

# FCC TEST REPORT

## (Part 15, Subpart E)

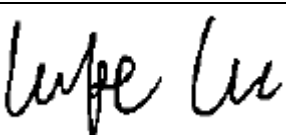
|            |                                                                                                                                                                                                           |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant: | Shenzhen GJS technology Co., LTD.                                                                                                                                                                         |
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|                           |                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer or Supplier: | Shenzhen GJS technology Co., LTD.                                                                                                                                                                         |
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| Product:                  | GANKER EX BATTLE ROBOT                                                                                                                                                                                    |
| Brand Name:               | GJS ROBOT                                                                                                                                                                                                 |
| Model Name:               | G00500                                                                                                                                                                                                    |
| FCC ID:                   | 2A14F-G00500                                                                                                                                                                                              |
| Date of tests:            | Jul. 03, 2019 ~ Jul. 29, 2019                                                                                                                                                                             |

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart E, Section 15.407**

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

|                                                                                                            |                                                                                                              |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
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| <br>Date: Aug. 01, 2019 | <br>Date: Aug. 01, 2019 |

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Test Report No.: RF190702W005

## RELEASE CONTROL RECORD

| ISSUE NO.    | REASON FOR CHANGE | DATE ISSUED   |
|--------------|-------------------|---------------|
| RF190702W005 | Original release  | Aug. 01, 2019 |

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407) |                                           |        |                                                                                  |
|-----------------------------------------------------------|-------------------------------------------|--------|----------------------------------------------------------------------------------|
| STANDARD SECTION                                          | TEST TYPE AND LIMIT                       | RESULT | REMARK                                                                           |
| 15.407(b)<br>(1/2/3/4/6)                                  | Radiated Emission & Band Edge Measurement | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -3.34dB at 83.35MHz. |
| 15.407(a/1/2/3)                                           | Maximum conducted output Power            | PASS   | Meet the requirement of limit.                                                   |
| 15.407(a/1/2/3)                                           | Peak Power Spectral Density               | PASS   | Meet the requirement of limit.                                                   |
| 15.407(a) (1),(5)                                         | 26 dB Bandwidth                           | PASS   | Meet the requirement of limit.<br>(for U-NII-1 Band)                             |
| 15.407(e)                                                 | 6 dB Bandwidth                            | PASS   | Meet the requirement of limit.<br>(U-NII-3 Band only)                            |
| 15.407(g)                                                 | Frequency Stability                       | PASS   | Meet the requirement of limit.                                                   |
| 15.203                                                    | Antenna Requirement                       | PASS   | No antenna connector is used.                                                    |

### 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| MEASUREMENT                | UNCERTAINTY |
|----------------------------|-------------|
| All Radiated emissions     | ±4.48dB     |
| Conducted emissions        | ±2 dB       |
| Occupied Channel Bandwidth | ±21.7KHz    |
| Conducted Output power     | ±1.03 dB    |
| Power Spectral Density     | ±0.95 dB    |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                              |                                                                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>               | GANKER EX BATTLE ROBOT                                                                                                                                                                               |
| <b>BRAND NAME</b>            | GJS ROBOT                                                                                                                                                                                            |
| <b>MODEL NAME</b>            | G00500                                                                                                                                                                                               |
| <b>NOMINAL VOLTAGE</b>       | DC 7.4V                                                                                                                                                                                              |
| <b>BATTERY</b>               | Manufacturer: Shenzhen EPT Battery Co., Ltd<br>Model Name: 54959P<br>Power Rating: DC 7.4V, 2000mAh, Li-ion                                                                                          |
| <b>MODULATION TYPE</b>       | 64QAM, 16QAM, QPSK, BPSK                                                                                                                                                                             |
| <b>MODULATION TECHNOLOGY</b> | OFDM                                                                                                                                                                                                 |
| <b>TRANSFER RATE</b>         | 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps<br>802.11n: up to MCS7                                                                                                                     |
| <b>OPERATING FREQUENCY</b>   | 5180 ~ 5240MHz, 5745 ~ 5805MHz                                                                                                                                                                       |
| <b>NUMBER OF CHANNEL</b>     | 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz)<br>5745 ~ 5805MHz: 4 for 802.11a, 802.11n (20MHz)                                                                                                     |
| <b>AVERAGE POWER</b>         | 18.18dBm for 5180 ~ 5240MHz<br>18.28dBm for 5745 ~ 5805MHz                                                                                                                                           |
| <b>ANTENNA TYPE</b>          | 5180 ~ 5240MHz: PCB Antenna0 with 1.07dBi gain<br>5180 ~ 5240MHz: PCB Antenna1 with 1.07dBi gain<br>5745 ~ 5805MHz: PCB Antenna0 with 1.07dBi gain<br>5745 ~ 5805MHz: PCB Antenna1 with 1.07dBi gain |
| <b>HW VERSION</b>            | V4.0                                                                                                                                                                                                 |
| <b>SW VERSION</b>            | V0.32                                                                                                                                                                                                |
| <b>I/O PORTS</b>             | Refer to user's manual                                                                                                                                                                               |
| <b>CABLE SUPPLIED</b>        | USB cable: non-shielded, detachable, 0.3meter                                                                                                                                                        |

**NOTE:**

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT incorporates a SISO function with 802.11a mode and a MIMO function with 802.11n (20MHz) mode. Physically, the EUT provides two completed transmitters and two receivers.

| MODULATION MODE | TX FUNCTION       |
|-----------------|-------------------|
| 802.11a         | 1TX/1RX diversity |
| 802.11n (20MHz) | 2TX/2RX           |



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3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

## 2.2 DESCRIPTION OF TEST MODES

### FOR 5150 ~ 5250MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 36      | 5180 MHz  | 44      | 5220 MHz  |
| 40      | 5200 MHz  | 48      | 5240 MHz  |

### FOR 5725 ~ 5805MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 149     | 5745 MHz  | 157     | 5785 MHz  |
| 153     | 5765 MHz  | 161     | 5805 MHz  |



## 2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

| EUT<br>CONFIGURE<br>MODE | APPLICABLE TO |       |      | DESCRIPTION                                  |
|--------------------------|---------------|-------|------|----------------------------------------------|
|                          | RE $\geq$ 1G  | RE<1G | APCM |                                              |
| A                        | -             | -     | -    | Powered by Adapter with wifi(5G) link        |
| B                        | √             | √     | √    | <b>Powered by Battery with wifi(5G) link</b> |
| C                        | -             | -     | -    | Powered by USB with wifi(5G) link            |

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz**RE<1G**: Radiated Emission below 1GHz**APCM**: Antenna Port Conducted Measurement**NOTE:**

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

**NOTE:** "-" means no effect.

**RADIATED EMISSION TEST (ABOVE 1GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT<br>CONFIGURE<br>MODE | MODE            | FREQ. BAND<br>(MHz) | AVAILABLE<br>CHANNEL | TESTED CHANNEL | MODULATION<br>TECHNOLOGY | MODULATION<br>TYPE | DATA<br>RATE<br>(Mbps) |
|--------------------------|-----------------|---------------------|----------------------|----------------|--------------------------|--------------------|------------------------|
| B                        | 802.11a         | 5180-5240           | 36 to 48             | 36, 40, 48     | OFDM                     | BPSK               | 6.0                    |
| B                        | 802.11n (20MHz) |                     | 36 to 48             | 36, 40, 48     | OFDM                     | BPSK               | MCS0                   |
| B                        | 802.11a         | 5725-5805           | 149 to 161           | 149, 157, 161  | OFDM                     | BPSK               | 6.0                    |
| B                        | 802.11n (20MHz) |                     | 149 to 161           | 149, 157, 161  | OFDM                     | BPSK               | MCS0                   |



**RADIATED EMISSION TEST (BELOW 1GHz):**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | MODE    | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------|---------|------------------|-------------------|----------------|-----------------------|-----------------|------------------|
| B                  | 802.11a | 5180-5320        | 36 to 64          | 40             | OFDM                  | BPSK            | 6.0              |

**BANDEDGE MEASUREMENT:**

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | MODE            | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------|-----------------|------------------|-------------------|----------------|-----------------------|-----------------|------------------|
| B                  | 802.11a         | 5180-5240        | 36 to 48          | 36, 48         | OFDM                  | BPSK            | 6.0              |
| B                  | 802.11n (20MHz) |                  | 36 to 48          | 36, 48         | OFDM                  | BPSK            | MCS0             |
| B                  | 802.11a         | 5725-5805        | 149 to 161        | 149, 161       | OFDM                  | BPSK            | 6.0              |
| B                  | 802.11n (20MHz) |                  | 149 to 161        | 149, 161       | OFDM                  | BPSK            | MCS0             |

**ANTENNA PORT CONDUCTED MEASUREMENT:**

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

| EUT CONFIGURE MODE | MODE            | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|--------------------|-----------------|------------------|-------------------|----------------|-----------------------|-----------------|------------------|
| B                  | 802.11a         | 5180-5240        | 36 to 48          | 36, 40, 48     | OFDM                  | BPSK            | 6.0              |
| B                  | 802.11n (20MHz) |                  | 36 to 48          | 36, 40, 48     | OFDM                  | BPSK            | MCS0             |
| B                  | 802.11a         | 5725-5805        | 149 to 161        | 149, 161       | OFDM                  | BPSK            | 6.0              |
| B                  | 802.11n (20MHz) |                  | 149 to 161        | 149, 161       | OFDM                  | BPSK            | MCS0             |

**TEST CONDITION:**

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER          | TESTED BY  |
|---------------|--------------------------|----------------------|------------|
| RE<1G         | 23deg. C, 70%RH          | DC 7.4V from battery | Tony Xiong |
| RE≥1G         | 23deg. C, 70%RH          | DC 7.4V from battery | Tony Xiong |
| APCM          | 23deg. C, 70%RH          | DC 7.4V from battery | Walker Ye  |

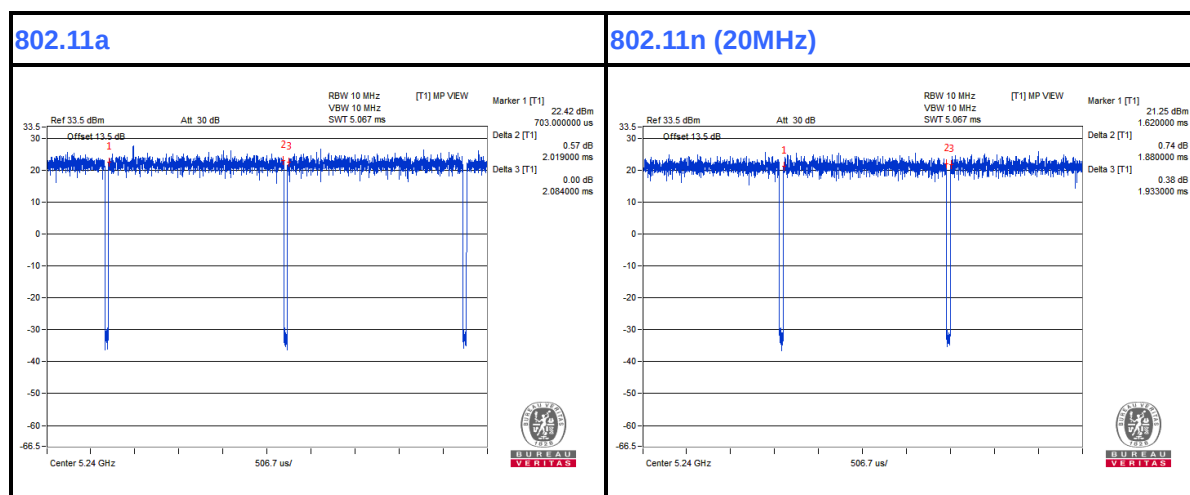


## 2.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is < 98%, duty factor shall be considered.

**802.11a:** Duty cycle =  $2.019/2.084 = 0.969$ , Duty factor =  $10 * \log(1/0.969) = 0.138$

**802.11n (20MHz):** Duty cycle =  $1.880/1.933 = 0.973$ , Duty factor =  $10 * \log(1/0.973) = 0.121$





## 2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

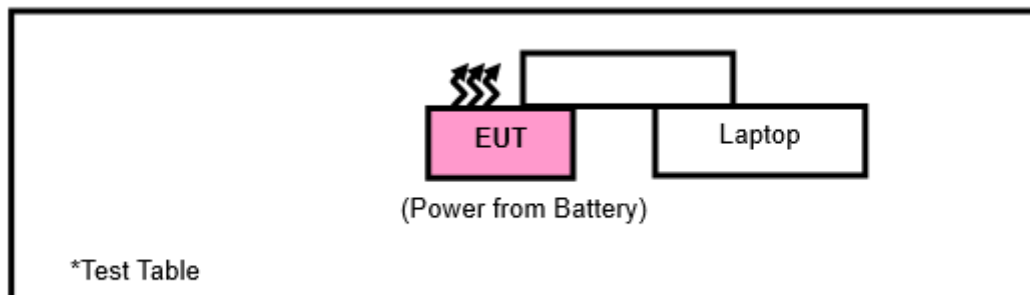
| NO. | PRODUCT | BRAND  | MODEL NO.     | SERIAL NO. | FCC ID |
|-----|---------|--------|---------------|------------|--------|
| 1   | Laptop  | Lenovo | Thnikpad L440 | R90FTFKN   | N/A    |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|-----|-----------------------------------------------------|
| 1   | AC Line: Unshielded, Detachable 1.5m                |

