

FCC 47 CFR PART 15 SUBPART E

Applicant : TP-Link Technologies Co., Ltd.
Product Type : AC750 Wi-Fi Range Extender
Trade Name : TP-Link
Model Number : RE200
Test Specification : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013
Receive Date : Apr. 07, 2017
Test Period : Apr. 23 ~ May 17, 2017
Issue Date : Aug. 09, 2017

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade District,
Taoyuan City 33465, Taiwan (R.O.C)
Tel : +86-3-2710188 / Fax : +86-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330
Test Firm MRA designation number: TW0010

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Jun. 01, 2017	Initial Issue	Nina Lin
01	Aug. 09, 2017	Revised report information.	Nina Lin

Verification of Compliance

Issued Date: Aug. 09, 2017

Applicant : TP-Link Technologies Co., Ltd.
Product Type : AC750 Wi-Fi Range Extender
Trade Name : TP-Link
Model Number : RE200
FCC ID : TE7RE200V2
EUT Rated Voltage : AC 100-240V, 50/60Hz, 0.3A
Test Voltage : 120 Vac / 60 Hz
Applicable Standard : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013
Test Result : Complied

Performing Lab. : A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade District,
Taoyuan City 33465, Taiwan (R.O.C)
Tel : +86-3-2710188 / Fax : +86-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330

<http://www.atl-lab.com.tw/e-index.htm>

A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Fly Lu Reviewed By : Eric Ou Yang
(Manager) (Fly Lu) (Testing Engineer) (Eric Ou Yang)



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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
FCC			
15.407(b)(6) 15.207	AC Power Conducted Emission	PASS	---
15.407(b) 15.205 / 15.209	Transmitter Radiated Emissions	PASS	---
15.407(a)	Maximum Conducted Output Power	PASS	---
15.407(a)	26dB RF Bandwidth	Reference	---
15.407(e)	6dB RF Bandwidth	PASS	----
15.407(a)	Peak Power Spectral Density	PASS	---
15.407(g)	Frequency Stability	PASS	---
15.407(a) 15.203	Antenna Requirement	PASS	---

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conducted Emission	9kHz ~ 150KHz	2.7
	150kHz ~ 30MHz	2.7
Radiated Emission	9kHz ~ 30MHz	1.7
	30MHz ~ 1000MHz	5.7
	1000MHz ~ 18000MHz	5.5
	18000MHz ~ 26500MHz	4.8
	26500MHz ~ 40000MHz	4.8
Conducted Output Power		+0.27 dB / -0.28 dB
RF Bandwidth		4.96%
Power Spectral Density		+0.71 dB / -0.77 dB
Frequency Stability		+ 2.212 x 10 ⁻⁷ % / - 2.170 x 10 ⁻⁷
Duty Cycle		1.06%
Time Occupancy		1.40%



2 EUT Description

Applicant	TP-Link Technologies Co., Ltd. Building 24 (floors 1,3,4,5) and 28 (floors1-4), Central Science and Technology Park, Nanshan, Shenzhen, China 518057			
Manufacturer	TP-Link Technologies Co., Ltd. Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China			
Product Type	AC750 Wi-Fi Range Extender			
Trade Name	TP-Link			
Model No.	RE200			
FCC ID	TE7RE200V2			
Operate Frequency	Frequency Band		Frequency Range (MHz)	Number of Channels
	IEEE 802.11a	U-NII Band I	5180 – 5240	4
		U-NII Band III	5745 – 5825	5
	IEEE 802.11n 20 MHz / IEEE 802.11ac 20 MHz	U-NII Band I	5180 – 5240	4
		U-NII Band III	5745 – 5825	5
	IEEE 802.11n 40 MHz / IEEE 802.11ac 40 MHz	U-NII Band I	5190 – 5230	2
		U-NII Band III	5755 – 5795	2
	IEEE 802.11ac 80 MHz	U-NII Band I	5210	1
U-NII Band III		5775	1	
Modulation Type	OFDM			
Equipment Type	Master			
Antenna information	Antenna	Type	Max. Gain (dBi)	
	ANT-0	Omni-directional Antenna	Band I	3.50
			Band III	4.08
Antenna Delivery	1TX + 1RX			
Frequency stability specification	± 20 ppm			
Operate Temp. Range	0 ~ +40 °C			

Frequency Band		RF Output Power (W)
IEEE 802.11a	U-NII Band I	0.154
	U-NII Band III	0.109
IEEE 802.11ac 20 MHz	U-NII Band I	0.141
	U-NII Band III	0.108
IEEE 802.11ac 40 MHz	U-NII Band I	0.129
	U-NII Band III	0.107
IEEE 802.11ac 80 MHz	U-NII Band I	0.061
	U-NII Band III	0.075



3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit mode
Mode 2: IEEE 802.11a Continuous TX mode
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

Equipment Type	
Outdoor access point	---
Indoor access point	---
Fixed point-to-point access points	---
Client devices	V

Test Mode	ANT-0
Mode 2	V
Mode 3	V
Mode 4	V
Mode 5	V

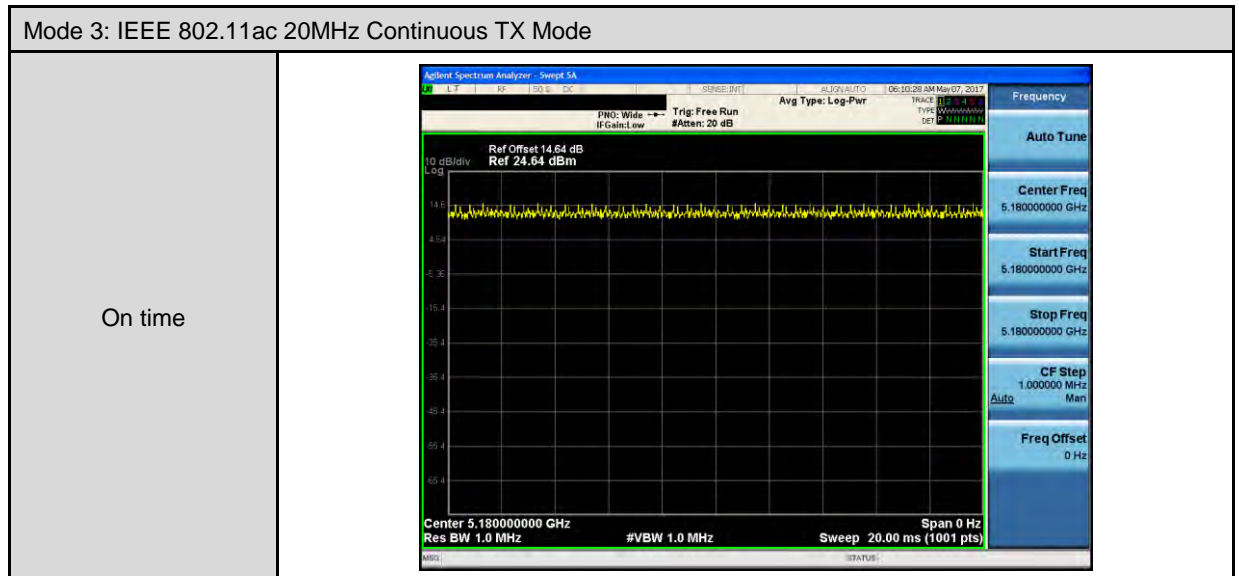
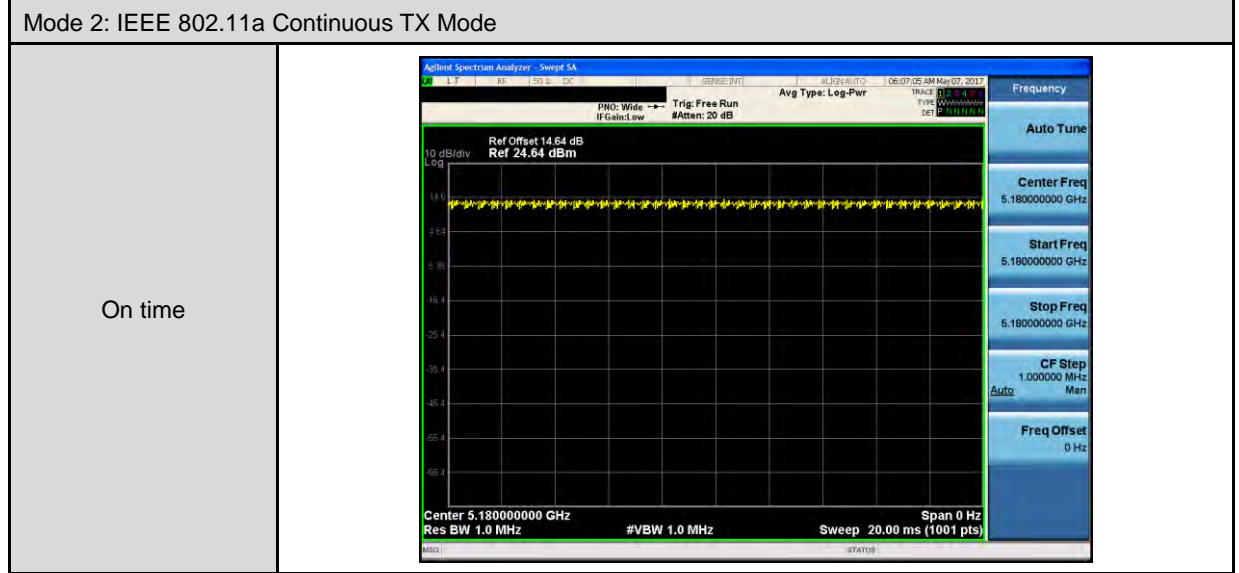
Test Mode	Band	Data Rate	Test Channel
Mode 2	U-NII Band I	6M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 3	U-NII Band I	6.5M	36, 40, 44, 48
	U-NII Band III		149,153,157,161,165
Mode 4	U-NII Band I	13.5M	38, 46
	U-NII Band III		151,159
Mode 5	U-NII Band I	29.3M	42
	U-NII Band III		155

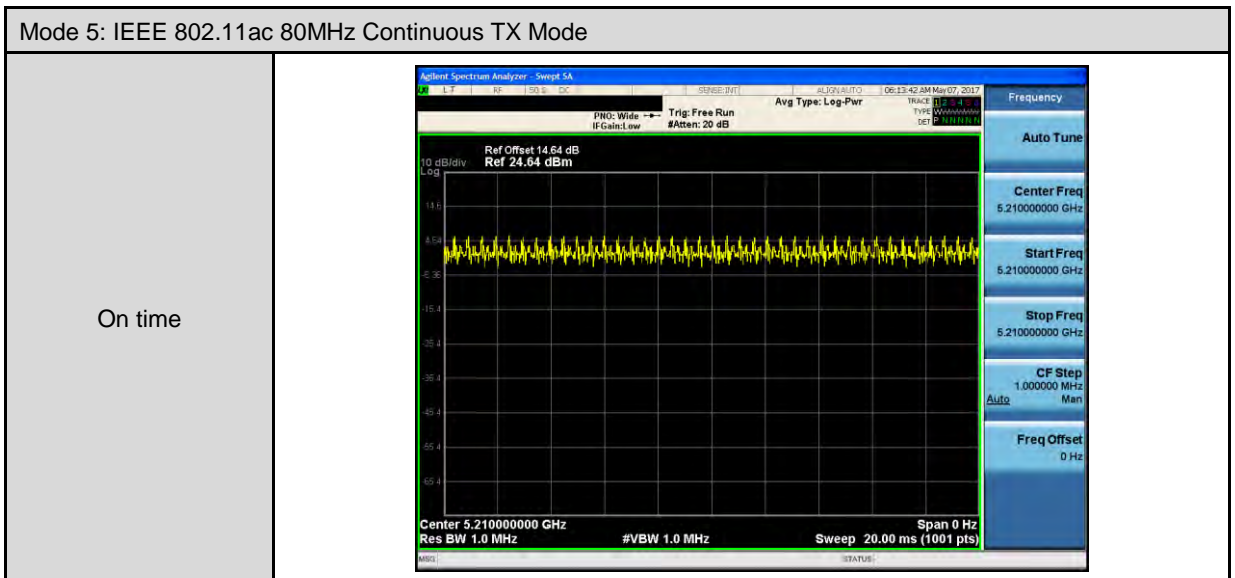
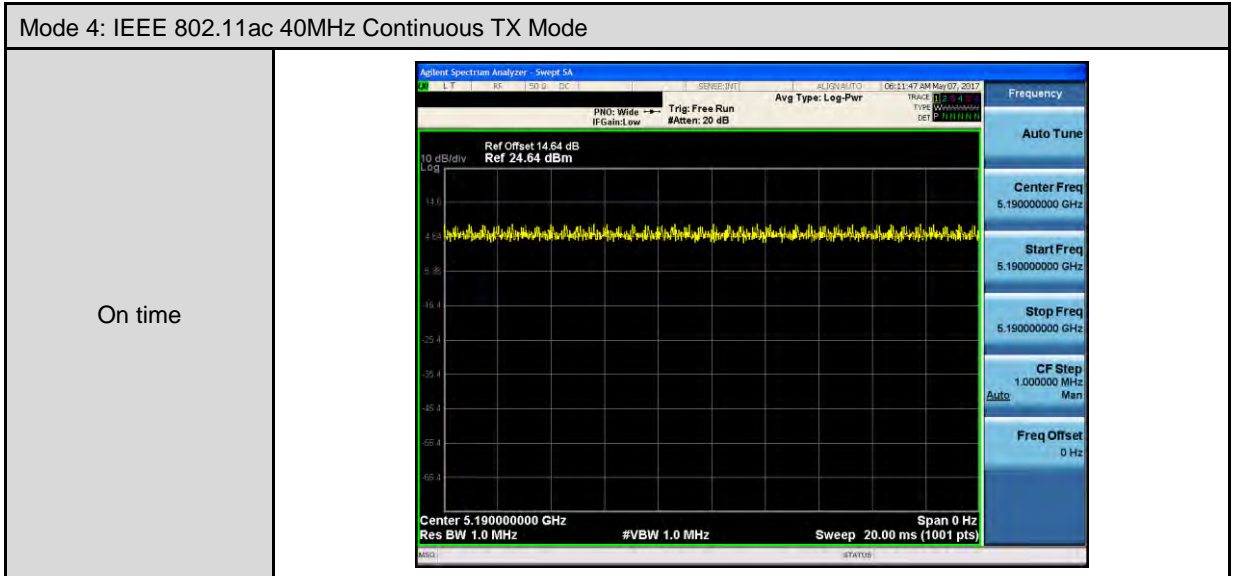
**Duty cycle**

Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
Mode 2: IEEE 802.11a Continuous TX Mode	5180.0	1.000	1.000	1.000	0.000	0.010
Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode	5180.0	1.000	1.000	1.000	0.000	0.010
Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode	5190.0	1.000	1.000	1.000	0.000	0.010
Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode	5210.0	1.000	1.000	1.000	0.000	0.010



Duty Cycle Graphs





3.2. EUT Exercise Software

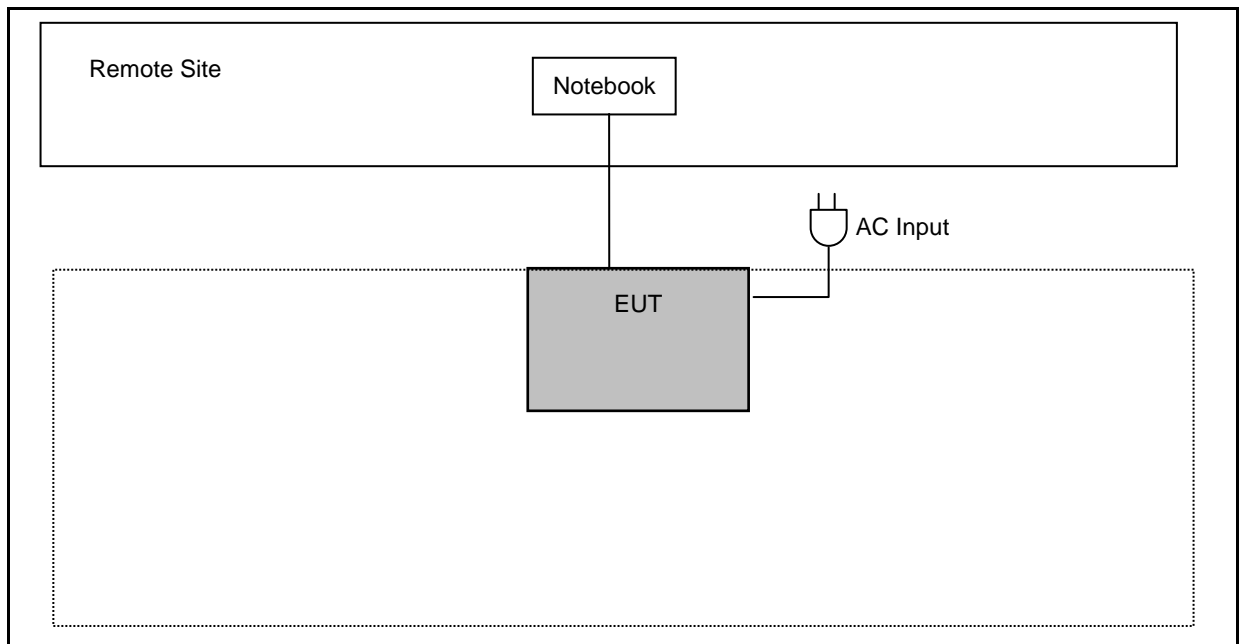
The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

1.	Setup the EUT shown on 3.3.
2.	Turn on the power of all equipment.
3.	EUT run test program.

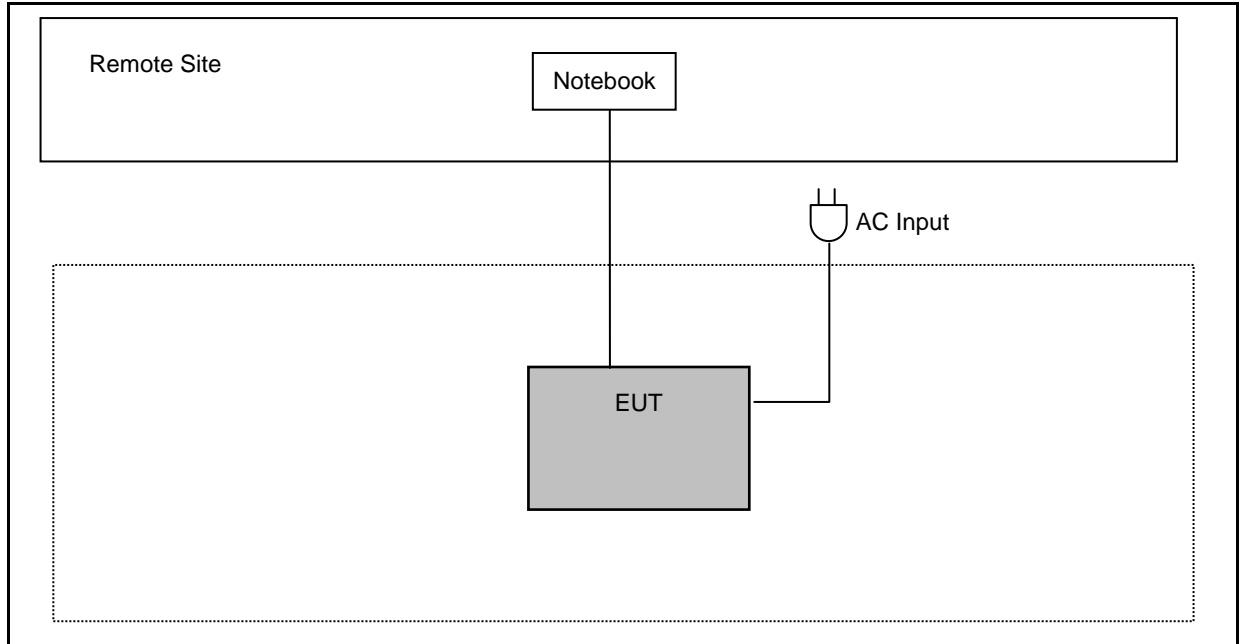
Measurement Software	
1	EZ-EMC Ver. ATL-03A1-1
2	EZ-EMC Ver ATL-ITC-3A1-1

3.3. Configuration of Test System Details

Conducted Emission



Radiated Emission



3.4. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

4 Test Results

4.1. AC Power Conducted Emission Measurement

■ Limit

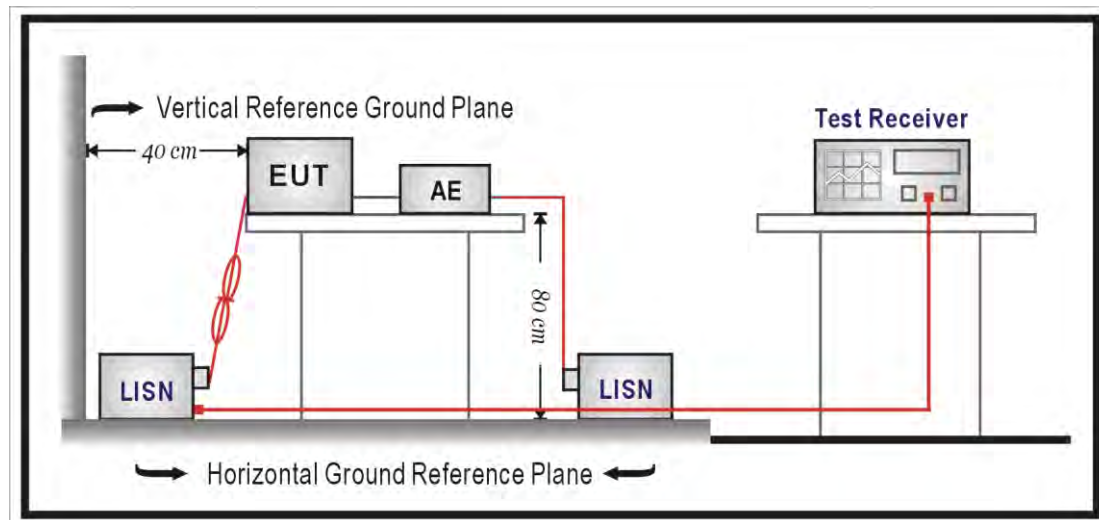
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	05/31/2016	1 year
LISN	R&S	ENV216	101040	04/01/2017	1 year
LISN	R&S	ENV216	101041	03/15/2017	1 year
RF Cable	Woken	00100D1380194M	TE-02-02	05/31/2016	1 year
Test Site	ATL	TE02	TE02	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Setup



4.2. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a $50\Omega//50\mu\text{H}$ coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a $50\Omega//50\mu\text{H}$ coupling impedance with 50ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12mm insulating material.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150kHz to 30MHz then quasi-peak and average measurement was unnecessary.

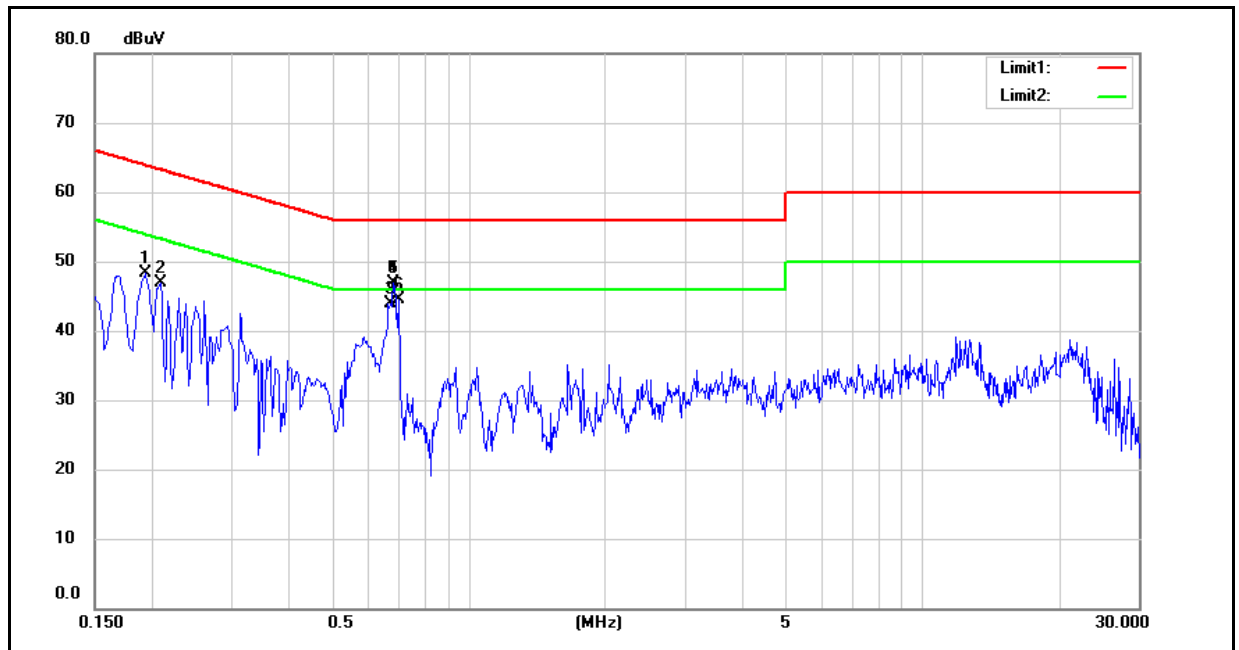
The AMN shall be placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0,8 m from the AMN. If the mains power cable is longer than 1m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4m. All of interconnecting cables that hang closer than 40cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1m. All 50Ω ports of the LISN shall be resistively terminated into 50Ω loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.



■ Test Result

Standard:	FCC Part 15.407	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Test Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
		Date:	05/17/2017
Description:			



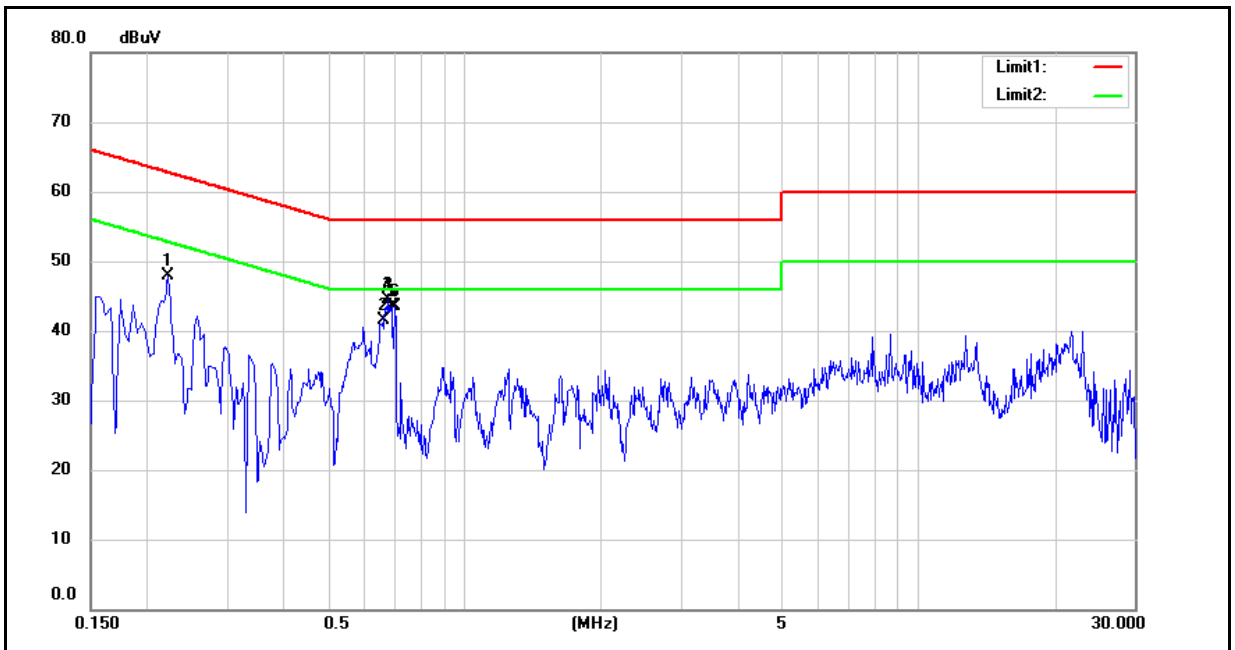
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1940	32.78	15.88	9.64	42.42	25.52	63.86	53.86	-21.44	-28.34	Pass
2	0.2100	33.99	19.11	9.64	43.63	28.75	63.21	53.21	-19.58	-24.46	Pass
3	0.6660	30.78	25.38	9.68	40.46	35.06	56.00	46.00	-15.54	-10.94	Pass
4	0.6740	33.01	28.29	9.68	42.69	37.97	56.00	46.00	-13.31	-8.03	Pass
5	0.6860	31.94	25.18	9.68	41.62	34.86	56.00	46.00	-14.38	-11.14	Pass
6	0.7020	26.80	17.20	9.68	36.48	26.88	56.00	46.00	-19.52	-19.12	Pass

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.



Standard:	FCC Part 15.407	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Test Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
		Date:	05/17/2017
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2220	26.23	8.78	9.64	35.87	18.42	62.74	52.74	-26.87	-34.32	Pass
2	0.6580	28.45	22.64	9.68	38.13	32.32	56.00	46.00	-17.87	-13.68	Pass
3	0.6740	32.10	27.69	9.68	41.78	37.37	56.00	46.00	-14.22	-8.63	Pass
4	0.6820	31.59	25.34	9.68	41.27	35.02	56.00	46.00	-14.73	-10.98	Pass
5	0.6900	29.82	26.06	9.68	39.50	35.74	56.00	46.00	-16.50	-10.26	Pass
6	0.7020	26.17	16.05	9.68	35.85	25.73	56.00	46.00	-20.15	-20.27	Pass

Note: 1. Result = Correction factor + Reading

2. Correction factor = Antenna Factor + Cable loss – Pre-Amplifier gain.

4.3. Transmitter Radiated Emissions Measurement

■ **Limit**

(1)Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (a)For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (b)For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (c)For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (d)For transmitters operating in the 5.725-5.85 GHz band:
 - (i)All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2)Limits of Radiated Emission Measurement

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency Range (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	10	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

- Note:
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

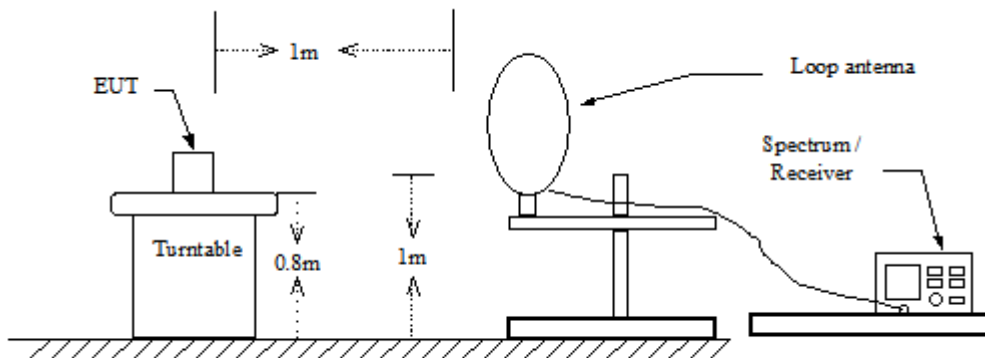
■ Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	06/22/2016	1 year
Spectrum Analyzer	Agilent	E4446A	MY46180578	06/22/2016	1 year
Pre Amplifier	Agilent	8449B	3008A02237	10/11/2016	1 year
Pre Amplifier	Agilent	8447D	2944A11119	01/12/2017	1 year
Broadband Antenna	Schwarzbeck	VULB9168	416	10/13/2016	1 year
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/06/2016	1 year
Horn Antenna (18~40GHz)	ETS	3116	86467	09/05/2016	1 year
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	01/26/2017	1 year
Microwave Cable	EMCI	EMC102-KM-KM-1 4000	151001	02/20/2017	1 year
Microwave Cable	EMCI	EMC-104-SM-SM- 14000	140202	02/20/2017	1 year
Microwave Cable	EMCI	EMC104-SM-SM-6 00	140301	02/20/2017	1 year
Test Site	ATL	TE01	888001	08/29/2016	1 year

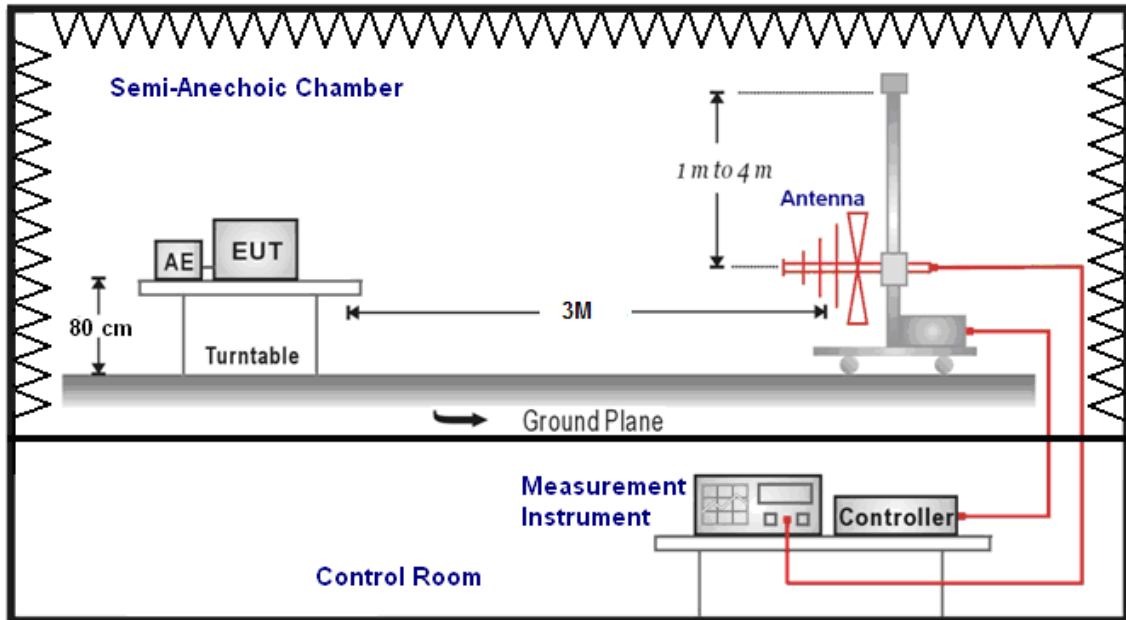
Note: N.C.R. = No Calibration Request.

■ Setup

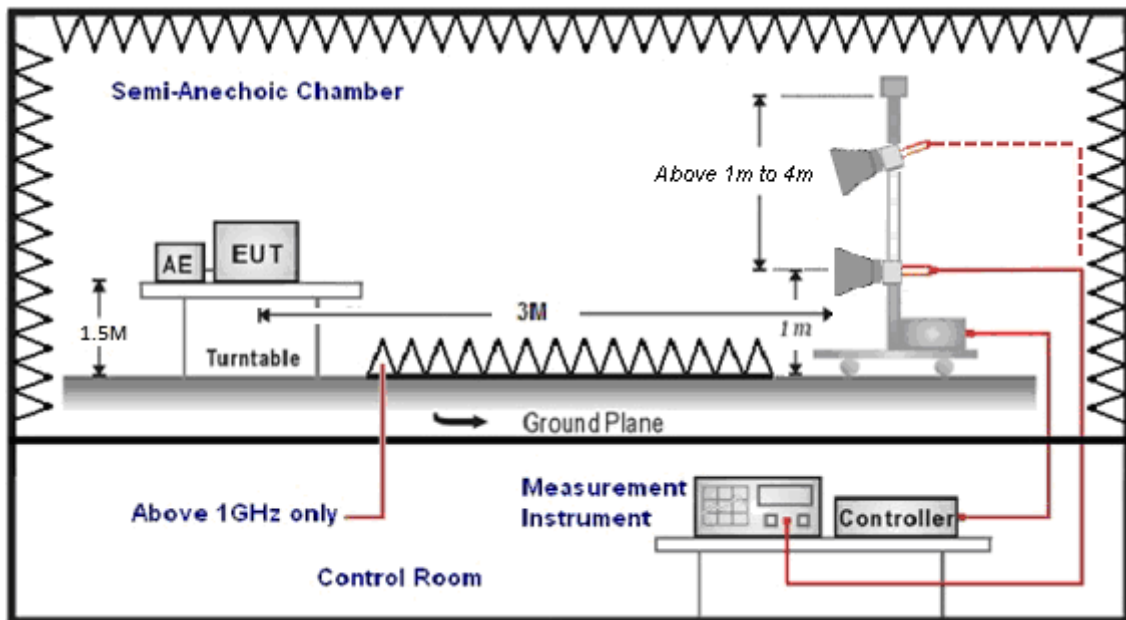
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



■ Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height (below 1GHz use 0.8m turntable / above 1GHz use 1.5m turntable), top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 40 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For restricted measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements and 10 Hz for average measurements when Duty cycle > 0.98 / 1/T for average measurements when Duty cycle < 0.98.

For out of band measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Trilog-Broadband Antenna at 3 Meter and the ETS-Lindgren Double-Ridged Waveguide Horn antenna Schwarzbeck Mess-Elektronik Broadband Horn Antenna was used in frequencies 1 – 40 GHz at a distance of 3 meter. The antenna at an angle toward the source of the emission. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).



