# TEST REPORT

| | |
|---|---|
| Applicant Name : | Vanstone Electronic (Beijing) Co., Ltd. |
| Address : | 3F No.2 Building, Aisino corporation park 18A, Xingshikou Road, Haidian District, Beijing, China 100195 |
| Report Number : | SZNS210702-55501E-RF-00C |
| FCC ID: | OWLA78 |

**Test Standard (s)**

FCC PART 15.407

**Sample Description**

| | |
|---|---|
| Product Type: | Cloud POS Terminal |
| Model No.: | A78 |
| Multiple Model(s) No.: | N/A |
| Trade Mark: | Aisino |
| Date Received: | 2021/07/02 |
| Date of Test: | 2021/08/02~2021/11/24 |
| Report Date: | 2021/11/24 |

| Test Result: | Pass* |
|---|---|

* In the configuration tested, the EUT complied with the standards above.

**Prepared and Checked By:**

Fan Yang
EMC Engineer

**Approved By:**

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".
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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

| | |
|---|---|
| Frequency Range | 5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5725MHz; 5725-5850MHz |
| Mode | 802.11a/n20/n40 |
| Maximum Conducted Average Ouput Power | 5150-5250 MHz: 15.92dBm<br>5250-5350MHz: 14.06dBm<br>5470-5725MHz: 12.75dBm<br>5725-5850 MHz: 9.64dBm |
| Modulation Technique | OFDM |
| Antenna Specification* | Antenna gain:1.0 dBi (provided by the applicant) |
| Voltage Range | DC 3.6V from battery or DC 5V from adapter |
| Sample serial number | SZNS210702-55501E-RF-S1 for RE&CE<br>SZNS210702-55501E-RF-S2 for RF Conducted<br>(Assigned by ATC) |
| Sample/EUT Status | Good condition |
| Adapter information | Model: TPA-46050200UU<br>Input: AC 100-240V, 50/60Hz, 0.3A<br>Output: DC 5.0V, 2000mA |

## Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

## Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

## Measurement Uncertainty

| Parameter | | Uncertainty |
|---|---|---|
| Occupied Channel Bandwidth | | 5% |
| RF Frequency | | $0.082*10^{-7}$ |
| RF output power, conducted | | 0.73dB |
| Unwanted Emission, conducted | | 1.6dB |
| AC Power Lines Conducted Emissions | | 2.72dB |
| Emissions, Radiated | 9kHz - 30MHz | 2.66dB |
| | 30MHz - 1GHz | 4.28dB |
| | 1GHz - 18GHz | 4.98dB |
| | 18GHz - 26.5GHz | 5.06dB |
| | 26.5GHz - 40GHz | 4.72dB |
| Temperature | | 1℃ |
| Humidity | | 6% |
| Supply voltages | | 0.4% |

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

# SYSTEM TEST CONFIGURATION

## Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The device only supports 5G Wi-Fi 802.11a/n20/n40 modes, which was declared by manufacturer.

For 5150-5250MHz Band, 6 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|
| 36 | 5180 | 44 | 5220 |
| 38 | 5190 | 46 | 5230 |
| 40 | 5200 | 48 | 5240 |

For 802.11a, 802.11n20 mode: channel 36, 40, 48 were tested;
For 802.11n40 mode: channel 38, 46 were tested.

For 5250-5350MHz Band, 6 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|
| 52 | 5260 | 60 | 5300 |
| 54 | 5270 | 62 | 5310 |
| 56 | 5280 | 64 | 5320 |

For 802.11a, 802.11n20 mode: channel 52, 56, 64 were tested;
For 802.11n40 mode: channel 54, 62 were tested.

For 5470-5725MHz Band, 16 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|
| 100 | 5500 | 120 | 5600 |
| 102 | 5510 | 124 | 5620 |
| 104 | 5520 | 126 | 5630 |
| 108 | 5540 | 128 | 5640 |
| 110 | 5550 | 132 | 5660 |
| 112 | 5560 | 134 | 5670 |
| 116 | 5580 | 136 | 5680 |
| 118 | 5590 | 140 | 5700 |

For 802.11a, 802.11n20 mode: channel 100, 116, 140 were tested; For 802.11n40 mode: channel 102, 110, 134 were tested.

For 5725-5850MHz Band, 7 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|
| 149 | 5745 | 157 | 5785 |
| 151 | 5755 | 159 | 5795 |
| 153 | 5765 | 161 | 5805 |
| / | / | 165 | 5825 |

For 802.11a, 802.11n20 mode: channel 149, 157, 165 were tested;
For 802.11n40 mode: channel 151, 159 were tested.

## EUT Exercise Software

"QRCT3.0*" software was used. The software and power level was provided by the applicant.

The worst case was performed under:

| U-NII | Mode | Frequency (MHz) | Data Rate | Power Level* |
|---|---|---|---|---|
| 5150 – 5250MHz | 802.11 a | 5180 | 6Mbps | 16 |
| | | 5200 | 6Mbps | 16 |
| | | 5240 | 6Mbps | 16 |
| | 802.11 n20 | 5180 | MCS0 | 16 |
| | | 5200 | MCS0 | 16 |
| | | 5240 | MCS0 | 16 |
| | 802.11 n40 | 5190 | MCS0 | 16 |
| | | 5230 | MCS0 | 16 |
| 5250 – 5350MHz | 802.11 a | 5260 | 6Mbps | 16 |
| | | 5280 | 6Mbps | 16 |
| | | 5320 | 6Mbps | 16 |
| | 802.11 n20 | 5260 | MCS0 | 16 |
| | | 5280 | MCS0 | 16 |
| | | 5320 | MCS0 | 16 |
| | 802.11 n40 | 5270 | MCS0 | 16 |
| | | 5310 | MCS0 | 16 |
| 5470 – 5725MHz | 802.11 a | 5500 | 6Mbps | 16 |
| | | 5580 | 6Mbps | 16 |
| | | 5700 | 6Mbps | 14 |
| | 802.11 n20 | 5500 | MCS0 | 16 |
| | | 5580 | MCS0 | 16 |
| | | 5700 | MCS0 | 14 |
| | 802.11 n40 | 5510 | MCS0 | 16 |
| | | 5550 | MCS0 | 16 |
| | | 5670 | MCS0 | 16 |

| U-NII | Mode | Frequency (MHz) | Data Rate | Power Level* |
|---|---|---|---|---|
| 5725 – 5850MHz | 802.11 a | 5745 | 6Mbps | 16 |
| | | 5785 | 6Mbps | 16 |
| | | 5825 | 6Mbps | 16 |
| | 802.11 n20 | 5745 | MCS0 | 16 |
| | | 5785 | MCS0 | 16 |
| | | 5825 | MCS0 | 16 |
| | 802.11 n40 | 5755 | MCS0 | 16 |
| | | 5795 | MCS0 | 16 |

The worse-case data rates are determined to be as follows for each mode based upon investigations by measuring the output power and PSD across all data rated bandwidths, and modulations.

## Duty cycle

Test Result: Pass. Please refer to the Appendix.

## Equipment Modifications

No modification was made to the EUT tested.

## Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| / | / | / | / |

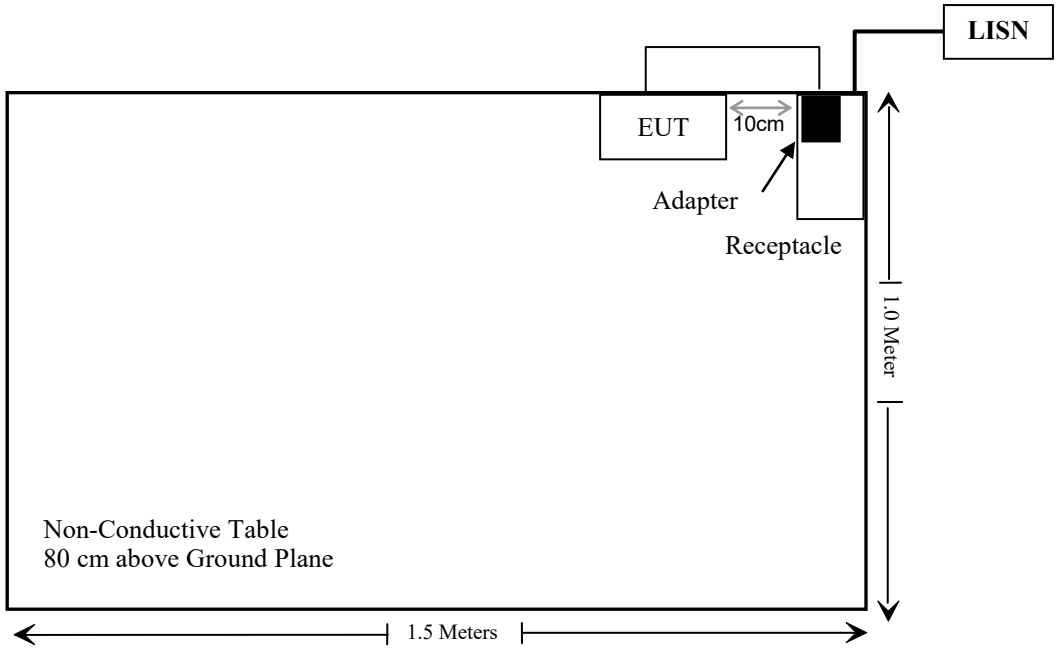
## External I/O Cable

| Cable Description | Length (m) | From Port | To |
|---|---|---|---|
| Un-shielded detachable USB cable | 1.0 | adapter | EUT |

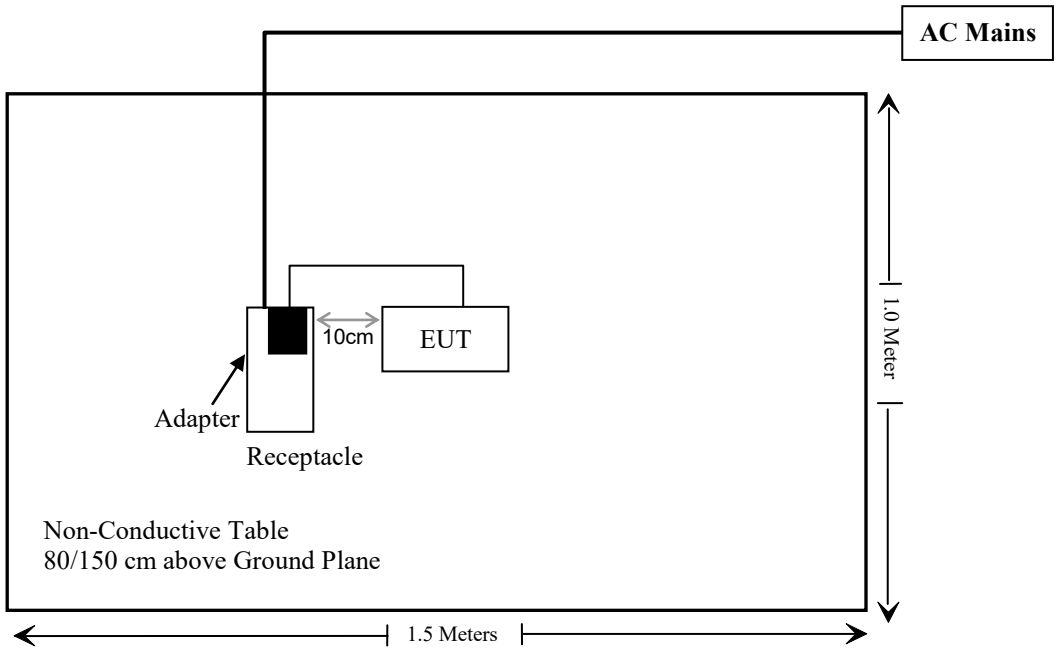
## Block Diagram of Test Setup

For conducted emission

For conducted emission:




For radiated emission:



# SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| §1.1307 (b) (1) & §2.1093 | RF Exposure | Compliant |
| §15.203 | Antenna Requirement | Compliant |
| §15.407(b)(9)& §15.207(a) | Conducted Emissions | Compliant |
| §15.205& §15.209 &§15.407(b) | Undesirable Emission& Restricted Bands | Compliant |
| §15.407(a) (e) | 26 dB Emission Bandwidth & 6dB Bandwidth | Compliant |
| §15.407(a) | Conducted Transmitter Output Power | Compliant |
| §15.407 (a) | Power Spectral Density | Compliant |
| §15.407 (h) | Transmit Power Control (TPC) | Not Applicable |
| §15.407 (h) | Dynamic Frequency Selection (DFS) | Compliant* |

Not Applicable: the EUT has no TPC function which was declarded by the applicant.
Compliant*: Please refer to the DFS report: SZNS210702-55501E-RF-00D.

# TEST EQUIPMENT LIST

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Conducted emission test | | | | | |
| Rohde& Schwarz | Test Receiver | ESPI3 | 100396 | 2020/12/24 | 2021/12/23 |
| R & S | L.I.S.N. | ENV216 | 101314 | 2020/12/25 | 2021/12/24 |
| Anritsu Corp | 50ΩCoaxial Switch | MP59B | 6200506474 | 2020/12/25 | 2021/12/24 |
| Unknown | RF Coaxial Cable | N-2m | No.2 | 2020/12/25 | 2021/12/24 |
| Conducted Emission Test Software: e3 19821G (V9) | | | | | |
| Radiated emission test | | | | | |
| Rohde& Schwarz | Test Receiver | ESR | 101817 | 2020/12/24 | 2021/12/23 |
| Rohde&Schwarz | Spectrum Analyzer | FSV40 | 101495 | 2020/12/24 | 2021/12/23 |
| SONOMA INSTRUMENT | Amplifier | 310 N | 186131 | 2020/12/25 | 2021/12/24 |
| A.H. Systems, inc. | Preamplifier | PAM-0118P | 531 | 2021/07/08 | 2022/07/07 |
| Quinstar | Amplifier | QLW-18405536-J0 | 15964001002 | 2020/11/28 | 2021/11/27 |
| Anritsu Corp | 50 Coaxial Switch | MP59B | 6100237248 | 2020/12/25 | 2021/12/24 |
| Schwarzbeck | Bilog Antenna | VULB9163 | 9163-323 | 2020/01/05 | 2023/01/04 |
| Schwarzbeck | Horn Antenna | BBHA9120D | 9120D-1067 | 2020/01/05 | 2023/01/04 |
| Schwarzbeck | HORN ANTENNA | BBHA9170 | 9170-359 | 2020/01/05 | 2023/01/04 |
| Unknown | RF Coaxial Cable | N-5m | No.3 | 2020/12/25 | 2021/12/24 |
| Unknown | RF Coaxial Cable | N-5m | No.4 | 2020/12/25 | 2021/12/24 |
| Unknown | RF Coaxial Cable | N-1m | No.5 | 2020/12/25 | 2021/12/24 |
| Unknown | RF Coaxial Cable | N-1m | No.6 | 2020/12/25 | 2021/12/24 |
| Radiated Emission Test Software: e3 19821G (V9) | | | | | |
| RF conducted test | | | | | |
| Rohde&Schwarz | Spectrum Analyzer | FSV40 | 101495 | 2020/12/24 | 2021/12/23 |
| Tonscend | RF Control Unit | JS0806-2 | 19G8060182 | 2021/07/06 | 2022/07/05 |

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

# FCC§1.1307 (b) (1) & §2.1093 – RF EXPOSURE

## Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

### Measurement Result

Please refer to SAR test report: SZNS210702-55525E-SA.

# FCC §15.203 – ANTENNA REQUIREMENT

## Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## Antenna Connector Construction

The EUT has one internal Antenna arrangement, which was permanently attached and the antenna gain is 1.0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

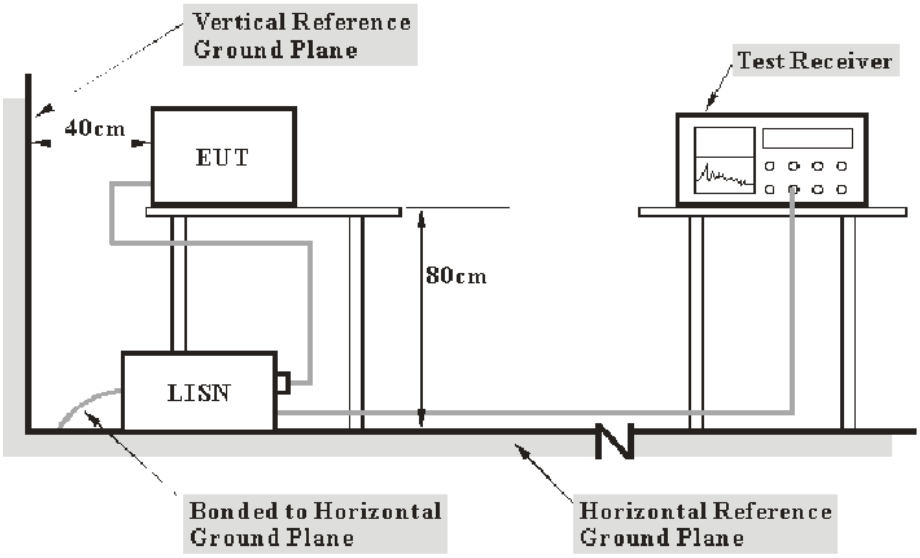
**Result:** Compliant.

# FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

## Applicable Standard

FCC §15.207, §15.407(b) (6)

## EUT Setup




Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

| Frequency Range | IF B/W |
|---|---|
| 150 kHz – 30 MHz | 9 kHz |

## Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and Average detection mode.

# Test Data

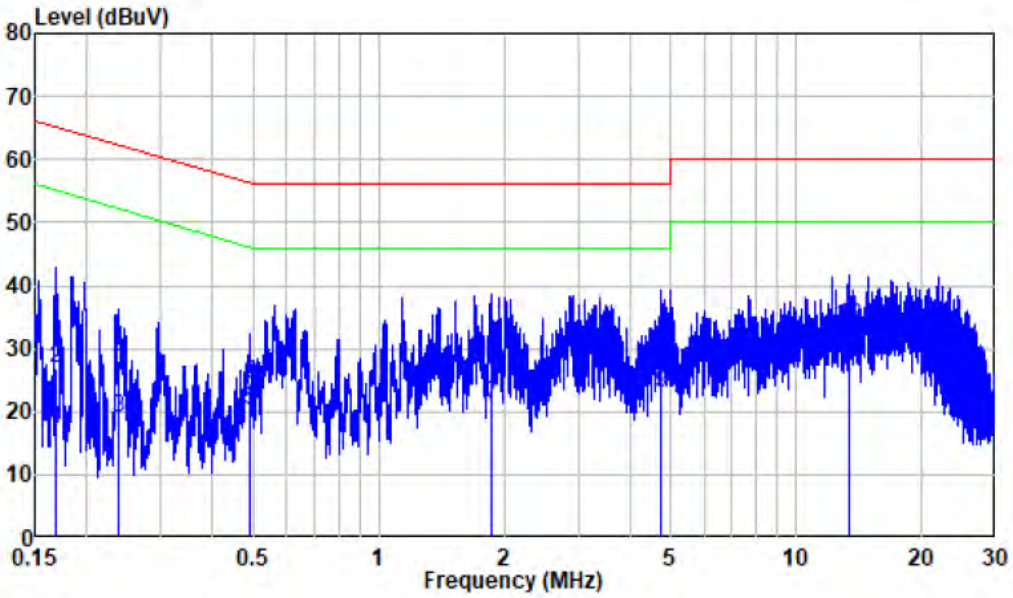
## Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25 ℃ |
| **Relative Humidity:** | 64 % |
| **ATM Pressure:** | 101.0 kPa |

*The testing was performed by Bin Deng on 2021-11-19.*

*EUT operation mode: Transmitting (worst case is 802.11n40 mode, 5310MHz)*

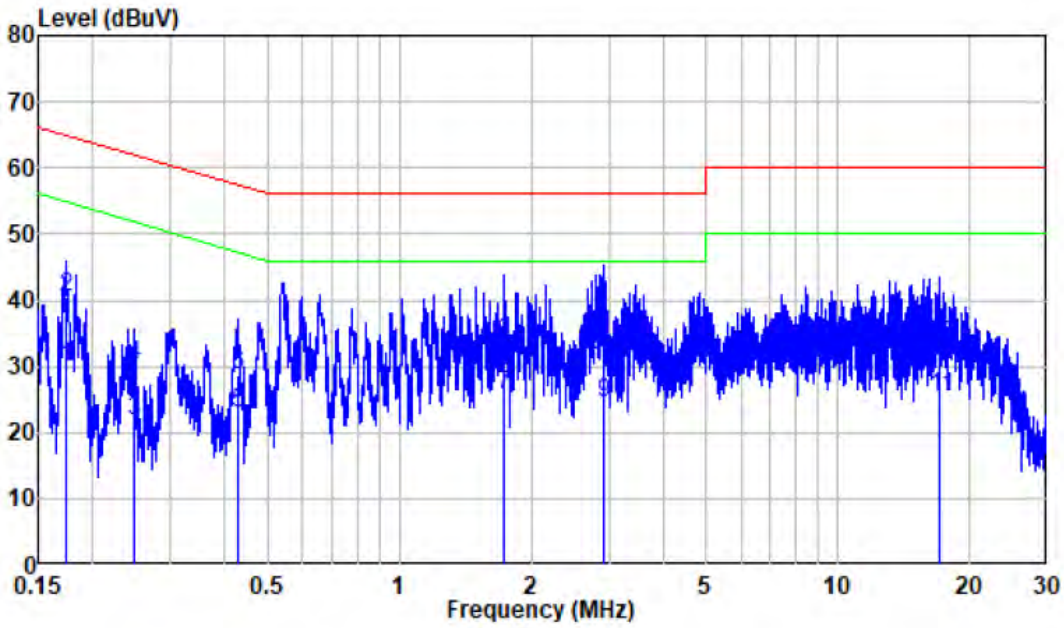
**AC 120V/60 Hz, Line:**




Site : Shielding Room
Condition: Line
Mode : 5G WIFI
Model : A78

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.168 | 9.86 | 7.44 | 17.30 | 55.04 | -37.74 | Average |
| 2 | 0.168 | 9.86 | 17.13 | 26.99 | 65.04 | -38.05 | QP |
| 3 | 0.237 | 9.80 | 9.16 | 18.96 | 52.19 | -33.23 | Average |
| 4 | 0.237 | 9.80 | 18.26 | 28.06 | 62.19 | -34.13 | QP |
| 5 | 0.492 | 9.80 | 10.48 | 20.28 | 46.13 | -25.85 | Average |
| 6 | 0.492 | 9.80 | 14.78 | 24.58 | 56.13 | -31.55 | QP |
| 7 | 1.853 | 9.91 | 11.27 | 21.18 | 46.00 | -24.82 | Average |
| 8 | 1.853 | 9.91 | 18.53 | 28.44 | 56.00 | -27.56 | QP |
| 9 | 4.756 | 9.98 | 12.92 | 22.90 | 46.00 | -23.10 | Average |
| 10 | 4.756 | 9.98 | 18.45 | 28.43 | 56.00 | -27.57 | QP |
| 11 | 13.311 | 10.06 | 16.47 | 26.53 | 50.00 | -23.47 | Average |
| 12 | 13.311 | 10.06 | 23.33 | 33.39 | 60.00 | -26.61 | QP |