**NOTE:**

1. All power cords of the above support units are non shielded (1.8m).

## 2.4.1 CONFIGURATION OF SYSTEM UNDER TEST



## 2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart E (15.407)**

**KDB 789033 D02 General U-NII Test Procedures New Rules v02r01**

**ANSI C63.10-2013**

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

### 3 TEST TYPES AND RESULTS

#### 3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

##### 3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

| FREQUENCIES<br>(MHz) | FIELD STRENGTH<br>(microvolts/meter) | MEASUREMENT DISTANCE<br>(meters) |
|----------------------|--------------------------------------|----------------------------------|
| 0.009 ~ 0.490        | 2400/F(kHz)                          | 300                              |
| 0.490 ~ 1.705        | 24000/F(kHz)                         | 30                               |
| 1.705 ~ 30.0         | 30                                   | 30                               |
| 30 ~ 88              | 100                                  | 3                                |
| 88 ~ 216             | 150                                  | 3                                |
| 216 ~ 960            | 200                                  | 3                                |
| Above 960            | 500                                  | 3                                |

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

##### 3.1.2 LIMITS OF UNWANTED EMISSION

| RESTRICTED<br>BANDS               | APPLICABLE TO                                                  | LIMIT                         |                                             |
|-----------------------------------|----------------------------------------------------------------|-------------------------------|---------------------------------------------|
|                                   | 789033 D02 General<br>UNII Test Procedures<br>New Rules v01r02 | FIELD STRENGTH AT 3m (dBμV/m) |                                             |
|                                   |                                                                | PK : 74                       | AV : 54                                     |
| OUT OF THE<br>RESTRICTED<br>BANDS | APPLICABLE TO                                                  | EIRP LIMIT<br>(dBm/MHz)       | EQUIVALENT FIELD<br>STRENGTH AT 3m (dBμV/m) |
|                                   | 15.407(b)(1)                                                   | PK : -27                      | PK : 68.3                                   |
|                                   | 15.407(b)(4)                                                   | See note 2 (FCC 16-24)        |                                             |

**NOTE:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

2. All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

### 3.1.3 TEST INSTRUMENTS

| Equipment                  | Manufacturer | Model No.                   | Serial No.                  | Last Cal.   | Next Cal.   |
|----------------------------|--------------|-----------------------------|-----------------------------|-------------|-------------|
| 3m Semi-anechoic Chamber   | ETS-LINDGREN | 9m*6m*6m                    | Euroshieldpn-CT0001143-1216 | Feb. 26,19  | Feb. 25,20  |
| Bilog Antenna              | ETS-LINDGREN | 3143B                       | 00161965                    | Feb. 26,19  | Feb. 25,20  |
| Horn Antenna               | ETS-LINDGREN | 3117                        | 00168728                    | Feb. 26,19  | Feb. 25,20  |
| Horn Antenna (18GHz-40GHz) | N/A          | QWH-SL-18-40-K-SG/QMS-00361 | 15433                       | Nov. 21, 18 | Nov. 20, 19 |
| Test Software              | E3           | V 9.160323                  | N/A                         | N/A         | N/A         |
| Test Software              | ADT          | ADT_Radiated_V7.6.15.9.2    | N/A                         | N/A         | N/A         |
| 10dB Attenuator            | JFW/USA      | 50HF-010-SMA                | 1505                        | Jul. 09,19  | Jul. 08, 20 |
| MXE EMI Receiver           | KEYSIGHT     | N9038A-544                  | MY54450026                  | Feb. 26,19  | Feb. 25,20  |
| Signal Pre-Amplifier       | EMSI         | EMC 9135                    | 980249                      | Jun. 24,19  | Jun. 23,20  |
| Signal Pre-Amplifier       | EMSI         | EMC 012645B                 | 980257                      | Jun. 24,19  | Jun. 23,20  |
| Signal Pre-Amplifier       | EMSI         | EMC 184045B                 | 980259                      | Jun. 24,19  | Jun. 23,20  |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Chamber.
3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

### 3.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

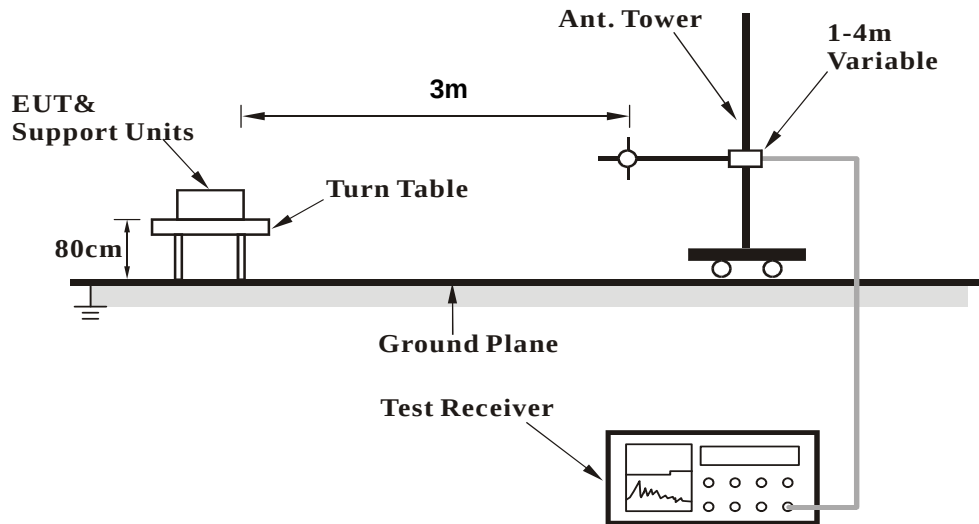
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

### 3.1.5 DEVIATION FROM TEST STANDARD

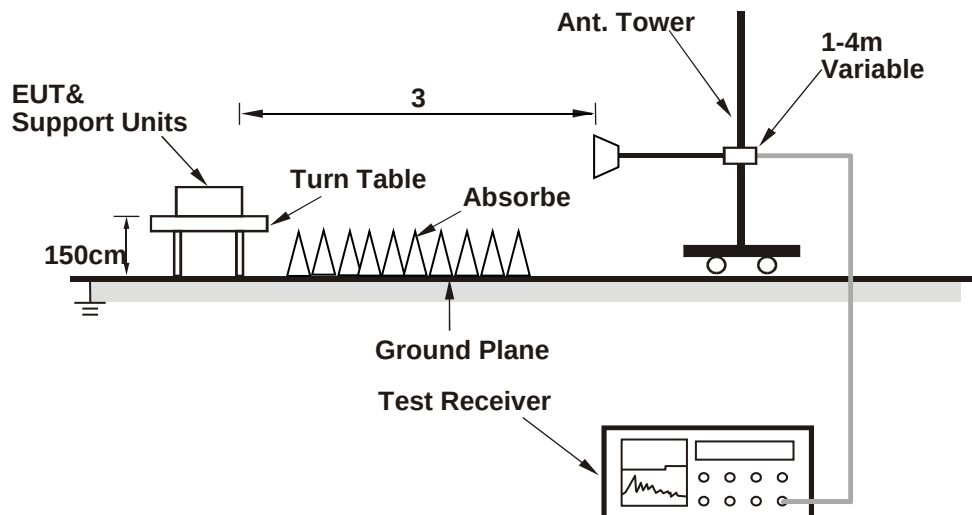
No deviation.

### 3.1.6 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).



**Test Report No.: RF190702W005**

### 3.1.7 EUT OPERATING CONDITION

- a. Set the EUT under full load condition and placed them on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



## 3.1.8 TEST RESULTS

## BELOW 1GHz WORST-CASE:

## 30 MHz – 1GHz data:

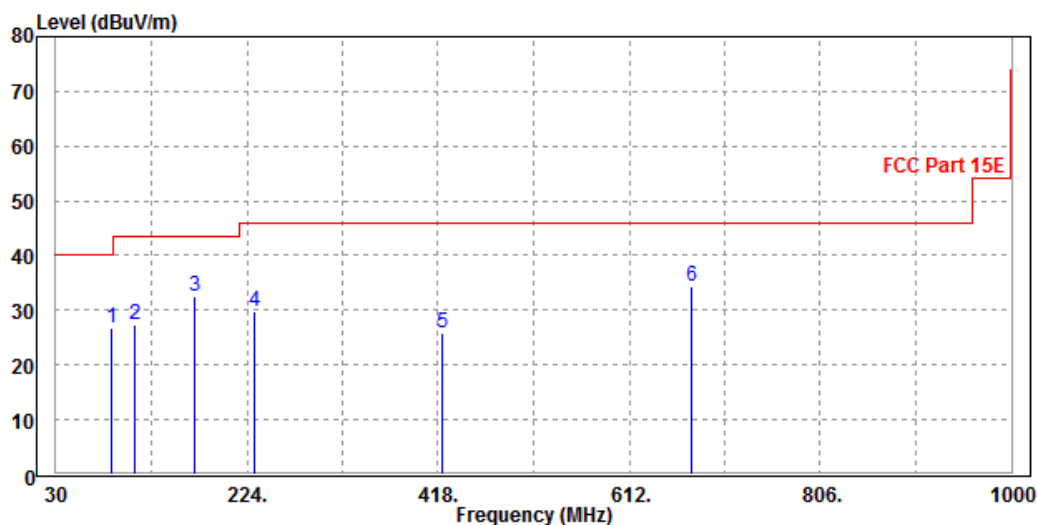
## 802.11a TEST DATA FROM ANT 0:

|                 |               |                   |                 |
|-----------------|---------------|-------------------|-----------------|
| CHANNEL         | TX Channel 40 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz  |                   |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 86.26                                               | 26.67                         | 54.35                   | 40                | -13.33         | 8.35                         | 1.25                  | 37.28                    | 100                       | 0                          | Peak   |
| 109.54                                              | 27.35                         | 53.96                   | 43.5              | -16.15         | 9.13                         | 1.38                  | 37.12                    | 100                       | 0                          | Peak   |
| 171.62                                              | 32.54                         | 57.16                   | 43.5              | -10.96         | 10.38                        | 1.68                  | 36.68                    | 100                       | 0                          | Peak   |
| 231.76                                              | 29.69                         | 52.15                   | 46                | -16.31         | 12.2                         | 1.95                  | 36.61                    | 100                       | 0                          | Peak   |
| 422.85                                              | 25.74                         | 42.41                   | 46                | -20.26         | 17.5                         | 2.7                   | 36.87                    | 100                       | 0                          | Peak   |
| 675.05                                              | 34.43                         | 46.2                    | 46                | -11.57         | 22.28                        | 3.44                  | 37.49                    | 100                       | 0                          | Peak   |

## REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

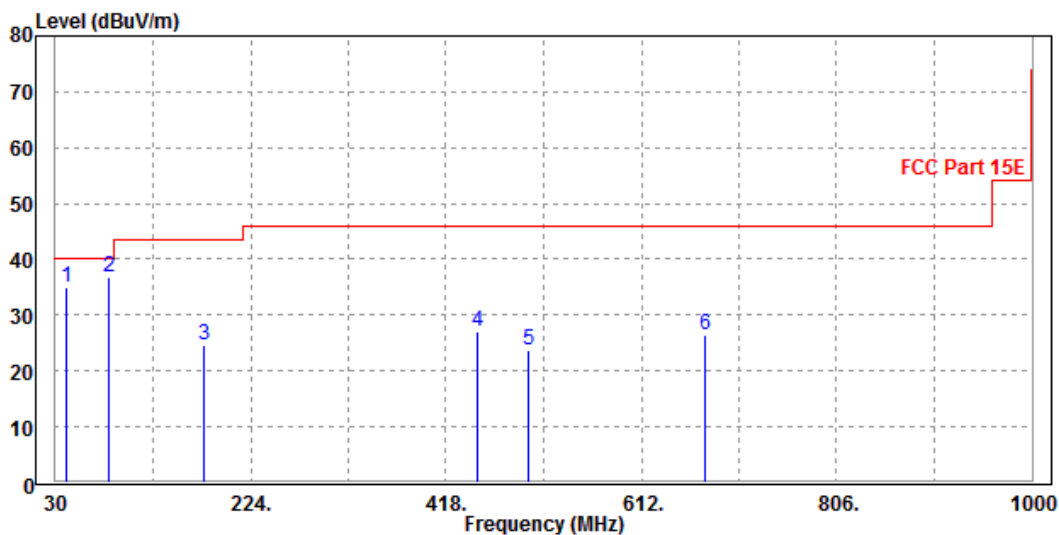


|                        |              |                          |                 |
|------------------------|--------------|--------------------------|-----------------|
| <b>CHANNEL</b>         | Channel 40   | <b>DETECTOR FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | 30MHz ~ 1GHz |                          |                 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |             |
|---------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|-------------|
| FREQ.<br>(MHz)                                    | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK      |
| 40.67                                             | 34.85                         | 58.54                   | 40                | -5.15          | 12.88                        | 0.93                  | 37.5                     | 100                       | 360                        | Peak        |
| <b>83.35</b>                                      | <b>36.66</b>                  | <b>64.34</b>            | <b>40</b>         | <b>-3.34</b>   | <b>8.4</b>                   | <b>1.23</b>           | <b>37.31</b>             | <b>100</b>                | <b>360</b>                 | <b>Peak</b> |
| 178.41                                            | 24.66                         | 49.21                   | 43.5              | -18.84         | 10.4                         | 1.7                   | 36.65                    | 100                       | 360                        | Peak        |
| 450.01                                            | 27.05                         | 43.16                   | 46                | -18.95         | 18                           | 2.81                  | 36.92                    | 100                       | 360                        | Peak        |
| 500.45                                            | 23.86                         | 39.16                   | 46                | -22.14         | 18.71                        | 2.99                  | 37                       | 100                       | 360                        | Peak        |
| 675.05                                            | 26.48                         | 38.25                   | 46                | -19.52         | 22.28                        | 3.44                  | 37.49                    | 100                       | 360                        | Peak        |

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



**ABOVE 1GHz WORST-CASE:**

**Note:** For higher frequency, the emission is too low to be detected.

**Band 1****802.11a TEST DATA FROM ANT 0:**

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 36 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 61.37                         | 64.35                   | 74                | -12.63         | 35.95                        | 7.42                  | 46.35                    | 200                       | 123                        | Peak    |
| 5150                                                | 48.68                         | 51.66                   | 54                | -5.32          | 35.95                        | 7.42                  | 46.35                    | 200                       | 123                        | Average |
| 5180                                                | 103.39                        | 106.33                  |                   |                | 35.98                        | 7.43                  | 46.35                    | 200                       | 123                        | Peak    |
| 5180                                                | 94.88                         | 97.82                   |                   |                | 35.98                        | 7.43                  | 46.35                    | 200                       | 123                        | Average |
| 5350                                                | 56.78                         | 59.46                   | 74                | -17.22         | 36.15                        | 7.47                  | 46.3                     | 200                       | 123                        | Peak    |
| 5350                                                | 43.24                         | 45.92                   | 54                | -10.76         | 36.15                        | 7.47                  | 46.3                     | 200                       | 123                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 62.18                         | 64.82                   | 74                | -11.82         | 36.29                        | 7.42                  | 46.35                    | 100                       | 185                        | Peak    |
| 5150                                                | 47.58                         | 50.22                   | 54                | -6.42          | 36.29                        | 7.42                  | 46.35                    | 100                       | 185                        | Average |
| 5180                                                | 104.62                        | 107.23                  |                   |                | 36.31                        | 7.43                  | 46.35                    | 100                       | 185                        | Peak    |
| 5180                                                | 95.01                         | 97.62                   |                   |                | 36.31                        | 7.43                  | 46.35                    | 100                       | 185                        | Average |
| 5350                                                | 56.7                          | 59.12                   | 74                | -17.3          | 36.41                        | 7.47                  | 46.3                     | 100                       | 185                        | Peak    |
| 5350                                                | 43.47                         | 45.89                   | 54                | -10.53         | 36.41                        | 7.47                  | 46.3                     | 100                       | 185                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5180MHz: Fundamental frequency.

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 40 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |                |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|----------------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK         |
| 5150                                                | 61.24                         | 64.22                   | 74                | -12.76         | 35.95                        | 7.42                  | 46.35                    | 200                       | 165                        | Peak           |
| <b>5150</b>                                         | <b>49.33</b>                  | <b>52.31</b>            | <b>54</b>         | <b>-4.67</b>   | <b>35.95</b>                 | <b>7.42</b>           | <b>46.35</b>             | <b>200</b>                | <b>165</b>                 | <b>Average</b> |
| 5200                                                | 107.73                        | 110.64                  |                   |                | 36                           | 7.43                  | 46.34                    | 200                       | 165                        | Peak           |
| 5200                                                | 97.58                         | 100.49                  |                   |                | 36                           | 7.43                  | 46.34                    | 200                       | 165                        | Average        |
| 5350                                                | 57.43                         | 60.11                   | 74                | -16.57         | 36.15                        | 7.47                  | 46.3                     | 200                       | 165                        | Peak           |
| 5350                                                | 44.23                         | 46.91                   | 54                | -9.77          | 36.15                        | 7.47                  | 46.3                     | 200                       | 165                        | Average        |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |                |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK         |
| 5150                                                | 59.47                         | 62.11                   | 74                | -14.53         | 36.29                        | 7.42                  | 46.35                    | 100                       | 246                        | Peak           |
| 5150                                                | 47.25                         | 49.89                   | 54                | -6.75          | 36.29                        | 7.42                  | 46.35                    | 100                       | 246                        | Average        |
| 5200                                                | 106.27                        | 108.86                  |                   |                | 36.32                        | 7.43                  | 46.34                    | 100                       | 246                        | Peak           |
| 5200                                                | 97.53                         | 100.12                  |                   |                | 36.32                        | 7.43                  | 46.34                    | 100                       | 246                        | Average        |
| 5350                                                | 56.4                          | 58.82                   | 74                | -17.6          | 36.41                        | 7.47                  | 46.3                     | 100                       | 246                        | Peak           |
| 5350                                                | 43.54                         | 45.96                   | 54                | -10.46         | 36.41                        | 7.47                  | 46.3                     | 100                       | 246                        | Average        |

**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 48 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 59.17                         | 62.15                   | 74                | -14.83         | 35.95                        | 7.42                  | 46.35                    | 100                       | 197                        | Peak    |
| 5150                                                | 45.61                         | 48.59                   | 54                | -8.39          | 35.95                        | 7.42                  | 46.35                    | 100                       | 197                        | Average |
| 5240                                                | 107.31                        | 110.16                  |                   |                | 36.04                        | 7.44                  | 46.33                    | 100                       | 197                        | Peak    |
| 5240                                                | 108.28                        | 111.13                  |                   |                | 36.04                        | 7.44                  | 46.33                    | 100                       | 197                        | Average |
| 5350                                                | 57.17                         | 59.85                   | 74                | -16.83         | 36.15                        | 7.47                  | 46.3                     | 100                       | 197                        | Peak    |
| 5350                                                | 44.09                         | 46.77                   | 54                | -9.91          | 36.15                        | 7.47                  | 46.3                     | 100                       | 197                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 59.48                         | 62.12                   | 74                | -14.52         | 36.29                        | 7.42                  | 46.35                    | 154                       | 87                         | Peak    |
| 5150                                                | 46.67                         | 49.31                   | 54                | -7.33          | 36.29                        | 7.42                  | 46.35                    | 154                       | 87                         | Average |
| 5240                                                | 109.44                        | 111.99                  |                   |                | 36.34                        | 7.44                  | 46.33                    | 154                       | 87                         | Peak    |
| 5240                                                | 100.92                        | 103.47                  |                   |                | 36.34                        | 7.44                  | 46.33                    | 154                       | 87                         | Average |
| 5350                                                | 56.44                         | 58.86                   | 74                | -17.56         | 36.41                        | 7.47                  | 46.3                     | 154                       | 87                         | Peak    |
| 5350                                                | 43.8                          | 46.22                   | 54                | -10.2          | 36.41                        | 7.47                  | 46.3                     | 154                       | 87                         | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5240MHz: Fundamental frequency.



**802.11n (20MHz) TEST DATA FROM ANT 0+ANT1:**

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 36 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 60.57                         | 63.55                   | 74                | -13.43         | 35.95                        | 7.42                  | 46.35                    | 120                       | 129                        | Peak    |
| 5150                                                | 48.18                         | 51.16                   | 54                | -5.82          | 35.95                        | 7.42                  | 46.35                    | 120                       | 129                        | Average |
| 5180                                                | 107.29                        | 110.23                  |                   |                | 35.98                        | 7.43                  | 46.35                    | 120                       | 129                        | Peak    |
| 5180                                                | 97.57                         | 100.51                  |                   |                | 35.98                        | 7.43                  | 46.35                    | 120                       | 129                        | Average |
| 5350                                                | 56.56                         | 59.24                   | 74                | -17.44         | 36.15                        | 7.47                  | 46.3                     | 120                       | 129                        | Peak    |
| 5350                                                | 44.14                         | 46.82                   | 54                | -9.86          | 36.15                        | 7.47                  | 46.3                     | 120                       | 129                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 58.72                         | 61.36                   | 74                | -15.28         | 36.29                        | 7.42                  | 46.35                    | 100                       | 235                        | Peak    |
| 5150                                                | 45.65                         | 48.29                   | 54                | -8.35          | 36.29                        | 7.42                  | 46.35                    | 100                       | 235                        | Average |
| 5180                                                | 103.85                        | 106.46                  | 74                | 29.85          | 36.31                        | 7.43                  | 46.35                    | 100                       | 235                        | Peak    |
| 5180                                                | 94.55                         | 97.16                   | 54                | 40.55          | 36.31                        | 7.43                  | 46.35                    | 100                       | 235                        | Average |
| 5350                                                | 57.73                         | 60.15                   | 74                | -16.27         | 36.41                        | 7.47                  | 46.3                     | 100                       | 235                        | Peak    |
| 5350                                                | 43.89                         | 46.31                   | 54                | -10.11         | 36.41                        | 7.47                  | 46.3                     | 100                       | 235                        | Average |

