

## **EMC Test Report**

### **Application for Grant of Equipment Authorization**

### **Industry Canada RSS-Gen Issue 4 / RSS 247 Issue 1 FCC Part 15, Subpart E**

### **Model: SDGOB-1506 and SDGOB-1505**

IC CERTIFICATION #: 466D-SDGOB1505 and 466D-SDGOB1506  
FCC ID: B94SDGOB1505 and B94SDGOB1506

APPLICANT: Hewlett Packard Company  
3000 Hanover Street  
Palo Alto, CA 94304

TEST SITE(S): National Technical Systems - Silicon Valley  
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Fremont, CA. 94538-2435

IC SITE REGISTRATION #: 2845B-3; 2845B-4, 2845B-5, 2845B-7

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and 31 and August 4, 5, 6, 10 and 12, 2015

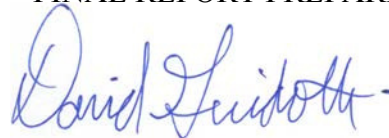
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**REVISION HISTORY**

| Rev# | Date               | Comments                                                                                        | Modified By |
|------|--------------------|-------------------------------------------------------------------------------------------------|-------------|
| -    | August 27, 2015    | First release                                                                                   |             |
| 1    | September 23, 2015 | Updated IC number                                                                               | MEH         |
| 2    | November 17, 2015  | Updated power vs data rate results<br>Added Appendix for justification of test reductions taken | MEH         |

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## **SCOPE**

An electromagnetic emissions test has been performed on the Hewlett Packard Company model SDGOB-1506 and SDGOB-1505, pursuant to the following rules:

Industry Canada RSS-Gen Issue 4

RSS 247 Issue 1 “Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices”

FCC Part 15, Subpart E requirements for UNII Devices

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

ANSI C63.10-2013

FCC General UNII Test Procedures KDB789033

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

## **OBJECTIVE**

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer’s declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body’s review of the submitted documents. Once the equipment authorization has been obtained, the label

indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

Testing for the 802.11 operation was performed only on model SDGOB-1505. This model was considered representative of the SDGOB-1506.

Only results for the 5GHz 802.11 operation are presented in this report.

### **STATEMENT OF COMPLIANCE**

The tested sample of Hewlett Packard Company model SDGOB-1506 and SDGOB-1505 complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 4

RSS 247 Issue 1 “Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices”

FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Hewlett Packard Company model SDGOB-1506 and SDGOB-1505 and therefore apply only to the tested sample. The sample was selected and prepared by Tarandeep Kaur of Broadcom Corporation on behalf of Hewlett Packard Company.

### **DEVIATIONS FROM THE STANDARDS**

No deviations were made from the published requirements listed in the scope of this report.

## TEST RESULTS SUMMARY

### UNII / LELAN DEVICES

#### Operation in the 5.15 – 5.25 GHz Band

| FCC Rule Part       | RSS Rule Part     | Description            | Measured Value / Comments                                              | Limit / Requirement | Result   |
|---------------------|-------------------|------------------------|------------------------------------------------------------------------|---------------------|----------|
| -                   | RSS 247 6.2.1     | Indoor operation only  | Refer to user's manual                                                 | N/A                 | Complies |
| 15.407 (a) (1) (iv) | -                 | Output Power           | n20: 19.4 dBm (86mW)<br>n40: 20.0 dBm (100mW)<br><br>(Max eirp: 224mW) | 24dBm               | Complies |
| -                   | RSS 247 6.2.1 (1) |                        | n20: 22.4dBm eirp<br>n40: 22.96dBm eirp                                | 23dBm eirp          | Complies |
| 15.407 (a) (1)      | -                 | Power Spectral Density | n20: 7.0 dBm/MHz<br>n40: 5.7 dBm/MHz                                   | 11 dBm/MHz          | Complies |
| -                   | RSS 247 6.2.1 (1) |                        |                                                                        | 10 dBm/MHz eirp     | Complies |

#### Operation in the 5.25 – 5.35 GHz Band

| FCC Rule Part | RSS Rule Part      | Description            | Measured Value / Comments                                                        | Limit / Requirement                  | Result (margin) |
|---------------|--------------------|------------------------|----------------------------------------------------------------------------------|--------------------------------------|-----------------|
| 15.407(a) (2) | -                  | 26dB Bandwidth         | 19.7MHz minimum                                                                  | N/A – limits output power if < 20MHz | N/A             |
| -             | RSS 247 6.2.2 (1)  | 99% Bandwidth          | 17.6MHz minimum                                                                  | N/A – limits output power if < 20MHz | N/A             |
| 15.407(a) (2) | RSS 247 6.2.2 (1)  | Output Power           | n20: 19.8 dBm (96mW)<br>n40: 19.8 dBm (95mW)<br><br>(Max eirp: 23.3 dBm (215mW)) | 24 dBm / 250mW (eirp < 30dBm)        | Complies        |
| 15.407(a) (2) | RSS 247 6.2.2 (1)- | Power Spectral Density | n20: 7.4 dBm/MHz<br>n40: 5.3 dBm/MHz                                             | 11 dBm/MHz                           | Complies        |

#### Operation in the 5.47 – 5.725 GHz Band

| FCC Rule Part  | RSS Rule Part     | Description                               | Measured Value / Comments                                                           | Limit / Requirement                  | Result (margin) |
|----------------|-------------------|-------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------|-----------------|
| 15.407(a) (2)  | -                 | 26dB Bandwidth                            | 20.0MHz minimum                                                                     | N/A – limits output power if < 20MHz | N/A             |
| -              | RSS 247 6.2.3 (1) | 99% Bandwidth                             | 17.6MHz minimum                                                                     | N/A – limits output power if < 20MHz | N/A             |
| 15.407(a) (2)  | RSS 247 6.2.3 (1) | Output Power                              | n20: 18.9 dBm (77mW)<br>n40: 19.0 dBm (80mW)<br><br>(Max eirp: 22.5 dBm (178mW))    | 24 dBm / 250mW (eirp < 30dBm)        | Complies        |
| 15.407(a) (2)) | RSS 247 6.2.3 (1) | Power Spectral Density                    | n20: 6.6 dBm/MHz<br>n40: 4.6 dBm/MHz                                                | 11 dBm/MHz                           | Complies        |
| -              | RSS 247 6.2.3     | Non-operation in 5600 – 5650 MHz sub band | Device cannot operate in the 5600 – 5650 MHz band –refer to Operational Description |                                      | Complies        |

**Operation in the 5.725 – 5.850 GHz Band**

| FCC Rule Part | RSS Rule Part     | Description            | Measured Value / Comments                                                        | Limit / Requirement            | Result (margin) |
|---------------|-------------------|------------------------|----------------------------------------------------------------------------------|--------------------------------|-----------------|
| 15.407 (e)    | RSS 247 6.2.4 (1) | 6dBm bandwidth         | 14.3MHz minimum                                                                  | >500kHz                        | Complies        |
| 15.407(a) (3) | RSS 247 6.2.4 (1) | Output Power           | n20: 18.7 dBm (74mW)<br>n40: 17.7 dBm (59mW)<br><br>(Max eirp: 21.2 dBm (165mW)) | 30 dBm / 1000mW (eirp < 36dBm) | Complies        |
| 15.407(a) (3) | RSS 247 6.2.4 (1) | Power Spectral Density | n20: 6.3 dBm/MHz<br>n40: 3.2 dBm/MHz                                             | 30 dBm/ 500kHz                 | Complies        |

**Requirements for all U-NII/LELAN bands**

| FCC Rule Part      | RSS Rule Part                   | Description                                                  | Measured Value / Comments                                      | Limit / Requirement                                                                                   | Result   |
|--------------------|---------------------------------|--------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------|
| 15.407             | RSS 247 6.1                     | Modulation                                                   | Digital Modulation is used                                     | Digital modulation is required                                                                        | Complies |
| 15.407(b) / 15.209 | RSS 247 6.0                     | Spurious Emissions                                           | 74.0 dBμV/m @ 5149.8 MHz (0.0 dB)                              | Refer to page 21                                                                                      | Complies |
|                    | RSS 247 6.4 (1)                 | Channel Selection                                            | Outermost carrier frequencies used for unwanted emissions      | Device was tested on the top, bottom and center channels in each band                                 | N/A      |
| 15                 |                                 |                                                              | Measurements on three channels in each band                    |                                                                                                       | Complies |
| 15.407 (c)         | RSS 247 6.4 (2)                 | Operation in the absence of information to transmit          | Operation is discontinued in the absence of information        | Device shall automatically discontinue operation in the absence of information to transmit            | Complies |
| 15.407 (g)         | -                               | Frequency Stability                                          | Frequency stability is better than 10ppm                       | Signal shall remain within the allocated band                                                         | Complies |
| 15.407 (h1)        | RSS 247 6.2.2 (1) and 6.2.3 (1) | Transmit Power Control                                       | TPC is not required as the device operates at below 500mW eirp | The U-NII device shall have the capability to operate with a mean EIRP value lower than 24dBm (250mW) | Complies |
| 15.407 (h2)        | RSS 247 6.3                     | Dynamic frequency Selection (device without radar detection) | Refer to separate test report, reference R99021                | Channel move time < 10s<br>Channel closing transmission time < 260ms                                  | Complies |
| 15.407 (i)         | RSS 247 6.4 (4)                 | Device Security                                              | Refer to Software Security Exhibit                             | Prevents modifications by unauthorized parties                                                        | Complies |
|                    | RSS 247 6.4 (5) and (6)         | User manual information                                      | Refer to manual for details                                    | Warning regarding interference from Satellite Systems                                                 | Complies |

### GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

| FCC Rule Part                | RSS Rule part          | Description              | Measured Value / Comments                                                                      | Limit / Requirement                            | Result (margin) |
|------------------------------|------------------------|--------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------|
| 15.203                       | -                      | RF Connector             | Uses u.FL connector for external antenna                                                       | Unique or integral antenna required            | Complies        |
| 15.207                       | RSS GEN Table 3        | AC Conducted Emissions   | 40.3 dBμV @ 0.176 MHz (-14.4 dB)                                                               | Refer to page 19                               | Complies        |
| 15.247 (b) (5)<br>15.407 (f) | RSS 102                | RF Exposure Requirements | Refer to MPE calculations in separate exhibit, RSS 102 declaration and User Manual statements. | Refer to OET 65, FCC Part 1 and RSS 102        | Complies        |
| -                            | RSS GEN 8.3            | User Manual              |                                                                                                | Statement for products with detachable antenna | Complies        |
| -                            | RSP 100<br>RSS GEN 6.6 | Occupied Bandwidth       | a: 17.5 MHz<br>n20: 18.3 MHz<br>n40: 37.3 MHz                                                  | Information only                               | N/A             |

### MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

| Measurement Type                        | Measurement Unit | Frequency Range   | Expanded Uncertainty |
|-----------------------------------------|------------------|-------------------|----------------------|
| RF power, conducted (power meter)       | dBm              | 25 to 7000 MHz    | ± 0.52 dB            |
| RF power, conducted (Spectrum analyzer) | dBm              | 25 to 7000 MHz    | ± 0.7 dB             |
| Conducted emission of transmitter       | dBm              | 25 to 26500 MHz   | ± 0.7 dB             |
| Conducted emission of receiver          | dBm              | 25 to 26500 MHz   | ± 0.7 dB             |
| Radiated emission (substitution method) | dBm              | 25 to 26500 MHz   | ± 2.5 dB             |
| Radiated emission (field strength)      | dBμV/m           | 25 to 1000 MHz    | ± 3.6 dB             |
|                                         |                  | 1000 to 40000 MHz | ± 6.0 dB             |
| Conducted Emissions (AC Power)          | dBμV             | 0.15 to 30 MHz    | ± 2.4 dB             |



**EQUIPMENT UNDER TEST (EUT) DETAILS****GENERAL**

The Hewlett Packard Company model SDGOB-1505 is an IEEE 802.11 a/b/g/n wireless network adapter that operates in both the 2.4GHz and 5GHz bands. Model SDGOB-1506 adds BLE functionality. The card supports 802.11n modes in 20MHz and 40MHz.

The sample was received on July 13, 2015 and tested on July 14, 15, 16, 20, 21, 22, 23, 24, 27, 28, 29, 30 and 31 and August 4, 5, 6, 10 and 12, 2015. The EUT consisted of the following component(s):

| Company                 | Model      | Description | Serial Number | FCC ID       |
|-------------------------|------------|-------------|---------------|--------------|
| Hewlett Packard Company | SDGOB-1505 | 802.11abgn  | 707781772513  | B94SDGOB1505 |
| Hewlett Packard Company | SDGOB-1505 | 802.11abgn  | D85DE2000005  | B94SDGOB1505 |
| Hewlett Packard Company | SDGOB-1505 | 802.11abgn  | 707781772509  | B94SDGOB1505 |

**OTHER EUT DETAILS****SDGOB-1505**

- USB interface

- Wifi operation 2.4GHz and 5GHz bands

- 802.11 a/b/g/n20 2x2 operation

- 40MHz bandwidths supported in 5GHz bands only

- Two configurations: one using fixed internal/onboard antennas, and one with u.FL connectors to allow for external antennas.

SDGOB-1505 is identical to the SDGOB-1506, except that the BLE function is disabled via a resistor change.

**ANTENNA SYSTEM**

There are two antenna options:

- PCB trace antenna – 2.5dBi @ 2.4GHz, 3.5dBi @ 5GHz

- External antenna, Yageo, ANT300P002B24553, 0.7dBi @ 2.4GHz, 1.9dBi @ 5GHz

**ENCLOSURE**

The EUT has no enclosure. It is designed to be installed within the enclosure of a host computer.

**MODIFICATIONS**

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

## SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

| Company | Model | Description | Serial Number | FCC ID |
|---------|-------|-------------|---------------|--------|
| Dell    | E6400 | Laptop      | FN4XJK1       | -      |

No remote support equipment was used during testing.

## EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

| Port         | Connected To     | Cable(s)    |                        |           |
|--------------|------------------|-------------|------------------------|-----------|
|              |                  | Description | Shielded or Unshielded | Length(m) |
| Laptop USB   | USB Card Adapter | USB         | Shielded               | 1         |
| Card Adapter | EUT Module       | -           | -                      | -         |

### Additional on Support Equipment

| Port            | Connected To | Cable(s)    |                        |           |
|-----------------|--------------|-------------|------------------------|-----------|
|                 |              | Description | Shielded or Unshielded | Length(m) |
| Laptop Ethernet | Switch       | Cat-5       | Unshielded             | 10        |
| Laptop DC input | AC/DC Output | 2Wire       | Unshielded             | 1         |
| AC/DC Adapter   | AC Mains     | 3Wire       | Unshielded             | 0.8       |

## EUT OPERATION

During testing, the EUT was configured to continuously transmit at maximum output power and noted data rate on the channel indicated.

**TEST SITE****GENERAL INFORMATION**

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

| Site      | Designation / Registration Numbers |         | Location                                      |
|-----------|------------------------------------|---------|-----------------------------------------------|
|           | FCC                                | Canada  |                                               |
| Chamber 5 | US0027                             | 2845B-5 | 41039 Boyce Road<br>Fremont,<br>CA 94538-2435 |

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

**CONDUCTED EMISSIONS CONSIDERATIONS**

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

**RADIATED EMISSIONS CONSIDERATIONS**

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.

## **MEASUREMENT INSTRUMENTATION**

### **RECEIVER SYSTEM**

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

### **INSTRUMENT CONTROL COMPUTER**

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

### **LINE IMPEDANCE STABILIZATION NETWORK (LISN)**

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

**FILTERS/ATTENUATORS**

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

**ANTENNAS**

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

**ANTENNA MAST AND EQUIPMENT TURNTABLE**

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

**INSTRUMENT CALIBRATION**

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

## TEST PROCEDURES

### EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

### CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

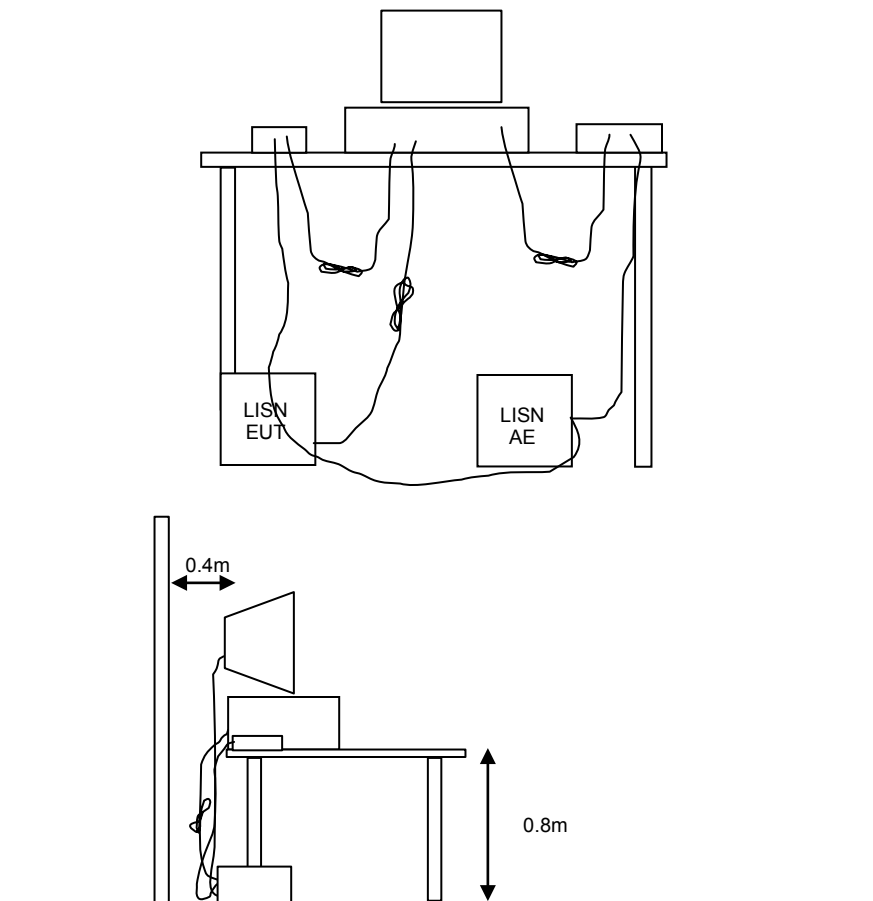


Figure 1 Typical Conducted Emissions Test Configuration

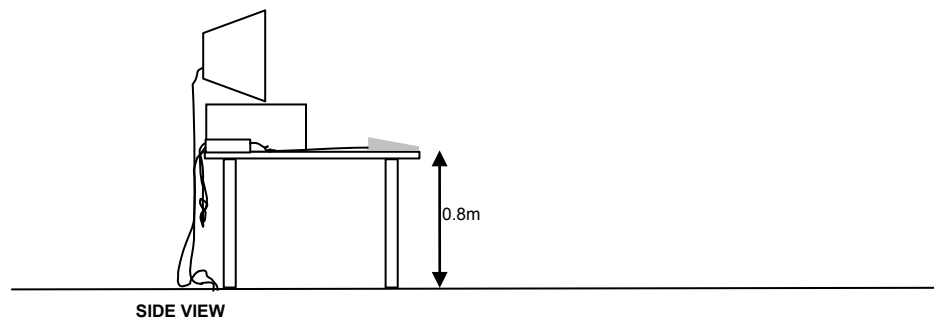
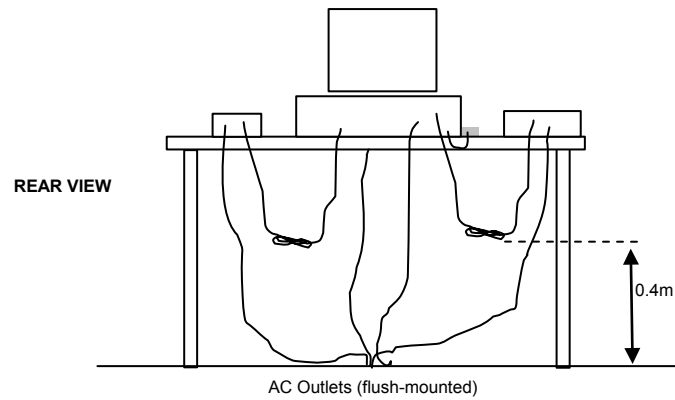
**RADIATED EMISSIONS**

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

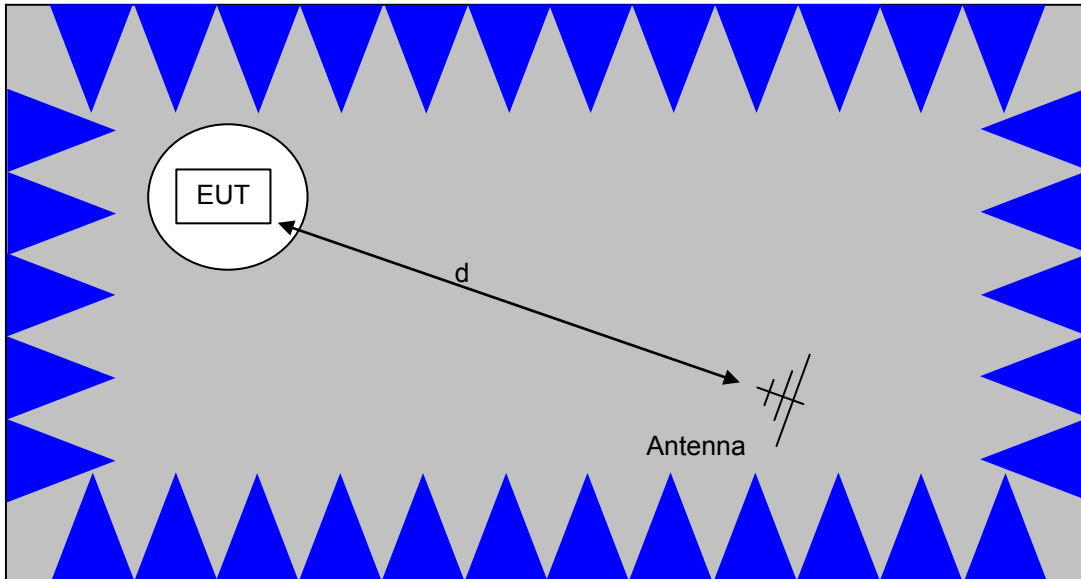
Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



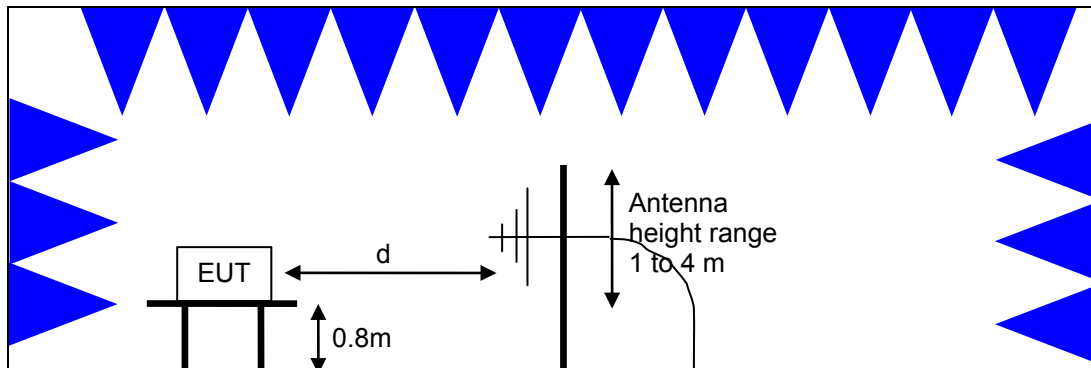
Typical Test Configuration for Radiated Field Strength Measurements





The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

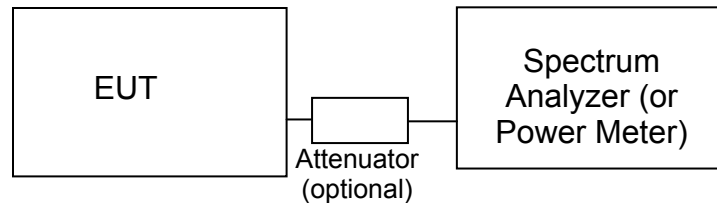
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements  
Semi-Anechoic Chamber, Plan and Side Views

**CONDUCTED EMISSIONS FROM ANTENNA PORT**

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.

Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and NTS Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

**BANDWIDTH MEASUREMENTS**

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

**SPECIFICATION LIMITS AND SAMPLE CALCULATIONS**

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

**CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN**

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

| Frequency<br>(MHz) | Average<br>Limit<br>(dBuV)                                                | Quasi Peak<br>Limit<br>(dBuV)                                             |
|--------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 0.150 to 0.500     | Linear decrease on<br>logarithmic frequency axis<br>between 56.0 and 46.0 | Linear decrease on<br>logarithmic frequency axis<br>between 66.0 and 56.0 |
| 0.500 to 5.000     | 46.0                                                                      | 56.0                                                                      |
| 5.000 to 30.000    | 50.0                                                                      | 60.0                                                                      |

### GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup>.

| Frequency Range (MHz) | Limit (uV/m)                 | Limit (dBuV/m @ 3m)                                  |
|-----------------------|------------------------------|------------------------------------------------------|
| 0.009-0.490           | 2400/F <sub>KHz</sub> @ 300m | 67.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 300m |
| 0.490-1.705           | 24000/F <sub>KHz</sub> @ 30m | 87.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 30m  |
| 1.705 to 30           | 30 @ 30m                     | 29.5 @ 30m                                           |
| 30 to 88              | 100 @ 3m                     | 40 @ 3m                                              |
| 88 to 216             | 150 @ 3m                     | 43.5 @ 3m                                            |
| 216 to 960            | 200 @ 3m                     | 46.0 @ 3m                                            |
| Above 960             | 500 @ 3m                     | 54.0 @ 3m                                            |

### FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. In the 5250-5350MHz and 5470-5725MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

| Operating Frequency (MHz) | Output Power     | Power Spectral Density |
|---------------------------|------------------|------------------------|
| 5150 – 5250               | 250 mW (24 dBm)  | 11 dBm/MHz             |
| 5250 – 5350               | 250 mW (24 dBm)  | 11 dBm/MHz             |
| 5745 – 5725               | 250 mW (24 dBm)  | 11 dBm/MHz             |
| 5725 – 5850               | 1 Watts (30 dBm) | 30 dBm/500kHz          |

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi.

<sup>1</sup> The restricted bands are detailed in FCC 15.205, RSS-GEN Table 3

**OUTPUT POWER LIMITS –LELAN DEVICES**

The table below shows the limits for output power and output power density defined by RSS 247. In the 5250-5350MHz and 5470-5725MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

| Operating Frequency (MHz) | Output Power                                    | Power Spectral Density |
|---------------------------|-------------------------------------------------|------------------------|
| 5150 – 5250               | 200mW (23 dBm) eirp                             | 10 dBm/MHz eirp        |
| 5250 – 5350               | 250 mW (24 dBm) <sup>2</sup><br>1W (30dBm) eirp | 11 dBm/MHz             |
| 5470 – 5725               | 250 mW (24 dBm) <sup>3</sup><br>1W (30dBm) eirp | 11 dBm/MHz             |
| 5725 – 5850               | 1 Watts (30 dBm)<br>4W eirp                     | 30 dBm/ 500KHz         |

**SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES**

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of –27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to –17dBm/MHz.

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<sup>2</sup> If EIRP exceeds 500mW the device must employ TPC

<sup>3</sup> If EIRP exceeds 500mW the device must employ TPC

**SAMPLE CALCULATIONS - CONDUCTED EMISSIONS**

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

$R_r$  = Receiver Reading in dBuV

$S$  = Specification Limit in dBuV

$M$  = Margin to Specification in +/- dB

**SAMPLE CALCULATIONS - RADIATED EMISSIONS**

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20 * \log_{10} (D_m/D_s)$$

where:

$F_d$  = Distance Factor in dB

$D_m$  = Measurement Distance in meters

$D_s$  = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40 * \log_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

$R_r$  = Receiver Reading in dBuV/m

$F_d$  = Distance Factor in dB

$R_C$  = Corrected Reading in dBuV/m

$L_S$  = Specification Limit in dBuV/m

$M$  = Margin in dB Relative to Spec

#### **SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION**

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of  $d$  (meters) from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{d} \quad \text{microvolts per meter}$$

where  $P$  is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

## Appendix A Test Equipment Calibration Data

| <u>Manufacturer</u>                                     | <u>Description</u>                    | <u>Model</u>             | <u>Asset #</u> | <u>Calibrated</u> | <u>Cal Due</u> |
|---------------------------------------------------------|---------------------------------------|--------------------------|----------------|-------------------|----------------|
| <b>Radiated Emissions, 1000 - 6,000 MHz, 13-Jul-15</b>  |                                       |                          |                |                   |                |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 1561           | 6/27/2014         | 6/27/2016      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| <b>Radiated Emissions, 1000 - 6,000 MHz, 14-Jul-15</b>  |                                       |                          |                |                   |                |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 1561           | 6/27/2014         | 6/27/2016      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| <b>Radiated Emissions, 1000 - 6,000 MHz, 15-Jul-15</b>  |                                       |                          |                |                   |                |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 1561           | 6/27/2014         | 6/27/2016      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| <b>Radiated Emissions, 1000 - 6,000 MHz, 16-Jul-15</b>  |                                       |                          |                |                   |                |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 2870           | 8/20/2013         | 8/20/2015      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| <b>Radiated Emissions, 1000 - 6,000 MHz, 17-Jul-15</b>  |                                       |                          |                |                   |                |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 2870           | 8/20/2013         | 8/20/2015      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| <b>Radiated Emissions, 1,000 - 6,000 MHz, 20-Jul-15</b> |                                       |                          |                |                   |                |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 2870           | 8/20/2013         | 8/20/2015      |
| <b>Radiated Emissions, 1000 - 12,000 MHz, 20-Jul-15</b> |                                       |                          |                |                   |                |
| Hewlett Packard                                         | Microwave Preamplifier, 1-26.5GHz     | 8449B                    | 785            | 10/31/2014        | 10/31/2015     |
| Hewlett Packard                                         | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue | 8564E<br>(84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Micro-Tronics                                           | Band Reject Filter, 2400-2500 MHz     | BRM50702-02              | 1683           | 7/13/2015         | 7/13/2016      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 2870           | 8/20/2013         | 8/20/2015      |
| <b>Radiated Emissions, 1000 - 12,000 MHz, 21-Jul-15</b> |                                       |                          |                |                   |                |
| Hewlett Packard                                         | Microwave Preamplifier, 1-26.5GHz     | 8449B                    | 785            | 10/31/2014        | 10/31/2015     |
| Hewlett Packard                                         | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue | 8564E<br>(84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Micro-Tronics                                           | Band Reject Filter, 2400-2500 MHz     | BRM50702-02              | 1683           | 7/13/2015         | 7/13/2016      |
| Rohde & Schwarz                                         | EMI Test Receiver, 20 Hz-40 GHz       | ESIB40<br>(1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| EMCO                                                    | Antenna, Horn, 1-18 GHz               | 3115                     | 2870           | 8/20/2013         | 8/20/2015      |





| <u>Manufacturer</u>                                               | <u>Description</u>                        | <u>Model</u>          | <u>Asset #</u> | <u>Calibrated</u> | <u>Cal Due</u> |
|-------------------------------------------------------------------|-------------------------------------------|-----------------------|----------------|-------------------|----------------|
| <b>Radiated Spurious Emissions, 1,000 - 25,000 MHz, 22-Jul-15</b> |                                           |                       |                |                   |                |
| Hewlett Packard                                                   | Microwave Preamplifier, 1-26.5GHz         | 8449B                 | 785            | 10/31/2014        | 10/31/2015     |
| Miteq                                                             | Preamplifier, 1-18 GHz                    | AFS44                 | 1346           | 1/16/2015         | 1/16/2016      |
| Hewlett Packard                                                   | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                   | Head (Inc flex cable, (1742,1743) Blue)   | 84125C                | 1620           | 6/5/2015          | 6/5/2016       |
| Micro-Tronics                                                     | Band Reject Filter, 2400-2500 MHz         | BRM50702-02           | 1683           | 7/13/2015         | 7/13/2016      |
| A. H. Systems                                                     | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581    | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                              | Antenna, Horn, 1-18 GHz                   | 3115                  | 2870           | 8/20/2013         | 8/20/2015      |
| <b>Radiated Emissions, 1000 - 25,000 MHz, 22-Jul-15</b>           |                                           |                       |                |                   |                |
| Miteq                                                             | Preamplifier, 1-18 GHz                    | AFS44                 | 1346           | 1/16/2015         | 1/16/2016      |
| Hewlett Packard                                                   | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                   | Head (Inc flex cable, (1742,1743) Blue)   | 84125C                | 1620           | 6/5/2015          | 6/5/2016       |
| Micro-Tronics                                                     | Band Reject Filter, 2400-2500 MHz         | BRM50702-02           | 1683           | 7/13/2015         | 7/13/2016      |
| Hewlett Packard                                                   | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039       | 1767           | 11/14/2014        | 11/14/2015     |
| A. H. Systems                                                     | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581    | 2161           | 7/16/2015         | 7/16/2017      |
| Rohde & Schwarz                                                   | EMI Test Receiver, 20 Hz-40 GHz           | ESIB40 (1088.7490.40) | 2493           | 1/23/2015         | 1/23/2016      |
| EMCO                                                              | Antenna, Horn, 1-18 GHz                   | 3115                  | 2870           | 8/20/2013         | 8/20/2015      |
| <b>Radiated Emissions, 1000 - 25,000 MHz, 23-Jul-15</b>           |                                           |                       |                |                   |                |
| Miteq                                                             | Preamplifier, 1-18 GHz                    | AFS44                 | 1346           | 1/16/2015         | 1/16/2016      |
| Hewlett Packard                                                   | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                   | Head (Inc flex cable, (1742,1743) Blue)   | 84125C                | 1620           | 6/5/2015          | 6/5/2016       |
| Micro-Tronics                                                     | Band Reject Filter, 2400-2500 MHz         | BRM50702-02           | 1683           | 7/13/2015         | 7/13/2016      |
| Hewlett Packard                                                   | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039       | 1767           | 11/14/2014        | 11/14/2015     |
| A. H. Systems                                                     | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581    | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                              | Antenna, Horn, 1-18 GHz                   | 3115                  | 2870           | 8/20/2013         | 8/20/2015      |
| Micro-Tronics                                                     | Band Reject Filter, 5150-5350 MHz         | BRC50703-02           | 1729           | 7/8/2015          | 7/8/2016       |
| Micro-Tronics                                                     | Band Reject Filter, 5470-5725 MHz         | BRC50704-02           | 1730           | 7/10/2015         | 7/10/2016      |
| <b>Radiated Emissions, 1000 - 25,000 MHz, 24-Jul-15</b>           |                                           |                       |                |                   |                |
| Miteq                                                             | Preamplifier, 1-18 GHz                    | AFS44                 | 1346           | 1/16/2015         | 1/16/2016      |
| Hewlett Packard                                                   | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)        | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                   | Head (Inc flex cable, (1742,1743) Blue)   | 84125C                | 1620           | 6/5/2015          | 6/5/2016       |
| Hewlett Packard                                                   | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039       | 1767           | 11/14/2014        | 11/14/2015     |



| <u>Manufacturer</u>                                              | <u>Description</u>                        | <u>Model</u>       | <u>Asset #</u> | <u>Calibrated</u> | <u>Cal Due</u> |
|------------------------------------------------------------------|-------------------------------------------|--------------------|----------------|-------------------|----------------|
| A. H. Systems                                                    | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581 | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                             | Antenna, Horn, 1-18 GHz                   | 3115               | 2870           | 8/20/2013         | 8/20/2015      |
| Micro-Tronics                                                    | Band Reject Filter, 5150-5350 MHz         | BRC50703-02        | 1729           | 7/8/2015          | 7/8/2016       |
| Micro-Tronics                                                    | Band Reject Filter, 5470-5725 MHz         | BRC50704-02        | 1730           | 7/10/2015         | 7/10/2016      |
| Micro-Tronics                                                    | Band Reject Filter, 5725-5875 MHz         | BRC50705-02        | 1682           | 7/8/2015          | 7/8/2016       |
| <b>Radiated Emissions, 1000 - 25,000 MHz, 27-Jul-15</b>          |                                           |                    |                |                   |                |
| Miteq                                                            | Preamplifier, 1-18 GHz                    | AFS44              | 1346           | 1/16/2015         | 1/16/2016      |
| Hewlett Packard                                                  | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)     | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                  | Head (Inc flex cable, (1742,1743) Blue)   | 84125C             | 1620           | 6/5/2015          | 6/5/2016       |
| Hewlett Packard                                                  | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039    | 1767           | 11/14/2014        | 11/14/2015     |
| A. H. Systems                                                    | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581 | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                             | Antenna, Horn, 1-18 GHz                   | 3115               | 2870           | 8/20/2013         | 8/20/2015      |
| Micro-Tronics                                                    | Band Reject Filter, 5150-5350 MHz         | BRC50703-02        | 1729           | 7/8/2015          | 7/8/2016       |
| Micro-Tronics                                                    | Band Reject Filter, 5470-5725 MHz         | BRC50704-02        | 1730           | 7/10/2015         | 7/10/2016      |
| Micro-Tronics                                                    | Band Reject Filter, 5725-5875 MHz         | BRC50705-02        | 1682           | 7/8/2015          | 7/8/2016       |
| <b>Radiated Spurious Emissions, 1000 - 40,000 MHz, 29-Jul-15</b> |                                           |                    |                |                   |                |
| Hewlett Packard                                                  | Microwave Preamplifier, 1-26.5GHz         | 8449B              | 785            | 10/31/2014        | 10/31/2015     |
| Hewlett Packard                                                  | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)     | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                  | Head (Inc flex cable, (1742,1743) Blue)   | 84125C             | 1620           | 6/5/2015          | 6/5/2016       |
| Hewlett Packard                                                  | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039    | 1767           | 11/14/2014        | 11/14/2015     |
| A. H. Systems                                                    | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581 | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                             | Antenna, Horn, 1-18 GHz                   | 3115               | 2870           | 8/20/2013         | 8/20/2015      |
| <b>Radiated Emissions, 1000 - 25,000 MHz, 29-Jul-15</b>          |                                           |                    |                |                   |                |
| Hewlett Packard                                                  | Microwave Preamplifier, 1-26.5GHz         | 8449B              | 785            | 10/31/2014        | 10/31/2015     |
| Hewlett Packard                                                  | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue     | 8564E (84125C)     | 1393           | 5/2/2015          | 5/2/2016       |
| Hewlett Packard                                                  | Head (Inc flex cable, (1742,1743) Blue)   | 84125C             | 1620           | 6/5/2015          | 6/5/2016       |
| Hewlett Packard                                                  | High Pass filter, 8.2 GHz (Purple System) | P/N 84300-80039    | 1767           | 11/14/2014        | 11/14/2015     |
| A. H. Systems                                                    | Red System Horn, 18-40GHz                 | SAS-574, p/n: 2581 | 2161           | 7/16/2015         | 7/16/2017      |
| EMCO                                                             | Antenna, Horn, 1-18 GHz                   | 3115               | 2870           | 8/20/2013         | 8/20/2015      |
| Micro-Tronics                                                    | Band Reject Filter, 5150-5350 MHz         | BRC50703-02        | 1729           | 7/8/2015          | 7/8/2016       |
| Micro-Tronics                                                    | Band Reject Filter, 5470-5725 MHz         | BRC50704-02        | 1730           | 7/10/2015         | 7/10/2016      |



| <b><u>Manufacturer</u></b>                                          | <b><u>Description</u></b>              | <b><u>Model</u></b>   | <b><u>Asset #</u></b> | <b><u>Calibrated</u></b> | <b><u>Cal Due</u></b> |
|---------------------------------------------------------------------|----------------------------------------|-----------------------|-----------------------|--------------------------|-----------------------|
| Micro-Tronics                                                       | Band Reject Filter, 5725-5875 MHz      | BRC50705-02           | 1682                  | 7/8/2015                 | 7/8/2016              |
| <b>Radiated Emissions, 1000 - 18,000 MHz, 30-Jul-15</b>             |                                        |                       |                       |                          |                       |
| Hewlett Packard                                                     | Microwave Preamplifier, 1-26.5GHz      | 8449B                 | 785                   | 10/31/2014               | 10/31/2015            |
| Hewlett Packard                                                     | SpecAn 9 kHz - 40 GHz, FT (SA40) Blue  | 8564E (84125C)        | 1393                  | 5/2/2015                 | 5/2/2016              |
| EMCO                                                                | Antenna, Horn, 1-18 GHz                | 3115                  | 2870                  | 8/20/2013                | 8/20/2015             |
| <b>Radiated Emissions, 30 - 1,000 MHz, 30-Jul-15</b>                |                                        |                       |                       |                          |                       |
| Sunol Sciences                                                      | Biconilog, 30-3000 MHz                 | JB3                   | 1548                  | 9/17/2014                | 9/17/2016             |
| Com-Power                                                           | Preamplifier, 30-1000 MHz              | PA-103A               | 2359                  | 12/22/2014               | 12/22/2015            |
| Rohde & Schwarz                                                     | EMI Test Receiver, 20 Hz-40 GHz        | ESIB40 (1088.7490.40) | 2493                  | 1/23/2015                | 1/23/2016             |
| <b>Conducted Emissions - AC Power Ports, 31-Jul-15</b>              |                                        |                       |                       |                          |                       |
| EMCO                                                                | LISN, 10 kHz-100 MHz, 25A              | 3825/2                | 1292                  | 7/24/2015                | 7/24/2016             |
| Rohde & Schwarz                                                     | Pulse Limiter                          | ESH3 Z2               | 1401                  | 5/14/2015                | 5/14/2016             |
| Rohde & Schwarz                                                     | EMI Test Receiver, 20 Hz-7 GHz         | ESIB7                 | 1630                  | 7/6/2015                 | 7/6/2016              |
| <b>Radiated Emissions, 30 - 1,000 MHz, 04-Aug-15</b>                |                                        |                       |                       |                          |                       |
| Sunol Sciences                                                      | Biconilog, 30-3000 MHz                 | JB3                   | 1548                  | 9/17/2014                | 9/17/2016             |
| Com-Power                                                           | Preamplifier, 30-1000 MHz              | PA-103A               | 2359                  | 12/22/2014               | 12/22/2015            |
| Rohde & Schwarz                                                     | EMI Test Receiver, 20 Hz-40 GHz        | ESIB40 (1088.7490.40) | 2493                  | 1/23/2015                | 1/23/2016             |
| <b>Radio Antenna Port (Power and Spurious Emissions), 05-Aug-15</b> |                                        |                       |                       |                          |                       |
| Agilent Technologies                                                | 3Hz -44GHz PSA Spectrum Analyzer       | E4446A                | 2796                  | 3/31/2015                | 3/31/2016             |
| <b>Radio Antenna Port (Power and Spurious Emissions), 06-Aug-15</b> |                                        |                       |                       |                          |                       |
| Agilent Technologies                                                | 3Hz -44GHz PSA Spectrum Analyzer       | E4446A                | 2796                  | 3/31/2015                | 3/31/2016             |
| <b>Radio Antenna Port (Power), 11-Aug-15</b>                        |                                        |                       |                       |                          |                       |
| Agilent Technologies                                                | 3Hz -44GHz PSA Spectrum Analyzer       | E4446A                | 2796                  | 3/31/2015                | 3/31/2016             |
| <b>Radio Antenna Port (Power and Spurious Emissions), 12-Aug-15</b> |                                        |                       |                       |                          |                       |
| Agilent Technologies                                                | 3Hz -44GHz PSA Spectrum Analyzer       | E4446A                | 2796                  | 3/31/2015                | 3/31/2016             |
| <b>Radio Antenna Port (Frequency Stability), 12-Aug-15</b>          |                                        |                       |                       |                          |                       |
| Watlow                                                              | Temp Chamber (w/ F4 Watlow Controller) | F4                    | 2170                  | 7/14/2015                | 7/14/2016             |
| Agilent Technologies                                                | 3Hz -44GHz PSA Spectrum Analyzer       | E4446A                | 2796                  | 3/31/2015                | 3/31/2016             |

## **Appendix B Test Data**

T98753 Pages 29 – 305



## ***EMC Test Data***

|                        |                                          |                      |                  |
|------------------------|------------------------------------------|----------------------|------------------|
| Client:                | Hewlett Packard Company                  | Job Number:          | J98746           |
| Product                | SDGOB-1505                               | T-Log Number:        | T98753           |
| System Configuration:  | -                                        | Project Manager:     | Sheareen Jacobs  |
| Contact:               | Tarandeep Kaur                           | Project Coordinator: | Irene Rademacher |
| Emissions Standard(s): | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Class:               | -                |
| Immunity Standard(s):  | -                                        | Environment:         | -                |

# **EMC Test Data**

For The

**Hewlett Packard Company**

Product

**SDGOB-1505**

Date of Last Test: 8/14/2015

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Power vs. Data Rate

In normal operating modes the card uses power settings stored on EEPROM to set the output power. For a given nominal output power the actual transmit power normally is reduced as the data rate increases, therefore testing was performed at the data rate in the mode with highest power to determine compliance with the requirements.

The following power measurements were made using a **GATED** average power meter and with the device configured in a continuous transmit mode on Chain 1 at the various data rates in each mode to verify the highest power mode:

### Sample Notes

Sample S/N: 707781772509

Driver: 6.37 RC214 .12

Date of Test: 7/13/2015

Test Engineer: Rafael Varelas

Test Location: FT Chamber #5

| Mode    | Data Rate | Power (dBm) | Power setting |
|---------|-----------|-------------|---------------|
| 802.11b | 1         | <b>18.3</b> | q72           |
|         | 2         | 18.3        |               |
|         | 5.5       | 18.2        |               |
|         | 11        | 18.2        |               |
| 802.11g | 6         | <b>17.0</b> | q67           |
|         | 9         | 17.0        |               |
|         | 12        | 17.0        |               |
|         | 18        | 16.9        |               |
|         | 24        | 16.9        |               |
|         | 36        | 16.8        |               |
|         | 48        | 16.8        |               |
|         | 54        | 16.7        |               |

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Mode                | Data Rate | Power (dBm) | Power setting |
|---------------------|-----------|-------------|---------------|
| 802.11n<br>20MHz    | 6.5       | <b>18.8</b> | q72           |
|                     | 13        | 18.8        |               |
|                     | 19.5      | 18.7        |               |
|                     | 26        | 18.6        |               |
|                     | 39        | 18.6        |               |
|                     | 52        | 18.6        |               |
|                     | 58.5      | 18.5        |               |
|                     | 65        | 18.5        |               |
|                     | 78        | N/A         |               |
| 802.11n/ac<br>40MHz | 13.5      | <b>17.0</b> | q66           |
|                     | 27        | 17.0        |               |
|                     | 40.5      | 16.9        |               |
|                     | 54        | 16.9        |               |
|                     | 81        | 16.8        |               |
|                     | 108       | 16.8        |               |
|                     | 121.5     | 16.7        |               |
|                     | 135       | 16.6        |               |
|                     | 162       | N/A         |               |
|                     | 180       | N/A         |               |
|                     |           |             |               |

<<-11ac mode only

<<-11ac mode only

<<-11ac mode only

Note : Power setting - the software power setting used during testing, included for reference only.

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Duty Cycle

Date of Test: 7/13/2015  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

Duty cycle measurements performed on the worse case data rate for power.

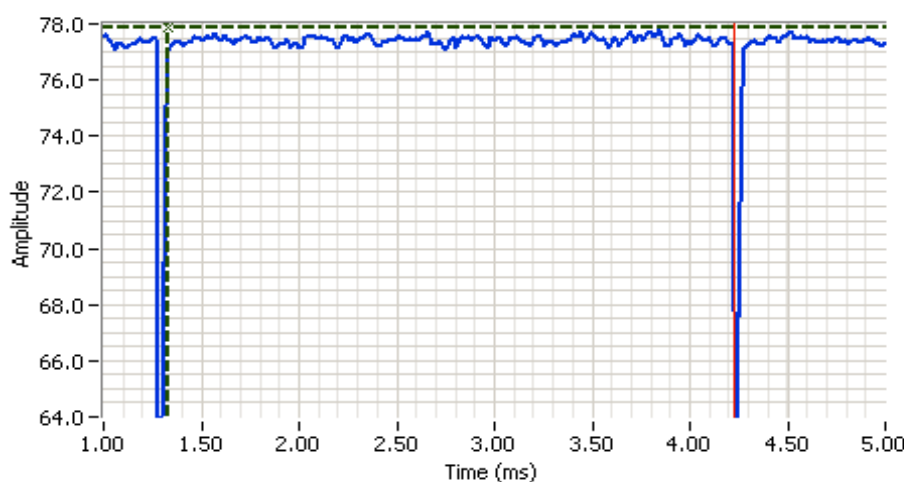
Notes: Measurements taken with maximum RBW/VBW settings allowed.

| Mode | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11b  | 1Mb/s     | 98.2%          | Yes          | 2.897  | 0               | 0                     | 345                 |
| 11g  | 6Mb/s     | 98.2%          | Yes          | 1.405  | 0               | 0                     | 712                 |
| n20  | MCS0      | 98.1%          | Yes          | 1.309  | 0               | 0                     | 764                 |
| n40  | MCS0      | 98.0%          | Yes          | 0.932  | 0               | 0                     | 1073                |
| n40  | MCS0      | 98.4%          | Yes          | 0.932  | 0               | 0                     | 1073                |

\* Correction factor when using RMS/Power averaging -  $10 \cdot \log(1/x)$

\*\* Correction factor when using linear voltage average -  $20 \cdot \log(1/x)$

T = Minimum transmission duration



### Analyzer Settings

Rohde&Schwarz, ESI  
 CF: 2411.500 MHz  
 SPAN: 0.000 MHz  
 RB: 10.000 MHz  
 VB: 20.0 kHz  
 Detector: POS  
 Attn: 20 DB  
 RL Offset: 0.0 DB  
 Sweep Time: 8.0ms  
 Ref Lvl: 102.0 DBUV

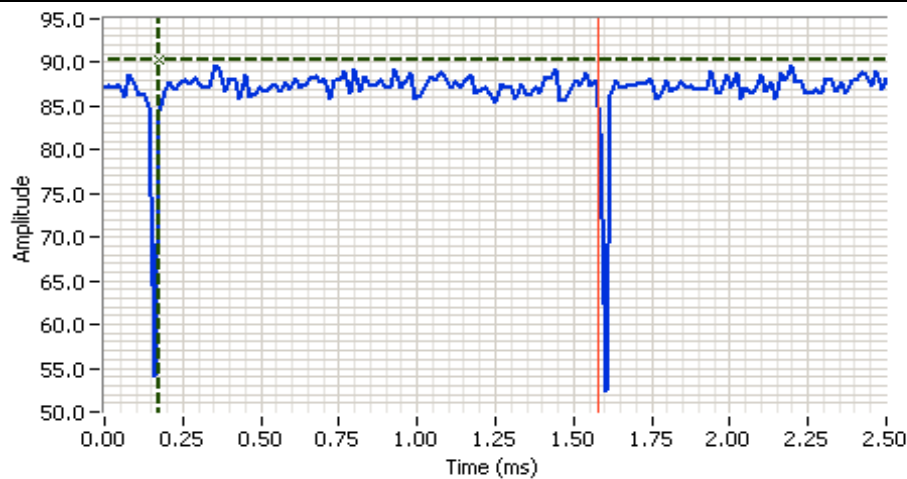
### Comments

802.11b  
 Tx On = 2.897ms  
 Tx Off = 0.052ms  
 Duty Cycle = 98.2%

|          |        |      |  |                 |       |
|----------|--------|------|--|-----------------|-------|
| Cursor 1 | 1.3299 | 77.8 |  | Delta Time (ms) | 2.897 |
| Cursor 1 | 4.2268 | 0.0  |  | Delta Amplitude | 77.8  |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



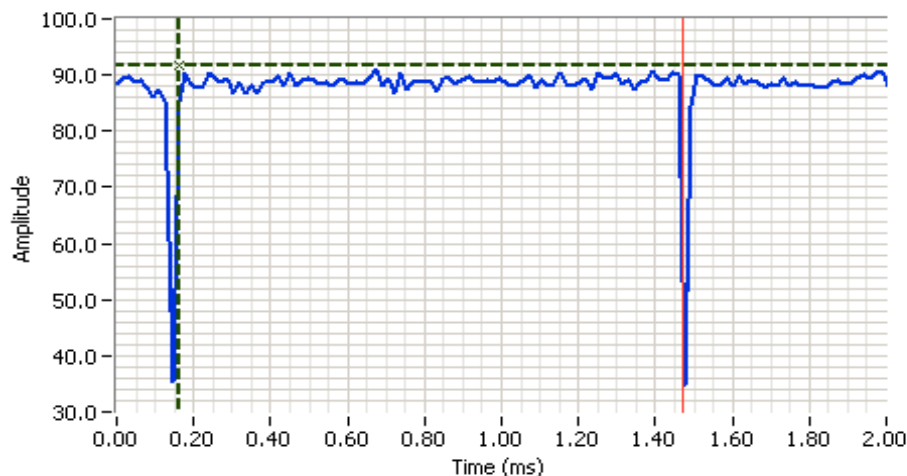
## Analyzer Settings

Rohde&Schwarz,ESI  
 CF: 2411.500 MHz  
 SPAN: 0.000 MHz  
 RB: 10.000 MHz  
 VB: 10.000 MHz  
 Detector: POS  
 Attn: 20 DB  
 RL Offset: 0.0 DB  
 Sweep Time: 8.0ms  
 Ref Lvl: 102.0 DBUV

## Comments

802.11g  
 Tx On = 1.405ms  
 Tx Off = 0.026ms  
 Duty Cycle = 98.2%

Cursor 1 0.1740 90.2    Delta Time (ms) 1.405  
 Cursor 1 1.5786 0.0    Delta Amplitude 90.2



## Analyzer Settings

Rohde&Schwarz,ESI  
 CF: 2462.000 MHz  
 SPAN: 0.000 MHz  
 RB: 10.000 MHz  
 VB: 10.000 MHz  
 Detector: POS  
 Attn: 0 DB  
 RL Offset: 0.0 DB  
 Sweep Time: 8.0ms  
 Ref Lvl: 92.0 DBUV

## Comments

802.11 n20  
 Tx On = 1.309ms  
 Tx Off = 0.026ms  
 Duty Cycle = 98.1%

Cursor 1 0.1623 91.6    Delta Time (ms) 1.309  
 Cursor 1 1.4712 0.0    Delta Amplitude 91.6

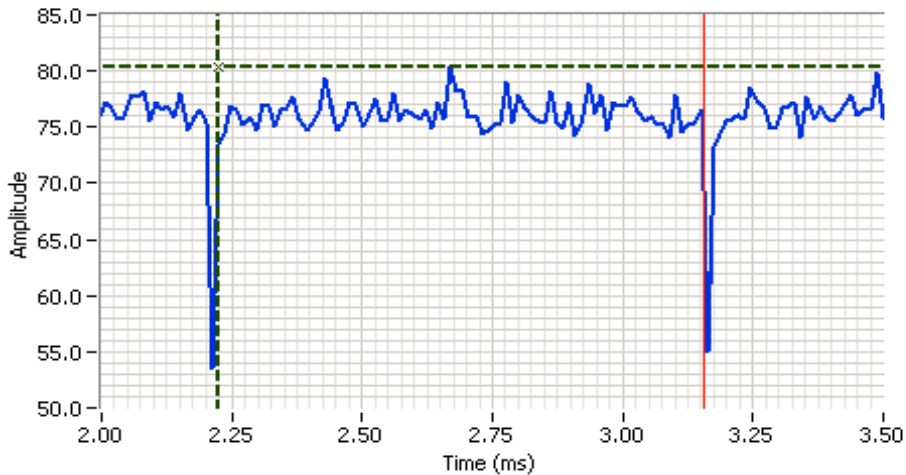


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



### Analyzer Settings

Rohde&Schwarz,ESI  
CF: 5180.000 MHz  
SPAN: 0.000 MHz  
RB: 10.000 MHz  
VB: 10.000 MHz  
Detector: POS  
Attn: 20 DB  
RL Offset: 0.0 DB  
Sweep Time: 6.0ms  
Ref Lvl: 102.0 DBUV

### Comments

802.11n40  
Tx On = 0.932ms  
Tx Off = 0.019ms  
Duty Cycle = 98.0%

|          |        |      |  |
|----------|--------|------|--|
| Cursor 1 | 2.2242 | 80.3 |  |
| Cursor 1 | 3.1559 | 0.0  |  |

|                 |       |
|-----------------|-------|
| Delta Time (ms) | 0.932 |
| Delta Amplitude | 80.3  |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS 247 and FCC 15.407 (UNII) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.  
For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

### Ambient Conditions:

Temperature: 22.6 °C  
Rel. Humidity: 38 %

### Summary of Results

| Run #                | Mode    | Channel       | Power Setting | Measured Power | Test Performed                   | Limit  | Result / Margin                    |
|----------------------|---------|---------------|---------------|----------------|----------------------------------|--------|------------------------------------|
| 20MHz Bandwith Modes |         |               |               |                |                                  |        |                                    |
| 1                    | a (1Tx) | 36 - 5180MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.0 dBµV/m @ 5150.0 MHz (-1.0 dB) |
| 2                    | a (1Tx) | 64 - 5320MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.6 dBµV/m @ 5350.0 MHz (-0.4 dB) |
| 3                    | a (1Tx) | 100 - 5500MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 47.4 dBµV/m @ 5460.0 MHz (-6.6 dB) |
|                      | a (1Tx) | 100 - 5500MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 50.8 dBµV/m @ 5470.0 MHz (-3.2 dB) |
|                      | a (1Tx) | 140 - 5700MHz | -             | -              | Band Edge 5725MHz                | 15E    | 53.9 dBµV/m @ 5725.0 MHz (-0.1 dB) |
| 4                    | a (1Tx) | 149 - 5745MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 66.9 dBµV/m @ 5713.4 MHz (-1.4 dB) |
|                      | a (1Tx) | 149 - 5745MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 78.0 dBµV/m @ 5724.8 MHz (-0.3 dB) |
|                      | a (1Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 66.5 dBµV/m @ 5864.0 MHz (-1.8 dB) |
|                      | a (1Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 75.7 dBµV/m @ 5853.2 MHz (-2.6 dB) |

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Mode      | Channel       | Power Setting | Measured Power | Test Performed                   | Limit  | Result / Margin                    |
|-------|-----------|---------------|---------------|----------------|----------------------------------|--------|------------------------------------|
| 5     | n20 (1Tx) | 36 - 5180MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.7 dBμV/m @ 5150.0 MHz (-0.3 dB) |
| 6     | n20 (1Tx) | 64 - 5320MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 52.6 dBμV/m @ 5350.0 MHz (-1.4 dB) |
| 7     | n20 (1Tx) | 100 - 5500MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 48.0 dBμV/m @ 5460.0 MHz (-6.0 dB) |
|       | n20 (1Tx) | 100 - 5500MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 51.7 dBμV/m @ 5470.0 MHz (-2.3 dB) |
|       | n20 (1Tx) | 140 - 5700MHz | -             | -              | Band Edge 5725MHz                | 15E    | 53.4 dBμV/m @ 5725.0 MHz (-0.6 dB) |
| 8     | n20 (1Tx) | 149 - 5745MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 71.2 dBμV/m @ 5712.2 MHz (-2.8 dB) |
|       | n20 (1Tx) | 149 - 5745MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 77.6 dBμV/m @ 5724.3 MHz (-0.7 dB) |
|       | n20 (1Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 53.6 dBμV/m @ 5860.2 MHz (-0.4 dB) |
|       | n20 (1Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 77.9 dBμV/m @ 5851.0 MHz (-0.4 dB) |
| 9     | n20 (2Tx) | 36 - 5180MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.2 dBμV/m @ 5150.0 MHz (-0.8 dB) |
|       | n20 (2Tx) | 40 - 5200MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.7 dBμV/m @ 5150.0 MHz (-0.3 dB) |
| 10    | n20 (2Tx) | 60 - 5300MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.7 dBμV/m @ 5350.2 MHz (-0.3 dB) |
|       | n20 (2Tx) | 64 - 5320MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.6 dBμV/m @ 5350.1 MHz (-0.4 dB) |
| 11    | n20 (2Tx) | 100 - 5500MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 53.4 dBμV/m @ 5460.0 MHz (-0.6 dB) |
|       | n20 (2Tx) | 100 - 5500MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 73.8 dBμV/m @ 5468.3 MHz (-0.2 dB) |
|       | n20 (2Tx) | 136 - 5680MHz | -             | -              | Band Edge 5725MHz                | 15E    | 53.1 dBμV/m @ 5725.0 MHz (-0.9 dB) |
|       | n20 (2Tx) | 140 - 5700MHz | -             | -              | Band Edge 5725MHz                | 15E    | 52.6 dBμV/m @ 5725.0 MHz (-1.4 dB) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run #                 | Mode      | Channel       | Power Setting | Measured Power | Test Performed                   | Limit  | Result / Margin                    |
|-----------------------|-----------|---------------|---------------|----------------|----------------------------------|--------|------------------------------------|
| 12                    | n20 (2Tx) | 149 - 5745MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 52.3 dBµV/m @ 5714.9 MHz (-1.7 dB) |
|                       | n20 (2Tx) | 149 - 5745MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 77.6 dBµV/m @ 5724.2 MHz (-0.7 dB) |
|                       | n20 (2Tx) | 153 - 5765MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 53.6 dBµV/m @ 5715.0 MHz (-0.4 dB) |
|                       | n20 (2Tx) | 153 - 5765MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 72.2 dBµV/m @ 5722.3 MHz (-7.4 dB) |
|                       | n20 (2Tx) | 161 - 5805MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 53.2 dBµV/m @ 5860.1 MHz (-0.8 dB) |
|                       | n20 (2Tx) | 161 - 5805MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 75.2 dBµV/m @ 5855.2 MHz (-3.1 dB) |
|                       | n20 (2Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 53.6 dBµV/m @ 5860.1 MHz (-0.4 dB) |
|                       | n20 (2Tx) | 165 - 5825MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 76.9 dBµV/m @ 5852.3 MHz (-1.4 dB) |
| 40MHz Bandwidth Modes |           |               |               |                |                                  |        |                                    |
| 13                    | n40 (1Tx) | 38 - 5190MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.5 dBµV/m @ 5150.0 MHz (-0.5 dB) |
|                       | n40 (1Tx) | 46 - 5230MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 49.9 dBµV/m @ 5150.0 MHz (-4.1 dB) |
| 14                    | n40 (1Tx) | 62 - 5310MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.8 dBµV/m @ 5350.0 MHz (-0.2 dB) |
| 15                    | n40 (1Tx) | 102 - 5510MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 48.9 dBµV/m @ 5459.9 MHz (-5.1 dB) |
|                       | n40 (1Tx) | 102 - 5510MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 53.4 dBµV/m @ 5470.0 MHz (-0.6 dB) |
|                       | n40 (1Tx) | 134 - 5670MHz | -             | -              | Band Edge 5725MHz                | 15E    | 53.9 dBµV/m @ 5725.0 MHz (-0.1 dB) |
| 16                    | n40 (1Tx) | 151 - 5755MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 53.7 dBµV/m @ 5715.0 MHz (-0.3 dB) |
|                       | n40 (1Tx) | 151 - 5755MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 75.9 dBµV/m @ 5723.2 MHz (-2.4 dB) |
|                       | n40 (1Tx) | 159 - 5795MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 53.1 dBµV/m @ 5860.1 MHz (-0.9 dB) |
|                       | n40 (1Tx) | 159 - 5795MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 72.9 dBµV/m @ 5854.8 MHz (-5.4 dB) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Mode      | Channel       | Power Setting | Measured Power | Test Performed                   | Limit  | Result / Margin                    |
|-------|-----------|---------------|---------------|----------------|----------------------------------|--------|------------------------------------|
| 17    | n40 (2Tx) | 38 - 5190MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.3 dBμV/m @ 5149.0 MHz (-0.7 dB) |
|       | n40 (2Tx) | 46 - 5230MHz  | -             | -              | Restricted Band Edge at 5150 MHz | 15.209 | 53.0 dBμV/m @ 5148.8 MHz (-1.0 dB) |
| 18    | n40 (2Tx) | 54 - 5270MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.7 dBμV/m @ 5350.0 MHz (-0.3 dB) |
|       | n40 (2Tx) | 62 - 5310MHz  | -             | -              | Restricted Band Edge at 5350 MHz | 15.209 | 53.3 dBμV/m @ 5351.0 MHz (-0.7 dB) |
| 19    | n40 (2Tx) | 102 - 5510MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 49.7 dBμV/m @ 5460.0 MHz (-4.3 dB) |
|       | n40 (2Tx) | 102 - 5510MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 53.5 dBμV/m @ 5470.0 MHz (-0.5 dB) |
|       | n40 (2Tx) | 110 - 5550MHz | -             | -              | Restricted Band Edge at 5460 MHz | 15.209 | 48.6 dBμV/m @ 5459.0 MHz (-5.4 dB) |
|       | n40 (2Tx) | 110 - 5550MHz | -             | -              | Band Edge 5460 - 5470 MHz        | 15E    | 67.6 dBμV/m @ 5465.9 MHz (-0.7 dB) |
|       | n40 (2Tx) | 126 - 5630MHz | -             | -              | Band Edge 5725MHz                | 15E    | 51.4 dBμV/m @ 5726.9 MHz (-2.6 dB) |
|       | n40 (2Tx) | 134 - 5670MHz | -             | -              | Band Edge 5725MHz                | 15E    | 53.3 dBμV/m @ 5726.4 MHz (-0.7 dB) |
| 20    | n40 (2Tx) | 151 - 5755MHz | -             | -              | Band Edge at 5715 MHz            | 15E    | 53.0 dBμV/m @ 5714.0 MHz (-1.0 dB) |
|       | n40 (2Tx) | 151 - 5755MHz | -             | -              | Band Edge 5715 - 5725 MHz        | 15E    | 73.4 dBμV/m @ 5724.1 MHz (-4.9 dB) |
|       | n40 (2Tx) | 159 - 5795MHz | -             | -              | Band Edge at 5860MHz             | 15E    | 53.1 dBμV/m @ 5860.2 MHz (-0.9 dB) |
|       | n40 (2Tx) | 159 - 5795MHz | -             | -              | Band Edge at 5850MHz             | 15E    | 74.5 dBμV/m @ 5850.3 MHz (-3.8 dB) |

## Modifications Made During Testing

No modifications were made to the EUT during testing

## Deviations From The Standard

No deviations were made from the requirements of the standard.

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Sample Notes

Sample S/N: D85DE2000005 (MAC #)  
 Driver: 6.37 RC214 .12  
 Antenna: Internal

## Notes

Testing performed at 1.5m per C63.10  
 n20 2Tx was tested as representative of 11a 2Tx  
 n20 / n40 tested in CDD mode as representative of STBC operation  
 Worse case chain for 1Tx operation was determined from preliminary testing

## Procedure Comments:

Measurements performed in accordance with FCC KDB 789033  
 Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time  
 Unless otherwise stated/noted, emission has duty cycle  $\geq 98\%$  and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

| Mode  | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|-------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a   | 6MB/s     | 0.982          | Yes          | 1.405  | 0               | 0                     | 10                  |
| 11n20 | MCS0      | 0.981          | Yes          | 1.309  | 0               | 0                     | 10                  |
| 11n40 | MCS0      | 0.98           | Yes          | 0.932  | 0               | 0                     | 10                  |

## Measurement Specific Notes:

|         |                                                                                                                                                                                                                                                                                                                        |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative. |
| Note 6: | Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabular results for final measurements.                                                                                                                                                                              |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #1: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/20/2015 0:00  
Test Engineer: Eddie Mariscal/John Caizzi  
Test Location: FT Chamber #5

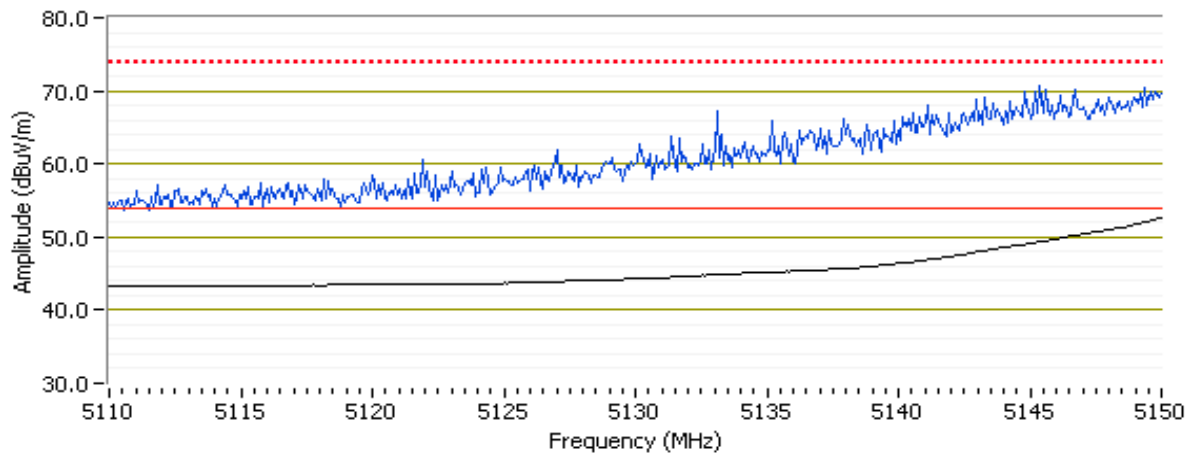
Config. Used: 1  
Config Change: None  
EUT Voltage: USB

Channel: 36 - 5180 MHz  
Tx Chain: Main  
Mode: a  
Data Rate: 6Mbps

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.0         | H   | 54.0       | -1.0   | AVG       | 156     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.440  | 69.0         | H   | 74.0       | -5.0   | PK        | 156     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 HzAvg (Black trace); RB 1MHz VB 3MHz (Blue trace); H





|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #2: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Eddie Mariscal/John Caizzi  
 Test Location: FT Chamber #5

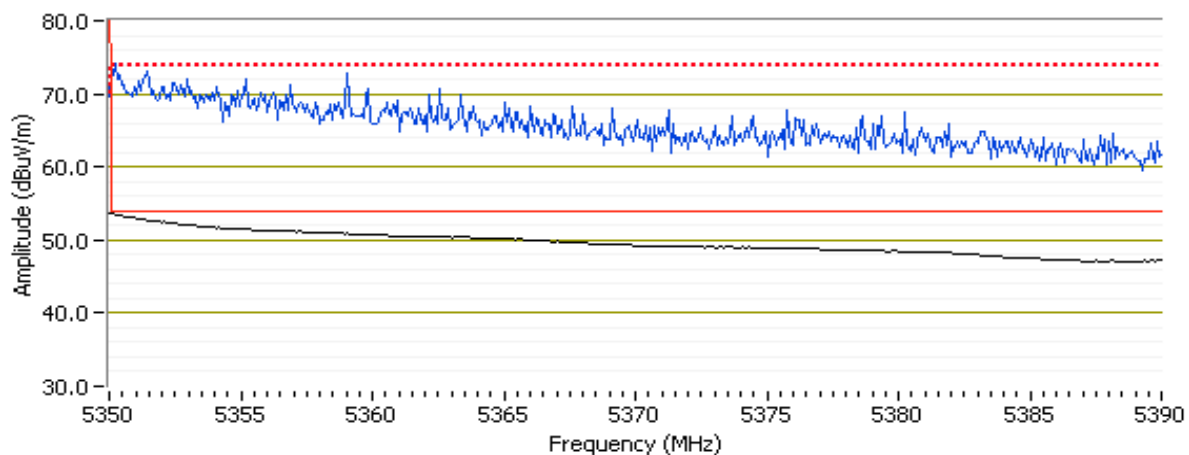
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 64 - 5320MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mbps

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 53.6         | H   | 54.0       | -0.4   | AVG       | 256     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.240  | 72.9         | H   | 74.0       | -1.1   | PK        | 256     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #3: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 100 - 5500MHz

Tx Chain: Main

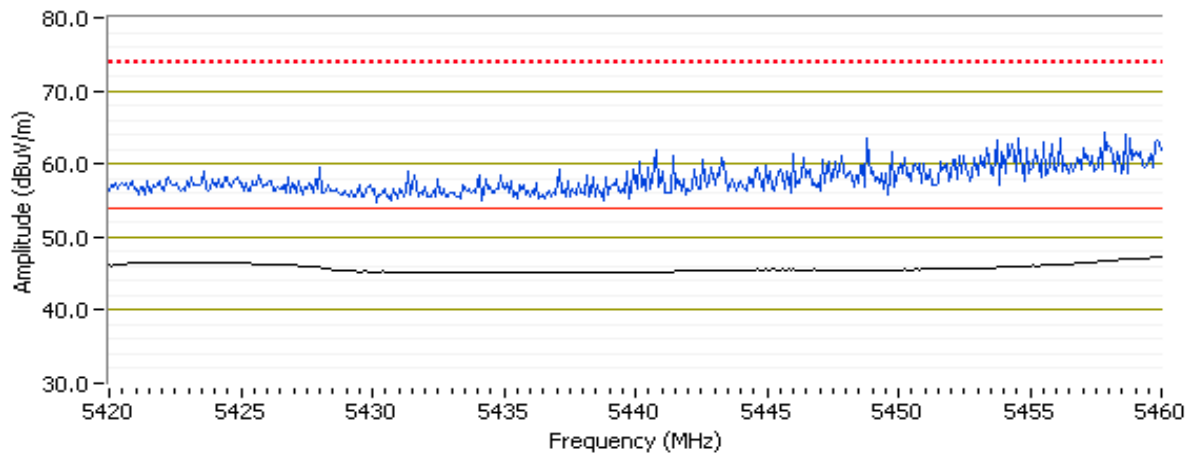
Mode: a

Data Rate: 6 Mbps

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.000  | 47.4         | H   | 54.0       | -6.6   | AVG       | 217     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5459.840  | 63.7         | H   | 74.0       | -10.3  | PK        | 217     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H

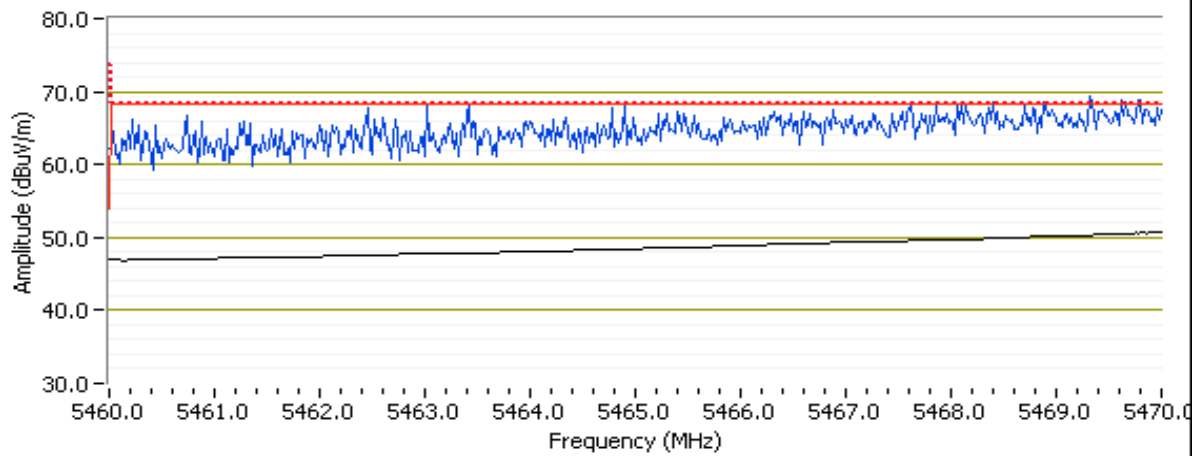


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5470.000  | 50.8         | H   | 54.0  | -3.2   | AVG       | 209     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5469.280  | 68.6         | H   | 74.0  | -5.4   | PK        | 209     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz

Tx Chain: Main

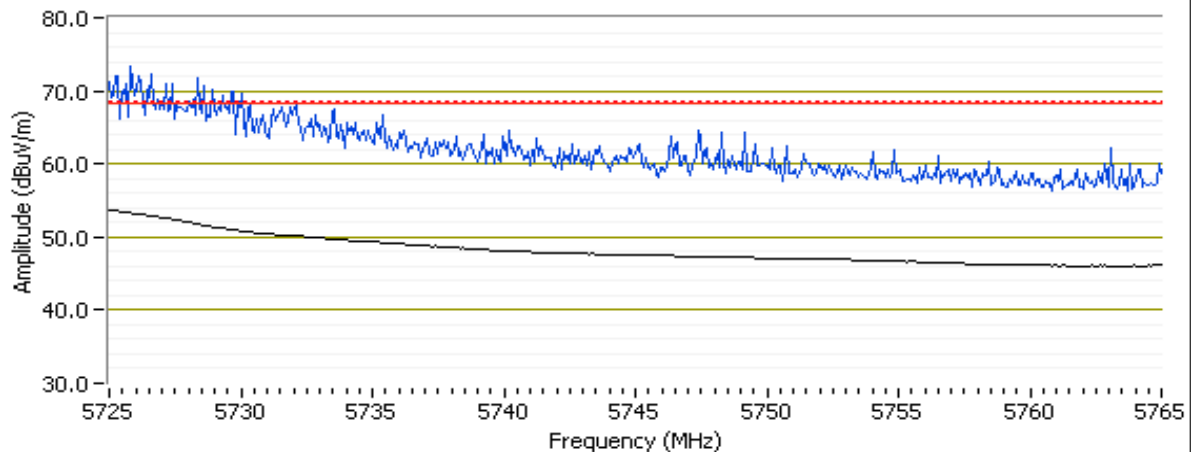
Mode: a

Data Rate: 6Mbps

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 53.9   | H   | 54.0  | -0.1   | AVG       | 252     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5729.010  | 70.6   | H   | 74.0  | -3.4   | PK        | 252     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #4: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

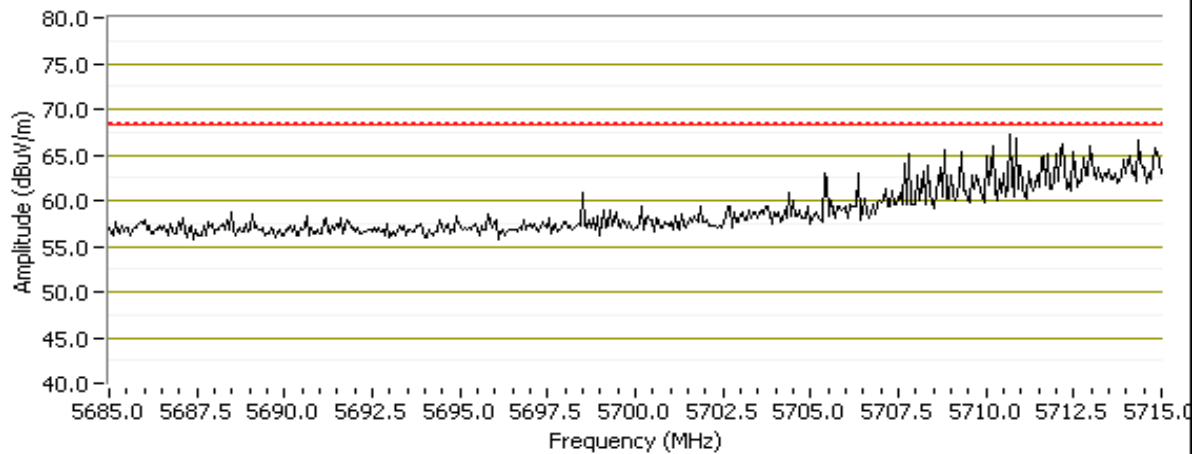
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6 Mbps