**AC 120V/60 Hz, Neutral:**




Site : Shielding Room
Condition: Neutral
Mode : 5G WIFI
Model : A78

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.173 | 9.95 | 20.02 | 29.97 | 54.80 | -24.83 | Average |
| 2 | 0.173 | 9.95 | 30.49 | 40.44 | 64.80 | -24.36 | QP |
| 3 | 0.249 | 9.98 | 11.79 | 21.77 | 51.80 | -30.03 | Average |
| 4 | 0.249 | 9.98 | 20.16 | 30.14 | 61.80 | -31.66 | QP |
| 5 | 0.427 | 9.92 | 12.97 | 22.89 | 47.31 | -24.42 | Average |
| 6 | 0.427 | 9.92 | 18.88 | 28.80 | 57.31 | -28.51 | QP |
| 7 | 1.736 | 9.92 | 15.61 | 25.53 | 46.00 | -20.47 | Average |
| 8 | 1.736 | 9.92 | 23.60 | 33.52 | 56.00 | -22.48 | QP |
| 9 | 2.933 | 9.99 | 14.37 | 24.36 | 46.00 | -21.64 | Average |
| 10 | 2.933 | 9.99 | 19.89 | 29.88 | 56.00 | -26.12 | QP |
| 11 | 17.063 | 10.11 | 15.24 | 25.35 | 50.00 | -24.65 | Average |
| 12 | 17.063 | 10.11 | 23.19 | 33.30 | 60.00 | -26.70 | QP |

# §15.205 & §15.209 & §15.407(B)– UNDESIRABLE EMISSION

## Applicable Standard

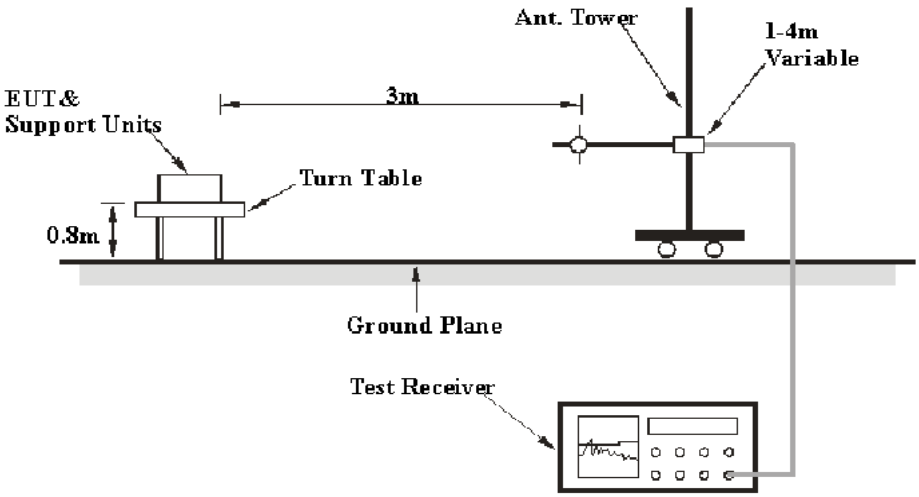
FCC §15.407 (b); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

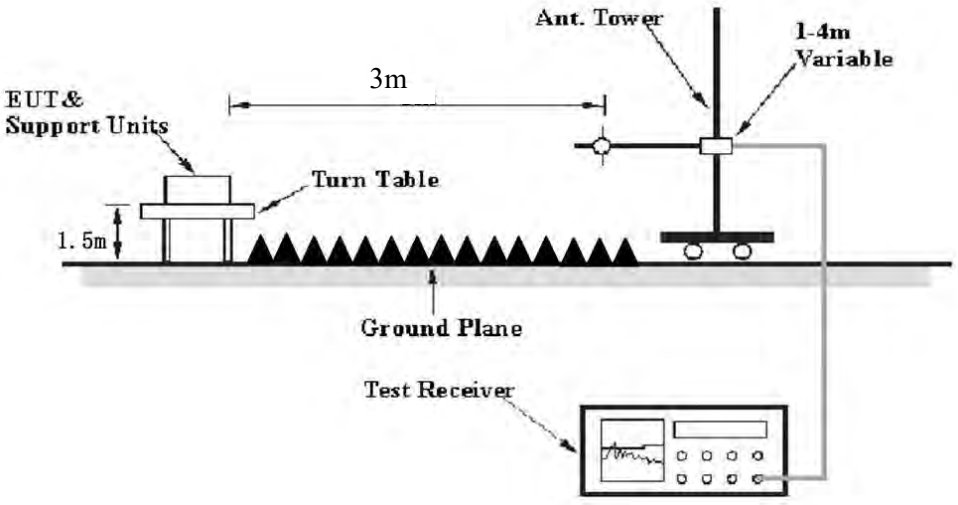
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

## EUT Setup

**Below 1 GHz:**



**Above 1 GHz:**




The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

## EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

| Frequency Range | RBW | Video B/W | IF B/W | Measurement |
|---|---|---|---|---|
| 30 MHz – 1000 MHz | 100 kHz | 300 kHz | 120 kHz | QP |
| Above 1 GHz | 1 MHz | 3 MHz | / | PK |
| | 1MHz | 10 Hz Note 1 | / | Average |
| | 1MHz | ＞1/T Note 2 | / | Average |

Note 1: when duty cycle is no less than 98%
Note 2: when duty cycle is less than 98%

## Test Procedure

### Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Corrected – Amplitude Limit

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 24~25 ℃ |
| **Relative Humidity:** | 62~64 % |
| **ATM Pressure:** | 101~101.1 kPa |

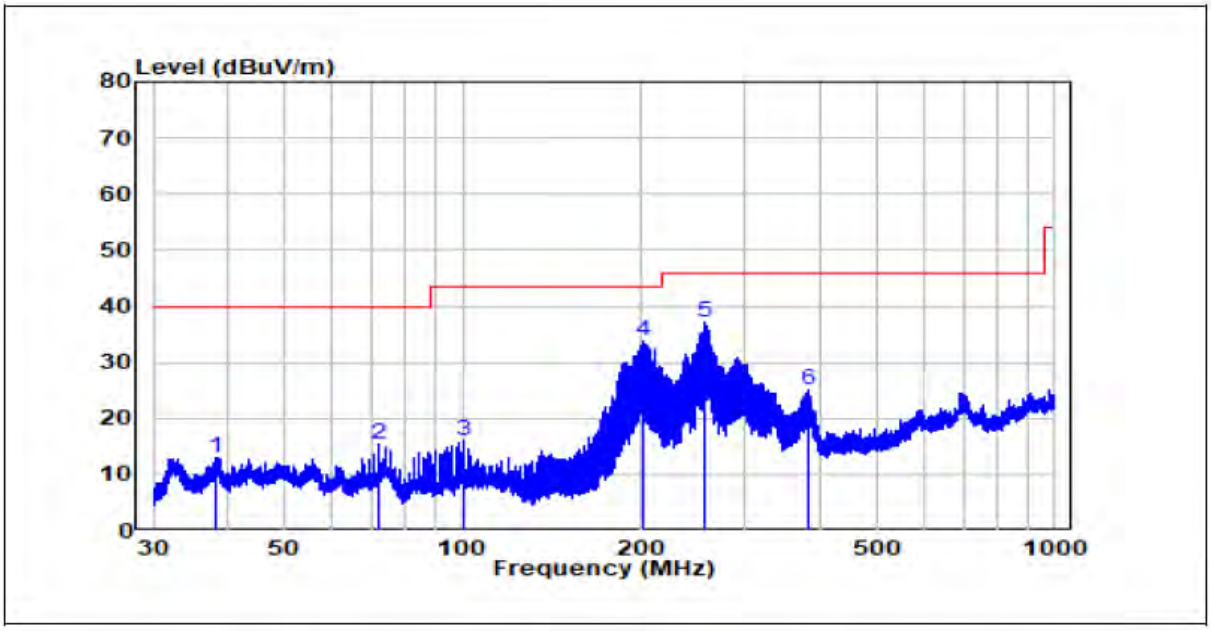
*The testing was performed by Bin Deng on 2021-11-17 for below 1GHz and 2021-11-18 for above 1GHz.*

*EUT operation mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded)*

*worst case is 802.11n40 mode, 5310MHz*

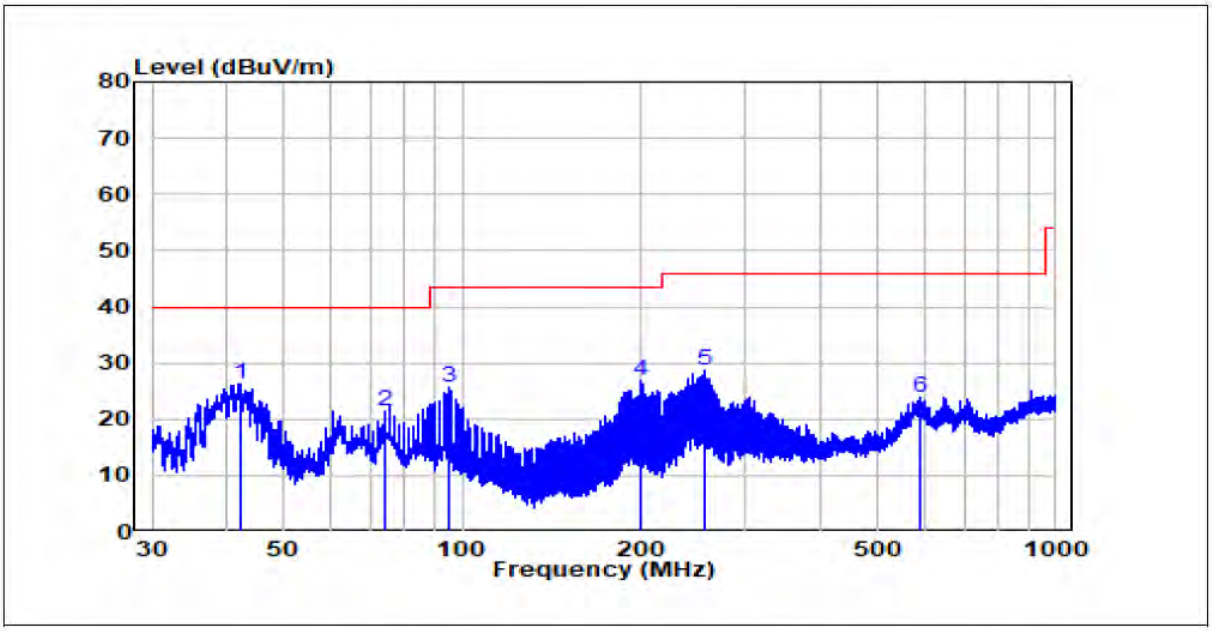
**30 MHz – 1 GHz:**

**Horizontal**




| No. | Frequency | Reading | Correct | Result | Limit | Over Limit | Remark | Phase |
|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB) | (dBuV) | (dBuV) | (dB) | | |
| 1 | 38.23 | 32.00 | -18.93 | 13.08 | 40.00 | -26.92 | Peak | HORIZONTAL |
| 2 | 72.31 | 37.26 | -21.75 | 15.51 | 40.00 | -24.49 | Peak | HORIZONTAL |
| 3 | 100.27 | 35.05 | -19.16 | 15.88 | 43.50 | -27.62 | Peak | HORIZONTAL |
| 4 | 202.10 | 52.73 | -19.05 | 33.68 | 43.50 | -9.82 | Peak | HORIZONTAL |
| 5 | 255.40 | 55.60 | -18.43 | 37.17 | 46.00 | -8.83 | Peak | HORIZONTAL |
| 6 | 382.09 | 40.78 | -15.73 | 25.05 | 46.00 | -20.95 | Peak | HORIZONTAL |

**Vertical**




| No. | Frequency | Reading | Correct | Result | Limit | Over Limit | Remark | Phase |
|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB) | (dBuV) | (dBuV) | (dB) | | |
| 1 | 42.19 | 44.51 | -18.12 | 26.39 | 40.00 | -13.61 | Peak | VERTICAL |
| 2 | 73.84 | 43.57 | -22.06 | 21.51 | 40.00 | -18.49 | Peak | VERTICAL |
| 3 | 94.55 | 45.98 | -20.30 | 25.68 | 43.50 | -17.82 | Peak | VERTICAL |
| 4 | 200.60 | 45.92 | -19.06 | 26.86 | 43.50 | -16.64 | Peak | VERTICAL |
| 5 | 255.18 | 47.09 | -18.43 | 28.65 | 46.00 | -17.35 | Peak | VERTICAL |
| 6 | 591.49 | 34.85 | -10.97 | 23.88 | 46.00 | -22.12 | Peak | VERTICAL |

**1GHz – 40GHz:**

**5150-5250 MHz:**

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part 15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | PK/QP/Ave. | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11a | | | | | | | | | |
| 5180 MHz | | | | | | | | | |
| 4500 | 65.72 | PK | 137 | 1.7 | H | -5.53 | 60.19 | 74 | -13.81 |
| 4500 | 51.07 | Ave. | 137 | 1.7 | H | -5.53 | 45.54 | 54 | -8.46 |
| 4500 | 68.25 | PK | 229 | 2.2 | V | -5.53 | 62.72 | 74 | -11.28 |
| 4500 | 53.19 | Ave. | 229 | 2.2 | V | -5.53 | 47.66 | 54 | -6.34 |
| 5150 | 62.55 | PK | 111 | 1.1 | H | -3.54 | 59.01 | 74 | -14.99 |
| 5150 | 48.91 | Ave. | 111 | 1.1 | H | -3.54 | 45.37 | 54 | -8.63 |
| 5150 | 64.81 | PK | 119 | 2.1 | V | -3.54 | 61.27 | 74 | -12.73 |
| 5150 | 51.07 | Ave. | 119 | 2.1 | V | -3.54 | 47.53 | 54 | -6.47 |
| 10360 | 46.61 | PK | 8 | 1.5 | H | 5.83 | 52.44 | 68.2 | -15.76 |
| 10360 | 48.96 | PK | 20 | 1.5 | V | 5.83 | 54.79 | 68.2 | -13.41 |
| 5200 MHz | | | | | | | | | |
| 10400 | 46.03 | PK | 150 | 1 | H | 5.94 | 51.97 | 68.2 | -16.23 |
| 10400 | 48.33 | PK | 26 | 1 | V | 5.94 | 54.27 | 68.2 | -13.93 |
| 5240 MHz | | | | | | | | | |
| 5350 | 60.16 | PK | 206 | 1.1 | H | -2.68 | 57.48 | 74 | -16.52 |
| 5350 | 46.79 | Ave. | 206 | 1.1 | H | -2.68 | 44.11 | 54 | -9.89 |
| 5350 | 62.63 | PK | 243 | 2.1 | V | -2.68 | 59.95 | 74 | -14.05 |
| 5350 | 48.92 | Ave. | 243 | 2.1 | V | -2.68 | 46.24 | 54 | -7.76 |
| 5460 | 61.01 | PK | 247 | 2.3 | H | -2.14 | 58.87 | 74 | -15.13 |
| 5460 | 46.78 | Ave. | 247 | 2.3 | H | -2.14 | 44.64 | 54 | -9.36 |
| 5460 | 63.15 | PK | 104 | 1.4 | V | -2.14 | 61.01 | 74 | -12.99 |
| 5460 | 49.08 | Ave. | 104 | 1.4 | V | -2.14 | 46.94 | 54 | -7.06 |
| 10480 | 45.45 | PK | 274 | 1.7 | H | 6.26 | 51.71 | 68.2 | -16.49 |
| 10480 | 47.67 | PK | 280 | 1.7 | V | 6.26 | 53.93 | 68.2 | -14.27 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | PK/QP/Ave. | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n20 | | | | | | | | | |
| 5180 MHz | | | | | | | | | |
| 4500 | 63.05 | PK | 59 | 1.6 | H | -5.53 | 57.52 | 74 | -16.48 |
| 4500 | 49.55 | Ave. | 59 | 1.6 | H | -5.53 | 44.02 | 54 | -9.98 |
| 4500 | 65.49 | PK | 273 | 1.8 | V | -5.53 | 59.96 | 74 | -14.04 |
| 4500 | 51.76 | Ave. | 273 | 1.8 | V | -5.53 | 46.23 | 54 | -7.77 |
| 5150 | 61.67 | PK | 216 | 1.5 | H | -3.54 | 58.13 | 74 | -15.87 |
| 5150 | 48.43 | Ave. | 216 | 1.5 | H | -3.54 | 44.89 | 54 | -9.11 |
| 5150 | 64.96 | PK | 126 | 1.7 | V | -3.54 | 61.42 | 74 | -12.58 |
| 5150 | 50.65 | Ave. | 126 | 1.7 | V | -3.54 | 47.11 | 54 | -6.89 |
| 10360 | 79.71 | PK | 69 | 1.8 | H | 5.83 | 85.54 | 68.2 | 17.34 |
| 10360 | 47.44 | PK | 142 | 1.8 | V | 5.83 | 53.27 | 68.2 | -14.93 |
| 5200 MHz | | | | | | | | | |
| 10400 | 45.10 | PK | 321 | 2.1 | H | 5.94 | 51.04 | 68.2 | -17.16 |
| 10400 | 47.37 | PK | 42 | 2.1 | V | 5.94 | 53.31 | 68.2 | -14.89 |
| 5240 MHz | | | | | | | | | |
| 5350 | 60.79 | PK | 349 | 2.3 | H | -2.68 | 58.11 | 74 | -15.89 |
| 5350 | 46.76 | Ave. | 349 | 2.3 | H | -2.68 | 44.08 | 54 | -9.92 |
| 5350 | 63.18 | PK | 339 | 2.2 | V | -2.68 | 60.5 | 74 | -13.5 |
| 5350 | 49.08 | Ave. | 339 | 2.2 | V | -2.68 | 46.4 | 54 | -7.6 |
| 5460 | 61.01 | PK | 278 | 1.8 | H | -2.14 | 58.87 | 74 | -15.13 |
| 5460 | 46.71 | Ave. | 278 | 1.8 | H | -2.14 | 44.57 | 54 | -9.43 |
| 5460 | 63.31 | PK | 343 | 1.7 | V | -2.14 | 61.17 | 74 | -12.83 |
| 5460 | 49.12 | Ave. | 343 | 1.7 | V | -2.14 | 46.98 | 54 | -7.02 |
| 10480 | 44.21 | PK | 301 | 1.7 | H | 6.26 | 50.47 | 68.2 | -17.73 |
| 10480 | 46.64 | PK | 133 | 1.7 | V | 6.26 | 52.90 | 68.2 | -15.3 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | PK/QP/Ave. | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n40 | | | | | | | | | |
| 5190 MHz | | | | | | | | | |
| 4500 | 71.58 | PK | 1 | 1.2 | H | -5.53 | 66.05 | 74 | -7.95 |
| 4500 | 50.75 | Ave. | 1 | 1.2 | H | -5.53 | 45.22 | 54 | -8.78 |
| 4500 | 73.97 | PK | 91 | 1.5 | V | -5.53 | 68.44 | 74 | -5.56 |
| 4500 | 53.17 | Ave. | 91 | 1.5 | V | -5.53 | 47.64 | 54 | -6.36 |
| 5150 | 62.31 | PK | 322 | 2.1 | H | -3.54 | 58.77 | 74 | -15.23 |
| 5150 | 49.22 | Ave. | 322 | 2.1 | H | -3.54 | 45.68 | 54 | -8.32 |
| 5150 | 64.74 | PK | 42 | 1.6 | V | -3.54 | 61.20 | 74 | -12.8 |
| 5150 | 51.58 | Ave. | 42 | 1.6 | V | -3.54 | 48.04 | 54 | -5.96 |
| 10380 | 44.44 | PK | 82 | 1.1 | H | 5.94 | 50.38 | 68.2 | -17.82 |
| 10380 | 46.77 | PK | 38 | 1.1 | V | 5.94 | 52.71 | 68.2 | -15.49 |
| 5230 MHz | | | | | | | | | |
| 5350 | 60.84 | PK | 100 | 1.2 | H | -2.68 | 58.16 | 74 | -15.84 |
| 5350 | 47.57 | Ave. | 100 | 1.2 | H | -2.68 | 44.89 | 54 | -9.11 |
| 5350 | 63.50 | PK | 243 | 2.4 | V | -2.68 | 60.82 | 74 | -13.18 |
| 5350 | 49.86 | Ave. | 243 | 2.4 | V | -2.68 | 47.18 | 54 | -6.82 |
| 5460 | 61.38 | PK | 339 | 2.3 | H | -2.14 | 59.24 | 74 | -14.76 |
| 5460 | 47.72 | Ave. | 339 | 2.3 | H | -2.14 | 45.58 | 54 | -8.42 |
| 5460 | 63.66 | PK | 222 | 1.6 | V | -2.14 | 61.52 | 74 | -12.48 |
| 5460 | 50.03 | Ave. | 222 | 1.6 | V | -2.14 | 47.89 | 54 | -6.11 |
| 10460 | 44.19 | PK | 10 | 1.7 | H | 5.99 | 50.18 | 68.2 | -18.02 |
| 10460 | 46.52 | PK | 184 | 1.7 | V | 5.99 | 52.51 | 68.2 | -15.69 |

