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Issue Date: 02-06-2018

MEASUREMENT REPORT

FCC PART 15.407 WLAN 802.11a/n

FCC ID: 2AD6M-X20

APPLICANT: P2 Mobile Technologies Limited

Application Type: Certification

Product: X22e Dual 5GHz MeshRanger

Model No.: X20, X22e

FCC Classification: Unlicensed National Information Infrastructure (UNII)

FCC Rule Part(s): Part15 Subpart E (Section 15.407)

Test Procedure(s): ANSI C63.10-2013, KDB 789033 D02v02r01,
KDB 662911 D01v02r01

Test Date: April 12 ~ April 17, 2018

Reviewed By : Sunny Sun

(Sunny Sun)

Approved By : Marlin Chen

(Marlin Chen)



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 789033 D02v02r01. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1803RSU020-U1	Rev. 01	Initial Report	02-06-2018	Valid

Note: This report is prepared for FCC Class II permissive change and supplement to MRT Original "1511RSU00201" Report changing housing, and be assessed the worst mode of "Radiated Spurious Emission Measuremnet" & "Radiated Restricted Band Edge Measurement" test items.

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§2.1033 General Information

Applicant:	P2 Mobile Technologies Limited			
Applicant Address:	Unit 708, 7/F, Bio-Informatics Centre, No. 2 Science Park West Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong			
Manufacturer:	P2 Mobile Technologies Limited			
Manufacturer Address:	Unit 708, 7/F, Bio-Informatics Centre, No. 2 Science Park West Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong			
Test Site:	MRT Technology (Suzhou) Co., Ltd			
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China			
MRT FCC Registration No.:	893164			
Test Device Serial No.:	N/A	<input type="checkbox"/> Production	<input checked="" type="checkbox"/> Pre-Production	<input type="checkbox"/> Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications and Radio testing for FCC, Industry Canada, EU and TELEC Rules.



1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on September 30, 2013.



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	X22e Dual 5GHz MeshRanger
Model No.	X20, X22e
Wi-Fi Specification	802.11a/b/g/n
Frequency Range	For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5775MHz
Type of Modulation	802.11a/n: OFDM

Note: There is different housing between each model.

2.2. Operation Frequency / Channel list

Channel List for 802.11a/n-HT20/ac-VHT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz
48	5240 MHz	149	5745 MHz	153	5765 MHz
157	5785 MHz	161	5805 MHz	165	5825 MHz

Channel List for 802.11n-HT40/ac-VHT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	151	5755 MHz
159	5795 MHz	--	--	--	--

Channel List for 802.11ac-VHT80

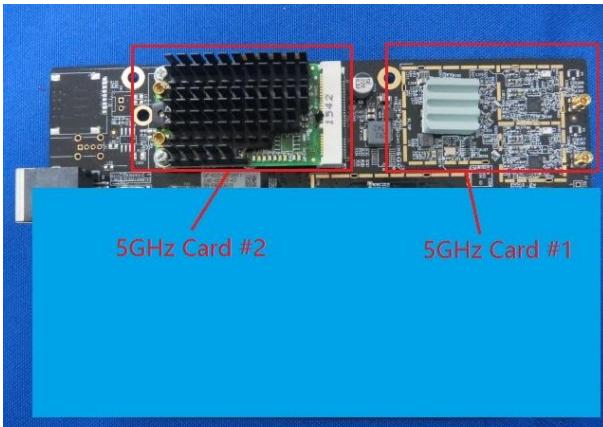
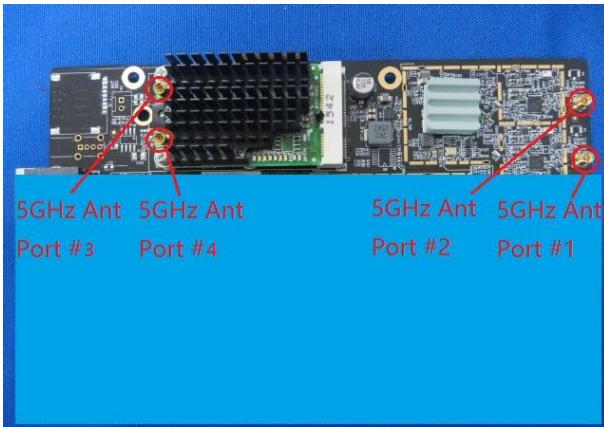
Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	155	5775 MHz	--	--

2.3. Description of Available Antennas

Antenna Type	Frequency Band (GHz)	Tx Paths	Max Peak Gain (dBi)	Beam Forming Directional Gain (dBi)	CDD Directional Gain (dBi)	
					For Power	For PSD
Internal Antenna						
	5	2	18	21	18	21
(Ant #1)						
External Antenna						
	5	2	20	23	20	23
(Ant #2)						

1. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$.
 - 1) If all antennas have the same gain, G_{ANT} , Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows.
 - For power spectral density (PSD) measurements on all devices, $\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}) \text{ dB} = 3.01$;
 - For power measurements on IEEE 802.11 devices, $\text{Array Gain} = 0 \text{ dB for } N_{ANT} \leq 4$;
2. The EUT supports Beam Forming technology for 802.11n/ac mode, and exclude 802.11a mode. Correlated signals include, but are not limited to, signals transmitted in any of the following modes:
Any transmit Beam Forming mode, whether fixed or adaptive (e.g., phased array modes, closed loop MIMO modes, Transmitter Adaptive Antenna modes, Maximum Ratio Transmission (MRT) modes, and Statistical Eigen Beam Forming (EBF) modes).
 - All antennas have the same gain, GANT:
Directional gain = $GANT + 10 \log(N_{ANT}/N_{SS}) \text{ dBi}$, where N_{SS} = the number of independent spatial streams of data and GANT is the antenna gain in dBi.

2.4. Description of Antenna RF Port

Antenna RF Port				
--	5GHz Card #1 Port		5GHz Card #2 Port	
Software Control Port	Ant 1	Ant 2	Ant 1	Ant 2
				

Note: The EUT is fixed point-to-point access point, and it is for fixed point-to-point usage. During the test, the 5GHz card #1 was fixed with antenna #1, and the 5GHz card #2 was fixed with antenna #2.

2.5. Test Mode

Test Mode	Mode 1: Transmit by 802.11a
	Mode 2: Transmit by 802.11n-HT20
	Mode 3: Transmit by 802.11n-HT40
	Mode 4: Transmit by 802.11ac-VHT20
	Mode 5: Transmit by 802.11ac-VHT40
	Mode 6: Transmit by 802.11ac-VHT80

2.6. Test Software

The test utility software used during testing is “ART2-GUI Version: 2.3”.

2.7. Test Configuration

The device was tested per the guidance of KDB 789033 D02v02r01. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.8. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.9. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase.

However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 789033 D02v02r01 were used in the measurement.

Deviation from measurement procedure.....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- There are provisions for N-Type connector to an external antenna.
- The unit belongs to the professional installation of equipment

Conclusion:

The unit complies with the requirement of §15.203.

5. TEST EQUIPMENT CALIBRATION DATE

Radiated Emission - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
PXA Signal Analyzer	Keysight	9030B	MRTSUE06395	1 year	2018/09/13
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2018/08/18
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2018/11/20
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2019/04/20
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2018/11/17
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2018/11/18
Broad Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06023	1 year	2018/10/21
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2018/12/14
Amplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2018/06/14
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2018/08/14
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2018/05/10

Software	Version	Function
e3	V8.3.5	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test 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 $k = 2$.

AC Conducted Emission Measurement
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{C(y)}$): 150kHz~30MHz: 3.46dB
Radiated Emission Measurement
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{C(y)}$): 9kHz ~ 1GHz: 4.18dB 1GHz ~ 25GHz: 4.76dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{C(y)}$): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{C(y)}$): 1.13dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_{C(y)}$): 0.28%

7. TEST RESULT

7.1. Summary

Company Name: X22e Dual 5GHz MeshRanger
FCC ID: 2AD6M-X20
Data Rate(s) Tested: 6Mbps ~ 54Mbps (a);
6.5/7.2Mbps ~ 130/144.4Mbps (n-HT20MHz BW);
13.5/15.0Mbps ~ 270/300Mbps (n-HT40MHz BW);
6.5/7.2Mbps ~ 156/173.4Mbps (ac-VHT20MHz BW);
13.5/15.0Mbps ~ 360/400Mbps (ac-VHT40MHz BW);
29.3/32.5Mbps ~ 780/866.6Mbps (ac-VHT80MHz BW)

FCC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.407(b)(4)(i)	Undesirable Emissions	≤ -27dBm/MHz EIRP Detail see section 7.3	Radiated	Pass	Section 7.3 & 7.4
15.205, 15.209 15.407(b)(5), (6), (7)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		Pass	

Notes: The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer.

The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.

7.2. Radiated Spurious Emission Measurement

7.2.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

7.2.2. Test Procedure Used

ANSI C63.10 Section 6.3 (General Requirements)

ANSI C63.10 Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

7.2.3. Test Setting

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak or power average (Average)
5. Sweep time = auto couple
6. Trace was allowed to stabilize

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

Peak Measurements above 1GHz

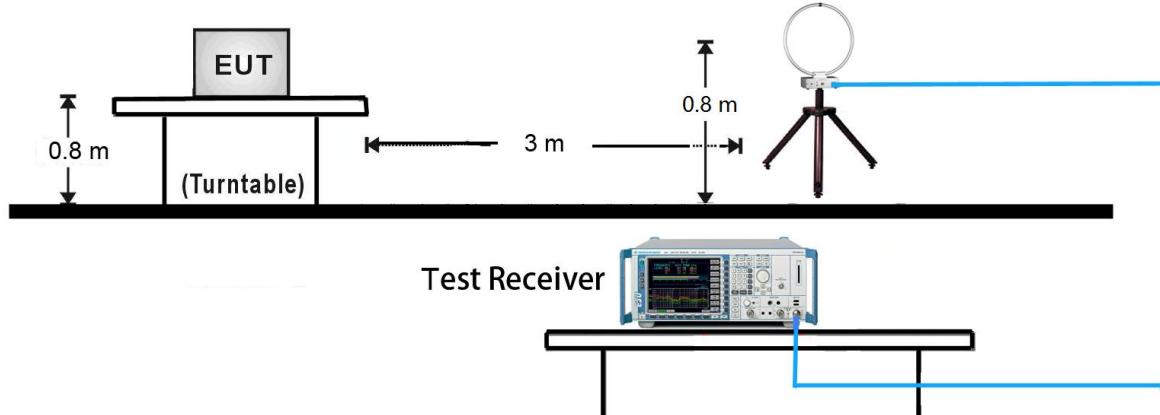
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method AD)

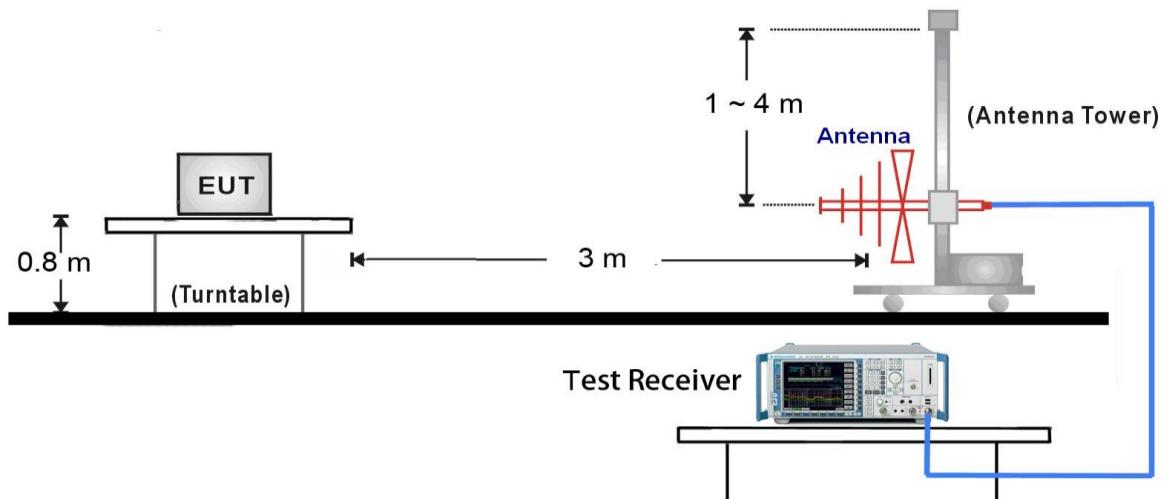
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98% duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle.

7.2.4. Test Setup

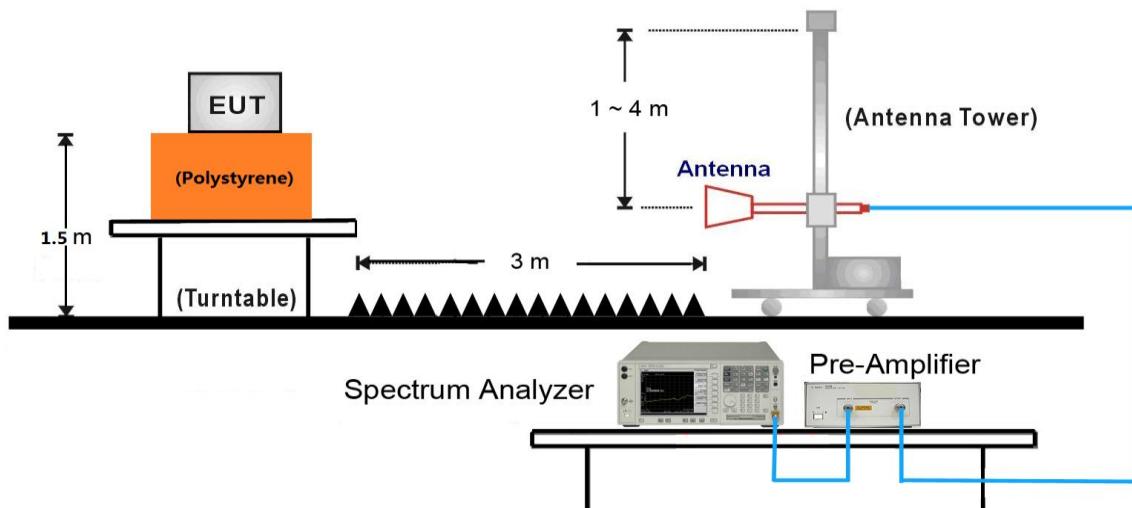
9kHz ~ 30MHz Test Setup:

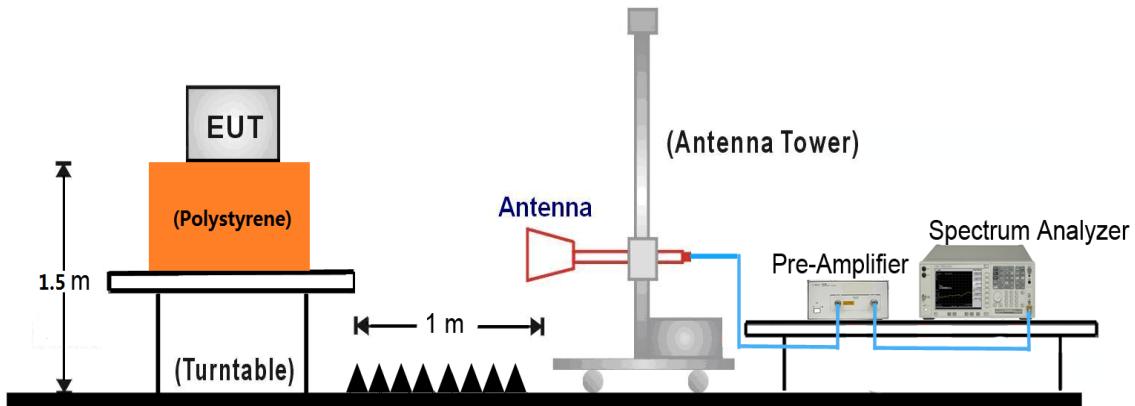


30MHz ~ 1GHz Test Setup:



1GHz ~18GHz Test Setup:



18GHz ~40GHz Test Setup:

