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FranklinWH Energy Storage Inc.

RF TEST REPORT

Report Type:
FCC Part 15.407 RF report

Model:
aGate X (may be followed by blank;
may be followed by A to Z; may be followed by 0 to 9;
may be followed by symbol.)

REPORT NUMBER:
240600353SHA-004

ISSUE DATE:
September 2, 2024

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 240600353SHA-004

Applicant:	FranklinWH Energy Storage Inc. 8 The Green ,Ste A, Dover, DE 19901,USA
Manufacturer:	FranklinWH Technologies Co., Ltd. Room 301, Building 5A Skyworth Innovation Park, No.8 Tangtou 1st Road, Tangtou community Shiyan sub-district , Baoan District, Shenzhen, Guangdong, China
Factory:	Dongguan Shingi Electronics Co., Ltd. No. 1 Yadi South Road, Qiaotou Town , Dongguan City , Guangdong Province , China.
FCC ID:	2BCMR-AGATEX20

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2023): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2020):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
Project Engineer Sky Yang	Reviewer Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
240600353SHA-004	Rev. 01	Initial issue of report	September 2, 2024

Measurement result summary

TEST ITEM	FCC REFERENCE	RESULT
26 dB Bandwidth & 99% Occupied Bandwidth	15.407(a)	Pass
Minimum 6dB Bandwidth	15.407(e)	Pass
Maximum Conducted Output Power	15.407(a)	Pass
Power spectral density	15.407(a)	Pass
Radiated emission	15.407(b) 15.205 15.209	Pass
Power line conducted emission	15.407(b) 15.207	Pass
Frequency Stability	15.407(g)	Tested
Antenna requirement	15.203	Pass

Notes:
1: NA =Not Applicable
2. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
3: Additions, Deviations and Exclusions from Standards: None.

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	aGate
Type/Model:	aGate X (may be followed by blank; may be followed by A to Z; may be followed by 0 to 9； may be followed by symbol.)
Description of EUT:	The EUT is an Energy storage control system which supports 2.4G, 5G Wi-Fi (802.11b/g/n/a/ac mode), BT and LTE function. LTE function uses a certified module, the FCC ID is XMR201909EC25AFX, the IC ID is 10224A-2019EC25AFX.
Rating:	120/208VAC ; 120V/240VAC
	120/208VAC is 3-wire form 3-phase, 4-wire network.
EUT type:	☐ Table top ☒ Floor standing
Sample received date:	June 27, 2024
Date of test:	July 11, 2024 to September 2, 2024

Note:
All models are same except for model name, different names represent different sales regions.

1.2 Technical Specification

Frequency Range:	5150 ~ 5250MHz 5250 ~ 5350MHz 5470 ~ 5725MHz 5725 ~ 5850MHz
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40) , 802.11ac(HT20), 802.11ac(HT40) , 802.11ac(HT80)
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Number:	For 5150 ~ 5250MHz band: Channel 36 - 48 For 5250 ~ 5350MHz Band: Channel 52 - 64 For 5470 ~ 5725MHz Band: Channel 100 - 140 For 5725 ~ 5850MHz band: Channel 149 - 165

1.3 Antenna information

Antenna information:						
No.	Antenna Type	Gain				Note
		U-NII-1	U-NII-2A	U-NII-2C	U-NII-3	
0	PCB Antenna 1	3.7 dBi	3.7 dBi	3.8 dBi	5.7 dBi	/
1	PCB Antenna 2	3.7 dBi	3.7 dBi	3.8 dBi	5.7 dBi	/
Note: After technology evaluation, the max gain antenna 1 was choose as external antenna for all test.						

Mode	Tx/Rx Function	Beamforming function	CDD function	Directional gain (dBi)	
802.11n/ac	2Tx/2Rx	NO	No	U-NII-1	6.71
				U-NII-2A	6.71
				U-NII-2C	6.81
				U-NII-3	8.71
Note: Directional gain = GANT + 10 log(NANT) dBi					

1.4 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L21189
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

All tests were sub-contracted.

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng Science and Technology Park, Longhua District, Shenzhen, China 518109

Telephone: +86 (0) 755 282 0888

Fax: +86 (0) 755 2823 0886

TEST REPORT

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

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

IC-Registration No.: 21600-1

The 3m Semi-anechoic chamber of Shenzhen UnionTrust Quality and Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 21600-1.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC Accredited Lab.

Designation Number: CN1194

Test Firm Registration Number: 259480

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2023)
ANSI C63.10 (2020)
KDB 558074 (v05r02)

2.2 Mode of operation during the test

While testing transmitting mode of EUT, the continuously transmission was applied by following software.

Software name	Manufacturer	Version	Supplied by
EmsDevTools.exe	NA	NA	Client

The lowest, middle and highest channel for the following modes were tested as representatives.

Frequency Band (MHz)	Mode	Lowest (MHz)	Middle (MHz)	Highest (MHz)
5150 - 5250	802.11a	5180	5200	5240
	802.11n(HT20), ac(VHT20)	5180	5200	5240
	802.11n(HT40) , ac(VHT40)	5190	/	5230
	802.11ac(VHT80)	/	5210	/
5250 - 5350	802.11a	5260	5280	5320
	802.11n(HT20), ac(VHT20)	5260	5280	5320
	802.11n(HT40) , ac(VHT40)	5270	/	5310
	802.11ac(VHT80)	/	5290	/
5470 - 5725	802.11a	5500	5580	5700
	802.11n(HT20), ac(VHT20)	5500	5580	5700
	802.11n(HT40) , ac(VHT40)	5510	5550	5670
	802.11ac(VHT80)	5530	/	/
5725 - 5850	802.11a	5745	5785	5825
	802.11n(HT20), ac(VHT20)	5745	5785	5825
	802.11n(HT40) , ac(VHT40)	5755	/	5795
	802.11ac(VHT80)	/	5775	/

Data rate and Power setting:

The pre-scan for the conducted power with all data rates in each modulation and band was used, and the worst case was found and used in all test cases. After this pre-scan, we choose the following table of the data rata as the worst case.

Frequency Band (MHz)	Mode	Worst case data rate
5150 - 5250	802.11a	6Mbps
	802.11n(HT20)	MCS8
	802.11n(HT40)	MCS8
	802.11ac(VHT20)	MCS0
	802.11ac(VHT40)	MCS0
	802.11ac(VHT80)	MCS0
5250 - 5350	802.11a	6Mbps
	802.11n(HT20)	MCS8
	802.11n(HT40)	MCS8
	802.11ac(VHT20)	MCS0
	802.11ac(VHT40)	MCS0
	802.11ac(VHT80)	MCS0
5500 - 5725	802.11a	6Mbps
	802.11n(HT20)	MCS8
	802.11n(HT40)	MCS8
	802.11ac(VHT20)	MCS0
	802.11ac(VHT40)	MCS0
	802.11ac(VHT80)	MCS0
5725 - 5850	802.11a	6Mbps
	802.11n(HT20)	MCS8
	802.11n(HT40)	MCS8
	802.11ac(VHT20)	MCS0
	802.11ac(VHT40)	MCS0
	802.11ac(VHT80)	MCS0

Duty cycle:

Duty cycle	Duty cycle (%)	Duty cycle factor
802.11a	96.26	0.17
802.11n(HT20)	95.22	0.21
802.11n(HT40)	91.41	0.39
802.11ac(VHT20)	97.54	0.11
802.11ac(VHT40)	95.06	0.22
802.11ac(VHT80)	90.00	0.46

2.3 Test software list

Test Items	Manufacturer	Version
Conducted emission	EMC-CON	3A1.1
Radiated emission	Audix	9.160323

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	Notebook	DELL, Latitude 3400	NA
2	Mouse	DELL, MS111	NA

2.5 Test environment condition:

Test items	Temperature	Humidity
26 dB Bandwidth & 99% Occupied Bandwidth	24.1°C	48.6% RH
Minimum 6dB Bandwidth		
Maximum Conducted Output Power		
Power spectral density		
Radiated Emissions in restricted frequency bands	24.8°C	54.1% RH
Power line conducted emission	24.4°C	49.6% RH

2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Receiver	R&S	ESR7	1316.3003K07-101181-K3	26-Oct-2024
☑	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	26-Oct-2024
☑	LISN	R&S	ESH2-Z5	860014/024	26-Oct-2024
☑	LISN	ETS-Lindgren	3816/2SH	00201088	26-Oct-2024
☑	Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1	
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	3m SAC	ETS-LINDGREN	3m	Euroshiedpn-CT001270-1317	10-Nov-2026
☑	Receiver	R&S	ESIB26	100114	26-Oct-2024
☑	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	28-Mar-2025
☑	Loop Antenna	ETS-LINDGREN	6502	00202525	29-Oct-2024
☑	Broadband Antenna	ETS-LINDGREN	3142E	00201566	29-Oct-2024
☑	6dB Attenuator	Talent	RA6A5-N-18	18103001	29-Oct-2024
☑	Preamplifier	HP	8447F	2805A02960	30-Oct-2024
☑	Band Rejection Filter (5150MHz~5880MHz)	Micro-Tronics	BRM50716	G186	26-Oct-2024
☑	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	31-Mar-2025
☑	Pre-amplifier	ETS-Lindgren	00118385	00201874	31-Mar-2025
☑	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3116C-PA	00202652	29-Oct-2024
☑	Pre-amplifier	ETS-Lindgren	00118384	00202652	29-Oct-2024
☑	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A
☑	Test Software	Audix	e3	Software Version: 9.160323	
RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	EXA Spectrum Analyzer	KEYSIGHT	N9020A	MY51286807	26-Oct-2024
☑	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	26-Oct-2024

2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 9kHz-30MHz	± 4.7 dB
4	Radiated emission 30MHz-1GHz	± 4.6 dB
5	Radiated emission 1GHz-18GHz	± 4.4 dB
6	Radiated emission 18GHz-26GHz	± 4.6 dB
7	Radiated emission 26GHz-40GHz	± 4.6 dB
8	RF Power, Conducted	± 0.9 dB
9	Transmission Time	± 0.19 %
10	Occupied Bandwidth	± 1.86 %
11	Power Spectral Density, conducted	± 0.6 dB
12	Radio Frequency	± 6.5 x 10-8
13	Conducted out of band emission	± 2.7 dB

3 26 dB Bandwidth & 99% Occupied Bandwidth

Test result: Pass

3.1 Limit

None

3.2 Measurement Procedure

The EUT was tested according to test procedure of "KDB789033 D02 General UNII Test Procedures New Rules"

26 dB Bandwidth

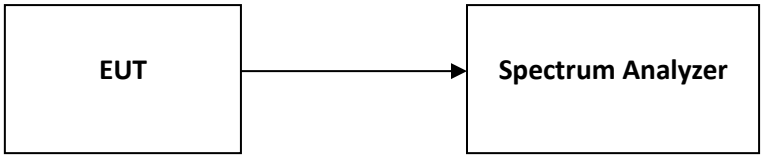
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

99% Occupied Bandwidth

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

3.3 Test Configuration



3.4 The results of 26 dB Bandwidth & 99% Occupied Bandwidth

Please refer to Appendix.

4 Minimum 6dB Bandwidth

Test result: Pass

4.1 Limit

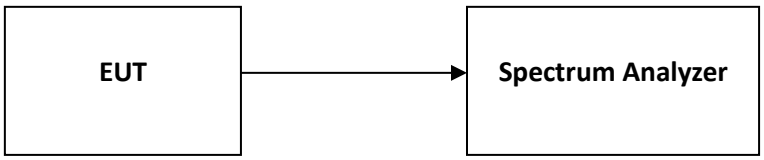
For systems using digital modulation techniques that may operate in the 5725 - 5850 MHz band, the minimum 6 dB bandwidth shall be at least 500 kHz.

4.2 Measurement Procedure

The EUT was tested according to test procedure of "KDB789033 D02 General UNII Test Procedures New Rules"

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 x RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

4.3 Test Configuration



4.4 The results of Minimum 6dB Bandwidth

Please refer to Appendix.

5 Maximum conducted output power

Test result: Pass

5.1 Limit

☐ For an outdoor access point operating in the band 5.15-5.25GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W provided the maximum antenna gain does not exceed 6dBi.
The maximum e.i.r.p. at any elevation angle above 30 degrees from the horizon must not exceed 125mW (21 dBm).

☐ For an indoor access point operating in the band 5.15-5.25GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6dBi.

☐ For fixed point-to-point access points operating in the band 5.15-5.25GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W.

☒ For client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi. (FCC Limit)

☒ For the 5.25-5.35GHz and 5.47-5.725GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250mW or 11dBm + 10logB, where B is the 26dB emission bandwidth in megahertz. (FCC limit)

☒ For the band 5.725-5.85GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W. (FCC limit)

If transmitting antennas of directional gain greater than 6dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.2 Measurement Procedure

The EUT was tested according to test procedure of “KDB789033 D02 General UNII Test Procedures New Rules”

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

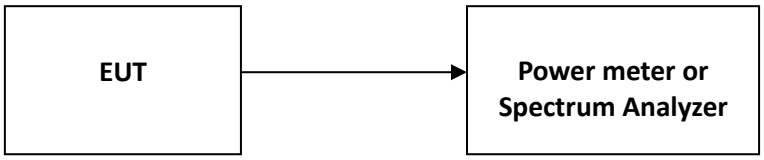
(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."

(viii) Trace average at least 100 traces in power averaging (rms) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

5.3 Test Configuration



5.4 Test Results of Maximum conducted output power

Please refer to Appendix.

6 Power spectrum density

Test result: **Pass**

6.1 Limit

☐ For an outdoor access point operating in the band 5.15-5.25GHz, the maximum power spectral density shall not exceed 17dBm in any 1 megahertz band.

☐ For an indoor access point operating in the band 5.15-5.25GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

☒ For client devices in the 5.15-5.25GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. (FCC limit)

☒ For the 5.25-5.35 GHz and 5.47-5.725GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. (FCC limit)

☒ For the band 5.725-5.85GHz, the maximum power spectral density shall not exceed 30dBm in any 500kHz band. (FCC limit)

If the transmitting antenna of directional gain greater than 6dBi is used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. If there have a beam forming type, the limit should be the less of original and original + (6 - antenna gain - beamforming gain).

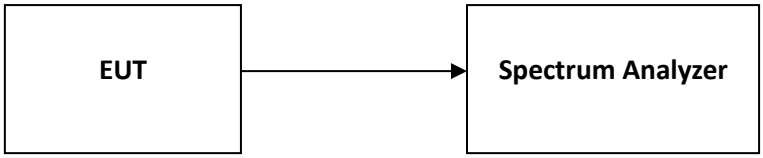
6.2 Measurement Procedure

The EUT was tested according to test procedure of "KDB789033 D02 General UNII Test Procedures New Rules"

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power…." (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
3. Make the following adjustments to the peak value of the spectrum, if applicable:
   a) If Method SA-2 or SA-2 Alternative was used, add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum.
   b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 MHz reference bandwidth.
5. For devices operating in the bands 5.15–5.25 GHz, 5.25–5.35 GHz, and 5.47–5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in Section 15.407(a)(5). For devices operating in the band 5.725–5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:
   a) Set RBW ≥ 1/*T*, where *T* is defined in II.B.l.a).
   b) Set VBW ≥ 3 RBW.
   c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
   d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
   e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for steps 5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

6.3 Test Configuration



6.4 Test Results of Power spectrum density

Please refer to Appendix.

7 Radiated Emissions

Test result: **Pass**

7.1 Limit

The radiated emissions which fall in the restricted bands, and the radiated emissions below 1GHz, must comply with the radiated emission limits specified showed as below:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

The radiated emissions which fall outside the restrict bands, should comply with the EIRP limit as below:

For transmitters operating in the 5.15 - 5.25 / 5.25 - 5.35 / 5.47 - 5.725GHz band:

Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (3m) (dBµV/m)
<5150	-27	68.20
>5350		
<5470		
>5725		

For transmitters operating in the 5.725 - 5.85GHz band:

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength (3m) (dBµV/m)
<5650	-27	68.20
5650 ~ 5700	-27 ~ 10	68.20 ~ 105.20
5700 ~ 5720	10 ~ 15.6	105.20 ~ 110.80
5720 ~ 5725	15.6 ~ 27	110.80 ~ 122.20
5850 ~ 5855	27 ~ 15.6	122.20 ~ 110.80
5855 ~ 5875	15.6 ~ 10	110.80 ~ 105.20
5875 ~ 5925	10 ~ -27	105.20 ~ 68.20
>5925	-27	68.20

7.2 Measurement Procedure

For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) Both X and Y axes of the antenna are set to make the measurement.
d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e) The test-receiver system was set to peak or quasi-peak detect function and specified bandwidth with maximum hold mode.

NOTE:

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

For Radiated emission above 30MHz:

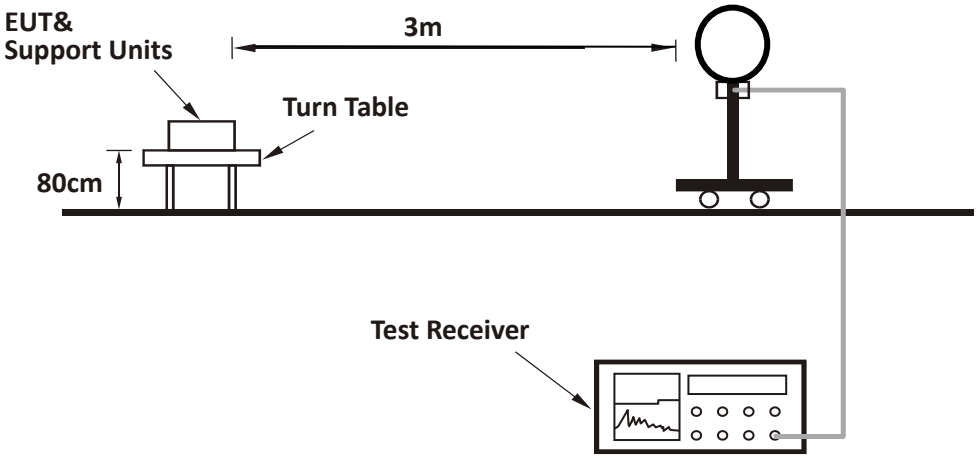
a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e) The test-receiver system was set to peak or quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

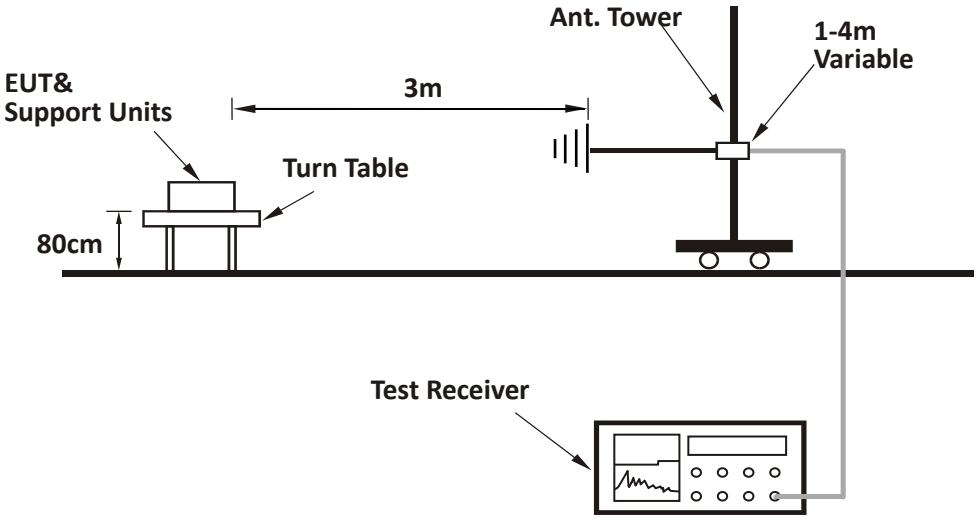
1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for peak or quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz at frequency above 1GHz for peak detection above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 3 x RBW (Duty cycle ≥ 98%) for average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

7.3 Test Configuration

For Radiated emission below 30MHz:

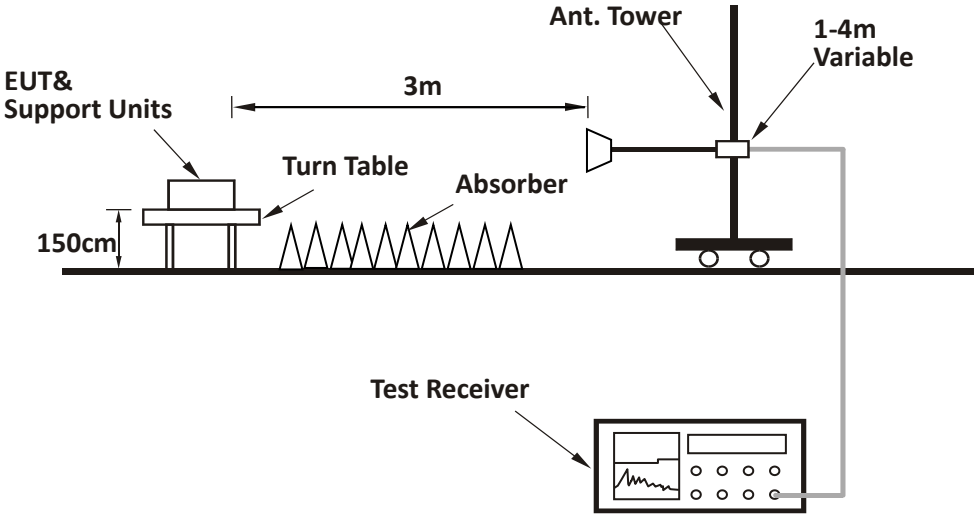


For Radiated emission 30MHz to 1GHz:



TEST REPORT

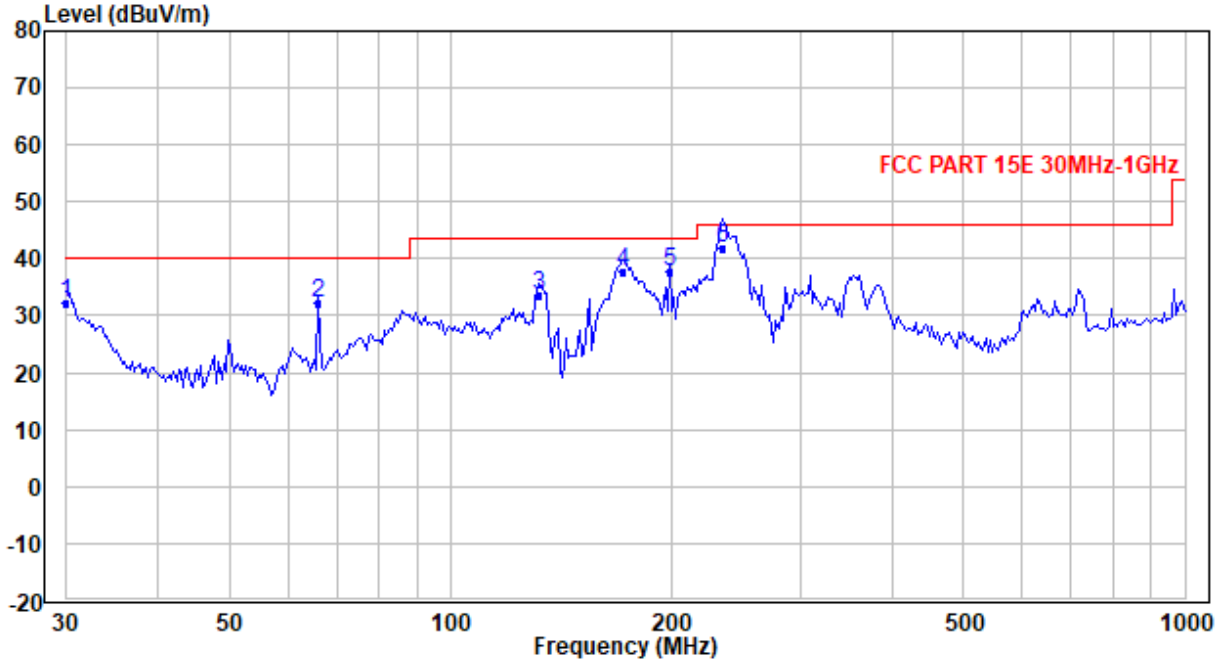
For Radiated emission above 1GHz:



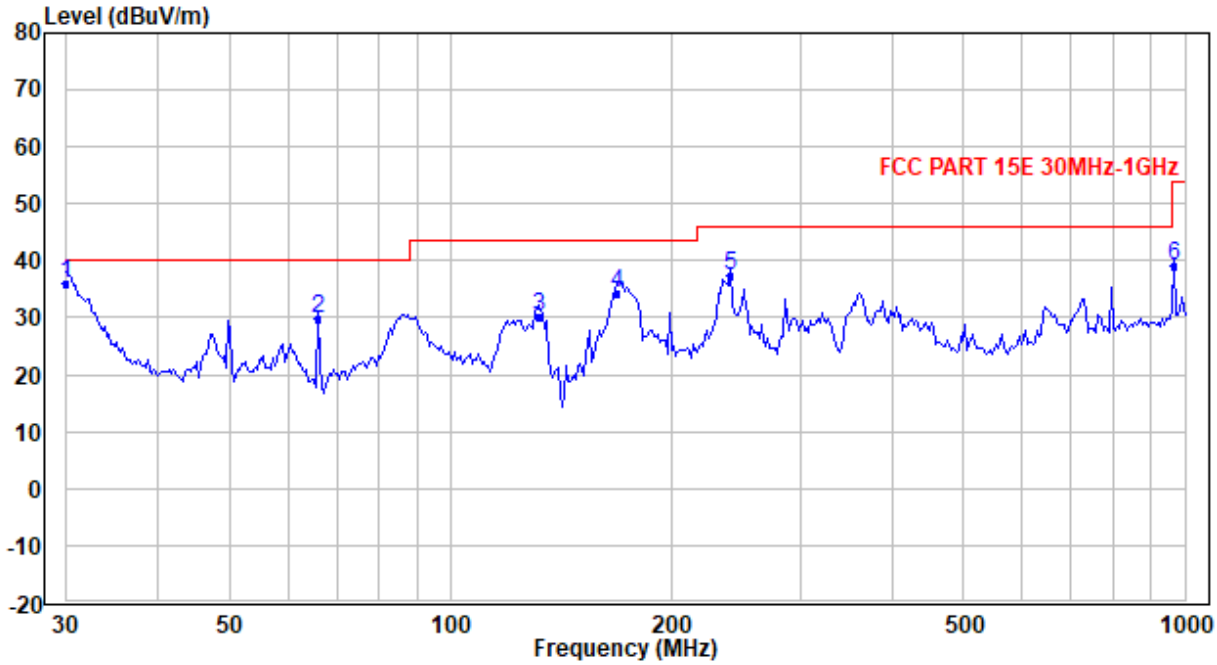
7.4 Test Results of Radiated Emissions

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Horizontal



Vertical



Test data below 1GHz

Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
H	30.000	32.30	-4.08	40.00	7.70	QP
H	65.907	32.32	-17.73	40.00	7.68	QP
H	132.149	33.52	-15.47	43.50	9.98	QP
H	171.389	37.81	-11.75	43.50	5.69	QP
H	198.642	37.84	-11.15	43.50	5.66	QP
H	235.135	42.01	-10.73	46.00	3.99	QP
V	30.000	35.91	-4.08	40.00	4.09	QP
V	65.907	30.00	-17.73	40.00	10.00	QP
V	132.149	30.33	-15.47	43.50	13.17	QP
V	168.997	34.21	-12.16	43.50	9.29	QP
V	240.144	37.35	-10.62	46.00	8.65	QP
V	965.474	39.12	5.32	54.00	14.88	QP

Remark: 1. Correct Factor = Antenna Factor + Cable Loss (- Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.
2. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,
Limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m;
Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;
Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.

