Website: www.cblueasia.com
Tel: +86-755-23059481
Email: marketing@cblueasia.com

# Test Report

| | | |
|---|---|---|
| **Applicant** | : | Shenzhen Lingchuangxun Technology Co., Ltd |
| **Address** | : | 6th floor, building C, ideemonto Industrial Park, 7002 Songbai RoadGuangming District, ShenZhen |
| **Product Name** | : | WIFI REPEATER |
| **Brand Mark** | : | N/A |
| **Model** | : | LCX-ZJ1200-003 |
| **Series model** | | LCX-ZJ1200-003-01, LCX-ZJ1200-003-02, LCX-ZJ1200-003-03, LCX-ZJ1200-003-04, LCX-ZJ1200-003-05, LCX-ZJ1200-003-06, LCX-ZJ1200-003-07, LCX-ZJ1200-003-08 |
| **FCC ID** | : | 2A4AOLCX-ZJ1200003 |
| **Report Number** | : | BLA-EMC-202503-A3502 |
| **Date of Receipt** | : | Mar. 14, 2025 |
| **Date of Test** | : | Mar. 14, 2025 to Mar. 26, 2025 |
| **Test Standard** | : | 47 CFR Part 15, Subpart E 15.407 |
| **Test Result** | : | Pass |

**Compiled by:** Mark Chen **Review by:** Sweet **Approved by:** Blue Zheng

**Issued Date: Apr. 01, 2025**

**BlueAsia of Technical Services(Shenzhen) Co.,Ltd.**

Address: Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

# Table of Contents

# Revise Record

| Version No. | Date | Description |
|---|---|---|
| 01 | Apr. 01, 2025 | Original |
| | | |
| | | |
| | | |

# 1 General information

## 1.1 General information

| | |
|---|---|
| Applicant | Shenzhen Lingchuangxun Technology Co., Ltd |
| Address | 6th floor, building C, ideemonto Industrial Park, 7002 Songbai RoadGuangming District, ShenZhen |
| Manufacturer | Shenzhen Lingchuangxun Technology Co., Ltd |
| Address | 6th floor, building C, ideemonto Industrial Park, 7002 Songbai RoadGuangming District, ShenZhen |
| Factory | Shenzhen Lingchuangxun Technology Co., Ltd |
| Address | 6th floor, building C, ideemonto Industrial Park, 7002 Songbai RoadGuangming District, ShenZhen |

## 1.2 General description of EUT

| | |
|---|---|
| Product Name | WIFI REPEATER |
| Model No. | LCX-ZJ1200-003 |
| Series model | LCX-ZJ1200-003-01, LCX-ZJ1200-003-02, LCX-ZJ1200-003-03, LCX-ZJ1200-003-04, LCX-ZJ1200-003-05, LCX-ZJ1200-003-06, LCX-ZJ1200-003-07, LCX-ZJ1200-003-08 |
| Differences of Series model | The above models are identical in PCB layout,internal structure and components.only model no, the appearance color and shape is different. |
| Operation Frequency | 5150MHz-5250MHz |
| Channel numbers | 802.11a/802.11n(HT20)/802.11ac(HT20): 4,<br>802.11n(HT40)/802.11ac(HT40):2,<br>802.11ac(HT80): 1 |
| Modulation Type | IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>IEEE for 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Transmit Data Rate | IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>IEEE 802.11n HT20: up to 216.7 Mbps, HT40: up to 450 Mbps<br>IEEE 802.11ac VHT20: up to 346.7 Mbps, VHT40: up to 800 Mbps, VHT80: up to 1733.3 Mbps |

| | |
|---|---|
| Antenna Type | FPC Antenna |
| Antenna Gain | WIFI Ant 1: -0.52dBi<br>WIFI Ant 2: -0.52dBi |
| Device type | Master device |
| Power supply | Input:AC 100-240V Output: DC 5V ⎓ 1A |
| Test voltage | AC 120V |
| Hardware Version | N/A |
| Software Version | N/A |
| *Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.* | |

# 2 Test summary

| No. | Test item | FCC standard | Test Method (Clause) | Result |
|---|---|---|---|---|
| 1 | Antenna Requirement | §15.203 | N/A | Pass |
| 2 | Conducted Emissions at AC Power Line (150kHz-30MHz) | §15.207 | ANSI C63.10-2013 Clause 6.2 | Pass |
| 3 | Frequency Stability | §15.407 (g) | ANSI C63.10-2013 Cluase 6.8 | Pass |
| 4 | Maximum Conducted output power | §15.407 (a) | KDB 789033 D02 II E | Pass |
| 5 | Transmitter Power Control | §15.407 (h)(1) | KDB 789033 D02 II E | N/A |
| 6 | Peak Power spectrum density | §15.407 (a) | KDB 789033 D02 II F | Pass |
| 7 | Minimum 6 dB bandwidth (5.725-5.85 GHz band ) | §15.407 (e) | KDB 789033 D02 II C 2 | N/A |
| 8 | 26dB Emission bandwidth | §15.407 (a) | KDB 789033 D02 II C 1 | Pass |
| 9 | 99% Bandwidth | N/A | KDB 789033 II D | Pass |
| 10 | Duty Cycle | KDB 789033 D02 II B 1 | KDB 789033 II B 1 | Pass |
| 11 | Conducted Band Edges Measurement | §15.407 (b)(4) | ANSI C63.10-2013 Cluase 11.13 | Pass |
| 12 | Conducted spurious emissions | §15.407(b) | ANSI C63.10-2013 Cluase 11.11 | Pass |
| 13 | Radiated Emissions which fall in the restricted bands | §15.209 §15.407(b) | KDB 789033 D02 II G | Pass |
| 14 | Radiated Emissions | §15.209 §15.407(b) | KDB 789033 D02 II G | Pass |
| 15 | DFS: Channel Closing Transmission Time | §15.407((h)(2) | KDB 905462 D02 Cluase 7.8.3 | N/A |
| 16 | DFS: Non-occupancy period | §15.407((h)(2) | KDB 905462 D02 Cluase 7.8.3 | N/A |

*N/A: Not Applicable*

# 3 Test Configuration

## 3.1 Test mode

| Test Mode Note 1 | Description |
|---|---|
| TX | Keep the EUT in continuously transmitting mode with modulation.（Duty cycle>98%） |

*Note 1: The EUT was configured to measure its highest possible emission and/or immunity level. The test modes were adapted according to the operation manual for use; the EUT was operated in the engineering mode Note 2 to fix the TX frequency that was for the purpose of the measurements.*

*Note 2: Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.*

*Note 3: When test RE and RSE, 802.11a is in SISO mode (ANT 1 and 2 all have been tested,only report worse case); and 802.11n20/n40/ac20/ac40/ac80 is in MIMO mode.*

| Power level setup in software | | | |
|---|---|---|---|
| Test Software Name | MT76xxE_AP | | |
| Mode | Channel | Frequency (MHz) | Soft Set |
| 802.11a/n20/ac20 | CH36 | 5180 | TX level : Default |
| | CH40 | 5200 | |
| | CH44 | 5220 | |
| | CH48 | 5240 | |
| 802.11n40/ac40 | CH38 | 5190 | TX level : Default |
| | CH46 | 5230 | |
| 802.11ac80 | CH42 | 5210 | TX level : Default |

## 3.2 Operation frequency and test channel

| 5150-5250MHz | | | | | |
|---|---|---|---|---|---|
| 802.11a/n20/ac20 | | 802.11n40/ac40 | | 802.11ac80 | |
| Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 36 | 5180MHz | 38 | 5190MHz | 42 | 5210MHz |
| 40 | 5200MHz | 46 | 5230MHz | | |
| 44 | 5220MHz | | | | |
| 48 | 5240MHz | | | | |

## 3.3 Auxiliary equipment

| Device Type | Manufacturer | Model Name | Serial No. | Remark |
|---|---|---|---|---|
| PC | Lenovo | E460C | N/A | From lab (No.BLA-ZC-BS-2022005) |
| **Note:** "--" mean no any auxiliary device during testing. | | | | |

## 3.4 Test environment

| | | |
|---|---|---|
| **Environment** | **Temperature** | |
| | NT(Normal Temperature) | 25 °C |
| | LT(Low Temperature) | -10 °C |
| | HT(High Temperature) | 50 °C |
| | **Working Voltage of the EUT** | |
| | NV(Normal Voltage) | AC 120V |
| | LV(Low Voltage) | AC 100V |
| | HV(High Voltage) | AC 240V |

# 4 Laboratory information

## 4.1 Laboratory and accreditations

The test facility is recognized, certified, or accredited by the following organizations:

| | |
|---|---|
| Company name: | BlueAsia of Technical Services(Shenzhen) Co., Ltd. |
| Address: | Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China |
| CNAS accredited No.: | L9788 |
| A2LA Cert. No.: | 5071.01 |
| FCC Designation No.: | CN1252 |
| ISED CAB identifier No.: | CN0028 |
| Telephone: | +86-755-28682673 |
| FAX: | +86-755-28682673 |

## 4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

| Parameter | Expanded Uncertainty |
|---|---|
| Radiated Emission(9kHz-30MHz) | ±4.34dB |
| Radiated Emission(30Mz-1000MHz) | ±4.24dB |
| Radiated Emission(1GHz-18GHz) | ±4.68dB |
| AC Power Line Conducted Emission(150kHz-30MHz) | ±3.45dB |
| Occupied Channel Bandwidth | ±5 % |
| RF output power, conducted | ±1.5 dB |
| Power Spectral Density, conducted | ±3.0 dB |
| Unwanted Emissions, conducted | ±3.0 dB |
| Temperature | ±3 °C |
| Supply voltages | ±3 % |
| Time | ±5 % |

# 5 Test equipment

**Radiated Spurious Emissions (Below 1GHz)**

| Equipment | Name | Model | Manufacture | S/N | Cal. Date | Due. Date |
|---|---|---|---|---|---|---|
| BLA-EMC-002-01 | Anechoic chamber | 9*6*6 chamber | SKET | N/A | 2024/3/27 | 2027/3/26 |
| BLA-EMC-002-02 | Control room | 966 control room | SKET | N/A | 2024/3/27 | 2027/3/26 |
| BLA-EMC-009 | EMI receiver | ESR7 | R&S | 101199 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-043 | Loop antenna | FMZB1519B | Schwarzbeck | 00102 | 2024/06/29 | 2026/06/28 |
| BLA-EMC-065 | Broadband antenna | VULB9168 | Schwarzbeck | 01065P | 2024/06/29 | 2026/06/27 |
| BLA-XC-01 | Coaxial Cable | N/A | BlueAsia | V01 | N/A | N/A |
| BLA-XC-02 | Coaxial Cable | N/A | BlueAsia | V02 | N/A | N/A |

**Radiated Spurious Emissions (Above 1GHz)**

| Equipment | Name | Model | Manufacture | S/N | Cal. Date | Due. Date |
|---|---|---|---|---|---|---|
| BLA-EMC-001-01 | Anechoic chamber | 9*6*6 chamber | SKET | N/A | 2023/11/16 | 2026/11/15 |
| BLA-EMC-001-02 | Control Room | 966 control room | SKET | N/A | 2023/11/16 | 2025/11/15 |
| BLA-EMC-008 | Spectrum | FSP40 | R&S | 100817 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-012 | Broadband antenna | VULB9168 | Schwarzbeck | 00836 P:00227 | 2022/10/12 | 2025/10/11 |
| BLA-EMC-013 | Horn Antenna | BBHA9120D | Schwarzbeck | 01892 | 2024/06/29 | 2026/06/28 |
| BLA-EMC-014 | Amplifier | PA_000318G-45 | SKET | PA201804 3003 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-046 | Filter bank | 2.4G/5G Filter bank | SKET | N/A | 2024/06/28 | 2025/06/27 |
| BLA-EMC-061 | Receiver | ESPI7 | R&S | 101477 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-066 | Amplifier | LNPA_30M01 G-30 | SKET | SK202106 0801 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-086 | Amplifier | LNPA_18G40 G-50dB | SKET | SK202207 1301 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-087 | Horn Antenna | BBHA 9170 | Schwarzbeck | 1106 | 2024/06/29 | 2026/06/28 |

| | | | | | | |
|---|---|---|---|---|---|---|
| BLA-XC-03 | Coaxial Cable | N/A | BlueAsia | V03 | N/A | N/A |
| BLA-XC-04 | Coaxial Cable | N/A | BlueAsia | V04 | N/A | N/A |

**Conducted Emissions**

| Equipment | Name | Model | Manufacture | S/N | Cal. Date | Due. Date |
|---|---|---|---|---|---|---|
| BLA-EMC-003-001 | Shield room | 8*3*3 | SKET | N/A | 2023/11/16 | 2025/11/15 |
| BLA-EMC-009 | EMI receiver | ESR7 | R&S | 101199 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-011 | LISN | ENV216 | R&S | 101372 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-033 | Impedance transformer | DC-2GHz | DFXP | N/A | 2024/06/28 | 2025/06/27 |
| BLA-EMC-041 | LISN | AT166-2 | ATTEN | AKK1806000003 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-045 | Impedance stable network | ISNT8-cat6 | TESEQ | 53580 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-095 | Single-channel vehicle artificial power network | NNBM 8124 | Schwarzbeck | 01045 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-096 | Single-channel vehicle artificial power network | NNBM 8124 | Schwarzbeck | 01075 | 2024/06/28 | 2025/06/27 |
| BLA-XC-05 | Coaxial Cable | N/A | BlueAsia | V05 | N/A | N/A |

**RF conducted**

| Equipment | Name | Model | Manufacture | S/N | Cal. Date | Due. Date |
|---|---|---|---|---|---|---|
| BLA-EMC-003-003 | Shield room | 5*3*3 | SKET | N/A | 2023/11/16 | 2025/11/15 |
| BLA-EMC-016 | Signal Generator | N5182A | Agilent | MY52420567 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-038 | Spectrum | N9020A | Agilent | MY49100060 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-042 | Power sensor | RPR3006W | DARE | 14I00889SN042 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-044 | Radio communication tester | CMW500 | R&S | 132429 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-064 | Signal Generator | N5182B | KEYSIGHT | MY58108892 | 2024/06/28 | 2025/06/27 |
| BLA-EMC-079 | Spectrum | N9020A | Agilent | MY54420161 | 2024/08/08 | 2025/08/07 |
| BLA-EMC-088 | Audio Analyzer | ATS-1 | Audio | ATS141094 | 2024/06/28 | 2025/06/27 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Precision | | | |

**Test software**

| Software No. | Software Name | Manufacture | Software version | Test site |
|---|---|---|---|---|
| BLA-EMC-S001 | EZ-EMC | EZ | EEMC-3A1+ | RE(Below 1GHz) |
| BLA-EMC-S002 | EZ-EMC | EZ | EEMC-3A1+ | RE(Above 1GHz) |
| BLA-EMC-S003 | EZ-EMC | EZ | EEMC-3A1+ | CE |
| BLA-EMC-S010 | MTS 8310 | MW | 2.0.0.0 | RF |

# 6 Test result

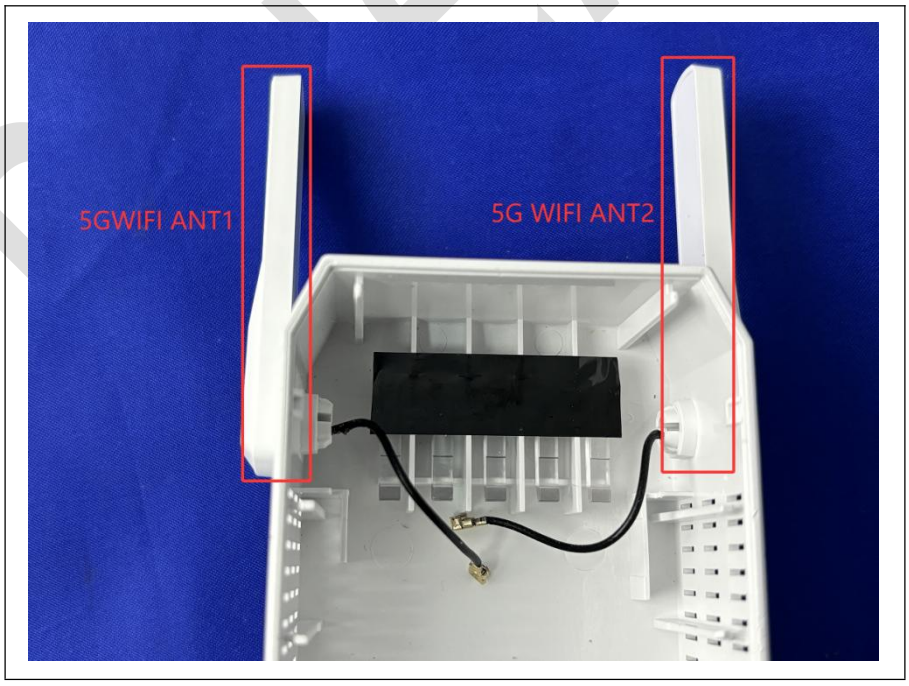
## 6.1 Antenna requirement

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart C 15.203 |
| **Test Method** | N/A |

### 6.1.1 Requirement

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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of a so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT antenna:
The antenna is FPC antenna. The best case gain of the antenna is WIFI Ant1: -0.52dBi and WIFI Ant2: -0.52dBi.



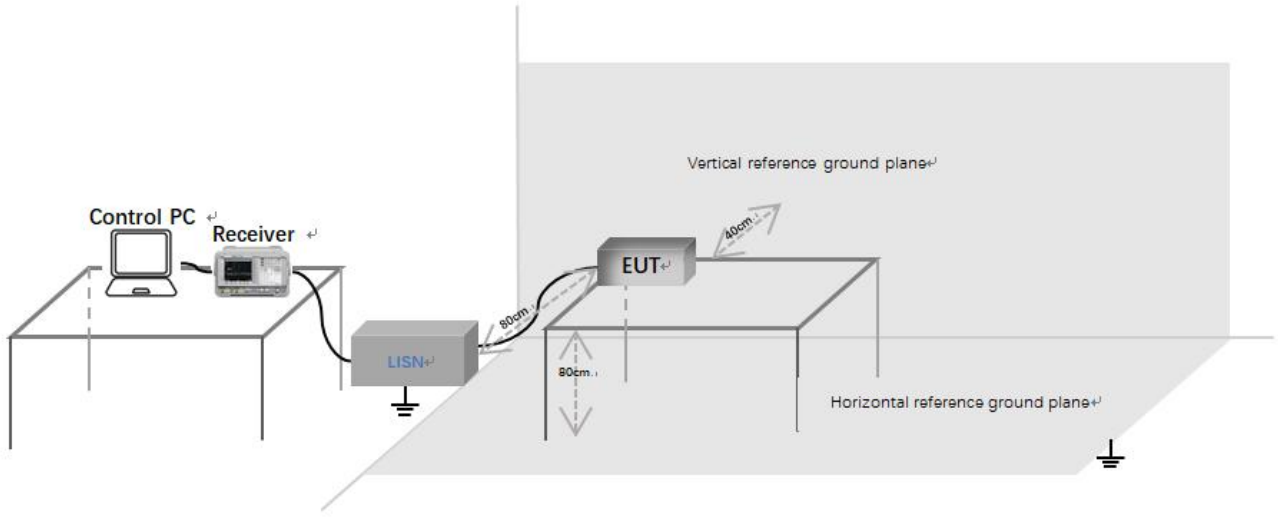
## 6.2 Conducted emissions at AC power line (150 kHz-30 MHz)

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart C 15.207 |
| **Test Method** | ANSI C63.10-2013 Cluase6.2 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.2.1 Limit

| **Frequency of emission(MHz)** | **Conducted limit(dBμV)** | |
|---|---|---|
| | **Quasi-peak** | **Average** |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| *Decreases with the logarithm of the frequency. | | |

### 6.2.2 Test setup




Description of test setup connection:

*a) Connect the control PC to the receiver through a USB to GPIB cable;*

*b) The receiver is connected to the LISN through a coaxial line;*

*c) Connect the power port of LISN to the EUT.*

### 6.2.3 Procedure

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

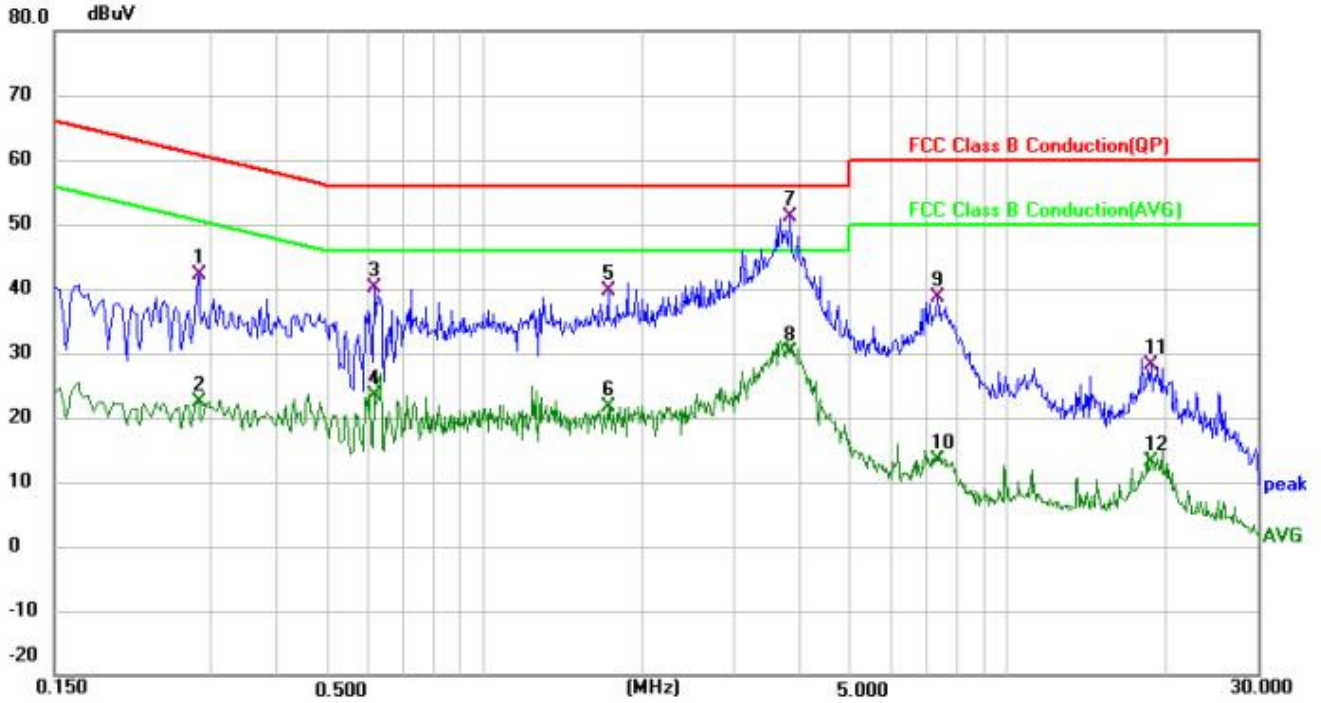
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