7.2.5. Test Result

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	149
Remark	<ol style="list-style-type: none"> Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. 		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8760.5	33.5	13.2	46.7	68.2	-21.5	Peak	Horizontal
*	10061.0	31.8	16.9	48.7	68.2	-19.5	Peak	Horizontal
	11242.5	33.5	17.5	51.0	74.0	-23.0	Peak	Horizontal
	12092.5	33.2	17.5	50.7	74.0	-23.3	Peak	Horizontal
*	8777.5	34.7	13.2	47.9	68.2	-20.3	Peak	Vertical
*	9814.5	33.2	16.4	49.6	68.2	-18.6	Peak	Vertical
	11438.0	33.2	17.8	51.0	74.0	-23.0	Peak	Vertical
	12271.0	32.7	17.4	50.1	74.0	-23.9	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8811.5	34.7	13.3	48.0	68.2	-20.2	Peak	Horizontal
*	9916.5	32.8	16.6	49.4	68.2	-18.8	Peak	Horizontal
	11565.5	40.7	17.8	58.5	74.0	-15.5	Peak	Horizontal
	11571.2	31.5	17.8	49.3	54.0	-4.7	Average	Horizontal
	12466.5	33.8	17.3	51.1	74.0	-22.9	Peak	Horizontal
*	8752.0	33.4	13.2	46.6	68.2	-21.6	Peak	Vertical
	11565.5	41.0	17.8	58.8	74.0	-15.2	Peak	Vertical
	11565.8	31.0	17.8	48.8	54.0	-5.2	Average	Vertical
	12330.5	33.1	17.3	50.4	74.0	-23.6	Peak	Vertical
*	17354.0	38.1	22.9	61.0	68.2	-7.2	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	165
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8752.0	35.8	13.2	49.0	68.2	-19.2	Peak	Horizontal
*	9814.5	34.6	16.4	51.0	68.2	-17.2	Peak	Horizontal
	11642.0	36.3	17.6	53.9	74.0	-20.1	Peak	Horizontal
	12339.0	32.6	17.3	49.9	74.0	-24.1	Peak	Horizontal
*	8735.0	34.9	13.0	47.9	68.2	-20.3	Peak	Vertical
*	10120.5	33.1	16.9	50.0	68.2	-18.2	Peak	Vertical
	11217.0	33.1	17.6	50.7	74.0	-23.3	Peak	Vertical
	11650.2	27.4	17.6	45.0	54.0	-9.0	Average	Vertical
	11650.5	36.8	17.6	54.4	74.0	-19.6	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	149
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8735.0	34.8	13.0	47.8	68.2	-20.4	Peak	Horizontal
*	9772.0	33.0	16.2	49.2	68.2	-19.0	Peak	Horizontal
	11021.5	33.4	17.9	51.3	74.0	-22.7	Peak	Horizontal
	12033.0	33.1	17.4	50.5	74.0	-23.5	Peak	Horizontal
*	8769.0	33.8	13.2	47.0	68.2	-21.2	Peak	Vertical
*	10095.0	32.8	16.9	49.7	68.2	-18.5	Peak	Vertical
	10970.5	32.7	18.2	50.9	74.0	-23.1	Peak	Vertical
	11922.5	33.1	17.3	50.4	74.0	-23.6	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8854.0	35.7	13.4	49.1	68.2	-19.1	Peak	Horizontal
*	9942.0	34.4	16.8	51.2	68.2	-17.0	Peak	Horizontal
	11557.0	40.6	17.8	58.4	74.0	-15.6	Peak	Horizontal
	11557.0	32.0	17.7	49.7	54.0	-4.3	Average	Horizontal
	12373.0	33.1	17.2	50.3	74.0	-23.7	Peak	Horizontal
*	8735.0	35.6	13.0	48.6	68.2	-19.6	Peak	Vertical
	11568.5	42.6	17.8	60.4	74.0	-13.6	Peak	Vertical
	11568.6	33.6	17.8	51.4	54.0	-2.6	Average	Vertical
	12560.0	33.3	17.3	50.6	74.0	-23.4	Peak	Vertical
*	17337.0	39.4	22.9	62.3	68.2	-5.9	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	165
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8718.0	35.3	13.0	48.3	68.2	-19.9	Peak	Horizontal
*	10265.0	32.6	17.2	49.8	68.2	-18.4	Peak	Horizontal
	11650.5	37.4	17.6	55.0	74.0	-19.0	Peak	Horizontal
	11650.8	27.1	17.6	44.7	54.0	-9.3	Average	Horizontal
	12509.0	33.0	17.2	50.2	74.0	-23.8	Peak	Horizontal
*	8709.5	35.4	13.0	48.4	68.2	-19.8	Peak	Vertical
*	9772.0	33.4	16.2	49.6	68.2	-18.6	Peak	Vertical
	11013.0	33.2	18.0	51.2	74.0	-22.8	Peak	Vertical
	11650.3	27.5	17.6	45.1	54.0	-8.9	Average	Vertical
	11650.5	38.8	17.6	56.4	74.0	-17.6	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT40 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	151
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8658.5	35.0	13.0	48.0	68.2	-20.2	Peak	Horizontal
*	10035.5	33.9	16.7	50.6	68.2	-17.6	Peak	Horizontal
	10911.0	32.4	18.2	50.6	74.0	-23.4	Peak	Horizontal
	11786.5	33.4	17.3	50.7	74.0	-23.3	Peak	Horizontal
*	8709.5	34.0	13.0	47.0	68.2	-21.2	Peak	Vertical
*	10095.0	32.3	16.9	49.2	68.2	-19.0	Peak	Vertical
	11004.5	32.6	18.1	50.7	74.0	-23.3	Peak	Vertical
	11786.5	32.8	17.3	50.1	74.0	-23.9	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT40 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	159
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8752.0	33.7	13.2	46.9	68.2	-21.3	Peak	Horizontal
*	9746.5	32.9	16.1	49.0	68.2	-19.2	Peak	Horizontal
	11590.5	27.3	17.7	45.0	54.0	-9.0	Average	Horizontal
	11591.0	37.4	17.7	55.1	74.0	-18.9	Peak	Horizontal
	12296.5	32.9	17.3	50.2	74.0	-23.8	Peak	Horizontal
*	8769.0	35.2	13.2	48.4	68.2	-19.8	Peak	Vertical
*	10035.5	33.4	16.7	50.1	68.2	-18.1	Peak	Vertical
	11590.3	28.8	17.7	46.5	54.0	-7.5	Average	Vertical
	11591.0	39.2	17.7	56.9	74.0	-17.1	Peak	Vertical
	12279.5	33.6	17.3	50.9	74.0	-23.1	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	149
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8735.0	35.0	13.0	48.0	68.2	-20.2	Peak	Horizontal
*	9899.5	33.1	16.6	49.7	68.2	-18.5	Peak	Horizontal
	11021.5	32.5	17.9	50.4	74.0	-23.6	Peak	Horizontal
	12254.0	32.6	17.4	50.0	74.0	-24.0	Peak	Horizontal
*	8777.5	33.6	13.2	46.8	68.2	-21.4	Peak	Vertical
*	9772.0	33.3	16.2	49.5	68.2	-18.7	Peak	Vertical
	11072.5	33.7	17.9	51.6	74.0	-22.4	Peak	Vertical
	12373.0	32.7	17.2	49.9	74.0	-24.1	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8769.0	35.7	13.2	48.9	68.2	-19.3	Peak	Horizontal
*	9857.0	34.7	16.7	51.4	68.2	-16.8	Peak	Horizontal
	11573.5	30.9	17.8	48.7	54.0	-5.3	Average	Horizontal
	11574.0	41.0	17.7	58.7	74.0	-15.3	Peak	Horizontal
	11948.0	34.4	17.3	51.7	74.0	-22.3	Peak	Horizontal
*	8828.5	33.7	13.3	47.0	68.2	-21.2	Peak	Vertical
	11565.5	43.4	17.8	61.2	74.0	-12.8	Peak	Vertical
	11565.5	32.7	17.8	50.5	54.0	-3.5	Average	Vertical
	12118.0	33.2	17.5	50.7	74.0	-23.3	Peak	Vertical
*	17345.5	38.3	22.9	61.2	68.2	-7.0	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	165
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8837.0	35.8	13.2	49.0	68.2	-19.2	Peak	Horizontal
*	9899.5	35.0	16.6	51.6	68.2	-16.6	Peak	Horizontal
	11225.5	33.4	17.6	51.0	74.0	-23.0	Peak	Horizontal
	11650.3	28.3	17.6	45.9	54.0	-8.1	Average	Horizontal
	11650.5	38.2	17.6	55.8	74.0	-18.2	Peak	Horizontal
*	8752.0	33.6	13.2	46.8	68.2	-21.4	Peak	Vertical
*	9780.5	32.4	16.1	48.5	68.2	-19.7	Peak	Vertical
	11191.5	33.3	17.6	50.9	74.0	-23.1	Peak	Vertical
	11642.0	39.6	17.6	57.2	74.0	-16.8	Peak	Vertical
	11642.5	29.0	17.6	46.6	54.0	-7.4	Average	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT40 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	151
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8607.5	35.6	12.9	48.5	68.2	-19.7	Peak	Horizontal
*	9908.0	33.1	16.6	49.7	68.2	-18.5	Peak	Horizontal
	11123.5	33.5	17.7	51.2	74.0	-22.8	Peak	Horizontal
	12509.0	33.1	17.2	50.3	74.0	-23.7	Peak	Horizontal
*	8769.0	34.6	13.2	47.8	68.2	-20.4	Peak	Vertical
*	9857.0	32.8	16.7	49.5	68.2	-18.7	Peak	Vertical
	10885.5	32.9	18.1	51.0	74.0	-23.0	Peak	Vertical
	12126.5	32.9	17.5	50.4	74.0	-23.6	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT40 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	159
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8854.0	34.0	13.4	47.4	68.2	-20.8	Peak	Horizontal
*	10044.0	32.9	16.7	49.6	68.2	-18.6	Peak	Horizontal
	11590.5	25.8	17.7	43.5	54.0	-10.5	Average	Horizontal
	11591.0	35.9	17.7	53.6	74.0	-20.4	Peak	Horizontal
	12364.5	32.8	17.2	50.0	74.0	-24.0	Peak	Horizontal
*	8752.0	34.1	13.2	47.3	68.2	-20.9	Peak	Vertical
*	9780.5	32.7	16.1	48.8	68.2	-19.4	Peak	Vertical
	11590.5	27.1	17.7	44.8	54.0	-9.2	Average	Vertical
	11591.0	37.4	17.7	55.1	74.0	-18.9	Peak	Vertical
	12330.5	32.4	17.3	49.7	74.0	-24.3	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT80 - Ant 1+2 CDD mode (5GHz Card #1 + Ant #1)	Test Channel	155
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8735.0	34.4	13.0	47.4	68.2	-20.8	Peak	Horizontal
*	9814.5	33.2	16.4	49.6	68.2	-18.6	Peak	Horizontal
	10928.0	32.1	18.2	50.3	74.0	-23.7	Peak	Horizontal
	11820.5	32.5	17.2	49.7	74.0	-24.3	Peak	Horizontal
*	8760.5	33.2	13.2	46.4	68.2	-21.8	Peak	Vertical
*	9780.5	32.3	16.1	48.4	68.2	-19.8	Peak	Vertical
	10894.0	32.3	18.1	50.4	74.0	-23.6	Peak	Vertical
	11846.0	32.8	17.2	50.0	74.0	-24.0	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	149
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8811.5	35.0	13.3	48.3	68.2	-19.9	Peak	Horizontal
*	9797.5	33.8	16.2	50.0	68.2	-18.2	Peak	Horizontal
	11106.5	33.6	17.8	51.4	74.0	-22.6	Peak	Horizontal
	12296.5	34.5	17.3	51.8	74.0	-22.2	Peak	Horizontal
*	8769.0	34.6	13.2	47.8	68.2	-20.4	Peak	Vertical
*	9857.0	33.4	16.7	50.1	68.2	-18.1	Peak	Vertical
	11021.5	33.2	17.9	51.1	74.0	-22.9	Peak	Vertical
	12109.5	33.4	17.5	50.9	74.0	-23.1	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8845.5	34.5	13.3	47.8	68.2	-20.4	Peak	Horizontal
*	10188.5	33.7	17.1	50.8	68.2	-17.4	Peak	Horizontal
	11030.0	33.5	17.9	51.4	74.0	-22.6	Peak	Horizontal
	12033.0	33.5	17.4	50.9	74.0	-23.1	Peak	Horizontal
*	8769.0	33.5	13.2	46.7	68.2	-21.5	Peak	Vertical
*	9806.0	32.5	16.3	48.8	68.2	-19.4	Peak	Vertical
	11568.1	24.4	17.8	42.2	54.0	-11.8	Average	Vertical
	11574.0	36.4	17.7	54.1	74.0	-19.9	Peak	Vertical
	12441.0	32.6	17.1	49.7	74.0	-24.3	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11a - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	165
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8854.0	34.5	13.4	47.9	68.2	-20.3	Peak	Horizontal
*	9899.5	33.7	16.6	50.3	68.2	-17.9	Peak	Horizontal
	11225.5	34.0	17.6	51.6	74.0	-22.4	Peak	Horizontal
	12424.0	32.6	17.2	49.8	74.0	-24.2	Peak	Horizontal
*	8794.5	35.6	13.3	48.9	68.2	-19.3	Peak	Vertical
*	9772.0	33.2	16.2	49.4	68.2	-18.8	Peak	Vertical
	10928.0	34.5	18.2	52.7	74.0	-21.3	Peak	Vertical
	12169.0	33.5	17.5	51.0	74.0	-23.0	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	149
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8692.5	34.8	13.0	47.8	68.2	-20.4	Peak	Horizontal
*	9857.0	33.5	16.7	50.2	68.2	-18.0	Peak	Horizontal
	10970.5	33.1	18.2	51.3	74.0	-22.7	Peak	Horizontal
	11735.5	33.7	17.3	51.0	74.0	-23.0	Peak	Horizontal
*	8777.5	33.7	13.2	46.9	68.2	-21.3	Peak	Vertical
*	9729.5	33.0	15.8	48.8	68.2	-19.4	Peak	Vertical
	11013.0	32.8	18.0	50.8	74.0	-23.2	Peak	Vertical
	11846.0	33.8	17.2	51.0	74.0	-23.0	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8769.0	34.9	13.2	48.1	68.2	-20.1	Peak	Horizontal
*	10307.5	32.4	17.3	49.7	68.2	-18.5	Peak	Horizontal
	11123.5	33.4	17.7	51.1	74.0	-22.9	Peak	Horizontal
	12007.5	33.9	17.4	51.3	74.0	-22.7	Peak	Horizontal
*	8658.5	36.2	13.0	49.2	68.2	-19.0	Peak	Vertical
*	10035.5	33.5	16.7	50.2	68.2	-18.0	Peak	Vertical
	11123.5	33.0	17.7	50.7	74.0	-23.3	Peak	Vertical
	12118.0	33.0	17.5	50.5	74.0	-23.5	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	165
Remark	<ol style="list-style-type: none"> Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. 		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8820.0	34.7	13.3	48.0	68.2	-20.2	Peak	Horizontal
*	9942.0	33.6	16.8	50.4	68.2	-17.8	Peak	Horizontal
	11327.5	33.9	17.6	51.5	74.0	-22.5	Peak	Horizontal
	12271.0	32.9	17.4	50.3	74.0	-23.7	Peak	Horizontal
*	8803.0	35.3	13.3	48.6	68.2	-19.6	Peak	Vertical
*	10171.5	32.8	17.0	49.8	68.2	-18.4	Peak	Vertical
	11038.5	33.2	17.9	51.1	74.0	-22.9	Peak	Vertical
	12169.0	33.4	17.5	50.9	74.0	-23.1	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT40 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	151
Remark	<ol style="list-style-type: none"> Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. 		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8922.0	36.5	13.3	49.8	68.2	-18.4	Peak	Horizontal
*	9772.0	33.8	16.2	50.0	68.2	-18.2	Peak	Horizontal
	11132.0	33.5	17.7	51.2	74.0	-22.8	Peak	Horizontal
	12551.5	32.8	17.3	50.1	74.0	-23.9	Peak	Horizontal
*	8794.5	34.8	13.3	48.1	68.2	-20.1	Peak	Vertical
*	9950.5	33.0	16.7	49.7	68.2	-18.5	Peak	Vertical
	10996.0	32.9	18.2	51.1	74.0	-22.9	Peak	Vertical
	12075.5	33.0	17.5	50.5	74.0	-23.5	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11n HT40 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	159
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8735.0	33.7	13.0	46.7	68.2	-21.5	Peak	Horizontal
*	9882.5	32.4	16.7	49.1	68.2	-19.1	Peak	Horizontal
	11242.5	32.4	17.5	49.9	74.0	-24.1	Peak	Horizontal
	11922.5	32.7	17.3	50.0	74.0	-24.0	Peak	Horizontal
*	8811.5	33.7	13.3	47.0	68.2	-21.2	Peak	Vertical
*	10010.0	33.0	16.6	49.6	68.2	-18.6	Peak	Vertical
	10902.5	32.8	18.1	50.9	74.0	-23.1	Peak	Vertical
	11795.0	34.0	17.3	51.3	74.0	-22.7	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	149
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8658.5	34.9	13.0	47.9	68.2	-20.3	Peak	Horizontal
*	9789.0	33.0	16.1	49.1	68.2	-19.1	Peak	Horizontal
	11234.0	32.9	17.5	50.4	74.0	-23.6	Peak	Horizontal
	12390.0	32.8	17.2	50.0	74.0	-24.0	Peak	Horizontal
*	8854.0	35.3	13.4	48.7	68.2	-19.5	Peak	Vertical
*	10018.5	32.2	16.6	48.8	68.2	-19.4	Peak	Vertical
	10987.5	32.8	18.2	51.0	74.0	-23.0	Peak	Vertical
	12194.5	33.8	17.4	51.2	74.0	-22.8	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	157
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8735.0	35.3	13.0	48.3	68.2	-19.9	Peak	Horizontal
*	9857.0	32.9	16.7	49.6	68.2	-18.6	Peak	Horizontal
	10877.0	33.6	18.1	51.7	74.0	-22.3	Peak	Horizontal
	11795.0	32.8	17.3	50.1	74.0	-23.9	Peak	Horizontal
*	8845.5	35.1	13.3	48.4	68.2	-19.8	Peak	Vertical
*	9814.5	32.7	16.4	49.1	68.2	-19.1	Peak	Vertical
	10970.5	33.2	18.2	51.4	74.0	-22.6	Peak	Vertical
	12033.0	32.5	17.4	49.9	74.0	-24.1	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT20 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	165
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8692.5	36.2	13.0	49.2	68.2	-19.0	Peak	Horizontal
*	9814.5	33.7	16.4	50.1	68.2	-18.1	Peak	Horizontal
	10970.5	33.9	18.2	52.1	74.0	-21.9	Peak	Horizontal
	12441.0	33.1	17.1	50.2	74.0	-23.8	Peak	Horizontal
*	8854.0	34.9	13.4	48.3	68.2	-19.9	Peak	Vertical
*	9899.5	33.9	16.6	50.5	68.2	-17.7	Peak	Vertical
	10987.5	33.1	18.2	51.3	74.0	-22.7	Peak	Vertical
	11956.5	33.1	17.3	50.4	74.0	-23.6	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT40 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	151
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8701.0	35.8	13.0	48.8	68.2	-19.4	Peak	Horizontal
*	10052.5	32.6	16.8	49.4	68.2	-18.8	Peak	Horizontal
	10970.5	33.1	18.2	51.3	74.0	-22.7	Peak	Horizontal
	11897.0	33.1	17.3	50.4	74.0	-23.6	Peak	Horizontal
*	8769.0	34.2	13.2	47.4	68.2	-20.8	Peak	Vertical
*	9789.0	32.2	16.1	48.3	68.2	-19.9	Peak	Vertical
	11038.5	32.3	17.9	50.2	74.0	-23.8	Peak	Vertical
	12415.5	32.6	17.2	49.8	74.0	-24.2	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT40 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	159
Remark	<ol style="list-style-type: none"> Average measurement was not performed if peak level lower than average limit. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report. 		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8811.5	34.7	13.3	48.0	68.2	-20.2	Peak	Horizontal
*	10214.0	32.9	17.1	50.0	68.2	-18.2	Peak	Horizontal
	11038.5	32.7	17.9	50.6	74.0	-23.4	Peak	Horizontal
	12424.0	32.8	17.2	50.0	74.0	-24.0	Peak	Horizontal
*	8769.0	34.3	13.2	47.5	68.2	-20.7	Peak	Vertical
*	9797.5	32.5	16.2	48.7	68.2	-19.5	Peak	Vertical
	11030.0	32.5	17.9	50.4	74.0	-23.6	Peak	Vertical
	12296.5	32.8	17.3	50.1	74.0	-23.9	Peak	Vertical

Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Product	X22e Dual 5GHz MeshRanger	Temperature	23°C
Test Engineer	Snake Ni	Relative Humidity	54 %
Test Site	AC1	Test Date	2018/04/14
Test Mode	802.11ac VHT80 - Ant 1+2 CDD mode (5GHz Card #2 + Ant #2)	Test Channel	155
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
*	8871.0	34.9	13.2	48.1	68.2	-20.1	Peak	Horizontal
*	9721.0	33.4	15.7	49.1	68.2	-19.1	Peak	Horizontal
	11030.0	32.3	17.9	50.2	74.0	-23.8	Peak	Horizontal
	12007.5	32.1	17.4	49.5	74.0	-24.5	Peak	Horizontal
*	8675.5	36.5	13.0	49.5	68.2	-18.7	Peak	Vertical
*	9772.0	32.9	16.2	49.1	68.2	-19.1	Peak	Vertical
	10877.0	33.3	18.1	51.4	74.0	-22.6	Peak	Vertical
	11846.0	32.5	17.2	49.7	74.0	-24.3	Peak	Vertical

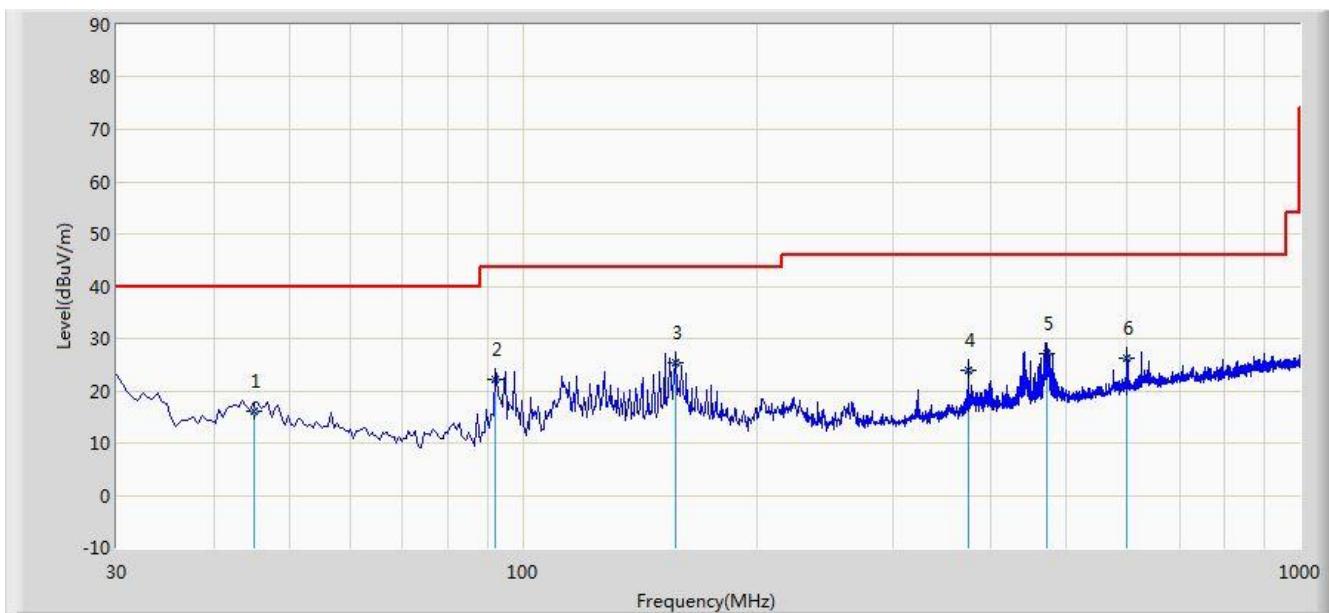
Note 1: “**” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Worst Case of Radiated Emission below 1GHz:

Site: AC1	Time: 2018/04/18 - 18:07
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: Flag Yang
Probe: VULB 9168_20-2000MHz	Polarity: Horizontal
EUT: X22e Dual 5GHz MeshRanger	Power: AC 120V/60Hz

Worse Case Mode: Transmit by 802.11ac-VHT40 at Channel 5755MHz, Ant 0 + 1 with 5GHz Card #1 + Ant #1


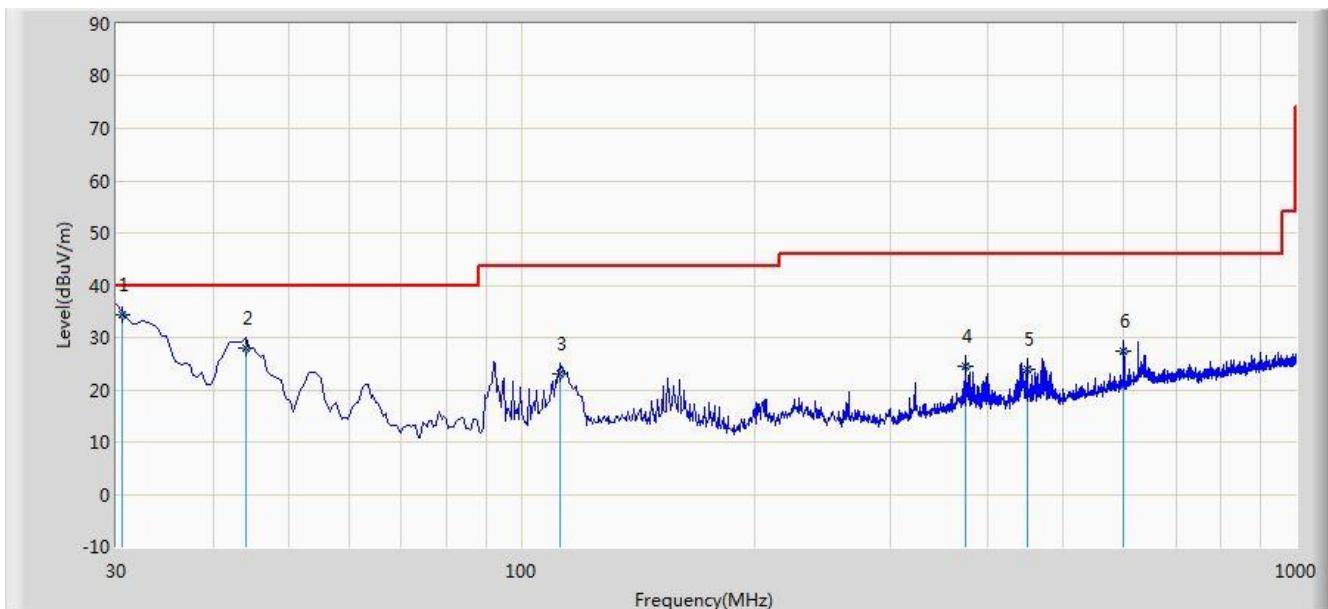
No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			45.035	15.944	1.643	-24.056	40.000	14.302	QP
2			92.080	22.242	11.773	-21.258	43.500	10.469	QP
3		*	157.555	25.335	10.038	-18.165	43.500	15.297	QP
4			374.835	24.025	7.930	-21.975	46.000	16.094	QP
5			472.320	27.131	8.945	-18.869	46.000	18.186	QP
6			599.875	26.274	5.695	-19.726	46.000	20.579	QP

Note 1: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

Site: AC1	Time: 2018/04/27 - 18:10
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: Flag Yang
Probe: VULB 9168 _20-2000MHz	Polarity: Vertical
EUT: X22e Dual 5GHz MeshRanger	Power: AC 120V/60Hz
Worse Case Mode: Transmit by 802.11ac-VHT40 at Channel 5755MHz, Ant 0 + 1 with 5GHz Card #1 + Ant #1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	30.523	34.439	20.699	-5.561	40.000	13.741	QP
2			44.065	28.067	13.715	-11.933	40.000	14.352	QP
3			112.450	23.126	10.751	-20.374	43.500	12.375	QP
4			374.835	24.476	8.381	-21.524	46.000	16.094	QP
5			450.010	23.939	6.020	-22.061	46.000	17.919	QP
6			599.875	27.431	6.852	-18.569	46.000	20.579	QP

Note 1: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

7.3. Radiated Restricted Band Edge Measurement

7.3.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.25 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

For 15.407(b) requirement:

For transmitters operating in the 5.725-5.85 GHz band:

Refer to KDB 789033 D02v02r01 G)2)c), as specified in § 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in § 15.407(b)(4)). However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

7.3.2. Test Procedure Used

ANSI C63.10 Section 6.6 (Standard test method above 1GHz)

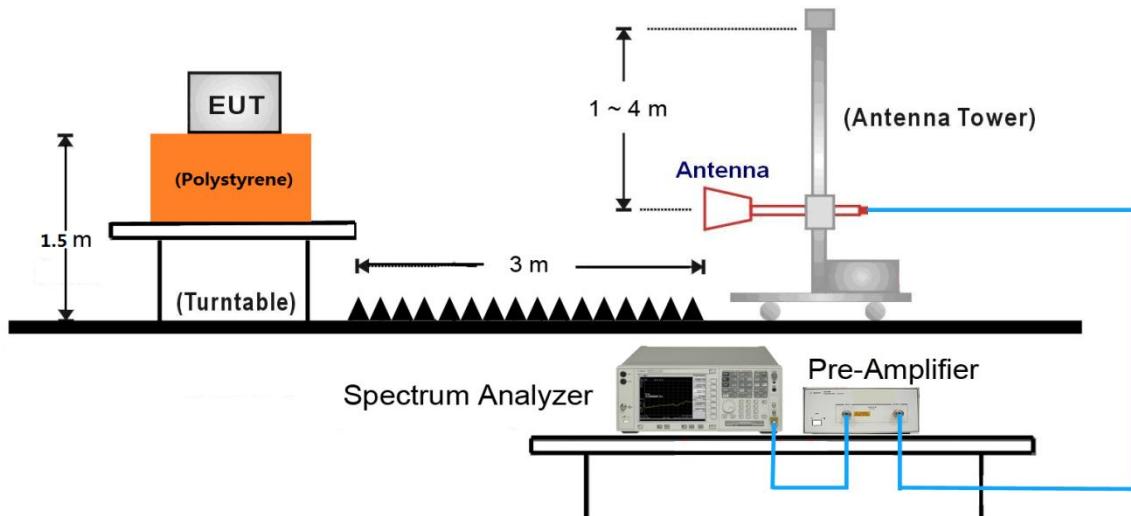
7.3.3. Test Setting

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

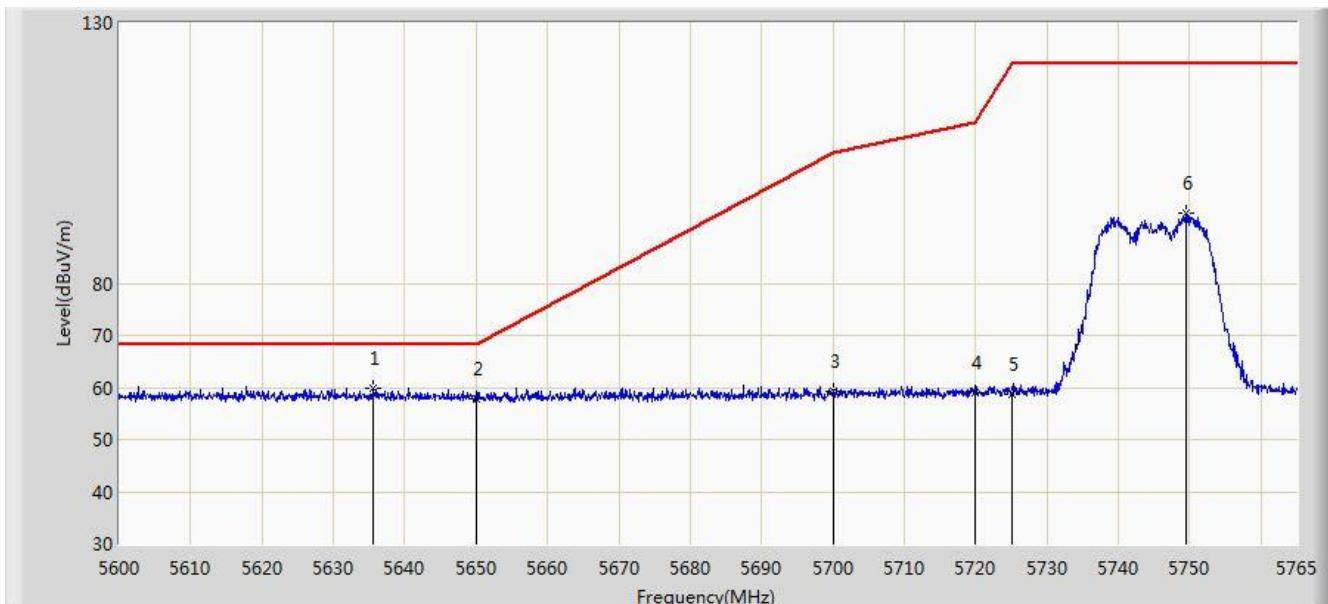
7.3.4. Test Setup

Note: This item was performed with the WIFI antenna connected.

