**CFR 47 FCC PART 15 SUBPART E**

# TEST REPORT

*For*

**Azuga Safetycam**

**MODEL NUMBER: Gen-2 D107**

**FCC ID: 2AS3V-D107-1**

**REPORT NUMBER: E04A23030703F00202**

**ISSUE DATE: Sept. 09, 2023**

*Prepared for*

**Azuga Inc**

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*Prepared by*


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Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V0 | Sept. 09, 2023 | Initial Issue | Win |

| Summary of Test Results | | | |
|---|---|---|---|
| **Test Item** | **Clause** | **Limit/Requirement** | **Result** |
| ON TIME AND DUTY CYCLE | ANSI C63.10-2013, Clause 12.2 | None; for reporting purposes only. | Pass |
| 6dB AND 26dB EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH | KDB 789033 D02 v02r01 Section C.1 | FCC Part 15.407 (a)(2)(5), | Pass |
| CONDUCTED OUTPUT POWER | KDB 789033 D02 v02r01 Section E.3.a (Method PM) | FCC 15.407 (a) | Pass |
| POWER SPECTRAL DENSITY | KDB 789033 D02 v02r01 Section F | FCC 15.407 (a) | Pass |
| AC Power Line Conducted Emission | ANSI C63.10-2013, Clause 6.2. | FCC 15.207 | N/A (NOTE 1, 2) |
| Radiated Emissions and Band Edge Measurement | KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6 | FCC 15.407 (b)<br>FCC 15.209<br>FCC 15.205 | Pass |
| FREQUENCY STABILITY | | FCC 15.407 (g) | Pass |
| Antenna Requirement | N/A | FCC 47 CFR Part 15.203/ 15.407(a)(1) (2), | Pass |

Note:
1. N/A: In this whole report not applicable.
2. This test is only applicable for devices which can be charged or powered by AC power cable.

*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART E > when <Accuracy Method> decision rule is applied.

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# 1. ATTESTATION OF TEST RESULTS

**Applicant Information**

| | |
|---|---|
| Company Name: | Azuga Inc |
| Address: | 42840 Christy St. #205, Fremont, CA, United States, 94508 |

**Manufacturer Information**

| | |
|---|---|
| Company Name: | SHENZHEN AONI ELECTRONIC CO.,LTD |
| Address: | No.5 Bldg, Honghui Industrial park, 2nd liuxian Road, Xin'an street, Bao'an District, Shenzhen |

**EUT Information**

| | |
|---|---|
| EUT Name: | Azuga Safetycam |
| Model: | Gen-2 D107 |
| Series Model: | N/A |
| Brand: | Azuga SafetyCam™ |
| Sample Received Date: | March 27, 2023 |
| Sample Status: | Normal |
| Sample ID: | A23030703 001 |
| Date of Tested: | March 27, 2023 to Sept. 09, 2023 |

| APPLICABLE STANDARDS | |
|---|---|
| **STANDARD** | **TEST RESULTS** |
| **CFR 47 FCC PART 15 SUBPART E** | **Pass** |

Prepared By:

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Checked By:

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## 2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART E

## 3. FACILITIES AND ACCREDITATION

| | |
|---|---|
| Accreditation Certificate | **A2LA (Certificate No.: 6947.01)**<br>Guangdong Global Testing Technology Co., Ltd.<br>has been assessed and proved to be in compliance with A2LA.<br>**FCC (FCC Designation No.: CN1343)**<br>Guangdong Global Testing Technology Co., Ltd.<br>has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules<br>**ISED (Company No.: 30714)**<br>Guangdong Global Testing Technology Co., Ltd.<br>has been registered and fully described in a report filed with ISED. The Company Number is 30714 and the test lab Conformity Assessment Body Identifier (CABID) is CN0148. |

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People’s Republic of China, 523808

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

## 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Description | Limit | Uncertainties |
|---|---|---|
| Carrier Frequencies | ±1.0E-05 | ±2.2E-10 |
| Occupied Channel Bandwidth | - | ±1.71 % |
| Power | ±1.5 dB | ±1.15 dB |
| Power Density | ±1.5 dB | ±1.21 dB |
| Transmitter unwanted emissions outside the 5 GHz RLAN bands | | |
| 30 MHz to 1 GHz | ±3 dB | ±0.80 dB |
| 1 GHz to 26GHz | ±3 dB | ±2.42 dB |
| Transmitter unwanted emissions inside the 5 GHz RLAN bands | | |
| 5 150 MHz to 5 350 MHz and 5 470 MHz to 5 725 MHz | ±3 dB | ±1.69 dB |
| Receiver Spurious emission | | |
| 30 MHz to 1 GHz | ±3 dB | ±0.80 dB |
| 1 GHz to 26GHz | ±3 dB | ±2.42 dB |

| Test Item | Uncertainty |
|---|---|
| Radiation Emission | 4.62 dB (30 MHz ~ 1 GHz) |
| | 3.50 dB (1 GHz ~ 18 GHz) |
| | 4.24 dB (18 GHz ~ 26 GHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2. | |

# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

| | | |
|---|---|---|
| EUT Name | | Azuga Safetycam |
| Model | | Gen-2 D107 |
| Series Model | | N/A |
| Hardware Version | | N/A |
| Software Version | | N/A |
| Ratings | | DC 5V, 2A |
| Power Supply | DC | 13V |

| | |
|---|---|
| Frequency Band: | 5150 MHz to 5250 MHz (U-NII-1) |
| Frequency Range: | 5180 MHz to 5240 MH |
| Support Standards: | IEEE 802.11a/n/ac |
| Type of Modulation: | IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Channel Spacing: | IEEE 802.11a/n-HT20/ac-VHT20: 20 MHz<br>IEEE 802.11n-HT40/ac-VHT40: 40 MHz<br>IEEE 802.11ac-VHT80: 80 MHz |
| Data Rate: | IEEE 802.11a: Up to 54 Mbps<br>IEEE 802.11n-HT20: Up to MCS15<br>IEEE 802.11n-HT40: Up to MCS15<br>IEEE 802.11ac-VHT20: Up to MCS8<br>IEEE 802.11ac-VHT40: Up to MCS9<br>IEEE 802.11ac-VHT80: Up to MCS9 |
| Number of Channels: | 5150 MHz to 5250 MHz:<br>4 for IEEE 802.11a/n-HT20/ac-VHT20<br>2 for IEEE 802.11n-HT40)/ac-VHT40<br>1 for IEEE 802.11acVHT80<br>5725 MHz to 5850 MHz:<br>5 for IEEE 802.11a/n-HT20/ac-VHT20<br>2 for IEEE 802.11n-HT40/ac-VHT40<br>1 for IEEE 802.11ac-VHT80 |
| Maximum conducted output power:<br>(U-NII-1) | 10.89 dBm |
| Antenna Type: | FPC Antenna |
| Antenna Gain: | 1.74dBi |
| Normal Test Voltage: | 13 Vdc |

‘

## 5.1. CHANNEL LIST

| UNII-1 (For Bandwidth=20MHz) | | UNII-1 (For Bandwidth=40MHz) | | UNII-1 (For Bandwidth=80MHz) | |
|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 36 | 5180 | 38 | 5190 | 42 | 5210 |
| 40 | 5200 | 46 | 5230 | | |
| 44 | 5220 | | | | |
| 48 | 5240 | | | | |

## 5.2. MAXIMUM AVERAGE EIRP

**UNII-1 BAND**

| IEEE Std. 802.11 | Frequency (MHz) | Maximum Average Conducted Power (dBm) |
|---|---|---|
| a | 5150 ~ 5250 | 10.89 |
| n HT20 | | 10.42 |
| n HT40 | | 10.47 |
| ac VHT20 | | 9.33 |
| ac VHT40 | | 8.83 |
| ac VHT80 | | 6.64 |

## 5.3. THE WORSE CASE POWER SETTING PARAMETER

| The Worse Case Power Setting Parameter | |
|---|---|
| Test Software | Secure CRT 1.7.6 |

UNII-1

| Mode | Rate | Channel | Soft set value |
|---|---|---|---|
| | | | ANT 1 |
| 11a | 6M | 36 | 17 |
| | | 40 | 17 |
| | | 48 | 17 |
| 11n HT20 | MCS0 | 36 | 17 |
| | | 40 | 17 |
| | | 48 | 17 |
| 11n HT40 | MCS0 | 38 | 17 |
| | | 46 | 17 |
| 11ac VHT20 | MCS0 | 36 | 17 |
| | | 40 | 17 |
| | | 48 | 17 |
| 11ac VHT40 | MCS0 | 38 | 17 |
| | | 46 | 17 |
| 11ac VHT80 | MCS0 | 42 | 17 |

# THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.4.

Maximum power setting referring to section 5.6.

Worst case Data Rates declared by the customer:

802.11a 20 mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ac VHT20 mode: MCS0
802.11ac VHT40 mode: MCS0
802.11ac VHT80 mode: MCS0

802.11ac VHT20 and VHT40 mode are different from 802.11nHT20 and HT40 only in control messages, so for these 4 modes, only 802.11n HT20 and 802.11n HT40 worst case power modes radiated emission test data are recorded in the report .

## 5.4. DESCRIPTION OF AVAILABLE ANTENNAS

| Antenna No. | Frequency Band | Antenna Type | Max Antenna Gain (dBi) |
|---|---|---|---|
| 1 | 5150-5250 | FPC | 1.74 |

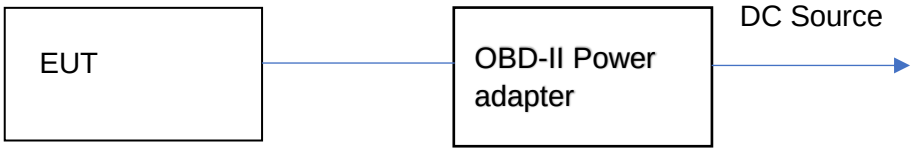
| IEE Std. 802.11 | Transmit and Receive Mode | Description |
|---|---|---|
| 802.11a | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| 802.11n HT20 | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| 802.11n HT40 | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| 802.11ac VHT20 | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| 802.11ac VHT40 | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| 802.11ac VHT80 | ☒1TX, 1RX | Antenna 1 can be used as transmitting/receiving antenna. |
| Note:<br>1. WLAN 2.4G & WLAN 5G can’t transmit simultaneously. (declared by client) | | |

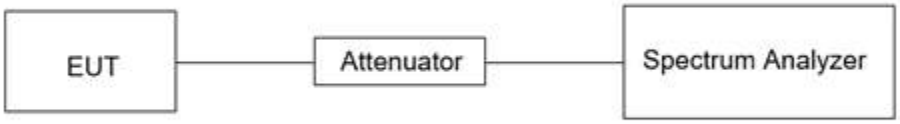
## 5.5. SUPPORT UNITS FOR SYSTEM TEST

The EUT has been tested as an independent unit

| Equipment | Manufacturer | Model No. |
|---|---|---|
| OBD-II Power adapter | AONI | A2-OPK-HTVP-007A |
| PC | Lenovo | T14 |

## 5.6. SETUP DIAGRAM



# 6. MEASURING EQUIPMENT AND SOFTWARE USED

| Test Equipment of Conducted RF | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Cal.** | **Due Date** |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 102257 | 2022/10/08 | 2023/10/07 |
| EXG Analog Signal Generator | KEYSIGHT | N5173B | MY61253075 | 2022/10/08 | 2023/10/07 |
| Vector Signal Generator | Rohde & Schwarz | SMM100A | 101899 | 2023/03/16 | 2024/03/15 |
| RF Control box | MWRF-test | MW100-RFCB | MW220926GTG | 2022/10/08 | 2023/10/07 |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW270 | 102792 | 2023/03/16 | 2024/03/15 |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | 103235 | 2022/10/08 | 2023/10/07 |
| temperature humidity chamber | Espec | SH-241 | SH-241-2014 | 2022/10/08 | 2023/10/07 |
| RF Test Software | MWRF-test | MTS8310E (Ver. V2/0) | N/A | N/A | N/A |

| Test Equipment of Radiated emissions below 1GHz | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Cal.** | **Due Date** |
| 3m Semi-anechoic Chamber | ETS | 9m*6m*6m | Q2146 | 2022/08/30 | 2025/08/29 |
| EMI Test Receiver | Rohde & Schwarz | ESCI3 | 101409 | 2022/10/08 | 2023/10/07 |
| Pre-Amplifier | HzEMC | HPA-9K0130 | HYPA21001 | 2022/10/29 | 2023/10/28 |
| Biconilog Antenna | Schwarzbeck | VULB 9168 | 01315 | 2022/10/10 | 2025/10/09 |
| Biconilog Antenna | ETS | 3142E | 00243646 | 2022/03/23 | 2025/03/22 |
| Loop Antenna | ETS | 6502 | 243668 | 2022/03/30 | 2025/03/29 |
| Test Software | Farad | EZ-EMC (Ver.FA-03A2 RE) | N/A | N/A | N/A |

| Test Equipment of Radiated emissions above 1GHz | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Cal.** | **Due Date** |
| 3m Semi-anechoic Chamber | ETS | 9m*6m*6m | Q2149 | 2022/08/30 | 2025/08/29 |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 101413 | 2022/10/08 | 2023/10/07 |
| Pre-Amplifier | A-INFO | HPA-1G1850 | HYPA21003 | 2022/10/29 | 2023/10/28 |
| Horn antenna | A-INFO | 3117 | 246069 | 2022/03/11 | 2023/03/10 |
| Pre-Amplifier | ZKJC | HPA-184057 | HYPA21004 | 2022/10/29 | 2023/10/28 |
| Horn antenna | ZKJC | 3116C | 246265 | 2022/03/29 | 2023/03/28 |

| | | | | | |
|---|---|---|---|---|---|
| Test Software | Farad | EZ-EMC (Ver.FA-03A2 RE+) | N/A | N/A | N/A |

# 7. ANTENNA PORT TEST RESULTS

## 7.1. ON TIME AND DUTY CYCLE

**LIMITS**

None; for reporting purposes only.

**TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.B.

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

Please refer to section "Test Data" - Appendix

## 7.2. 6DB AND 26DB EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH

**LIMITS**

| CFR 47 FCC Part15, Subpart E | | |
|---|---|---|
| Test Item | Limit | Frequency Range (MHz) |
| 26 dB Emission Bandwidth | For reporting purposes only. | 5150 ~ 5250 |
| 26 dB Emission Bandwidth | For reporting purposes only. | 5250 ~ 5350 |
| 26 dB Emission Bandwidth | For reporting purposes only. | 5470 ~ 5725 |
| 6 dB Emission Bandwidth | The minimum 6 dB emission bandwidth shall be 500 kHz. | 5725 ~ 5850 |
| 99 % Occupied Bandwidth | For reporting purposes only. | 5150 ~ 5825 |

**TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.C1. for 26 dB Emission Bandwidth; section II.C2. for 6 dB Emission Bandwidth; section II.D. for 99 % Occupied Bandwidth.
Connect the EUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | Peak |
| RBW | For 6 dB Emission Bandwidth: RBW=100 kHz<br>For 26 dB Emission bandwidth: approximately 1 % of the EBW.<br>For 99 % Occupied Bandwidth: approximately 1 % ~ 5 % of the OBW. |
| VBW | For 6 dB Bandwidth: ≥ 3*RBW<br>For 26 dB Bandwidth: >3*RBW<br>For 99 % Bandwidth: >3*RBW |
| Trace | Max hold |
| Sweep | Auto couple |

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.
b) Allow the trace to stabilize and 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 6/26 dB relative to the maximum level measured in the fundamental emission.

**Calculation for 99 % Bandwidth of UNII-2C and UNII-3 Straddle Channel:**

For Example: Fundamental Frequency: 5720 MHz

99 % OBW: 21.00 MHz

Turning Frequency: 5725 MHz

99 % Bandwidth of UNII-2C Band Portion = (5725-(5720-(21.00/2)) = 15.50 MHz

99 % Bandwidth of UNII-3 Band Portion = (5720+(21.00/2)-5725) = 5.50 MHz

**Calculation for 26 dB Bandwidth of UNII-2C Straddle Channel:**

For Example: Fundamental frequency: 5720 MHz

26 dB BW: 20.00 MHz

FL: 5710.16 MHz

FH: 5730.16 MHz

Turning Frequency: 5725 MHz

26 dB Bandwidth of UNII-2C Band Portion = 5725-5710.16=14.84 MHz

**Calculation for 6dB Bandwidth of UNII-3 Straddle Channel:**

For Example: Fundamental frequency: 5720 MHz

6 dB BW: 16.44 MHz

FL: 5711.76 MHz

FH: 5728.2 MHz

Turning Frequency: 5725 MHz

6 dB Bandwidth of UNII-3 band Portion = 5728.2-5725=3.2 MHz

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

Please refer to section "Test Data" - Appendix

## 7.3. CONDUCTED OUTPUT POWER

**LIMITS**

| CFR 47 FCC Part15, Subpart E | | |
|---|---|---|
| Test Item | Limit | Frequency Range (MHz) |
| Conducted Output Power | ☐ Outdoor Access Point: 1 W (30 dBm)<br>☐ Indoor Access Point: 1 W (30 dBm)<br>☐ Fixed Point-To-Point Access Points: 1 W (30 dBm)<br>☒ Client Devices: 250 mW (24 dBm) | 5150 ~ 5250 |
| | Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. | 5250 ~ 5350<br>5470 ~ 5725 |
| | Shall not exceed 1 Watt (30 dBm). | 5725 ~ 5850 |

Note:
The above limits are based upon the maximum antenna gain does not exceed 6 dBi.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

**Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):**
(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 %, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”
(viii) Trace average at least 100 traces in power averaging (rms) mode.
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

**Method PM (Measurement using an RF average power meter):**
(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
a. The EUT is configured to transmit continuously or to transmit with a constant duty cycle.

b. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
c. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
(ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in II.B.
(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
(iv) Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log (1/0.25) if the duty cycle is 25 %).

**Method PM-G (Measurement using a gated RF average power meter):**
Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power was measured using spectrum analyzer.

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

Please refer to section "Test Data" - Appendix

## 7.4. POWER SPECTRAL DENSITY

**LIMITS**

| CFR 47 FCC Part15, Subpart E | | |
|---|---|---|
| Test Item | Limit | Frequency Range (MHz) |
| Power Spectral Density | ☐ Outdoor Access Point: 17 dBm/MHz<br>☐ Indoor Access Point: 17 dBm/MHz<br>☐ Fixed Point-To-Point Access Points: 17 dBm/MHz<br>☒ Client Devices: 11 dBm/MHz | 5150 ~ 5250 |
| | 11 dBm/MHz | 5250 ~ 5350<br>5470 ~ 5725 |
| | 30 dBm/500kHz | 5725 ~ 5850 |

Note:
The above limits are based upon the maximum antenna gain does not exceed 6 dBi.
If transmitting antennas of directional gain greater than 6 dBi are used, maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.F.

Connect the EUT to the spectrum analyser and use the following settings:

For U-NII-1, U-NII-2A and U-NII-2C band:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | RMS |
| RBW | 1 MHz |
| VBW | ≥3 × RBW |
| Span | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace | Max hold |
| Sweep time | Auto |

For U-NII-3:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | RMS |
| RBW | 500 kHz |
| VBW | ≥3 × RBW |
| Span | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace | Max hold |
| Sweep time | Auto |

Allow trace to fully stabilize and Use the peak search function on the instrument to find the peak of the spectrum and record its value.

Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum, the result is the Maximum PSD over 1 MHz / 500 kHz reference bandwidth.

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

Please refer to section "Test Data" - Appendix

## 7.5. FREQUENCY STABILITY

**LIMITS**

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

**TEST PROCEDURE**

1. The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -10 °C ~ 50 °C (declared by customer).

2. The temperature was incremented by 10 °C intervals and the unit allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

3. The primary supply voltage is varied from 85 % to 115 % of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Connect the EUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | Peak |
| RBW | 10 kHz |
| VBW | ≥3 × RBW |
| Span | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace | Max hold |
| Sweep time | Auto |

4. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup, and at 2 minutes, 5minutes, and 10 minutes after the EUT is energized.

5. Allow the trace to stabilize, find the peak value of the power envelope and record the frequency, then calculated the frequency drift.

**TEST ENVIRONMENT**

| | Normal Test Conditions | Extreme Test Conditions |
|---|---|---|
| Relative Humidity | 20 % - 75 % | / |
| Atmospheric Pressure | 100 kPa ~102 kPa | / |
| Temperature | $T_N$ (Normal Temperature): 25.1 °C | $T_L$ (Low Temperature): -10 °C |
| | | $T_H$ (High Temperature): 50 °C |
| Supply Voltage | $V_N$ (Normal Voltage): DC 13 V | $V_L$ (Low Voltage): DC 11.05 V |
| | | $V_H$ (High Voltage): DC 14.95 V |

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

Please refer to section "Test Data" - Appendix

# 8. RADIATED TEST RESULTS

**LIMITS**

Refer to CFR 47 FCC §15.205, §15.209 and §15.407 (b).