LISN=Read Level+ Cable Loss+ LISN Factor

### 6.2.4 Test data

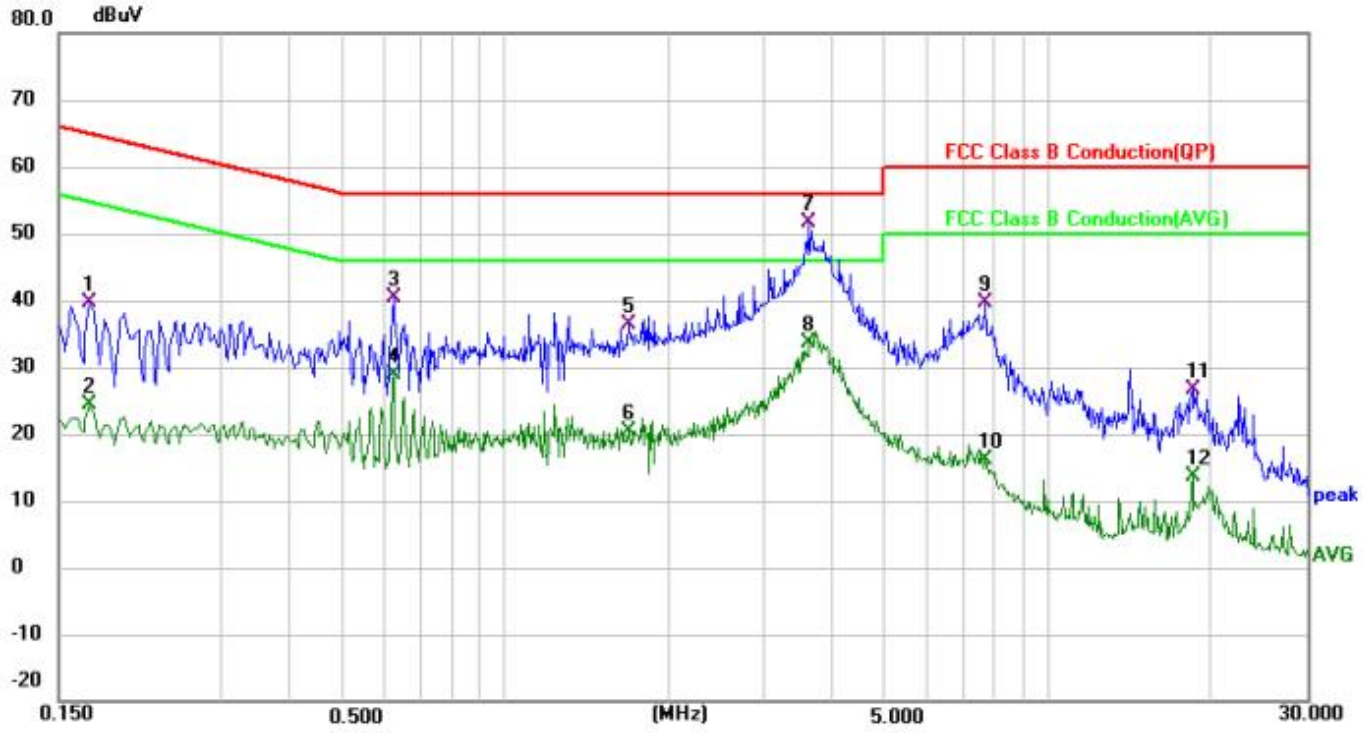
[Test mode: TX]; [Line: Line];[Power:AC120V/60Hz]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector |
| 1 | | 0.2819 | 32.11 | 9.90 | 42.01 | 60.76 | -18.75 | QP |
| 2 | | 0.2819 | 12.39 | 9.90 | 22.29 | 50.76 | -28.47 | AVG |
| 3 | | 0.6140 | 30.28 | 9.75 | 40.03 | 56.00 | -15.97 | QP |
| 4 | | 0.6140 | 13.65 | 9.75 | 23.40 | 46.00 | -22.60 | AVG |
| 5 | | 1.7180 | 29.63 | 9.89 | 39.52 | 56.00 | -16.48 | QP |
| 6 | | 1.7180 | 11.64 | 9.89 | 21.53 | 46.00 | -24.47 | AVG |
| 7 | * | 3.8220 | 40.93 | 10.12 | 51.05 | 56.00 | -4.95 | QP |
| 8 | | 3.8220 | 20.10 | 10.12 | 30.22 | 46.00 | -15.78 | AVG |
| 9 | | 7.3540 | 28.24 | 10.29 | 38.53 | 60.00 | -21.47 | QP |
| 10 | | 7.3540 | 2.99 | 10.29 | 13.28 | 50.00 | -36.72 | AVG |
| 11 | | 18.8060 | 15.27 | 12.77 | 28.04 | 60.00 | -31.96 | QP |
| 12 | | 18.8060 | 0.27 | 12.77 | 13.04 | 50.00 | -36.96 | AVG |

**Test Result: Pass**

[Test mode: TX]; [Line: Neutral];[Power:AC120V/60Hz]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector |
| 1 | | 0.1700 | 29.32 | 10.20 | 39.52 | 64.96 | -25.44 | QP |
| 2 | | 0.1700 | 14.07 | 10.20 | 24.27 | 54.96 | -30.69 | AVG |
| 3 | | 0.6220 | 30.74 | 9.70 | 40.44 | 56.00 | -15.56 | QP |
| 4 | | 0.6220 | 19.26 | 9.70 | 28.96 | 46.00 | -17.04 | AVG |
| 5 | | 1.6900 | 26.69 | 9.80 | 36.49 | 56.00 | -19.51 | QP |
| 6 | | 1.6900 | 10.48 | 9.80 | 20.28 | 46.00 | -25.72 | AVG |
| 7 | * | 3.6300 | 41.51 | 10.00 | 51.51 | 56.00 | -4.49 | QP |
| 8 | | 3.6300 | 23.51 | 10.00 | 33.51 | 46.00 | -12.49 | AVG |
| 9 | | 7.6580 | 29.17 | 10.36 | 39.53 | 60.00 | -20.47 | QP |
| 10 | | 7.6580 | 5.86 | 10.36 | 16.22 | 50.00 | -33.78 | AVG |
| 11 | | 18.4660 | 14.09 | 12.61 | 26.70 | 60.00 | -33.30 | QP |
| 12 | | 18.4660 | 1.06 | 12.61 | 13.67 | 50.00 | -36.33 | AVG |

**Test Result: Pass**

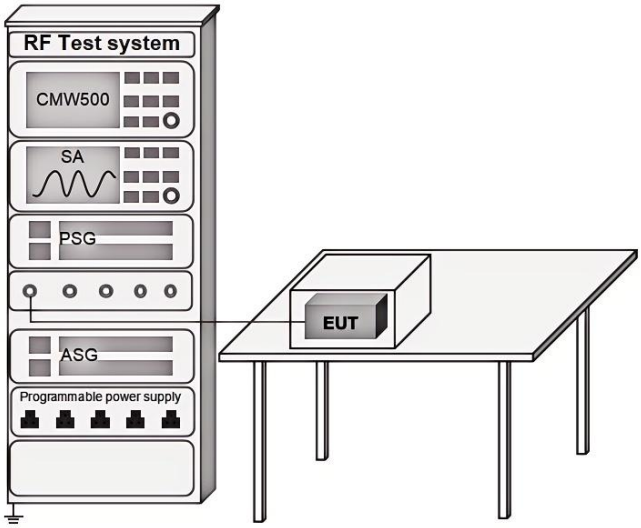
## 6.3 Frequency Stability

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407(g) |
| **Test Method** | ANSI C63.10-2013 Cluase6.8 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.3.1 Limit

The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 35 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

### 6.3.2 Test setup




### 6.3.3 Test data

Pass: Please refer to appendix A for details

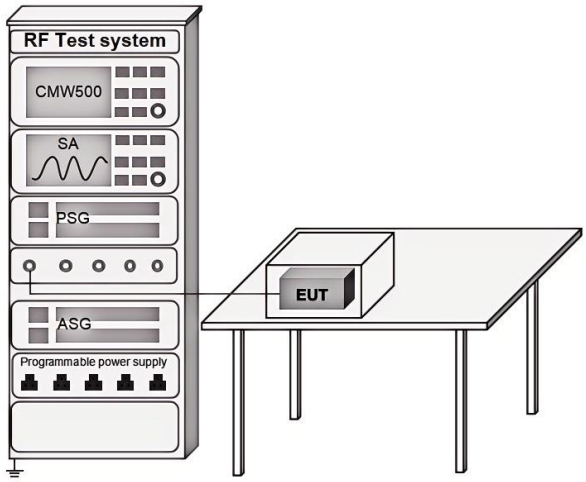
## 6.4 Maximum conducted output Power

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 (a) |
| **Test Method** | KDB 789033 D02 II E |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.4.1 Limit

| Frequency band(MHz) | Limit |
|---|---|
| 5150-5250 | ≤1W(30dBm) for master device |
| | ≤250mW(24dBm) for client device |
| 5250-5350 | ≤250mW(24dBm) for client device or 11dBm+10logB* |
| 5470-5725 | ≤250mW(24dBm) for client device or 11dBm+10logB* |
| 5725-5850 | ≤1W(30dBm) |
| *Remark:* Where B is the 26dB emission bandwidth in MHz.*<br>*The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.* | |

### 6.4.2 Test setup




### 6.4.3 Test data

Pass: Please refer to appendix A for details

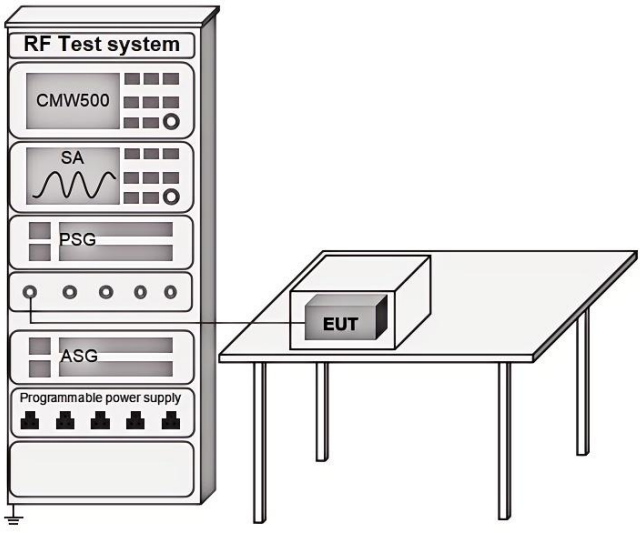
## 6.5 Peak power spectrum density

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 (a) |
| **Test Method** | KDB 789033 D02 II F |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.5.1 Limit

| Frequency band(MHz) | Limit |
|---|---|
| 5150-5250 | ≤17dBm in 1MHz for master device |
| | ≤11dBm in 1MHz for client device |
| 5250-5350 | ≤11dBm in 1MHz for client device |
| 5470-5725 | ≤11dBm in 1MHz for client device |
| 5725-5850 | ≤30dBm in 500 kHz |
| *Remark: The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.* | |

### 6.5.2 Test setup




### 6.5.3 Test data

Pass: Please refer to appendix A for details

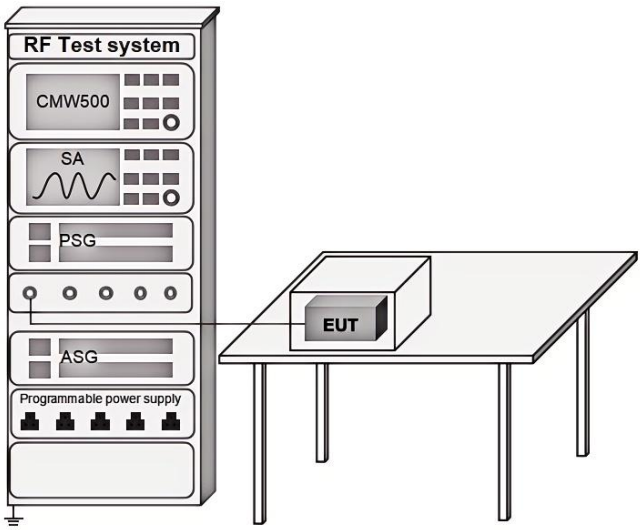
## 6.6 Minimum 6dB bandwidth (5.725-5.85 GHz band)

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 (e) |
| **Test Method** | KDB 789033 D02 II C 2 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.6.1 Limit

≥500 kHz

### 6.6.2 Test setup




### 6.6.3 Test data

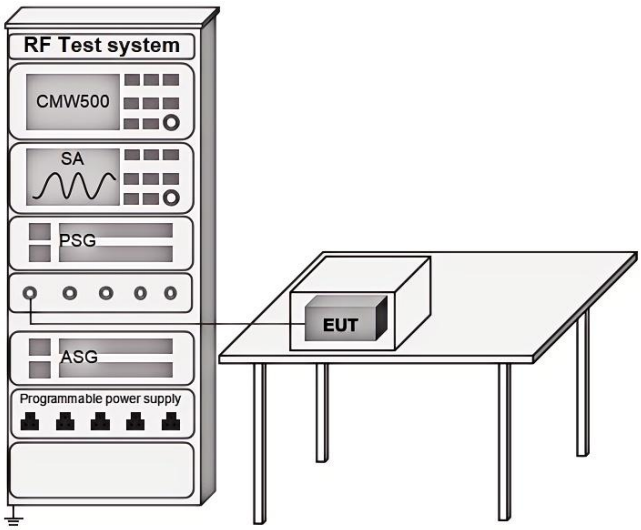
*N/A: Not Applicable*

## 6.7 26dB Emission bandwidth

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 (a) |
| **Test Method** | KDB 789033 D02 II C 1 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.7.1 Limit

### 6.7.2 Test setup




### 6.7.3 Test data

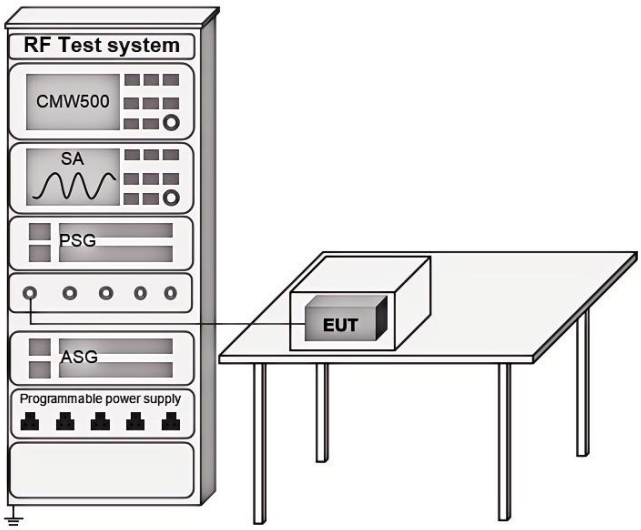
Pass: Please refer to appendix A for details

## 6.8 99% Bandwidth

| | |
|---|---|
| **Test Standard** | N/A |
| **Test Method** | KDB 789033 II D |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.8.1 Limit

### 6.8.2 Test setup



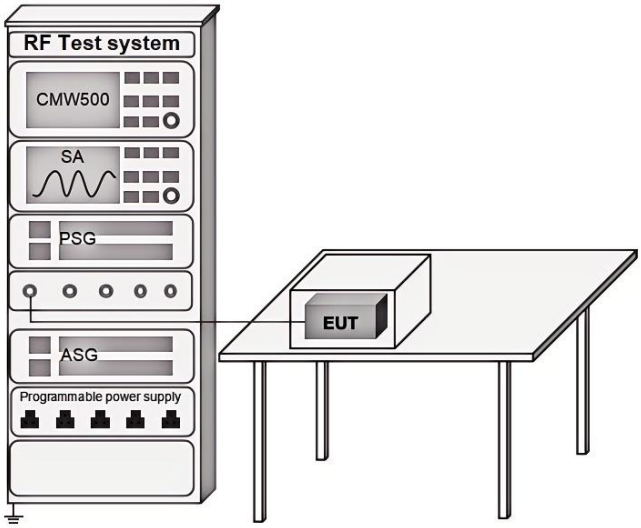

### 6.8.3 Test data

Pass: Please refer to appendix A for details

## 6.9 Duty Cycle

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 |
| **Test Method** | KDB 789033 II B 1 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.9.1 Test setup




### 6.9.2 Test data

Pass: Please refer to appendix A for details

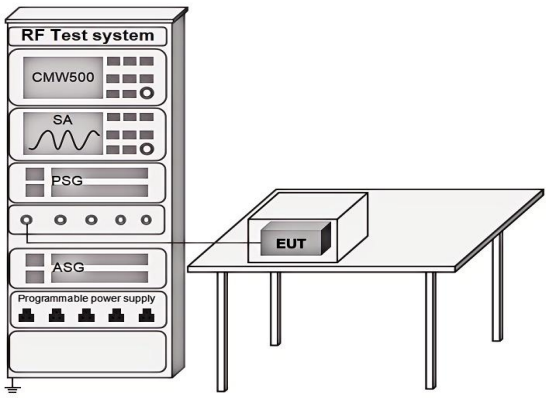
## 6.10 Conducted Band Edges Measurement

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart C 15.407(b)(4) |
| **Test Method** | ANSI C63.10-2013 Cluase7.8.8 & Section 11.13.3.2 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.10.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.
If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.
Attenuation below the general limits specified in §15.209(a) is not required.
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 6.10.2 Test setup




### 6.10.3 Test data

Pass: Please refer to appendix A for details

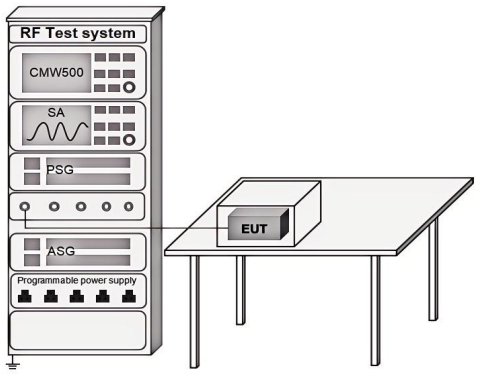
## 6.11 Conducted spurious emissions

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart C 15.407 |
| **Test Method** | ANSI C63.10-2013 Cluase7.8.6 & Section 11.11 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.11.1 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.
If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.
Attenuation below the general limits specified in §15.209(a) is not required.
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 6.11.2 Test setup




### 6.11.3 Test data

Pass: Please refer to appendix A for details

## 6.12 Radiated emissions

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 |
| **Test Method** | KDB 789033 D02 II G |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

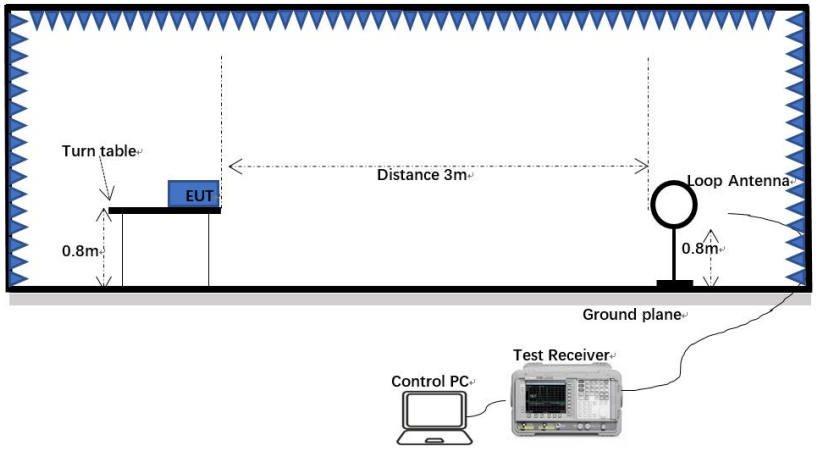
### 6.12.1 Limit

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(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 |

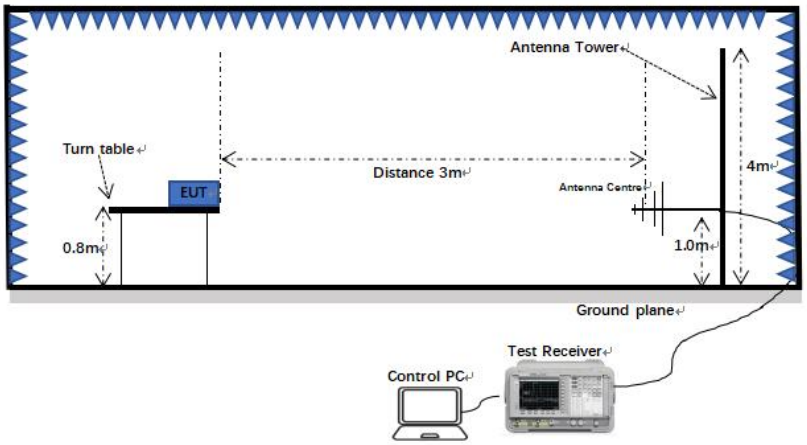
*Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.*

6.12.2 Test setup

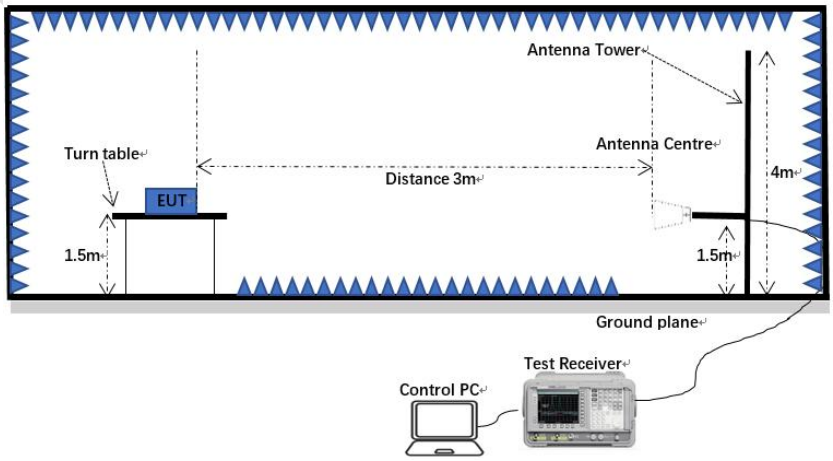
Below 1GHz：




30MHz-1GHz：




Above 1GHz：



6.12.3 Procedure

a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e) 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h) Test the EUT in the lowest channel, the middle channel, the highest channel.

i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j) Repeat above procedures until all frequencies measured was complete.

