

RF Test Report

Applicant : Ring LLC
Product Type : Video Doorbell 4
Trade Name : Ring
Model Number : 5D22E9
Applicable Standard : FCC 47 CFR PART 15 SUBPART C
ANSI C63.10:2013
Received Date : Jan. 25, 2021
Test Period : Jan. 25 ~ Feb. 21, 2021
Issued Date : Mar. 09, 2021

Issued by

A Test Lab Techno Corp.
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Taiwan Accreditation Foundation accreditation number: 1330
Frequency Range : 9 kHz to 40 GHz
Test Firm MRA designation number: TW0010

Note:

1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
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3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.



Revision History

Rev.	Issued Date	Revisions	Revised By
00	Mar. 09, 2021	Initial Issue	Yu Chiang

Verification of Compliance

Applicant : Ring LLC

Product Type : Video Doorbell 4

Trade Name : Ring

Model Number : 5D22E9

FCC ID : 2AEUPBHARG071

EUT Rated Voltage : 8-24 Vac, 50/60 Hz, 200 mA

Test Voltage : AC 24 V / DC 3.65 V

Applicable Standard : FCC 47 CFR PART 15 SUBPART C
ANSI C63.10:2013

Test Result : Complied

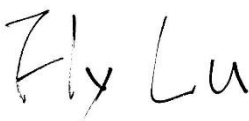
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Taiwan Accreditation Foundation accreditation number: 1330
<http://www.atl-lab.com.tw/e-index.htm>

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. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By

: 

(Manager)

(Fly Lu)

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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
15.207	AC Power Conducted Emission	PASS	-----
15.247(d)	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	Max. Output Power	PASS	-----
15.247(a)(2)	6 dB RF Bandwidth	PASS	-----
15.247(e)	Maximum Power Spectral Density	PASS	-----
15.247(d)	Out of Band Conducted Spurious Emission	PASS	-----
15.203	Antenna Requirement	PASS	-----

Decision Rule

- ☒ Uncertainty is not included.
- ☐ Uncertainty is included.

Standard	Description
CFR47, Part 15, Subpart C	Intentional Radiators
ANSI C63. 10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 D01 15.247 Meas Guidance v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES
KDB 662911 D01 v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)



1.2. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conducted Emission	150 kHz ~ 30 MHz	2.7 dB
Radiated Emission	9 kHz ~ 30 MHz	2.2 dB
	30 MHz ~ 1000 MHz	5.1 dB
	1000 MHz ~ 18000 MHz	5.1 dB
	18000 MHz ~ 26500 MHz	4.4 dB
	26500 MHz ~ 40000 MHz	4.6 dB
Conducted Output Power	1.1 dB	
RF Bandwidth	4.7 %	
Power Spectral Density	1.1 dB	



2 EUT Description

Applicant	Ring LLC 1523 26th Street, Santa Monica United States 90404			
Manufacturer	Ring LLC 1523 26th Street, Santa Monica United States 90404			
Product Type	Video Doorbell 4			
Trade Name	Ring			
Model Number	5D22E9			
FCC ID	2AEUPBHARG071			
Operate Freq. Band	Frequency Range (MHz)	Modulation	Channel Bandwidth	Data Rate 800 GI (ns)
IEEE 802.11b	2412 ~ 2462	DSSS	20 MHz	Up to 11 Mbps
IEEE 802.11g	2412 ~ 2462	OFDM	20 MHz	Up to 54 Mbps
IEEE 802.11n 2.4 GHz 20 MHz	2412 ~ 2462	OFDM	20 MHz	Up to 72.7 Mbps
Antenna information	ANT	Model Number	Type	Max. Gain (dBi)
	ANT-0(MAIN)	RFPCA491914EMLB301	PCB Antenna	0.72
	ANT-1(AUX)	RFPCA491910EMLB303	PCB Antenna	0.61
Antenna Delivery	See section 3.1			
Operate Temp. Range	-20 ~ +50 °C			

Frequency Band	Max. RF Output Power (W)
IEEE 802.11b	0.090
IEEE 802.11g	0.172
IEEE 802.11n 2.4 GHz 20 MHz	0.163

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 802.11b Continuous TX mode
Mode 3: IEEE 802.11g Continuous TX mode
Mode 4: IEEE 802.11n 2.4 GHz 20 MHz 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.

Test Mode	ANT-0	ANT-1	ANT-0+1
Mode 2	V	V	---
Mode 3	V	V	---
Mode 4	V	V	---

Test Mode	Antenna Delivery	Data Rate (Mbps)	Test Channel
Mode 2	1TX (Diversity)	1	1, 6, 11
Mode 3	1TX (Diversity)	6	1, 6, 11
Mode 4	1TX (Diversity)	6.5	1, 6, 11



Duty cycle

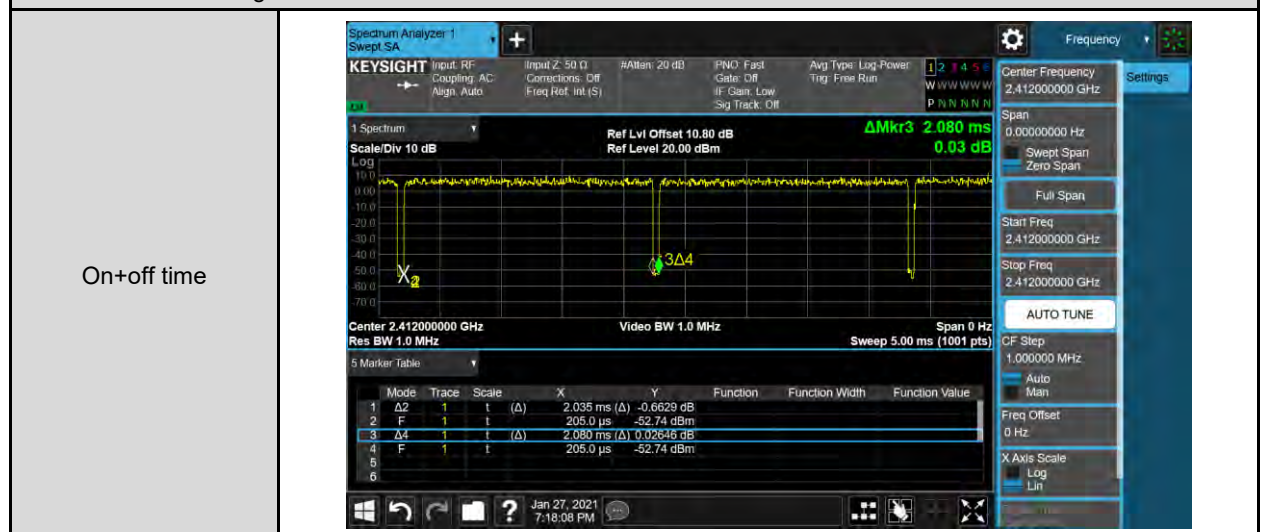
Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
Mode 2	2412.0	10.000	10.000	1.000	0.000	0.010
Mode 3	2412.0	2.035	2.080	0.978	0.095	0.491
Mode 4	2412.0	1.900	1.945	0.977	0.102	0.526

Duty Cycle Graphs

Mode 2: IEEE 802.11b Continuous TX mode

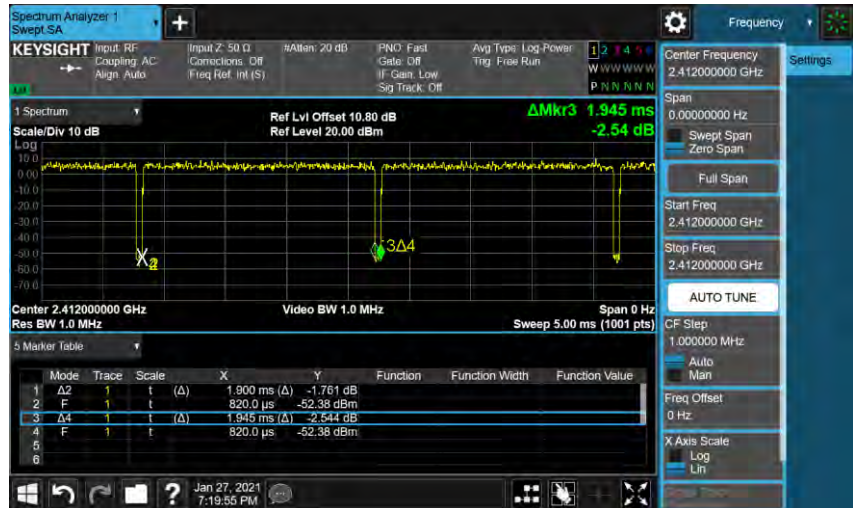


Mode 3: IEEE 802.11g Continuous TX mode



Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode

On+off time



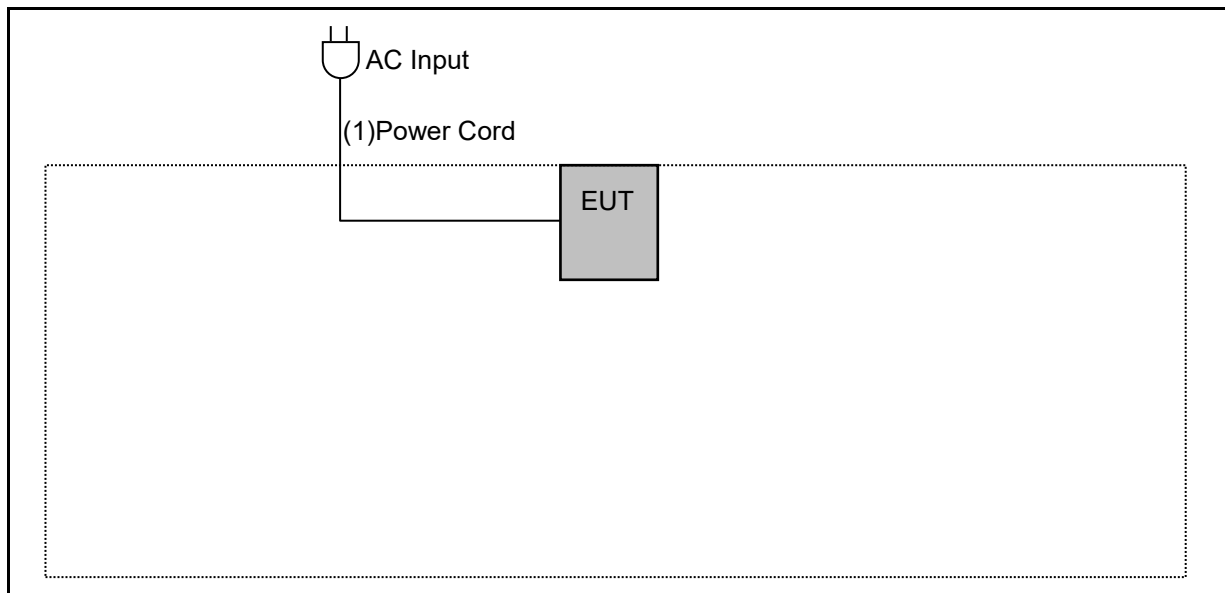
3.2. EUT Test Step

1.	Setup the EUT shown on "Configuration of Test System Details".
2.	Turn on the power of all equipment.
3.	Turn on TX function.
4.	EUT run test program.

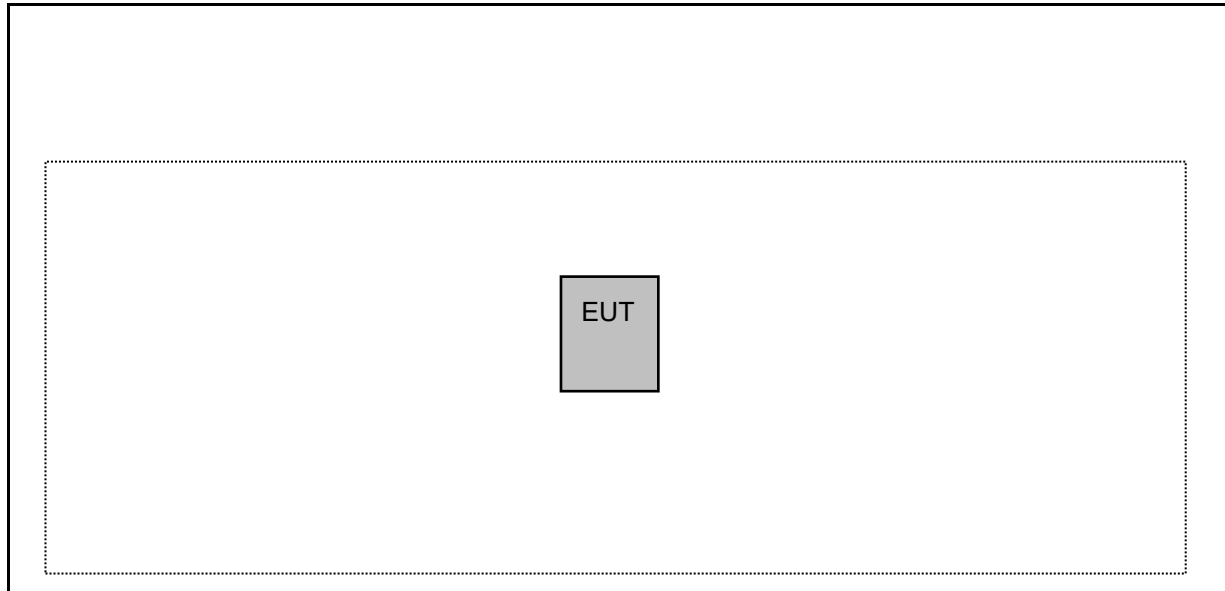
Measurement Software			
No.	Description	Software	Version
1	Conducted Emission	EZ EMC	1.1.4.3
2	Radiated Emission	EZ EMC	1.1.4.4

3.3. Configuration of Test System Details

Conducted Emissions



Radiated Emission



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Power Cord	BAOHING	ATL-002	--	--



3.4. Test Instruments

For Conducted Emission

Test Period: Jan. 30 ~ Feb. 21, 2021

Testing Engineer: Louis Shen, Andy Lu, Peter Liu

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Test Receiver	R&S	ESCI	100367	05/25/2020	1 year
RF Cable	Woken	00100D1380194M	TE-02-03	05/25/2020	1 year
LISN	R&S	ENV216	101040	03/23/2020	1 year
LISN	R&S	ENV216	101041	04/06/2020	1 year

For Radiated Emissions

Test Period: Jan. 25 ~ Feb. 21, 2021

Testing Engineer: Ricky Liu, Hung Chou, Brian Lin, Pink Li

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer (2 Hz~50 GHz)	Keysight	N9030B	MY57143537	04/14/2020	1 year
Pre Amplifier (1 kHz~1 GHz)	Titan	T0910E00014330A1F	001	07/23/2020	1 year
Pre Amplifier (1~26.5 GHz)	Titan	T0912E01263025A1F	002	07/23/2020	1 year
Horn Antenna (1~18 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	02207	06/30/2020	1 year
Horn Antenna (18~40 GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	08/18/2020	1 year
Coaxial Cable	Titan	T0710AT327A10A100	J11005	08/13/2020	1 year
Coaxial Cable	Titan	T0710AT327A10A900	J11004	08/13/2020	1 year
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	03/27/2020	1 year

For Conducted

Test Period: Jan. 27 ~ Feb. 09, 2021

Testing Engineer: Peter Liu, Andy Lu

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer (10 Hz~26.5 GHz)	KEYSIGHT	N9010B	MY59071418	03/17/2020	1 year
Power Sensor	Agilent	N1921A	MY45241957	12/09/2020	1 year
Power Meter	Agilent	N1911A	MY45101619	12/09/2020	1 year

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



3.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	45-75

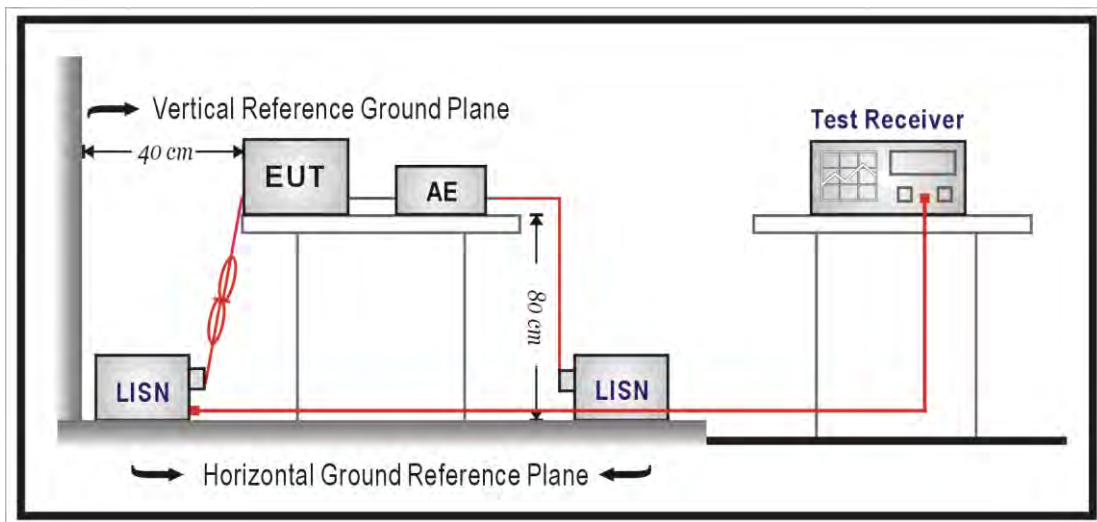
4 Measurement Procedure

4.1. AC Power Line 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 Setup



■ 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 50 ohm 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 40 cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80 cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12 mm 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 150 kHz to 30 MHz 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 1 m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4 m. All of interconnecting cables that hang closer than 40 cm 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 0.1 m. All $50\ \Omega$ ports of the LISN shall be resistively terminated into $50\ \Omega$ 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.

4.2. Radiated Emission Measurement

■ Limit

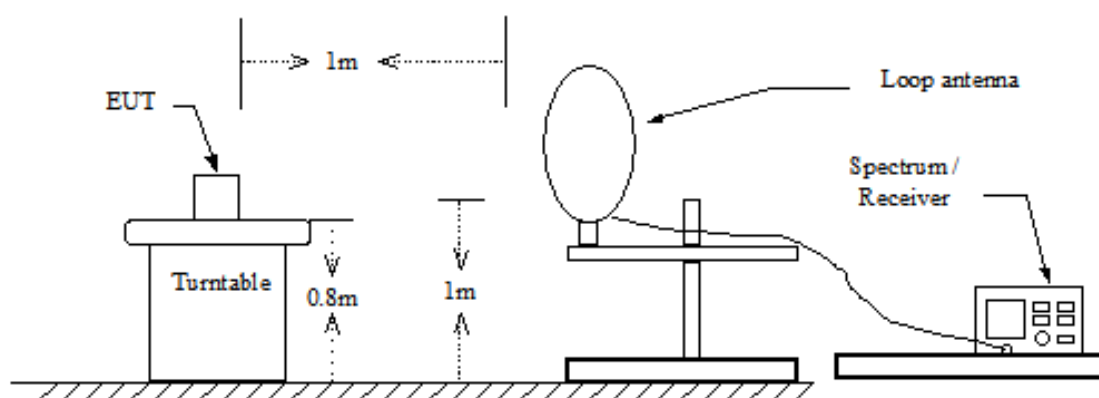
According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at meter)	Measurement Distance (meters)
0.009 – 0.490	$2400 / F$ (kHz)	300
0.490 – 1.705	$24000 / F$ (kHz)	30
1.705 – 30.0	30	30
30 - 88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

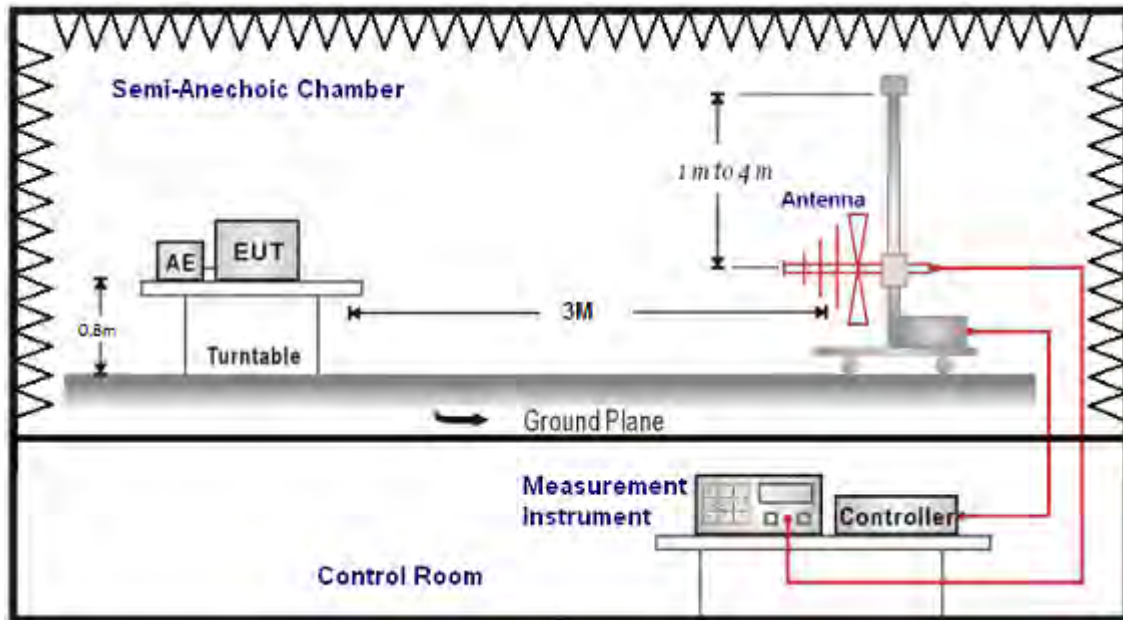
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

■ Setup

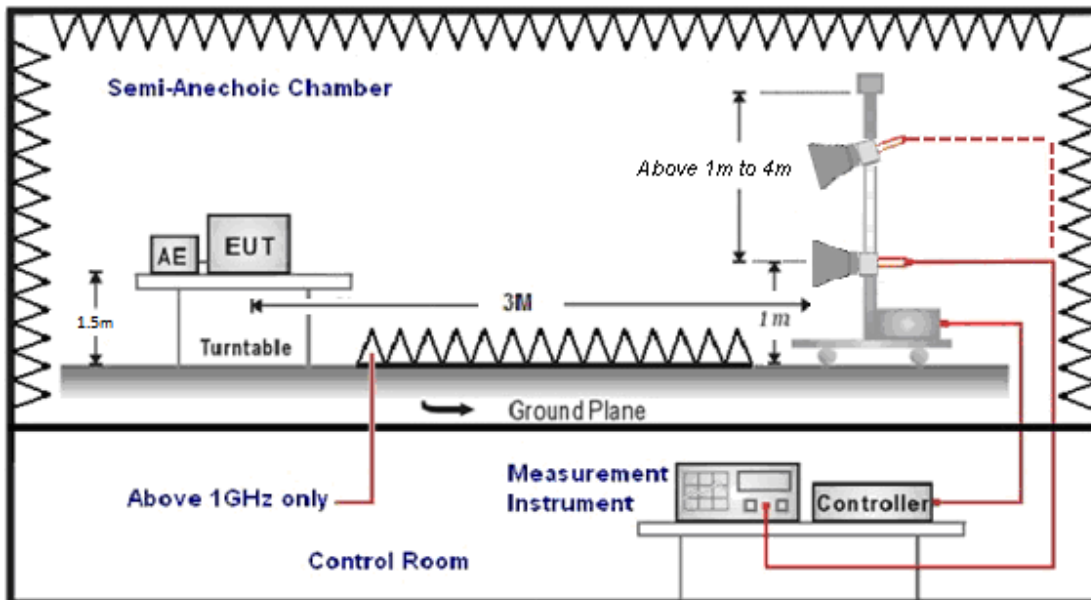
9 kHz ~ 30 MHz



Below 1 GHz



Above 1 GHz



■ 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, 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 26.5 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 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 . 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 Biconilog Antenna at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna was used in frequencies 1 –26.5 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 (20 dB/decade).