The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Measuring Instruments and setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000MHz
Stop Frequency	40GHz
RBW/VBW(Emission in restricted band)	1MHz / 3MHz for Peak 1MHz / (1/T) for Average
RBW/VBW(Emission in non-restricted band)	1MHz / 3MHz for Peak



■ Test Result

Below 1GHz

Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Test Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Description:		Date:	04/26/2017

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
192.9600	40.09	-7.53	32.56	43.50	-10.94	QP	H
490.7500	36.33	0.57	36.90	46.00	-9.10	QP	H
523.7300	35.04	1.08	36.12	46.00	-9.88	QP	H
579.9900	35.62	2.33	37.95	46.00	-8.05	QP	H
870.0200	31.51	7.97	39.48	46.00	-6.52	QP	H
884.5700	30.28	8.28	38.56	46.00	-7.44	QP	H
192.9600	37.03	-7.53	29.50	43.50	-14.00	QP	V
493.6600	40.39	0.63	41.02	46.00	-4.98	QP	V
518.8800	35.84	1.02	36.86	46.00	-9.14	QP	V
579.9900	35.35	2.33	37.68	46.00	-8.32	QP	V
662.4400	30.22	4.08	34.30	46.00	-11.70	QP	V
939.8600	28.43	9.44	37.87	46.00	-8.13	QP	V

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

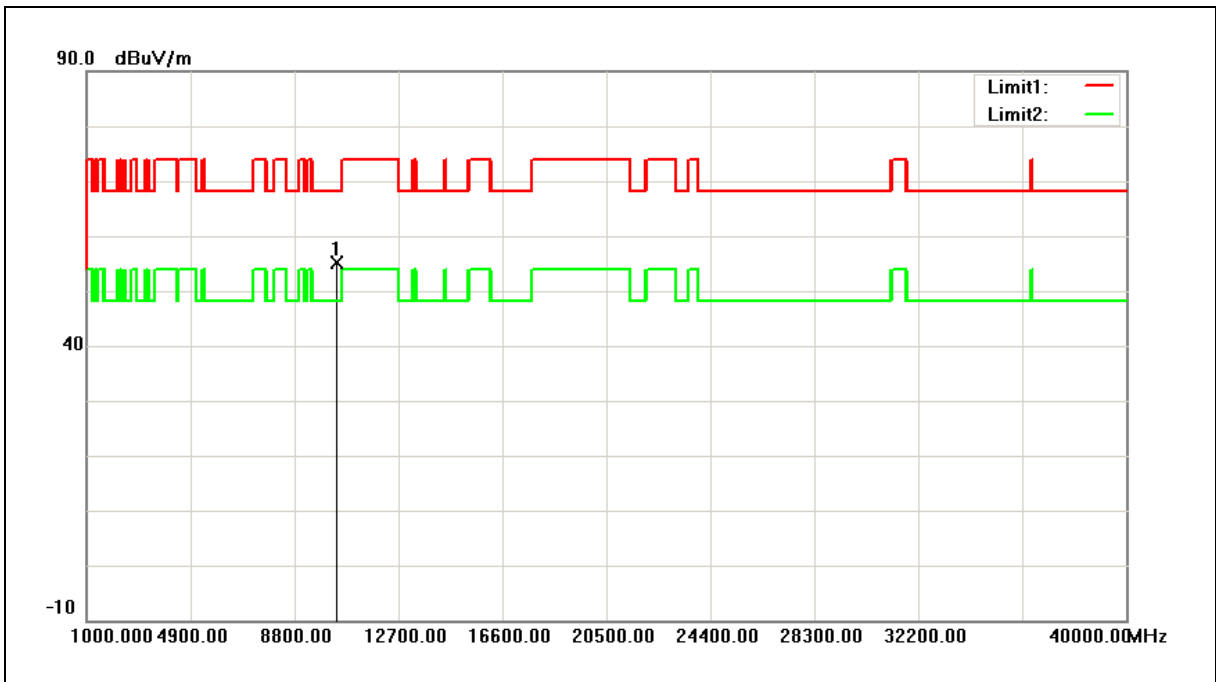
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Above 1GHz

Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	49.85	5.36	55.21	68.20	-12.99	peak

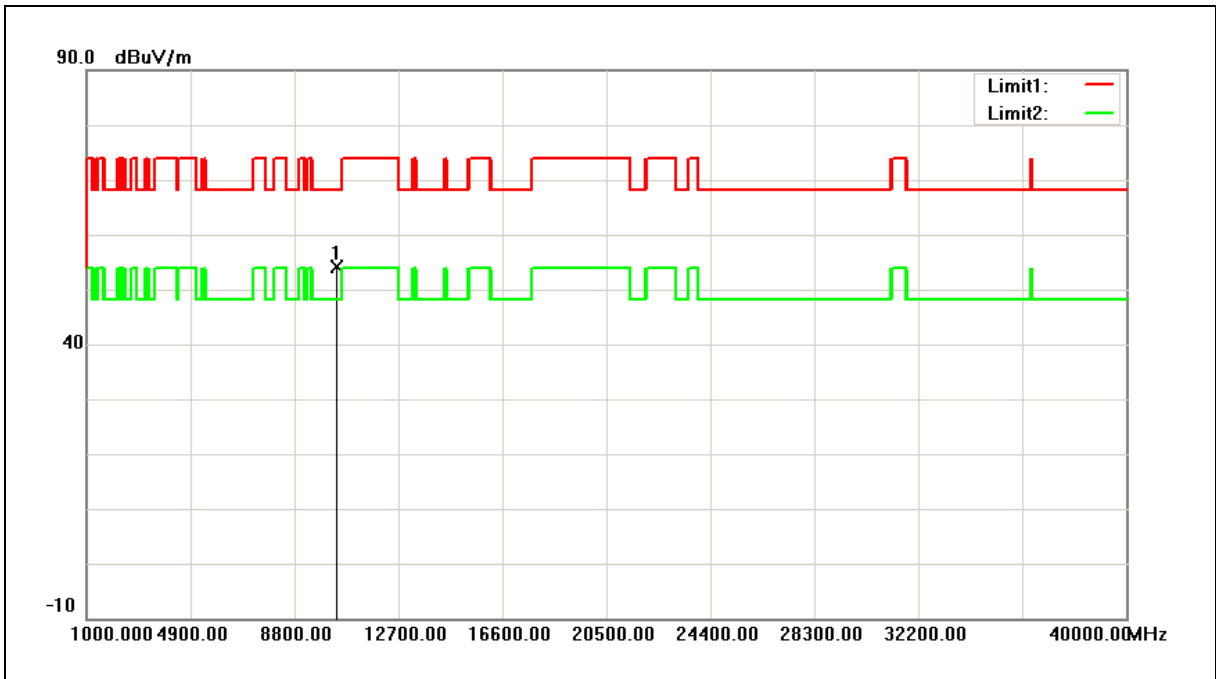
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10350.000	48.80	5.33	54.13	68.20	-14.07	peak

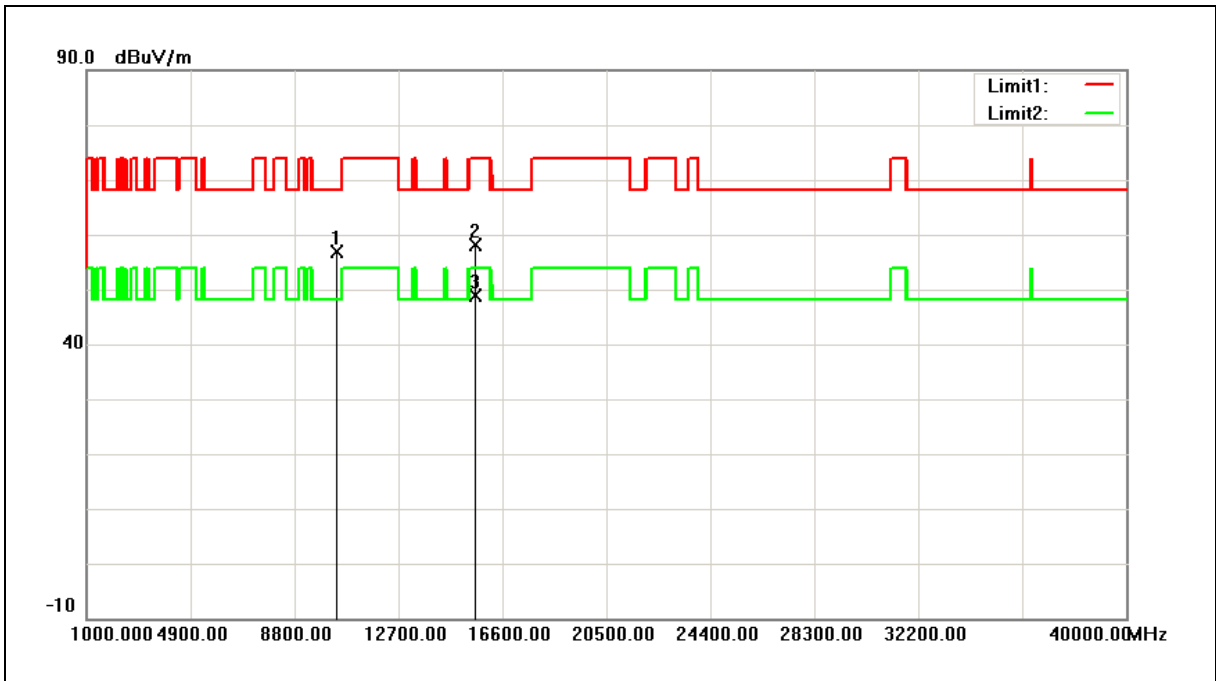
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	51.47	5.45	56.92	68.20	-11.28	peak
2	15600.000	51.02	7.22	58.24	74.00	-15.76	peak
3	15600.000	41.62	7.22	48.84	54.00	-5.16	AVG

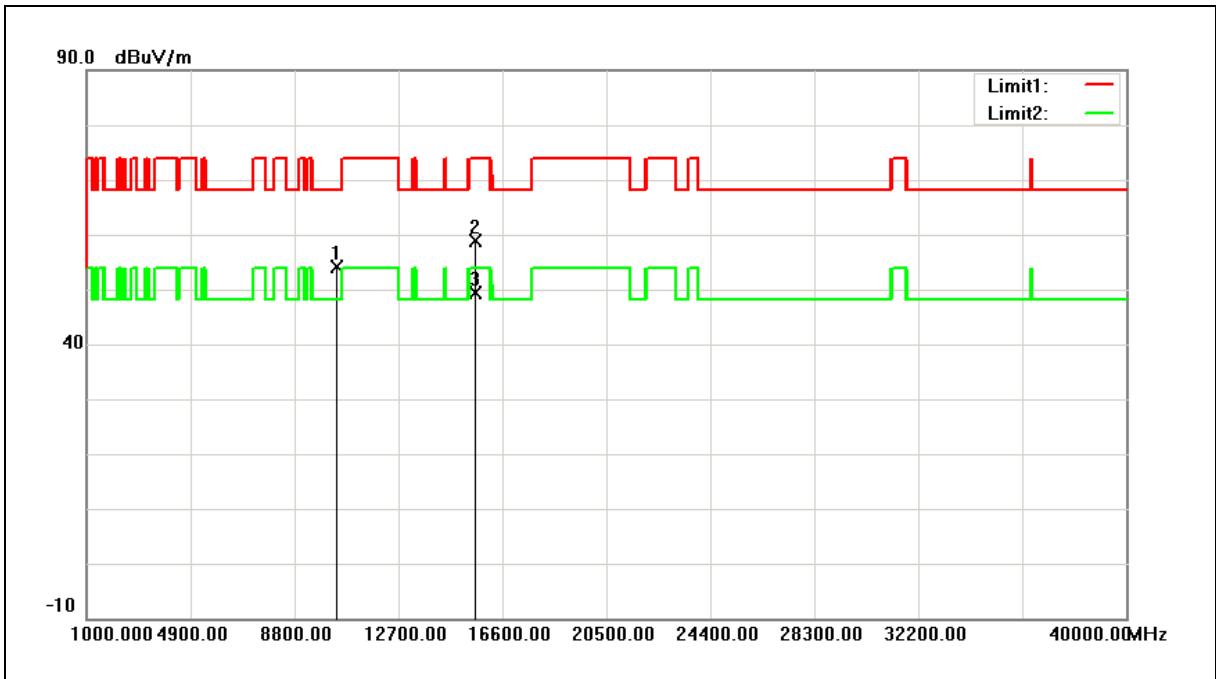
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	48.75	5.45	54.20	68.20	-14.00	peak
2	15600.000	51.54	7.22	58.76	74.00	-15.24	peak
3	15600.000	42.11	7.22	49.33	54.00	-4.67	AVG

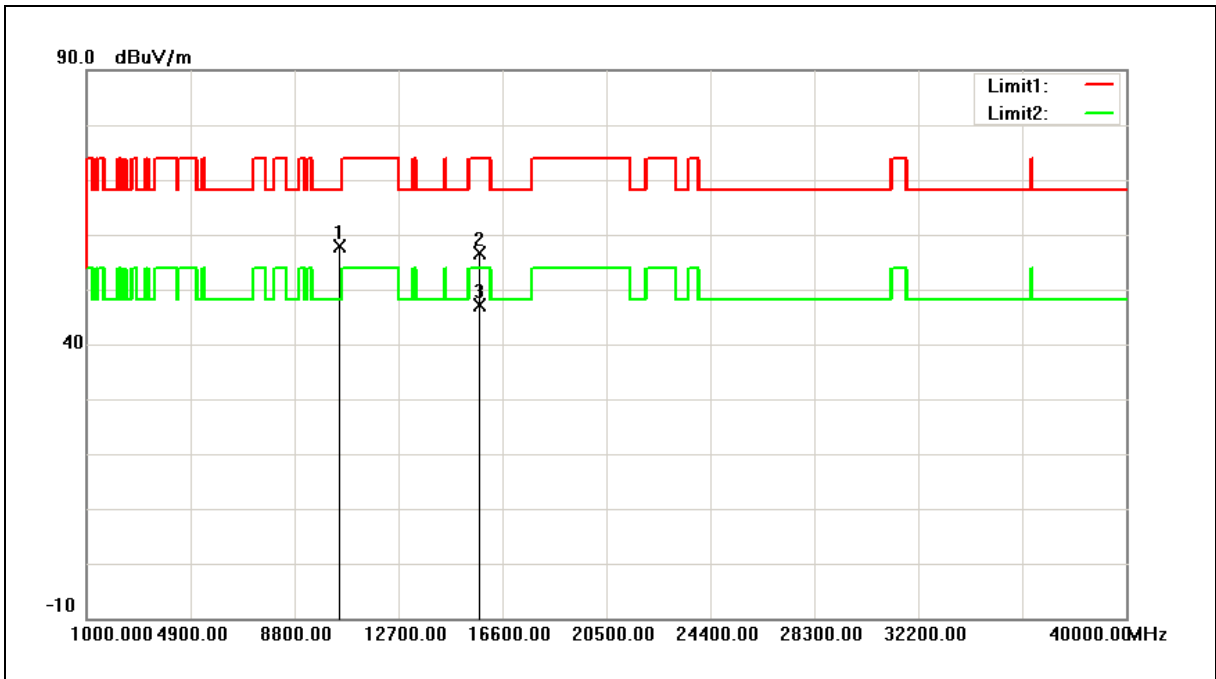
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	52.22	5.63	57.85	68.20	-10.35	peak
2	15720.000	49.51	7.07	56.58	74.00	-17.42	peak
3	15720.000	40.13	7.07	47.20	54.00	-6.80	AVG

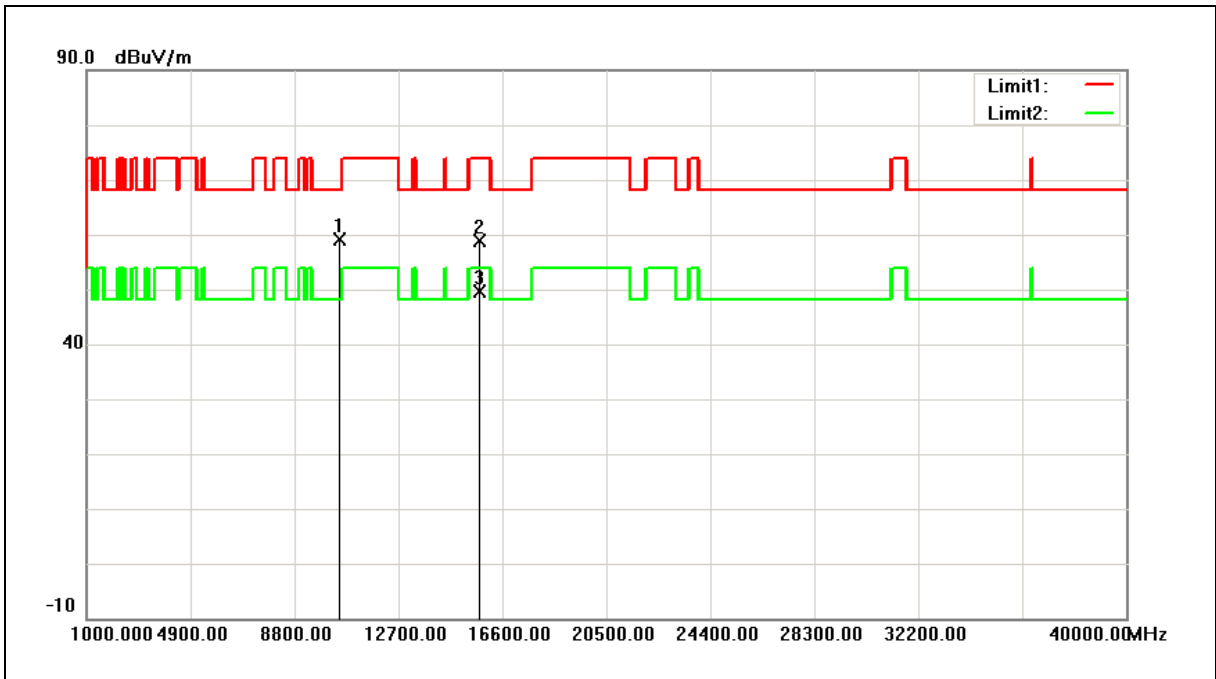
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	53.49	5.63	59.12	68.20	-9.08	peak
2	15720.000	51.78	7.07	58.85	74.00	-15.15	peak
3	15720.000	42.58	7.07	49.65	54.00	-4.35	AVG

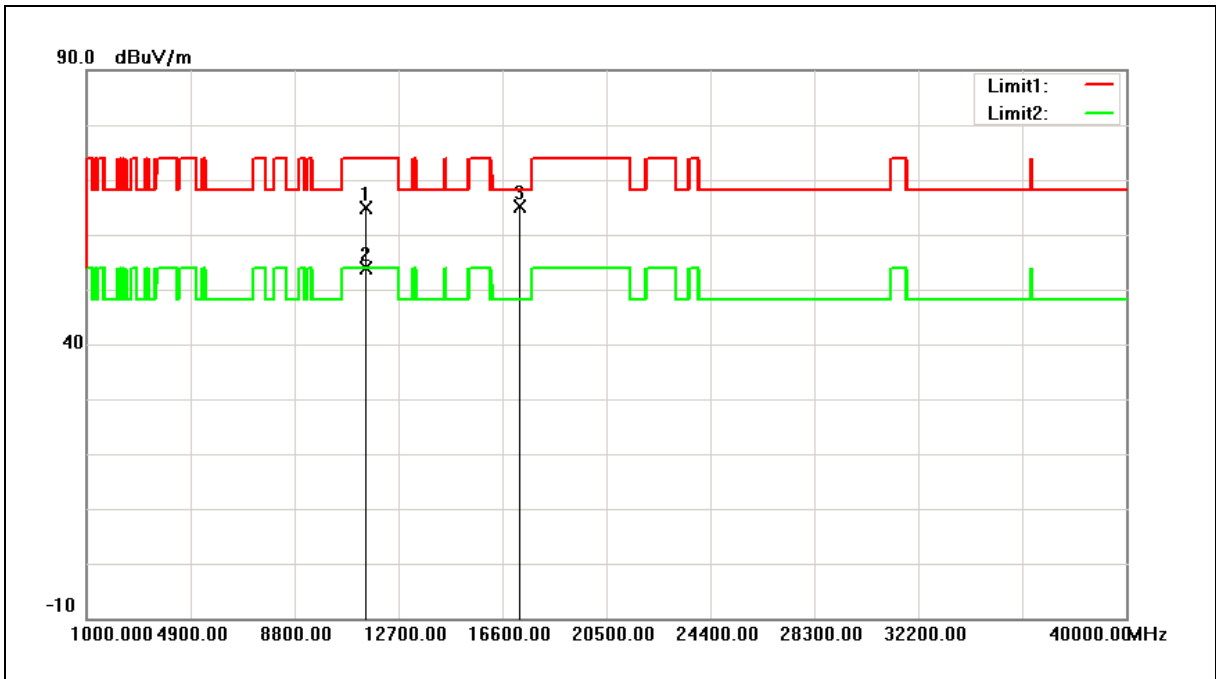
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	58.18	6.61	64.79	74.00	-9.21	peak
2	11490.000	47.29	6.61	53.90	54.00	-0.10	AVG
3	17235.000	54.23	10.87	65.10	68.20	-3.10	peak

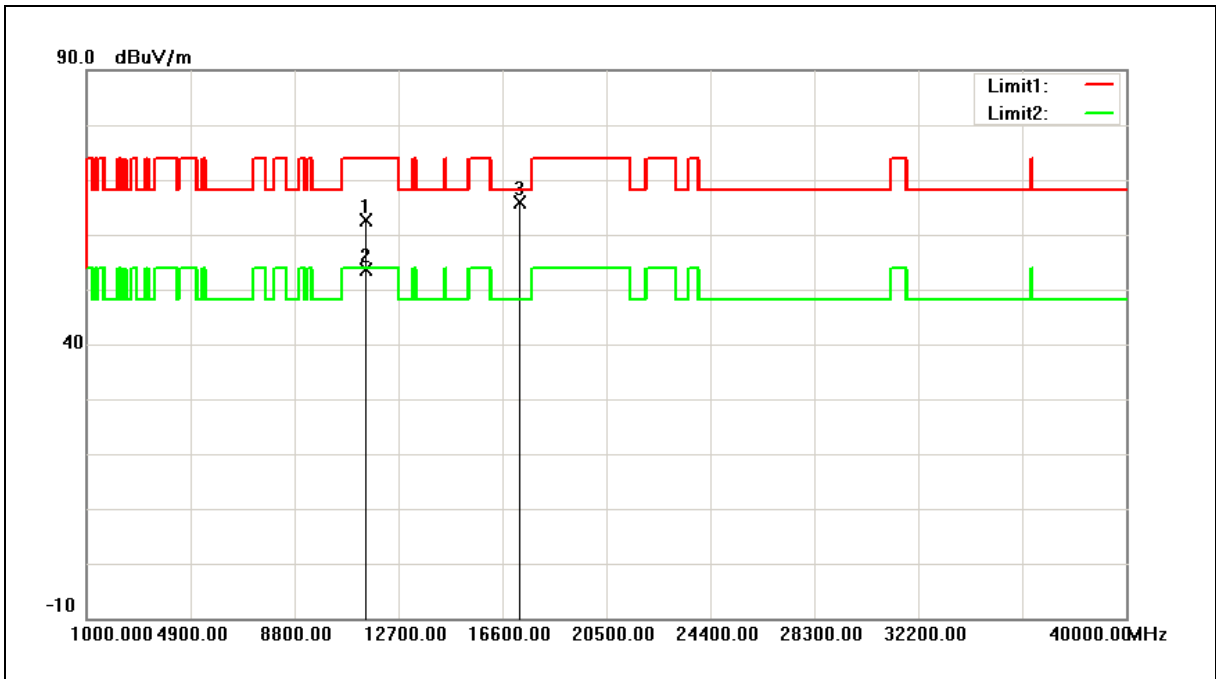
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	55.91	6.61	62.52	74.00	-11.48	peak
2	11490.000	47.12	6.61	53.73	54.00	-0.27	AVG
3	17235.000	55.04	10.87	65.91	68.20	-2.29	peak

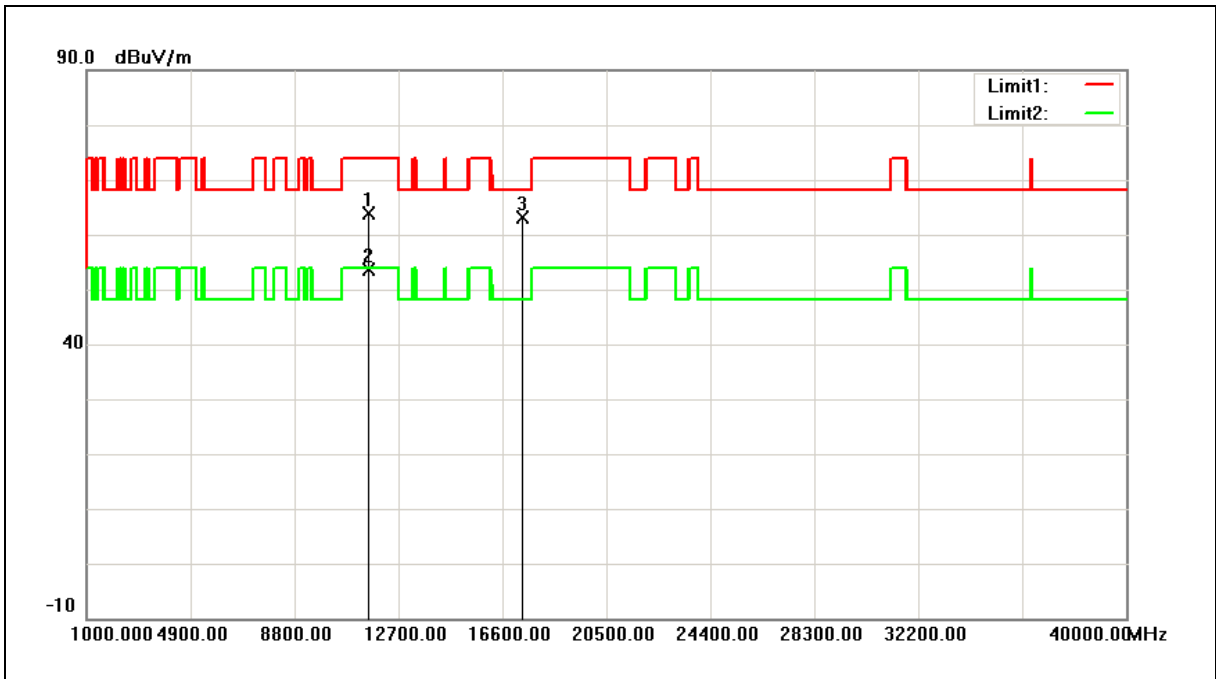
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	57.10	6.80	63.90	74.00	-10.10	peak
2	11570.000	46.81	6.80	53.61	54.00	-0.39	AVG
3	17355.000	51.57	11.52	63.09	68.20	-5.11	peak

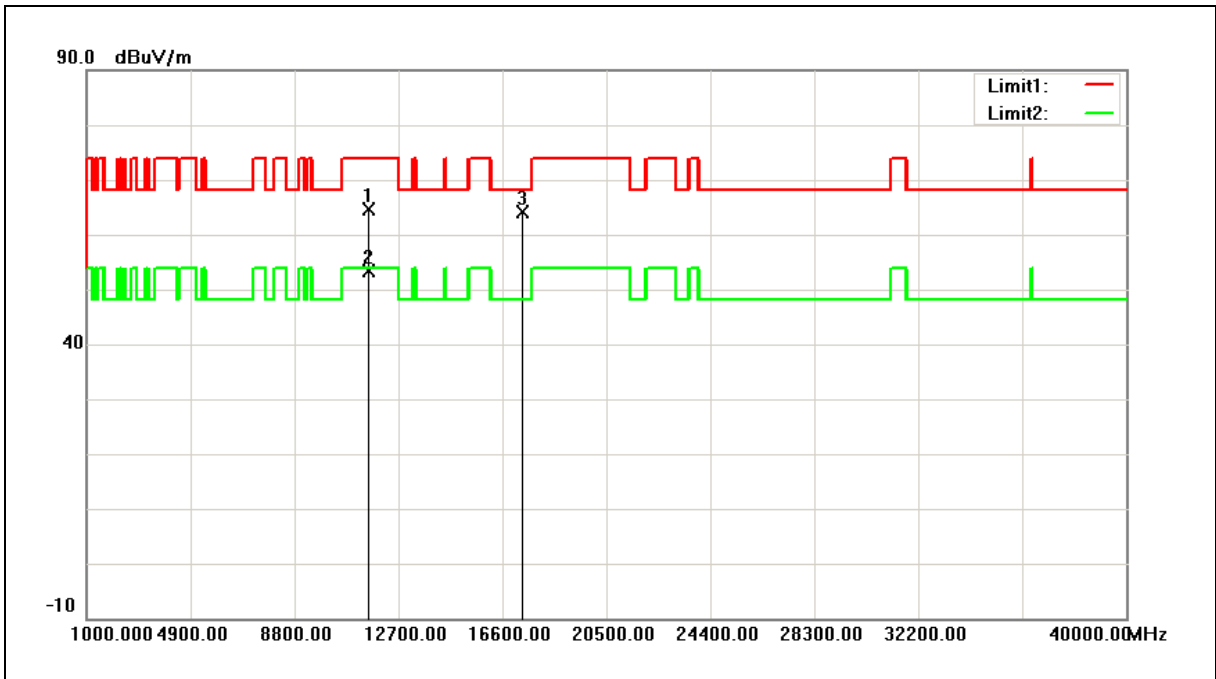
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	57.72	6.80	64.52	74.00	-9.48	peak
2	11570.000	46.62	6.80	53.42	54.00	-0.58	AVG
3	17355.000	52.66	11.52	64.18	68.20	-4.02	peak

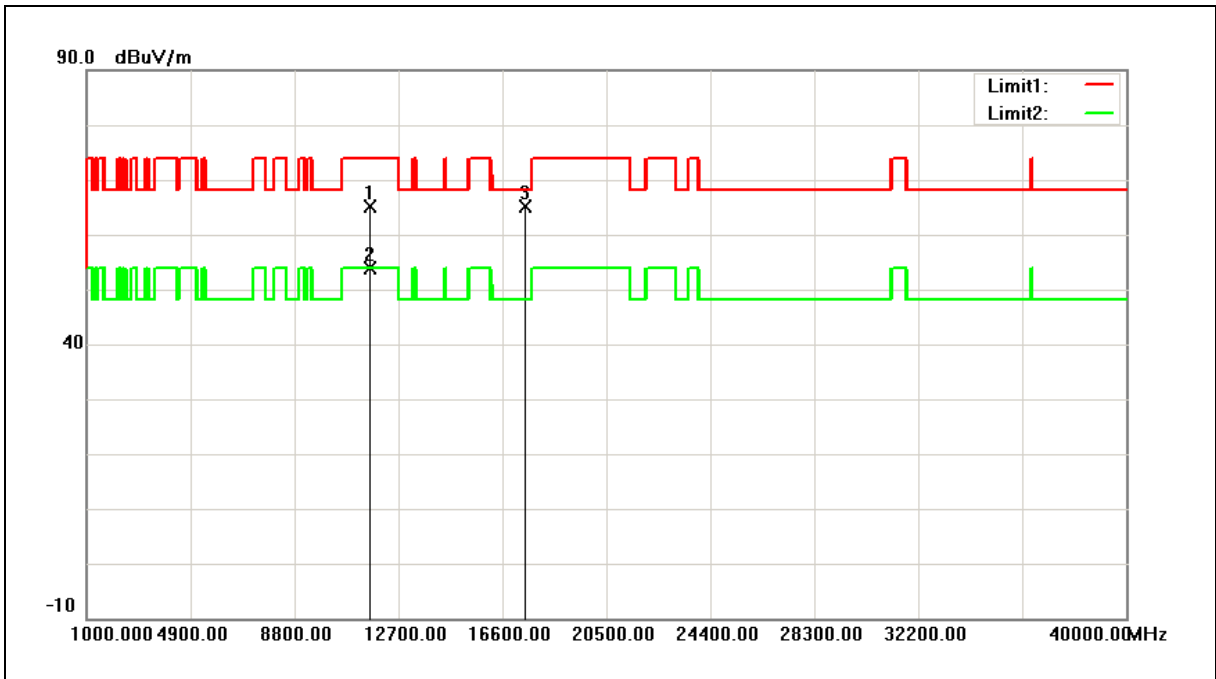
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	58.15	7.01	65.16	74.00	-8.84	peak
2	11650.000	46.85	7.01	53.86	54.00	-0.14	AVG
3	17475.000	52.98	12.17	65.15	68.20	-3.05	peak

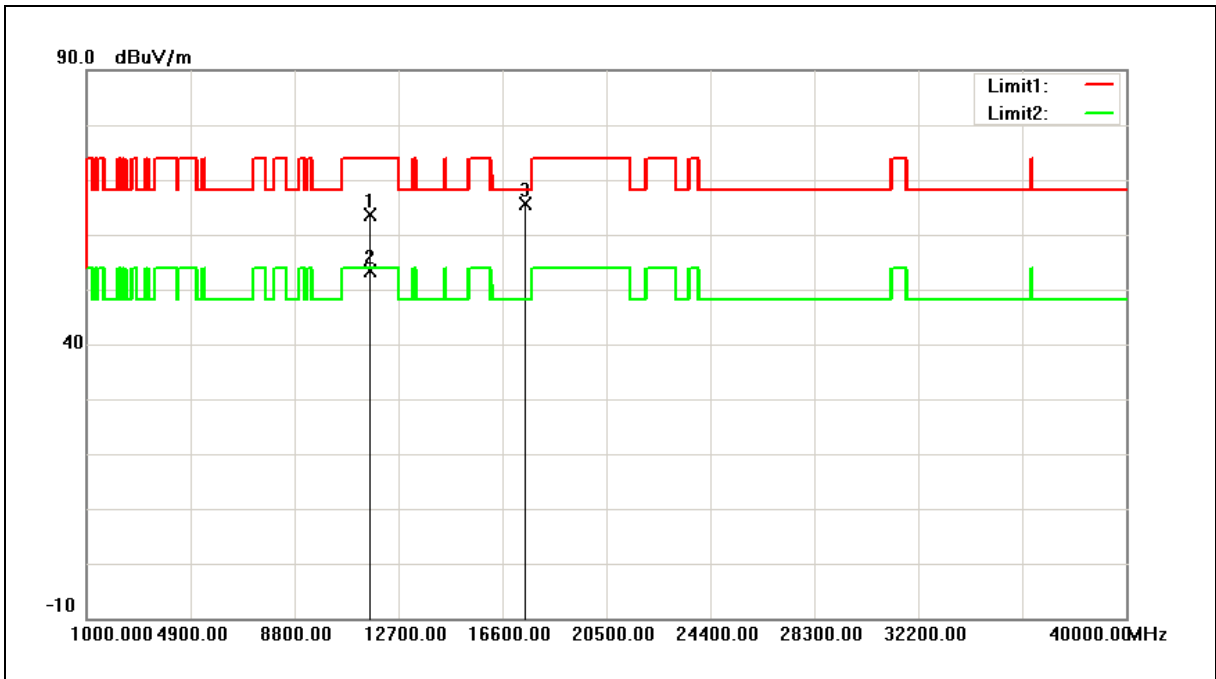
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	56.65	7.01	63.66	74.00	-10.34	peak
2	11650.000	46.43	7.01	53.44	54.00	-0.56	AVG
3	17475.000	53.46	12.17	65.63	68.20	-2.57	peak

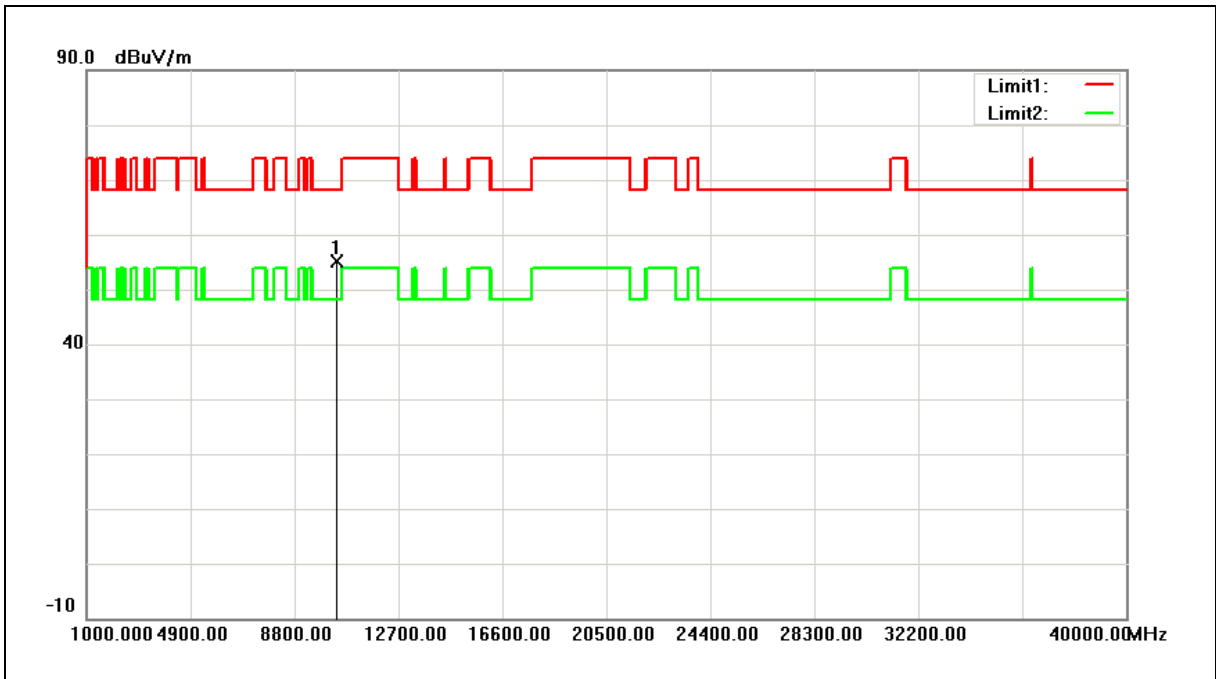
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	49.82	5.36	55.18	68.20	-13.02	peak