7.3.5. Test Result

5GHz Card #1 + Ant #1

Site: AC1	Time: 2018/04/17 - 03:00
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11a at Channel 5745MHz Ant 1 + 2 CDD mode	

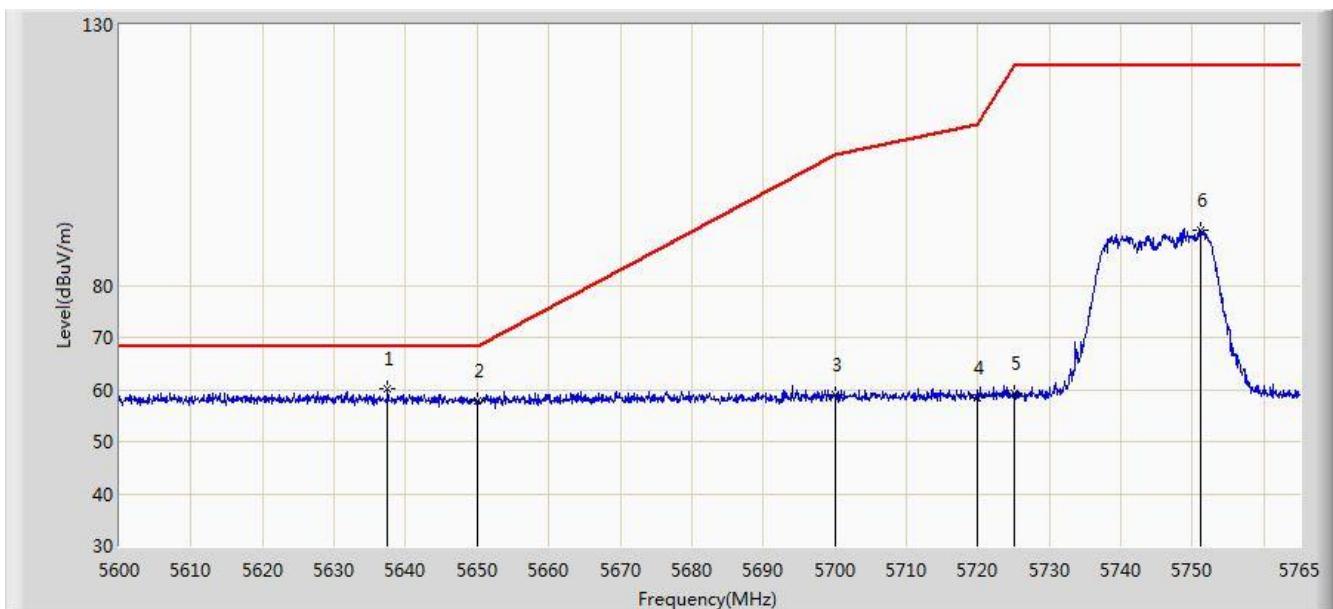


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5635.640	59.903	52.909	-8.297	68.200	6.995	PK
2			5650.000	57.866	50.861	-10.334	68.200	7.005	PK
3			5700.000	59.338	52.173	-45.862	105.200	7.165	PK
4			5720.000	59.038	51.739	-51.762	110.800	7.299	PK
5			5725.000	58.786	51.458	-63.414	122.200	7.328	PK
6			5749.408	93.592	86.184	N/A	N/A	7.407	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:02
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11a at Channel 5745MHz Ant 1 + 2 CDD mode	

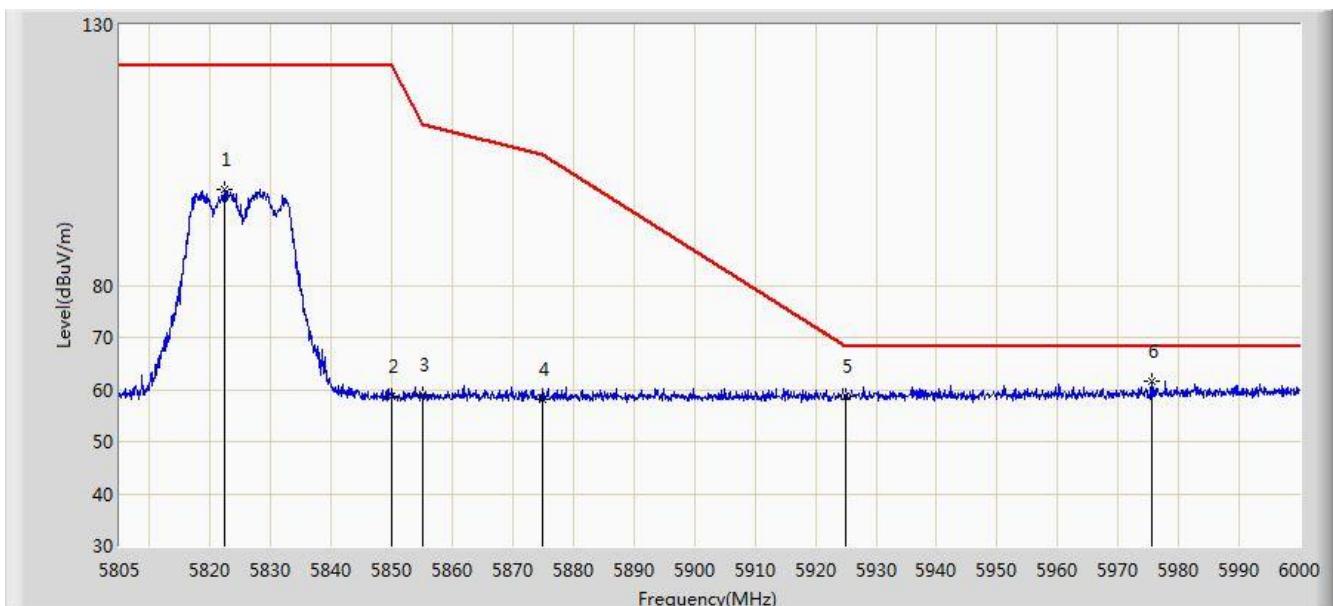


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5637.455	60.071	53.080	-8.129	68.200	6.991	PK
2			5650.000	57.690	50.685	-10.510	68.200	7.005	PK
3			5700.000	58.971	51.806	-46.229	105.200	7.165	PK
4			5720.000	58.548	51.249	-52.252	110.800	7.299	PK
5			5725.000	59.345	52.017	-62.855	122.200	7.328	PK
6			5751.058	90.720	83.311	N/A	N/A	7.409	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:04
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11a at Channel 5825MHz Ant 1 + 2 CDD mode	

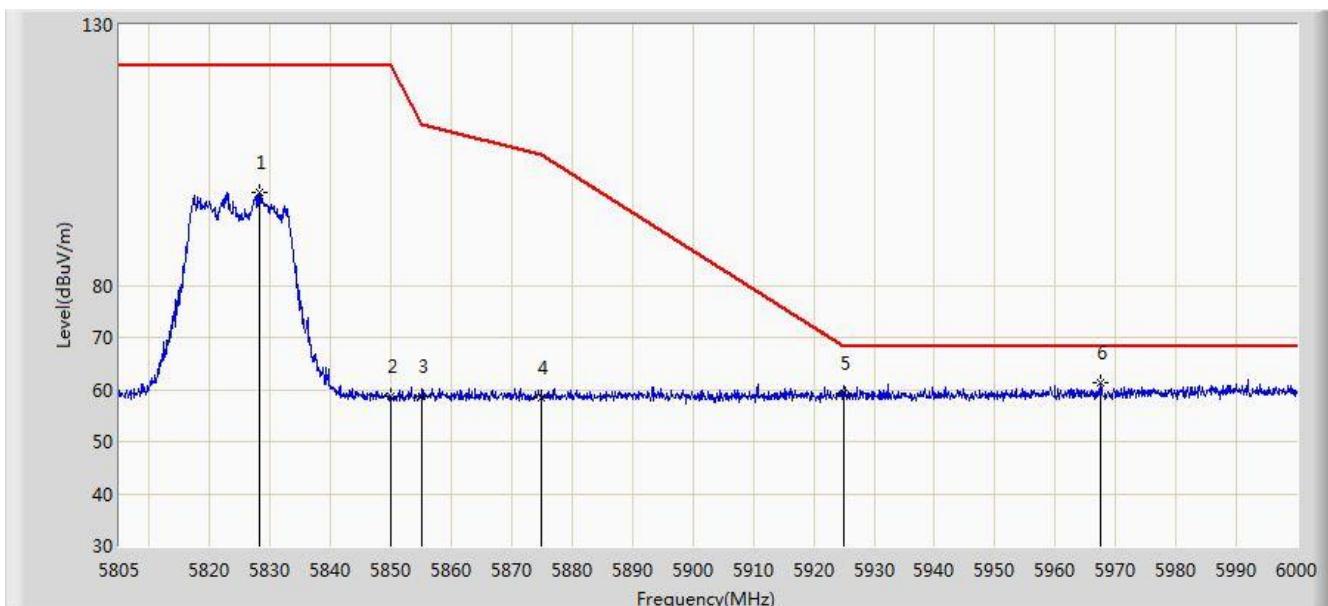


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5822.257	98.300	90.654	N/A	N/A	7.646	PK
2			5850.000	58.686	50.913	-63.514	122.200	7.774	PK
3			5855.000	59.107	51.331	-51.693	110.800	7.775	PK
4			5875.000	58.235	50.417	-46.965	105.200	7.818	PK
5			5925.000	58.835	51.016	-9.365	68.200	7.819	PK
6			5975.527	61.679	53.798	-6.521	68.200	7.881	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:05
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11a at Channel 5825MHz Ant 1 + 2 CDD mode	

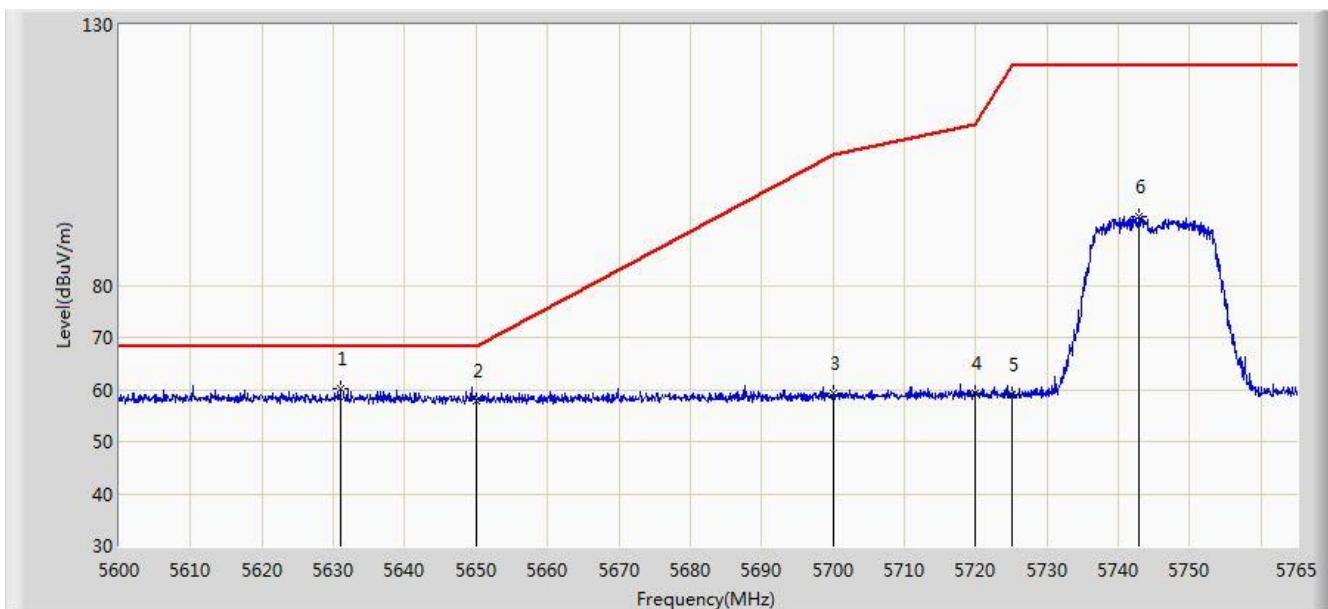


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5828.107	97.920	90.247	N/A	N/A	7.672	PK
2			5850.000	58.631	50.858	-63.569	122.200	7.774	PK
3			5855.000	58.717	50.941	-52.083	110.800	7.775	PK
4			5875.000	58.403	50.585	-46.797	105.200	7.818	PK
5			5925.000	59.403	51.584	-8.797	68.200	7.819	PK
6			5967.435	61.365	53.498	-6.835	68.200	7.867	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:16
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 1 + 2 CDD mode	

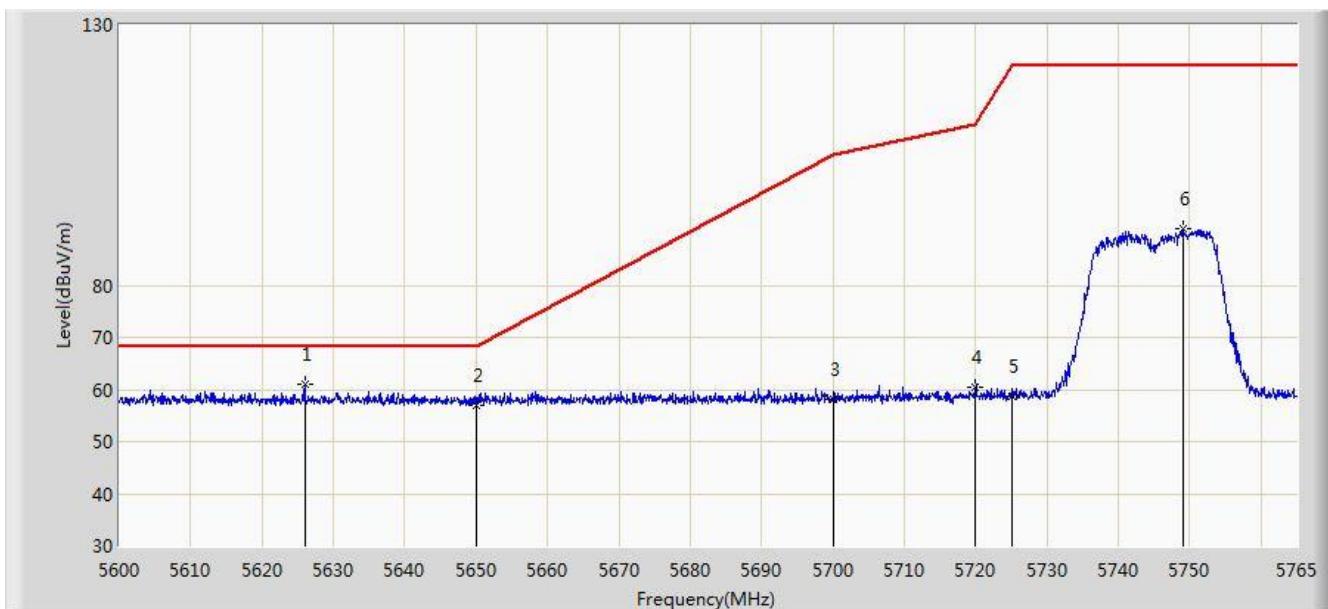


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5630.937	60.003	53.000	-8.197	68.200	7.003	PK
2			5650.000	57.697	50.692	-10.503	68.200	7.005	PK
3			5700.000	59.167	52.002	-46.033	105.200	7.165	PK
4			5720.000	59.297	51.998	-51.503	110.800	7.299	PK
5			5725.000	59.025	51.697	-63.175	122.200	7.328	PK
6			5742.808	93.069	85.667	N/A	N/A	7.403	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:19
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT20 at Channel 5745MHz Ant 1 + 2 CDD mode	

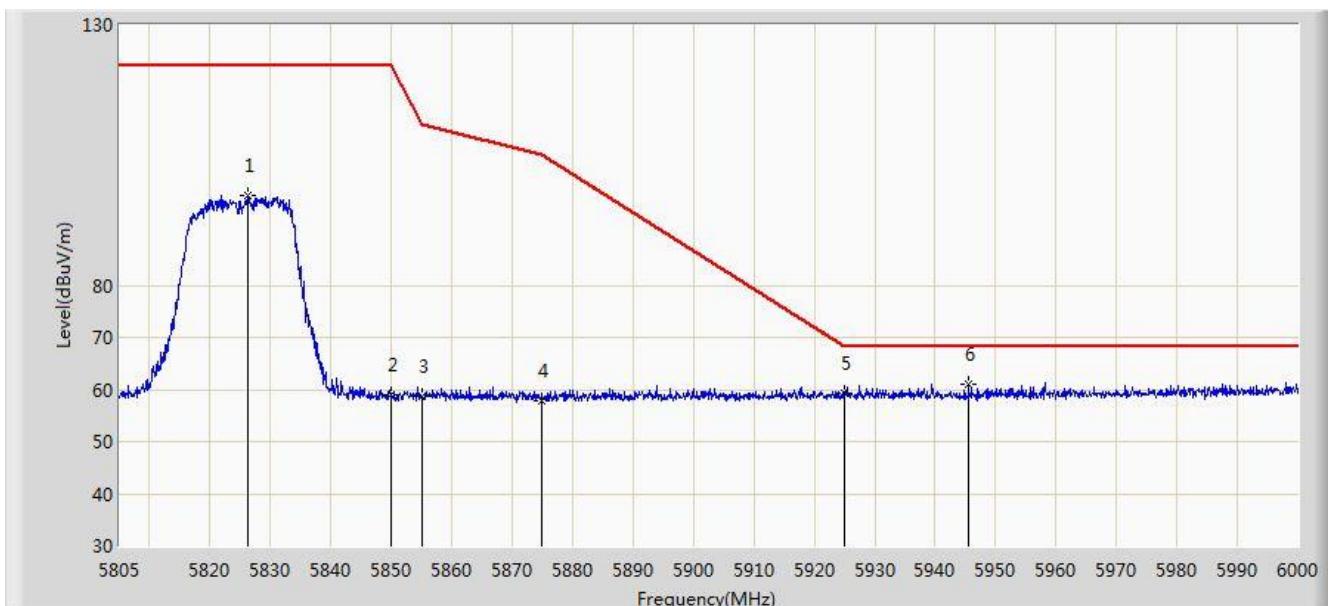


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5625.987	61.082	54.071	-7.118	68.200	7.011	PK
2			5650.000	56.930	49.925	-11.270	68.200	7.005	PK
3			5700.000	58.219	51.054	-46.981	105.200	7.165	PK
4			5720.000	60.565	53.266	-50.235	110.800	7.299	PK
5			5725.000	58.645	51.317	-63.555	122.200	7.328	PK
6			5749.160	90.829	83.421	N/A	N/A	7.407	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:20
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 1 + 2 CDD mode	

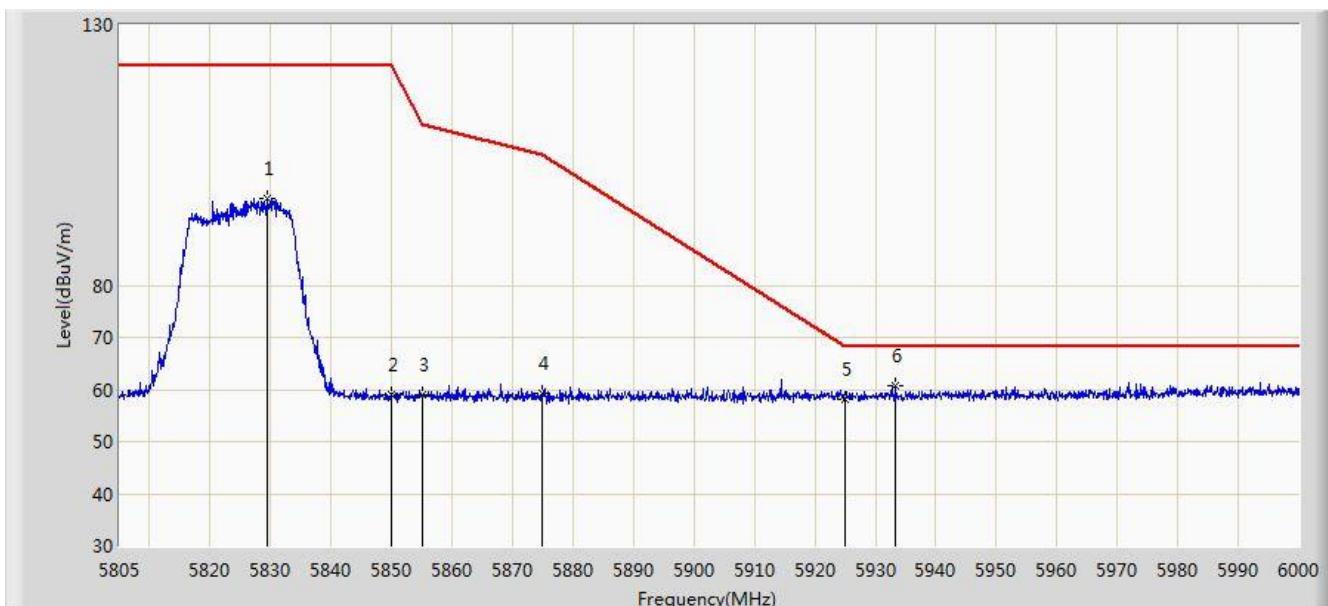


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5826.158	97.126	89.462	N/A	N/A	7.664	PK
2			5850.000	58.946	51.173	-63.254	122.200	7.774	PK
3			5855.000	58.772	50.996	-52.028	110.800	7.775	PK
4			5875.000	57.832	50.014	-47.368	105.200	7.818	PK
5			5925.000	59.199	51.380	-9.001	68.200	7.819	PK
6			5945.498	61.053	53.210	-7.147	68.200	7.844	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:22
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT20 at Channel 5825MHz Ant 1 + 2 CDD mode	