*Note 1: Scan from 9 kHz to 40GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.*

*Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.*

*Note 3: The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:*

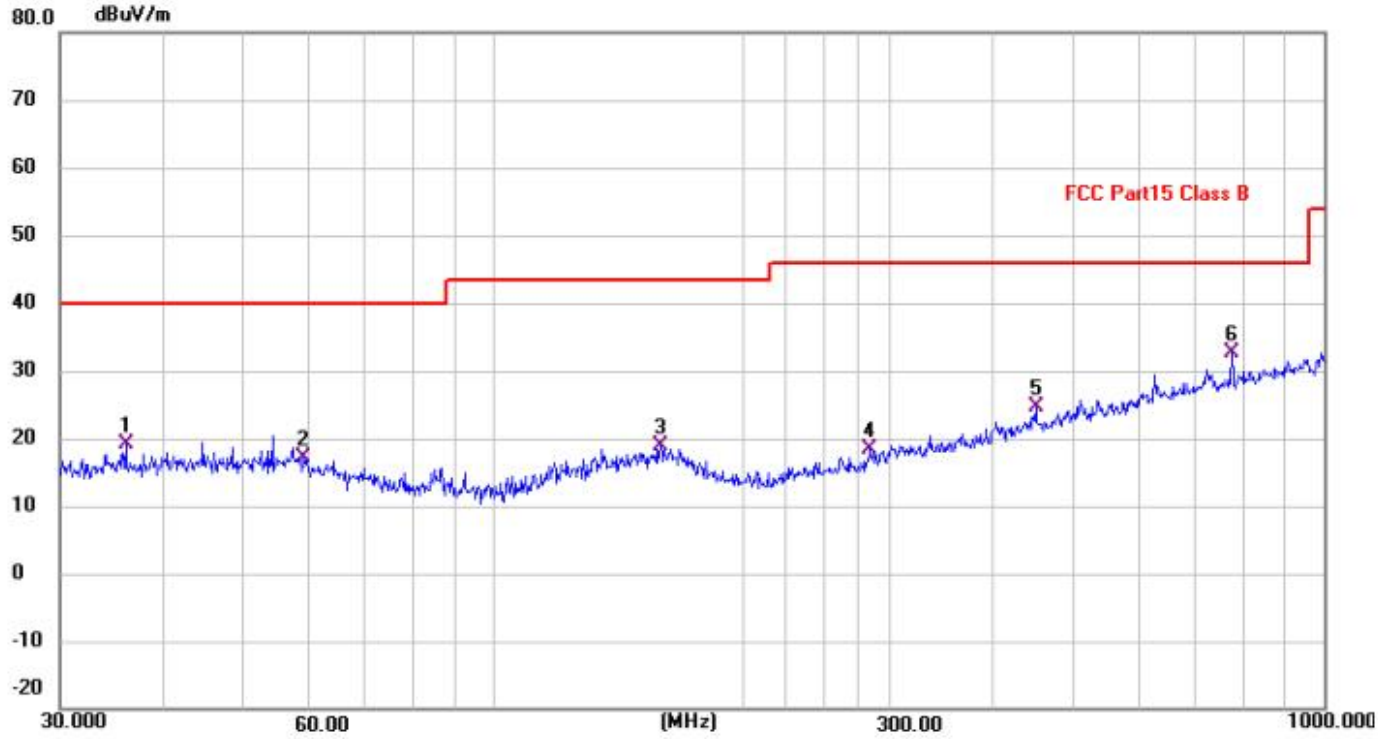
Level (dBuV) = Reading (dBuV) + Factor (dB/m)

6.12.4 Test data

*Remark: During the test, pre-scan the 802.11a/n(HT20/40)/ac(VHT20/40/80) mode, and found the 802.11a mode which it is worse case, only the worse case lowest channel of 6Mbps for 802.11a was recorded in the report.*

Below 1GHz

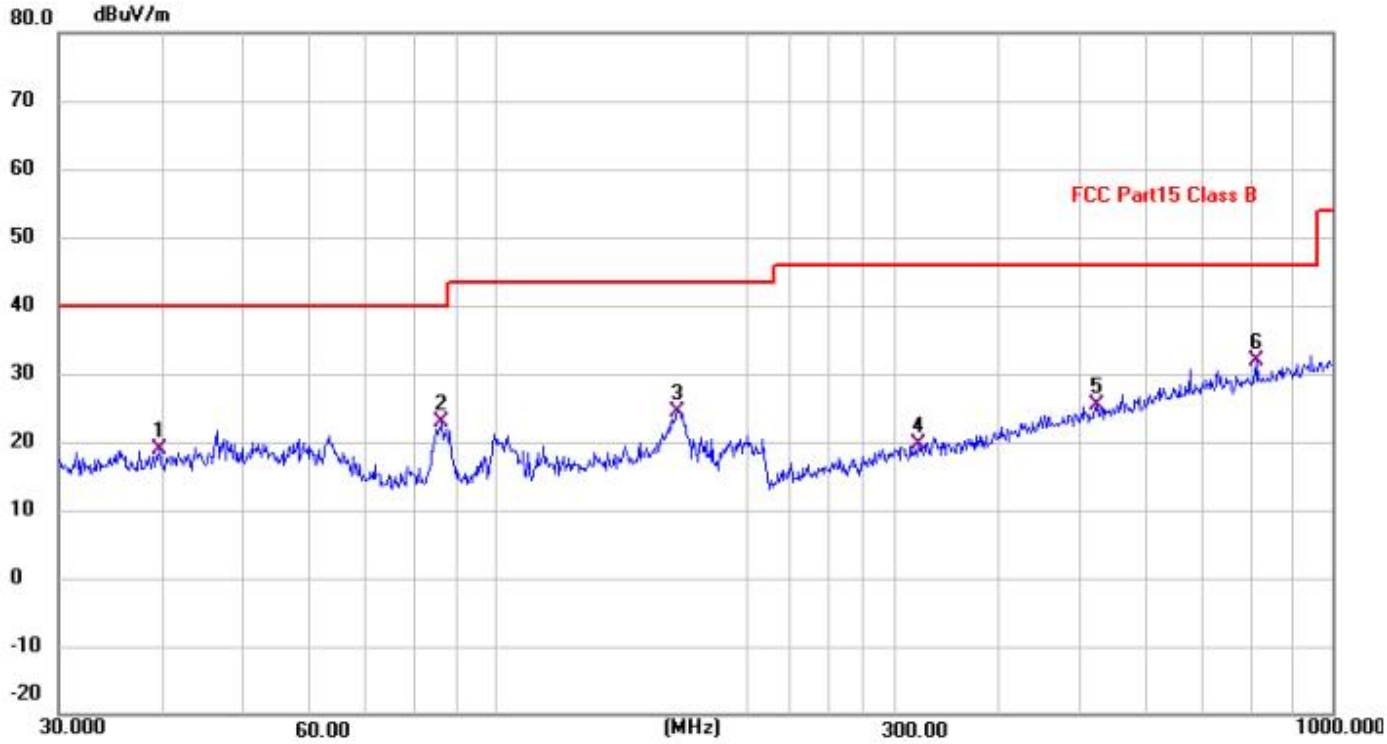
[Test mode: TX]; [Polarity: Horizontal]




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 36.0007 | 0.28 | 18.93 | 19.21 | 40.00 | -20.79 | QP |
| 2 | 59.0251 | -1.42 | 18.48 | 17.06 | 40.00 | -22.94 | QP |
| 3 | 158.6677 | -1.65 | 20.51 | 18.86 | 43.50 | -24.64 | QP |
| 4 | 283.9791 | -1.08 | 19.50 | 18.42 | 46.00 | -27.58 | QP |
| 5 | 449.5558 | 0.25 | 24.28 | 24.53 | 46.00 | -21.47 | QP |
| 6 * | 774.1584 | 3.42 | 29.28 | 32.70 | 46.00 | -13.30 | QP |

**Test Result: Pass**

[Test mode: TX]; [Polarity: Vertical]




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 39.5757 | -0.42 | 19.30 | 18.88 | 40.00 | -21.12 | QP |
| 2 | 86.2001 | 7.30 | 15.59 | 22.89 | 40.00 | -17.11 | QP |
| 3 | 164.9075 | 4.20 | 20.24 | 24.44 | 43.50 | -19.06 | QP |
| 4 | 319.9370 | -1.30 | 20.82 | 19.52 | 46.00 | -26.48 | QP |
| 5 | 522.7180 | -0.26 | 25.71 | 25.45 | 46.00 | -20.55 | QP |
| 6 * | 813.1115 | 1.86 | 30.03 | 31.89 | 46.00 | -14.11 | QP |

**Test Result: Pass**

*Remark: During the test, pre-scan the 802.11a/n(HT20/40)/ac(VHT20/40/80) mode, and found the 802.11a mode which it is worse case, only the worse case 6Mbps for 802.11a was recorded in the report.*

Above 1GHz:

[Test mode: TX low channel]; [Polarity: Horizontal]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5300.500 | 39.73 | 7.65 | 47.38 | 74.00 | -26.62 | peak |
| 2 | | 6252.250 | 38.91 | 7.05 | 45.96 | 74.00 | -28.04 | peak |
| 3 | | 8038.250 | 39.07 | 11.68 | 50.75 | 74.00 | -23.25 | peak |
| 4 | | 9765.500 | 37.98 | 13.76 | 51.74 | 74.00 | -22.26 | peak |
| 5 | | 10646.75 | 36.27 | 13.24 | 49.51 | 74.00 | -24.49 | peak |
| 6 | * | 11586.75 | 37.63 | 14.79 | 52.42 | 74.00 | -21.58 | peak |

**Test Result: Pass**

[Test mode: TX low channel]; [Polarity: Vertical]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5147.750 | 39.43 | 8.08 | 47.51 | 74.00 | -26.49 | peak |
| 2 | | 6158.250 | 38.05 | 6.67 | 44.72 | 74.00 | -29.28 | peak |
| 3 | | 7791.500 | 37.72 | 10.67 | 48.39 | 74.00 | -25.61 | peak |
| 4 | | 9683.250 | 37.66 | 13.52 | 51.18 | 74.00 | -22.82 | peak |
| 5 | * | 11410.50 | 37.04 | 14.33 | 51.37 | 74.00 | -22.63 | peak |
| 6 | | 11962.75 | 37.03 | 14.02 | 51.05 | 74.00 | -22.95 | peak |

**Test Result: Pass**

[Test mode: TX middle channel]; [Polarity: Horizontal]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5500.250 | 38.06 | 8.48 | 46.54 | 74.00 | -27.46 | peak |
| 2 | | 6910.250 | 37.68 | 9.21 | 46.89 | 74.00 | -27.11 | peak |
| 3 | * | 8085.250 | 38.35 | 11.77 | 50.12 | 74.00 | -23.88 | peak |
| 4 | | 9424.750 | 36.77 | 12.91 | 49.68 | 74.00 | -24.32 | peak |
| 5 | | 11234.25 | 36.37 | 13.23 | 49.60 | 74.00 | -24.40 | peak |
| 6 | | 12209.50 | 36.41 | 13.26 | 49.67 | 74.00 | -24.33 | peak |

**Test Result: Pass**

[Test mode: TX middle channel]; [Polarity: Vertical]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5241.750 | 39.21 | 7.41 | 46.62 | 74.00 | -27.38 | peak |
| 2 | | 7145.250 | 39.81 | 10.64 | 50.45 | 74.00 | -23.55 | peak |
| 3 | | 8461.250 | 37.33 | 11.47 | 48.80 | 74.00 | -25.20 | peak |
| 4 | | 9683.250 | 36.93 | 13.52 | 50.45 | 74.00 | -23.55 | peak |
| 5 | | 10964.00 | 35.84 | 13.06 | 48.90 | 74.00 | -25.10 | peak |
| 6 | * | 11962.75 | 37.37 | 14.02 | 51.39 | 74.00 | -22.61 | peak |

**Test Result: Pass**

[Test mode: TX High channel]; [Polarity: Horizontal]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5371.000 | 37.79 | 7.86 | 45.65 | 74.00 | -28.35 | peak |
| 2 | | 6945.500 | 38.51 | 9.74 | 48.25 | 74.00 | -25.75 | peak |
| 3 | | 8661.000 | 36.86 | 11.79 | 48.65 | 74.00 | -25.35 | peak |
| 4 | | 10024.00 | 36.88 | 13.24 | 50.12 | 74.00 | -23.88 | peak |
| 5 | | 11116.75 | 36.83 | 13.27 | 50.10 | 74.00 | -23.90 | peak |
| 6 | * | 11915.75 | 37.32 | 13.68 | 51.00 | 74.00 | -23.00 | peak |

**Test Result: Pass**

[Test mode: TX High channel]; [Polarity: Vertical]


| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5312.250 | 39.18 | 7.61 | 46.79 | 74.00 | -27.21 | peak |
| 2 | | 6757.500 | 38.28 | 9.01 | 47.29 | 74.00 | -26.71 | peak |
| 3 | | 8285.000 | 38.56 | 11.06 | 49.62 | 74.00 | -24.38 | peak |
| 4 | | 9342.500 | 36.99 | 13.35 | 50.34 | 74.00 | -23.66 | peak |
| 5 | | 10811.25 | 36.43 | 13.00 | 49.43 | 74.00 | -24.57 | peak |
| 6 | * | 12374.00 | 37.58 | 12.79 | 50.37 | 74.00 | -23.63 | peak |

**Test Result: Pass**

## 6.13 Radiated emissions which fall in the restricted bands

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407 |
| **Test Method** | KDB 789033 D02 II G |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

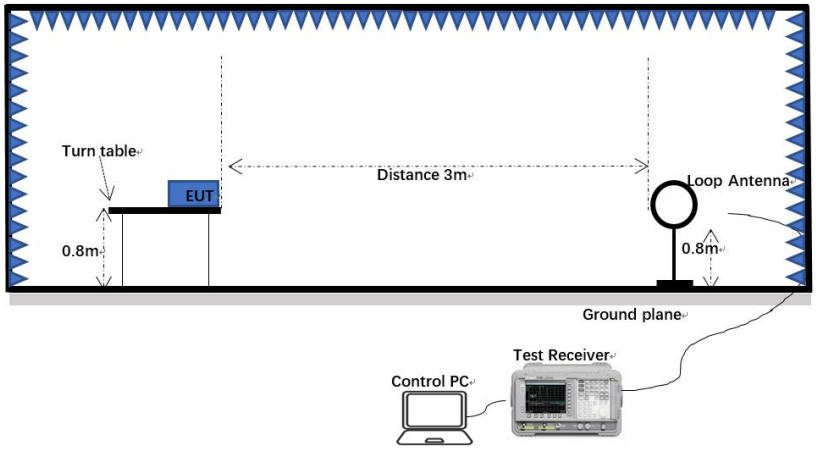
### 6.13.1 Limit

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(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 |

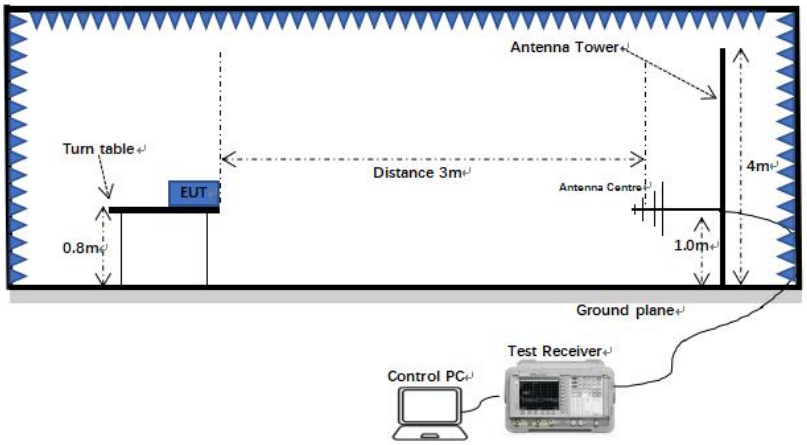
*Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.*

6.13.2 Test setup

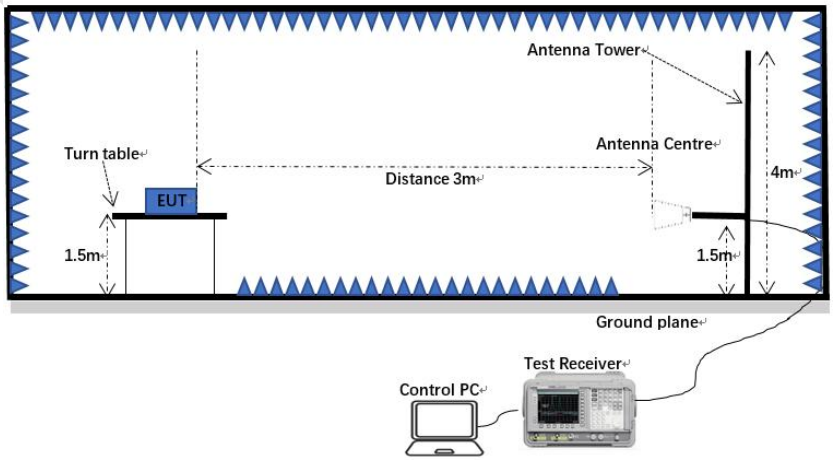
Below 1GHz：




30MHz-1GHz：




Above 1GHz：



6.13.3 Procedure

a) For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b) For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c) The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e) 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h) Test the EUT in the lowest channel, the middle channel, the highest channel.

i) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

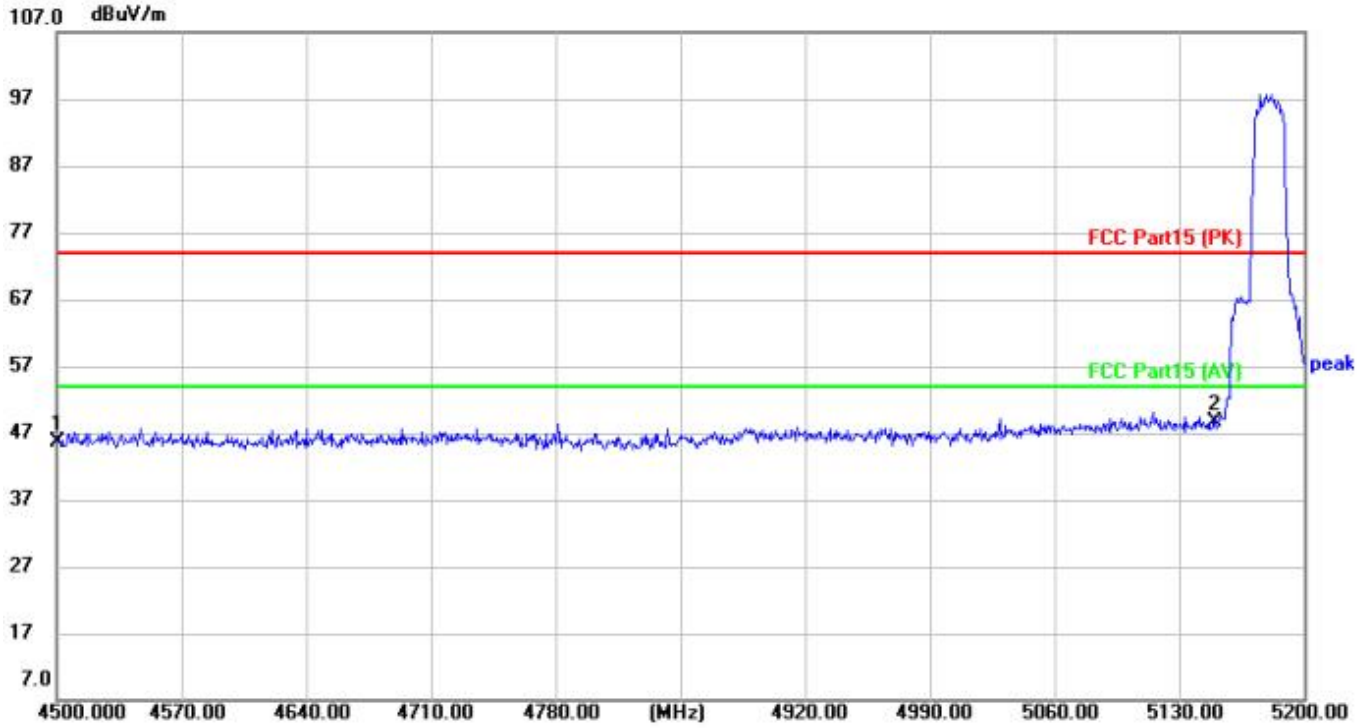
j) Repeat above procedures until all frequencies measured was complete.

