RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Brand name	**TechNexion**
Product name	**WiFi+Bluetooth 4.1(HS) System on Module**
Model No.	**PIXI-9377**
Test Result	**Pass**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).

Approved by:

Sam Chuang
Manager

Tested by:

Jerry Chuang
Engineer

Revision History

Rev.	Issue Date	Revisions	Revised By
00	August 28, 2018	Initial Issue	May Lin
01	September 20, 2018	1. Revised EUT channel and antenna information in P.5. 2. Update KDB 937606 to KDB 414788 in P.51.	May Lin
02	September 27, 2018	1. Revised the worst mode of measurement in P.12.	May Lin

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Manufacturer	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Equipment	WiFi+Bluetooth 4.1(HS) System on Module
Model Name	PIXI-9377
Model Discrepancy	N/A
Received Date	June 27, 2018
Date of Test	July 13 ~ August 13, 2018
Output Power(W)	IEEE 802.11b mode: 0.0830 IEEE 802.11g mode: 0.2323 IEEE 802.11n HT 20 MHz mode: 0.2291 IEEE 802.11n HT 40 MHz mode: 0.2275
Power Supply	Power by host system
HW Version	A1
FW Version	A1

1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT 40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b mode: DSSS 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM 4. IEEE 802.11n HT 40 MHz mode : OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode : 7 Channels

Remark:
Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ PIFA ☐ PCB ☒ Dipole ☐ Coils
Antenna Gain	

	Brand	P/N	Type	Peak Gain	Worst Mode
Antenna 1	TechNexion	VM2450-25523-OOX-180	PIFA	2.5dBi	X
Antenna 2	TechNexion	VM2450-ASSY1005	Dipole	4dBi	O

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark:

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

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at *No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)*

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chuang	-
RF Conducted	Jerry Chuang	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	06/29/2018	06/28/2019
Power Meter	Anritsu	ML2495A	1012009	09/18/2017	09/17/2018
Power Seneor	Anritsu	MA2411B	1126148	02/06/2018	02/05/2019
Signal Analyzer	R&S	FSV 40	101073	10/02/2017	10/01/2018

3M 966 Chamber Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
Band Reject Filters	MICRO TRONICS	BRM 50702	120	05/14/2018	05/13/2019
Bilog Antenna	Sunol Sciences	JB3	A030105	07/13/2018	07/12/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	07/31/2017	07/30/2018
Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	07/31/2017	07/30/2018
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	02/08/2018	02/07/2019
Double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	08/25/2017	08/24/2018
Loop Ant	COM-POWER	AL-130	121051	03/21/2018	03/20/2019
Pre-Amplifier	EMEC	EM330	060609	06/29/2018	06/28/2019
Pre-Amplifier	HP	8449B	3008A00965	06/29/2018	06/28/2019
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/31/2018	05/30/2019
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R

AC Conducted Emissions Test Site					
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due
LISN	R&S	ENV216	101054	02/06/2018	02/05/2019
LISN	SCHWARZBECK	NSLK 8127	8127-541	02/09/2018	02/08/2019
EMI Test Receiver	R&S	ESCI	101203	11/02/2017	11/01/2018
CABLE	EMCI	CFD300-NL	CERF	07/03/2018	07/02/2019

Remark: *Each piece of equipment is scheduled for calibration once a year.*

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(K)	Toshiba	voyager	ZD 154034s	N/A
2	NB	Lenovo	TP00056A	R33B65	PD97260HU

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074 D01

2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	5.1	AC Conducted Emission	Pass
15.247(a)(2)	5.2	6 dB Bandwidth	Pass
-	5.2	Occupied Bandwidth (99%)	Pass
15.247(b)	5.3	Output Power Measurement	Pass
15.247(e)	5.4	Power Spectral Density	Pass
15.247(d)	5.5	Conducted Band Edge	Pass
15.247(d)	5.5	Conducted Emission	Pass
15.247(d)	5.6	Radiation Band Edge	Pass
15.247(d)	5.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode: MCS0 IEEE 802.11n HT40 mode: MCS0
Test Channel Frequencies	**IEEE 802.11b mode:** 1. Lowest Channel: 2412MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462MHz **IEEE 802.11g mode:** 1. Lowest Channel: 2412MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462MHz **IEEE 802.11n HT20 mode:** 1. Lowest Channel: 2412MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2462MHz **IEEE 802.11n HT40 mode:** 1. Lowest Channel: 2422MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452MHz
Operation Transmitter	IEEE 802.11b mode: 1T1R IEEE 802.11g mode: 1T1R IEEE 802.11n HT20 mode: 1T1R IEEE 802.11n HT40 mode: 1T1R

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

For PIFA Antenna

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☒ Horizontal ☐ Vertical

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis , X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane and Horizontal) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

For Dipole Antenna

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☒ Horizontal ☐ Vertical

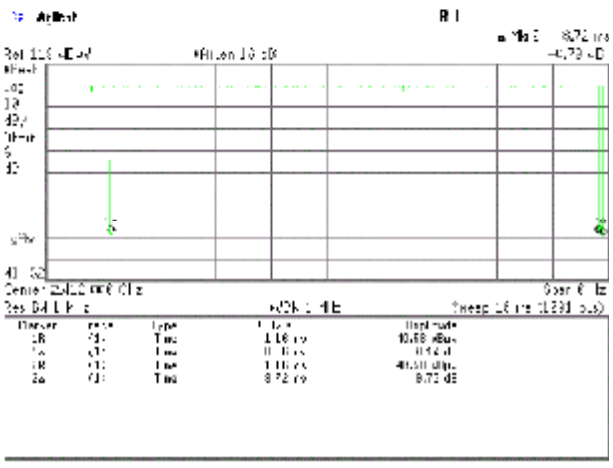
Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane and Vertical) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

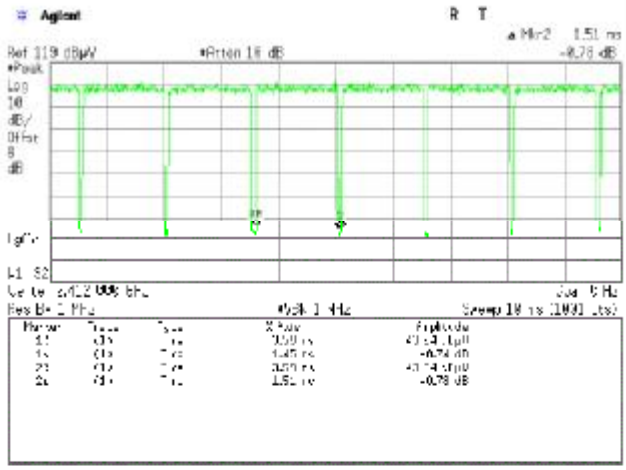
4. EUT DUTY CYCLE

Duty Cycle				
Configuration	TX ON (ms)	TX ALL (ms)	Duty Cycle (%)	Duty Factor(dB)
802.11b	8.6600	8.7200	99.31%	-0.03
802.11g	1.4500	1.5100	96.03%	0.18
802.11n HT20	1.3700	1.4500	94.48%	-0.25
802.11n HT40	0.6900	0.7600	90.79%	-0.42

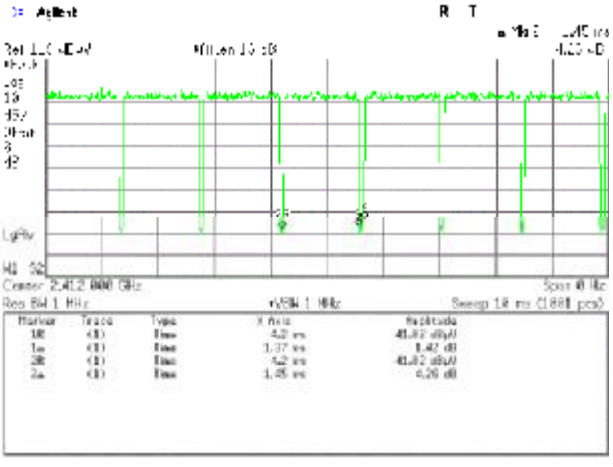
802.11b



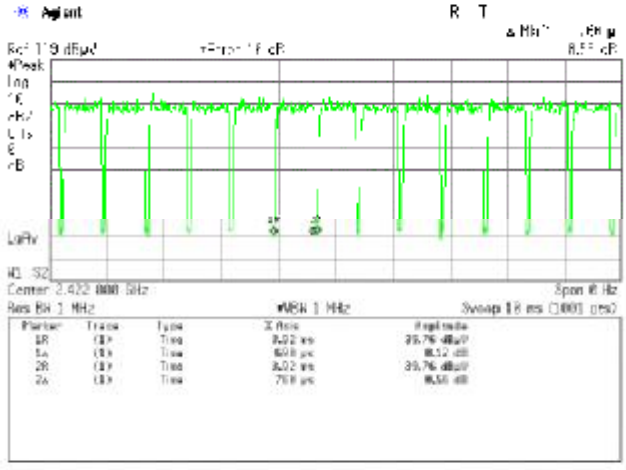
802.11g



802.11n HT20



802.11n HT40



5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a)(2)

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

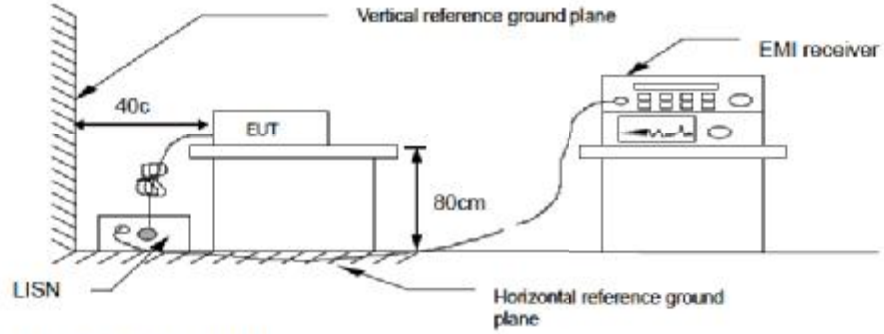
* Decreases with the logarithm of the frequency.

5.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

5.1.3 Test Setup

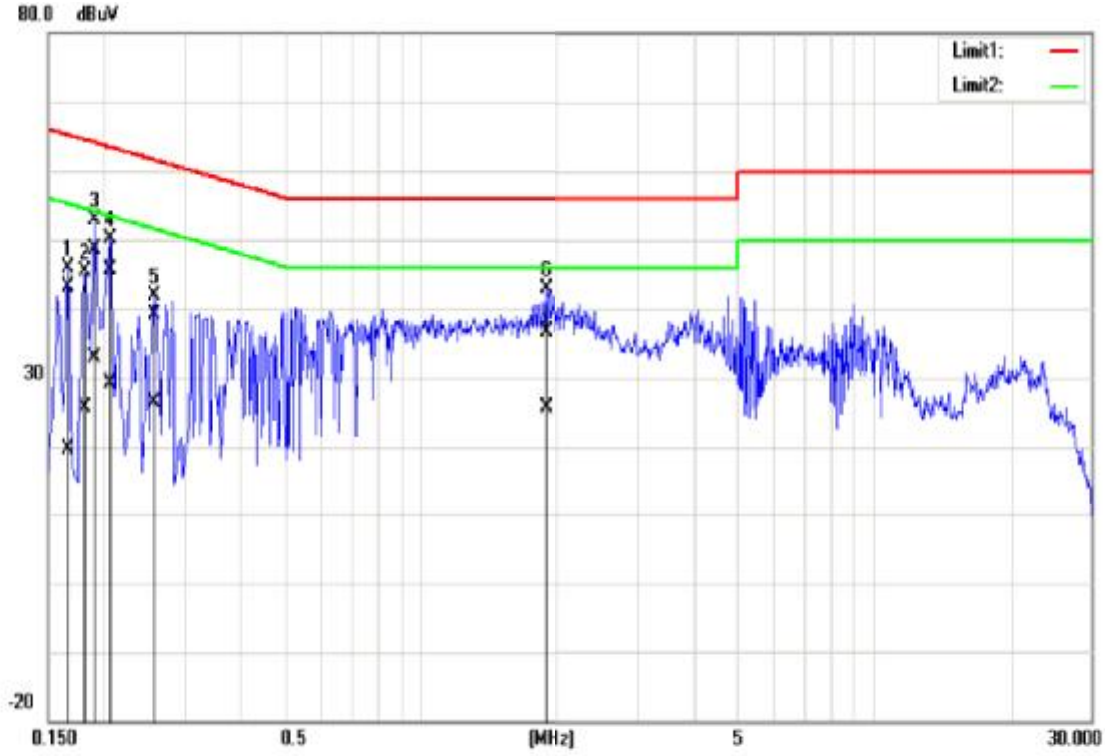


5.1.4 Test Result

Pass.

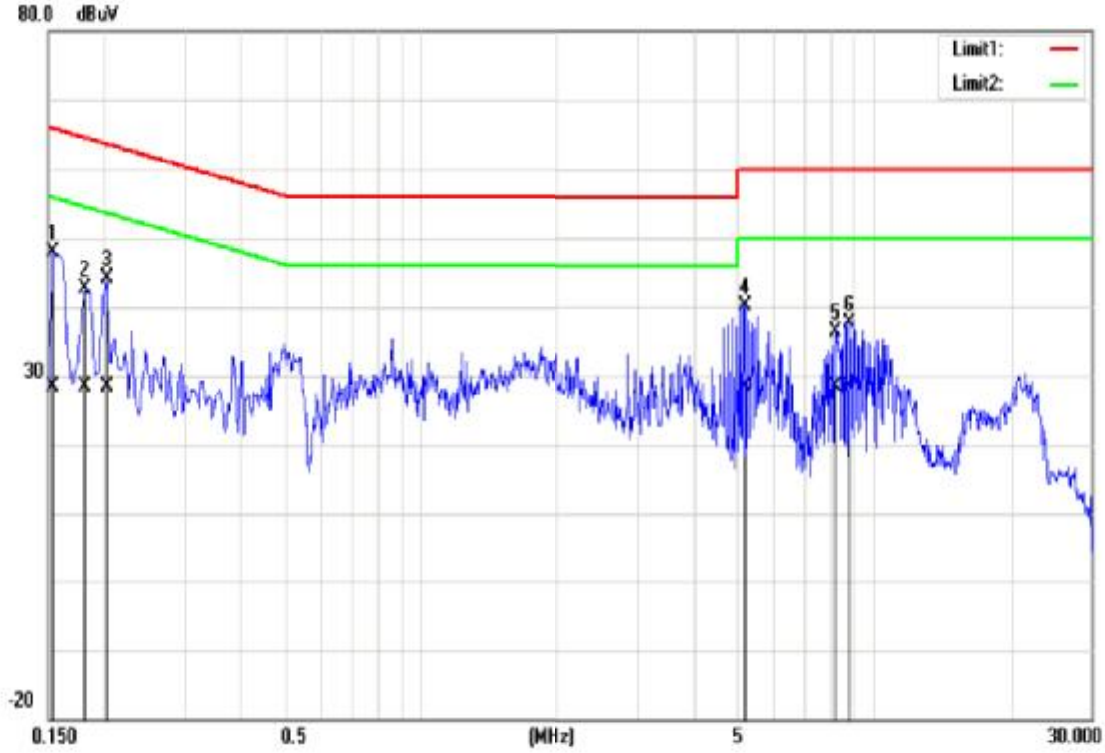
Test Data

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Line	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1660	43.06	19.41	0.11	43.17	19.52	65.16	55.16	-21.99	-35.64	Pass
2	0.1820	45.33	25.48	0.11	45.44	25.59	64.39	54.39	-18.95	-28.80	Pass
3	0.1900	48.46	32.72	0.11	48.57	32.83	64.04	54.04	-15.47	-21.21	Pass
4	0.2060	45.57	28.98	0.11	45.68	29.09	63.37	53.37	-17.69	-24.28	Pass
5	0.2580	39.04	26.23	0.11	39.15	26.34	61.50	51.50	-22.35	-25.16	Pass
6	1.8940	36.51	25.54	0.15	36.66	25.69	56.00	46.00	-19.34	-20.31	Pass

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Neutral	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	1.8940	31.03	22.97	0.16	31.19	23.13	56.00	46.00	-24.81	-22.87	Pass
2	0.1825	40.91	28.44	0.13	41.04	28.57	64.37	54.37	-23.33	-25.80	Pass
3	0.2007	40.02	26.02	0.13	40.15	26.15	63.58	53.58	-23.43	-27.43	Pass
4	5.1660	39.14	35.87	0.22	39.36	36.09	60.00	50.00	-20.64	-13.91	Pass
5	8.2300	34.97	30.49	0.27	35.24	30.76	60.00	50.00	-24.76	-19.24	Pass
6	8.7020	35.42	26.13	0.28	35.70	26.41	60.00	50.00	-24.30	-23.59	Pass

5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

5.2.1 Test Limit

According to §15.247(a)(2)

6 dB Bandwidth :

Limit	Shall be at least 500kHz

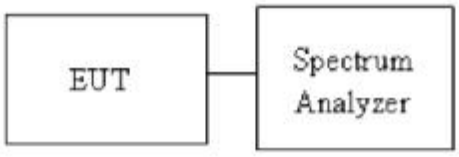
Occupied Bandwidth(99%) : For reporting purposes only.

5.2.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 8.1 and ANSI 63.10:2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

5.2.3 Test Setup



5.2.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	13.0246	8.0435	≥500
Mid	2437	13.0680	8.0435	
High	2462	13.1114	8.0435	

Test mode: IEEE 802.11g mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	16.2807	15.1304	≥500
Mid	2437	16.5846	15.1304	
High	2462	16.2373	15.1304	

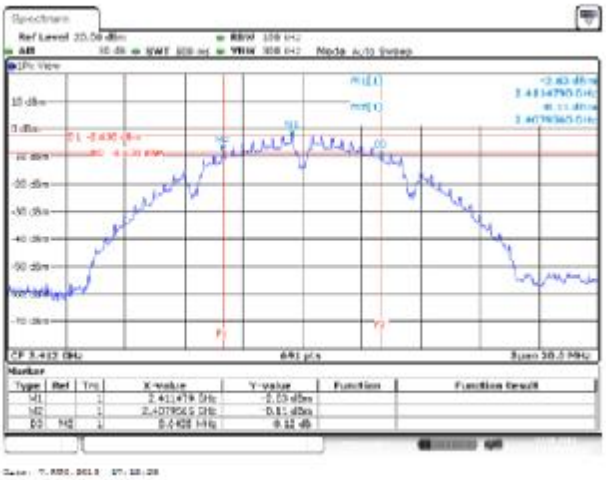
Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.4095	15.1304	≥500
Mid	2437	17.5397	16.6087	
High	2462	17.3661	15.1304	

Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz				
Channel	Frequency (MHz)	OBW (99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2422	36.0057	35.13	>500
Mid	2437	36.0057	34.014	
High	2452	35.8900	35.13	

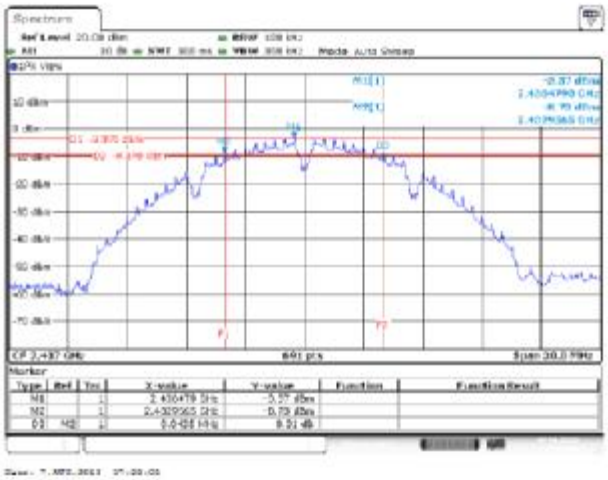
Test Data (6dB BANDWIDTH)

IEEE 802.11b mode

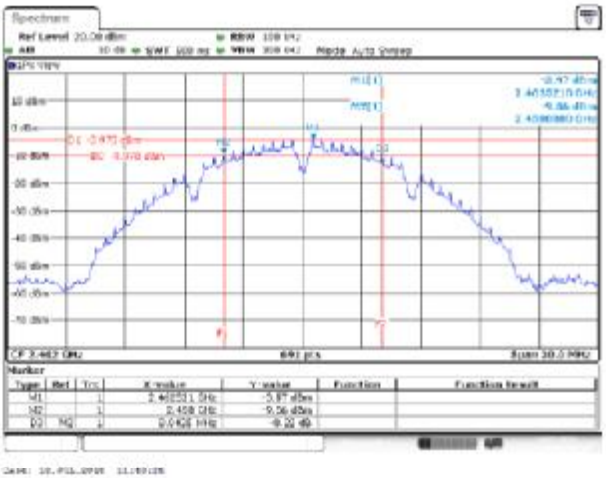
Low CH



Mid CH

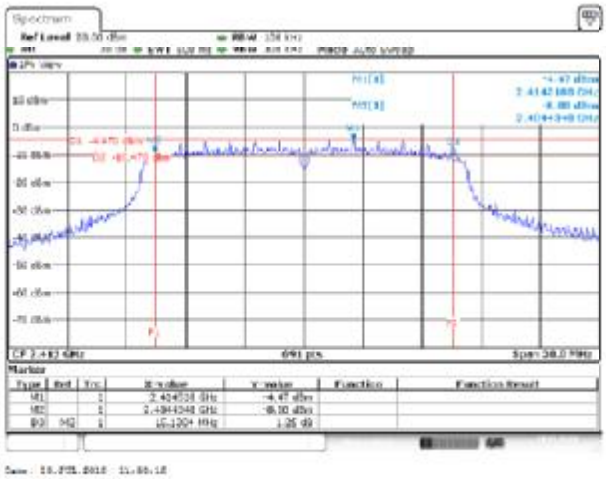


High CH

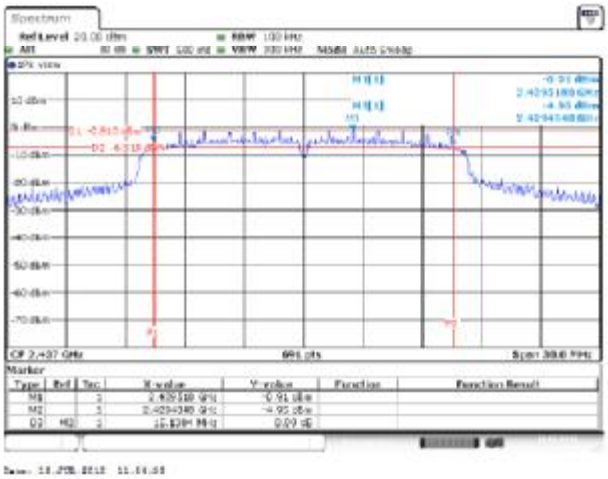


IEEE 802.11g mode

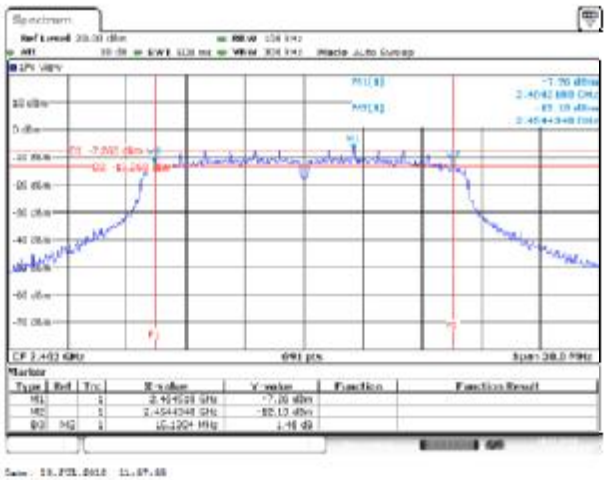
Low CH



Mid CH

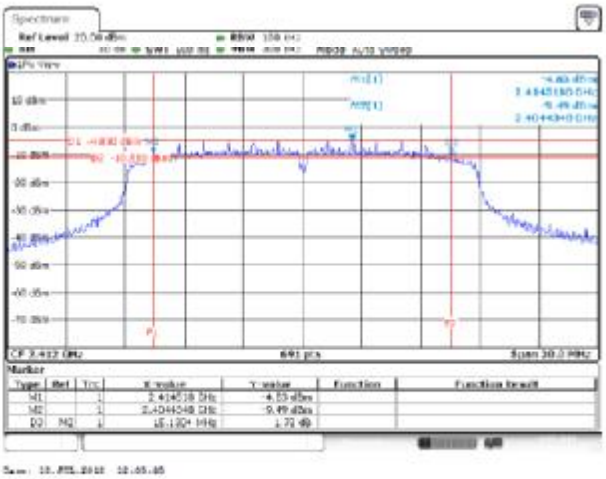


High CH

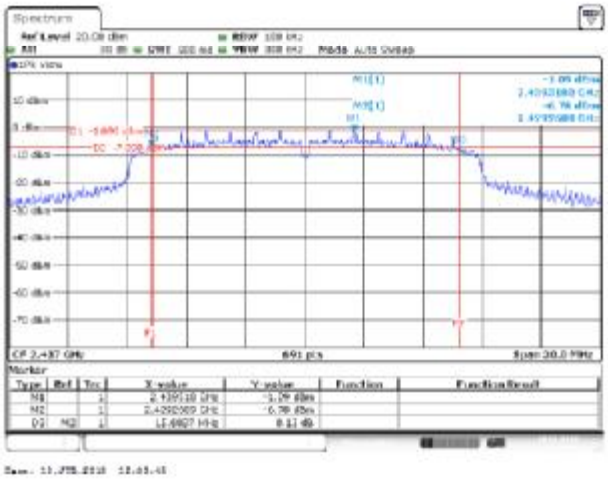


IEEE 802.11n HT20 mode

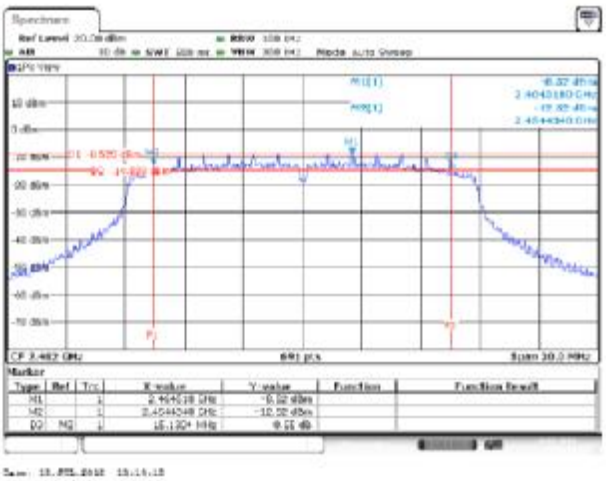
Low CH



Mid CH

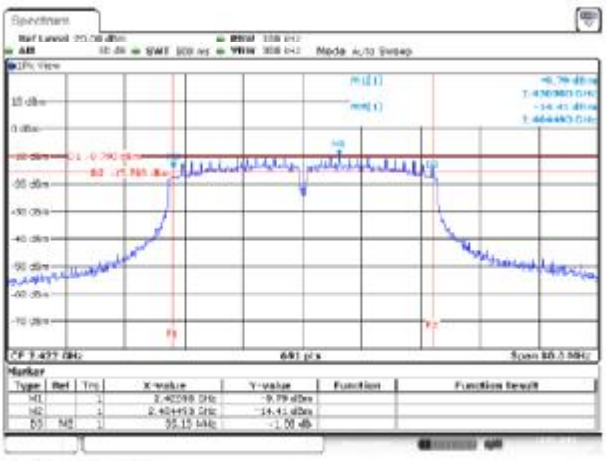


High CH

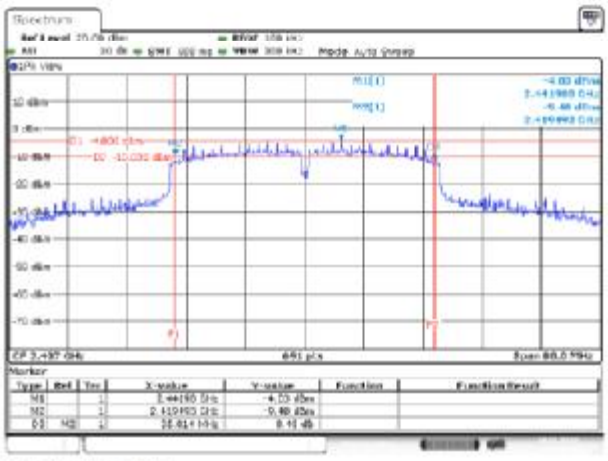


IEEE 802.11n HT40 mode

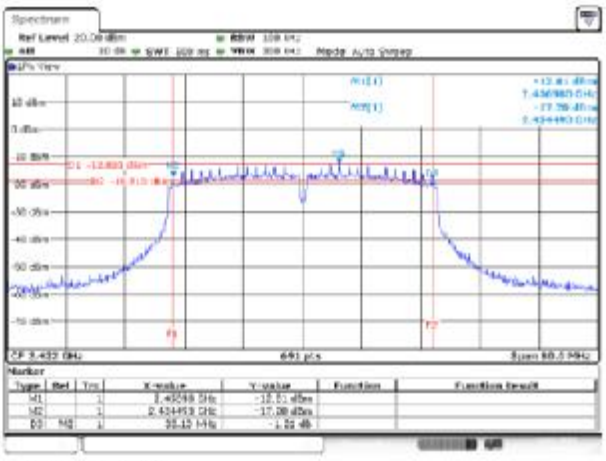
Low CH



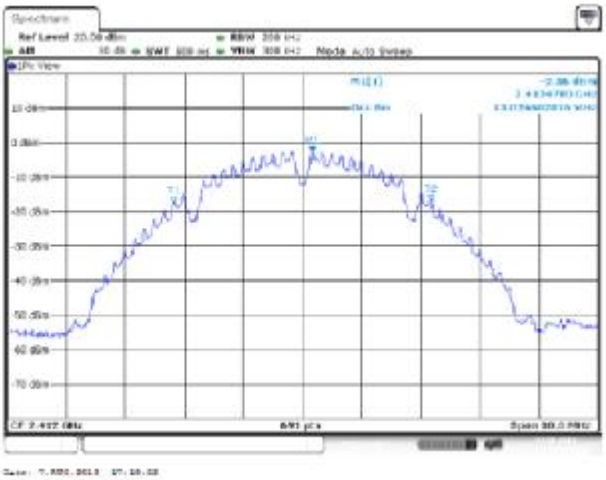
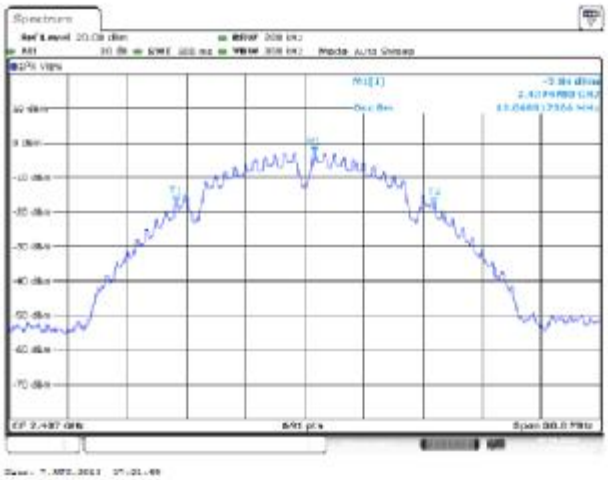
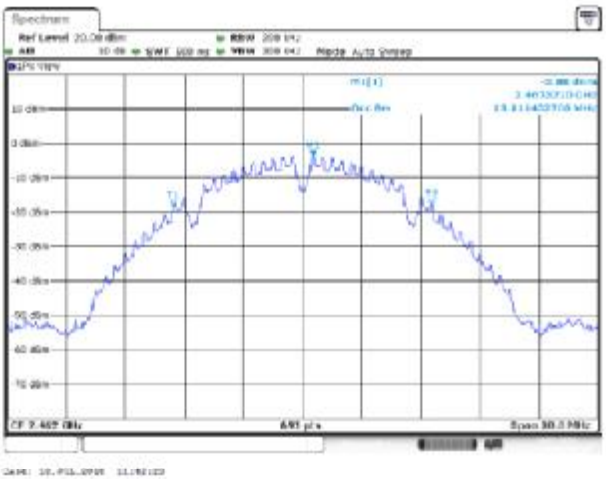
Mid CH

