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## Test Report

### Certification

<b>FCC ID</b>	2AJACT4TS
<b>Equipment Under Test</b>	040-00460a
<b>Test Report Serial No</b>	V055388_01
<b>Dates of Test</b>	Radiated: July 13 – 14, & 20 – 23, August 10 – 13, August 17 – 19, 2020 Conducted at Antenna Port: November 13 – 17, 2020
<b>Report Issue Date</b>	December 7, 2020

<b>Test Specifications:</b>	<b>Applicant:</b>
FCC Part 15, Subpart E	Wirepath Home Syses, LLC. (dba SnapAv, dba Control4) 1800 Continental Blvd, Suite 200 Charlotte, NC 28273 U.S.A.



## Certification of Engineering Report

This report has been prepared by VPI Laboratories, Inc. to document compliance of the device described below with the requirements of Federal Communications Commission (FCC) Part 15, Subpart E. This report may be reproduced in full. Partial reproduction of this report may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

<b>Applicant</b>	Wirepath Home Systems, LLC. (dba SnapAv, dba Control4)
<b>Manufacturer</b>	Wirepath Home Systems, LLC. (dba SnapAv, dba Control4)
<b>Brand Name</b>	Control4
<b>Model Number</b>	040-00460a
<b>FCC ID</b>	2AJACT4TS

On this 7<sup>th</sup> day of December 2020, I, individually and for VPI Laboratories, Inc., certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

Although NVLAP has accredited the VPI Laboratories, Inc. EMC testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

VPI Laboratories, Inc.



Radiated Emissions Testing by: Norman P. Hansen



Direct Connect Measurements by: Benjamin N. Antczak



Reviewed by: Jason Stewart

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<b>Revision History</b>		
<b>Revision</b>	<b>Description</b>	<b>Date</b>
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## 1 Client Information

### 1.1 Applicant

<b>Company Name</b>	Wirepath Home Systems, LLC. (dba SnapAV, dba Control4) 1800 Continental Blvd, Suite 200 Charlotte, NC 28273 U.S.A.
<b>Contact Name</b>	Roger Midgley
<b>Title</b>	Principle Compliance Engineer

### 1.2 Manufacturer

<b>Company Name</b>	Wirepath Home Systems, LLC. (dba SnapAV, dba Control4) 1800 Continental Blvd, Suite 200 Charlotte, NC 28273 U.S.A.
<b>Contact Name</b>	Roger Midgley
<b>Title</b>	Principle Compliance Engineer

## 2 Equipment Under Test (EUT)

### 2.1 Identification of EUT

<b>Brand Name</b>	Control4
<b>Model Number</b>	040-00460a
<b>Serial Number</b>	None
<b>Dimensions (cm)</b>	2.8 x 1.6 x 0.2

### 2.2 Description of EUT

The 040-00460a is a WiFi module that uses the 2.4 GHz ISM band and the UNII bands. The UNII-2 band transceiver operates on 16 channels and at the power setting as shown in the table below. The 040-00460a has 2 antennas installed, controlled by an RF switch, and only one antenna at a time is used for transmitting data. The 040-00460a receives power from the host device the module is installed in.

Channel	Frequency (MHz)	Maximum Power Setting
52	5260	20
56	5280	20
60	5300	18
64	5320	12
100	5500	12
104	5520	17
108	5540	20
112	5560	20
116	5580	20
120	5600	20
124	5620	20
128	5640	20
132	5660	20
136	5680	17
140	5700	11
144	5720	11

#### 2.2.1 Modes of Operation

EUT is intended to operate indoors as a client device. EUT is not fixed and therefore incapable of fixed point-to-point architecture.

#### 2.2.2 DFS Capabilities

EUT utilizes DFS but cannot operate in a master operational mode and cannot detect radar. Therefore, only the requirements for channel move time and non-occupancy are applicable.

## 2.3 EUT and Support Equipment

The EUT and support equipment used during the test are listed below.

Brand Name Model Number Serial Number	Description	Name of Interface Ports / Interface Cables
BN: Control4 MN: 040-00460a (Note 1) SN: None	WiFi Module	See Section 2.4
BN: Control4 MN: C4-T4IW10-XX SN: None	10" In-wall Touchscreen Display (Host System)	AC power/2 unshielded conductors Network/Cat 5e cable
BN: Control4 MN: C4-T4IW8-XX SN: None	8" In-wall Touchscreen Display (Host System)	AC power/2 unshielded conductors Network/Cat 5e cable
BN: Control4 MN: C4-T4T10-XX SN: None	10" Tabletop Touchscreen Display (Host System)	AC power/Direct connection to AC outlet
BN: Control4 MN: C4-T4IW8-XX SN: None	10" Tabletop Touchscreen Display (Host System)	AC power/Direct connection to AC outlet
BN: ASUS MN: WL-520G SN: A1IAAC051369	Network Router	Network/Cat 5e cable

Notes: (1) EUT

(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

## 2.4 Interface Ports on EUT

Name of Ports	No. of Ports Fitted to EUT	Cable Description/Length
Host system interface	1	Direct connection to the host system

## 2.5 Modification Incorporated/Special Accessories on EUT

There were no modifications or special accessories required to comply with the specification.

## 2.6 Deviation from Test Standard

There were no deviations from the test specification.

## 2.7 Scope of This Report

This report covers the circuitry of the devices subject to FCC Part 15, Subpart E. with operation in the 5250 MHz to 5725 MHz frequency band. The circuitry of the device subject to FCC 15 Subpart B, FCC 15 Subpart C, and other requirements of FCC Part 15 Subpart E and was found to be compliant but are covered in separate reports.



### 3 Test Specification, Methods and Procedures

#### 3.1 Test Specification

<b>Title</b>	FCC PART 15, Subpart E (47 CFR 15) 15.203, 15.207, 15.209, and 15.407
<b>Purpose of Test</b>	The tests were performed to demonstrate initial compliance
<b>UNII References</b>	KDB 789033 Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

#### 3.2 Methods & Procedures

##### 3.2.1 §15.203 Antenna 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 a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered in compliance 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 jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 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 Section 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.

##### 3.2.2 §15.207 Conducted Limits

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 to 0.50*	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

\*Decreases with the logarithm of the frequency.

**Table 1: Limits for conducted emissions at mains ports of Class B ITE.**

##### 3.2.3 §15.407 Operation within the UNII Bands

Emission bandwidth is determined by measuring the width of the signal between points that are 26 dB down relative to the maximum level of the carrier center frequency.

Maximum conducted output power is the total transmit power delivered to all antennas, averaged across all symbols when operating at maximum power control level. If multiple modulation methods are possible, then the highest total transmit power in any mode is considered the maximum conducted output power.

Power spectral density is the total energy output per unit bandwidth from a transmitter operating at maximum power level divided by the total duration of transmission.

Measurements for UNII operation are taken over intervals of continuous transmissions. Measurements are taken using a minimum of resolution bandwidth of 1 MHz. If lower resolution bandwidths are used, measurement energies must be integrated to show the total power over 1 MHz. Emission limits are taken at the highest and lowest channels available to the manufacturer.

Although not covered in this test report, frequency stability must be ensured by manufacturer under all conditions of normal operation.

### **3.2.3.1 Power Limits in the Band 5150 – 5250 MHz (“UNII-1”)**

Access points operating either indoors or outdoors, maximum conducted output power over the frequency band 5.15 – 5.25 GHz (“UNII-1”) shall not exceed 1 W (30 dBm) as long as the maximum antenna gain does not exceed 6 dBi. In addition, maximum power spectral density shall not exceed 17 dBm in any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi.

Outdoor access points additionally may not exceed 125 mW (21 dBm) maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon.

Only fixed point-to-point access points may employ antennas with directional gain of up to 23 dBi without reducing conducted output power. However, for every 1 dB gain over 23 dBi, maximum conducted output power and maximum power spectral density must be reduced by 1 dB. The 23 dBi exception is only applicable to fixed, point-to-point access points, and is not acceptable for point to multi-point, omnidirectional, or multi-point to point architectures.

Client devices shall not exceed conducted output power of 250 mW (24 dBm) as long as the maximum antenna gain does not exceed 6 dBi. In addition, maximum power spectral density shall not exceed 11 dBm for any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6dBi.

Emissions outside the band 5.15 – 5.35 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz.

### **3.2.3.2 Power Limits in the Bands 5250 – 5350 MHz and 5470 – 5725 MHz (“UNII-2”)**

Maximum conducted output power over the frequency bands 5.25-5.35 GHz and 5.47-5.725 GHz (“UNII-2A” and “UNII-2C,” collectively, “UNII-2”) shall not exceed the lesser of: 250 mW (24 dBm); or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz (MHz). Maximum power spectral density shall additionally not exceed 11 dBm in any 1 MHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi.

For transmitters operating in the UNII-2A band, emissions outside the band 5.15 – 5.35 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz. For those transmitters operating in the UNII-2C band, emissions outside the UNII-2C band shall not exceed an e.i.r.p. of -27 dBm/MHz.

Transmitters operating in the UNII-2 bands for which e.i.r.p. exceeds 500 mW (27 dBm) must employ a transmit power control (TPC) mechanism, giving the device the capability of operating at least 6 dB below the mean EIRP of 30 dBm.

### 3.2.3.3 Power Limits in the Band 5725 – 5850 MHz (“UNII-3”)

Maximum conducted output power over the frequency bands 5.725 – 5.85 GHz (“UNII-3”) shall not exceed 1 W (30 dBm). Maximum power spectral density shall not exceed 30 dBm in any 500 kHz band. If maximum antenna gain exceeds 6 dBi, then the maximum conducted output power and maximum power spectral density shall be reduced by the amount (in dB) that the directional gain of the antenna exceeds 6 dBi. Fixed point-to-point operations may utilize antennas exceeding 6 dBi without reducing the transmitter conducted power; this exception is only applicable to fixed, point-to-point transmitters, and is not acceptable for point to multi-point, omni-directional, or multi-point to point architectures.

For transmitters operating in the UNII-3 band, emissions 75 MHz above or below the band-edge shall not exceed an e.i.r.p. of -27 dBm/MHz. For those emissions within 75 MHz and 25 MHz of the band-edge the limit increases linearly to 10 dBm/MHz. For those emissions within 25 MHz and 5 MHz of the band-edge the limit increases linearly to 15.6 dBm/MHz. For those emissions within 5 MHz of the band-edge the limit increases linearly to the band-edge to 27 dBm/MHz.

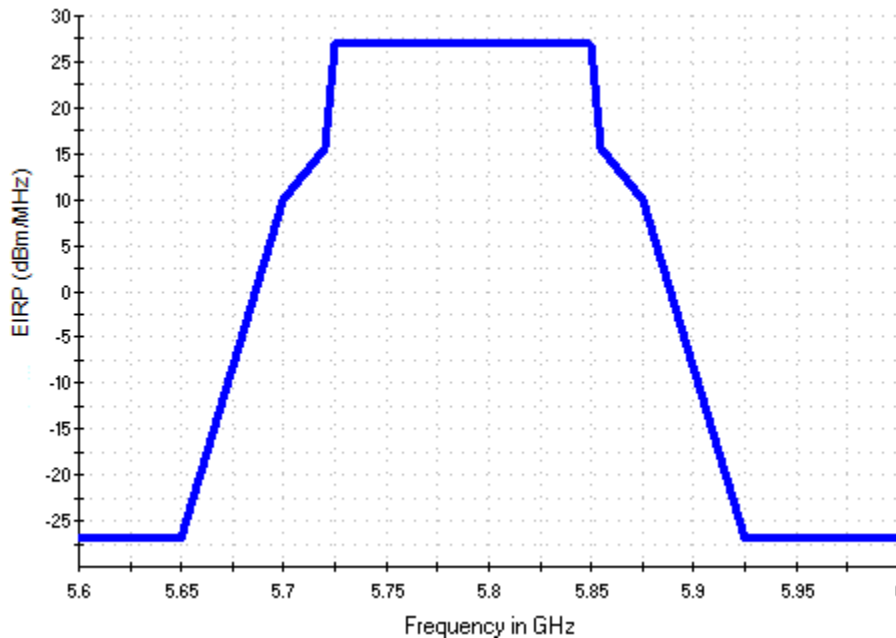


Figure 1. Emission limit for transmitters operating in the UNII-3 (5.725 – 5.850 GHz) band

Transmitters operating in the UNII-3 band shall also have a 6 dB bandwidth of at least 500 kHz.

### 3.2.3.4 Radar Detection Function of Dynamic Frequency Selection

UNII devices that operate with any part of their 26 dB emission bandwidth in the UNII-2 bands must employ a DFS radar detection mechanism to avoid co-channel operation with radar systems. Upon detection of radar signals, the channel must be flagged as containing a radar system and must not be utilized for at least 30 minutes (“Non-occupancy Period”).

All DFS devices must fulfil the Channel Move Time requirement, forcing all transmissions to cease operating on a channel within 10 seconds of detecting a radar signal. Transmissions may continue with normal traffic for a maximum of 200 ms after the detection of radar, but only control and management signals may exist after 200 ms to assist in the vacating of the occupied channel. Control and management signals are not allowed after 10 seconds.

Only DFS devices operating as a master device must fulfil the Channel Availability Check time requirement. Master devices must check if there are radar signals already operating on a channel before initiating transmission (or changing channels). If no radar signals are detected above the DFS detection threshold within 60 seconds, the channel may be utilized. Initial channel selection may be either randomly selected or manually selected.

The DFS detection threshold is -64 dBm for devices with a maximum e.i.r.p. between 200 mW and 1 W. Devices for which e.i.r.p. is less than 200 mW and for which maximum power spectral density is less than 10 dBm per 1 MHz band shall have a DFS threshold of -62 dBm.

Radar signals must be detected at 100 percent of the device's emission bandwidth. DFS detection threshold is the received power averaged over 1 $\mu$ s and referenced to a 0 dBi antenna.

Some standards such as IEEE 801.11.ax allow wideband transmissions that are “notched” or “punctured” upon radar detection (e.g., 160 MHz wideband transmissions wherein a 20 MHz portion of the bandwidth is not utilized). For such transmission schemes, the remaining emissions of the notched signal shall not bleed into the notch (i.e., 26 dB or 99% bandwidth is outside the notch). Channel closing and moving times must be met when notches are utilized.

### **3.2.4 UNII Band Channel Aggregation**

EUTs which utilize “straddle” channels (Channel 50 at 160 MHz BW, Channel 138 at 80 MHz BW, Channel 142 at 40 MHz BW, or Channel 144 at 20 MHz BW) are subject to the requirements of the bands they straddle. For example, Channel 42 + 138 (80 MHz + 80 MHz) are distributed over (and straddle) the UNII-1 and UNII-2 bands.

Straddle channel 50 is considered operating in both UNII-1 and UNII-2A; straddle channels 138, 142, and 144 are considered operating in both UNII-2C and UNII-3.

#### **3.2.4.1 Conducted Output Power in the Case of Channel Aggregation**

For such transmissions, conducted output power is calculated as the summed power of segments located within the band, where the band edge replaces the -26 dB point of the straddling signal. In the example shown in Figure 1, power requirements must be met for both UNII-2 and UNII-3. While it is acceptable to sum the power of the entire transmission in a band (e.g., top-line  $P_{U-NII-2C}$  and  $P_{U-NII-3}$ ), individual measurements over the 26 dB bandwidth of each carrier frequency (or to the band edge) may also be summed ( $P_A + P_B$  for UNII-2 band requirements and  $P_{U-NII-3}$  for UNII-3 band requirements).

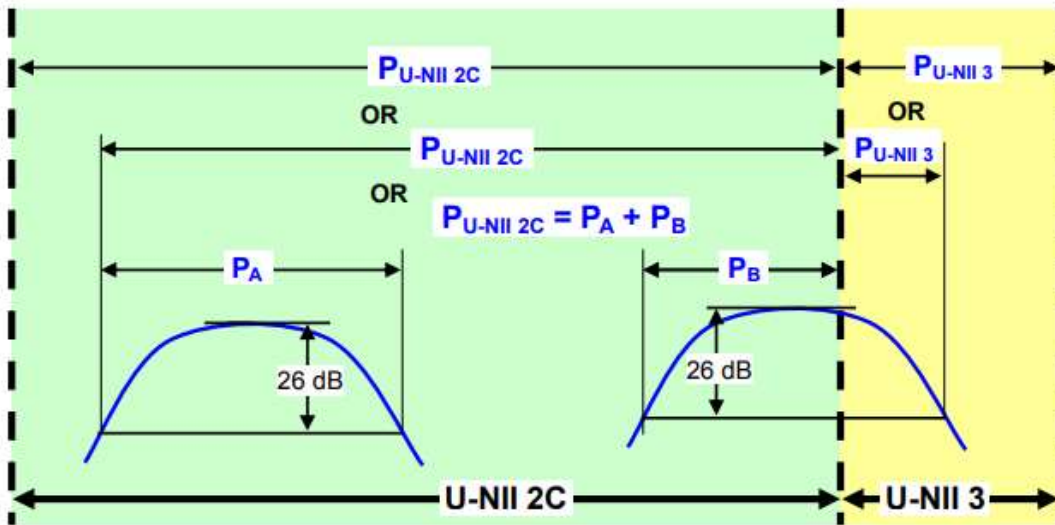


Figure 2. Conducted output power measurement examples (KDB 789033 D02 v02r01, p 21)

### 3.2.4.2 Emissions Bandwidths in the Case of Channel Aggregation

Emissions bandwidth is defined based upon overlap of the 26 dB bandwidths of each channel individually. For those transmissions where the 26 dB bandwidths overlap, the emission bandwidth (EWB) is the difference between the outer -26 dB points.

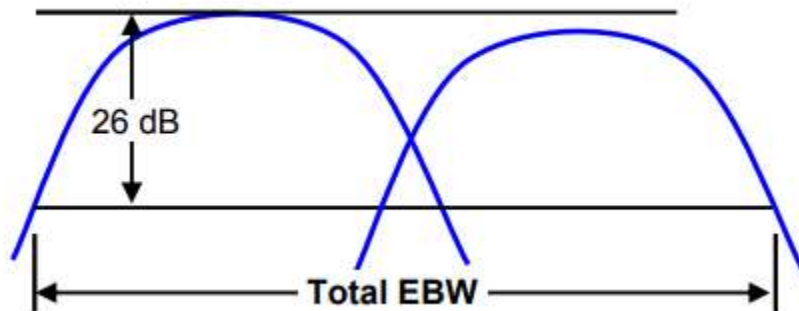


Figure 3. Overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

For those transmissions where the 26 dB bandwidths do not overlap, the emission bandwidth is the sum of the individual 26 dB bandwidths, and each segment is measured independently.

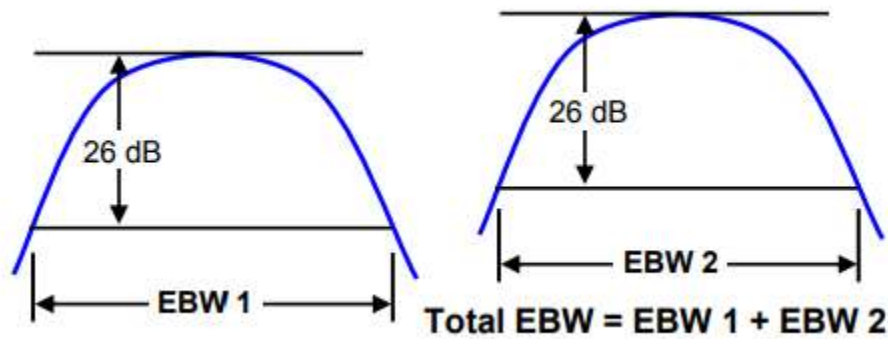


Figure 4. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 18)

Finally, for those transmissions which cross into other UNII bands, the band boundary serves as one edge for that band, while the other edge is measured from the peak of the contiguous segment.

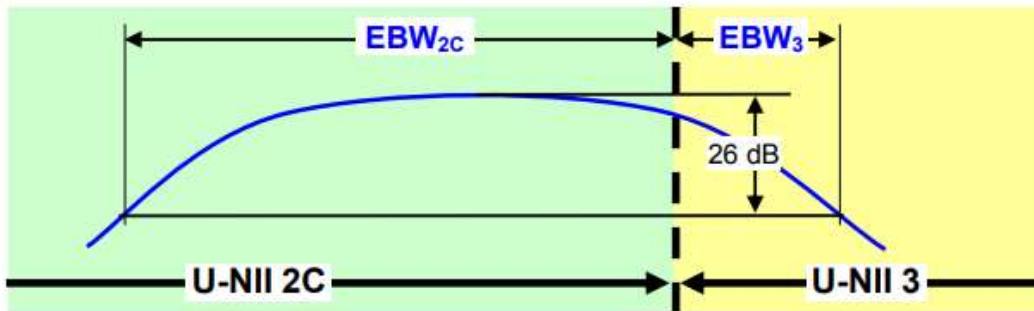


Figure 5. Non-overlapping emissions bandwidths (KDB 789033 D02 v02r01, p 19)

### 3.2.4.3 Additional Requirements for UNII Devices

UNII devices are subject to requirements imposed by the National Environmental Policy Act. Manufacturers are responsible for applying RF radiation exposure requirements specified in 47 CFR 1.1307(b), 2.1091, and 2.1093 as appropriate (47 CFR 15.407(f)). Such requirements include (but are not limited to) routine environmental evaluation for RF exposure prior to equipment authorization or use (47 CFR 1.1307(b)(2)(i)) and additional evaluation of RF radiation exposure for mobile and portable devices (47 CFR 2.1091 and 2.1093, respectively).

## 3.3 Test Procedure

VPI Laboratories, Inc. is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code: 100272-0, which is effective until September 30, 2021. VPI Laboratories, Inc. carries FCC Accreditation Designation Number US5263. VPI Laboratories main office is located at 313 W 12800 S, Suite 311, Draper, UT 84020. The testing was performed according to the procedures in ANSI C63.10-2013, KDB 789033, and 47 CFR Part 15. Radiated testing was performed at the VPI Laboratories, Inc. Wanship Upper Open Area Test Site, located at 29145 Old Lincoln Highway, Wanship, UT. This location is listed on NVLAP scope under the lines for C63.4 and C63.10. Conducted testing was performed at VPI Laboratories main office.

## 4 Operation of EUT During Testing

### 4.1 Operating Environment

Power Supply	3.3 VDC from host device
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### 4.2 Operating Modes

The transmitter was tested in 4 host units as listed in section 2.2. The in-wall host systems were tested as if mounted in a wall. The tabletop host systems were test while on the charging base and on 3 orthogonal axes when off the charging base. The transmitter was in a constant transmit mode at the upper, middle, and lower channels of each band. The voltage was varied as required by §15.31(e) with no change seen in the voltage supplied to the transmitter or in transmitter characteristics. The tabletop host systems when tested off the charging base had fully charged batteries.

### 4.3 EUT Exercise Software

Control4 firmware was used to exercise and control the transmitter for testing.



## 5 Summary of Test Results

### 5.1 FCC Part 15, Subpart E

#### 5.1.1 Summary of Tests

Section	Environmental Phenomena	Frequency Range (MHz)	Result
15.205 (15.407(b)(9))	Spurious Emissions in Restricted Bands	0.009 – 40000	Complied
15.207 (15.407(b)(8))	Conducted Disturbance at Mains Ports	0.15 to 30	Complied
15.209 (15.407(b)(6))	General Field Strength Limits	0.009 – 40000	Complied
15.403	Emissions Bandwidth	5250 – 5725	Complied
15.407(e)	Minimum Emission Bandwidth	5725 – 5850	Note 1
15.407(a)(2)	Maximum Conducted Output Power	5250 – 5725	Complied
15.407(a)(1)	EIRP above 30 Degrees	5150 – 5250	Note 2
15.407(a)(2)	Maximum Power Spectral Density	5250 – 5725	Complied
15.407(b)(3)	Unwanted Emissions	0.009 – 40000	Complied
Note 1: EUT does not utilize UNII-3 band and therefore requirement is not applicable. Note 2: UNII-1 capable EUT does not operate outdoors and therefore requirement is not applicable.			

#### 5.1.2 UNII-2 Transmit Power Control and Dynamic Frequency Selection Tests

Section	Environmental Phenomena	Result
15.407(h)(1)	Transmit Power Control	Note 3
15.407(h)(2)	DFS Radar Detection	Note 4 & 5
15.407(h)(2)(ii)	DFS Channel Availability Check Time	Note 4 & 5
15.407(h)(2)(iii)	DFS Channel Move Time	Complied (Note 5)
15.407(h)(2)(iv)	DFS Non-Occupancy Period	Complied (Note 5)
Note 3: EUT e.i.r.p. levels are less than 500mV and does not require TPC. Note 4: EUT is DFS capable only as a Client device without In Service Monitoring and therefore this requirement is not applicable. Note 5: Testing is documented in a separate report.		

## 5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.



## 6 Measurements, Examinations and Derived Results

### 6.1 General Comments

This section contains the test results only. Details of the test methods used and a list of the test equipment used during the measurements can be found in Section 7 of this report.

### 6.2 Test Results

#### 6.2.1 §15.203 Antenna Requirements

A total of 7 antenna are used in the 4 devices covered in this testing. The antennas are located interna to the housings and are not user accessible. The table below shows the device, antenna port, antenna model, and maximum gain of the antenna in the UNII-1 band.

Device	Antenna Port	Model	Maximum Gain
C4-T4T10-XX	0	1005180	5.5
	1	1005179	7.5
C4-T4T8-XX	0	1005178	5.6
	1	1005179	7.5
C4-T4IW10-XX	0	1005097	7.2
	1	1005098	5.7
C4-T4IW8-XX	0	1005095	4.8
	1	1005096	5.9

#### Result

In the configurations tested the EUT complied with the requirements of the specification.

#### 6.2.2 §15.207 Conducted Emissions at AC Mains Ports

##### 040-00460a installed in C4-T4IW10-XX

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.18	Hot Lead	Peak (Note 1)	51.1	54.5	-3.4
0.20	Hot Lead	Peak (Note 1)	47.7	53.5	-5.8
0.33	Hot Lead	Peak (Note 1)	43.9	49.3	-5.4
0.41	Hot Lead	Peak (Note 1)	44.0	47.6	-3.6
0.90	Hot Lead	Peak (Note 1)	39.8	46.0	-6.2
21.78	Hot Lead	Peak (Note 1)	44.0	50.0	-6.0
0.20	Neutral Lead	Quasi-Peak (Note 2)	52.9	63.5	-10.6
0.20	Neutral Lead	Average (Note 2)	41.4	53.5	-12.1
0.27	Neutral Lead	Peak (Note 1)	45.1	51.1	-6.0
0.33	Neutral Lead	Peak (Note 1)	45.5	49.3	-3.8
0.41	Neutral Lead	Peak (Note 1)	42.8	47.7	-4.9

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.91	Neutral Lead	Peak (Note 1)	37.4	46.0	-8.6
1.32	Neutral Lead	Peak (Note 1)	37.7	46.0	-8.3

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.  
 Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

### Result

The EUT complied with the specification limit by a margin of 3.4 dB.

#### 040-00460a installed in C4-T4IW8-XX

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.15	Hot Lead	Peak (Note 1)	52.7	56.0	-3.3
0.20	Hot Lead	Quasi-Peak (Note 2)	51.6	63.6	-12.0
0.20	Hot Lead	Average (Note 2)	42.3	53.6	-11.3
0.33	Hot Lead	Peak (Note 1)	41.5	49.3	-7.8
0.39	Hot Lead	Peak (Note 1)	41.0	48.1	-7.1
2.80	Hot Lead	Peak (Note 1)	36.1	46.0	-9.9
3.07	Hot Lead	Peak (Note 1)	35.8	46.0	-10.2
0.20	Neutral Lead	Peak (Note 1)	46.6	53.6	-7.0
0.33	Neutral Lead	Peak (Note 1)	43.0	49.3	-6.3
0.41	Neutral Lead	Peak (Note 1)	40.7	47.7	-7.0
2.79	Neutral Lead	Peak (Note 1)	40.2	46.0	-5.8
2.96	Neutral Lead	Peak (Note 1)	40.9	46.0	-5.1
3.07	Neutral Lead	Peak (Note 1)	40.1	46.0	-5.9

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.  
 Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

### Result

The EUT complied with the specification limit by a margin of 3.3 dB.

#### 040-00460a installed in C4-T4T10-XX

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.20	Hot Lead	Quasi-Peak (Note 2)	53.0	63.5	-10.5
0.20	Hot Lead	Average (Note 2)	45.3	53.5	-8.2
0.39	Hot Lead	Quasi-Peak (Note 1)	43.5	48.1	-4.6

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.69	Hot Lead	Quasi-Peak (Note 2)	45.8	56.0	-10.2
0.69	Hot Lead	Average (Note 2)	38.8	46.0	-7.2
0.77	Hot Lead	Quasi-Peak (Note 2)	45.3	56.0	-10.7
0.77	Hot Lead	Average (Note 2)	40.4	46.0	-5.6
0.91	Hot Lead	Quasi-Peak (Note 2)	43.8	56.0	-12.2
0.91	Hot Lead	Average (Note 2)	39.1	46.0	-6.9
1.22	Hot Lead	Quasi-Peak (Note 2)	42.5	56.0	-13.5
1.22	Hot Lead	Average (Note 2)	37.9	46.0	-8.1
1.49	Hot Lead	Quasi-Peak (Note 1)	41.3	46.0	-4.7
1.79	Hot Lead	Quasi-Peak (Note 1)	40.3	46.0	-5.7
0.16	Neutral Lead	Quasi-Peak (Note 2)	53.7	65.5	-11.8
0.16	Neutral Lead	Average (Note 2)	34.2	55.5	-21.3
0.22	Neutral Lead	Quasi-Peak (Note 2)	51.9	62.9	-11.0
0.22	Neutral Lead	Average (Note 2)	38.8	52.9	-14.1
0.28	Neutral Lead	Quasi-Peak (Note 1)	45.2	50.9	-5.7
0.41	Neutral Lead	Quasi-Peak (Note 1)	41.7	47.7	-6.0
0.46	Neutral Lead	Quasi-Peak (Note 1)	39.7	46.8	-7.1
0.64	Neutral Lead	Peak (Note 1)	42.9	46.0	-3.1
0.77	Neutral Lead	Quasi-Peak (Note 1)	41.9	46.0	-4.1
0.84	Neutral Lead	Quasi-Peak (Note 1)	40.7	46.0	-5.3
4.06	Neutral Lead	Quasi-Peak (Note 1)	39.0	46.0	-7.0
9.08	Neutral Lead	Peak (Note 1)	44.3	50.0	-5.7

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.

## Result

The EUT complied with the specification limit by a margin of 3.1 dB.

### 040-00460a installed in C4-T4T8-XX

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
0.76	Hot Lead	Quasi-Peak (Note 2)	44.3	56.0	-11.7
0.76	Hot Lead	Average (Note 2)	42.6	46.0	-3.4
0.85	Hot Lead	Peak (Note 1)	38.8	46.0	-7.2
1.61	Hot Lead	Peak (Note 1)	37.6	46.0	-8.4

Frequency (MHz)	AC Mains Lead	Detector	Measured Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
2.37	Hot Lead	Peak (Note 1)	38.4	46.0	-7.6
3.22	Hot Lead	Peak (Note 1)	38.7	46.0	-7.3
4.04	Hot Lead	Peak (Note 1)	37.6	46.0	-8.4
0.16	Neutral Lead	Peak (Note 1)	50.7	55.5	-4.8
0.65	Neutral Lead	Quasi-Peak (Note 1)	41.4	46.0	-4.6
0.81	Neutral Lead	Quasi-Peak (Note 2)	44.3	56.0	-11.7
0.81	Neutral Lead	Average (Note 2)	42.1	46.0	-3.9
0.98	Neutral Lead	Peak (Note 1)	41.1	46.0	-4.9
1.42	Neutral Lead	Peak (Note 1)	40.9	46.0	-5.1
2.30	Neutral Lead	Peak (Note 1)	39.7	46.0	-6.3
2.68	Neutral Lead	Peak (Note 1)	38.1	46.0	-7.9
<p>Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.</p> <p>Note 2: The reference detector used for the measurements was quasi-peak and average and the data was compared to the respective limits.</p>					

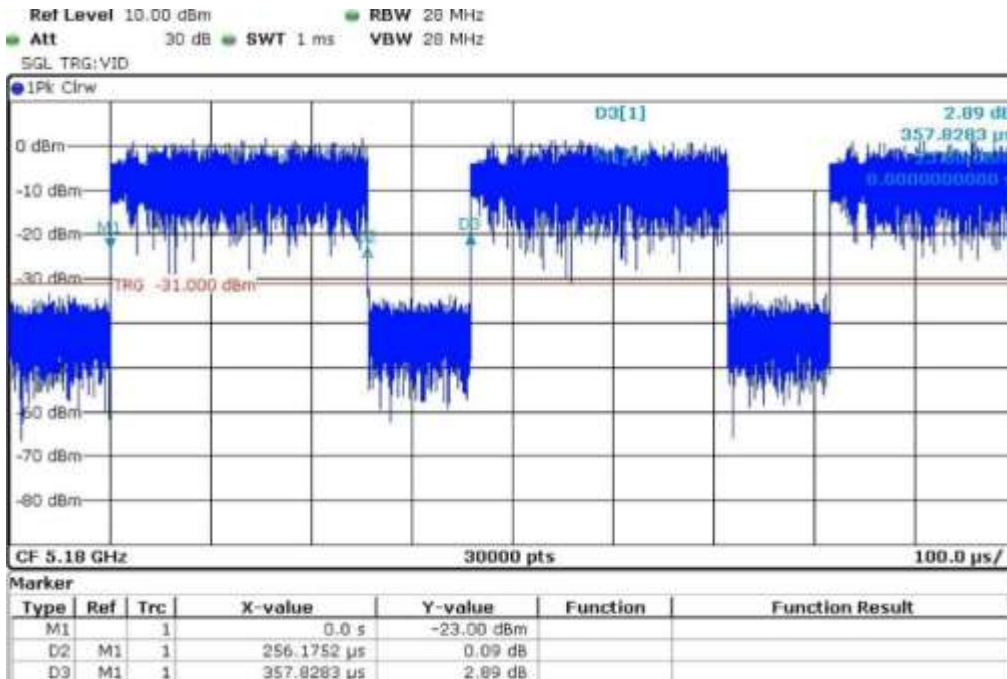
**Result**

The EUT complied with the specification limit by a margin of 3.4 dB.

### 6.2.3 Duty Cycle, Transmission Duration, and Maximum Power Control

Where EUT was incapable of 100% duty cycle at maximum power control, correction factors are required. Duty cycle (DC) and transmission duration (“T”) was tested for these modes of operation. and the Correction Factor (“CF”) is determined by the equation  $CF = 10 \times \log \frac{1}{DC}$ , wherein DC is a decimal value between 0 and 1.

.Mode / Datarate	Duty Cycle	Transmission Duration	Correction Factor
N-Mode / DR: 4	72.2%	0.256 milliseconds	+1.41 dB



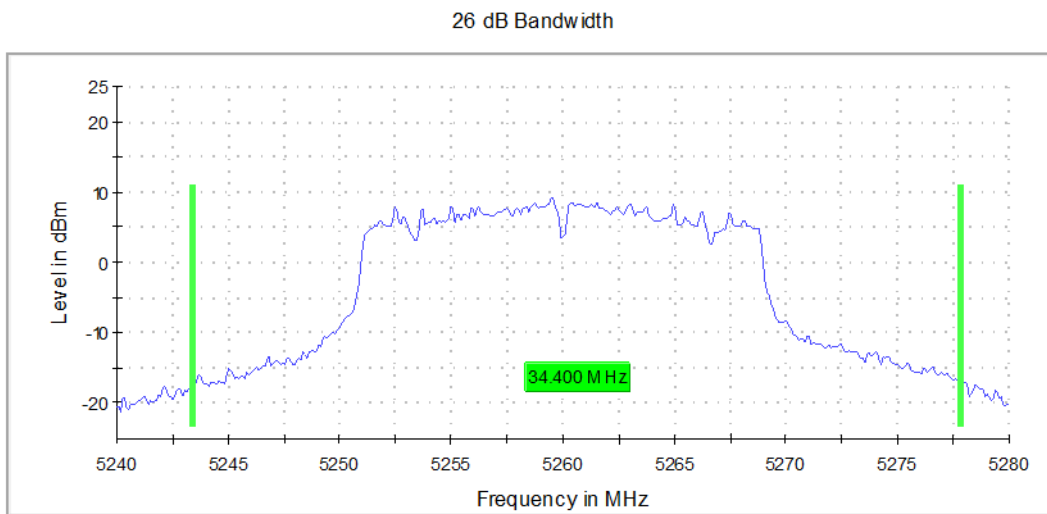
Graph 1: N-Mode Duty Cycle

## 6.2.4 26 dB Emission Bandwidth

### Antenna 0 Measurements

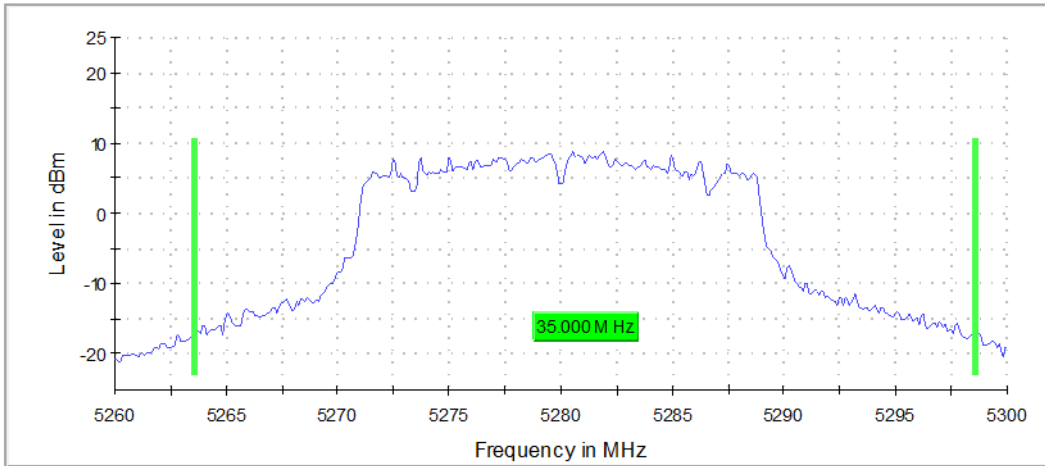
Frequency (MHz)	Emissions 26 dB bandwidth (MHz)
5260	34.4
5280	35.0
5300	24.2
5320	21.6
5500	21.5
5520	21.6
5540	35.5
5600	34.8
5660	34.3
5680	21.9
5700	21.4
5720	21.5

**Table 2: Antenna 0 - 26 dB Emissions Bandwidth**



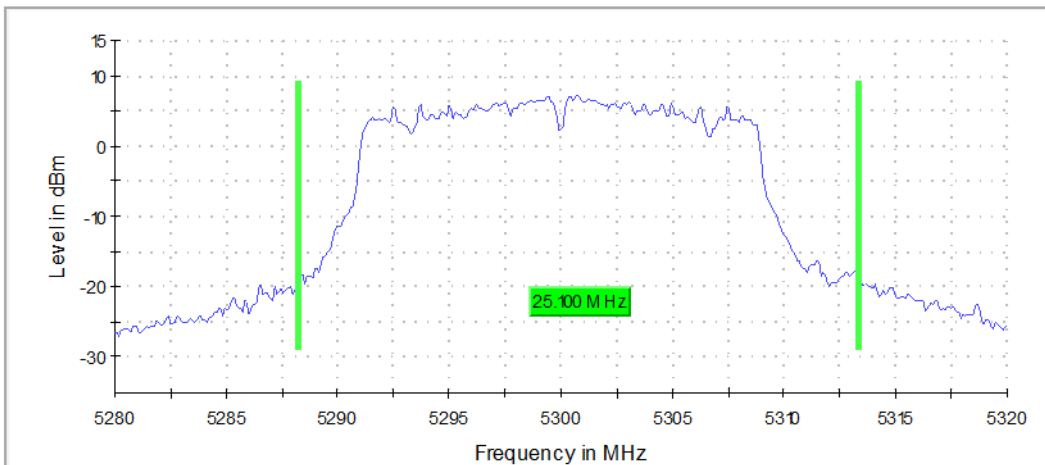
**Graph 1: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5260 MHz - Setting 20**

26 dB Bandwidth



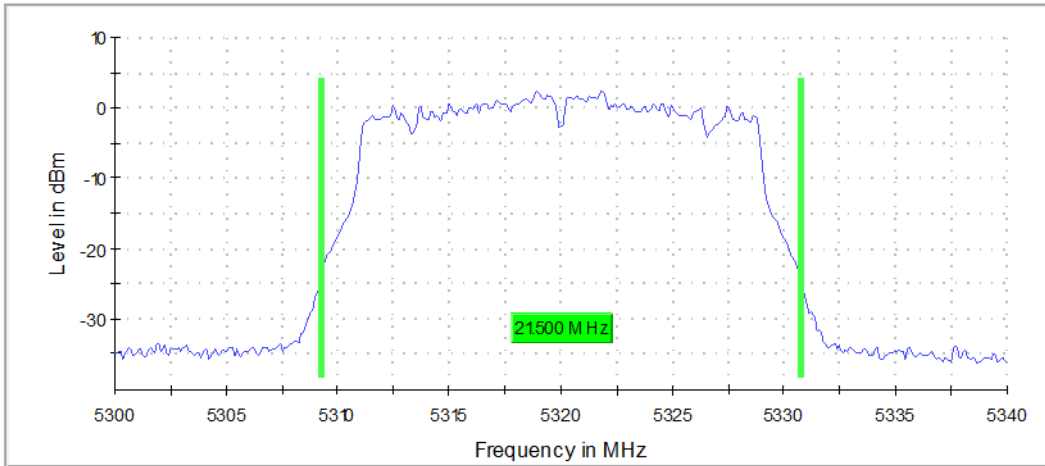
**Graph 2: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5280 MHz - Setting 20**

26 dB Bandwidth



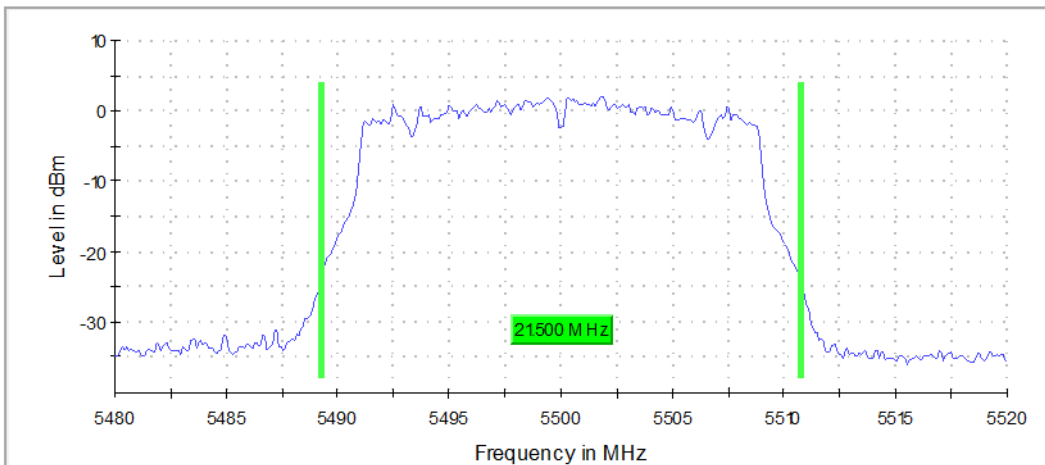
**Graph 3: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5300 MHz - Setting 18**