**5250-5350 MHz:**

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11a | | | | | | | | | |
| 5260 MHz | | | | | | | | | |
| 4500 | 63.75 | PK | 252 | 2.3 | H | -5.53 | 58.22 | 74 | -15.78 |
| 4500 | 49.89 | Ave. | 252 | 2.3 | H | -5.53 | 44.36 | 54 | -9.64 |
| 4500 | 66.27 | PK | 324 | 1.4 | V | -5.53 | 60.74 | 74 | -13.26 |
| 4500 | 52.08 | Ave. | 324 | 1.4 | V | -5.53 | 46.55 | 54 | -7.45 |
| 5150 | 61.88 | PK | 161 | 2.4 | H | -3.54 | 58.34 | 74 | -15.66 |
| 5150 | 48.11 | Ave. | 161 | 2.4 | H | -3.54 | 44.57 | 54 | -9.43 |
| 5150 | 64.65 | PK | 193 | 1.3 | V | -3.54 | 61.11 | 74 | -12.89 |
| 5150 | 50.40 | Ave. | 193 | 1.3 | V | -3.54 | 46.86 | 54 | -7.14 |
| 10520 | 44.41 | PK | 41 | 2 | H | 6.20 | 50.61 | 68.2 | -17.59 |
| 10520 | 46.80 | PK | 46 | 2 | V | 6.20 | 53.00 | 68.2 | -15.2 |
| 5280 MHz | | | | | | | | | |
| 10560 | 45.22 | PK | 42 | 2.1 | H | 6.11 | 51.33 | 68.2 | -16.87 |
| 10560 | 47.67 | PK | 101 | 2.1 | V | 6.11 | 53.78 | 68.2 | -14.42 |
| 5320 MHz | | | | | | | | | |
| 5350 | 59.84 | PK | 133 | 2.2 | H | -2.68 | 57.16 | 74 | -16.84 |
| 5350 | 46.93 | Ave. | 133 | 2.2 | H | -2.68 | 44.25 | 54 | -9.75 |
| 5350 | 62.64 | PK | 148 | 2.5 | V | -2.68 | 59.96 | 74 | -14.04 |
| 5350 | 49.16 | Ave. | 148 | 2.5 | V | -2.68 | 46.48 | 54 | -7.52 |
| 5460 | 60.46 | PK | 70 | 1.7 | H | -2.14 | 58.32 | 74 | -15.68 |
| 5460 | 47.02 | Ave. | 70 | 1.7 | H | -2.14 | 44.88 | 54 | -9.12 |
| 5460 | 62.97 | PK | 336 | 1.7 | V | -2.14 | 60.83 | 74 | -13.17 |
| 5460 | 49.32 | Ave. | 336 | 1.7 | V | -2.14 | 47.18 | 54 | -6.82 |
| 10640 | 45.61 | PK | 139 | 1.5 | H | 6.26 | 51.87 | 74 | -22.13 |
| 10640 | 37.75 | Ave. | 139 | 1.5 | H | 6.26 | 44.01 | 54 | -9.99 |
| 10640 | 47.91 | PK | 322 | 1.7 | V | 6.26 | 54.17 | 74 | -19.83 |
| 10640 | 40.02 | Ave. | 322 | 1.7 | V | 6.26 | 46.28 | 54 | -7.72 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n20 | | | | | | | | | |
| 5260 MHz | | | | | | | | | |
| 4500 | 63.11 | PK | 191 | 2.1 | H | -5.53 | 57.58 | 74 | -16.42 |
| 4500 | 49.77 | Ave. | 191 | 2.1 | H | -5.53 | 44.24 | 54 | -9.76 |
| 4500 | 65.51 | PK | 80 | 2 | V | -5.53 | 59.98 | 74 | -14.02 |
| 4500 | 52.17 | Ave. | 80 | 2 | V | -5.53 | 46.64 | 54 | -7.36 |
| 5150 | 62.31 | PK | 212 | 2.3 | H | -3.54 | 58.77 | 74 | -15.23 |
| 5150 | 48.65 | Ave. | 212 | 2.3 | H | -3.54 | 45.11 | 54 | -8.89 |
| 5150 | 64.53 | PK | 225 | 1.4 | V | -3.54 | 60.99 | 74 | -13.01 |
| 5150 | 50.90 | Ave. | 225 | 1.4 | V | -3.54 | 47.36 | 54 | -6.64 |
| 10520 | 45.04 | PK | 150 | 2.1 | H | 6.20 | 51.24 | 68.2 | -16.96 |
| 10520 | 47.29 | PK | 206 | 2.1 | V | 6.20 | 53.49 | 68.2 | -14.71 |
| 5280 MHz | | | | | | | | | |
| 10560 | 45.68 | PK | 152 | 2 | H | 6.11 | 51.79 | 68.2 | -16.41 |
| 10560 | 48.11 | PK | 301 | 2 | V | 6.11 | 54.22 | 68.2 | -13.98 |
| 5320 MHz | | | | | | | | | |
| 5350 | 60.14 | PK | 315 | 2.4 | H | -2.68 | 57.46 | 74 | -16.54 |
| 5350 | 46.70 | Ave. | 315 | 2.4 | H | -2.68 | 44.02 | 54 | -9.98 |
| 5350 | 62.68 | PK | 84 | 1.2 | V | -2.68 | 60 | 74 | -14 |
| 5350 | 49.13 | Ave. | 84 | 1.2 | V | -2.68 | 46.45 | 54 | -7.55 |
| 5460 | 63.52 | PK | 308 | 1.1 | H | -2.14 | 61.38 | 74 | -12.62 |
| 5460 | 48.28 | Ave. | 308 | 1.1 | H | -2.14 | 46.14 | 54 | -7.86 |
| 5460 | 66.00 | PK | 60 | 1.4 | V | -2.14 | 63.86 | 74 | -10.14 |
| 5460 | 50.93 | Ave. | 60 | 1.4 | V | -2.14 | 48.79 | 54 | -5.21 |
| 10640 | 45.87 | PK | 132 | 1.3 | H | 6.26 | 52.13 | 74 | -21.87 |
| 10640 | 37.77 | Ave. | 132 | 1.3 | H | 6.26 | 44.03 | 54 | -9.97 |
| 10640 | 48.39 | PK | 17 | 1.6 | V | 6.26 | 54.65 | 74 | -19.35 |
| 10640 | 40.06 | Ave. | 17 | 1.6 | V | 6.26 | 46.32 | 54 | -7.68 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n40 | | | | | | | | | |
| 5270 MHz | | | | | | | | | |
| 4500 | 63.85 | PK | 41 | 1.3 | H | -5.53 | 58.32 | 74 | -15.68 |
| 4500 | 50.60 | Ave. | 41 | 1.3 | H | -5.53 | 45.07 | 54 | -8.93 |
| 4500 | 66.21 | PK | 126 | 1.6 | V | -5.53 | 60.68 | 74 | -13.32 |
| 4500 | 52.85 | Ave. | 126 | 1.6 | V | -5.53 | 47.32 | 54 | -6.68 |
| 5150 | 62.81 | PK | 16 | 2.2 | H | -3.54 | 59.27 | 74 | -14.73 |
| 5150 | 49.22 | Ave. | 16 | 2.2 | H | -3.54 | 45.68 | 54 | -8.32 |
| 5150 | 65.12 | PK | 56 | 2.4 | V | -3.54 | 61.58 | 74 | -12.42 |
| 5150 | 51.63 | Ave. | 56 | 2.4 | V | -3.54 | 48.09 | 54 | -5.91 |
| 10540 | 44.90 | PK | 59 | 1.1 | H | 6.09 | 50.99 | 68.2 | -17.21 |
| 10540 | 47.03 | PK | 314 | 1.1 | V | 6.09 | 53.12 | 68.2 | -15.08 |
| 5310 MHz | | | | | | | | | |
| 5350 | 60.65 | PK | 316 | 1.5 | H | -2.68 | 57.97 | 74 | -16.03 |
| 5350 | 46.79 | Ave. | 316 | 1.5 | H | -2.68 | 44.11 | 54 | -9.89 |
| 5350 | 62.95 | PK | 158 | 1.1 | V | -2.68 | 60.27 | 74 | -13.73 |
| 5350 | 49.12 | Ave. | 158 | 1.1 | V | -2.68 | 46.44 | 54 | -7.56 |
| 5460 | 63.39 | PK | 46 | 1.9 | H | -2.14 | 61.25 | 74 | -12.75 |
| 5460 | 49.10 | Ave. | 46 | 1.9 | H | -2.14 | 46.96 | 54 | -7.04 |
| 5460 | 65.69 | PK | 273 | 1.3 | V | -2.14 | 63.55 | 74 | -10.45 |
| 5460 | 51.39 | Ave. | 273 | 1.3 | V | -2.14 | 49.25 | 54 | -4.75 |
| 10620 | 45.28 | PK | 288 | 1.5 | H | 6.29 | 51.57 | 74 | -22.43 |
| 10620 | 37.58 | Ave. | 288 | 1.5 | H | 6.29 | 43.87 | 54 | -10.13 |
| 10620 | 47.47 | PK | 356 | 1.4 | V | 6.29 | 53.76 | 74 | -20.24 |
| 10620 | 39.96 | PK | 356 | 1.4 | V | 6.29 | 46.25 | 54 | -7.75 |

**5470-5725MHz:**

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11a | | | | | | | | | |
| 5500 MHz | | | | | | | | | |
| 5400 | 65.82 | PK | 152 | 1.5 | H | -2.34 | 63.48 | 74 | -10.52 |
| 5400 | 51.00 | AV | 152 | 1.5 | H | -2.34 | 48.66 | 54 | -5.34 |
| 5400 | 68.07 | PK | 40 | 1.9 | V | -2.34 | 65.73 | 74 | -8.27 |
| 5400 | 53.21 | AV | 40 | 1.9 | V | -2.34 | 50.87 | 54 | -3.13 |
| 5470 | 64.74 | PK | 267 | 1.5 | H | -2.11 | 62.63 | 68.2 | -5.57 |
| 5470 | 66.66 | PK | 184 | 1.9 | V | -2.11 | 64.55 | 68.2 | -3.65 |
| 11000 | 43.72 | PK | 81 | 1.7 | H | 7.53 | 51.25 | 74 | -22.75 |
| 11000 | 45.88 | PK | 193 | 2.4 | V | 7.53 | 53.41 | 74 | -20.59 |
| 5580 MHz | | | | | | | | | |
| 11160 | 43.98 | PK | 13 | 2.1 | H | 7.99 | 51.97 | 74 | -22.03 |
| 11160 | 46.15 | PK | 5 | 1.7 | V | 7.99 | 54.14 | 74 | -19.86 |
| 11160 | 38.19 | AV | 309 | 1.8 | V | 7.99 | 46.18 | 54 | -7.82 |
| 5700 MHz | | | | | | | | | |
| 5725 | 72.60 | PK | 226 | 1.5 | H | 1.68 | 74.28 | 68.2 | -3.42 |
| 5725 | 74.75 | PK | 62 | 2.3 | V | 1.68 | 76.43 | 68.2 | -1.27 |
| 5745 | 67.32 | PK | 350 | 1.6 | H | 2.24 | 69.56 | 68.2 | -8.14 |
| 5745 | 69.54 | PK | 212 | 1.4 | V | 2.24 | 71.78 | 68.2 | -5.92 |
| 11400 | 43.33 | PK | 307 | 1.5 | H | 8.88 | 52.21 | 74 | -21.79 |
| 11400 | 45.60 | PK | 156 | 2.3 | V | 8.88 | 54.48 | 74 | -19.52 |
| 11400 | 37.49 | AV | 120 | 1.5 | V | 8.88 | 46.37 | 54 | -7.63 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n20 | | | | | | | | | |
| 5500 MHz | | | | | | | | | |
| 5400 | 64.91 | PK | 314 | 2.2 | H | -2.34 | 62.57 | 74 | -11.43 |
| 5400 | 50.10 | AV | 314 | 2.2 | H | -2.34 | 47.76 | 54 | -6.24 |
| 5400 | 67.15 | PK | 152 | 1.3 | V | -2.34 | 64.81 | 74 | -9.19 |
| 5400 | 52.31 | AV | 152 | 1.3 | V | -2.34 | 49.97 | 54 | -4.03 |
| 5470 | 62.00 | PK | 52 | 1.8 | H | -2.11 | 59.89 | 68.2 | -8.31 |
| 5470 | 64.21 | PK | 14 | 1.5 | V | -2.11 | 62.10 | 68.2 | -6.1 |
| 11000 | 43.61 | PK | 5 | 1.7 | H | 7.53 | 51.14 | 74 | -22.86 |
| 11000 | 45.88 | PK | 220 | 1.8 | V | 7.53 | 53.41 | 74 | -20.59 |
| 5580 MHz | | | | | | | | | |
| 11160 | 42.85 | PK | 250 | 1.9 | H | 7.99 | 50.84 | 74 | -23.16 |
| 11160 | 45.01 | PK | 117 | 1 | V | 7.99 | 53.00 | 74 | -21 |
| 5700 MHz | | | | | | | | | |
| 5725 | 62.84 | PK | 357 | 1.6 | H | 1.68 | 64.52 | 68.2 | -3.68 |
| 5725 | 64.83 | PK | 7 | 1.9 | V | 1.68 | 66.51 | 68.2 | -1.69 |
| 5745 | 57.97 | PK | 262 | 1 | H | 2.24 | 60.21 | 68.2 | -7.99 |
| 5745 | 60.10 | PK | 353 | 1.2 | V | 2.24 | 62.34 | 68.2 | -5.86 |
| 11400 | 43.67 | PK | 282 | 1.2 | H | 8.88 | 52.55 | 74 | -21.45 |
| 11400 | 45.56 | PK | 72 | 1.2 | V | 8.88 | 54.44 | 74 | -19.56 |
| 11400 | 37.30 | AV | 79 | 1.7 | V | 8.88 | 46.18 | 54 | -7.82 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n40 | | | | | | | | | |
| 5510 MHz | | | | | | | | | |
| 5400 | 65.22 | PK | 255 | 2 | H | -2.34 | 62.88 | 74 | -11.12 |
| 5400 | 50.28 | AV | 255 | 2 | H | -2.34 | 47.94 | 54 | -6.06 |
| 5400 | 67.52 | PK | 94 | 1.5 | V | -2.34 | 65.18 | 74 | -8.82 |
| 5400 | 52.30 | AV | 94 | 1.5 | V | -2.34 | 49.96 | 54 | -4.04 |
| 5470 | 62.42 | PK | 48 | 1.8 | H | -2.11 | 60.31 | 68.2 | -7.89 |
| 5470 | 64.77 | PK | 281 | 1.3 | V | -2.11 | 62.66 | 68.2 | -5.54 |
| 11020 | 44.05 | PK | 5 | 1.7 | H | 7.54 | 51.59 | 74 | -22.41 |
| 11020 | 45.96 | PK | 34 | 1.5 | V | 7.54 | 53.50 | 74 | -20.5 |
| 5550 MHz | | | | | | | | | |
| 11100 | 43.45 | PK | 295 | 1.5 | H | 7.72 | 51.17 | 74 | -22.83 |
| 11100 | 45.58 | PK | 282 | 2.5 | V | 7.72 | 53.30 | 74 | -20.7 |
| 5670 MHz | | | | | | | | | |
| 5725 | 58.54 | PK | 2 | 2.3 | H | 1.68 | 60.22 | 68.2 | -7.98 |
| 5725 | 60.69 | PK | 106 | 1.8 | V | 1.68 | 62.37 | 68.2 | -5.83 |
| 5745 | 57.33 | PK | 90 | 2.1 | H | 2.24 | 59.57 | 68.2 | -8.63 |
| 5745 | 59.82 | PK | 182 | 2.1 | V | 2.24 | 62.06 | 68.2 | -6.14 |
| 11340 | 42.50 | PK | 181 | 1.5 | H | 8.94 | 51.44 | 74 | -22.56 |
| 11340 | 44.73 | PK | 48 | 1.4 | V | 8.94 | 53.67 | 74 | -20.33 |

**5725-5850 MHz:**

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11a | | | | | | | | | |
| 5745 MHz | | | | | | | | | |
| 5725 | 77.06 | PK | 359 | 1.7 | H | 1.68 | 78.74 | 122.2 | -43.46 |
| 5725 | 78.87 | PK | 116 | 2 | V | 1.68 | 80.55 | 122.2 | -41.65 |
| 5720 | 73.00 | PK | 354 | 2.1 | H | 1.68 | 74.68 | 110.8 | -36.12 |
| 5720 | 75.09 | PK | 289 | 2.1 | V | 1.68 | 76.77 | 110.8 | -34.03 |
| 5700 | 66.98 | PK | 53 | 1.8 | H | 1.18 | 68.16 | 105.2 | -37.04 |
| 5700 | 69.05 | PK | 77 | 1.9 | V | 1.18 | 70.23 | 105.2 | -34.97 |
| 5650 | 59.98 | PK | 74 | 1.1 | H | -0.65 | 59.33 | 68.2 | -8.87 |
| 5650 | 62.14 | PK | 89 | 1.3 | V | -0.65 | 61.49 | 68.2 | -6.71 |
| 11490 | 41.49 | PK | 21 | 1.2 | H | 8.97 | 50.46 | 74 | -23.54 |
| 11490 | 43.37 | PK | 331 | 1.1 | V | 8.97 | 52.34 | 74 | -21.66 |
| 5785 MHz | | | | | | | | | |
| 11570 | 41.53 | PK | 133 | 2.4 | H | 9.05 | 50.58 | 74 | -23.42 |
| 11570 | 43.80 | PK | 88 | 2.3 | V | 9.05 | 52.85 | 74 | -21.15 |
| 5825 MHz | | | | | | | | | |
| 5850 | 68.02 | PK | 227 | 2.5 | H | 0.74 | 68.76 | 122.2 | -53.44 |
| 5850 | 70.15 | PK | 89 | 2.5 | V | 0.74 | 70.89 | 122.2 | -51.31 |
| 5855 | 62.44 | PK | 319 | 1.2 | H | 0.74 | 63.18 | 110.8 | -47.62 |
| 5855 | 64.47 | PK | 282 | 2.1 | V | 0.74 | 65.21 | 110.8 | -45.59 |
| 5875 | 65.18 | PK | 9 | 1.9 | H | 0.37 | 65.55 | 105.2 | -39.65 |
| 5875 | 67.44 | PK | 254 | 1.6 | V | 0.37 | 67.81 | 105.2 | -37.39 |
| 5925 | 61.85 | PK | 308 | 1.3 | H | -0.43 | 61.42 | 68.2 | -6.78 |
| 5925 | 64.17 | PK | 289 | 1.3 | V | -0.43 | 63.74 | 68.2 | -4.46 |
| 11650 | 39.51 | PK | 94 | 1.1 | H | 9.07 | 48.58 | 74 | -25.42 |
| 11650 | 41.78 | PK | 306 | 2.2 | V | 9.07 | 50.85 | 74 | -23.15 |

| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n20 | | | | | | | | | |
| 5745 MHz | | | | | | | | | |
| 5725 | 80.29 | PK | 350 | 2.3 | H | 1.68 | 81.97 | 122.2 | -40.23 |
| 5725 | 82.11 | PK | 258 | 2.5 | V | 1.68 | 83.79 | 122.2 | -38.41 |
| 5720 | 74.60 | PK | 240 | 1.3 | H | 1.68 | 76.28 | 110.8 | -34.52 |
| 5720 | 76.50 | PK | 127 | 1.1 | V | 1.68 | 78.18 | 110.8 | -32.62 |
| 5700 | 66.17 | PK | 349 | 1.9 | H | 1.18 | 67.35 | 105.2 | -37.85 |
| 5700 | 68.42 | PK | 68 | 2.2 | V | 1.18 | 69.60 | 105.2 | -35.6 |
| 5650 | 59.73 | PK | 292 | 1.7 | H | -0.65 | 59.08 | 68.2 | -9.12 |
| 5650 | 61.82 | PK | 100 | 2.2 | V | -0.65 | 61.17 | 68.2 | -7.03 |
| 11490 | 41.24 | PK | 331 | 1.6 | H | 8.97 | 50.21 | 74 | -23.79 |
| 11490 | 43.56 | PK | 264 | 1.9 | V | 8.97 | 52.53 | 74 | -21.47 |
| 5785 MHz | | | | | | | | | |
| 11570 | 41.30 | PK | 42 | 2.1 | H | 9.05 | 50.35 | 74 | -23.65 |
| 11570 | 43.71 | PK | 206 | 1.9 | V | 9.05 | 52.76 | 74 | -21.24 |
| 5825 MHz | | | | | | | | | |
| 5850 | 74.25 | PK | 72 | 2.1 | H | 0.74 | 74.99 | 122.2 | -47.21 |
| 5850 | 76.44 | PK | 53 | 1.2 | V | 0.74 | 77.18 | 122.2 | -45.02 |
| 5855 | 62.80 | PK | 104 | 1.8 | H | 0.74 | 63.54 | 110.8 | -47.26 |
| 5855 | 65.00 | PK | 73 | 1.2 | V | 0.74 | 65.74 | 110.8 | -45.06 |
| 5875 | 66.43 | PK | 299 | 2.1 | H | 0.37 | 66.80 | 105.2 | -38.4 |
| 5875 | 68.35 | PK | 87 | 2.3 | V | 0.37 | 68.72 | 105.2 | -36.48 |
| 5925 | 61.90 | PK | 225 | 2.2 | H | -0.43 | 61.47 | 68.2 | -6.73 |
| 5925 | 64.17 | PK | 80 | 2.2 | V | -0.43 | 63.74 | 68.2 | -4.46 |
| 11650 | 39.44 | PK | 122 | 2.3 | H | 9.07 | 48.51 | 74 | -25.49 |
| 11650 | 41.92 | PK | 281 | 1.8 | V | 9.07 | 50.99 | 74 | -23.01 |