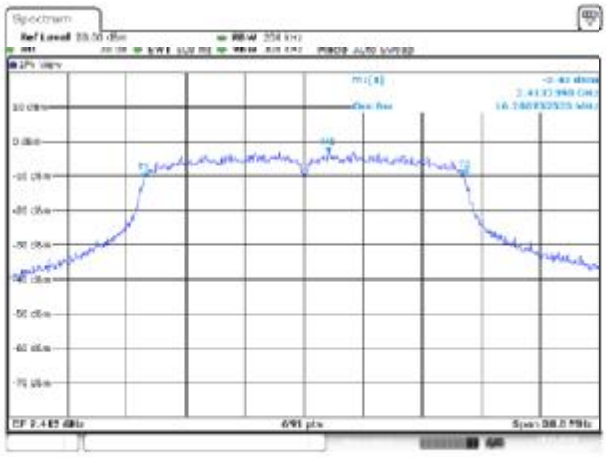
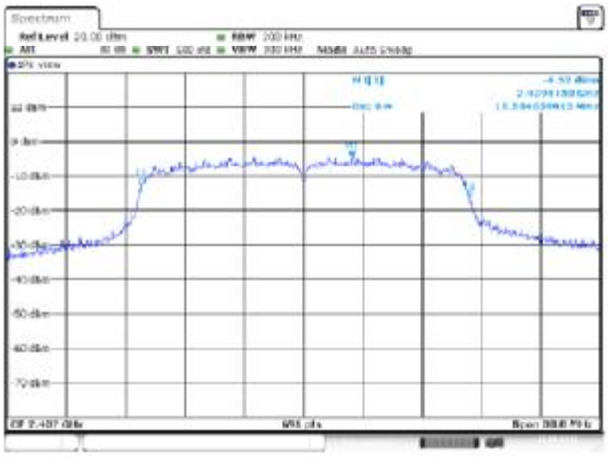
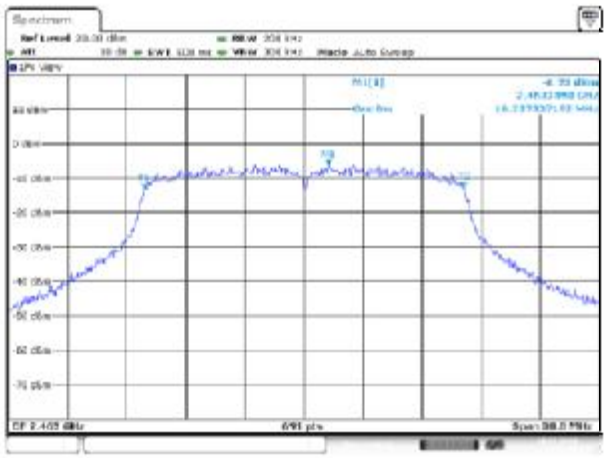


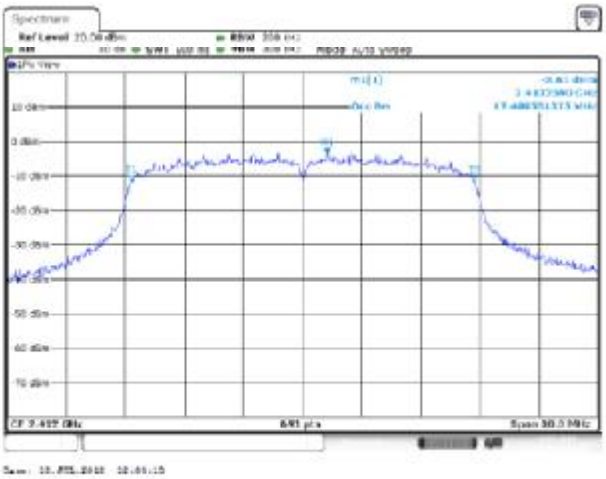
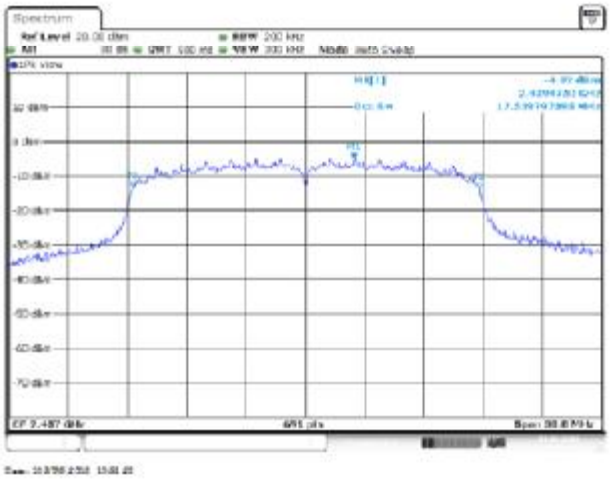
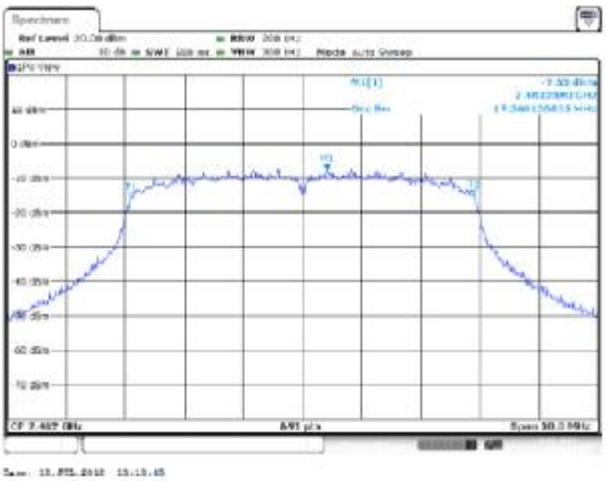
High CH



Test Data (BANDWIDTH 99%)

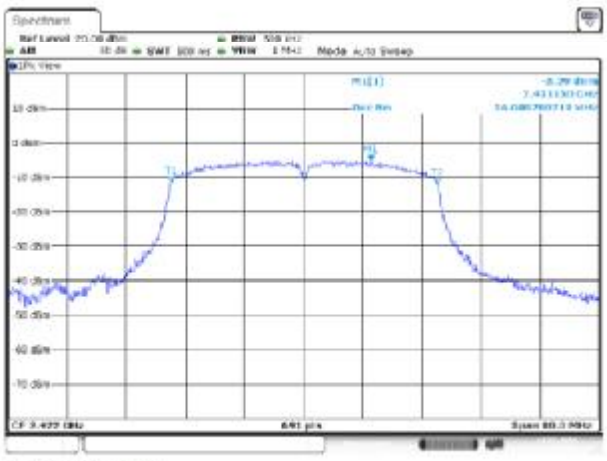
IEEE 802.11b mode	
Low CH	Mid CH
	
High CH	
	

IEEE 802.11g mode	
Low CH	Mid CH
	
High CH	
	

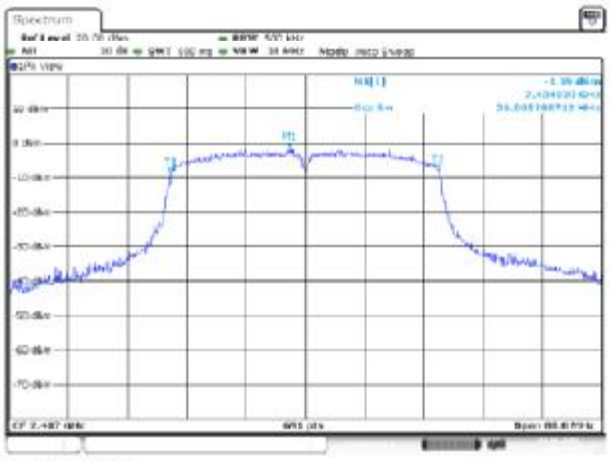
IEEE 802.11n HT20 mode	
Low CH	Mid CH
	
High CH	
	

IEEE 802.11n HT40 mode

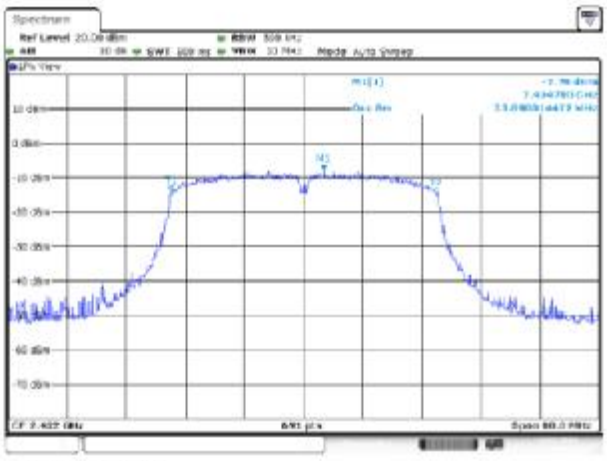
Low CH



Mid CH



High CH



5.3 OUTPUT POWER MEASUREMENT

5.3.1 Test Limit

According to §15.247(b)

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :

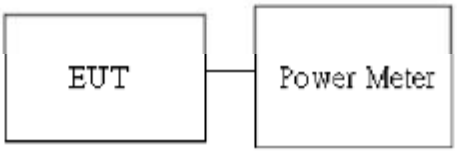
Average output power : For reporting purposes only.

5.3.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 9.1.2.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

5.3.3 Test Setup



5.3.4 Test Result

Peak output power :

Wifi 2.4G						
Config	CH	Freq. (MHz)	power set	PK Power (dBm)	PK Total Power (W)	Limit (dBm)
IEEE 802.11b Data rate: 1Mbps	Low	2412	16	18.98	0.0791	30
	Mid	2437	16	19.19	0.0830	
	High	2462	15	18.17	0.0656	
IEEE 802.11g Data rate: 6Mbps	Low	2412	18	23.25	0.2113	
	Mid	2437	22	23.66	0.2323	
	High	2462	15	21.13	0.1297	
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	18	23.31	0.2143	
	Mid	2437	22	23.60	0.2291	
	High	2462	14	20.25	0.1059	
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	16	22.08	0.1614	
	Mid	2437	22	23.57	0.2275	
	High	2452	13	19.56	0.0904	

Average output power :

Wifi 2.4G			
Config	CH	Freq. (MHz)	AV Power (dBm)
IEEE 802.11b Data rate: 1Mbps	Low	2412	16.50
	Mid	2437	16.68
	High	2462	15.68
IEEE 802.11g Data rate: 6Mbps	Low	2412	17.63
	Mid	2437	17.96
	High	2462	14.89
IEEE 802.11n HT20 Data rate: MCS0	Low	2412	17.45
	Mid	2437	17.76
	High	2462	13.66
IEEE 802.11n HT40 Data rate: MCS0	Low	2422	15.20
	Mid	2437	17.38
	High	2452	12.43

5.4 POWER SPECTRAL DENSITY

5.4.1 Test Limit

According to §15.247(e)

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.

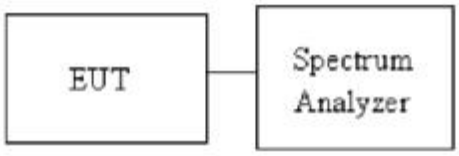
Limit	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 8 – (DG – 6)] ☐ Point-to-point operation：

5.4.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 10.2

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

5.4.3 Test Setup



5.4.4 Test Result

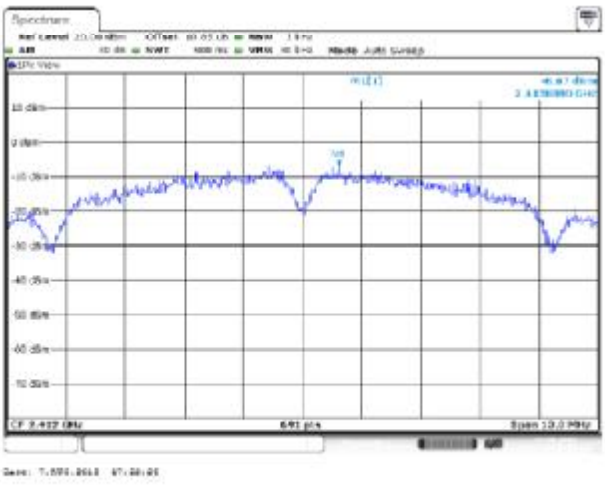
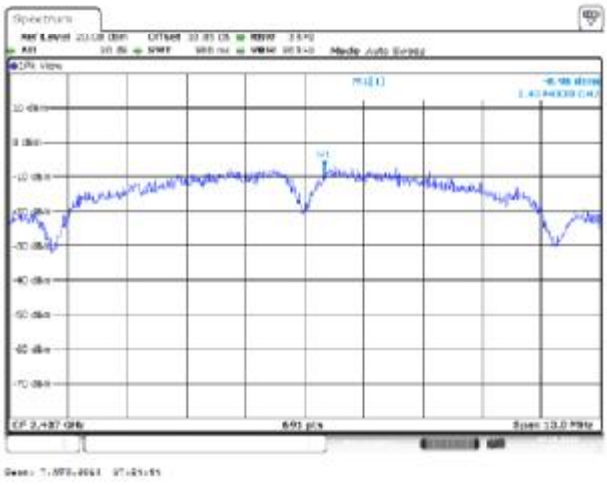
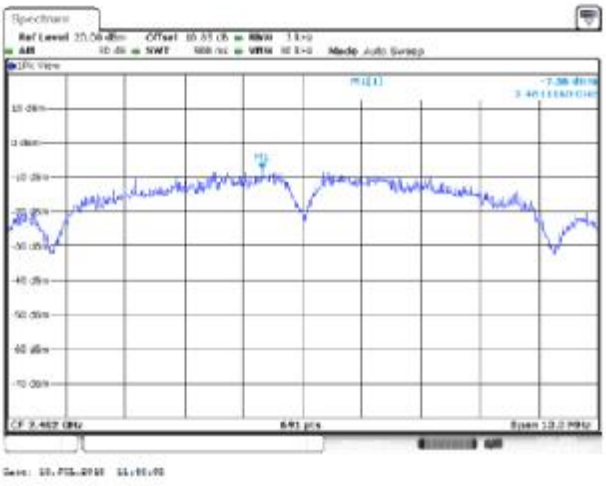
Test mode: IEEE 802.11b mode / 2412-2462 MHz			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	2412	-6.67	8
Mid	2437	-6.96	
High	2462	-7.56	

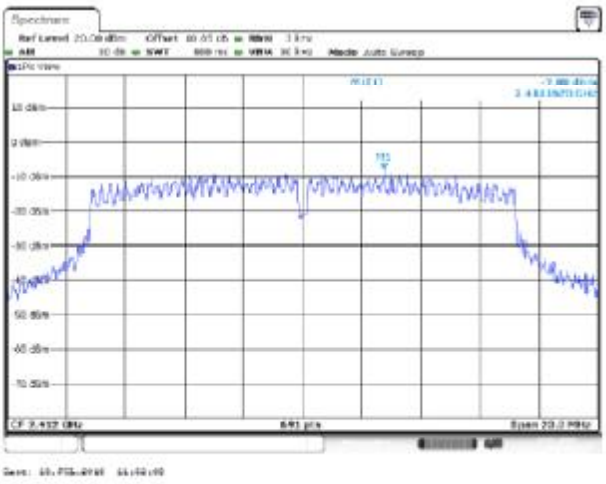
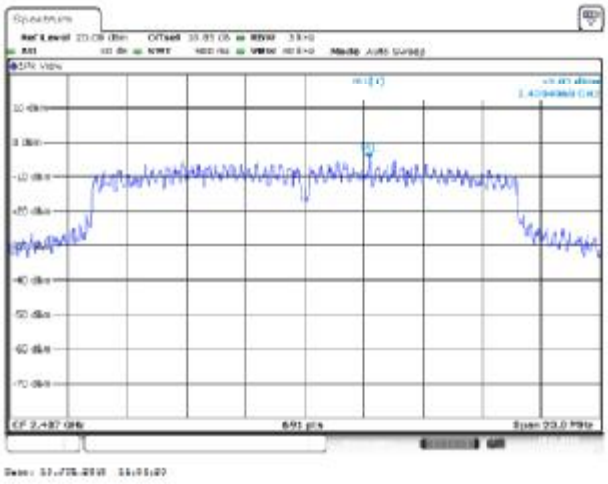
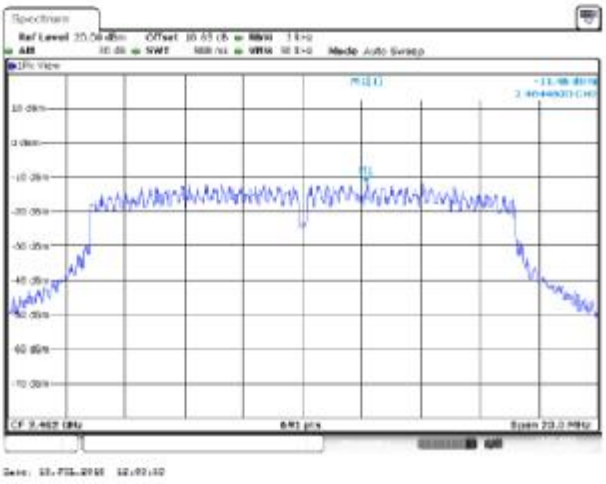
Test mode: IEEE 802.11g mode / 2412-2462 MHz			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	2412	-7.88	8
Mid	2437	-5.02	
High	2462	-11.46	

Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	2412	-8.77	8
Mid	2437	-5.75	
High	2462	-13.00	

Test mode: IEEE 802.11n HT 40 MHz mode / 2422-2452 MHz			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	2422	-12.07	8
Mid	2437	-7.27	
High	2452	-15.60	

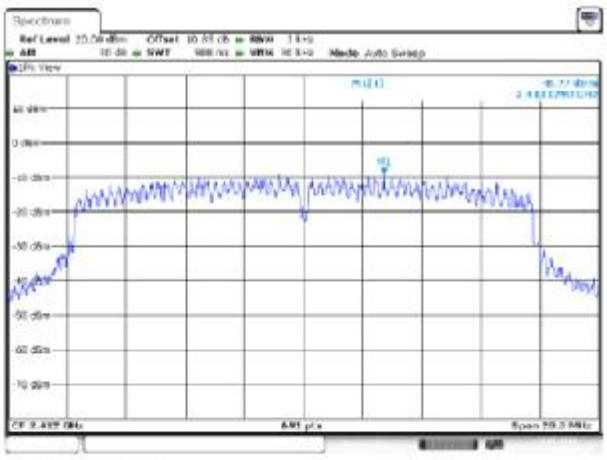
Test Data

IEEE 802.11b mode	
Low CH	Mid CH
	
High CH	
	

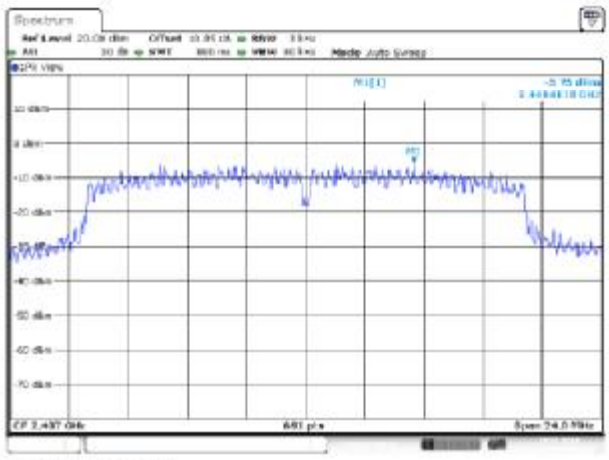
IEEE 802.11g mode	
Low CH	Mid CH
	
High CH	
	

IEEE 802.11n HT20 mode

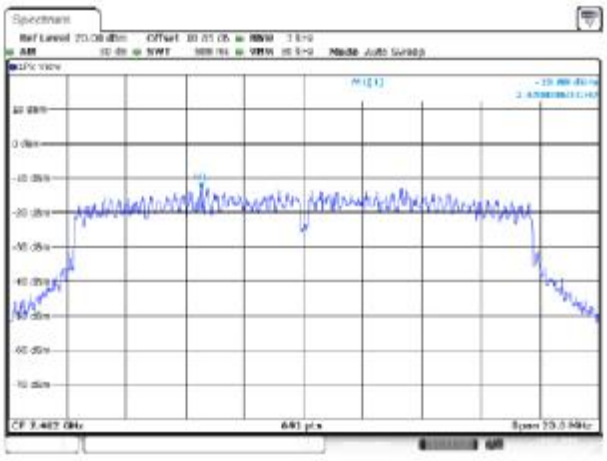
Low CH



Mid CH

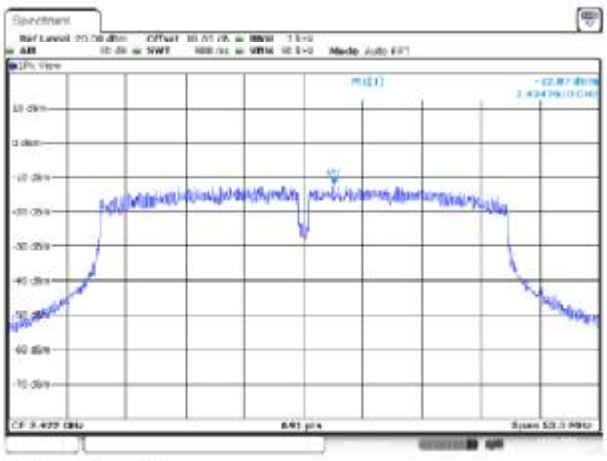


High CH

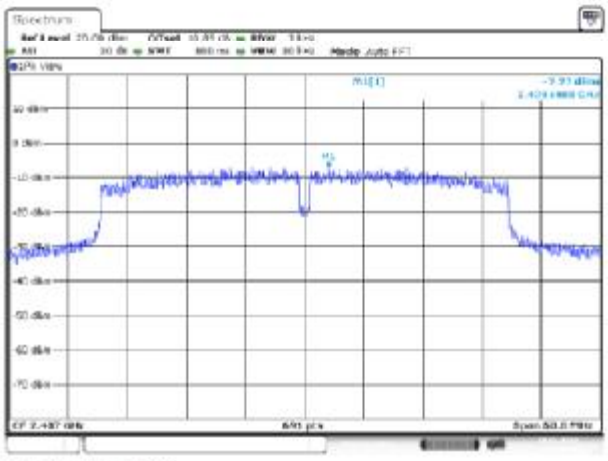


IEEE 802.11n HT40 mode

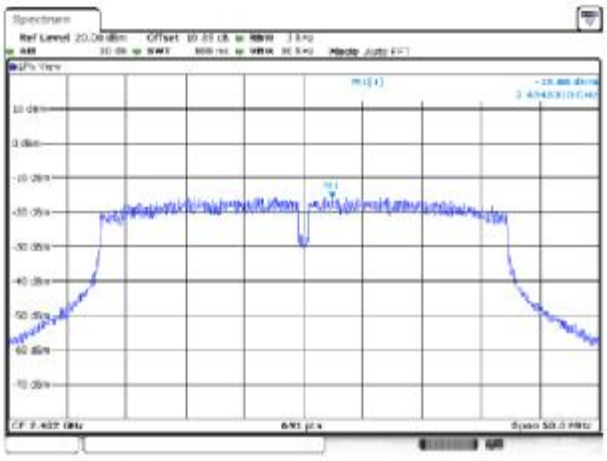
Low CH



Mid CH



High CH



5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

5.5.1 Test Limit

According to §15.247(d)

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

5.5.2 Test Procedure

Test method Refer as, KDB 558074 D01, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

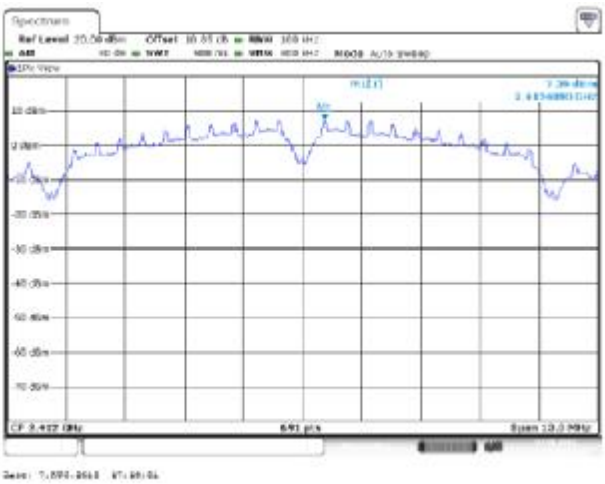
5.5.3 Test Setup

5.5.4 Test Result

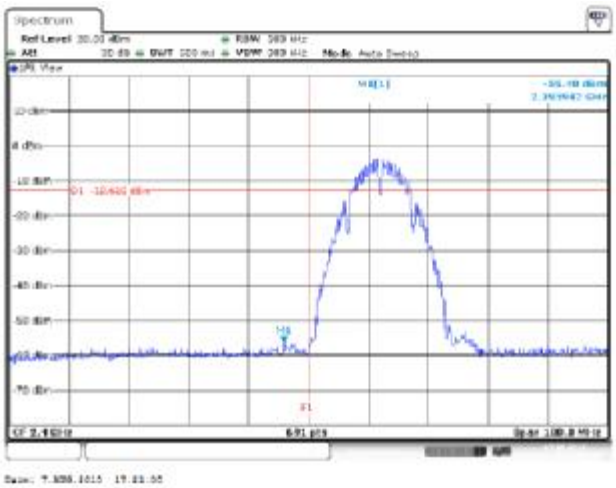
Test Data

IEEE 802.11b mode Low CH

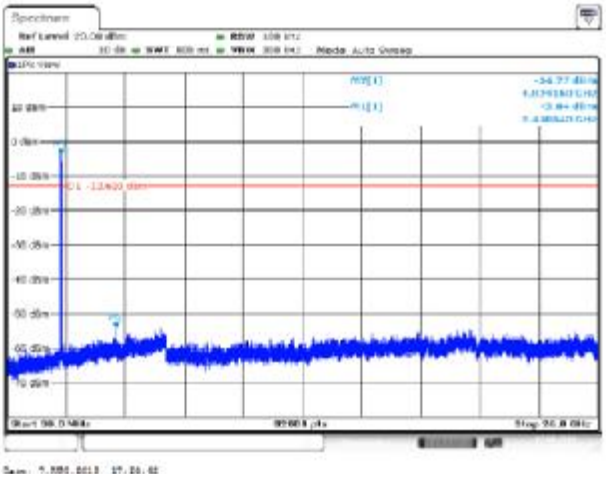
Reference Level of PSD in 100kHz

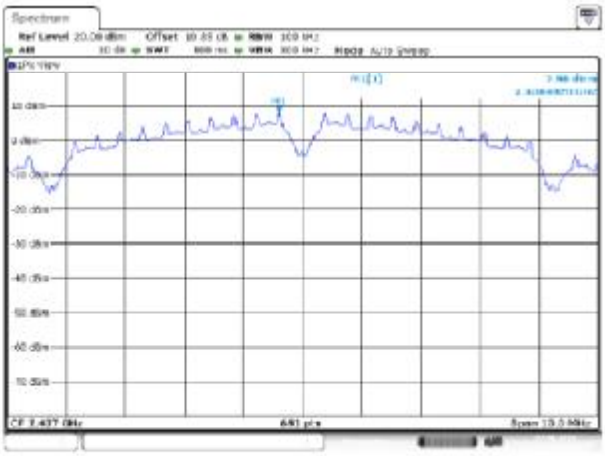
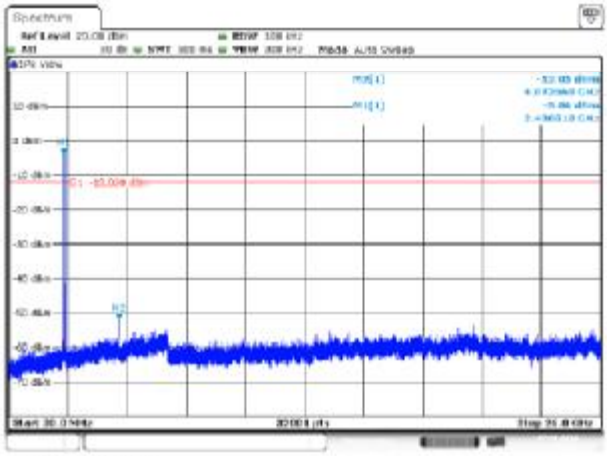


Band Edge



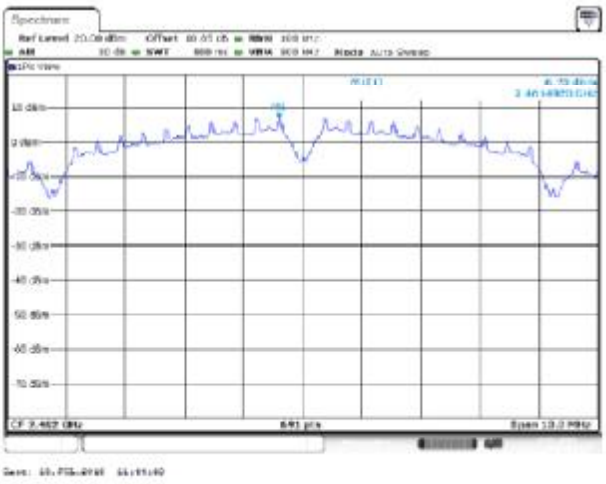
Spurious Emission 30MHz-25GHz



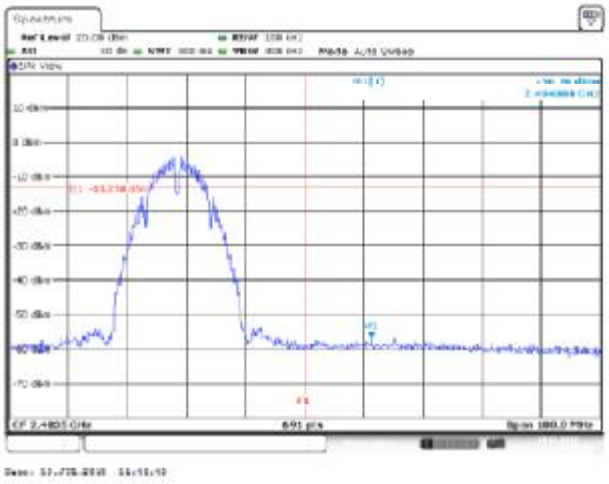
IEEE 802.11b mode Mid CH	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