26 dB Bandwidth



**Graph 4: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5320 MHz - Setting 12**

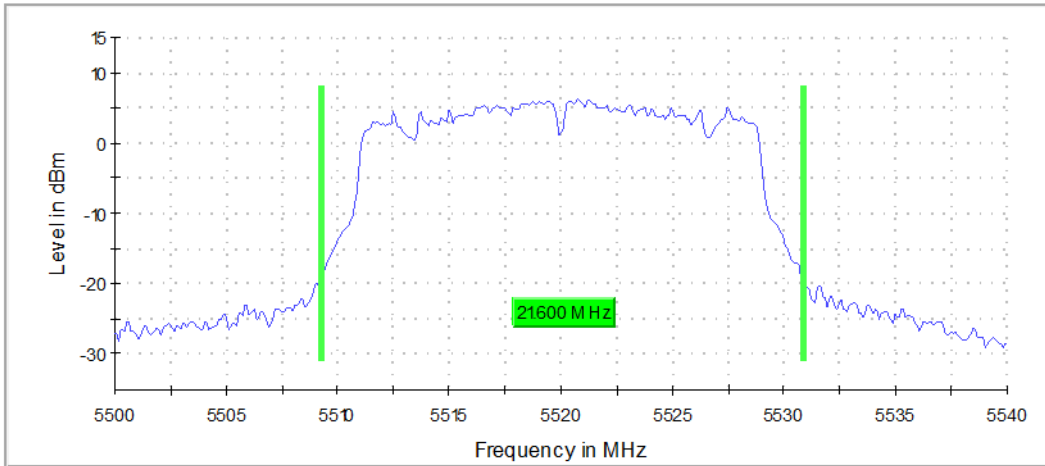
26 dB Bandwidth



**Graph 5: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5500 MHz - Setting 12**

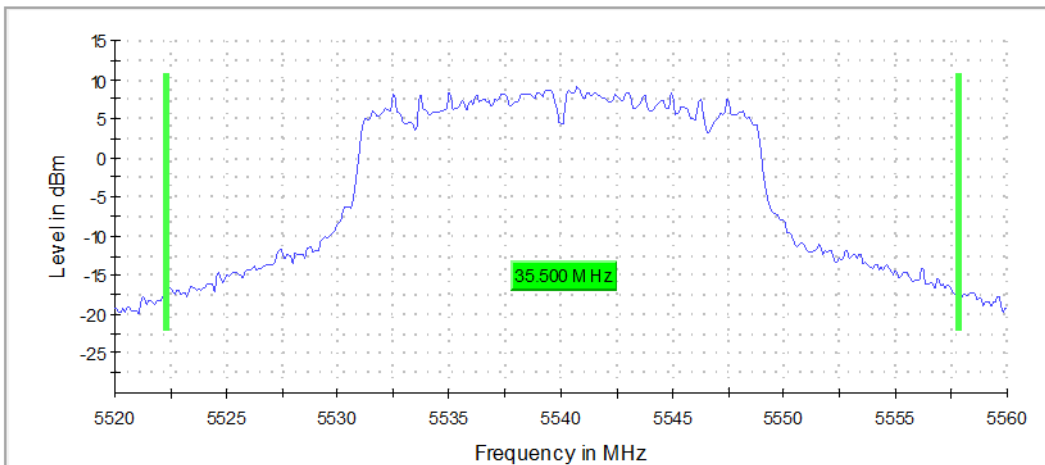


26 dB Bandwidth



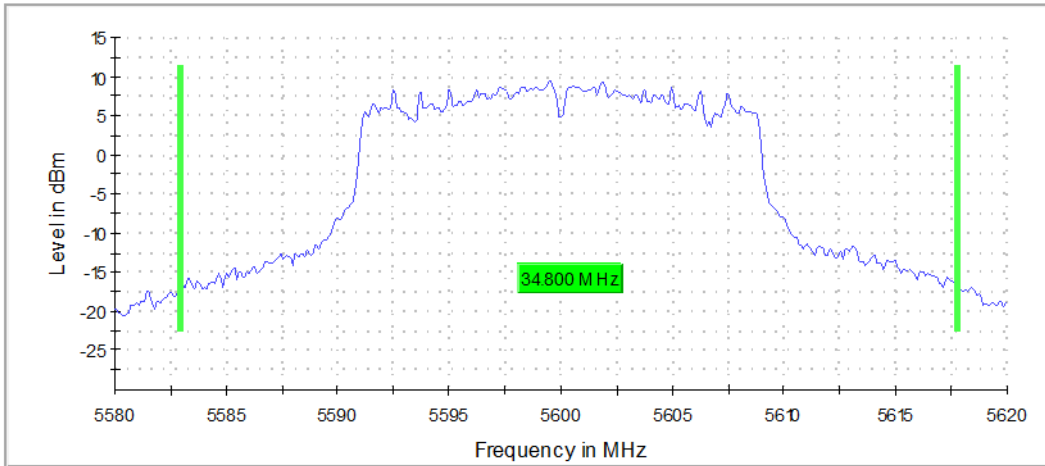
**Graph 6: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5520 MHz - Setting 17**

26 dB Bandwidth



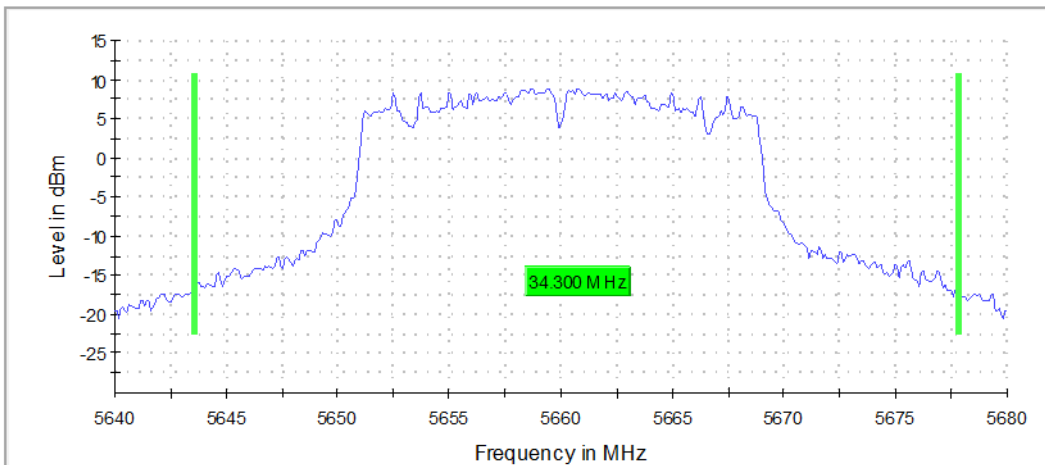
**Graph 7: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5540 MHz - Setting 20**

26 dB Bandwidth



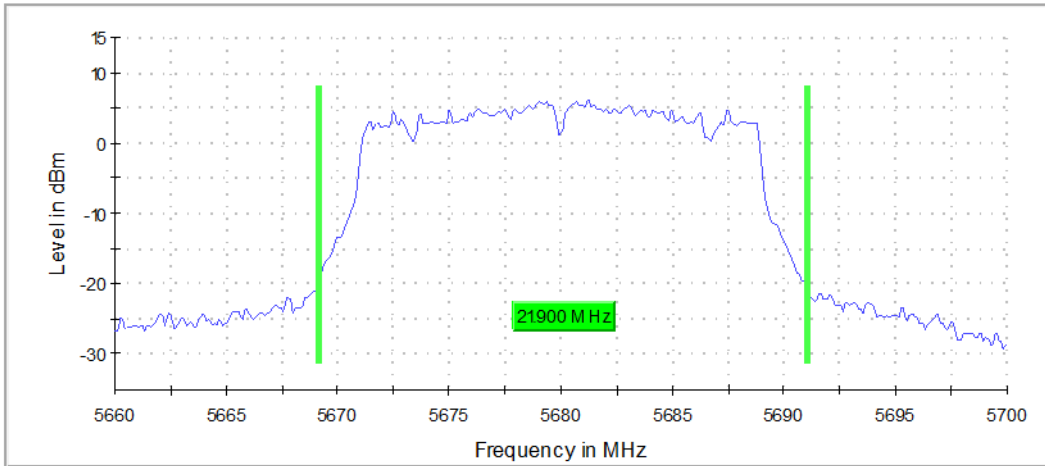
**Graph 8: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5600 MHz - Setting 20**

26 dB Bandwidth



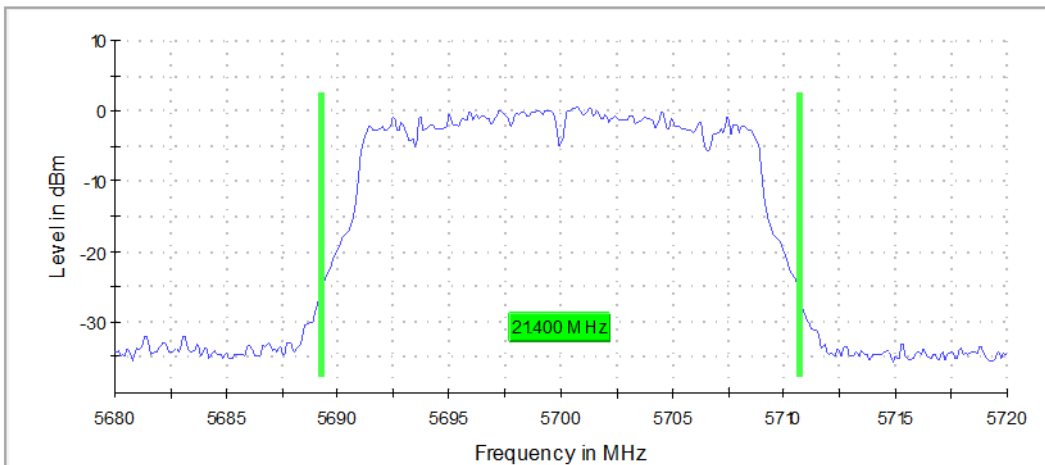
**Graph 9: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5660 MHz - Setting 20**

26 dB Bandwidth



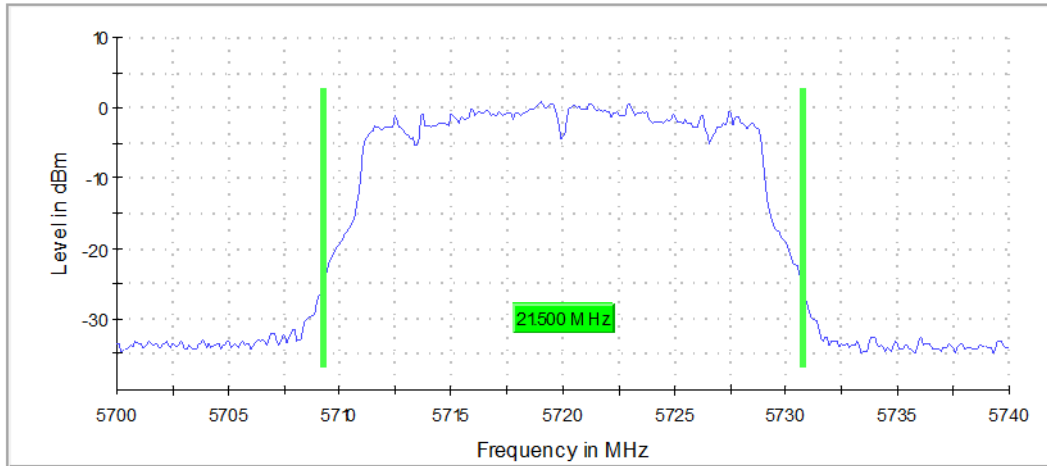
**Graph 10: Antenna 0 – 26 dB Emissions Bandwidth Transmitted at 5680 MHz - Setting 17**

26 dB Bandwidth



**Graph 11: Antenna 0 – 26 dB Emissions Bandwidth Transmitted at 5700 MHz - Setting 11**

26 dB Bandwidth



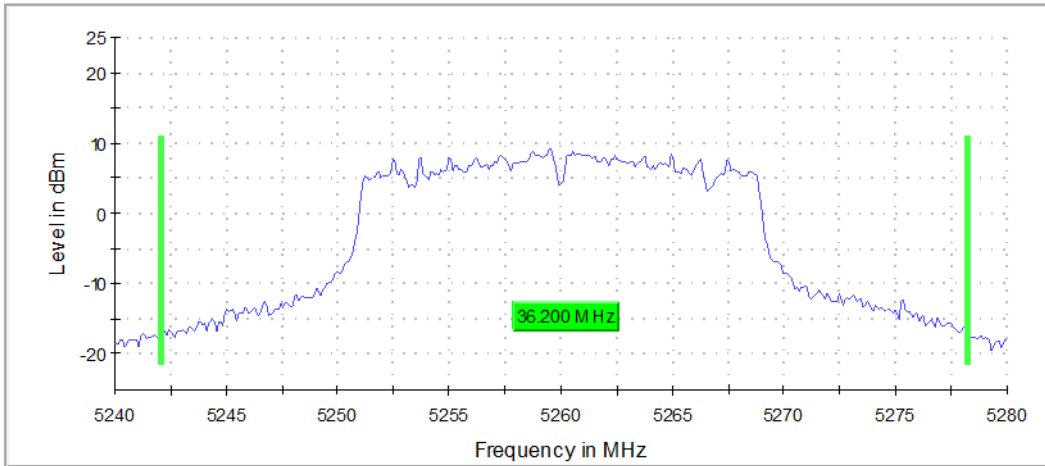
Graph 12: Antenna 0 – 26 dB Emissions Bandwidth Transmitting at 5720 MHz - Setting 11

**Antenna 1 Measurements**

Frequency (MHz)	Emissions 26 dB bandwidth (MHz)
5260	35.6
5280	35.5
5300	25.7
5320	21.4
5500	21.5
5520	22.0
5540	32.3
5600	36.8
5660	34.9
5680	21.7
5700	21.6
5720	21.5

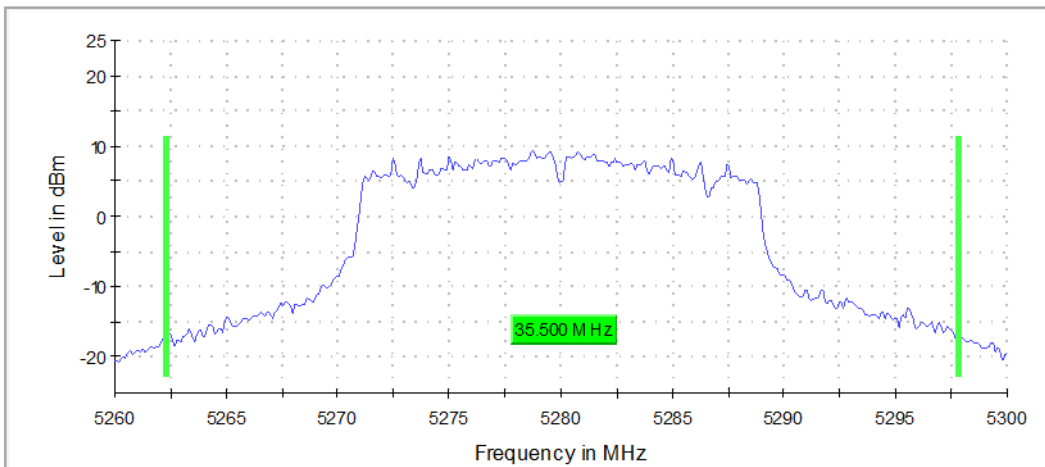
Table 3: Antenna 1 - 26 dB Emissions Bandwidth

26 dB Bandwidth



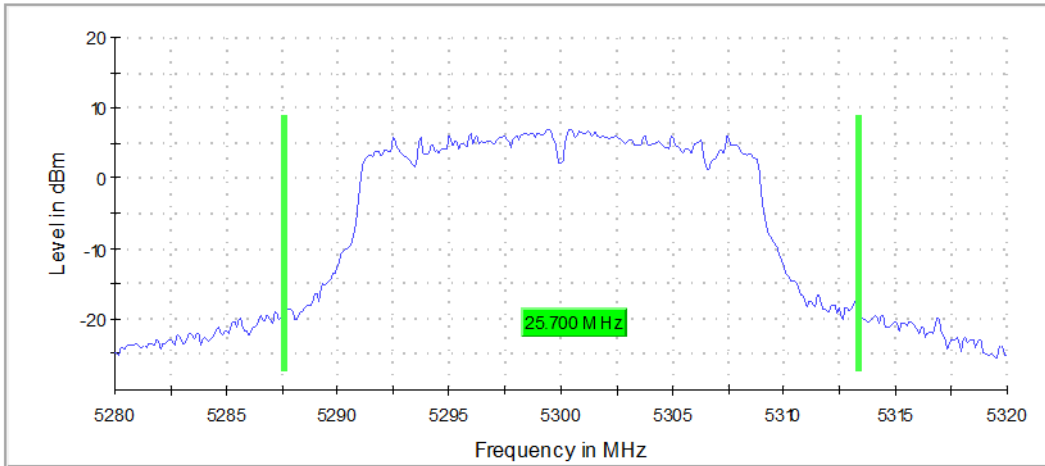
**Graph 13: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5260 MHz - Setting 20**

26 dB Bandwidth



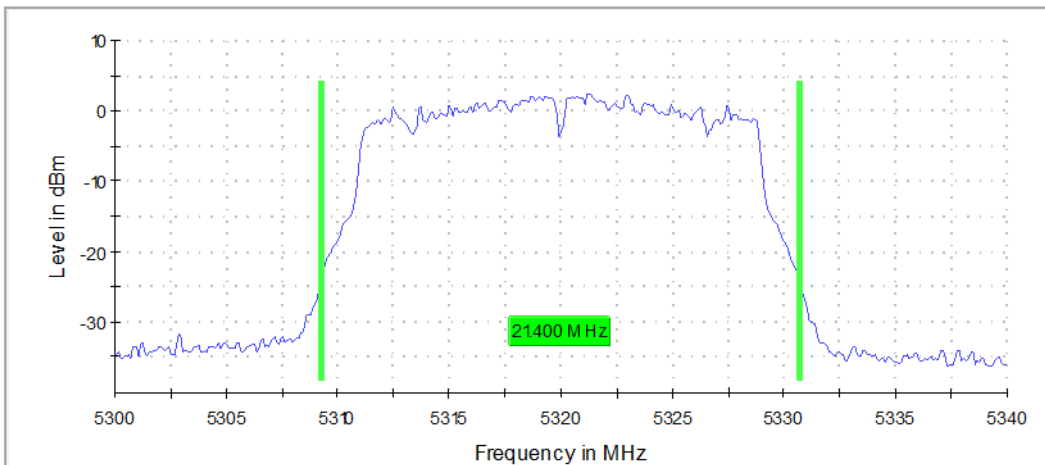
**Graph 14: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5280 MHz - Setting 20**

26 dB Bandwidth



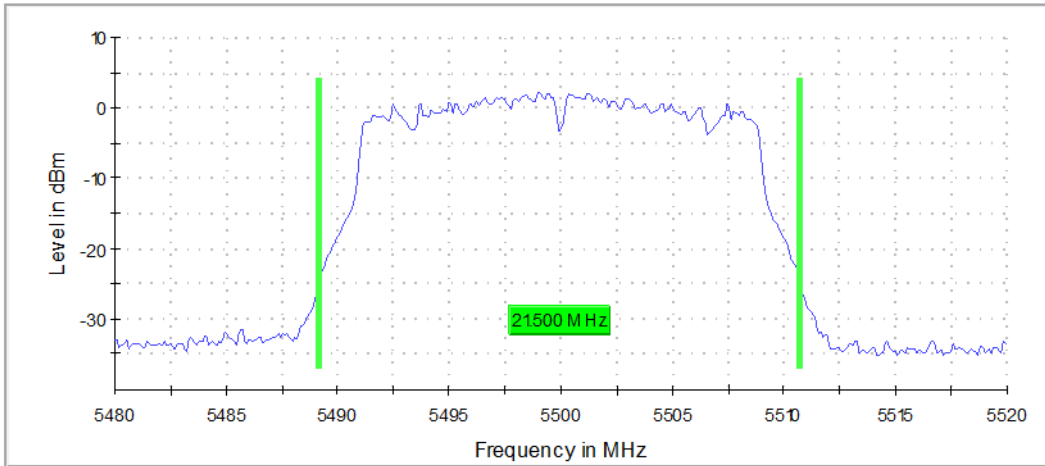
**Graph 15: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5300 MHz - Setting 18**

26 dB Bandwidth



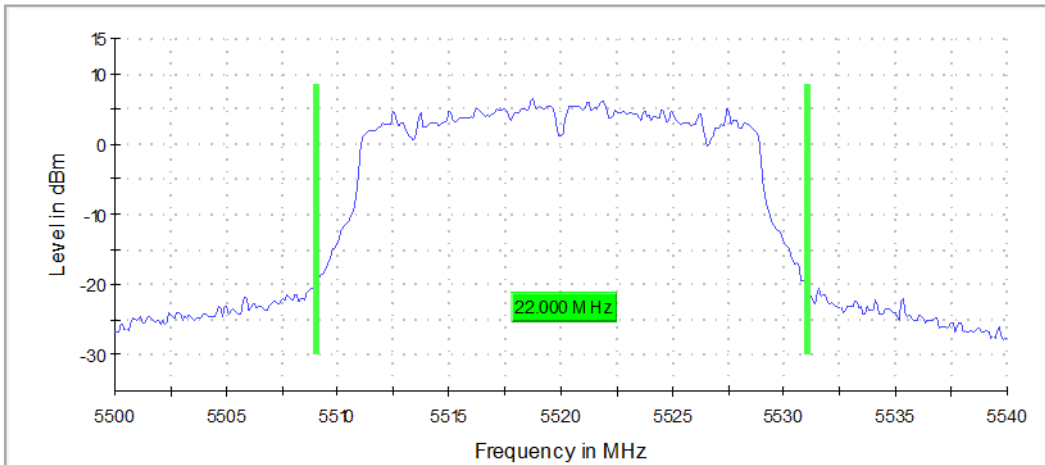
**Graph 16: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5320 MHz - Setting 12**

26 dB Bandwidth



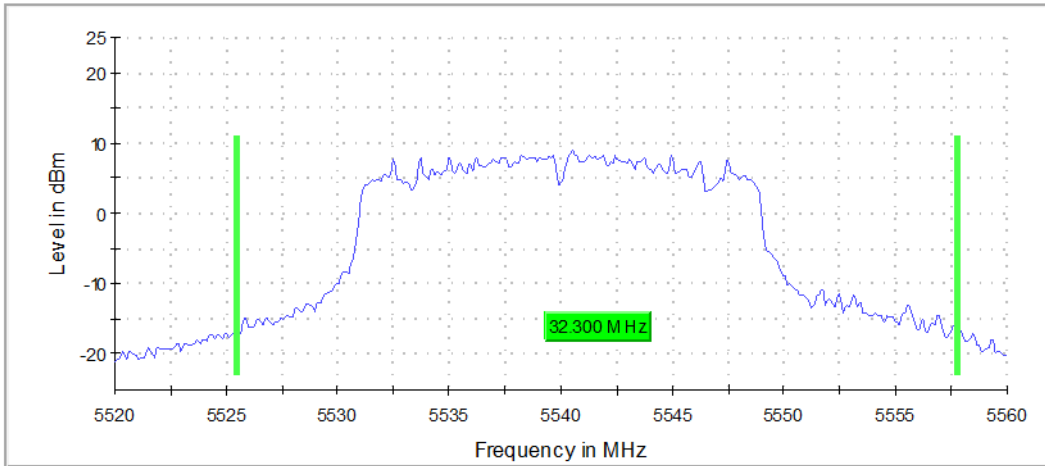
**Graph 17: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5500 MHz - Setting 12**

26 dB Bandwidth



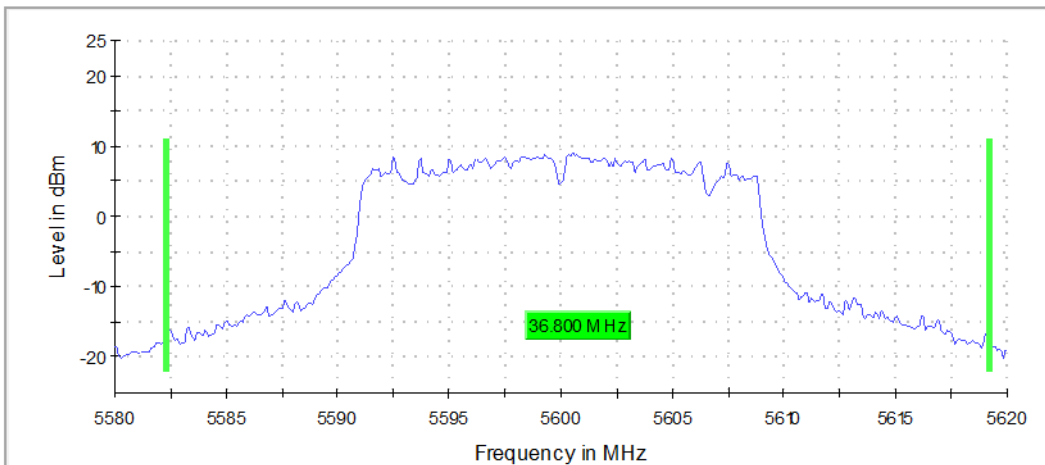
**Graph 18: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5520 MHz - Setting 17**

26 dB Bandwidth



**Graph 19: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5540 MHz - Setting 20**

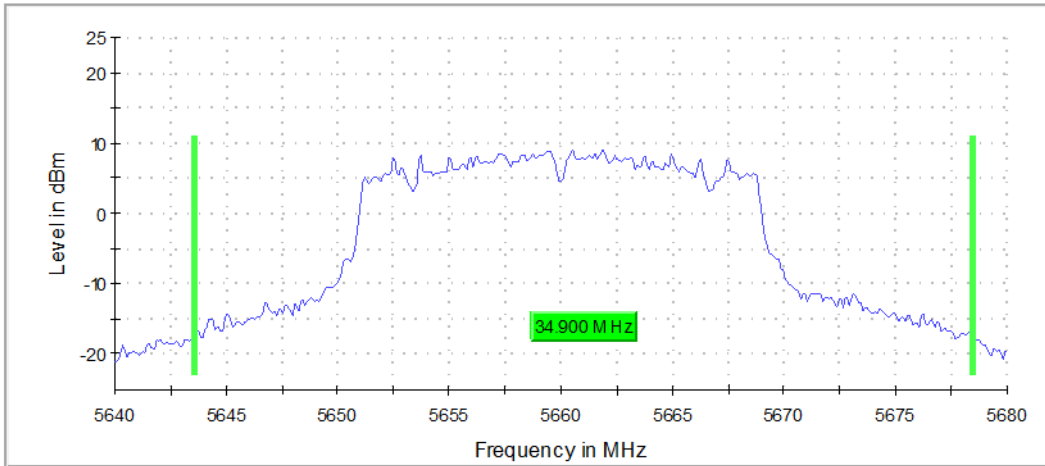
26 dB Bandwidth



**Graph 20: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5600 MHz - Setting 20**

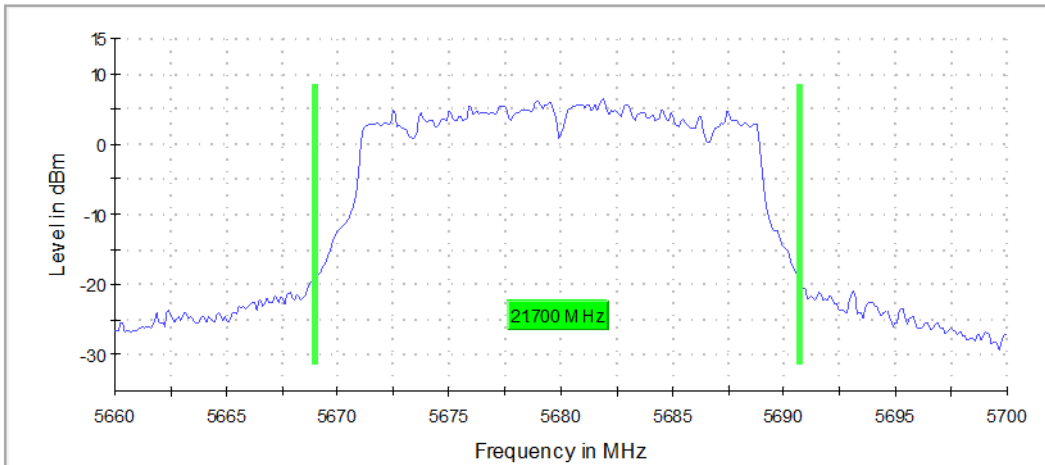


26 dB Bandwidth



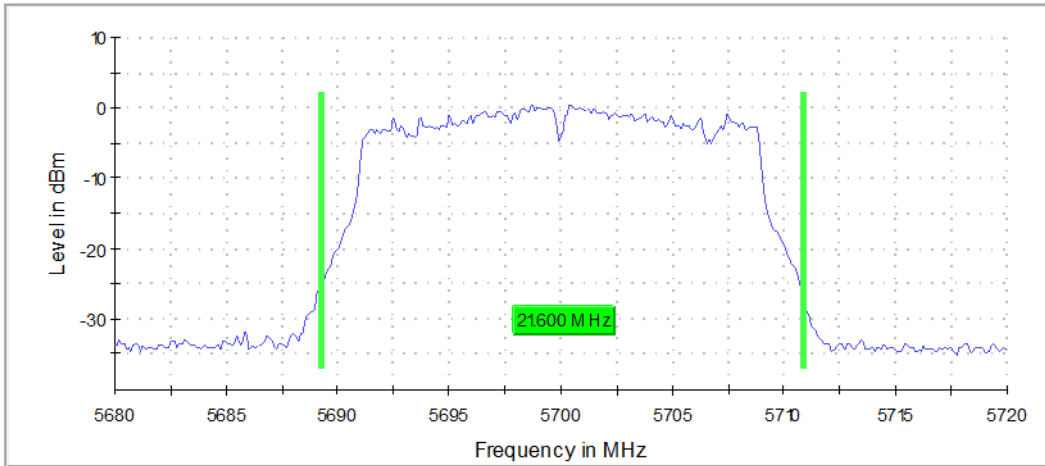
**Graph 21: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5660 MHz - Setting 20**

26 dB Bandwidth



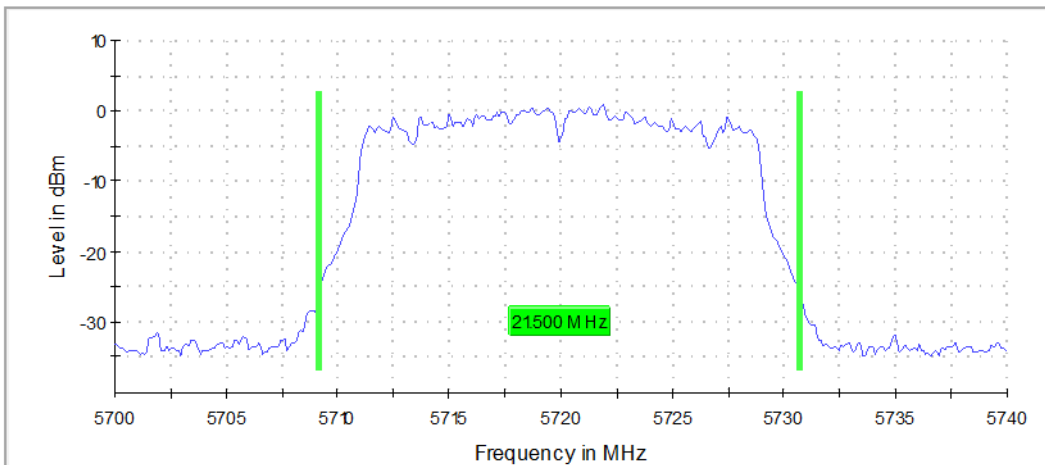
**Graph 22: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5680 MHz - Setting 17**

26 dB Bandwidth



**Graph 23: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5700 MHz - Setting 11**

26 dB Bandwidth



**Graph 24: Antenna 1 – 26 dB Emissions Bandwidth Transmitted at 5720 MHz - Setting 11**

### 6.2.5 §15.407(a) Power Limits: Maximum Conducted Output Power

The following tables show the adjusted conducted power limits.

#### UNII-2 Conducted Power Limits (N-Mode)

Maximum conducted power limits for the UNII-2 band are adjusted based on the isotropic antenna gain and measured 26 dB bandwidth. Transmitters exceeding 27 dBm must employ a transmit power control (TCP) mechanism.

CFR Title 47 Part 15.407(a)(2) limits emissions to the lesser of either 250 mW (24 dBm) or  $11 \text{ dBm} + 10 \log(\text{EBW}_{26 \text{ dB}})$  where  $\text{EBW}_{26 \text{ dB}}$  is measured in MHz. The following plots show the 26 dB emission bandwidth of each channel at the manufacturer’s intended power setting. Tables 4 and 6 list the conducted power limits, adjusted as necessary based upon the worst case  $\text{EBW}_{26 \text{ dB}}$  for that setting. Tables 5 and 7 contain the conducted power measurements according to method PM-G (KDB 789033 D02).

#### Antenna 0 Limits and Measurements

Transmitting Frequency (MHz)	Measured 26 dB BW (MHz)	11 dBm + 10 log EWB (dBm)	Antenna Gain (dBi)	Max Gain before Limit Change (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
5260	34.4	26.4	7.5	6	-1.5	24	22.5
5280	35.0	26.4	7.5	6	-1.5	24	22.5
5300	24.2	24.8	7.5	6	-1.5	24	22.5
5320	21.6	24.3	7.5	6	-1.5	24	22.5
5500	21.5	24.3	7.5	6	-1.5	24	22.5
5520	21.6	24.3	7.5	6	-1.5	24	22.5
5540	35.5	26.5	7.5	6	-1.5	24	22.5
5600	34.8	26.4	7.5	6	-1.5	24	22.5
5660	34.3	26.4	7.5	6	-1.5	24	22.5
5680	21.9	24.4	7.5	6	-1.5	24	22.5
5700	21.4	24.3	7.5	6	-1.5	24	22.5
5720	21.5	24.3	7.5	6	-1.5	24	22.5

**Table 4: Antenna 0 – UNII-2 maximum conducted power limits based on antenna gain and measured 26 dB emissions bandwidth.**

Frequency (MHz)	Power Setting	Output Power (dBm)	Output Power Limit (dBm)	Margin (dB)	TCP Required
5260	20	18.7	22.5	-3.8	No
5280	20	18.8	22.5	-3.7	No
5300	18	17.2	22.5	-5.3	No
5320	12	12.1	22.5	-10.4	No
5500	12	11.9	22.5	-10.6	No
5520	17	16.4	22.5	-6.1	No
5540	20	19.2	22.5	-3.3	No
5600	20	19.1	22.5	-3.4	No
5660	20	19.1	22.5	-3.4	No
5680	17	16.0	22.5	-6.5	No
5700	11	9.4	22.5	-13.1	No
5720	11	9.3	22.5	-13.2	No

**Table 5: Antenna 0 – UNII-2 Conducted Power and TCP Requirement (Method PM-G)**

**Antenna 1 Limits and Measurements**

Transmitting Frequency (MHz)	Measured 26 dB BW (MHz)	11 dBm + 10 log EWB (dBm)	Antenna Gain (dBi)	Max Gain before Limit Change (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
5260	35.6	26.5	7.5	6	-1.5	24	22.5
5280	35.5	26.5	7.5	6	-1.5	24	22.5
5300	25.7	25.1	7.5	6	-1.5	24	22.5
5320	21.4	24.3	7.5	6	-1.5	24	22.5
5500	21.5	24.3	7.5	6	-1.5	24	22.5
5520	22.0	24.4	7.5	6	-1.5	24	22.5
5540	32.3	26.1	7.5	6	-1.5	24	22.5
5600	36.8	26.7	7.5	6	-1.5	24	22.5
5660	34.9	26.4	7.5	6	-1.5	24	22.5
5680	21.7	24.4	7.5	6	-1.5	24	22.5
5700	21.6	24.3	7.5	6	-1.5	24	22.5
5720	21.5	24.3	7.5	6	-1.5	24	22.5

**Table 6: Antenna 1 – UNII-2 maximum conducted power limits based on antenna gain and measured 26 dB emissions bandwidth.**

Frequency (MHz)	Power Setting	Output Power (dBm)	Output Power Limit (dBm)	Margin (dB)	TCP Required
5260	20	18.9	22.5	-3.6	No
5280	20	18.8	22.5	-3.7	No
5300	18	17.1	22.5	-5.4	No
5320	12	12.3	22.5	-10.2	No
5500	12	11.8	22.5	-10.7	No
5520	17	16.0	22.5	-6.5	No
5540	20	18.9	22.5	-3.6	No
5600	20	19.1	22.5	-3.4	No
5660	20	18.7	22.5	-3.8	No
5680	17	15.9	22.5	-6.6	No
5700	11	8.2	22.5	-14.3	No
5720	11	8.7	22.5	-13.8	No

**Table 7: Antenna 1 – UNII-2 Conducted Power and TCP Requirement (Method PM-G)**

**Result: UNII-2 Conducted Power Measurement**

In the configurations tested the EUT complied with the requirements of the specification with a margin of 3.4 dB and does not require a transmit power control mechanism.

### 6.2.6 §15.407(a) Power Limits: Maximum Power Spectral Density

The following tables show the adjusted power spectral density limits. Power spectral density limits for the UNII-2 band are adjusted based on isotropic antenna gain.

Antenna Gain (dBi)	Default Gain (dBi)	Limit Change (dB)	Default Limit (dBm)	Adjusted Limit (dBm)
7.5	6	-1.5	11	9.5

Table 8: PSD Limit Adjustment

#### Antenna 0 Measurements

Frequency (MHz)	Power Setting	Power Spectral Density (dBm/MHz)	Power Spectral Density Limit (dBm/MHz)	Margin (dB)
5260	20	7.3	9.5	-2.2
5280	20	7.3	9.5	-2.2
5300	18	5.8	9.5	-3.7
5320	12	0.6	9.5	-8.9
5500	12	0.8	9.5	-8.7
5520	17	5.0	9.5	-4.5
5540	20	7.7	9.5	-1.8
5600	20	7.9	9.5	-1.6
5660	20	7.9	9.5	-1.6
5680	17	4.7	9.5	-4.8
5700	11	-0.5	9.5	-10.0
5720	11	-0.6	9.5	-10.1

Table 9: Antenna 0 – UNII-2 Power Spectral Density Measurement Results

**Antenna 1 Measurements**

<b>Frequency (MHz)</b>	<b>Power Setting</b>	<b>EIRP Density (dBm/MHz)</b>	<b>EIRP Density Limit (dBm/MHz)</b>	<b>Margin (dB)</b>
5260	20	7.5	9.5	-8.5
5280	20	7.7	9.5	-1.8
5300	18	5.8	9.5	-3.7
5320	12	1.2	9.5	-8.3
5500	12	1.0	9.5	-8.5
5520	17	4.4	9.5	-5.1
5540	20	7.8	9.5	-1.7
5600	20	7.8	9.5	-1.7
5660	20	7.6	9.5	-1.9
5680	17	4.8	9.5	-4.7
5700	11	-0.9	9.5	-10.4
5720	11	-0.4	9.5	-9.9

**Table 10: Antenna 1- UNII-2 Power Spectral Density Measurement Results**

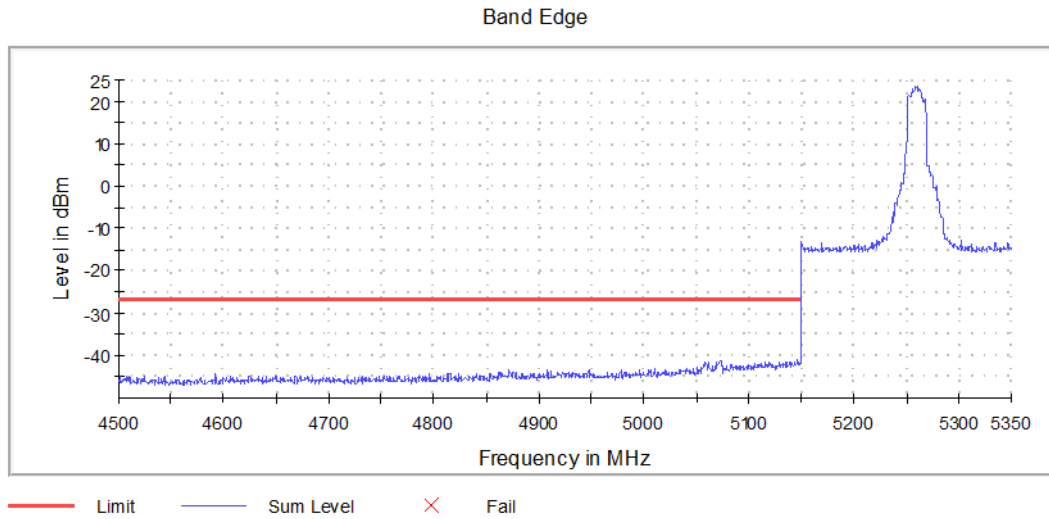
**Result: UNII-2 Power Spectral Density**

In the configurations tested the EUT complied with the requirements of the specification with a margin of 1.7 dB and does not require a transmit power control mechanism.

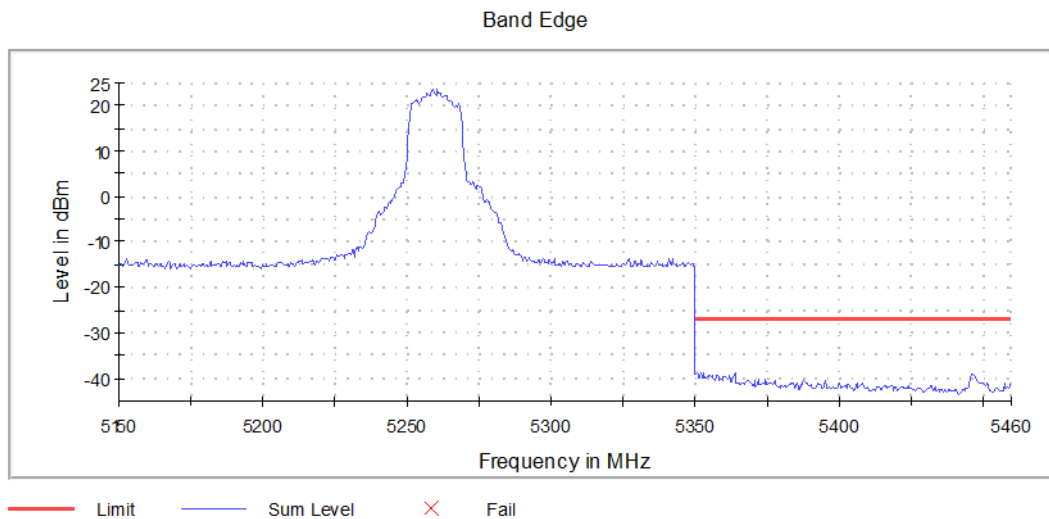
### 6.2.7 §15.407(b) Undesirable Emissions – Out-of-Band and Spurious Domains

The out-of-band edges and spurious emissions were tested at the manufacturer’s intended power setting, indicated by the caption.

