FCC/ISED RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Rugged Smart Phone

ISSUED TO
Trimble Europe BV

Meerheide, 45 Eersel 5521 NETHERLANDS

Report No.:	BL-EC18B0415-604
EUT Name:	Rugged Smart Phone
Model Name:	TDC600/ MobileMapper60
Brand Name:	Trimble/ Spectra Geospatial
Test Standard:	47 CFR Part 15 Subpart E
	RSS-Gen (Issue 5, April 2018)
	RSS-247 (Issue 2, February 2017)
FCC ID:	NZI-11705900
ISED Number:	9288A-11705900
Test Conclusion:	Pass
Test Date:	Nov. 29, 2018 ~ Dec. 18, 2018
Date of Issue:	Dec. 29, 2018

Prepared by: Hu Chao
Hu Chao
(Engineer)
Date: Dec. 29, 2018

Approved by:
Wei Yanquan
(Chief Engineer)
Date: Dec. 29, 2018

NOTE: This test report of test results only related to testing samples, which can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen BALUN Technology Co., Ltd. Any objections should be raised within thirty days from the date of issue. To validate the report, please contact us.

Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055
TEL: +86-755-66850100, FAX: +86-755-61824271
Email: qc@baluntek.com
www.baluntek.com

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Dec. 26, 2018	Initial Issue
Rev. 02	Dec. 29, 2018	Revise the version of KDB 789033 on page 11.

TABLE OF CONTENTS

1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20℃ to 25℃
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

1.4 Announce

(1) The test report reference to the report template version v4.3.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	Trimble Europe BV
Address	Meerheide, 45 Eersel 5521 NETHERLANDS

2.2 Manufacturer

Manufacturer	Trimble Europe BV
Address	Meerheide, 45 Eersel 5521 NETHERLANDS

2.3 Factory

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Rugged Smart Phone
Model Name Under Test	TDC600
Series Model Name	TDC600/ MobileMapper60
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only different on model name, brand name and colors
Hardware Version	C601_V1.00_PCB
Software Version	TDC600.53.80.10
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	SJYEnergy
	Model No.	BA7800
	Serial No.	N/A
	Capacity	8000 mAh
	Rated Voltage	3.8 V
	Limited Voltage	4.35 V
Ancillary Equipment 2	Adapter	
	Brand Name	N/A
	Model No.	N/A
	Serial No.	N/A
	Rated Input	100-220 V~, 50/60 Hz, 0.7 A
	Rated Output	5 V⎓ 3 A
Ancillary Equipment 3	USB Cable	
	Length (Approx.)	1.0m

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 1/2/5/8 TD-SCDMA Band 34/39 4G Network FDD LTE Band 1/2/3/4/5/7/8/12/13/17/20/25/28 TDD LTE Band 38/39/40/41 Bluetooth 4.0 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11n(HT20) and 802.11ac NFC, GPS, GLONASS, BDS, Galileo

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	Band I: 5150 MHz to 5250 MHz, Band IV: 5725 MHz to 5850 MHz
Product Type	☐ Mobile ☒ Portable ☐ Fix Location
Modulation technology	OFDM
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Product Type	Indoor for IC standard Mobile and portable for FCC standard
Transfer Rate (Mbps) (Single RF path)	802.11n: up to 150 Mbps 802.11ac: up to VHT-MCS9
Channel Bandwidth	802.11n: 20 MHz 802.11ac: 20 MHz, 40 MHz, 80 MHz
Maximum Output Power	Band I: 13.21 dBm Band IV: 11.31 dBm
Antenna System (eg., MIMO, Smart Antenna)	N/A
Categorization as Correlated or Completely Uncorrelated	N/A
Antenna Type	PIFA Antenna
Antenna Gain	Band I: 5150 MHz to 5250 MHz: 2.05 dBi Band IV: 5725 MHz to 5850 MHz: 1.69 dBi
About the Product	The equipment is Rugged Smart Phone, intended for used with information technology equipment.

2.7 Additional Instructions

EUT Software Settings:

Mode	☒ Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

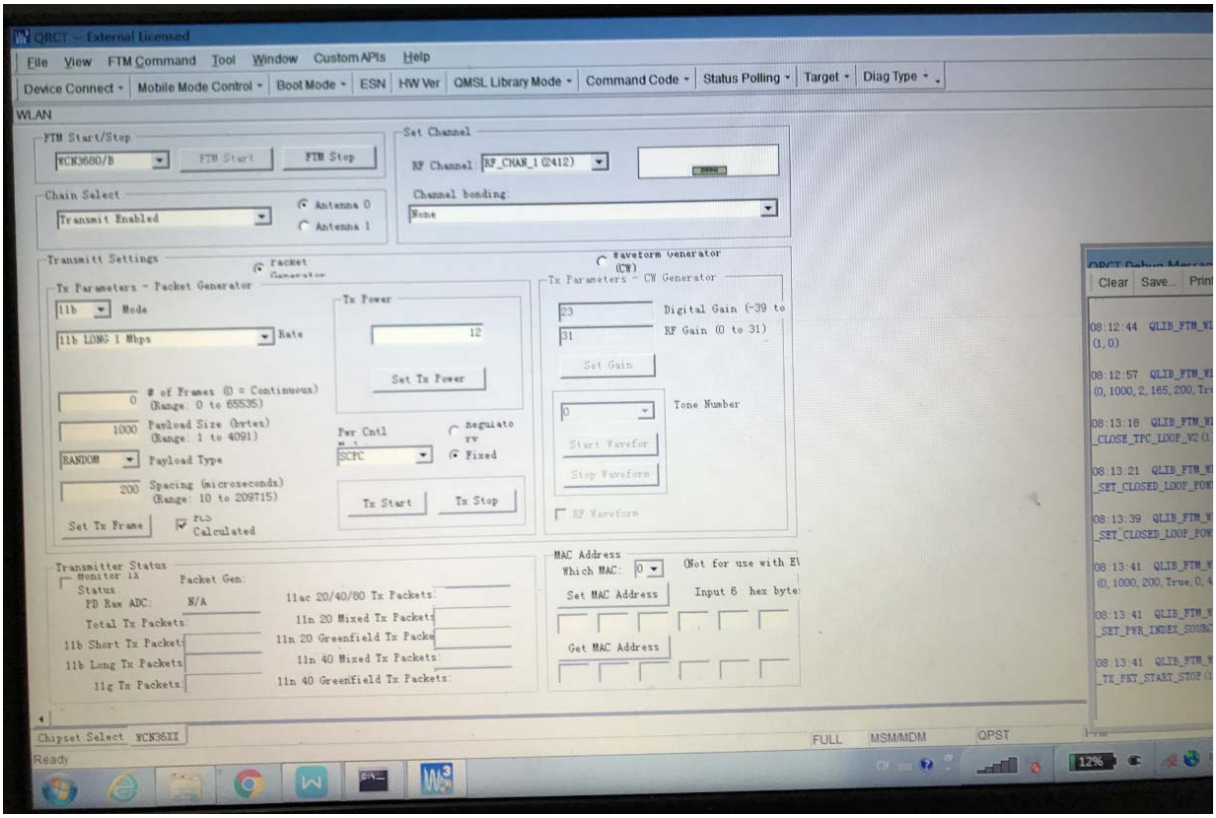
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software Version	QRCT

Band I (5150 - 5250 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11n (HT20)	CH36	5180	11
11n (HT20)	CH44	5220	
11n (HT20)	CH48	5240	
11ac (VHT20)	CH36	5180	13
11ac (VHT20)	CH44	5220	
11ac (VHT20)	CH48	5240	
11ac (VHT40)	CH38	5190	13
11ac (VHT40)	CH46	5230	
11ac (VHT80)	CH42	5210	13

Band IV (5725 - 5850 MHz) Power level setup in software			
Mode	Channel	Frequency (MHz)	Soft Set
11n (HT20)	CH149	5745	11
11n (HT20)	CH157	5785	
11n (HT20)	CH165	5825	
11ac (VHT20)	CH149	5745	13
11ac (VHT20)	CH157	5785	
11ac (VHT20)	CH165	5825	
11ac (VHT40)	CH151	5755	13
11ac (VHT40)	CH159	5795	
11ac (VHT80)	CH155	5775	13

Run Software



2.8 Channel List

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	**5180**	**38**	**5190**	**42**	**5210**
40	5200	**46**	**5230**	**155**	**5775**
44	**5220**	**151**	**5755**		
48	**5240**	**159**	**5795**		
149	**5745**				
153	5765				
157	**5785**				
161	5805				
165	**5825**				

Note: Until further notice, devices subject to this section shall not be capable of transmitting in the band 5600-5650 MHz. This restriction is for the protection of weather radars operating in this band.

The Lowest frequency, the middle frequency and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11n(HT20)/ac(VHT20)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
36	Low	5180	149	Low	5745
44	Mid	5220	157	Mid	5785
48	High	5240	165	High	5825

For 802.11ac(VHT40)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
38	Low	5190	151	Low	5755
46	High	5230	159	High	5795

For 802.11ac(VHT80)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
42	Low	5210	155	Low	5775

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Modulation Type	Band I Channel	Band IV Channel
RF Output Power	11n(20 MHz)	6.5	BPSK	48/44/36	165/157/149
	11ac(20 MHz)	6.5		48/44/36	165/157/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	MCS0		42	155
Emission Bandwidth & 99% Occupied Bandwidth	11n20	6	BPSK	48/44/36	165/157/149
	11ac(20 MHz)	6.5		48/44/36	165/157/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	VHT-MCS0		42	155
6 dB bandwidth	11n20	6	BPSK	N/A	165/157/149
	11ac(20 MHz)	6.5		N/A	165/157/149
	11ac(40 MHz)	13.5		N/A	159/151
	11ac(80 MHz)	MCS0		N/A	155
Power Spectral Density	11n20	6	BPSK	48/44/36	165/157/149
	11ac(20 MHz)	6.5		48/44/36	165/157/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	MCS0		42	155
Conducted Spurious Emission and Band Edge (Authorized-band)	11n20	6	BPSK	48/44/36	165/157/149
	11ac(20 MHz)	6.5		48/44/36	165/157/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	MCS0		42	155
Radiated Spurious Emissions	11n(20 MHz)	6	BPSK	48/44/36	165/157/149
	11ac(20 MHz)	6.5		48/44/36	165/157/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	MCS0		42	155
Band Edge (Restricted-band)	11n(20 MHz)	6	BPSK	48/36	165/149
	11ac(20 MHz)	6.5		48/36	165/149
	11ac(40 MHz)	13.5		46/38	159/151
	11ac(80 MHz)	MCS0		42	155
Frequency Stability	Unmodulated	N/A	N/A	44	157

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E (Oct. 01, 2017)	Unlicensed National Information Infrastructure Devices
2	KDB Publication 789033 D02v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	RSS-Gen (Issue 5, Apr. 2018)	General Requirements for Compliance of Radio Apparatus
4	RSS-247 (Issue 2, February 2017)	Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exemp Local Area Network (LE-LAN) Devices
5	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC Part No.	RSS Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	RSS-247, 6.2	--	Pass[Note1]
2	RF Output Power	15.407(a)	RSS-247, 6.2	ANNEX A.1	Pass
3	Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	RSS-247, 6.2	ANNEX A.2	Pass
4	6 dB bandwidth	15.407(e)	RSS-247, 6.2	ANNEX A.3	Pass
5	Power Spectral Density	15.407(a)	RSS-247, 6.2	ANNEX A.4	Pass
6	Conducted Emission	15.207	RSS-GEN, 8.8	ANNEX A.5	Pass
7	Conducted Spurious Emission and Band Edge (Authorized-band)	15.407(b) 15.209	RSS-247, 6.2	ANNEX A.6	Pass
8	Radiated Spurious Emissions and Band Edge (Restricted-band)	15.407(b)	RSS-247, 6.2	ANNEX A.7	Pass
9	Frequency Stability	15.407(g)	--	ANNEX A.8	Pass
10	Receiver Spurious Emissions	--	RSS-Gen, 7.1.2	--	N/A[Note2]

Note [1]: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note [2]: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	45% to 55%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22℃ to +25℃
	LT (Low Temperature)	-20℃
	HT (High Temperature)	+55℃
Working Voltage of the EUT	NV (Normal Voltage)	3.8 V
	LV (Low Voltage)	3.7 V
	HV (High Voltage)	4.35 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2018.06.15	2019.06.14
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2018.06.15	2019.06.14
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2018.11.07	2019.11.06
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13	2019.06.12
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13	2019.06.12
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2018.06.15	2019.06.14
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2018.06.15	2019.06.14
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2018.06.14	2019.06.13
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2018.06.26	2019.06.25
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2017.11.09	2019.11.08
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10
Test Antenna-Horn(15-26.5 GHz)	SCHWARZBECK	BBHA 9170	9170-305	2018.06.21	2019.06.20
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2017.01.06	2019.01.05
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2017.08.08	2019.08.07
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2018.06.15	2019.06.14
Power Amplifier	OPHIR RF	5225F	1037	2018.02.16	2019.02.15

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Power Amplifier	OPHIR RF	5273F	1016	2018.02.16	2019.02.15
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Amplifier	COM-MW	KL_LNA_18-40G-01	N/A	2018.06.26	2019.06.25
RF Cable 1	ROHDE&SCHWARZ	JUNFLON	APR0914004	2018.07.10	2019.10.09
RF Cable 2	Huber&suhner	RG_400_/U	N/A	2018.07.10	2019.10.09
RF Cable 3	Huber&suhner	RG_400_/U	N/A	2018.07.10	2019.10.09
RF Cable 4	Huber&suhner	SX_04172_B-60	N/A	2018.07.10	2019.10.09
RF Cable 5	COM-MW	RFJA360-2.92mm-J/J3M	N/A	2018.07.10	2019.10.09
Note: The calibration period on the Cable is three month.					

4.3 Measurement Uncertainty

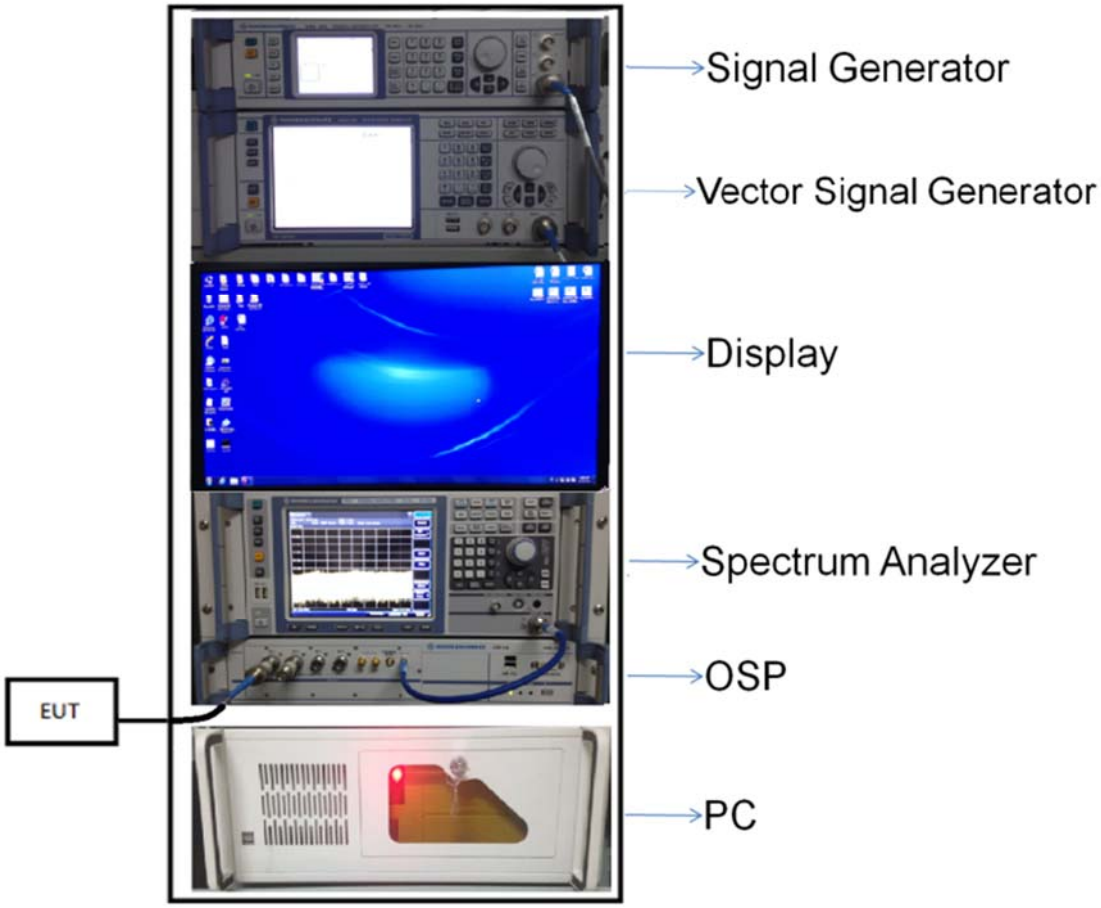
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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

Measurement	Value
Occupied Channel Bandwidth	±4%
RF output power, conducted	±1.4 dB
Power Spectral Density, conducted	±2.5 dB
Unwanted Emissions, conducted	±2.8 dB
All emissions, radiated	±5.4 dB
Temperature	±1°C
Humidity	±4%

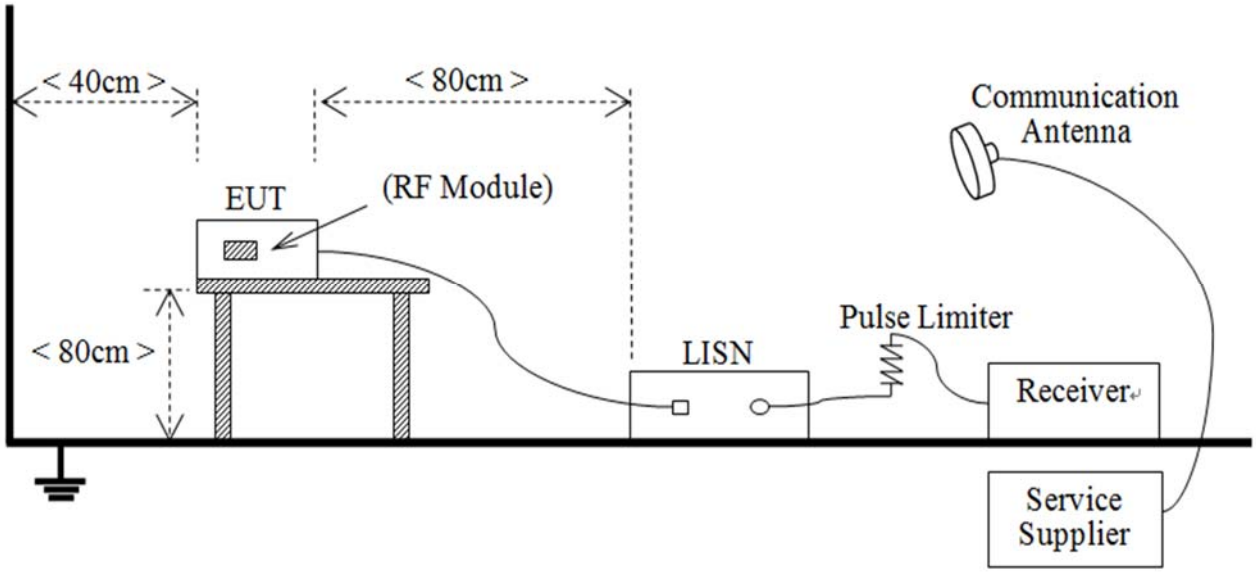
4.4 Description of Test Setup

4.4.1 For Antenna Port Test



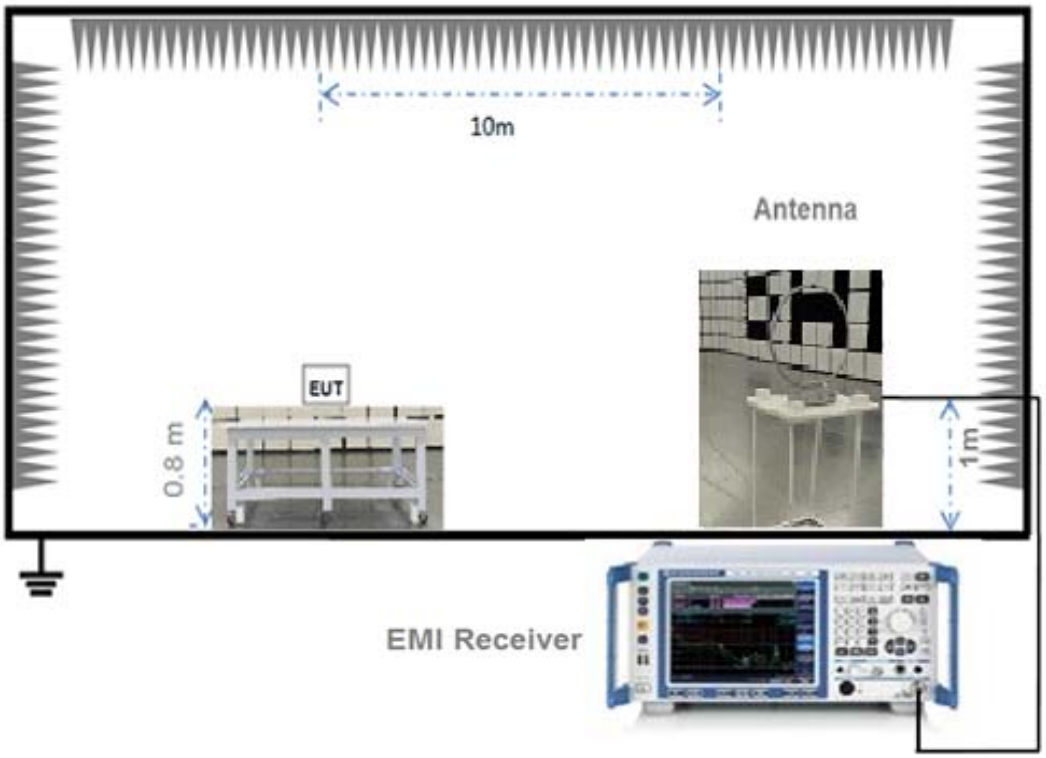
(Diagram 1)

4.4.2 For AC Power Supply Port Test



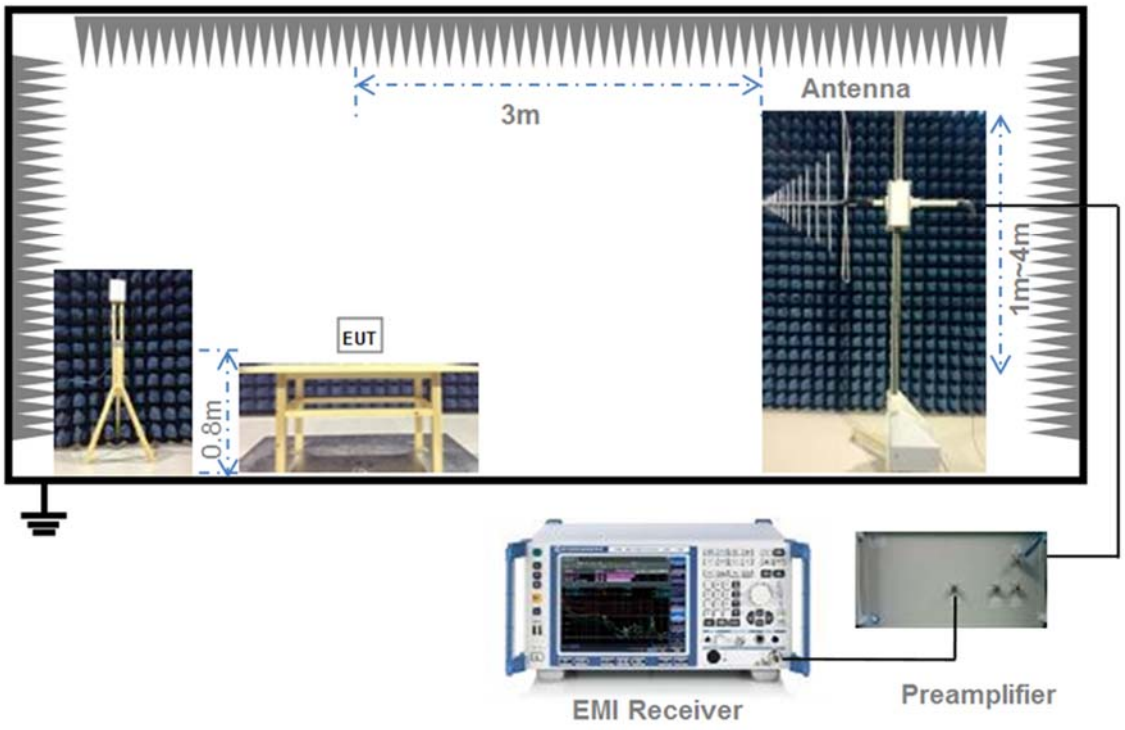
(Diagram 2)

4.4.3 For Radiated Test (Below 30 MHz)



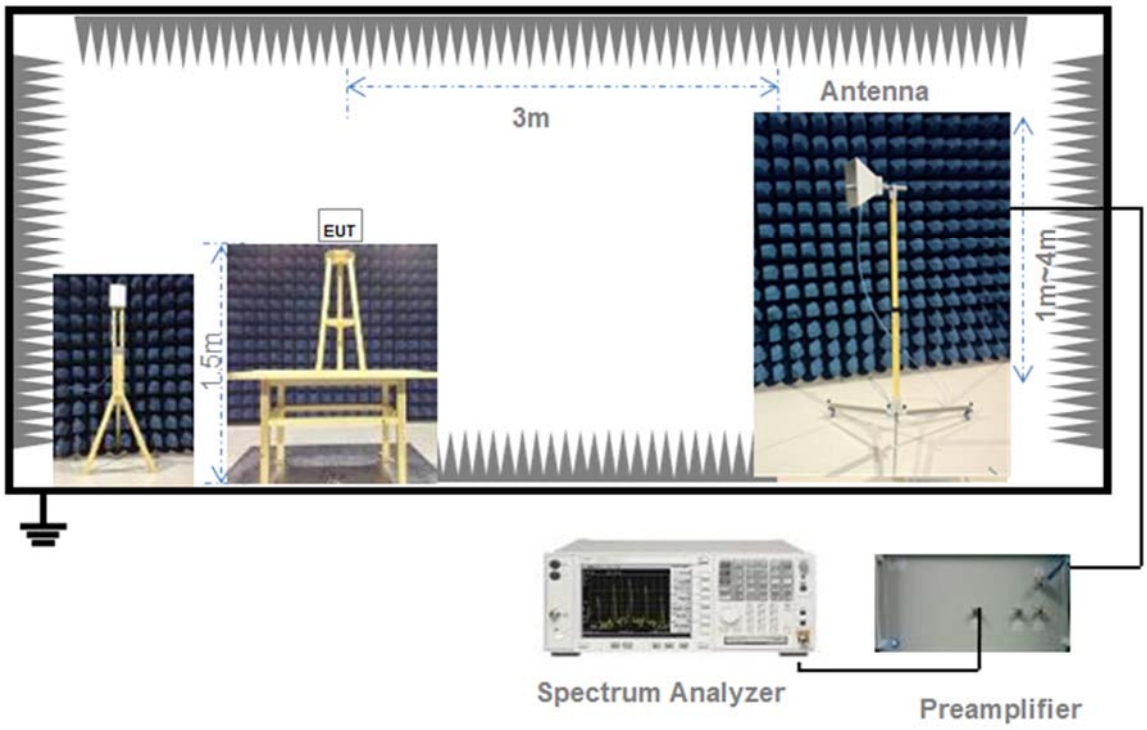
(Diagram 3)

4.4.4 For Radiated Test (30 MHz-1 GHz)



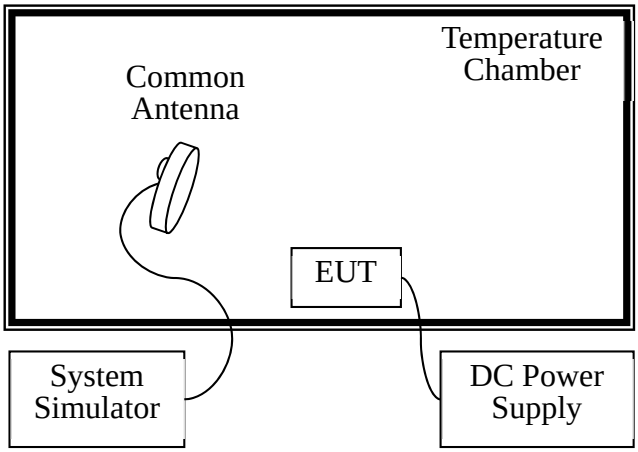
(Diagram 4)

4.4.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

4.4.6 For Frequency Stability Test



(Diagram 6)

5 TEST ITEMS

5.1 RF Output Power

5.1.1 Test Limit

FCC §15.407(a)

The maximum conducted output power should not exceed:

Frequency Band (MHz)	Limit
5150-5250	250 mW
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 26 dB emissions bandwidth in MHz.	

RSS-247, 6.2

The maximum conducted output power shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where “B” is the 99% emissions bandwidth in MHz.	

The maximum e.i.r.p. shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	200 mW or 10 dBm + 10log B, whichever is less.
5250-5350	1W or 17 dBm + 10log B, whichever is less.
5470-5725	1W or 17 dBm + 10log B, whichever is less.
5725-5850	N/A
Note: Where “B” is the 99% emissions bandwidth in MHz.	

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

The E.I.R.P used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Emission Bandwidth and 6 dB Bandwidth

5.2.1 Limit

FCC §15.407(a), RSS-247, 6.2

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

5.2.2 Test Setup

The test setup photo please refer to 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Emission bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.

2. Set VBW ≥ 3*RBW,

3. Detector = Peak.

4. Trace mode = Max hold.

5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

1. Set Span = 1.5 times to 5.0 times the OBW

2. Set RBW = 1% to 5% of the OBW.

3. Set VBW ≥ 3*RBW, Detector = Peak.

4. Trace mode = Max hold.

5. Use the 99% power bandwidth function of the instrument.

6 dB bandwidth

1. Set RBW = 100 kHz, VBW = 300 kHz.

2. Detector = Peak.Trace mode = Max hold.

3. Allow the trace to stabilize.

4. 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.

5.2.4 Test Result

Please refer to ANNEX A.2 and ANNEX A.3.

5.3 Power Spectral density (PSD)

5.3.1 Limit

FCC §15.407(a)

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	11 dBm/MHz
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

RSS-247, 6.2

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

The e.i.r.p. spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	10 dBm/MHz
5250-5350	N/A
5470-5725	N/A
5725-5850	N/A

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

1. Set RBW = 510 kHz/1 MHz, VBW ≥ 3*RBW, Sweep time = Auto, Detector = RMS.
2. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak marker function to determine the maximum amplitude level.
4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

5.3.4 Test Result

Please refer to ANNEX A.4.

5.4 Conducted Emission

5.4.1 Limit

FCC §15.207, RSS-GEN, 8.8

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 within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

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

5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

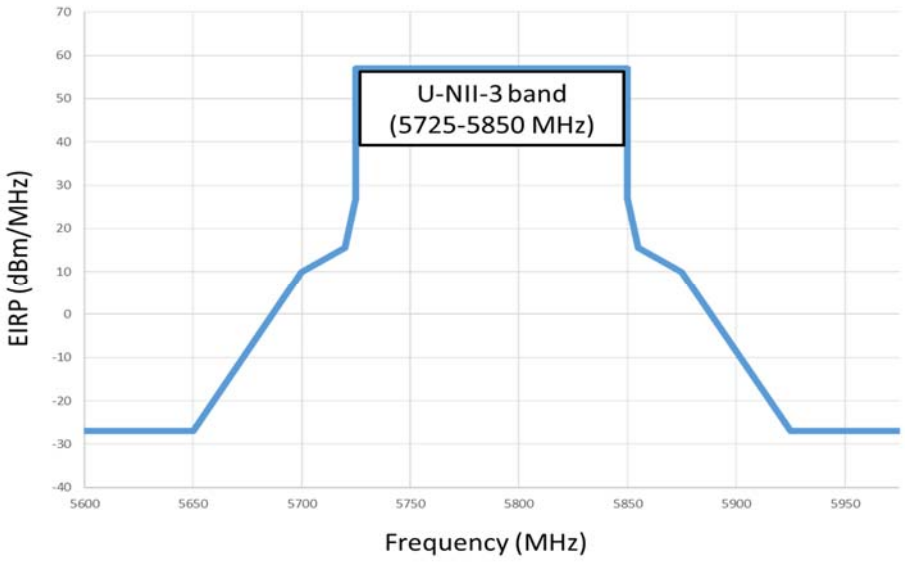
5.4.4 Test Result

Please refer to ANNEX A.5.

5.5 Conducted Spurious Emission and Band Edge (Authorized-band)

5.5.1 Limit

FCC §15.407(b)

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. 

RSS-247, 6.2

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm, However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz.
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm. And any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of 10 dBm/MHz, The device shall be labelled “for indoor use only.”
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	5715 -5725 MHz: e.i.r.p. -17 dBm 5850 -5860 MHz: e.i.r.p. -17 dBm Other un-restricted band: e.i.r.p .-27 dBm

5.5.2 Test Setup

See section 4.4.2 (Diagram 2) for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize

5.5.4 Test Result

Please refer to ANNEX A.6.

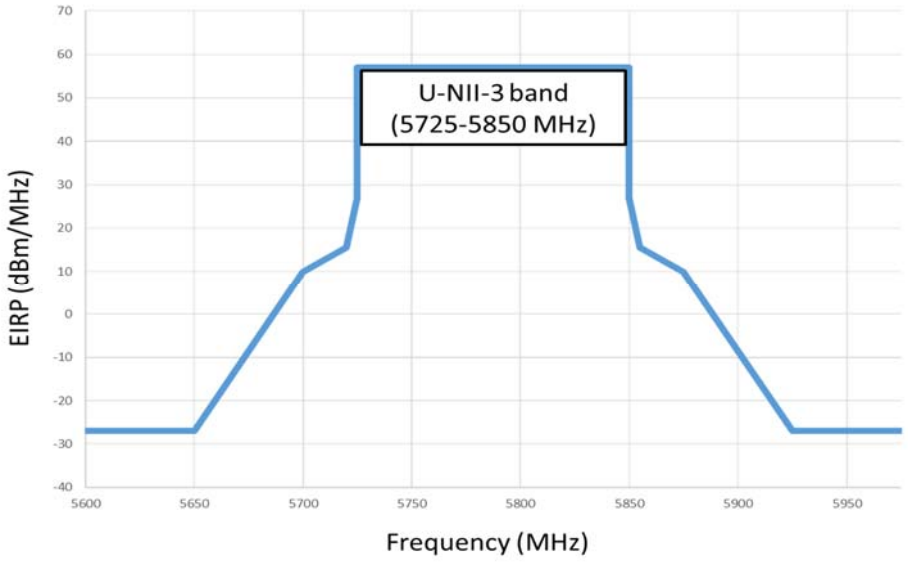
5.6 Radiated Spurious Emissions and Band Edge (Restricted-band)

5.6.1 Limit

FCC §15.209 & 15.407(b), RSS-247, 6.2

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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

Note [1]: The Limit for radiated test was performed according to FCC Part 15C
Note [2]: The tighter limit applies at the band edge.

Un-restricted band emissions	
Out Operating Band (MHz)	Limit
5150 - 5250	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5250 - 5350	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5470 - 5725	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. 

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength.

5.6.2 Test Setup

The section 4.4.3-4.4.5 (Diagram 3 - Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$E = EIRP – 20\log D + 104.8$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

f) Compare the resultant electric field strength level to the applicable limit.

g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

a) RBW = as specified in Table 1.

b) VBW ≥ 3 x RBW.

c) Detector = Peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then the following procedure shall be used:

a) The EUT shall be configured to operate at the maximum achievable duty cycle.

b) Measure the duty cycle, x, of the transmitter output signal as described in section 6.0.

c) RBW = 1 MHz (unless otherwise specified).

d) VBW ≥ 3 x RBW.

e) Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

f) Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.

2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

g) Sweep time = auto.

h) Perform a trace average of at least 100 traces.

i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is 10 log(1/x), where x is the duty cycle.

2) If linear voltage averaging mode was used in step f), then the applicable correction factor is 20 log(1/x), where x is the duty cycle.

3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.6.4 Test Result

Please refer to ANNEX A.7 and Please refer to ANNEX A.9

5.7 Frequency Stability

5.7.1 Limit

FCC §15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

5.7.2 Test Setup

The section 4.4.6 (Diagram 6) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

The EUT is installed in an environment test chamber with external power source.
Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.
A sufficient stabilization period at each temperatures is used prior to each frequency measurement.
When temperature is stabled, measure the frequency stability.
The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.
Change setting of chamber and external power source to complete all conditions.

5.7.4 Test Result

Please refer to ANNEX A.8.

ANNEX A TEST RESULT

A.1 RF Output Power

Note [1]: For FCC standard, if transmitting antennas of directional gain greater than 6 dBi are used, all band maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note [2]: For IC standard, the band IV (5725 - 5850 MHz) maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Data

Conducted Power

Band I (5150 - 5250 MHz)						
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	FCC Limit (mW)	Verdict
11n (HT20)	CH36	5180	10.61	11.51	250	Pass
11n (HT20)	CH44	5220	10.61	11.51	250	Pass
11n (HT20)	CH48	5240	11.26	13.37	250	Pass
11ac (VHT20)	CH36	5180	10.81	12.05	250	Pass
11ac (VHT20)	CH44	5220	10.76	11.91	250	Pass
11ac (VHT20)	CH48	5240	11.42	13.87	250	Pass
11ac (VHT40)	CH38	5190	12.60	18.20	250	Pass
11ac (VHT40)	CH46	5230	13.21	20.94	250	Pass
11ac (VHT80)	CH42	5210	10.95	12.45	250	Pass

Band IV (5725 - 5850 MHz)						
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power Total (mW)	FCC/IC Limit (W)	Verdict
11n (HT20)	CH149	5745	10.72	11.80	1	Pass
11n (HT20)	CH157	5785	10.72	11.80	1	Pass
11n (HT20)	CH165	5825	10.81	12.05	1	Pass
11ac (VHT20)	CH149	5745	10.84	12.13	1	Pass
11ac (VHT20)	CH157	5785	10.97	12.50	1	Pass
11ac (VHT20)	CH165	5825	11.02	12.65	1	Pass
11ac (VHT40)	CH151	5755	10.89	12.27	1	Pass
11ac (VHT40)	CH159	5795	11.31	13.52	1	Pass
11ac (VHT80)	CH155	5775	11.12	12.94	1	Pass

EIRP Power

Mode	Channel	Frequency (MHz)	EIRP Power Total (dBm)	EIRP Power Total (mW)	IC Limit (mW)	Verdict
11n (HT20)	CH36	5180	12.66	18.45	176	Pass
11n (HT20)	CH44	5220	12.66	18.45	176	Pass
11n (HT20)	CH48	5240	13.31	21.43	176	Pass
11ac (VHT20)	CH36	5180	12.86	19.32	176	Pass
11ac (VHT20)	CH44	5220	12.81	19.10	176	Pass
11ac (VHT20)	CH48	5240	13.47	22.23	176	Pass
11ac (VHT40)	CH38	5190	14.65	29.17	200	Pass
11ac (VHT40)	CH46	5230	15.26	33.57	200	Pass
11ac (VHT80)	CH42	5210	13.00	19.95	200	Pass

A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-EC18B0415-604 Data Part 1.pdf”.

Test Data

Band I (5150 - 5250 MHz)				
Mode	Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11n20	CH36	5180	21.76	16.85
11n20	CH44	5220	21.60	16.79
11n20	CH48	5240	21.88	16.90
11ac (VHT20)	CH36	5180	22.00	17.89
11ac (VHT20)	CH44	5220	21.72	17.89
11ac (VHT20)	CH48	5240	21.88	17.89
11ac (VHT40)	CH38	5190	43.60	36.47
11ac (VHT40)	CH46	5230	43.40	36.47
11ac (VHT80)	CH42	5210	85.20	74.56

Band IV (5725 - 5850 MHz)				
Mode	Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	99% Bandwidth (MHz)
11n20	CH149	5745	21.60	16.79
11n20	CH157	5785	21.88	16.85
11n20	CH165	5825	21.92	16.79
11ac (VHT20)	CH149	5745	21.80	17.83
11ac (VHT20)	CH157	5785	21.88	17.83
11ac (VHT20)	CH165	5825	21.92	17.83
11ac (VHT40)	CH151	5755	43.10	36.35
11ac (VHT40)	CH159	5795	43.70	36.47
11ac (VHT80)	CH155	5775	84.60	75.02

A.3 6 dB Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-EC18B0415-604 Data Part 2.pdf”.

Test Data

Band IV (5725 - 5850 MHz)					
Mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)	Verdict
11n20	CH149	5745	16.67	500	Pass
11n20	CH157	5785	16.42	500	Pass
11n20	CH165	5825	16.52	500	Pass
11ac (VHT20)	CH149	5745	17.87	500	Pass
11ac (VHT20)	CH157	5785	17.87	500	Pass
11ac (VHT20)	CH165	5825	17.87	500	Pass
11ac (VHT40)	CH151	5755	35.77	500	Pass
11ac (VHT40)	CH159	5795	35.17	500	Pass
11ac (VHT80)	CH155	5775	75.22	500	Pass

A.4 Power Spectral Density

Note: Test plots please refer to the document “Annex No.: BL-EC18B0415-604 Data Part 3.pdf”.

Test Data

Band I (5150 - 5250 MHz)					
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	FCC Limit (dBm/MHz)	Verdict
11n20	CH36	5180	-9.78	11	Pass
11n20	CH44	5220	-7.75	11	Pass
11n20	CH48	5240	-8.90	11	Pass
11ac (VHT20)	CH36	5180	-7.11	11	Pass
11ac (VHT20)	CH44	5220	-6.15	11	Pass
11ac (VHT20)	CH48	5240	-7.10	11	Pass
11ac (VHT40)	CH38	5190	-10.10	11	Pass
11ac (VHT40)	CH46	5230	-13.63	11	Pass
11ac (VHT80)	CH42	5210	-14.42	11	Pass

Band IV (5725 - 5850 MHz)					
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	FCC/IC Limit (dBm/500 kHz)	Verdict
11n20	CH149	5745	-8.70	30	Pass
11n20	CH157	5785	-9.49	30	Pass
11n20	CH165	5825	-9.96	30	Pass
11ac (VHT20)	CH149	5745	-3.92	30	Pass
11ac (VHT20)	CH157	5785	-3.75	30	Pass
11ac (VHT20)	CH165	5825	-3.59	30	Pass
11ac (VHT40)	CH151	5755	-8.28	30	Pass
11ac (VHT40)	CH159	5795	-9.58	30	Pass
11ac (VHT80)	CH155	5775	-20.48	30	Pass

EIRP PSD

Band I (5150 - 5250 MHz)					
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	IC Limit (dBm/MHz)	Verdict
11n20	CH36	5180	-7.73	10	Pass
11n20	CH44	5220	-5.70	10	Pass
11n20	CH48	5240	-6.85	10	Pass
11ac (VHT20)	CH36	5180	-5.06	10	Pass
11ac (VHT20)	CH44	5220	-4.10	10	Pass
11ac (VHT20)	CH48	5240	-5.05	10	Pass
11ac (VHT40)	CH38	5190	-8.05	10	Pass
11ac (VHT40)	CH46	5230	-11.58	10	Pass
11ac (VHT80)	CH42	5210	-12.37	10	Pass

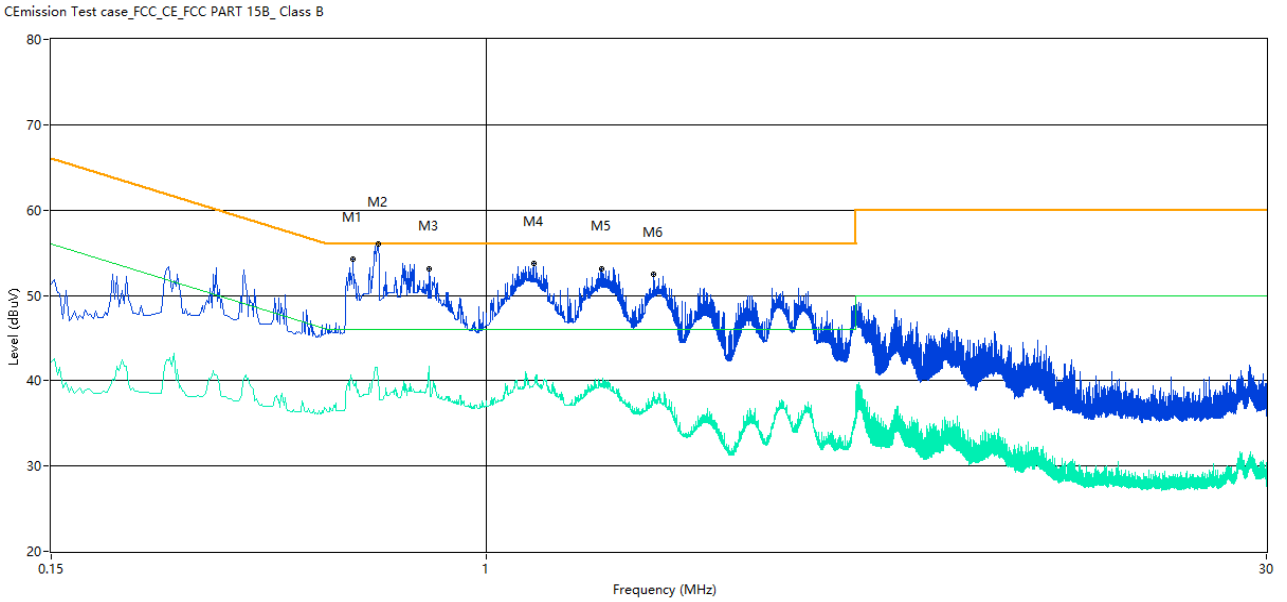
A.5 Conducted Emissions

Note [1]: The EUT is working in the Normal link mode.

Note [2]: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

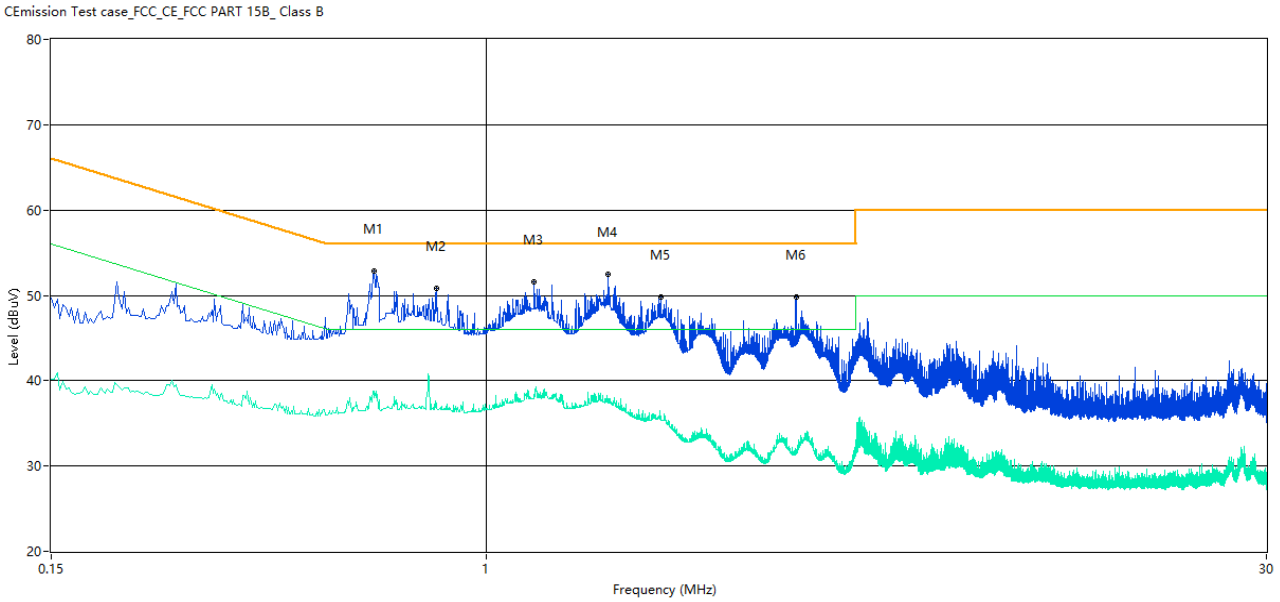
Test Data and Plots

PHASE L



Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.560	52.75	47.96	37.49	10.54	56.0	46.0	8.04	L Line	Pass
0.624	55.04	51.51	36.72	10.53	56.0	46.0	4.49	L Line	Pass
0.778	51.82	45.42	33.89	10.54	56.0	46.0	10.58	L Line	Pass
1.228	51.79	46.44	33.51	10.55	56.0	46.0	9.56	L Line	Pass
1.652	52.12	47.22	35.44	10.55	56.0	46.0	8.78	L Line	Pass
2.076	50.92	46.10	35.38	10.55	56.0	46.0	9.90	L Line	Pass

PHASE N



Frequency (MHz)	Peak Level (dBuV)	Q-peak Level (dBuV)	Average Level (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.614	51.34	48.33	32.96	10.53	56.0	46.0	7.67	N Line	Pass
0.804	47.71	43.89	27.98	10.54	56.0	46.0	12.11	N Line	Pass
1.230	48.77	43.35	28.57	10.55	56.0	46.0	12.65	N Line	Pass
1.700	47.66	43.67	29.84	10.55	56.0	46.0	12.33	N Line	Pass
2.138	46.93	42.45	30.06	10.55	56.0	46.0	13.55	N Line	Pass
3.866	49.03	39.08	27.38	10.58	56.0	46.0	16.92	N Line	Pass

A.6 Conducted Spurious Emission and Band Edge (Authorized-band)

Note: Test plots please refer to the document “Annex No.: BL-EC18B0415-604 Data Part 4.pdf”.