Test result above 1GHz:

The emission was conducted from 1GHz to 40GHz

SISO_ Ant.1_IEEE 802.11a_Channel 36

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360	33.3	3.4	36.7	54	17.3	Average	Horizontal
2	10360	47.3	3.4	50.7	68.2	17.5	Peak	Horizontal
3	15540	32.8	7.6	40.3	54	13.7	Average	Horizontal
4	15540	49.0	7.6	56.6	74	17.4	Peak	Horizontal
5	10360	33.3	3.4	36.7	54	17.3	Average	Vertical
6	10360	45.7	3.4	49.1	68.2	19.1	Peak	Vertical
7	15540	33.8	7.6	41.4	54	12.6	Average	Vertical
8	15540	49.0	7.6	56.6	74	17.5	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 44

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440	33.4	3.4	36.8	54	17.2	Average	Horizontal
2	10440	46.1	3.4	49.5	68.2	18.7	Peak	Horizontal
3	15660	35.5	7.5	43.0	54	11.0	Average	Horizontal
4	15660	51.4	7.5	58.9	74	15.1	Peak	Horizontal
5	10440	33.3	3.4	36.7	54	17.3	Average	Vertical
6	10440	45.4	3.4	48.8	68.2	19.4	Peak	Vertical
7	15660	34.6	7.5	42.1	54	11.9	Average	Vertical
8	15660	50.1	7.5	57.5	74	16.5	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 48

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480	33.3	3.4	36.6	54	17.4	Average	Horizontal
2	10480	46.2	3.4	49.6	68.2	18.6	Peak	Horizontal
3	15720	34.4	7.4	41.8	54	12.2	Average	Horizontal
4	15720	49.8	7.4	57.2	74	16.8	Peak	Horizontal
5	10480	33.4	3.4	36.8	54	17.2	Average	Vertical
6	10480	45.6	3.4	49.0	68.2	19.2	Peak	Vertical
7	15720	34.4	7.4	41.8	54	12.2	Average	Vertical
8	15720	49.7	7.4	57.1	74	16.9	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 52

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520	33.4	3.4	36.7	54	17.3	Average	Horizontal
2	10520	45.2	3.4	48.5	68.2	19.7	Peak	Horizontal
3	15780	32.1	7.4	39.4	54	14.6	Average	Horizontal
4	15780	47.7	7.4	55.1	74	18.9	Peak	Horizontal
5	10520	33.4	3.4	36.7	54	17.3	Average	Vertical
6	10520	45.2	3.4	48.5	68.2	19.7	Peak	Vertical
7	15780	32.8	7.4	40.1	54	13.9	Average	Vertical
8	15780	47.4	7.4	54.7	74	19.3	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 60

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600	32.3	3.2	35.5	54	18.5	Average	Horizontal
2	10600	45.3	3.2	48.5	74	25.5	Peak	Horizontal
3	15900	32.9	7.2	40.1	54	13.9	Average	Horizontal
4	15900	46.6	7.2	53.8	74	20.2	Peak	Horizontal
5	10600	32.2	3.2	35.4	54	18.6	Average	Vertical
6	10600	44.2	3.2	47.4	74	26.6	Peak	Vertical
7	15900	32.8	7.2	40.1	54	13.9	Average	Vertical
8	15900	46.6	7.2	53.8	74	20.2	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 64

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640	32.3	3.1	35.4	54	18.6	Average	Horizontal
2	10640	45.7	3.1	48.8	74	25.2	Peak	Horizontal
3	15960	31.4	7.2	38.6	54	15.4	Average	Horizontal
4	15960	48.6	7.2	55.7	74	18.3	Peak	Horizontal
5	10640	32.5	3.1	35.6	54	18.4	Average	Vertical
6	10640	44.6	3.1	47.7	74	26.3	Peak	Vertical
7	15960	31.3	7.2	38.5	54	15.5	Average	Vertical
8	15960	49.2	7.2	56.4	74	17.6	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 100

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000	33.2	2.4	35.6	54	18.4	Average	Horizontal
2	11000	44.9	2.4	47.3	74	26.7	Peak	Horizontal
3	16500	32.5	8.0	40.5	54	13.5	Average	Horizontal
4	16500	45.4	8.0	53.4	68.2	14.8	Peak	Horizontal
5	11000	33.2	2.4	35.6	54	18.4	Average	Vertical
6	11000	45.3	2.4	47.7	74	26.4	Peak	Vertical
7	16500	32.6	8.0	40.6	54	13.4	Average	Vertical
8	16500	45.5	8.0	53.5	68.2	14.8	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 116

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11160	32.9	2.3	35.2	54	18.8	Average	Horizontal
2	11160	44.7	2.3	46.9	74	27.1	Peak	Horizontal
3	16740	30.2	8.3	38.5	54	15.5	Average	Horizontal
4	16740	42.5	8.3	50.8	68.2	17.4	Peak	Horizontal
5	11160	32.8	2.3	35.1	54	18.9	Average	Vertical
6	11160	45.5	2.3	47.8	74	26.2	Peak	Vertical
7	16740	30.7	8.3	39.0	54	15.0	Average	Vertical
8	16740	44.7	8.3	53.0	68.2	15.2	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 140

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400	32.6	2.1	34.7	54	19.3	Average	Horizontal
2	11400	44.6	2.1	46.7	74	27.3	Peak	Horizontal
3	17100	32.3	8.8	41.1	54	12.9	Average	Horizontal
4	17100	45.5	8.8	54.3	68.2	14.0	Peak	Horizontal
5	11400	32.6	2.1	34.7	54	19.3	Average	Vertical
6	11400	44.0	2.1	46.1	74	27.9	Peak	Vertical
7	17100	32.3	8.8	41.1	54	12.9	Average	Vertical
8	17100	45.1	8.8	53.8	68.2	14.4	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 149

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490	32.2	2.1	34.2	54	19.8	Average	Horizontal
2	11490	44.3	2.1	46.4	74	27.6	Peak	Horizontal
3	17235	30.0	9.0	39.0	54	15.0	Average	Horizontal
4	17235	41.9	9.0	50.9	68.2	17.3	Peak	Horizontal
5	11490	32.1	2.1	34.1	54	19.9	Average	Vertical
6	11490	44.1	2.1	46.2	74	27.8	Peak	Vertical
7	17235	30.1	9.0	39.1	54	14.9	Average	Vertical
8	17235	42.5	9.0	51.5	68.2	16.8	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 157

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570	32.2	2.1	34.3	54	19.7	Average	Horizontal
2	11570	44.4	2.1	46.5	74	27.5	Peak	Horizontal
3	17355	30.2	9.2	39.4	54	14.7	Average	Horizontal
4	17355	42.3	9.2	51.5	68.2	16.8	Peak	Horizontal
5	11570	32.5	2.1	34.6	54	19.4	Average	Vertical
6	11570	44.1	2.1	46.2	74	27.9	Peak	Vertical
7	17355	30.2	9.2	39.3	54	14.7	Average	Vertical
8	17355	43.5	9.2	52.7	68.2	15.5	Peak	Vertical

SISO_ Ant.1_IEEE 802.11a_Channel 165

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650	32.0	2.1	34.1	54	19.9	Average	Horizontal
2	11650	44.1	2.1	46.1	74	27.9	Peak	Horizontal
3	17475	31.1	9.3	40.4	54	13.6	Average	Horizontal
4	17475	44.1	9.3	53.4	68.2	14.8	Peak	Horizontal
5	11650	32.0	2.1	34.1	54	19.9	Average	Vertical
6	11650	44.3	2.1	46.4	74	27.6	Peak	Vertical
7	17475	29.1	9.3	38.4	54	15.6	Average	Vertical
8	17475	44.9	9.3	54.2	68.2	14.0	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 36

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360	32.9	3.4	36.3	54	17.7	Average	Horizontal
2	10360	45.3	3.4	48.6	68.2	19.6	Peak	Horizontal
3	15540	30.5	7.6	38.1	54	15.9	Average	Horizontal
4	15540	46.1	7.6	53.7	74	20.3	Peak	Horizontal
5	10360	33.1	3.4	36.5	54	17.6	Average	Vertical
6	10360	45.2	3.4	48.5	68.2	19.7	Peak	Vertical
7	15540	32.6	7.6	40.2	54	13.8	Average	Vertical
8	15540	48.9	7.6	56.5	74	17.5	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 44

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440	33.4	3.4	36.8	54	17.2	Average	Horizontal
2	10440	45.4	3.4	48.8	68.2	19.4	Peak	Horizontal
3	15660	33.3	7.5	40.8	54	13.2	Average	Horizontal
4	15660	48.5	7.5	56.0	74	18.0	Peak	Horizontal
5	10440	33.3	3.4	36.7	54	17.3	Average	Vertical
6	10440	44.9	3.4	48.3	68.2	19.9	Peak	Vertical
7	15660	33.0	7.5	40.5	54	13.5	Average	Vertical
8	15660	47.6	7.5	55.1	74	18.9	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 48

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480	33.2	3.4	36.6	54	17.4	Average	Horizontal
2	10480	45.2	3.4	48.6	68.2	19.6	Peak	Horizontal
3	15720	35.1	7.4	42.5	54	11.5	Average	Horizontal
4	15720	51.1	7.4	58.5	74	15.5	Peak	Horizontal
5	10480	33.3	3.4	36.6	54	17.4	Average	Vertical
6	10480	45.6	3.4	48.9	68.2	19.3	Peak	Vertical
7	15720	34.4	7.4	41.8	54	12.2	Average	Vertical
8	15720	49.3	7.4	56.7	74	17.3	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 52

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520	33.3	3.4	36.6	54	17.4	Average	Horizontal
2	10520	45.3	3.4	48.7	68.2	19.5	Peak	Horizontal
3	15780	32.0	7.4	39.3	54	14.7	Average	Horizontal
4	15780	44.9	7.4	52.2	74	21.8	Peak	Horizontal
5	10520	33.3	3.4	36.6	54	17.4	Average	Vertical
6	10520	44.8	3.4	48.2	68.2	20.0	Peak	Vertical
7	15780	32.0	7.4	39.3	54	14.7	Average	Vertical
8	15780	48.1	7.4	55.5	74	18.5	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 60

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600	32.1	3.2	35.3	54	18.7	Average	Horizontal
2	10600	44.6	3.2	47.8	74	26.2	Peak	Horizontal
3	15900	29.7	7.2	36.9	54	17.1	Average	Horizontal
4	15900	42.8	7.2	50.1	74	24.0	Peak	Horizontal
5	10600	32.3	3.2	35.5	54	18.6	Average	Vertical
6	10600	44.5	3.2	47.7	74	26.3	Peak	Vertical
7	15900	32.6	7.2	39.9	54	14.1	Average	Vertical
8	15900	46.9	7.2	54.1	74	19.9	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 64

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640	32.3	3.1	35.4	54	18.6	Average	Horizontal
2	10640	44.7	3.1	47.8	74	26.3	Peak	Horizontal
3	15960	30.7	7.2	37.9	54	16.1	Average	Horizontal
4	15960	45.2	7.2	52.4	74	21.7	Peak	Horizontal
5	10640	32.4	3.1	35.5	54	18.5	Average	Vertical
6	10640	44.6	3.1	47.7	74	26.3	Peak	Vertical
7	15960	30.3	7.2	37.5	54	16.5	Average	Vertical
8	15960	44.3	7.2	51.4	74	22.6	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 100

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000	33.3	2.4	35.6	54	18.4	Average	Horizontal
2	11000	45.1	2.4	47.4	74	26.6	Peak	Horizontal
3	16500	30.5	8.0	38.5	54	15.5	Average	Horizontal
4	16500	43.2	8.0	51.2	68.2	17.0	Peak	Horizontal
5	11000	33.2	2.4	35.6	54	18.4	Average	Vertical
6	11000	45.9	2.4	48.3	74	25.7	Peak	Vertical
7	16500	30.4	8.0	38.4	54	15.6	Average	Vertical
8	16500	43.8	8.0	51.8	68.2	16.4	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 116

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11160	32.9	2.3	35.1	54	18.9	Average	Horizontal
2	11160	45.6	2.3	47.8	74	26.2	Peak	Horizontal
3	16740	30.0	8.3	38.3	54	15.7	Average	Horizontal
4	16740	42.4	8.3	50.7	68.2	17.5	Peak	Horizontal
5	11160	32.9	2.3	35.2	54	18.8	Average	Vertical
6	11160	45.3	2.3	47.6	74	26.4	Peak	Vertical
7	16740	30.6	8.3	38.9	54	15.1	Average	Vertical
8	16740	43.0	8.3	51.3	68.2	16.9	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 140

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400	32.6	2.1	34.7	54	19.3	Average	Horizontal
2	11400	44.5	2.1	46.6	74	27.4	Peak	Horizontal
3	17100	30.3	8.8	39.1	54	14.9	Average	Horizontal
4	17100	43.1	8.8	51.8	68.2	16.4	Peak	Horizontal
5	11400	32.6	2.1	34.7	54	19.3	Average	Vertical
6	11400	44.3	2.1	46.4	74	27.6	Peak	Vertical
7	17100	32.4	8.8	41.2	54	12.8	Average	Vertical
8	17100	45.1	8.8	53.8	68.2	14.4	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 149

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490	32.1	2.1	34.2	54	19.8	Average	Horizontal
2	11490	43.6	2.1	45.6	74	28.4	Peak	Horizontal
3	17235	30.0	9.0	39.0	54	15.0	Average	Horizontal
4	17235	43.8	9.0	52.8	68.2	15.4	Peak	Horizontal
5	11490	32.0	2.1	34.1	54	19.9	Average	Vertical
6	11490	44.0	2.1	46.1	74	27.9	Peak	Vertical
7	17235	30.0	9.0	39.0	54	15.0	Average	Vertical
8	17235	42.3	9.0	51.2	68.2	17.0	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 157

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570	32.2	2.1	34.2	54	19.8	Average	Horizontal
2	11570	43.8	2.1	45.8	74	28.2	Peak	Horizontal
3	17355	30.2	9.2	39.3	54	14.7	Average	Horizontal
4	17355	42.4	9.2	51.5	68.2	16.7	Peak	Horizontal
5	11570	32.2	2.1	34.2	54	19.8	Average	Vertical
6	11570	44.2	2.1	46.3	74	27.7	Peak	Vertical
7	17355	30.2	9.2	39.3	54	14.7	Average	Vertical
8	17355	44.5	9.2	53.7	68.2	14.5	Peak	Vertical

SISO_ Ant.2_IEEE 802.11a_Channel 165

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650	31.8	2.1	33.9	54	20.1	Average	Horizontal
2	11650	43.9	2.1	46.0	74	28.0	Peak	Horizontal
3	17475	29.2	9.3	38.5	54	15.5	Average	Horizontal
4	17475	43.9	9.3	53.3	68.2	14.9	Peak	Horizontal
5	11650	31.9	2.1	34.0	54	20.0	Average	Vertical
6	11650	44.0	2.1	46.1	74	27.9	Peak	Vertical
7	17475	29.1	9.3	38.5	54	15.6	Average	Vertical
8	17475	41.8	9.3	51.1	68.2	17.1	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 36

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360	33.0	3.4	36.4	54	17.6	Average	Horizontal
2	10360	45.6	3.4	48.9	68.2	19.3	Peak	Horizontal
3	15540	33.5	7.6	41.0	54	13.0	Average	Horizontal
4	15540	52.1	7.6	59.7	74	14.3	Peak	Horizontal
5	10360	33.2	3.4	36.6	54	17.4	Average	Vertical
6	10360	46.0	3.4	49.4	68.2	18.8	Peak	Vertical
7	15540	34.6	7.6	42.2	54	11.8	Average	Vertical
8	15540	53.2	7.6	60.8	74	13.2	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 44

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440	33.0	3.4	36.3	54	17.7	Average	Horizontal
2	10440	44.4	3.4	47.8	68.2	20.4	Peak	Horizontal
3	15660	35.0	7.6	42.6	54	11.4	Average	Horizontal
4	15660	51.4	7.6	59.0	74	15.1	Peak	Horizontal
5	10440	33.1	3.4	36.5	54	17.5	Average	Vertical
6	10440	45.9	3.4	49.2	68.2	19.0	Peak	Vertical
7	15660	35.2	7.6	42.7	54	11.3	Average	Vertical
8	15660	52.6	7.6	60.2	74	13.8	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 48

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480	33.0	3.4	36.4	54	17.6	Average	Horizontal
2	10480	44.7	3.4	48.1	68.2	20.1	Peak	Horizontal
3	15720	33.5	7.6	41.1	54	13.0	Average	Horizontal
4	15720	48.4	7.6	56.0	74	18.0	Peak	Horizontal
5	10480	33.2	3.4	36.6	54	17.4	Average	Vertical
6	10480	44.9	3.4	48.3	68.2	19.9	Peak	Vertical
7	15720	35.5	7.6	43.1	54	10.9	Average	Vertical
8	15720	51.5	7.6	59.1	74	14.9	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 52

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520	33.0	3.4	36.4	54	17.7	Average	Horizontal
2	10520	45.1	3.4	48.4	68.2	19.8	Peak	Horizontal
3	15780	33.5	7.6	41.1	54	12.9	Average	Horizontal
4	15780	52.4	7.6	60.0	74	14.0	Peak	Horizontal
5	10520	33.2	3.4	36.6	54	17.4	Average	Vertical
6	10520	45.4	3.4	48.8	68.2	19.4	Peak	Vertical
7	15780	33.6	7.6	41.1	54	12.9	Average	Vertical
8	15780	53.0	7.6	60.6	74	13.4	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 60

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600	33.0	3.4	36.3	54	17.7	Average	Horizontal
2	10600	46.1	3.4	49.4	74	24.6	Peak	Horizontal
3	15900	33.5	7.6	41.0	54	13.0	Average	Horizontal
4	15900	48.4	7.6	55.9	74	18.1	Peak	Horizontal
5	10600	33.1	3.4	36.5	54	17.5	Average	Vertical
6	10600	46.4	3.4	49.8	74	24.2	Peak	Vertical
7	15900	34.6	7.6	42.2	54	11.8	Average	Vertical
8	15900	51.9	7.6	59.5	74	14.5	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 64

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640	33.0	3.4	36.4	54	17.6	Average	Horizontal
2	10640	44.5	3.4	47.9	74	26.1	Peak	Horizontal
3	15960	30.5	7.6	38.1	54	15.9	Average	Horizontal
4	15960	49.4	7.6	56.9	74	17.1	Peak	Horizontal
5	10640	33.2	3.4	36.5	54	17.5	Average	Vertical
6	10640	45.5	3.4	48.9	74	25.1	Peak	Vertical
7	15960	30.5	7.6	38.0	54	16.0	Average	Vertical
8	15960	51.5	7.6	59.0	74	15.0	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 100

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000	33.0	3.4	36.3	54	17.7	Average	Horizontal
2	11000	45.9	3.4	49.3	74	24.7	Peak	Horizontal
3	16500	30.5	7.6	38.1	54	15.9	Average	Horizontal
4	16500	42.5	7.6	50.0	68.2	18.2	Peak	Horizontal
5	11000	33.2	3.4	36.6	54	17.4	Average	Vertical
6	11000	45.0	3.4	48.4	74	25.7	Peak	Vertical
7	16500	30.5	7.6	38.1	54	15.9	Average	Vertical
8	16500	42.3	7.6	49.9	68.2	18.3	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 116

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11160	33.0	3.4	36.4	54	17.6	Average	Horizontal
2	11160	45.2	3.4	48.6	74	25.4	Peak	Horizontal
3	16740	30.6	7.6	38.1	54	15.9	Average	Horizontal
4	16740	42.9	7.6	50.5	68.2	17.7	Peak	Horizontal
5	11160	33.2	3.4	36.6	54	17.4	Average	Vertical
6	11160	45.3	3.4	48.7	74	25.3	Peak	Vertical
7	16740	30.5	7.6	38.1	54	15.9	Average	Vertical
8	16740	42.2	7.6	49.8	68.2	18.4	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 140

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400	33.0	3.4	36.4	54	17.7	Average	Horizontal
2	11400	45.7	3.4	49.1	74	25.0	Peak	Horizontal
3	17100	30.5	7.6	38.1	54	15.9	Average	Horizontal
4	17100	43.0	7.6	50.5	68.2	17.7	Peak	Horizontal
5	11400	33.0	3.4	36.4	54	17.6	Average	Vertical
6	11400	45.0	3.4	48.4	74	25.6	Peak	Vertical
7	17100	30.5	7.6	38.1	54	15.9	Average	Vertical
8	17100	43.2	7.6	50.8	68.2	17.4	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 149

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490	33.0	3.4	36.4	54	17.6	Average	Horizontal
2	11490	45.2	3.4	48.6	74	25.4	Peak	Horizontal
3	17235	30.5	7.6	38.0	54	16.0	Average	Horizontal
4	17235	42.5	7.6	50.0	68.2	18.2	Peak	Horizontal
5	11490	33.0	3.4	36.4	54	17.6	Average	Vertical
6	11490	45.1	3.4	48.5	74	25.6	Peak	Vertical
7	17235	30.5	7.6	38.1	54	16.0	Average	Vertical
8	17235	42.4	7.6	49.9	68.2	18.3	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 157

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570	33.1	3.4	36.4	54	17.6	Average	Horizontal
2	11570	45.2	3.4	48.5	74	25.5	Peak	Horizontal
3	17355	30.6	7.6	38.1	54	15.9	Average	Horizontal
4	17355	43.1	7.6	50.7	68.2	17.6	Peak	Horizontal
5	11570	32.9	3.4	36.3	54	17.7	Average	Vertical
6	11570	44.8	3.4	48.2	74	25.8	Peak	Vertical
7	17355	30.4	7.6	38.0	54	16.0	Average	Vertical
8	17355	43.1	7.6	50.7	68.2	17.5	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT20_Channel 165

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650	33.1	3.4	36.5	54	17.5	Average	Horizontal
2	11650	45.6	3.4	48.9	74	25.1	Peak	Horizontal
3	17475	30.6	7.6	38.1	54	15.9	Average	Horizontal
4	17475	43.1	7.6	50.7	68.2	17.6	Peak	Horizontal
5	11650	33.1	3.4	36.5	54	17.5	Average	Vertical
6	11650	46.0	3.4	49.3	74	24.7	Peak	Vertical
7	17475	30.3	7.6	37.9	54	16.1	Average	Vertical
8	17475	42.6	7.6	50.1	68.2	18.1	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 38

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10380	33.1	3.4	36.5	54	17.5	Average	Horizontal
2	10380	45.6	3.4	49.0	68.2	19.2	Peak	Horizontal
3	15570	31.8	7.6	39.3	54	14.7	Average	Horizontal
4	15570	46.8	7.6	54.4	74	19.6	Peak	Horizontal
5	10380	33.1	3.4	36.4	54	17.6	Average	Vertical
6	10380	45.2	3.4	48.6	68.2	19.6	Peak	Vertical
7	15570	33.6	7.6	41.2	54	12.8	Average	Vertical
8	15570	49.2	7.6	56.7	74	17.3	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 46

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10460	32.4	3.4	35.8	54	18.2	Average	Horizontal
2	10460	44.8	3.4	48.1	68.2	20.1	Peak	Horizontal
3	15690	33.8	7.6	41.4	54	12.6	Average	Horizontal
4	15690	52.7	7.6	60.3	74	13.7	Peak	Horizontal
5	10460	32.9	3.4	36.3	54	17.7	Average	Vertical
6	10460	44.7	3.4	48.0	68.2	20.2	Peak	Vertical
7	15690	33.9	7.6	41.5	54	12.5	Average	Vertical
8	15690	51.3	7.6	58.8	74	15.2	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 54

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10540	32.4	3.4	35.8	54	18.2	Average	Horizontal
2	10540	45.2	3.4	48.6	68.2	19.6	Peak	Horizontal
3	15810	36.0	7.6	43.6	54	10.4	Average	Horizontal
4	15810	50.6	7.6	58.2	74	15.8	Peak	Horizontal
5	10540	32.5	3.4	35.8	54	18.2	Average	Vertical
6	10540	44.1	3.4	47.5	68.2	20.7	Peak	Vertical
7	15810	36.6	7.6	44.2	54	9.8	Average	Vertical
8	15810	51.5	7.6	59.1	74	14.9	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 62

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10620	32.8	3.4	36.2	54	17.8	Average	Horizontal
2	10620	45.0	3.4	48.3	74	25.7	Peak	Horizontal
3	15930	36.8	7.6	44.3	54	9.7	Average	Horizontal
4	15930	50.7	7.6	58.2	74	15.8	Peak	Horizontal
5	10620	32.4	3.4	35.8	54	18.2	Average	Vertical
6	10620	44.3	3.4	47.7	74	26.3	Peak	Vertical
7	15930	35.0	7.6	42.5	54	11.5	Average	Vertical
8	15930	48.5	7.6	56.1	74	17.9	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 102

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11020	32.4	3.4	35.8	54	18.2	Average	Horizontal
2	11020	44.8	3.4	48.2	74	25.8	Peak	Horizontal
3	16530	30.9	7.6	38.5	54	15.5	Average	Horizontal
4	16530	43.6	7.6	51.1	68.2	17.1	Peak	Horizontal
5	11020	32.7	3.4	36.1	54	17.9	Average	Vertical
6	11020	44.4	3.4	47.7	74	26.3	Peak	Vertical
7	16530	30.6	7.6	38.2	54	15.8	Average	Vertical
8	16530	43.1	7.6	50.7	68.2	17.5	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 110

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11100	32.4	3.4	35.8	54	18.2	Average	Horizontal
2	11100	44.5	3.4	47.9	74	26.1	Peak	Horizontal
3	16650	30.9	7.6	38.5	54	15.5	Average	Horizontal
4	16650	43.1	7.6	50.6	68.2	17.6	Peak	Horizontal
5	11100	32.4	3.4	35.8	54	18.2	Average	Vertical
6	11100	44.3	3.4	47.7	74	26.3	Peak	Vertical
7	16650	30.6	7.6	38.2	54	15.9	Average	Vertical
8	16650	43.2	7.6	50.8	68.2	17.4	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 134

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11340	32.3	3.4	35.7	54	18.3	Average	Horizontal
2	11340	44.6	3.4	48.0	74	26.0	Peak	Horizontal
3	17010	30.9	7.6	38.4	54	15.6	Average	Horizontal
4	17010	43.0	7.6	50.5	68.2	17.7	Peak	Horizontal
5	11340	32.4	3.4	35.8	54	18.3	Average	Vertical
6	11340	44.9	3.4	48.3	74	25.7	Peak	Vertical
7	17010	30.6	7.6	38.2	54	15.9	Average	Vertical
8	17010	42.9	7.6	50.4	68.2	17.8	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 151

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11510	32.3	3.4	35.7	54	18.3	Average	Horizontal
2	11510	44.6	3.4	48.0	74	26.0	Peak	Horizontal
3	17265	31.0	7.6	38.5	54	15.5	Average	Horizontal
4	17265	43.0	7.6	50.5	68.2	17.7	Peak	Horizontal
5	11510	32.4	3.4	35.8	54	18.2	Average	Vertical
6	11510	46.0	3.4	49.3	74	24.7	Peak	Vertical
7	17265	30.6	7.6	38.1	54	15.9	Average	Vertical
8	17265	43.1	7.6	50.7	68.2	17.5	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT40_Channel 159