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

| Emissions radiated outside of the specified frequency bands above 30 MHz | | | |
|---|---|---|---|
| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m | |
| | | Quasi-Peak | |
| 30 - 88 | 100 | 40 | |
| 88 - 216 | 150 | 43.5 | |
| 216 - 960 | 200 | 46 | |
| Above 960 | 500 | 54 | |
| Above 1000 | 500 | Peak | Average |
| | | 74 | 54 |

| FCC Emissions radiated outside of the specified frequency bands below 30 MHz | | |
|---|---|---|
| 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 |

FCC Restricted bands of operation refer to FCC §15.205 (a):

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

| LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz) | | |
|---|---|---|
| Frequency Range (MHz) | EIRP Limit | Field Strength Limit (dBuV/m) at 3 m |
| 5150~5250 MHz | PK: -27 (dBm/MHz) | PK:68.2(dBμV/m) |
| 5250~5350 MHz | | |
| 5470~5725 MHz | | |
| 5725~5850 MHz | PK: -27 (dBm/MHz) *1<br>PK: 10 (dBm/MHz) *2<br>PK: 15.6 (dBm/MHz) *3<br>PK: 27 (dBm/MHz) *4 | PK: 68.2(dBμV/m) *1<br>PK: 105.2 (dBμV/m) *2<br>PK: 110.8(dBμV/m) *3<br>PK: 122.2 (dBμV/m) *4 |
| Note:<br>*1 beyond 75 MHz or more above of the band edge.<br>*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.<br>*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.<br>*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. | | |

**TEST PROCEDURE**

Below 30 MHz

The setting of the spectrum analyser

| | |
|---|---|
| RBW | 200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz) |
| VBW | 200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz) |
| Sweep | Auto |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

| | |
|---|---|
| RBW | 120 kHz |
| VBW | 300 kHz |
| Sweep | Auto |
| Detector | Peak/QP |
| Trace | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

The setting of the spectrum analyser

| | |
|---|---|
| RBW | 1 MHz |
| VBW | PEAK: 3 MHz<br>AVG: see note 6 |
| Sweep | Auto |
| Detector | Peak |
| Trace | Max hold |

1. The testing follows the guidelines in KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

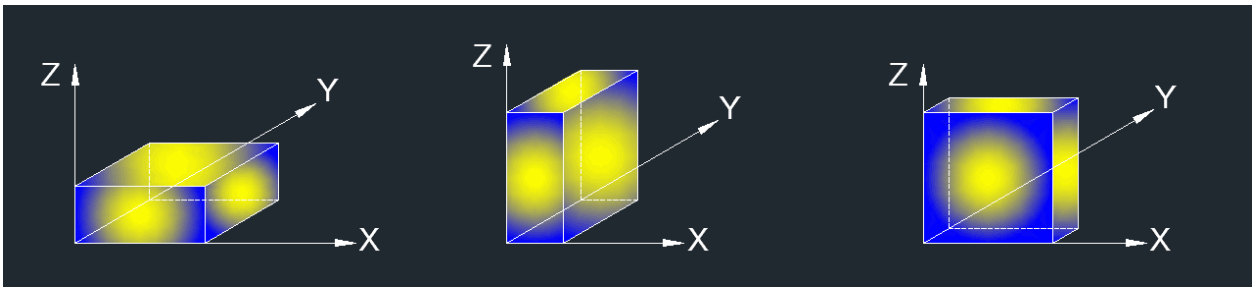
3. The EUT was placed on a turntable with 1.5 m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

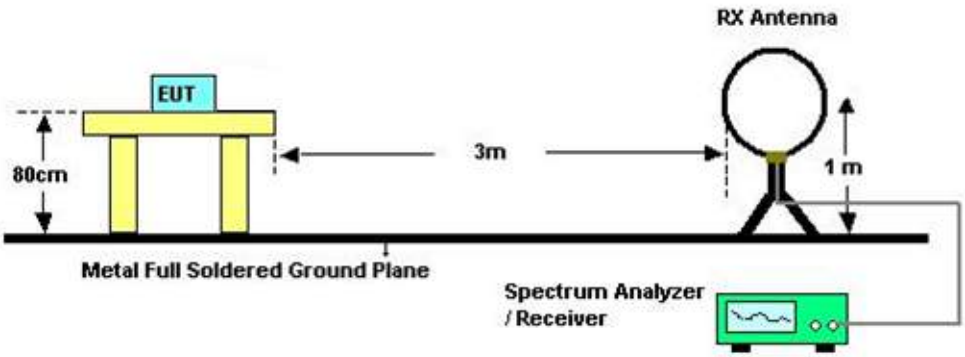
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

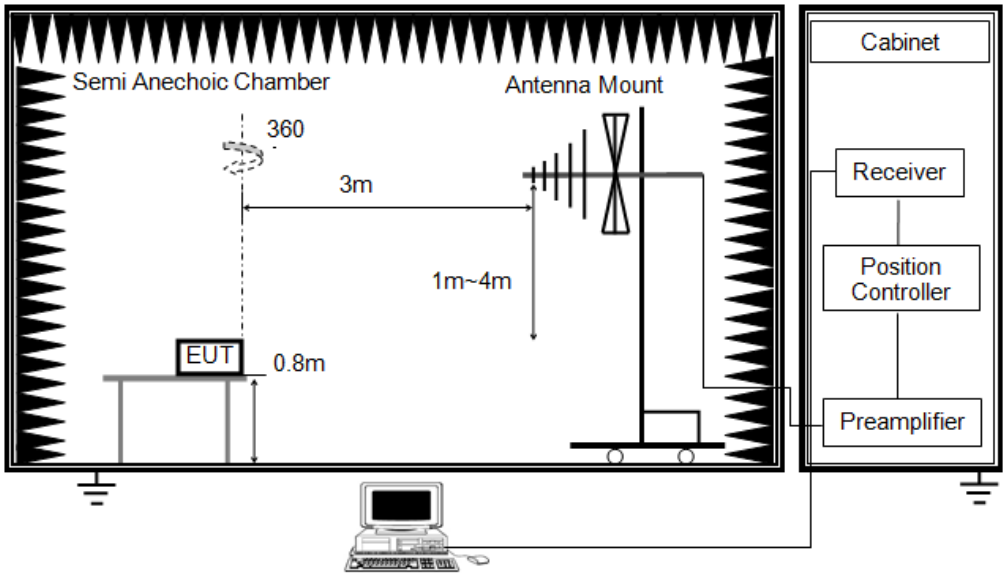
X axis, Y axis, Z axis positions:

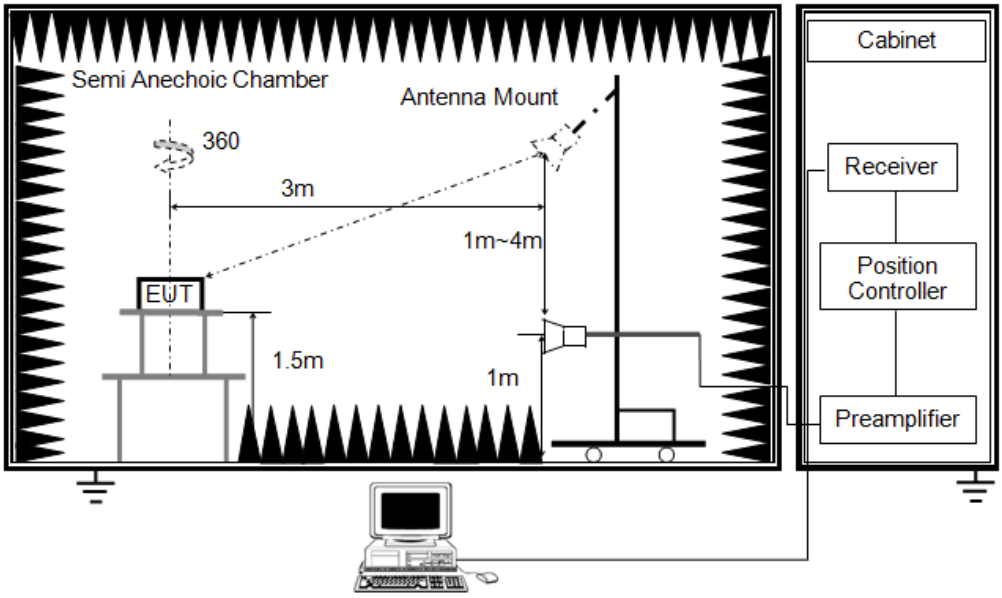



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

**TEST SETUP**


RX Antenna
EUT
80cm
3m
1 m
Metal Full Soldered Ground Plane
Spectrum Analyzer
/ Receiver


Semi Anechoic Chamber
Antenna Mount
360
3m
1m~4m
EUT
0.8m
Cabinet
Receiver
Position
Controller
Preamplifier


Semi Anechoic Chamber
Antenna Mount
360
3m
1m~4m
EUT
1.5m
1m
Cabinet
Receiver
Position
Controller
Preamplifier

**TEST ENVIRONMENT**

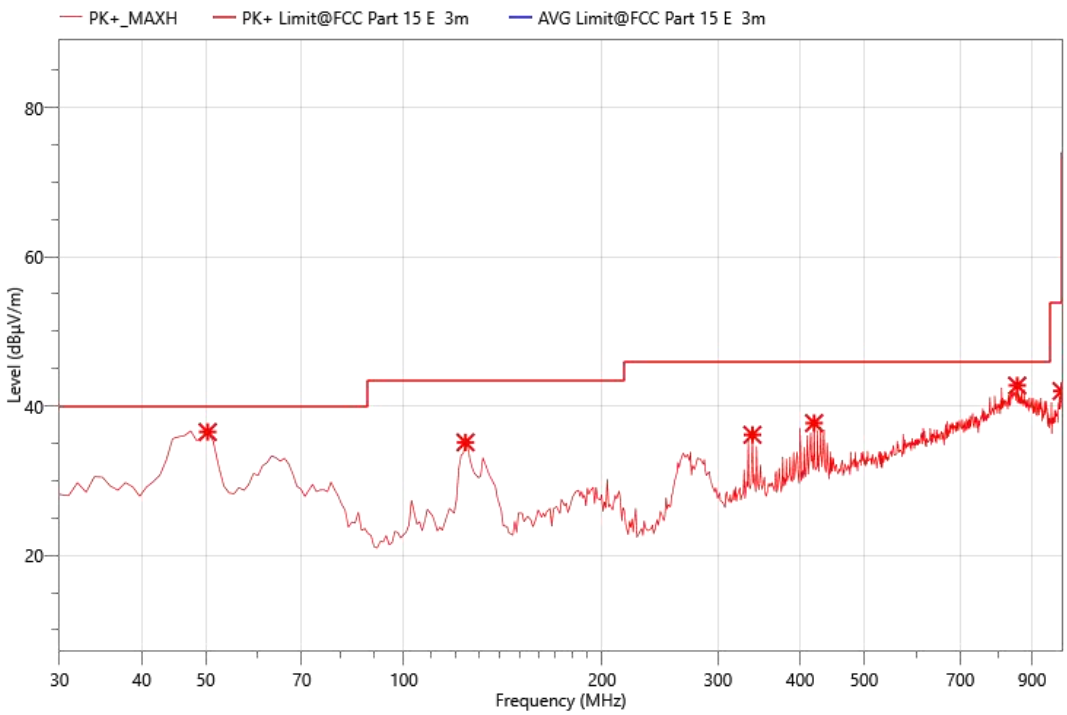
| | | | |
|---|---|---|---|
| Temperature | 24℃ | Relative Humidity | 55% |
| Atmosphere Pressure | 101kPa | | |

**TEST RESULTS**

**Radiated Spurious Emission :**

The worst result as bellow:

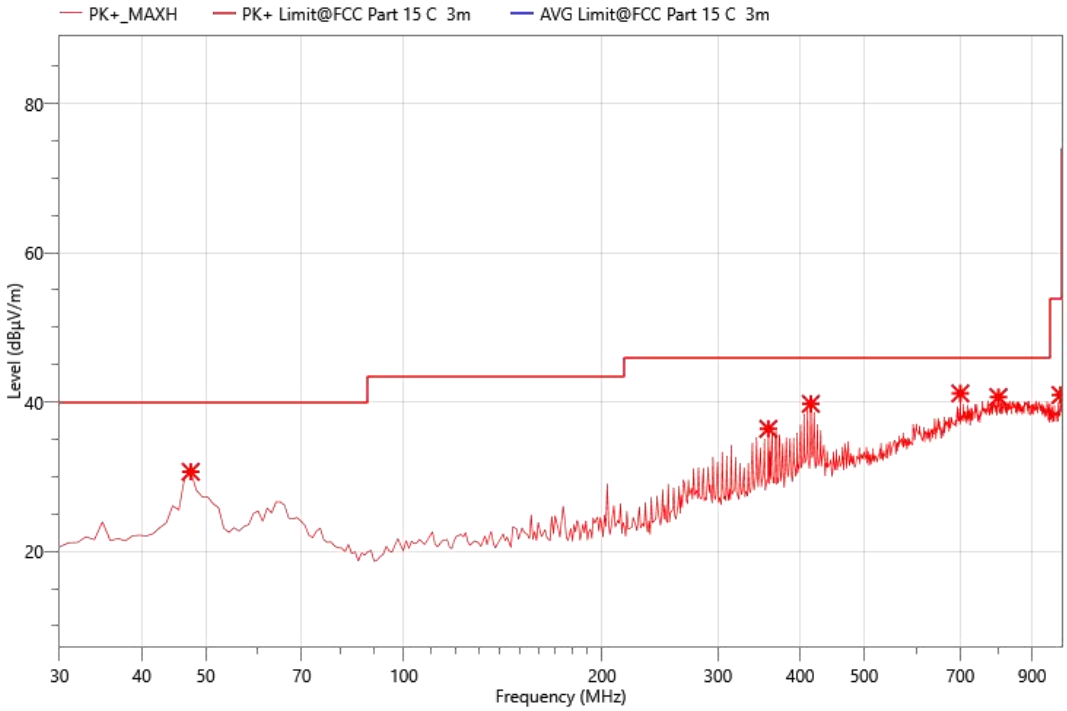
| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3°C/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 50.370 | 40.11 | 36.52 | 40.00 | 3.48 | PK+ | V | -3.59 |
| 2 | 124.090 | 40.89 | 35.14 | 43.50 | 8.36 | PK+ | V | -5.75 |
| 3 | 338.460 | 35.56 | 36.15 | 46.00 | 9.85 | PK+ | V | 0.59 |
| 4 | 419.940 | 34.27 | 37.72 | 46.00 | 8.28 | PK+ | V | 3.45 |
| 5 | 854.500 | 29.70 | 42.75 | 46.00 | 3.25 | PK+ | V | 13.05 |
| 6 | 998.060 | 30.20 | 42.01 | 53.90 | 11.89 | PK+ | V | 11.81 |

| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |



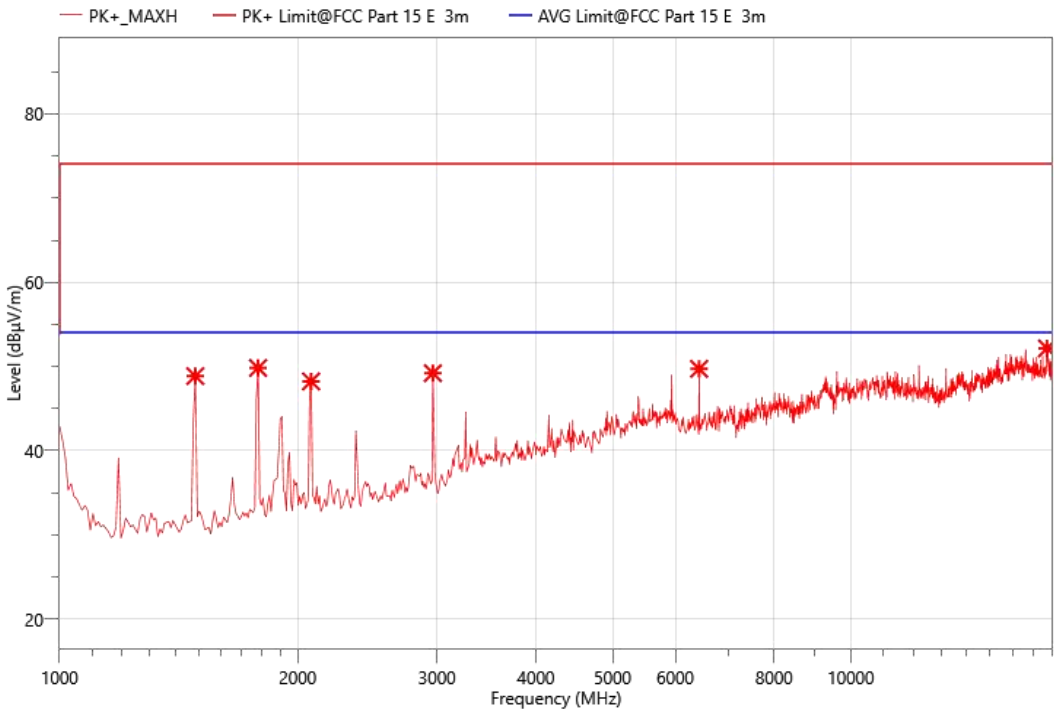

## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 47.460 | 34.67 | 30.66 | 40.00 | 9.34 | PK+ | H | -4.01 |
| 2 | 357.860 | 35.18 | 36.41 | 46.00 | 9.59 | PK+ | H | 1.23 |
| 3 | 415.090 | 36.44 | 39.76 | 46.00 | 6.24 | PK+ | H | 3.32 |
| 4 | 700.270 | 31.15 | 41.16 | 46.00 | 4.84 | PK+ | H | 10.01 |
| 5 | 800.180 | 27.80 | 40.67 | 46.00 | 5.33 | PK+ | H | 12.87 |
| 6 | 994.180 | 29.18 | 40.94 | 53.90 | 12.96 | PK+ | H | 11.76 |

Note: 1. Result Level = Read Level+ Antenna Factor+ Cable Loss- Amp. Factor

**Above 1000MHz~10th Harmonics:**

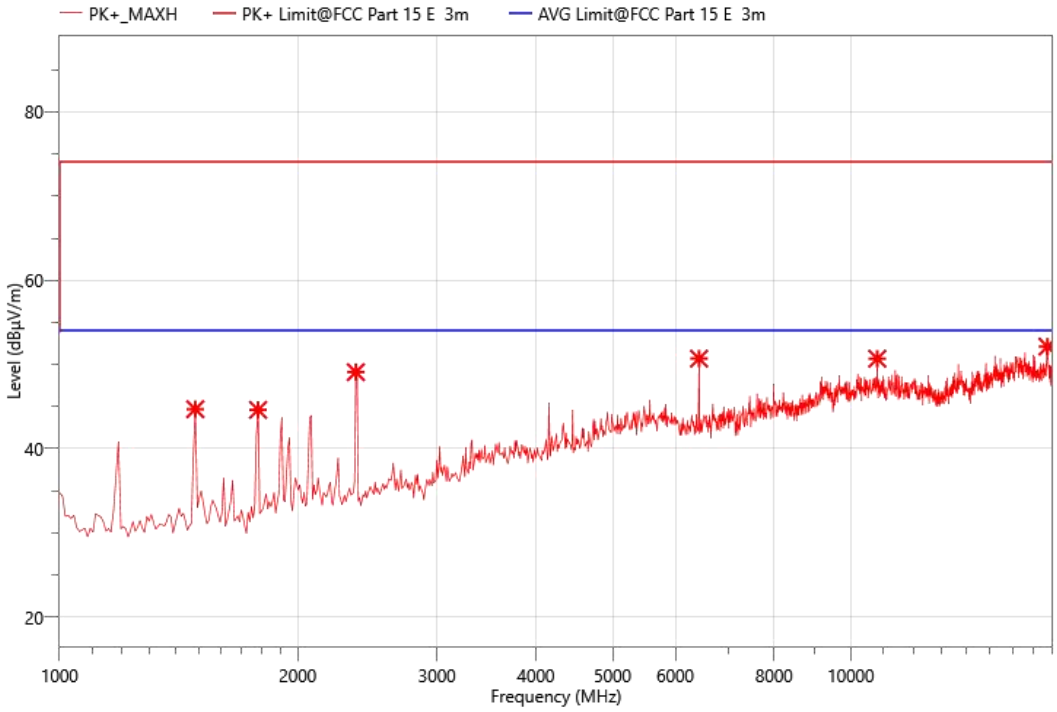
| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1484.500 | 74.74 | 48.86 | 74.00 | 25.14 | PK+ | H | -25.88 |
| 2 | 1782.000 | 73.73 | 49.83 | 74.00 | 24.17 | PK+ | H | -23.9 |
| 3 | 2079.500 | 70.19 | 48.23 | 74.00 | 25.77 | PK+ | H | -21.96 |
| 4 | 2963.500 | 67.00 | 49.21 | 74.00 | 24.79 | PK+ | H | -17.79 |
| 5 | 6431.500 | 54.57 | 49.72 | 74.00 | 24.28 | PK+ | H | -4.85 |
| 6 | 17702.500 | 47.56 | 52.15 | 74.00 | 21.85 | PK+ | H | 4.59 |

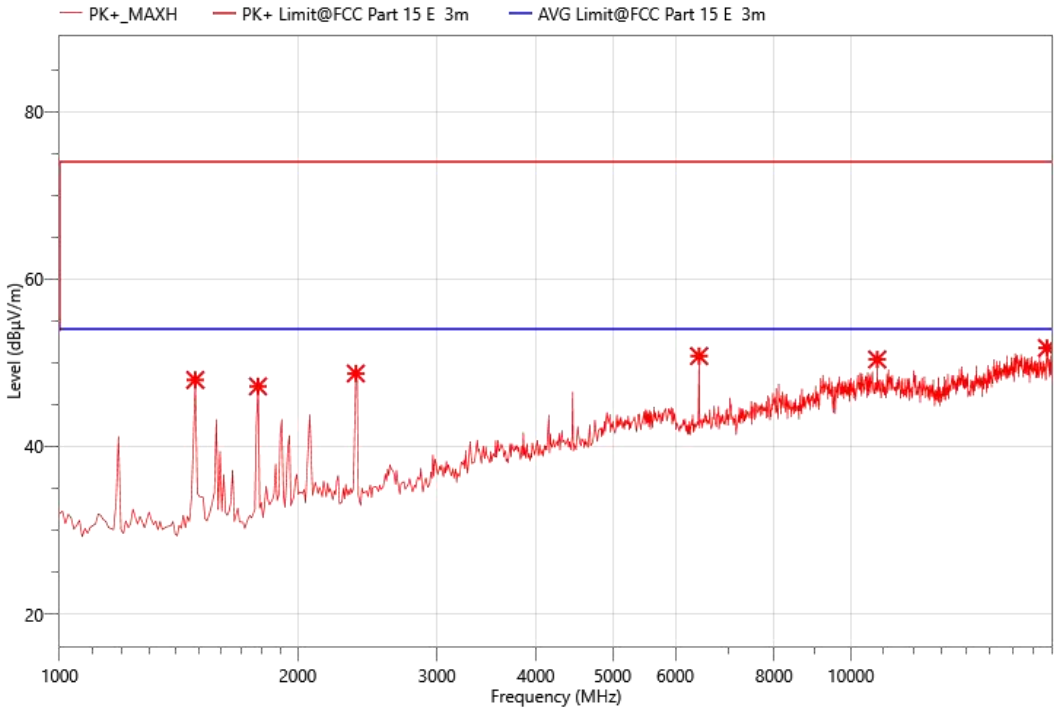
| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1484.500 | 70.57 | 44.69 | 74.00 | 29.31 | PK+ | V | -25.88 |
| 2 | 1782.000 | 68.51 | 44.61 | 74.00 | 29.39 | PK+ | V | -23.9 |
| 3 | 2368.500 | 69.82 | 49.09 | 74.00 | 24.91 | PK+ | V | -20.73 |
| 4 | 6431.500 | 55.55 | 50.70 | 74.00 | 23.30 | PK+ | V | -4.85 |
| 5 | 10800.500 | 51.02 | 50.69 | 74.00 | 23.31 | PK+ | V | -0.33 |
| 6 | 17728.000 | 46.95 | 52.13 | 74.00 | 21.87 | PK+ | V | 5.18 |