Test Band	Mode	Channel	Verdict
Band I	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11ac(VHT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11ac(VHT40)	Low	Pass
		High	Pass
	802.11ac(VHT80)	Middle	Pass
Band IV	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11ac(VHT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11ac(VHT40)	Low	Pass
		High	Pass
	802.11ac(VHT80)	Middle	Pass

A.7 Radiated Spurious Emissions and Band Edge (Restricted-band)

Test Data

Cabinet Radiated spurious emission test

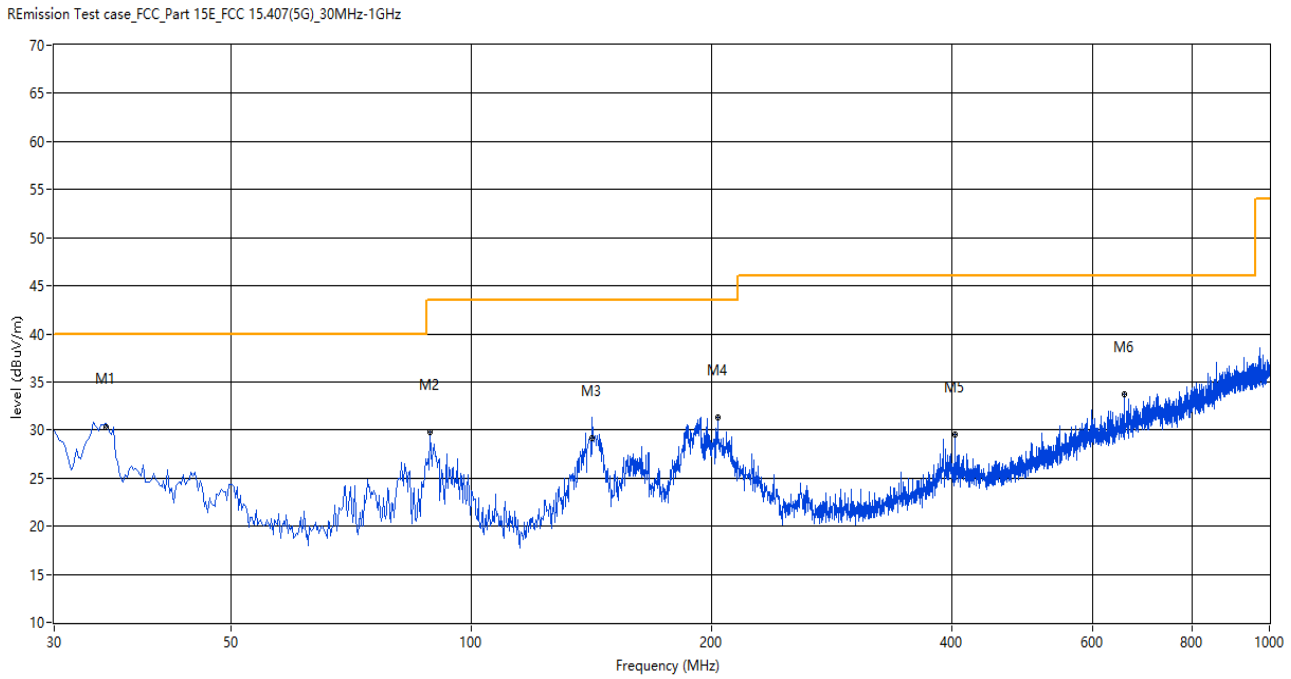
Note [1]: The symbol of "--" in the table which means not application.

Note [2]: For the test data above 1 GHz，According the ANSI C63.4, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note [3]: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

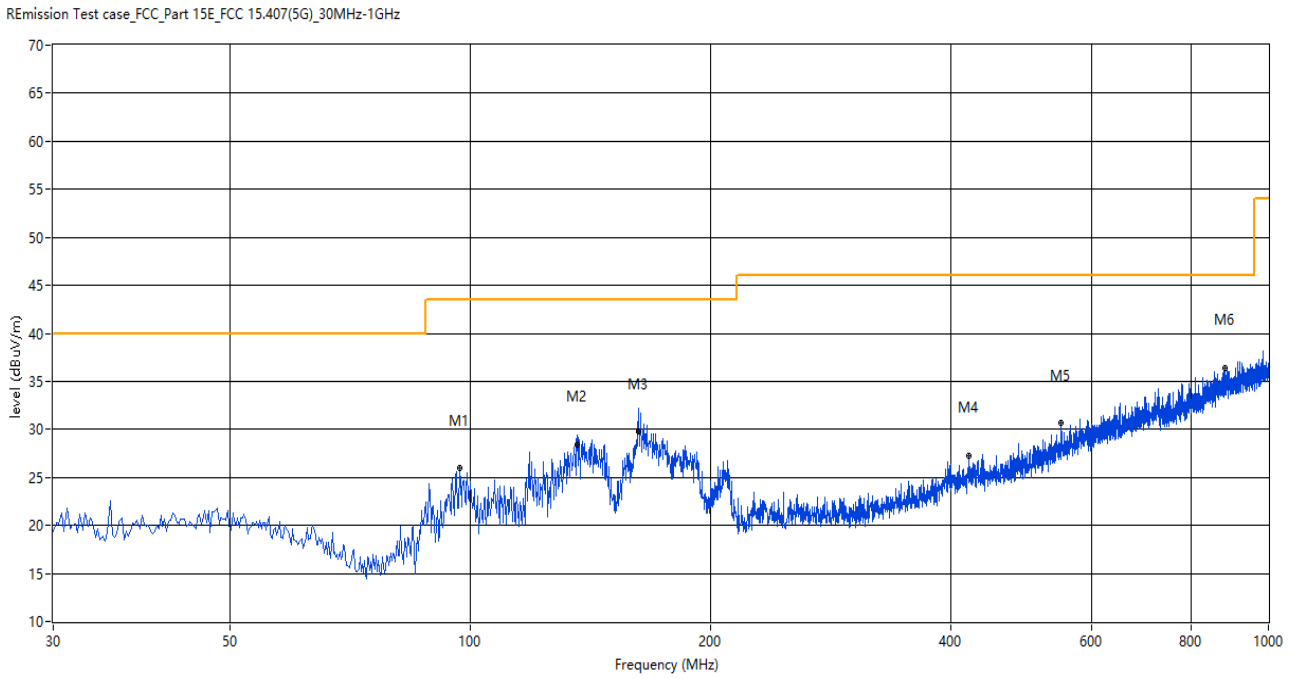
Note [4]: The EUT is working in the Normal link mode below 1 GHz.

30 MHz to 1 GHz, ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
34.849	30.63	30.28	--	-28.39	--	40.0	--	9.72	58.80	100	Vertical	Pass
88.670	29.82	--	--	-30.74	--	43.5	--	13.68	266.30	100	Vertical	Pass
141.765	31.26	29.13	--	-32.08	--	43.5	--	14.37	358.90	100	Vertical	Pass
203.587	31.26	--	--	-28.58	--	43.5	--	12.24	293.50	100	Vertical	Pass
403.357	29.55	--	--	-24.05	--	46.0	--	16.45	48.10	100	Vertical	Pass
657.918	33.75	--	--	-18.02	--	46.0	--	12.25	64.20	100	Vertical	Pass

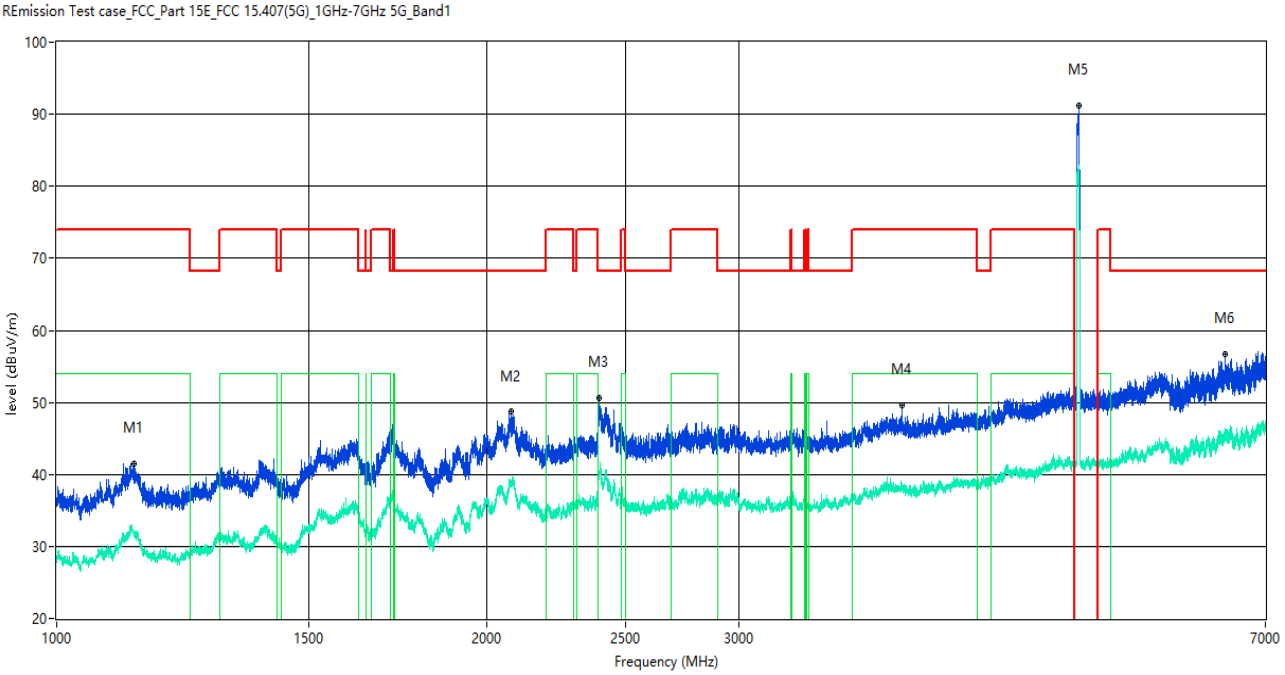
30 MHz to 1 GHz, ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
96.913	25.96	--	--	-29.16	--	43.5	--	17.54	0.00	100	Horizontal	Pass
135.946	29.47	28.41	--	-31.93	--	43.5	--	15.09	42.40	100	Horizontal	Pass
162.372	32.24	29.84	--	-31.44	--	43.5	--	13.66	359.70	100	Horizontal	Pass
421.782	27.28	--	--	-23.40	--	46.0	--	18.72	289.30	100	Horizontal	Pass
550.275	30.73	--	--	-20.57	--	46.0	--	15.27	275.70	100	Horizontal	Pass
882.659	36.41	--	--	-13.81	--	46.0	--	9.59	136.30	100	Horizontal	Pass

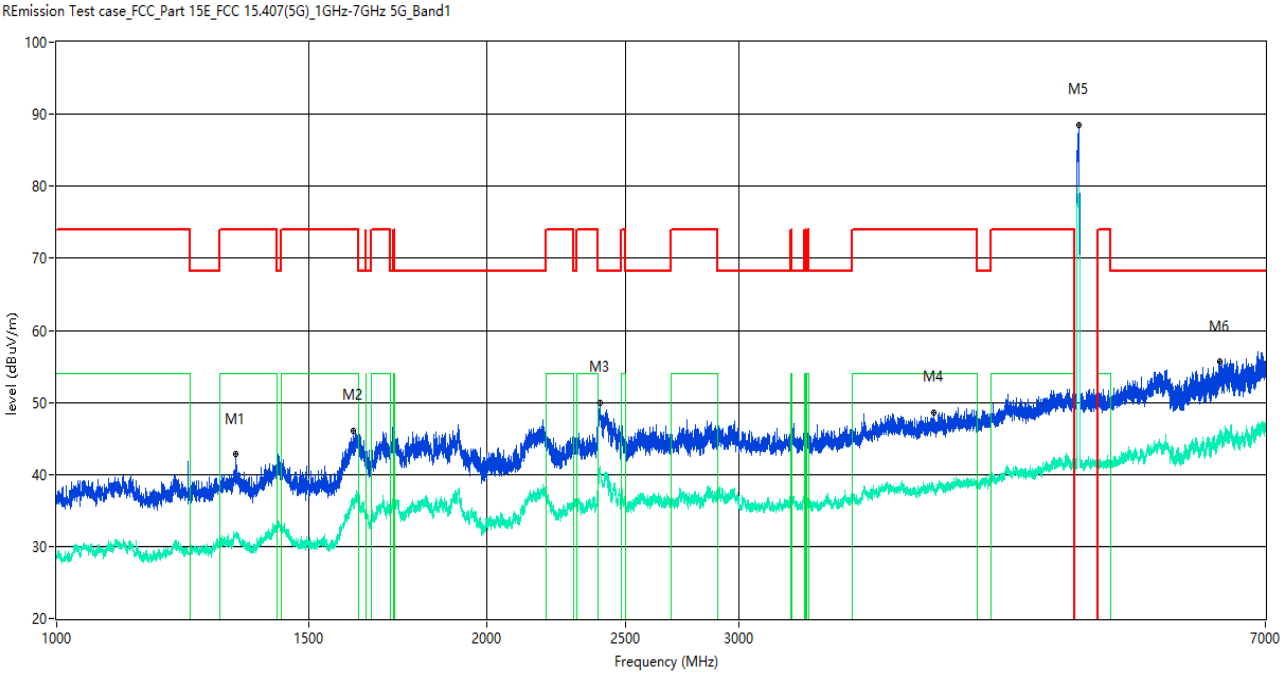
Note: The spurious from 18G-40G is noise only, do not show on the report.

1 GHz to 7 GHz, Band I 11n20 Low channel ANT V



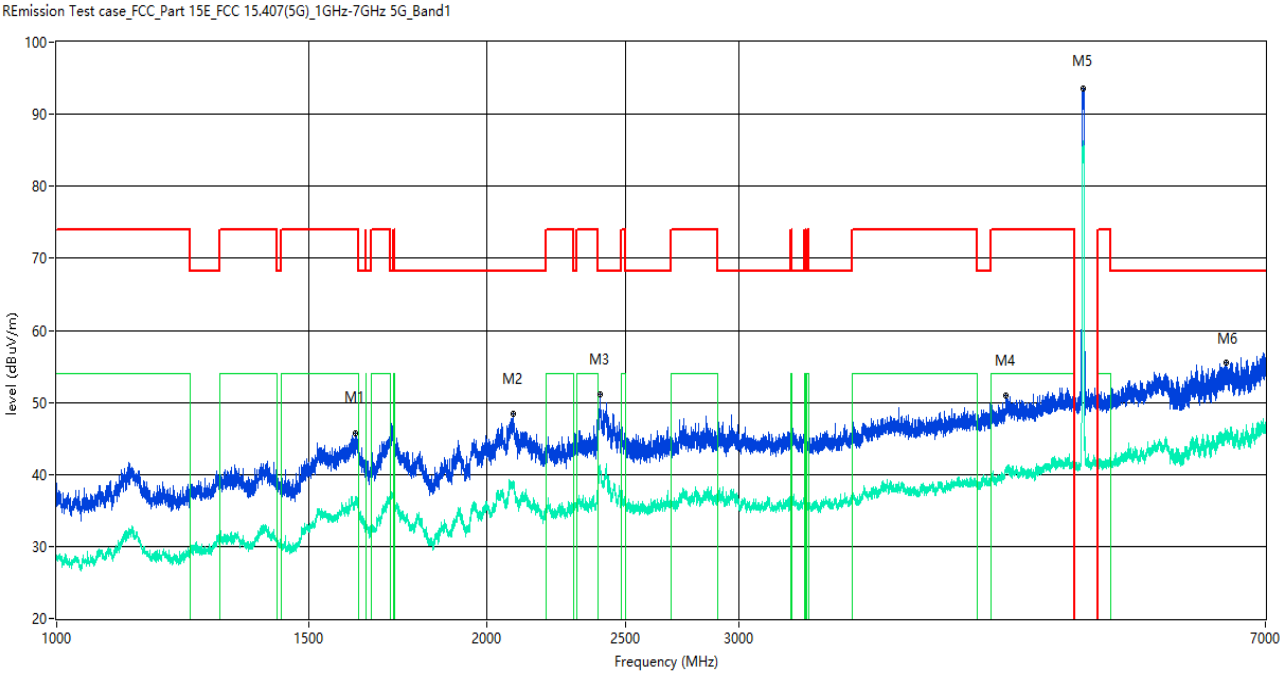
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1131.734	41.44	--	31.6	-11.96	74.0	--	54.0	22.40	241.00	150	Vertical	Pass
2079.865	48.75	--	38.8	-8.19	68.2	--	--	19.45	256.00	150	Vertical	Pass
2396.075	50.59	--	40.5	0.06	68.2	--	--	17.61	159.00	150	Vertical	Pass
3899.138	49.54	--	38.4	-2.40	74.0	--	54.0	15.60	170.00	150	Vertical	Pass
5184.477	91.20	--	82.9	0.36	--	--	--	--	4.00	150	Vertical	Pass
6563.805	56.72	--	45.9	8.42	68.2	--	--	11.48	125.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11n20 Low channel ANT H



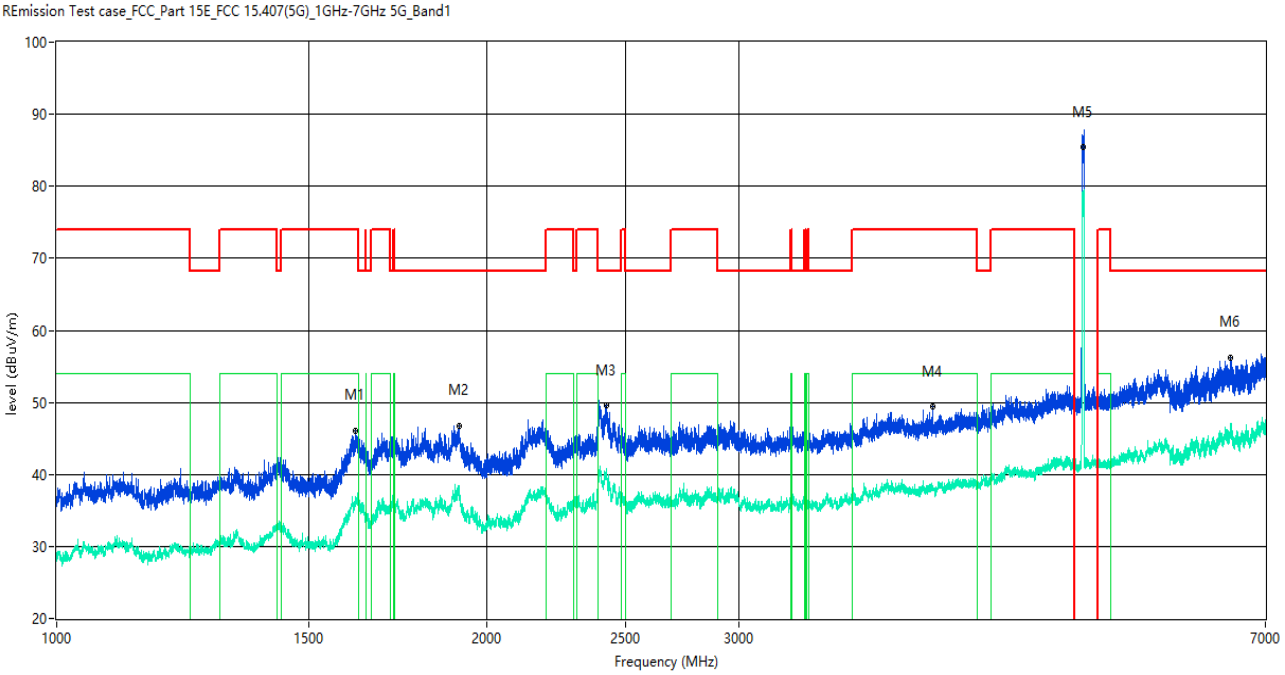
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1333.208	42.75	--	31.5	-11.75	74.0	--	54.0	22.50	6.00	150	Horizontal	Pass
1611.674	45.97	--	35.9	-12.22	74.0	--	54.0	18.10	360.00	150	Horizontal	Pass
2397.325	49.93	--	40.7	-0.01	68.2	--	--	18.27	266.00	150	Horizontal	Pass
4104.237	48.58	--	37.7	-2.45	74.0	--	54.0	16.30	308.00	150	Horizontal	Pass
5184.852	88.52	--	79.3	0.35	--	--	--	--	218.00	150	Horizontal	Pass
6507.187	55.66	--	46.0	8.01	68.2	--	--	12.54	71.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11n20 Middle channel ANT V



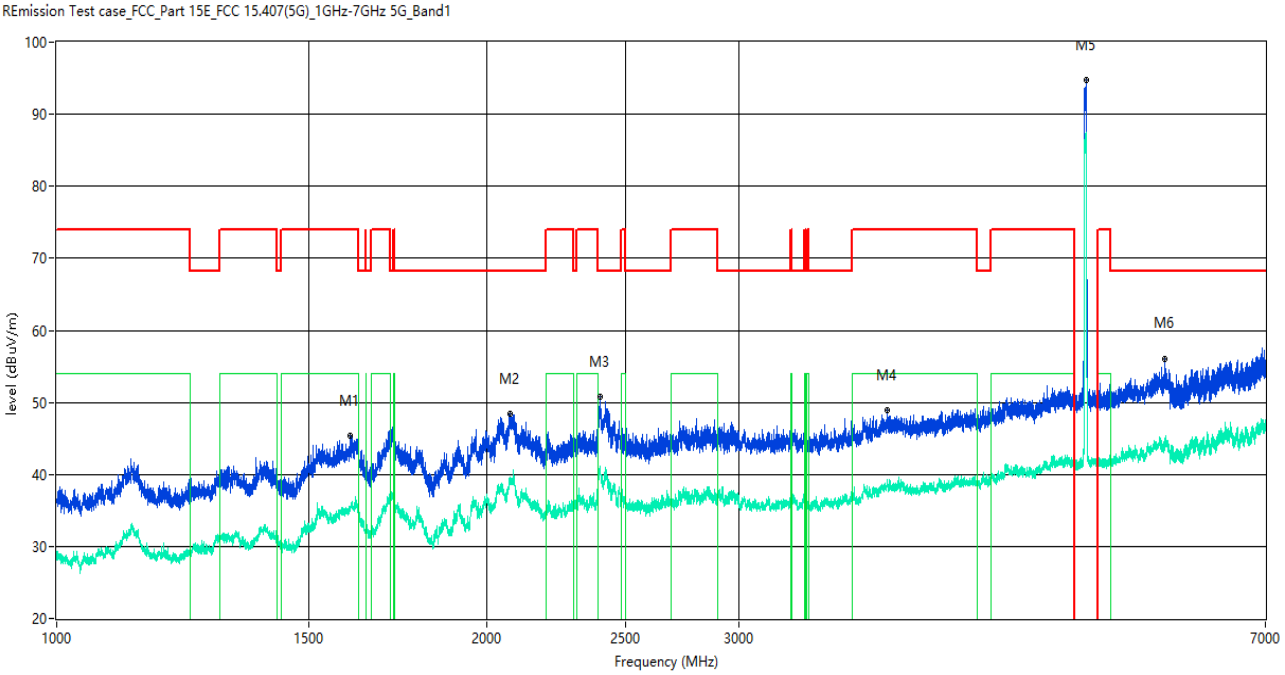
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1617.173	45.74	--	36.3	-11.86	74.0	--	54.0	17.70	36.00	150	Vertical	Pass
2083.865	48.48	--	38.4	-8.06	68.2	--	--	19.72	91.00	150	Vertical	Pass
2399.825	51.10	--	41.1	-0.08	68.2	--	--	17.10	105.00	150	Vertical	Pass
4608.924	50.88	--	40.6	0.42	74.0	--	54.0	13.40	104.00	150	Vertical	Pass
5223.847	93.58	--	85.6	0.64	--	--	--	--	212.00	150	Vertical	Pass
6575.178	55.51	--	45.2	7.83	68.2	--	--	12.69	251.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11n20 Middle channel ANT H



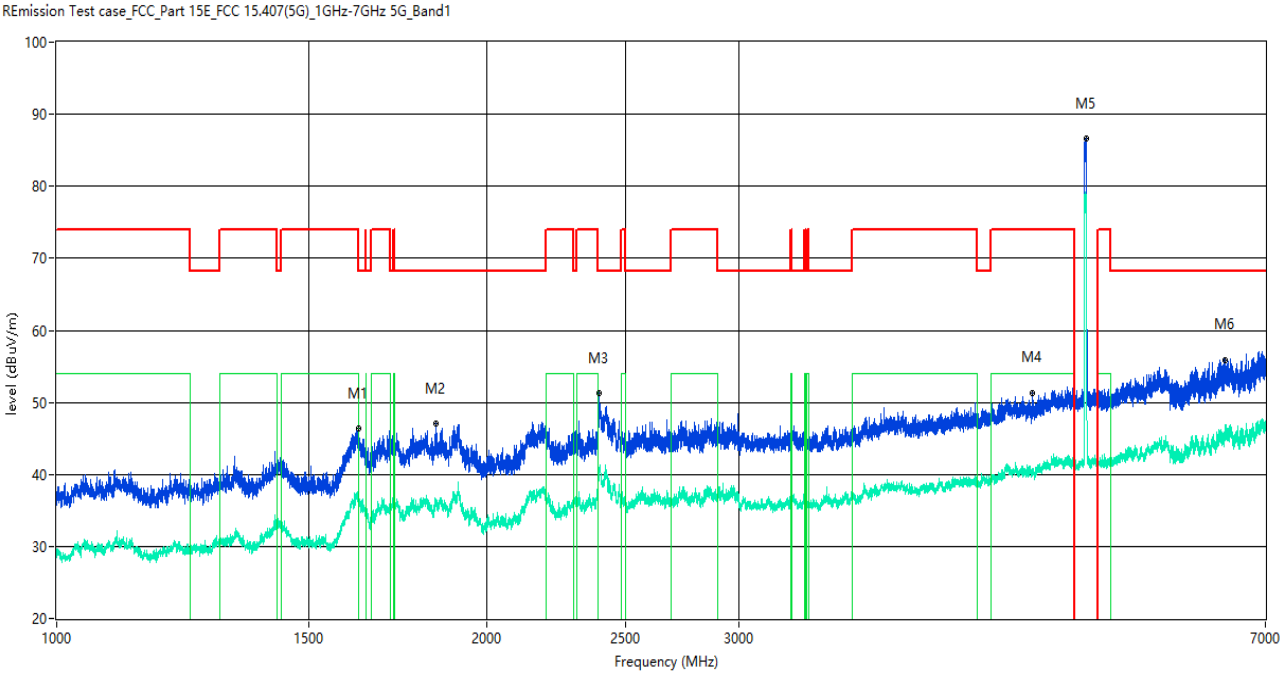
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1617.923	46.04	--	36.2	-11.74	74.0	--	54.0	17.80	30.00	150	Horizontal	Pass
1911.636	46.81	--	38.4	-9.17	68.2	--	--	21.39	299.00	150	Horizontal	Pass
2421.322	49.60	--	40.4	-0.81	68.2	--	--	18.60	217.00	150	Horizontal	Pass
4097.113	49.38	--	38.3	-2.37	74.0	--	54.0	15.70	9.00	150	Horizontal	Pass
5218.223	84.75	--	75.9	0.65	--	--	--	--	101.00	150	Horizontal	Pass
6612.423	56.18	--	45.7	7.57	68.2	--	--	12.02	198.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11n20 High channel ANT V



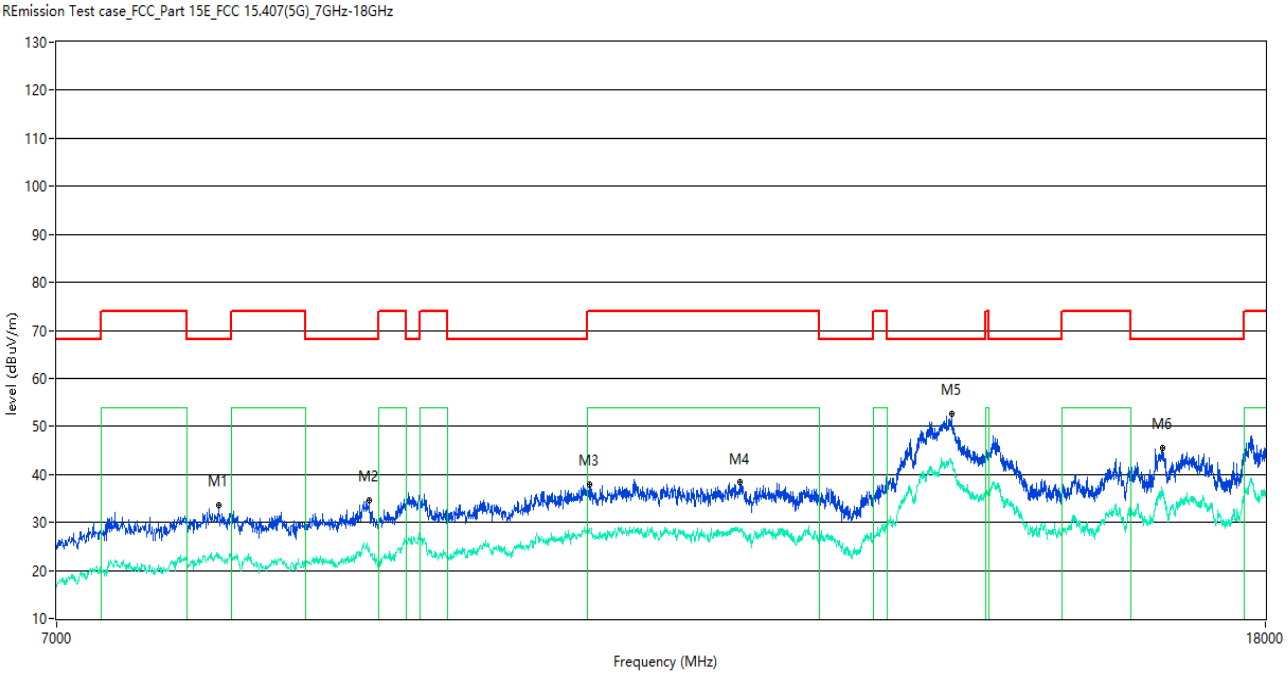
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1604.174	45.29	--	35.3	-12.22	74.0	--	54.0	18.70	105.00	150	Vertical	Pass
2075.616	48.37	--	39.6	-7.85	68.2	--	--	19.83	321.00	150	Vertical	Pass
2397.825	50.71	--	40.9	-0.03	68.2	--	--	17.49	88.00	150	Vertical	Pass
3808.774	48.96	--	38.7	-2.61	74.0	--	54.0	15.30	185.00	150	Vertical	Pass
5244.469	94.83	--	87.4	0.96	--	--	--	--	291.00	150	Vertical	Pass
5956.880	55.97	--	44.5	4.33	68.2	--	--	12.23	266.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11n20 High channel ANT H



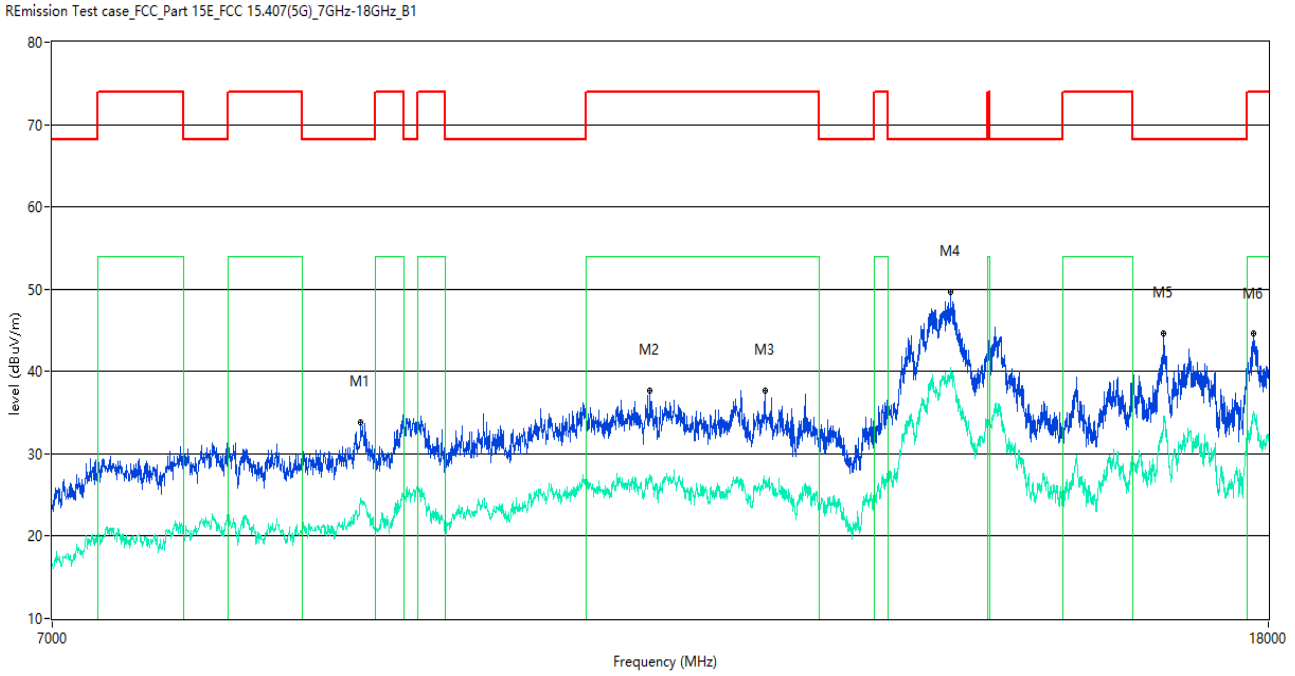
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1625.172	46.31	--	37.5	-12.02	74.0	--	54.0	16.50	194.00	150	Horizontal	Pass
1842.895	47.12	--	36.5	-9.83	68.2	--	--	21.08	227.00	150	Horizontal	Pass
2396.075	51.25	--	40.8	0.06	68.2	--	--	16.95	301.00	150	Horizontal	Pass
4812.523	51.24	--	40.1	-0.27	74.0	--	54.0	13.90	313.00	150	Horizontal	Pass
5247.469	86.63	--	78.8	1.01	--	--	--	--	213.00	150	Horizontal	Pass
6562.055	55.79	--	46.0	8.34	68.2	--	--	12.41	24.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11n20 Low channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7945.764	33.59	--	23.4	-36.96	68.2	--	--	34.61	126.00	150	Vertical	Pass
8935.516	34.58	--	24.6	-32.85	68.2	--	--	33.62	147.00	150	Vertical	Pass
10615.346	37.88	--	28.4	-25.81	74.0	--	54.0	25.60	185.00	150	Vertical	Pass
11943.264	38.45	--	28.5	-24.16	74.0	--	54.0	25.50	256.00	150	Vertical	Pass
14087.728	52.60	--	42.8	-6.71	68.2	--	--	15.60	78.00	150	Vertical	Pass
16611.597	45.59	--	36.6	-10.29	68.2	--	--	22.61	191.00	150	Vertical	Pass

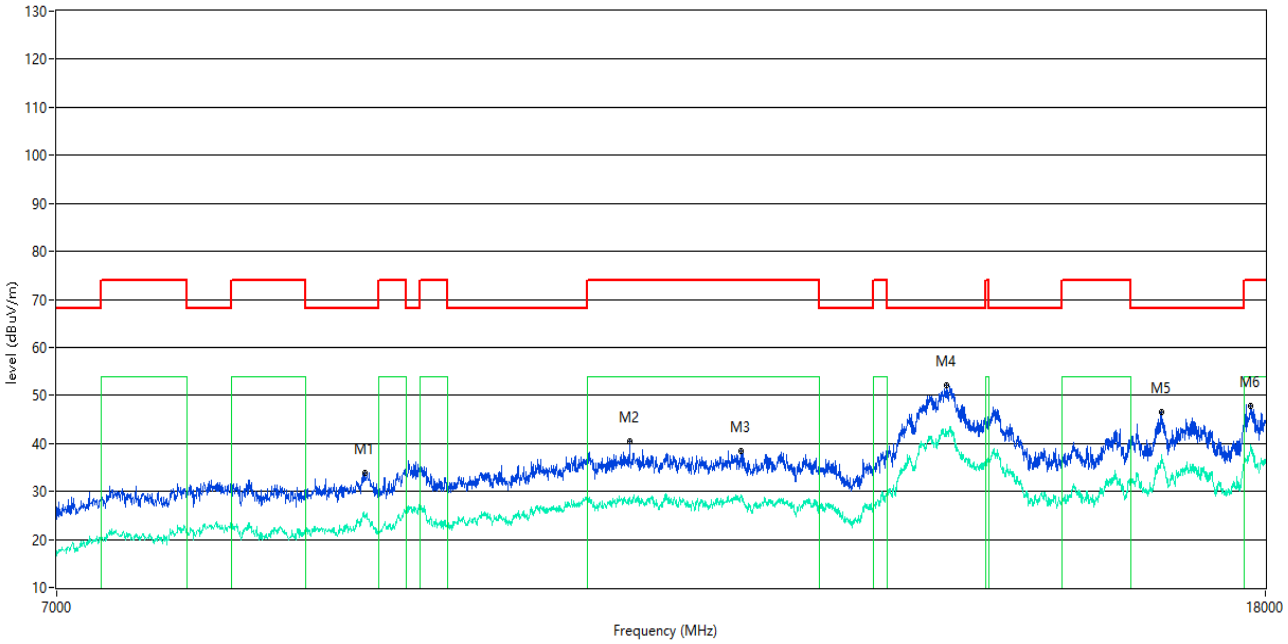
7 GHz to 18 GHz, Band I 11n20 Low channel ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8897.026	33.83	--	24.4	-32.04	68.2	--	--	34.37	60.00	150	Horizontal	Pass
11134.966	37.62	--	27.4	-25.49	74.0	--	54.0	26.60	53.00	150	Horizontal	Pass
12176.956	37.68	--	26.5	-24.56	74.0	--	54.0	27.50	11.00	150	Horizontal	Pass
14062.984	49.66	--	39.7	-6.42	68.2	--	--	18.54	208.00	150	Horizontal	Pass
16597.851	44.61	--	34.5	-10.41	68.2	--	--	23.59	329.00	150	Horizontal	Pass
17788.303	44.69	--	35.1	-8.07	74.0	--	54.0	18.90	167.00	150	Horizontal	Pass

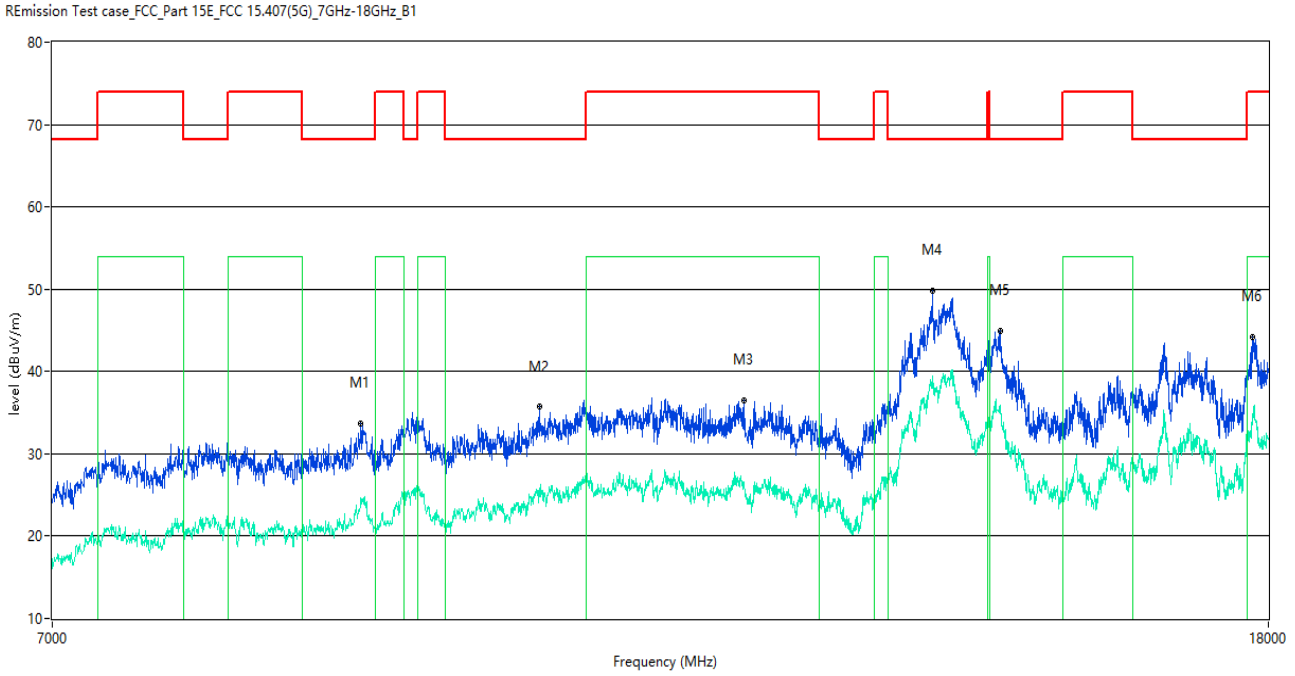
7 GHz to 18 GHz, Band I 11n20 Middle channel ANT V

REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz



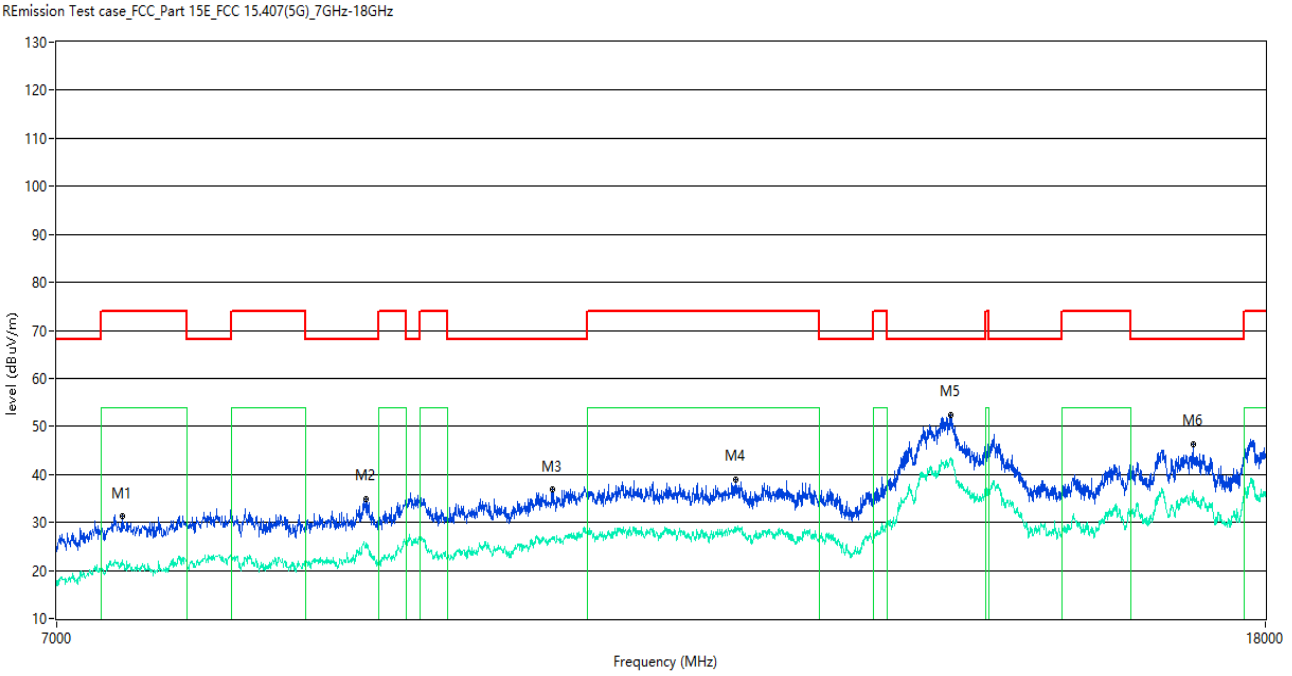
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8908.023	33.87	--	24.9	-32.42	68.2	--	--	34.33	58.00	150	Vertical	Pass
10950.762	40.36	--	28.8	-24.82	74.0	--	54.0	25.20	109.00	150	Vertical	Pass
11948.763	38.52	--	29.1	-24.08	74.0	--	54.0	24.90	355.00	150	Vertical	Pass
14032.742	52.07	--	42.3	-6.76	68.2	--	--	16.13	168.00	150	Vertical	Pass
16597.851	46.65	--	37.0	-10.41	68.2	--	--	21.55	214.00	150	Vertical	Pass
17788.303	47.81	--	38.5	-8.07	74.0	--	54.0	15.50	185.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11n20 Middle channel ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8897.026	33.74	--	24.7	-32.04	68.2	--	--	34.46	234.00	100	Horizontal	Pass
10216.696	35.71	--	25.8	-28.01	68.2	--	--	32.49	25.00	100	Horizontal	Pass
11976.256	36.56	--	26.6	-24.83	74.0	--	54.0	27.40	210.00	100	Horizontal	Pass
13862.284	49.79	--	38.8	-9.44	68.2	--	--	18.41	160.00	100	Horizontal	Pass
14612.847	44.92	--	35.8	-11.14	68.2	--	--	23.28	3.00	100	Horizontal	Pass
17785.554	44.15	--	34.2	-8.18	74.0	--	54.0	19.80	312.00	100	Horizontal	Pass

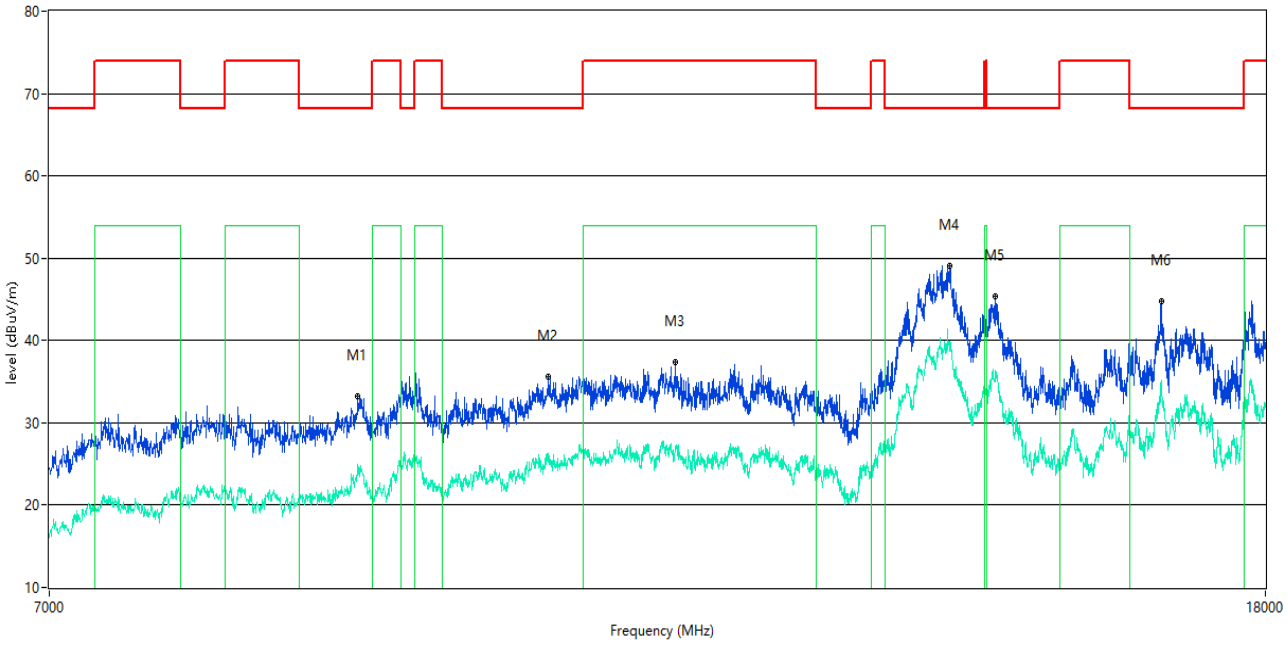
7 GHz to 18 GHz, Band I 11n20 High channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7365.659	31.20	--	21.9	-37.13	74.0	--	54.0	32.10	177.00	150	Vertical	Pass
8916.271	34.82	--	25.6	-32.29	68.2	--	--	33.38	36.00	150	Vertical	Pass
10310.172	36.98	--	26.4	-27.99	68.2	--	--	31.22	157.00	150	Vertical	Pass
11896.526	38.97	--	29.0	-24.30	74.0	--	54.0	25.00	9.00	150	Vertical	Pass
14073.982	52.25	--	43.1	-6.53	68.2	--	--	15.95	161.00	150	Vertical	Pass
17010.247	46.26	--	36.6	-10.60	68.2	--	--	21.94	327.00	150	Vertical	Pass

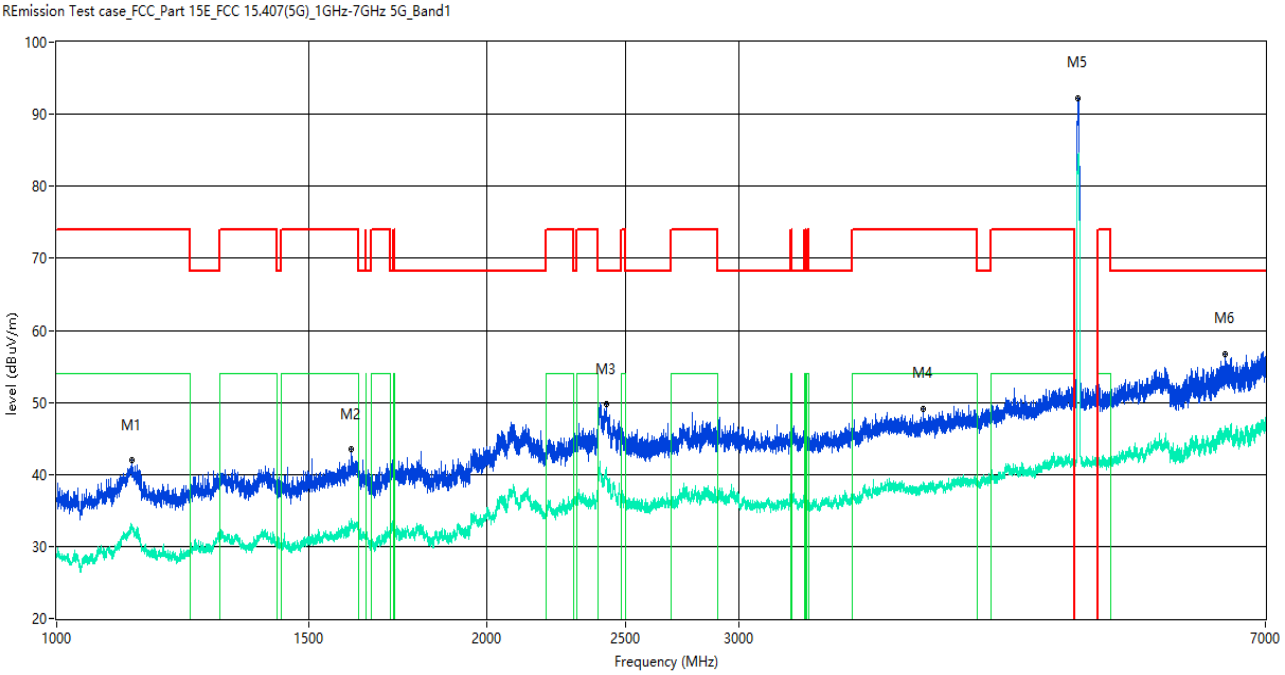
7 GHz to 18 GHz, Band I 11n20 High channel ANT H

REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz_B1



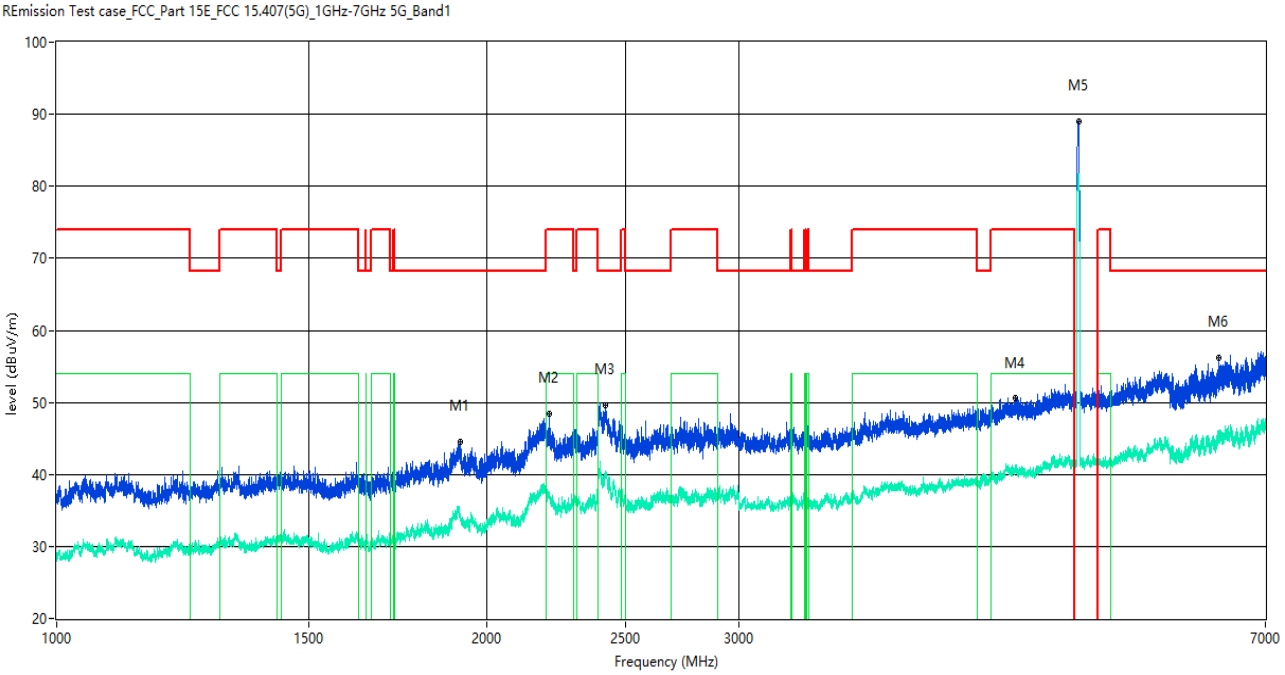
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8897.026	33.18	--	25.0	-32.04	68.2	--	--	35.02	196.00	150	Horizontal	Pass
10312.922	35.66	--	25.9	-27.78	68.2	--	--	32.54	128.00	150	Horizontal	Pass
11382.404	37.38	--	27.2	-24.66	74.0	--	54.0	26.80	112.00	150	Horizontal	Pass
14087.728	49.02	--	39.9	-6.71	68.2	--	--	19.18	233.00	150	Horizontal	Pass
14599.100	45.41	--	35.3	-11.21	68.2	--	--	22.79	123.00	150	Horizontal	Pass
16600.600	44.77	--	35.1	-10.26	68.2	--	--	23.43	180.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac20 Low channel ANT V



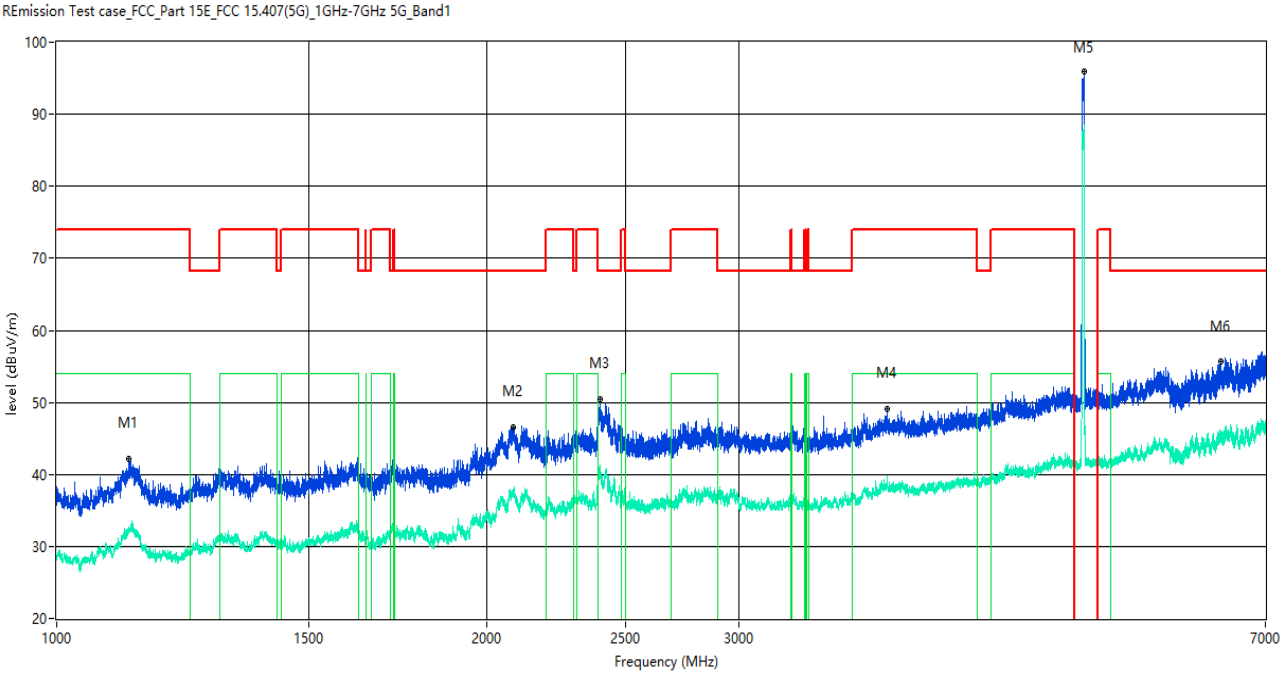
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1128.984	41.95	--	32.4	-11.73	74.0	--	54.0	21.60	6.00	150	Vertical	Pass
1606.424	43.59	--	33.7	-11.95	74.0	--	54.0	20.30	189.00	150	Vertical	Pass
2423.572	49.84	--	40.9	-0.89	68.2	--	--	18.36	288.00	150	Vertical	Pass
4033.746	49.05	--	38.3	-2.62	74.0	--	54.0	15.70	227.00	150	Vertical	Pass
5174.353	92.21	--	84.1	0.42	--	--	--	--	119.00	150	Vertical	Pass
6563.680	56.67	--	46.2	8.44	68.2	--	--	11.53	135.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac20 Low channel ANT H



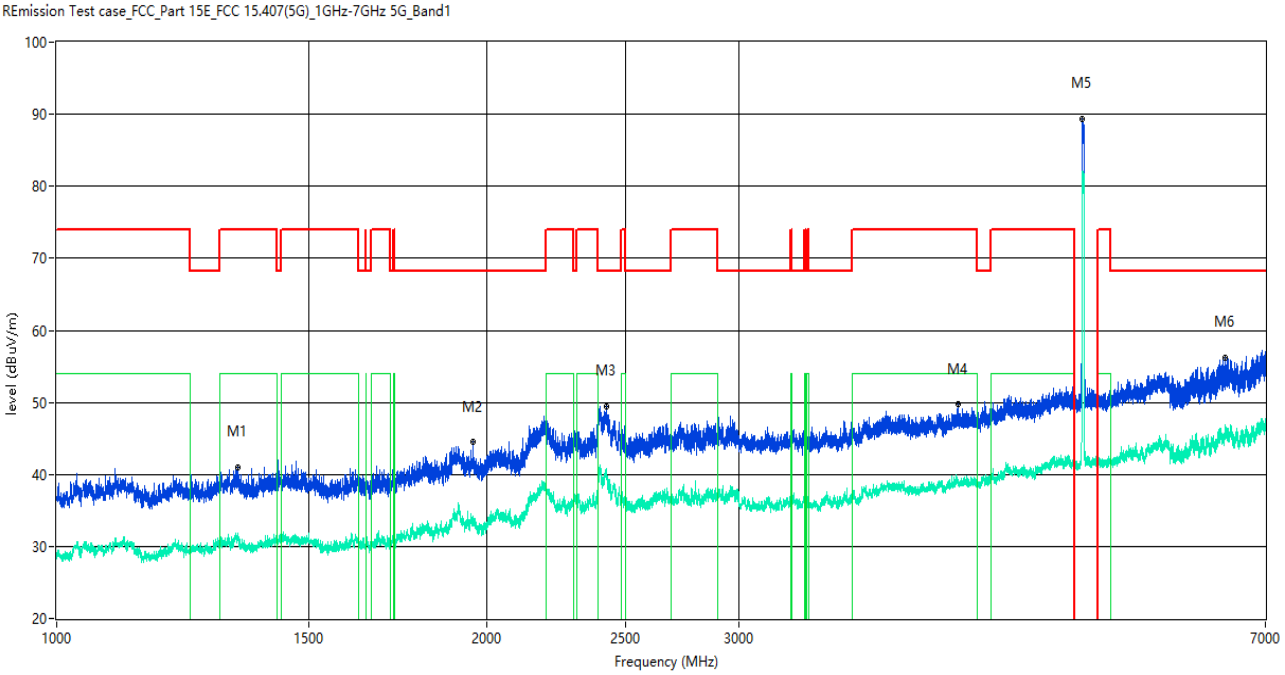
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1915.636	44.49	--	34.0	-9.59	68.2	--	--	23.71	134.00	150	Horizontal	Pass
2208.599	48.43	--	37.6	-5.96	74.0	--	54.0	16.40	75.00	150	Horizontal	Pass
2420.072	49.63	--	40.5	-0.77	68.2	--	--	18.57	164.00	150	Horizontal	Pass
4680.165	50.63	--	40.3	-0.08	74.0	--	54.0	13.70	189.00	150	Horizontal	Pass
5183.352	89.08	--	80.3	0.39	--	--	--	--	279.00	150	Horizontal	Pass
6489.689	56.11	--	45.0	6.97	68.2	--	--	12.09	90.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac20 Middle channel ANT V



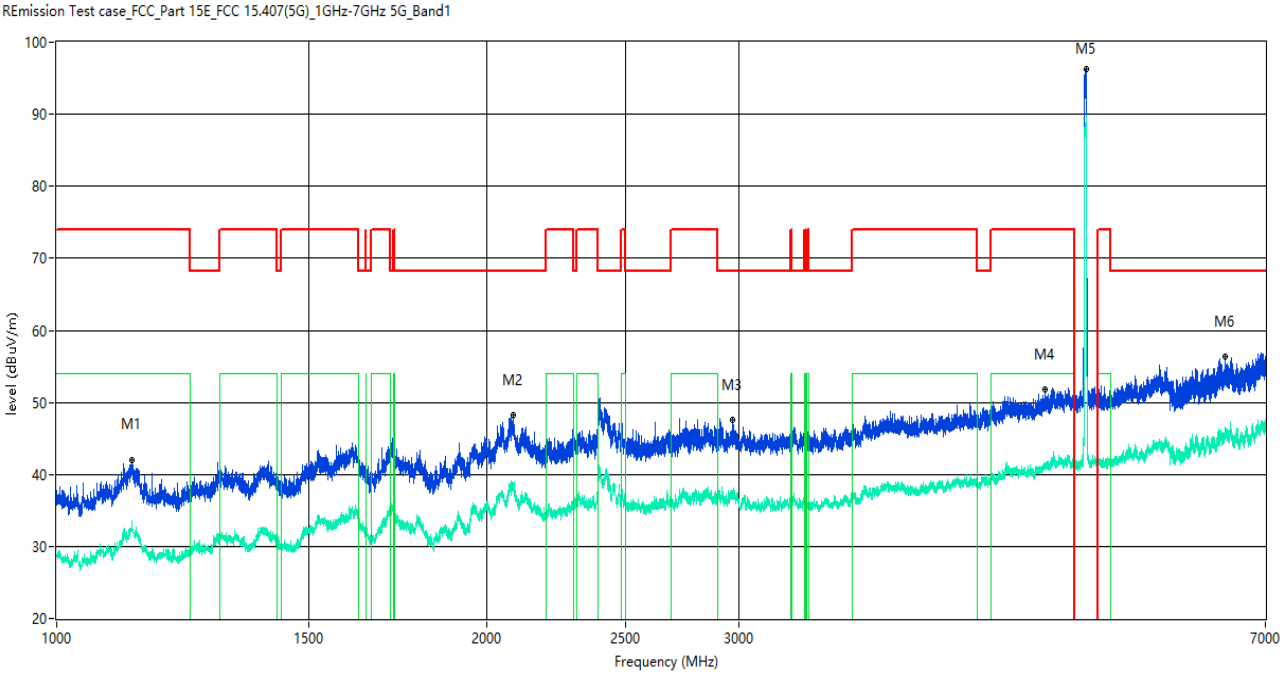
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1122.485	42.18	--	32.4	-11.91	74.0	--	54.0	21.60	3.00	150	Vertical	Pass
2086.864	46.63	--	37.4	-7.75	68.2	--	--	21.57	132.00	150	Vertical	Pass
2396.825	50.52	--	41.2	0.02	68.2	--	--	17.68	87.00	150	Vertical	Pass
3805.399	49.13	--	39.7	-2.49	74.0	--	54.0	14.30	68.00	150	Vertical	Pass
5225.347	95.86	--	87.8	0.61	--	--	--	--	221.00	150	Vertical	Pass
6515.436	55.71	--	45.8	7.95	68.2	--	--	12.49	155.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac20 Middle channel ANT H



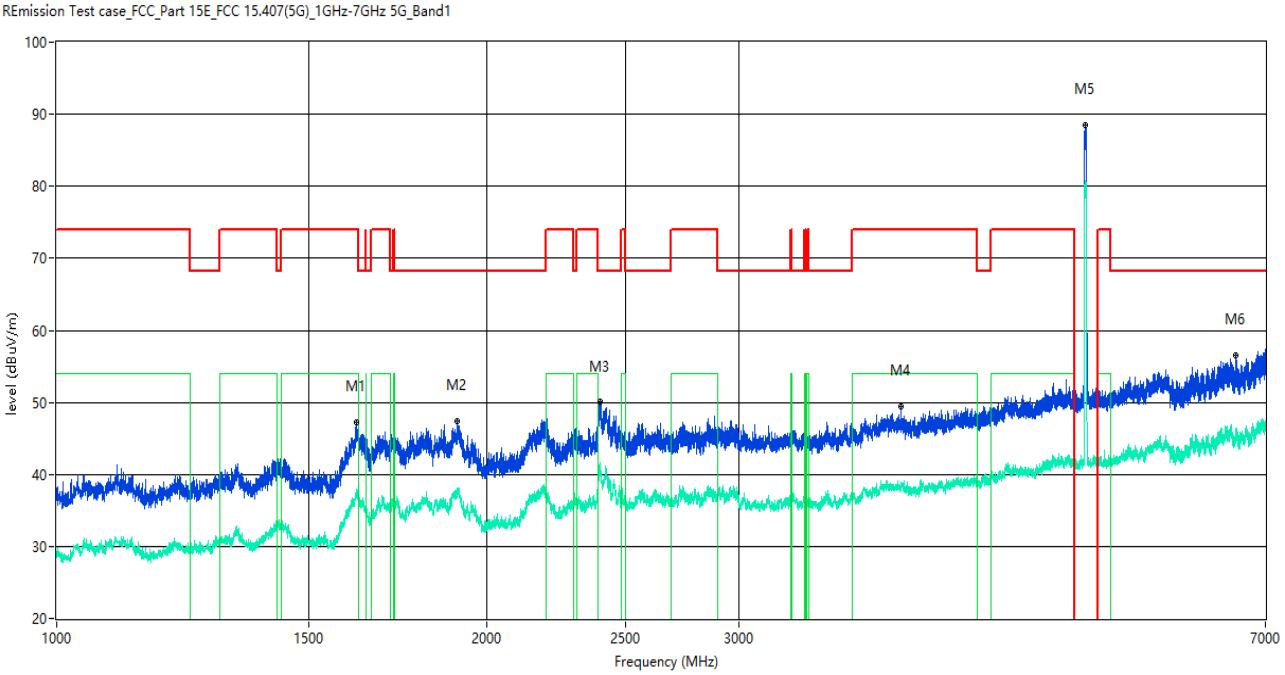
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1337.958	41.02	--	31.1	-11.76	74.0	--	54.0	22.90	182.00	150	Horizontal	Pass
1953.631	44.47	--	34.2	-9.22	68.2	--	--	23.73	4.00	150	Horizontal	Pass
2422.322	49.47	--	40.8	-0.83	68.2	--	--	18.73	239.00	150	Horizontal	Pass
4271.841	49.81	--	39.0	-1.80	74.0	--	54.0	15.00	17.00	150	Horizontal	Pass
5213.348	89.33	--	81.7	0.75	--	--	--	--	308.00	150	Horizontal	Pass
6562.680	56.27	--	46.8	8.40	68.2	--	--	11.93	98.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac20 High channel ANT V



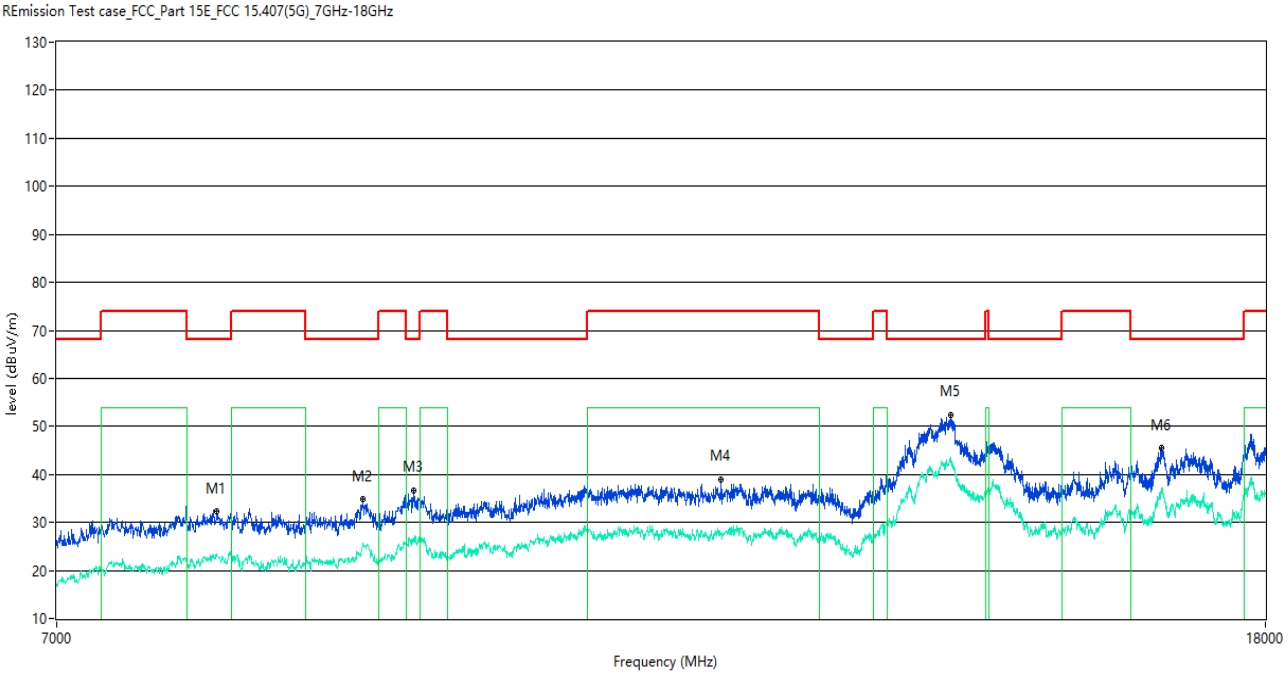
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1128.234	41.92	--	33.5	-11.74	74.0	--	54.0	20.50	204.00	150	Vertical	Pass
2086.614	48.20	--	38.4	-7.78	68.2	--	--	20.00	306.00	150	Vertical	Pass
2969.754	47.65	--	37.1	-3.21	68.2	--	--	20.55	148.00	150	Vertical	Pass
4910.386	51.75	--	40.6	0.51	74.0	--	54.0	13.40	198.00	150	Vertical	Pass
5244.844	96.24	--	88.9	0.99	--	--	--	--	248.00	150	Vertical	Pass
6562.805	56.42	--	46.0	8.41	68.2	--	--	11.78	345.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac20 High channel ANT H



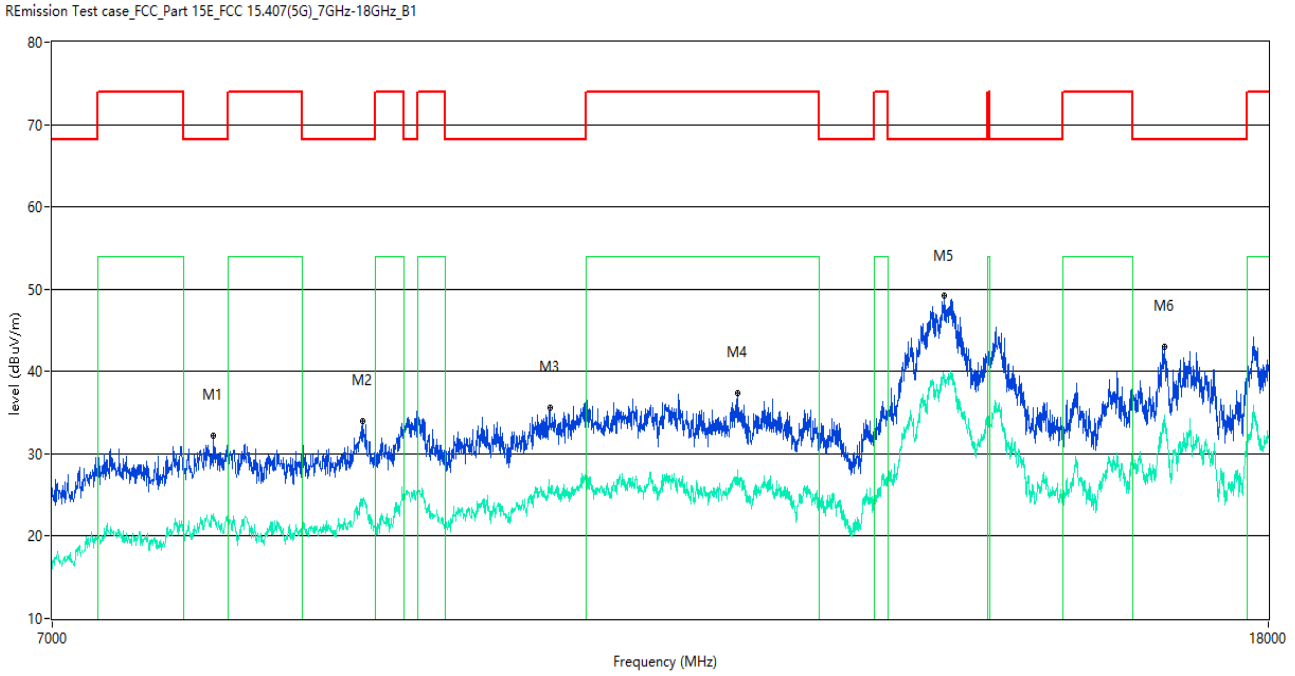
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1621.422	47.22	--	37.3	-11.81	74.0	--	54.0	16.70	160.00	150	Horizontal	Pass
1906.387	47.36	--	37.5	-9.18	68.2	--	--	20.84	94.00	150	Horizontal	Pass
2398.575	50.14	--	40.6	-0.05	68.2	--	--	18.06	347.00	150	Horizontal	Pass
3895.388	49.42	--	38.8	-2.63	74.0	--	54.0	15.20	142.00	150	Horizontal	Pass
5234.721	88.57	--	80.7	0.60	--	--	--	--	2.00	150	Horizontal	Pass
6672.916	56.56	--	46.4	7.70	68.2	--	--	11.64	148.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac20 Low channel ANT V



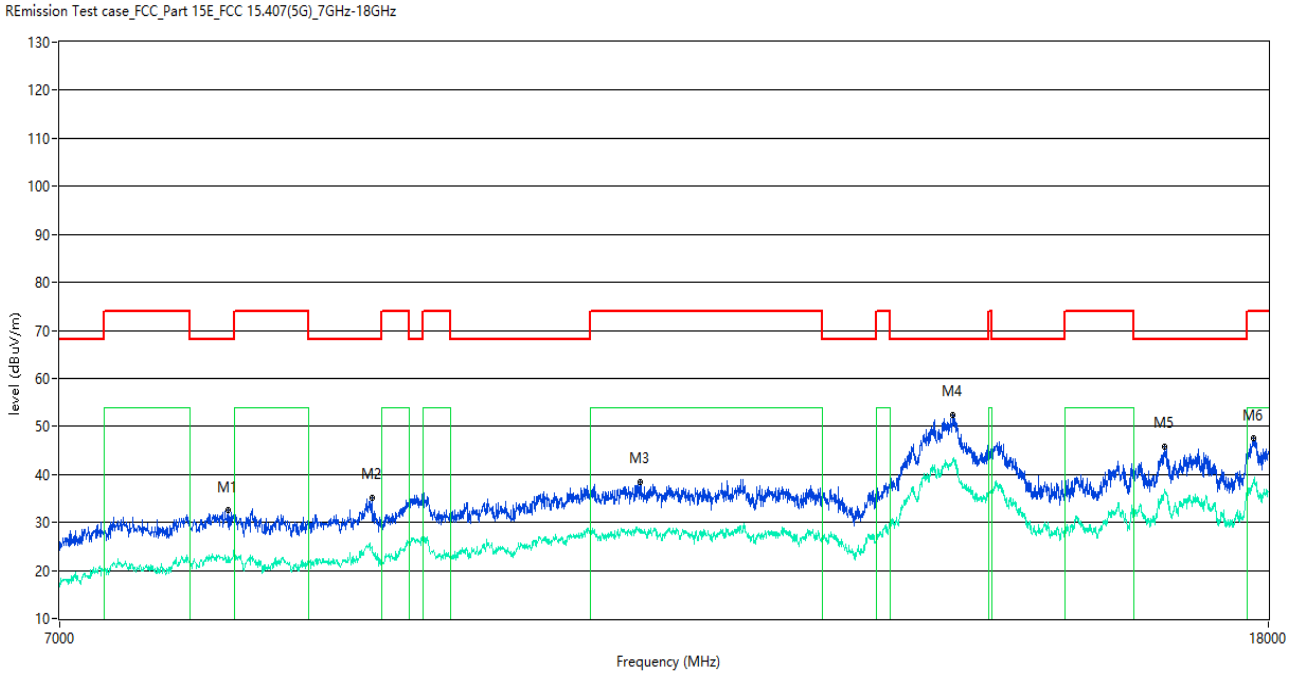
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7932.017	32.33	--	22.9	-36.85	68.2	--	--	35.87	198.00	150	Vertical	Pass
8888.778	34.80	--	24.9	-32.54	68.2	--	--	33.40	33.00	150	Vertical	Pass
9248.938	36.60	--	26.7	-31.83	68.2	--	--	31.60	353.00	150	Vertical	Pass
11764.559	38.89	--	27.8	-24.58	74.0	--	54.0	26.20	48.00	150	Vertical	Pass
14073.982	52.33	--	43.5	-6.53	68.2	--	--	15.87	102.00	150	Vertical	Pass
16600.600	45.46	--	36.4	-10.26	68.2	--	--	22.74	251.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac20 Low channel ANT H



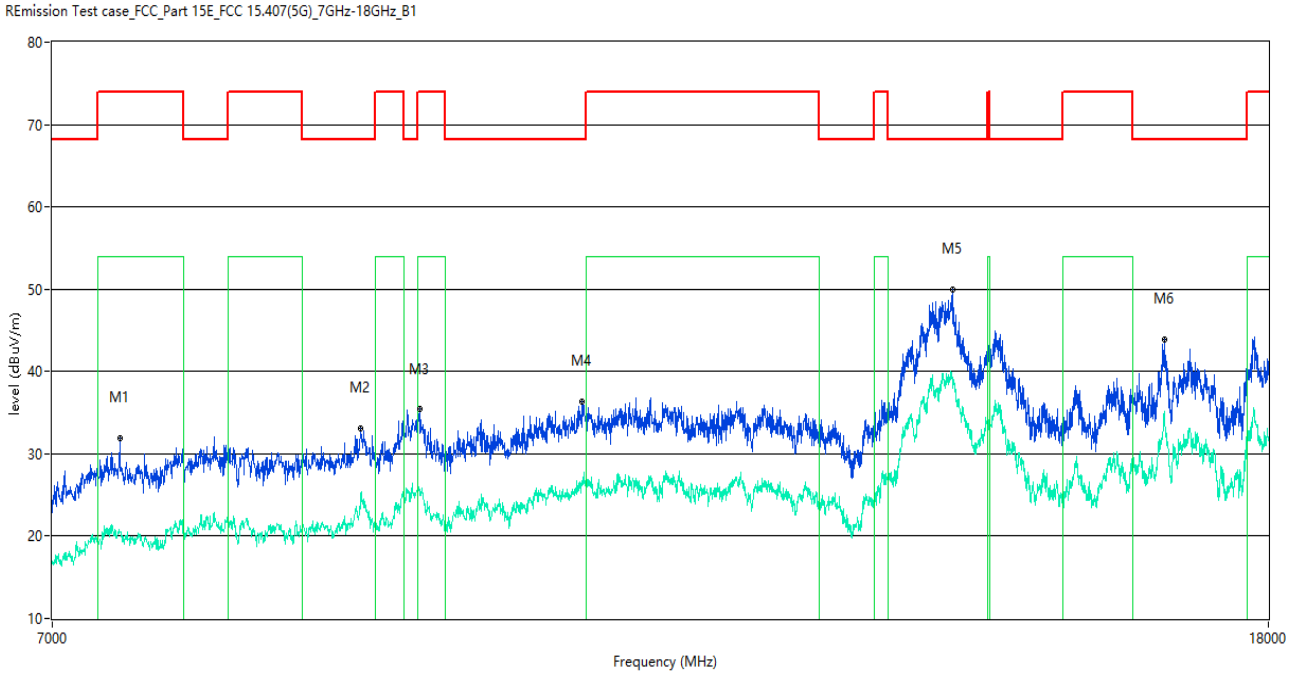
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7934.766	32.19	--	22.7	-36.79	68.2	--	--	36.01	227.00	150	Horizontal	Pass
8910.772	34.00	--	24.2	-32.41	68.2	--	--	34.20	164.00	150	Horizontal	Pass
10304.674	35.60	--	25.9	-27.81	68.2	--	--	32.60	225.00	150	Horizontal	Pass
11924.019	37.45	--	28.1	-24.19	74.0	--	54.0	25.90	273.00	150	Horizontal	Pass
13997.001	49.19	--	39.2	-6.64	68.2	--	--	19.01	220.00	150	Horizontal	Pass
16603.349	42.97	--	34.8	-10.25	68.2	--	--	25.23	194.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac20 Middle channel ANT V



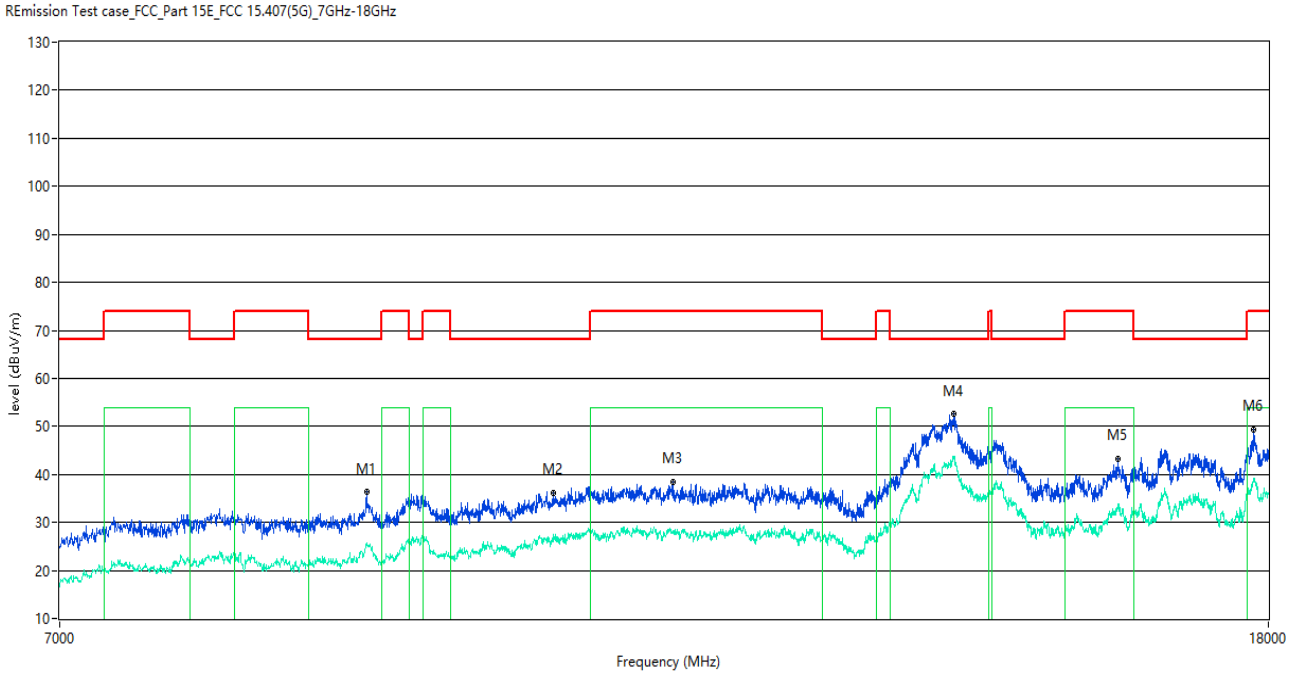
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7987.003	32.66	--	22.7	-37.20	68.2	--	--	35.54	122.00	150	Vertical	Pass
8932.767	35.12	--	24.9	-32.78	68.2	--	--	33.08	174.00	150	Vertical	Pass
11013.997	38.41	--	28.5	-24.92	74.0	--	54.0	25.50	243.00	150	Vertical	Pass
14062.984	52.28	--	43.1	-6.42	68.2	--	--	15.92	121.00	150	Vertical	Pass
16592.352	45.88	--	36.2	-10.81	68.2	--	--	22.32	18.00	150	Vertical	Pass
17785.554	47.43	--	38.5	-8.18	74.0	--	54.0	15.50	125.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac20 Middle channel ANT H



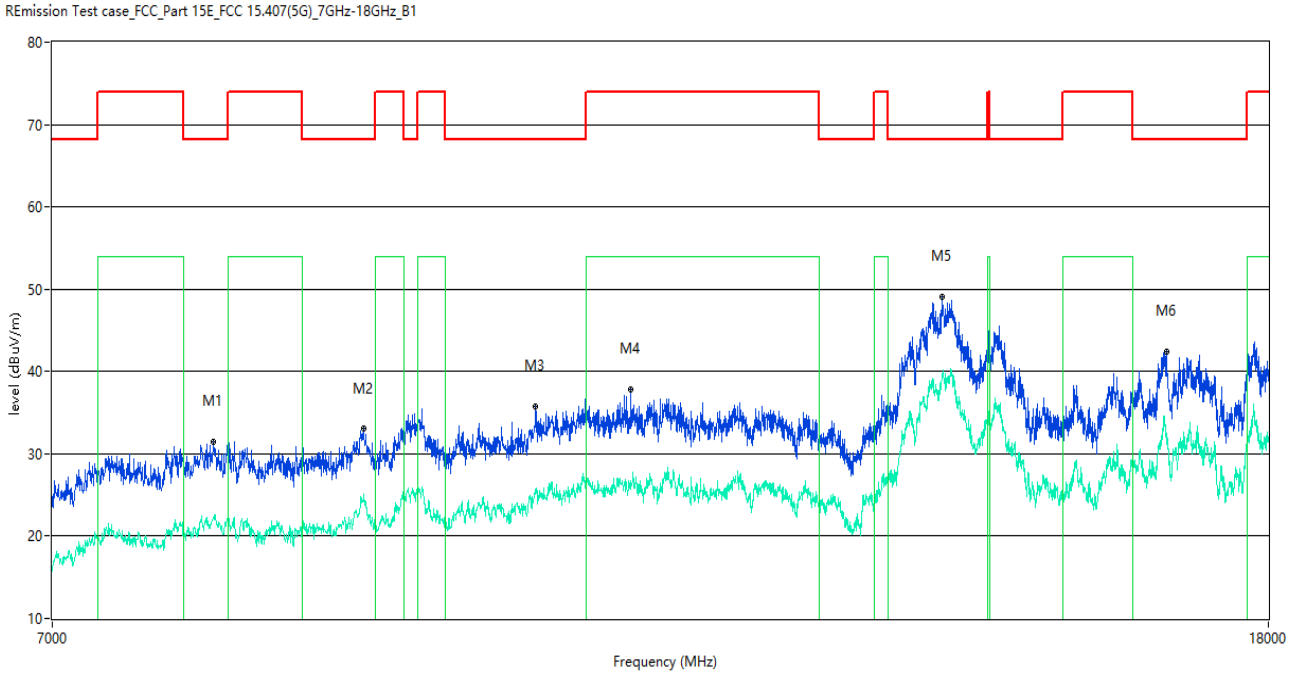
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7376.656	31.91	--	20.5	-36.92	74.0	--	54.0	33.50	127.00	150	Horizontal	Pass
8897.026	33.10	--	25.3	-32.04	68.2	--	--	35.10	52.00	150	Horizontal	Pass
9314.921	35.38	--	24.9	-31.34	74.0	--	54.0	29.10	130.00	150	Horizontal	Pass
10565.859	36.28	--	26.8	-26.47	68.2	--	--	31.92	93.00	150	Horizontal	Pass
14084.979	49.94	--	39.2	-6.61	68.2	--	--	18.26	6.00	150	Horizontal	Pass
16600.600	43.91	--	35.1	-10.26	68.2	--	--	24.29	141.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac20 High channel ANT V



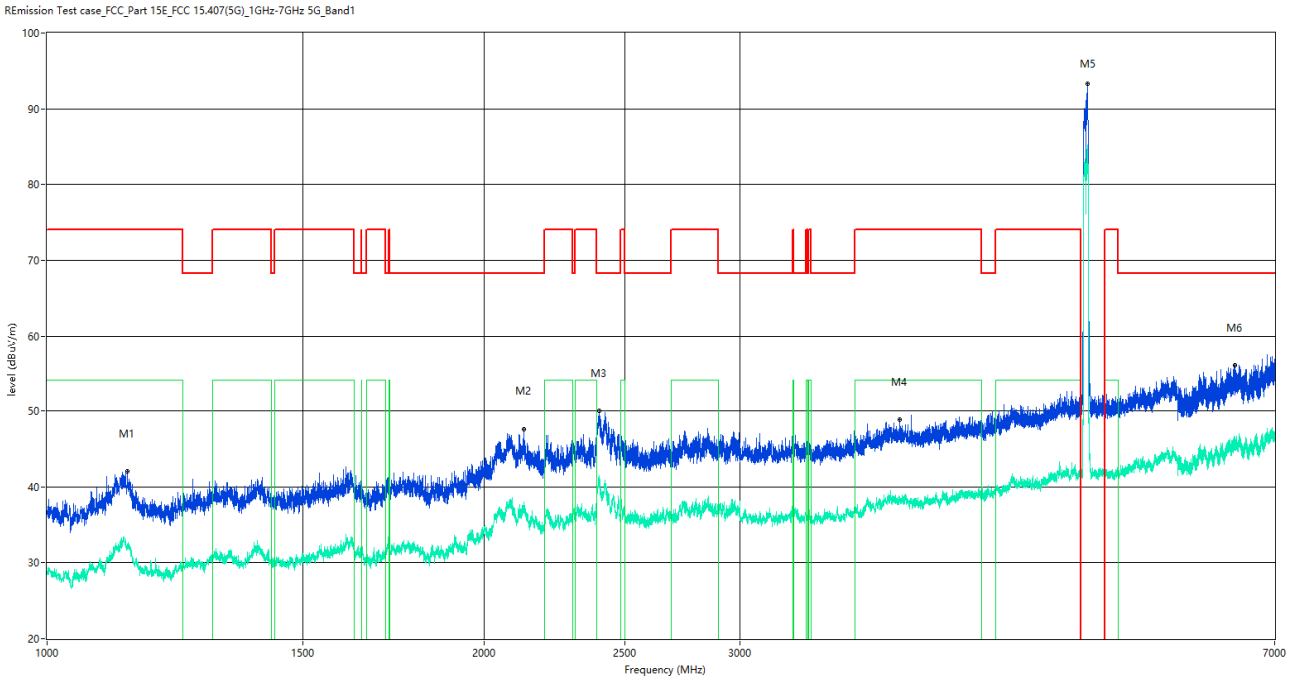
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8897.026	36.33	--	25.8	-32.04	68.2	--	--	31.87	63.00	150	Vertical	Pass
10293.677	36.20	--	26.7	-27.62	68.2	--	--	32.00	313.00	150	Vertical	Pass
11308.173	38.50	--	28.2	-24.60	74.0	--	54.0	25.80	57.00	150	Vertical	Pass
14082.229	52.72	--	43.3	-6.62	68.2	--	--	15.48	196.00	150	Vertical	Pass
16003.999	43.17	--	33.8	-14.15	74.0	--	54.0	20.20	150.00	150	Vertical	Pass
17785.554	49.33	--	39.0	-8.18	74.0	--	54.0	15.00	9.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac20 High channel ANT H



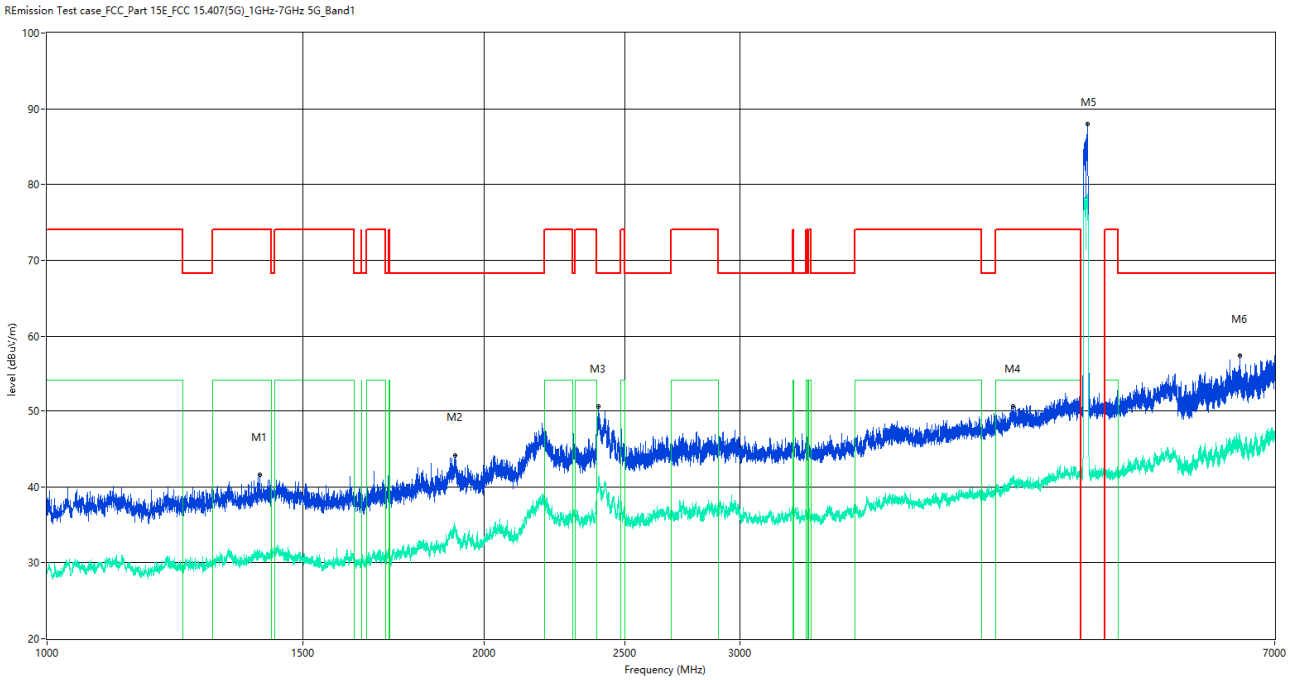
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7929.268	31.47	--	22.1	-36.91	68.2	--	--	36.73	119.00	150	Horizontal	Pass
8913.522	33.02	--	24.1	-32.36	68.2	--	--	35.18	303.00	150	Horizontal	Pass
10189.203	35.81	--	25.5	-28.24	68.2	--	--	32.39	251.00	150	Horizontal	Pass
10970.007	37.85	--	26.8	-25.13	74.0	--	54.0	27.20	277.00	150	Horizontal	Pass
13975.006	49.03	--	39.8	-7.25	68.2	--	--	19.17	154.00	150	Horizontal	Pass
16630.842	42.38	--	32.3	-10.78	68.2	--	--	25.82	2.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac40 Low channel ANT V



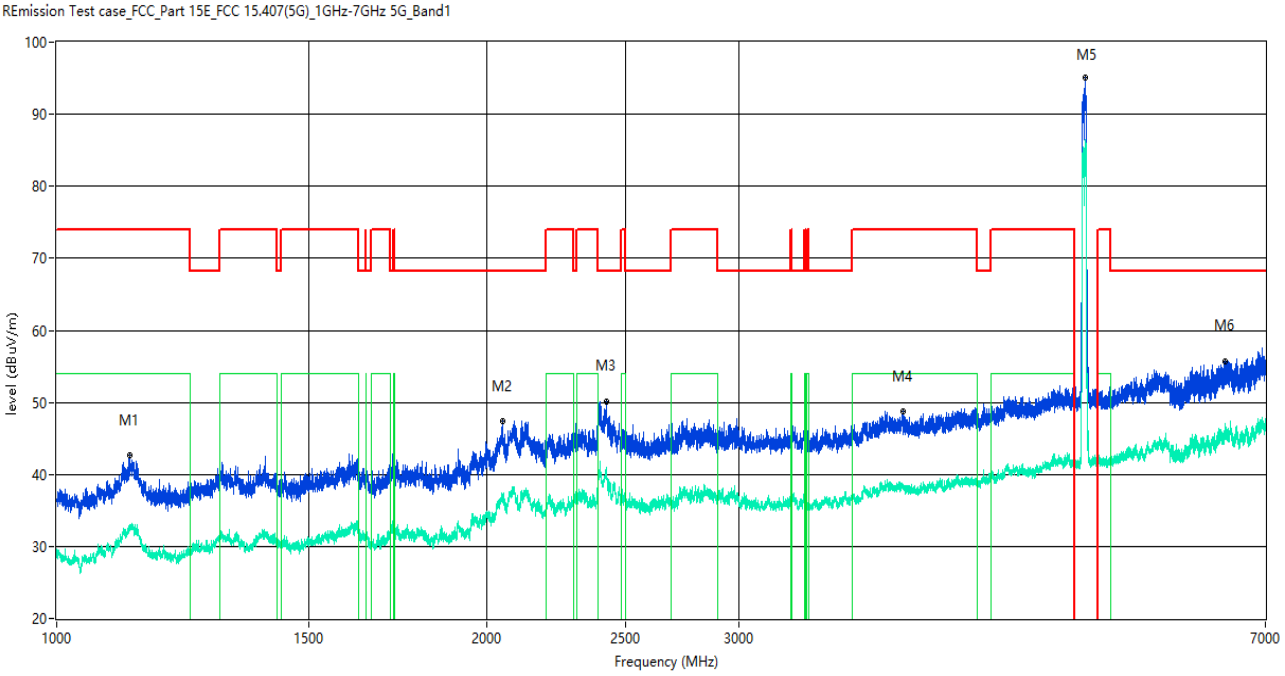
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1135.483	42.03	--	32.3	-11.93	74.0	--	54.0	21.70	309.00	150	Vertical	Pass
2128.859	47.62	--	37.8	-7.36	68.2	--	--	20.58	38.00	150	Vertical	Pass
2398.325	50.05	--	41.2	-0.04	68.2	--	--	18.15	144.00	150	Vertical	Pass
3862.392	48.82	--	37.9	-3.01	74.0	--	54.0	16.10	0.30	150	Vertical	Pass
5202.100	93.36	--	84.3	0.73	--	--	--	--	29.00	150	Vertical	Pass
6573.428	55.96	--	45.9	7.85	68.2	--	--	12.24	87.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac40 Low channel ANT H