IEEE 802.11b mode High CH

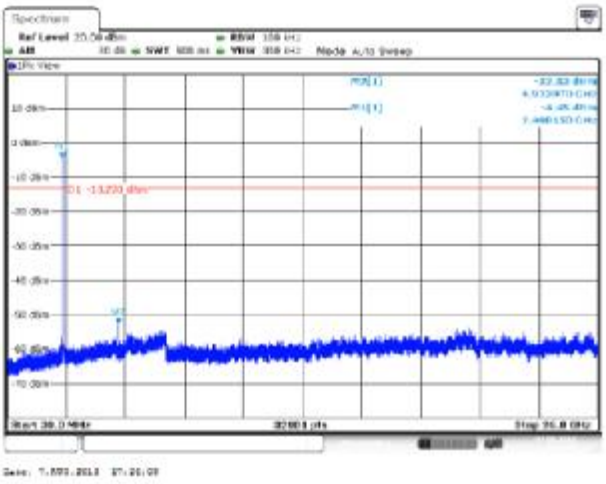
Reference Level of PSD in 100kHz



Band Edge

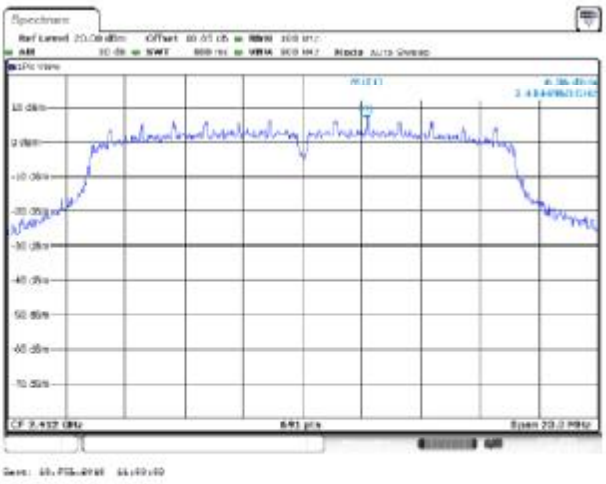


Spurious Emission 30MHz-25GHz

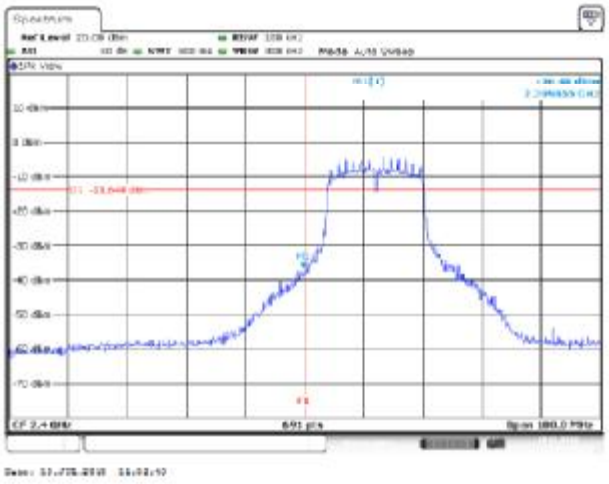


IEEE 802.11g mode Low CH

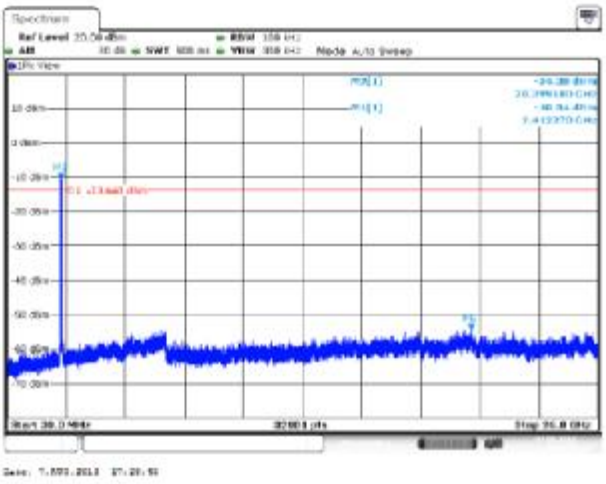
Reference Level of PSD in 100kHz

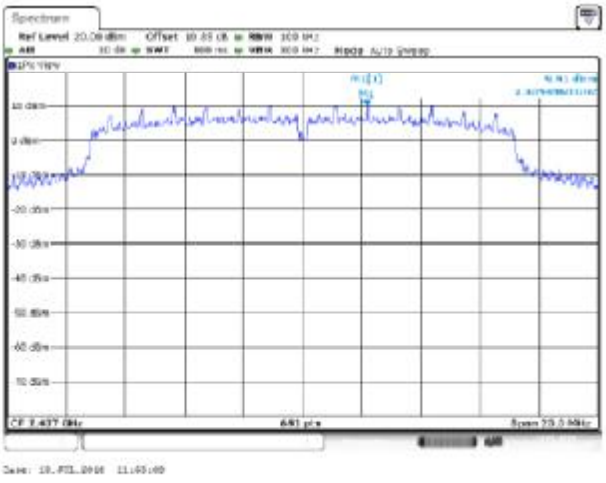
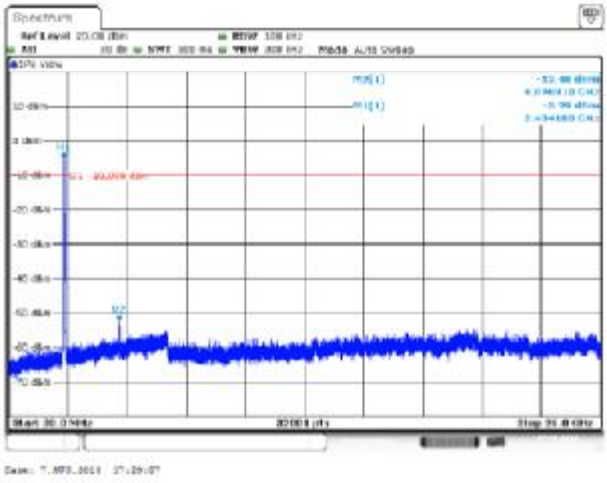


Band Edge



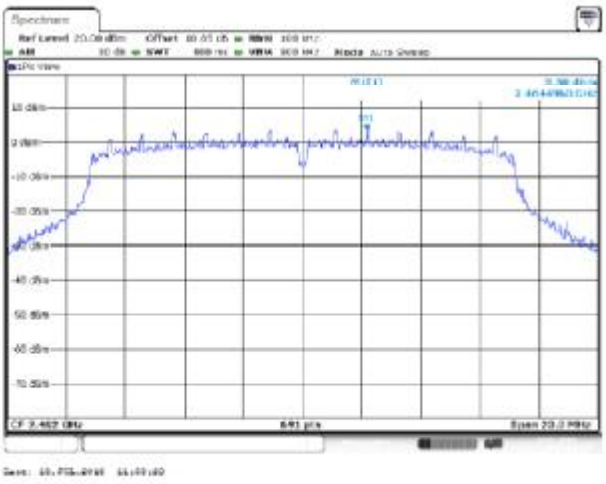
Spurious Emission 30MHz-25GHz



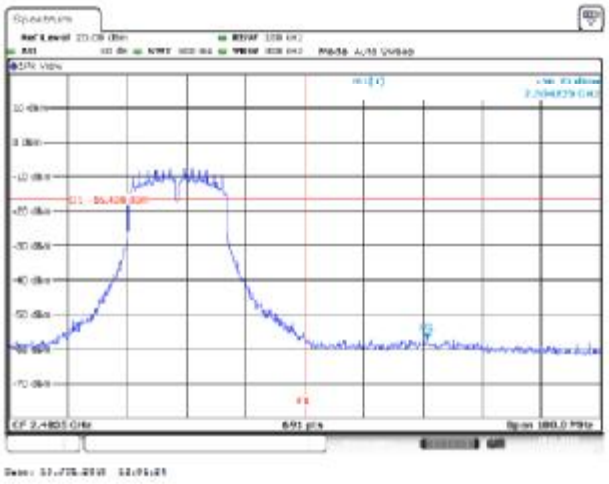
IEEE 802.11g mode Mid CH	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

IEEE 802.11g mode High CH

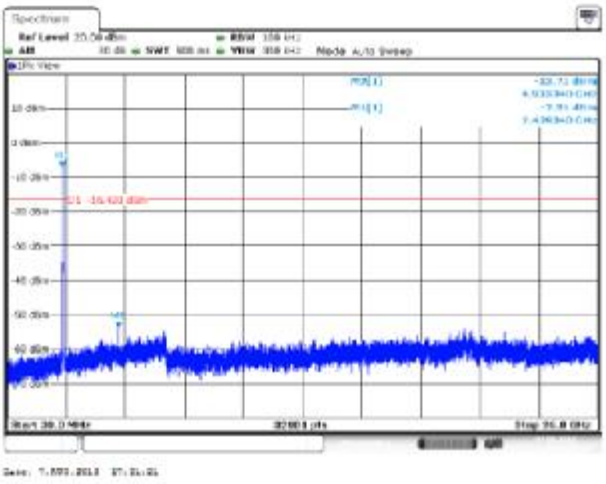
Reference Level of PSD in 100kHz



Band Edge

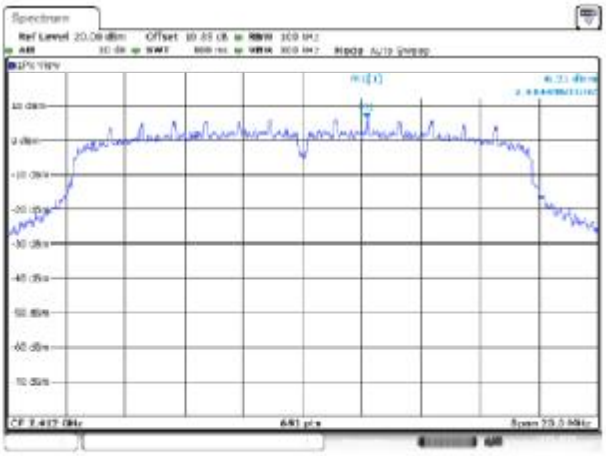


Spurious Emission 30MHz-25GHz

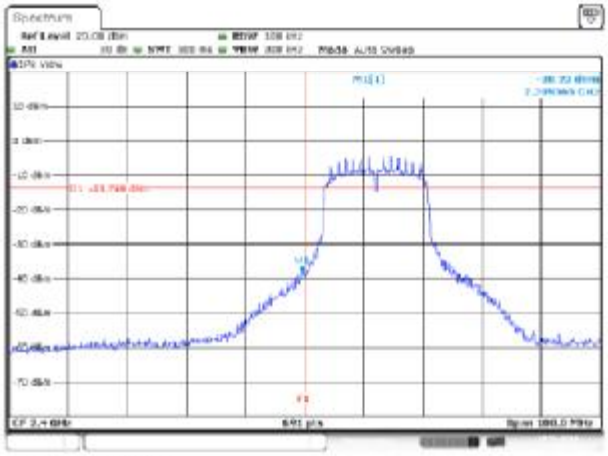


IEEE 802.11 n HT20 mode Low CH

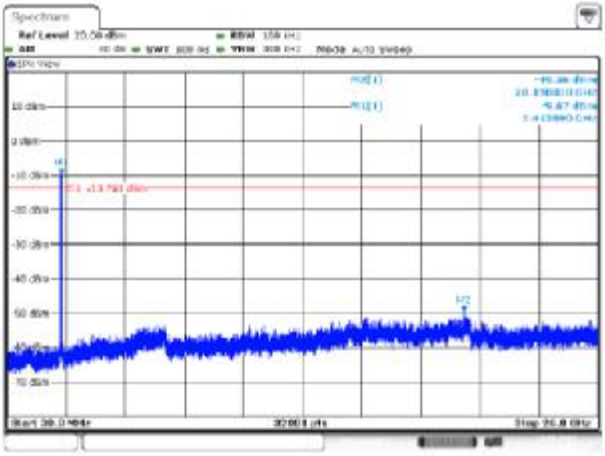
Reference Level of PSD in 100kHz

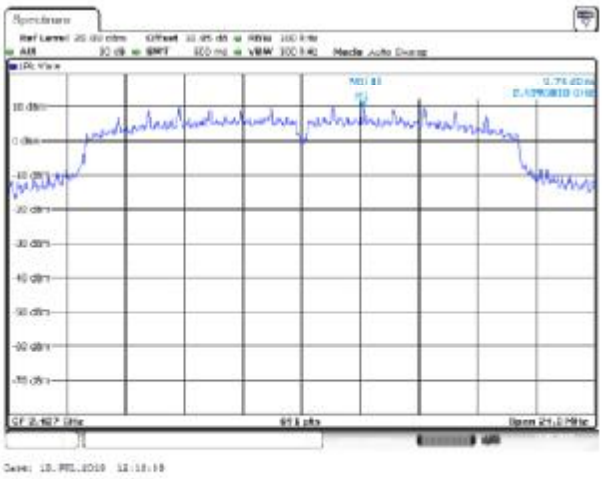
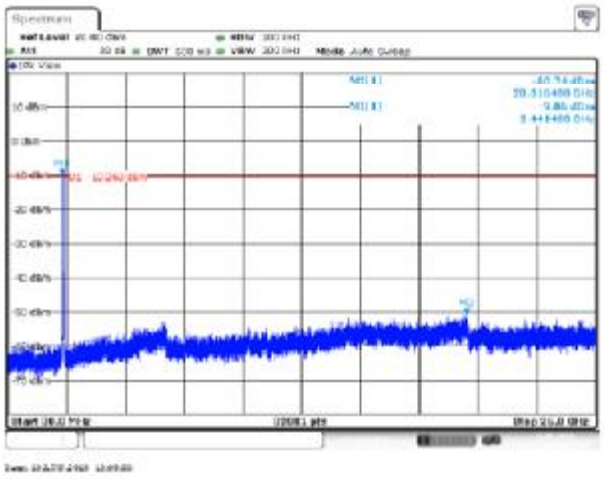


Band Edge



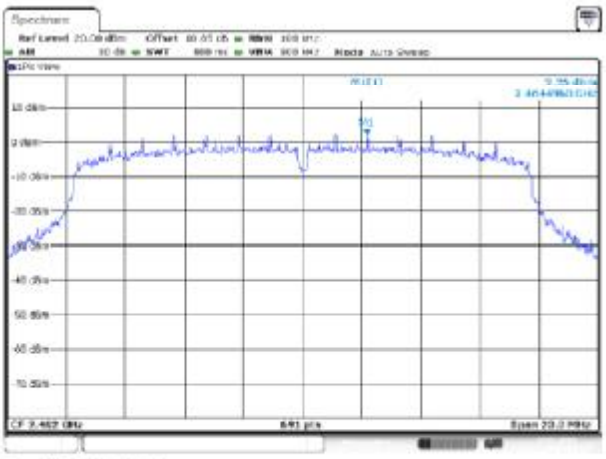
Spurious Emission 30MHz-25GHz



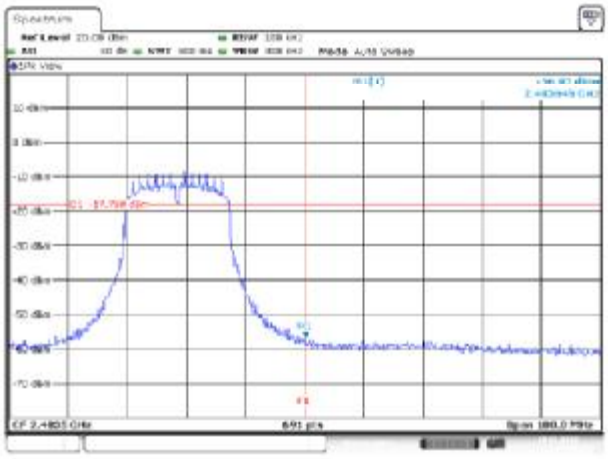
IEEE 802.11 n HT20 mode Mid CH	
Reference Level of PSD in 100kHz	**Spurious Emission 30MHz-25GHz**
	

IEEE 802.11n HT20 mode High CH

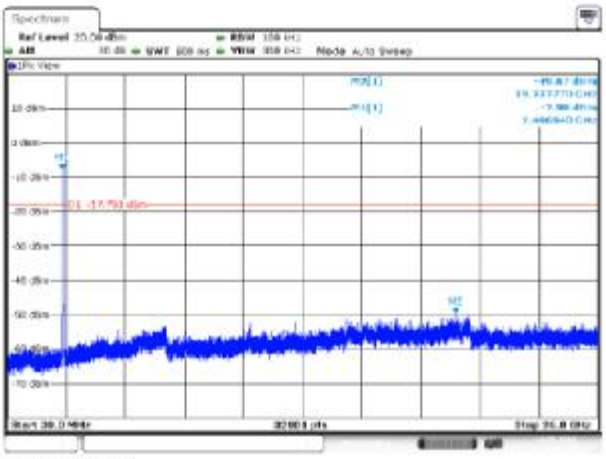
Reference Level of PSD in 100kHz



Band Edge

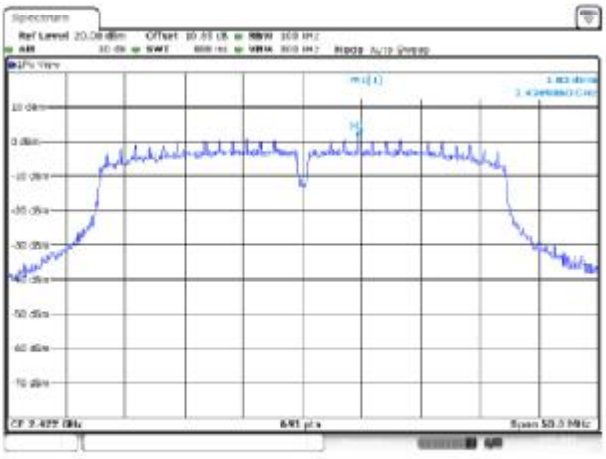


Spurious Emission 30MHz-25GHz

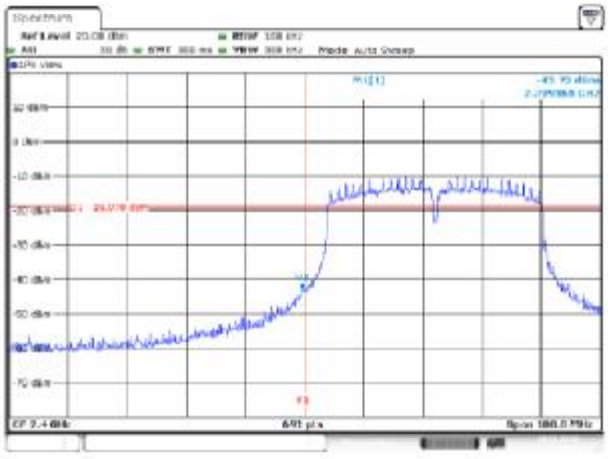


IEEE 802.11 n HT40 mode Low CH

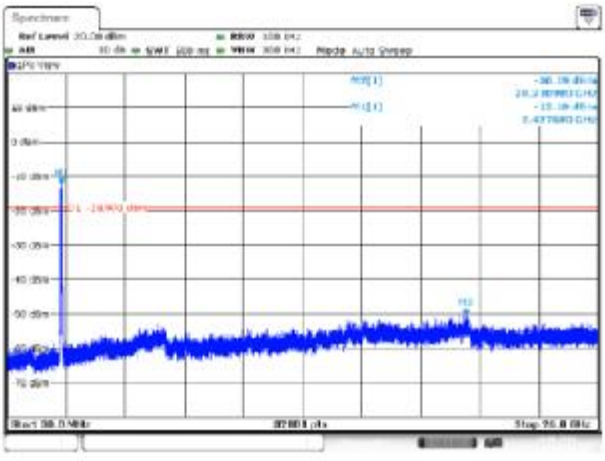
Reference Level of PSD in 100kHz

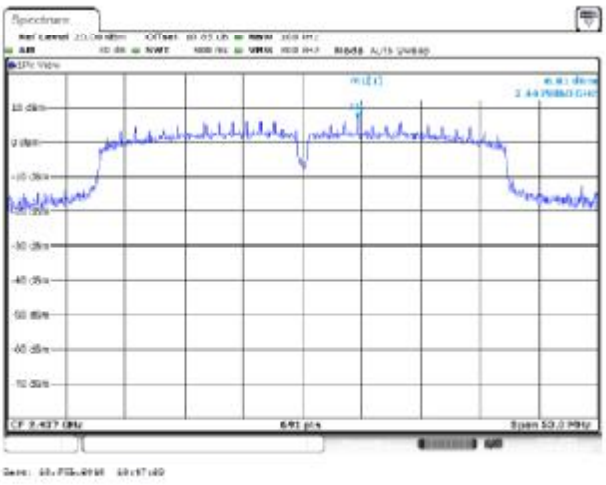
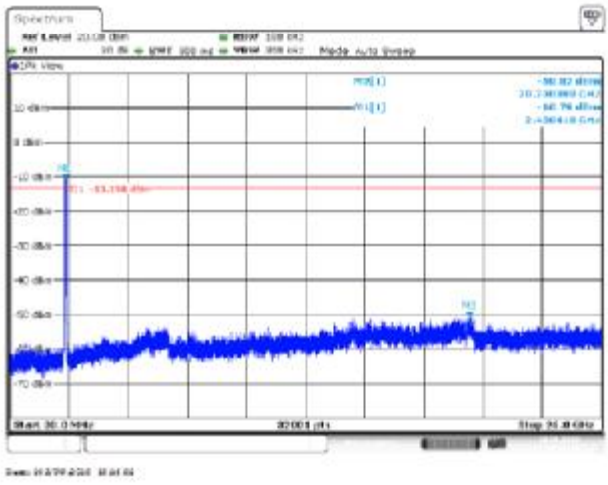


Band Edge



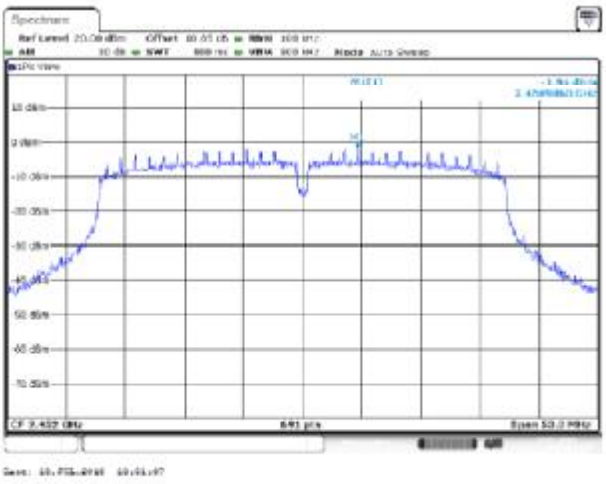
Spurious Emission 30MHz-25GHz



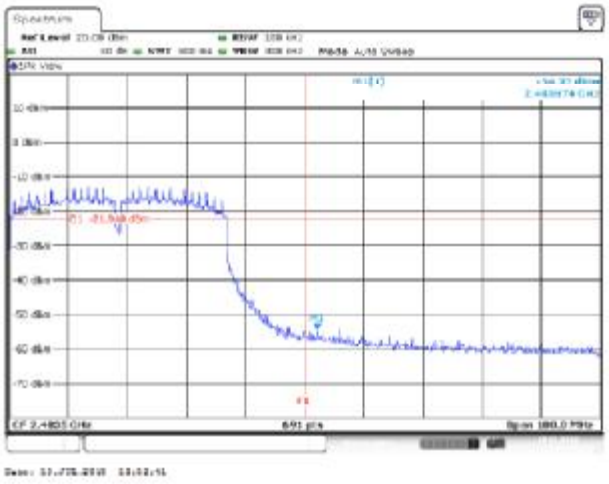
IEEE 802.11 n HT40 mode Mid CH	
Reference Level of PSD in 100kHz	Spurious Emission 30MHz-25GHz
	

IEEE 802.11n HT40 mode High CH

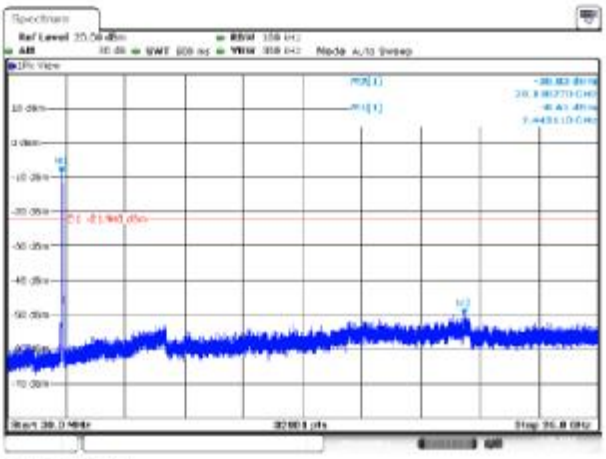
Reference Level of PSD in 100kHz



Band Edge



Spurious Emission 30MHz-25GHz



5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

5.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength (microvolts/m)	Measurement Distance (metres)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

5.6.2 Test Procedure

Test method Refer as, KDB 558074, Section 12.1.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

1. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
2. Note: No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz)

4. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

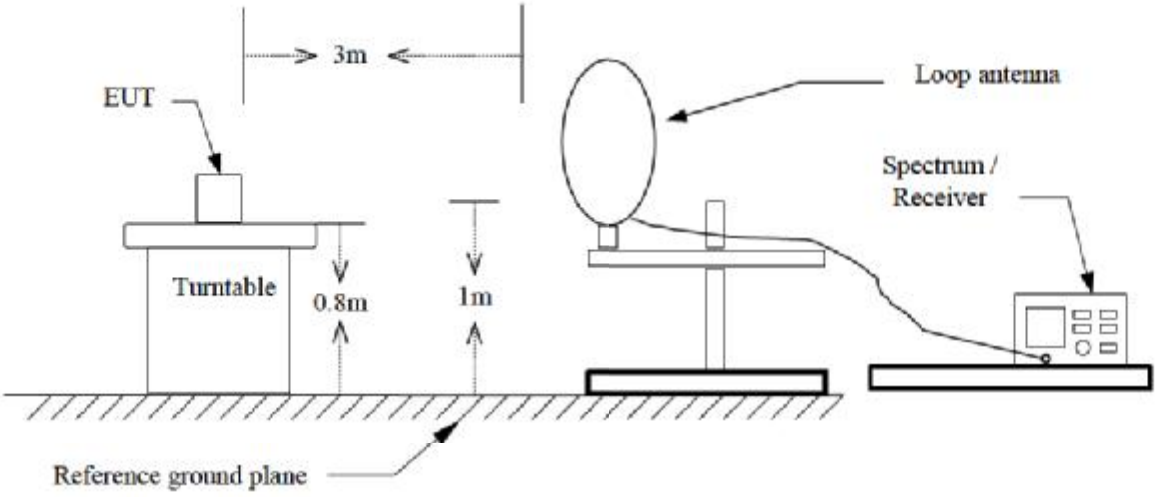
(2.2) For Average measurement：RBW = 1MHz, VBW

- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW=1/T.

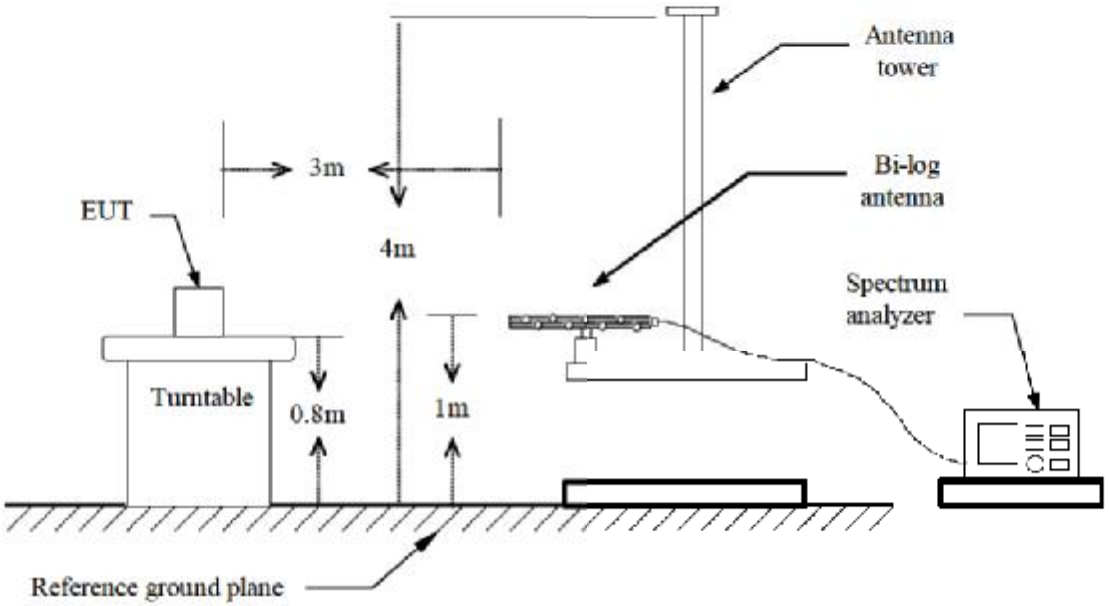
Configuration	Duty Cycle (%)	T(ms)	1/T (kHz)	VBW Setting
802.11b	99.31%	8.6600	-	10Hz
802.11g	96.03%	1.4500	0.690	750Hz
802.11n HT20	94.48%	1.3700	0.730	750Hz
802.11n HT40	90.79%	0.6900	1.449	1.5KHz

5.6.3 Test Setup

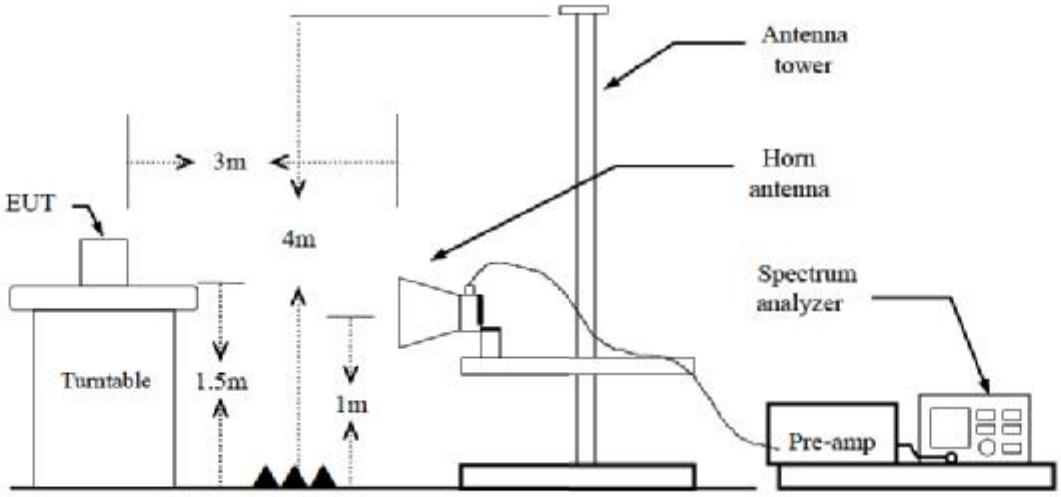
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz



5.6.4 Test Result

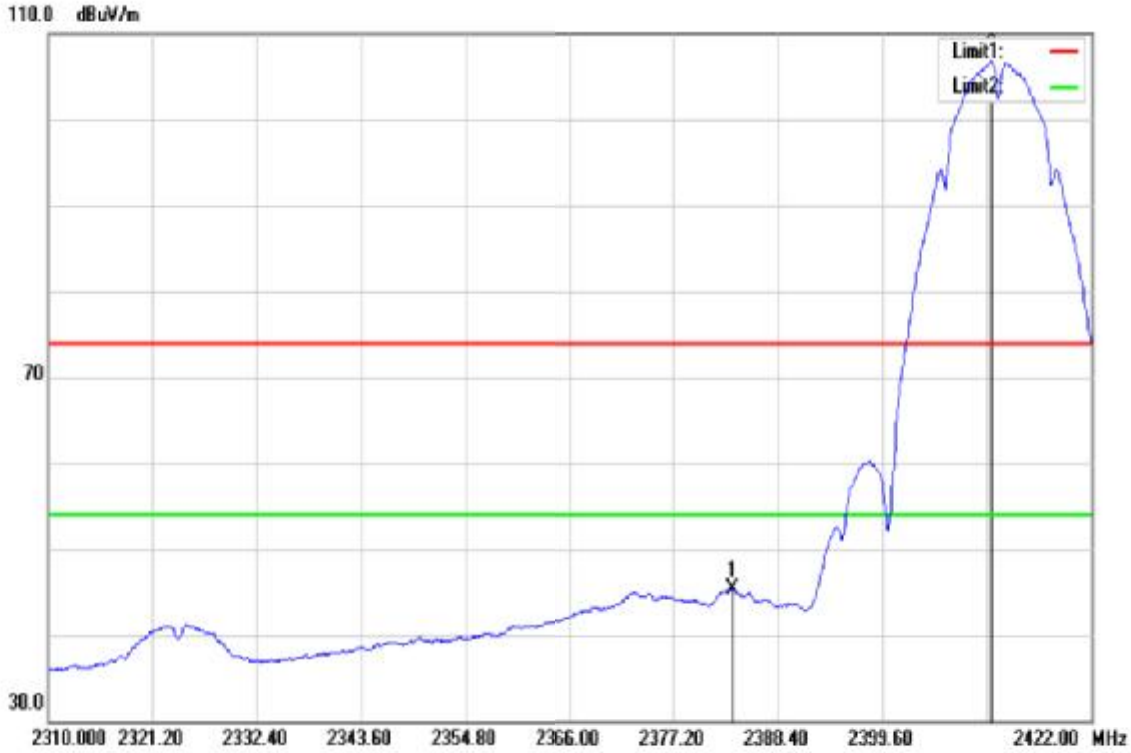
Band Edge Test Data

For PIFA Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

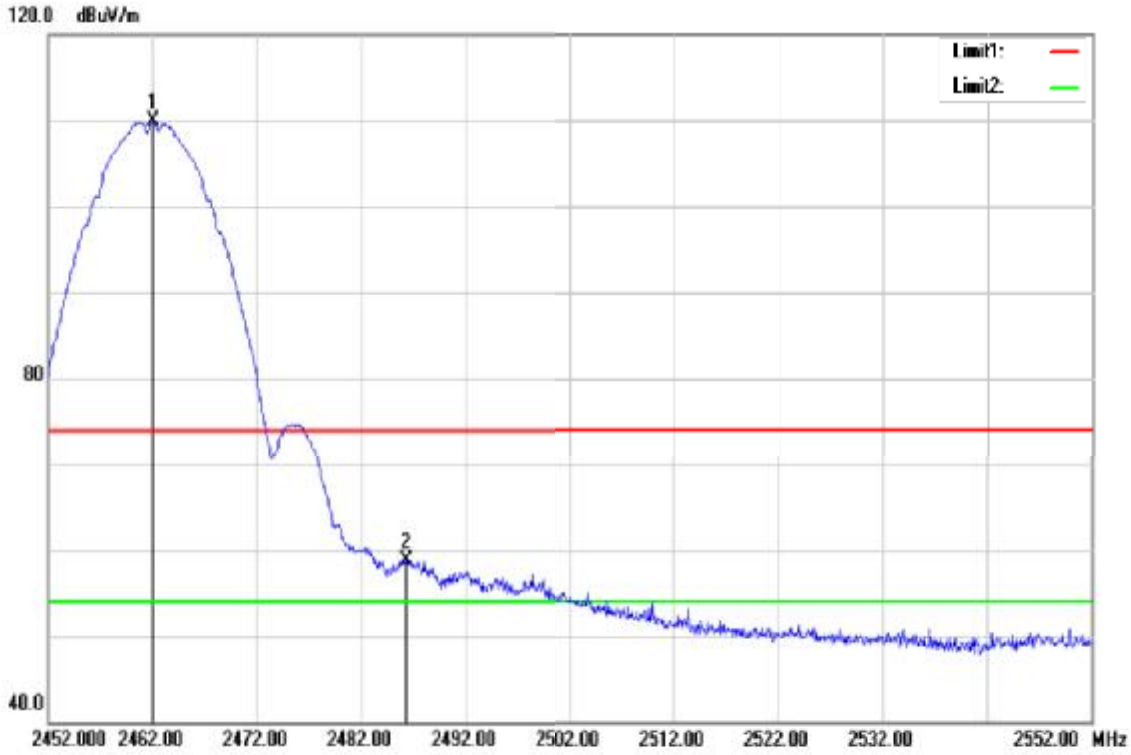
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2383.136	60.54	-3.00	57.54	74.00	-16.46	peak
2412.032	112.86	-2.92	109.94	-	-	peak

Test Mode	IEEE 802.11b Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2383.584	48.33	-3.00	45.33	54.00	-8.67	AVG
2411.248	109.72	-2.92	106.80	-	-	AVG

Test Mode	IEEE 802.11b High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

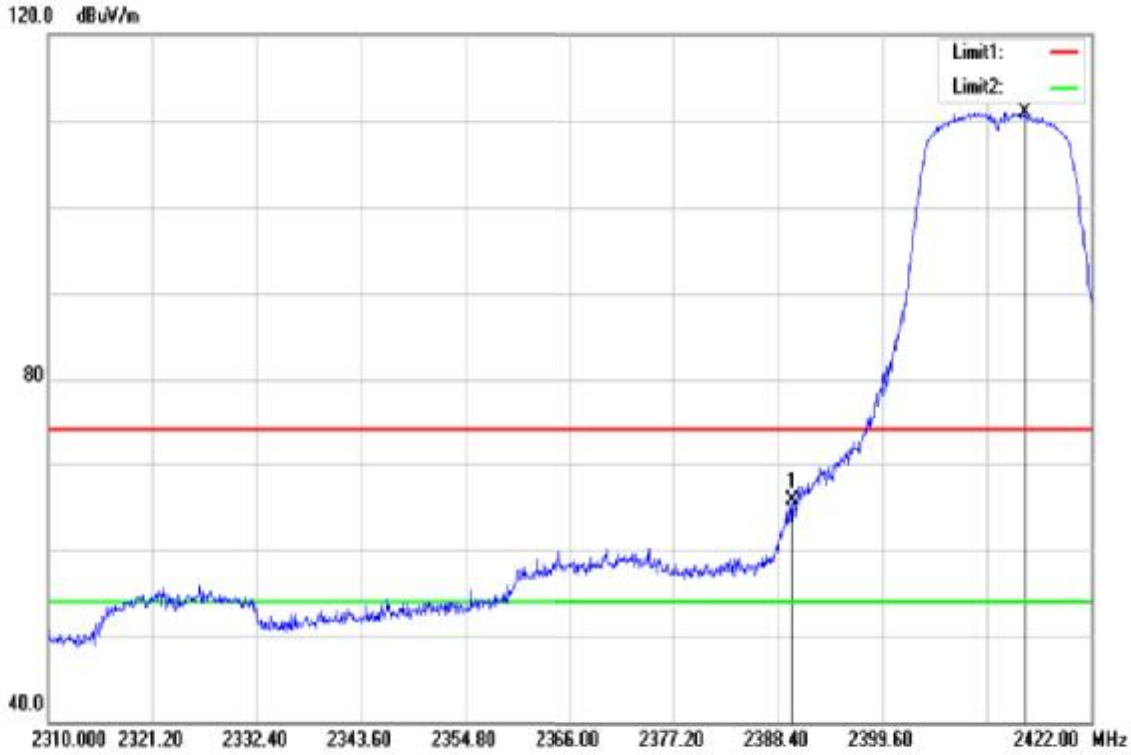


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2462.000	112.58	-2.76	109.82	-	-	peak
2486.300	61.46	-2.68	58.78	74.00	-15.22	peak

Test Mode	IEEE 802.11b High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

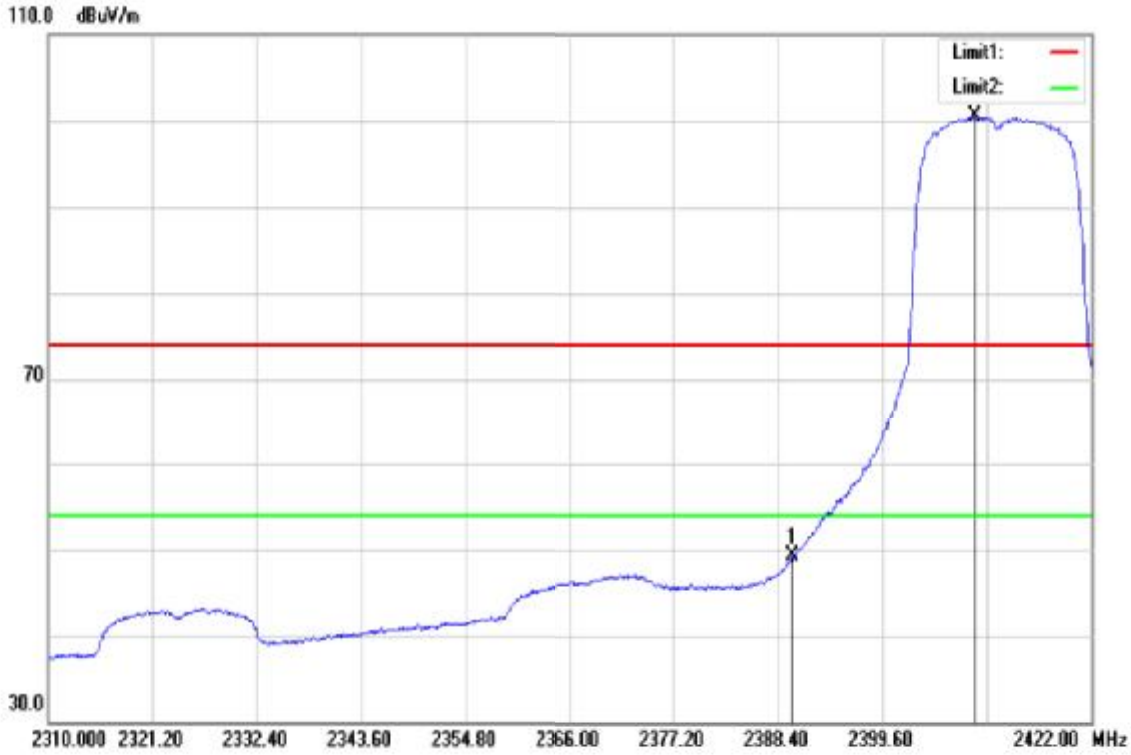
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2461.300	109.52	-2.76	106.76	-	-	AVG
2486.000	51.96	-2.69	49.27	54.00	-4.73	AVG

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



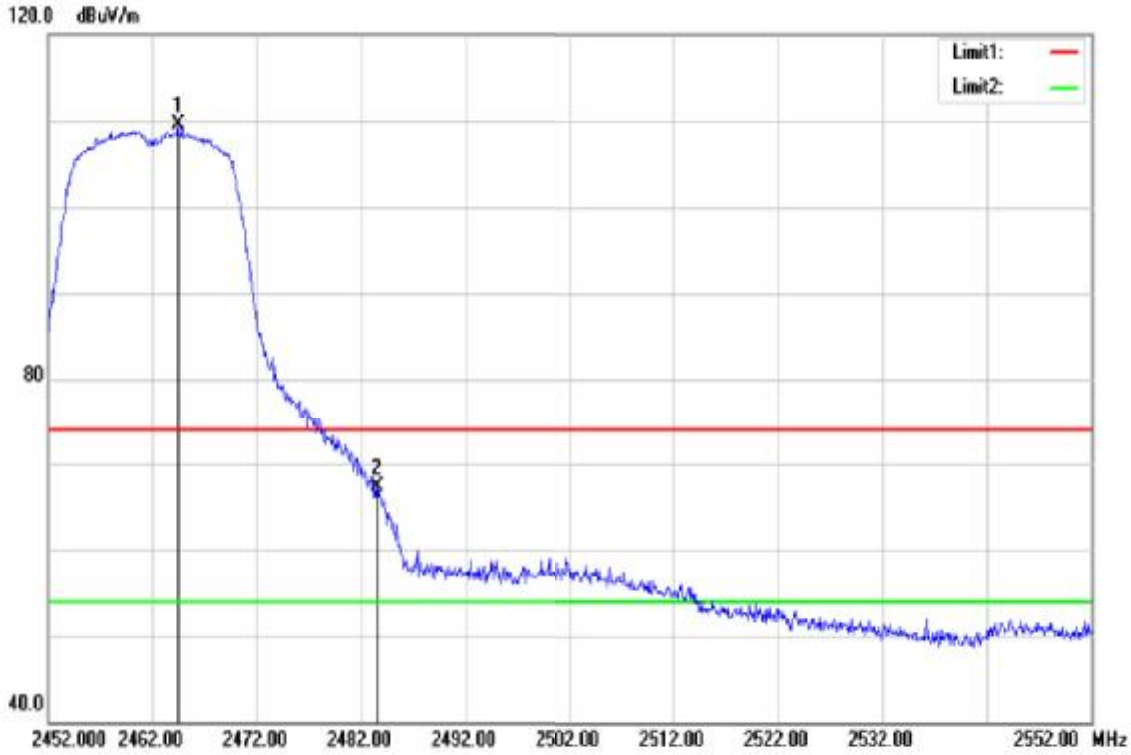
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	68.71	-2.98	65.73	74.00	-8.27	peak
2414.832	113.88	-2.90	110.98	-	-	peak

Test Mode	IEEE 802.11g Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	52.18	-2.98	49.20	54.00	-4.80	AVG
2409.456	103.38	-2.92	100.46	-	-	AVG

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2464.400	112.27	-2.75	109.52	-	-	peak
2483.500	69.96	-2.69	67.27	74.00	-6.73	peak

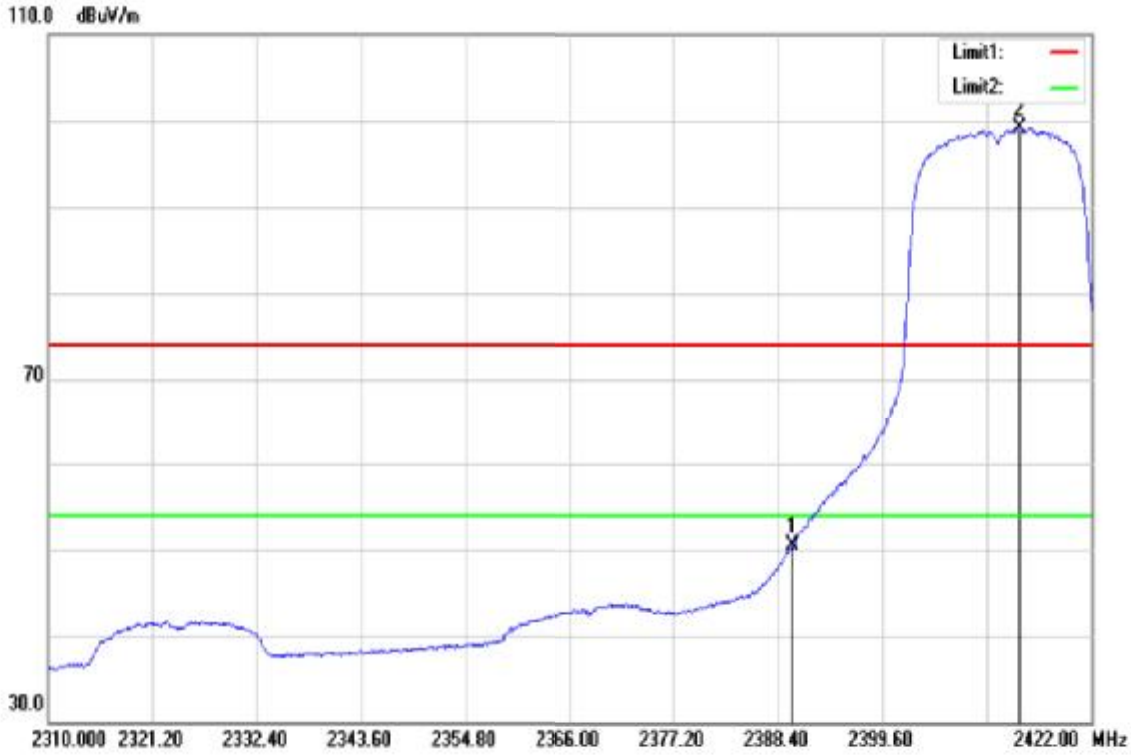
Test Mode	IEEE 802.11g High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2463.300	101.18	-2.75	98.43	-	-	AVG
2483.500	53.46	-2.69	50.77	54.00	-3.23	AVG

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

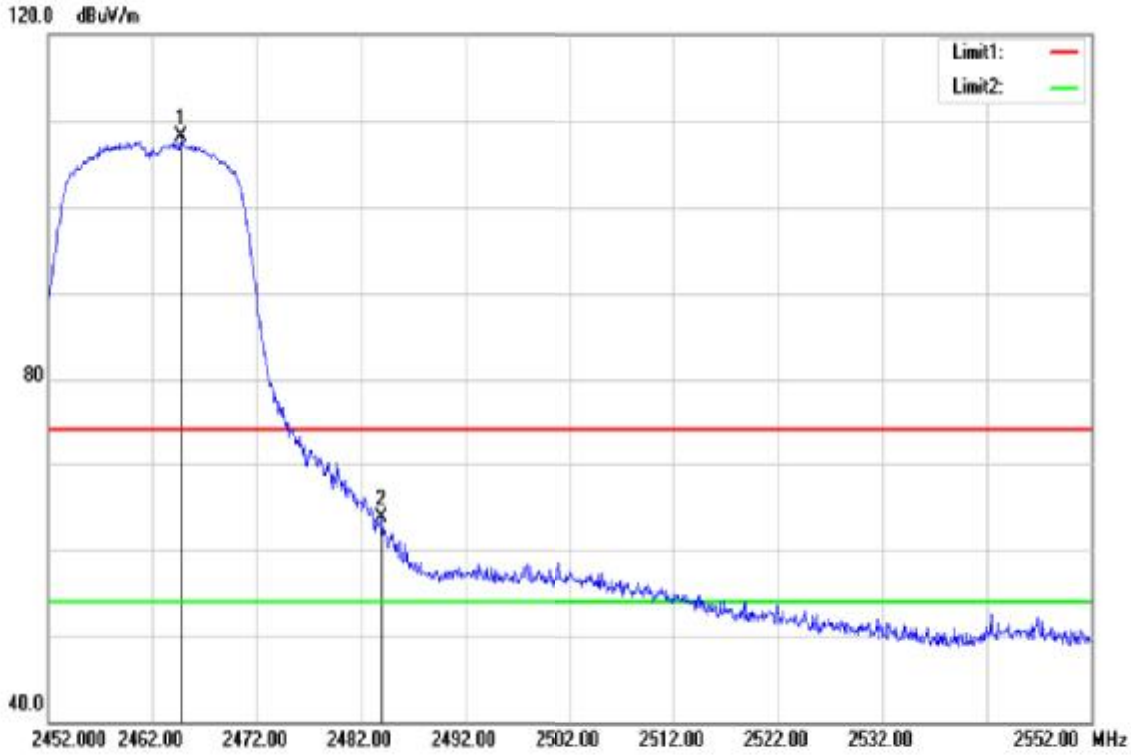
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2389.968	69.42	-2.98	66.44	74.00	-7.56	peak
2413.936	112.82	-2.90	109.92	-	-	peak

Test Mode	IEEE 802.11n HT20 Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	53.50	-2.98	50.52	54.00	-3.48	AVG
2414.272	102.10	-2.90	99.20	-	-	AVG

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

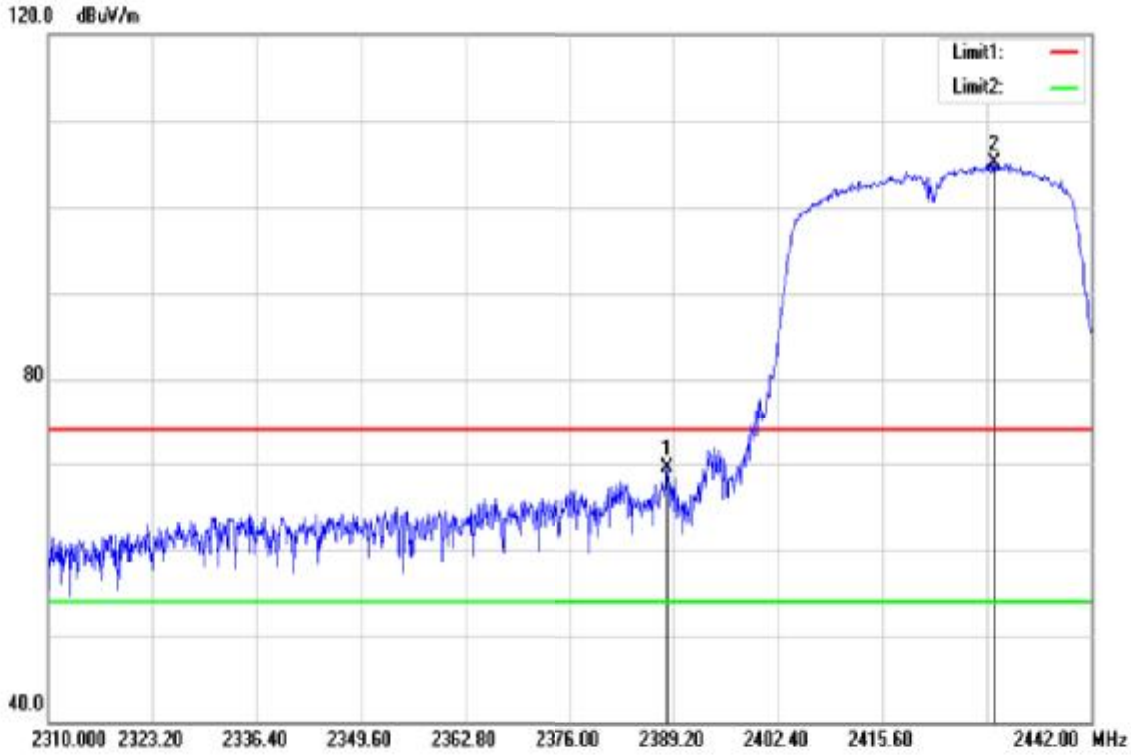


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2464.700	110.81	-2.75	108.06	-	-	peak
2483.900	66.43	-2.69	63.74	74.00	-10.26	peak

Test Mode	IEEE 802.11n HT20 High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

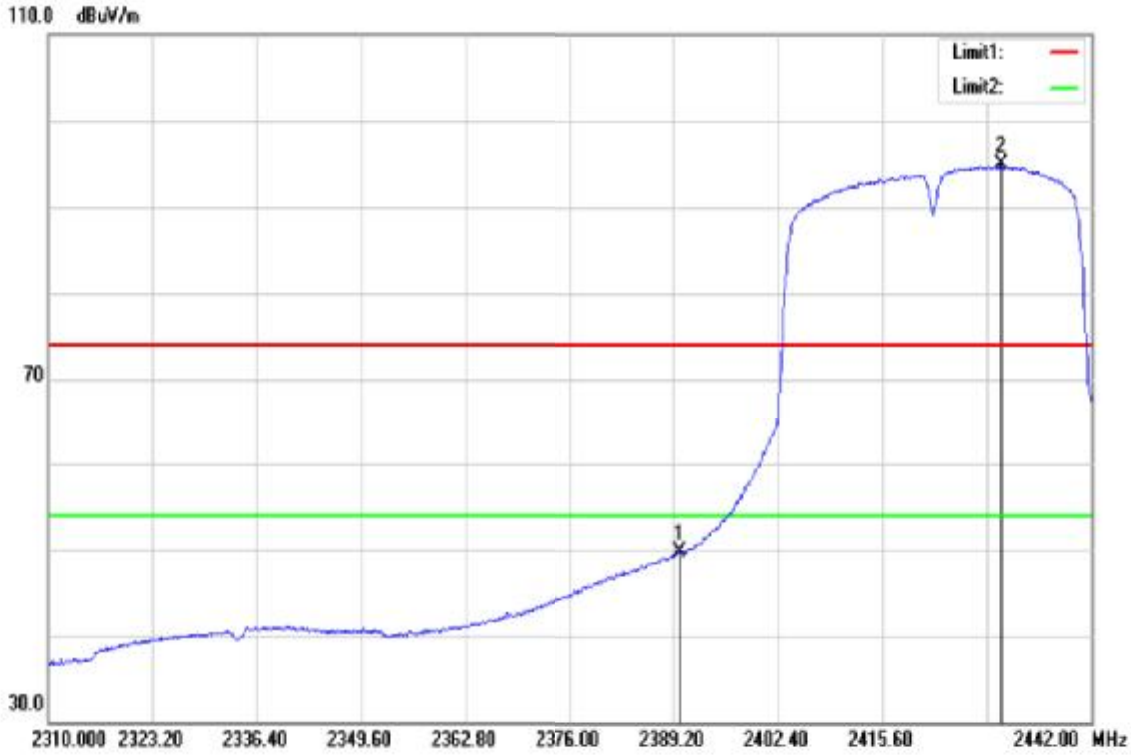
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2463.800	99.72	-2.75	96.97	-	-	AVG
2483.500	52.08	-2.69	49.39	54.00	-4.61	AVG

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



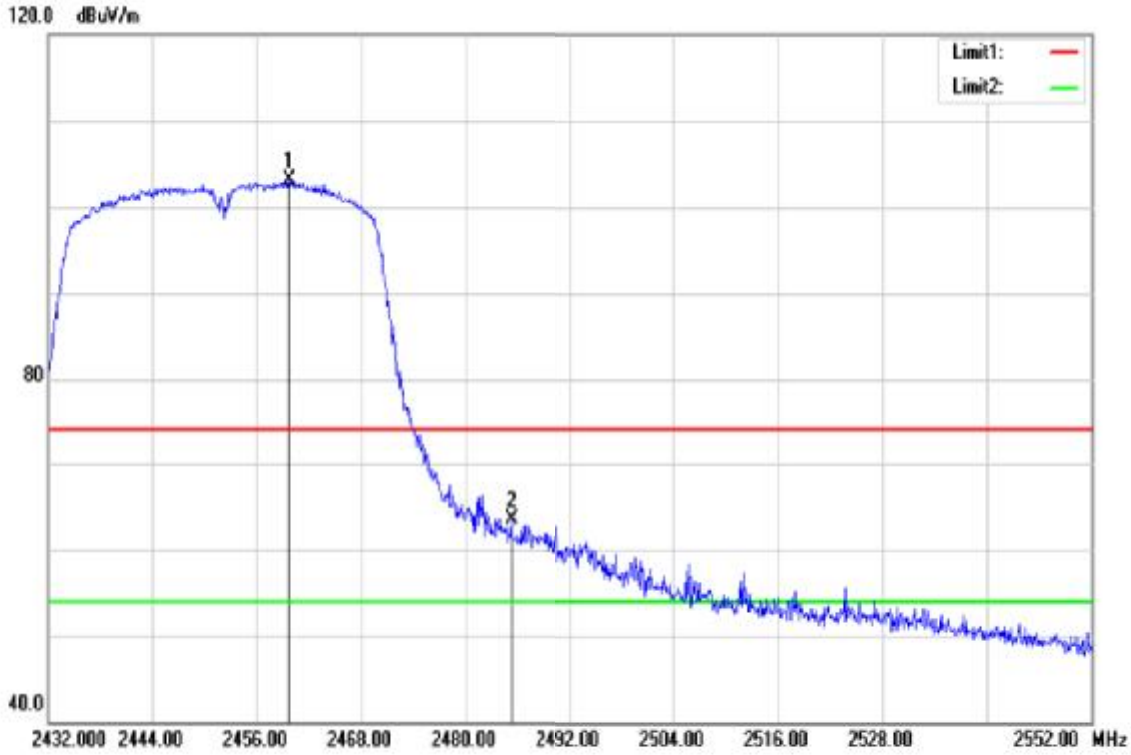
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2388.408	72.48	-2.98	69.50	74.00	-4.50	peak
2429.724	107.90	-2.86	105.04	-	-	peak

Test Mode	IEEE 802.11n HT40 Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	52.63	-2.98	49.65	54.00	-4.35	AVG
2430.648	97.73	-2.85	94.88	-	-	AVG

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2459.720	105.94	-2.76	103.18	-	-	peak
2485.280	66.12	-2.69	63.43	74.00	-10.57	peak

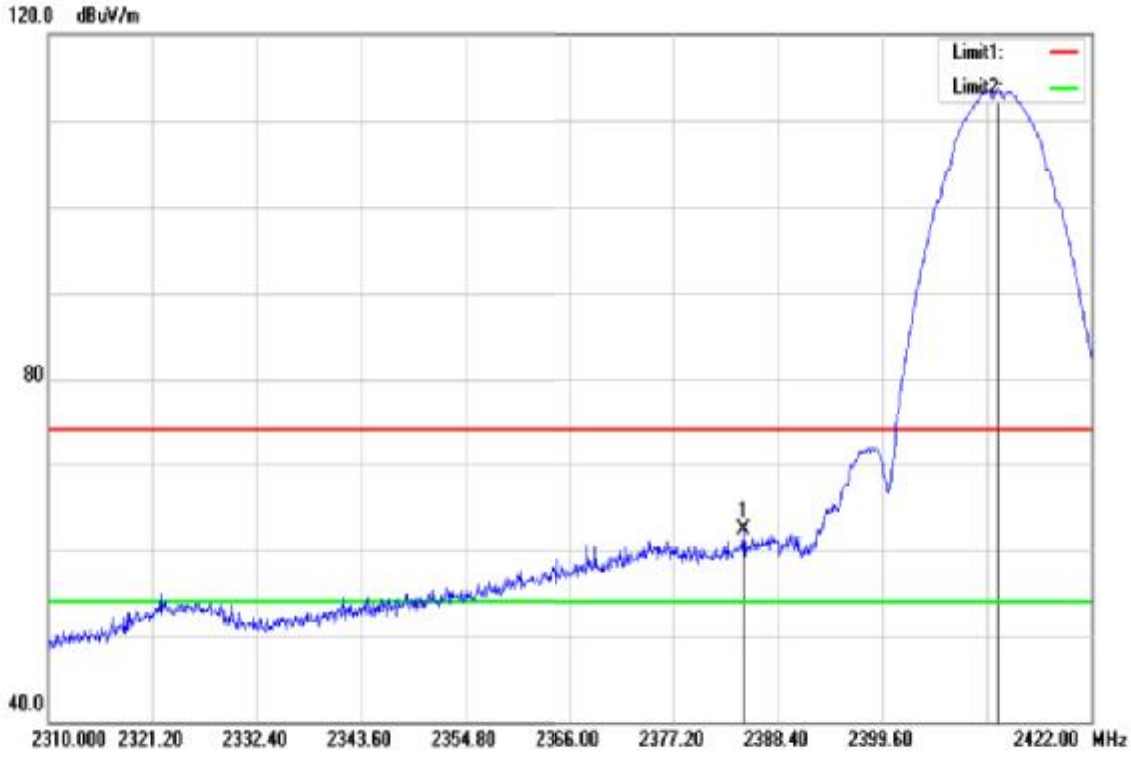
Test Mode	IEEE 802.11n HT40 High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2456.960	95.81	-2.78	93.03	-	-	AVG
2483.500	53.04	-2.69	50.35	54.00	-3.65	AVG