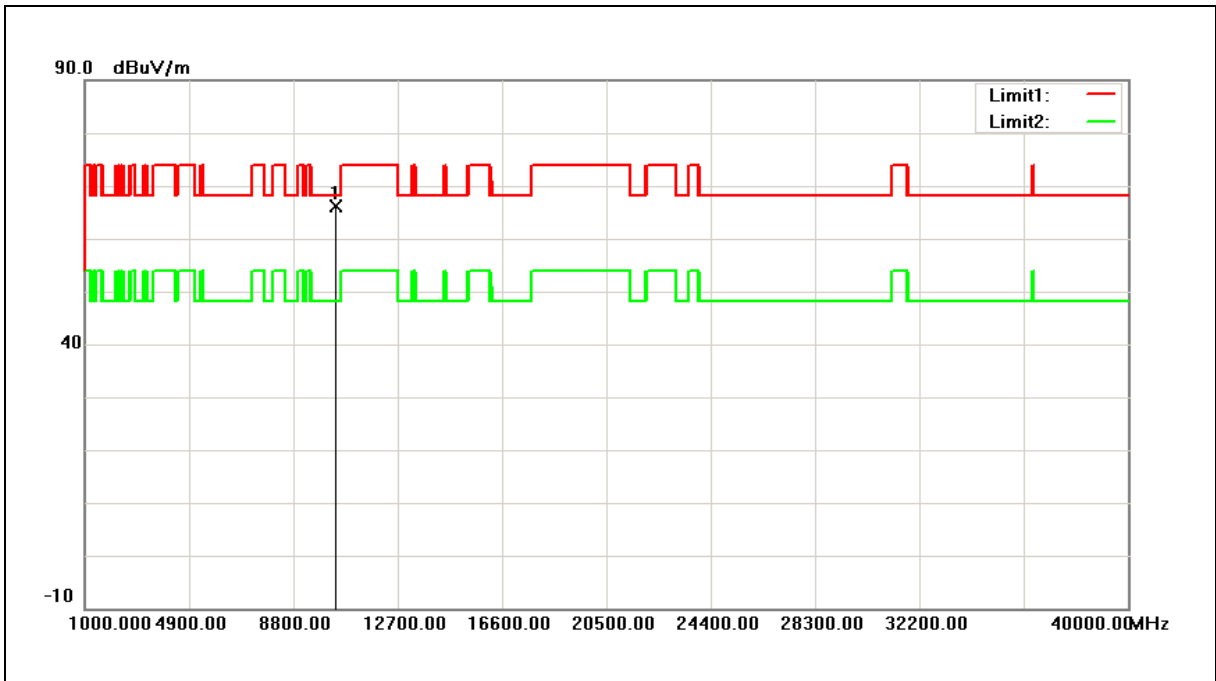
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10360.000	61.07	4.97	66.04	68.20	-2.16	peak

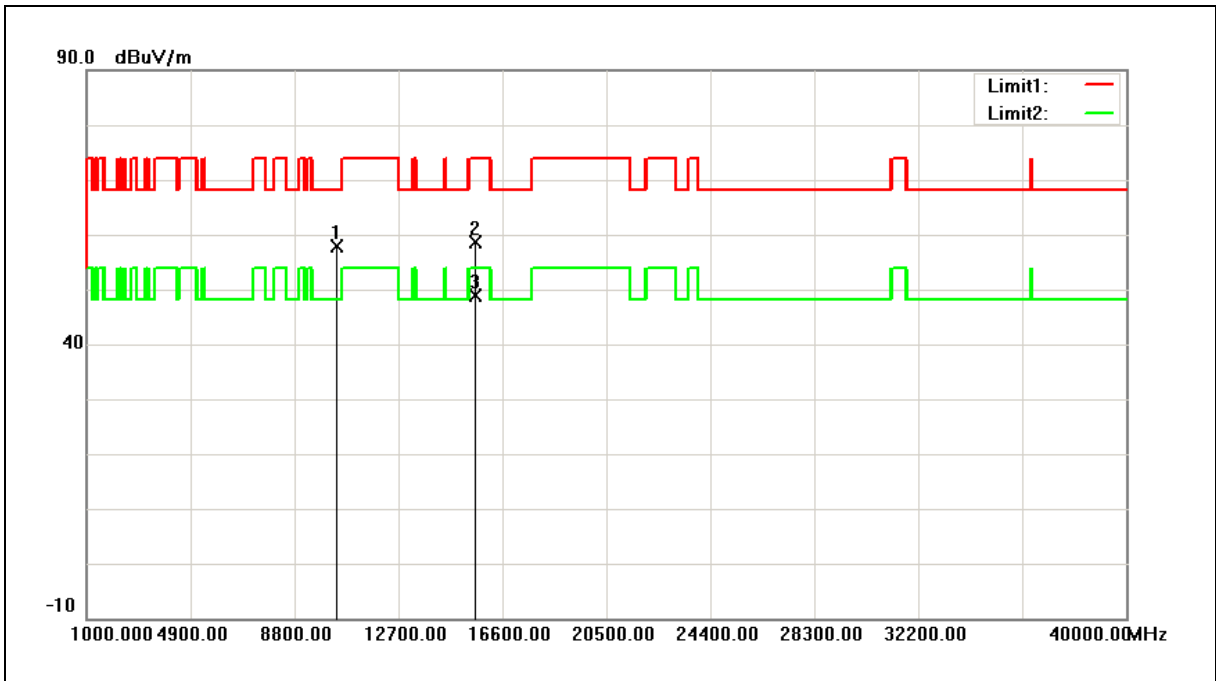
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	52.53	5.45	57.98	68.20	-10.22	peak
2	15600.000	51.44	7.22	58.66	74.00	-15.34	peak
3	15600.000	41.57	7.22	48.79	54.00	-5.21	AVG

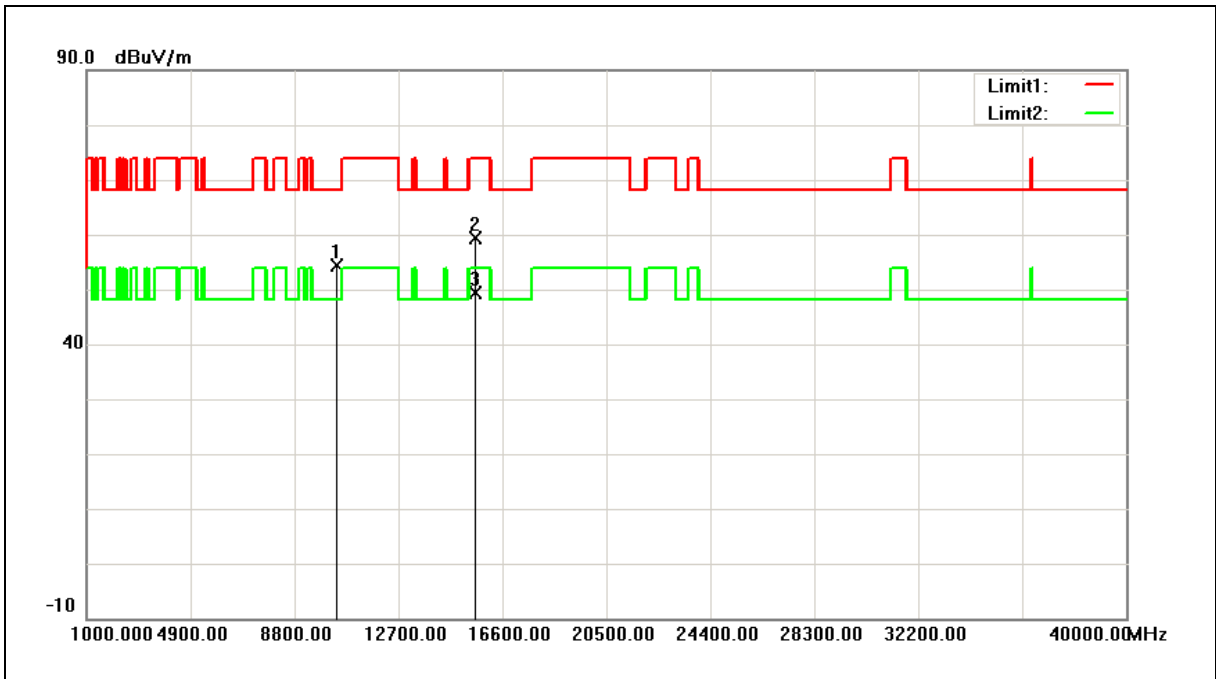
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	48.87	5.45	54.32	68.20	-13.88	peak
2	15600.000	52.20	7.22	59.42	74.00	-14.58	peak
3	15600.000	42.15	7.22	49.37	54.00	-4.63	AVG

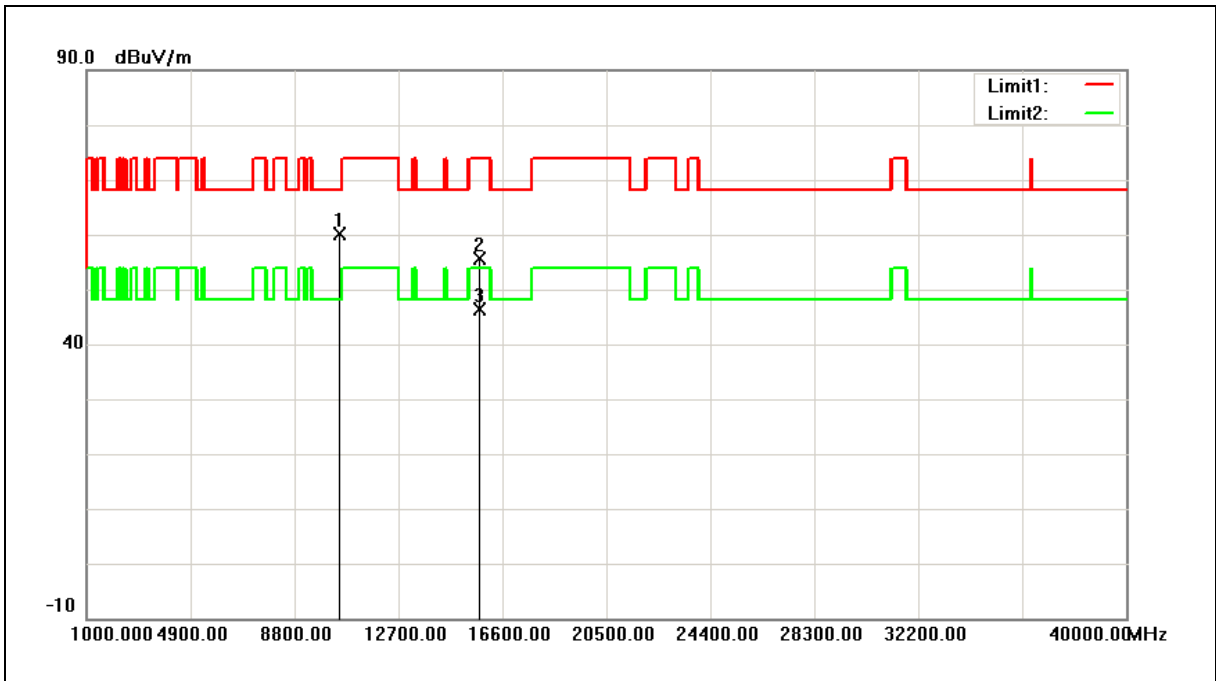
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	54.54	5.63	60.17	68.20	-8.03	peak
2	15720.000	48.68	7.07	55.75	74.00	-18.25	peak
3	15720.000	39.28	7.07	46.35	54.00	-7.65	AVG

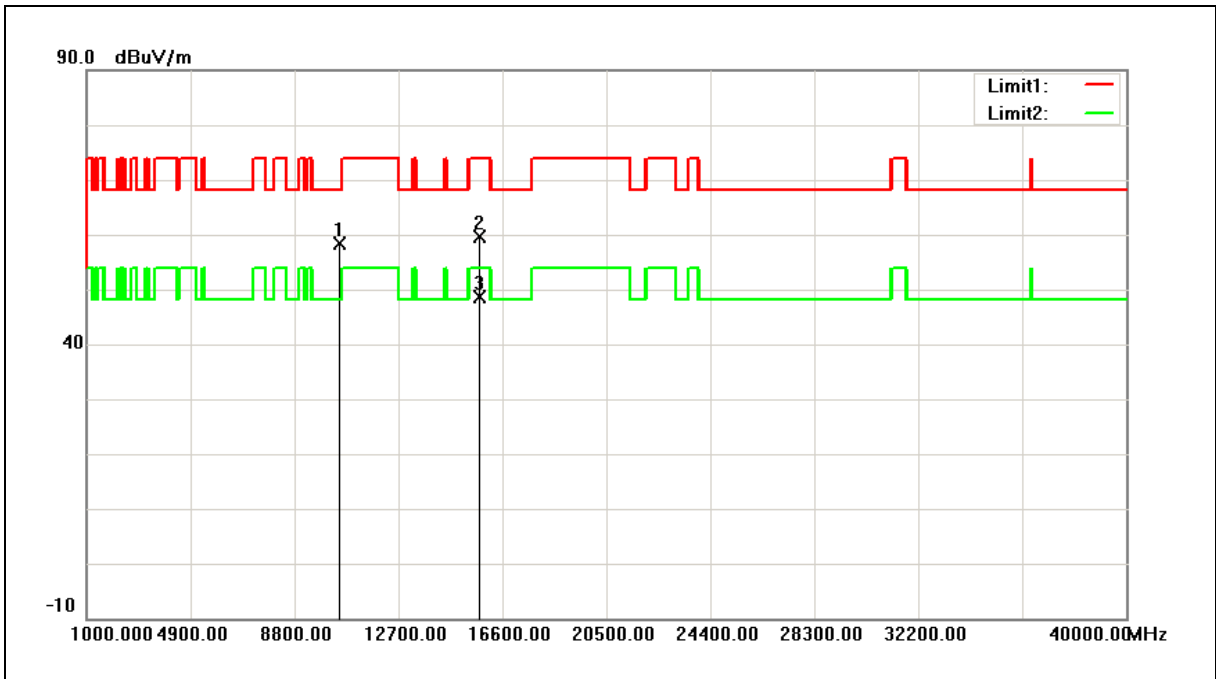
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10480.000	52.72	5.63	58.35	68.20	-9.85	peak
2	15720.000	52.44	7.07	59.51	74.00	-14.49	peak
3	15720.000	41.52	7.07	48.59	54.00	-5.41	AVG

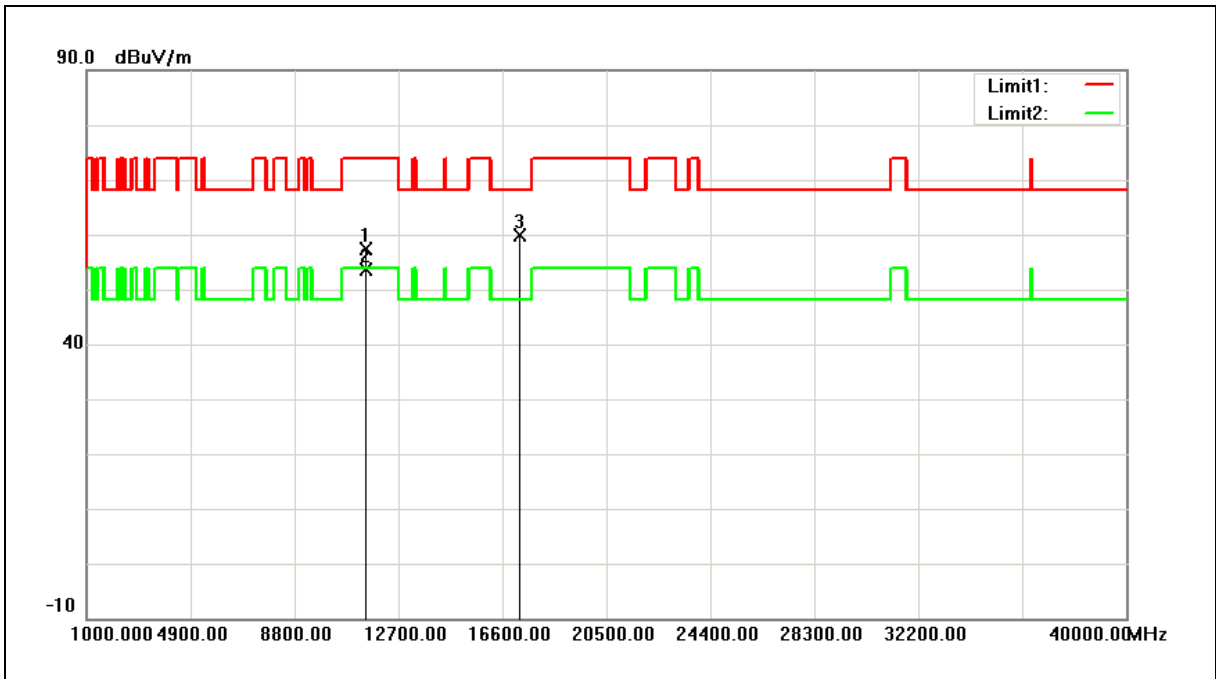
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	50.65	6.61	57.26	74.00	-16.74	peak
2	11490.000	46.92	6.61	53.53	54.00	-0.47	AVG
3	17235.000	49.00	10.87	59.87	68.20	-8.33	peak

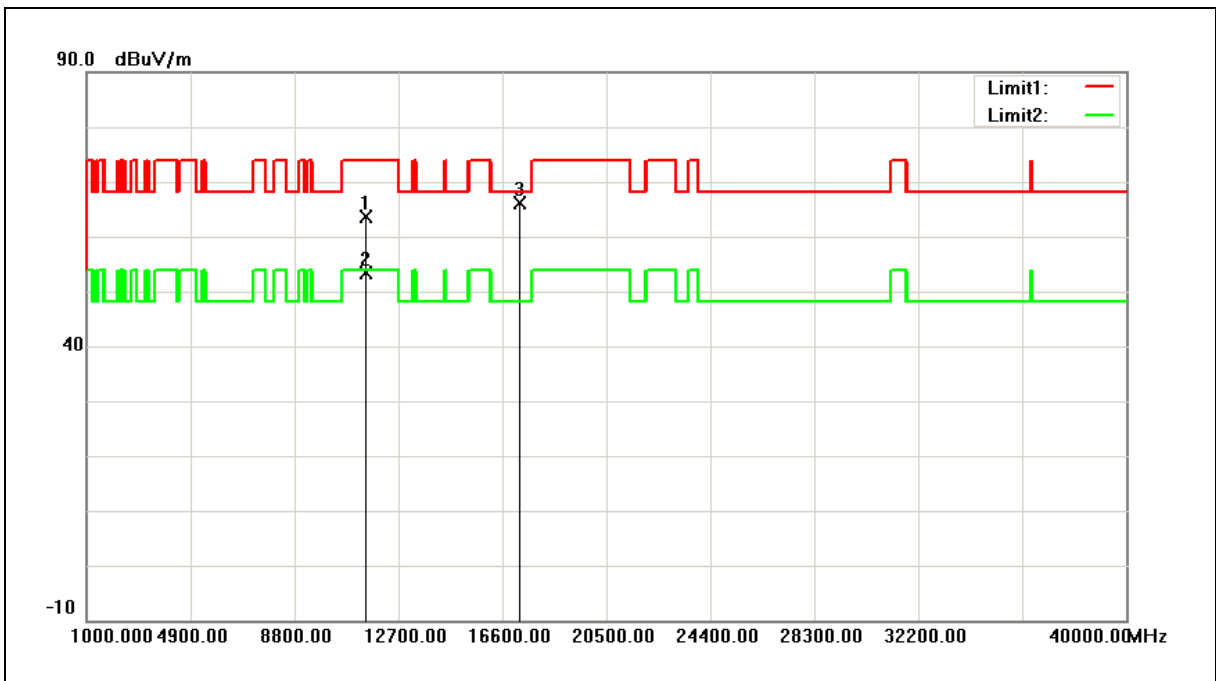
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	56.91	6.61	63.52	74.00	-10.48	peak
2	11490.000	46.78	6.61	53.39	54.00	-0.61	AVG
3	17235.000	55.16	10.87	66.03	68.20	-2.17	peak

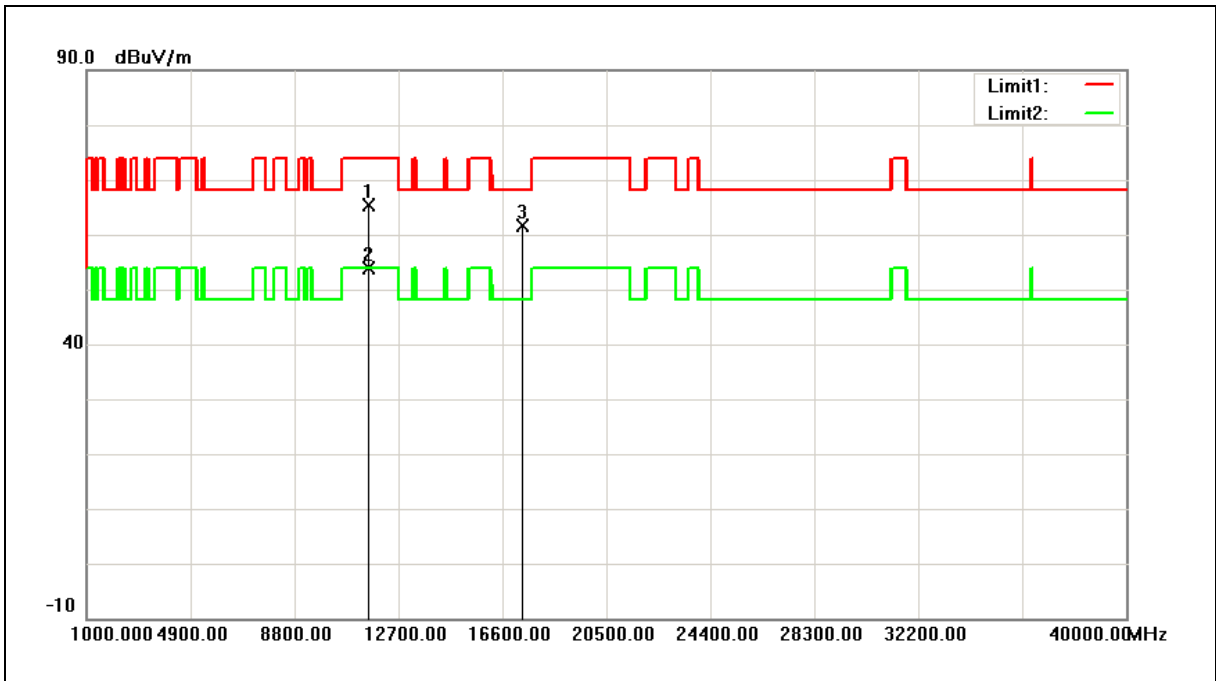
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	58.50	6.80	65.30	74.00	-8.70	peak
2	11570.000	47.09	6.80	53.89	54.00	-0.11	AVG
3	17355.000	50.03	11.52	61.55	68.20	-6.65	peak

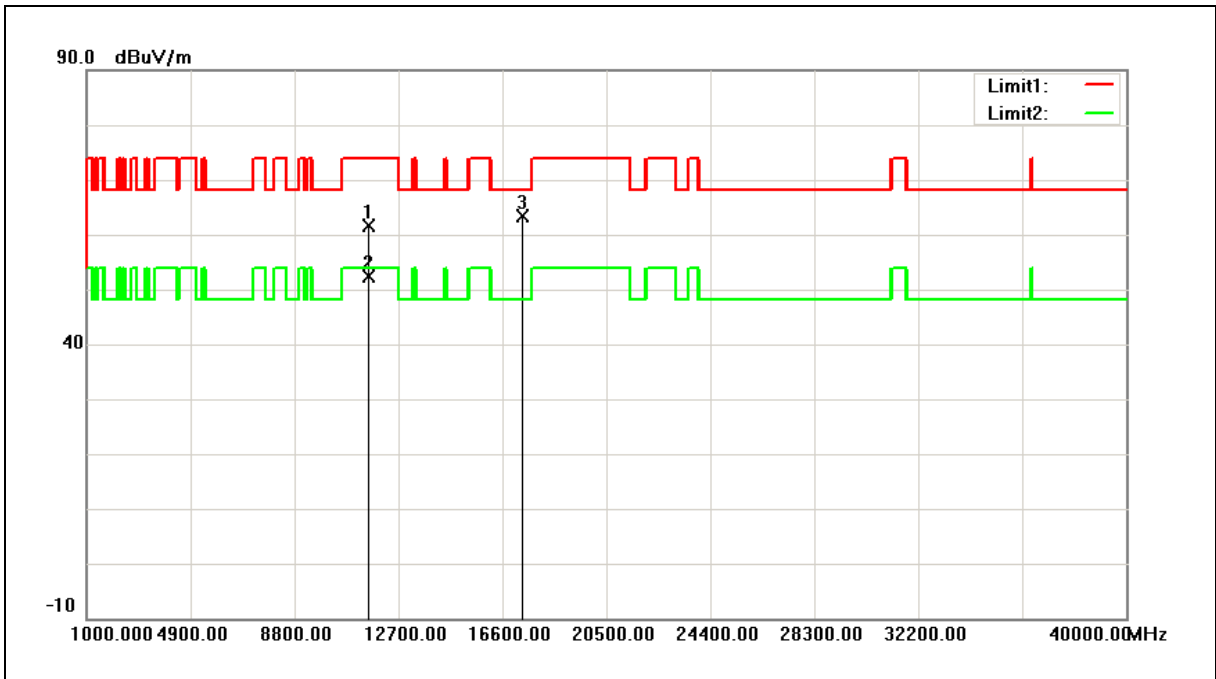
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	54.82	6.80	61.62	74.00	-12.38	peak
2	11570.000	45.63	6.80	52.43	54.00	-1.57	AVG
3	17355.000	51.86	11.52	63.38	68.20	-4.82	peak

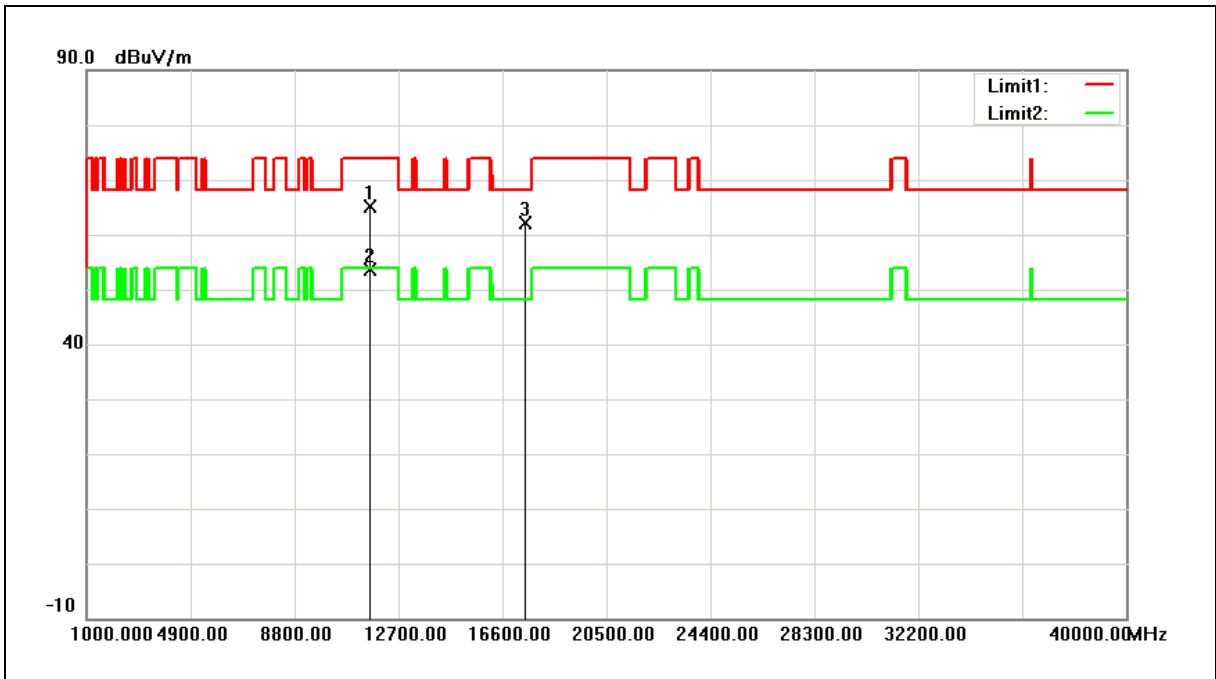
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	58.18	7.01	65.19	74.00	-8.81	peak
2	11650.000	46.74	7.01	53.75	54.00	-0.25	AVG
3	17475.000	49.99	12.17	62.16	68.20	-6.04	peak

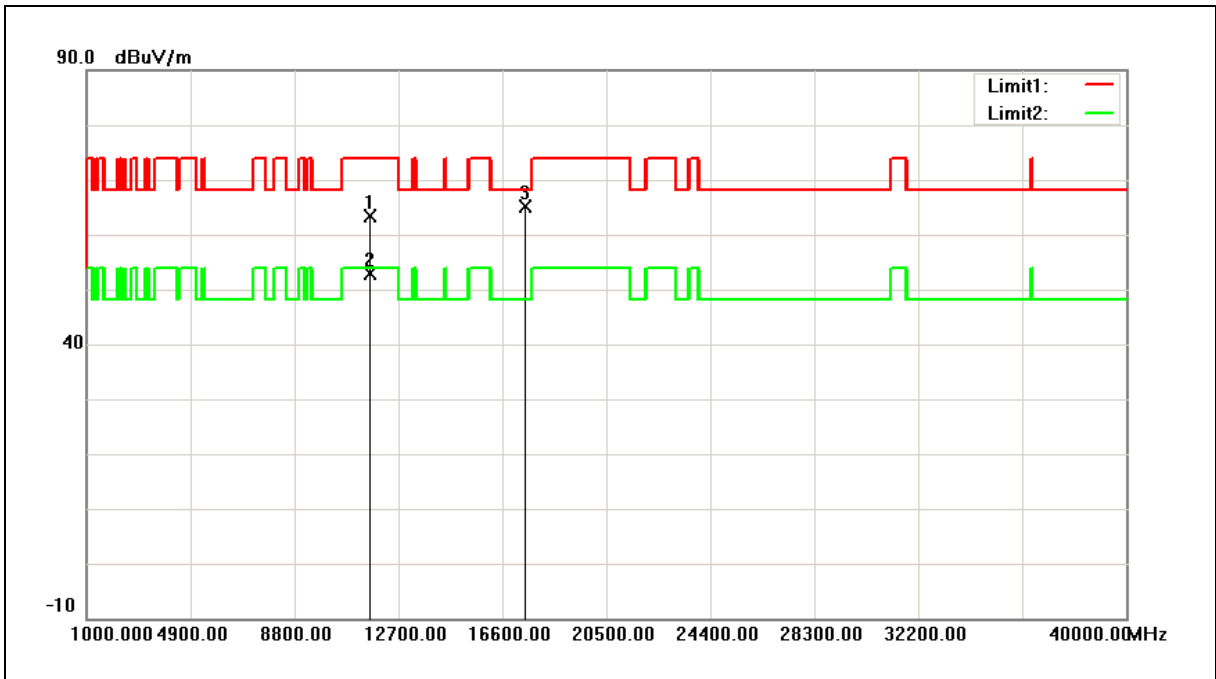
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	56.29	7.01	63.30	74.00	-10.70	peak
2	11650.000	45.77	7.01	52.78	54.00	-1.22	AVG
3	17475.000	53.02	12.17	65.19	68.20	-3.01	peak

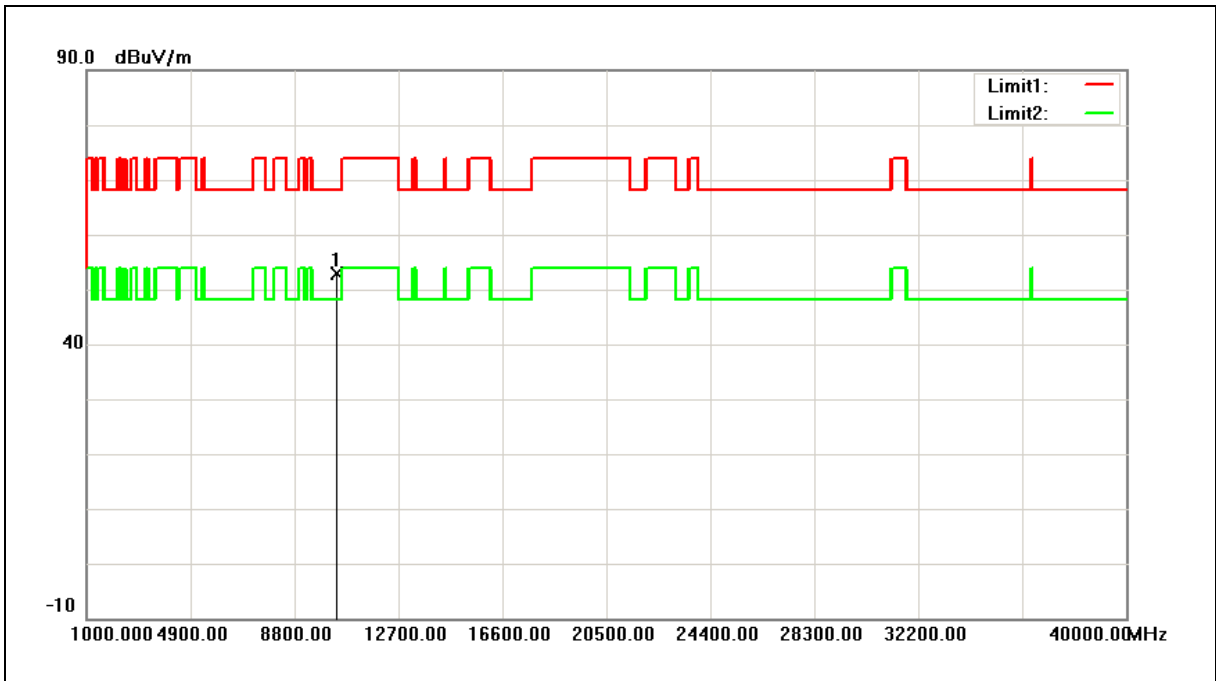
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	47.42	5.39	52.81	68.20	-15.39	peak

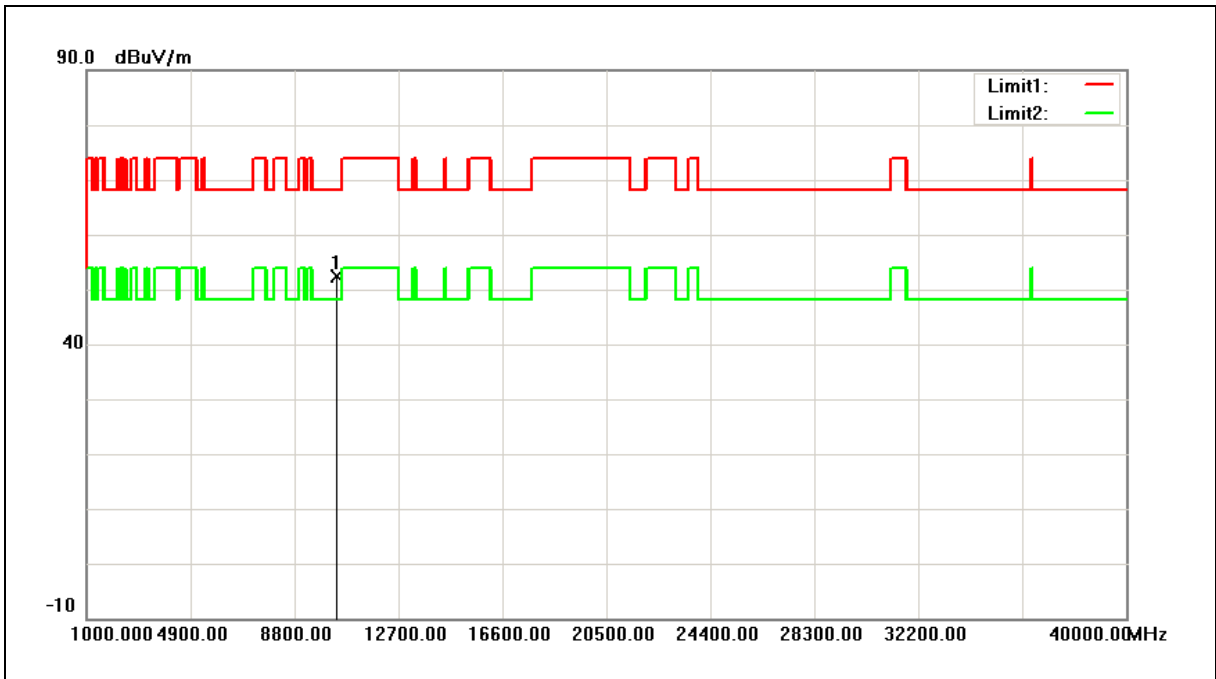
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10380.000	46.89	5.39	52.28	68.20	-15.92	peak