**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5180MHz: Fundamental frequency.

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 40 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 58.91                         | 61.89                   | 74                | -15.09         | 35.95                        | 7.42                  | 46.35                    | 157                       | 198                        | Peak    |
| 5150                                                | 45.91                         | 48.89                   | 54                | -8.09          | 35.95                        | 7.42                  | 46.35                    | 157                       | 198                        | Average |
| 5200                                                | 104.06                        | 106.97                  |                   |                | 36                           | 7.43                  | 46.34                    | 157                       | 198                        | Peak    |
| 5200                                                | 95.25                         | 98.16                   |                   |                | 36                           | 7.43                  | 46.34                    | 157                       | 198                        | Average |
| 5350                                                | 54.99                         | 57.67                   | 74                | -19.01         | 36.15                        | 7.47                  | 46.3                     | 157                       | 198                        | Peak    |
| 5350                                                | 43.51                         | 46.19                   | 54                | -10.49         | 36.15                        | 7.47                  | 46.3                     | 157                       | 198                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 57.57                         | 60.21                   | 74                | -16.43         | 36.29                        | 7.42                  | 46.35                    | 100                       | 260                        | Peak    |
| 5150                                                | 44.95                         | 47.59                   | 54                | -9.05          | 36.29                        | 7.42                  | 46.35                    | 100                       | 260                        | Average |
| 5200                                                | 101.57                        | 104.16                  |                   |                | 36.32                        | 7.43                  | 46.34                    | 100                       | 260                        | Peak    |
| 5200                                                | 92.54                         | 95.13                   |                   |                | 36.32                        | 7.43                  | 46.34                    | 100                       | 260                        | Average |
| 5350                                                | 56.74                         | 59.16                   | 74                | -17.26         | 36.41                        | 7.47                  | 46.3                     | 100                       | 260                        | Peak    |
| 5350                                                | 43.7                          | 46.12                   | 54                | -10.3          | 36.41                        | 7.47                  | 46.3                     | 100                       | 260                        | Average |

**REMARKS:**

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.

|                        |               |                          |              |
|------------------------|---------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 48 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz  |                          | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 58.21                         | 61.19                   | 74                | -15.79         | 35.95                        | 7.42                  | 46.35                    | 158                       | 145                        | Peak    |
| 5150                                                | 45.28                         | 48.26                   | 54                | -8.72          | 35.95                        | 7.42                  | 46.35                    | 158                       | 145                        | Average |
| 5240                                                | 105.76                        | 108.61                  |                   |                | 36.04                        | 7.44                  | 46.33                    | 158                       | 145                        | Peak    |
| 5240                                                | 95.46                         | 98.31                   |                   |                | 36.04                        | 7.44                  | 46.33                    | 158                       | 145                        | Average |
| 5350                                                | 57.57                         | 60.25                   | 74                | -16.43         | 36.15                        | 7.47                  | 46.3                     | 158                       | 145                        | Peak    |
| 5350                                                | 43.93                         | 46.61                   | 54                | -10.07         | 36.15                        | 7.47                  | 46.3                     | 158                       | 145                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5150                                                | 57.54                         | 60.18                   | 74                | -16.46         | 36.29                        | 7.42                  | 46.35                    | 100                       | 257                        | Peak    |
| 5150                                                | 44.92                         | 47.56                   | 54                | -9.08          | 36.29                        | 7.42                  | 46.35                    | 100                       | 257                        | Average |
| 5240                                                | 104.67                        | 107.22                  |                   |                | 36.34                        | 7.44                  | 46.33                    | 100                       | 257                        | Peak    |
| 5240                                                | 94.07                         | 96.62                   |                   |                | 36.34                        | 7.44                  | 46.33                    | 100                       | 257                        | Average |
| 5350                                                | 56.7                          | 59.12                   | 74                | -17.3          | 36.41                        | 7.47                  | 46.3                     | 100                       | 257                        | Peak    |
| 5350                                                | 43.82                         | 46.24                   | 54                | -10.18         | 36.41                        | 7.47                  | 46.3                     | 100                       | 257                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5240MHz: Fundamental frequency.

**Band 4**

**802.11a TEST DATA FROM ANT 0:**

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 149 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5745                                                | 109.16                        | 111.19                  |                   |                | 36.4                         | 7.75                  | 46.18                    | 200                       | 125                        | Peak    |
| 5745                                                | 99.23                         | 101.26                  |                   |                | 36.4                         | 7.75                  | 46.18                    | 200                       | 125                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5745                                                | 108.79                        | 110.57                  |                   |                | 36.65                        | 7.75                  | 46.18                    | 100                       | 80                         | Peak    |
| 5745                                                | 98.34                         | 100.12                  |                   |                | 36.65                        | 7.75                  | 46.18                    | 100                       | 80                         | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5745MHz: Fundamental frequency.

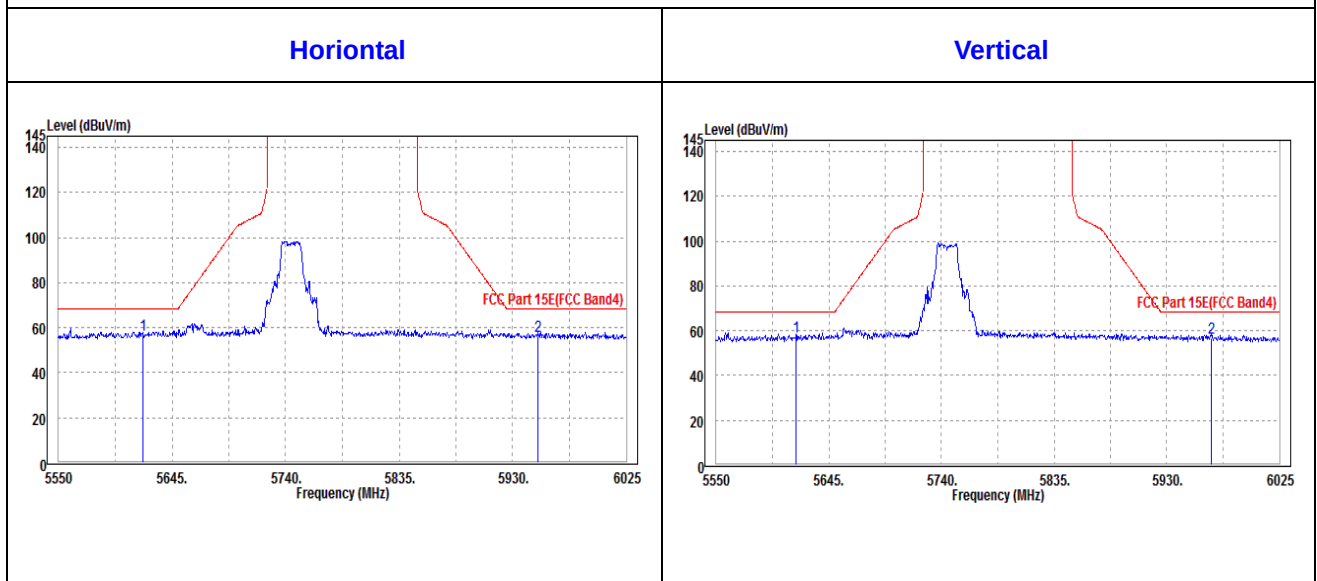


## OUBE DATA

### 802.11a TEST DATA FROM ANT 0:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5620.3                                              | 56.91                         | 59.16                   | 68.3              | -11.39         | 36.35                        | 7.62                  | 46.22                    | 100                       | 0                          | Peak   |
| 5951.375                                            | 56.46                         | 58.14                   | 68.3              | -11.84         | 36.48                        | 7.96                  | 46.12                    | 100                       | 0                          | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5617.45                                             | 57.13                         | 59.16                   | 68.3              | -11.17         | 36.57                        | 7.62                  | 46.22                    | 200                       | 0                          | Peak   |
| 5967.525                                            | 56.9                          | 58.26                   | 68.3              | -11.4          | 36.78                        | 7.98                  | 46.12                    | 200                       | 0                          | Peak   |

## CH 149



|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5785                                                | 103.92                        | 105.89                  |                   |                | 36.41                        | 7.79                  | 46.17                    | 200                       | 150                        | Peak    |
| 5785                                                | 94.84                         | 96.81                   |                   |                | 36.41                        | 7.79                  | 46.17                    | 200                       | 150                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5785                                                | 107.55                        | 109.26                  |                   |                | 36.67                        | 7.79                  | 46.17                    | 120                       | 196                        | Peak    |
| 5785                                                | 99.93                         | 101.64                  |                   |                | 36.67                        | 7.79                  | 46.17                    | 120                       | 196                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5785MHz: Fundamental frequency.

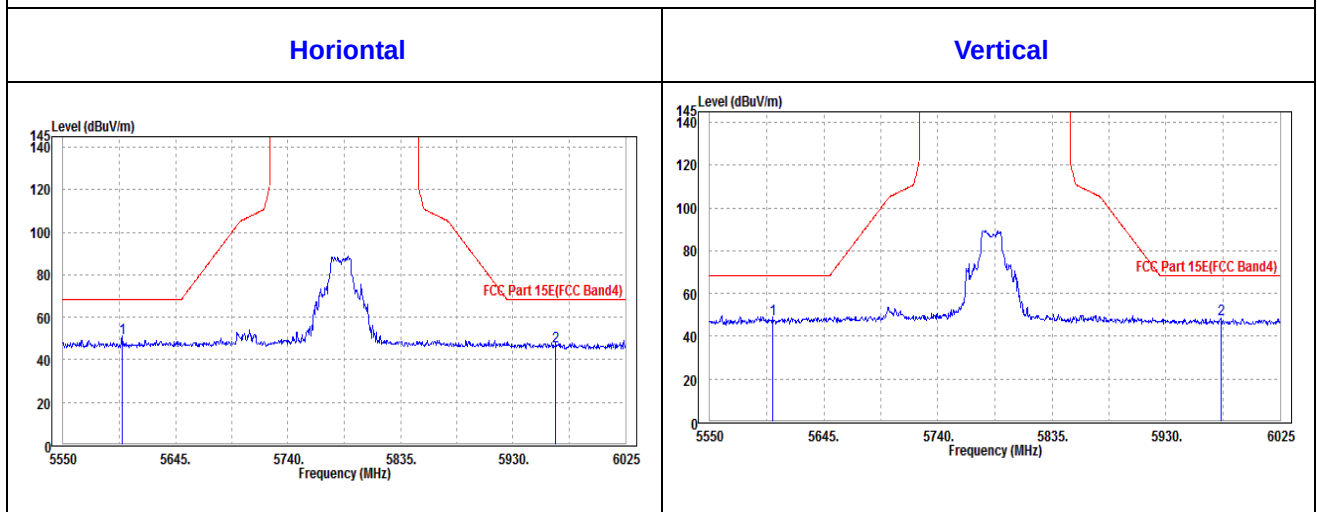


## OOBE DATA

### 802.11a TEST DATA FROM ANT 0:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5599.875                                            | 50.18                         | 52.46                   | 68.3              | -18.12         | 36.34                        | 7.6                   | 46.22                    | 200                       | 0                          | Peak   |
| 5966.1                                              | 46.23                         | 47.88                   | 68.3              | -22.07         | 36.49                        | 7.98                  | 46.12                    | 200                       | 0                          | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5602.25                                             | 48.17                         | 50.23                   | 68.3              | -20.13         | 36.56                        | 7.6                   | 46.22                    | 100                       | 0                          | Peak   |
| 5975.6                                              | 47.78                         | 49.12                   | 68.3              | -20.52         | 36.79                        | 7.99                  | 46.12                    | 100                       | 0                          | Peak   |

## CH 157





|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 161 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5825                                                | 107.96                        | 109.86                  |                   |                | 36.43                        | 7.83                  | 46.16                    | 143                       | 135                        | Peak    |
| 5825                                                | 99.47                         | 101.37                  |                   |                | 36.43                        | 7.83                  | 46.16                    | 143                       | 135                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5825                                                | 108.23                        | 109.87                  |                   |                | 36.69                        | 7.83                  | 46.16                    | 100                       | 188                        | Peak    |
| 5825                                                | 99.01                         | 100.65                  |                   |                | 36.69                        | 7.83                  | 46.16                    | 100                       | 188                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5805MHz: Fundamental frequency.