*Note 1: Level (dBuV) = Reading (dBuV) + Factor (dB/m)*
*Note 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.*

6.13.4 Test data

*Remark: During the test, pre-scan the 802.11a/n(HT20/40)/ac(VHT20/40/80) mode, and found 20MHz for the 802.11a mode which it is worse case, and found 40MHz for the 802.11n40 mode and found 80MHz for the 802.11ac80 mode which it is worse case, only the worse case was recorded in the report.*

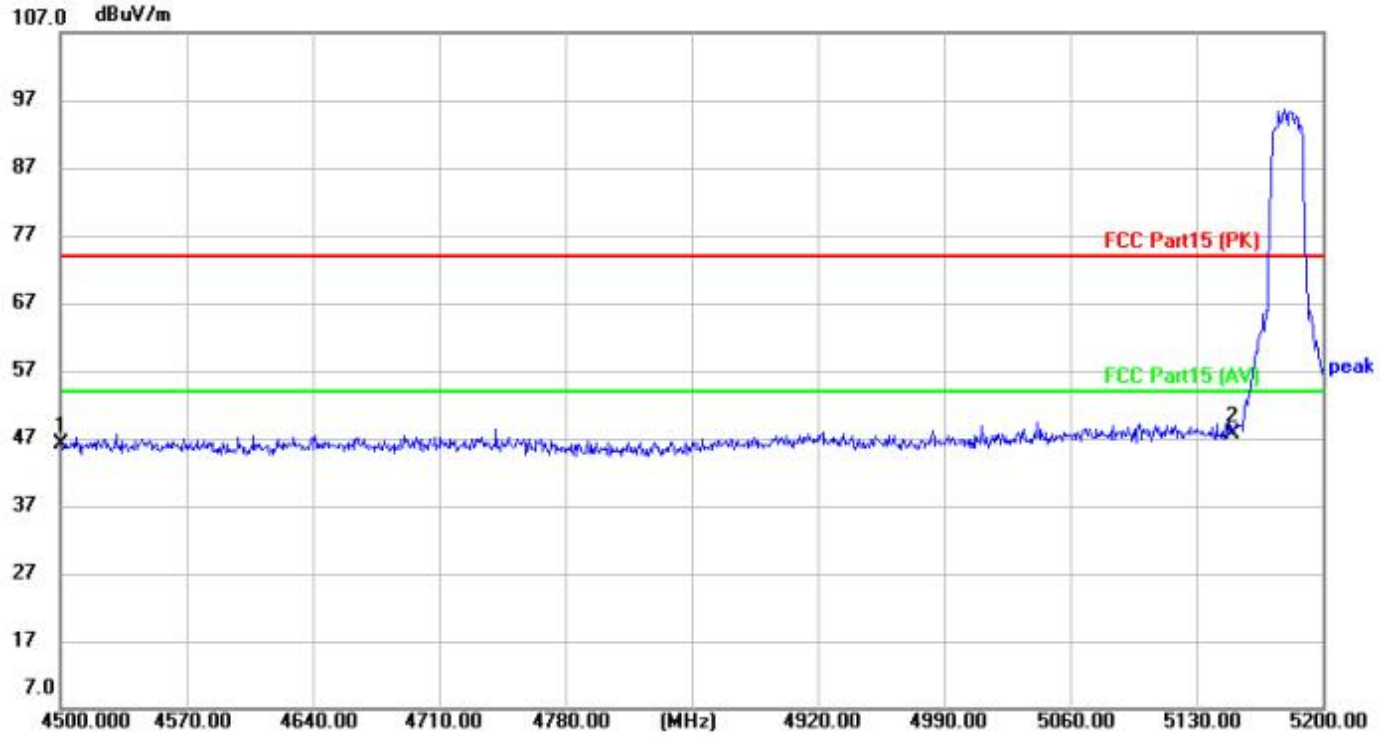
[Test mode: 802.11a 5180MHz TX low channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 42.49 | 3.02 | 45.51 | 74.00 | -28.49 | peak |
| 2 | * | 5150.000 | 42.64 | 5.93 | 48.57 | 74.00 | -25.43 | peak |

**Test Result: Pass**

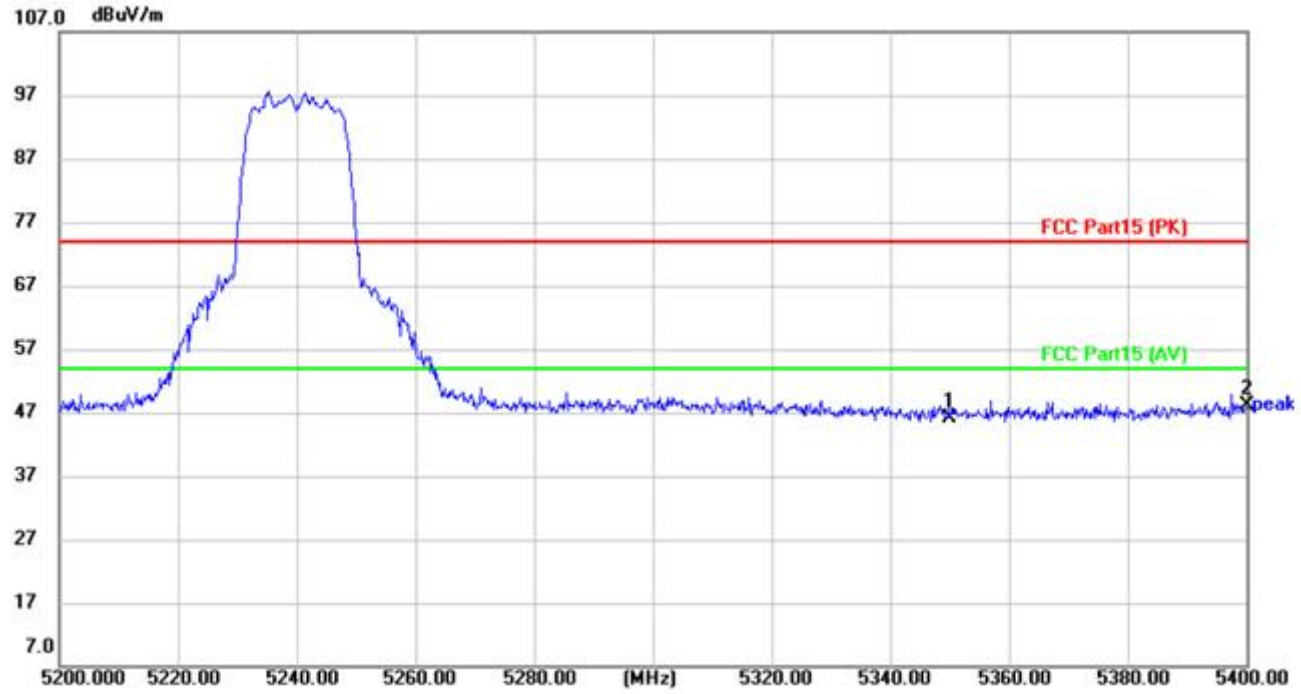
[Test mode:802.11a 5180MHz TX low channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 43.12 | 3.02 | 46.14 | 74.00 | -27.86 | peak |
| 2 | * | 5150.000 | 41.82 | 5.93 | 47.75 | 74.00 | -26.25 | peak |

**Test Result: Pass**

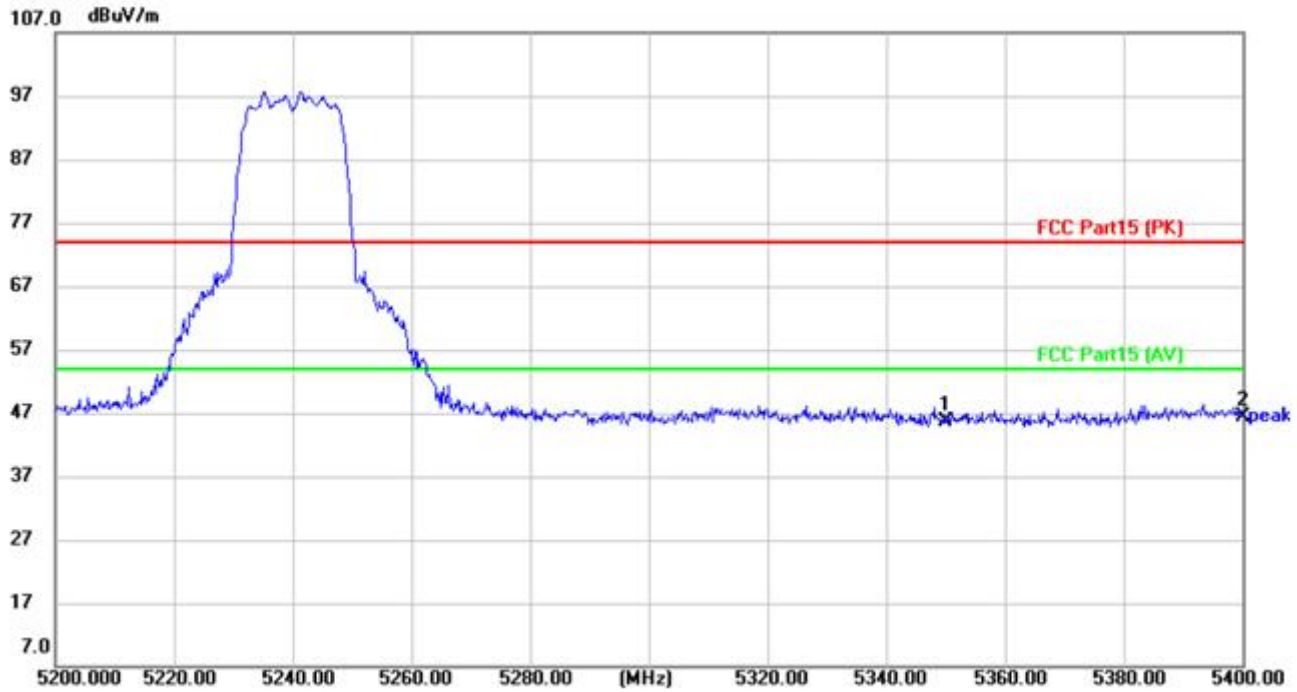
[Test mode: 802.11a 5240MHz TX high channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5350.000 | 40.85 | 5.21 | 46.06 | 74.00 | -27.94 | peak |
| 2 | * | 5400.000 | 42.29 | 5.93 | 48.22 | 74.00 | -25.78 | peak |

**Test Result: Pass**

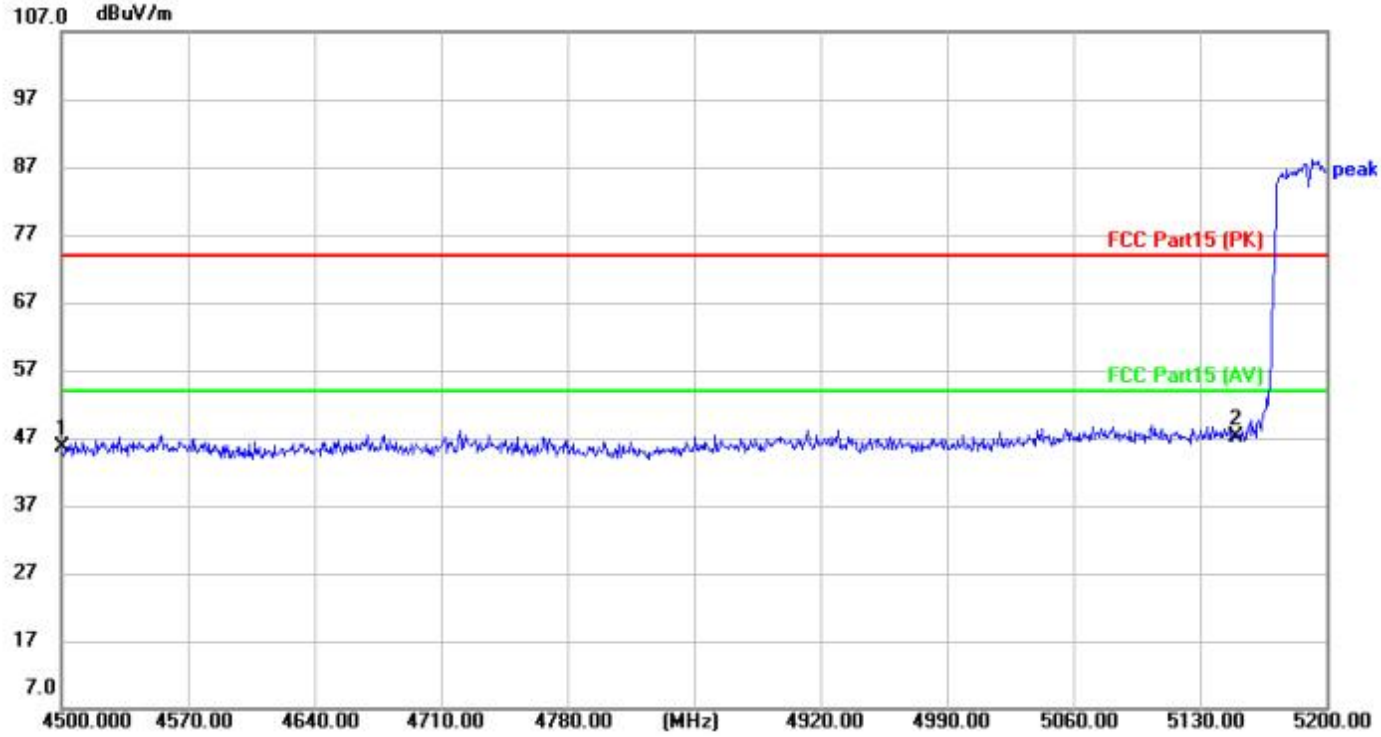
[Test mode:802.11a 5240MHz TX high channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5350.000 | 40.48 | 5.21 | 45.69 | 74.00 | -28.31 | peak |
| 2 | * | 5400.000 | 40.55 | 5.93 | 46.48 | 74.00 | -27.52 | peak |

**Test Result: Pass**

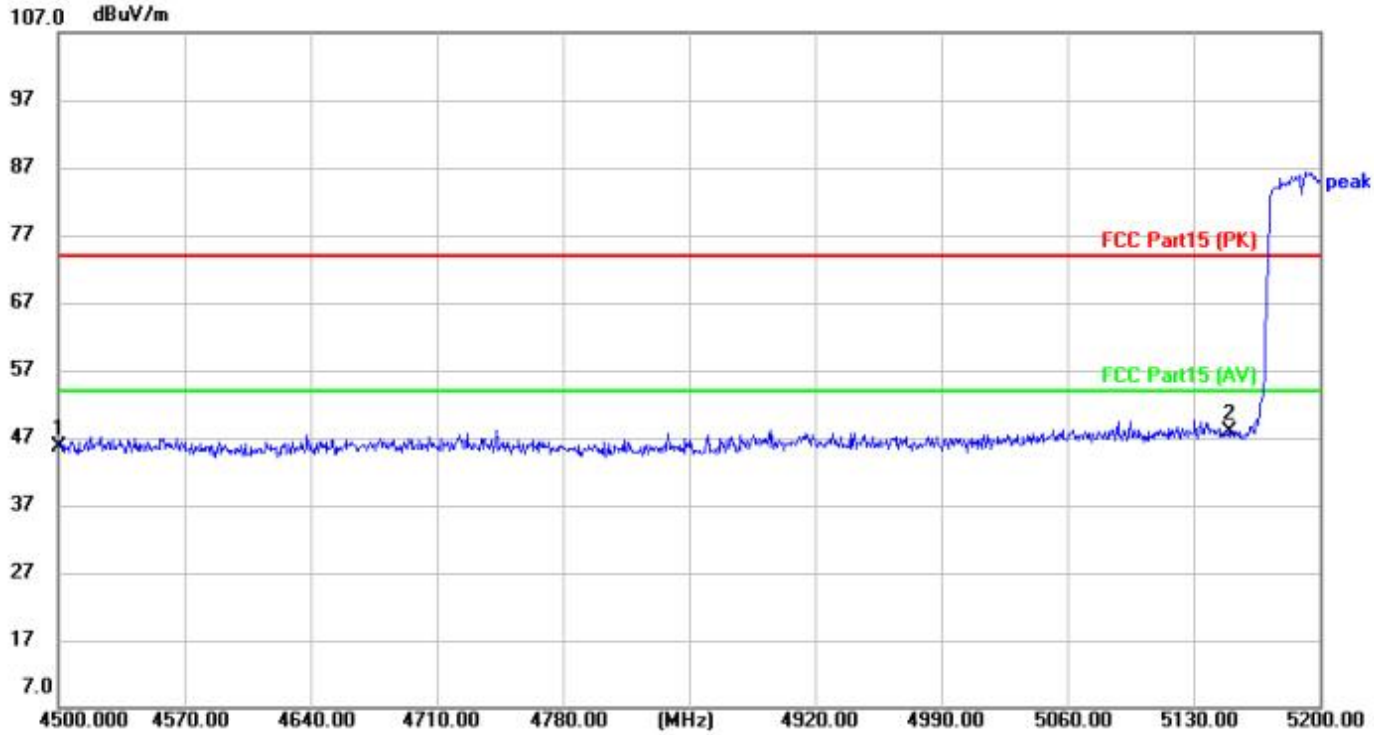
[Test mode: 802.11n40 5190MHz TX low channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 42.59 | 3.02 | 45.61 | 74.00 | -28.39 | peak |
| 2 | * | 5150.000 | 41.14 | 5.93 | 47.07 | 74.00 | -26.93 | peak |

**Test Result: Pass**

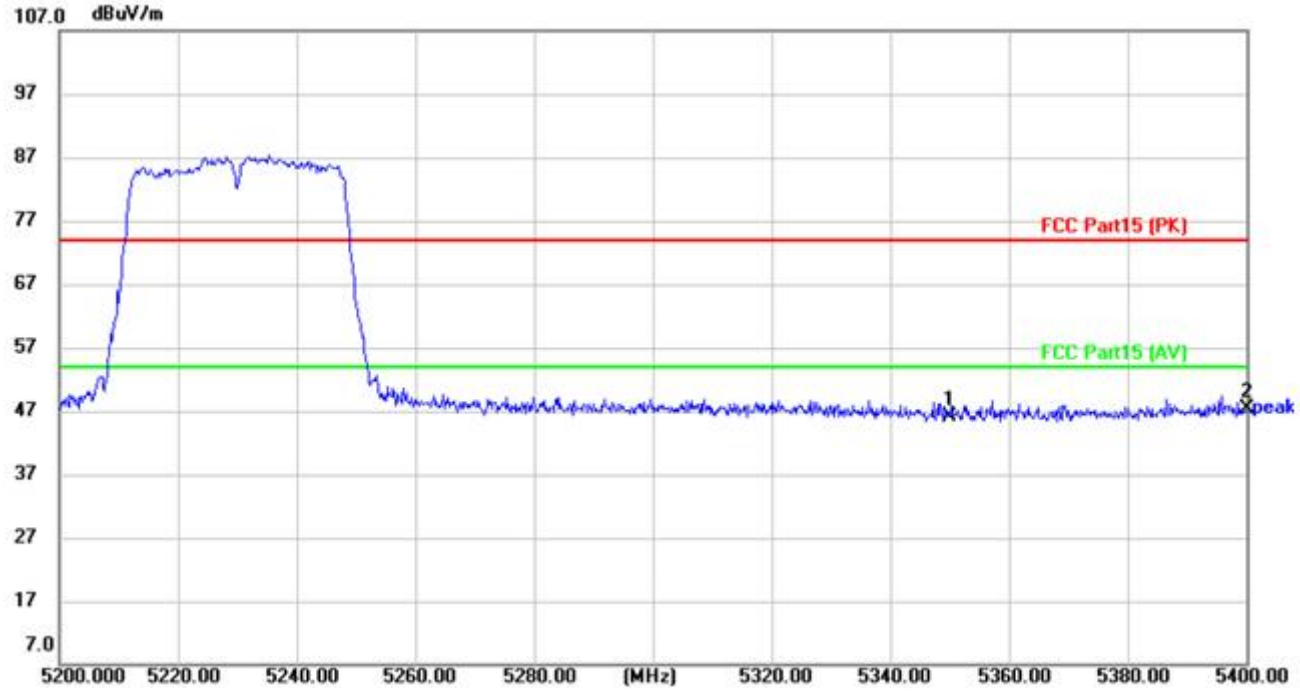
[Test mode: 802.11n40 5190MHz TX low channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 42.69 | 3.02 | 45.71 | 74.00 | -28.29 | peak |
| 2 | * | 5150.000 | 41.95 | 5.93 | 47.88 | 74.00 | -26.12 | peak |