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5713.440  | 66.9         | H   | 68.3  | -1.4   | PK        | 173     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |
| 5691.730  | 59.3         | V   | 68.3  | -9.0   | PK        | 76      | 2.7    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz ; H

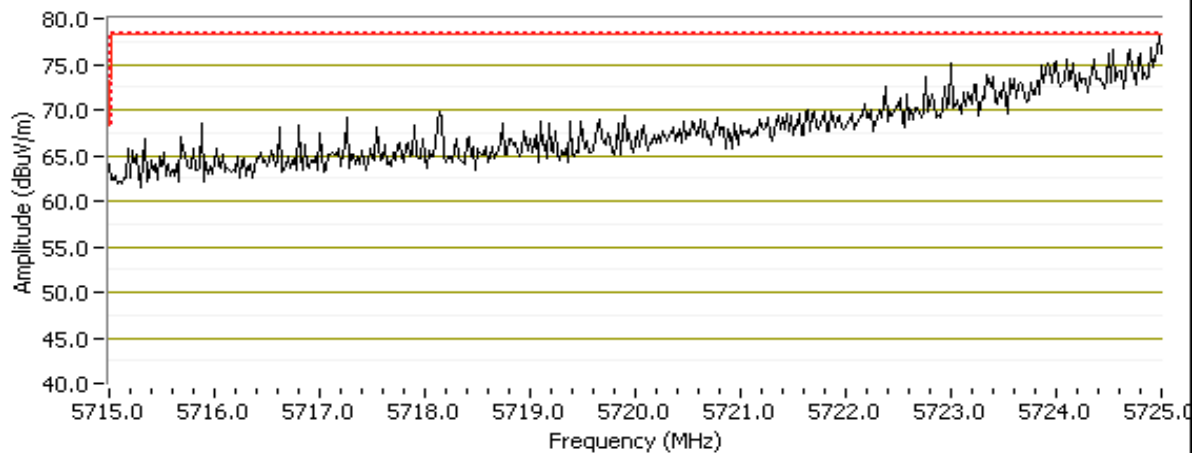


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.760  | 78.0         | H   | 78.3  | -0.3   | PK        | 173     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |
| 5724.960  | 70.9         | V   | 78.3  | -7.4   | PK        | 76      | 2.7    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz ; H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz

Tx Chain: Main

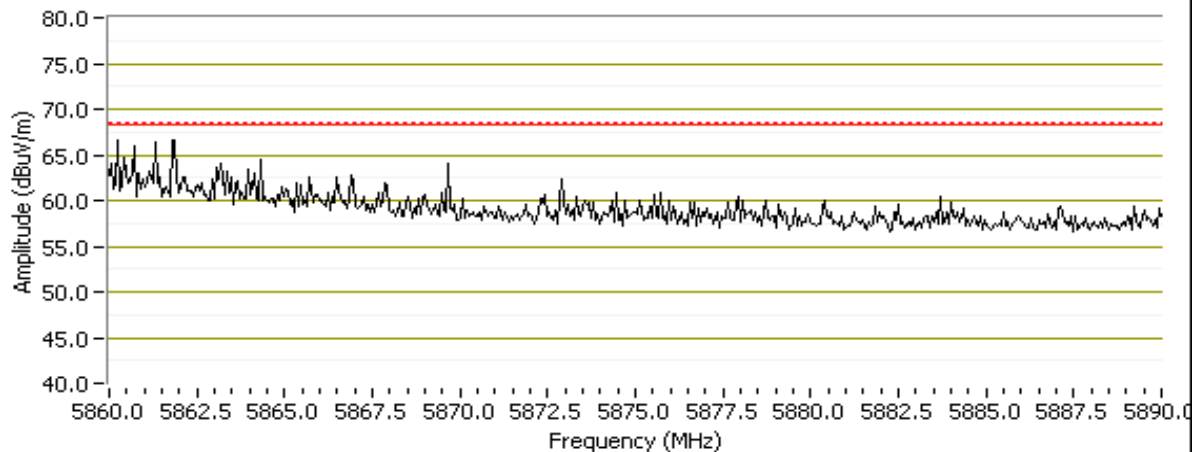
Mode: a

Data Rate: 6 Mbps

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5863.970  | 66.5   | H   | 68.3  | -1.8   | PK        | 158     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |
| 5861.800  | 58.1   | V   | 68.3  | -10.2  | PK        | 33      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz ; H

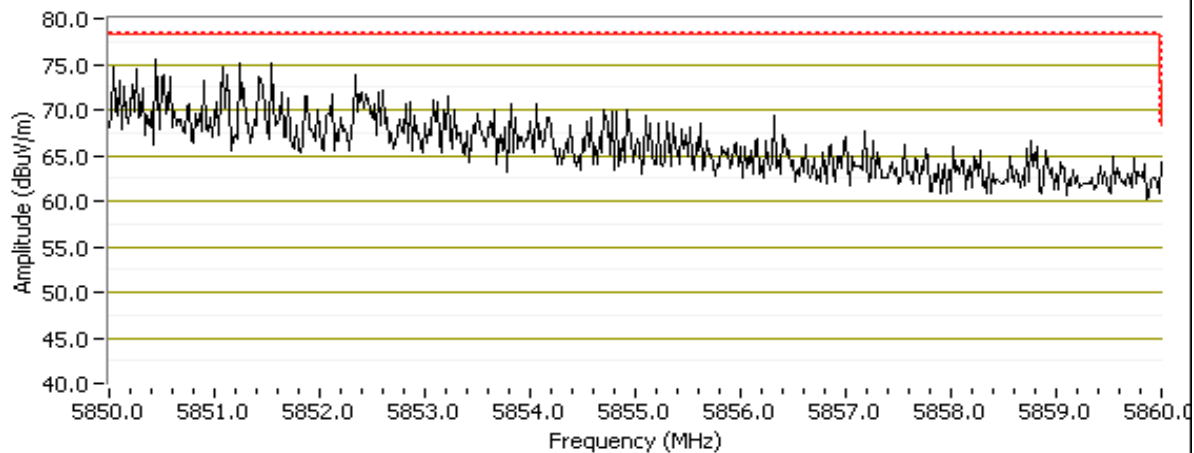


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5853.210  | 75.7         | H   | 78.3  | -2.6   | PK        | 158     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |
| 5851.500  | 65.0         | V   | 78.3  | -13.3  | PK        | 33      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz ; H





|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #5: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 36 - 5180 MHz

Tx Chain: Main

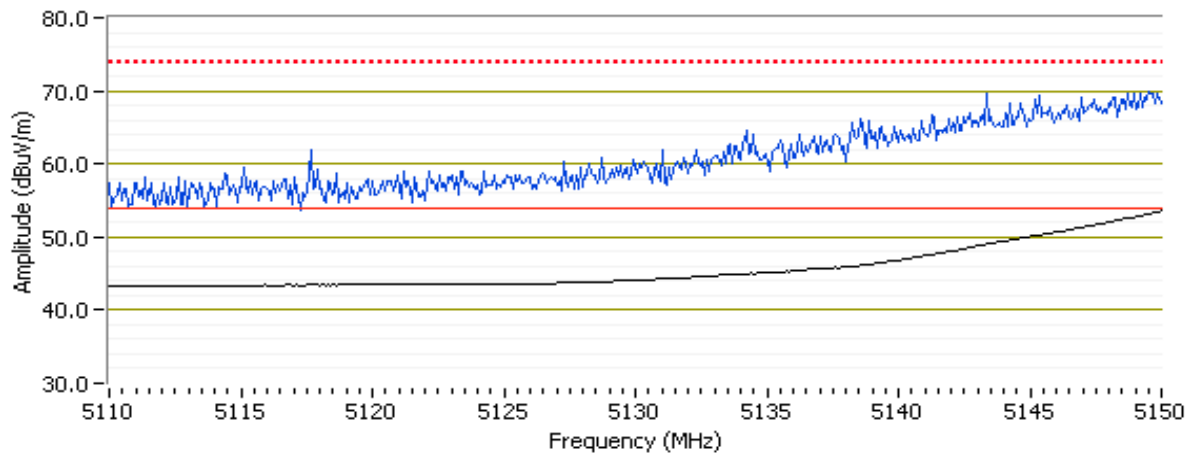
Mode: n20

Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.7         | H   | 54.0       | -0.3   | AVG       | 160     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5141.740  | 69.0         | H   | 74.0       | -5.0   | PK        | 160     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #6: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 64 - 5320MHz

Tx Chain: Main

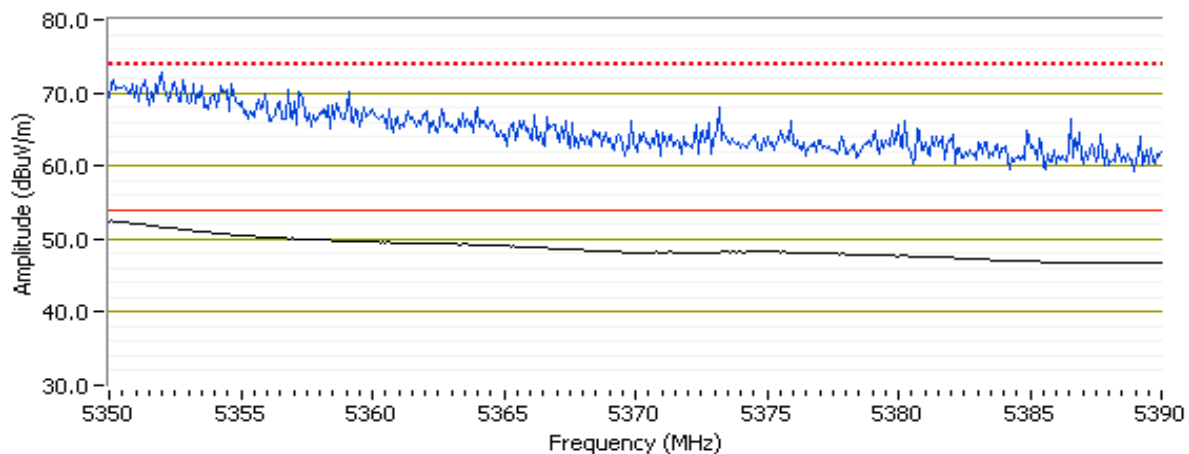
Mode: n20

Data Rate: MCS0

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 52.6         | H   | 54.0       | -1.4   | AVG       | 261     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5352.650  | 72.2         | H   | 74.0       | -1.8   | PK        | 261     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 100 - 5500MHz

Tx Chain: Main

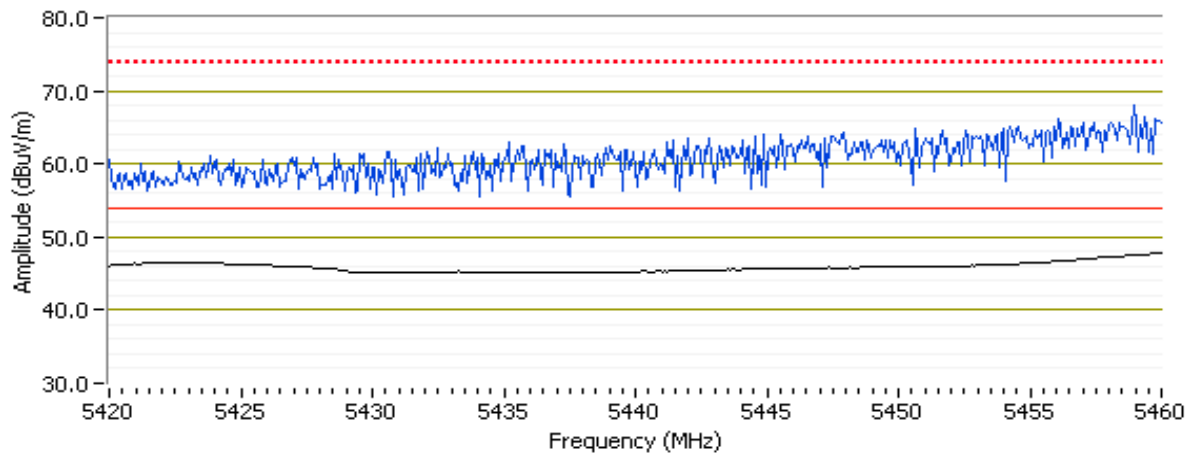
Mode: n20

Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.000  | 48.0         | H   | 54.0       | -6.0   | AVG       | 161     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.480  | 66.7         | H   | 74.0       | -7.3   | PK        | 161     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H

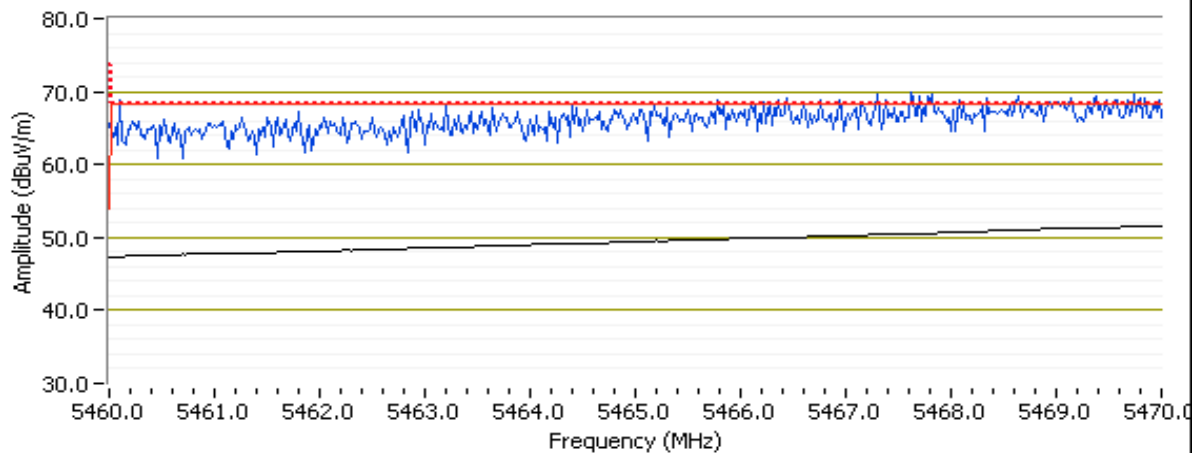


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5469.980  | 51.7         | H   | 54.0  | -2.3   | AVG       | 162     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5469.940  | 69.3         | H   | 74.0  | -4.7   | PK        | 162     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz

Tx Chain: Main

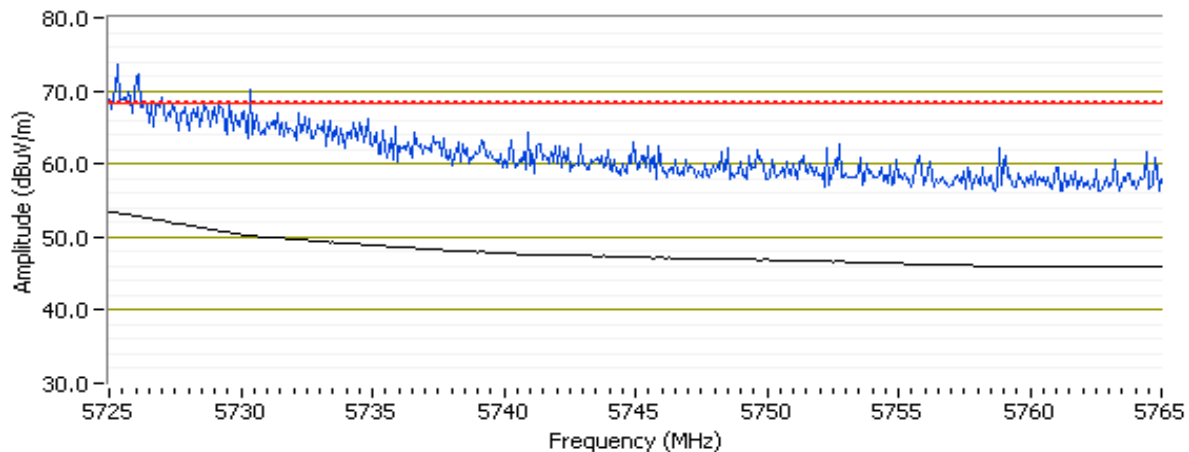
Mode: n20

Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 53.4         | H   | 54.0  | -0.6   | AVG       | 257     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5725.240  | 70.3         | H   | 74.0  | -3.7   | PK        | 257     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #8: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

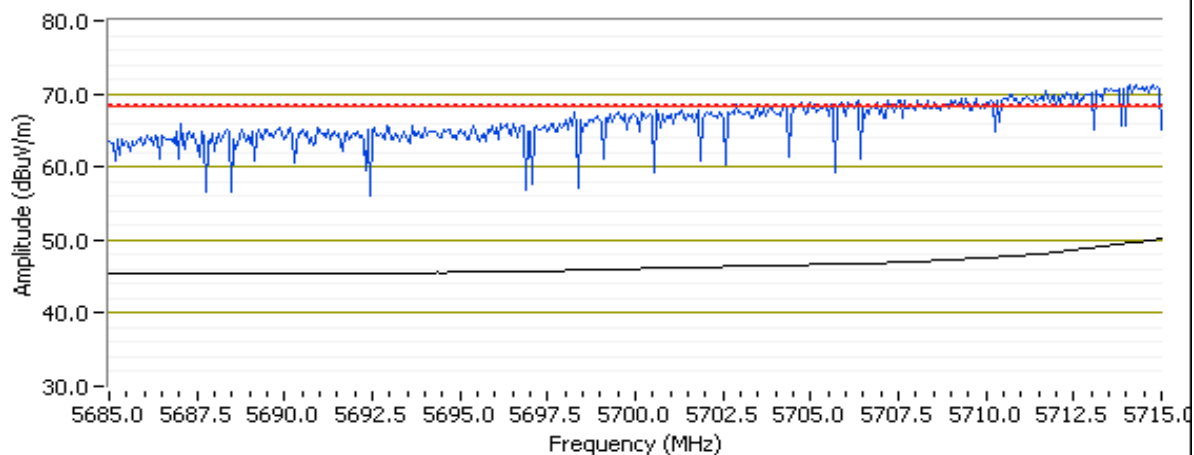
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                                  |
| 5715.000  | 50.0         | H   | 54.0  | -4.0   | AVG       | 226     | 1.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5712.230  | 71.2         | H   | 74.0  | -2.8   | PK        | 226     | 1.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H

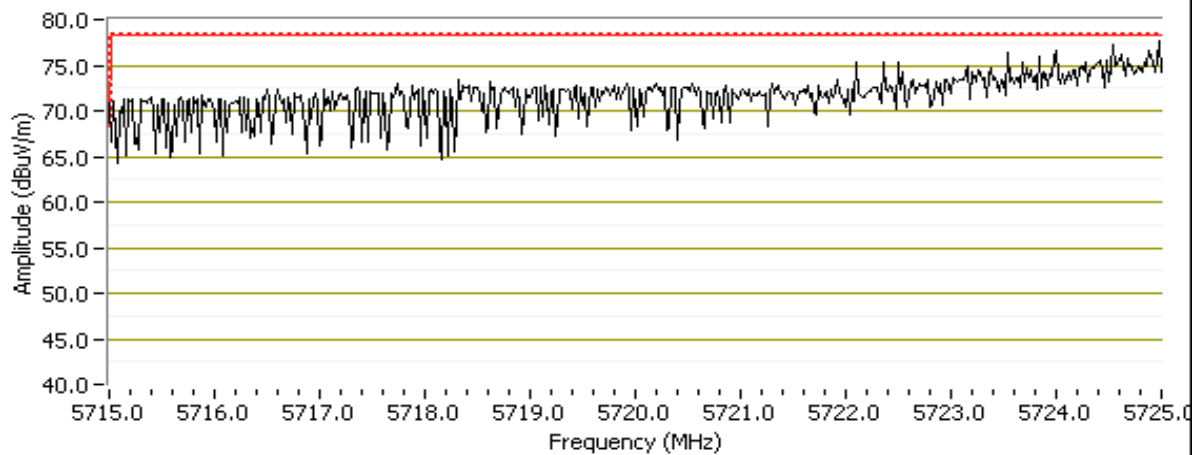


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.320  | 77.6         | H   | 78.3  | -0.7   | PK        | 226     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz ; H



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz

Tx Chain: Main

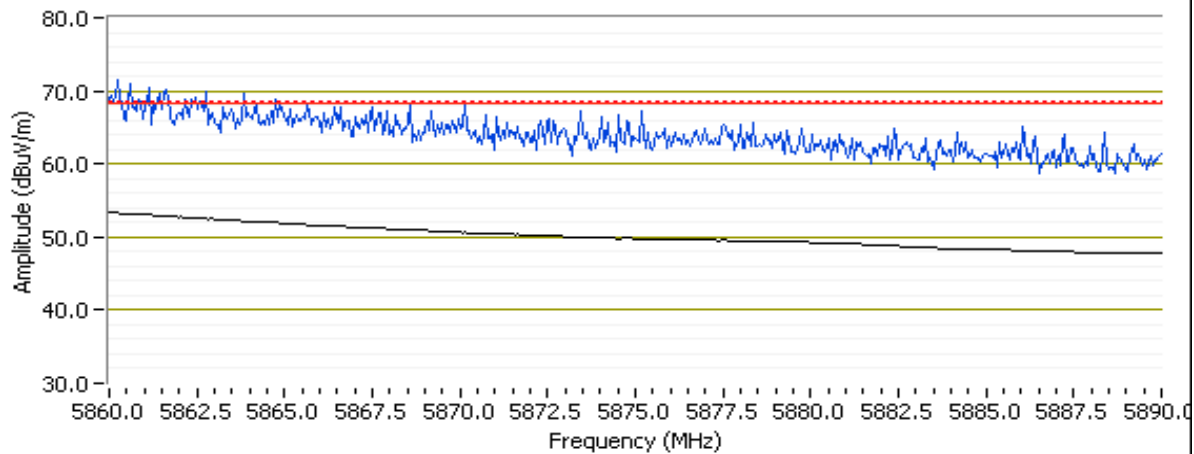
Mode: n20

Data Rate: MCS0

### 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.180  | 53.6         | H   | 54.0  | -0.4   | AVG       | 253     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5862.950  | 72.3         | H   | 74.0  | -1.7   | PK        | 253     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



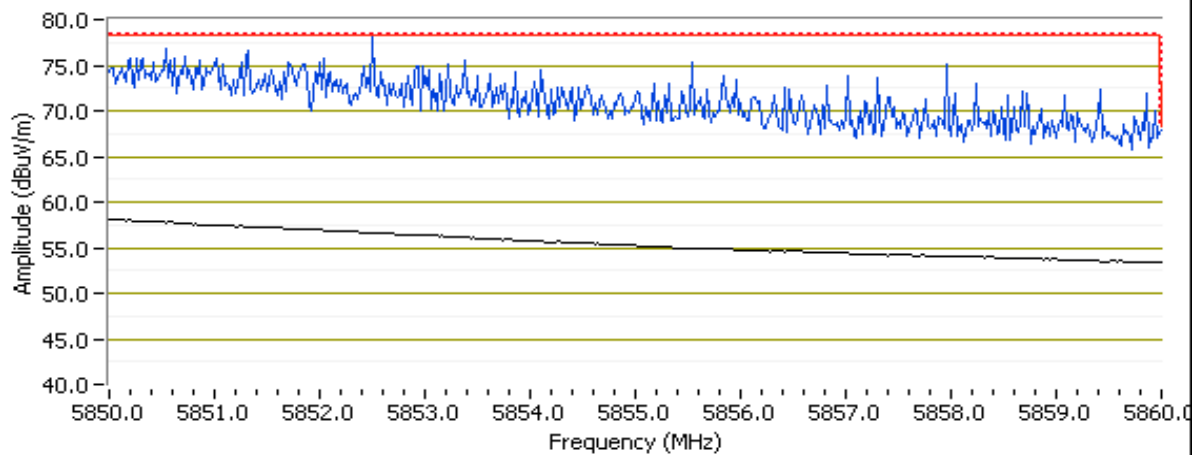


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5851.020  | 77.9         | H   | 78.3  | -0.4   | PK        | 253     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #9: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 36 - 5180 MHz

Tx Chain: 2Tx

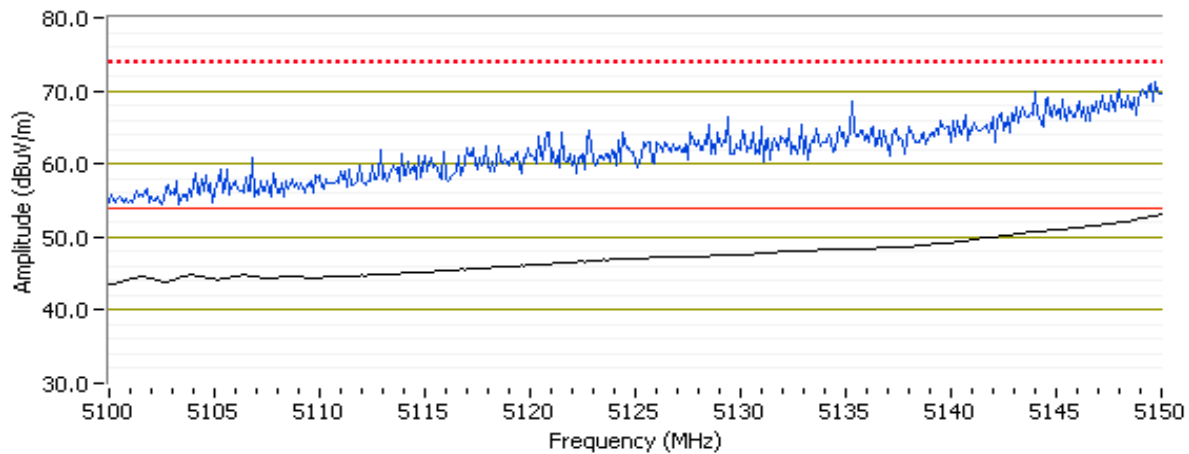
Mode: n20

Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.2         | H   | 54.0       | -0.8   | AVG       | 259     | 1.7    | POS; RB 1 MHz; VB: 10 Hz |
| 5141.780  | 71.0         | H   | 74.0       | -3.0   | PK        | 259     | 1.7    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



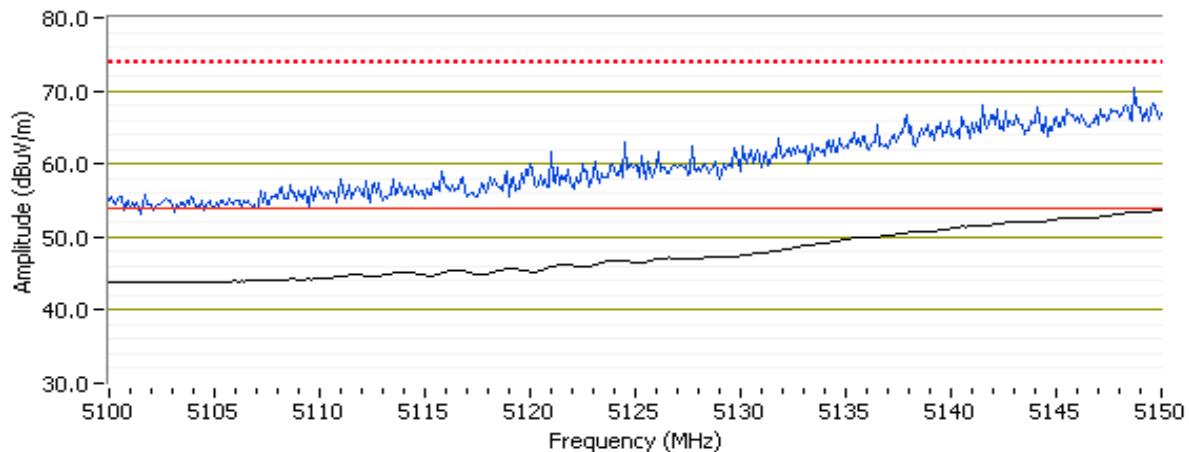
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 40 - 5200 MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.7         | H   | 54.0       | -0.3   | AVG       | 265     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5143.790  | 68.9         | H   | 74.0       | -5.1   | PK        | 265     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #10: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Eddie Mariscal/John Caizzi  
 Test Location: FT Chamber #5

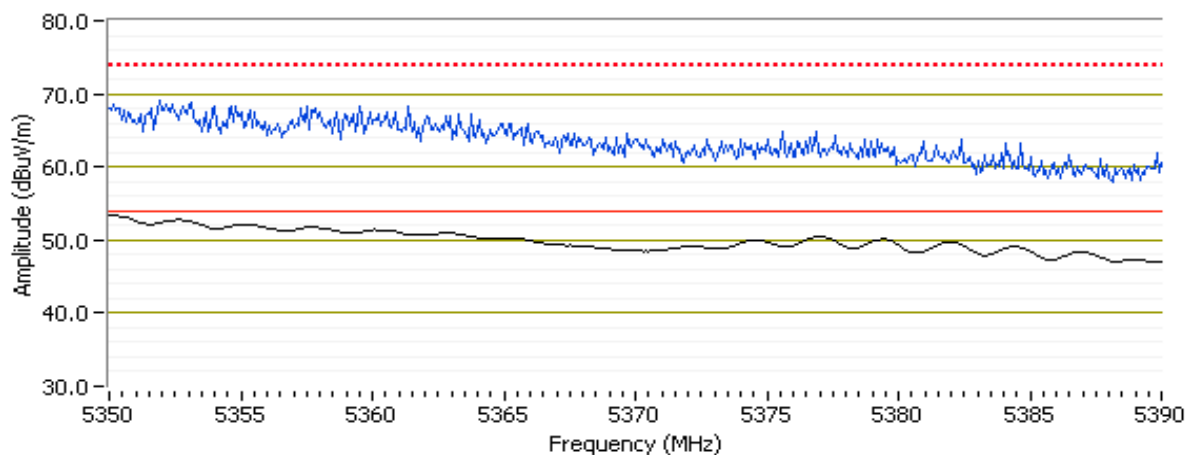
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 60 - 5300MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | PK/QP/Avg | degrees | meters |                          |
| 5350.160  | 53.7         | H   | 54.0       | -0.3   | AVG       | 219     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5352.890  | 69.0         | H   | 74.0       | -5.0   | PK        | 219     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



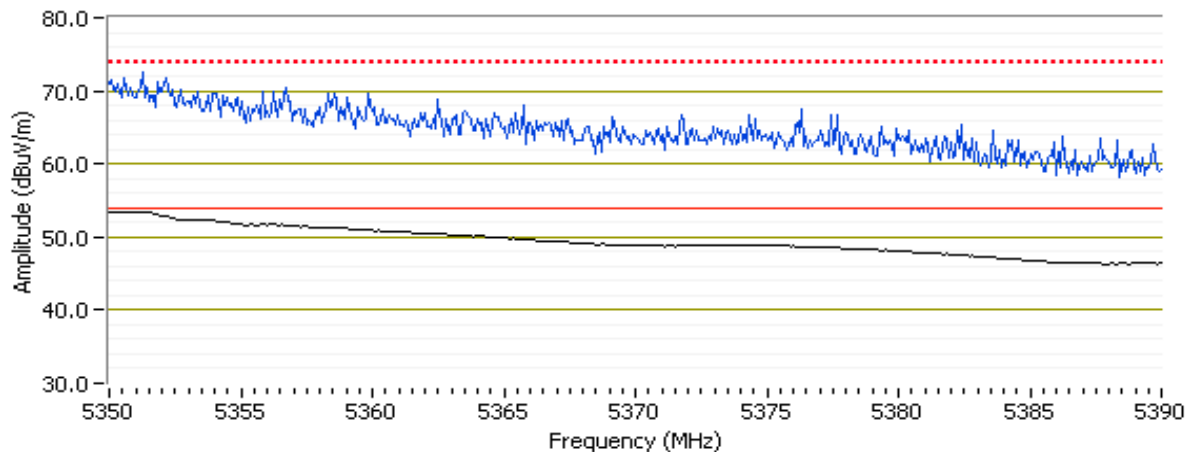
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 64 - 5320MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.080  | 53.6   | H   | 54.0       | -0.4   | AVG       | 270     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.880  | 72.1   | H   | 74.0       | -1.9   | PK        | 270     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #11: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

Channel: 100 - 5500MHz

Tx Chain: 2Tx

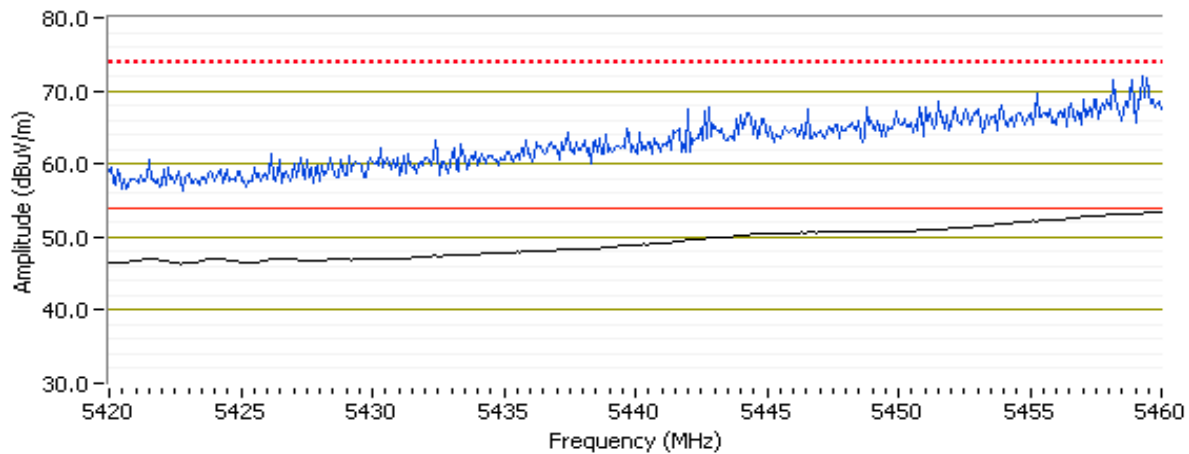
Mode: n20

Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.000  | 53.4         | H   | 54.0       | -0.6   | AVG       | 264     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5443.970  | 69.6         | H   | 74.0       | -4.4   | PK        | 264     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H

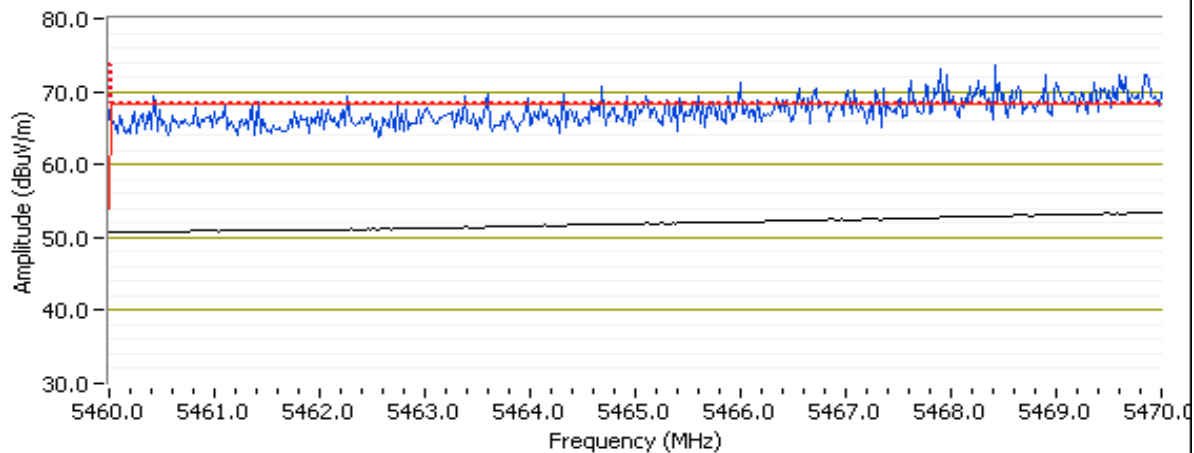


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5469.980  | 53.4         | H   | 54.0  | -0.6   | AVG       | 266     | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5468.260  | 73.8         | H   | 74.0  | -0.2   | PK        | 266     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



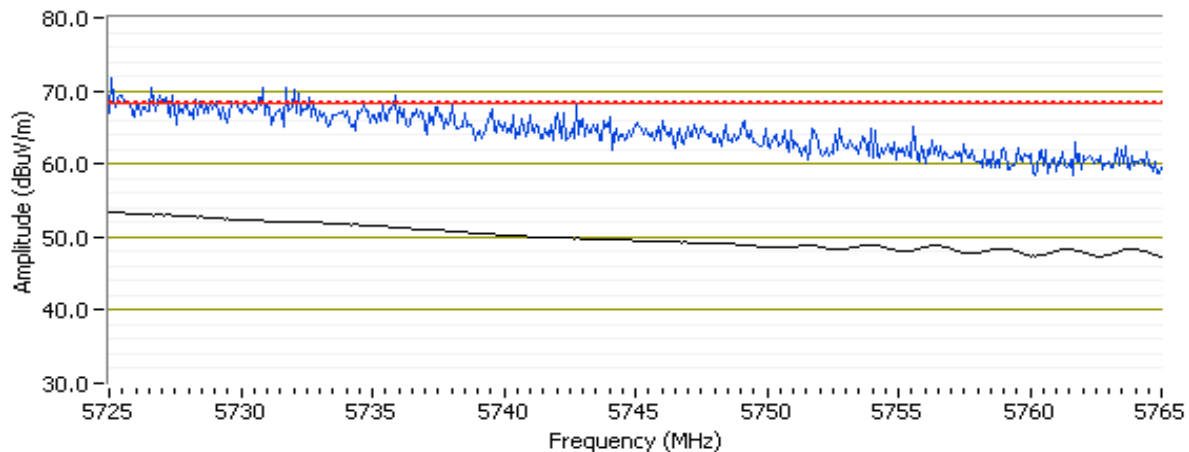
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 136 - 5680MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 53.1         | H   | 54.0  | -0.9   | AVG       | 246     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5726.600  | 69.8         | H   | 74.0  | -4.2   | PK        | 246     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H





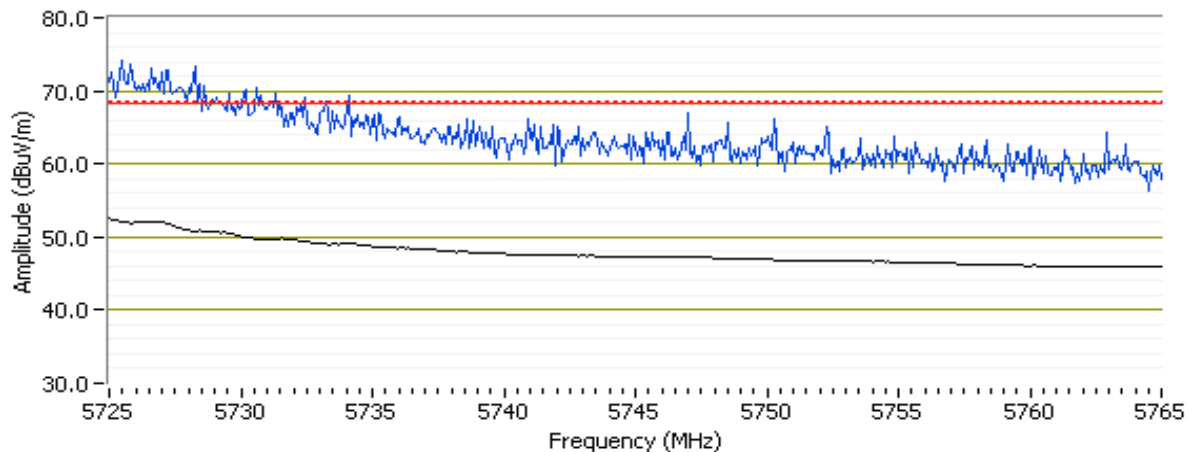
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 52.6   | H   | 54.0  | -1.4   | AVG       | 253     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5726.680  | 72.4   | H   | 74.0  | -1.6   | PK        | 253     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #12: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

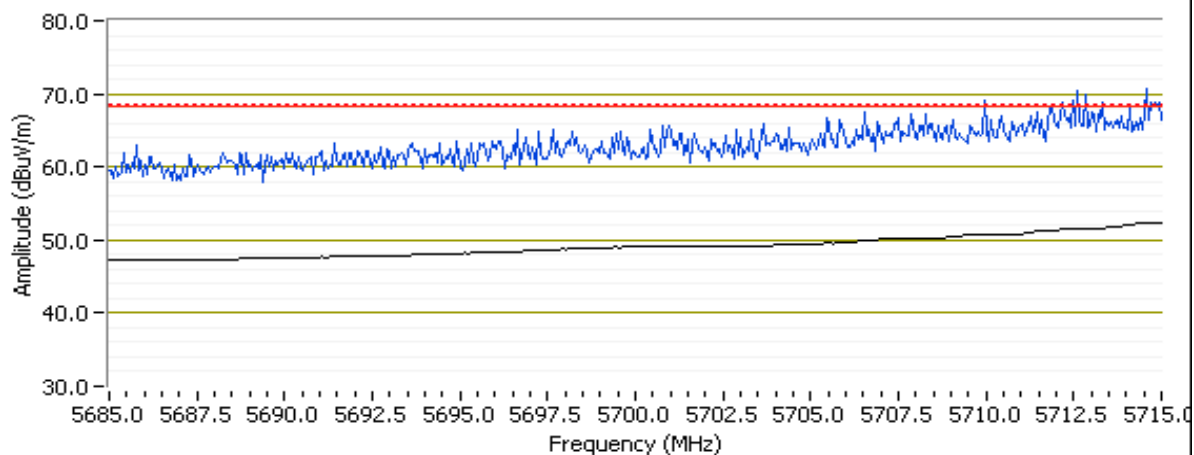
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

### 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5714.940  | 52.3         | H   | 54.0  | -1.7   | AVG       | 245     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5712.720  | 71.2         | H   | 74.0  | -2.8   | PK        | 245     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H

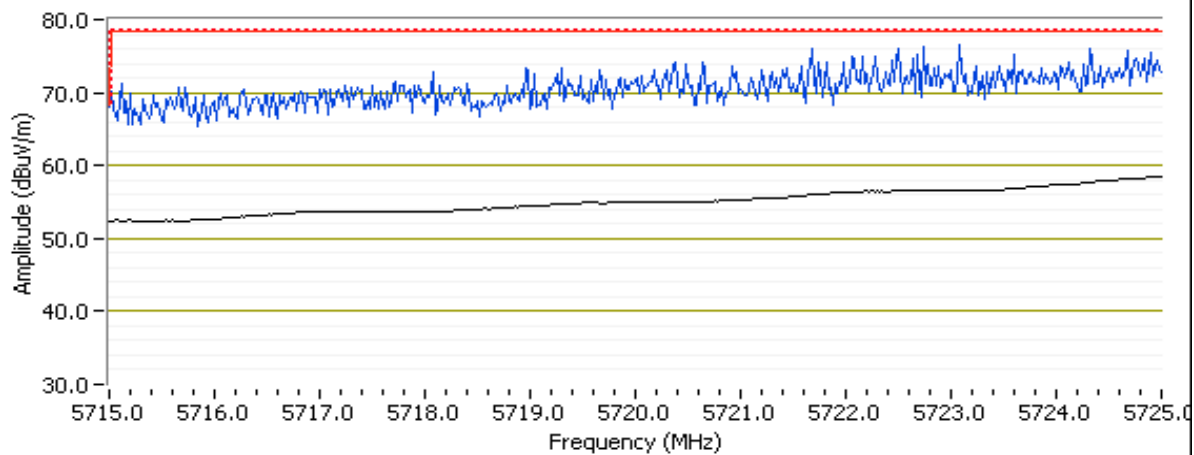


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.160  | 77.6         | H   | 78.3  | -0.7   | PK        | 245     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



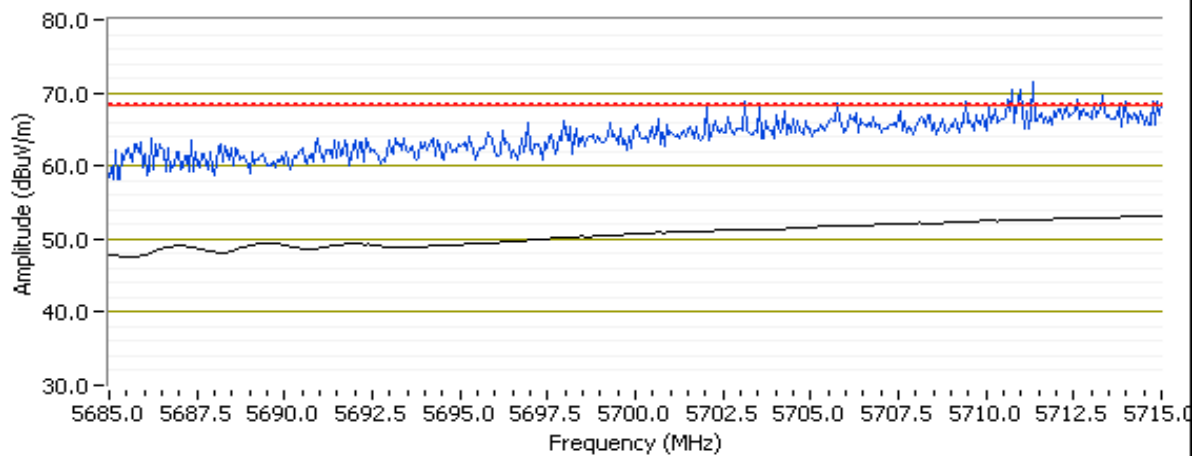
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 153 - 5765MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5715.000  | 53.6   | H   | 54.0  | -0.4   | AVG       | 230     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5713.200  | 71.4   | H   | 74.0  | -2.6   | PK        | 230     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H

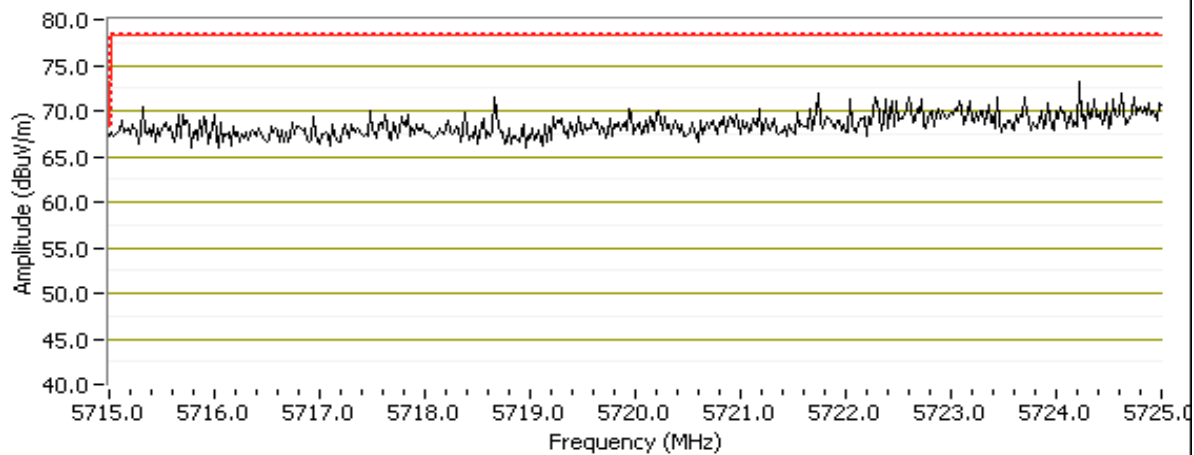


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5722.330  | 72.2         | H   | 78.3  | -7.4   | PK        | 230     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz; H



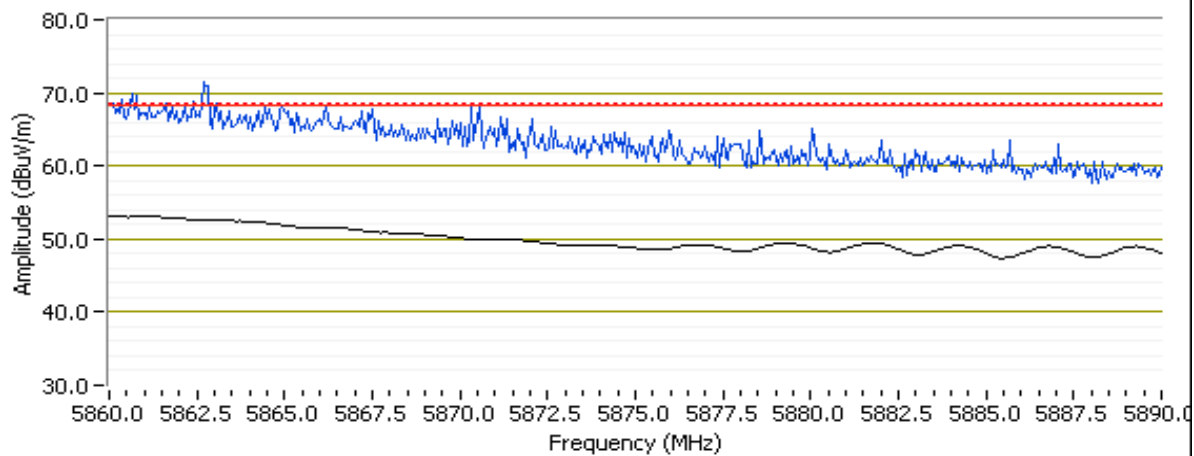
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 161 - 5805MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.060  | 53.2         | H   | 54.0  | -0.8   | AVG       | 225     | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5863.790  | 71.5         | H   | 74.0  | -2.5   | PK        | 225     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

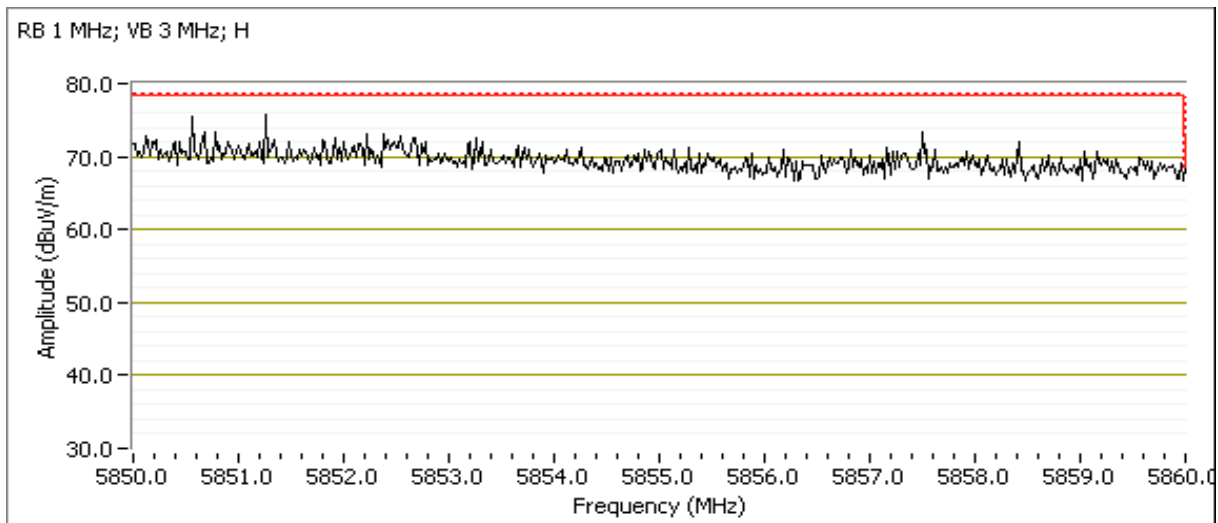
RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5855.190  | 75.2         | H   | 78.3  | -3.1   | PK        | 225     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz

Tx Chain: 2Tx

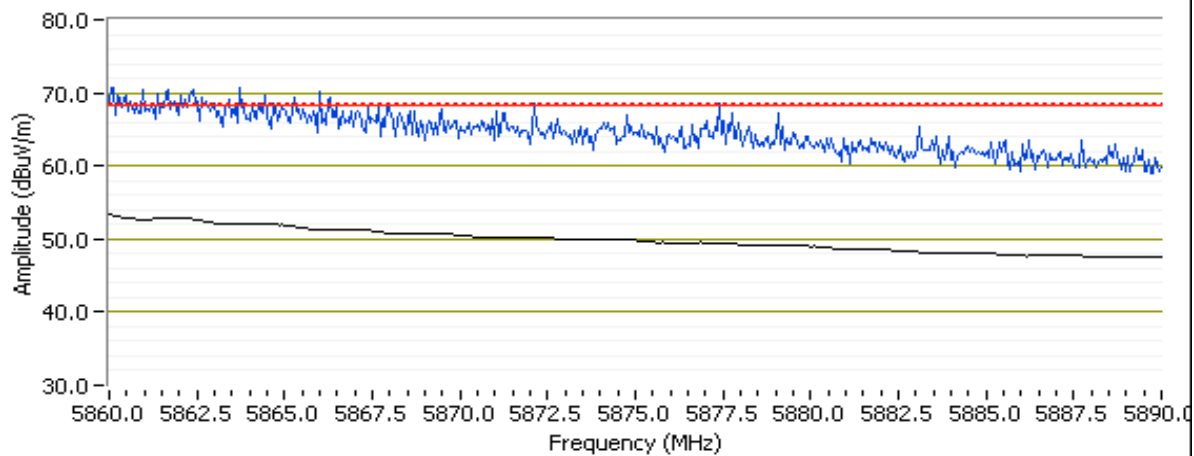
Mode: n20

Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.060  | 53.6         | H   | 54.0  | -0.4   | AVG       | 229     | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5865.530  | 73.2         | H   | 74.0  | -0.8   | PK        | 229     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H

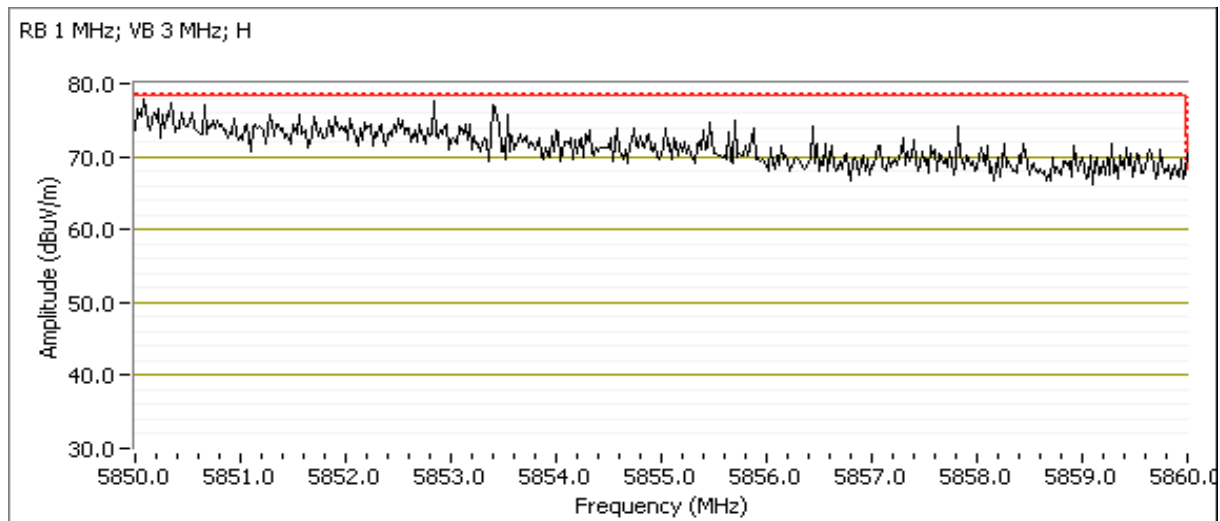




|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5852.280  | 76.9         | H   | 78.3  | -1.4   | PK        | 229     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #13: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber# 5

Config. Used: 1

Config Change: none

EUT Voltage: USB

Channel: 38 - 5190 MHz

Tx Chain: Main

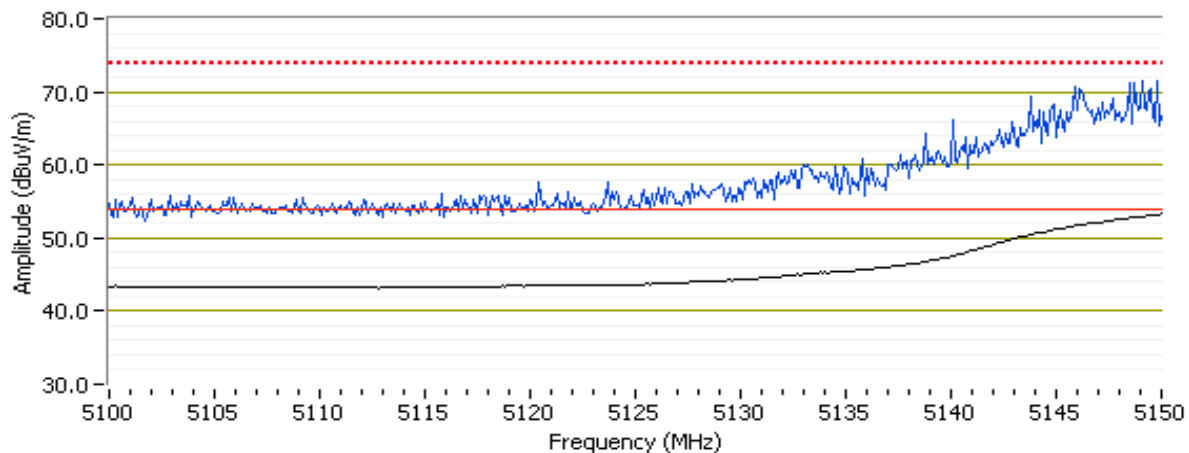
Mode: n40

Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.5         | H   | 54.0       | -0.5   | AVG       | 162     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.000  | 69.9         | H   | 74.0       | -4.1   | PK        | 162     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 46 - 5230 MHz

Tx Chain: Main

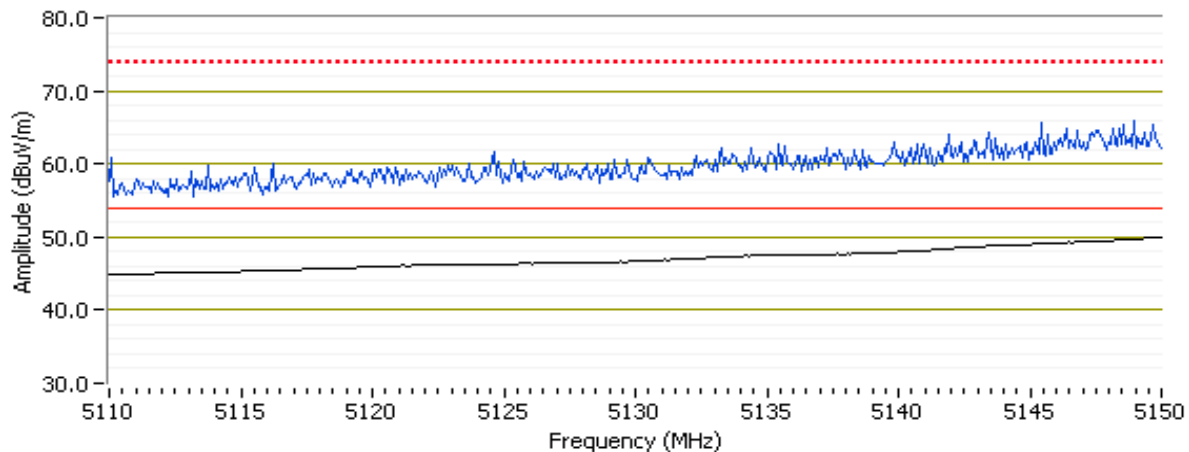
Mode: n40

Data Rate: MCS0

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 49.9         | H   | 54.0       | -4.1   | AVG       | 196     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.360  | 64.8         | H   | 74.0       | -9.2   | PK        | 196     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #14: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/20/2015 0:00

Test Engineer: Eddie Mariscal/John Caizzi

Test Location: FT Chamber# 5

Config. Used: 1

Config Change: none

EUT Voltage: USB

Channel: 62 - 5310MHz

Tx Chain: Main

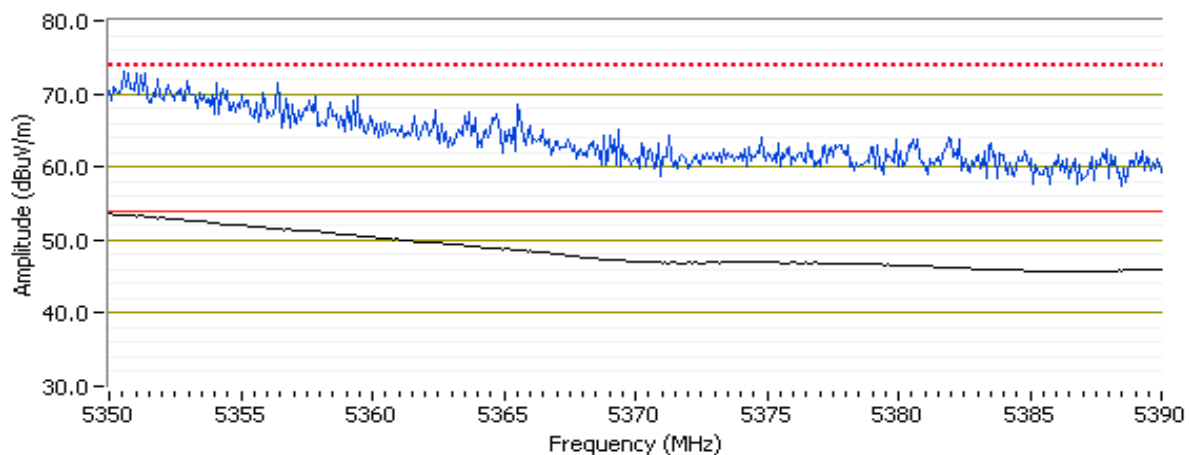
Mode: n40

Data Rate: MCS0

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 53.8         | H   | 54.0       | -0.2   | AVG       | 207     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5355.290  | 73.6         | H   | 74.0       | -0.4   | PK        | 207     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #15: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber# 5

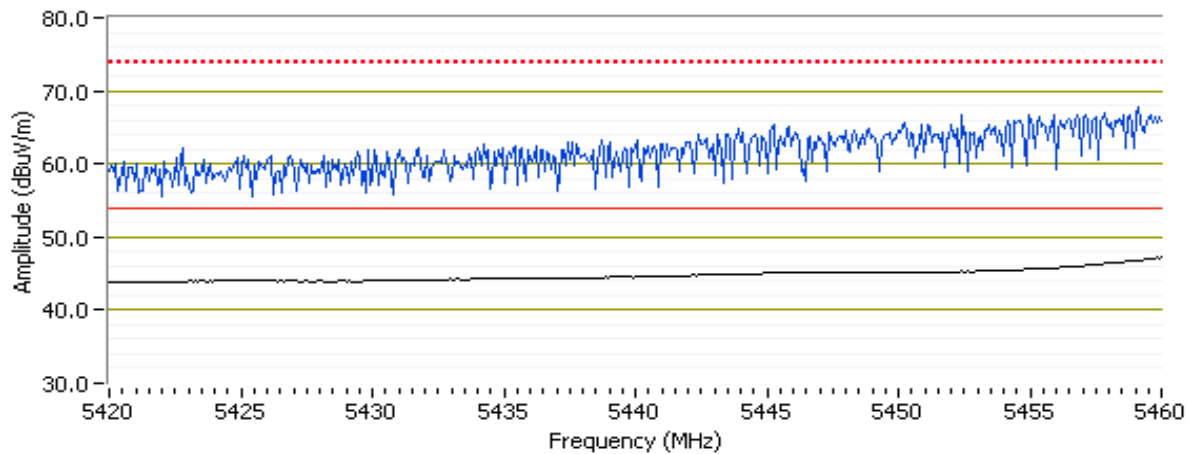
Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Channel: 102 - 5510MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5459.920  | 48.9         | H   | 54.0       | -5.1   | AVG       | 162     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5457.920  | 67.3         | H   | 74.0       | -6.7   | PK        | 162     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H

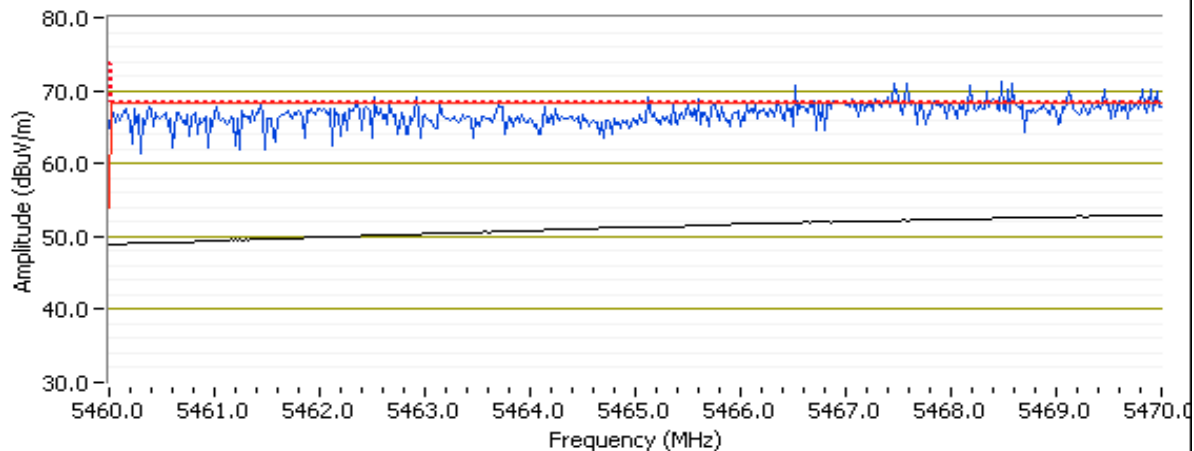


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5470.000  | 53.4         | H   | 54.0  | -0.6   | AVG       | 162     | 1.3    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5468.000  | 68.3         | H   | 74.0  | -5.7   | PK        | 162     | 1.3    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



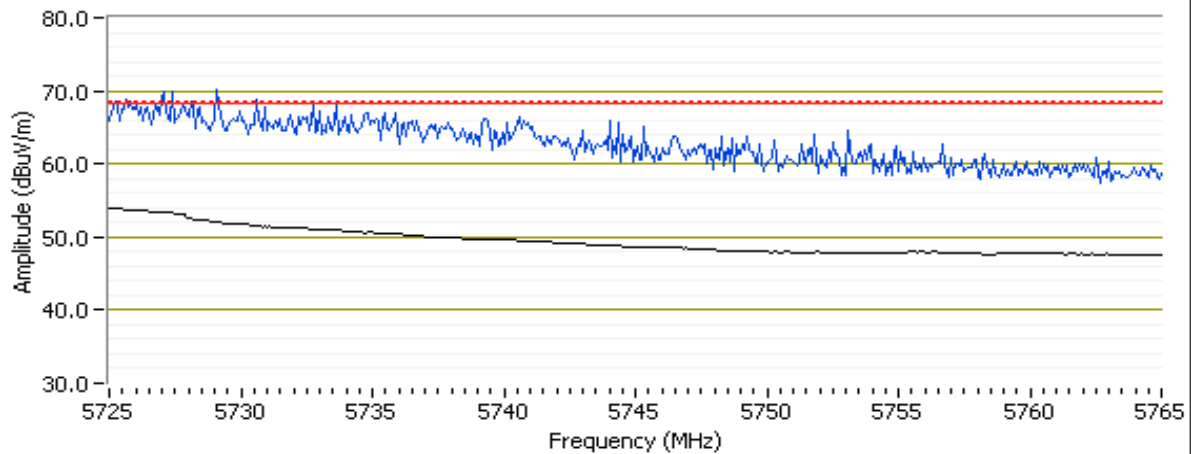
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 134 - 5670MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 53.9   | H   | 54.0  | -0.1   | AVG       | 249     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5738.550  | 70.5   | H   | 74.0  | -3.5   | PK        | 249     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #16: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

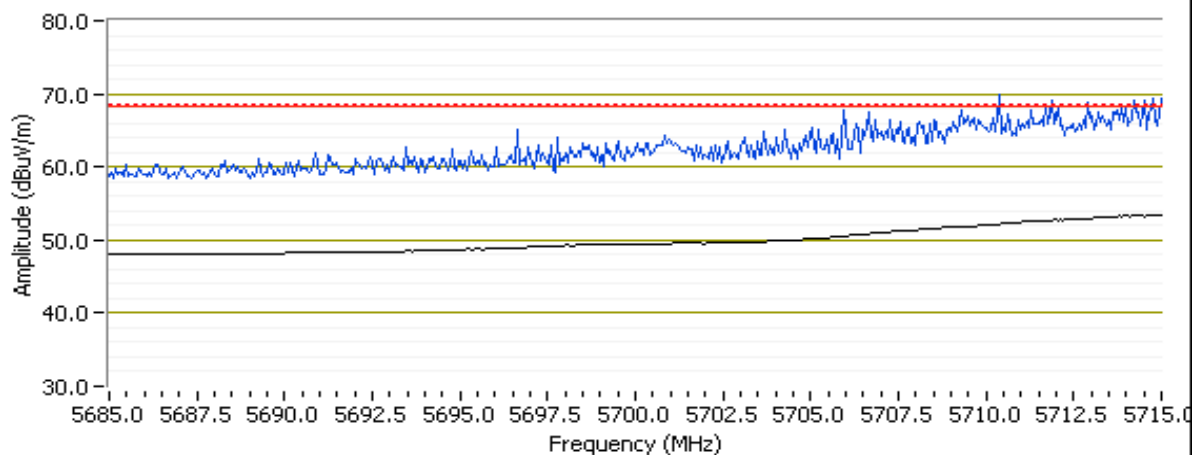
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 151 - 5755MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5715.000  | 53.7         | H   | 54.0  | -0.3   | AVG       | 248     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5712.350  | 71.0         | H   | 74.0  | -3.0   | PK        | 248     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



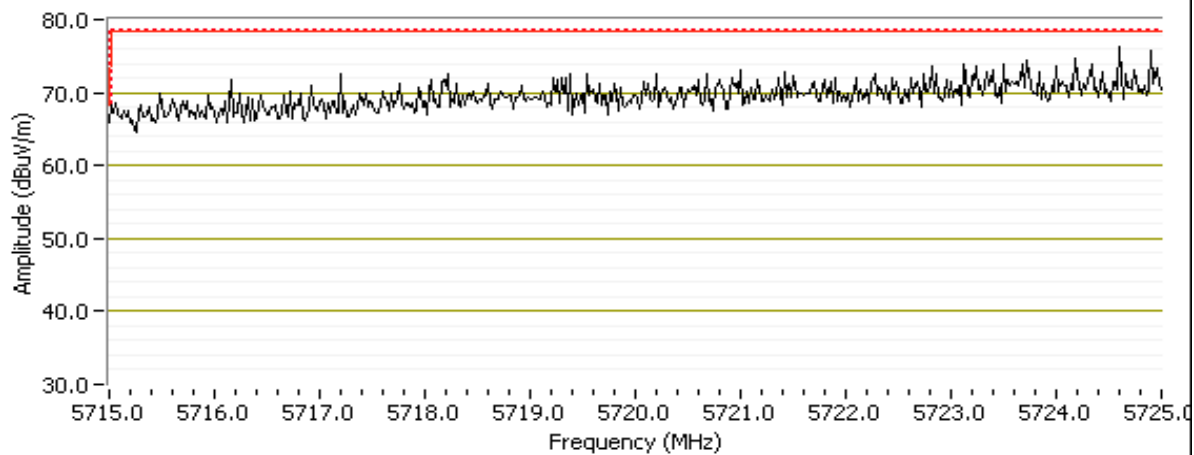


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5723.220  | 75.9         | H   | 78.3  | -2.4   | PK        | 248     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz; H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 159 - 5795MHz

Tx Chain: Main

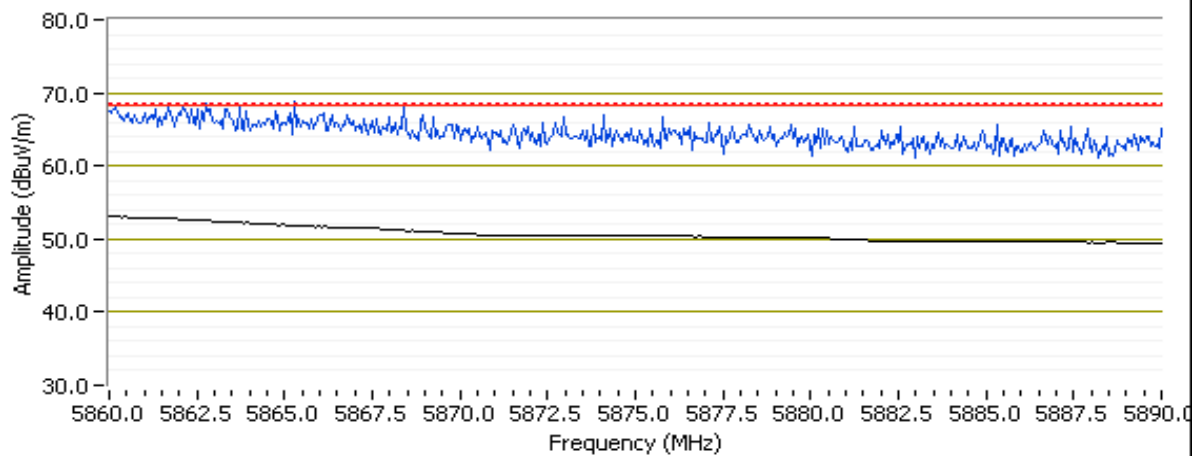
Mode: n40

Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.120  | 53.1         | H   | 54.0  | -0.9   | AVG       | 170     | 1.8    | POS; RB 1 MHz; VB: 10 Hz |
| 5862.040  | 69.1         | H   | 74.0  | -4.9   | PK        | 170     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |

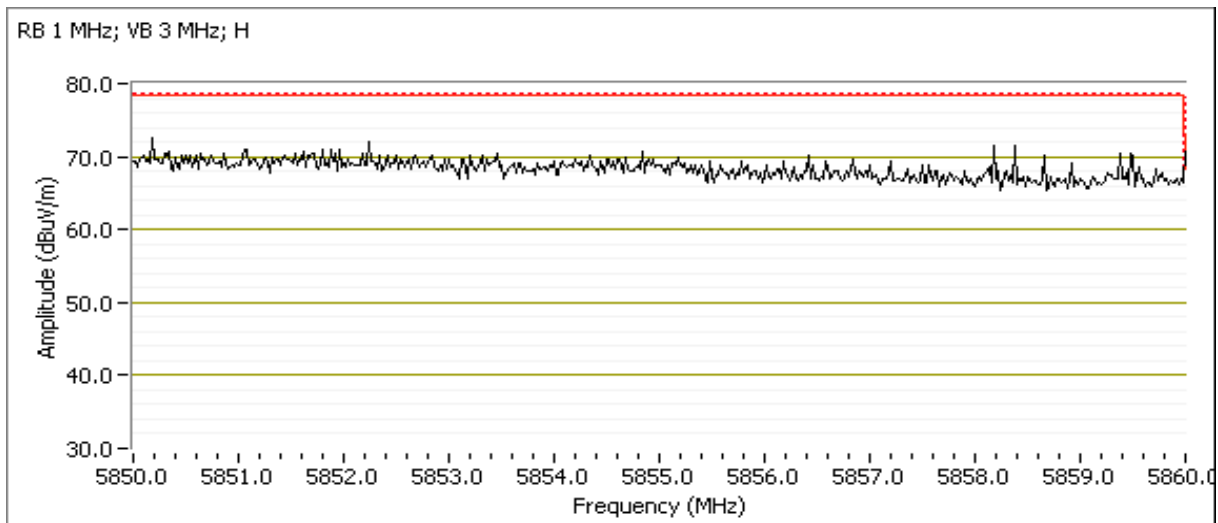
RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5854.750  | 72.9         | H   | 78.3  | -5.4   | PK        | 170     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #17: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber# 5

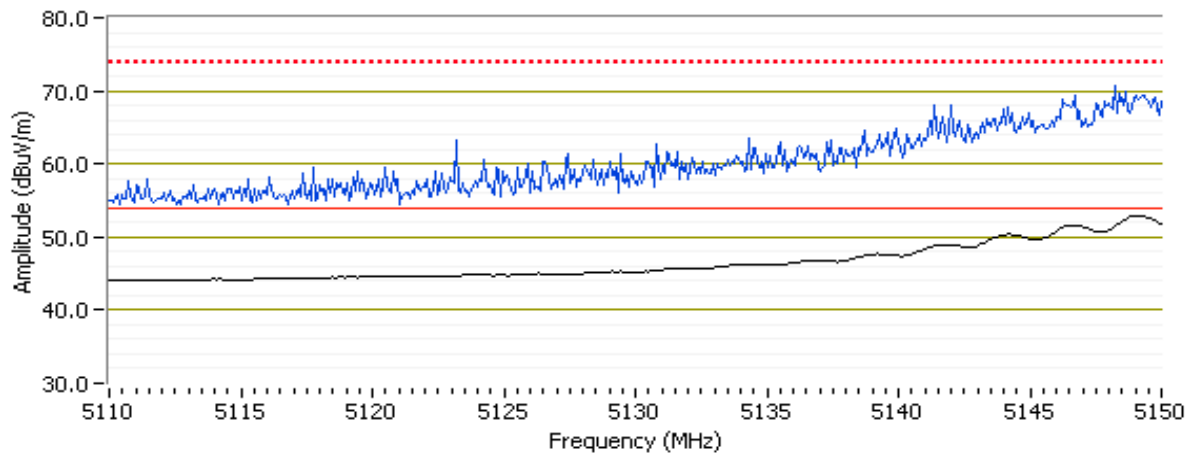
Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Channel: 38 - 5190 MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5149.040  | 53.3         | H   | 54.0       | -0.7   | AVG       | 260     | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.120  | 70.9         | H   | 74.0       | -3.1   | PK        | 260     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 46 - 5230 MHz

Tx Chain: 2Tx

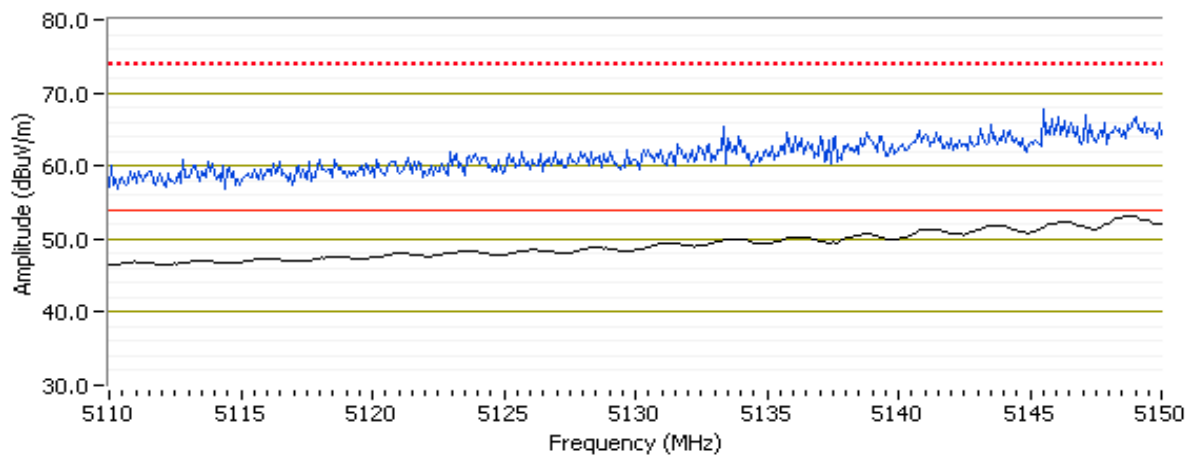
Mode: n40

Data Rate: MCS0

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5148.800  | 53.0         | H   | 54.0       | -1.0   | AVG       | 272     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.960  | 67.5         | H   | 74.0       | -6.5   | PK        | 272     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #18: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber# 5

