

# **RADIO TEST REPORT**

**Product** : IEEE 802.11ax/ac/a/b/g/n 2x2 WiFi with Bluetooth5.3 M.2 LGA Type 1216 Module

**Model Name** : AP6275SDSR

**FCC ID** : RYK-AP6275SDSR

**Test Regulation** : FCC 47 CFR Part 15 Subpart C (Section 15.247)

**Received Date** : 2026/1/2

**Test Date** : 2026/01/06 ~ 2026/04/07

**Issued Date** : 2026/5/20

**Applicant** : SparkLAN Communications, Inc.  
5F, No. 199, Ruihu St., Neihu Dist., Taipei City 114067, Taiwan

**Issued By** : Underwriters Laboratories Taiwan Co., Ltd.  
Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd.,  
Zhudong Township, Hsinchu County, Taiwan



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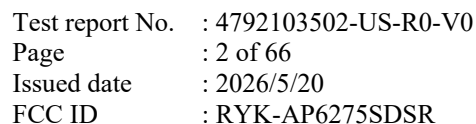
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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0



**Original Test Report No.: 4792103502-US-R0-V0**

Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

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## 1. Attestation of Test Results

**APPLICANT:** SparkLAN Communications, Inc.  
5F, No. 199, Ruihu St., Neihu Dist., Taipei City 114067, Taiwan

**MANUFACTURER:** SparkLAN Communications, Inc.  
5F, No. 199, Ruihu St., Neihu Dist., Taipei City 114067, Taiwan

**EUT DESCRIPTION:** IEEE 802.11ax/ac/a/b/g/n 2x2 WiFi with Bluetooth5.3 M.2 LGA Type 1216 Module

**BRAND:** SparkLAN, Ampak

**MODEL:** AP6275SDSR

**SAMPLE STAGE:** Engineering Verification Test Sample

**DATE of TESTED:** 2026/01/06 ~ 2026/04/07

| APPLICABLE STANDARDS                          |              |
|-----------------------------------------------|--------------|
| STANDARD                                      | Test Results |
| FCC 47 CFR PART 15 Subpart C (Section 15.247) | PASS         |

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:



Sally Lu  
Project Handler

Date : 2026/5/20

Approved and Authorized By:



Kent Liu  
Senior Laboratory Engineer

Date : 2026/5/20

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## 2. Summary of Test Results

| Summary of Test Results        |                                                 |        |
|--------------------------------|-------------------------------------------------|--------|
| FCC Clause                     | Test Items                                      | Result |
| 15.247(a)(2)                   | 6dB Bandwidth                                   | Note 1 |
| 15.247(b)                      | Conducted Output Power                          | PASS   |
| 15.247(e)                      | Power Spectral Density                          | Note 1 |
| 15.247(d)                      | Antenna Port Emission                           | Note 1 |
| 15.205 / 15.209 /<br>15.247(d) | Radiated Emissions and<br>Band Edge Measurement | PASS   |
| 15.207                         | AC Power Conducted Emission                     | Note 1 |
| 15.203                         | Antenna Requirement                             | PASS   |

Note:

1. This report is as a supplementary report of report no.: 4790471812-US-R0-V0. The test result refer to the original report.

### 3. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB558074 D01 Meas Guidance v05r02, KDB414788 D01 Radiated Test Site v01r01, ANSI C63.10-2020+Cor.1-2023 and KDB 662911 D01 Multiple Transmitter Output v02r01.

### 4. Facilities and Accreditation

|                                  |                                                                                                    |
|----------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Test Location</b>             | Underwriters Laboratories Taiwan Co., Ltd.                                                         |
| <b>Address</b>                   | Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd.,<br>Zhudong Township, Hsinchu County, Taiwan |
| <b>Accreditation Certificate</b> | Underwriters Laboratories Taiwan Co., Ltd. is accredited by<br>TAF, Laboratory Code 3398.          |

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## 5. Measurement Uncertainty

For statement of conformity, Simple acceptance (Section 3.1.4 of IEC Guide 115) was applied as decision rule for measurement in this test report.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor  $k=2$ .

Determining compliance based on the results of the compliance measurement, not considering measurement instrumentation uncertainty.

| Measurement                                    | Frequency      | Uncertainty |
|------------------------------------------------|----------------|-------------|
| Conducted disturbance at mains terminals ports | 150kHz ~ 30MHz | 3.0 dB      |
| RF Conducted                                   | 9 kHz - 40GHz  | 2.4 dB      |
| Radiated disturbance below 30MHz               | 9 kHz - 30 MHz | 1.9 dB      |
| Radiated disturbance below 1 GHz               | 30MHz ~ 1GHz   | 5.6 dB      |
| Radiated disturbance above 1 GHz               | 1GHz ~ 40GHz   | 4.6 dB      |

The EUT support table is constructed of high-density Expandable Polystyrene (EPS) with dimensions of 1 m × 1.5 m.

The Measurement Uncertainty (MU) report is prepared in accordance with CISPR 16-4-2:2011-06; the potential impact of the setup table material has been evaluated and included as a component of the overall uncertainty value.

## 6. Equipment under Test

### 6.1. Description of EUT

|                       |                                                                              |
|-----------------------|------------------------------------------------------------------------------|
| <b>Product</b>        | IEEE 802.11ax/ac/a/b/g/n 2x2 WiFi with Bluetooth5.3 M.2 LGA Type 1216 Module |
| <b>Brand Name</b>     | SparkLAN, Ampak                                                              |
| <b>Model Name</b>     | AP6275SDSR                                                                   |
| <b>Normal Voltage</b> | 3.3Vdc from Host                                                             |

|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| <b>Operating Frequency</b>  | 2412MHz ~ 2462MHz                                  |
| <b>Modulation</b>           | CCK, DQPSK, DBPSK for DSSS                         |
|                             | 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM |
| <b>Transfer Rate</b>        | 802.11b: up to 11 Mbps                             |
|                             | 802.11g: up to 54 Mbps                             |
|                             | 802.11n: up to MCS15                               |
|                             | 802.11ax: up to MCS11                              |
| <b>Maximum Output Power</b> | 2412MHz ~ 2462MHz: 27.04dBm                        |
| <b>Sample ID</b>            | Conducted Test:5258006                             |
|                             | Radiated Test:5258006                              |

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Note:

1. This report is as a supplementary report of report no.: 4790471812-US-R0-V0. The differences were as below:
  - Add new PIFA antennas.
2. According to above conditions, therefore only the radiated spurious emission worse case and conducted output power need to be performed, others result please refer to the original report.
3. The model has two brand names as follows:

| Brand    | Product name                                                                 | Model      |
|----------|------------------------------------------------------------------------------|------------|
| SparkLAN | IEEE 802.11ax/ac/a/b/g/n 2x2 WiFi with Bluetooth5.3 M.2 LGA Type 1216 Module | AP6275SDSR |
| Ampak    |                                                                              |            |

4. EUT provides a complete Tx port and Rx port. Please refer to the following working transmission conditions:

| Modulation Mode | Tx Function   | Rx Function |
|-----------------|---------------|-------------|
| 802.11b         | 1Tx Diversity | 2Rx         |
| 802.11g         | 2Tx           | 2Rx         |
| 802.11n(HT20)   | 2Tx           | 2Rx         |
| 802.11ax(HE20)  | 2Tx           | 2Rx         |

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual, the laboratory shall not be held responsible.

## 6.2. Channel List

11 channels are provided for WLAN 20MHz bandwidth system:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 1       | 2412            | 7       | 2442            |
| 2       | 2417            | 8       | 2447            |
| 3       | 2422            | 9       | 2452            |
| 4       | 2427            | 10      | 2457            |
| 5       | 2432            | 11      | 2462            |
| 6       | 2437            | -       | -               |

### 6.3. Test Condition

| Test Item                          | Test Site No. | Environmental        | Input Power | Test Date                 | Tested by                 |
|------------------------------------|---------------|----------------------|-------------|---------------------------|---------------------------|
| Antenna Port Conducted Measurement | SR4           | 24°C/<br>60%RH       | 3.3Vdc      | 2026/01/13~<br>2026/04/07 | Scott Chang/<br>Jubo Shen |
| Radiated Spurious Emission         | 966-2         | 22~26°C/<br>62~68%RH | 3.3Vdc      | 2026/01/06~<br>2026/04/07 | Scott Chang/<br>Jubo Shen |

#### Sample Calculation:

##### Antenna Port Conducted Measurement:

- Where relevant, the follow sample calculation is provided:  
Result Value (dBm) = Reading Value (dBm) + Attenuator Factor (dB) + Cable Loss (dB).  
Example: Result Value (10dBm) = Reading Value (-2dBm) + Attenuator Factor (10dB) + Cable Loss(2dB).  
\*Test plot only shown the “Result Value”.

##### Radiated Spurious Emission:

- Where relevant, the follow sample calculation is provided:  
Result Value (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).  
Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB).  
Example: Result Value (34.5dBuV/m) = Reading Value (40.1dBuV) + Antenna Factor (18.7dB/m) + Cable Loss (4.2dB) - Preamp Factor (28.5dB).

##### AC power Line Conducted Emission:

- Where relevant, the follow sample calculation is provided:  
Result Value (dBuV) = Reading Value (dBuV) + Correction Factor (dB).  
Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).  
Example: Result Value (53.7dBuV) = Reading Value (35.1dBuV) + Insertion loss(18.1dB) + Cable loss(0.5dB).

## 6.4. Description of Available Antennas

| Original |                     |                        |                      |                      |                          |           |                |
|----------|---------------------|------------------------|----------------------|----------------------|--------------------------|-----------|----------------|
| Ant. No. | Transmitter Circuit | Frequency Range (MHz)  | Brand Name           | Model Name           | Maximum Gain (dBi)       | Ant. Type | Connector Type |
| 1        | Chain0+1            | 2400~2500<br>5150~5875 | SparkLAN             | AD-103AG             | 2.4G: 2.02<br>5G: 2.03   | Dipole    | RP-SMA         |
| 2        | Chain0+1            | 2400~2500<br>5150~5850 | SparkLAN             | AD-301N              | 2.4G: 4.4<br>5G: 5.8     | Dipole    | RP-SMA         |
| 3        | Chain0+1            | 2400~2500<br>5150~5850 | SparkLAN             | AD-302N              | 2.4G: 3.14<br>5G: 2.87   | Dipole    | RP-SMA         |
| 4        | Chain0+1            | 2400~2500<br>5150~5850 | SparkLAN             | AD-303N              | 2.4G: 3.14<br>5G: 3.45   | Dipole    | RP-SMA         |
| 5        | Chain0+1            | 2400~2500<br>5150~5825 | SparkLAN             | AD-305N              | 2.4G: 5<br>5G: 5.53      | Dipole    | RP-SMA         |
| 6        | Chain0+1            | 2400~2500<br>5150~5825 | SparkLAN             | AD-308N              | 2.4G: 3<br>5G: 5         | Dipole    | I-PEX          |
| 7        | Chain0+1            | 2400~2500<br>5150~5875 | SparkLAN             | AD-309N              | 2.4G: 1.68<br>5G: 4.72   | Dipole    | I-PEX          |
| 8        | Chain0+1            | 2400~2500<br>5150~5875 | SparkLAN             | AD-310N              | 2.4G: 2.65<br>5G: 4.86   | Dipole    | I-PEX          |
| 9        | Chain0+1            | 2400~2500<br>5150~5875 | SparkLAN             | AD-311N              | 2.4G: 2.67<br>5G: 4.91   | Dipole    | I-PEX          |
| 10       | Chain0+1            | 2400~2500<br>5150~5875 | GRAND-TEK Technology | 103DG00000140        | 2.4G: 4.8<br>5G: 5       | Dipole    | I-PEX          |
| 11       | Chain0+1            | 2400~2500<br>5150~5875 | GRAND-TEK Technology | 103DG00000150        | 2.4G: 2.5<br>5G: 5.3     | Dipole    | I-PEX          |
| Newly    |                     |                        |                      |                      |                          |           |                |
| Ant. No. | Transmitter Circuit | Frequency Range (MHz)  | Brand Name           | Model Name           | Maximum Gain (dBi)       | Ant. Type | Connector Type |
| 12       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-25-JP818P1-4C036 | 2.4G: 2.91<br>5G: 4.43   | PIFA      | i-pex(MHF)     |
| 13       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-25-KP010-4B-70   | 2.4G: -2.44<br>5G: 5.23  | PIFA      | i-pex(MHF)     |
| 14       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-27-KP208-4B-115  | 2.4G: 2.98<br>5G: 4.89   | PIFA      | i-pex(MHF)     |
| 15       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-27-KP209-74G-315 | 2.4G: 2.28<br>5G: 3.64   | PIFA      | i-pex(MHF)     |
| 16       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-25-KP290-4B-70   | 2.4G: 3.13<br>5G: 4.71   | PIFA      | i-pex(MHF)     |
| 17       | Chain0+1            | 2400~2500<br>5150~5895 | Aristotle            | RFA-25-KP291-4G-70   | 2.4G: -1.48<br>5G: -0.99 | PIFA      | i-pex(MHF)     |
| 18       | Chain0+1            | 2400~2500<br>5150~5895 | SparkLAN             | AD-303PF             | 2.4G: 2.91<br>5G: 4.43   | PIFA      | i-pex(MHF)     |
| 19       | Chain0+1            | 2400~2500<br>5150~5895 | SparkLAN             | AD-304PF             | 2.4G: -2.44<br>5G: 5.23  | PIFA      | i-pex(MHF)     |
| 20       | Chain0+1            | 2400~2500<br>5150~5895 | SparkLAN             | AD-305PF             | 2.4G: 2.98<br>5G: 4.89   | PIFA      | i-pex(MHF)     |

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|    |          |                        |          |          |                          |      |            |
|----|----------|------------------------|----------|----------|--------------------------|------|------------|
| 21 | Chain0+1 | 2400~2500<br>5150~5895 | SparkLAN | AD-306PF | 2.4G: 2.28<br>5G: 3.64   | PIFA | i-pex(MHF) |
| 22 | Chain0+1 | 2400~2500<br>5150~5895 | SparkLAN | AD-307PF | 2.4G: 3.13<br>5G: 4.71   | PIFA | i-pex(MHF) |
| 23 | Chain0+1 | 2400~2500<br>5150~5895 | SparkLAN | AD-308PF | 2.4G: -1.48<br>5G: -0.99 | PIFA | i-pex(MHF) |

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual, the laboratory shall not be held responsible.

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## 6.5. Test Mode Applicability and Tested Channel Detail

| Test Item                                    | Mode            | Modulation Technology | Available Channel | Test Channel | Data Rate |
|----------------------------------------------|-----------------|-----------------------|-------------------|--------------|-----------|
| Conducted Output Power and Radiated Bandedge | 802.11b         | DSSS                  | 1 to 11           | 1,2,6,10,11  | 1 Mbps    |
|                                              | 802.11g         | OFDM                  | 1 to 11           | 1,2,6,10,11  | 6 Mbps    |
|                                              | 802.11n (HT20)  | OFDM                  | 3 to 9            | 1,2,6,10,11  | MCS0      |
|                                              | 802.11ax (HE20) | OFDM                  | 1 to 11           | 1,2,6,10,11  | MCS0 Nss1 |
| Radiated Emissions (Above 1GHz)              | 802.11b         | DSSS                  | 1 to 11           | 1,2,6,10,11  | 1 Mbps    |
|                                              | 802.11g         | OFDM                  | 1 to 11           | 1,2,6,10,11  | 6 Mbps    |
| Radiated Emissions (Below 1GHz)              | 802.11b         | DSSS                  | 1 to 11           | 1            | 1 Mbps    |

- For the EUT, the PIFA antenna was assessed across three orthogonal axes: X-Y, Y-Z, and X-Z. The Y-Z plane was identified as the worst-case orientation. Therefore, all final radiated emission tests were performed with the PIFA antenna positioned in the Y-Z plane.
- Among the New available antennas No.12-23, No.13/19 exhibited the 5G Band highest gain and No.16/22 exhibited the 2.4G Band highest gain. After evaluation, Antenna No.13 (For 5G) and Antenna No.16 (For 2.4G) was identified as the worst-case configuration and was selected for final testing.
- Antenna No. 16 has the highest in-band gain and was used for all tests. Antenna No. 13 has the highest out-of-band gain and was add perform the radiated emissions testing above 1 GHz.
- The radiated spurious emission test was performed in all test modes. The worst case was 802.11b and 802.11g, and therefore, only the worst case data is shown in this report to represent all test modes.
- In the transmit mode, 802.11b channel 1 has the worst case of Tx spurious emission (above 1GHz). Therefore, all final tests for the spurious emission (below 1GHz) were performed using this worst-case mode.
- For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.
- 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).