For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB 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 pre 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) $\text{Amplitude (dBuV/m)} = \text{FI (dBuV)} + \text{AF (dBuV)} + \text{CL (dBuV)} - \text{Gain (dB)}$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

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

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

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

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

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.

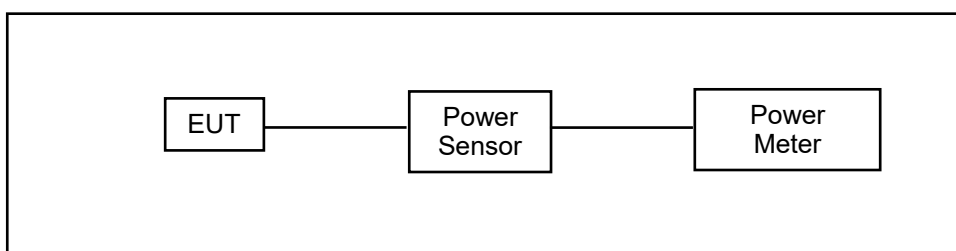
4.3. Maximum Conducted Output Power Measurement

■ Limit

For systems using digital modulation in the 2400-2483.5 MHz, the limit for maximum output power is 30 dBm.

And According to 15.247 (b), 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 6 dBi.

■ Test Setup



■ Test Procedure

The testing follows the Measurement Procedure of ANSI C63.10:2013 section 11.9.2.3.2 Method AVGPM.

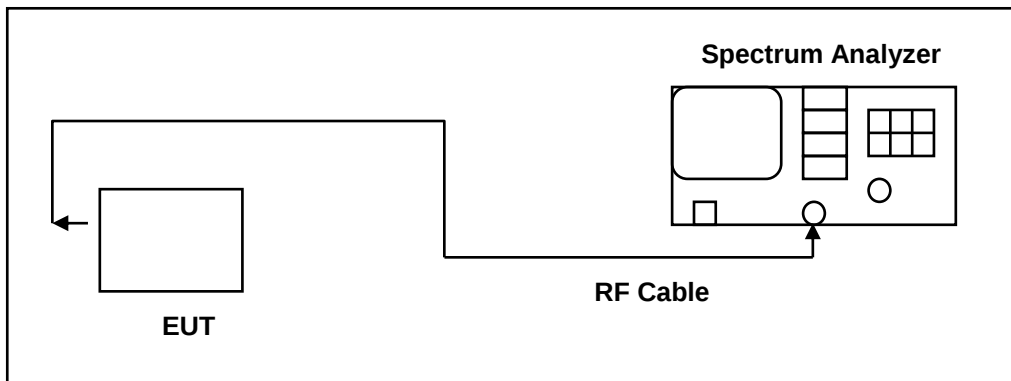
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor.

4.4. 6 dB RF Bandwidth Measurement

■ Limit

6 dB RF Bandwidth: Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

■ Test Setup



■ Test Procedure

The EUT tested to DTS test procedure of ANSI C63.10:2013 section 11.8.2 option2 for compliance to FCC 47CFR 15.247 requirements.

6 dB RF Bandwidth: The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RBW 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.

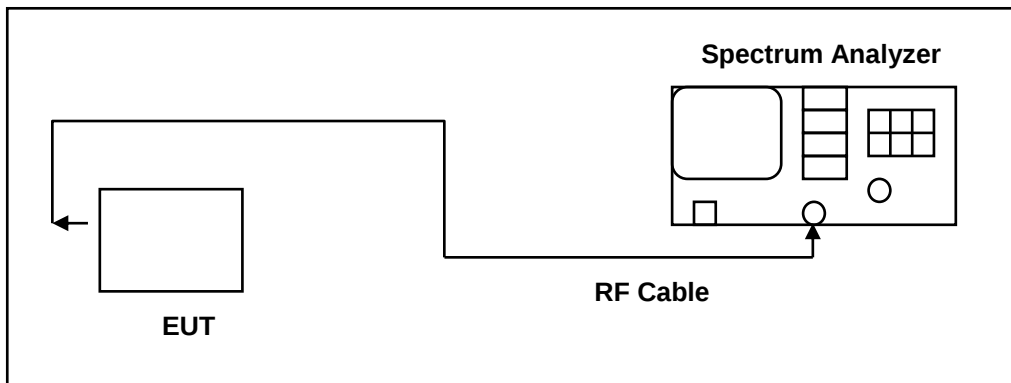
The test was performed at 3 channels (Channel low, middle, high)

4.5. Maximum Power Spectral Density Measurement

■ Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

■ Test Setup



■ Test Procedure

The EUT tested to DTS test procedure of ANSI C63.10:2013 section 11.10.2 Method PKPSD for compliance to FCC 47CFR 15.247 requirements.

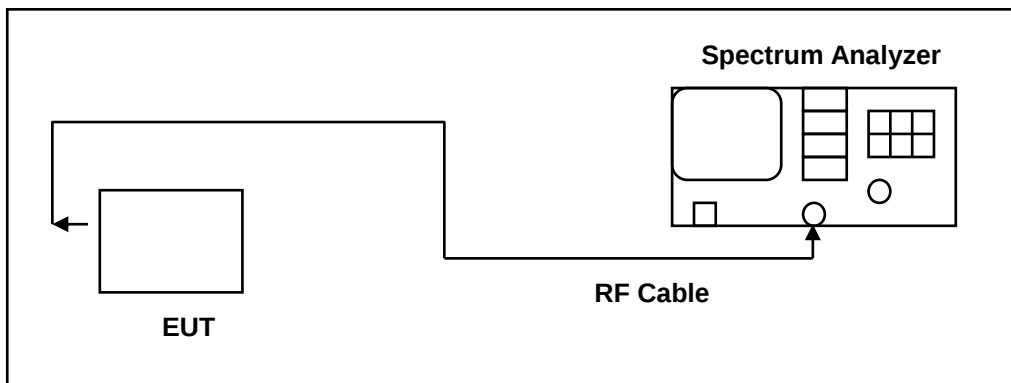
1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.6. Out of Band Conducted Emissions Measurement

■ Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

■ Test Setup



■ Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 30 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function. All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels.



4.7. Antenna Measurement

■ 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 15.247 (b), 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 6 dBi.

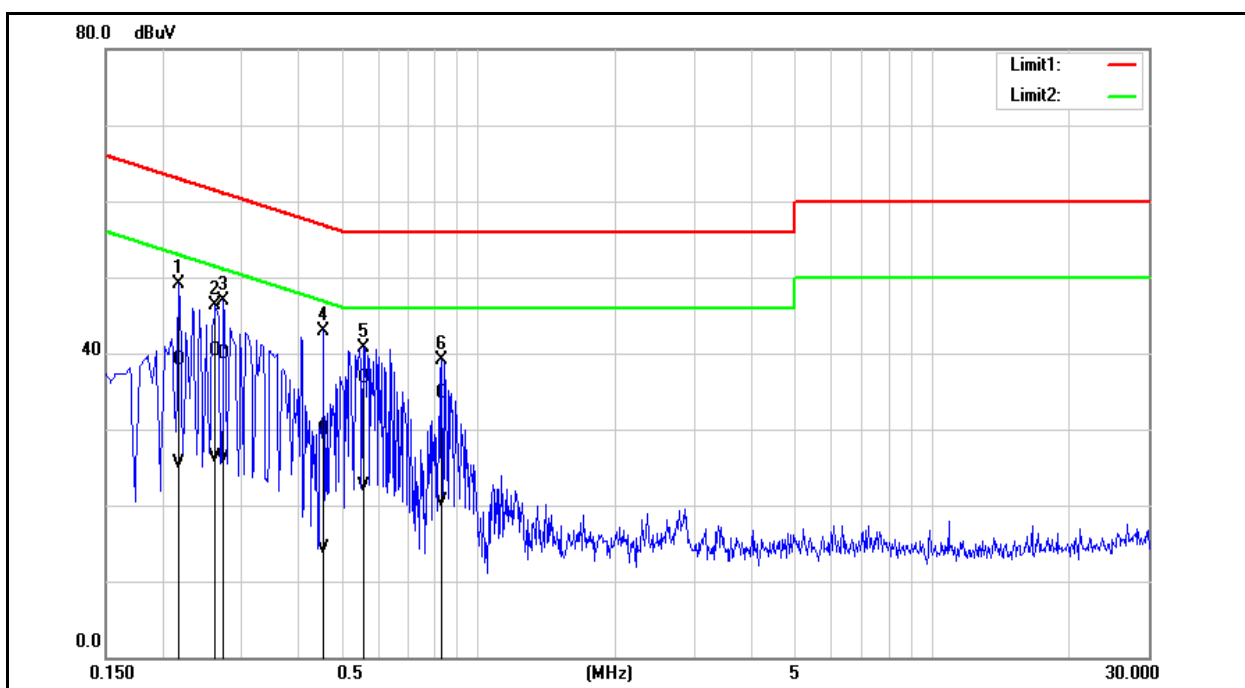
■ Antenna Description

See section 2 – antenna information.

5 Test Results

Annex A. Conducted Emission

Standard:	FCC Part 15.247	Line:	L1
Test item:	Conducted Emission	Power:	AC 24 V
Mode:	Mode 1		
Description:			

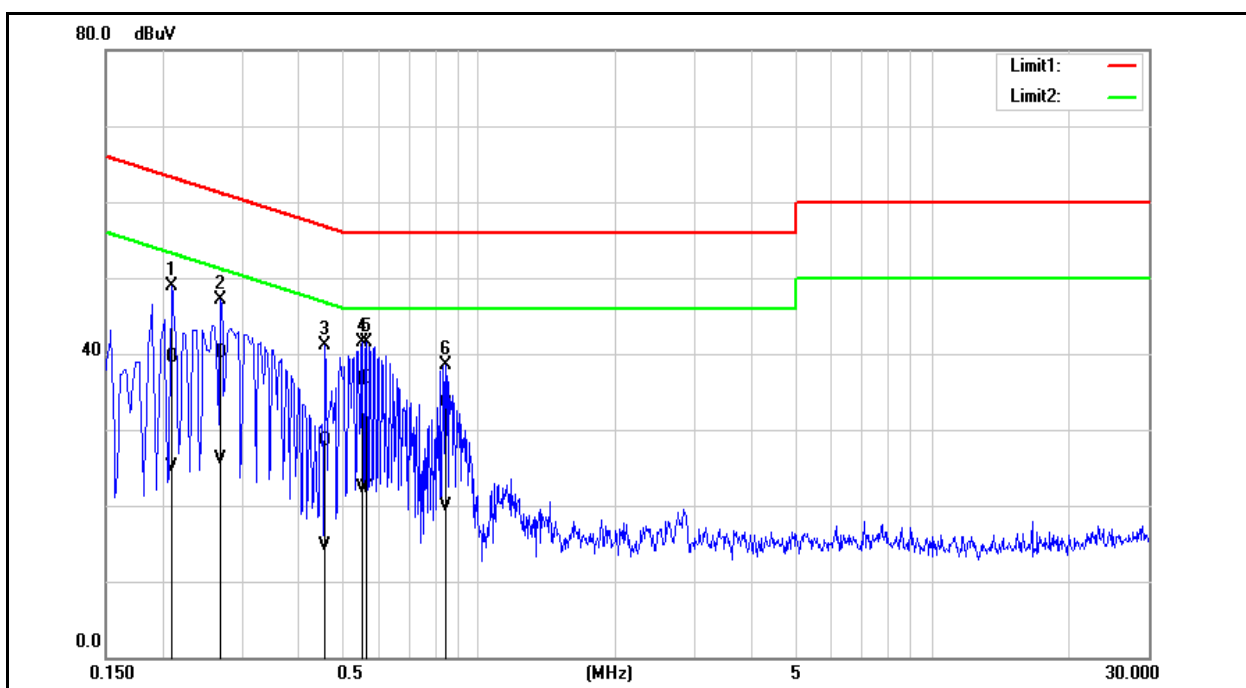


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2180	29.50	15.72	9.70	39.20	25.42	62.89	52.89	-23.69	-27.47	Pass
2	0.2620	30.52	16.65	9.70	40.22	26.35	61.37	51.37	-21.15	-25.02	Pass
3	0.2740	30.21	16.48	9.70	39.91	26.18	61.00	51.00	-21.09	-24.82	Pass
4	0.4540	20.22	4.56	9.71	29.93	14.27	56.80	46.80	-26.87	-32.53	Pass
5	0.5580	26.93	12.78	9.71	36.64	22.49	56.00	46.00	-19.36	-23.51	Pass
6	0.8300	24.93	10.85	9.71	34.64	20.56	56.00	46.00	-21.36	-25.44	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 15.247	Line:	N
Test item:	Conducted Emission	Power:	AC 24 V
Mode:	Mode 1		
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	0.2100	29.91	15.32	9.69	39.60	25.01	63.21	53.21	-23.61	-28.20	Pass
2	0.2700	30.37	16.46	9.69	40.06	26.15	61.12	51.12	-21.06	-24.97	Pass
3	0.4580	18.74	4.91	9.70	28.44	14.61	56.73	46.73	-28.29	-32.12	Pass
4	0.5540	26.85	12.58	9.70	36.55	22.28	56.00	46.00	-19.45	-23.72	Pass
5	0.5660	26.97	12.69	9.70	36.67	22.39	56.00	46.00	-19.33	-23.61	Pass
6	0.8460	23.75	10.23	9.70	33.45	19.93	56.00	46.00	-22.55	-26.07	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).
2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Annex B. Conducted Test Results

Maximum Conducted Output Power Measurement

ANT-0							
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		Peak Output Power		
			Measurement Results		Measurement Results		Limit
			dBm	W	dBm	W	dBm
Mode 2	2412	1 M	17.18	0.052	19.32	0.086	≤ 30
	2437		17.14	0.052	19.21	0.083	≤ 30
	2462		17.25	0.053	19.31	0.085	≤ 30
Mode 3	2412	6 M	15.58	0.036	21.35	0.136	≤ 30
	2437		17.04	0.051	22.28	0.169	≤ 30
	2462		14.87	0.031	20.94	0.124	≤ 30
Mode 4	2412	6.5 M	14.55	0.029	20.97	0.125	≤ 30
	2437		16.76	0.047	21.97	0.157	≤ 30
	2462		14.01	0.025	20.57	0.114	≤ 30

ANT-1							
Test Mode	Frequency (MHz)	Data Rate	Average Output Power		Peak Output Power		
			Measurement Results		Measurement Results		Limit
			dBm	W	dBm	W	dBm
Mode 2	2412	1 M	17.28	0.053	19.45	0.088	≤ 30
	2437		17.42	0.055	19.52	0.090	≤ 30
	2462		17.32	0.054	19.43	0.088	≤ 30
Mode 3	2412	6 M	15.62	0.036	21.43	0.139	≤ 30
	2437		17.09	0.051	22.35	0.172	≤ 30
	2462		14.96	0.031	21.01	0.126	≤ 30
Mode 4	2412	6.5 M	14.61	0.029	21.04	0.127	≤ 30
	2437		16.83	0.048	22.13	0.163	≤ 30
	2462		14.06	0.025	20.62	0.115	≤ 30

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



6 dB RF Bandwidth Measurement

ANT-0			
Test Mode	Frequency (MHz)	Measurement (kHz)	Limit (kHz)
Mode 2	2412	10130	≥ 500
	2437	10120	≥ 500
	2462	10120	≥ 500
Mode 3	2412	16390	≥ 500
	2437	16380	≥ 500
	2462	16370	≥ 500
Mode 4	2412	17580	≥ 500
	2437	17580	≥ 500
	2462	17580	≥ 500

Test Graphs

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz





Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode_ANT-0

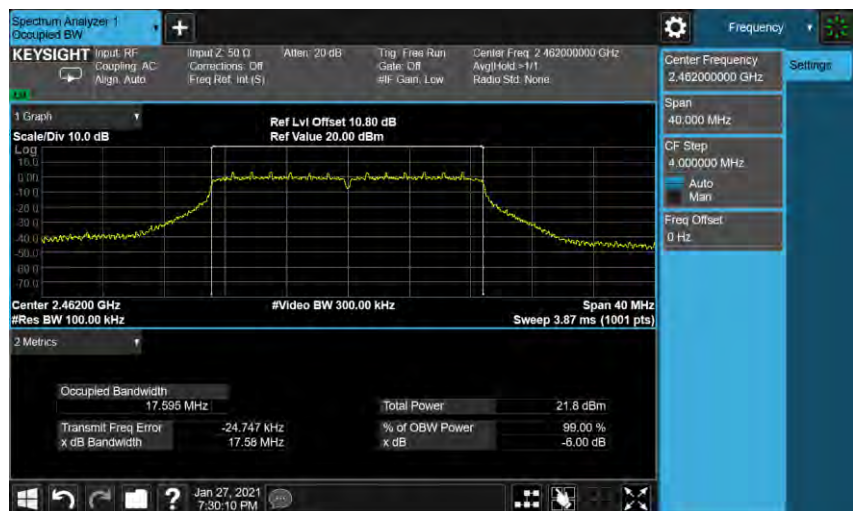
2412 MHz



2437 MHz



2462 MHz





Maximum Power Spectral Density Measurement

ANT-0			
Test Mode	Frequency (MHz)	Measurement (dBm/3 kHz)	Limit (dBm/ 3 kHz)
Mode 2	2412	-5.900	≤ 8
	2437	-5.950	≤ 8
	2462	-6.150	≤ 8
Mode 3	2412	-9.410	≤ 8
	2437	-7.140	≤ 8
	2462	-10.130	≤ 8
Mode 4	2412	-10.110	≤ 8
	2437	-7.050	≤ 8
	2462	-10.730	≤ 8



Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz

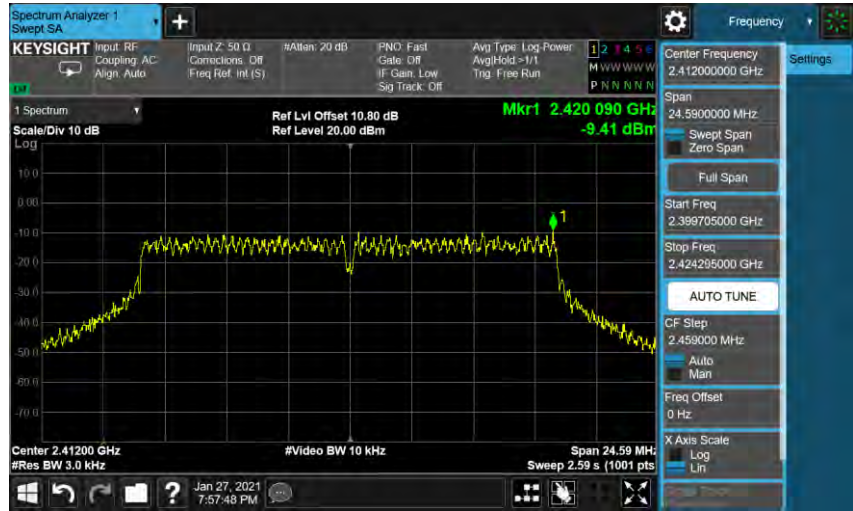


2462 MHz

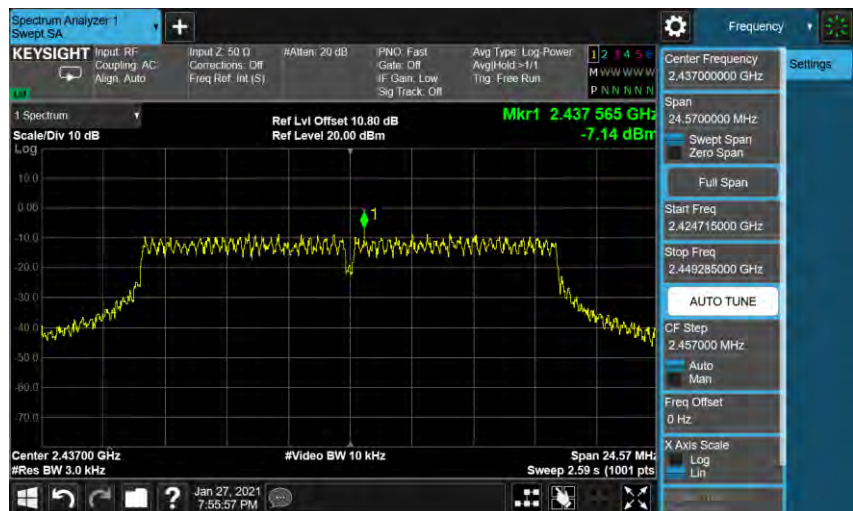


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

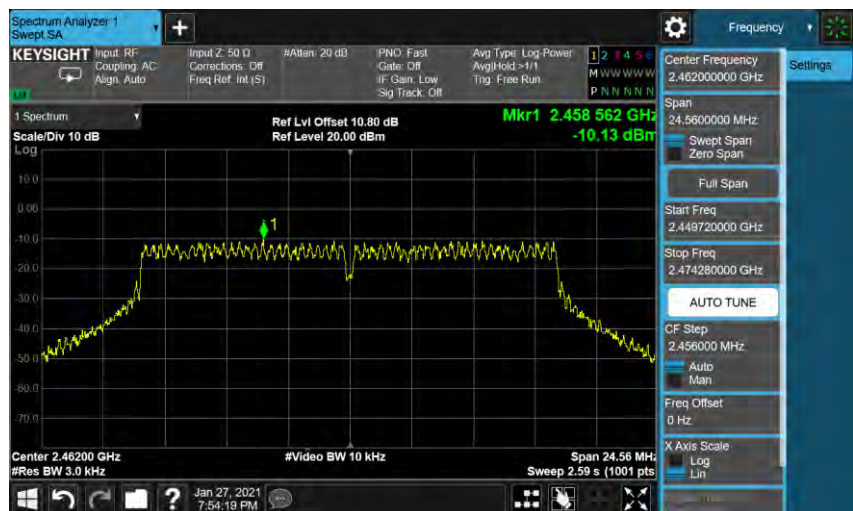
2412 MHz



2437 MHz

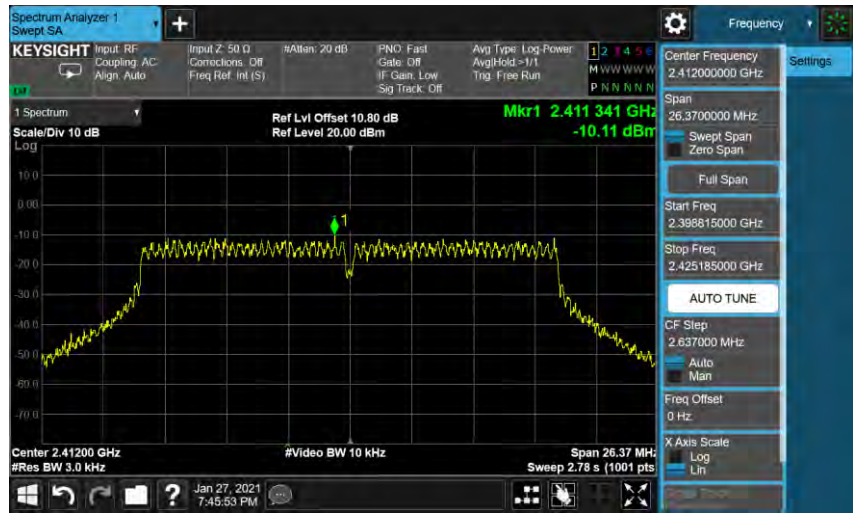


2462 MHz

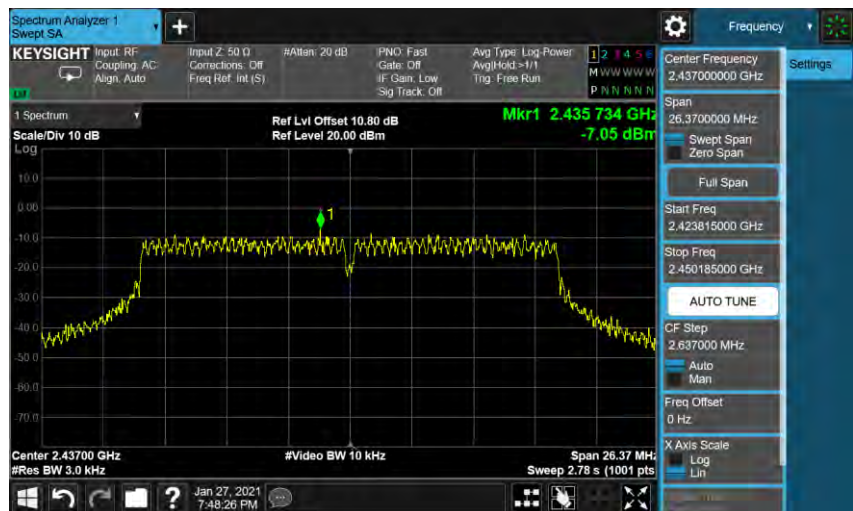


Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode_ANT-0

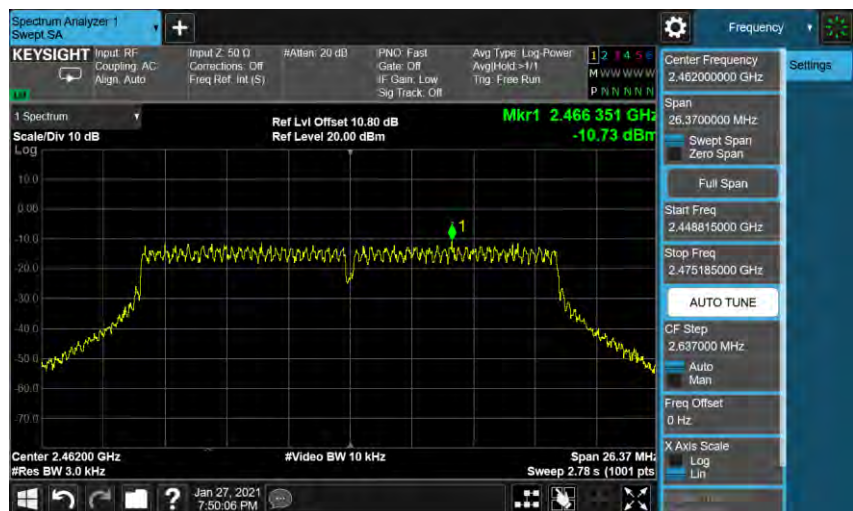
2412 MHz



2437 MHz



2462 MHz



Out of Band Conducted Emissions Measurement

■ Test Graphs

Reference level

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz





Out of Band Conducted Emissions

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz



Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode_ANT-0

2412 MHz



2437 MHz



2462 MHz





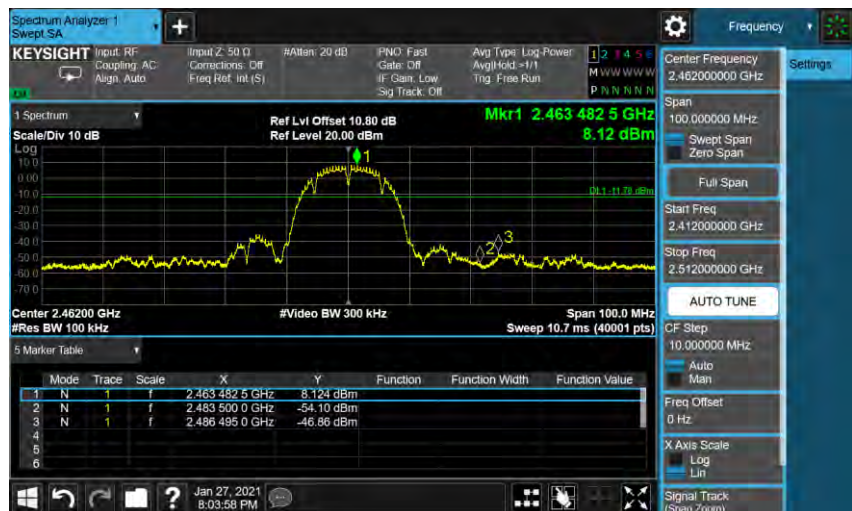
Conducted Band Edge

Mode 2: IEEE 802.11b Continuous TX mode_ANT-0

2412 MHz



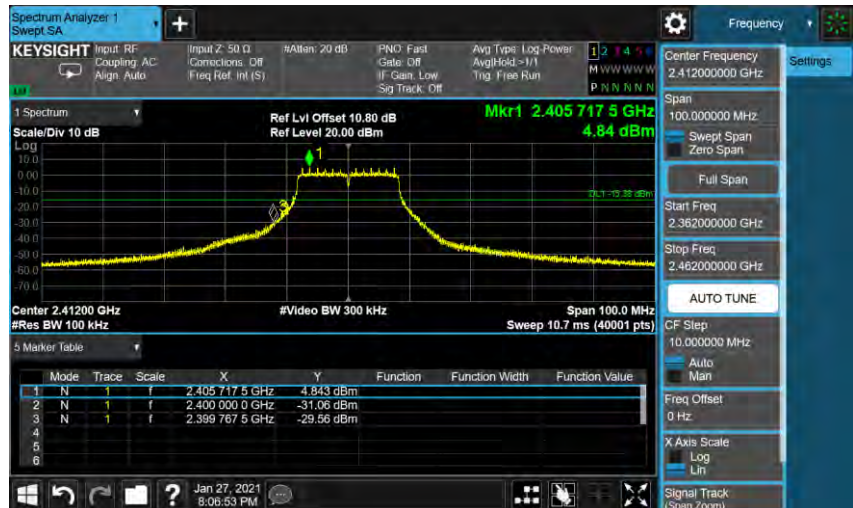
2462 MHz



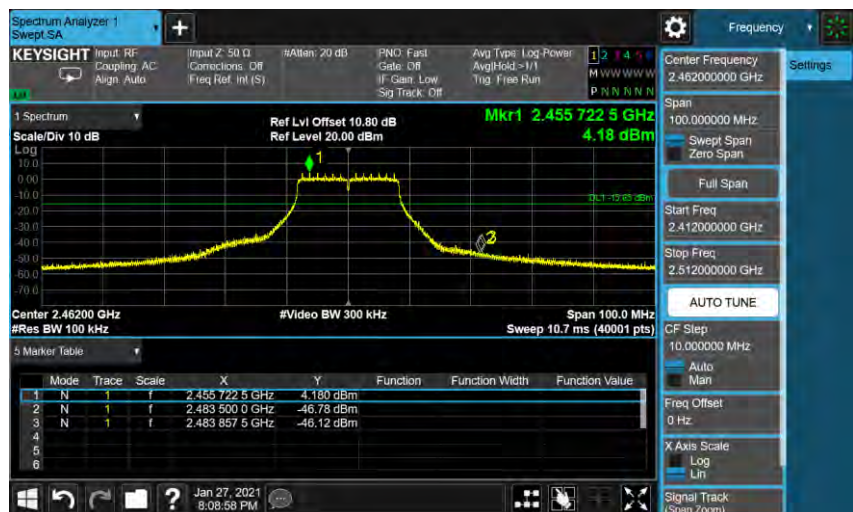


Mode 3: IEEE 802.11g Continuous TX mode_ANT-0

2412 MHz

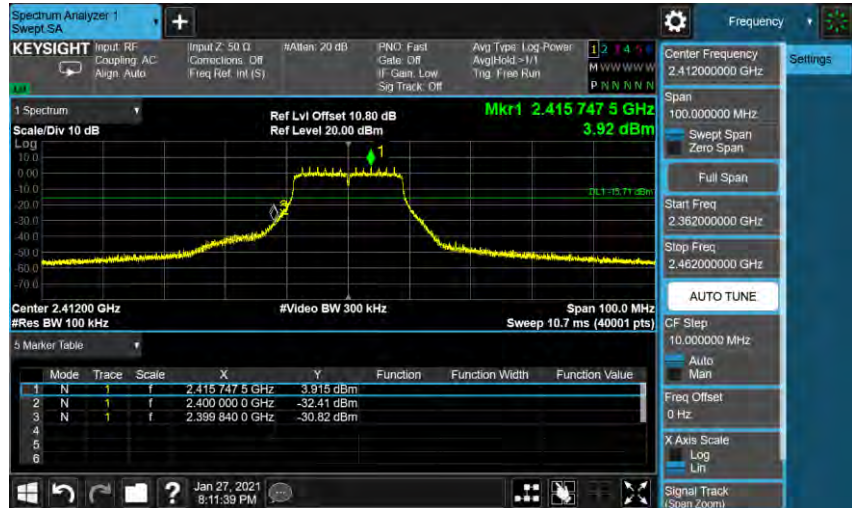


2462 MHz



Mode 4: IEEE 802.11n 2.4 GHz 20 MHz Continuous TX mode _ANT-0

2412 MHz



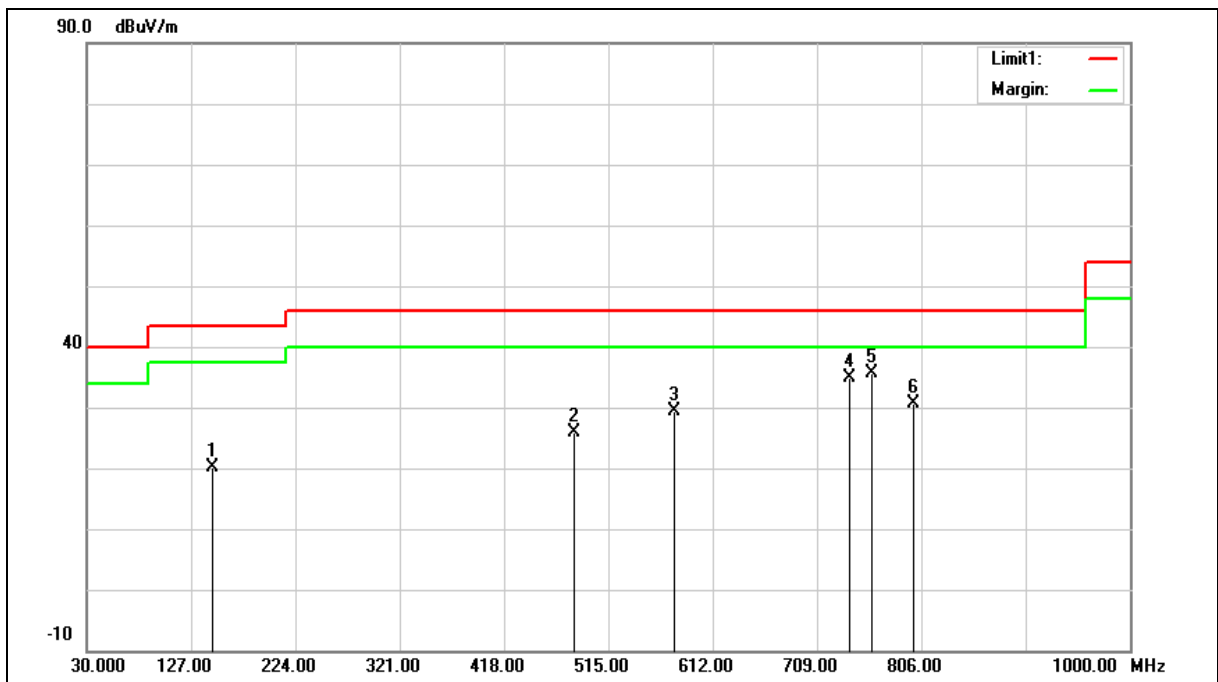
2462 MHz



Annex C. Radiated Emission Measurement

Below 1 GHz

Standard:	FCC Part 15.247	Test Distance:	3 m
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	147.3700	44.52	-24.47	20.05	43.50	-23.45	QP
2	482.9900	45.73	-19.82	25.91	46.00	-20.09	QP
3	576.1100	47.07	-17.73	29.34	46.00	-16.66	QP
4	739.0700	50.17	-15.40	34.77	46.00	-11.23	QP
5	759.4400	50.61	-15.10	35.51	46.00	-10.49	QP
6	799.2100	45.08	-14.53	30.55	46.00	-15.45	QP

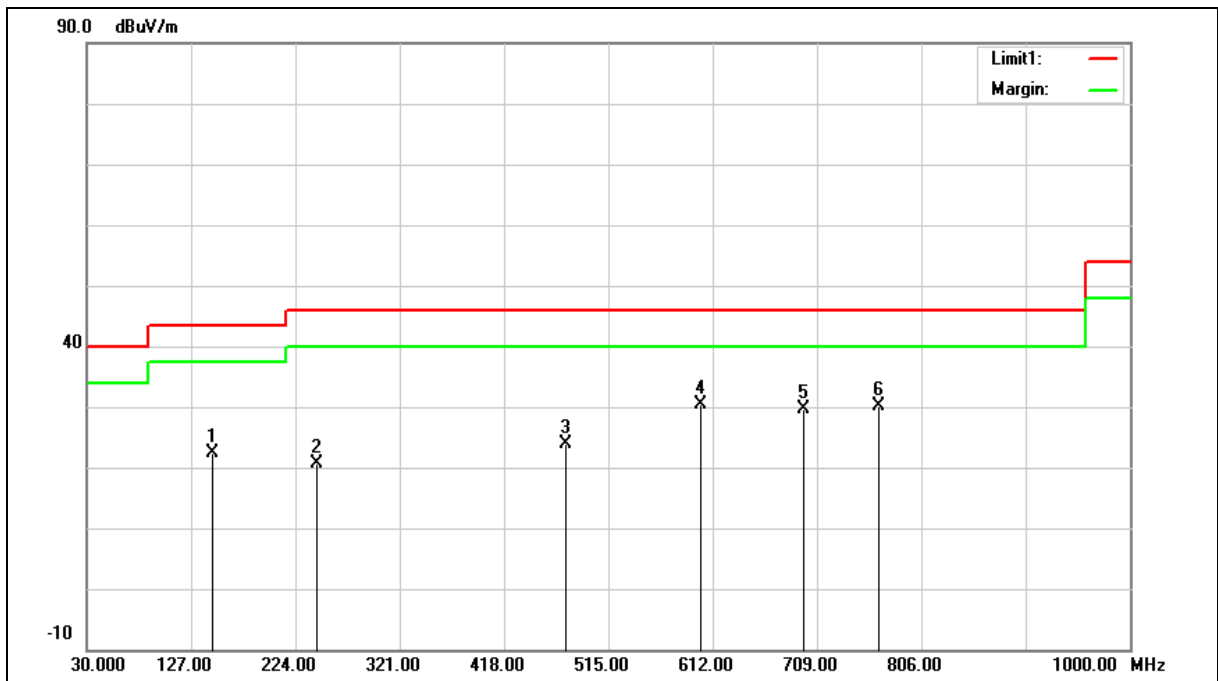
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: 20.05 = -24.47 + 44.52.

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 15.247	Test Distance:	3 m
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	147.3700	46.97	-24.47	22.50	43.50	-21.00	QP
2	243.4000	46.04	-25.48	20.56	46.00	-25.44	QP
3	475.2300	43.76	-19.91	23.85	46.00	-22.15	QP
4	600.3600	47.39	-17.12	30.27	46.00	-15.73	QP
5	696.3900	45.78	-16.06	29.72	46.00	-16.28	QP
6	766.2300	45.18	-15.01	30.17	46.00	-15.83	QP

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

Example: 22.50 = -24.47 + 46.97.

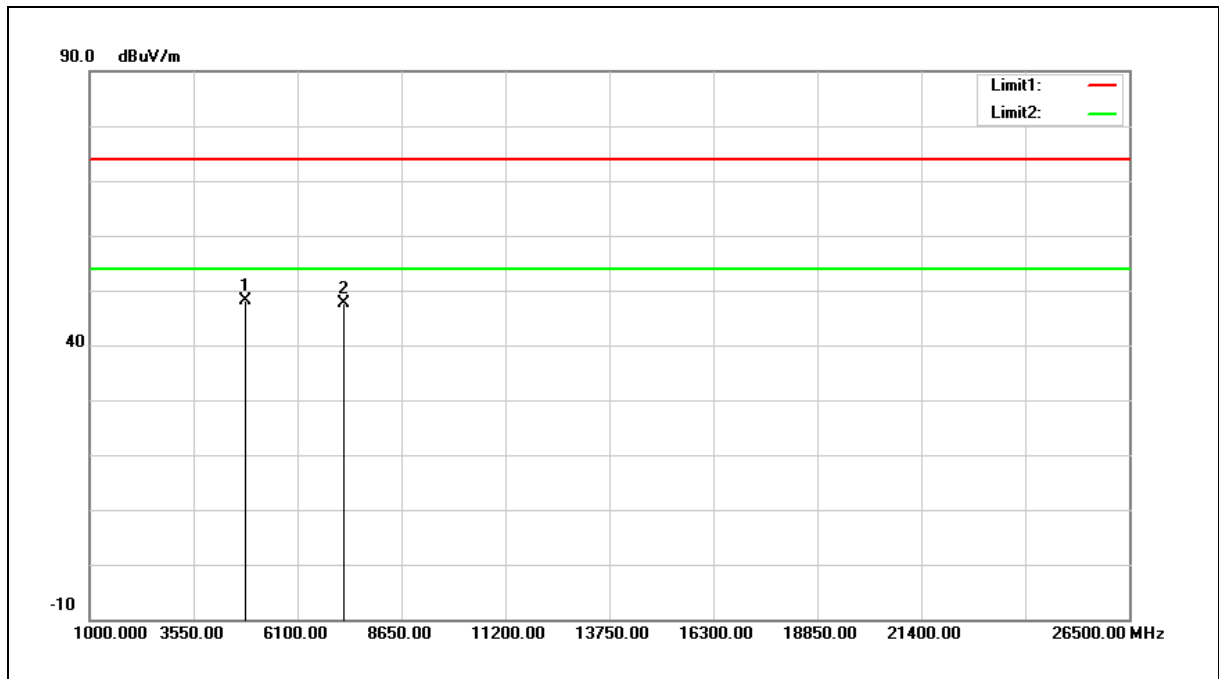
2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

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

Harmonic

Above 1 GHz

Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	49.47	-1.25	48.22	74.00	-25.78	peak
2	7236.000	41.74	5.85	47.59	74.00	-26.41	peak

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

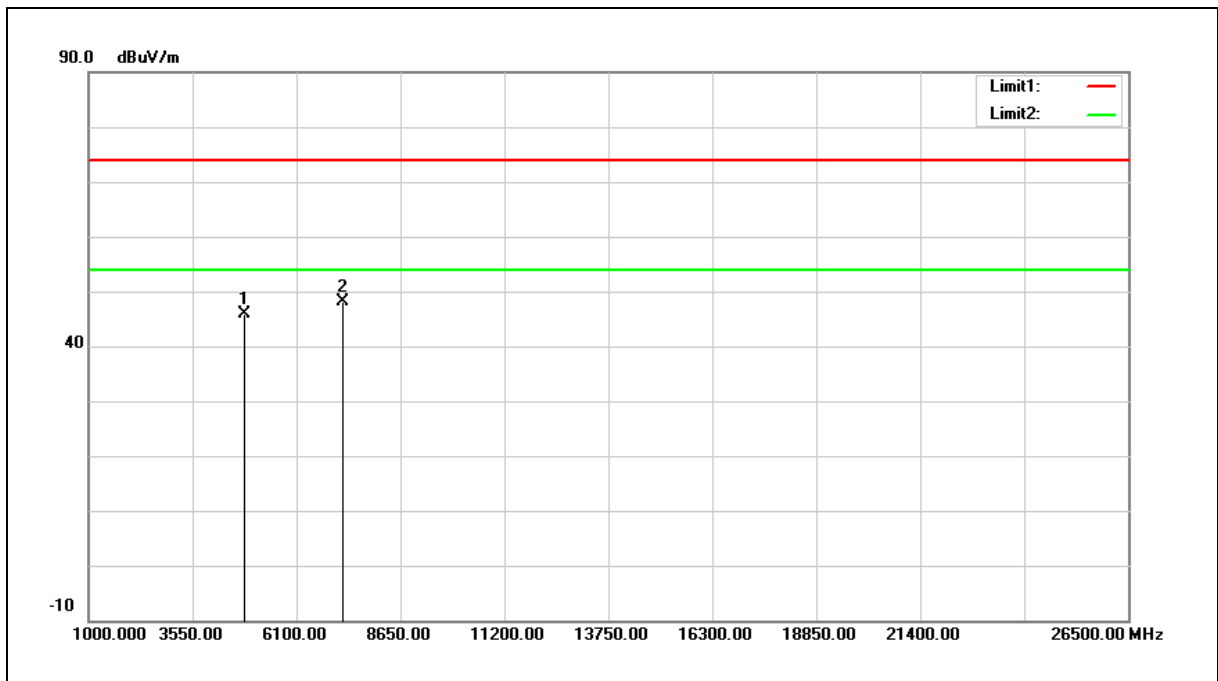
Example: 48.22 = -1.25 + 49.47.