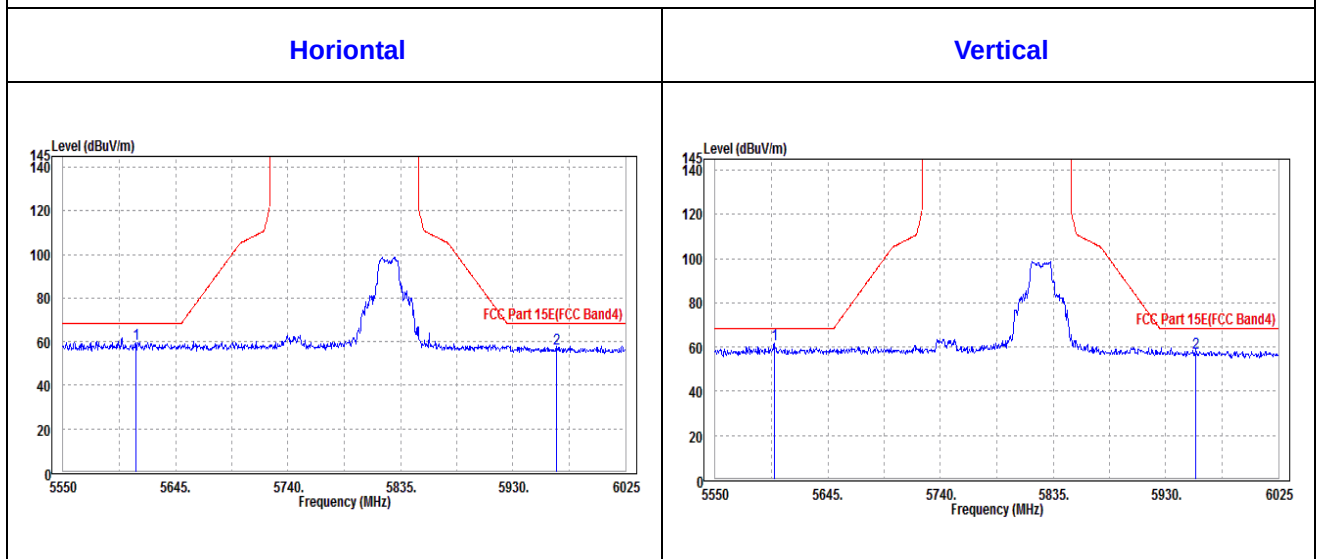


## Oobe Data

### 802.11a TEST DATA FROM ANT 0:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5611.275                                            | 58.79                         | 61.06                   | 68.3              | -9.51          | 36.34                        | 7.61                  | 46.22                    | 200                       | 156                        | Peak   |
| 5966.575                                            | 56.88                         | 58.53                   | 68.3              | -11.42         | 36.49                        | 7.98                  | 46.12                    | 200                       | 156                        | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5599.875                                            | 61.2                          | 63.26                   | 68.3              | -7.1           | 36.56                        | 7.6                   | 46.22                    | 100                       | 164                        | Peak   |
| 5955.175                                            | 57.25                         | 58.64                   | 68.3              | -11.05         | 36.77                        | 7.96                  | 46.12                    | 100                       | 164                        | Peak   |

### CH 161





**802.11n (20MHz) TEST DATA FROM ANT 0+ANT1:**

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 149 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5745                                                | 104.2                         | 106.23                  |                   |                | 36.4                         | 7.75                  | 46.18                    | 100                       | 164                        | Peak    |
| 5745                                                | 96.15                         | 98.18                   |                   |                | 36.4                         | 7.75                  | 46.18                    | 100                       | 144                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5745                                                | 107.38                        | 109.16                  |                   |                | 36.65                        | 7.75                  | 46.18                    | 131                       | 59                         | Peak    |
| 5745                                                | 97.35                         | 99.13                   |                   |                | 36.65                        | 7.75                  | 46.18                    | 131                       | 59                         | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5745MHz: Fundamental frequency.

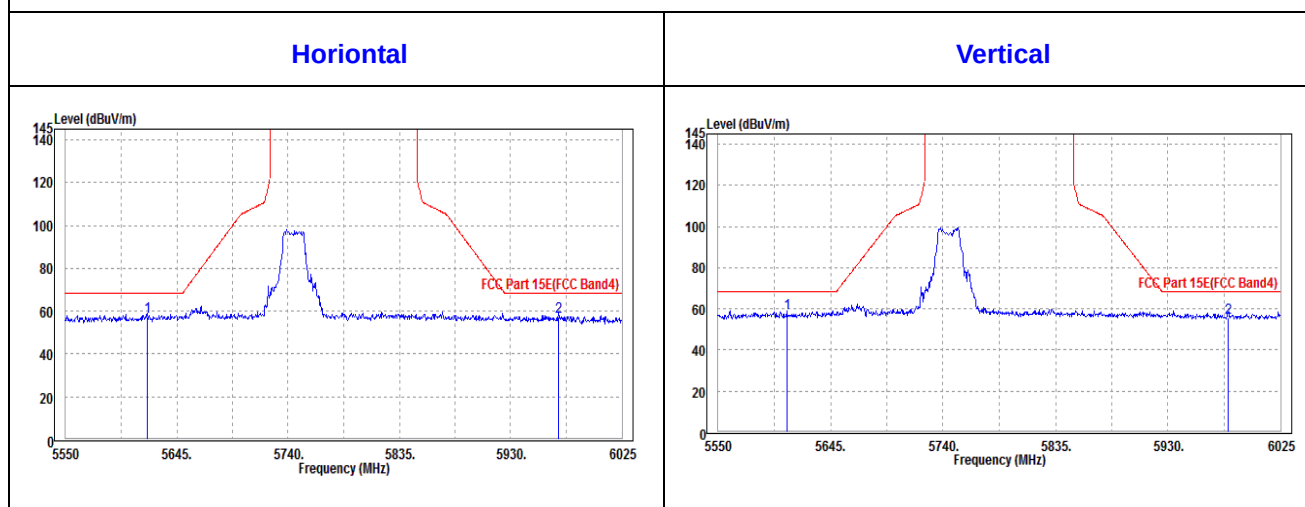


## OOBE DATA

### 802.11n (20MHZ) TEST DATA FROM ANT 0+ANT1:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5619.825                                            | 57.6                          | 59.85                   | 68.3              | -10.7          | 36.35                        | 7.62                  | 46.22                    | 100                       | 0                          | Peak   |
| 5970.85                                             | 57.41                         | 59.06                   | 68.3              | -10.89         | 36.49                        | 7.98                  | 46.12                    | 100                       | 0                          | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5607.95                                             | 57.83                         | 59.88                   | 68.3              | -10.47         | 36.56                        | 7.61                  | 46.22                    | 200                       | 121                        | Peak   |
| 5980.825                                            | 55.82                         | 57.16                   | 68.3              | -12.48         | 36.79                        | 7.99                  | 46.12                    | 200                       | 121                        | Peak   |

## CH 149



|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5785                                                | 106.27                        | 108.24                  |                   |                | 36.41                        | 7.79                  | 46.17                    | 148                       | 145                        | Peak    |
| 5785                                                | 96.14                         | 98.11                   |                   |                | 36.41                        | 7.79                  | 46.17                    | 148                       | 145                        | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5785                                                | 106.63                        | 108.34                  |                   |                | 36.67                        | 7.79                  | 46.17                    | 100                       | 120                        | Peak    |
| 5785                                                | 96.45                         | 98.16                   |                   |                | 36.67                        | 7.79                  | 46.17                    | 100                       | 120                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5785MHz: Fundamental frequency.



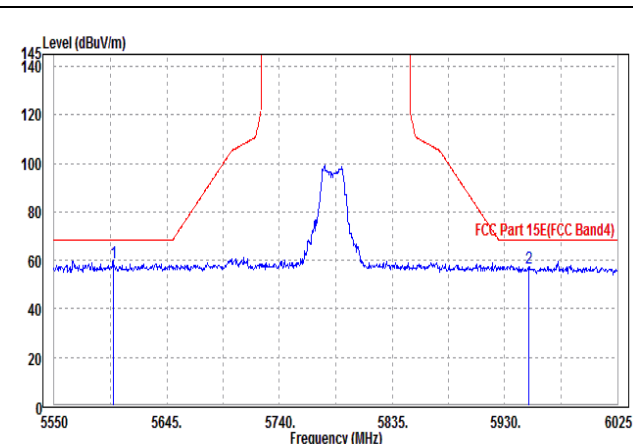
## OUBE DATA

### 802.11n (20MHZ) TEST DATA FROM ANT 0+ANT1:

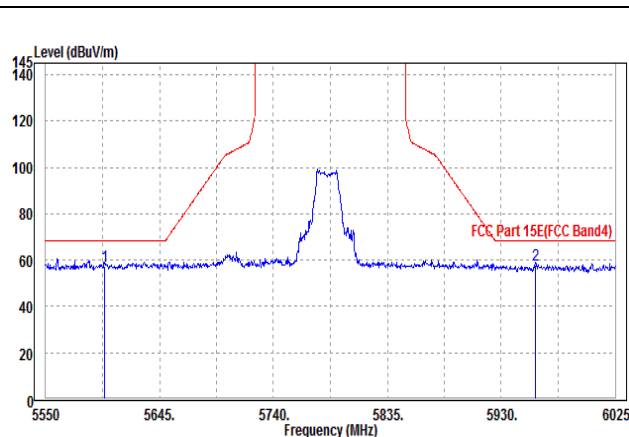
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5599.87<br>5                                        | 58.87                         | 61.15                   | 68.3              | -9.43          | 36.34                        | 7.6                   | 46.22                    | 200                       | 0                          | Peak   |
| 5949.95                                             | 56.57                         | 58.25                   | 68.3              | -11.73         | 36.48                        | 7.96                  | 46.12                    | 200                       | 0                          | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5598.92<br>5                                        | 57.48                         | 59.54                   | 68.3              | -10.82         | 36.56                        | 7.6                   | 46.22                    | 100                       | 0                          | Peak   |
| 5958.5                                              | 57.88                         | 59.25                   | 68.3              | -10.42         | 36.78                        | 7.97                  | 46.12                    | 100                       | 0                          | Peak   |

## CH 157

### Horizontal



### Vertical



|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 161 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|---------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5825                                                | 105.78                        | 107.68                  |                   |                | 36.43                        | 7.83                  | 46.16                    | 119                       | 87                         | Peak    |
| 5825                                                | 97.02                         | 98.92                   |                   |                | 36.43                        | 7.83                  | 46.16                    | 119                       | 87                         | Average |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |         |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK  |
| 5825                                                | 106.91                        | 108.55                  |                   |                | 36.69                        | 7.83                  | 46.16                    | 100                       | 200                        | Peak    |
| 5825                                                | 97.57                         | 99.21                   |                   |                | 36.69                        | 7.83                  | 46.16                    | 100                       | 200                        | Average |