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11590	32.4	3.4	35.8	54	18.3	Average	Horizontal
2	11590	44.2	3.4	47.6	74	26.4	Peak	Horizontal
3	17385	31.0	7.6	38.5	54	15.5	Average	Horizontal
4	17385	43.2	7.6	50.7	68.2	17.5	Peak	Horizontal
5	11590	32.4	3.4	35.8	54	18.2	Average	Vertical
6	11590	44.5	3.4	47.9	74	26.1	Peak	Vertical
7	17385	30.6	7.6	38.2	54	15.9	Average	Vertical
8	17385	42.4	7.6	49.9	68.2	18.3	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT80_Channel 42

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10420	32.4	3.4	35.8	54	18.2	Average	Horizontal
2	10420	44.6	3.4	48.0	68.2	20.2	Peak	Horizontal
3	15630	34.6	7.6	42.2	54	11.8	Average	Horizontal
4	15630	47.0	7.6	54.6	74	19.4	Peak	Horizontal
5	10420	32.4	3.4	35.8	54	18.2	Average	Vertical
6	10420	44.7	3.4	48.0	68.2	20.2	Peak	Vertical
7	15630	34.9	7.6	42.4	54	11.6	Average	Vertical
8	15630	48.5	7.6	56.0	74	18.0	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT80_Channel 58

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10580	32.3	3.4	35.7	54	18.3	Average	Horizontal
2	10580	44.4	3.4	47.7	68.2	20.5	Peak	Horizontal
3	15870	34.9	7.6	42.5	54	11.5	Average	Horizontal
4	15870	48.9	7.6	56.4	74	17.6	Peak	Horizontal
5	10580	32.3	3.4	35.7	54	18.3	Average	Vertical
6	10580	44.7	3.4	48.1	68.2	20.1	Peak	Vertical
7	15870	34.9	7.6	42.4	54	11.6	Average	Vertical
8	15870	49.5	7.6	57.1	74	16.9	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT80_Channel 106

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11060	32.2	3.4	35.6	54	18.4	Average	Horizontal
2	11060	44.8	3.4	48.2	74	25.9	Peak	Horizontal
3	16590	30.9	7.6	38.5	54	15.5	Average	Horizontal
4	16590	45.0	7.6	52.6	68.2	15.6	Peak	Horizontal
5	11060	32.3	3.4	35.7	54	18.4	Average	Vertical
6	11060	44.3	3.4	47.7	74	26.3	Peak	Vertical
7	16590	30.8	7.6	38.4	54	15.6	Average	Vertical
8	16590	43.0	7.6	50.6	68.2	17.6	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT80_Channel 122

No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11220	32.3	3.4	35.7	54	18.3	Average	Horizontal
2	11220	44.2	3.4	47.6	74	26.4	Peak	Horizontal
3	16830	30.9	7.6	38.5	54	15.6	Average	Horizontal
4	16830	43.5	7.6	51.0	68.2	17.2	Peak	Horizontal
5	11220	32.3	3.4	35.7	54	18.3	Average	Vertical
6	11220	44.9	3.4	48.3	74	25.7	Peak	Vertical
7	16830	31.0	7.6	38.5	54	15.5	Average	Vertical
8	16830	43.3	7.6	50.9	68.2	17.3	Peak	Vertical

MIMO_ Ant. 1+2_IEEE 802.11ac-VHT80_Channel 155

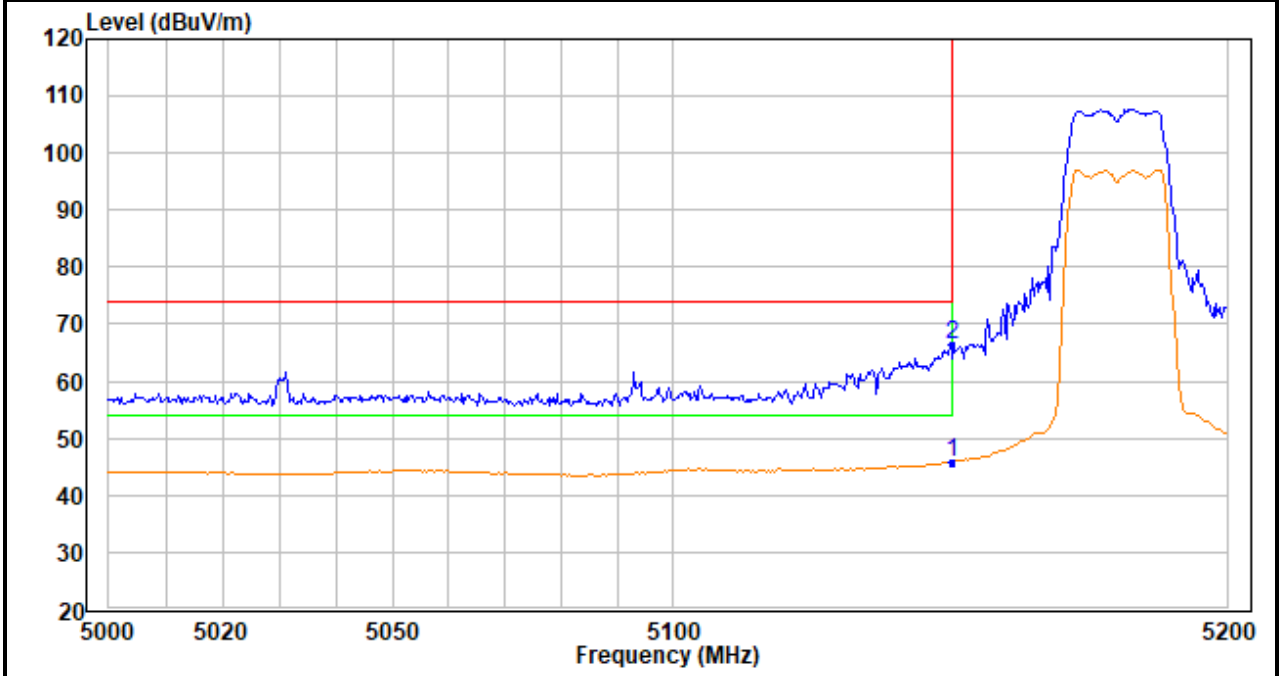
No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11550	32.3	3.4	35.7	54	18.3	Average	Horizontal
2	11550	44.7	3.4	48.1	74	26.0	Peak	Horizontal
3	17325	30.9	7.6	38.5	54	15.5	Average	Horizontal
4	17325	43.0	7.6	50.6	68.2	17.6	Peak	Horizontal
5	11550	32.3	3.4	35.7	54	18.3	Average	Vertical
6	11550	44.5	3.4	47.9	74	26.1	Peak	Vertical
7	17325	30.9	7.6	38.5	54	15.5	Average	Vertical
8	17325	42.6	7.6	50.2	68.2	18.0	Peak	Vertical

Remark: 1. Correction Factor = Antenna Factor + Cable Loss (- Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.
2. Result = Original Receiver Reading + Correction Factor
3. Margin = Limit - Result

Band Edge Measurements (Radiated)

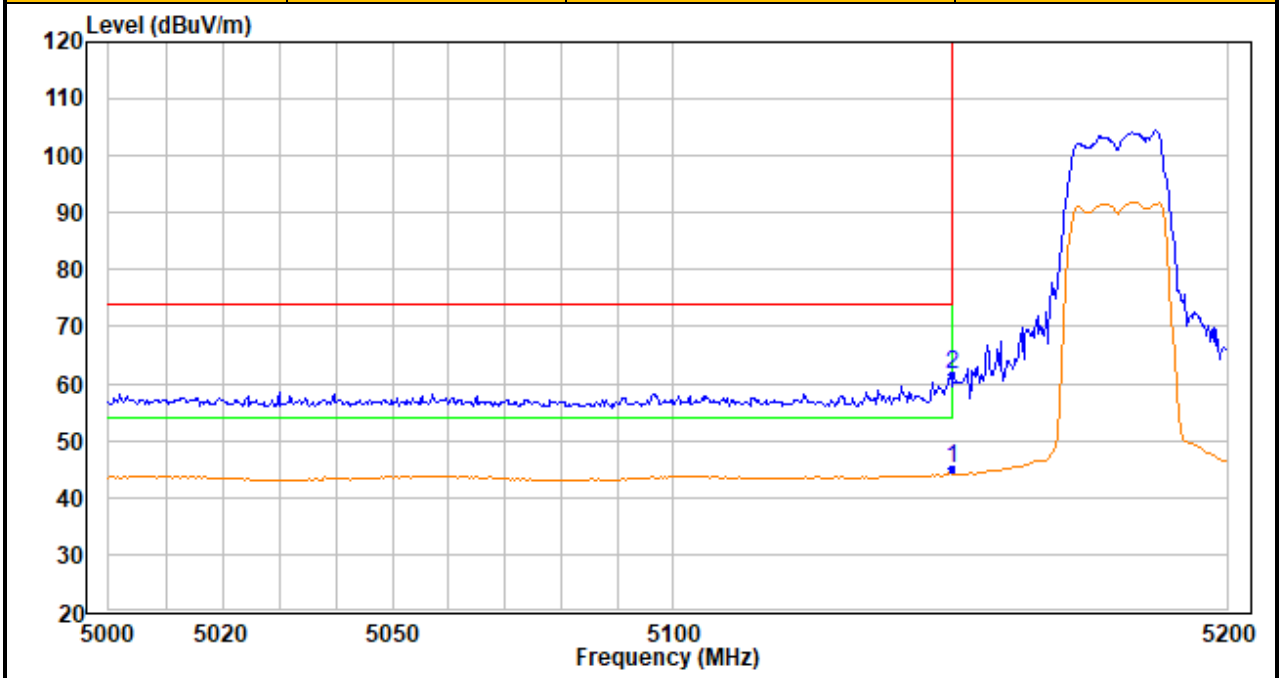
SISO_ Antenna 1_IEEE 802.11a

Test Channel:	Channel 36	Ant. Polar. :	Horizontal



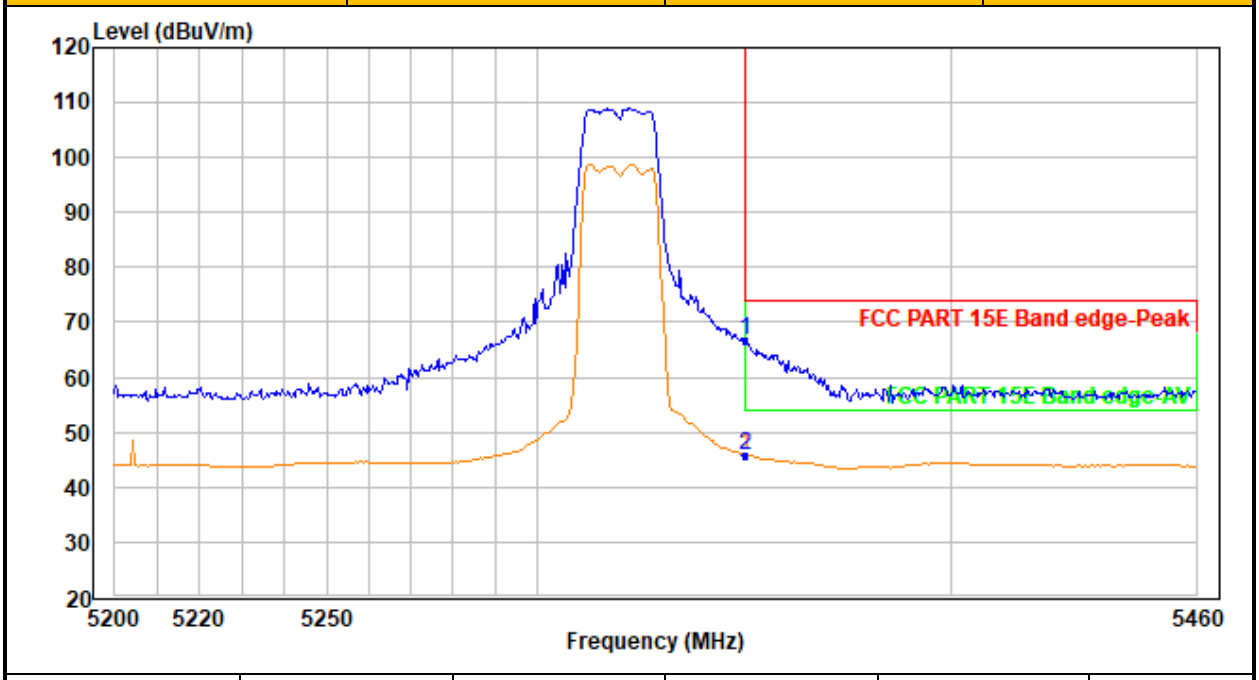
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	66.47	74.00	45.76	54.00	Pass

Test Channel:	Channel 36	Ant. Polar. :	Vertical



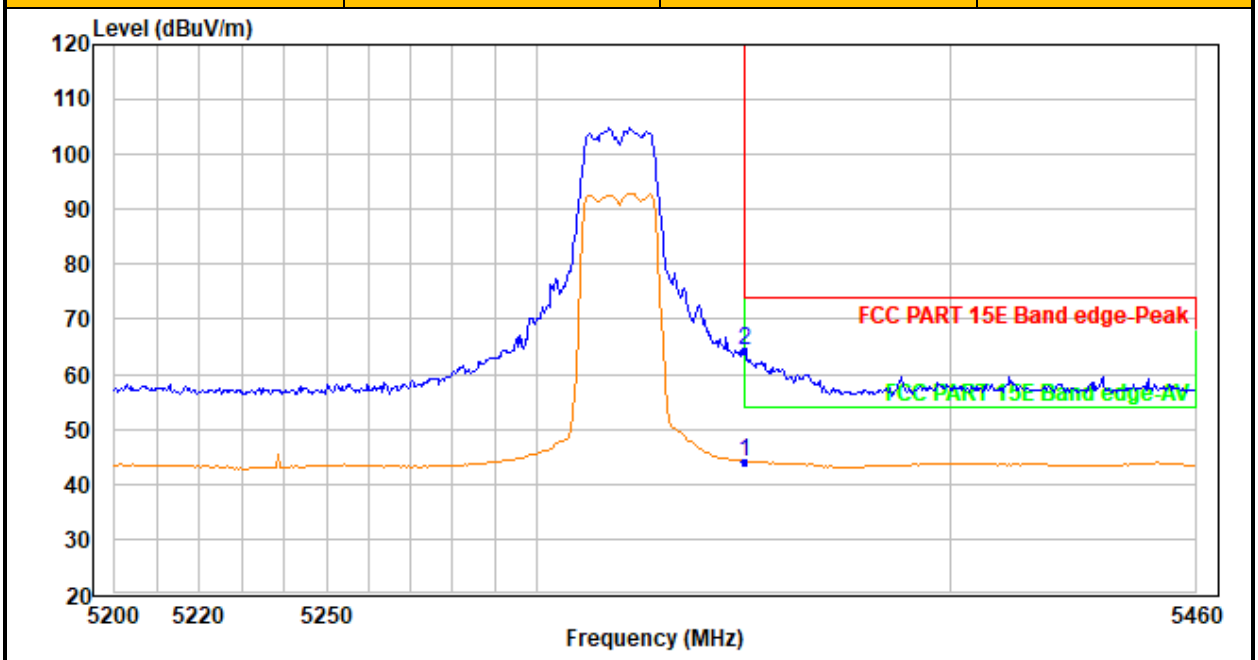
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	61.65	74.00	45.02	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Horizontal



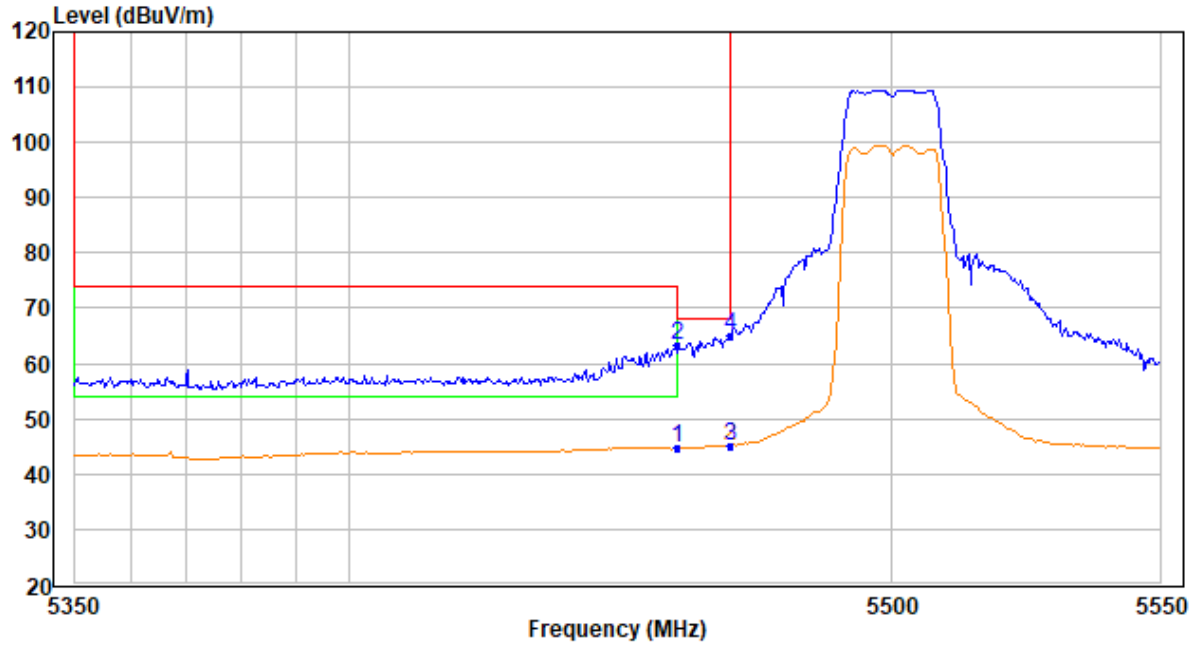
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	66.89	74.00	45.80	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Vertical



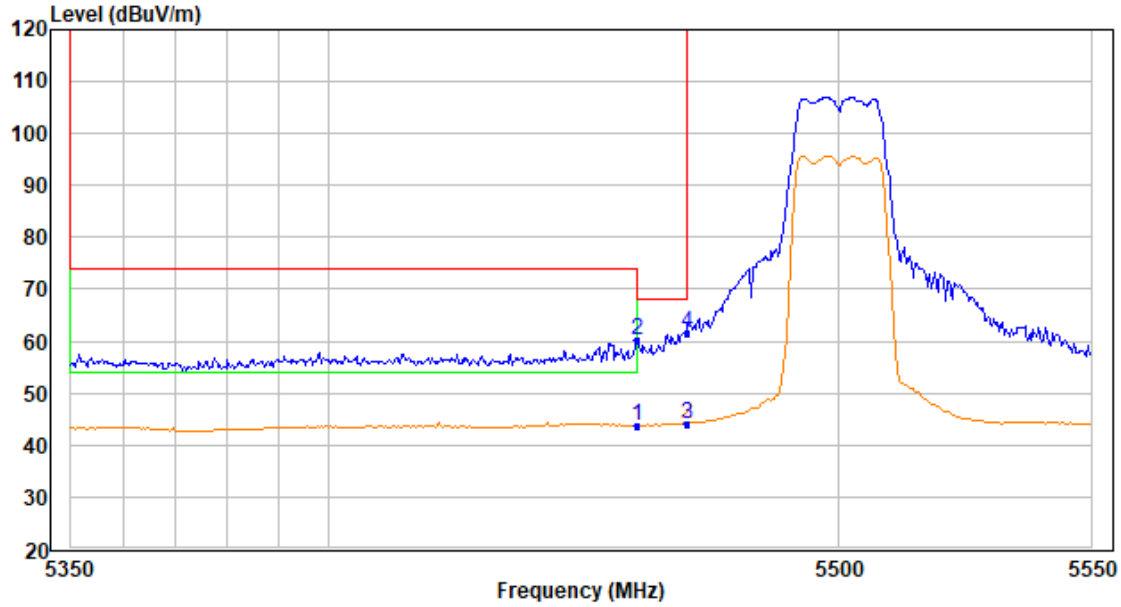
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	64.48	74.00	44.14	54.00	Pass

Test Channel:	Channel 100	Ant. Polar. :	Horizontal



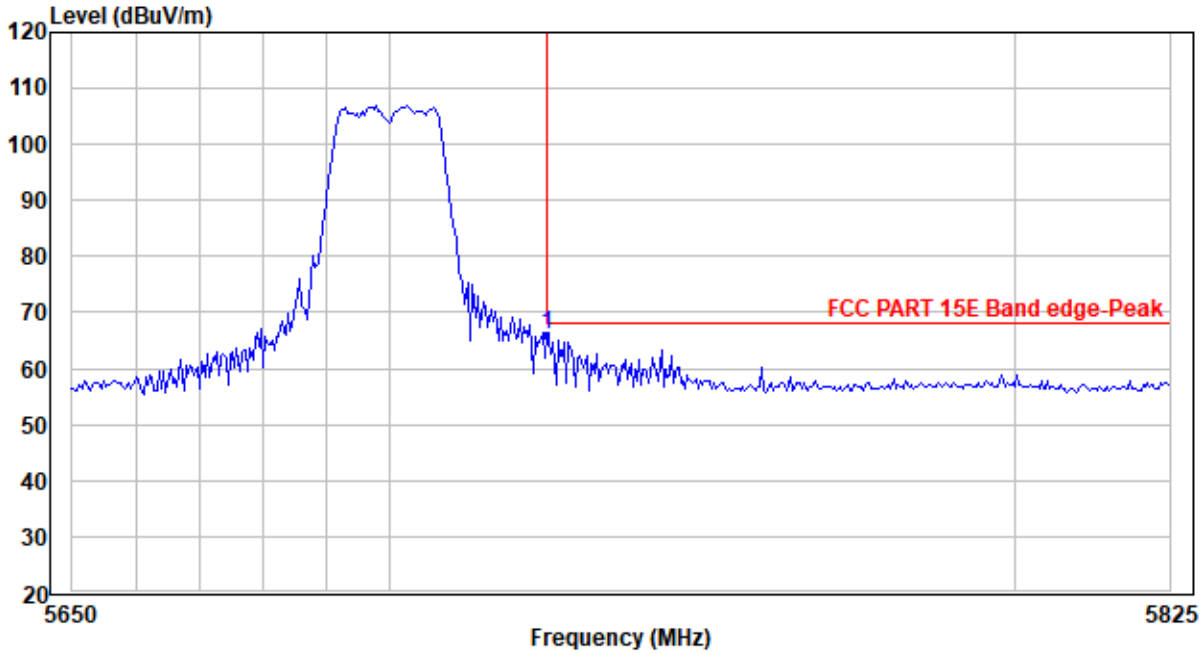
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	63.31	68.20	44.62	54.00	Pass
5470.000	65.13	68.20	45.19	68.20	Pass

Test Channel:	Channel 100	Ant. Polar. :	Vertical



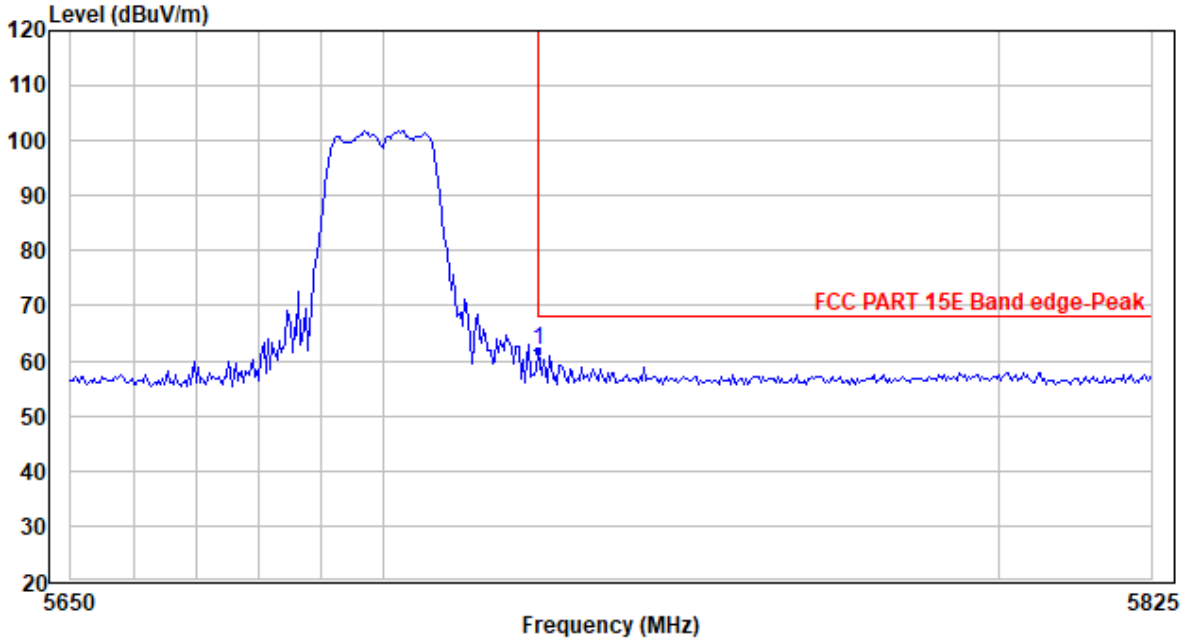
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	60.23	68.20	43.86	54.00	Pass
5470.000	61.73	68.20	44.11	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Horizontal



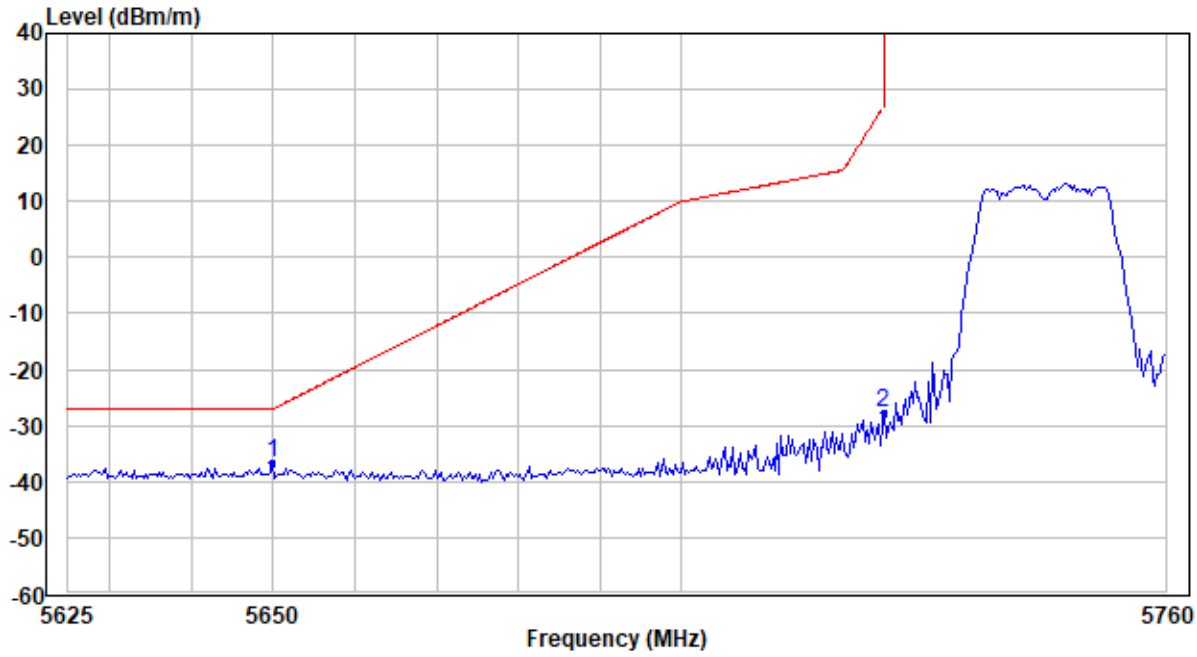
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	65.98	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Vertical