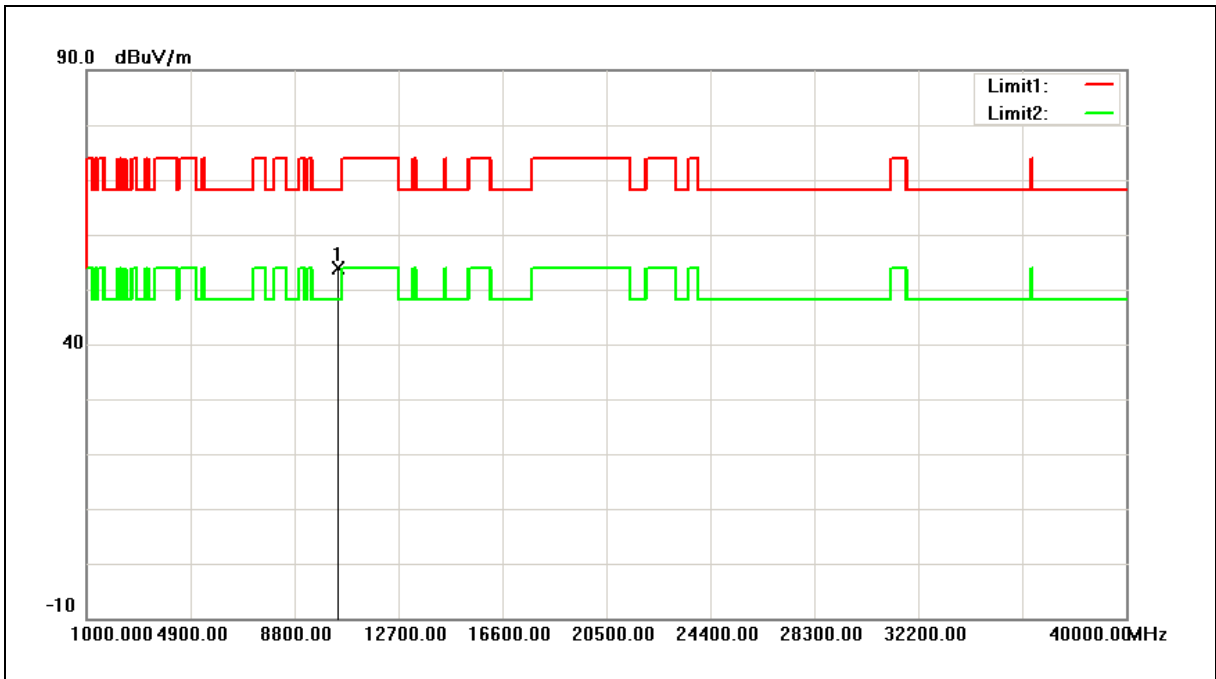
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	48.28	5.59	53.87	68.20	-14.33	peak

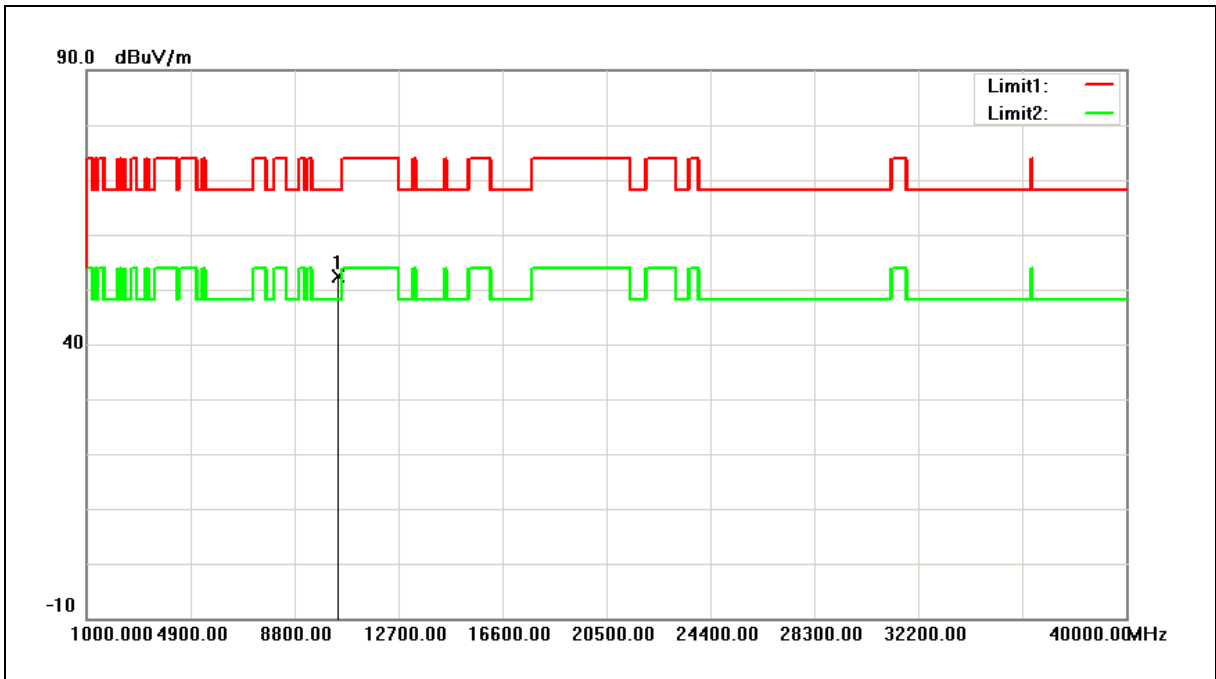
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10460.000	46.89	5.59	52.48	68.20	-15.72	peak

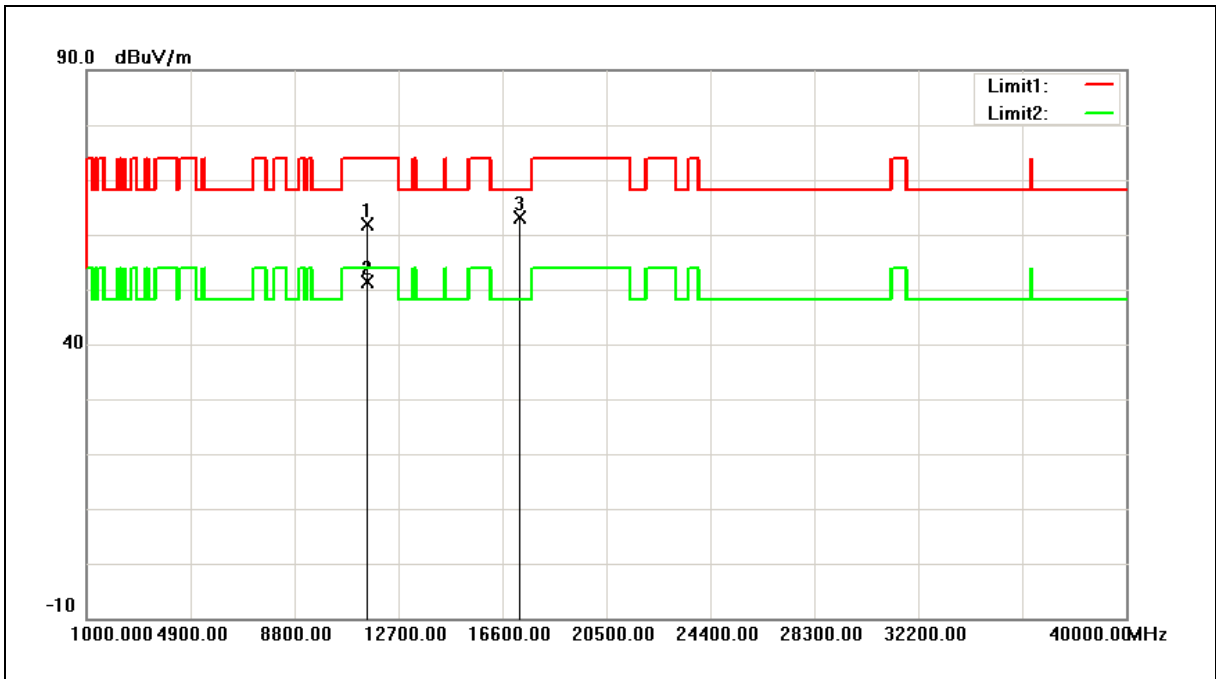
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	55.32	6.64	61.96	74.00	-12.04	peak
2	11510.000	44.85	6.64	51.49	54.00	-2.51	AVG
3	17265.000	52.06	11.03	63.09	68.20	-5.11	peak

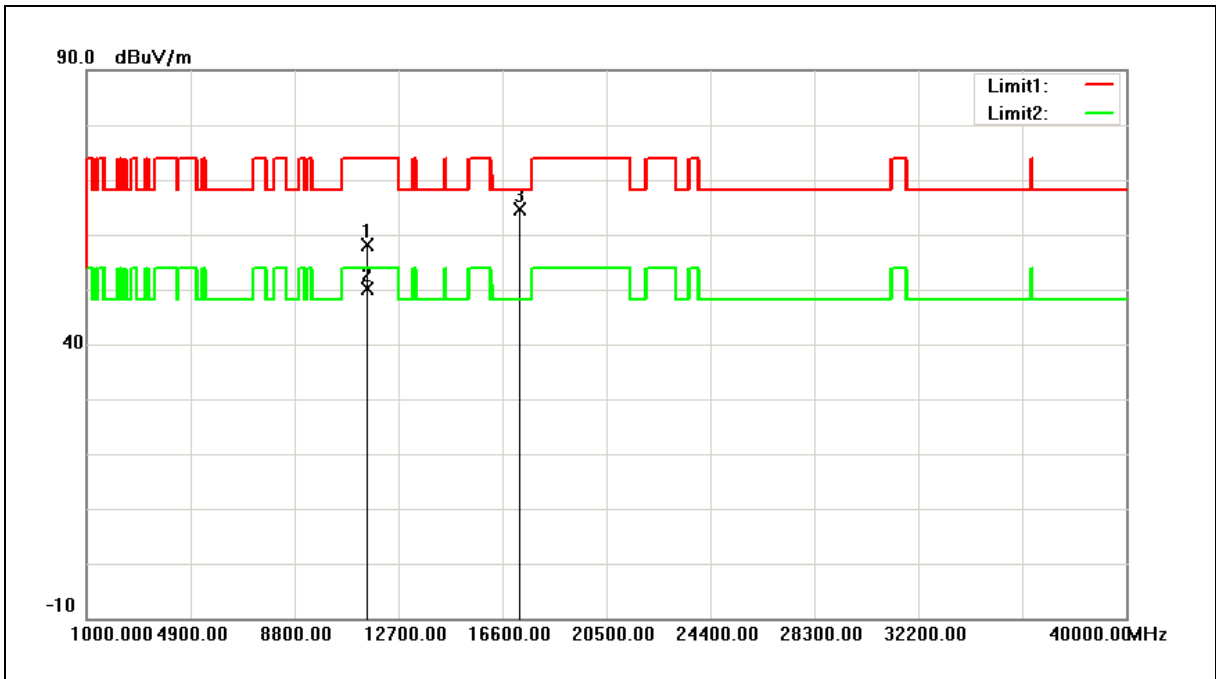
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	51.46	6.64	58.10	74.00	-15.90	peak
2	11510.000	43.46	6.64	50.10	54.00	-3.90	AVG
3	17265.000	53.49	11.03	64.52	68.20	-3.68	peak

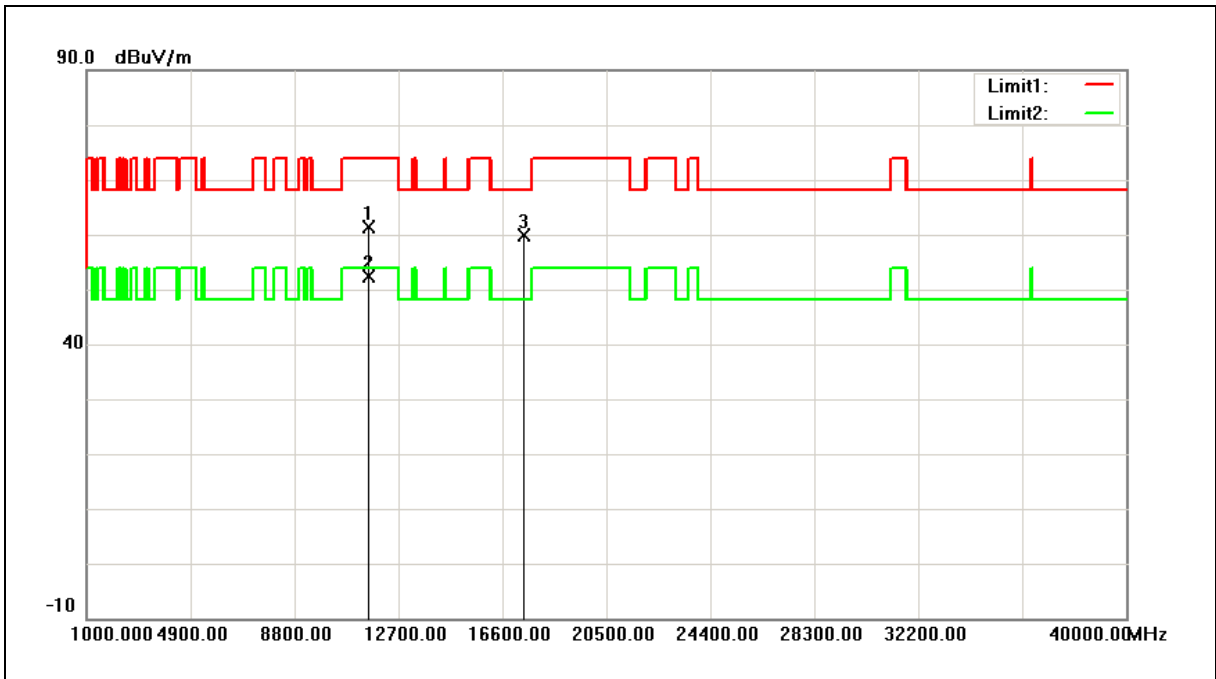
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	54.43	6.86	61.29	74.00	-12.71	peak
2	11590.000	45.47	6.86	52.33	54.00	-1.67	AVG
3	17385.000	48.17	11.68	59.85	68.20	-8.35	peak

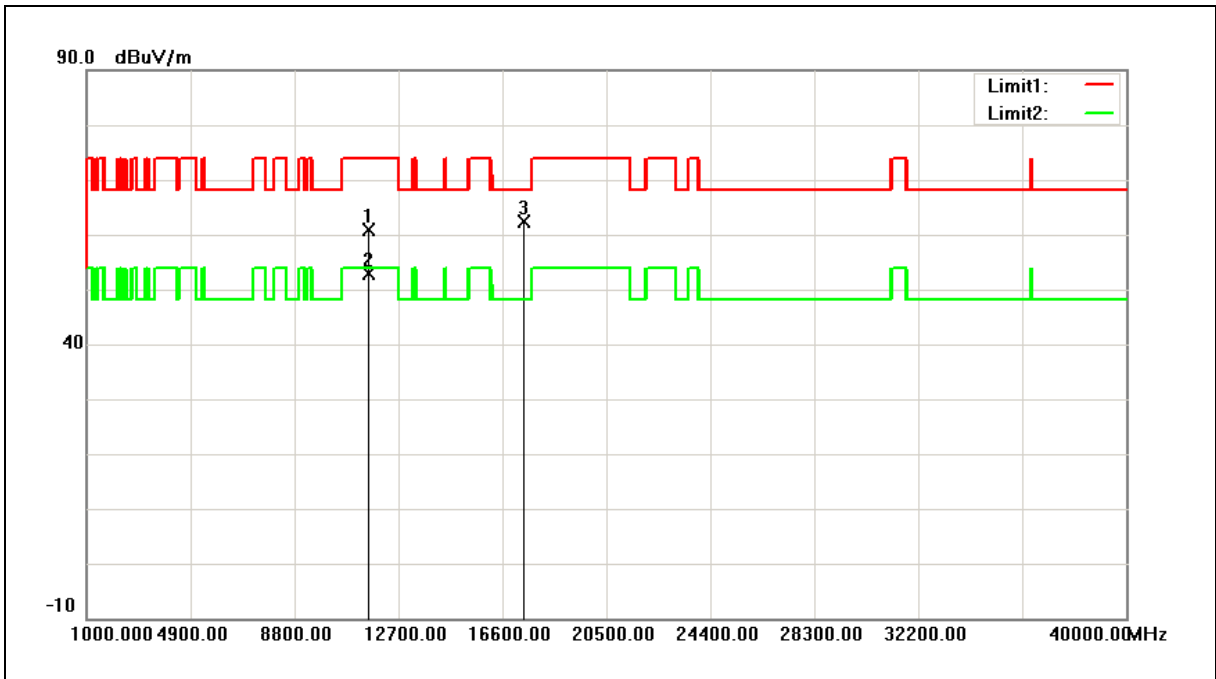
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	54.05	6.86	60.91	74.00	-13.09	peak
2	11590.000	45.99	6.86	52.85	54.00	-1.15	AVG
3	17385.000	50.76	11.68	62.44	68.20	-5.76	peak

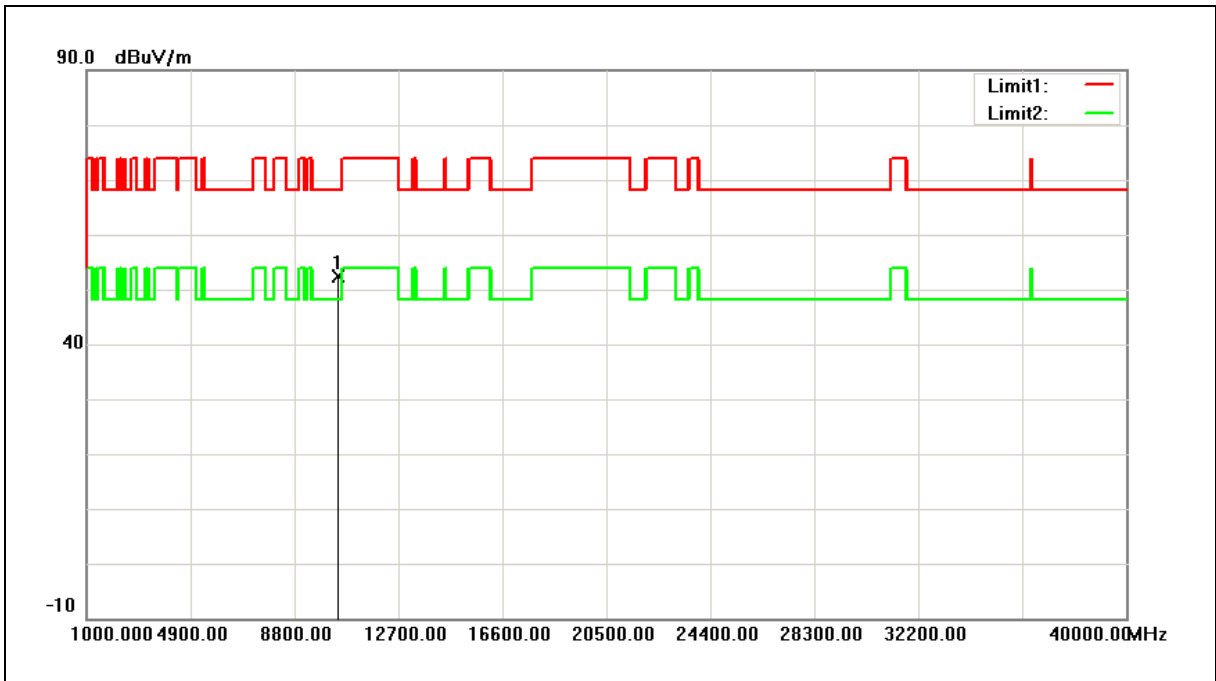
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	46.96	5.49	52.45	68.20	-15.75	peak

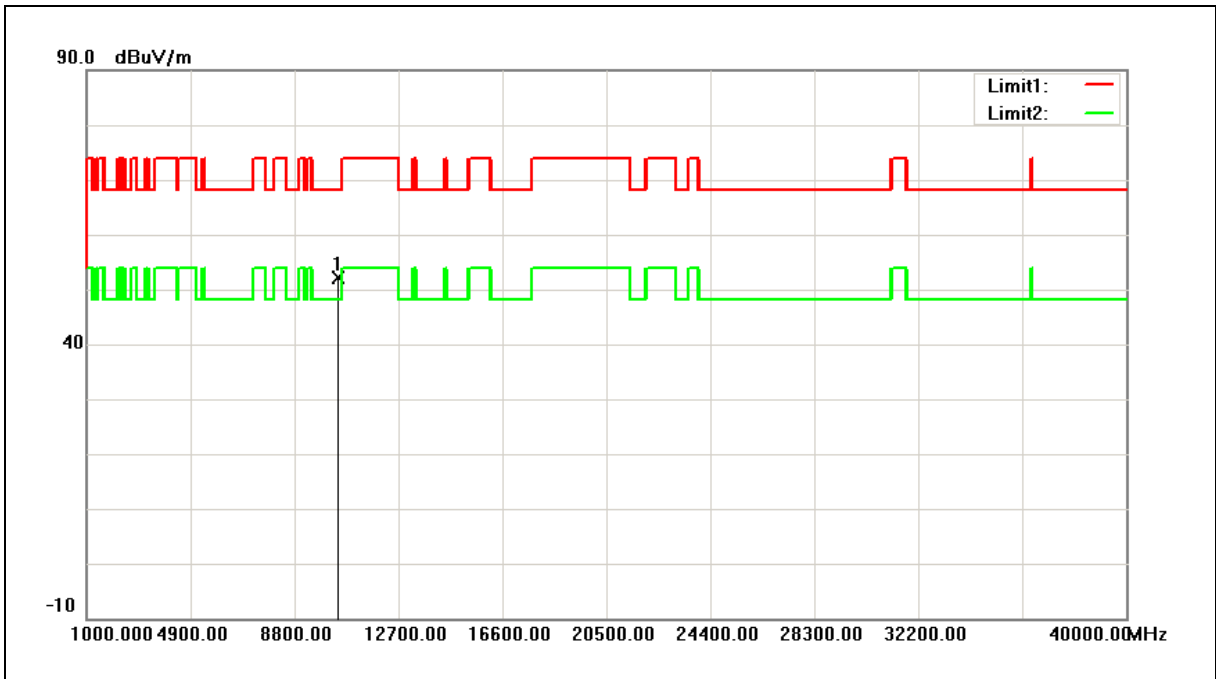
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10420.000	46.73	5.49	52.22	68.20	-15.98	peak

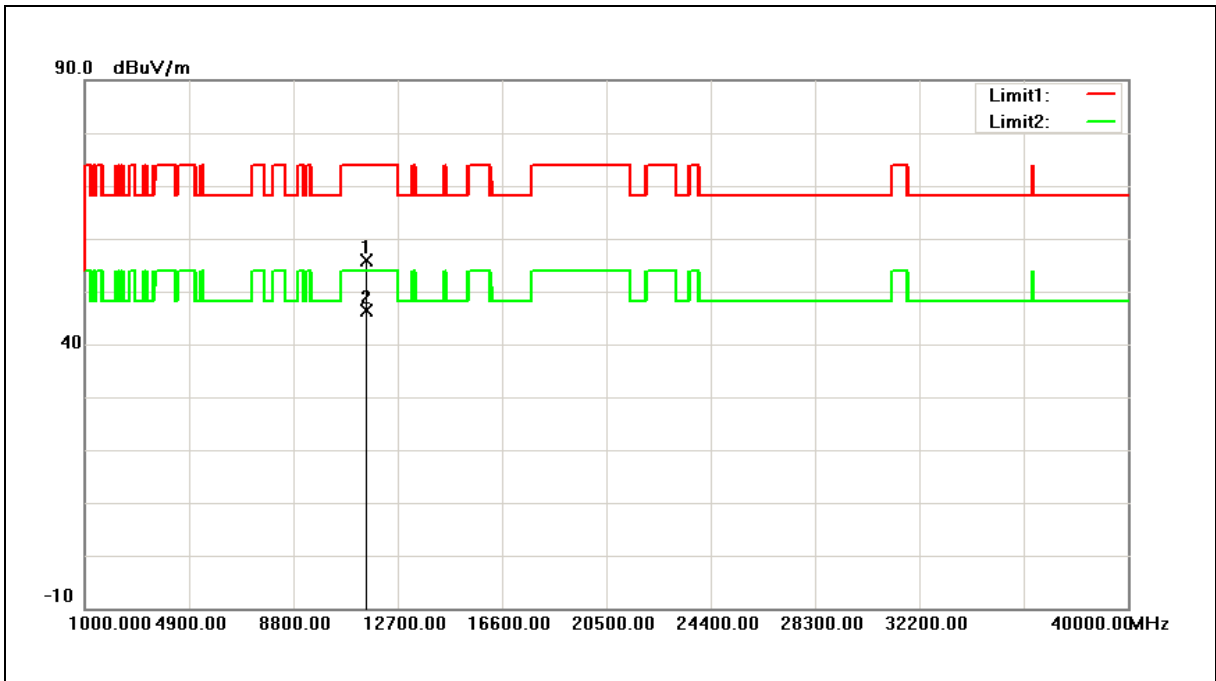
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5775MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		

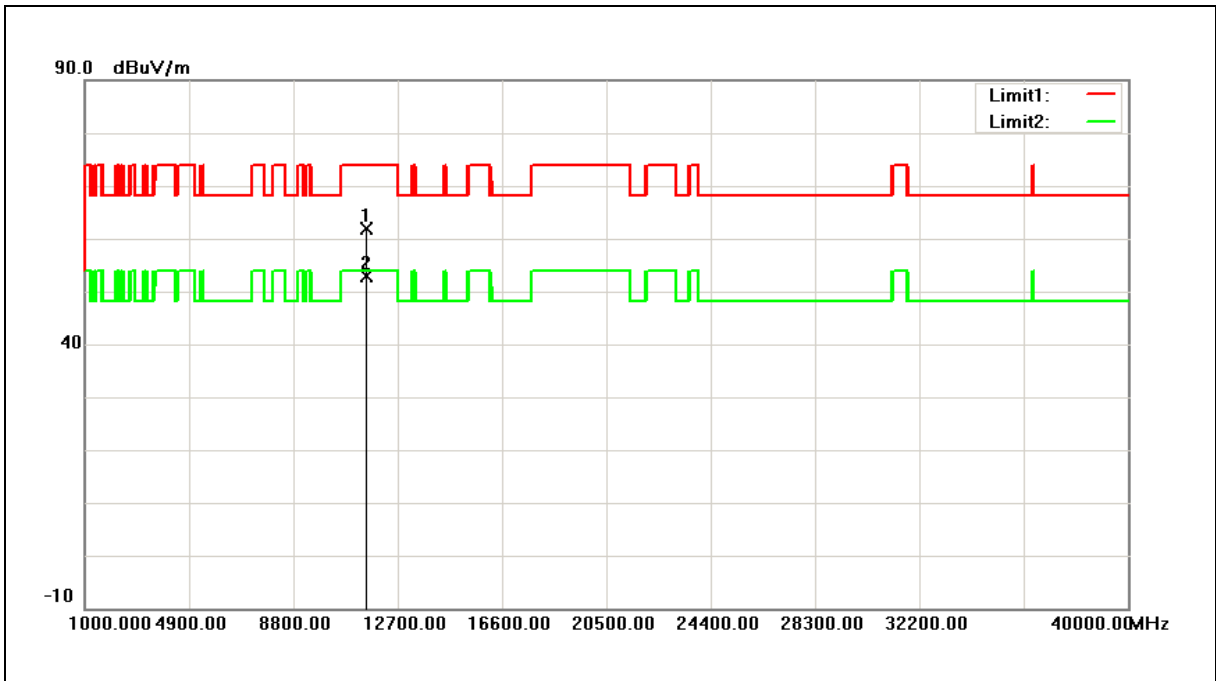


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	49.62	6.29	55.91	74.00	-18.09	peak
2	11550.000	40.07	6.29	46.36	54.00	-7.64	AVG

- Note: 1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).
 2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).
 3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	5775MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	55.48	6.29	61.77	74.00	-12.23	peak
2	11550.000	46.63	6.29	52.92	54.00	-1.08	AVG

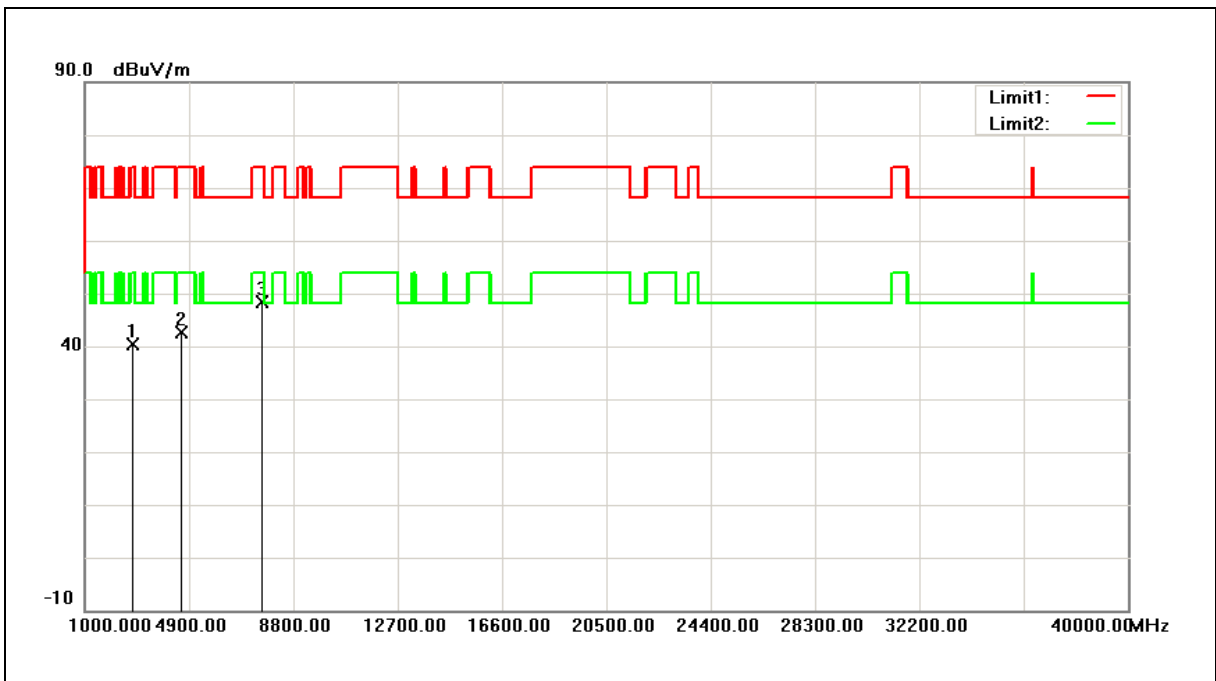
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Transmitter Unwanted Emissions	Power:	AC 120V/60Hz
Test Mode:	Simultaneous Transmitting (DTS+NII)	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Ant.Polar.:	Horizontal	Date:	04/25/2017



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	53.28	-12.85	40.43	74.00	-33.57	peak
2	4621.000	50.27	-7.71	42.56	74.00	-31.44	peak
3	7613.000	47.56	0.81	48.37	74.00	-25.63	peak

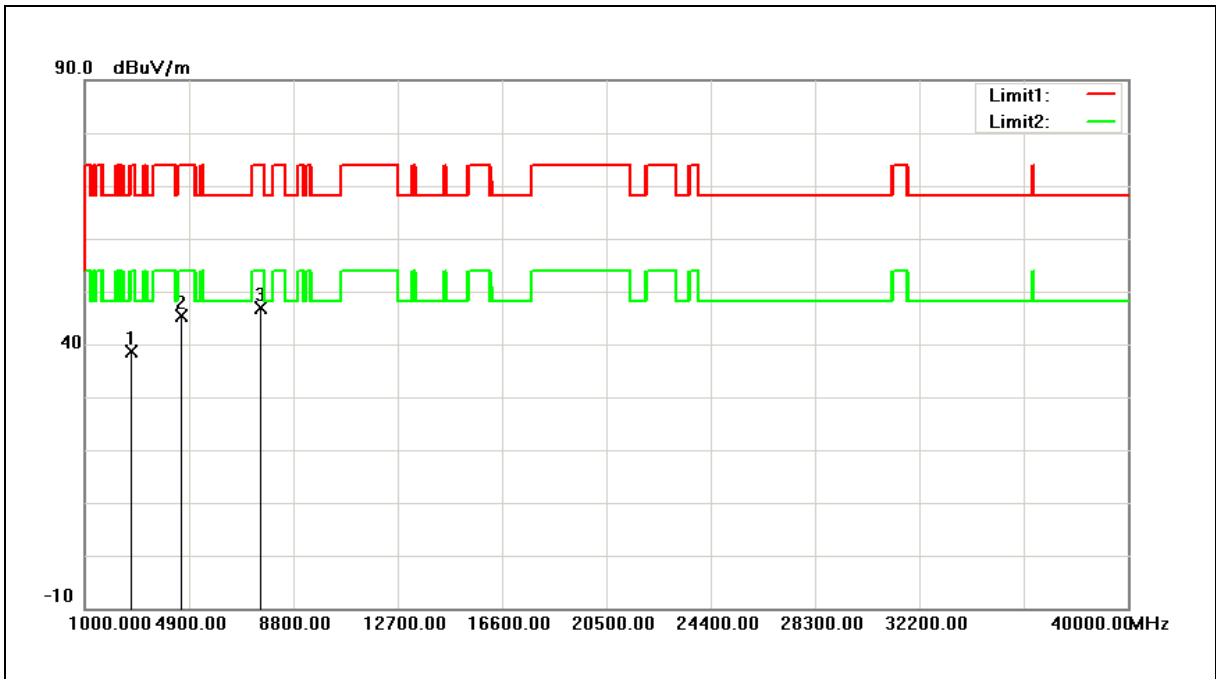
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Transmitter Unwanted Emissions	Power:	AC 120V/60Hz
Test Mode:	Simultaneous Transmitting (DTS+NII)	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Ant.Polar.:	Vertical	Date:	04/25/2017



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2751.000	51.48	-12.93	38.55	74.00	-35.45	peak
2	4587.000	53.29	-7.82	45.47	74.00	-28.53	peak
3	7562.000	46.10	0.68	46.78	74.00	-27.22	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

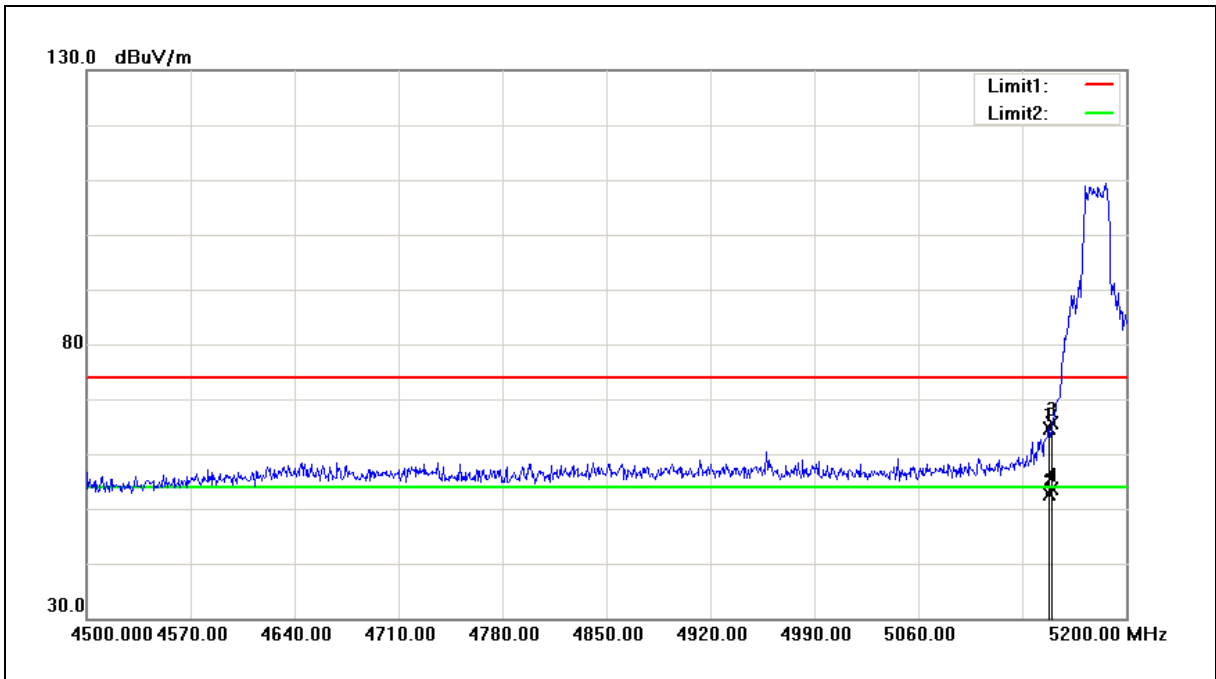
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Band Edge

Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Horizontal		

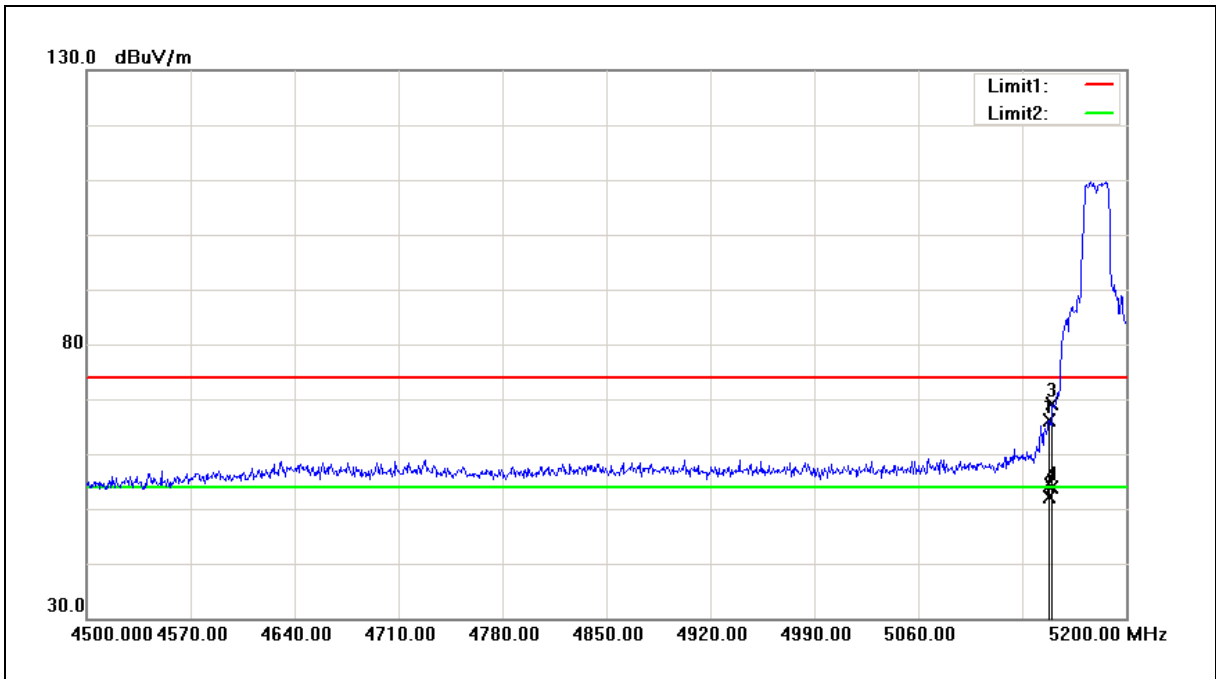


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.200	56.50	8.25	64.75	74.00	-9.25	peak
2	5148.200	44.43	8.25	52.68	54.00	-1.32	AVG
3	5150.000	57.44	8.25	65.69	74.00	-8.31	peak
4	5150.000	45.26	8.25	53.51	54.00	-0.49	AVG

- Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).
- 2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).
3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.200	57.98	8.25	66.23	74.00	-7.77	peak
2	5148.200	43.92	8.25	52.17	54.00	-1.83	AVG
3	5150.000	60.98	8.25	69.23	74.00	-4.77	peak
4	5150.000	45.55	8.25	53.80	54.00	-0.20	AVG

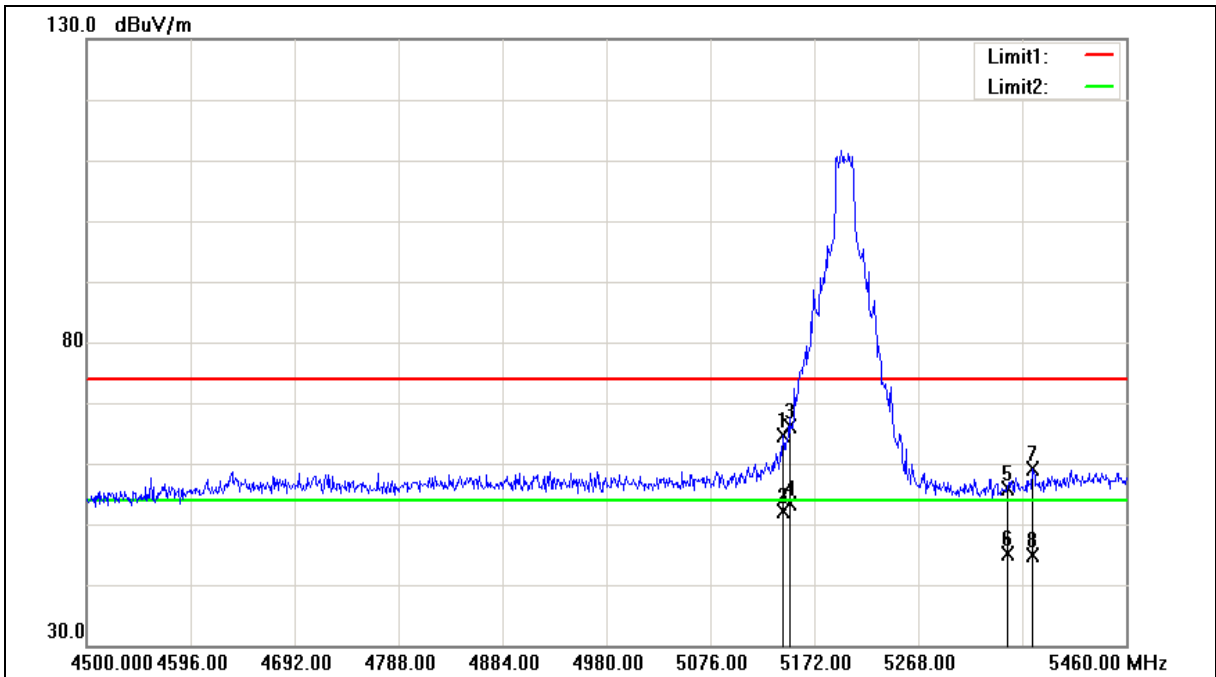
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5143.200	56.34	8.24	64.58	74.00	-9.42	peak
2	5143.200	43.81	8.24	52.05	54.00	-1.95	AVG
3	5150.000	57.90	8.25	66.15	74.00	-7.85	peak
4	5150.000	45.13	8.25	53.38	54.00	-0.62	AVG
5	5350.000	47.40	8.41	55.81	74.00	-18.19	peak
6	5350.000	36.70	8.41	45.11	54.00	-8.89	AVG
7	5373.600	50.74	8.43	59.17	74.00	-14.83	peak
8	5373.600	36.36	8.43	44.79	54.00	-9.21	AVG

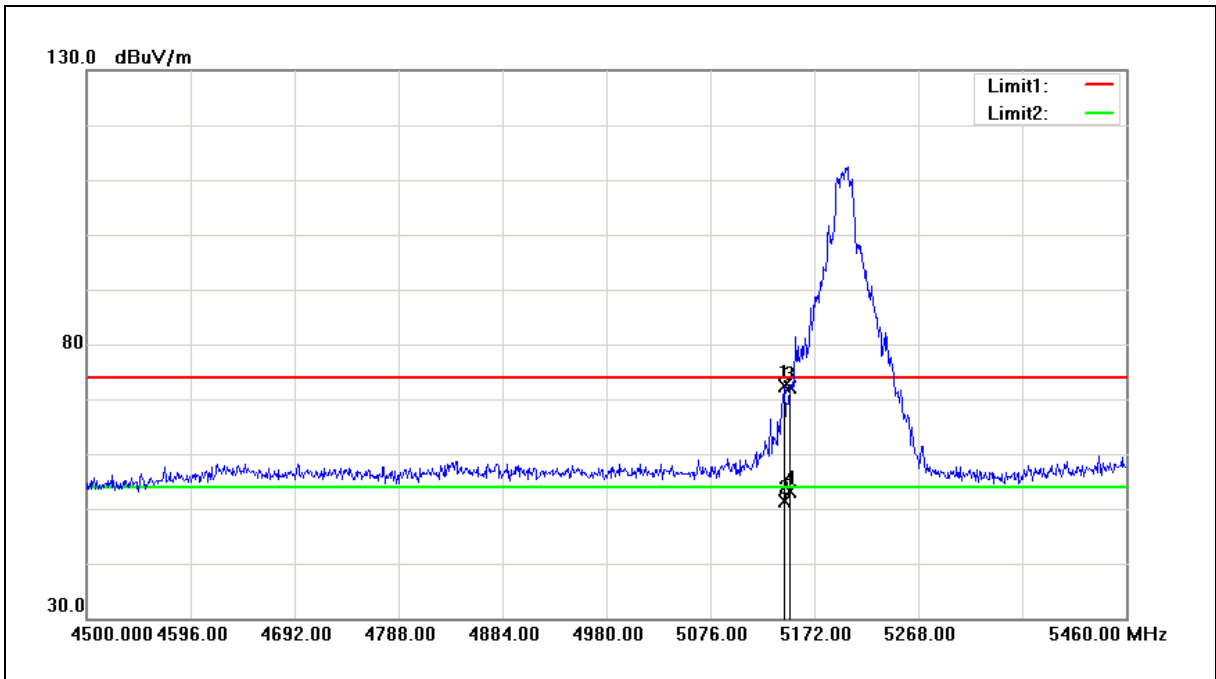
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.160	64.08	8.24	72.32	74.00	-1.68	peak
2	5144.160	43.13	8.24	51.37	54.00	-2.63	AVG
3	5150.000	63.95	8.25	72.20	74.00	-1.80	peak
4	5150.000	44.86	8.25	53.11	54.00	-0.89	AVG

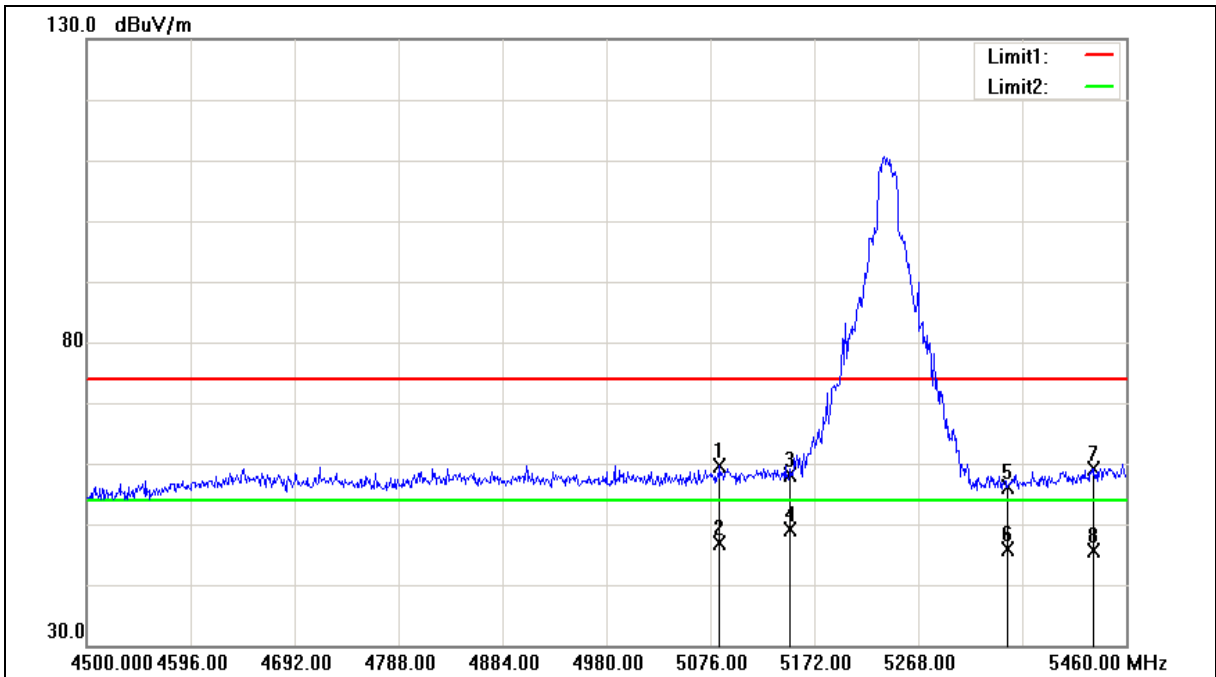
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5084.640	51.52	8.18	59.70	74.00	-14.30	peak
2	5084.640	38.73	8.18	46.91	54.00	-7.09	AVG
3	5150.000	49.91	8.25	58.16	74.00	-15.84	peak
4	5150.000	40.81	8.25	49.06	54.00	-4.94	AVG
5	5350.000	47.78	8.41	56.19	74.00	-17.81	peak
6	5350.000	37.42	8.41	45.83	54.00	-8.17	AVG
7	5430.240	50.76	8.49	59.25	74.00	-14.75	peak
8	5430.240	37.03	8.49	45.52	54.00	-8.48	AVG

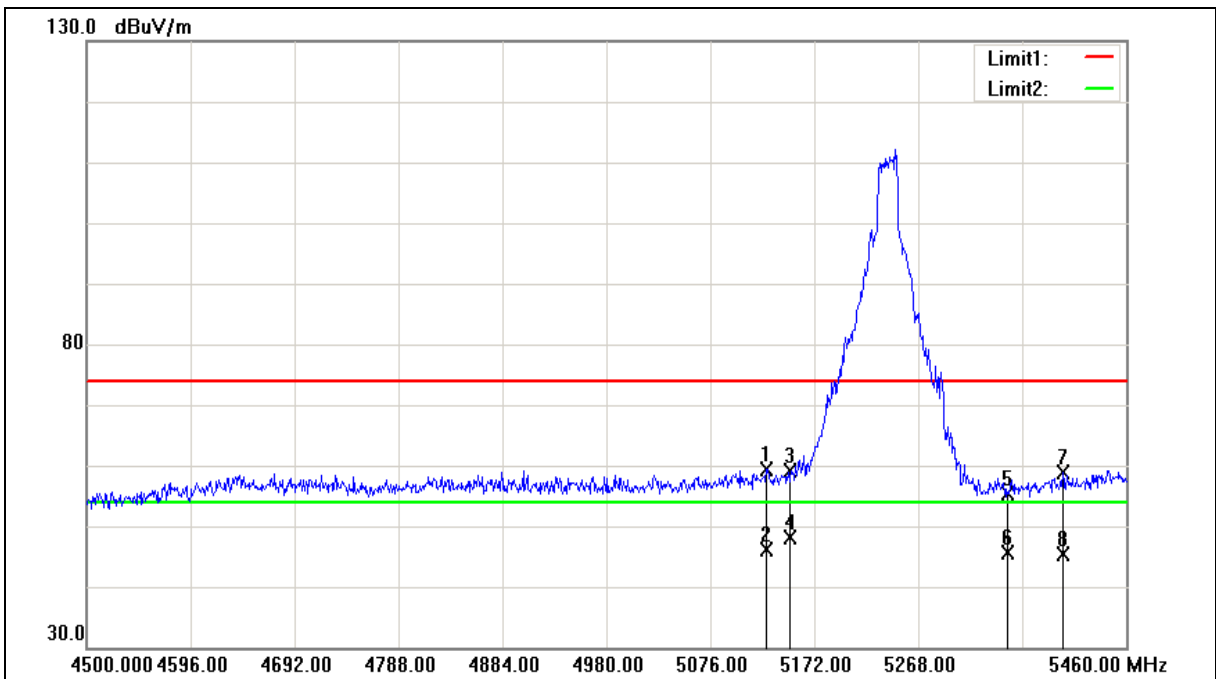
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/24/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5127.840	51.11	8.23	59.34	74.00	-14.66	peak
2	5127.840	37.99	8.23	46.22	54.00	-7.78	AVG
3	5150.000	51.00	8.25	59.25	74.00	-14.75	peak
4	5150.000	40.00	8.25	48.25	54.00	-5.75	AVG
5	5350.000	46.85	8.41	55.26	74.00	-18.74	peak
6	5350.000	37.20	8.41	45.61	54.00	-8.39	AVG
7	5401.440	50.42	8.47	58.89	74.00	-15.11	peak
8	5401.440	36.89	8.47	45.36	54.00	-8.64	AVG

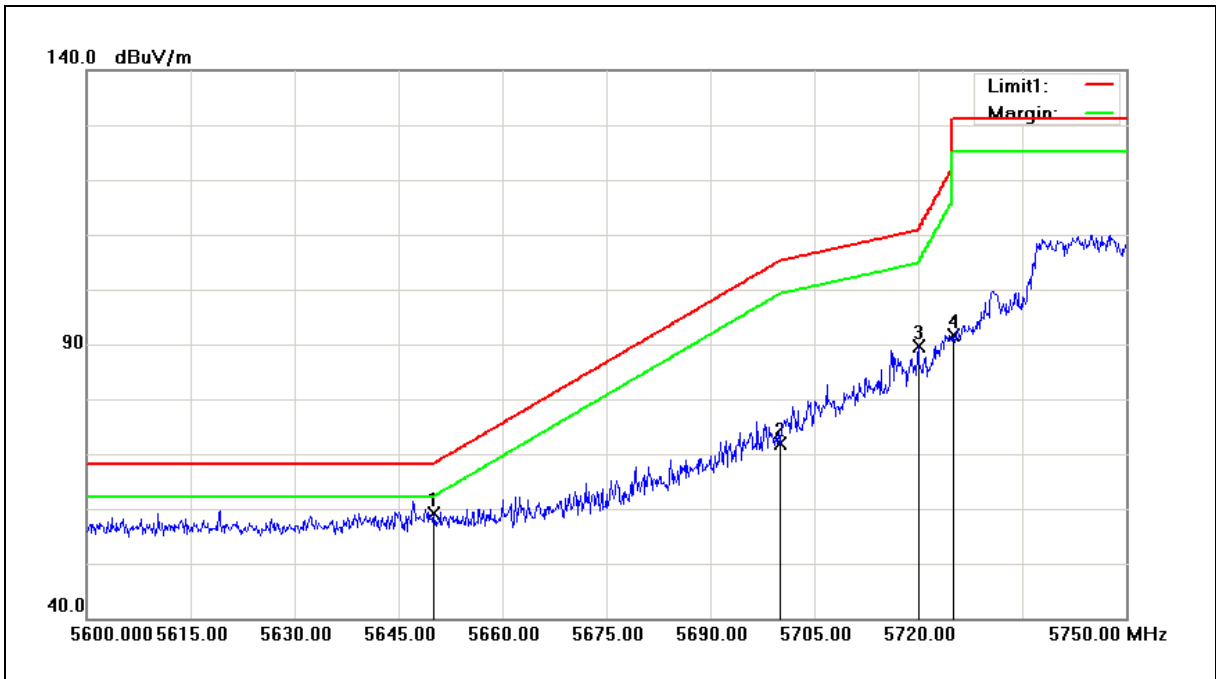
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	50.30	8.93	59.23	68.20	-8.97	peak
2	5700.000	62.95	9.05	72.00	105.20	-33.20	peak
3	5720.000	80.47	9.09	89.56	110.80	-21.24	peak
4	5725.000	82.41	9.11	91.52	122.20	-30.68	peak

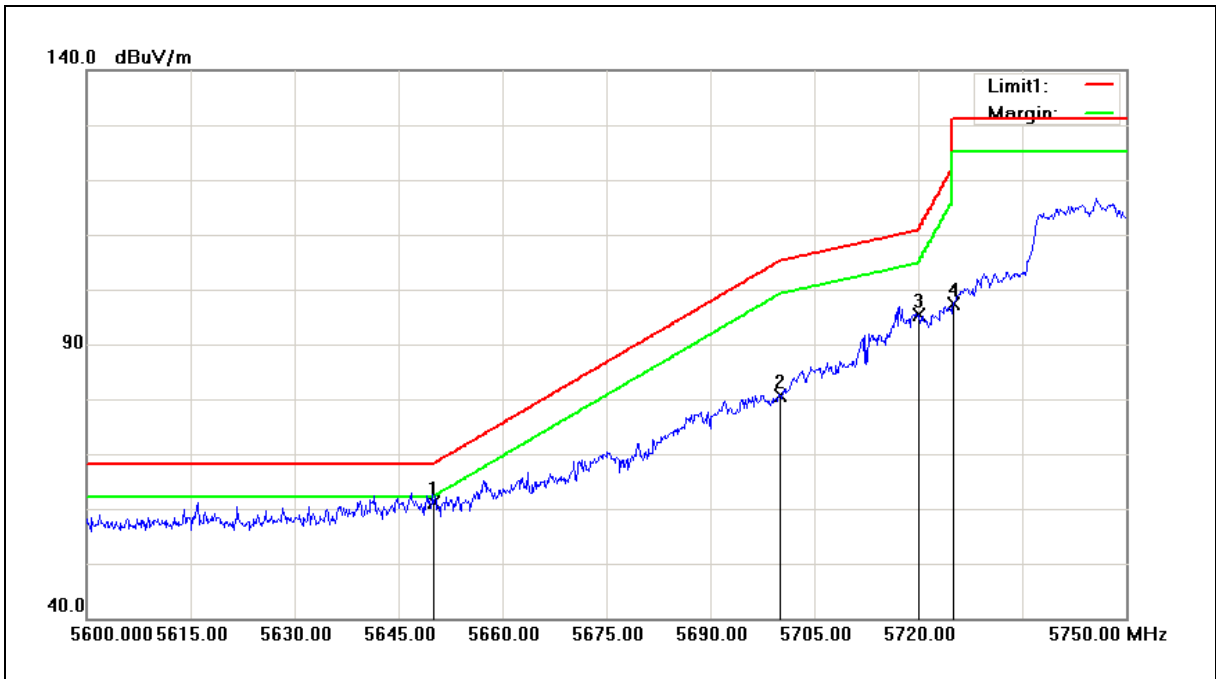
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	52.27	8.93	61.20	68.20	-7.00	peak
2	5700.000	71.62	9.05	80.67	105.20	-24.53	peak
3	5720.000	86.23	9.09	95.32	110.80	-15.48	peak
4	5725.000	88.23	9.11	97.34	122.20	-24.86	peak

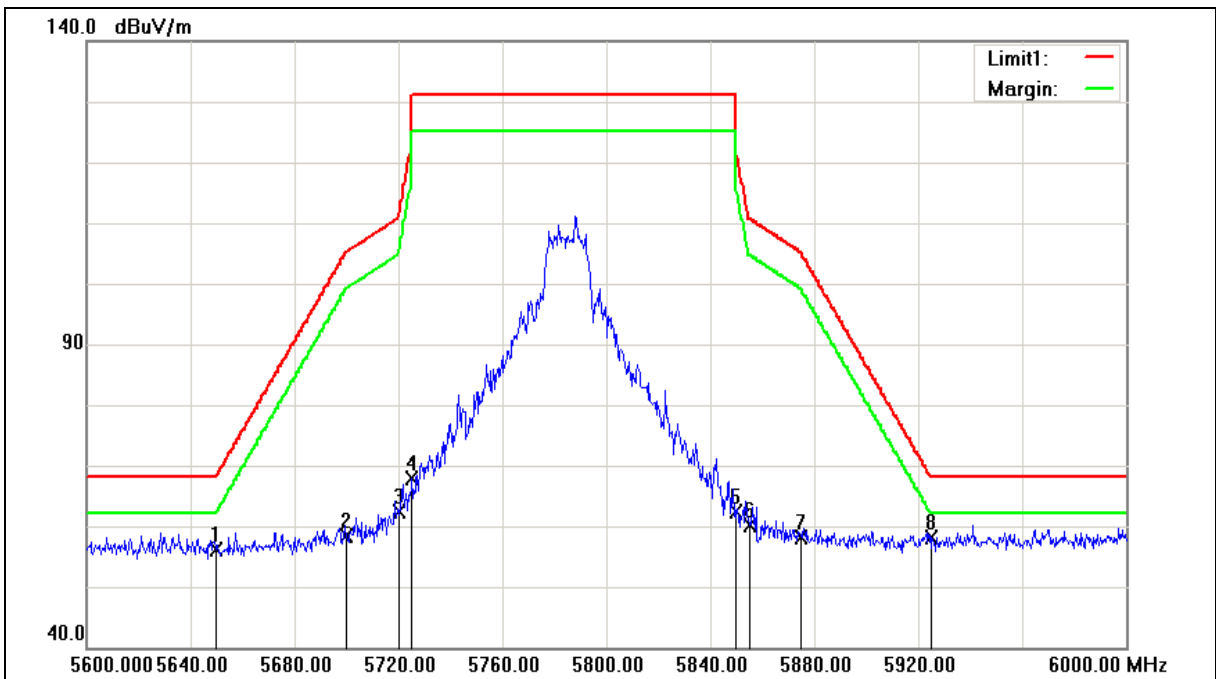
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	47.22	8.93	56.15	68.20	-12.05	peak
2	5700.000	49.39	9.05	58.44	105.20	-46.76	peak
3	5720.000	53.41	9.09	62.50	110.80	-48.30	peak
4	5725.000	58.67	9.11	67.78	122.20	-54.42	peak
5	5850.000	53.00	9.41	62.41	122.20	-59.79	peak
6	5855.000	50.79	9.43	60.22	110.80	-50.58	peak
7	5875.000	48.59	9.48	58.07	105.20	-47.13	peak
8	5925.000	48.59	9.61	58.20	68.20	-10.00	peak

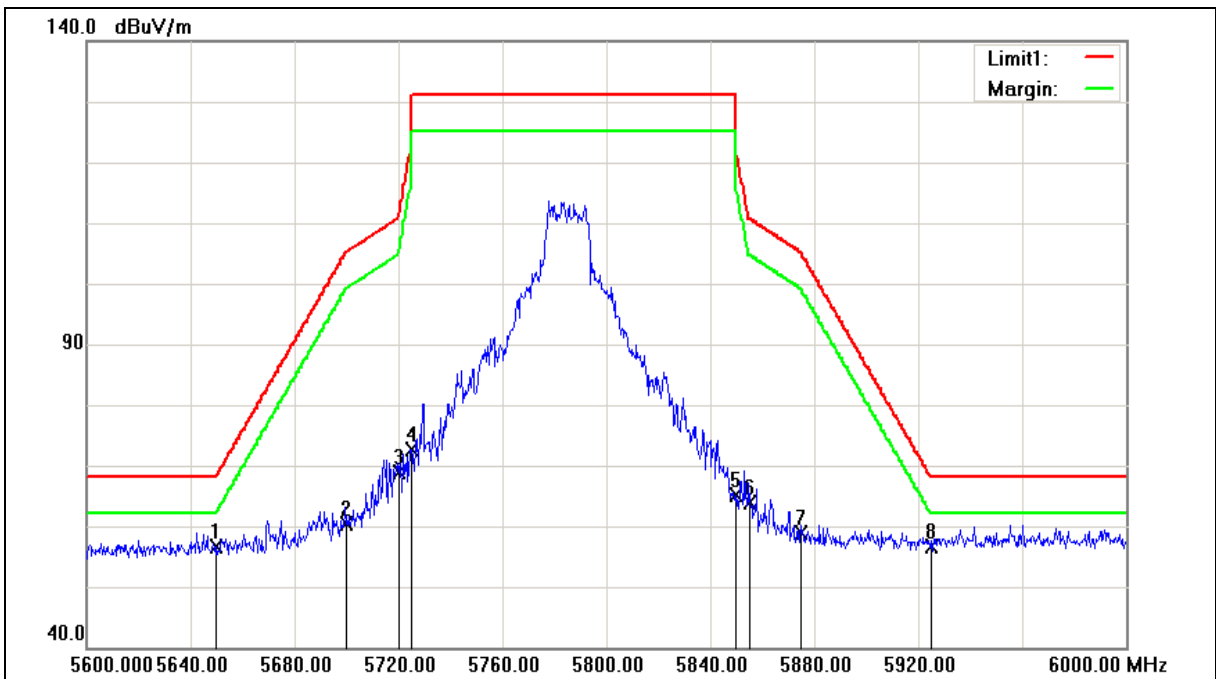
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	47.64	8.93	56.57	68.20	-11.63	peak
2	5700.000	51.32	9.05	60.37	105.20	-44.83	peak
3	5720.000	59.87	9.09	68.96	110.80	-41.84	peak
4	5725.000	63.46	9.11	72.57	122.20	-49.63	peak
5	5850.000	55.71	9.41	65.12	122.20	-57.08	peak
6	5855.000	54.38	9.43	63.81	110.80	-46.99	peak
7	5875.000	49.46	9.48	58.94	105.20	-46.26	peak
8	5925.000	46.95	9.61	56.56	68.20	-11.64	peak

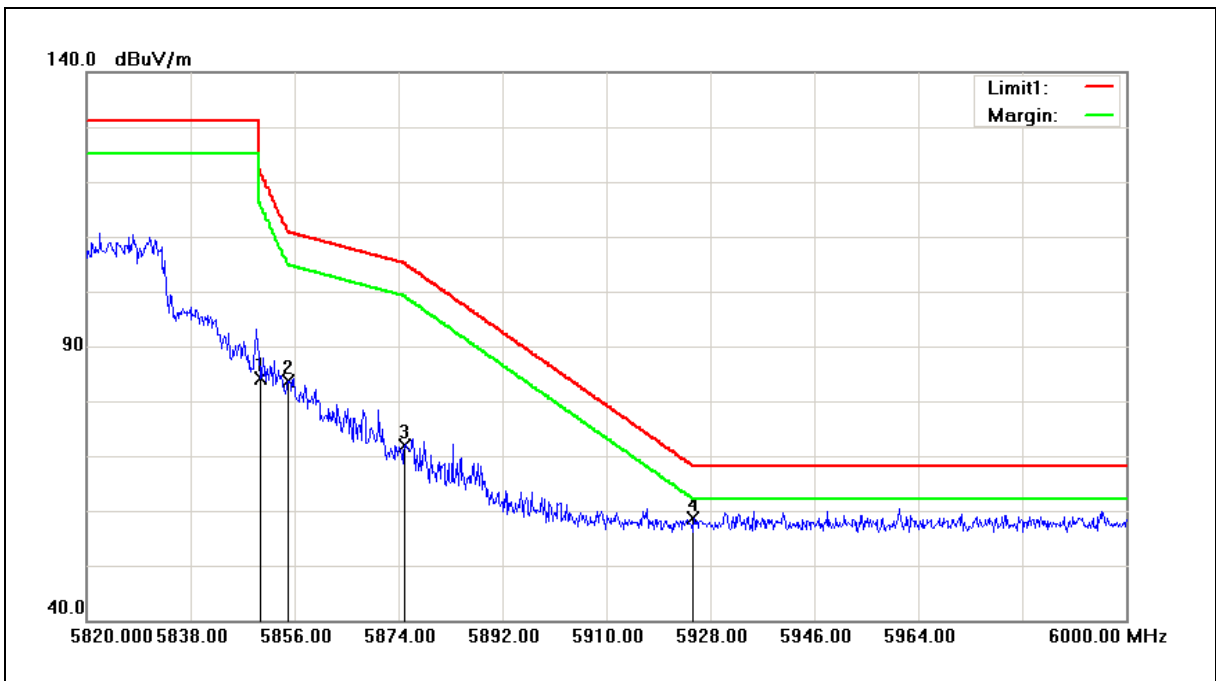
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	74.83	9.41	84.24	122.20	-37.96	peak
2	5855.000	74.24	9.43	83.67	110.80	-27.13	peak
3	5875.000	62.31	9.48	71.79	105.20	-33.41	peak
4	5925.000	48.95	9.61	58.56	68.20	-9.64	peak

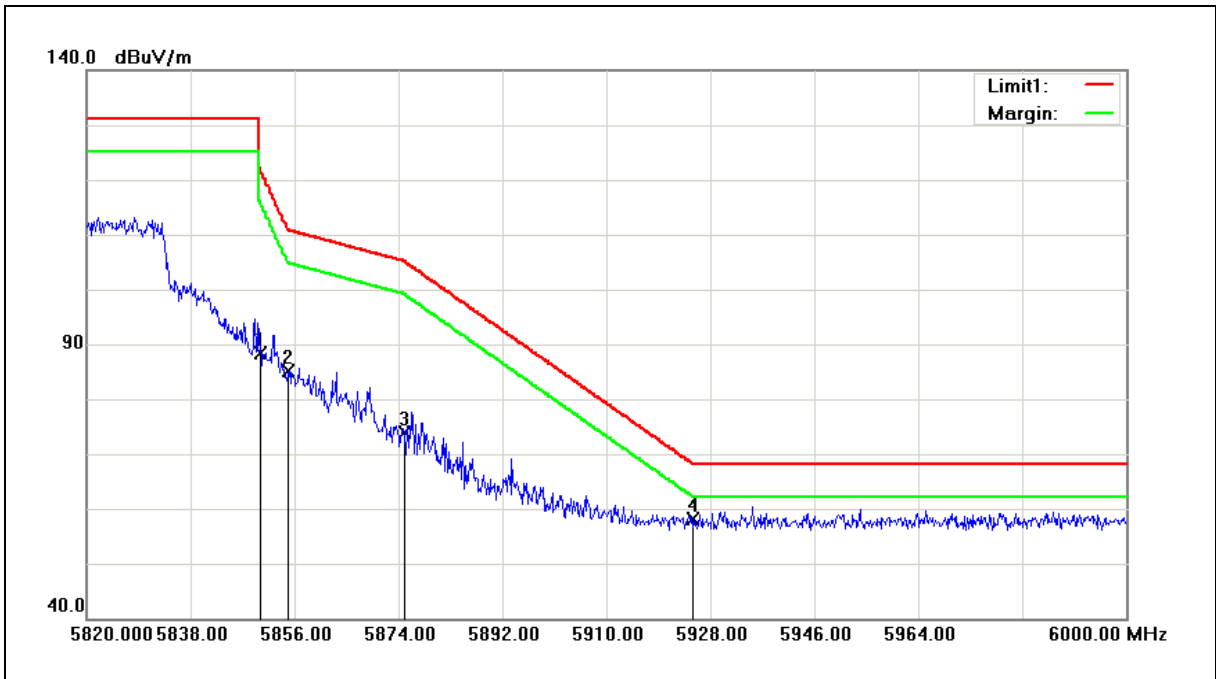
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	79.09	9.41	88.50	122.20	-33.70	peak
2	5855.000	75.58	9.43	85.01	110.80	-25.79	peak
3	5875.000	64.43	9.48	73.91	105.20	-31.29	peak
4	5925.000	48.63	9.61	58.24	68.20	-9.96	peak

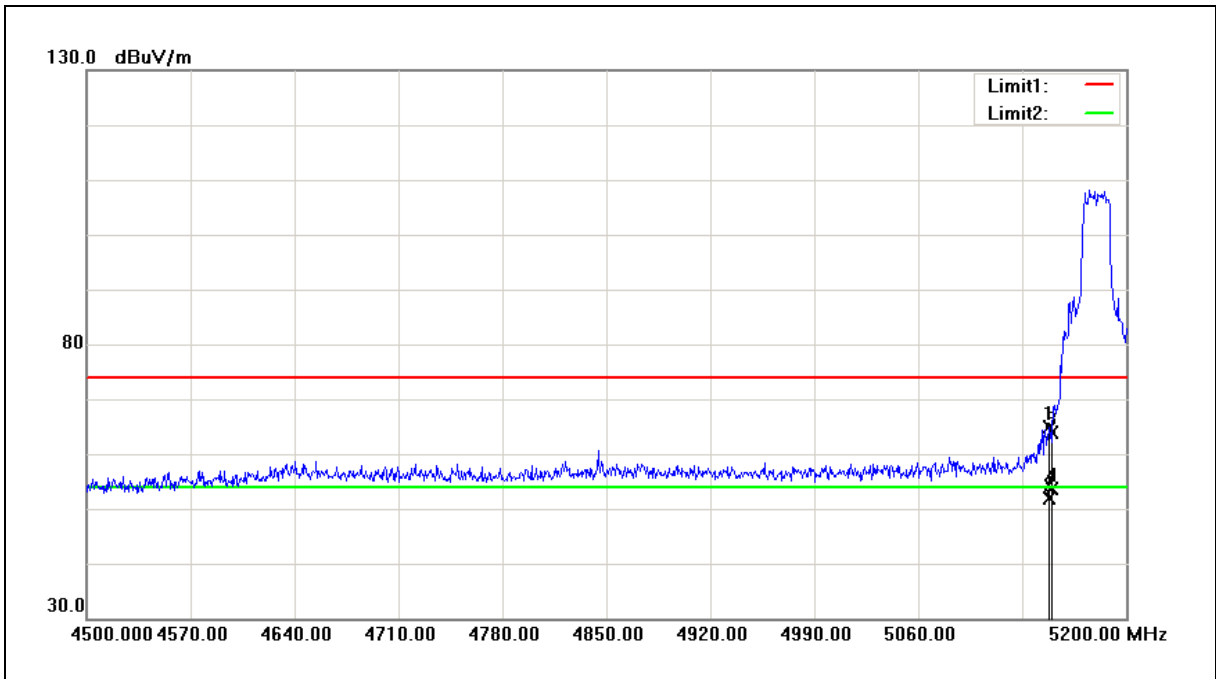
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.200	56.71	8.25	64.96	74.00	-9.04	peak
2	5148.200	43.56	8.25	51.81	54.00	-2.19	AVG
3	5150.000	55.59	8.25	63.84	74.00	-10.16	peak
4	5150.000	45.31	8.25	53.56	54.00	-0.44	AVG