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	47.24	-1.25	45.99	74.00	-28.01	peak
2	7236.000	42.35	5.85	48.20	74.00	-25.80	peak

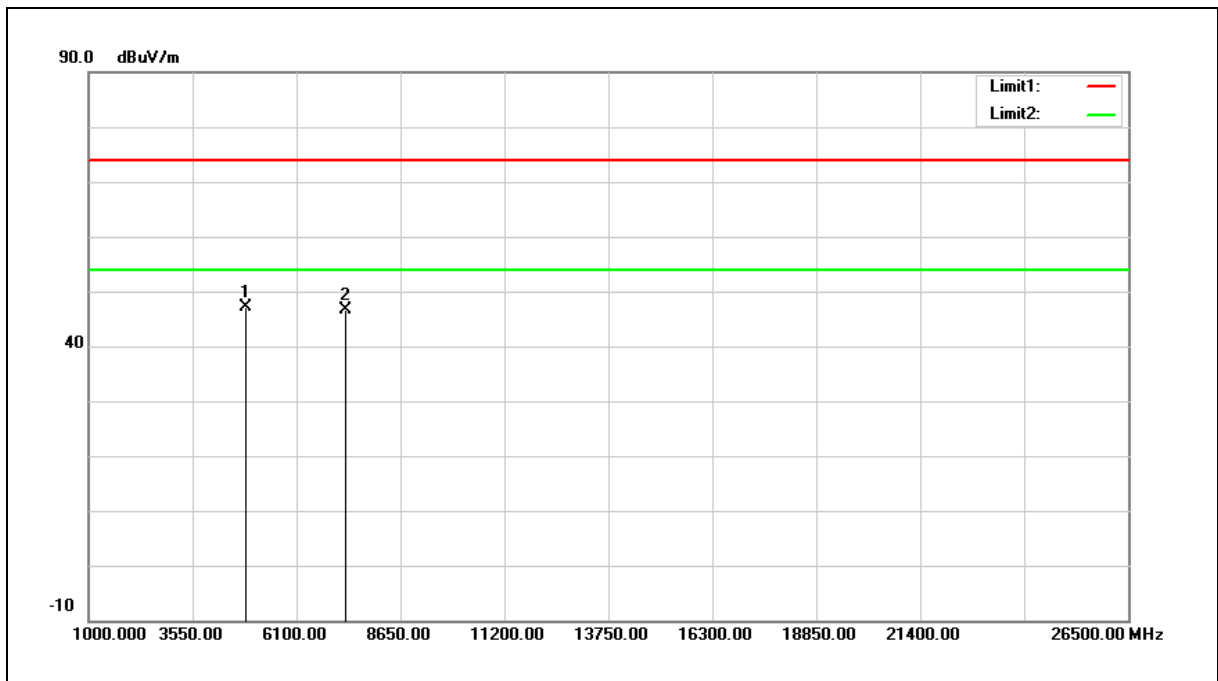
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

Example: $45.99 = -1.25 + 47.24$.

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



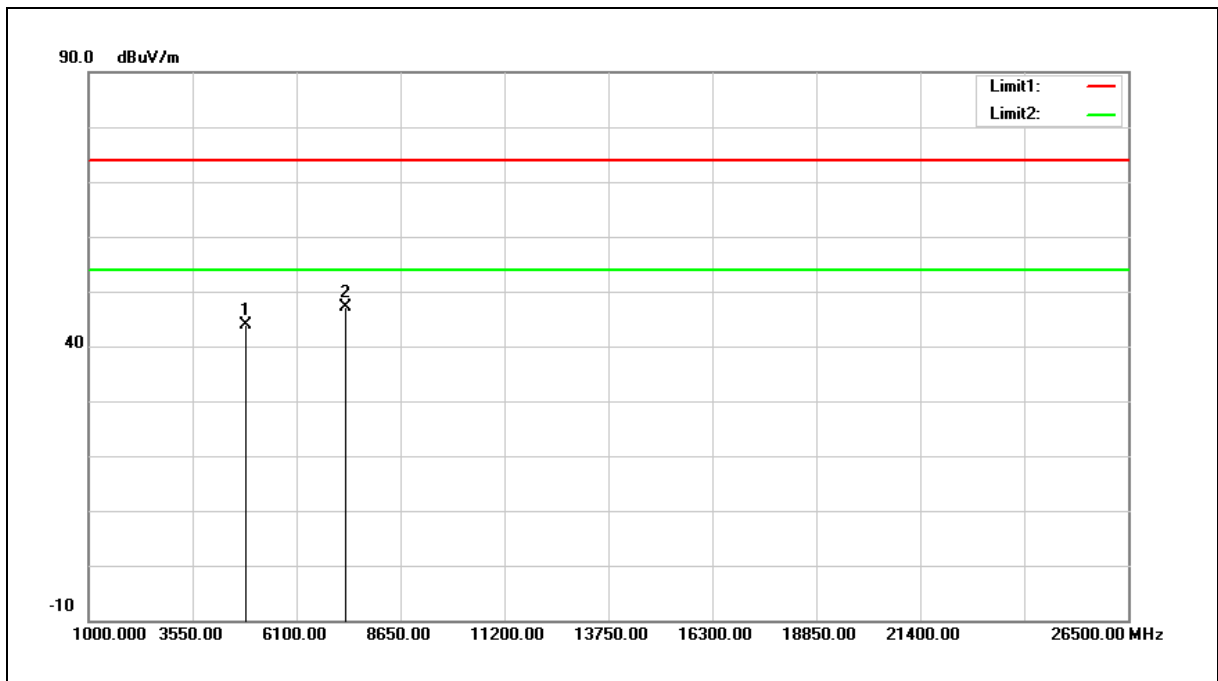
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	48.35	-1.12	47.23	74.00	-26.77	peak
2	7311.000	40.63	6.11	46.74	74.00	-27.26	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



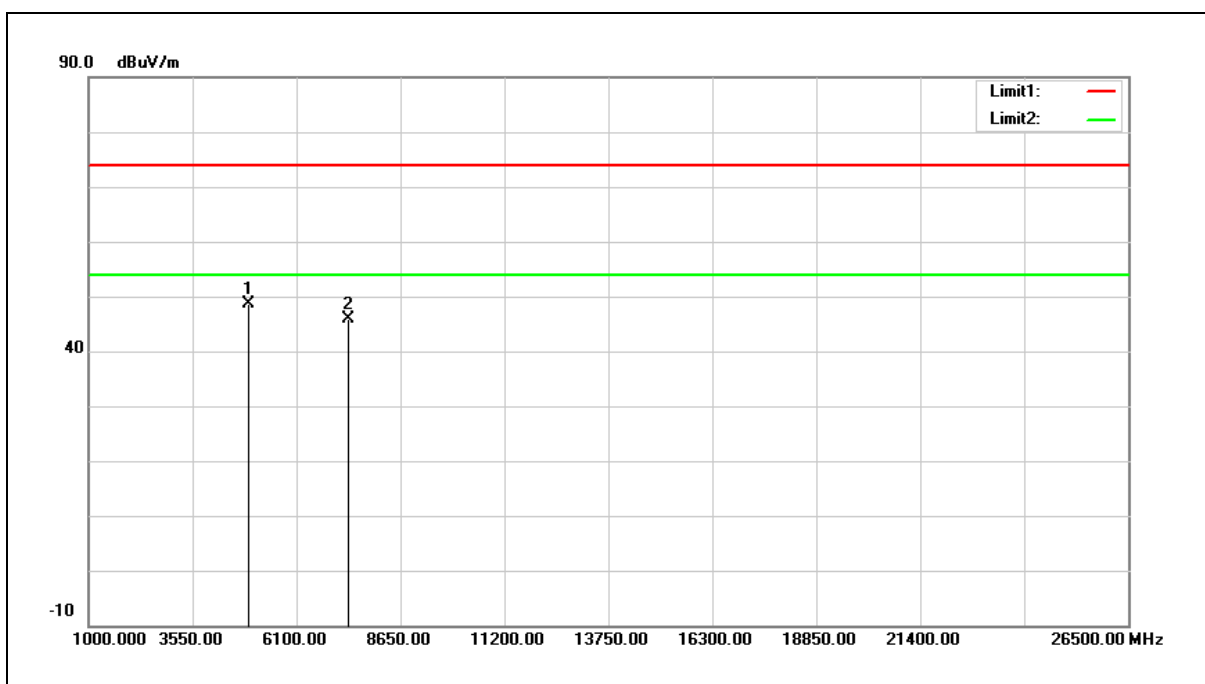
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	44.89	-1.12	43.77	74.00	-30.23	peak
2	7311.000	41.00	6.11	47.11	74.00	-26.89	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



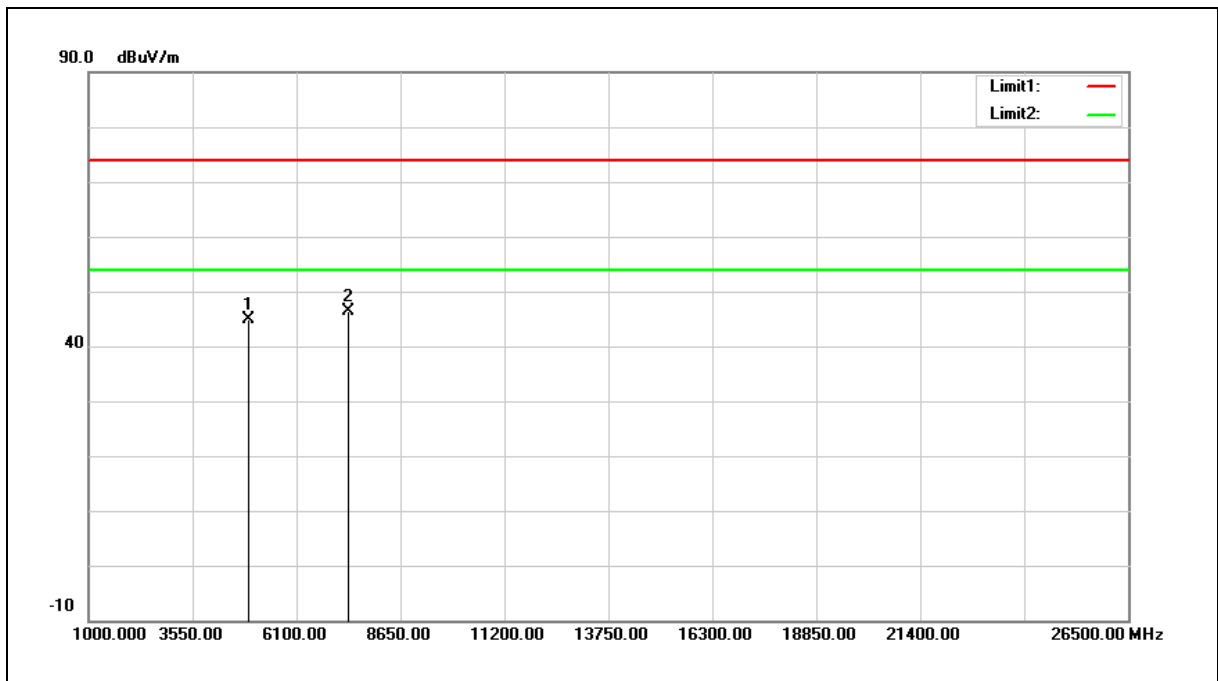
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	49.73	-0.99	48.74	74.00	-25.26	peak
2	7386.000	39.51	6.38	45.89	74.00	-28.11	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



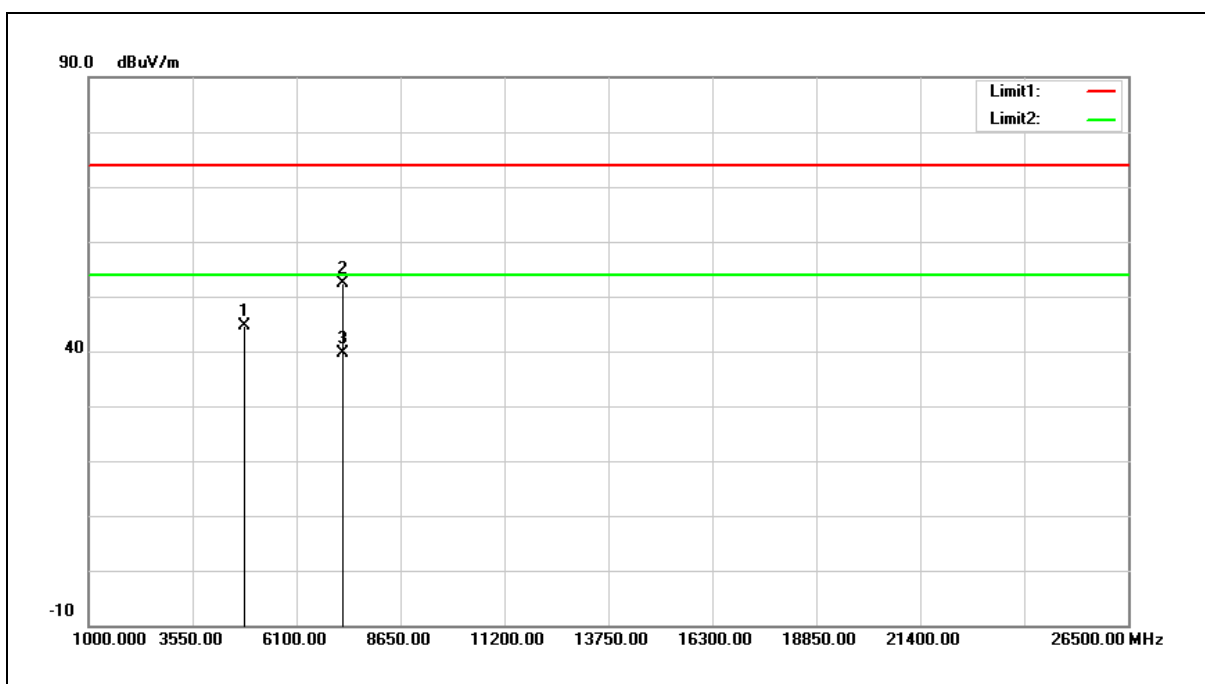
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	45.98	-0.99	44.99	74.00	-29.01	peak
2	7386.000	40.08	6.38	46.46	74.00	-27.54	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



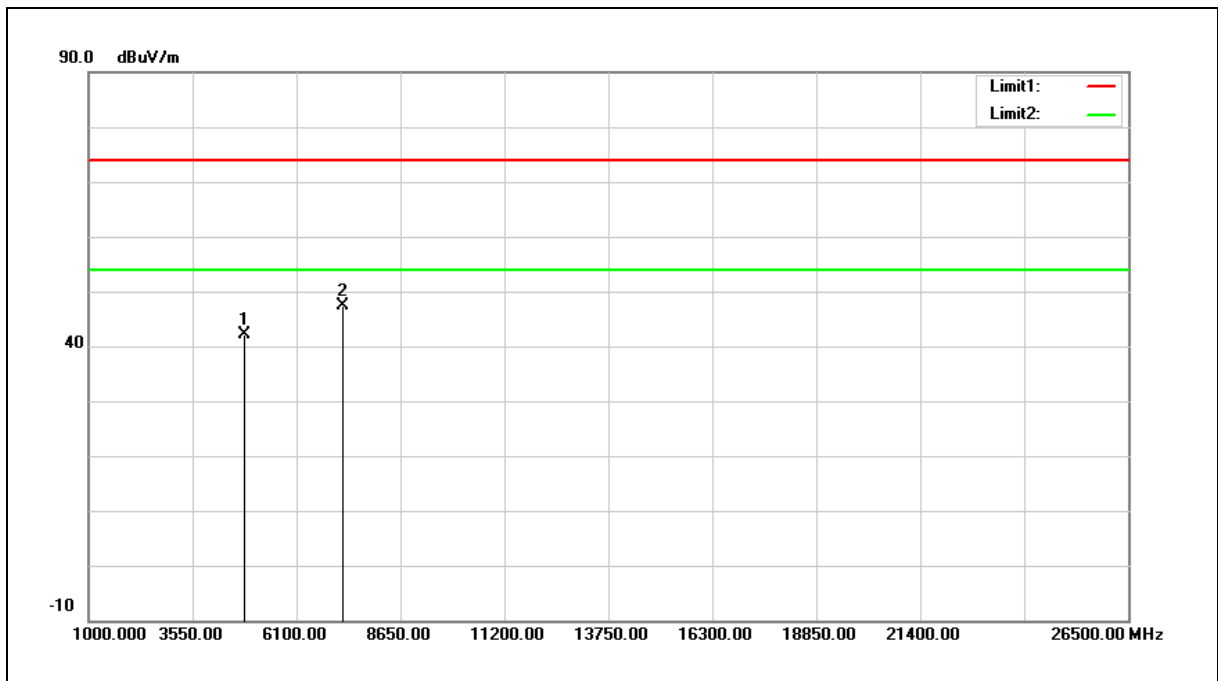
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	45.99	-1.25	44.74	74.00	-29.26	peak
2	7236.000	46.44	5.85	52.29	74.00	-21.71	peak
3	7236.000	33.88	5.85	39.73	54.00	-14.27	AVG

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		



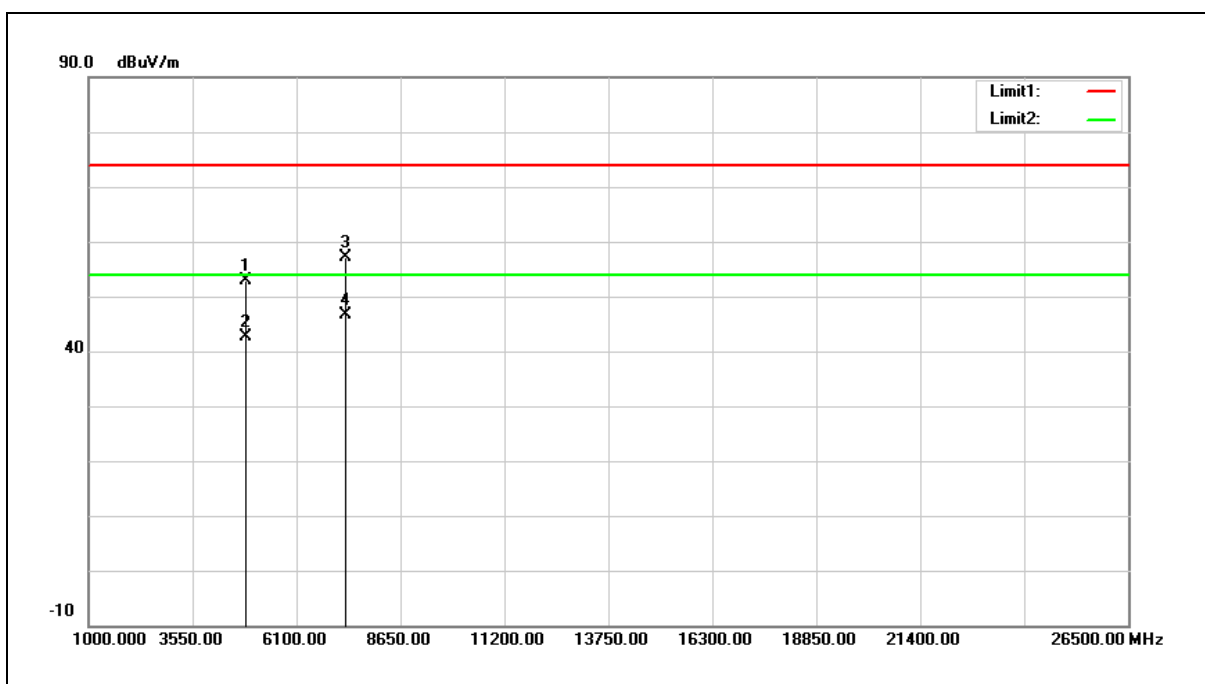
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	43.44	-1.25	42.19	74.00	-31.81	peak
2	7236.000	41.41	5.85	47.26	74.00	-26.74	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	54.07	-1.12	52.95	74.00	-21.05	peak
2	4874.000	43.64	-1.12	42.52	54.00	-11.48	AVG
3	7311.000	50.96	6.11	57.07	74.00	-16.93	peak
4	7311.000	40.56	6.11	46.67	54.00	-7.33	AVG

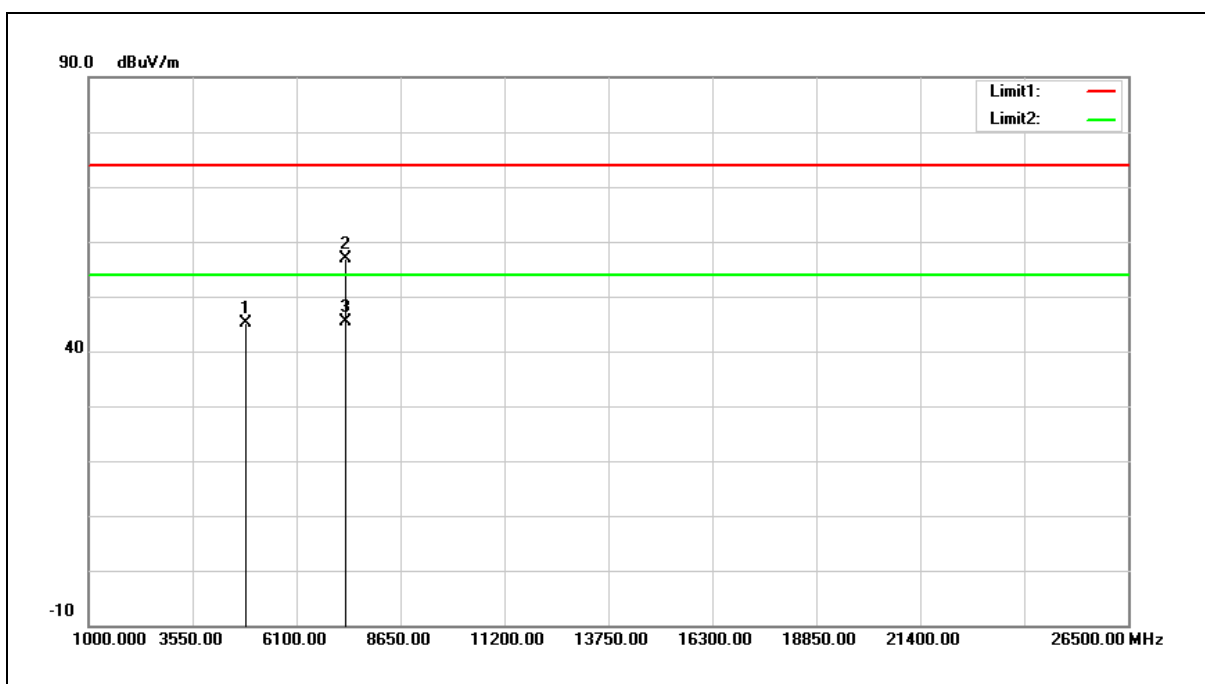
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		