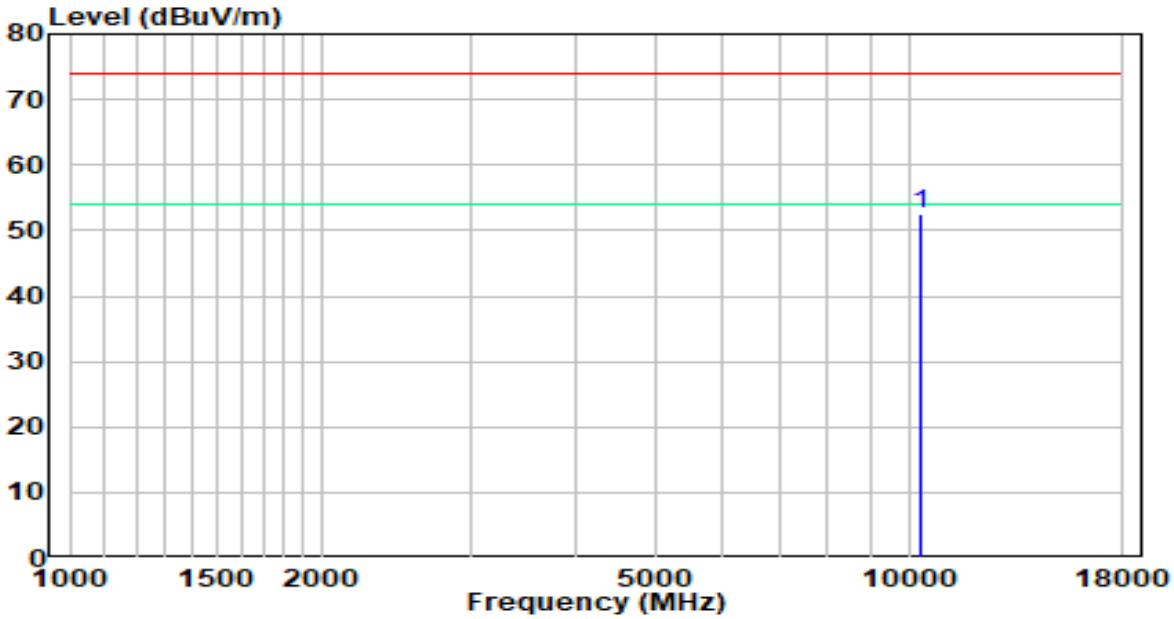
| Frequency (MHz) | Receiver | | Turn-Table | Rx Antenna | | Corrected Factor (dB/m) | Corrected Amplitude (dBμV/m) | FCC Part15.407 | |
|---|---|---|---|---|---|---|---|---|---|
| | Reading (dBμV) | Detector (PK/QP/AV) | Angle Degree | Height (m) | Polar (H / V) | | | Limit (dBμV/m) | Margin (dB) |
| 802.11n40 | | | | | | | | | |
| 5755 MHz | | | | | | | | | |
| 5725 | 62.40 | PK | 113 | 2.5 | H | 1.68 | 64.08 | 122.2 | -58.12 |
| 5725 | 64.11 | PK | 332 | 2 | V | 1.68 | 65.79 | 122.2 | -56.41 |
| 5720 | 65.10 | PK | 92 | 1.2 | H | 1.68 | 66.78 | 110.8 | -44.02 |
| 5720 | 66.65 | PK | 295 | 2.1 | V | 1.68 | 68.33 | 110.8 | -42.47 |
| 5700 | 60.60 | PK | 293 | 2.5 | H | 1.18 | 61.78 | 105.2 | -43.42 |
| 5700 | 62.67 | PK | 153 | 1.4 | V | 1.18 | 63.85 | 105.2 | -41.35 |
| 5650 | 59.69 | PK | 201 | 2.1 | H | -0.65 | 59.04 | 68.2 | -9.16 |
| 5650 | 61.83 | PK | 111 | 1.1 | V | -0.65 | 61.18 | 68.2 | -7.02 |
| 11510 | 41.88 | PK | 88 | 1.6 | H | 8.97 | 50.85 | 74 | -23.15 |
| 11510 | 43.52 | PK | 6 | 1.1 | V | 8.97 | 52.49 | 74 | -21.51 |
| 5795 MHz | | | | | | | | | |
| 5850 | 68.45 | PK | 303 | 1.5 | H | 0.74 | 69.19 | 122.2 | -53.01 |
| 5850 | 70.47 | PK | 53 | 1.4 | V | 0.74 | 71.21 | 122.2 | -50.99 |
| 5855 | 61.19 | PK | 223 | 1.1 | H | 0.74 | 61.93 | 110.8 | -48.87 |
| 5855 | 63.41 | PK | 199 | 2.1 | V | 0.74 | 64.15 | 110.8 | -46.65 |
| 5875 | 68.94 | PK | 334 | 2.4 | H | 0.37 | 69.31 | 105.2 | -35.89 |
| 5875 | 71.16 | PK | 74 | 1.2 | V | 0.37 | 71.53 | 105.2 | -33.67 |
| 5925 | 61.75 | PK | 330 | 1 | H | -0.43 | 61.32 | 68.2 | -6.88 |
| 5925 | 63.96 | PK | 292 | 2.1 | V | -0.43 | 63.53 | 68.2 | -4.67 |
| 11590 | 41.02 | PK | 148 | 1.6 | H | 9.09 | 50.11 | 74 | -23.89 |
| 11590 | 43.19 | PK | 344 | 2.4 | V | 9.09 | 52.28 | 74 | -21.72 |

**Note:**
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak values were recorded.

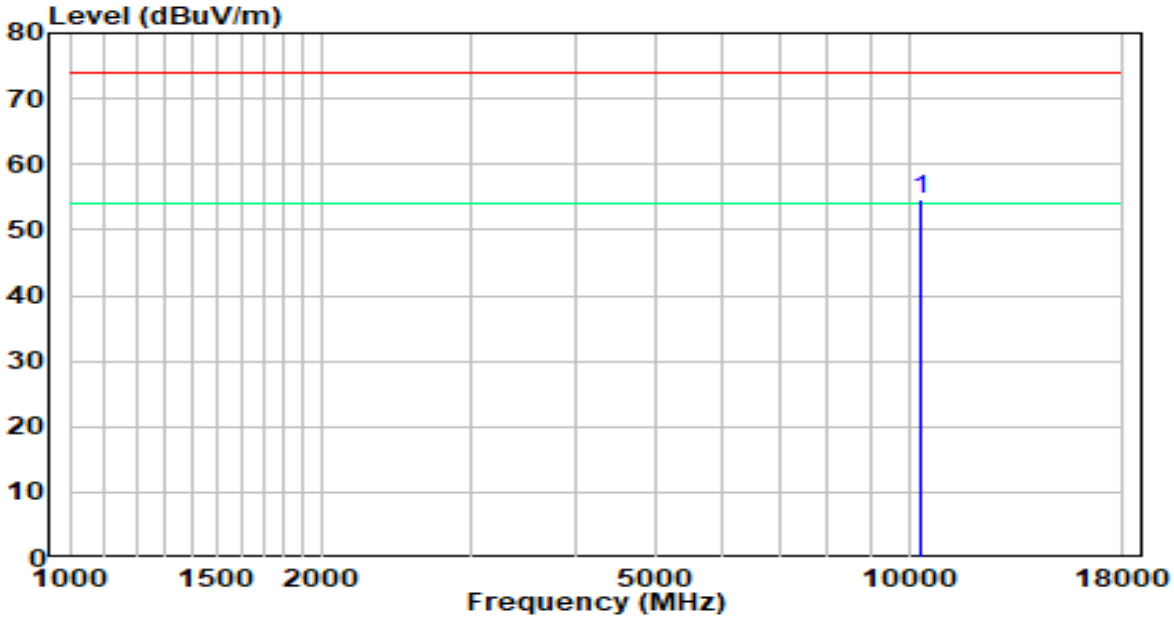
**1-18GHz**

**Pre-scan for 802.11 n40 mode, 5310MHz**

**Horizontal:**



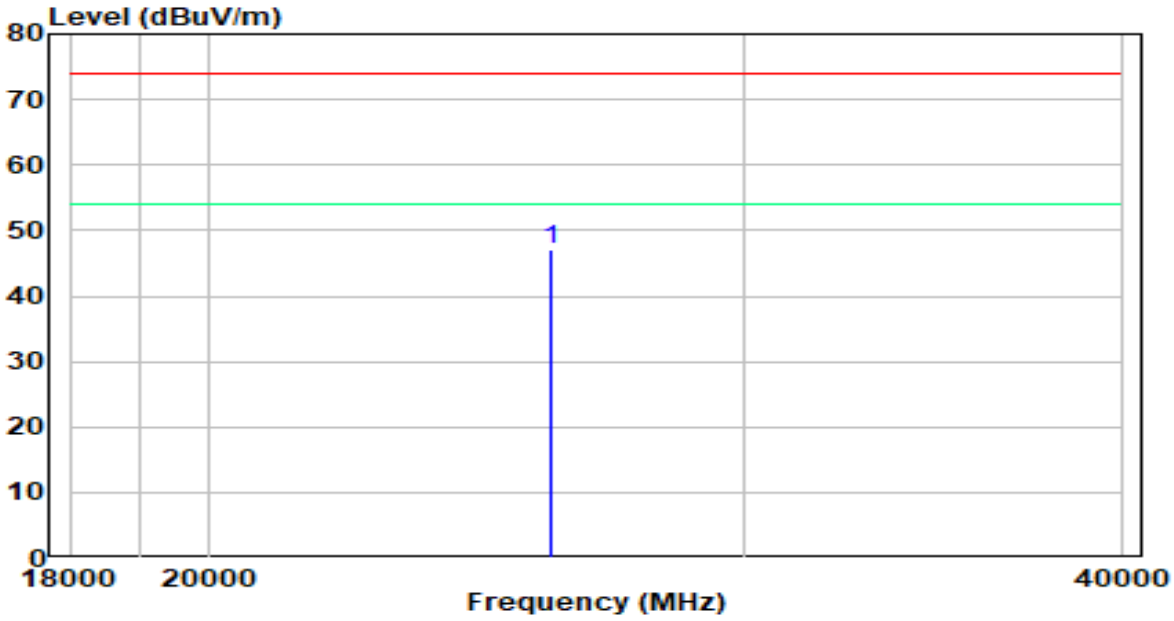

**Vertical:**



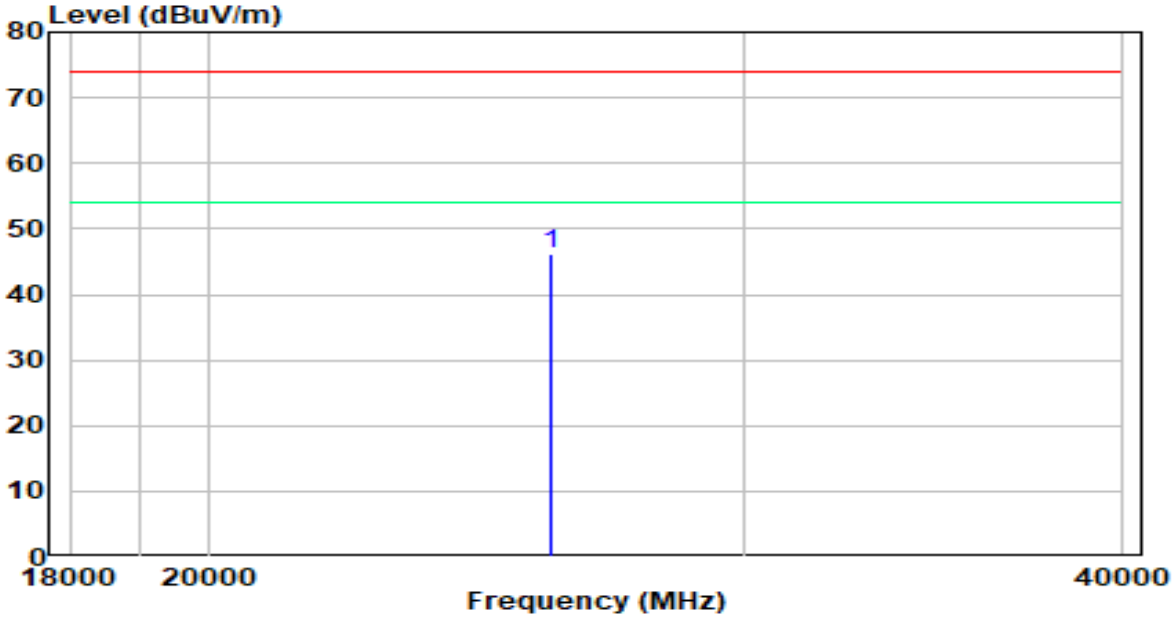
**18-40GHz**

**Pre-scan for 802.11 n40 mode, 5310MHz**

**Horizontal:**




**Vertical:**



# FCC §15.407(a),(e) – 26 dB & 6dB EMISSION BANDWIDTH

## Applicable Standard

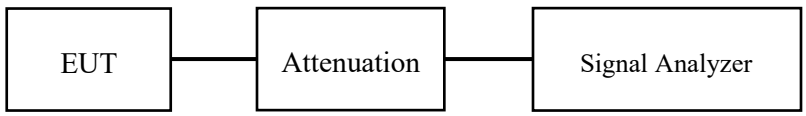
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

## Test Procedure

**1. Emission Bandwidth (EBW)**
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. **Minimum Emission Bandwidth for the band 5.725-5.85 GHz**
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25-27 ℃ |
| **Relative Humidity:** | 46-57 % |
| **ATM Pressure:** | 101.0 kPa |

*The testing was performed by Fan Yang from 2021-08-02 to 2021-11-24.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the Appendix.*

# FCC §15.407(a) – CONDUCTED TRANSMITTER OUTPUT POWER

## Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

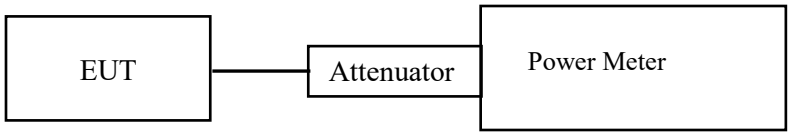
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

## Test Procedure

c. Place the EUT on a bench and set it in transmitting mode.

d. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.

e. Add a correction factor to the display.



## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 27 ℃ |
| **Relative Humidity:** | 57 % |
| **ATM Pressure:** | 101.0 kPa |

*The testing was performed by Fan Yang from 2021-08-02 to 2021-08-03.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the Appendix.*

# FCC §15.407(a) - POWER SPECTRAL DENSITY

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

## Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW $\geqslant$ 1/T, where T is defined in section II.B.l.a).
b) Set VBW $\geqslant$ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 25-27 ℃ |
| **Relative Humidity:** | 46-57 % |
| **ATM Pressure:** | 101.0 kPa |

*The testing was performed by Fan Yang from 2021-08-02 to 2021-11-24.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the Appendix.*

# APPENDIX

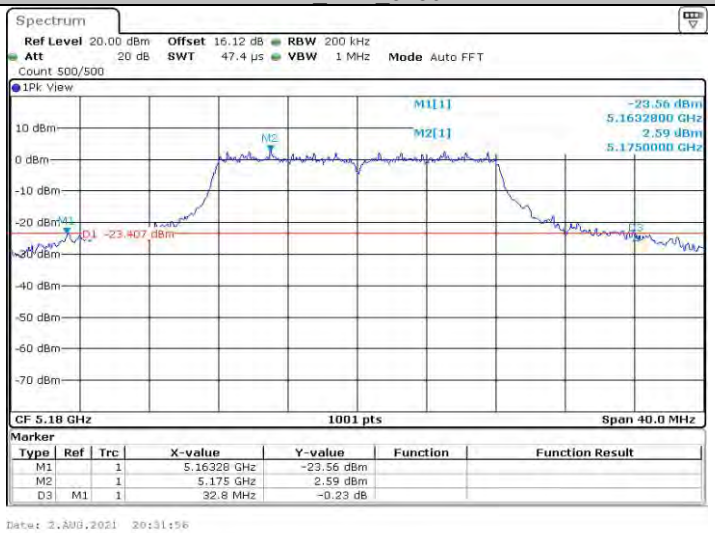
## Appendix A1:EmissionBandwidth

### Test Result

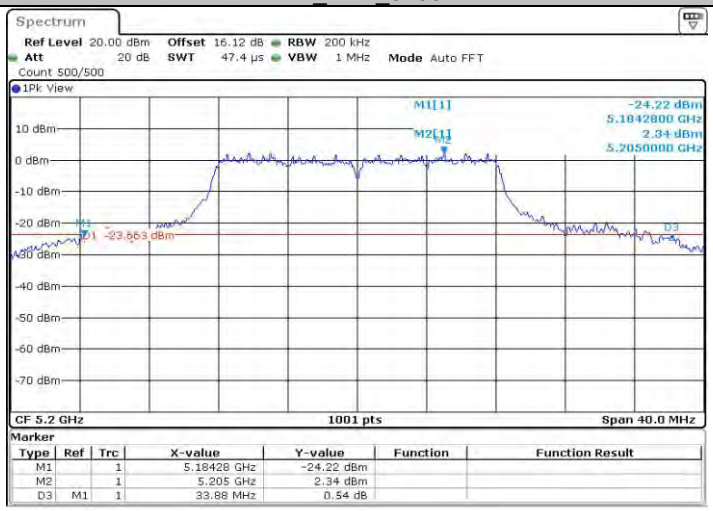
| Test Mode | Antenna | Channel | 26db EBW [MHz] | Verdict |
|---|---|---|---|---|
| 11A | Ant1 | 5180 | 32.800 | PASS |
| | | 5200 | 33.880 | PASS |
| | | 5240 | 31.800 | PASS |
| | | 5260 | 33.320 | PASS |
| | | 5280 | 31.840 | PASS |
| | | 5320 | 33.960 | PASS |
| | | 5500 | 37.600 | PASS |
| | | 5580 | 38.160 | PASS |
| | | 5700 | 32.680 | PASS |
| 11N20SISO | Ant1 | 5180 | 36.080 | PASS |
| | | 5200 | 34.880 | PASS |
| | | 5240 | 33.960 | PASS |
| | | 5260 | 35.840 | PASS |
| | | 5280 | 34.480 | PASS |
| | | 5320 | 36.920 | PASS |
| | | 5500 | 38.120 | PASS |
| | | 5580 | 42.300 | PASS |
| | | 5700 | 33.680 | PASS |
| 11N40SISO | Ant1 | 5190 | 73.700 | PASS |
| | | 5230 | 81.800 | PASS |
| | | 5270 | 86.600 | PASS |
| | | 5310 | 76.300 | PASS |
| | | 5510 | 84.600 | PASS |
| | | 5550 | 86.100 | PASS |
| | | 5670 | 87.200 | PASS |