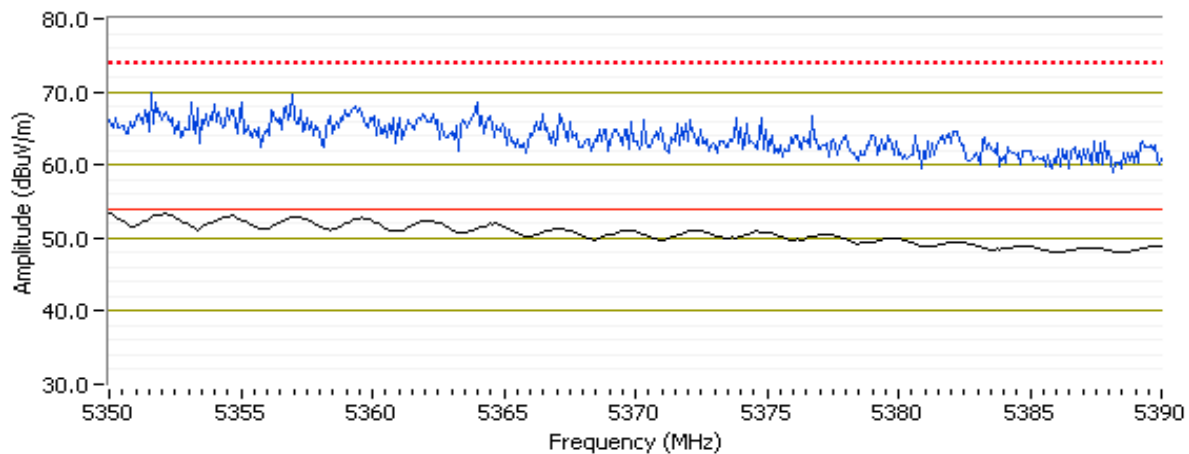
Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Channel: 54 - 5270MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 53.7         | H   | 54.0       | -0.3   | AVG       | 229     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5355.850  | 69.6         | H   | 74.0       | -4.4   | PK        | 229     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



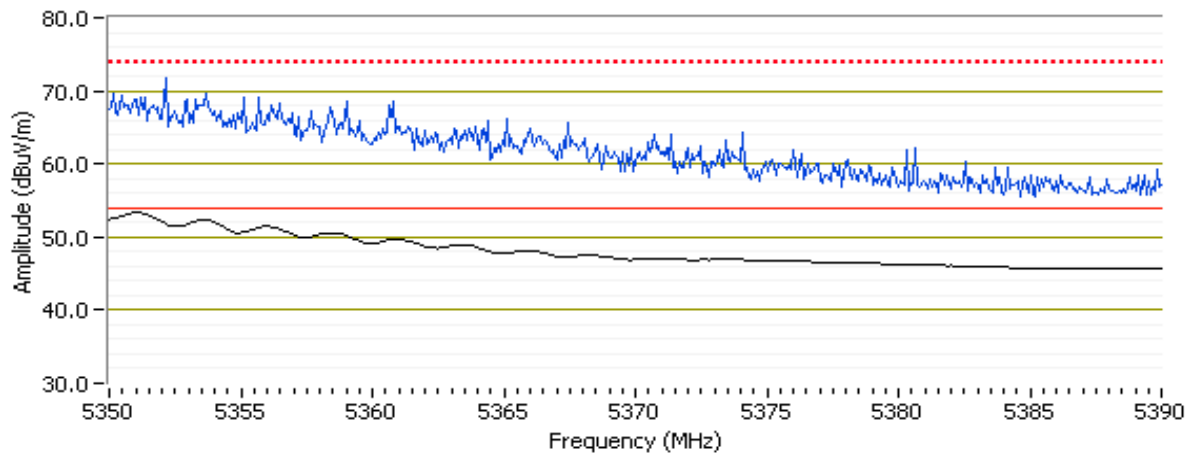
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 62 - 5310MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5351.040  | 53.3         | H   | 54.0       | -0.7   | AVG       | 267     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5353.930  | 71.2         | H   | 74.0       | -2.8   | PK        | 267     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #19: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/20/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber# 5

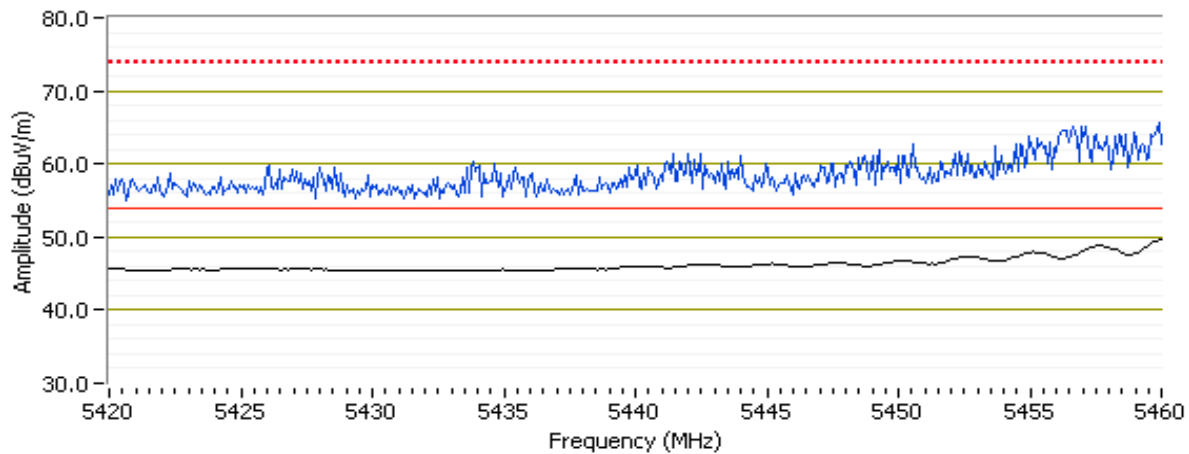
Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Channel: 102 - 5510MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.000  | 49.7         | H   | 54.0       | -4.3   | AVG       | 181     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5456.870  | 66.3         | H   | 74.0       | -7.7   | PK        | 181     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



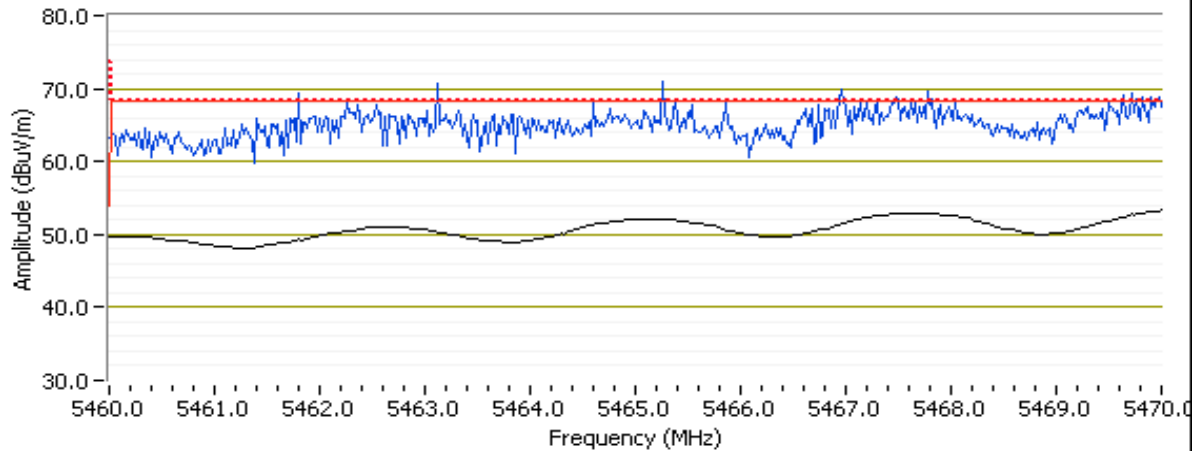


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5470.000  | 53.5         | H   | 54.0  | -0.5   | AVG       | 181     | 1.2    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5467.110  | 70.3         | H   | 74.0  | -3.7   | PK        | 181     | 1.2    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



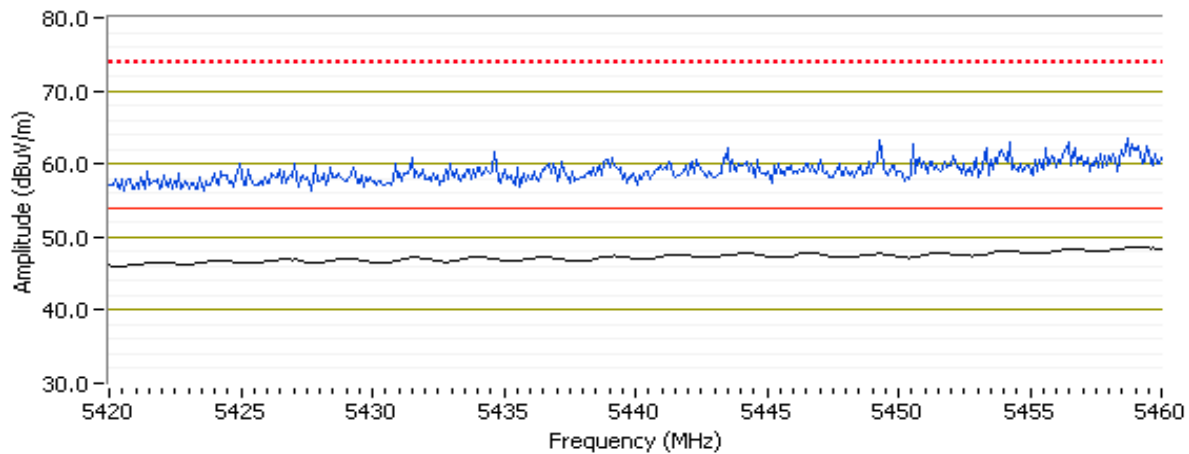
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 110 - 5550MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5458.960  | 48.6         | H   | 54.0       | -5.4   | AVG       | 233     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5455.590  | 64.4         | H   | 74.0       | -9.6   | PK        | 233     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



**NTS**

WE ENGINEER SUCCESS

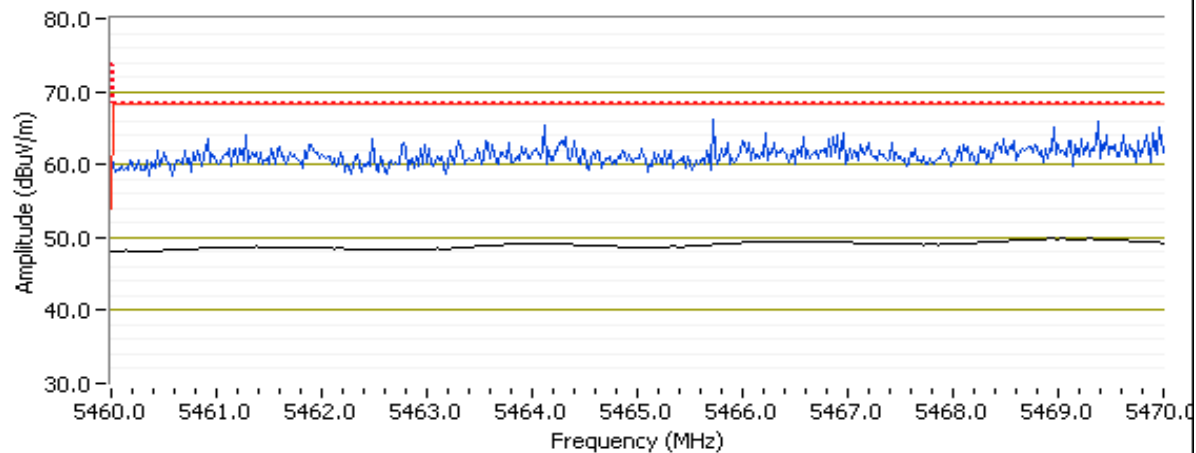
## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5465.930  | 67.6         | H   | 68.3  | -0.7   | PK        | 233     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



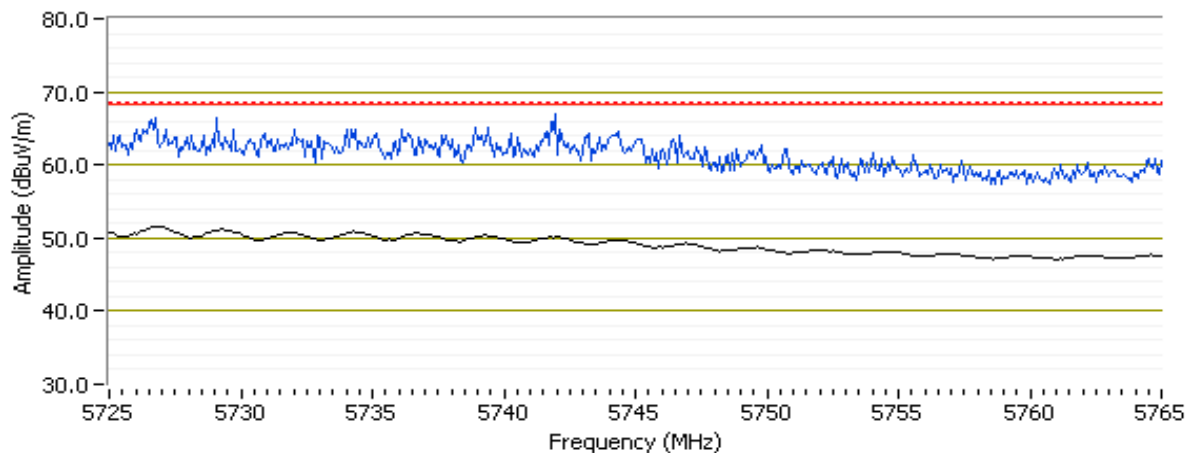
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 126 - 5630MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5726.920  | 51.4   | H   | 54.0  | -2.6   | AVG       | 234     | 1.4    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5731.090  | 66.3   | H   | 74.0  | -7.7   | PK        | 234     | 1.4    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5731.090  | 66.3   | H   | 68.3  | -2.0   | PK        | 234     | 1.4    | POS; RB 1 MHz; VB: 3 MHz         |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



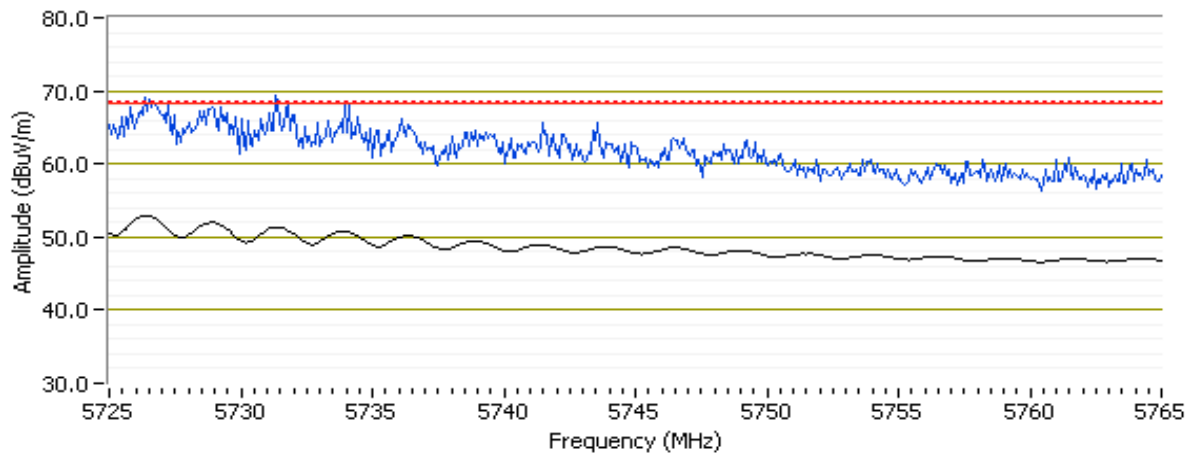
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 134 - 5670MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5726.360  | 53.3   | H   | 54.0  | -0.7   | AVG       | 233     | 1.4    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5726.440  | 70.3   | H   | 74.0  | -3.7   | PK        | 233     | 1.4    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #20: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

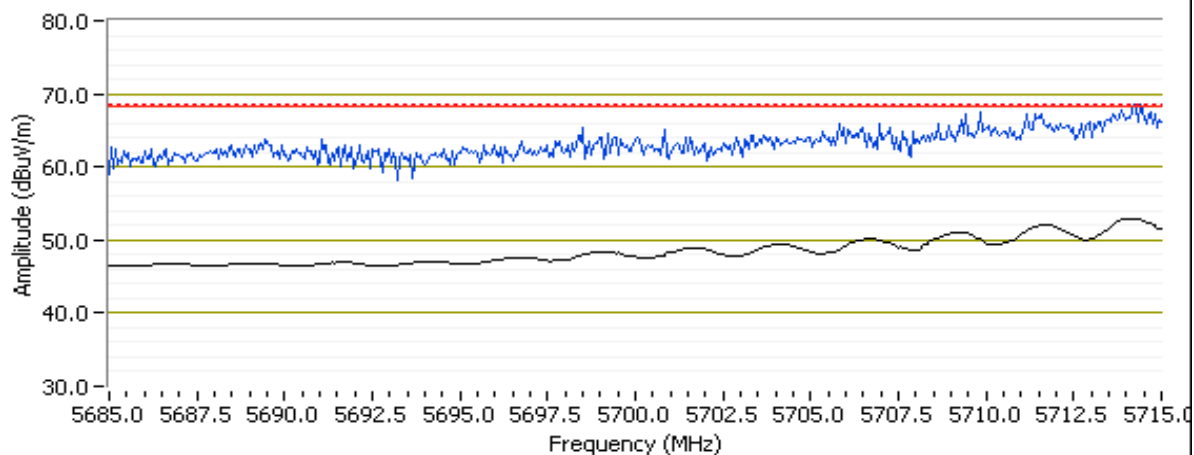
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 151 - 5755MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5714.040  | 53.0         | H   | 54.0  | -1.0   | AVG       | 224     | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5714.880  | 68.9         | H   | 74.0  | -5.1   | PK        | 224     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

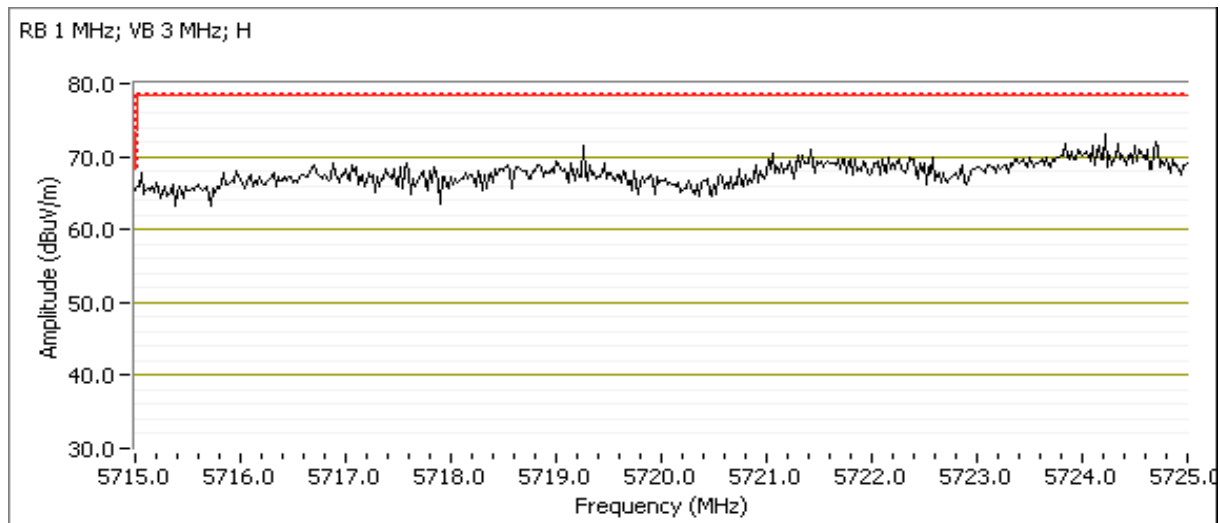
RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.060  | 73.4         | H   | 78.3  | -4.9   | PK        | 224     | 1.6    | POS; RB 1 MHz; VB: 3 MHz |



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 159 - 5795MHz

Tx Chain: 2Tx

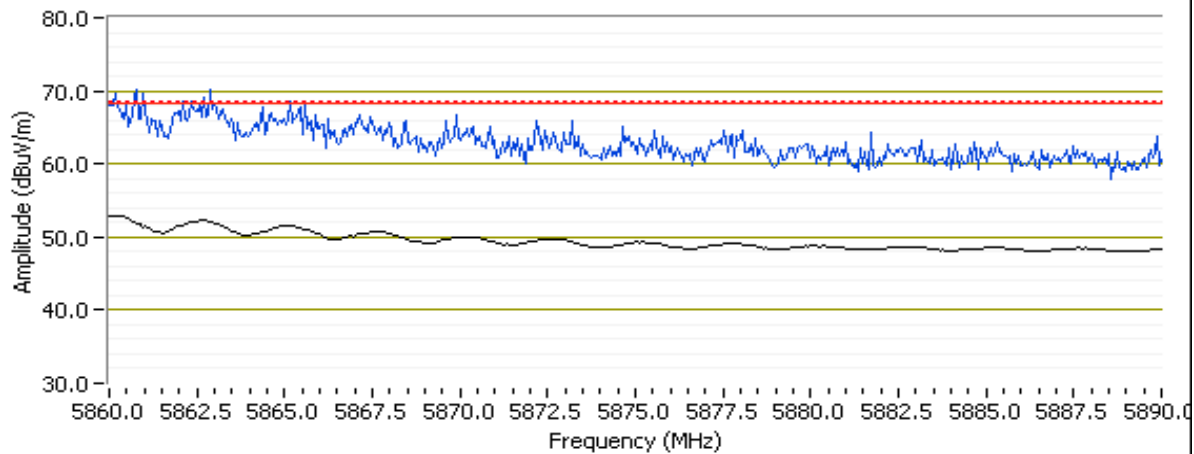
Mode: n40

Data Rate: MCS0

**5860 MHz Band Edge Signal Radiated Field Strength**

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.180  | 53.1         | H   | 54.0  | -0.9   | AVG       | 181     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5865.950  | 71.1         | H   | 74.0  | -2.9   | PK        | 181     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); H



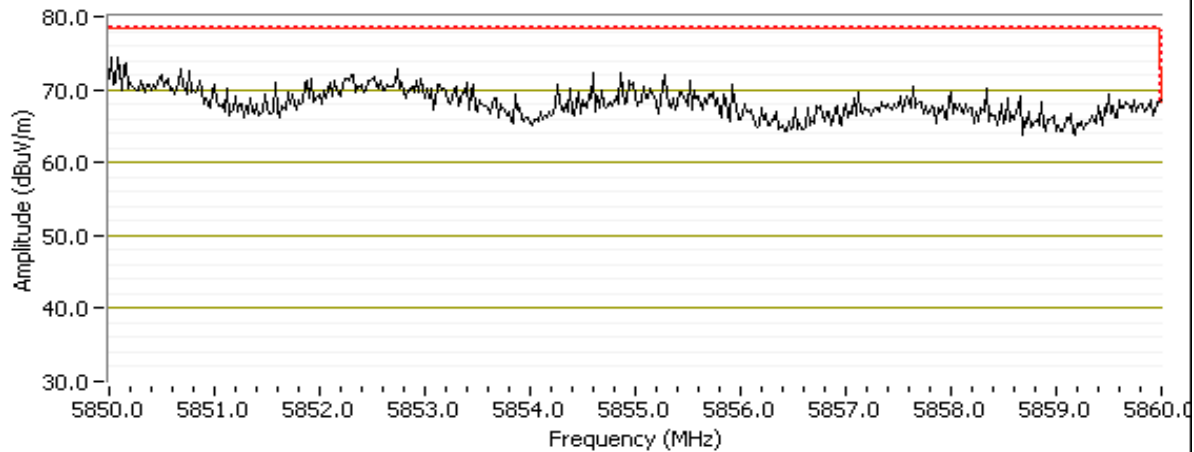


|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5850.300  | 74.5         | H   | 78.3  | -3.8   | PK        | 181     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz; H



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.  
 For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

### Ambient Conditions:

Temperature: 22.7 °C  
 Rel. Humidity: 36 %

### Summary of Results

| Run #                                                                                                   | Mode      | Channel      | Target Power | Power Setting | Test Performed                 | Limit             | Result / Margin                     |
|---------------------------------------------------------------------------------------------------------|-----------|--------------|--------------|---------------|--------------------------------|-------------------|-------------------------------------|
| Scans on "center" channel in all OFDM modes to determine the worst case mode.                           |           |              |              |               |                                |                   |                                     |
| 1                                                                                                       | a (1Tx)   | 40 - 5200MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 43.8 dBµV/m @ 5420.1 MHz (-10.2 dB) |
|                                                                                                         | n20 (2Tx) | 40 - 5200MHz |              | -             |                                |                   | 57.3 dBµV/m @ 10398 MHz (-11.0 dB)  |
|                                                                                                         | n40 (2Tx) | 38 - 5190MHz |              | -             |                                |                   | 46.1 dBµV/m @ 5039.1 MHz (-7.9 dB)  |
| Measurements on low and high channels in worst-case OFDM mode (high channel only if worst case is n40). |           |              |              |               |                                |                   |                                     |
| 2                                                                                                       | n40 (2Tx) | 46 - 5230MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 46.6 dBµV/m @ 5456.7 MHz (-7.4 dB)  |
| Scans on "center" channel in all OFDM modes to determine the worst case mode.                           |           |              |              |               |                                |                   |                                     |
| 3                                                                                                       | a (1Tx)   | 60 - 5300MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 42.8 dBµV/m @ 5419.8 MHz (-11.2 dB) |
|                                                                                                         | n20 (2Tx) | 60 - 5300MHz |              | -             |                                |                   | 48.6 dBµV/m @ 5454.1 MHz (-5.4 dB)  |
|                                                                                                         | n40 (2Tx) | 54 - 5270MHz |              | -             |                                |                   | 51.0 dBµV/m @ 5428.7 MHz (-3.0 dB)  |
| Measurements on low and high channels in worst-case OFDM mode (high channel only if worst case is n40). |           |              |              |               |                                |                   |                                     |
| 4                                                                                                       | n40 (2Tx) | 62 - 5310MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 48.7 dBµV/m @ 5434.3 MHz (-5.3 dB)  |



## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run #                                                                         | Mode      | Channel       | Target Power | Power Setting | Test Performed                 | Limit             | Result / Margin                     |
|-------------------------------------------------------------------------------|-----------|---------------|--------------|---------------|--------------------------------|-------------------|-------------------------------------|
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |               |              |               |                                |                   |                                     |
| 5                                                                             | a (1Tx)   | 116 - 5580MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 51.0 dBμV/m @ 5318.1 MHz (-17.3 dB) |
|                                                                               | n20 (2Tx) | 116 - 5580MHz |              | -             |                                |                   | 47.5 dBμV/m @ 11159.4 MHz (-6.5 dB) |
|                                                                               | n40 (2Tx) | 110 - 5550MHz |              | -             |                                |                   | 45.5 dBμV/m @ 11099.7 MHz (-8.5 dB) |
| Measurements on low and high channels in worst-case OFDM mode.                |           |               |              |               |                                |                   |                                     |
| 6                                                                             | n20 (2Tx) | 100 - 5500MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 47.0 dBμV/m @ 10999.9 MHz (-7.0 dB) |
|                                                                               |           | 140 - 5720MHz |              | -             |                                |                   | 60.9 dBμV/m @ 5926.2 MHz (-7.4 dB)  |
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |               |              |               |                                |                   |                                     |
| 7                                                                             | a (1Tx)   | 157 - 5785MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 46.0 dBμV/m @ 11570.4 MHz (-8.0 dB) |
|                                                                               | n20 (2Tx) | 157 - 5785MHz |              | -             |                                |                   | 48.5 dBμV/m @ 11570.2 MHz (-5.5 dB) |
|                                                                               | n40 (2Tx) | 151 - 5755MHz |              | -             |                                |                   | 45.7 dBμV/m @ 11510.5 MHz (-8.3 dB) |
| Measurements on low and high channels in worst-case OFDM mode.                |           |               |              |               |                                |                   |                                     |
| 8                                                                             | n20 (2Tx) | 149 - 5745MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 48.0 dBμV/m @ 11489.2 MHz (-6.0 dB) |
|                                                                               |           | 165 - 5825MHz |              | -             |                                |                   | 50.7 dBμV/m @ 11649.4 MHz (-3.3 dB) |

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

### Sample Notes

Sample S/N: D85DE2000005 (MAC ID)

Driver: 6.37 RC214 .12

Antenna: Internal

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Notes

Testing performed at 1.5m per C63.10

All testing was performed in 2Tx mode using worse case 1Tx power levels

## Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle  $\geq 98\%$  and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

| Mode | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a  | 6Mb/s     | 98.2%          | Yes          | 1.405  | 0               | 0                     | 10                  |
| n20  | MCS0      | 98.1%          | Yes          | 1.309  | 0               | 0                     | 10                  |
| n40  | MCS0      | 98.0%          | Yes          | 0.932  | 0               | 0                     | 10                  |

## Measurement Specific Notes:

|         |                                                                                                                                                                                                                                                                                                                        |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative. |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5150-5250 MHz Band

Date of Test: 7/28/2015 & 7/29/15  
 Test Engineer: Rafael Varelas & J. Caizzi  
 Test Location: FT Chamber #5

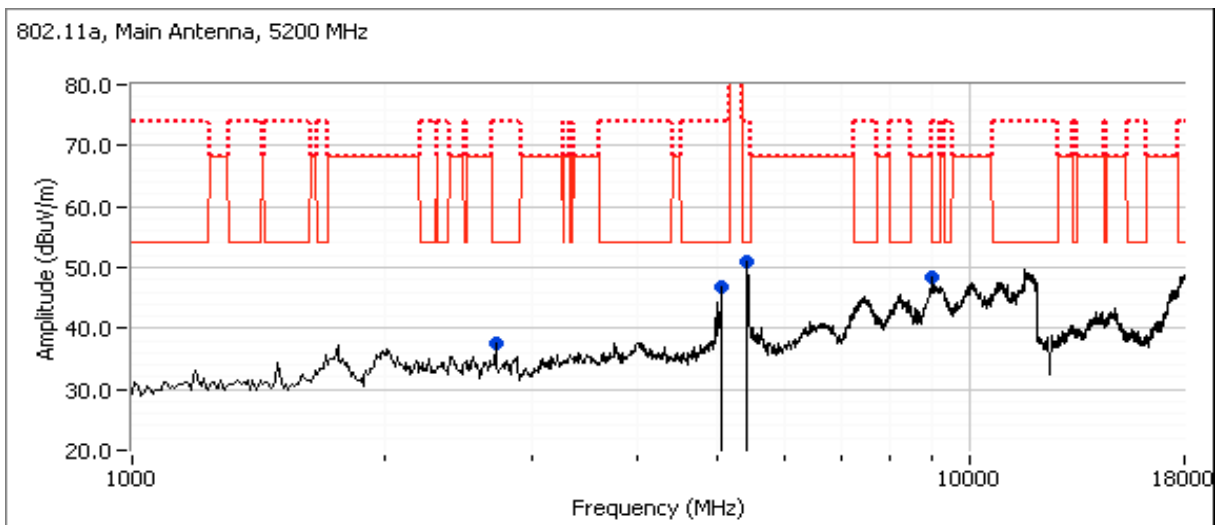
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

### Run #1a: Center Channel

Channel: 40 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5420.070  | 43.8         | H   | 54.0         | -10.2  | AVG       | 222     | 1.4    | RB 1 MHz;VB 10 Hz;Peak |
| 5419.570  | 53.6         | H   | 74.0         | -20.4  | PK        | 222     | 1.4    | RB 1 MHz;VB 3 MHz;Peak |
| 5050.350  | 39.9         | V   | 54.0         | -14.1  | AVG       | 207     | 1.3    | RB 1 MHz;VB 10 Hz;Peak |
| 5034.420  | 51.2         | V   | 74.0         | -22.8  | PK        | 207     | 1.3    | RB 1 MHz;VB 3 MHz;Peak |
| 9023.800  | 42.0         | V   | 54.0         | -12.0  | AVG       | 268     | 2.1    | RB 1 MHz;VB 10 Hz;Peak |
| 9017.730  | 52.9         | V   | 74.0         | -21.1  | PK        | 268     | 2.1    | RB 1 MHz;VB 3 MHz;Peak |

Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.

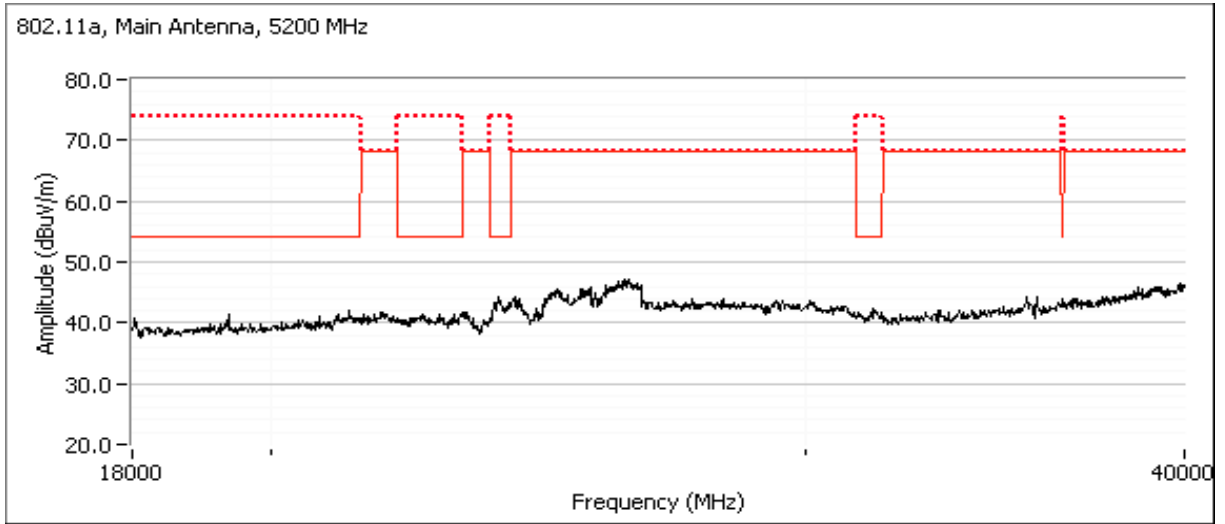


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



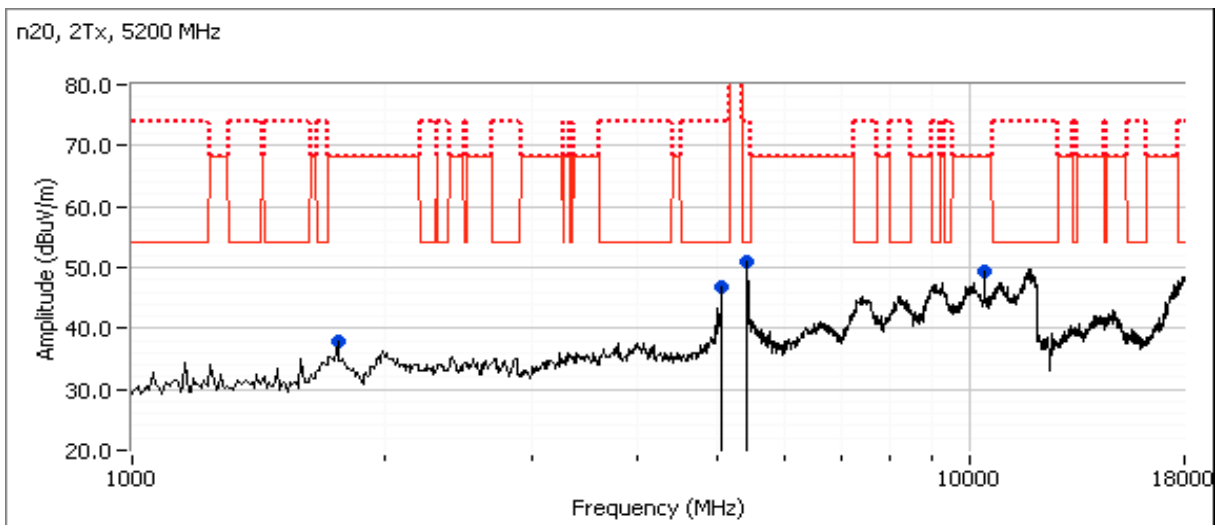
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1b: Center Channel

Channel: 40                      Mode: 11n20  
 Tx Chain: 2Tx                      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5421.220  | 42.7   | H   | 54.0         | -11.3  | AVG       | 210     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5418.850  | 52.8   | H   | 74.0         | -21.2  | PK        | 210     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5044.690  | 39.3   | H   | 54.0         | -14.7  | AVG       | 264     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5044.690  | 49.6   | H   | 74.0         | -24.4  | PK        | 264     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 10397.960 | 57.3   | V   | 68.3         | -11.0  | PK        | 256     | 1.9    | RB 1 MHz;VB 3 MHz;Peak |

Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.

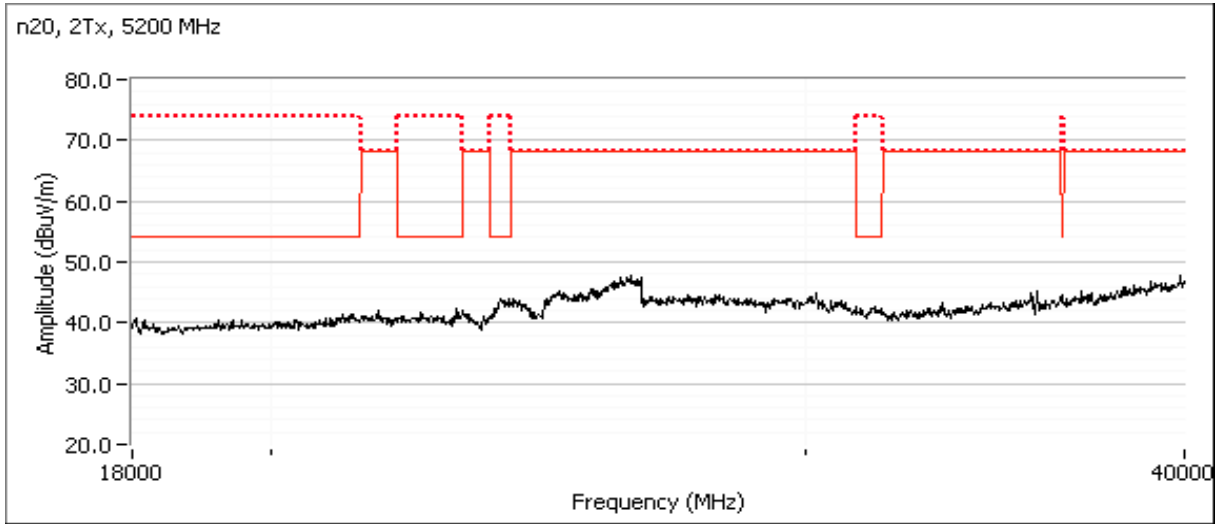


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |





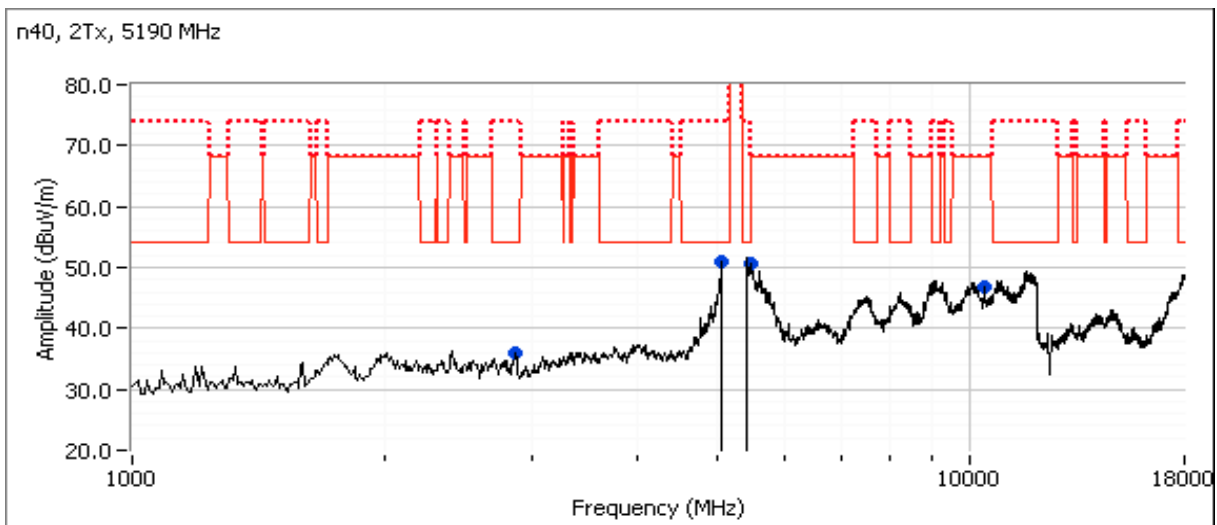
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1c: Center Channel

Channel: 38                      Mode: 11n40  
 Tx Chain: 2Tx                      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |             | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|-------------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin      | PK/QP/Avg | degrees | meters |                        |
| 10384.430 | 53.8   | V   | 68.3         | -14.5       | PK        | 127     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5456.330  | 43.7   | H   | 54.0         | -10.3       | AVG       | 252     | 1.5    | RB 1 MHz;VB 10 Hz;Peak |
| 5459.170  | 54.4   | H   | 74.0         | -19.6       | PK        | 252     | 1.5    | RB 1 MHz;VB 3 MHz;Peak |
| 5039.140  | 46.1   | H   | 54.0         | <b>-7.9</b> | AVG       | 272     | 1.5    | RB 1 MHz;VB 10 Hz;Peak |
| 5038.540  | 57.4   | H   | 74.0         | -16.6       | PK        | 272     | 1.5    | RB 1 MHz;VB 3 MHz;Peak |

Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.

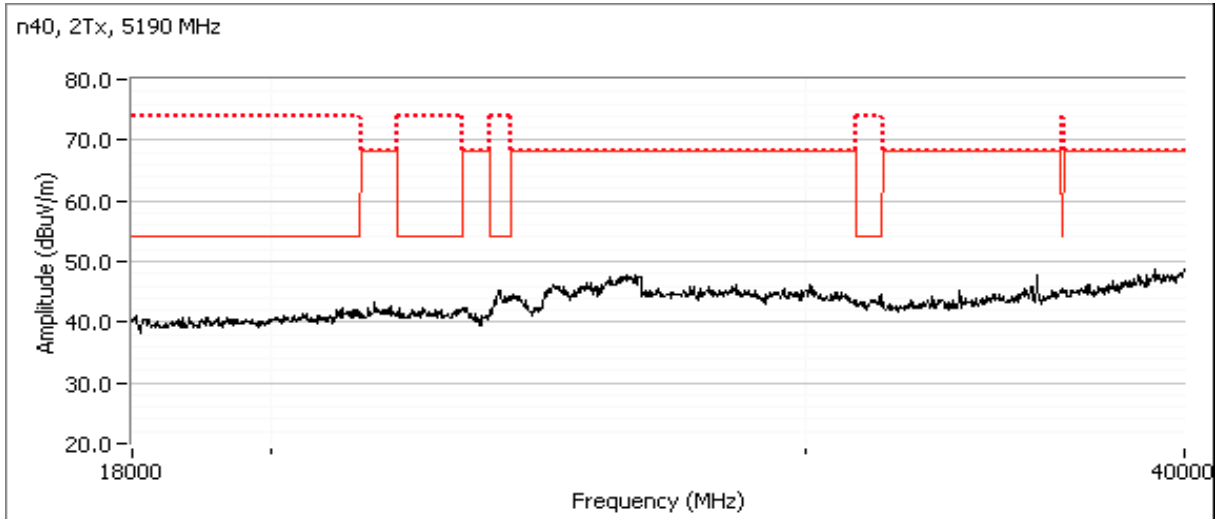


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #2: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #1

Date of Test: 7/29/2015 0:00  
 Test Engineer: John Caizzi / R. Varelas  
 Test Location: Chamber 5

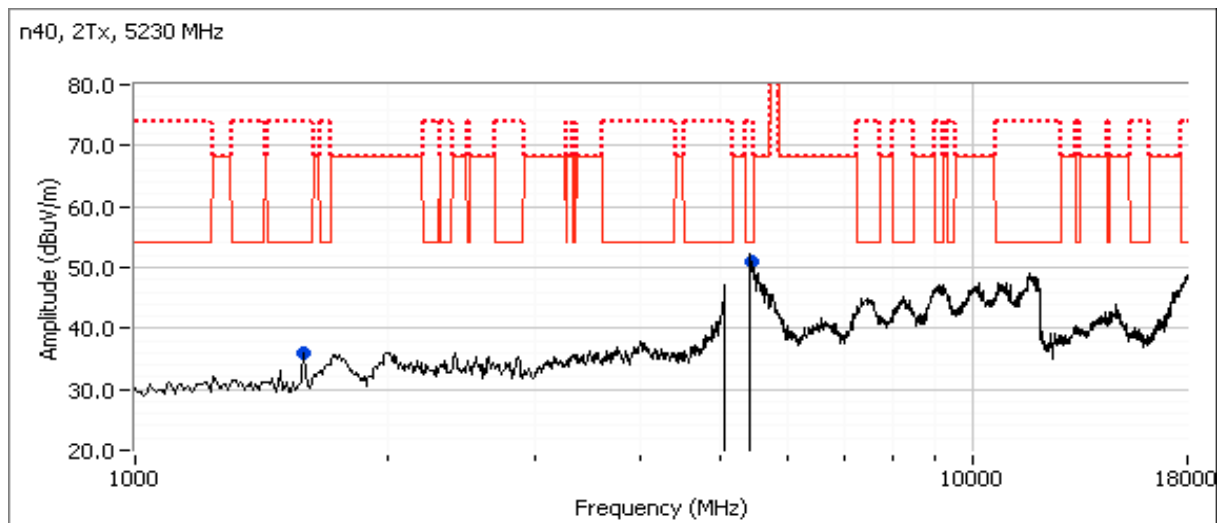
Config. Used: 1  
 Config Change: None  
 Host Voltage: USB

### Run #2b: High Channel

Channel: 46 Mode: n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5456.650  | 46.6         | H   | 54.0            | -7.4   | AVG       | 260     | 1.2    | RB 1 MHz;VB 10 Hz;Peak |
| 5455.600  | 57.7         | H   | 74.0            | -16.3  | PK        | 260     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 1606.650  | 36.1         | V   | 54.0            | -17.9  | Peak      | 226     | 1.0    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #3, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band

Date of Test: 7/28/2015 & 7/29/15  
 Test Engineer: Rafael Varelas & J. Caizzi  
 Test Location: FT Chamber #5

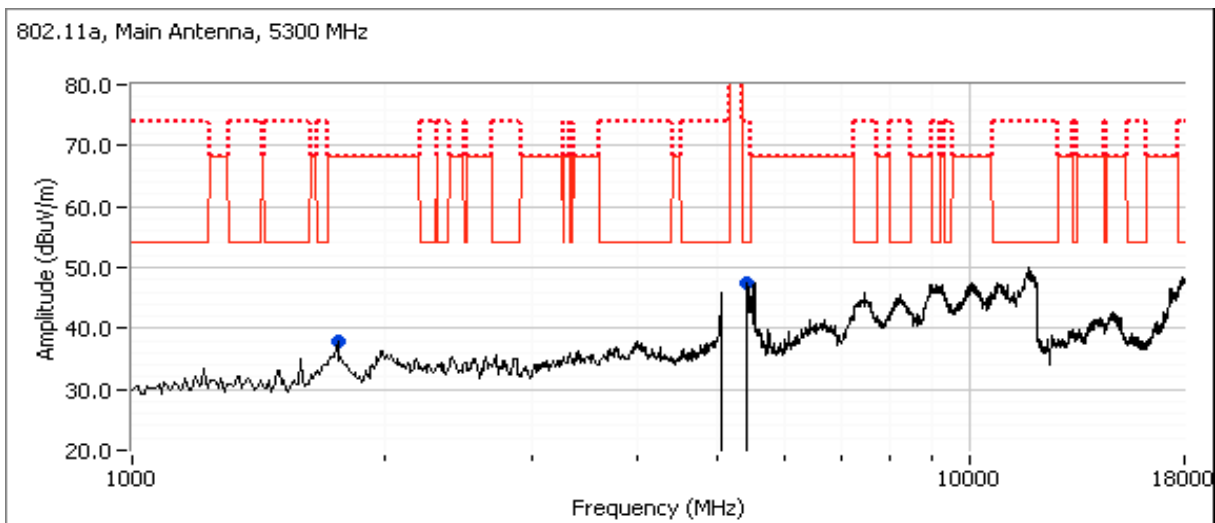
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

### Run #3a: Center Channel

Channel: 60 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5419.760  | 42.8         | H   | 54.0         | -11.2  | AVG       | 255     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5418.960  | 53.9         | H   | 74.0         | -20.1  | PK        | 255     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



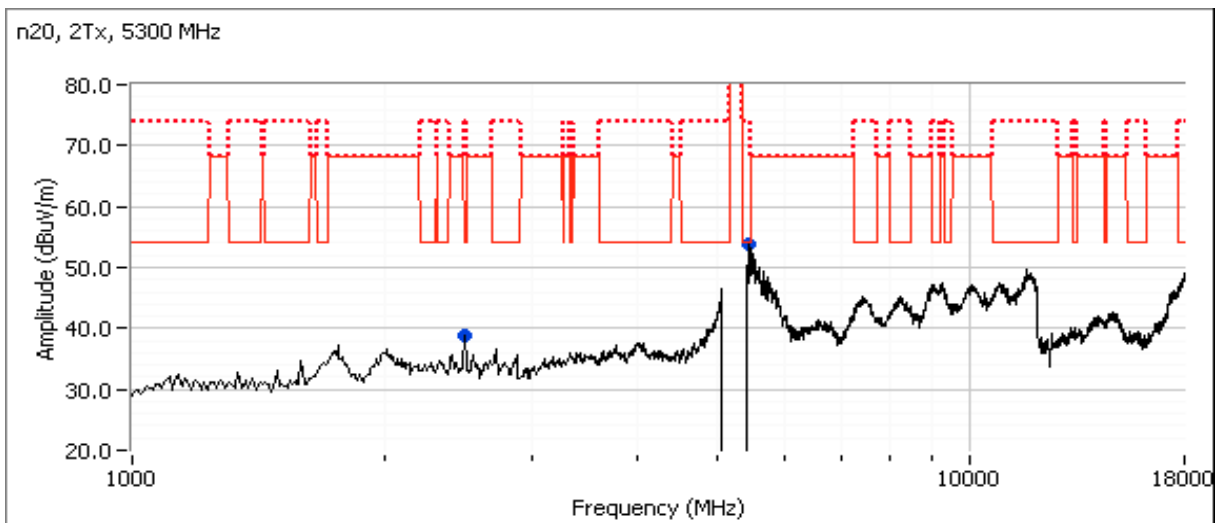
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #3b: Center Channel

Channel: 60                      Mode: 11n20  
 Tx Chain: 2Tx                      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | PK/QP/Avg | degrees | meters |                        |
| 5454.080  | 48.6         | H   | 54.0         | -5.4   | AVG       | 247     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5453.960  | 58.8         | H   | 74.0         | -15.2  | PK        | 247     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 2496.500  | 38.8         | V   | 54.0         | -15.2  | Peak      | 307     | 1.6    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



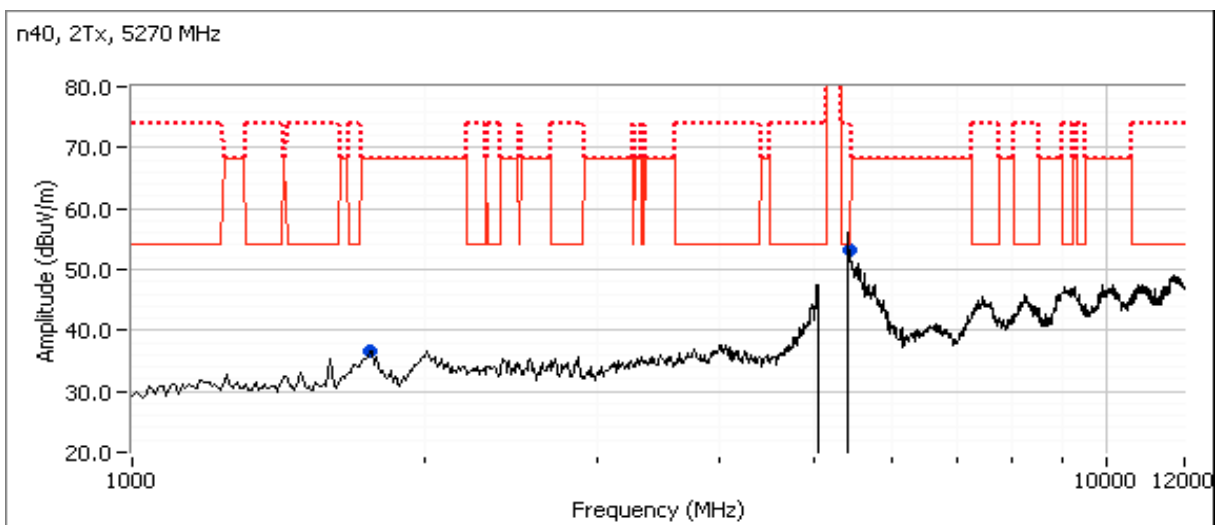
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #3c: Center Channel

Channel: 54 Mode: 11n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | PK/QP/Avg | degrees | meters |                        |
| 5428.720  | 51.0         | H   | 54.0         | -3.0   | AVG       | 266     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5417.990  | 61.0         | H   | 74.0         | -13.0  | PK        | 266     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1752.910  | 36.7         | V   | 68.3         | -31.6  | Peak      | 39      | 1.9    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |

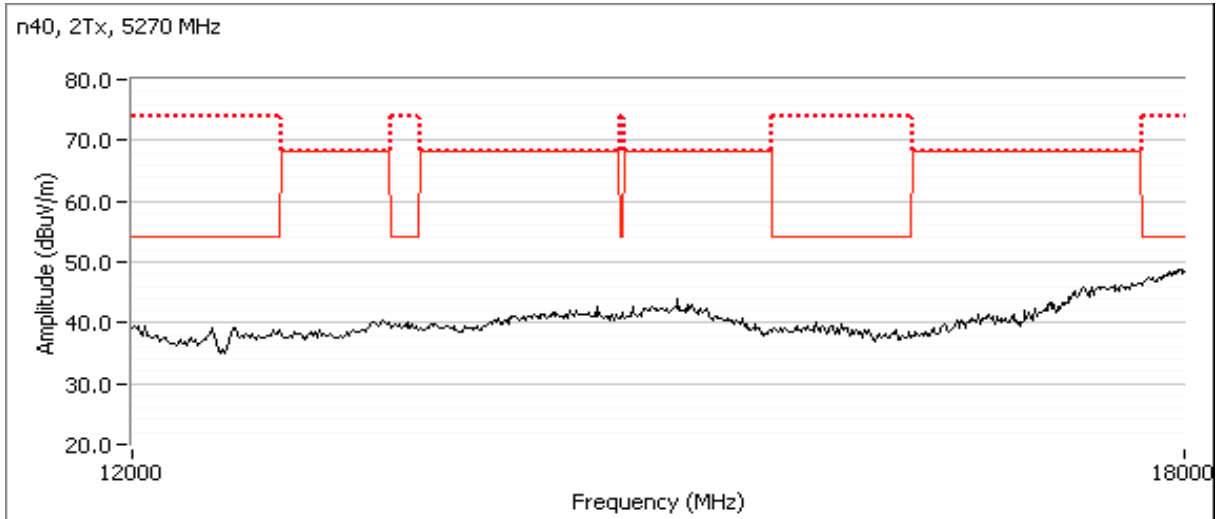


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #4: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #3

Date of Test: 7/29/2015 0:00  
 Test Engineer: John Caizzi / R. Varelas  
 Test Location: Chamber 5

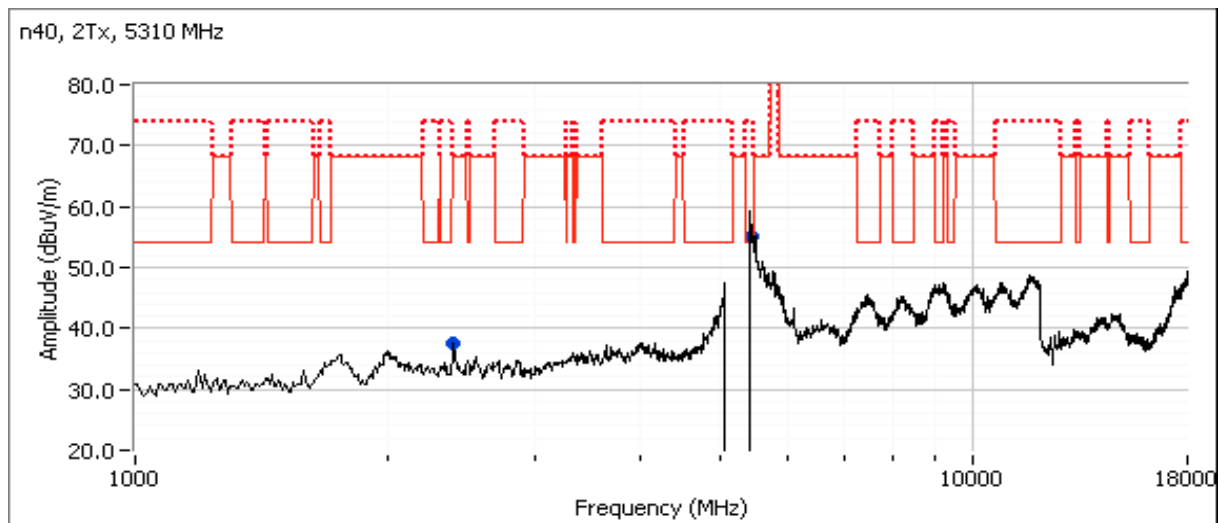
Config. Used: 1  
 Config Change: None  
 Host Voltage: USB

### Run #4b: High Channel

Channel: 62 Mode: n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5434.340  | 48.7         | H   | 54.0            | -5.3   | AVG       | 276     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5432.110  | 62.4         | H   | 74.0            | -11.6  | PK        | 276     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 2406.160  | 37.5         | V   | 68.3            | -30.8  | Peak      | 193     | 1.0    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |





|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #5, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band

Date of Test: 7/28/2015 & 7/29/15  
 Test Engineer: Rafael Varelas & J. Caizzi  
 Test Location: FT Chamber #5

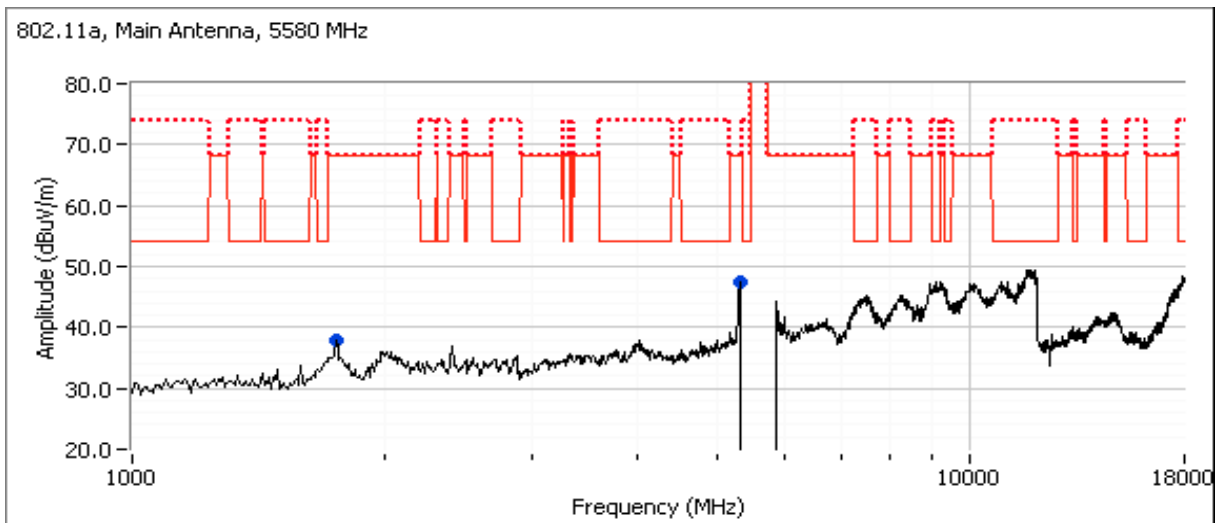
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

### Run #5a: Center Channel

Channel: 116 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5318.120  | 51.0         | H   | 68.3         | -17.3  | PK        | 308     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



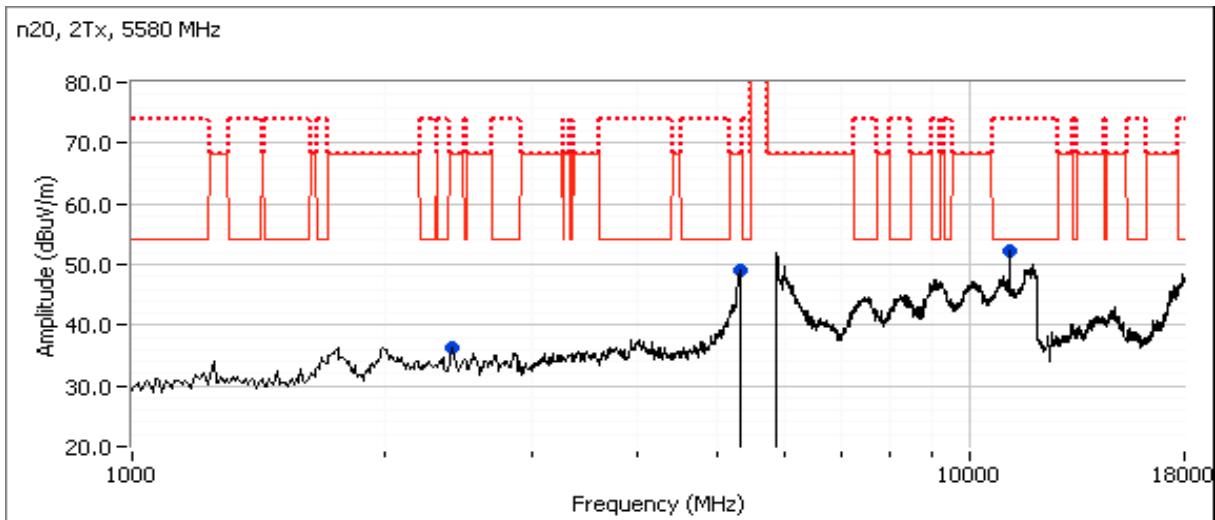
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #5b: Center Channel

Channel: 116      Mode: 11n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |             | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|-------------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin      | Pk/QP/Avg | degrees | meters |                        |
| 11159.420 | 47.5         | V   | 54.0         | <b>-6.5</b> | AVG       | 250     | 1.1    | RB 1 MHz;VB 10 Hz;Peak |
| 11158.890 | 60.1         | V   | 74.0         | -13.9       | PK        | 250     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



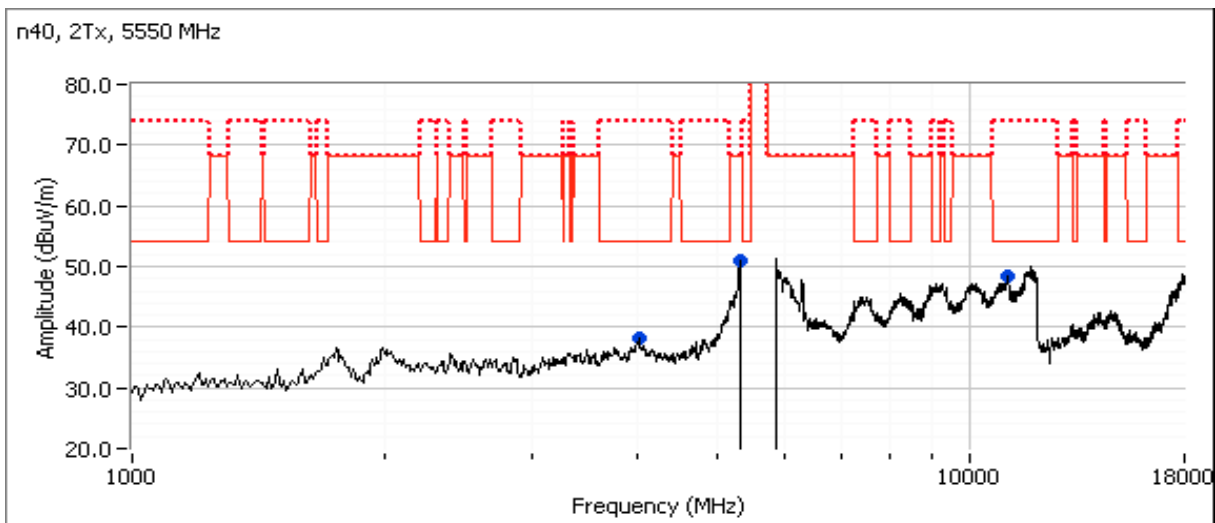
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #5c: Center Channel

Channel: 110 Mode: 11n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |             | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|-------------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin      | PK/QP/Avg | degrees | meters |                        |
| 11099.730 | 45.5         | V   | 54.0         | <b>-8.5</b> | AVG       | 260     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11082.330 | 56.9         | V   | 74.0         | -17.1       | PK        | 260     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5308.160  | 51.1         | H   | 68.3         | -17.2       | Peak      | 209     | 2.5    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5

Date of Test: 7/29/2015 0:00  
 Test Engineer: John Caizzi / R. Varelas  
 Test Location: Chamber 5

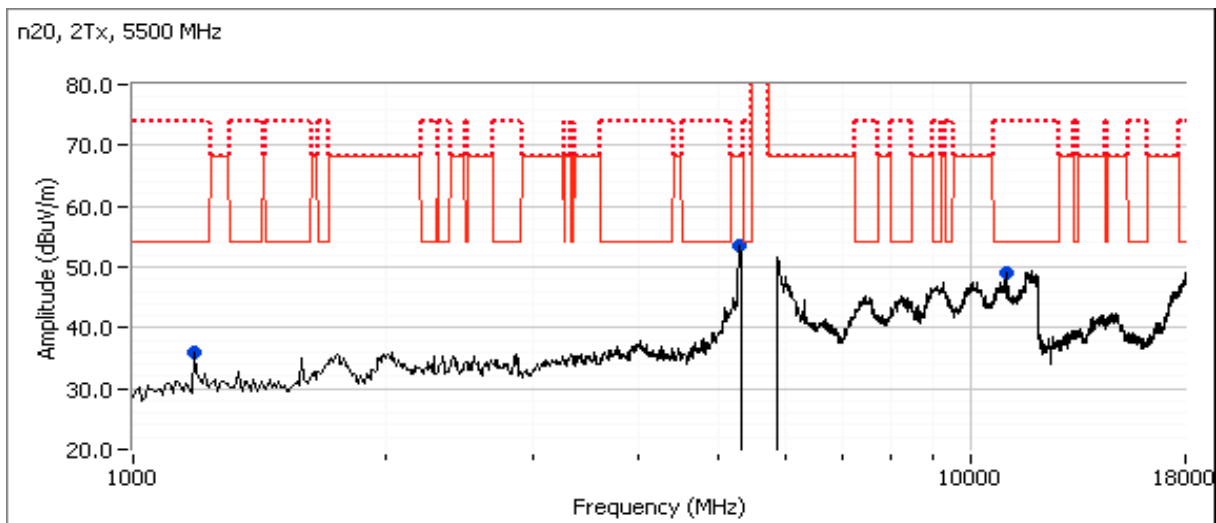
Config. Used: 1  
 Config Change: None  
 Host Voltage: USB

### Run #6a: Low Channel

Channel: 100 Mode: n20  
 Tx Chain: 2 Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 10999.890 | 47.0         | V   | 54.0            | -7.0   | AVG       | 252     | 1.2    | RB 1 MHz;VB 10 Hz;Peak |
| 10999.920 | 59.7         | V   | 74.0            | -14.3  | PK        | 252     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 5298.040  | 57.7         | H   | 68.3            | -10.6  | PK        | 215     | 1.5    | RB 1 MHz;VB 3 MHz;Peak |
| 1192.480  | 35.8         | V   | 54.0            | -18.2  | Peak      | 151     | 1.0    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



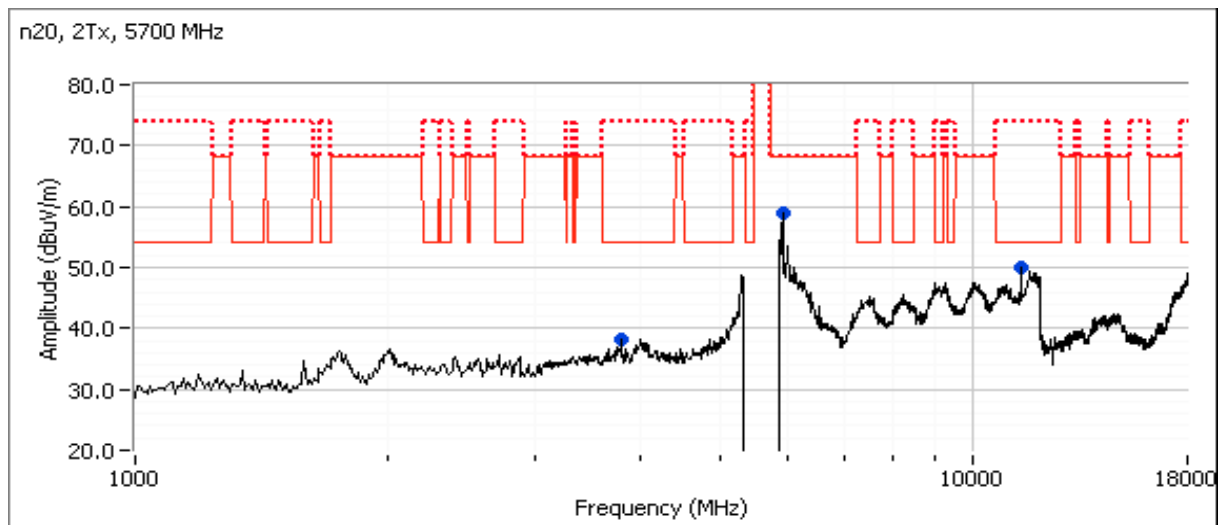
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #6b: High Channel

Channel: 140      Mode: n20  
 Tx Chain: 2 Tx      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | PK/QP/Avg | degrees | meters |                        |
| 5926.190  | 60.9         | H   | 68.3            | -7.4   | PK        | 225     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |
| 11400.630 | 45.8         | H   | 54.0            | -8.2   | AVG       | 218     | 2.2    | RB 1 MHz;VB 10 Hz;Peak |
| 11400.730 | 57.6         | H   | 74.0            | -16.4  | PK        | 218     | 2.2    | RB 1 MHz;VB 3 MHz;Peak |
| 3800.080  | 38.3         | H   | 54.0            | -15.7  | Peak      | 243     | 1.0    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5725-5850 MHz Band

Date of Test: 7/28/2015 & 7/29/15

Test Engineer: Rafael Varelas & J. Caizzi

Test Location: FT Chamber #5

Config. Used: 1

Config Change: None

EUT Voltage: USB

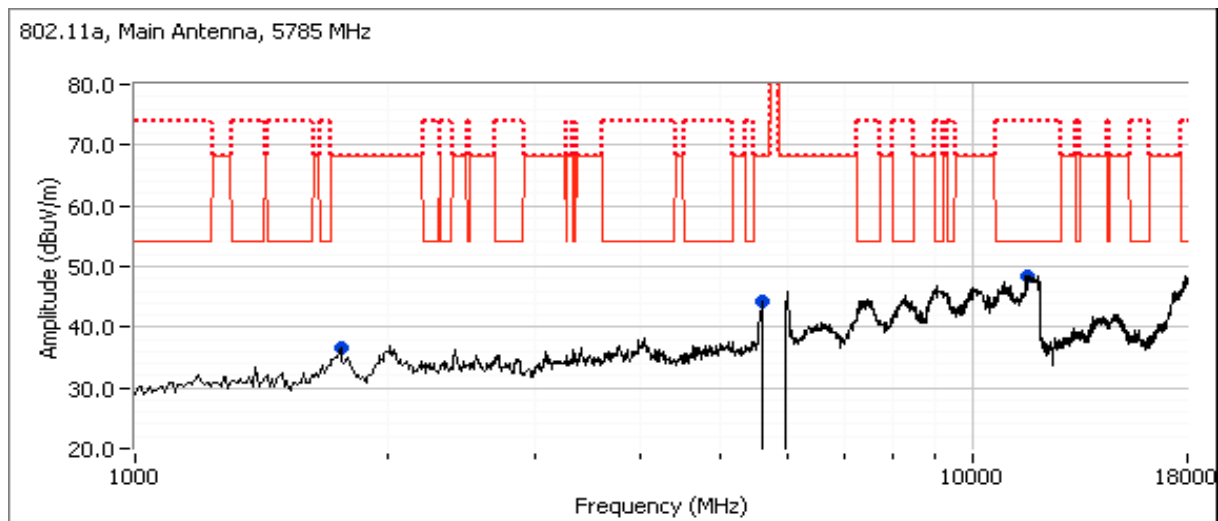
### Run #7a: Center Channel

Channel: 157  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11570.440 | 46.0         | H   | 54.0         | -8.0   | AVG       | 118     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11575.780 | 57.6         | H   | 74.0         | -16.4  | PK        | 118     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5611.160  | 44.4         | H   | 68.3         | -23.9  | Peak      | 215     | 1.0    |                        |

Note 1: For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.

Note 3: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range.