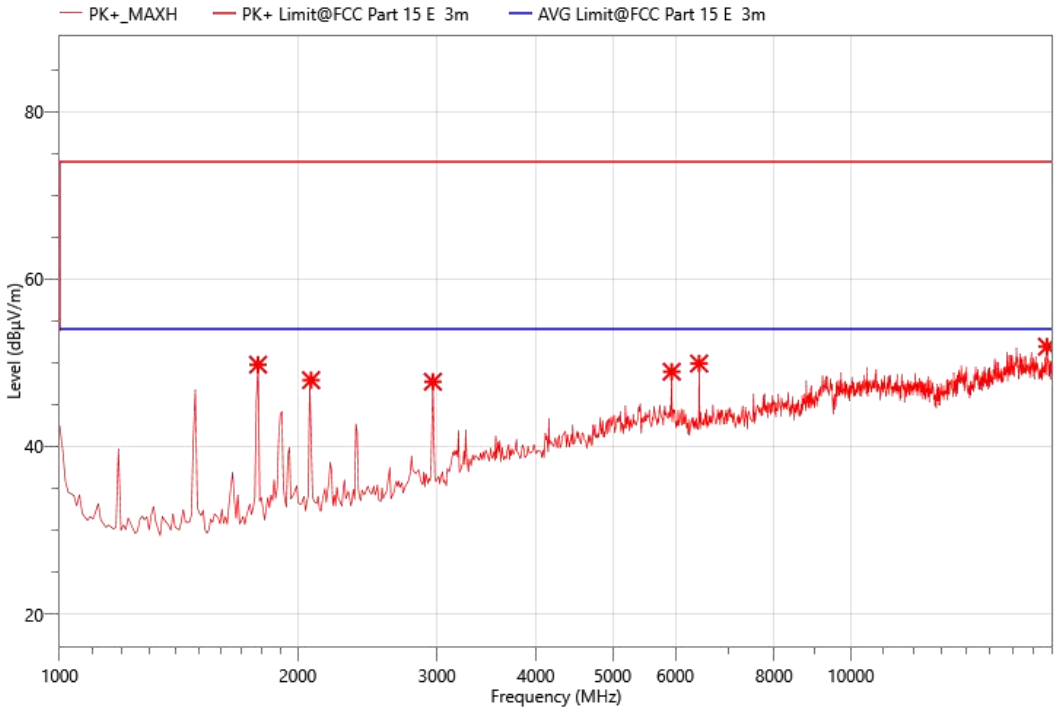
| | |
|---|---|
| Mode: | 5.1G a 5200 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1484.500 | 73.83 | 47.95 | 74.00 | 26.05 | PK+ | V | -25.88 |
| 2 | 1782.000 | 71.09 | 47.19 | 74.00 | 26.81 | PK+ | V | -23.9 |
| 3 | 2368.500 | 69.46 | 48.73 | 74.00 | 25.27 | PK+ | V | -20.73 |
| 4 | 6431.500 | 55.66 | 50.81 | 74.00 | 23.19 | PK+ | V | -4.85 |
| 5 | 10800.500 | 50.73 | 50.40 | 74.00 | 23.60 | PK+ | V | -0.33 |
| 6 | 17702.500 | 47.19 | 51.78 | 74.00 | 22.22 | PK+ | V | 4.59 |

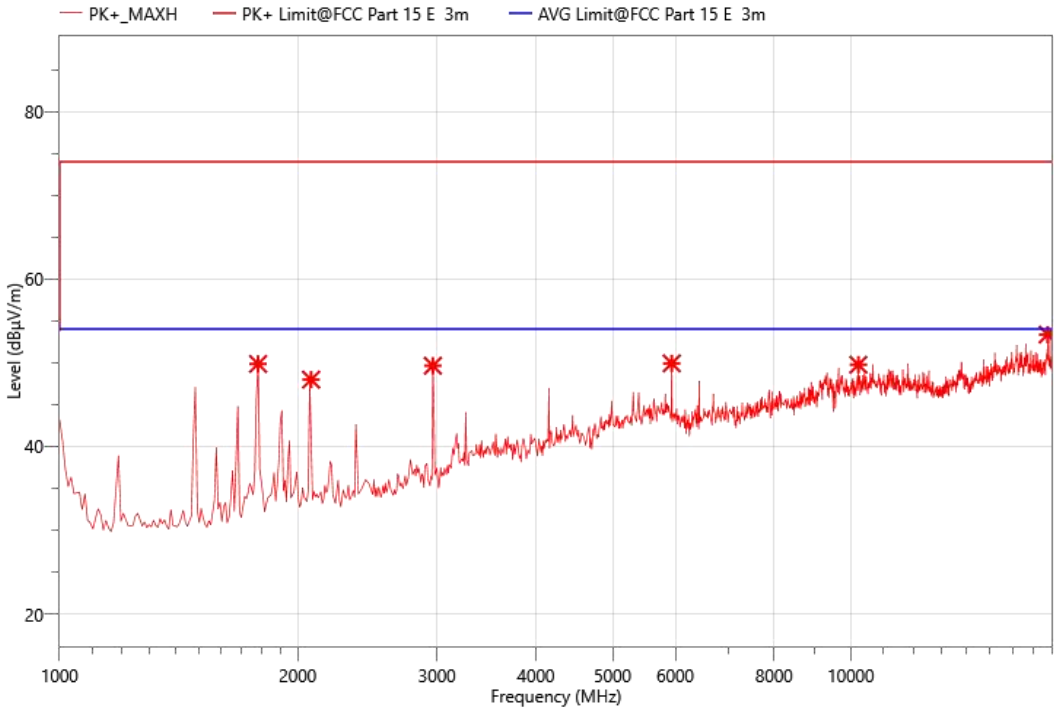
| | |
|---|---|
| Mode: | 5.1G a 5200 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1782.000 | 73.68 | 49.78 | 74.00 | 24.22 | PK+ | H | -23.9 |
| 2 | 2079.500 | 69.89 | 47.93 | 74.00 | 26.07 | PK+ | H | -21.96 |
| 3 | 2963.500 | 65.53 | 47.74 | 74.00 | 26.26 | PK+ | H | -17.79 |
| 4 | 5938.500 | 54.08 | 48.94 | 74.00 | 25.06 | PK+ | H | -5.14 |
| 5 | 6431.500 | 54.77 | 49.92 | 74.00 | 24.08 | PK+ | H | -4.85 |
| 6 | 17702.500 | 47.34 | 51.93 | 74.00 | 22.07 | PK+ | H | 4.59 |

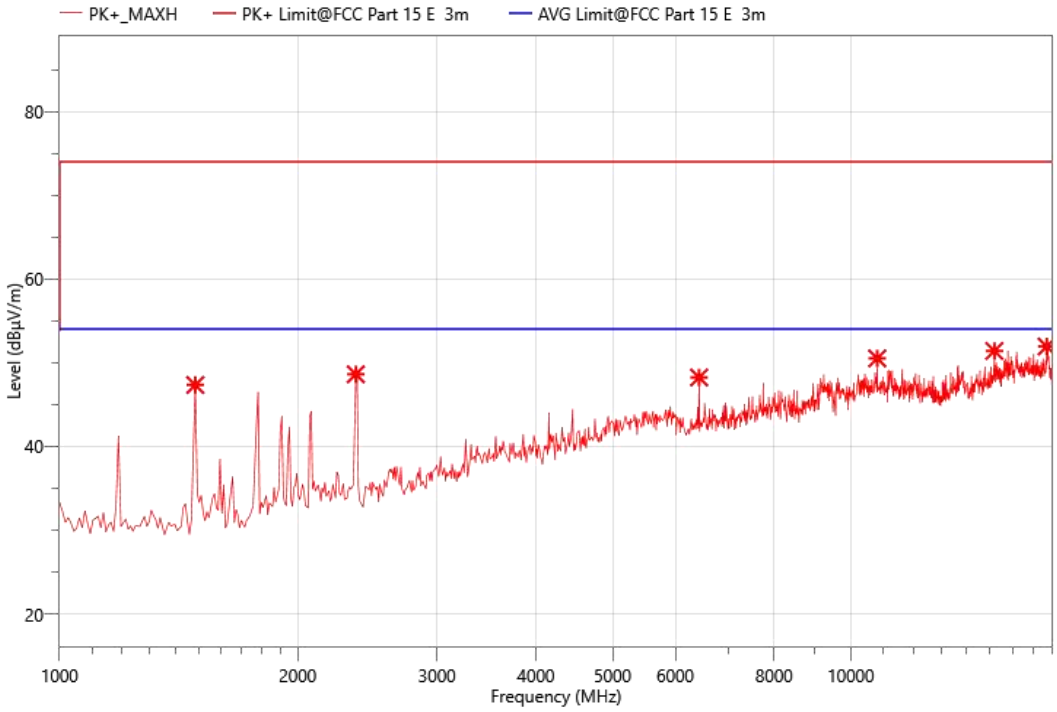
| | |
|---|---|
| Mode: | 5.1G a 5240 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1782.000 | 73.77 | 49.87 | 74.00 | 24.13 | PK+ | H | -23.9 |
| 2 | 2079.500 | 69.95 | 47.99 | 74.00 | 26.01 | PK+ | H | -21.96 |
| 3 | 2963.500 | 67.45 | 49.66 | 74.00 | 24.34 | PK+ | H | -17.79 |
| 4 | 5938.500 | 55.08 | 49.94 | 74.00 | 24.06 | PK+ | H | -5.14 |
| 5 | 10222.500 | 50.40 | 49.77 | 74.00 | 24.23 | PK+ | H | -0.63 |
| 6 | 17736.500 | 48.10 | 53.38 | 74.00 | 20.62 | PK+ | H | 5.28 |

| | |
|---|---|
| Mode: | 5.1G a 5240 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

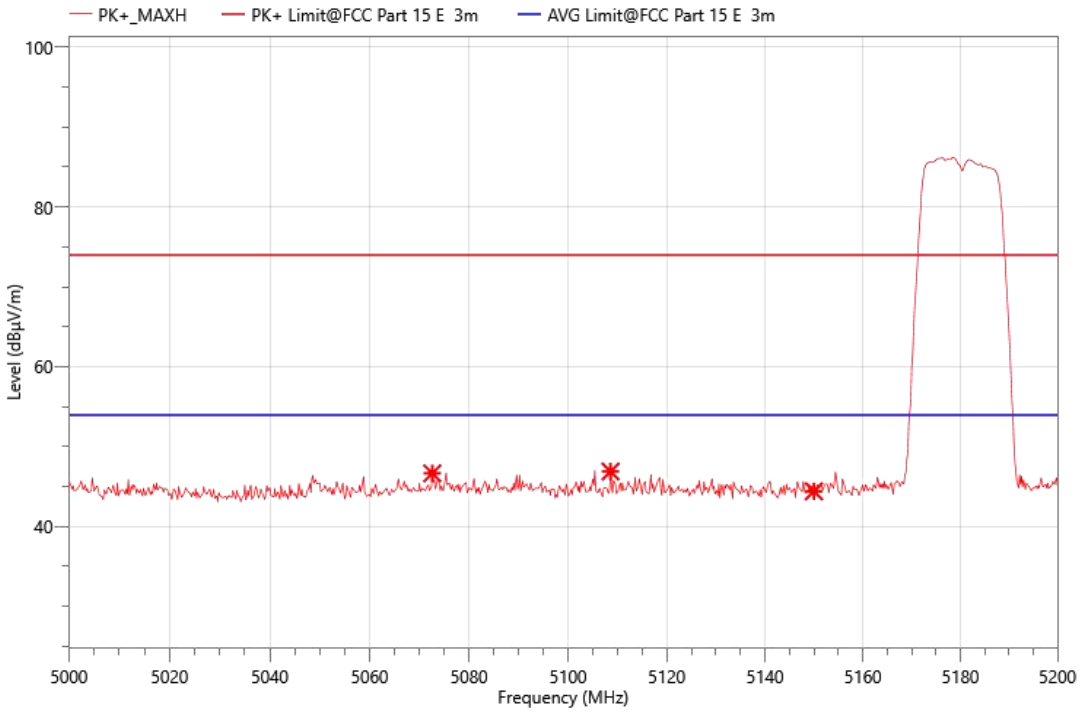
| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1484.500 | 73.24 | 47.36 | 74.00 | 26.64 | PK+ | V | -25.88 |
| 2 | 2368.500 | 69.36 | 48.63 | 74.00 | 25.37 | PK+ | V | -20.73 |
| 3 | 6431.500 | 53.10 | 48.25 | 74.00 | 25.75 | PK+ | V | -4.85 |
| 4 | 10800.500 | 50.86 | 50.53 | 74.00 | 23.47 | PK+ | V | -0.33 |
| 5 | 15186.500 | 48.72 | 51.42 | 74.00 | 22.58 | PK+ | V | 2.7 |
| 6 | 17685.500 | 47.35 | 51.95 | 74.00 | 22.05 | PK+ | V | 4.6 |

**Other harmonics emissions are lower than 20dB below the allowable limit.**

**Note:** (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.
(4) Measuring frequencies from 1GHz to 25GHz.

**Band edge:**

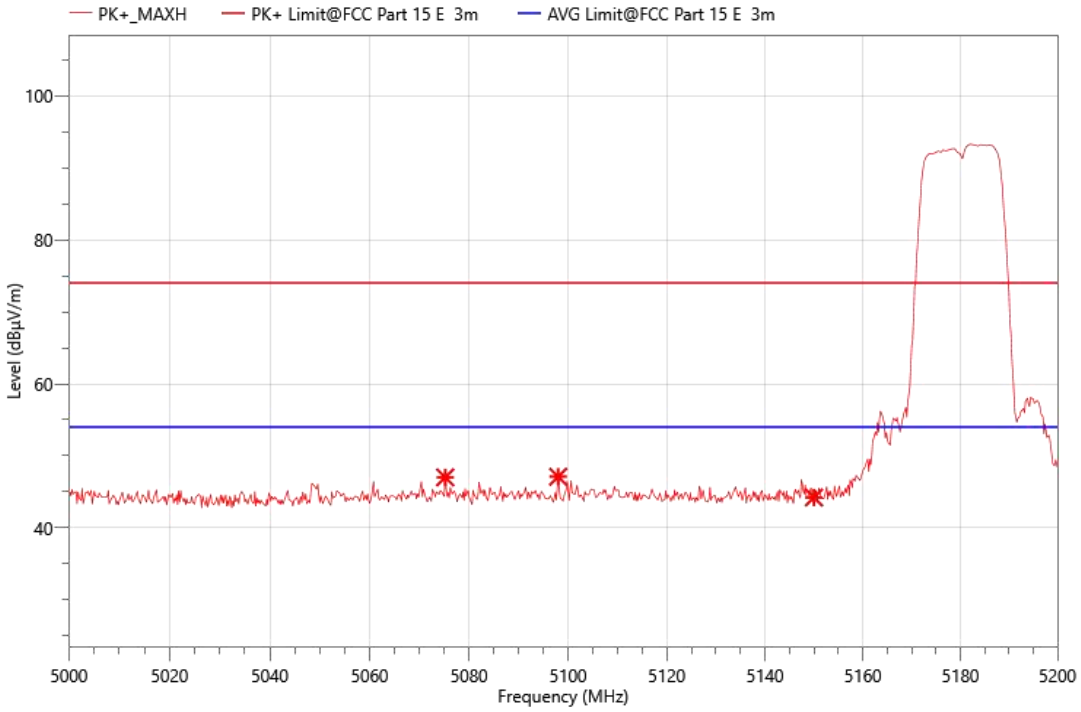
| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3°C/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 5072.600 | 54.90 | 46.66 | 74.00 | 27.34 | PK+ | H | -8.24 |
| 2 | 5108.600 | 54.71 | 46.89 | 74.00 | 27.11 | PK+ | H | -7.82 |
| 3 | 5150.000 | 52.64 | 44.41 | 74.00 | 29.59 | PK+ | H | -8.23 |

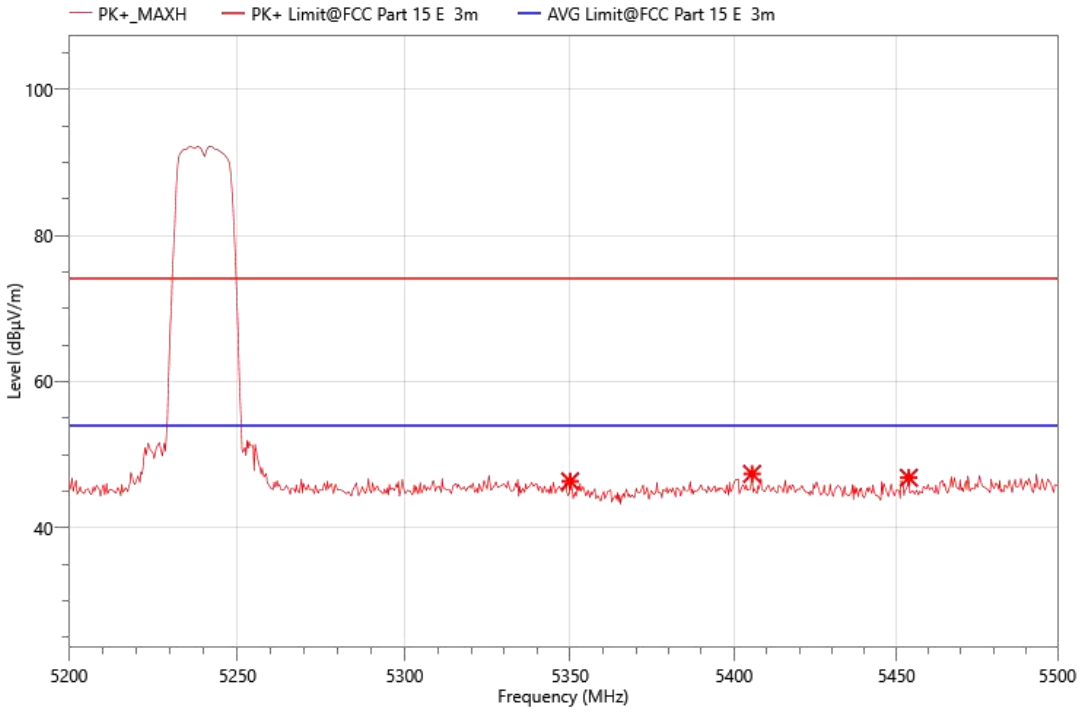
| | |
|---|---|
| Mode: | 5.1G a 5180 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 5075.200 | 55.21 | 47.01 | 74.00 | 26.99 | PK+ | V | -8.2 |
| 2 | 5098.000 | 54.96 | 47.10 | 74.00 | 26.90 | PK+ | V | -7.86 |
| 3 | 5150.000 | 52.44 | 44.21 | 74.00 | 29.79 | PK+ | V | -8.23 |

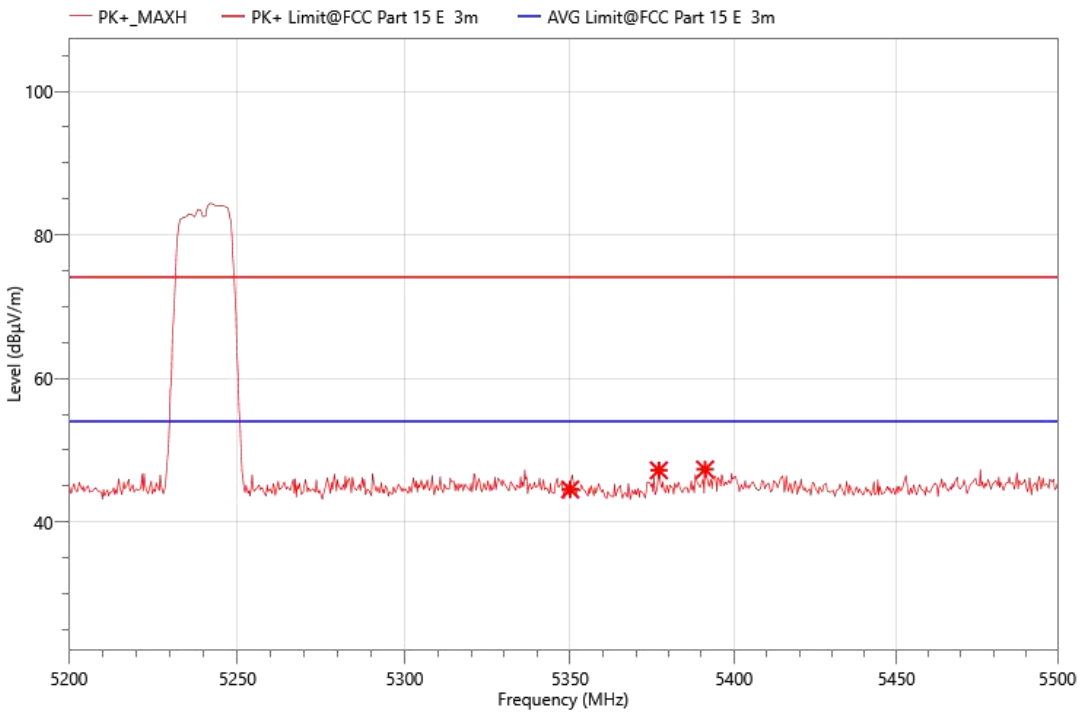
| | |
|---|---|
| Mode: | 5.1G a 5240 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 53.86 | 46.36 | 74.00 | 27.64 | PK+ | V | -7.5 |
| 2 | 5405.500 | 54.90 | 47.37 | 74.00 | 26.63 | PK+ | V | -7.53 |
| 3 | 5453.800 | 54.09 | 46.84 | 74.00 | 27.16 | PK+ | V | -7.25 |

| | |
|---|---|
| Mode: | 5.1G a 5240 |
| Power: | DC 5V |
| TE: | Vier |
| Date | 2023/9/4 |
| T/A/P | 24.3℃/54%/101Kpa |