Simultaneously transmission condition:

| Condition | Technology |               |
|-----------|------------|---------------|
| 1         | BTLE       | WLAN (2.4GHz) |

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

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## 7. Test Equipment

| Test Equipment List                          |                    |                         |                     |                       |                       |
|----------------------------------------------|--------------------|-------------------------|---------------------|-----------------------|-----------------------|
| Equipment                                    | Manufacturer       | Model No.               | Serial No.          | Cal. Date             | Expired date          |
| Radiated Spurious Emission                   |                    |                         |                     |                       |                       |
| Spectrum Analyzer                            | Keysight           | N9010A                  | MY56070818          | 2025/3/12<br>2026/2/9 | 2026/3/11<br>2027/2/8 |
| EMI Test Receiver                            | Rohde & Schwarz    | ESR7                    | 101754              | 2025/12/9             | 2026/12/8             |
| Loop Antenna                                 | ETS lindgren       | 6502                    | 00213440            | 2025/11/14            | 2026/11/13            |
| Trilog-Broadband Antenna with 5dB Attenuator | Schwarzbeck & EMCI | VULB 9168 & N-6-05      | 774 & AT-N0538      | 2025/12/23            | 2026/12/22            |
| Horn Antenna (1-18 GHz)                      | Schwarzbeck        | BBHA 9120 D             | 01690               | 2025/11/18            | 2026/11/17            |
| Horn Antenna (18-40 GHz)                     | Schwarzbeck        | BBHA 9170               | 781                 | 2025/12/2             | 2026/12/1             |
| Preamplifier (30-1000 MHz)                   | EMCI               | EMC330E                 | 980405              | 2025/5/12             | 2026/5/11             |
| Preamplifier (1-18 GHz)                      | EMCI               | EMC051835BE             | 980406              | 2025/12/26            | 2026/12/25            |
| Preamplifier (18-40GHz)                      | EMCI               | EMC184040SEE            | 980426              | 2025/4/7<br>2026/3/24 | 2026/4/6<br>2027/3/23 |
| Cables (9k-18 GHz)                           | Hanyitek           | K1K50-UP0264-K1K50-2500 | 170214-4 & 170425-2 | 2025/11/21            | 2026/11/20            |
| Cables (18-40GHz)                            | Hanyitek           | K1K50-UP0264-K1K50-2500 | 170214-1 & 170214-2 | 2025/11/21            | 2026/11/20            |
| Antenna Port Conducted Measurement           |                    |                         |                     |                       |                       |
| Signal Analyzer                              | Rohde & Schwarz    | FSVA3044                | 101281              | 2025/3/5<br>2026/2/2  | 2026/3/4<br>2027/2/1  |
| Signal Analyzer                              | Rohde & Schwarz    | FSV40                   | 101490              | 2025/6/17             | 2026/6/16             |
| Attenuator                                   | EMCI               | EMC-40ATK2W10           | 17002               | 2025/10/28            | 2026/10/27            |
| USB Power Sensor                             | Anritsu            | MA24408A                | 12031               | 2025/6/24             | 2026/6/23             |
| Temperature & Humidity Test Chamber          | GIANT FORCE        | GTH-150- 40-CP-AR       | MAA1701-010         | 2025/2/25<br>2026/2/2 | 2026/2/24<br>2027/2/1 |

| UL Software                      |         |               |
|----------------------------------|---------|---------------|
| Description                      | Name    | Version       |
| Radiated measurement             | e3      | 6.191211 (V6) |
| AC power Line Conducted Emission | EZ_EMCI | UL-3A1.2      |

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## 8. Description of Test Setup

### Tx Mode

#### Support Equipment

| ID | Equipment | Brand Name | Model Name  | S/N | Remark             |
|----|-----------|------------|-------------|-----|--------------------|
| A  | PC        | GIGABYTE   | GA-H81M-DS2 | N/A | Supplied by Client |
| B  | Fixture   | AMPAK      | UART_V07    | N/A | Supplied by Client |
| C  | EVB Board | AMPAK      | EVB         | N/A | Supplied by Client |

#### I/O Cables

| ID | Equipment            | Brand Name | Model Name | Length (m) | Remark             |
|----|----------------------|------------|------------|------------|--------------------|
| 1  | SDIO extension cable | AMPAK      | UART       | 0.8        | Supplied by Client |
| 2  | USB Cable            | AMPAK      | USB        | 1.8        | Supplied by Client |
| 3  | USB Cable            | AMPAK      | USB        | 1.8        | Supplied by Client |

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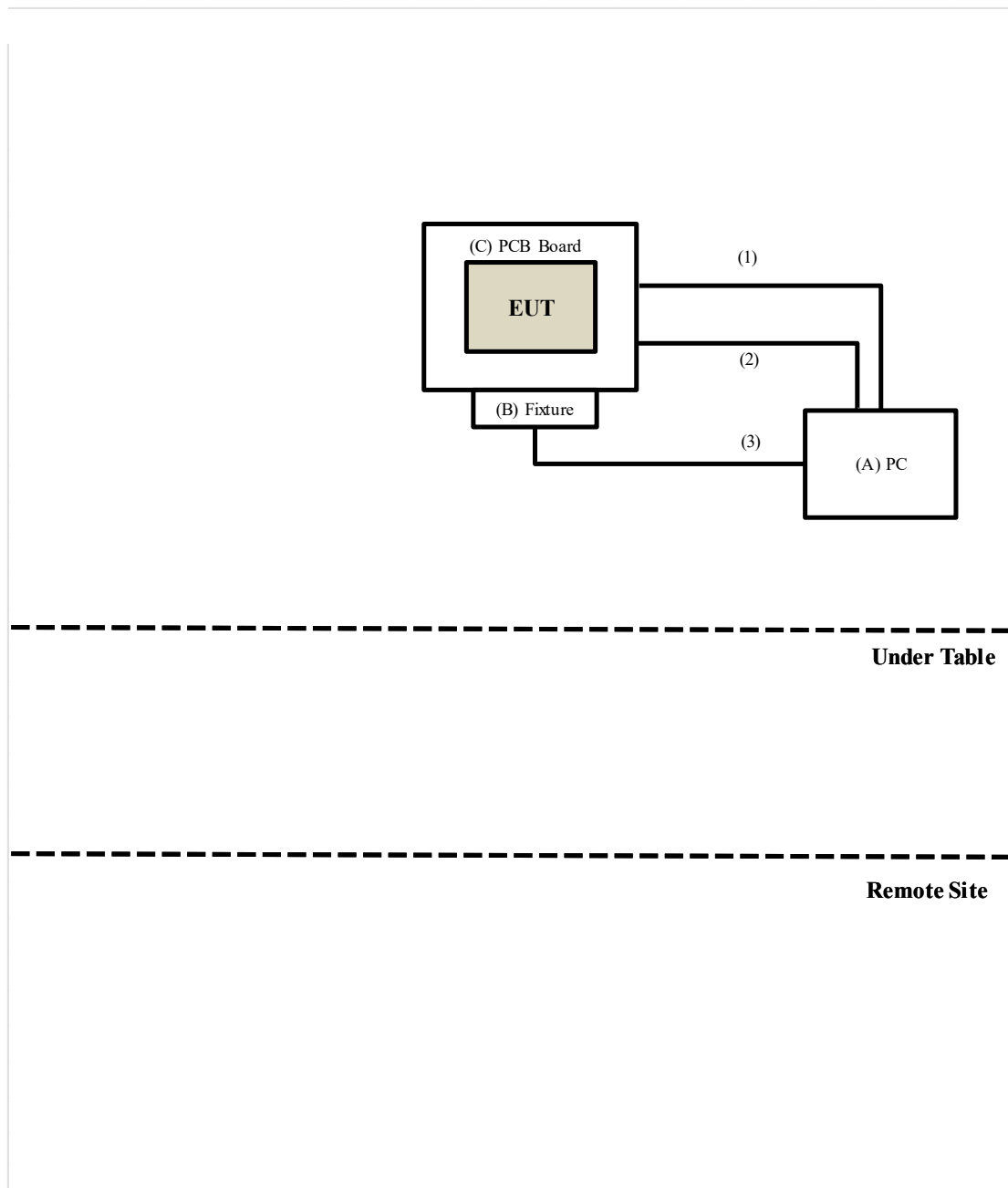
Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

## Test Setup

Controlled using a bespoke application (WIFI : Typing RF command by terminal tool (ubuntu terminal)) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.

## Setup Diagram for Test

### **Tx Mode**



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## 9. Test Results

### 9.1. Conducted Output Power

#### Requirements

For systems using digital modulation in the 2400-2483.5 MHz bands: 1 Watt.

Note:

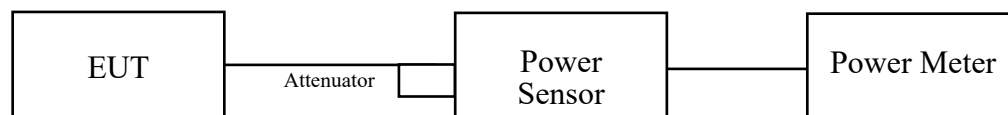
1.  $P_{\text{Out}}$  = maximum conducted output power in dBm,  $G_{\text{TX}}$  = the maximum transmitting antenna directional gain in dBi, B is the 26 dB emission bandwidth in megahertz
2. If EUT with Multiple Transmitter Output:
  - a. Directional Gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / N_{\text{ant}}]$  dBi.  
Nant: Number of Transmit Antennas  
G1, G2,..., Gn: Gain of Individual Antennas  
Example: two antenna and gain 5 dBi / 3dBi, so if it was used for TxBF power measurement  
Directional Gain =  $10 \log[(105/20 + 103/20)^2 / 2]$  dBi = 7.07 dBi
  - b. Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices, CDD  
Array Gain = 0 dB (i.e., no array gain) for  $N_{\text{ANT}} \leq 4$ ;  
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{\text{ANT}}$ ;  
Array Gain =  $5 \log(N_{\text{ANT}}/N_{\text{SS}})$  dB or 3 dB, whichever is less for 20-MHz channel widths with  $N_{\text{ANT}} \geq 5$ .  
Example: Maximum antenna gain = 5 dBi and  $N_{\text{ANT}} \leq 4$ , so if it was used for CDD power measurement  
Directional Gain = 5 dBi + Array Gain = 5 dBi + 0 dB = 5 dBi
  - c. For power measurement of KDB 662911 is used with multiple transmitter output. Total conducted power is the sum of the conducted power levels measured at the various output ports.

#### Test Procedure

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level for Peak Power.

A AVG power sensor was used on the output port of the EUT. A power meter was used to read the response of the AVG power sensor, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Record the power level for AVG Power (Reference only).

#### Test Setup



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

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## Test Data

| Mode           | CH | Freq.<br>(MHz) | Peak Power (dBm) |         | Total PK<br>Power<br>(mW) | Total PK<br>Power<br>(dBm) | AVG Power<br>(dBm) |         | Total<br>Power<br>(mW) | Total<br>Power<br>(dBm) | Limit<br>(dBm) | Result |
|----------------|----|----------------|------------------|---------|---------------------------|----------------------------|--------------------|---------|------------------------|-------------------------|----------------|--------|
|                |    |                | Chain 0          | Chain 1 |                           |                            | Chain 0            | Chain 1 |                        |                         |                |        |
| 802.11b        | 1  | 2412           | 16.44            | -       | 44.055                    | 16.44                      | 13.61              | -       | 22.961                 | 13.61                   | 30             | PASS   |
|                | 2  | 2417           | 17.31            | -       | 53.827                    | 17.31                      | 14.21              | -       | 26.363                 | 14.21                   | 30             | PASS   |
|                | 6  | 2437           | 19.11            | -       | 81.47                     | 19.11                      | 16.16              | -       | 41.305                 | 16.16                   | 30             | PASS   |
|                | 10 | 2457           | 19.3             | -       | 85.114                    | 19.3                       | 16.22              | -       | 41.879                 | 16.22                   | 30             | PASS   |
|                | 11 | 2462           | 19.16            | -       | 82.414                    | 19.16                      | 16.11              | -       | 40.832                 | 16.11                   | 30             | PASS   |
| 802.11g        | 1  | 2412           | 20.18            | 21.84   | 257.04                    | 24.1                       | 12.08              | 12.01   | 32.063                 | 15.06                   | 30             | PASS   |
|                | 2  | 2417           | 23.7             | 22.86   | 427.563                   | 26.31                      | 14.61              | 14.29   | 55.719                 | 17.46                   | 30             | PASS   |
|                | 6  | 2437           | 24.08            | 23.84   | 497.737                   | 26.97                      | 16.5               | 16.88   | 93.325                 | 19.7                    | 30             | PASS   |
|                | 10 | 2457           | 23.38            | 23.57   | 445.656                   | 26.49                      | 15.12              | 15.86   | 71.121                 | 18.52                   | 30             | PASS   |
|                | 11 | 2462           | 20.71            | 20.23   | 223.357                   | 23.49                      | 11.1               | 11.29   | 26.363                 | 14.21                   | 30             | PASS   |
| 802.11n(HT20)  | 1  | 2412           | 19.61            | 19.83   | 187.499                   | 22.73                      | 11.05              | 10.72   | 24.547                 | 13.9                    | 30             | PASS   |
|                | 2  | 2417           | 22.64            | 21.88   | 338.065                   | 25.29                      | 13.12              | 13.25   | 41.687                 | 16.2                    | 30             | PASS   |
|                | 6  | 2437           | 23.81            | 23.54   | 466.659                   | 26.69                      | 16.44              | 16.55   | 89.331                 | 19.51                   | 30             | PASS   |
|                | 10 | 2457           | 21.45            | 22.69   | 325.087                   | 25.12                      | 12.9               | 12.6    | 37.67                  | 15.76                   | 30             | PASS   |
|                | 11 | 2462           | 18.16            | 17.39   | 120.226                   | 20.8                       | 8.68               | 8.56    | 14.555                 | 11.63                   | 30             | PASS   |
| 802.11ax(HE20) | 1  | 2412           | 20.01            | 20.28   | 207.014                   | 23.16                      | 11.4               | 11.08   | 26.607                 | 14.25                   | 30             | PASS   |
|                | 2  | 2417           | 23.05            | 22.35   | 373.25                    | 25.72                      | 13.6               | 13.6    | 45.814                 | 16.61                   | 30             | PASS   |
|                | 6  | 2437           | 24.16            | 23.9    | 505.825                   | 27.04                      | 16.88              | 16.96   | 98.401                 | 19.93                   | 30             | PASS   |
|                | 10 | 2457           | 21.87            | 23.1    | 358.096                   | 25.54                      | 13.35              | 13      | 41.591                 | 16.19                   | 30             | PASS   |
|                | 11 | 2462           | 18.63            | 17.78   | 133.045                   | 21.24                      | 9.07               | 8.92    | 15.885                 | 12.01                   | 30             | PASS   |

Note: Average Power is for reference Only.

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## 9.2. Radiated Spurious Emission

### Requirements

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

| Frequency(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.

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## **Test Procedures**

[For 9 kHz ~ 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 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 height of antenna 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. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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**Note:**

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.

**Peak**

| Frequency      | RBW     | VBW     |
|----------------|---------|---------|
| 9 kHz~150 kHz  | 200 Hz  | 600 Hz  |
| 150 kHz~30 MHz | 10 kHz  | 30 kHz  |
| 30 MHz~1 GHz   | 120 kHz | 360 kHz |
| Above 1GHz     | 1 MHz   | 3 MHz   |

**Average for above 1GHz**

| RBW  | VBW                      |
|------|--------------------------|
| 1MHz | Refer to original report |

- d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
- e. Test data of Result value (dBuV/m) = Reading value (dBuV) + Correction Factor (dB/m).
- f. Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
- g. Test data of Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB).
- h. Test data of Notation "@" = Fundamental Frequency
- i. Test data of Notation "\*" = The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

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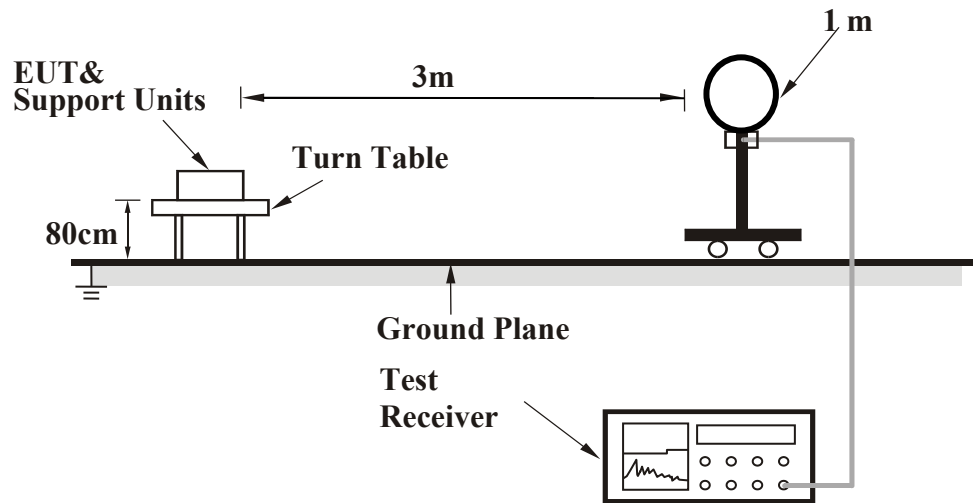
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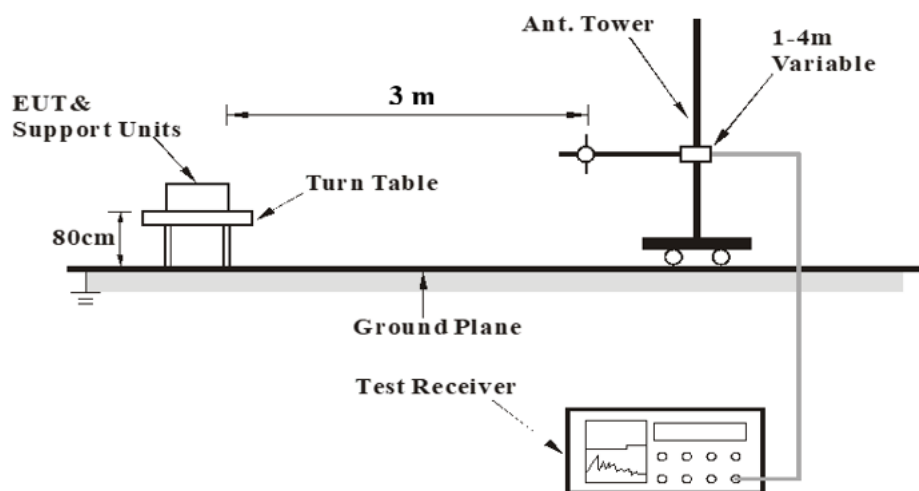
Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

## Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >

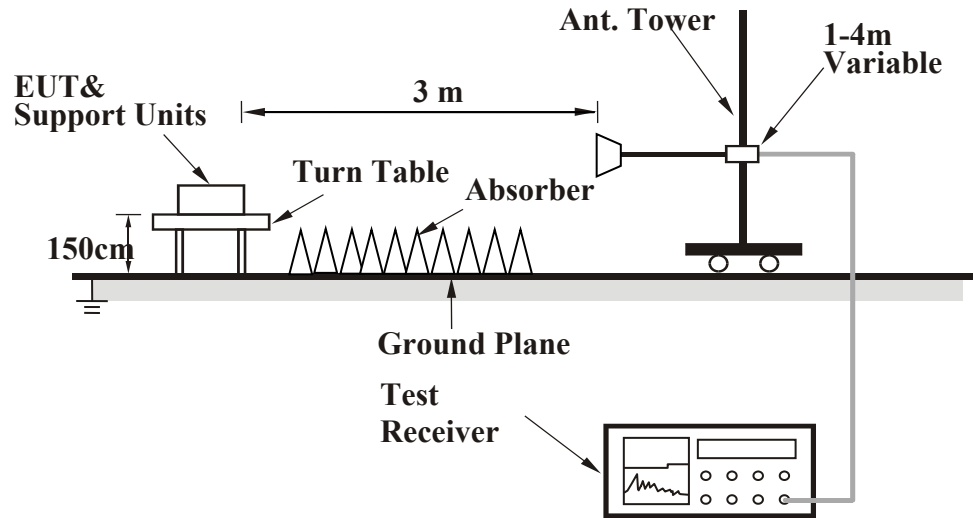


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<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.