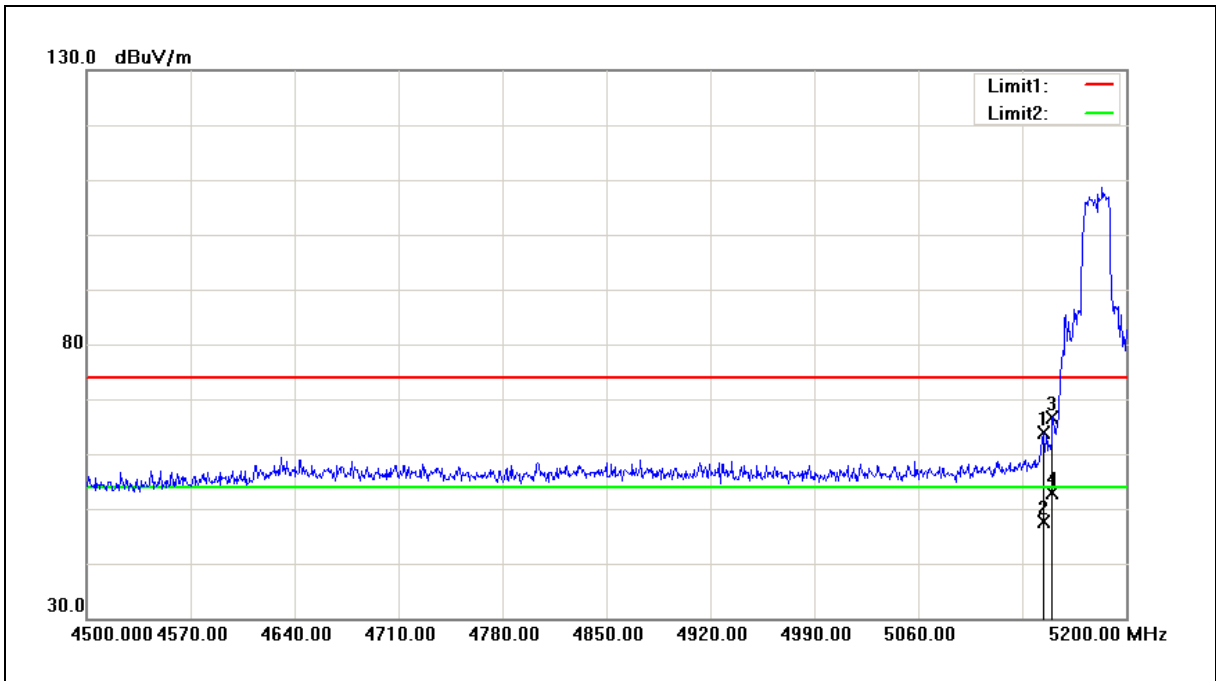
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5180MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.700	55.74	8.24	63.98	74.00	-10.02	peak
2	5144.700	39.31	8.24	47.55	54.00	-6.45	AVG
3	5150.000	58.28	8.25	66.53	74.00	-7.47	peak
4	5150.000	44.54	8.25	52.79	54.00	-1.21	AVG

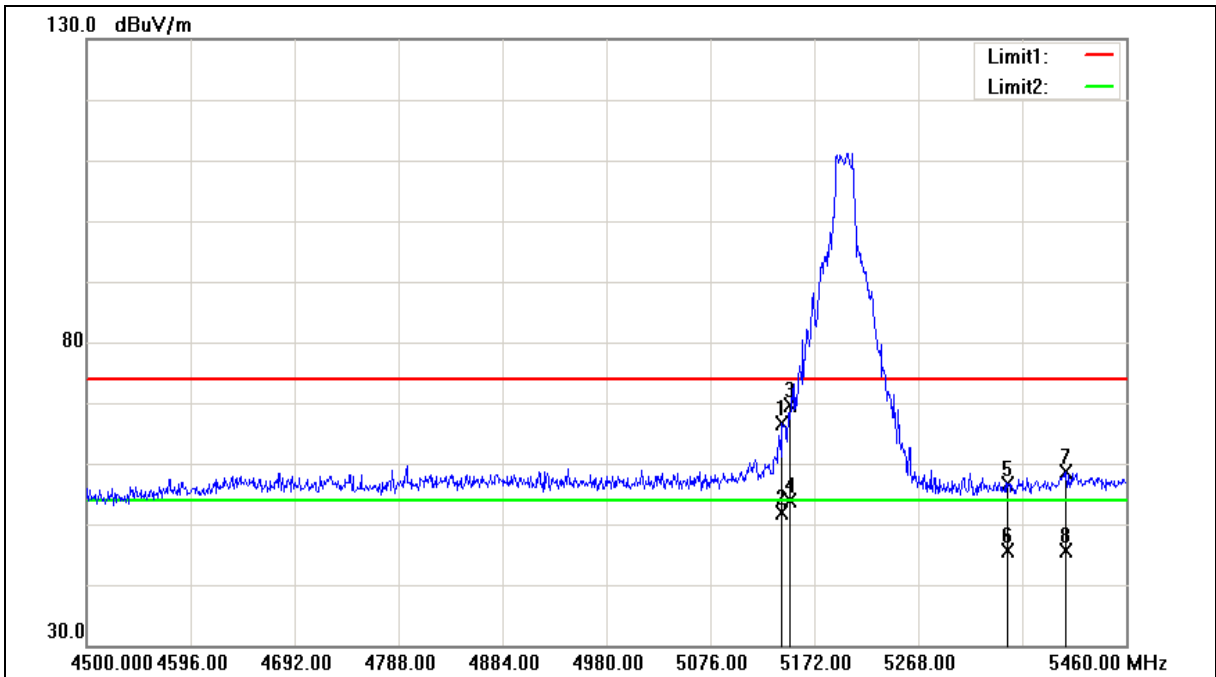
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5142.240	58.28	8.24	66.52	74.00	-7.48	peak
2	5142.240	43.73	8.24	51.97	54.00	-2.03	AVG
3	5150.000	61.31	8.25	69.56	74.00	-4.44	peak
4	5150.000	45.60	8.25	53.85	54.00	-0.15	AVG
5	5350.000	48.28	8.41	56.69	74.00	-17.31	peak
6	5350.000	37.14	8.41	45.55	54.00	-8.45	AVG
7	5404.320	50.06	8.47	58.53	74.00	-15.47	peak
8	5404.320	37.21	8.47	45.68	54.00	-8.32	AVG

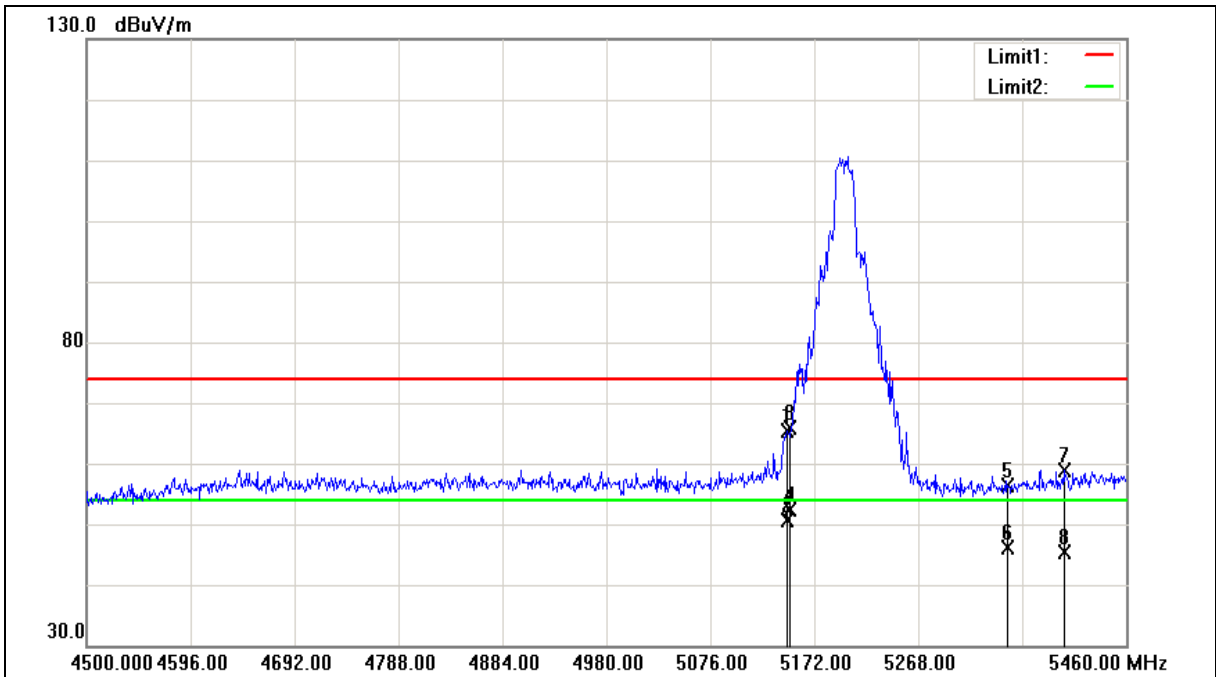
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5200MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.040	57.03	8.24	65.27	74.00	-8.73	peak
2	5147.040	42.32	8.24	50.56	54.00	-3.44	AVG
3	5150.000	57.66	8.25	65.91	74.00	-8.09	peak
4	5150.000	44.04	8.25	52.29	54.00	-1.71	AVG
5	5350.000	47.88	8.41	56.29	74.00	-17.71	peak
6	5350.000	37.61	8.41	46.02	54.00	-7.98	AVG
7	5402.400	50.38	8.47	58.85	74.00	-15.15	peak
8	5402.400	36.89	8.47	45.36	54.00	-8.64	AVG

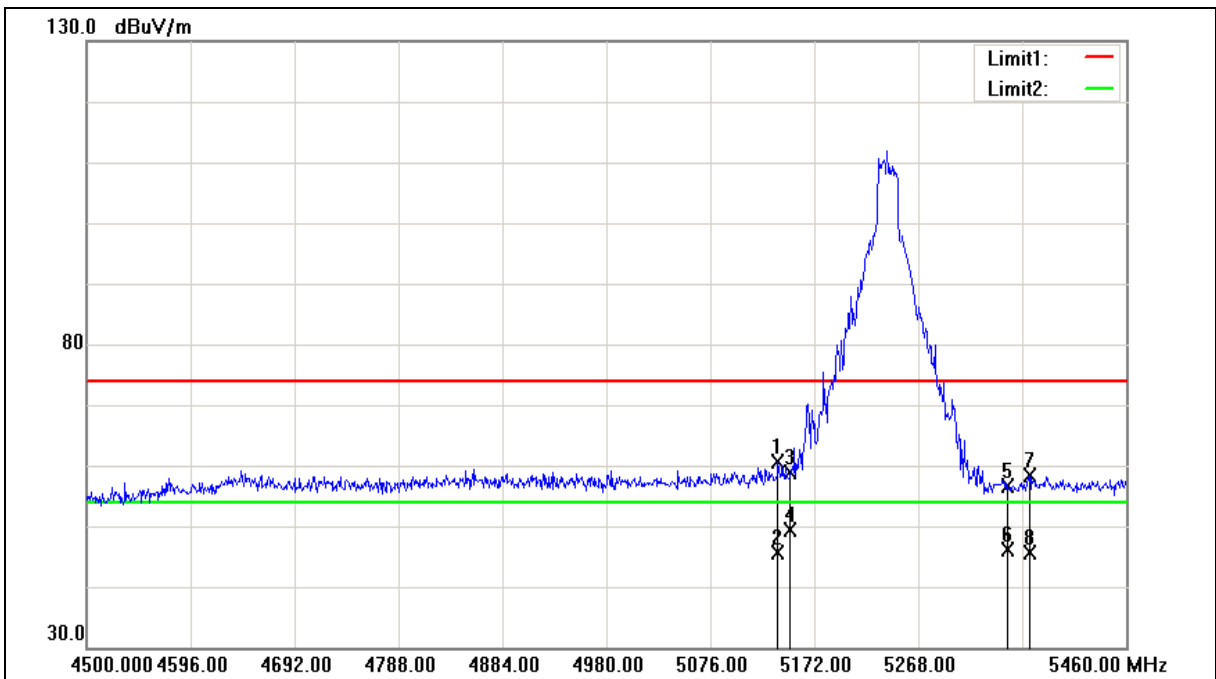
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5138.400	52.37	8.24	60.61	74.00	-13.39	peak
2	5138.400	37.48	8.24	45.72	54.00	-8.28	AVG
3	5150.000	50.55	8.25	58.80	74.00	-15.20	peak
4	5150.000	41.17	8.25	49.42	54.00	-4.58	AVG
5	5350.000	48.17	8.41	56.58	74.00	-17.42	peak
6	5350.000	37.80	8.41	46.21	54.00	-7.79	AVG
7	5370.720	50.04	8.43	58.47	74.00	-15.53	peak
8	5370.720	37.23	8.43	45.66	54.00	-8.34	AVG

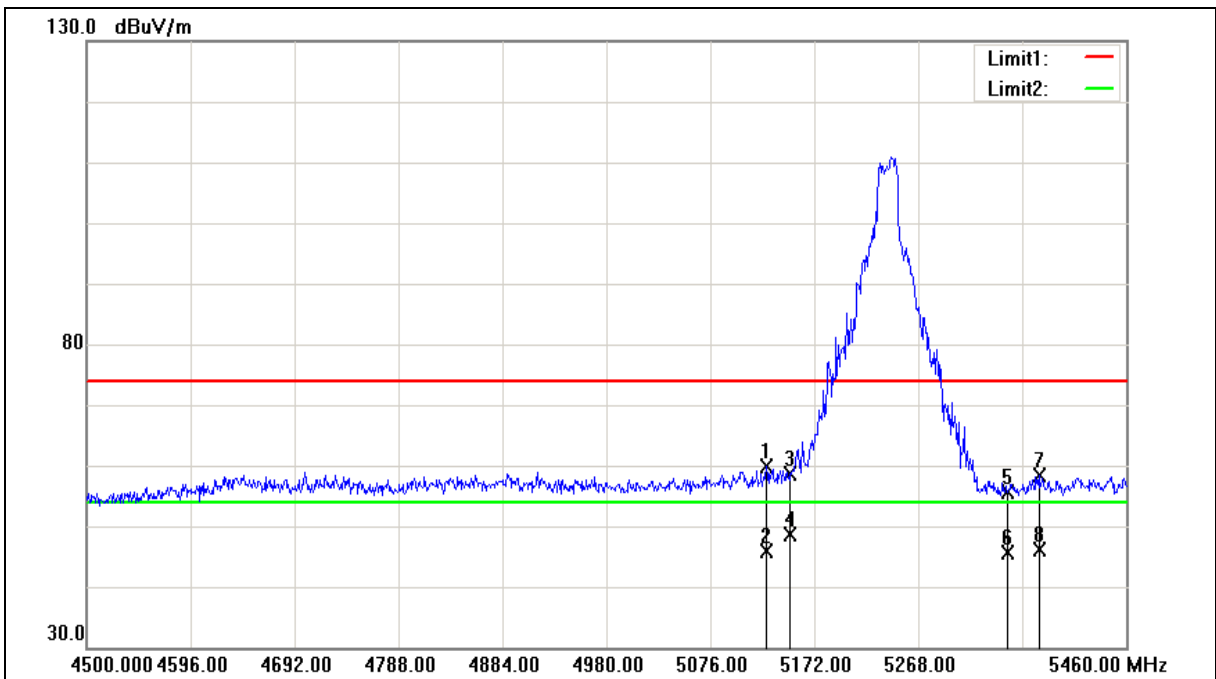
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5240MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/24/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5127.840	51.66	8.23	59.89	74.00	-14.11	peak
2	5127.840	37.66	8.23	45.89	54.00	-8.11	AVG
3	5150.000	50.30	8.25	58.55	74.00	-15.45	peak
4	5150.000	40.48	8.25	48.73	54.00	-5.27	AVG
5	5350.000	47.18	8.41	55.59	74.00	-18.41	peak
6	5350.000	37.12	8.41	45.53	54.00	-8.47	AVG
7	5379.360	49.90	8.45	58.35	74.00	-15.65	peak
8	5379.360	37.67	8.45	46.12	54.00	-7.88	AVG

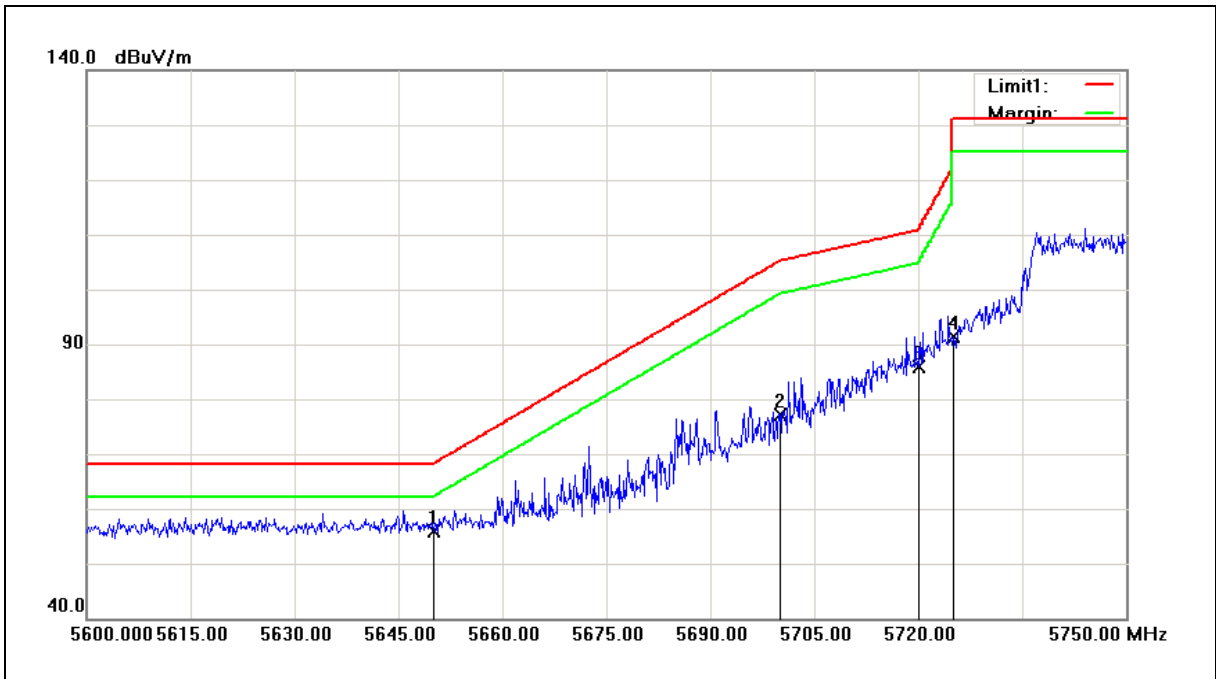
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	46.93	8.93	55.86	68.20	-12.34	peak
2	5700.000	67.99	9.05	77.04	105.20	-28.16	peak
3	5720.000	76.71	9.09	85.80	110.80	-25.00	peak
4	5725.000	82.22	9.11	91.33	122.20	-30.87	peak

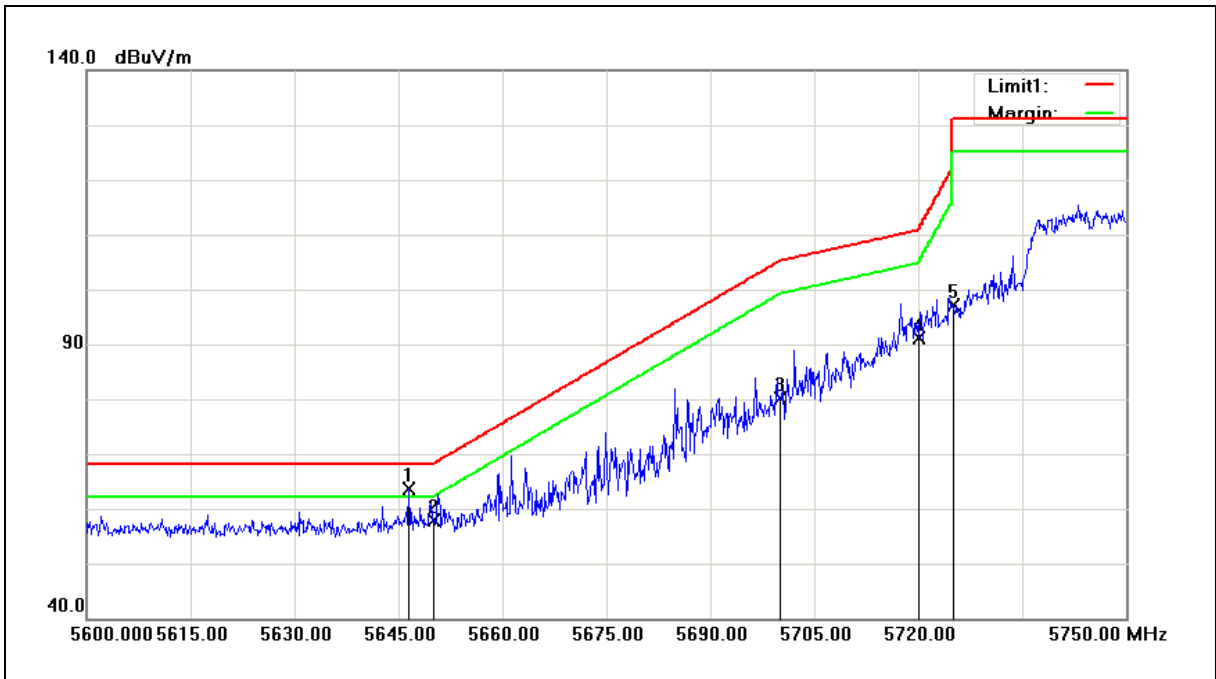
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5745MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5646.500	54.66	8.91	63.57	68.20	-4.63	peak
2	5650.000	49.00	8.93	57.93	68.20	-10.27	peak
3	5700.000	71.17	9.05	80.22	105.20	-24.98	peak
4	5720.000	82.11	9.09	91.20	110.80	-19.60	peak
5	5725.000	88.06	9.11	97.17	122.20	-25.03	peak

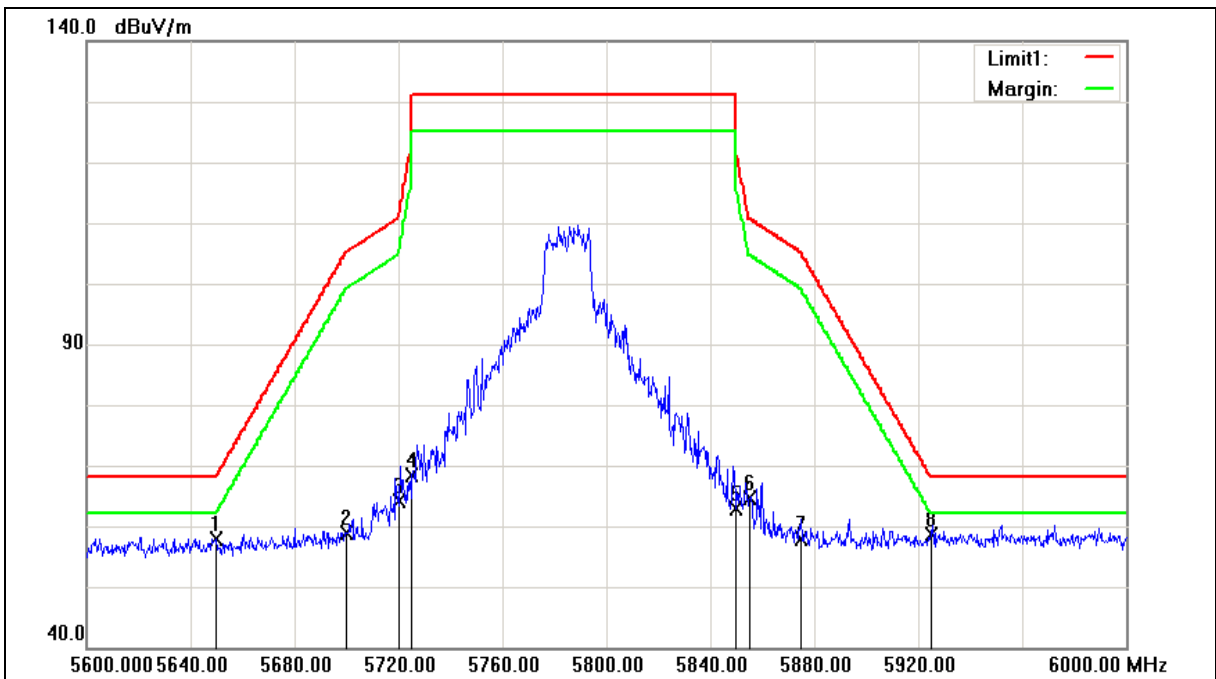
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	49.04	8.93	57.97	68.20	-10.23	peak
2	5700.000	49.95	9.05	59.00	105.20	-46.20	peak
3	5720.000	55.06	9.09	64.15	110.80	-46.65	peak
4	5725.000	59.25	9.11	68.36	122.20	-53.84	peak
5	5850.000	53.40	9.41	62.81	122.20	-59.39	peak
6	5855.000	55.21	9.43	64.64	110.80	-46.16	peak
7	5875.000	48.46	9.48	57.94	105.20	-47.26	peak
8	5925.000	48.92	9.61	58.53	68.20	-9.67	peak

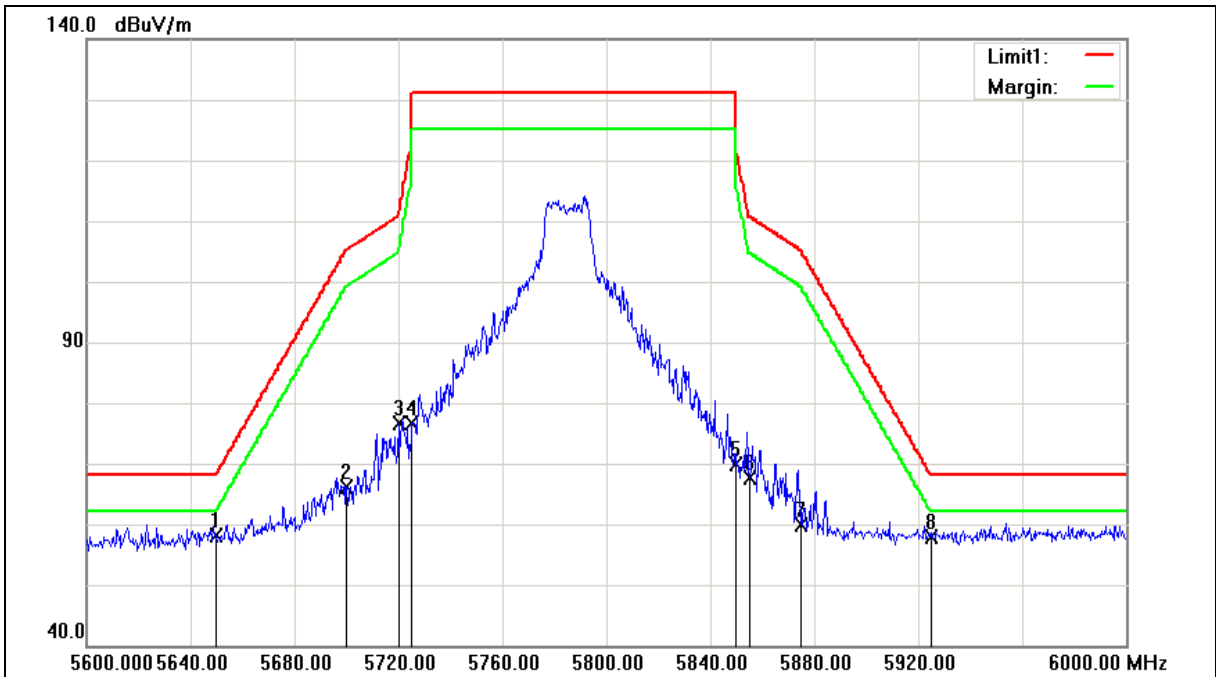
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5785MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	49.17	8.93	58.10	68.20	-10.10	peak
2	5700.000	57.11	9.05	66.16	105.20	-39.04	peak
3	5720.000	67.45	9.09	76.54	110.80	-34.26	peak
4	5725.000	67.64	9.11	76.75	122.20	-45.45	peak
5	5850.000	60.57	9.41	69.98	122.20	-52.22	peak
6	5855.000	58.23	9.43	67.66	110.80	-43.14	peak
7	5875.000	50.36	9.48	59.84	105.20	-45.36	peak
8	5925.000	48.25	9.61	57.86	68.20	-10.34	peak

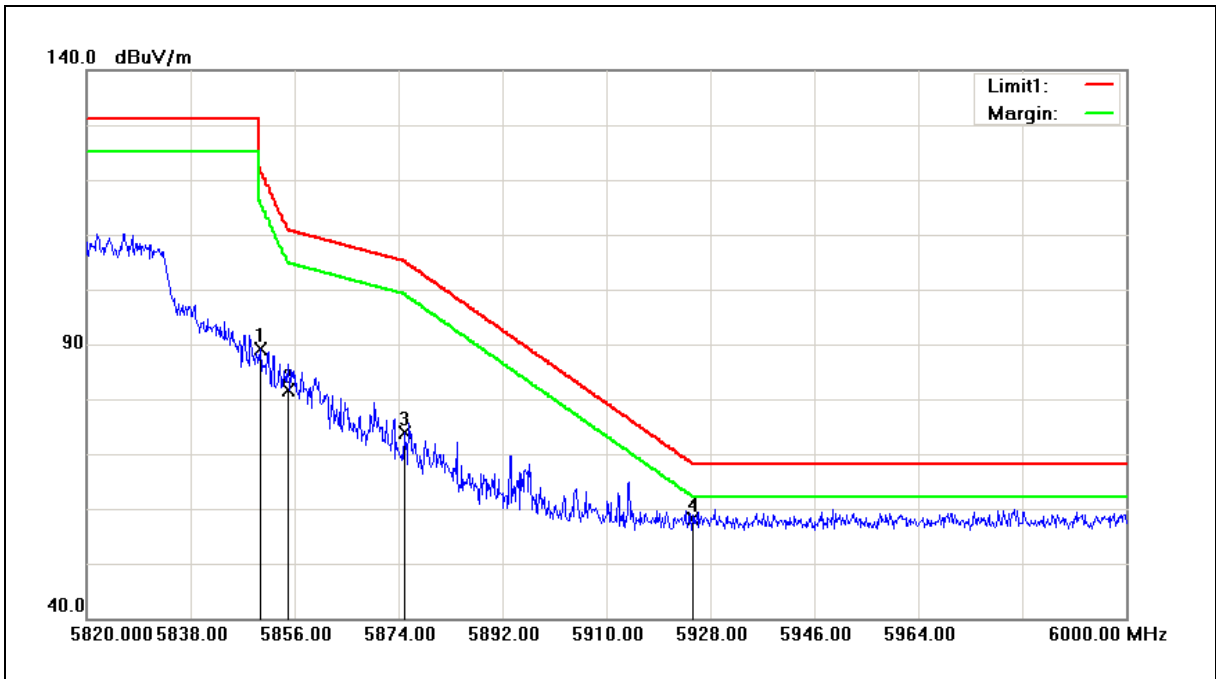
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	79.66	9.41	89.07	122.20	-33.13	peak
2	5855.000	72.18	9.43	81.61	110.80	-29.19	peak
3	5875.000	64.34	9.48	73.82	105.20	-31.38	peak
4	5925.000	48.59	9.61	58.20	68.20	-10.00	peak

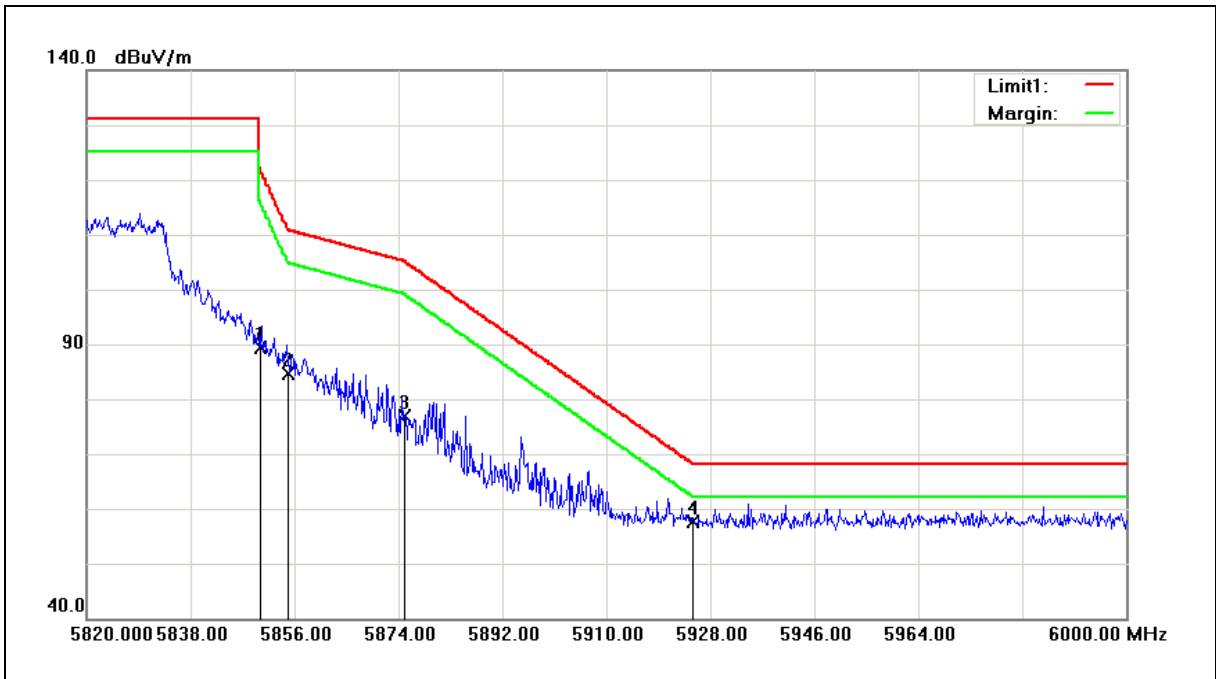
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5825MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	79.94	9.41	89.35	122.20	-32.85	peak
2	5855.000	75.20	9.43	84.63	110.80	-26.17	peak
3	5875.000	67.35	9.48	76.83	105.20	-28.37	peak
4	5925.000	48.02	9.61	57.63	68.20	-10.57	peak

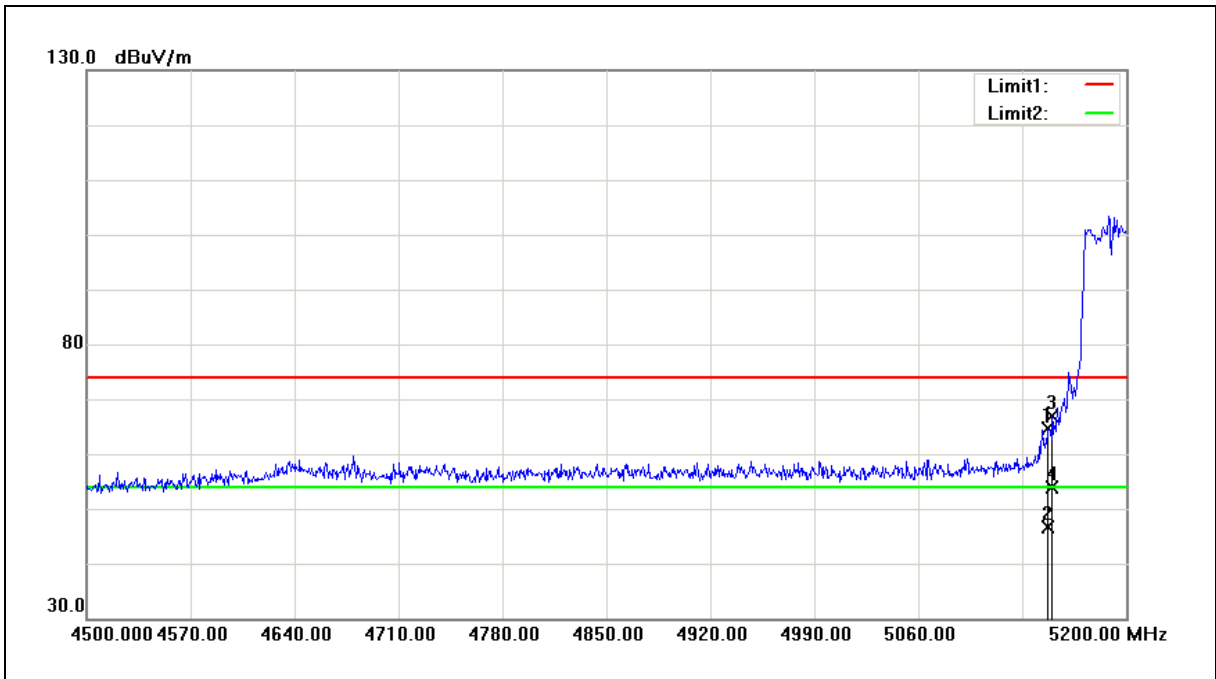
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum. (%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/24/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.500	56.27	8.24	64.51	74.00	-9.49	peak
2	5147.500	38.41	8.24	46.65	54.00	-7.35	AVG
3	5150.000	58.53	8.25	66.78	74.00	-7.22	peak
4	5150.000	45.65	8.25	53.90	54.00	-0.10	AVG