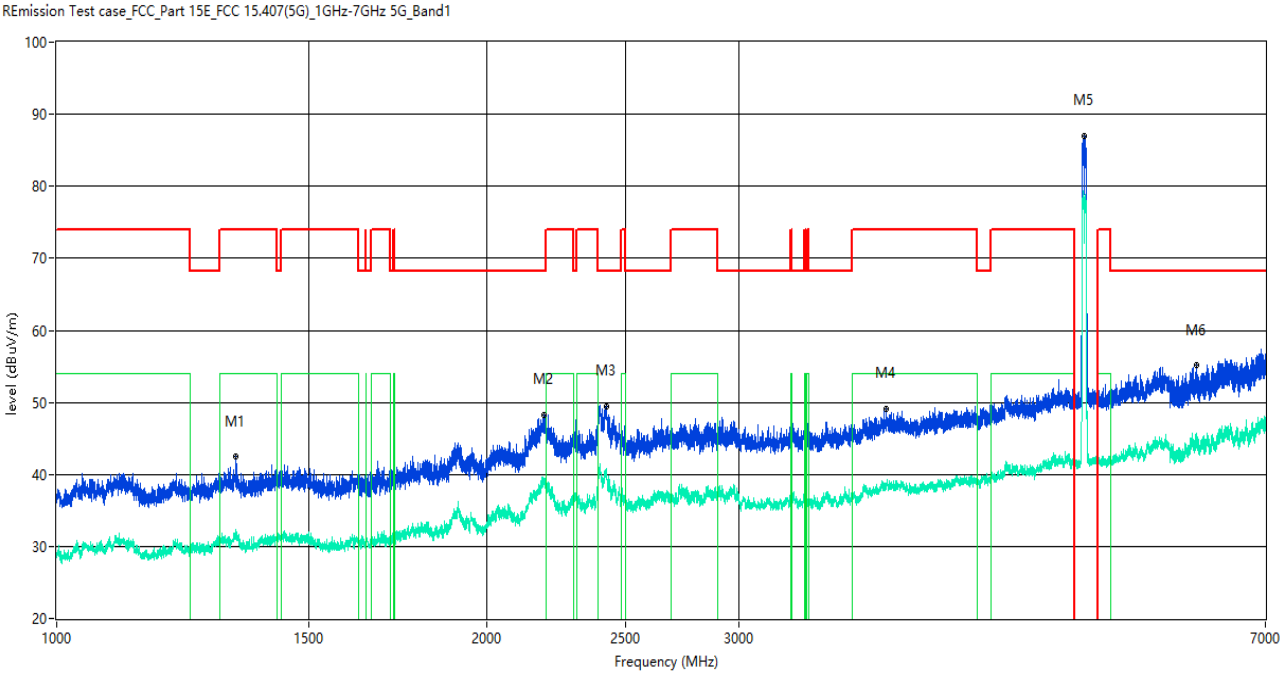
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1401.200	41.53	--	31.5	-11.83	74.0	--	54.0	22.50	101.00	150	Horizontal	Pass
1908.386	44.11	--	34.6	-8.78	68.2	--	--	24.09	11.00	150	Horizontal	Pass
2397.575	50.55	--	40.8	-0.02	68.2	--	--	17.65	174.00	150	Horizontal	Pass
4622.422	50.59	--	41.1	0.24	74.0	--	54.0	12.90	183.00	150	Horizontal	Pass
5202.100	88.01	--	78.8	0.73	--	--	--	--	183.00	150	Horizontal	Pass
6620.422	57.27	--	45.7	7.89	68.2	--	--	10.93	142.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac40 High channel ANT V



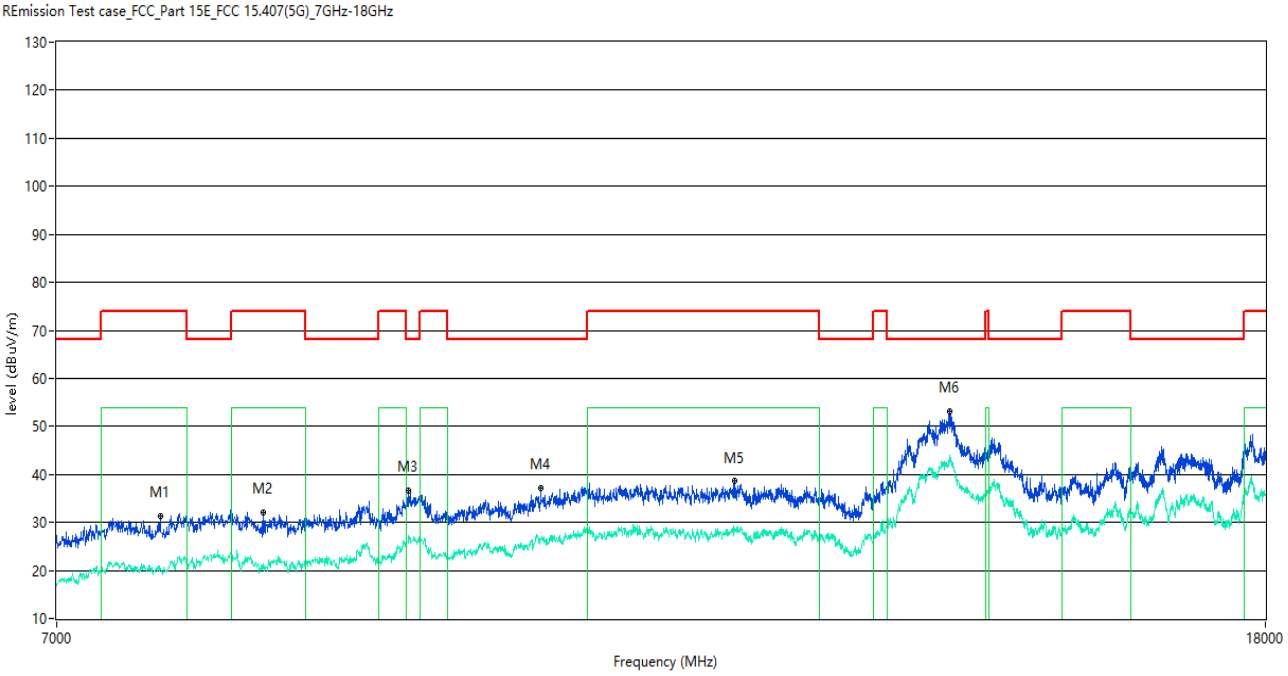
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1125.484	42.58	--	32.7	-11.79	74.0	--	54.0	21.30	217.00	150	Vertical	Pass
2049.869	47.45	--	37.0	-7.95	68.2	--	--	20.75	71.00	150	Vertical	Pass
2423.322	50.19	--	40.3	-0.88	68.2	--	--	18.01	68.00	150	Vertical	Pass
3906.262	48.78	--	37.9	-2.83	74.0	--	54.0	16.10	359.00	150	Vertical	Pass
5241.845	90.67	--	81.8	0.76	--	--	--	--	5.00	150	Vertical	Pass
6563.055	55.62	--	47.1	8.44	68.2	--	--	12.58	356.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac40 High channel ANT H



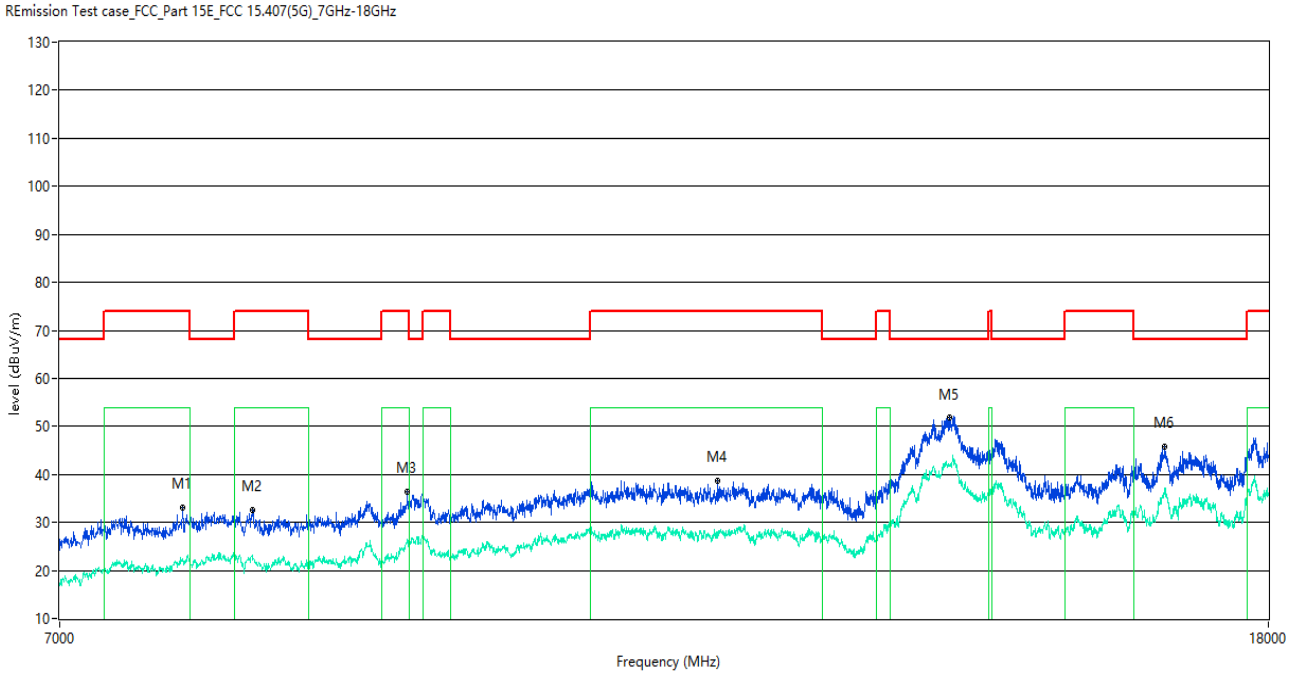
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1333.958	42.42	--	31.6	-11.69	74.0	--	54.0	22.40	3.00	150	Horizontal	Pass
2192.101	48.18	--	39.2	-6.88	68.2	--	--	20.02	144.00	150	Horizontal	Pass
2423.072	49.42	--	40.4	-0.86	68.2	--	--	18.78	309.00	150	Horizontal	Pass
3800.150	49.14	--	37.9	-2.88	74.0	--	54.0	16.10	71.00	150	Horizontal	Pass
5228.346	87.00	--	77.1	0.44	--	--	--	--	15.00	150	Horizontal	Pass
6270.716	55.12	--	44.5	5.74	68.2	--	--	13.08	96.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac40 Low channel ANT V



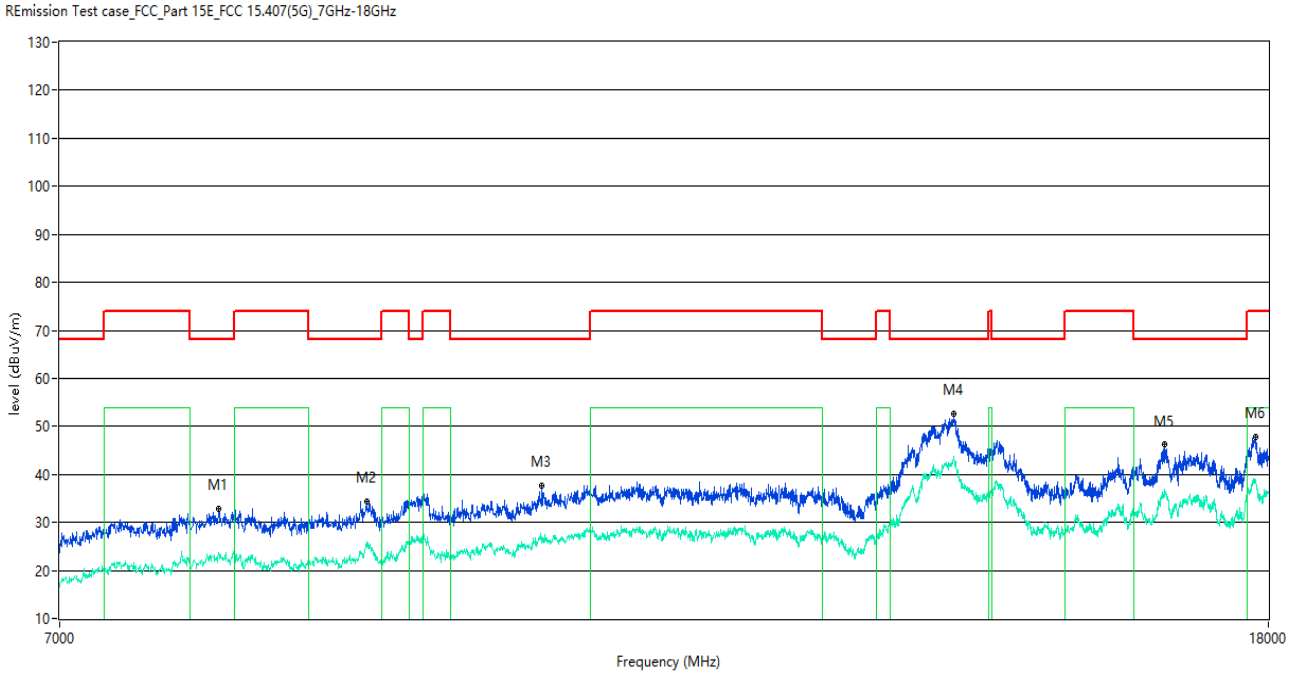
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7591.102	31.19	--	20.4	-37.72	74.0	--	54.0	33.60	97.00	150	Vertical	Pass
8223.444	32.19	--	21.5	-36.28	74.0	--	54.0	32.50	41.00	150	Vertical	Pass
9215.946	36.74	--	27.3	-31.70	68.2	--	--	31.46	134.00	150	Vertical	Pass
10219.445	37.07	--	26.5	-28.25	68.2	--	--	31.13	357.00	150	Vertical	Pass
11885.529	38.56	--	28.7	-24.90	74.0	--	54.0	25.30	86.00	150	Vertical	Pass
14065.734	53.19	--	44.0	-6.61	68.2	--	--	15.01	11.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac40 Low channel ANT H



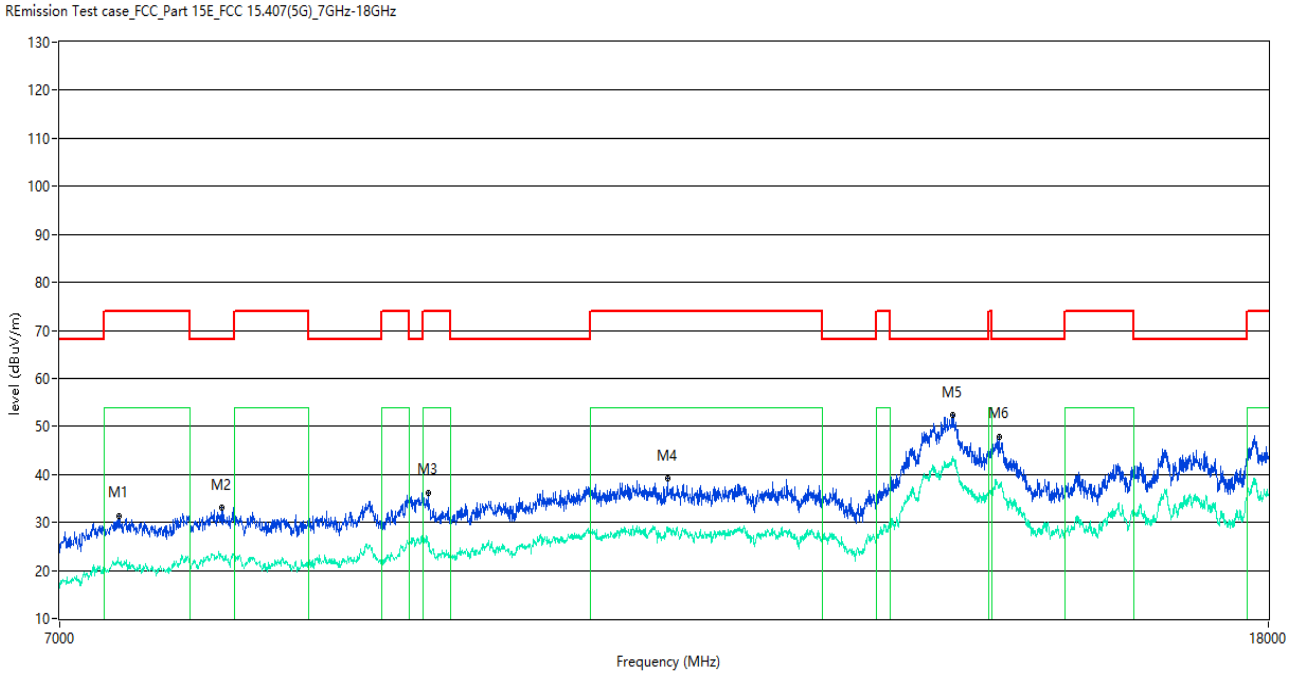
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7706.573	33.05	--	22.5	-35.88	74.0	--	54.0	31.50	1.00	150	Horizontal	Pass
8135.466	32.55	--	23.1	-35.74	74.0	--	54.0	30.90	222.00	150	Horizontal	Pass
9185.704	36.34	--	26.4	-32.58	74.0	--	54.0	27.60	228.00	150	Horizontal	Pass
11706.823	38.60	--	27.9	-24.29	74.0	--	54.0	26.10	15.00	150	Horizontal	Pass
14035.491	51.87	--	42.0	-6.75	68.2	--	--	16.33	27.00	150	Horizontal	Pass
16600.600	45.85	--	37.2	-10.26	68.2	--	--	22.35	338.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac40 High channel ANT V



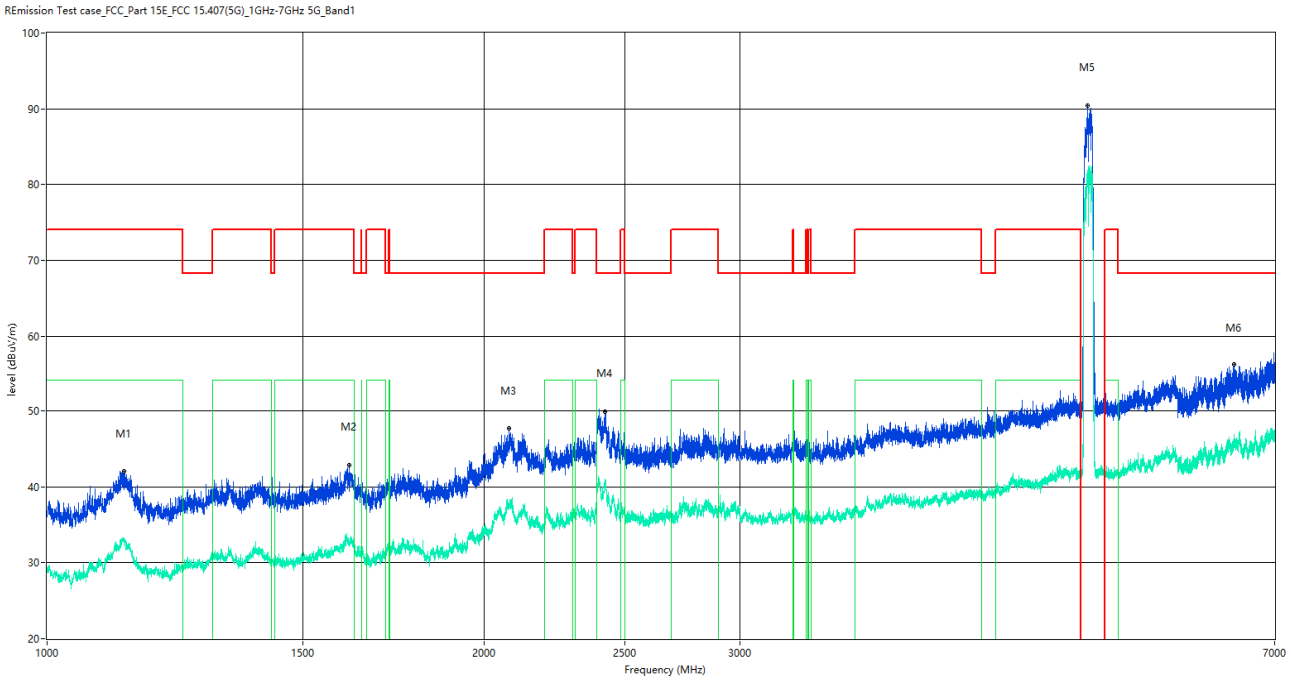
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7926.518	32.72	--	23.6	-36.95	68.2	--	--	35.48	115.00	150	Vertical	Pass
8899.775	34.36	--	26.0	-32.30	68.2	--	--	33.84	221.00	150	Vertical	Pass
10205.699	37.61	--	25.7	-28.33	68.2	--	--	30.59	274.00	150	Vertical	Pass
14071.232	52.51	--	42.9	-6.65	68.2	--	--	15.69	328.00	150	Vertical	Pass
16597.851	46.36	--	37.0	-10.41	68.2	--	--	21.84	21.00	150	Vertical	Pass
17815.796	47.84	--	38.8	-8.54	74.0	--	54.0	15.20	36.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac40 High channel ANT H



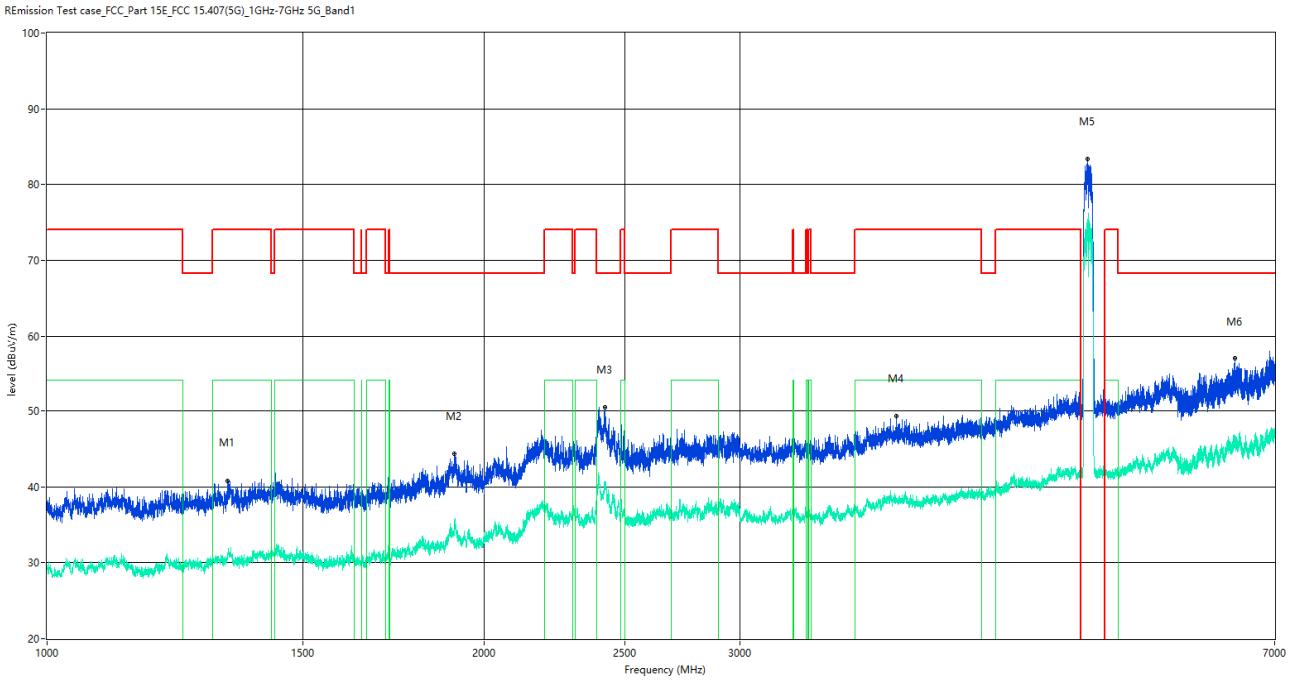
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7329.918	31.41	--	21.5	-37.12	74.0	--	54.0	32.50	266.00	150	Horizontal	Pass
7943.014	33.16	--	22.9	-36.97	68.2	--	--	35.04	352.00	150	Horizontal	Pass
9336.916	36.03	--	25.9	-32.07	74.0	--	54.0	28.10	86.00	150	Horizontal	Pass
11255.936	39.16	--	28.6	-24.97	74.0	--	54.0	25.40	196.00	150	Horizontal	Pass
14068.483	52.31	--	43.4	-6.65	68.2	--	--	15.89	202.00	150	Horizontal	Pass
14588.103	47.82	--	37.9	-10.79	68.2	--	--	20.38	159.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band I 11ac80 Middle channel ANT V



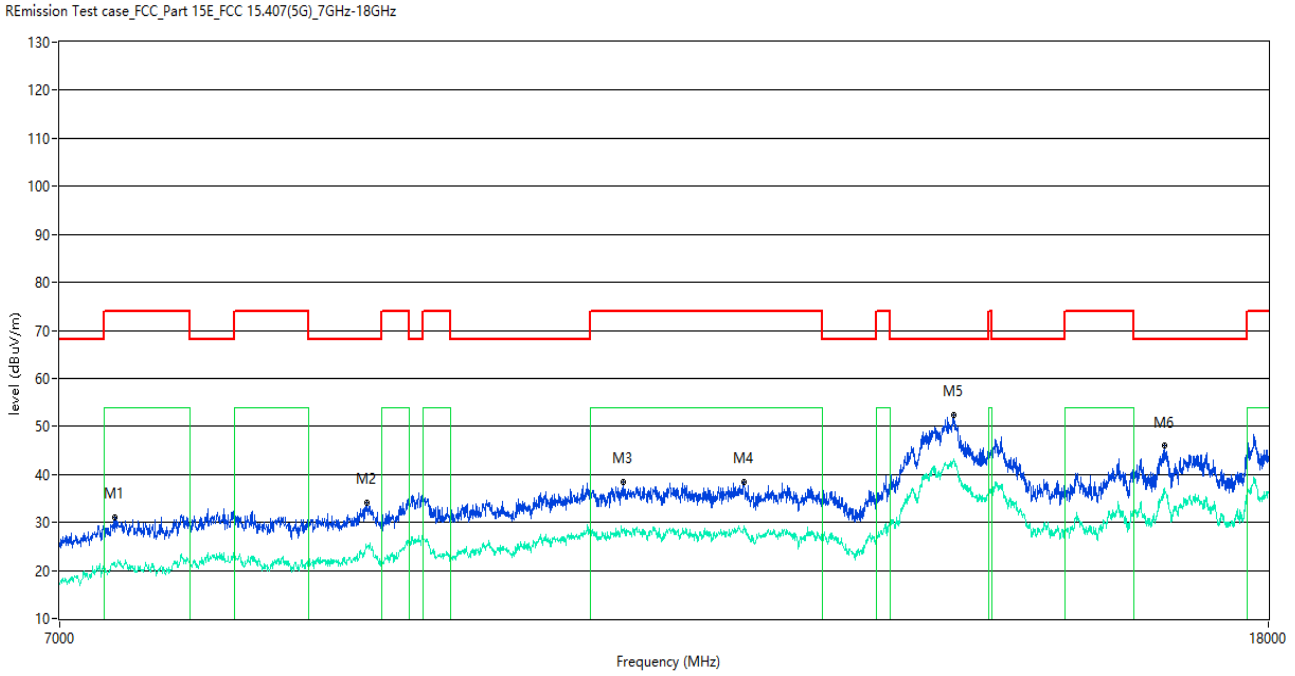
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1129.734	42.06	--	33.3	-11.79	74.0	--	54.0	20.70	5.00	150	Vertical	Pass
1615.173	42.88	--	32.8	-12.20	74.0	--	54.0	21.20	11.00	150	Vertical	Pass
2079.865	47.69	--	37.7	-8.19	68.2	--	--	20.51	5.00	150	Vertical	Pass
2420.072	49.92	--	40.5	-0.77	68.2	--	--	18.28	10.00	150	Vertical	Pass
5205.474	90.37	--	81.8	0.80	--	--	--	--	30.30	150	Vertical	Pass
6563.180	56.08	--	45.9	8.45	68.2	--	--	12.12	13.00	150	Vertical	Pass

1 GHz to 7 GHz, Band I 11ac80 Middle channel ANT H



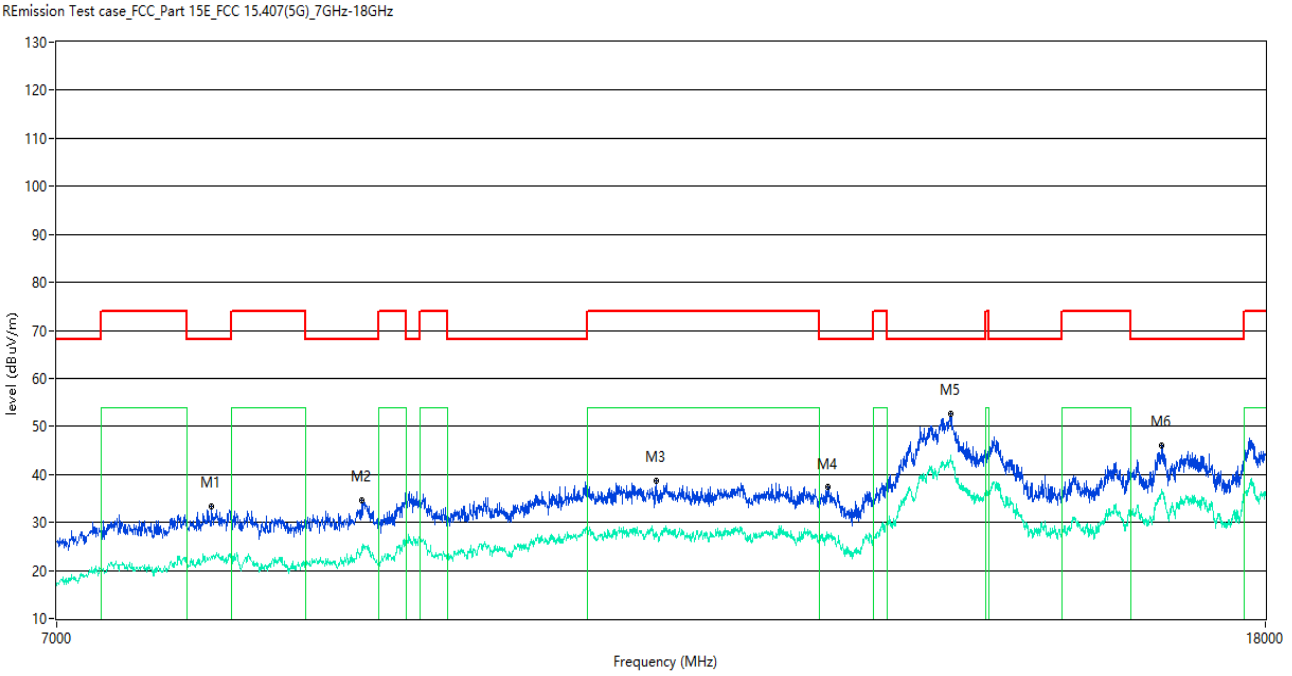
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1331.459	40.77	--	31.1	-11.99	74.0	--	54.0	22.90	8.00	150	Horizontal	Pass
1907.387	44.39	--	34.8	-8.93	68.2	--	--	23.81	14.00	150	Horizontal	Pass
2421.072	50.42	--	40.4	-0.80	68.2	--	--	17.78	11.00	150	Horizontal	Pass
3841.395	49.32	--	38.5	-2.89	74.0	--	54.0	15.50	45.80	150	Horizontal	Pass
5205.099	83.43	--	74.7	0.78	--	--	--	--	205.20	150	Horizontal	Pass
6576.303	56.95	--	45.8	7.82	68.2	--	--	11.25	9.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band I 11ac80 Middle channel ANT V



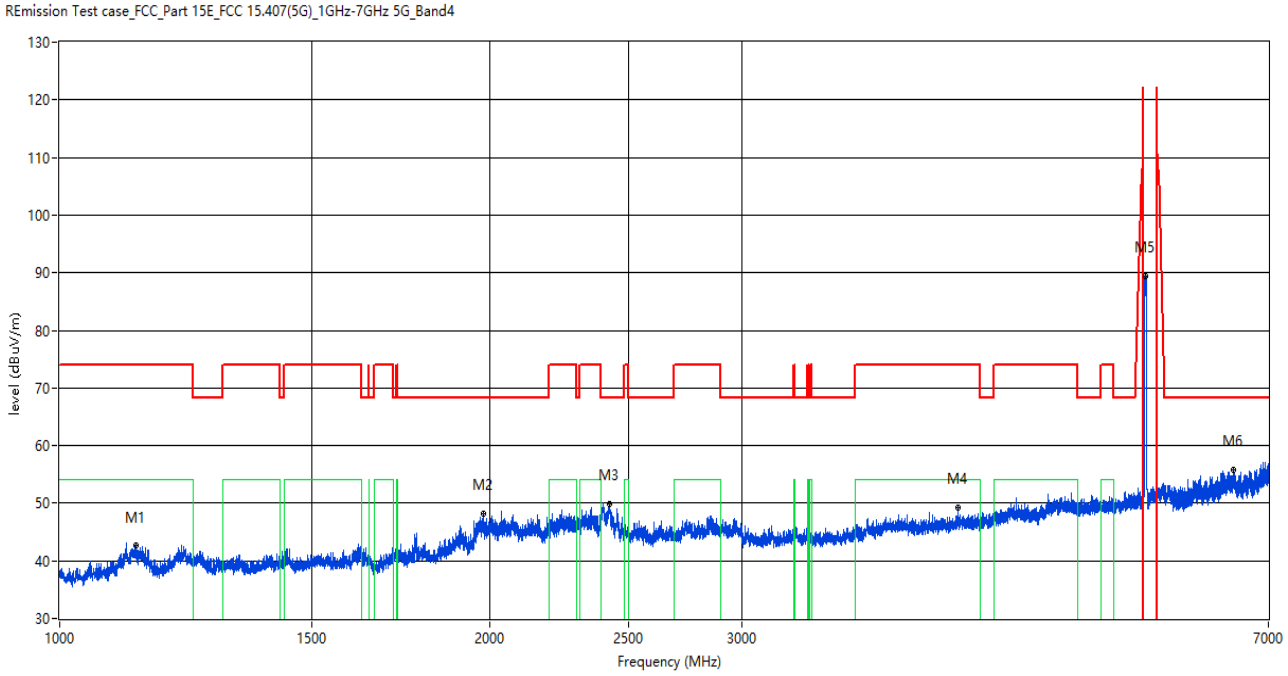
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7305.174	31.10	--	21.7	-37.16	74.0	--	54.0	32.30	223.00	150	Vertical	Pass
8897.026	34.05	--	25.0	-32.04	68.2	--	--	34.15	313.00	150	Vertical	Pass
10876.531	38.38	--	28.2	-25.27	74.0	--	54.0	25.80	239.00	150	Vertical	Pass
11948.763	38.30	--	29.4	-24.08	74.0	--	54.0	24.60	160.00	150	Vertical	Pass
14082.229	52.32	--	43.3	-6.62	68.2	--	--	15.88	134.00	150	Vertical	Pass
16600.600	45.93	--	37.2	-10.26	68.2	--	--	22.27	84.00	150	Vertical	Pass

7 GHz to 18 GHz, Band I 11ac80 Middle channel ANT H



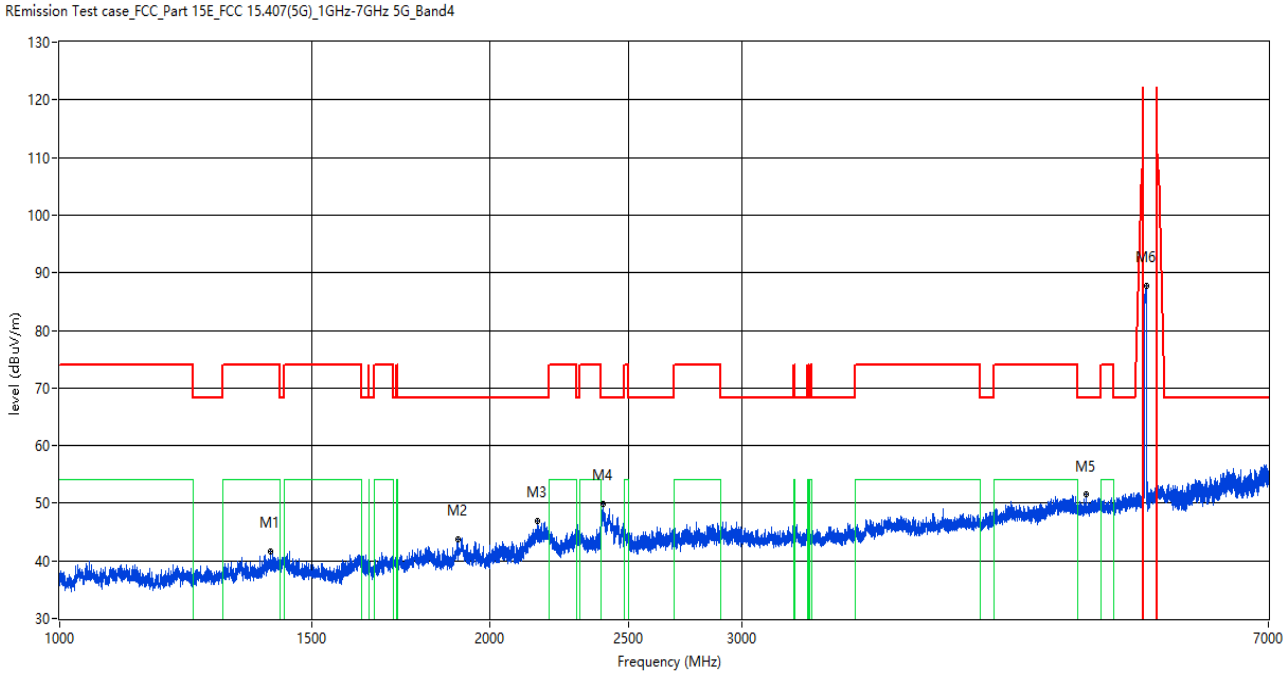
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7901.775	33.44	--	22.6	-36.77	68.2	--	--	34.76	90.00	150	Horizontal	Pass
8886.028	34.72	--	24.8	-32.47	68.2	--	--	33.48	300.00	150	Horizontal	Pass
11178.955	38.77	--	28.1	-25.57	74.0	--	54.0	25.90	248.00	150	Horizontal	Pass
12784.554	37.30	--	27.3	-24.58	68.2	--	--	30.90	302.00	150	Horizontal	Pass
14076.731	52.59	--	43.9	-6.48	68.2	--	--	15.61	48.00	150	Horizontal	Pass
16595.101	46.12	--	36.9	-10.68	68.2	--	--	22.08	353.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11n20 Low channel ANT V



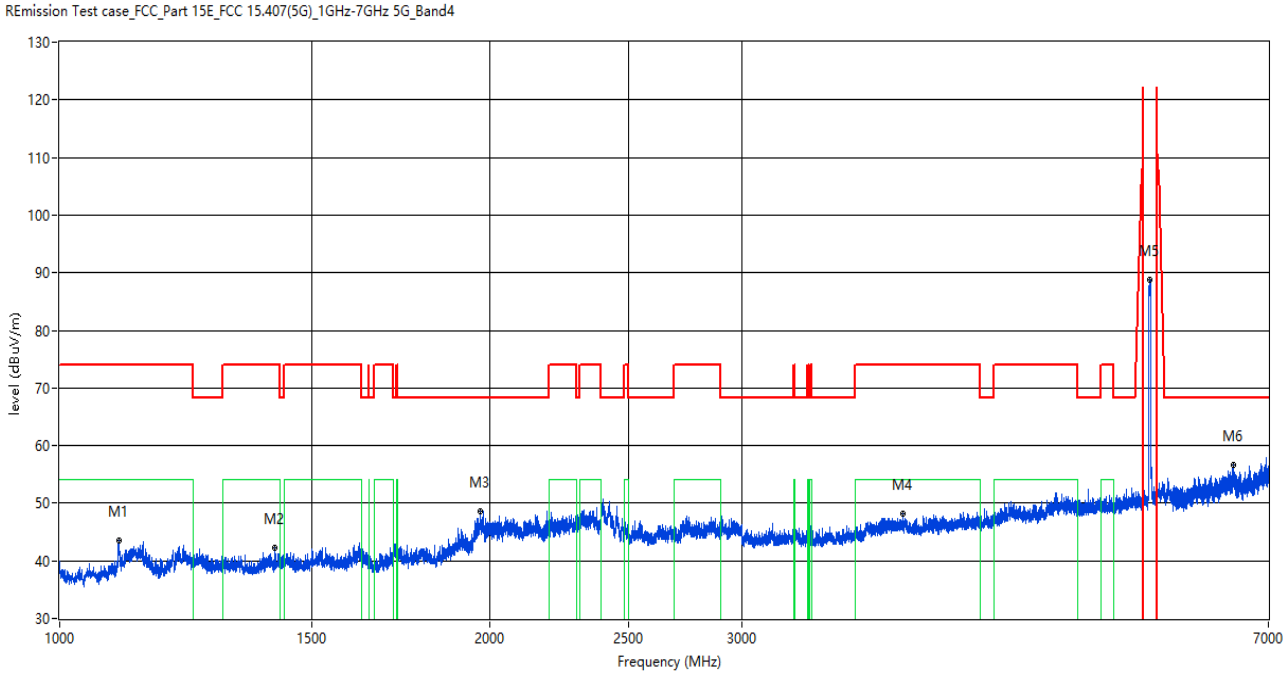
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1131.484	42.71	--	--	-11.94	74.0	--	54.0	11.29	95.00	150	Vertical	Pass
1977.878	48.09	--	--	-8.49	68.2	--	--	20.11	287.00	150	Vertical	Pass
2424.572	49.89	--	--	-0.94	68.2	--	--	18.31	257.00	150	Vertical	Pass
4248.969	49.18	--	--	-1.94	74.0	--	54.0	4.82	57.00	150	Vertical	Pass
5739.783	89.36	--	--	2.20	--	--	--	--	214.00	150	Vertical	Pass
6617.798	55.89	--	--	8.00	68.2	--	--	12.31	87.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11n20 Low channel ANT H



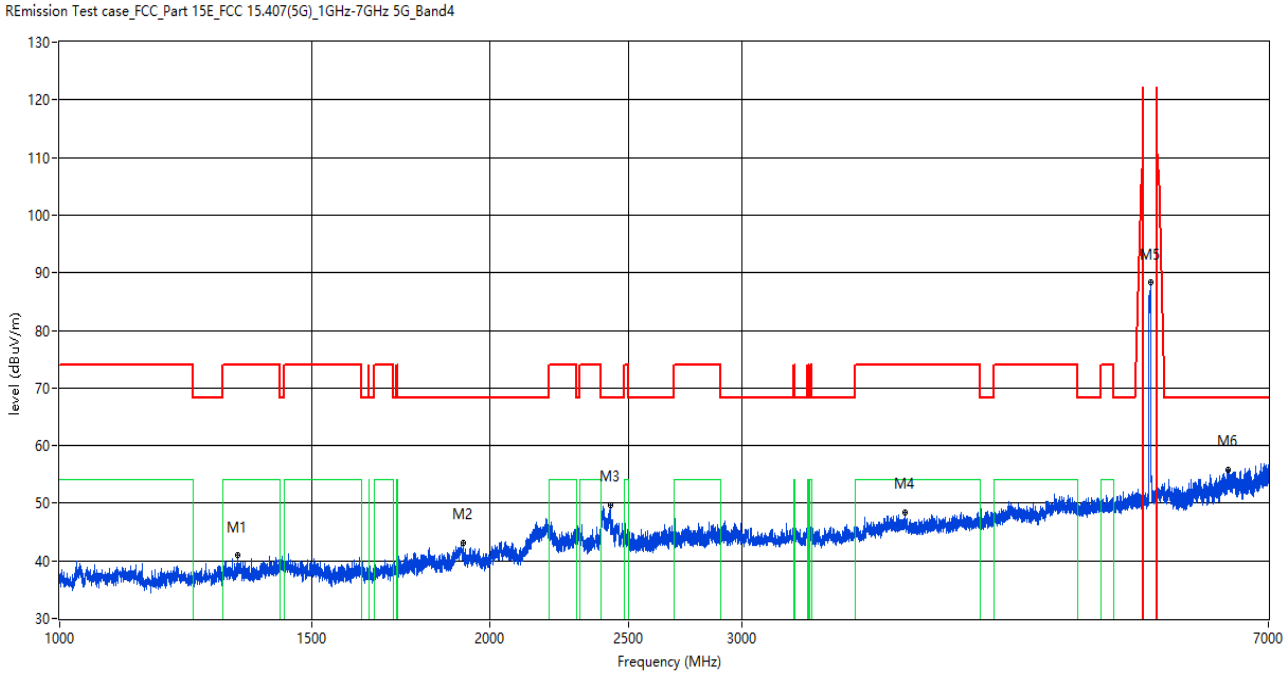
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1402.950	41.58	--	--	-11.86	74.0	--	54.0	12.42	239.00	150	Horizontal	Pass
1897.638	43.64	--	--	-9.96	68.2	--	--	24.56	161.00	150	Horizontal	Pass
2158.605	46.96	--	--	-6.97	68.2	--	--	21.24	4.00	150	Horizontal	Pass
2400.075	49.89	--	--	-0.08	68.2	--	--	18.31	281.00	150	Horizontal	Pass
5221.972	51.52	--	--	0.65	68.2	--	--	16.68	237.00	150	Horizontal	Pass
5749.531	87.73	--	--	2.22	--	--	--	--	186.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11n20 Middle channel ANT V



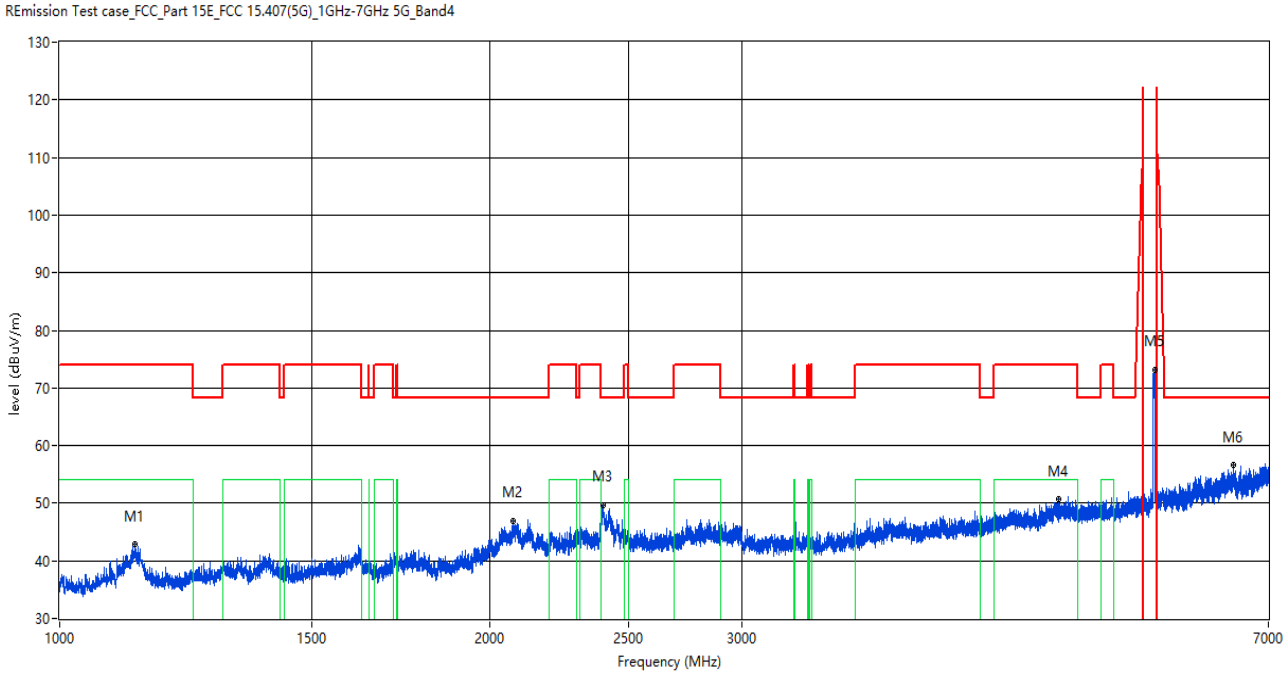
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1099.988	43.59	--	--	-11.45	74.0	--	54.0	10.41	3.00	150	Vertical	Pass
1414.448	42.17	--	--	-12.13	74.0	--	54.0	11.83	137.00	150	Vertical	Pass
1967.629	48.52	--	--	-9.06	68.2	--	--	19.68	152.00	150	Vertical	Pass
3883.765	48.16	--	--	-3.10	74.0	--	54.0	5.84	101.00	150	Vertical	Pass
5779.528	88.67	--	--	2.53	--	--	--	--	192.00	150	Vertical	Pass
6617.798	56.54	--	--	8.00	68.2	--	--	11.66	155.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11n20 Middle channel ANT H



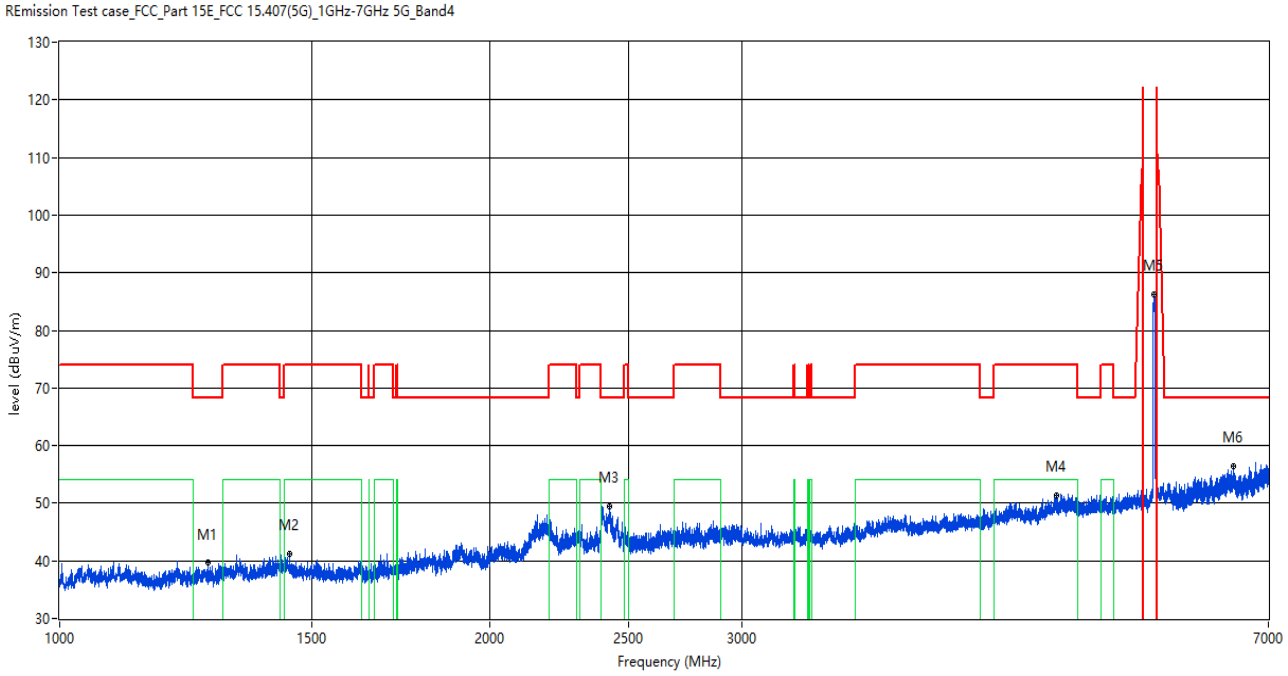
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1332.708	40.89	--	--	-11.82	74.0	--	54.0	13.11	59.00	150	Horizontal	Pass
1915.636	43.05	--	--	-9.59	68.2	--	--	25.15	334.00	150	Horizontal	Pass
2425.822	49.69	--	--	-1.00	68.2	--	--	18.51	113.00	150	Horizontal	Pass
3898.388	48.31	--	--	-2.43	74.0	--	54.0	5.69	198.00	150	Horizontal	Pass
5790.776	88.25	--	--	2.95	--	--	--	--	2.00	150	Horizontal	Pass
6561.305	55.78	--	--	8.26	68.2	--	--	12.42	96.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11n20 High channel ANT V