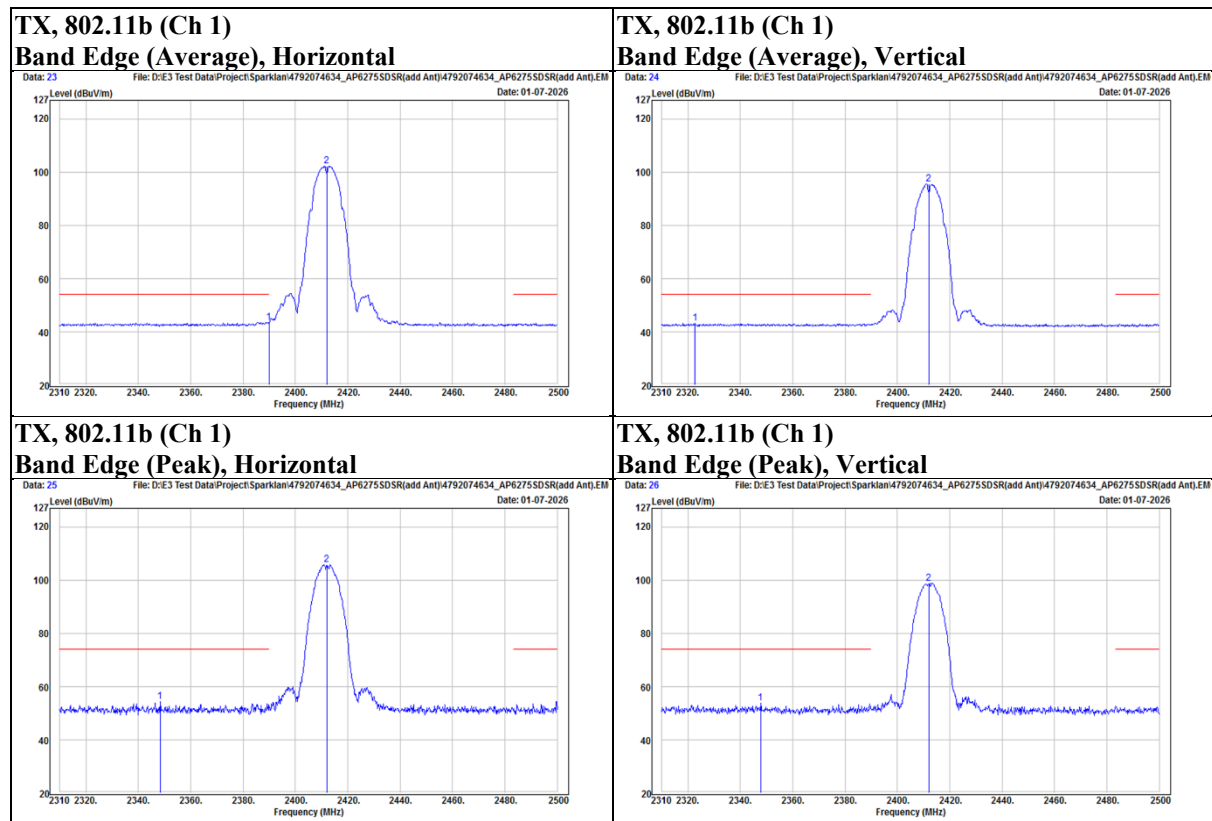
## Test Data

### Antenna No.16 (RFA-25-KP290-4B-70)

#### Above 1 GHz

|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11b | Channel | 1 |
|------|---------|---------|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|--------------|----------|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| Horizontal   |          | 2348.38         | 43.15          | 11.22          | 54.37           | 74             | -19.63      | PK     |
|              |          | 2389.99         | 32.5           | 11.15          | 43.65           | 54             | -10.35      | AVG    |
|              | @        | 2412            | 94.75          | 11.08          | 105.83          | N/A            | N/A         | PK     |
|              | @        | 2412            | 91.23          | 11.08          | 102.31          | N/A            | N/A         | AVG    |
| Vertical     |          | 2322.73         | 31.98          | 11.22          | 43.2            | 54             | -10.8       | AVG    |
|              |          | 2347.81         | 42.63          | 11.22          | 53.85           | 74             | -20.15      | PK     |
|              | @        | 2412            | 87.69          | 11.08          | 98.77           | N/A            | N/A         | PK     |
|              | @        | 2412            | 84.59          | 11.08          | 95.67           | N/A            | N/A         | AVG    |



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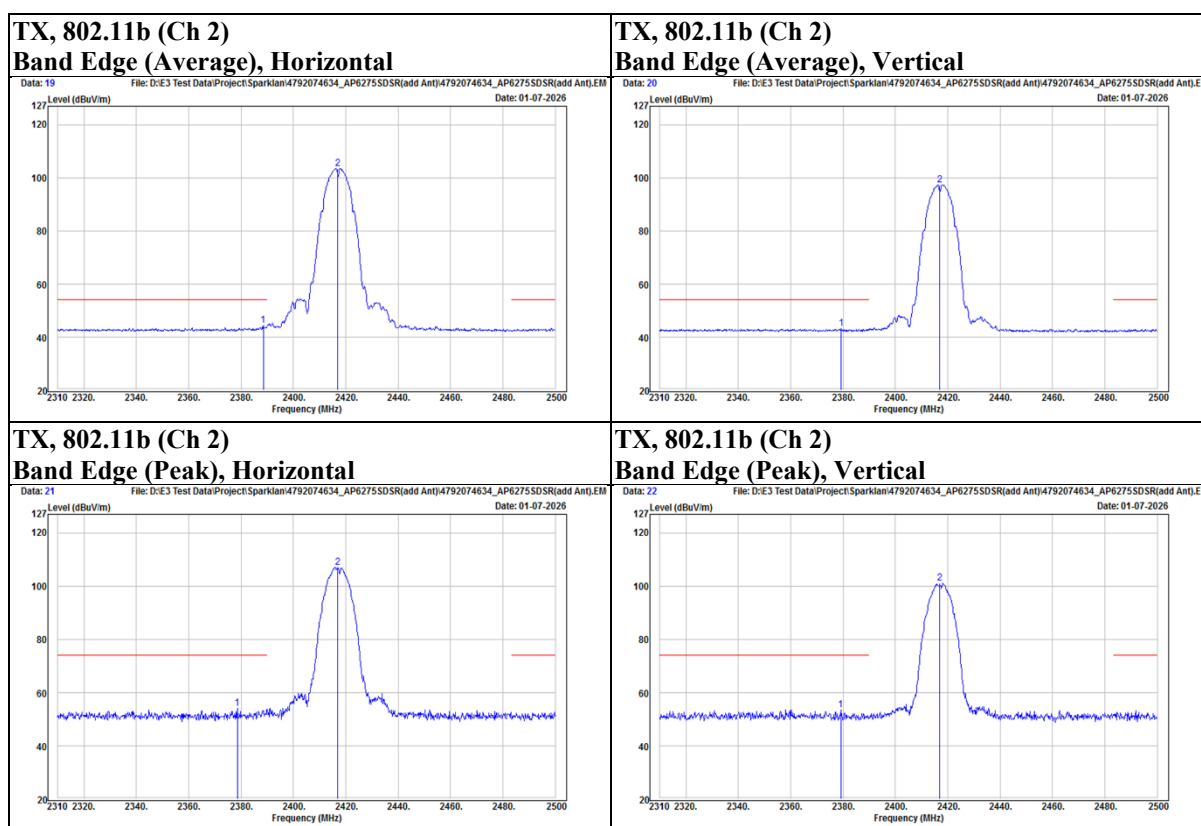
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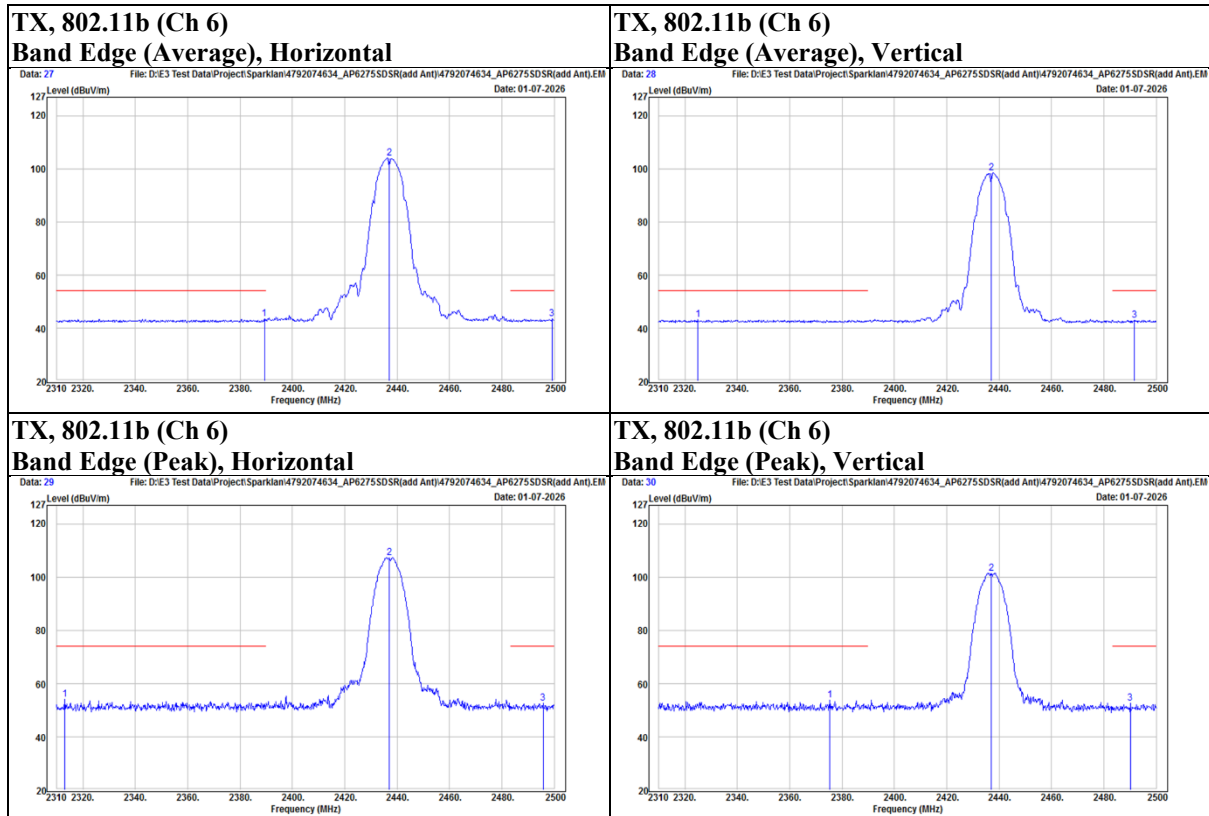
|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11b | Channel | 2 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2378.59            | 42.79             | 11.18             | 53.97              | 74                | -20.03         | PK     |
|              |          | 2388.47            | 33.35             | 11.16             | 44.51              | 54                | -9.49          | AVG    |
|              | @        | 2417               | 96                | 11.06             | 107.06             | N/A               | N/A            | PK     |
|              | @        | 2417               | 92.5              | 11.06             | 103.56             | N/A               | N/A            | AVG    |
| Vertical     |          | 2379.16            | 42.43             | 11.17             | 53.6               | 74                | -20.4          | PK     |
|              |          | 2379.35            | 32.01             | 11.17             | 43.18              | 54                | -10.82         | AVG    |
|              | @        | 2417               | 89.95             | 11.06             | 101.01             | N/A               | N/A            | PK     |
|              | @        | 2417               | 86.32             | 11.06             | 97.38              | N/A               | N/A            | AVG    |



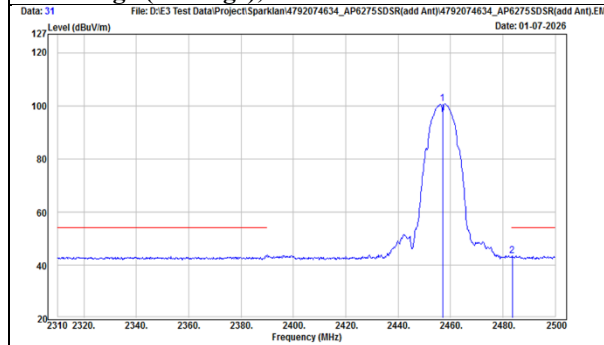
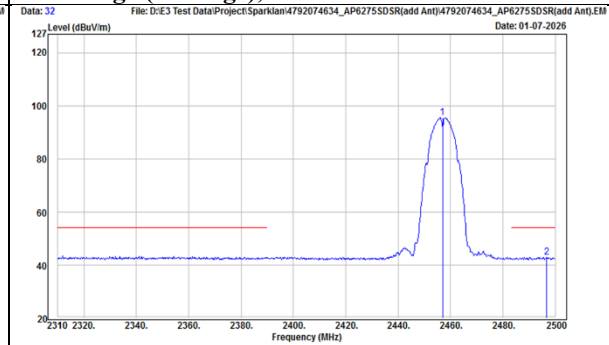
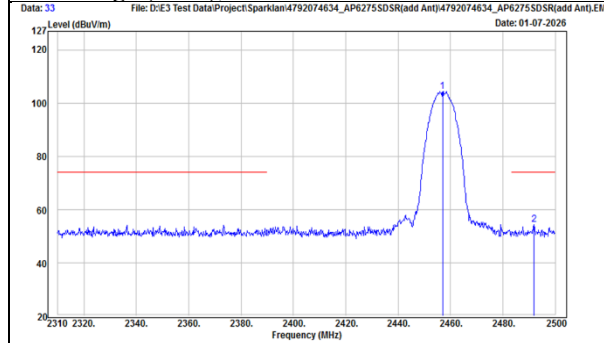
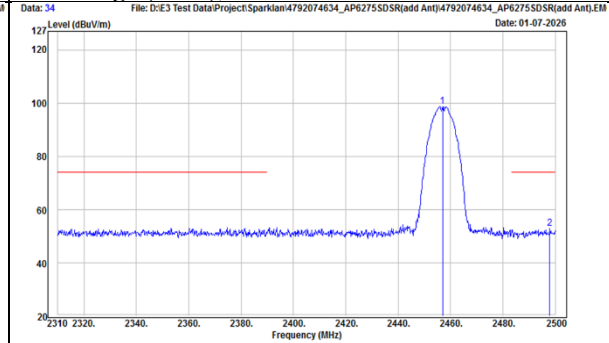
|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11b | Channel | 6 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2313.04            | 42.87             | 11.22             | 54.09              | 74                | -19.91         | PK     |
|              |          | 2389.42            | 32.23             | 11.15             | 43.38              | 54                | -10.62         | AVG    |
|              | @        | 2437               | 96.46             | 10.98             | 107.44             | N/A               | N/A            | PK     |
|              | @        | 2437               | 93                | 10.98             | 103.98             | N/A               | N/A            | AVG    |
|              |          | 2495.82            | 41.75             | 11.02             | 52.77              | 74                | -21.23         | PK     |
|              |          | 2499.24            | 32.39             | 11.03             | 43.42              | 54                | -10.58         | AVG    |
| Vertical     |          | 2325.01            | 31.98             | 11.23             | 43.21              | 54                | -10.79         | AVG    |
|              |          | 2375.36            | 42.6              | 11.18             | 53.78              | 74                | -20.22         | PK     |
|              | @        | 2437               | 90.52             | 10.98             | 101.5              | N/A               | N/A            | PK     |
|              | @        | 2437               | 87.49             | 10.98             | 98.47              | N/A               | N/A            | AVG    |
|              |          | 2490.12            | 41.5              | 11.01             | 52.51              | 74                | -21.49         | PK     |
|              |          | 2491.64            | 32.01             | 11.01             | 43.02              | 54                | -10.98         | AVG    |



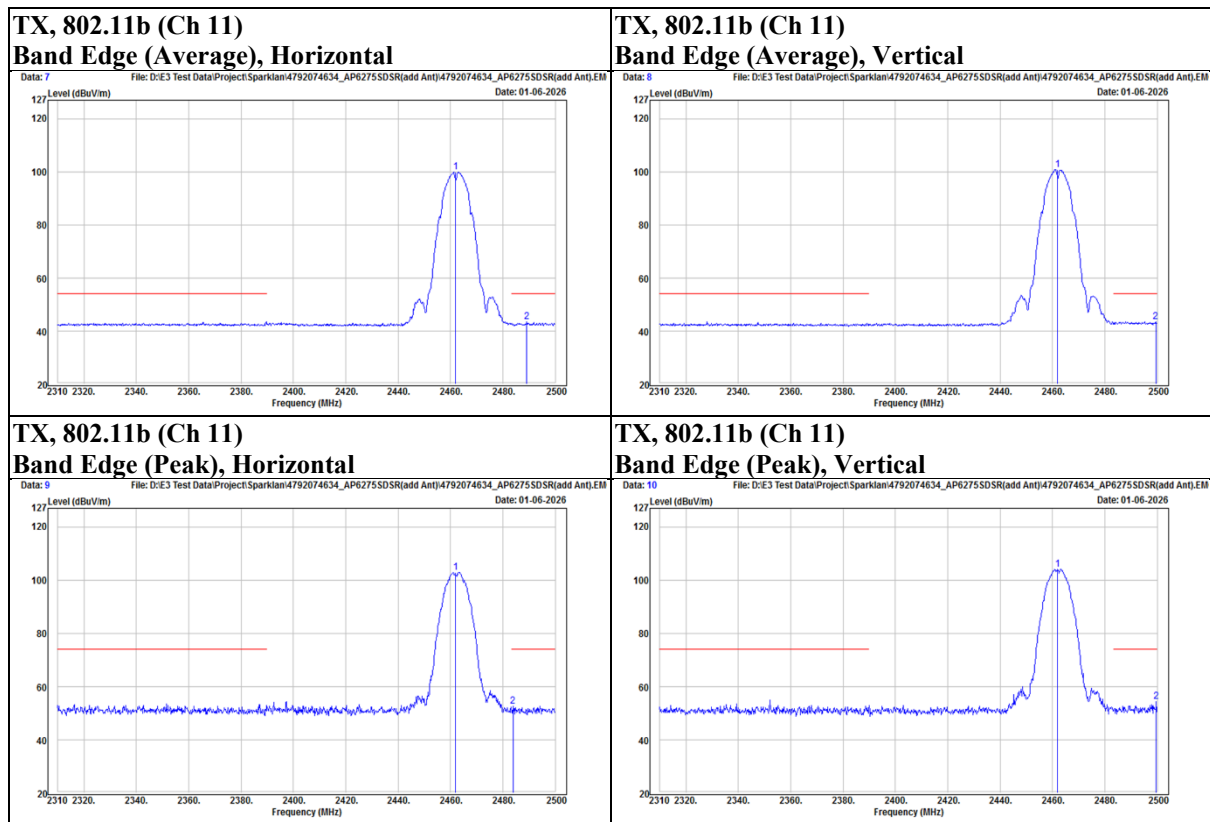
|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11b | Channel | 10 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2457               | 93.47             | 10.95             | 104.42             | N/A               | N/A            | PK     |
|              | @        | 2457               | 89.84             | 10.95             | 100.79             | N/A               | N/A            | AVG    |
|              |          | 2483.66            | 32.45             | 11                | 43.45              | 54                | -10.55         | AVG    |
|              |          | 2492.02            | 43.33             | 11.02             | 54.35              | 74                | -19.65         | PK     |
| Vertical     | @        | 2457               | 87.72             | 10.95             | 98.67              | N/A               | N/A            | PK     |
|              | @        | 2457               | 84.63             | 10.95             | 95.58              | N/A               | N/A            | AVG    |
|              |          | 2496.77            | 31.9              | 11.02             | 42.92              | 54                | -11.08         | AVG    |
|              |          | 2497.91            | 41.86             | 11.03             | 52.89              | 74                | -21.11         | PK     |