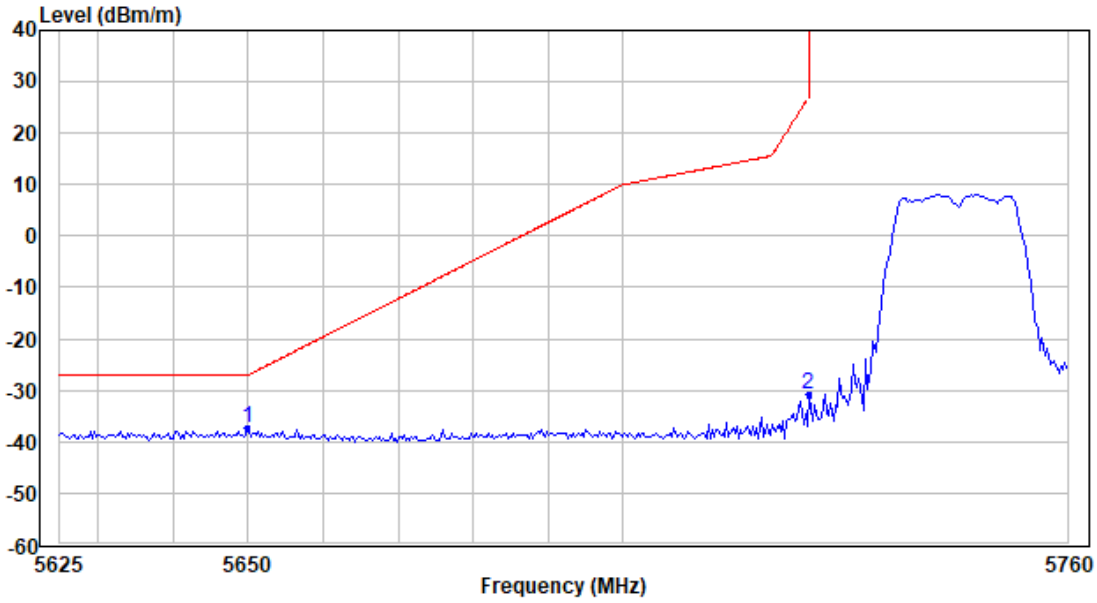
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	61.86	68.20	Pass

Test Channel:	Channel 149	Ant. Polar. :	Horizontal



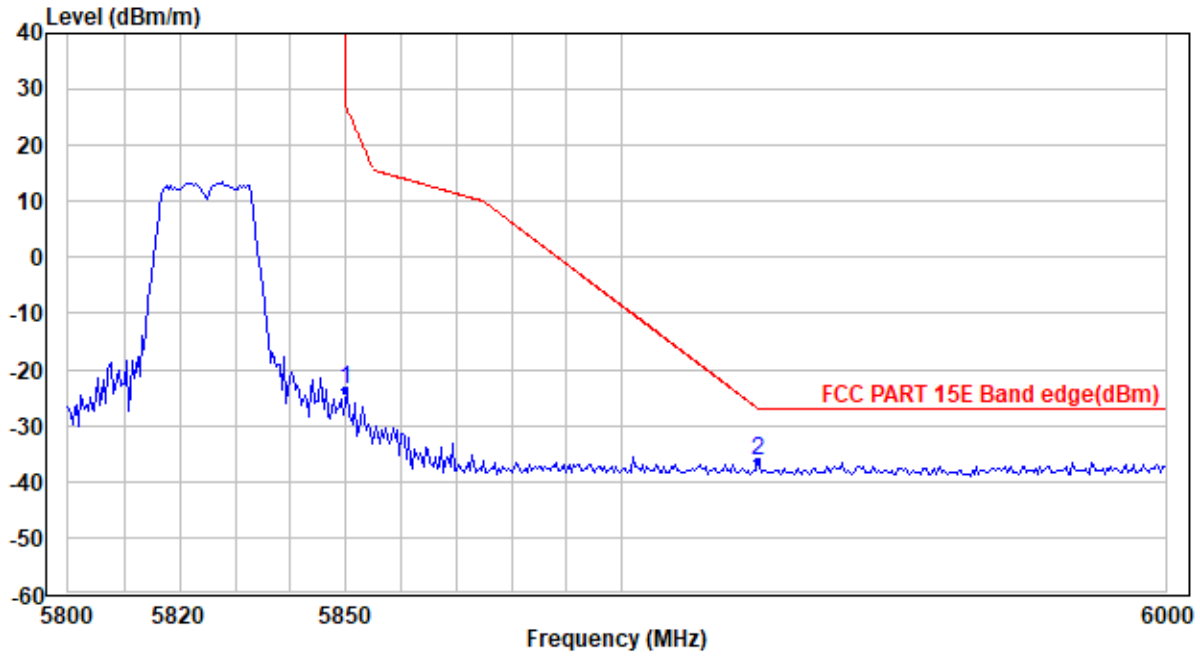
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.73	-27.00	Pass
5725.000	-27.85	27.00	Pass

Test Channel:	Channel 149	Ant. Polar. :	Vertical



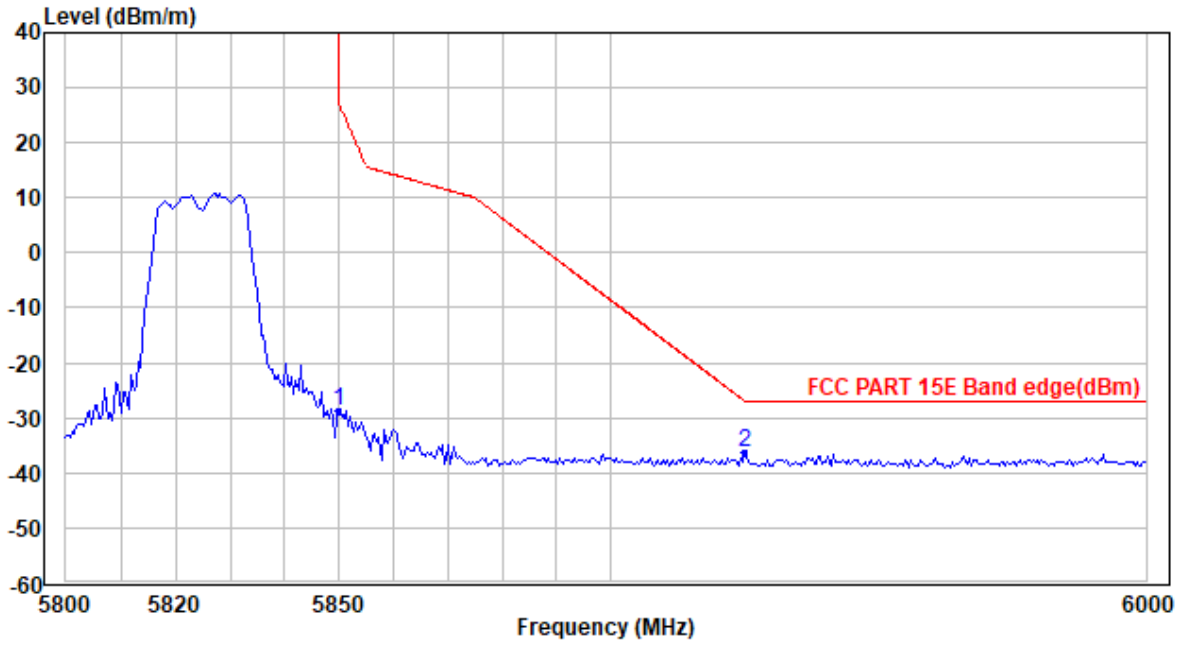
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-37.36	-27.00	Pass
5725.000	-30.75	27.00	Pass

Test Channel:	Channel 165	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-23.68	27.00	Pass
5925.000	-36.14	-27.00	Pass

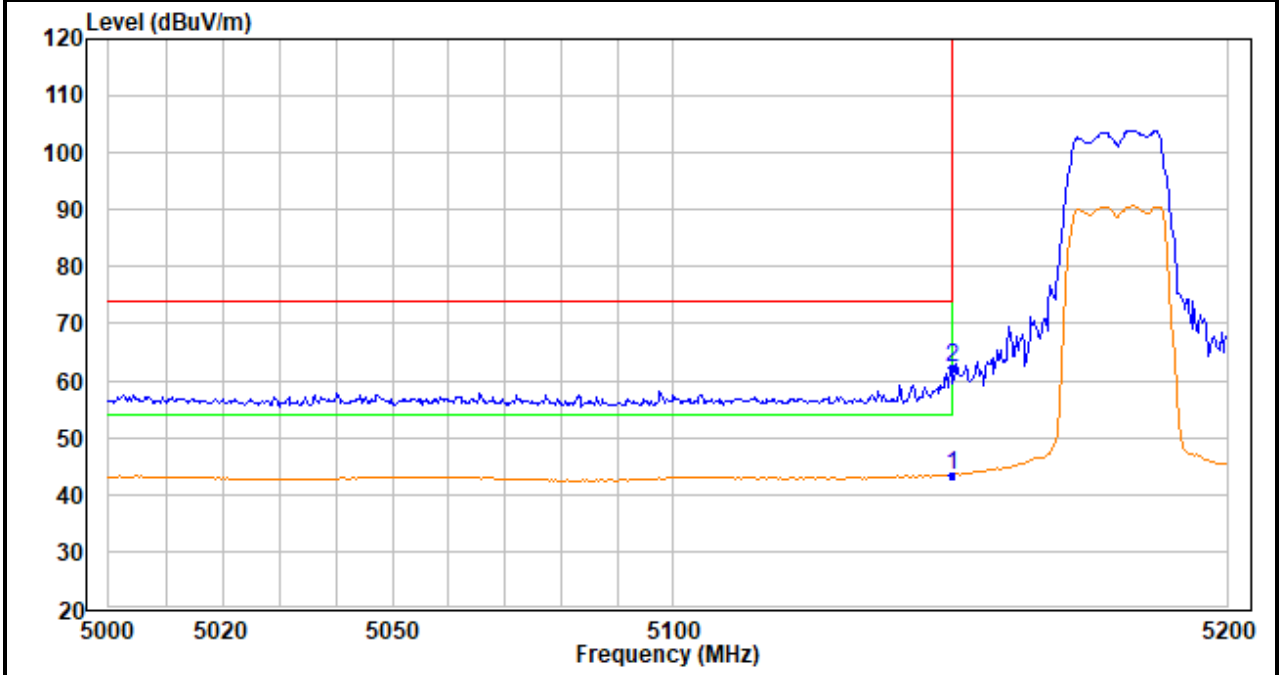
Test Channel:	Channel 165	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-28.56	27.00	Pass
5925.000	-36.31	-27.00	Pass

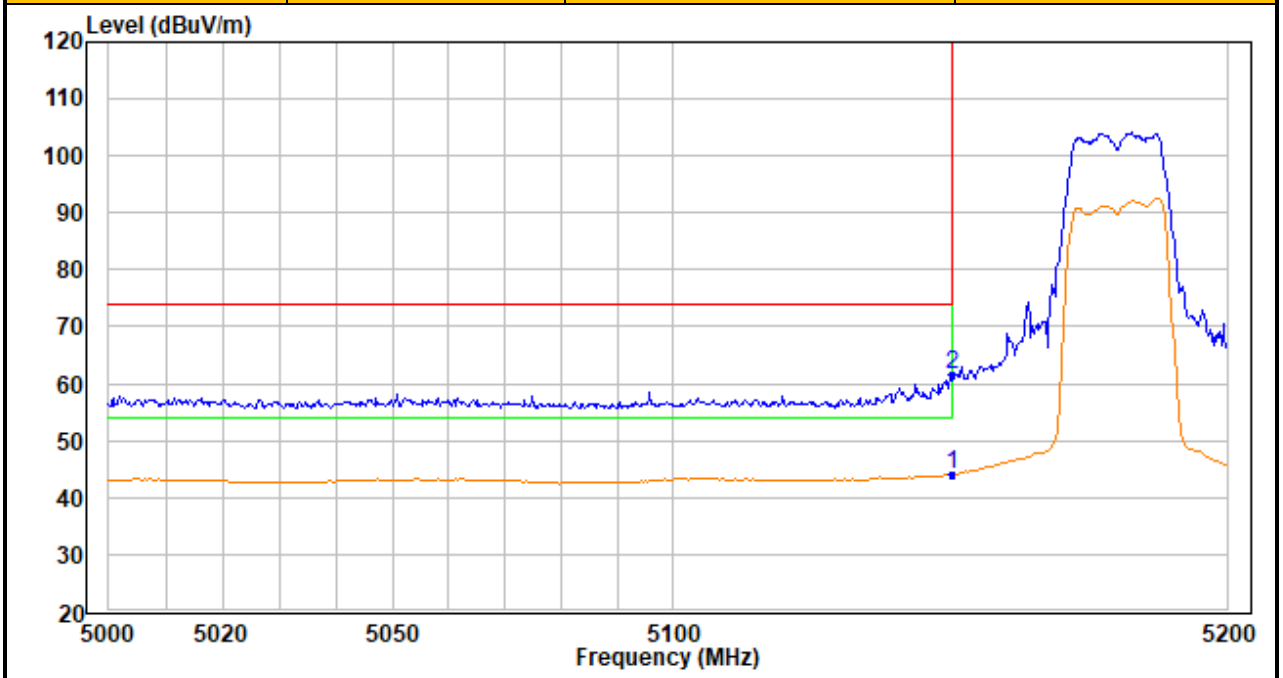
SISO_ Antenna 2_IEEE 802.11a

Test Channel:	Channel 36	Ant. Polar. :	Horizontal



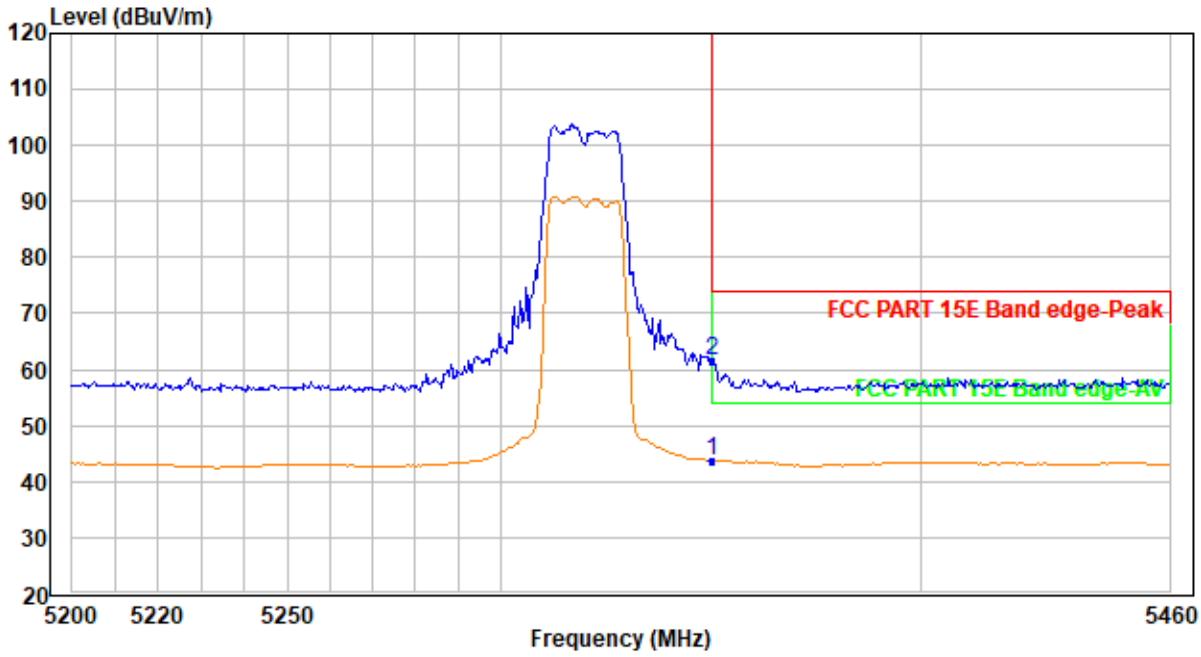
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	62.26	74.00	43.43	54.00	Pass

Test Channel:	Channel 36	Ant. Polar. :	Vertical



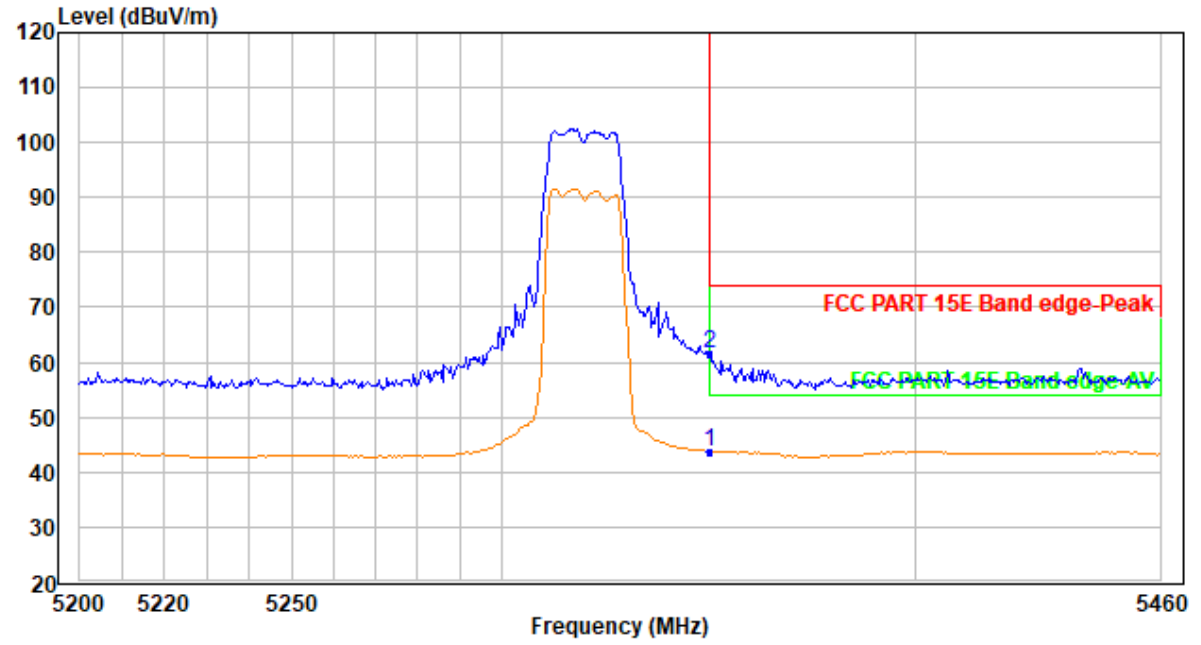
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	61.54	74.00	44.10	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Horizontal



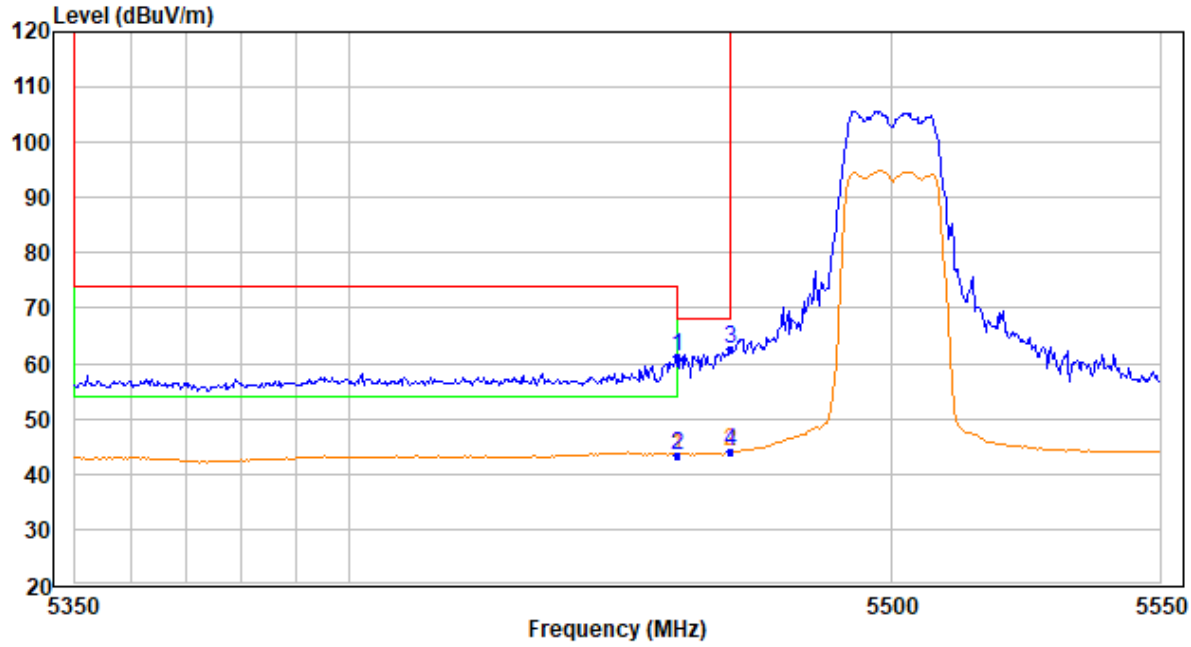
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	61.58	74.00	43.85	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Vertical



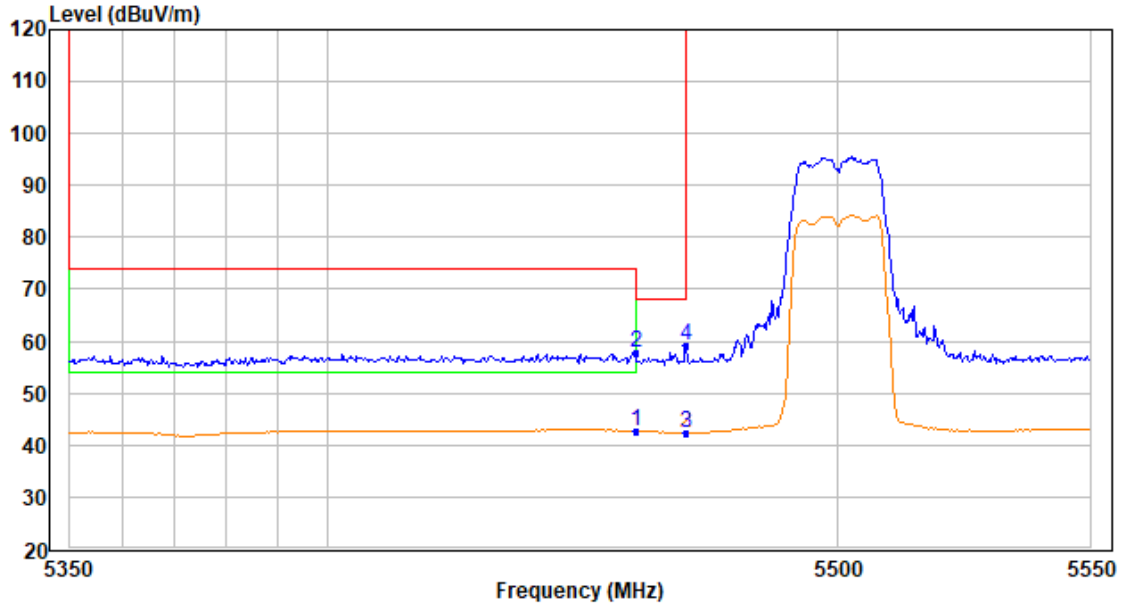
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	61.63	74.00	43.78	54.00	Pass

Test Channel:	Channel 100	Ant. Polar. :	Horizontal



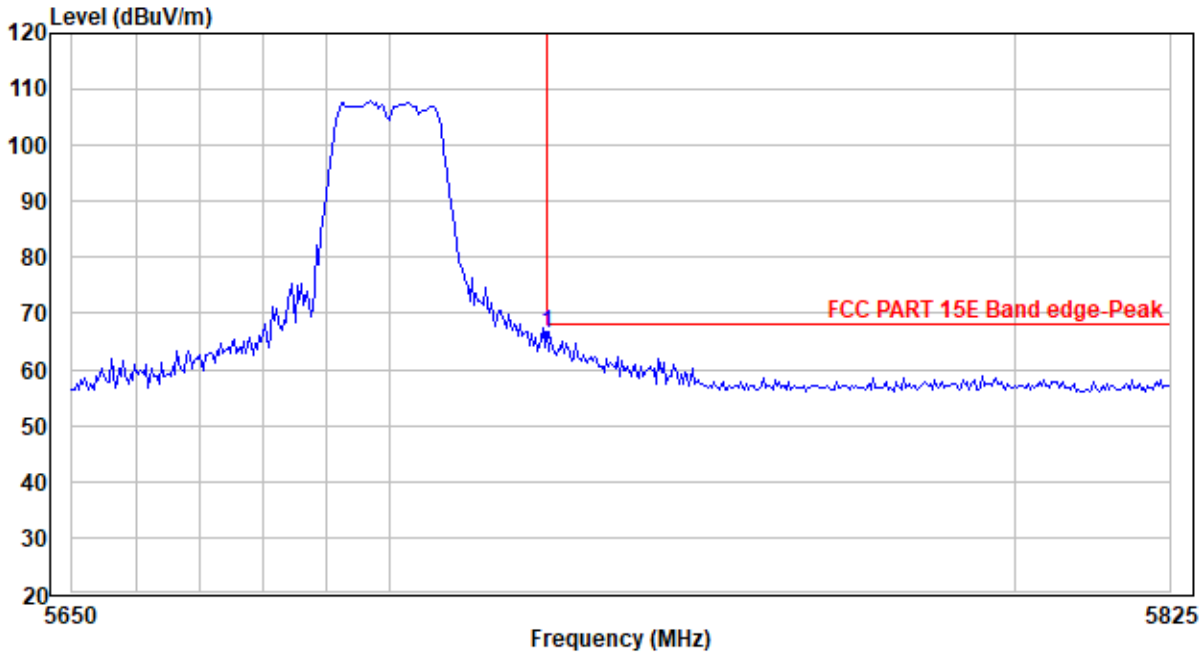
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	61.27	68.20	43.53	54.00	Pass
5470.000	62.76	68.20	43.94	68.20	Pass