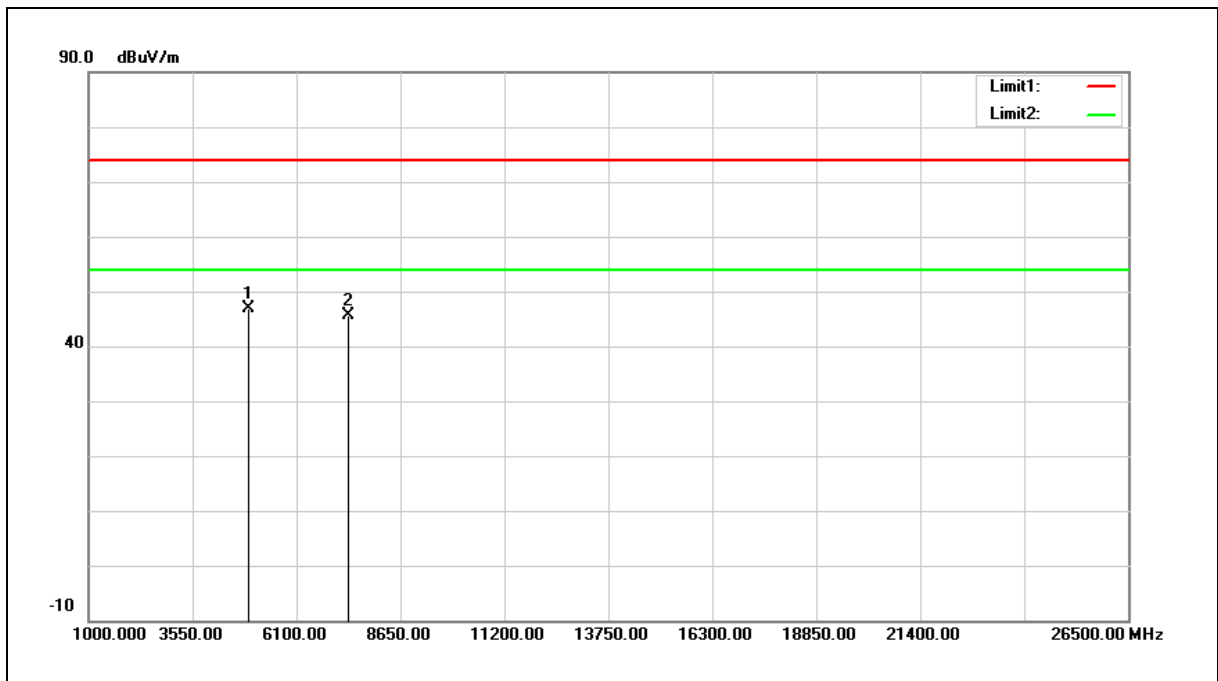
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	46.37	-1.12	45.25	74.00	-28.75	peak
2	7311.000	50.67	6.11	56.78	74.00	-17.22	peak
3	7311.000	39.27	6.11	45.38	54.00	-8.62	AVG

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



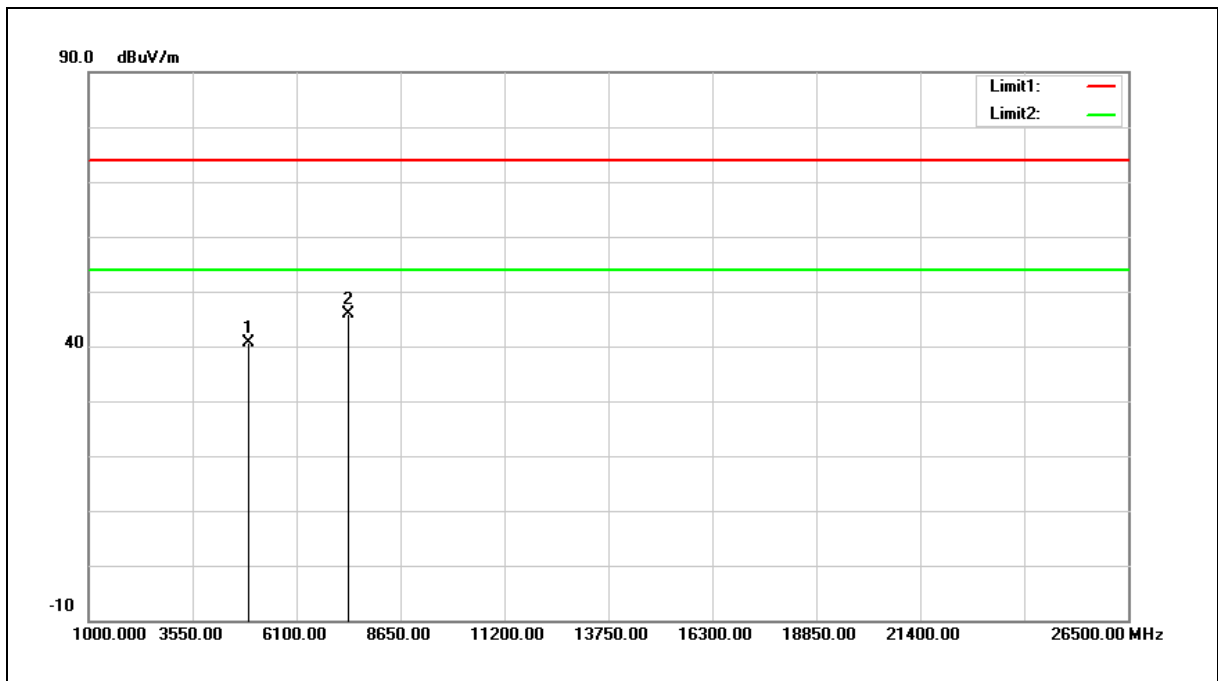
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	47.76	-0.99	46.77	74.00	-27.23	peak
2	7386.000	39.29	6.38	45.67	74.00	-28.33	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		



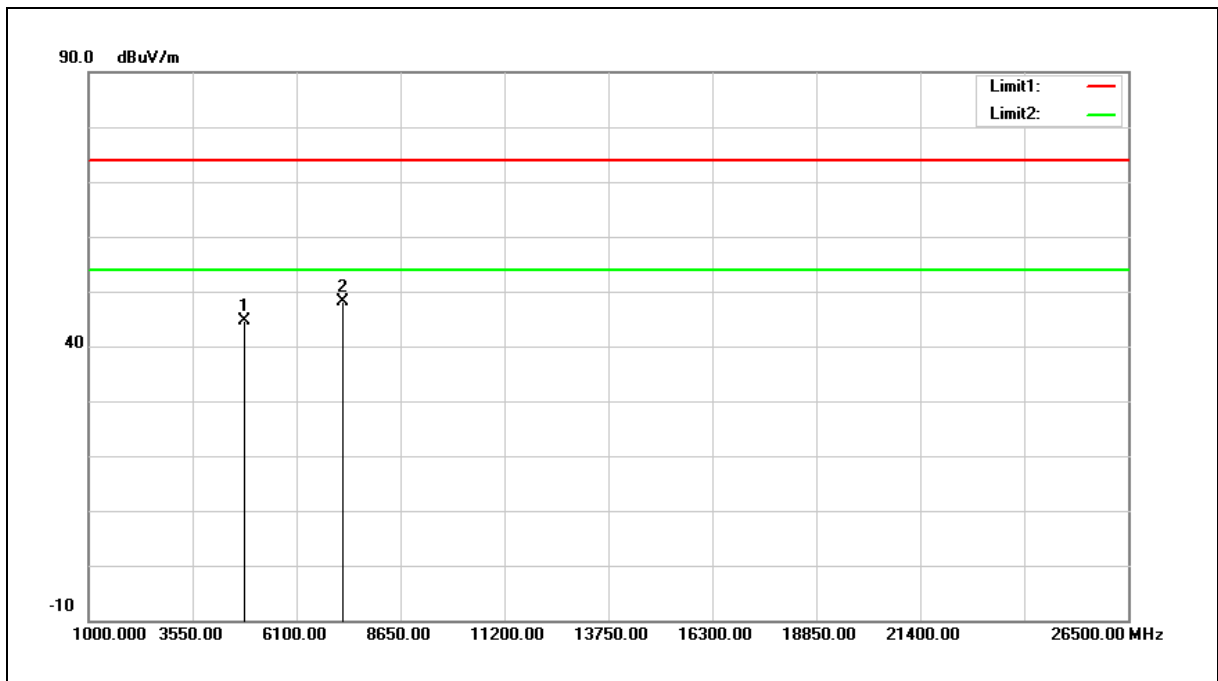
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	41.54	-0.99	40.55	74.00	-33.45	peak
2	7386.000	39.54	6.38	45.92	74.00	-28.08	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



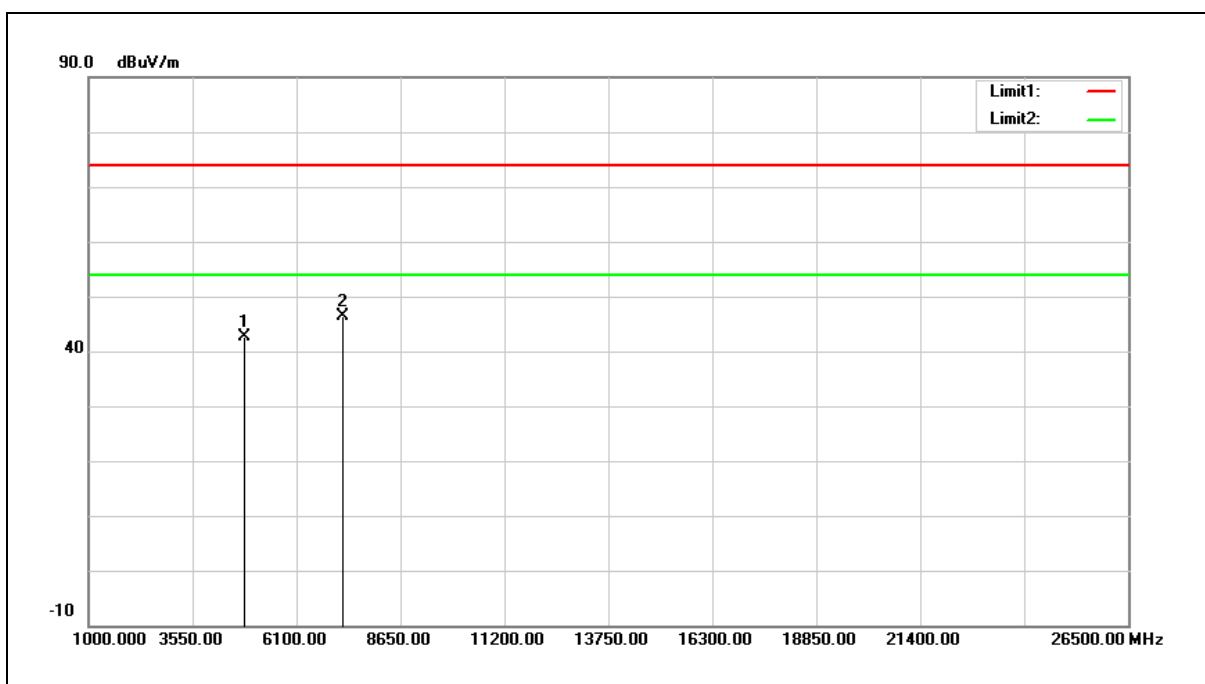
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	45.83	-1.25	44.58	74.00	-29.42	peak
2	7236.000	42.31	5.85	48.16	74.00	-25.84	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



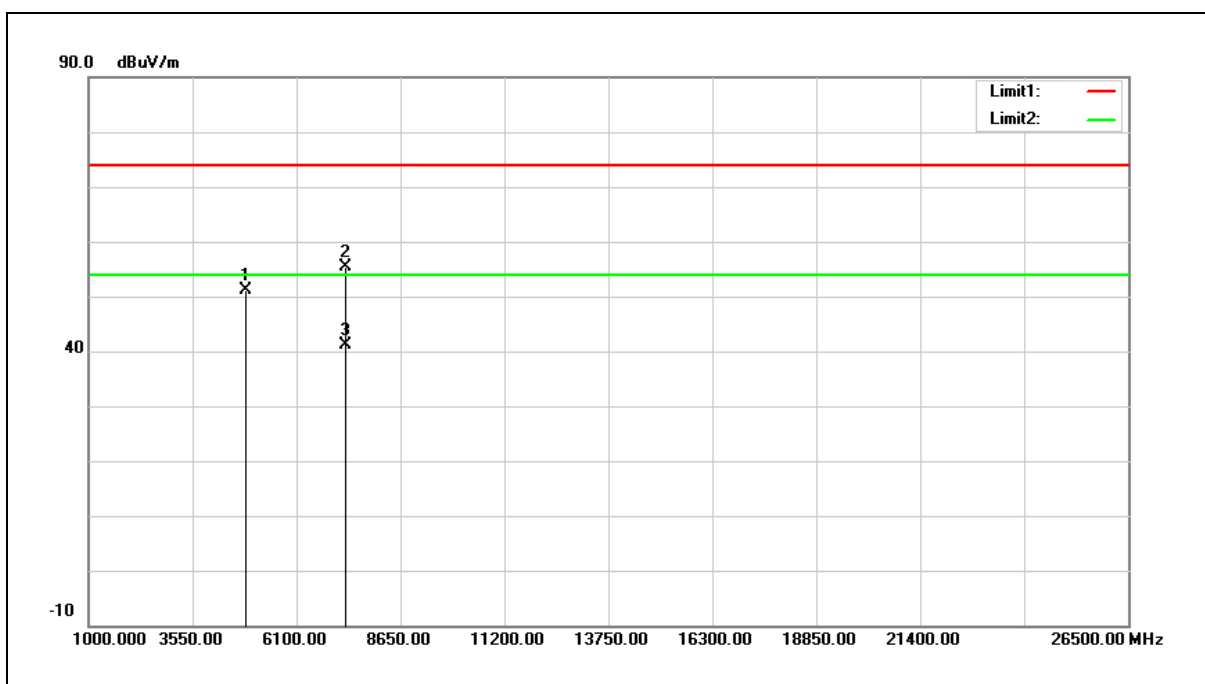
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.000	43.83	-1.25	42.58	74.00	-31.42	peak
2	7236.000	40.43	5.85	46.28	74.00	-27.72	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



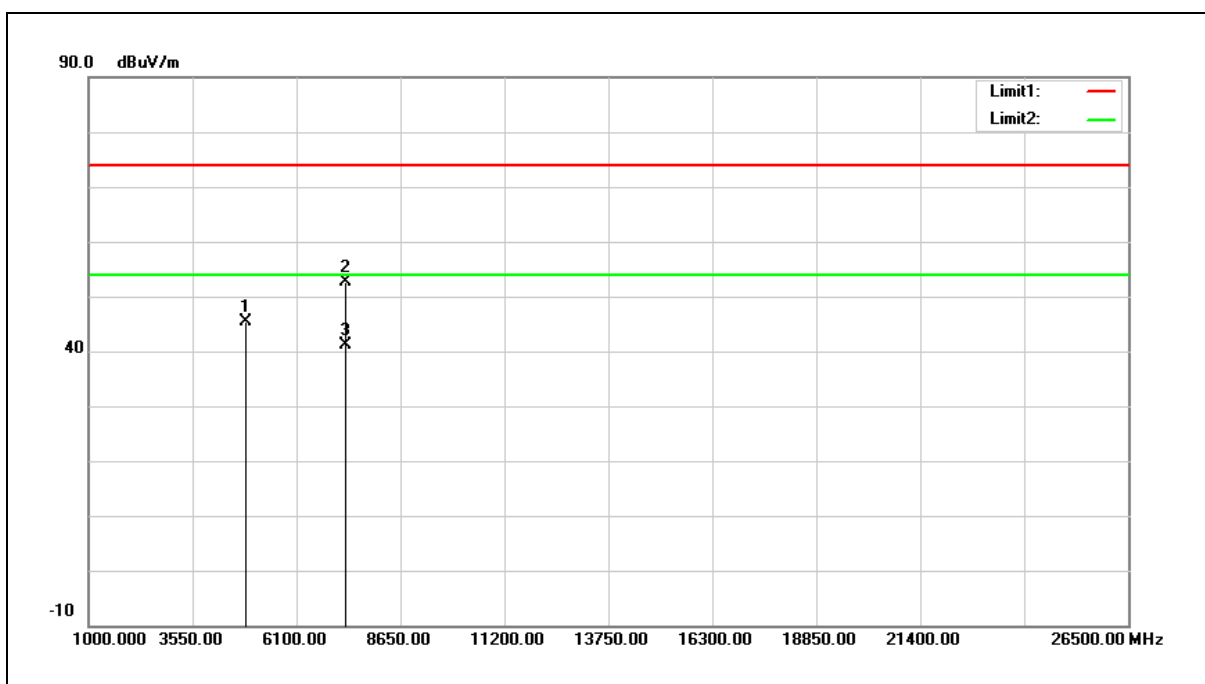
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	52.21	-1.12	51.09	74.00	-22.91	peak
2	7311.000	49.21	6.11	55.32	74.00	-18.68	peak
3	7311.000	35.01	6.11	41.12	54.00	-12.88	AVG

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2437 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



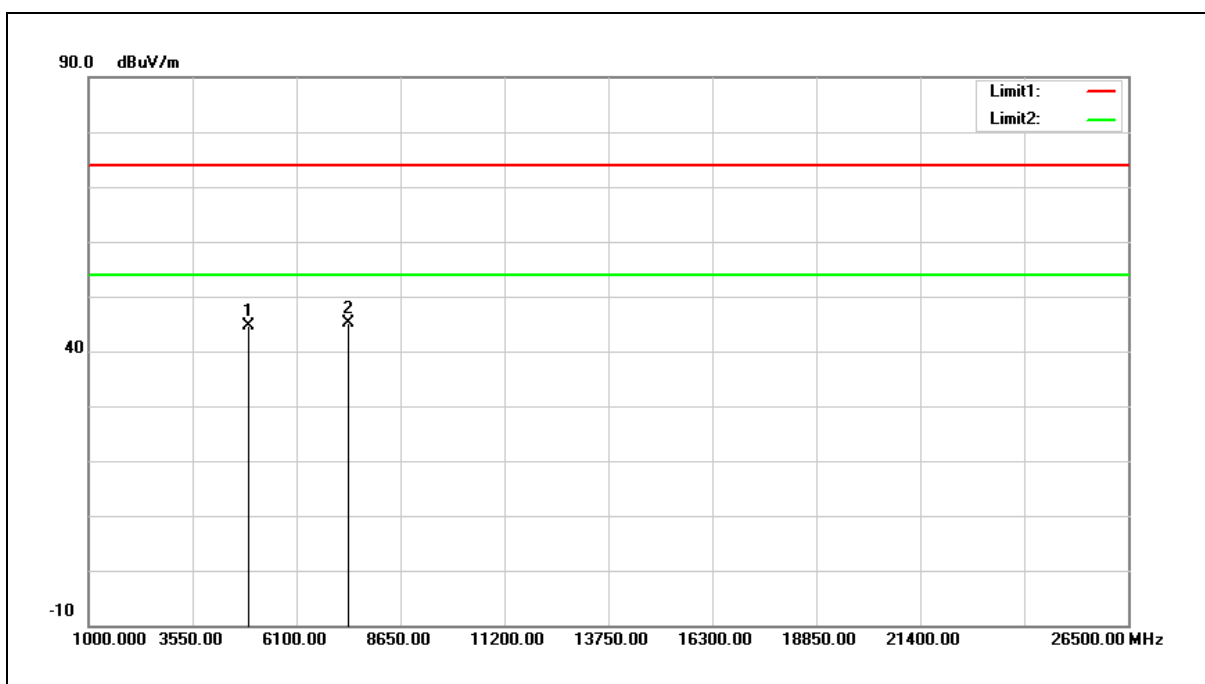
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4874.000	46.53	-1.12	45.41	74.00	-28.59	peak
2	7311.000	46.41	6.11	52.52	74.00	-21.48	peak
3	7311.000	35.03	6.11	41.14	54.00	-12.86	AVG

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



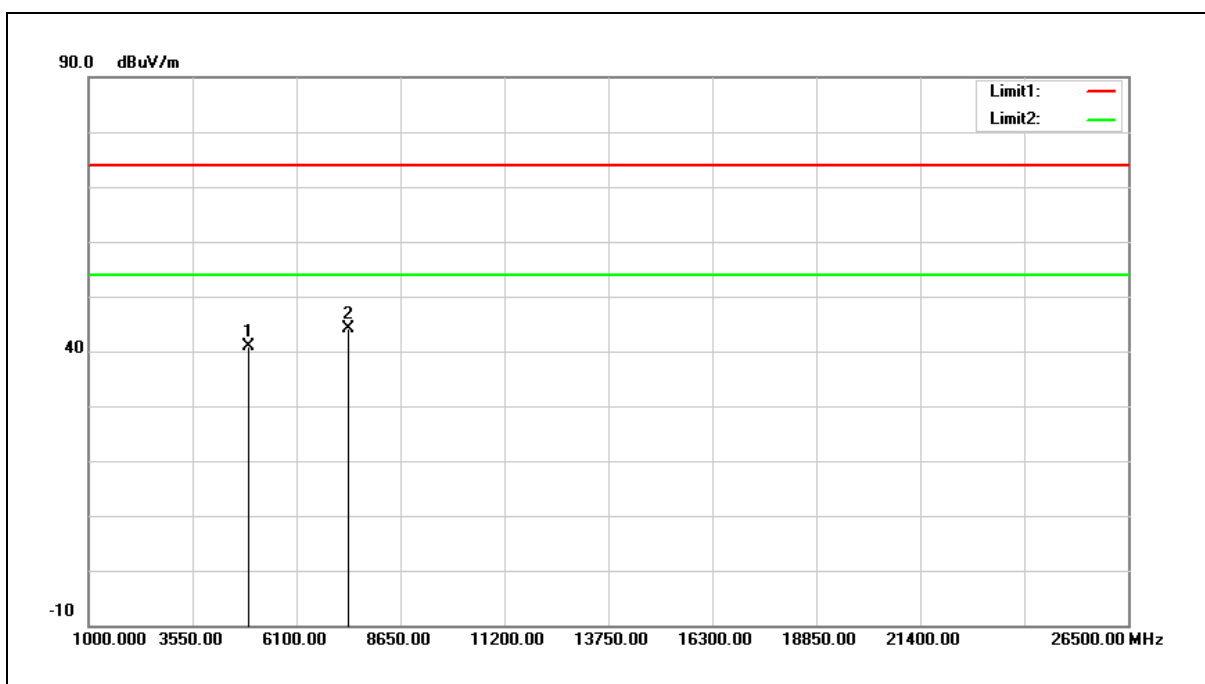
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	45.59	-0.99	44.60	74.00	-29.40	peak
2	7386.000	38.70	6.38	45.08	74.00	-28.92	peak

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 15.247	Test Distance:	3 m
Test item:	Harmonic		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.000	41.82	-0.99	40.83	74.00	-33.17	peak
2	7386.000	37.64	6.38	44.02	74.00	-29.98	peak

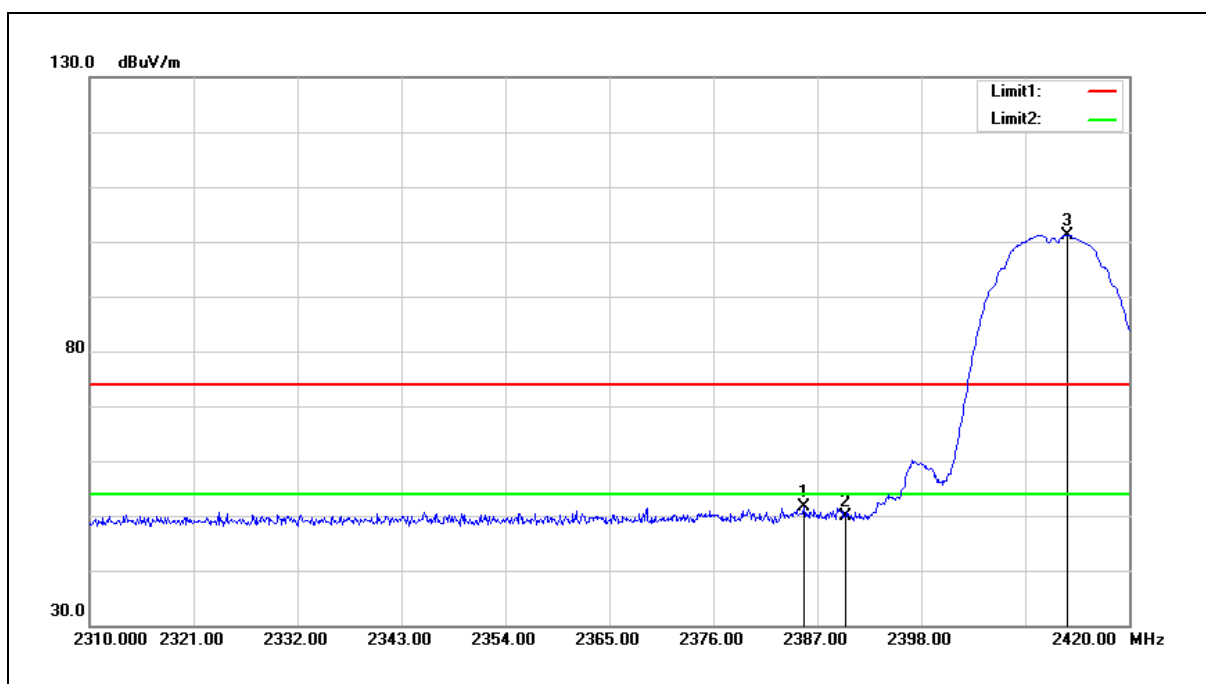
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.