**Test Result: Pass**

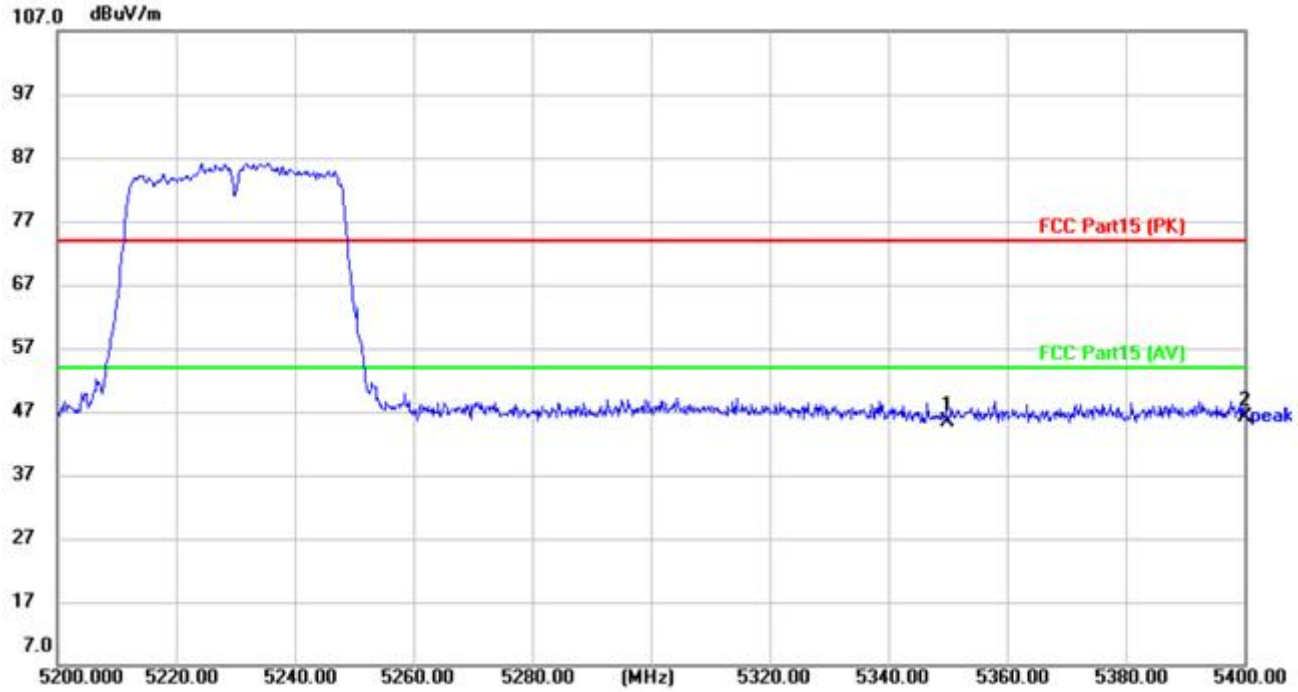
[Test mode: 802.11n40 5230MHz TX high channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5350.000 | 40.89 | 5.21 | 46.10 | 74.00 | -27.90 | peak |
| 2 | * | 5400.000 | 41.41 | 5.93 | 47.34 | 74.00 | -26.66 | peak |

**Test Result: Pass**

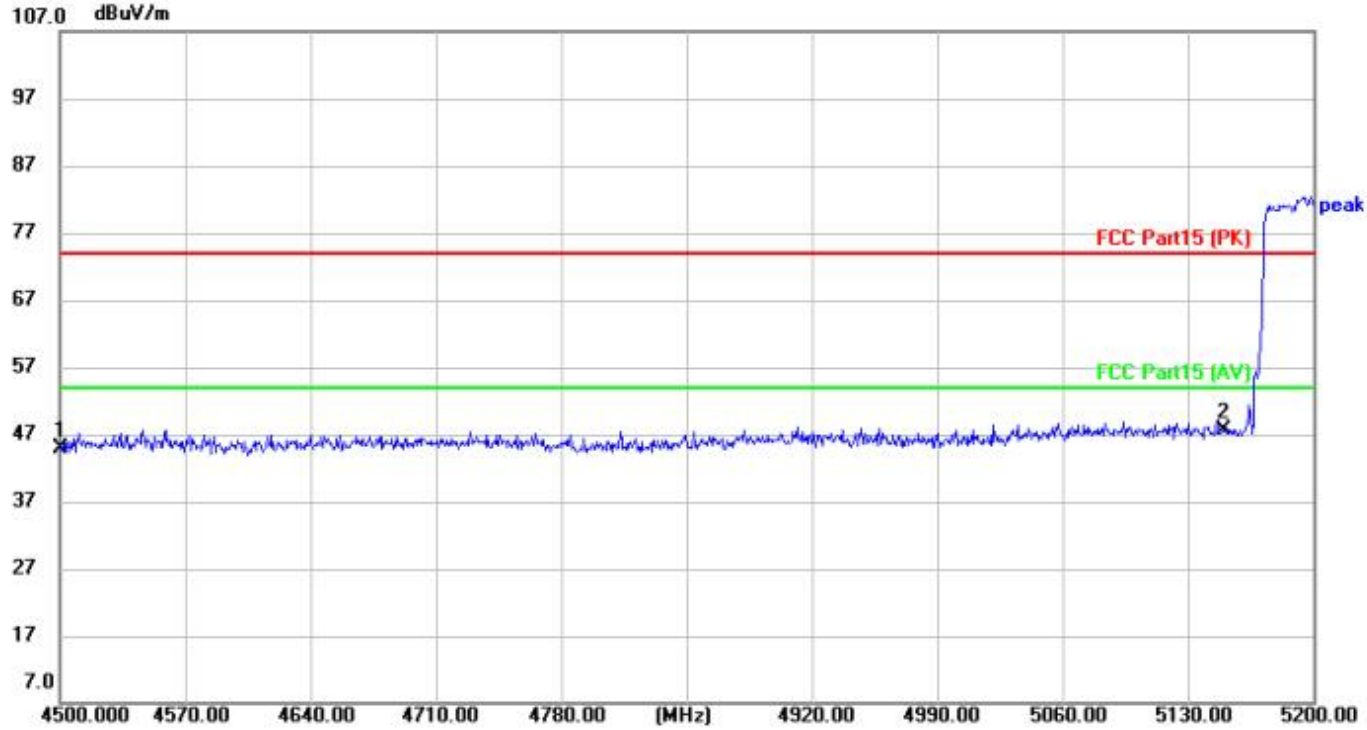
[Test mode: 802.11n40 5230MHz TX high channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5350.000 | 40.22 | 5.21 | 45.43 | 74.00 | -28.57 | peak |
| 2 | * | 5400.000 | 40.20 | 5.93 | 46.13 | 74.00 | -27.87 | peak |

**Test Result: Pass**

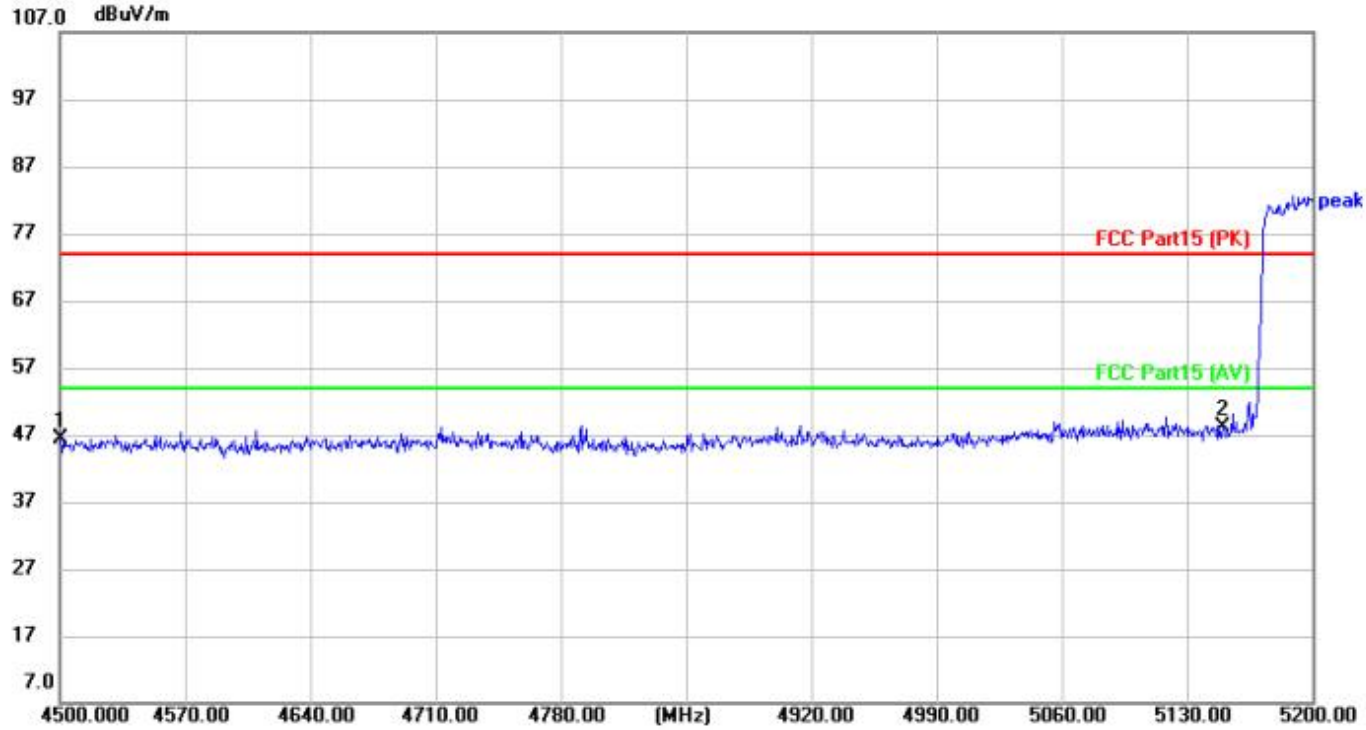
[Test mode: 802.11ac 80 5210MHz TX low channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 41.93 | 3.02 | 44.95 | 74.00 | -29.05 | peak |
| 2 | * | 5150.000 | 41.59 | 5.93 | 47.52 | 74.00 | -26.48 | peak |

**Test Result: Pass**

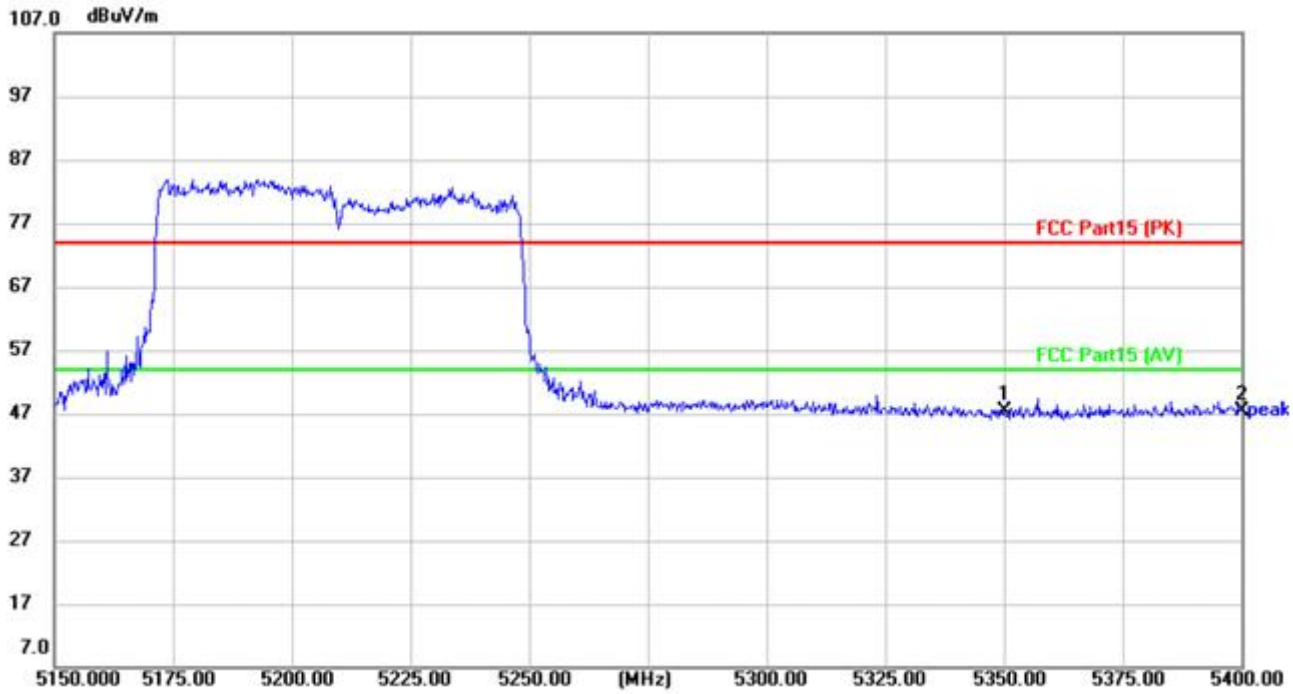
[Test mode: 802.11ac 80 5210MHz TX low channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 4500.000 | 43.30 | 3.02 | 46.32 | 74.00 | -27.68 | peak |
| 2 | * | 5150.000 | 42.32 | 5.93 | 48.25 | 74.00 | -25.75 | peak |

**Test Result: Pass**

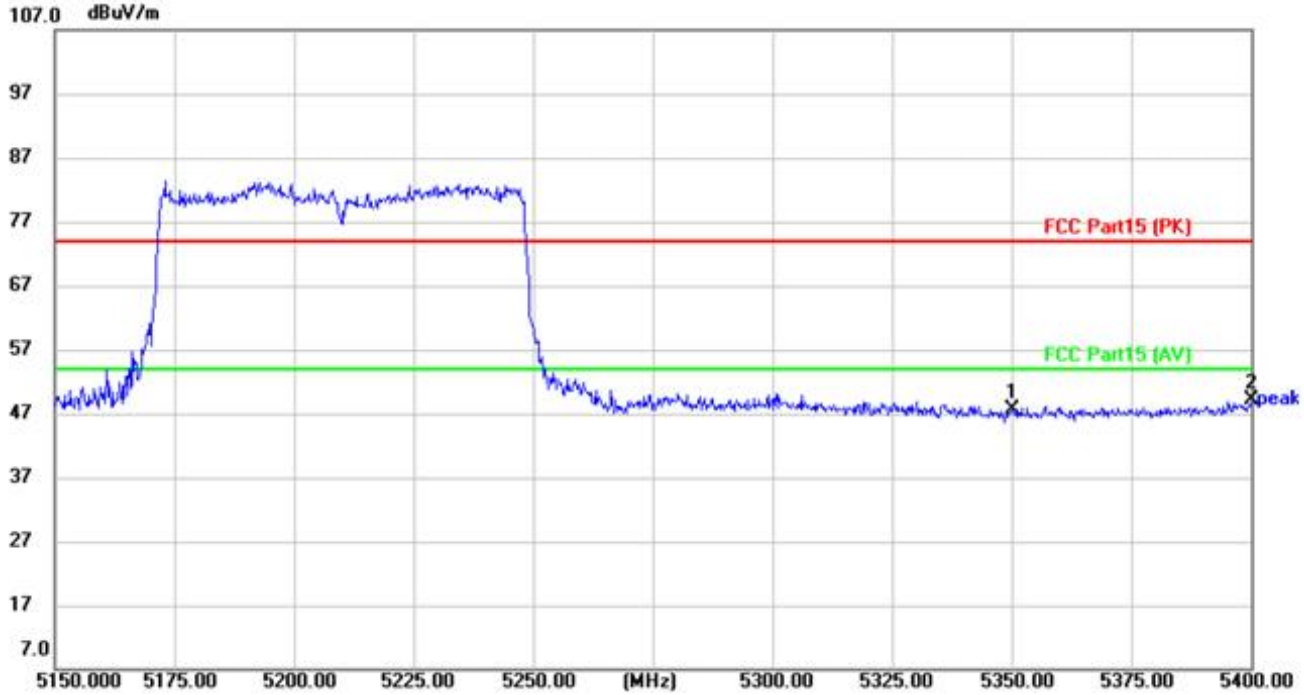
[Test mode: 802.11ac 80 5210MHz TX low channel]; [Polarity: Horizontal]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | * | 5350.000 | 42.28 | 5.21 | 47.49 | 74.00 | -26.51 | peak |
| 2 | | 5400.000 | 41.42 | 5.93 | 47.35 | 74.00 | -26.65 | peak |

**Test Result: Pass**

[Test mode: 802.11ac 80 5210MHz TX low channel]; [Polarity: Vertical]




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 5350.000 | 42.42 | 5.21 | 47.63 | 74.00 | -26.37 | peak |
| 2 | * | 5400.000 | 43.19 | 5.93 | 49.12 | 74.00 | -24.88 | peak |

**Test Result: Pass**

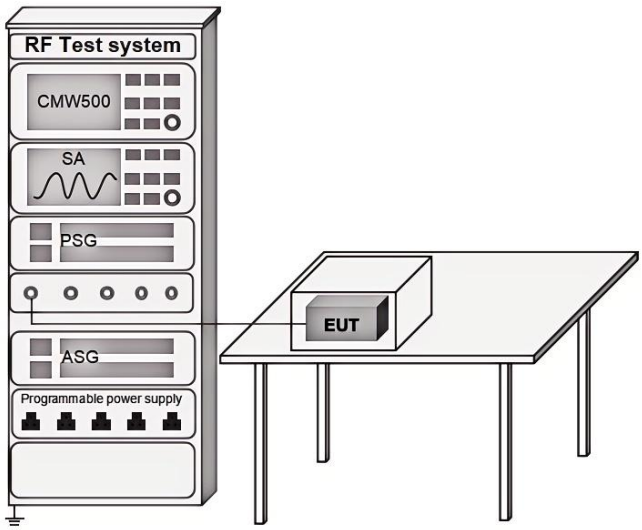
## 6.14 DFS: Channel Closing Transmission Time

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407(h)(2) |
| **Test Method** | KDB 905462 D02 Section 7.8.3 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.14.1 Limit

200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period (should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. It is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions)

### 6.14.2 Test setup




### 6.14.3 Procedure

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file ¡°iperf.exe¡± specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7) Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

### 6.14.4 Test data

*N/A: Not Applicable*

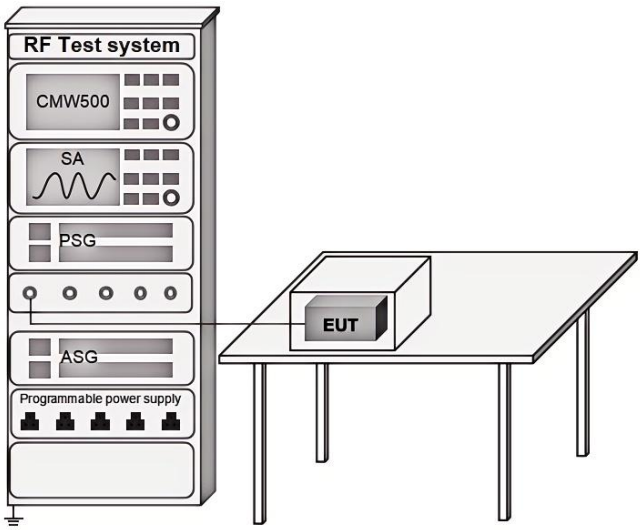
## 6.15 DFS: Non-occupancy period

| | |
|---|---|
| **Test Standard** | 47 CFR Part 15, Subpart E 15.407(h)(2) |
| **Test Method** | KDB 905462 D02 Section 7.8.3 |
| **Test Mode (Pre-Scan)** | TX |
| **Test Mode (Final Test)** | TX |

### 6.15.1 Limit

Minimum 30 minutes

### 6.15.2 Test setup




### 6.15.3 Procedure

1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.

2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device.

3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.

4) EUT will associate with the master at channel. The file ¡°iperf.exe¡± specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.

5)When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.

6)Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom in 600ms plot of the Short Pulse Radar Type.

7)Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (0.3ms) =S (12000ms) / B (4000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C (ms)= N X Dwell (0.3ms); where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.