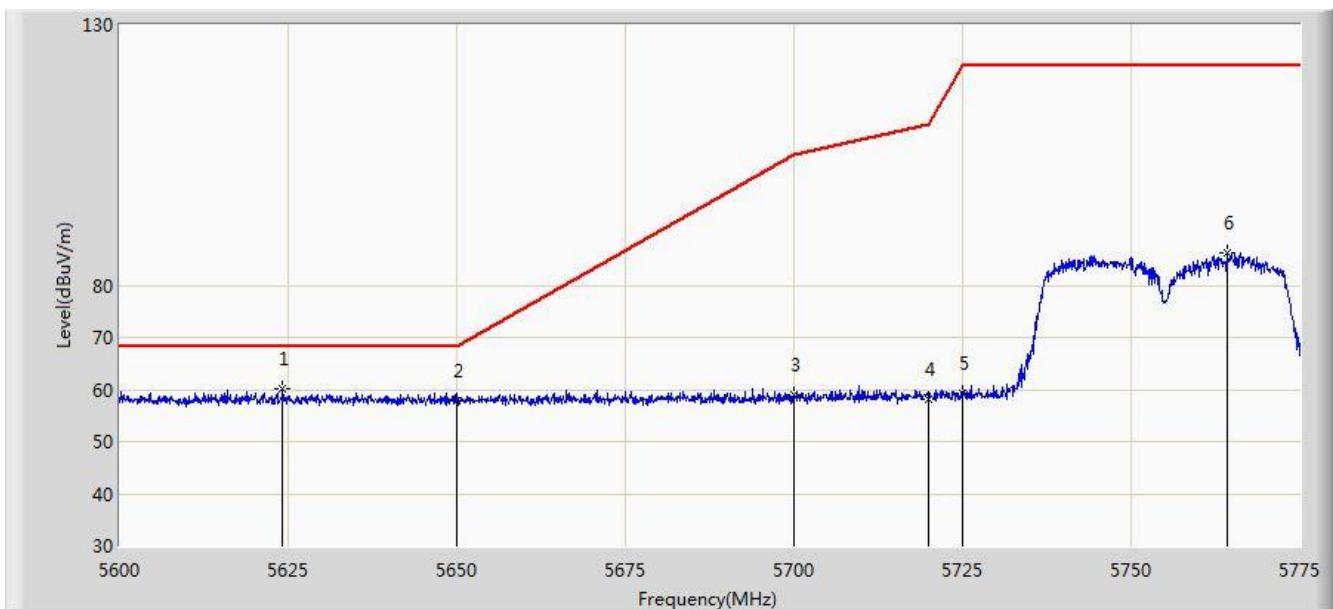


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5829.375	96.675	88.995	N/A	N/A	7.680	PK
2			5850.000	58.988	51.215	-63.212	122.200	7.774	PK
3			5855.000	58.991	51.215	-51.809	110.800	7.775	PK
4			5875.000	59.391	51.573	-45.809	105.200	7.818	PK
5			5925.000	58.169	50.350	-10.031	68.200	7.819	PK
6			5933.310	60.705	52.878	-7.495	68.200	7.827	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:31
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 1 + 2 CDD mode	

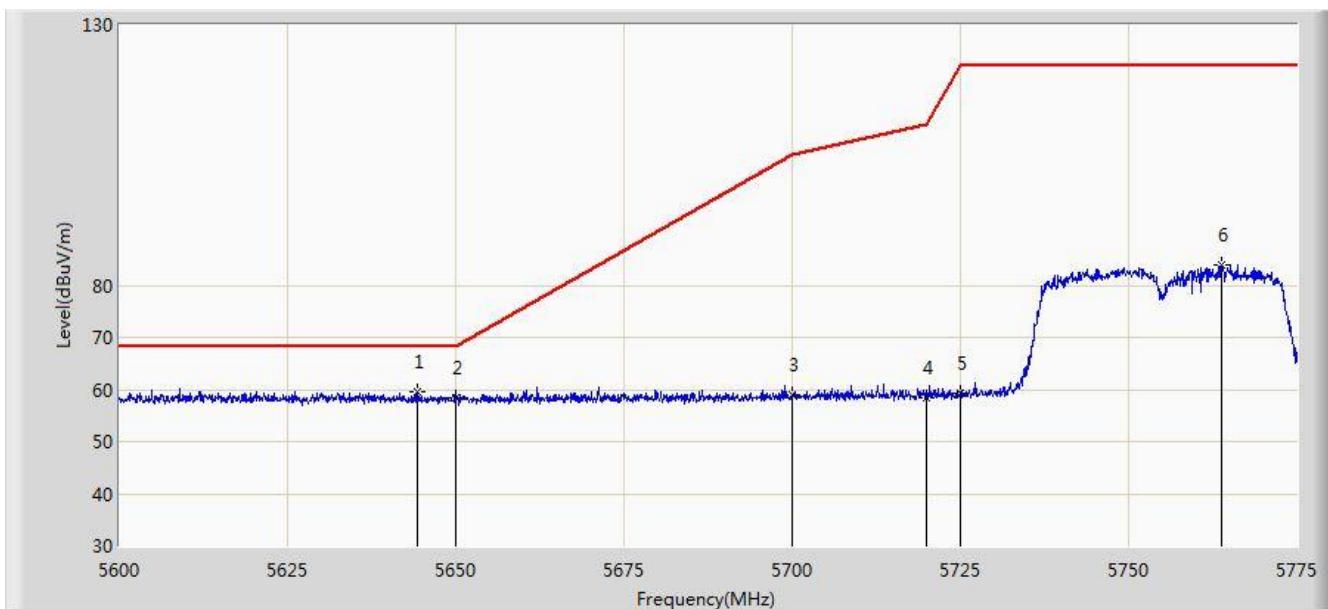


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5624.150	60.264	53.249	-7.936	68.200	7.015	PK
2			5650.000	57.759	50.754	-10.441	68.200	7.005	PK
3			5700.000	58.861	51.696	-46.339	105.200	7.165	PK
4			5720.000	58.239	50.940	-52.561	110.800	7.299	PK
5			5725.000	59.217	51.889	-62.983	122.200	7.328	PK
6			5764.150	86.273	78.845	N/A	N/A	7.428	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:33
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT40 at Channel 5755MHz Ant 1 + 2 CDD mode	

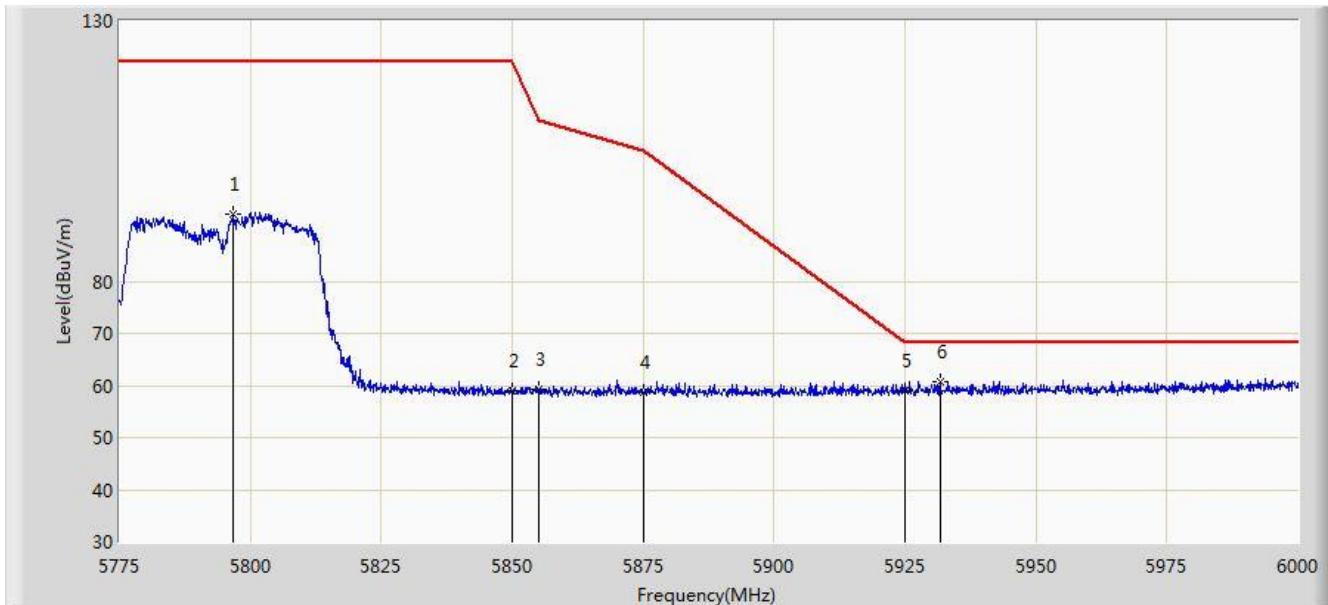


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5644.275	59.661	52.669	-8.539	68.200	6.992	PK
2			5650.000	58.338	51.333	-9.862	68.200	7.005	PK
3			5700.000	58.857	51.692	-46.343	105.200	7.165	PK
4			5720.000	58.409	51.110	-52.391	110.800	7.299	PK
5			5725.000	59.321	51.993	-62.879	122.200	7.328	PK
6			5763.800	83.992	76.566	N/A	N/A	7.427	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:36
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 1 + 2 CDD mode	

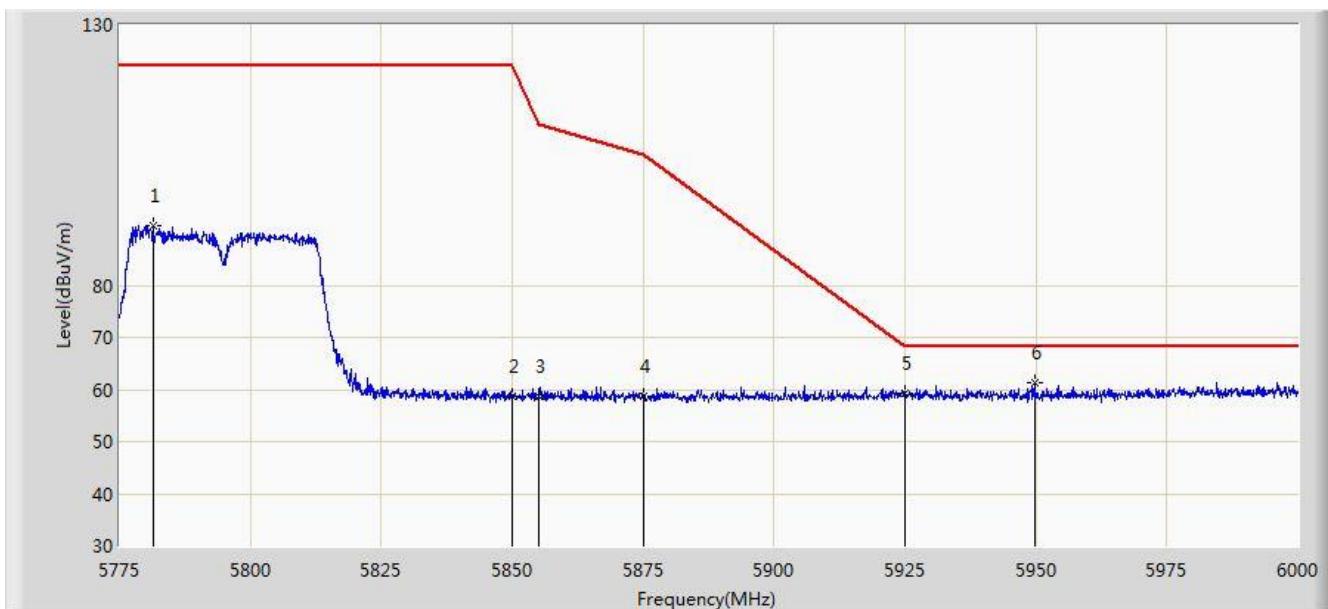


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5796.825	92.974	85.427	N/A	N/A	7.546	PK
2			5850.000	59.025	51.252	-63.175	122.200	7.774	PK
3			5855.000	59.251	51.475	-51.549	110.800	7.775	PK
4			5875.000	58.558	50.740	-46.642	105.200	7.818	PK
5			5925.000	59.066	51.247	-9.134	68.200	7.819	PK
6			5931.712	60.591	52.766	-7.609	68.200	7.825	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 03:38
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11n-HT40 at Channel 5795MHz Ant 1 + 2 CDD mode	

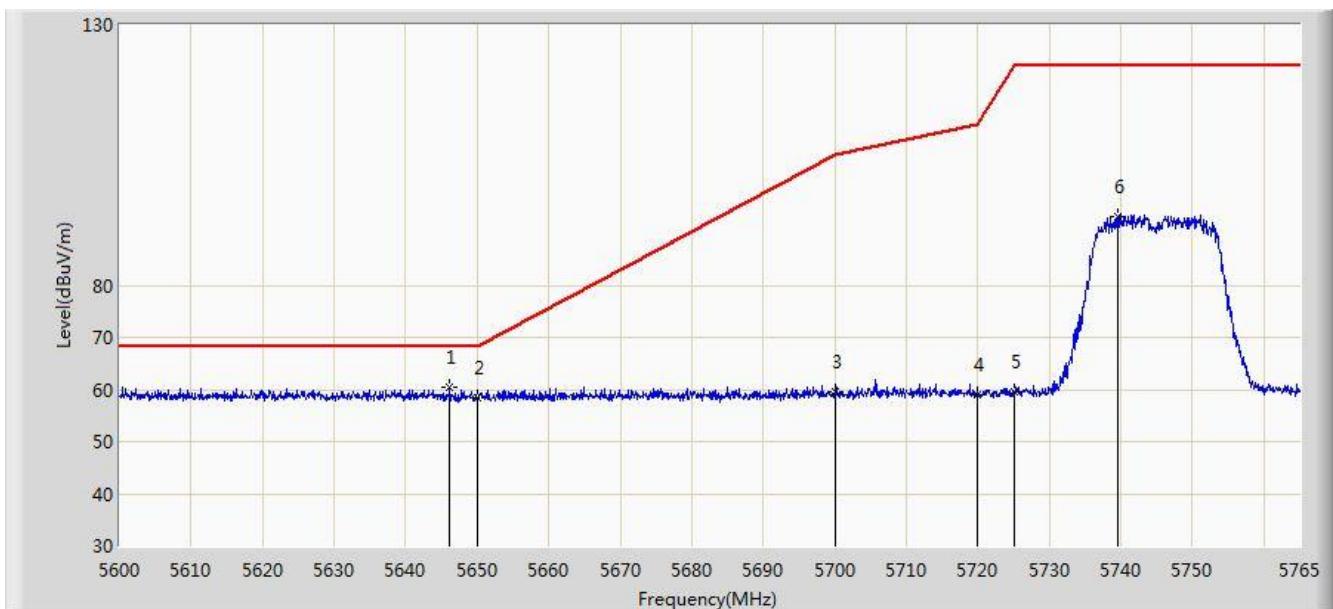


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5781.413	91.413	83.923	N/A	N/A	7.490	PK
2			5850.000	58.630	50.857	-63.570	122.200	7.774	PK
3			5855.000	58.782	51.006	-52.018	110.800	7.775	PK
4			5875.000	58.636	50.818	-46.564	105.200	7.818	PK
5			5925.000	59.340	51.521	-8.860	68.200	7.819	PK
6			5949.712	61.194	53.351	-7.006	68.200	7.844	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:00
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT20 at Channel 5745MHz Ant 1 + 2 CDD mode	

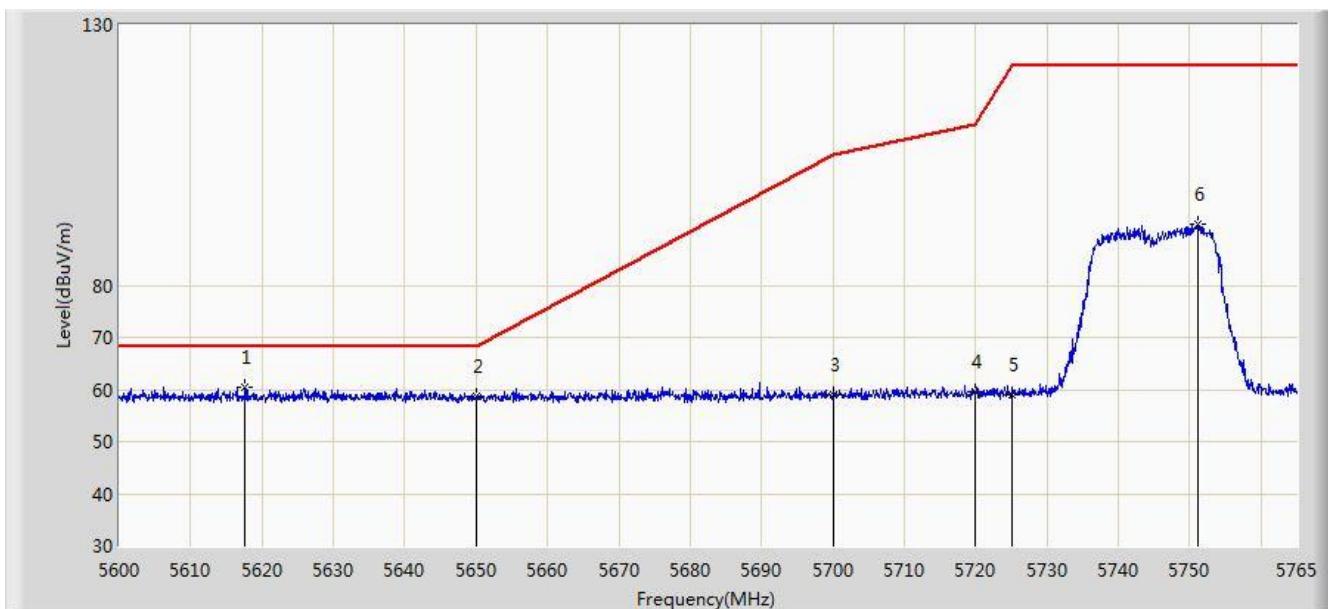


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5646.200	60.431	53.434	-7.769	68.200	6.996	PK
2			5650.000	58.364	51.359	-9.836	68.200	7.005	PK
3			5700.000	59.525	52.360	-45.675	105.200	7.165	PK
4			5720.000	59.052	51.753	-51.748	110.800	7.299	PK
5			5725.000	59.516	52.188	-62.684	122.200	7.328	PK
6			5739.590	93.267	85.877	N/A	N/A	7.390	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:03
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT20 at Channel 5745MHz Ant 1 + 2 CDD mode	

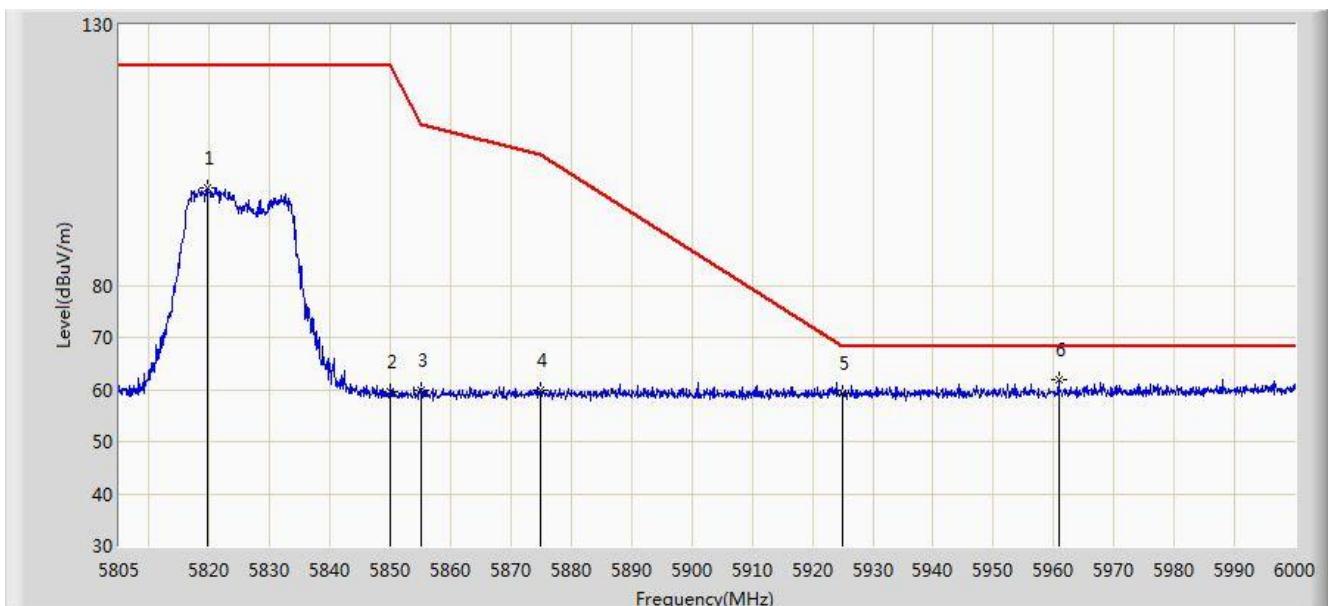


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5617.655	60.436	53.436	-7.764	68.200	7.000	PK
2			5650.000	58.567	51.562	-9.633	68.200	7.005	PK
3			5700.000	58.858	51.693	-46.342	105.200	7.165	PK
4			5720.000	59.631	52.332	-51.169	110.800	7.299	PK
5			5725.000	58.888	51.560	-63.312	122.200	7.328	PK
6			5751.223	91.597	84.188	N/A	N/A	7.410	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:04
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT20 at Channel 5825MHz Ant 1 + 2 CDD mode	

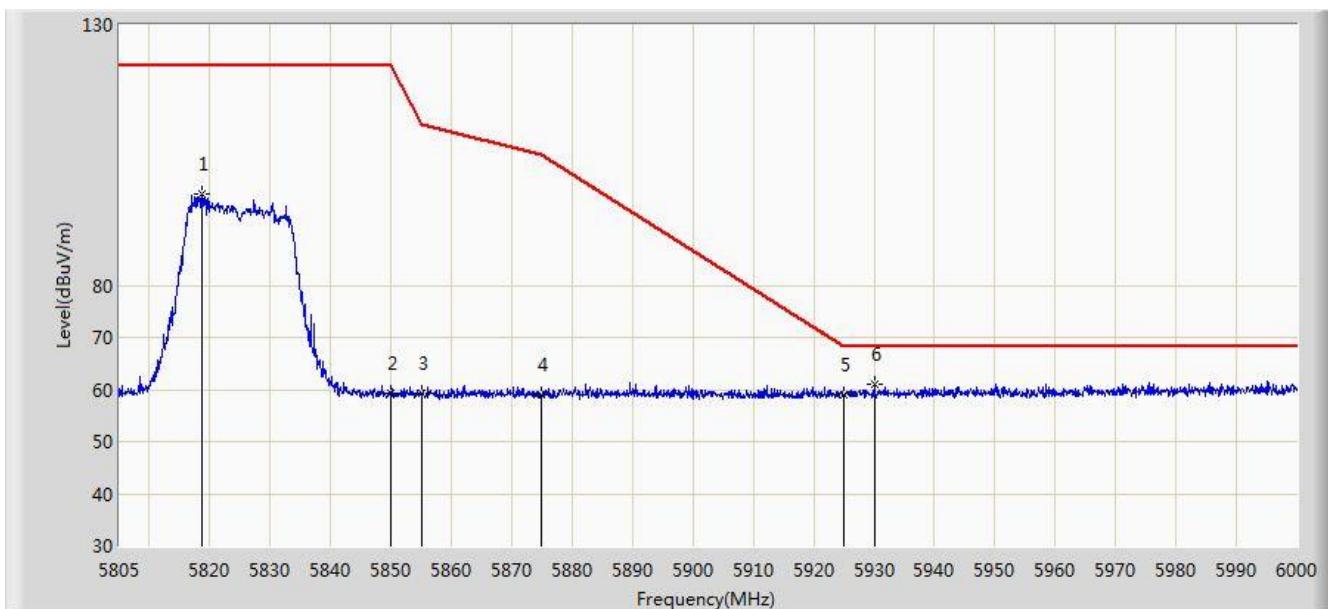


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5819.625	98.656	91.022	N/A	N/A	7.634	PK
2			5850.000	59.591	51.818	-62.609	122.200	7.774	PK
3			5855.000	59.897	52.121	-50.903	110.800	7.775	PK
4			5875.000	59.711	51.893	-45.489	105.200	7.818	PK
5			5925.000	59.342	51.523	-8.858	68.200	7.819	PK
6			5960.805	61.970	54.113	-6.230	68.200	7.858	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:14
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT20 at Channel 5825MHz Ant 1 + 2 CDD mode	