## Critical_Freqs

| No. | Freq. (MHz) | Reading (dBµV) | Meas. (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Det. | Pol. | Corr. (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 5350.000 | 52.02 | 44.52 | 74.00 | 29.48 | PK+ | H | -7.5 |
| 2 | 5377.000 | 54.73 | 47.19 | 74.00 | 26.81 | PK+ | H | -7.54 |
| 3 | 5391.100 | 54.87 | 47.32 | 74.00 | 26.68 | PK+ | H | -7.55 |

# 9. ANTENNA REQUIREMENT

**REQUIREMENT**

| Standard | Requirement |
|---|---|
| FCC CRF Part 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 use of a standard antenna Sunshine or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. |

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

**DESCRIPTION**

Pass

# 10. TEST DATA

## Duty Cycle

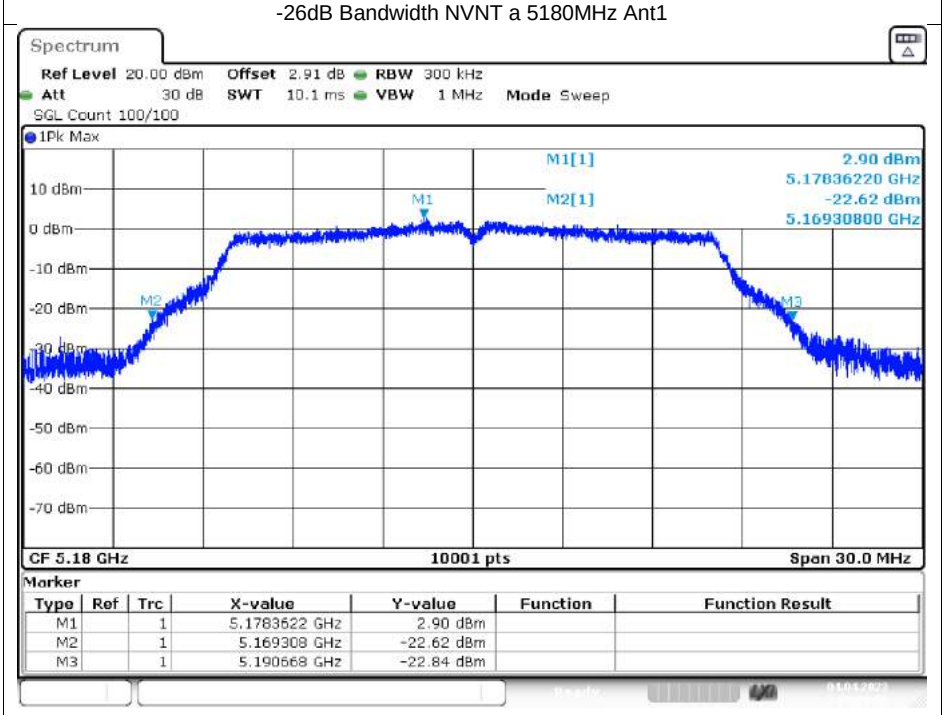
| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 93.46 | 0.29 | 0.7 |
| NVNT | a | 5200 | Ant1 | 93.46 | 0.29 | 0.7 |
| NVNT | a | 5240 | Ant1 | 93.46 | 0.29 | 0.7 |
| NVNT | n20 | 5180 | Ant1 | 93.11 | 0.31 | 0.75 |
| NVNT | n20 | 5200 | Ant1 | 93.11 | 0.31 | 0.75 |
| NVNT | n20 | 5240 | Ant1 | 93.05 | 0.31 | 0.75 |
| NVNT | n40 | 5190 | Ant1 | 87.21 | 0.59 | 1.5 |
| NVNT | n40 | 5230 | Ant1 | 87.19 | 0.6 | 1.5 |
| NVNT | ac20 | 5180 | Ant1 | 93.08 | 0.31 | 0.74 |
| NVNT | ac20 | 5200 | Ant1 | 93.08 | 0.31 | 0.74 |
| NVNT | ac20 | 5240 | Ant1 | 93.08 | 0.31 | 0.74 |
| NVNT | ac40 | 5190 | Ant1 | 87.39 | 0.59 | 1.49 |
| NVNT | ac40 | 5230 | Ant1 | 87.27 | 0.59 | 1.49 |
| NVNT | ac80 | 5210 | Ant1 | 77.42 | 1.11 | 2.98 |

## -26dB Bandwidth

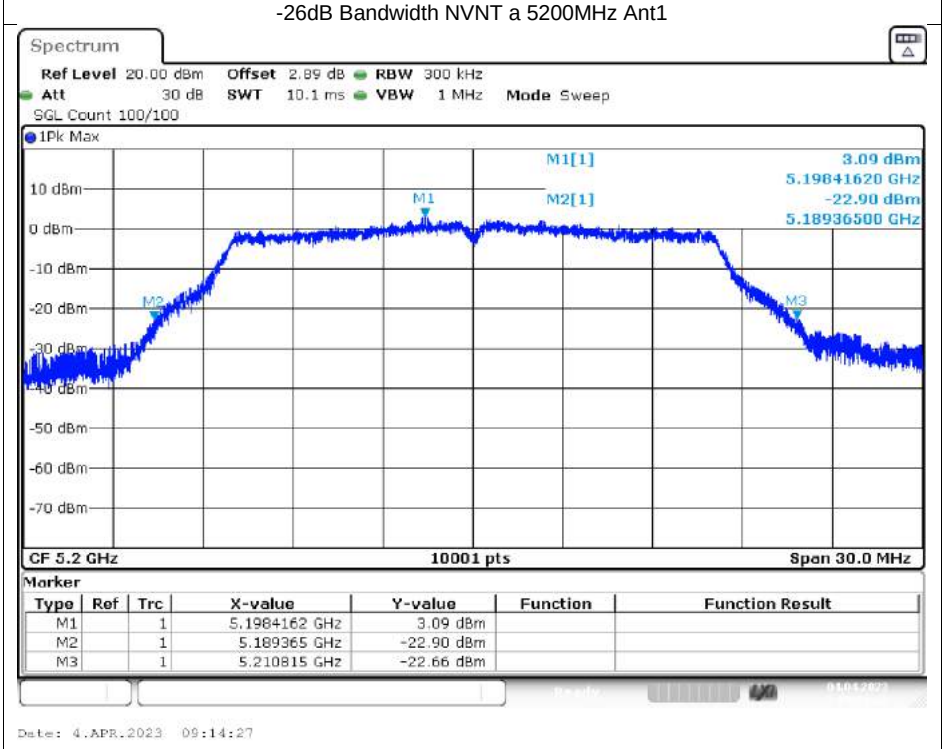
| Condition | Mode | Frequency (MHz) | Antenna | -26 dB Bandwidth (MHz) | Limit -26 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 21.36 | 0.5 | Pass |
| NVNT | a | 5200 | Ant1 | 21.45 | 0.5 | Pass |
| NVNT | a | 5240 | Ant1 | 21.477 | 0.5 | Pass |
| NVNT | n20 | 5180 | Ant1 | 22.626 | 0.5 | Pass |
| NVNT | n20 | 5200 | Ant1 | 21.972 | 0.5 | Pass |
| NVNT | n20 | 5240 | Ant1 | 21.651 | 0.5 | Pass |
| NVNT | n40 | 5190 | Ant1 | 43.806 | 0.5 | Pass |
| NVNT | n40 | 5230 | Ant1 | 43.716 | 0.5 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 21.84 | 0.5 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 21.717 | 0.5 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 21.477 | 0.5 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 39.648 | 0.5 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 39.594 | 0.5 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 79.872 | 0.5 | Pass |