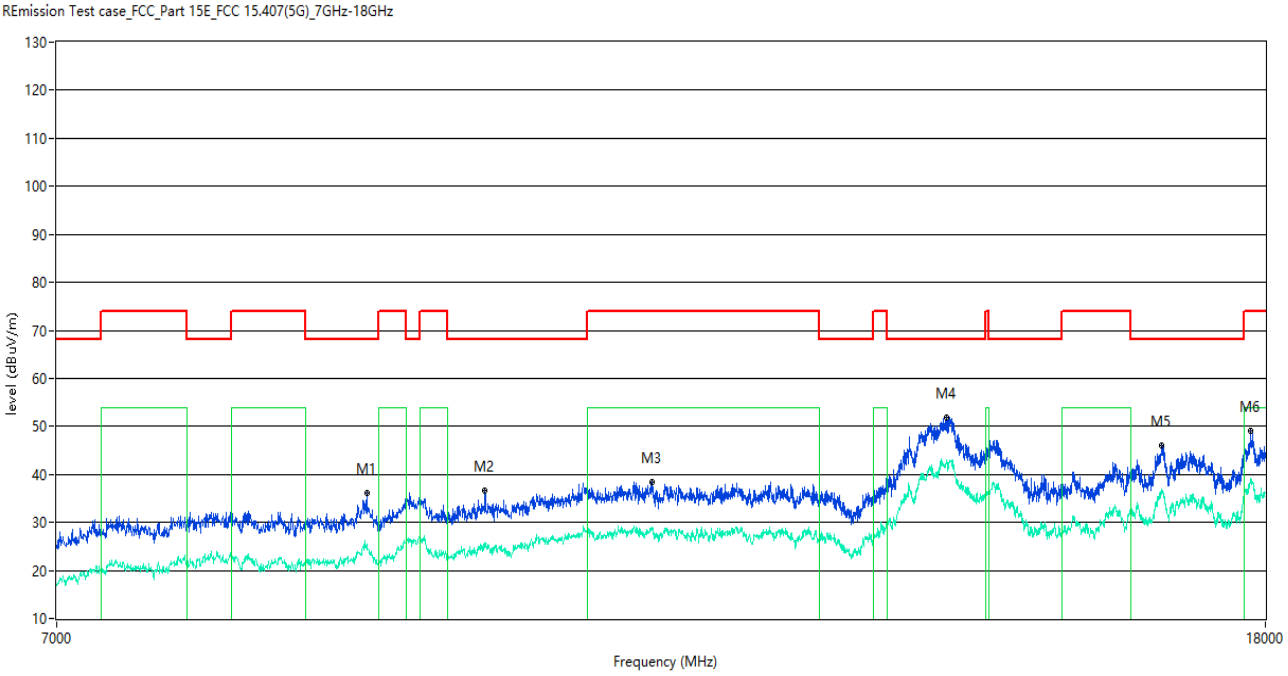
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1129.484	42.79	--	--	-11.77	74.0	--	54.0	11.21	237.00	100	Vertical	Pass
2074.366	46.81	--	--	-7.65	68.2	--	--	21.39	224.00	100	Vertical	Pass
2396.575	49.65	--	--	0.03	68.2	--	--	18.55	43.00	100	Vertical	Pass
4996.625	50.67	--	--	0.85	74.0	--	54.0	3.33	13.00	100	Vertical	Pass
5829.771	73.23	--	--	2.98	--	--	--	--	89.00	100	Vertical	Pass
6620.797	56.55	--	--	7.86	68.2	--	--	11.65	113.00	100	Vertical	Pass

1 GHz to 7 GHz, Band IV 11n20 High channel ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1268.716	39.72	--	--	-12.49	68.2	--	--	28.48	65.00	150	Horizontal	Pass
1446.944	41.17	--	--	-11.64	74.0	--	54.0	12.83	127.00	150	Horizontal	Pass
2424.322	49.45	--	--	-0.92	68.2	--	--	18.75	123.00	150	Horizontal	Pass
4980.127	51.26	--	--	1.64	74.0	--	54.0	2.74	210.00	150	Horizontal	Pass
5818.523	86.28	--	--	3.25	--	--	--	--	294.00	150	Horizontal	Pass
6619.798	56.46	--	--	7.94	68.2	--	--	11.74	339.00	150	Horizontal	Pass

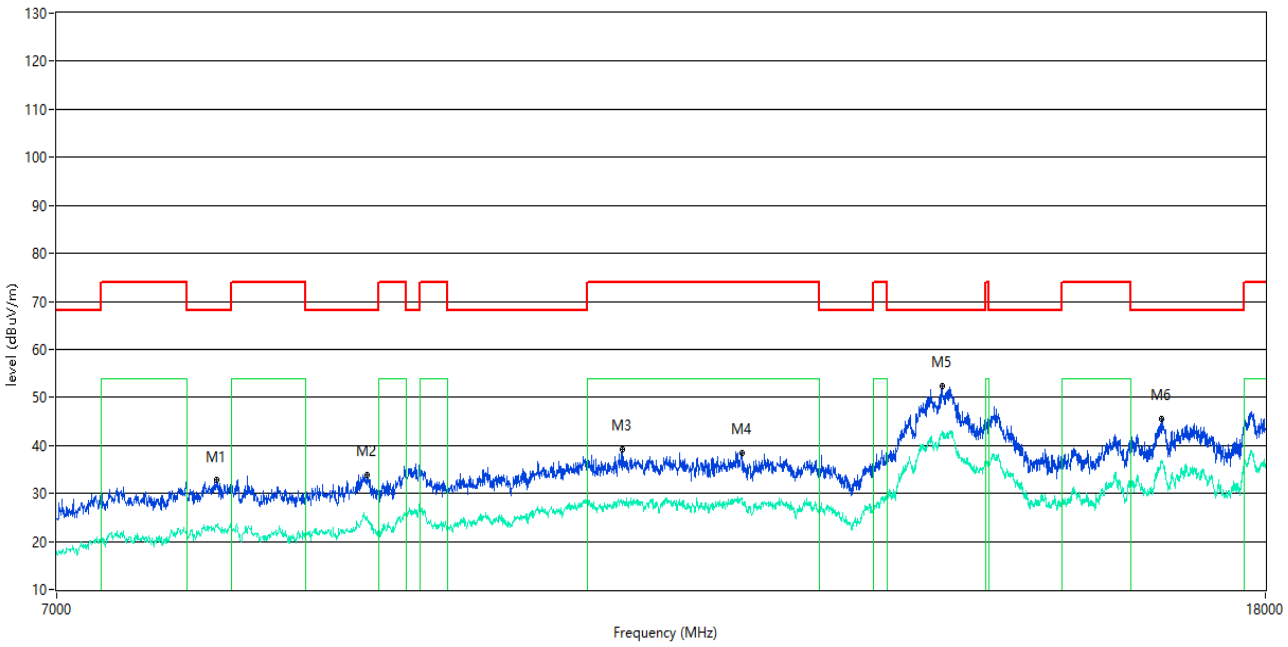
7 GHz to 18 GHz, Band IV 11n20 Low channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8921.770	36.14	--	25.4	-32.33	68.2	--	--	32.06	90.00	150	Vertical	Pass
9782.304	36.63	--	25.8	-32.03	68.2	--	--	31.57	102.00	150	Vertical	Pass
11148.713	38.32	--	29.0	-25.23	74.0	--	54.0	25.00	153.00	150	Vertical	Pass
14035.491	51.77	--	43.0	-6.75	68.2	--	--	16.43	215.00	150	Vertical	Pass
16603.349	46.05	--	36.7	-10.25	68.2	--	--	22.15	318.00	150	Vertical	Pass
17796.551	49.17	--	39.1	-7.84	74.0	--	54.0	14.90	306.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11n20 Low channel ANT H

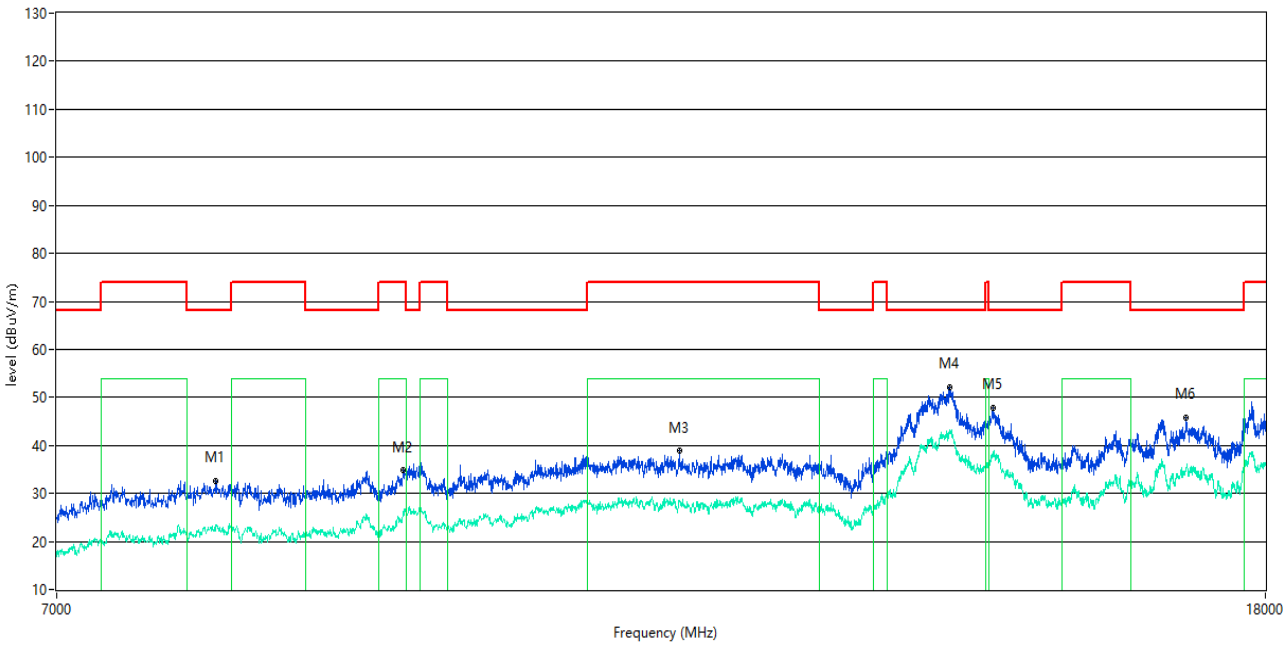
REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7929.268	32.73	--	23.1	-36.91	68.2	--	--	35.47	0.00	150	Horizontal	Pass
8921.770	33.95	--	25.1	-32.33	68.2	--	--	34.25	3.00	150	Horizontal	Pass
10887.528	39.14	--	28.4	-25.55	74.0	--	54.0	25.60	20.00	150	Horizontal	Pass
11954.261	38.29	--	29.0	-24.28	74.0	--	54.0	25.00	224.00	150	Horizontal	Pass
13980.505	52.36	--	41.9	-7.06	68.2	--	--	15.84	311.00	150	Horizontal	Pass
16595.101	45.60	--	36.8	-10.68	68.2	--	--	22.60	40.00	150	Horizontal	Pass

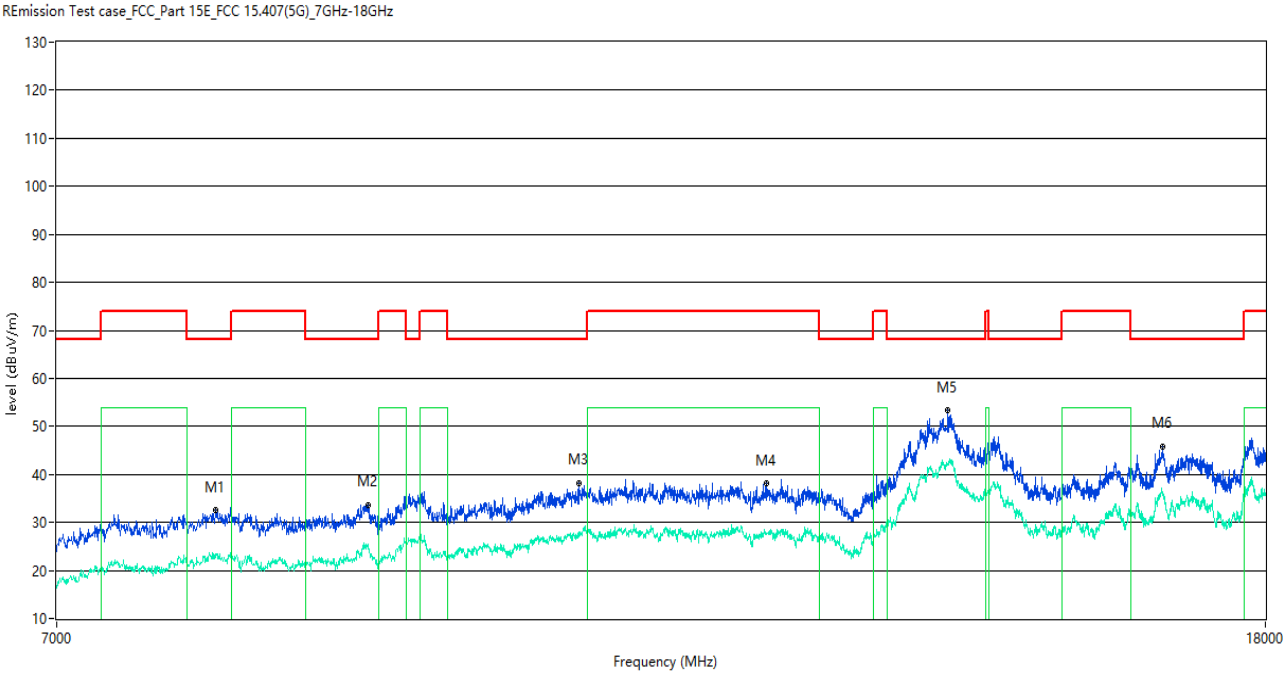
7 GHz to 18 GHz, Band IV 11n20 Middle channel ANT V

REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz



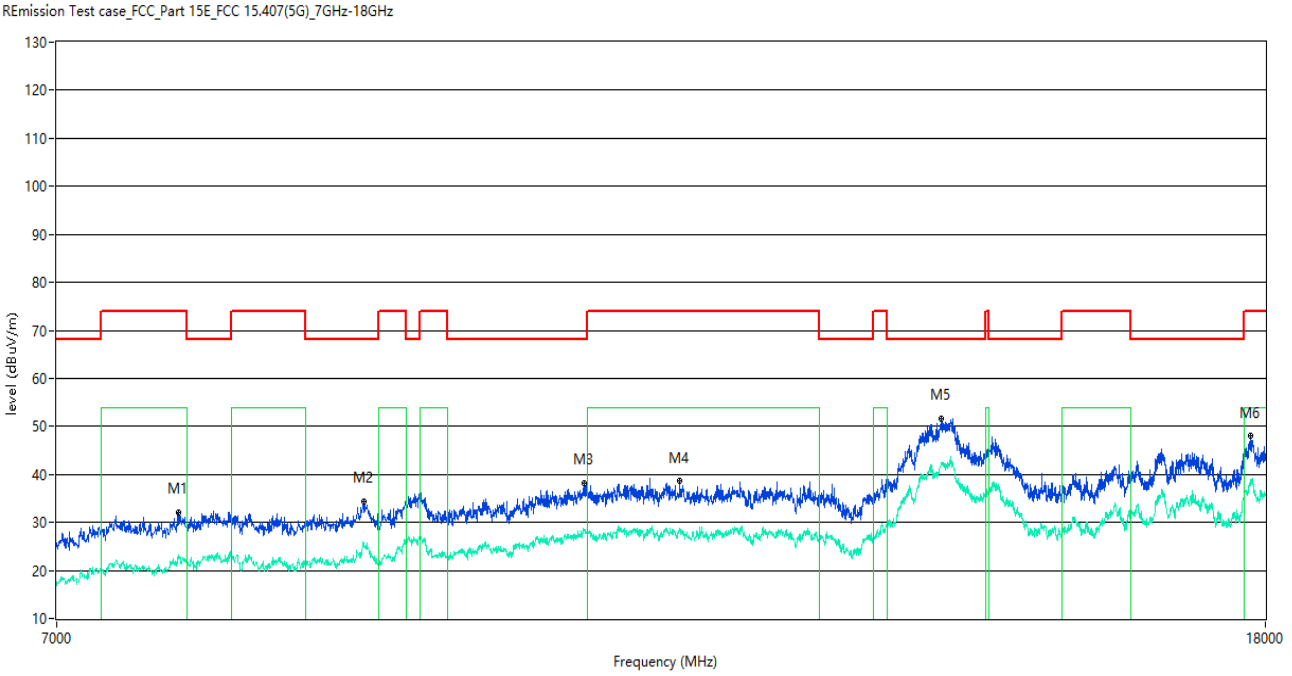
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7926.518	32.57	--	23.4	-36.95	68.2	--	--	35.63	219.00	150	Vertical	Pass
9177.456	34.83	--	25.9	-32.67	74.0	--	54.0	28.10	203.00	150	Vertical	Pass
11385.154	38.80	--	28.5	-24.63	74.0	--	54.0	25.50	225.00	150	Vertical	Pass
14065.734	52.15	--	42.4	-6.61	68.2	--	--	16.05	187.00	150	Vertical	Pass
14555.111	47.86	--	38.3	-11.29	68.2	--	--	20.34	163.00	150	Vertical	Pass
16922.269	45.77	--	34.8	-11.26	68.2	--	--	22.43	69.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11n20 Middle channel ANT H



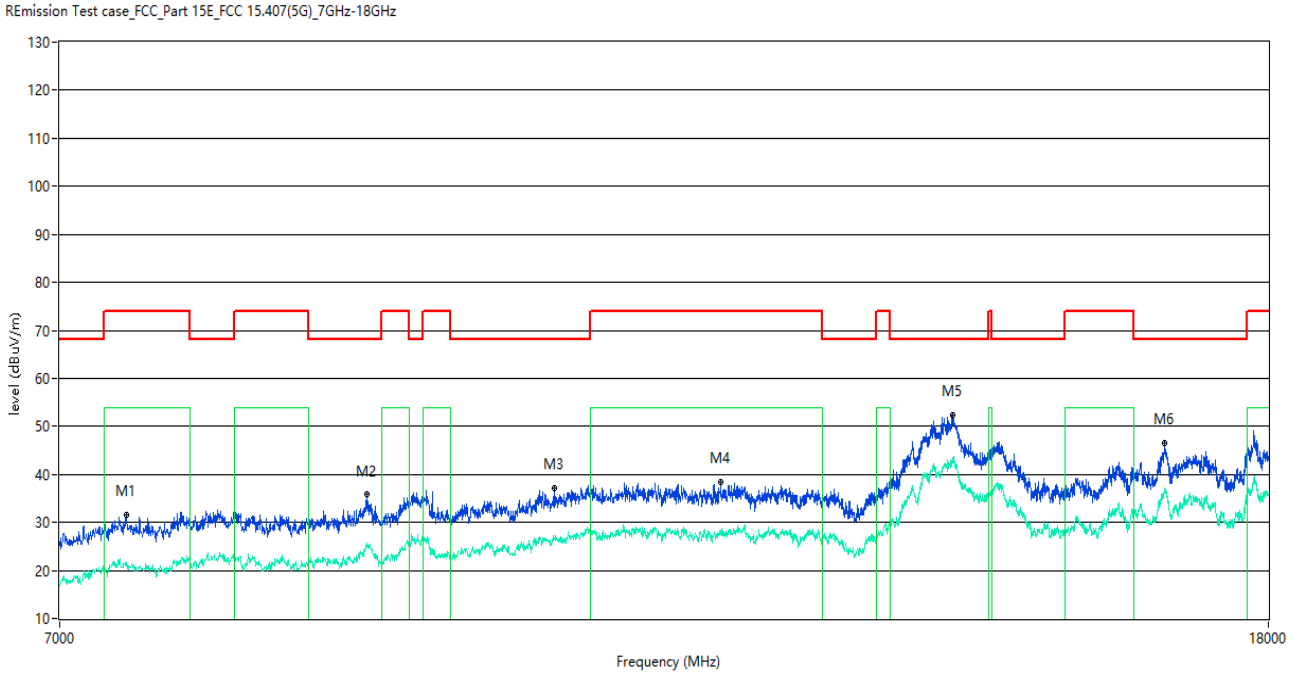
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7926.518	32.61	--	23.4	-36.95	68.2	--	--	35.59	315.00	150	Horizontal	Pass
8927.268	33.51	--	25.5	-32.66	68.2	--	--	34.69	146.00	150	Horizontal	Pass
10524.619	38.09	--	28.0	-26.93	68.2	--	--	30.11	39.00	150	Horizontal	Pass
12185.204	38.07	--	27.7	-24.73	74.0	--	54.0	26.30	70.00	150	Horizontal	Pass
14046.488	53.32	--	42.3	-6.60	68.2	--	--	14.88	127.00	150	Horizontal	Pass
16617.096	45.74	--	36.3	-10.21	68.2	--	--	22.46	325.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band IV 11n20 High channel ANT V



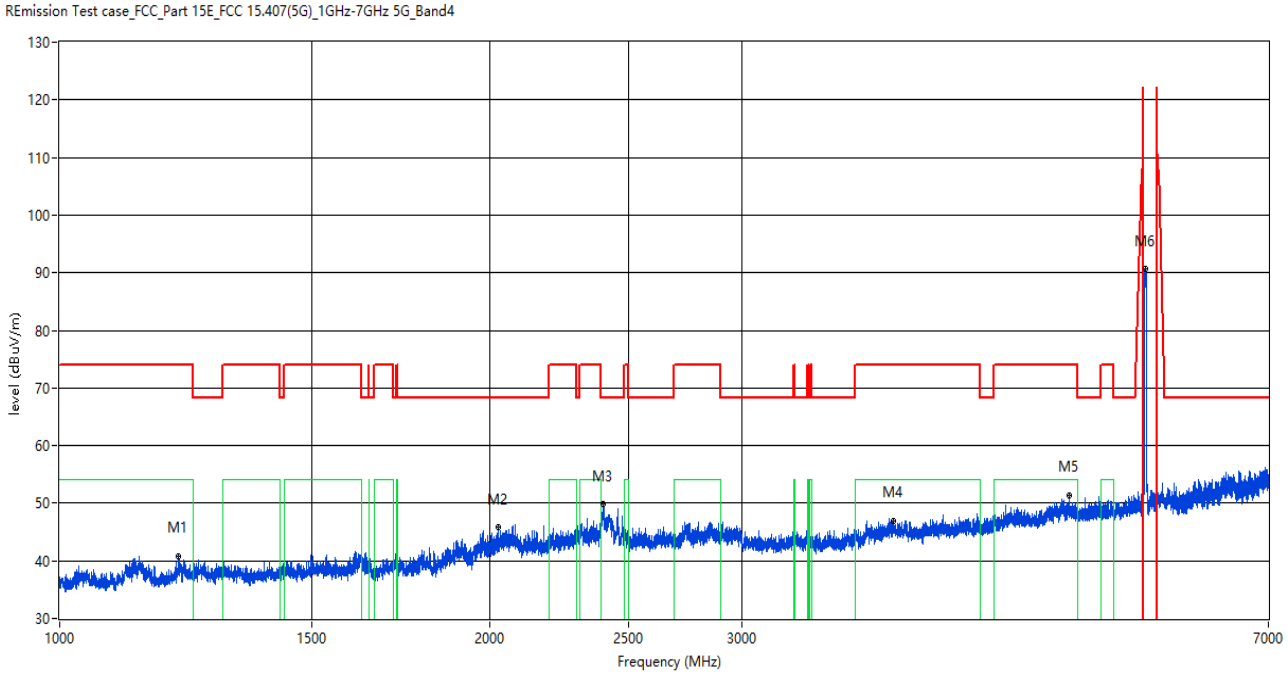
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7701.075	32.01	--	23.1	-35.74	74.0	--	54.0	30.90	277.00	150	Vertical	Pass
8897.026	34.24	--	25.8	-32.04	68.2	--	--	33.96	19.00	150	Vertical	Pass
10568.608	38.21	--	28.3	-26.39	68.2	--	--	29.99	44.00	150	Vertical	Pass
11390.652	38.68	--	28.5	-24.64	74.0	--	54.0	25.50	83.00	150	Vertical	Pass
13972.257	51.48	--	42.3	-7.19	68.2	--	--	16.72	30.00	150	Vertical	Pass
17796.551	47.96	--	38.6	-7.84	74.0	--	54.0	15.40	186.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11n20 High channel ANT H



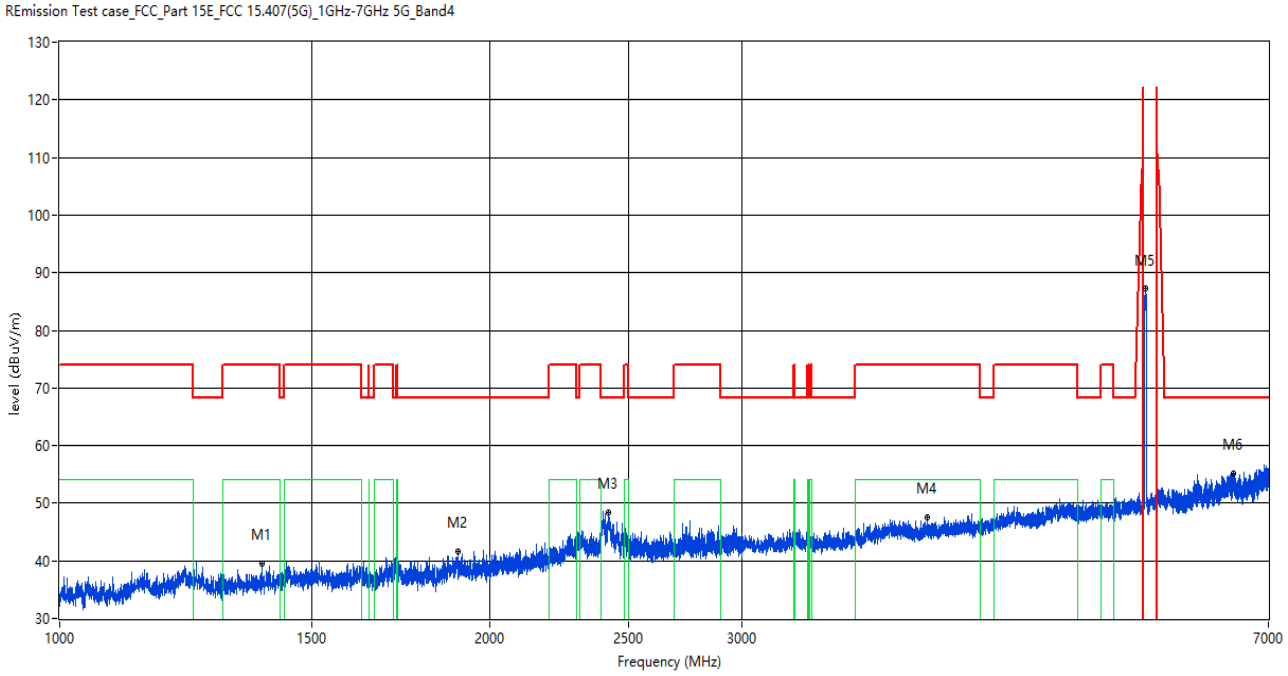
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7373.907	31.66	--	21.0	-36.87	74.0	--	54.0	33.00	115.00	150	Horizontal	Pass
8902.524	35.79	--	25.8	-32.46	68.2	--	--	32.41	37.00	150	Horizontal	Pass
10307.423	37.19	--	26.8	-27.93	68.2	--	--	31.01	153.00	150	Horizontal	Pass
11731.567	38.40	--	28.2	-23.83	74.0	--	54.0	25.80	3.00	150	Horizontal	Pass
14062.984	52.28	--	42.6	-6.42	68.2	--	--	15.92	174.00	150	Horizontal	Pass
16600.600	46.58	--	37.1	-10.26	68.2	--	--	21.62	20.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac20 Low channel ANT V



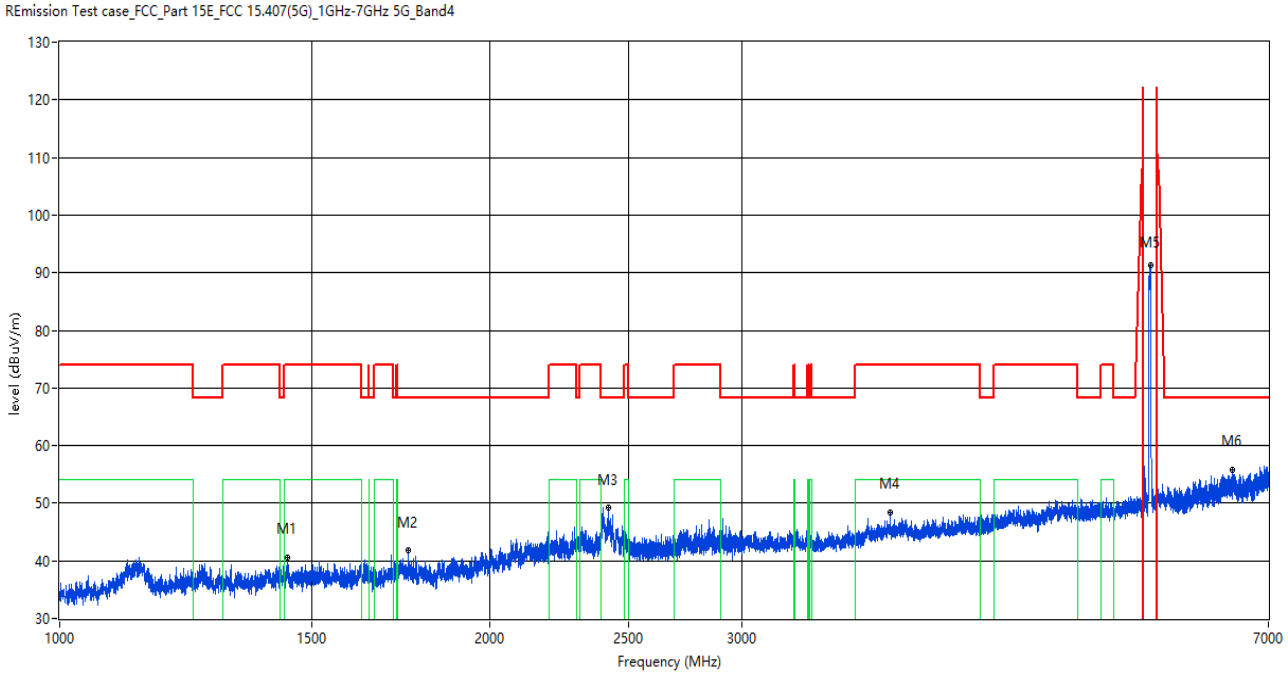
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1211.474	40.77	--	--	-12.22	74.0	--	54.0	13.23	309.00	150	Vertical	Pass
2026.622	45.86	--	--	-8.44	68.2	--	--	22.34	321.00	150	Vertical	Pass
2399.075	49.77	--	--	-0.06	68.2	--	--	18.43	285.00	150	Vertical	Pass
3824.147	47.01	--	--	-2.91	74.0	--	54.0	6.99	231.00	150	Vertical	Pass
5078.740	51.29	--	--	1.45	74.0	--	54.0	2.71	32.00	150	Vertical	Pass
5740.907	90.78	--	--	2.22	--	--	--	--	182.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11ac20 Low channel ANT H



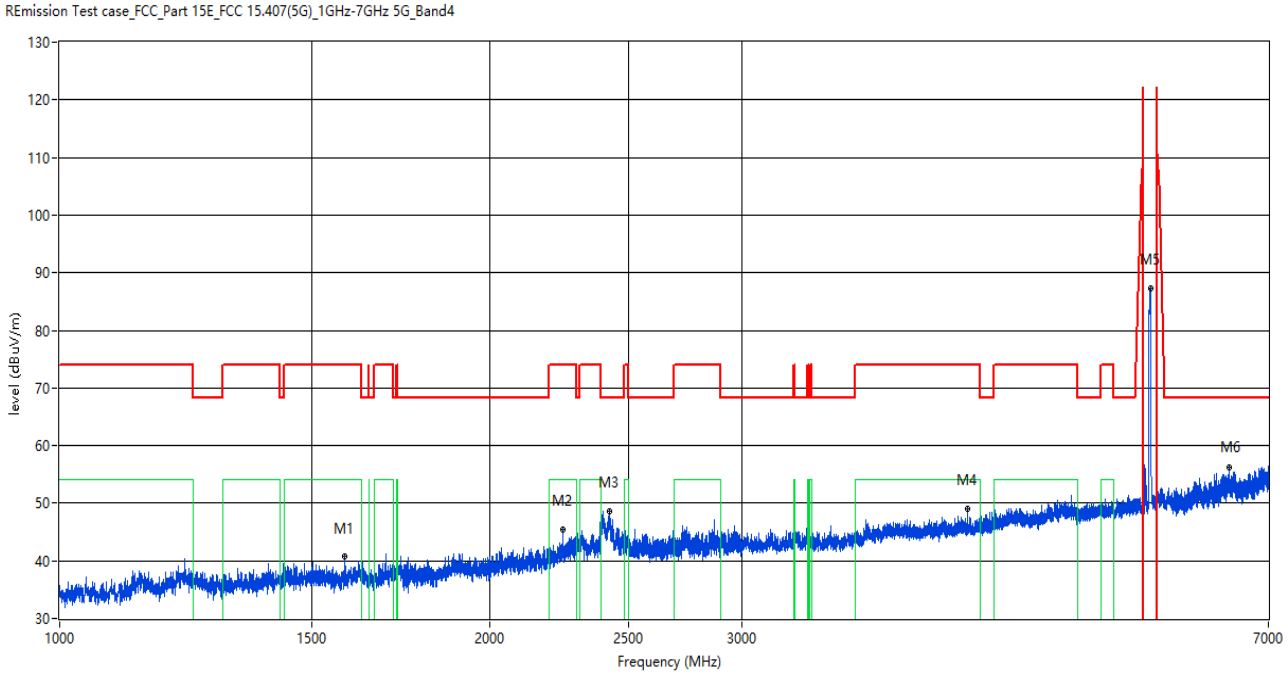
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1384.202	39.45	--	--	-12.05	74.0	--	54.0	14.55	220.00	150	Horizontal	Pass
1899.638	41.64	--	--	-10.01	68.2	--	--	26.56	14.00	150	Horizontal	Pass
2420.822	48.40	--	--	-0.79	68.2	--	--	19.80	271.00	150	Horizontal	Pass
4038.995	47.50	--	--	-2.77	74.0	--	54.0	6.50	17.00	150	Horizontal	Pass
5739.408	87.20	--	--	2.19	--	--	--	--	340.00	150	Horizontal	Pass
6620.297	55.11	--	--	7.90	68.2	--	--	13.09	125.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac20 Middle channel ANT V



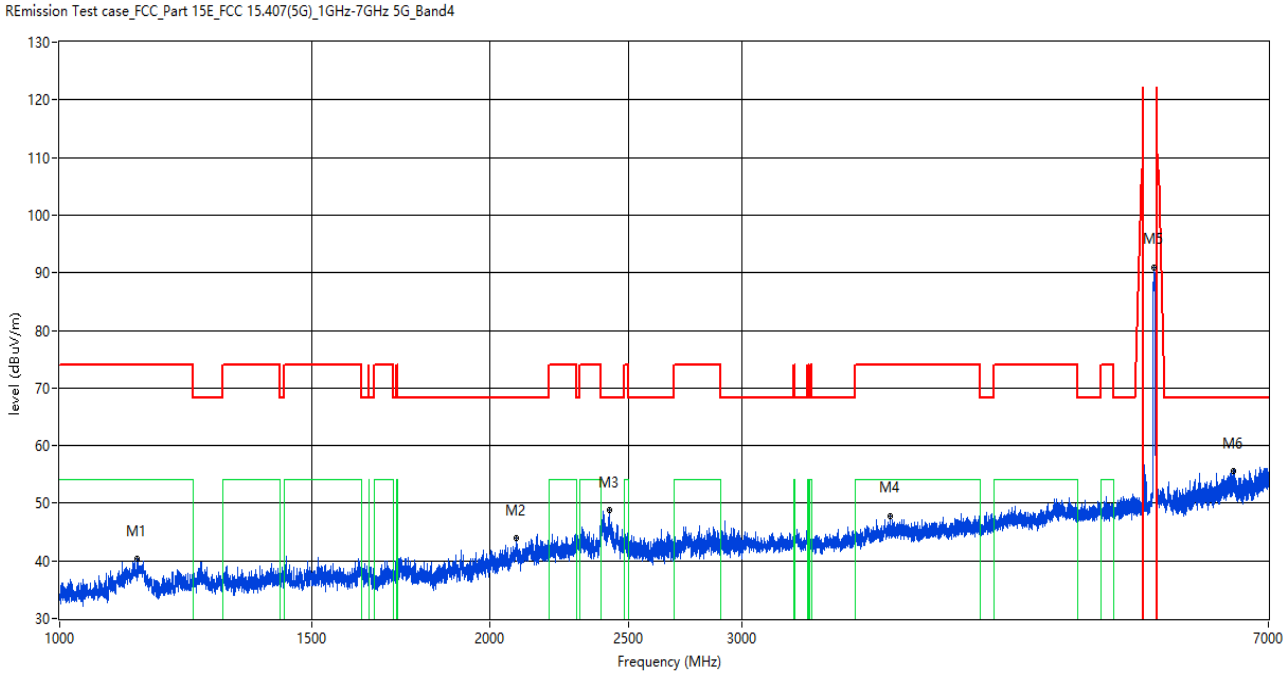
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1443.945	40.62	--	--	-11.42	74.0	--	54.0	13.38	152.00	150	Vertical	Pass
1752.656	41.81	--	--	-11.50	68.2	--	--	26.39	37.00	150	Vertical	Pass
2417.323	49.20	--	--	-0.70	68.2	--	--	19.00	160.00	150	Vertical	Pass
3808.774	48.47	--	--	-2.61	74.0	--	54.0	5.53	270.00	150	Vertical	Pass
5791.526	91.27	--	--	2.97	--	--	--	--	6.00	150	Vertical	Pass
6602.300	55.76	--	--	6.92	68.2	--	--	12.44	39.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11ac20 Middle channel ANT H



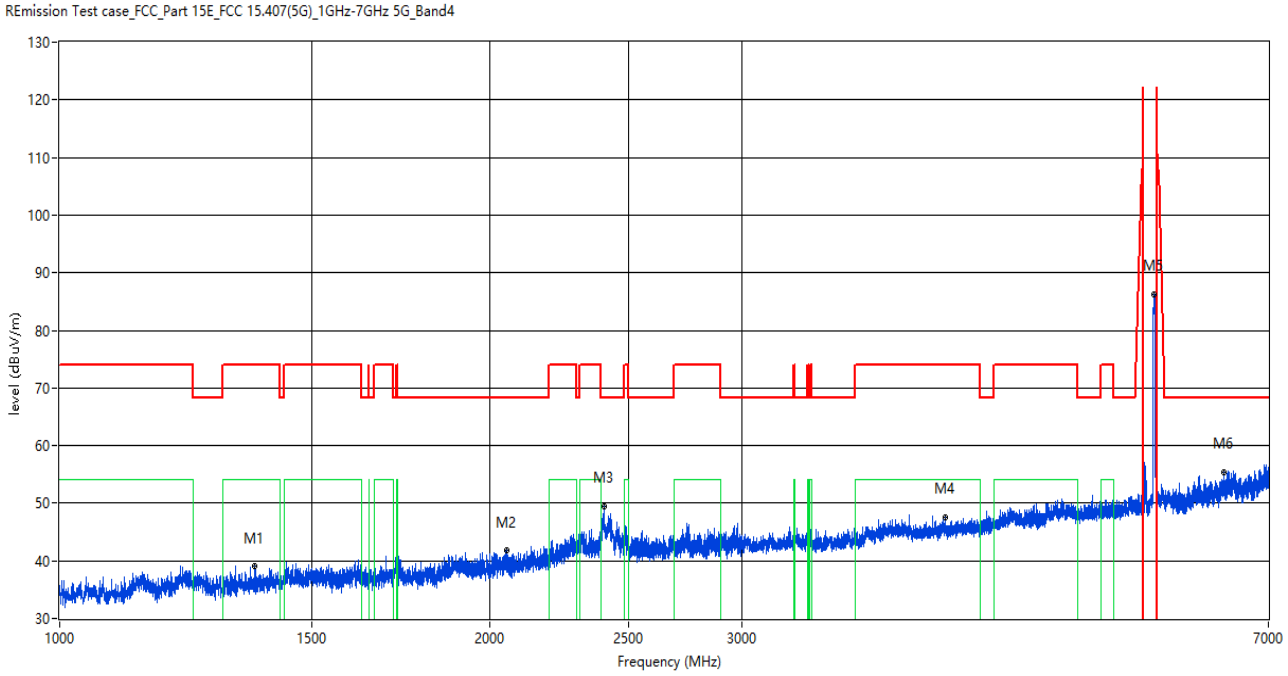
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1581.427	40.82	--	--	-11.72	74.0	--	54.0	13.18	251.00	150	Horizontal	Pass
2249.594	45.35	--	--	-5.81	74.0	--	54.0	8.65	1.00	150	Horizontal	Pass
2423.072	48.60	--	--	-0.86	68.2	--	--	19.60	0.00	150	Horizontal	Pass
4312.711	49.11	--	--	-1.97	74.0	--	54.0	4.89	170.00	150	Horizontal	Pass
5791.526	87.27	--	--	2.97	--	--	--	--	98.00	150	Horizontal	Pass
6573.178	56.15	--	--	7.84	68.2	--	--	12.05	45.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac20 High channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1132.733	40.31	--	--	-12.05	74.0	--	54.0	13.69	4.00	150	Vertical	Pass
2084.114	43.91	--	--	-8.03	68.2	--	--	24.29	9.00	150	Vertical	Pass
2424.572	48.72	--	--	-0.94	68.2	--	--	19.48	4.00	150	Vertical	Pass
3806.524	47.67	--	--	-2.43	74.0	--	54.0	6.33	257.50	150	Vertical	Pass
5820.772	90.91	--	--	3.20	--	--	--	--	42.30	150	Vertical	Pass
6613.173	55.60	--	--	7.68	68.2	--	--	12.60	6.00	150	Vertical	Pass

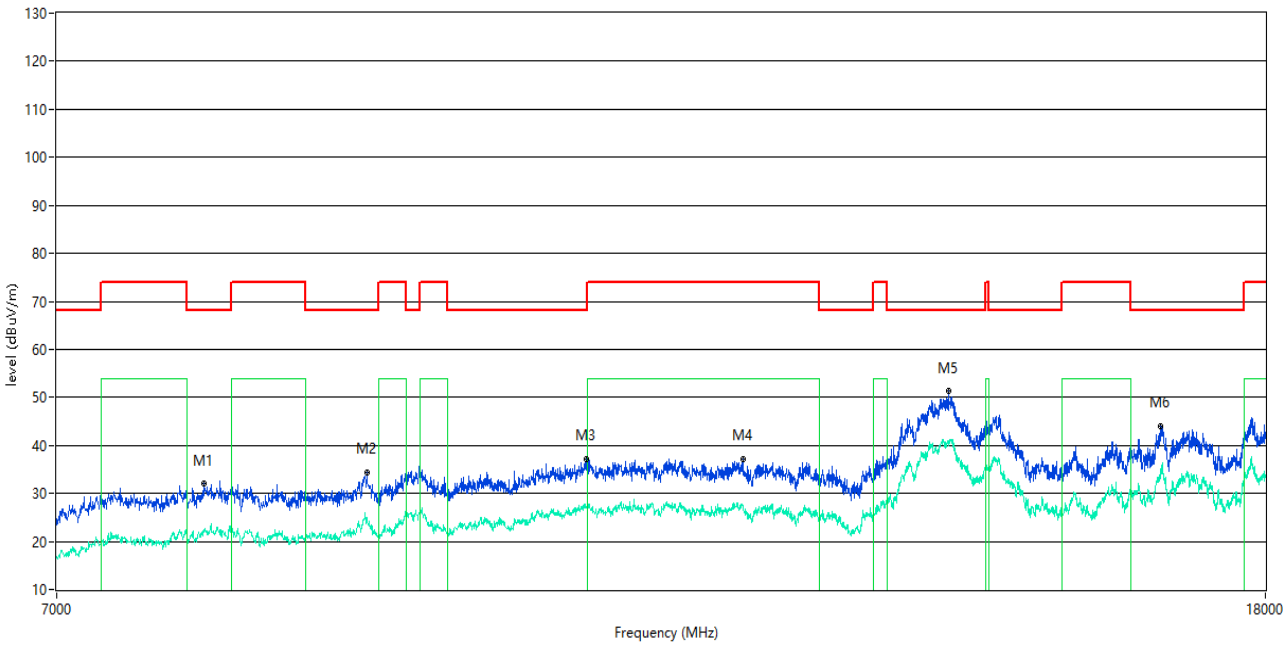
1 GHz to 7 GHz, Band IV 11ac20 High channel ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1369.704	39.00	--	--	-12.12	74.0	--	54.0	15.00	124.00	150	Horizontal	Pass
2055.118	41.94	--	--	-8.19	68.2	--	--	26.26	39.00	150	Horizontal	Pass
2401.825	49.51	--	--	-0.12	68.2	--	--	18.69	3.00	150	Horizontal	Pass
4159.355	47.46	--	--	-1.98	74.0	--	54.0	6.54	284.00	150	Horizontal	Pass
5818.148	86.13	--	--	3.22	--	--	--	--	283.00	150	Horizontal	Pass
6517.935	55.45	--	--	7.78	68.2	--	--	12.75	105.00	150	Horizontal	Pass

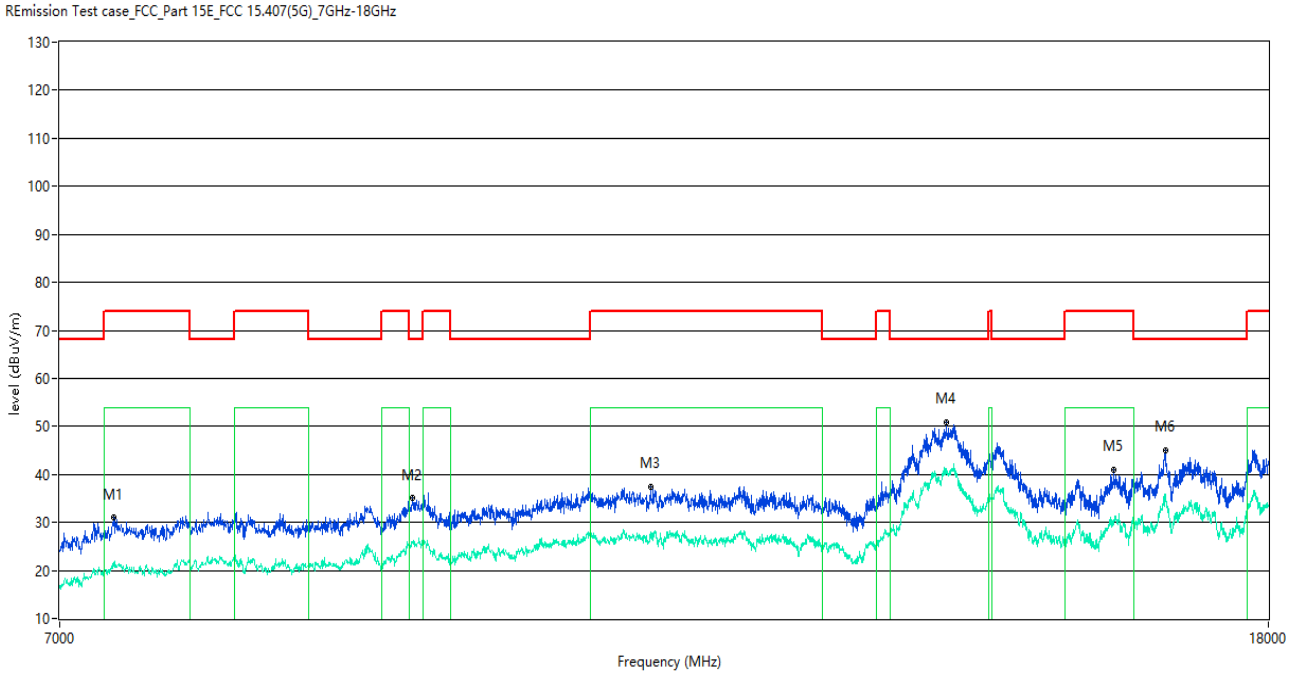
7 GHz to 18 GHz, Band IV 11ac20 Low channel ANT V

REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz



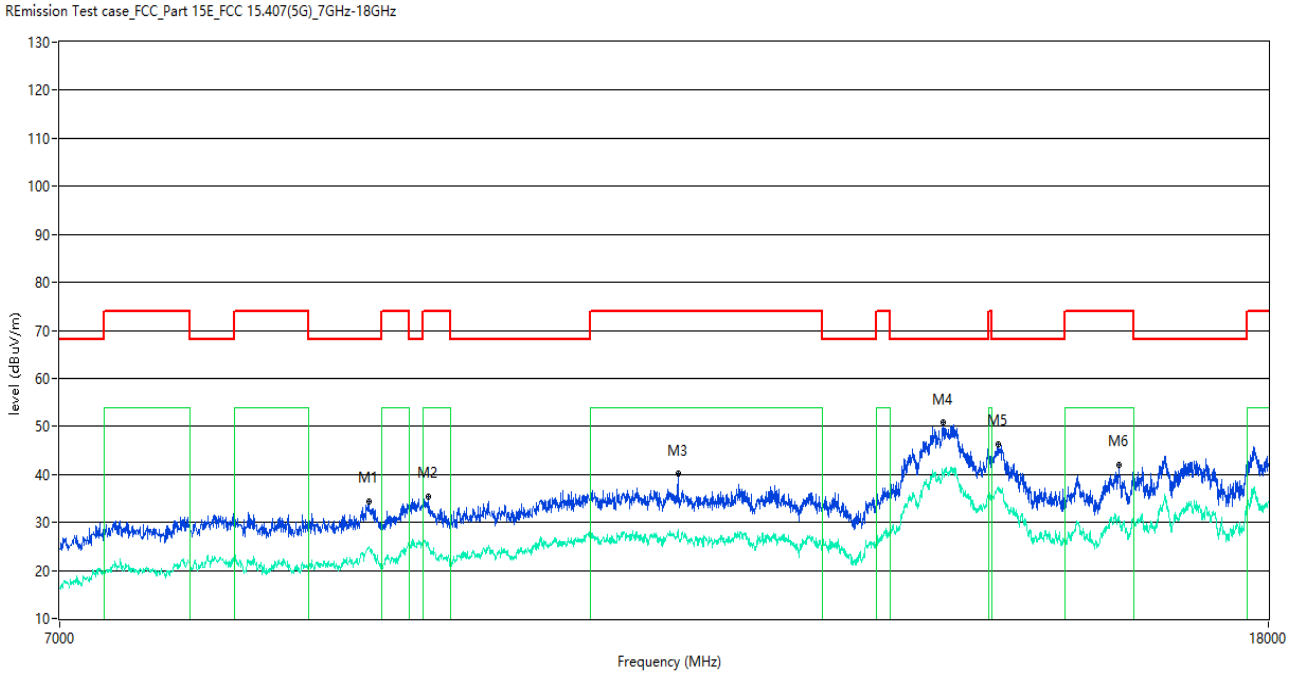
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7855.036	32.06	--	21.8	-36.94	68.2	--	--	36.14	282.00	150	Vertical	Pass
8921.770	34.31	--	24.4	-32.33	68.2	--	--	33.89	285.00	150	Vertical	Pass
10590.602	37.20	--	27.1	-26.11	68.2	--	--	31.00	355.00	150	Vertical	Pass
11965.259	37.27	--	27.6	-24.74	74.0	--	54.0	26.40	66.00	150	Vertical	Pass
14049.238	51.30	--	40.5	-6.62	68.2	--	--	16.90	325.00	150	Vertical	Pass
16586.853	43.98	--	35.0	-10.77	68.2	--	--	24.22	80.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11ac20 Low channel ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7302.424	30.93	--	21.6	-37.14	74.0	--	54.0	32.40	151.00	150	Horizontal	Pass
9221.445	35.00	--	26.1	-32.09	68.2	--	--	33.20	211.00	150	Horizontal	Pass
11107.473	37.29	--	28.0	-24.98	74.0	--	54.0	26.00	225.00	150	Horizontal	Pass
13997.001	50.94	--	41.2	-6.64	68.2	--	--	17.26	282.00	150	Horizontal	Pass
15951.762	40.90	--	30.0	-16.07	74.0	--	54.0	24.00	85.00	150	Horizontal	Pass
16606.098	44.97	--	35.8	-10.28	68.2	--	--	23.23	64.00	150	Horizontal	Pass

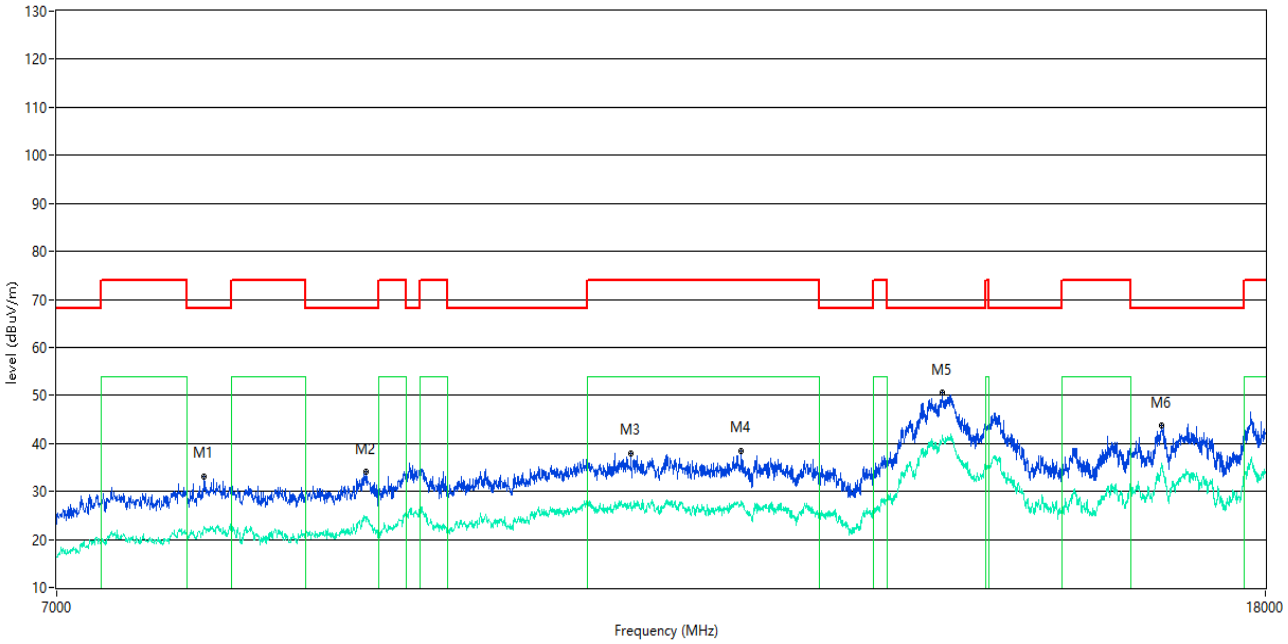
7 GHz to 18 GHz, Band IV 11ac20 Middle channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8913.522	34.34	--	24.7	-32.36	68.2	--	--	33.86	113.00	150	Vertical	Pass
9336.916	35.35	--	25.1	-32.07	74.0	--	54.0	28.90	196.00	150	Vertical	Pass
11346.663	40.09	--	28.5	-24.43	74.0	--	54.0	25.50	227.00	150	Vertical	Pass
13964.009	50.93	--	40.0	-7.62	68.2	--	--	17.27	188.00	150	Vertical	Pass
14568.858	46.18	--	37.1	-11.12	68.2	--	--	22.02	68.00	150	Vertical	Pass
16014.996	41.88	--	31.3	-14.54	74.0	--	54.0	22.70	121.00	150	Vertical	Pass

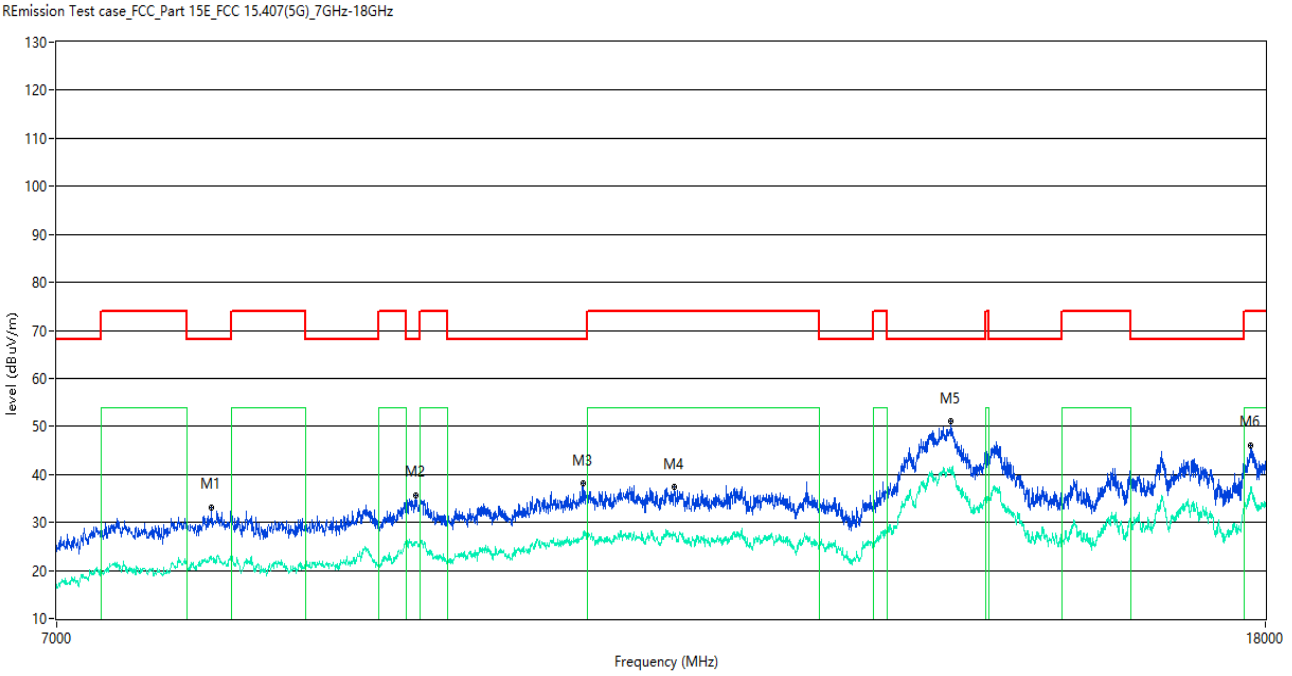
7 GHz to 18 GHz, Band IV 11ac20 Middle channel ANT H

REmission Test case_FCC_Part 15E_FCC 15.407(5G)_7GHz-18GHz



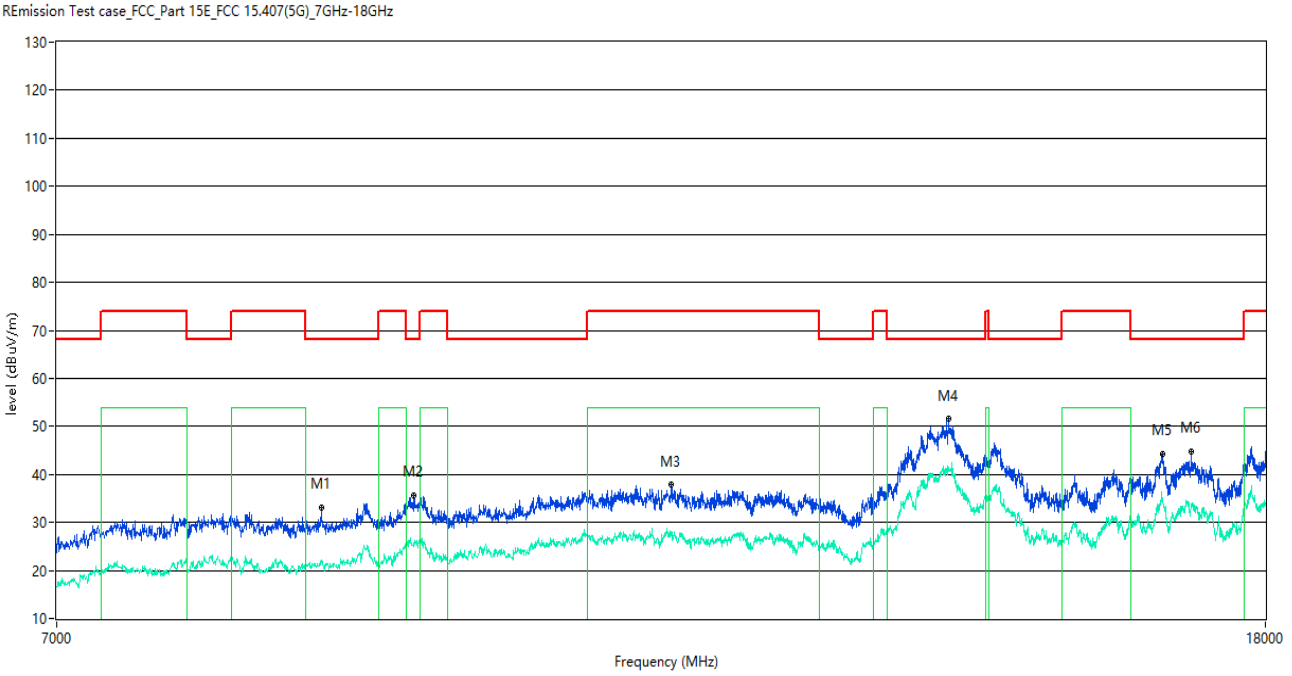
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7855.036	33.21	--	22.6	-36.94	68.2	--	--	34.99	13.00	150	Horizontal	Pass
8916.271	34.06	--	24.8	-32.29	68.2	--	--	34.14	346.00	150	Horizontal	Pass
10964.509	37.80	--	27.2	-25.03	74.0	--	54.0	26.80	304.00	150	Horizontal	Pass
11948.763	38.41	--	27.1	-24.08	74.0	--	54.0	26.90	305.00	150	Horizontal	Pass
13983.254	50.57	--	41.7	-6.99	68.2	--	--	17.63	204.00	150	Horizontal	Pass
16597.851	43.77	--	35.9	-10.41	68.2	--	--	24.43	275.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band IV 11ac20 High channel ANT V



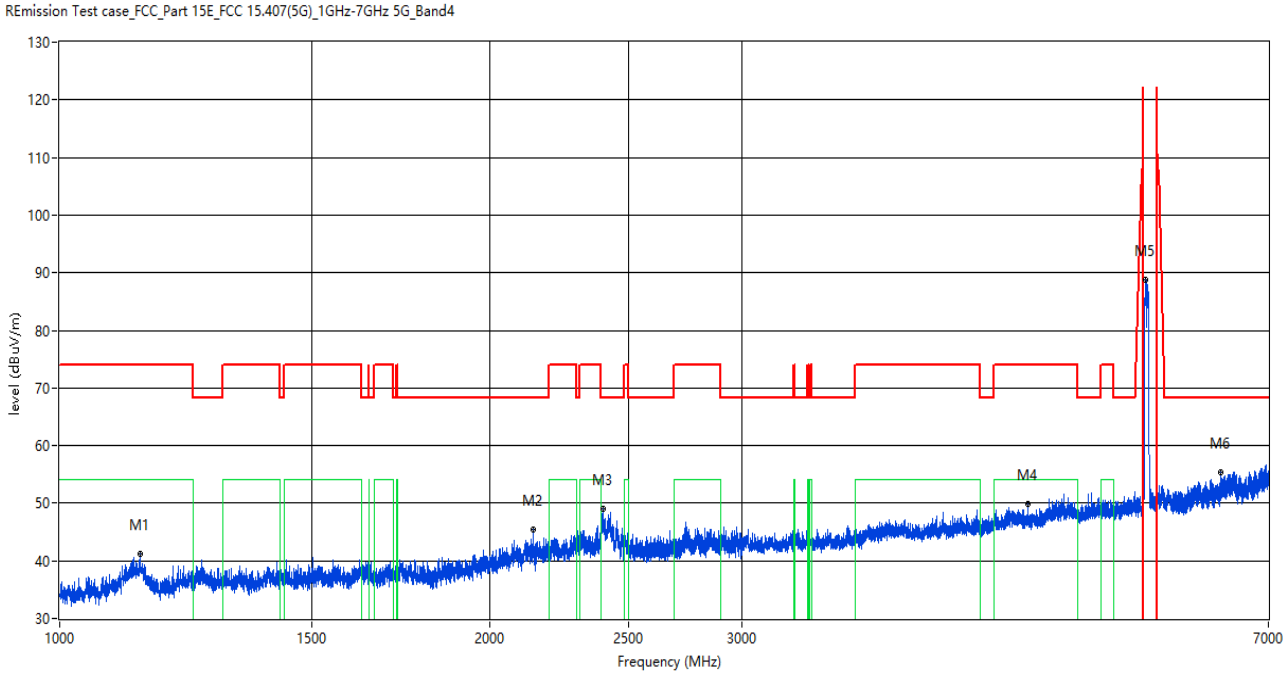
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7899.025	33.06	--	23.0	-36.87	68.2	--	--	35.14	348.00	150	Vertical	Pass
9270.932	35.58	--	25.8	-31.08	68.2	--	--	32.62	344.00	150	Vertical	Pass
10565.859	38.20	--	28.1	-26.47	68.2	--	--	30.00	4.00	150	Vertical	Pass
11343.914	37.36	--	27.2	-24.24	74.0	--	54.0	26.80	259.00	150	Vertical	Pass
14079.480	51.07	--	40.8	-6.58	68.2	--	--	17.13	15.00	150	Vertical	Pass
17785.554	45.99	--	35.8	-8.18	74.0	--	54.0	18.20	146.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11ac20 High channel ANT H



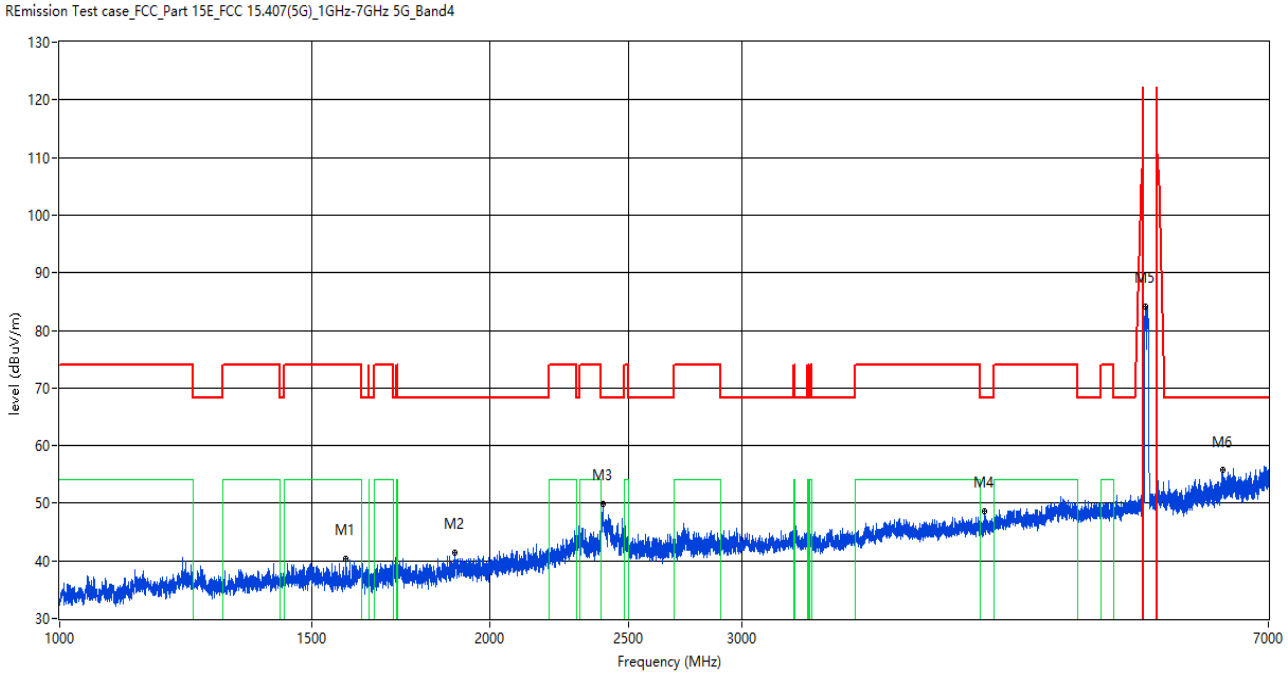
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8608.348	33.02	--	22.3	-35.29	68.2	--	--	35.18	179.00	150	Horizontal	Pass
9254.436	35.73	--	25.6	-31.57	68.2	--	--	32.47	86.00	150	Horizontal	Pass
11316.421	38.03	--	27.9	-24.48	74.0	--	54.0	26.10	153.00	150	Horizontal	Pass
14054.736	51.66	--	40.8	-6.74	68.2	--	--	16.54	101.00	150	Horizontal	Pass
16611.597	44.21	--	34.8	-10.29	68.2	--	--	23.99	352.00	150	Horizontal	Pass
16985.504	44.79	--	33.7	-10.67	68.2	--	--	23.41	320.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac40 Low channel ANT V



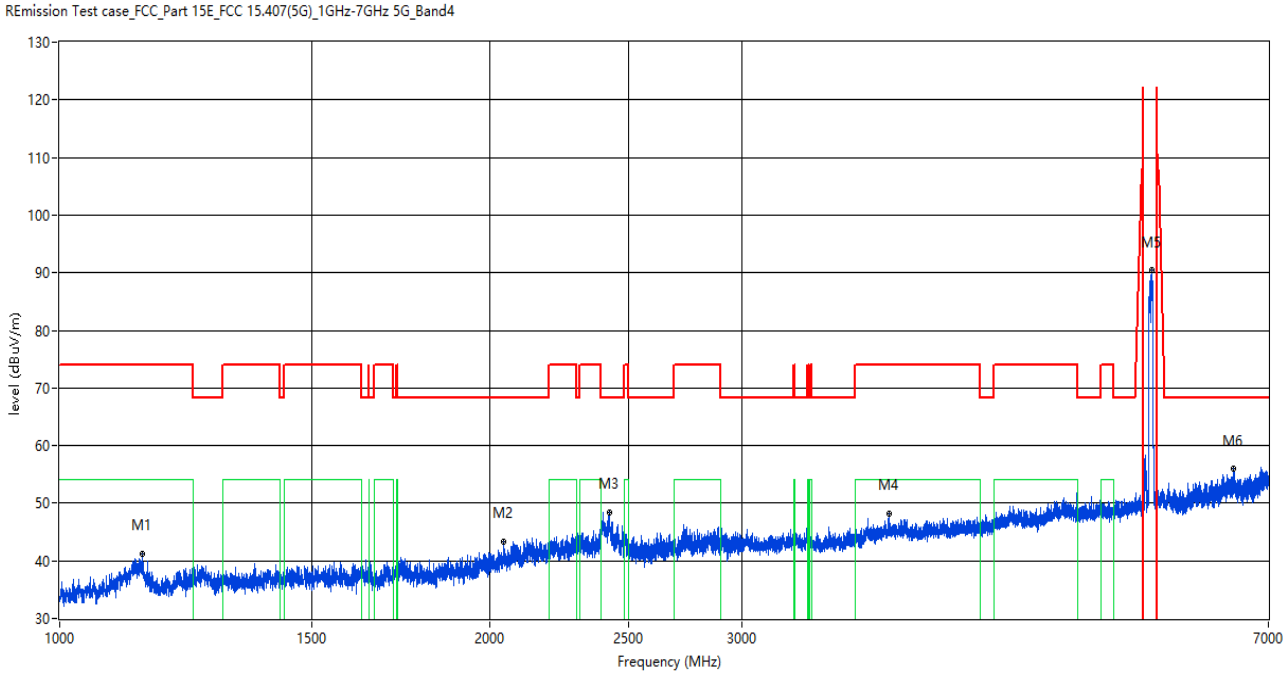
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1137.483	41.27	--	--	-11.66	74.0	--	54.0	12.73	101.00	150	Vertical	Pass
2142.107	45.34	--	--	-7.06	68.2	--	--	22.86	62.00	150	Vertical	Pass
2399.075	49.12	--	--	-0.06	68.2	--	--	19.08	293.00	150	Vertical	Pass
4751.031	49.94	--	--	-0.52	74.0	--	54.0	4.06	279.00	150	Vertical	Pass
5740.907	88.82	--	--	2.22	--	--	--	--	7.00	150	Vertical	Pass
6484.314	55.28	--	--	6.80	68.2	--	--	12.92	277.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11ac40 Low channel ANT H



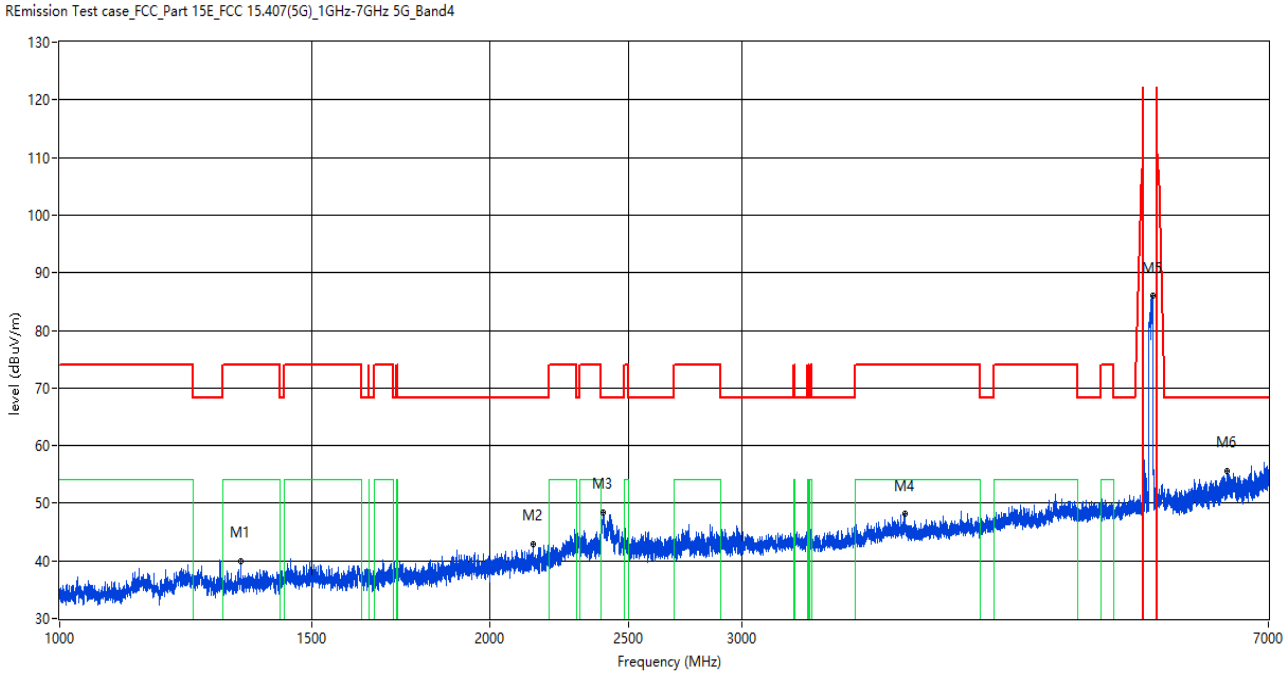
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1584.927	40.32	--	--	-11.85	74.0	--	54.0	13.68	233.00	150	Horizontal	Pass
1890.639	41.32	--	--	-9.85	68.2	--	--	26.88	67.00	150	Horizontal	Pass
2397.075	49.89	--	--	0.01	68.2	--	--	18.31	217.00	150	Horizontal	Pass
4434.196	48.67	--	--	-1.43	68.2	--	--	19.53	84.00	150	Horizontal	Pass
5741.657	84.22	--	--	2.24	--	--	--	--	268.00	150	Horizontal	Pass
6502.812	55.85	--	--	7.49	68.2	--	--	12.35	355.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac40 High channel ANT V



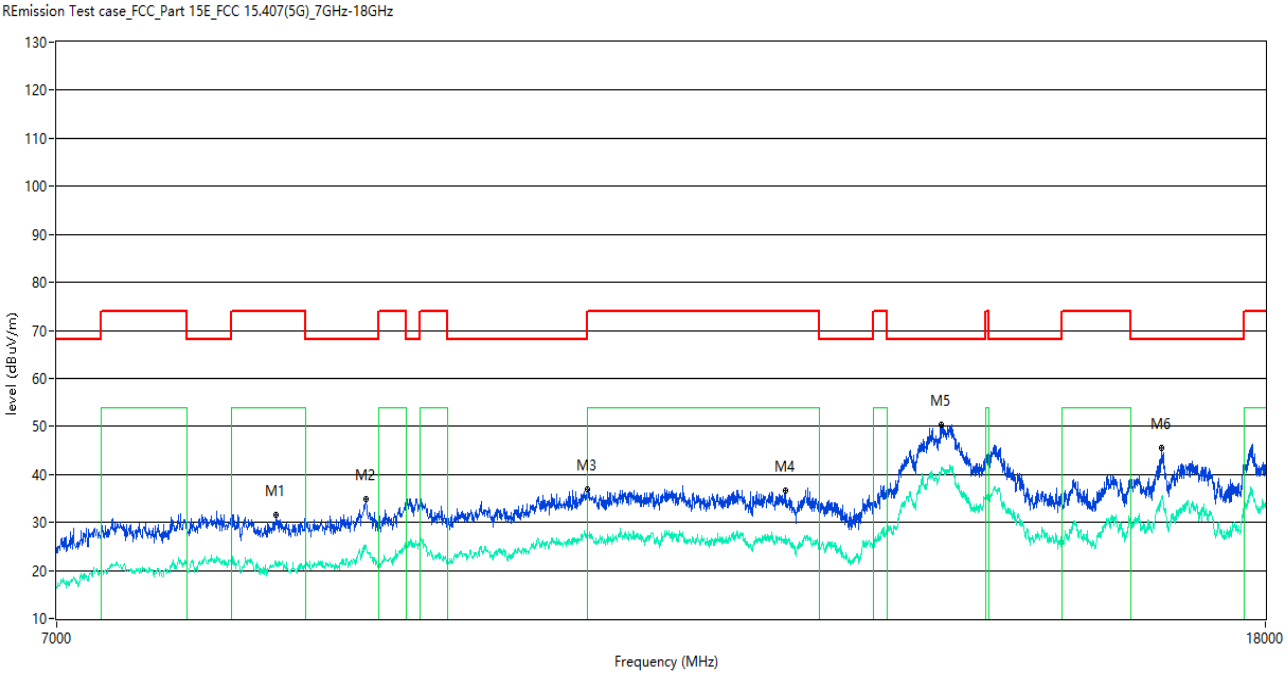
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1142.732	41.22	--	--	-11.73	74.0	--	54.0	12.78	4.00	150	Vertical	Pass
2044.369	43.29	--	--	-8.15	68.2	--	--	24.91	296.00	150	Vertical	Pass
2424.072	48.46	--	--	-0.91	68.2	--	--	19.74	243.00	150	Vertical	Pass
3798.275	48.09	--	--	-2.81	74.0	--	54.0	5.91	128.00	150	Vertical	Pass
5807.274	90.43	--	--	3.02	--	--	--	--	261.00	150	Vertical	Pass
6616.673	56.07	--	--	7.93	68.2	--	--	12.13	261.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11ac40 High channel ANT H



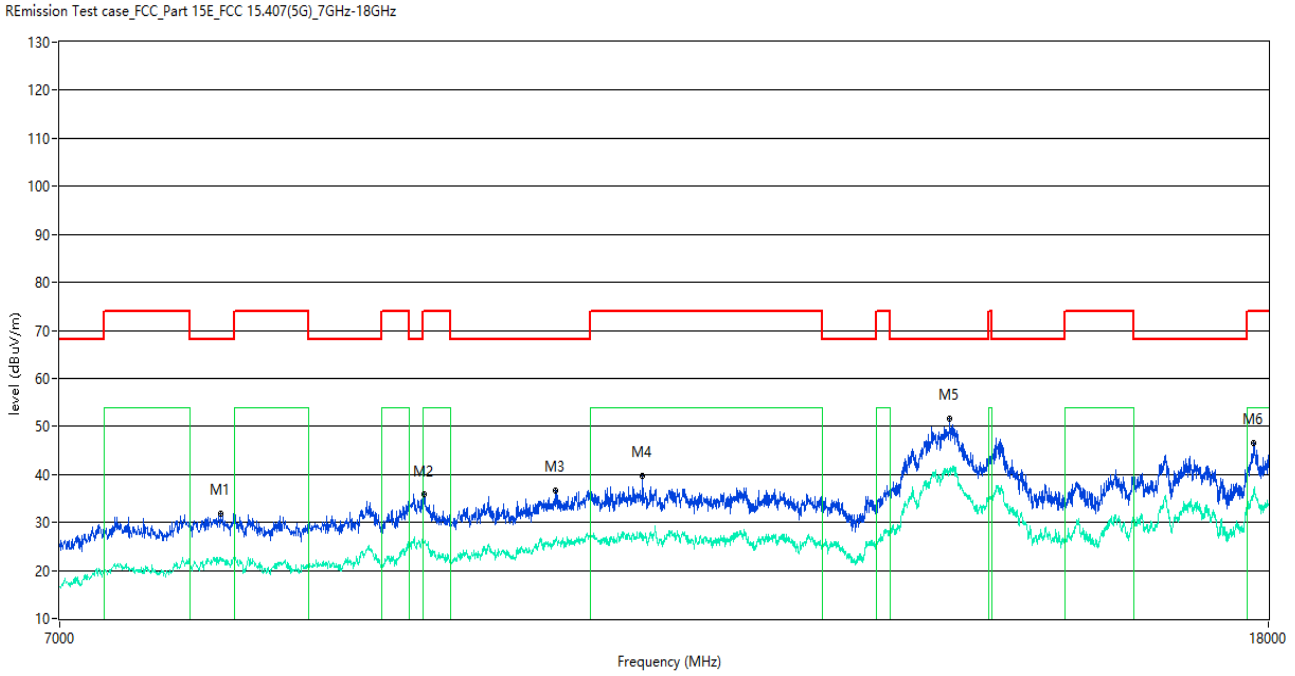
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1339.458	40.02	--	--	-11.89	74.0	--	54.0	13.98	13.00	150	Horizontal	Pass
2143.857	43.00	--	--	-7.14	68.2	--	--	25.20	5.00	150	Horizontal	Pass
2397.075	48.35	--	--	0.01	68.2	--	--	19.85	2.00	150	Horizontal	Pass
3896.888	48.18	--	--	-2.49	74.0	--	54.0	5.82	243.30	150	Horizontal	Pass
5807.649	85.92	--	--	3.04	--	--	--	--	278.40	150	Horizontal	Pass
6550.431	55.52	--	--	7.01	68.2	--	--	12.68	6.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band IV 11ac40 Low channel ANT V



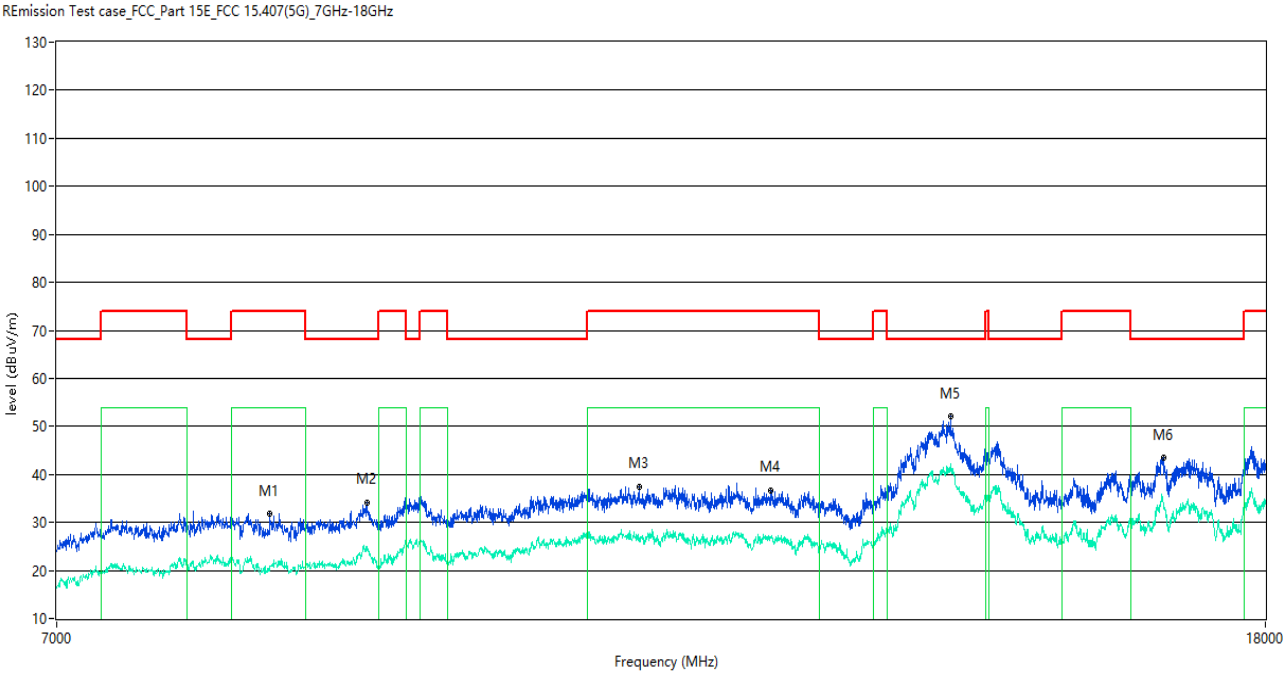
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8311.422	31.55	--	22.0	-35.39	74.0	--	54.0	32.00	80.00	150	Vertical	Pass
8916.271	34.81	--	24.4	-32.29	68.2	--	--	33.39	80.00	150	Vertical	Pass
10593.352	36.83	--	27.4	-26.27	68.2	--	--	31.37	346.00	150	Vertical	Pass
12366.658	36.69	--	27.2	-24.44	74.0	--	54.0	26.80	12.00	150	Vertical	Pass
13966.758	50.41	--	40.5	-7.49	68.2	--	--	17.79	163.00	150	Vertical	Pass
16595.101	45.47	--	35.2	-10.68	68.2	--	--	22.73	153.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11ac40 Low channel ANT H



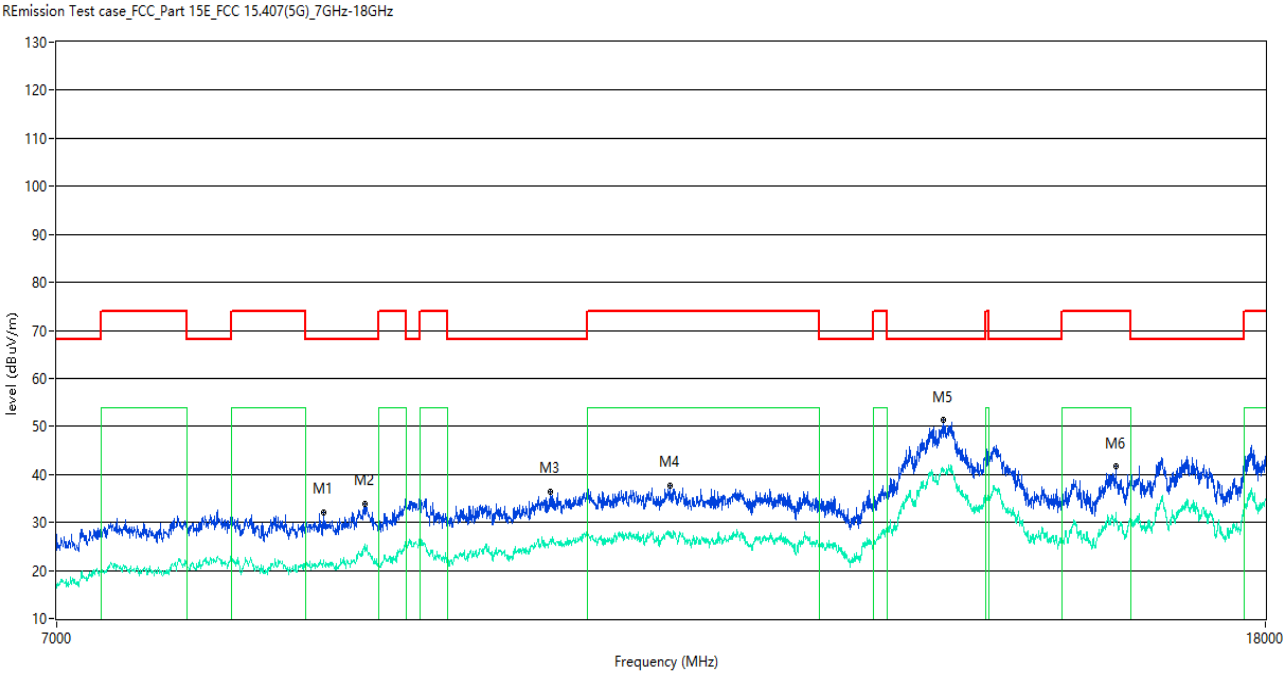
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7937.516	31.87	--	22.8	-36.77	68.2	--	--	36.33	276.00	150	Horizontal	Pass
9303.924	35.97	--	25.8	-31.26	74.0	--	54.0	28.20	346.00	150	Horizontal	Pass
10315.671	36.54	--	26.1	-27.65	68.2	--	--	31.66	207.00	150	Horizontal	Pass
11038.740	39.69	--	27.6	-24.41	74.0	--	54.0	26.40	46.00	150	Horizontal	Pass
14029.993	51.48	--	40.8	-6.78	68.2	--	--	16.72	196.00	150	Horizontal	Pass
17799.300	46.56	--	36.8	-7.95	74.0	--	54.0	17.20	349.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band IV 11ac40 High channel ANT V



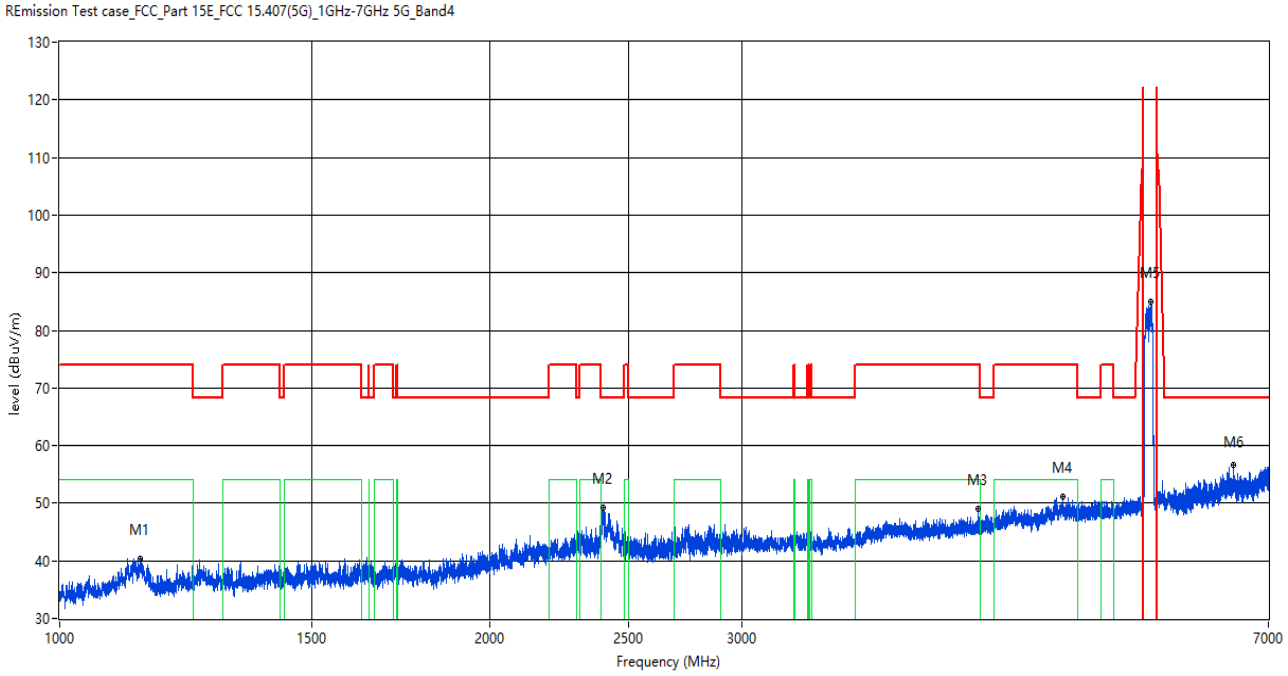
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8267.433	31.90	--	20.8	-36.21	74.0	--	54.0	33.20	105.00	150	Vertical	Pass
8919.020	34.09	--	24.9	-32.29	68.2	--	--	34.11	303.00	150	Vertical	Pass
11035.991	37.39	--	26.8	-24.92	74.0	--	54.0	27.20	158.00	150	Vertical	Pass
12229.193	36.59	--	27.1	-24.37	74.0	--	54.0	26.90	322.00	150	Vertical	Pass
14079.480	52.04	--	42.1	-6.58	68.2	--	--	16.16	260.00	150	Vertical	Pass
16622.594	43.38	--	34.0	-10.35	68.2	--	--	24.82	241.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11ac40 High channel ANT H



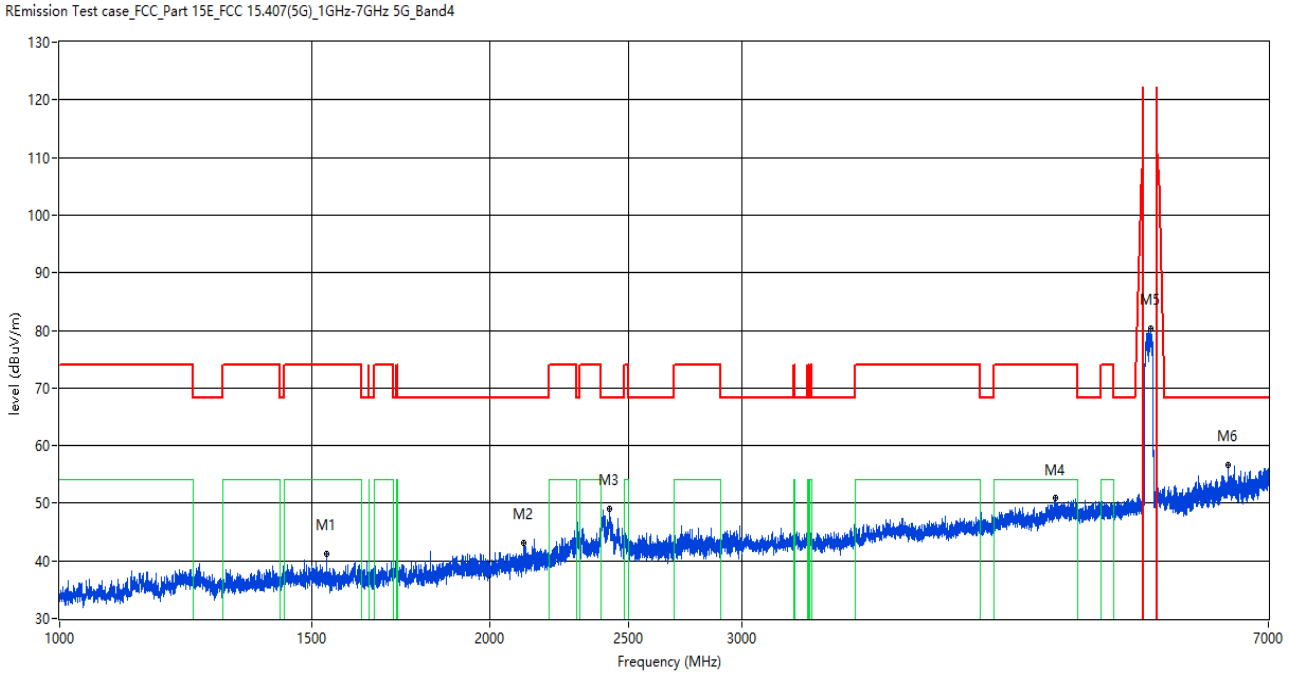
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8622.094	31.98	--	22.1	-35.38	68.2	--	--	36.22	48.00	150	Horizontal	Pass
8905.274	33.74	--	25.4	-32.43	68.2	--	--	34.46	138.00	150	Horizontal	Pass
10296.426	36.40	--	26.5	-27.54	68.2	--	--	31.80	299.00	150	Horizontal	Pass
11302.674	37.68	--	28.1	-24.42	74.0	--	54.0	25.90	19.00	150	Horizontal	Pass
13994.251	51.46	--	41.2	-6.73	68.2	--	--	16.74	198.00	150	Horizontal	Pass
16017.746	41.78	--	31.8	-14.71	74.0	--	54.0	22.20	217.00	150	Horizontal	Pass

1 GHz to 7 GHz, Band IV 11ac80 Middle channel ANT V



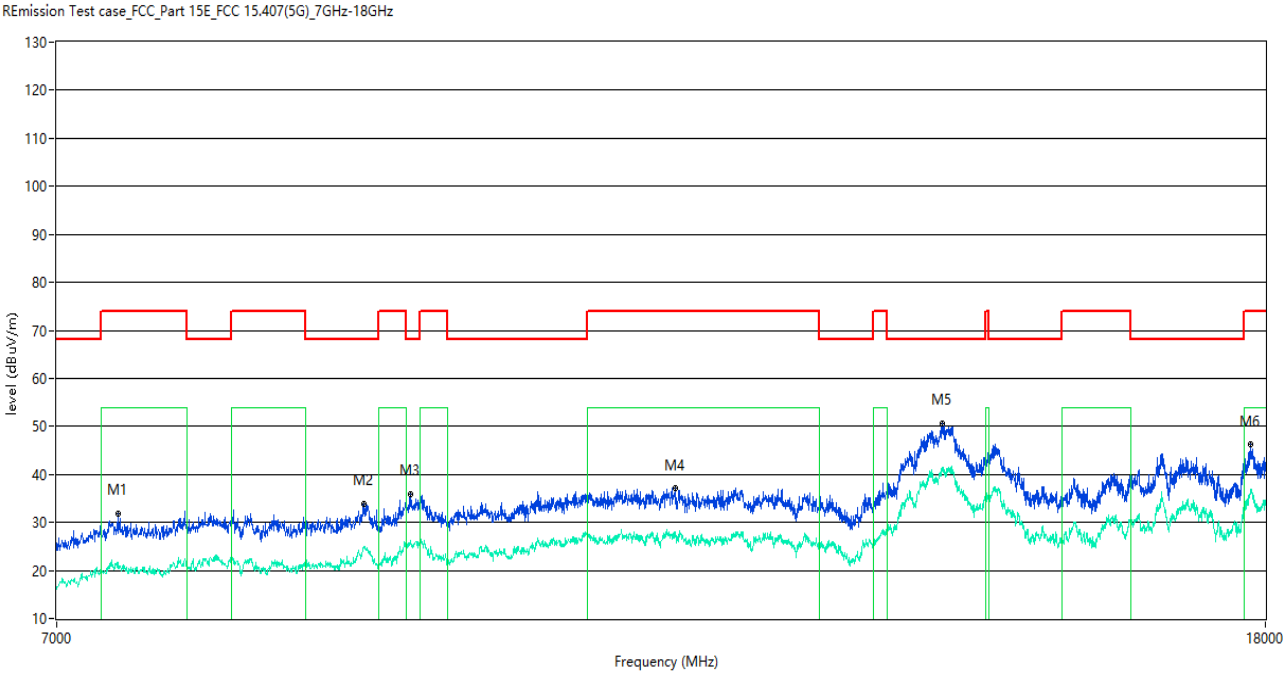
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1138.733	40.32	--	--	-11.49	74.0	--	54.0	13.68	11.00	150	Vertical	Pass
2399.575	49.15	--	--	-0.07	68.2	--	--	19.05	9.00	150	Vertical	Pass
4386.577	49.04	--	--	-1.93	74.0	--	54.0	4.96	247.20	150	Vertical	Pass
5028.496	51.07	--	--	0.83	74.0	--	54.0	2.93	293.00	150	Vertical	Pass
5790.776	82.95	--	--	2.95	--	--	--	--	169.40	150	Vertical	Pass
6618.673	56.65	--	--	8.02	68.2	--	--	11.55	5.00	150	Vertical	Pass