#### Antenna 0 Out-Of-Band Domain Measurements

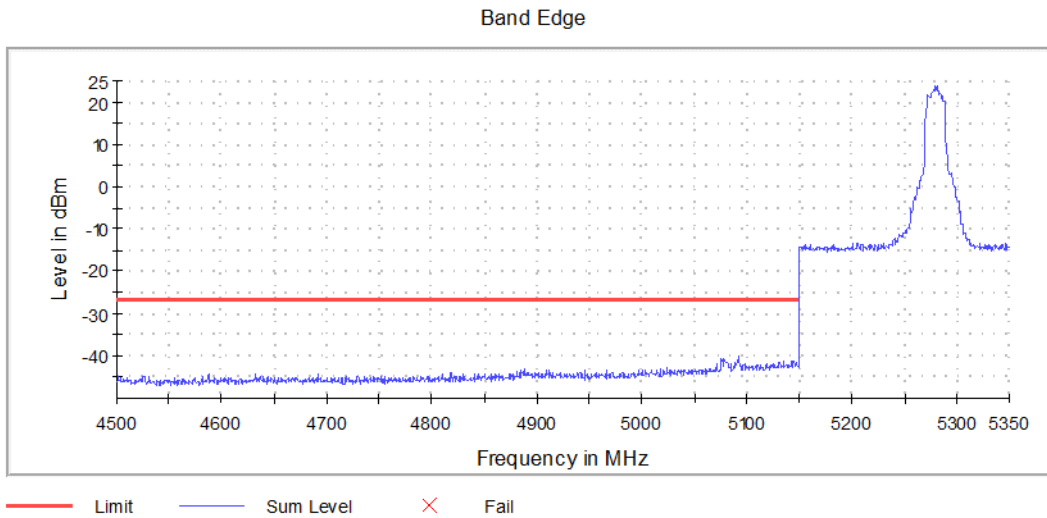


**Graph 25: Antenna 0 – Low Band Edge Channel 52 Transmitting (5260 MHz) – Setting 20**

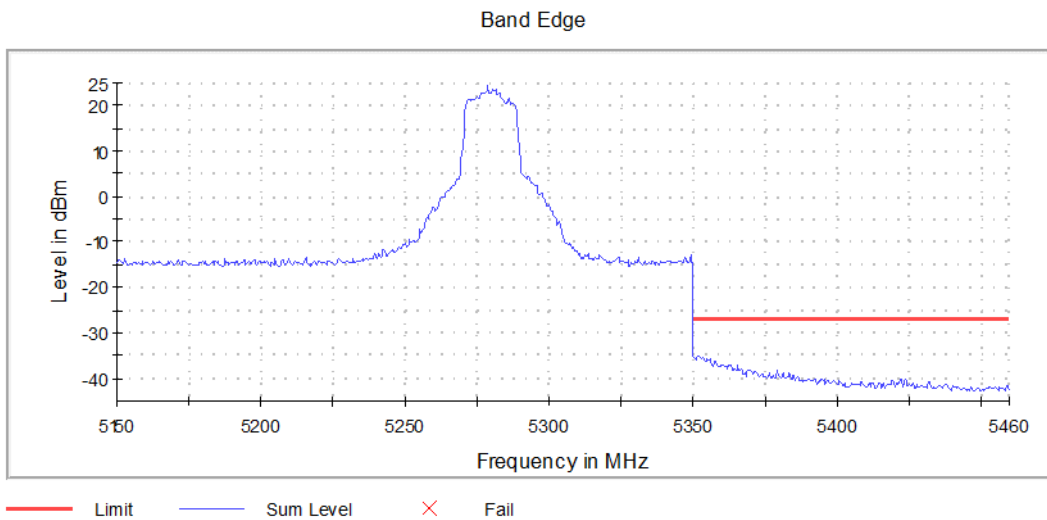


**Graph 26: Antenna 0 – High Band Edge Channel 52 Transmitting (5260 MHz) – Setting 20**



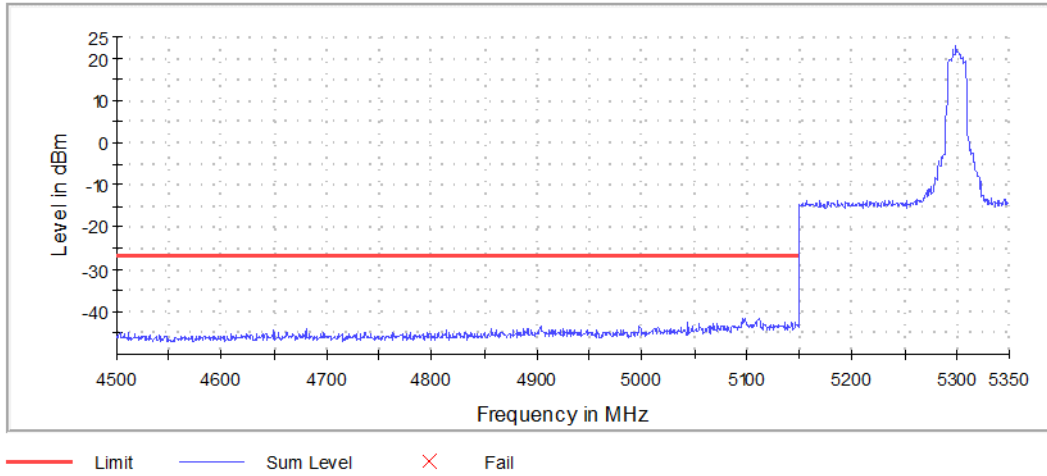


**Graph 27: Antenna 0 – Low Band Edge Channel 56 Transmitting (5280 MHz) – Setting 20**



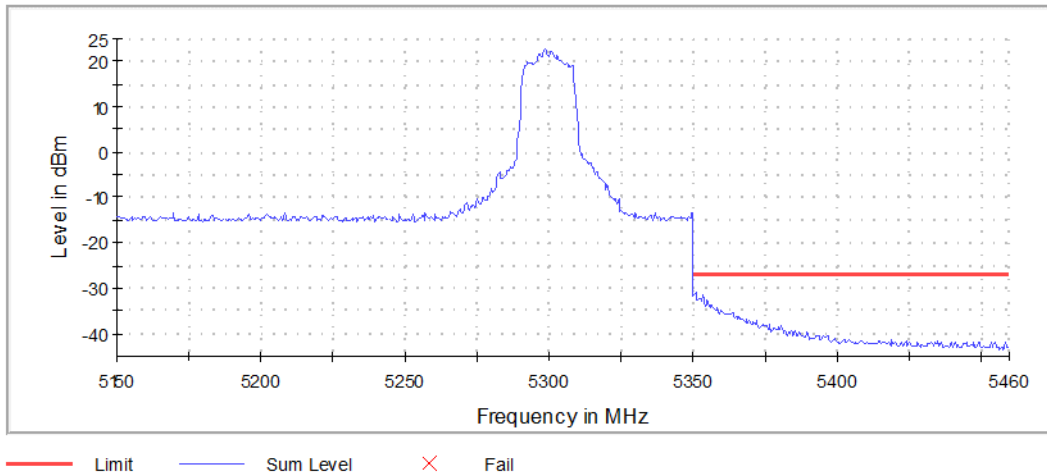
**Graph 28: Antenna 0 – High Band Edge Channel 56 Transmitting (5280 MHz) – Setting 20**

Band Edge

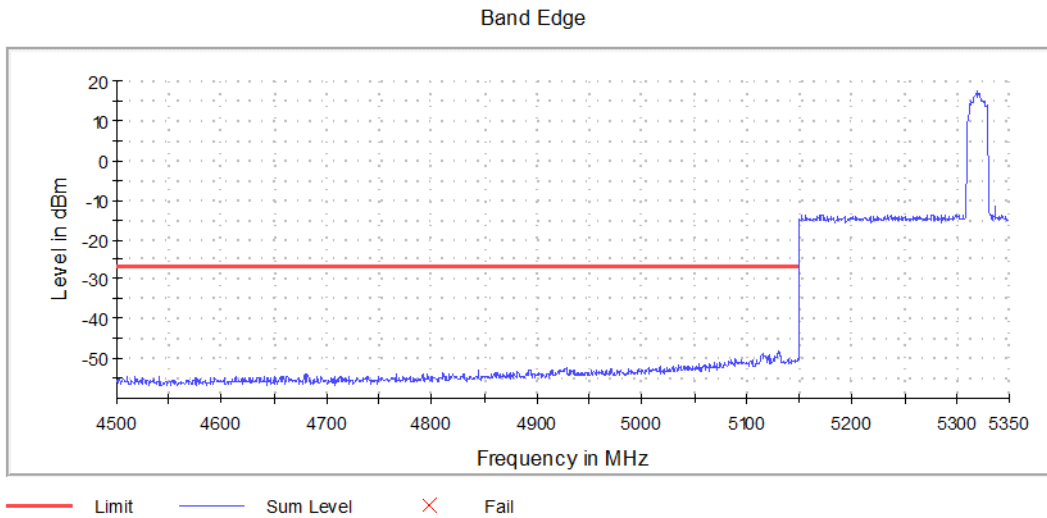


**Graph 29: Antenna 0 – Low Band Edge Channel 60 Transmitting (5300 MHz) – Setting 18**

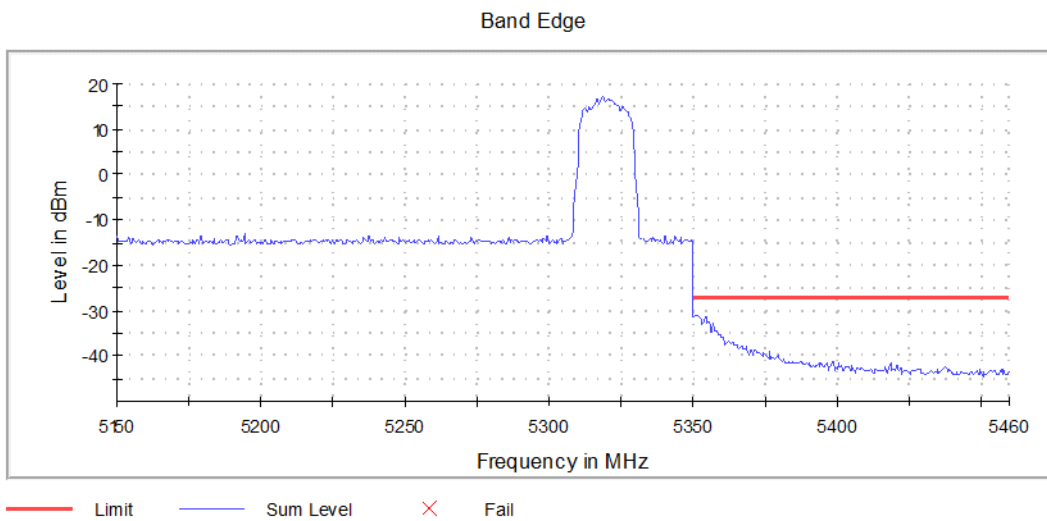
Band Edge



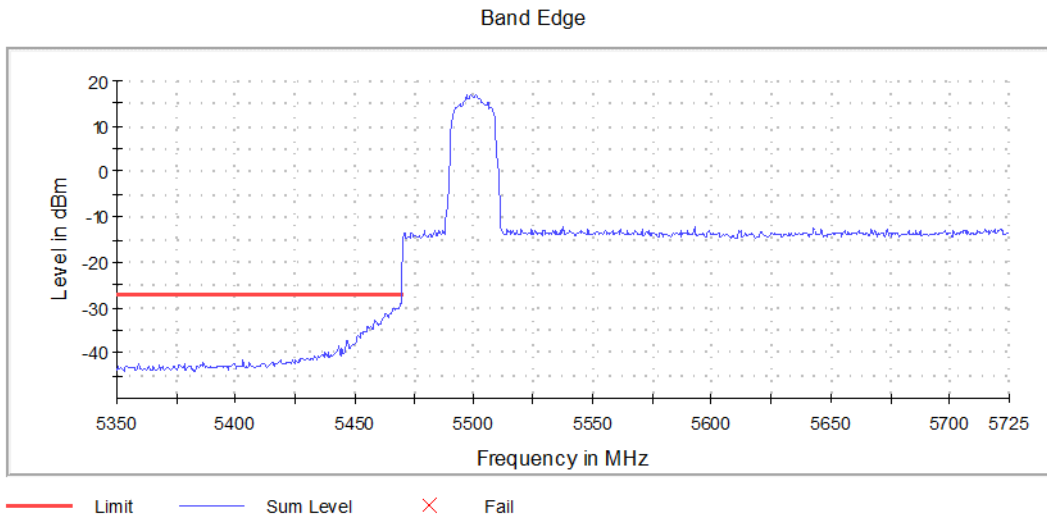
**Graph 30: Antenna 0 – High Band Edge Channel 60 Transmitting (5300 MHz) – Setting 18**



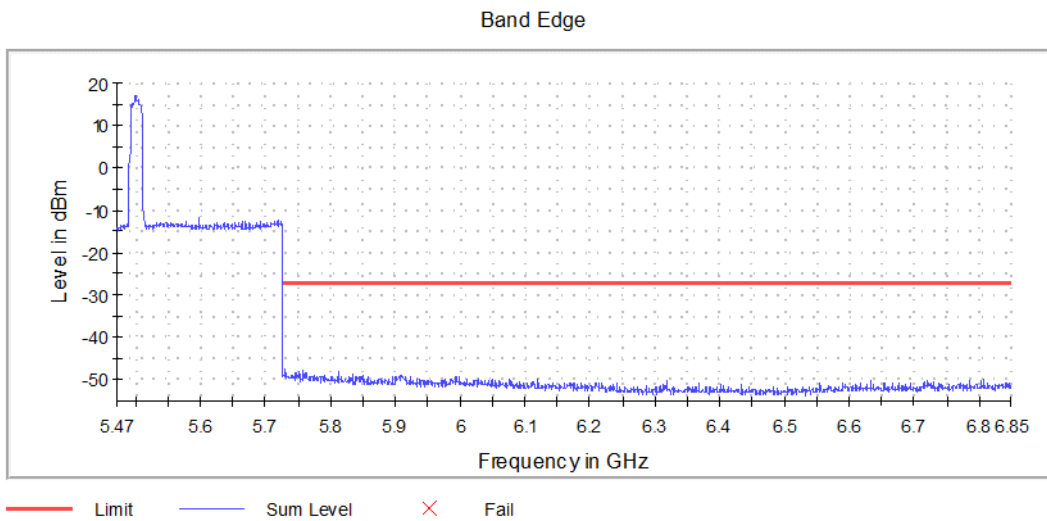
**Graph 31: Antenna 0 – Low Band Edge Channel 64 Transmitting (5320 MHz) – Setting 12**



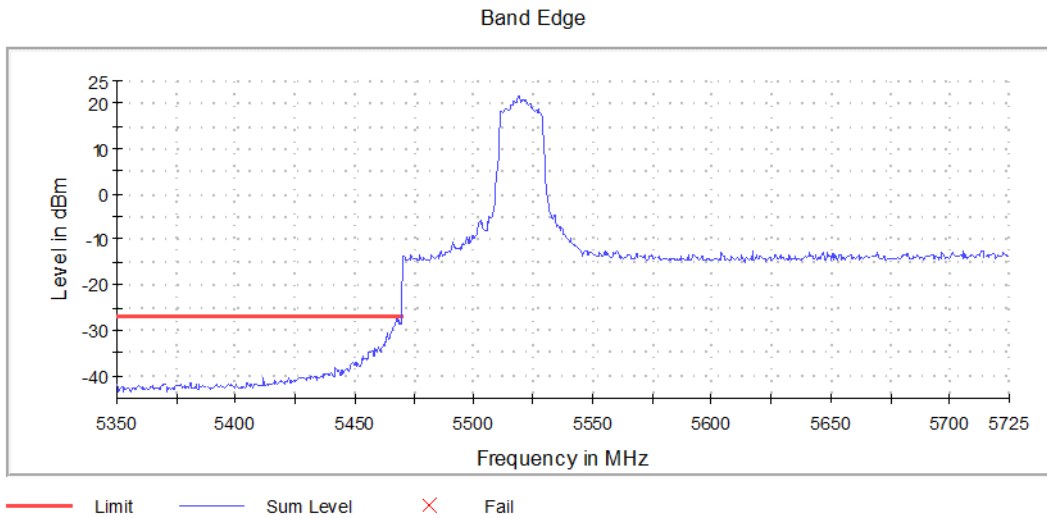
**Graph 32: Antenna 0 – High Band Edge Channel 64 Transmitting (5320 MHz) – Setting 12**



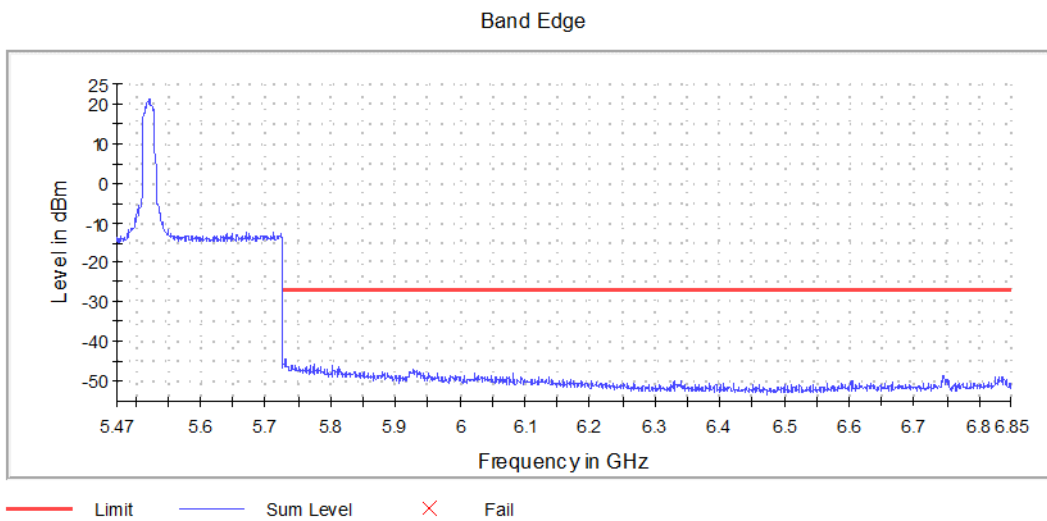
**Graph 33: Antenna 0 – Low Band Edge Channel 100 Transmitting (5500 MHz) – Setting 12**



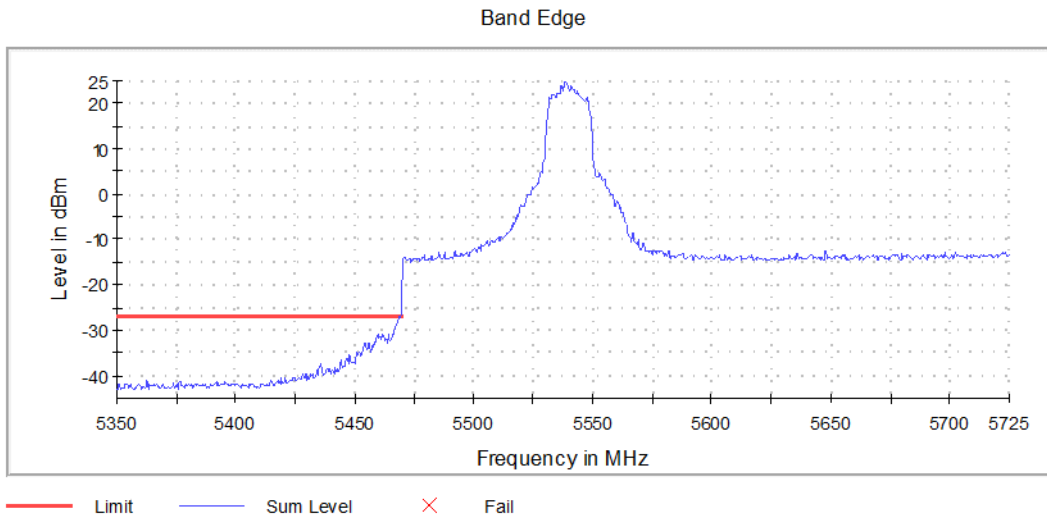
**Graph 34: Antenna 0 – High Band Edge Channel 100 Transmitting (5500 MHz) – Setting 12**



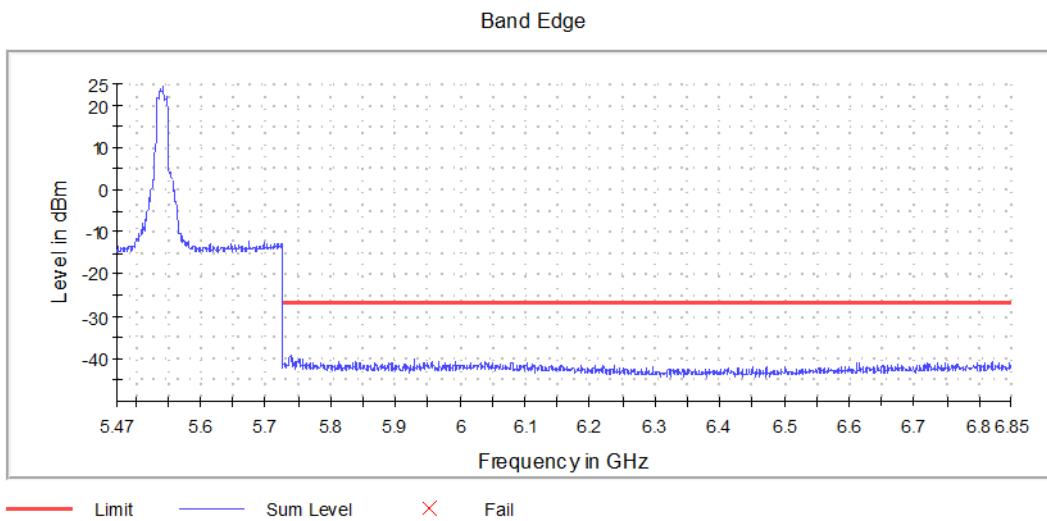
**Graph 35: Antenna 0 – Low Band Edge Channel 104 Transmitting (5520 MHz) – Setting 17**



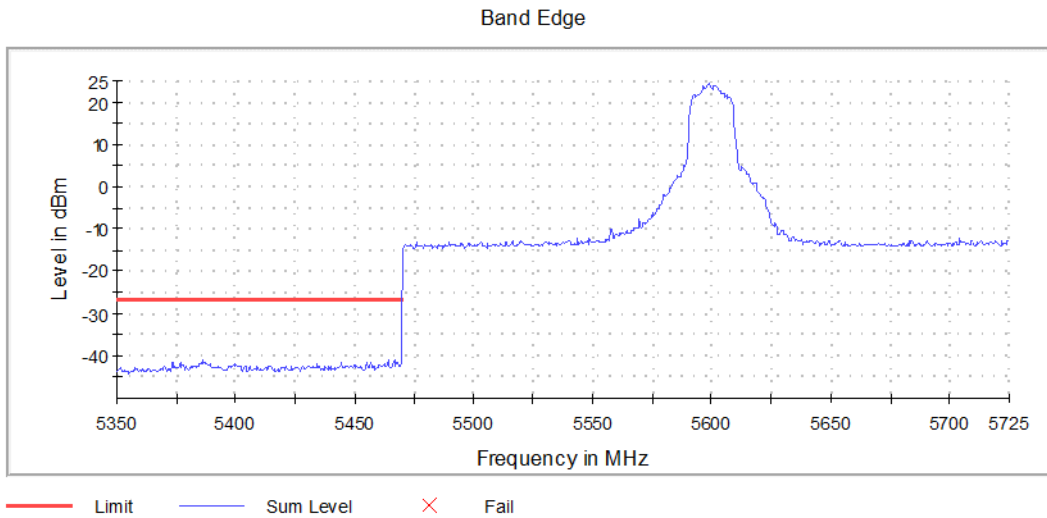
**Graph 36: Antenna 0 – High Band Edge Channel 104 Transmitting (5520 MHz) – Setting 17**



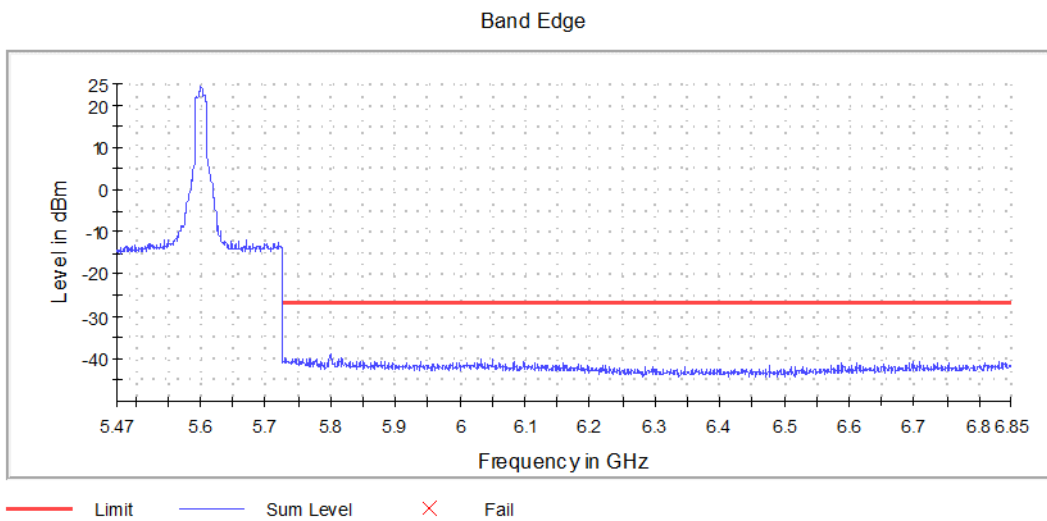
**Graph 37: Antenna 0 – Low Band Edge Channel 108 Transmitting (5540 MHz) – Setting 20**



**Graph 38: Antenna 0 – High Band Edge Channel 108 Transmitting (5540 MHz) – Setting 20**

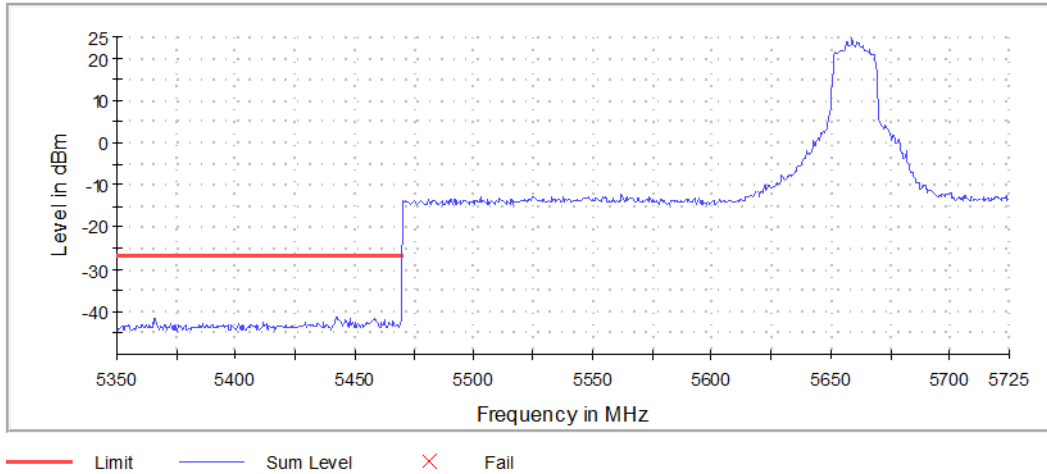


**Graph 39: Antenna 0 – Low Band Edge Channel 120 Transmitting (5600 MHz) – Setting 20**



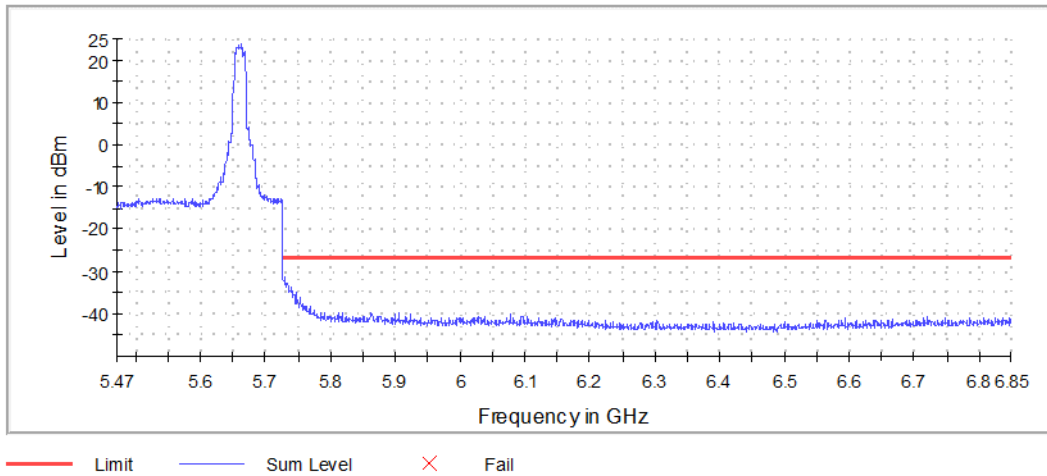
**Graph 40: Antenna 0 – High Band Edge Channel 120 Transmitting (5600 MHz) – Setting 20**

Band Edge



**Graph 41: Antenna 0 – Low Band Edge Channel 132 Transmitting (5660 MHz) – Setting 20**

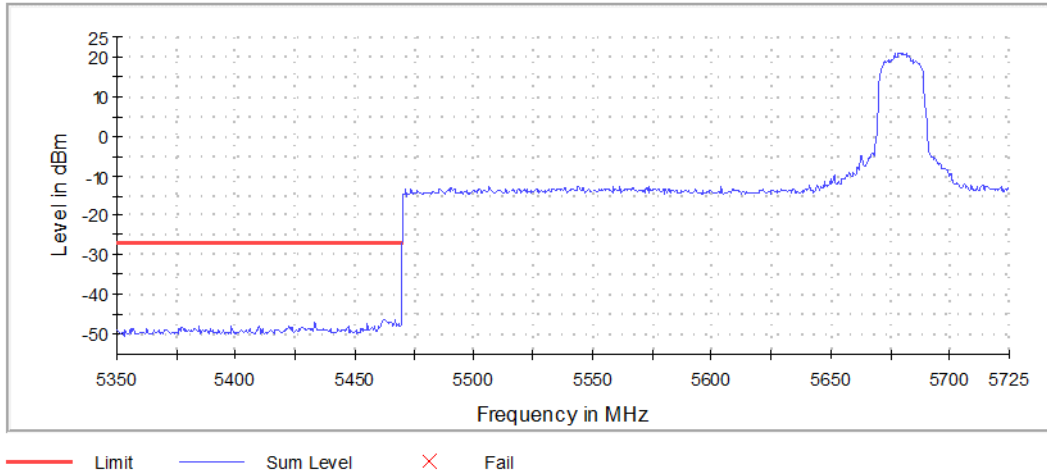
Band Edge



**Graph 42: Antenna 0 – High Band Edge Channel 132 Transmitting (5660 MHz) – Setting 20**

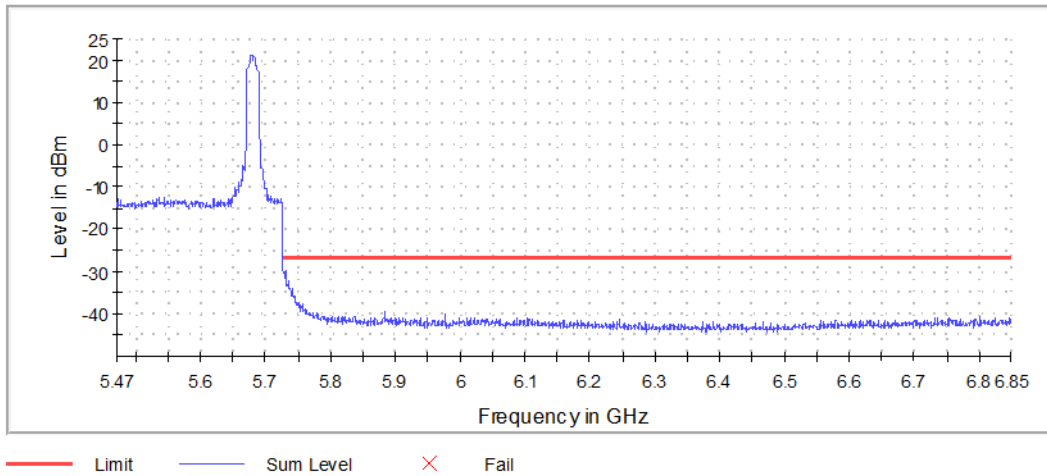


Band Edge

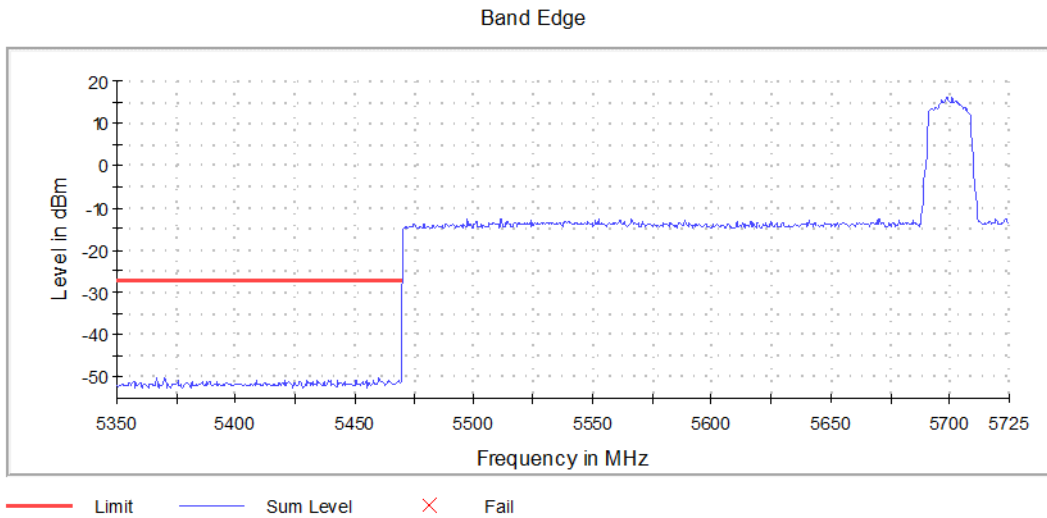


**Graph 43: Antenna 0 – Low Band Edge Channel 136 Transmitting (5680 MHz) – Setting 17**

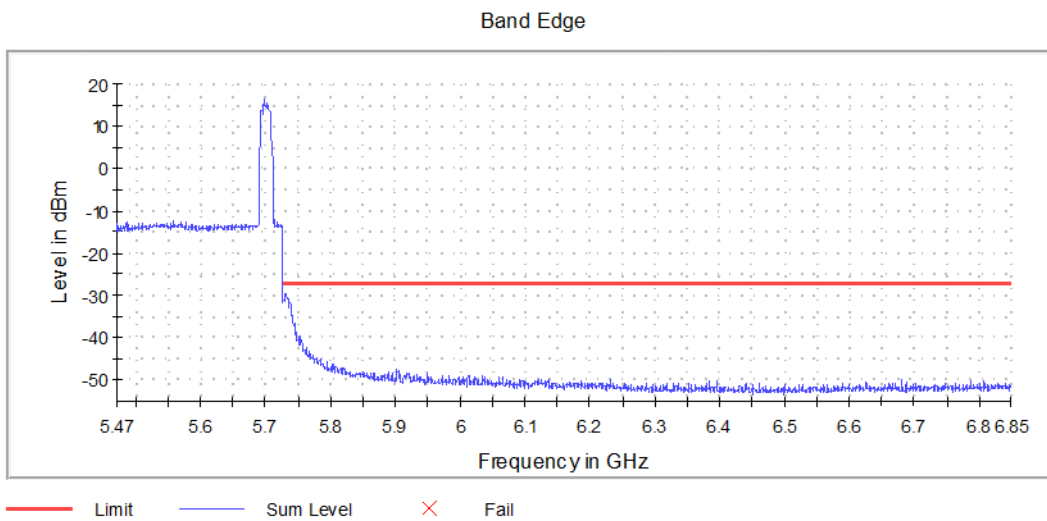
Band Edge



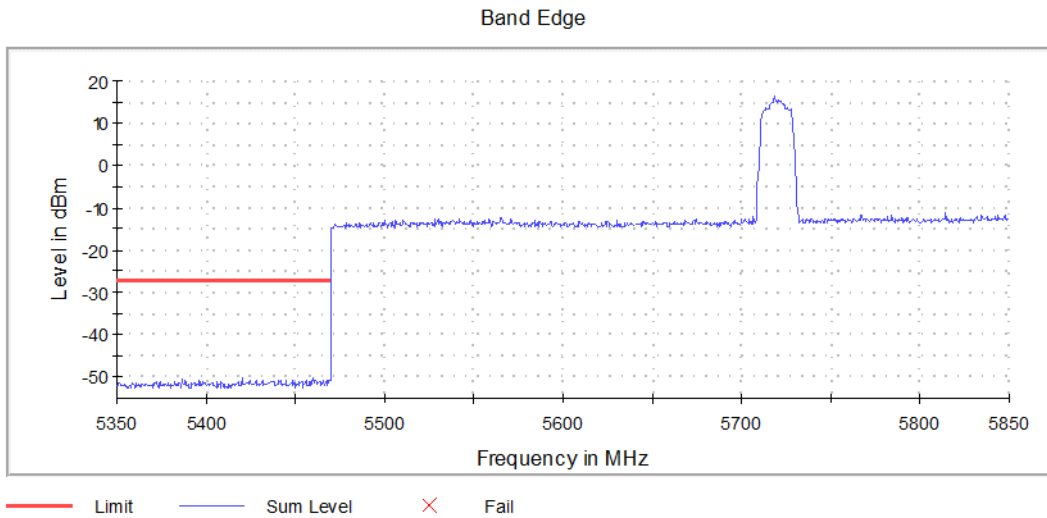
**Graph 44: Antenna 0 – High Band Edge Channel 136 Transmitting (5680 MHz) – Setting 17**



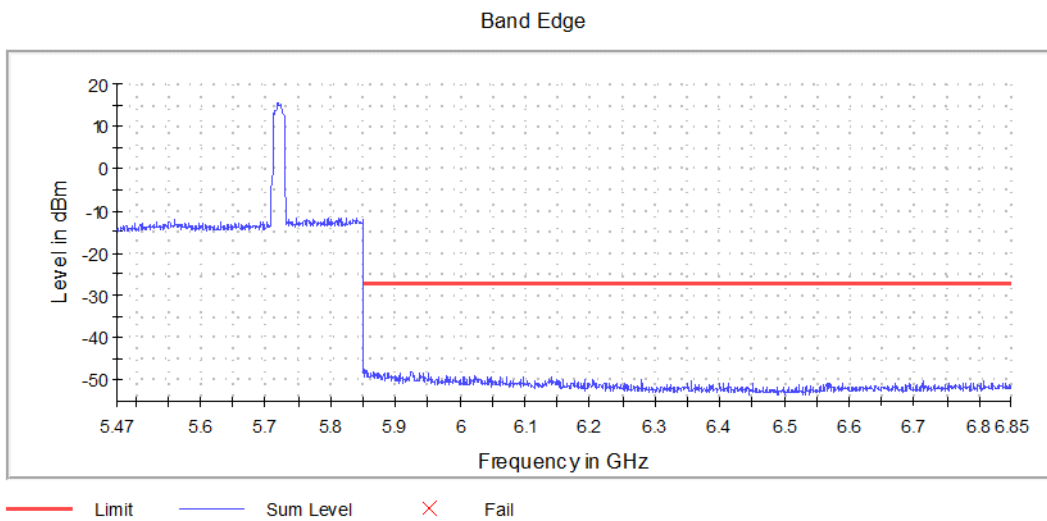
**Graph 45: Antenna 0 – Low Band Edge Channel 140 Transmitting (5700 MHz) – Setting 11**



**Graph 46: Antenna 0 – High Band Edge Channel 140 Transmitting (5700 MHz) – Setting 11**

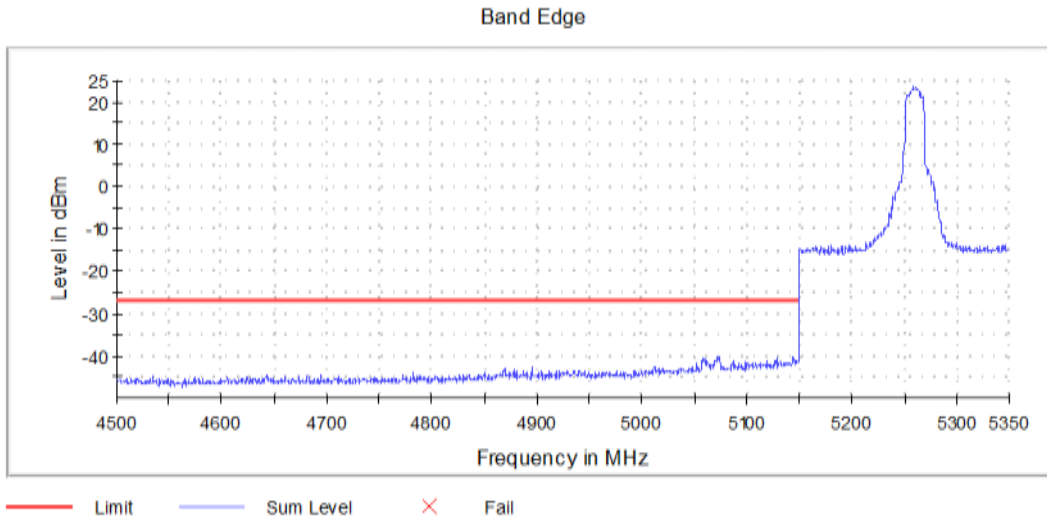


**Graph 47: Antenna 0 – Low Band Edge Channel 144 Transmitting (5720 MHz) – Setting 11**

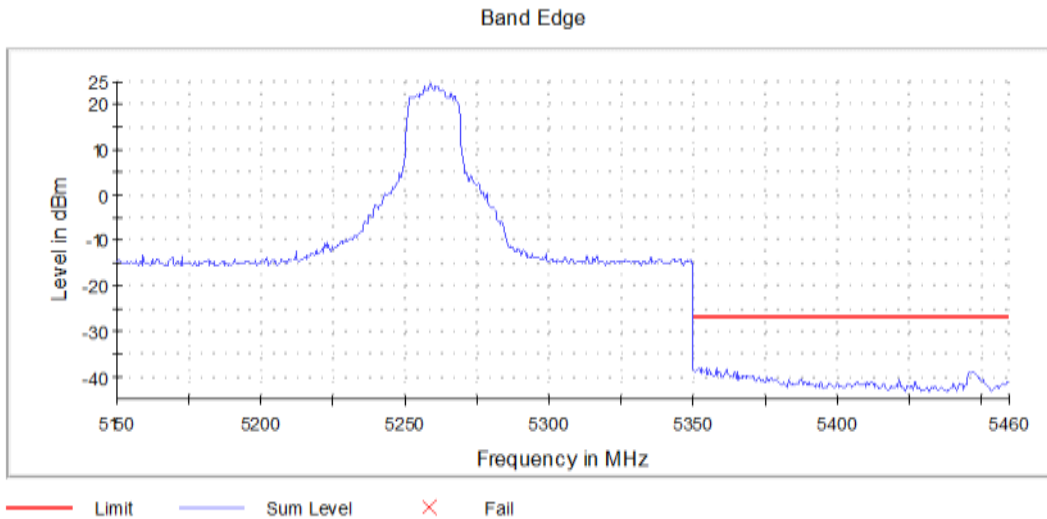


**Graph 48: Antenna 0 – High Band Edge Channel 144 Transmitting (5720 MHz) – Setting 11**

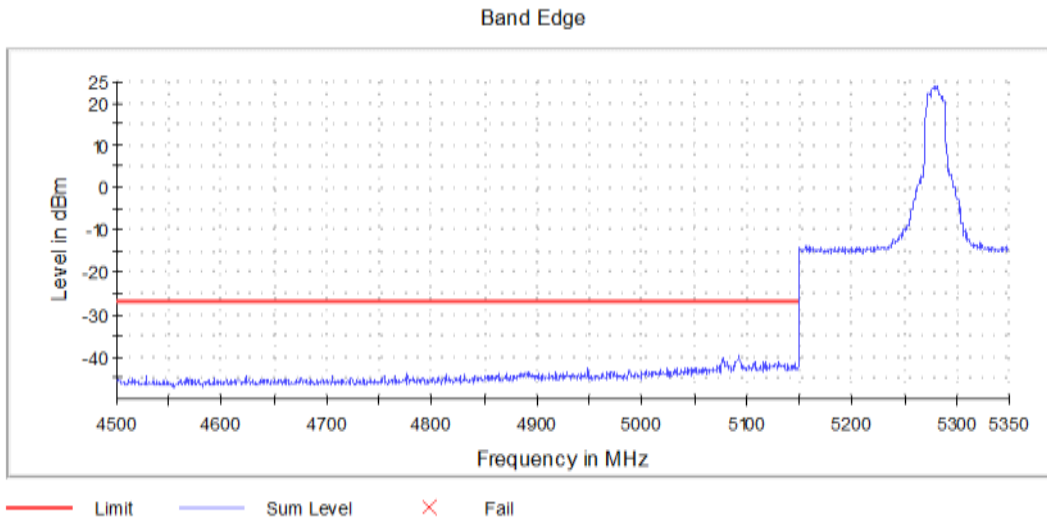
### Antenna 1 Out-Of-Band Domain Measurements