**TX, 802.11b (Ch 10)**
**Band Edge (Average), Horizontal**

**TX, 802.11b (Ch 10)**
**Band Edge (Average), Vertical**

**TX, 802.11b (Ch 10)**
**Band Edge (Peak), Horizontal**

**TX, 802.11b (Ch 10)**
**Band Edge (Peak), Vertical**


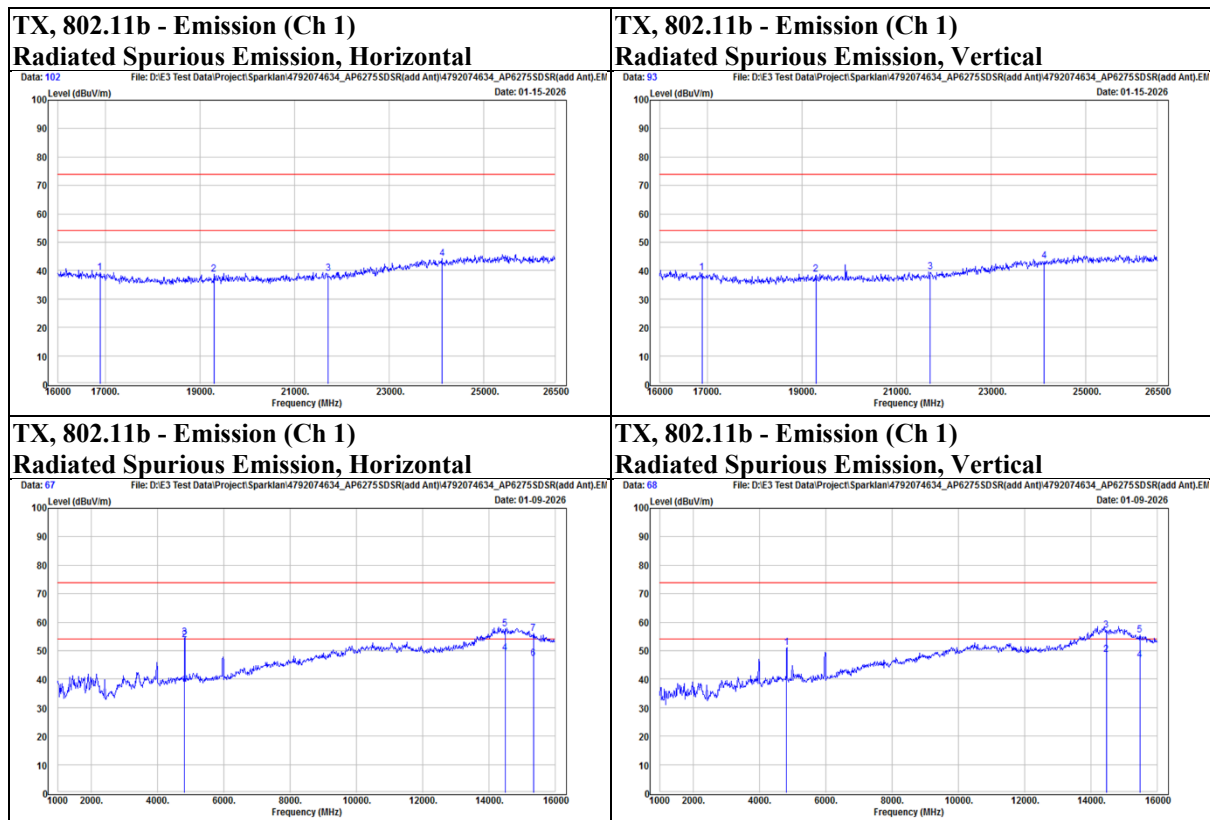
|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11b | Channel | 11 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2462               | 92.03             | 10.96             | 102.99             | N/A               | N/A            | PK     |
|              | @        | 2462               | 88.91             | 10.96             | 99.87              | N/A               | N/A            | AVG    |
|              |          | 2483.85            | 41.59             | 11                | 52.59              | 74                | -21.41         | PK     |
|              |          | 2489.17            | 32.43             | 11.01             | 43.44              | 54                | -10.56         | AVG    |
| Vertical     | @        | 2462               | 93.1              | 10.96             | 104.06             | N/A               | N/A            | PK     |
|              | @        | 2462               | 89.86             | 10.96             | 100.82             | N/A               | N/A            | AVG    |
|              |          | 2499.43            | 32.46             | 11.03             | 43.49              | 54                | -10.51         | AVG    |
|              |          | 2499.62            | 43.31             | 11.03             | 54.34              | 74                | -19.66         | PK     |



|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11b - Emission | Channel | 1 |
|------|--------------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 4824               | 50.47             | 4.2               | 54.67              | 74                | -19.33         | PK     |
|              |          | 4824               | 49.55             | 4.2               | 53.75              | 54                | -0.25          | AVG    |
|              | *        | 4824               | 34.06             | 4.2               | 38.26              | 54                | -15.74         | AVG    |
|              |          | 14500              | 29.58             | 28                | 57.58              | 74                | -16.42         | PK     |
|              |          | 14500              | 21.31             | 28                | 49.31              | 54                | -4.69          | AVG    |
|              |          | 15355              | 29.59             | 26.36             | 55.95              | 74                | -18.05         | PK     |
|              |          | 15355              | 20.76             | 26.36             | 47.12              | 54                | -6.88          | AVG    |
|              | *        | 16884              | 33.83             | 5.54              | 39.37              | 74                | -34.63         | PK     |
|              | *        | 19296              | 34.99             | 3.66              | 38.65              | 74                | -35.35         | PK     |
|              | *        | 21708              | 32.88             | 6.18              | 39.06              | 74                | -34.94         | PK     |
| Vertical     | *        | 24120              | 33.17             | 11.03             | 44.2               | 74                | -29.8          | PK     |
|              | *        | 4824               | 46.85             | 4.2               | 51.05              | 74                | -22.95         | PK     |
|              |          | 14470              | 29.05             | 27.97             | 57.02              | 74                | -16.98         | PK     |
|              |          | 14470              | 20.78             | 27.97             | 48.75              | 54                | -5.25          | AVG    |
|              |          | 15490              | 29.62             | 25.95             | 55.57              | 74                | -18.43         | PK     |
|              |          | 15490              | 20.79             | 25.95             | 46.74              | 54                | -7.26          | AVG    |
|              | *        | 16884              | 33.76             | 5.54              | 39.3               | 74                | -34.7          | PK     |
|              | *        | 19296              | 35.09             | 3.66              | 38.75              | 74                | -35.25         | PK     |
|              | *        | 21708              | 33.5              | 6.18              | 39.68              | 74                | -34.32         | PK     |
|              | *        | 24120              | 32.24             | 11.03             | 43.27              | 74                | -30.73         | PK     |

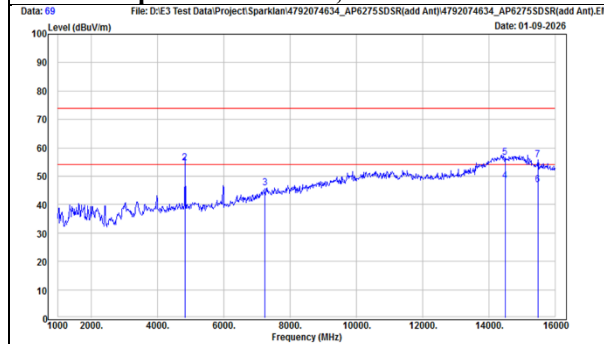


|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11b - Emission | Channel | 2 |
|------|--------------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 4834               | 50.42             | 4.19              | 54.61              | 74                | -19.39         | PK     |
|              |          | 4834               | 49.04             | 4.19              | 53.23              | 54                | -0.77          | AVG    |
|              | *        | 7251               | 33.72             | 12.22             | 45.94              | 74                | -28.06         | PK     |
|              |          | 14500              | 28.67             | 28                | 56.67              | 74                | -17.33         | PK     |
|              |          | 14500              | 20.4              | 28                | 48.4               | 54                | -5.6           | AVG    |
|              |          | 15490              | 29.78             | 25.95             | 55.73              | 74                | -18.27         | PK     |
|              |          | 15490              | 20.95             | 25.95             | 46.9               | 54                | -7.1           | AVG    |
|              | *        | 16919              | 34.04             | 5.49              | 39.53              | 74                | -34.47         | PK     |
|              | *        | 19336              | 34.42             | 3.72              | 38.14              | 74                | -35.86         | PK     |
|              | *        | 21753              | 33.2              | 6.2               | 39.4               | 74                | -34.6          | PK     |
| Vertical     | *        | 24170              | 32.83             | 11.17             | 44                 | 74                | -30            | PK     |
|              | *        | 4834               | 41.99             | 4.19              | 46.18              | 74                | -27.82         | PK     |
|              | *        | 7251               | 32.47             | 12.22             | 44.69              | 74                | -29.31         | PK     |
|              |          | 14485              | 28.43             | 27.98             | 56.41              | 74                | -17.59         | PK     |
|              |          | 14485              | 20.16             | 27.98             | 48.14              | 54                | -5.86          | AVG    |
|              |          | 15685              | 29.99             | 25.44             | 55.43              | 74                | -18.57         | PK     |
|              |          | 15685              | 21.16             | 25.44             | 46.6               | 54                | -7.4           | AVG    |
|              | *        | 16919              | 33.98             | 5.49              | 39.47              | 74                | -34.53         | PK     |
|              | *        | 19336              | 35.33             | 3.72              | 39.05              | 74                | -34.95         | PK     |
|              | *        | 21753              | 33.53             | 6.2               | 39.73              | 74                | -34.27         | PK     |
|              | *        | 24170              | 32.69             | 11.17             | 43.86              | 74                | -30.14         | PK     |

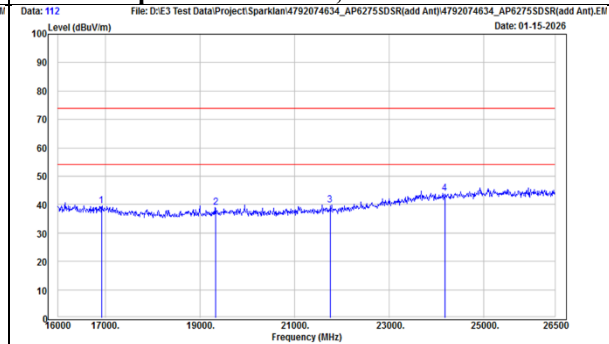
### TX, 802.11b - Emission (Ch 2)

#### Radiated Spurious Emission, Horizontal



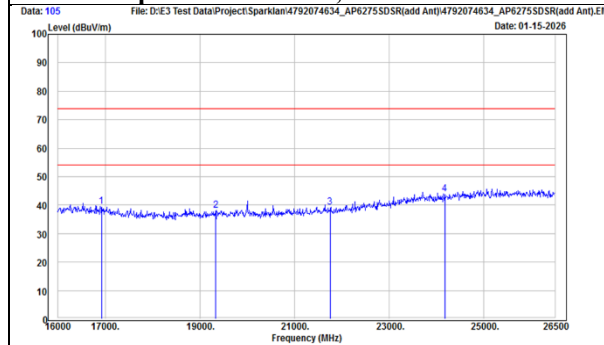
### TX, 802.11b - Emission (Ch 2)

#### Radiated Spurious Emission, Vertical



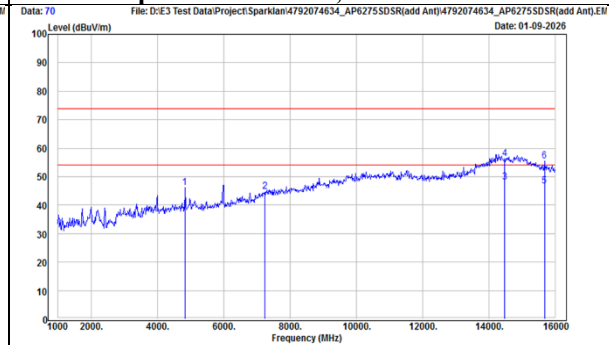
### TX, 802.11b - Emission (Ch 2)

#### Radiated Spurious Emission, Horizontal



### TX, 802.11b - Emission (Ch 2)

#### Radiated Spurious Emission, Vertical



## Underwriters Laboratories Taiwan Co., Ltd.

Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

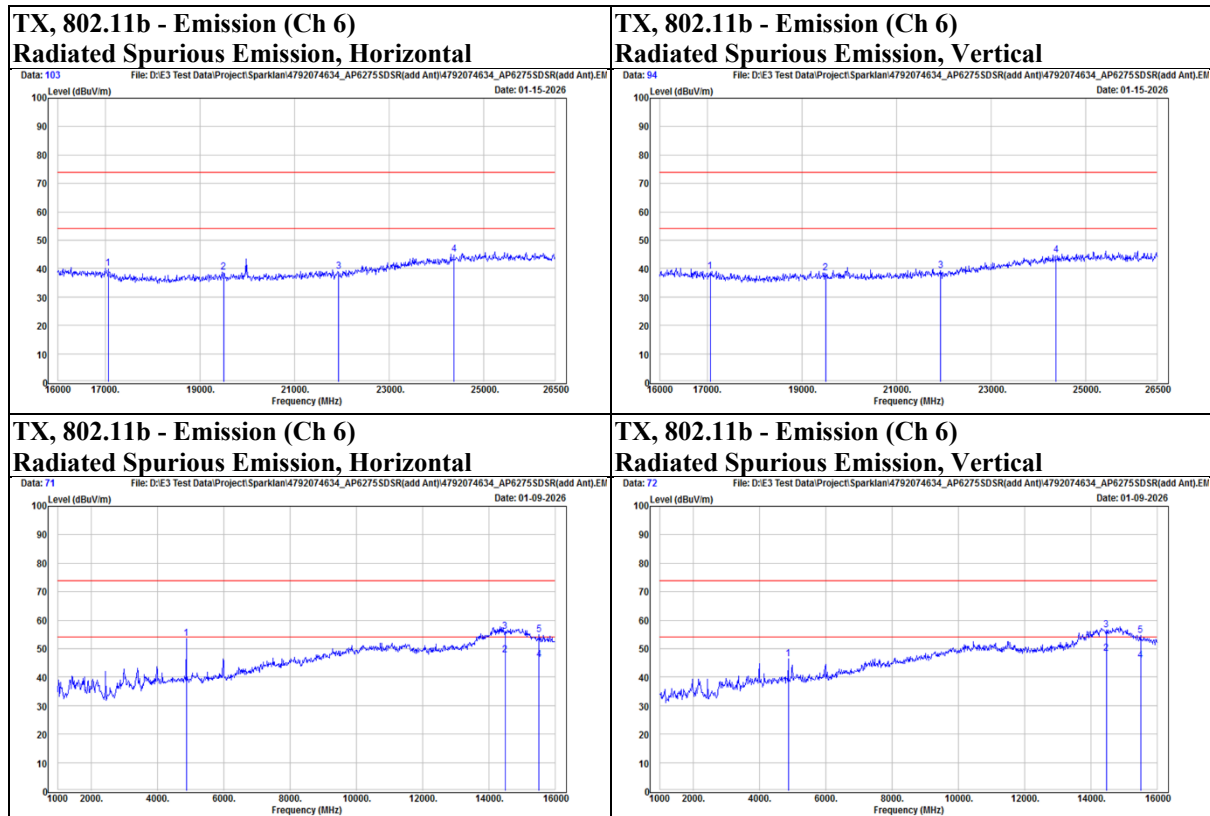
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