Band Edge

Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.570	59.26	-7.73	51.53	74.00	-22.47	peak
2	2390.000	57.67	-7.72	49.95	74.00	-24.05	peak
3	2413.510	108.84	-7.62	101.22	--	--	peak

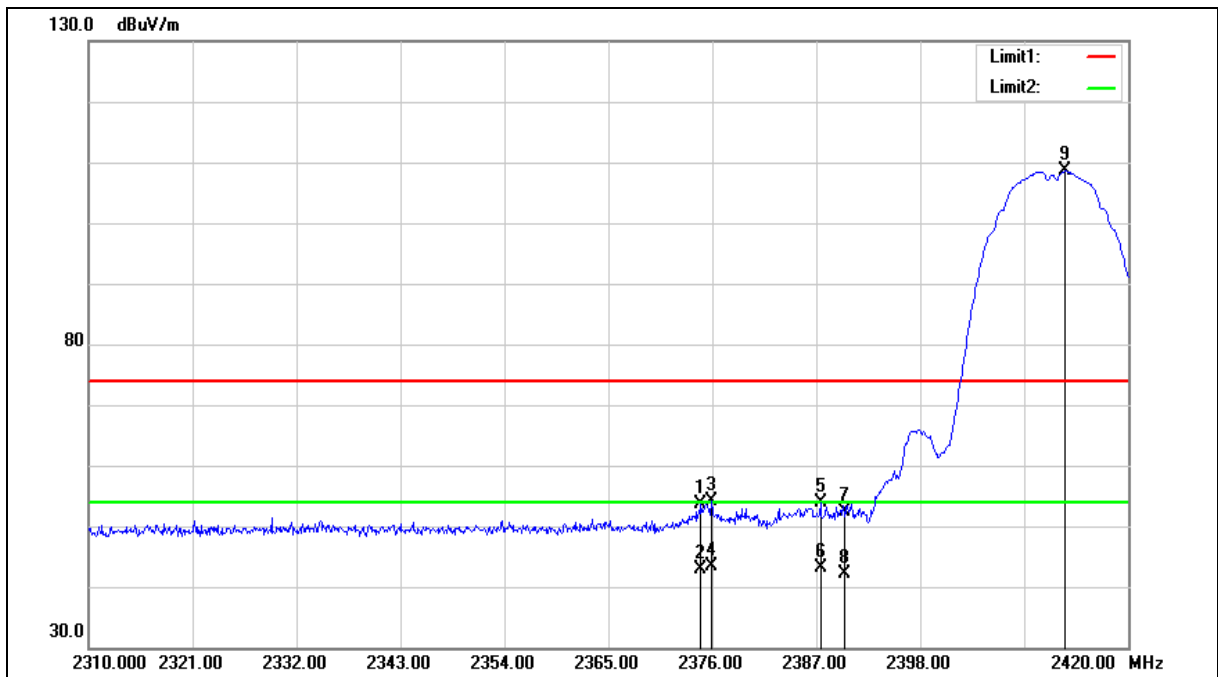
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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.



Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		

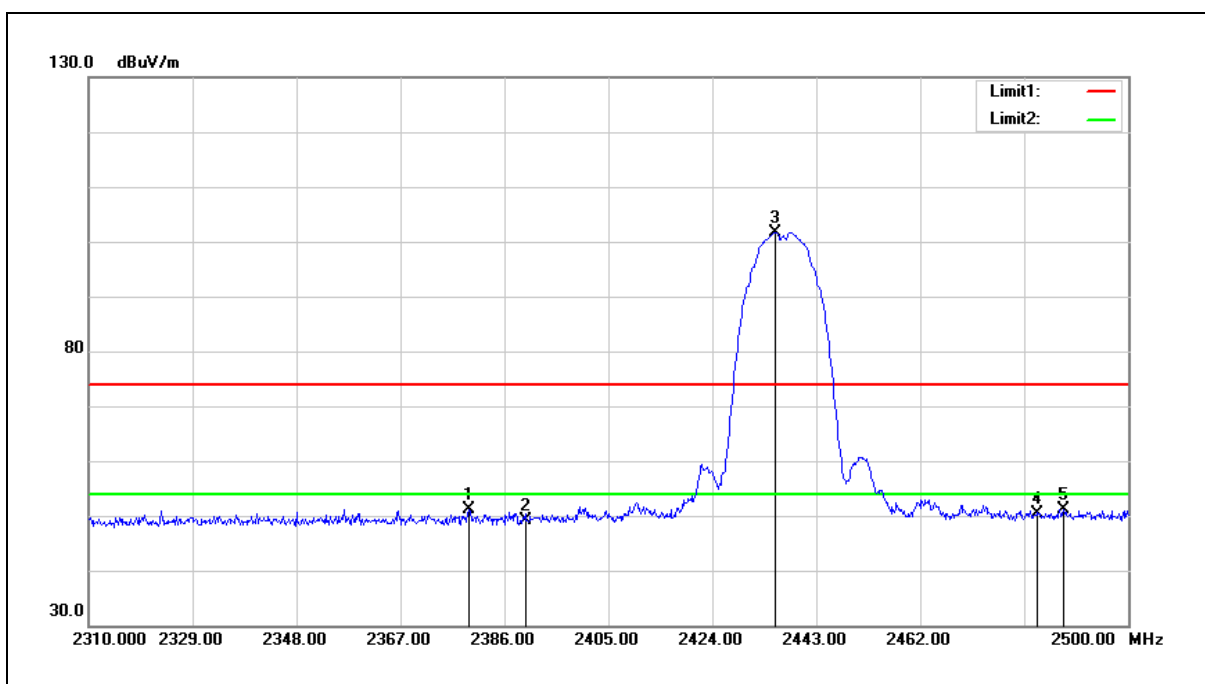
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.790	61.38	-7.78	53.60	74.00	-20.40	peak
2	2374.790	50.69	-7.78	42.91	54.00	-11.09	AVG
3	2375.890	61.80	-7.77	54.03	74.00	-19.97	peak
4	2375.890	51.21	-7.77	43.44	54.00	-10.56	AVG
5	2387.440	61.72	-7.73	53.99	74.00	-20.01	peak
6	2387.440	50.80	-7.73	43.07	54.00	-10.93	AVG
7	2390.000	60.10	-7.72	52.38	74.00	-21.62	peak
8	2390.000	49.91	-7.72	42.19	54.00	-11.81	AVG
9	2413.290	116.17	-7.62	108.55	--	--	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



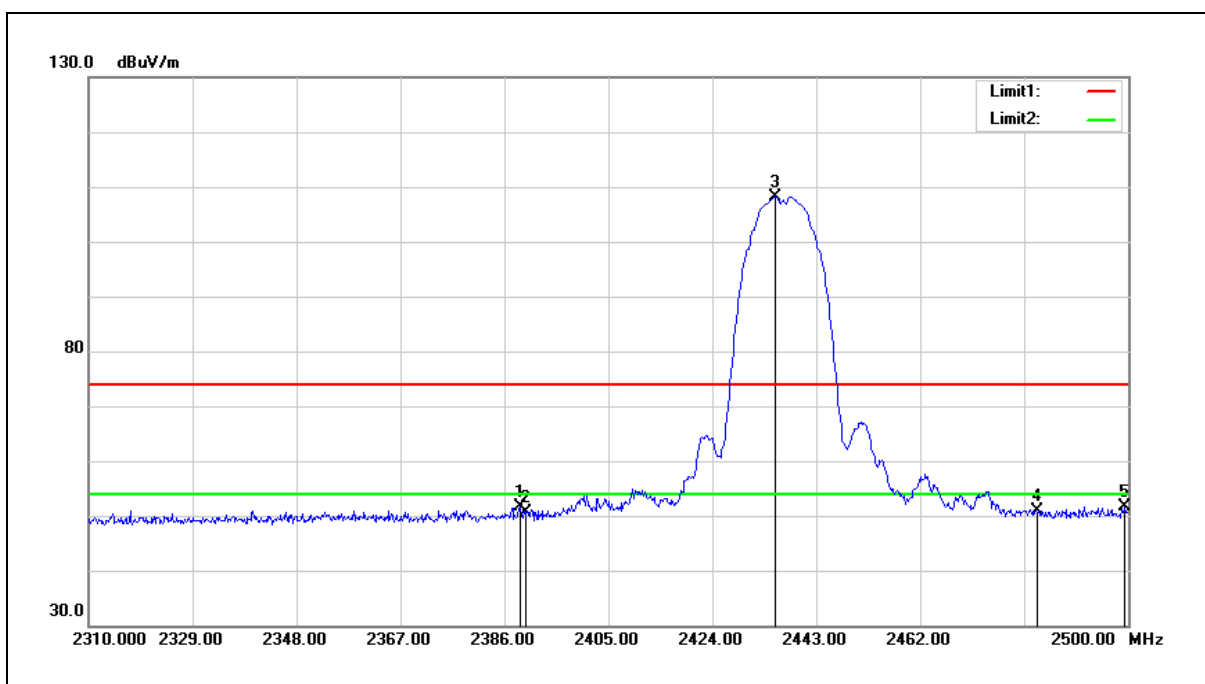
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2379.540	58.84	-7.76	51.08	74.00	-22.92	peak
2	2390.000	56.89	-7.72	49.17	74.00	-24.83	peak
3	2435.590	109.16	-7.53	101.63	--	--	peak
4	2483.500	57.63	-7.34	50.29	74.00	-23.71	peak
5	2488.220	58.51	-7.32	51.19	74.00	-22.81	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.850	59.23	-7.72	51.51	74.00	-22.49	peak
2	2390.000	58.43	-7.72	50.71	74.00	-23.29	peak
3	2435.590	115.65	-7.53	108.12	--	--	peak
4	2483.500	58.33	-7.34	50.99	74.00	-23.01	peak
5	2499.430	58.86	-7.27	51.59	74.00	-22.41	peak

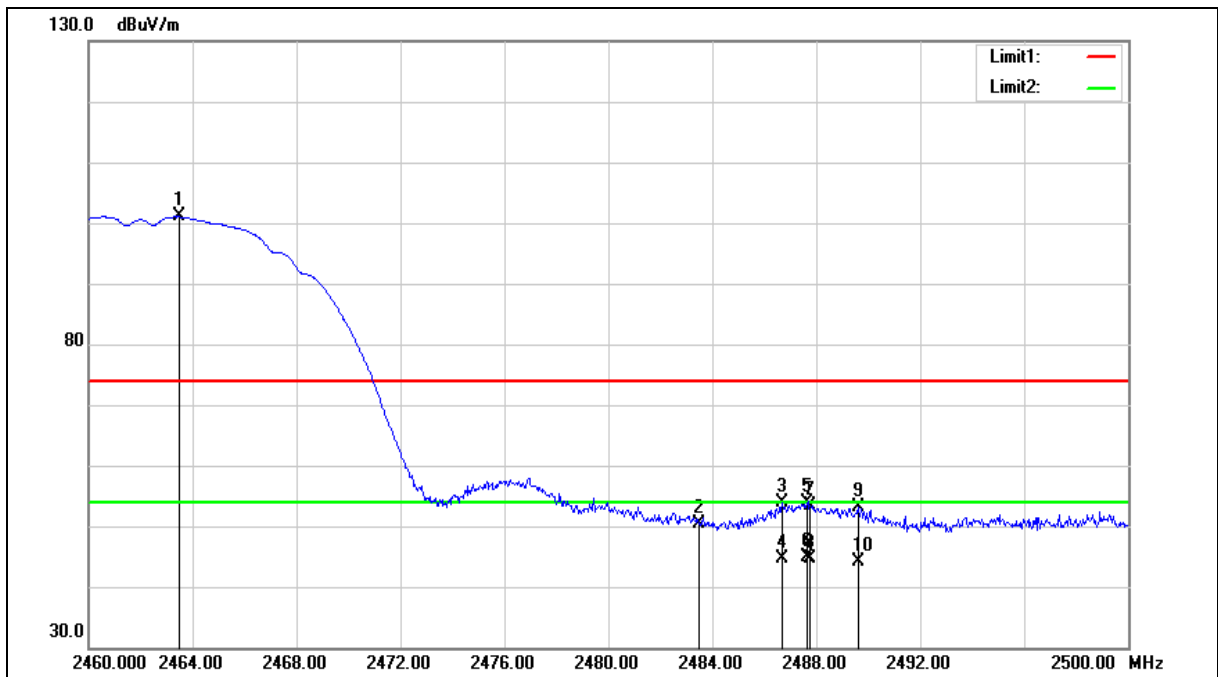
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

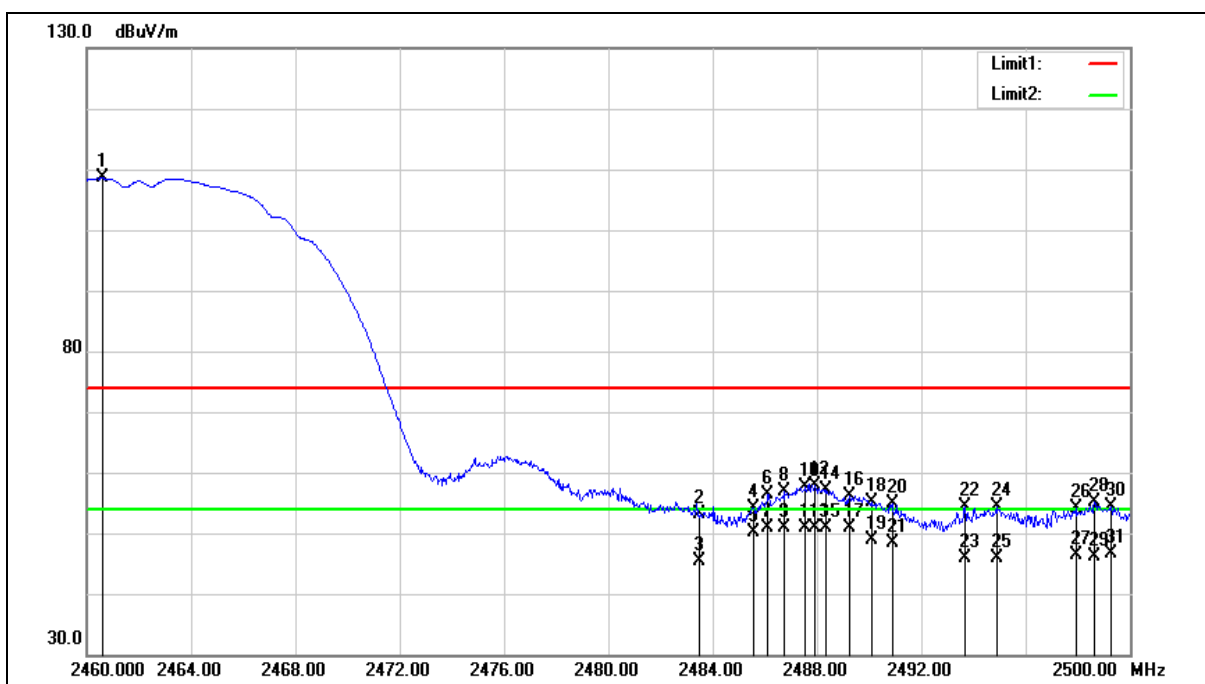
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.480	108.44	-7.42	101.02	--	--	peak
2	2483.500	57.79	-7.34	50.45	74.00	-23.55	peak
3	2486.680	61.26	-7.32	53.94	74.00	-20.06	peak
4	2486.680	52.07	-7.32	44.75	54.00	-9.25	AVG
5	2487.640	61.22	-7.32	53.90	74.00	-20.10	peak
6	2487.640	52.08	-7.32	44.76	54.00	-9.24	AVG
7	2487.760	60.70	-7.32	53.38	74.00	-20.62	peak
8	2487.760	52.06	-7.32	44.74	54.00	-9.26	AVG
9	2489.600	60.45	-7.31	53.14	74.00	-20.86	peak
10	2489.600	51.51	-7.31	44.20	54.00	-9.80	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.600	115.98	-7.43	108.55	--	--	peak
2	2483.500	60.46	-7.34	53.12	74.00	-20.88	peak
3	2483.500	52.80	-7.34	45.46	54.00	-8.54	AVG
4	2485.560	61.55	-7.32	54.23	74.00	-19.77	peak
5	2485.560	57.51	-7.32	50.19	54.00	-3.81	AVG
6	2486.120	63.65	-7.32	56.33	74.00	-17.67	peak
7	2486.120	58.16	-7.32	50.84	54.00	-3.16	AVG
8	2486.760	64.14	-7.32	56.82	74.00	-17.18	peak
9	2486.760	58.19	-7.32	50.87	54.00	-3.13	AVG
10	2487.560	64.87	-7.32	57.55	74.00	-16.45	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 2		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11	2487.560	58.18	-7.32	50.86	54.00	-3.14	AVG
12	2487.920	65.16	-7.32	57.84	74.00	-16.16	peak
13	2487.920	58.22	-7.32	50.90	54.00	-3.10	AVG
14	2488.360	64.46	-7.31	57.15	74.00	-16.85	peak
15	2488.360	58.17	-7.31	50.86	54.00	-3.14	AVG
16	2489.240	63.54	-7.31	56.23	74.00	-17.77	peak
17	2489.240	58.15	-7.31	50.84	54.00	-3.16	AVG
18	2490.080	62.40	-7.31	55.09	74.00	-18.91	peak
19	2490.080	56.15	-7.31	48.84	54.00	-5.16	AVG
20	2490.880	62.25	-7.31	54.94	74.00	-19.06	peak
21	2490.880	55.70	-7.31	48.39	54.00	-5.61	AVG
22	2493.680	61.67	-7.29	54.38	74.00	-19.62	peak
23	2493.680	53.06	-7.29	45.77	54.00	-8.23	AVG
24	2494.880	61.60	-7.29	54.31	74.00	-19.69	peak
25	2494.880	53.05	-7.29	45.76	54.00	-8.24	AVG
26	2497.960	61.34	-7.28	54.06	74.00	-19.94	peak
27	2497.960	53.63	-7.28	46.35	54.00	-7.65	AVG
28	2498.640	62.42	-7.27	55.15	74.00	-18.85	peak
29	2498.640	53.42	-7.27	46.15	54.00	-7.85	AVG
30	2499.280	61.73	-7.27	54.46	74.00	-19.54	peak
31	2499.280	53.84	-7.27	46.57	54.00	-7.43	AVG

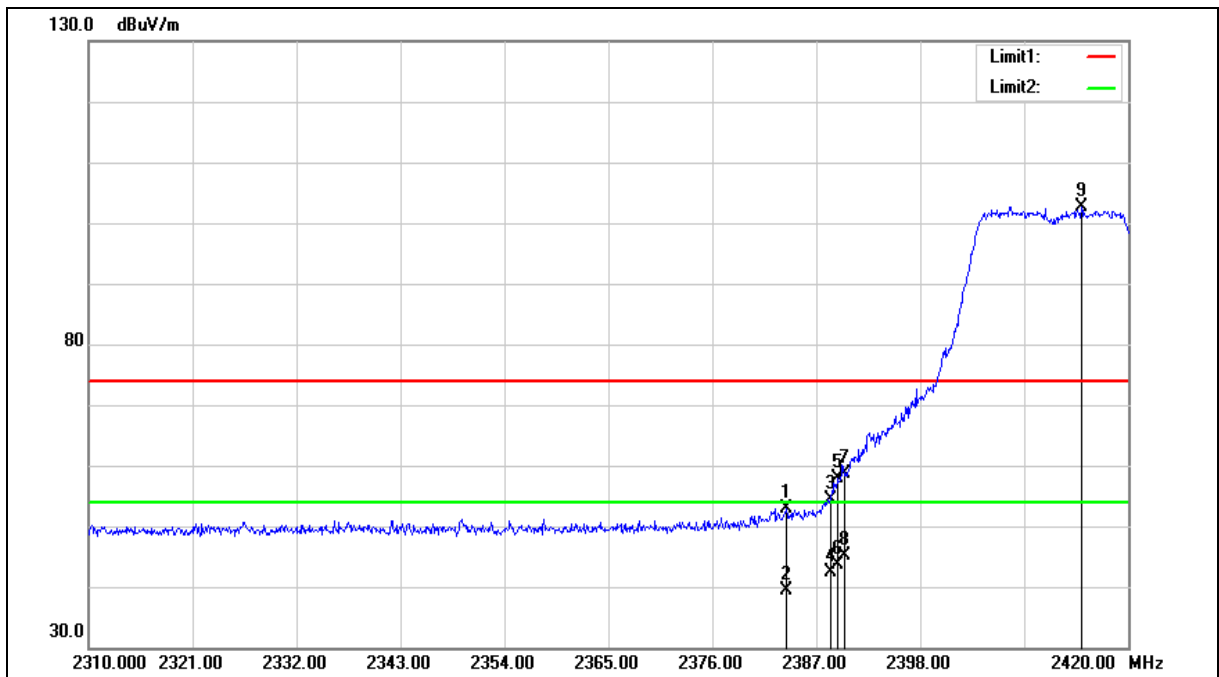
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.810	60.63	-7.75	52.88	74.00	-21.12	peak
2	2383.810	47.13	-7.75	39.38	54.00	-14.62	AVG
3	2388.540	62.18	-7.72	54.46	74.00	-19.54	peak
4	2388.540	50.03	-7.72	42.31	54.00	-11.69	AVG
5	2389.310	65.48	-7.72	57.76	74.00	-16.24	peak
6	2389.310	51.38	-7.72	43.66	54.00	-10.34	AVG
7	2390.000	66.32	-7.72	58.60	74.00	-15.40	peak
8	2390.000	52.91	-7.72	45.19	54.00	-8.81	AVG
9	2415.050	110.24	-7.61	102.63	--	--	peak