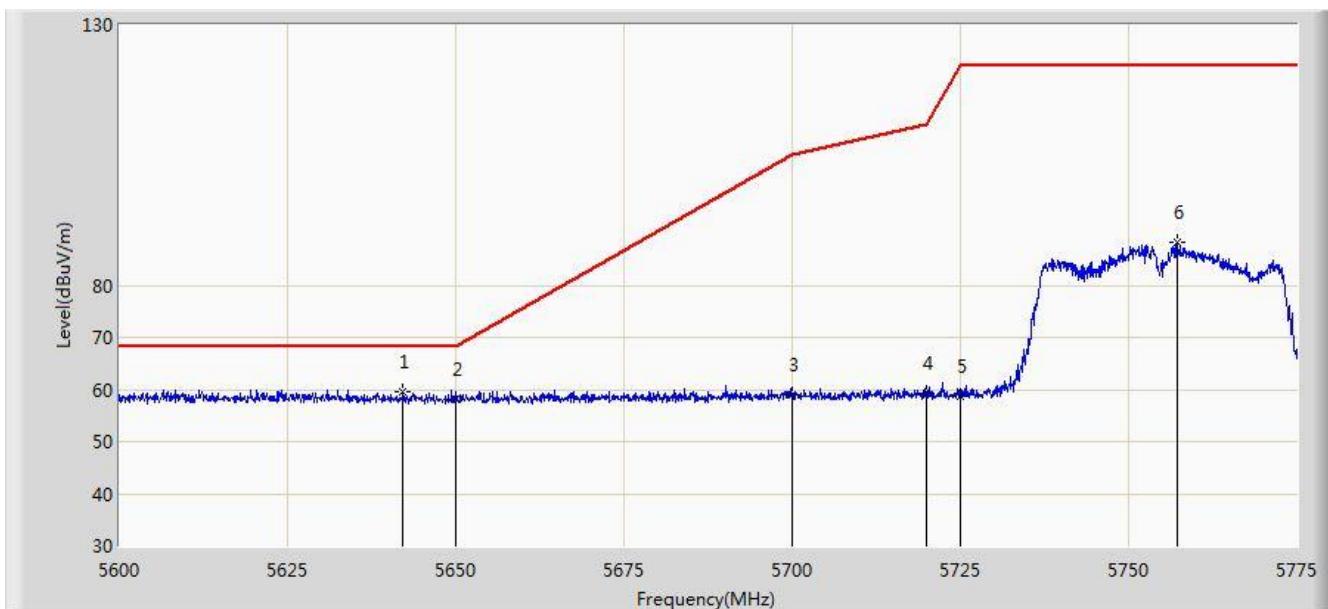


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5818.650	97.504	89.875	N/A	N/A	7.629	PK
2			5850.000	59.222	51.449	-62.978	122.200	7.774	PK
3			5855.000	59.169	51.393	-51.631	110.800	7.775	PK
4			5875.000	59.095	51.277	-46.105	105.200	7.818	PK
5			5925.000	59.014	51.195	-9.186	68.200	7.819	PK
6			5930.092	61.098	53.275	-7.102	68.200	7.823	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:24
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT40 at Channel 5755MHz Ant 1 + 2 CDD mode	

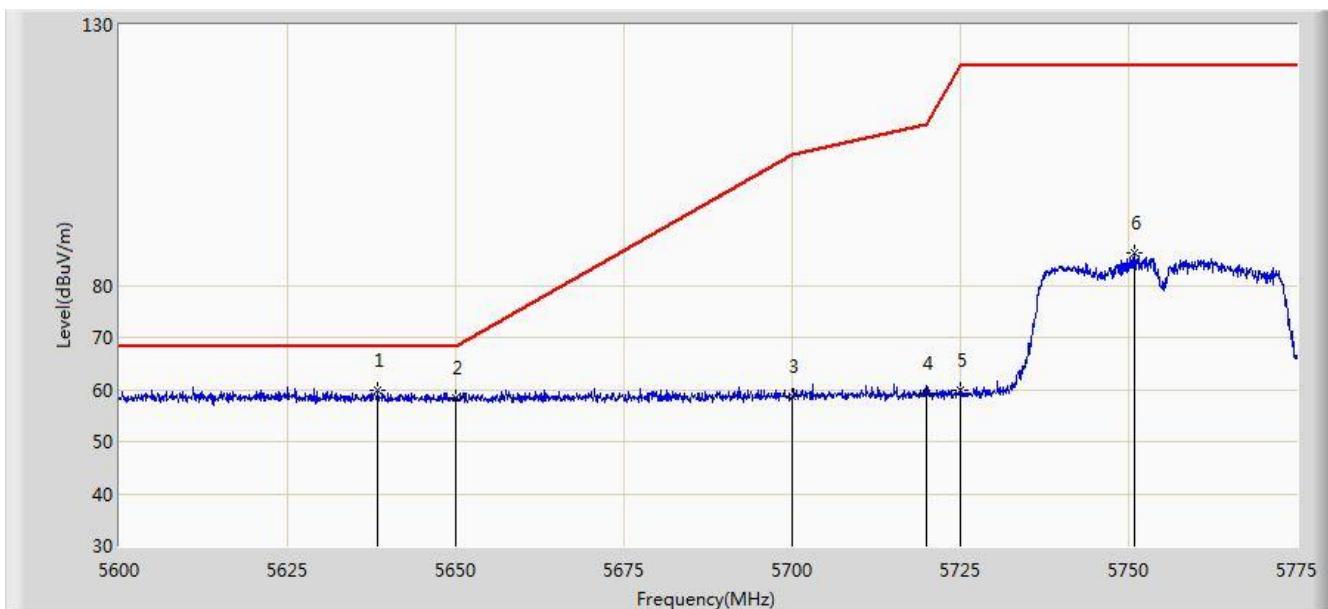


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5642.175	59.701	52.713	-8.499	68.200	6.987	PK
2			5650.000	58.065	51.060	-10.135	68.200	7.005	PK
3			5700.000	59.000	51.835	-46.200	105.200	7.165	PK
4			5720.000	59.173	51.874	-51.627	110.800	7.299	PK
5			5725.000	58.797	51.469	-63.403	122.200	7.328	PK
6			5757.150	88.130	80.717	N/A	N/A	7.412	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:27
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT40 at Channel 5755MHz Ant 1 + 2 CDD mode	

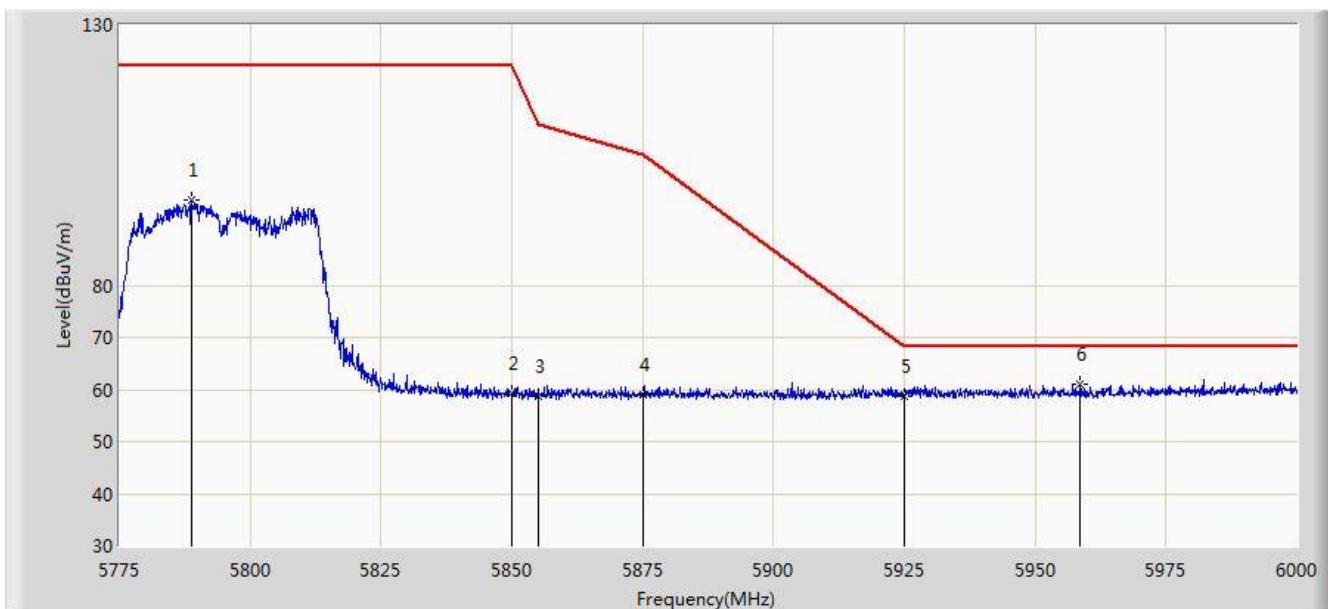


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Over Limit (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			5638.413	59.782	52.792	-8.418	68.200	6.990	PK
2			5650.000	58.467	51.462	-9.733	68.200	7.005	PK
3			5700.000	58.608	51.443	-46.592	105.200	7.165	PK
4			5720.000	59.404	52.105	-51.396	110.800	7.299	PK
5			5725.000	59.811	52.483	-62.389	122.200	7.328	PK
6			5750.850	86.113	78.704	N/A	N/A	7.409	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:29
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT40 at Channel 5795MHz Ant 1 + 2 CDD mode	

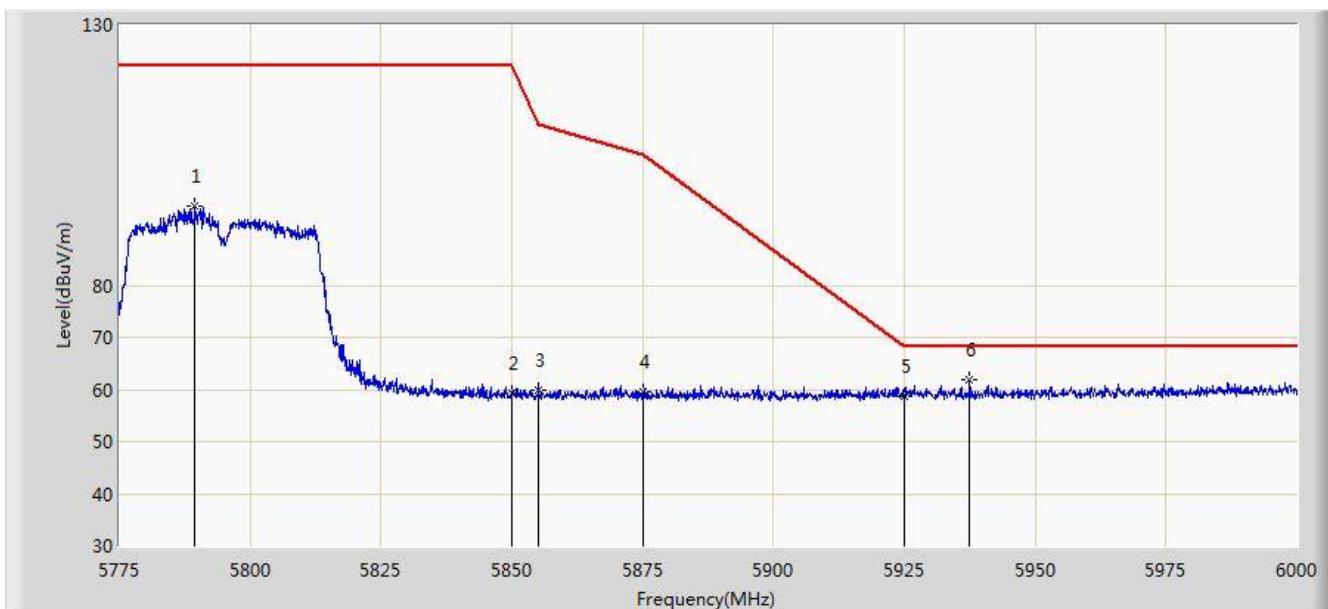


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5788.837	96.516	88.999	N/A	N/A	7.518	PK
2			5850.000	59.282	51.509	-62.918	122.200	7.774	PK
3			5855.000	58.721	50.945	-52.079	110.800	7.775	PK
4			5875.000	58.974	51.156	-46.226	105.200	7.818	PK
5			5925.000	58.815	50.996	-9.385	68.200	7.819	PK
6			5958.600	60.929	53.075	-7.271	68.200	7.855	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:31
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT40 at Channel 5795MHz Ant 1 + 2 CDD mode	

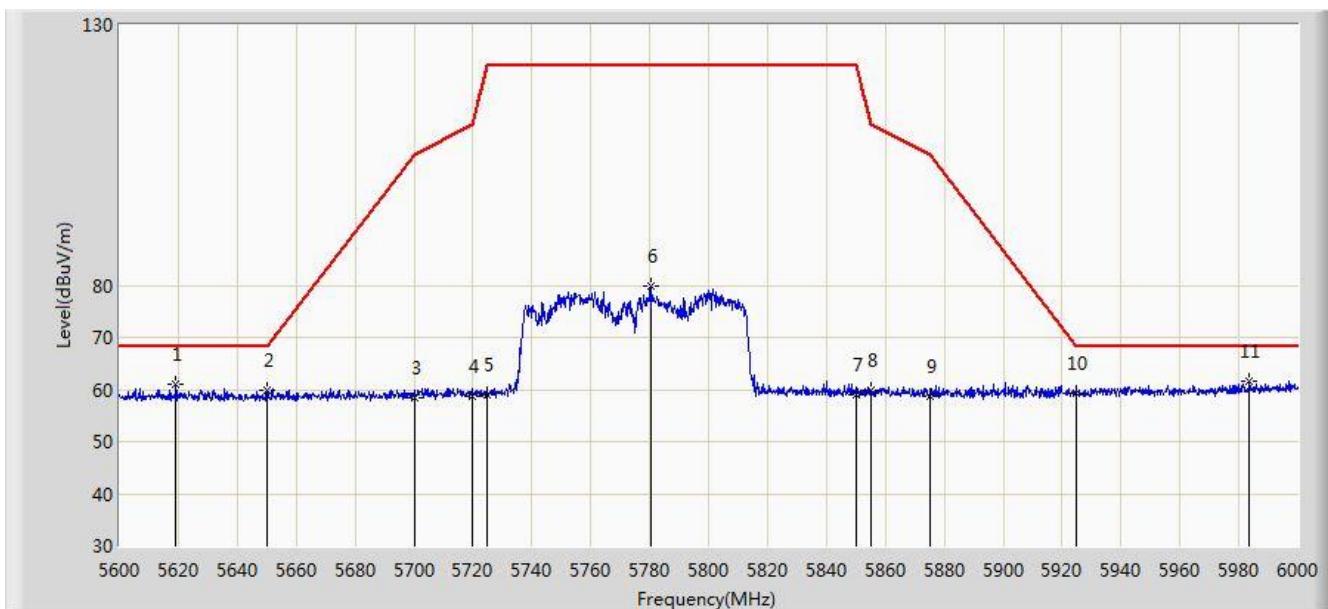


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5789.513	95.205	87.685	N/A	N/A	7.520	PK
2			5850.000	59.194	51.421	-63.006	122.200	7.774	PK
3			5855.000	59.728	51.952	-51.072	110.800	7.775	PK
4			5875.000	59.467	51.649	-45.733	105.200	7.818	PK
5			5925.000	58.576	50.757	-9.624	68.200	7.819	PK
6			5937.450	61.782	53.950	-6.418	68.200	7.832	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:43
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT80 at Channel 5775MHz Ant 1 + 2 CDD mode	

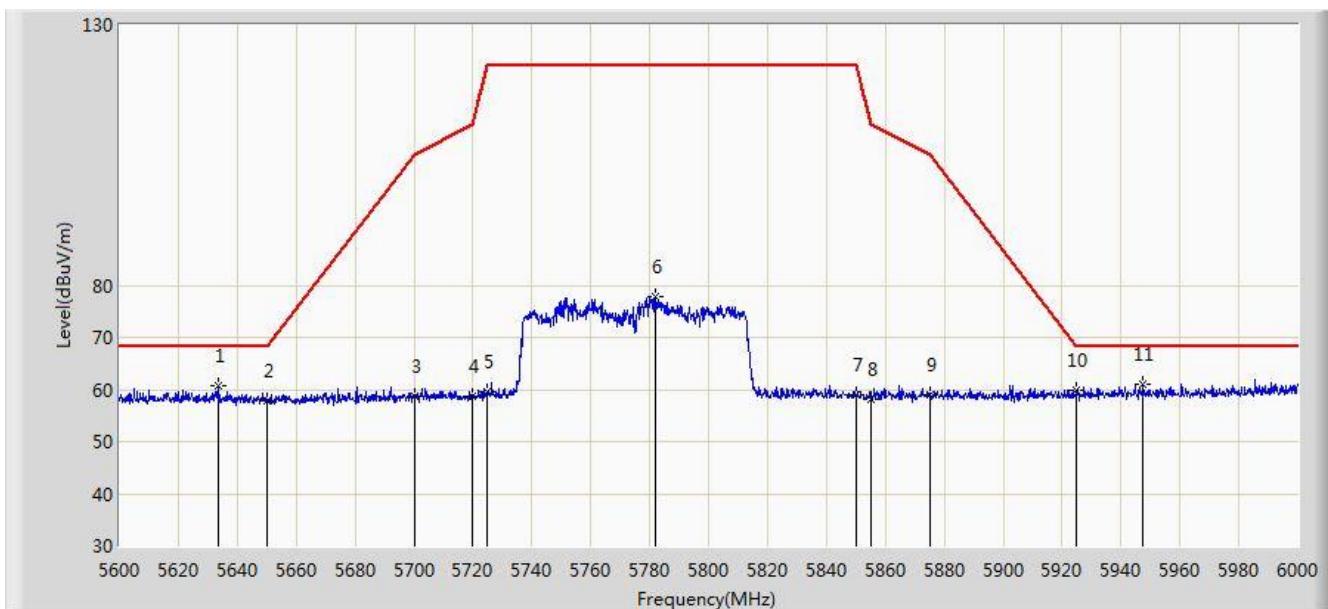


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5619.000	61.088	54.084	-7.112	68.200	7.004	PK
2			5650.000	59.741	52.736	-8.459	68.200	7.005	PK
3			5700.000	58.391	51.226	-46.809	105.200	7.165	PK
4			5720.000	58.597	51.298	-52.203	110.800	7.299	PK
5			5725.000	59.107	51.779	-63.093	122.200	7.328	PK
6			5780.400	79.851	72.365	N/A	N/A	7.486	PK
7			5850.000	59.116	51.343	-63.084	122.200	7.774	PK
8			5855.000	59.815	52.039	-50.985	110.800	7.775	PK
9			5875.000	58.728	50.910	-46.472	105.200	7.818	PK
10			5925.000	59.400	51.581	-8.800	68.200	7.819	PK
11			5983.600	61.734	53.832	-6.466	68.200	7.902	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/17 - 05:46
Limit: FCC_Part15.407_RE(3m)	Engineer: Snake Ni
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 120V/60Hz
Note: Transmit by 802.11ac-VHT80 at Channel 5775MHz Ant 1 + 2 CDD mode	



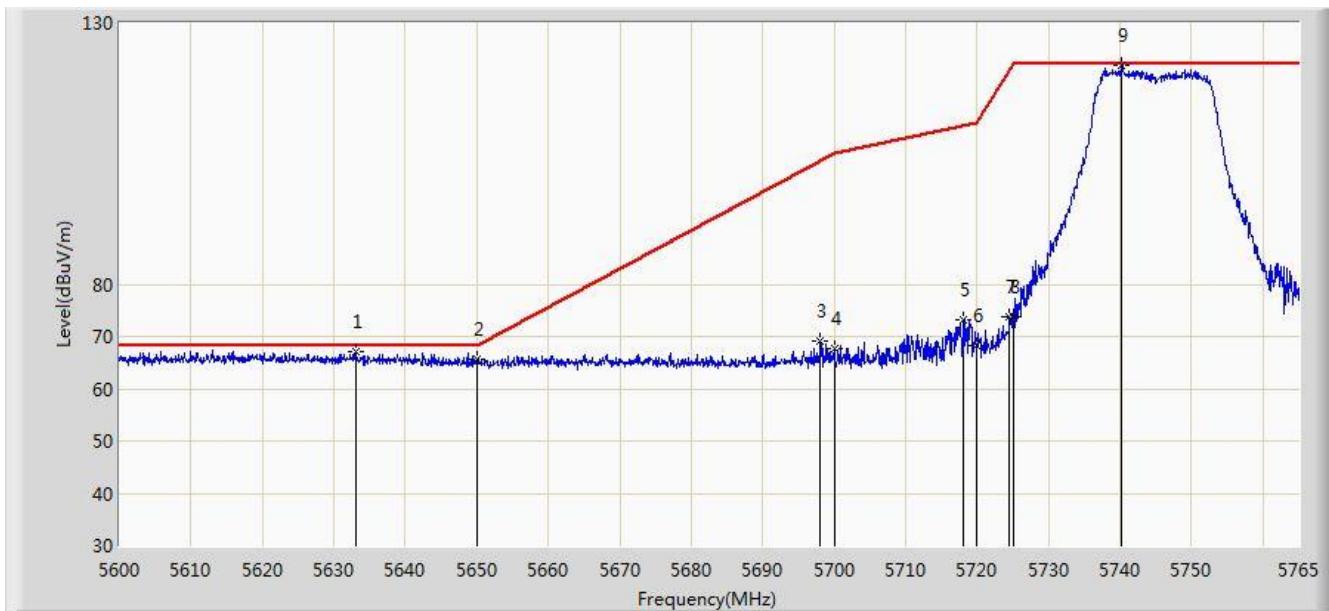
No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Over Limit (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			5633.400	60.702	53.704	-7.498	68.200	6.998	PK
2			5650.000	57.959	50.954	-10.241	68.200	7.005	PK
3			5700.000	58.585	51.420	-46.615	105.200	7.165	PK
4			5720.000	58.665	51.366	-52.135	110.800	7.299	PK
5			5725.000	59.699	52.371	-62.501	122.200	7.328	PK
6			5782.200	77.720	70.227	N/A	N/A	7.492	PK
7			5850.000	58.966	51.193	-63.234	122.200	7.774	PK
8			5855.000	58.233	50.457	-52.567	110.800	7.775	PK
9			5875.000	58.939	51.121	-46.261	105.200	7.818	PK
10			5925.000	59.847	52.028	-8.353	68.200	7.819	PK
11			5947.400	60.965	53.120	-7.235	68.200	7.846	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