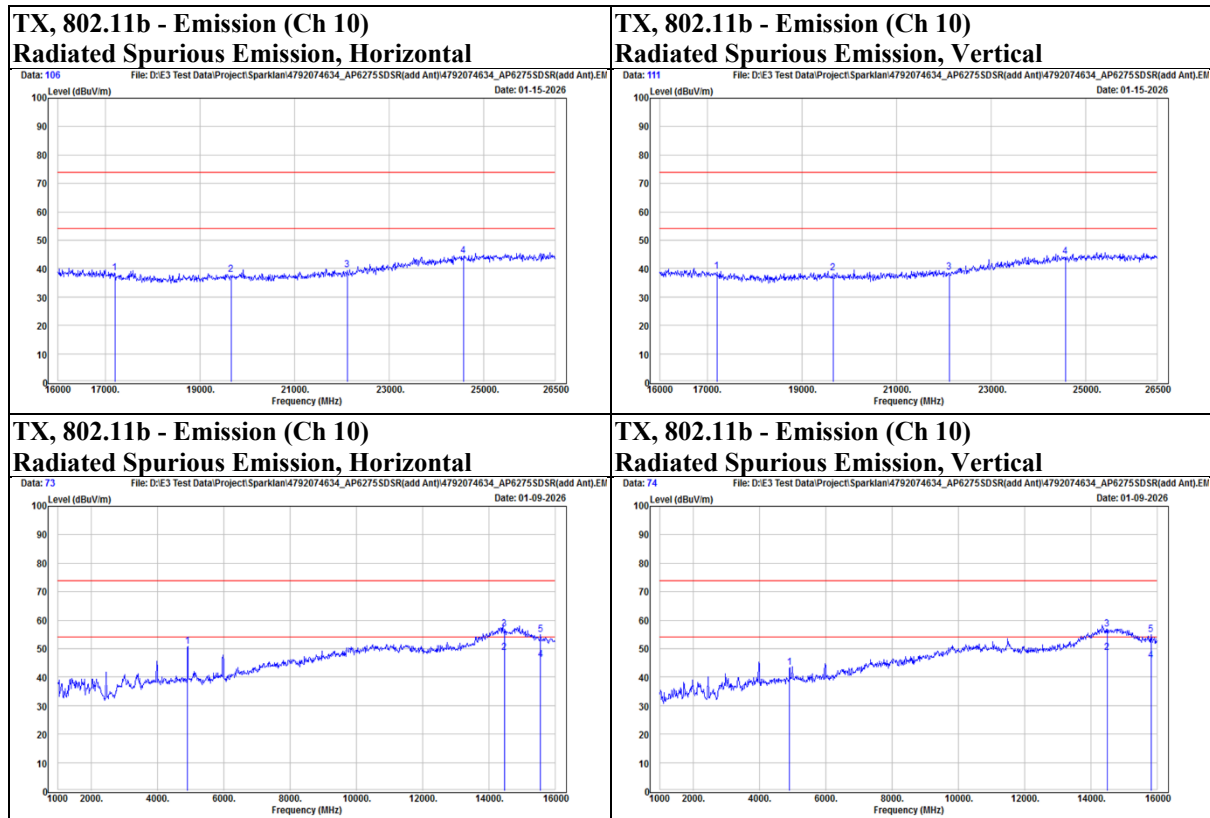
|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11b - Emission | Channel | 6 |
|------|--------------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4874               | 49.09             | 4.4               | 53.49              | 74                | -20.51         | PK     |
|              |          | 14500              | 28.1              | 28                | 56.1               | 74                | -17.9          | PK     |
|              |          | 14500              | 19.83             | 28                | 47.83              | 54                | -6.17          | AVG    |
|              |          | 15520              | 29.12             | 25.84             | 54.96              | 74                | -19.04         | PK     |
|              |          | 15520              | 20.29             | 25.84             | 46.13              | 54                | -7.87          | AVG    |
|              | *        | 17059              | 34.64             | 5.36              | 40                 | 74                | -34            | PK     |
|              | *        | 19496              | 34.83             | 3.99              | 38.82              | 74                | -35.18         | PK     |
|              | *        | 21933              | 32.71             | 6.24              | 38.95              | 74                | -35.05         | PK     |
| Vertical     | *        | 24370              | 33.13             | 11.82             | 44.95              | 74                | -29.05         | PK     |
|              | *        | 4874               | 41.89             | 4.4               | 46.29              | 74                | -27.71         | PK     |
|              |          | 14470              | 28.61             | 27.97             | 56.58              | 74                | -17.42         | PK     |
|              |          | 14470              | 20.34             | 27.97             | 48.31              | 54                | -5.69          | AVG    |
|              |          | 15505              | 28.7              | 25.9              | 54.6               | 74                | -19.4          | PK     |
|              |          | 15505              | 19.87             | 25.9              | 45.77              | 54                | -8.23          | AVG    |
|              | *        | 17059              | 33.62             | 5.36              | 38.98              | 74                | -35.02         | PK     |
|              | *        | 19496              | 34.5              | 3.99              | 38.49              | 74                | -35.51         | PK     |
|              | *        | 21933              | 33.15             | 6.24              | 39.39              | 74                | -34.61         | PK     |
|              | *        | 24370              | 32.88             | 11.82             | 44.7               | 74                | -29.3          | PK     |



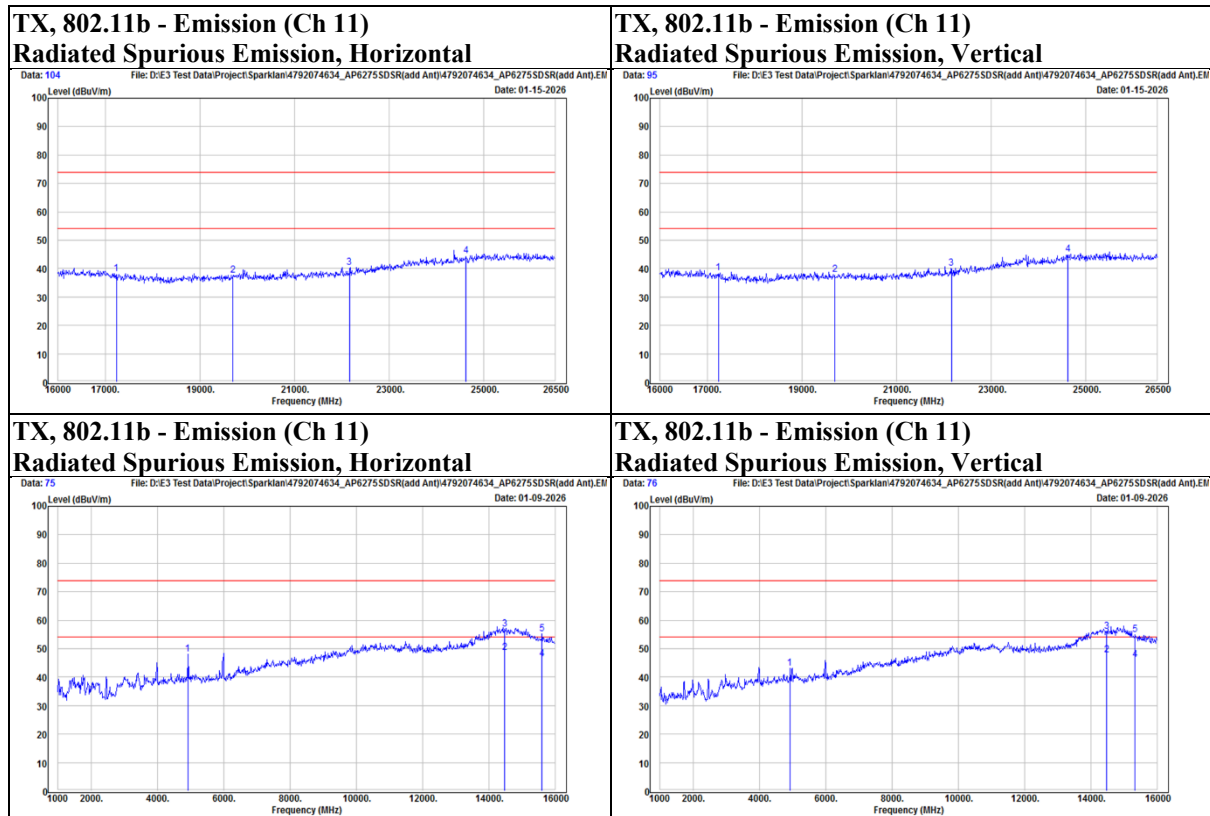
|      |                    |         |    |
|------|--------------------|---------|----|
| Mode | 802.11b - Emission | Channel | 10 |
|------|--------------------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4914               | 46.21             | 4.62              | 50.83              | 74                | -23.17         | PK     |
|              |          | 14470              | 28.83             | 27.97             | 56.8               | 74                | -17.2          | PK     |
|              |          | 14470              | 20.56             | 27.97             | 48.53              | 54                | -5.47          | AVG    |
|              |          | 15565              | 29.25             | 25.63             | 54.88              | 74                | -19.12         | PK     |
|              |          | 15565              | 20.42             | 25.63             | 46.05              | 54                | -7.95          | AVG    |
|              | *        | 17199              | 33.33             | 5.23              | 38.56              | 74                | -35.44         | PK     |
|              | *        | 19656              | 33.91             | 3.98              | 37.89              | 74                | -36.11         | PK     |
|              | *        | 22113              | 33.03             | 6.5               | 39.53              | 74                | -34.47         | PK     |
| Vertical     | *        | 24570              | 32.3              | 12.34             | 44.64              | 74                | -29.36         | PK     |
|              | *        | 4914               | 38.85             | 4.62              | 43.47              | 74                | -30.53         | PK     |
|              |          | 14500              | 28.85             | 28                | 56.85              | 74                | -17.15         | PK     |
|              |          | 14500              | 20.58             | 28                | 48.58              | 54                | -5.42          | AVG    |
|              |          | 15820              | 29.6              | 25.21             | 54.81              | 74                | -19.19         | PK     |
|              |          | 15820              | 20.77             | 25.21             | 45.98              | 54                | -8.02          | AVG    |
|              | *        | 17199              | 33.78             | 5.23              | 39.01              | 74                | -34.99         | PK     |
|              | *        | 19656              | 34.44             | 3.98              | 38.42              | 74                | -35.58         | PK     |
|              | *        | 22113              | 32.23             | 6.5               | 38.73              | 74                | -35.27         | PK     |
|              | *        | 24570              | 32.01             | 12.34             | 44.35              | 74                | -29.65         | PK     |



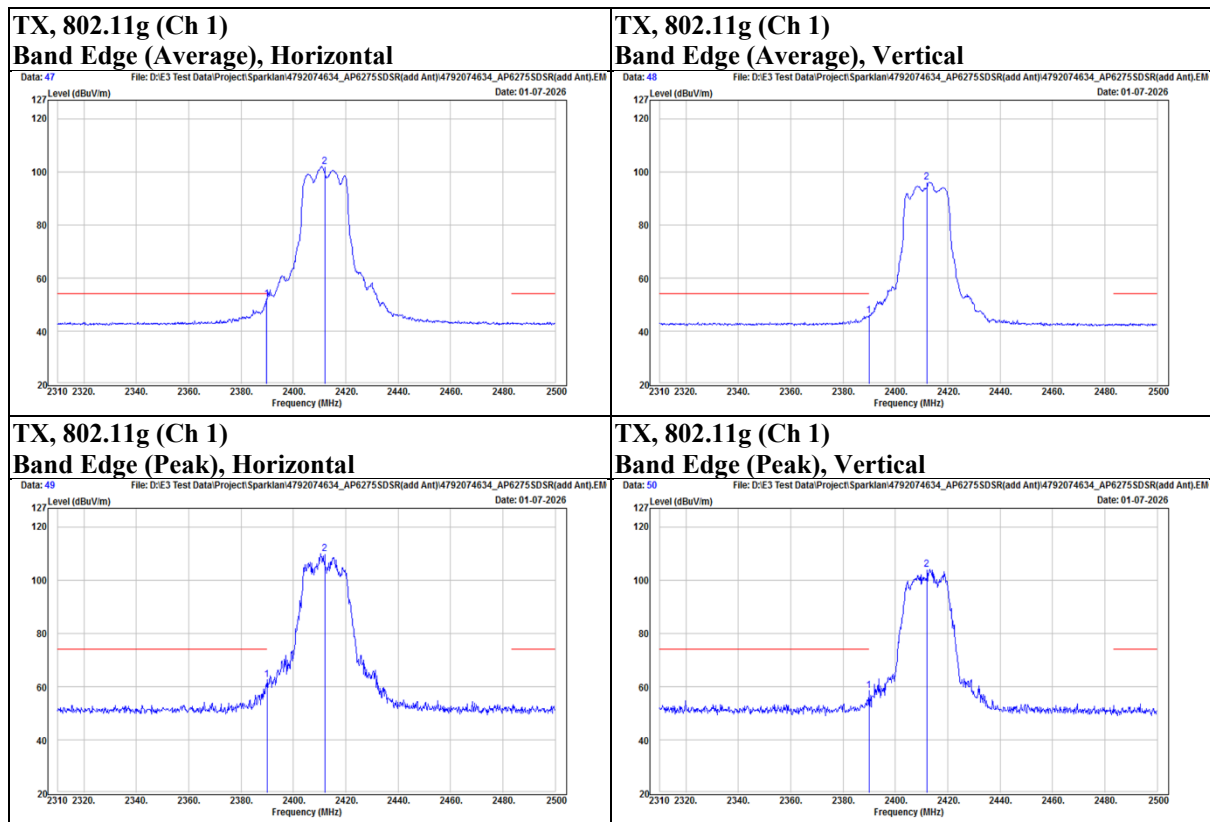
|      |                    |         |    |
|------|--------------------|---------|----|
| Mode | 802.11b - Emission | Channel | 11 |
|------|--------------------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4924               | 43.51             | 4.62              | 48.13              | 74                | -25.87         | PK     |
|              |          | 14485              | 28.91             | 27.98             | 56.89              | 74                | -17.11         | PK     |
|              |          | 14485              | 20.64             | 27.98             | 48.62              | 54                | -5.38          | AVG    |
|              |          | 15610              | 29.84             | 25.47             | 55.31              | 74                | -18.69         | PK     |
|              |          | 15610              | 21.01             | 25.47             | 46.48              | 54                | -7.52          | AVG    |
|              | *        | 17234              | 33.03             | 5.16              | 38.19              | 74                | -35.81         | PK     |
|              | *        | 19696              | 33.76             | 3.98              | 37.74              | 74                | -36.26         | PK     |
|              | *        | 22158              | 33.89             | 6.6               | 40.49              | 74                | -33.51         | PK     |
| Vertical     | *        | 24620              | 31.99             | 12.38             | 44.37              | 74                | -29.63         | PK     |
|              | *        | 4924               | 38.62             | 4.62              | 43.24              | 74                | -30.76         | PK     |
|              |          | 14485              | 28.09             | 27.98             | 56.07              | 74                | -17.93         | PK     |
|              |          | 14485              | 19.82             | 27.98             | 47.8               | 54                | -6.2           | AVG    |
|              |          | 15340              | 28.56             | 26.45             | 55.01              | 74                | -18.99         | PK     |
|              |          | 15340              | 19.73             | 26.45             | 46.18              | 54                | -7.82          | AVG    |
|              | *        | 17234              | 33.25             | 5.16              | 38.41              | 74                | -35.59         | PK     |
|              | *        | 19696              | 34.02             | 3.98              | 38                 | 74                | -36            | PK     |
|              | *        | 22158              | 33.51             | 6.6               | 40.11              | 74                | -33.89         | PK     |
|              | *        | 24620              | 32.54             | 12.38             | 44.92              | 74                | -29.08         | PK     |



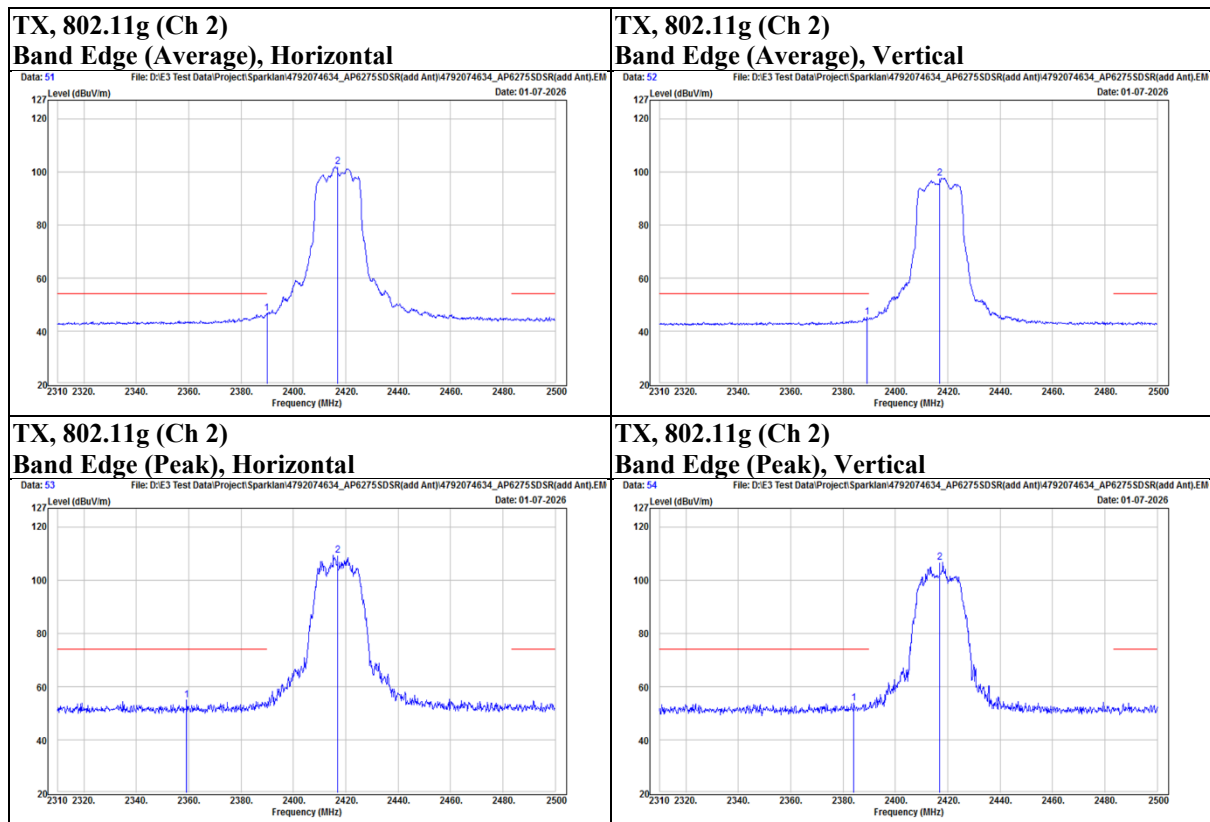
|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 1 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2389.8             | 40.91             | 11.15             | 52.06              | 54                | -1.94          | AVG    |
|              |          | 2389.99            | 51.33             | 11.15             | 62.48              | 74                | -11.52         | PK     |
|              | @        | 2412               | 98.82             | 11.08             | 109.9              | N/A               | N/A            | PK     |
|              | @        | 2412               | 90.85             | 11.08             | 101.93             | N/A               | N/A            | AVG    |
| Vertical     |          | 2389.99            | 47.47             | 11.15             | 58.62              | 74                | -15.38         | PK     |
|              |          | 2389.99            | 34.69             | 11.15             | 45.84              | 54                | -8.16          | AVG    |
|              | @        | 2412               | 92.98             | 11.08             | 104.06             | N/A               | N/A            | PK     |
|              | @        | 2412               | 84.98             | 11.08             | 96.06              | N/A               | N/A            | AVG    |