Test Graphs

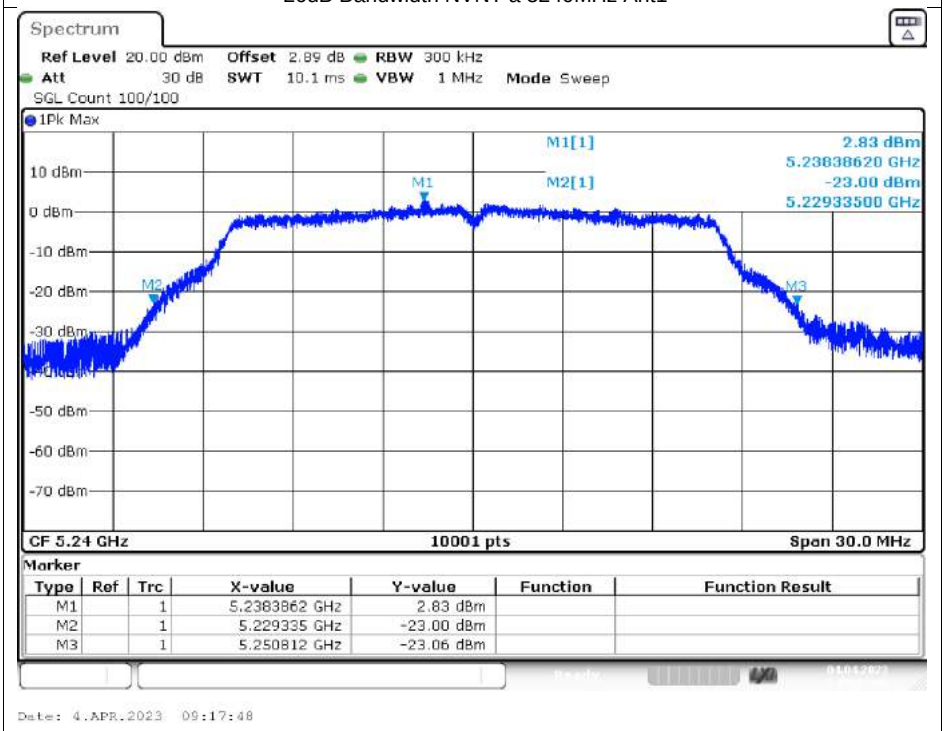
-26dB Bandwidth NVNT a 5180MHz Ant1



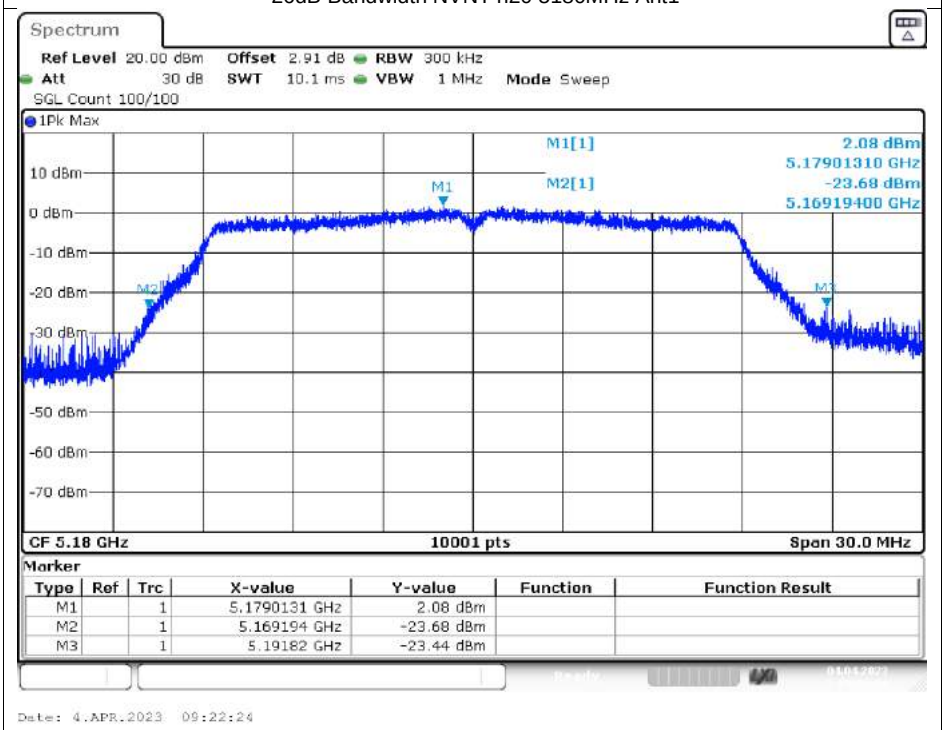

-26dB Bandwidth NVNT a 5200MHz Ant1



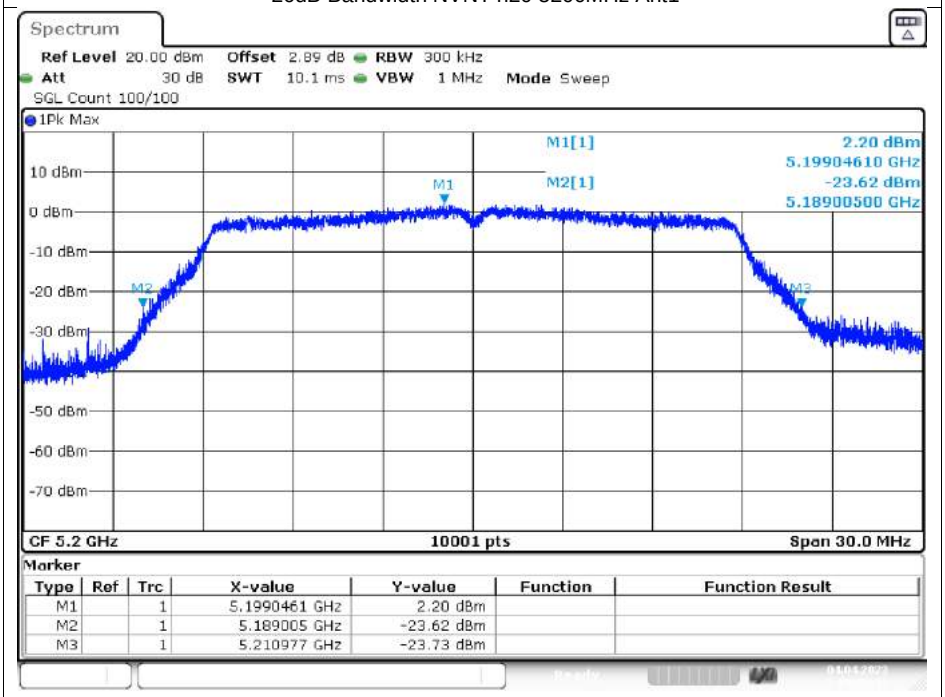
-26dB Bandwidth NVNT a 5240MHz Ant1




-26dB Bandwidth NVNT n20 5180MHz Ant1

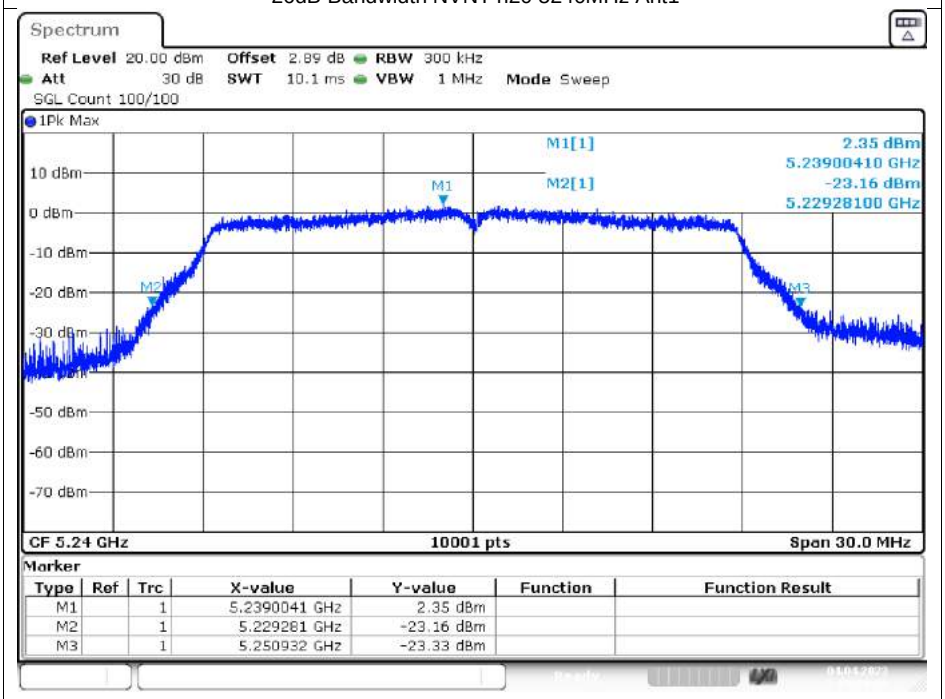


-26dB Bandwidth NVNT n20 5200MHz Ant1



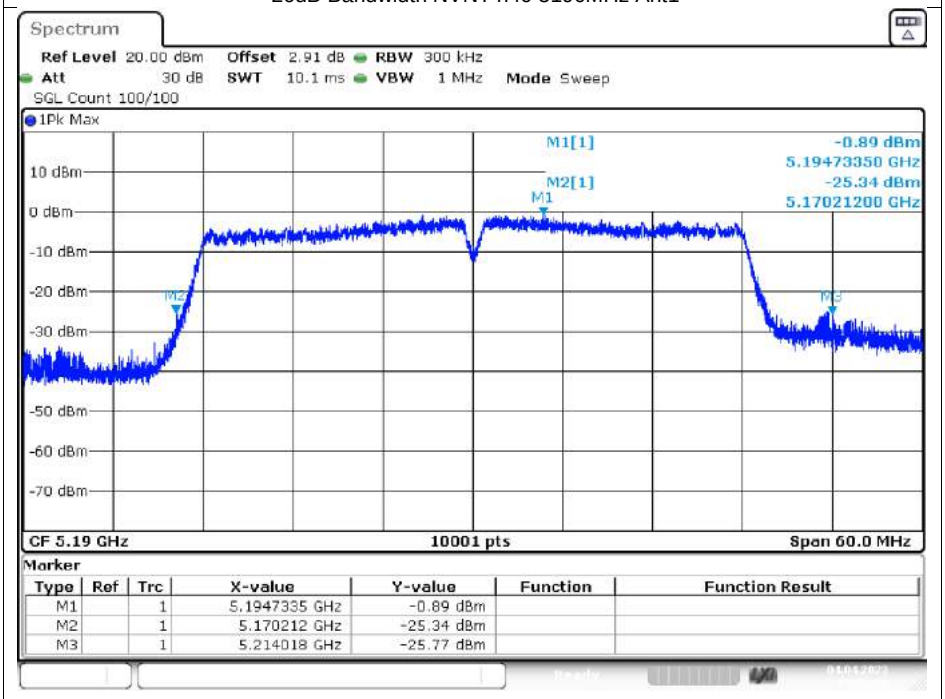

Date: 4.APR.2023 09:25:11

-26dB Bandwidth NVNT n20 5240MHz Ant1

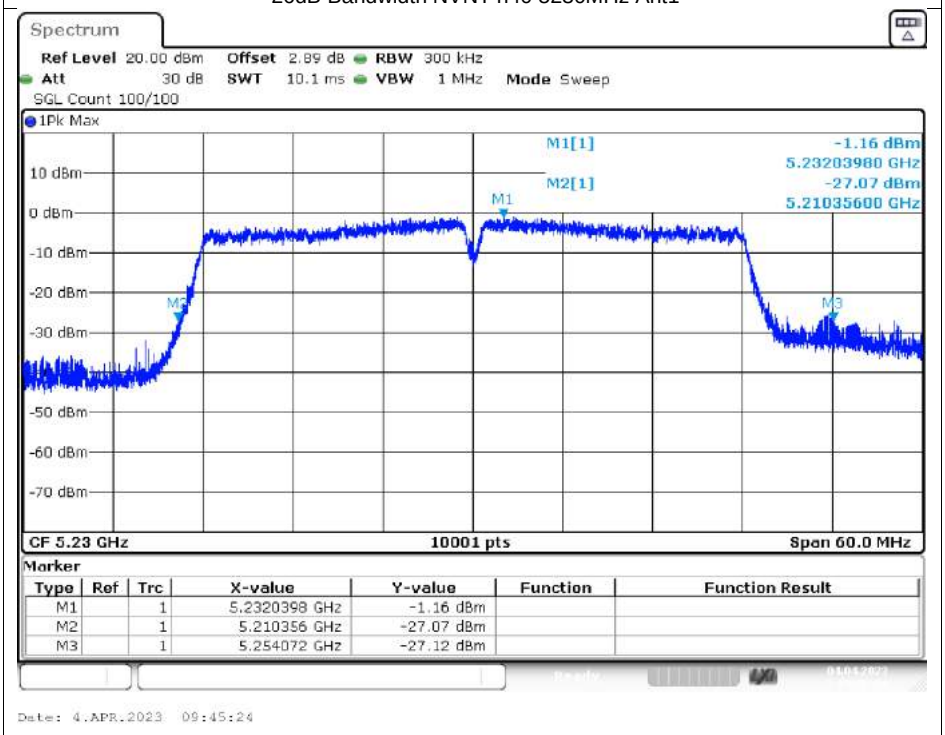



Date: 4.APR.2023 09:28:36

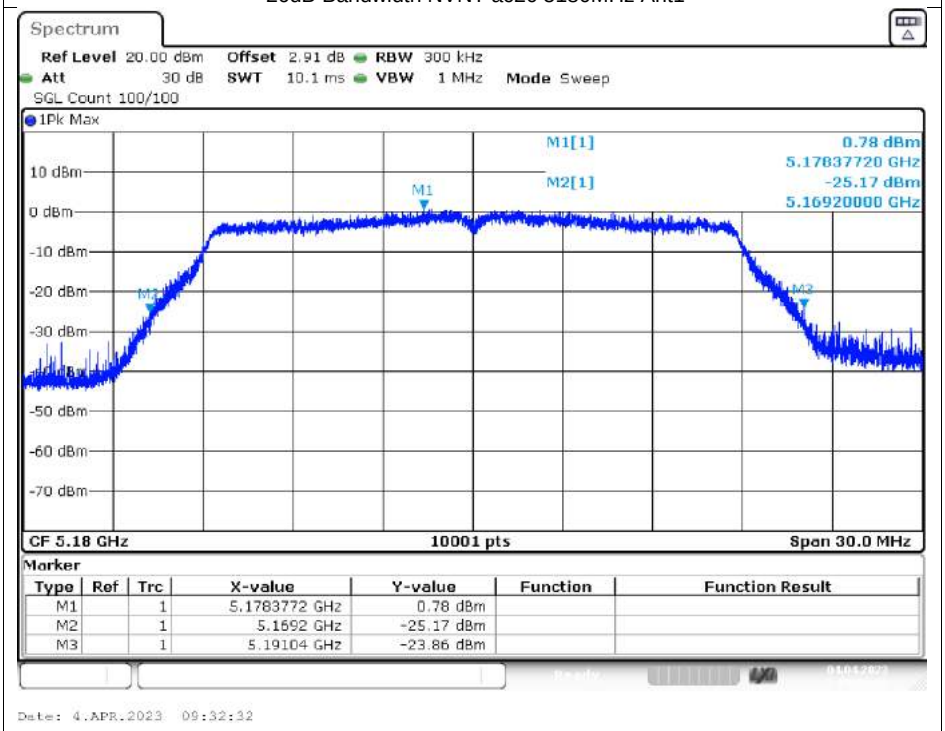
-26dB Bandwidth NVNT n40 5190MHz Ant1



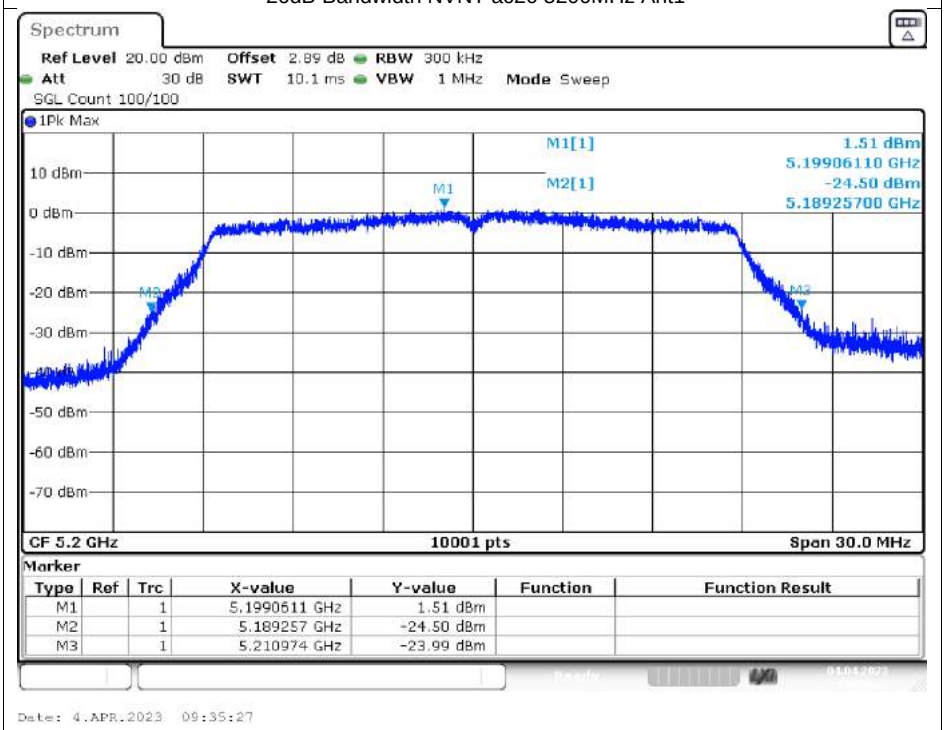

-26dB Bandwidth NVNT n40 5230MHz Ant1



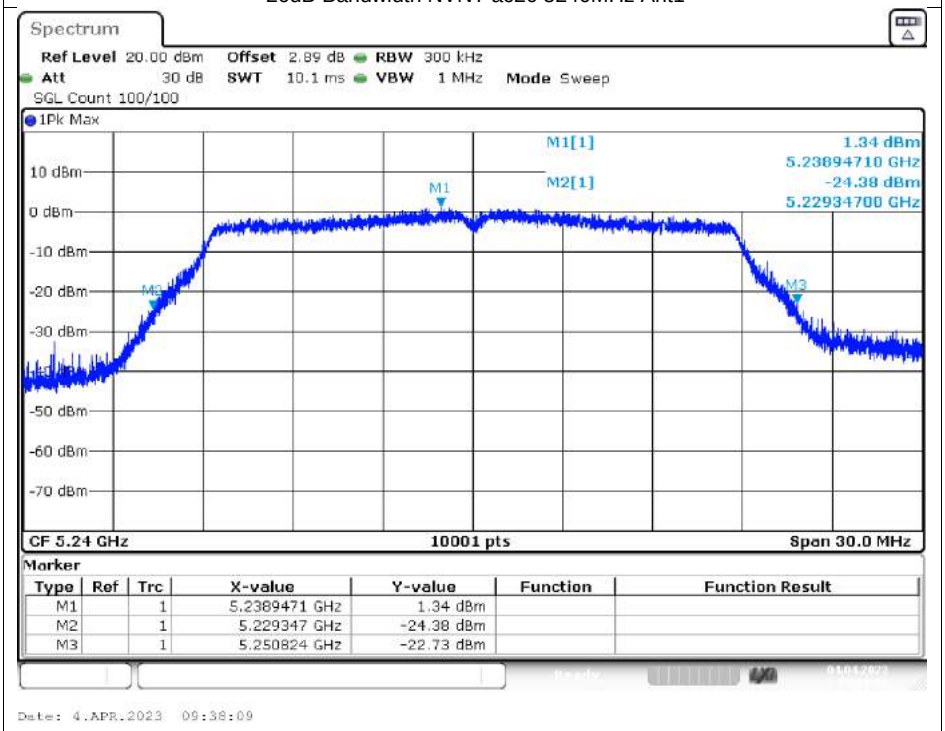
-26dB Bandwidth NVNT ac20 5180MHz Ant1



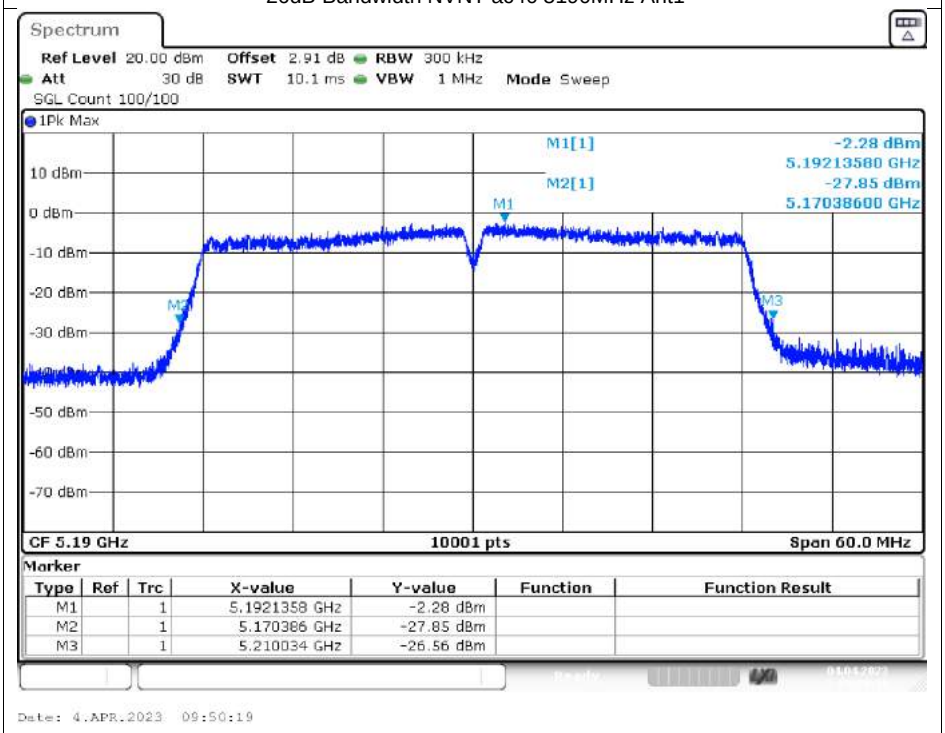

-26dB Bandwidth NVNT ac20 5200MHz Ant1



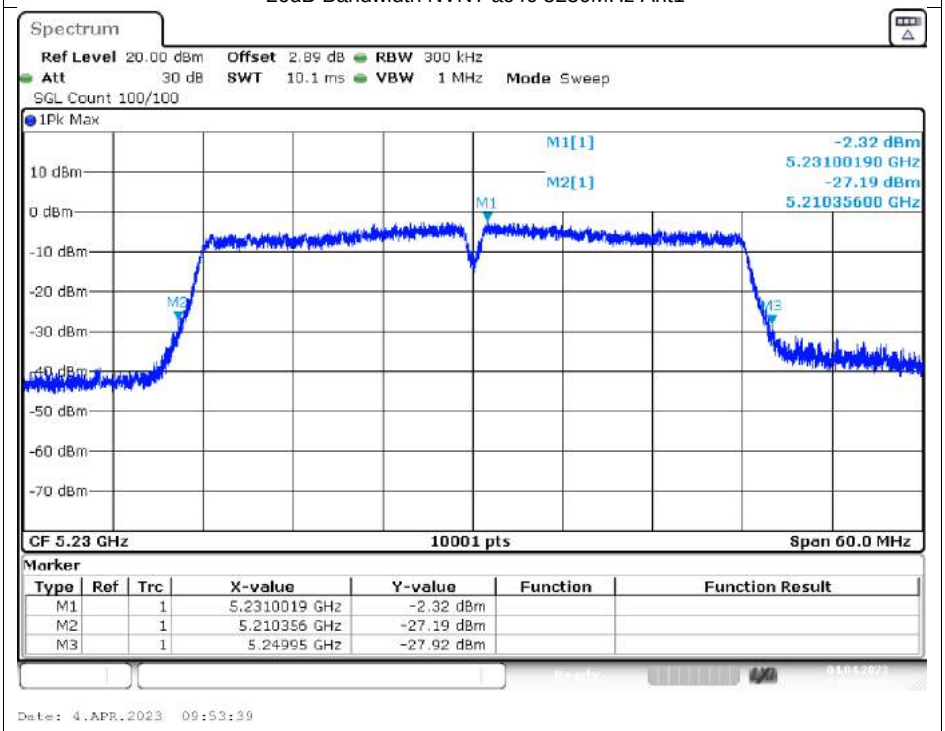
-26dB Bandwidth NVNT ac20 5240MHz Ant1



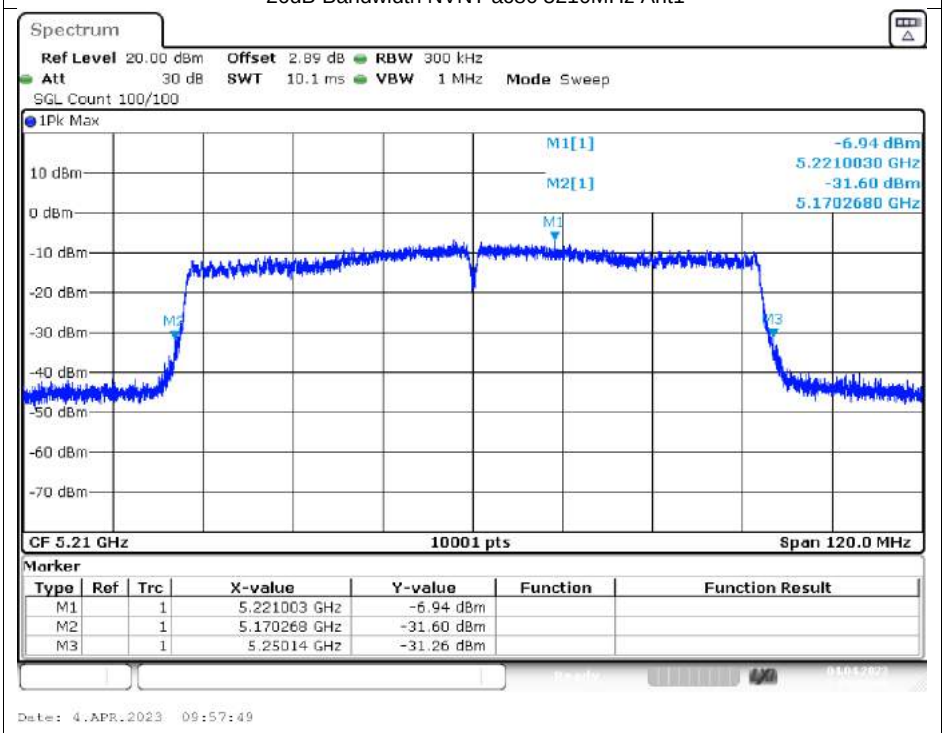

-26dB Bandwidth NVNT ac40 5190MHz Ant1



-26dB Bandwidth NVNT ac40 5230MHz Ant1




-26dB Bandwidth NVNT ac80 5210MHz Ant1

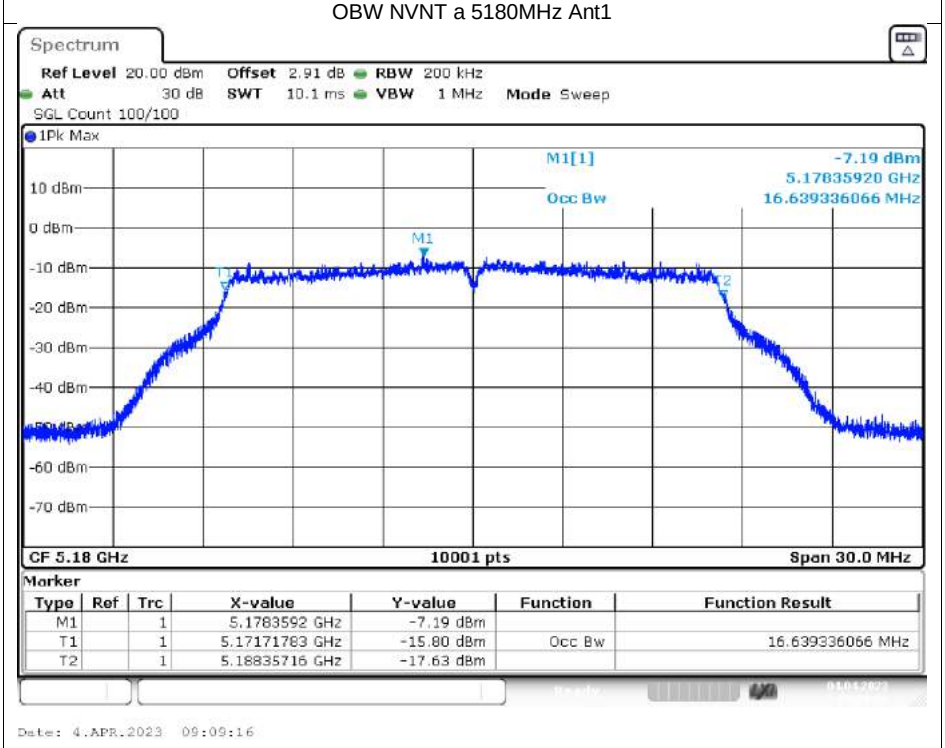


# Occupied Channel Bandwidth

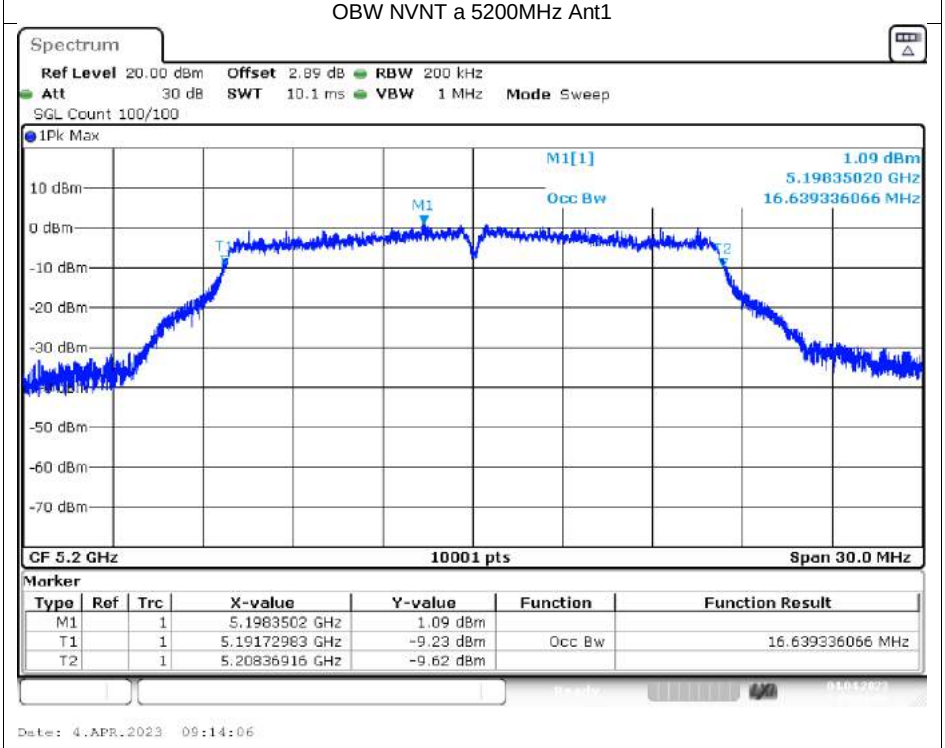
| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 16.639 |
| NVNT | a | 5200 | Ant1 | 16.639 |
| NVNT | a | 5240 | Ant1 | 16.63 |
| NVNT | n20 | 5180 | Ant1 | 17.764 |
| NVNT | n20 | 5200 | Ant1 | 17.761 |
| NVNT | n20 | 5240 | Ant1 | 17.767 |
| NVNT | n40 | 5190 | Ant1 | 36.302 |
| NVNT | n40 | 5230 | Ant1 | 36.278 |
| NVNT | ac20 | 5180 | Ant1 | 17.749 |
| NVNT | ac20 | 5200 | Ant1 | 17.737 |
| NVNT | ac20 | 5240 | Ant1 | 17.764 |
| NVNT | ac40 | 5190 | Ant1 | 36.266 |
| NVNT | ac40 | 5230 | Ant1 | 36.254 |
| NVNT | ac80 | 5210 | Ant1 | 75.352 |