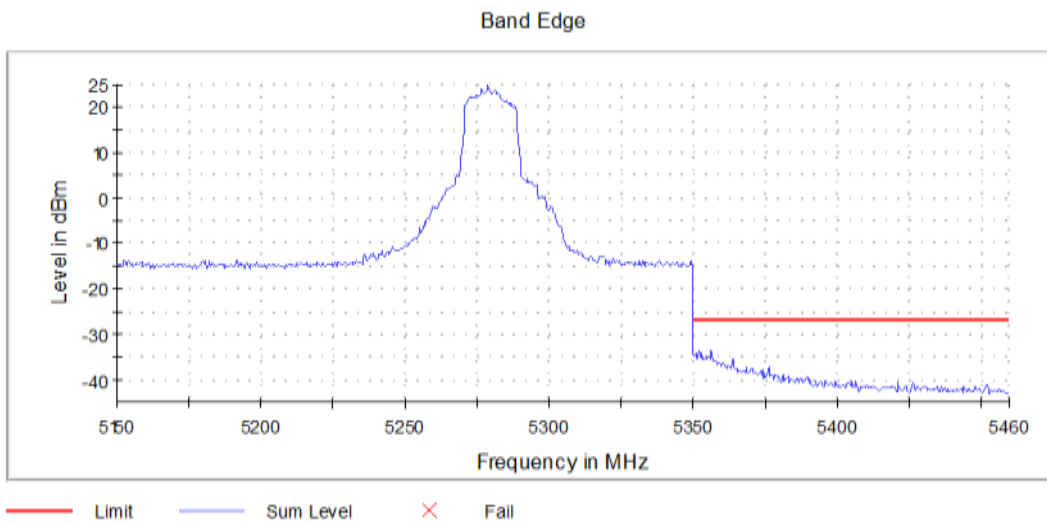
**Graph 49: Antenna 1 – Low Band Edge Channel 52 Transmitting (5260 MHz) – Setting 20**



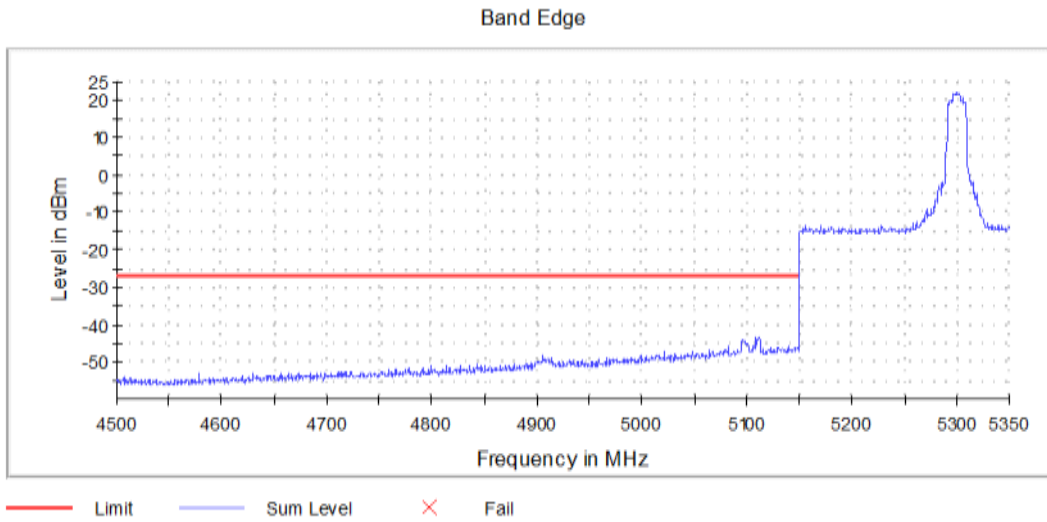
**Graph 50: Antenna 1 – High Band Edge Channel 52 Transmitting (5260 MHz) – Setting 20**



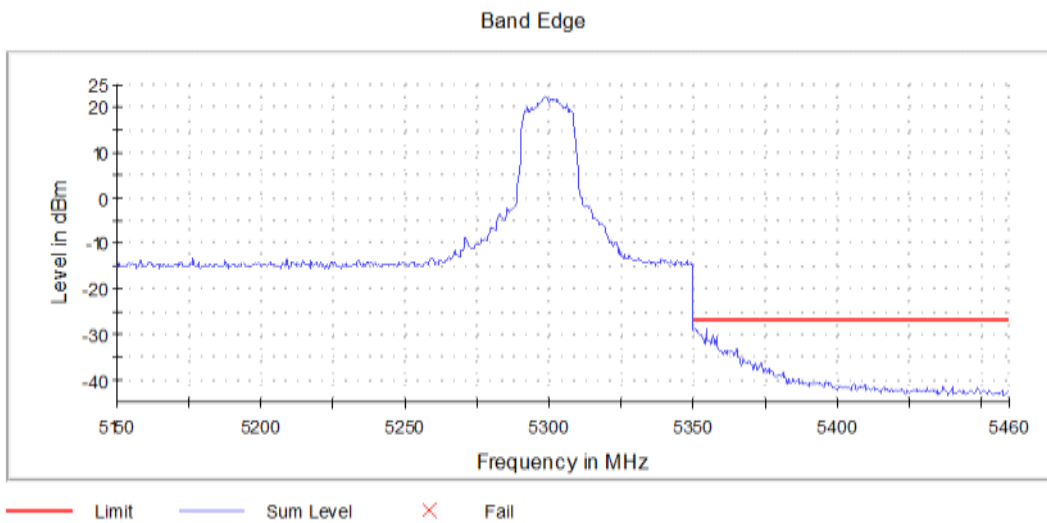
**Graph 51: Antenna 1 – Low Band Edge Channel 56 Transmitting (5280 MHz) – Setting 20**



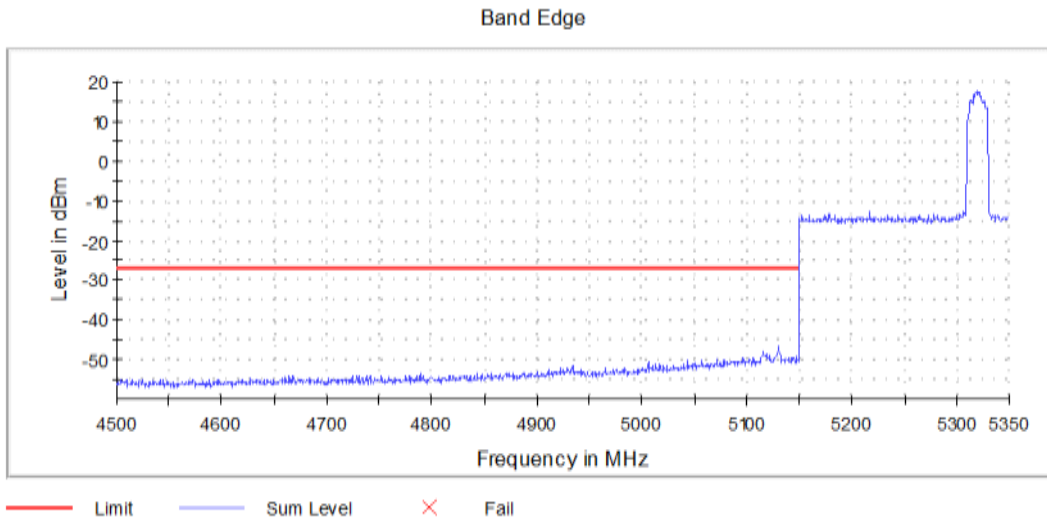
**Graph 52: Antenna 1 – High Band Edge Channel 56 Transmitting (5280 MHz) – Setting 20**



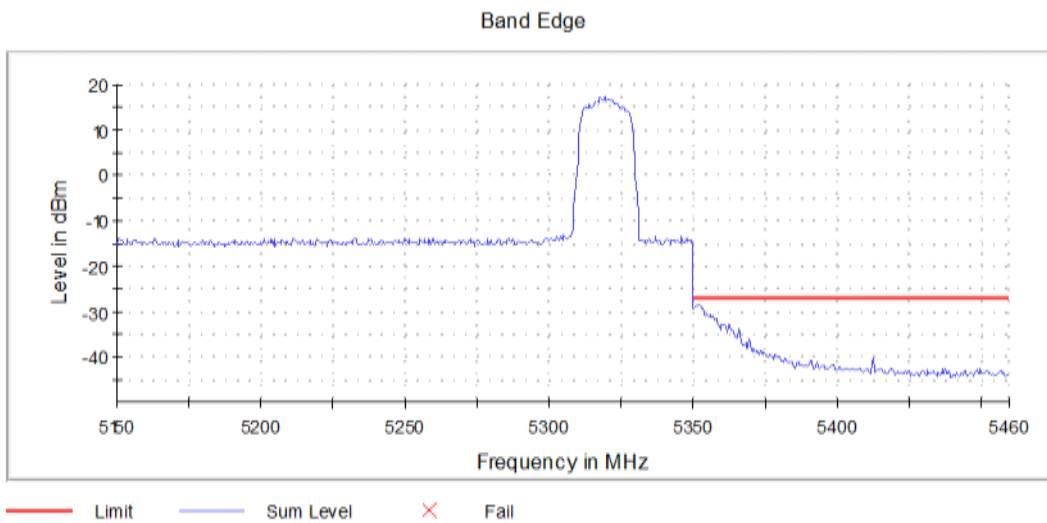
**Graph 53: Antenna 1 – Low Band Edge Channel 60 Transmitting (5300 MHz) – Setting 18**



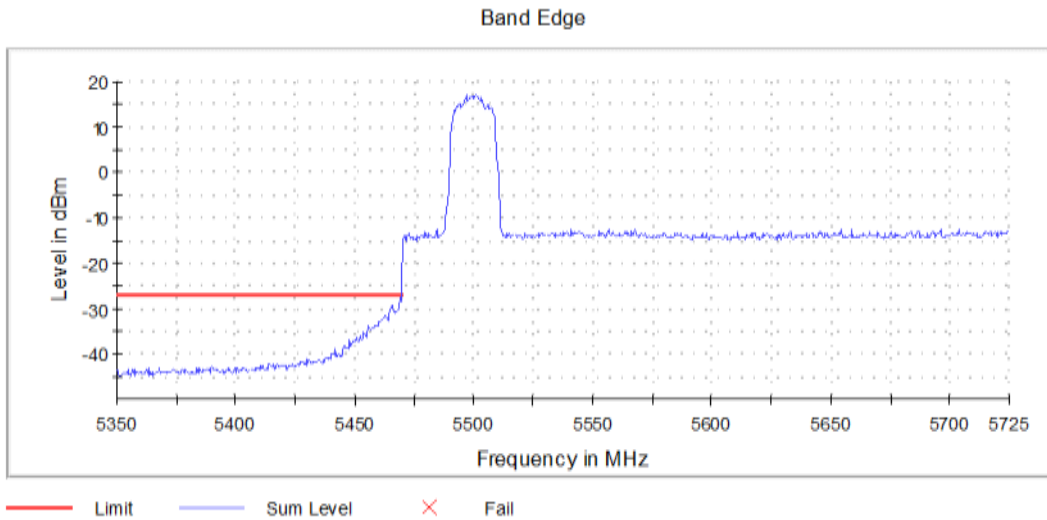
**Graph 54: Antenna 1 – High Band Edge Channel 60 Transmitting (5300 MHz) – Setting 18**



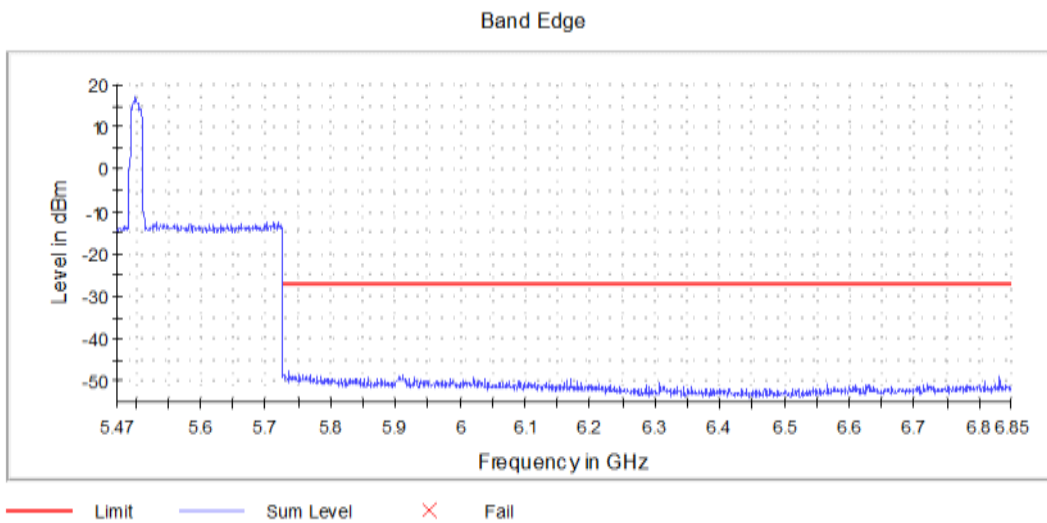
**Graph 55: Antenna 1 – Low Band Edge Channel 64 Transmitting (5320 MHz) – Setting 12**



**Graph 56: Antenna 1 – High Band Edge Channel 64 Transmitting (5320 MHz) – Setting 12**

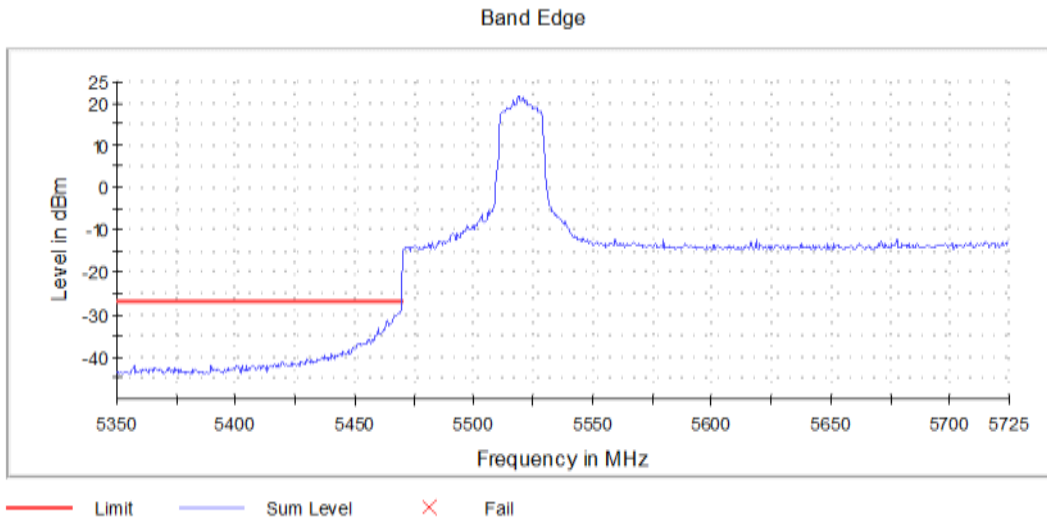


**Graph 57: Antenna 1 – Low Band Edge Channel 100 Transmitting (5500 MHz) – Setting 12**

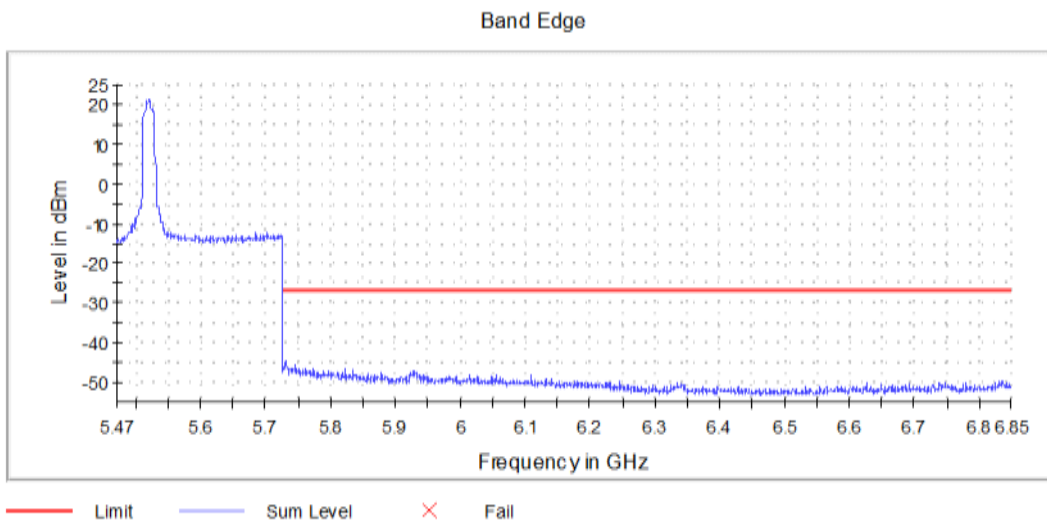


**Graph 58: Antenna 1 – High Band Edge Channel 100 Transmitting (5500 MHz) – Setting 12**

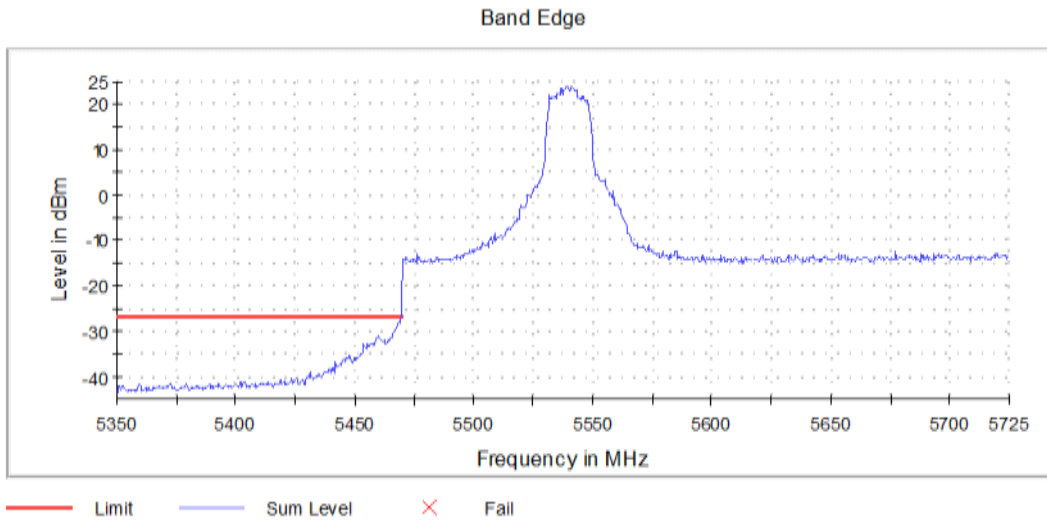




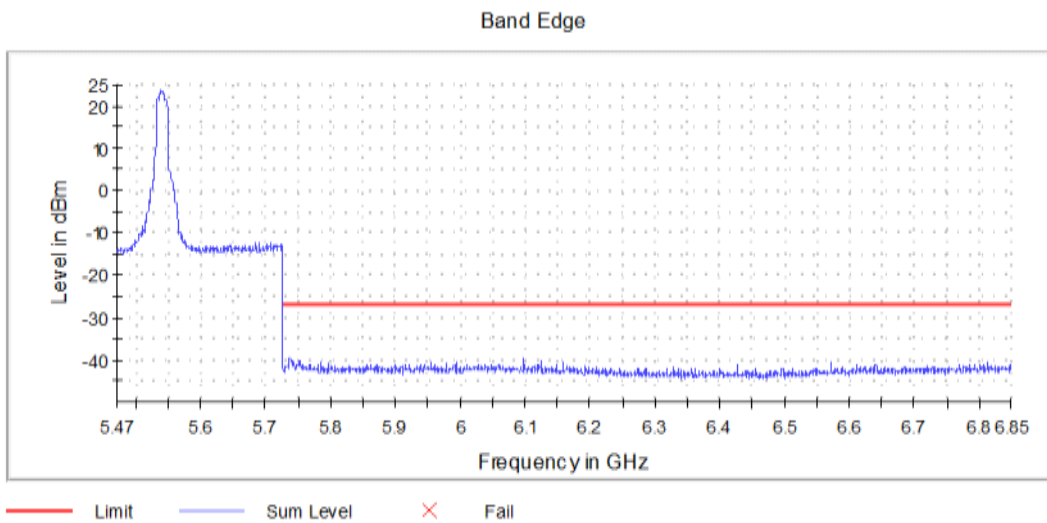
**Graph 59: Antenna 1 – Low Band Edge Channel 104 Transmitting (5520 MHz) – Setting 17**



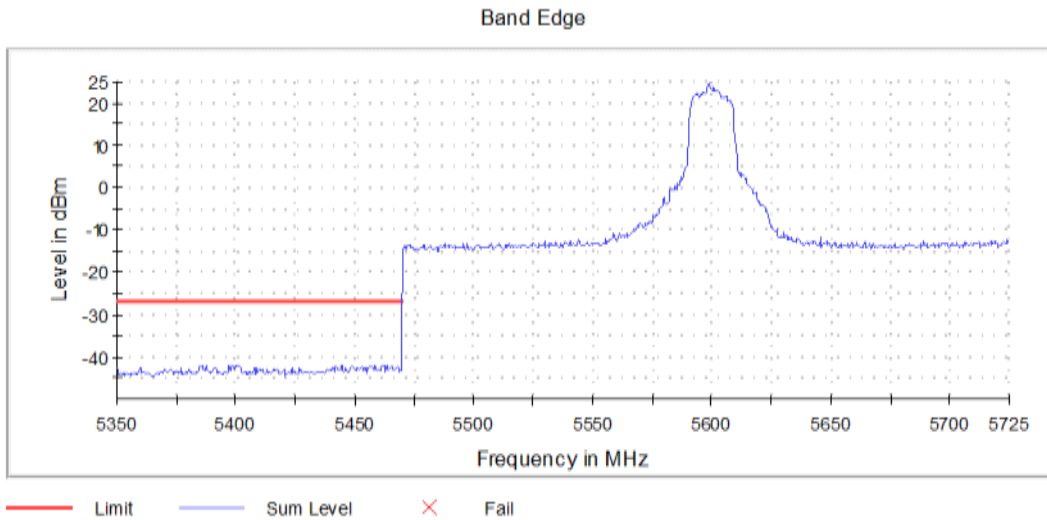
**Graph 60: Antenna 1 – High Band Edge Channel 104 Transmitting (5520 MHz) – Setting 17**



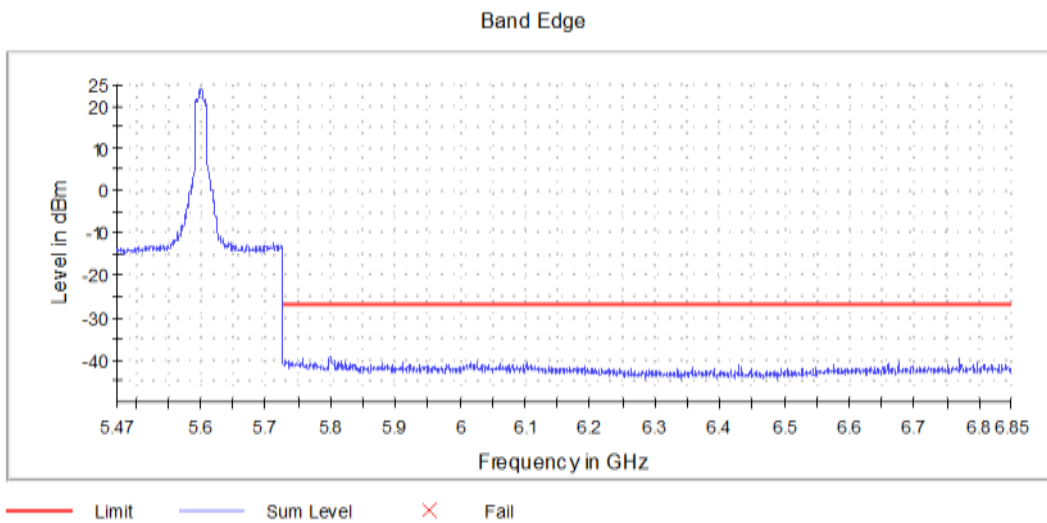
**Graph 61: Antenna 1 – Low Band Edge Channel 108 Transmitting (5540 MHz) – Setting 20**



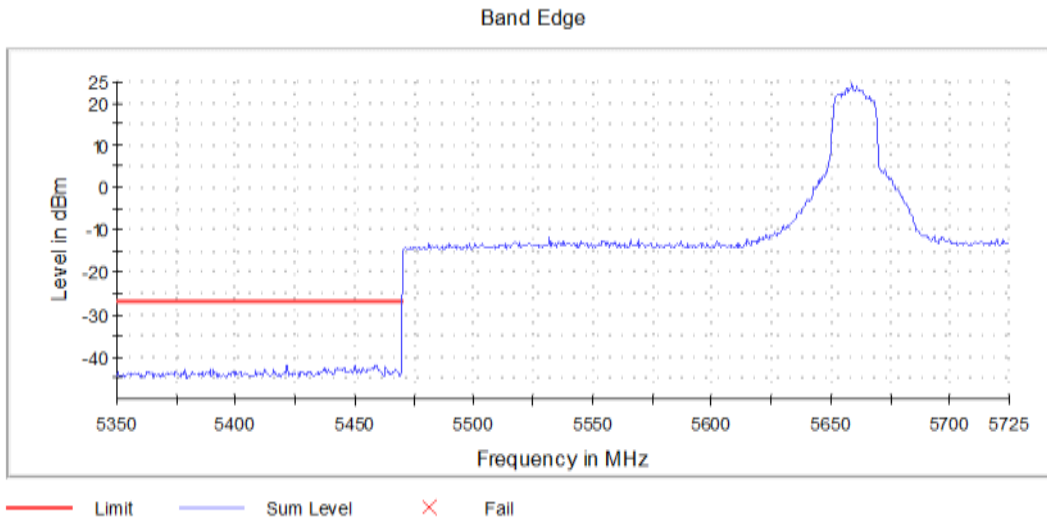
**Graph 62: Antenna 1 – High Band Edge Channel 108 Transmitting (5540 MHz) – Setting 20**



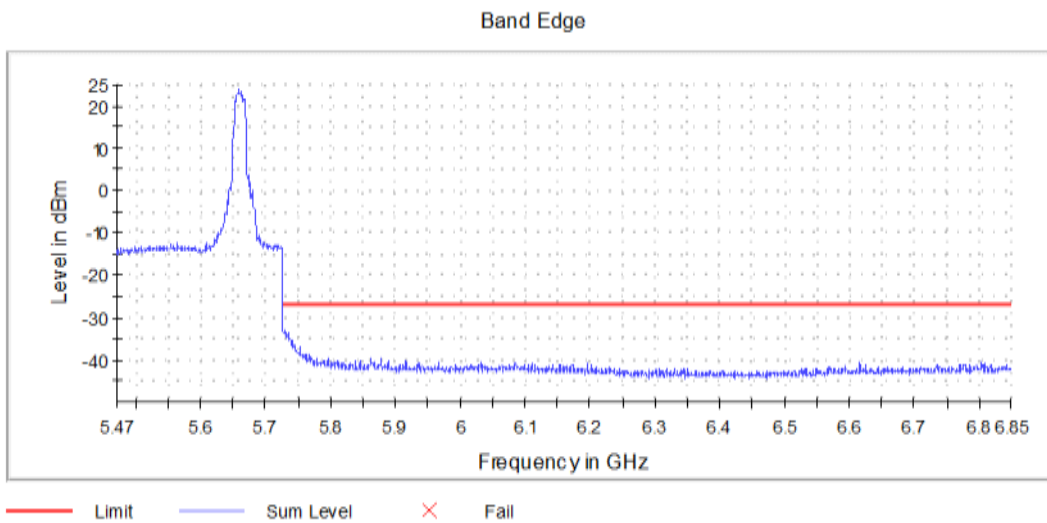
**Graph 63: Antenna 1 – Low Band Edge Channel 120 Transmitting (5600 MHz) – Setting 20**



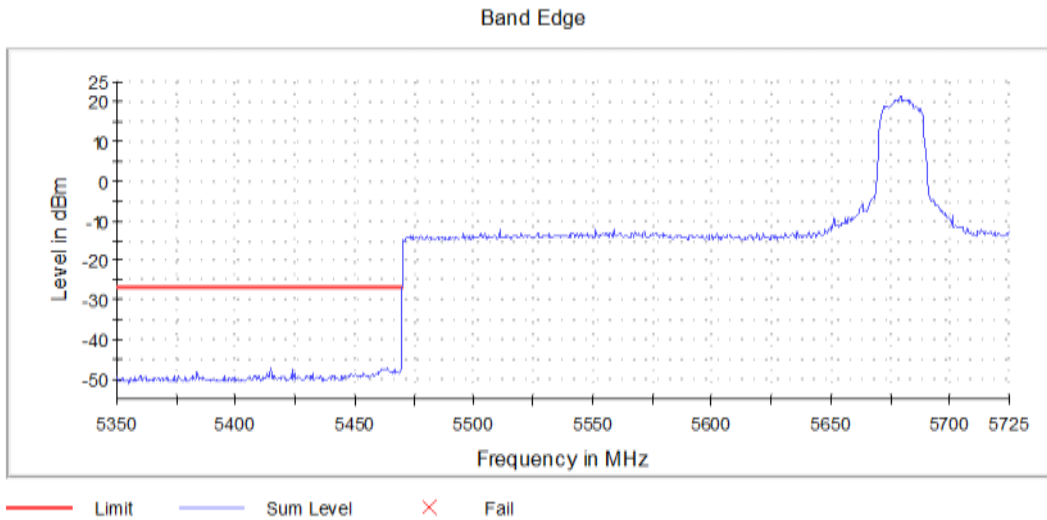
**Graph 64: Antenna 1 – High Band Edge Channel 120 Transmitting (5600 MHz) – Setting 20**



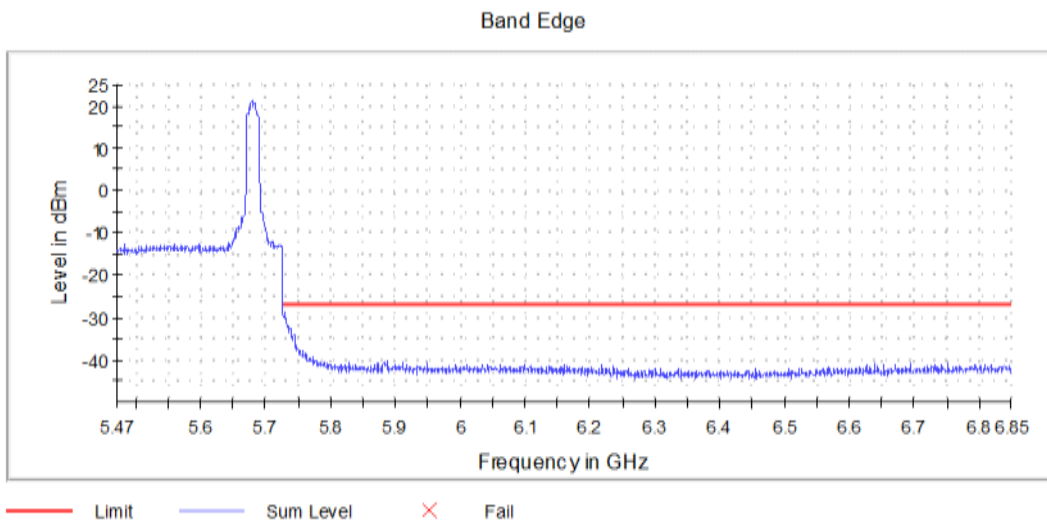
**Graph 65: Antenna 1 – Low Band Edge Channel 132 Transmitting (5660 MHz) – Setting 20**



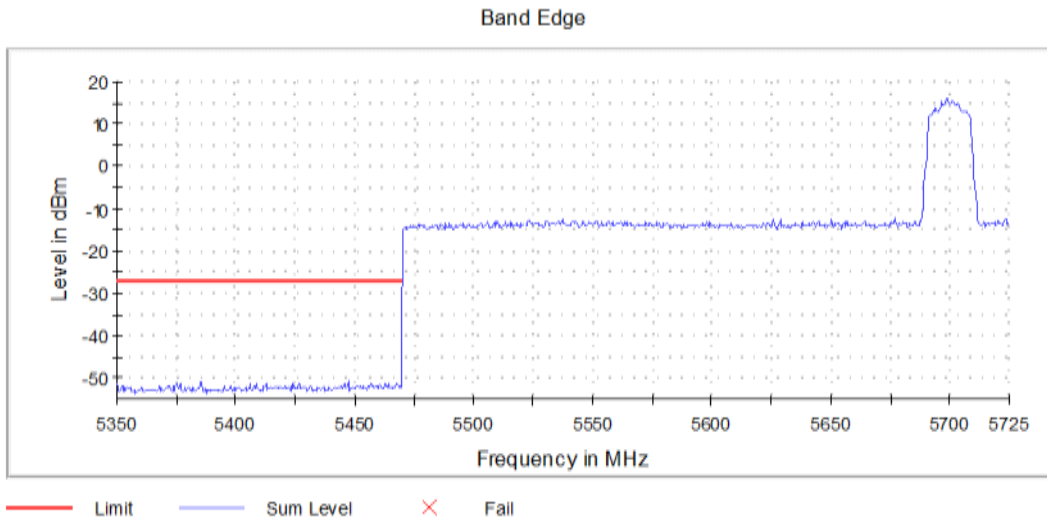
**Graph 66: Antenna 1 – High Band Edge Channel 132 Transmitting (5660 MHz) – Setting 20**



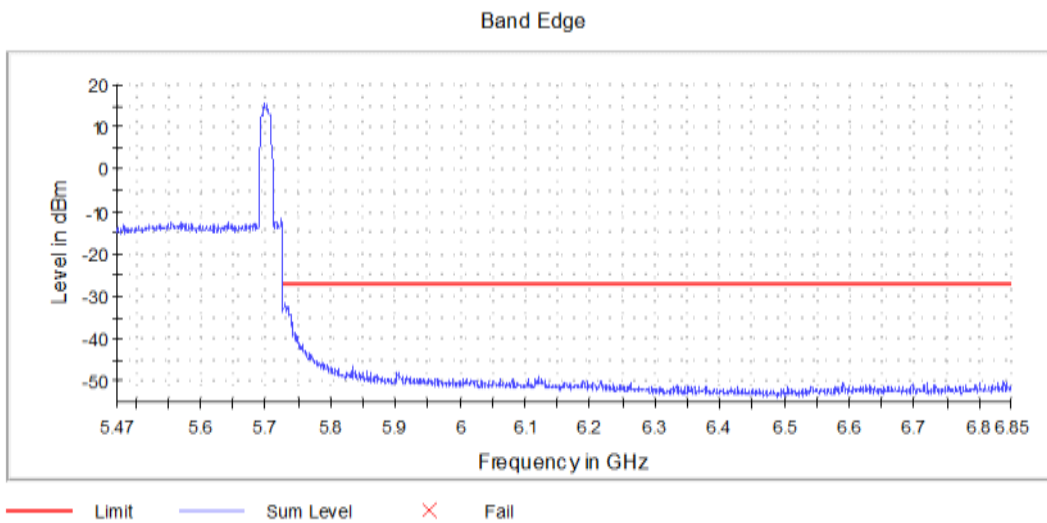
**Graph 67: Antenna 1 – Low Band Edge Channel 136 Transmitting (5680 MHz) – Setting 17**



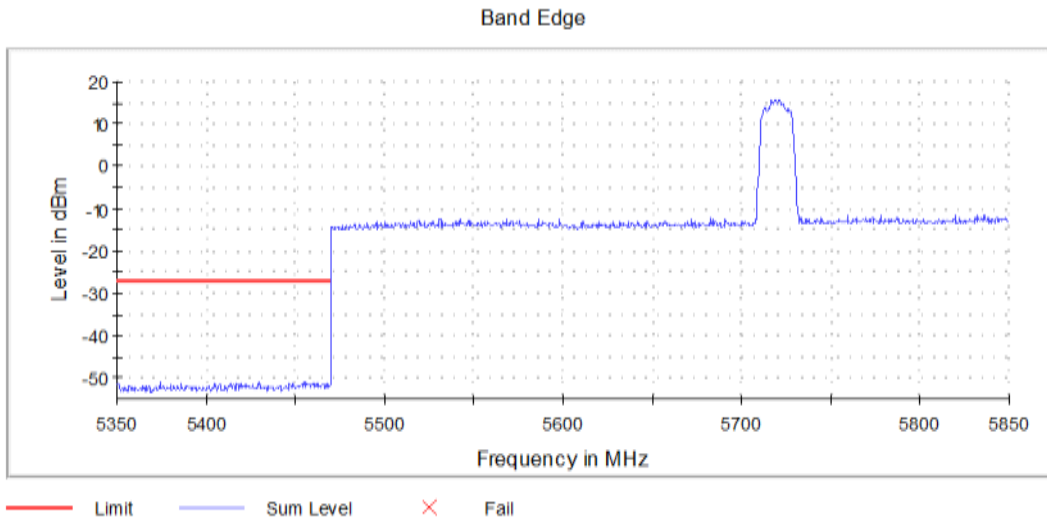
**Graph 68: Antenna 1 – High Band Edge Channel 136 Transmitting (5680 MHz) – Setting 17**



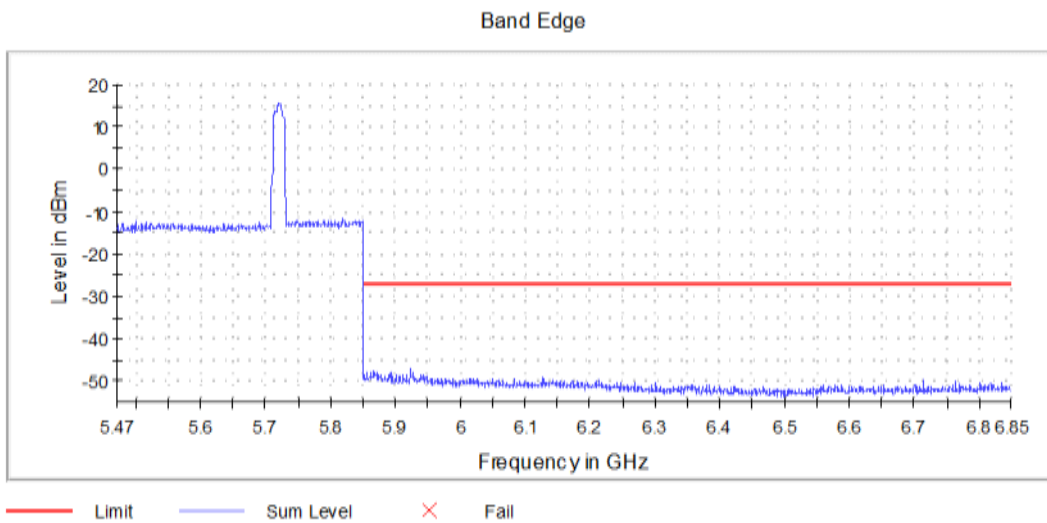
**Graph 69: Antenna 1 – Low Band Edge Channel 140 Transmitting (5700 MHz) – Setting 11**



**Graph 70: Antenna 1 – High Band Edge Channel 140 Transmitting (5700 MHz) – Setting 11**

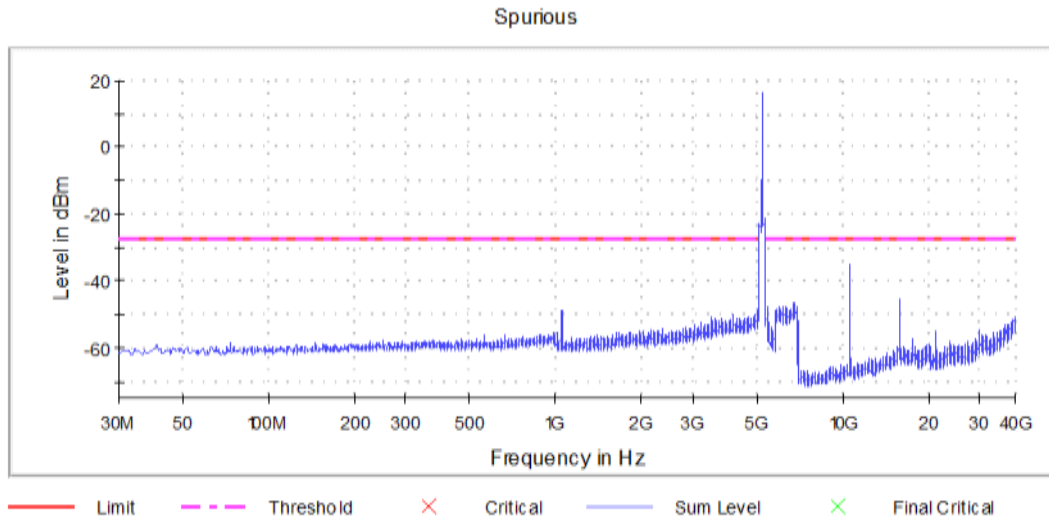


**Graph 71: Antenna 1 – Low Band Edge Channel 144 Transmitting (5720 MHz) – Setting 11**

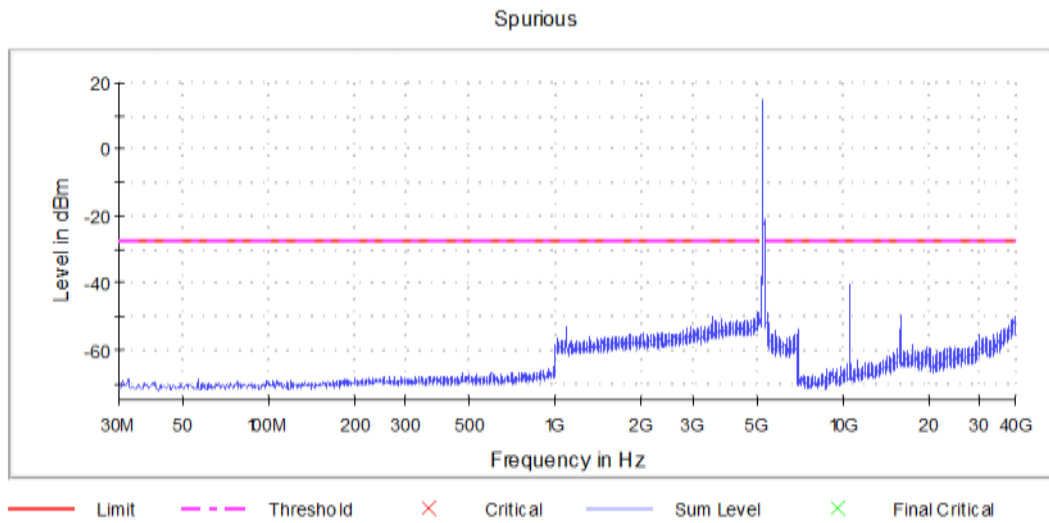


**Graph 72: Antenna 1 – High Band Edge Channel 144 Transmitting (5720 MHz) – Setting 11**

### Antenna 0 Spurious Domain Measurements

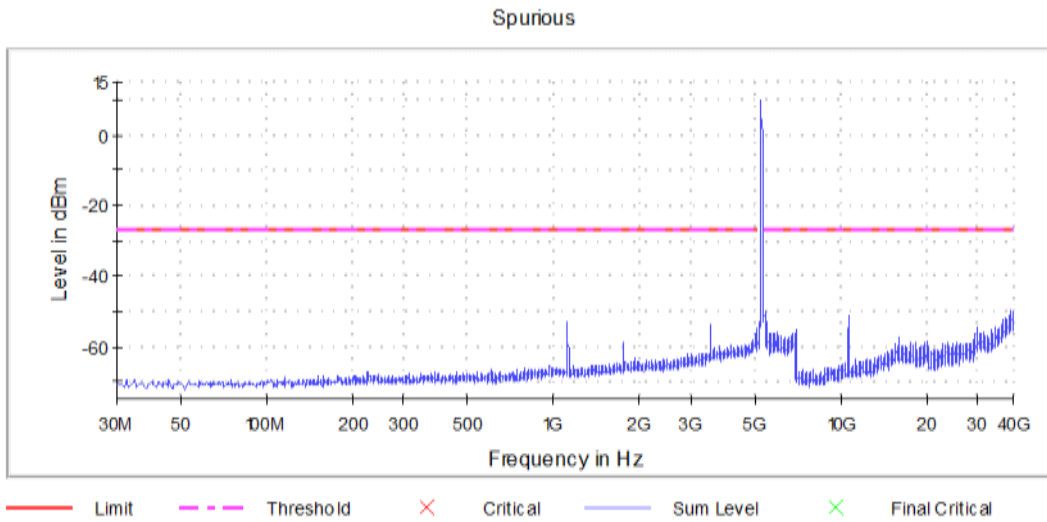


**Graph 73: Antenna 0 – Spurious Emissions Channel 52 Transmitting (5260 MHz) – Setting 20**

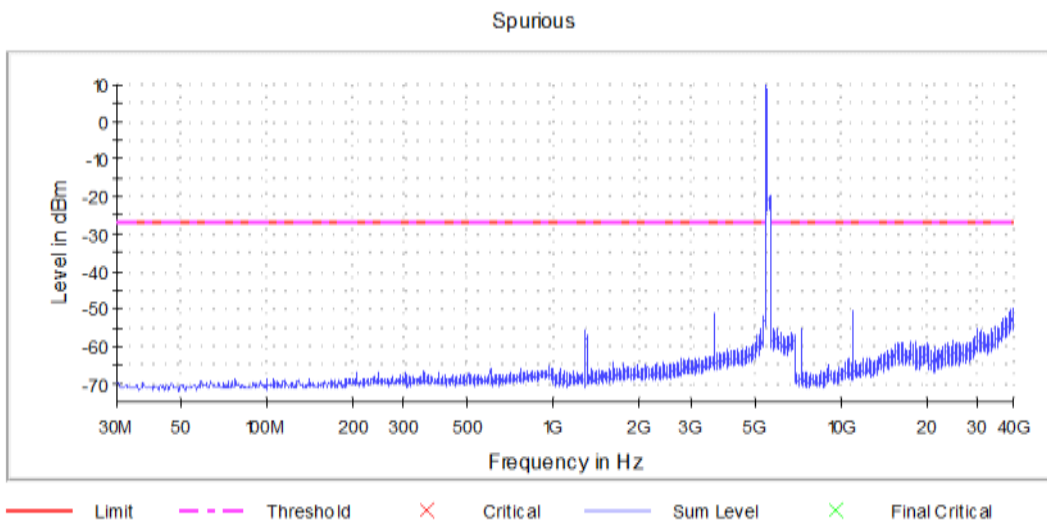


**Graph 74: Antenna 0 – Spurious Emissions Channel 60 Transmitting (5300 MHz) – Setting 18**

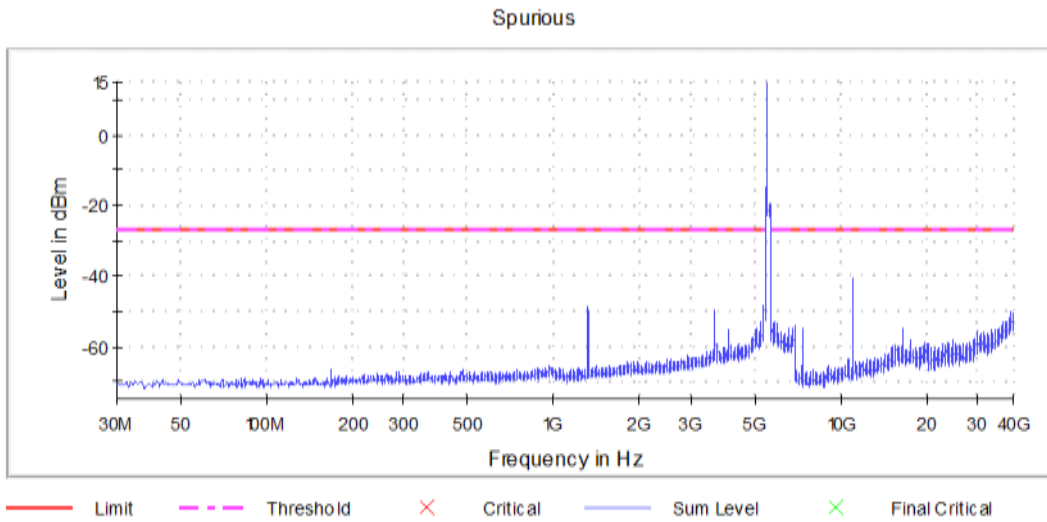




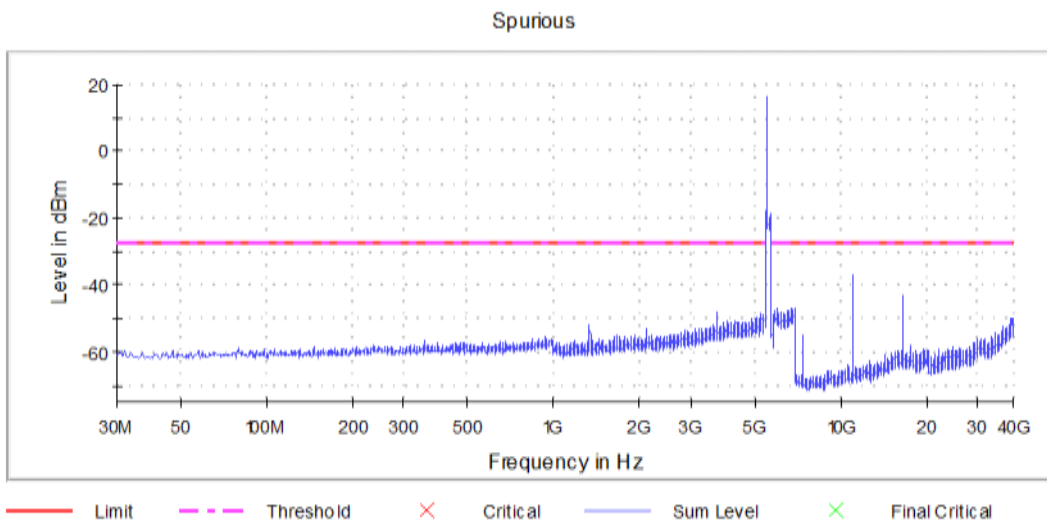
**Graph 75: Antenna 0 – Spurious Emissions Channel 64 Transmitting (5320 MHz) – Setting 12**