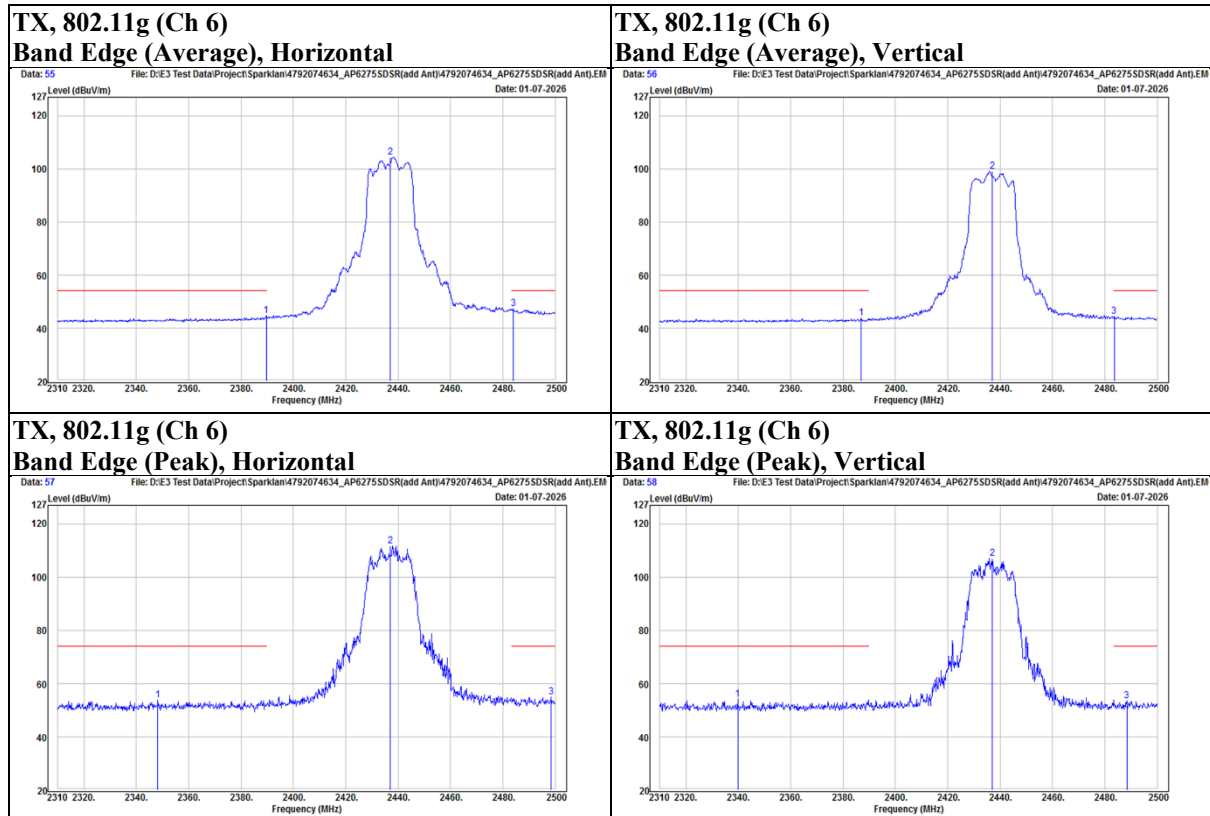
|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 2 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2359.21            | 43.64             | 11.21             | 54.85              | 74                | -19.15         | PK     |
|              |          | 2389.99            | 35.46             | 11.15             | 46.61              | 54                | -7.39          | AVG    |
|              | @        | 2417               | 98.16             | 11.06             | 109.22             | N/A               | N/A            | PK     |
|              | @        | 2417               | 90.87             | 11.06             | 101.93             | N/A               | N/A            | AVG    |
| Vertical     |          | 2384.1             | 42.53             | 11.16             | 53.69              | 74                | -20.31         | PK     |
|              |          | 2389.23            | 34.09             | 11.15             | 45.24              | 54                | -8.76          | AVG    |
|              | @        | 2417               | 95.53             | 11.06             | 106.59             | N/A               | N/A            | PK     |
|              | @        | 2417               | 86.63             | 11.06             | 97.69              | N/A               | N/A            | AVG    |



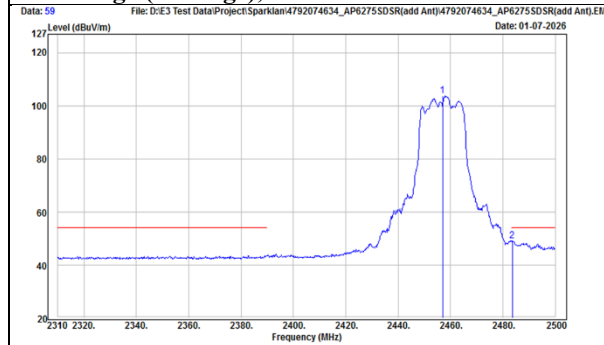
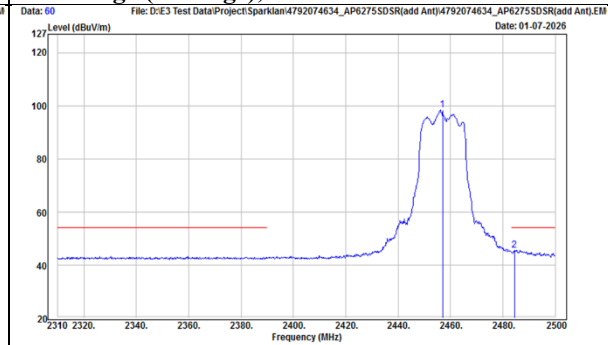
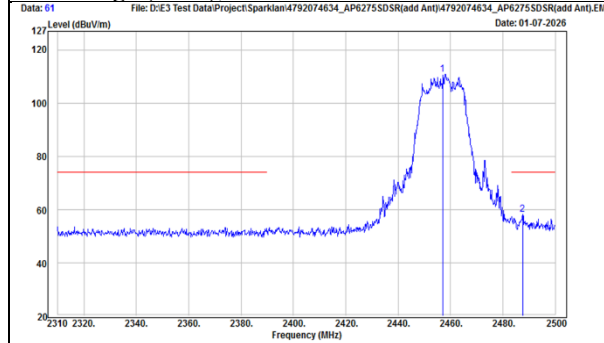
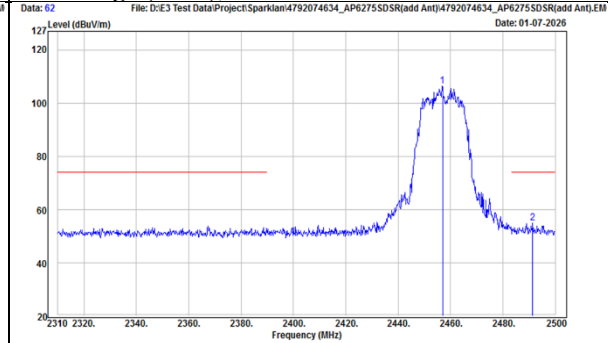
|      |         |         |   |
|------|---------|---------|---|
| Mode | 802.11g | Channel | 6 |
|------|---------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2348.19            | 42.44             | 11.22             | 53.66              | 74                | -20.34         | PK     |
|              |          | 2389.61            | 33.53             | 11.15             | 44.68              | 54                | -9.32          | AVG    |
|              | @        | 2437               | 100.79            | 10.98             | 111.77             | N/A               | N/A            | PK     |
|              | @        | 2437               | 93.5              | 10.98             | 104.48             | N/A               | N/A            | AVG    |
|              |          | 2484.04            | 36.2              | 11                | 47.2               | 54                | -6.8           | AVG    |
| Vertical     |          | 2498.48            | 43.81             | 11.03             | 54.84              | 74                | -19.16         | PK     |
|              |          | 2339.83            | 42.95             | 11.22             | 54.17              | 74                | -19.83         | PK     |
|              |          | 2386.95            | 32.52             | 11.16             | 43.68              | 54                | -10.32         | AVG    |
|              | @        | 2437               | 95.89             | 10.98             | 106.87             | N/A               | N/A            | PK     |
|              | @        | 2437               | 87.96             | 10.98             | 98.94              | N/A               | N/A            | AVG    |
|              |          | 2483.66            | 33.33             | 11                | 44.33              | 54                | -9.67          | AVG    |
|              |          | 2488.41            | 42.55             | 11.01             | 53.56              | 74                | -20.44         | PK     |



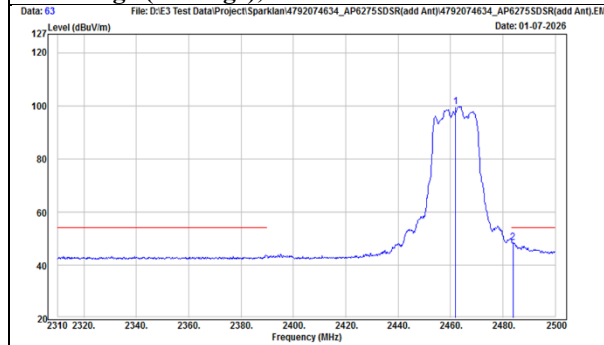
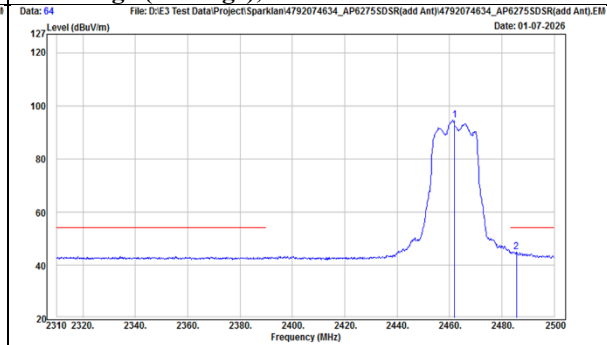
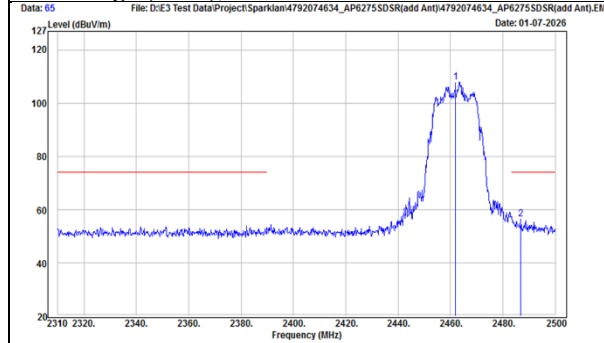
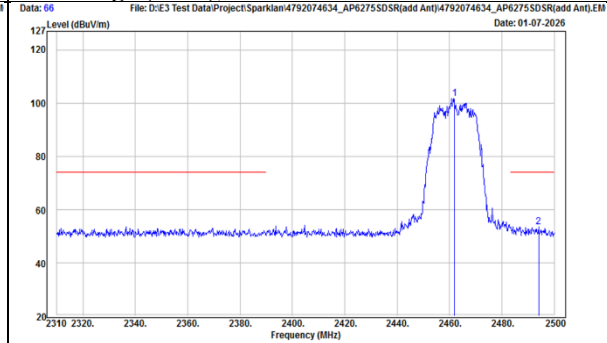
|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11g | Channel | 10 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2457               | 100.01            | 10.95             | 110.96             | N/A               | N/A            | PK     |
|              | @        | 2457               | 92.73             | 10.95             | 103.68             | N/A               | N/A            | AVG    |
|              |          | 2483.66            | 38.14             | 11                | 49.14              | 54                | -4.86          | AVG    |
|              |          | 2487.65            | 47.27             | 11.01             | 58.28              | 74                | -15.72         | PK     |
| Vertical     | @        | 2457               | 95.42             | 10.95             | 106.37             | N/A               | N/A            | PK     |
|              | @        | 2457               | 87.41             | 10.95             | 98.36              | N/A               | N/A            | AVG    |
|              |          | 2484.42            | 34.63             | 11                | 45.63              | 54                | -8.37          | AVG    |
|              |          | 2491.45            | 43.91             | 11.01             | 54.92              | 74                | -19.08         | PK     |

**TX, 802.11g (Ch 10)**
**Band Edge (Average), Horizontal**

**TX, 802.11g (Ch 10)**
**Band Edge (Average), Vertical**

**TX, 802.11g (Ch 10)**
**Band Edge (Peak), Horizontal**

**TX, 802.11g (Ch 10)**
**Band Edge (Peak), Vertical**


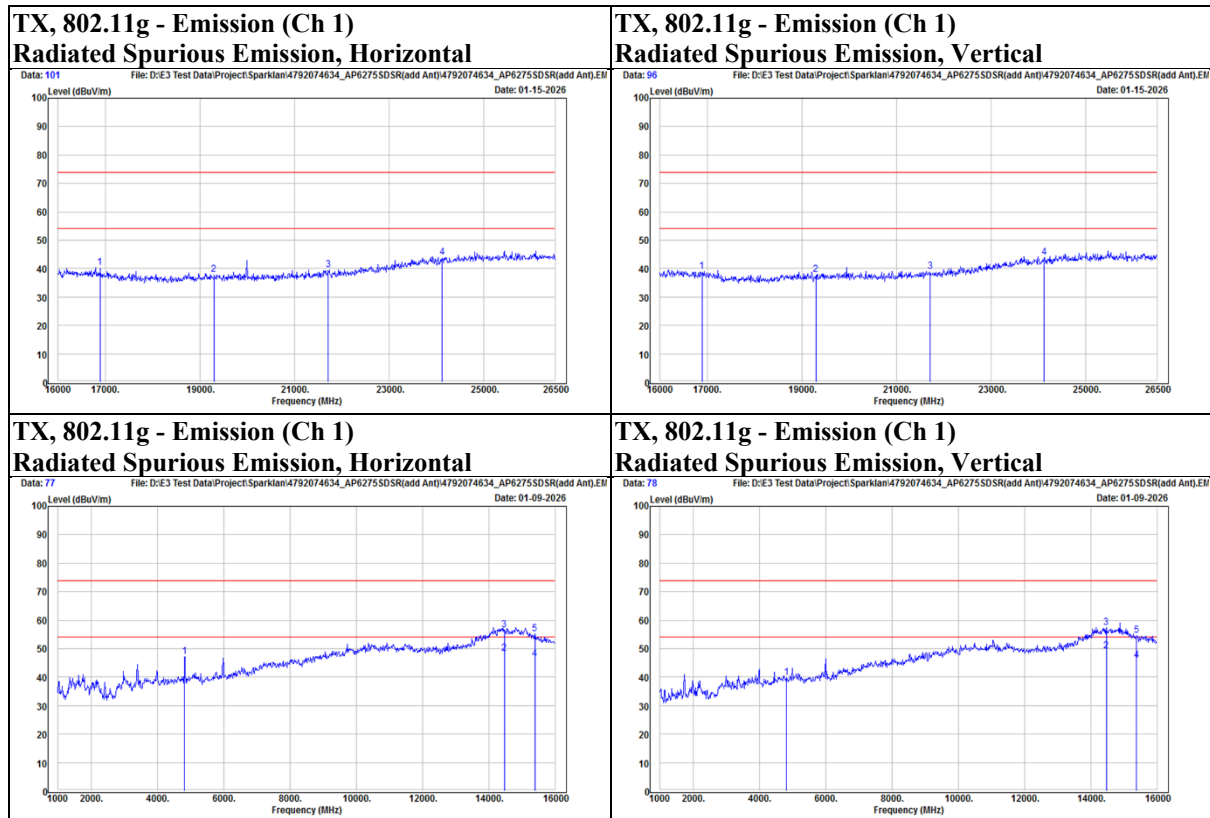
|      |         |         |    |
|------|---------|---------|----|
| Mode | 802.11g | Channel | 11 |
|------|---------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2462               | 96.83             | 10.96             | 107.79             | N/A               | N/A            | PK     |
|              | @        | 2462               | 88.73             | 10.96             | 99.69              | N/A               | N/A            | AVG    |
|              |          | 2483.85            | 37.58             | 11                | 48.58              | 54                | -5.42          | AVG    |
|              |          | 2486.89            | 45.4              | 11.01             | 56.41              | 74                | -17.59         | PK     |
| Vertical     | @        | 2462               | 90.8              | 10.96             | 101.76             | N/A               | N/A            | PK     |
|              | @        | 2462               | 83.57             | 10.96             | 94.53              | N/A               | N/A            | AVG    |
|              |          | 2485.56            | 34.09             | 11                | 45.09              | 54                | -8.91          | AVG    |
|              |          | 2494.11            | 42.61             | 11.02             | 53.63              | 74                | -20.37         | PK     |

**TX, 802.11g (Ch 11)**
**Band Edge (Average), Horizontal**

**TX, 802.11g (Ch 11)**
**Band Edge (Average), Vertical**

**TX, 802.11g (Ch 11)**
**Band Edge (Peak), Horizontal**

**TX, 802.11g (Ch 11)**
**Band Edge (Peak), Vertical**


|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11g - Emission | Channel | 1 |
|------|--------------------|---------|---|

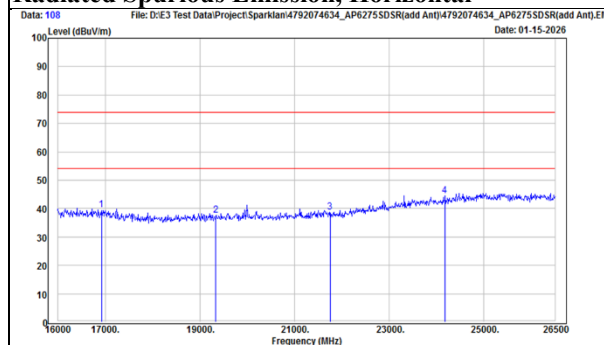
| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4824               | 42.97             | 4.2               | 47.17              | 74                | -26.83         | PK     |
|              |          | 14470              | 28.61             | 27.97             | 56.58              | 74                | -17.42         | PK     |
|              |          | 14470              | 20.34             | 27.97             | 48.31              | 54                | -5.69          | AVG    |
|              |          | 15400              | 28.98             | 26.14             | 55.12              | 74                | -18.88         | PK     |
|              |          | 15400              | 20.15             | 26.14             | 46.29              | 54                | -7.71          | AVG    |
|              | *        | 16884              | 34.73             | 5.54              | 40.27              | 74                | -33.73         | PK     |
|              | *        | 19296              | 34.24             | 3.66              | 37.9               | 74                | -36.1          | PK     |
|              | *        | 21708              | 33.3              | 6.18              | 39.48              | 74                | -34.52         | PK     |
| Vertical     | *        | 24120              | 33.04             | 11.03             | 44.07              | 74                | -29.93         | PK     |
|              | *        | 4824               | 35.69             | 4.2               | 39.89              | 74                | -34.11         | PK     |
|              |          | 14470              | 29.4              | 27.97             | 57.37              | 74                | -16.63         | PK     |
|              |          | 14470              | 21.13             | 27.97             | 49.1               | 54                | -4.9           | AVG    |
|              |          | 15385              | 28.57             | 26.22             | 54.79              | 74                | -19.21         | PK     |
|              |          | 15385              | 19.74             | 26.22             | 45.96              | 54                | -8.04          | AVG    |
|              | *        | 16884              | 33.53             | 5.54              | 39.07              | 74                | -34.93         | PK     |
|              | *        | 19296              | 34.2              | 3.66              | 37.86              | 74                | -36.14         | PK     |
|              | *        | 21708              | 32.92             | 6.18              | 39.1               | 74                | -34.9          | PK     |
|              | *        | 24120              | 32.95             | 11.03             | 43.98              | 74                | -30.02         | PK     |