5GHz Card #2 + Ant #2

Site: AC1	Time: 2018/04/13 - 07:22
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11a at channel 5745MHz Ant 1+2 CDD mode	

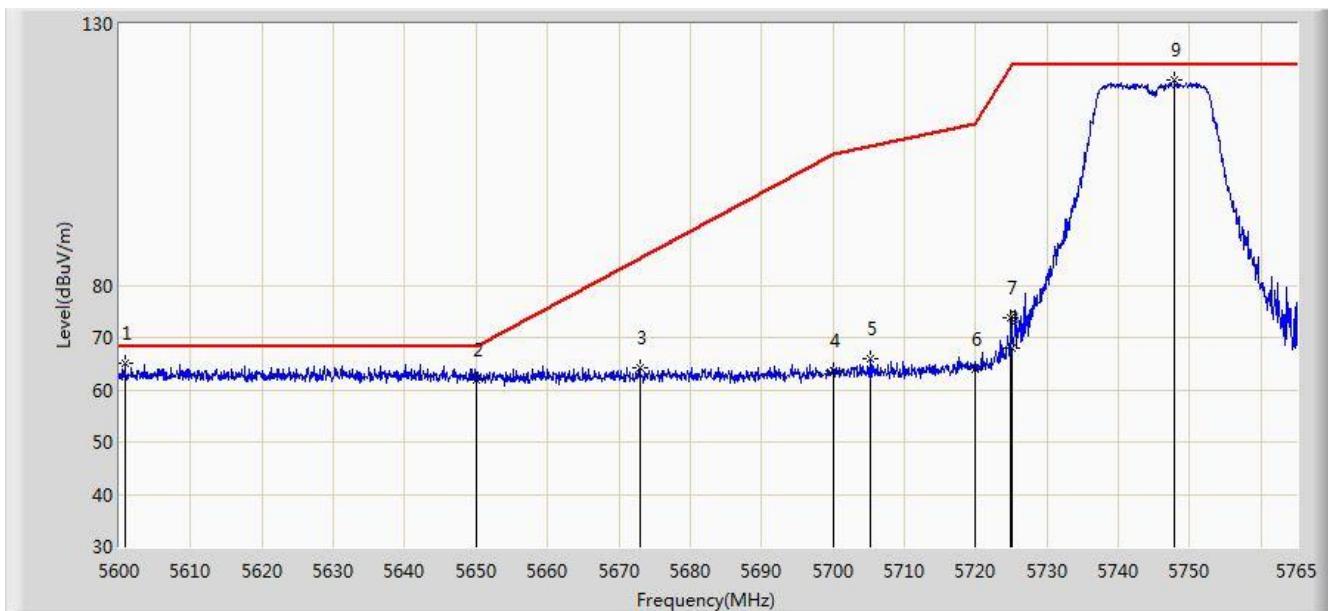


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5633.165	67.125	60.126	-1.075	68.200	6.999	PK
2			5650.000	65.735	58.730	-2.465	68.200	7.005	PK
3			5698.092	69.205	62.052	-34.590	103.794	7.152	PK
4			5700.000	67.697	60.532	-37.503	105.200	7.165	PK
5			5717.975	73.234	65.946	-37.000	110.234	7.288	PK
6			5720.000	68.349	61.050	-42.451	110.800	7.299	PK
7			5724.575	73.885	66.559	-47.347	121.231	7.326	PK
8			5725.000	73.732	66.404	-48.468	122.200	7.328	PK
9			5740.250	121.795	114.402	N/A	N/A	7.393	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:24
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11a at channel 5745MHz Ant 1+2 CDD mode	

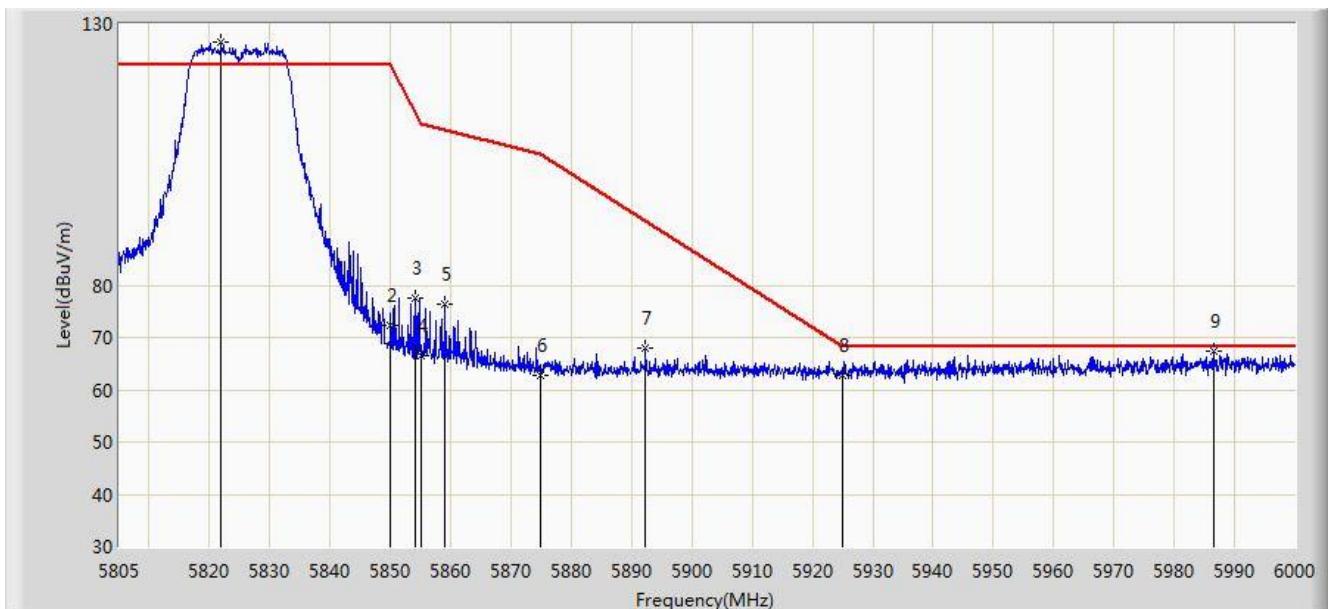


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5600.825	64.938	57.958	-3.262	68.200	6.980	PK
2			5650.000	62.015	55.010	-6.185	68.200	7.005	PK
3			5672.930	64.330	57.278	-20.878	85.209	7.053	PK
4			5700.000	63.492	56.327	-41.708	105.200	7.165	PK
5			5705.187	65.999	58.795	-40.655	106.654	7.204	PK
6			5720.000	64.042	56.743	-46.758	110.800	7.299	PK
7			5724.905	73.850	66.523	-48.133	121.983	7.327	PK
8			5725.000	68.048	60.720	-54.152	122.200	7.328	PK
9			5747.922	119.201	111.794	N/A	N/A	7.406	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:28
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11a at channel 5825MHz Ant 1+2 CDD mode	

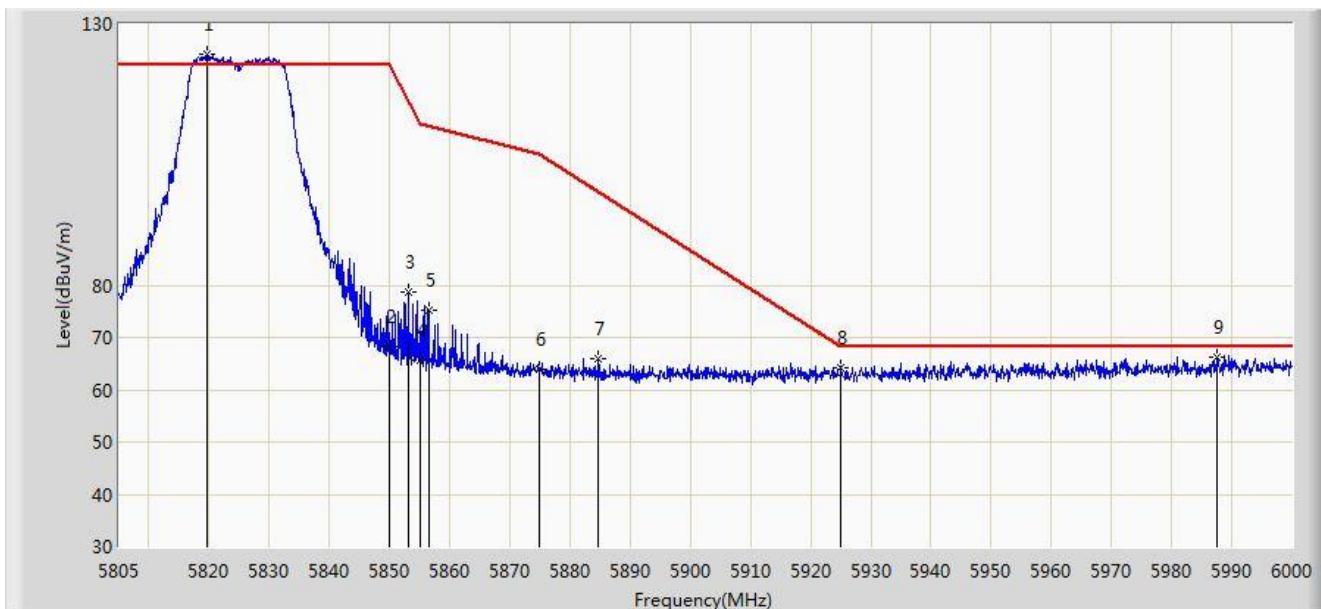


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Over Limit (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			5821.868	126.626	118.982	N/A	N/A	7.644	PK
2			5850.000	72.434	64.661	-49.766	122.200	7.774	PK
3			5854.237	77.397	69.621	-35.142	112.539	7.776	PK
4			5855.000	66.418	58.642	-44.382	110.800	7.775	PK
5			5859.112	76.235	68.457	-33.412	109.647	7.778	PK
6			5875.000	62.824	55.006	-42.376	105.200	7.818	PK
7			5892.263	68.055	60.222	-24.334	92.390	7.834	PK
8			5925.000	62.852	55.033	-5.348	68.200	7.819	PK
9			5986.643	67.299	59.382	-0.901	68.200	7.917	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:30
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11a at channel 5825MHz Ant 1+2 CDD mode	

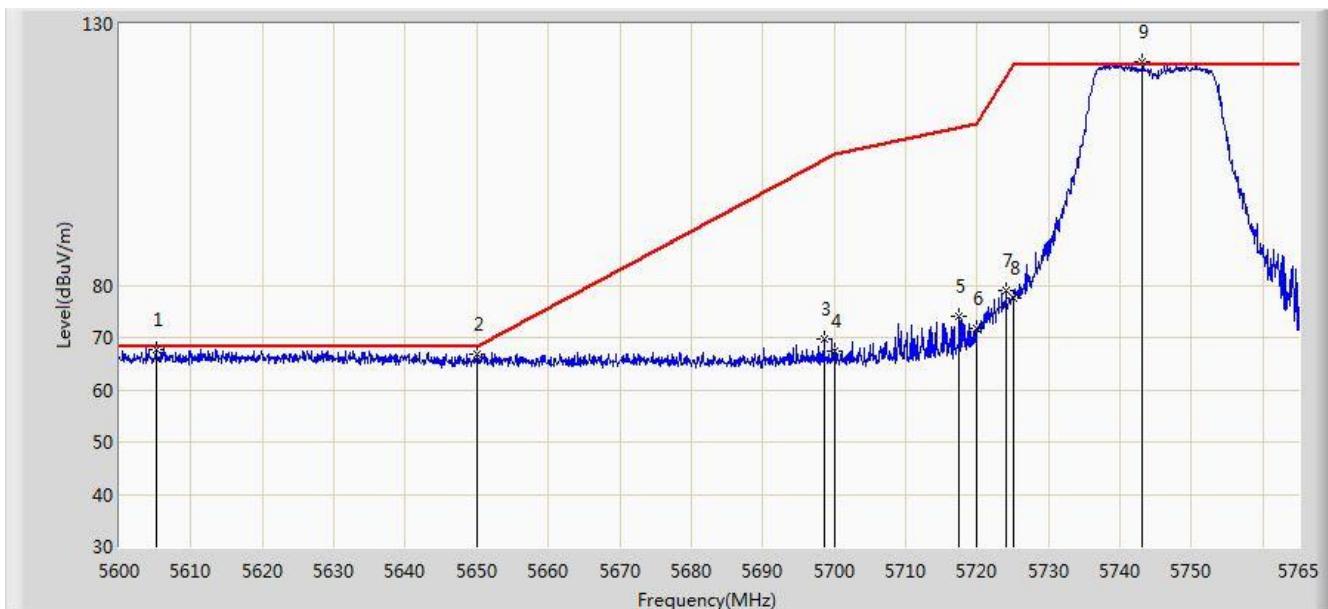


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5819.625	124.171	116.537	N/A	N/A	7.634	PK
2			5850.000	68.243	60.470	-53.957	122.200	7.774	PK
3			5853.067	78.615	70.840	-36.591	115.206	7.775	PK
4			5855.000	65.785	58.009	-45.015	110.800	7.775	PK
5			5856.578	75.119	67.342	-35.239	110.357	7.777	PK
6			5875.000	63.931	56.113	-41.269	105.200	7.818	PK
7			5884.755	65.946	58.114	-32.011	97.957	7.832	PK
8			5925.000	64.241	56.422	-3.959	68.200	7.819	PK
9			5987.618	66.297	58.376	-1.903	68.200	7.920	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:37
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT20 at channel 5745MHz Ant 1+2 CDD mode	

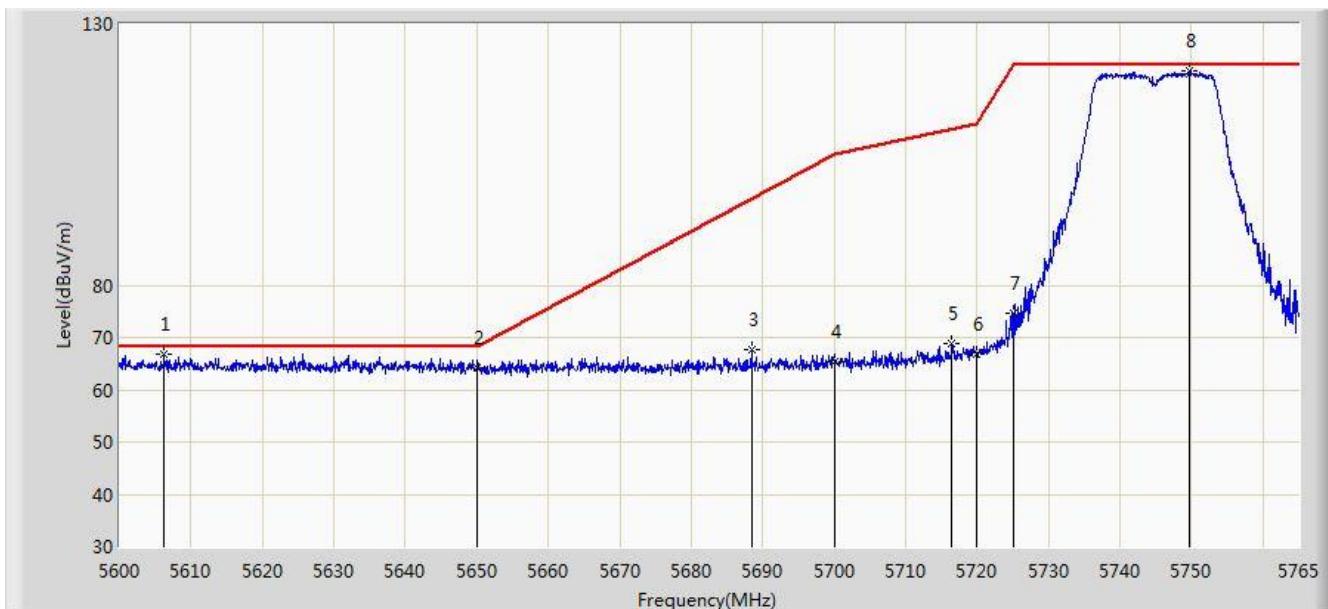


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5605.115	67.693	60.714	-0.507	68.200	6.979	PK
2			5650.000	66.670	59.665	-1.530	68.200	7.005	PK
3			5698.587	69.634	62.478	-34.525	104.159	7.156	PK
4			5700.000	67.410	60.245	-37.790	105.200	7.165	PK
5			5717.480	73.947	66.662	-36.148	110.095	7.285	PK
6			5720.000	71.666	64.367	-39.134	110.800	7.299	PK
7			5724.080	79.044	71.721	-41.059	120.103	7.323	PK
8			5725.000	77.443	70.115	-44.757	122.200	7.328	PK
9			5743.138	122.759	115.356	N/A	N/A	7.404	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:39
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT20 at channel 5745MHz Ant 1+2 CDD mode	

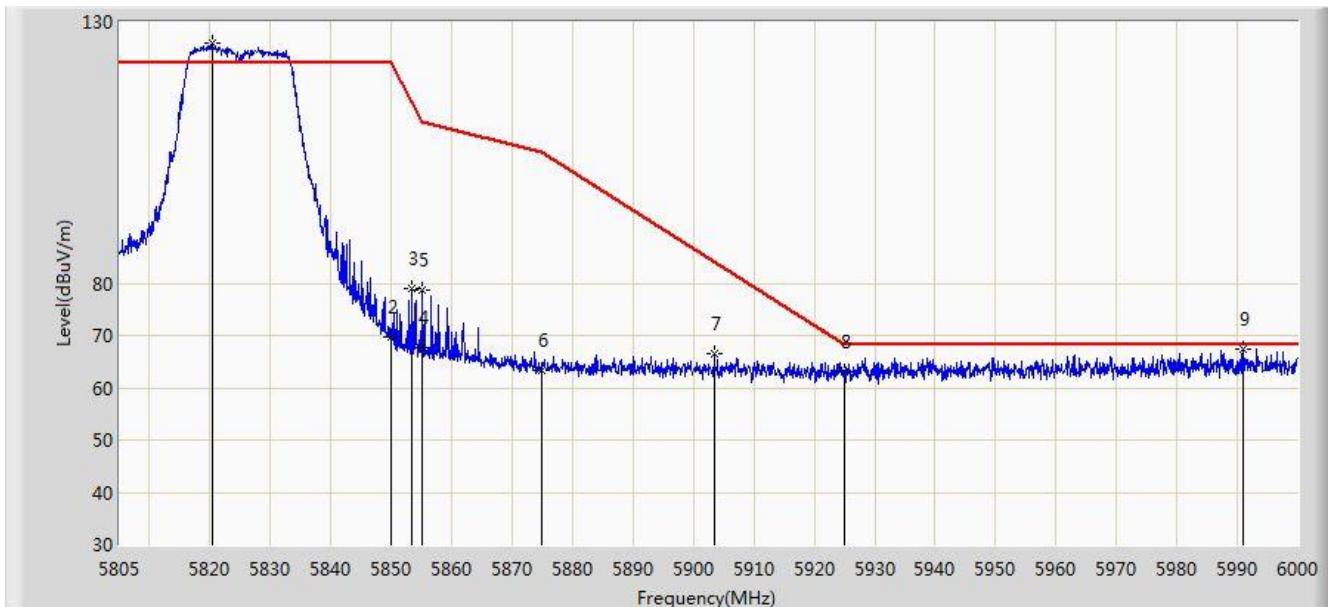


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5606.270	66.898	59.919	-1.302	68.200	6.979	PK
2			5650.000	64.307	57.302	-3.893	68.200	7.005	PK
3			5688.440	67.687	60.588	-28.988	96.675	7.099	PK
4			5700.000	65.360	58.195	-39.840	105.200	7.165	PK
5			5716.408	68.973	61.694	-40.823	109.796	7.279	PK
6			5720.000	66.839	59.540	-43.961	110.800	7.299	PK
7			5725.000	74.614	67.286	-47.586	122.200	7.328	PK
8			5749.737	121.007	113.599	N/A	N/A	7.408	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:42
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT20 at channel 5825MHz Ant 1+2 CDD mode	

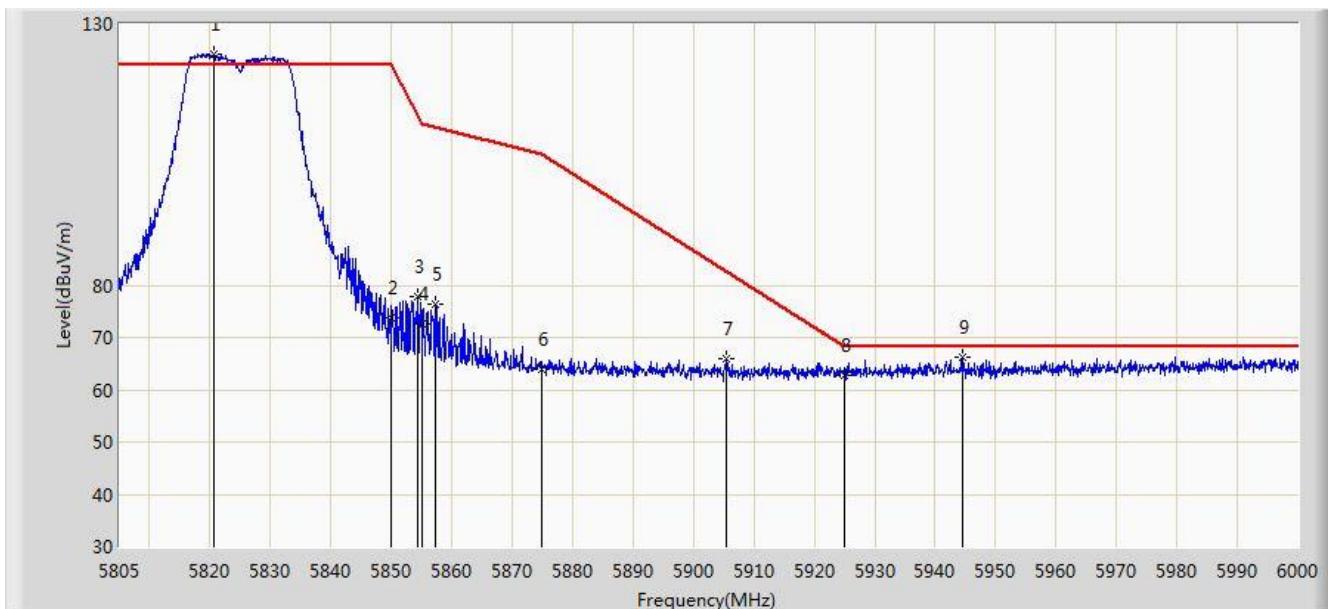


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5820.308	125.906	118.269	N/A	N/A	7.637	PK
2			5850.000	69.639	61.866	-52.561	122.200	7.774	PK
3			5853.458	78.938	71.163	-35.376	114.315	7.776	PK
4			5855.000	67.795	60.019	-43.005	110.800	7.775	PK
5			5855.212	78.739	70.963	-32.001	110.741	7.776	PK
6			5875.000	63.212	55.394	-41.988	105.200	7.818	PK
7			5903.475	66.404	58.579	-17.686	84.090	7.826	PK
8			5925.000	62.949	55.130	-5.251	68.200	7.819	PK
9			5990.933	67.362	59.425	-0.838	68.200	7.937	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:44
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT20 at channel 5825MHz Ant 1+2 CDD mode	