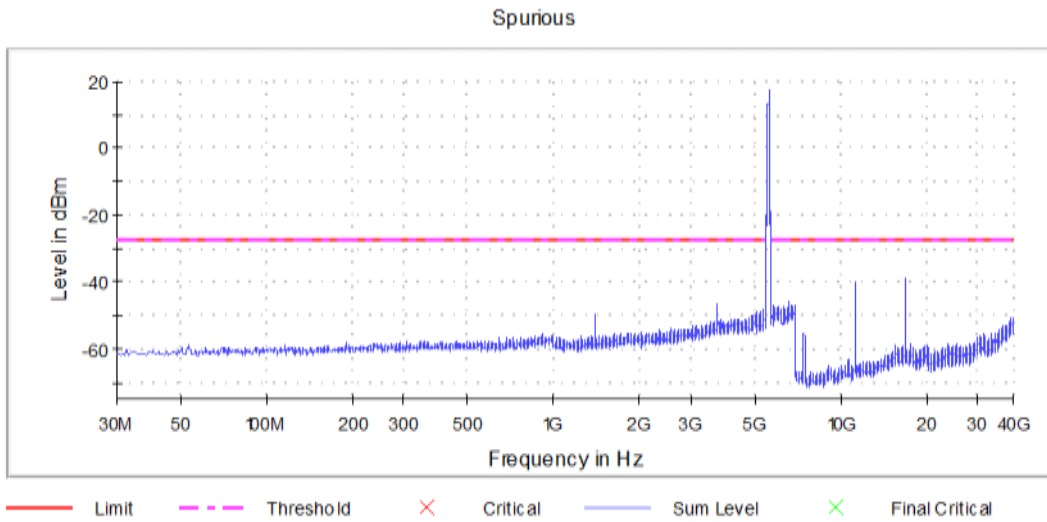
**Graph 76: Antenna 0 – Spurious Emissions Channel 100 Transmitting (5500 MHz) – Setting 12**



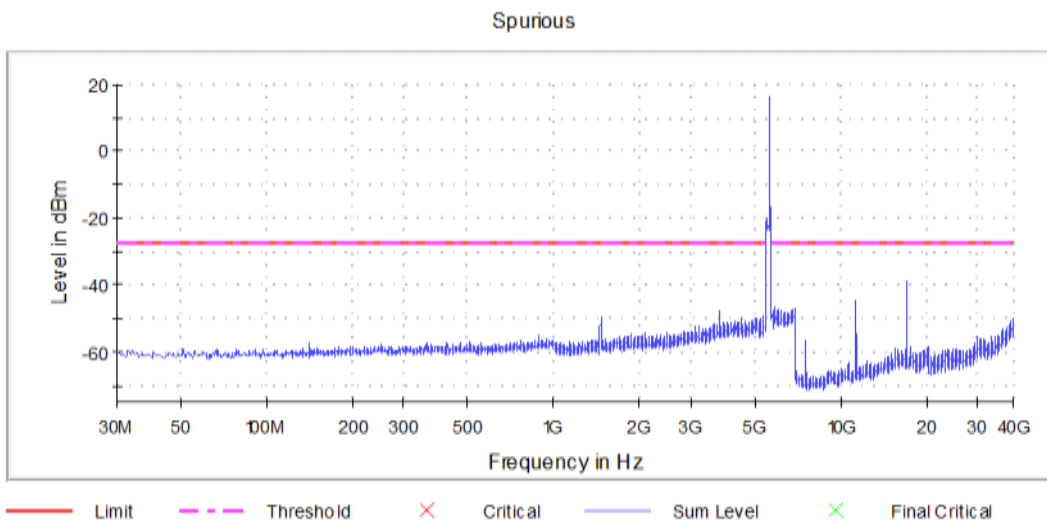
**Graph 77: Antenna 0 – Spurious Emissions Channel 104 Transmitting (5520 MHz) – Setting 17**



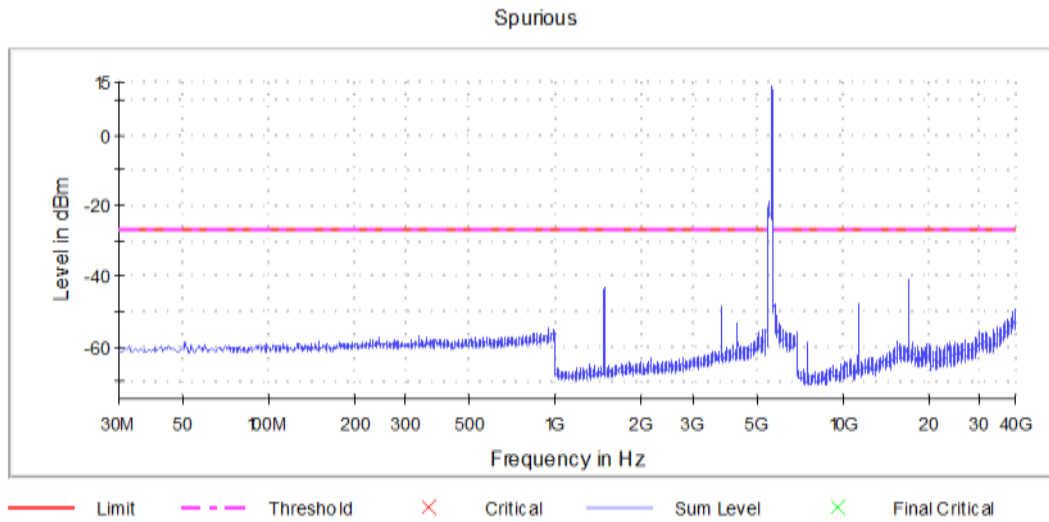
**Graph 78: Antenna 0 – Spurious Emissions Channel 108 Transmitting (5540 MHz)– Setting 20**



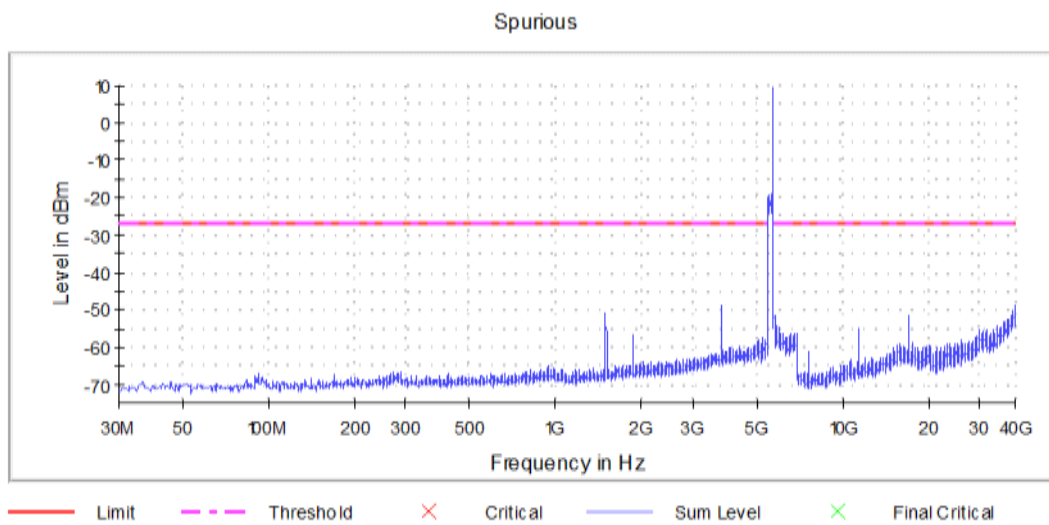
**Graph 79: Antenna 0 – Spurious Emissions Channel 120 Transmitting (5600 MHz) – Setting 20**



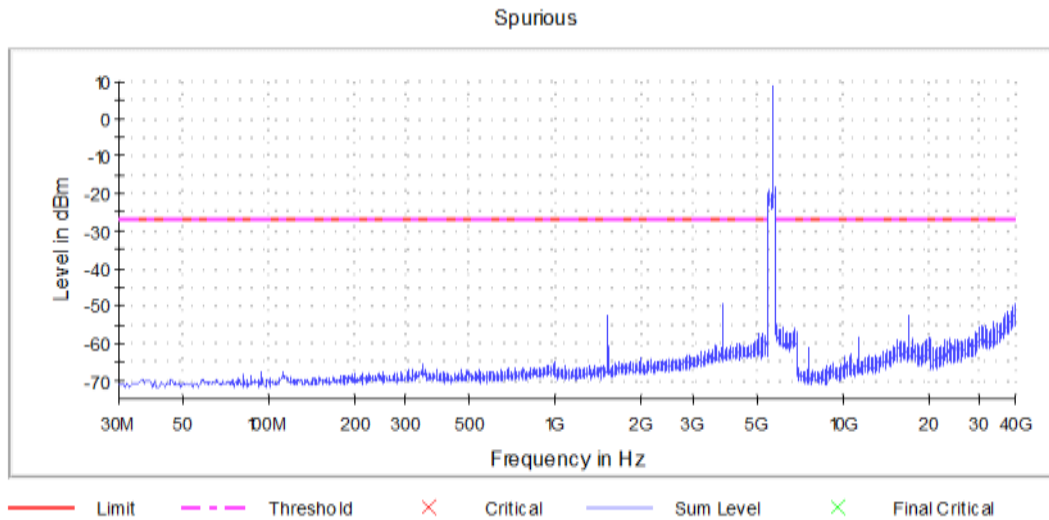
**Graph 80: Antenna 0 – Spurious Emissions Channel 132 Transmitting (5660 MHz) – Setting 20**



**Graph 81: Antenna 0 – Spurious Emissions Channel 136 Transmitting (5680 MHz) – Setting 17**

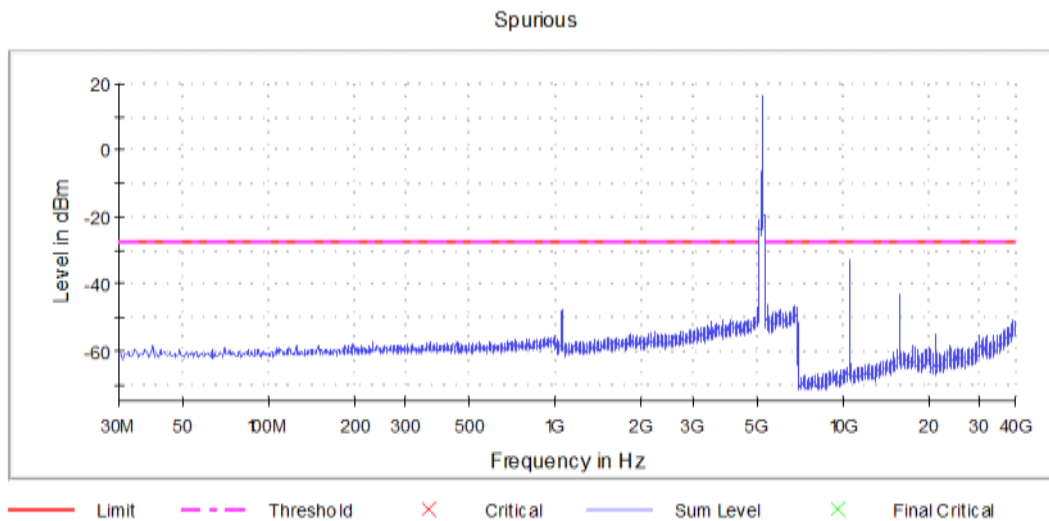


**Graph 82: Antenna 0 – Spurious Emissions Channel 140 Transmitting (5700 MHz) – Setting 11**

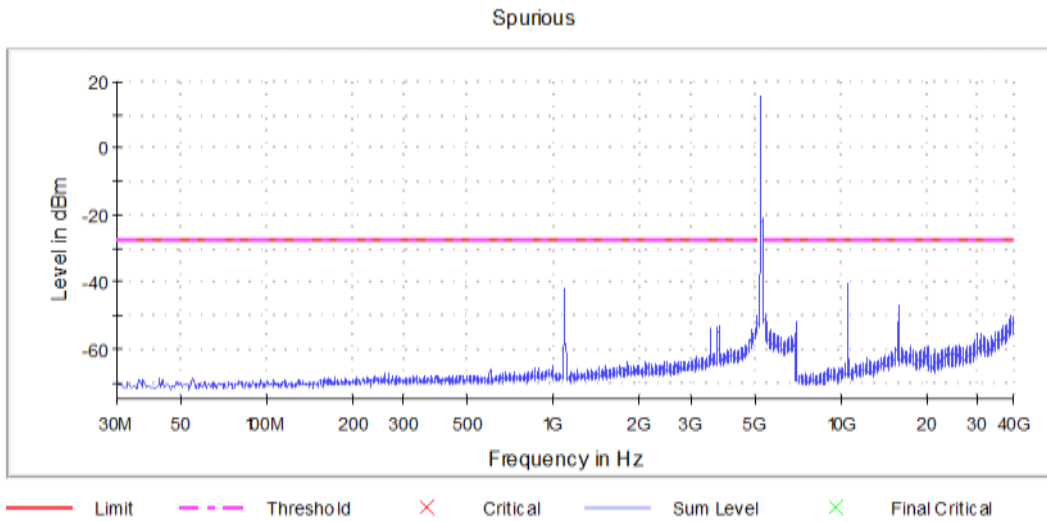


**Graph 83: Antenna 0 – Spurious Emissions Channel 144 Transmitting (5720 MHz) – Setting 11**

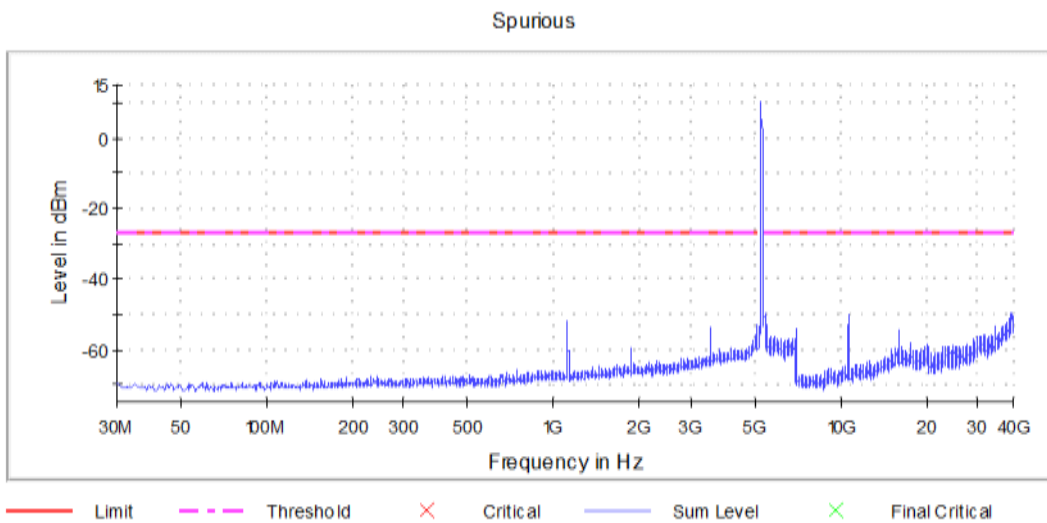
**Antenna 1 Spurious Domain Measurements**



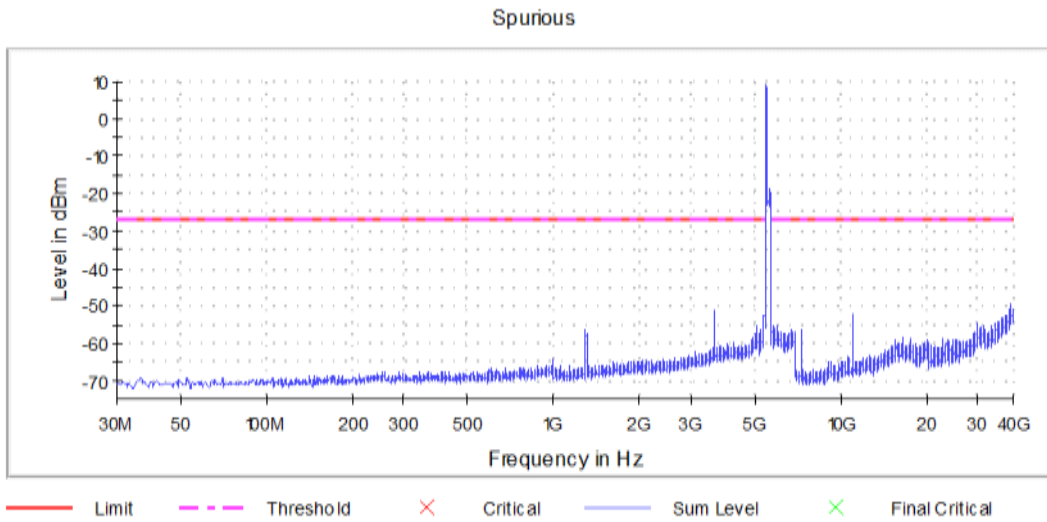
**Graph 84: Antenna 1 – Spurious Emissions Channel 52 Transmitting (5260 MHz) – Setting 20**



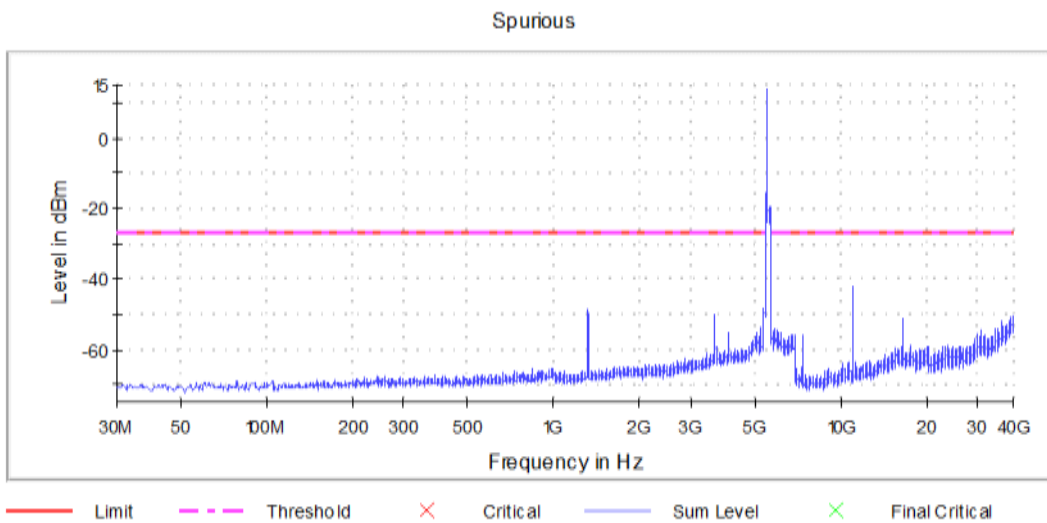
**Graph 85: Antenna 1 – Spurious Emissions Channel 60 Transmitting (5300 MHz) – Setting 18**



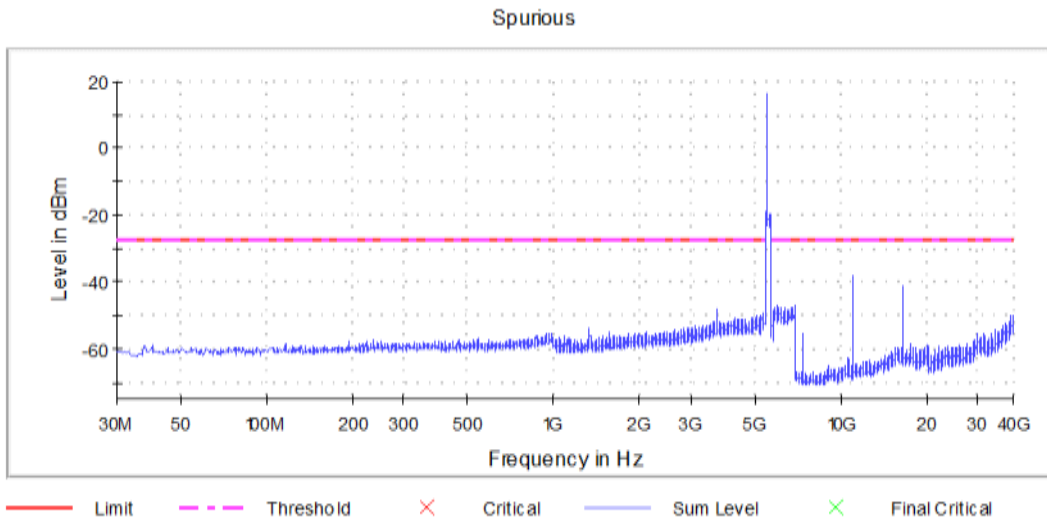
**Graph 86: Antenna 1 – Spurious Emissions Channel 64 Transmitting (5320 MHz) – Setting 12**



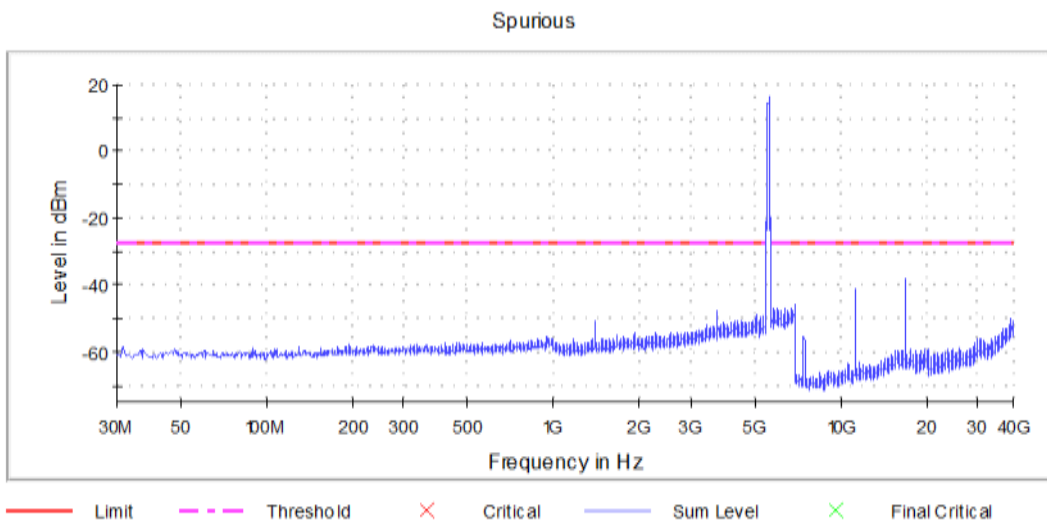
**Graph 87: Antenna 1 – Spurious Emissions Channel 100 Transmitting (5500 MHz) – Setting 12**



**Graph 88: Antenna 1 – Spurious Emissions Channel 104 Transmitting (5520 MHz) – Setting 17**

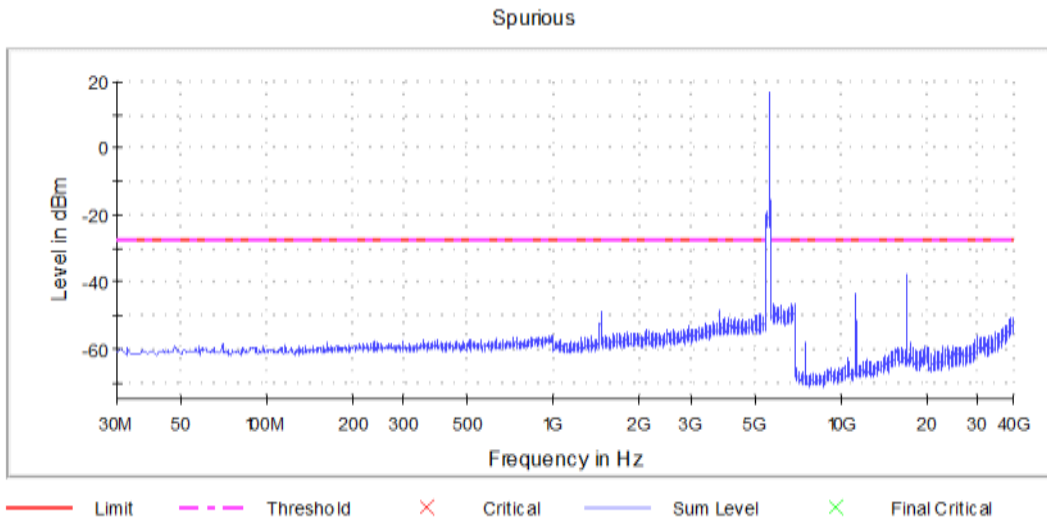


**Graph 89: Antenna 1 – Spurious Emissions Channel 108 Transmitting (5540 MHz) – Setting 20**

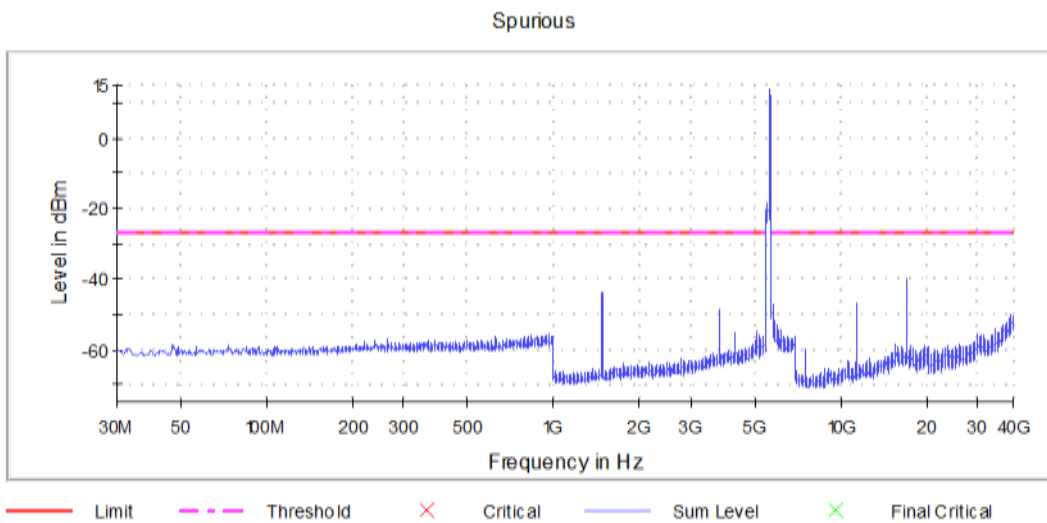


**Graph 90: Antenna 1 – Spurious Emissions Channel 120 Transmitting (5600 MHz) – Setting 20**

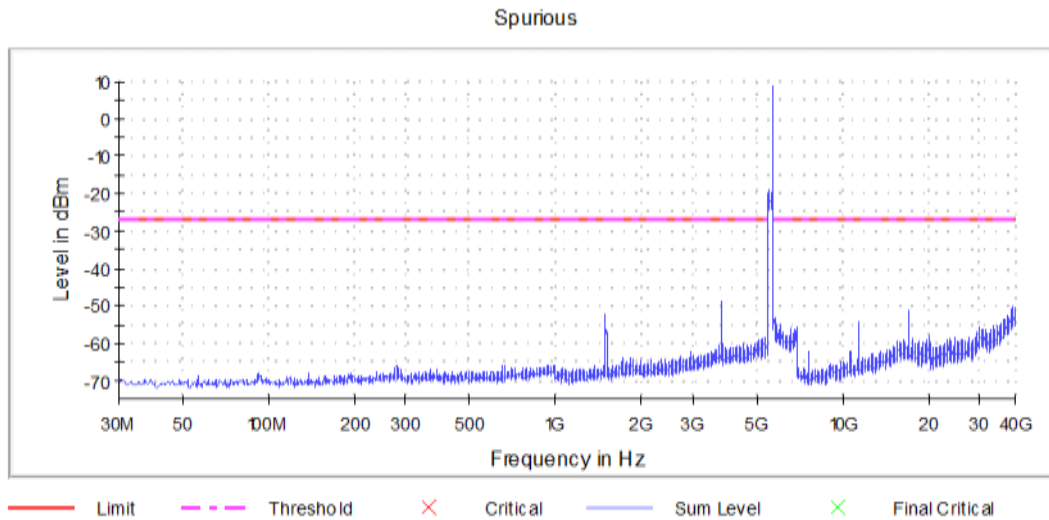




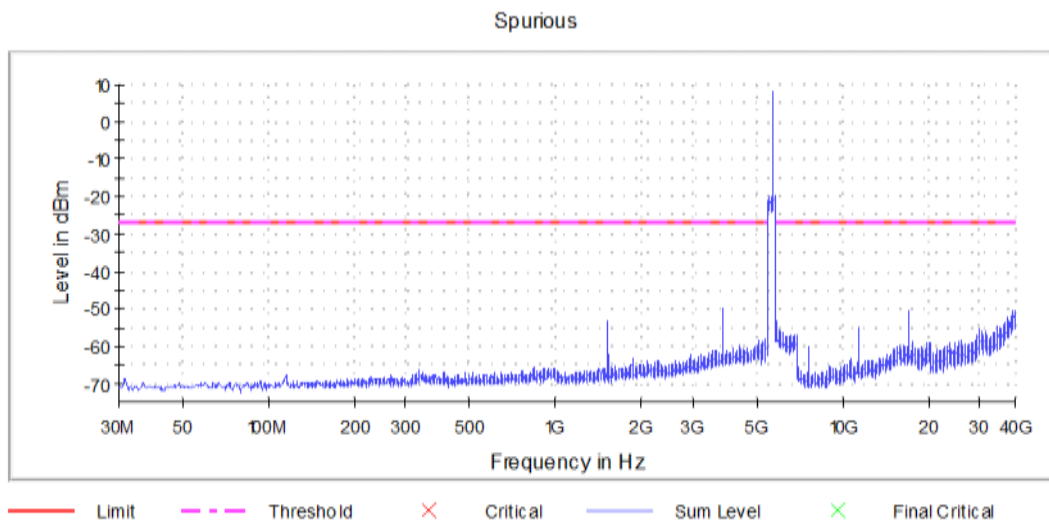
**Graph 91: Antenna 1 – Spurious Emissions Channel 132 Transmitting (5660 MHz) – Setting 20**



**Graph 92: Antenna 1 – Spurious Emissions Channel 136 Transmitting (5680 MHz) – Setting 17**



**Graph 93: Antenna 1 – Spurious Emissions Channel 140 Transmitting (5700 MHz) – Setting 11**



**Graph 94: Antenna 1 – Spurious Emissions Channel 144 Transmitting (5720 MHz) – Setting 11**

**Result**

The EUT complied with all undesirable emission requirements of 15.407(b).

### 6.2.8 §15.247(b) Undesirable Emissions – Restricted Bands

The frequency range from the lowest frequency generated or used in the device to the tenth harmonic of the highest fundamental emission was investigated to measure any radiated emissions in the restricted bands. The following tables show measurements of any emission that fell into the restricted bands of §15.205. The tables show the worst-case emission measured from the EUT. The emissions in the restricted bands must meet the limits specified in §15.209. The spurious emissions were tested at the highest power setting used by any channel in the band (setting of 20). The band edges at the restricted bands were measured using the power settings that will be used in manufacturing. Tabular data and plots are shown below.

#### UNII-2A Frequency Band (Radiated Measurements)

##### C4-T4T10-XX Antenna 0 (1005180)

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBµV)	Correction Factor (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
15780.0	Peak	Vertical	0.5	47.8	48.3	74.0	-25.7
15780.0	Average	Vertical	-10.5	47.8	37.3	54.0	-16.7
15780.0	Peak	Horizontal	0.6	47.8	48.4	74.0	-25.6
15780.0	Average	Horizontal	-10.6	47.8	37.2	54.0	-16.8

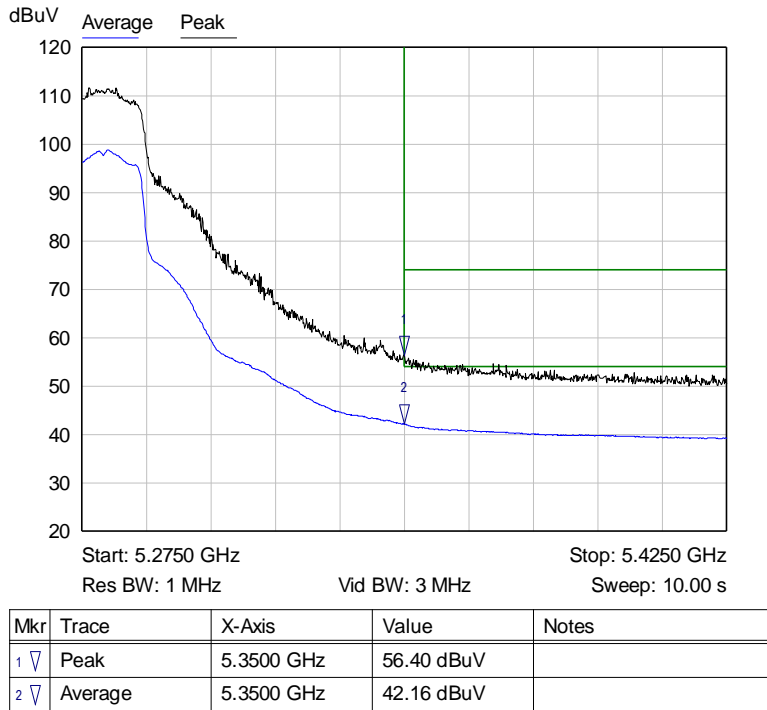
**Table 11: Antenna 0 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBµV)	Correction Factor (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
15840.0	Peak	Vertical	0.7	47.8	48.5	74.0	-25.5
15840.0	Average	Vertical	-10.4	47.8	37.4	54.0	-16.6
15840.0	Peak	Horizontal	0.3	47.8	48.1	74.0	-25.9
15840.0	Average	Horizontal	-10.6	47.8	37.2	54.0	-16.8

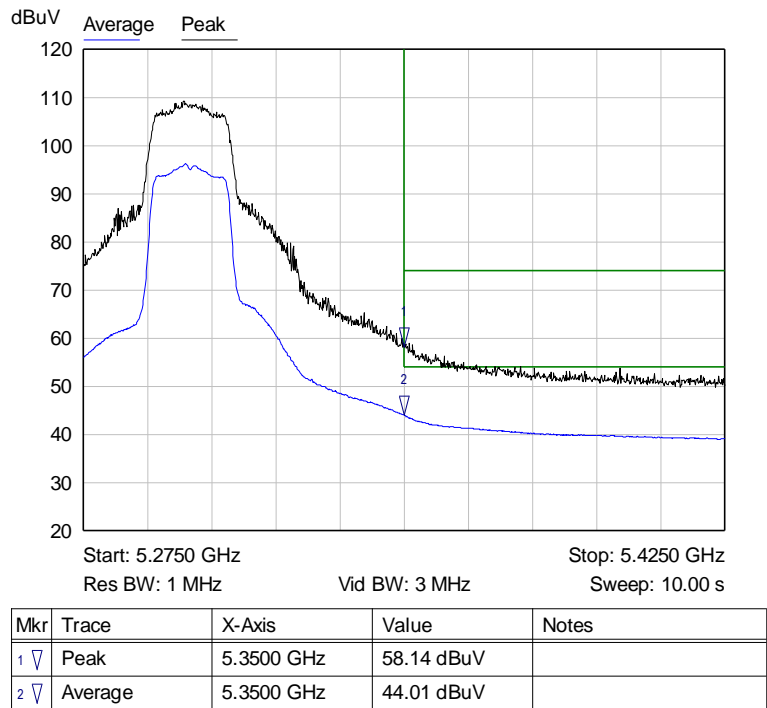
**Table 12: Antenna 0 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBµV)	Correction Factor (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
10640.0	Peak	Vertical	10.5	46.6	57.1	74.0	-16.9
10640.0	Average	Vertical	1.5	46.6	48.1	54.0	-5.9
10640.0	Peak	Horizontal	11.4	46.6	58.0	74.0	-16.0
10640.0	Average	Horizontal	0.7	46.6	47.3	54.0	-6.7
15960.0	Peak	Vertical	1.2	47.9	49.1	74.0	-24.9
15960.0	Average	Vertical	-9.9	47.9	38.0	54.0	-16.0
15960.0	Peak	Horizontal	0.7	47.9	48.6	74.0	-25.4
15960.0	Average	Horizontal	-10.3	47.9	37.6	54.0	-16.4

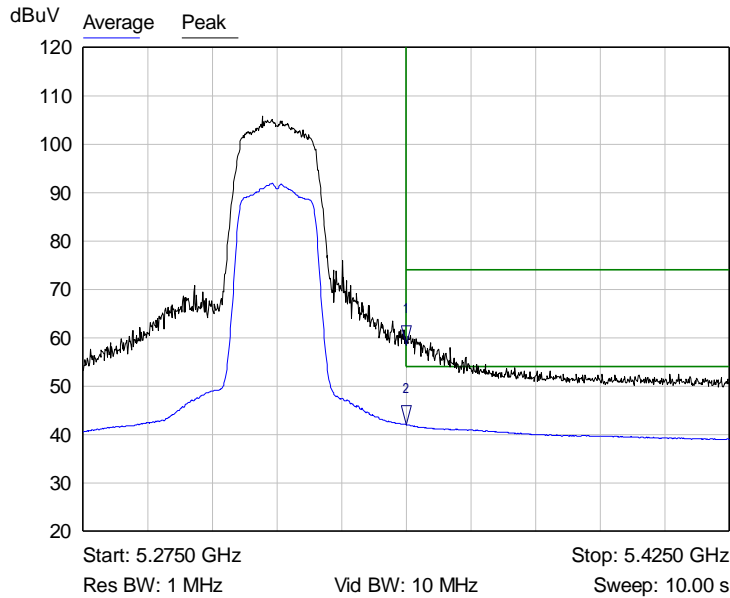
**Table 13: Antenna 0 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



**Graph 95: Antenna 0 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



**Graph 96: Antenna 0 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.45 dBuV	
2 ▾	Average	5.3500 GHz	42.04 dBuV	

**Graph 97: Antenna 0 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4T10-XX Antenna 1 (1005179)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15780.0	Peak	Vertical	0.5	47.8	48.3	74.0	-25.7
15780.0	Average	Vertical	-10.3	47.8	37.5	54.0	-16.5
15780.0	Peak	Horizontal	0.7	47.8	48.5	74.0	-25.5
15780.0	Average	Horizontal	-10.6	47.8	37.2	54.0	-16.8

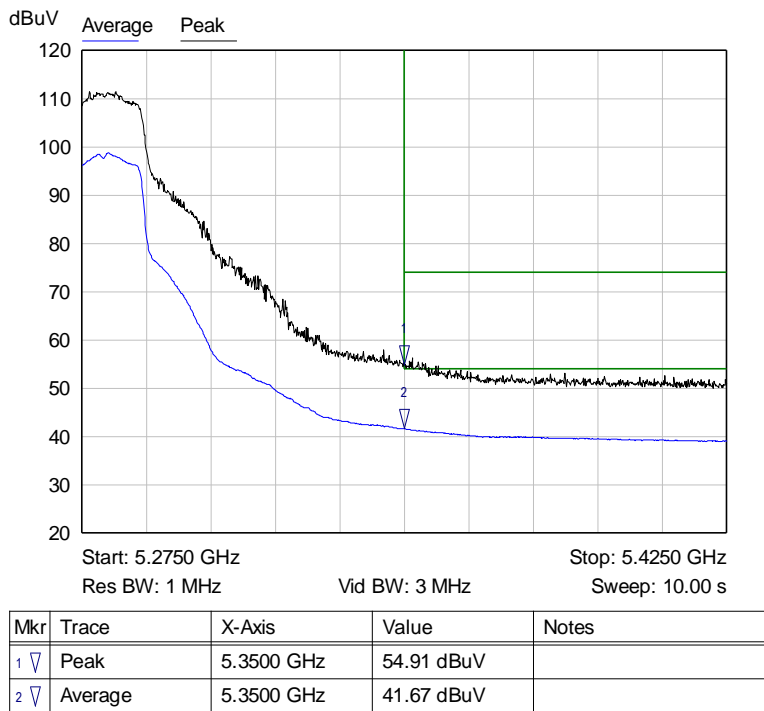
**Table 14: Antenna 1 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15840.0	Peak	Vertical	1.1	47.8	48.9	74.0	-25.1
15840.0	Average	Vertical	-10.3	47.8	37.5	54.0	-16.5
15840.0	Peak	Horizontal	1.2	47.8	49.0	74.0	-25.0
15840.0	Average	Horizontal	-10.3	47.8	37.5	54.0	-16.5