Test Graphs

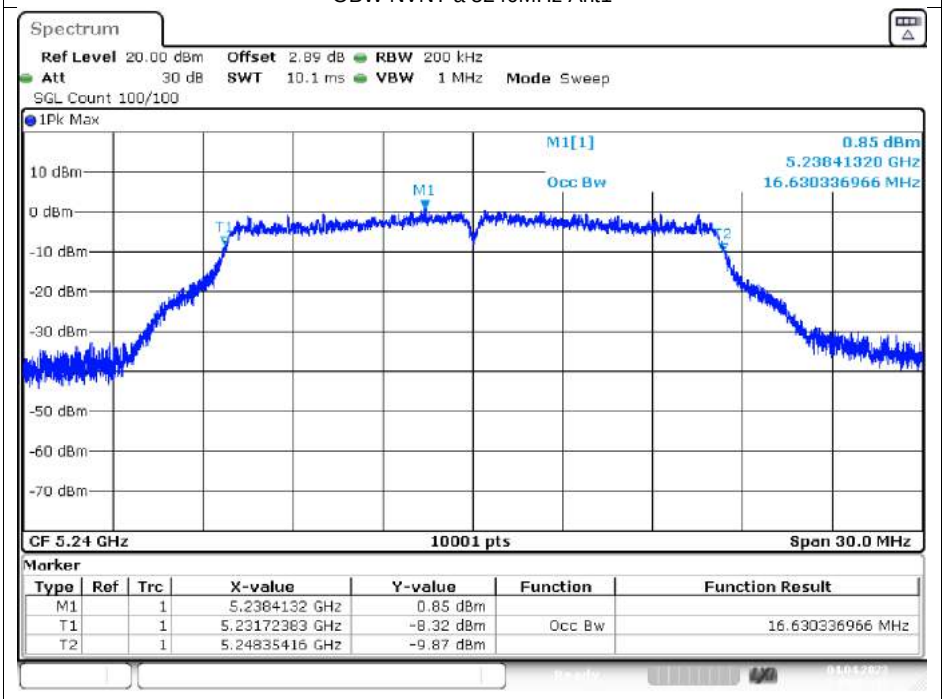
OBW NVNT a 5180MHz Ant1



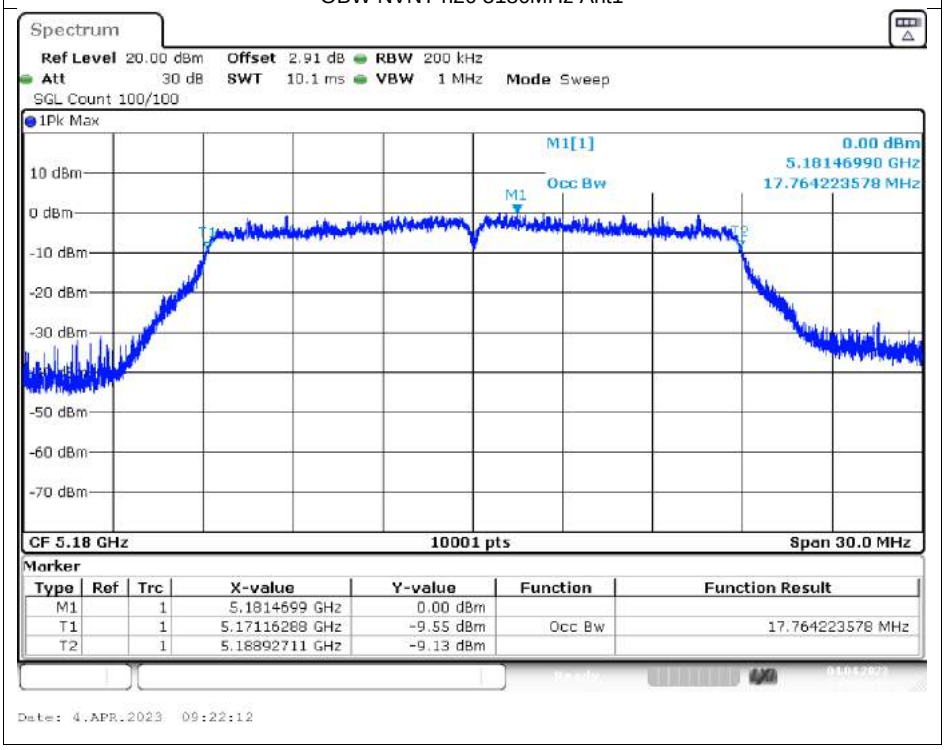

OBW NVNT a 5200MHz Ant1



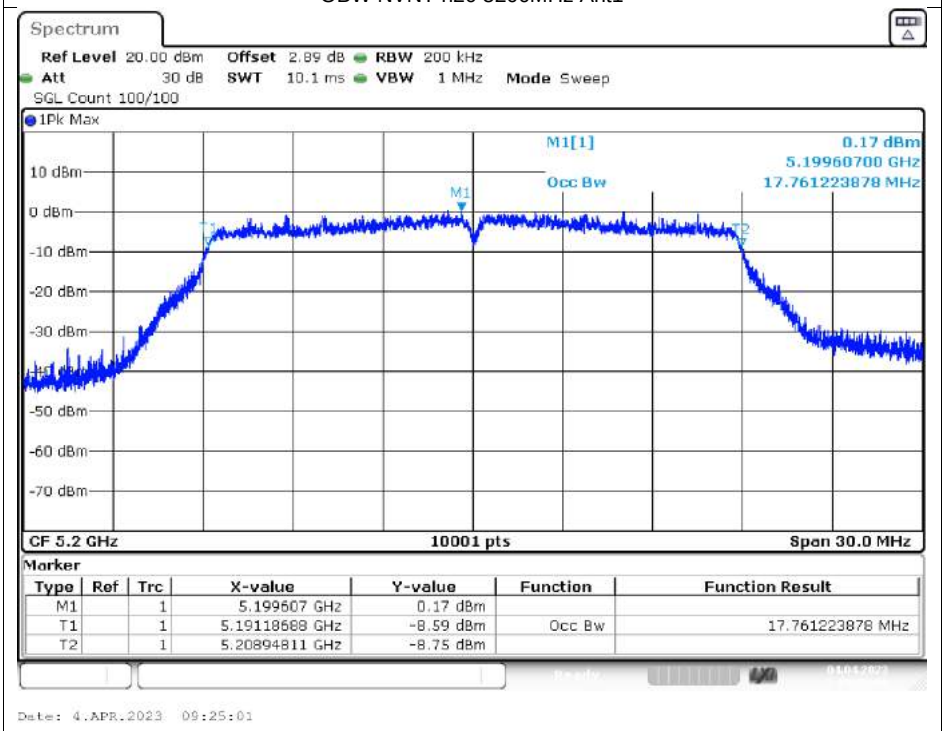
OBW NVNT a 5240MHz Ant1




OBW NVNT n20 5180MHz Ant1

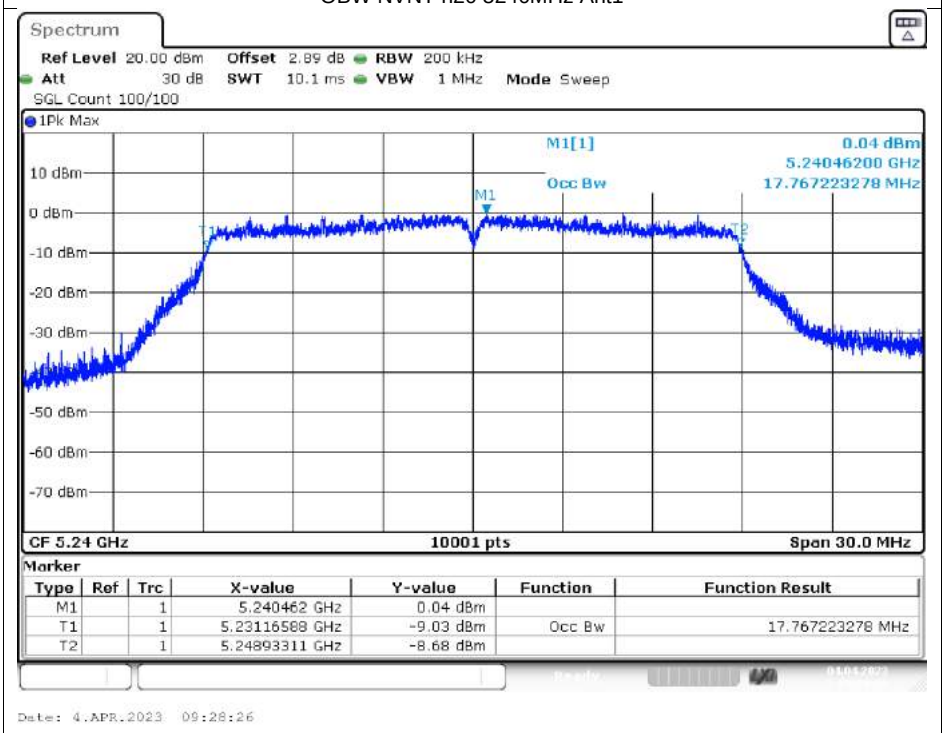


OBW NVNT n20 5200MHz Ant1



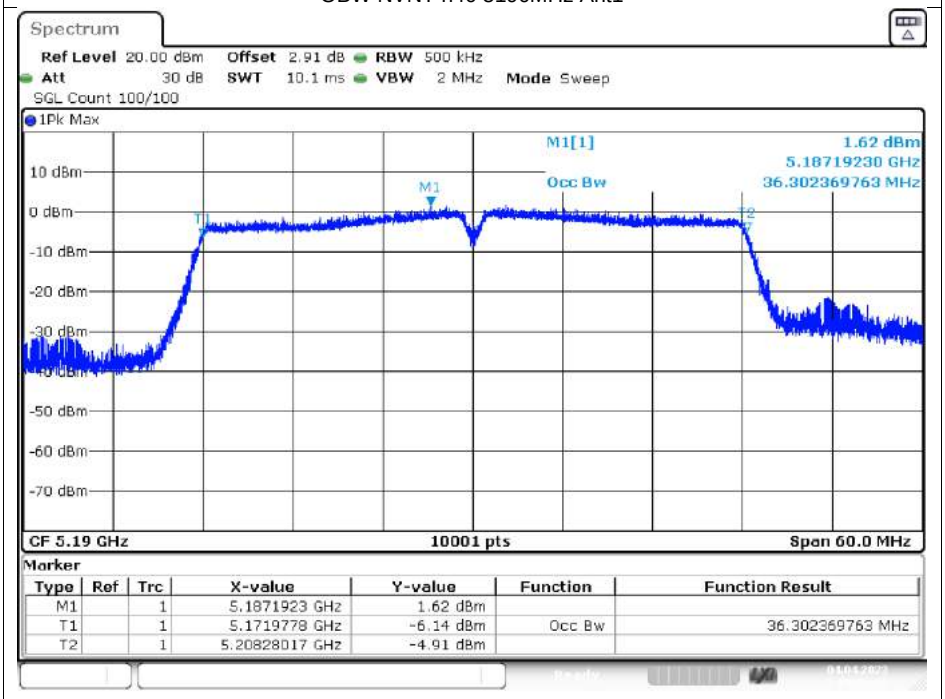

Date: 4.APR.2023 09:25:01

OBW NVNT n20 5240MHz Ant1



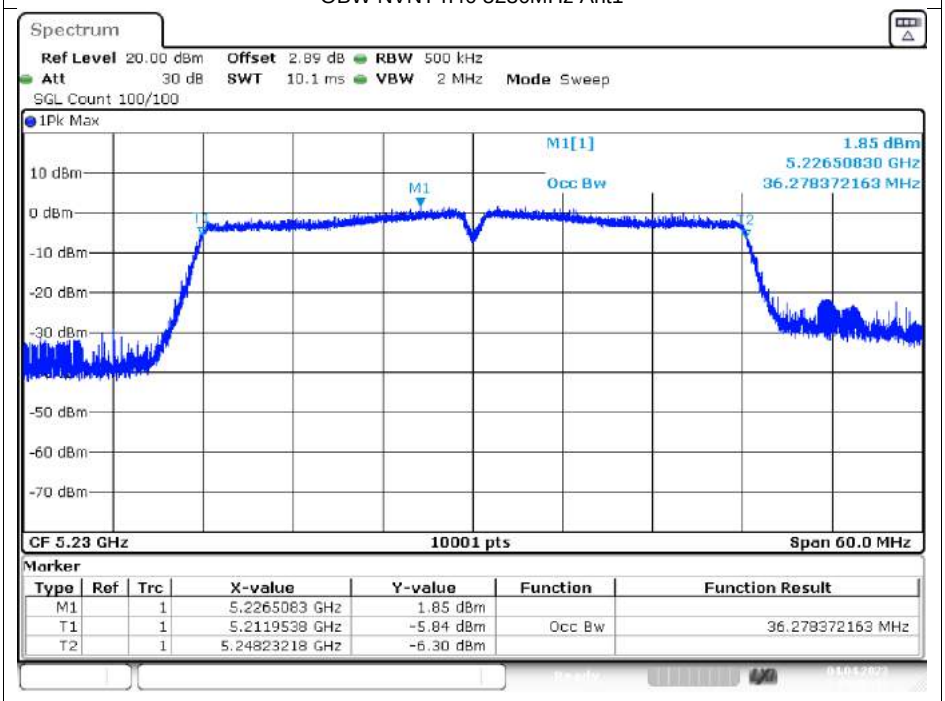

Date: 4.APR.2023 09:28:26

OBW NVNT n40 5190MHz Ant1



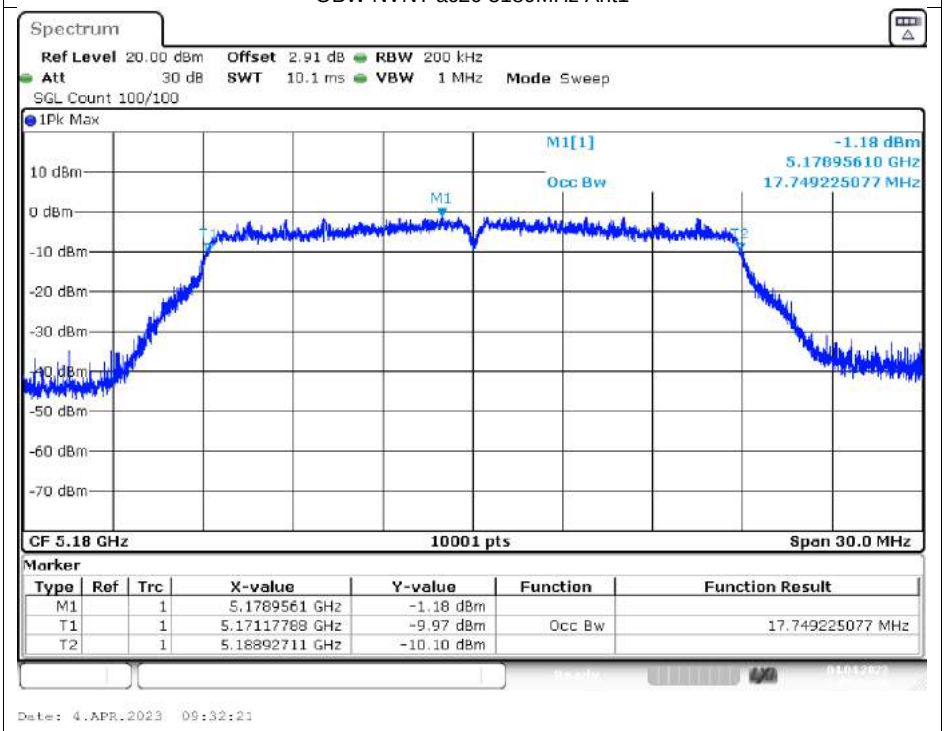

Date: 4.APR.2023 09:41:20

OBW NVNT n40 5230MHz Ant1



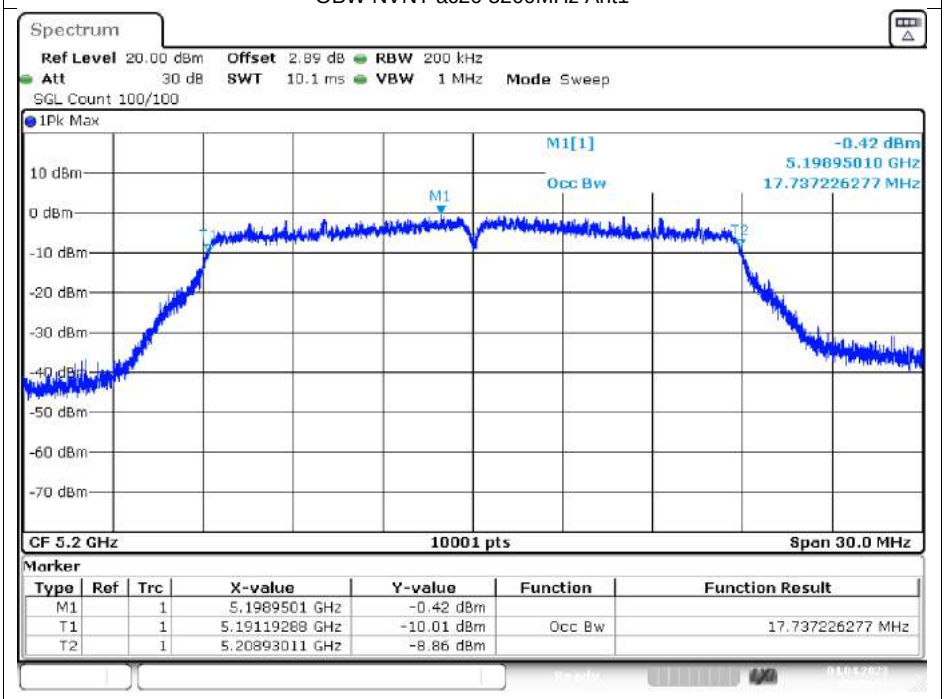

Date: 4.APR.2023 09:45:14

OBW NVNT ac20 5180MHz Ant1



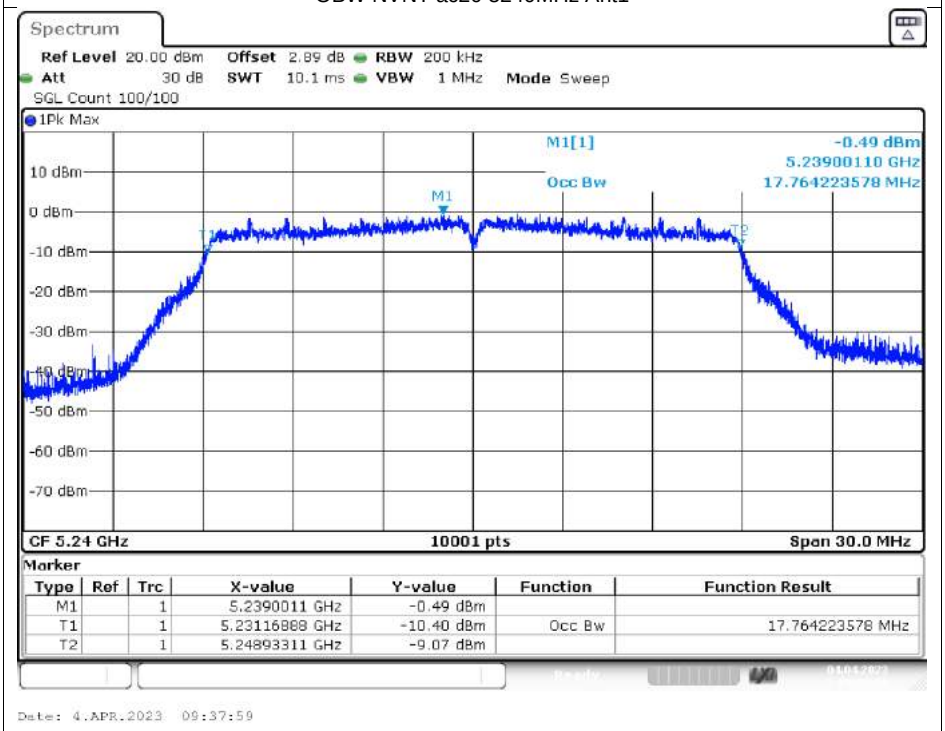

Date: 4.APR.2023 09:32:21

OBW NVNT ac20 5200MHz Ant1

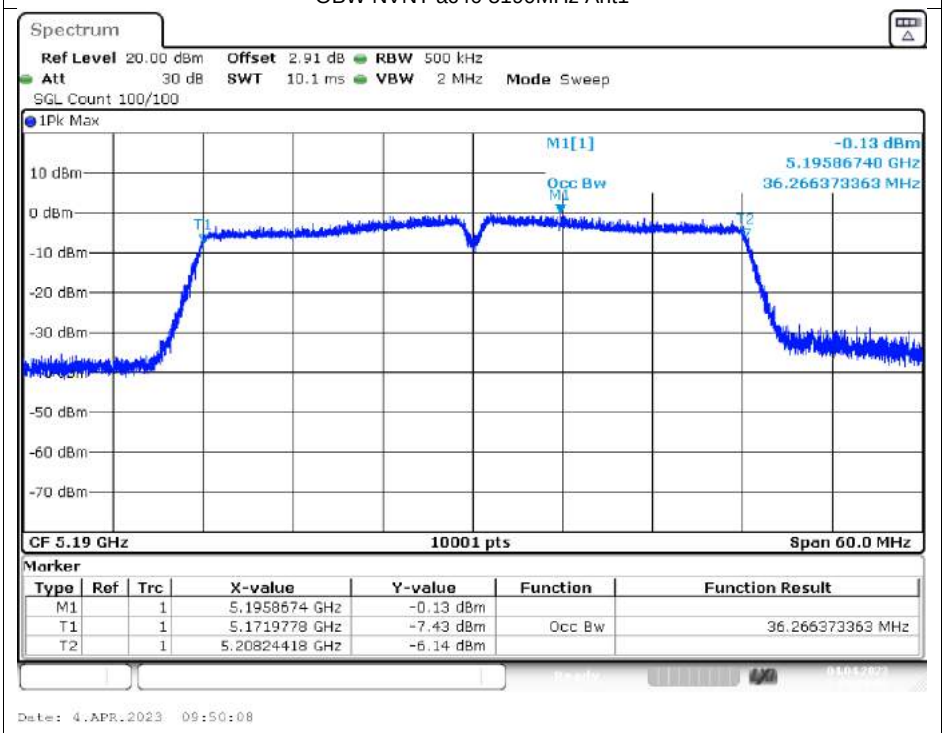



Date: 4.APR.2023 09:35:17

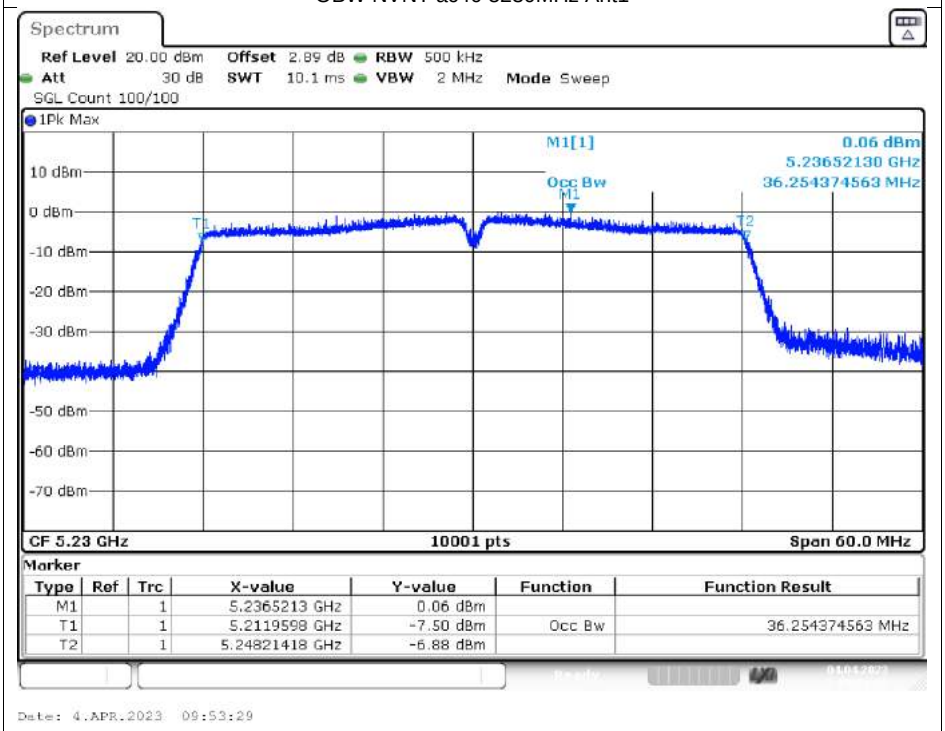
OBW NVNT ac20 5240MHz Ant1




OBW NVNT ac40 5190MHz Ant1

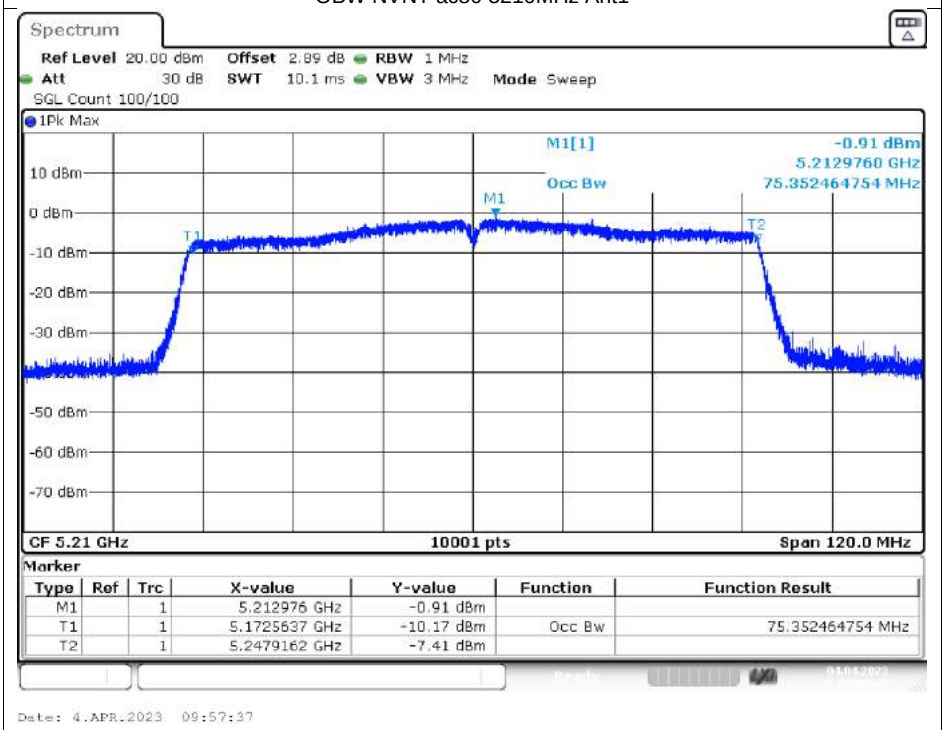


OBW NVNT ac40 5230MHz Ant1




Date: 4.APR.2023 09:53:29

OBW NVNT ac80 5210MHz Ant1




Date: 4.APR.2023 09:57:37

# Maximum Conducted Output Power

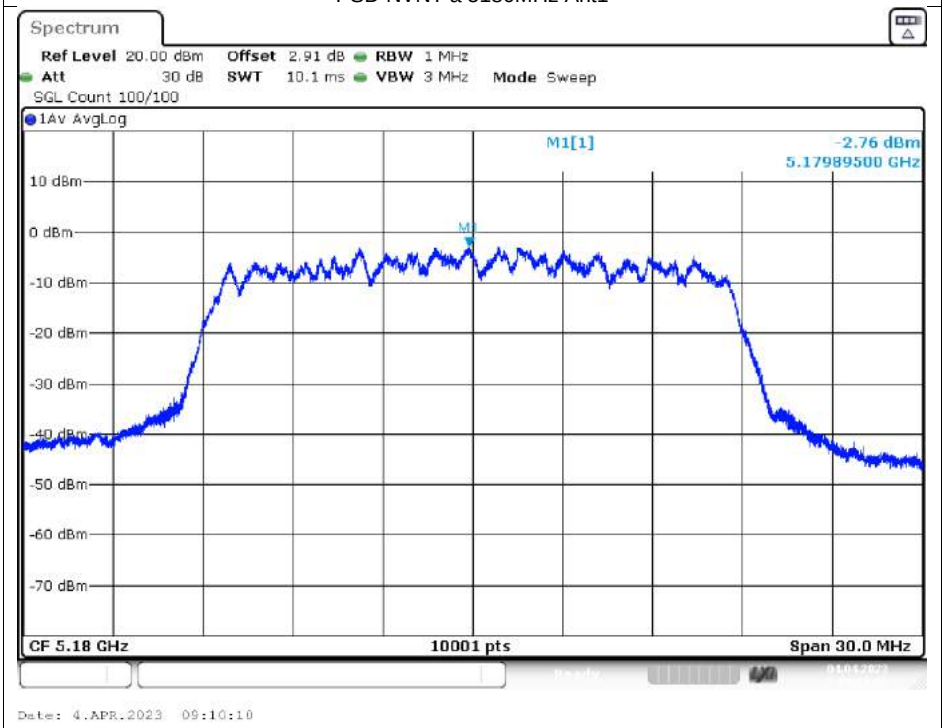
| Condition | Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | 10.6 | 0.29 | 10.89 | 24 | Pass |
| NVNT | a | 5200 | Ant1 | 10.24 | 0.29 | 10.53 | 24 | Pass |
| NVNT | a | 5240 | Ant1 | 10.16 | 0.29 | 10.45 | 24 | Pass |
| NVNT | n20 | 5180 | Ant1 | 10.11 | 0.31 | 10.42 | 24 | Pass |
| NVNT | n20 | 5200 | Ant1 | 9.71 | 0.31 | 10.02 | 24 | Pass |
| NVNT | n20 | 5240 | Ant1 | 9.69 | 0.31 | 10 | 24 | Pass |
| NVNT | n40 | 5190 | Ant1 | 10.47 | 0 | 10.47 | 24 | Pass |
| NVNT | n40 | 5230 | Ant1 | 9.79 | 0.6 | 10.39 | 24 | Pass |
| NVNT | ac20 | 5180 | Ant1 | 9.02 | 0.31 | 9.33 | 24 | Pass |
| NVNT | ac20 | 5200 | Ant1 | 8.84 | 0.31 | 9.15 | 24 | Pass |
| NVNT | ac20 | 5240 | Ant1 | 8.83 | 0.31 | 9.14 | 24 | Pass |
| NVNT | ac40 | 5190 | Ant1 | 8.24 | 0.59 | 8.83 | 24 | Pass |
| NVNT | ac40 | 5230 | Ant1 | 8.18 | 0.59 | 8.77 | 24 | Pass |
| NVNT | ac80 | 5210 | Ant1 | 5.53 | 1.11 | 6.64 | 24 | Pass |

# Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Conducted PSD (dBm) | Duty Factor (dB) | Total PSD (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|---|---|---|
| NVNT | a | 5180 | Ant1 | -2.76 | 0.29 | -2.47 | 11 | Pass |
| NVNT | a | 5200 | Ant1 | -1.65 | 0.29 | -1.36 | 11 | Pass |
| NVNT | a | 5240 | Ant1 | -1.96 | 0.29 | -1.67 | 11 | Pass |
| NVNT | n20 | 5180 | Ant1 | -3.16 | 0.31 | -2.85 | 11 | Pass |
| NVNT | n20 | 5200 | Ant1 | -2.7 | 0.31 | -2.39 | 11 | Pass |
| NVNT | n20 | 5240 | Ant1 | -2.91 | 0.31 | -2.6 | 11 | Pass |
| NVNT | n40 | 5190 | Ant1 | -7.51 | 0 | -7.51 | 11 | Pass |
| NVNT | n40 | 5230 | Ant1 | -8.44 | 0.6 | -7.84 | 11 | Pass |
| NVNT | ac20 | 5180 | Ant1 | -3.85 | 0.31 | -3.54 | 11 | Pass |
| NVNT | ac20 | 5200 | Ant1 | -3.3 | 0.31 | -2.99 | 11 | Pass |
| NVNT | ac20 | 5240 | Ant1 | -2.84 | 0.31 | -2.53 | 11 | Pass |
| NVNT | ac40 | 5190 | Ant1 | -9.11 | 0.59 | -8.52 | 11 | Pass |
| NVNT | ac40 | 5230 | Ant1 | -8.84 | 0.59 | -8.25 | 11 | Pass |
| NVNT | ac80 | 5210 | Ant1 | -18.49 | 1.11 | -17.38 | 11 | Pass |