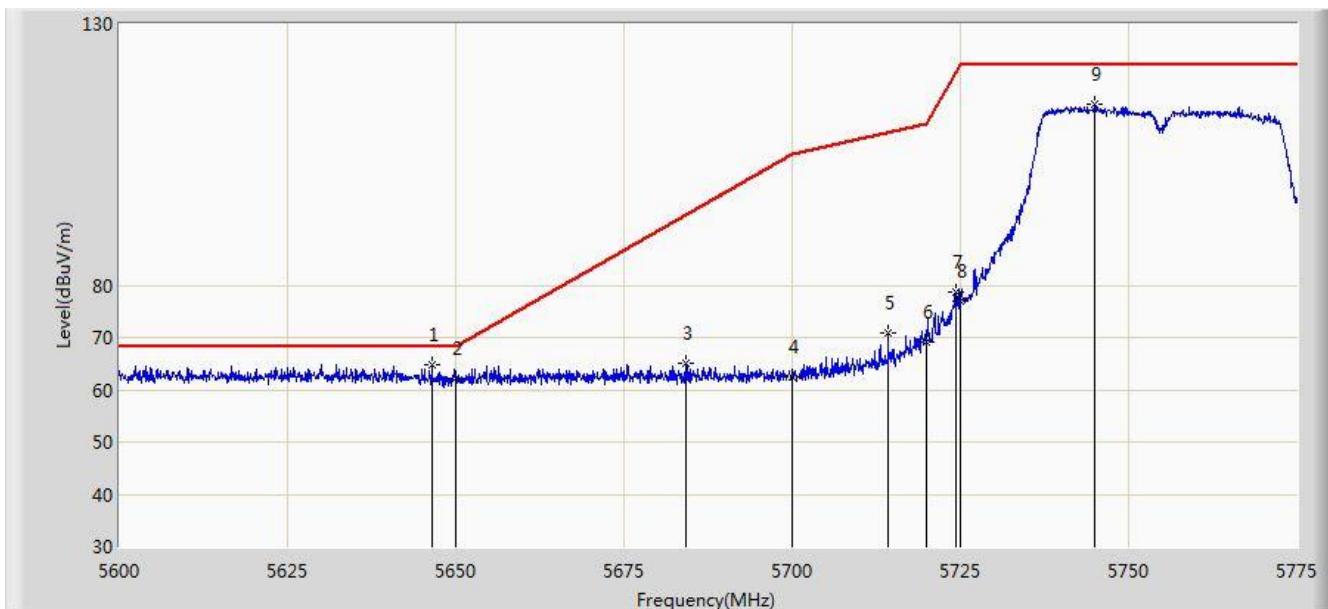


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5820.697	124.298	116.659	N/A	N/A	7.638	PK
2			5850.000	73.632	65.859	-48.568	122.200	7.774	PK
3			5854.433	77.706	69.930	-34.387	112.092	7.776	PK
4			5855.000	72.735	64.959	-38.065	110.800	7.775	PK
5			5857.260	76.434	68.657	-33.732	110.166	7.777	PK
6			5875.000	63.930	56.112	-41.270	105.200	7.818	PK
7			5905.425	65.845	58.023	-16.803	82.648	7.823	PK
8			5925.000	62.647	54.828	-5.553	68.200	7.819	PK
9			5944.425	66.186	58.344	-2.014	68.200	7.842	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:50
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT40 at channel 5755MHz Ant 1+2 CDD mode	

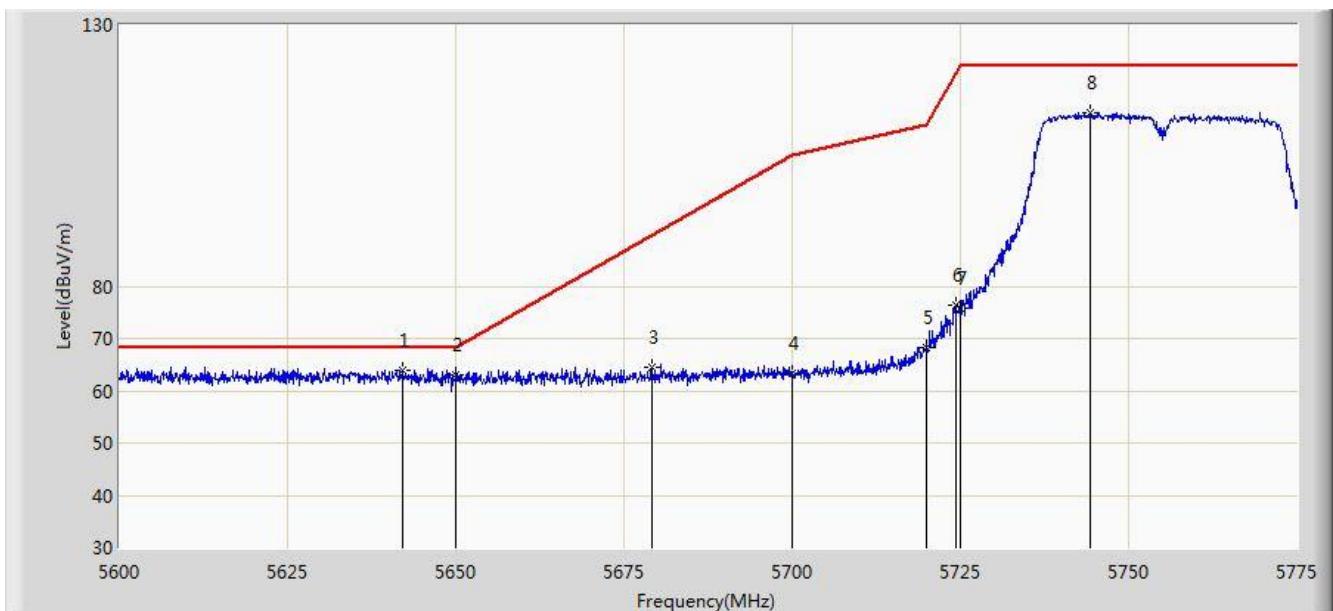


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Over Limit (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			5646.462	64.779	57.782	-3.421	68.200	6.998	PK
2			5650.000	62.251	55.246	-5.949	68.200	7.005	PK
3			5684.175	64.944	57.860	-28.580	93.525	7.084	PK
4			5700.000	62.430	55.265	-42.770	105.200	7.165	PK
5			5714.275	70.828	63.561	-38.371	109.199	7.267	PK
6			5720.000	69.099	61.800	-41.701	110.800	7.299	PK
7			5724.250	78.776	71.452	-41.715	120.491	7.324	PK
8			5725.000	76.868	69.540	-45.332	122.200	7.328	PK
9			5744.900	114.683	107.278	N/A	N/A	7.405	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:52
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT40 at channel 5755MHz Ant 1+2 CDD mode	

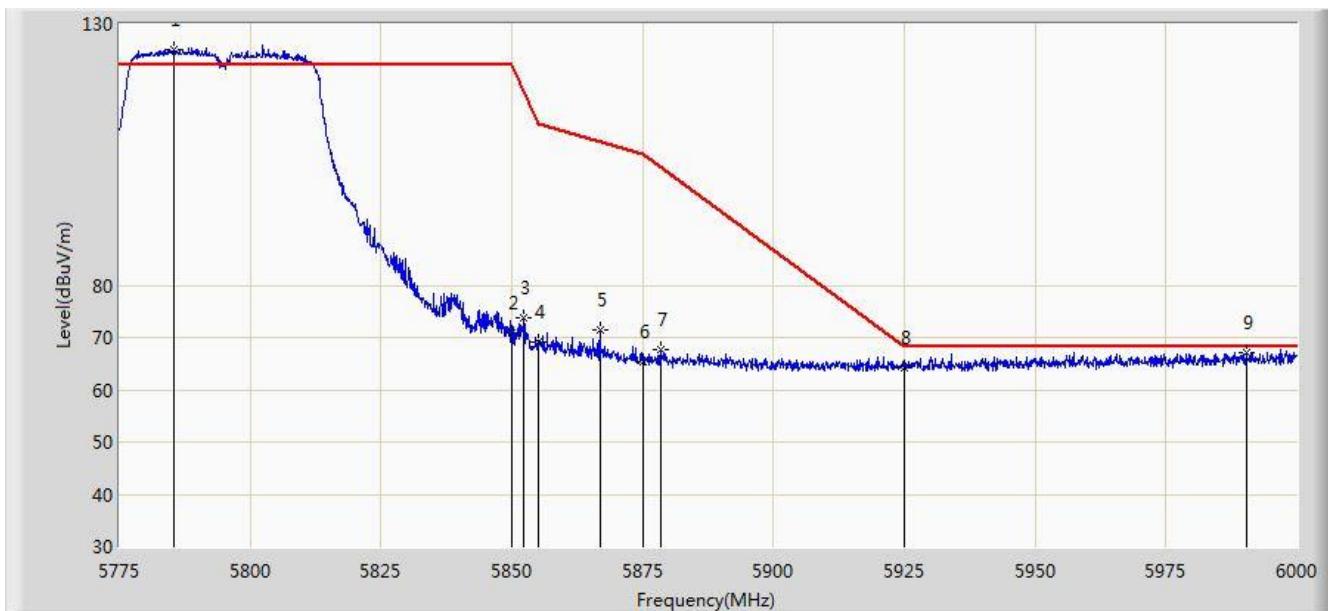


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5642.000	64.040	57.053	-4.160	68.200	6.987	PK
2			5650.000	63.108	56.103	-5.092	68.200	7.005	PK
3			5679.187	64.636	57.567	-25.202	89.838	7.068	PK
4			5700.000	63.342	56.177	-41.858	105.200	7.165	PK
5			5720.000	68.319	61.020	-42.481	110.800	7.299	PK
6			5724.337	76.359	69.035	-44.330	120.689	7.324	PK
7			5725.000	75.811	68.483	-46.389	122.200	7.328	PK
8			5744.288	113.189	105.785	N/A	N/A	7.405	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:53
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT40 at channel 5795MHz Ant 1+2 CDD mode	

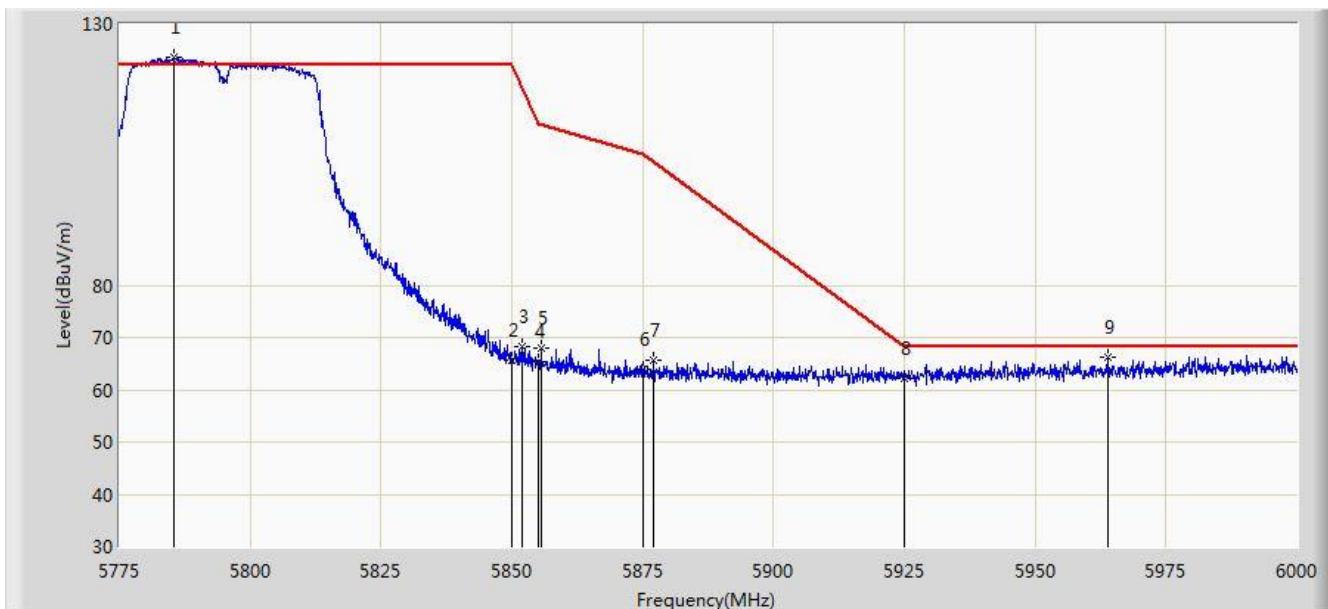


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5785.350	125.189	117.685	N/A	N/A	7.505	PK
2			5850.000	70.856	63.083	-51.344	122.200	7.774	PK
3			5852.288	73.688	65.913	-43.295	116.982	7.775	PK
4			5855.000	69.104	61.328	-41.696	110.800	7.775	PK
5			5866.800	71.566	63.772	-35.928	107.494	7.794	PK
6			5875.000	65.389	57.571	-39.811	105.200	7.818	PK
7			5878.388	67.802	59.974	-34.881	102.683	7.827	PK
8			5925.000	64.347	56.528	-3.853	68.200	7.819	PK
9			5990.325	67.189	59.255	-1.011	68.200	7.935	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 07:56
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11n-HT40 at channel 5795MHz Ant 1+2 CDD mode	

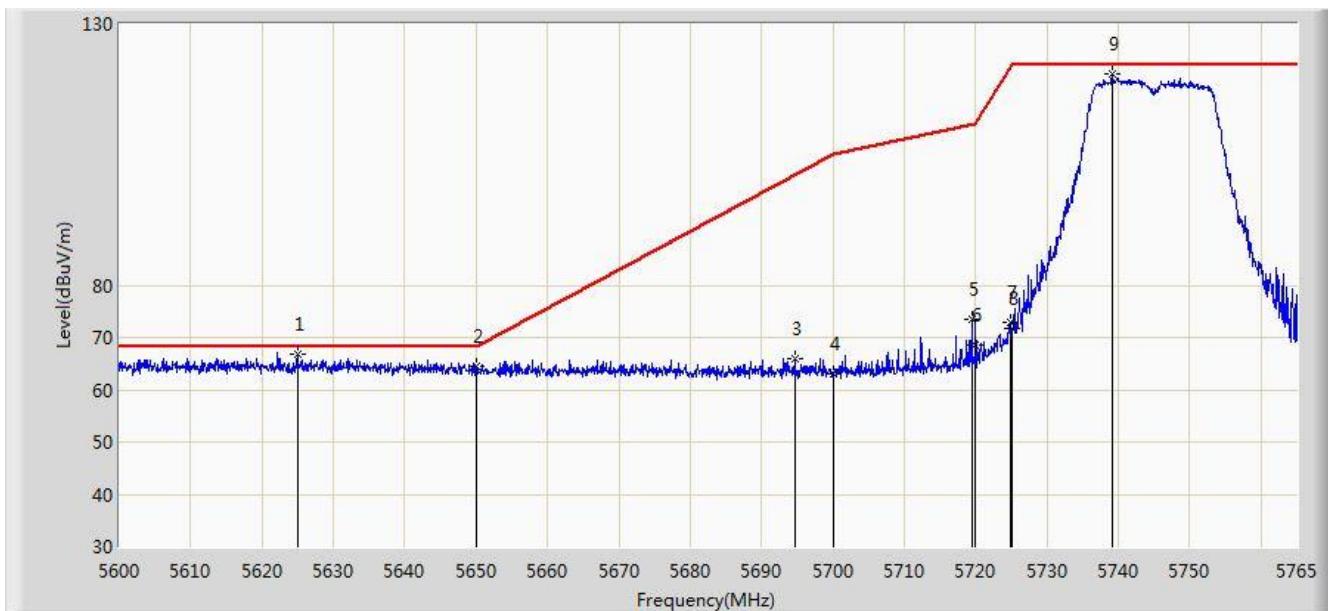


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5785.350	123.719	116.215	N/A	N/A	7.505	PK
2			5850.000	65.725	57.952	-56.475	122.200	7.774	PK
3			5852.062	68.185	60.410	-49.313	117.497	7.775	PK
4			5855.000	65.435	57.659	-45.365	110.800	7.775	PK
5			5855.663	68.036	60.260	-42.578	110.614	7.777	PK
6			5875.000	63.928	56.110	-41.272	105.200	7.818	PK
7			5877.150	65.712	57.887	-37.891	103.603	7.824	PK
8			5925.000	62.258	54.439	-5.942	68.200	7.819	PK
9			5964.000	66.333	58.471	-1.867	68.200	7.862	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:17
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT20 at channel 5745MHz Ant 1+2 CDD mode	

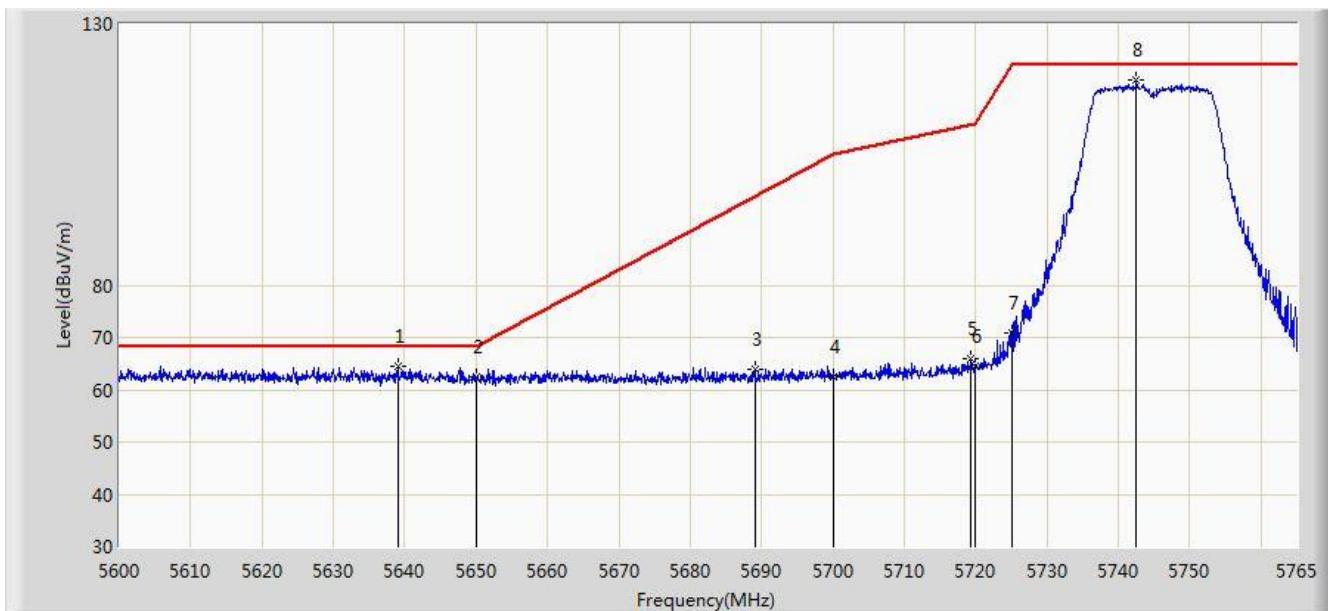


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Over Limit (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			5624.998	66.811	59.798	-1.389	68.200	7.014	PK
2			5650.000	64.570	57.565	-3.630	68.200	7.005	PK
3			5694.627	65.984	58.855	-35.255	101.240	7.130	PK
4			5700.000	63.041	55.876	-42.159	105.200	7.165	PK
5			5719.460	73.488	66.192	-37.161	110.649	7.297	PK
6			5720.000	68.563	61.264	-42.237	110.800	7.299	PK
7			5724.822	72.978	65.651	-48.816	121.794	7.326	PK
8			5725.000	71.834	64.506	-50.366	122.200	7.328	PK
9			5739.095	120.420	113.032	N/A	N/A	7.388	PK

Note: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:18
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT20 at channel 5745MHz Ant 1+2 CDD mode	

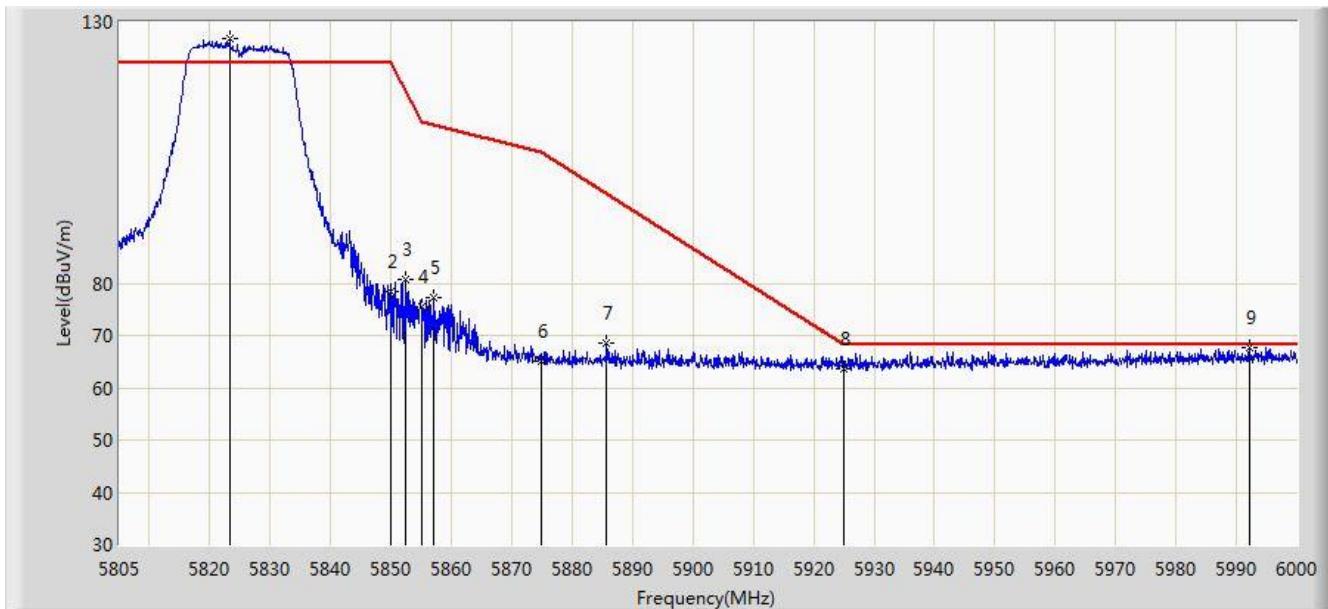


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5639.022	64.374	57.385	-3.826	68.200	6.989	PK
2			5650.000	62.358	55.353	-5.842	68.200	7.005	PK
3			5689.018	63.920	56.819	-33.181	97.101	7.101	PK
4			5700.000	62.563	55.398	-42.637	105.200	7.165	PK
5			5719.295	65.805	58.510	-44.797	110.603	7.296	PK
6			5720.000	64.398	57.099	-46.402	110.800	7.299	PK
7			5725.000	70.884	63.556	-51.316	122.200	7.328	PK
8			5742.560	119.401	111.999	N/A	N/A	7.402	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:21
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT20 at channel 5825MHz Ant 1+2 CDD mode	