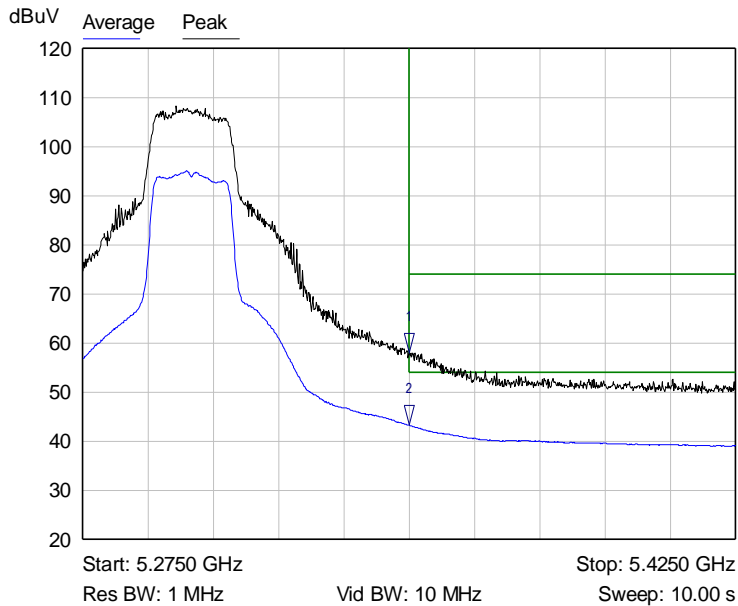
**Table 15: Antenna 1 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	8.9	46.6	55.5	74.0	-18.5
10640.0	Average	Vertical	-1.4	46.6	45.2	54.0	-8.8
10640.0	Peak	Horizontal	9.7	46.6	56.3	74.0	-17.7
10640.0	Average	Horizontal	-0.8	46.6	45.8	54.0	-8.2
15960.0	Peak	Vertical	0.8	47.9	48.7	74.0	-25.3
15960.0	Average	Vertical	-10.4	47.9	37.5	54.0	-16.5
15960.0	Peak	Horizontal	1.0	47.9	48.9	74.0	-25.1
15960.0	Average	Horizontal	-10.1	47.9	37.8	54.0	-16.2

**Table 16: Antenna 1 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**

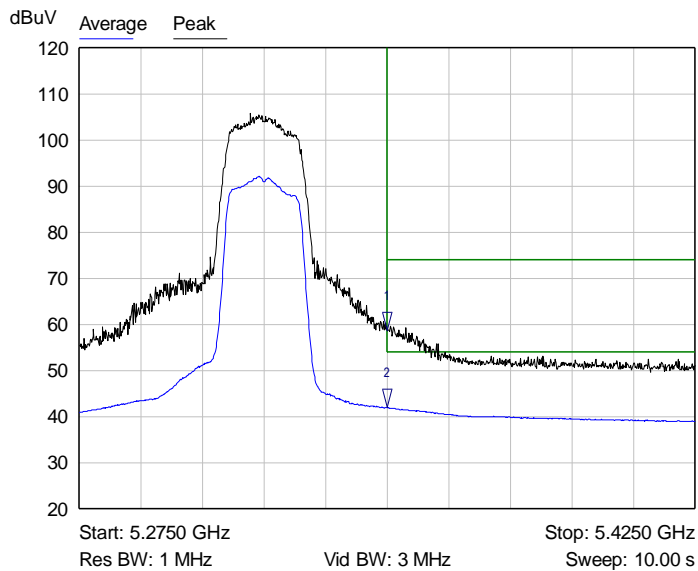


**Graph 98: Antenna 1 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.06 dBuV	
2 ▾	Average	5.3500 GHz	43.27 dBuV	

**Graph 99: Antenna 1 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.72 dBuV	
2 ▾	Average	5.3500 GHz	41.99 dBuV	

**Graph 100: Antenna 1 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4T8-XX Antenna 0 (1005178)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15780.0	Peak	Vertical	1.5	47.8	49.3	74.0	-24.7
15780.0	Average	Vertical	-10.5	47.8	37.3	54.0	-16.7
15780.0	Peak	Horizontal	0.4	47.8	48.2	74.0	-25.8
15780.0	Average	Horizontal	-10.3	47.8	37.5	54.0	-16.5

**Table 17: Antenna 0 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

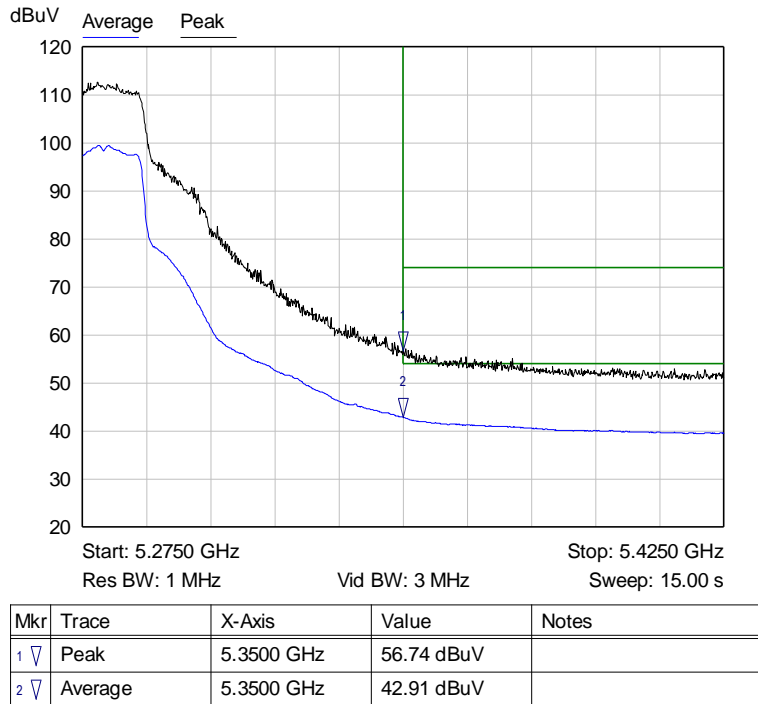
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15840.0	Peak	Vertical	1.1	47.8	48.9	74.0	-25.1
15840.0	Average	Vertical	-9.4	47.8	38.4	54.0	-15.6
15840.0	Peak	Horizontal	1.7	47.8	49.5	74.0	-24.5
15840.0	Average	Horizontal	-10.4	47.8	37.4	54.0	-16.6

**Table 18: Antenna 0 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

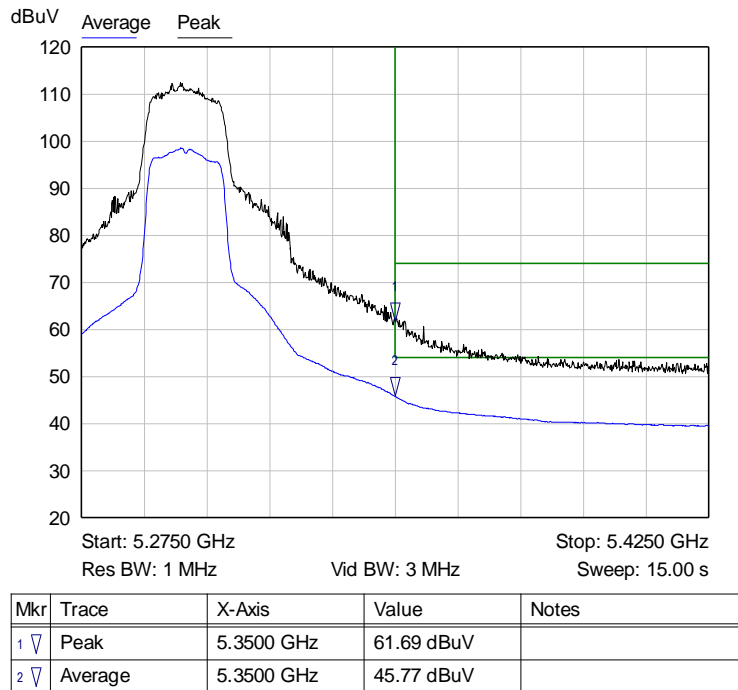
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	6.4	46.6	53.0	74.0	-21.0
10640.0	Average	Vertical	-3.4	46.6	43.2	54.0	-10.8
10640.0	Peak	Horizontal	7.2	46.6	53.8	74.0	-20.2
10640.0	Average	Horizontal	-4.0	46.6	42.6	54.0	-11.4
15960.0	Peak	Vertical	1.5	47.9	49.4	74.0	-24.6
15960.0	Average	Vertical	-8.2	47.9	39.7	54.0	-14.3
15960.0	Peak	Horizontal	1.9	47.9	49.8	74.0	-24.2
15960.0	Average	Horizontal	-8.5	47.9	39.4	54.0	-14.6

**Table 19: Antenna 0 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**

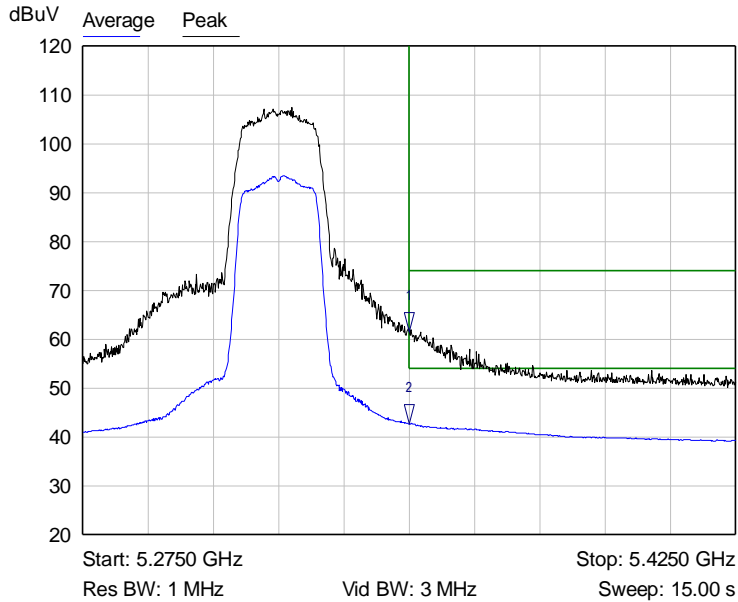




**Graph 101: Antenna 0 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



**Graph 102: Antenna 0 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	61.54 dBuV	
2 ▾	Average	5.3500 GHz	42.74 dBuV	

**Graph 103: Antenna 0 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4T8-XX Antenna 1 (1005179)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15780.0	Peak	Vertical	1.7	47.8	49.5	74.0	-24.5
15780.0	Average	Vertical	-11.0	47.8	36.8	54.0	-17.2
15780.0	Peak	Horizontal	0.8	47.8	48.6	74.0	-25.4
15780.0	Average	Horizontal	-10.9	47.8	36.9	54.0	-17.1

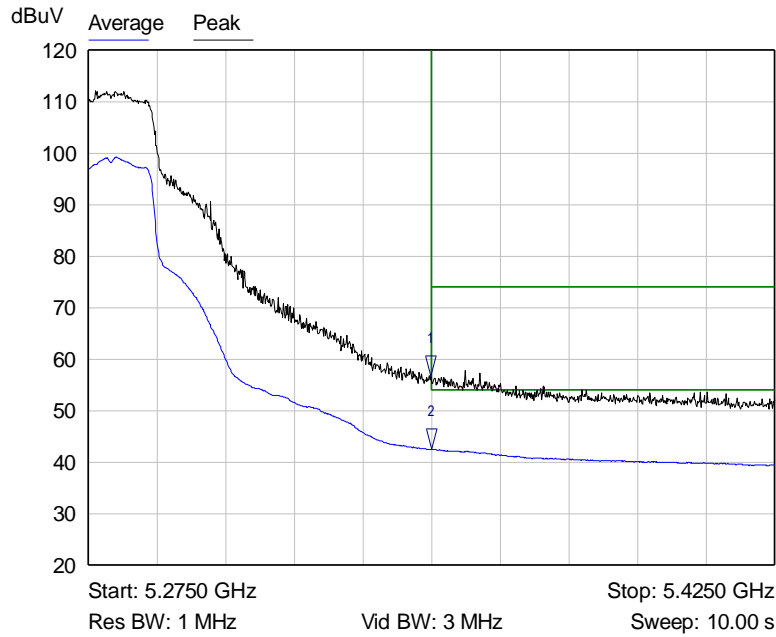
**Table 20: Antenna 1 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15840.0	Peak	Vertical	1.3	47.8	49.1	74.0	-24.9
15840.0	Average	Vertical	-10.4	47.8	37.4	54.0	-16.6
15840.0	Peak	Horizontal	0.9	47.8	48.7	74.0	-25.3
15840.0	Average	Horizontal	-11.0	47.8	36.8	54.0	-17.2

**Table 21: Antenna 1 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

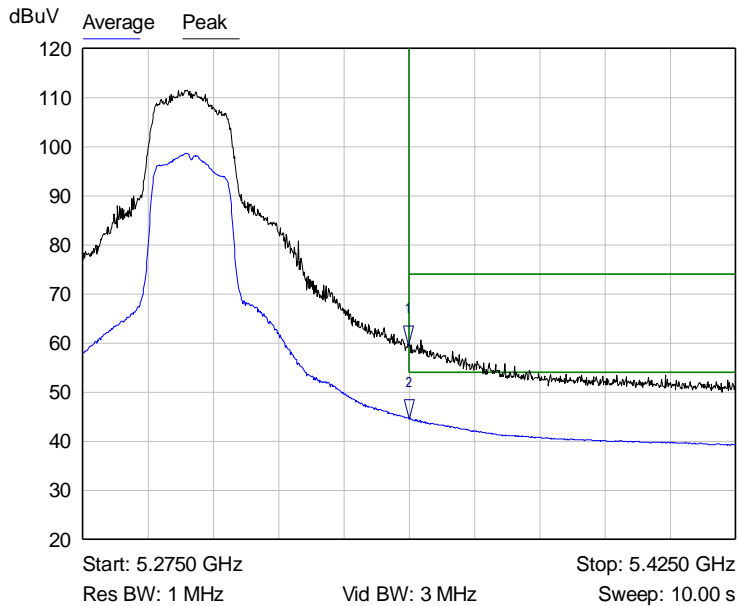
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	6.5	46.6	53.1	74.0	-20.9
10640.0	Average	Vertical	-2.1	46.6	44.5	54.0	-9.5
10640.0	Peak	Horizontal	8.1	46.6	54.7	74.0	-19.3
10640.0	Average	Horizontal	-2.4	46.6	44.2	54.0	-9.8
15960.0	Peak	Vertical	1.8	47.9	49.7	74.0	-24.3
15960.0	Average	Vertical	-8.8	47.9	39.1	54.0	-14.9
15960.0	Peak	Horizontal	1.6	47.9	49.5	74.0	-24.5
15960.0	Average	Horizontal	-9.3	47.9	38.6	54.0	-15.4

**Table 22: Antenna 1 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



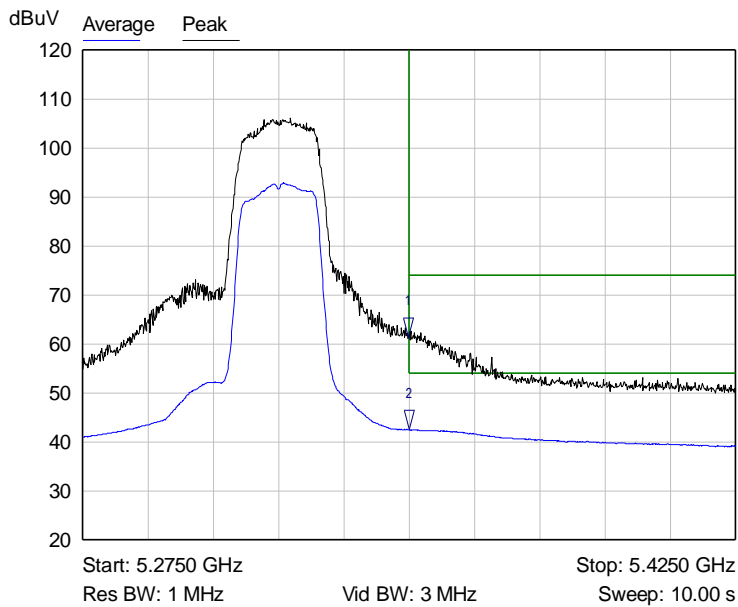
Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3499 GHz	56.63 dBuV	
2 ▾	Average	5.3500 GHz	42.49 dBuV	

**Graph 104: Antenna 1 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3499 GHz	59.56 dBuV	
2 ▾	Average	5.3500 GHz	44.58 dBuV	

**Graph 105: Antenna 1 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3499 GHz	61.30 dBuV	
2 ▾	Average	5.3500 GHz	42.52 dBuV	

**Graph 106: Antenna 1 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4IW10-XX Antenna 0 (1005097)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15780.0	Peak	Vertical	0.0	47.8	47.8	74.0	-26.2
15780.0	Average	Vertical	-10.8	47.8	37.0	54.0	-17.0
15780.0	Peak	Horizontal	1.4	47.8	49.2	74.0	-24.8
15780.0	Average	Horizontal	-10.8	47.8	37.0	54.0	-17.0

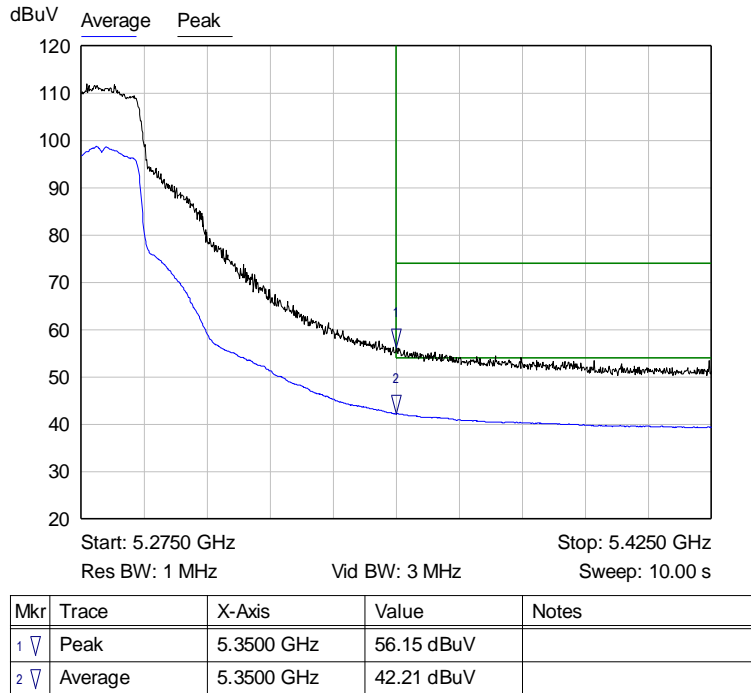
**Table 23: Antenna 0 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15840.0	Peak	Vertical	0.5	47.8	48.3	74.0	-25.7
15840.0	Average	Vertical	-11.1	47.8	36.7	54.0	-17.3
15840.0	Peak	Horizontal	-0.3	47.8	47.5	74.0	-26.5
15840.0	Average	Horizontal	-11.2	47.8	36.6	54.0	-17.4

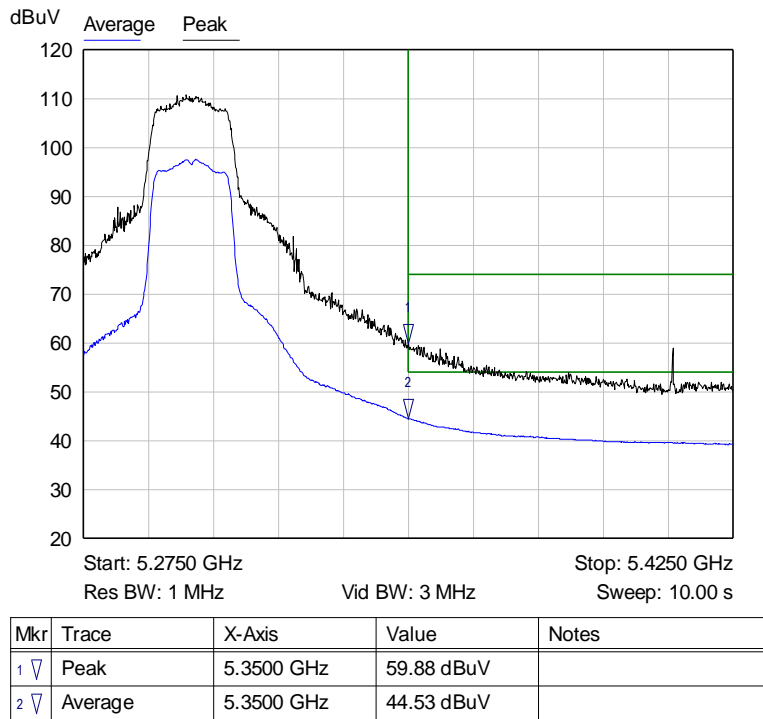
**Table 24: Antenna 0 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	9.1	46.6	55.7	74.0	-18.3
10640.0	Average	Vertical	-1.0	46.6	45.6	54.0	-8.4
10640.0	Peak	Horizontal	8.2	46.6	54.8	74.0	-19.2
10640.0	Average	Horizontal	-1.8	46.6	44.8	54.0	-9.2
15960.0	Peak	Vertical	0.2	47.9	48.1	74.0	-25.9
15960.0	Average	Vertical	-11.0	47.9	36.9	54.0	-17.1
15960.0	Peak	Horizontal	-0.1	47.9	47.8	74.0	-26.2
15960.0	Average	Horizontal	-11.0	47.9	36.9	54.0	-17.1

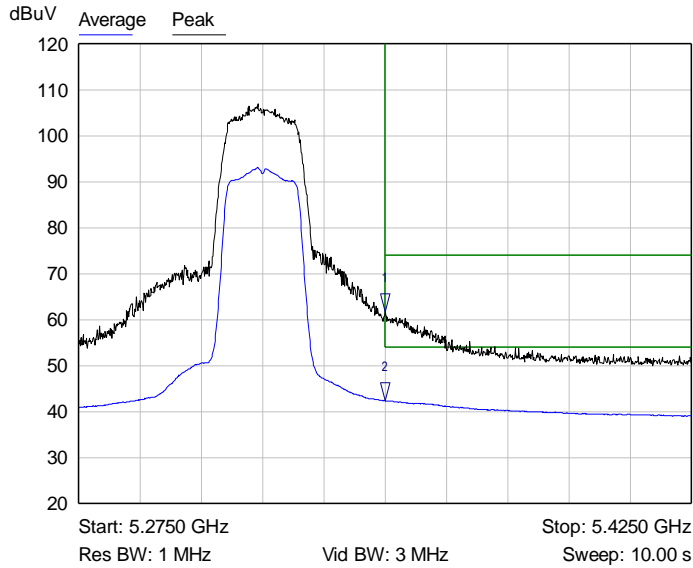
**Table 25: Antenna 0 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



**Graph 107: Antenna 0 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



**Graph 108: Antenna 0 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	61.61 dBuV	
2 ▾	Average	5.3500 GHz	42.41 dBuV	

**Graph 109: Antenna 0 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4IW10-XX Antenna 1 (1005098)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15780.0	Peak	Vertical	-0.3	47.8	47.5	74.0	-26.5
15780.0	Average	Vertical	-11.0	47.8	36.8	54.0	-17.2
15780.0	Peak	Horizontal	0.5	47.8	48.3	74.0	-25.7
15780.0	Average	Horizontal	-10.9	47.8	36.9	54.0	-17.1

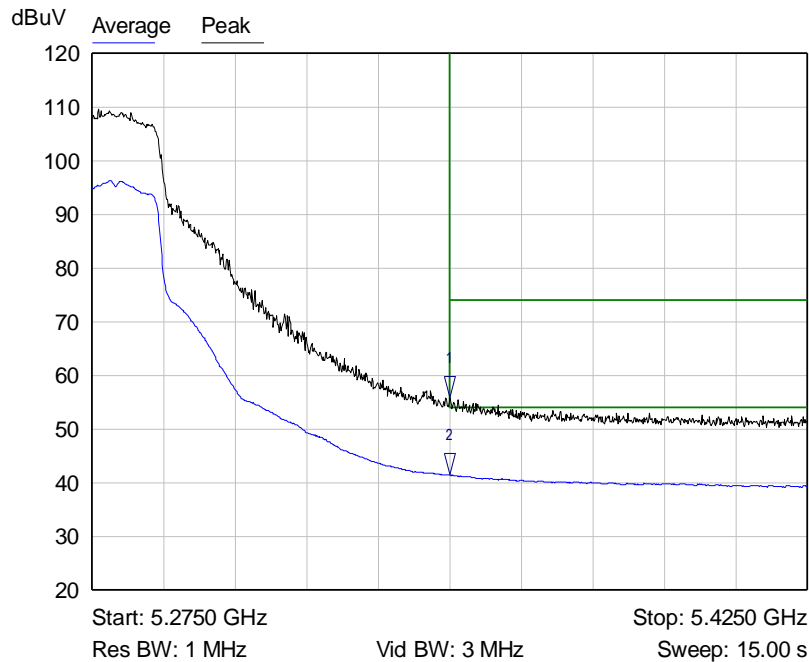
**Table 26: Antenna 1 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15840.0	Peak	Vertical	-0.1	47.8	47.7	74.0	-26.3
15840.0	Average	Vertical	-11.0	47.8	36.8	54.0	-17.2
15840.0	Peak	Horizontal	0.3	47.8	48.1	74.0	-25.9
15840.0	Average	Horizontal	-11.0	47.8	36.8	54.0	-17.2

**Table 27: Antenna 1 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	8.7	46.6	55.3	74.0	-18.7
10640.0	Average	Vertical	-1.2	46.6	45.4	54.0	-8.6
10640.0	Peak	Horizontal	8.3	46.6	54.9	74.0	-19.1
10640.0	Average	Horizontal	-1.9	46.6	44.7	54.0	-9.3
15960.0	Peak	Vertical	0.5	47.9	48.4	74.0	-25.6
15960.0	Average	Vertical	-11.0	47.9	36.9	54.0	-17.1
15960.0	Peak	Horizontal	-0.3	47.9	47.6	74.0	-26.4
15960.0	Average	Horizontal	-11.1	47.9	36.8	54.0	-17.2

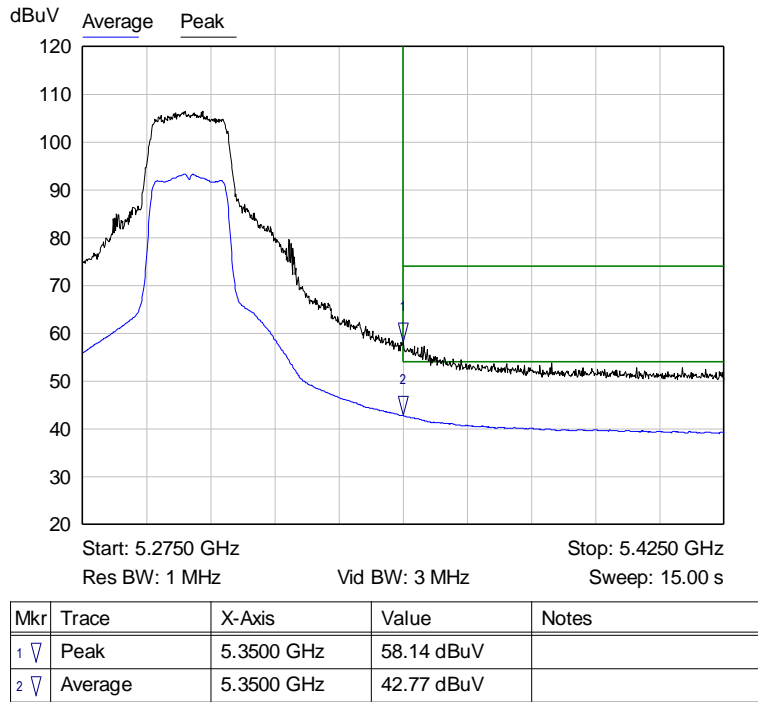
**Table 28: Antenna 1 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



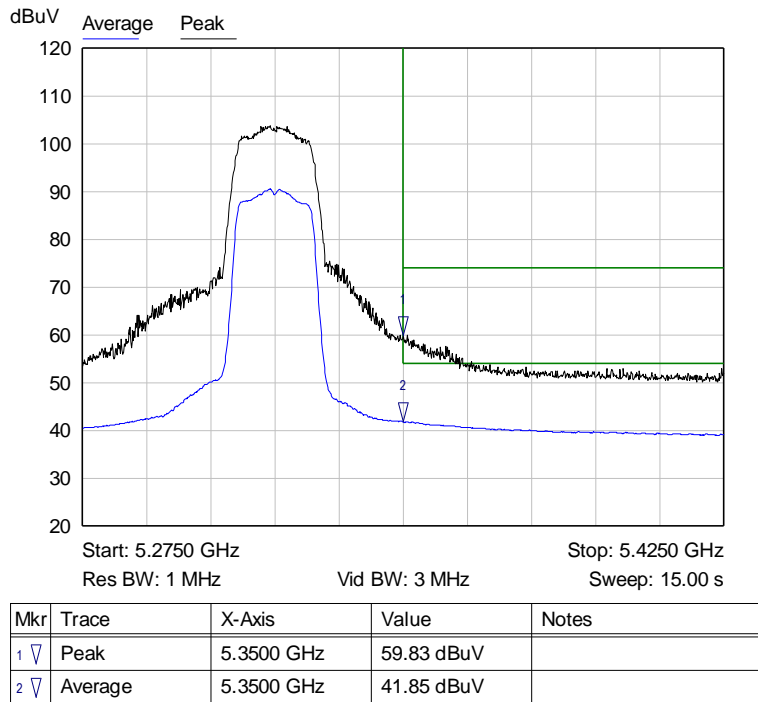
Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	55.78 dBuV	
2 ▾	Average	5.3500 GHz	41.47 dBuV	

**Graph 110: Antenna 1 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**





**Graph 111: Antenna 1 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



**Graph 112: Antenna 1 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4IW8-XX Antenna 0 (1005195)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15780.0	Peak	Vertical	3.5	47.8	51.3	74.0	-22.7
15780.0	Average	Vertical	-7.9	47.8	39.9	54.0	-14.1
15780.0	Peak	Horizontal	4.9	47.8	52.7	74.0	-21.3
15780.0	Average	Horizontal	-7.7	47.8	40.1	54.0	-13.9

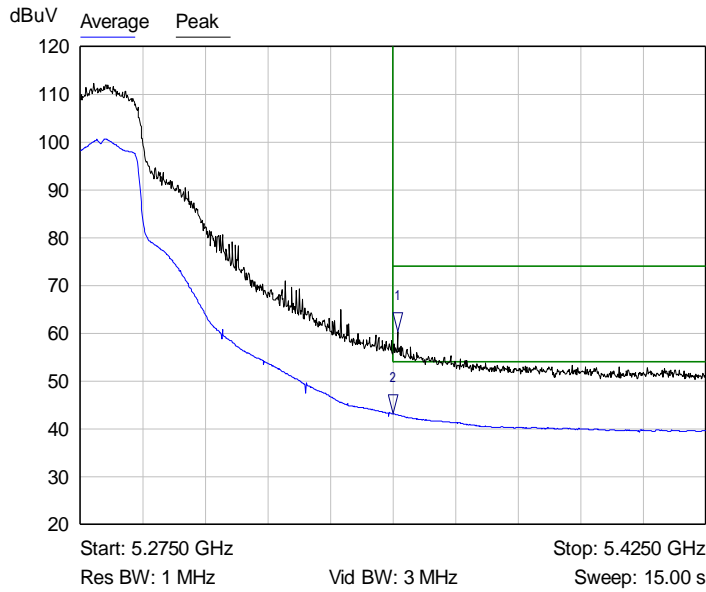
**Table 29: Antenna 0 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
15840.0	Peak	Vertical	3.9	47.8	51.7	74.0	-22.3
15840.0	Average	Vertical	-6.8	47.8	41.0	54.0	-13.0
15840.0	Peak	Horizontal	3.2	47.8	51.0	74.0	-23.0
15840.0	Average	Horizontal	-7.3	47.8	40.5	54.0	-13.5

**Table 30: Antenna 0 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

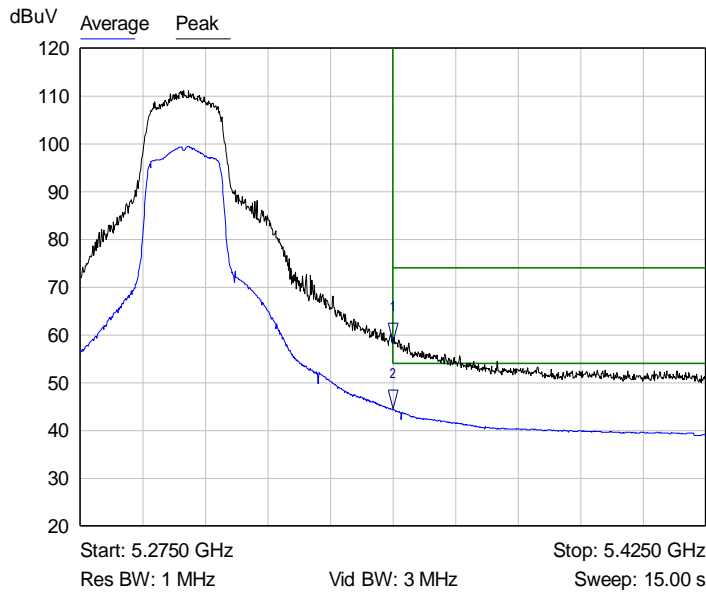
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	9.1	46.6	55.7	74.0	-18.3
10640.0	Average	Vertical	-1.4	46.6	45.2	54.0	-8.8
10640.0	Peak	Horizontal	9.1	46.6	55.7	74.0	-18.3
10640.0	Average	Horizontal	-1.5	46.6	45.1	54.0	-8.9
15960.0	Peak	Vertical	4.2	47.9	52.1	74.0	-21.9
15960.0	Average	Vertical	-6.6	47.9	41.3	54.0	-12.7
15960.0	Peak	Horizontal	4.3	47.9	52.2	74.0	-21.8
15960.0	Average	Horizontal	-6.5	47.9	41.4	54.0	-12.6

**Table 31: Antenna 0 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



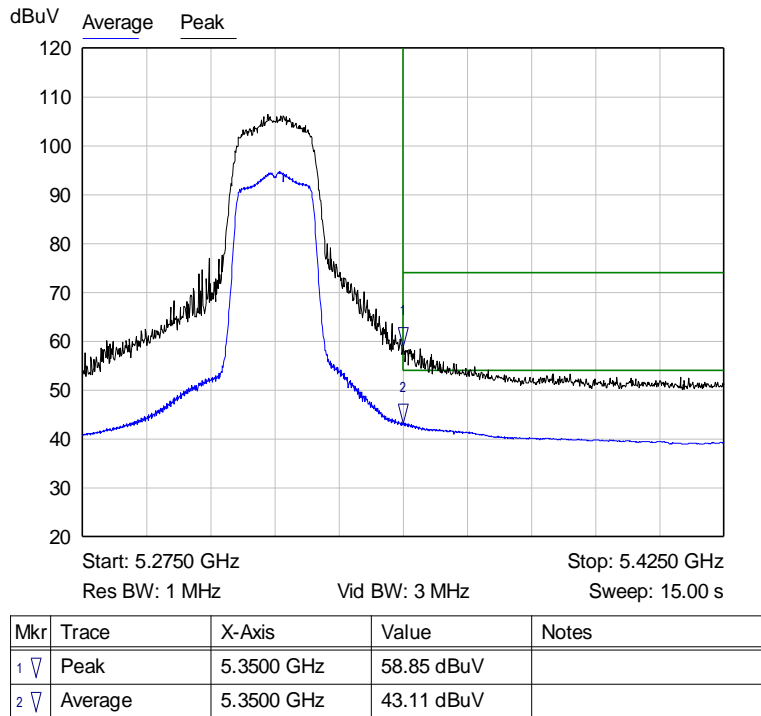
Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3511 GHz	60.33 dBuV	
2 ▾	Average	5.3500 GHz	43.13 dBuV	

**Graph 113: Antenna 0 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.58 dBuV	
2 ▾	Average	5.3500 GHz	44.47 dBuV	

**Graph 114: Antenna 0 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



**Graph 115: Antenna 0 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**C4-T4IW8-XX Antenna 1 (1005196)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15780.0	Peak	Vertical	2.9	47.8	50.7	74.0	-23.3
15780.0	Average	Vertical	-8.3	47.8	39.5	54.0	-14.5
15780.0	Peak	Horizontal	2.8	47.8	50.6	74.0	-23.4
15780.0	Average	Horizontal	-7.2	47.8	40.6	54.0	-13.4

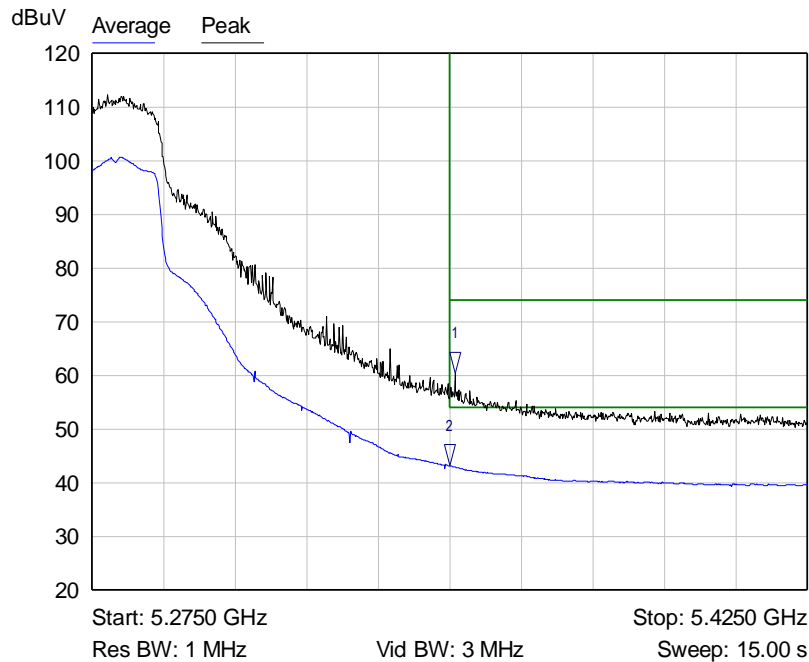
**Table 32: Antenna 1 - Transmitting at the Lowest Frequency (Channel 52) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
15840.0	Peak	Vertical	2.0	47.8	49.8	74.0	-24.2
15840.0	Average	Vertical	-8.4	47.8	39.4	54.0	-14.6
15840.0	Peak	Horizontal	2.1	47.8	49.9	74.0	-24.1
15840.0	Average	Horizontal	-8.5	47.8	39.3	54.0	-14.7

**Table 33: Antenna 1 - Transmitting at the Middle Frequency (Channel 60) – Setting 20**

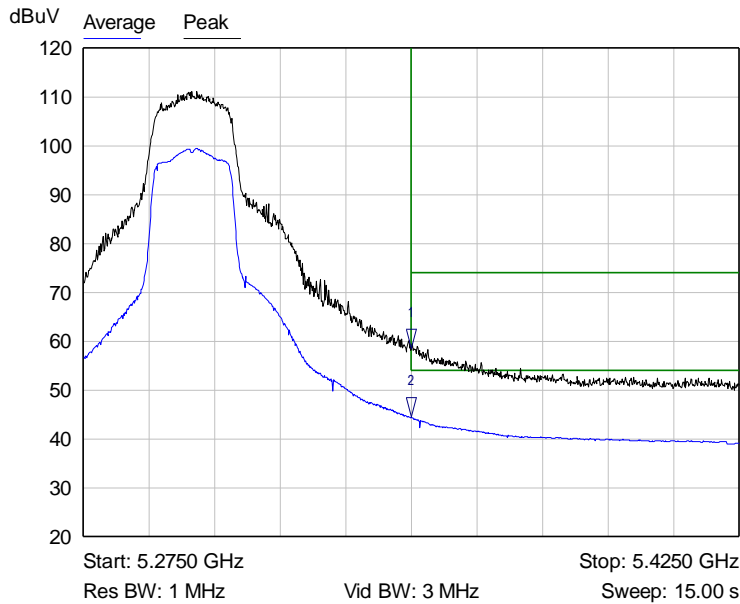
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
10640.0	Peak	Vertical	12.9	46.6	59.5	74.0	-14.5
10640.0	Average	Vertical	2.6	46.6	49.2	54.0	-4.8
10640.0	Peak	Horizontal	12.7	46.6	59.3	74.0	-14.7
10640.0	Average	Horizontal	2.4	46.6	49.0	54.0	-5.0
15960.0	Peak	Vertical	4.0	47.9	51.9	74.0	-22.1
15960.0	Average	Vertical	-6.3	47.9	41.6	54.0	-12.4
15960.0	Peak	Horizontal	3.1	47.9	51.0	74.0	-23.0
15960.0	Average	Horizontal	-7.1	47.9	40.8	54.0	-13.2

**Table 34: Antenna 1 - Transmitting at the Highest Frequency (Channel 64) – Setting 20**



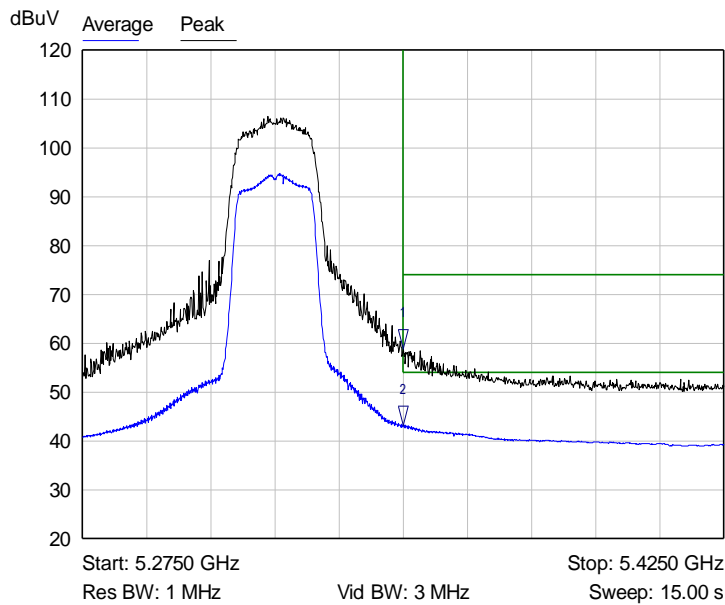
Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3511 GHz	60.33 dBuV	
2 ▾	Average	5.3500 GHz	43.13 dBuV	

**Graph 116: Antenna 1 – Channel 56 Band Edge at the Restricted Band Plot – Setting 20**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.58 dBuV	
2 ▾	Average	5.3500 GHz	44.47 dBuV	

**Graph 117: Antenna 1 – Channel 60 Band Edge at the Restricted Band Plot – Setting 18**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.3500 GHz	58.85 dBuV	
2 ▾	Average	5.3500 GHz	43.11 dBuV	

**Graph 118: Antenna 1 – Channel 64 Band Edge at the Restricted Band Plot – Setting 12**

**UNII-2C Frequency Band (Radiated Measurements)**

**C4-T4T10-XX Antenna 0 (1005180)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11000.0	Peak	Vertical	12.0	46.9	58.9	74.0	-15.1
11000.0	Average	Vertical	1.9	46.9	48.8	54.0	-5.2
11000.0	Peak	Horizontal	12.1	46.9	59.0	74.0	-15.0
11000.0	Average	Horizontal	2.2	46.9	49.1	54.0	-4.9