8)Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

## 6.15.4 Test data

*N/A: Not Applicable*

# 7 Appendix A

## 7.1 Frequency Stability

| Condition | Mode | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|---|---|---|---|---|---|---|---|---|
| 25°C 120V | a | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25°C 102V | a | 5180 | Ant1 | 5180.04 | 44000.00 | 8.49 | 25 | Pass |
| 25°C 138V | a | 5180 | Ant1 | 5180.01 | 9500.00 | 1.83 | 25 | Pass |
| -30°C 120V | a | 5180 | Ant1 | 5180.03 | 30500.00 | 5.89 | 25 | Pass |
| -20°C 120V | a | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| -10°C 120V | a | 5180 | Ant1 | 5180.04 | 44000.00 | 8.49 | 25 | Pass |
| 0°C 120V | a | 5180 | Ant1 | 5180.01 | 9500.00 | 1.83 | 25 | Pass |
| 10°C 120V | a | 5180 | Ant1 | 5180.03 | 30500.00 | 5.89 | 25 | Pass |
| 20°C 120V | a | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 30°C 120V | a | 5180 | Ant1 | 5180.04 | 44000.00 | 8.49 | 25 | Pass |
| 40°C 120V | a | 5180 | Ant1 | 5180.01 | 9500.00 | 1.83 | 25 | Pass |
| 50°C 120V | a | 5180 | Ant1 | 5180.03 | 30500.00 | 5.89 | 25 | Pass |
| 25°C 120V | a | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25°C 102V | a | 5200 | Ant1 | 5200.05 | 46500.00 | 8.94 | 25 | Pass |
| 25°C 138V | a | 5200 | Ant1 | 5200.01 | 10000.00 | 1.92 | 25 | Pass |
| -30°C 120V | a | 5200 | Ant1 | 5200.03 | 33500.00 | 6.44 | 25 | Pass |
| -20°C 120V | a | 5200 | Ant1 | 5200.03 | 33500.00 | 6.44 | 25 | Pass |
| -10°C 120V | a | 5200 | Ant1 | 5200.05 | 46500.00 | 8.94 | 25 | Pass |
| 0°C 120V | a | 5200 | Ant1 | 5200.01 | 10000.00 | 1.92 | 25 | Pass |
| 10°C 120V | a | 5200 | Ant1 | 5200.03 | 33500.00 | 6.44 | 25 | Pass |
| 20°C 120V | a | 5200 | Ant1 | 5200.03 | 33500.00 | 6.44 | 25 | Pass |
| 30°C 120V | a | 5200 | Ant1 | 5200.05 | 46500.00 | 8.94 | 25 | Pass |
| 40°C 120V | a | 5200 | Ant1 | 5200.01 | 10000.00 | 1.92 | 25 | Pass |
| 50°C 120V | a | 5200 | Ant1 | 5200.05 | 46500.00 | 8.94 | 25 | Pass |
| 25°C 120V | a | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25°C 102V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| 25°C 138V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| -30°C 120V | a | 5240 | Ant1 | 5240.01 | 12500.00 | 2.39 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| -20°C 120V | a | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| -10°C 120V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| 0°C 120V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| 10°C 120V | a | 5240 | Ant1 | 5240.01 | 12500.00 | 2.39 | 25 | Pass |
| 20°C 120V | a | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 30°C 120V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| 40°C 120V | a | 5240 | Ant1 | 5240.03 | 28000.00 | 5.34 | 25 | Pass |
| 50°C 120V | a | 5240 | Ant1 | 5240.01 | 12500.00 | 2.39 | 25 | Pass |
| 25°C 120V | a | 5180 | Ant2 | 5180 | 0 | 0 | 25 | Pass |
| 25°C 102V | a | 5180 | Ant2 | 5180.01 | 11500.00 | 2.22 | 25 | Pass |
| 25°C 138V | a | 5180 | Ant2 | 5180.04 | 42500.00 | 8.20 | 25 | Pass |
| -30°C 120V | a | 5180 | Ant2 | 5180 | 0 | 0 | 25 | Pass |
| -20°C 120V | a | 5180 | Ant2 | 5180.01 | 11500.00 | 2.22 | 25 | Pass |
| -10°C 120V | a | 5180 | Ant2 | 5180.04 | 42500.00 | 8.20 | 25 | Pass |
| 0°C 120V | a | 5180 | Ant2 | 5180 | 0 | 0 | 25 | Pass |
| 10°C 120V | a | 5180 | Ant2 | 5180.01 | 11500.00 | 2.22 | 25 | Pass |
| 20°C 120V | a | 5180 | Ant2 | 5180.04 | 42500.00 | 8.20 | 25 | Pass |
| 30°C 120V | a | 5180 | Ant2 | 5180.01 | 11500.00 | 2.22 | 25 | Pass |
| 40°C 120V | a | 5180 | Ant2 | 5180.04 | 42500.00 | 8.20 | 25 | Pass |
| 50°C 120V | a | 5180 | Ant2 | 5180.01 | 11500.00 | 2.22 | 25 | Pass |
| 25°C 120V | a | 5200 | Ant2 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 25°C 102V | a | 5200 | Ant2 | 5200.00 | 4500.00 | 0.87 | 25 | Pass |
| 25°C 138V | a | 5200 | Ant2 | 5200.00 | 4000.00 | 0.77 | 25 | Pass |
| -30°C 120V | a | 5200 | Ant2 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| -20°C 120V | a | 5200 | Ant2 | 5200.00 | 4500.00 | 0.87 | 25 | Pass |
| -10°C 120V | a | 5200 | Ant2 | 5200.00 | 4000.00 | 0.77 | 25 | Pass |
| 0°C 120V | a | 5200 | Ant2 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 10°C 120V | a | 5200 | Ant2 | 5200.00 | 4500.00 | 0.87 | 25 | Pass |
| 20°C 120V | a | 5200 | Ant2 | 5200.00 | 4000.00 | 0.77 | 25 | Pass |
| 30°C 120V | a | 5200 | Ant2 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 40°C 120V | a | 5200 | Ant2 | 5200.00 | 4500.00 | 0.87 | 25 | Pass |
| 50°C 120V | a | 5200 | Ant2 | 5200.00 | 4000.00 | 0.77 | 25 | Pass |
| 25°C 120V | a | 5240 | Ant2 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 25°C 102V | a | 5240 | Ant2 | 5240.02 | 15000.00 | 2.86 | 25 | Pass |
| 25°C 138V | a | 5240 | Ant2 | 5240.03 | 27500.00 | 5.25 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| -30°C 120V | a | 5240 | Ant2 | 5240.03 | 26500.00 | 5.06 | 25 | Pass |
| -20°C 120V | a | 5240 | Ant2 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| -10°C 120V | a | 5240 | Ant2 | 5240.02 | 15000.00 | 2.86 | 25 | Pass |
| 0°C 120V | a | 5240 | Ant2 | 5240.03 | 27500.00 | 5.25 | 25 | Pass |
| 10°C 120V | a | 5240 | Ant2 | 5240.03 | 26500.00 | 5.06 | 25 | Pass |
| 20°C 120V | a | 5240 | Ant2 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 30°C 120V | a | 5240 | Ant2 | 5240.02 | 15000.00 | 2.86 | 25 | Pass |
| 40°C 120V | a | 5240 | Ant2 | 5240.03 | 27500.00 | 5.25 | 25 | Pass |
| 50°C 120V | a | 5240 | Ant2 | 5240.03 | 26500.00 | 5.06 | 25 | Pass |
| 25°C 120V | n20 | 5180 | Sum | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 25°C 102V | n20 | 5180 | Sum | 5180.05 | 47000.00 | 9.07 | 25 | Pass |
| 25°C 138V | n20 | 5180 | Sum | 5180.02 | 22500.00 | 4.34 | 25 | Pass |
| -30°C 120V | n20 | 5180 | Sum | 5180.01 | 10000.00 | 1.93 | 25 | Pass |
| -20°C 120V | n20 | 5180 | Sum | 5180.04 | 40000 | 7.72 | 25 | Pass |
| -10°C 120V | n20 | 5180 | Sum | 5180.05 | 47000.00 | 9.07 | 25 | Pass |
| 0°C 120V | n20 | 5180 | Sum | 5180.02 | 22500.00 | 4.34 | 25 | Pass |
| 10°C 120V | n20 | 5180 | Sum | 5180.01 | 10000.00 | 1.93 | 25 | Pass |
| 20°C 120V | n20 | 5180 | Sum | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 30°C 120V | n20 | 5180 | Sum | 5180.05 | 47000.00 | 9.07 | 25 | Pass |
| 40°C 120V | n20 | 5180 | Sum | 5180.02 | 22500.00 | 4.34 | 25 | Pass |
| 50°C 120V | n20 | 5180 | Sum | 5180.01 | 10000.00 | 1.93 | 25 | Pass |
| 25°C 120V | n20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25°C 102V | n20 | 5200 | Sum | 5200.04 | 43000.00 | 8.27 | 25 | Pass |
| 25°C 138V | n20 | 5200 | Sum | 5200.01 | 10500.00 | 2.02 | 25 | Pass |
| -30°C 120V | n20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| -20°C 120V | n20 | 5200 | Sum | 5200.04 | 43000.00 | 8.27 | 25 | Pass |
| -10°C 120V | n20 | 5200 | Sum | 5200.01 | 10500.00 | 2.02 | 25 | Pass |
| 0°C 120V | n20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 10°C 120V | n20 | 5200 | Sum | 5200.04 | 43000.00 | 8.27 | 25 | Pass |
| 20°C 120V | n20 | 5200 | Sum | 5200.01 | 10500.00 | 2.02 | 25 | Pass |
| 30°C 120V | n20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 40°C 120V | n20 | 5200 | Sum | 5200.04 | 43000.00 | 8.27 | 25 | Pass |
| 50°C 120V | n20 | 5200 | Sum | 5200.00 | 500.00 | 0.10 | 25 | Pass |
| 25°C 120V | n20 | 5240 | Sum | 5240.06 | 60000 | 11.45 | 25 | Pass |
| 25°C 102V | n20 | 5240 | Sum | 5240.02 | 18500.00 | 3.53 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25°C 138V | n20 | 5240 | Sum | 5240.04 | 42500.00 | 8.11 | 25 | Pass |
| -30°C 120V | n20 | 5240 | Sum | 5240.05 | 46500.00 | 8.87 | 25 | Pass |
| -20°C 120V | n20 | 5240 | Sum | 5240.06 | 60000 | 11.45 | 25 | Pass |
| -10°C 120V | n20 | 5240 | Sum | 5240.02 | 18500.00 | 3.53 | 25 | Pass |
| 0°C 120V | n20 | 5240 | Sum | 5240.04 | 42500.00 | 8.11 | 25 | Pass |
| 10°C 120V | n20 | 5240 | Sum | 5240.05 | 46500.00 | 8.87 | 25 | Pass |
| 20°C 120V | n20 | 5240 | Sum | 5240.04 | 42500.00 | 8.11 | 25 | Pass |
| 30°C 120V | n20 | 5240 | Sum | 5240.05 | 46500.00 | 8.87 | 25 | Pass |
| 40°C 120V | n20 | 5240 | Sum | 5240.04 | 42500.00 | 8.11 | 25 | Pass |
| 50°C 120V | n20 | 5240 | Sum | 5240.05 | 46500.00 | 8.87 | 25 | Pass |
| 25°C 120V | n40 | 5190 | Sum | 5190 | 0 | 0 | 25 | Pass |
| 25°C 102V | n40 | 5190 | Sum | 5190.02 | 15500.00 | 2.99 | 25 | Pass |
| 25°C 138V | n40 | 5190 | Sum | 5190.05 | 48000.00 | 9.25 | 25 | Pass |
| -30°C 120V | n40 | 5190 | Sum | 5190.02 | 21000.00 | 4.05 | 25 | Pass |
| -20°C 120V | n40 | 5190 | Sum | 5190.02 | 15500.00 | 2.99 | 25 | Pass |
| -10°C 120V | n40 | 5190 | Sum | 5190.05 | 48000.00 | 9.25 | 25 | Pass |
| 0°C 120V | n40 | 5190 | Sum | 5190.02 | 21000.00 | 4.05 | 25 | Pass |
| 10°C 120V | n40 | 5190 | Sum | 5190.02 | 15500.00 | 2.99 | 25 | Pass |
| 20°C 120V | n40 | 5190 | Sum | 5190.05 | 48000.00 | 9.25 | 25 | Pass |
| 30°C 120V | n40 | 5190 | Sum | 5190.02 | 21000.00 | 4.05 | 25 | Pass |
| 40°C 120V | n40 | 5190 | Sum | 5190 | 0 | 0 | 25 | Pass |
| 50°C 120V | n40 | 5190 | Sum | 5190.02 | 21000.00 | 4.05 | 25 | Pass |
| 25°C 120V | n40 | 5230 | Sum | 5230 | 0 | 0 | 25 | Pass |
| 25°C 102V | n40 | 5230 | Sum | 5230.01 | 7500.00 | 1.43 | 25 | Pass |
| 25°C 138V | n40 | 5230 | Sum | 5230.01 | 9000.00 | 1.72 | 25 | Pass |
| -30°C 120V | n40 | 5230 | Sum | 5230.04 | 41500.00 | 7.93 | 25 | Pass |
| -20°C 120V | n40 | 5230 | Sum | 5230 | 0 | 0 | 25 | Pass |
| -10°C 120V | n40 | 5230 | Sum | 5230.01 | 7500.00 | 1.43 | 25 | Pass |
| 0°C 120V | n40 | 5230 | Sum | 5230.01 | 9000.00 | 1.72 | 25 | Pass |
| 10°C 120V | n40 | 5230 | Sum | 5230.04 | 41500.00 | 7.93 | 25 | Pass |
| 20°C 120V | n40 | 5230 | Sum | 5230 | 0 | 0 | 25 | Pass |
| 30°C 120V | n40 | 5230 | Sum | 5230.01 | 7500.00 | 1.43 | 25 | Pass |
| 40°C 120V | n40 | 5230 | Sum | 5230.01 | 9000.00 | 1.72 | 25 | Pass |
| 50°C 120V | n40 | 5230 | Sum | 5230.04 | 41500.00 | 7.93 | 25 | Pass |
| 25°C 120V | ac20 | 5180 | Sum | 5180.02 | 20000 | 3.86 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25°C 102V | ac20 | 5180 | Sum | 5180.02 | 19000.00 | 3.67 | 25 | Pass |
| 25°C 138V | ac20 | 5180 | Sum | 5180.00 | 4000.00 | 0.77 | 25 | Pass |
| -30°C 120V | ac20 | 5180 | Sum | 5180.00 | 3500.00 | 0.68 | 25 | Pass |
| -20°C 120V | ac20 | 5180 | Sum | 5180.02 | 19000.00 | 3.67 | 25 | Pass |
| -10°C 120V | ac20 | 5180 | Sum | 5180.00 | 4000.00 | 0.77 | 25 | Pass |
| 0°C 120V | ac20 | 5180 | Sum | 5180.00 | 3500.00 | 0.68 | 25 | Pass |
| 10°C 120V | ac20 | 5180 | Sum | 5180.02 | 19000.00 | 3.67 | 25 | Pass |
| 20°C 120V | ac20 | 5180 | Sum | 5180.00 | 4000.00 | 0.77 | 25 | Pass |
| 30°C 120V | ac20 | 5180 | Sum | 5180.00 | 3500.00 | 0.68 | 25 | Pass |
| 40°C 120V | ac20 | 5180 | Sum | 5180.00 | 4000.00 | 0.77 | 25 | Pass |
| 50°C 120V | ac20 | 5180 | Sum | 5180.00 | 3500.00 | 0.68 | 25 | Pass |
| 25°C 120V | ac20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25°C 102V | ac20 | 5200 | Sum | 5200.01 | 8500.00 | 1.63 | 25 | Pass |
| 25°C 138V | ac20 | 5200 | Sum | 5200.02 | 24000.00 | 4.62 | 25 | Pass |
| -30°C 120V | ac20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| -20°C 120V | ac20 | 5200 | Sum | 5200.01 | 8500.00 | 1.63 | 25 | Pass |
| -10°C 120V | ac20 | 5200 | Sum | 5200.02 | 24000.00 | 4.62 | 25 | Pass |
| 0°C 120V | ac20 | 5200 | Sum | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 10°C 120V | ac20 | 5200 | Sum | 5200.01 | 8500.00 | 1.63 | 25 | Pass |
| 20°C 120V | ac20 | 5200 | Sum | 5200.02 | 24000.00 | 4.62 | 25 | Pass |
| 30°C 120V | ac20 | 5200 | Sum | 5200.03 | 34000.00 | 6.54 | 25 | Pass |
| 40°C 120V | ac20 | 5200 | Sum | 5200.03 | 34000.00 | 6.54 | 25 | Pass |
| 50°C 120V | ac20 | 5200 | Sum | 5200.01 | 8500.00 | 1.63 | 25 | Pass |
| 25°C 120V | ac20 | 5240 | Sum | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 25°C 102V | ac20 | 5240 | Sum | 5240.01 | 11500.00 | 2.19 | 25 | Pass |
| 25°C 138V | ac20 | 5240 | Sum | 5240.05 | 48000.00 | 9.16 | 25 | Pass |
| -30°C 120V | ac20 | 5240 | Sum | 5240.03 | 29000.00 | 5.53 | 25 | Pass |
| -20°C 120V | ac20 | 5240 | Sum | 5240.04 | 40500.00 | 7.73 | 25 | Pass |
| -10°C 120V | ac20 | 5240 | Sum | 5240.03 | 29000.00 | 5.53 | 25 | Pass |
| 0°C 120V | ac20 | 5240 | Sum | 5240.04 | 40500.00 | 7.73 | 25 | Pass |
| 10°C 120V | ac20 | 5240 | Sum | 5240.01 | 11500.00 | 2.19 | 25 | Pass |
| 20°C 120V | ac20 | 5240 | Sum | 5240.05 | 48000.00 | 9.16 | 25 | Pass |
| 30°C 120V | ac20 | 5240 | Sum | 5240.03 | 29000.00 | 5.53 | 25 | Pass |
| 40°C 120V | ac20 | 5240 | Sum | 5240.05 | 48000.00 | 9.16 | 25 | Pass |
| 50°C 120V | ac20 | 5240 | Sum | 5240.03 | 29000.00 | 5.53 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 25°C 120V | ac40 | 5190 | Sum | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25°C 102V | ac40 | 5190 | Sum | 5190.01 | 10000.00 | 1.93 | 25 | Pass |
| 25°C 138V | ac40 | 5190 | Sum | 5190.05 | 48500.00 | 9.34 | 25 | Pass |
| -30°C 120V | ac40 | 5190 | Sum | 5190.01 | 7500.00 | 1.45 | 25 | Pass |
| -20°C 120V | ac40 | 5190 | Sum | 5190.04 | 40000 | 7.71 | 25 | Pass |
| -10°C 120V | ac40 | 5190 | Sum | 5190.01 | 10000.00 | 1.93 | 25 | Pass |
| 0°C 120V | ac40 | 5190 | Sum | 5190.05 | 48500.00 | 9.34 | 25 | Pass |
| 10°C 120V | ac40 | 5190 | Sum | 5190.01 | 7500.00 | 1.45 | 25 | Pass |
| 20°C 120V | ac40 | 5190 | Sum | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 30°C 120V | ac40 | 5190 | Sum | 5190.01 | 10000.00 | 1.93 | 25 | Pass |
| 40°C 120V | ac40 | 5190 | Sum | 5190.05 | 48500.00 | 9.34 | 25 | Pass |
| 50°C 120V | ac40 | 5190 | Sum | 5190.01 | 7500.00 | 1.45 | 25 | Pass |
| 25°C 120V | ac40 | 5230 | Sum | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 25°C 102V | ac40 | 5230 | Sum | 5230.03 | 25500.00 | 4.88 | 25 | Pass |
| 25°C 138V | ac40 | 5230 | Sum | 5230.01 | 7000.00 | 1.34 | 25 | Pass |
| -30°C 120V | ac40 | 5230 | Sum | 5230.01 | 7000.00 | 1.34 | 25 | Pass |
| -20°C 120V | ac40 | 5230 | Sum | 5230.04 | 40500.00 | 7.74 | 25 | Pass |
| -10°C 120V | ac40 | 5230 | Sum | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 0°C 120V | ac40 | 5230 | Sum | 5230.03 | 25500.00 | 4.88 | 25 | Pass |
| 10°C 120V | ac40 | 5230 | Sum | 5230.01 | 7000.00 | 1.34 | 25 | Pass |
| 20°C 120V | ac40 | 5230 | Sum | 5230.01 | 7000.00 | 1.34 | 25 | Pass |
| 30°C 120V | ac40 | 5230 | Sum | 5230.04 | 40500.00 | 7.74 | 25 | Pass |
| 40°C 120V | ac40 | 5230 | Sum | 5230.03 | 25500.00 | 4.88 | 25 | Pass |
| 50°C 120V | ac40 | 5230 | Sum | 5230.01 | 7000.00 | 1.34 | 25 | Pass |
| 25°C 120V | ac80 | 5210 | Sum | 5210.08 | 80000 | 15.36 | 25 | Pass |
| 25°C 102V | ac80 | 5210 | Sum | 5210.01 | 10000.00 | 1.92 | 25 | Pass |
| 25°C 138V | ac80 | 5210 | Sum | 5210.03 | 32500.00 | 6.24 | 25 | Pass |
| -30°C 120V | ac80 | 5210 | Sum | 5210.02 | 15000.00 | 2.88 | 25 | Pass |
| -20°C 120V | ac80 | 5210 | Sum | 5210.00 | 4500.00 | 0.86 | 25 | Pass |
| -10°C 120V | ac80 | 5210 | Sum | 5210.08 | 80000 | 15.36 | 25 | Pass |
| 0°C 120V | ac80 | 5210 | Sum | 5210.01 | 10000.00 | 1.92 | 25 | Pass |
| 10°C 120V | ac80 | 5210 | Sum | 5210.03 | 32500.00 | 6.24 | 25 | Pass |
| 20°C 120V | ac80 | 5210 | Sum | 5210.02 | 15000.00 | 2.88 | 25 | Pass |
| 30°C 120V | ac80 | 5210 | Sum | 5210.00 | 4500.00 | 0.86 | 25 | Pass |
| 40°C 120V | ac80 | 5210 | Sum | 5210.02 | 15000.00 | 2.88 | 25 | Pass |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 50°C 120V | ac80 | 5210 | Sum | 5210.00 | 4500.00 | 0.86 | 25 | Pass |

## 7.2 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 16.865 | 30 | Pass |
| NVNT | a | 5200 | Ant1 | 17.299 | 30 | Pass |
| NVNT | a | 5240 | Ant1 | 17.311 | 30 | Pass |
| NVNT | a | 5180 | Ant2 | 15.471 | 30 | Pass |
| NVNT | a | 5200 | Ant2 | 15.938 | 30 | Pass |
| NVNT | a | 5240 | Ant2 | 16.75 | 30 | Pass |
| NVNT | n20 | 5180 | Ant1 | 13.572 | 30 | Pass |
| NVNT | n20 | 5180 | Ant2 | 12.388 | 30 | Pass |
| NVNT | n20 | 5180 | Sum | 16.031 | 30 | Pass |
| NVNT | n20 | 5200 | Ant1 | 14.152 | 30 | Pass |
| NVNT | n20 | 5200 | Ant2 | 12.757 | 30 | Pass |
| NVNT | n20 | 5200 | Sum | 16.521 | 30 | Pass |
| NVNT | n20 | 5240 | Ant1 | 14.006 | 30 | Pass |
| NVNT | n20 | 5240 | Ant2 | 13.056 | 30 | Pass |
| NVNT | n20 | 5240 | Sum | 16.567 | 30 | Pass |
| NVNT | n40 | 5190 | Ant1 | 13.911 | 30 | Pass |
| NVNT | n40 | 5190 | Ant2 | 12.481 | 30 | Pass |
| NVNT | n40 | 5190 | Sum | 16.265 | 30 | Pass |
| NVNT | n40 | 5230 | Ant1 | 14.192 | 30 | Pass |
| NVNT | n40 | 5230 | Ant2 | 13.111 | 30 | Pass |
| NVNT | n40 | 5230 | Sum | **16.695** | 30 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 13.002 | 30 | Pass |
| NVNT | ac20 | 5180 | Ant2 | 12.292 | 30 | Pass |
| NVNT | ac20 | 5180 | Sum | 15.672 | 30 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 13.637 | 30 | Pass |
| NVNT | ac20 | 5200 | Ant2 | 12.766 | 30 | Pass |
| NVNT | ac20 | 5200 | Sum | 16.234 | 30 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 13.995 | 30 | Pass |
| NVNT | ac20 | 5240 | Ant2 | 13.148 | 30 | Pass |
| NVNT | ac20 | 5240 | Sum | 16.602 | 30 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 13.553 | 30 | Pass |
| NVNT | ac40 | 5190 | Ant2 | 13.321 | 30 | Pass |