### Test Graphs

11A_Ant1_5180

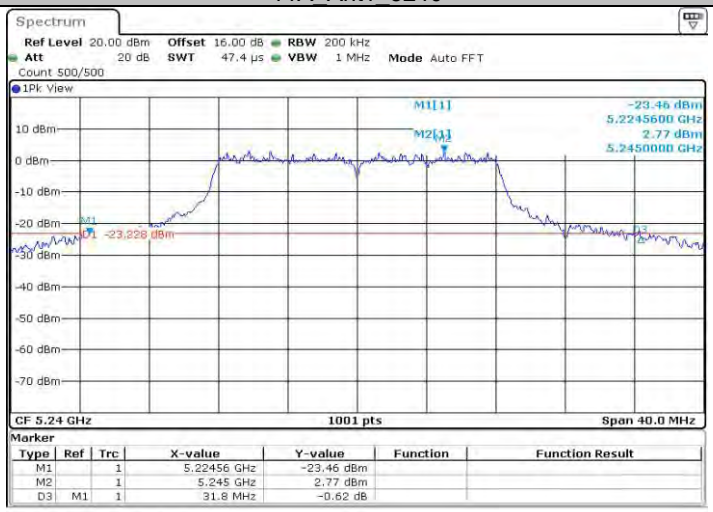


11A_Ant1_5200



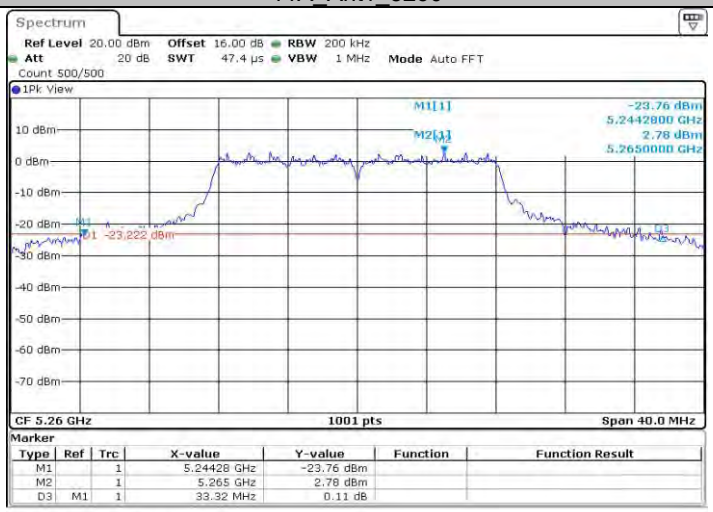

Date: 2.AUG.2021 20:41:59

11A_Ant1_5240



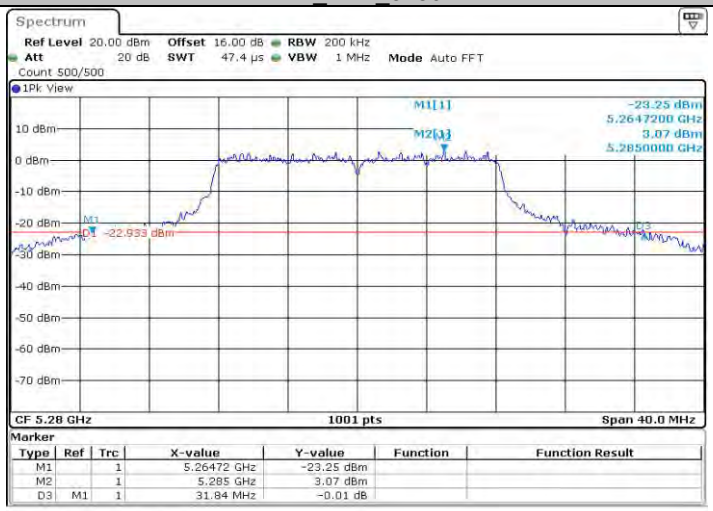

Date: 2.AUG.2021 20:38:07

11A_Ant1_5260

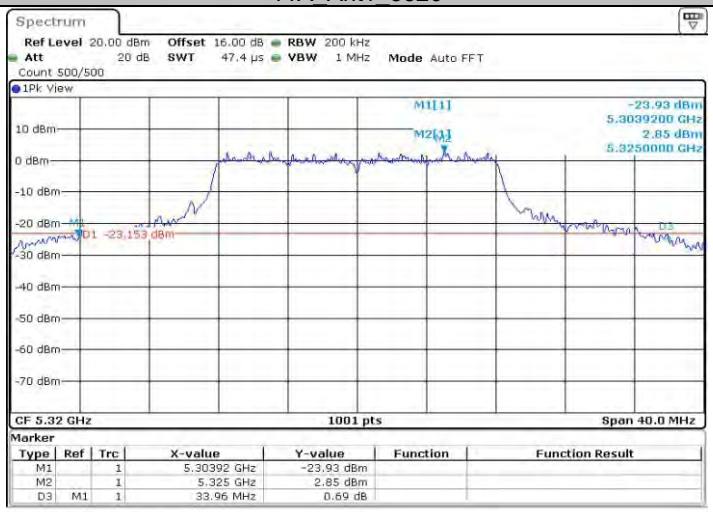



Date: 2.AUG.2021 20:42:42

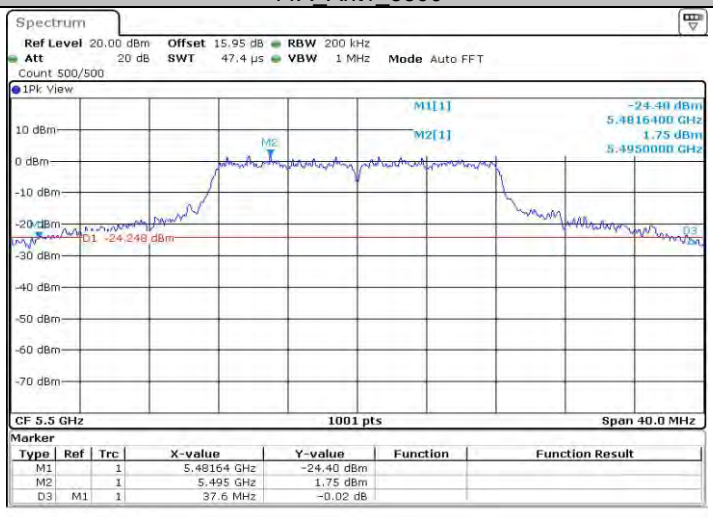
11A_Ant1_5280



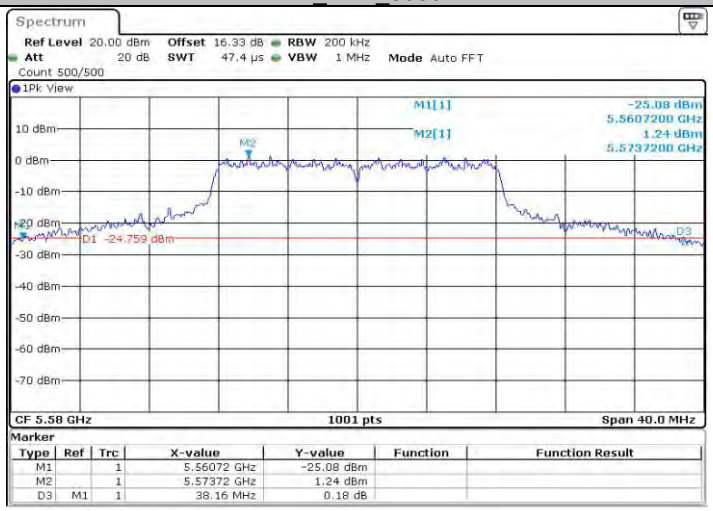

11A_Ant1_5320



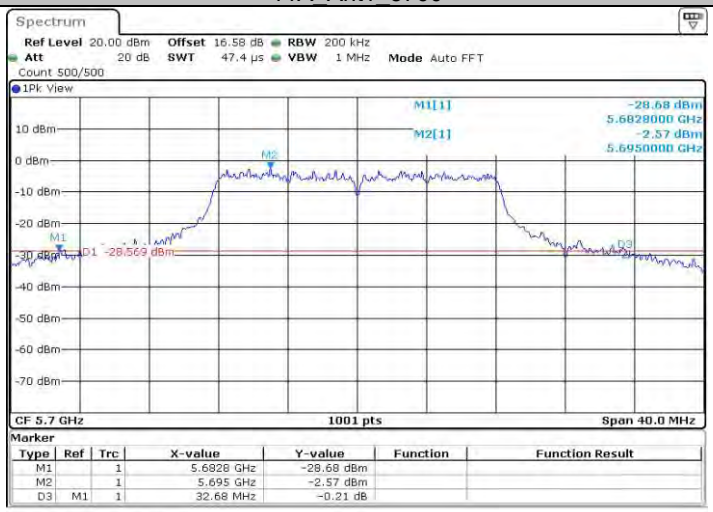

11A_Ant1_5500



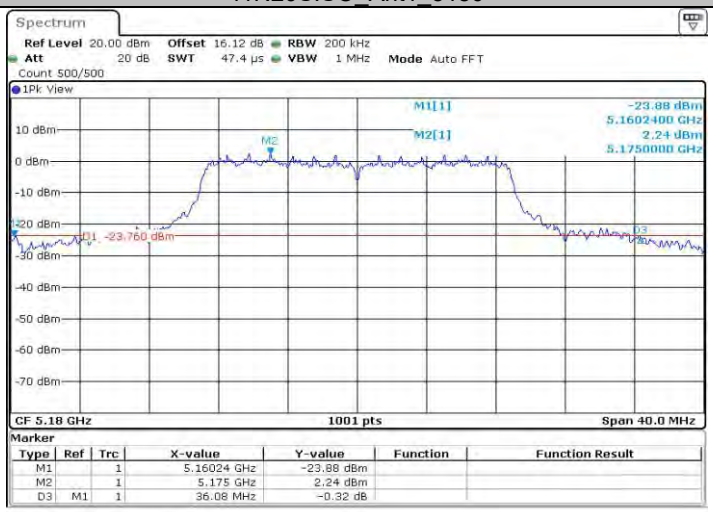
11A_Ant1_5580



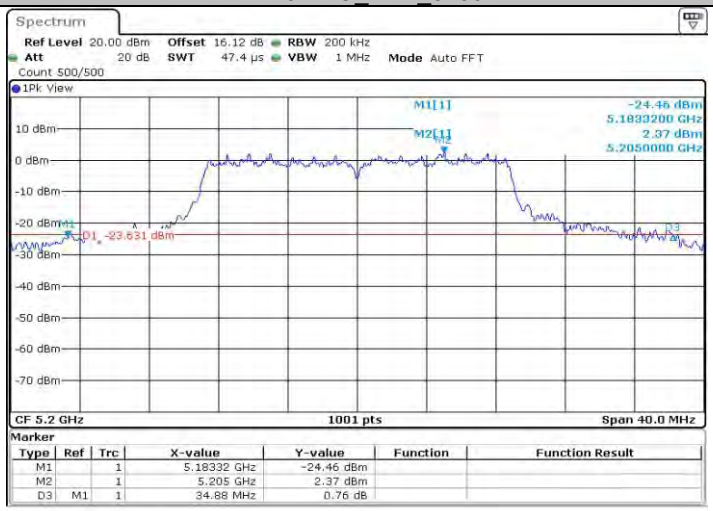

11A_Ant1_5700



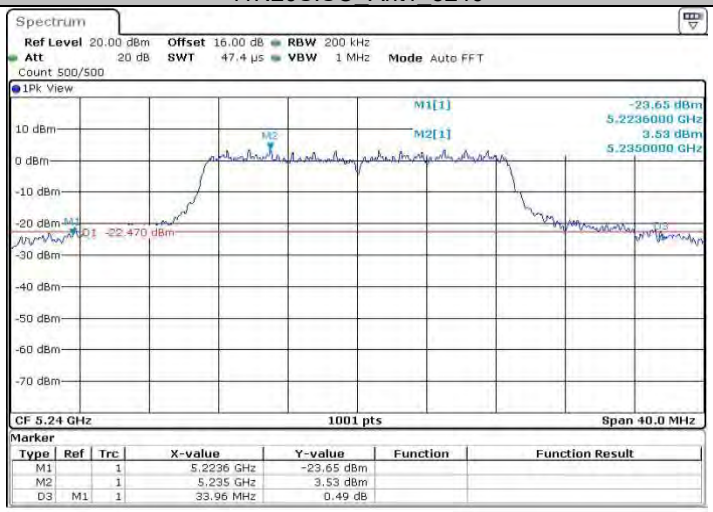

11N20SISO_Ant1_5180



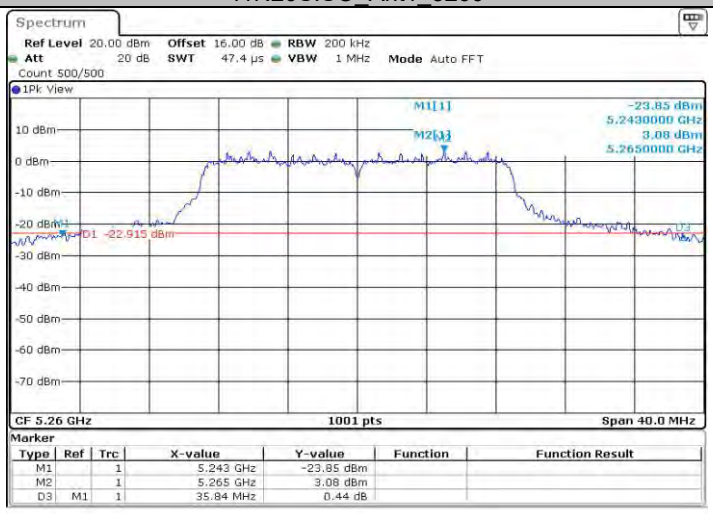
11N20SISO_Ant1_5200



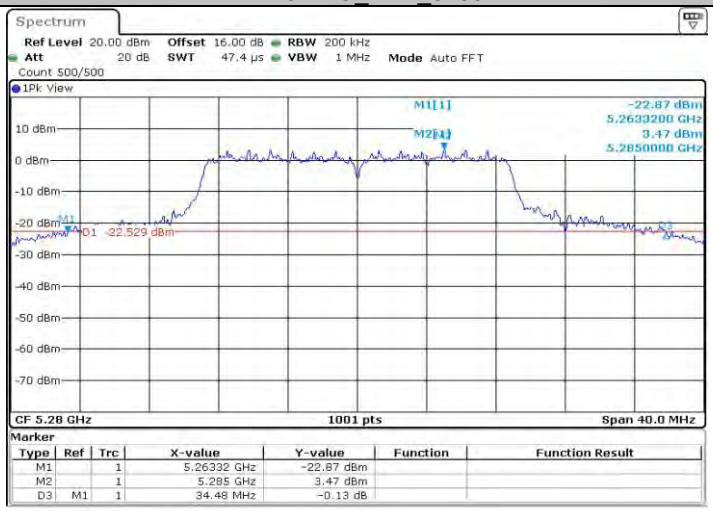

11N20SISO_Ant1_5240



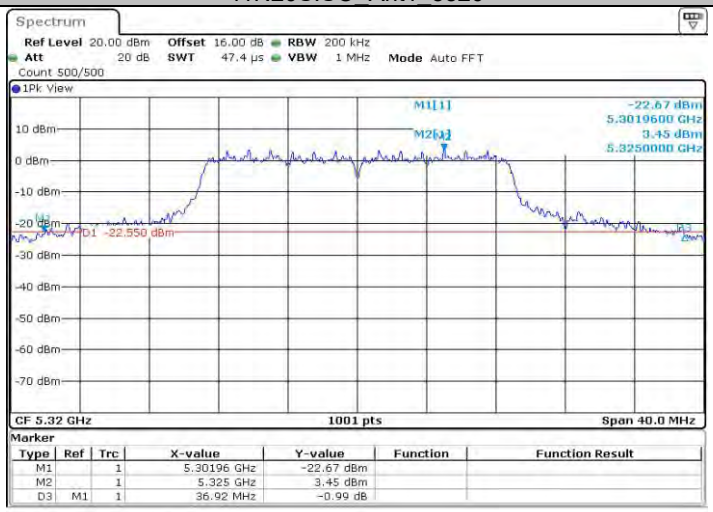

11N20SISO_Ant1_5260



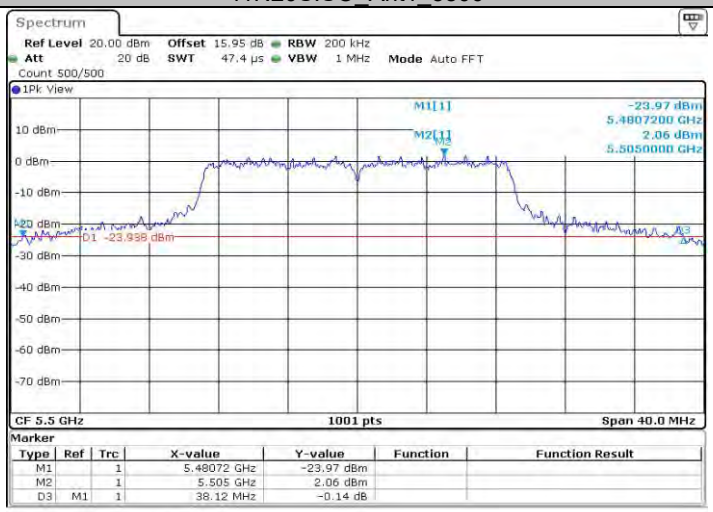
11N20SISO_Ant1_5280




11N20SISO_Ant1_5320

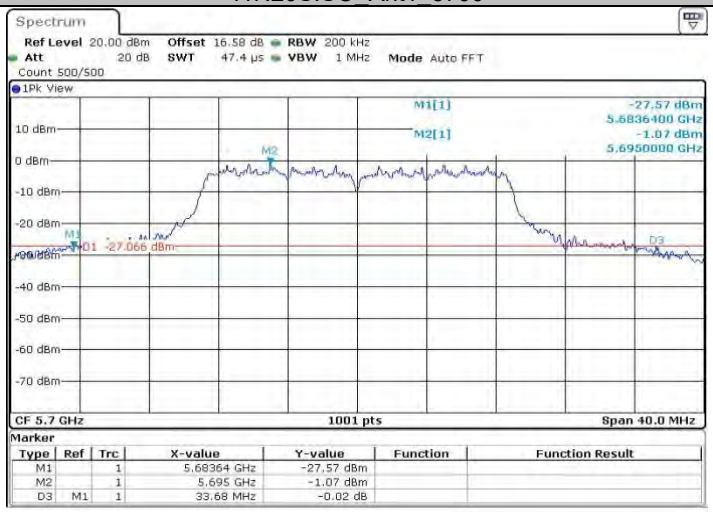



11N20SISO_Ant1_5500

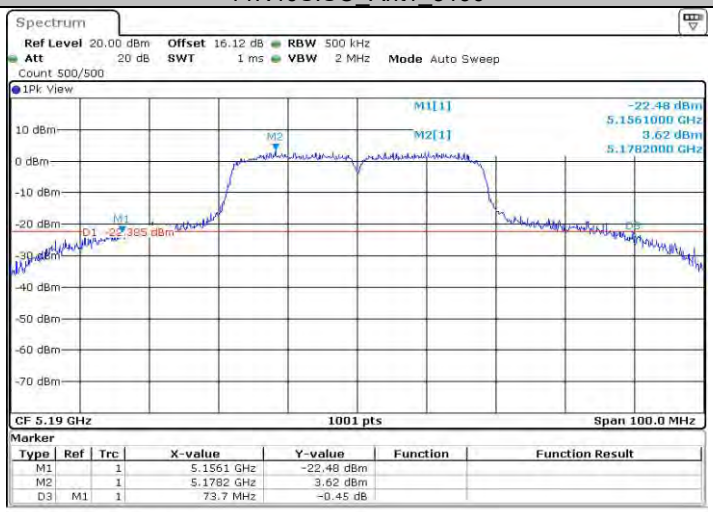


11N20SISO_Ant1_5580

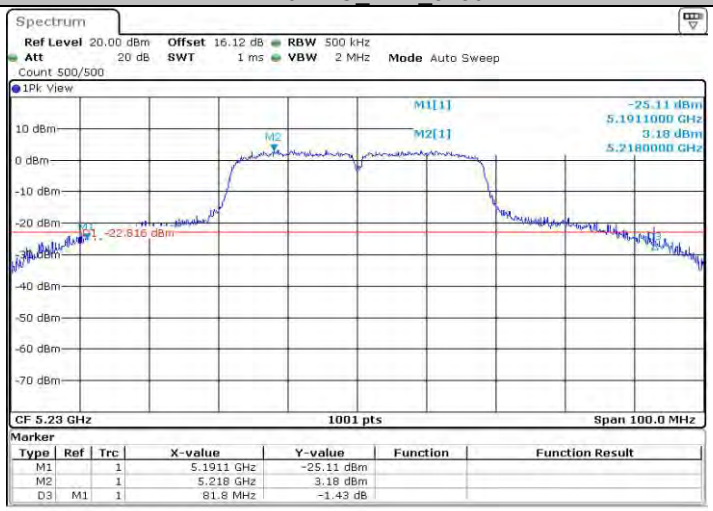

11N20SISO_Ant1_5700



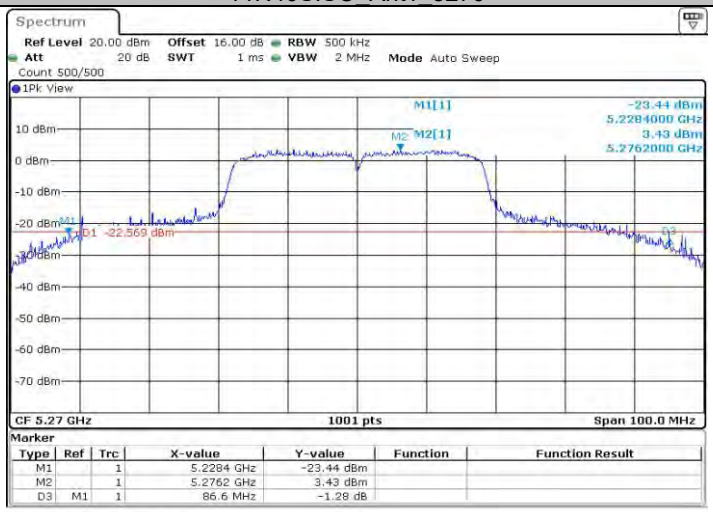

11N40SISO_Ant1_5190



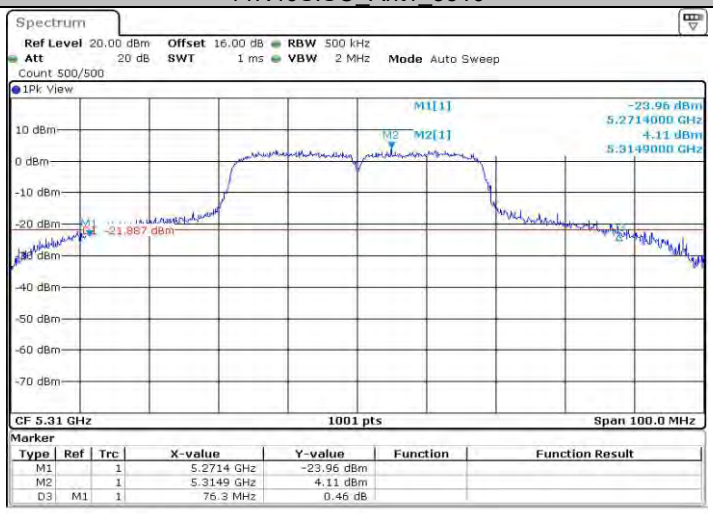
11N40SISO_Ant1_5230



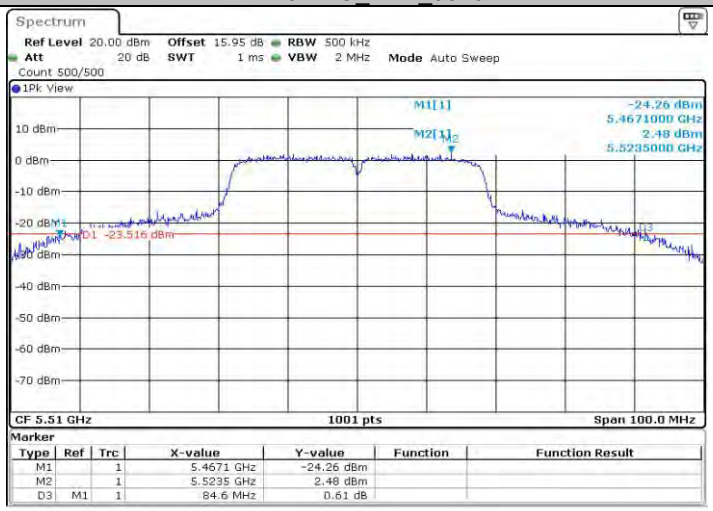

11N40SISO_Ant1_5270



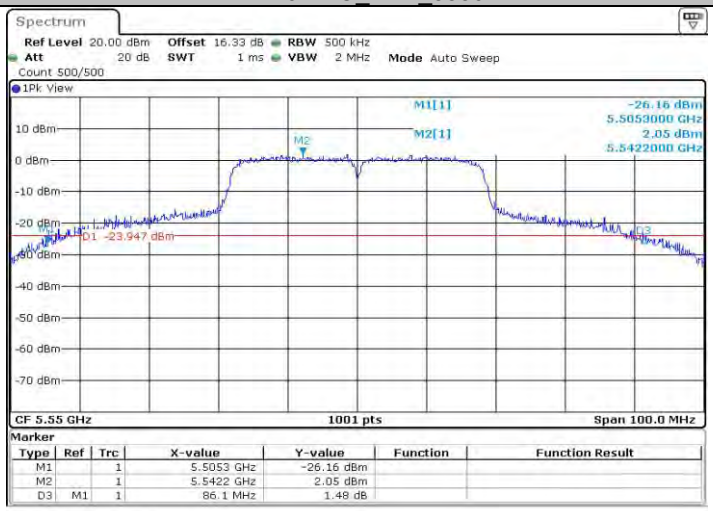

11N40SISO_Ant1_5310



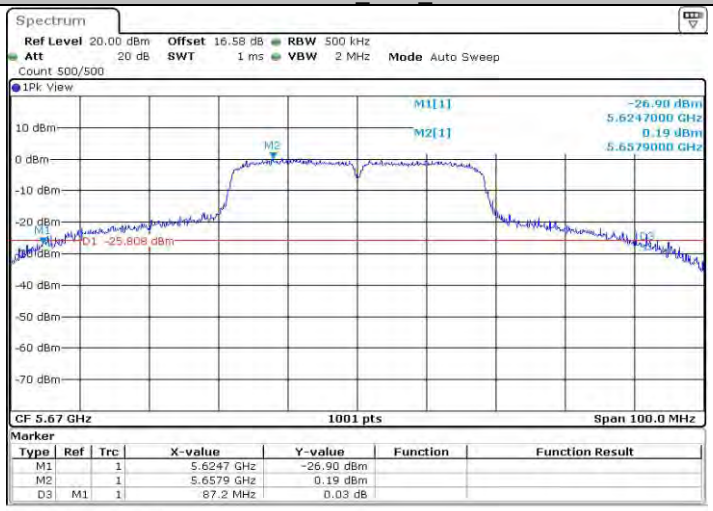
11N40SISO_Ant1_5510




11N40SISO_Ant1_5550




11N40SISO_Ant1_5670



## Appendix A2: Occupied channel bandwidth

### Test Result

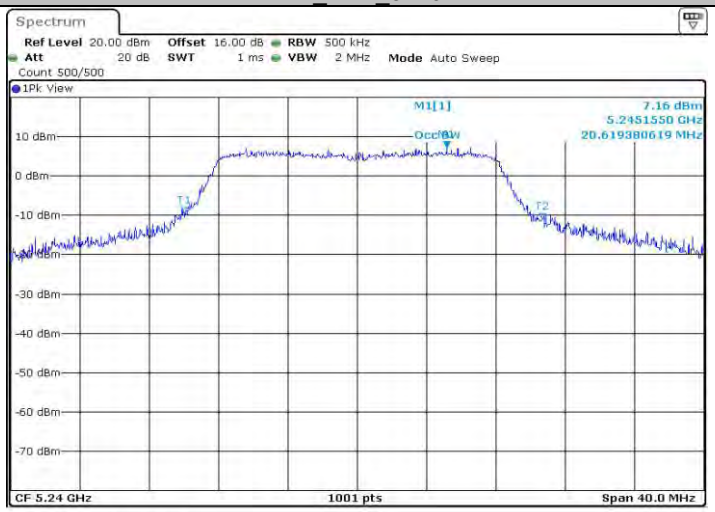
| Test Mode | Antenna | Channel | OCB [MHz] | Verdict |
|---|---|---|---|---|
| 11A | Ant1 | 5180 | 19.98 | PASS |
| | | 5200 | 20.539 | PASS |
| | | 5240 | 20.619 | PASS |
| | | 5260 | 20.899 | PASS |
| | | 5280 | 20.699 | PASS |
| | | 5320 | 21.379 | PASS |
| | | 5500 | 24.935 | PASS |
| | | 5580 | 25.574 | PASS |
| | | 5700 | 19.7 | PASS |
| | | 5745 | 20.899 | PASS |
| | | 5785 | 20.18 | PASS |
| | | 5825 | 18.462 | PASS |
| 11N20SISO | Ant1 | 5180 | 20.140 | PASS |
| | | 5200 | 21.059 | PASS |
| | | 5240 | 20.819 | PASS |
| | | 5260 | 22.697 | PASS |