**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Emission level – Limit value.
- 5805MHz: Fundamental frequency.

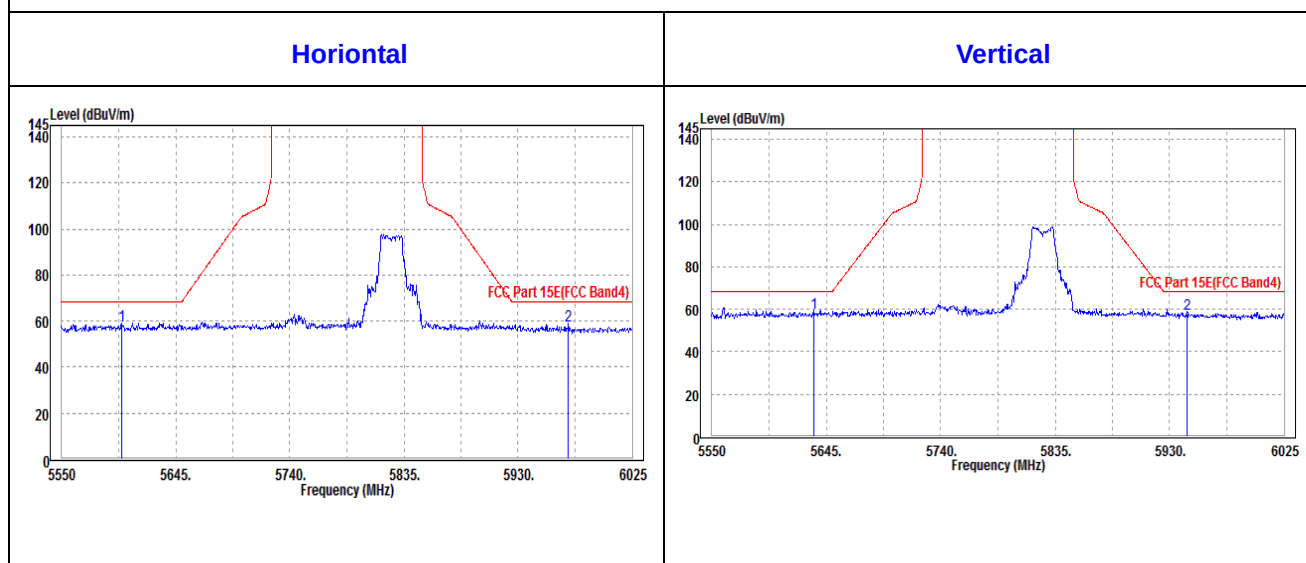


## OOBE DATA

### 802.11n (20MHZ) TEST DATA FROM ANT 0+ANT1:

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
|-----------------------------------------------------|-------------------------------|-------------------------|-------------------|----------------|------------------------------|-----------------------|--------------------------|---------------------------|----------------------------|--------|
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5599.875                                            | 57.95                         | 60.23                   | 68.3              | -10.35         | 36.34                        | 7.6                   | 46.22                    | 100                       | 0                          | Peak   |
| 5971.8                                              | 57.97                         | 59.62                   | 68.3              | -10.33         | 36.49                        | 7.98                  | 46.12                    | 100                       | 0                          | Peak   |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                               |                         |                   |                |                              |                       |                          |                           |                            |        |
| FREQ.<br>(MHz)                                      | EMISSION<br>LEVEL<br>(dBuV/m) | READ<br>LEVEL<br>(dBuV) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>FACTOR<br>(dB /m) | CABLE<br>LOSS<br>(dB) | PREAMP<br>FACTOR<br>(dB) | ANTENNA<br>HEIGHT<br>(cm) | TABLE<br>ANGLE<br>(Degree) | REMARK |
| 5635.025                                            | 58.25                         | 60.24                   | 68.3              | -10.05         | 36.58                        | 7.64                  | 46.21                    | 200                       | 0                          | Peak   |
| 5944.25                                             | 57.75                         | 59.16                   | 68.3              | -10.55         | 36.77                        | 7.95                  | 46.13                    | 200                       | 0                          | Peak   |

## CH 161



### 3.2 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

#### 3.2.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

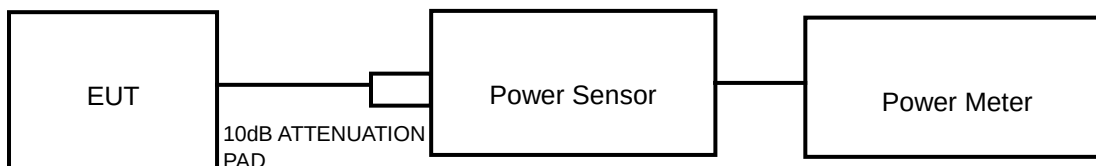
| Operation Band | EUT Category |                                   | LIMIT                                                                                                                       |
|----------------|--------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| U-NII-1        |              | Outdoor Access Point              | 1 Watt (30 dBm)<br>(Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon) |
|                |              | Fixed point-to-point Access Point | 1 Watt (30 dBm)                                                                                                             |
|                |              | Indoor Access Point               | 1 Watt (30 dBm)                                                                                                             |
|                | √            | Client devices                    | 250mW (24 dBm)                                                                                                              |
| U-NII-3        | √            |                                   | 1 Watt (30 dBm)                                                                                                             |

**NOTE:** Where B is the 26dB emission bandwidth in MHz.

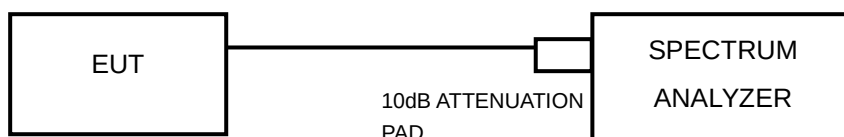
### 3.2.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT

##### 802.11a, 802.11n (20MHz), TEST CONFIGURATION



#### FOR 26dB BANDWIDTH



### 3.2.3 TEST INSTRUMENTS

| Equipment           | Manufacturer | Model No.  | Serial No. | Last Cal.  | Next Cal.  |
|---------------------|--------------|------------|------------|------------|------------|
| Power Meter         | ANRITSU      | ML2495A    | 1506002    | Feb. 26,19 | Feb. 25,20 |
| EXA Signal Analyzer | KEYSIGHT     | N9010A-526 | MY54510322 | Feb. 26,19 | Feb. 25,20 |
| EXA Signal Analyzer | KEYSIGHT     | N9010A-544 | MY54510355 | Feb. 26,19 | Feb. 25,20 |
| Power Sensor        | ANRITSU      | MA2411B    | 1339352    | Feb. 26,19 | Feb. 25,20 |

**NOTE:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

### 3.2.4 TEST PROCEDURE

#### FOR POWER MEASUREMENT

##### For 802.11a, 802.11n (20MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

#### FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### FOR 6dB BANDWIDTH

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 3.2.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.2.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



Test Report No.: RF190702W005

### 3.2.7 TEST RESULTS

#### OUTPUT POWER:

##### 802.11a

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | AVERAGE POWER  |                |               |                | POWER LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|----------------|----------------|---------------|----------------|----------------------|-----------|
|         |                               | ANT 0<br>(dBm) | ANT 1<br>(dBm) | Total<br>(mW) | Total<br>(dBm) |                      |           |
| 36      | 5180                          | 15.72          | 15.65          | /             | /              | 24                   | PASS      |
| 40      | 5200                          | 17.21          | 16.70          | /             | /              | 24                   | PASS      |
| 48      | 5240                          | <b>18.18</b>   | 18.05          | /             | /              | 24                   | PASS      |
| 149     | 5745                          | 18.01          | 18.21          | /             | /              | 30                   | PASS      |
| 157     | 5785                          | 18.22          | <b>18.28</b>   | /             | /              | 30                   | PASS      |
| 161     | 5805                          | 18.06          | 18.18          | /             | /              | 30                   | PASS      |

##### 802.11n (20MHz)

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | AVERAGE POWER  |                |               |                | POWER LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|----------------|----------------|---------------|----------------|----------------------|-----------|
|         |                               | ANT 0<br>(dBm) | ANT 1<br>(dBm) | Total<br>(mW) | Total<br>(dBm) |                      |           |
| 36      | 5180                          | 15.57          | 14.53          | 64.44         | 18.09          | 24                   | PASS      |
| 40      | 5200                          | 15.55          | 14.58          | 64.6          | 18.1           | 24                   | PASS      |
| 48      | 5240                          | 15.61          | 14.55          | 64.9          | 18.12          | 24                   | PASS      |
| 149     | 5745                          | 15.03          | 15.34          | 66.04         | 18.2           | 30                   | PASS      |
| 157     | 5785                          | 15.31          | 14.93          | 65.08         | 18.13          | 30                   | PASS      |
| 161     | 5805                          | 15.53          | 14.47          | 63.72         | 18.04          | 30                   | PASS      |

**99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH DATA FROM ANT 0:****802.11a**

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | 99% OCCUPIED<br>BANDWIDTH | 26dB<br>BANDWIDTH<br>(MHz) | PASS/FAIL |
|---------|-------------------------------|---------------------------|----------------------------|-----------|
| 36      | 5180                          | 16.86                     | 27.29                      | PASS      |
| 40      | 5200                          | 16.98                     | 29.24                      | PASS      |
| 48      | 5240                          | 17.22                     | 32.49                      | PASS      |
| CHANNEL | CHANNEL<br>FREQUENCY          | 99% OCCUPIED<br>BANDWIDTH | 6dB<br>BANDWIDTH           | PASS/FAIL |
| 149     | 5745                          | 16.80                     | 16.27                      | PASS      |
| 157     | 5785                          | 18.00                     | 16.08                      | PASS      |
| 161     | 5805                          | 18.00                     | 16.93                      | PASS      |

**802.11n (20MHz)**

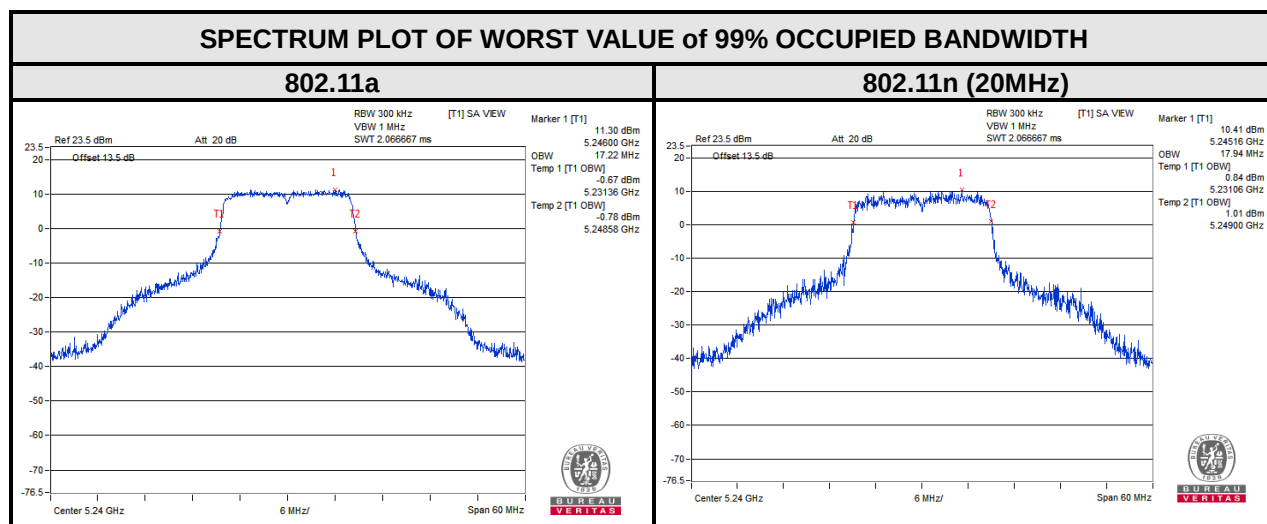
| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | 99% OCCUPIED<br>BANDWIDTH | 26dB<br>BANDWIDTH<br>(MHz) | PASS/FAIL |
|---------|-------------------------------|---------------------------|----------------------------|-----------|
| 36      | 5180                          | 16.92                     | 27.83                      | PASS      |
| 40      | 5200                          | 16.86                     | 30.00                      | PASS      |
| 48      | 5240                          | 17.94                     | 25.17                      | PASS      |
| CHANNEL | CHANNEL<br>FREQUENCY          | 99% OCCUPIED<br>BANDWIDTH | 6dB<br>BANDWIDTH           | PASS/FAIL |
| 149     | 5745                          | 18.12                     | 17.13                      | PASS      |
| 157     | 5785                          | 18.12                     | 17.16                      | PASS      |
| 161     | 5805                          | 17.76                     | 17.68                      | PASS      |



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Test Report No.: RF190702W005

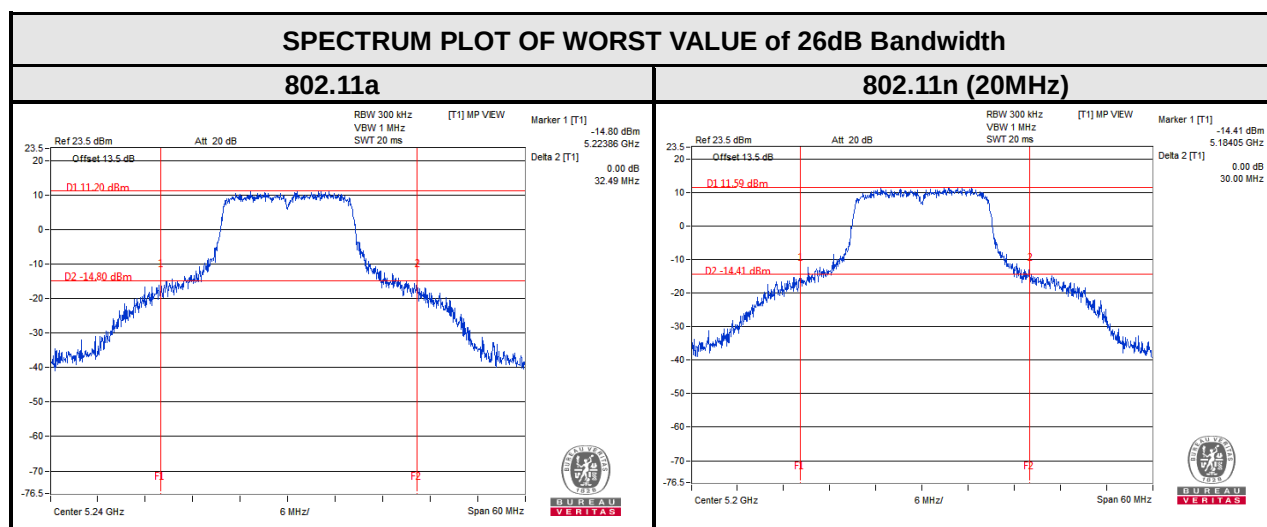
For U-NII-1:





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Test Report No.: RF190702W005

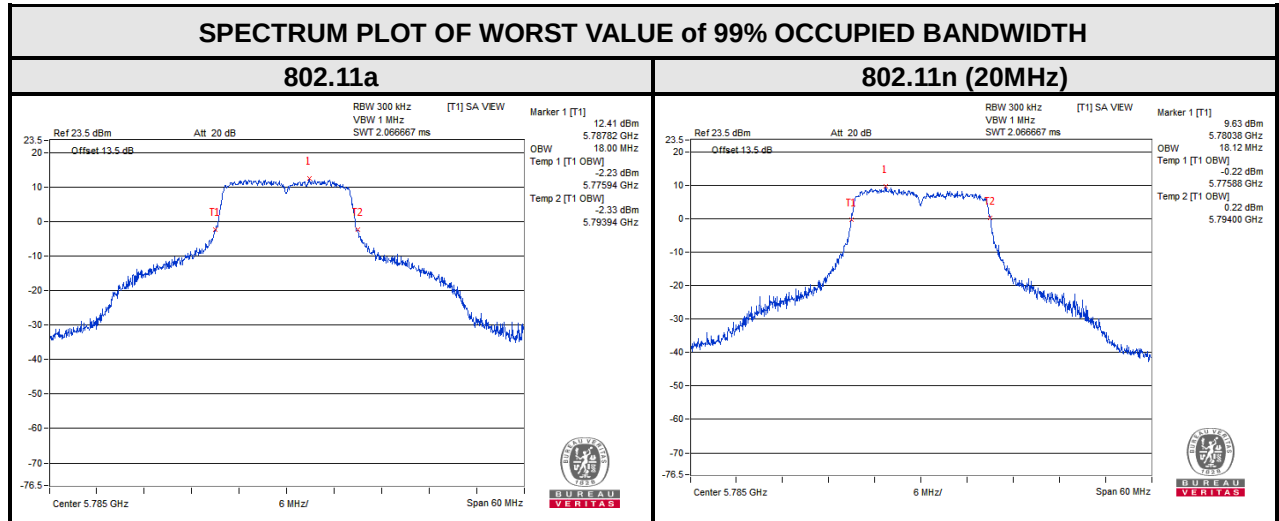




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Test Report No.: RF190702W005

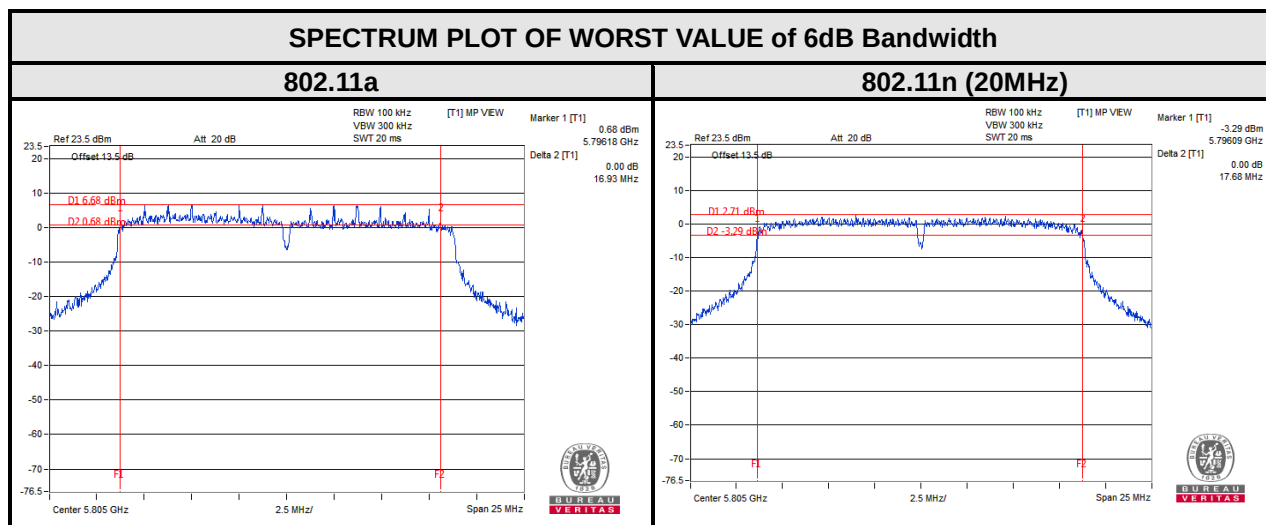
For U-NII-3:





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Test Report No.: RF190702W005

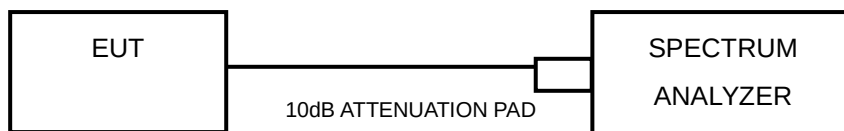


### 3.3 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

#### 3.3.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

| Operation Band | EUT Category |                                   | LIMIT         |
|----------------|--------------|-----------------------------------|---------------|
| U-NII-1        |              | Outdoor Access Point              | 17dBm/ MHz    |
|                |              | Fixed point-to-point Access Point |               |
|                |              | Indoor Access Point               |               |
|                | √            | Client devices                    | 11dBm/ MHz    |
| U-NII-2A       | √            |                                   | 11dBm/ MHz    |
| U-NII-2C       | √            |                                   | 11dBm/ MHz    |
| U-NII-3        | √            |                                   | 30dBm/ 500kHz |

#### 3.3.2 TEST SETUP



#### 3.3.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

### 3.3.4 TEST PROCEDURES

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log (1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 7) Record the max value

### 3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.3.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

### 3.3.7 TEST RESULTS

#### For U-NII-1

##### 802.11a

| CHANNEL | FREQUENCY<br>(MHz) | ANT 0<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | ANT 1<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | Duty<br>Factor | ANT 0<br>PSD with<br>Duty Factor<br>(dBm/MHz) | ANT 1<br>PSD with<br>Duty Factor<br>(dBm/MHz) | MAXIMUM<br>LIMIT<br>(dBm/MHz) | PASS/<br>FAIL |
|---------|--------------------|----------------------------------------------|----------------------------------------------|----------------|-----------------------------------------------|-----------------------------------------------|-------------------------------|---------------|
| 36      | 5180               | 9.75                                         | 8.89                                         | 0.138          | 9.89                                          | 9.03                                          | 11                            | PASS          |
| 40      | 5200               | 9.85                                         | 8.55                                         | 0.138          | <b>9.99</b>                                   | 8.69                                          | 11                            | PASS          |
| 48      | 5240               | 9.61                                         | 8.92                                         | 0.138          | 9.75                                          | 9.06                                          | 11                            | PASS          |

##### 802.11n (20MHz)

| CHANNEL | FREQUENCY<br>(MHz) | ANT 0<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | ANT 1<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | Duty Factor | Total<br>PSD with<br>Duty Factor<br>(dBm/MHz) | MAXIMUM<br>LIMIT<br>(dBm/MHz) | PASS/FAIL |
|---------|--------------------|----------------------------------------------|----------------------------------------------|-------------|-----------------------------------------------|-------------------------------|-----------|
| 36      | 5180               | 7.93                                         | 4.24                                         | 0.121       | 9.6                                           | 11                            | PASS      |
| 40      | 5200               | 8.43                                         | 4.35                                         | 0.121       | <b>9.98</b>                                   | 11                            | PASS      |
| 48      | 5240               | 8.46                                         | 4.14                                         | 0.121       | 9.95                                          | 11                            | PASS      |

Note:  $N_{ANT} = 2$ ,  $N_{SS}=1$ , Directional gain =  $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$  dBi = 4.08dBi < 6dBi, density limit shall not be reduced.

For U-NII-3:

802.11a

| CHANNEL | FREQUENCY<br>(MHz) | ANT 0<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | ANT 1<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | Duty Factor | ANT 0<br>PSD with<br>Duty Factor<br>(dBm/500kHz) | ANT 1<br>PSD with<br>Duty Factor<br>(dBm/500kHz) | LIMIT<br>(dBm/500kHz) | PASS<br>/FAIL |
|---------|--------------------|----------------------------------------------|----------------------------------------------|-------------|--------------------------------------------------|--------------------------------------------------|-----------------------|---------------|
| 149     | 5745               | 7.42                                         | 9.53                                         | 0.138       | 4.55                                             | 6.66                                             | 30                    | PASS          |
| 157     | 5785               | <b>9.55</b>                                  | 9.32                                         | 0.138       | 6.68                                             | 6.45                                             | 30                    | PASS          |
| 161     | 5805               | 7.24                                         | 4.82                                         | 0.138       | 4.37                                             | 1.95                                             | 30                    | PASS          |

802.11n (20MHz)

| CHANNEL | FREQUENCY<br>(MHz) | ANT 0<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | ANT 1<br>PSD w/o<br>Duty Factor<br>(dBm/MHz) | Total<br>PSD w/o<br>Duty Factor<br>(dBm/500kHz) | Duty Factor | Total<br>PSD with<br>Duty Factor<br>(dBm/500kHz) | LIMIT<br>(dBm/500kHz) | PASS<br>/FAIL |
|---------|--------------------|----------------------------------------------|----------------------------------------------|-------------------------------------------------|-------------|--------------------------------------------------|-----------------------|---------------|
| 149     | 5745               | 6.89                                         | 6.35                                         | 6.63                                            | 0.121       | 6.75                                             | 30                    | PASS          |
| 157     | 5785               | <b>6.98</b>                                  | 5.68                                         | 6.38                                            | 0.121       | 6.50                                             | 30                    | PASS          |
| 161     | 5805               | 4.22                                         | 5.29                                         | 4.79                                            | 0.121       | 4.91                                             | 30                    | PASS          |

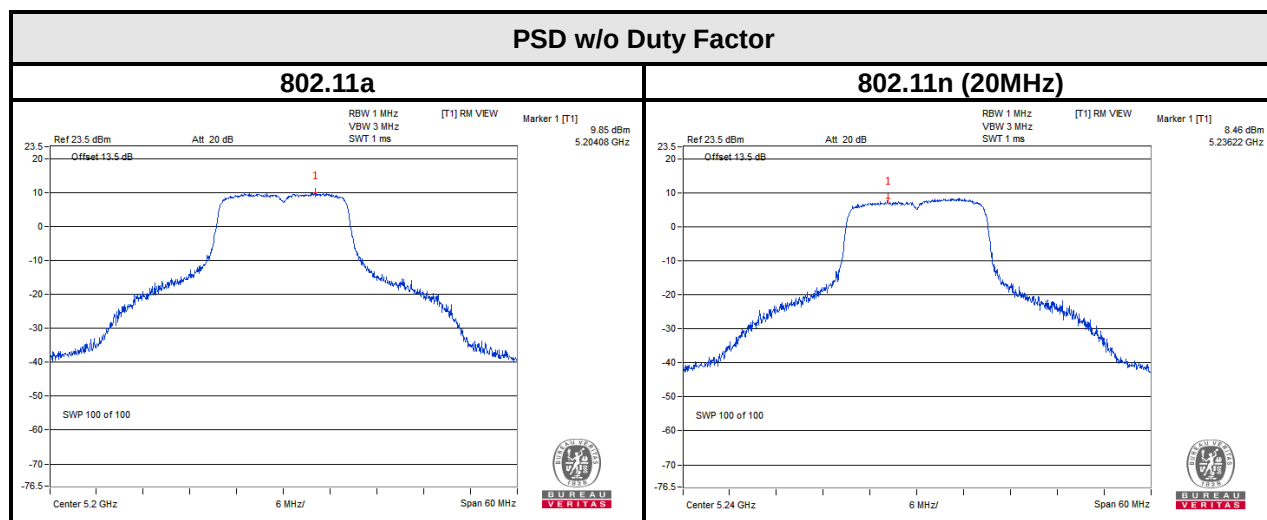
Note:  $N_{ANT} = 2$ ,  $N_{SS} = 1$ , Directional gain =  $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$  dBi = 4.08dBi < 6dBi, density limit shall not be reduced.