Test Channel:	Channel 100	Ant. Polar. :	Vertical



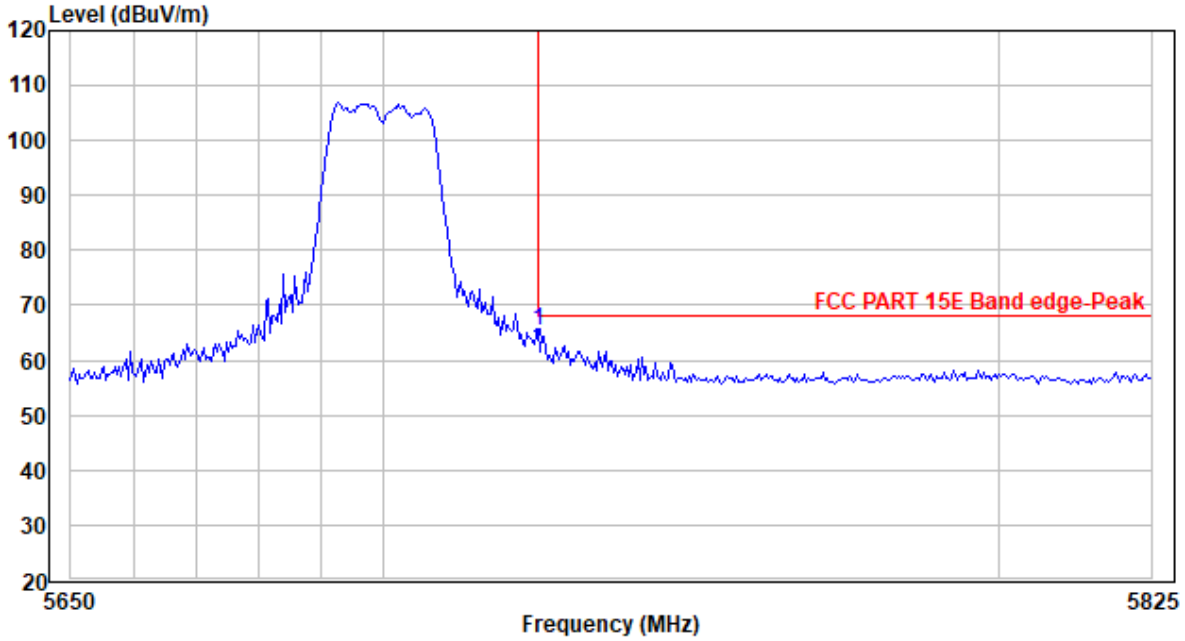
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	57.94	68.20	42.57	54.00	Pass
5470.000	59.11	68.20	42.38	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Horizontal



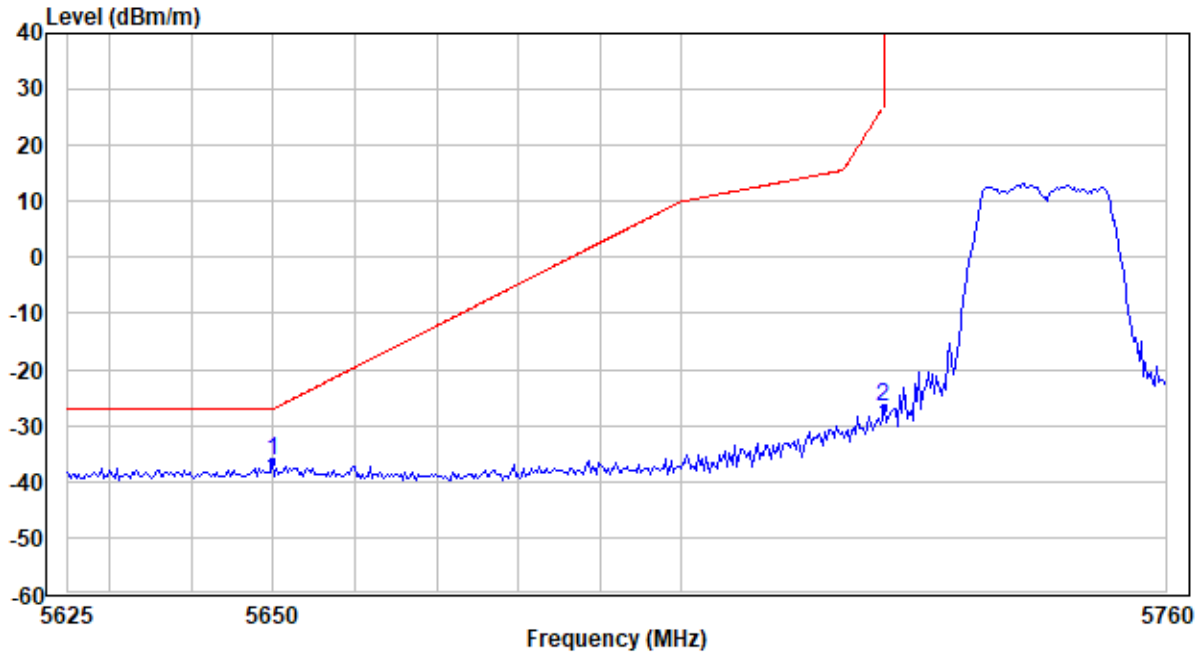
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	66.45	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Vertical



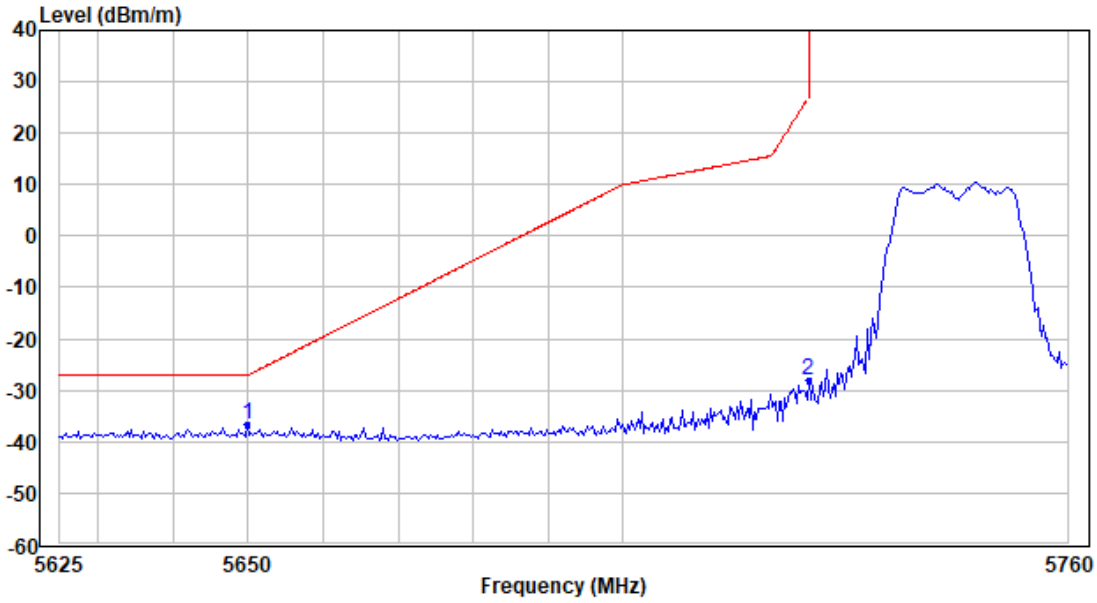
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	65.23	68.20	Pass

Test Channel:	Channel 149	Ant. Polar. :	Horizontal



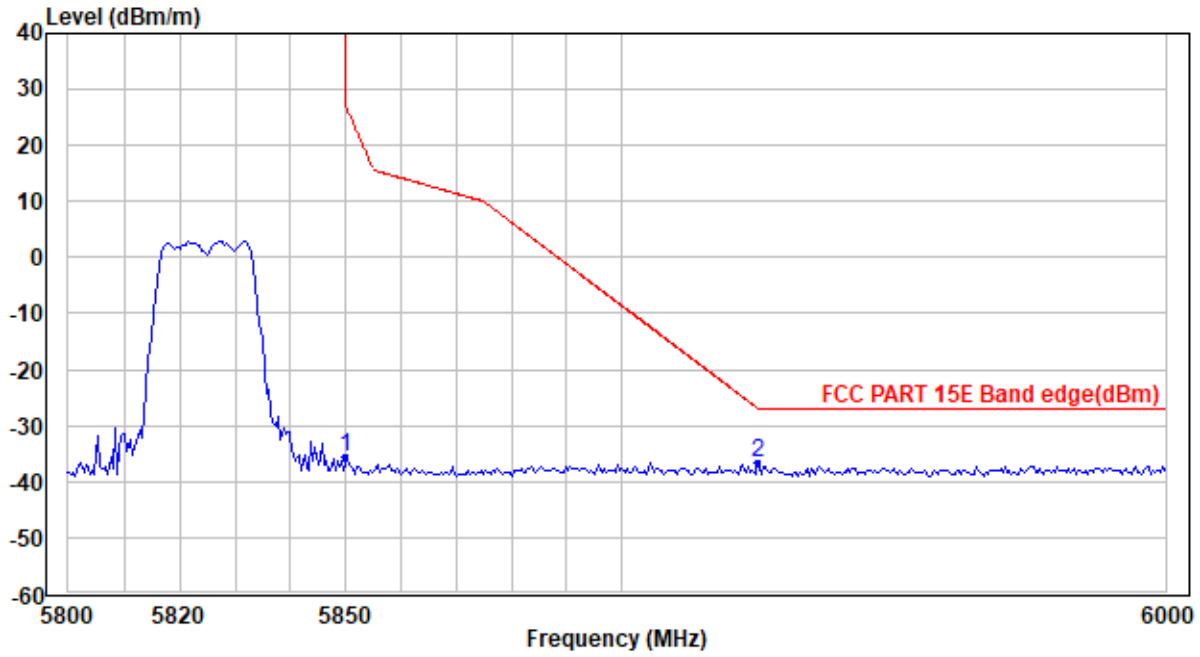
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.38	-27.00	Pass
5725.000	-26.65	27.00	Pass

Test Channel:	Channel 149	Ant. Polar. :	Vertical



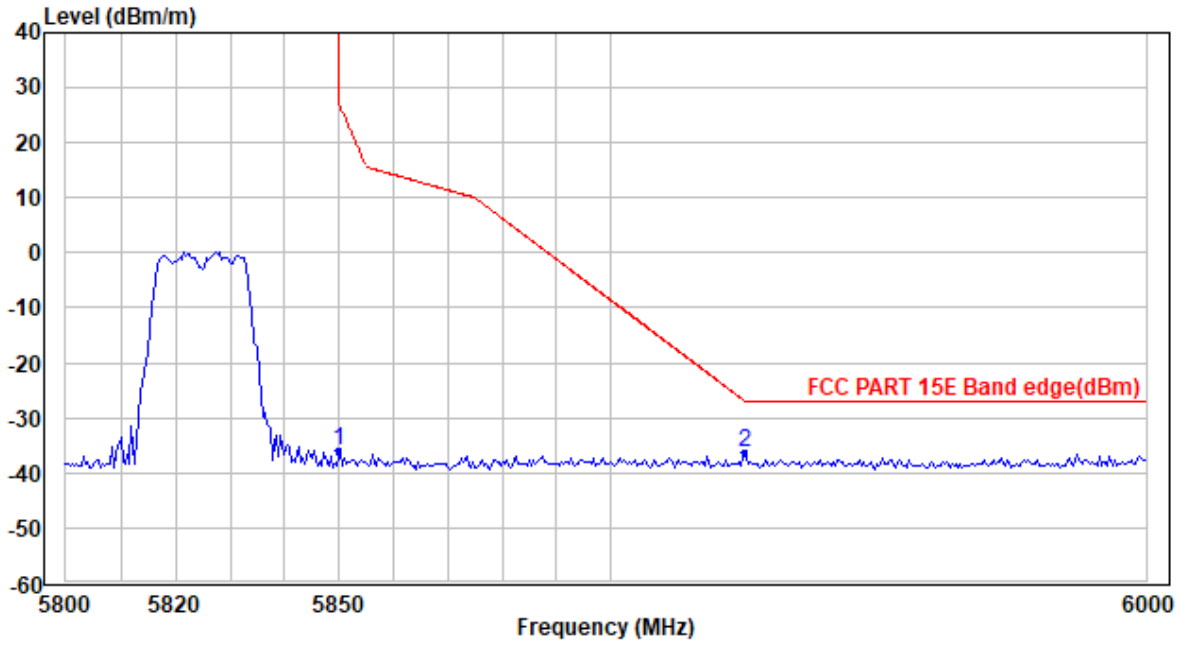
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.53	-27.00	Pass
5725.000	-28.08	27.00	Pass

Test Channel:	Channel 165	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-35.46	27.00	Pass
5925.000	-36.47	-27.00	Pass

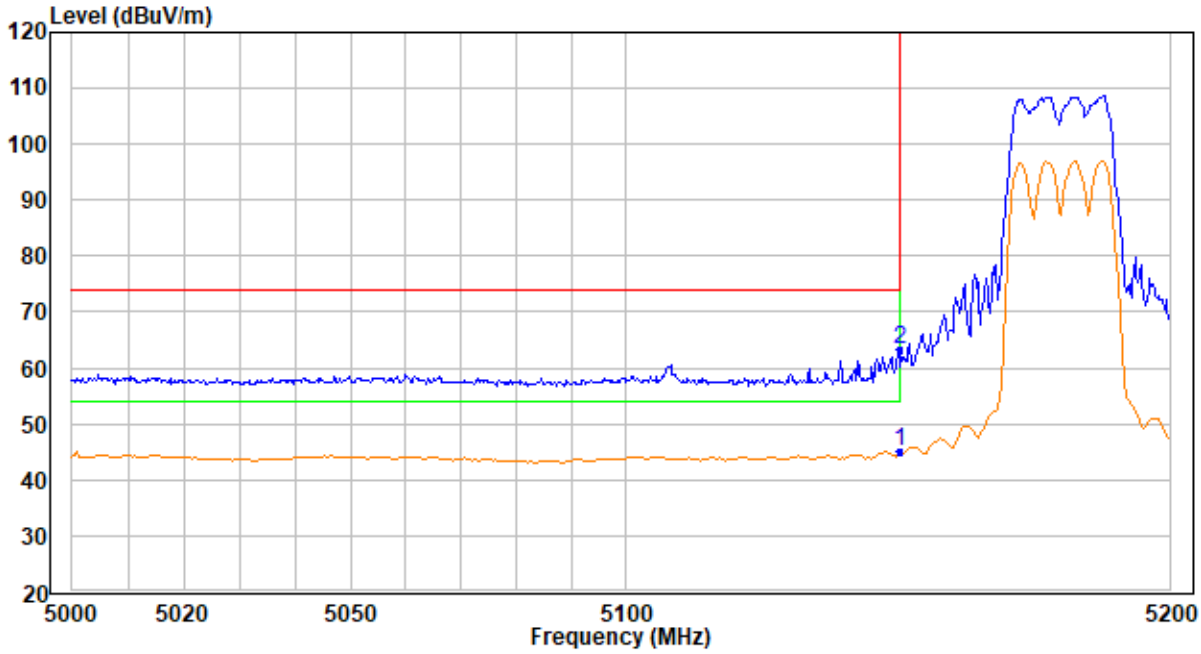
Test Channel:	Channel 165	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-36.11	27.00	Pass
5925.000	-36.40	-27.00	Pass

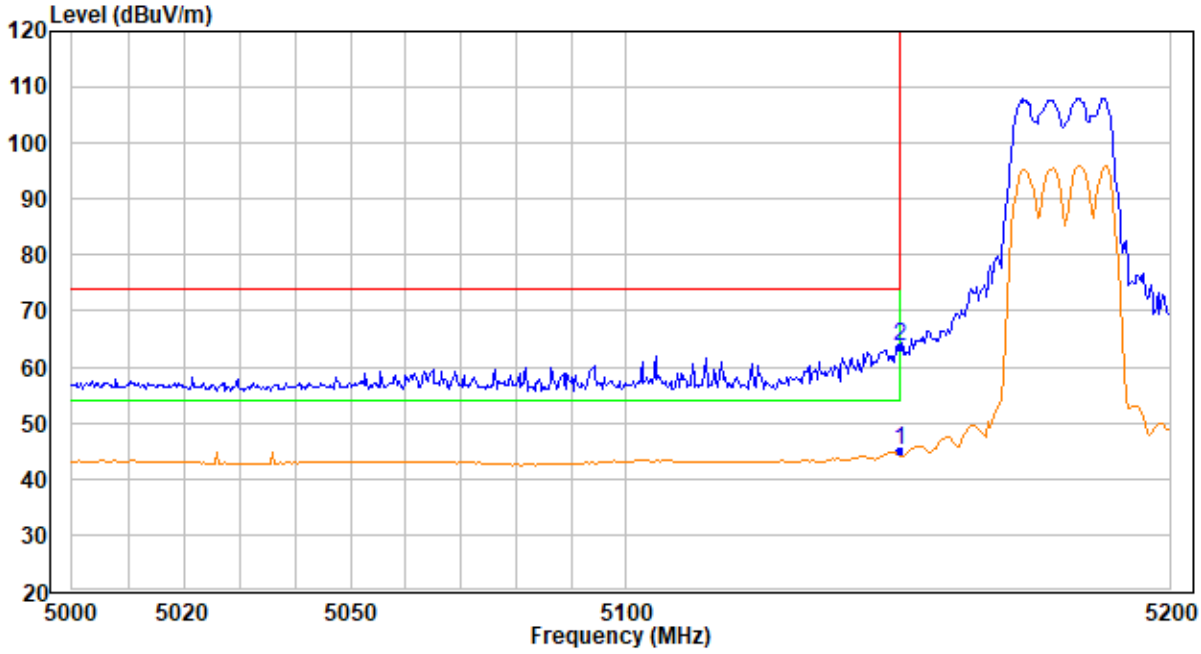
MIMO_ Antenna 1+2_IEEE 802.11ac-VHT20

Test Channel:	Channel 36	Ant. Polar. :	Horizontal



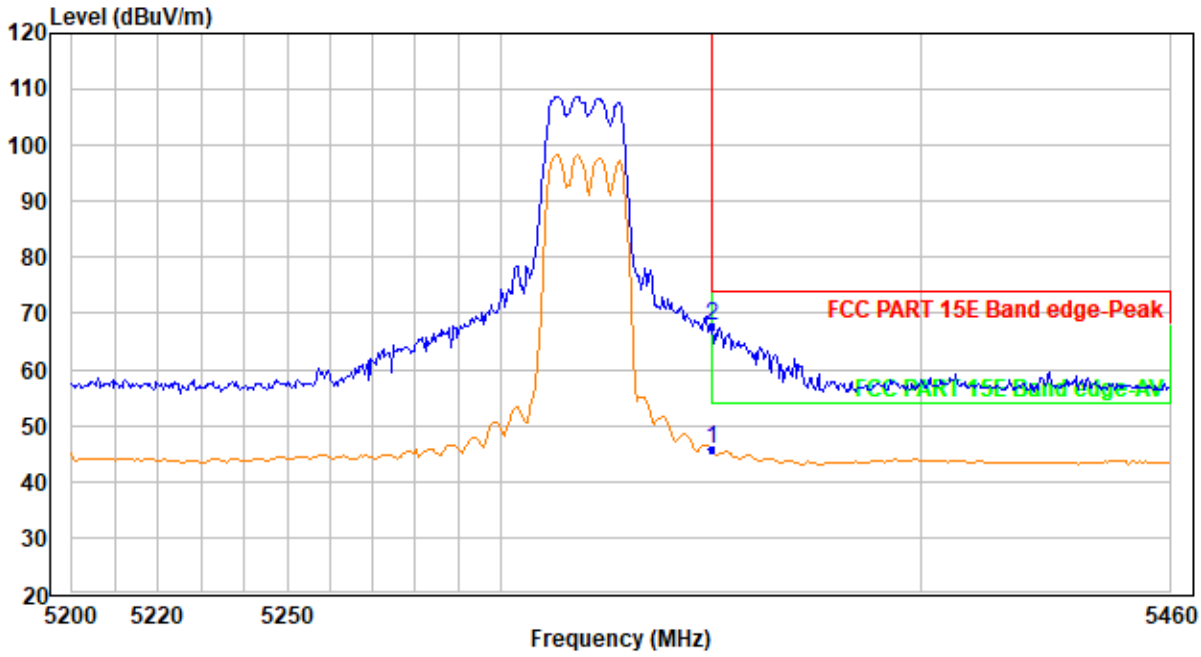
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	63.25	74.00	45.11	54.00	Pass

Test Channel:	Channel 36	Ant. Polar. :	Vertical



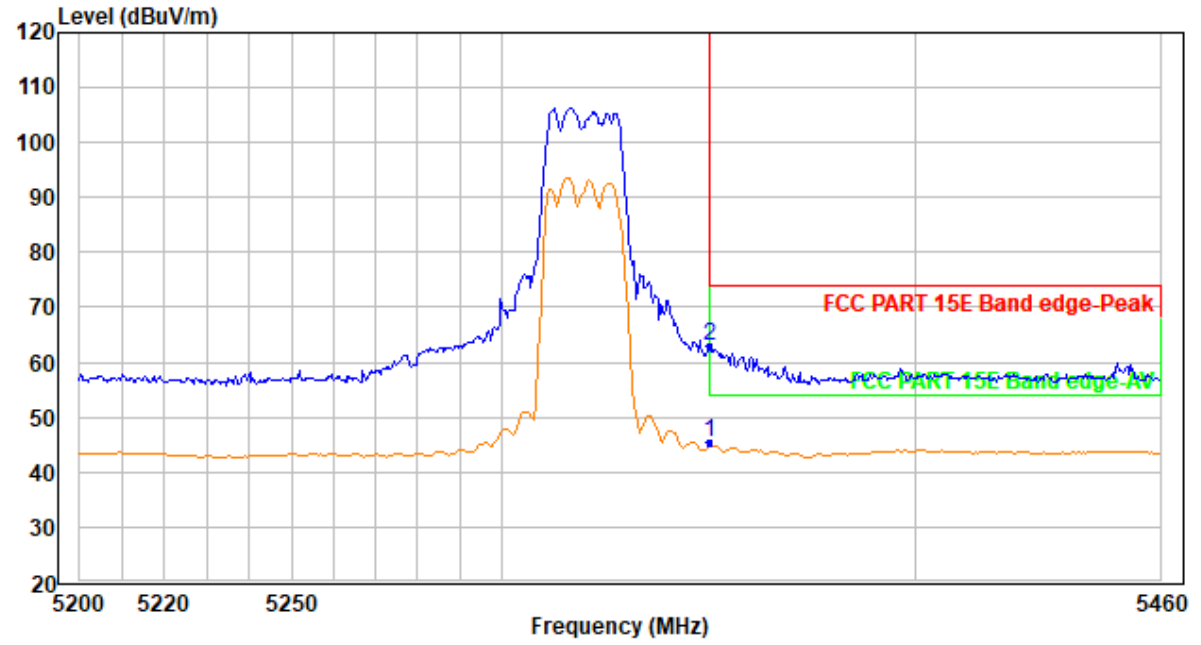
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	63.59	74.00	45.21	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Horizontal



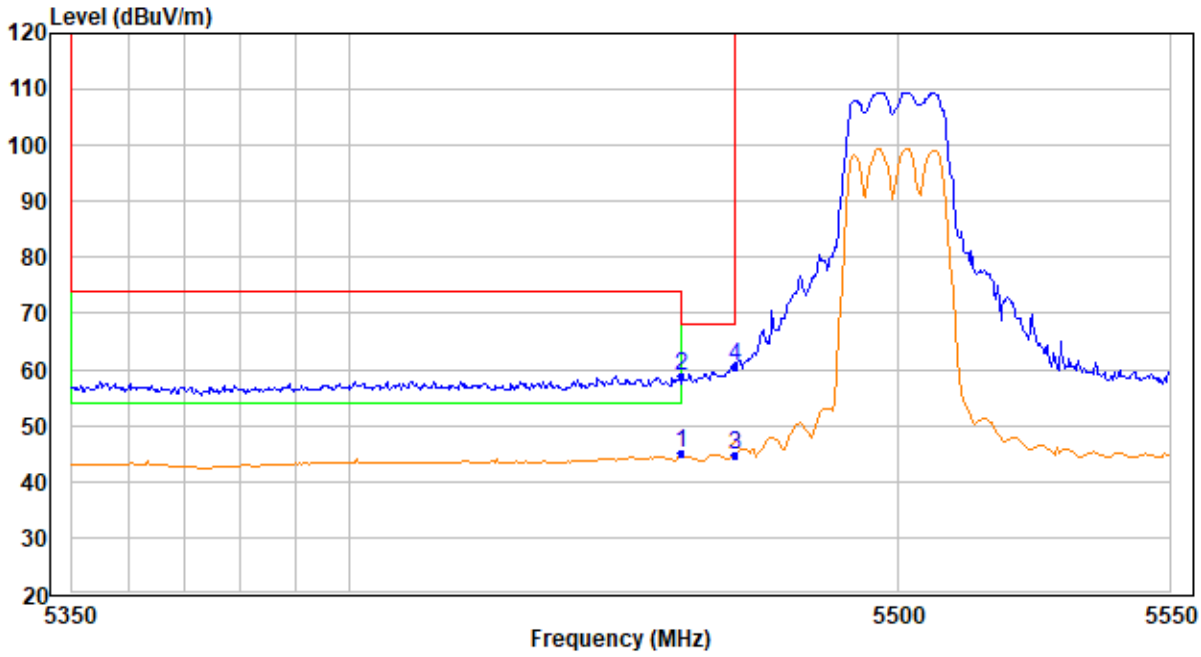
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	67.92	74.00	45.92	54.00	Pass

Test Channel:	Channel 64	Ant. Polar. :	Vertical



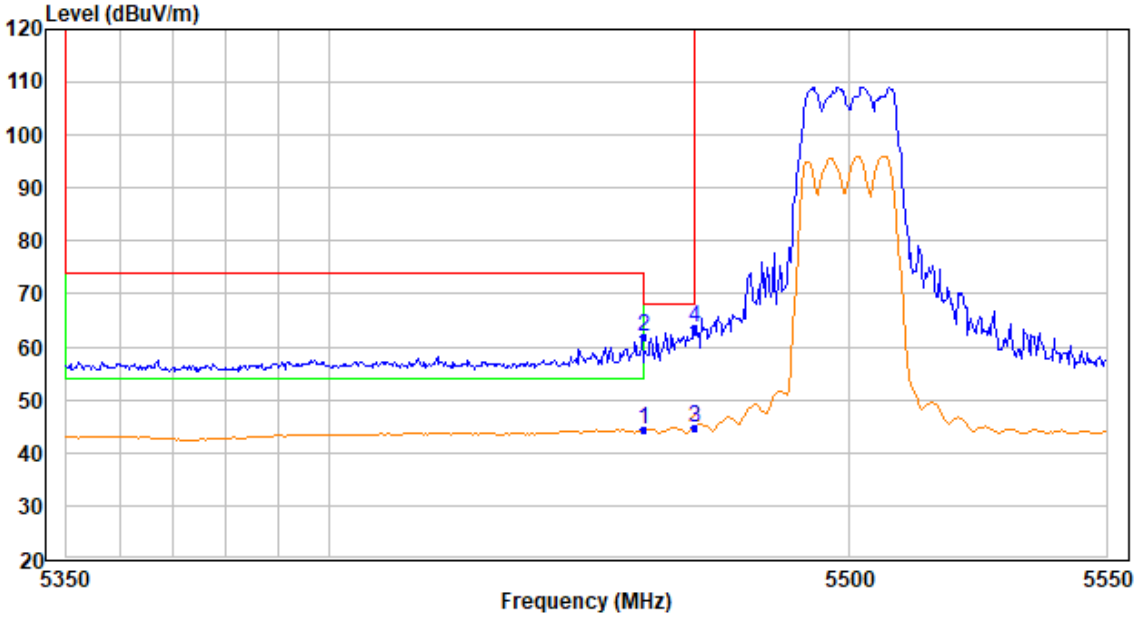
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	63.03	74.00	45.58	54.00	Pass