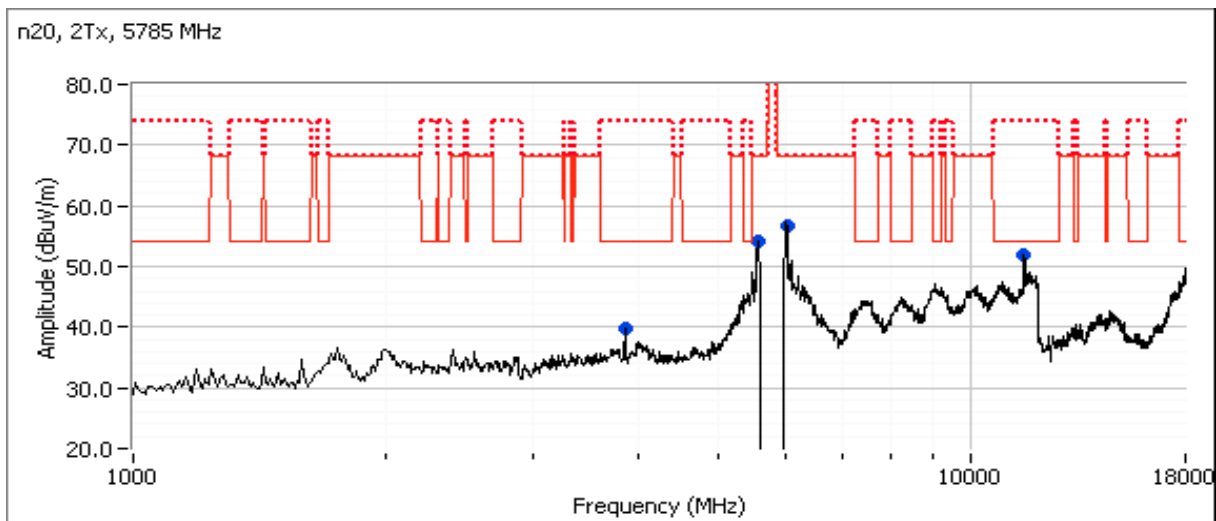
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7b: Center Channel

Channel: 157      Mode: 11n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |             | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|-------------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin      | PK/QP/Avg | degrees | meters |                        |
| 6008.530  | 59.6         | H   | 68.3         | -8.7        | PK        | 241     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 11570.180 | 48.5         | V   | 54.0         | <b>-5.5</b> | AVG       | 246     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11576.010 | 61.0         | V   | 74.0         | -13.0       | PK        | 246     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5568.400  | 54.0         | H   | 68.3         | -14.3       | Peak      | 237     | 1.0    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



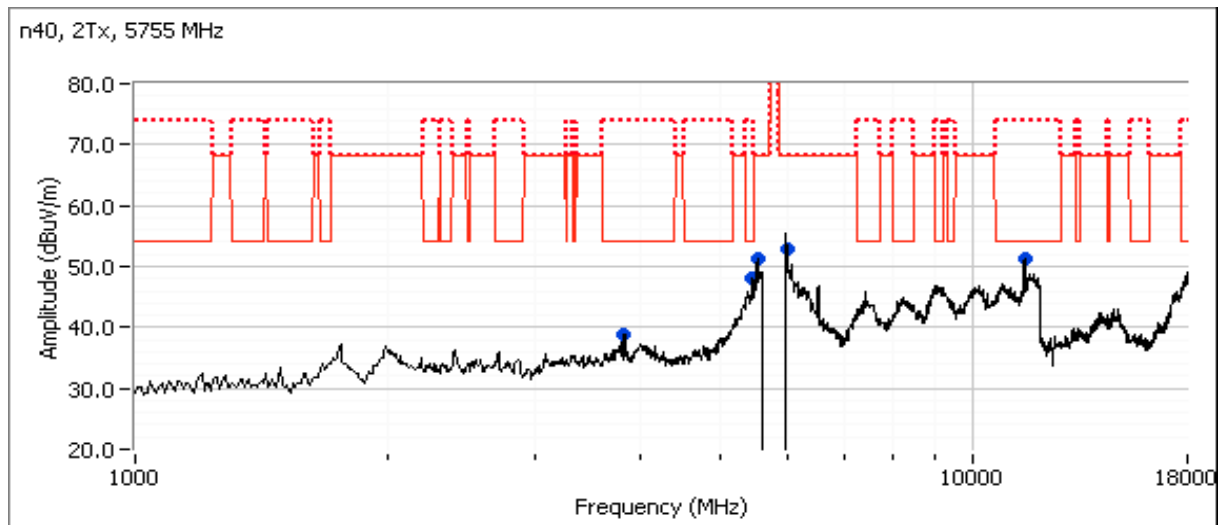
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7c: Center Channel

Channel: 151      Mode: 11n40  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |             | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|-------------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin      | Pk/QP/Avg | degrees | meters |                        |
| 5457.400  | 42.1   | H   | 54.0         | -11.9       | AVG       | 232     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5459.200  | 53.1   | H   | 74.0         | -20.9       | PK        | 232     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5992.890  | 57.2   | H   | 68.3         | -11.1       | PK        | 182     | 1.4    | RB 1 MHz;VB 3 MHz;Peak |
| 11510.520 | 45.7   | H   | 54.0         | <b>-8.3</b> | AVG       | 58      | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11515.490 | 56.3   | H   | 74.0         | -17.7       | PK        | 58      | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5547.460  | 51.3   | H   | 68.3         | -17.0       | Peak      | 249     | 1.9    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |





|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #8: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #7

Date of Test: 7/29/2015 0:00  
 Test Engineer: John Caizzi / R. Varelas  
 Test Location: Chamber 5

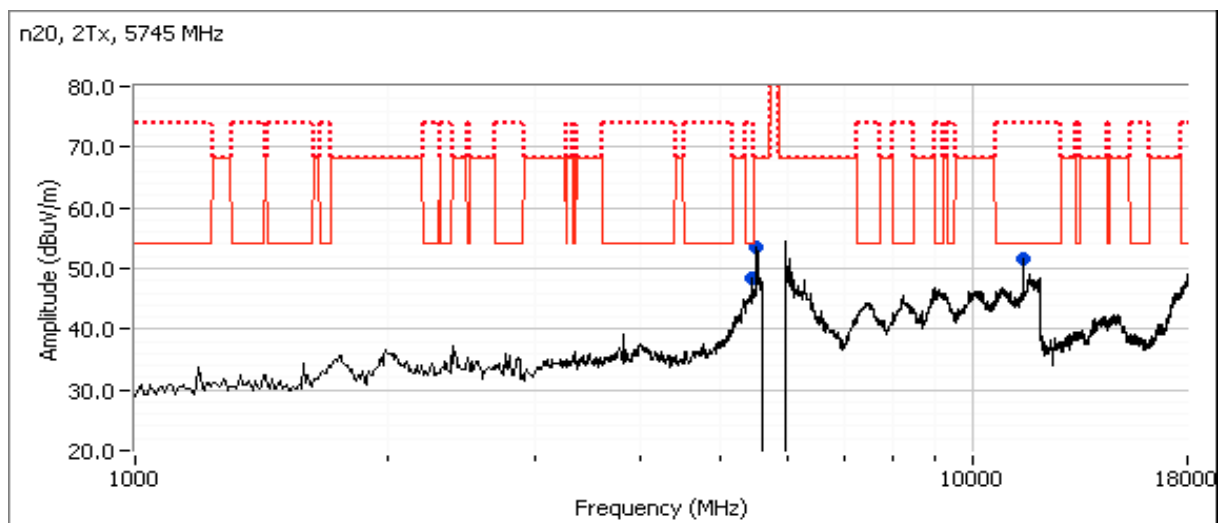
Config. Used: 1  
 Config Change: None  
 Host Voltage: USB

### Run #8a: Low Channel

Channel: 149 Mode: n20  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11489.190 | 48.0         | V   | 54.0            | -6.0   | AVG       | 252     | 2.3    | RB 1 MHz;VB 10 Hz;Peak |
| 11491.890 | 59.7         | V   | 74.0            | -14.3  | PK        | 252     | 2.3    | RB 1 MHz;VB 3 MHz;Peak |
| 5449.050  | 41.0         | H   | 54.0            | -13.0  | AVG       | 267     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5450.320  | 51.0         | H   | 74.0            | -23.0  | PK        | 267     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5527.160  | 57.8         | H   | 68.3            | -10.5  | PK        | 270     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



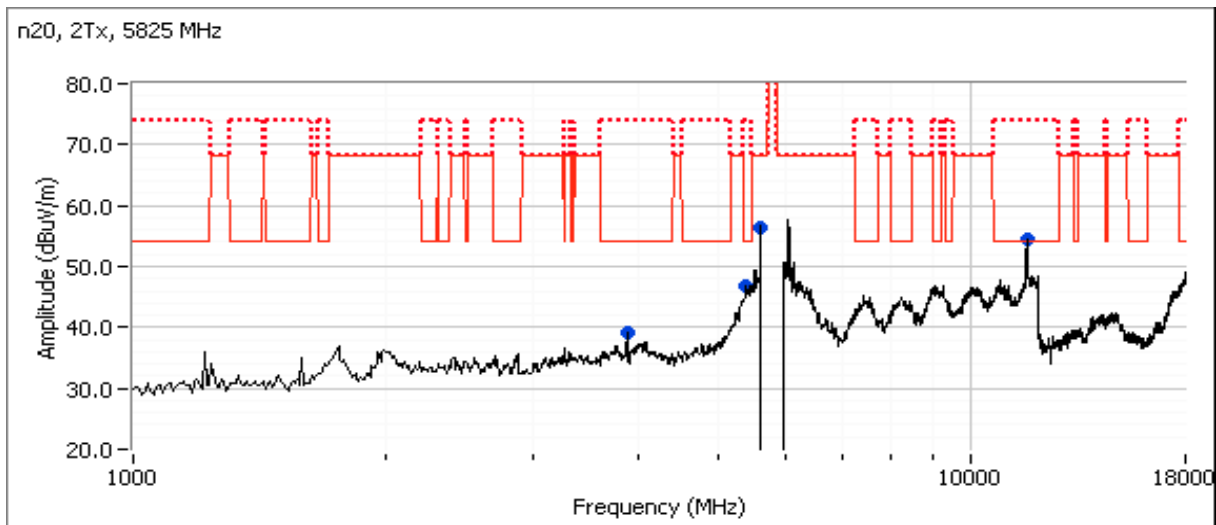
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #8b: High Channel

Channel: 165      Mode: n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11649.390 | 50.7   | V   | 54.0            | -3.3   | AVG       | 249     | 2.4    | RB 1 MHz;VB 10 Hz;Peak |
| 11648.820 | 63.6   | V   | 74.0            | -10.4  | PK        | 249     | 2.4    | RB 1 MHz;VB 3 MHz;Peak |
| 5600.000  | 61.1   | H   | 68.3            | -7.2   | PK        | 228     | 1.7    | RB 1 MHz;VB 3 MHz;Peak |
| 5398.580  | 41.3   | H   | 54.0            | -12.7  | AVG       | 269     | 1.3    | RB 1 MHz;VB 10 Hz;Peak |
| 5396.280  | 53.0   | H   | 74.0            | -21.0  | PK        | 269     | 1.3    | RB 1 MHz;VB 3 MHz;Peak |
| 3883.410  | 39.3   | H   | 54.0            | -14.7  | Peak      | 180     | 2.5    |                        |

|         |                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                     |
| Note 3  | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range. |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS 247 and FCC 15.407 (UNII) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.  
 For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

### Ambient Conditions:

Temperature: 22.4 °C  
 Rel. Humidity: 38 %

### Summary of Results

| Run #                | Mode    | Channel       | Target Power | Final Setting | Test Performed                   | Limit  | Result / Margin                    |
|----------------------|---------|---------------|--------------|---------------|----------------------------------|--------|------------------------------------|
| 20MHz Bandwith Modes |         |               |              |               |                                  |        |                                    |
| 1                    | a (1Tx) | 36 - 5180MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 53.7 dBµV/m @ 5150.0 MHz (-0.3 dB) |
| 2                    | a (1Tx) | 64 - 5320MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 53.0 dBµV/m @ 5350.0 MHz (-1.0 dB) |
| 3                    | a (1Tx) | 100 - 5500MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 48.8 dBµV/m @ 5460.0 MHz (-5.2 dB) |
|                      | a (1Tx) | 100 - 5500MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 53.5 dBµV/m @ 5470.0 MHz (-0.5 dB) |
|                      | a (1Tx) | 136 - 5680MHz | -            | -             | Band Edge 5725MHz                | 15E    | 47.6 dBµV/m @ 5760.1 MHz (-6.4 dB) |
|                      | a (1Tx) | 140 - 5700MHz | -            | -             | Band Edge 5725MHz                | 15E    | 53.8 dBµV/m @ 5725.0 MHz (-0.2 dB) |
| 4                    | a (1Tx) | 149 - 5745MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.4 dBµV/m @ 5715.0 MHz (-0.6 dB) |
|                      | a (1Tx) | 149 - 5745MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 77.6 dBµV/m @ 5724.9 MHz (-0.7 dB) |
|                      | a (1Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5860MHz             | 15E    | 65.6 dBµV/m @ 5862.7 MHz (-2.7 dB) |
|                      | a (1Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5850MHz             | 15E    | 74.0 dBµV/m @ 5853.6 MHz (-4.3 dB) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Mode      | Channel       | Target Power | Final Setting | Test Performed                   | Limit  | Result / Margin                    |
|-------|-----------|---------------|--------------|---------------|----------------------------------|--------|------------------------------------|
| 5     | n20 (1Tx) | 36 - 5180MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 53.5 dBμV/m @ 5150.0 MHz (-0.5 dB) |
| 6     | n20 (1Tx) | 64 - 5320MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 52.4 dBμV/m @ 5350.0 MHz (-1.6 dB) |
| 7     | n20 (1Tx) | 100 - 5500MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 49.1 dBμV/m @ 5459.8 MHz (-4.9 dB) |
|       | n20 (1Tx) | 100 - 5500MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 53.4 dBμV/m @ 5470.0 MHz (-0.6 dB) |
|       | n20 (1Tx) | 136 - 5680MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 68.8 dBμV/m @ 5728.1 MHz (-5.2 dB) |
|       | n20 (1Tx) | 140 - 5700MHz | -            | -             | Band Edge 5725MHz                | 15E    | 53.9 dBμV/m @ 5725.0 MHz (-0.1 dB) |
| 8     | n20 (1Tx) | 149 - 5745MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.4 dBμV/m @ 5715.0 MHz (-0.6 dB) |
|       | n20 (1Tx) | 149 - 5745MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 77.6 dBμV/m @ 5724.4 MHz (-0.7 dB) |
|       | n20 (1Tx) | 153 - 5765MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 50.2 dBμV/m @ 5715.0 MHz (-3.8 dB) |
|       | n20 (1Tx) | 153 - 5765MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 71.2 dBμV/m @ 5715.3 MHz (-7.1 dB) |
|       | n20 (1Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5860MHz             | 15E    | 71.4 dBμV/m @ 5862.8 MHz (-2.6 dB) |
|       | n20 (1Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5850MHz             | 15E    | 74.9 dBμV/m @ 5850.9 MHz (-3.4 dB) |
| 9     | n20 (2Tx) | 36 - 5180MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 74.0 dBμV/m @ 5149.8 MHz (0.0 dB)  |
|       | n20 (2Tx) | 40 - 5200MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 53.6 dBμV/m @ 5148.4 MHz (-0.4 dB) |
| 10    | n20 (2Tx) | 60 - 5300MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 49.7 dBμV/m @ 5383.8 MHz (-4.3 dB) |
|       | n20 (2Tx) | 64 - 5320MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 53.5 dBμV/m @ 5351.4 MHz (-0.5 dB) |

**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run #                 | Mode      | Channel       | Target Power | Final Setting | Test Performed                   | Limit  | Result / Margin                    |
|-----------------------|-----------|---------------|--------------|---------------|----------------------------------|--------|------------------------------------|
| 11                    | n20 (2Tx) | 100 - 5500MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 49.4 dBµV/m @ 5459.0 MHz (-4.6 dB) |
|                       | n20 (2Tx) | 100 - 5500MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 53.8 dBµV/m @ 5469.3 MHz (-0.2 dB) |
|                       | n20 (2Tx) | 136 - 5680MHz | -            | -             | Band Edge 5725MHz                | 15E    | 53.9 dBµV/m @ 5725.0 MHz (-0.1 dB) |
|                       | n20 (2Tx) | 140 - 5700MHz | -            | -             | Band Edge 5725MHz                | 15E    | 53.5 dBµV/m @ 5725.1 MHz (-0.5 dB) |
| 12                    | n20 (2Tx) | 149 - 5745MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.7 dBµV/m @ 5714.0 MHz (-0.3 dB) |
|                       | n20 (2Tx) | 149 - 5745MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 77.9 dBµV/m @ 5724.5 MHz (-0.4 dB) |
|                       | n20 (2Tx) | 153 - 5765MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.7 dBµV/m @ 5713.4 MHz (-0.3 dB) |
|                       | n20 (2Tx) | 153 - 5765MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 73.6 dBµV/m @ 5723.2 MHz (-4.7 dB) |
|                       | n20 (2Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5860MHz             | 15E    | 53.6 dBµV/m @ 5860.1 MHz (-0.4 dB) |
|                       | n20 (2Tx) | 165 - 5825MHz | -            | -             | Band Edge at 5850MHz             | 15E    | 75.3 dBµV/m @ 5855.1 MHz (-3.0 dB) |
| 40MHz Bandwidth Modes |           |               |              |               |                                  |        |                                    |
| 13                    | n40 (1Tx) | 38 - 5190MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 53.7 dBµV/m @ 5150.0 MHz (-0.3 dB) |
|                       | n40 (1Tx) | 46 - 5230MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 49.3 dBµV/m @ 5148.6 MHz (-4.7 dB) |
| 14                    | n40 (1Tx) | 62 - 5310MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 53.7 dBµV/m @ 5350.0 MHz (-0.3 dB) |
| 15                    | n40 (1Tx) | 102 - 5510MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 48.7 dBµV/m @ 5459.9 MHz (-5.3 dB) |
|                       | n40 (1Tx) | 102 - 5510MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 53.3 dBµV/m @ 5469.9 MHz (-0.7 dB) |
|                       | n40 (1Tx) | 110 - 5550MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 46.6 dBµV/m @ 5458.2 MHz (-7.4 dB) |
|                       | n40 (1Tx) | 110 - 5550MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 46.7 dBµV/m @ 5465.8 MHz (-7.3 dB) |
|                       | n40 (1Tx) | 134 - 5670MHz | -            | -             | Band Edge 5725MHz                | 15E    | 50.4 dBµV/m @ 5725.0 MHz (-3.6 dB) |

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Mode      | Channel       | Target Power | Final Setting | Test Performed                   | Limit  | Result / Margin                    |
|-------|-----------|---------------|--------------|---------------|----------------------------------|--------|------------------------------------|
| 16    | n40 (1Tx) | 151 - 5755MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.3 dBμV/m @ 5715.0 MHz (-0.7 dB) |
|       | n40 (1Tx) | 151 - 5755MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 75.6 dBμV/m @ 5723.9 MHz (-2.7 dB) |
|       | n40 (1Tx) | 159 - 5795MHz | -            | -             | Band Edge at 5860MHz             | 15E    | 53.7 dBμV/m @ 5860.1 MHz (-0.3 dB) |
|       | n40 (1Tx) | 159 - 5795MHz | -            | -             | Band Edge at 5850MHz             | 15E    | 72.1 dBμV/m @ 5851.0 MHz (-6.2 dB) |
| 17    | n40 (2Tx) | 38 - 5190MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 53.7 dBμV/m @ 5150.0 MHz (-0.3 dB) |
|       | n40 (2Tx) | 46 - 5230MHz  | -            | -             | Restricted Band Edge at 5150 MHz | 15.209 | 52.7 dBμV/m @ 5149.9 MHz (-1.3 dB) |
| 18    | n40 (2Tx) | 54 - 5270MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 50.3 dBμV/m @ 5350.0 MHz (-3.7 dB) |
|       | n40 (2Tx) | 62 - 5310MHz  | -            | -             | Restricted Band Edge at 5350 MHz | 15.209 | 53.4 dBμV/m @ 5351.3 MHz (-0.6 dB) |
| 19    | n40 (2Tx) | 102 - 5510MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 48.7 dBμV/m @ 5459.8 MHz (-5.3 dB) |
|       | n40 (2Tx) | 102 - 5510MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 53.9 dBμV/m @ 5469.8 MHz (-0.1 dB) |
|       | n40 (2Tx) | 110 - 5550MHz | -            | -             | Restricted Band Edge at 5460 MHz | 15.209 | 46.1 dBμV/m @ 5459.0 MHz (-7.9 dB) |
|       | n40 (2Tx) | 110 - 5550MHz | -            | -             | Band Edge 5460 - 5470 MHz        | 15E    | 61.8 dBμV/m @ 5460.5 MHz (-6.5 dB) |
|       | n40 (2Tx) | 134 - 5670MHz | -            | -             | Band Edge 5725MHz                | 15E    | 53.2 dBμV/m @ 5725.5 MHz (-0.8 dB) |
| 20    | n40 (2Tx) | 151 - 5755MHz | -            | -             | Band Edge at 5715 MHz            | 15E    | 53.6 dBμV/m @ 5713.9 MHz (-0.4 dB) |
|       | n40 (2Tx) | 151 - 5755MHz | -            | -             | Band Edge 5715 - 5725 MHz        | 15E    | 73.6 dBμV/m @ 5717.5 MHz (-4.7 dB) |
|       | n40 (2Tx) | 159 - 5795MHz | -            | -             | Band Edge at 5860MHz             | 15E    | 53.2 dBμV/m @ 5861.6 MHz (-0.8 dB) |
|       | n40 (2Tx) | 159 - 5795MHz | -            | -             | Band Edge at 5850MHz             | 15E    | 72.7 dBμV/m @ 5851.8 MHz (-5.6 dB) |



## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

### Notes

Testing performed at 1.5m per C63.10

n20 2Tx was tested as representative of 11a 2Tx

n20 / n40 tested in CDD mode as representative of STBC operation

Worse case chain for 1Tx operation was determined from preliminary testing

### Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle  $\geq 98\%$  and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

| Mode | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a  | 6Mb/s     | 98.2%          | Yes          | 1.405  | 0               | 0                     | 10                  |
| n20  | MCS0      | 98.1%          | Yes          | 1.309  | 0               | 0                     | 10                  |
| n40  | MCS0      | 98.0%          | Yes          | 0.932  | 0               | 0                     | 10                  |

### Sample Notes

Sample S/N: 707781772509

Driver: 6.37 RC214 .12

Antenna: External

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Measurement Specific Notes:

|         |                                                                                                                                                                                                                                                                                                                 |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative. |
| Note 2: | Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces                                                                                                                                                                    |
| Note 4: | Emission has duty cycle < 98%, average measurement performed: RBW=1MHz, VBW> 1/T, peak detector, linear average mode, sweep time auto, max hold. Max hold for 50*(1/DC) traces                                                                                                                                  |
| Note 5: | Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Pwr correction factor                                                                                               |
| Note 6: | Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabular results for final measurements.                                                                                                                                                                       |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/14/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

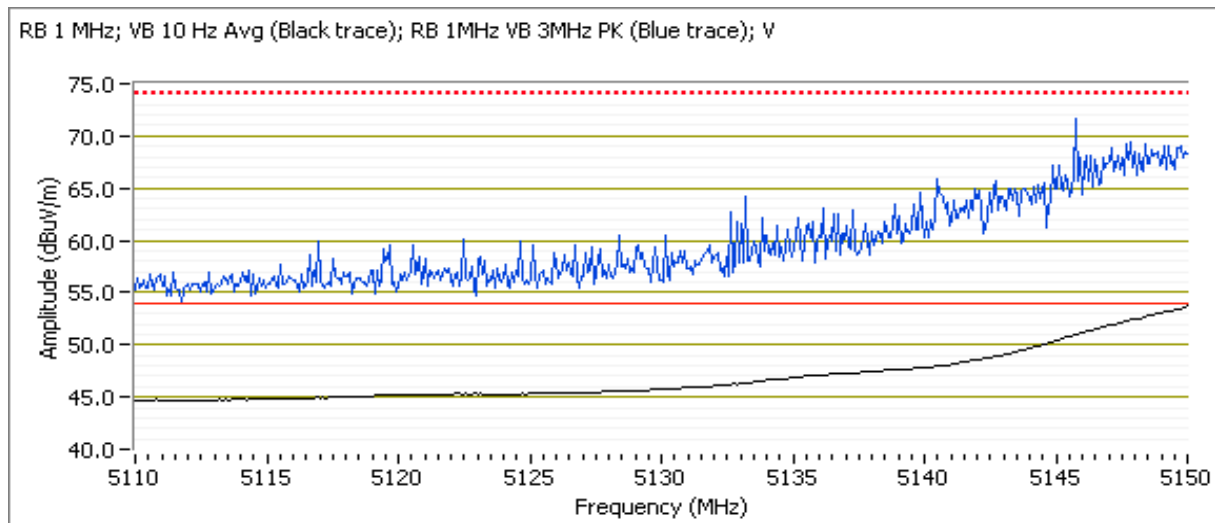
Config. Used: 1  
 Config Change: None  
 EUT Voltage: 120V/60Hz

Channel: 36 - 5180 MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.7         | V   | 54.0       | -0.3   | AVG       | 201     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5147.350  | 72.5         | V   | 74.0       | -1.5   | PK        | 201     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |
| 5150.000  | 48.6         | H   | 54.0       | -5.4   | AVG       | 131     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.320  | 62.7         | H   | 74.0       | -11.3  | PK        | 131     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



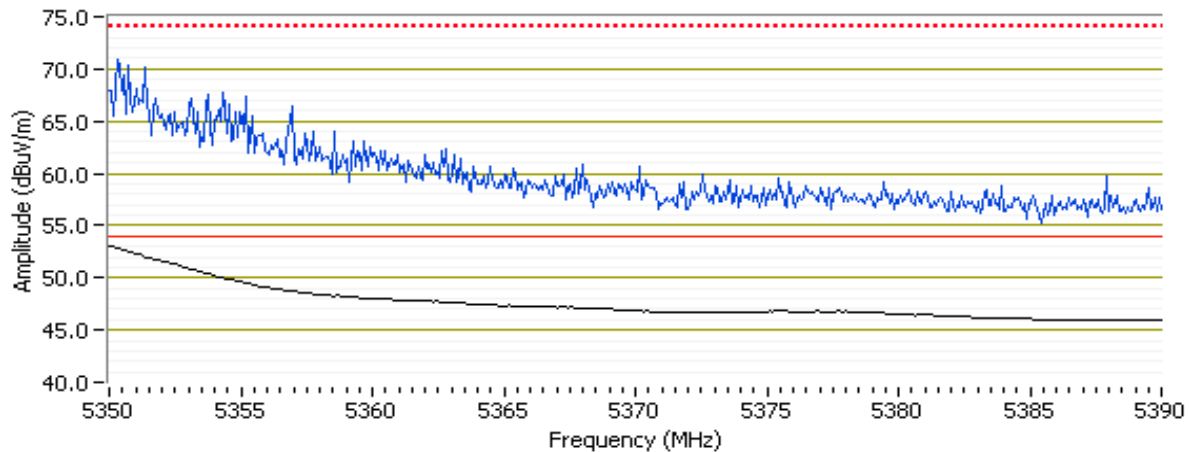
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 64 - 5320MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 53.0         | V   | 54.0       | -1.0   | AVG       | 152     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.320  | 69.6         | V   | 74.0       | -4.4   | PK        | 152     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.000  | 48.6         | H   | 54.0       | -5.4   | AVG       | 203     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5355.130  | 64.5         | H   | 74.0       | -9.5   | PK        | 203     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #3: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/14/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

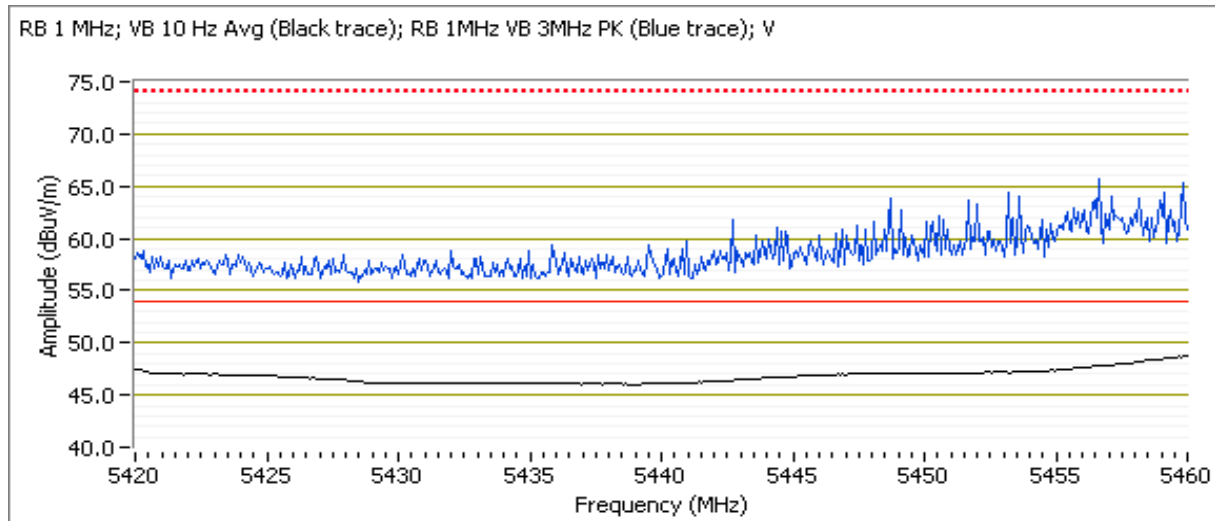
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 100 - 5500MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.000  | 48.8         | V   | 54.0       | -5.2   | AVG       | 152     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.240  | 65.3         | V   | 74.0       | -8.7   | PK        | 152     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |
| 5459.920  | 46.4         | H   | 54.0       | -7.6   | AVG       | 63      | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5457.270  | 63.7         | H   | 74.0       | -10.3  | PK        | 63      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

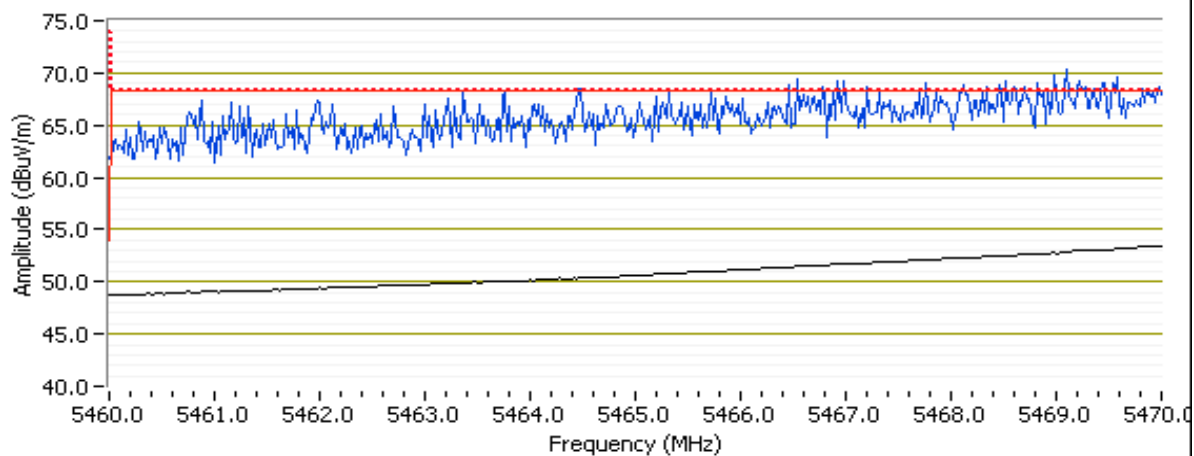


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                        |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|---------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                 |
| 5469.960  | 53.5         | V   | 54.0  | -0.5   | AVG       | 152     | 1.1    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5468.140  | 70.5         | V   | 74.0  | -3.5   | PK        | 152     | 1.1    | Note 1,POS; RB 1 MHz; VB: 3 MHz |
| 5470.000  | 50.9         | H   | 54.0  | -3.1   | AVG       | 63      | 1.2    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5466.270  | 67.5         | H   | 74.0  | -6.5   | PK        | 63      | 1.2    | Note 1,POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



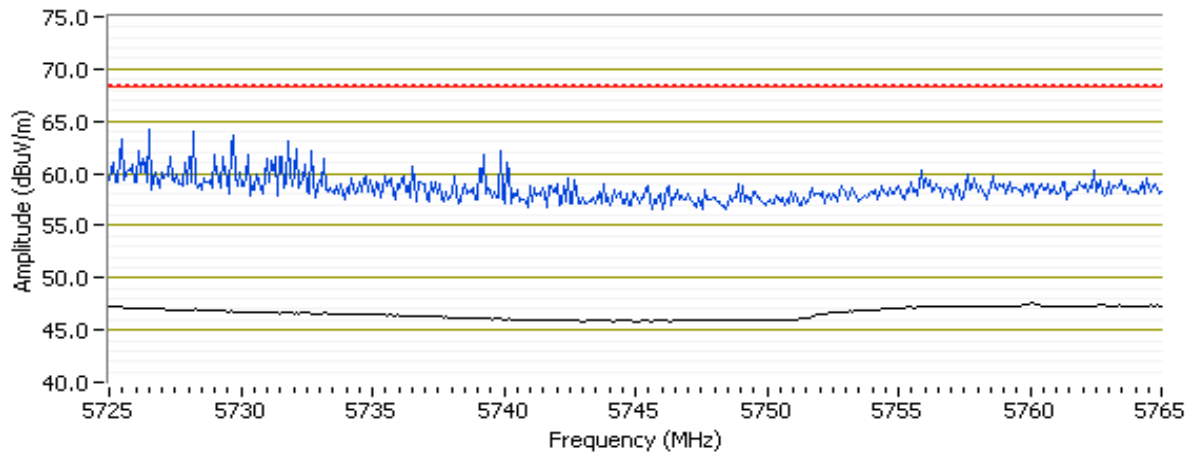
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 136 - 5680MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5760.110  | 47.6         | V   | 54.0  | -6.4   | AVG       | 199     | 1.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5732.860  | 64.7         | V   | 74.0  | -9.3   | PK        | 199     | 1.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5725.400  | 44.7         | H   | 54.0  | -9.3   | AVG       | 76      | 1.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5740.150  | 56.8         | H   | 74.0  | -17.2  | PK        | 76      | 1.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5740.150  | 56.8         | H   | 68.3  | -11.5  | PK        | 76      | 1.0    | POS; RB 1 MHz; VB: 3 MHz         |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



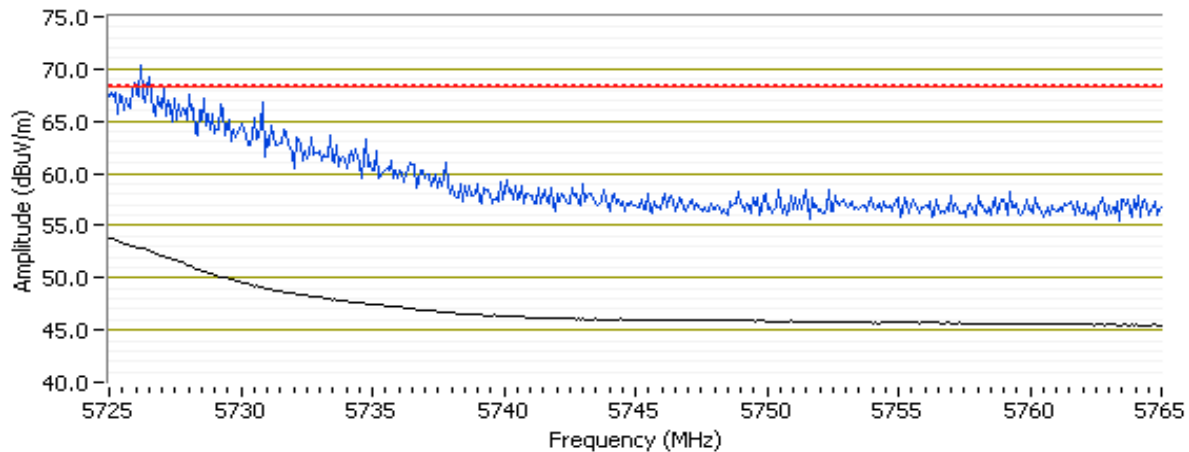
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                        |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|---------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                 |
| 5725.000  | 53.8         | V   | 54.0  | -0.2   | AVG       | 168     | 1.4    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5727.480  | 70.2         | V   | 74.0  | -3.8   | PK        | 168     | 1.4    | Note 1,POS; RB 1 MHz; VB: 3 MHz |
| 5725.000  | 49.5         | H   | 54.0  | -4.5   | AVG       | 220     | 2.4    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5727.240  | 65.3         | H   | 74.0  | -8.7   | PK        | 220     | 2.4    | Note 1,POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V





## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

### Run #4: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/21/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

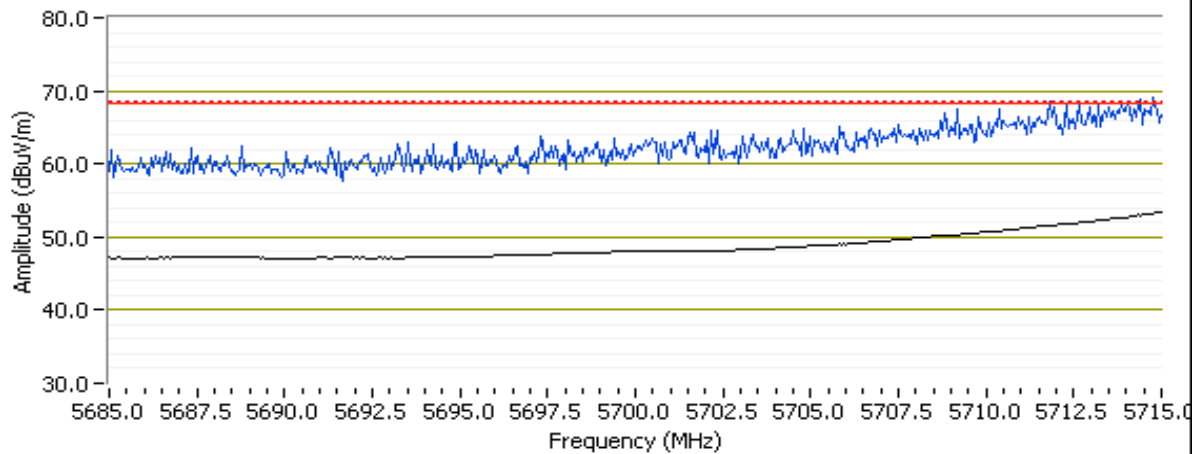
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6 Mbps

### 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5715.000  | 53.4         | V   | 54.0  | -0.6   | AVG       | 172     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5714.760  | 69.5         | V   | 74.0  | -4.5   | PK        | 172     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

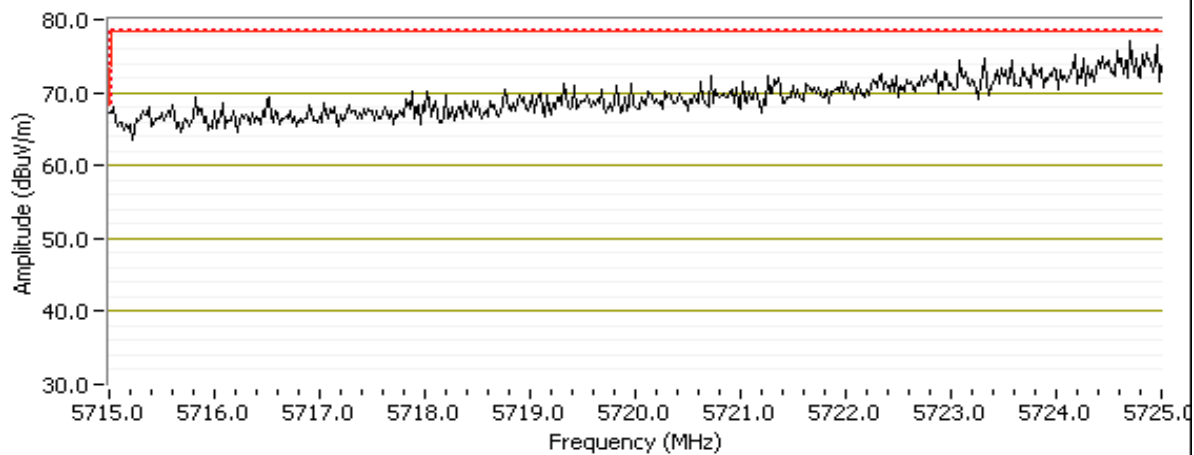


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.880  | 77.6         | V   | 78.3  | -0.7   | PK        | 172     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 3 MHz; V





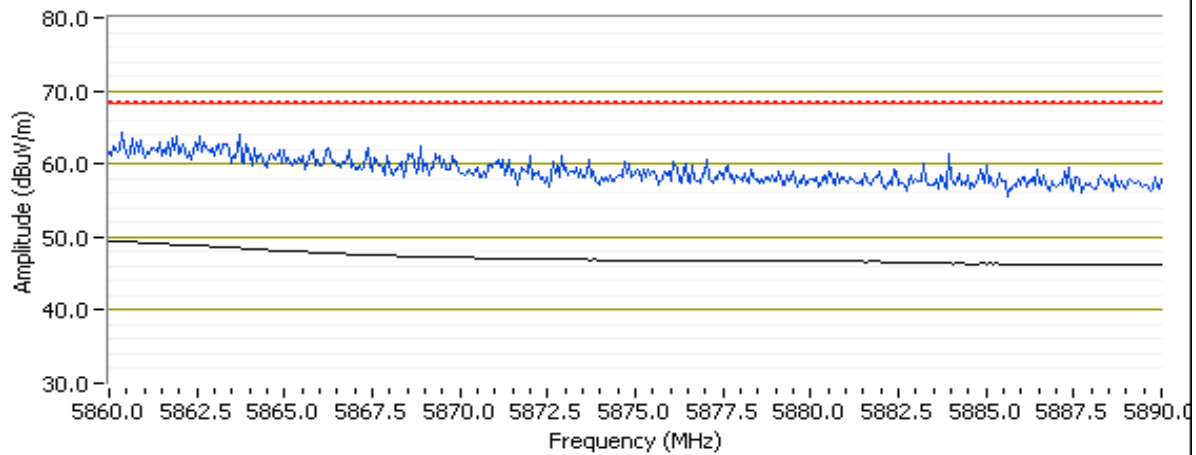
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6 Mbps

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5862.650  | 65.6   | V   | 68.3  | -2.7   | PK        | 197     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

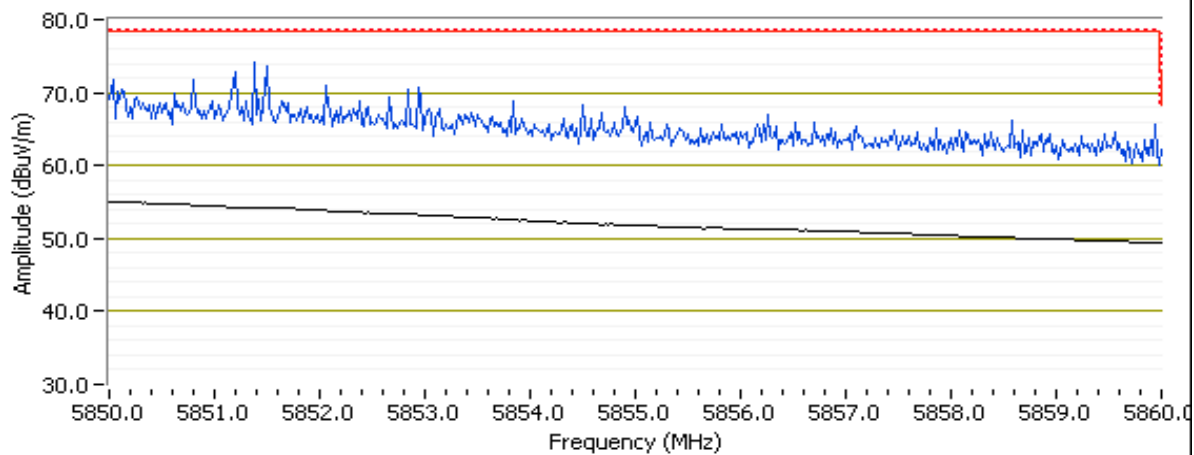


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5853.630  | 74.0         | V   | 78.3  | -4.3   | PK        | 197     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #5: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

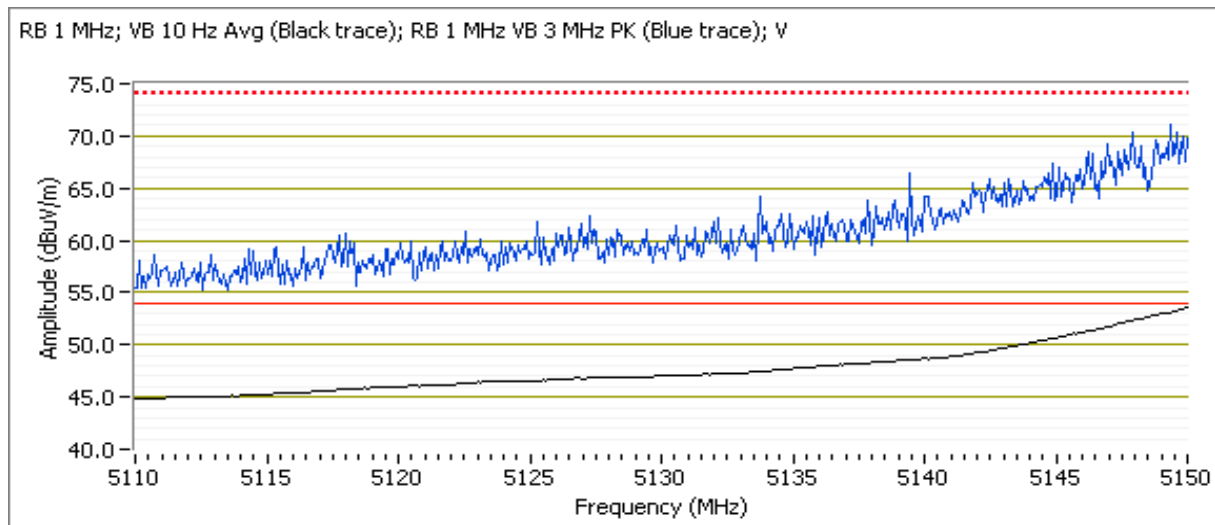
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 36 - 5180 MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.5         | V   | 54.0       | -0.5   | AVG       | 157     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5145.350  | 72.0         | V   | 74.0       | -2.0   | PK        | 157     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |
| 5150.000  | 50.4         | H   | 54.0       | -3.6   | AVG       | 73      | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.960  | 66.3         | H   | 74.0       | -7.7   | PK        | 73      | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #6: Radiated Bandedge Measurements, 5250-5350MHz

Channel: 64 - 5320MHz

Tx Chain: Main

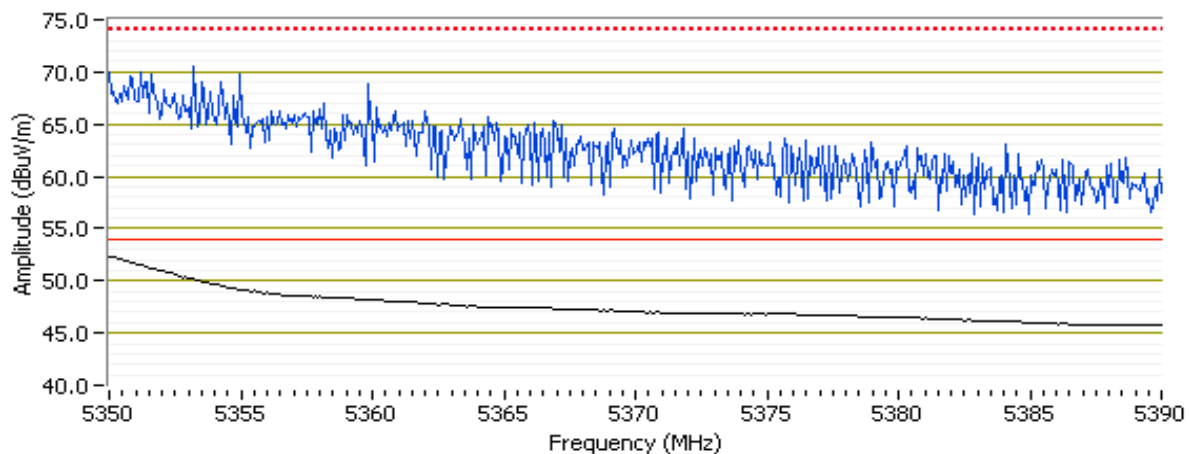
Mode: n20

Data Rate: MCS0

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 52.4         | V   | 54.0       | -1.6   | AVG       | 172     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5351.120  | 70.4         | V   | 74.0       | -3.6   | PK        | 172     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.000  | 49.3         | H   | 54.0       | -4.7   | AVG       | 210     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.800  | 63.6         | H   | 74.0       | -10.4  | PK        | 210     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 20 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #7: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

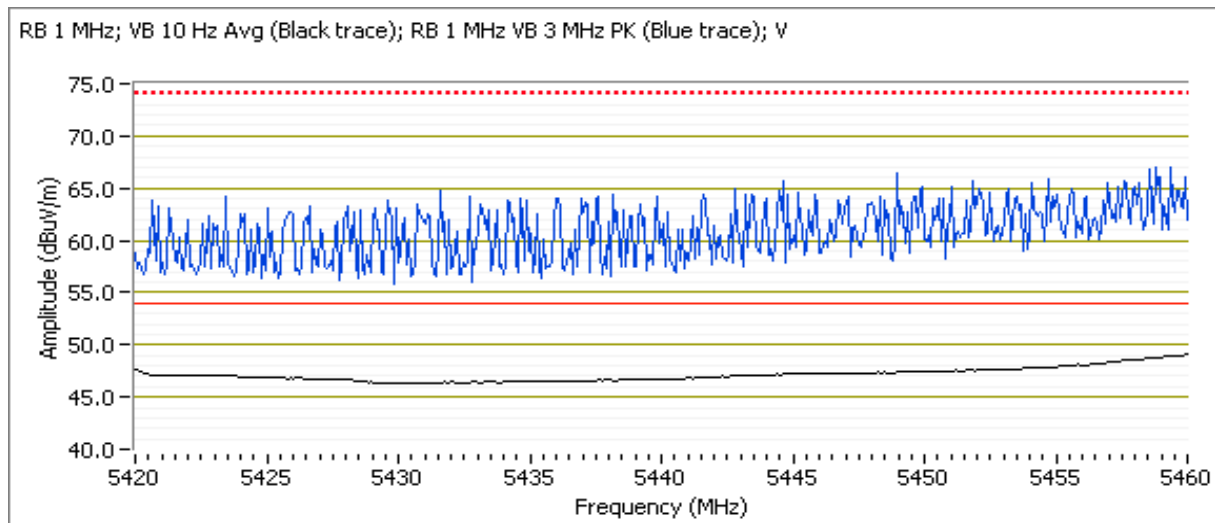
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 100 - 5500MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5459.840  | 49.1         | V   | 54.0       | -4.9   | AVG       | 172     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.880  | 66.7         | V   | 74.0       | -7.3   | PK        | 172     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |
| 5460.000  | 46.0         | H   | 54.0       | -8.0   | AVG       | 57      | 2.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5460.000  | 61.7         | H   | 74.0       | -12.3  | PK        | 57      | 2.6    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V

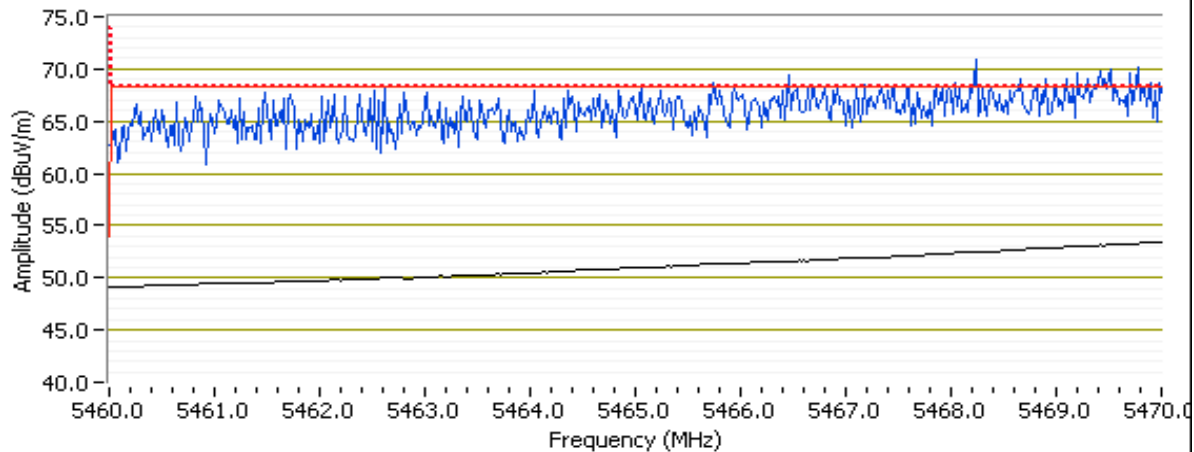


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5470.000  | 53.4         | V   | 54.0  | -0.6   | AVG       | 172     | 1.4    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5469.860  | 71.5         | V   | 74.0  | -2.5   | PK        | 172     | 1.4    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5469.960  | 49.0         | H   | 54.0  | -5.0   | AVG       | 57      | 2.6    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5468.660  | 65.8         | H   | 74.0  | -8.2   | PK        | 57      | 2.6    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 136 - 5680MHz

Tx Chain: Main

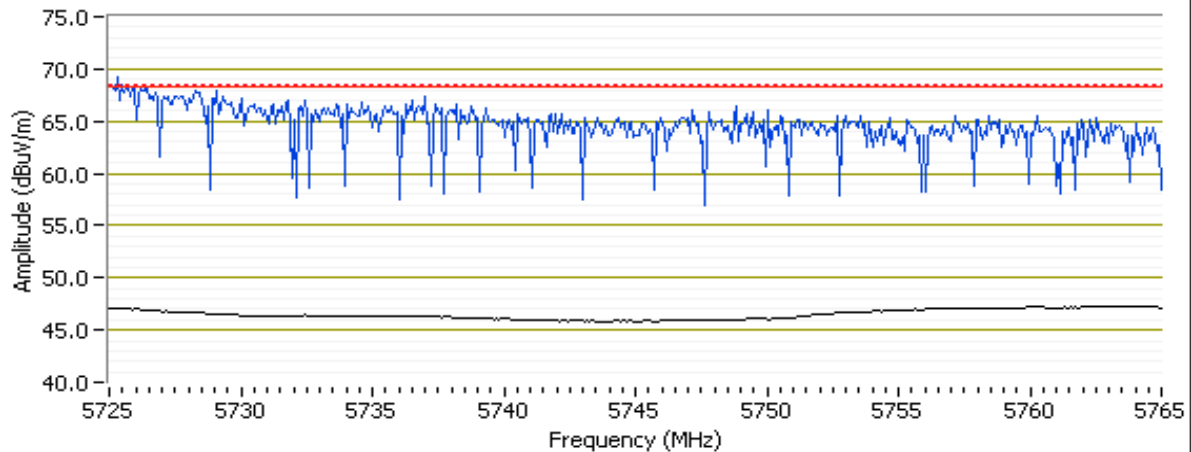
Mode: n20

Data Rate: MCS0

### 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5762.350  | 47.3         | V   | 54.0  | -6.7   | AVG       | 175     | 1.2    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5728.050  | 68.8         | V   | 74.0  | -5.2   | PK        | 175     | 1.2    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5725.320  | 44.9         | H   | 54.0  | -9.1   | AVG       | 177     | 1.6    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5738.310  | 60.9         | H   | 74.0  | -13.1  | PK        | 177     | 1.6    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



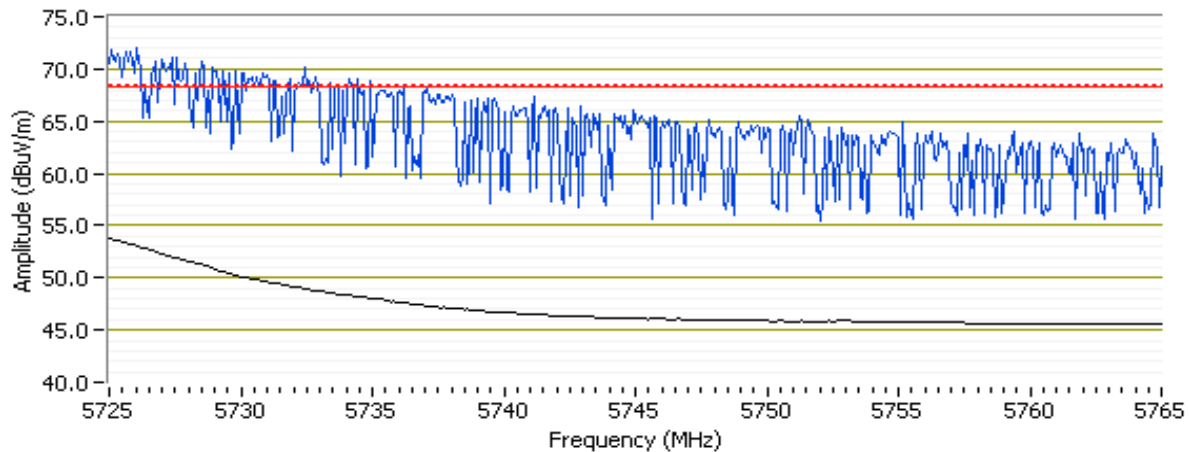
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5725.000  | 53.9         | V   | 54.0  | -0.1   | AVG       | 197     | 2.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5727.730  | 71.7         | V   | 74.0  | -2.3   | PK        | 197     | 2.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5725.000  | 48.9         | H   | 54.0  | -5.1   | AVG       | 228     | 1.0    | POS; RB 1 MHz; VB: 10 Hz         |
| 5727.890  | 65.7         | H   | 74.0  | -8.3   | PK        | 228     | 1.0    | POS; RB 1 MHz; VB: 3 MHz         |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V





|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #8: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/22/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

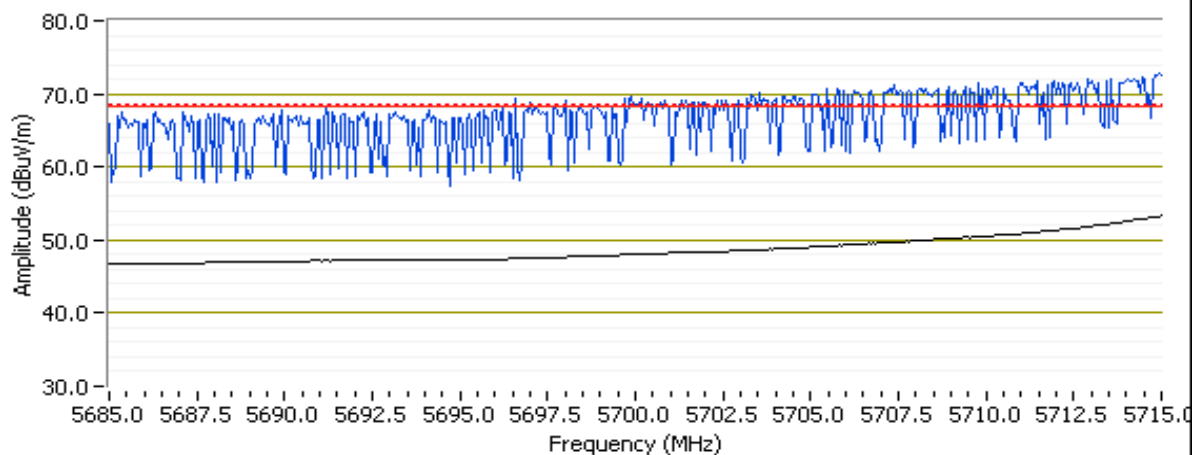
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5715.000  | 53.4         | V   | 54.0  | -0.6   | AVG       | 192     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5714.700  | 72.7         | V   | 74.0  | -1.3   | PK        | 192     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

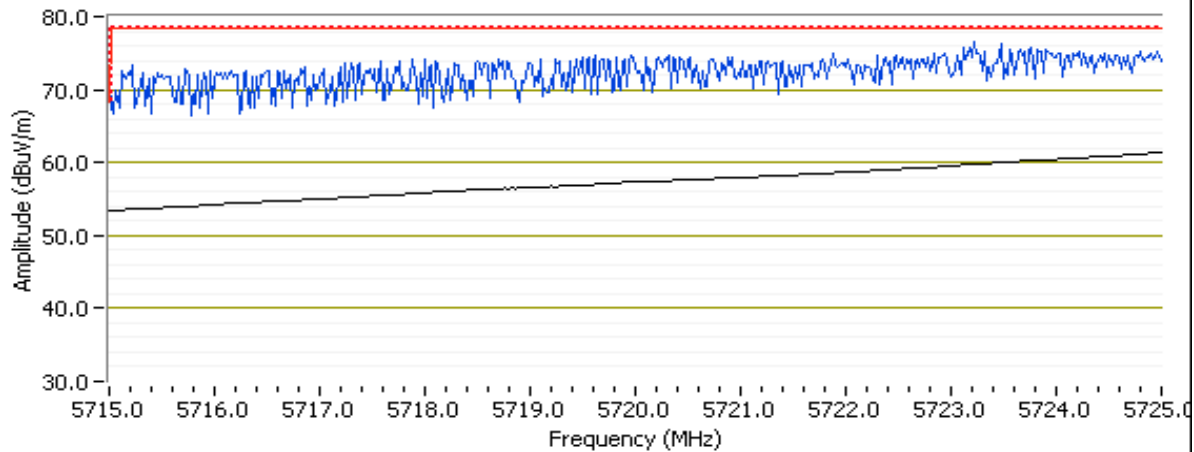


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.420  | 77.6         | V   | 78.3  | -0.7   | PK        | 192     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



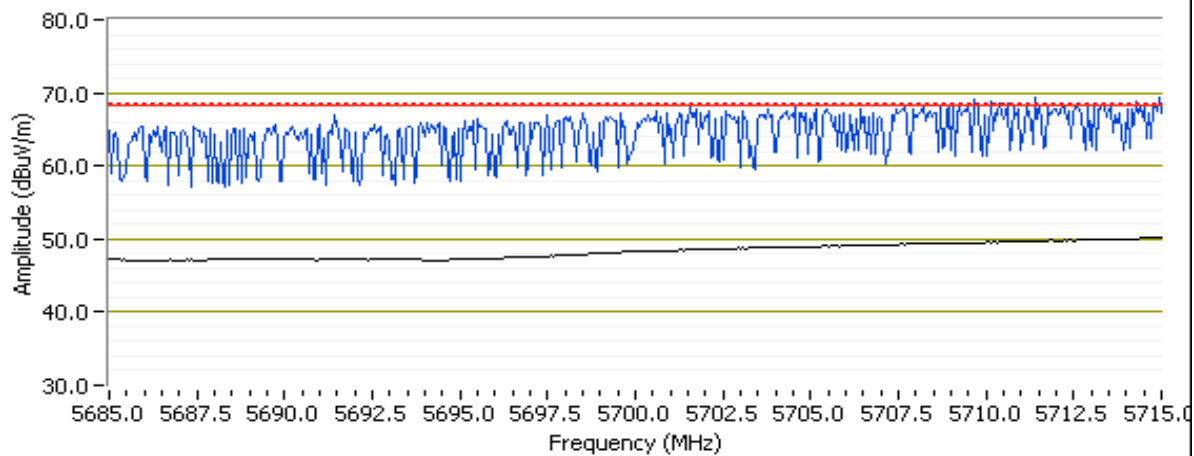
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 153 - 5765MHz  
 Tx Chain: Main  
 Mode: n20  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBuV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5715.000  | 50.2   | V   | 54.0  | -3.8   | AVG       | 177     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5700.990  | 68.9   | V   | 74.0  | -5.1   | PK        | 177     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

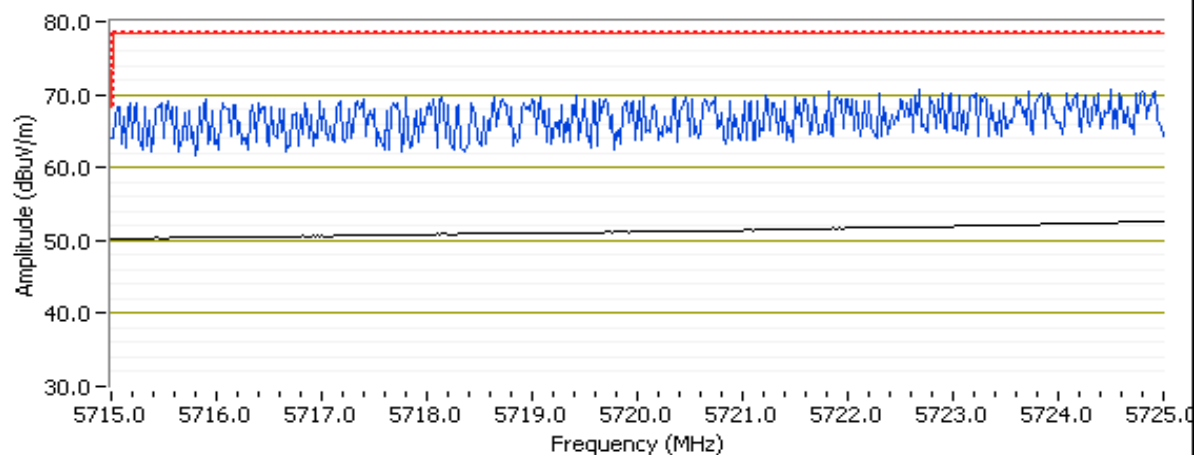


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5715.260  | 71.2         | V   | 78.3  | -7.1   | PK        | 177     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz

Tx Chain: Main

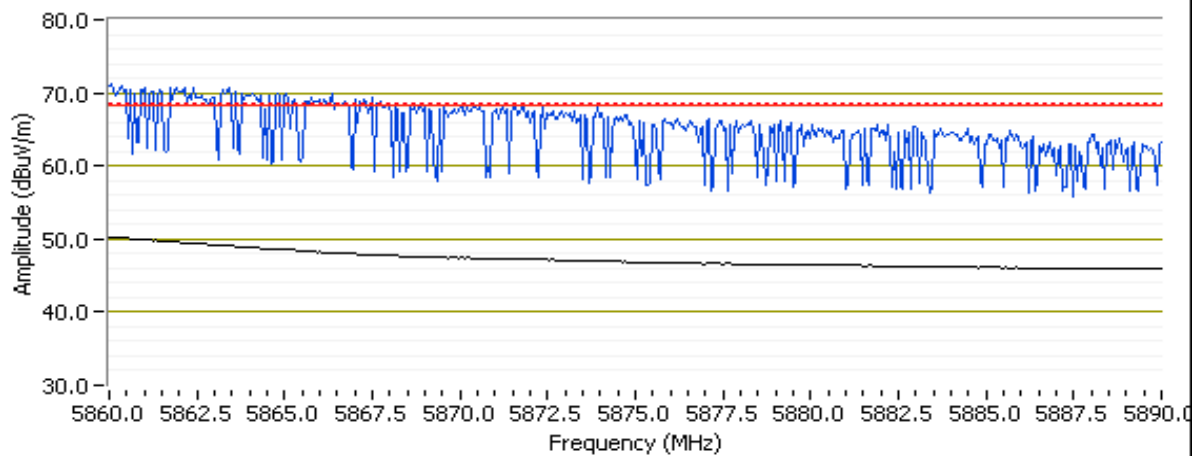
Mode: n20

Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.000  | 50.4         | V   | 54.0  | -3.6   | AVG       | 195     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5862.830  | 71.4         | V   | 74.0  | -2.6   | PK        | 195     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

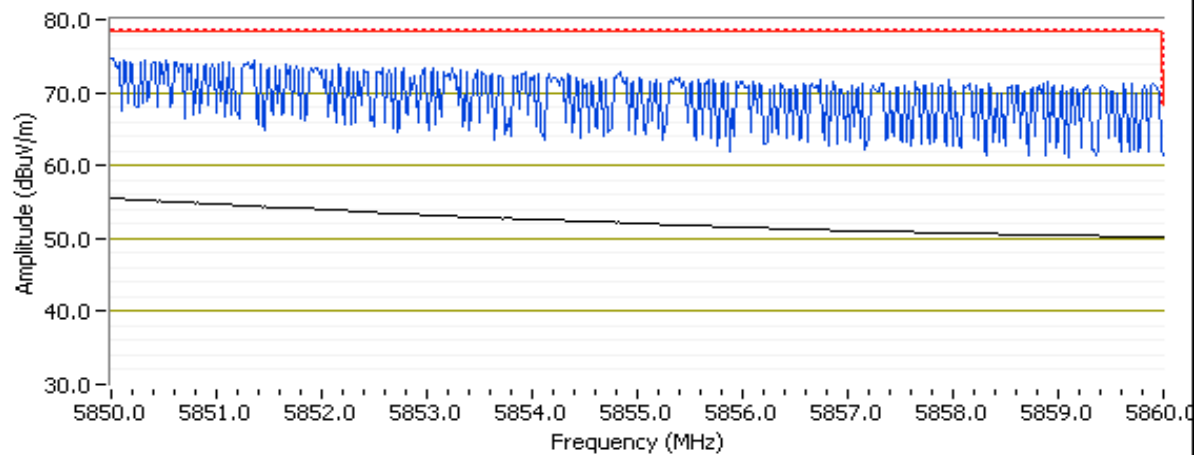


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5850.920  | 74.9         | V   | 78.3  | -3.4   | PK        | 195     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #9: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Eddie Mariscal  
 Test Location: FT Chamber #5

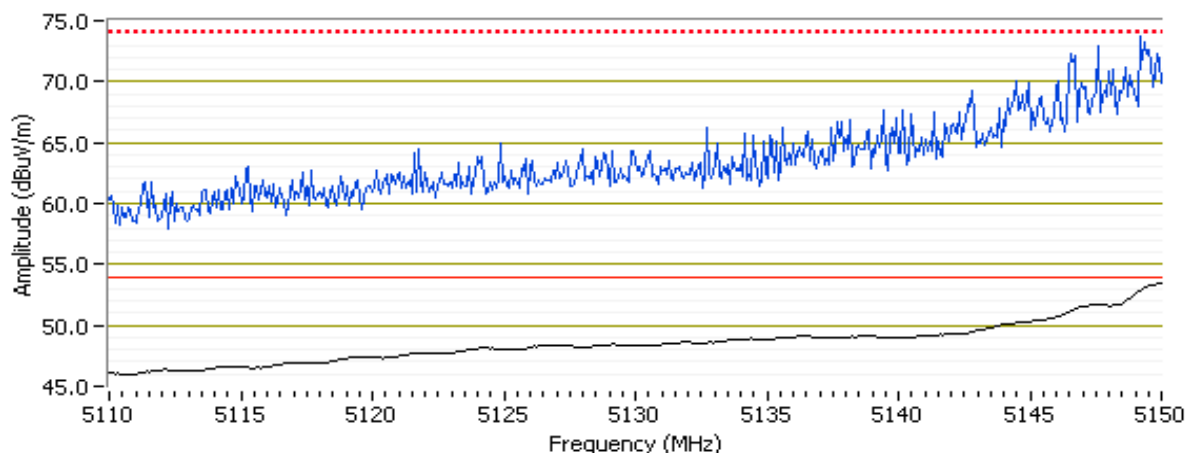
Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Channel: 36 - 5180 MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5149.830  | 74.0         | V   | 74.0       | 0.0    | PK        | 134     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |
| 5149.790  | 53.4         | V   | 54.0       | -0.6   | AVG       | 134     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.110  | 49.9         | H   | 54.0       | -4.1   | AVG       | 128     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.180  | 70.2         | H   | 74.0       | -3.8   | PK        | 128     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |
| 5032.540  | 50.1         | V   | 54.0       | -3.9   | AVG       | 135     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5027.620  | 61.9         | V   | 74.0       | -12.1  | PK        | 135     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



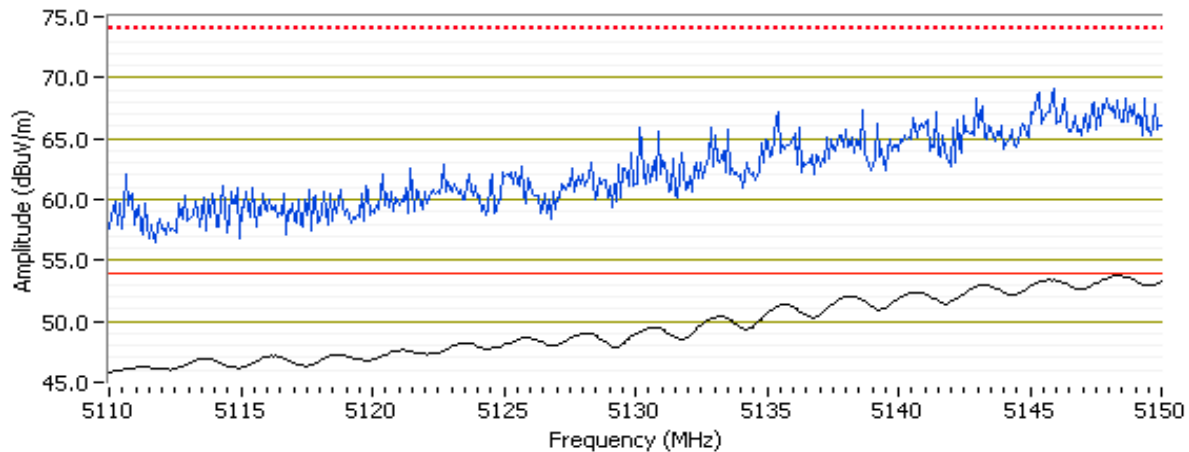
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 40 - 5200 MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5148.410  | 53.6         | V   | 54.0       | -0.4   | AVG       | 177     | 1.7    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.490  | 71.0         | V   | 74.0       | -3.0   | PK        | 177     | 1.7    | POS; RB 1 MHz; VB: 3 MHz |
| 5148.340  | 50.5         | H   | 54.0       | -3.5   | AVG       | 71      | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.060  | 67.0         | H   | 74.0       | -7.0   | PK        | 71      | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol





|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #10: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Aika Hirano  
 Test Location: FT Chamber #5

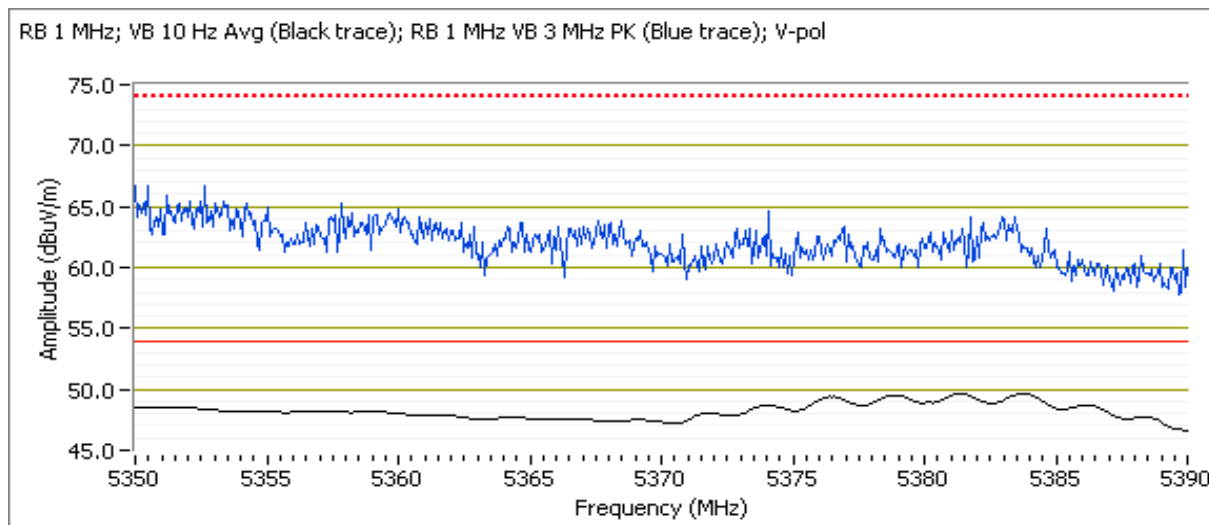
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 60 - 5300MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency       | Level        | Pol | FCC 15.209 |             | Detector  | Azimuth | Height | Comments                 |
|-----------------|--------------|-----|------------|-------------|-----------|---------|--------|--------------------------|
| MHz             | dB $\mu$ V/m | v/h | Limit      | Margin      | Pk/QP/Avg | degrees | meters |                          |
| <b>5383.750</b> | <b>49.7</b>  | V   | 54.0       | <b>-4.3</b> | AVG       | 175     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5381.940        | 46.5         | H   | 54.0       | -7.5        | AVG       | 133     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5376.410        | 64.6         | V   | 74.0       | -9.4        | PK        | 175     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |
| 5378.820        | 59.8         | H   | 74.0       | -14.2       | PK        | 133     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



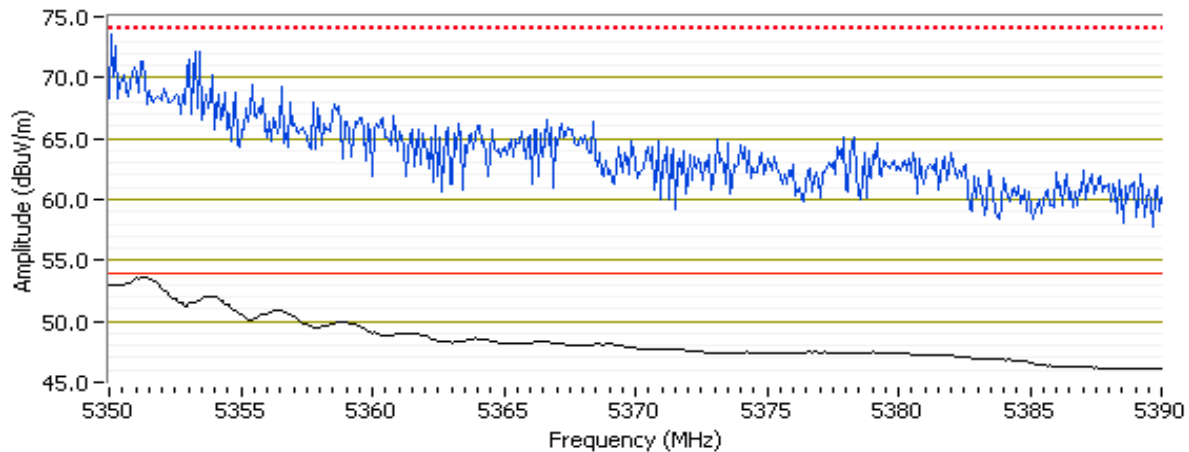
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 64 - 5320MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5351.440  | 53.5         | V   | 54.0       | -0.5   | AVG       | 193     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.650  | 72.4         | V   | 74.0       | -1.6   | PK        | 193     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.040  | 50.7         | H   | 54.0       | -3.3   | AVG       | 134     | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.160  | 67.6         | H   | 74.0       | -6.4   | PK        | 134     | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #11: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Eddie Mariscal  
 Test Location: FT Chamber #5

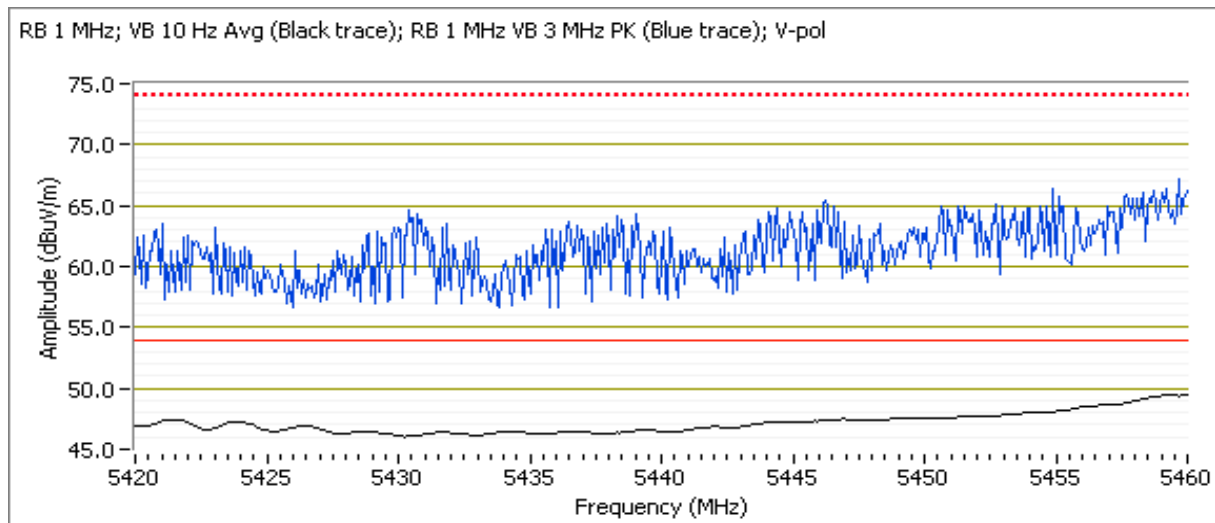
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 100 - 5500MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5459.040  | 49.4         | V   | 54.0       | -4.6   | AVG       | 188     | 1.8    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.400  | 66.0         | V   | 74.0       | -8.0   | PK        | 188     | 1.8    | POS; RB 1 MHz; VB: 3 MHz |
| 5460.000  | 46.9         | H   | 54.0       | -7.1   | AVG       | 34      | 1.6    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.320  | 62.5         | H   | 74.0       | -11.5  | PK        | 34      | 1.6    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol

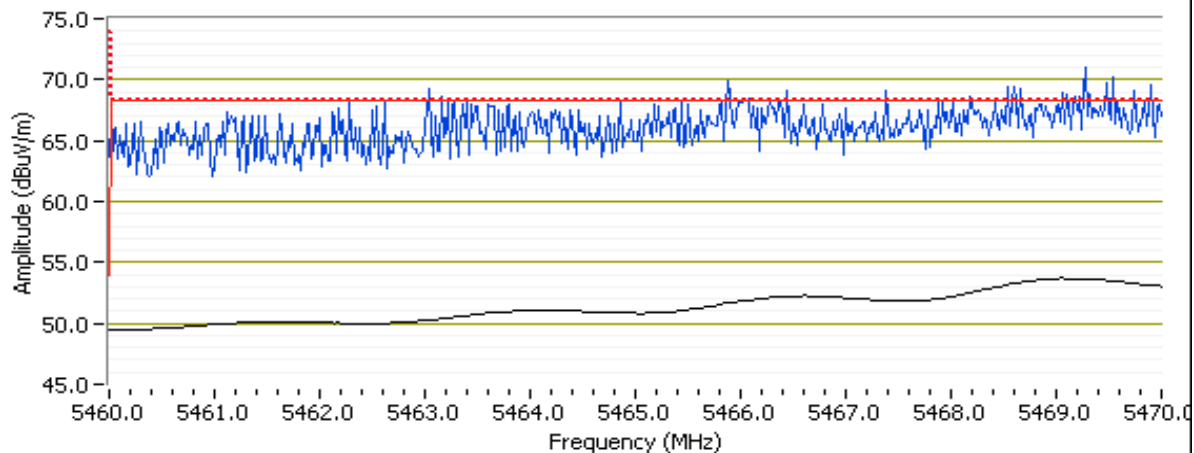


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |          |
| 5469.280  | 53.8         | V   | 54.0  | -0.2   | AVG       | 188     | 1.8    | Note 1   |
| 5468.280  | 70.2         | V   | 74.0  | -3.8   | PK        | 188     | 1.8    | Note 1   |
| 5470.000  | 50.9         | H   | 54.0  | -3.1   | AVG       | 34      | 1.6    | Note 1   |
| 5467.210  | 66.8         | H   | 74.0  | -7.2   | PK        | 34      | 1.6    | Note 1   |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



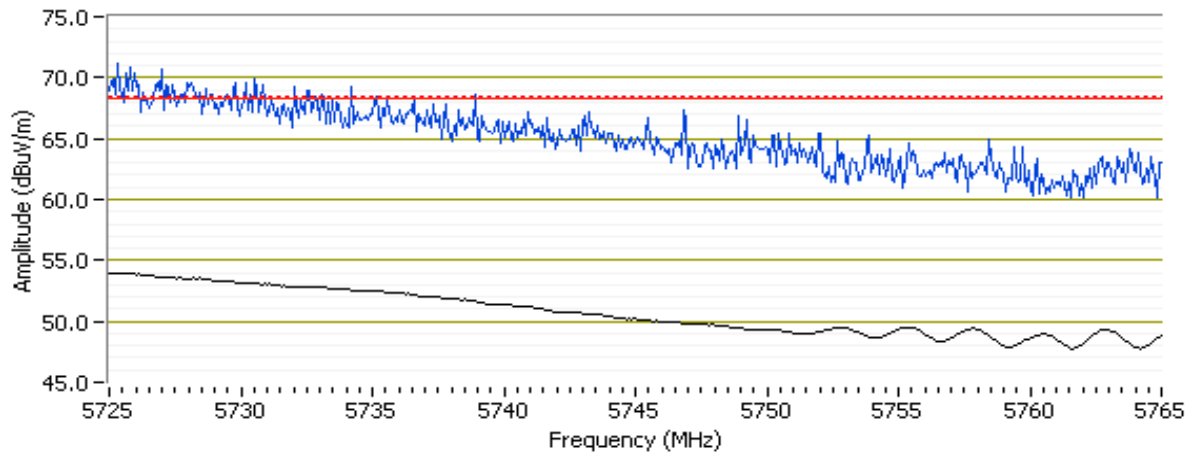
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 136 - 5180MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5725.000  | 53.9   | V   | 54.0  | -0.1   | AVG       | 140     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5726.120  | 71.1   | V   | 74.0  | -2.9   | PK        | 140     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |
| 5725.080  | 50.3   | H   | 54.0  | -3.7   | AVG       | 60      | 1.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5726.540  | 68.3   | H   | 74.0  | -5.7   | PK        | 60      | 1.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