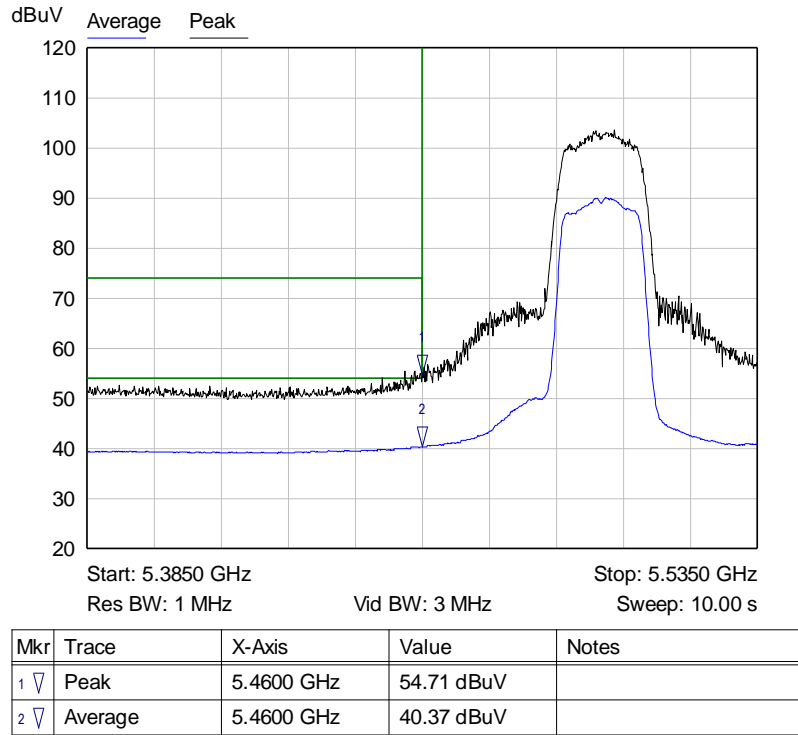
**Table 35: Antenna 0 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11200.0	Peak	Vertical	12.6	47.1	59.7	74.0	-14.3
11200.0	Average	Vertical	2.7	47.1	49.8	54.0	-4.2
11200.0	Peak	Horizontal	9.5	47.1	56.6	74.0	-17.4
11200.0	Average	Horizontal	-0.1	47.1	47.0	54.0	-7.0

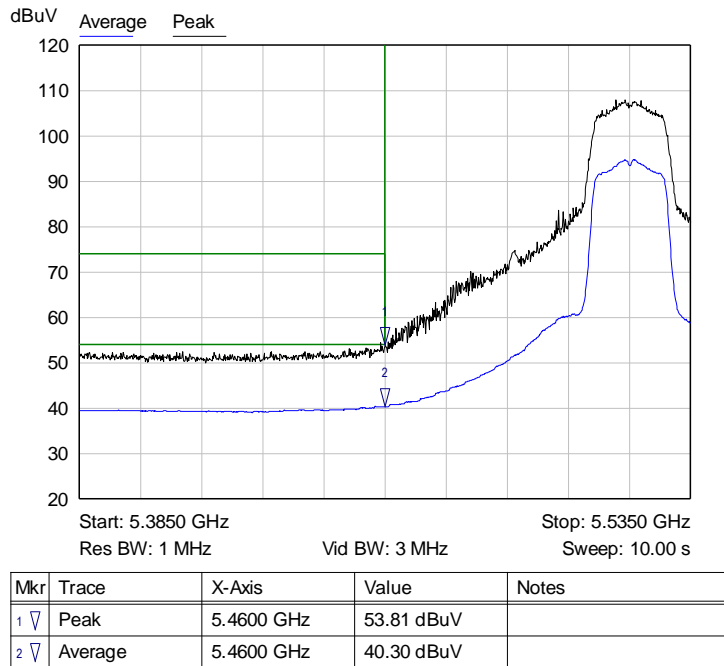
**Table 36: Antenna 0 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11440.0	Peak	Vertical	5.9	47.3	53.2	74.0	-20.8
11440.0	Average	Vertical	-4.5	47.3	42.8	54.0	-11.2
11440.0	Peak	Horizontal	5.7	47.3	53.0	74.0	-21.0
11440.0	Average	Horizontal	-4.7	47.3	42.6	54.0	-11.4

**Table 37: Antenna 0 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**

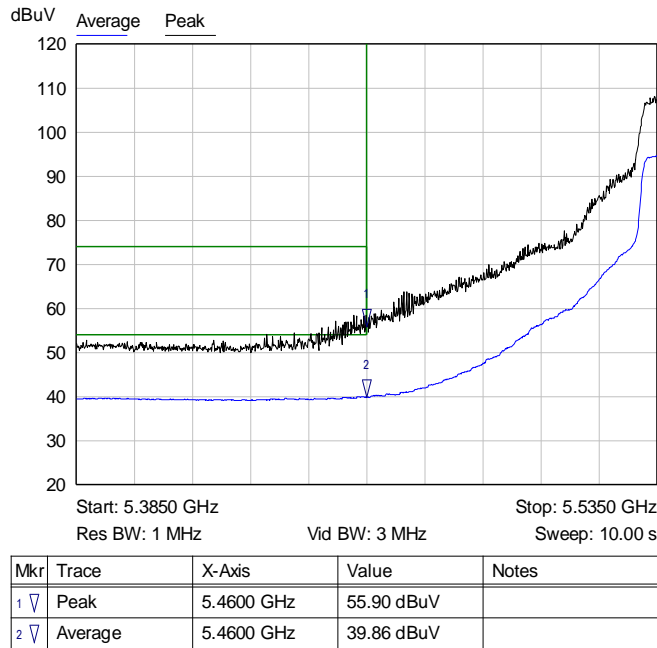


**Graph 119: Antenna 0 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 120: Antenna 0 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**





**Graph 121: Antenna 0 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4T10-XX Antenna 1 (1005179)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11000.0	Peak	Vertical	10.2	46.9	57.1	74.0	-16.9
11000.0	Average	Vertical	0.4	46.9	47.3	54.0	-6.7
11000.0	Peak	Horizontal	11.0	46.9	57.9	74.0	-16.1
11000.0	Average	Horizontal	0.7	46.9	47.6	54.0	-6.4

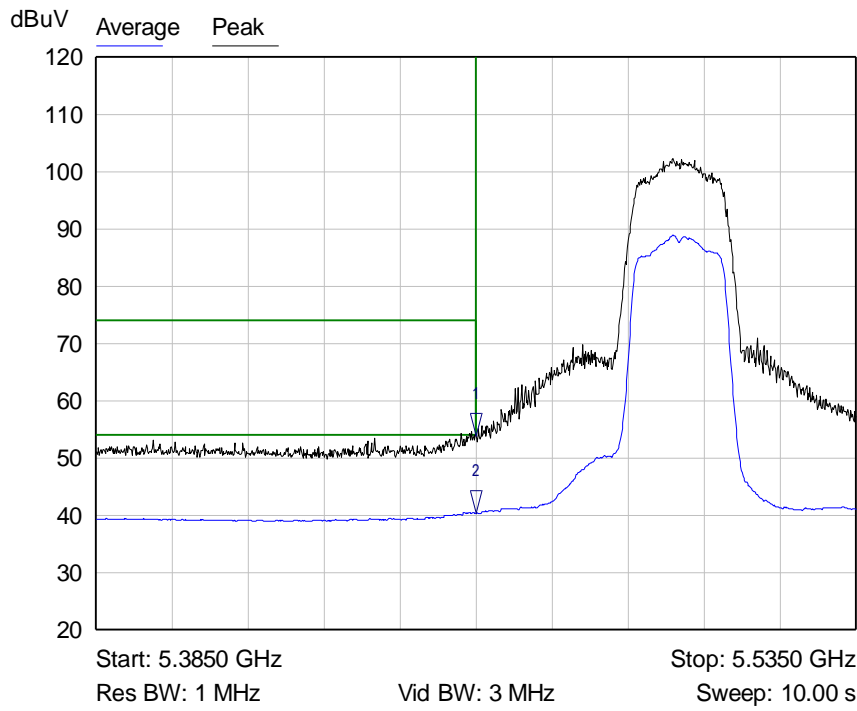
**Table 38: Antenna 1 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11200.0	Peak	Vertical	9.3	47.1	56.4	74.0	-17.6
11200.0	Average	Vertical	-0.3	47.1	46.8	54.0	-7.2
11200.0	Peak	Horizontal	9.3	47.1	56.4	74.0	-17.6
11200.0	Average	Horizontal	-0.5	47.1	46.6	54.0	-7.4

**Table 39: Antenna 1 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

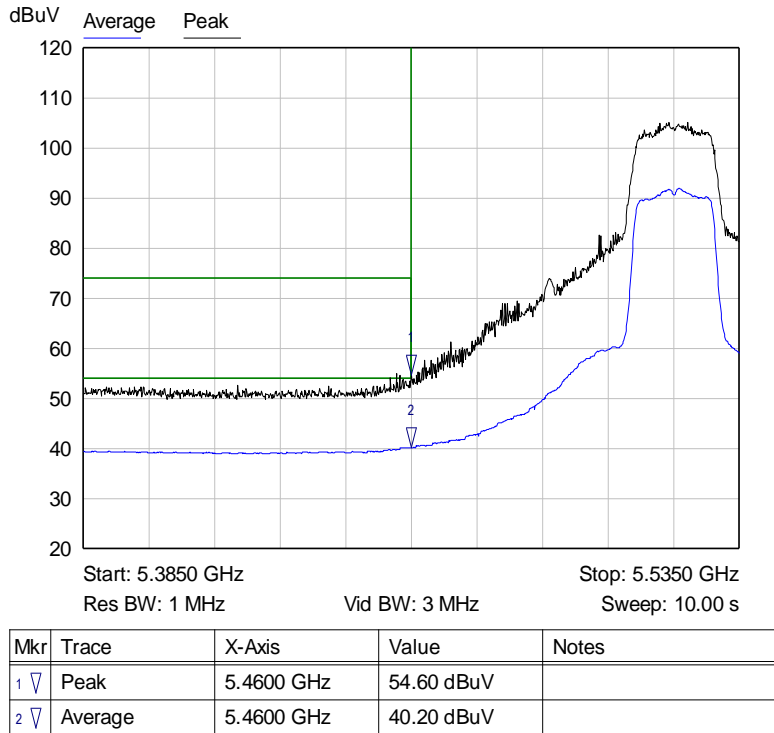
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	8.1	47.3	55.4	74.0	-18.6
11440.0	Average	Vertical	-1.9	47.3	45.4	54.0	-8.6
11440.0	Peak	Horizontal	9.2	47.3	56.5	74.0	-17.5
11440.0	Average	Horizontal	-1.4	47.3	45.9	54.0	-8.1

**Table 40: Antenna 1 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**

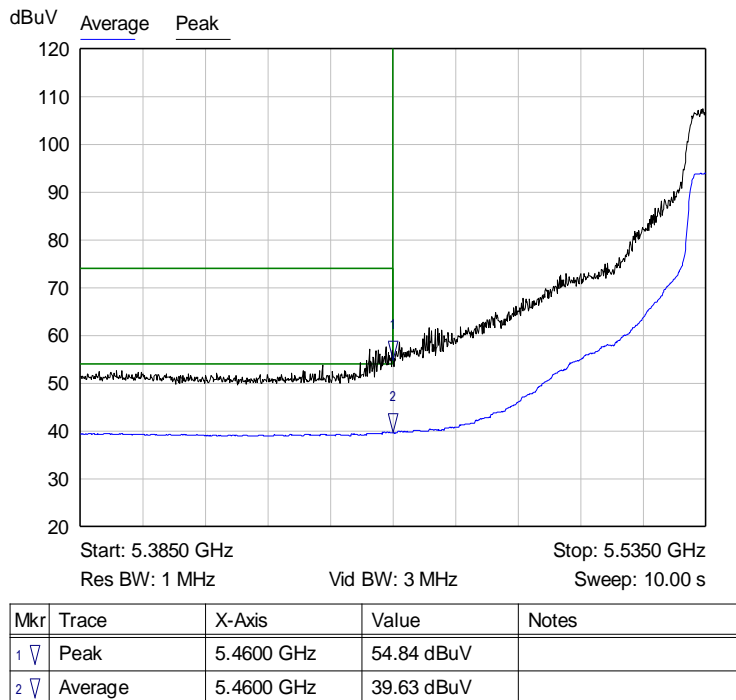


Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4600 GHz	53.76 dBuV	
2 ▾	Average	5.4600 GHz	40.37 dBuV	

**Graph 122: Antenna 1 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 123: Antenna 1 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



**Graph 124: Antenna 1 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4T8-XX Antenna 0 (1005178)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11000.0	Peak	Vertical	10.3	46.9	57.2	74.0	-16.8
11000.0	Average	Vertical	1.0	46.9	47.9	54.0	-6.1
11000.0	Peak	Horizontal	11.2	46.9	58.1	74.0	-15.9
11000.0	Average	Horizontal	0.9	46.9	47.8	54.0	-6.2

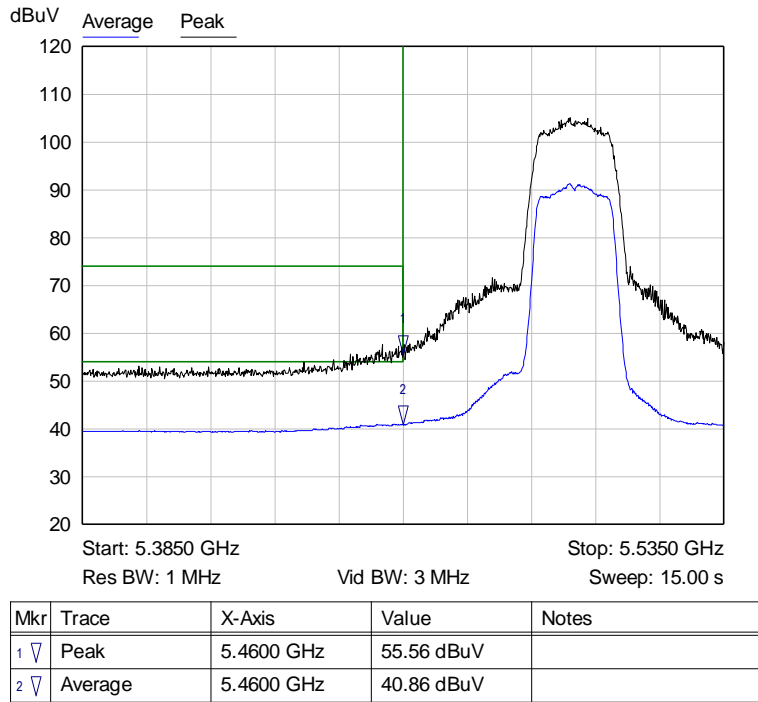
**Table 41: Antenna 0 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11200.0	Peak	Vertical	9.5	47.1	56.6	74.0	-17.4
11200.0	Average	Vertical	-0.2	47.1	46.9	54.0	-7.1
11200.0	Peak	Horizontal	9.5	47.1	56.6	74.0	-17.4
11200.0	Average	Horizontal	-0.6	47.1	46.5	54.0	-7.5

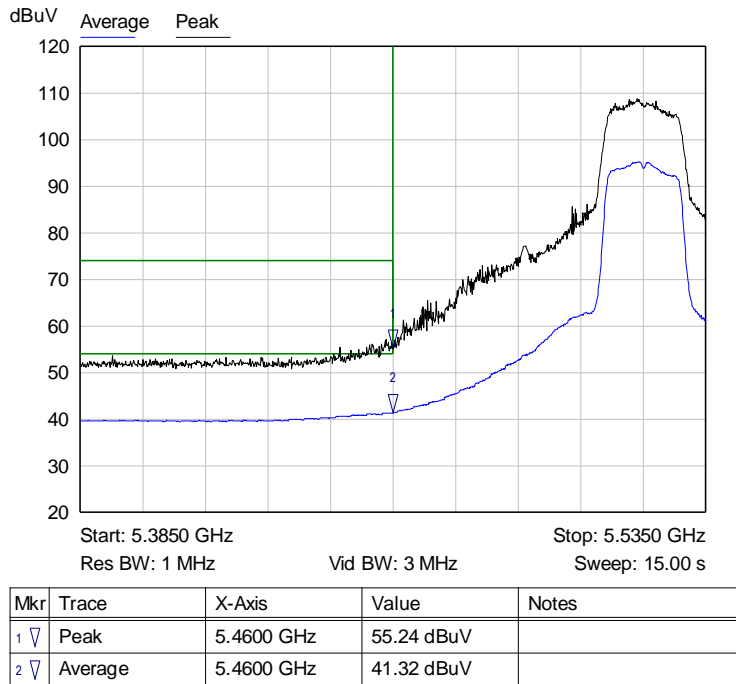
**Table 42: Antenna 0 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	8.1	47.3	55.4	74.0	-18.6
11440.0	Average	Vertical	-1.9	47.3	45.4	54.0	-8.6
11440.0	Peak	Horizontal	9.2	47.3	56.5	74.0	-17.5
11440.0	Average	Horizontal	-1.4	47.3	45.9	54.0	-8.1

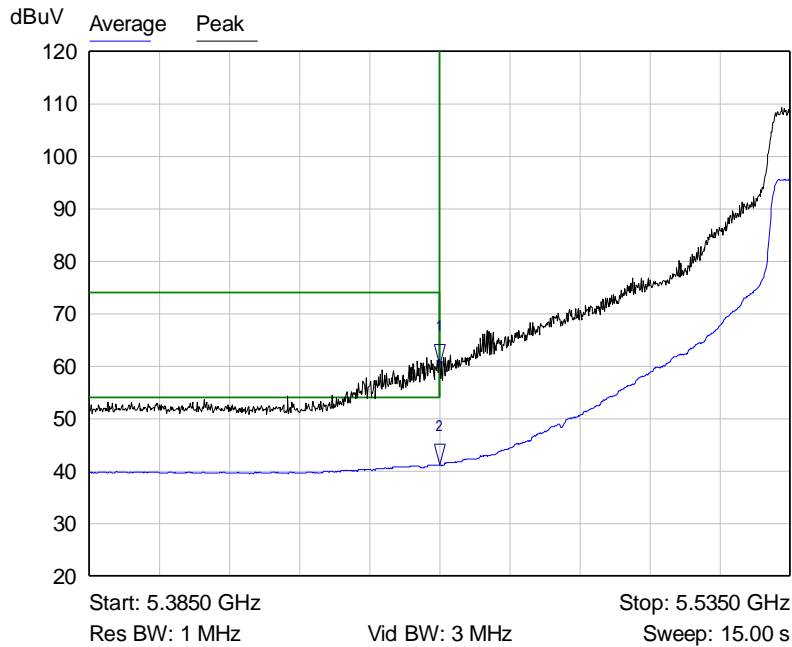
**Table 43: Antenna 0 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**



**Graph 125: Antenna 0 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 126: Antenna 0 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4600 GHz	60.24 dBuV	
2 ▾	Average	5.4600 GHz	41.12 dBuV	

**Graph 127: Antenna 0 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4T8-XX Antenna 1 (1005179)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11000.0	Peak	Vertical	11.8	46.9	58.7	74.0	-15.3
11000.0	Average	Vertical	2.1	46.9	49.0	54.0	-5.0
11000.0	Peak	Horizontal	11.2	46.9	58.1	74.0	-15.9
11000.0	Average	Horizontal	1.4	46.9	48.3	54.0	-5.7

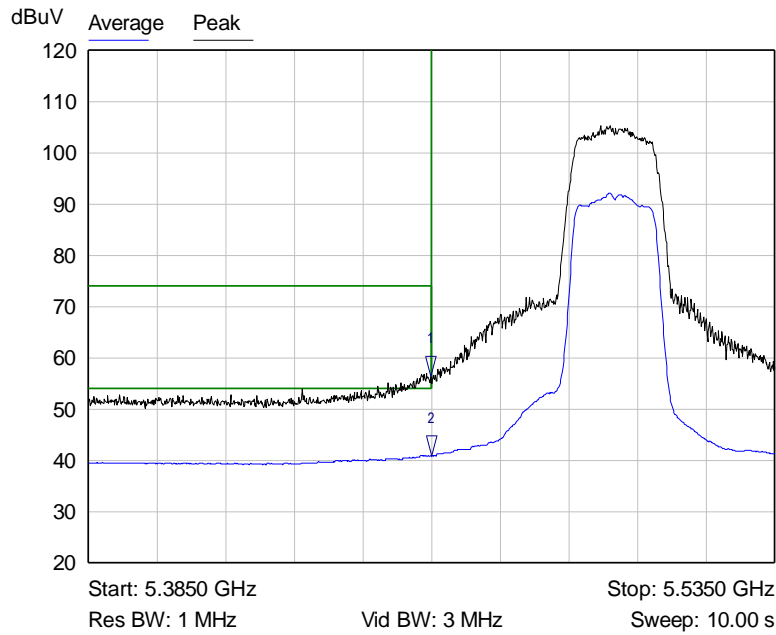
**Table 44: Antenna 1 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11200.0	Peak	Vertical	12.9	47.1	60.0	74.0	-14.0
11200.0	Average	Vertical	0.0	47.1	47.1	54.0	-6.9
11200.0	Peak	Horizontal	9.8	47.1	56.9	74.0	-17.1
11200.0	Average	Horizontal	0.1	47.1	47.2	54.0	-6.8

**Table 45: Antenna 1 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

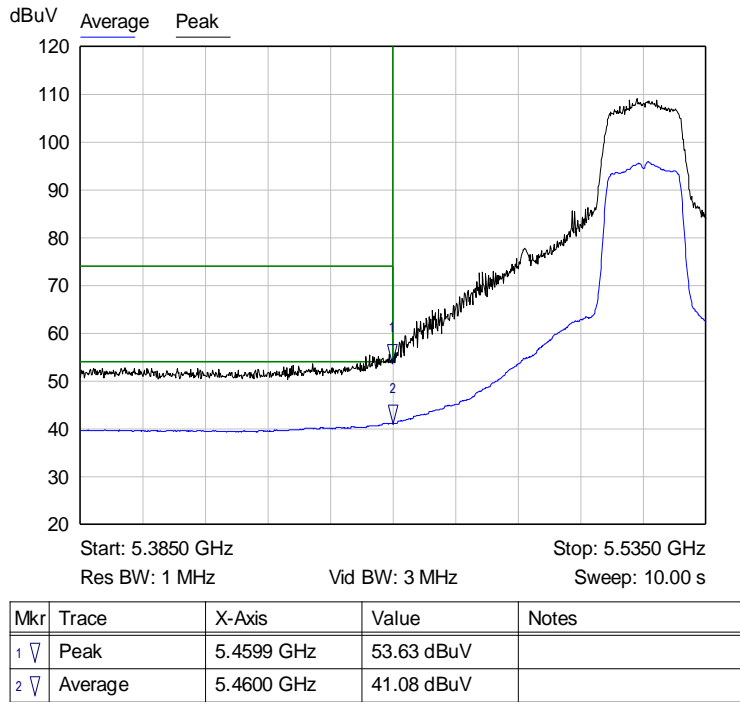
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	5.8	47.3	53.1	74.0	-20.9
11440.0	Average	Vertical	-4.2	47.3	43.1	54.0	-10.9
11440.0	Peak	Horizontal	5.6	47.3	52.9	74.0	-21.1
11440.0	Average	Horizontal	-4.4	47.3	42.9	54.0	-11.1

**Table 46: Antenna 1 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**

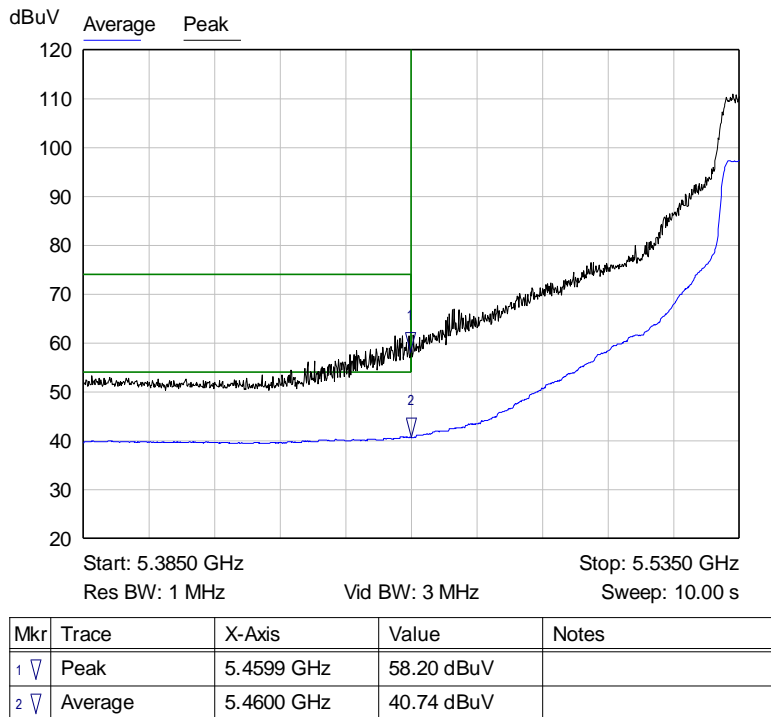


Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4599 GHz	56.40 dBuV	
2 ▾	Average	5.4600 GHz	40.91 dBuV	

**Graph 128: Antenna 1 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 129: Antenna 1 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



**Graph 130: Antenna 1 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**



**C4-T4IW10-XX Antenna 0 (1005097)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11000.0	Peak	Vertical	11.8	46.9	58.7	74.0	-15.3
11000.0	Average	Vertical	2.1	46.9	49.0	54.0	-5.0
11000.0	Peak	Horizontal	11.2	46.9	58.1	74.0	-15.9
11000.0	Average	Horizontal	1.4	46.9	48.3	54.0	-5.7

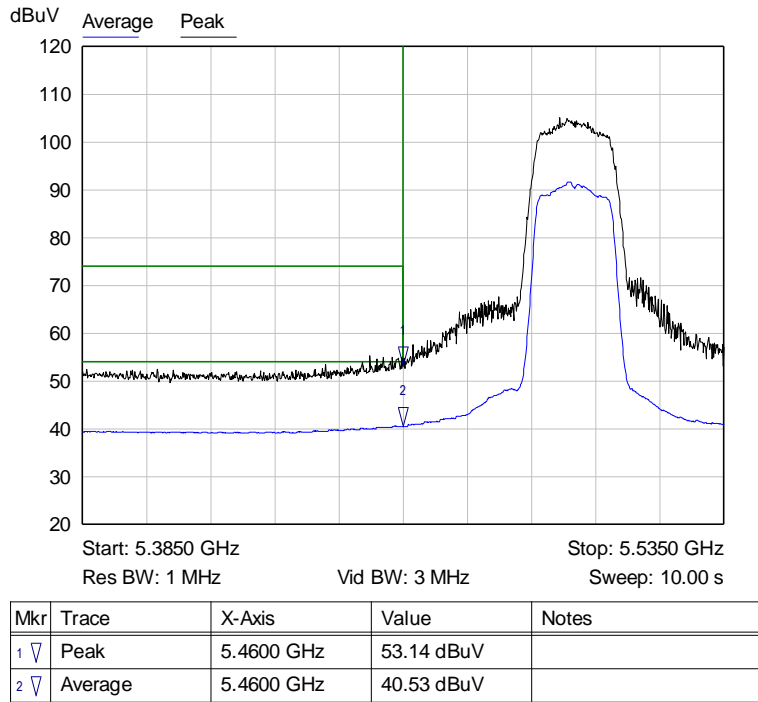
**Table 47: Antenna 0 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11200.0	Peak	Vertical	12.9	47.1	60.0	74.0	-14.0
11200.0	Average	Vertical	0.0	47.1	47.1	54.0	-6.9
11200.0	Peak	Horizontal	9.8	47.1	56.9	74.0	-17.1
11200.0	Average	Horizontal	0.1	47.1	47.2	54.0	-6.8

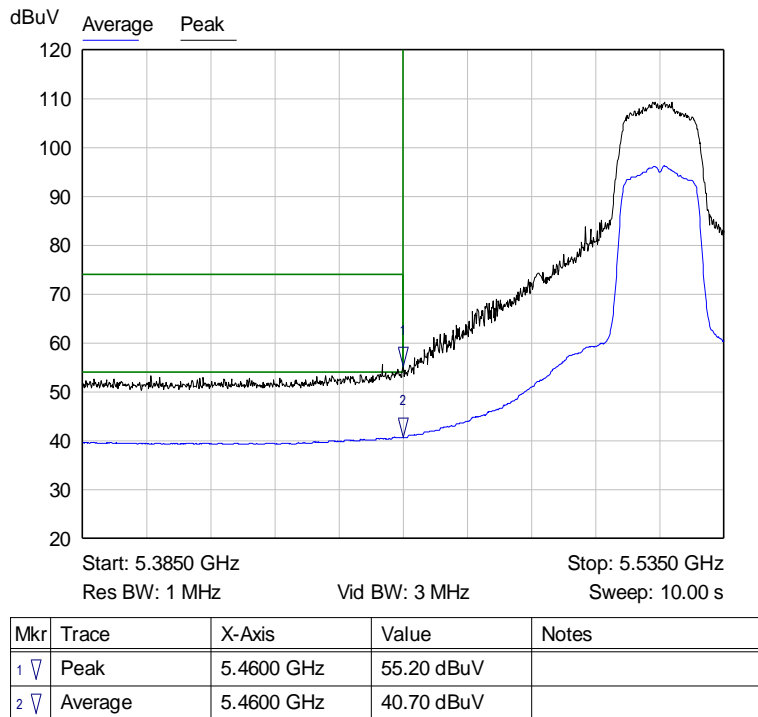
**Table 48: Antenna 0 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	5.8	47.3	53.1	74.0	-20.9
11440.0	Average	Vertical	-4.2	47.3	43.1	54.0	-10.9
11440.0	Peak	Horizontal	5.6	47.3	52.9	74.0	-21.1
11440.0	Average	Horizontal	-4.4	47.3	42.9	54.0	-11.1

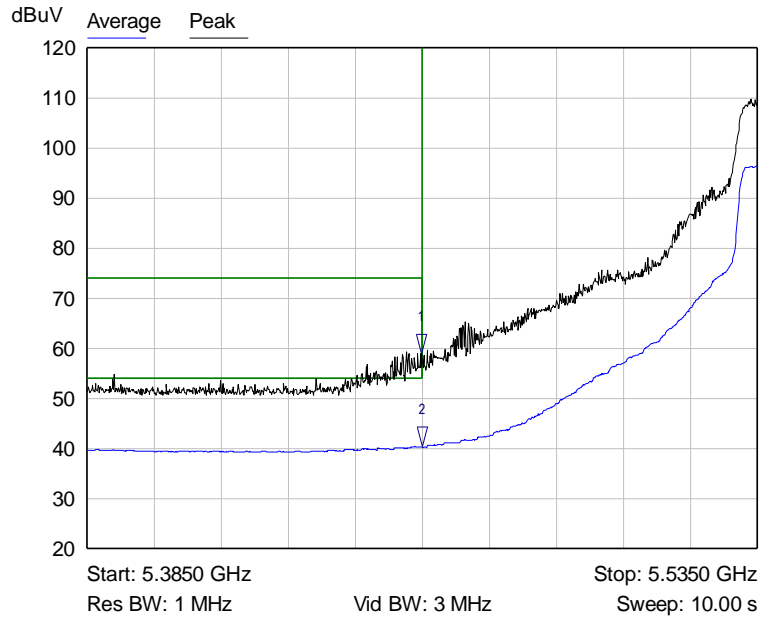
**Table 49: Antenna 0 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**



**Graph 131: Antenna 0 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 132: Antenna 0 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4599 GHz	58.88 dBuV	
2 ▾	Average	5.4600 GHz	40.26 dBuV	

**Graph 133: Antenna 0 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4IW10-XX Antenna 1 (1005098)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11000.0	Peak	Vertical	10.3	46.9	57.2	74.0	-16.8
11000.0	Average	Vertical	0.9	46.9	47.8	54.0	-6.2
11000.0	Peak	Horizontal	11.2	46.9	58.1	74.0	-15.9
11000.0	Average	Horizontal	0.9	46.9	47.8	54.0	-6.2

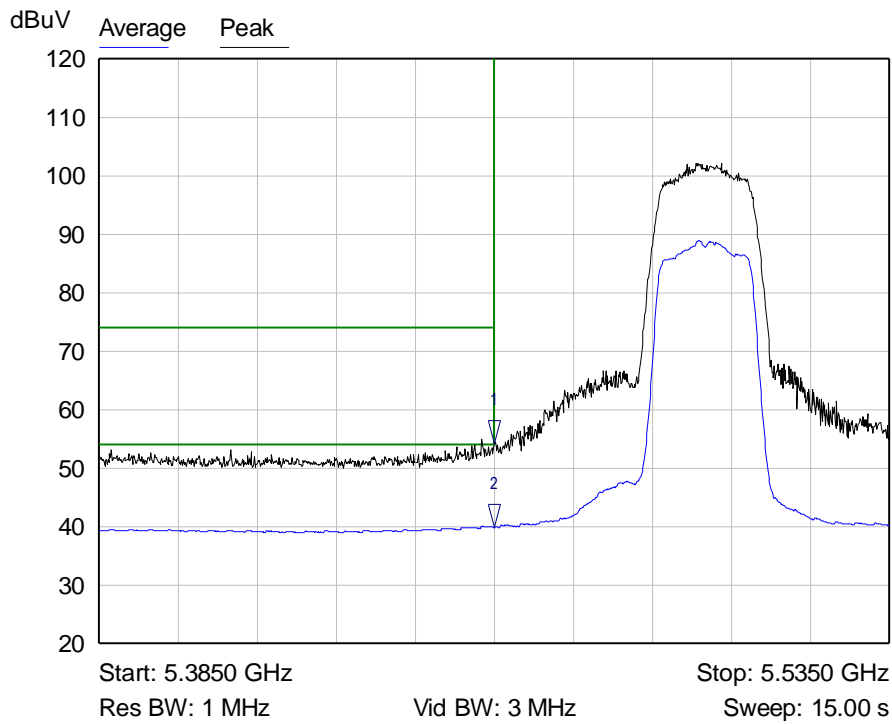
**Table 50: Antenna 1 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11200.0	Peak	Vertical	9.5	47.1	56.6	74.0	-17.4
11200.0	Average	Vertical	-0.2	47.1	46.9	54.0	-7.1
11200.0	Peak	Horizontal	9.5	47.1	56.6	74.0	-17.4
11200.0	Average	Horizontal	-0.6	47.1	46.5	54.0	-7.5

**Table 51: Antenna 1 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

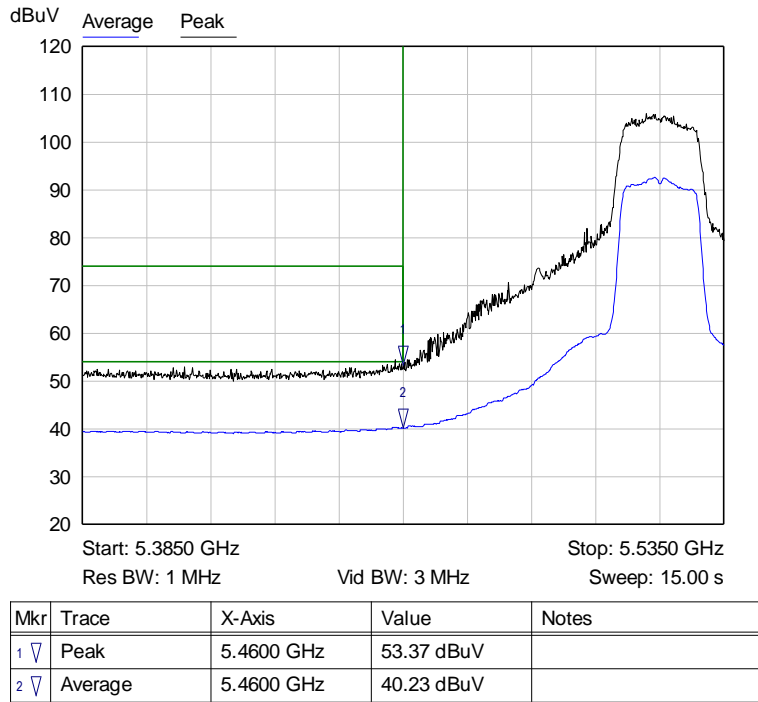
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	8.1	47.3	55.4	74.0	-18.6
11440.0	Average	Vertical	-1.9	47.3	45.4	54.0	-8.6
11440.0	Peak	Horizontal	9.2	47.3	56.5	74.0	-17.5
11440.0	Average	Horizontal	-1.4	47.3	45.9	54.0	-8.1

**Table 52: Antenna 1 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**

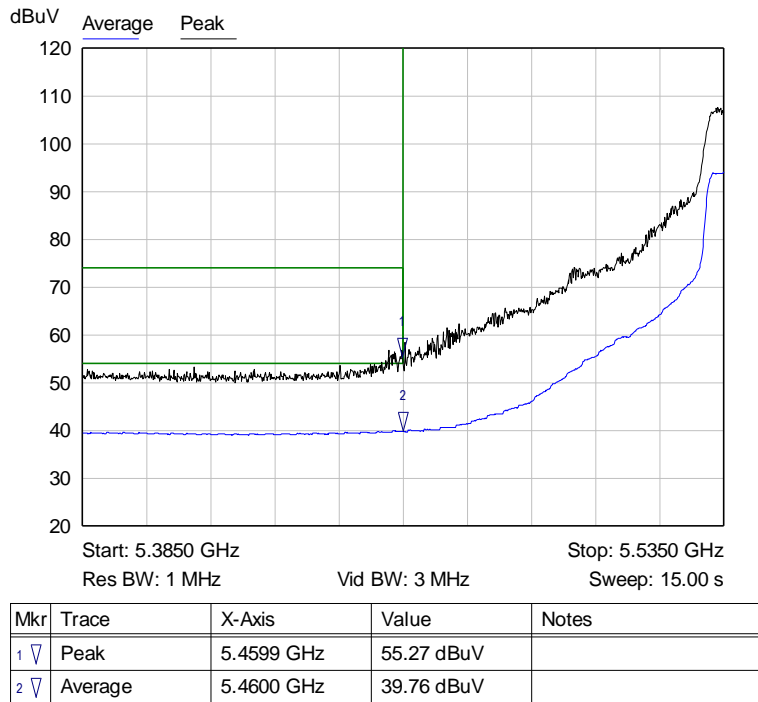


Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4600 GHz	54.19 dBuV	
2 ▾	Average	5.4600 GHz	39.91 dBuV	

**Graph 134: Antenna 1 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 135: Antenna 1 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



**Graph 136: Antenna 1 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4IW8-XX Antenna 0 (1005095)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11000.0	Peak	Vertical	10.4	46.9	57.3	74.0	-16.7
11000.0	Average	Vertical	-0.6	46.9	46.3	54.0	-7.7
11000.0	Peak	Horizontal	10.5	46.9	57.4	74.0	-16.6
11000.0	Average	Horizontal	-0.9	46.9	46.0	54.0	-8.0

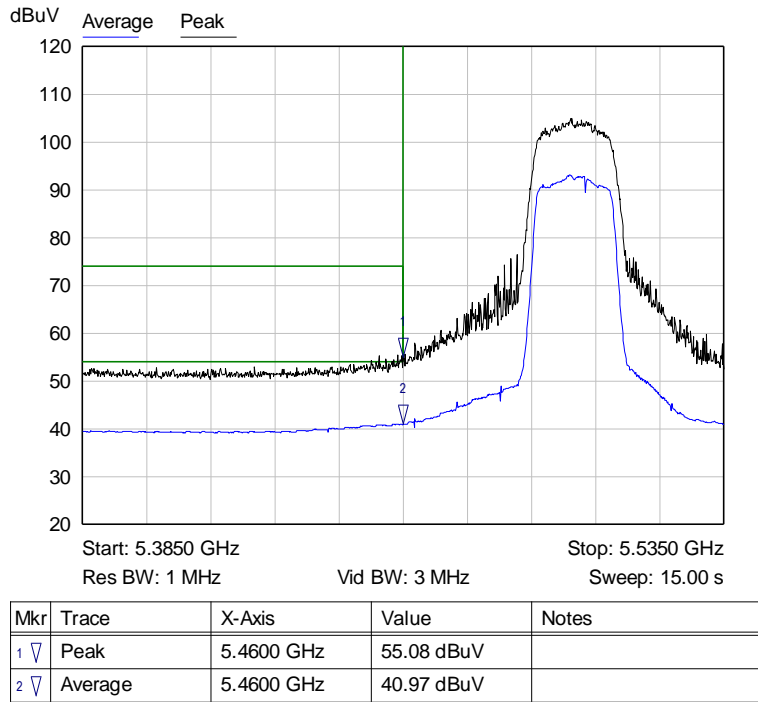
**Table 53: Antenna 0 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11200.0	Peak	Vertical	7.8	47.1	54.9	74.0	-19.1
11200.0	Average	Vertical	-2.0	47.1	45.1	54.0	-8.9
11200.0	Peak	Horizontal	8.2	47.1	55.3	74.0	-18.7
11200.0	Average	Horizontal	-2.4	47.1	44.7	54.0	-9.3

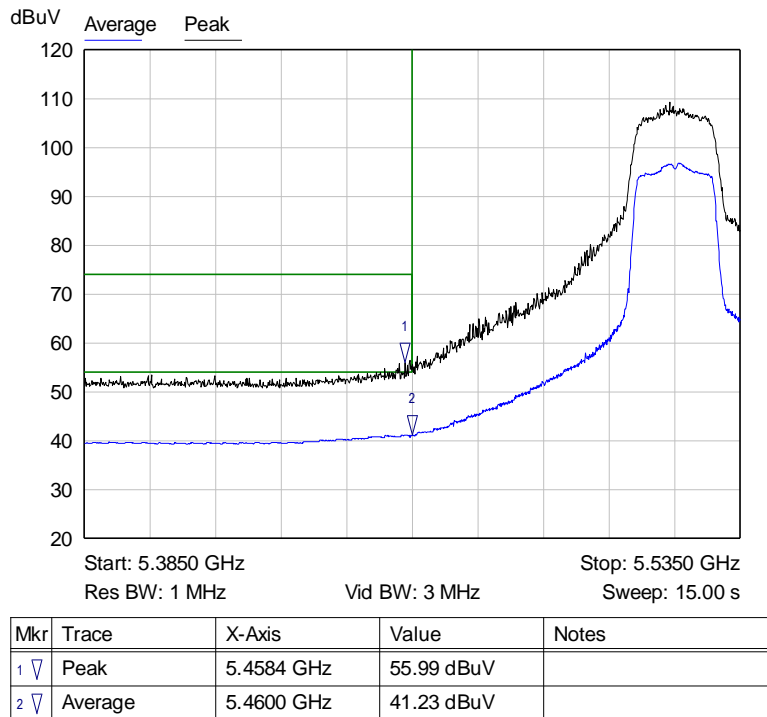
**Table 54: Antenna 0 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	4.0	47.3	51.3	74.0	-22.7
11440.0	Average	Vertical	-7.0	47.3	40.3	54.0	-13.7
11440.0	Peak	Horizontal	3.5	47.3	50.8	74.0	-23.2
11440.0	Average	Horizontal	-7.0	47.3	40.3	54.0	-13.7

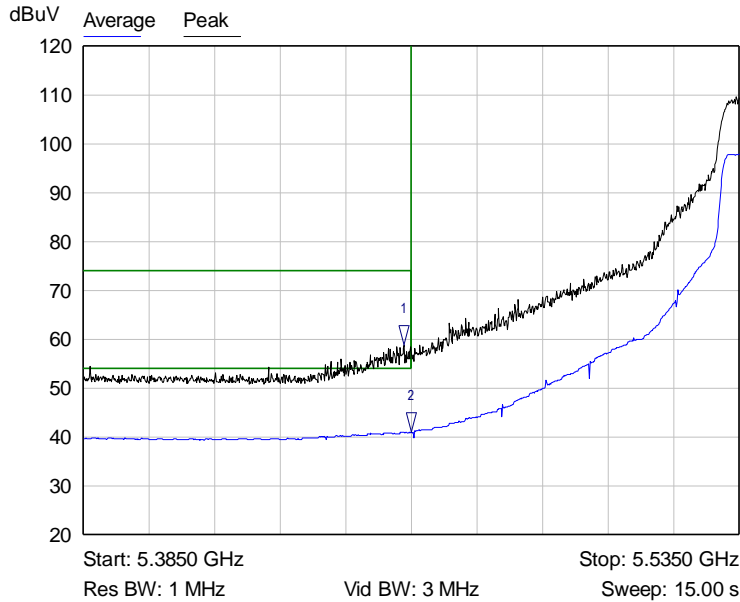
**Table 55: Antenna 0 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**