Test Channel:	Channel 100	Ant. Polar. :	Horizontal



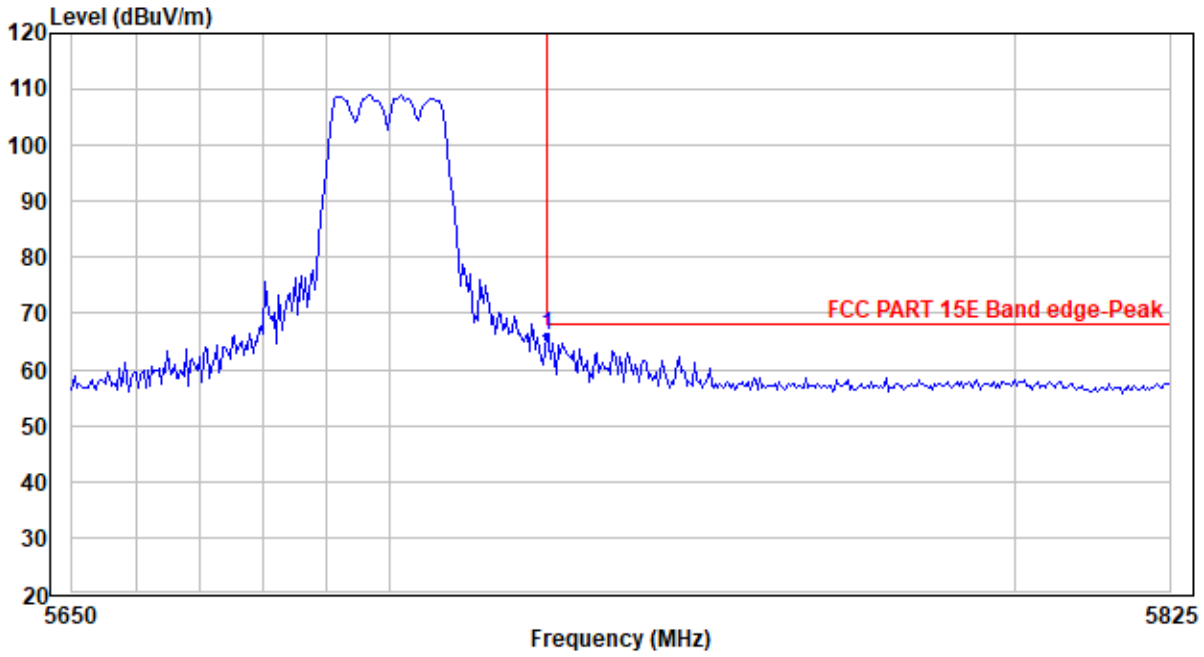
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	58.80	68.20	45.12	54.00	Pass
5470.000	60.51	68.20	44.78	68.20	Pass

Test Channel:	Channel 100	Ant. Polar. :	Vertical



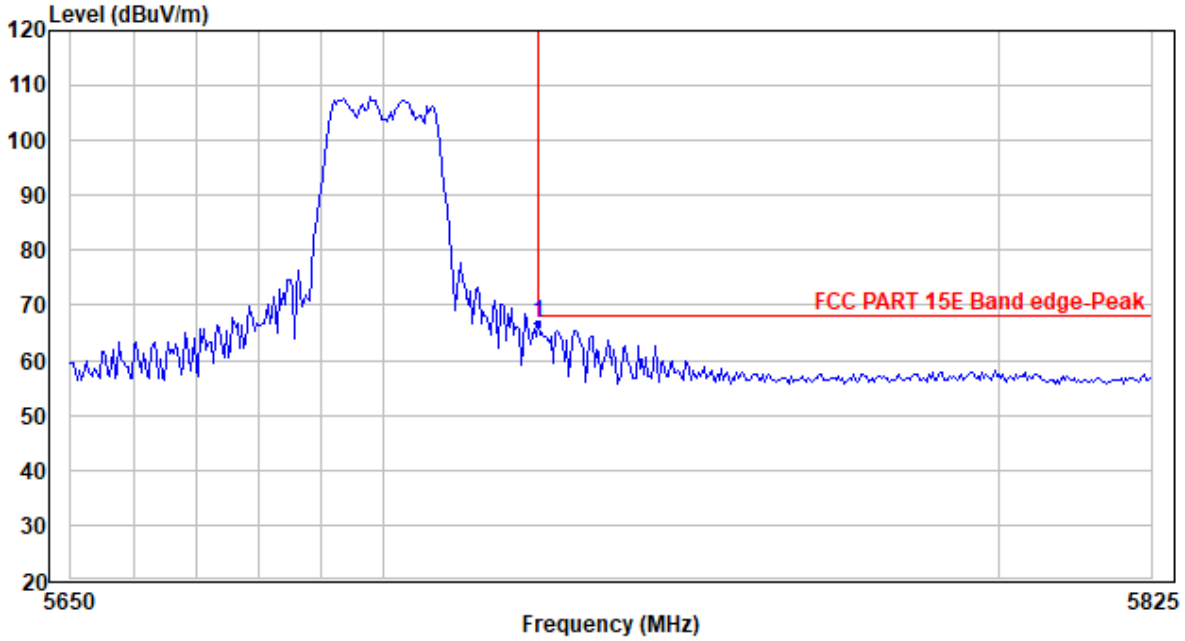
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	61.80	68.20	44.29	54.00	Pass
5470.000	63.59	68.20	44.84	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Horizontal



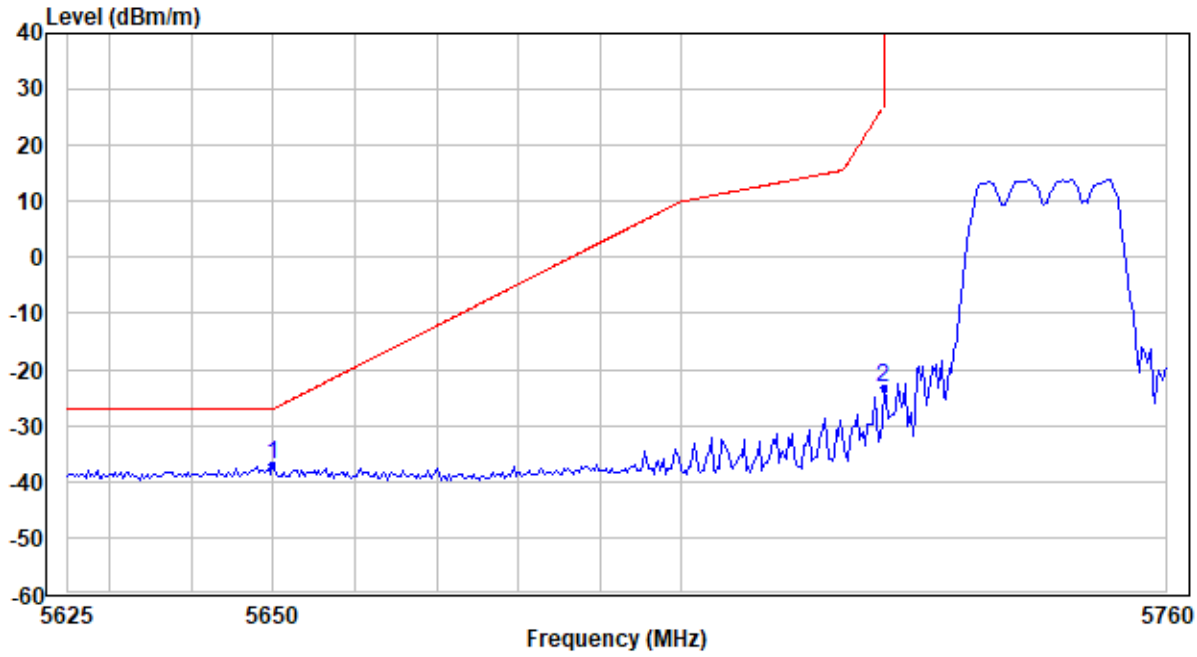
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	65.96	68.20	Pass

Test Channel:	Channel 140	Ant. Polar. :	Vertical



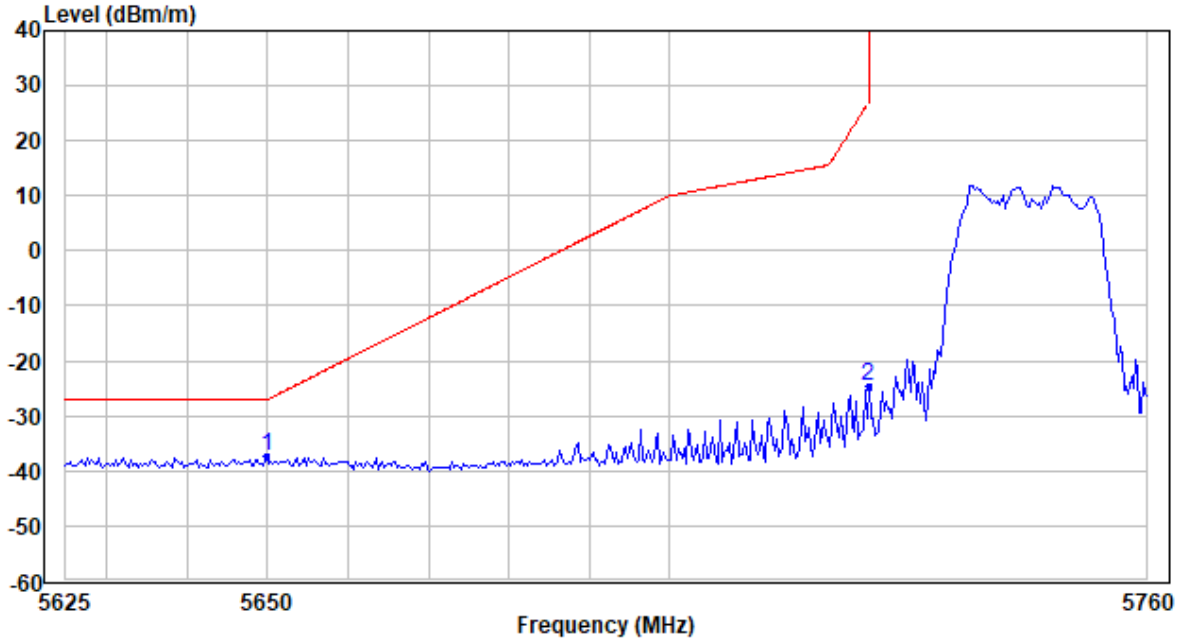
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	66.63	68.20	Pass

Test Channel:	Channel 149	Ant. Polar. :	Horizontal



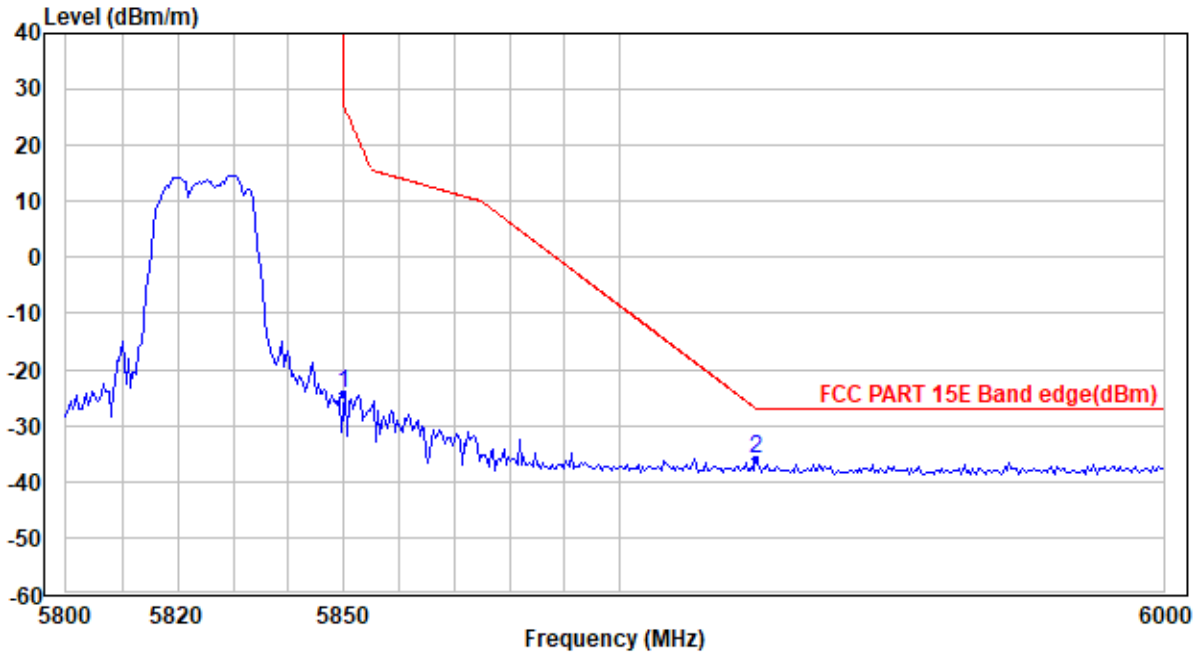
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.87	-27.00	Pass
5725.000	-23.17	27.00	Pass

Test Channel:	Channel 149	Ant. Polar. :	Vertical



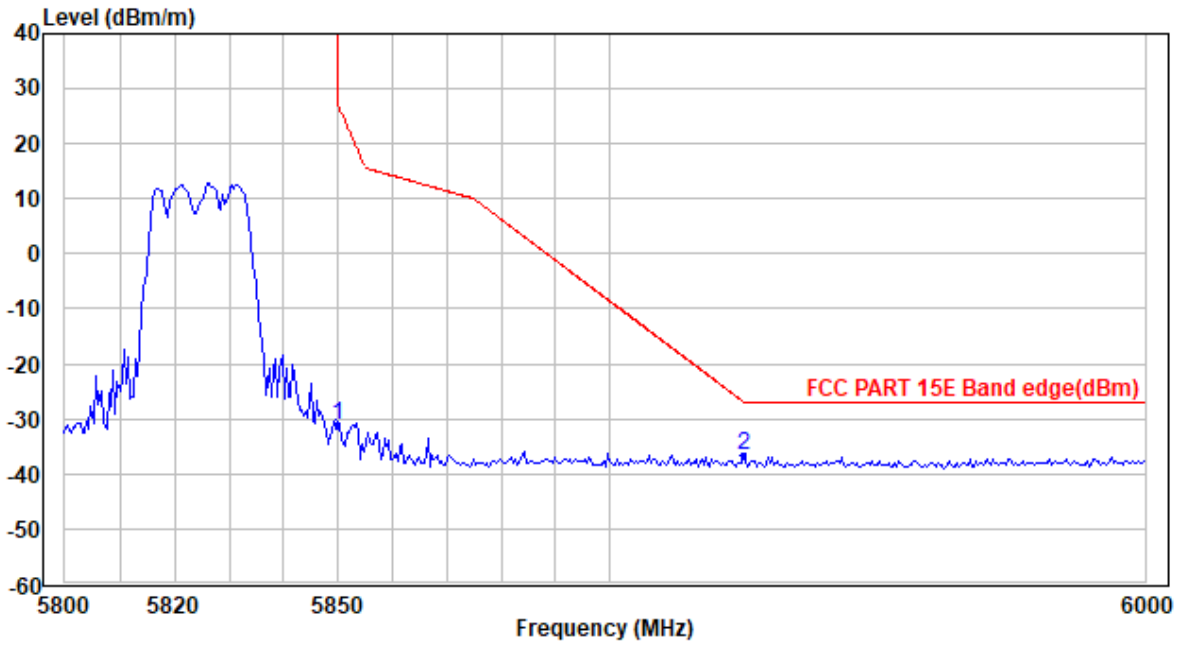
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-37.42	-27.00	Pass
5725.000	-24.53	27.00	Pass

Test Channel:	Channel 165	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-24.15	27.00	Pass
5925.000	-35.86	-27.00	Pass

Test Channel:	Channel 165	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-31.12	27.00	Pass
5925.000	-36.61	-27.00	Pass

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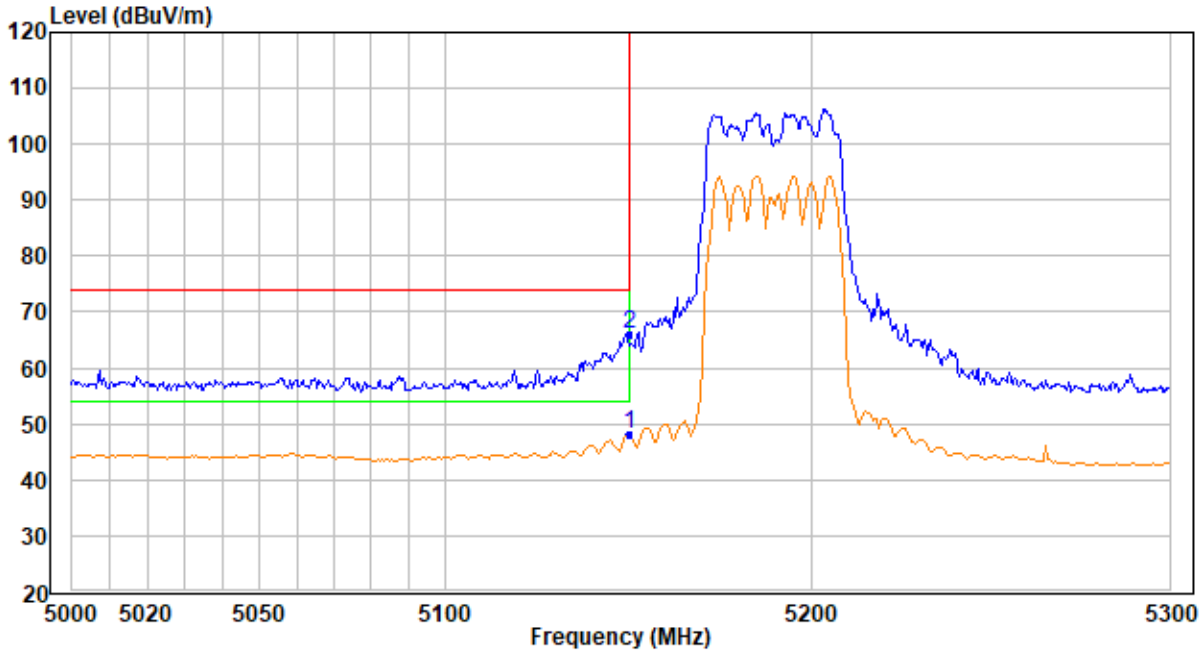
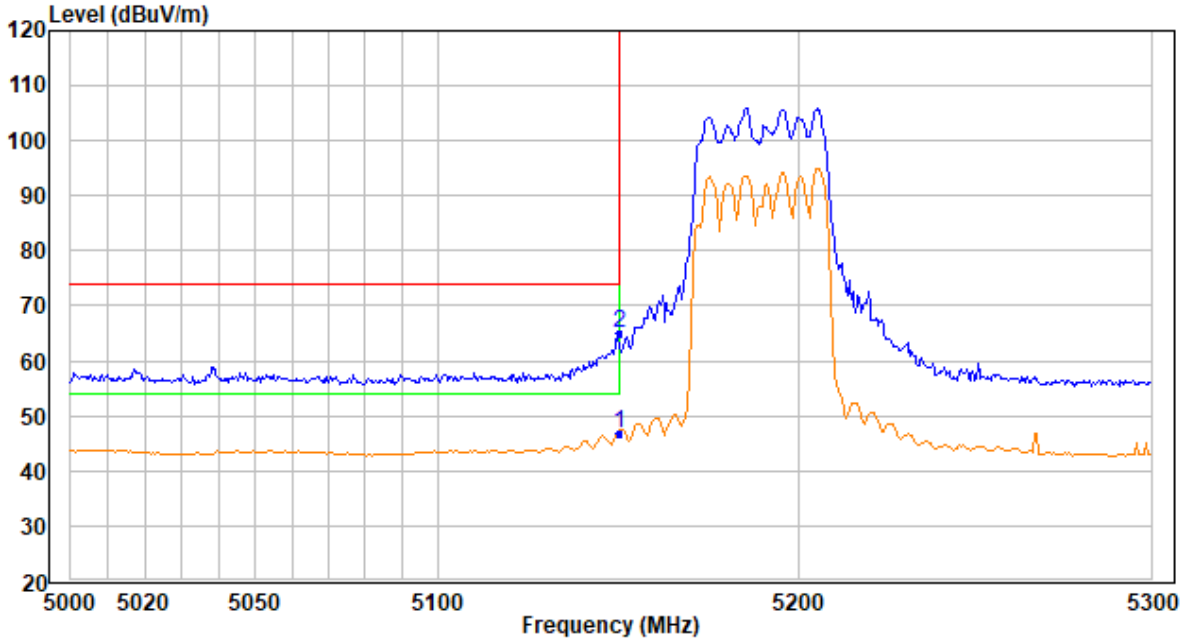
Test Channel:	Channel 38	Ant. Polar. :	Horizontal



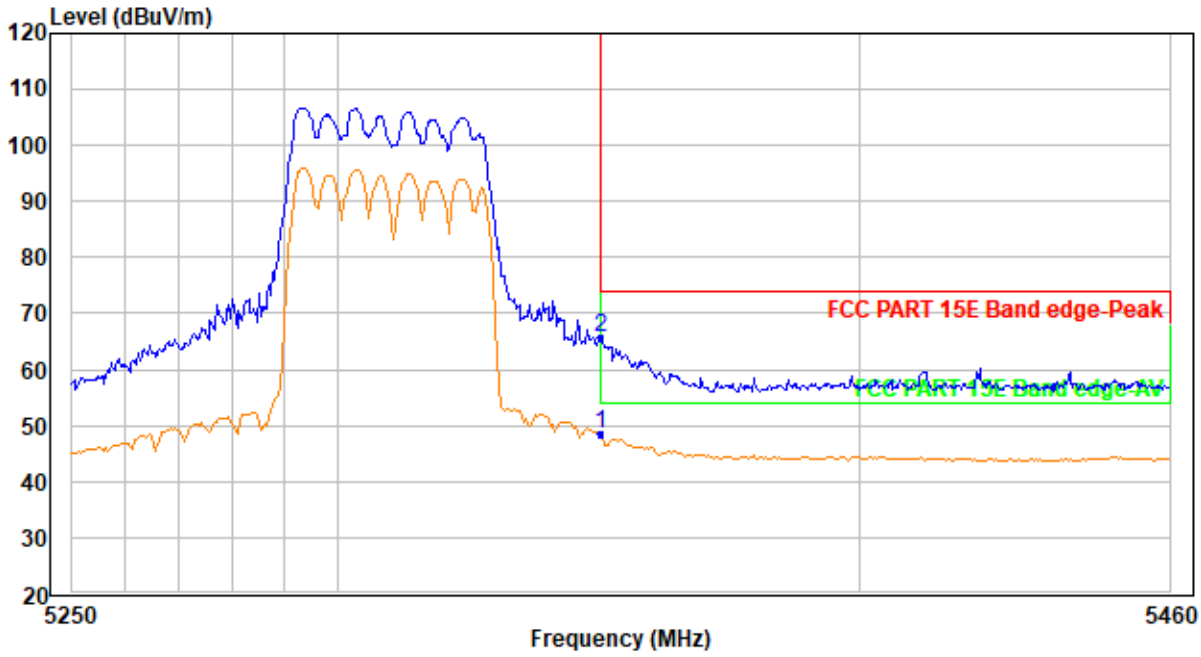
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	66.05	74.00	48.07	54.00	Pass

Test Channel:	Channel 38	Ant. Polar. :	Vertical



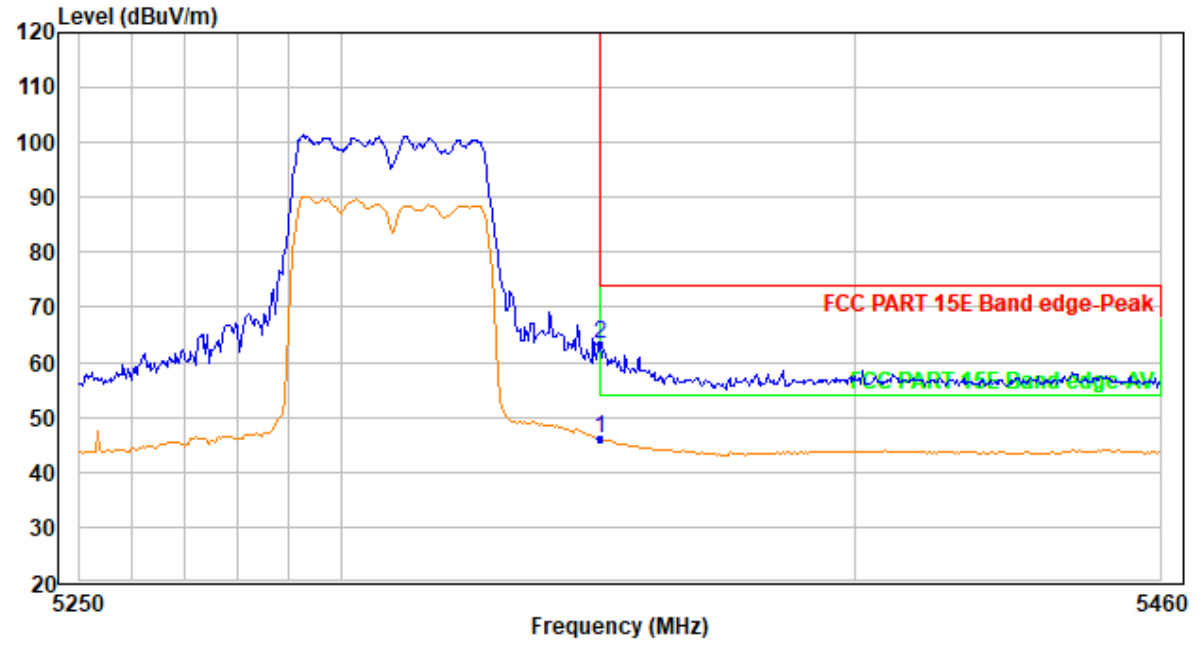
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	64.91	74.00	46.91	54.00	Pass

Test Channel:	Channel 62	Ant. Polar. :	Horizontal



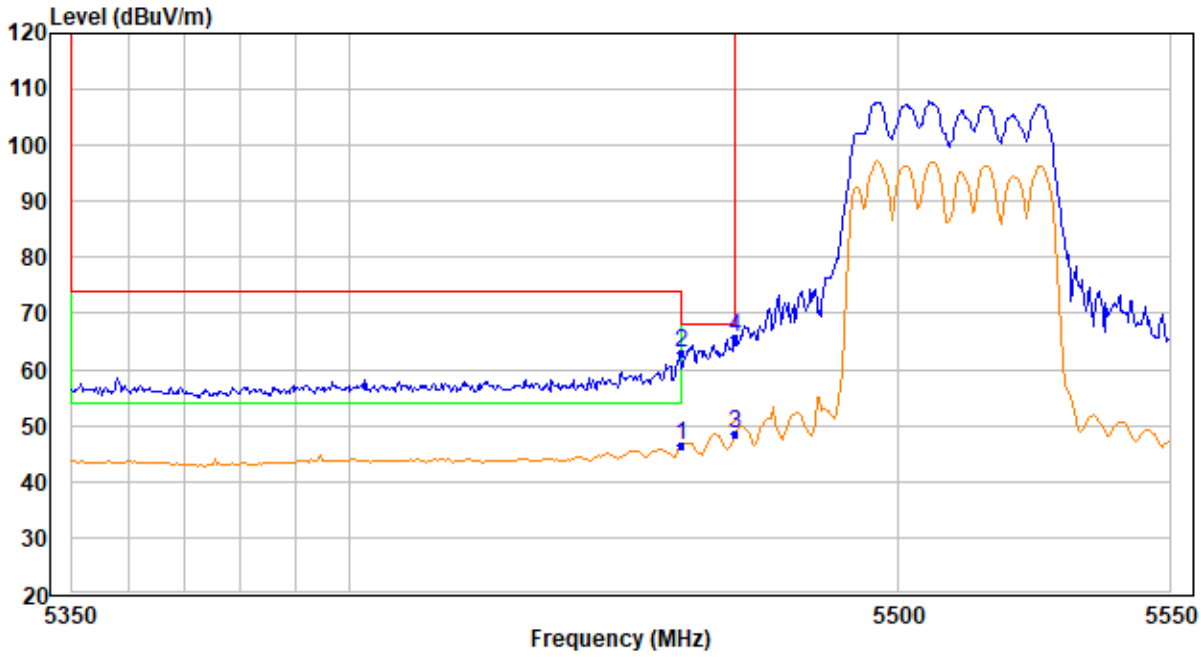
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	65.59	74.00	48.62	54.00	Pass