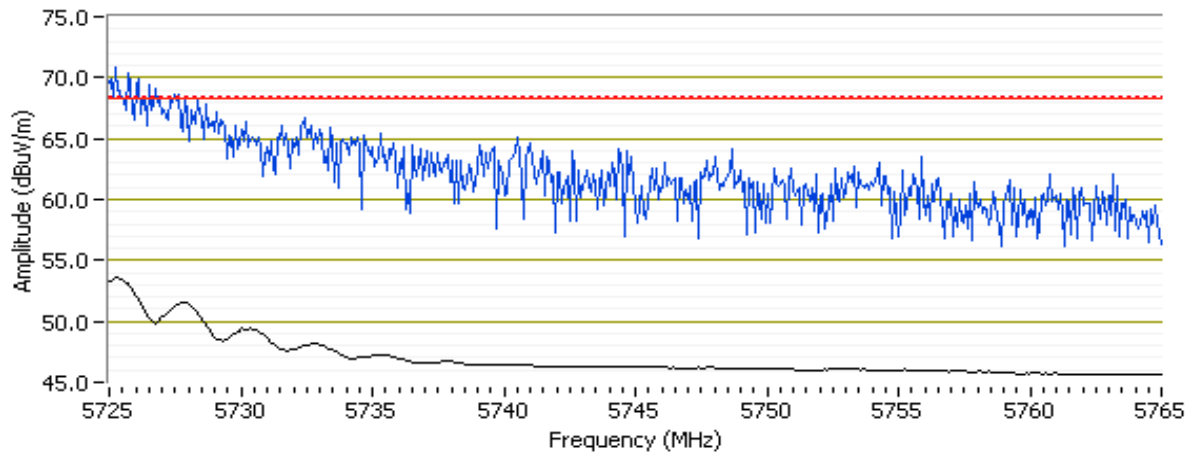
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 140 - 5700MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate:

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |          |
| 5725.120  | 53.5         | V   | 54.0  | -0.5   | AVG       | 139     | 1.2    | Note 1   |
| 5725.210  | 70.8         | V   | 74.0  | -3.2   | PK        | 139     | 1.2    | Note 1   |
| 5725.310  | 50.5         | H   | 54.0  | -3.5   | AVG       | 139     | 1.7    | Note 1   |
| 5725.510  | 66.9         | H   | 74.0  | -7.1   | PK        | 139     | 1.7    | Note 1   |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V-pol



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #12: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/22/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

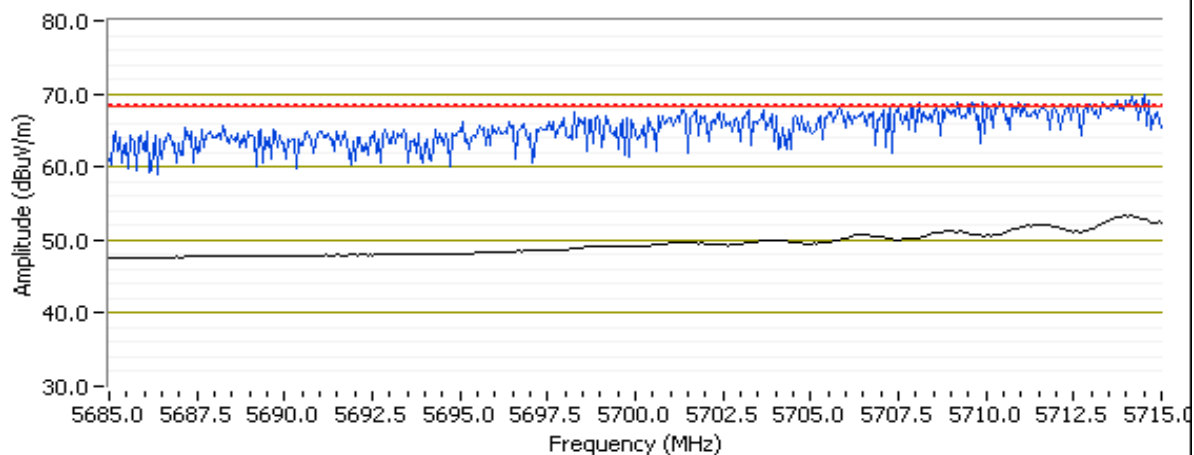
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 149 - 5745MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

### 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5713.980  | 53.7         | V   | 54.0  | -0.3   | AVG       | 188     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5713.620  | 70.6         | V   | 74.0  | -3.4   | PK        | 188     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

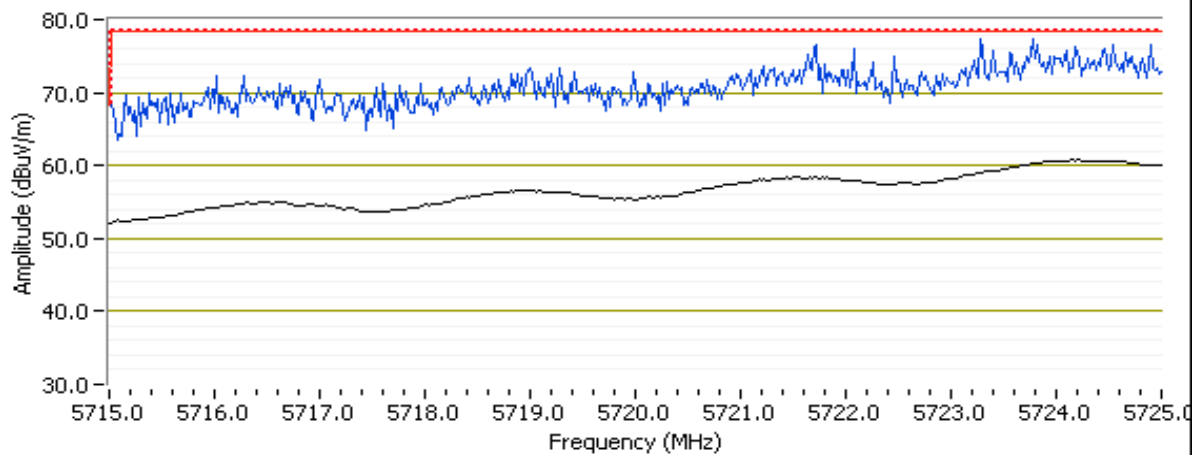


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5724.540  | 77.9         | V   | 78.3  | -0.4   | PK        | 188     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V





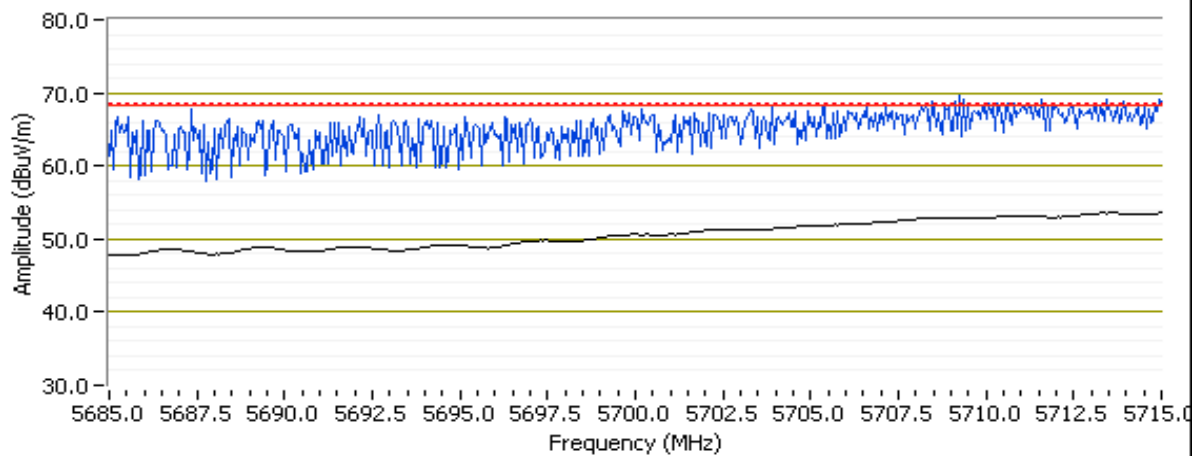
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 153 - 5765MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5713.380  | 53.7         | V   | 54.0  | -0.3   | AVG       | 193     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5714.580  | 69.1         | V   | 74.0  | -4.9   | PK        | 193     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

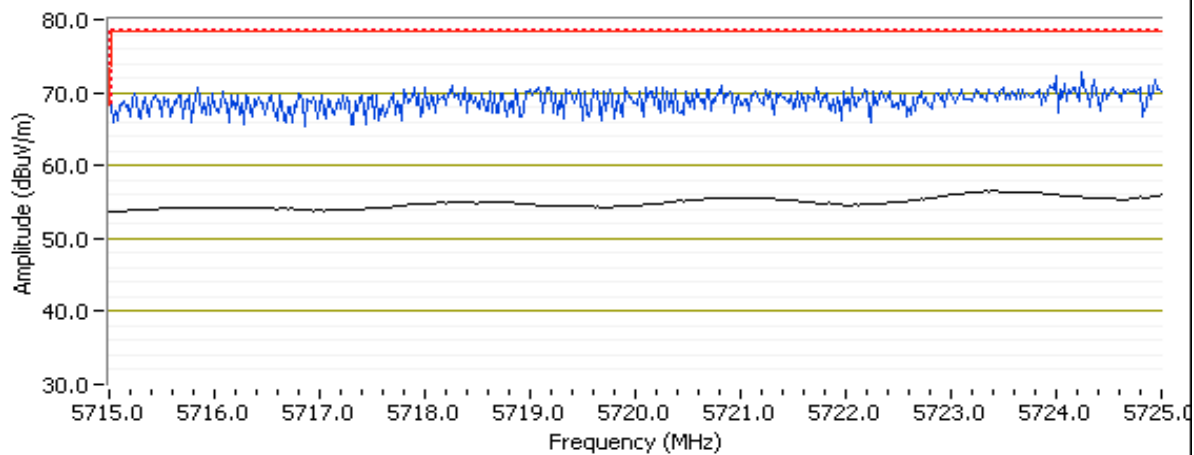


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5723.240  | 73.6         | V   | 78.3  | -4.7   | PK        | 193     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 165 - 5825MHz

Tx Chain: 2Tx

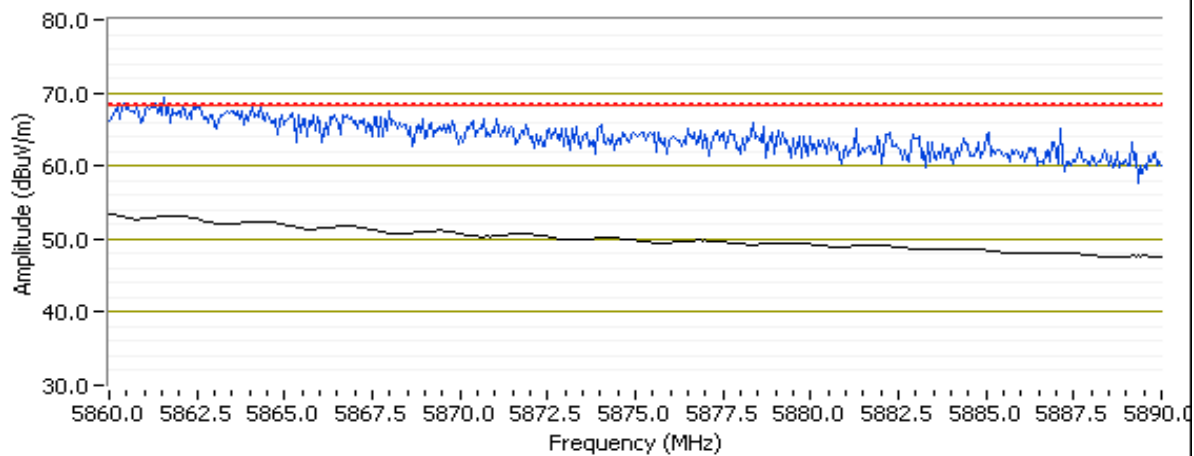
Mode: n20

Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.060  | 53.6         | V   | 54.0  | -0.4   | AVG       | 193     | 2.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5862.340  | 69.8         | V   | 74.0  | -4.2   | PK        | 193     | 2.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

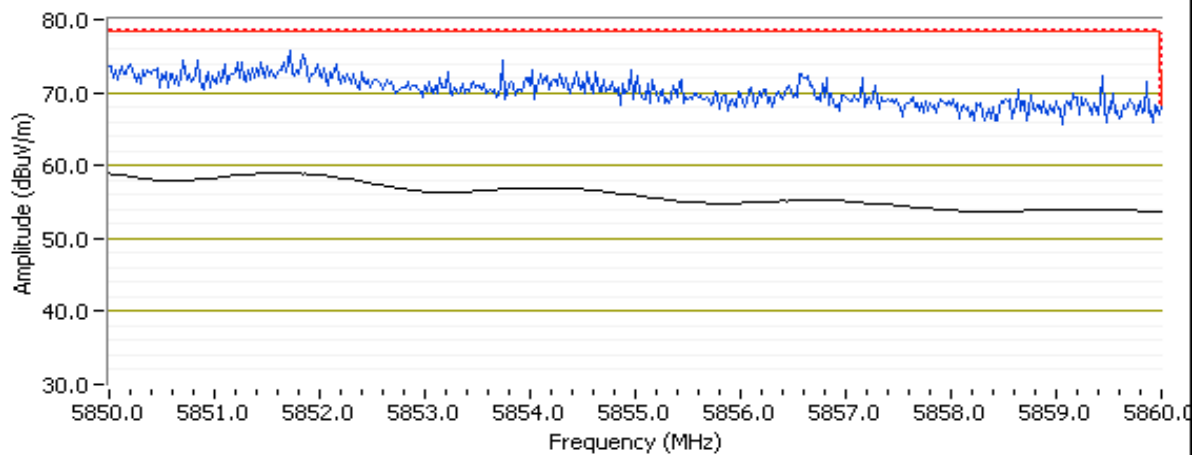


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5855.090  | 75.3         | V   | 78.3  | -3.0   | PK        | 193     | 2.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #13: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

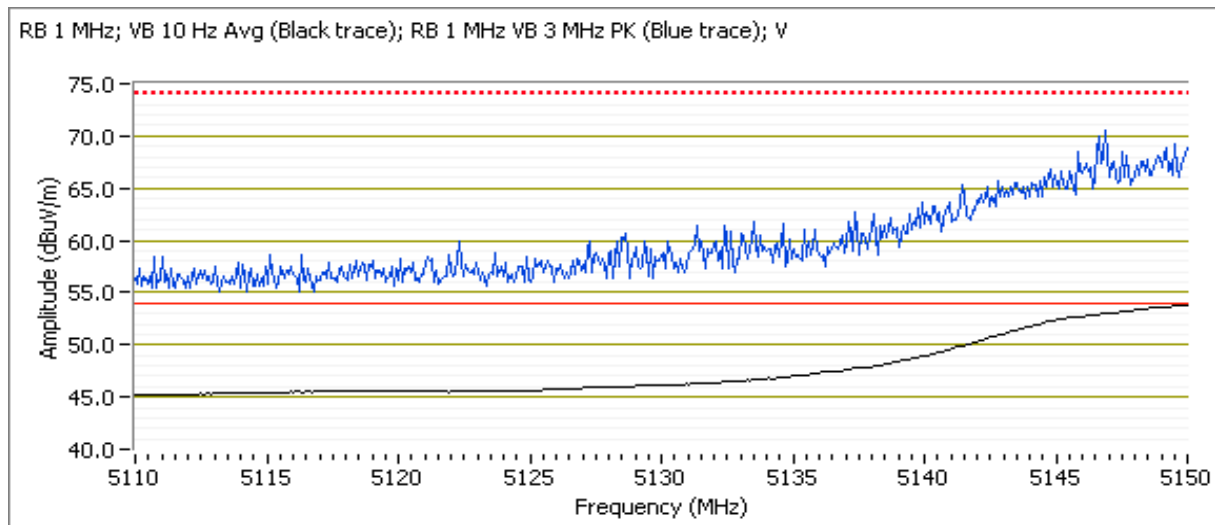
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 38 - 5190 MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.7         | V   | 54.0       | -0.3   | AVG       | 208     | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.360  | 71.4         | V   | 74.0       | -2.6   | PK        | 208     | 1.2    | POS; RB 1 MHz; VB: 3 MHz |
| 5150.000  | 51.0         | H   | 54.0       | -3.0   | AVG       | 74      | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5148.240  | 67.4         | H   | 74.0       | -6.6   | PK        | 74      | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



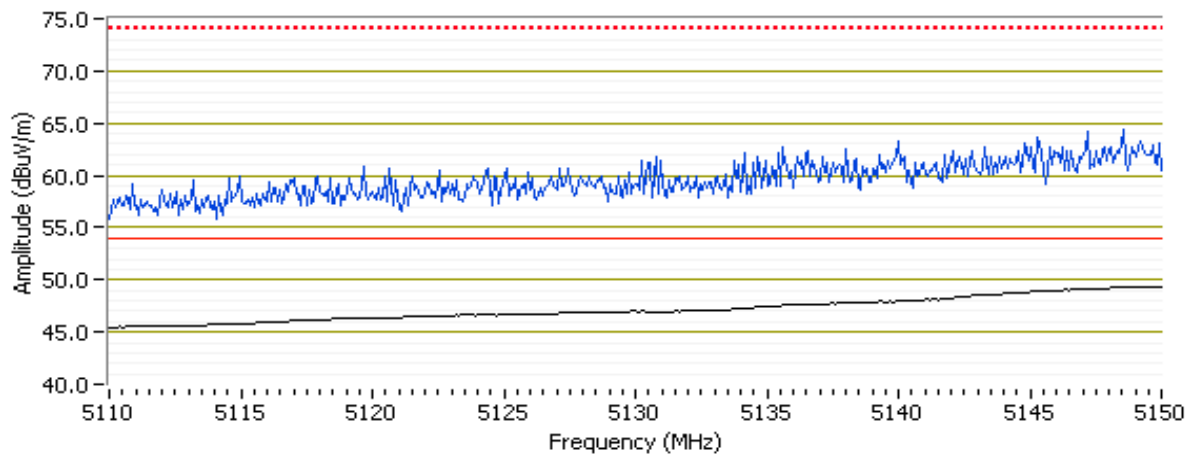
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 46 - 5230 MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5148.560  | 49.3         | V   | 54.0       | -4.7   | AVG       | 160     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5143.030  | 63.7         | V   | 74.0       | -10.3  | PK        | 160     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |
| 5149.920  | 45.4         | H   | 54.0       | -8.6   | AVG       | 56      | 2.5    | POS; RB 1 MHz; VB: 10 Hz |
| 5142.060  | 58.1         | H   | 74.0       | -15.9  | PK        | 56      | 2.5    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #14: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

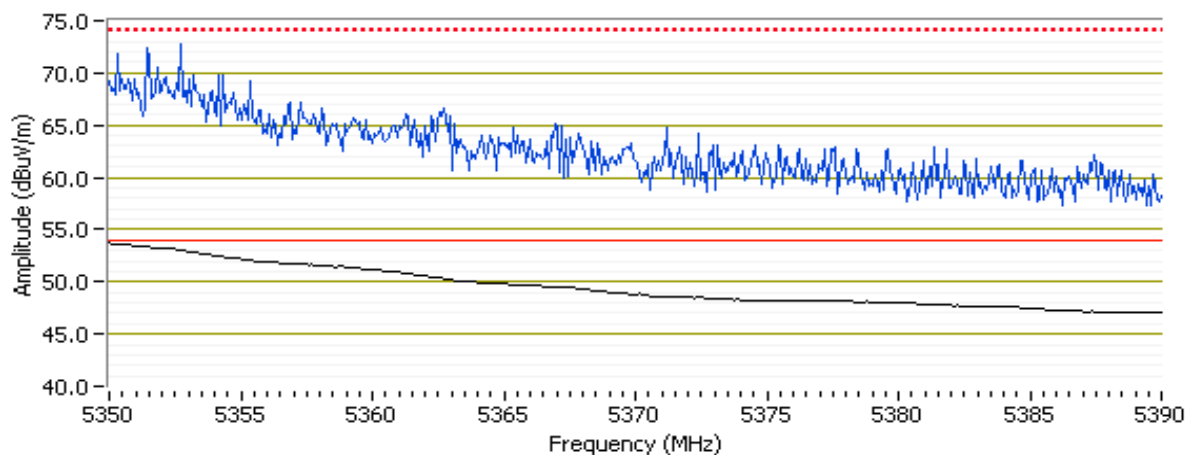
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 62 - 5310MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

### 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 53.7         | V   | 54.0       | -0.3   | AVG       | 174     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.560  | 73.7         | V   | 74.0       | -0.3   | PK        | 174     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.000  | 50.2         | H   | 54.0       | -3.8   | AVG       | 203     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.320  | 68.9         | H   | 74.0       | -5.1   | PK        | 203     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #15: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

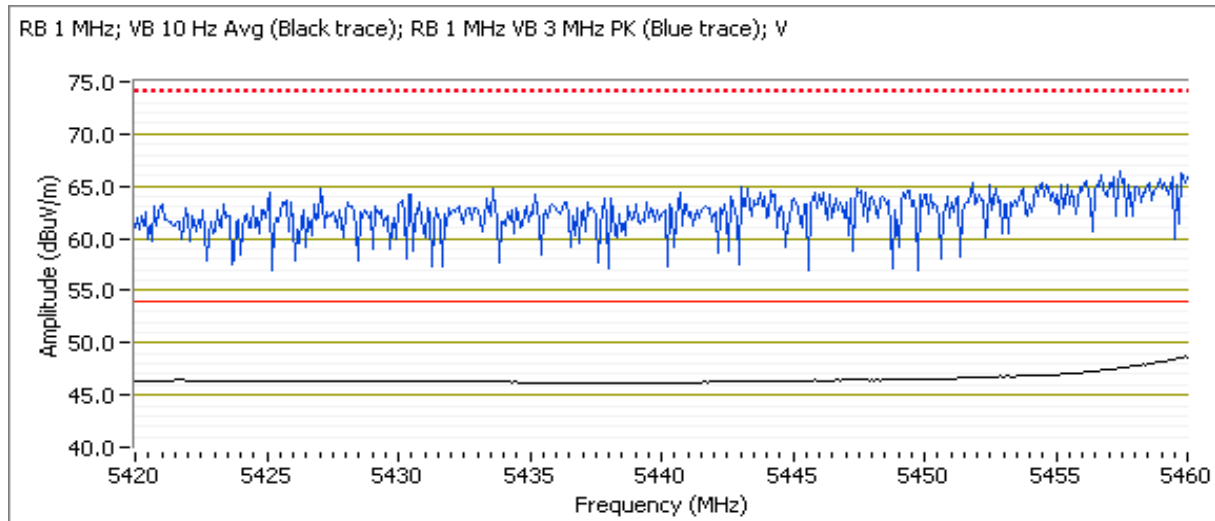
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 102 - 5510MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5459.920  | 48.7         | V   | 54.0       | -5.3   | AVG       | 170     | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5441.640  | 67.3         | V   | 74.0       | -6.7   | PK        | 170     | 1.3    | POS; RB 1 MHz; VB: 3 MHz |
| 5460.000  | 45.7         | H   | 54.0       | -8.3   | AVG       | 74      | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5456.870  | 59.9         | H   | 74.0       | -14.1  | PK        | 74      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



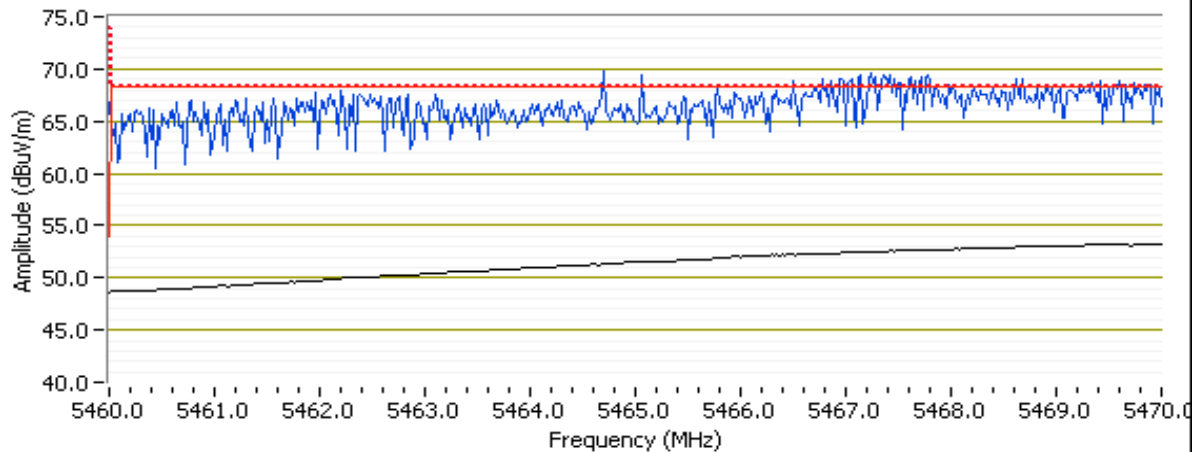


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5469.860  | 53.3         | V   | 54.0  | -0.7   | AVG       | 170     | 1.3    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5462.280  | 70.4         | V   | 74.0  | -3.6   | PK        | 170     | 1.3    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5469.980  | 49.5         | H   | 54.0  | -4.5   | AVG       | 74      | 1.2    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5469.060  | 65.5         | H   | 74.0  | -8.5   | PK        | 74      | 1.2    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



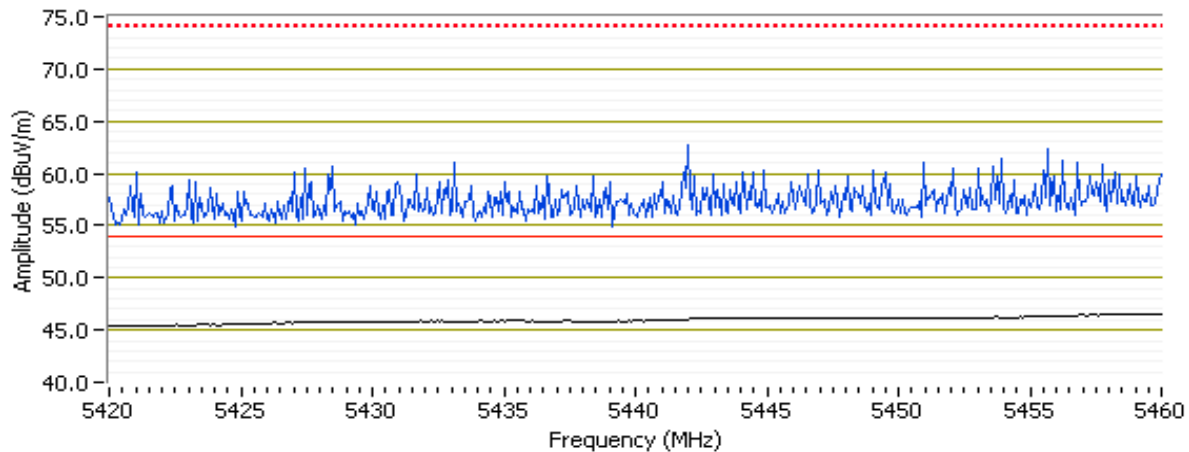
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 110 - 5550MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5458.240  | 46.6         | V   | 54.0       | -7.4   | AVG       | 165     | 2.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5430.420  | 61.3         | V   | 74.0       | -12.7  | PK        | 165     | 2.1    | POS; RB 1 MHz; VB: 3 MHz |
| 5459.440  | 44.7         | H   | 54.0       | -9.3   | AVG       | 58      | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5446.610  | 56.2         | H   | 74.0       | -17.8  | PK        | 58      | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V

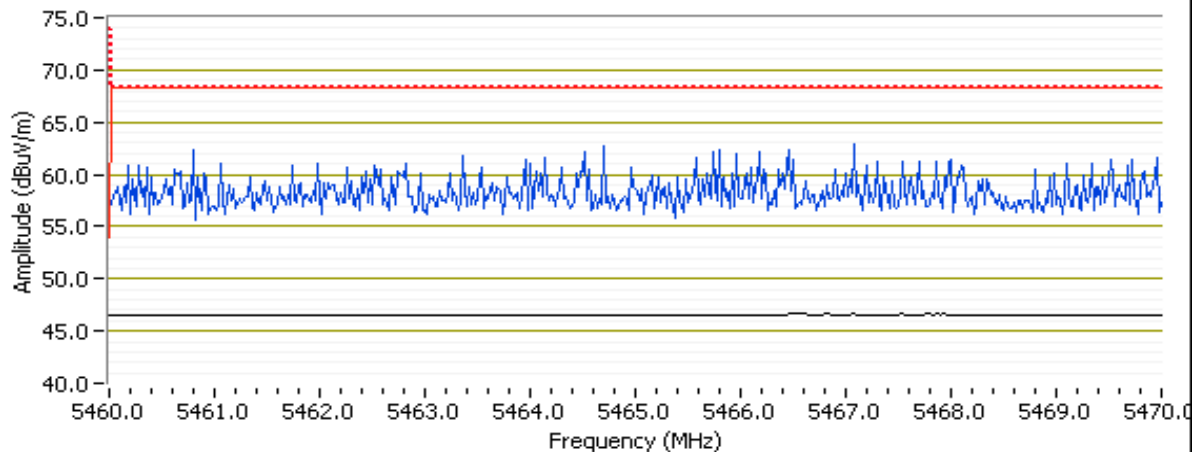


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5465.790  | 46.7         | V   | 54.0  | -7.3   | AVG       | 165     | 2.1    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5467.210  | 62.4         | V   | 74.0  | -11.6  | PK        | 165     | 2.1    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5467.210  | 62.4         | V   | 68.3  | -5.9   | PK        | 165     | 2.1    | POS; RB 1 MHz; VB: 3 MHz         |
| 5464.790  | 45.0         | H   | 54.0  | -9.0   | AVG       | 58      | 1.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5468.480  | 57.8         | H   | 74.0  | -16.2  | PK        | 58      | 1.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5468.480  | 57.8         | H   | 68.3  | -10.5  | PK        | 58      | 1.0    | POS; RB 1 MHz; VB: 3 MHz         |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



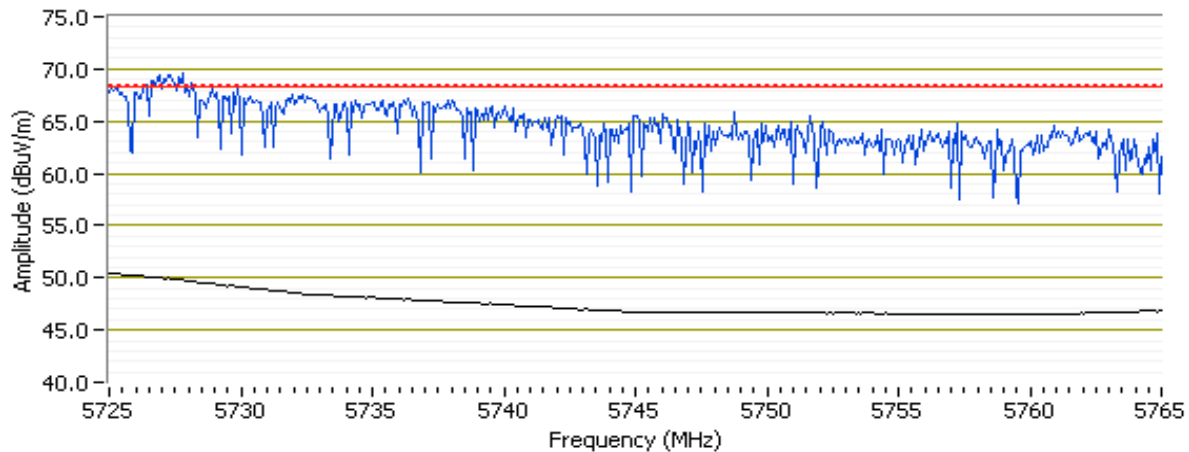
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 134 - 5670MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dBμV/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5725.000  | 50.4   | V   | 54.0  | -3.6   | AVG       | 163     | 1.2    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5729.330  | 69.4   | V   | 74.0  | -4.6   | PK        | 163     | 1.2    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5725.160  | 46.6   | H   | 54.0  | -7.4   | AVG       | 215     | 1.4    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5728.770  | 63.2   | H   | 74.0  | -10.8  | PK        | 215     | 1.4    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #16: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/22/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

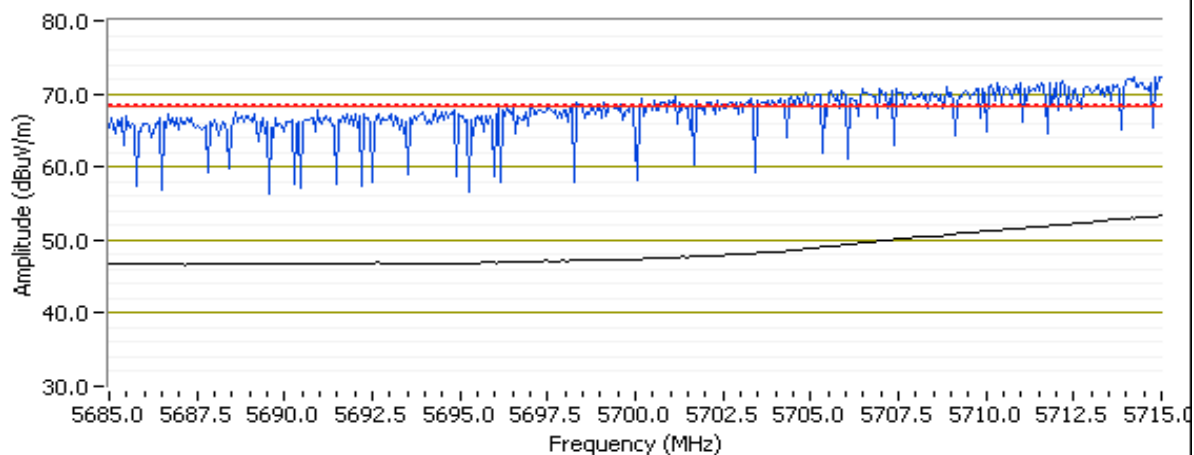
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 151 - 5755MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5715.000  | 53.3         | V   | 54.0  | -0.7   | AVG       | 192     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5708.270  | 72.6         | V   | 74.0  | -1.4   | PK        | 192     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

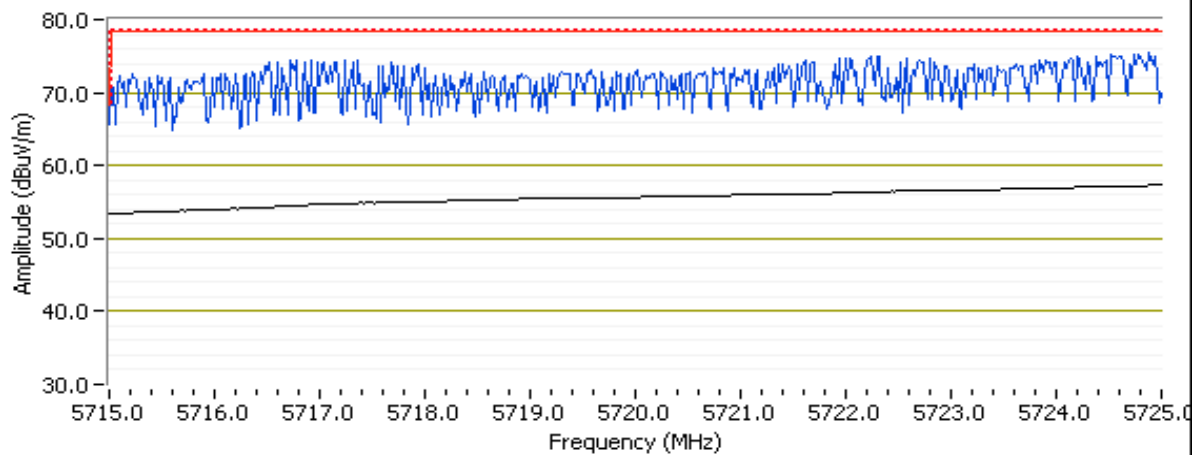


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5723.900  | 75.6         | V   | 78.3  | -2.7   | PK        | 192     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



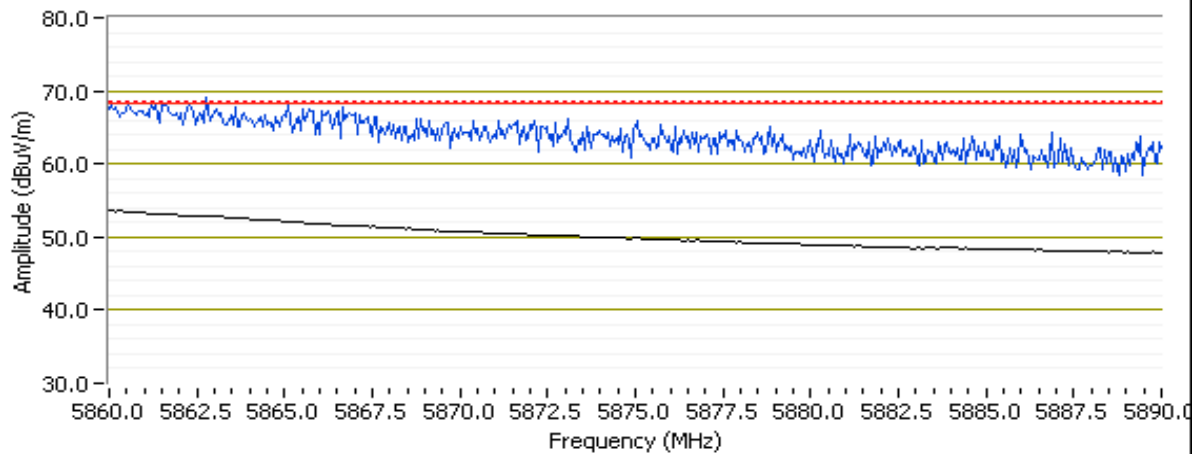
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 159 - 5795MHz  
 Tx Chain: Main  
 Mode: n40  
 Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5860.120  | 53.7         | V   | 54.0  | -0.3   | AVG       | 201     | 1.1    | POS; RB 1 MHz; VB: 10 Hz |
| 5866.250  | 69.0         | V   | 74.0  | -5.0   | PK        | 201     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

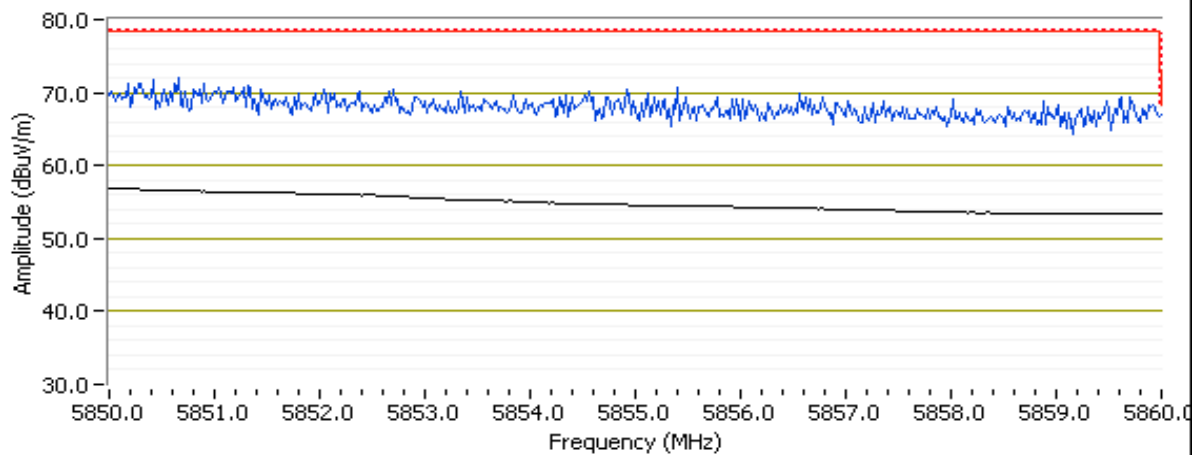


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5851.000  | 72.1         | V   | 78.3  | -6.2   | PK        | 201     | 1.1    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V





|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #17: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

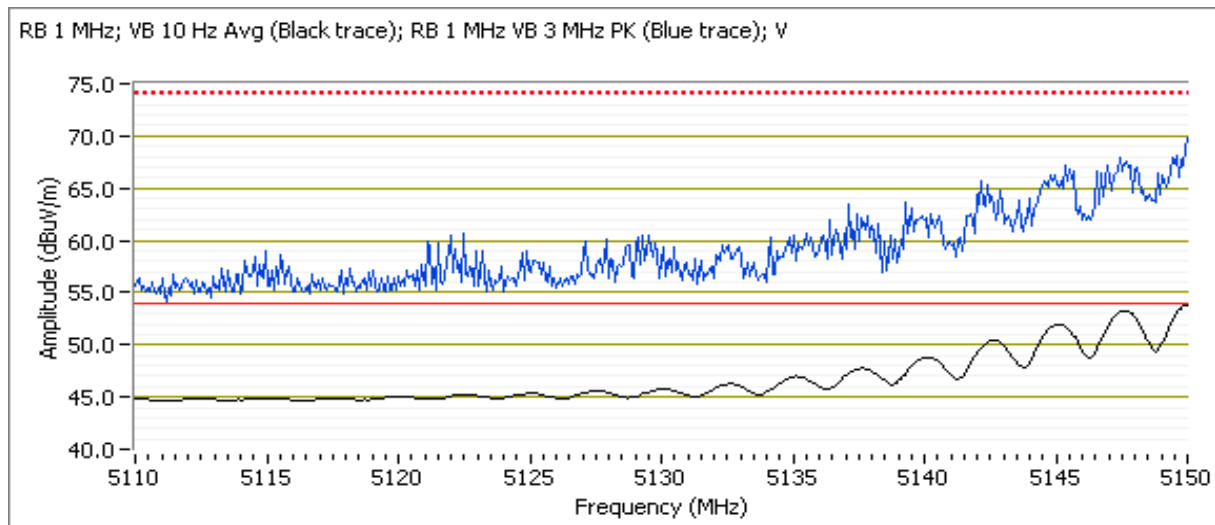
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 38 - 5190 MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5150.000  | 53.7         | V   | 54.0       | -0.3   | AVG       | 214     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5147.840  | 70.9         | V   | 74.0       | -3.1   | PK        | 214     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5149.520  | 50.9         | H   | 54.0       | -3.1   | AVG       | 134     | 1.4    | POS; RB 1 MHz; VB: 10 Hz |
| 5149.120  | 65.8         | H   | 74.0       | -8.2   | PK        | 134     | 1.4    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



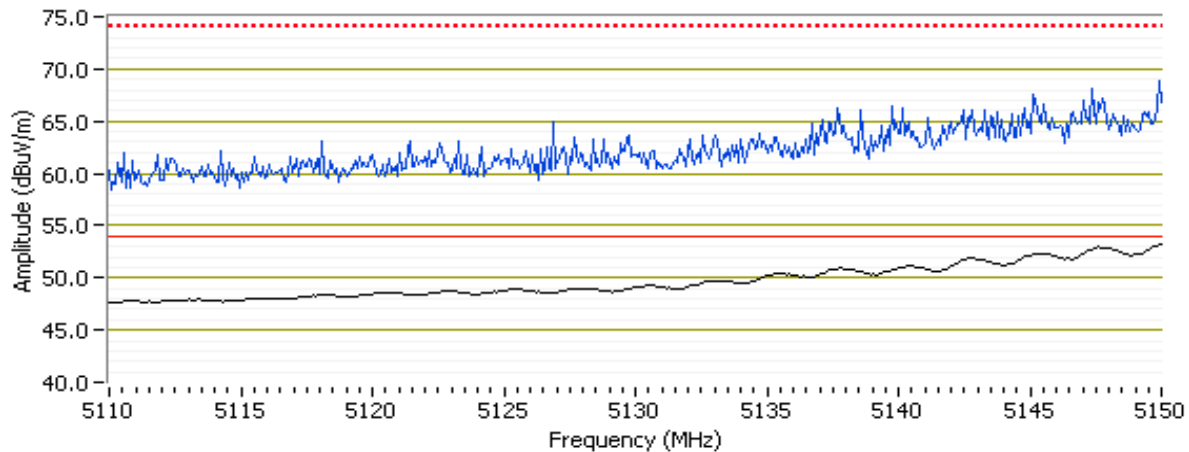
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 46 - 5230 MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5150 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5149.920  | 52.7         | V   | 54.0       | -1.3   | AVG       | 212     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5144.630  | 67.8         | V   | 74.0       | -6.2   | PK        | 212     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5148.480  | 49.1         | H   | 54.0       | -4.9   | AVG       | 23      | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5146.310  | 62.5         | H   | 74.0       | -11.5  | PK        | 23      | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V





## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #18: Radiated Bandedge Measurements, 5250-5350MHz

Date of Test: 7/15/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

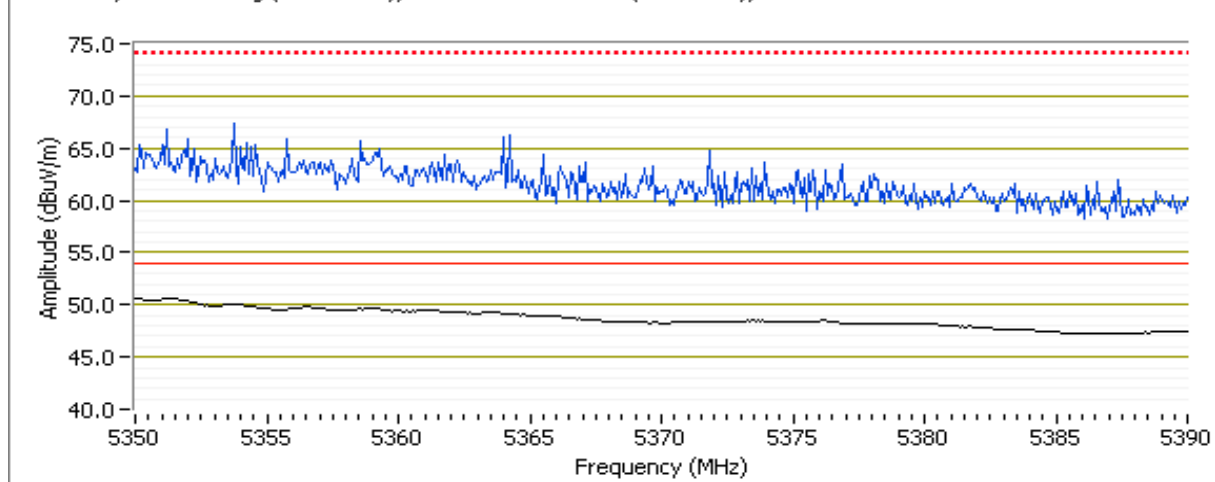
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 54 - 5270MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5350.000  | 50.3         | V   | 54.0       | -3.7   | AVG       | 232     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5356.890  | 67.5         | V   | 74.0       | -6.5   | PK        | 232     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.160  | 49.5         | H   | 54.0       | -4.5   | AVG       | 49      | 1.3    | POS; RB 1 MHz; VB: 10 Hz |
| 5353.690  | 63.7         | H   | 74.0       | -10.3  | PK        | 49      | 1.3    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 62 - 5310MHz

Tx Chain: 2Tx

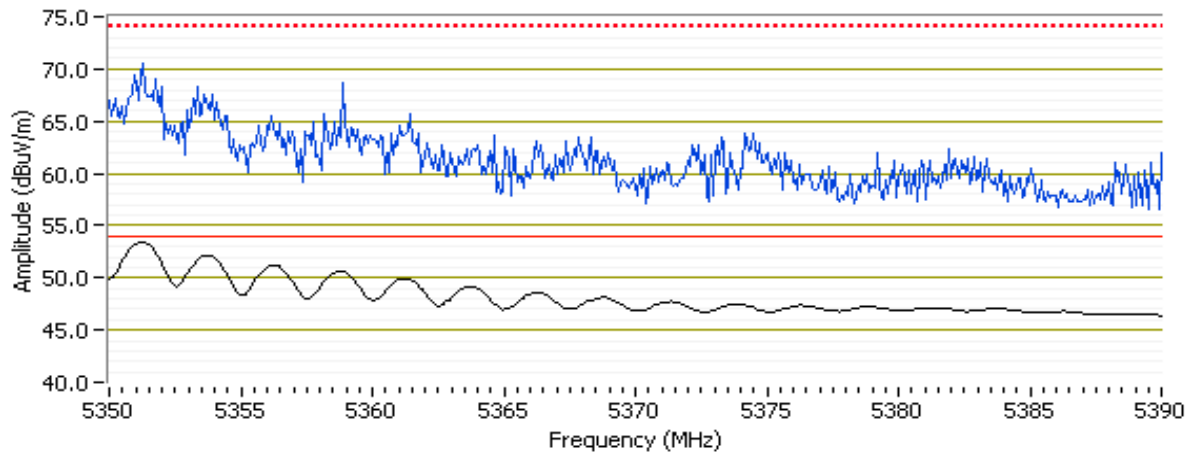
Mode: n40

Data Rate: MCS0

## 5350 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5351.280  | 53.4         | V   | 54.0       | -0.6   | AVG       | 175     | 2.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.960  | 72.6         | V   | 74.0       | -1.4   | PK        | 175     | 2.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5350.240  | 48.9         | H   | 54.0       | -5.1   | AVG       | 206     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5350.640  | 61.4         | H   | 74.0       | -12.6  | PK        | 206     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1 MHz VB 3 MHz PK (Blue trace); V



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #19: Radiated Bandedge Measurements, 5470-5725MHz

Date of Test: 7/16/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

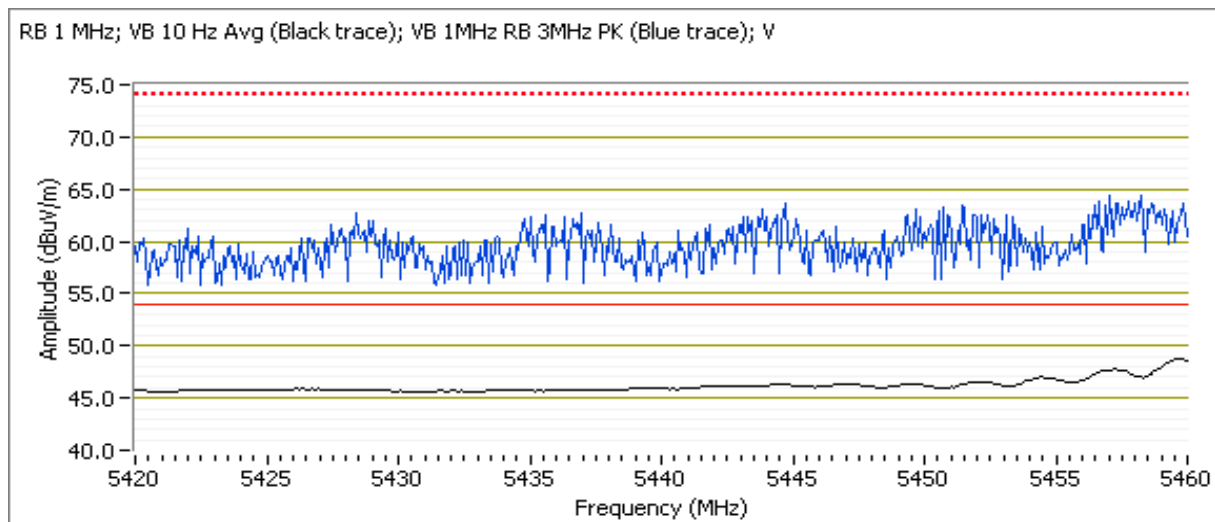
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 102 - 5510MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5459.840  | 48.7         | V   | 54.0       | -5.3   | AVG       | 226     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5449.820  | 64.1         | V   | 74.0       | -9.9   | PK        | 226     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5458.960  | 48.1         | H   | 54.0       | -5.9   | AVG       | 54      | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5458.080  | 63.1         | H   | 74.0       | -10.9  | PK        | 54      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V

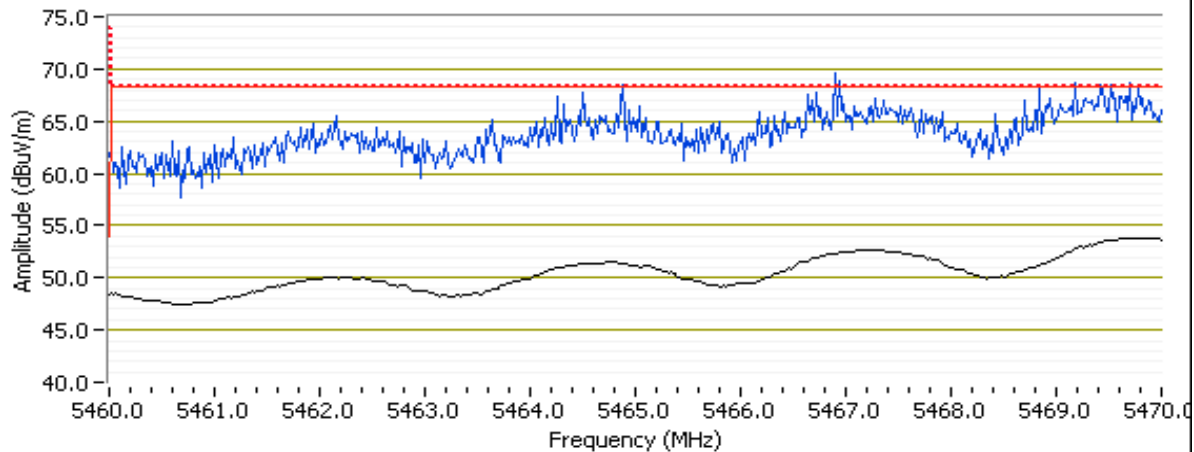


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                         |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|----------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                  |
| 5469.800  | 53.9         | V   | 54.0  | -0.1   | AVG       | 226     | 1.0    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5469.180  | 69.8         | V   | 74.0  | -4.2   | PK        | 226     | 1.0    | Note 1, POS; RB 1 MHz; VB: 3 MHz |
| 5468.800  | 53.0         | H   | 54.0  | -1.0   | AVG       | 54      | 1.2    | Note 1, POS; RB 1 MHz; VB: 10 Hz |
| 5467.070  | 68.3         | H   | 74.0  | -5.7   | PK        | 54      | 1.2    | Note 1, POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V



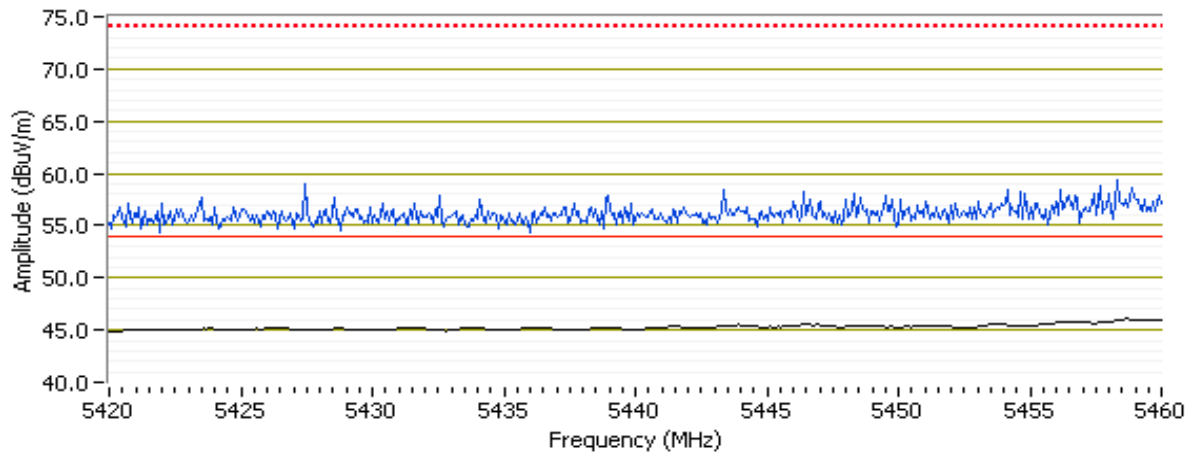
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 110 - 5550MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

## 5460 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level  | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------|-----|------------|--------|-----------|---------|--------|--------------------------|
| MHz       | dBμV/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5458.960  | 46.1   | V   | 54.0       | -7.9   | AVG       | 127     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5459.360  | 59.8   | V   | 74.0       | -14.2  | PK        | 127     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5458.080  | 45.8   | H   | 54.0       | -8.2   | AVG       | 39      | 1.2    | POS; RB 1 MHz; VB: 10 Hz |
| 5447.820  | 58.0   | H   | 74.0       | -16.0  | PK        | 39      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V

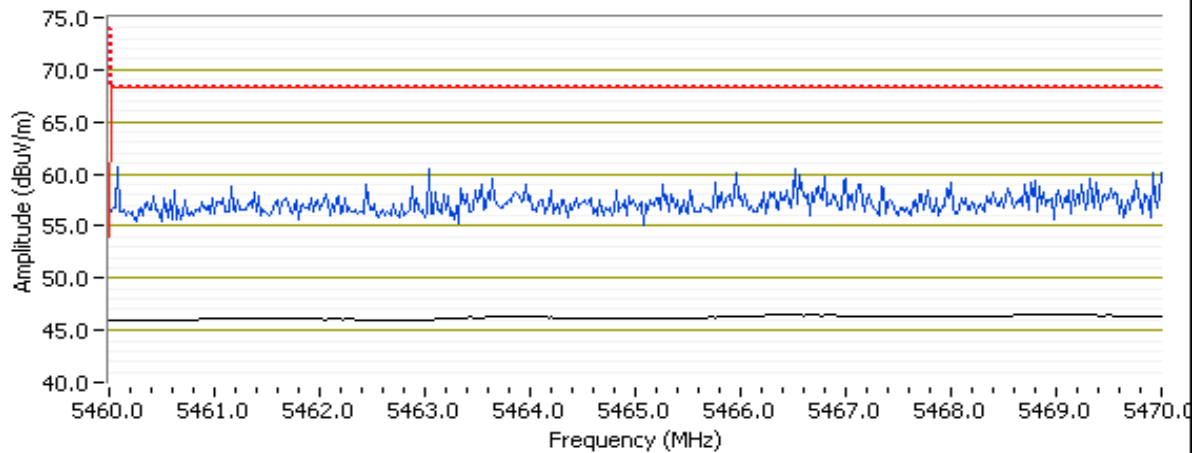


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5460.540  | 61.8         | V   | 68.3  | -6.5   | PK        | 127     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |
| 5466.870  | 60.1         | H   | 68.3  | -8.2   | PK        | 39      | 1.2    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V





**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 134 - 5670MHz

Tx Chain: 2Tx

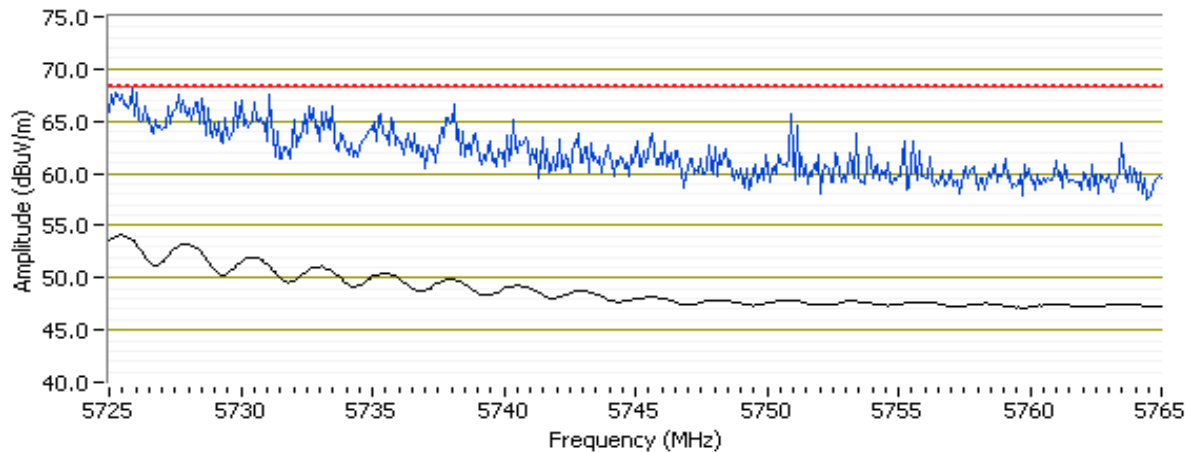
Mode: n40

Data Rate: MCS0

### 5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                        |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|---------------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                                 |
| 5725.480  | 53.2         | V   | 54.0  | -0.8   | AVG       | 143     | 1.2    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5730.130  | 68.9         | V   | 74.0  | -5.1   | PK        | 143     | 1.2    | Note 1,POS; RB 1 MHz; VB: 3 MHz |
| 5725.720  | 50.8         | H   | 54.0  | -3.2   | AVG       | 205     | 1.0    | Note 1,POS; RB 1 MHz; VB: 10 Hz |
| 5727.730  | 65.2         | H   | 74.0  | -8.8   | PK        | 205     | 1.0    | Note 1,POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); VB 1MHz RB 3MHz PK (Blue trace); V



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #20: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 7/22/2015 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

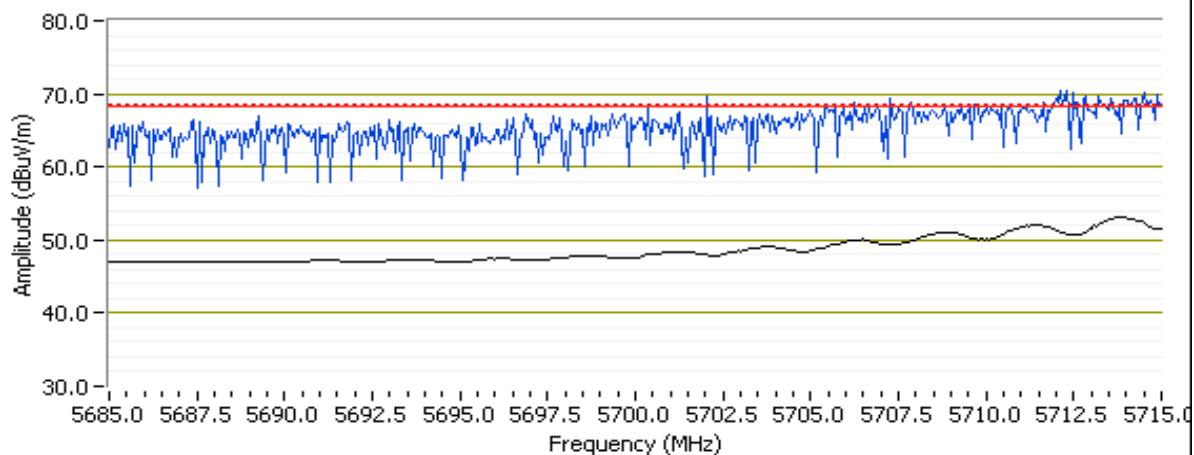
Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

Channel: 151 - 5755MHz  
 Tx Chain: 2Tx  
 Mode: n40  
 Data Rate: MCS0

### 5715 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | PK/QP/Avg | degrees | meters |                          |
| 5713.860  | 53.6         | V   | 54.0  | -0.4   | AVG       | 202     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5712.230  | 70.6         | V   | 74.0  | -3.4   | PK        | 202     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



**NTS**

WE ENGINEER SUCCESS

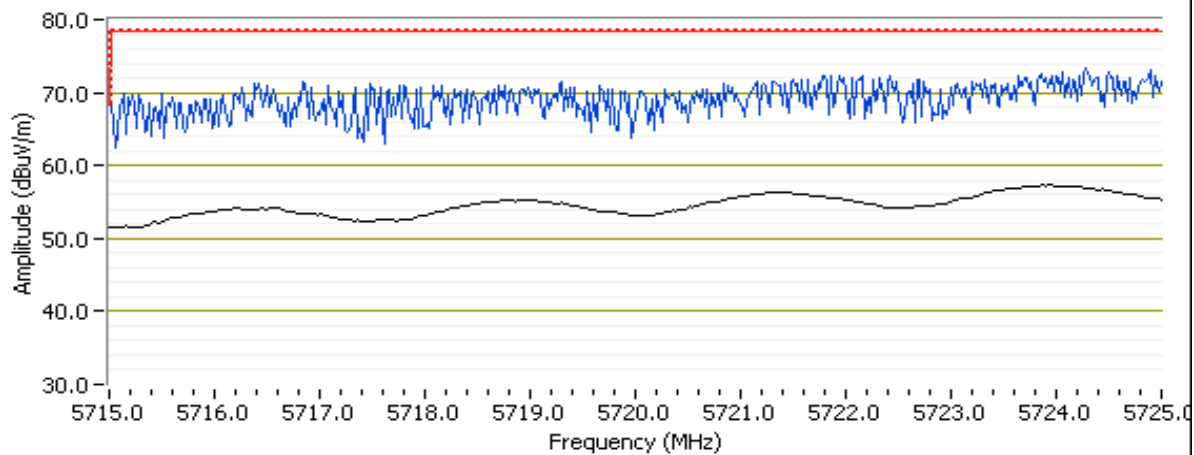
## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### 5715-5725 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5717.540  | 73.6         | V   | 78.3  | -4.7   | PK        | 202     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

Channel: 159 - 5795MHz

Tx Chain: 2Tx

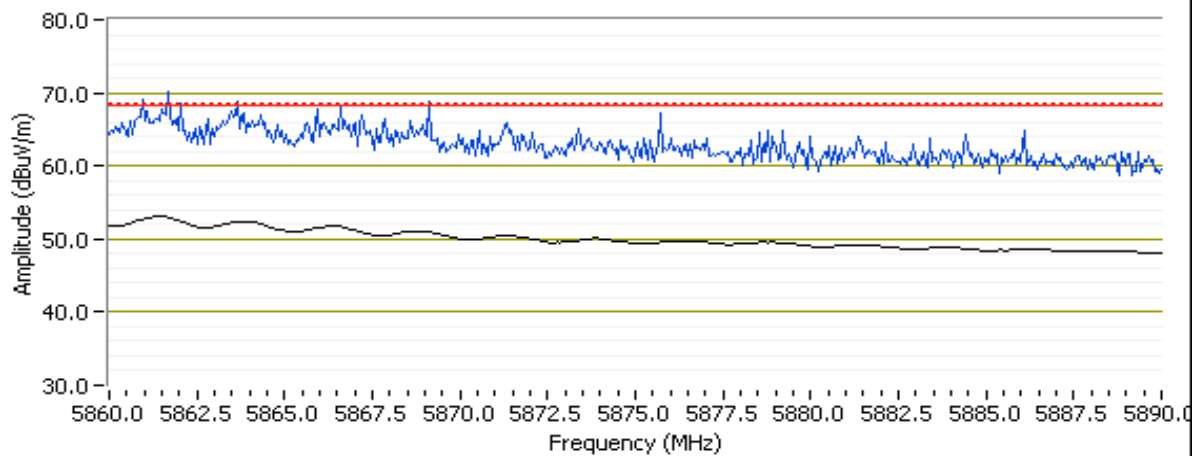
Mode: n40

Data Rate: MCS0

## 5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5861.560  | 53.2         | V   | 54.0  | -0.8   | AVG       | 197     | 1.0    | POS; RB 1 MHz; VB: 10 Hz |
| 5863.910  | 69.6         | V   | 74.0  | -4.4   | PK        | 197     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V

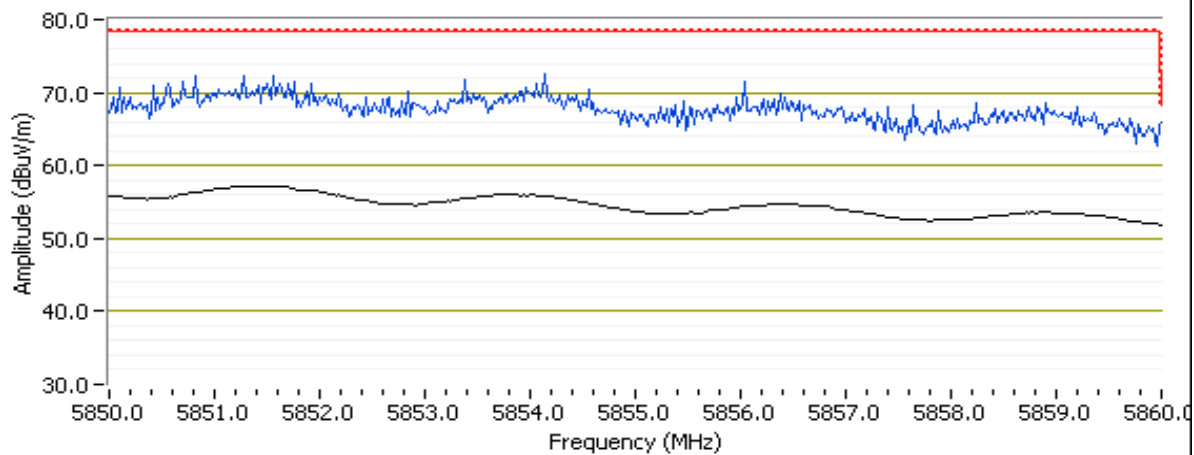


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5850-5860 MHz Band Edge Signal Radiated Field Strength

| Frequency | Level        | Pol | 15.E  |        | Detector  | Azimuth | Height | Comments                 |
|-----------|--------------|-----|-------|--------|-----------|---------|--------|--------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit | Margin | Pk/QP/Avg | degrees | meters |                          |
| 5851.800  | 72.7         | V   | 78.3  | -5.6   | PK        | 197     | 1.0    | POS; RB 1 MHz; VB: 3 MHz |

RB 1 MHz; VB 10 Hz Avg (Black trace); RB 1MHz VB 3MHz PK (Blue trace); V



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS 210 and FCC 15.407 (UNII) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.  
 For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

### Ambient Conditions:

Temperature: 21.6 °C  
 Rel. Humidity: 38 %

### Summary of Results

| Run #                                                                         | Mode      | Channel      | Target Power | Power Setting | Test Performed                 | Limit             | Result / Margin                      |
|-------------------------------------------------------------------------------|-----------|--------------|--------------|---------------|--------------------------------|-------------------|--------------------------------------|
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |              |              |               |                                |                   |                                      |
| 1                                                                             | a (1Tx)   | 40 - 5200MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 40.3 dBµV/m @ 5050.3 MHz (-13.7 dB)  |
|                                                                               | n20 (2Tx) | 40 - 5200MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 46.1 dBµV/m @ 5046.7 MHz (-7.9 dB)   |
|                                                                               | n40 (2Tx) | 38 - 5190MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 47.4 dBµV/m @ 5039.4 MHz (-6.6 dB)   |
| 40MHz - use if worse case from 1                                              |           |              |              |               |                                |                   |                                      |
| 2                                                                             | n40 (2Tx) | 46 - 5230MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 40.3 dBµV/m @ 5037.6 MHz (-13.7 dB)  |
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |              |              |               |                                |                   |                                      |
| 3                                                                             | a (1Tx)   | 60 - 5300MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 42.5 dBµV/m @ 5418.1 MHz (-11.5 dB)  |
|                                                                               | n20 (2Tx) | 60 - 5300MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 45.2 dBµV/m @ 10600.1 MHz (-8.8 dB)  |
|                                                                               | n40 (2Tx) | 54 - 5270MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 41.5 dBµV/m @ 5041.6 MHz (-12.5 dB)  |
| Measurements on low and high channels in worst-case OFDM mode.                |           |              |              |               |                                |                   |                                      |
| 4                                                                             | n20 (2Tx) | 52 - 5260MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 57.6 dBµV/m @ 10518.6 MHz (-10.7 dB) |
|                                                                               | n20 (2Tx) | 64 - 5320MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 45.7 dBµV/m @ 10640.1 MHz (-8.3 dB)  |

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run #                                                                         | Mode      | Channel       | Target Power | Power Setting | Test Performed                 | Limit             | Result / Margin                     |
|-------------------------------------------------------------------------------|-----------|---------------|--------------|---------------|--------------------------------|-------------------|-------------------------------------|
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |               |              |               |                                |                   |                                     |
| 5                                                                             | a (1Tx)   | 116 - 5580MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 50.8 dBμV/m @ 5325.9 MHz (-17.5 dB) |
|                                                                               | n20 (2Tx) | 116 - 5580MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 47.8 dBμV/m @ 11160.0 MHz (-6.2 dB) |
|                                                                               | n40 (2Tx) | 110 - 5550MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 46.1 dBμV/m @ 11100.3 MHz (-7.9 dB) |
| Measurements on low and high channels in worst-case OFDM mode.                |           |               |              |               |                                |                   |                                     |
| 6                                                                             | n20 (2Tx) | 100 - 5500MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 47.9 dBμV/m @ 11000.5 MHz (-6.1 dB) |
|                                                                               | n20 (2Tx) | 140 - 5700MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 54.7 dBμV/m @ 5921.4 MHz (-13.6 dB) |
| Scans on "center" channel in all OFDM modes to determine the worst case mode. |           |               |              |               |                                |                   |                                     |
| 7                                                                             | a (1Tx)   | 157 - 5785MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 44.7 dBμV/m @ 11569.1 MHz (-9.3 dB) |
|                                                                               | n20 (2Tx) | 157 - 5785MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 49.4 dBμV/m @ 11569.9 MHz (-4.6 dB) |
|                                                                               | n40 (2Tx) | 151 - 5755MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 46.6 dBμV/m @ 11515.2 MHz (-7.4 dB) |
| Measurements on low and high channels in worst-case OFDM mode.                |           |               |              |               |                                |                   |                                     |
| 8                                                                             | n20 (2Tx) | 149 - 5745MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 49.3 dBμV/m @ 11490.2 MHz (-4.7 dB) |
|                                                                               | n20 (2Tx) | 165 - 5825MHz | -            | -             | Radiated Emissions, 1 - 40 GHz | FCC 15.209 / 15 E | 50.2 dBμV/m @ 11649.7 MHz (-3.8 dB) |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

### Sample Notes

Sample S/N: 707781772509

Driver: 6.37 RC214 .12

Antenna: External

### Notes

Testing performed at 1.5m per C63.10

All testing was performed in 2Tx mode using worse case 1Tx power levels



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time

Unless otherwise stated/noted, emission has duty cycle  $\geq 98\%$  and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

| Mode | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a  | 6Mb/s     | 98.2%          | Yes          | 1.405  | 0               | 0                     | 10                  |
| n20  | MCS0      | 98.1%          | Yes          | 1.309  | 0               | 0                     | 10                  |
| n40  | MCS0      | 98.0%          | Yes          | 0.932  | 0               | 0                     | 10                  |

## Measurement Specific Notes:

|         |                                                                                                                                                                                                                                                                                                                        |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector). Per KDB 789033 2) c) (i), compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative. |
| Note 2: | Emission has duty cycle $\geq 98\%$ , average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces                                                                                                                                                                    |
| Note 4: | Emission has duty cycle $< 98\%$ , average measurement performed: RBW=1MHz, VBW $> 1/T$ , peak detector, linear average mode, sweep time auto, max hold. Max hold for $50*(1/DC)$ traces                                                                                                                               |
| Note 5: | Emission has duty cycle $< 98\%$ , but constant, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average $100 * 1/DC$ traces, measurement corrected by Pwr correction factor                                                                                                |
| Note 6: | Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabular results for final measurements.                                                                                                                                                                              |

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #1, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5150-5250 MHz Band

Date of Test: 7/23 & 7/24/2015 12:00:00 AM

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

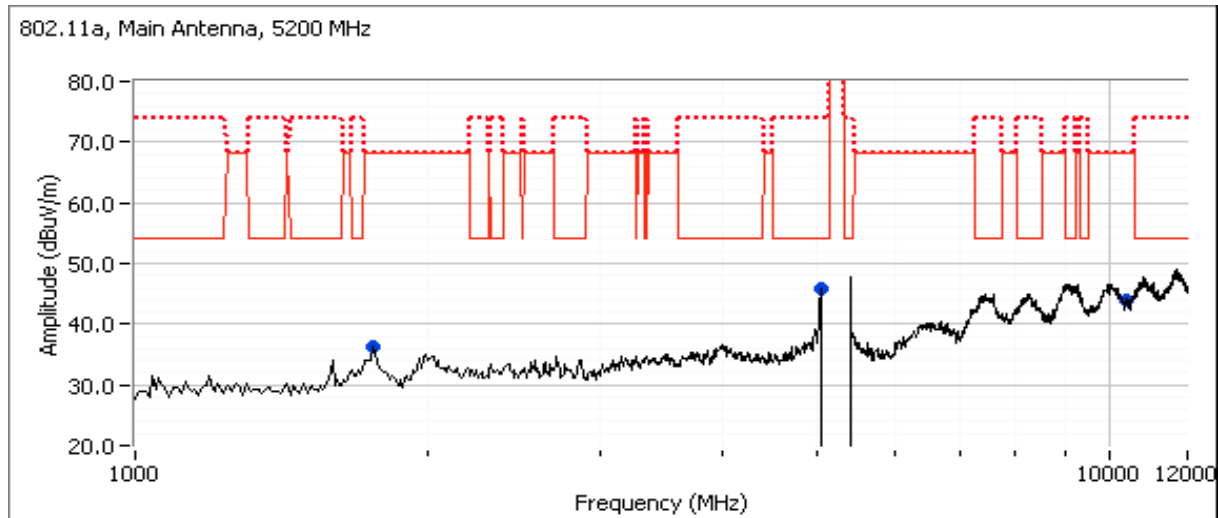
EUT Voltage: USB

### Run #1a: Center Channel

Channel: 40 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBuV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5050.340  | 40.3   | H   | 54.0         | -13.7  | AVG       | 347     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5044.440  | 51.7   | H   | 74.0         | -22.3  | PK        | 347     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 10390.000 | 43.9   | V   | 68.3         | -24.4  | Peak      | 111     | 2.2    |                        |
| 1750.000  | 36.2   | V   | 68.3         | -32.1  | Peak      | 253     | 1.0    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |





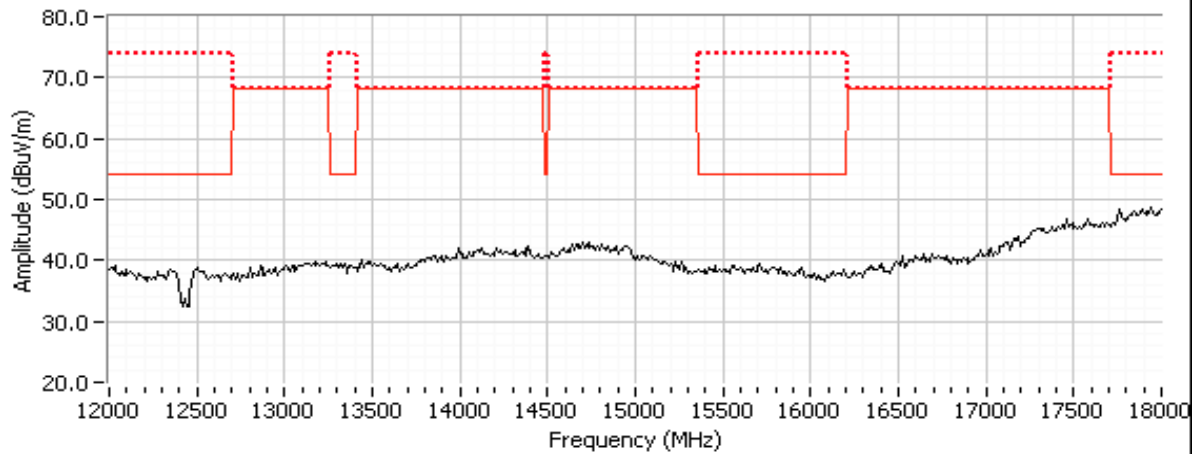
**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

802.11a, Main Antenna, 5200 MHz



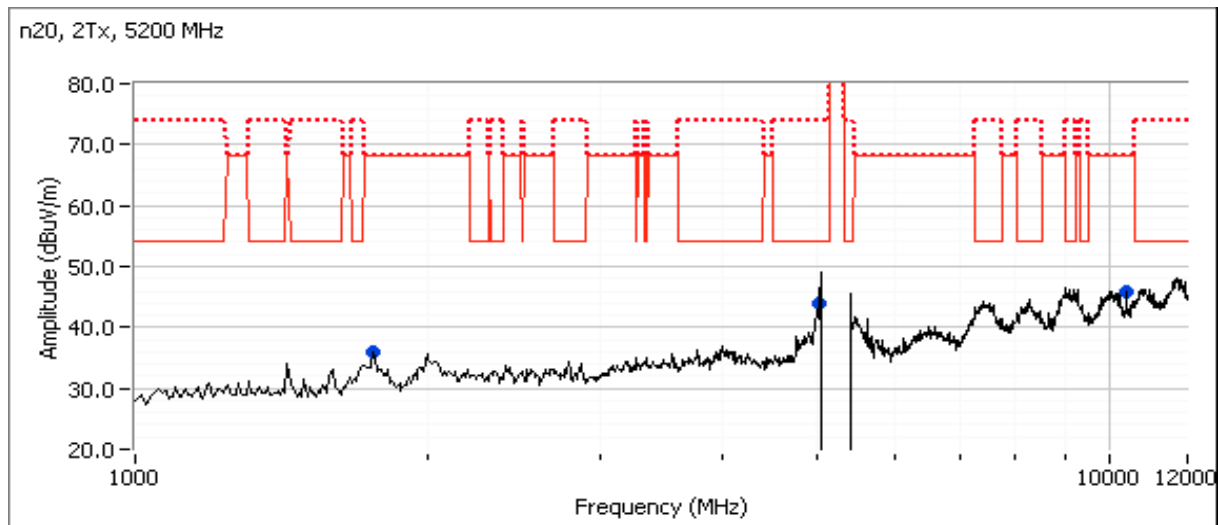
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #1b: Center Channel

Channel: 40 Mode: 11n20  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5046.700  | 46.1   | V   | 54.0         | -7.9   | AVG       | 188     | 1.4    | RB 1 MHz;VB 10 Hz;Peak |
| 5044.800  | 55.7   | V   | 74.0         | -18.3  | PK        | 188     | 1.4    | RB 1 MHz;VB 3 MHz;Peak |
| 10401.300 | 53.4   | V   | 68.3         | -14.9  | PK        | 97      | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1750.500  | 35.8   | V   | 68.3         | -32.5  | Peak      | 177     | 1.0    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBμV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |



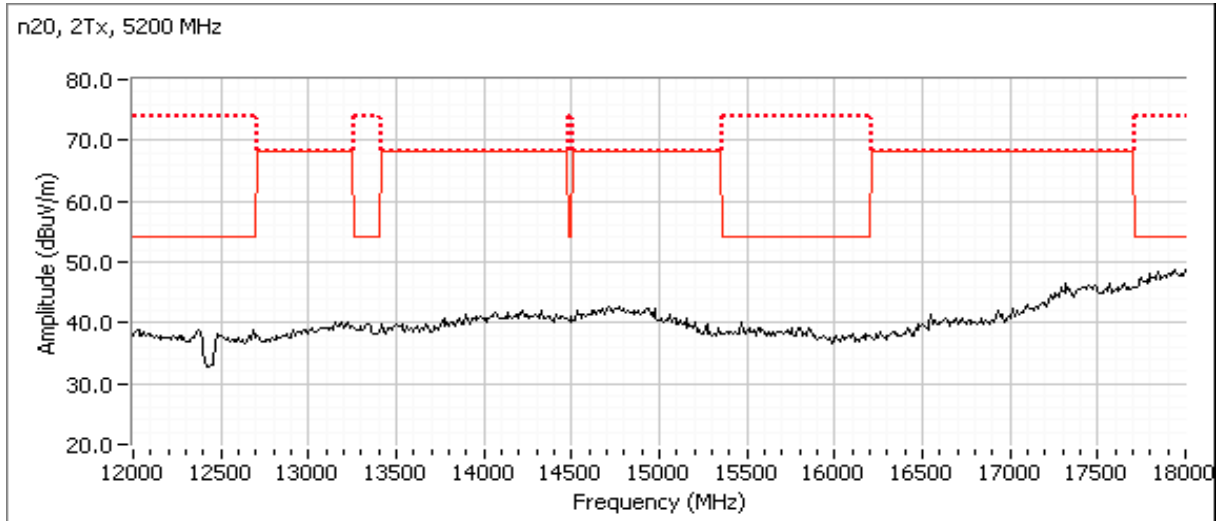


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



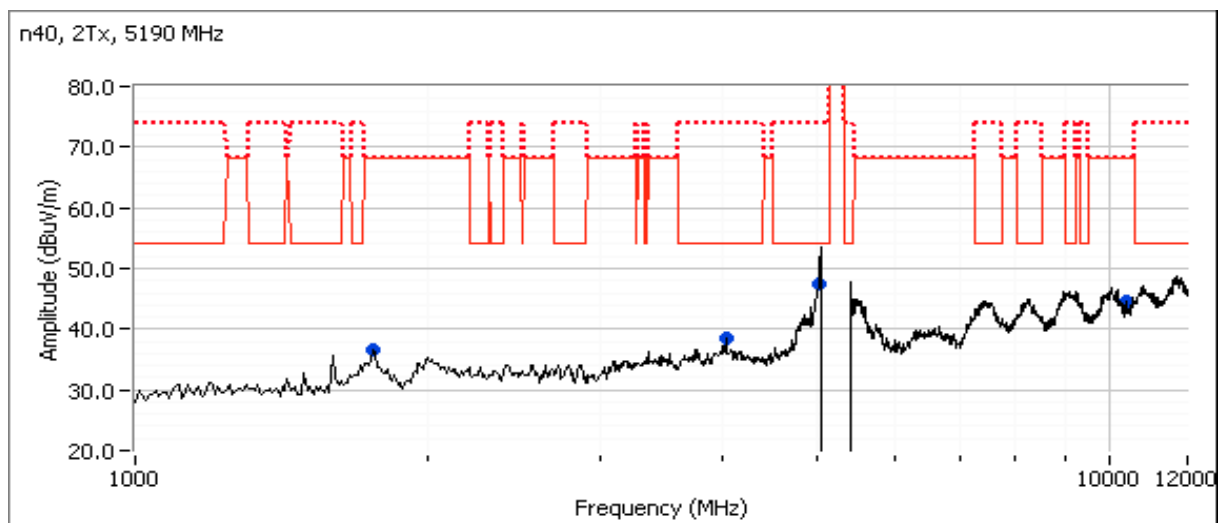
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #1c: Center Channel

Channel: 38 Mode: 11n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5039.400  | 47.4   | V   | 54.0         | -6.6   | AVG       | 229     | 1.1    | RB 1 MHz;VB 10 Hz;Peak |
| 5039.800  | 57.1   | V   | 74.0         | -16.9  | PK        | 229     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |
| 4042.310  | 31.3   | V   | 54.0         | -22.7  | AVG       | 98      | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 4036.870  | 43.4   | V   | 74.0         | -30.6  | PK        | 98      | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1749.920  | 36.5   | V   | 68.3         | -31.8  | Peak      | 207     | 1.0    |                        |
| 10400.480 | 44.6   | V   | 68.3         | -23.7  | Peak      | 13      | 1.6    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |

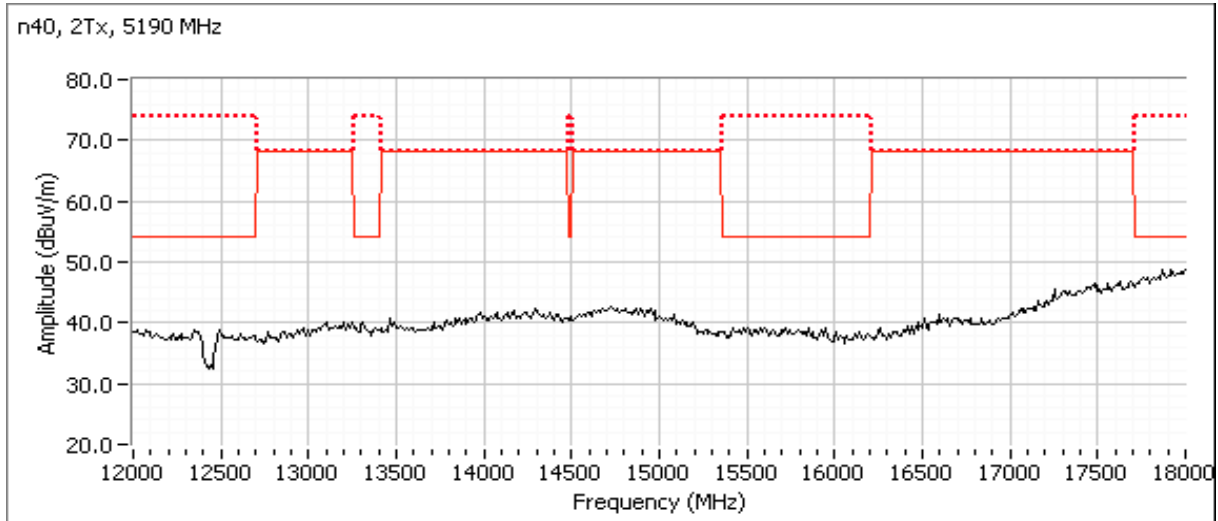


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #2: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #1

Date of Test: 7/27/2015 0:00

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

EUT Voltage: USB

## Run #2a: High Channel

Channel: 46

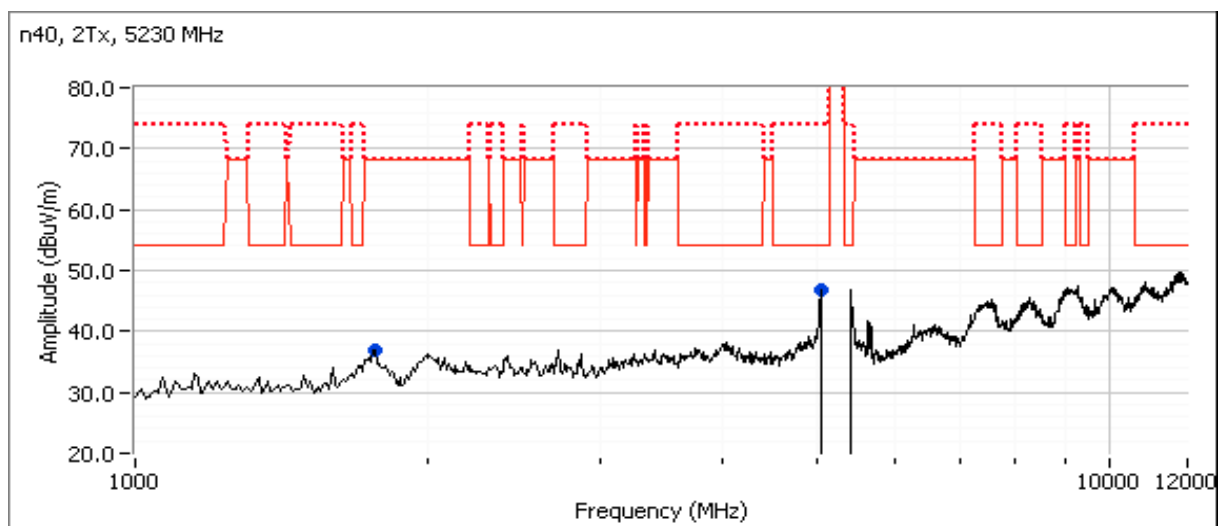
Mode: n40

Tx Chain: 2Tx

Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5037.620  | 40.3         | V   | 54.0            | -13.7  | AVG       | 178     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5038.730  | 51.7         | V   | 74.0            | -22.3  | PK        | 178     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1752.590  | 37.0         | V   | 68.3            | -31.3  | Peak      | 354     | 1.9    |                        |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range



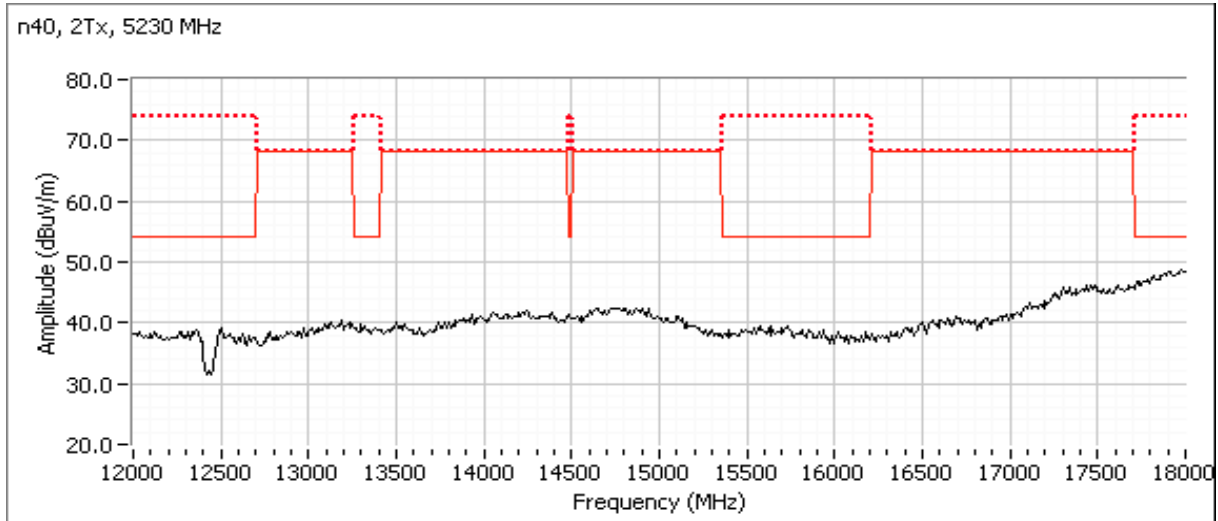


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #3, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5250-5350 MHz Band

Date of Test: 7/23 & 7/24/2015 12:00:00 AM

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

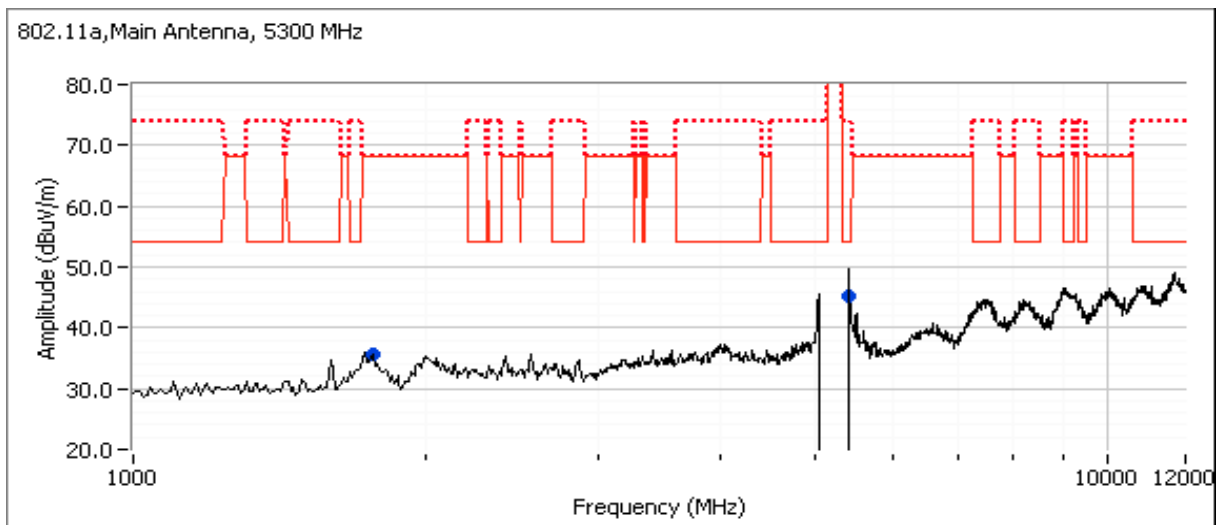
EUT Voltage: USB

### Run #3a: Center Channel

Channel: 60 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5418.080  | 42.5         | V   | 54.0         | -11.5  | AVG       | 171     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5416.540  | 52.7         | V   | 74.0         | -21.3  | PK        | 171     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1760.490  | 35.7         | V   | 68.3         | -32.6  | Peak      | 174     | 1.3    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dB $\mu$ V/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector).   |



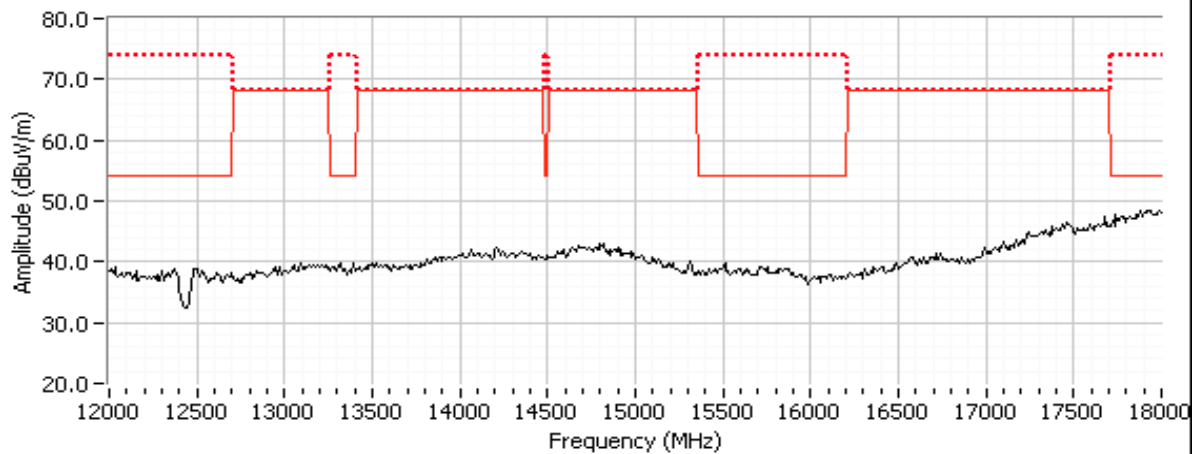
**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

802.11a, Main Antenna, 5300 MHz



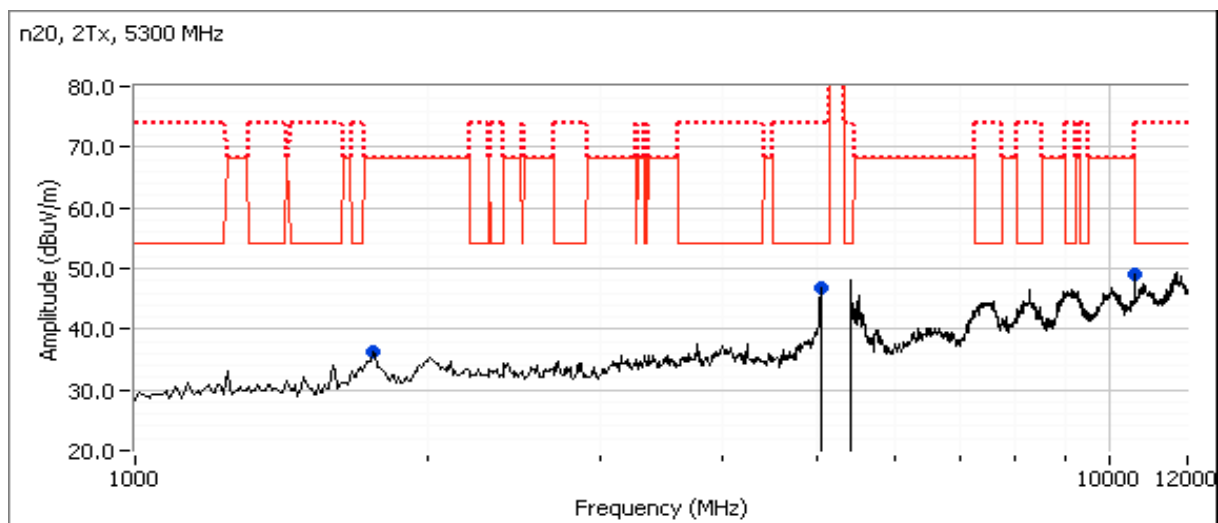
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #3b: Center Channel

Channel: 60 Mode: 11n20  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 10600.130 | 45.2   | V   | 54.0         | -8.8   | AVG       | 240     | 2.3    | RB 1 MHz;VB 10 Hz;Peak |
| 10603.000 | 57.9   | V   | 74.0         | -16.1  | PK        | 240     | 2.3    | RB 1 MHz;VB 3 MHz;Peak |
| 5037.490  | 39.7   | V   | 54.0         | -14.3  | AVG       | 147     | 1.1    | RB 1 MHz;VB 10 Hz;Peak |
| 5022.290  | 50.5   | V   | 74.0         | -23.5  | PK        | 147     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |
| 1749.830  | 36.2   | V   | 68.3         | -32.1  | Peak      | 208     | 1.0    |                        |
| 16550.000 | 41.9   | H   | 68.3         | -26.4  | Peak      | 272     | 1.3    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |

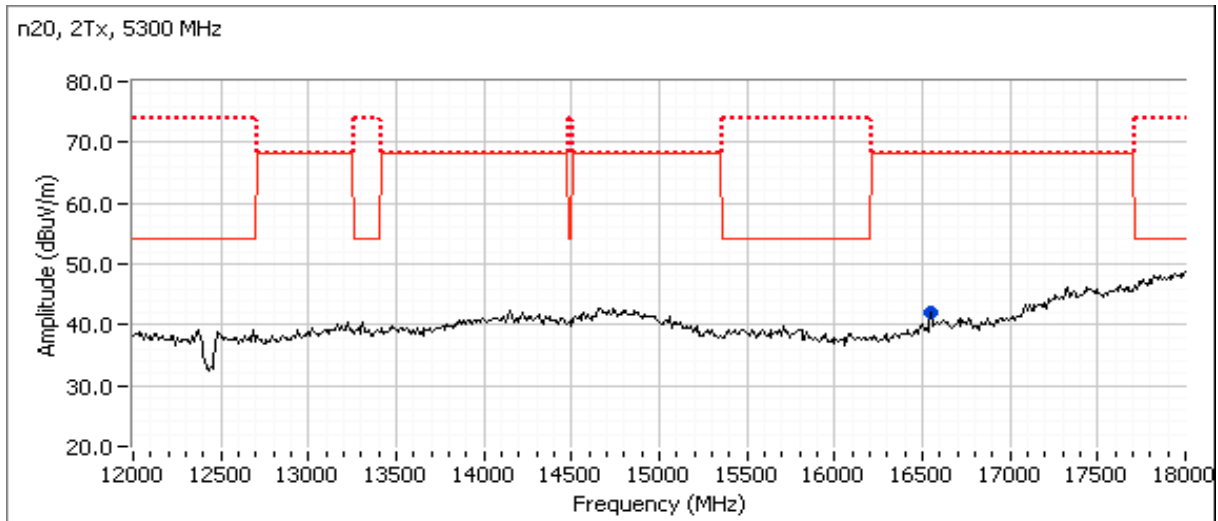


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



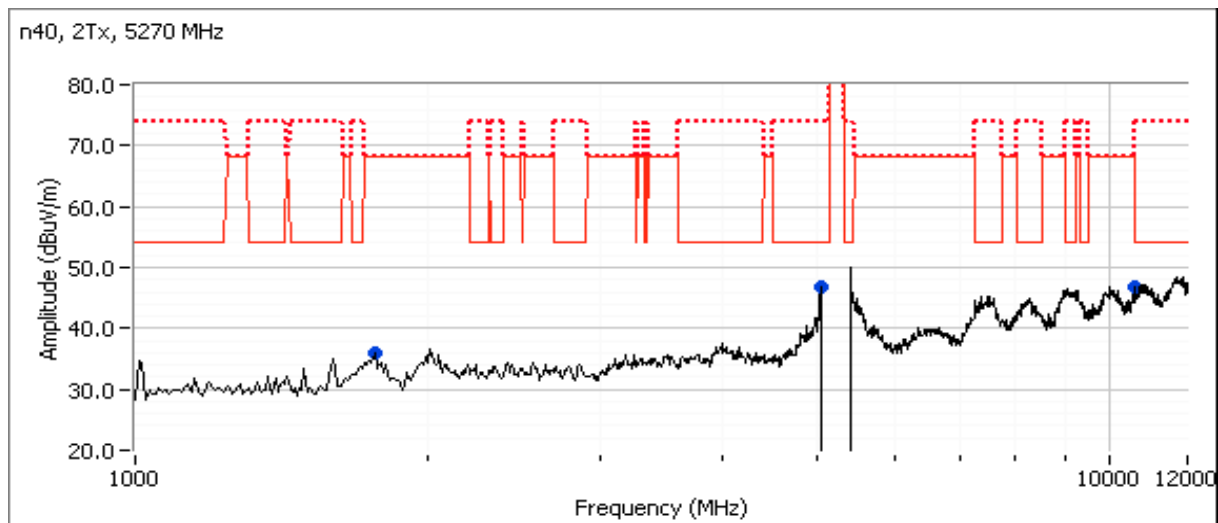
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #3c: Center Channel

Channel: 54 Mode: 11n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5041.620  | 41.5         | V   | 54.0         | -12.5  | AVG       | 127     | 2.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5044.150  | 52.0         | V   | 74.0         | -22.0  | PK        | 127     | 2.0    | RB 1 MHz;VB 3 MHz;Peak |
| 10617.180 | 41.0         | H   | 54.0         | -13.0  | AVG       | 360     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 10610.270 | 52.4         | H   | 74.0         | -21.6  | PK        | 360     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1750.260  | 36.0         | V   | 68.3         | -32.3  | Peak      | 24      | 1.3    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dB $\mu$ V/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector).   |

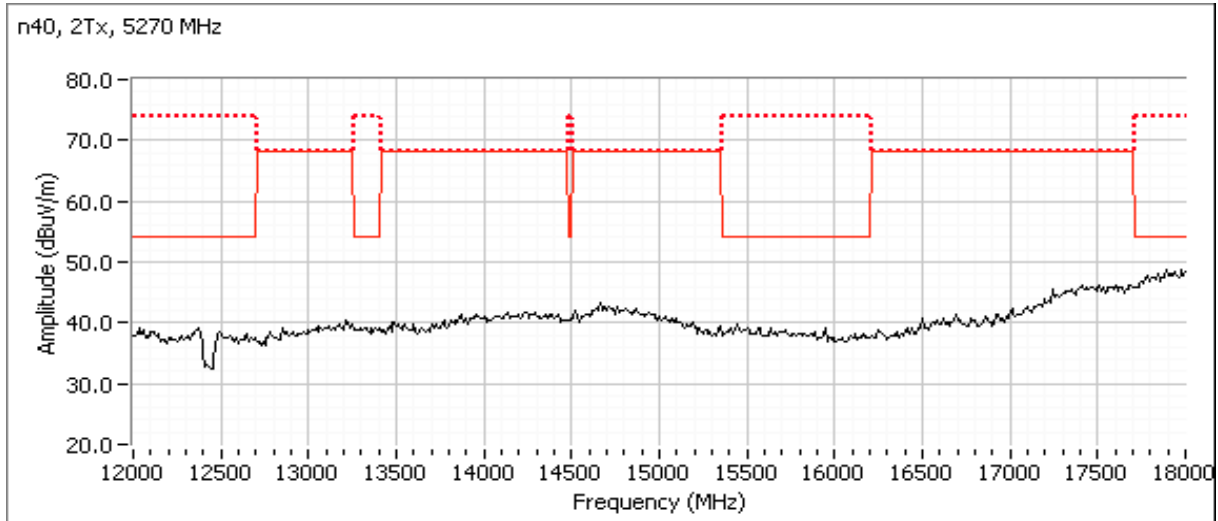


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |





## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

### Run #4: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #3

Date of Test: 7/27/2015 0:00

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

EUT Voltage: USB

### Run #4a: Low Channel

Channel: 52

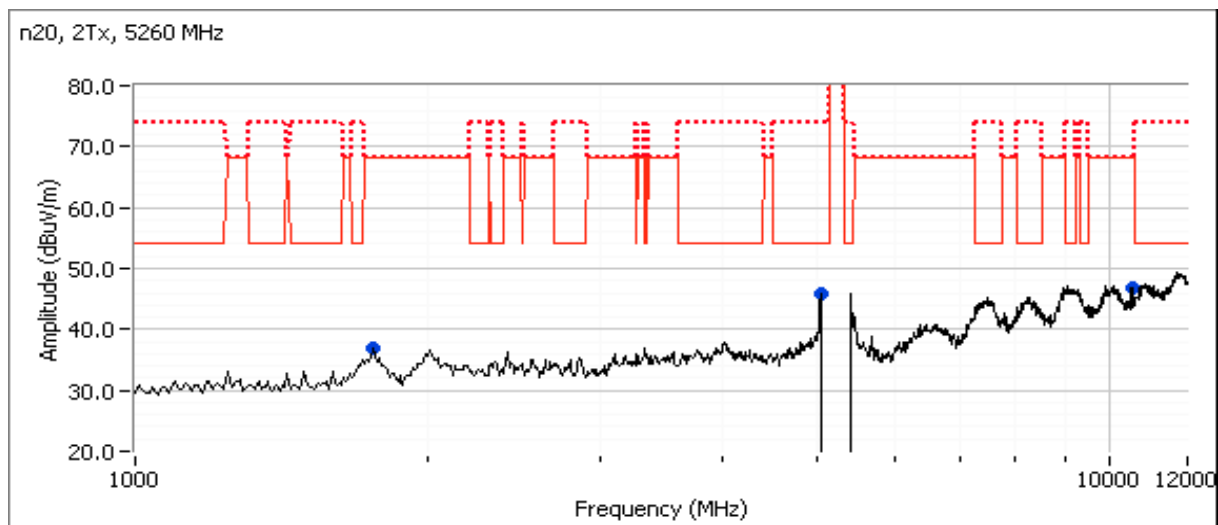
Mode: n20

Tx Chain: 2Tx

Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 10518.620 | 57.6         | V   | 68.3            | -10.7  | PK        | 239     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |
| 5045.450  | 39.5         | V   | 54.0            | -14.5  | AVG       | 191     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5039.080  | 51.2         | V   | 74.0            | -22.8  | PK        | 191     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1752.500  | 36.8         | V   | 68.3            | -31.5  | Peak      | 181     | 1.3    |                        |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range





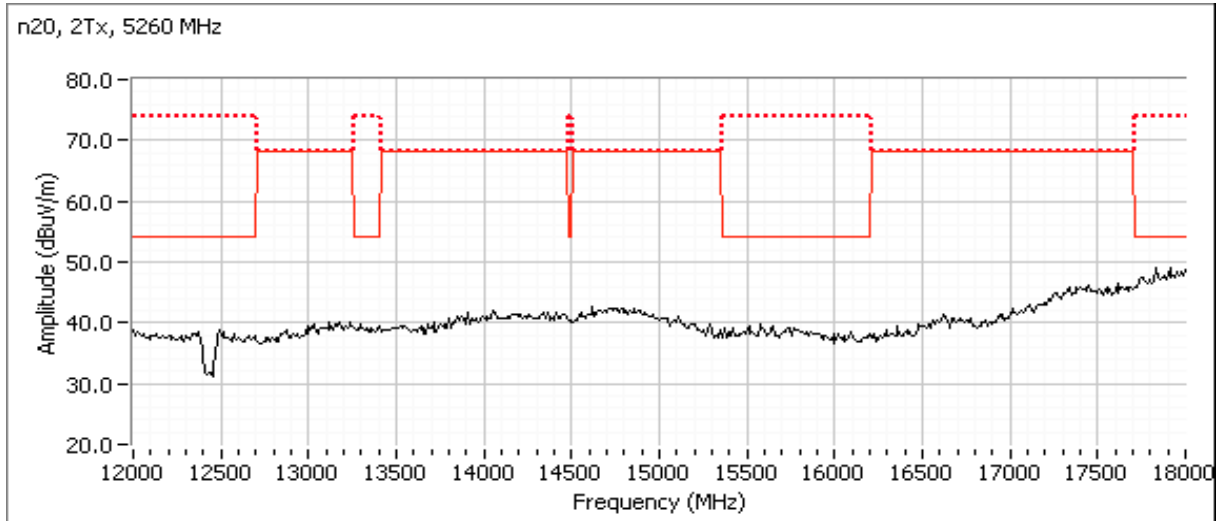


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

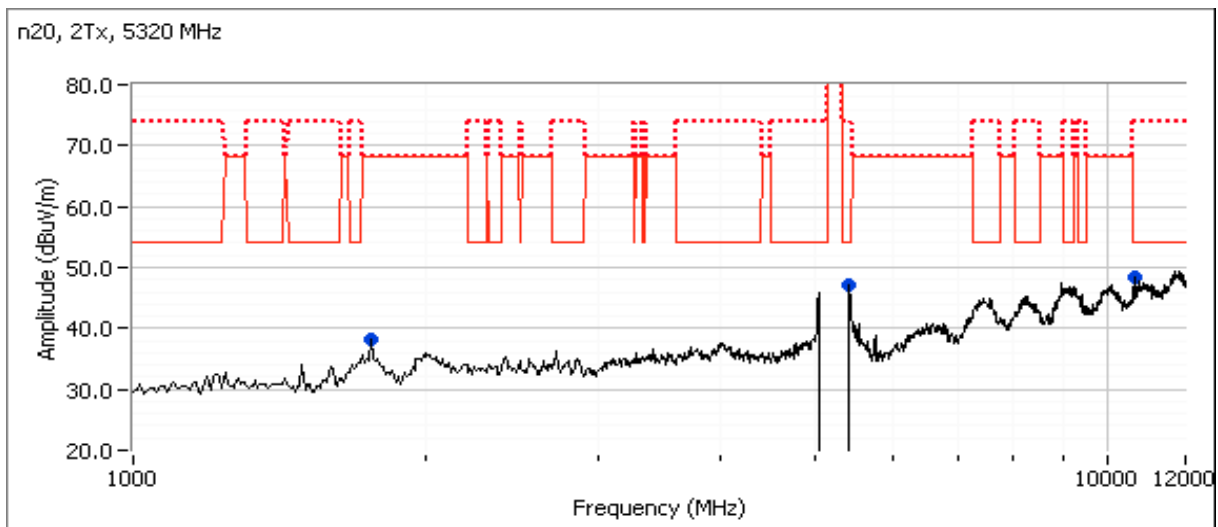
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #4b: High Channel

Channel: 64                      Mode: n20  
Tx Chain: 2Tx                      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 10640.100 | 45.7         | V   | 54.0            | -8.3   | AVG       | 244     | 1.2    | RB 1 MHz;VB 10 Hz;Peak |
| 10638.250 | 59.1         | V   | 74.0            | -14.9  | PK        | 244     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 5414.960  | 42.4         | V   | 54.0            | -11.6  | AVG       | 204     | 1.2    | RB 1 MHz;VB 10 Hz;Peak |
| 5414.960  | 54.5         | V   | 74.0            | -19.5  | PK        | 204     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 1749.170  | 38.3         | V   | 68.3            | -30.0  | Peak      | 14      | 1.3    |                        |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

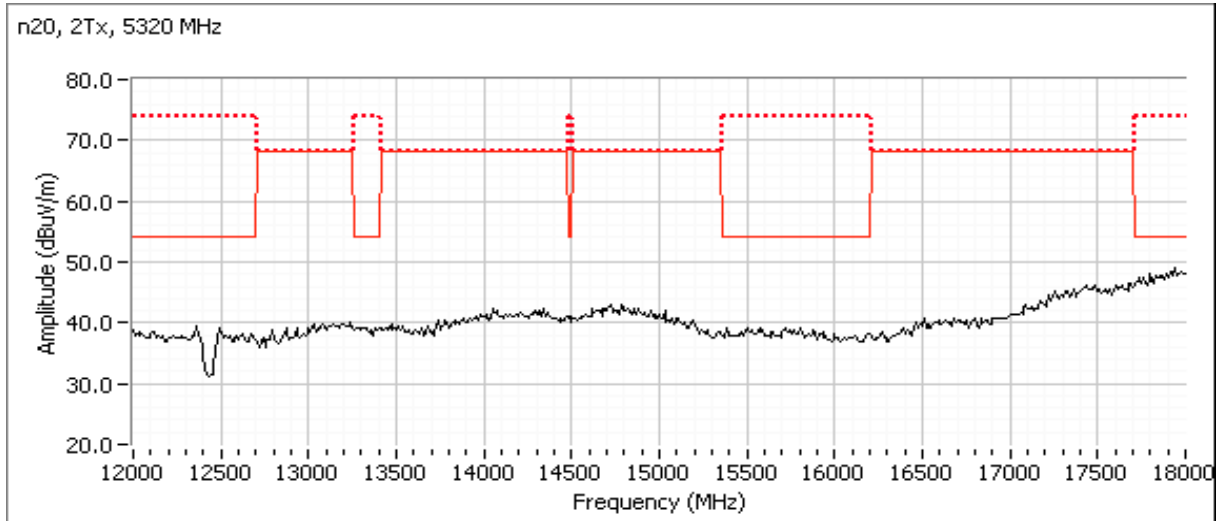


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #5, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5470-5725 MHz Band

Date of Test: 7/23 & 7/24/2015 12:00:00 AM

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

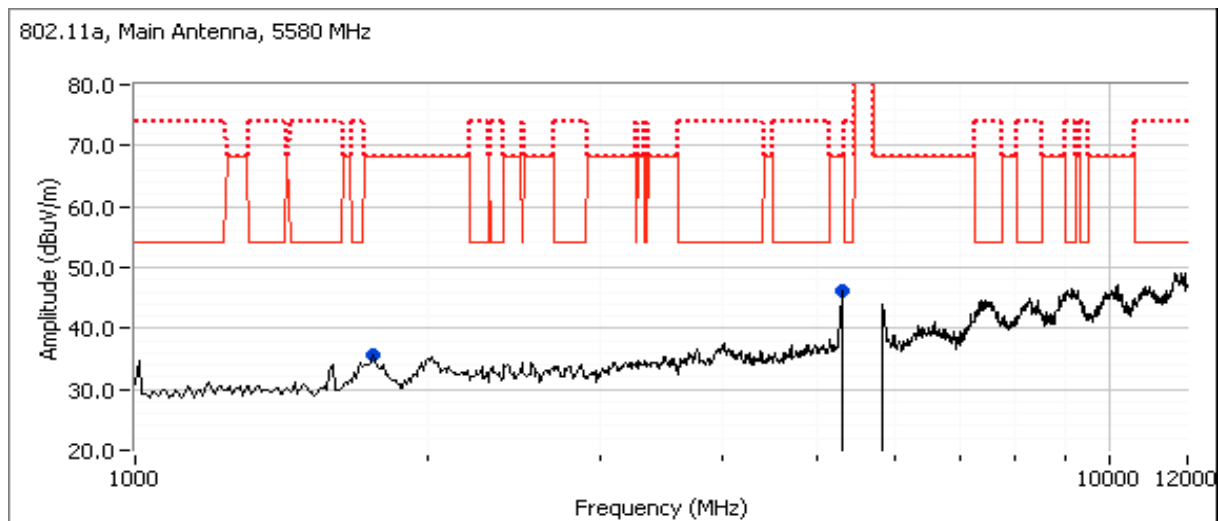
EUT Voltage: USB

### Run #5a: Center Channel

Channel: 116 Mode: a  
 Tx Chain: Main Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 5325.930  | 50.8         | V   | 68.3         | -17.5  | PK        | 87      | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1750.000  | 35.5         | V   | 68.3         | -32.8  | Peak      | 18      | 1.3    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dB $\mu$ V/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector).   |



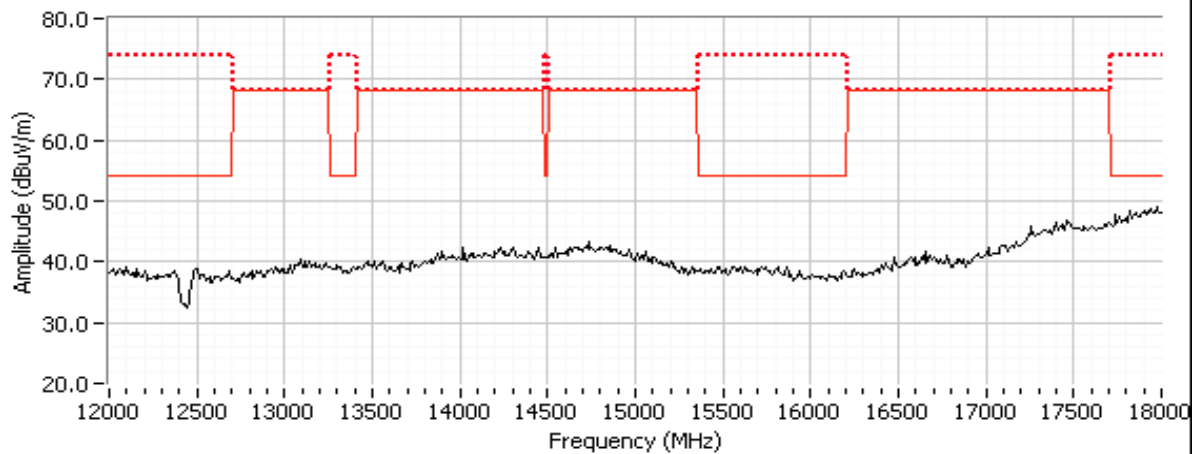
**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

802.11a, Main Antenna, 5580 MHz



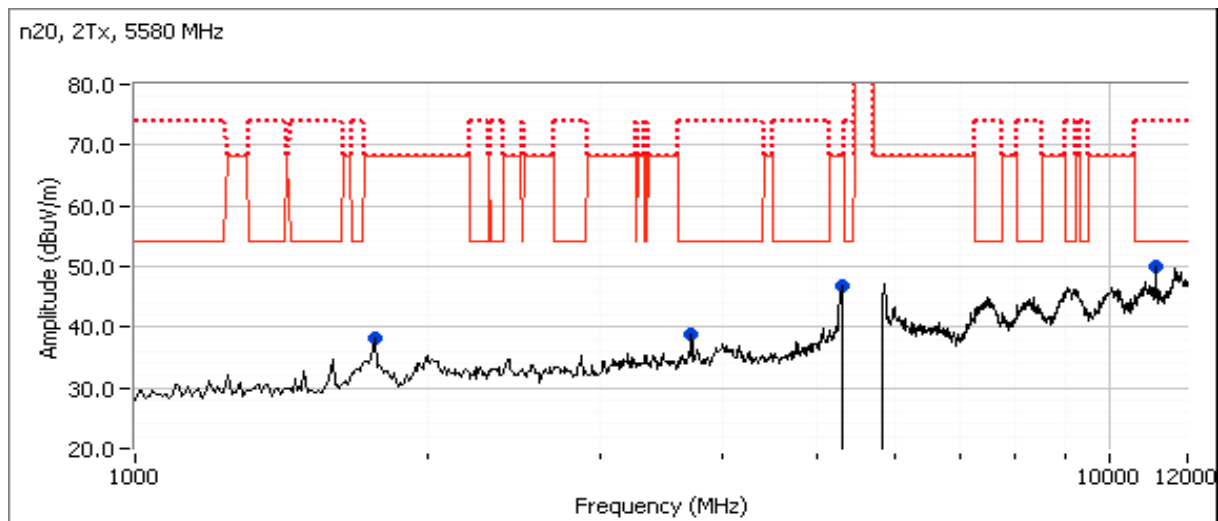
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #5b: Center Channel

Channel: 116      Mode: 11n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBuV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11160.040 | 47.8   | V   | 54.0         | -6.2   | AVG       | 252     | 1.5    | RB 1 MHz;VB 10 Hz;Peak |
| 11162.500 | 60.3   | V   | 74.0         | -13.7  | PK        | 252     | 1.5    | RB 1 MHz;VB 3 MHz;Peak |
| 3720.000  | 34.9   | V   | 54.0         | -19.1  | AVG       | 263     | 1.8    | RB 1 MHz;VB 10 Hz;Peak |
| 3720.170  | 43.0   | V   | 74.0         | -31.0  | PK        | 263     | 1.8    | RB 1 MHz;VB 3 MHz;Peak |
| 1757.660  | 38.2   | V   | 68.3         | -30.1  | Peak      | 357     | 1.3    |                        |
| 5309.250  | 46.8   | H   | 68.3         | -21.5  | Peak      | 298     | 1.6    |                        |
| 16740.000 | 42.3   | V   | 68.3         | -26.0  | Peak      | 209     | 1.6    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |

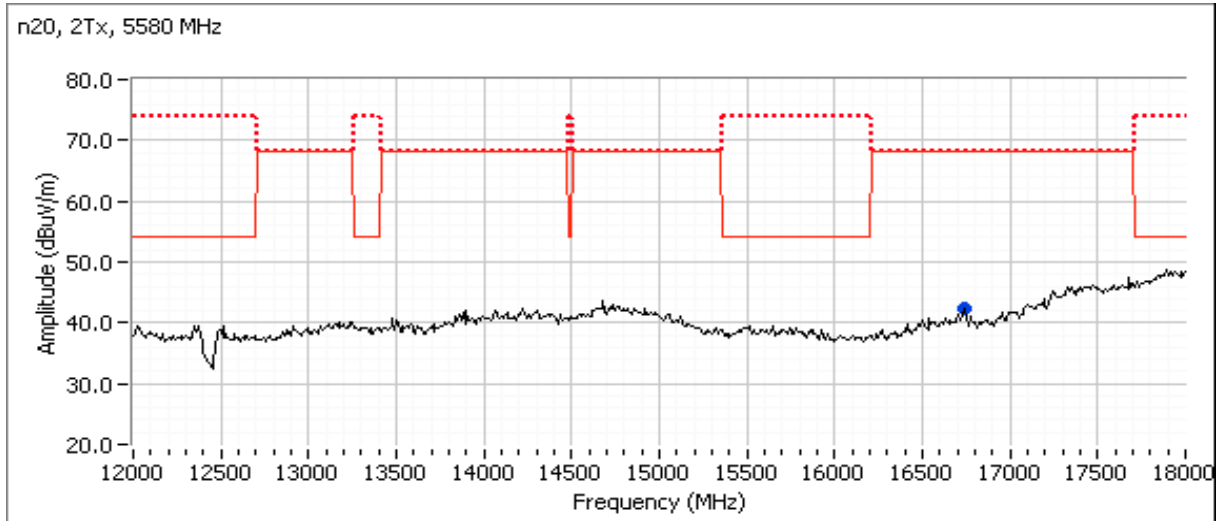


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



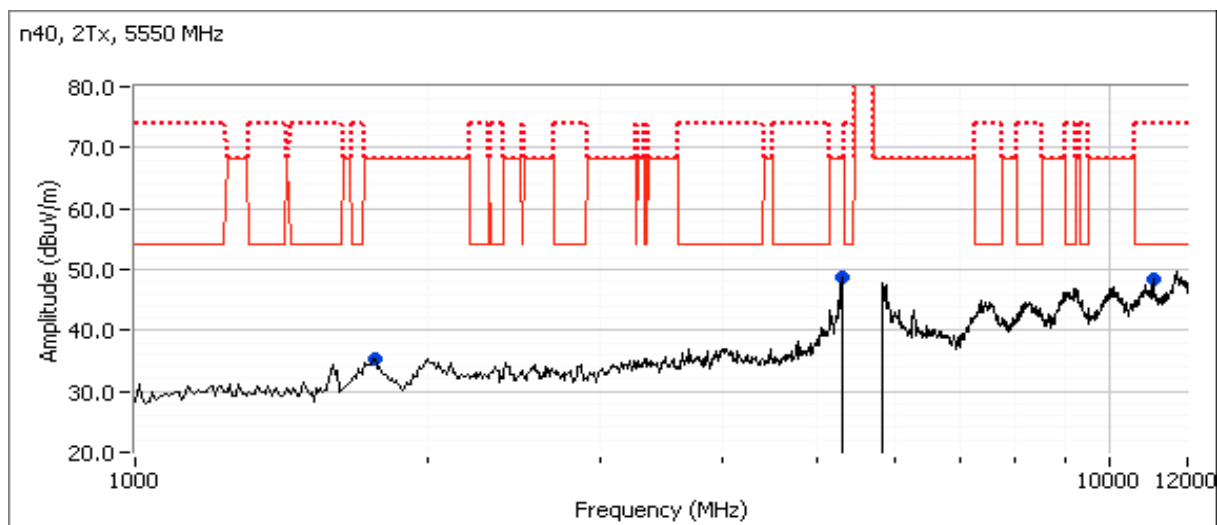
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #5c: Center Channel

Channel: 110 Mode: 11n40  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBuV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11100.310 | 46.1   | V   | 54.0         | -7.9   | AVG       | 243     | 2.4    | RB 1 MHz;VB 10 Hz;Peak |
| 11103.410 | 57.8   | V   | 74.0         | -16.2  | PK        | 243     | 2.4    | RB 1 MHz;VB 3 MHz;Peak |
| 1759.990  | 35.2   | V   | 68.3         | -33.1  | Peak      | 11      | 1.3    |                        |
| 5308.160  | 48.6   | V   | 68.3         | -19.7  | Peak      | 179     | 2.5    |                        |
| 17090.000 | 43.6   | V   | 68.3         | -24.7  | Peak      | 46      | 1.3    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |



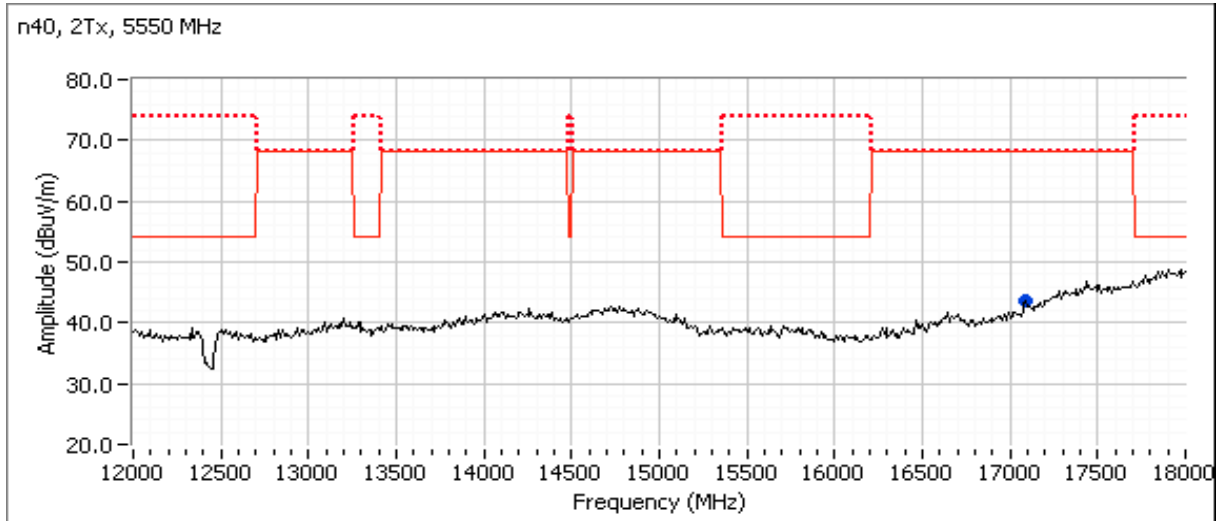


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #6: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #5

Date of Test: 7/27/2015 0:00

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

EUT Voltage: USB

### Run #6a: Low Channel

Channel: 100

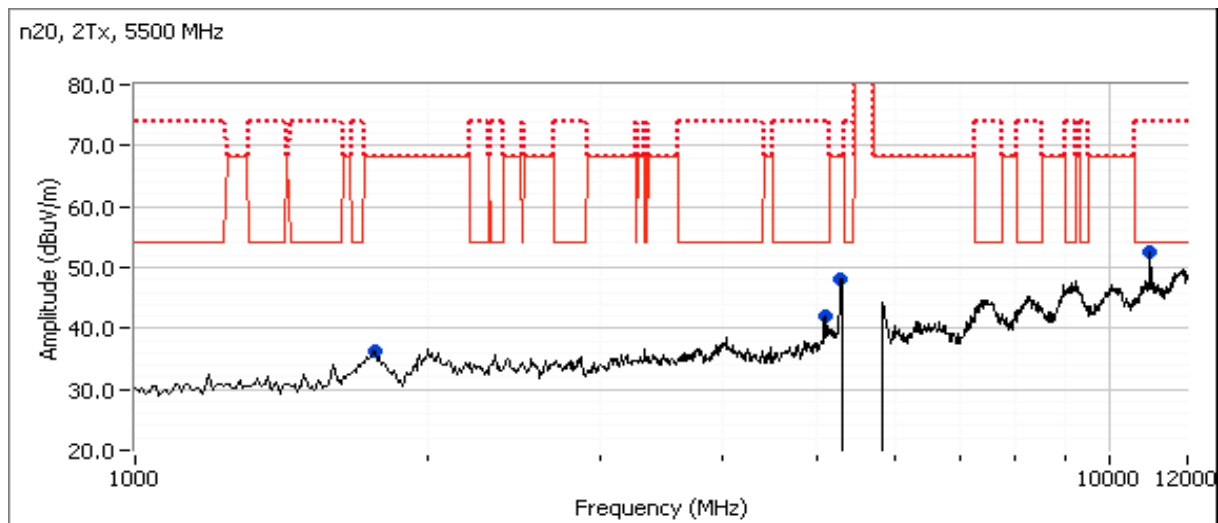
Mode: n20

Tx Chain: 2Tx

Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11000.530 | 47.9         | V   | 54.0            | -6.1   | AVG       | 258     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11003.750 | 60.7         | V   | 74.0            | -13.3  | PK        | 258     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 5111.180  | 31.1         | V   | 54.0            | -22.9  | AVG       | 256     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 5110.490  | 42.4         | V   | 74.0            | -31.6  | PK        | 256     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1754.750  | 36.2         | V   | 68.3            | -32.1  | Peak      | 180     | 1.3    |                        |
| 5309.060  | 48.2         | V   | 68.3            | -20.1  | Peak      | 194     | 1.6    |                        |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range



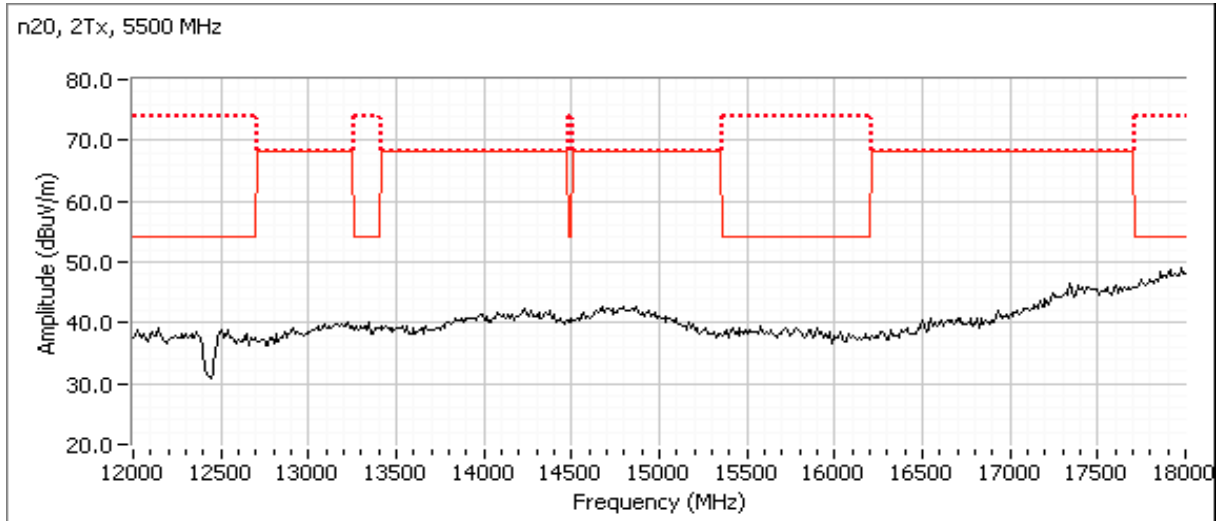


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



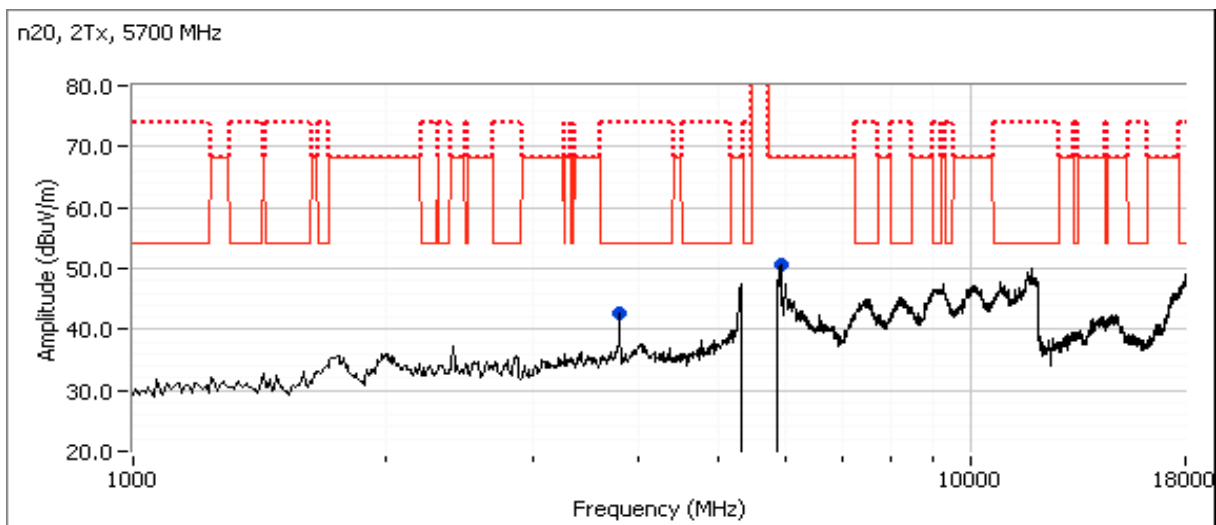
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #6b: High Channel

Channel: 140      Mode: n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | PK/QP/Avg | degrees | meters |                        |
| 5921.370  | 54.7         | V   | 68.3            | -13.6  | PK        | 191     | 2.3    | RB 1 MHz;VB 3 MHz;Peak |
| 3800.060  | 38.3         | V   | 54.0            | -15.7  | AVG       | 310     | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 3800.350  | 45.4         | V   | 74.0            | -28.6  | PK        | 310     | 1.0    | RB 1 MHz;VB 3 MHz;Peak |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5725-5850 MHz Band

Date of Test: 7/24/2015 0:00

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

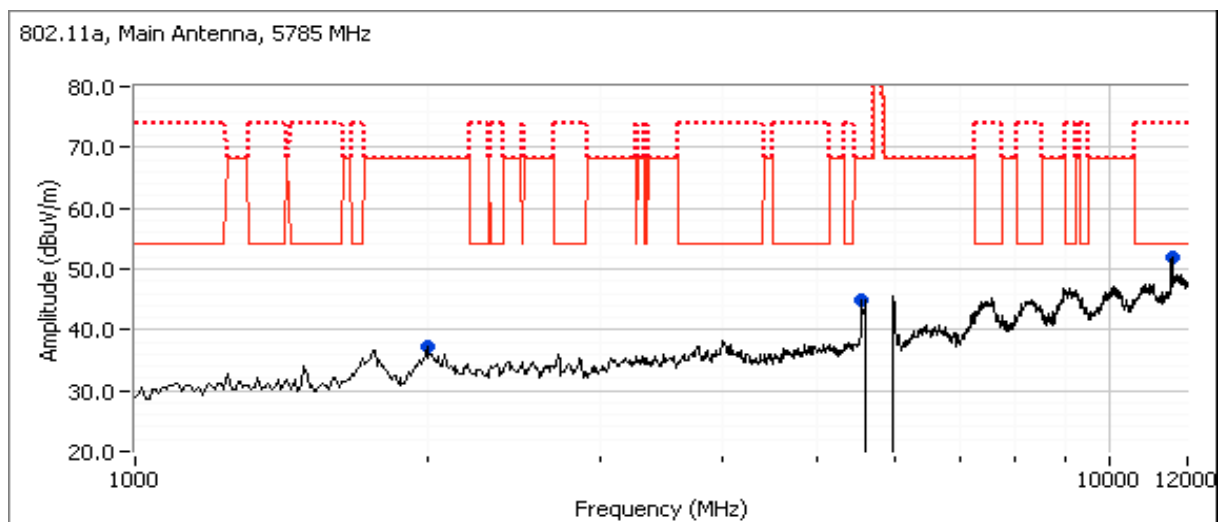
EUT Voltage: USB

### Run #7a: Center Channel

Channel: 157  
 Tx Chain: Main  
 Mode: a  
 Data Rate: 6Mb/s

| Frequency | Level        | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11569.080 | 44.7         | V   | 54.0         | -9.3   | AVG       | 26      | 1.0    | RB 1 MHz;VB 10 Hz;Peak |
| 11575.950 | 55.8         | V   | 74.0         | -18.2  | PK        | 26      | 1.0    | RB 1 MHz;VB 3 MHz;Peak |
| 1995.500  | 37.2         | V   | 68.3         | -31.1  | Peak      | 111     | 2.5    |                        |
| 5573.800  | 44.8         | V   | 68.3         | -23.5  | Peak      | 194     | 1.6    |                        |
| 16630.000 | 42.1         | V   | 68.3         | -26.2  | Peak      | 220     | 1.9    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB $\geq$ 3MHz, peak detector).         |



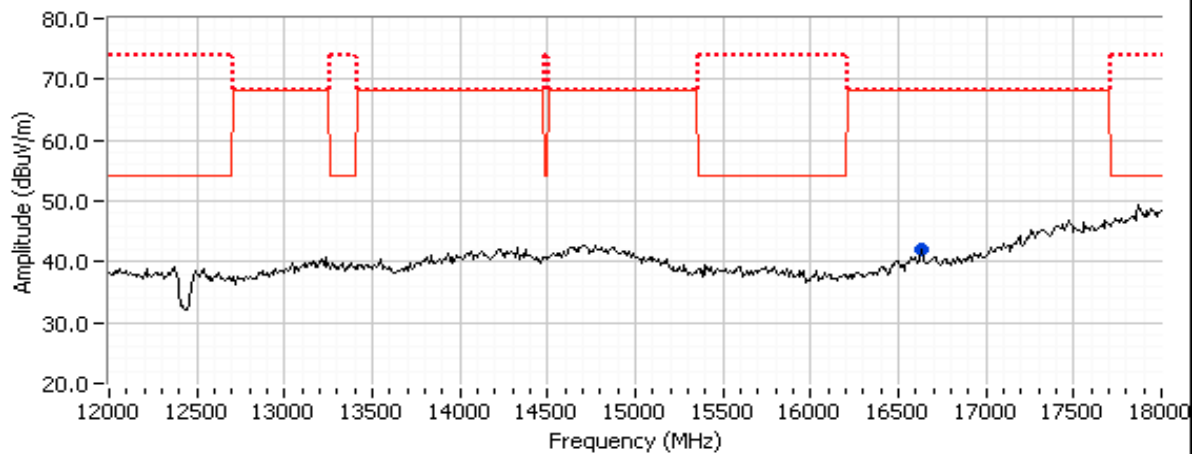
**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

802.11a, Main Antenna, 5785 MHz



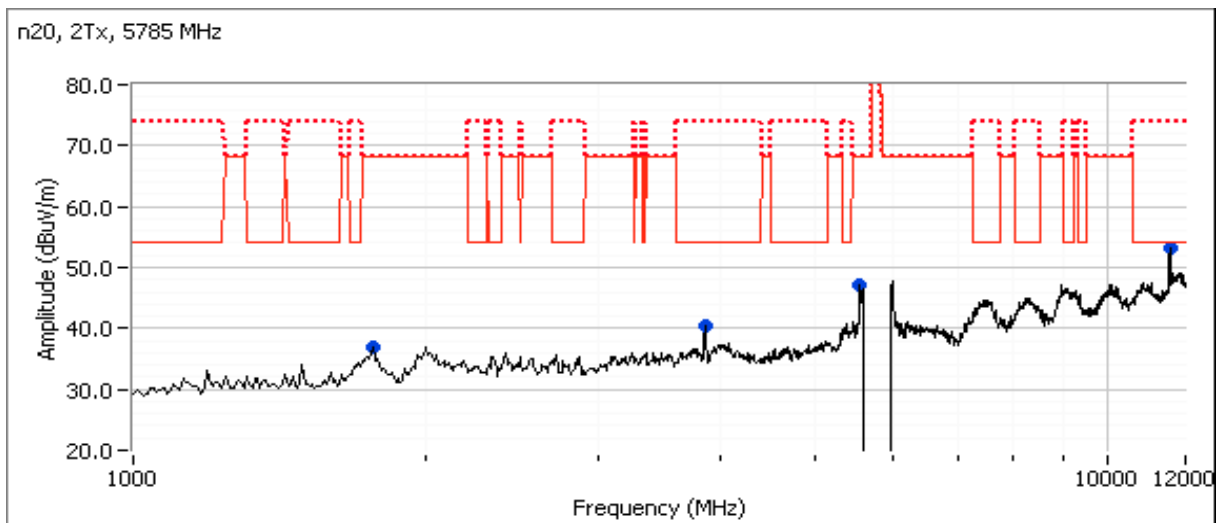
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7b: Center Channel

Channel: 157 Mode: 11n20  
 Tx Chain: 2Tx Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBμV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11569.930 | 49.4   | V   | 54.0         | -4.6   | AVG       | 190     | 1.2    | RB 1 MHz;VB 10 Hz;Peak |
| 11570.200 | 60.7   | V   | 74.0         | -13.3  | PK        | 190     | 1.2    | RB 1 MHz;VB 3 MHz;Peak |
| 1759.660  | 37.0   | V   | 68.3         | -31.3  | Peak      | 212     | 1.0    |                        |
| 3863.160  | 40.5   | V   | 54.0         | -13.5  | Peak      | 177     | 1.6    |                        |
| 5590.550  | 47.2   | V   | 68.3         | -21.1  | Peak      | 175     | 1.9    |                        |
| 17361.200 | 49.1   | V   | 68.3         | -19.2  | Peak      | 229     | 1.6    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |



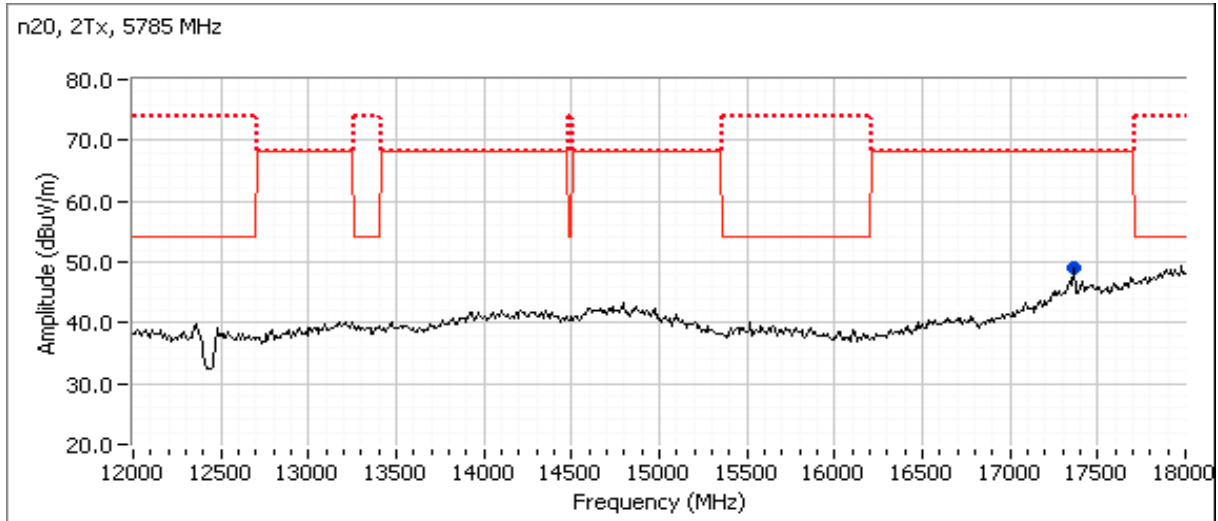


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |





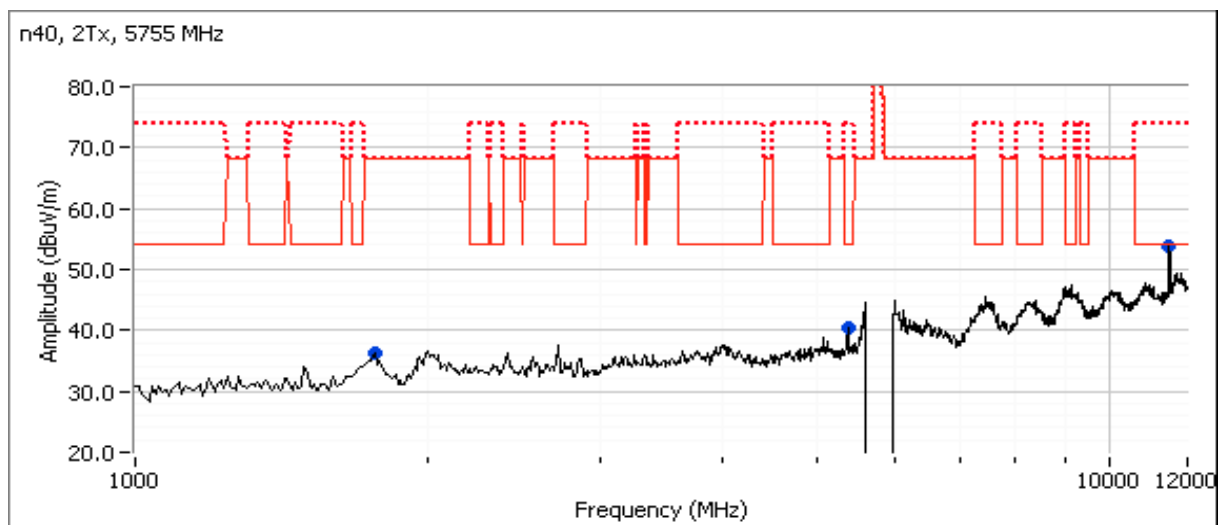
|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #7c: Center Channel

Channel: 151      Mode: 11n40  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level  | Pol | 15.209 / 15E |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------|-----|--------------|--------|-----------|---------|--------|------------------------|
| MHz       | dBuV/m | v/h | Limit        | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11515.180 | 46.6   | V   | 54.0         | -7.4   | AVG       | 281     | 2.4    | RB 1 MHz;VB 10 Hz;Peak |
| 11506.910 | 57.3   | V   | 74.0         | -16.7  | PK        | 281     | 2.4    | RB 1 MHz;VB 3 MHz;Peak |
| 5388.490  | 40.4   | H   | 54.0         | -13.6  | Peak      | 230     | 1.6    |                        |
| 1758.500  | 36.3   | V   | 68.3         | -32.0  | Peak      | 26      | 1.9    |                        |
| 17252.700 | 50.8   | V   | 68.3         | -17.5  | Peak      | 195     | 1.6    |                        |

|         |                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note:   | Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range |
| Note 1: | For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.                                                                                    |
| Note 2: | For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).                |

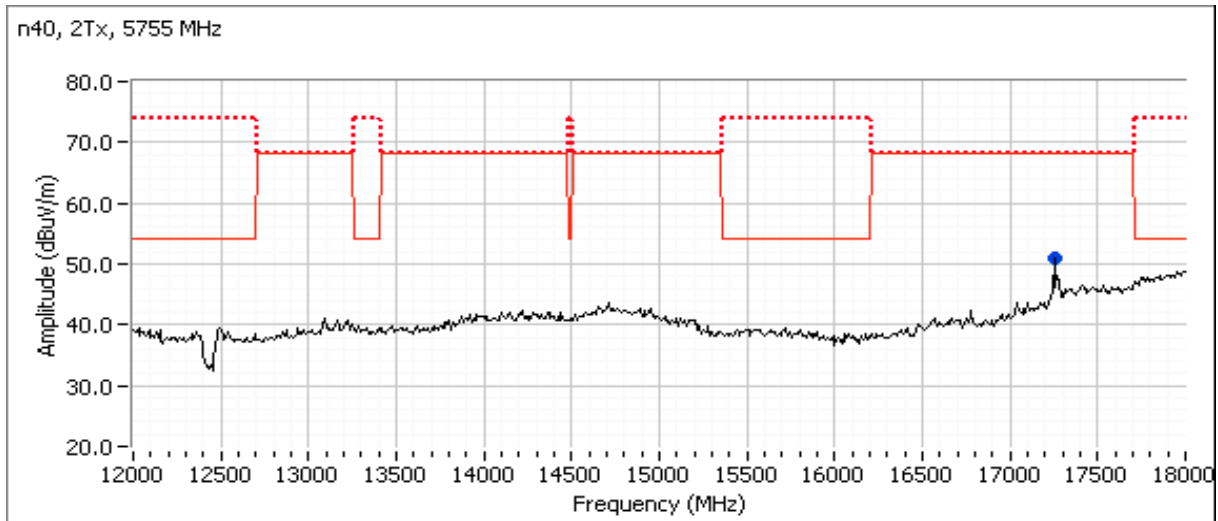


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |

## Run #8: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #7

Date of Test: 7/27/2015 0:00

Config. Used: 1

Test Engineer: Rafael Varelas

Config Change: None

Test Location: FT Chamber #5

EUT Voltage: USB

### Run #8a: Low Channel

Channel: 149

Mode: n20

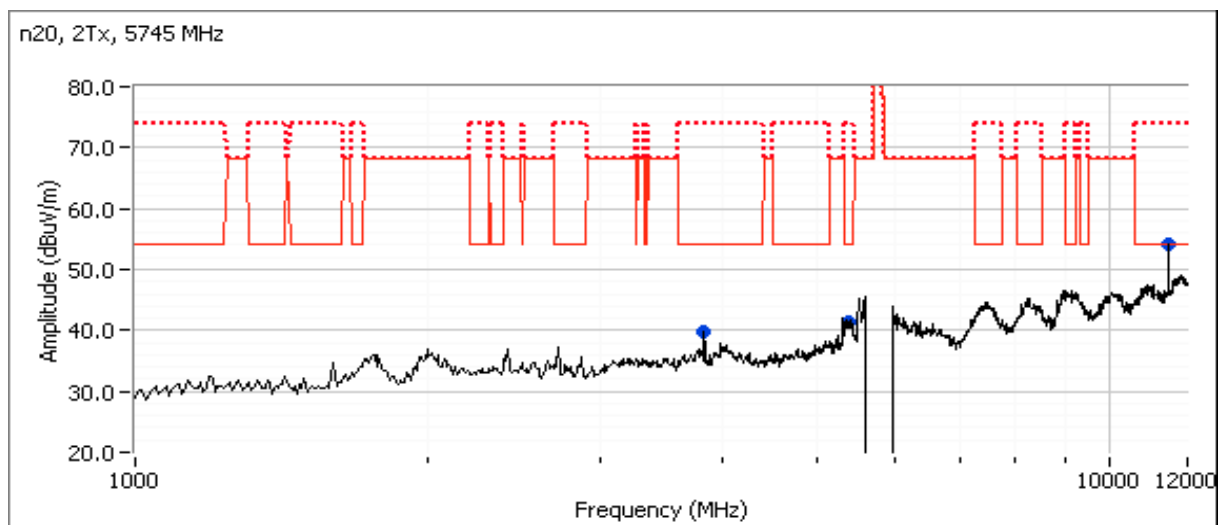
Tx Chain: 2Tx

Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11490.220 | 49.3         | V   | 54.0            | -4.7   | AVG       | 255     | 1.4    | RB 1 MHz;VB 10 Hz;Peak |
| 11492.760 | 60.0         | V   | 74.0            | -14.0  | PK        | 255     | 1.4    | RB 1 MHz;VB 3 MHz;Peak |
| 3830.160  | 39.9         | V   | 54.0            | -14.1  | Peak      | 141     | 1.9    |                        |
| 5406.890  | 41.4         | V   | 54.0            | -12.6  | Peak      | 189     | 1.3    |                        |
| 17240.000 | 48.3         | H   | 68.3            | -20.0  | Peak      | 170     | 1.9    |                        |

Note:

Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

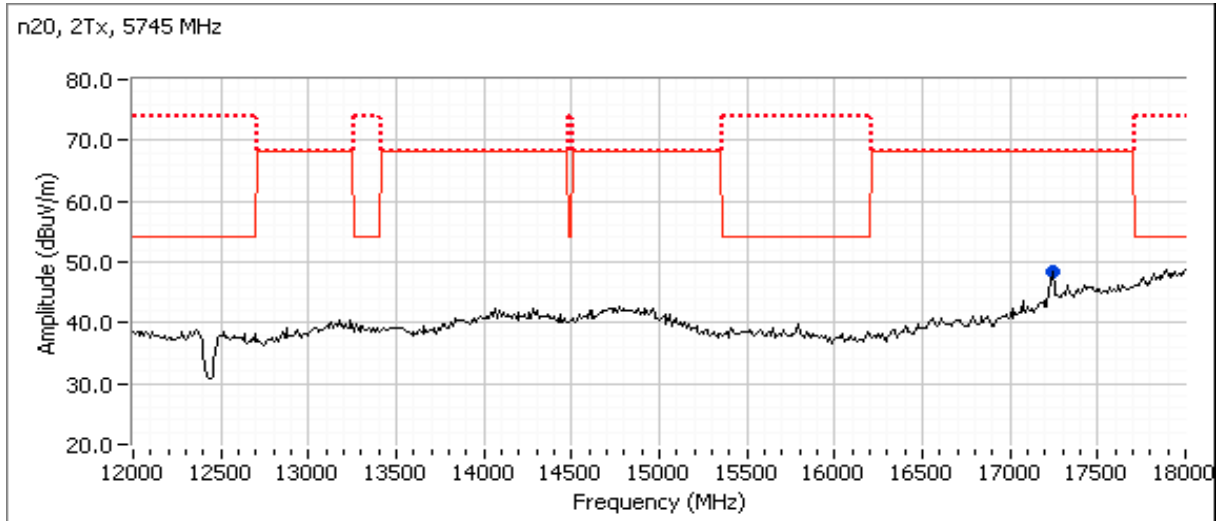


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



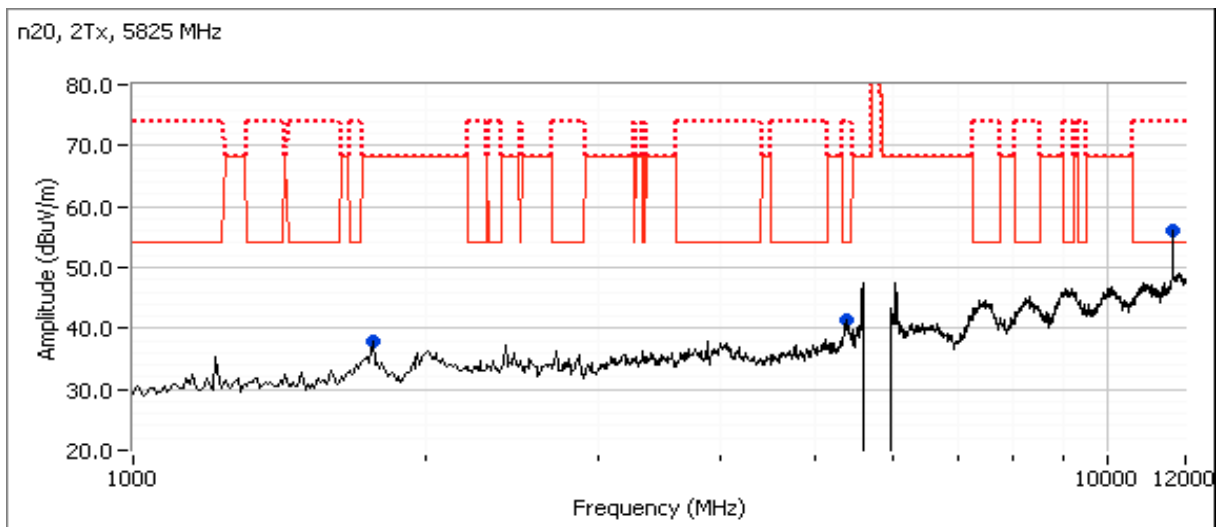
|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #8b: High Channel

Channel: 165      Mode: n20  
 Tx Chain: 2Tx      Data Rate: MCS0

| Frequency | Level        | Pol | 15.209 / 15.247 |        | Detector  | Azimuth | Height | Comments               |
|-----------|--------------|-----|-----------------|--------|-----------|---------|--------|------------------------|
| MHz       | dB $\mu$ V/m | v/h | Limit           | Margin | Pk/QP/Avg | degrees | meters |                        |
| 11649.680 | 50.2         | V   | 54.0            | -3.8   | AVG       | 196     | 1.1    | RB 1 MHz;VB 10 Hz;Peak |
| 11654.850 | 61.9         | V   | 74.0            | -12.1  | PK        | 196     | 1.1    | RB 1 MHz;VB 3 MHz;Peak |
| 1757.910  | 37.8         | V   | 68.3            | -30.5  | Peak      | 224     | 1.0    |                        |
| 5381.830  | 41.3         | V   | 54.0            | -12.7  | Peak      | 185     | 1.3    |                        |
| 17470.000 | 50.9         | V   | 68.3            | -17.4  | Peak      | 234     | 1.6    |                        |

Note: Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range

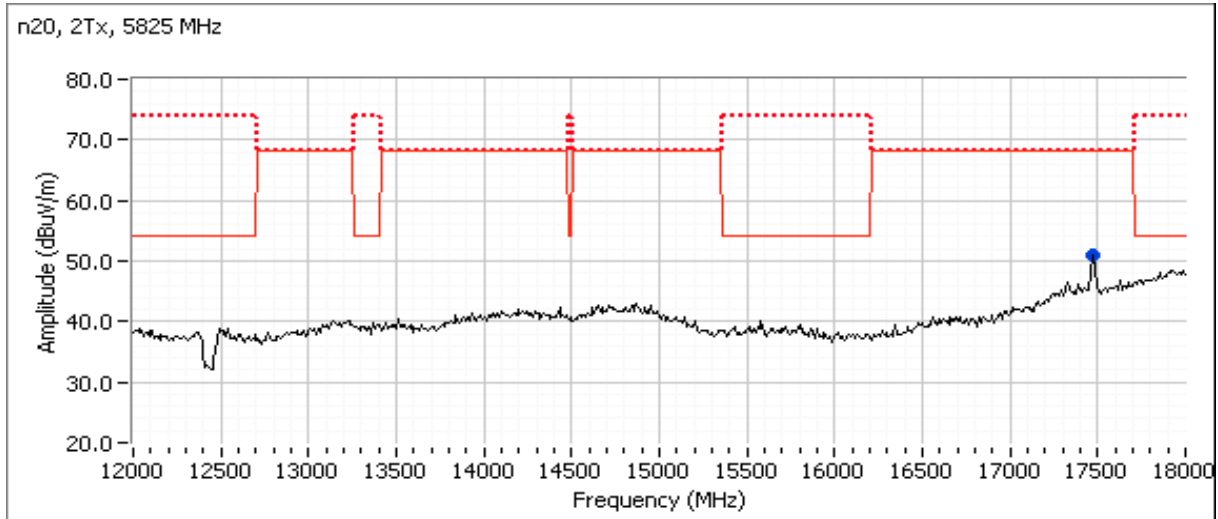


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS-247 and FCC 15.407(UNII) Antenna Port Measurements Power, PSD, Bandwidth and Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### Summary of Results

| Run # | Test Performed             | Limit                                                                                 | Pass / Fail | Result / Margin                                 |
|-------|----------------------------|---------------------------------------------------------------------------------------|-------------|-------------------------------------------------|
| 1     | Power, 5150 - 5250MHz      | 15.407(a) (1) (iv)                                                                    | Pass        | n20: 18.9 dBm (77.8mW)<br>n40: 20.0 dBm (100mW) |
| 1     | PSD, 5150 - 5250MHz        | 15.407(a) (1) (iv)                                                                    | Pass        | n20: 6.4 dBm/MHz<br>n40: 5.7 dBm/MHz            |
| 1     | Power, 5150 - 5250MHz      | RSS-247, 6.2.1 (1)                                                                    | Pass        | n20: 22.4dBm eirp<br>n40: 22.96dBm eirp         |
| 1     | PSD, 5150 - 5250MHz        | RSS-247, 6.2.1 (1)                                                                    | Pass        | n20: 6.4 dBm/MHz<br>n40: 5.0 dBm/MHz            |
| 1     | Power, 5250 - 5350MHz      | 15.407(a) (2) / RSS-247, 6.2.2 (1)                                                    | Pass        | n20: 19.8 dBm (96mW)<br>n40: 18.8 dBm (76mW)    |
| 1     | PSD, 5250 - 5350MHz        | 15.407(a) (2) / RSS-247, 6.2.2 (1)                                                    | Pass        | n20: 7.4 dBm/MHz<br>n40: 4.4 dBm/MHz            |
| 1     | Max EIRP<br>5250 - 5350MHz | TPC required if EIRP ≥ 500mW (27dBm).<br>EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. | Pass        | EIRP = 23.3 dBm (215mW)                         |
| 1     | Power, 5470 - 5725MHz      | 15.407(a) (2) / RSS-247, 6.2.3 (1)                                                    | Pass        | n20: 18.5 dBm (71mW)<br>n40: 19.0 dBm (80mW)    |
| 1     | PSD, 5470 - 5725MHz        | 15.407(a) (2) / RSS-247, 6.2.3 (1)                                                    | Pass        | n20: 6.2 dBm/MHz<br>n40: 4.6 dBm/MHz            |
| 1     | Max EIRP<br>5470 - 5725MHz | TPC required if EIRP ≥ 500mW (27dBm).<br>EIRP ≥ 200mW (23dBm) DFS threshold           | Pass        | EIRP = 22.5 dBm (178mW)                         |
| 1     | Power, 5725 - 5850MHz      | 15.407(a)(3) / RSS-247, 6.2.4 (1)                                                     | Pass        | n20: 18.7 dBm (74 mW)<br>n40: 16.4 dBm (44 mW)  |
| 1     | PSD, 5725 - 5850MHz        | 15.407(a)(3) / RSS-247, 6.2.4 (1)                                                     | Pass        | n20: 6.3 dBm/MHz<br>n40: 2.0 dBm/MHz            |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Test Performed        | Limit                         | Pass / Fail | Result / Margin                |
|-------|-----------------------|-------------------------------|-------------|--------------------------------|
| 2     | 6dB Bandwidth - UNII3 | 15.407(e)                     | Pass        | 14.3 MHz minimum               |
| 1     | 99% Bandwidth         | RSS 210<br>(Information only) | N/A         | n20: 17.6 MHz<br>n40: 36.3 MHz |

## General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

## Ambient Conditions:

Temperature: 25 °C  
 Rel. Humidity: 31 %

## Modifications Made During Testing

No modifications were made to the EUT during testing

## Deviations From The Standard

No deviations were made from the requirements of the standard.

## Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01 v01r03, dated April 8, 2013

| Mode  | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|-------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a   | 6MB/s     | 0.982          | Yes          | 1.405  | 0               | 0                     | 10                  |
| 11n20 | MCS0      | 0.981          | Yes          | 1.309  | 0               | 0                     | 10                  |
| 11n40 | MCS0      | 0.98           | Yes          | 0.932  | 0               | 0                     | 10                  |

## Sample Notes

Sample S/N: MAC ID# 707781772509

Driver: 6.37 RC214 .12



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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**Test Reduction Notes:**

Power/PSD for 11a and n20 (1Tx) was not performed. Covered by n20 2Tx, total power not to exceed 2Tx power levels.

Power/PSD for n40 (1Tx) was not performed. Covered by n40 2Tx, total power not to exceed 2Tx power levels.

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems

Date of Test: 8/5, 8/10/15, 8/12/15  
 Test Engineer: J.Caizzi / E. Mariscal / R. Varelas  
 Test Location: Lab 4A

Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep $\geq 2 \times \text{span/RBW}$ , <b>RMS</b> detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz (method SA-1 of KDB 789033).                                                                                                                                                                                                                                                                                                                                                                                                          |
| Note 2: | Measured using the same analyzer settings used for output power.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Note 3: | For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.                                                                                                                                                                                                                                                                                |
| Note 4: | 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB $\geq 3 \times \text{RB}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Note 5: | For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power. |

## Antenna Gain Information - CDD Operation

| Freq      | Antenna Gain (dBi) / Chain |     |   |   | BF | MultiChain Legacy | CDD | Sectorized / Xpol | Dir G (PWR) | Dir G (PSD) |
|-----------|----------------------------|-----|---|---|----|-------------------|-----|-------------------|-------------|-------------|
|           | 1                          | 2   | 3 | 4 |    |                   |     |                   |             |             |
| 5150-5250 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 6.51        |
| 5250-5350 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 6.51        |
| 5470-5725 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 6.51        |
| 5725-5825 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 6.51        |

## For devices that support CDD modes

Min # of spatial streams: 1  
 Max # of spatial streams: 2

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Antenna Gain Information - STBC Operation

| Freq      | Antenna Gain (dBi) / Chain |     |   |   | BF | MultiChain Legacy | CDD | Sectorized / Xpol | Dir G (PWR) | Dir G (PSD) |
|-----------|----------------------------|-----|---|---|----|-------------------|-----|-------------------|-------------|-------------|
|           | 1                          | 2   | 3 | 4 |    |                   |     |                   |             |             |
| 5150-5250 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 3.50        |
| 5250-5350 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 3.50        |
| 5470-5725 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 3.50        |
| 5725-5825 | 3.5                        | 3.5 |   |   | No | Yes               | Yes | No                | 3.50        | 3.50        |

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes: | BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.                                                                                                                                                                                                                                                                        |
| Notes: | Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.                                                                                                                                                                                                                                                                                       |
| Notes: | Array gain for power/psd calculated per DKB 662911 D01, v01r02. Spatial Multiplexing with Nant=4, Nss=2, for worse case condition. Array gain = $10 \cdot \log(4/2) = 3\text{dB}$ .                                                                                                                                                                                                                                                                                                                                                    |
| Notes: | For systems with Beamforming and CDD, choose one the following options:<br>Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria.<br>Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power) |

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**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5150-5250 MHz Band - FCC****Mode: n20 (CDD)**

Max EIRP (mW): 174.2

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|------------------------|-------------|------|---------------|---------------|--------|
| 5180            | 1     | -                | 19.6          | 98           | 12.4                   | 33.2        | 15.2 | 24.0          | 0.078         | Pass   |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              |                        |             |      |               |               |        |
| 5200            | 1     | -                | 21.3          | 98           | 15.0                   | 64.0        | 18.1 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              |                        |             |      |               |               |        |
| 5240            | 1     | -                | 22.1          | 98           | 15.8                   | 77.8        | 18.9 | 24.0          | Pass          |        |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              |                        |             |      |               |               |        |
|                 |       |                  |               |              | 16.0                   |             |      |               |               |        |

**MIMO Device - 5150-5250 MHz Band - Industry Canada****Mode: n20 (CDD)**

Max EIRP (mW): 85.1

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm dBm (eirp) |      | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|----------------------------|------|---------------------|---------------|--------|
| 5180            | 1     | -                | 17.6         | 98           | 12.4                   | 15.2                       | 18.7 | 22.5                | 0.038         | Pass   |
|                 | 3     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                            |      |                     |               |        |
| 5200            | 1     | -                | 17.6         | 98           | 12.8                   | 15.8                       | 19.3 | 22.5                |               | Pass   |
|                 | 3     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                            |      |                     |               |        |
| 5240            | 1     | -                | 17.6         | 98           | 12.3                   | 15.4                       | 18.9 | 22.5                | Pass          |        |
|                 | 3     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                            |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                            |      |                     |               |        |

**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5150-5250 PSD - FCC****Mode: n20 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> |     | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|---------------|--------------|-------------|------------------------|-----|-------------------|----------|--------|
| 5180            | 1     | -                | 19.6          | 98           | 0.0         | 1.9                    | 2.8 | 10.5              |          | Pass   |
|                 | 3     |                  |               |              |             |                        |     |                   |          |        |
|                 | 4     |                  |               |              |             |                        |     |                   |          |        |
|                 | 2     |                  |               |              | -0.5        |                        |     |                   |          |        |
| 5200            | 1     | -                | 21.3          | 98           | 2.6         | 3.6                    | 5.6 | 10.5              |          | Pass   |
|                 | 3     |                  |               |              |             |                        |     |                   |          |        |
|                 | 4     |                  |               |              |             |                        |     |                   |          |        |
|                 | 2     |                  |               |              | 2.6         |                        |     |                   |          |        |
| 5240            | 1     | -                | 22.1          | 98           | 3.3         | 4.4                    | 6.4 | 10.5              |          | Pass   |
|                 | 3     |                  |               |              |             |                        |     |                   |          |        |
|                 | 4     |                  |               |              |             |                        |     |                   |          |        |
|                 | 2     |                  |               |              | 3.5         |                        |     |                   |          |        |

**5150-5250 PSD - IC****Mode: n20 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> |     | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|------------------------|-----|-------------------|----------|--------|
| 5180            | 1     | -                | 17.6         | 98           | 0.0         | 1.9                    | 2.8 |                   | 3.5      | Pass   |
|                 | 3     |                  |              |              |             |                        |     |                   |          |        |
|                 | 4     |                  |              |              |             |                        |     |                   |          |        |
|                 | 2     |                  |              |              | -0.5        |                        |     |                   |          |        |
| 5200            | 1     | -                | 17.6         | 98           | 0.4         | 2.2                    | 3.4 |                   | 3.5      | Pass   |
|                 | 3     |                  |              |              |             |                        |     |                   |          |        |
|                 | 4     |                  |              |              |             |                        |     |                   |          |        |
|                 | 2     |                  |              |              | 0.3         |                        |     |                   |          |        |
| 5240            | 1     | -                | 17.6         | 98           | 0.0         | 2.1                    | 3.3 |                   | 3.5      | Pass   |
|                 | 3     |                  |              |              |             |                        |     |                   |          |        |
|                 | 4     |                  |              |              |             |                        |     |                   |          |        |
|                 | 2     |                  |              |              | 0.5         |                        |     |                   |          |        |

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: n20 (STBC)

Max EIRP (mW): 174.2

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm   dBm (eirp) |      | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|------------------------------|------|---------------------|---------------|--------|
| 5180            | 1     | -                | 17.6         | 98           | 12.4                   | 15.2                         | 18.7 | 22.5                | 0.078         | Pass   |
|                 | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                              |      |                     |               |        |
| 5200            | 1     | -                | 17.6         | 98           | 15.0                   | 18.1                         | 21.6 | 22.5                |               | Pass   |
|                 | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                              |      |                     |               |        |
| 5240            | 1     | -                | 17.7         | 98           | 15.8                   | 18.9                         | 22.4 | 22.5                |               | Pass   |
|                 | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                              |      |                     |               |        |

## 5150-5250 PSD - IC

Mode: n20 (STBC)

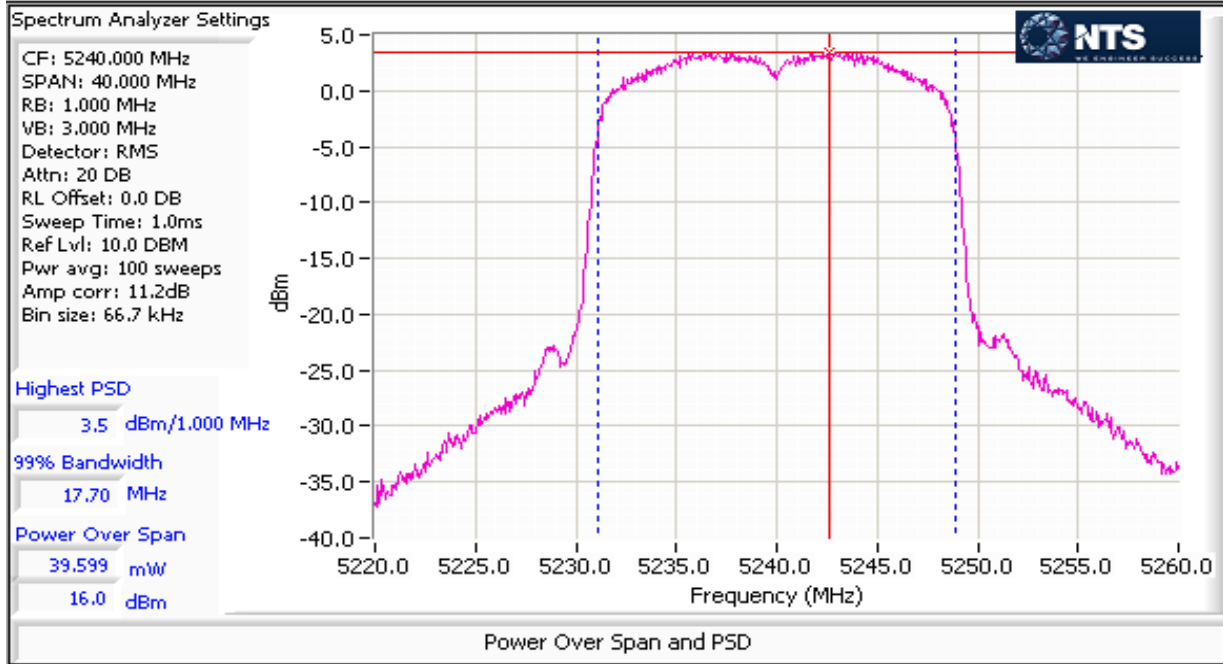
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|----------|--------|
| 5180            | 1     | -                | 17.6         | 98           | 0.0         | 1.9                           | 2.8                            |                   | 6.5      | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 2     |                  |              |              | -0.5        |                               |                                |                   |          |        |
| 5200            | 1     | -                | 17.6         | 98           | 2.6         | 3.6                           | 5.6                            |                   | 6.5      | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 2     |                  |              |              | 2.6         |                               |                                |                   |          |        |
| 5240            | 1     | -                | 17.7         | 98           | 3.3         | 4.4                           | 6.4                            |                   | 6.5      | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |          |        |
|                 | 2     |                  |              |              | 3.5         |                               |                                |                   |          |        |

**NTS**

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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5150-5250 MHz Band - FCC

Mode: n40 (CDD)

Max EIRP (mW): 224.5

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5190            | 1     | -                | 39.6          | 98           | 12.4      | 34.0                     | 15.3 | 24.0          | 0.100         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              |           |                          |      |               |               |        |
| 5230            | 1     | -                | 52.9          | 98           | 17.1      | 100.3                    | 20.0 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              |           |                          |      |               |               |        |
|                 |       |                  |               |              | 16.9      |                          |      |               |               |        |

## MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: n40 (CDD)

Max EIRP (mW): 130.8

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm |      | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-----------------|------|---------------------|---------------|--------|
| 5190            | 1     | -                | 36.3         | 98           | 12.4                   | 15.3            | 18.8 | 23.0                | 0.058         | Pass   |
|                 | 3     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                 |      |                     |               |        |
| 5230            | 1     | -                | 36.5         | 98           | 14.9                   | 17.7            | 21.2 | 23.0                |               | Pass   |
|                 | 3     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                 |      |                     |               |        |
|                 |       |                  |              |              | 14.4                   |                 |      |                     |               |        |



**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5150-5250 PSD - FCC****Mode: n40 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup><br>mW/MHz   dBm/MHz |     | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|---------------|--------------|-------------|--------------------------------------------|-----|-------------------|----------|--------|
| 5190            | 1     | -                | 39.6          | 98           | -2.0        | 1.2                                        | 0.9 | 10.5              |          | Pass   |
|                 | 3     |                  |               |              |             |                                            |     |                   |          |        |
|                 | 4     |                  |               |              |             |                                            |     |                   |          |        |
|                 | 2     |                  |               |              | -2.2        |                                            |     |                   |          |        |
| 5230            | 1     | -                | 52.9          | 98           | 2.8         | 3.7                                        | 5.7 | 10.5              |          | Pass   |
|                 | 3     |                  |               |              |             |                                            |     |                   |          |        |
|                 | 4     |                  |               |              |             |                                            |     |                   |          |        |
|                 | 2     |                  |               |              | 2.6         |                                            |     |                   |          |        |

**5150-5250 PSD - IC****Mode: n40 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup><br>mW/MHz   dBm/MHz |     | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|--------------------------------------------|-----|-------------------|----------|--------|
| 5190            | 1     | -                | 36.3         | 98           | -2.0        | 1.2                                        | 0.9 |                   | 3.5      | Pass   |
|                 | 3     |                  |              |              |             |                                            |     |                   |          |        |
|                 | 4     |                  |              |              |             |                                            |     |                   |          |        |
|                 | 2     |                  |              |              | -2.2        |                                            |     |                   |          |        |
| 5230            | 1     | -                | 36.5         | 98           | 0.6         | 2.1                                        | 3.2 |                   | 3.5      | Pass   |
|                 | 3     |                  |              |              |             |                                            |     |                   |          |        |
|                 | 4     |                  |              |              |             |                                            |     |                   |          |        |
|                 | 2     |                  |              |              | -0.2        |                                            |     |                   |          |        |

**NTS**

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**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5150-5250 MHz Band - Industry Canada****Mode: n40 (STBC)**

Max EIRP (mW): 197.7

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm   dBm (eirp) |       | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|------------------------------|-------|---------------------|---------------|--------|
| 5190            | 1     | -                | 36.3         | 98           | 12.4                   | 15.3                         | 18.8  | 23.0                | 0.088         | Pass   |
|                 | 3     |                  |              |              |                        |                              |       |                     |               |        |
|                 | 4     |                  |              |              |                        |                              |       |                     |               |        |
|                 | 2     |                  |              |              |                        |                              |       |                     |               |        |
| 5230            | 1     | -                | 36.5         | 98           | 16.4                   | 19.5                         | 22.96 | 23.0                |               | Pass   |
|                 | 3     |                  |              |              |                        |                              |       |                     |               |        |
|                 | 4     |                  |              |              |                        |                              |       |                     |               |        |
|                 | 2     |                  |              |              |                        |                              |       |                     |               |        |
|                 |       |                  |              |              | 16.5                   |                              |       |                     |               |        |

**5150-5250 PSD - IC****Mode: n40 (STBC)**

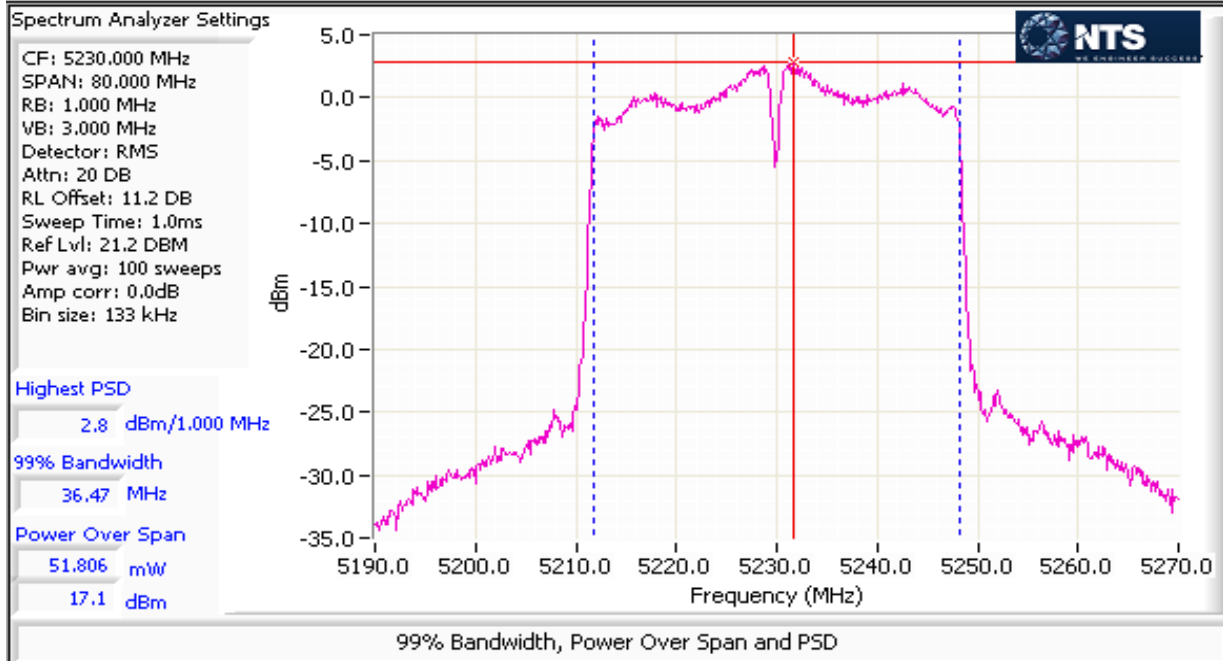
| Frequency<br>(MHz) | Chain | Software<br>Setting | 99% BW<br>(MHz) | Duty Cycle<br>% | PSD<br>dBm/MHz | Total PSD <sup>1</sup> |         | FCC Limit | IC Limit | Result |
|--------------------|-------|---------------------|-----------------|-----------------|----------------|------------------------|---------|-----------|----------|--------|
|                    |       |                     |                 |                 |                | mW/MHz                 | dBm/MHz | dBm/MHz   |          |        |
| 5190               | 1     | -                   | 36.3            | 98              | -2.0           | 1.2                    | 0.9     |           | 6.5      | Pass   |
|                    | 3     |                     |                 |                 |                |                        |         |           |          |        |
|                    | 4     |                     |                 |                 |                |                        |         |           |          |        |
|                    | 2     |                     |                 |                 |                |                        |         |           |          |        |
| 5230               | 1     | -                   | 36.5            | 98              | 1.9            | 3.1                    | 5.0     |           | 6.5      | Pass   |
|                    | 3     |                     |                 |                 |                |                        |         |           |          |        |
|                    | 4     |                     |                 |                 |                |                        |         |           |          |        |
|                    | 2     |                     |                 |                 |                |                        |         |           |          |        |
|                    |       |                     |                 |                 | 2.0            |                        |         |           |          |        |

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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5250-5350 MHz Band - FCC**
**Mode: n20 (CDD)**

Max EIRP (mW): 214.8

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5260            | 1     | -                | 21.8          | 98           | 16.5      | 96.0                     | 19.8 | 24.0          | 0.096         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 17.1      |                          |      |               |               |        |
| 5300            | 1     | -                | 21.0          | 98           | 15.3      | 68.6                     | 18.4 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.4      |                          |      |               |               |        |
| 5320            | 1     | -                | 19.7          | 98           | 13.5      | 45.3                     | 16.6 | 23.9          | Pass          |        |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 13.6      |                          |      |               |               |        |

**MIMO Device - 5250-5350 MHz Band - Industry Canada**
**Mode: n20 (CDD)**

Max EIRP (mW): 214.8

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |            | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------------|--------------|---------------|--------|
|                 |       |                  |              |              |                        | dBm         | dBm (eirp) |              |               |        |
| 5260            | 1     | -                | 17.7         | 98           | 16.5                   | 19.8        | 23.3       | 23.5         | 0.096         | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 17.1                   |             |            |              |               |        |
| 5300            | 1     | -                | 17.6         | 98           | 15.3                   | 18.4        | 21.9       | 23.5         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 15.4                   |             |            |              |               |        |
| 5320            | 1     | -                | 17.6         | 98           | 13.5                   | 16.6        | 20.1       | 23.5         | Pass          |        |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 13.6                   |             |            |              |               |        |

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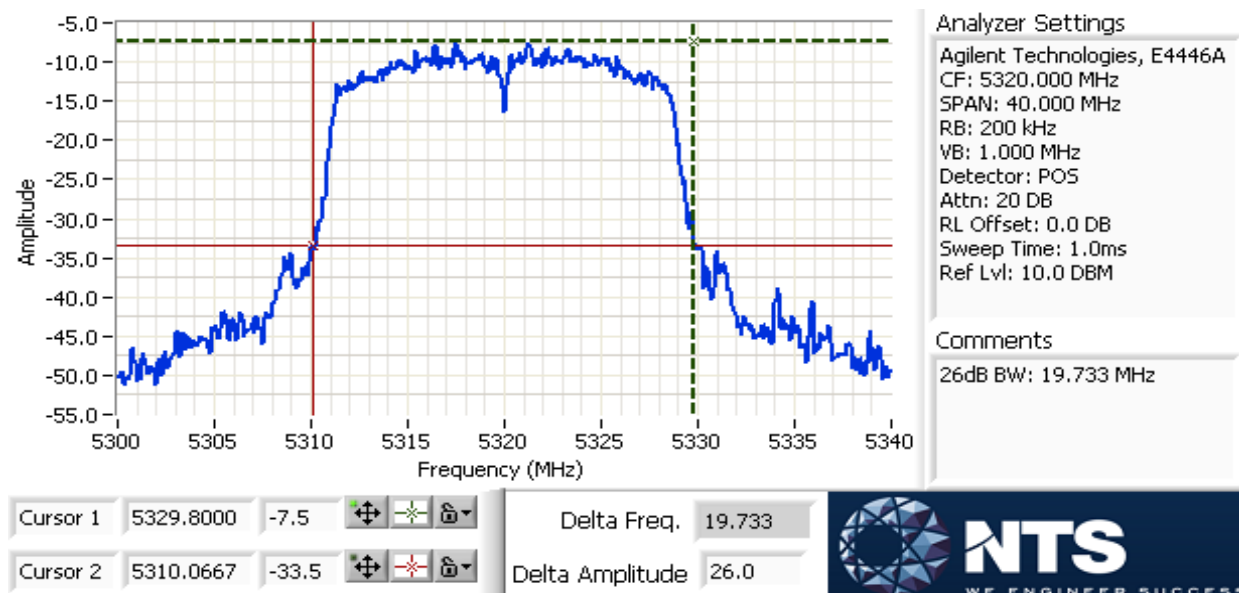
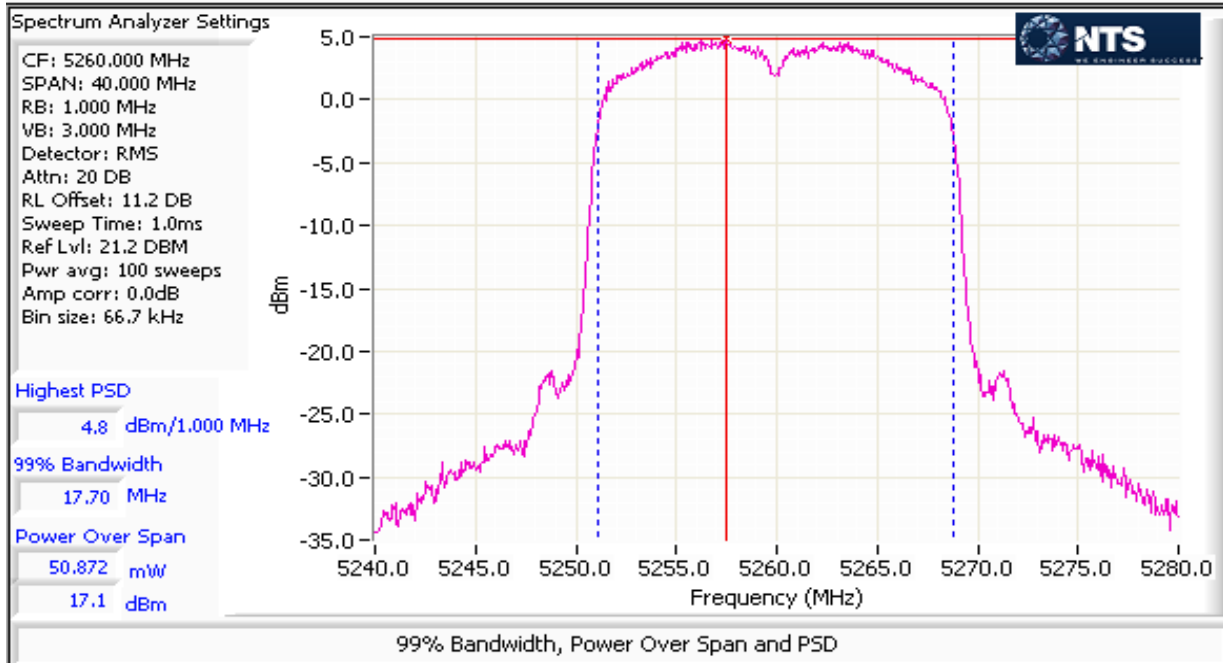
**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5250-5350 PSD - FCC/IC****Mode: n20 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5260            | 1     | -                | 17.7         | 98           | 4.0         | 5.5                           | 7.4                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 4.8         |                               |                                |                   |                  |        |
| 5300            | 1     | -                | 17.6         | 98           | 3.1         | 4.0                           | 6.0                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.9         |                               |                                |                   |                  |        |
| 5320            | 1     | -                | 17.6         | 98           | 1.1         | 2.6                           | 4.2                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.3         |                               |                                |                   |                  |        |

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5250-5350 MHz Band - FCC**
**Mode: n40 (CDD)**

Max EIRP (mW): 170.2

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> mW | dBm  | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|-----------------------------|------|---------------|---------------|--------|
| 5270            | 1     | -                | 38.9          | 98           | 15.8      | 76.0                        | 18.8 | 24.0          | 0.076         | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 15.8      |                             |      |               |               |        |
| 5310            | 1     | -                | 39.1          | 98           | 12.4      | 34.0                        | 15.3 | 24.0          | 0.076         | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 12.2      |                             |      |               |               |        |

**MIMO Device - 5250-5350 MHz Band - Industry Canada**
**Mode: n40 (CDD)**

Max EIRP (mW): 170.2

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm | dBm (eirp) | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-----------------|------------|--------------|---------------|--------|
| 5270            | 1     | -                | 36.5         | 98           | 15.8                   | 18.8            | 22.3       | 24.0         | 0.076         | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |              |               |        |
|                 | 4     |                  |              |              |                        |                 |            |              |               |        |
|                 | 2     |                  |              |              | 15.8                   |                 |            |              |               |        |
| 5310            | 1     | -                | 36.3         | 98           | 12.4                   | 15.3            | 18.8       | 24.0         | 0.076         | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |              |               |        |
|                 | 4     |                  |              |              |                        |                 |            |              |               |        |
|                 | 2     |                  |              |              | 12.2                   |                 |            |              |               |        |

**5250-5350 PSD - FCC/IC**
**Mode: n40 (CDD)**

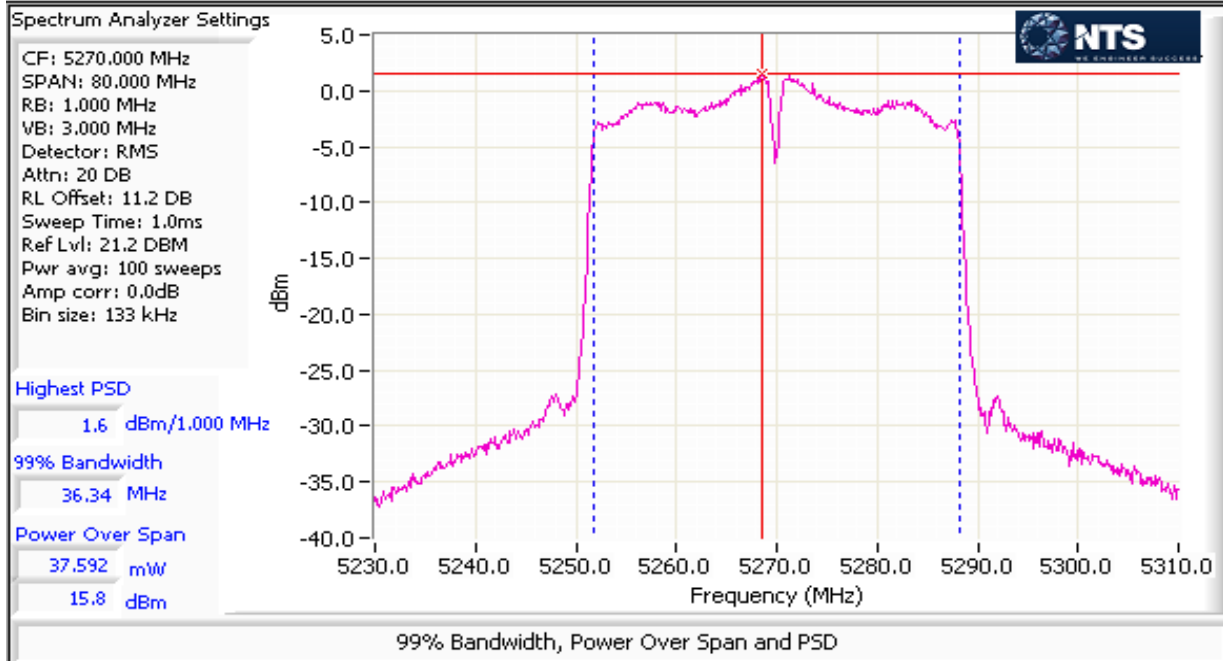
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|-------------------|------------------|--------|
| 5270            | 1     | -                | 36.5         | 98           | 1.6         | 2.8                           | 4.4     | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | 1.2         |                               |         |                   |                  |        |
| 5310            | 1     | -                | 36.3         | 98           | -2.0        | 1.2                           | 0.9     | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | -2.3        |                               |         |                   |                  |        |

**NTS**

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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |





# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5470-5725 MHz Band - FCC

Mode: n20 (CDD)

Max EIRP (mW): 159.0

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5500            | 1     | -                | 23.1          | 98           | 14.5      | 52.2                     | 17.2 | 24.0          | 0.071         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 13.8      |                          |      |               |               |        |
| 5580            | 1     | -                | 22.7          | 98           | 15.1      | 59.9                     | 17.8 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 14.4      |                          |      |               |               |        |
| 5700            | 1     | -                | 23.2          | 98           | 15.7      | 71.0                     | 18.5 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.3      |                          |      |               |               |        |

## MIMO Device - 5470-5725 MHz Band - Industry Canada

Mode: n20 (CDD)

Max EIRP (mW): 158.5

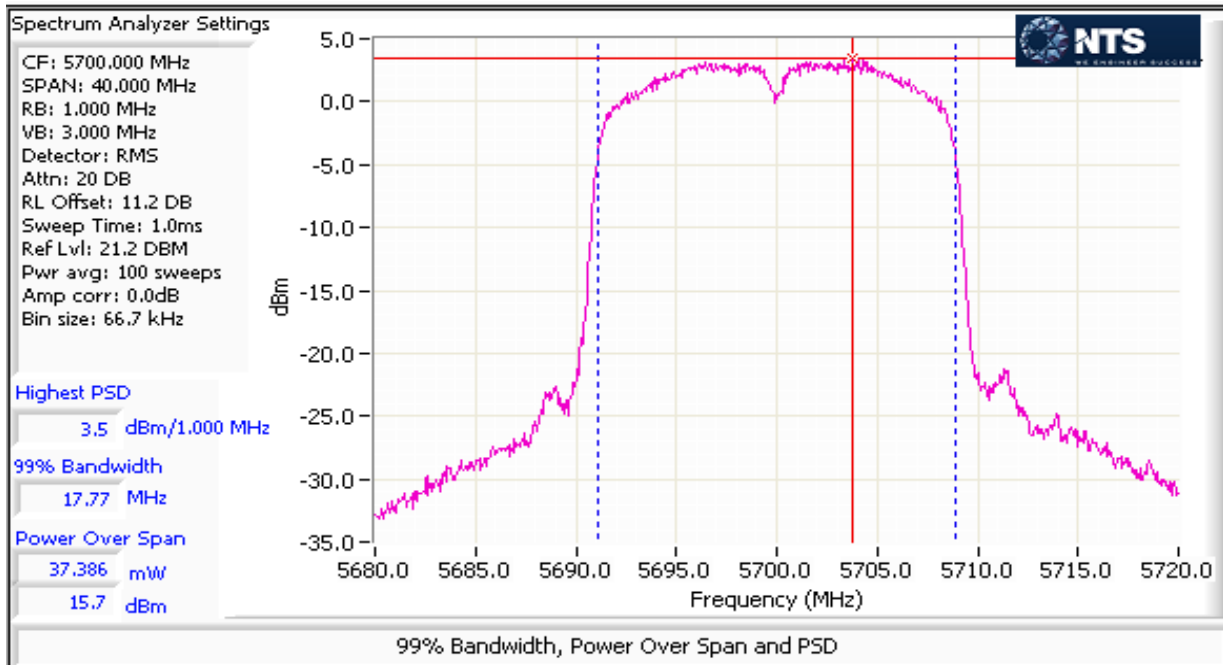
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |            | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------------|--------------|---------------|--------|
|                 |       |                  |              |              |                        | dBm         | dBm (eirp) |              |               |        |
| 5500            | 1     | -                | 17.6         | 98           | 14.5                   | 17.2        | 20.7       | 23.5         | 0.071         | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 13.8                   |             |            |              |               |        |
| 5580            | 1     | -                | 17.7         | 98           | 15.1                   | 17.8        | 21.3       | 23.5         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 14.4                   |             |            |              |               |        |
| 5700            | 1     | -                | 17.8         | 98           | 15.7                   | 18.5        | 22.0       | 23.5         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 15.3                   |             |            |              |               |        |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5470-5725 PSD - FCC/IC

Mode: n20 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5500            | 1     | -                | 17.6         | 98           | 2.0         | 2.9                           | 4.7                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.3         |                               |                                |                   |                  |        |
| 5580            | 1     | -                | 17.7         | 98           | 2.9         | 3.5                           | 5.5                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.0         |                               |                                |                   |                  |        |
| 5700            | 1     | -                | 17.8         | 98           | 3.5         | 4.2                           | 6.2                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.9         |                               |                                |                   |                  |        |

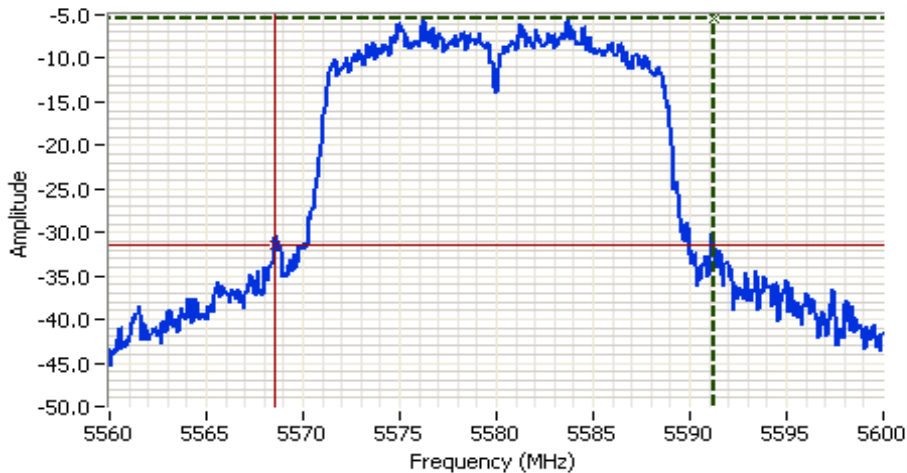


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



### Analyzer Settings

Agilent Technologies, E4446A  
CF: 5580.000 MHz  
SPAN: 40.000 MHz  
RB: 200 kHz  
VB: 1.000 MHz  
Detector: POS  
Attn: 20 DB  
RL Offset: 0.0 DB  
Sweep Time: 1.0ms  
Ref Lvl: 10.0 DBM

### Comments

26dB BW: 22.667 MHz

|          |           |       |  |
|----------|-----------|-------|--|
| Cursor 1 | 5591.2000 | -5.5  |  |
| Cursor 2 | 5568.5333 | -31.5 |  |

Delta Freq. 22.667

Delta Amplitude 26.0

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WE ENGINEER SUCCESS

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5470-5725 MHz Band - FCC

Mode: n40 (CDD)

Max EIRP (mW): 178.4

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5510            | 1     | -                | 42            | 98           | 12.6      | 33.7                     | 15.3 | 24.0          | 0.080         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 11.9      |                          |      |               |               |        |
| 5550            | 1     | -                | 47.9          | 98           | 16.2      | 79.7                     | 19.0 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.8      |                          |      |               |               |        |
| 5670            | 1     | -                | 39.6          | 98           | 13.7      | 41.6                     | 16.2 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 12.6      |                          |      |               |               |        |

## MIMO Device - 5470-5725 MHz Band - Industry Canada

Mode: n40 (CDD)

Max EIRP (mW): 178.4

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |            | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------------|--------------|---------------|--------|
|                 |       |                  |              |              |                        | dBm         | dBm (eirp) |              |               |        |
| 5510            | 1     | -                | 36.4         | 98           | 12.6                   | 15.3        | 18.8       | 24.0         | 0.080         | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 11.9                   |             |            |              |               |        |
| 5550            | 1     | -                | 36.5         | 98           | 16.2                   | 19.0        | 22.5       | 24.0         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 15.8                   |             |            |              |               |        |
| 5670            | 1     | -                | 36.4         | 98           | 13.7                   | 16.2        | 19.7       | 24.0         | Pass          |        |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 12.6                   |             |            |              |               |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5470-5725 PSD - FCC/IC****Mode: n40 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5510            | 1     | -                | 36.4         | 98           | -1.9        | 1.2                           | 0.9                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -2.4        |                               |                                |                   |                  |        |
| 5550            | 1     | -                | 36.5         | 98           | 1.8         | 2.9                           | 4.6                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.3         |                               |                                |                   |                  |        |
| 5670            | 1     | -                | 36.4         | 98           | -0.9        | 1.5                           | 1.6                            | 10.5              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.9        |                               |                                |                   |                  |        |

**Spectrum Analyzer Settings**

CF: 5550.000 MHz  
 SPAN: 80.000 MHz  
 RB: 1.000 MHz  
 VB: 3.000 MHz  
 Detector: RMS  
 Attn: 20 DB  
 RL Offset: 11.2 DB  
 Sweep Time: 1.0ms  
 Ref Lvl: 21.2 DBM  
 Pwr avg: 100 sweeps  
 Amp corr: 0.0dB  
 Bin size: 133 kHz

**Highest PSD**

1.8 dBm/1.000 MHz

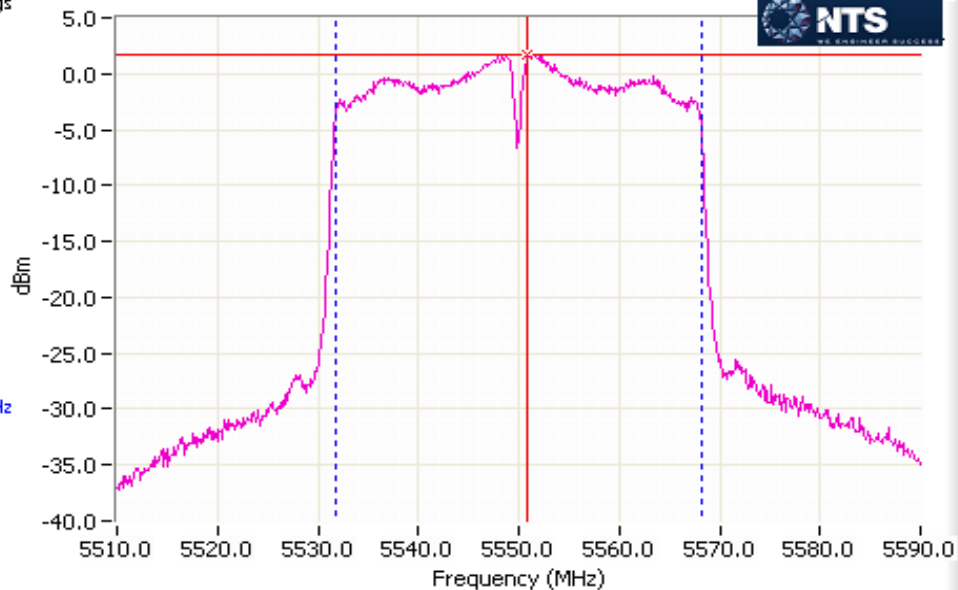
**99% Bandwidth**

36.47 MHz

**Power Over Span**

42.125 mW

16.2 dBm



**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5725-5850 MHz Band - FCC/IC****Mode: n20 (CDD)**

Max EIRP (mW): 165.0

| Frequency (MHz) | Chain | Software Setting |  | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--|--------------|-----------|--------------------------|------|-----------|---------------|--------|
| 5745            | 1     | -                |  | 98           | 11.8      | 29.6                     | 14.7 | 30.0      | 0.074         | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 11.6      |                          |      |           |               |        |
| 5785            | 1     | -                |  | 98           | 16.0      | 73.7                     | 18.7 | 30.0      |               | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 15.3      |                          |      |           |               |        |
| 5825            | 1     | -                |  | 98           | 13.2      | 38.7                     | 15.9 | 30.0      | Pass          |        |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 12.5      |                          |      |           |               |        |

**5725-5850 PSD - FCC/IC****Mode: n20 (CDD)**

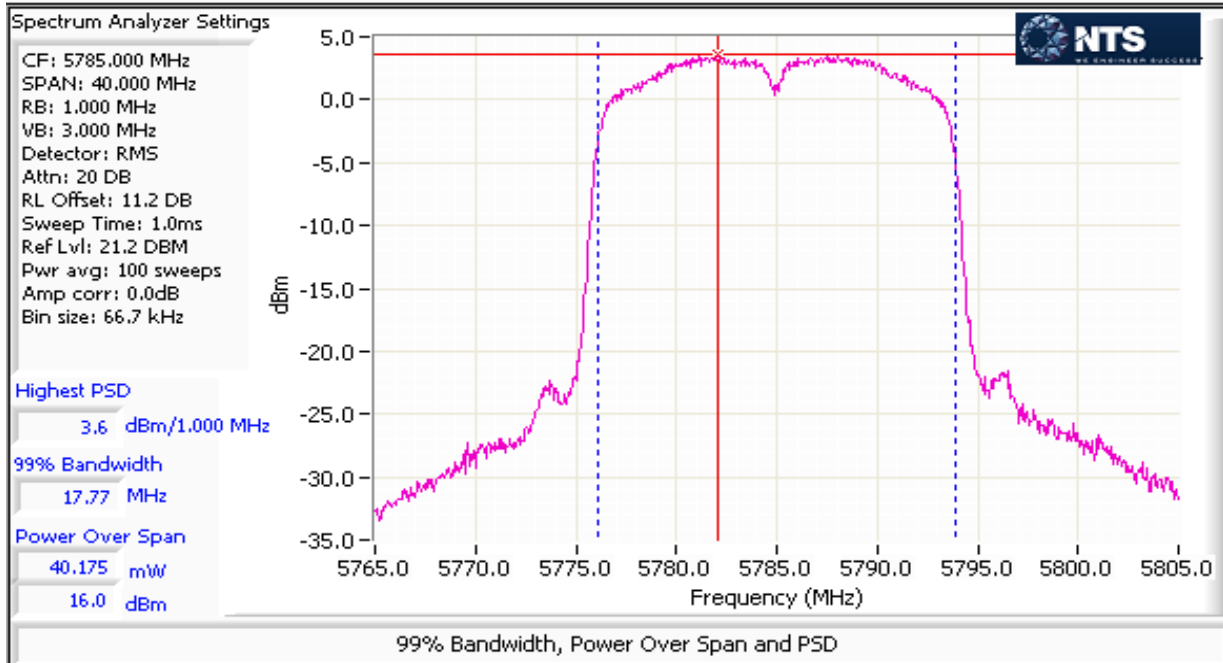
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/500kHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|----------------------|----------|--------|
| 5745            | 1     | -                | 17.2         | 98           | -0.6        | 1.7                           | 2.3     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | -0.9        |                               |         |                      |          |        |
| 5785            | 1     | -                | 17.8         | 98           | 3.6         | 4.2                           | 6.3     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | 2.9         |                               |         |                      |          |        |
| 5825            | 1     | -                | 17.2         | 98           | 0.9         | 2.3                           | 3.7     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | 0.4         |                               |         |                      |          |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: n40 (CDD)

Max EIRP (mW): 98.4

| Frequency (MHz) | Chain | Software Setting |  | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--|--------------|-----------|--------------------------|------|-----------|---------------|--------|
| 5755            | 1     | -                |  | 98           | 9.7       | 18.0                     | 12.6 | 30.0      | 0.044         | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              |           |                          |      |           |               |        |
| 5795            | 1     | -                |  | 98           | 13.8      | 43.9                     | 16.4 | 30.0      |               | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              |           |                          |      |           |               |        |
|                 |       |                  |  |              | 13.0      |                          |      |           |               |        |

## 5725-5850 PSD - FCC/IC

Mode: n40 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz   dBm/MHz |      | FCC Limit dBm/500kHz | IC Limit dBm/500kHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-----------------------------------------|------|----------------------|---------------------|--------|
| 5755            | 1     | -                | 37.3         | 98           | -4.7        | 0.6                                     | -2.0 | 30.0                 | 30.0                | Pass   |
|                 | 3     |                  |              |              |             |                                         |      |                      |                     |        |
|                 | 4     |                  |              |              |             |                                         |      |                      |                     |        |
|                 | 2     |                  |              |              |             |                                         |      |                      |                     |        |
| 5795            | 1     | -                | 37.3         | 98           | -0.6        | 1.6                                     | 2.0  | 30.0                 | 30.0                | Pass   |
|                 | 3     |                  |              |              |             |                                         |      |                      |                     |        |
|                 | 4     |                  |              |              |             |                                         |      |                      |                     |        |
|                 | 2     |                  |              |              |             |                                         |      |                      |                     |        |
|                 |       |                  |              |              | -1.5        |                                         |      |                      |                     |        |

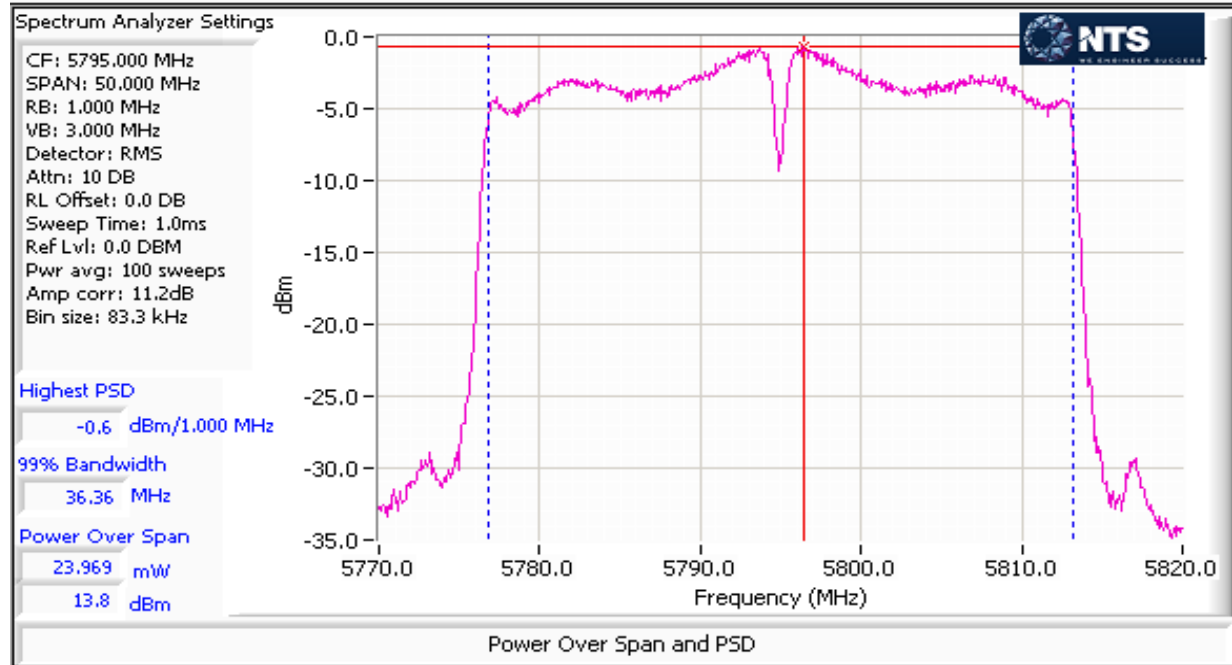


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #2: Bandwidth Measurements

Date of Test: 8/12/2015 0:00  
 Test Engineer: John Caizzi  
 Test Location: Lab 4A

Config. Used: 1  
 Config Change: none  
 EUT Voltage: USB

Mode:

11a

5725-5850MHz band (UNII3)

Testing performed on port: main

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (kHz) |     |
|---------------|-----------------|-----------------|------|-------------------|-----|
|               |                 | 6dB             | 99%  | 6dB               | 99% |
| -             | 5745            | 14.7            | 17.2 | 100               | 750 |
|               | 5785            | 15.3            | 17.4 |                   |     |
|               | 5825            | 14.3            | 17.2 |                   |     |

Mode:

n20

5725-5850MHz band (UNII3)

Testing performed on port: main

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (kHz) |     |
|---------------|-----------------|-----------------|------|-------------------|-----|
|               |                 | 6dB             | 99%  | 6dB               | 99% |
| -             | 5745            | 15.1            | 18.4 | 100               | 750 |
|               | 5785            | 15.5            | 18.2 |                   |     |
|               | 5825            | 14.6            | 18.4 |                   |     |

Mode:

n40

5725-5850MHz band (UNII3)

Testing performed on port: main

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (kHz) |     |
|---------------|-----------------|-----------------|------|-------------------|-----|
|               |                 | 6dB             | 99%  | 6dB               | 99% |
| -             | 5755            | 35.5            | 37.3 | 100               | 750 |
|               | 5795            | 35.0            | 37.3 |                   |     |

Note 1:

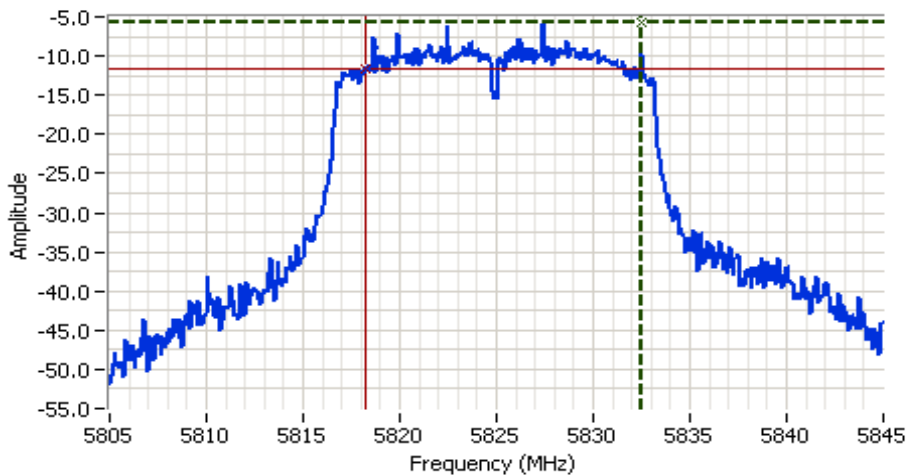
6dB BW: RBW=100kHz, VBW ≥ 3\*RBW, peak detector, max hold, auto sweep time.  
 99% BW: RBW=1-5% of 99%BW, VBW ≥ 3\*RBW, peak detector, max hold, auto sweep time.

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



### Analyzer Settings

Agilent Technologies, E4446A  
CF: 5825.000 MHz  
SPAN: 40.000 MHz  
RB: 100 kHz  
VB: 300 kHz  
Detector: POS  
Attn: 10 DB  
RL Offset: 0.0 DB  
Sweep Time: 3.8ms  
Ref Lvl: 0.0 DBM

### Comments

6dB BW: 14.267 MHz

|          |           |       |  |
|----------|-----------|-------|--|
| Cursor 1 | 5832.5333 | -5.7  |  |
| Cursor 2 | 5818.2667 | -11.7 |  |

Delta Freq. 14.267

Delta Amplitude 6.0

**NTS**

WE ENGINEER SUCCESS

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## RSS-247 and FCC 15.407(UNII) Antenna Port Measurements Power, PSD, Bandwidth and Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

### Summary of Results

| Run # | Test Performed             | Limit                                                                                 | Pass / Fail | Result / Margin                              |
|-------|----------------------------|---------------------------------------------------------------------------------------|-------------|----------------------------------------------|
| 1     | Power, 5150 - 5250MHz      | 15.407(a) (1) (iv)                                                                    | Pass        | n20: 19.4 dBm (86mW)<br>n40: 19.5 dBm (88mW) |
| 1     | PSD, 5150 - 5250MHz        | 15.407(a) (1) (iv)                                                                    | Pass        | n20: 7.0 dBm/MHz<br>n40: 5.1 dBm/MHz         |
| 1     | Power, 5150 - 5250MHz      | RSS-247, 6.2.1 (1)                                                                    | Pass        | n20: 21.3 dBm eirp<br>n40: 21.4 dBm eirp     |
| 1     | PSD, 5150 - 5250MHz        | RSS-247, 6.2.1 (1)                                                                    | Pass        | n20: 7.0 dBm/MHz<br>n40: 5.1 dBm/MHz         |
| 1     | Power, 5250 - 5350MHz      | 15.407(a) (2) / RSS-247, 6.2.2 (1)                                                    | Pass        | n20: 19.3 dBm (84mW)<br>n40: 19.8 dBm (95mW) |
| 1     | PSD, 5250 - 5350MHz        | 15.407(a) (2) / RSS-247, 6.2.2 (1)                                                    | Pass        | n20: 7.0 dBm/MHz<br>n40: 5.3 dBm/MHz         |
| 1     | Max EIRP<br>5250 - 5350MHz | TPC required if EIRP ≥ 500mW (27dBm).<br>EIRP ≥ 200mW (23dBm) DFS threshold = -64dBm. | Pass        | EIRP = 21.7 dBm (147mW)                      |
| 1     | Power, 5470 - 5725MHz      | 15.407(a) (2) / RSS-247, 6.2.3 (1)                                                    | Pass        | n20: 18.9 dBm (77mW)<br>n40: 19.0 dBm (80mW) |
| 1     | PSD, 5470 - 5725MHz        | 15.407(a) (2) / RSS-247, 6.2.3 (1)                                                    | Pass        | n20: 6.6 dBm/MHz<br>n40: 4.6 dBm/MHz         |
| 1     | Max EIRP<br>5470 - 5725MHz | TPC required if EIRP ≥ 500mW (27dBm).<br>EIRP ≥ 200mW (23dBm) DFS threshold           | Pass        | EIRP = 20.9 dBm (124mW)                      |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Run # | Test Performed        | Limit                                | Pass / Fail | Result / Margin                               |
|-------|-----------------------|--------------------------------------|-------------|-----------------------------------------------|
| 1     | Power, 5725 - 5850MHz | 15.407(a)(3) / RSS-247,<br>6.2.4 (1) | Pass        | n20: 18.7 dBm (74mW)<br>n40: 17.7 dBm (59mW)  |
| 1     | PSD, 5725 - 5850MHz   | 15.407(a)(3) / RSS-247,<br>6.2.4 (1) | Pass        | n20: 6.3 dBm/MHz<br>n40: 3.2 dBm/MHz          |
| 2     | 6dB Bandwidth - UNII3 | 15.407(e)                            | Pass        | a: 15.1 MHz<br>n20: 15.1 MHz<br>n40: 35.1 MHz |
| 1     | 99% Bandwidth         | RSS 210<br>(Information only)        | N/A         | a: 17.5 MHz<br>n20: 18.3 MHz<br>n40: 37.3 MHz |

## General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

## Ambient Conditions:

Temperature: 25 °C  
 Rel. Humidity: 31 %

## Modifications Made During Testing

No modifications were made to the EUT during testing

## Deviations From The Standard

No deviations were made from the requirements of the standard.

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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Procedure Comments:

Measurements performed in accordance with FCC KDB 789033 D01 v01r03, dated April 8, 2013

| Mode  | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|-------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11a   | 6MB/s     | 0.982          | Yes          | 1.405  | 0               | 0                     | 10                  |
| 11n20 | MCS0      | 0.981          | Yes          | 1.309  | 0               | 0                     | 10                  |
| 11n40 | MCS0      | 0.980          | Yes          | 0.932  | 0               | 0                     | 10                  |

### Sample Notes

Sample S/N: MAC ID# 707781772509

Driver: 6.37 RC214 .12

### Test Reduction Notes:

Power/PSD for 11a and n20 (1Tx) was not performed. Covered by n20 2Tx, total power not to exceed 2Tx power levels.

Power/PSD for n40 (1Tx) was not performed. Covered by n40 2Tx, total power not to exceed 2Tx power levels.



## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems

Date of Test: 8/5, 8/6/2015, and 8/10/15  
 Test Engineer: J.Caizzi & E. Mariscal, J. Cadigal, R. Varelas  
 Test Location: Lab 4A

Config. Used: 1  
 Config Change: None  
 EUT Voltage: USB

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | Output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep $\geq 2 \times \text{span/RBW}$ , <b>RMS</b> detector, power averaging on (transmitted signal was continuous) and power integration over 50 MHz (method SA-1 of KDB 789033).                                                                                                                                                                                                                                                                                                                                                                                                       |
| Note 2: | Measured using the same analyzer settings used for output power.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Note 3: | For RSS-210 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 10dBm/MHz. The limits are also corrected for instances where the highest measured value of the PSD exceeds the average PSD (calculated from the measured power divided by the measured 99% bandwidth) by more than 3dB by the amount that the measured value exceeds the average by more than 3dB.                                                                                                                                                                                                                                                                             |
| Note 4: | 99% Bandwidth measured in accordance with RSS GEN - RB > 1% of span and VB $\geq 3 \times \text{RB}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Note 5: | For MIMO systems the total output power and total PSD are calculated from the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals are non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power. |

### Antenna Gain Information - CDD Operation

| Freq      | Antenna Gain (dBi) / Chain |     |   |   | BF | MultiChain Legacy | CDD | Sectorized / Xpol | Dir G (PWR) | Dir G (PSD) |
|-----------|----------------------------|-----|---|---|----|-------------------|-----|-------------------|-------------|-------------|
|           | 1                          | 2   | 3 | 4 |    |                   |     |                   |             |             |
| 5150-5250 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 4.91        |
| 5250-5350 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 4.91        |
| 5470-5725 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 4.91        |
| 5725-5825 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 4.91        |

### For devices that support CDD modes

Min # of spatial streams: 1  
 Max # of spatial streams: 2

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Antenna Gain Information - STBC Operation

| Freq      | Antenna Gain (dBi) / Chain |     |   |   | BF | MultiChain Legacy | CDD | Sectorized / Xpol | Dir G (PWR) | Dir G (PSD) |
|-----------|----------------------------|-----|---|---|----|-------------------|-----|-------------------|-------------|-------------|
|           | 1                          | 2   | 3 | 4 |    |                   |     |                   |             |             |
| 5150-5250 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 1.90        |
| 5250-5350 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 1.90        |
| 5470-5725 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 1.90        |
| 5725-5825 | 1.9                        | 1.9 |   |   | No | Yes               | Yes | No                | 1.90        | 1.90        |

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes: | BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.                                                                                                                                                                                                                                                                        |
| Notes: | Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.                                                                                                                                                                                                                                                                                       |
| Notes: | Array gain for power/psd calculated per DKB 662911 D01, v01r02. Spatial Multiplexing with Nant=4, Nss=2, for worse case condition. Array gain = $10 \cdot \log(4/2) = 3\text{dB}$ .                                                                                                                                                                                                                                                                                                                                                    |
| Notes: | For systems with Beamforming and CDD, choose one the following options:<br>Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria.<br>Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power) |



**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5150-5250 MHz Band - FCC****Mode: n20 (CDD)**

Max EIRP (mW): 133.7

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|------------------------|-------------|------|---------------|---------------|--------|
|                 |       |                  |               |              | mW                     | dBm         |      |               |               |        |
| 5180            | 1     | -                | 20.13         | 98           | 13.3                   | 44.3        | 16.5 | 24.0          | 0.0863        | Pass   |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              | 13.6                   |             |      |               |               |        |
| 5200            | 1     | -                | 26.07         |              | 16.3                   | 85.3        | 19.3 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              | 16.3                   |             |      |               |               |        |
| 5240            | 1     | -                | 29.07         |              | 16.3                   | 86.3        | 19.4 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |                        |             |      |               |               |        |
|                 | 4     |                  |               |              |                        |             |      |               |               |        |
|                 | 2     |                  |               |              | 16.4                   |             |      |               |               |        |

**MIMO Device - 5150-5250 MHz Band - Industry Canada****Mode: n20 (CDD)**

Max EIRP (mW): 87.1

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |            | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------------|---------------------|---------------|--------|
|                 |       |                  |              |              |                        | dBm         | dBm (eirp) |                     |               |        |
| 5180            | 1     | -                | 17.64        | 98           | 13.3                   | 16.5        | 18.4       | 22.5                | 0.056         | Pass   |
|                 | 3     |                  |              |              |                        |             |            |                     |               |        |
|                 | 4     |                  |              |              |                        |             |            |                     |               |        |
|                 | 2     |                  |              |              | 13.6                   |             |            |                     |               |        |
| 5200            | 1     | -                | 17.64        |              | 14.6                   | 17.5        | 19.4       | 22.5                |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |                     |               |        |
|                 | 4     |                  |              |              |                        |             |            |                     |               |        |
|                 | 2     |                  |              |              | 14.4                   |             |            |                     |               |        |
| 5240            | 1     | -                | 17.7         |              | 14.2                   | 17.2        | 19.1       | 22.5                |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |                     |               |        |
|                 | 4     |                  |              |              |                        |             |            |                     |               |        |
|                 | 2     |                  |              |              | 14.2                   |             |            |                     |               |        |

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5150-5250 PSD - FCC

Mode: n20 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz   dBm/MHz |     | FCC Limit dBm/MHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-----------------------------------------|-----|-------------------|----------|--------|
| 5180            | 1     | -                | 17.64        | 98           | 0.9         | 2.5                                     | 4.0 | 11.0              |          | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 2     |                  |              |              | 1.0         |                                         |     |                   |          |        |
| 5200            | 1     | -                | 17.7         |              | 3.8         | 4.9                                     | 6.9 | 11.0              |          | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 2     |                  |              |              | 3.9         |                                         |     |                   |          |        |
| 5240            | 1     | -                | 17.7         |              | 4.0         | 5.0                                     | 7.0 | 11.0              |          | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |          |        |
|                 | 2     |                  |              |              | 3.9         |                                         |     |                   |          |        |

## 5150-5250 PSD - IC

Mode: n20 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz   dBm/MHz |     | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-----------------------------------------|-----|-------------------|------------------|--------|
| 5180            | 1     | -                | 17.64        | 98           | 0.9         | 2.5                                     | 4.0 |                   | 5.1              | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 2     |                  |              |              | 1.0         |                                         |     |                   |                  |        |
| 5200            | 1     | -                | 17.7         |              | 2.1         | 3.2                                     | 5.0 |                   | 5.1              | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 2     |                  |              |              | 1.9         |                                         |     |                   |                  |        |
| 5240            | 1     | -                | 17.7         |              | 1.7         | 3.0                                     | 4.7 |                   | 5.1              | Pass   |
|                 | 3     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 4     |                  |              |              |             |                                         |     |                   |                  |        |
|                 | 2     |                  |              |              | 1.7         |                                         |     |                   |                  |        |

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

| Mode: n20 (STBC) |       |                  |               |              |                        | Max EIRP (mW):       |      |               | 133.7         |        |
|------------------|-------|------------------|---------------|--------------|------------------------|----------------------|------|---------------|---------------|--------|
| Frequency (MHz)  | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power mW   dBm |      | FCC Limit dBm | Max Power (W) | Result |
| 5180             | 1     | -                | 20.133        | 98           | 13.3                   | 44.3                 | 16.5 | 24.0          | 0.086         | Pass   |
|                  | 3     |                  |               |              |                        |                      |      |               |               |        |
|                  | 4     |                  |               |              |                        |                      |      |               |               |        |
|                  | 2     |                  |               |              |                        |                      |      |               |               |        |
| 5200             | 1     | -                | 26.067        | 98           | 16.3                   | 85.3                 | 19.3 | 24.0          |               | Pass   |
|                  | 3     |                  |               |              |                        |                      |      |               |               |        |
|                  | 4     |                  |               |              |                        |                      |      |               |               |        |
|                  | 2     |                  |               |              |                        |                      |      |               |               |        |
| 5240             | 1     | -                | 26.067        | 98           | 16.3                   | 86.3                 | 19.4 | 24.0          | Pass          |        |
|                  | 3     |                  |               |              |                        |                      |      |               |               |        |
|                  | 4     |                  |               |              |                        |                      |      |               |               |        |
|                  | 2     |                  |               |              |                        |                      |      |               |               |        |
|                  |       |                  |               |              | 16.4                   |                      |      |               |               |        |

## MIMO Device - 5150-5250 MHz Band - Industry Canada

| Mode: n20 (STBC) |       |                  |              |              |                        | Max EIRP (mW):               |      |                     | 134.9         |        |
|------------------|-------|------------------|--------------|--------------|------------------------|------------------------------|------|---------------------|---------------|--------|
| Frequency (MHz)  | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm   dBm (eirp) |      | IC limit dBm (eirp) | Max Power (W) | Result |
| 5180             | 1     | -                | 17.64        | 98           | 13.3                   | 16.5                         | 18.4 | 22.5                | 0.086         | Pass   |
|                  | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 2     |                  |              |              |                        |                              |      |                     |               |        |
| 5200             | 1     | -                | 26.067       | 98           | 16.3                   | 19.3                         | 21.2 | 23.0                |               | Pass   |
|                  | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 2     |                  |              |              |                        |                              |      |                     |               |        |
| 5240             | 1     | -                | 26.067       | 98           | 16.3                   | 19.4                         | 21.3 | 23.0                | Pass          |        |
|                  | 3     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 4     |                  |              |              |                        |                              |      |                     |               |        |
|                  | 2     |                  |              |              |                        |                              |      |                     |               |        |
|                  |       |                  |              |              | 16.4                   |                              |      |                     |               |        |

**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5150-5250 PSD - FCC****Mode: n20 (STBC)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5180            | 1     | -                | 17.64        | 98           | 0.9         | 2.5                           | 4.0                            | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.0         |                               |                                |                   |                  |        |
| 5200            | 1     | -                | 17.7         | 98           | 3.8         | 4.9                           | 6.9                            | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.9         |                               |                                |                   |                  |        |
| 5240            | 1     | -                | 17.7         | 98           | 4.0         | 5.0                           | 7.0                            | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.9         |                               |                                |                   |                  |        |

**5150-5250 PSD - IC****Mode: n20 (STBC)**

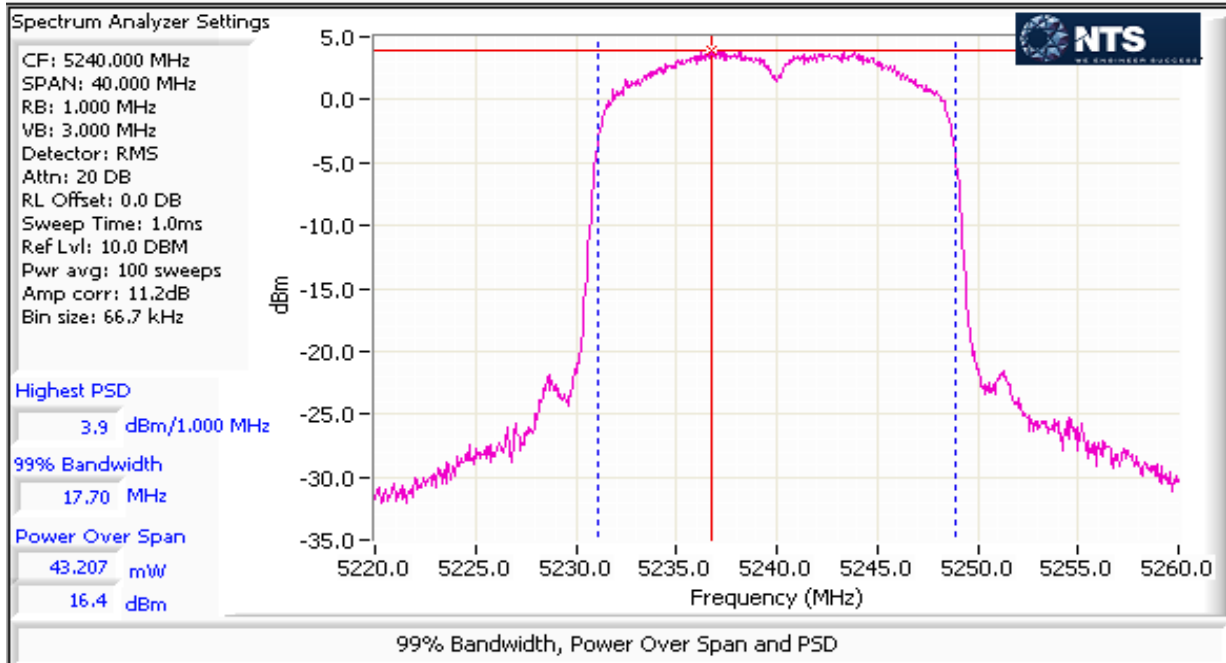
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5180            | 1     | -                | 17.64        | 98           | 0.9         | 2.5                           | 4.0                            |                   | 8.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.0         |                               |                                |                   |                  |        |
| 5200            | 1     | -                | 17.7         | 98           | 3.8         | 4.9                           | 6.9                            |                   | 8.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.9         |                               |                                |                   |                  |        |
| 5240            | 1     | -                | 17.7         | 98           | 4.0         | 5.0                           | 7.0                            |                   | 8.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.9         |                               |                                |                   |                  |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5150-5250 MHz Band - FCC

Mode: n40 (CDD)

Max EIRP (mW): 136.9

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5190            | 1     | -                | 40.1          | 98           | 12.3      | 34.8                     | 15.4 | 24.0          | 0.0884        | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              |           |                          |      |               |               |        |
| 5230            | 1     | -                | 42.3          | 98           | 16.6      | 88.4                     | 19.5 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              |           |                          |      |               |               |        |
|                 |       |                  |               |              | 16.3      |                          |      |               |               |        |

## MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: n40 (CDD)

Max EIRP (mW): 138.0

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm |      | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-----------------|------|---------------------|---------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | 12.3                   | 15.4            | 17.3 | 23.0                | 0.088         | Pass   |
|                 | 3     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                 |      |                     |               |        |
| 5230            | 1     | -                | 36.61        | 98           | 16.6                   | 19.5            | 21.4 | 23.0                |               | Pass   |
|                 | 3     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |      |                     |               |        |
|                 | 2     |                  |              |              |                        |                 |      |                     |               |        |
|                 |       |                  |              |              | 16.3                   |                 |      |                     |               |        |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5150-5250 PSD - FCC Mode: n40 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | -2.0        | 1.3                           | 1.1                            | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.8        |                               |                                |                   |                  |        |
| 5230            | 1     | -                | 36.61        | 98           | 2.2         | 3.2                           | 5.1                            | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.0         |                               |                                |                   |                  |        |

## 5150-5250 PSD - IC Mode: n40 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | -2.0        | 1.3                           | 1.1                            |                   | 5.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.8        |                               |                                |                   |                  |        |
| 5230            | 1     | -                | 36.61        | 98           | 2.2         | 3.2                           | 5.1                            |                   | 5.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.0         |                               |                                |                   |                  |        |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5150-5250 MHz Band - FCC**
**Mode: n40 (STBC)**

Max EIRP (mW): 136.9

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> mW | dBm  | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|-----------------------------|------|---------------|---------------|--------|
| 5190            | 1     | -                | 40.1          | 98           | 12.3      | 34.8                        | 15.4 | 24.0          | 0.088         | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 12.5      |                             |      |               |               |        |
| 5230            | 1     | -                | 42.3          | 98           | 16.6      | 88.4                        | 19.5 | 24.0          | 0.088         | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 16.3      |                             |      |               |               |        |

**MIMO Device - 5150-5250 MHz Band - Industry Canada**
**Mode: n40 (STBC)**

Max EIRP (mW): 138.0

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm | dBm (eirp) | IC limit dBm (eirp) | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-----------------|------------|---------------------|---------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | 12.3                   | 15.4            | 17.3       | 23.0                | 0.088         | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |            |                     |               |        |
|                 | 2     |                  |              |              | 12.5                   |                 |            |                     |               |        |
| 5230            | 1     | -                | 36.61        | 98           | 16.6                   | 19.5            | 21.4       | 23.0                | 0.088         | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |                     |               |        |
|                 | 4     |                  |              |              |                        |                 |            |                     |               |        |
|                 | 2     |                  |              |              | 16.3                   |                 |            |                     |               |        |

**5150-5250 PSD - FCC**
**Mode: n40 (STBC)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|-------------------|------------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | -2.0        | 1.3                           | 1.1     | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | -1.8        |                               |         |                   |                  |        |
| 5230            | 1     | -                | 36.61        | 98           | 2.2         | 3.2                           | 5.1     | 11.0              |                  | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | 2.0         |                               |         |                   |                  |        |



**NTS**

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## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### 5150-5250 PSD - IC

Mode: n40 (STBC)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5190            | 1     | -                | 36.34        | 98           | -2.0        | 1.3                           | 1.1                            |                   | 8.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.8        |                               |                                |                   |                  |        |
| 5230            | 1     | -                | 36.61        | 98           | 2.2         | 3.2                           | 5.1                            |                   | 8.1              | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.0         |                               |                                |                   |                  |        |

#### Spectrum Analyzer Settings

CF: 5230.000 MHz  
 SPAN: 80.000 MHz  
 RB: 1.000 MHz  
 VB: 3.000 MHz  
 Detector: RMS  
 Attn: 20 DB  
 RL Offset: 0.0 DB  
 Sweep Time: 1.0ms  
 Ref Lvl: 10.0 DBM  
 Pwr avg: 100 sweeps  
 Amp corr: 11.2dB  
 Bin size: 133 kHz

#### Highest PSD

2.0 dBm/1,000 MHz

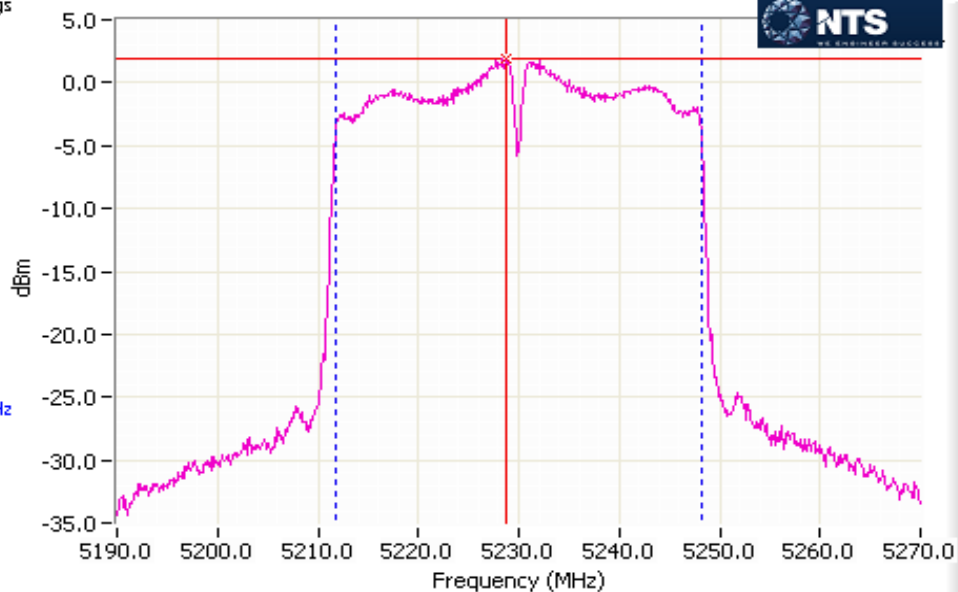
#### 99% Bandwidth

36.47 MHz

#### Power Over Span

42.706 mW

16.3 dBm



99% Bandwidth, Power Over Span and PSD

# EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## MIMO Device - 5250-5350 MHz Band - FCC

Mode: n20 (CDD)

Max EIRP (mW): 130.6

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5260            | 1     | -                | 23.3          | 98           | 16.2      | 84.3                     | 19.3 | 24.0          | 0.0843        | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 16.3      |                          |      |               |               |        |
| 5300            | 1     | -                | 21.7          | 98           | 15.8      | 78.8                     | 19.0 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 16.1      |                          |      |               |               |        |
| 5320            | 1     | -                | 20.1          | 98           | 15.6      | 73.5                     | 18.7 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.7      |                          |      |               |               |        |

## MIMO Device - 5250-5350 MHz Band - Industry Canada

Mode: n20 (CDD)

Max EIRP (mW): 130.6

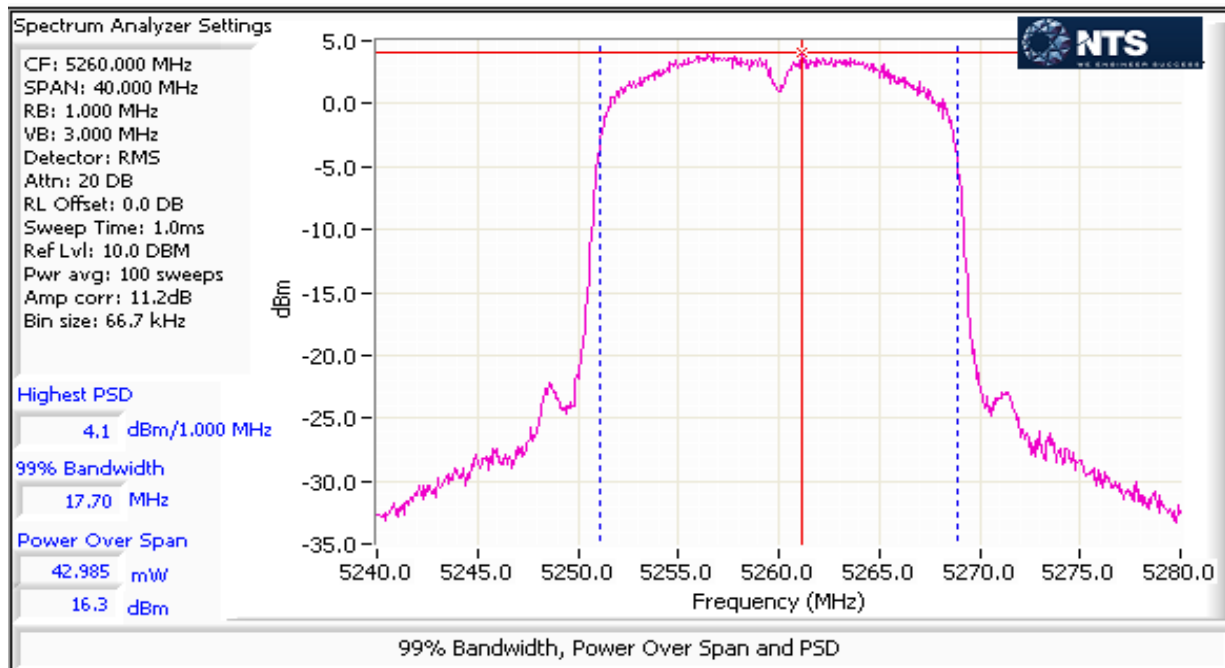
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |            | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------------|--------------|---------------|--------|
|                 |       |                  |              |              |                        | dBm         | dBm (eirp) |              |               |        |
| 5260            | 1     | -                | 17.7         | 98           | 16.2                   | 19.3        | 21.2       | 23.5         | 0.0843        | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 16.3                   |             |            |              |               |        |
| 5300            | 1     | -                | 17.7         | 98           | 15.8                   | 19.0        | 20.9       | 23.5         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 16.1                   |             |            |              |               |        |
| 5320            | 1     | -                | 17.6         | 98           | 15.6                   | 18.7        | 20.6       | 23.5         | Pass          |        |
|                 | 3     |                  |              |              |                        |             |            |              |               |        |
|                 | 4     |                  |              |              |                        |             |            |              |               |        |
|                 | 2     |                  |              |              | 15.7                   |             |            |              |               |        |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## 5250-5350 PSD - FCC/IC

Mode: n20 (CDD)

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5260            | 1     | -                | 17.7         | 98           | 3.9         | 5.0                           | 7.0                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 4.1         |                               |                                |                   |                  |        |
| 5300            | 1     | -                | 17.7         | 98           | 3.4         | 4.5                           | 6.5                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.6         |                               |                                |                   |                  |        |
| 5320            | 1     | -                | 17.6         | 98           | 3.4         | 4.4                           | 6.5                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.5         |                               |                                |                   |                  |        |

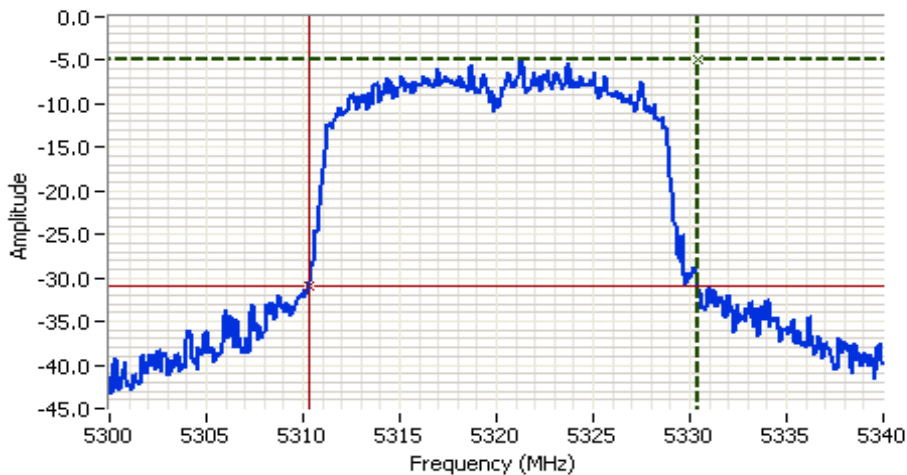


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



### Analyzer Settings

Agilent Technologies, E4446A  
CF: 5320.000 MHz  
SPAN: 40.000 MHz  
RB: 200 kHz  
VB: 1.000 MHz  
Detector: POS  
Attn: 20 DB  
RL Offset: 0.0 DB  
Sweep Time: 1.0ms  
Ref Lvl: 9.0 DBM

### Comments

26dB BW: 20.133 MHz

**NTS**

WE ENGINEER SUCCESS

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5250-5350 MHz Band - FCC**
**Mode: n40 (CDD)**

Max EIRP (mW): 146.6

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> mW | dBm  | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|-----------------------------|------|---------------|---------------|--------|
| 5270            | 1     | -                | 41.7          | 98           | 16.7      | 94.6                        | 19.8 | 24.0          | 0.0946        | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 16.8      |                             |      |               |               |        |
| 5310            | 1     | -                | 39.9          | 98           | 13.3      | 45.4                        | 16.6 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                             |      |               |               |        |
|                 | 4     |                  |               |              |           |                             |      |               |               |        |
|                 | 2     |                  |               |              | 13.8      |                             |      |               |               |        |

**MIMO Device - 5250-5350 MHz Band - Industry Canada**
**Mode: n40 (CDD)**

Max EIRP (mW): 146.6

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm | dBm (eirp) | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-----------------|------------|--------------|---------------|--------|
| 5270            | 1     | -                | 36.47        | 98           | 16.7                   | 19.8            | 21.7       | 24.0         | 0.095         | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |              |               |        |
|                 | 4     |                  |              |              |                        |                 |            |              |               |        |
|                 | 2     |                  |              |              | 16.8                   |                 |            |              |               |        |
| 5310            | 1     | -                | 36.34        | 98           | 13.3                   | 16.6            | 18.5       | 24.0         |               | Pass   |
|                 | 3     |                  |              |              |                        |                 |            |              |               |        |
|                 | 4     |                  |              |              |                        |                 |            |              |               |        |
|                 | 2     |                  |              |              | 13.8                   |                 |            |              |               |        |

**5250-5350 PSD - FCC/IC**
**Mode: n40 (CDD)**

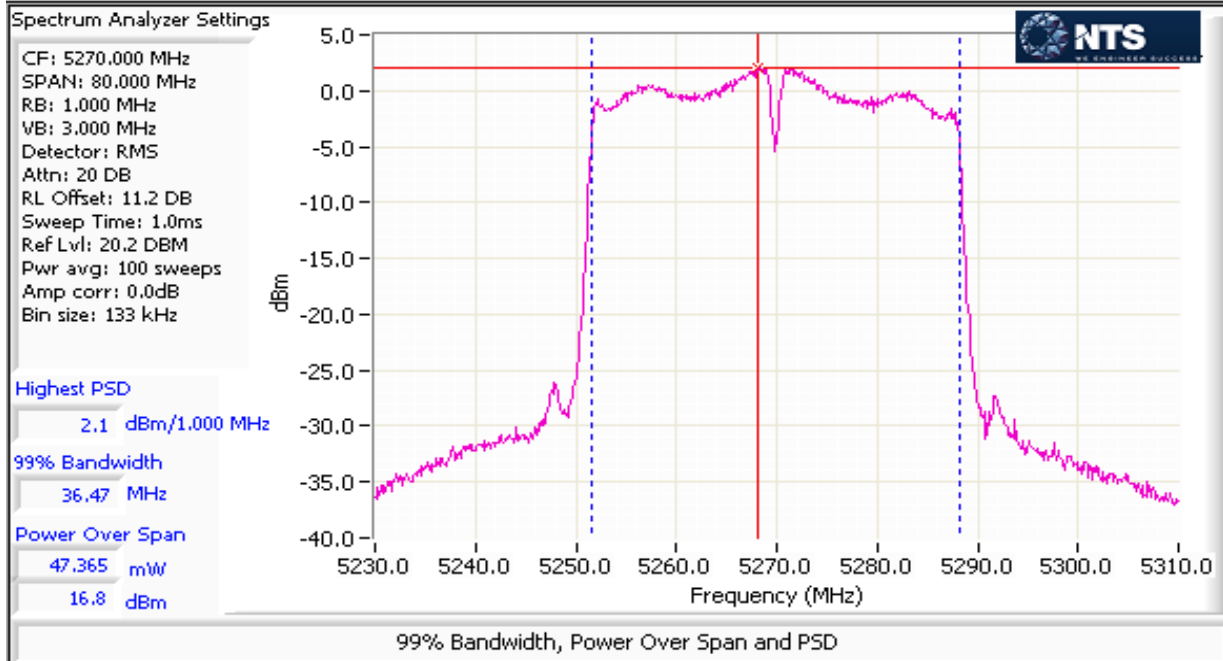
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|-------------------|------------------|--------|
| 5270            | 1     | -                | 36.47        | 98           | 2.5         | 3.4                           | 5.3     | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | 2.1         |                               |         |                   |                  |        |
| 5310            | 1     | -                | 36.34        | 98           | -1.1        | 1.7                           | 2.2     | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |         |                   |                  |        |
|                 | 2     |                  |              |              | -0.5        |                               |         |                   |                  |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5470-5725 MHz Band - FCC****Mode: n20 (CDD)**

Max EIRP (mW): 119.3

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5500            | 1     | -                | 20            | 98           | 14.9      | 59.1                     | 17.7 | 24.0          | 0.077         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 14.5      |                          |      |               |               |        |
| 5580            | 1     | -                | 22.3          | 98           | 16.2      | 77.2                     | 18.9 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.5      |                          |      |               |               |        |
| 5700            | 1     | -                | 20.1          | 98           | 11.7      | 28.3                     | 14.5 | 24.0          | Pass          |        |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 11.3      |                          |      |               |               |        |

**MIMO Device - 5470-5725 MHz Band - Industry Canada****Mode: n20 (CDD)**

Max EIRP (mW): 120.2

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power |      | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|-------------|------|--------------|---------------|--------|
| 5500            | 1     | -                | 17.8         | 98           | 14.9                   | 17.7        | 19.6 | 23.5         | 0.077         | Pass   |
|                 | 3     |                  |              |              |                        |             |      |              |               |        |
|                 | 4     |                  |              |              |                        |             |      |              |               |        |
|                 | 2     |                  |              |              | 14.5                   |             |      |              |               |        |
| 5580            | 1     | -                | 17.8         | 98           | 16.2                   | 18.9        | 20.8 | 23.5         |               | Pass   |
|                 | 3     |                  |              |              |                        |             |      |              |               |        |
|                 | 4     |                  |              |              |                        |             |      |              |               |        |
|                 | 2     |                  |              |              | 15.5                   |             |      |              |               |        |
| 5700            | 1     | -                | 17.8         | 98           | 11.7                   | 14.5        | 16.4 | 23.5         | Pass          |        |
|                 | 3     |                  |              |              |                        |             |      |              |               |        |
|                 | 4     |                  |              |              |                        |             |      |              |               |        |
|                 | 2     |                  |              |              | 11.3                   |             |      |              |               |        |

**NTS**

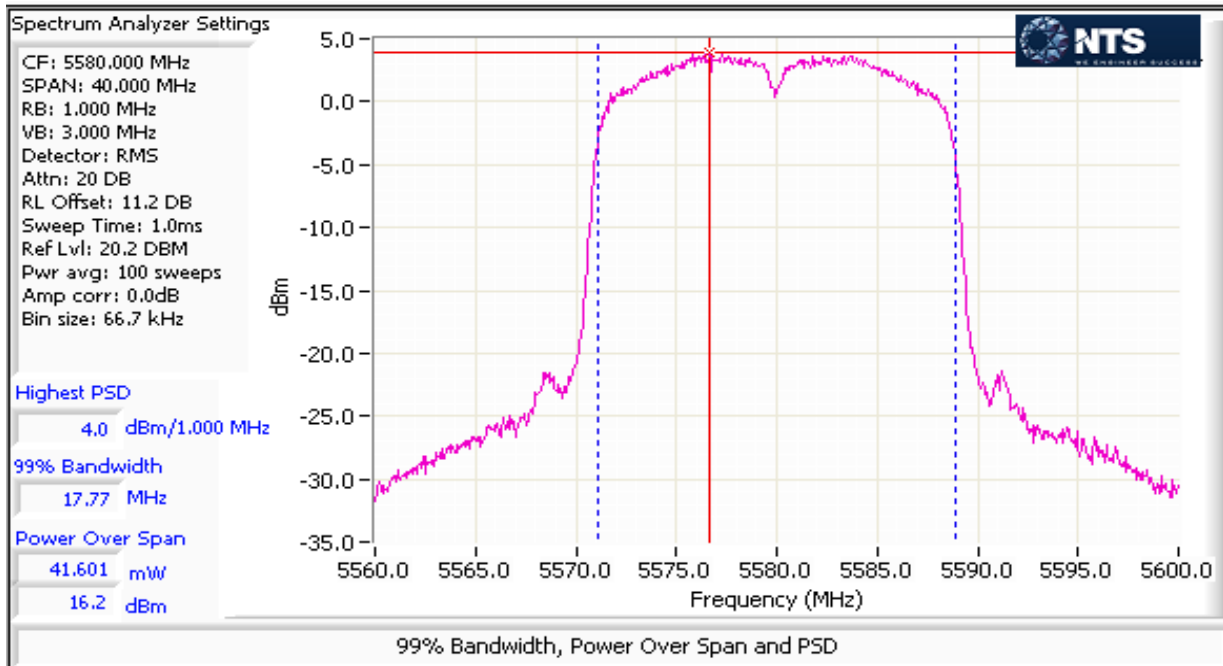
WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5470-5725 PSD - FCC/IC****Mode: n20 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5500            | 1     | -                | 17.8         | 98           | 2.4         | 3.4                           | 5.3                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 2.2         |                               |                                |                   |                  |        |
| 5580            | 1     | -                | 17.8         | 98           | 4.0         | 4.6                           | 6.6                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 3.2         |                               |                                |                   |                  |        |
| 5700            | 1     | -                | 17.8         | 98           | -0.7        | 1.6                           | 2.1                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.1        |                               |                                |                   |                  |        |



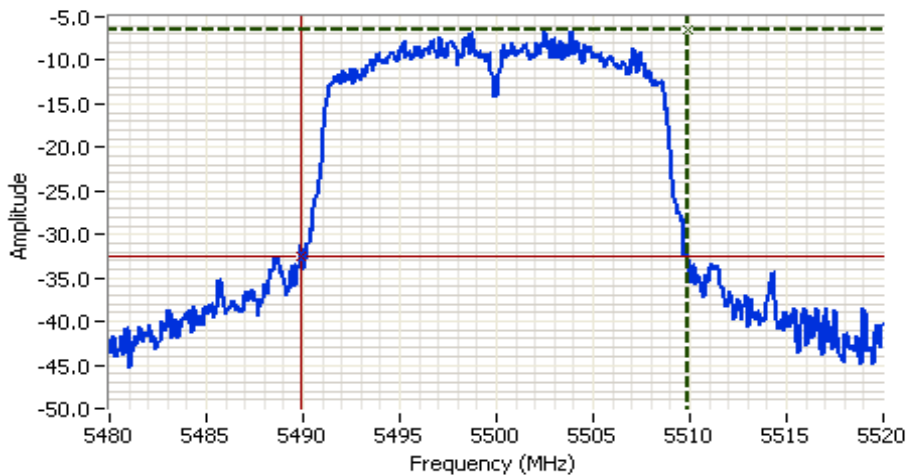


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



### Analyzer Settings

Agilent Technologies, E4446A  
CF: 5500.000 MHz  
SPAN: 40.000 MHz  
RB: 200 kHz  
VB: 1.000 MHz  
Detector: POS  
Attn: 20 DB  
RL Offset: 0.0 DB  
Sweep Time: 1.0ms  
Ref Lvl: 9.0 DBM

### Comments

26dB BW: 20.000 MHz

|          |           |       |  |
|----------|-----------|-------|--|
| Cursor 1 | 5509.8667 | -6.5  |  |
| Cursor 2 | 5489.8667 | -32.5 |  |

Delta Freq. 20.000

Delta Amplitude 26.0

**NTS**

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**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5470-5725 MHz Band - FCC****Mode: n40 (CDD)**

Max EIRP (mW): 123.9

| Frequency (MHz) | Chain | Software Setting | 26dB BW (MHz) | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | FCC Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|---------------|--------------|-----------|--------------------------|------|---------------|---------------|--------|
| 5510            | 1     | -                | 41.5          | 98           | 13.7      | 44.8                     | 16.5 | 24.0          | 0.080         | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 13.3      |                          |      |               |               |        |
| 5550            | 1     | -                | 47.9          | 98           | 16.2      | 79.7                     | 19.0 | 24.0          |               | Pass   |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 15.8      |                          |      |               |               |        |
| 5670            | 1     | -                | 44.1          | 98           | 14.3      | 50.9                     | 17.1 | 24.0          | Pass          |        |
|                 | 3     |                  |               |              |           |                          |      |               |               |        |
|                 | 4     |                  |               |              |           |                          |      |               |               |        |
|                 | 2     |                  |               |              | 13.8      |                          |      |               |               |        |

**MIMO Device - 5470-5725 MHz Band - Industry Canada****Mode: n40 (CDD)**

Max EIRP (mW): 123.0

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | Power <sup>1</sup> dBm | Total Power dBm dBm (eirp) |      | IC limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--------------|--------------|------------------------|----------------------------|------|--------------|---------------|--------|
| 5510            | 1     | -                | 36.5         | 98           | 13.7                   | 16.5                       | 18.4 | 24.0         | 0.080         | Pass   |
|                 | 3     |                  |              |              |                        |                            |      |              |               |        |
|                 | 4     |                  |              |              |                        |                            |      |              |               |        |
|                 | 2     |                  |              |              | 13.3                   |                            |      |              |               |        |
| 5550            | 1     | -                | 36.5         | 98           | 16.2                   | 19.0                       | 20.9 | 24.0         |               | Pass   |
|                 | 3     |                  |              |              |                        |                            |      |              |               |        |
|                 | 4     |                  |              |              |                        |                            |      |              |               |        |
|                 | 2     |                  |              |              | 15.8                   |                            |      |              |               |        |
| 5670            | 1     | -                | 36.5         | 98           | 14.3                   | 17.1                       | 19.0 | 24.0         | Pass          |        |
|                 | 3     |                  |              |              |                        |                            |      |              |               |        |
|                 | 4     |                  |              |              |                        |                            |      |              |               |        |
|                 | 2     |                  |              |              | 13.8                   |                            |      |              |               |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**5470-5725 PSD - FCC/IC****Mode: n40 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | Total PSD <sup>1</sup> dBm/MHz | FCC Limit dBm/MHz | IC Limit dBm/MHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|--------------------------------|-------------------|------------------|--------|
| 5510            | 1     | -                | 36.5         | 98           | -0.7        | 1.6                           | 2.2                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -1.0        |                               |                                |                   |                  |        |
| 5550            | 1     | -                | 36.5         | 98           | 1.8         | 2.9                           | 4.6                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | 1.3         |                               |                                |                   |                  |        |
| 5670            | 1     | -                | 36.5         | 98           | -0.1        | 1.8                           | 2.6                            | 11.0              | 11.0             | Pass   |
|                 | 3     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 4     |                  |              |              |             |                               |                                |                   |                  |        |
|                 | 2     |                  |              |              | -0.8        |                               |                                |                   |                  |        |

**Spectrum Analyzer Settings**

CF: 5550.000 MHz  
 SPAN: 80.000 MHz  
 RB: 1.000 MHz  
 VB: 3.000 MHz  
 Detector: RMS  
 Attn: 20 DB  
 RL Offset: 11.2 DB  
 Sweep Time: 1.0ms  
 Ref Lvl: 21.2 DBM  
 Pwr avg: 100 sweeps  
 Amp corr: 0.0dB  
 Bin size: 133 kHz

**Highest PSD**

1.8 dBm/1.000 MHz

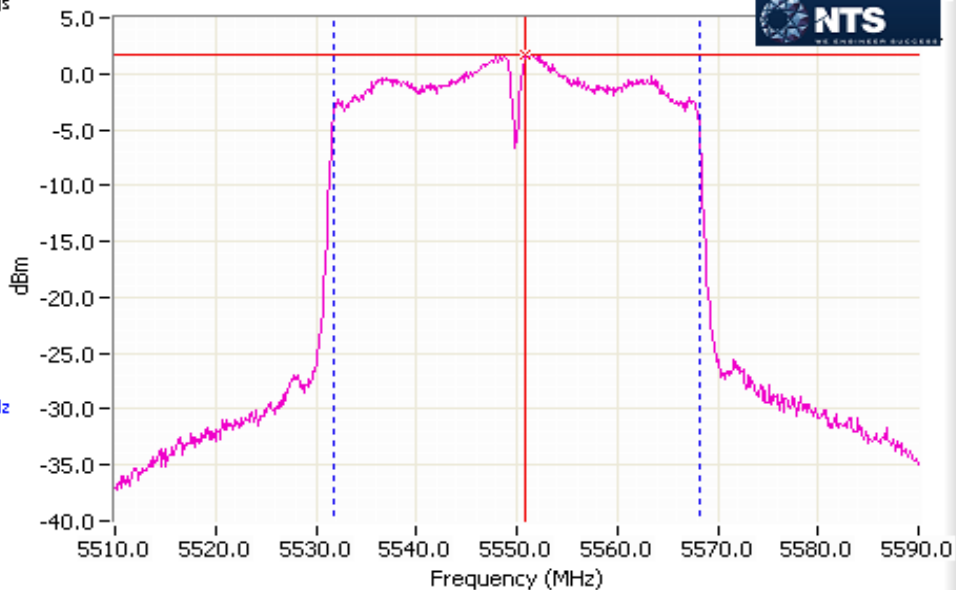
**99% Bandwidth**

36.47 MHz

**Power Over Span**

42.125 mW

16.2 dBm



99% Bandwidth, Power Over Span and PSD

**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5725-5850 MHz Band - FCC/IC****Mode: n20 (CDD)**

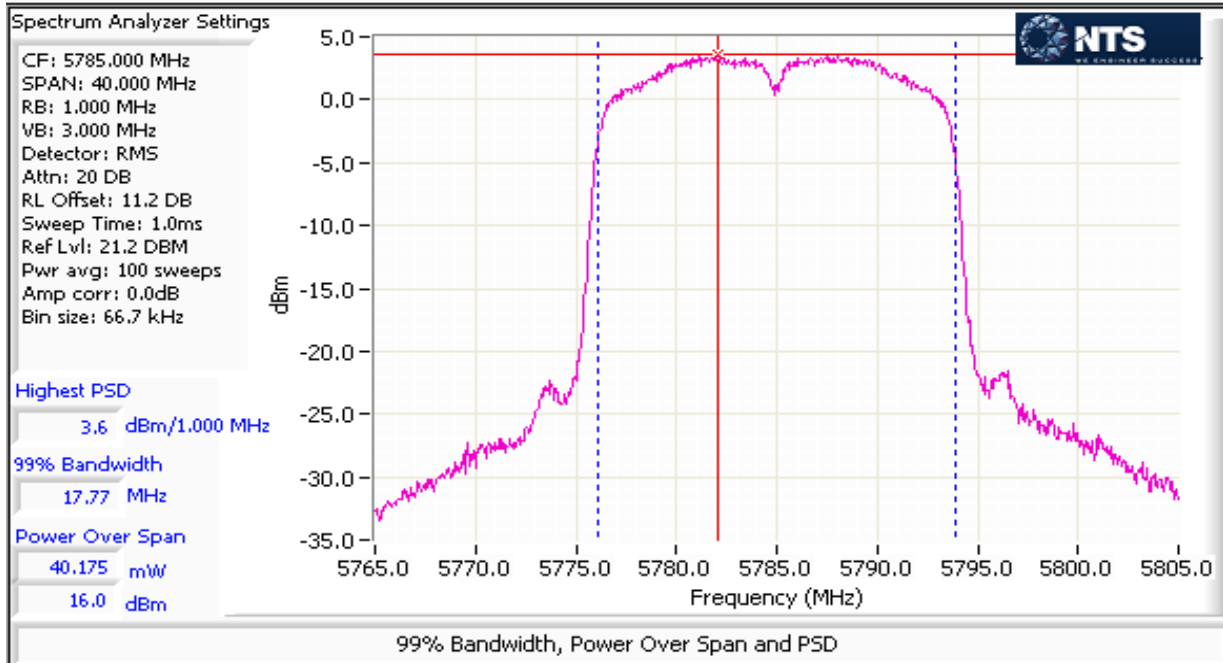
Max EIRP (mW): 114.6

| Frequency (MHz) | Chain | Software Setting |  | Duty Cycle % | Power dBm | Total Power <sup>1</sup> |      | Limit dBm | Max Power (W) | Result |
|-----------------|-------|------------------|--|--------------|-----------|--------------------------|------|-----------|---------------|--------|
| 5745            | 1     | -                |  | 98           | 12.6      | 36.0                     | 15.6 | 30.0      | 0.074         | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 12.5      |                          |      |           |               |        |
| 5785            | 1     | -                |  | 98           | 16.0      | 73.7                     | 18.7 | 30.0      |               | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 15.3      |                          |      |           |               |        |
| 5825            | 1     | -                |  | 98           | 14.8      | 58.4                     | 17.7 | 30.0      |               | Pass   |
|                 | 3     |                  |  |              |           |                          |      |           |               |        |
|                 | 4     |                  |  |              |           |                          |      |           |               |        |
|                 | 2     |                  |  |              | 14.5      |                          |      |           |               |        |

**5725-5850 PSD - FCC/IC****Mode: n20 (CDD)**

| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/500kHz | IC Limit | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|----------------------|----------|--------|
| 5745            | 1     | -                | 17.6         | 98           | 0.1         | 2.0                           | 3.1     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | 0.1         |                               |         |                      |          |        |
| 5785            | 1     | -                | 17.8         | 98           | 3.6         | 4.2                           | 6.3     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | 2.9         |                               |         |                      |          |        |
| 5825            | 1     | -                | 17.6         | 98           | 2.4         | 3.4                           | 5.3     | 30.0                 | 30.0     | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |          |        |
|                 | 4     |                  |              |              |             |                               |         |                      |          |        |
|                 | 2     |                  |              |              | 2.1         |                               |         |                      |          |        |

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



**NTS**

WE ENGINEER SUCCESS

**EMC Test Data**

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

**MIMO Device - 5725-5850 MHz Band - FCC/IC****Mode: n40 (CDD)**

Max EIRP (mW): 91.4

| Frequency<br>(MHz) | Chain | Software<br>Setting |  | Duty Cycle<br>% | Power<br>dBm | Total Power <sup>1</sup><br>mW   dBm |      | Limit<br>dBm | Max Power<br>(W) | Result |      |
|--------------------|-------|---------------------|--|-----------------|--------------|--------------------------------------|------|--------------|------------------|--------|------|
| 5755               | 1     | -                   |  | 98              | 10.1         | 20.0                                 | 13.0 | 30.0         | 0.059            | Pass   |      |
|                    | 3     |                     |  |                 |              |                                      |      |              |                  |        |      |
|                    | 4     |                     |  |                 |              |                                      |      |              |                  |        |      |
|                    | 2     |                     |  |                 | 9.9          |                                      |      |              |                  |        |      |
| 5795               | 1     | -                   |  | 98              | 15.1         | 59.3                                 | 17.7 | 30.0         |                  |        | Pass |
|                    | 3     |                     |  |                 |              |                                      |      |              |                  |        |      |
|                    | 4     |                     |  |                 |              |                                      |      |              |                  |        |      |
|                    | 2     |                     |  |                 | 14.3         |                                      |      |              |                  |        |      |

**5725-5850 PSD - FCC/IC****Mode: n40 (CDD)**

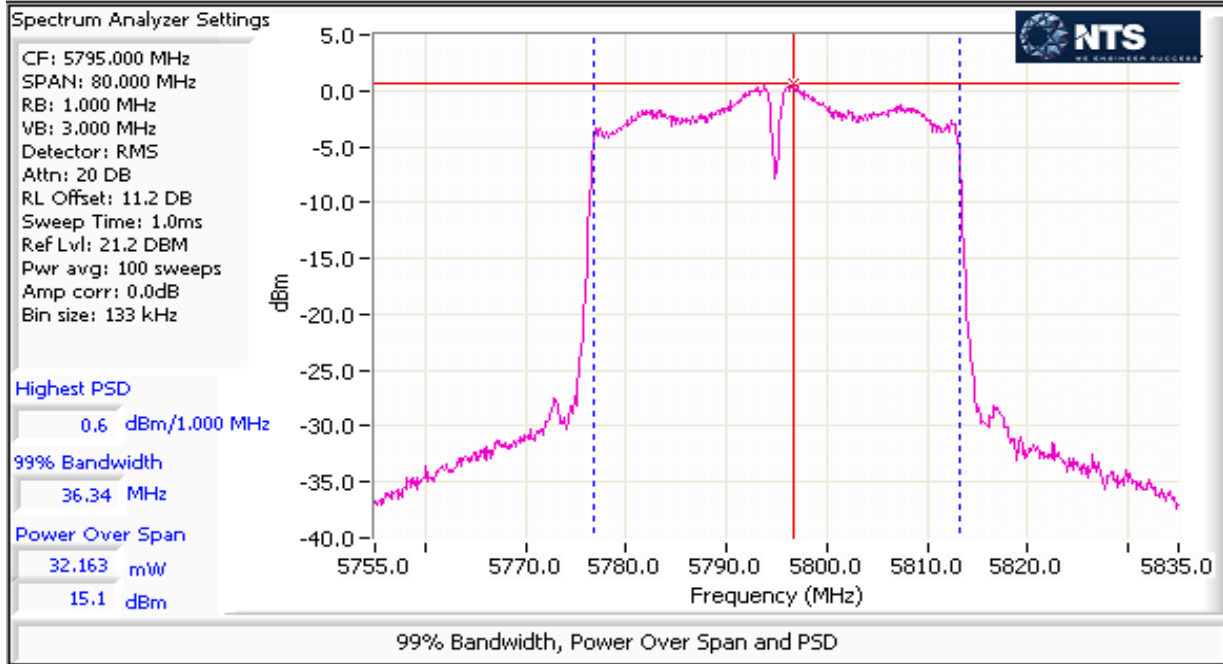
| Frequency (MHz) | Chain | Software Setting | 99% BW (MHz) | Duty Cycle % | PSD dBm/MHz | Total PSD <sup>1</sup> mW/MHz | dBm/MHz | FCC Limit dBm/500kHz | IC Limit dBm/500kHz | Result |
|-----------------|-------|------------------|--------------|--------------|-------------|-------------------------------|---------|----------------------|---------------------|--------|
| 5755            | 1     | -                | 36.3         | 98           | -4.5        | 0.7                           | -1.6    | 30.0                 | 30.0                | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |                     |        |
|                 | 4     |                  |              |              |             |                               |         |                      |                     |        |
|                 | 2     |                  |              |              | -4.7        |                               |         |                      |                     |        |
| 5795            | 1     | -                | 36.5         | 98           | 0.6         | 2.1                           | 3.2     | 30.0                 | 30.0                | Pass   |
|                 | 3     |                  |              |              |             |                               |         |                      |                     |        |
|                 | 4     |                  |              |              |             |                               |         |                      |                     |        |
|                 | 2     |                  |              |              | -0.3        |                               |         |                      |                     |        |

**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #2: Bandwidth Measurements

Date of Test: 8/10/2015 0:00

Test Engineer: Rafael Varelas

Test Location: FT Lab #4A

Config. Used: 1

Config Change: None

EUT Voltage: USB

Mode:

11a

5725-5850MHz band (UNII3)

Testing performed on port:

1

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (MHz) |      |
|---------------|-----------------|-----------------|------|-------------------|------|
|               |                 | 6dB             | 99%  | 6dB               | 99%  |
| q66           | 5745            | 15.5            | 17.4 | 100kHz            | 1MHz |
| q66           | 5785            | 15.3            | 17.5 | 100kHz            | 1MHz |
| q66           | 5825            | 15.1            | 17.4 | 100kHz            | 1MHz |

Mode:

n20

5725-5850MHz band (UNII3)

Testing performed on port:

1

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (MHz) |      |
|---------------|-----------------|-----------------|------|-------------------|------|
|               |                 | 6dB             | 99%  | 6dB               | 99%  |
| q66           | 5745            | 15.1            | 18.2 | 100kHz            | 1MHz |
| q66           | 5785            | 15.1            | 18.3 | 100kHz            | 1MHz |
| q66           | 5825            | 15.1            | 18.2 | 100kHz            | 1MHz |

Mode:

n40

5725-5850MHz band (UNII3)

Testing performed on port:

1

| Power Setting | Frequency (MHz) | Bandwidth (MHz) |      | RBW Setting (MHz) |      |
|---------------|-----------------|-----------------|------|-------------------|------|
|               |                 | 6dB             | 99%  | 6dB               | 99%  |
| q66           | 5755            | 35.1            | 37.1 | 100kHz            | 1MHz |
| q66           | 5795            | 35.1            | 37.3 | 100kHz            | 1MHz |

Note 1:

6dB BW: RBW=100kHz, VBW ≥ 3\*RBW, peak detector, max hold, auto sweep time.

99% BW: RBW=1-5% of 99%BW, VBW ≥ 3\*RBW, peak detector, max hold, auto sweep time.

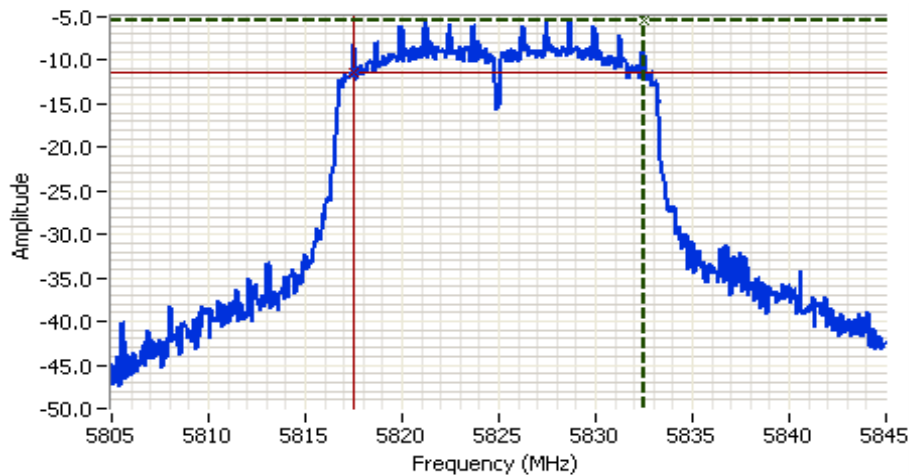


**NTS**

WE ENGINEER SUCCESS

## EMC Test Data

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: N/A                            |



### Analyzer Settings

Agilent Technologies, E4446A  
CF: 5825.000 MHz  
SPAN: 40.000 MHz  
RB: 100 kHz  
VB: 300 kHz  
Detector: POS  
Attn: 20 DB  
RL Offset: 0.0 DB  
Sweep Time: 3.8ms  
Ref Lvl: 10.0 DBM

### Comments

6dB BW: 15.067 MHz

|          |           |       |  |
|----------|-----------|-------|--|
| Cursor 1 | 5832.5333 | -5.3  |  |
| Cursor 2 | 5817.4667 | -11.3 |  |

Delta Freq. 15.067

Delta Amplitude 6.0

**NTS**

WE ENGINEER SUCCESS



## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

### FCC Part 15 Frequency Stability

#### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

#### General Test Configuration

All measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument. For frequency stability measurements the EUT was placed inside an environmental chamber.

**Ambient Conditions:**

|                |       |
|----------------|-------|
| Temperature:   | 24 °C |
| Rel. Humidity: | 38 %  |

| Run # |  |  | Test Performed      | Limit         | Pass / Fail |  |
|-------|--|--|---------------------|---------------|-------------|--|
| 1     |  |  | Frequency Stability | Stays in band | Pass        |  |

#### Modifications Made During Testing

No modifications were made to the EUT during testing

#### Deviations From The Standard

No deviations were made from the requirements of the standard.

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | N/A              |

## Run #1: Frequency Stability

Date of Test: 8/12/2015

Test Engineer: Rafael Varelas

Test Location: FT Lab #4A

Config. Used: 1

Config Change: None

EUT Voltage: 120V/60Hz

Nominal Frequency: 2437 MHz

## Frequency Stability Over Temperature

The EUT was soaked at each temperature for a minimum of 30 minutes prior to starting the transmitter and making the measurements to ensure the EUT and chamber had stabilized at that temperature.

Measurement performed on a modulated carrier. Center determined from the -10dBc frequency points, captured using RBW=1MHz, VBW=10kHz, RMS detector, trace averaging.

| Temperature | Frequency Measured | Drift  |       |
|-------------|--------------------|--------|-------|
| (Celsius)   | (MHz)              | (Hz)   | (ppm) |
| 0           | 2437.009570        | 9570   | 3.9   |
| 10          | 2437.004330        | 4330   | 1.8   |
| 20          | 2436.997370        | -2630  | -1.1  |
| 30          | 2436.990190        | -9810  | -4.0  |
| 40          | 2436.983860        | -16140 | -6.6  |
| 50          | 2436.980160        | -19840 | -8.1  |
| Worst case: |                    | -16140 | -8.1  |

## Frequency Stability Over Input Voltage

Nominal Voltage is 120Vac.

| Voltage     | Frequency Measured | Drift |       |
|-------------|--------------------|-------|-------|
| (AC)        | (MHz)              | (Hz)  | (ppm) |
| 102.00      | 2436.997370        | -2630 | -1.1  |
| 138.00      | 2436.997370        | -2630 | -1.1  |
| Worst case: |                    | -2630 | -1.1  |



## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

### Radiated Emissions

(NTS Silicon Valley, Fremont Facility, Semi-Anechoic Chamber)

#### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/30 & 8/4/15  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #5

Config. Used: 1  
 Config Change: None  
 Host Unit Voltage 120V/60Hz

#### General Test Configuration

The EUT and any local support equipment were located on the turntable for radiated emissions testing. The test distance and extrapolation factor (if applicable) are detailed under each run description.

Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

#### Ambient Conditions:

|                | 7/30/2015 | 8/4/2015 |
|----------------|-----------|----------|
| Temperature:   | 20.6 °C   | 21.4 °C  |
| Rel. Humidity: | 38 %      | 40 %     |

#### Summary of Results (ANSI C63.4:2009)

| Run # | Test Performed                                | Limit      | Result | Margin                                |
|-------|-----------------------------------------------|------------|--------|---------------------------------------|
| 1     | Radiated Emissions<br>30 - 1000 MHz, Transmit | FCC 15.209 | Pass   | 26.0 dBμV/m @ 37.95 MHz<br>(-14.0 dB) |
| 2     | Radiated Emissions<br>30 - 1000 MHz, Transmit | FCC 15.209 | Pass   | 26.1 dBμV/m @ 37.92 MHz<br>(-13.9 dB) |
| 3     | Radiated Emissions<br>30 - 1000 MHz, Receive  | LP 0002    | Pass   | 36.2 dBμV/m @ 41.16 MHz<br>(-3.8 dB)  |
| 4     | Radiated Emissions<br>30 - 1000 MHz, Receive  | LP 0002    | Pass   | 36.5 dBμV/m @ 41.40 MHz<br>(-3.5 dB)  |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

## Modifications Made During Testing

No modifications were made to the EUT during testing

## Deviations From The Standard

No deviations were made from the requirements of the standard.

## Sample Notes

Sample S/N: D85DE2000005 (MAC ID)

Driver: 6.37 RC214 .12

Antenna: Internal

## Notes

### Testing performed at 0.8m per C63.10

All testing was performed in 2Tx mode using worse case 1Tx power levels

## Procedure Comments:

Measurements performed in accordance with FCC KDB 558074

2.4GHz band reject filter used

| Mode | Data Rate | Duty Cycle (x) | Constant DC? | T (ms) | Pwr Cor Factor* | Lin Volt Cor Factor** | Min VBW for FS (Hz) |
|------|-----------|----------------|--------------|--------|-----------------|-----------------------|---------------------|
| 11b  | 1Mb/s     | 98.2%          | Yes          | 2.897  | 0               | 0                     | 10                  |
| 11a  | 6Mb/s     | 98.2%          | Yes          | 1.405  | 0               | 0                     | 10                  |
| n20  | MCS0      | 98.1%          | Yes          | 1.309  | 0               | 0                     | 10                  |
| n40  | MCS0      | 98.0%          | Yes          | 0.932  | 0               | 0                     | 10                  |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

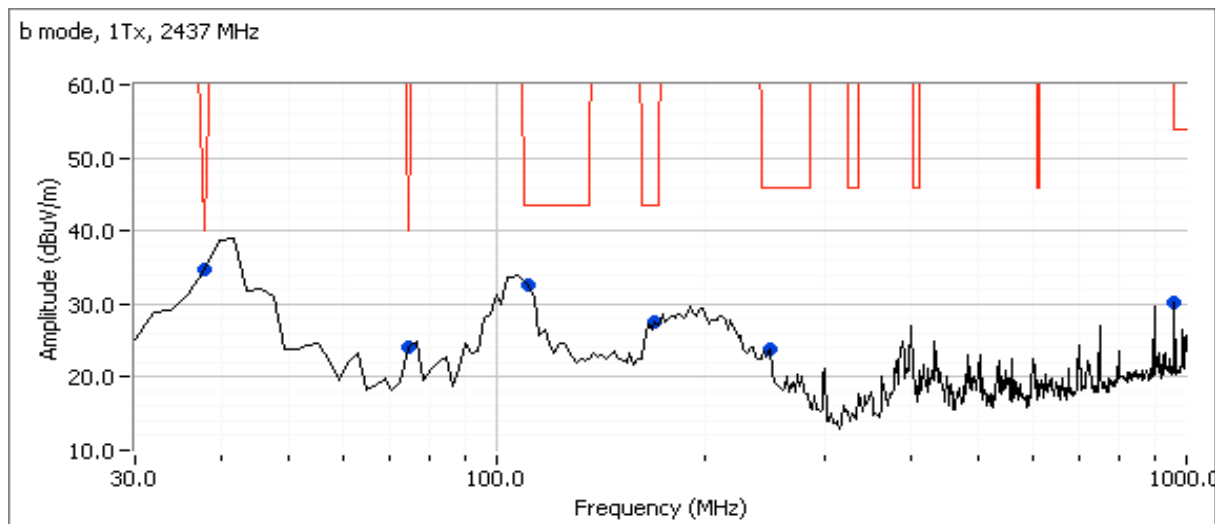
## Run #1: Radiated Spurious Emissions, 30 - 1000 MHz

| Test Parameters for Preliminary Scan(s) |                           |                         |                                            |
|-----------------------------------------|---------------------------|-------------------------|--------------------------------------------|
| Frequency Range (MHz)                   | Prescan Distance (meters) | Limit Distance (meters) | Extrapolation Factor (dB, applied to data) |
| 30 - 1000                               | 3                         | 3                       | 0.0                                        |

Channel: 6      Mode: 802.11b      Power: -  
 Tx Chain: 1Tx      Data Rate: 1Mb/s

## Preliminary peak readings captured during pre-scan

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |          |
| 37.946    | 34.7         | V   | 40.0       | -5.3   | Peak      | 7       | 1.0    |          |
| 74.982    | 24.2         | V   | 40.0       | -15.8  | Peak      | 227     | 1.0    |          |
| 112.208   | 32.7         | V   | 43.5       | -10.8  | Peak      | 306     | 1.0    |          |
| 170.071   | 27.6         | V   | 43.5       | -15.9  | Peak      | 238     | 1.0    |          |
| 249.683   | 23.7         | H   | 46.0       | -22.3  | Peak      | 114     | 1.0    |          |
| 960.004   | 30.2         | V   | 54.0       | -23.8  | Peak      | 215     | 1.0    |          |

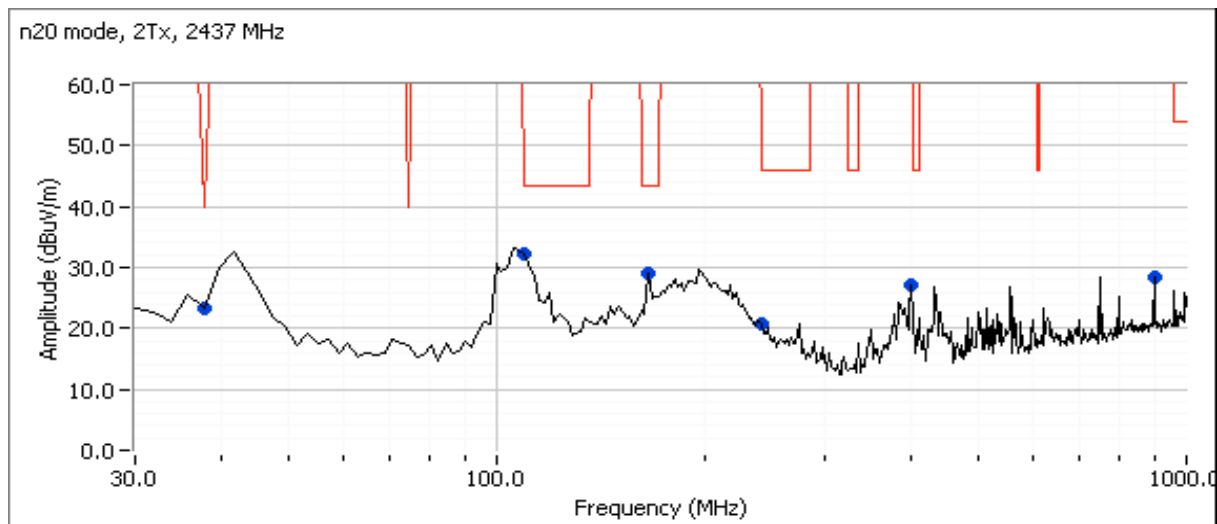


|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

Channel: 6                      Mode: n20                      Power: -  
 Tx Chain: 2Tx                      Data Rate: MCS0

## Preliminary peak readings captured during pre-scan

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |          |
| 37.776    | 23.3         | V   | 40.0       | -16.7  | Peak      | 326     | 1.0    |          |
| 109.699   | 32.2         | V   | 43.5       | -11.3  | Peak      | 140     | 1.0    |          |
| 166.072   | 28.9         | H   | 43.5       | -14.6  | Peak      | 282     | 2.0    |          |
| 241.884   | 20.9         | V   | 46.0       | -25.1  | Peak      | 245     | 1.0    |          |
| 399.339   | 27.0         | V   | 100.0      | -73.0  | Peak      | 346     | 1.0    |          |
| 898.918   | 28.5         | V   | 100.0      | -71.5  | Peak      | 221     | 1.0    |          |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

**Maximized quasi-peak readings (includes manipulation of EUT interface cables), Worse case from above runs**

| Frequency     | Level        | Pol | FCC 15.209 |              | Detector  | Azimuth | Height | Comments   |
|---------------|--------------|-----|------------|--------------|-----------|---------|--------|------------|
| MHz           | dB $\mu$ V/m | v/h | Limit      | Margin       | Pk/QP/Avg | degrees | meters |            |
| <b>37.946</b> | <b>26.0</b>  | V   | 40.0       | <b>-14.0</b> | QP        | 4       | 1.0    | QP (1.00s) |
| 170.071       | 23.5         | V   | 43.5       | -20.0        | QP        | 235     | 1.0    | QP (1.00s) |
| 74.982        | 18.9         | V   | 40.0       | -21.1        | QP        | 222     | 1.0    | QP (1.00s) |
| 112.208       | 22.3         | V   | 43.5       | -21.2        | QP        | 304     | 1.0    | QP (1.00s) |
| 960.004       | 30.1         | V   | 54.0       | -23.9        | QP        | 212     | 1.0    | QP (1.00s) |
| 249.683       | 20.1         | H   | 46.0       | -25.9        | QP        | 110     | 1.0    | QP (1.00s) |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

## Run #2: Radiated Spurious Emissions, 30 - 1000 MHz

| Test Parameters for Preliminary Scan(s) |                           |                         |                                            |
|-----------------------------------------|---------------------------|-------------------------|--------------------------------------------|
| Frequency Range (MHz)                   | Prescan Distance (meters) | Limit Distance (meters) | Extrapolation Factor (dB, applied to data) |
| 30 - 1000                               | 3                         | 3                       | 0.0                                        |

Channel: 157      Mode: n20      Power: -  
Tx Chain: 2Tx      Data Rate: MCS0

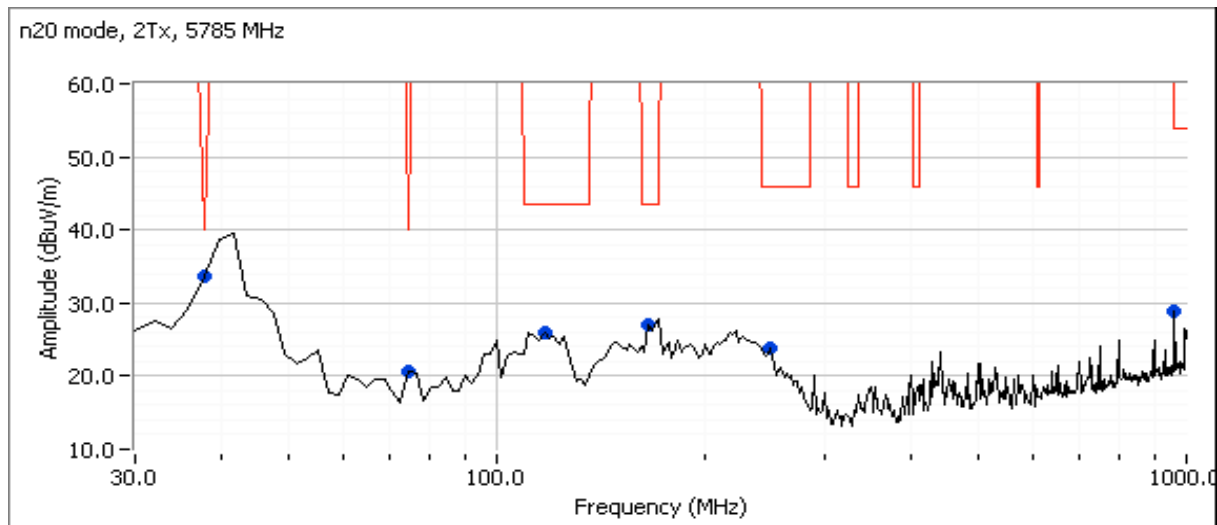
### Preliminary peak readings captured during pre-scan

| Frequency | Level        | Pol | FCC 15.209 |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |          |
| 37.922    | 33.8         | V   | 40.0       | -6.2   | Peak      | 326     | 1.0    |          |
| 74.972    | 20.7         | V   | 40.0       | -19.3  | Peak      | 200     | 2.0    |          |
| 116.712   | 26.0         | H   | 43.5       | -17.5  | Peak      | 100     | 3.0    |          |
| 166.328   | 27.1         | H   | 43.5       | -16.4  | Peak      | 272     | 1.5    |          |
| 249.727   | 23.7         | H   | 46.0       | -22.3  | Peak      | 305     | 2.0    |          |
| 959.991   | 28.9         | V   | 54.0       | -25.1  | Peak      | 209     | 1.0    |          |

### Maximized quasi-peak readings (includes manipulation of EUT interface cables)

| Frequency     | Level        | Pol | FCC 15.209 |              | Detector  | Azimuth | Height | Comments   |
|---------------|--------------|-----|------------|--------------|-----------|---------|--------|------------|
| MHz           | dB $\mu$ V/m | v/h | Limit      | Margin       | Pk/QP/Avg | degrees | meters |            |
| <b>37.922</b> | <b>26.1</b>  | V   | 40.0       | <b>-13.9</b> | QP        | 327     | 1.0    | QP (1.00s) |
| 166.328       | 25.0         | H   | 43.5       | -18.5        | QP        | 273     | 1.7    | QP (1.00s) |
| 74.972        | 16.7         | V   | 40.0       | -23.3        | QP        | 201     | 1.0    | QP (1.00s) |
| 249.727       | 21.7         | H   | 46.0       | -24.3        | QP        | 305     | 1.3    | QP (1.00s) |
| 959.991       | 28.4         | V   | 54.0       | -25.6        | QP        | 210     | 1.0    | QP (1.00s) |
| 116.712       | 15.3         | H   | 43.5       | -28.2        | QP        | 103     | 1.0    | QP (1.00s) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

## Run #3: Radiated Spurious Emissions, 30 - 1000 MHz

| Test Parameters for Preliminary Scan(s) |                           |                         |                                            |
|-----------------------------------------|---------------------------|-------------------------|--------------------------------------------|
| Frequency Range (MHz)                   | Prescan Distance (meters) | Limit Distance (meters) | Extrapolation Factor (dB, applied to data) |
| 30 - 1000                               | 3                         | 3                       | 0.0                                        |

Channel: 6      Mode: Rx      Power: N/A  
Tx Chain: 2Tx      Data Rate: N/A

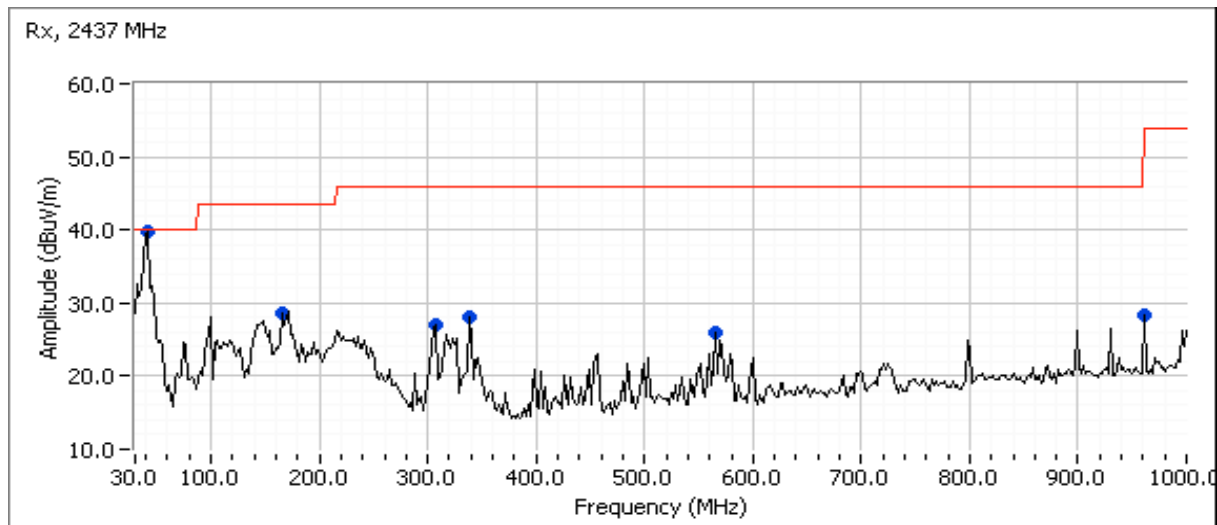
### Preliminary peak readings captured during pre-scan

| Frequency | Level        | Pol | LP0002 2.8 |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |          |
| 41.160    | 39.7         | V   | 40.0       | -0.3   | Peak      | 360     | 1.5    |          |
| 165.971   | 28.6         | H   | 43.5       | -14.9  | Peak      | 283     | 1.5    |          |
| 306.331   | 27.0         | V   | 46.0       | -19.0  | Peak      | 96      | 2.0    |          |
| 342.005   | 28.0         | V   | 46.0       | -18.0  | Peak      | 130     | 3.5    |          |
| 563.134   | 25.9         | V   | 46.0       | -20.1  | Peak      | 266     | 1.5    |          |
| 960.014   | 28.3         | V   | 54.0       | -25.7  | Peak      | 209     | 1.0    |          |

### Maximized quasi-peak readings (includes manipulation of EUT interface cables)

| Frequency     | Level        | Pol | LP0002 2.8 |             | Detector  | Azimuth | Height | Comments   |
|---------------|--------------|-----|------------|-------------|-----------|---------|--------|------------|
| MHz           | dB $\mu$ V/m | v/h | Limit      | Margin      | Pk/QP/Avg | degrees | meters |            |
| <b>41.160</b> | <b>36.2</b>  | V   | 40.0       | <b>-3.8</b> | QP        | 360     | 1.0    | QP (1.00s) |
| 165.971       | 26.4         | H   | 43.5       | -17.1       | QP        | 286     | 1.7    | QP (1.00s) |
| 342.005       | 21.1         | V   | 46.0       | -24.9       | QP        | 133     | 1.0    | QP (1.00s) |
| 960.014       | 28.8         | V   | 54.0       | -25.2       | QP        | 211     | 1.0    | QP (1.00s) |
| 563.134       | 14.2         | V   | 46.0       | -31.8       | QP        | 270     | 1.0    | QP (1.00s) |
| 306.331       | 8.9          | V   | 46.0       | -37.1       | QP        | 99      | 1.0    | QP (1.00s) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |



|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

## Run #4: Radiated Spurious Emissions, 30 - 1000 MHz

| Test Parameters for Preliminary Scan(s) |                           |                         |                                            |
|-----------------------------------------|---------------------------|-------------------------|--------------------------------------------|
| Frequency Range (MHz)                   | Prescan Distance (meters) | Limit Distance (meters) | Extrapolation Factor (dB, applied to data) |
| 30 - 1000                               | 3                         | 3                       | 0.0                                        |

Channel: 157      Mode: Rx      Power: N/A  
Tx Chain: 2Tx      Data Rate: N/A

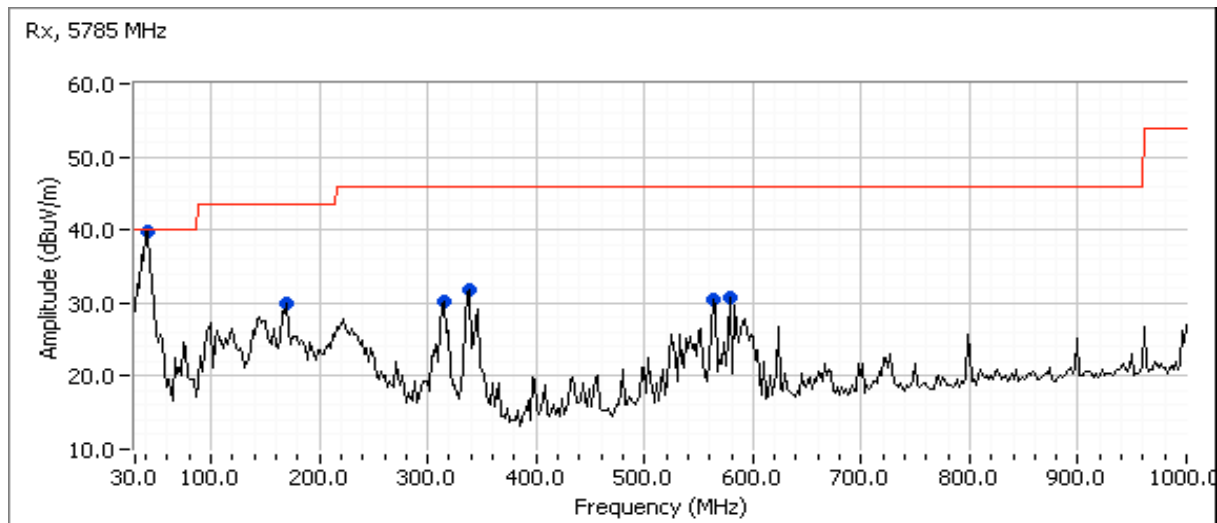
### Preliminary peak readings captured during pre-scan

| Frequency | Level        | Pol | LP0002 2.8 |        | Detector  | Azimuth | Height | Comments |
|-----------|--------------|-----|------------|--------|-----------|---------|--------|----------|
| MHz       | dB $\mu$ V/m | v/h | Limit      | Margin | Pk/QP/Avg | degrees | meters |          |
| 41.400    | 39.8         | V   | 40.0       | -0.2   | Peak      | 324     | 1.0    |          |
| 170.093   | 29.9         | H   | 43.5       | -13.6  | Peak      | 285     | 2.5    |          |
| 315.996   | 30.1         | V   | 46.0       | -15.9  | Peak      | 185     | 2.0    |          |
| 340.489   | 31.9         | V   | 46.0       | -14.1  | Peak      | 17      | 2.0    |          |
| 561.214   | 30.5         | V   | 46.0       | -15.5  | Peak      | 212     | 1.0    |          |
| 575.995   | 30.8         | V   | 46.0       | -15.2  | Peak      | 212     | 1.0    |          |

### Maximized quasi-peak readings (includes manipulation of EUT interface cables)

| Frequency     | Level        | Pol | LP0002 2.8 |             | Detector  | Azimuth | Height | Comments   |
|---------------|--------------|-----|------------|-------------|-----------|---------|--------|------------|
| MHz           | dB $\mu$ V/m | v/h | Limit      | Margin      | Pk/QP/Avg | degrees | meters |            |
| <b>41.400</b> | <b>36.5</b>  | V   | 40.0       | <b>-3.5</b> | QP        | 319     | 1.0    | QP (1.00s) |
| 170.093       | 26.0         | H   | 43.5       | -17.5       | QP        | 279     | 1.6    | QP (1.00s) |
| 340.489       | 22.0         | V   | 46.0       | -24.0       | QP        | 15      | 1.0    | QP (1.00s) |
| 575.995       | 19.9         | V   | 46.0       | -26.1       | QP        | 210     | 1.0    | QP (1.00s) |
| 315.996       | 17.0         | V   | 46.0       | -29.0       | QP        | 181     | 1.0    | QP (1.00s) |
| 561.214       | 13.3         | V   | 46.0       | -32.7       | QP        | 215     | 1.6    | QP (1.00s) |

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |





## EMC Test Data

|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

### Conducted Emissions

(NTS Silicon Valley, Fremont Facility, Semi-Anechoic Chamber)

#### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/31/2015  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #4

Config. Used: 2  
 Config Change: None  
 EUT Voltage: Laptop USB

#### General Test Configuration

For tabletop equipment, the EUT was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment were routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

#### Ambient Conditions:

Temperature: 22.5 °C  
 Rel. Humidity: 38 %

#### Summary of Results

| Run # | Test Performed          | Limit      | Result | Margin                           |
|-------|-------------------------|------------|--------|----------------------------------|
| 1     | CE, AC Power, 120V/60Hz | FCC 15.207 | Pass   | 40.3 dBμV @ 0.176 MHz (-14.4 dB) |

#### Modifications Made During Testing

No modifications were made to the EUT during testing

#### Deviations From The Standard

No deviations were made from the requirements of the standard.

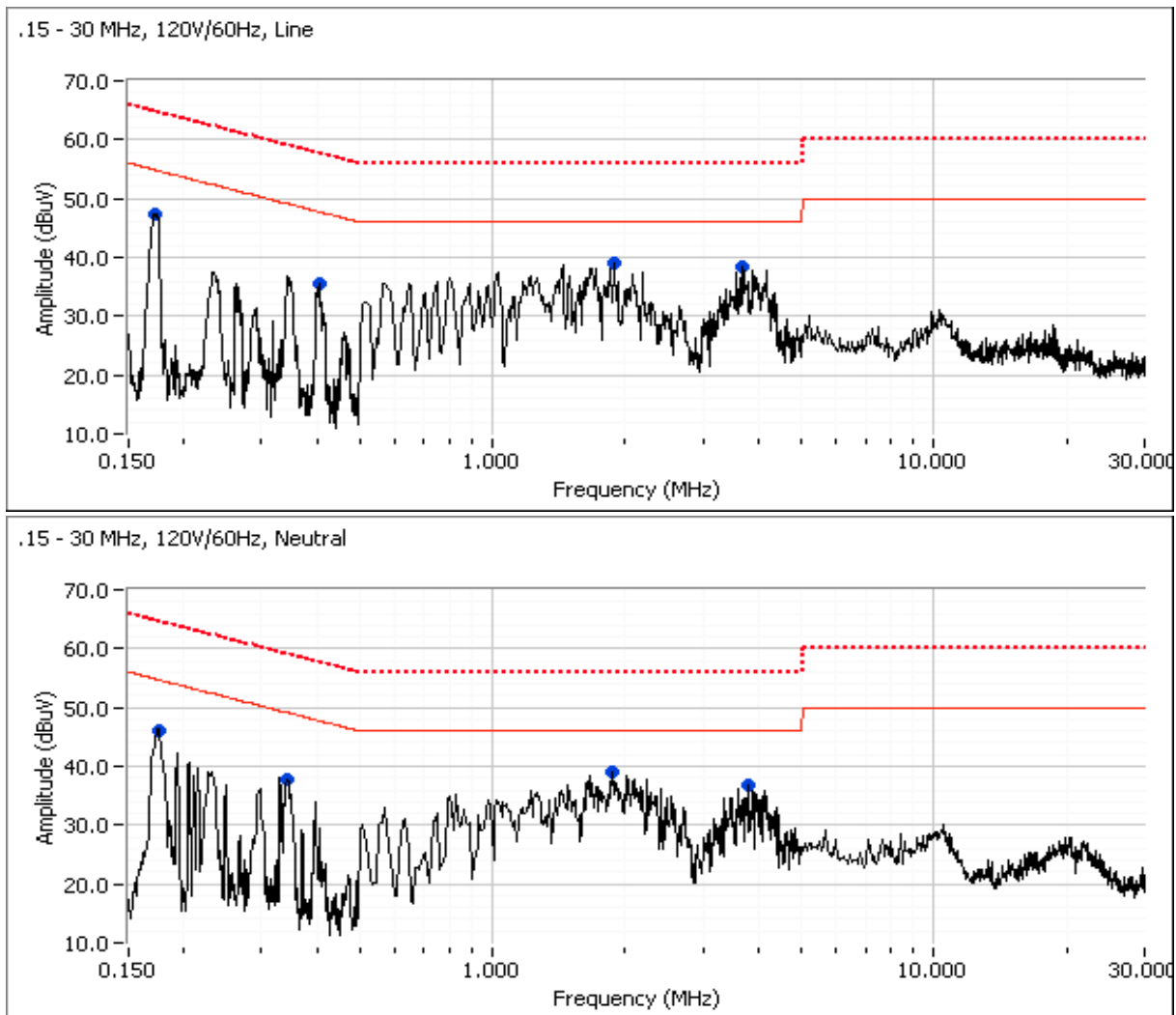
#### Sample Notes

Sample S/N: D85DE2000005 (MAC ID)  
 Driver: 6.37 RC214 .12  
 Antenna: Internal

Channel: 6 - 2437MHz  
 Tx Chain: 2Tx  
 Mode: n20  
 Data Rate: MCS0  
 Power Setting: max 1Tx setting

|                                                    |                                       |
|----------------------------------------------------|---------------------------------------|
| Client: Hewlett Packard Company                    | Job Number: J98746                    |
| Model: SDGOB-1505                                  | T-Log Number: T98753                  |
| Contact: Tarandeep Kaur                            | Project Manager: Sheareen Jacobs      |
| Standard: FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: Irene Rademacher |
|                                                    | Class: -                              |

## Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz





|           |                                          |                      |                  |
|-----------|------------------------------------------|----------------------|------------------|
| Client:   | Hewlett Packard Company                  | Job Number:          | J98746           |
| Model:    | SDGOB-1505                               | T-Log Number:        | T98753           |
| Contact:  | Tarandeep Kaur                           | Project Manager:     | Sheareen Jacobs  |
| Standard: | FCC 15.247 / FCC 15.E / RSS-247 / LP0002 | Project Coordinator: | Irene Rademacher |
|           |                                          | Class:               | -                |

## Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

| Frequency<br>MHz | Level<br>dB $\mu$ V | AC<br>Line | FCC 15.207 |        | Detector<br>QP/Ave | Comments |
|------------------|---------------------|------------|------------|--------|--------------------|----------|
|                  |                     |            | Limit      | Margin |                    |          |
| 0.172            | 47.5                | Line 1     | 54.9       | -7.4   | Peak               |          |
| 0.405            | 35.5                | Line 1     | 47.7       | -12.2  | Peak               |          |
| 1.888            | 39.0                | Line 1     | 46.0       | -7.0   | Peak               |          |
| 3.661            | 38.5                | Line 1     | 46.0       | -7.5   | Peak               |          |
| 0.176            | 46.0                | Neutral    | 54.7       | -8.7   | Peak               |          |
| 0.344            | 37.9                | Neutral    | 49.1       | -11.2  | Peak               |          |
| 1.855            | 38.9                | Neutral    | 46.0       | -7.1   | Peak               |          |
| 3.817            | 36.8                | Neutral    | 46.0       | -9.2   | Peak               |          |

## Final quasi-peak and average readings

| Frequency<br>MHz | Level<br>dB $\mu$ V | AC<br>Line | FCC 15.207 |              | Detector<br>QP/Ave | Comments    |
|------------------|---------------------|------------|------------|--------------|--------------------|-------------|
|                  |                     |            | Limit      | Margin       |                    |             |
| <b>0.176</b>     | <b>40.3</b>         | Neutral    | 54.7       | <b>-14.4</b> | AVG                | AVG (0.10s) |
| 0.172            | 40.2                | Line 1     | 54.9       | -14.7        | AVG                | AVG (0.10s) |
| 0.172            | 47.7                | Line 1     | 64.9       | -17.2        | QP                 | QP (1.00s)  |
| 1.855            | 27.6                | Neutral    | 46.0       | -18.4        | AVG                | AVG (0.10s) |
| 0.344            | 30.3                | Neutral    | 49.1       | -18.8        | AVG                | AVG (0.10s) |
| 0.405            | 28.6                | Line 1     | 47.8       | -19.2        | AVG                | AVG (0.10s) |
| 0.176            | 45.5                | Neutral    | 64.7       | -19.2        | QP                 | QP (1.00s)  |
| 1.888            | 26.1                | Line 1     | 46.0       | -19.9        | AVG                | AVG (0.10s) |
| 1.888            | 36.0                | Line 1     | 56.0       | -20.0        | QP                 | QP (1.00s)  |
| 1.855            | 36.0                | Neutral    | 56.0       | -20.0        | QP                 | QP (1.00s)  |
| 3.661            | 32.9                | Line 1     | 56.0       | -23.1        | QP                 | QP (1.00s)  |
| 0.344            | 35.7                | Neutral    | 59.1       | -23.4        | QP                 | QP (1.00s)  |
| 0.405            | 34.0                | Line 1     | 57.8       | -23.8        | QP                 | QP (1.00s)  |
| 3.661            | 21.5                | Line 1     | 46.0       | -24.5        | AVG                | AVG (0.10s) |
| 3.817            | 28.4                | Neutral    | 56.0       | -27.6        | QP                 | QP (1.00s)  |
| 3.817            | 18.3                | Neutral    | 46.0       | -27.7        | AVG                | AVG (0.10s) |

### Appendix C Test Reductions

| Test Reduction Taken                                                                                                                                                 | Justification/Comment                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Radiated bandedge and radiated and conducted spurious emissions – n20 2Tx was tested as representative of 11g/11a 2Tx                                                | Total EIRP would be the same given the same output power, as both use CDD. The OBW of n20 is wider. 11g/11a results would be equal to or better than n20.                                                          |
| Power/PSD for 11g/11a and n20 1Tx operation not performed. Output power is based on 2Tx n20.                                                                         | Power for 1Tx 11a/n20 operation is based on the results from 2Tx and the bandedge results. The power for 1Tx will not exceed the total power from 2Tx, the compliant power from bandedge, or board limitations.    |
| Power/PSD for n40 1Tx operation not performed. Output power is based on n40 2Tx                                                                                      | Power for the 1Tx n40 operation is based on the results from 2Tx and the bandedge results. The power for 1Tx will not exceed the total power from 2Tx, the compliant power from the bandage, or board limitations. |
| Radiated Spurious performed 2Tx using worse case 1Tx power settings                                                                                                  | Testing performed in a worse case condition of power and number of transmitting antennas                                                                                                                           |
| Radiated spurious – testing was performed on the center channel for all OFDM modes (11g/a, n20, n40) within a band. Worse case mode tested for low and high channels | Spurious response would be consistent across the different OFDM modes within a given band                                                                                                                          |

### ***End of Report***

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