**Graph 137: Antenna 0 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 138: Antenna 0 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4584 GHz	58.90 dBuV	
2 ▾	Average	5.4600 GHz	40.94 dBuV	

**Graph 139: Antenna 0 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**C4-T4IW8-XX Antenna 1 (1005096)**

Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11000.0	Peak	Vertical	10.0	46.9	56.9	74.0	-17.1
11000.0	Average	Vertical	0.1	46.9	47.0	54.0	-7.0
11000.0	Peak	Horizontal	9.9	46.9	56.8	74.0	-17.2
11000.0	Average	Horizontal	0.2	46.9	47.1	54.0	-6.9

**Table 56: Antenna 1 - Transmitting at the Lowest Frequency (Channel 100) – Setting 20**

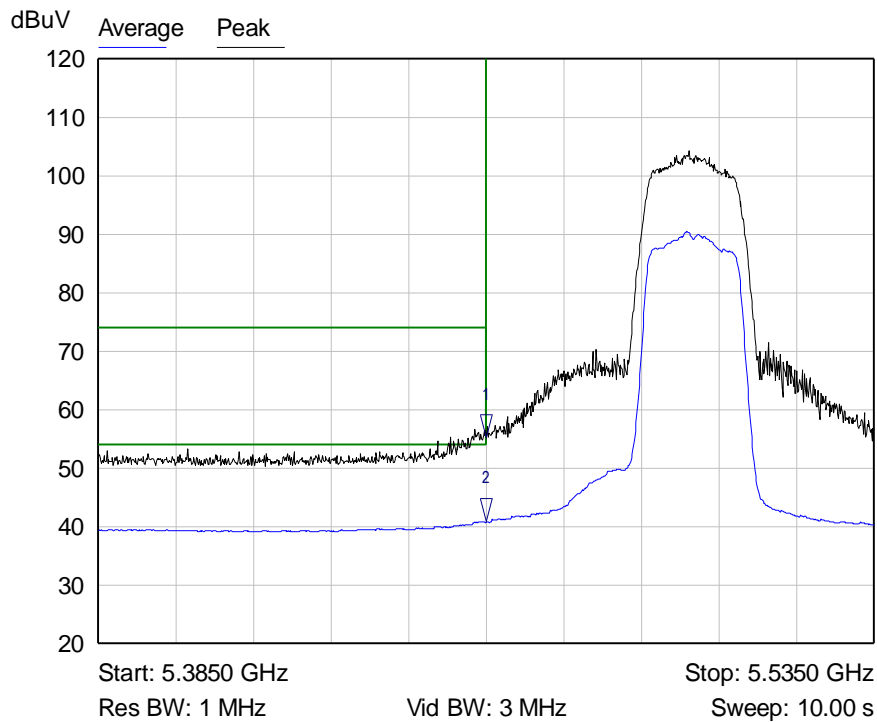
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dBμV)	Correction Factor (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11200.0	Peak	Vertical	9.0	47.1	56.1	74.0	-17.9
11200.0	Average	Vertical	-0.9	47.1	46.2	54.0	-7.8
11200.0	Peak	Horizontal	8.9	47.1	56.0	74.0	-18.0
11200.0	Average	Horizontal	-1.3	47.1	45.8	54.0	-8.2

**Table 57: Antenna 1 - Transmitting at the Middle Frequency (Channel 120) – Setting 20**



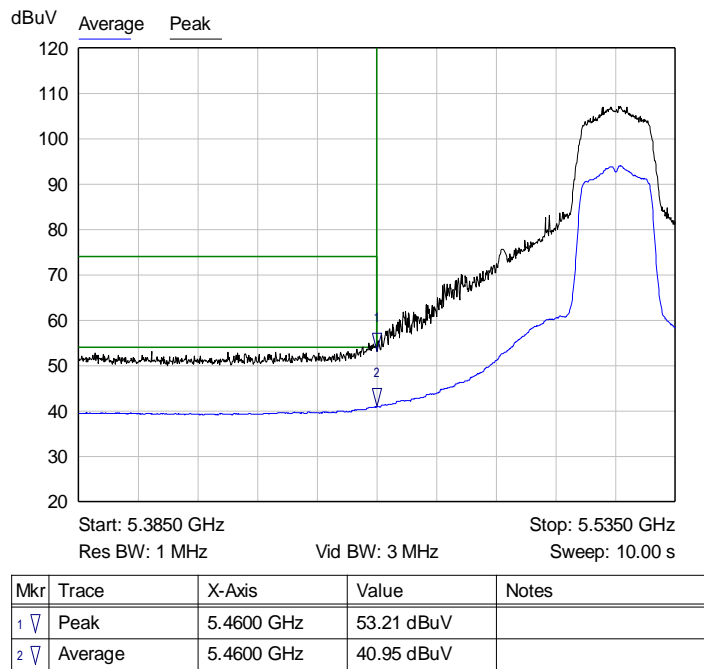
Frequency (MHz)	Detector	Antenna Polarity	Receiver Reading (dB $\mu$ V)	Correction Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
11440.0	Peak	Vertical	6.9	47.3	54.2	74.0	-19.8
11440.0	Average	Vertical	-3.2	47.3	44.1	54.0	-9.9
11440.0	Peak	Horizontal	6.9	47.3	54.2	74.0	-19.8
11440.0	Average	Horizontal	-3.5	47.3	43.8	54.0	-10.2

**Table 58: Antenna 1 - Transmitting at the Highest Frequency (Channel 144) – Setting 20**

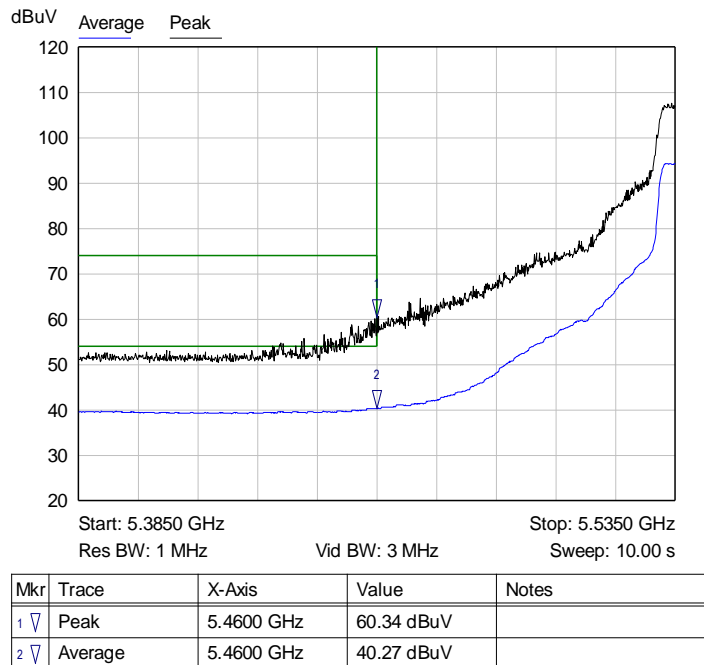


Mkr	Trace	X-Axis	Value	Notes
1 ▾	Peak	5.4600 GHz	55.12 dBuV	
2 ▾	Average	5.4600 GHz	40.83 dBuV	

**Graph 140: Antenna 1 – Channel 100 Band Edge at the Restricted Band Plot – Setting 12**



**Graph 141: Antenna 1 – Channel 104 Band Edge at the Restricted Band Plot – Setting 17**



**Graph 142: Antenna 1 – Channel 108 Band Edge at the Restricted Band Plot – Setting 20**

**Result**

The EUT complied with the specification limit as all emissions met the limits of 15.209.

## 7 Test Procedures and Test Equipment

### 7.1 Conducted Emissions at Mains Ports

The conducted emissions at mains and telecommunications ports from the EUT were measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 150 kHz to 30 MHz frequency ranges.

The conducted emissions at mains ports measurements are performed in a screen room using a (50 Ω/50 μH) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of devices with each device having its own power cord, the point of connection for the LISN is determined from the following rules:

- Each power cord, which is terminated in a mains supply plug, shall be tested separately.
- Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
- Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
- Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
- When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

For testing, desktop EUT are placed on a non-conducting table at least 0.8 meters from the metallic floor and placed 40 cm from the vertical coupling plane (copper plating in the wall behind EUT table). Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	Hewlett Packard	8566B	V034141	05/12/2020	05/12/2021
Quasi-Peak Detector	Hewlett Packard	85650A	V033345	05/11/2020	05/11/2022
LISN	Teseq	NNB 51	V045406	08/20/2020	08/20/2021
Conductance Cable Wanship Upper Site	VPI Labs	Cable J	V034832	01/09/2020	01/09/2021
Filter	VPI Labs	47038	V047038	01/09/2020	01/09/2021
Test Software (AC)	VPI Labs	Revision 01	V035674	N/A	N/A

**Table 59: List of equipment used for conducted emissions testing at mains ports.**

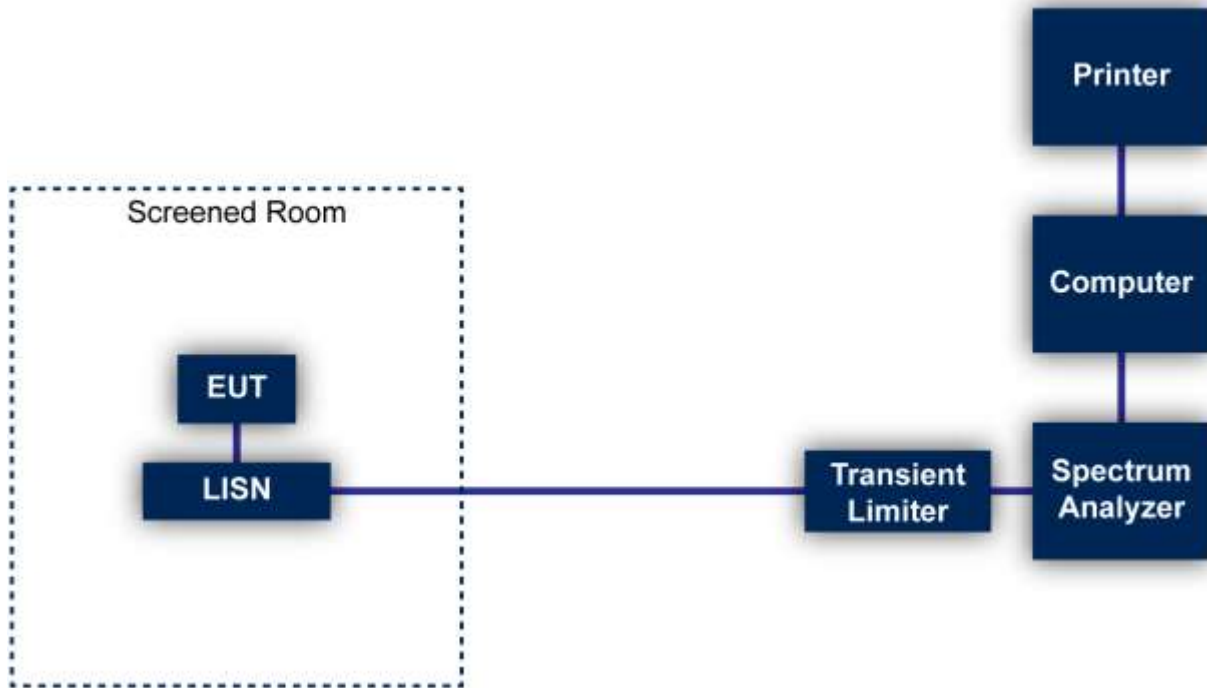


Figure 143: Mains Conducted Emissions Test

## 7.2 Direct Connection at the Antenna Port Test

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer	Rohde & Schwarz	FSU40	V044352	03/13/2020	03/13/2021
Signal Generator	Rohde & Schwarz	SMB100A	V044485	03/16/2020	03/16/2021
Vector Signal Generator	Rohde & Schwarz	SMBV100A	V044217	04/01/2019	04/01/2021
40GHz Switch Extension	Rohde & Schwarz	OSP-150	V044486	03/24/2020	03/24/2022
40GHz Switch Base Unite	Rohde & Schwarz	OSP-120	V044487	04/30/2020	04/30/2022

Table 60: List of equipment used for conducted emissions testing at antenna ports.

## 7.2.1 Test Configuration Block Diagram

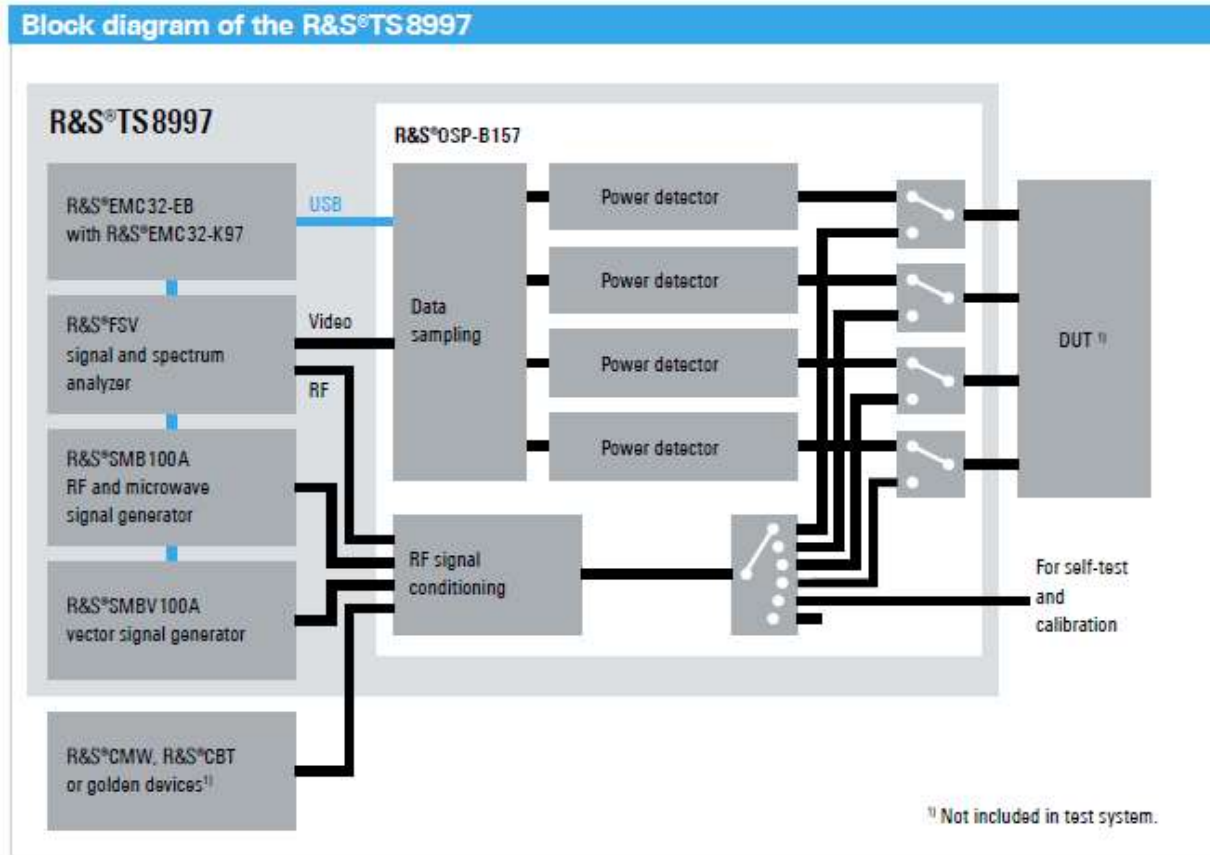


Figure 144: Direct Connection at the Antenna Port Test

## 7.3 Radiated Emissions

The radiated emissions from the EUT were measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings.

A preamplifier with a fixed gain of 51 dB was used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges. For frequencies below 30 MHz, a 9 kHz resolution Bandwidth was used.

A loop antenna was used to measure frequencies below 30 MHz. A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 3 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors. A double-ridged guide antenna was used to measure the emissions at frequencies above 1000 MHz at a 3 meter or 1 meter distance from the EUT.

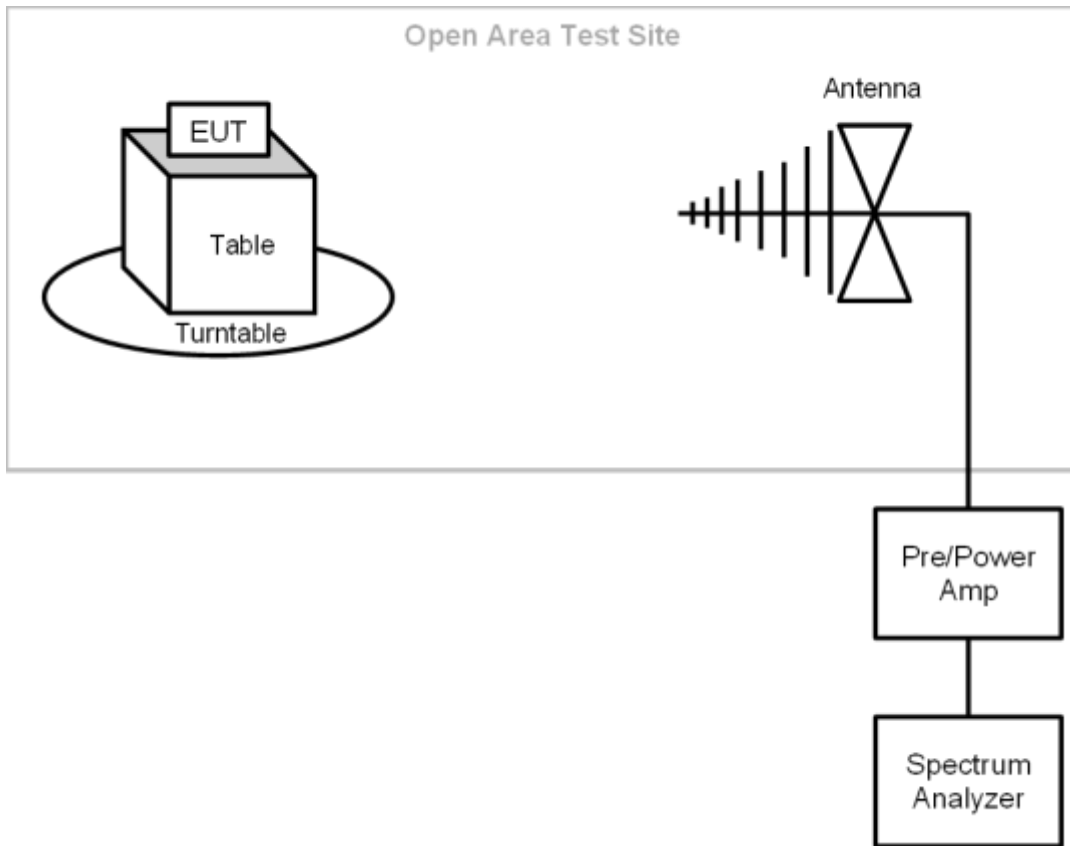
The configuration of the EUT was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated emissions. The EUT was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there were multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

Desktop EUT are measured on a non-conducting table 0.8 meters above the ground plane. For frequencies above 1000 MHz, the EUT is placed on a table 1.5 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

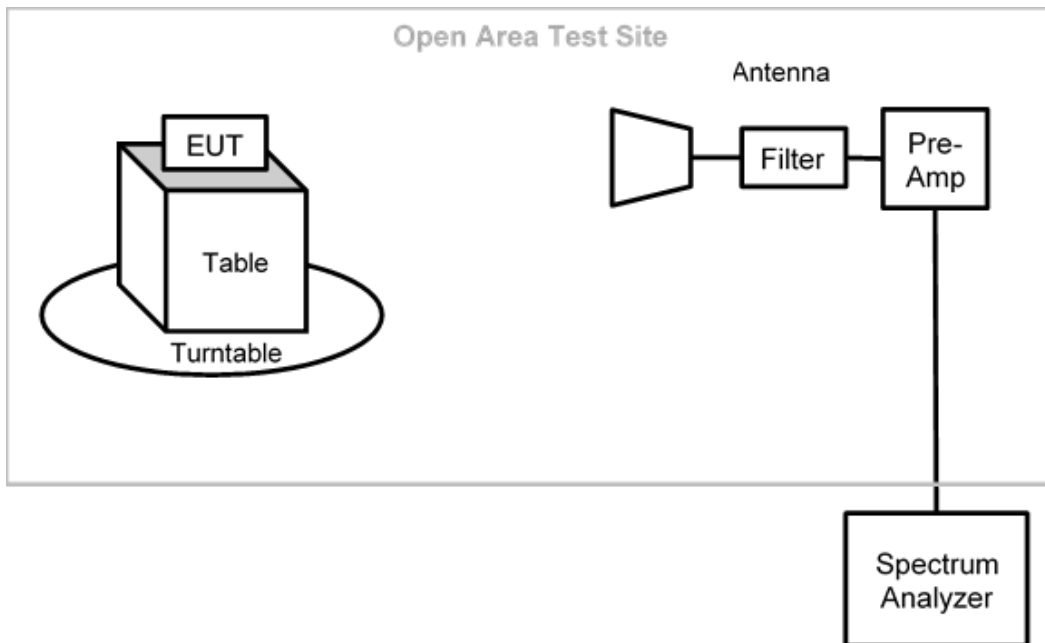
For radiated emissions testing that is performed at distances closer than the specified distance; an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

Type of Equipment	Manufacturer	Model Number	Asset Number	Date of Last Calibration	Due Date of Calibration
Spectrum Analyzer/Receiver	Rohde & Schwarz	ESU40	V033119	08/005/2020	08/05/2021
Spectrum Analyzer	Hewlett Packard	8566B	V034141	05/12/2020	05/12/2021
Quasi-Peak Detector	Hewlett Packard	85650A	V033345	05/11/2020	05/11/2022
Loop Antenna	EMCO	6502	V034216	02/11/2019	02/11/2021
Biconilog Antenna	EMCO	3142E-PA	V035736	06/24/2020	06/24/2022
Double Ridged Guide Antenna	EMCO	3115	V034194	03/09/2019	03/09/2021
Standard Gain Horn	ETS-Lindgren	3160-09	V034223	ICO	ICO
Standard Gain Horn	ETS-Lindgren	3160-10	V034224	ICO	ICO
High Frequency Amplifier	Miteq	AFS4-001018000-35-10P-4	V033997	01/09/2020	01/09/2021
High Frequency Amplifier	L3-Narda-Miteq	AMF-6F-18004000-37-8P	V042464	01/09/2020	01/09/2021
5 GHz High Pass Filter	Micro-Tronics	HPM50105	V034198	01/09/2020	01/09/2021
6' High Frequency Cable	Microcoax	UFB197C-0-0720-000000	V033638	01/09/2020	01/09/2021
20' High Frequency Cable	Microcoax	UFB197C-1-3120-000000	V033979	01/09/2020	01/09/2021
3 Meter Radiated Emissions Cable Wanship Upper Site	Microcoax	UFB205A-0-4700-000000	V033639	01/09/2020	01/09/2021
Test Software (FCC)	VPI Labs	Revision 01	V035673	N/A	N/A

**Table 61: List of equipment used for radiated emissions testing.**



**Figure 145: Radiated Emissions Below 1GHz Test**



**Figure 146: Radiated Emissions Above 1GHz Test**

## 7.4 Equipment Calibration

All applicable equipment is calibrated using either an independent calibration laboratory or VPI Laboratories, Inc. personnel at intervals defined in ANSI C63.4:2014 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

## 7.5 Measurement Uncertainty

Test	Uncertainty ( $\pm$ dB)	Confidence (%)
Conducted Emissions	2.8	95
Radiated Emission (9 kHz to 30 MHz)	3.3	95
Radiated Emissions (30 MHz to 1 GHz)	3.4	95
Radiated Emissions (1 GHz to 18 GHz)	5.0	95
Radiated Emissions (18 GHz to 40 GHz)	4.1	95



## 8 Photographs



**Photograph 1: Front View Radiated Emissions Configuration – Below 30 MHz – C4-T4IW10-XX Shown**



**Photograph 2: Back View Radiated Emissions Configuration – 30 to 1000 MHz – C4-T4IW10-XX Shown**



**Photograph 3: Front View Radiated Emissions Configuration – Above 1000 MHz – C4-T4IW10-XX Shown**



**Photograph 4: Back View Radiated Emissions Configuration – Above 1000 MHz – C4-T4IW10-XX Shown**



**Photograph 5: Radiated Emissions Configuration – Tabletop Unit Vertical Placement**



**Photograph 6: Back Radiated Emissions Configuration – Tabletop Unit Horizontal Placement**



**Photograph 7: Radiated Emissions Configuration – Tabletop Unit On Edge Placement**



**Photograph 8 – Front View Conducted Emissions Configuration – Tabletop Units**



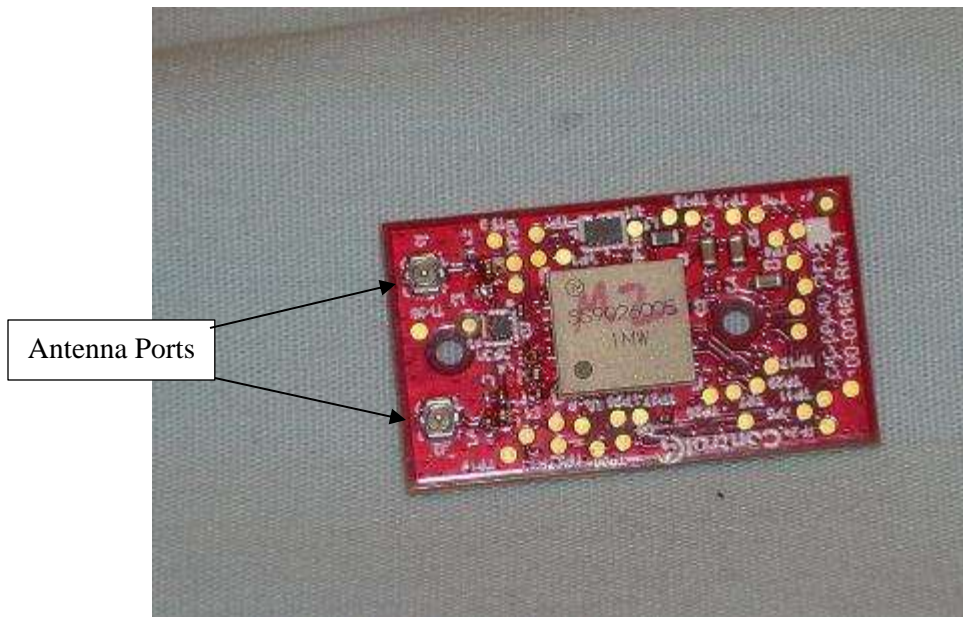
**Photograph 9 – Back View Conducted Emissions Configuration – Tabletop Units**



**Photograph 10 – Front View Conducted Emissions Configuration – In-Wall Units AC Powered**



**Photograph 11 – Back View Conducted Emissions Configuration – In-wall Units AC Powered**



**Photograph 12: Front View of the EUT**

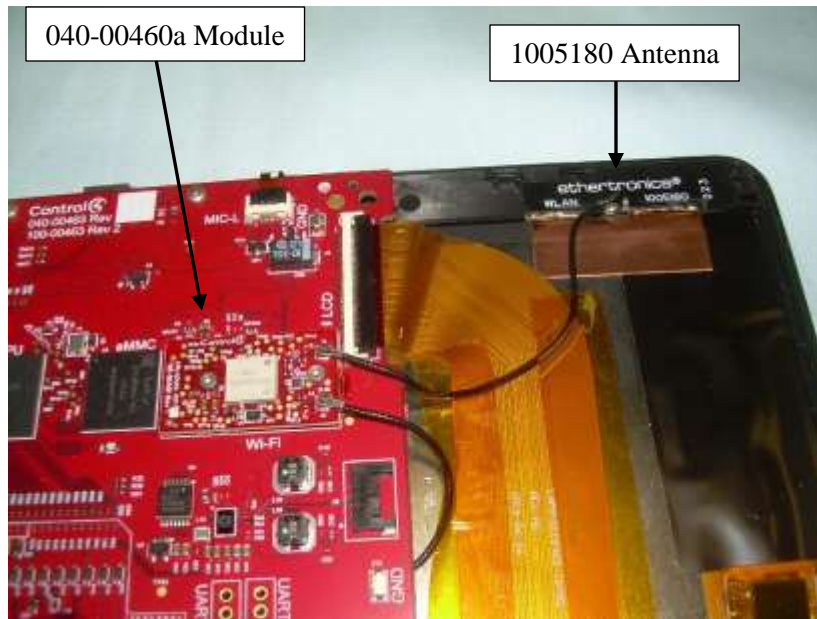




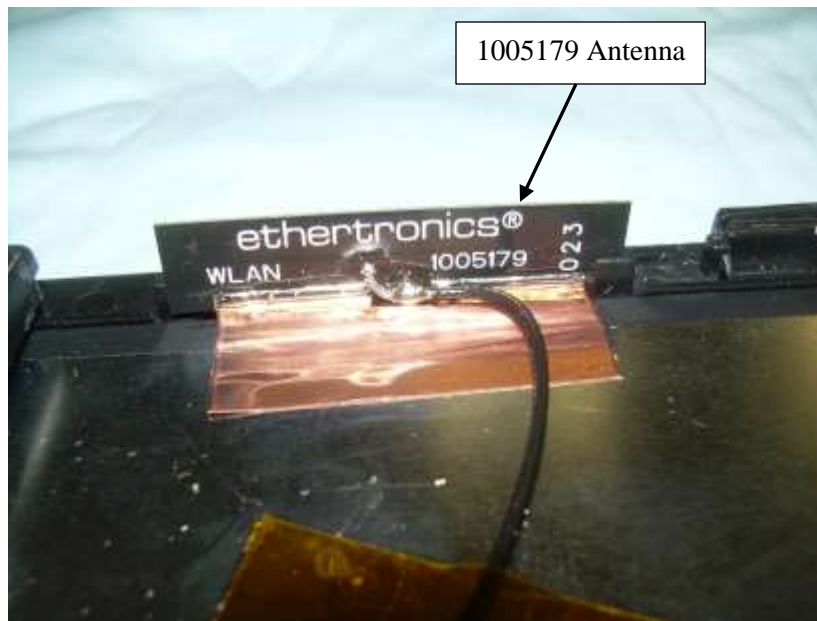
**Photograph 13: Back View of the EUT**



**Photograph 14: 040-00460a Installed in C4-T4T10-xx with 1005180 and 1005179 Antennas Installed**



**Photograph 15: 040-00460a Installed in C4-T4T10-xxwith 1005180 Antennas Installed**



**Photograph 16: 040-00460a Installed in C4-T4T10-xxwith 1005179 Antennas Installed**

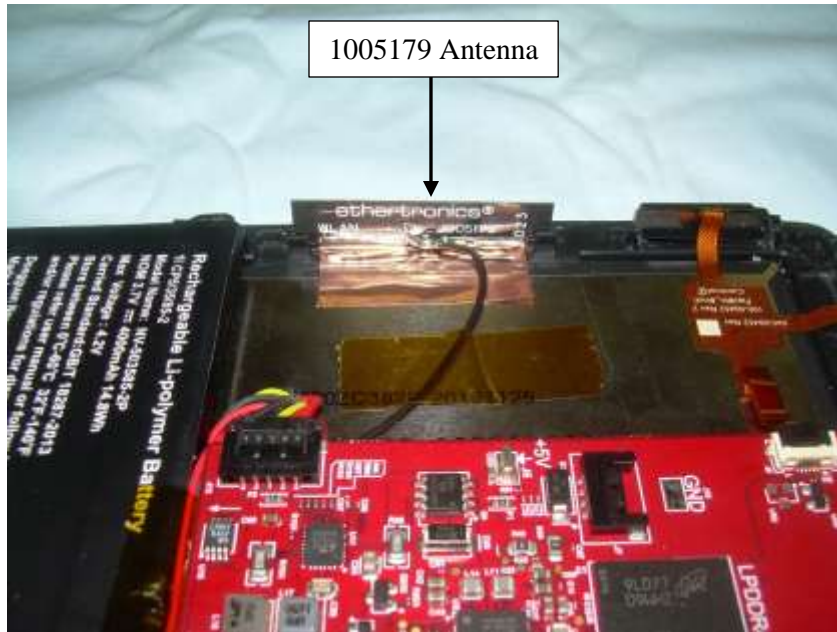




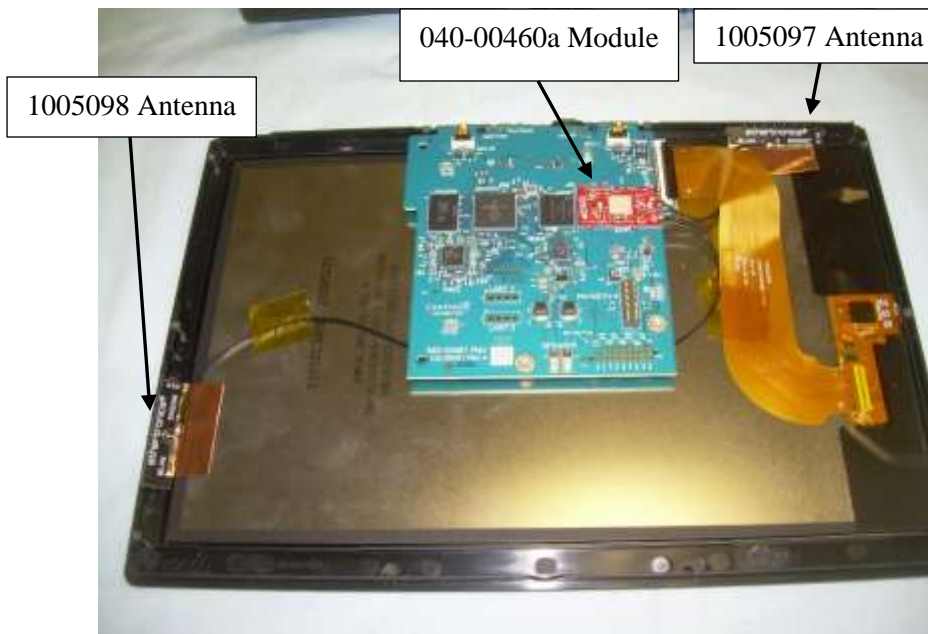
**Photograph 17: 040-00460a Installed in C4-T4T8-XX with 1005178 and 1005179 Antennas Installed**



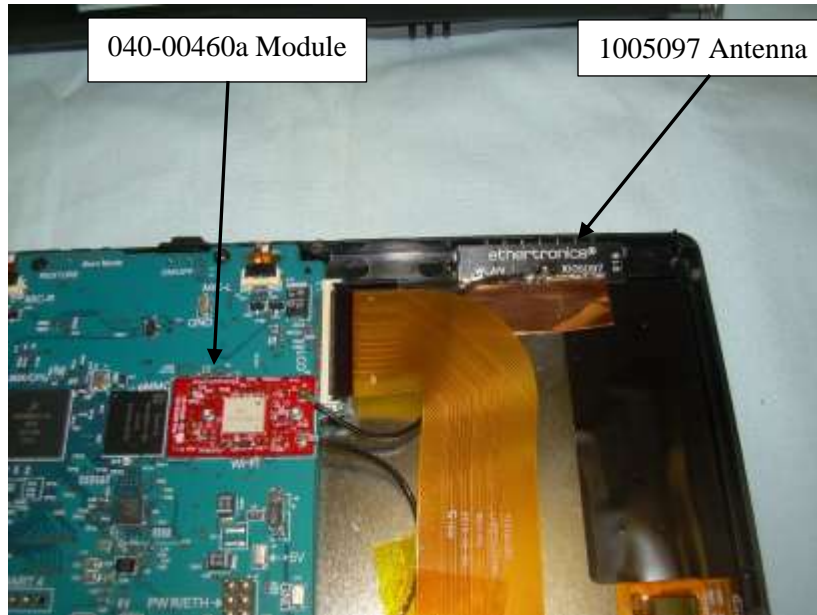
**Photograph 18: 040-00460a Installed in C4-T4T8-XX with 1005178 Antenna Installed**



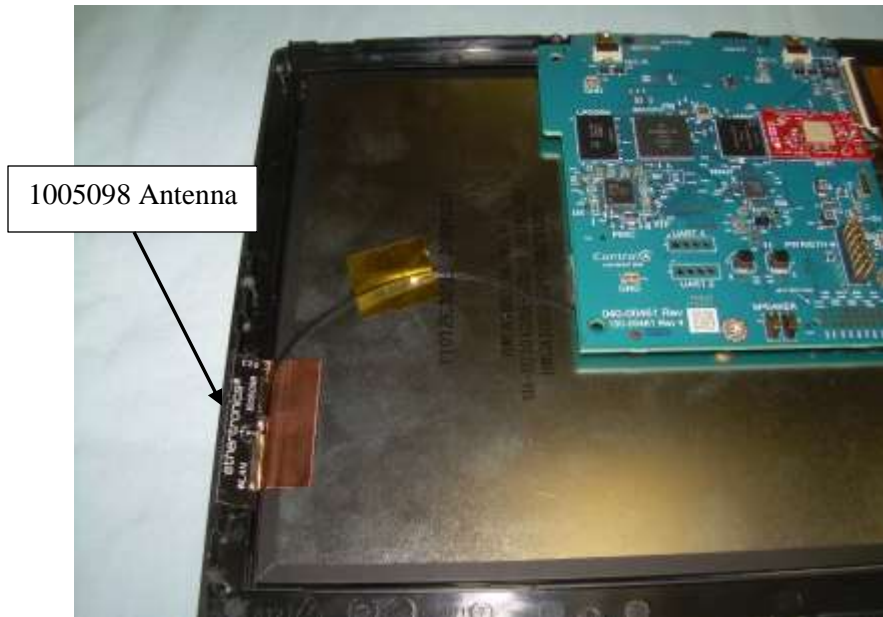
**Photograph 19: 040-00460a Installed in C4-T4T8-XX with 1005179 Antenna Installed**



**Photograph 20: 040-00460a Installed in C4-T4IW10-XX with 1005097 and 1005098 Antennas Installed**

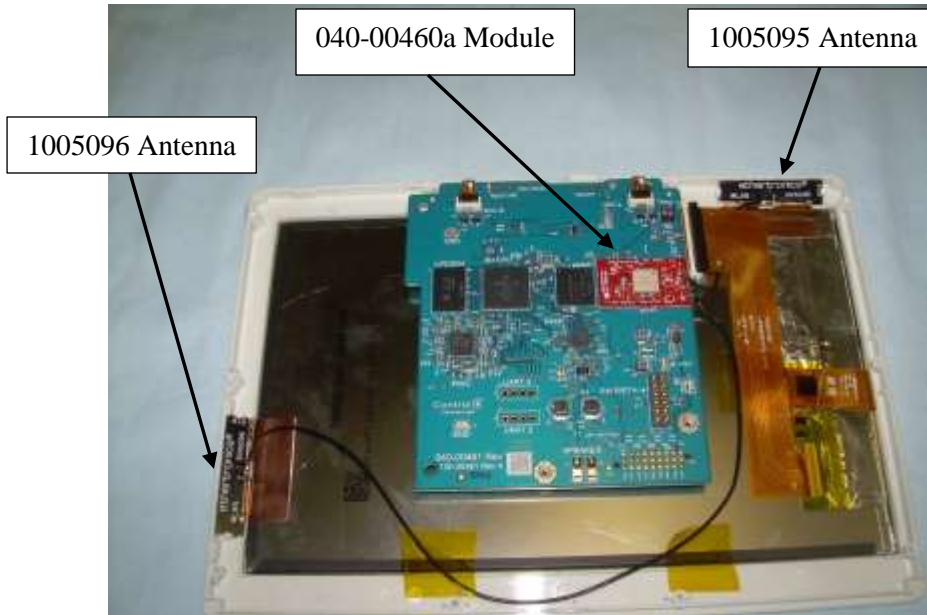


**Photograph 21: 040-00460a Installed in C4-T4IW10-XX with 1005097 Antenna Installed**

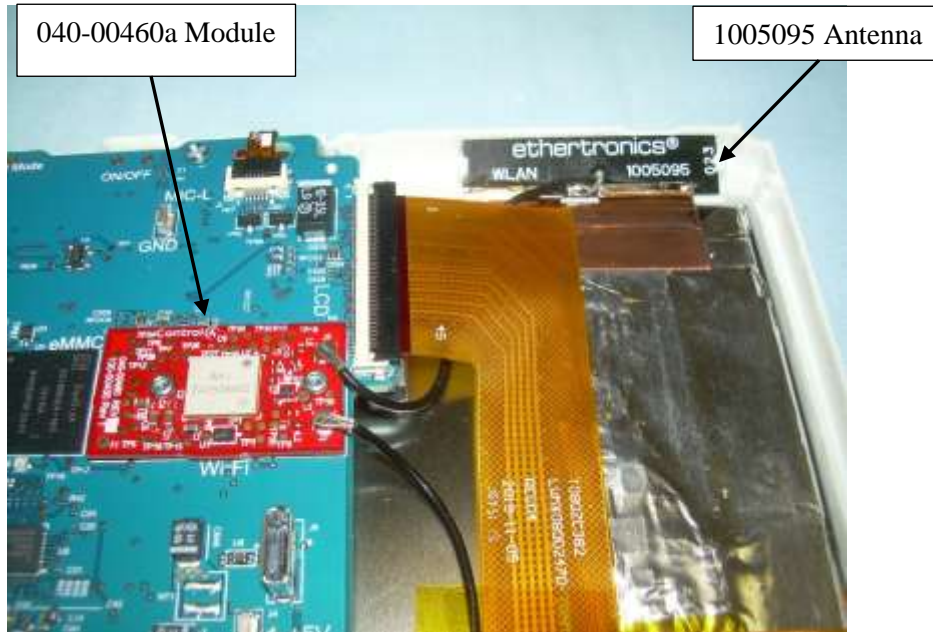


**Photograph 22: 040-00460a Installed in C4-T4IW10-XX with 1005098 Antenna Installed**

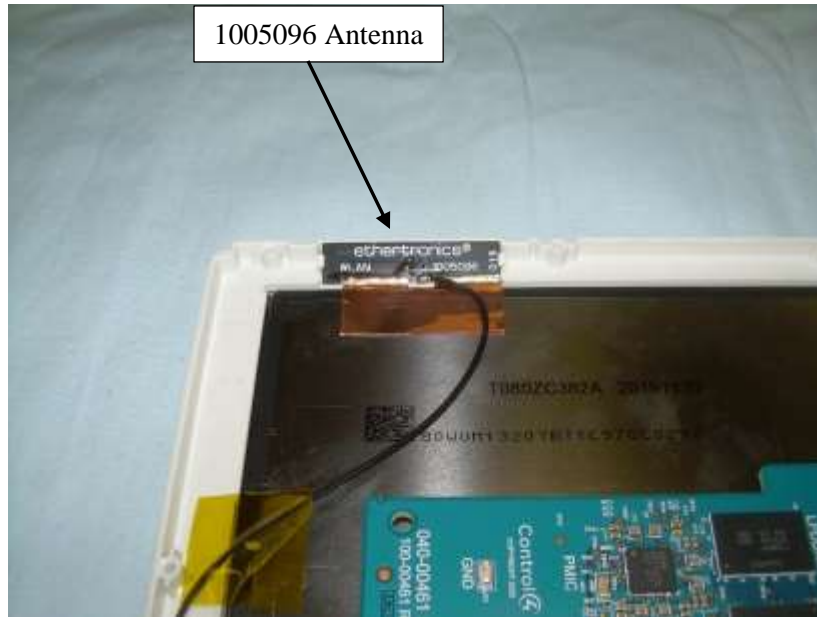




**Photograph 23: 040-00460a Installed in C4-T4IW-XX with 1005095 and 1005096 Antennas Installed**



**Photograph 24: 040-00460a Installed in C4-T4IW8-XX with 1005095 Antennas Installed**



**Photograph 25: 040-00460a Installed in C4-T4IW8-XX with 1005096 Antenna Installed**

--- End of Report ---