| | | 5280 | 22.617 | PASS |
| | | 5320 | 23.377 | PASS |
| | | 5500 | 24.056 | PASS |
| | | 5580 | 26.653 | PASS |
| | | 5700 | 20.500 | PASS |
| | | 5745 | 22.498 | PASS |
| | | 5785 | 21.259 | PASS |
| | | 5825 | 19.141 | PASS |
| 11N40SISO | Ant1 | 5190 | 38.601 | PASS |
| | | 5230 | 38.761 | PASS |
| | | 5270 | 39.161 | PASS |
| | | 5310 | 39.8 | PASS |
| | | 5510 | 43.796 | PASS |
| | | 5550 | 45.235 | PASS |
| | | 5670 | 43.237 | PASS |
| | | 5755 | 39.96 | PASS |
| | | 5795 | 38.921 | PASS |

## Test Graphs

11A_Ant1_5180


11A_Ant1_5200

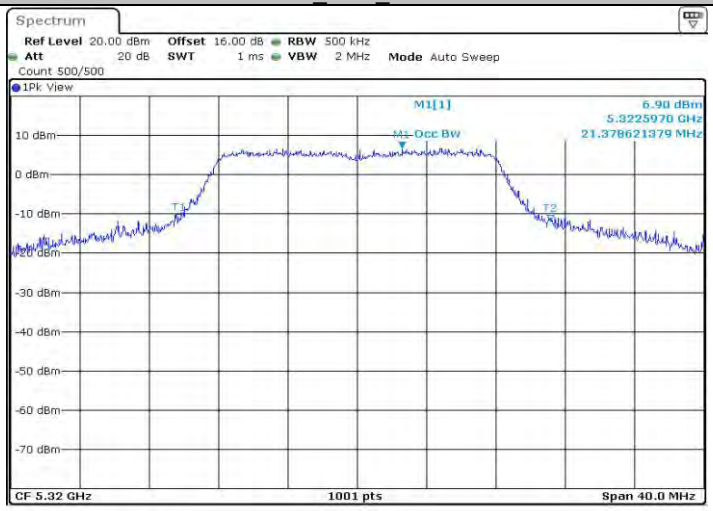

11A_Ant1_5240



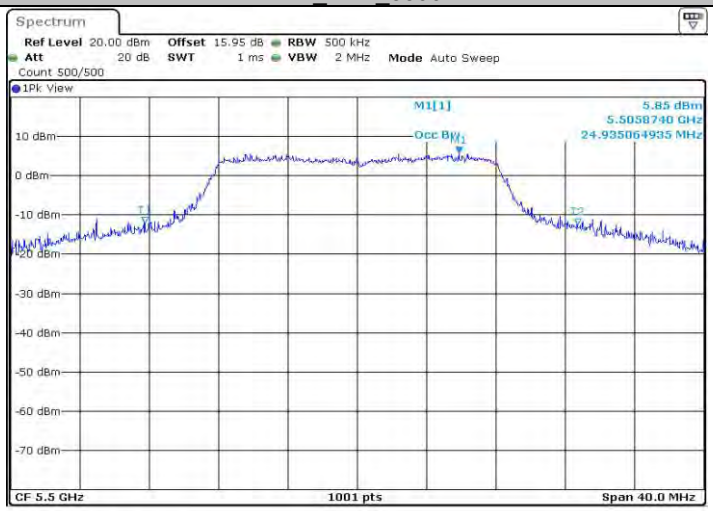
11A_Ant1_5260


11A_Ant1_5280

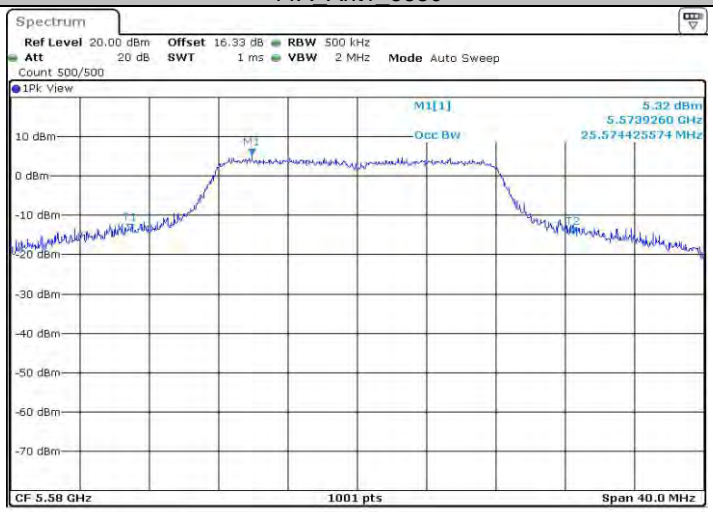

11A_Ant1_5320



11A_Ant1_5500




11A_Ant1_5580




11A_Ant1_5700

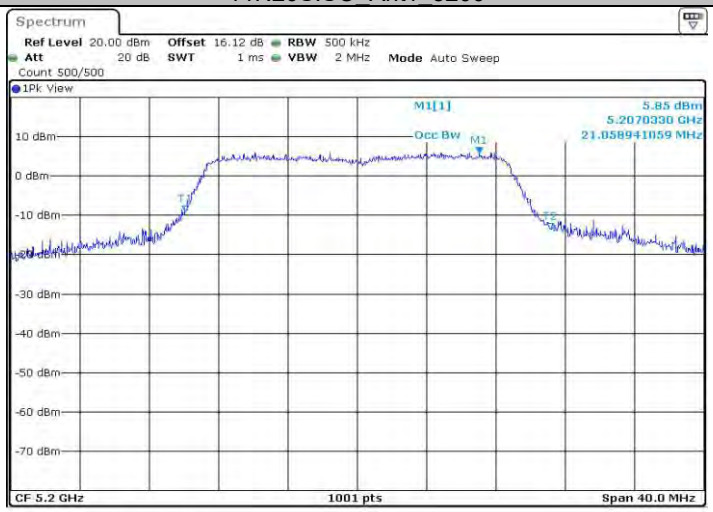
11A_Ant1_5745


11A_Ant1_5785


11A_Ant1_5825

11N20SISO_Ant1_5180

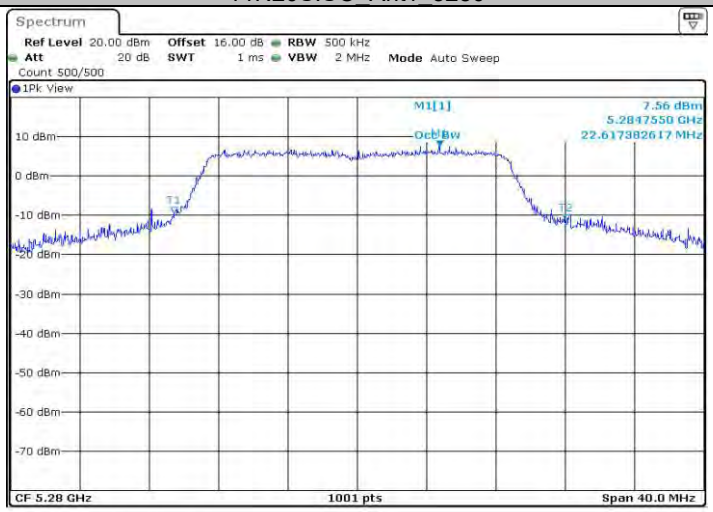

11N20SISO_Ant1_5200



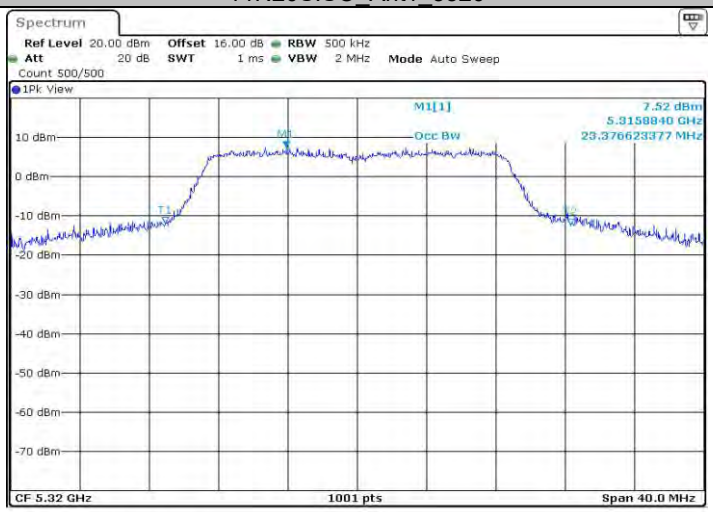

11N20SISO_Ant1_5240

11N20SISO_Ant1_5260


11N20SISO_Ant1_5280

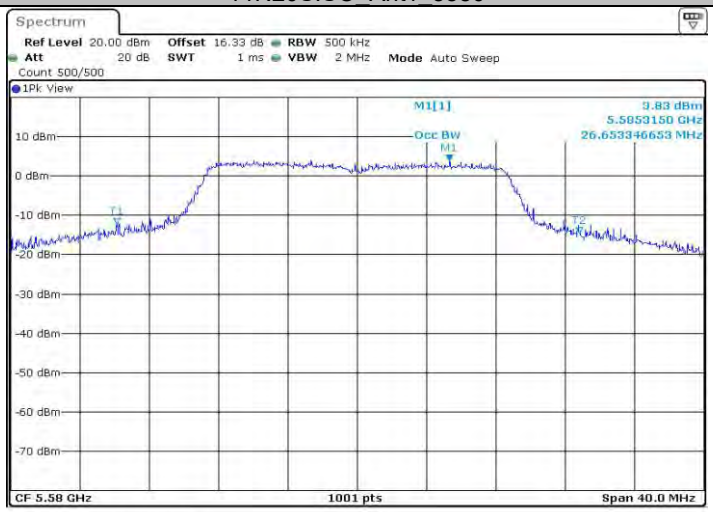



11N20SISO_Ant1_5320



11N20SISO_Ant1_5500


11N20SISO_Ant1_5580

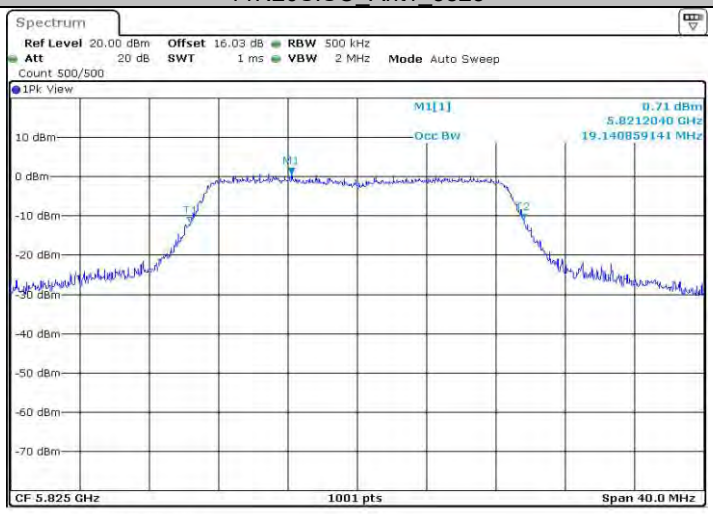



11N20SISO_Ant1_5700

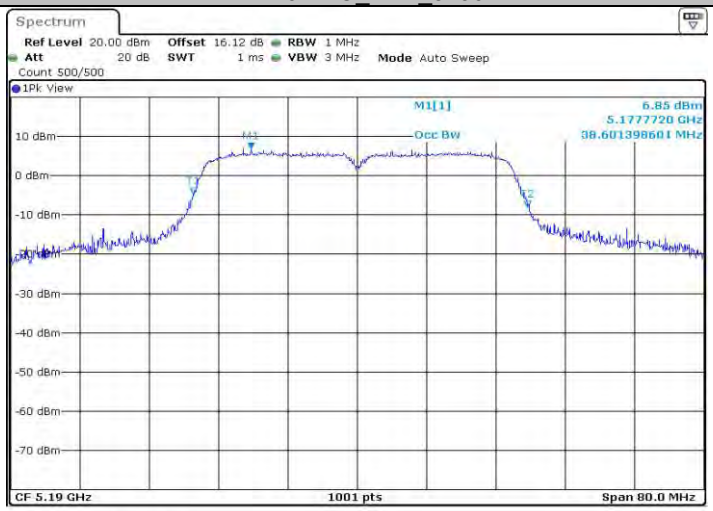
11N20SISO_Ant1_5745


11N20SISO_Ant1_5785


11N20SISO_Ant1_5825



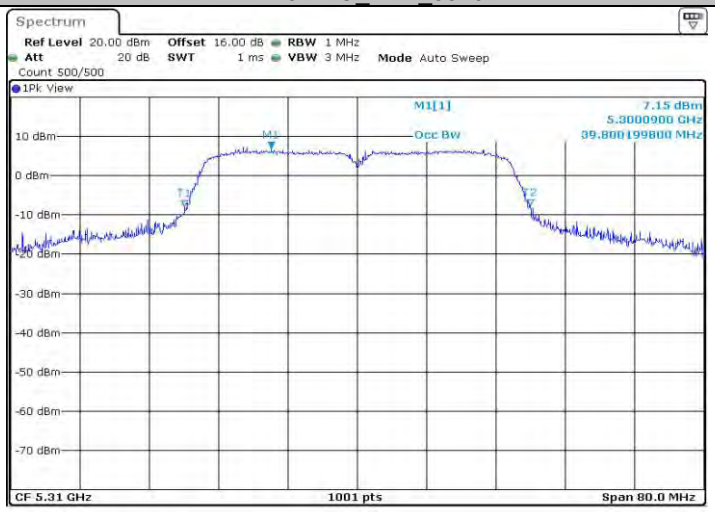
11N40SISO_Ant1_5190



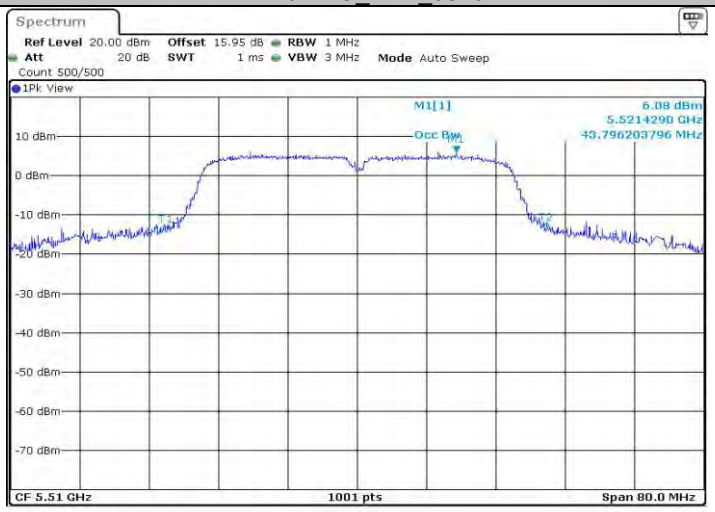

11N40SISO_Ant1_5230


11N40SISO_Ant1_5270

11N40SISO_Ant1_5310

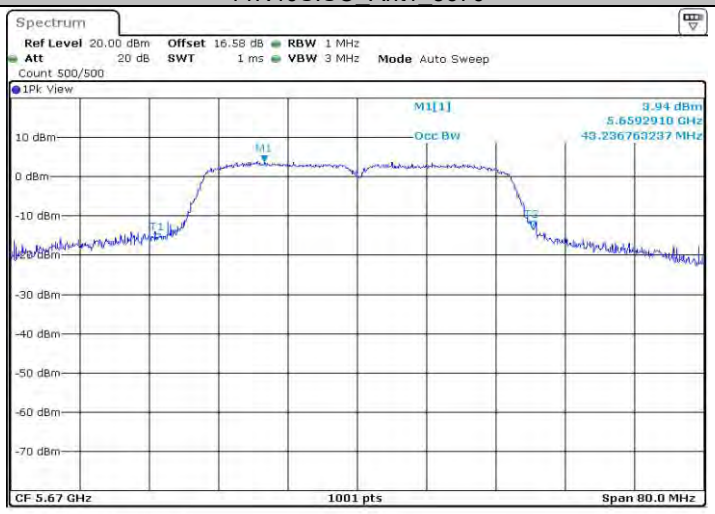



11N40SISO_Ant1_5510




11N40SISO_Ant1_5550

11N40SISO_Ant1_5670




11N40SISO_Ant1_5755


11N40SISO_Ant1_5795

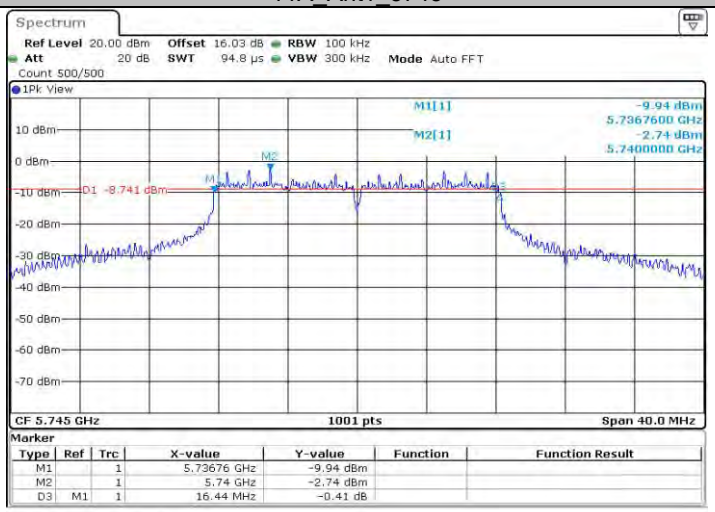
## Appendix A3: Min emission bandwidth

### Test Result

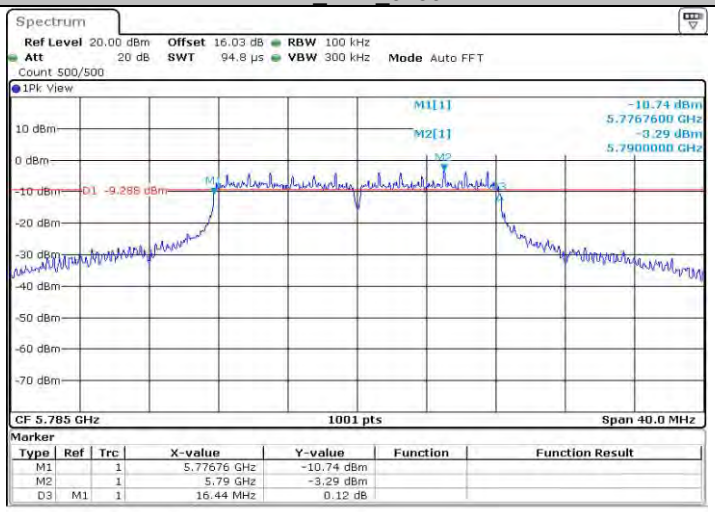
| Test Mode | Antenna | Channel | 6db EBW [MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5745 | 16.440 | 0.5 | PASS |
| | | 5785 | 16.440 | 0.5 | PASS |
| | | 5825 | 16.440 | 0.5 | PASS |
| 11N20SISO | Ant1 | 5745 | 17.640 | 0.5 | PASS |
| | | 5785 | 17.640 | 0.5 | PASS |
| | | 5825 | 17.640 | 0.5 | PASS |
| 11N40SISO | Ant1 | 5755 | 35.520 | 0.5 | PASS |
| | | 5795 | 35.280 | 0.5 | PASS |