1 GHz to 7 GHz, Band IV 11ac80 Middle channel ANT H



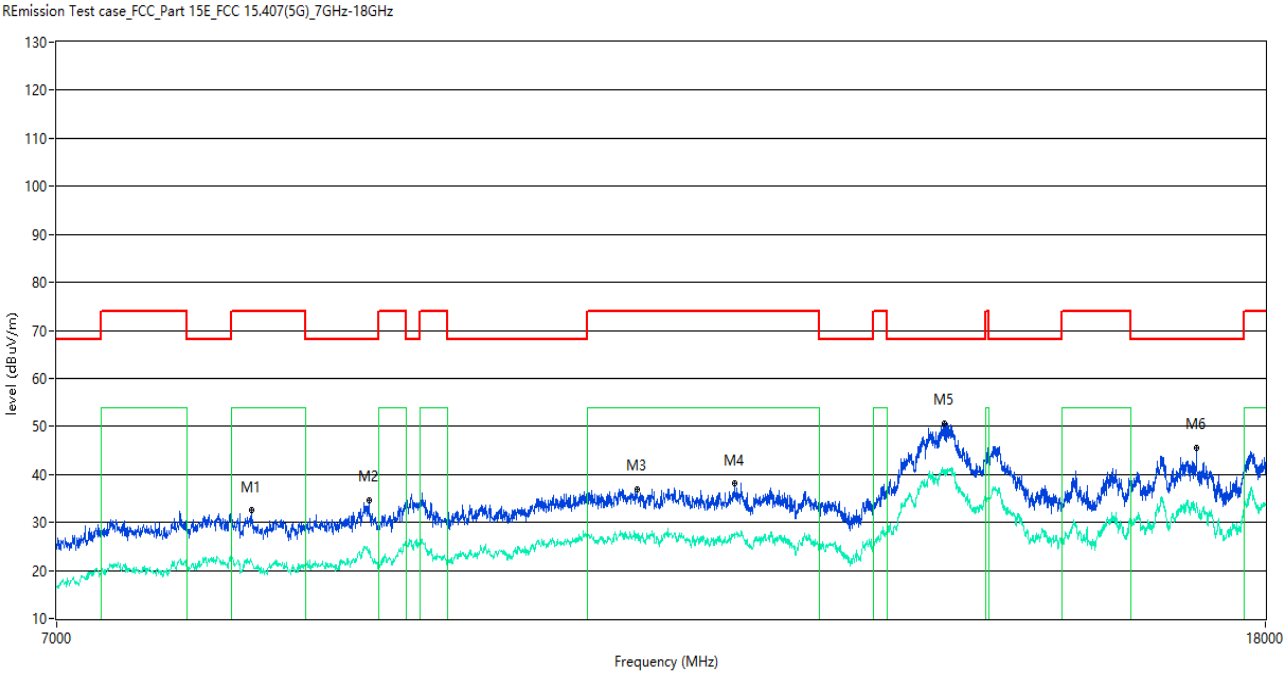
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1537.683	41.28	--	--	-11.74	74.0	--	54.0	12.72	352.00	150	Horizontal	Pass
2112.111	43.21	--	--	-7.52	68.2	--	--	24.99	281.00	150	Horizontal	Pass
2423.322	49.01	--	--	-0.88	68.2	--	--	19.19	150.00	150	Horizontal	Pass
4967.004	50.99	--	--	1.24	74.0	--	54.0	3.01	176.00	150	Horizontal	Pass
5790.401	80.38	--	--	2.94	--	--	--	--	1.00	150	Horizontal	Pass
6564.554	56.68	--	--	8.31	68.2	--	--	11.52	169.00	150	Horizontal	Pass

7 GHz to 18 GHz, Band IV 11ac80 Middle channel ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7343.664	31.87	--	21.6	-37.04	74.0	--	54.0	32.40	332.00	150	Vertical	Pass
8899.775	33.96	--	24.7	-32.30	68.2	--	--	34.24	333.00	150	Vertical	Pass
9226.943	35.89	--	25.9	-32.00	68.2	--	--	32.31	175.00	150	Vertical	Pass
11352.162	37.16	--	26.9	-24.65	74.0	--	54.0	27.10	218.00	150	Vertical	Pass
13988.753	50.57	--	40.8	-6.91	68.2	--	--	17.63	23.00	150	Vertical	Pass
17796.551	46.29	--	36.8	-7.84	74.0	--	54.0	17.20	253.00	150	Vertical	Pass

7 GHz to 18 GHz, Band IV 11ac80 Middle channel ANT H



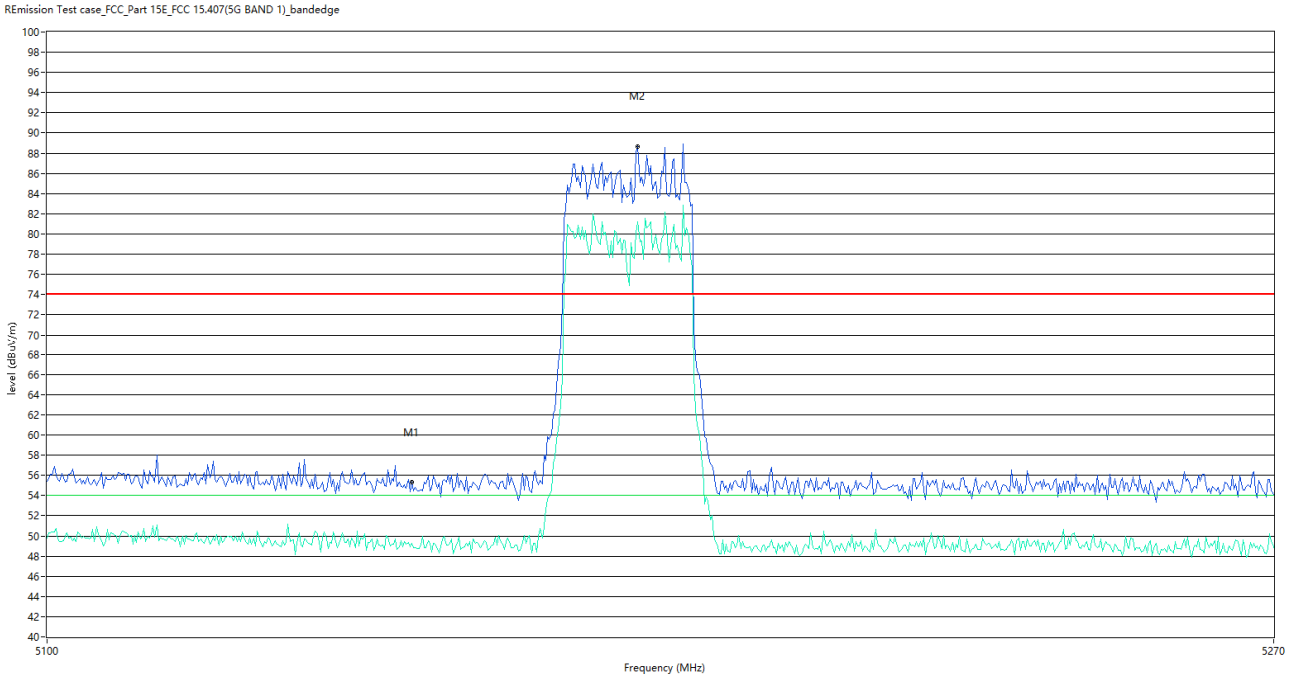
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
8149.213	32.49	--	22.0	-35.85	74.0	--	54.0	32.00	298.00	150	Horizontal	Pass
8932.767	34.51	--	24.3	-32.78	68.2	--	--	33.69	142.00	150	Horizontal	Pass
11013.997	36.84	--	27.4	-24.92	74.0	--	54.0	26.60	256.00	150	Horizontal	Pass
11888.278	38.23	--	27.4	-24.66	74.0	--	54.0	26.60	270.00	150	Horizontal	Pass
14002.499	50.59	--	40.8	-6.73	68.2	--	--	17.61	31.00	150	Horizontal	Pass
17056.986	45.49	--	34.2	-10.86	68.2	--	--	22.71	129.00	150	Horizontal	Pass

A.7.2 Band Edge (Restricted-band)

Test Band	Mode	Channel	Verdict
Band I	802.11n(HT20)	Low	Pass
		High	Pass
	802.11ac(VHT20)	Low	Pass
		High	Pass
	802.11ac(VHT40)	Low	Pass
		High	Pass
	802.11ac(VHT80)	Middle	Pass
Band IV	802.11n(HT20)	Low	Pass
		High	Pass
	802.11ac(VHT20)	Low	Pass
		High	Pass
	802.11ac(VHT40)	Low	Pass
		High	Pass
	802.11ac(VHT80)	Middle	Pass

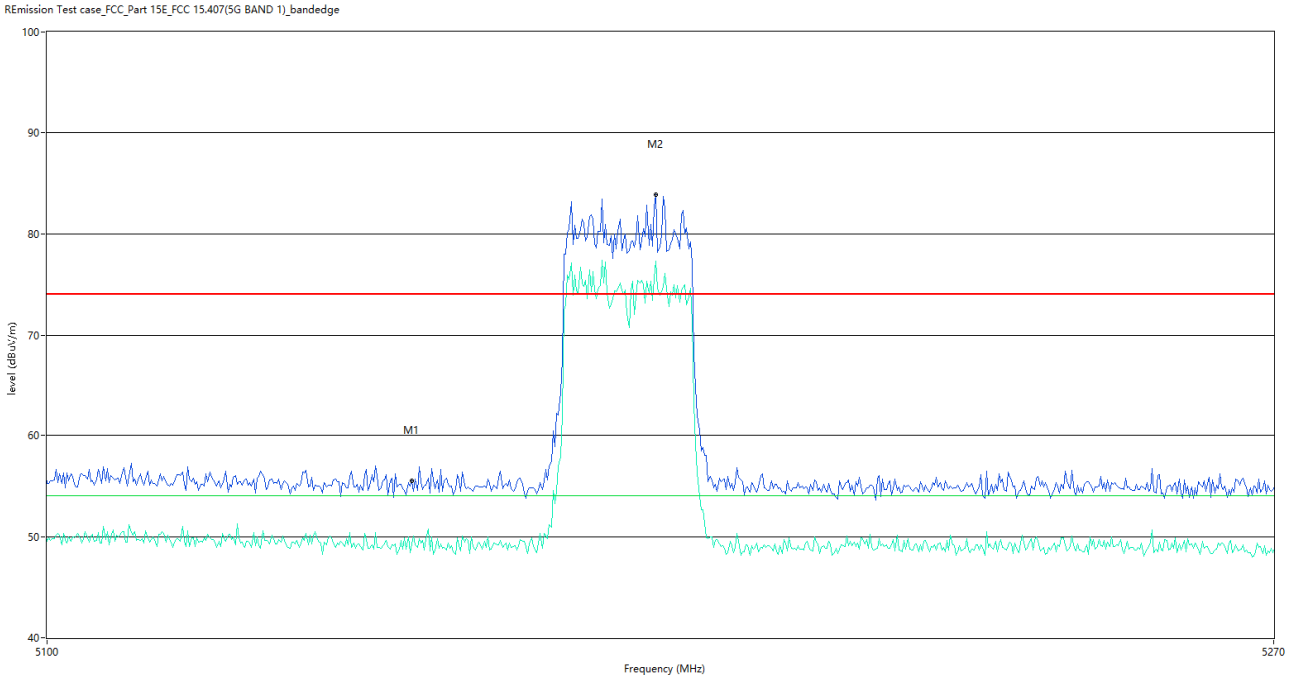
Test Plots

Band I 11n20 CH36 ANT V



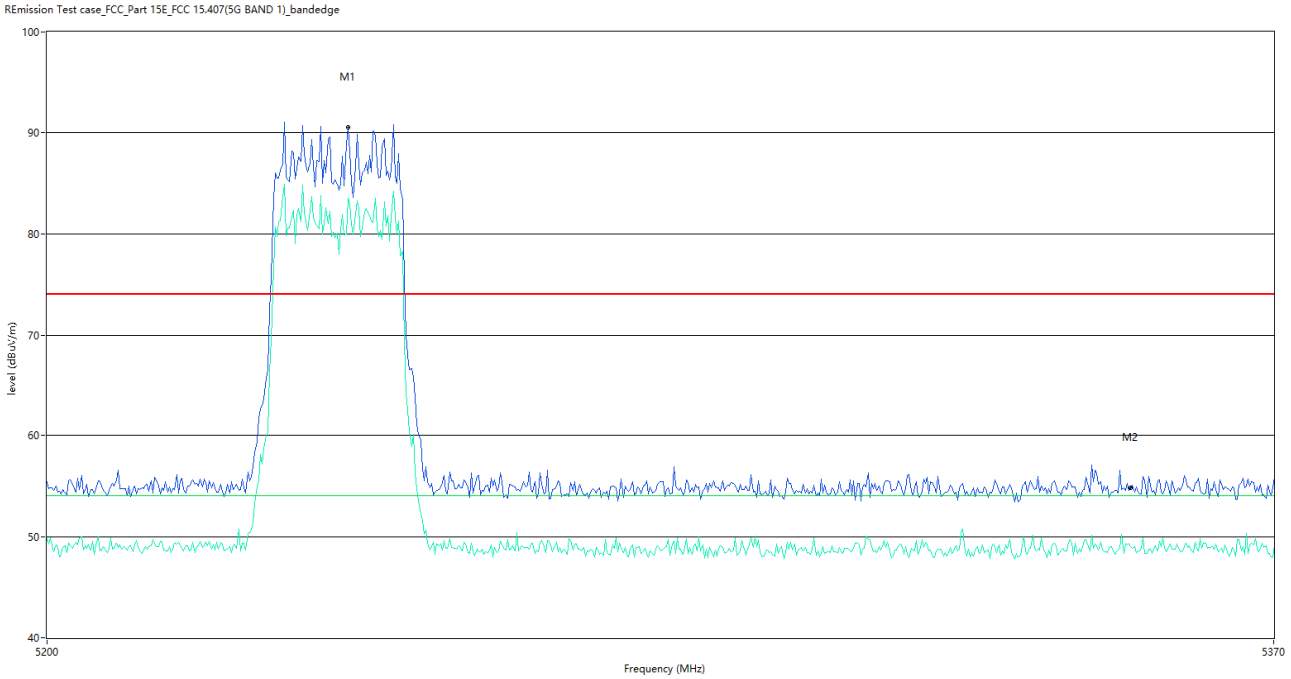
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	55.20	--	49.2	44.02	74.0	--	54.0	4.80	32.33	150	Vertical	Pass
5181.205	88.66	--	81.2	43.83	74.0	--	54.0	-27.20	37.30	150	Vertical	N.A

Band I 11n20 CH36 ANT H



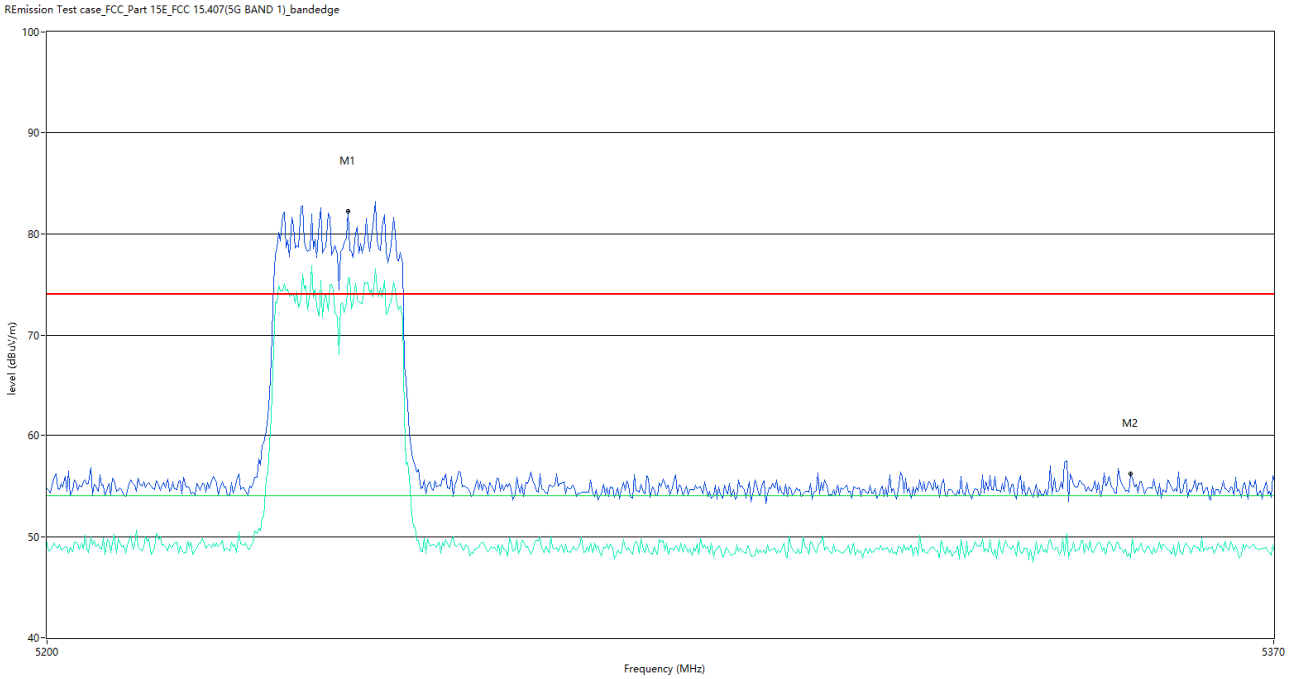
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	55.35	--	49.4	44.02	74.0	--	54.0	4.60	198.09	150	Horizontal	Pass
5183.704	83.88	--	77.3	43.81	74.0	--	54.0	-23.30	208.30	150	Horizontal	N.A

Band I 11n20 CH48 ANT V



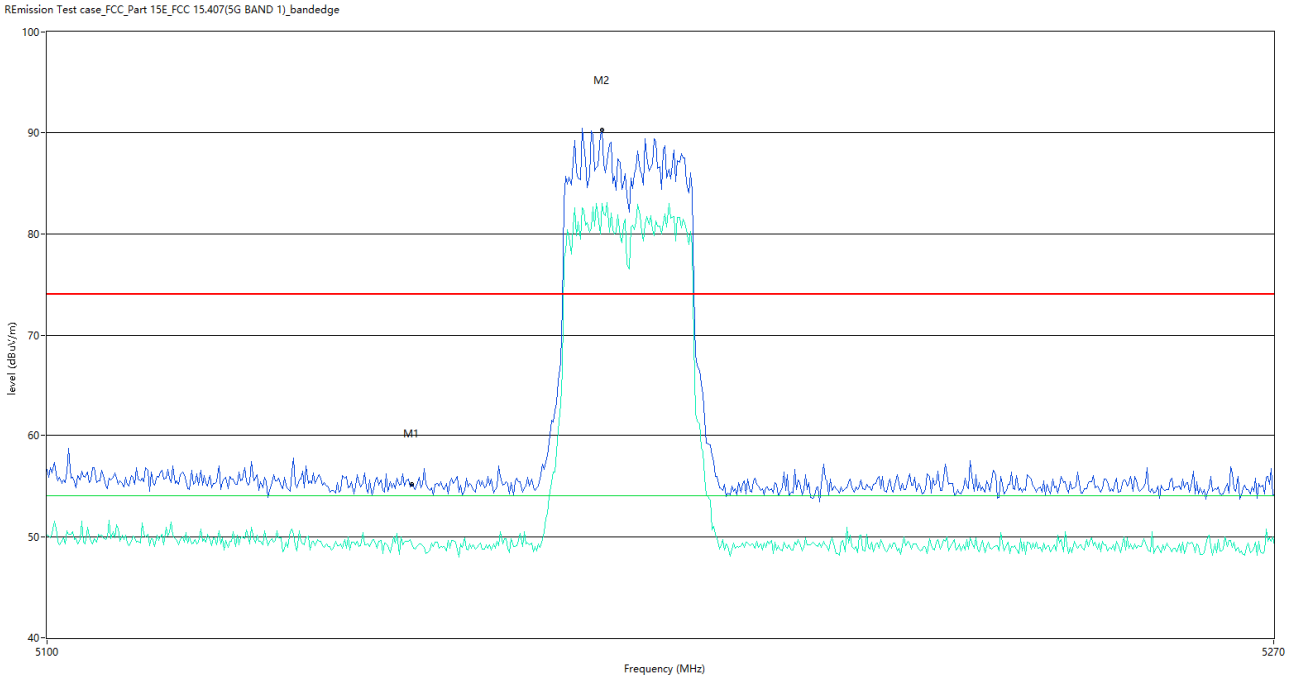
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5241.190	90.60	--	83.6	43.80	74.0	--	54.0	-29.60	37.60	150	Vertical	N.A
5350.000	54.87	--	48.9	43.88	74.0	--	54.0	5.10	273.00	150	Vertical	Pass

Band I 11n20 CH48 ANT H



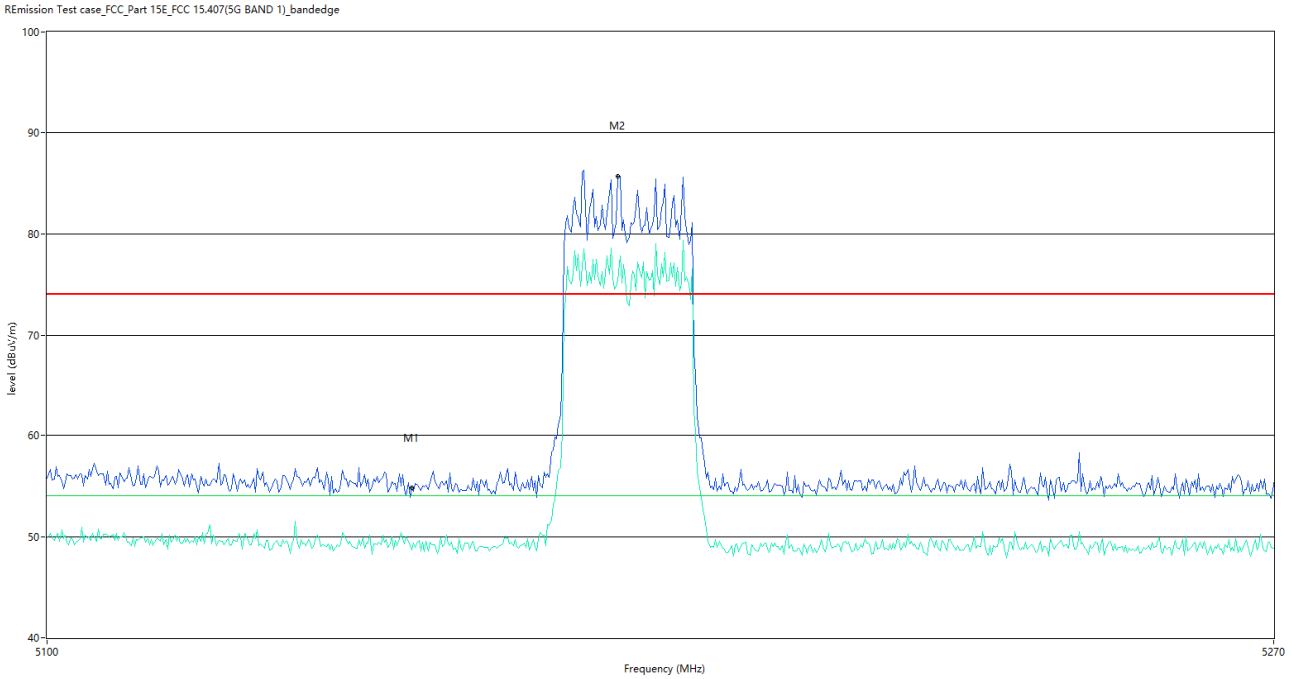
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5241.190	82.24	--	75.6	43.80	74.0	--	54.0	-21.60	250.50	150	Horizontal	N.A
5350.000	56.05	--	48.6	43.88	74.0	--	54.0	5.40	1.10	150	Horizontal	Pass

Band I 11ac20 CH36 ANT V



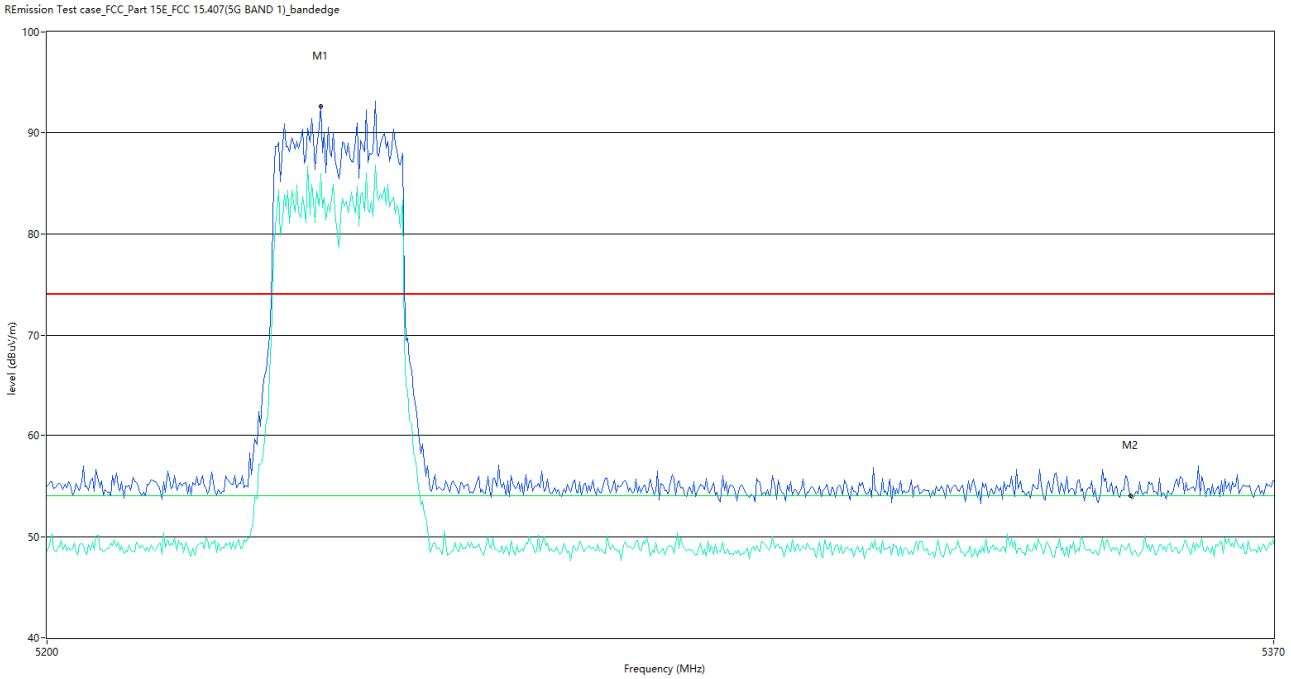
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	55.15	--	49.2	44.02	74.0	--	54.0	4.80	237.95	150	Vertical	Pass
5176.206	90.28	--	83.1	43.86	74.0	--	54.0	-29.10	29.40	150	Vertical	N.A

Band I 11ac20 CH36 ANT H



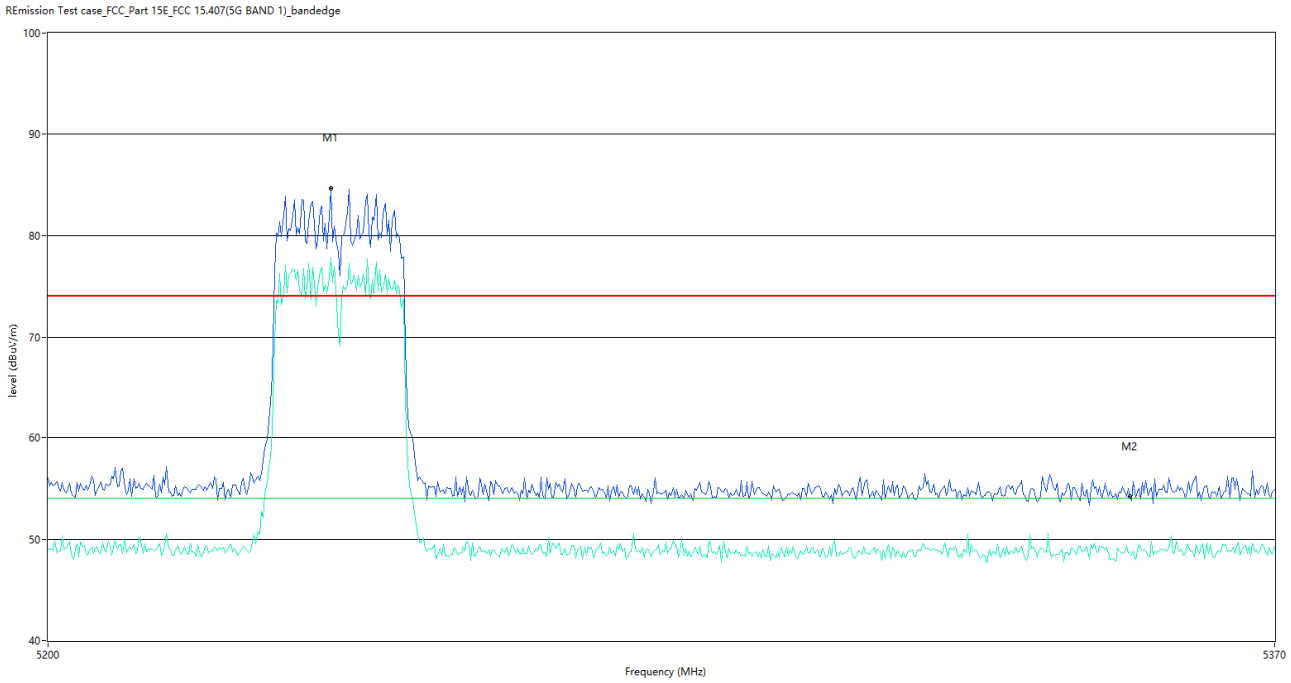
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	54.77	--	48.8	44.02	74.0	--	54.0	5.20	201.91	150	Horizontal	Pass
5178.455	85.69	--	75.4	43.84	74.0	--	54.0	-21.40	202.20	150	Horizontal	N.A

Band I 11ac20 CH48 ANT V



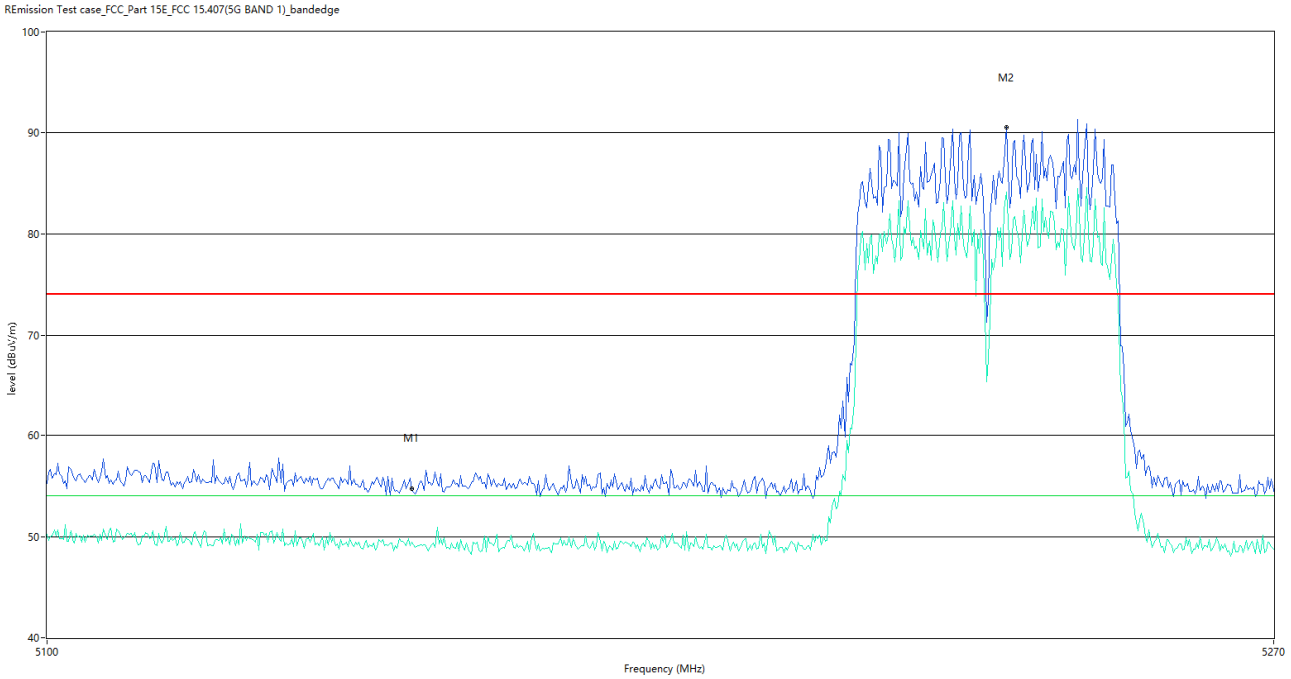
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5237.441	92.65	--	86.0	43.84	74.0	--	54.0	-32.00	40.00	150	Vertical	N.A
5350.000	53.92	--	48.4	43.88	74.0	--	54.0	5.60	247.54	150	Vertical	Pass

Band I 11ac20 CH48 ANT H



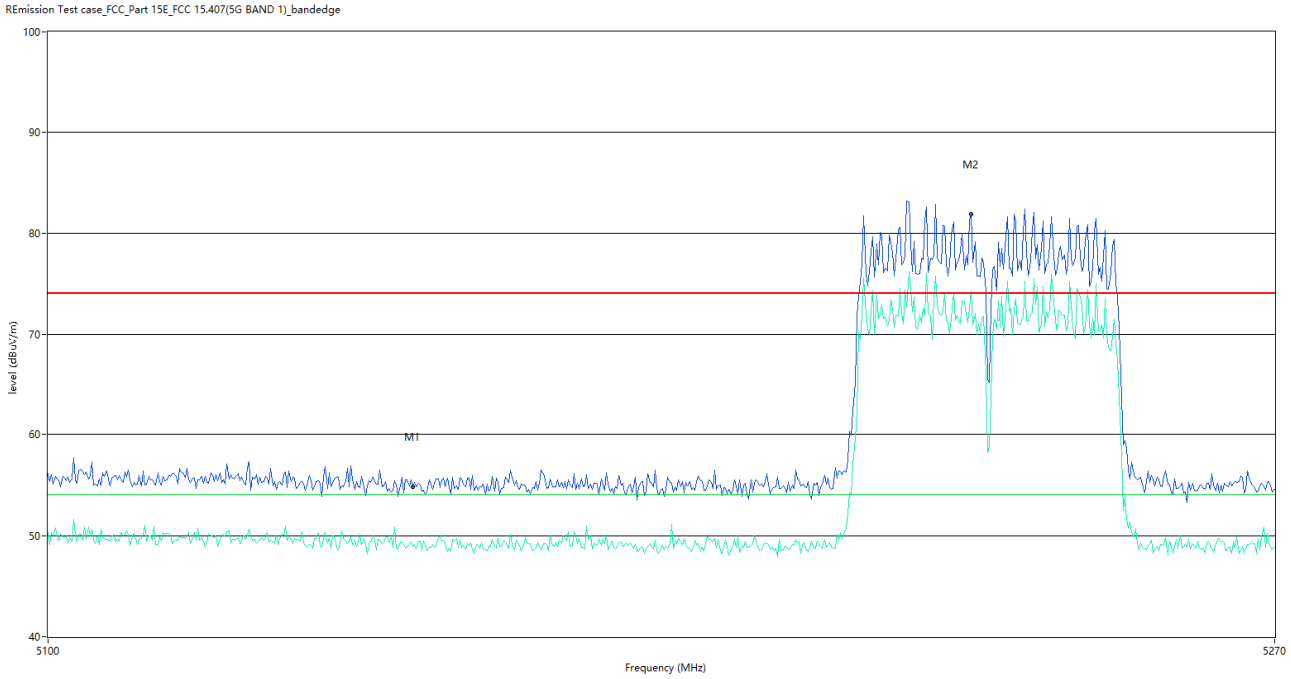
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5238.690	84.68	--	77.8	43.83	74.0	--	54.0	-23.80	198.90	150	Horizontal	N.A
5350.000	54.42	--	48.5	43.88	74.0	--	54.0	5.50	78.99	150	Horizontal	Pass

Band I 11ac40 CH38 ANT V



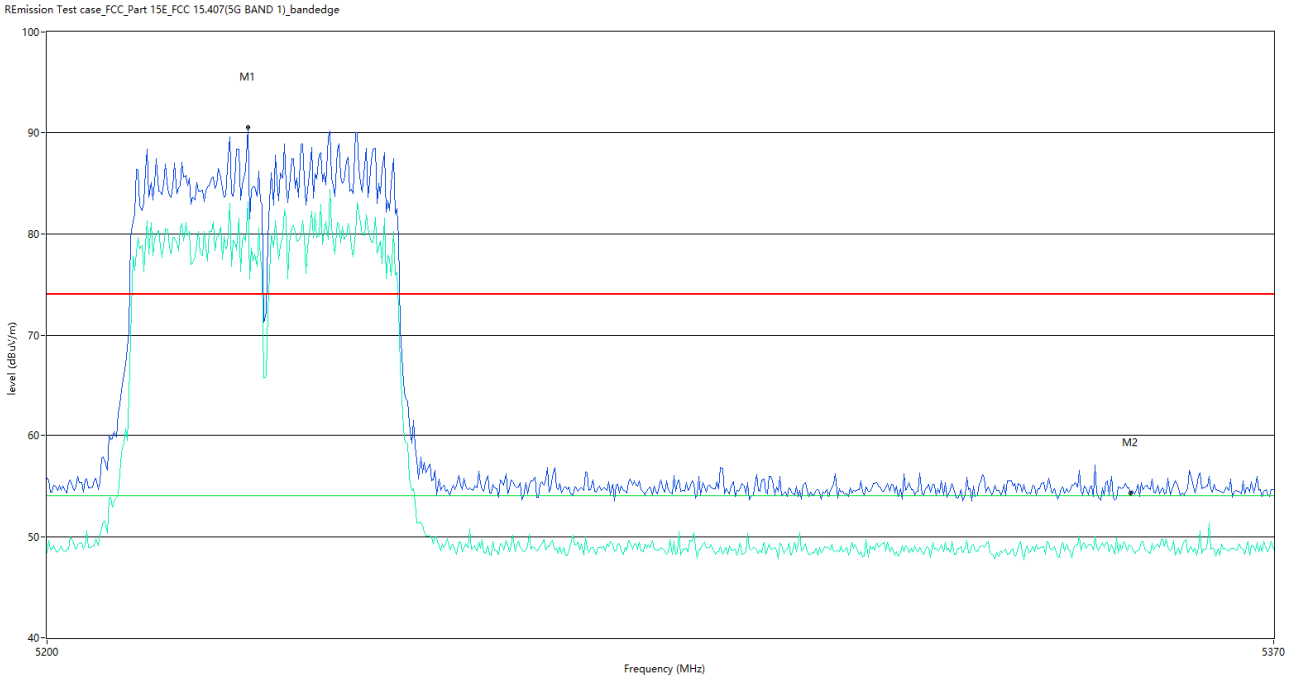
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	54.66	--	49.4	44.02	74.0	--	54.0	4.60	343.05	150	Vertical	Pass
5232.442	90.55	--	84.1	43.88	74.0	--	54.0	-30.10	43.80	150	Vertical	N.A

Band I 11ac40 CH38 ANT H



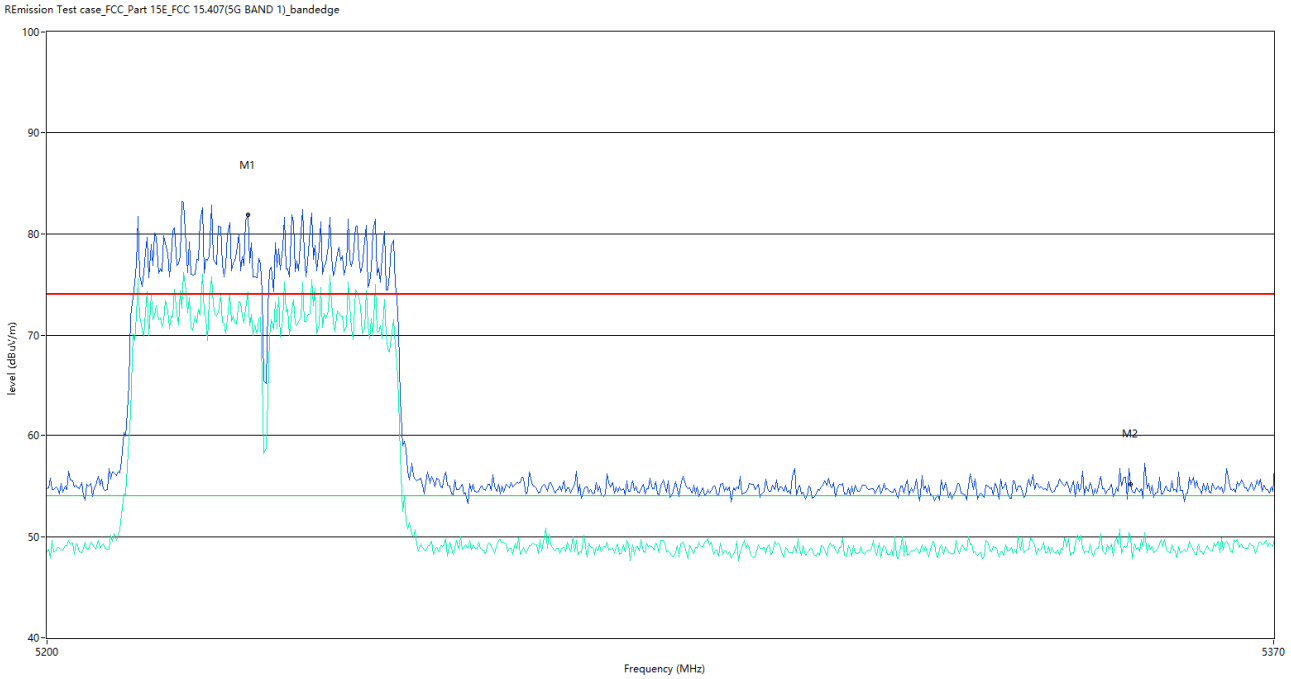
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	54.86	--	48.9	44.02	74.0	--	54.0	5.10	173.63	150	Horizontal	Pass
5227.443	81.91	--	74.3	43.88	74.0	--	54.0	-20.30	266.30	150	Horizontal	N.A

Band I 11ac40 CH46 ANT V



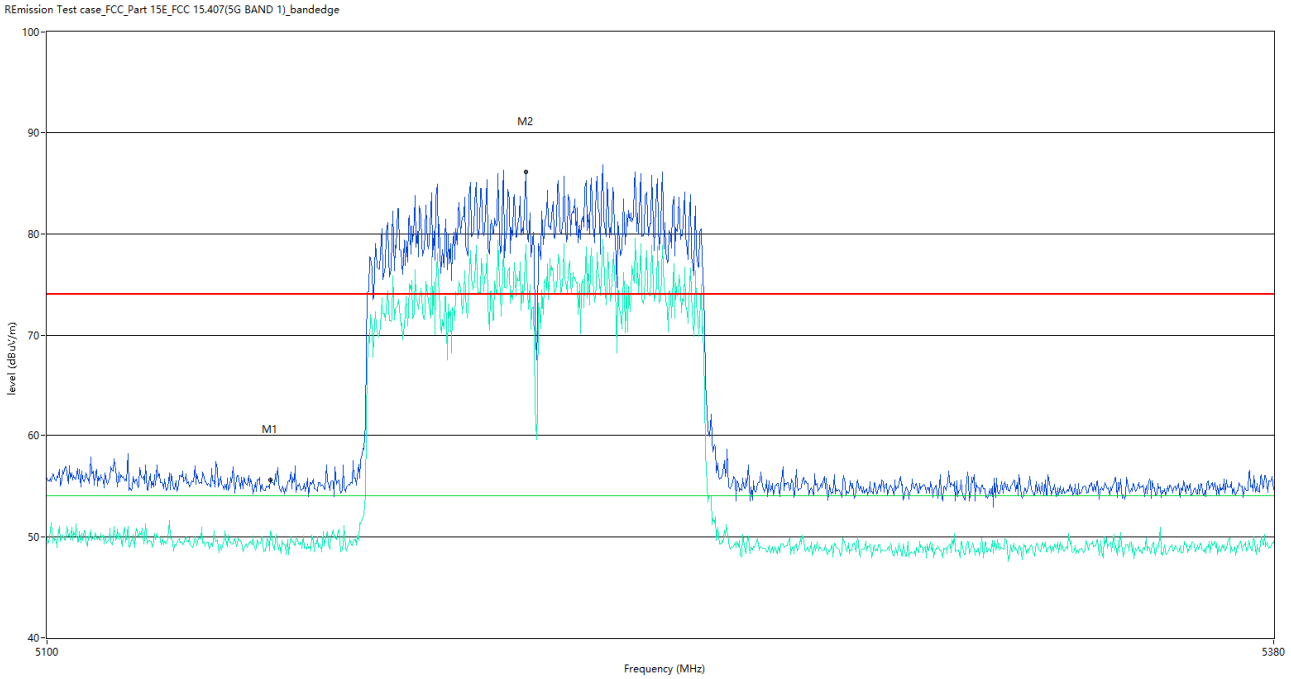
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5227.443	90.55	--	83.2	43.88	74.0	--	54.0	-29.20	40.70	150	Vertical	N.A
5350.000	54.35	--	49.0	43.88	74.0	--	54.0	5.00	22.16	150	Vertical	Pass

Band I 11ac40 CH46 ANT H



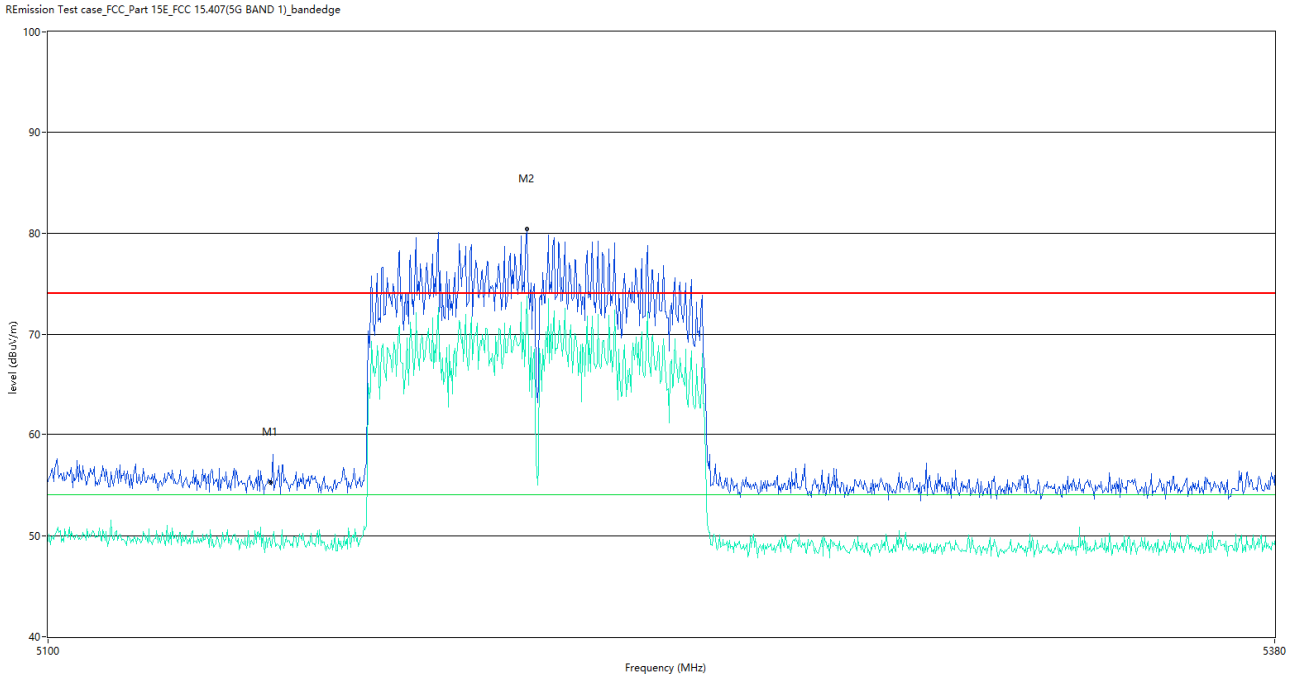
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5227.443	81.91	--	74.3	43.88	74.0	--	54.0	-20.30	266.30	150	Horizontal	N.A
5350.000	54.91	--	49.2	43.88	74.0	--	54.0	4.80	183.82	150	Horizontal	Pass