Test Channel:	Channel 62	Ant. Polar. :	Vertical



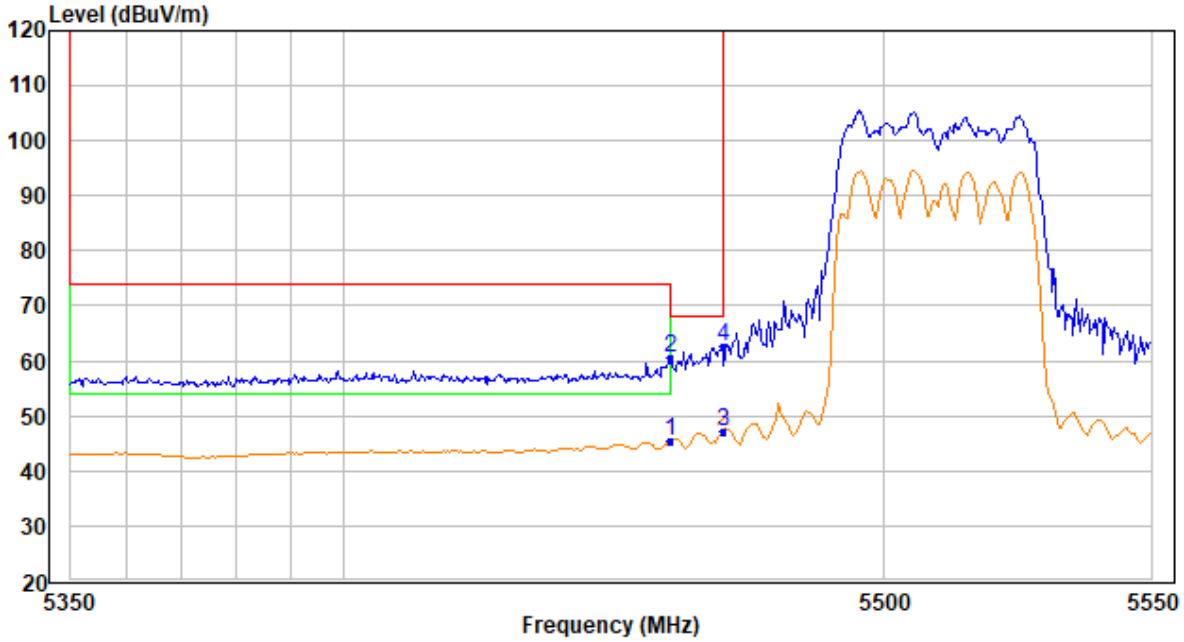
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	63.15	74.00	46.10	54.00	Pass

Test Channel:	Channel 102	Ant. Polar. :	Horizontal



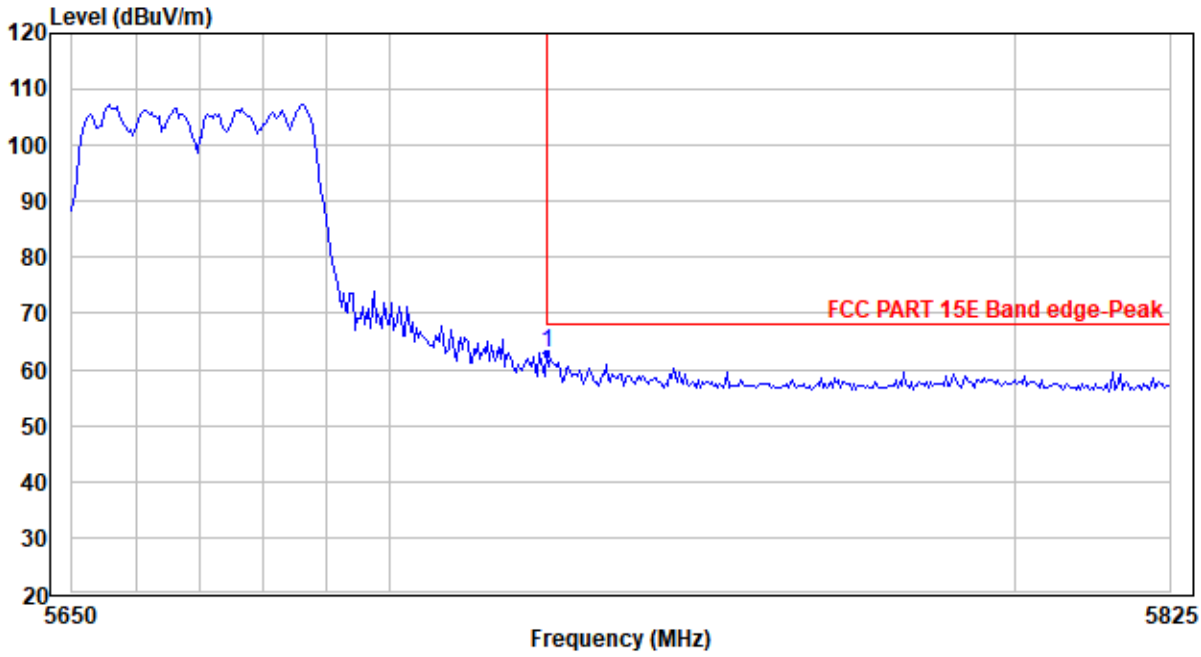
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	63.04	68.20	46.57	54.00	Pass
5470.000	65.77	68.20	48.56	68.20	Pass

Test Channel:	Channel 102	Ant. Polar. :	Vertical



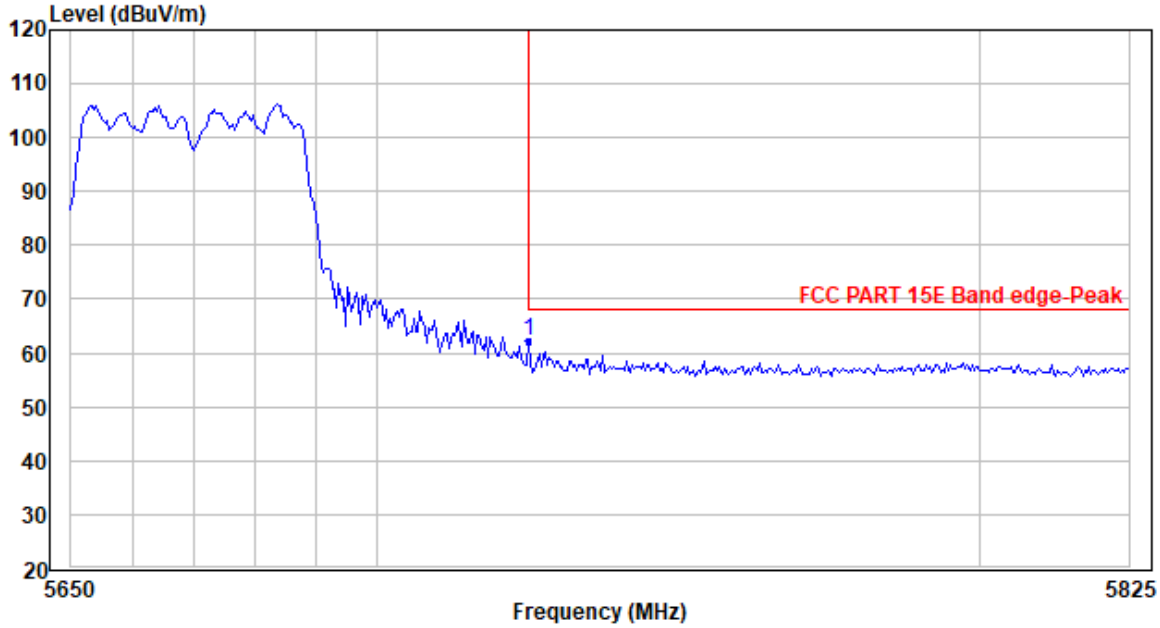
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	60.42	68.20	45.39	54.00	Pass
5470.000	62.71	68.20	47.19	68.20	Pass

Test Channel:	Channel 134	Ant. Polar. :	Horizontal

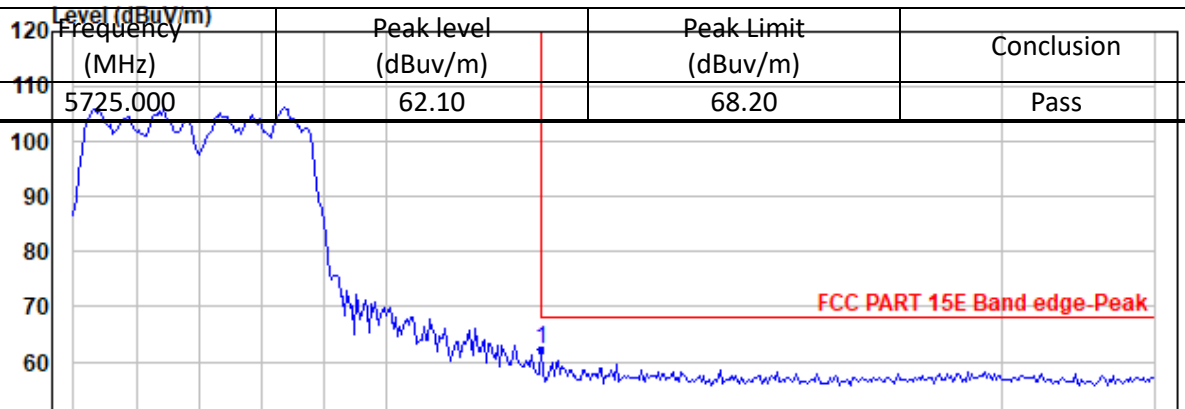


Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.050	63.01	68.20	Pass

Test Channel:	Channel 134	Ant. Polar. :	Vertical

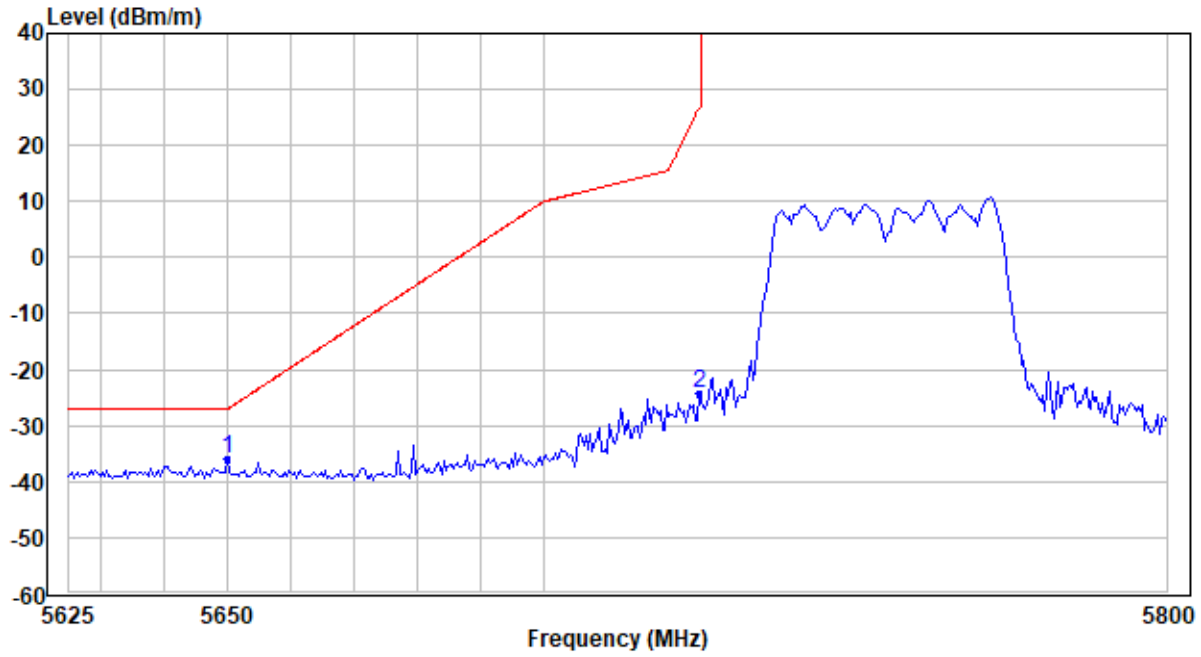


Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	62.10	68.20	Pass



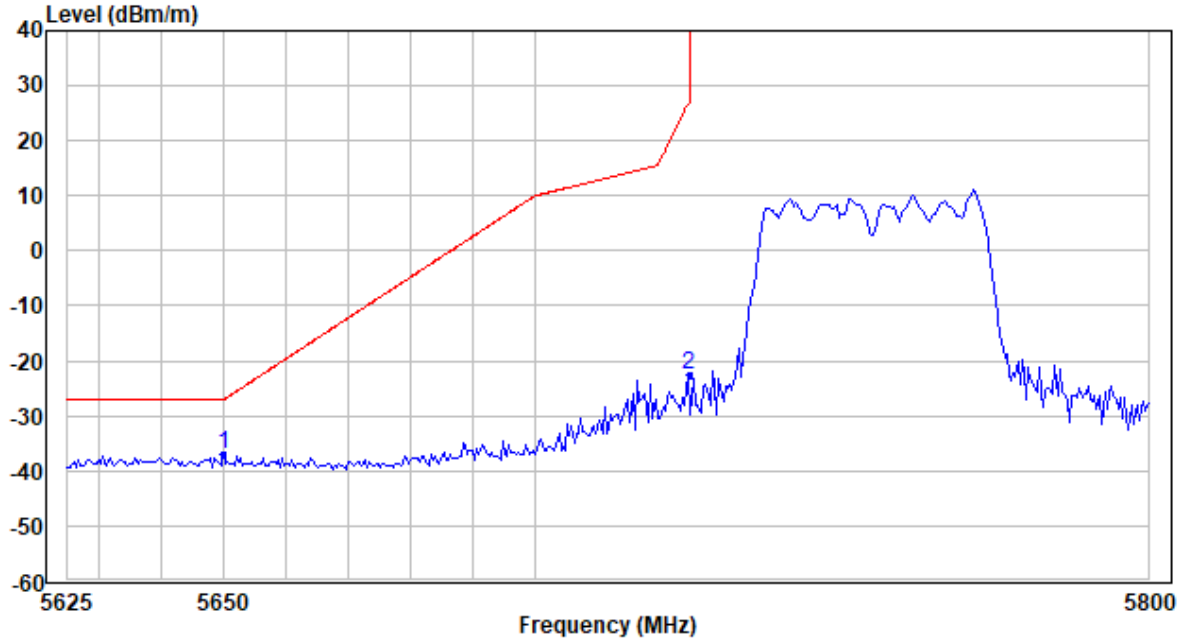
TT

Test Channel:	Channel 151	Ant. Polar. :	Horizontal



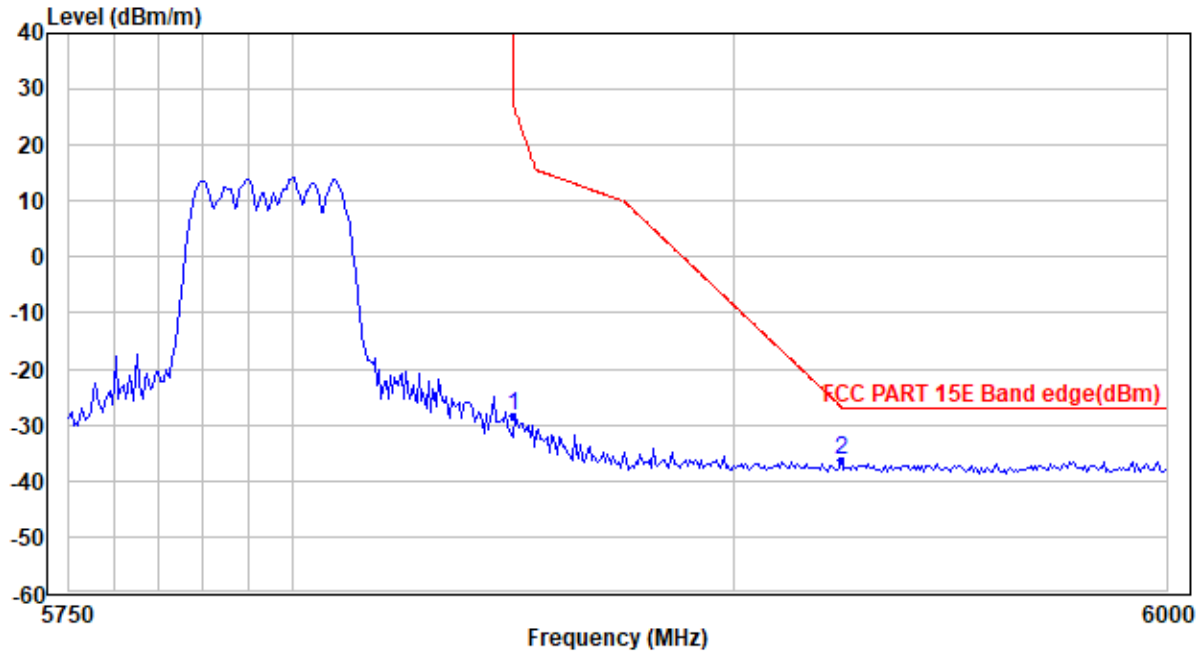
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.11	-27.00	Pass
5724.950	-24.17	26.89	Pass

Test Channel:	Channel 151	Ant. Polar. :	Vertical



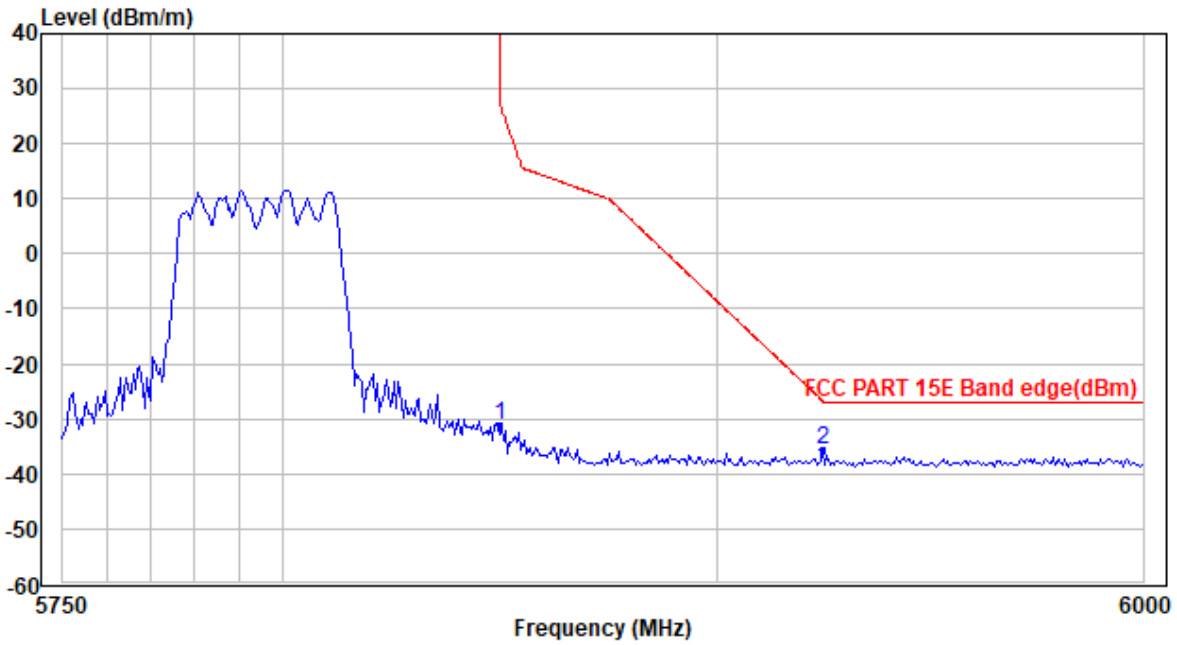
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5650.000	-36.94	-27.00	Pass
5725.000	-22.64	27.00	Pass

Test Channel:	Channel 159	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-28.55	27.00	Pass
5925.000	-36.13	-27.00	Pass

Test Channel:	Channel 159	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5850.000	-31.01	27.00	Pass

5925.000	-35.61	-27.00	Pass

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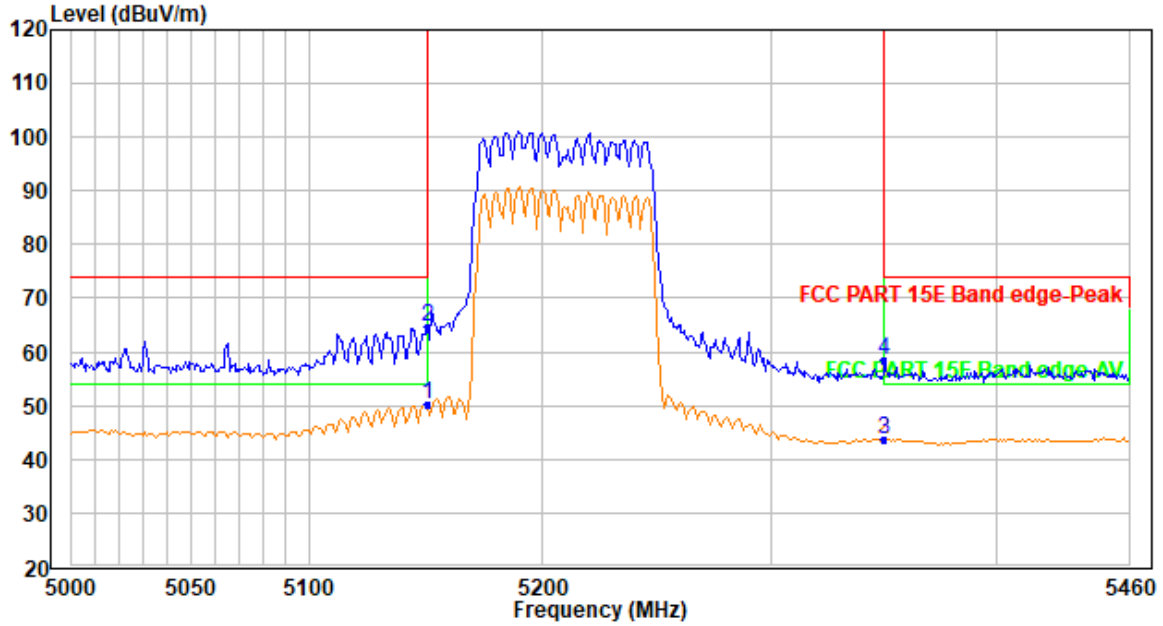
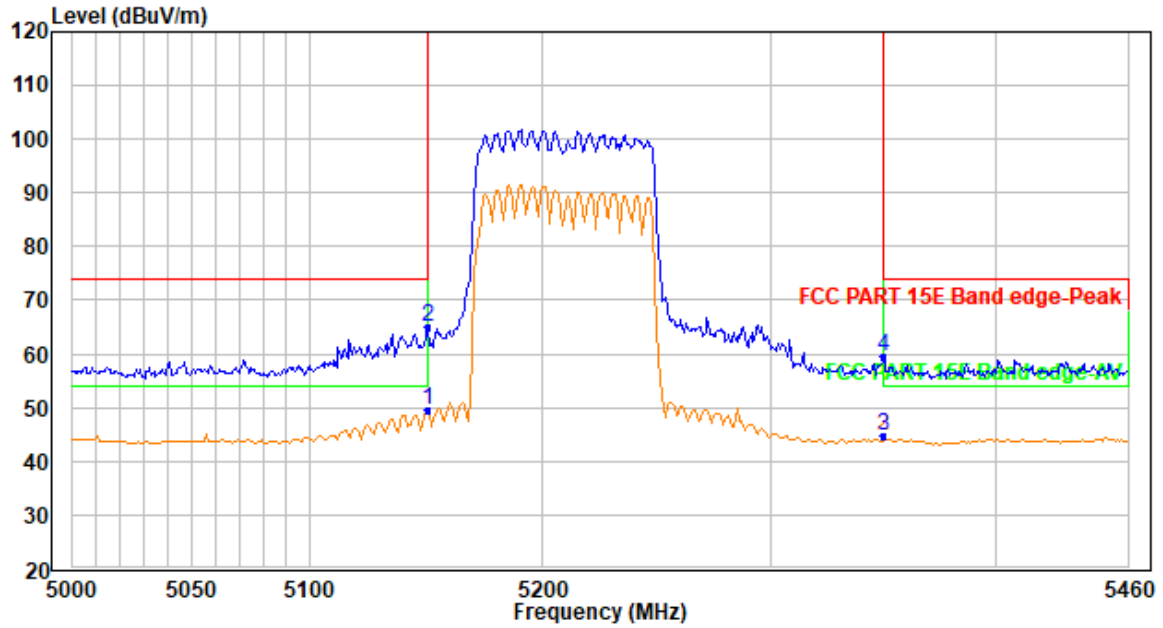
Test Channel:	Channel 42	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.000	64.56	74.00	50.32	54.00	Pass
5350.000	58.43	74.00	43.64	54.00	Pass

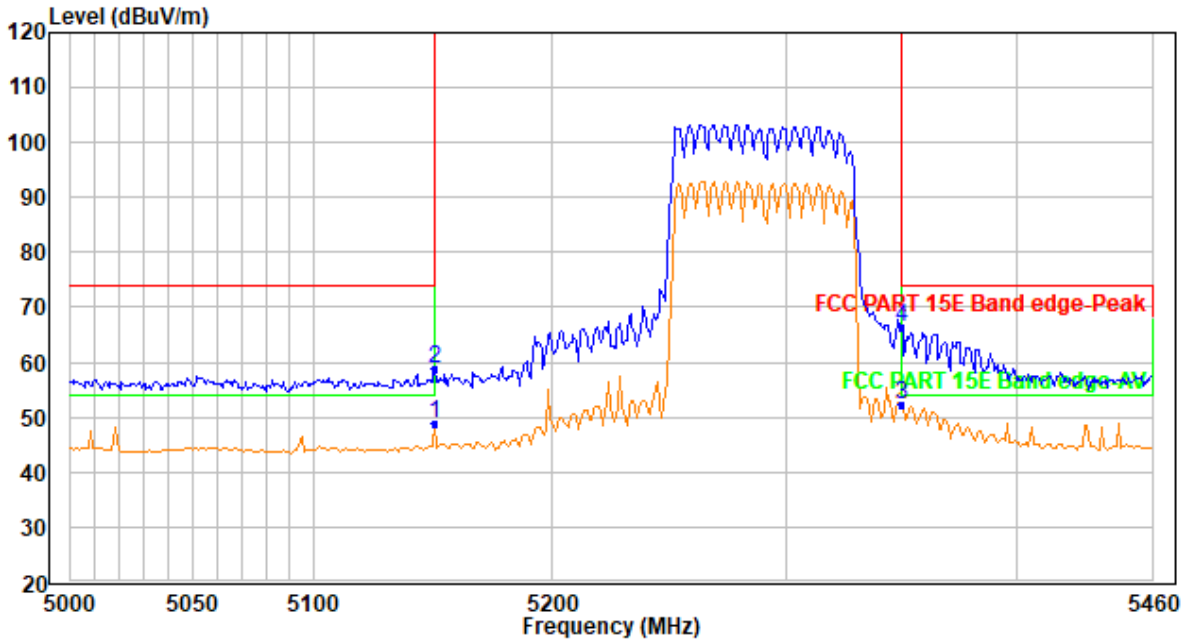
Test Channel:	Channel 42	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion

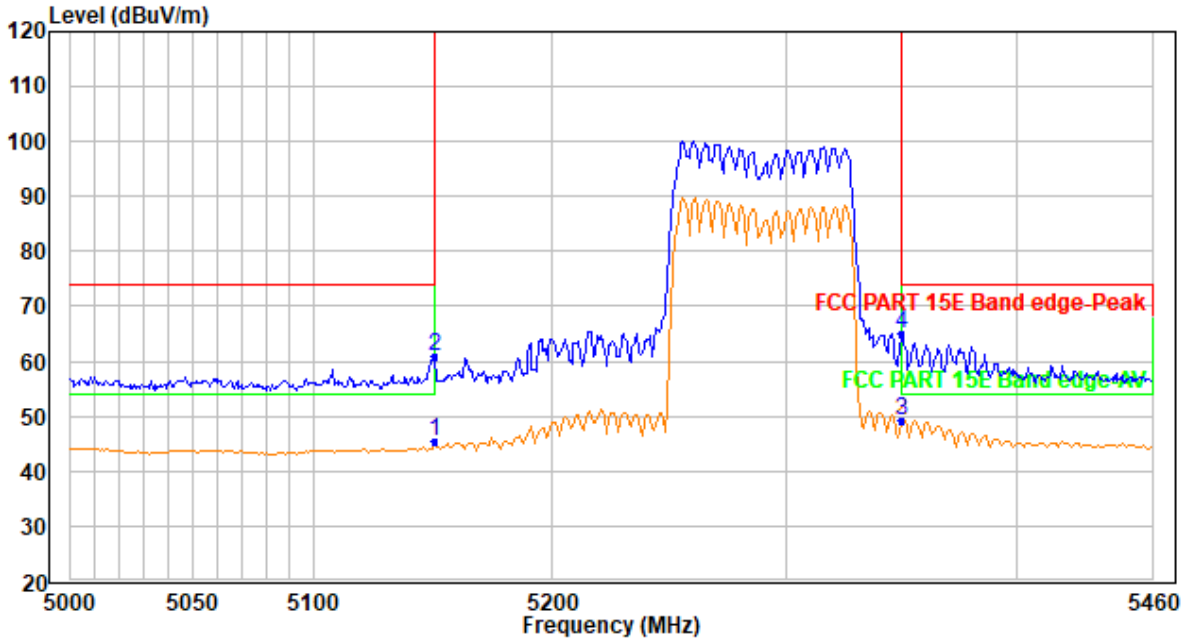
5150.000	64.99	74.00	49.71	54.00	Pass
5350.000	59.57	74.00	44.79	54.00	Pass

Test Channel:	Channel 58	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5150.000	58.88	74.00	48.83	54.00	Pass
5350.000	66.42	74.00	52.23	54.00	Pass

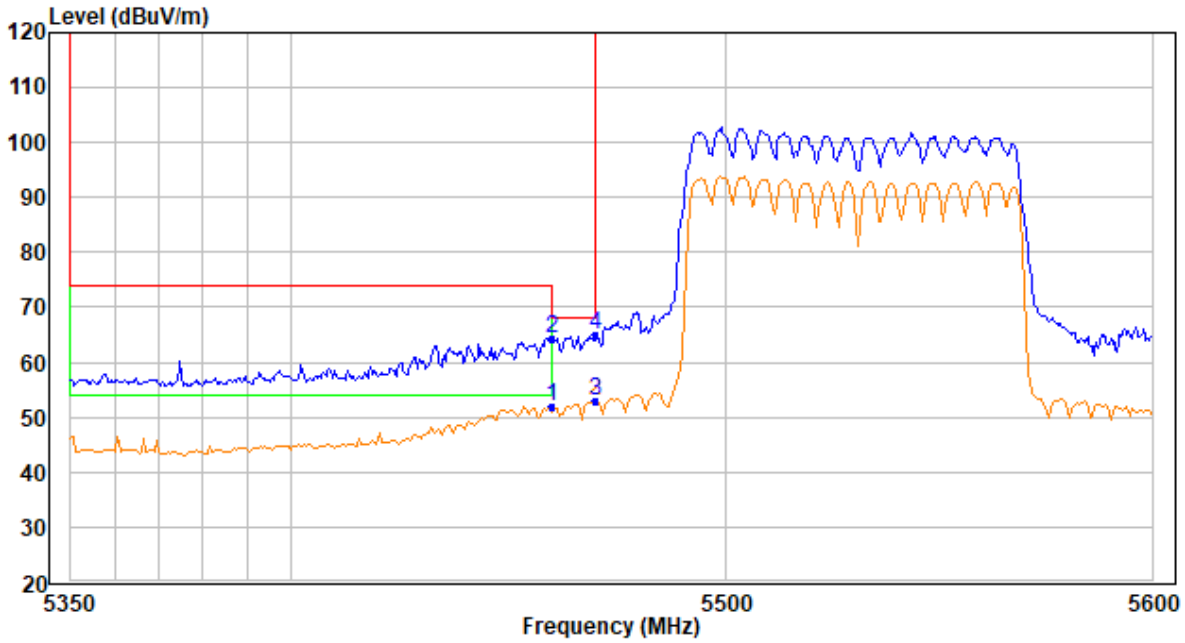
Test Channel:	Channel 58	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion

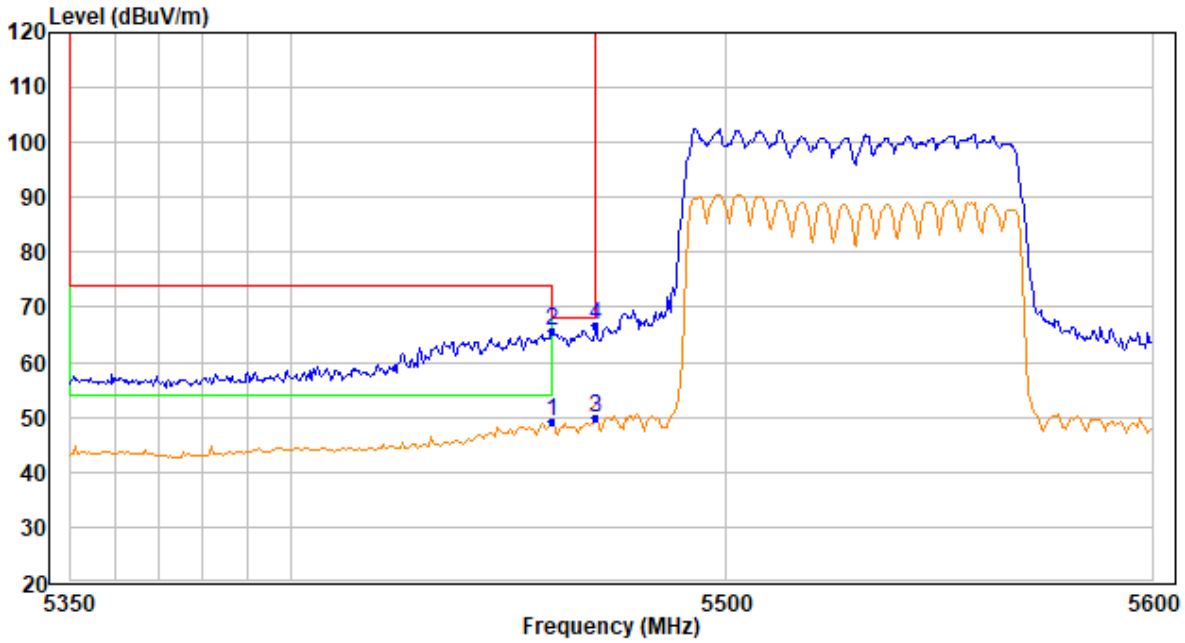
5150.000	60.95	74.00	45.48	54.00	Pass
5350.000	64.98	74.00	49.32	54.00	Pass

Test Channel:	Channel 106	Ant. Polar. :	Horizontal



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion
5460.000	64.34	68.20	51.89	54.00	Pass
5470.000	64.94	68.20	53.07	68.20	Pass

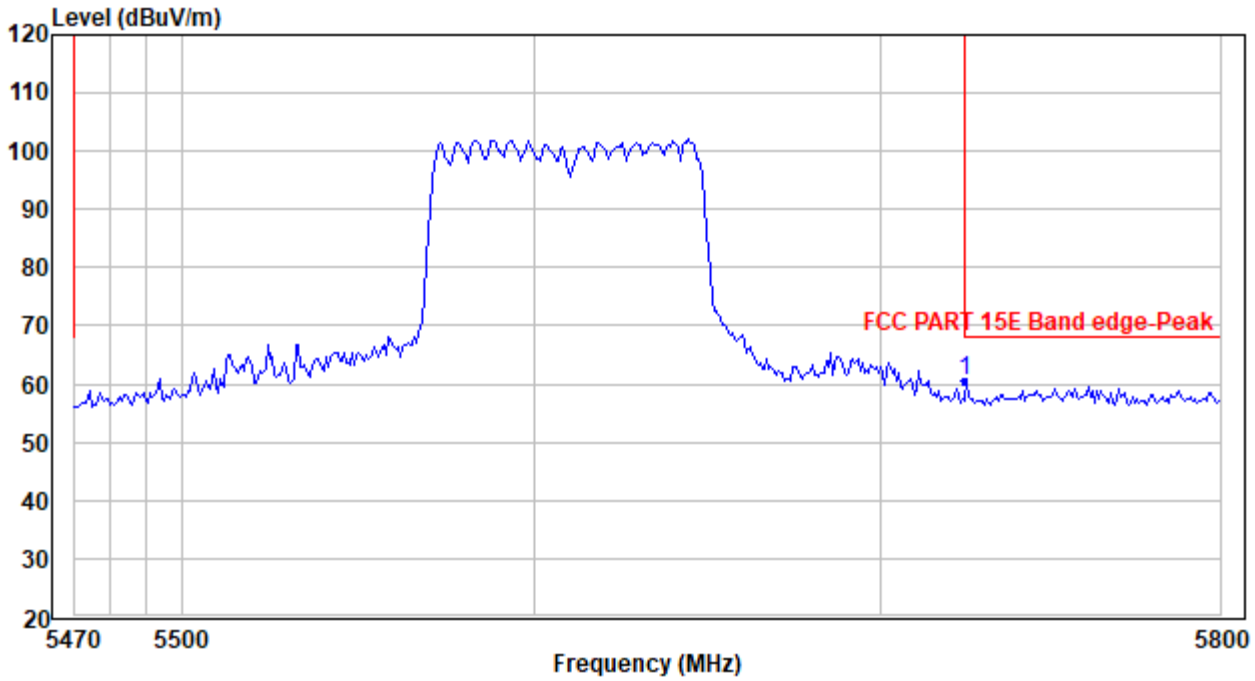
Test Channel:	Channel 106	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	AV level (dBuv/m)	AV Limit (dBuv/m)	Conclusion

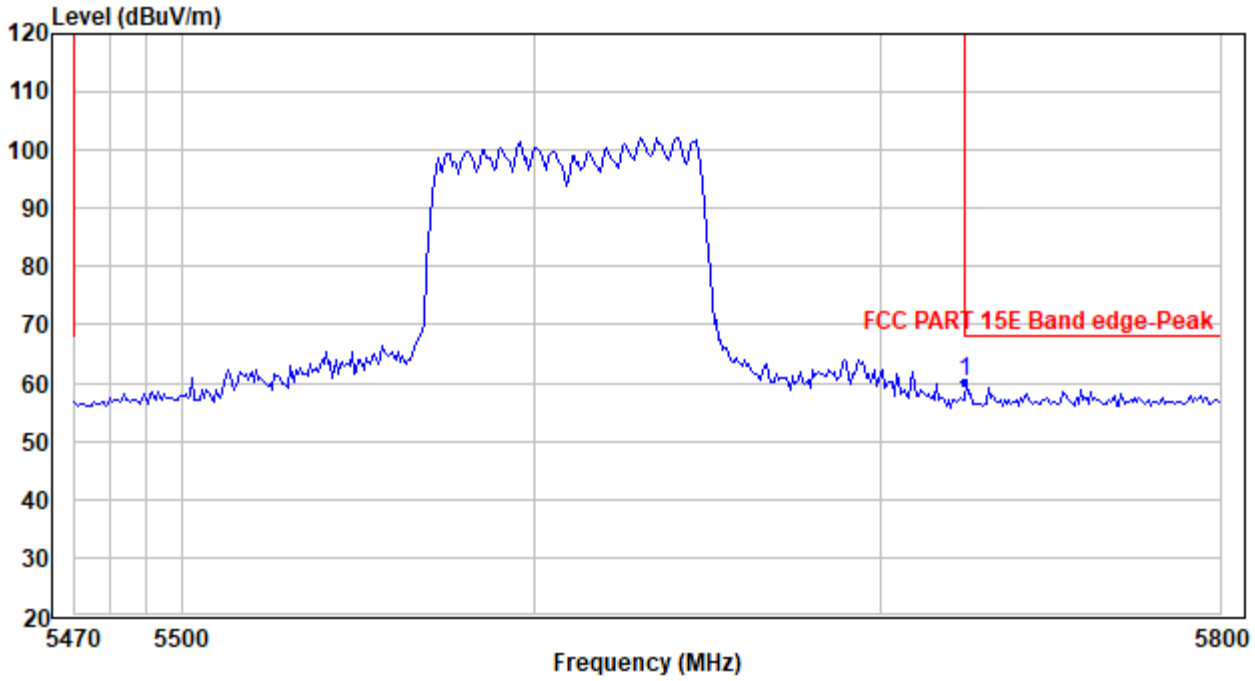
5460.000	65.84	68.20	49.31	54.00	Pass
5470.000	66.65	68.20	49.75	68.20	Pass

Test Channel:	Channel 122	Ant. Polar. :	Horizontal



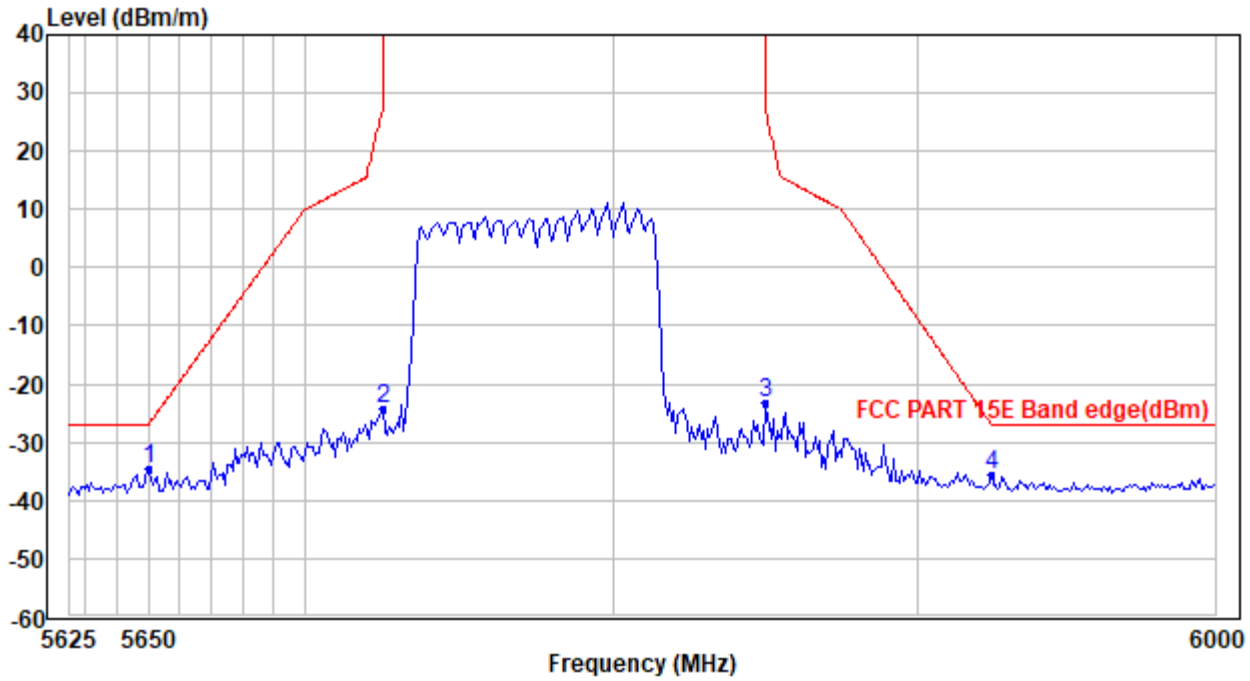
Frequency (MHz)	Peak level (dBuv/m)	Peak Limit (dBuv/m)	Conclusion
5725.000	60.38	68.20	Pass

Test Channel:	Channel 122	Ant. Polar. :	Vertical



Frequency	Peak level	Peak Limit	Conclusion

(MHz)	(dBuv/m)	(dBuv/m)	
5725.000	60.34	68.20	Pass
Test Channel:	**Channel 155**	**Ant. Polar. :**	**Horizontal**



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5650.000	-34.42	-27.00	Pass
5725.000	-24.23	27.00	Pass
5850.000	-23.13	27.00	Pass
5925.000	-35.59	-27.00	Pass

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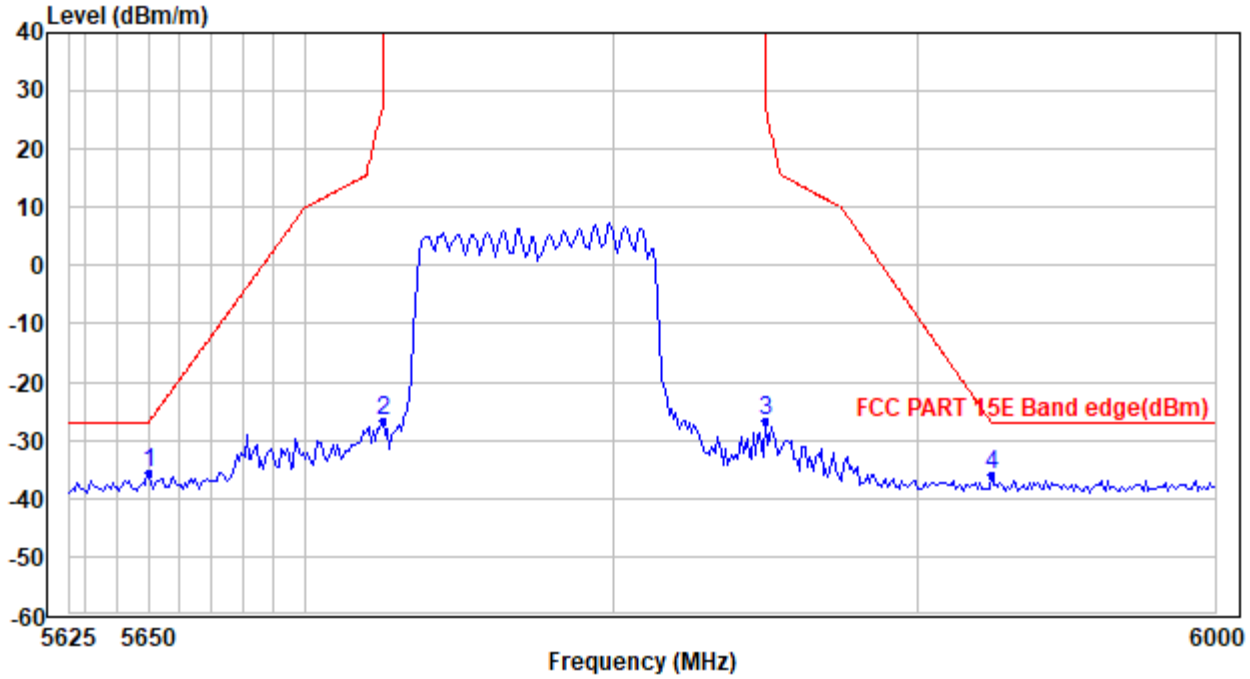
Test Channel:	Channel 155	Ant. Polar. :	Vertical



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5650.000	-35.74	-27.00	Pass
5725.000	-26.57	27.00	Pass
5850.000	-26.80	27.00	Pass
5925.000	-36.09	-27.00	Pass

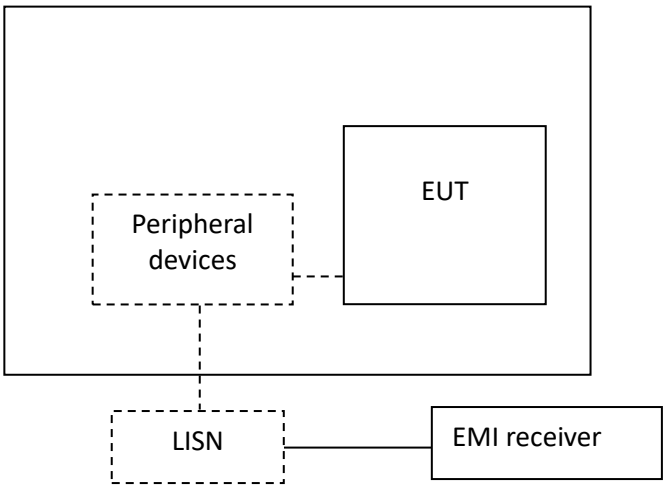
8 Power line conducted emission

Test result: **Pass**

8.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	QP	AV
0.15-0.5	66 to 56*	56 to 46 *
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

8.2 Test Configuration



8.3 Measurement Procedure

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

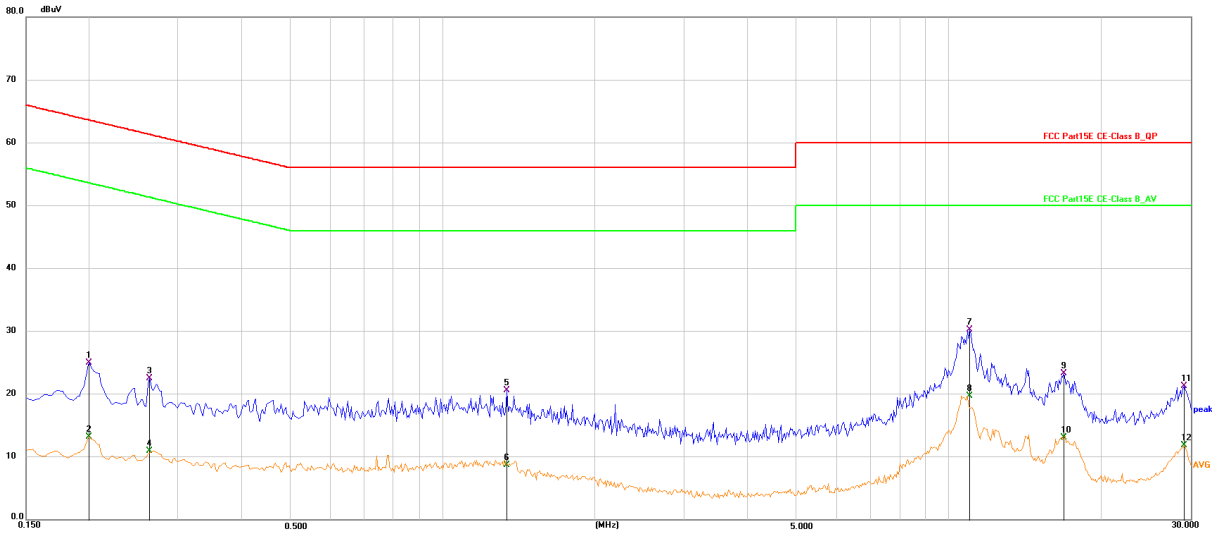
Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

8.4 Test Results of Power line conducted emission

Test Curve:

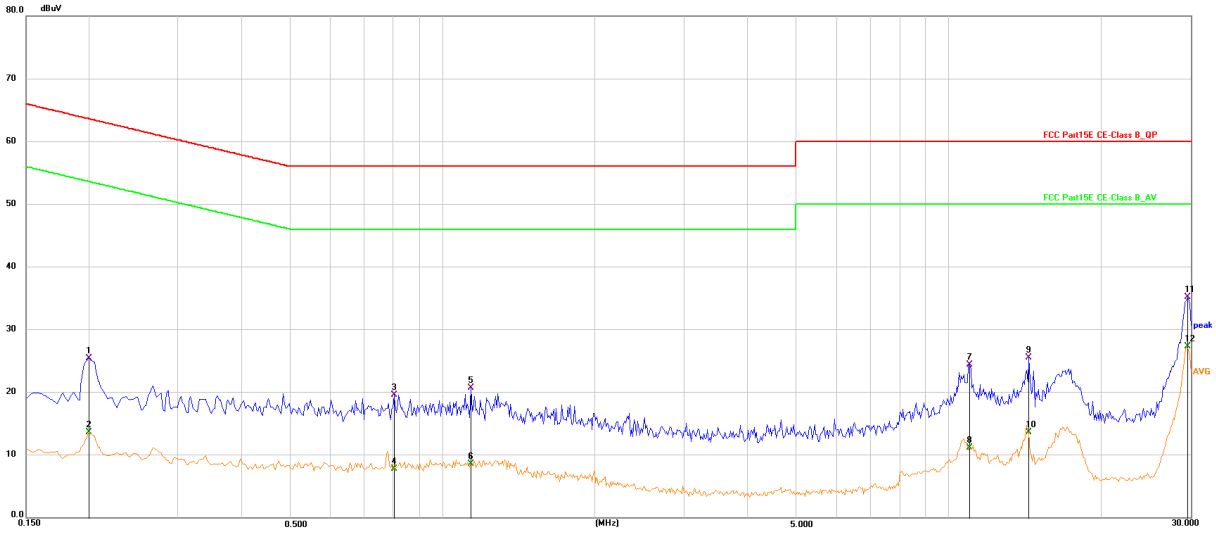
L Line



Test Data:

Frequency (MHz)	Quasi-peak			Average		
	Level dB(μV)	Limit dB(μV)	Margin (dB)	Level dB(μV)	Limit dB(μV)	Margin (dB)
0.1995	24.99	63.63	38.64	13.16	53.63	40.47
0.2625	22.50	61.35	38.85	10.99	51.35	40.36
1.3425	20.62	56.00	35.38	8.65	46.00	37.35
11.0084	30.20	60.00	29.80	19.66	50.00	30.34
16.8810	23.27	60.00	36.73	13.12	50.00	36.88
29.2110	21.23	60.00	38.77	11.79	50.00	38.21

N Line



Test Data:

Frequency (MHz)	Quasi-peak			Average		
	Level dB(μV)	Limit dB(μV)	Margin (dB)	Level dB(μV)	Limit dB(μV)	Margin (dB)
0.1995	25.45	63.63	38.18	13.62	53.63	40.01
0.8024	19.56	56.00	36.44	7.79	46.00	38.21
1.1354	20.75	56.00	35.25	8.62	46.00	37.38
11.0175	24.41	60.00	35.59	11.17	50.00	38.83
14.3700	25.56	60.00	34.44	13.59	50.00	36.41
29.5844	35.19	60.00	24.81	27.27	50.00	22.73

Remark: 1. Correct Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.
2. Level = Original Receiver Reading + Correct Factor
3. Margin = Limit - Level

9 Antenna requirement

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 sufficient to comply with the provisions of this section.

Result:
EUT uses permanently attached antenna to the intentional radiator, so it can comply with the provisions of this section.

********** END **********