## Test Graphs

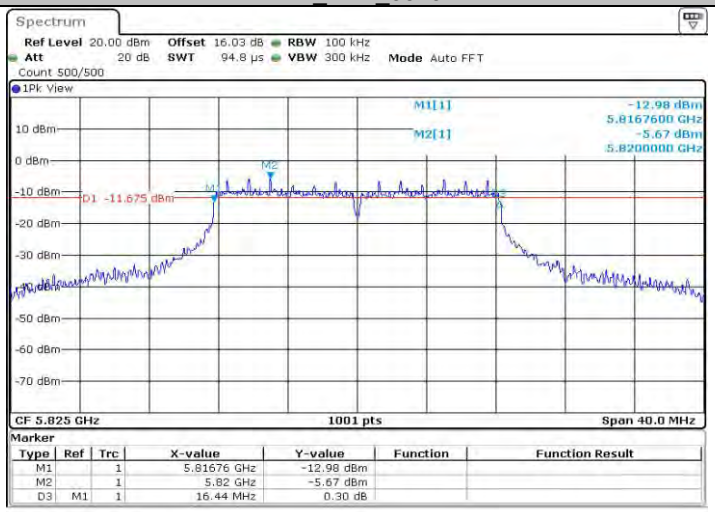
11A_Ant1_5745



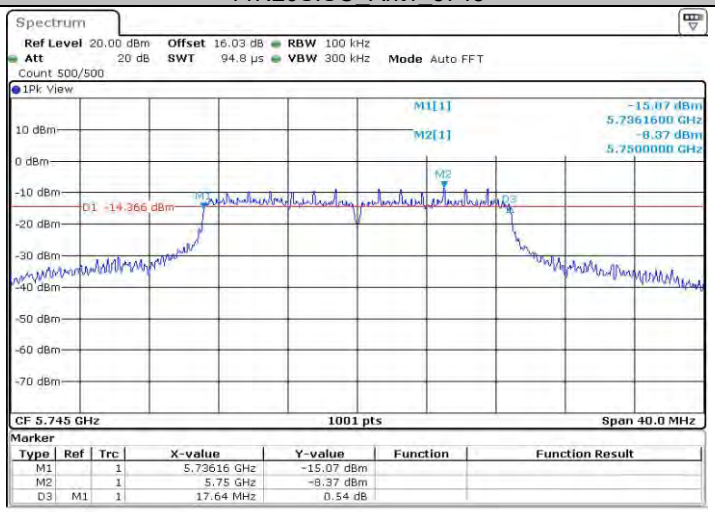

11A_Ant1_5785




11A_Ant1_5825

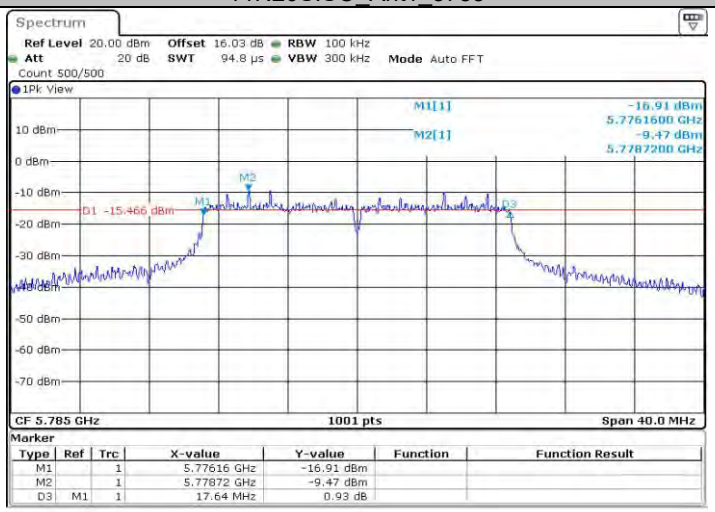


11N20SISO_Ant1_5745



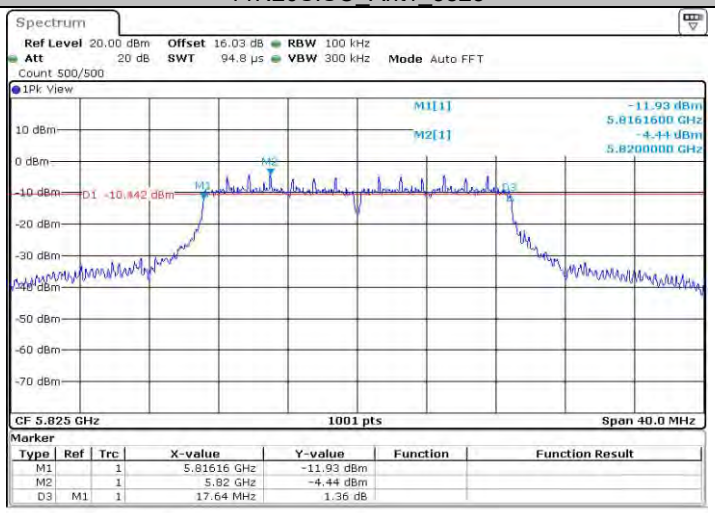

Date: 24.NOV.2021 03:19:52

11N20SISO_Ant1_5785



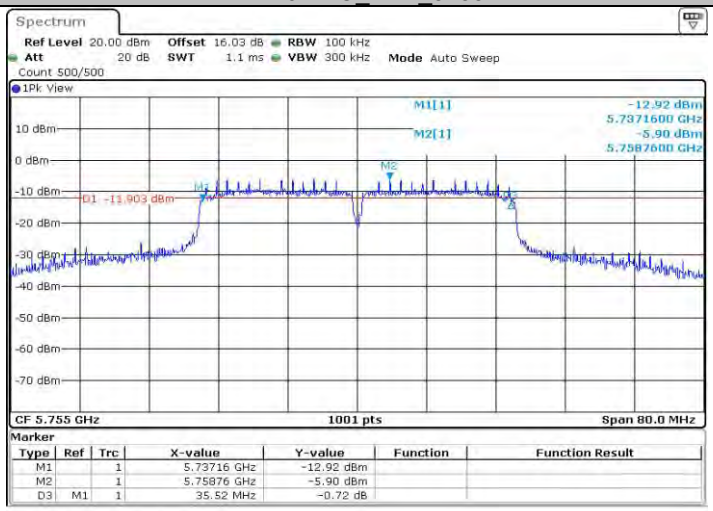

Date: 24.NOV.2021 03:24:40

11N20SISO_Ant1_5825

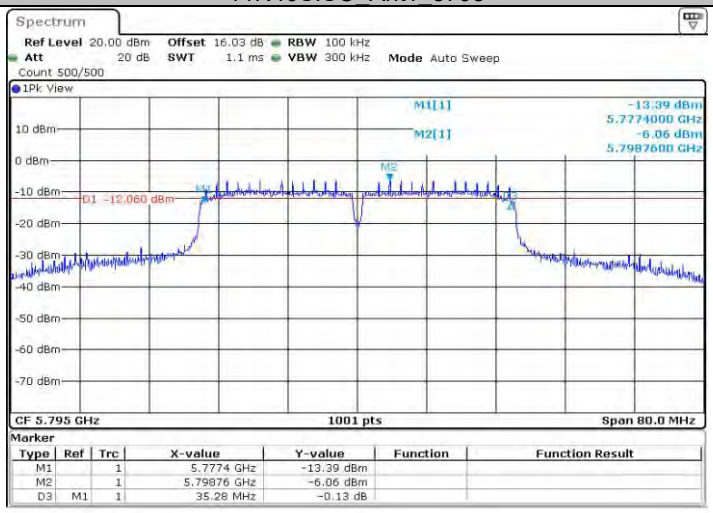



Date: 24.NOV.2021 03:26:14

11N40SISO_Ant1_5755




11N40SISO_Ant1_5795



## Appendix B: Maximum conducted output power

### Test Result

| Test Mode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 13.71 | ≤23.98 | PASS |
| | | 5200 | 13.80 | ≤23.98 | PASS |
| | | 5240 | 13.99 | ≤23.98 | PASS |
| | | 5260 | 13.96 | ≤23.98 | PASS |
| | | 5280 | 13.97 | ≤23.98 | PASS |
| | | 5320 | 14.01 | ≤23.98 | PASS |
| | | 5500 | 12.70 | ≤23.98 | PASS |
| | | 5580 | 11.84 | ≤23.98 | PASS |
| | | 5700 | 8.45 | ≤23.98 | PASS |
| | | 5745 | 9.64 | ≤30 | PASS |
| | | 5785 | 9.22 | ≤30 | PASS |
| | | 5825 | 6.75 | ≤30 | PASS |
| 11N20SISO | Ant1 | 5180 | 13.27 | ≤23.98 | PASS |
| | | 5200 | 13.47 | ≤23.98 | PASS |
| | | 5240 | 13.64 | ≤23.98 | PASS |
| | | 5260 | 13.72 | ≤23.98 | PASS |
| | | 5280 | 13.85 | ≤23.98 | PASS |
| | | 5320 | 13.86 | ≤23.98 | PASS |
| | | 5500 | 12.53 | ≤23.98 | PASS |
| | | 5580 | 11.80 | ≤23.98 | PASS |
| | | 5700 | 8.25 | ≤23.98 | PASS |
| | | 5745 | 9.55 | ≤30 | PASS |
| | | 5785 | 9.17 | ≤30 | PASS |
| | | 5825 | 6.64 | ≤30 | PASS |
| 11N40SISO | Ant1 | 5190 | 15.92 | ≤23.98 | PASS |
| | | 5230 | 13.59 | ≤23.98 | PASS |
| | | 5270 | 13.94 | ≤23.98 | PASS |
| | | 5310 | 14.06 | ≤23.98 | PASS |
| | | 5510 | 12.75 | ≤23.98 | PASS |
| | | 5550 | 12.25 | ≤23.98 | PASS |
| | | 5670 | 10.42 | ≤23.98 | PASS |
| | | 5755 | 9.62 | ≤30 | PASS |
| | | 5795 | 9.34 | ≤30 | PASS |

## Appendix C: Maximum power spectral density

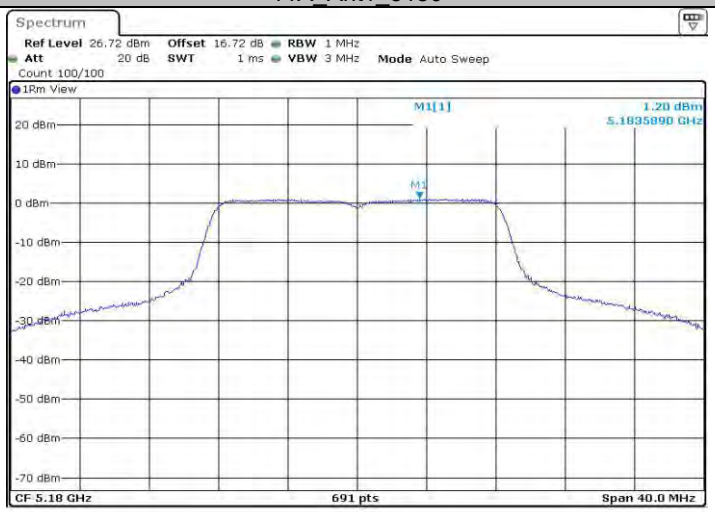
### Test Result

| Test Mode | Antenna | Channel | Result [dBm/MHz] | Limit[dBm/MHz] | Verdict |
|---|---|---|---|---|---|
| 11A | Ant1 | 5180 | 1.2 | ≤11 | PASS |
| | | 5200 | 1.04 | ≤11 | PASS |
| | | 5240 | 1.51 | ≤11 | PASS |
| | | 5260 | 1.25 | ≤11 | PASS |
| | | 5280 | 1.57 | ≤11 | PASS |
| | | 5320 | 1.39 | ≤11 | PASS |
| | | 5500 | 0.21 | ≤11 | PASS |
| | | 5580 | -0.5 | ≤11 | PASS |
| | | 5700 | -4.15 | ≤11 | PASS |
| | | 5745 | -6.07 | ≤30 | PASS |
| | | 5785 | -6.53 | ≤30 | PASS |
| | | 5825 | -8.99 | ≤30 | PASS |
| 11N20SISO | Ant1 | 5180 | 0.64 | ≤11 | PASS |
| | | 5200 | 0.55 | ≤11 | PASS |
| | | 5240 | 1.82 | ≤11 | PASS |
| | | 5260 | 1.25 | ≤11 | PASS |
| | | 5280 | 1.61 | ≤11 | PASS |
| | | 5320 | 1.6 | ≤11 | PASS |
| | | 5500 | 0.14 | ≤11 | PASS |
| | | 5580 | -1.34 | ≤11 | PASS |
| | | 5700 | -2.97 | ≤11 | PASS |
| | | 5745 | -5.19 | ≤30 | PASS |
| | | 5785 | -5.46 | ≤30 | PASS |
| | | 5825 | -7.83 | ≤30 | PASS |
| 11N40SISO | Ant1 | 5190 | 0.03 | ≤11 | PASS |
| | | 5230 | -1.93 | ≤11 | PASS |
| | | 5270 | -1.64 | ≤11 | PASS |
| | | 5310 | -1.96 | ≤11 | PASS |
| | | 5510 | -3.08 | ≤11 | PASS |
| | | 5550 | -2.74 | ≤11 | PASS |
| | | 5670 | -5.01 | ≤11 | PASS |
| | | 5755 | -9.58 | ≤30 | PASS |
| | | 5795 | -9.6 | ≤30 | PASS |

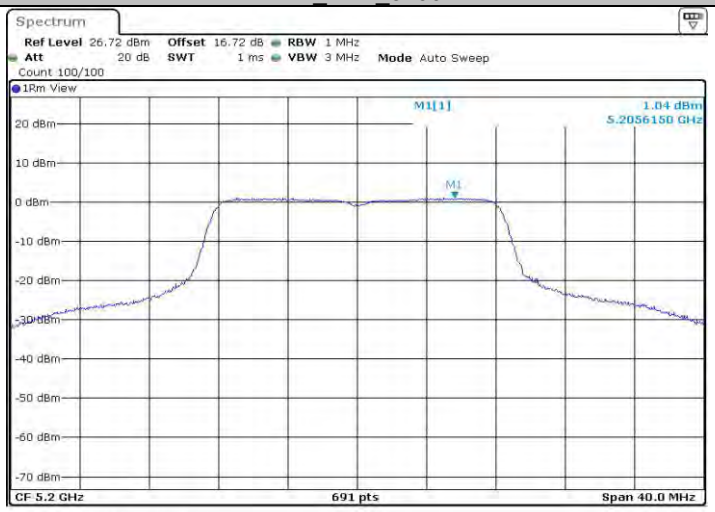
Note：1.TheResult and LimitUnit is dBm/500 kHz in the band 5.725–5.85 GHz.
2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

## Test Graphs

11A_Ant1_5180




11A_Ant1_5200




11A_Ant1_5240

11A_Ant1_5260


11A_Ant1_5280


11A_Ant1_5320

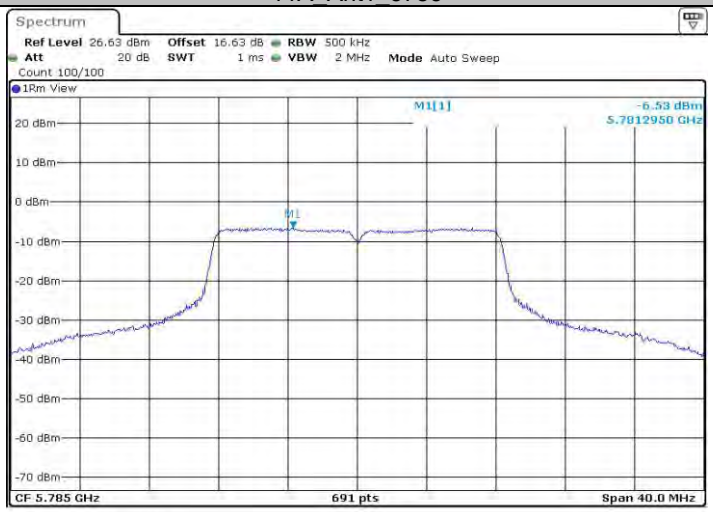
11A_Ant1_5500


11A_Ant1_5580


11A_Ant1_5700

11A_Ant1_5745


11A_Ant1_5785




11A_Ant1_5825

11N20SISO_Ant1_5180


11N20SISO_Ant1_5200


11N20SISO_Ant1_5240

11N20SISO_Ant1_5260


11N20SISO_Ant1_5280

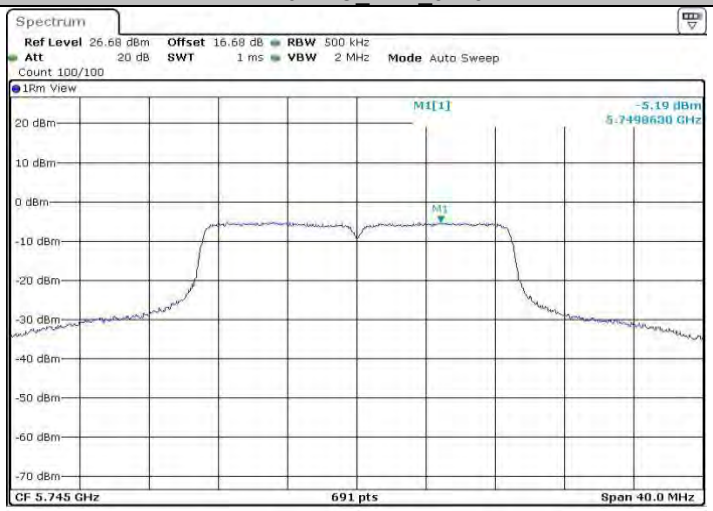

11N20SISO_Ant1_5320

11N20SISO_Ant1_5500


11N20SISO_Ant1_5580


11N20SISO_Ant1_5700

11N20SISO_Ant1_5745

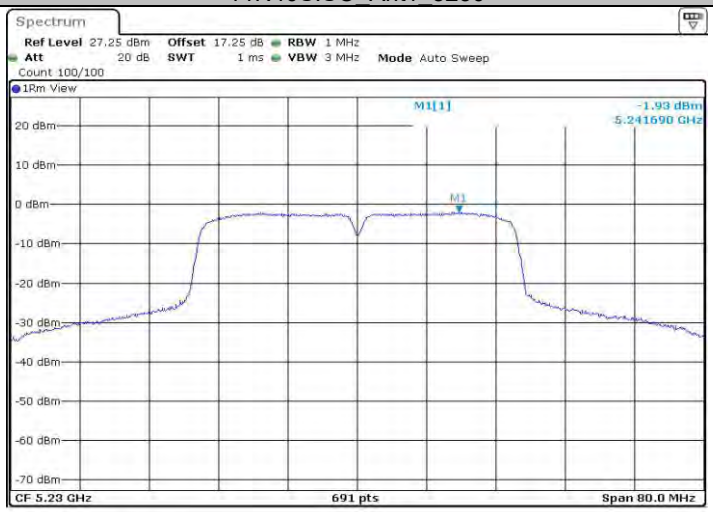



11N20SISO_Ant1_5785


11N20SISO_Ant1_5825

11N40SISO_Ant1_5190


11N40SISO_Ant1_5230

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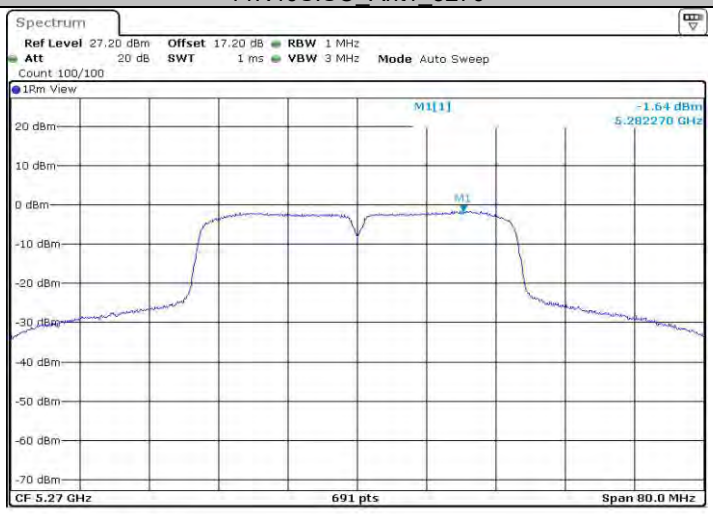
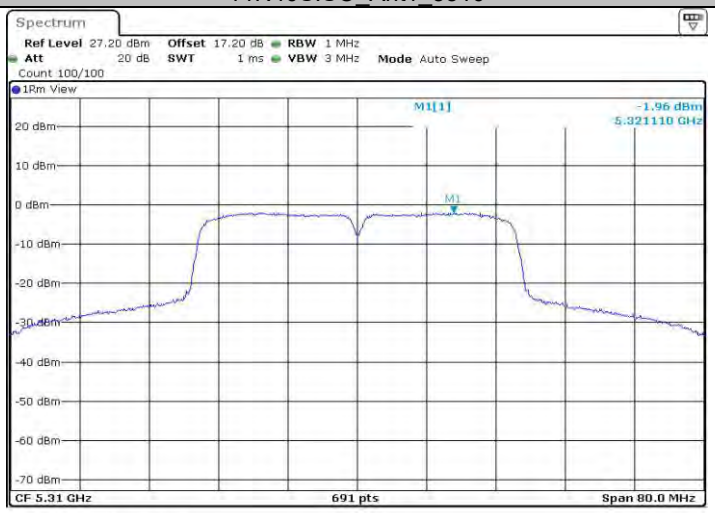
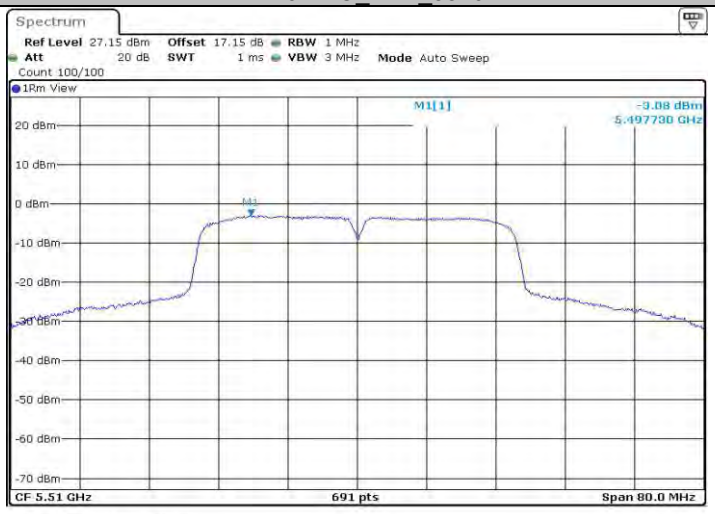