Band I 11ac80 CH42 ANT V



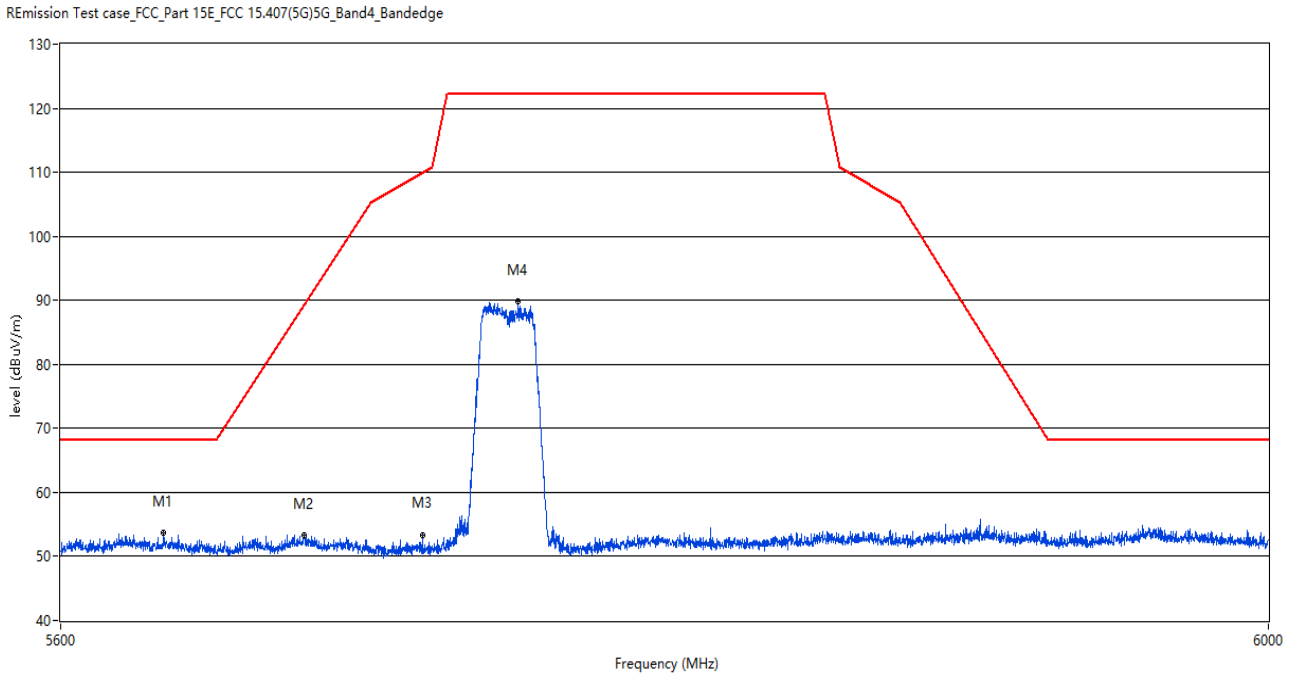
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	55.56	--	50.4	44.02	74.0	--	54.0	3.60	153.65	150	Vertical	Pass
5207.448	86.19	--	79.0	43.85	74.0	--	54.0	-25.00	39.70	150	Vertical	N.A

Band I 11ac80 CH42 ANT H



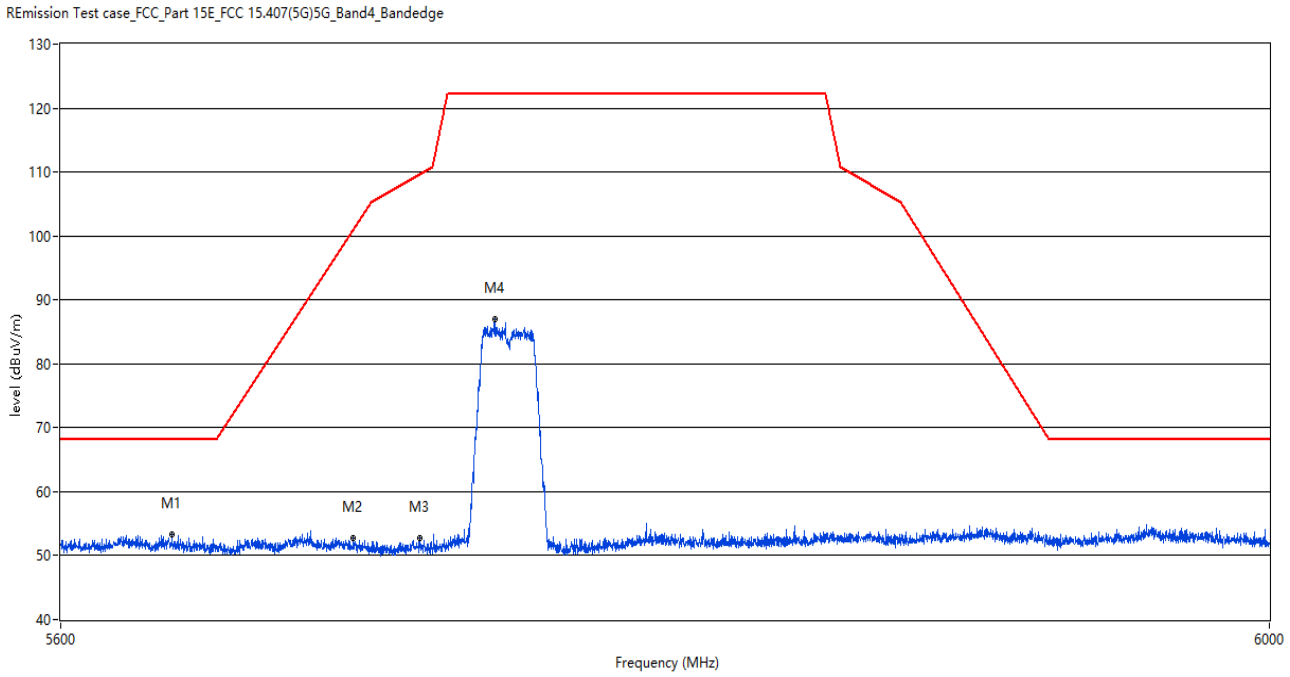
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5150.000	55.39	--	49.0	44.02	74.0	--	54.0	5.00	239.81	150	Horizontal	Pass
5207.448	80.42	--	73.8	43.85	74.0	--	54.0	-19.80	202.90	150	Horizontal	N.A

Band IV 11n20 CH149 ANT V



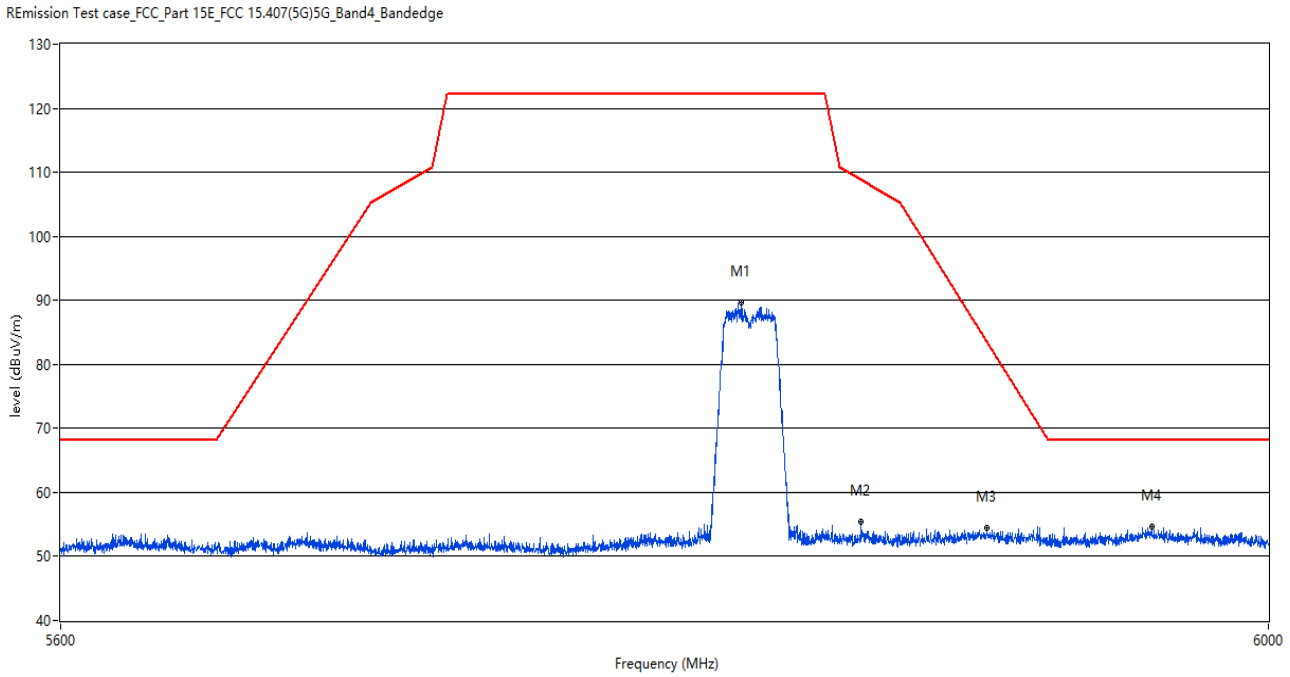
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5633.092	53.62	--	--	2.86	68.2	--	--	14.58	214.50	150	Vertical	Pass
5678.380	53.23	--	--	2.92	89.2	--	--	35.97	329.90	150	Vertical	Pass
5716.871	53.34	--	--	1.77	109.9	--	--	56.56	98.90	150	Vertical	Pass
5748.263	89.79	--	--	2.24	122.2	--	--	32.41	44.50	150	Vertical	Pass

Band IV 11n20 CH149 ANT H



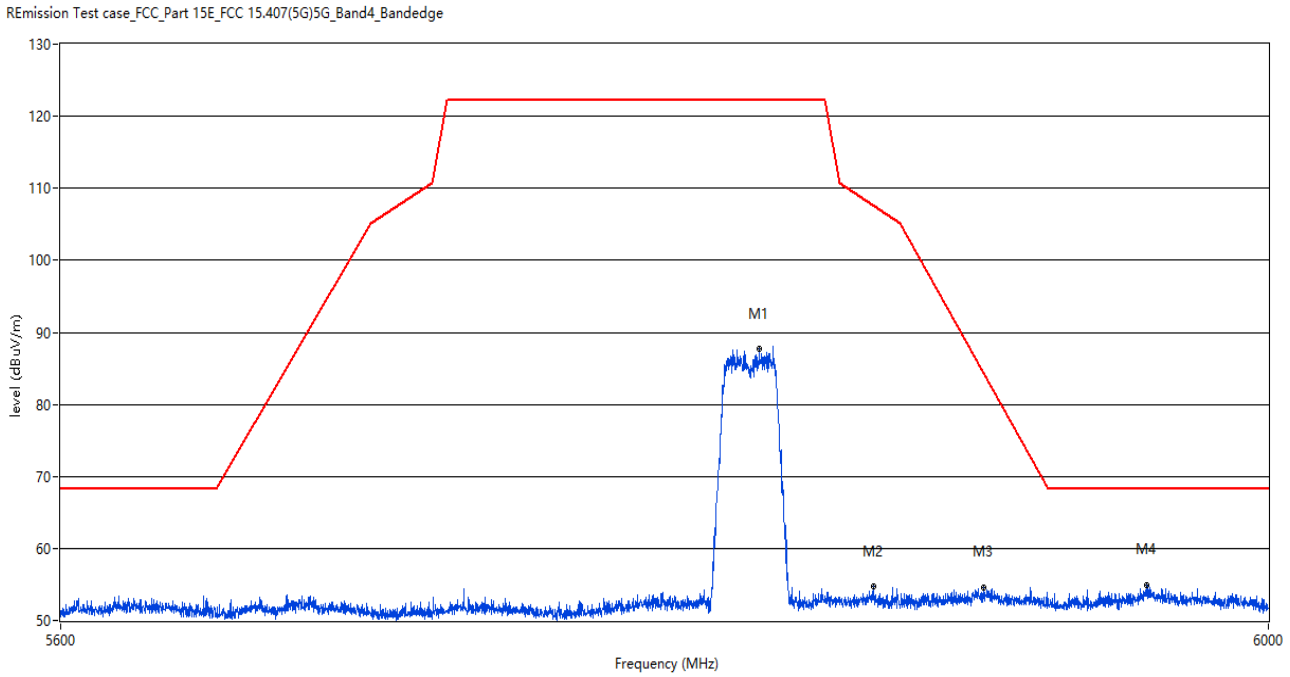
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5635.691	53.23	--	--	2.80	68.2	--	--	14.97	248.30	150	Horizontal	Pass
5694.376	52.76	--	--	2.33	101.1	--	--	48.34	14.10	150	Horizontal	Pass
5715.871	52.69	--	--	1.82	109.6	--	--	56.91	245.10	150	Horizontal	Pass
5740.465	86.96	--	--	2.21	122.2	--	--	35.24	277.50	150	Horizontal	Pass

Band IV 11n20 CH165 ANT V



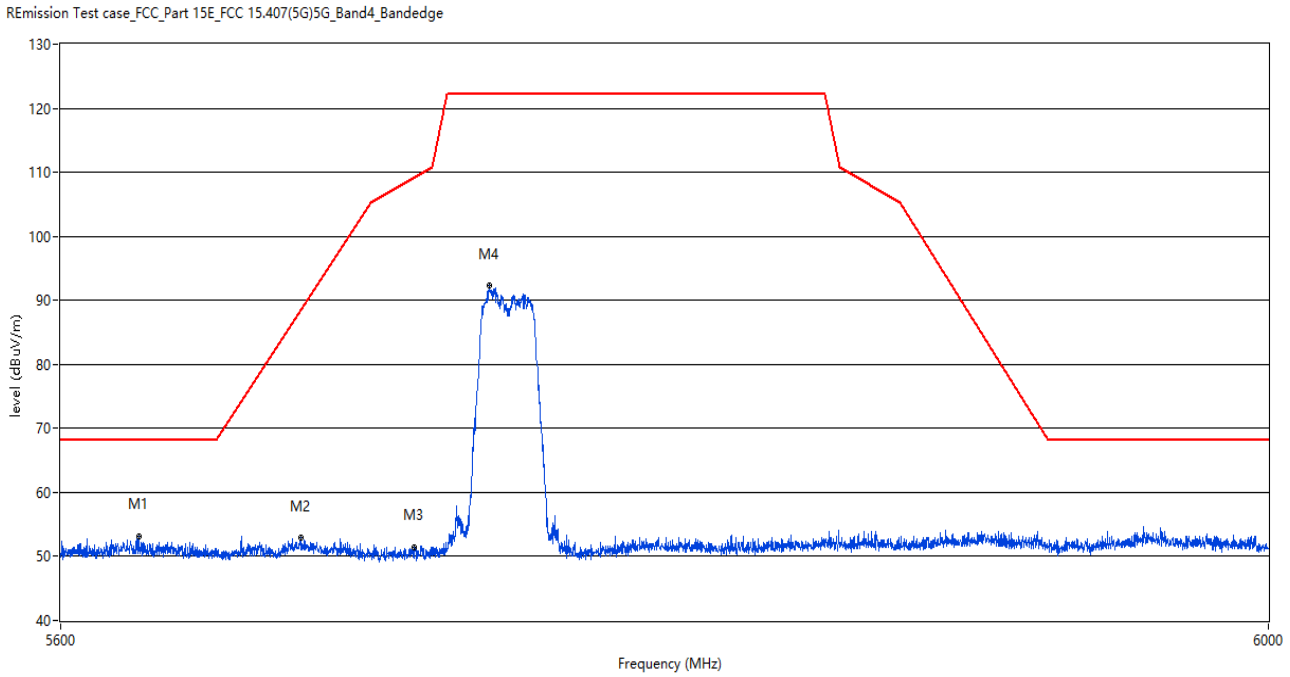
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5822.144	89.58	--	--	3.10	122.2	--	--	32.62	44.30	150	Vertical	Pass
5862.034	55.37	--	--	3.50	108.8	--	--	53.43	121.10	150	Vertical	Pass
5904.224	54.54	--	--	4.45	83.5	--	--	28.96	281.50	150	Vertical	Pass
5960.210	54.72	--	--	4.68	68.2	--	--	13.48	300.50	150	Vertical	Pass

Band IV 11n20 CH165 ANT H



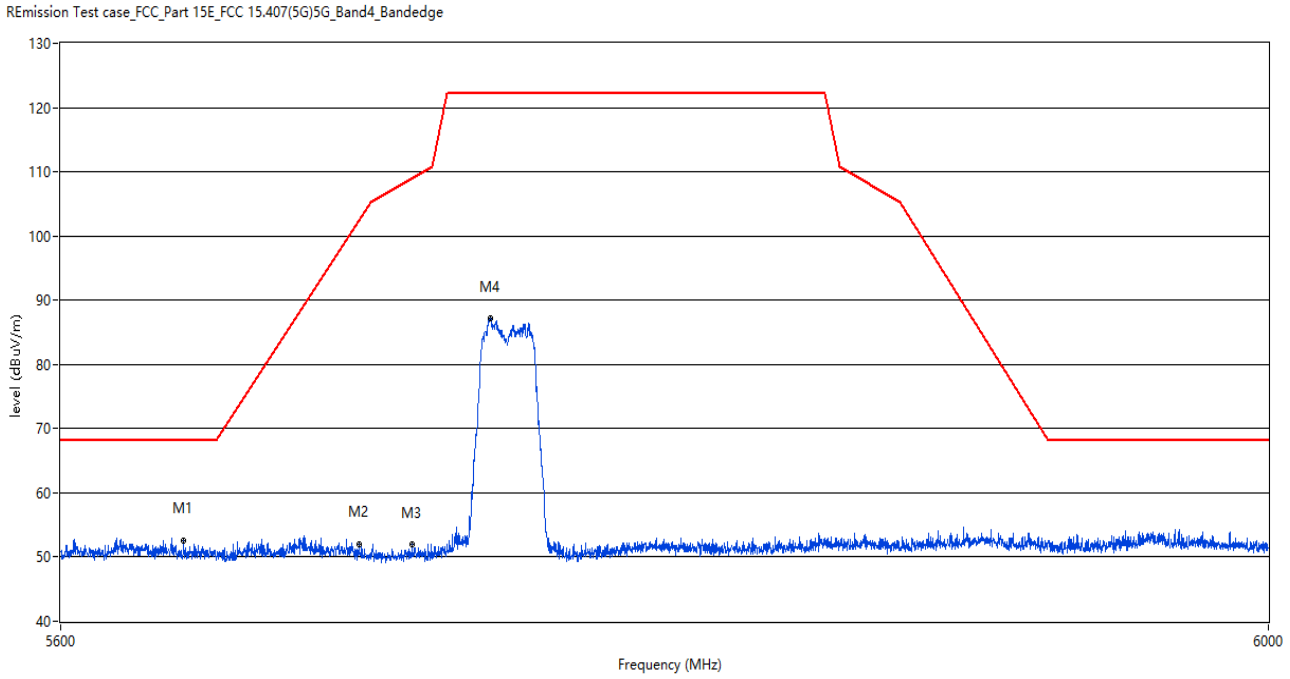
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5827.943	87.75	--	--	2.97	122.2	--	--	34.45	293.00	150	Horizontal	Pass
5866.133	54.66	--	--	3.52	107.7	--	--	53.04	360.00	150	Horizontal	Pass
5903.324	54.64	--	--	4.36	84.2	--	--	29.56	1.10	150	Horizontal	Pass
5958.310	54.99	--	--	4.62	68.2	--	--	13.21	203.10	150	Horizontal	Pass

Band IV 11ac20 CH149 ANT V



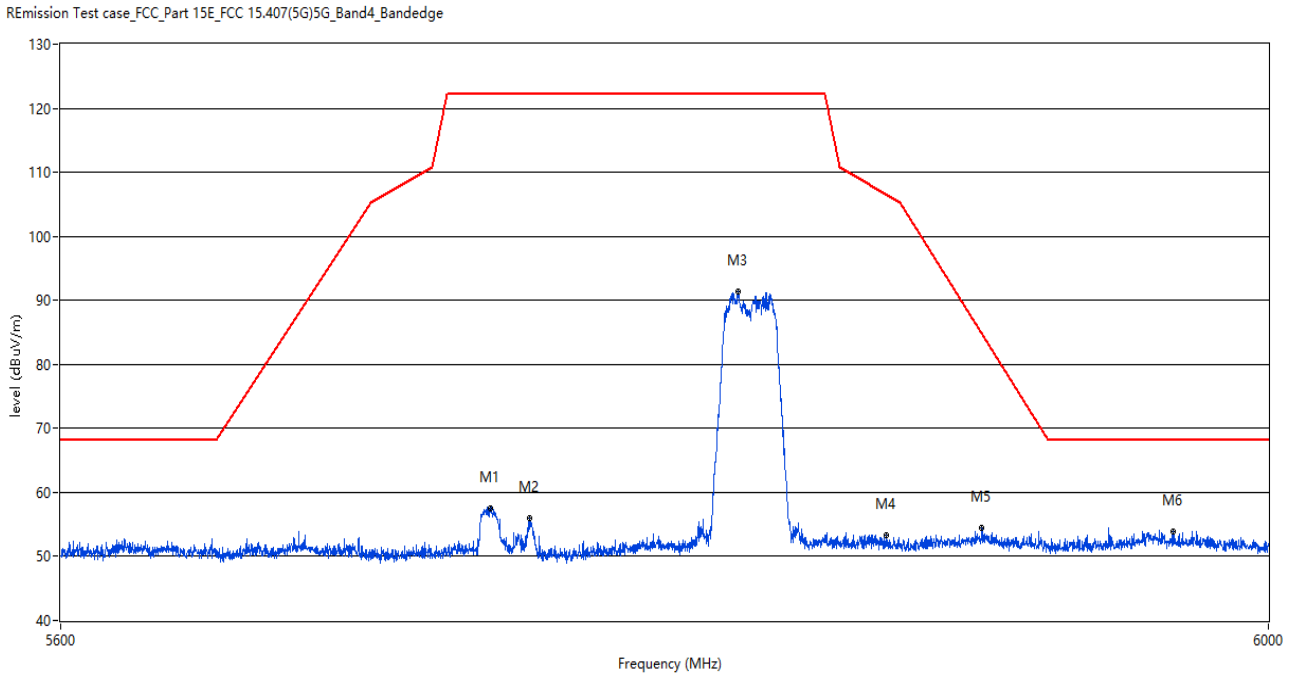
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5625.094	53.17	--	--	2.88	68.2	--	--	15.03	210.00	150	Vertical	Pass
5677.481	52.84	--	--	2.89	88.6	--	--	35.76	40.20	150	Vertical	Pass
5714.371	51.36	--	--	1.91	109.2	--	--	57.84	8.10	150	Vertical	Pass
5738.765	92.24	--	--	2.19	122.2	--	--	29.96	46.70	150	Vertical	Pass

Band IV 11ac20 CH149 ANT H



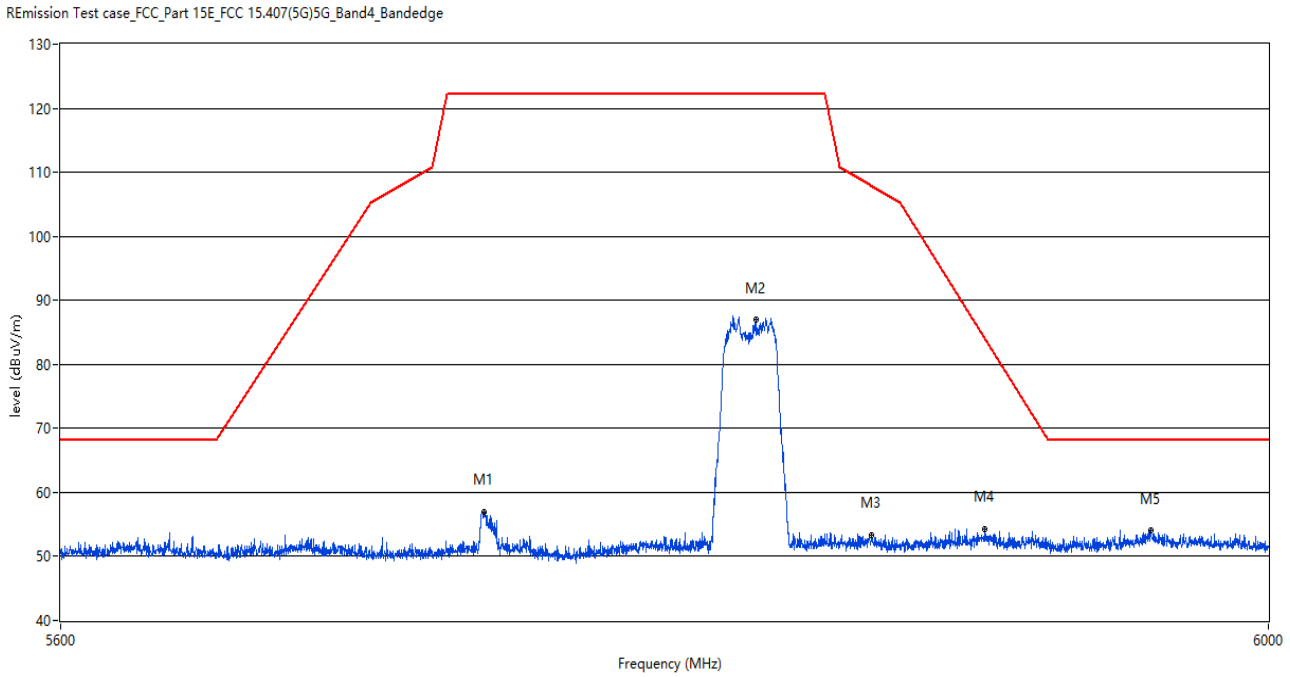
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5639.390	52.57	--	--	2.25	68.2	--	--	15.63	329.90	150	Horizontal	Pass
5696.276	52.03	--	--	2.17	102.5	--	--	50.47	76.70	150	Horizontal	Pass
5713.572	51.99	--	--	1.89	109.0	--	--	57.01	134.50	150	Horizontal	Pass
5739.165	87.23	--	--	2.19	122.2	--	--	34.97	284.90	150	Horizontal	Pass

Band IV 11ac20 CH165 ANT V



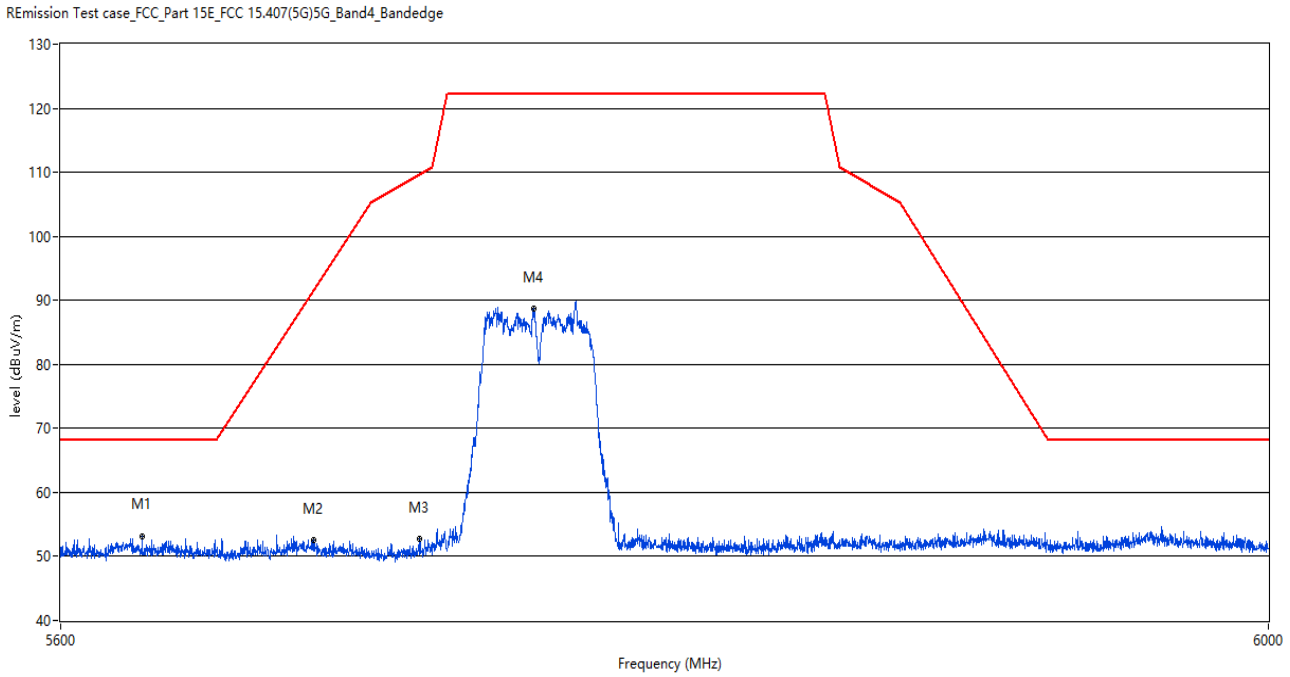
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5739.265	57.51	--	--	2.19	122.2	--	--	64.69	154.90	150	Vertical	Pass
5752.162	55.99	--	--	2.16	122.2	--	--	66.21	161.30	150	Vertical	Pass
5820.945	91.30	--	--	3.18	122.2	--	--	30.90	45.90	150	Vertical	Pass
5870.432	53.24	--	--	3.18	106.5	--	--	53.26	299.20	150	Vertical	Pass
5902.624	54.37	--	--	4.28	84.7	--	--	30.33	328.30	150	Vertical	Pass
5967.308	53.85	--	--	4.28	68.2	--	--	14.35	123.00	150	Vertical	Pass

Band IV 11ac20 CH165 ANT H



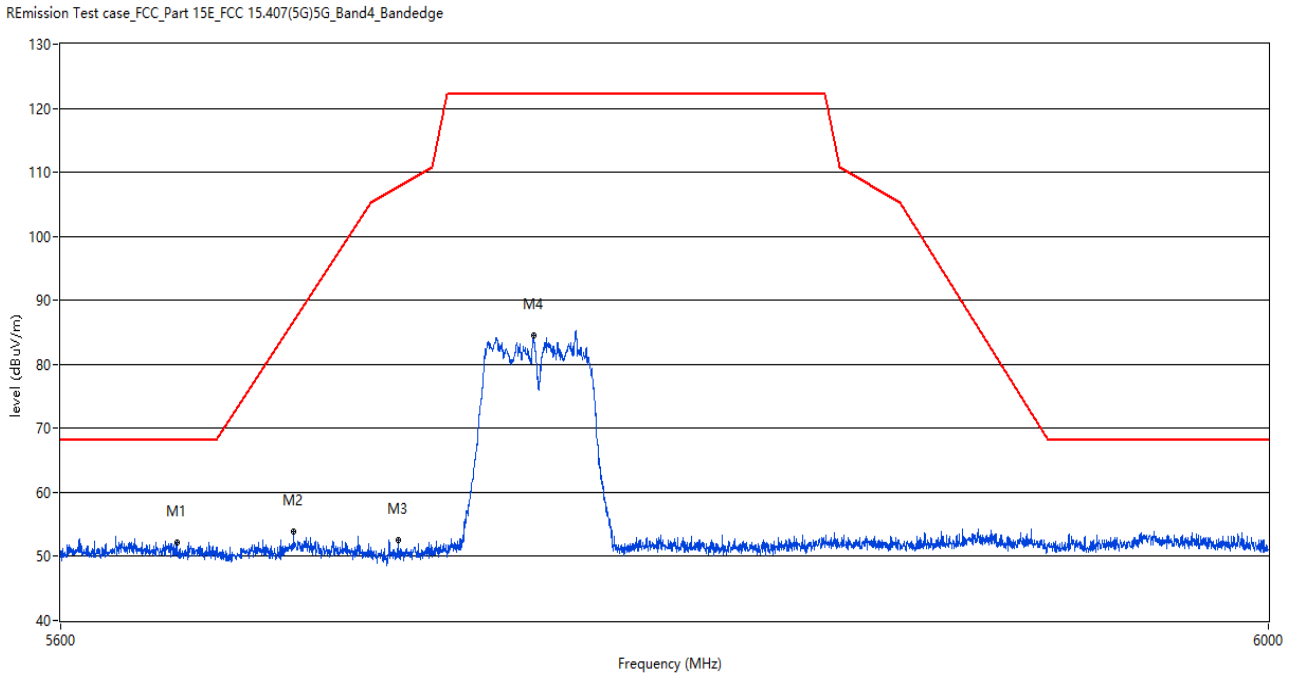
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5736.966	57.02	--	--		122.2	--	--	65.18	48.20	150	Horizontal	Pass
5826.943	87.04	--	--	2.97	122.2	--	--	35.16	278.70	150	Horizontal	Pass
5865.534	53.40	--	--	3.58	107.8	--	--	54.40	224.40	150	Horizontal	Pass
5903.724	54.25	--	--	4.41	83.9	--	--	29.65	134.40	150	Horizontal	Pass
5959.810	53.99	--	--	4.71	68.2	--	--	14.21	346.20	150	Horizontal	Pass

Band IV 11ac40 CH151 ANT V



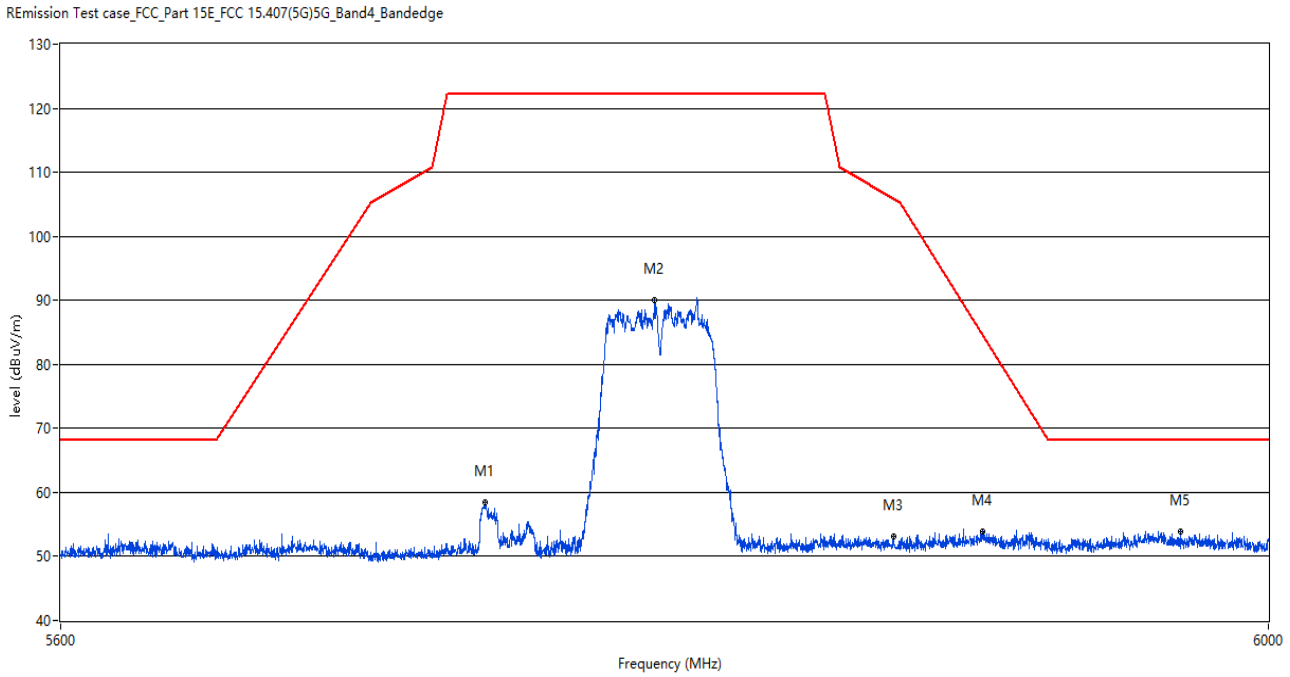
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5626.093	53.19	--	--	2.78	68.2	--	--	15.01	326.70	150	Vertical	Pass
5681.380	52.49	--	--	2.63	91.5	--	--	39.01	326.70	150	Vertical	Pass
5715.871	52.69	--	--	1.82	109.6	--	--	56.91	25.20	150	Vertical	Pass
5753.462	88.66	--	--	2.14	122.2	--	--	33.54	38.10	150	Vertical	Pass

Band IV 11ac40 CH151 ANT H



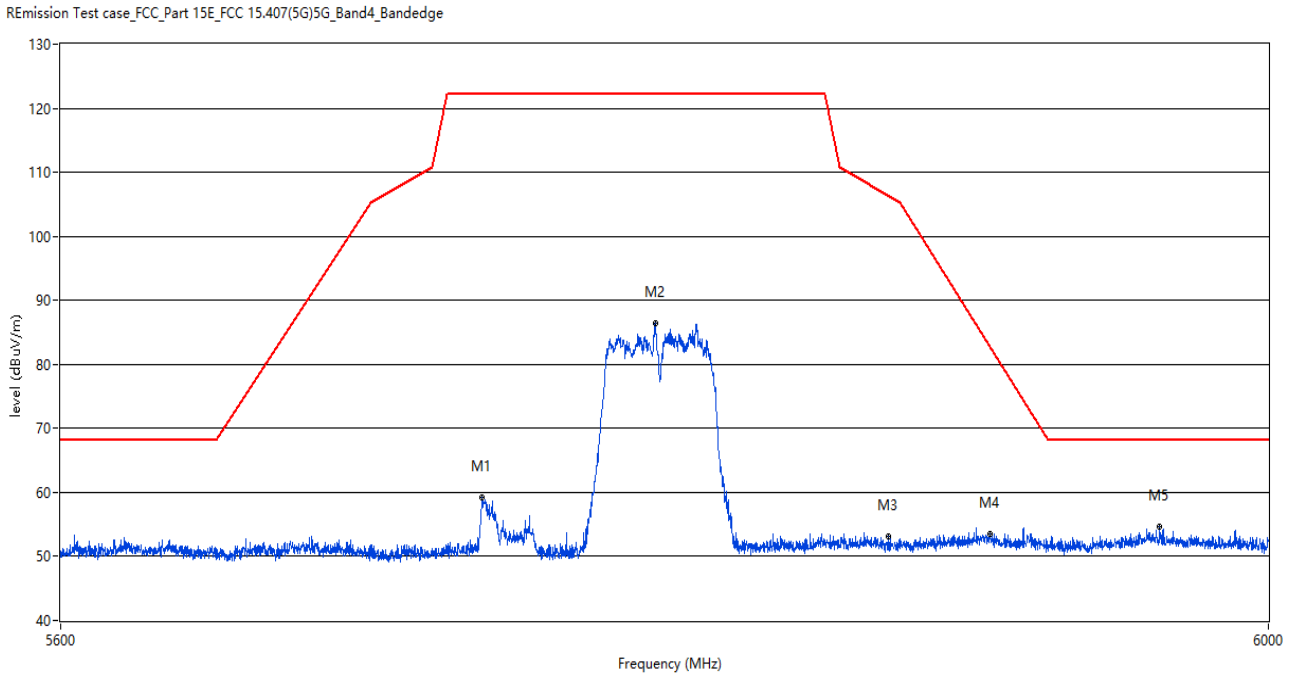
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5637.391	52.11	--	--	2.55	68.2	--	--	16.09	13.80	150	Horizontal	Pass
5674.981	53.85	--	--	2.82	86.7	--	--	32.85	356.50	150	Horizontal	Pass
5708.973	52.47	--	--	1.70	107.7	--	--	55.23	71.40	150	Horizontal	Pass
5753.262	84.44	--	--	2.14	122.2	--	--	37.76	292.50	150	Horizontal	Pass

Band IV 11ac40 CH159 ANT V



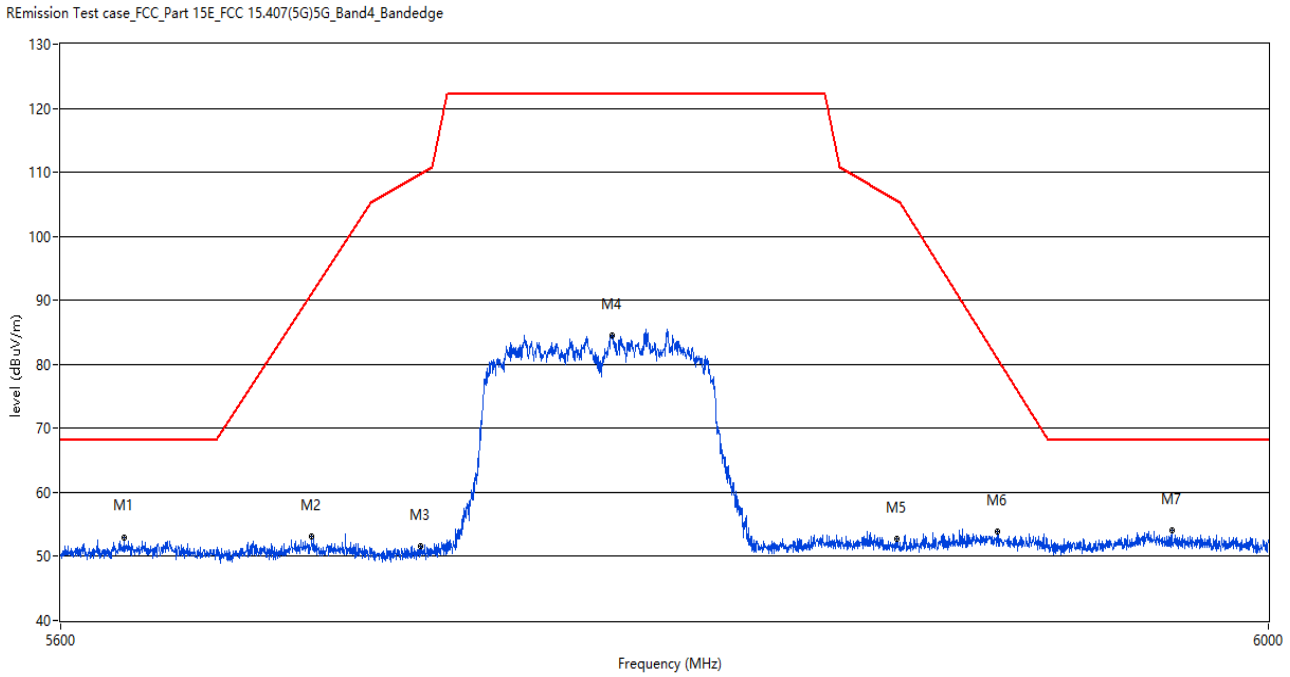
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5737.566	58.42	--	--	2.20	122.2	--	--	63.78	335.80	150	Vertical	Pass
5793.252	90.02	--	--	3.02	122.2	--	--	32.18	44.00	150	Vertical	Pass
5872.932	53.14	--	--	3.04	105.8	--	--	52.66	287.90	150	Vertical	Pass
5902.724	53.88	--	--	4.29	84.6	--	--	30.72	37.90	150	Vertical	Pass
5969.808	53.86	--	--	4.29	68.2	--	--	14.34	357.60	150	Vertical	Pass

Band IV 11ac40 CH159 ANT H



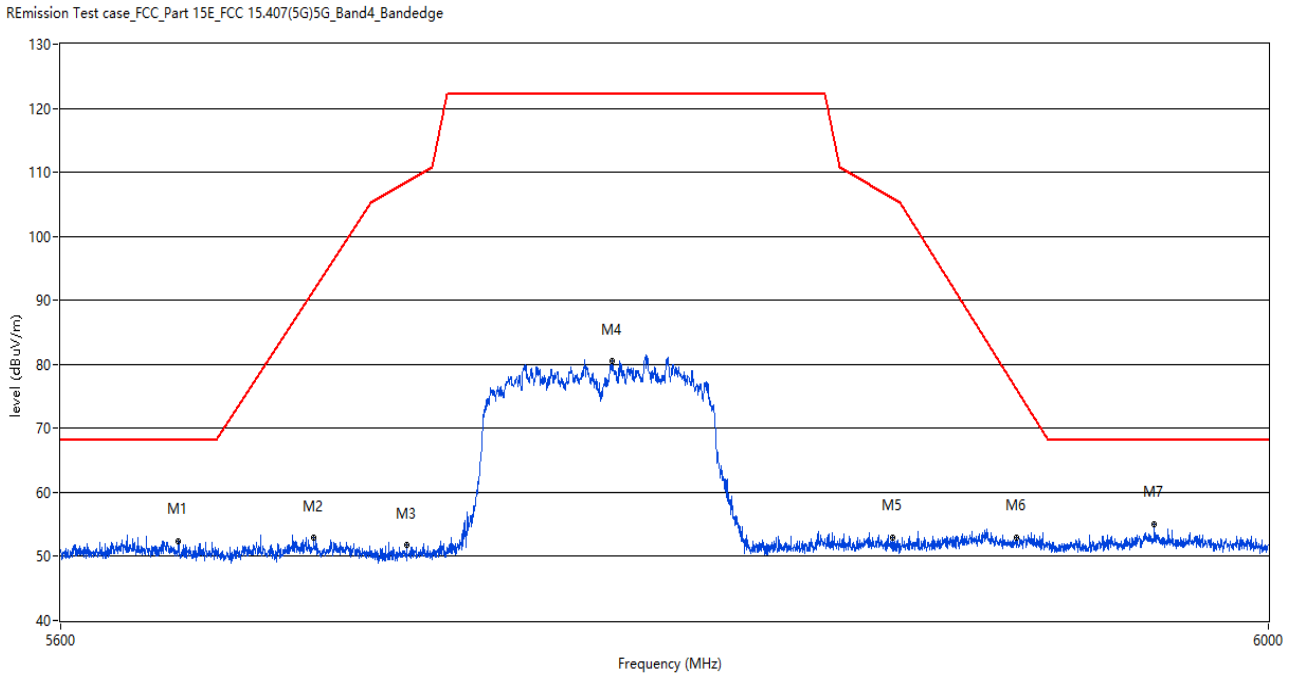
Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5736.566	59.23	--	--	2.21	122.2	--	--	62.97	315.30	150	Horizontal	Pass
5793.452	86.35	--	--	3.03	122.2	--	--	35.85	289.80	150	Horizontal	Pass
5871.332	53.16	--	--	3.13	106.2	--	--	53.04	151.90	150	Horizontal	Pass
5905.224	53.60	--	--	4.35	82.8	--	--	29.20	358.70	150	Horizontal	Pass
5962.909	54.69	--	--	4.46	68.2	--	--	13.51	119.80	150	Horizontal	Pass

Band IV 11ac80 CH155 ANT V



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5620.395	52.99	--	--	3.22	68.2	--	--	15.21	283.60	150	Vertical	Pass
5680.880	53.05	--	--	2.71	91.1	--	--	38.05	203.60	150	Vertical	Pass
5716.471	51.51	--	--	1.79	109.8	--	--	58.29	274.00	150	Vertical	Pass
5779.055	84.57	--	--	2.51	122.2	--	--	37.63	36.50	150	Vertical	Pass
5874.031	52.68	--	--	2.98	105.5	--	--	52.82	177.90	150	Vertical	Pass
5907.923	53.80	--	--	4.07	80.8	--	--	27.00	335.50	150	Vertical	Pass
5967.108	54.03	--	--	4.28	68.2	--	--	14.17	190.70	150	Vertical	Pass

Band IV 11ac80 CH155 ANT H



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
5637.791	52.45	--	--	2.49	68.2	--	--	15.75	294.80	150	Horizontal	Pass
5681.480	52.85	--	--	2.62	91.5	--	--	38.65	67.20	150	Horizontal	Pass
5711.872	51.84	--	--	1.82	108.5	--	--	56.66	38.30	150	Horizontal	Pass
5779.055	80.52	--	--	2.51	122.2	--	--	41.68	278.80	150	Horizontal	Pass
5872.432	52.96	--	--	3.07	105.9	--	--	52.94	314.10	150	Horizontal	Pass
5914.121	52.92	--	--	3.92	76.2	--	--	23.28	102.60	150	Horizontal	Pass
5961.010	55.07	--	--	4.61	68.2	--	--	13.13	73.70	100	Horizontal	Pass

A.8 Frequency Stability

Band I

Voltage vs. Frequency Stability (5220 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
TEMP. (°C)	Voltage (VDC)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
20	3.7	5220	5219.994003	-1.15	5219.993618	-1.22	5219.971554	-5.45	5219.96922	-5.90
	3.8	5220	5220.006144	1.18	5220.026108	5.00	5220.007434	1.42	5220.048128	9.22
	4.35	5220	5220.015934	3.05	5220.008172	1.57	5220.012556	2.41	5220.008066	1.55

Temperature vs. Frequency Stability (5220 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
Voltage (VDC)	TEMP. (°C)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
3.8	-20	5220	5219.973554	-5.07	5219.991014	-1.72	5219.976782	-4.45	5219.996775	-0.62
	-10	5220	5220.034983	6.70	5220.047324	9.07	5220.041507	7.95	5220.039139	7.50
	0	5220	5220.014733	2.82	5220.013514	2.59	5220.043374	8.31	5220.043978	8.42
	10	5220	5220.01945	3.73	5220.040121	7.69	5220.038193	7.32	5220.047204	9.04
	20	5220	5219.993124	-1.32	5219.978736	-4.07	5219.98412	-3.04	5219.97496	-4.80
	30	5220	5220.019839	3.80	5220.02217	4.25	5220.024428	4.68	5220.008883	1.70
	40	5220	5220.016109	3.09	5220.031362	6.01	5220.012816	2.46	5220.028884	5.53
	50	5220	5220.024861	4.76	5220.049753	9.53	5220.034176	6.55	5220.046895	8.98
	55	5220	5220.046774	8.96	5219.983476	-3.17	5220.0026	0.50	5219.964227	-6.85

Band IV

Voltage vs. Frequency Stability (5785 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
TEMP. (°C)	Voltage (VDC)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
20	3.7	5785	5784.971232	-4.97	5784.974365	-4.43	5784.988299	-2.02	5784.986686	-2.30
	3.8	5785	5785.008343	1.44	5785.013209	2.28	5785.023123	4.00	5785.012171	2.10
	4.35	5785	5785.028219	4.88	5785.037417	6.47	5785.047773	8.26	5785.005111	0.88

Temperature vs. Frequency Stability (5785 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
Voltage (VDC)	TEMP. (°C)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
3.8	-20	5785	5784.996454	-0.61	5784.97633	-4.09	5784.951381	-8.40	5784.988936	-1.91
	-10	5785	5785.034631	5.99	5785.035113	6.07	5785.030832	5.33	5785.027097	4.68
	0	5785	5785.00243	0.42	5785.029214	5.05	5785.029494	5.10	5785.005811	1.00
	10	5785	5785.004952	0.86	5785.02696	4.66	5785.009093	1.57	5785.047615	8.23
	20	5785	5784.96498	-6.05	5784.985584	-2.49	5784.956994	-7.43	5784.951831	-8.33
	30	5785	5785.043559	7.53	5785.040246	6.96	5785.00466	0.81	5785.003624	0.63
	40	5785	5785.038598	6.67	5785.049782	8.61	5785.035619	6.16	5785.033794	5.84
	50	5785	5785.047996	8.30	5785.04884	8.44	5785.014676	2.54	5785.008402	1.45
	55	5785	5785.033039	5.71	5784.983752	-2.81	5785.008826	1.53	5784.990036	-1.72

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-EC18B0415-AR-2.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-EC18B0415-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-EC18B0415-AI.PDF”.

--END OF REPORT--