Band Edge Test Data

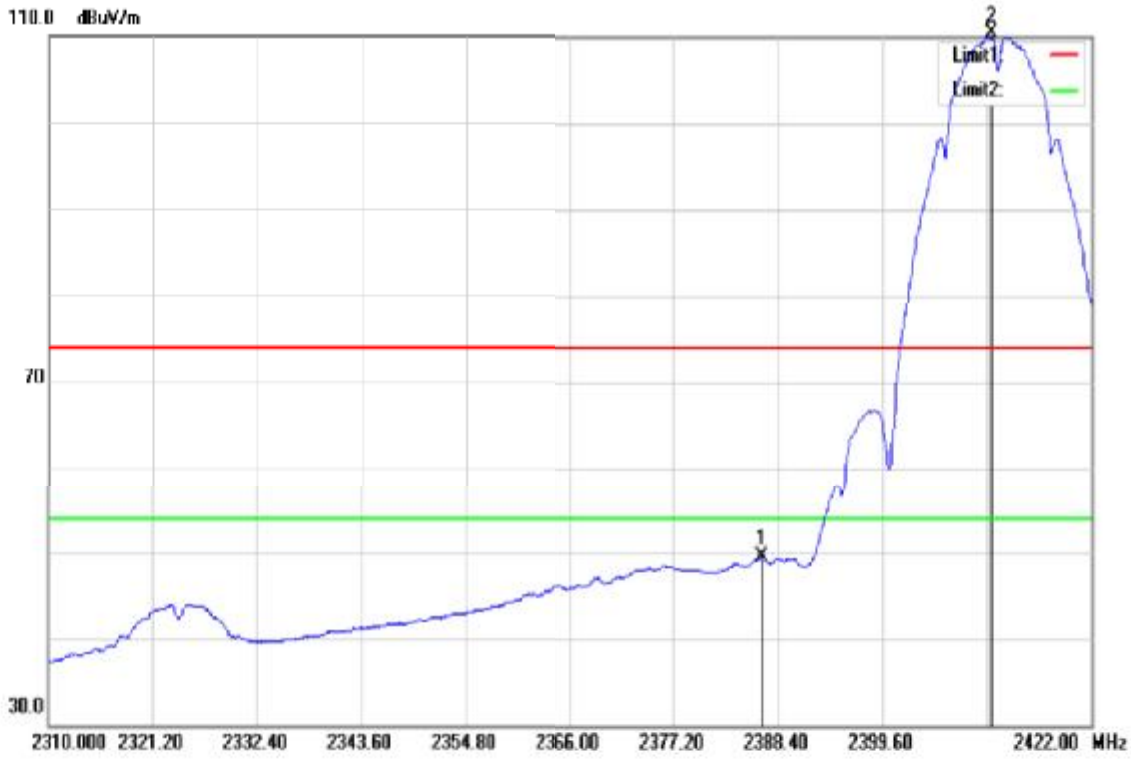
For Dipole Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



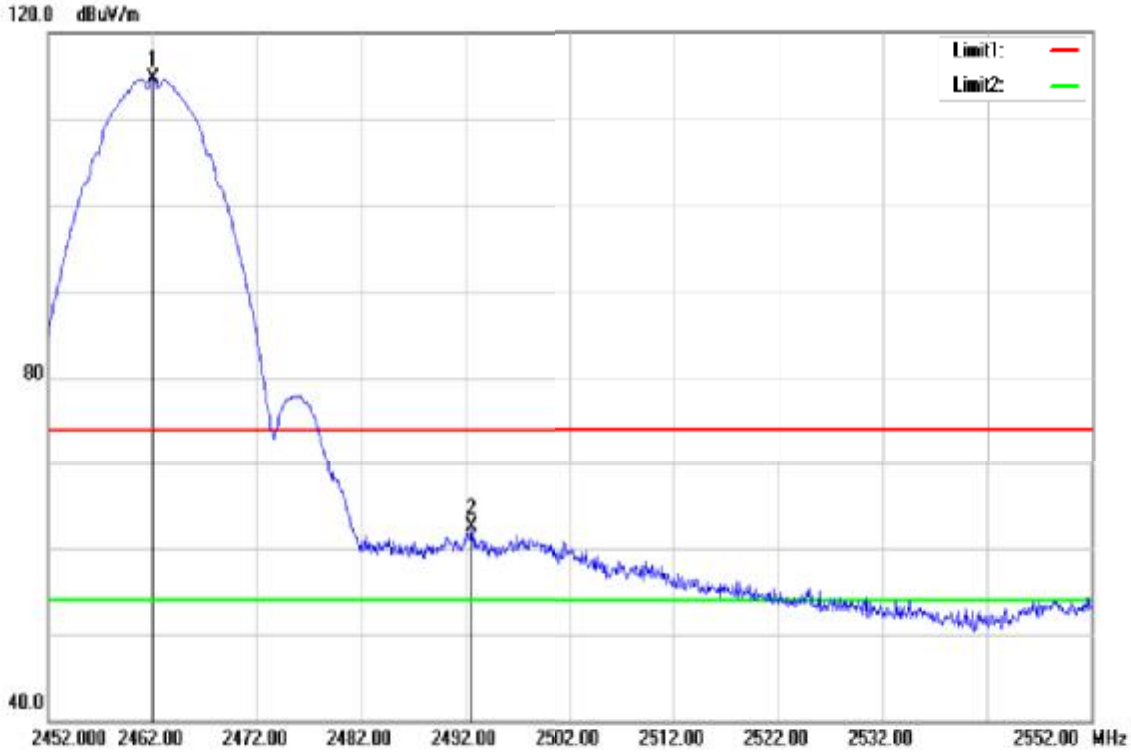
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2384.704	65.25	-2.99	62.26	74.00	-11.74	peak
2412.032	116.54	-2.92	113.62	-	-	peak

Test Mode	IEEE 802.11b Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2386.720	52.41	-2.99	49.42	54.00	-4.58	AVG
2411.248	113.38	-2.92	110.46	-	-	AVG

Test Mode	IEEE 802.11b High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

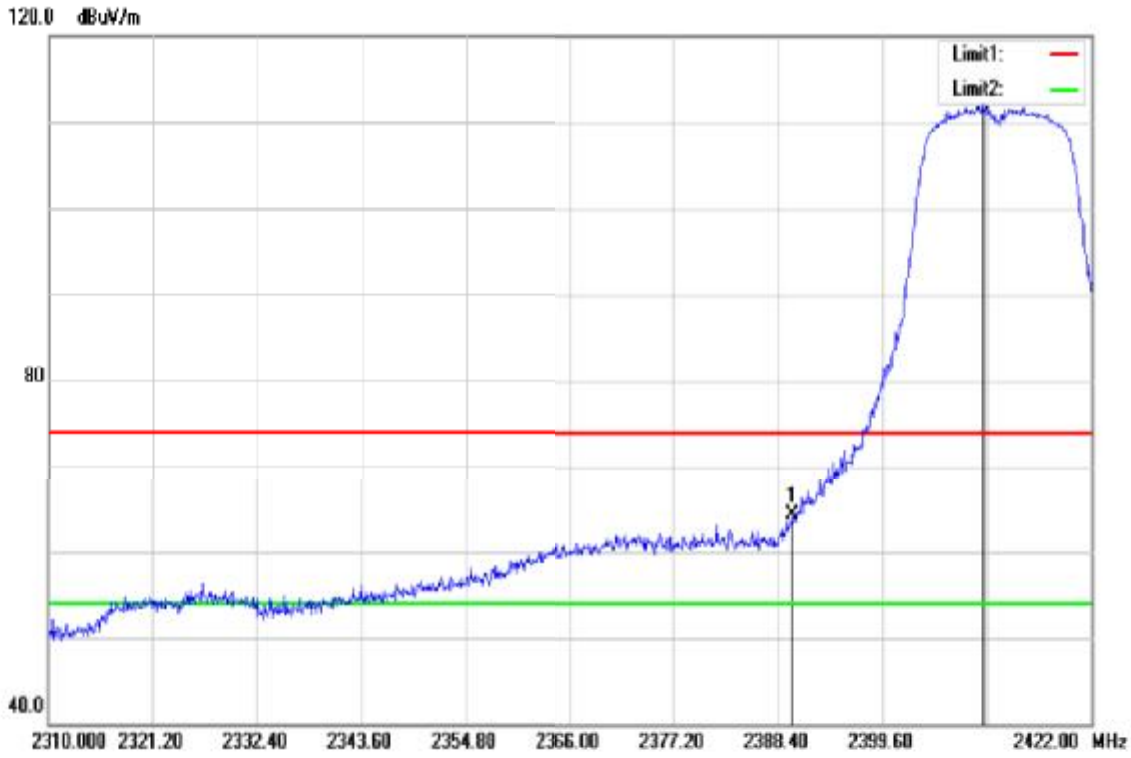


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2462.000	117.45	-2.76	114.69	-	-	peak
2492.600	65.13	-2.66	62.47	74.00	-11.53	peak

Test Mode	IEEE 802.11b High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

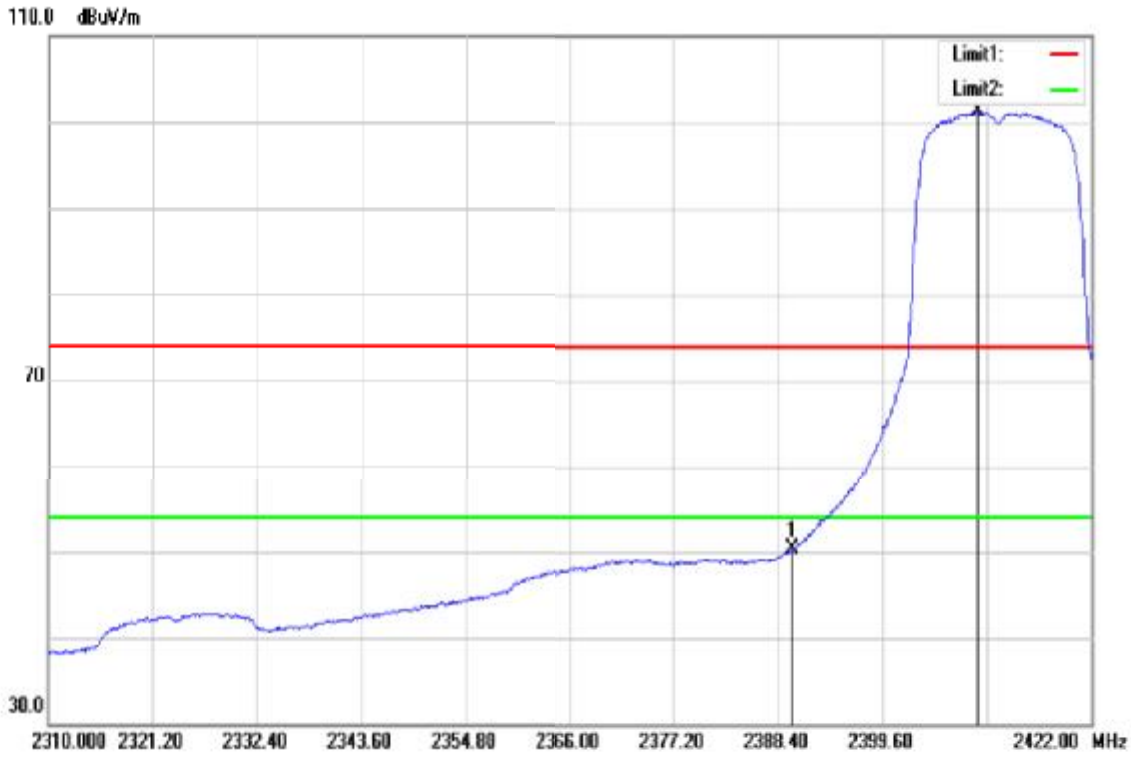
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2461.200	114.54	-2.76	111.78	-	-	AVG
2484.100	53.65	-2.69	50.96	54.00	-3.04	AVG

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



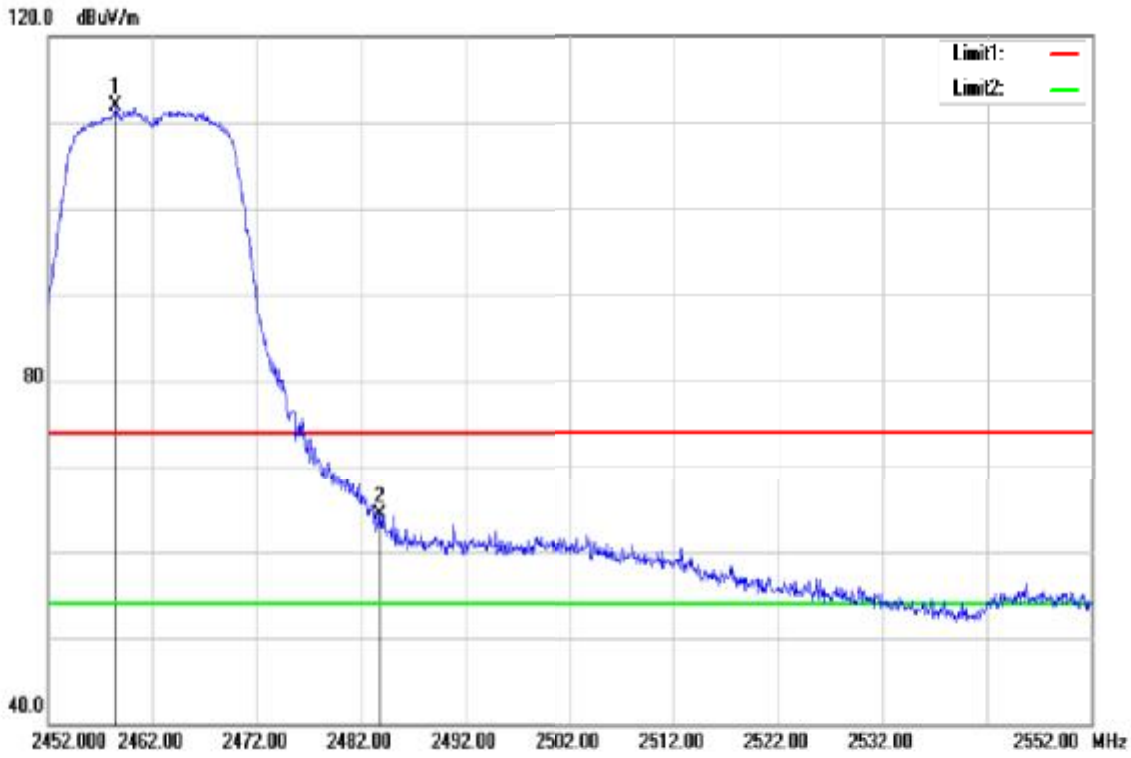
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	67.37	-2.98	64.39	74.00	-9.61	peak
2410.352	114.99	-2.92	112.07	-	-	peak

Test Mode	IEEE 802.11g Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



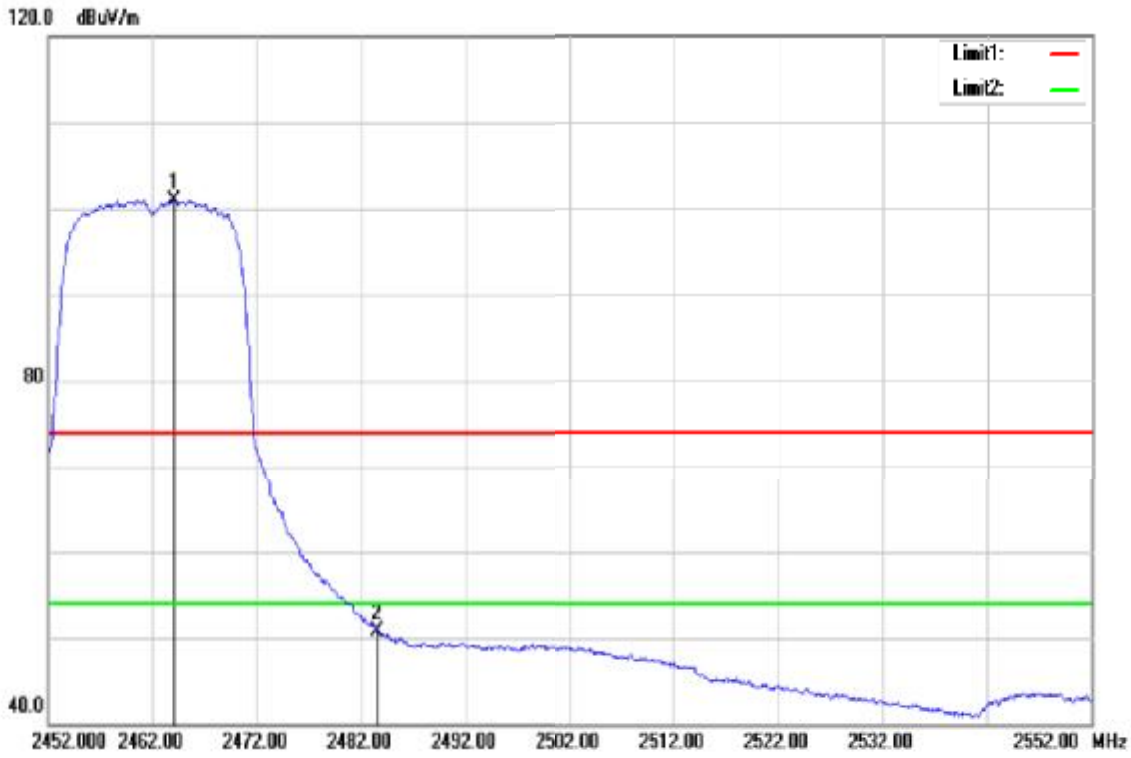
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	53.26	-2.98	50.28	54.00	-3.72	AVG
2409.792	104.22	-2.92	101.30	-	-	AVG

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



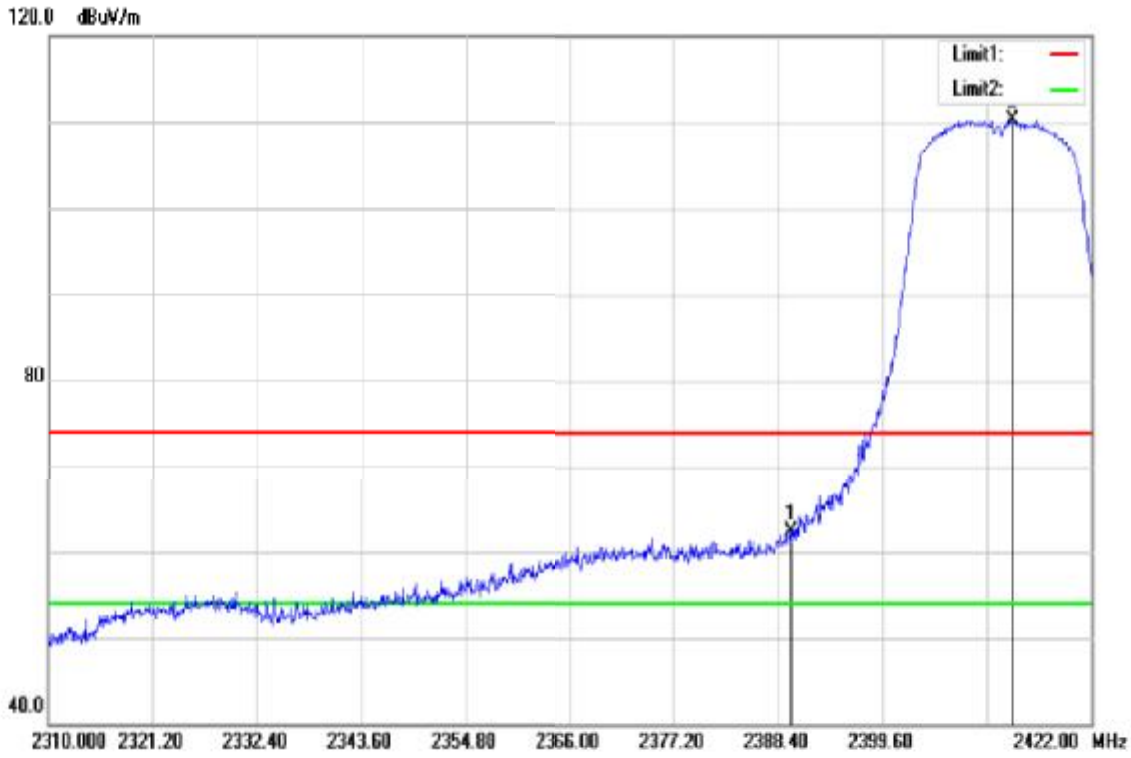
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2458.400	114.60	-2.76	111.84	-	-	peak
2483.800	67.01	-2.69	64.32	74.00	-9.68	peak

Test Mode	IEEE 802.11g High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



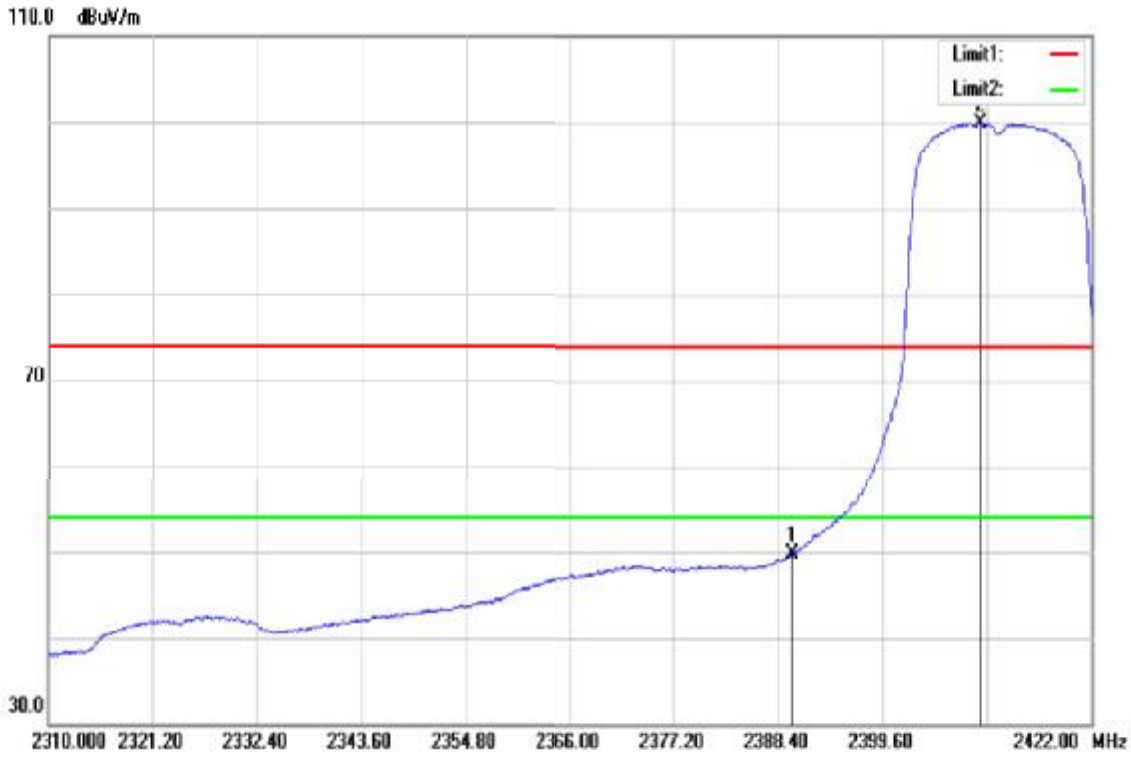
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2464.000	103.67	-2.75	100.92	-	-	AVG
2483.500	53.43	-2.69	50.74	54.00	-3.26	AVG

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



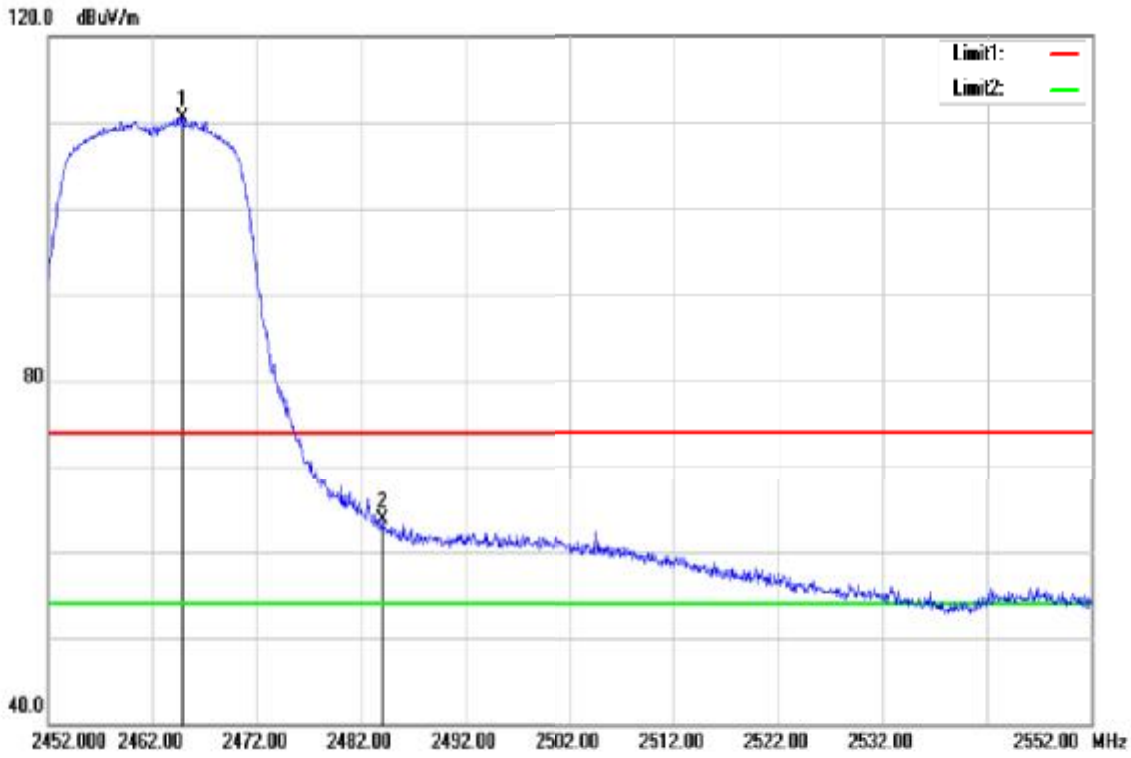
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2389.744	65.34	-2.98	62.36	74.00	-11.64	peak
2413.488	113.29	-2.90	110.39	-	-	peak

Test Mode	IEEE 802.11n HT20 Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



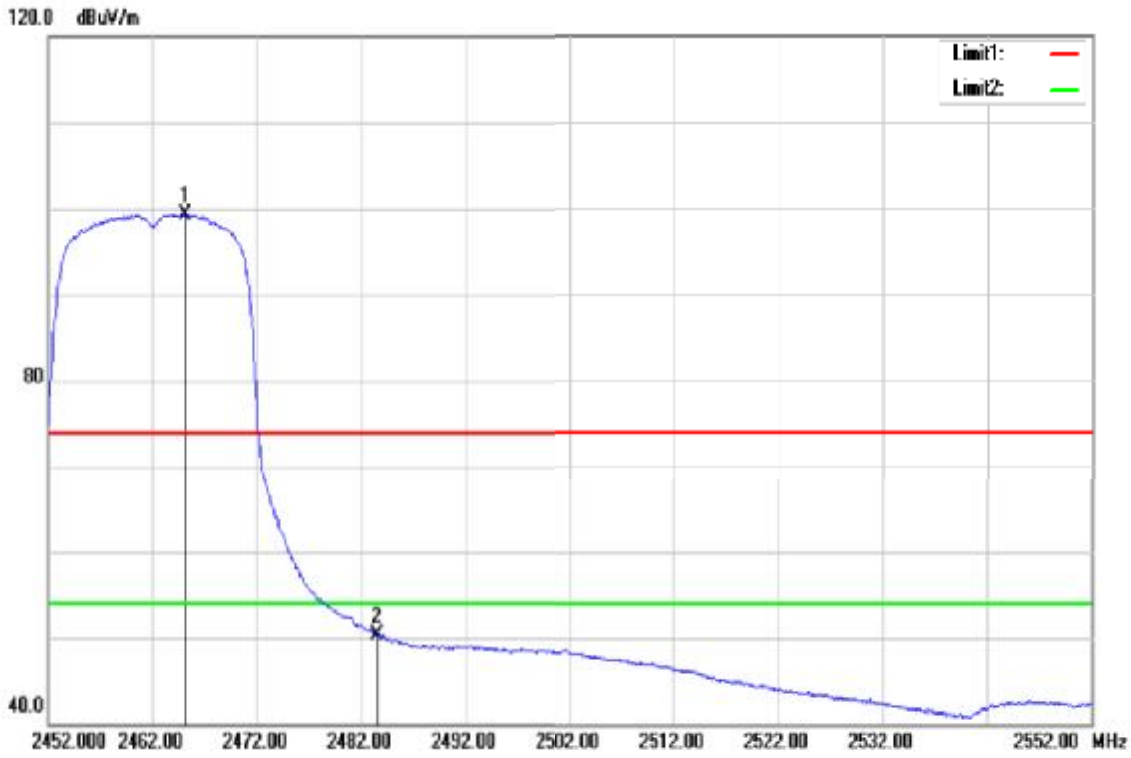
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	52.78	-2.98	49.80	54.00	-4.20	AVG
2410.128	102.86	-2.92	99.94	-	-	AVG

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



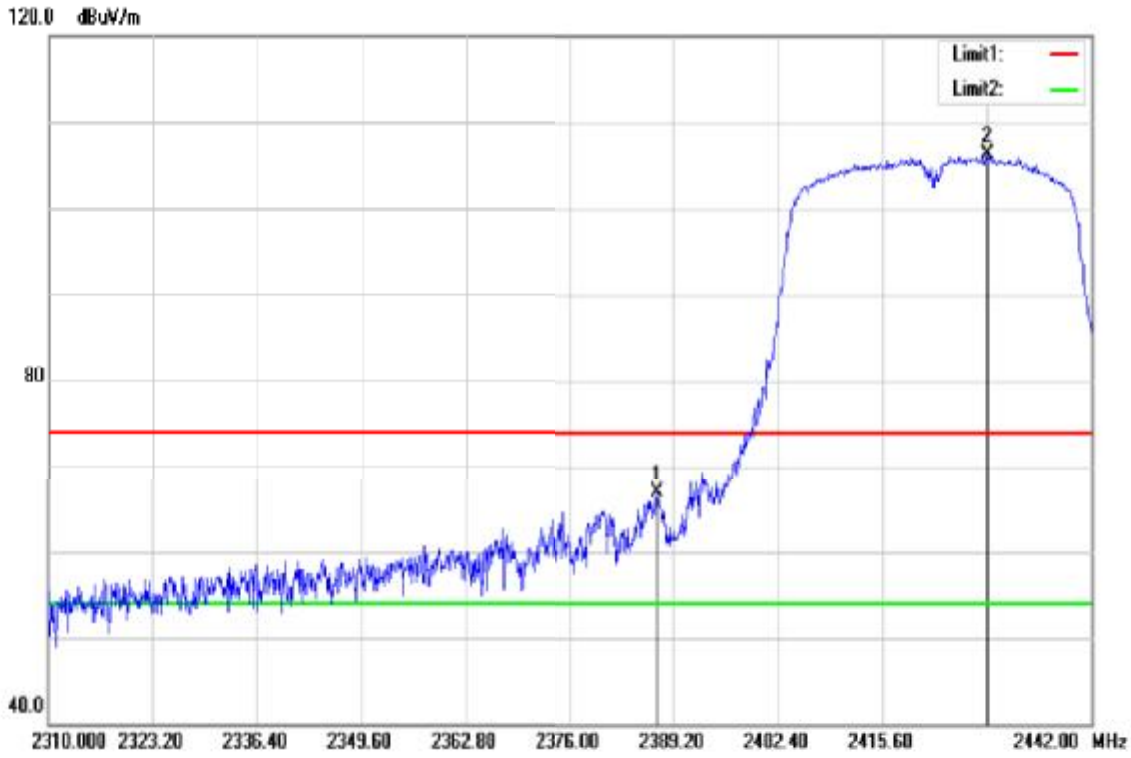
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2464.900	113.28	-2.75	110.53	-	-	peak
2484.000	66.40	-2.69	63.71	74.00	-10.29	peak