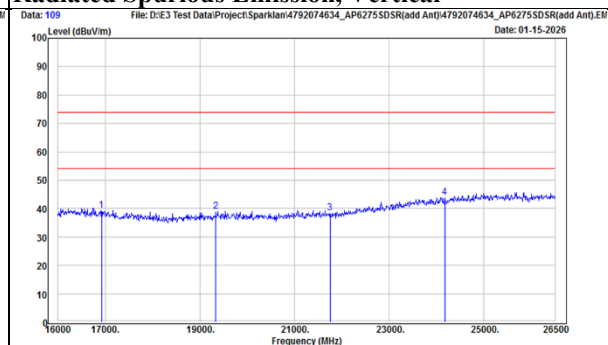
|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11g - Emission | Channel | 2 |
|------|--------------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4834               | 43.36             | 4.19              | 47.55              | 74                | -26.45         | PK     |
|              |          | 14470              | 27.91             | 27.97             | 55.88              | 74                | -18.12         | PK     |
|              |          | 14470              | 19.64             | 27.97             | 47.61              | 54                | -6.39          | AVG    |
|              |          | 15325              | 28.53             | 26.53             | 55.06              | 74                | -18.94         | PK     |
|              |          | 15325              | 19.7              | 26.53             | 46.23              | 54                | -7.77          | AVG    |
|              | *        | 16919              | 34.14             | 5.49              | 39.63              | 74                | -34.37         | PK     |
|              | *        | 19336              | 33.88             | 3.72              | 37.6               | 74                | -36.4          | PK     |
|              | *        | 21753              | 32.63             | 6.2               | 38.83              | 74                | -35.17         | PK     |
| Vertical     | *        | 24170              | 33.27             | 11.17             | 44.44              | 74                | -29.56         | PK     |
|              | *        | 4834               | 38.15             | 4.19              | 42.34              | 74                | -31.66         | PK     |
|              |          | 14470              | 28.29             | 27.97             | 56.26              | 74                | -17.74         | PK     |
|              |          | 14470              | 20.02             | 27.97             | 47.99              | 54                | -6.01          | AVG    |
|              |          | 15310              | 28.84             | 26.6              | 55.44              | 74                | -18.56         | PK     |
|              |          | 15310              | 20.01             | 26.6              | 46.61              | 54                | -7.39          | AVG    |
|              | *        | 16919              | 33.9              | 5.49              | 39.39              | 74                | -34.61         | PK     |
|              | *        | 19336              | 35.37             | 3.72              | 39.09              | 74                | -34.91         | PK     |
|              | *        | 21753              | 32.39             | 6.2               | 38.59              | 74                | -35.41         | PK     |
|              | *        | 24170              | 32.73             | 11.17             | 43.9               | 74                | -30.1          | PK     |

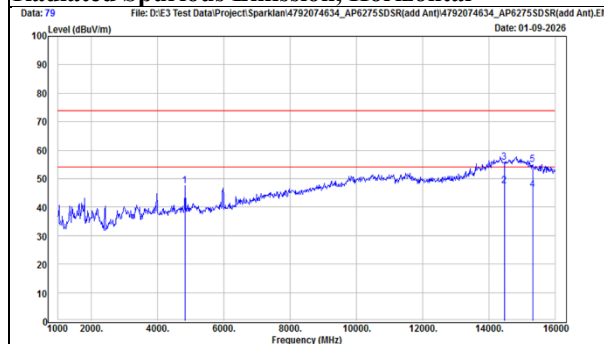
### TX, 802.11g - Emission (Ch 2) Radiated Spurious Emission, Horizontal



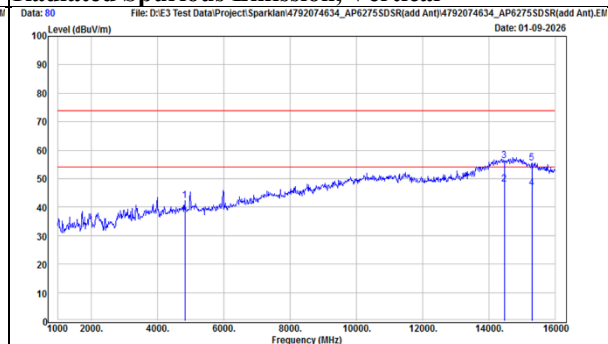
### TX, 802.11g - Emission (Ch 2) Radiated Spurious Emission, Vertical



### TX, 802.11g - Emission (Ch 2) Radiated Spurious Emission, Horizontal



### TX, 802.11g - Emission (Ch 2) Radiated Spurious Emission, Vertical



## Underwriters Laboratories Taiwan Co., Ltd.

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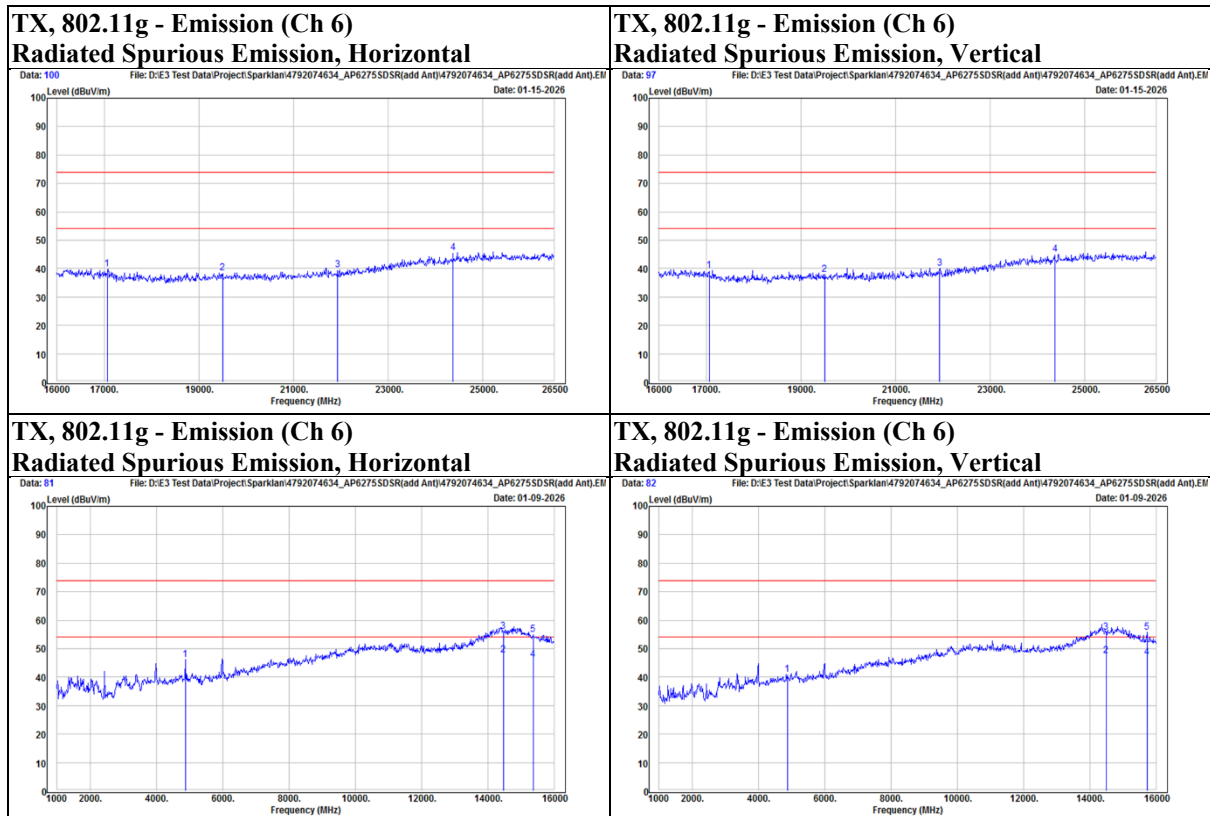
Telephone : +886-2-7737-3000

Facsimile (FAX) : +886-3-583-7948

Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

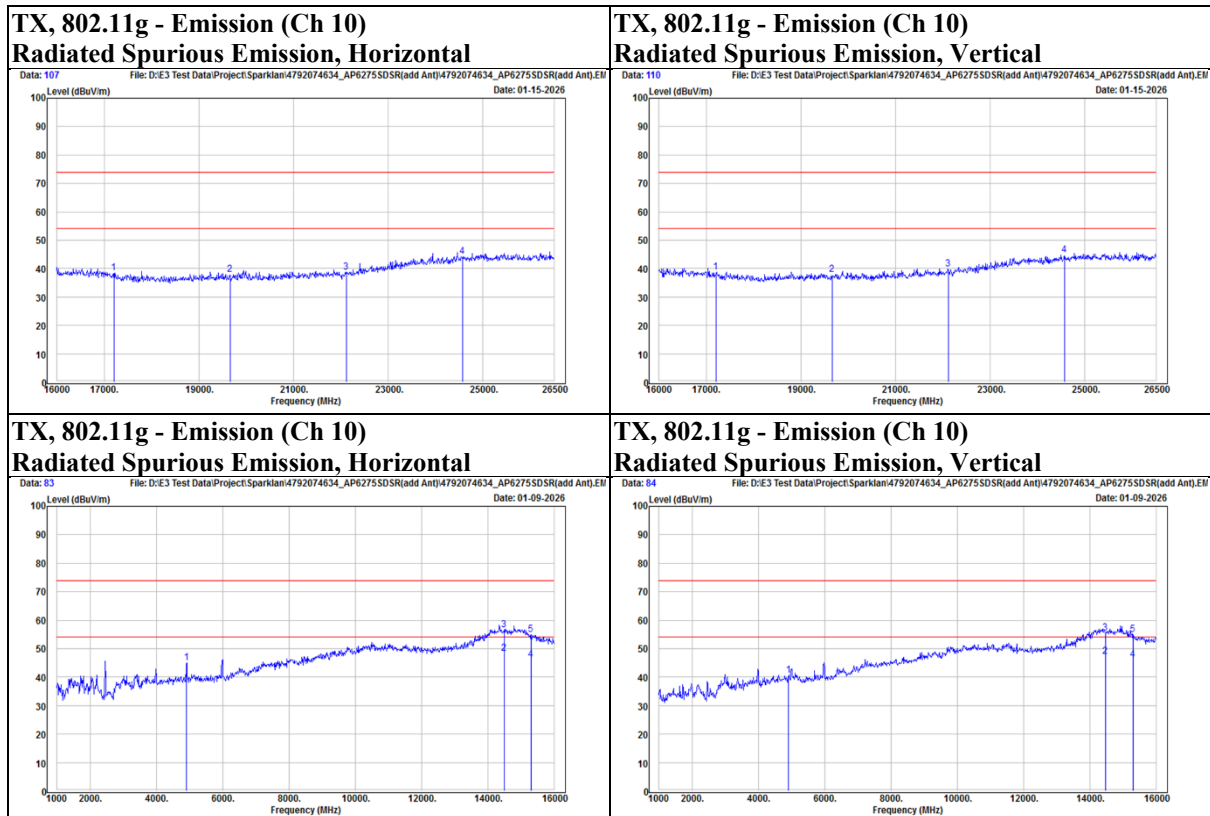
|      |                    |         |   |
|------|--------------------|---------|---|
| Mode | 802.11g - Emission | Channel | 6 |
|------|--------------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4874               | 41.89             | 4.4               | 46.29              | 74                | -27.71         | PK     |
|              |          | 14470              | 28.03             | 27.97             | 56                 | 74                | -18            | PK     |
|              |          | 14470              | 19.76             | 27.97             | 47.73              | 54                | -6.27          | AVG    |
|              |          | 15370              | 28.63             | 26.29             | 54.92              | 74                | -19.08         | PK     |
|              |          | 15370              | 19.8              | 26.29             | 46.09              | 54                | -7.91          | AVG    |
|              | *        | 17059              | 34.37             | 5.36              | 39.73              | 74                | -34.27         | PK     |
|              | *        | 19496              | 34.48             | 3.99              | 38.47              | 74                | -35.53         | PK     |
|              | *        | 21933              | 33.2              | 6.24              | 39.44              | 74                | -34.56         | PK     |
| Vertical     | *        | 24370              | 33.73             | 11.82             | 45.55              | 74                | -28.45         | PK     |
|              | *        | 4874               | 36.43             | 4.4               | 40.83              | 74                | -33.17         | PK     |
|              |          | 14500              | 27.7              | 28                | 55.7               | 74                | -18.3          | PK     |
|              |          | 14500              | 19.43             | 28                | 47.43              | 54                | -6.57          | AVG    |
|              |          | 15730              | 30.42             | 25.37             | 55.79              | 74                | -18.21         | PK     |
|              |          | 15730              | 21.59             | 25.37             | 46.96              | 54                | -7.04          | AVG    |
|              | *        | 17059              | 33.87             | 5.36              | 39.23              | 74                | -34.77         | PK     |
|              | *        | 19496              | 34.04             | 3.99              | 38.03              | 74                | -35.97         | PK     |
|              | *        | 21933              | 33.98             | 6.24              | 40.22              | 74                | -33.78         | PK     |
|              | *        | 24370              | 33.31             | 11.82             | 45.13              | 74                | -28.87         | PK     |



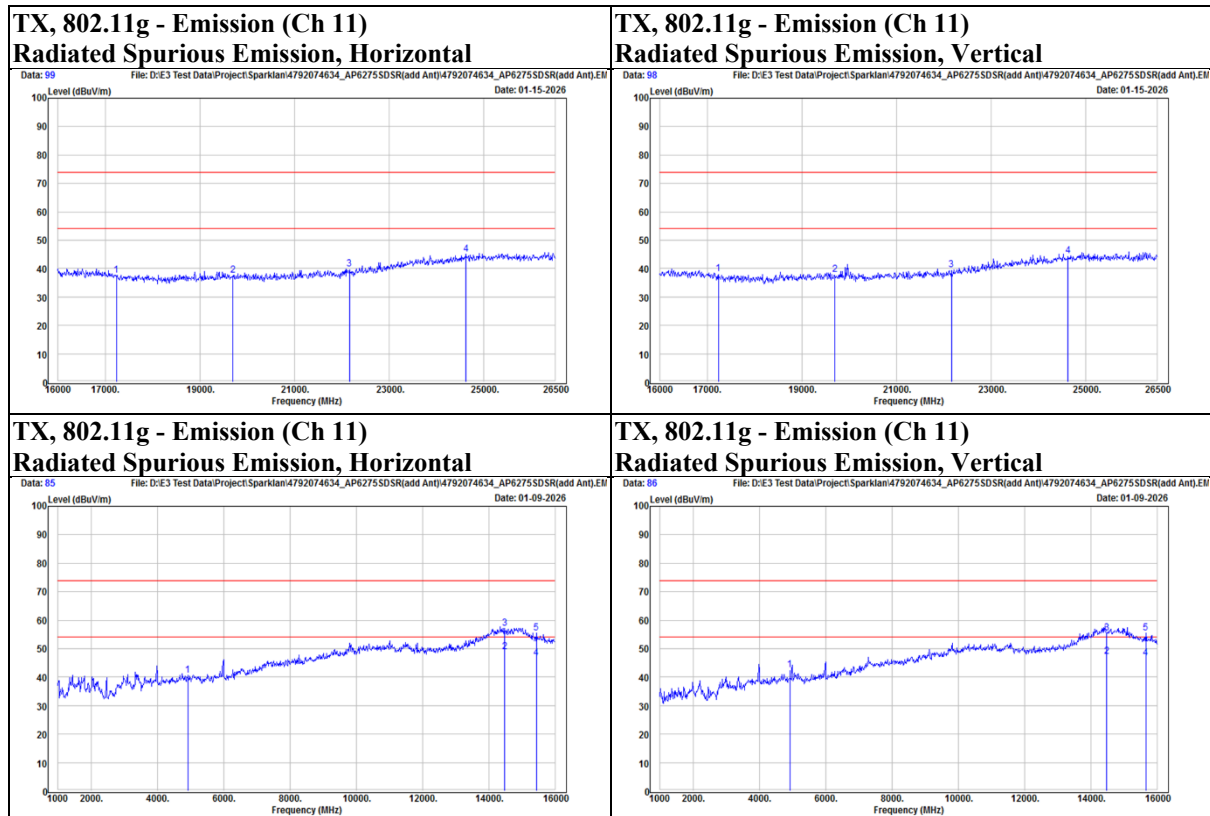
|      |                    |         |    |
|------|--------------------|---------|----|
| Mode | 802.11g - Emission | Channel | 10 |
|------|--------------------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4914               | 40.43             | 4.62              | 45.05              | 74                | -28.95         | PK     |
|              |          | 14500              | 28.57             | 28                | 56.57              | 74                | -17.43         | PK     |
|              |          | 14500              | 20.3              | 28                | 48.3               | 54                | -5.7           | AVG    |
|              |          | 15310              | 28.25             | 26.6              | 54.85              | 74                | -19.15         | PK     |
|              |          | 15310              | 19.42             | 26.6              | 46.02              | 54                | -7.98          | AVG    |
|              | *        | 17199              | 33.12             | 5.23              | 38.35              | 74                | -35.65         | PK     |
|              | *        | 19656              | 34.02             | 3.98              | 38                 | 74                | -36            | PK     |
|              | *        | 22113              | 32.27             | 6.5               | 38.77              | 74                | -35.23         | PK     |
| Vertical     | *        | 24570              | 31.81             | 12.34             | 44.15              | 74                | -29.85         | PK     |
|              | *        | 4914               | 36.17             | 4.62              | 40.79              | 74                | -33.21         | PK     |
|              |          | 14470              | 27.65             | 27.97             | 55.62              | 74                | -18.38         | PK     |
|              |          | 14470              | 19.38             | 27.97             | 47.35              | 54                | -6.65          | AVG    |
|              |          | 15310              | 28.35             | 26.6              | 54.95              | 74                | -19.05         | PK     |
|              |          | 15310              | 19.52             | 26.6              | 46.12              | 54                | -7.88          | AVG    |
|              | *        | 17199              | 33.56             | 5.23              | 38.79              | 74                | -35.21         | PK     |
|              | *        | 19656              | 34.01             | 3.98              | 37.99              | 74                | -36.01         | PK     |
|              | *        | 22113              | 33.25             | 6.5               | 39.75              | 74                | -34.25         | PK     |
|              | *        | 24570              | 32.36             | 12.34             | 44.7               | 74                | -29.3          | PK     |



|      |                    |         |    |
|------|--------------------|---------|----|
| Mode | 802.11g - Emission | Channel | 11 |
|------|--------------------|---------|----|