11N40SISO_Ant1_5310




11N40SISO_Ant1_5510

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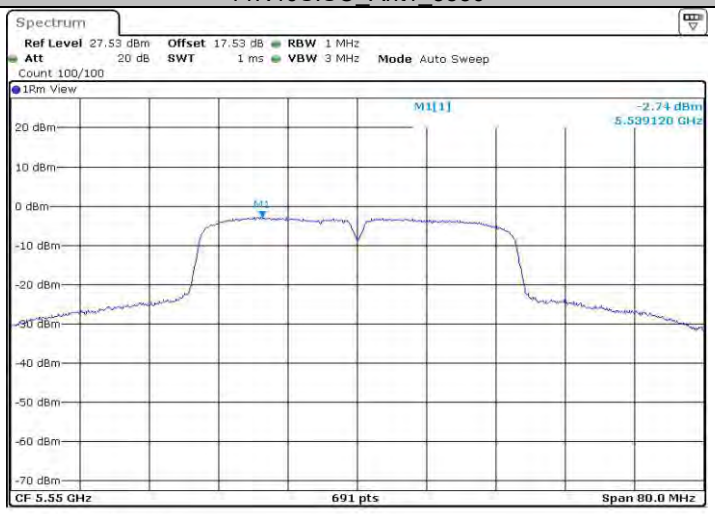
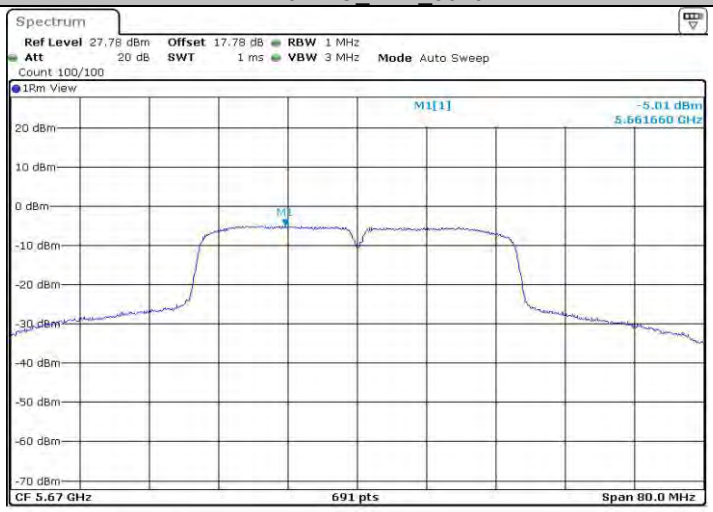
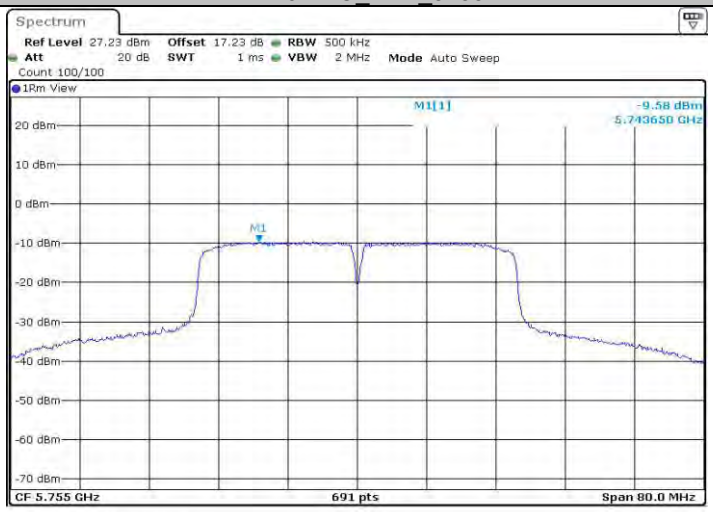


11N40SISO_Ant1_5670




11N40SISO_Ant1_5755




11N40SISO_Ant1_5795

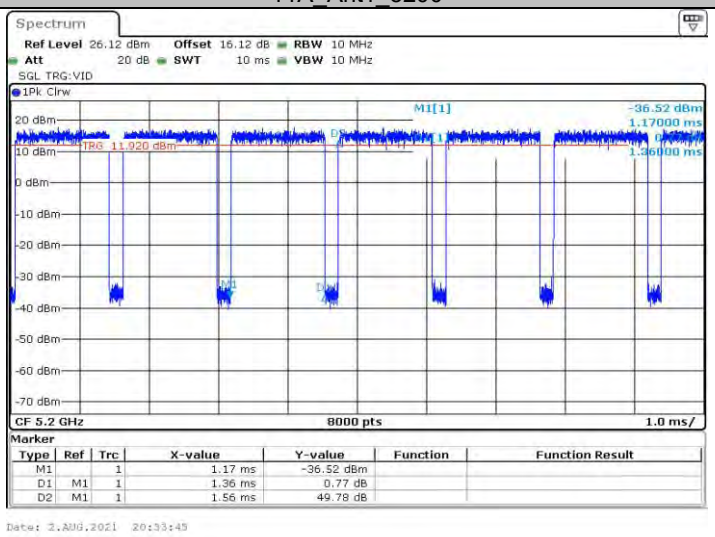
# Appendix D: Duty Cycle

## Test Result

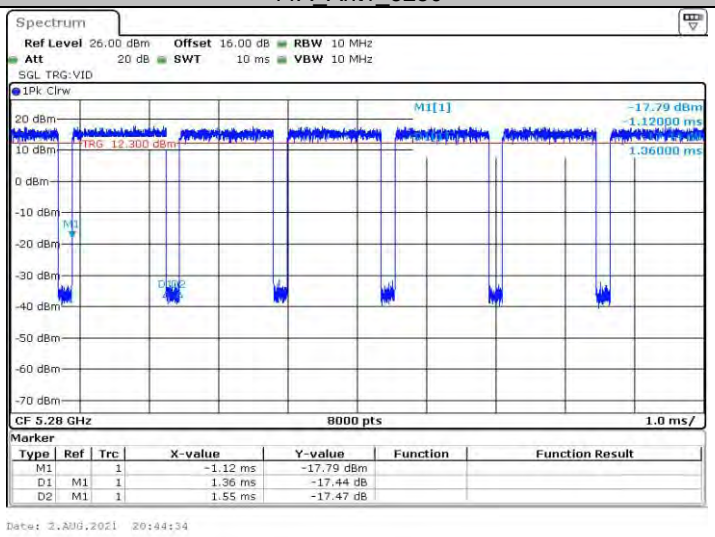
| Test Mode | Antenna | Channel | TransmissionDuration [ms] | Transmission Period [ms] | Duty Cycle [%] |
|---|---|---|---|---|---|
| 11A | Ant1 | 5200 | 1.36 | 1.56 | 87.18 |
| | | 5280 | 1.36 | 1.55 | 87.74 |
| | | 5580 | 1.36 | 1.56 | 87.18 |
| | | 5785 | 1.35 | 1.55 | 87.10 |
| 11N20SISO | Ant1 | 5200 | 1.35 | 1.55 | 87.10 |
| | | 5280 | 1.36 | 1.56 | 87.18 |
| | | 5580 | 1.36 | 1.56 | 87.18 |
| | | 5785 | 1.35 | 1.55 | 87.10 |
| 11N40SISO | Ant1 | 5190 | 0.63 | 0.83 | 75.90 |
| | | 5270 | 0.63 | 0.83 | 75.90 |
| | | 5550 | 0.63 | 0.83 | 75.90 |
| | | 5755 | 0.63 | 0.83 | 75.90 |

## Test Graphs

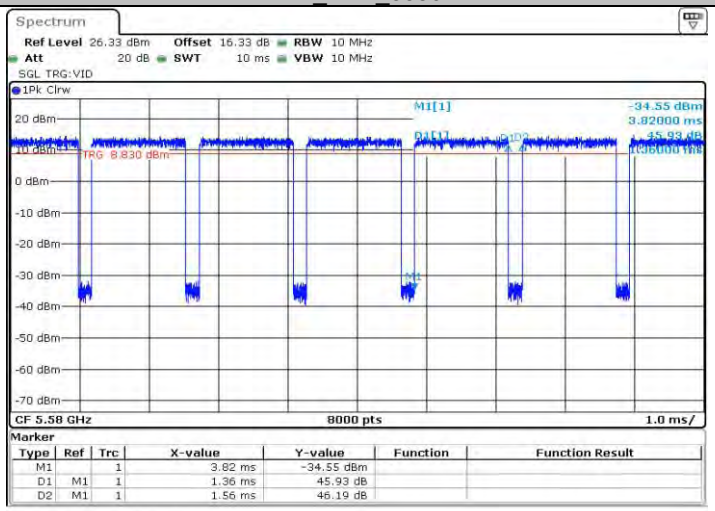
11A_Ant1_5200



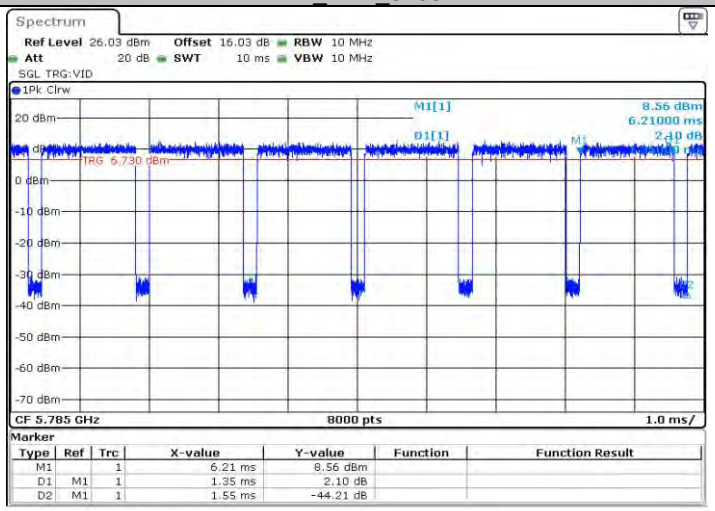

11A_Ant1_5280



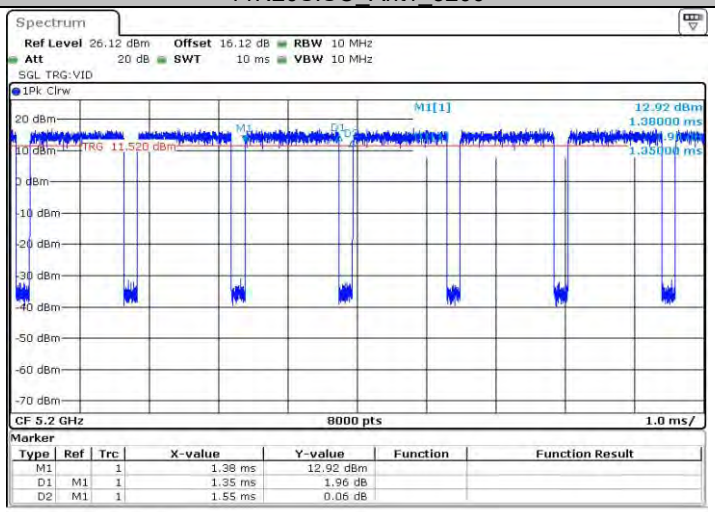
11A_Ant1_5580




11A_Ant1_5785




11N20SISO_Ant1_5200



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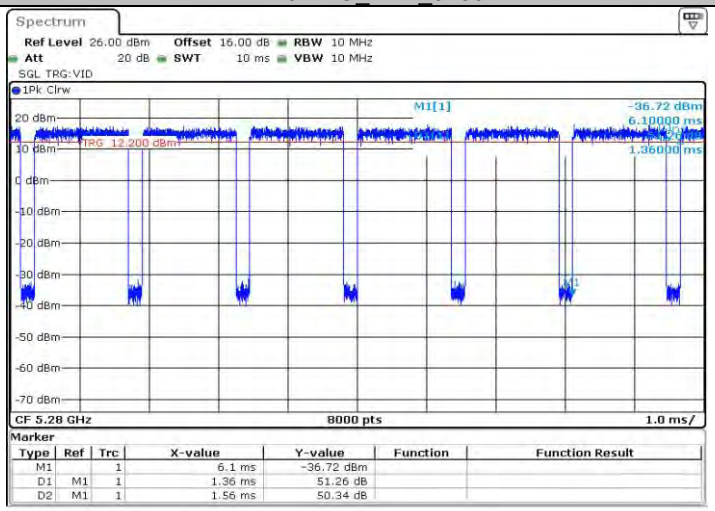
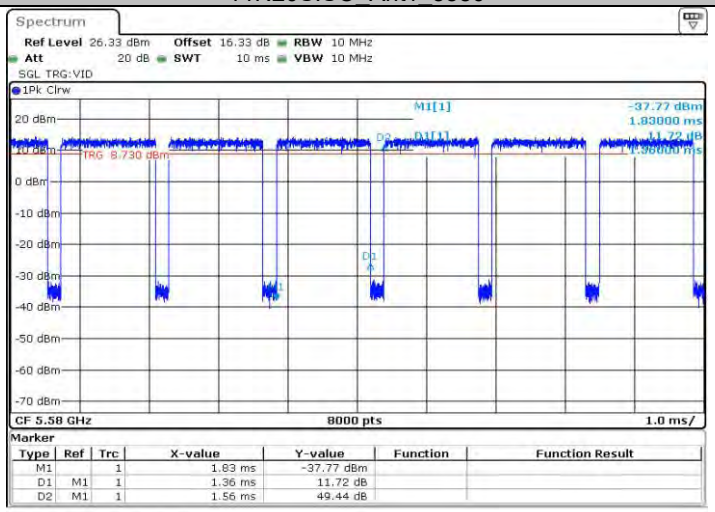
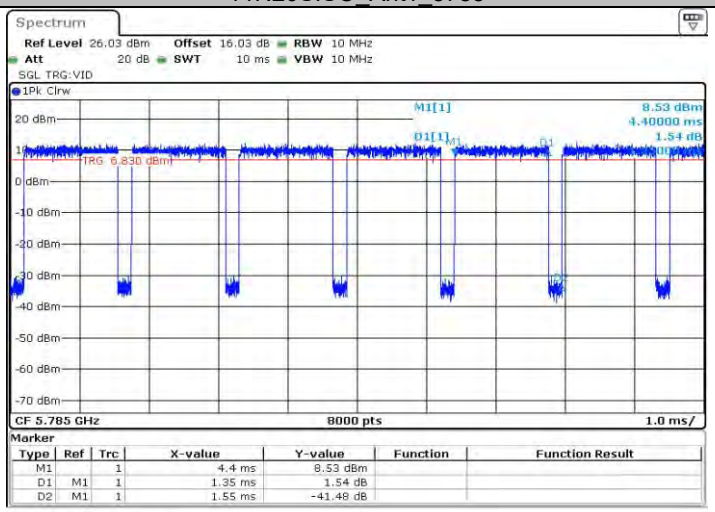


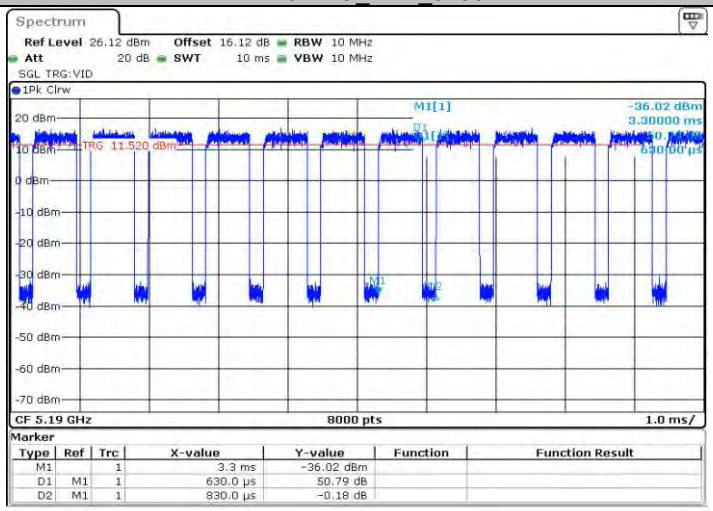

11N20SISO_Ant1_5580



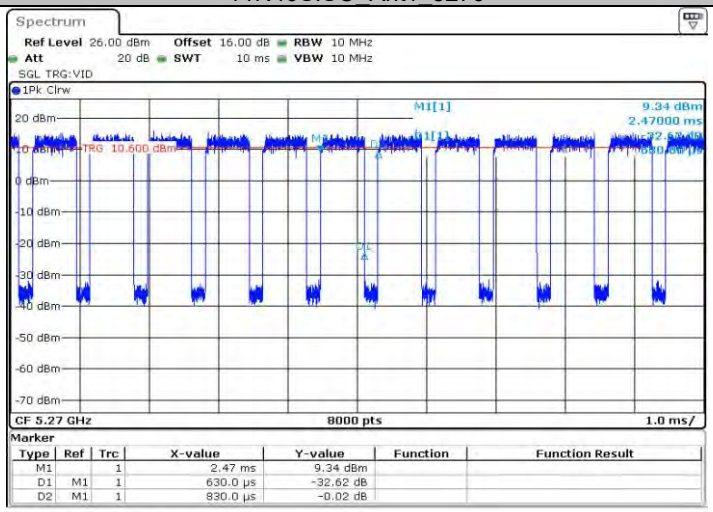

11N20SISO_Ant1_5785



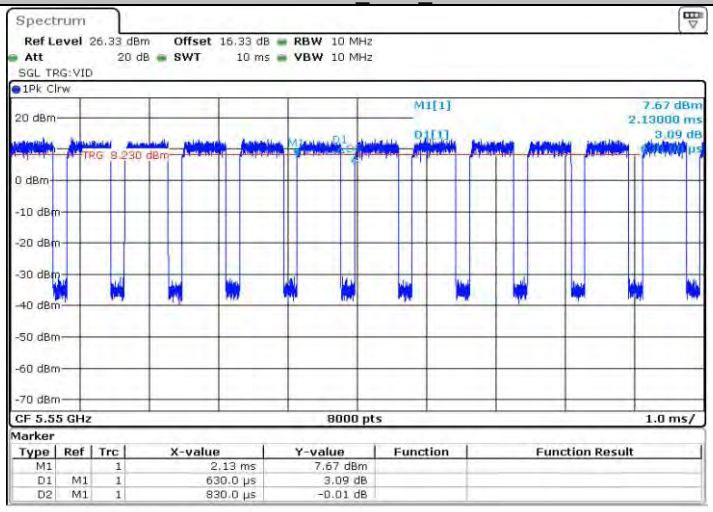
11N40SISO_Ant1_5190



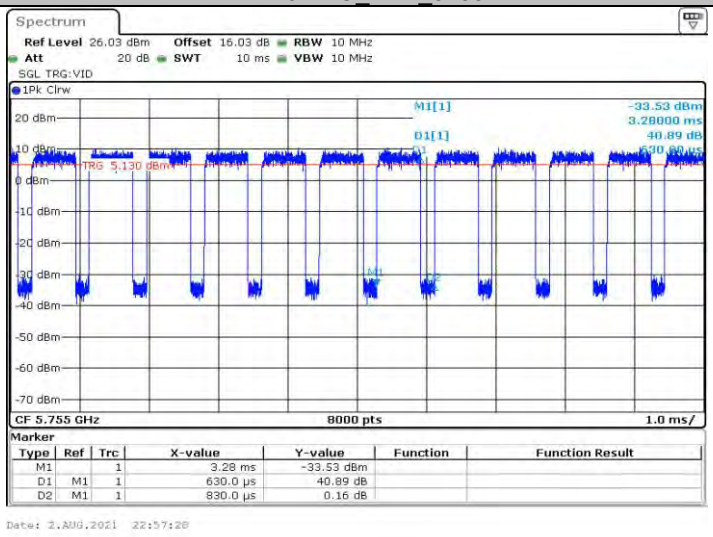

11N40SISO_Ant1_5270




11N40SISO_Ant1_5550



| 11N40SISO_Ant1_5755 |
|---|




******* END OF REPORT *******