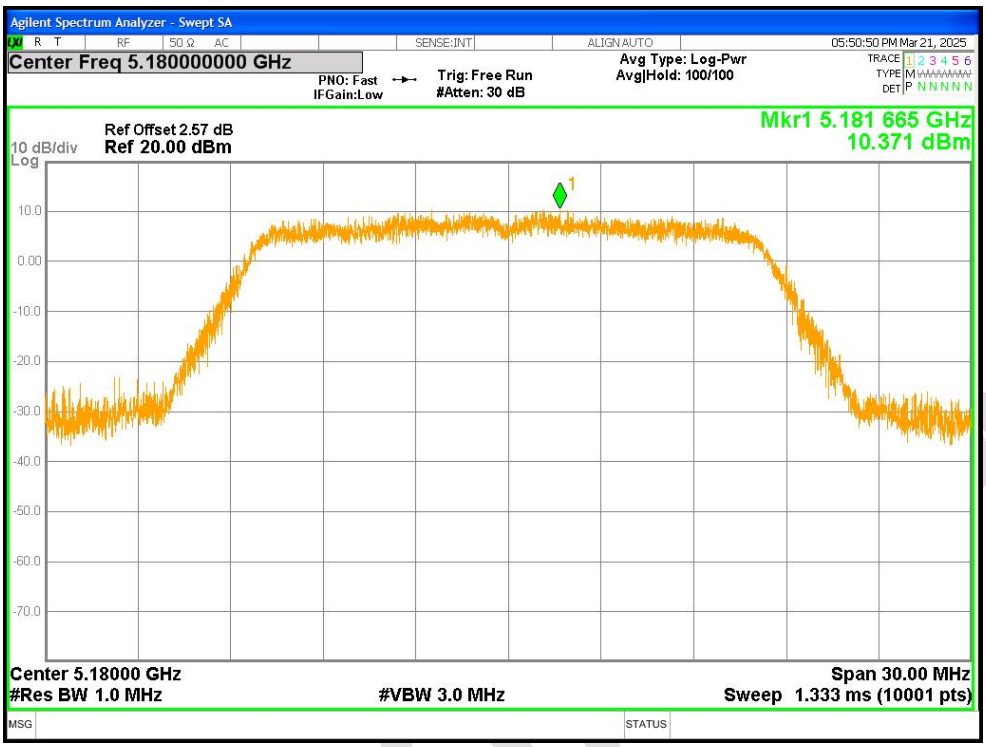
| | | | | | | |
|---|---|---|---|---|---|---|
| NVNT | ac40 | 5190 | Sum | 16.449 | 30 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 14.105 | 30 | Pass |
| NVNT | ac40 | 5230 | Ant2 | 13.188 | 30 | Pass |
| NVNT | ac40 | 5230 | Sum | 16.681 | 30 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 13.818 | 30 | Pass |
| NVNT | ac80 | 5210 | Ant2 | 12.898 | 30 | Pass |
| NVNT | ac80 | 5210 | Sum | 16.393 | 30 | Pass |

## 7.3 Maximum Power Spectral Density Level

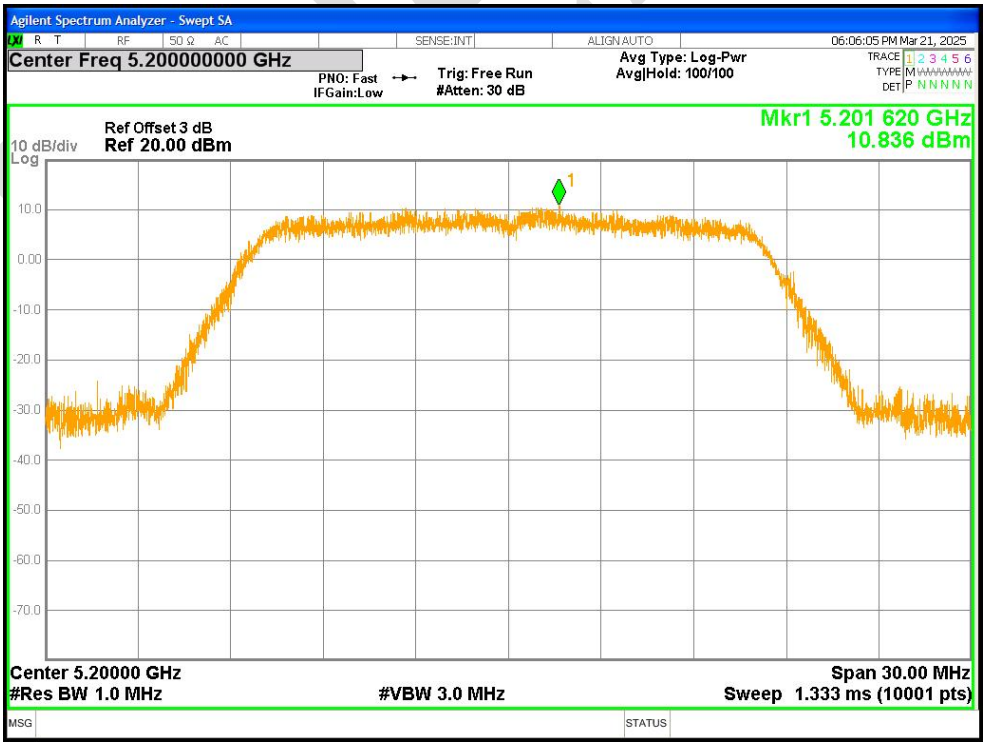
| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 10.371 | 17 | Pass |
| NVNT | a | 5200 | Ant1 | 10.836 | 17 | Pass |
| NVNT | a | 5240 | Ant1 | 10.908 | 17 | Pass |
| NVNT | a | 5180 | Ant2 | 8.834 | 17 | Pass |
| NVNT | a | 5200 | Ant2 | 9.59 | 17 | Pass |
| NVNT | a | 5240 | Ant2 | 10.254 | 17 | Pass |
| NVNT | n20 | 5180 | Ant1 | 7.167 | 17 | Pass |
| NVNT | n20 | 5180 | Ant2 | 6.042 | 17 | Pass |
| NVNT | n20 | 5180 | Sum | 9.651 | 17 | Pass |
| NVNT | n20 | 5200 | Ant1 | 7.659 | 17 | Pass |
| NVNT | n20 | 5200 | Ant2 | 6.154 | 17 | Pass |
| NVNT | n20 | 5200 | Sum | 9.982 | 17 | Pass |
| NVNT | n20 | 5240 | Ant1 | 8.138 | 17 | Pass |
| NVNT | n20 | 5240 | Ant2 | 6.544 | 17 | Pass |
| NVNT | n20 | 5240 | Sum | 10.424 | 17 | Pass |
| NVNT | n40 | 5190 | Ant1 | 3.848 | 17 | Pass |
| NVNT | n40 | 5190 | Ant2 | 2.267 | 17 | Pass |
| NVNT | n40 | 5190 | Sum | 6.139 | 17 | Pass |
| NVNT | n40 | 5230 | Ant1 | 4.343 | 17 | Pass |
| NVNT | n40 | 5230 | Ant2 | 3.979 | 17 | Pass |
| NVNT | n40 | 5230 | Sum | 7.175 | 17 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 6.295 | 17 | Pass |
| NVNT | ac20 | 5180 | Ant2 | 5.846 | 17 | Pass |
| NVNT | ac20 | 5180 | Sum | 9.087 | 17 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 7.442 | 17 | Pass |
| NVNT | ac20 | 5200 | Ant2 | 6.111 | 17 | Pass |
| NVNT | ac20 | 5200 | Sum | 9.838 | 17 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 7.505 | 17 | Pass |
| NVNT | ac20 | 5240 | Ant2 | 6.626 | 17 | Pass |
| NVNT | ac20 | 5240 | Sum | 10.098 | 17 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 3.932 | 17 | Pass |
| NVNT | ac40 | 5190 | Ant2 | 2.94 | 17 | Pass |

| | | | | | | |
|---|---|---|---|---|---|---|
| NVNT | ac40 | 5190 | Sum | 6.475 | 17 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 4.387 | 17 | Pass |
| NVNT | ac40 | 5230 | Ant2 | 3.477 | 17 | Pass |
| NVNT | ac40 | 5230 | Sum | 6.966 | 17 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 1.47 | 17 | Pass |
| NVNT | ac80 | 5210 | Ant2 | 0.6 | 17 | Pass |
| NVNT | ac80 | 5210 | Sum | 4.067 | 17 | Pass |