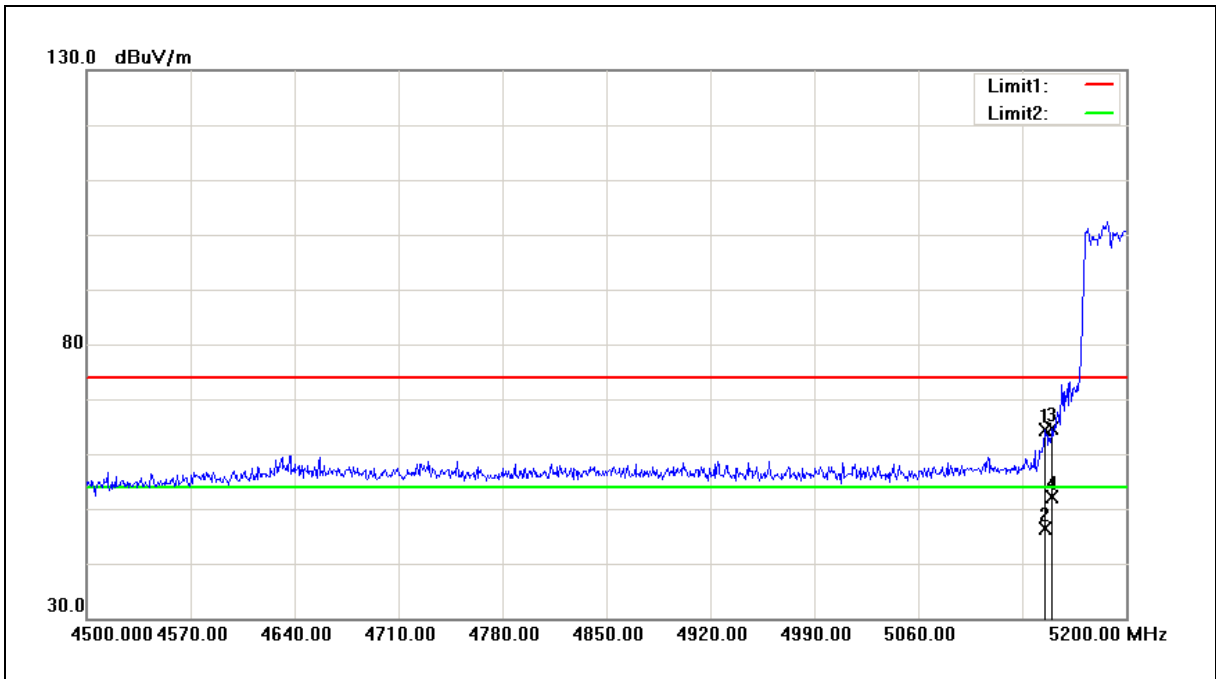
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5190MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/24/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5145.400	56.20	8.24	64.44	74.00	-9.56	peak
2	5145.400	38.06	8.24	46.30	54.00	-7.70	AVG
3	5150.000	56.38	8.25	64.63	74.00	-9.37	peak
4	5150.000	43.99	8.25	52.24	54.00	-1.76	AVG

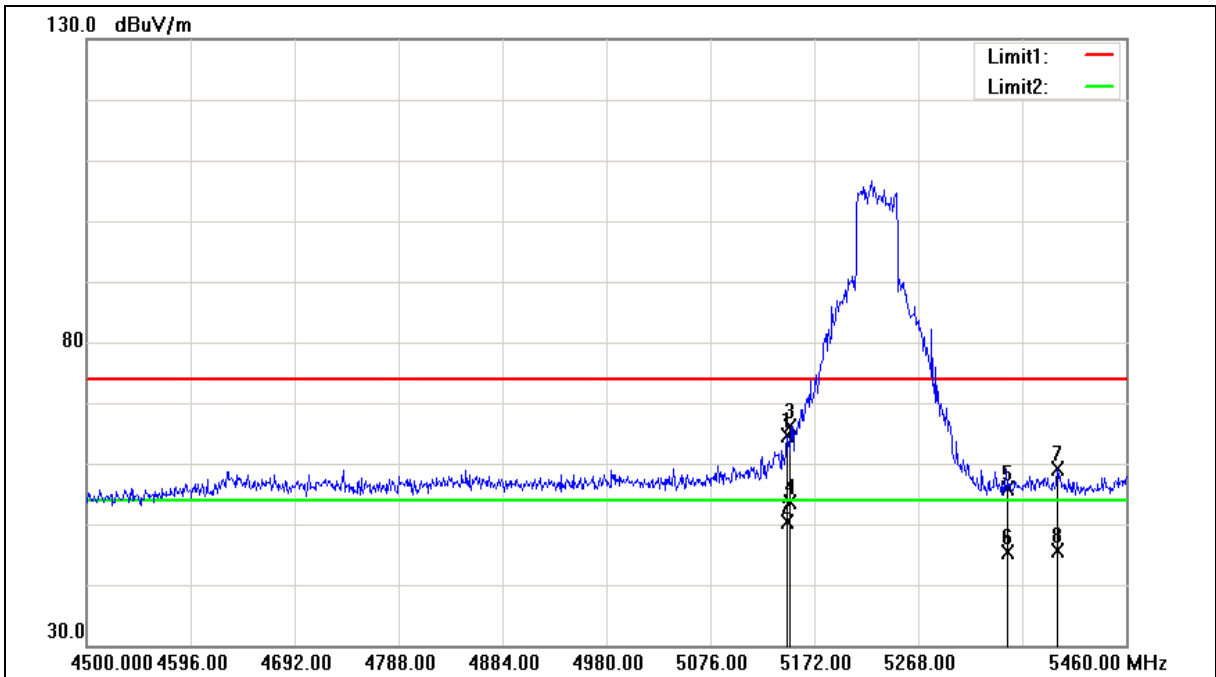
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.040	56.38	8.24	64.62	74.00	-9.38	peak
2	5147.040	42.04	8.24	50.28	54.00	-3.72	AVG
3	5150.000	57.95	8.25	66.20	74.00	-7.80	peak
4	5150.000	45.38	8.25	53.63	54.00	-0.37	AVG
5	5350.000	47.35	8.41	55.76	74.00	-18.24	peak
6	5350.000	37.03	8.41	45.44	54.00	-8.56	AVG
7	5396.640	50.66	8.46	59.12	74.00	-14.88	peak
8	5396.640	37.06	8.46	45.52	54.00	-8.48	AVG

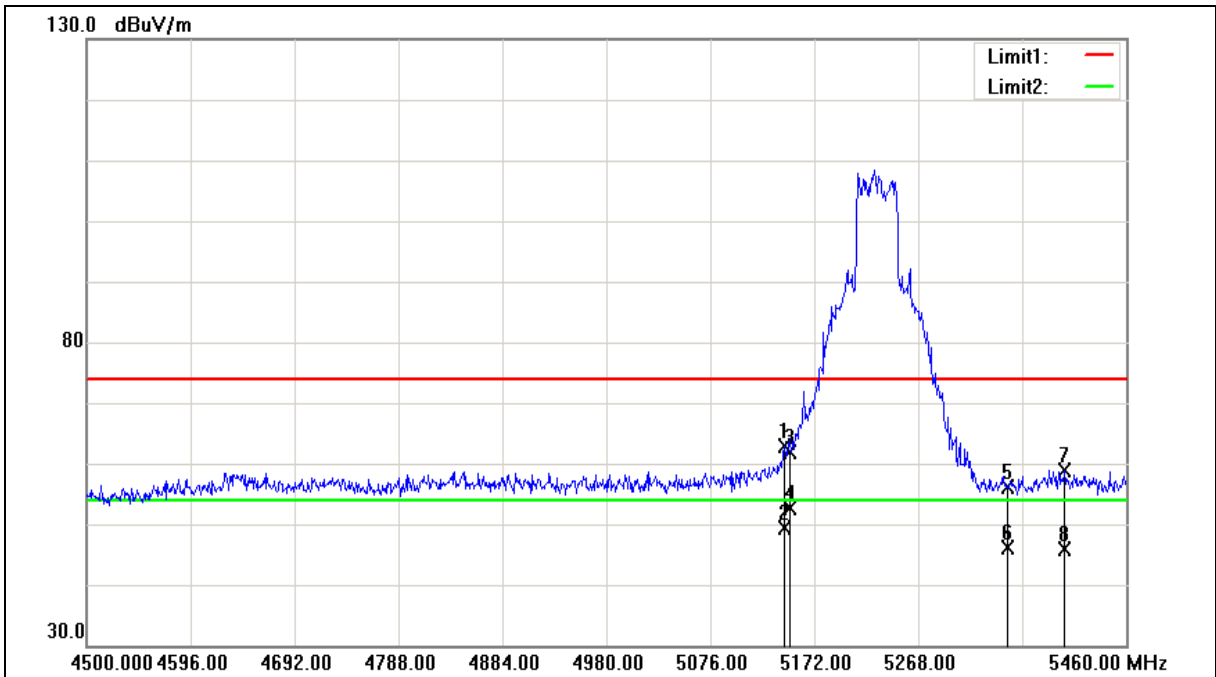
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5230MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5144.160	54.65	8.24	62.89	74.00	-11.11	peak
2	5144.160	41.02	8.24	49.26	54.00	-4.74	AVG
3	5150.000	53.53	8.25	61.78	74.00	-12.22	peak
4	5150.000	44.46	8.25	52.71	54.00	-1.29	AVG
5	5350.000	47.66	8.41	56.07	74.00	-17.93	peak
6	5350.000	37.60	8.41	46.01	54.00	-7.99	AVG
7	5403.360	50.45	8.47	58.92	74.00	-15.08	peak
8	5403.360	37.30	8.47	45.77	54.00	-8.23	AVG

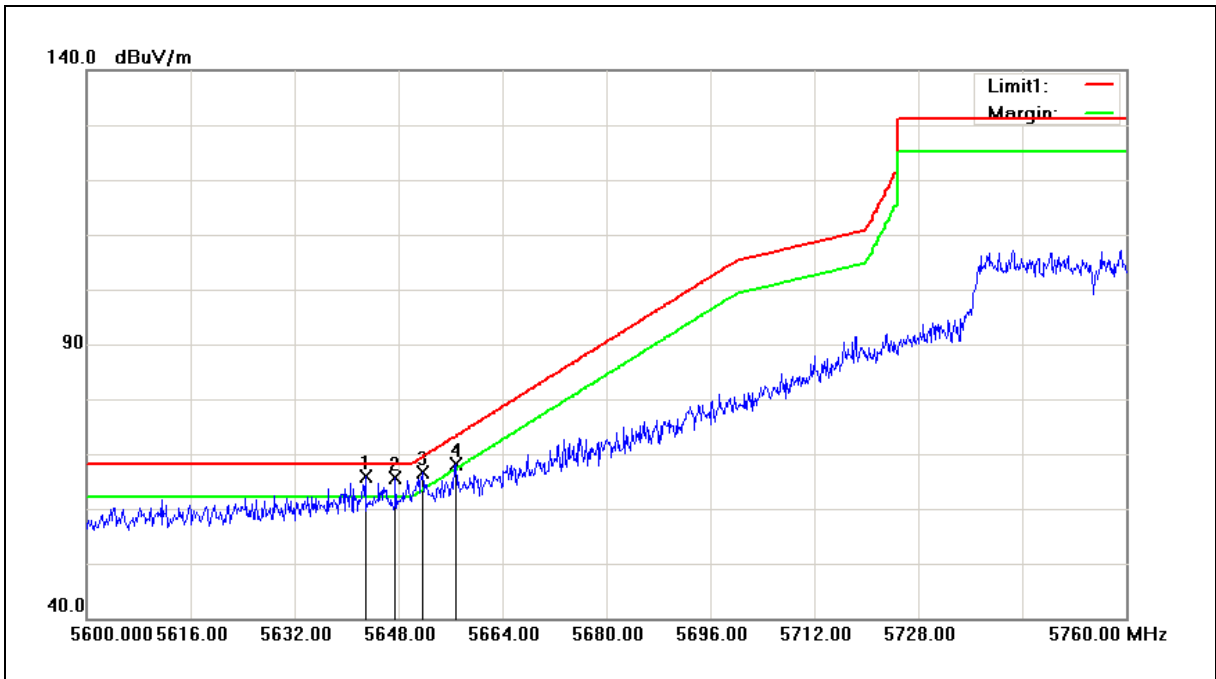
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5642.880	56.95	8.91	65.86	68.20	-2.34	peak
2	5647.520	56.71	8.92	65.63	68.20	-2.57	peak
3	5651.680	57.60	8.93	66.53	69.44	-2.91	peak
4	5656.800	59.25	8.94	68.19	73.23	-5.04	peak

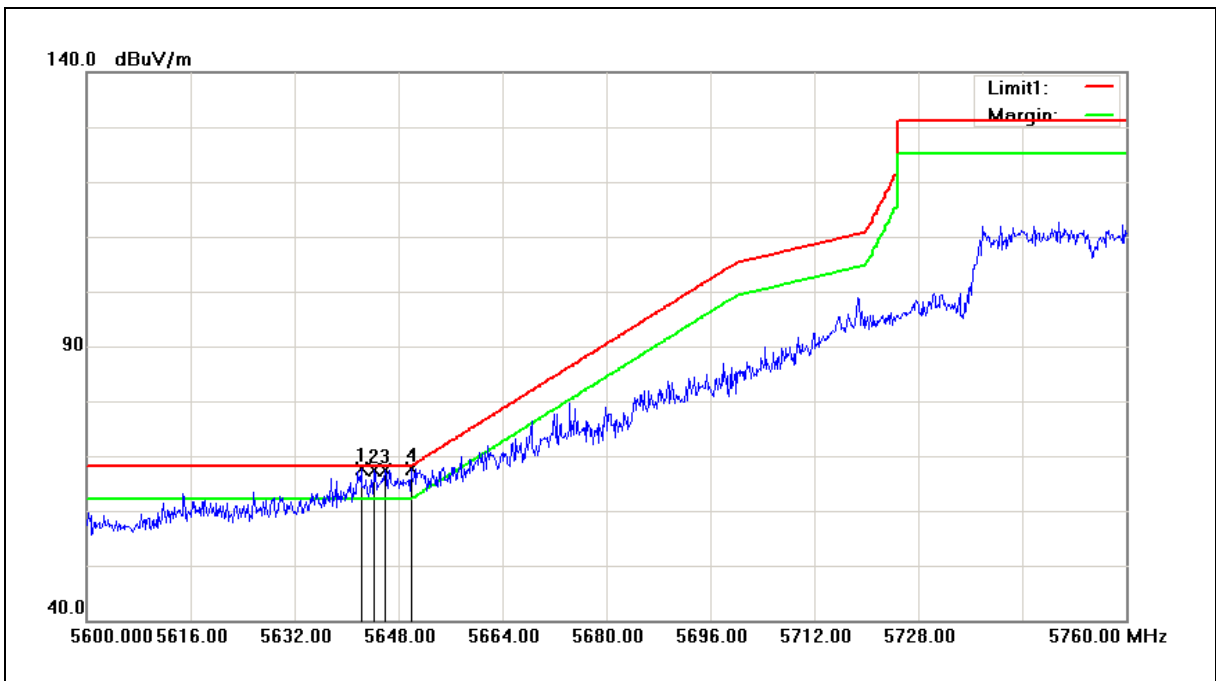
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5755MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		

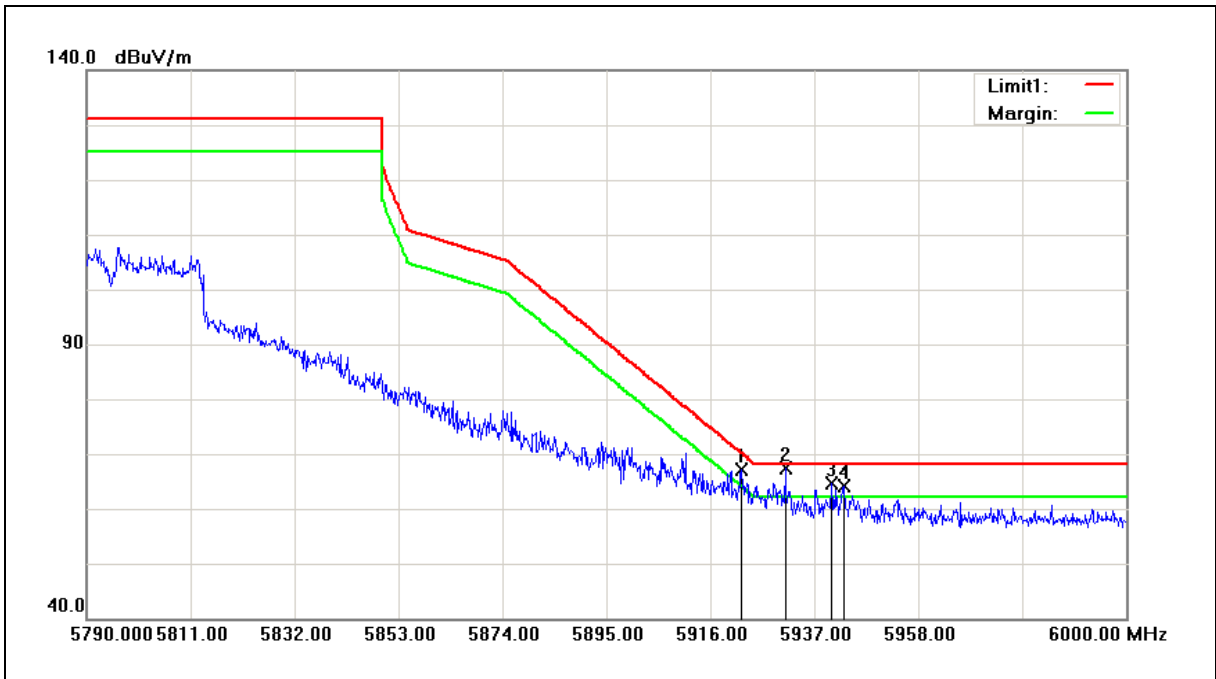


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5642.240	58.66	8.91	67.57	68.20	-0.63	peak
2	5644.160	58.46	8.91	67.37	68.20	-0.83	peak
3	5645.920	58.52	8.91	67.43	68.20	-0.77	peak
4	5649.920	58.80	8.93	67.73	68.20	-0.47	peak

- Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).
- 2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).
3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5922.300	57.54	9.60	67.14	70.20	-3.06	peak
2	5931.120	57.72	9.62	67.34	68.20	-0.86	peak
3	5940.570	54.92	9.64	64.56	68.20	-3.64	peak
4	5942.880	54.39	9.65	64.04	68.20	-4.16	peak

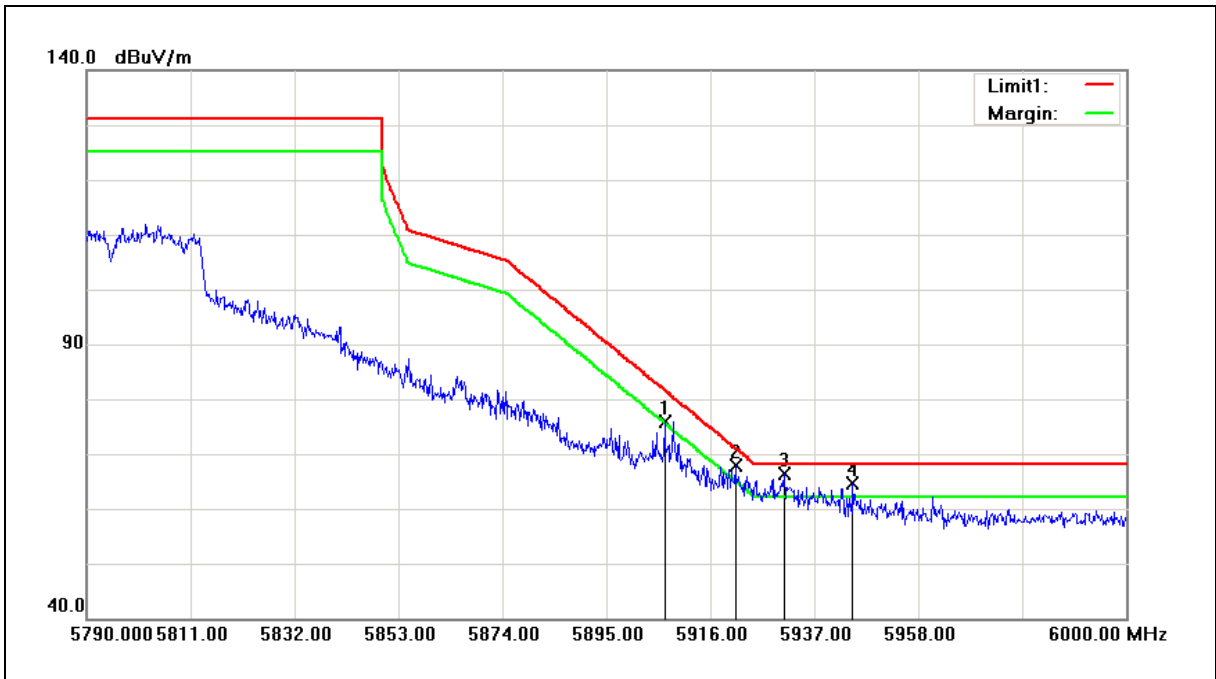
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5795MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5906.760	66.42	9.56	75.98	81.70	-5.72	peak
2	5921.040	58.29	9.59	67.88	71.13	-3.25	peak
3	5930.910	56.70	9.62	66.32	68.20	-1.88	peak
4	5944.770	54.87	9.65	64.52	68.20	-3.68	peak

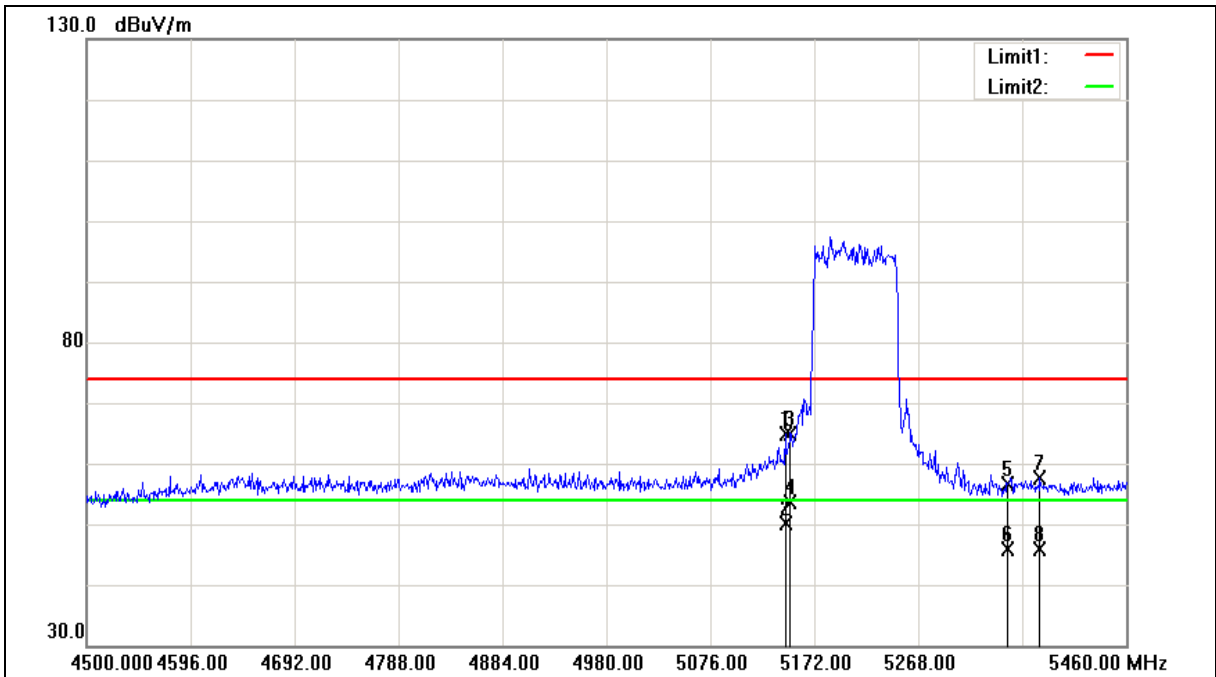
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5145.120	56.61	8.24	64.85	74.00	-9.15	peak
2	5145.120	41.85	8.24	50.09	54.00	-3.91	AVG
3	5150.000	56.69	8.25	64.94	74.00	-9.06	peak
4	5150.000	45.35	8.25	53.60	54.00	-0.40	AVG
5	5350.000	48.15	8.41	56.56	74.00	-17.44	peak
6	5350.000	37.42	8.41	45.83	54.00	-8.17	AVG
7	5380.320	49.17	8.45	57.62	74.00	-16.38	peak
8	5380.320	37.46	8.45	45.91	54.00	-8.09	AVG

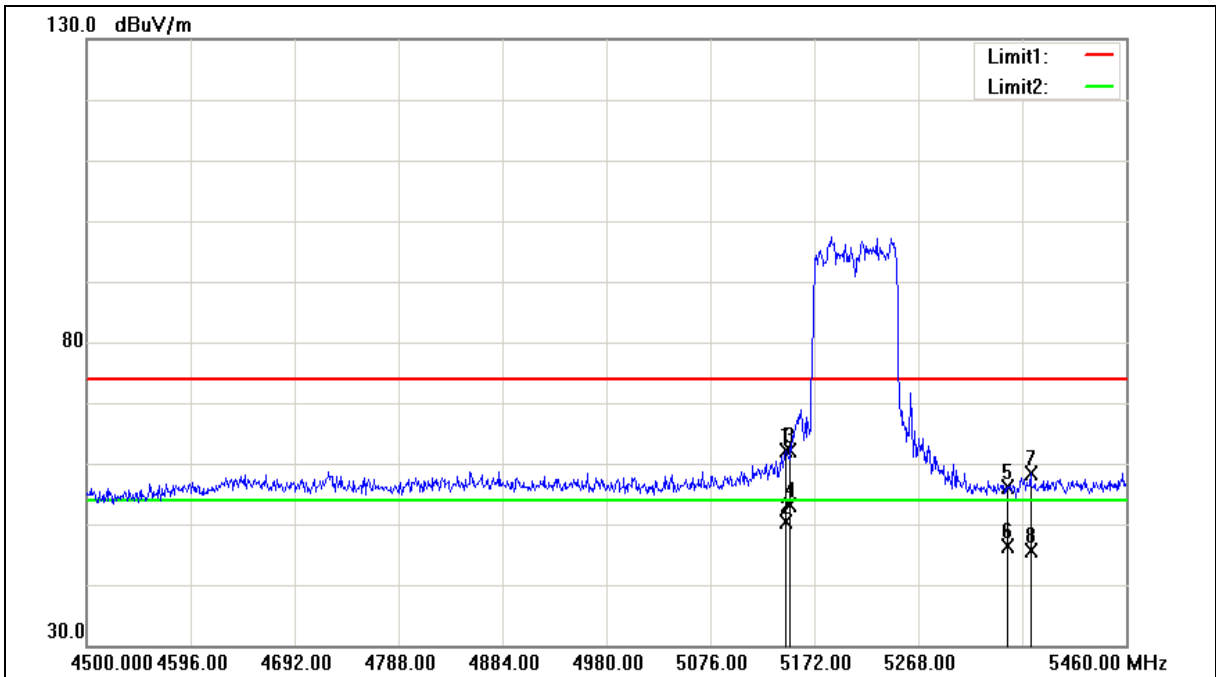
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5210MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5145.120	53.96	8.24	62.20	74.00	-11.80	peak
2	5145.120	42.09	8.24	50.33	54.00	-3.67	AVG
3	5150.000	53.88	8.25	62.13	74.00	-11.87	peak
4	5150.000	44.82	8.25	53.07	54.00	-0.93	AVG
5	5350.000	47.79	8.41	56.20	74.00	-17.80	peak
6	5350.000	37.85	8.41	46.26	54.00	-7.74	AVG
7	5371.680	49.92	8.43	58.35	74.00	-15.65	peak
8	5371.680	37.28	8.43	45.71	54.00	-8.29	AVG

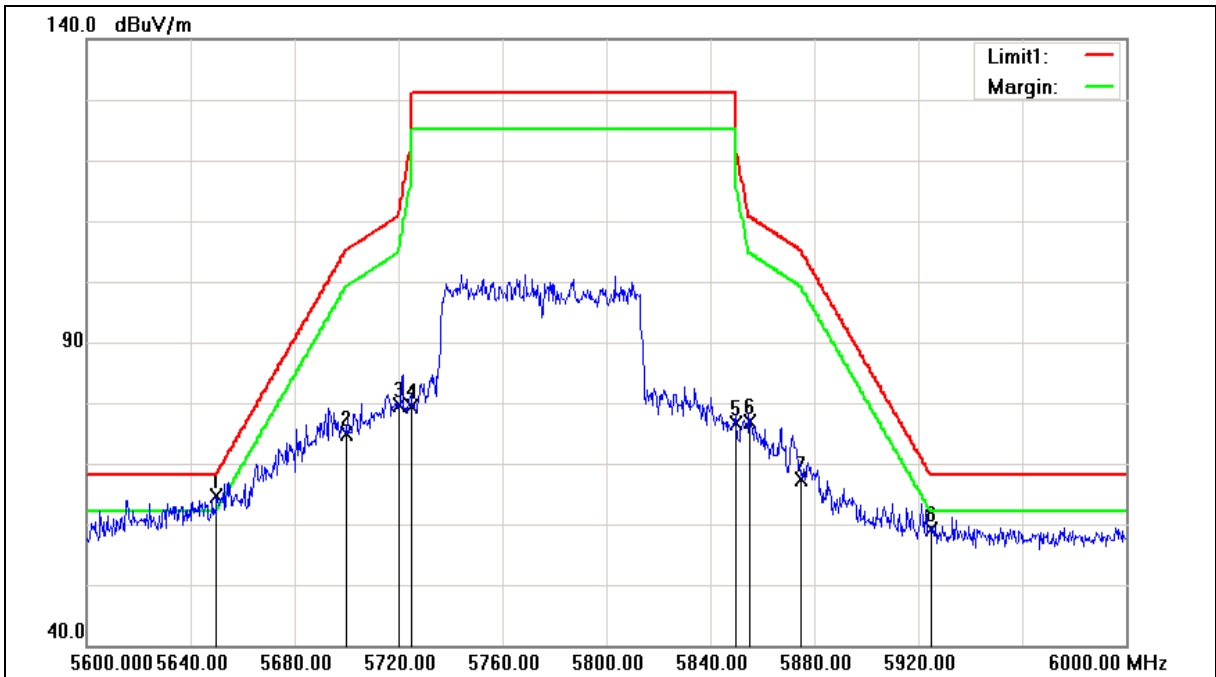
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5775MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5775MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5650.000	55.79	8.93	64.72	68.20	-3.48	peak
2	5700.000	65.83	9.05	74.88	105.20	-30.32	peak
3	5720.000	70.60	9.09	79.69	110.80	-31.11	peak
4	5725.000	70.25	9.11	79.36	122.20	-42.84	peak
5	5850.000	67.29	9.41	76.70	122.20	-45.50	peak
6	5855.000	67.49	9.43	76.92	110.80	-33.88	peak
7	5875.000	57.79	9.48	67.27	105.20	-37.93	peak
8	5925.000	49.61	9.61	59.22	68.20	-8.98	peak

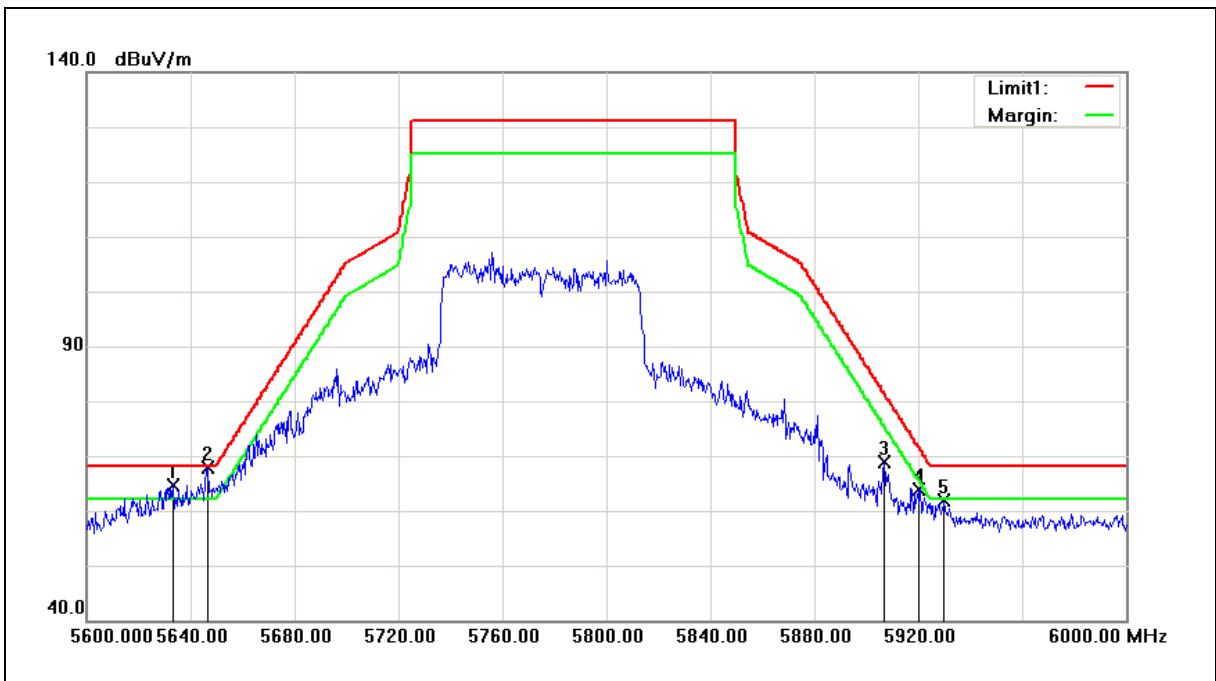
Note:1. Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.



Standard:	FCC Part 15.407	Test Distance:	3m
Test item:	Band edge	Power:	AC 120V/60Hz
Frequency:	5775MHz	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	04/25/2017
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5633.200	55.87	8.88	64.75	68.20	-3.45	peak
2	5646.800	59.09	8.91	68.00	68.20	-0.20	peak
3	5906.800	59.26	9.56	68.82	81.67	-12.85	peak
4	5920.400	54.37	9.59	63.96	71.60	-7.64	peak
5	5930.000	52.22	9.62	61.84	68.20	-6.36	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. When the peak results are less than average limit, so not need to evaluate the average.

4.4. Maximum Conducted Output Power Measurement

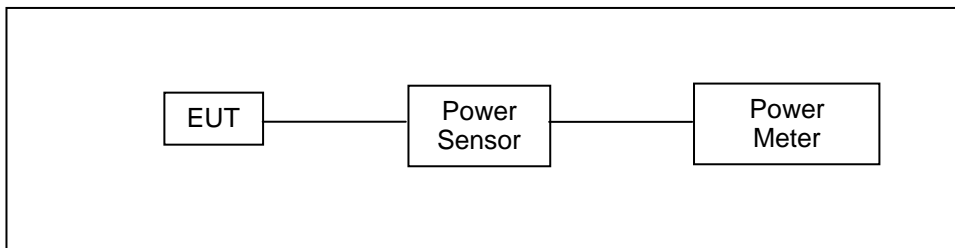
■ Limit

Frequency Range (MHz)	FCC Maximum Conducted Output Power Limit
	Master
5.150 ~ 5.250 GHz	The lesser of 1W (30dBm)
5.725 ~ 5.850 GHz	The lesser of 1W (30dBm)

According FCC KDB 662911 D01 v02r01 – for power measurements on IEEE802.11 devices,

* SISO mode for ANT-0 : Max. Gain = 4.08 dBi < 6dBi

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Power Sensor	Anritsu	MA2411B	1126022	08/29/2016	1 year
Power Meter	Anritsu	ML2495A	1135009	08/29/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices

Section (E) Maximum Conducted Output Power

3. Measurement using a Power Meter (PM)

b) Method PM-G (Measurement using a gated RF average power meter)



■ Test Result

Test Mode		Mode 2: IEEE 802.11a Continuous TX Mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	6M	21.88	0.154	≤ 30
5200		21.67	0.147	
5220		21.66	0.147	
5240		20.96	0.125	
5745		19.86	0.097	≤ 30
5765		19.96	0.099	
5785		20.12	0.103	
5805		20.38	0.109	
5825		20.21	0.105	
5180		54M	21.79	
5200	21.65		0.146	
5220	21.61		0.145	
5240	20.89		0.123	
5745	19.79		0.095	≤ 30
5765	19.91		0.098	
5785	20.08		0.102	
5805	20.31		0.107	
5825	20.13		0.103	

Note: The relevant measured result has the offset with cable loss already.