Test Mode	IEEE 802.11n HT20 High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



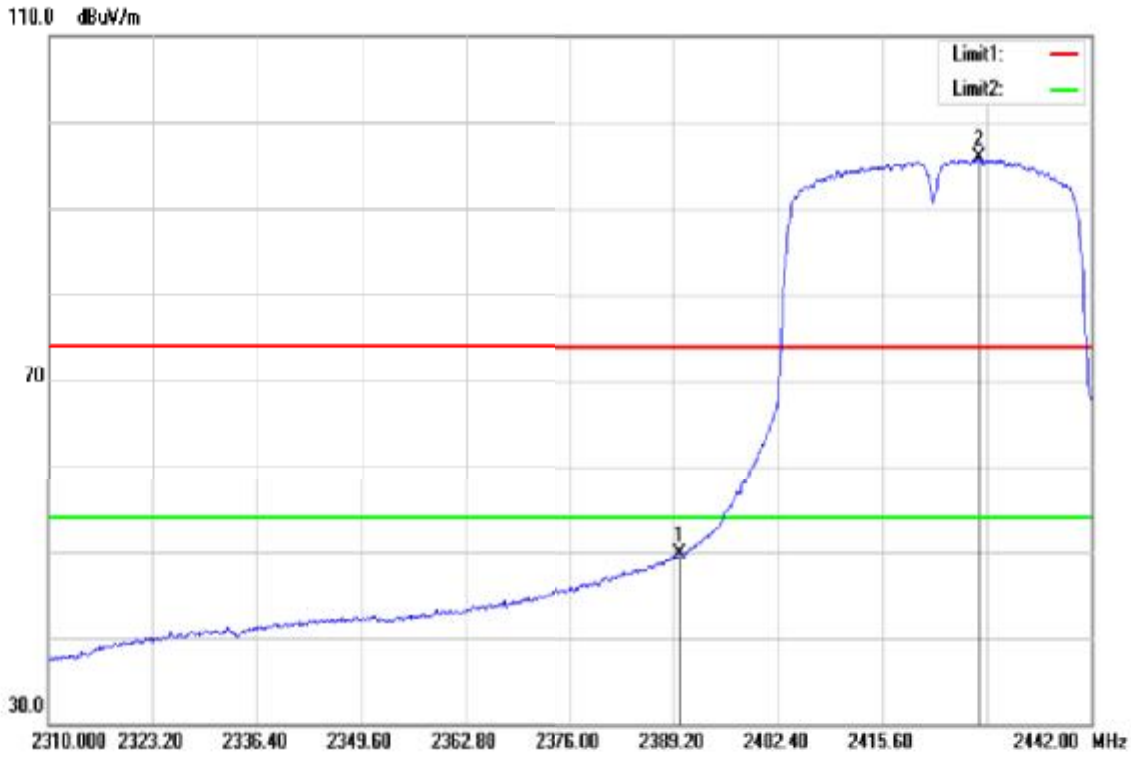
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2465.100	102.04	-2.75	99.29	-	-	AVG
2483.500	53.02	-2.69	50.33	54.00	-3.67	AVG

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



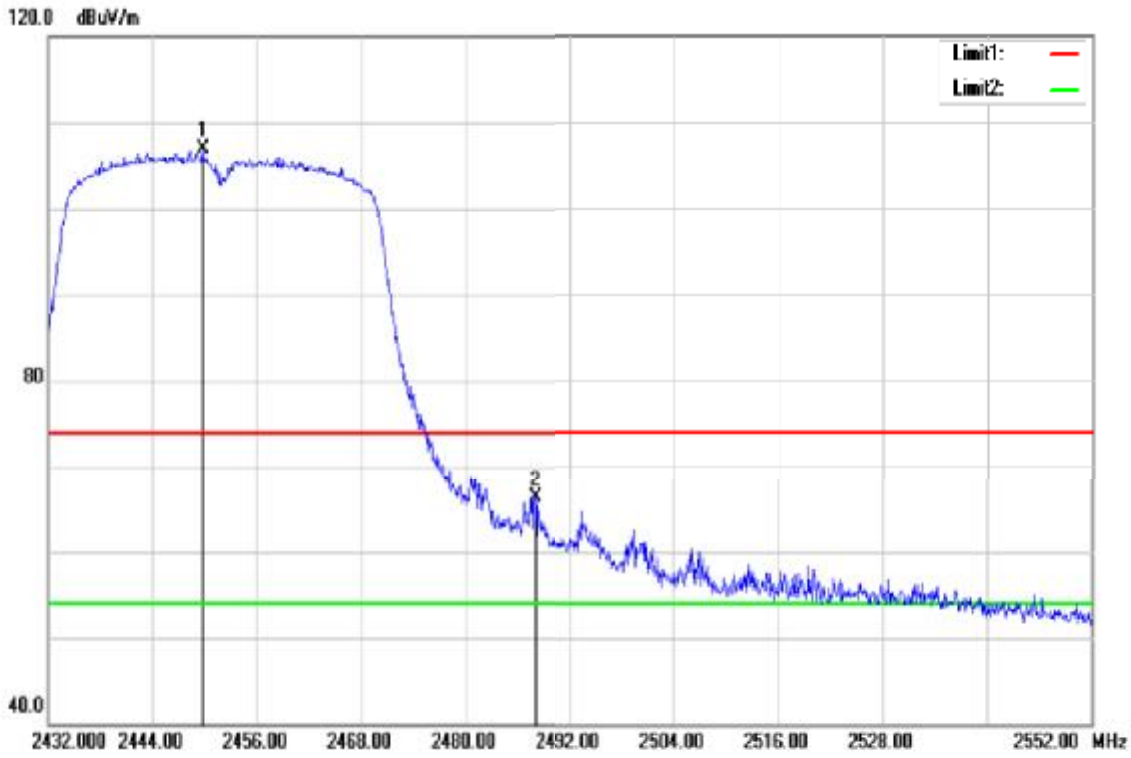
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2387.088	69.83	-2.99	66.84	74.00	-7.16	peak
2428.932	109.24	-2.86	106.38	-	-	peak

Test Mode	IEEE 802.11n HT40 Low CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



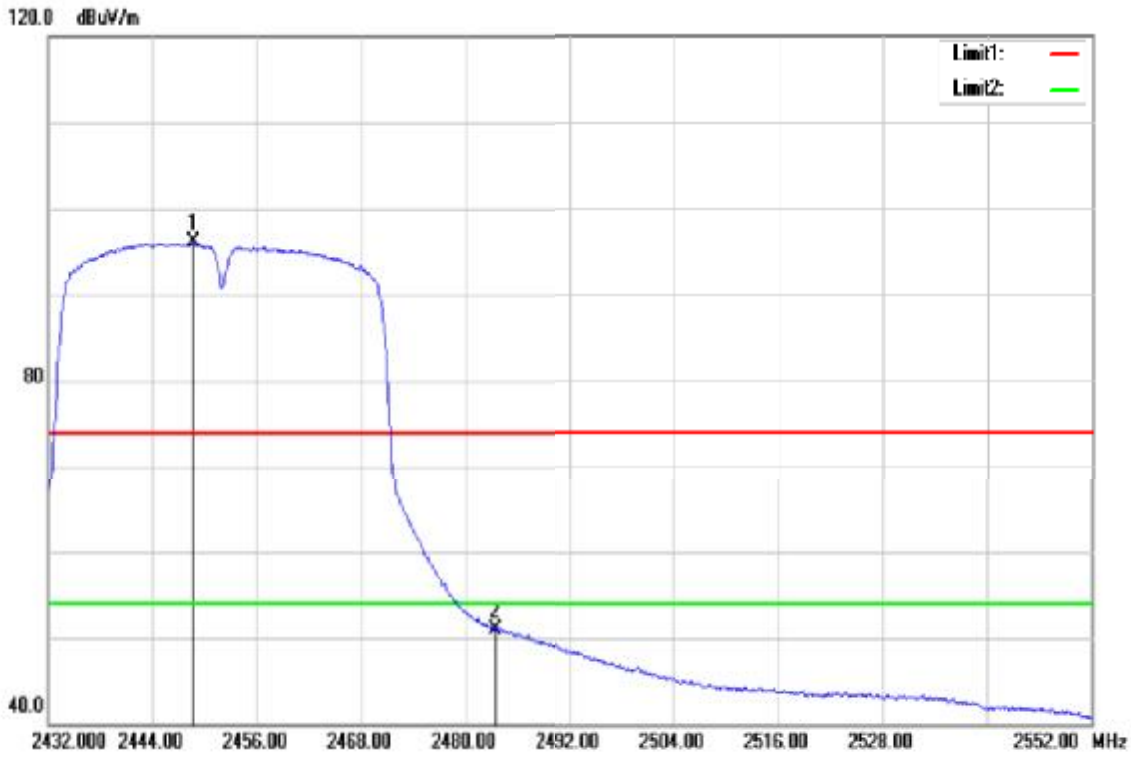
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	52.63	-2.98	49.65	54.00	-4.35	AVG
2427.744	98.77	-2.86	95.91	-	-	AVG

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2449.760	109.60	-2.79	106.81	-	-	peak
2488.040	69.01	-2.67	66.34	74.00	-7.66	peak

Test Mode	IEEE 802.11n HT40 High CH	Temperature:	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

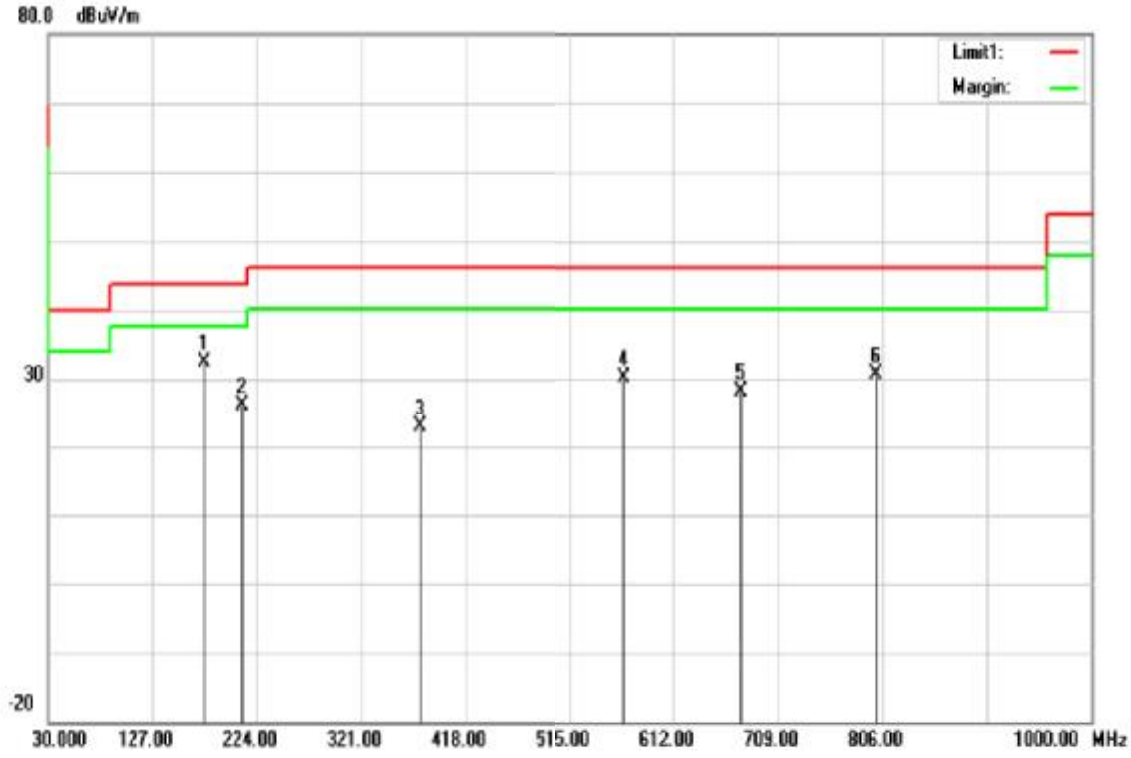


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2448.680	98.87	-2.80	96.07	-	-	AVG
2483.500	53.59	-2.69	50.90	54.00	-3.10	AVG

Below 1G Test Data

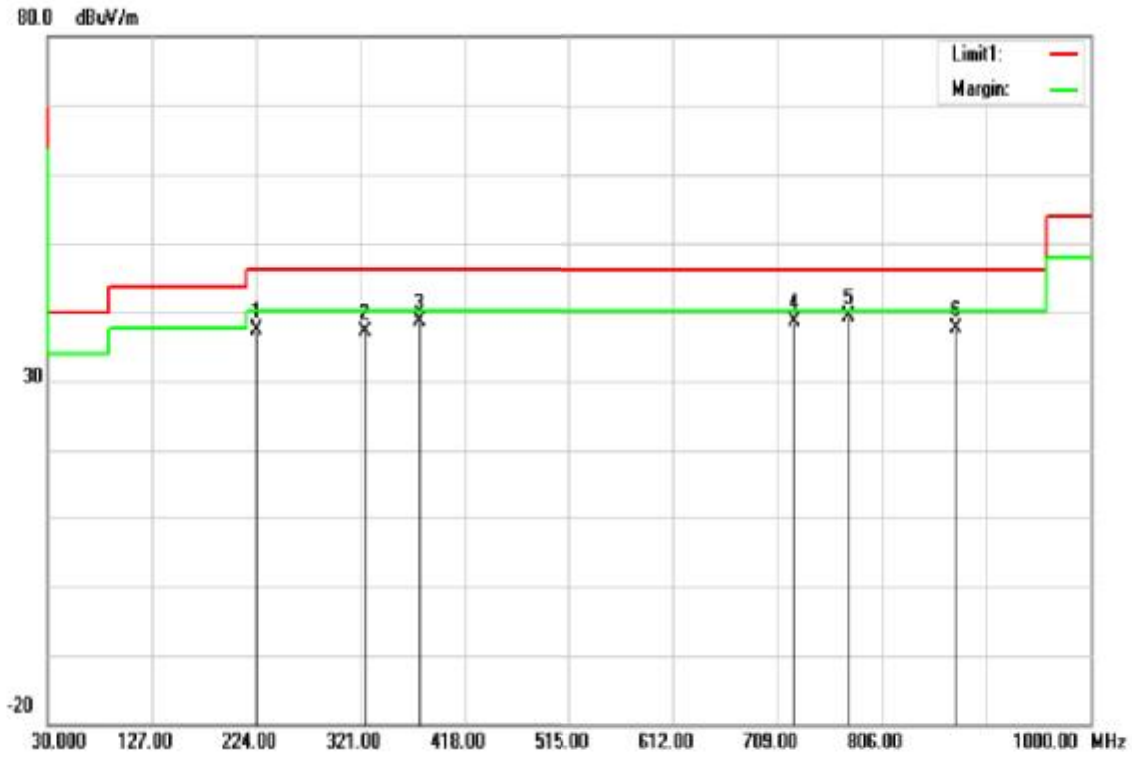
For PIFA Antenna

Test Mode	Mode 1	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
175.5000	43.32	-10.83	32.49	43.52	-11.03	peak
210.4200	36.48	-10.27	26.21	43.52	-17.31	peak
375.3200	28.99	-6.02	22.97	46.02	-23.05	peak
565.4400	31.73	-1.56	30.17	46.02	-15.85	peak
675.0500	27.41	0.68	28.09	46.02	-17.93	peak
800.1800	27.90	2.72	30.62	46.02	-15.40	peak

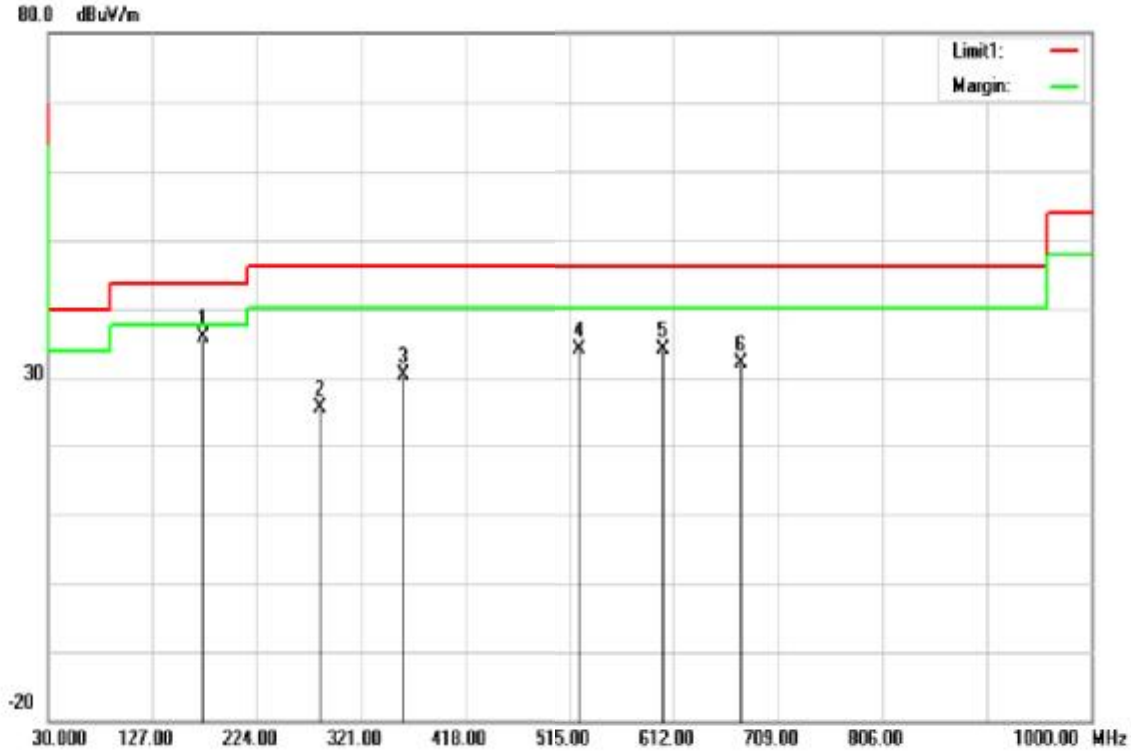
Test Mode	Mode 1	Temp/Hum	22(°C)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB	Remark
224.9700	48.39	-10.97	37.42	46.02	-8.60	peak
324.8800	44.48	-7.38	37.10	46.02	-8.92	peak
375.3200	44.58	-6.02	38.56	46.02	-7.46	peak
724.5200	37.38	1.35	38.73	46.02	-7.29	QP
774.9600	37.14	2.21	39.35	46.02	-6.67	QP
874.8700	33.61	3.91	37.52	46.02	-8.50	peak

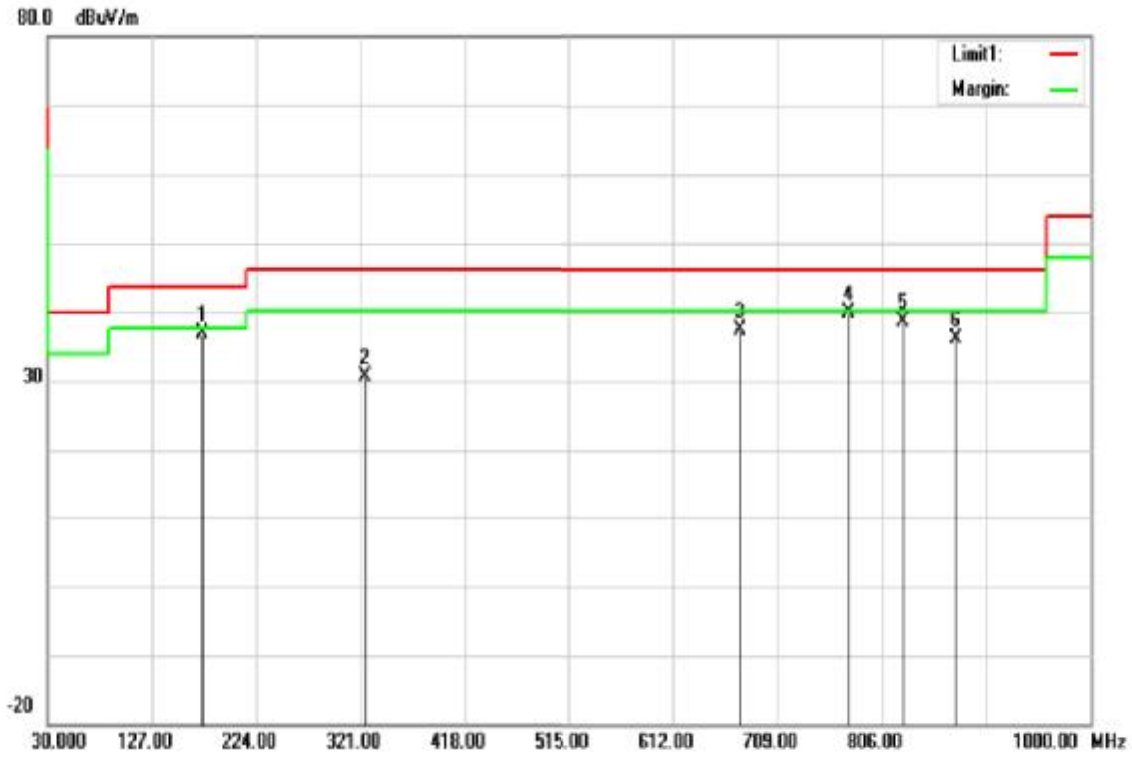
For Dipole Antenna

Test Mode	Mode 1	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
174.5300	46.66	-10.78	35.88	43.52	-7.64	peak
283.1700	33.71	-8.14	25.57	46.02	-20.45	peak
359.8000	36.75	-6.48	30.27	46.02	-15.75	peak
524.7000	36.24	-2.18	34.06	46.02	-11.96	peak
602.3000	35.13	-1.06	34.07	46.02	-11.95	peak
675.0500	31.37	0.68	32.05	46.02	-13.97	peak

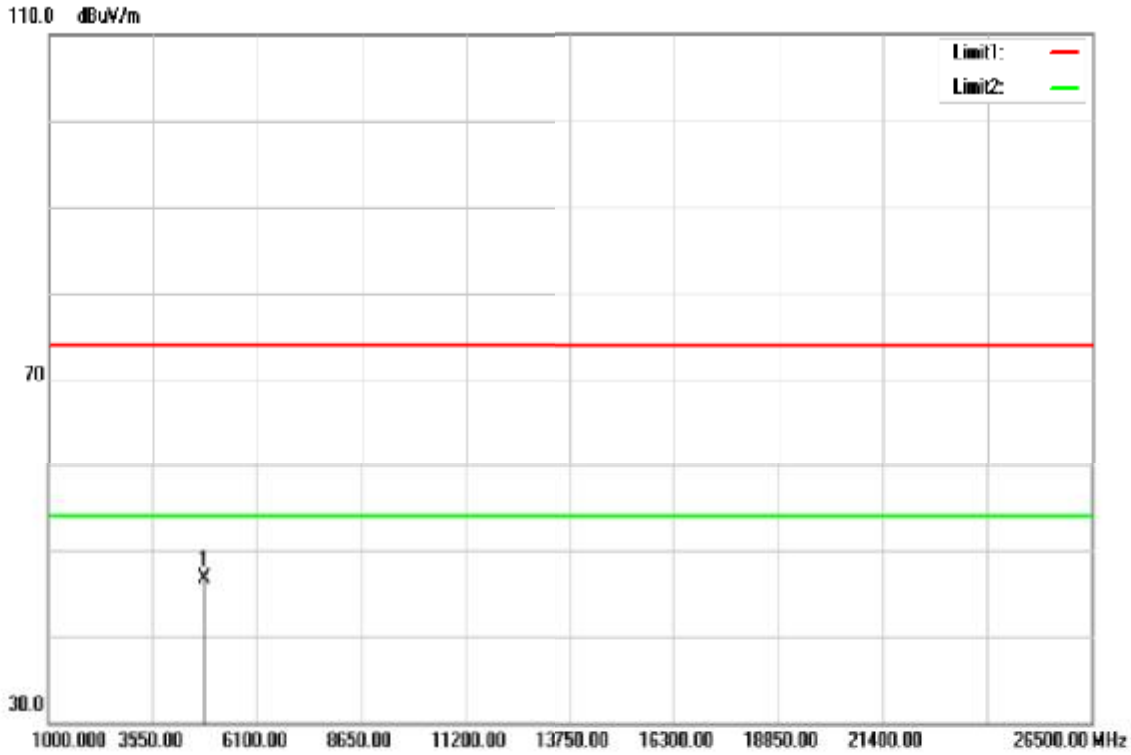
Test Mode	Mode 1	Temp/Hum	22(°C)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB	Remark
174.5300	47.76	-10.78	36.98	43.52	-6.54	peak
324.8800	37.91	-7.38	30.53	46.02	-15.49	peak
675.0500	36.76	0.68	37.44	46.02	-8.58	peak
774.9600	37.78	2.21	39.99	46.02	-6.03	peak
825.4000	35.48	3.04	38.52	46.02	-7.50	peak
874.8700	32.12	3.91	36.03	46.02	-9.99	peak

Above 1G Test Data
For PIFA Antenna

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

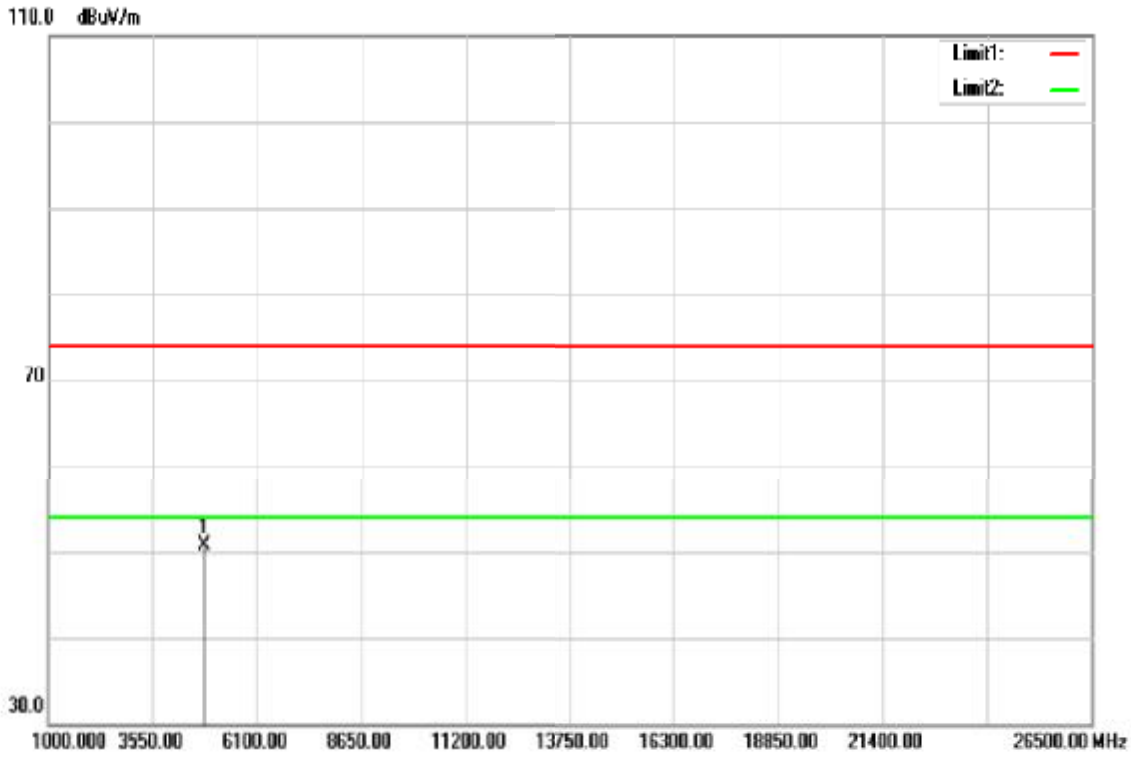


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	42.42	4.38	46.80	74.00	-27.20	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

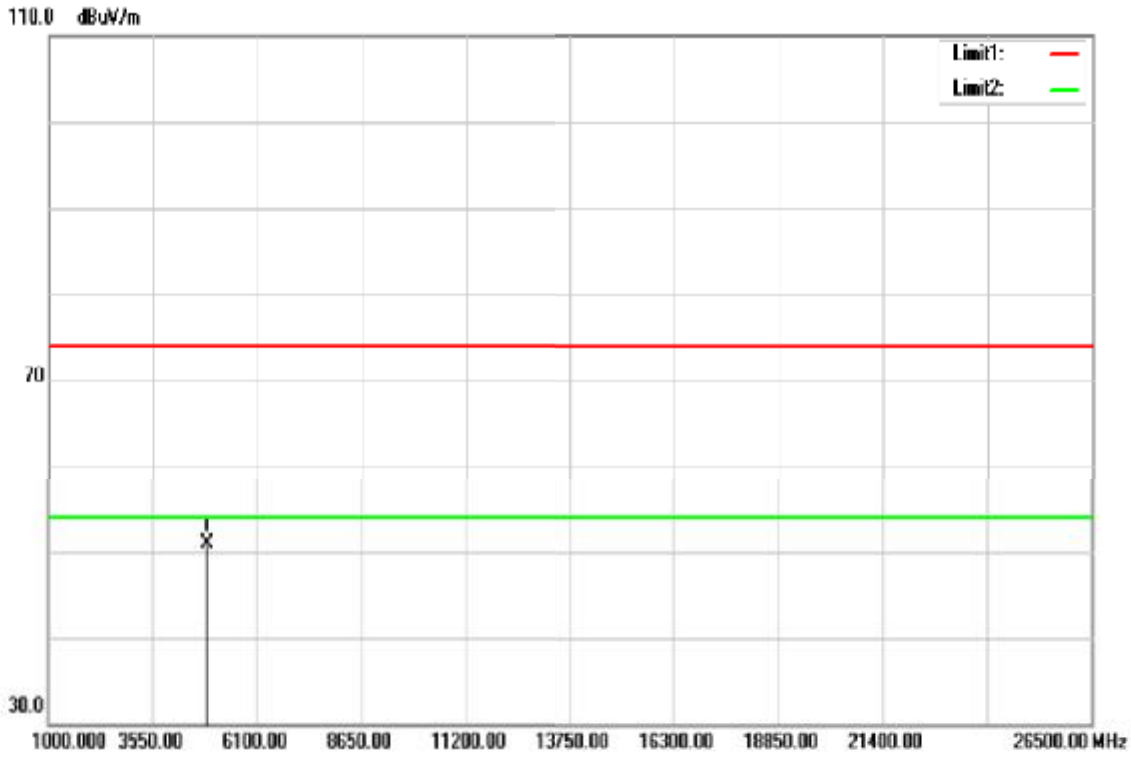


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	46.26	4.38	50.64	74.00	-23.36	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