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Test Report No.: RF190702W005

For 5180~5240MHz

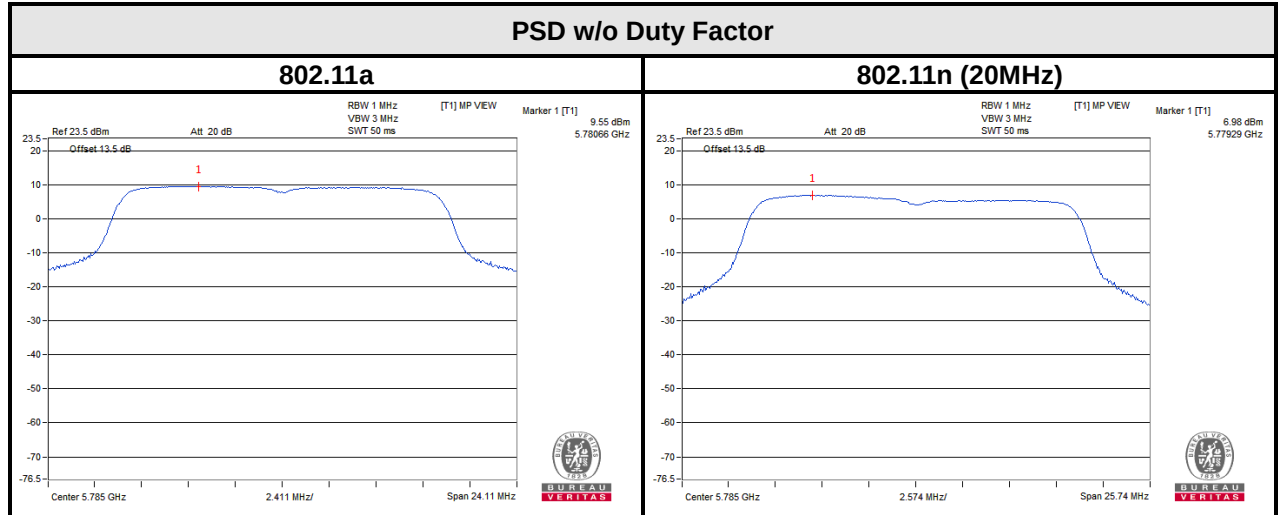




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VERITAS

Test Report No.: RF190702W005

For 5745~5805MHz

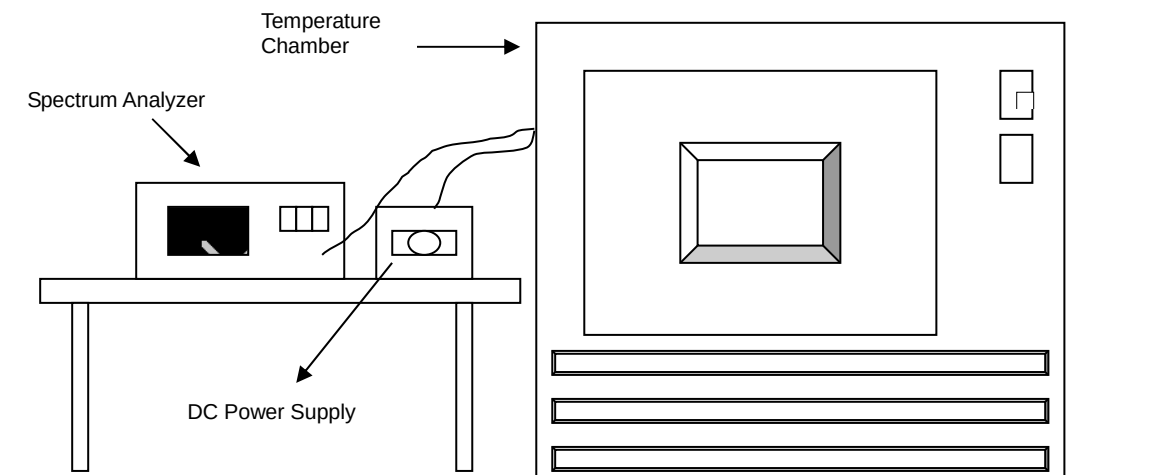


### 3.4 FREQUENCY STABILITY

#### 3.4.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

#### 3.4.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

#### 3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 3.4.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

### 3.4.7 TEST RESULTS

#### TEST DATA FROM ANT 0:

| FREQUENCY STABILITY VERSUS TEMP. |                          |                                |                             |                                |                             |                                |                             |                                |                             | RESULT |
|----------------------------------|--------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------|
| OPERATING FREQUENCY: 5180MHz     |                          |                                |                             |                                |                             |                                |                             |                                |                             |        |
| TEMP.<br>(°C)                    | Power<br>Supply<br>(Vdc) | 0 MINUTE                       |                             | 2 MINUTES                      |                             | 5 MINUTES                      |                             | 10 MINUTE                      |                             |        |
|                                  |                          | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) |        |
| 50                               | 120                      | 5179.977                       | -4.382                      | 5179.979                       | -3.919                      | 5179.979                       | -4.035                      | 5179.982                       | -3.398                      | PASS   |
| 40                               | 120                      | 5179.984                       | -3.069                      | 5179.980                       | -3.822                      | 5179.979                       | -4.035                      | 5179.978                       | -4.208                      | PASS   |
| 30                               | 120                      | 5180.012                       | 2.452                       | 5180.011                       | 2.201                       | 5180.013                       | 2.548                       | 5180.015                       | 2.973                       | PASS   |
| 20                               | 120                      | 5179.988                       | -2.259                      | 5179.986                       | -2.568                      | 5179.984                       | -3.089                      | 5179.985                       | -2.838                      | PASS   |
| 10                               | 120                      | 5179.972                       | -5.386                      | 5179.976                       | -4.614                      | 5179.974                       | -4.903                      | 5179.979                       | -3.958                      | PASS   |
| 0                                | 120                      | 5179.969                       | -5.830                      | 5179.969                       | -5.927                      | 5179.971                       | -5.502                      | 5179.971                       | -5.425                      | PASS   |
| -10                              | 120                      | 5180.000                       | 0.019                       | 5179.998                       | -0.367                      | 5179.997                       | -0.483                      | 5179.994                       | -1.120                      | PASS   |
| -20                              | 120                      | 5180.000                       | 0.097                       | 5180.006                       | 1.178                       | 5180.001                       | 0.347                       | 5179.999                       | -0.019                      | PASS   |
| -30                              | 120                      | 5179.984                       | -3.012                      | 5179.982                       | -3.320                      | 5179.978                       | -4.228                      | 5179.987                       | -2.490                      | PASS   |

| FREQUENCY STABILITY VERSUS VOLTAGE |                          |                                |                             |                                |                             |                                |                             |                                |                             | RESULT |
|------------------------------------|--------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------|
| OPERATING FREQUENCY: 5180MHZ       |                          |                                |                             |                                |                             |                                |                             |                                |                             |        |
| TEMP.<br>(°C)                      | Power<br>Supply<br>(Vdc) | 0 MINUTE                       |                             | 2 MINUTE                       |                             | 5 MINUTE                       |                             | 10 MINUTE                      |                             |        |
|                                    |                          | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) |        |
| 20                                 | 138                      | 5179.989                       | -2.124                      | 5179.985                       | -2.780                      | 5179.985                       | -2.896                      | 5179.985                       | -2.819                      | PASS   |
|                                    | 120                      | 5179.988                       | -2.259                      | 5179.986                       | -2.568                      | 5179.984                       | -3.089                      | 5179.985                       | -2.838                      | PASS   |
|                                    | 102                      | 5179.988                       | -2.162                      | 5179.985                       | -2.799                      | 5179.985                       | -2.819                      | 5179.985                       | -2.799                      | PASS   |



| FREQUENCY STABILITY VERSUS TEMP. |                          |                                |                             |                                |                             |                                |                             |                                |                             | RESULT |
|----------------------------------|--------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------|
| OPERATING FREQUENCY: 5805MHz     |                          |                                |                             |                                |                             |                                |                             |                                |                             |        |
| TEMP.<br>(°C)                    | Power<br>Supply<br>(Vdc) | 0 MINUTE                       |                             | 2 MINUTES                      |                             | 5 MINUTES                      |                             | 10 MINUTE                      |                             |        |
|                                  |                          | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) |        |
| 50                               | 120                      | 5805.008                       | 1.413                       | 5805.005                       | 0.999                       | 5805.003                       | 0.551                       | 5805.004                       | 0.844                       | PASS   |
| 40                               | 120                      | 5804.987                       | -2.222                      | 5804.983                       | -2.825                      | 5804.979                       | -3.583                      | 5804.976                       | -4.083                      | PASS   |
| 30                               | 120                      | 5805.015                       | 2.722                       | 5805.014                       | 2.481                       | 5805.02                        | 3.445                       | 5805.019                       | 3.307                       | PASS   |
| 20                               | 120                      | 5805.006                       | 1.189                       | 5805.009                       | 1.585                       | 5805.005                       | 0.999                       | 5804.998                       | -0.345                      | PASS   |
| 10                               | 120                      | 5805.001                       | 0.207                       | 5805.001                       | 0.310                       | 5805.007                       | 1.344                       | 5805.006                       | 1.068                       | PASS   |
| 0                                | 120                      | 5805.003                       | 0.637                       | 5805.001                       | 0.241                       | 5805.003                       | 0.603                       | 5804.997                       | -0.362                      | PASS   |
| -10                              | 120                      | 5805.021                       | 3.669                       | 5805.015                       | 2.739                       | 5805.019                       | 3.325                       | 5805.021                       | 3.652                       | PASS   |
| -20                              | 120                      | 5804.981                       | -3.152                      | 5804.982                       | -3.101                      | 5804.988                       | -2.033                      | 5804.981                       | -3.118                      | PASS   |
| -30                              | 120                      | 5804.995                       | -0.758                      | 5805.004                       | 0.724                       | 5805.001                       | 0.207                       | 5804.995                       | -0.706                      | PASS   |

| FREQUENCY STABILITY VERSUS VOLTAGE |                          |                                |                             |                                |                             |                                |                             |                                |                             | RESULT |
|------------------------------------|--------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|-----------------------------|--------|
| OPERATING FREQUENCY: 5805MHZ       |                          |                                |                             |                                |                             |                                |                             |                                |                             |        |
| TEMP.<br>(°C)                      | Power<br>Supply<br>(Vdc) | 0 MINUTE                       |                             | 2 MINUTE                       |                             | 5 MINUTE                       |                             | 10 MINUTE                      |                             |        |
|                                    |                          | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) | Measured<br>Frequency<br>(MHz) | Frequency<br>Drift<br>(ppm) |        |
| 20                                 | 138                      | 5805.006                       | 1.171                       | 5805.008                       | 1.516                       | 5805.004                       | 0.827                       | 5804.999                       | -0.172                      | PASS   |
|                                    | 120                      | 5805.006                       | 1.189                       | 5805.009                       | 1.585                       | 5805.005                       | 0.999                       | 5804.998                       | -0.345                      | PASS   |
|                                    | 102                      | 5805.007                       | 1.206                       | 5805.008                       | 1.430                       | 5805.005                       | 0.965                       | 5804.998                       | -0.241                      | PASS   |



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## 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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## 5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---