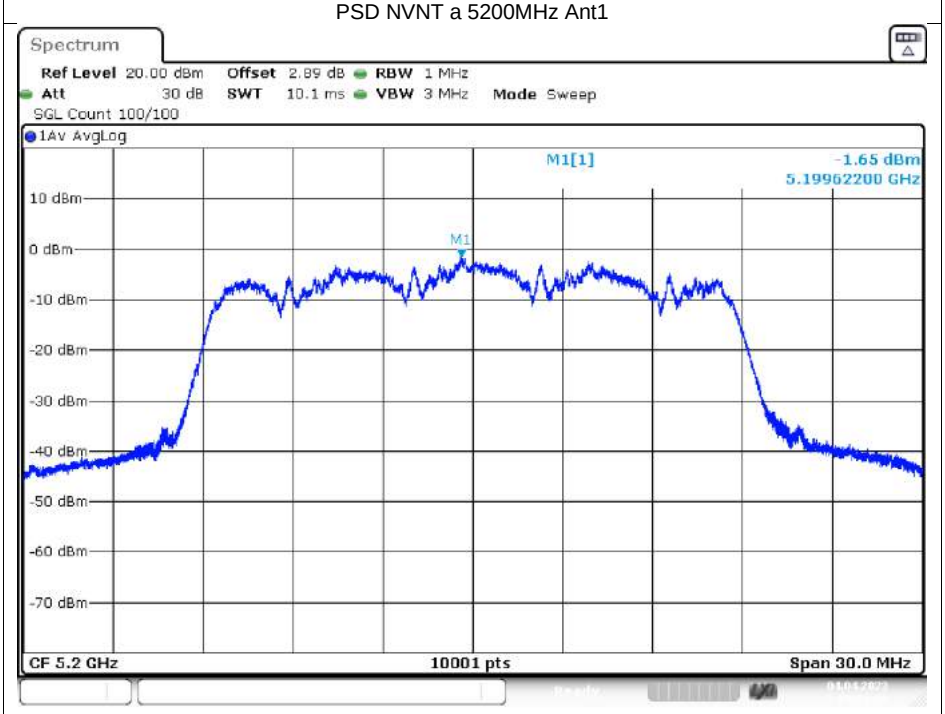
Test Graphs

PSD NVNT a 5180MHz Ant1



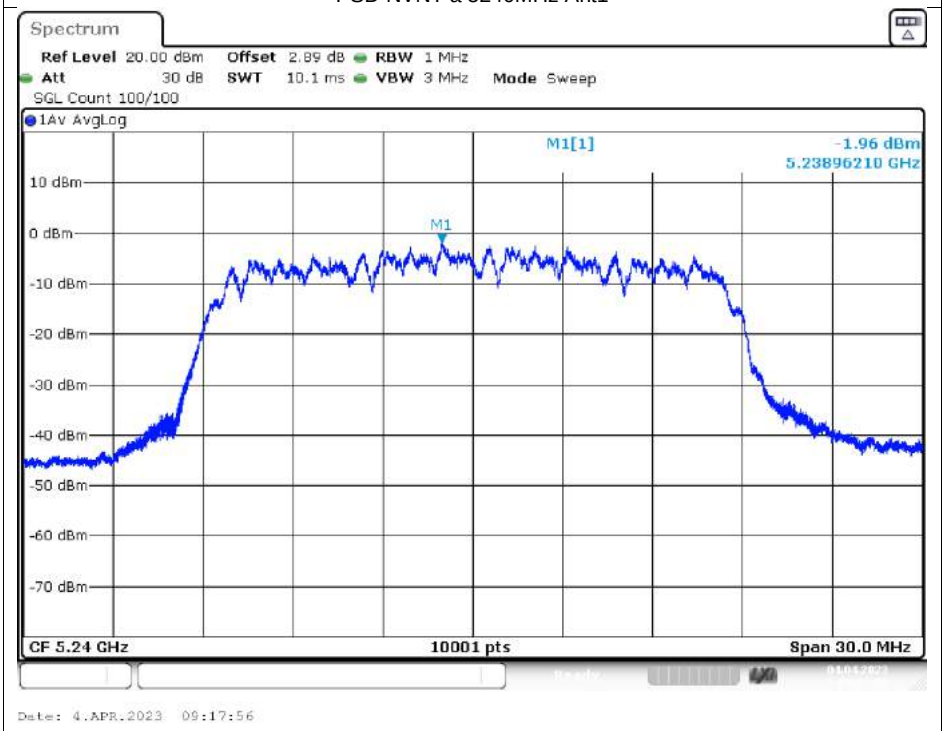

Date: 4.APR.2023 09:10:10

PSD NVNT a 5200MHz Ant1

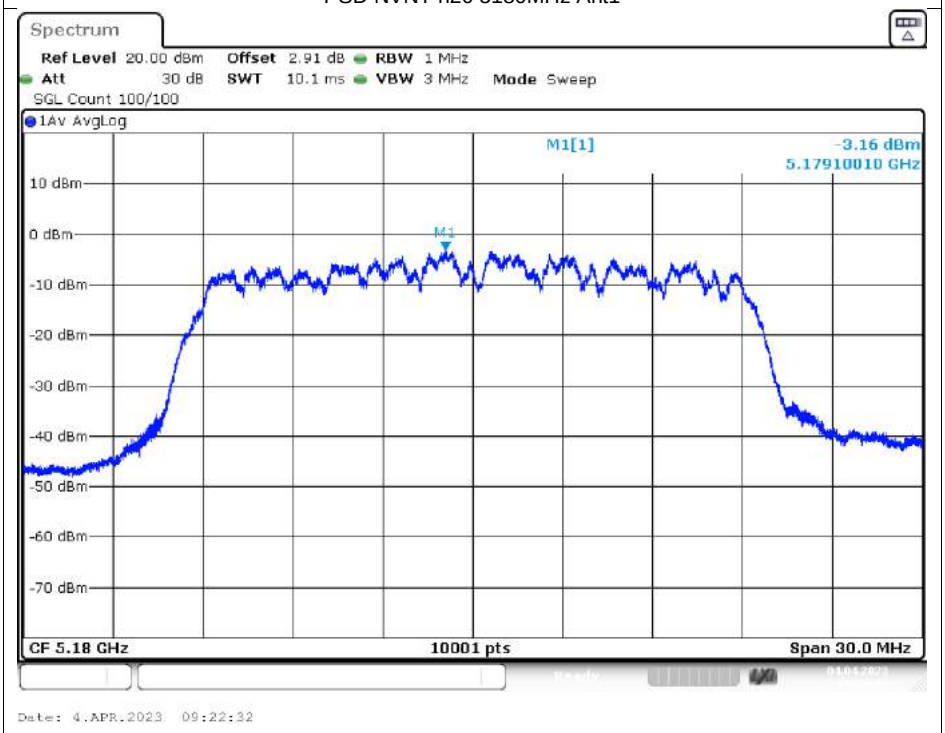



Date: 4.APR.2023 09:14:36

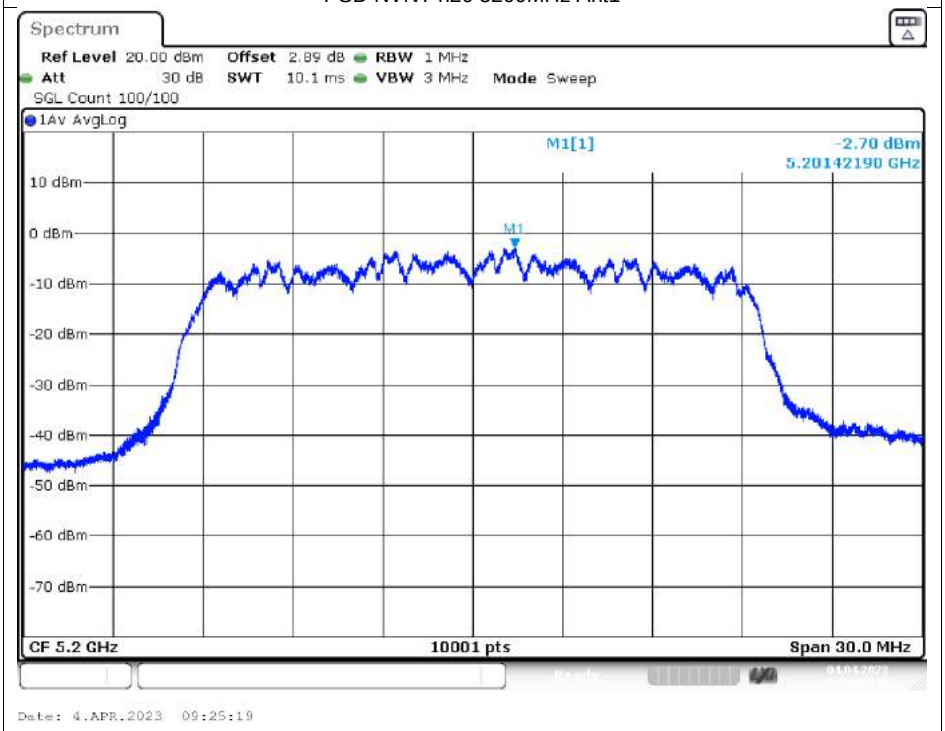
PSD NVNT a 5240MHz Ant1




PSD NVNT n20 5180MHz Ant1

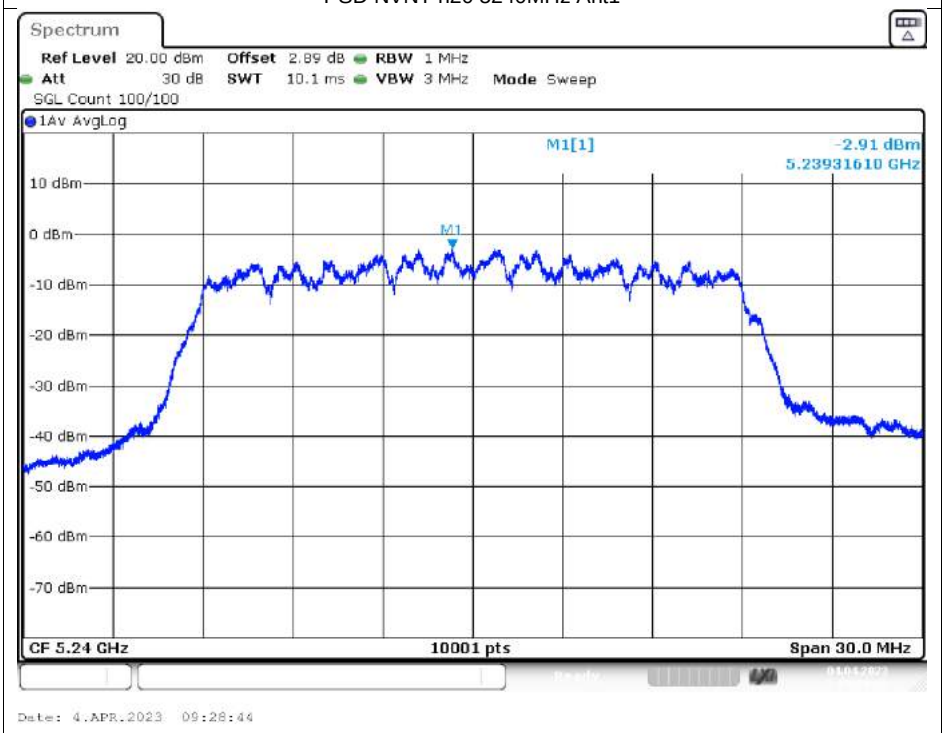


PSD NVNT n20 5200MHz Ant1



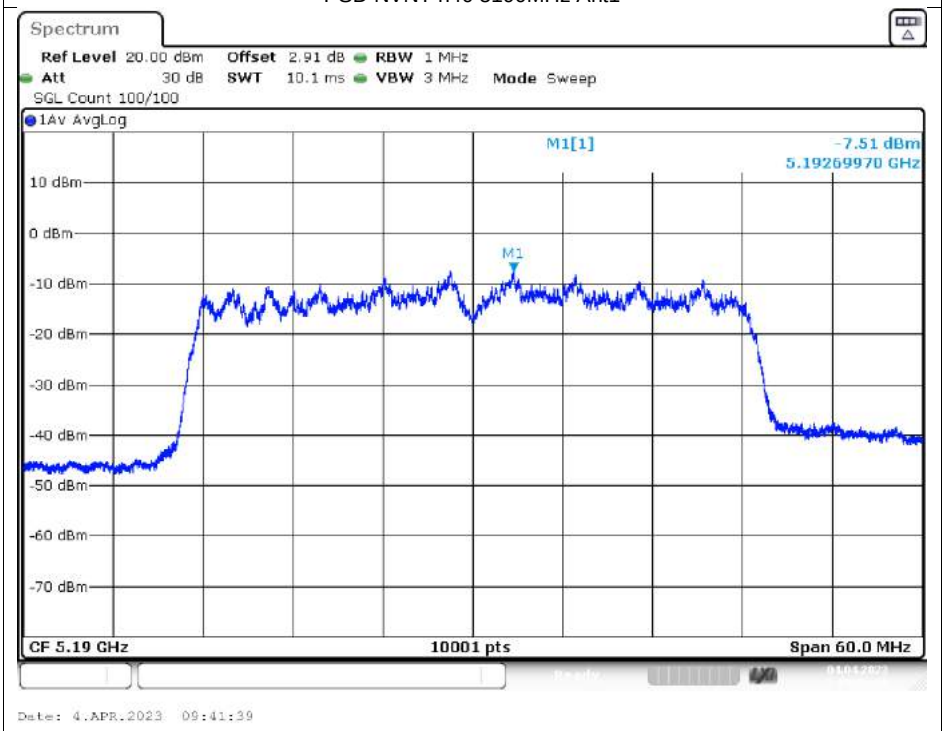

Date: 4.APR.2023 09:25:19

PSD NVNT n20 5240MHz Ant1

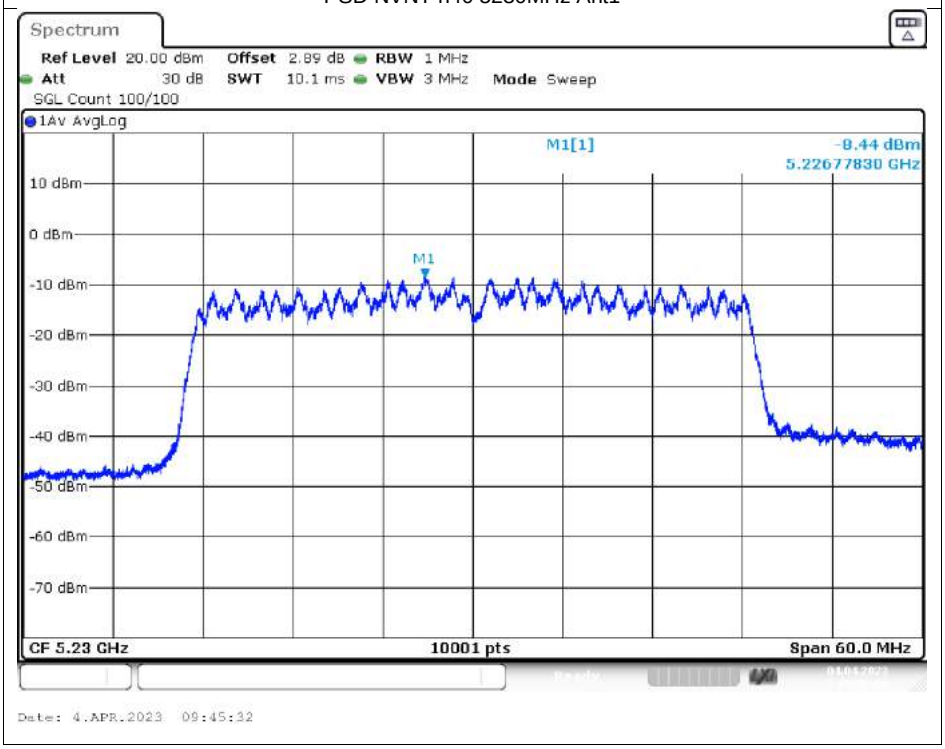



Date: 4.APR.2023 09:28:44

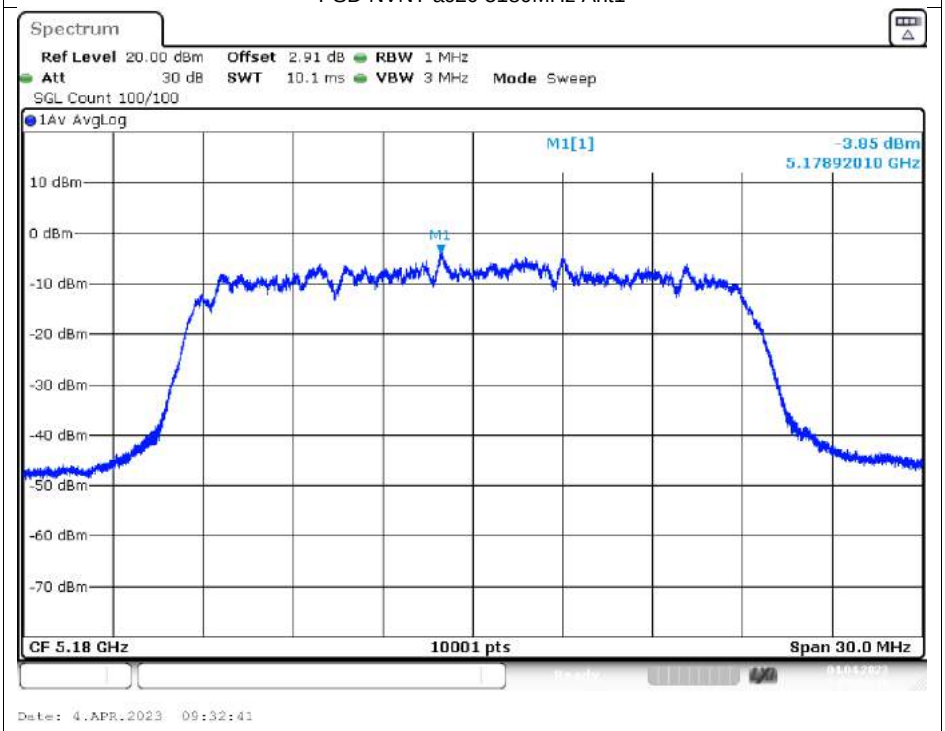
PSD NVNT n40 5190MHz Ant1



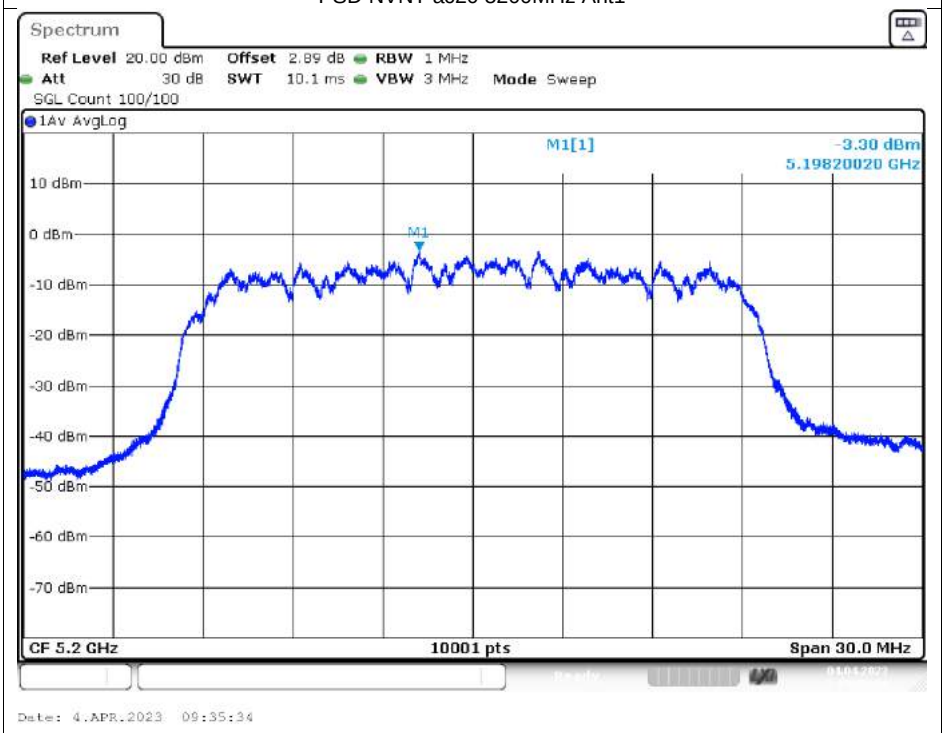

PSD NVNT n40 5230MHz Ant1



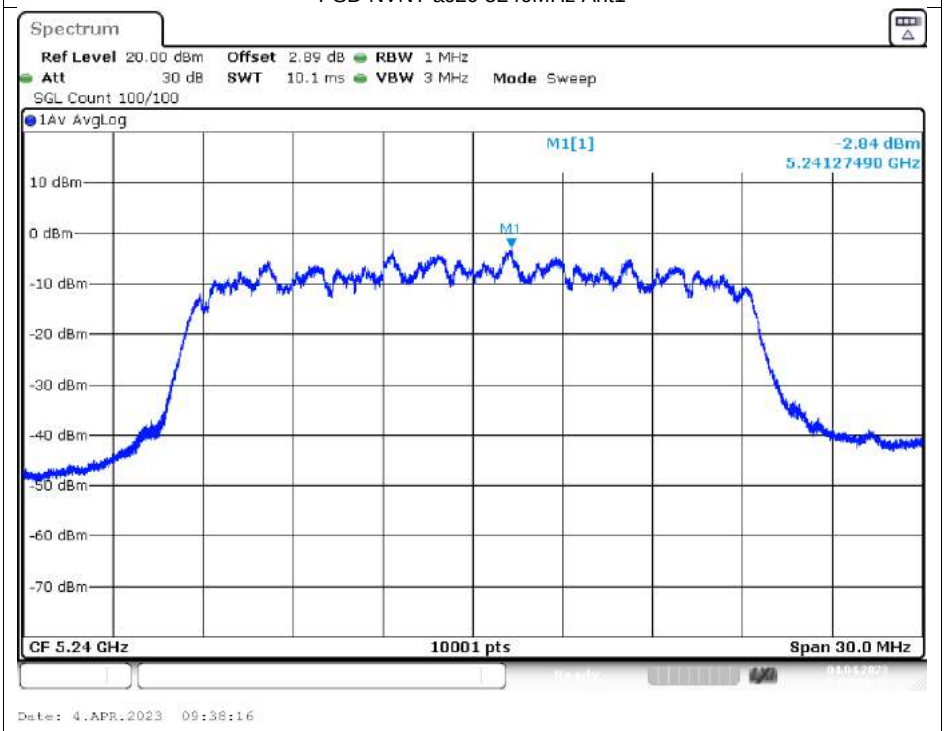
PSD NVNT ac20 5180MHz Ant1



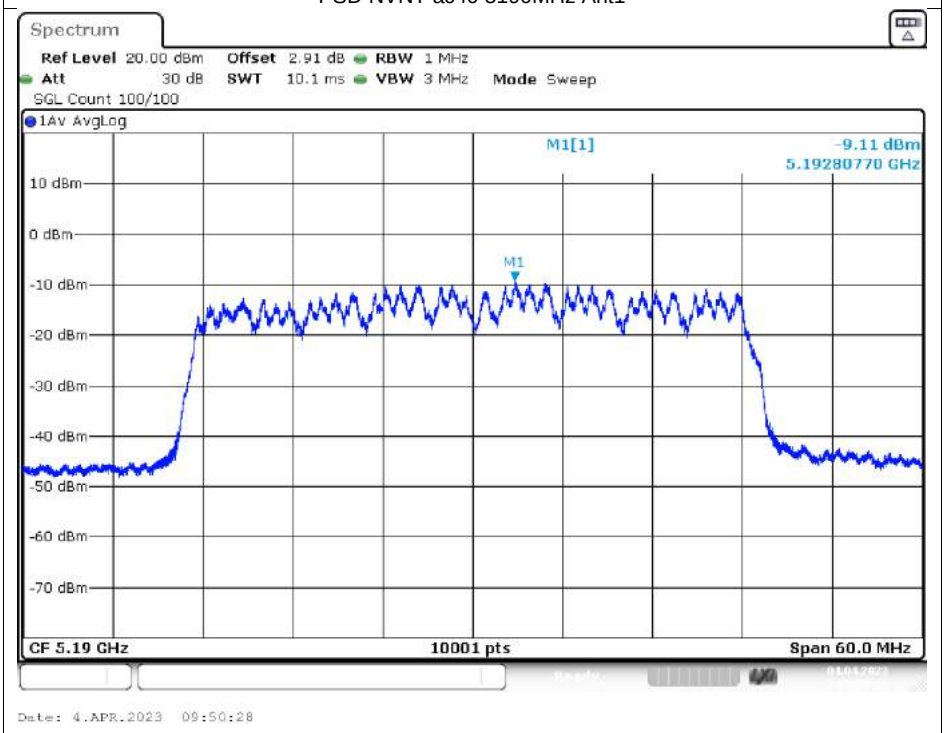

PSD NVNT ac20 5200MHz Ant1



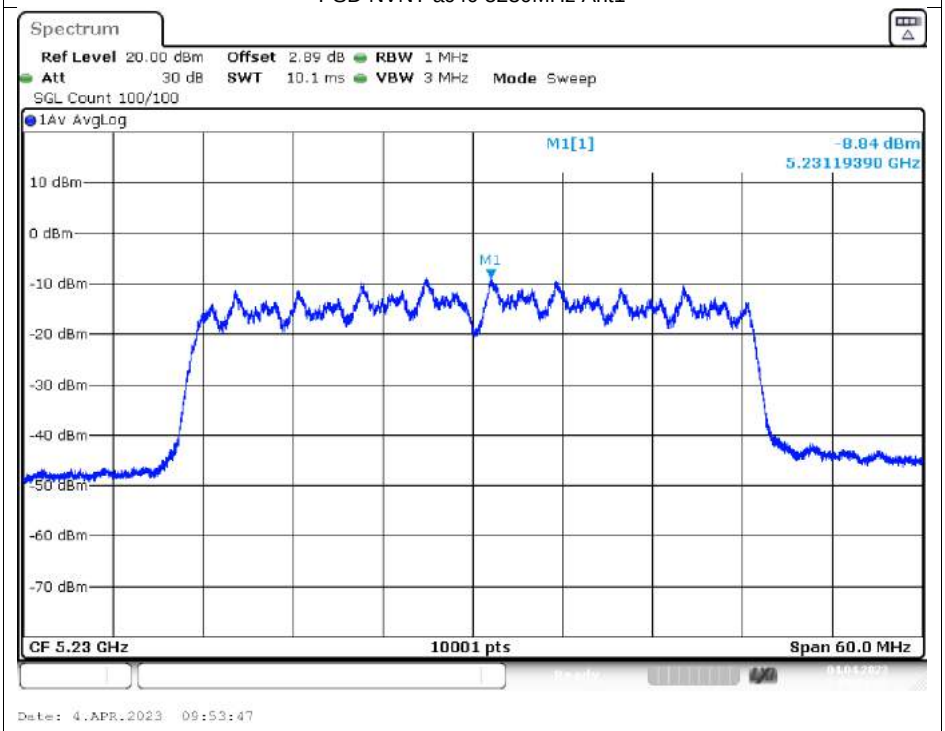
PSD NVNT ac20 5240MHz Ant1



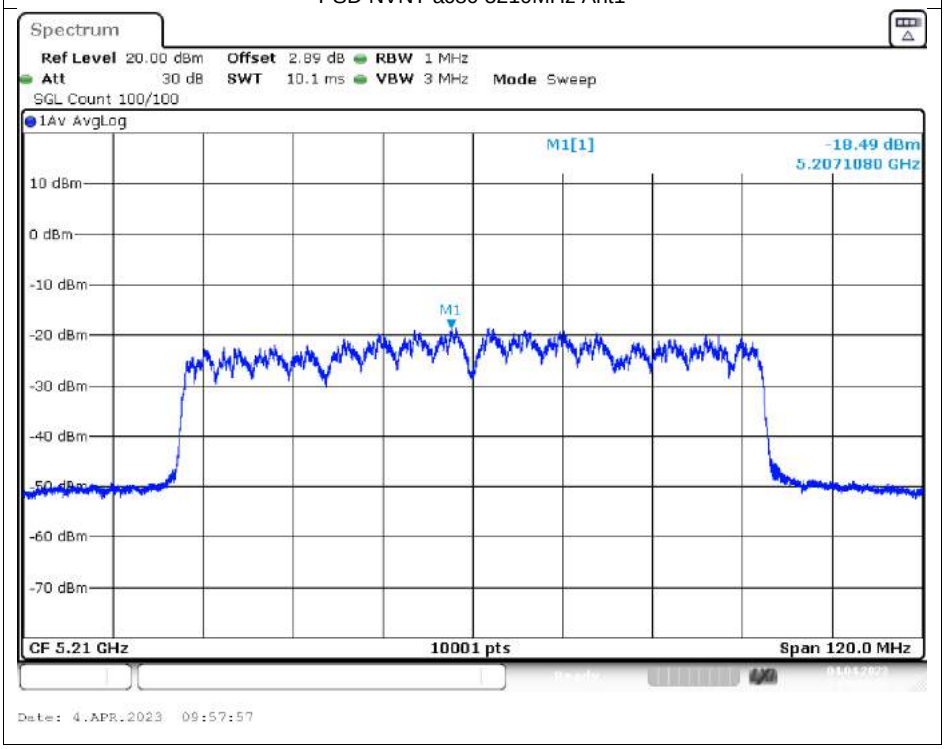

PSD NVNT ac40 5190MHz Ant1



PSD NVNT ac40 5230MHz Ant1




PSD NVNT ac80 5210MHz Ant1



# Frequency Stability

| Condition | Mode | Time (mins) | Frequency (MHz) | Antenna | Measured Frequency (MHz) | Frequency Error (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 25C 11.05V | a | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C 13V | a | 0 | 5180 | Ant1 | 5180 | 0 | 0 | 25 | Pass |
| 25C14.95V | a | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| -10C 13V | a | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 0C 13V | a | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 10C 13V | a | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 30C 13V | a | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 40C 13V | a | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 50C 13V | a | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C 11.05V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 25C 13V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 25C14.95V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| -10C 13V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 0C 13V | a | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 10C 13V | a | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 30C 13V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 40C 13V | a | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 50C 13V | a | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 25C 13V | a | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25C14.95V | a | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 20C14.95V | a | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| -10C 13V | a | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 0C 13V | a | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 10C 13V | a | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 30C 13V | a | 0 | 5240 | Ant1 | 5240 | 0 | 0 | 25 | Pass |
| 40C 13V | a | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 25C 13V | a | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25C 11.05V | n20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C 13V | n20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C14.95V | n20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| -10C 13V | n20 | 0 | 5180 | Ant1 | 5180 | 0 | 0 | 25 | Pass |
| 0C 13V | n20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 10C 13V | n20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 30C 13V | n20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 40C 13V | n20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 50C 13V | n20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C 11.05V | n20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25C 13V | n20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25C14.95V | n20 | 0 | 5200 | Ant1 | 5200.06 | 60000 | 11.54 | 25 | Pass |
| -10C 13V | n20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 0C 13V | n20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 10C 13V | n20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 30C 13V | n20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 40C 13V | n20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 50C 13V | n20 | 0 | 5200 | Ant1 | 5200 | 0 | 0 | 25 | Pass |
| 25C 11.05V | n20 | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 25C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25C14.95V | n20 | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| -10C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 0C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 10C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 30C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 40C 13V | n20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 50C 13V | n20 | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 25C 11.05V | n40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25C 13V | n40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25C14.95V | n40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| -10C 13V | n40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 0C 13V | n40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| 10C 13V | n40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 30C 13V | n40 | 0 | 5190 | Ant1 | 5190 | 0 | 0 | 25 | Pass |