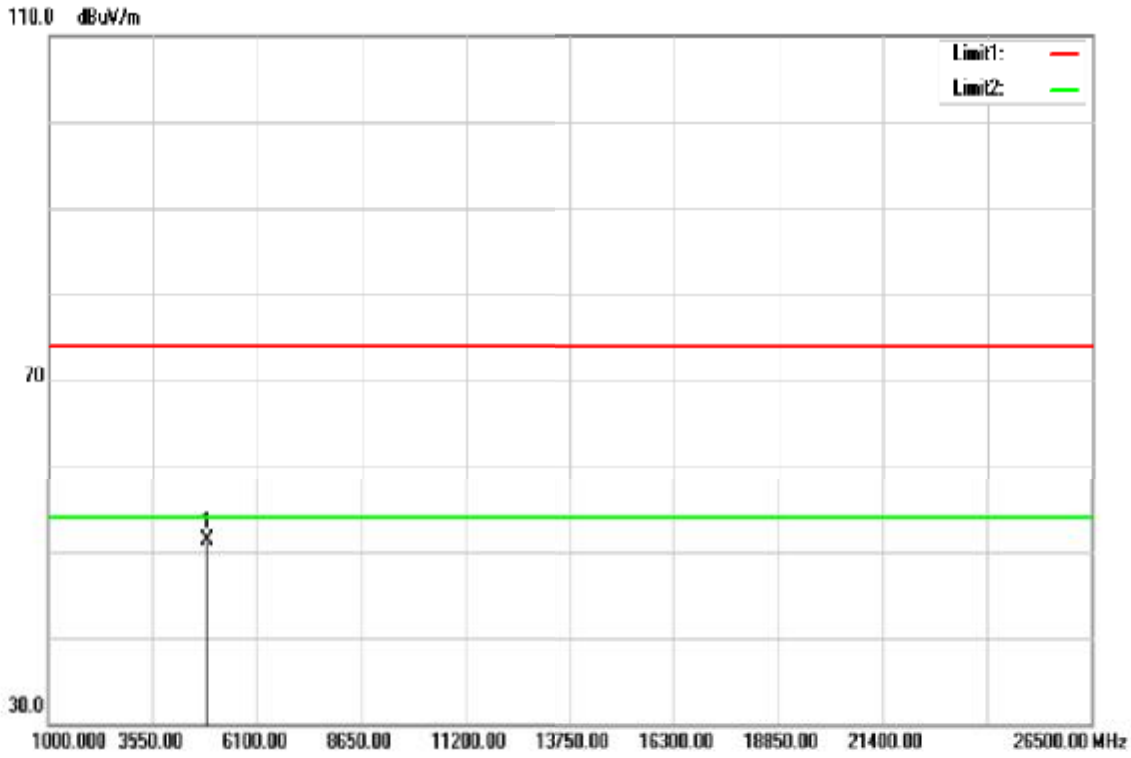


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	46.48	4.47	50.95	74.00	-23.05	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

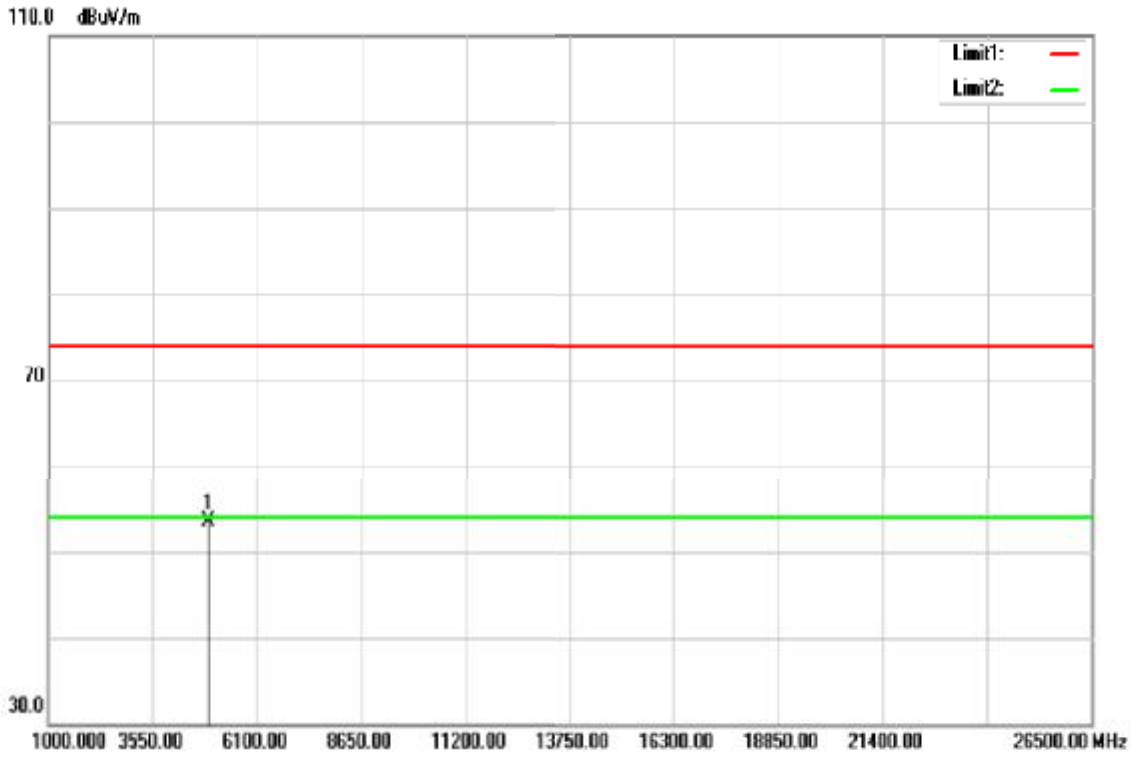


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	46.79	4.47	51.26	74.00	-22.74	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

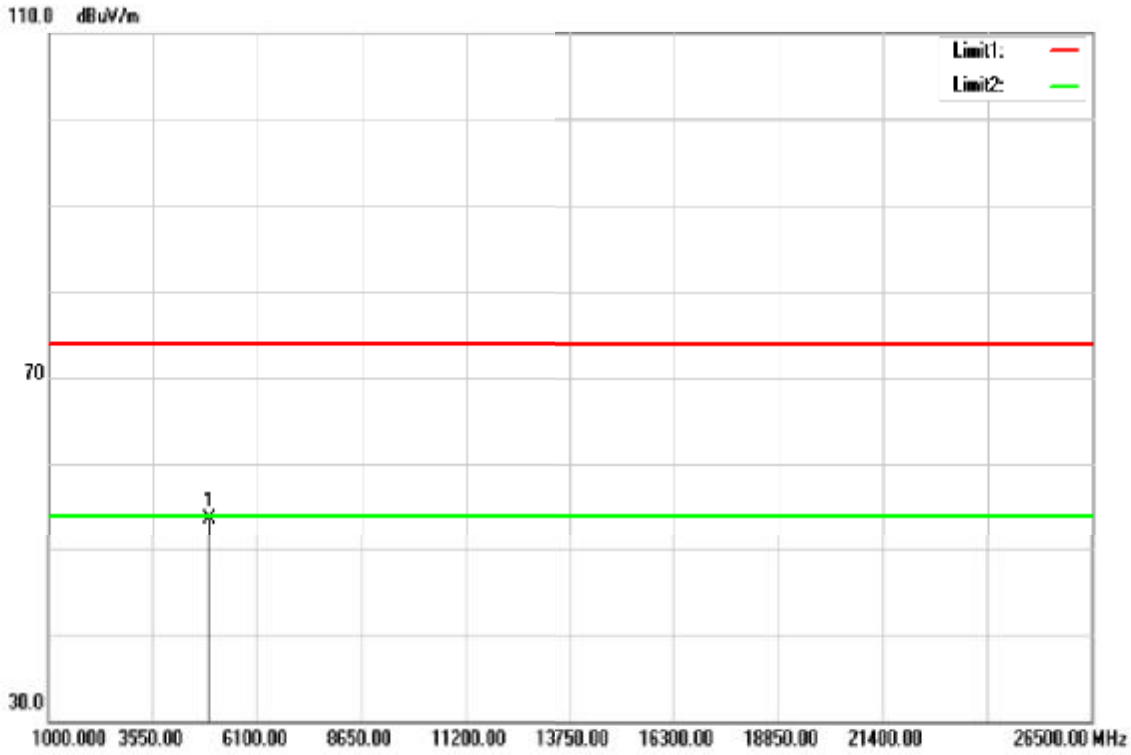


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	49.02	4.55	53.57	74.00	-20.43	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

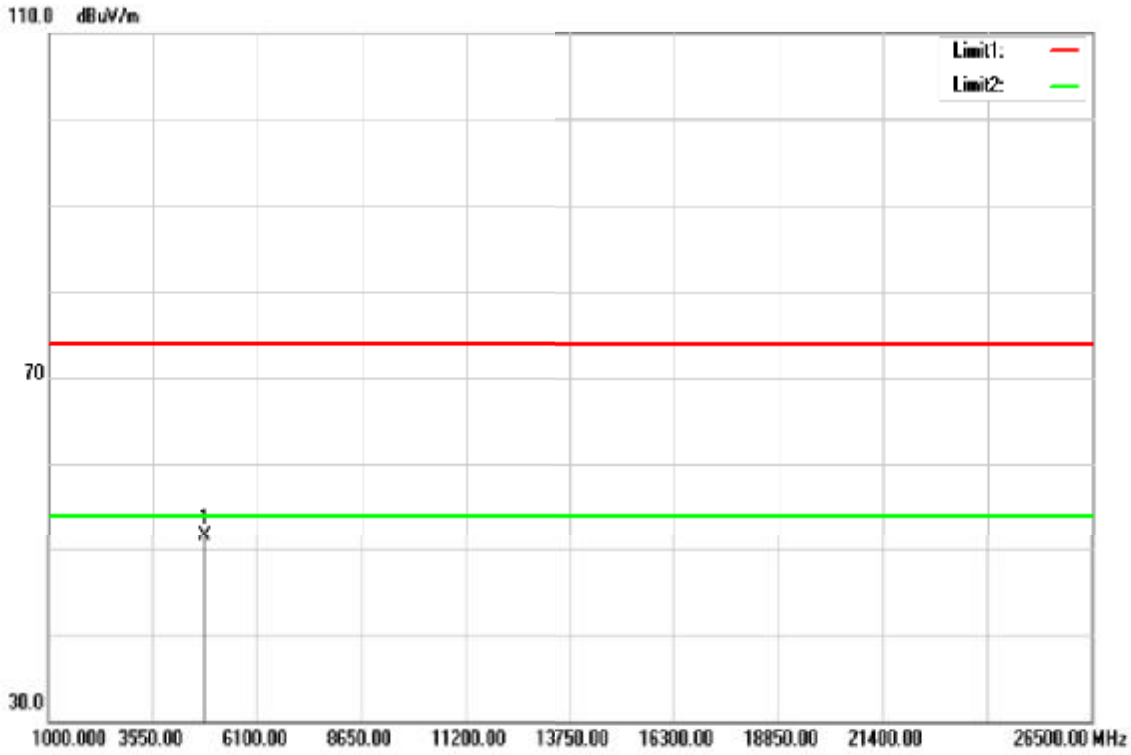


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	48.98	4.55	53.53	74.00	-20.47	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

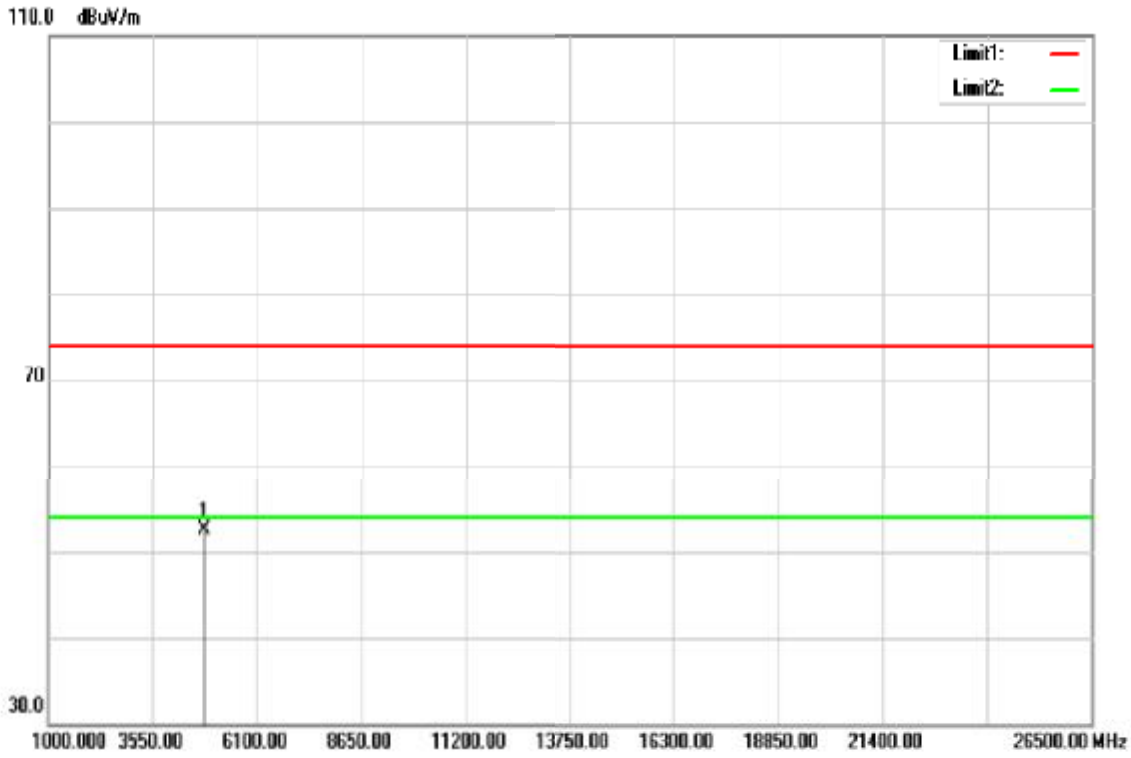


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4820.000	47.21	4.36	51.57	74.00	-22.43	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

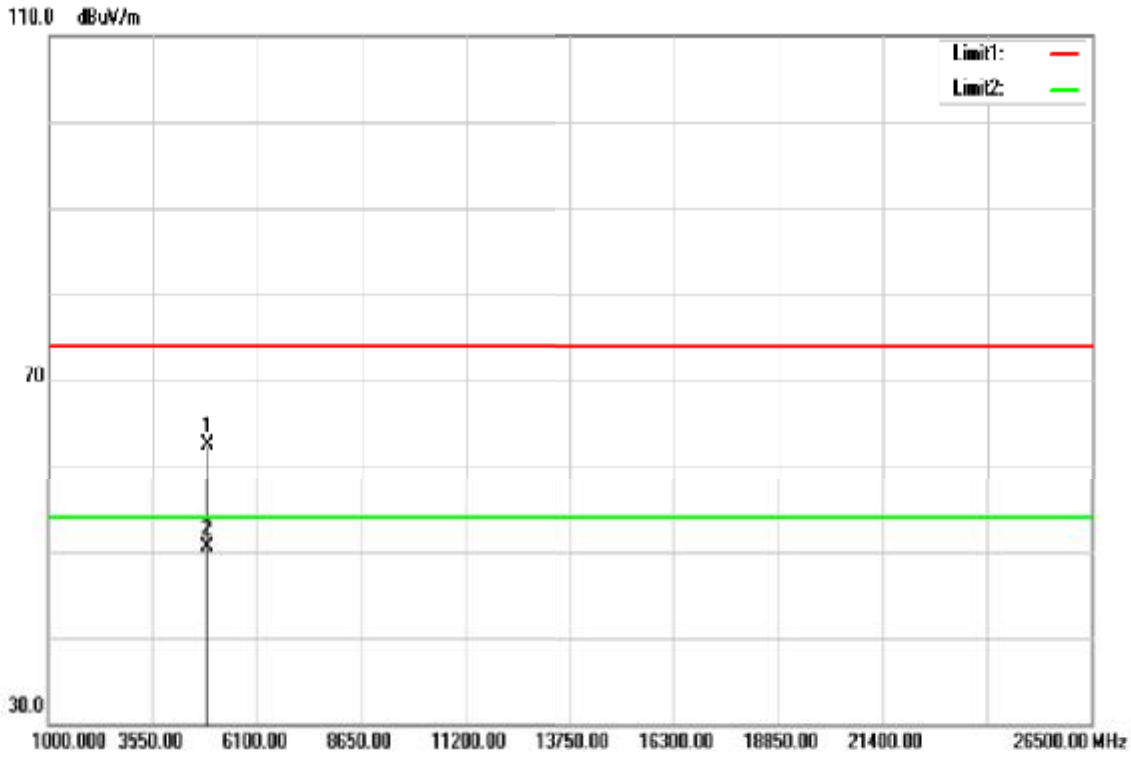


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	48.22	4.38	52.60	74.00	-21.40	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

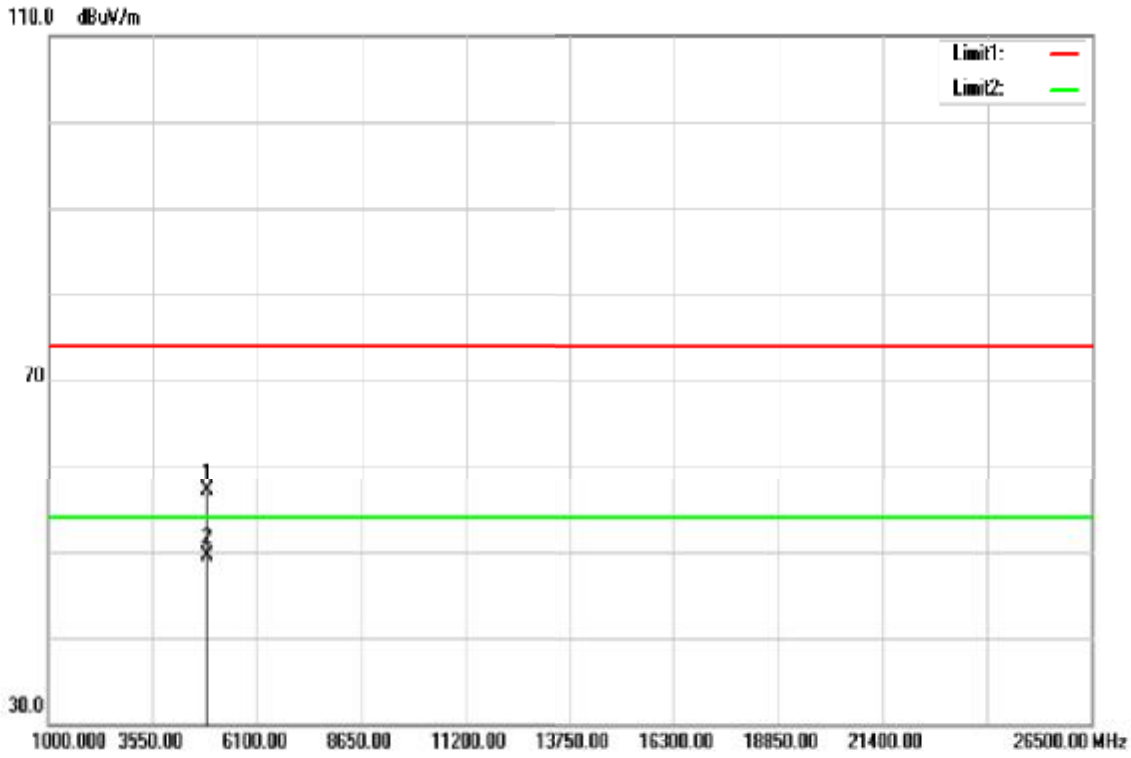


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	57.94	4.47	62.41	74.00	-11.59	peak
4876.000	46.11	4.47	50.58	54.00	-3.42	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

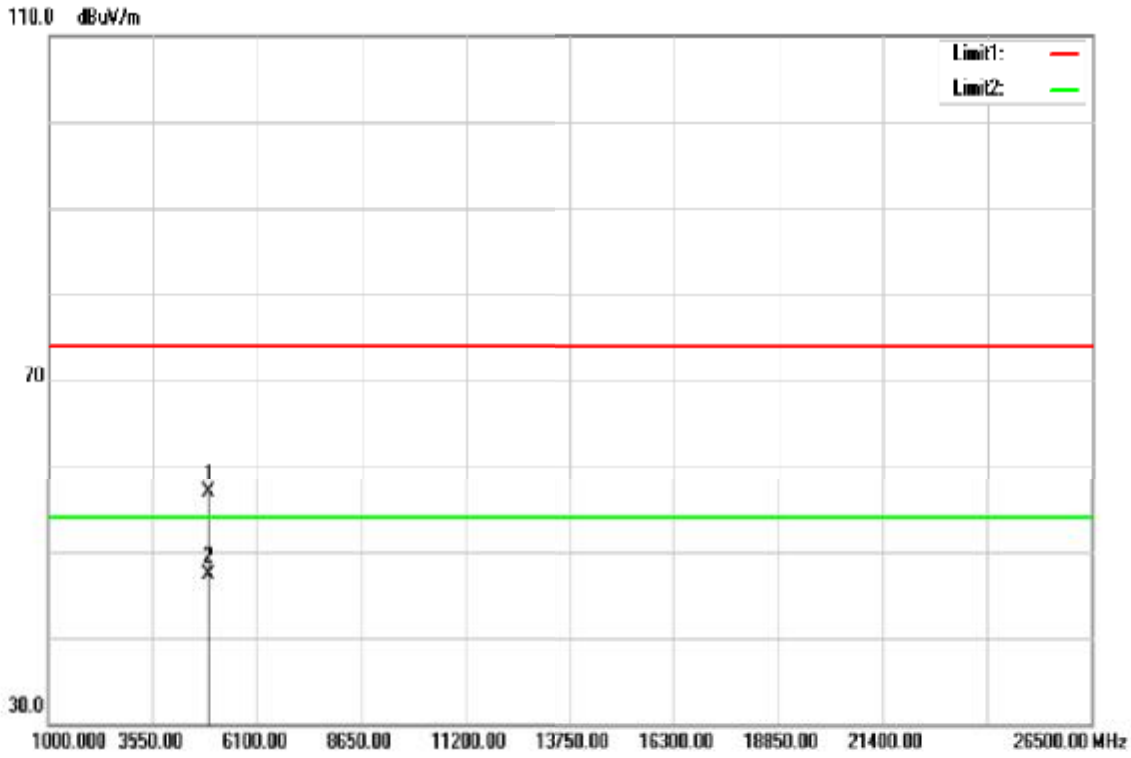


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	52.54	4.49	57.03	74.00	-16.97	peak
4883.000	45.06	4.49	49.55	54.00	-4.45	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

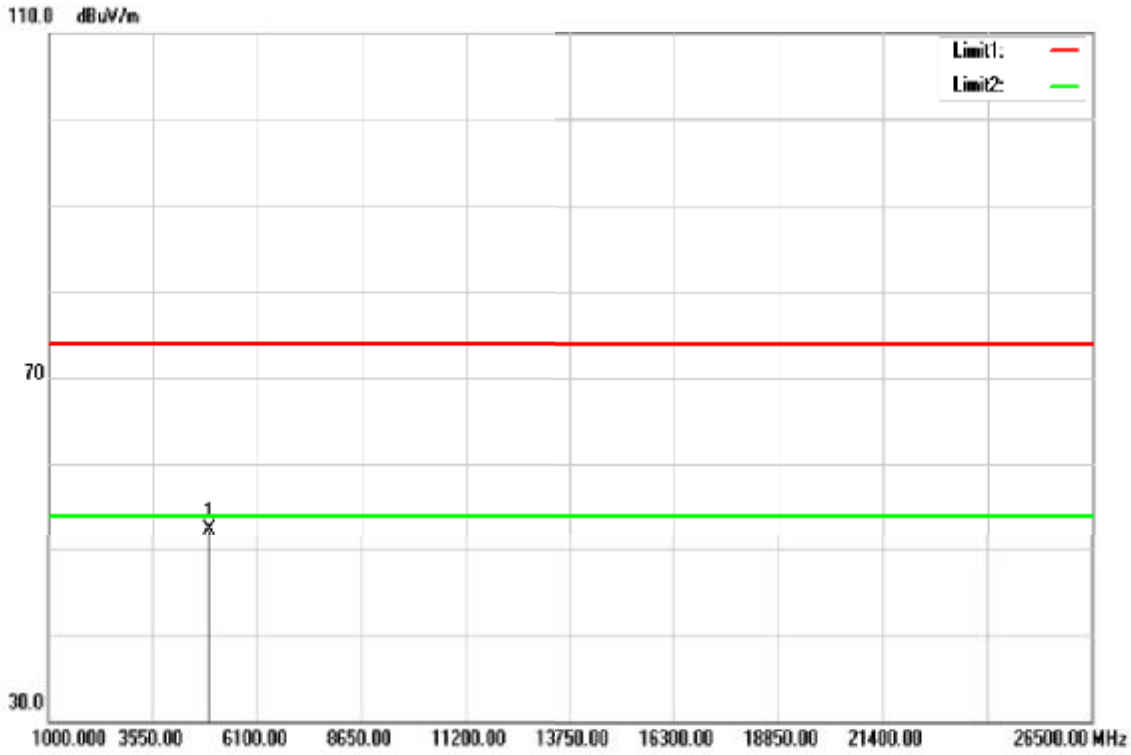


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	52.30	4.55	56.85	74.00	-17.15	peak
4925.000	42.68	4.55	47.23	54.00	-6.77	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

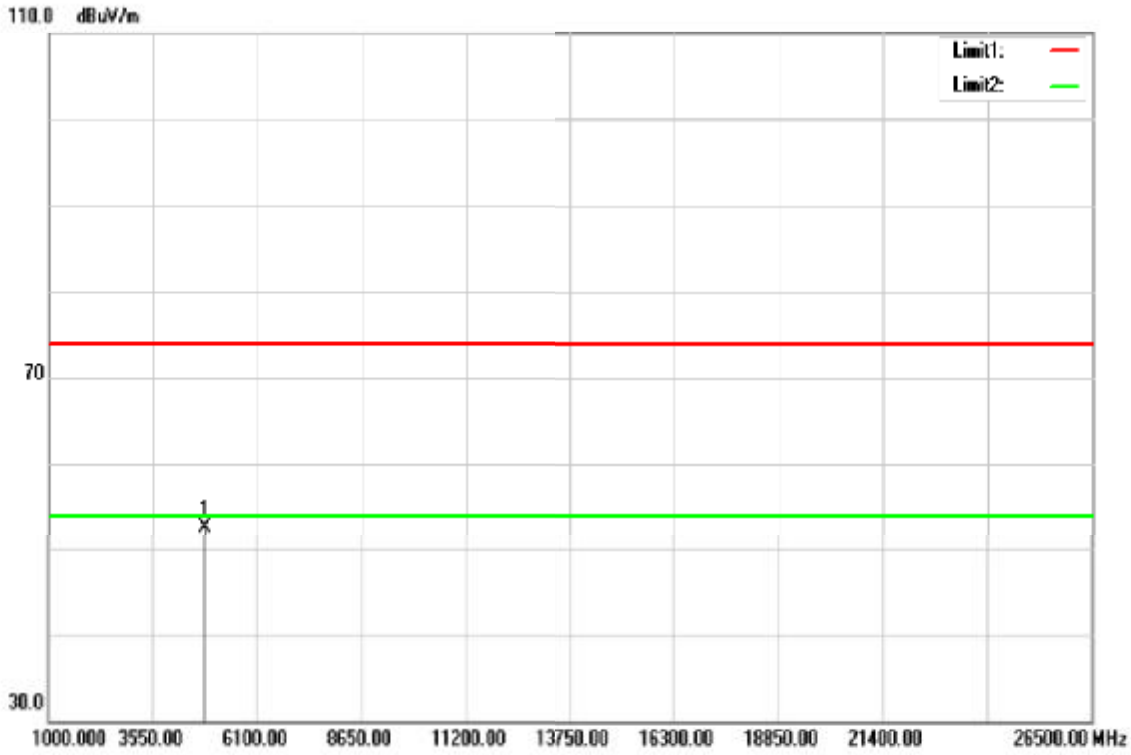


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	47.77	4.55	52.32	74.00	-21.68	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

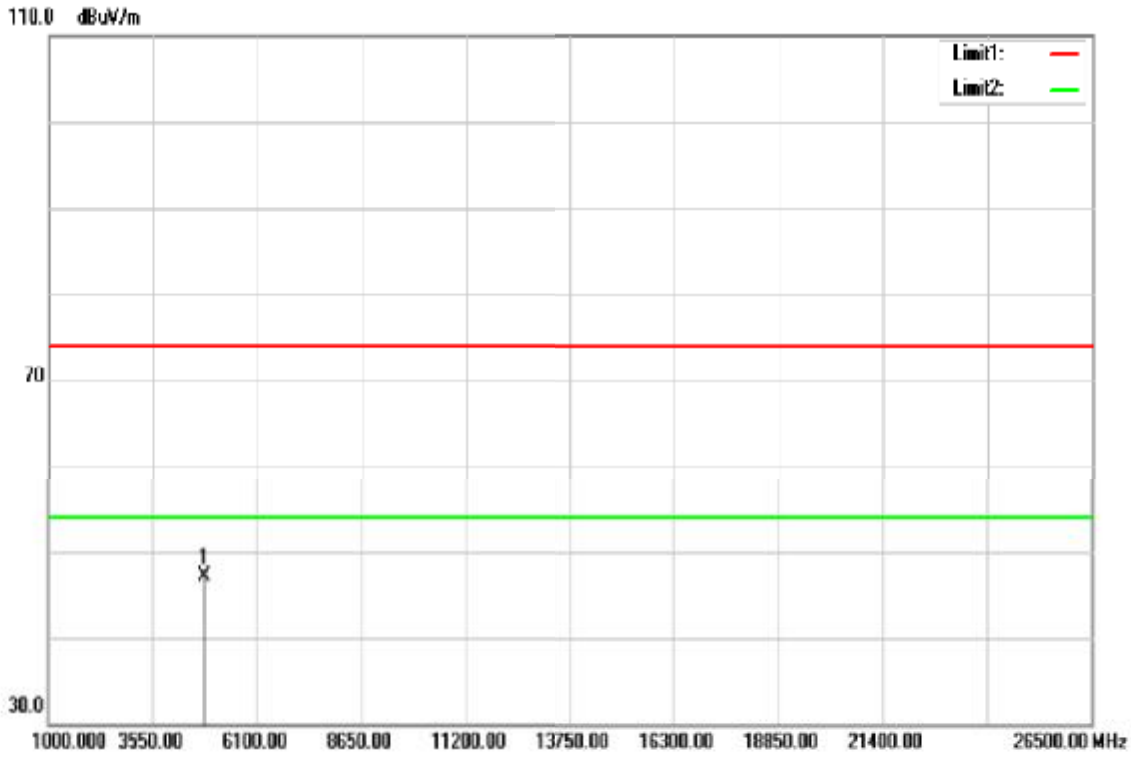


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	48.06	4.38	52.44	74.00	-21.56	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