Test Mode		Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5180	6.5M	21.49	0.141	≤ 30
5200		21.23	0.133	
5220		21.07	0.128	
5240		20.86	0.122	
5745		19.82	0.096	≤ 30
5765		20.02	0.100	
5785		20.14	0.103	
5805		20.35	0.108	
5825		20.28	0.107	
5180		86.7M	21.45	
5200	21.17		0.131	
5220	20.99		0.126	
5240	20.77		0.119	
5745	19.75		0.094	≤ 30
5765	19.98		0.100	
5785	20.07		0.102	
5805	20.26		0.106	
5825	20.18		0.104	

Note: The relevant measured result has the offset with cable loss already.



Test Mode		Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5190	13.5M	18.28	0.067	≤ 30
5230		21.12	0.129	
5755		20.13	0.103	≤ 30
5795		20.31	0.107	
5190	200M	18.19	0.066	≤ 30
5230		21.08	0.128	
5755		20.04	0.101	≤ 30
5755		20.23	0.105	

Test Mode		Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode		
Frequency (MHz)	Data Rate	ANT-0		FCC Limit (dBm)
		Max. Output Power		
		(dBm)	(W)	
5210	29.3M	17.88	0.061	≤ 30
5775		18.73	0.075	≤ 30
5210	433.3M	17.87	0.061	≤ 30
5775		18.67	0.074	≤ 30

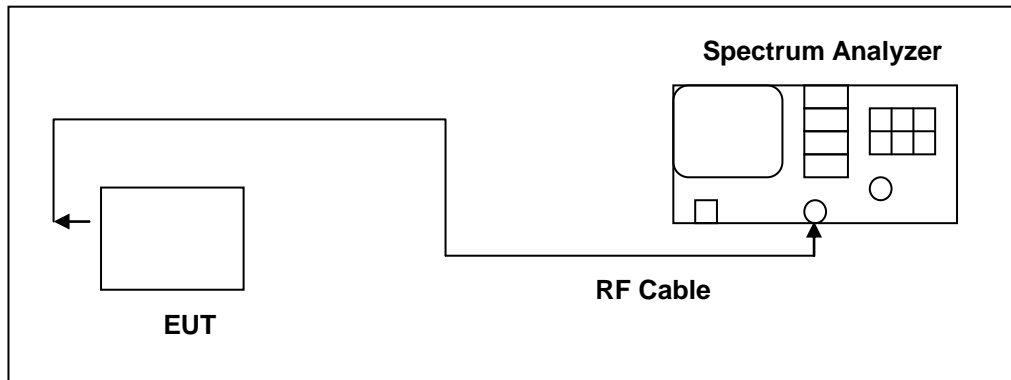
Note: The relevant measured result has the offset with cable loss already.

4.5. 26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement

■ **Limit**

N/A

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Microwave Cable	EMCI	EMC104-SM-SM-1 500	140303	02/22/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ **Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	>26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto



■ Test Result

Test Mode	Mode 2: IEEE 802.11a Continuous TX Mode	
Frequency (MHz)	ANT-0	
	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	24.630	16.728
5200	24.700	16.695
5240	24.980	16.614

Test Mode	Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode	
Frequency (MHz)	ANT-0	
	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5180	23.510	17.610
5200	24.650	17.615
5240	24.480	17.615

Test Mode	Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode	
Frequency (MHz)	ANT-0	
	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5190	49.150	36.527
5230	49.450	36.545

Note: The 99% occupied bandwidth not crossed 5250MHz.

Test Mode	Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode	
Frequency (MHz)	ANT-0	
	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
5210	88.110	75.602

Note: The 99% occupied bandwidth not crossed 5250MHz.



■ Test Graphs

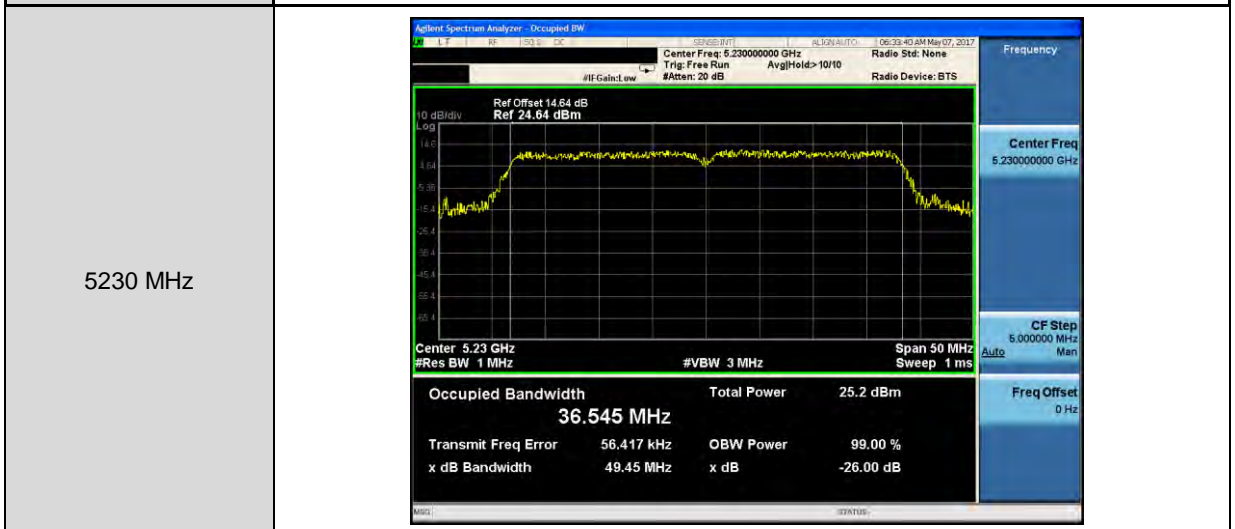
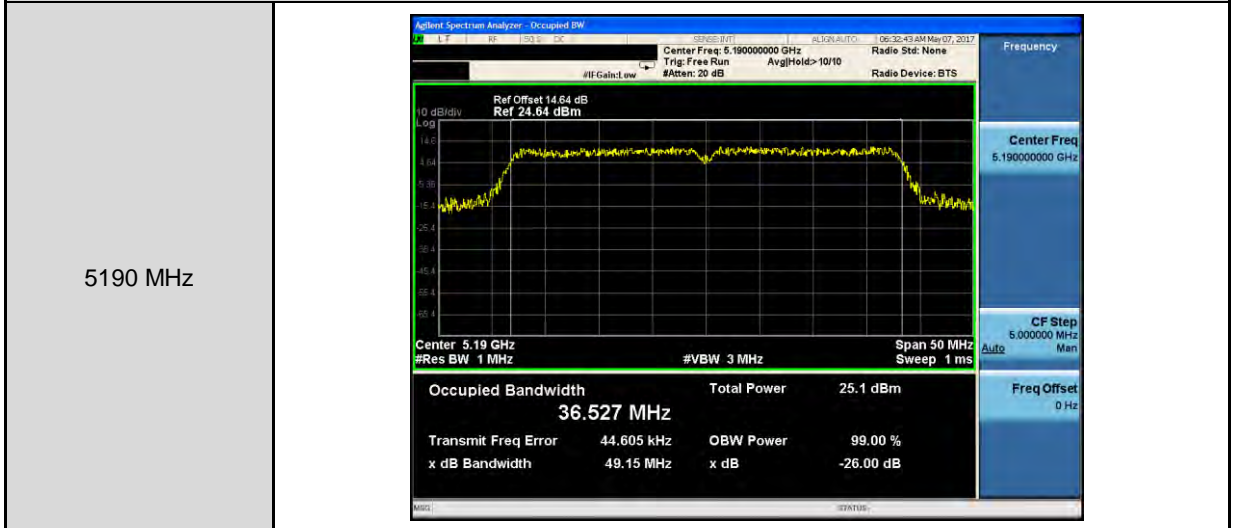
Mode 2: IEEE 802.11a Continuous TX Mode_ ANT-0																			
5180 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.18000000 GHz Trig: Free Run Avg/Hold: >10/10 #IF Gain: 0 dB #Atten: 20 dB Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>25.6 dBm</td> </tr> <tr> <td>16.728 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>4.787 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>24.63 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	25.6 dBm	16.728 MHz			Transmit Freq Error	OBW Power	99.00 %	4.787 kHz	x dB	-26.00 dB	x dB Bandwidth			24.63 MHz		
Occupied Bandwidth	Total Power	25.6 dBm																	
16.728 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
4.787 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
24.63 MHz																			
5200 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.20000000 GHz Trig: Free Run Avg/Hold: >10/10 #IF Gain: 0 dB #Atten: 20 dB Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>25.4 dBm</td> </tr> <tr> <td>16.695 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-5.150 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>24.70 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	25.4 dBm	16.695 MHz			Transmit Freq Error	OBW Power	99.00 %	-5.150 kHz	x dB	-26.00 dB	x dB Bandwidth			24.70 MHz		
Occupied Bandwidth	Total Power	25.4 dBm																	
16.695 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-5.150 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
24.70 MHz																			
5240 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.24000000 GHz Trig: Free Run Avg/Hold: >10/10 #IF Gain: 0 dB #Atten: 20 dB Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Span 25 MHz Sweep 1 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.9 dBm</td> </tr> <tr> <td>16.614 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>19.851 kHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>24.98 MHz</td> <td></td> <td></td> </tr> </table>	Occupied Bandwidth	Total Power	24.9 dBm	16.614 MHz			Transmit Freq Error	OBW Power	99.00 %	19.851 kHz	x dB	-26.00 dB	x dB Bandwidth			24.98 MHz		
Occupied Bandwidth	Total Power	24.9 dBm																	
16.614 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
19.851 kHz	x dB	-26.00 dB																	
x dB Bandwidth																			
24.98 MHz																			



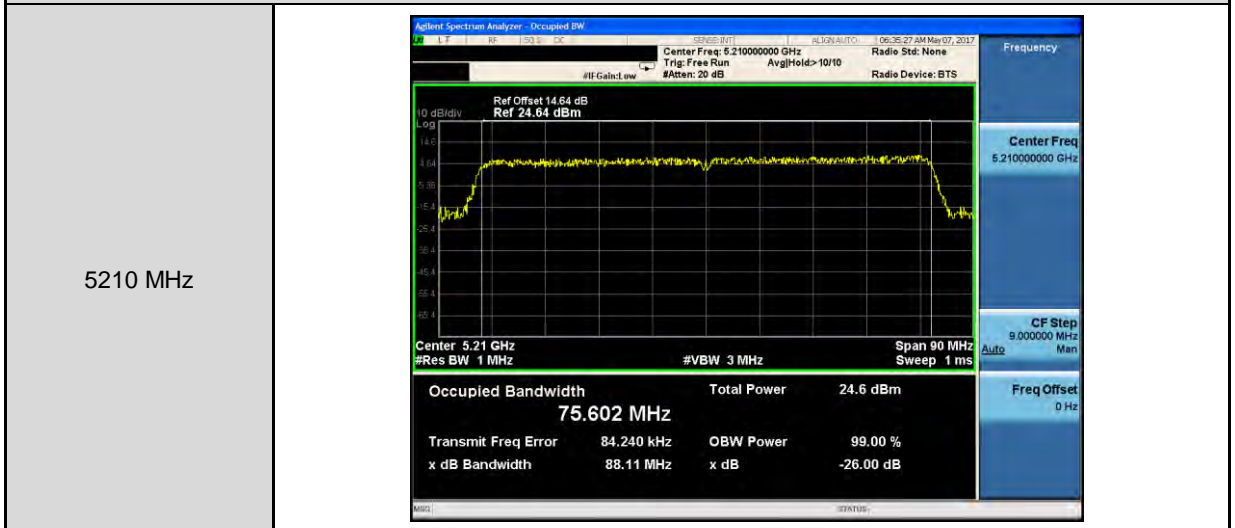
Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode_ ANT-0	
5180 MHz	<p>Center Freq: 5.18000000 GHz</p> <p>Center 5.18 GHz</p> <p>Occupied Bandwidth 17.610 MHz</p> <p>Total Power 24.8 dBm</p> <p>Transmit Freq Error 1.163 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 23.51 MHz</p> <p>x dB -26.00 dB</p>
5200 MHz	<p>Center Freq: 5.20000000 GHz</p> <p>Center 5.2 GHz</p> <p>Occupied Bandwidth 17.615 MHz</p> <p>Total Power 24.9 dBm</p> <p>Transmit Freq Error 4.173 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 24.65 MHz</p> <p>x dB -26.00 dB</p>
5240 MHz	<p>Center Freq: 5.24000000 GHz</p> <p>Center 5.24 GHz</p> <p>Occupied Bandwidth 17.615 MHz</p> <p>Total Power 25.4 dBm</p> <p>Transmit Freq Error 19.675 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 24.48 MHz</p> <p>x dB -26.00 dB</p>



Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode_ ANT-0



Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode_ ANT-0



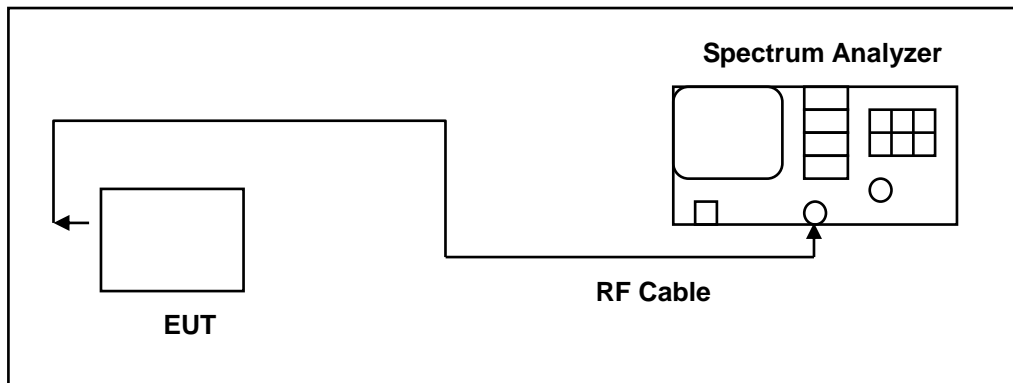
4.6. 6dB RF Bandwidth Measurement

■ **Limit**

6dB RF Bandwidth

Systems using digital modulation techniques may operate in the 5725~5850MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

■ **Test Setup**



■ **Test Instruments**

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ **Test Procedure**

6dB RF Bandwidth

The EUT tested to UNII test procedure of KDB789033 D02 v01r04 for compliance to FCC 47CFR 15.407 requirements.

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels.



■ Test Result

Test Mode	Mode 2: IEEE 802.11a Continuous TX Mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5745	16470	> 500
5785	16530	> 500
5825	16520	> 500

Test Mode	Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5745	17600	> 500
5785	17630	> 500
5825	17630	> 500

Test Mode	Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5755	36480	> 500
5795	36480	> 500

Test Mode	Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode	
Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
	ANT-0	
5775	76170	> 500



■ Test Graphs

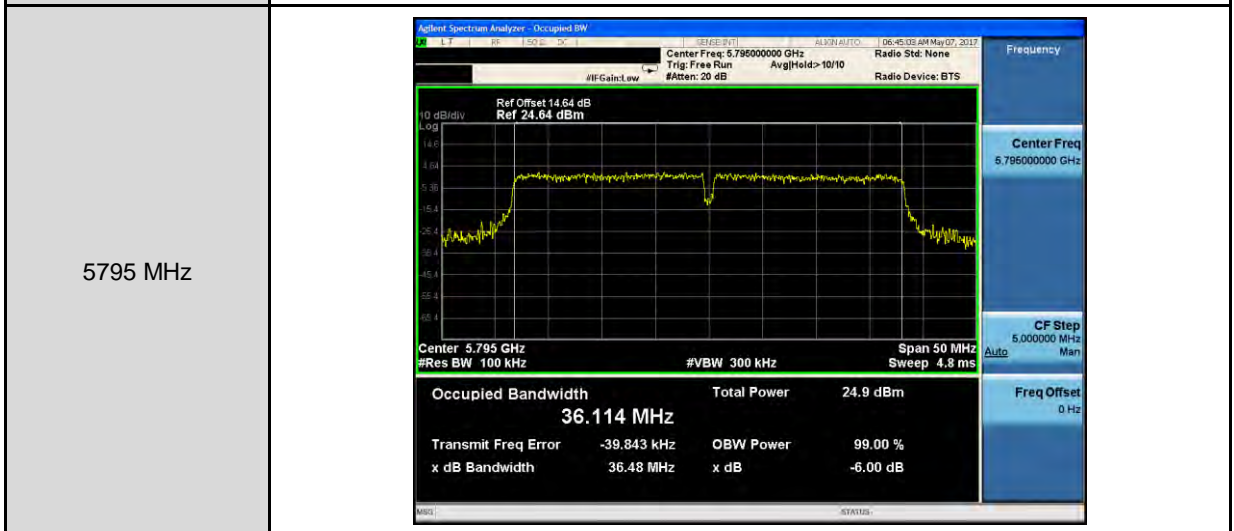
Mode 2: IEEE 802.11a Continuous TX Mode_ANT-0	
5745 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.745000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.745 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <p>Occupied Bandwidth: 16.387 MHz Total Power: 24.3 dBm</p> <p>Transmit Freq Error: -10.663 kHz OBW Power: 99.00 % x dB Bandwidth: 16.47 MHz x dB: -6.00 dB</p> <p>Center Freq: 5.745000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5785 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.785000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.785 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <p>Occupied Bandwidth: 16.437 MHz Total Power: 24.8 dBm</p> <p>Transmit Freq Error: -25.973 kHz OBW Power: 99.00 % x dB Bandwidth: 16.53 MHz x dB: -6.00 dB</p> <p>Center Freq: 5.785000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>
5825 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.825000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.825 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <p>Occupied Bandwidth: 16.461 MHz Total Power: 24.2 dBm</p> <p>Transmit Freq Error: -24.088 kHz OBW Power: 99.00 % x dB Bandwidth: 16.52 MHz x dB: -6.00 dB</p> <p>Center Freq: 5.825000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>



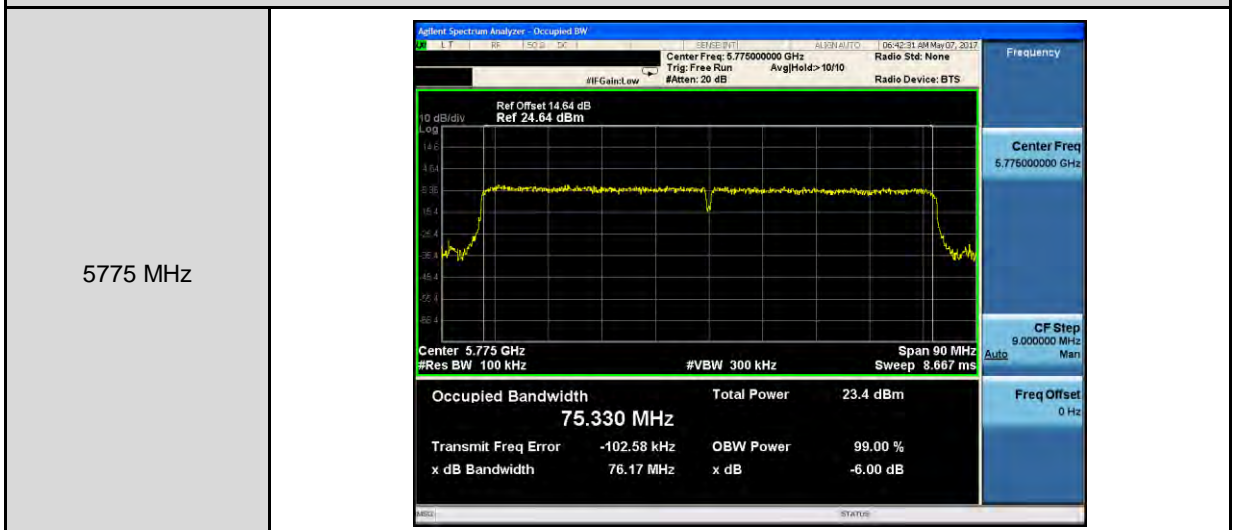
Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode_ANT-0																			
5745 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.745000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.745 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.7 dBm</td> </tr> <tr> <td>17.547 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-9.293 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>17.60 MHz</td> <td></td> <td></td> </tr> </table> <p>Center Freq: 5.74500000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>	Occupied Bandwidth	Total Power	24.7 dBm	17.547 MHz			Transmit Freq Error	OBW Power	99.00 %	-9.293 kHz	x dB	-6.00 dB	x dB Bandwidth			17.60 MHz		
Occupied Bandwidth	Total Power	24.7 dBm																	
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5785 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.785000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.785 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>25.2 dBm</td> </tr> <tr> <td>17.547 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-9.327 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>17.63 MHz</td> <td></td> <td></td> </tr> </table> <p>Center Freq: 5.785000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>	Occupied Bandwidth	Total Power	25.2 dBm	17.547 MHz			Transmit Freq Error	OBW Power	99.00 %	-9.327 kHz	x dB	-6.00 dB	x dB Bandwidth			17.63 MHz		
Occupied Bandwidth	Total Power	25.2 dBm																	
17.547 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-9.327 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
17.63 MHz																			
5825 MHz	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 5.825000000 GHz Trig: Free Run #IFGain: Low #Atten: 20 dB Avg/Hold: 10/10 Radio Std: None Radio Device: BTS</p> <p>Ref Offset 14.64 dB Ref 24.64 dBm</p> <p>Center: 5.825 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 30 MHz Sweep: 2.933 ms</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>24.1 dBm</td> </tr> <tr> <td>17.554 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>-16.408 kHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>x dB Bandwidth</td> <td></td> <td></td> </tr> <tr> <td>17.63 MHz</td> <td></td> <td></td> </tr> </table> <p>Center Freq: 5.825000000 GHz CF Step: 3.000000 MHz Freq Offset: 0 Hz</p>	Occupied Bandwidth	Total Power	24.1 dBm	17.554 MHz			Transmit Freq Error	OBW Power	99.00 %	-16.408 kHz	x dB	-6.00 dB	x dB Bandwidth			17.63 MHz		
Occupied Bandwidth	Total Power	24.1 dBm																	
17.554 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-16.408 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
17.63 MHz																			



Mode 4: IEEE 802.11ac 40MHz Continuous TX Mode_ANT-0



Mode 5: IEEE 802.11ac 80MHz Continuous TX Mode_ANT-0



4.7. Peak Power Spectral Density Measurement

■ Limit

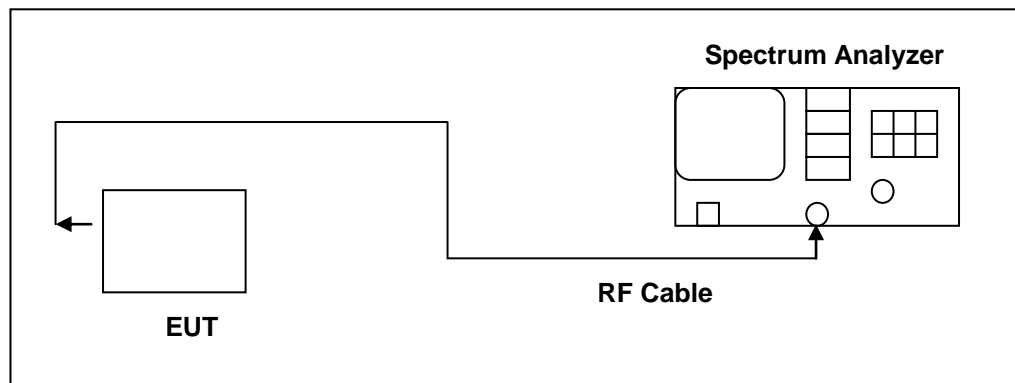
Conducted power spectral density

Frequency Range (MHz)	FCC Limit
	Master
5.150 ~ 5.250 GHz	17 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

According FCC KDB 662911 D01 v02r01 – for power spectral density measurements on IEEE802.11 devices,

* SISO mode for ANT-0 : Max. Gain = 4.08 dBi < 6dBi

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/19/2016	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

**■ Test Procedure**

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01r04, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz (5725 ~ 5850MHz use 100 kHz)
VBW	3 MHz (5725 ~ 5850MHz use 300 kHz)
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/100\text{kHz})$ to the measured result.	



■ Test Result

Test Mode	Mode 2: IEEE 802.11a Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	6.495	0.000	6.495	< 17
5200	6.491	0.000	6.491	
5240	6.455	0.000	6.455	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 2: IEEE 802.11a Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-0.06	0.000	6.93	< 30
5785	0.18	0.000	7.17	
5825	-0.91	0.000	6.08	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Test Mode	Mode 3: IEEE 802.11ac 20MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	8.624	0.000	8.624	< 17
5200	8.581	0.000	8.581	
5240	8.540	0.000	8.540	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 3: IEEE 802.11ac 20MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-0.76	0.000	6.23	< 30
5785	-0.28	0.000	6.71	
5825	-1.22	0.000	5.77	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Test Mode	Mode 4: IEEE 802.11ac 40MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	5.218	0.000	5.218	< 17
5230	5.246	0.000	5.246	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Test Mode	Mode 4: IEEE 802.11ac 40MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-3.89	0.000	3.10	< 30
5795	-3.96	0.000	3.03	

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Conversion ratio = 10*Log(500k/100k)



Test Mode	Mode 5: IEEE 802.11ac 80MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	1.400	0.000	1.400	< 17

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = mered result + duty factor.


Test Mode	Mode 5: IEEE 802.11ac 80MHz Continuous TX mode			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5775	-9.11	0.000	-2.12	< 30

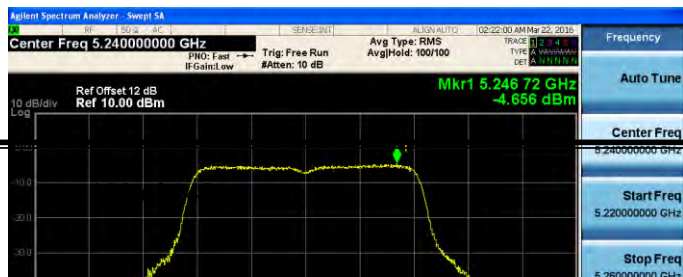
Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) + Conversion ratio = mered result + duty factor.

Conversion ratio = 10*Log(500k/100k)



■ Test Graphs

Mode 2: IEEE 802.11a Continuous TX Mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	





Mode 2: IEEE 802.11a Continuous TX Mode_ ANT-0	
5745 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.743 74 GHz -0.062 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5785 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.784 37 GHz 0.182 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5825 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.825 33 GHz -0.911 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>

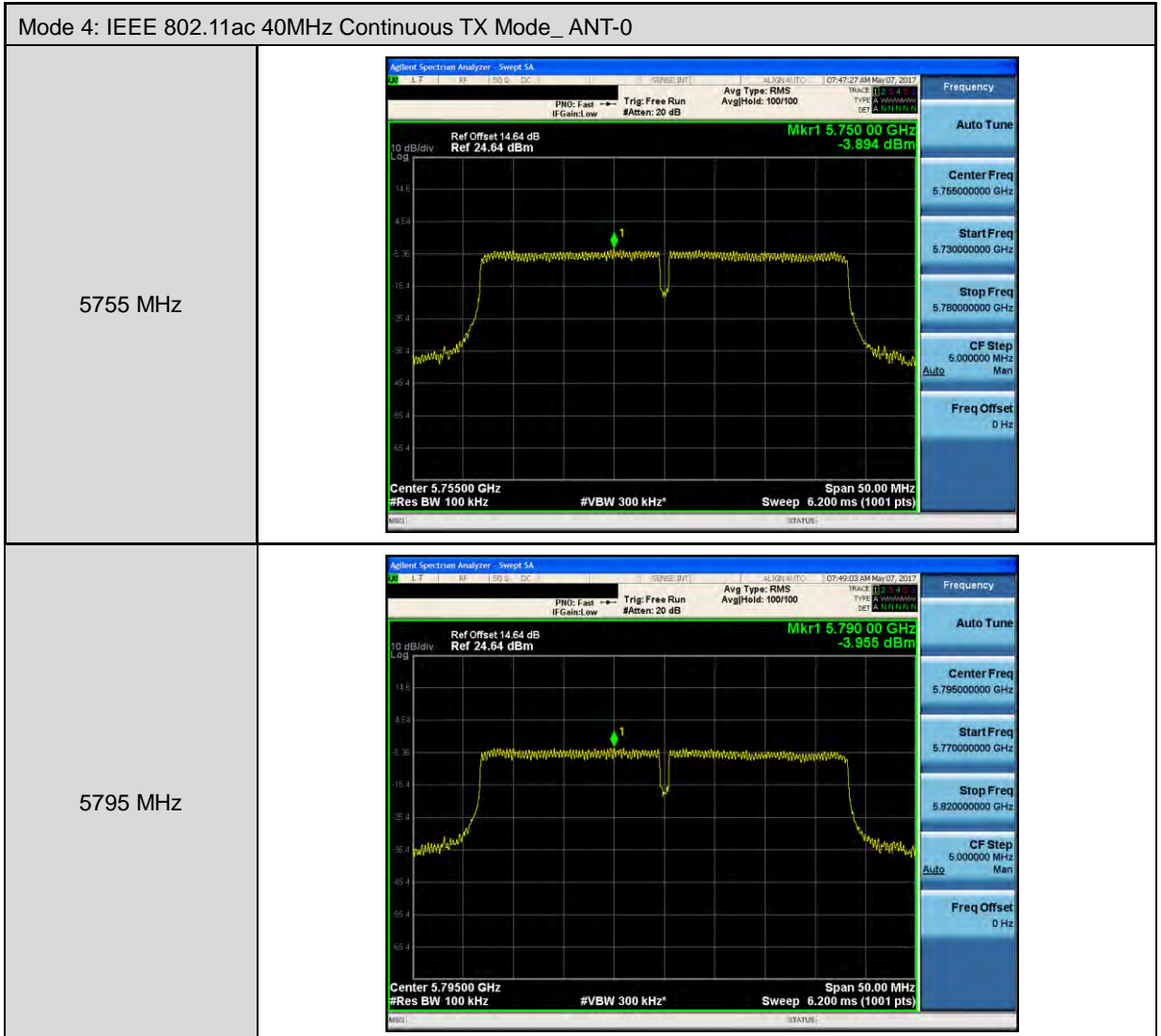


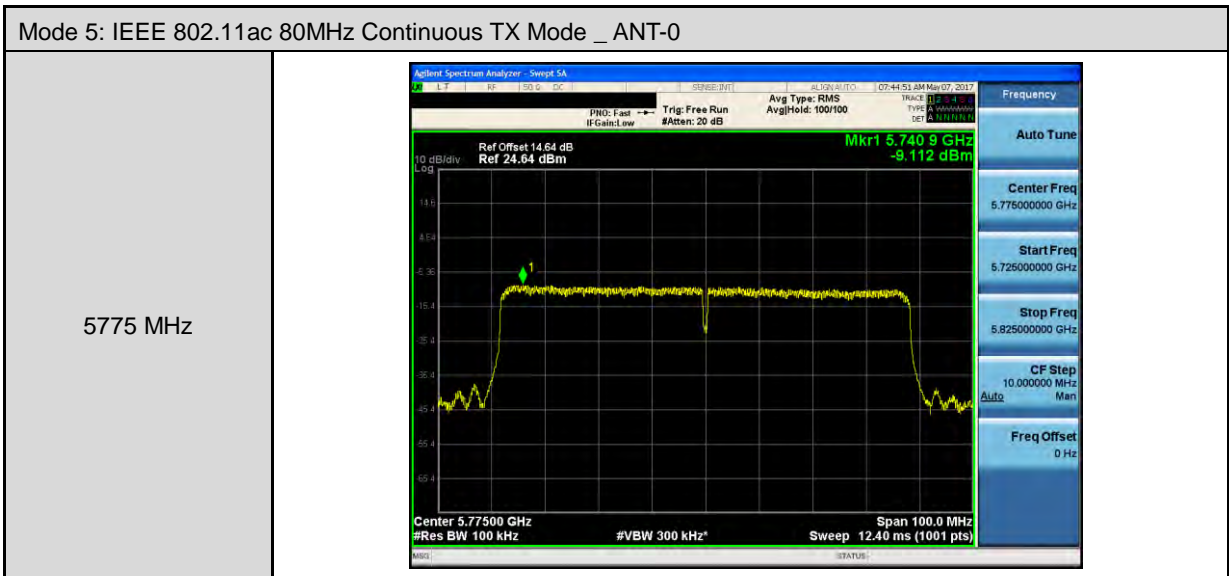
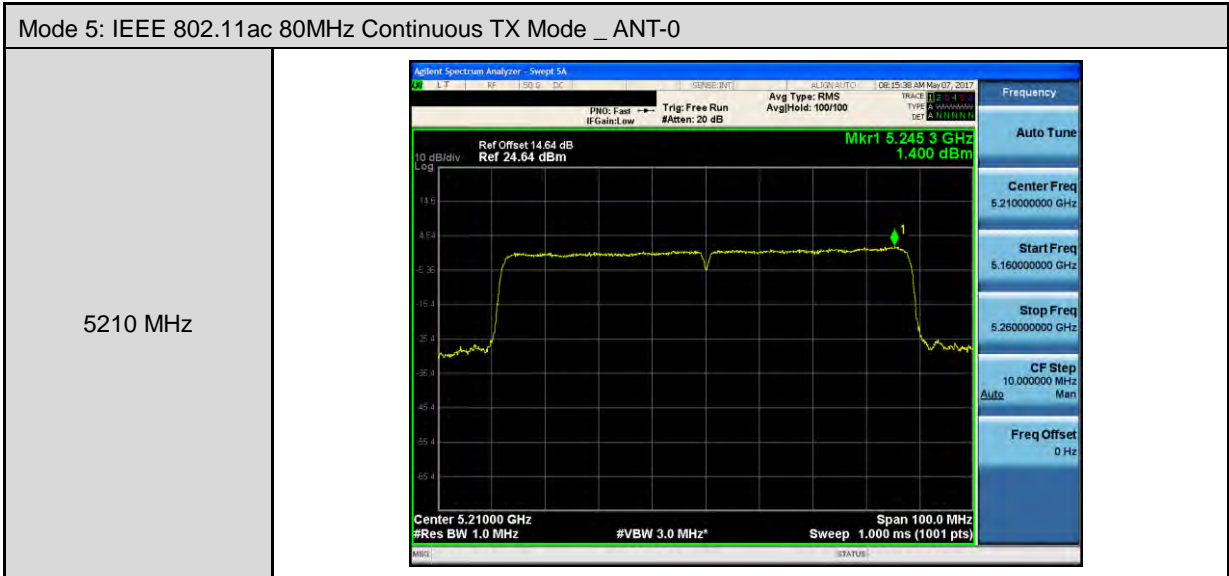
Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode _ ANT-0	
5180 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.181 08 GHz 8.624 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>
5200 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.202 04 GHz 8.581 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>
5240 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.241 12 GHz 8.540 dBm Center 5.24000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* Span 40.00 MHz Sweep 1.000 ms (1001 pts)</p>



Mode 3: IEEE 802.11ac 20MHz Continuous TX Mode _ANT-0	
5745 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.743 77 GHz -0.759 dBm</p> <p>Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5785 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.783 77 GHz -0.280 dBm</p> <p>Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>
5825 MHz	<p>Ref Offset 14.64 dB Ref 24.64 dBm Mkr1 5.821 28 GHz -1.223 dBm</p> <p>Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 3.733 ms (1001 pts)</p>





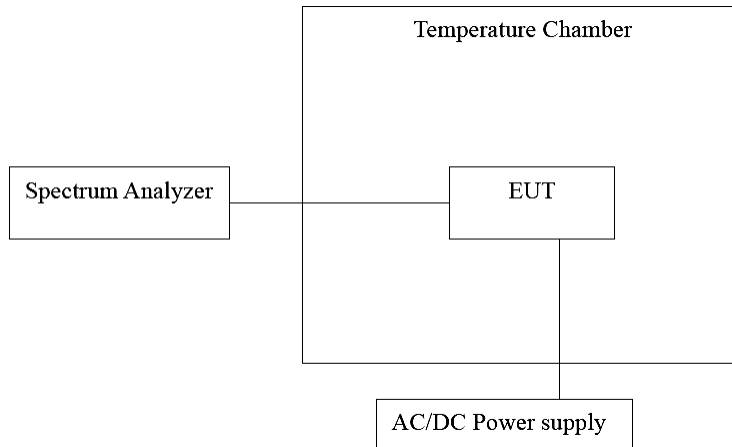


4.8. Frequency Stability Measurement

■ Limit

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

■ Test Setup



■ Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	08/08/2016	1 year
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/17/2017	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

Note: N.C.R. = No Calibration Request.

■ Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.



■ Test Result

Temperature Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5199.9936	-6400	-1.231	Pass
	10		5199.9941	-5900	-1.135	Pass
	20		5199.9946	-5400	-1.038	Pass
	30		5199.9951	-4900	-0.942	Pass
	40		5199.9956	-4400	-0.846	Pass
5785 MHz	0	120	5784.9928	-7200	-1.245	Pass
	10		5784.9934	-6600	-1.141	Pass
	20		5784.994	-6000	-1.037	Pass
	30		5784.9947	-5300	-0.916	Pass
	40		5784.9949	-5100	-0.882	Pass

Voltage Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.9944	-5600	-1.077	Pass
		120.00	5199.9949	-5100	-0.981	Pass
		102.00	5199.9953	-47000	-9.038	Pass
5785 MHz	20	138.00	5784.9939	-6100	-1.054	Pass
		120.00	5784.994	-6000	-1.037	Pass
		102.00	5784.9942	-5800	-1.003	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.



4.9. Antenna Requirement

■ Limit

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

■ Antenna Connector Construction

See section 2 – antenna information.