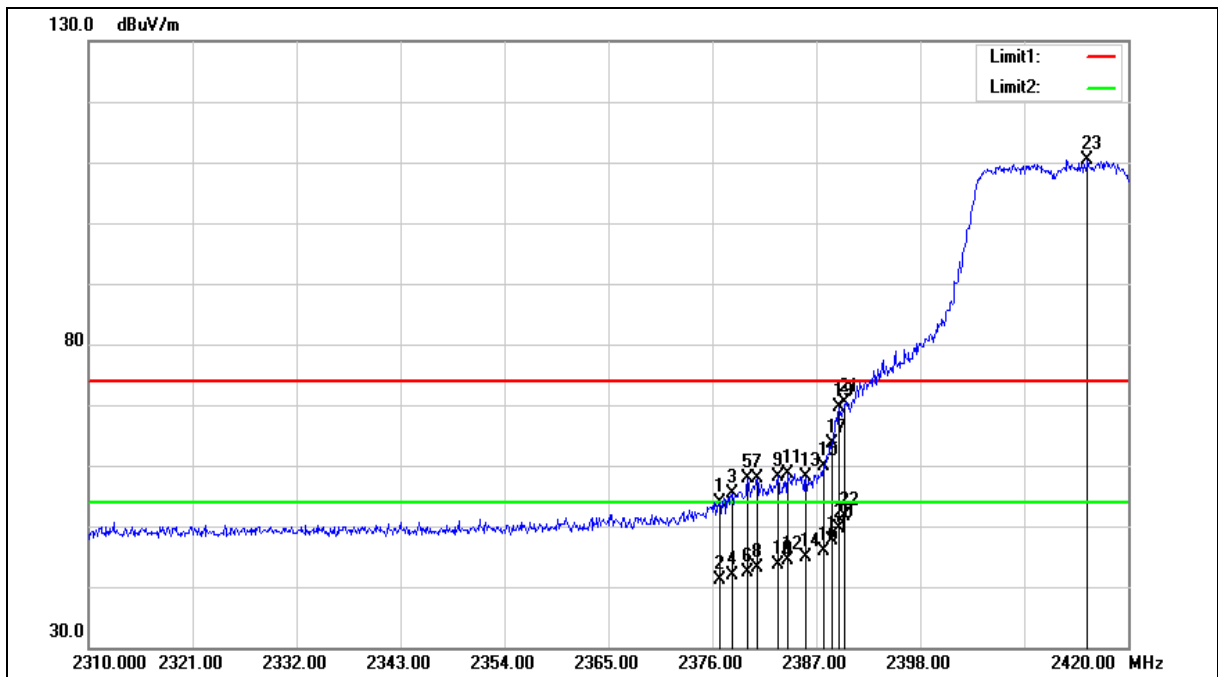
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		

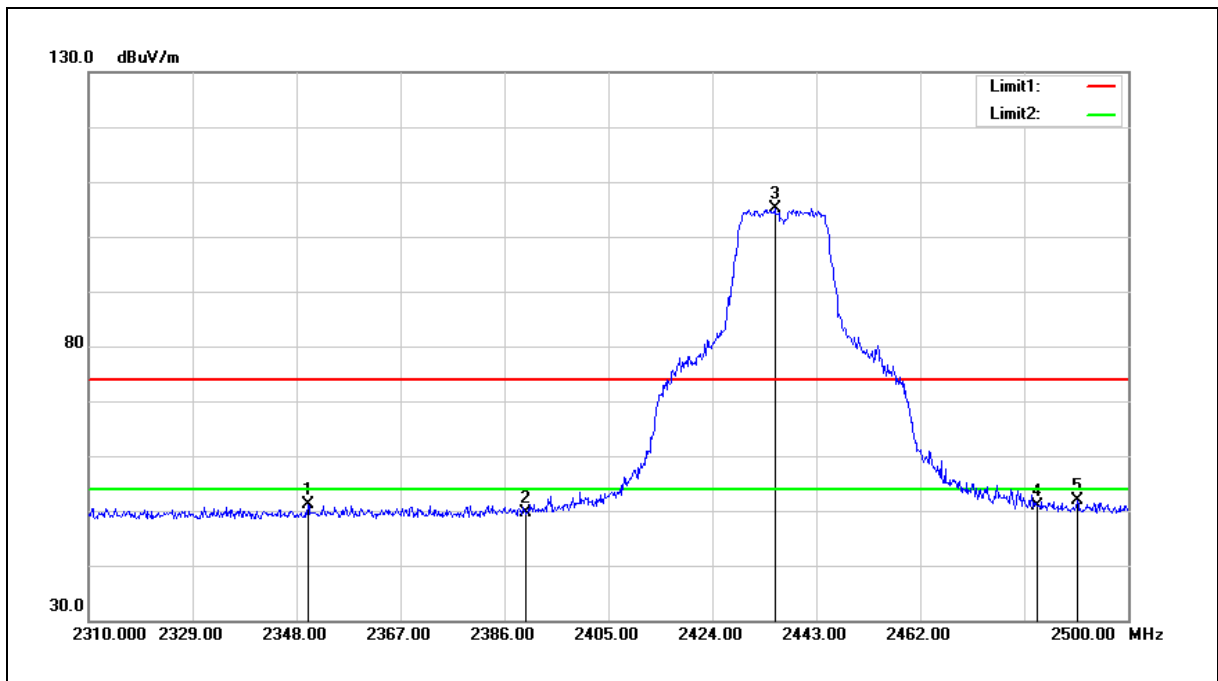
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2376.770	61.72	-7.77	53.95	74.00	-20.05	peak
2	2376.770	48.86	-7.77	41.09	54.00	-12.91	AVG
3	2378.090	63.10	-7.77	55.33	74.00	-18.67	peak
4	2378.090	49.54	-7.77	41.77	54.00	-12.23	AVG
5	2379.740	65.67	-7.76	57.91	74.00	-16.09	peak
6	2379.740	50.24	-7.76	42.48	54.00	-11.52	AVG
7	2380.730	65.52	-7.76	57.76	74.00	-16.24	peak
8	2380.730	50.84	-7.76	43.08	54.00	-10.92	AVG
9	2382.930	66.00	-7.75	58.25	74.00	-15.75	peak
10	2382.930	51.40	-7.75	43.65	54.00	-10.35	AVG
11	2383.920	66.48	-7.75	58.73	74.00	-15.27	peak
12	2383.920	52.13	-7.75	44.38	54.00	-9.62	AVG
13	2385.900	65.92	-7.73	58.19	74.00	-15.81	peak
14	2385.900	52.54	-7.73	44.81	54.00	-9.19	AVG
15	2387.770	67.72	-7.73	59.99	74.00	-14.01	peak
16	2387.770	53.70	-7.73	45.97	54.00	-8.03	AVG
17	2388.650	71.26	-7.72	63.54	74.00	-10.46	peak
18	2388.650	55.30	-7.72	47.58	54.00	-6.42	AVG
19	2389.420	77.23	-7.72	69.51	74.00	-4.49	peak
20	2389.420	57.29	-7.72	49.57	54.00	-4.43	AVG
21	2390.000	78.12	-7.72	70.40	74.00	-3.60	peak
22	2390.000	59.34	-7.72	51.62	54.00	-2.38	AVG
23	2415.710	118.03	-7.61	110.42	--	--	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2350.090	58.89	-7.88	51.01	74.00	-22.99	peak
2	2390.000	57.30	-7.72	49.58	74.00	-24.42	peak
3	2435.400	112.66	-7.53	105.13	--	--	peak
4	2483.500	58.33	-7.34	50.99	74.00	-23.01	peak
5	2490.690	59.29	-7.31	51.98	74.00	-22.02	peak

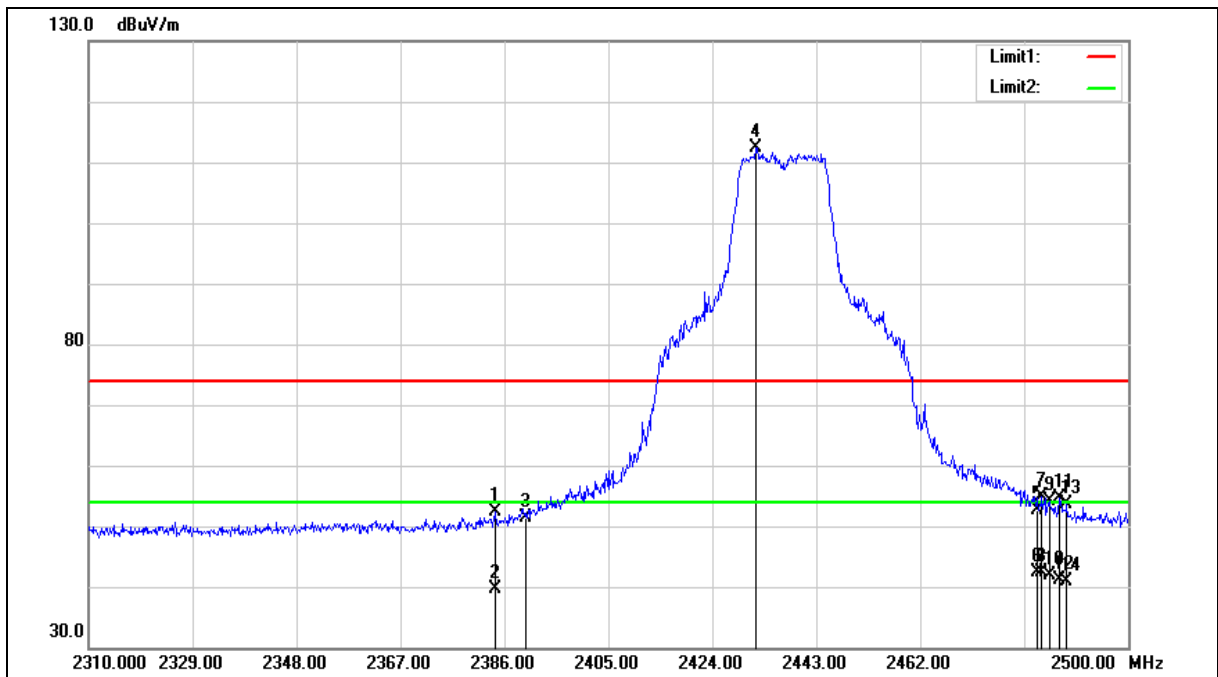
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.290	60.07	-7.75	52.32	74.00	-21.68	peak
2	2384.290	47.36	-7.75	39.61	54.00	-14.39	AVG
3	2390.000	59.12	-7.72	51.40	74.00	-22.60	peak
4	2431.980	119.92	-7.54	112.38	--	--	peak
5	2483.500	59.93	-7.34	52.59	74.00	-21.41	peak
6	2483.500	49.79	-7.34	42.45	54.00	-11.55	AVG
7	2484.230	62.33	-7.34	54.99	74.00	-19.01	peak
8	2484.230	49.62	-7.34	42.28	54.00	-11.72	AVG
9	2485.560	61.55	-7.32	54.23	74.00	-19.77	peak
10	2485.560	49.11	-7.32	41.79	54.00	-12.21	AVG
11	2487.460	61.83	-7.32	54.51	74.00	-19.49	peak
12	2487.460	48.37	-7.32	41.05	54.00	-12.95	AVG
13	2488.790	60.97	-7.31	53.66	74.00	-20.34	peak
14	2488.790	48.09	-7.31	40.78	54.00	-13.22	AVG

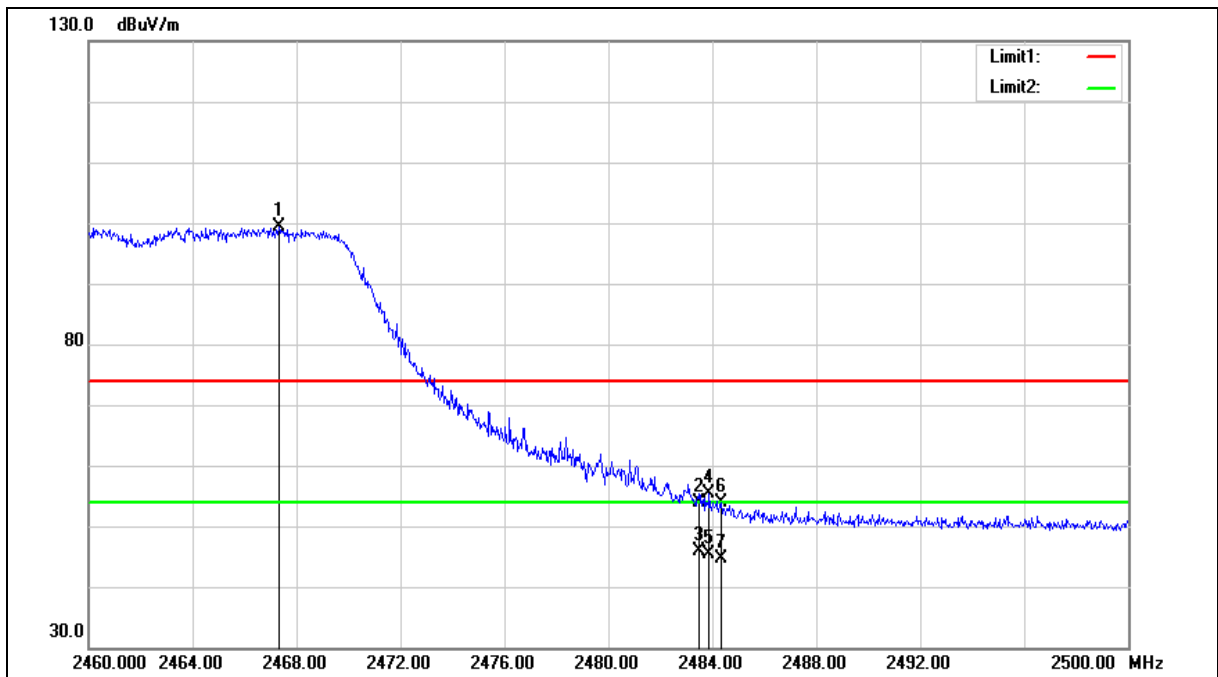
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Horizontal		

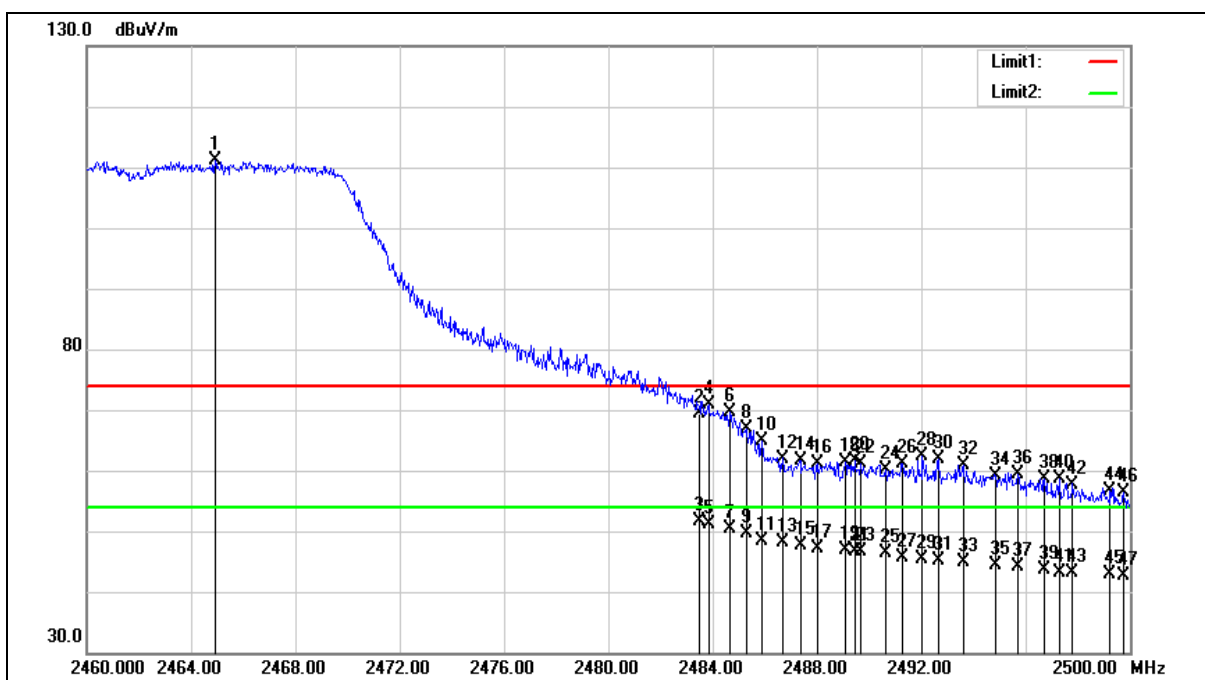
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2467.320	106.71	-7.40	99.31	--	--	peak
2	2483.500	61.15	-7.34	53.81	74.00	-20.19	peak
3	2483.500	53.26	-7.34	45.92	54.00	-8.08	AVG
4	2483.880	62.63	-7.34	55.29	74.00	-18.71	peak
5	2483.880	52.84	-7.34	45.50	54.00	-8.50	AVG
6	2484.360	61.28	-7.34	53.94	74.00	-20.06	peak
7	2484.360	52.00	-7.34	44.66	54.00	-9.34	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2464.920	118.65	-7.42	111.23	--	--	peak
2	2483.500	76.62	-7.34	69.28	74.00	-4.72	peak
3	2483.500	59.03	-7.34	51.69	54.00	-2.31	AVG
4	2483.840	78.33	-7.34	70.99	74.00	-3.01	peak
5	2483.840	58.42	-7.34	51.08	54.00	-2.92	AVG
6	2484.680	76.85	-7.34	69.51	74.00	-4.49	peak
7	2484.680	57.71	-7.34	50.37	54.00	-3.63	AVG
8	2485.280	74.23	-7.33	66.90	74.00	-7.10	peak
9	2485.280	56.93	-7.33	49.60	54.00	-4.40	AVG
10	2485.880	72.15	-7.32	64.83	74.00	-9.17	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11	2485.880	55.60	-7.32	48.28	54.00	-5.72	AVG
12	2486.680	69.32	-7.32	62.00	74.00	-12.00	peak
13	2486.680	55.51	-7.32	48.19	54.00	-5.81	AVG
14	2487.360	69.01	-7.32	61.69	74.00	-12.31	peak
15	2487.360	54.84	-7.32	47.52	54.00	-6.48	AVG
16	2488.000	68.38	-7.32	61.06	74.00	-12.94	peak
17	2488.000	54.40	-7.32	47.08	54.00	-6.92	AVG
18	2489.080	68.58	-7.31	61.27	74.00	-12.73	peak
19	2489.080	54.13	-7.31	46.82	54.00	-7.18	AVG
20	2489.440	69.02	-7.31	61.71	74.00	-12.29	peak
21	2489.440	54.04	-7.31	46.73	54.00	-7.27	AVG
22	2489.680	68.43	-7.31	61.12	74.00	-12.88	peak
23	2489.680	53.89	-7.31	46.58	54.00	-7.42	AVG
24	2490.640	67.47	-7.31	60.16	74.00	-13.84	peak
25	2490.640	53.61	-7.31	46.30	54.00	-7.70	AVG
26	2491.280	68.46	-7.31	61.15	74.00	-12.85	peak
27	2491.280	53.06	-7.31	45.75	54.00	-8.25	AVG
28	2492.040	69.71	-7.30	62.41	74.00	-11.59	peak
29	2492.040	52.79	-7.30	45.49	54.00	-8.51	AVG
30	2492.640	69.12	-7.30	61.82	74.00	-12.18	peak
31	2492.640	52.32	-7.30	45.02	54.00	-8.98	AVG
32	2493.600	68.15	-7.29	60.86	74.00	-13.14	peak
33	2493.600	52.17	-7.29	44.88	54.00	-9.12	AVG
34	2494.840	66.40	-7.29	59.11	74.00	-14.89	peak
35	2494.840	51.68	-7.29	44.39	54.00	-9.61	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 3		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
36	2495.680	66.73	-7.28	59.45	74.00	-14.55	peak
37	2495.680	51.46	-7.28	44.18	54.00	-9.82	AVG
38	2496.720	65.87	-7.28	58.59	74.00	-15.41	peak
39	2496.720	50.93	-7.28	43.65	54.00	-10.35	AVG
40	2497.280	65.85	-7.28	58.57	74.00	-15.43	peak
41	2497.280	50.52	-7.28	43.24	54.00	-10.76	AVG
42	2497.800	65.03	-7.28	57.75	74.00	-16.25	peak
43	2497.800	50.39	-7.28	43.11	54.00	-10.89	AVG
44	2499.240	63.99	-7.27	56.72	74.00	-17.28	peak
45	2499.240	50.24	-7.27	42.97	54.00	-11.03	AVG
46	2499.760	63.67	-7.27	56.40	74.00	-17.60	peak
47	2499.760	49.95	-7.27	42.68	54.00	-11.32	AVG

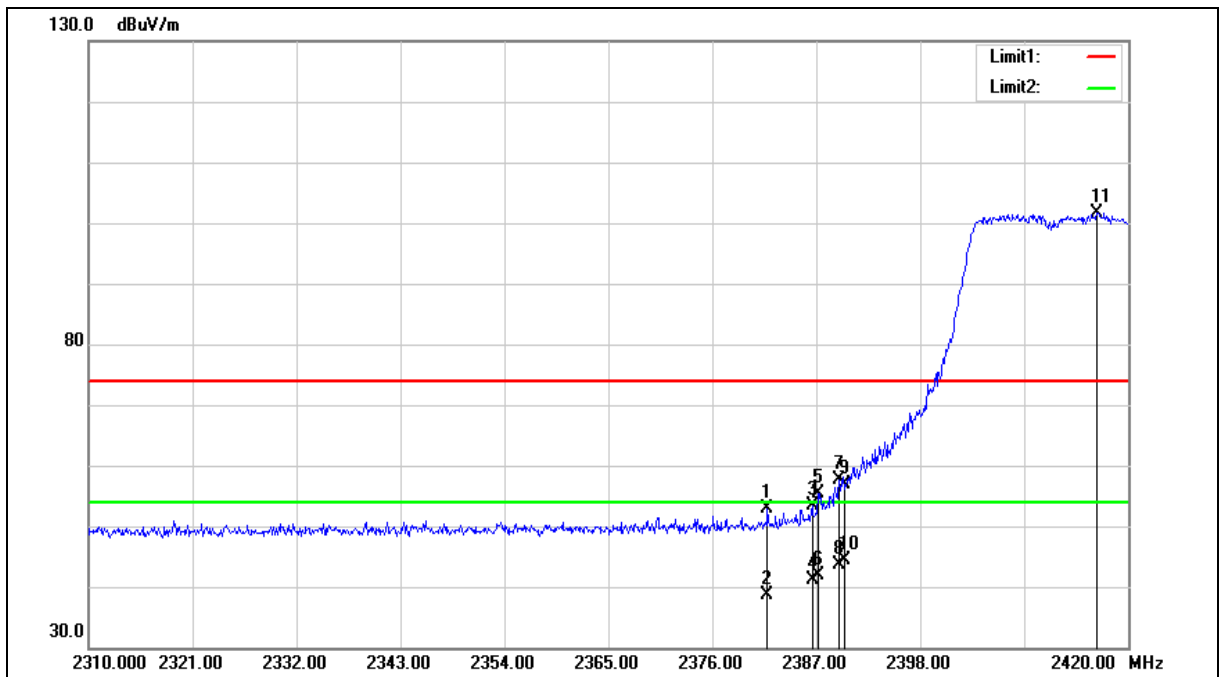
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.830	60.63	-7.75	52.88	74.00	-21.12	peak
2	2381.830	46.40	-7.75	38.65	54.00	-15.35	AVG
3	2386.560	61.09	-7.73	53.36	74.00	-20.64	peak
4	2386.560	48.75	-7.73	41.02	54.00	-12.98	AVG
5	2387.220	63.21	-7.73	55.48	74.00	-18.52	peak
6	2387.220	49.54	-7.73	41.81	54.00	-12.19	AVG
7	2389.420	65.27	-7.72	57.55	74.00	-16.45	peak
8	2389.420	51.31	-7.72	43.59	54.00	-10.41	AVG
9	2390.000	64.67	-7.72	56.95	74.00	-17.05	peak
10	2390.000	52.14	-7.72	44.42	54.00	-9.58	AVG
11	2416.700	109.35	-7.61	101.74	--	--	peak