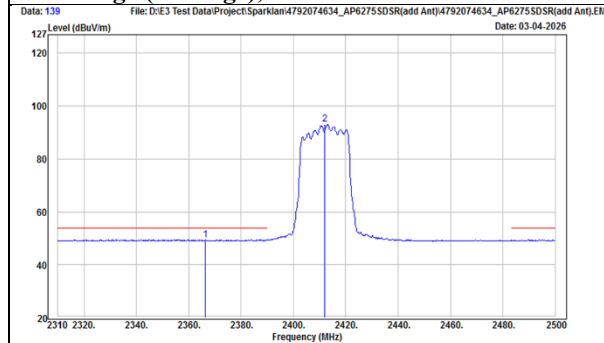
| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | *        | 4924               | 36.09             | 4.62              | 40.71              | 74                | -33.29         | PK     |
|              |          | 14485              | 29.23             | 27.98             | 57.21              | 74                | -16.79         | PK     |
|              |          | 14485              | 20.96             | 27.98             | 48.94              | 54                | -5.06          | AVG    |
|              |          | 15445              | 29.38             | 26.05             | 55.43              | 74                | -18.57         | PK     |
|              |          | 15445              | 20.55             | 26.05             | 46.6               | 54                | -7.4           | AVG    |
|              | *        | 17234              | 32.52             | 5.16              | 37.68              | 74                | -36.32         | PK     |
|              | *        | 19696              | 33.74             | 3.98              | 37.72              | 74                | -36.28         | PK     |
|              | *        | 22158              | 33.34             | 6.6               | 39.94              | 74                | -34.06         | PK     |
| Vertical     | *        | 24620              | 32.76             | 12.38             | 45.14              | 74                | -28.86         | PK     |
|              | *        | 4924               | 37.85             | 4.62              | 42.47              | 74                | -31.53         | PK     |
|              |          | 14485              | 27.54             | 27.98             | 55.52              | 74                | -18.48         | PK     |
|              |          | 14485              | 19.27             | 27.98             | 47.25              | 54                | -6.75          | AVG    |
|              |          | 15670              | 30.15             | 25.44             | 55.59              | 74                | -18.41         | PK     |
|              |          | 15670              | 21.32             | 25.44             | 46.76              | 54                | -7.24          | AVG    |
|              | *        | 17234              | 33.13             | 5.16              | 38.29              | 74                | -35.71         | PK     |
|              | *        | 19696              | 33.93             | 3.98              | 37.91              | 74                | -36.09         | PK     |
|              | *        | 22158              | 32.83             | 6.6               | 39.43              | 74                | -34.57         | PK     |
|              | *        | 24620              | 32.24             | 12.38             | 44.62              | 74                | -29.38         | PK     |



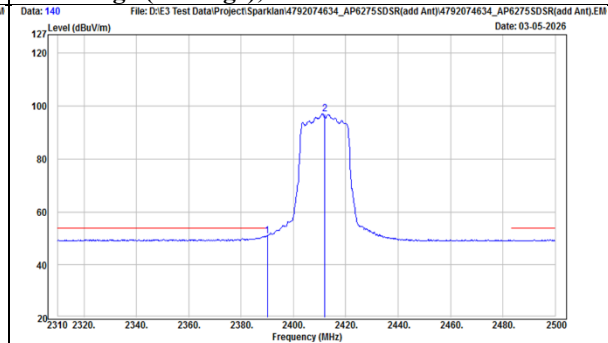
|      |               |         |   |
|------|---------------|---------|---|
| Mode | 802.11n(HT20) | Channel | 1 |
|------|---------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2326.53            | 40.16             | 20.92             | 61.08              | 74                | -12.92         | PK     |
|              |          | 2366.43            | 28.62             | 20.88             | 49.5               | 54                | -4.5           | AVG    |
|              | @        | 2412               | 80.01             | 20.75             | 100.76             | N/A               | N/A            | PK     |
|              | @        | 2412               | 72.33             | 20.75             | 93.08              | N/A               | N/A            | AVG    |
| Vertical     |          | 2361.68            | 41.21             | 20.89             | 62.1               | 74                | -11.9          | PK     |
|              |          | 2389.99            | 30.17             | 20.83             | 51                 | 54                | -3             | AVG    |
|              | @        | 2412               | 84.11             | 20.75             | 104.86             | N/A               | N/A            | PK     |
|              | @        | 2412               | 76.35             | 20.75             | 97.1               | N/A               | N/A            | AVG    |

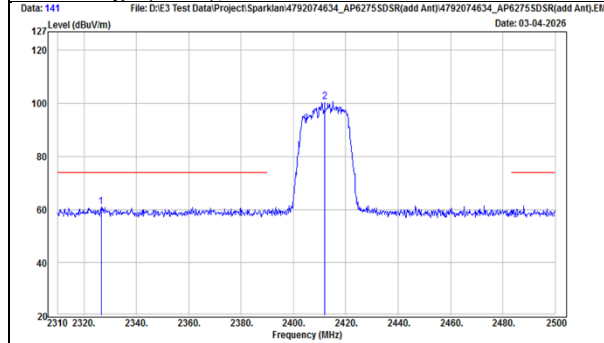
**TX, 802.11n(HT20) (Ch 1)**  
**Band Edge (Average), Horizontal**



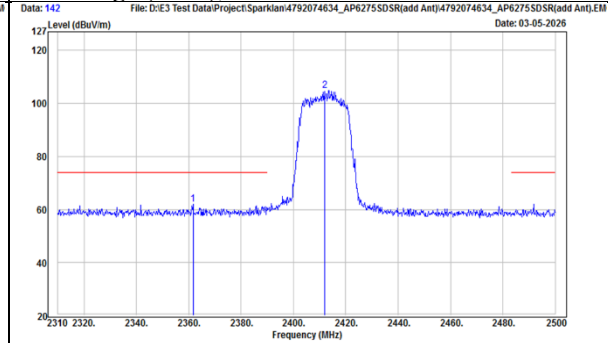
**TX, 802.11n(HT20) (Ch 1)**  
**Band Edge (Average), Vertical**



**TX, 802.11n(HT20) (Ch 1)**  
**Band Edge (Peak), Horizontal**



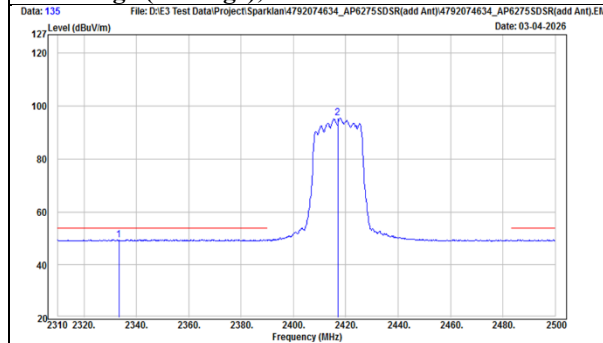
**TX, 802.11n(HT20) (Ch 1)**  
**Band Edge (Peak), Vertical**



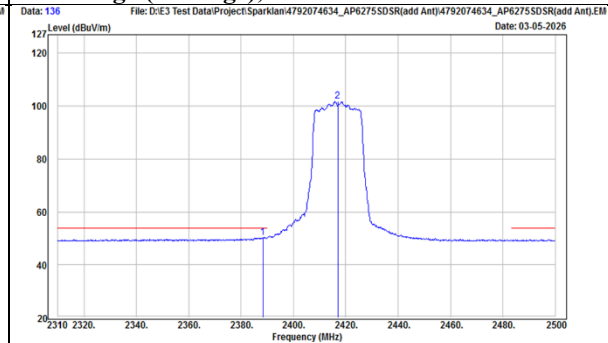
|      |               |         |   |
|------|---------------|---------|---|
| Mode | 802.11n(HT20) | Channel | 2 |
|------|---------------|---------|---|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2329.95            | 40.99             | 20.91             | 61.9               | 74                | -12.1          | PK     |
|              |          | 2333.37            | 28.51             | 20.91             | 49.42              | 54                | -4.58          | AVG    |
|              | @        | 2417               | 83.59             | 20.73             | 104.32             | N/A               | N/A            | PK     |
|              | @        | 2417               | 74.87             | 20.73             | 95.6               | N/A               | N/A            | AVG    |
| Vertical     |          | 2363.01            | 40.3              | 20.89             | 61.19              | 74                | -12.81         | PK     |
|              |          | 2388.28            | 29.48             | 20.84             | 50.32              | 54                | -3.68          | AVG    |
|              | @        | 2417               | 90.24             | 20.73             | 110.97             | N/A               | N/A            | PK     |
|              | @        | 2417               | 81.07             | 20.73             | 101.8              | N/A               | N/A            | AVG    |

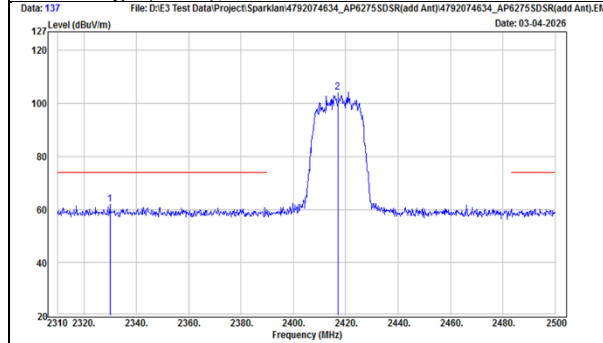
**TX, 802.11n(HT20) (Ch 2)**  
**Band Edge (Average), Horizontal**



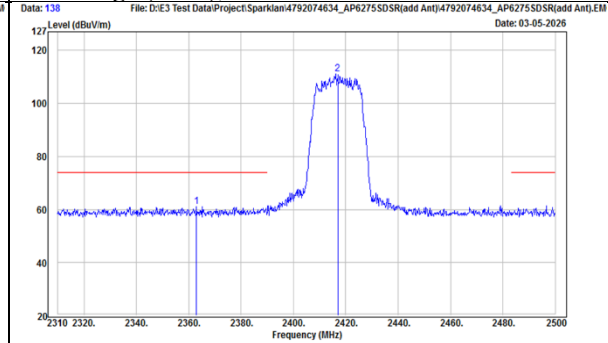
**TX, 802.11n(HT20) (Ch 2)**  
**Band Edge (Average), Vertical**



**TX, 802.11n(HT20) (Ch 2)**  
**Band Edge (Peak), Horizontal**

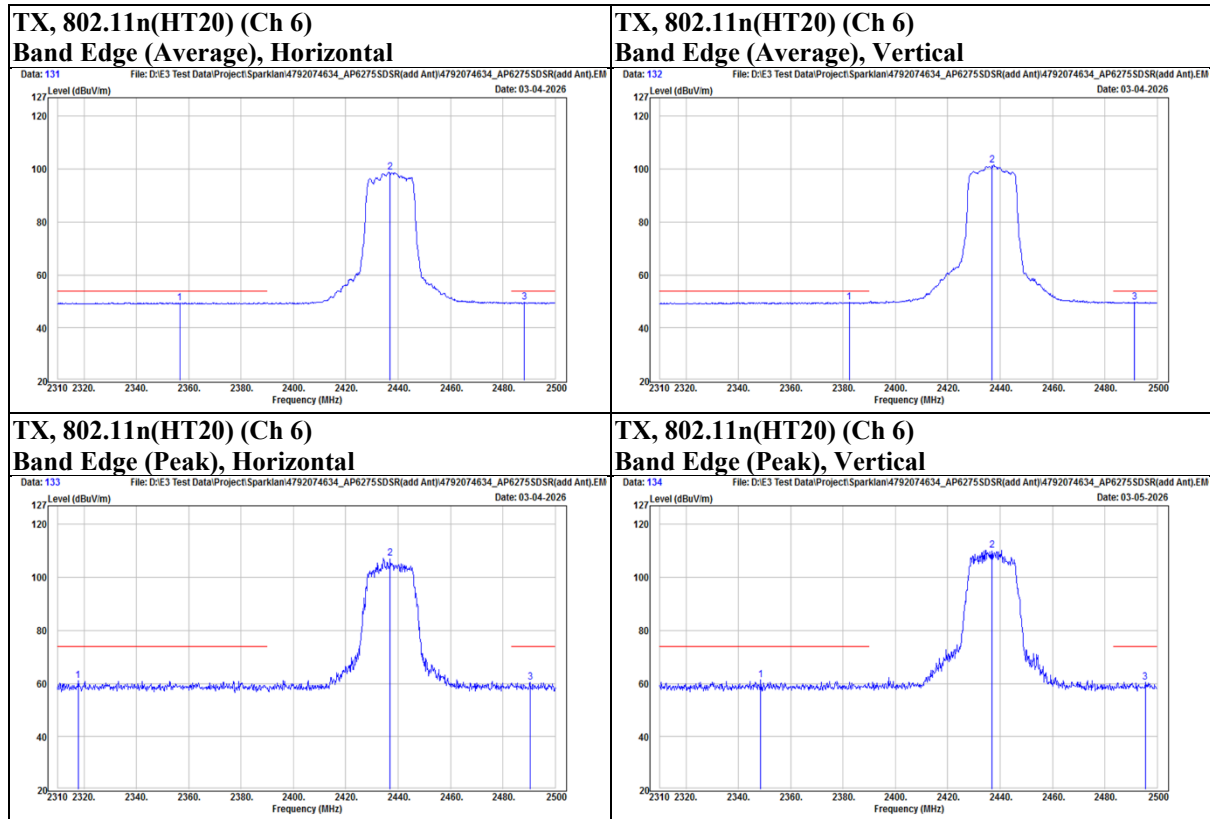


**TX, 802.11n(HT20) (Ch 2)**  
**Band Edge (Peak), Vertical**



|      |               |         |   |
|------|---------------|---------|---|
| Mode | 802.11n(HT20) | Channel | 6 |
|------|---------------|---------|---|

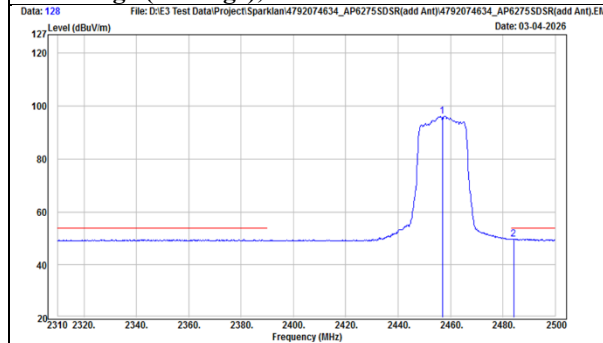
| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   |          | 2317.79            | 40.11             | 20.92             | 61.03              | 74                | -12.97         | PK     |
|              |          | 2356.55            | 28.59             | 20.9              | 49.49              | 54                | -4.51          | AVG    |
|              | @        | 2437               | 86.47             | 20.65             | 107.12             | N/A               | N/A            | PK     |
|              | @        | 2437               | 78.11             | 20.65             | 98.76              | N/A               | N/A            | AVG    |
|              |          | 2488.22            | 28.91             | 20.66             | 49.57              | 54                | -4.43          | AVG    |
|              |          | 2490.5             | 39.66             | 20.66             | 60.32              | 74                | -13.68         | PK     |
| Vertical     |          | 2348.57            | 40.47             | 20.91             | 61.38              | 74                | -12.62         | PK     |
|              |          | 2382.39            | 28.75             | 20.85             | 49.6               | 54                | -4.4           | AVG    |
|              | @        | 2437               | 89.61             | 20.65             | 110.26             | N/A               | N/A            | PK     |
|              | @        | 2437               | 80.77             | 20.65             | 101.42             | N/A               | N/A            | AVG    |
|              |          | 2491.45            | 29.08             | 20.66             | 49.74              | 54                | -4.26          | AVG    |
|              |          | 2495.44            | 39.81             | 20.67             | 60.48              | 74                | -13.52         | PK     |



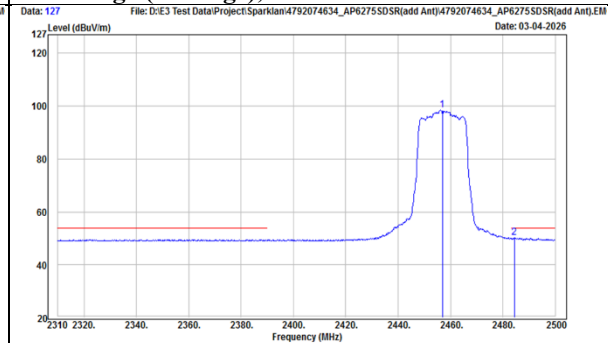
|      |               |         |    |
|------|---------------|---------|----|
| Mode | 802.11n(HT20) | Channel | 10 |
|------|---------------|---------|----|

| Polarization | Notation | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|--------------|----------|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| Horizontal   | @        | 2457               | 83.72             | 20.61             | 104.33             | N/A               | N/A            | PK     |
|              | @        | 2457               | 75.56             | 20.61             | 96.17              | N/A               | N/A            | AVG    |
|              |          | 2484.23            | 29.13             | 20.65             | 49.78              | 54                | -4.22          | AVG    |
|              |          | 2486.13            | 39.73             | 20.65             | 60.38              | 74                | -13.62         | PK     |
| Vertical     | @        | 2457               | 85.9              | 20.61             | 106.51             | N/A               | N/A            | PK     |
|              | @        | 2457               | 77.96             | 20.61             | 98.57              | N/A               | N/A            | AVG    |
|              |          | 2484.42            | 29.6              | 20.65             | 50.25              | 54                | -3.75          | AVG    |
|              |          | 2484.99            | 40.52             | 20.65             | 61.17              | 74                | -12.83         | PK     |

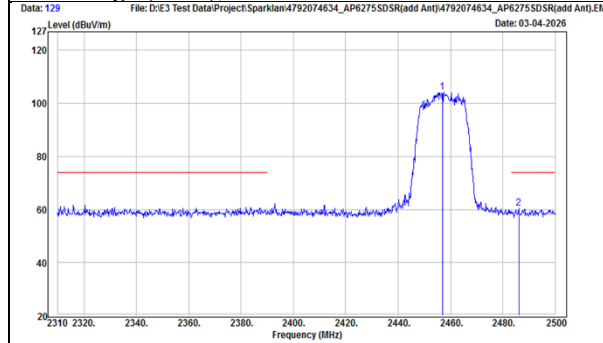
**TX, 802.11n(HT20) (Ch 10)**  
**Band Edge (Average), Horizontal**



**TX, 802.11n(HT20) (Ch 10)**  
**Band Edge (Average), Vertical**



**TX, 802.11n(HT20) (Ch 10)**  
**Band Edge (Peak), Horizontal**



**TX, 802.11n(HT20) (Ch 10)**  
**Band Edge (Peak), Vertical**