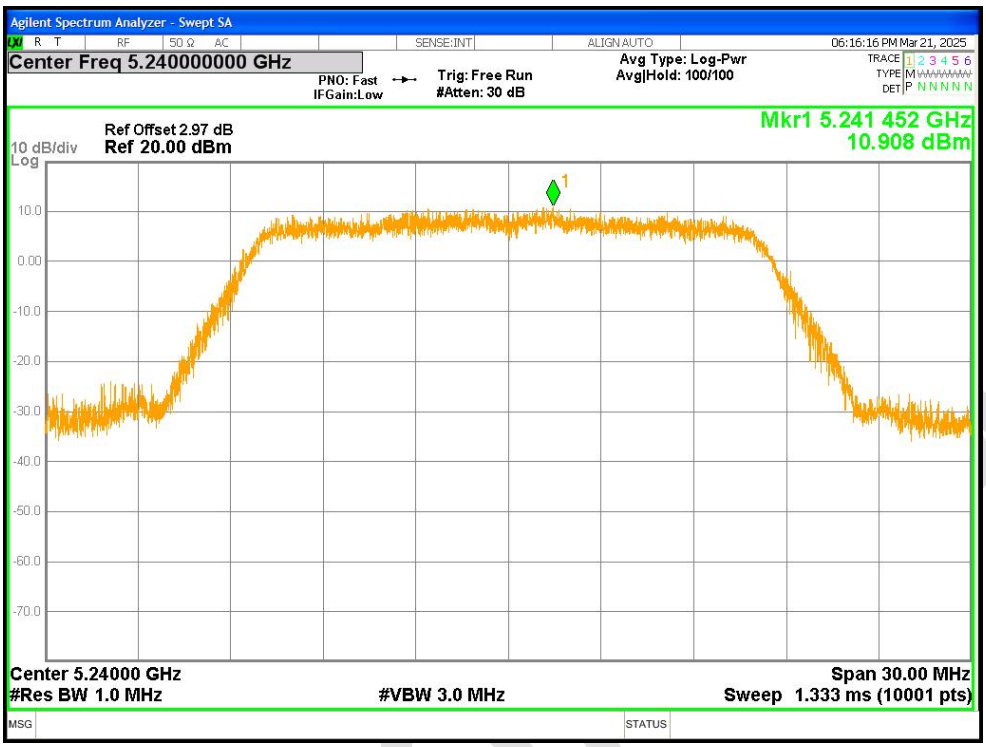
PSD NVNT a 5180MHz Ant1



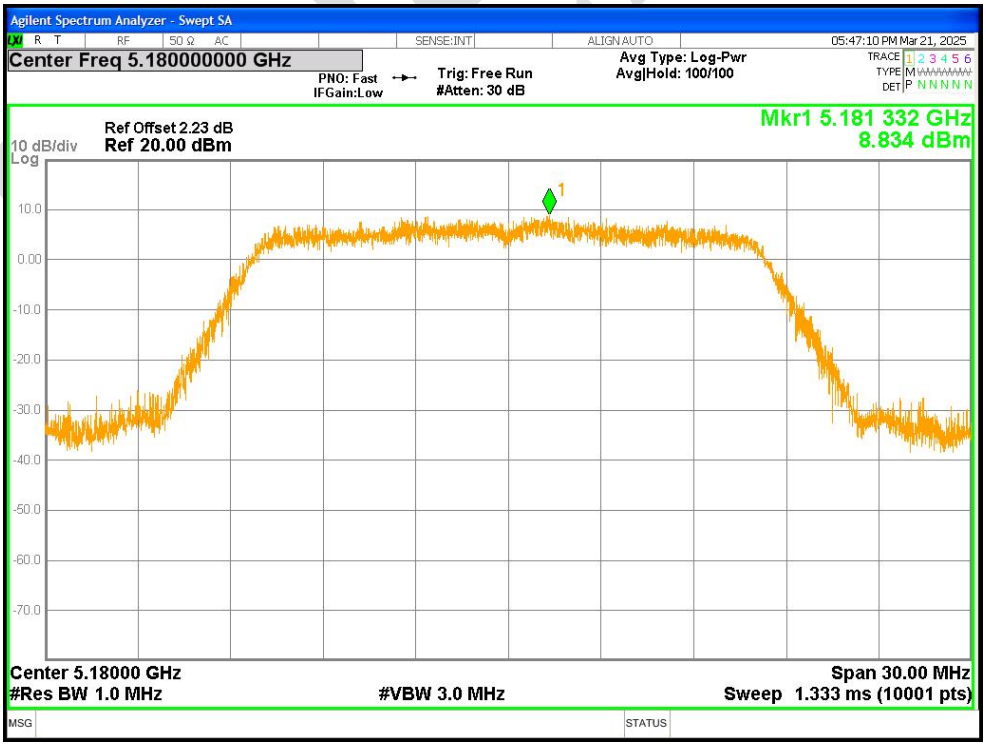

PSD NVNT a 5200MHz Ant1



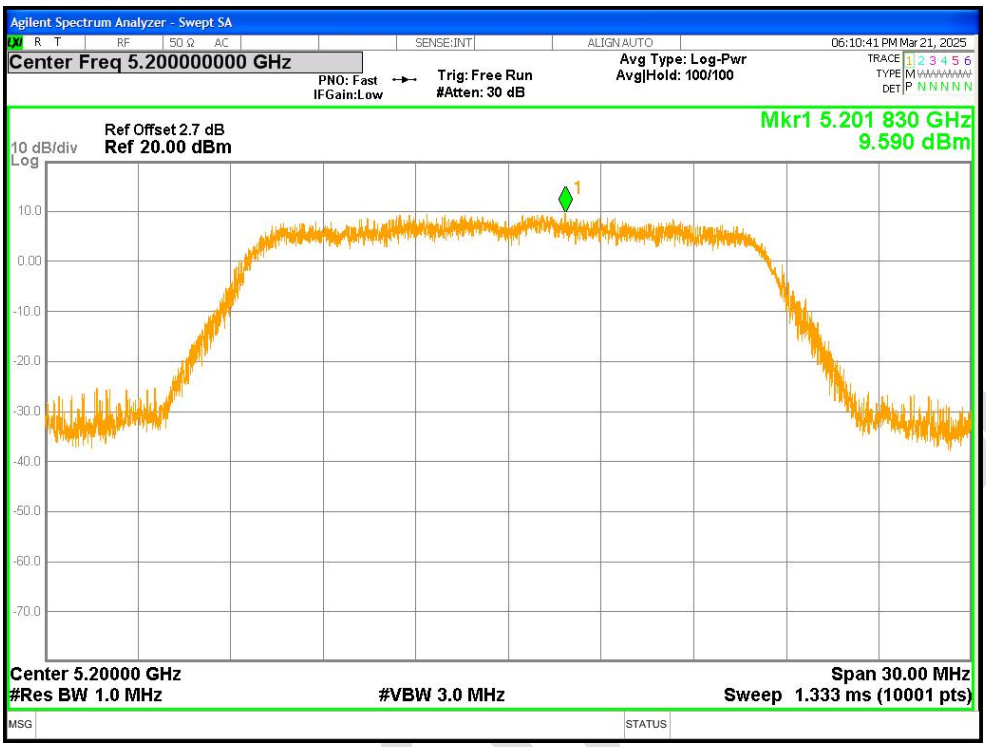
PSD NVNT a 5240MHz Ant1



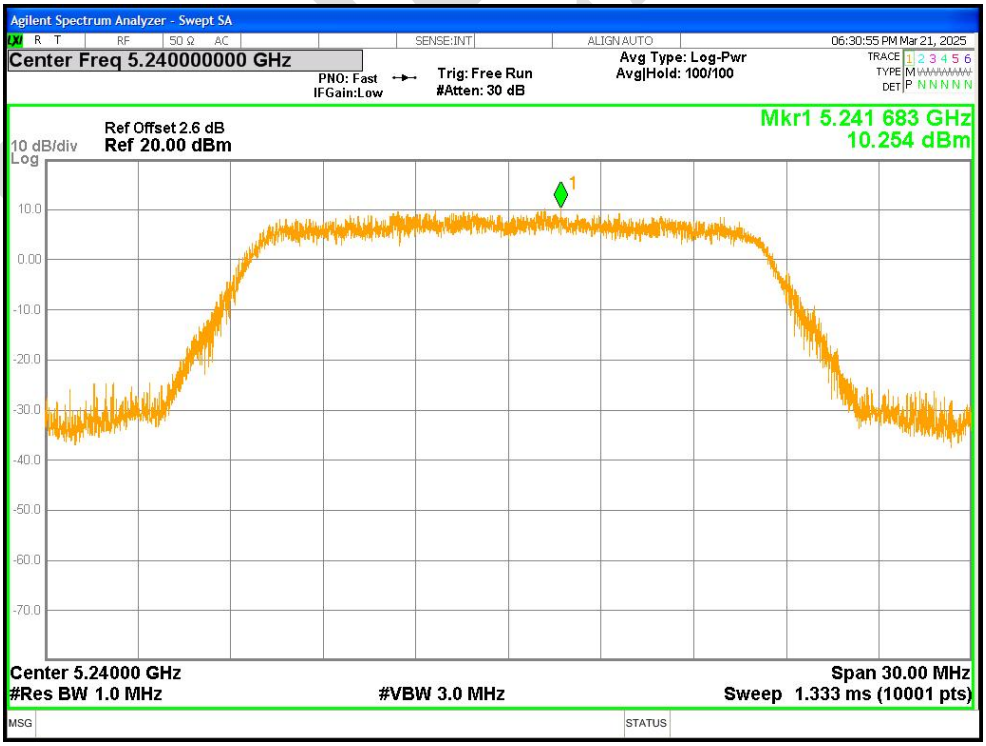

PSD NVNT a 5180MHz Ant2



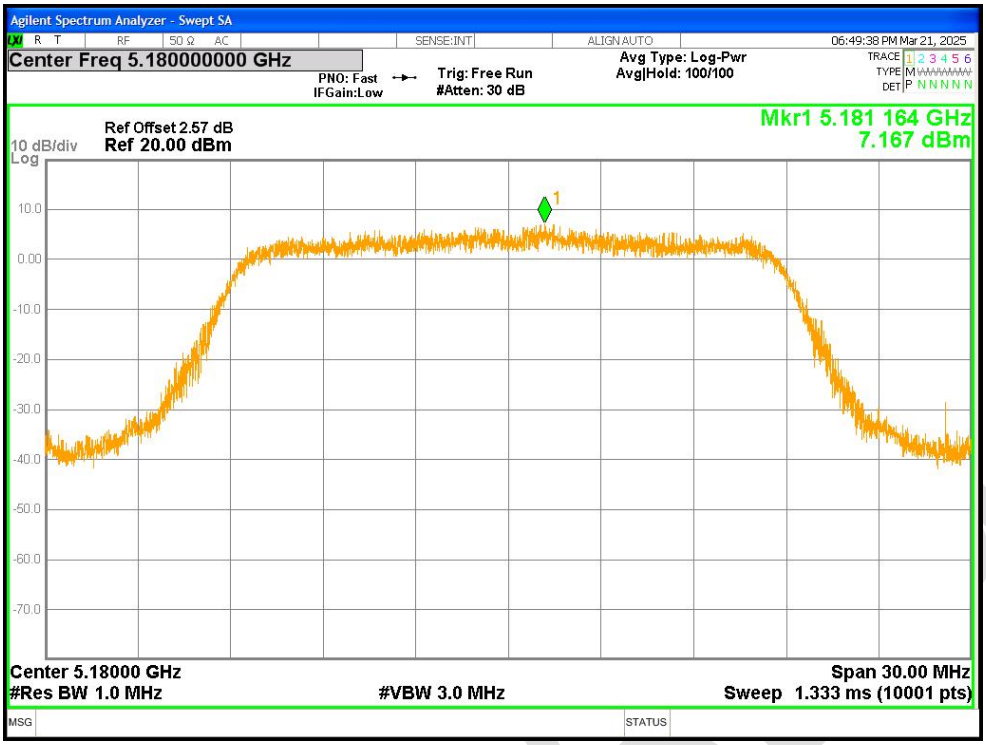
PSD NVNT a 5200MHz Ant2



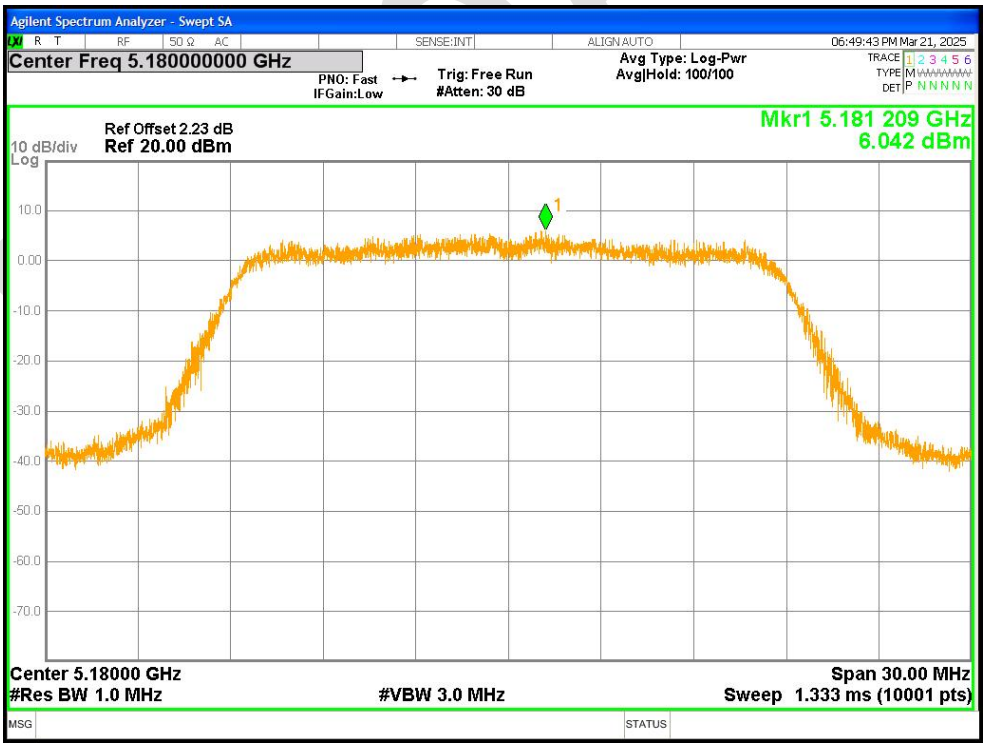

PSD NVNT a 5240MHz Ant2



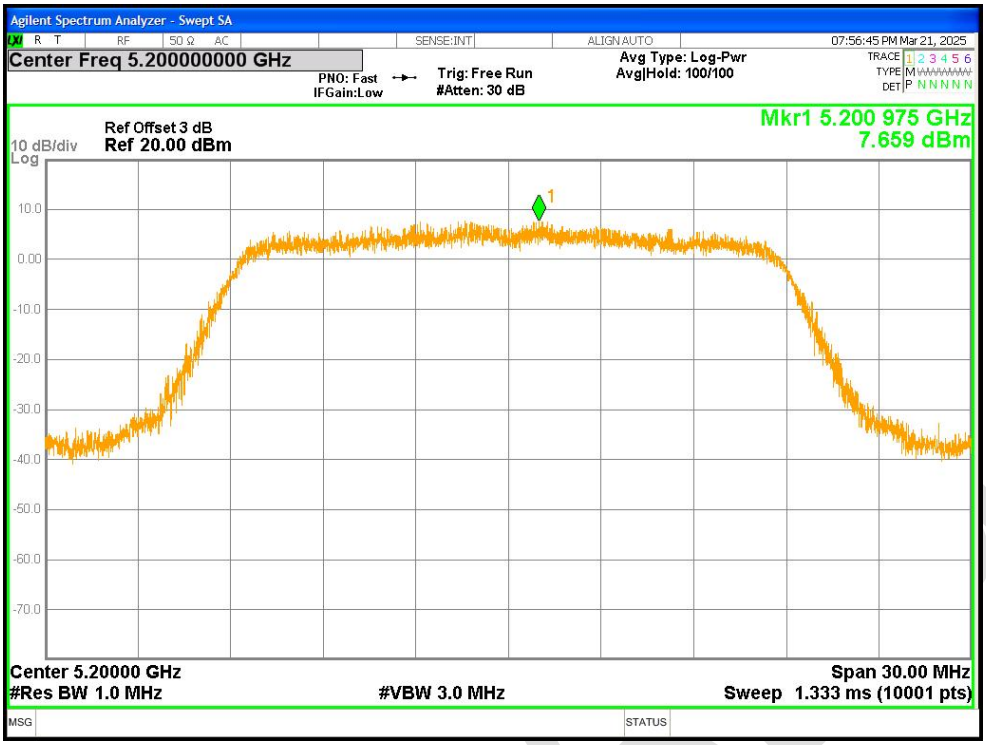

PSD NVNT n20 5180MHz Ant1



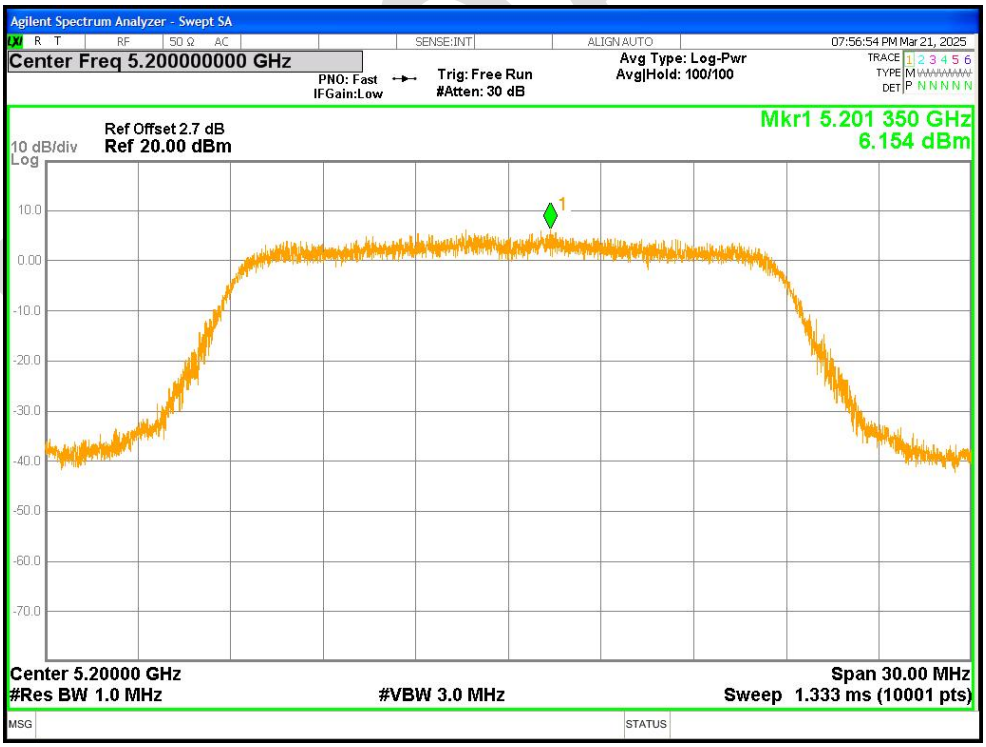

PSD NVNT n20 5180MHz Ant2



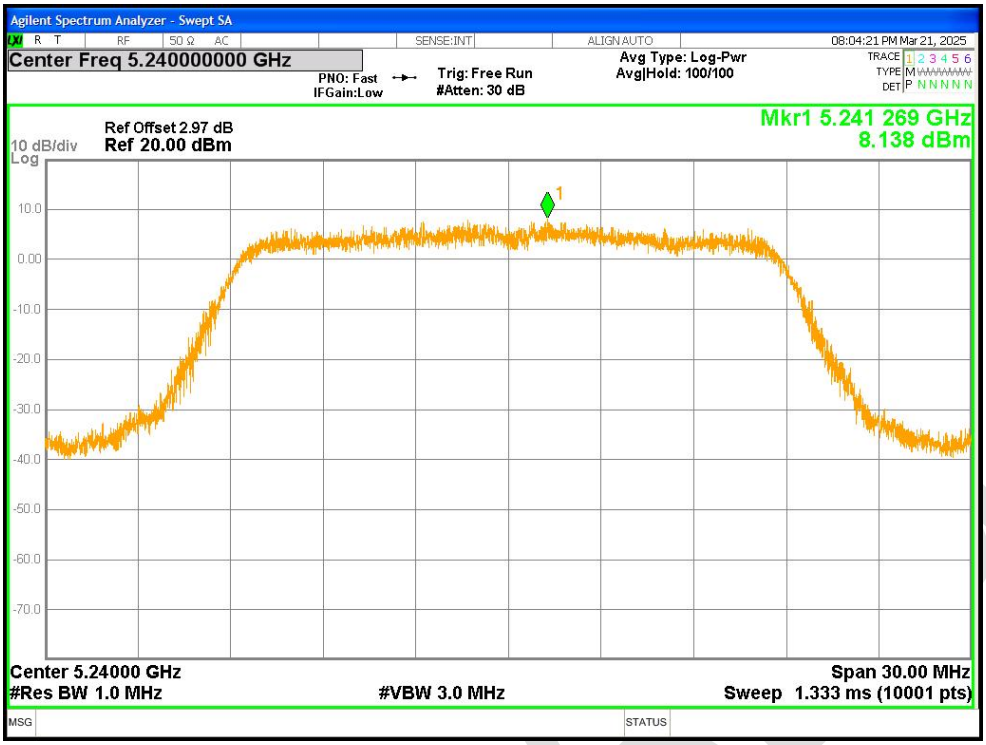

PSD NVNT n20 5200MHz Ant1



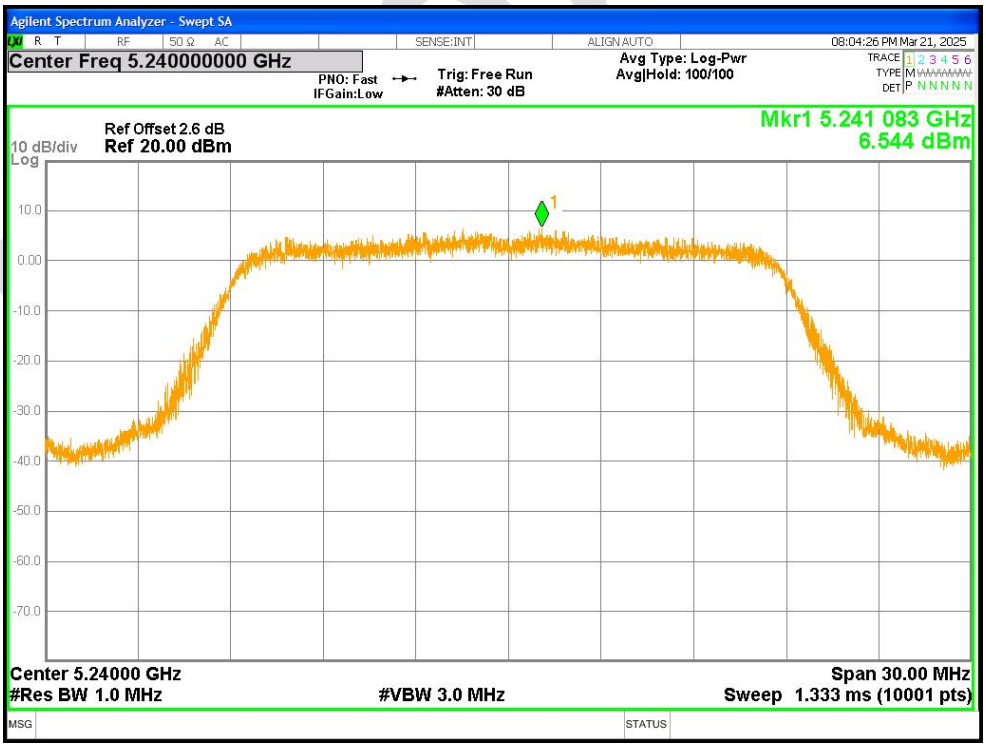

PSD NVNT n20 5200MHz Ant2



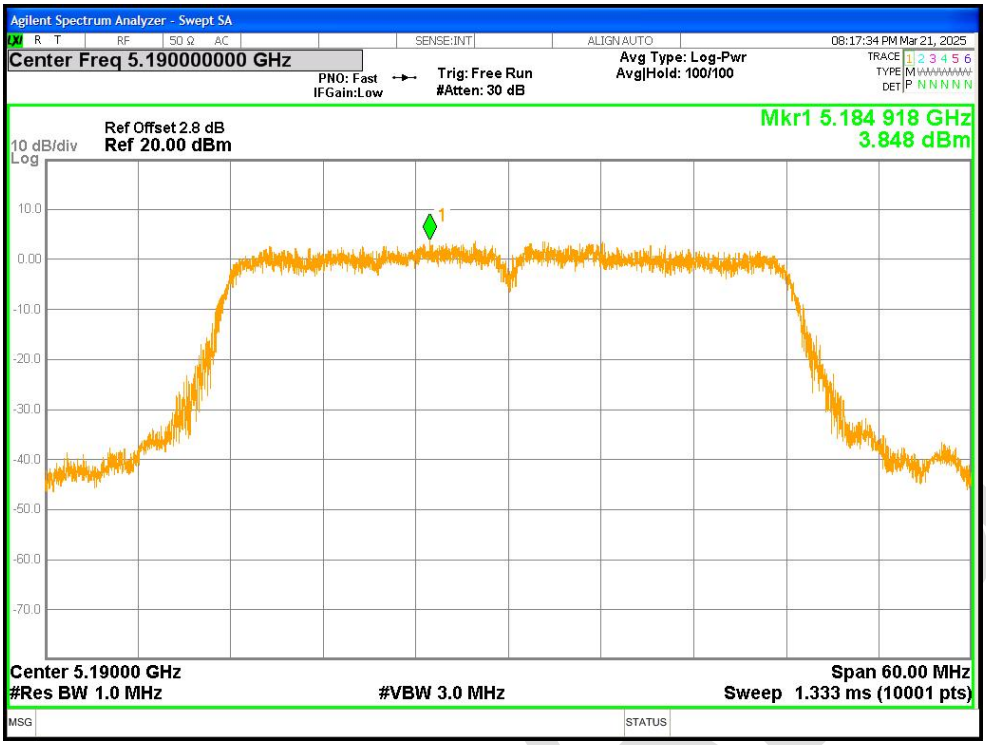

PSD NVNT n20 5240MHz Ant1



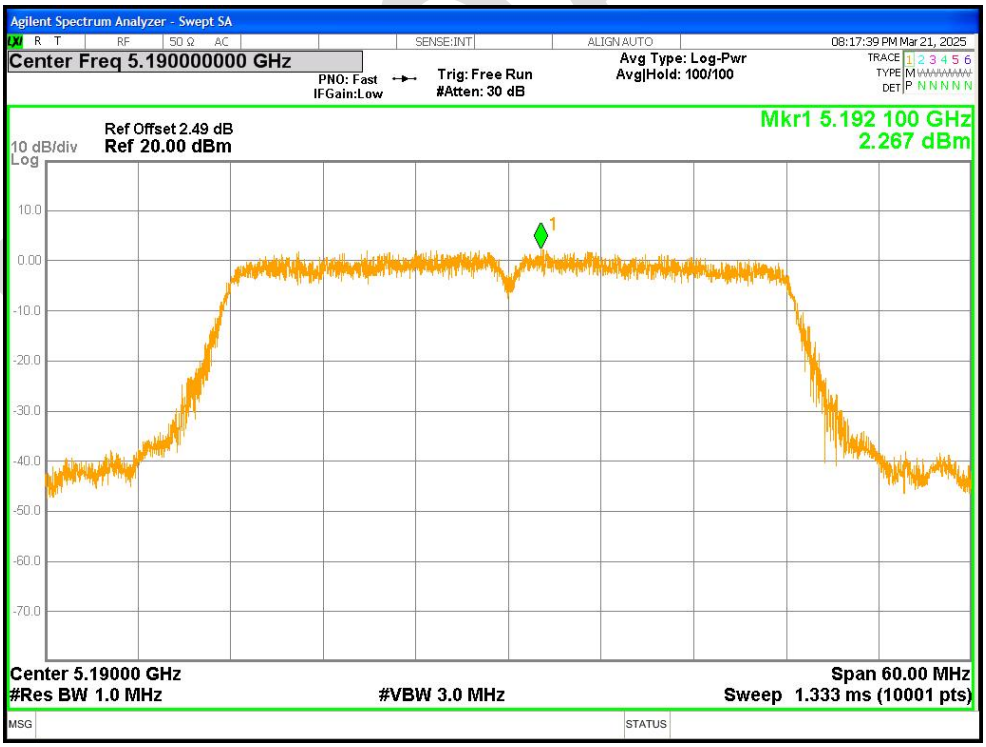

PSD NVNT n20 5240MHz Ant2



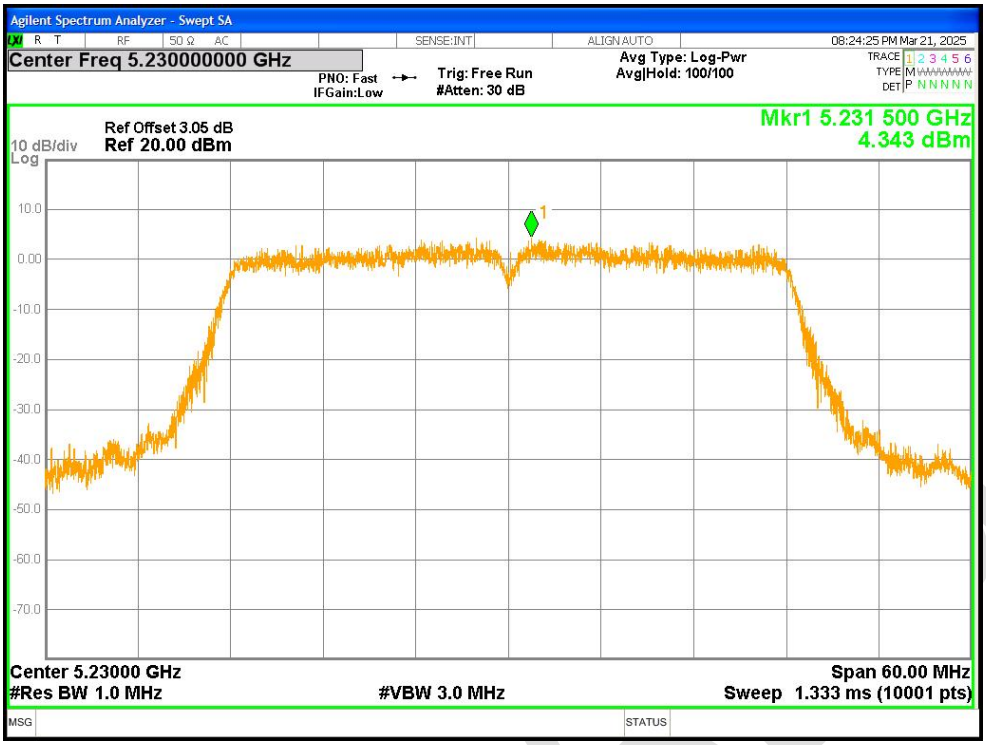

PSD NVNT n40 5190MHz Ant1



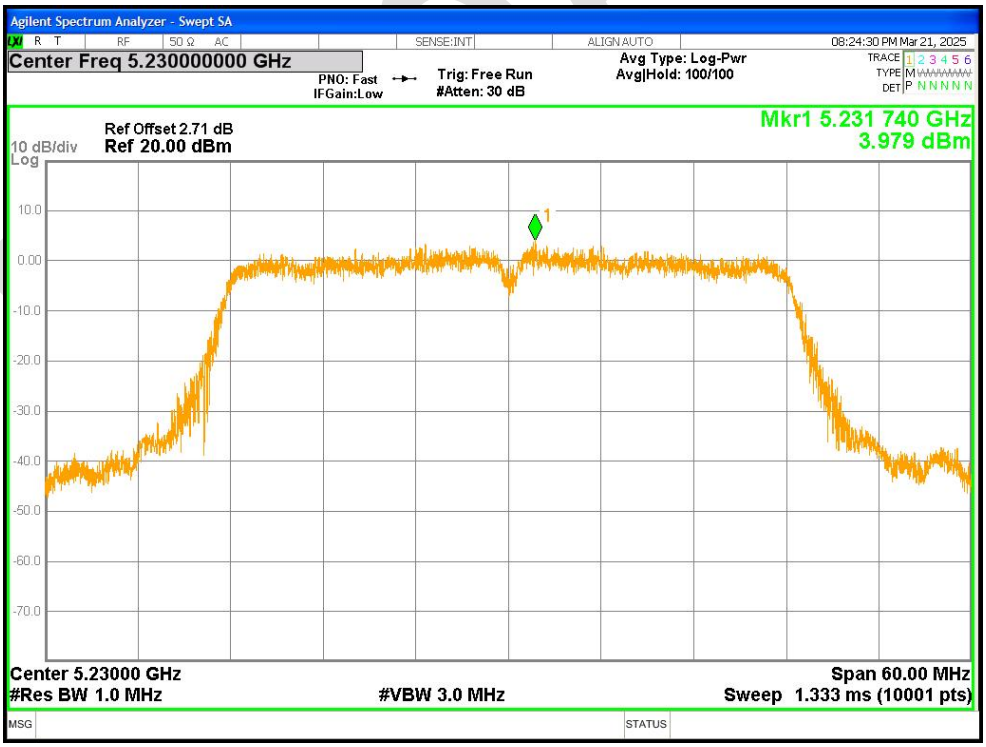

PSD NVNT n40 5190MHz Ant2




PSD NVNT n40 5230MHz Ant1




PSD NVNT n40 5230MHz Ant2




PSD NVNT ac20 5180MHz Ant1