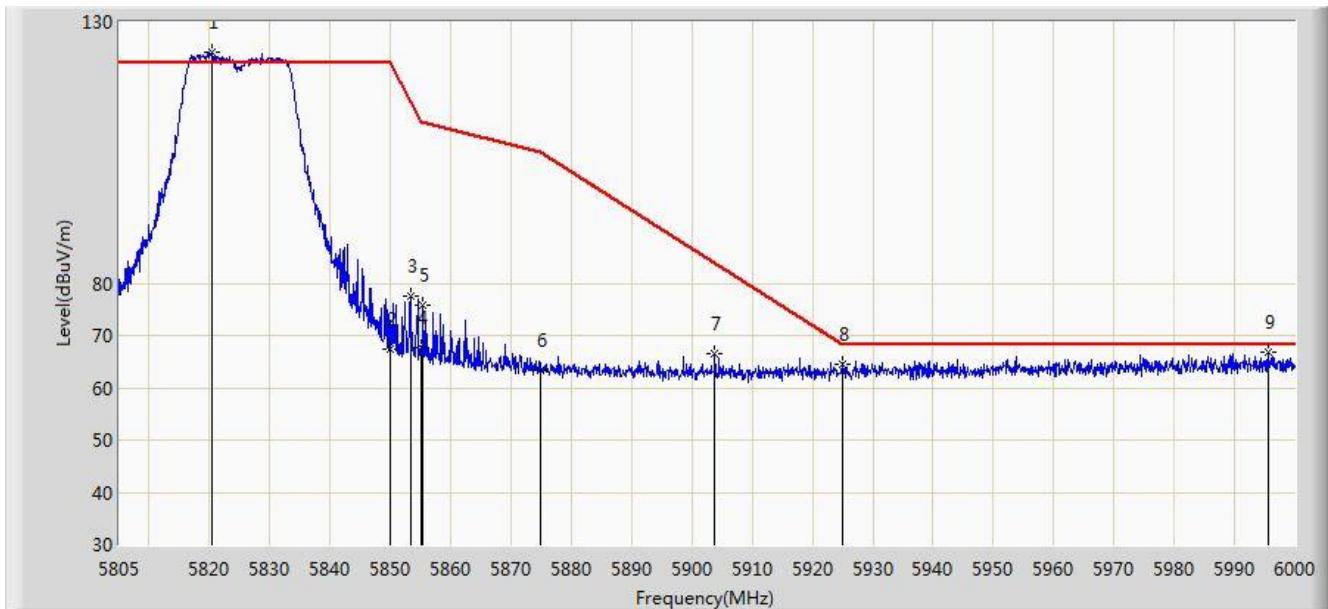


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5823.232	126.795	119.145	N/A	N/A	7.650	PK
2			5850.000	78.314	70.541	-43.886	122.200	7.774	PK
3			5852.288	80.632	72.857	-36.351	116.982	7.775	PK
4			5855.000	75.378	67.602	-35.422	110.800	7.775	PK
5			5857.065	77.189	69.412	-33.032	110.221	7.777	PK
6			5875.000	65.055	57.237	-40.145	105.200	7.818	PK
7			5885.730	68.624	60.792	-28.610	97.233	7.832	PK
8			5925.000	63.759	55.940	-4.441	68.200	7.819	PK
9			5992.297	67.752	59.809	-0.448	68.200	7.943	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:23
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT20 at channel 5825MHz Ant 1+2 CDD mode	

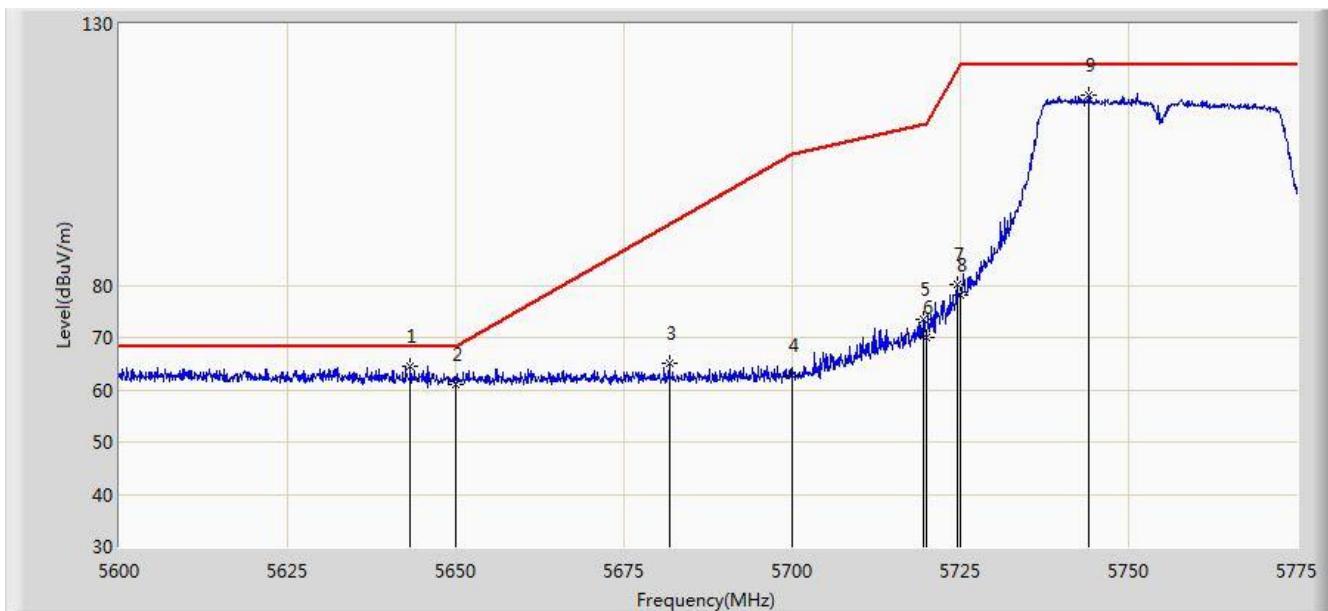


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5820.308	124.298	116.661	N/A	N/A	7.637	PK
2			5850.000	67.496	59.723	-54.704	122.200	7.774	PK
3			5853.360	77.457	69.682	-37.081	114.538	7.776	PK
4			5855.000	67.729	59.953	-43.071	110.800	7.775	PK
5			5855.408	75.723	67.947	-34.962	110.686	7.776	PK
6			5875.000	63.277	55.459	-41.923	105.200	7.818	PK
7			5903.768	66.601	58.776	-17.272	83.873	7.825	PK
8			5925.000	64.393	56.574	-3.807	68.200	7.819	PK
9			5995.710	66.818	58.859	-1.382	68.200	7.960	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:31
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT40 at channel 5755MHz Ant 1+2 CDD mode	

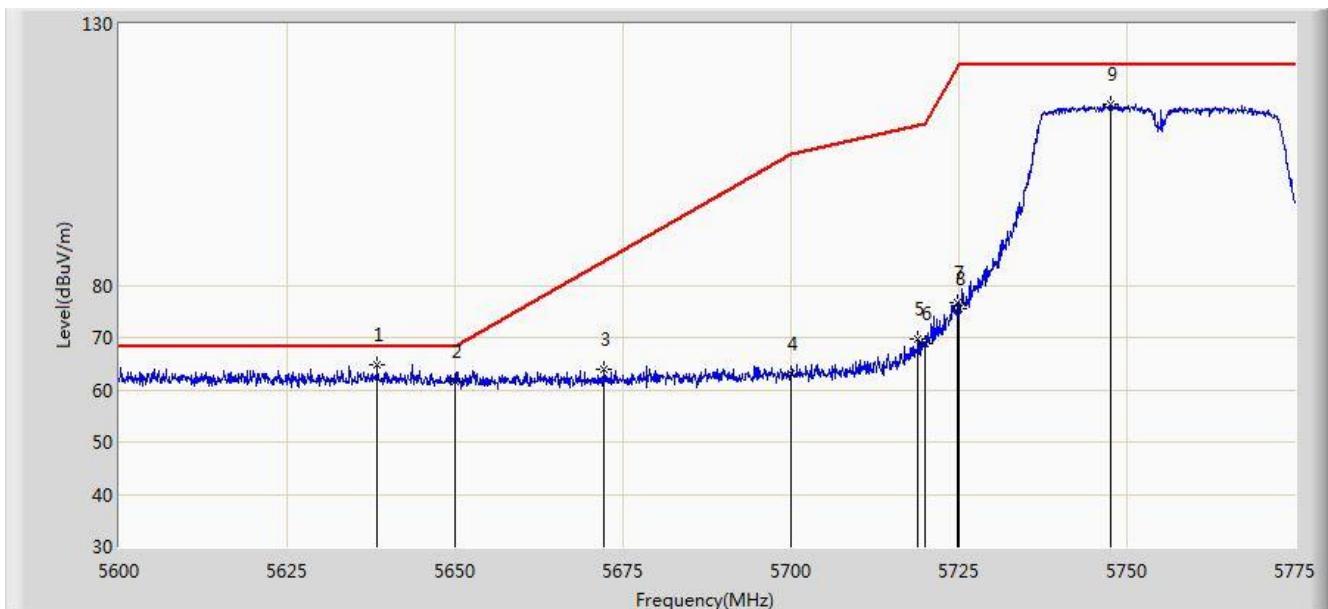


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5643.225	64.632	57.642	-3.568	68.200	6.990	PK
2			5650.000	61.145	54.140	-7.055	68.200	7.005	PK
3			5681.812	65.027	57.950	-26.752	91.779	7.078	PK
4			5700.000	62.735	55.570	-42.465	105.200	7.165	PK
5			5719.437	73.395	66.099	-37.247	110.643	7.297	PK
6			5720.000	70.120	62.821	-40.680	110.800	7.299	PK
7			5724.513	80.050	72.725	-41.040	121.090	7.326	PK
8			5725.000	78.096	70.768	-44.104	122.200	7.328	PK
9			5744.025	116.502	109.098	N/A	N/A	7.404	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:33
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT40 at channel 5755MHz Ant 1+2 CDD mode	

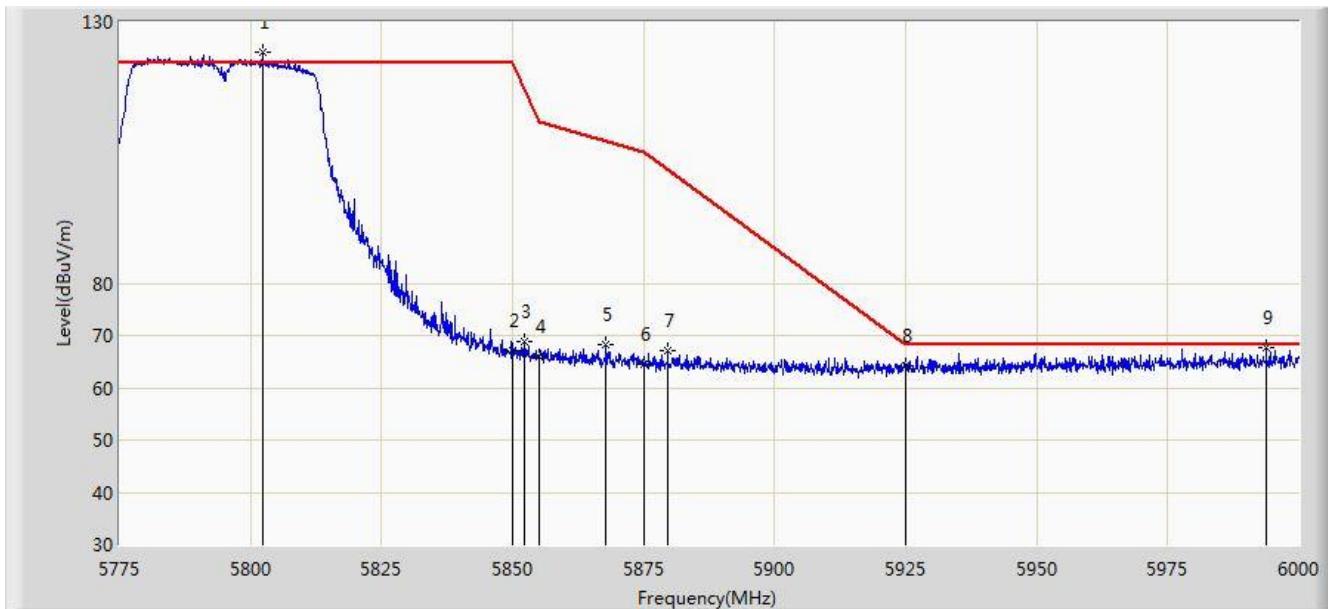


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5638.413	64.742	57.752	-3.458	68.200	6.990	PK
2			5650.000	61.614	54.609	-6.586	68.200	7.005	PK
3			5672.187	64.038	56.987	-20.620	84.659	7.051	PK
4			5700.000	63.167	56.002	-42.033	105.200	7.165	PK
5			5718.913	69.635	62.342	-40.861	110.496	7.294	PK
6			5720.000	68.773	61.474	-42.027	110.800	7.299	PK
7			5724.862	76.735	69.408	-45.150	121.885	7.326	PK
8			5725.000	75.405	68.077	-46.795	122.200	7.328	PK
9			5747.525	114.530	107.123	N/A	N/A	7.406	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:34
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT40 at channel 5795MHz Ant 1+2 CDD mode	

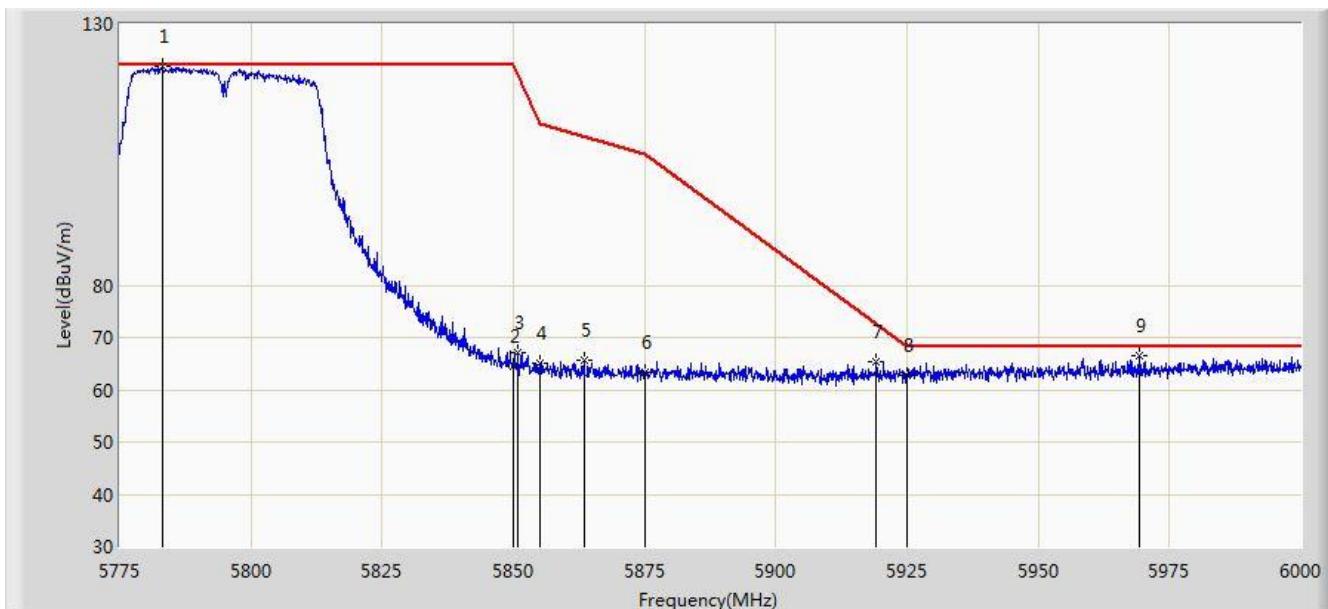


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5802.225	124.085	116.520	N/A	N/A	7.565	PK
2			5850.000	67.171	59.398	-55.029	122.200	7.774	PK
3			5852.175	68.745	60.970	-48.495	117.240	7.775	PK
4			5855.000	65.858	58.082	-44.942	110.800	7.775	PK
5			5867.812	68.215	60.418	-38.995	107.210	7.797	PK
6			5875.000	64.512	56.694	-40.688	105.200	7.818	PK
7			5879.625	67.143	59.313	-34.621	101.764	7.831	PK
8			5925.000	64.162	56.343	-4.038	68.200	7.819	PK
9			5993.812	67.597	59.647	-0.603	68.200	7.950	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:36
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT40 at channel 5795MHz Ant 1+2 CDD mode	

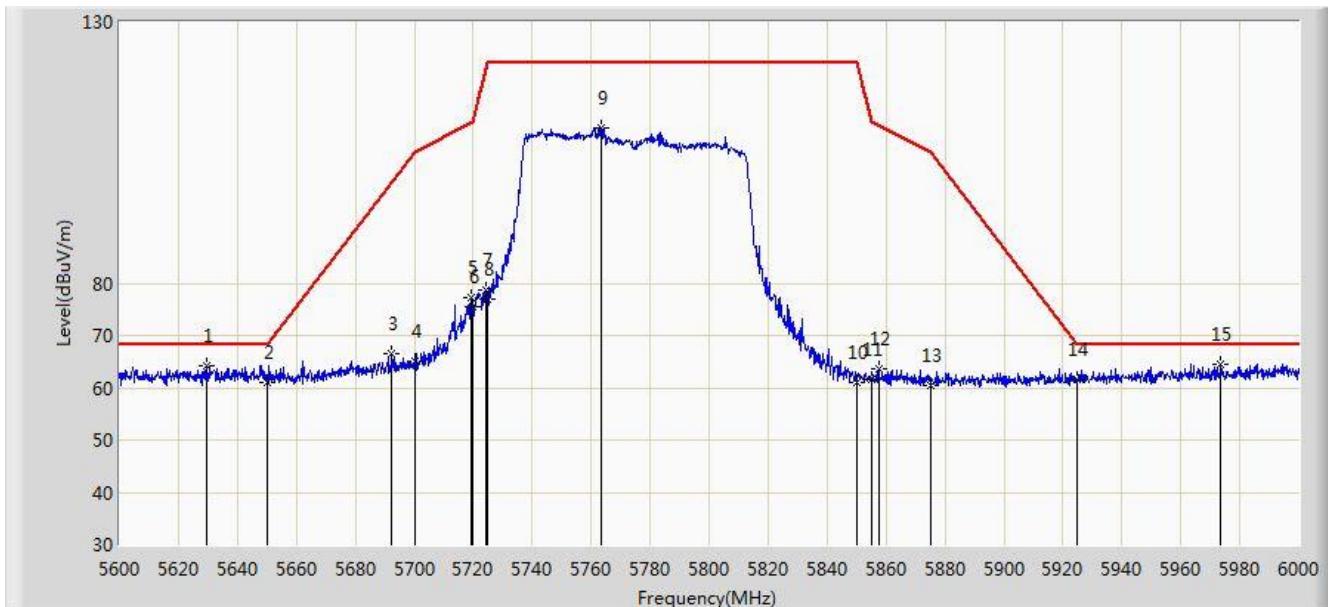


No	Flag	Mark	Frequency (MHz)	Measure Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1			5783.100	121.776	114.280	N/A	N/A	7.496	PK
2			5850.000	64.489	56.716	-57.711	122.200	7.774	PK
3			5850.937	67.215	59.441	-52.848	120.063	7.773	PK
4			5855.000	65.036	57.260	-45.764	110.800	7.775	PK
5			5863.425	65.606	57.822	-42.833	108.439	7.784	PK
6			5875.000	63.412	55.594	-41.788	105.200	7.818	PK
7			5919.112	65.418	57.603	-7.123	72.541	7.815	PK
8			5925.000	62.892	55.073	-5.308	68.200	7.819	PK
9			5969.288	66.532	58.662	-1.668	68.200	7.870	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:43
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT80 at channel 5775MHz Ant 1+2 CDD mode	

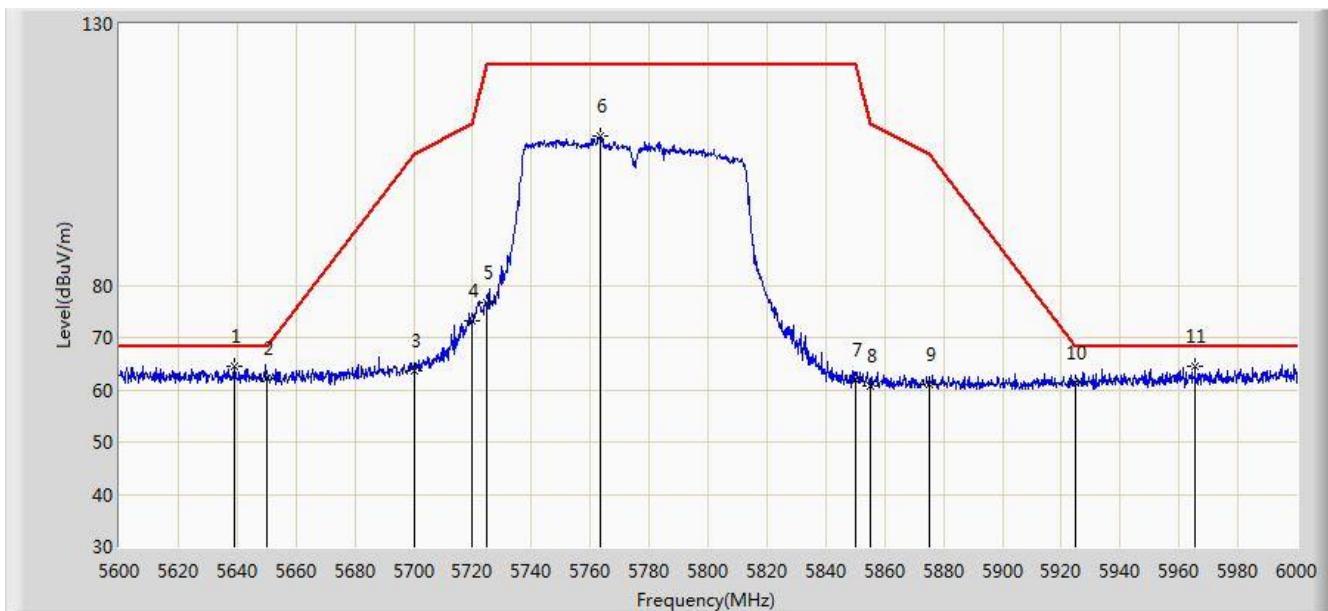


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5629.800	64.070	57.065	-4.130	68.200	7.005	PK
2			5650.000	61.025	54.020	-7.175	68.200	7.005	PK
3			5692.400	66.482	59.368	-33.115	99.597	7.114	PK
4			5700.000	64.977	57.812	-40.223	105.200	7.165	PK
5			5719.400	77.149	69.853	-33.483	110.632	7.296	PK
6			5720.000	75.392	68.093	-35.408	110.800	7.299	PK
7			5724.200	78.820	71.497	-41.556	120.377	7.324	PK
8			5725.000	76.833	69.505	-45.367	122.200	7.328	PK
9			5763.400	109.703	102.278	N/A	N/A	7.425	PK
10			5850.000	61.021	53.248	-61.179	122.200	7.774	PK
11			5855.000	61.477	53.701	-49.323	110.800	7.775	PK
12			5857.400	63.551	55.774	-46.576	110.127	7.778	PK
13			5875.000	60.456	52.638	-44.744	105.200	7.818	PK
14			5925.000	61.632	53.813	-6.568	68.200	7.819	PK
15			5973.400	64.631	56.754	-3.569	68.200	7.877	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: AC1	Time: 2018/04/13 - 08:45
Limit: FCC_Part15.407_RE(3m)	Engineer: Flag Yang
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: MESH RANGER X20 DUAL 5GHZ 802.11AC	Power: AC 230V/50Hz
Test Mode: Transmit by 802.11ac-VHT80 at channel 5775MHz Ant 1+2 CDD mode	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			5639.000	64.512	57.523	-3.688	68.200	6.989	PK
2			5650.000	62.091	55.086	-6.109	68.200	7.005	PK
3			5700.000	63.757	56.592	-41.443	105.200	7.165	PK
4			5720.000	73.044	65.745	-37.756	110.800	7.299	PK
5			5725.000	76.808	69.480	-45.392	122.200	7.328	PK
6			5763.600	108.545	101.119	N/A	N/A	7.426	PK
7			5850.000	61.751	53.978	-60.449	122.200	7.774	PK
8			5855.000	60.609	52.833	-50.191	110.800	7.775	PK
9			5875.000	61.108	53.290	-44.092	105.200	7.818	PK
10			5925.000	61.382	53.563	-6.818	68.200	7.819	PK
11			5965.400	64.554	56.690	-3.646	68.200	7.864	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **X22e Dual 5GHz MeshRanger** is in compliance with Part 15E of the FCC Rules.

The End