| 40C 13V | n40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| 50C 13V | n40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| 25C 11.05V | n40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 25C 13V | n40 | 0 | 5230 | Ant1 | 5230.08 | 80000 | 15.3 | 25 | Pass |
| 25C14.95V | n40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| -10C 13V | n40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 0C 13V | n40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10C 13V | n40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 30C 13V | n40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 40C 13V | n40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 50C 13V | n40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 25C 11.05V | ac20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 25C 13V | ac20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 25C14.95V | ac20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| -10C 13V | ac20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 0C 13V | ac20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 10C 13V | ac20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 30C 13V | ac20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 40C 13V | ac20 | 0 | 5180 | Ant1 | 5180.04 | 40000 | 7.72 | 25 | Pass |
| 50C 13V | ac20 | 0 | 5180 | Ant1 | 5180.02 | 20000 | 3.86 | 25 | Pass |
| 25C 11.05V | ac20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25C 13V | ac20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 25C14.95V | ac20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| -10C 13V | ac20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 0C 13V | ac20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 10C 13V | ac20 | 0 | 5200 | Ant1 | 5200.02 | 20000 | 3.85 | 25 | Pass |
| 30C 13V | ac20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 40C 13V | ac20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 50C 13V | ac20 | 0 | 5200 | Ant1 | 5200.04 | 40000 | 7.69 | 25 | Pass |
| 25C 11.05V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25C 13V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 25C14.95V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| -10C 13V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 0C 13V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 10C 13V | ac20 | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 30C 13V | ac20 | 0 | 5240 | Ant1 | 5240.04 | 40000 | 7.63 | 25 | Pass |
| 40C 13V | ac20 | 0 | 5240 | Ant1 | 5240.02 | 20000 | 3.82 | 25 | Pass |
| 50C 13V | ac20 | 0 | 5240 | Ant1 | 5240.06 | 60000 | 11.45 | 25 | Pass |
| 25C 11.05V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25C 13V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25C14.95V | ac40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| -10C 13V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 0C 13V | ac40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| 10C 13V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 30C 13V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 40C 13V | ac40 | 0 | 5190 | Ant1 | 5190.08 | 80000 | 15.41 | 25 | Pass |
| 50C 13V | ac40 | 0 | 5190 | Ant1 | 5190.04 | 40000 | 7.71 | 25 | Pass |
| 25C 11.05V | ac40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 25C 13V | ac40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 25C14.95V | ac40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| -10C 13V | ac40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 0C 13V | ac40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 10C 13V | ac40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 30C 13V | ac40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 40C 13V | ac40 | 0 | 5230 | Ant1 | 5230.04 | 40000 | 7.65 | 25 | Pass |
| 50C 13V | ac40 | 0 | 5230 | Ant1 | 5230 | 0 | 0 | 25 | Pass |
| 25C 11.05V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 25C 13V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 25C14.95V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| -10C 13V | ac80 | 0 | 5210 | Ant1 | 5210.16 | 160000 | 16.5 | 25 | Pass |
| 0C 13V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 10C 13V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 30C 13V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 40C 13V | ac80 | 0 | 5210 | Ant1 | 5210 | 0 | 0 | 25 | Pass |
| 50C 13V | ac80 | 0 | 5210 | Ant1 | 5210.08 | 80000 | 8.62 | 25 | Pass |

# APPENDIX: PHOTOGRAPHS OF TEST CONFIGURATION

Please refer to the test report: E04A23030703E00201.

# APPENDIX: PHOTOGRAPHS OF THE EUT

Please refer to the test report: E04A23030703E00201.

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