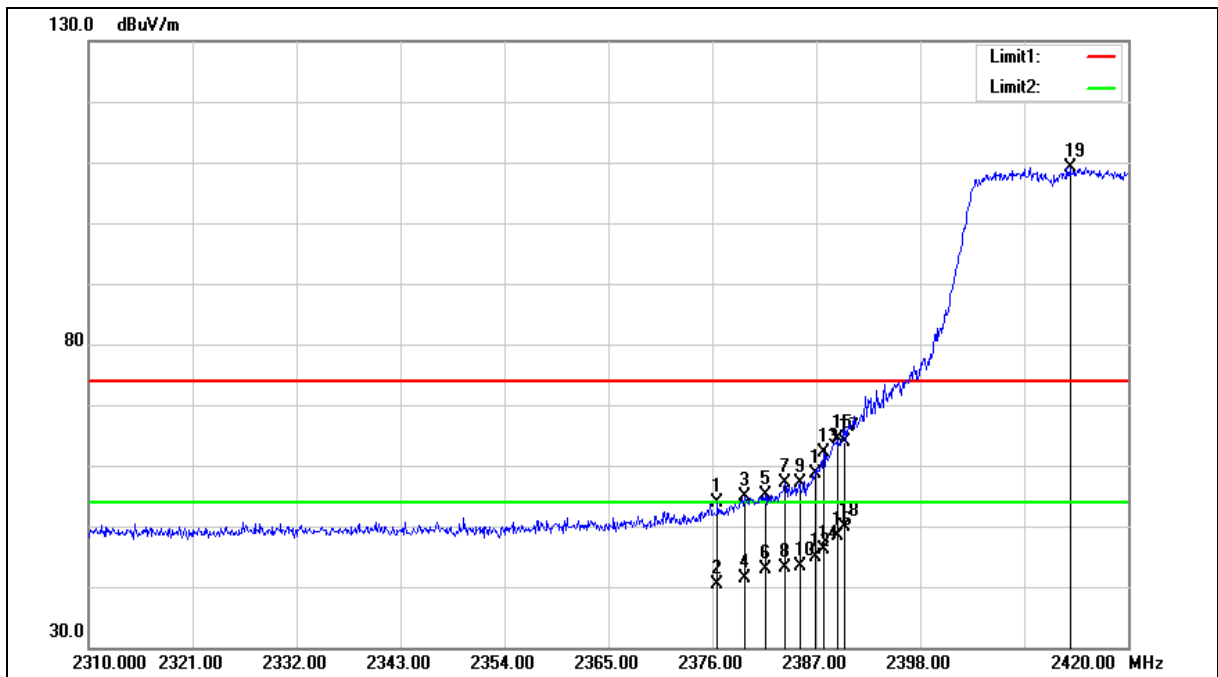
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2412 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		

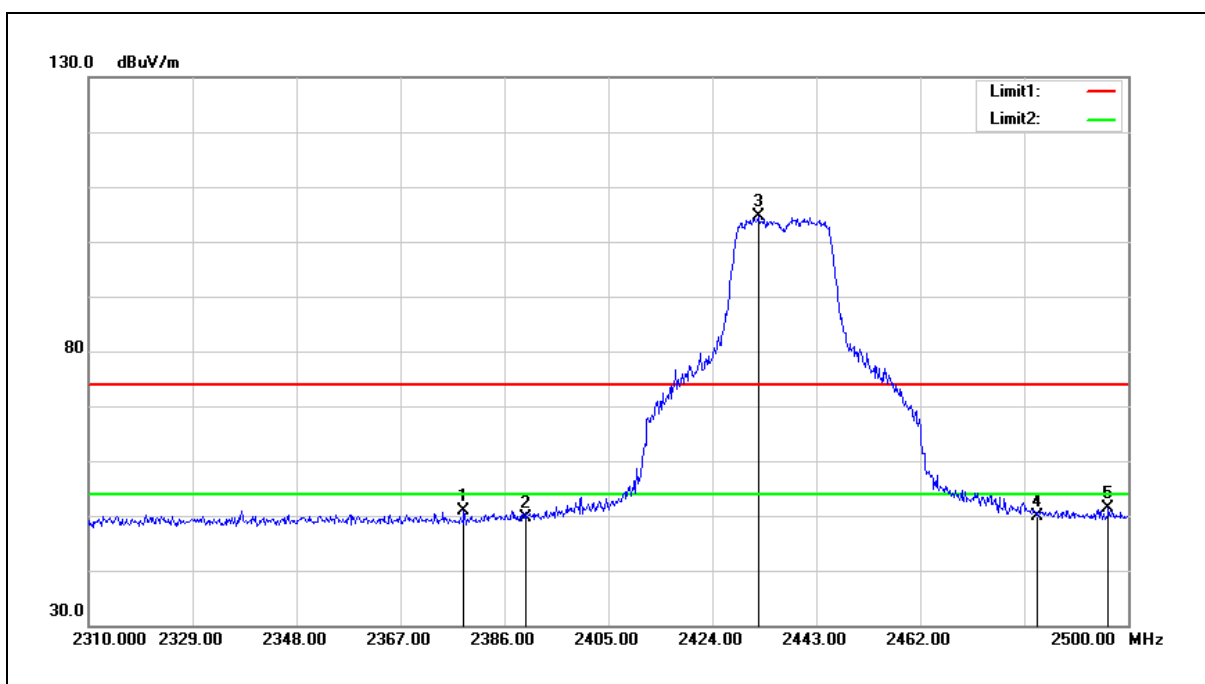
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2376.550	61.69	-7.77	53.92	74.00	-20.08	peak
2	2376.550	48.21	-7.77	40.44	54.00	-13.56	AVG
3	2379.410	62.69	-7.76	54.93	74.00	-19.07	peak
4	2379.410	49.24	-7.76	41.48	54.00	-12.52	AVG
5	2381.610	62.99	-7.76	55.23	74.00	-18.77	peak
6	2381.610	50.75	-7.76	42.99	54.00	-11.01	AVG
7	2383.700	64.77	-7.75	57.02	74.00	-16.98	peak
8	2383.700	50.87	-7.75	43.12	54.00	-10.88	AVG
9	2385.240	64.78	-7.73	57.05	74.00	-16.95	peak
10	2385.240	51.14	-7.73	43.41	54.00	-10.59	AVG
11	2386.890	66.34	-7.73	58.61	74.00	-15.39	peak
12	2386.890	52.51	-7.73	44.78	54.00	-9.22	AVG
13	2387.770	69.75	-7.73	62.02	74.00	-11.98	peak
14	2387.770	53.78	-7.73	46.05	54.00	-7.95	AVG
15	2389.200	72.01	-7.72	64.29	74.00	-9.71	peak
16	2389.200	56.12	-7.72	48.40	54.00	-5.60	AVG
17	2390.000	71.68	-7.72	63.96	74.00	-10.04	peak
18	2390.000	57.66	-7.72	49.94	54.00	-4.06	AVG
19	2413.840	116.83	-7.62	109.21	--	--	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2378.590	58.71	-7.76	50.95	74.00	-23.05	peak
2	2390.000	57.42	-7.72	49.70	74.00	-24.30	peak
3	2432.360	112.20	-7.54	104.66	--	--	peak
4	2483.500	57.29	-7.34	49.95	74.00	-24.05	peak
5	2496.390	58.55	-7.28	51.27	74.00	-22.73	peak

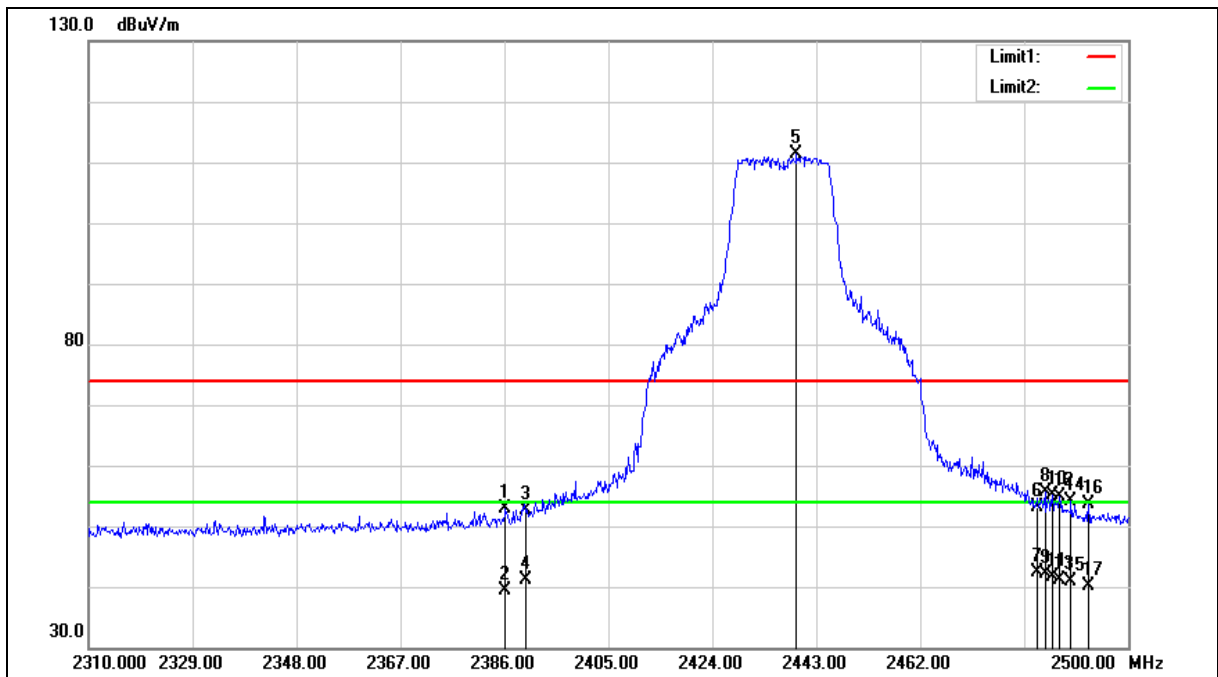
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2437 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.190	60.64	-7.73	52.91	74.00	-21.09	peak
2	2386.190	47.17	-7.73	39.44	54.00	-14.56	AVG
3	2390.000	60.27	-7.72	52.55	74.00	-21.45	peak
4	2390.000	48.75	-7.72	41.03	54.00	-12.97	AVG
5	2439.390	118.84	-7.51	111.33	--	--	peak
6	2483.500	60.36	-7.34	53.02	74.00	-20.98	peak
7	2483.500	49.72	-7.34	42.38	54.00	-11.62	AVG
8	2484.800	62.85	-7.34	55.51	74.00	-18.49	peak
9	2484.800	49.40	-7.34	42.06	54.00	-11.94	AVG
10	2486.130	62.53	-7.32	55.21	74.00	-18.79	peak
11	2486.130	48.90	-7.32	41.58	54.00	-12.42	AVG
12	2487.460	62.12	-7.32	54.80	74.00	-19.20	peak
13	2487.460	48.43	-7.32	41.11	54.00	-12.89	AVG
14	2489.550	61.44	-7.31	54.13	74.00	-19.87	peak
15	2489.550	48.25	-7.31	40.94	54.00	-13.06	AVG
16	2492.780	61.02	-7.30	53.72	74.00	-20.28	peak
17	2492.780	47.43	-7.30	40.13	54.00	-13.87	AVG

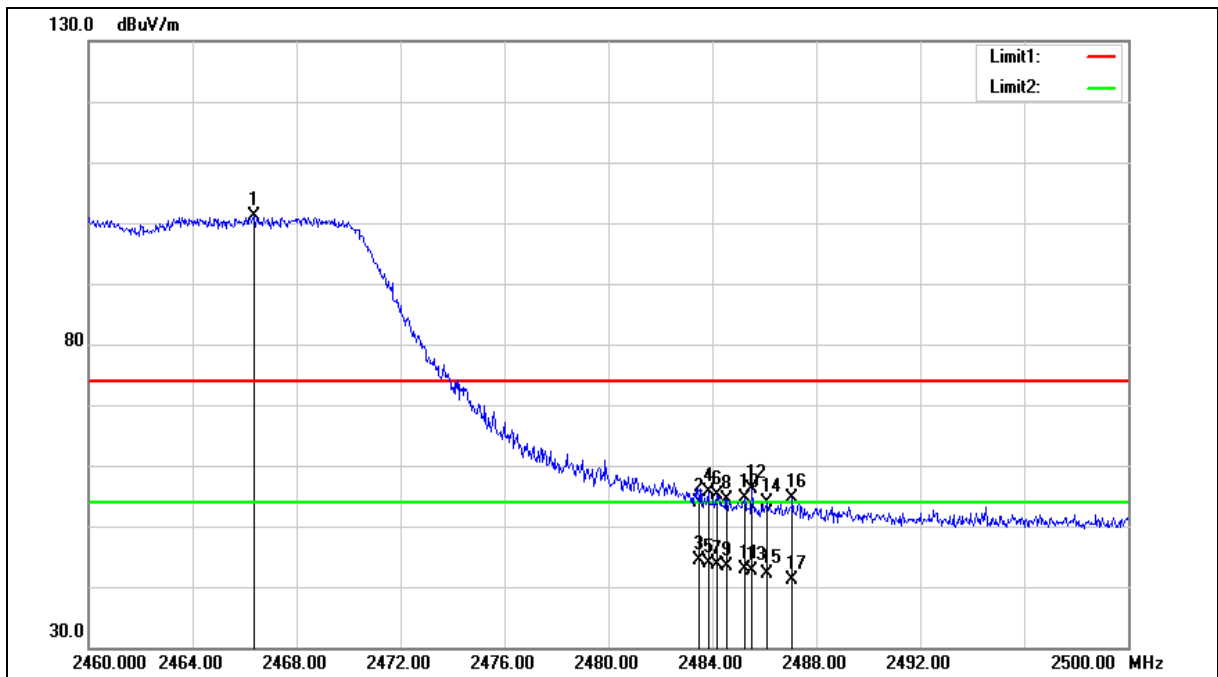
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		





Standard:	FCC Part 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Horizontal		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2466.360	108.63	-7.40	101.23	--	--	peak
2	2483.500	61.15	-7.34	53.81	74.00	-20.19	peak
3	2483.500	51.70	-7.34	44.36	54.00	-9.64	AVG
4	2483.840	63.02	-7.34	55.68	74.00	-18.32	peak
5	2483.840	51.32	-7.34	43.98	54.00	-10.02	AVG
6	2484.160	62.45	-7.34	55.11	74.00	-18.89	peak
7	2484.160	50.96	-7.34	43.62	54.00	-10.38	AVG
8	2484.560	61.78	-7.34	54.44	74.00	-19.56	peak
9	2484.560	50.76	-7.34	43.42	54.00	-10.58	AVG
10	2485.240	61.97	-7.33	54.64	74.00	-19.36	peak
11	2485.240	50.33	-7.33	43.00	54.00	-11.00	AVG
12	2485.520	63.33	-7.32	56.01	74.00	-17.99	peak
13	2485.520	49.99	-7.32	42.67	54.00	-11.33	AVG
14	2486.120	61.10	-7.32	53.78	74.00	-20.22	peak
15	2486.120	49.55	-7.32	42.23	54.00	-11.77	AVG
16	2487.080	61.94	-7.32	54.62	74.00	-19.38	peak
17	2487.080	48.57	-7.32	41.25	54.00	-12.75	AVG

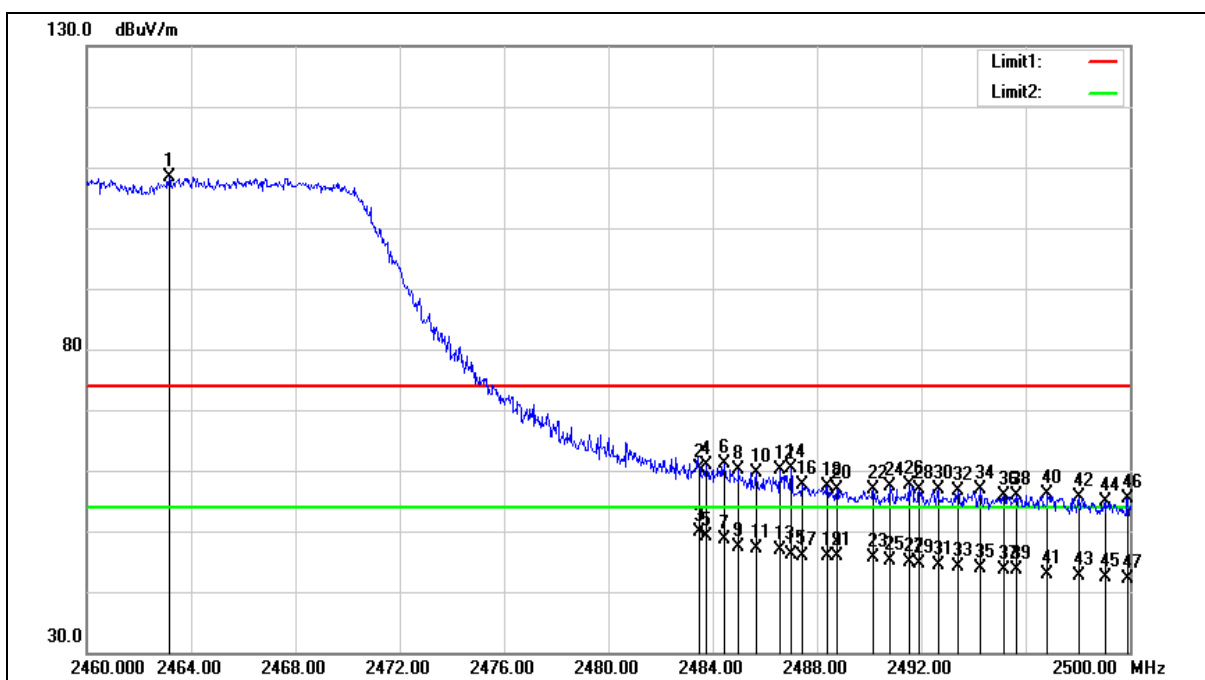
Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2463.160	115.85	-7.42	108.43	--	--	peak
2	2483.500	67.67	-7.34	60.33	74.00	-13.67	peak
3	2483.500	57.29	-7.34	49.95	54.00	-4.05	AVG
4	2483.760	68.14	-7.34	60.80	74.00	-13.20	peak
5	2483.760	56.56	-7.34	49.22	54.00	-4.78	AVG
6	2484.440	68.42	-7.34	61.08	74.00	-12.92	peak
7	2484.440	56.07	-7.34	48.73	54.00	-5.27	AVG
8	2485.000	67.39	-7.34	60.05	74.00	-13.95	peak
9	2485.000	54.78	-7.34	47.44	54.00	-6.56	AVG
10	2485.680	66.97	-7.32	59.65	74.00	-14.35	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11	2485.680	54.52	-7.32	47.20	54.00	-6.80	AVG
12	2486.560	67.49	-7.32	60.17	74.00	-13.83	peak
13	2486.560	54.18	-7.32	46.86	54.00	-7.14	AVG
14	2487.000	67.75	-7.32	60.43	74.00	-13.57	peak
15	2487.000	53.37	-7.32	46.05	54.00	-7.95	AVG
16	2487.440	64.94	-7.32	57.62	74.00	-16.38	peak
17	2487.440	53.30	-7.32	45.98	54.00	-8.02	AVG
18	2488.400	64.76	-7.31	57.45	74.00	-16.55	peak
19	2488.400	53.15	-7.31	45.84	54.00	-8.16	AVG
20	2488.760	64.29	-7.31	56.98	74.00	-17.02	peak
21	2488.760	53.14	-7.31	45.83	54.00	-8.17	AVG
22	2490.160	64.28	-7.31	56.97	74.00	-17.03	peak
23	2490.160	52.98	-7.31	45.67	54.00	-8.33	AVG
24	2490.800	64.60	-7.31	57.29	74.00	-16.71	peak
25	2490.800	52.53	-7.31	45.22	54.00	-8.78	AVG
26	2491.520	64.86	-7.31	57.55	74.00	-16.45	peak
27	2491.520	52.26	-7.31	44.95	54.00	-9.05	AVG
28	2491.920	64.21	-7.30	56.91	74.00	-17.09	peak
29	2491.920	51.93	-7.30	44.63	54.00	-9.37	AVG
30	2492.640	64.25	-7.30	56.95	74.00	-17.05	peak
31	2492.640	51.75	-7.30	44.45	54.00	-9.55	AVG
32	2493.400	63.89	-7.29	56.60	74.00	-17.40	peak
33	2493.400	51.53	-7.29	44.24	54.00	-9.76	AVG
34	2494.280	64.24	-7.29	56.95	74.00	-17.05	peak
35	2494.280	51.18	-7.29	43.89	54.00	-10.11	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 15.247	Test Distance:	3 m
Test item:	Band edge		
Frequency:	2462 MHz		
Mode:	Mode 4		
Ant.Polar.:	Vertical		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
36	2495.160	63.21	-7.28	55.93	74.00	-18.07	peak
37	2495.160	51.03	-7.28	43.75	54.00	-10.25	AVG
38	2495.640	63.09	-7.28	55.81	74.00	-18.19	peak
39	2495.640	50.85	-7.28	43.57	54.00	-10.43	AVG
40	2496.840	63.40	-7.28	56.12	74.00	-17.88	peak
41	2496.840	50.21	-7.28	42.93	54.00	-11.07	AVG
42	2498.040	62.80	-7.28	55.52	74.00	-18.48	peak
43	2498.040	49.95	-7.28	42.67	54.00	-11.33	AVG
44	2499.080	62.10	-7.27	54.83	74.00	-19.17	peak
45	2499.080	49.65	-7.27	42.38	54.00	-11.62	AVG
46	2499.920	62.60	-7.27	55.33	74.00	-18.67	peak
47	2499.920	49.50	-7.27	42.23	54.00	-11.77	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.

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