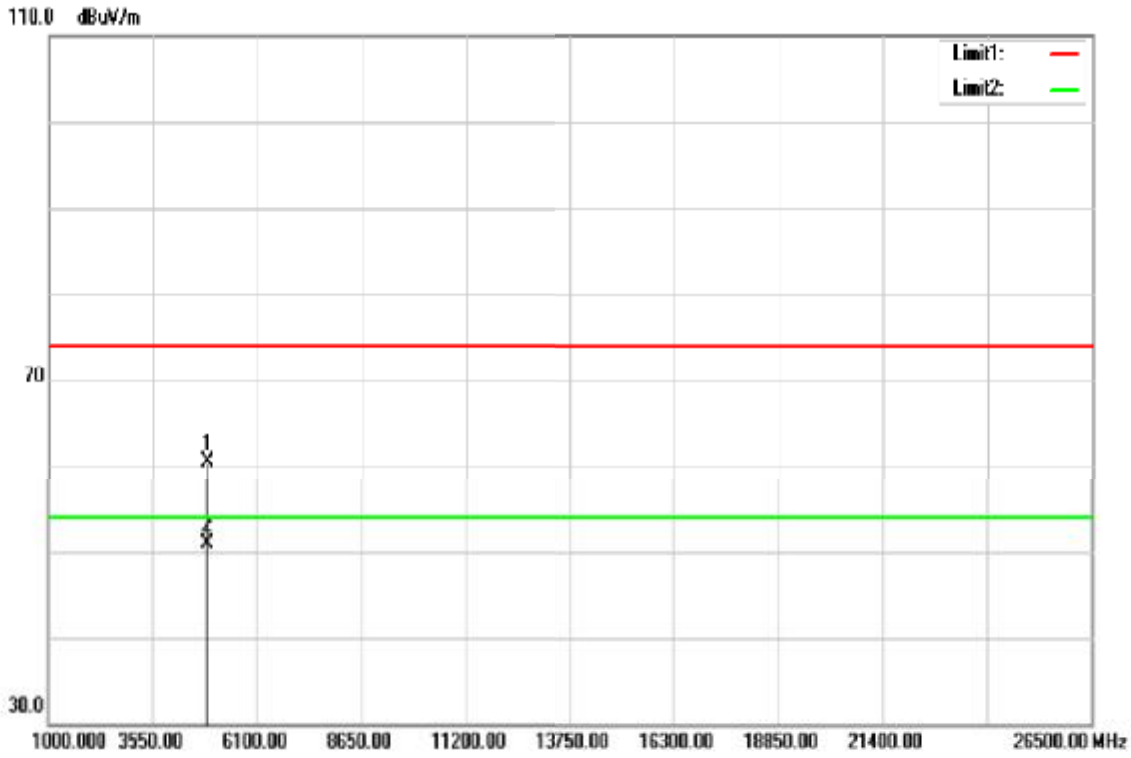


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	42.72	4.38	47.10	74.00	-26.90	
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

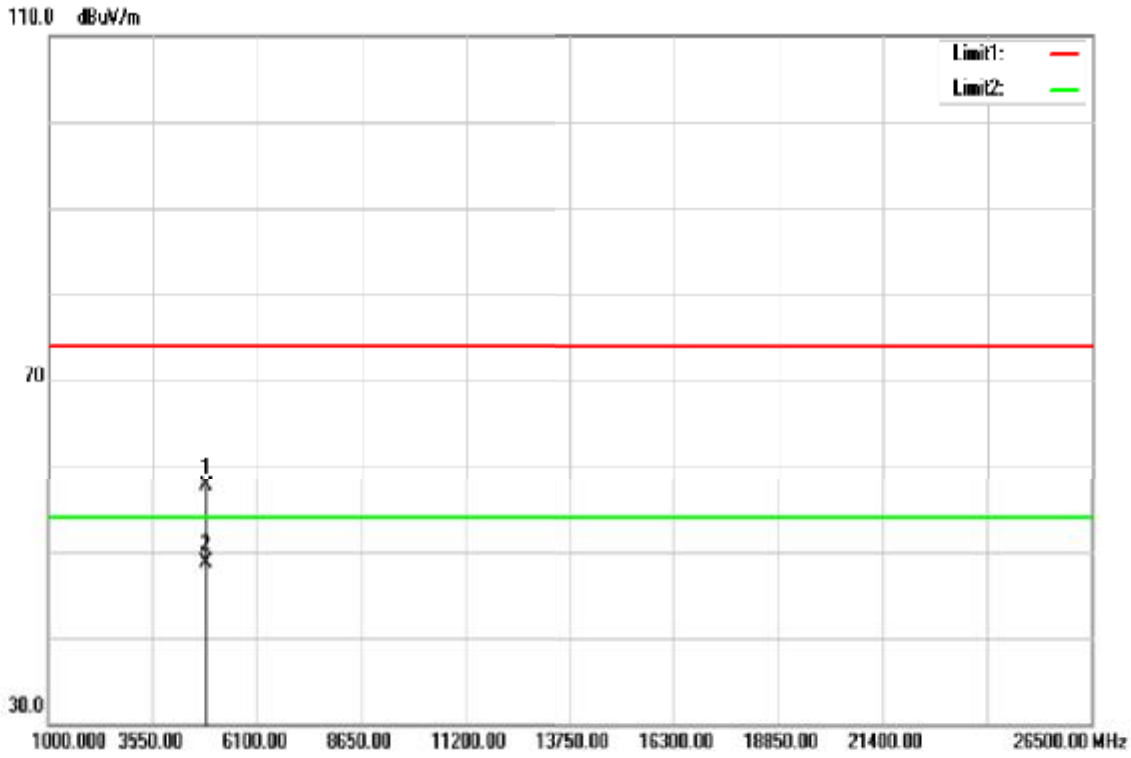


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	56.13	4.47	60.60	74.00	-13.40	peak
4876.000	46.45	4.47	50.92	54.00	-3.08	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

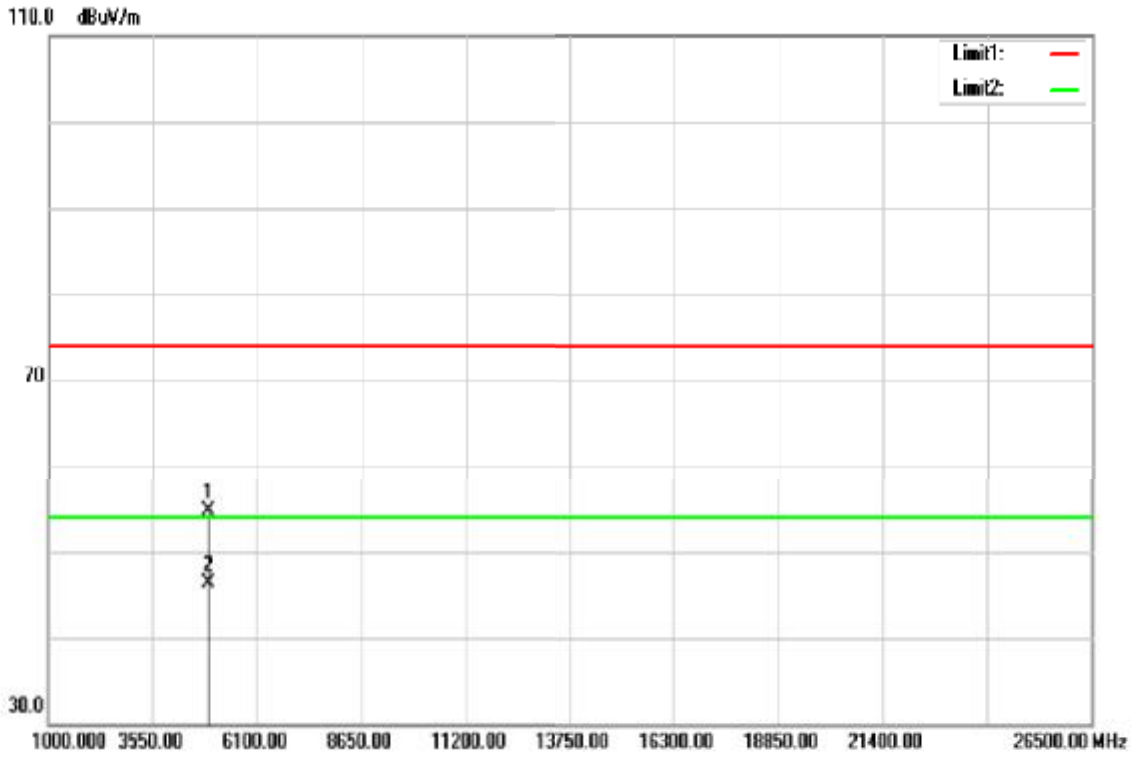


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4869.000	53.19	4.45	57.64	74.00	-16.36	peak
4869.000	44.29	4.45	48.74	54.00	-5.26	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

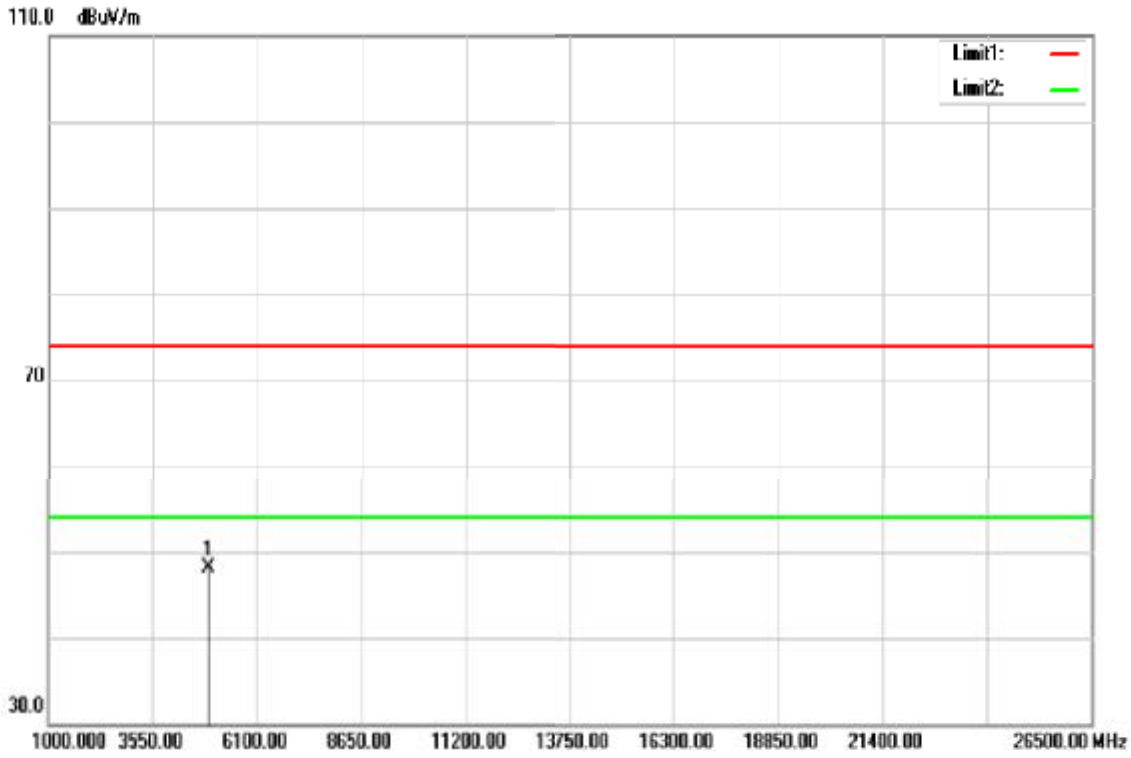


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	50.07	4.55	54.62	74.00	-19.38	peak
4925.000	41.74	4.55	46.29	54.00	-7.71	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

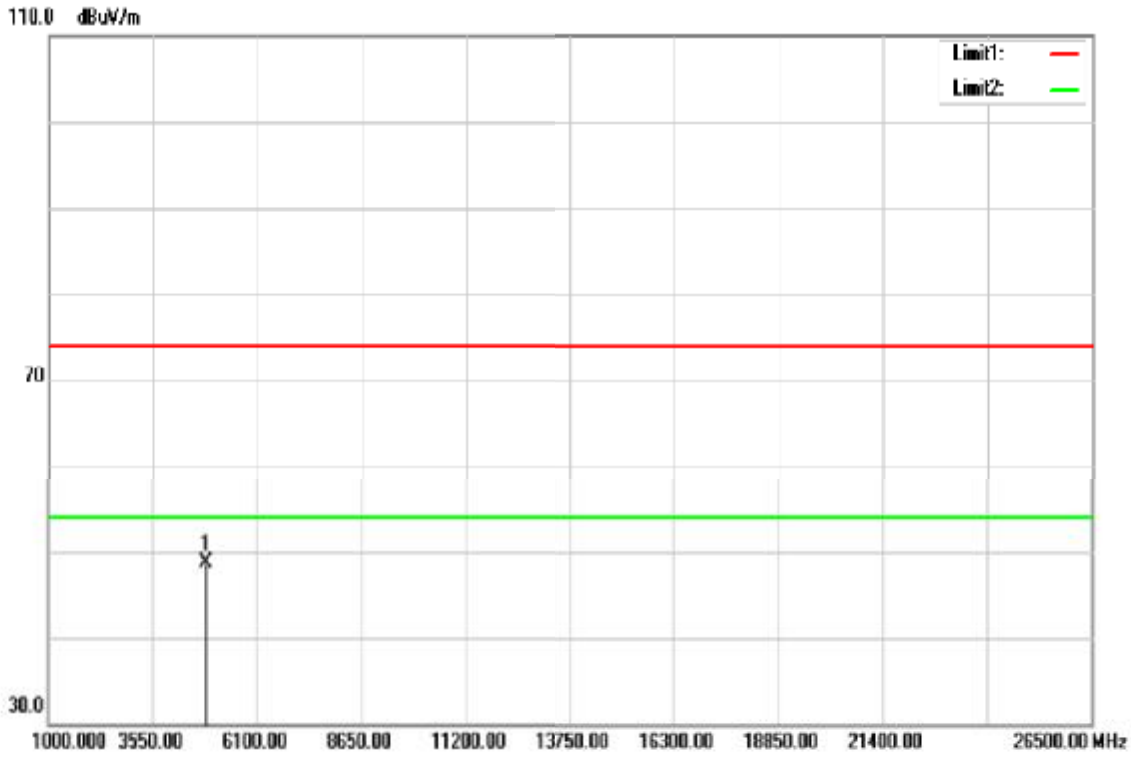


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4918.000	43.53	4.55	48.08	74.00	-25.92	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

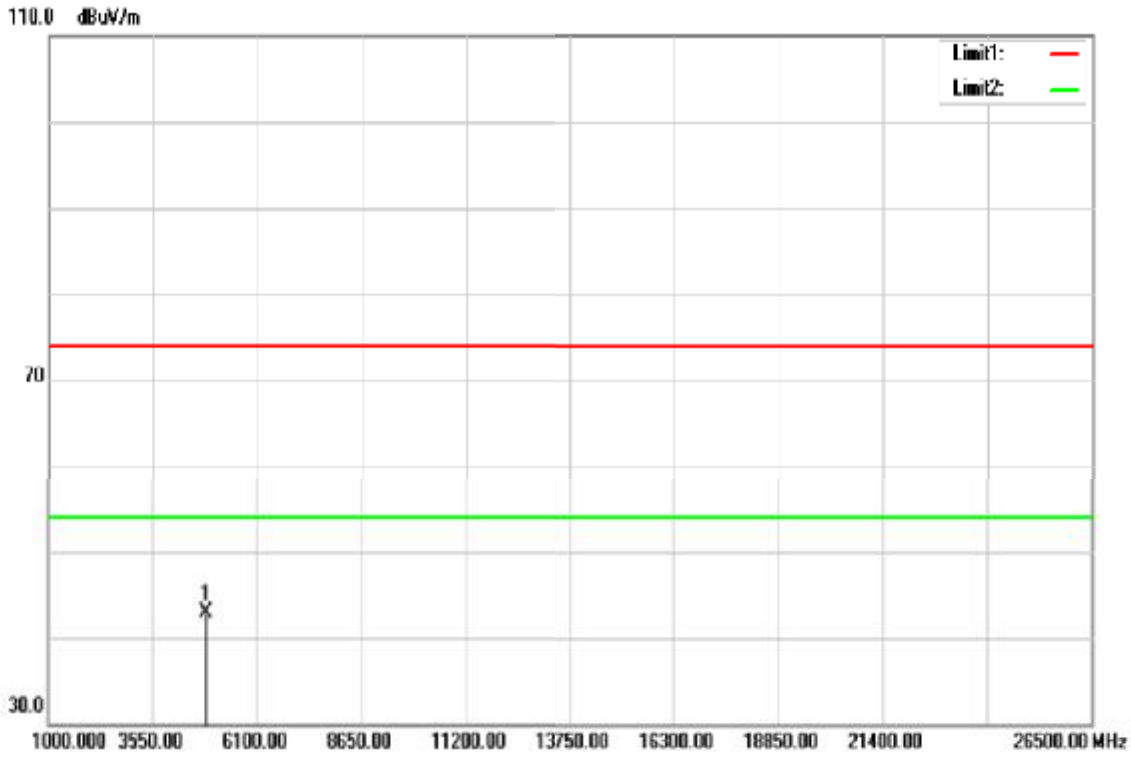


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4848.000	44.20	4.43	48.63	74.00	-25.37	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

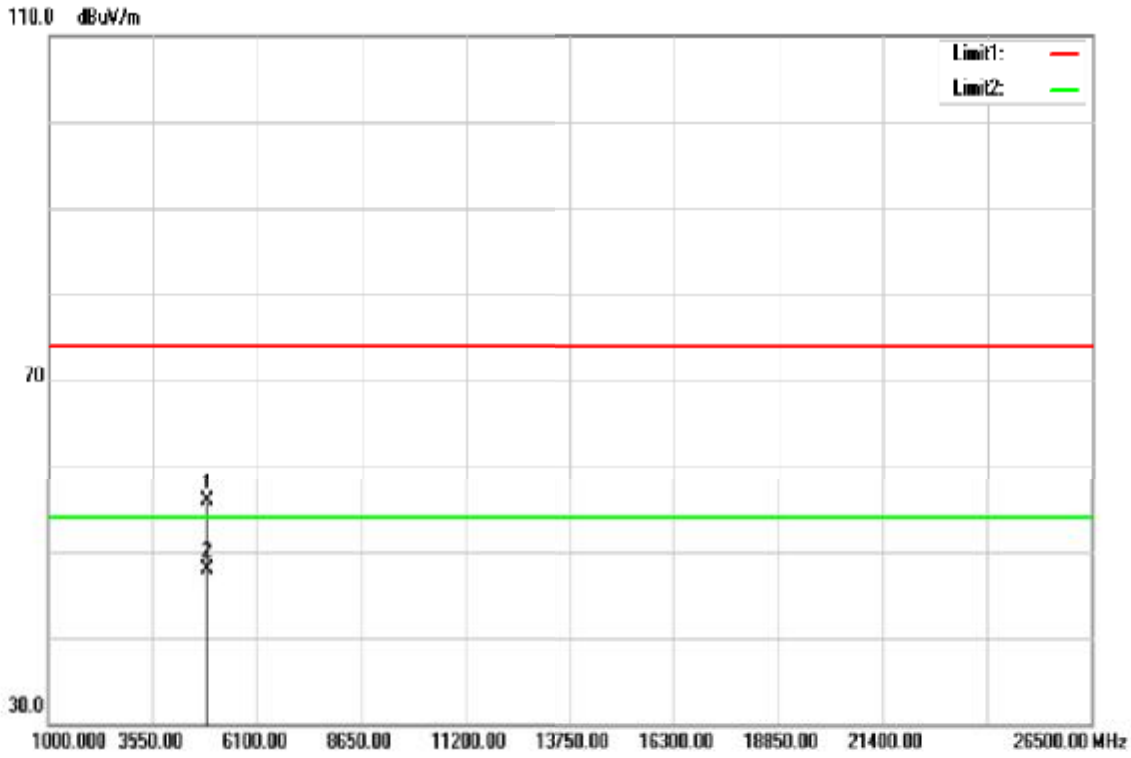


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4844.000	38.49	4.41	42.90	74.00	-31.10	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

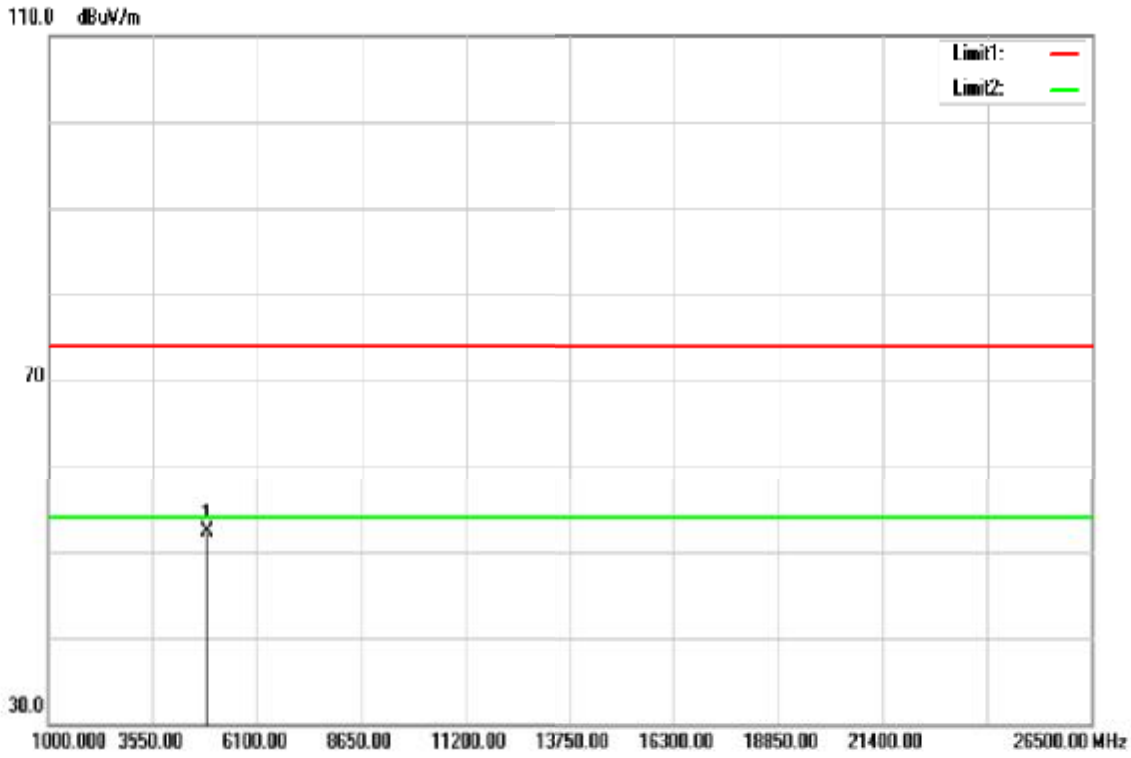


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	51.38	4.49	55.87	74.00	-18.13	peak
4883.000	43.36	4.49	47.85	54.00	-6.15	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

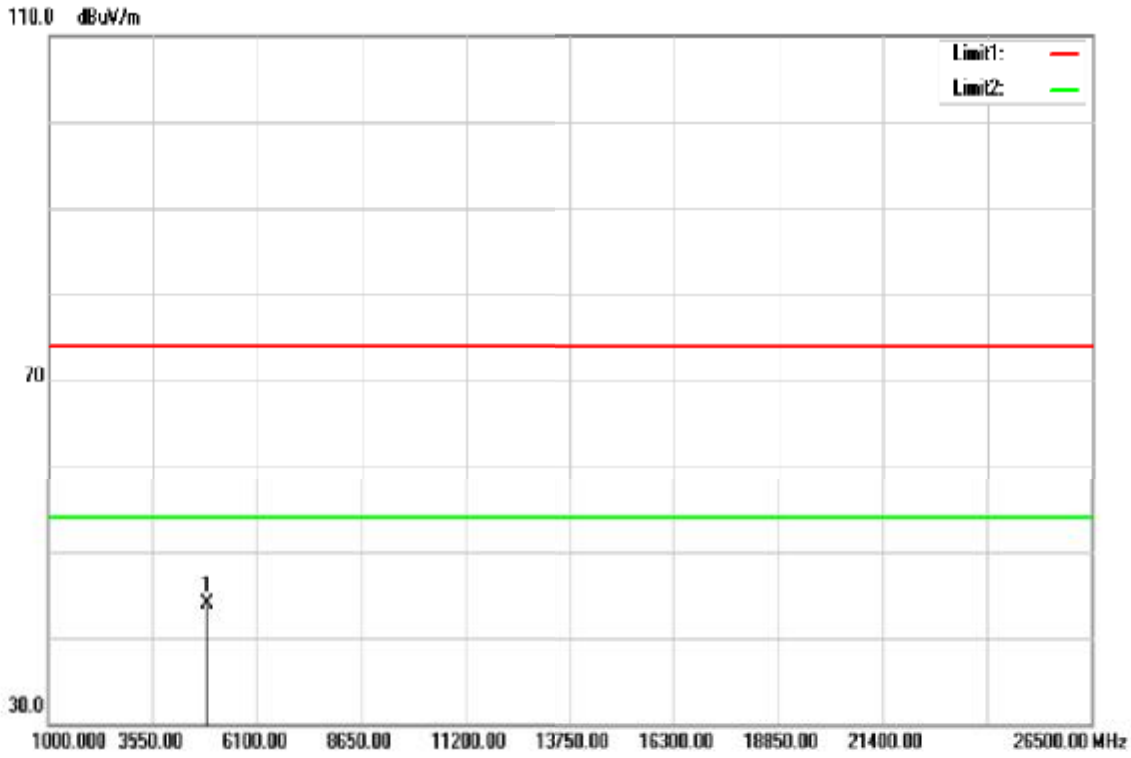


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4890.000	47.76	4.49	52.25	74.00	-21.75	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

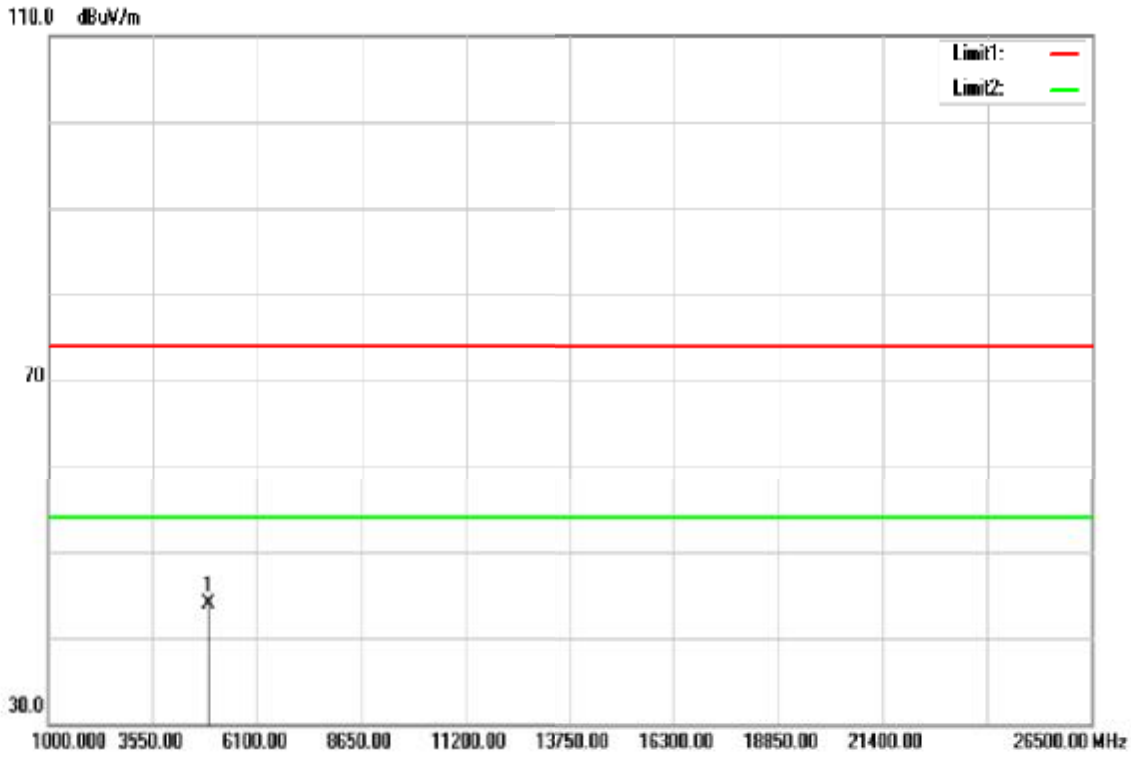


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4897.000	39.45	4.51	43.96	74.00	-30.04	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4911.000	39.43	4.53	43.96	74.00	-30.04	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

For Dipole Antenna

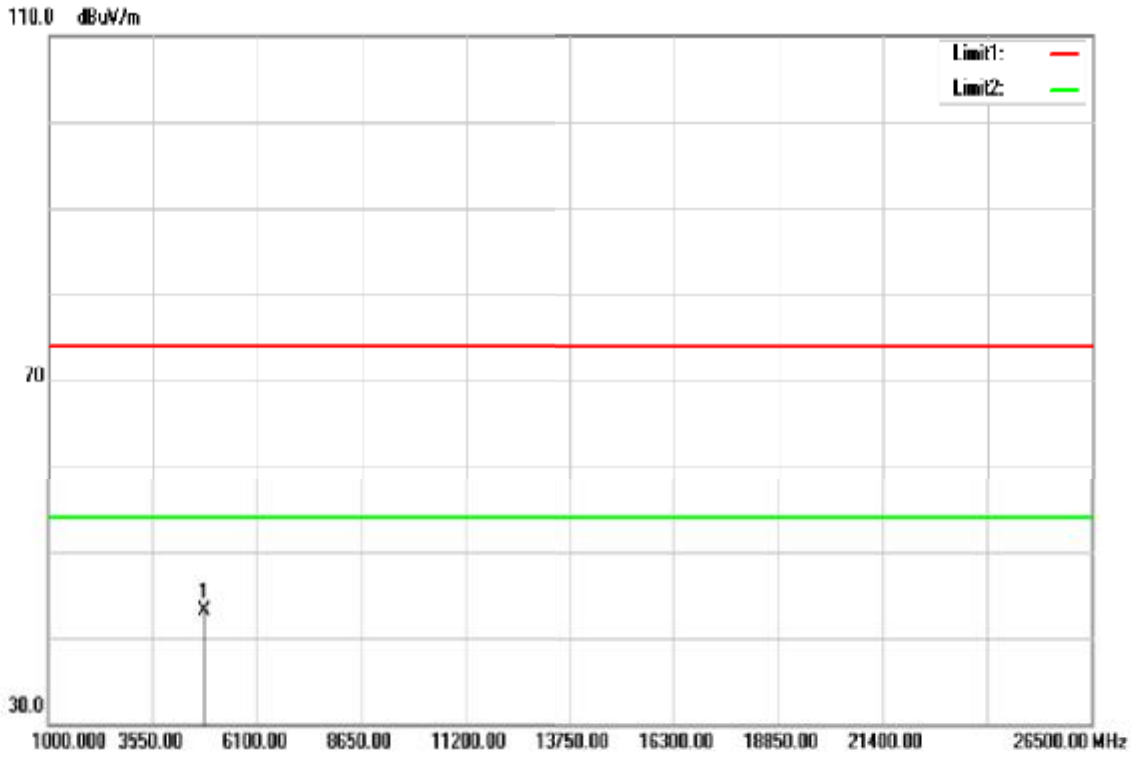
Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	48.68	4.38	53.06	74.00	-20.94	peak
4827.000	45.97	4.38	50.35	54.00	-3.65	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

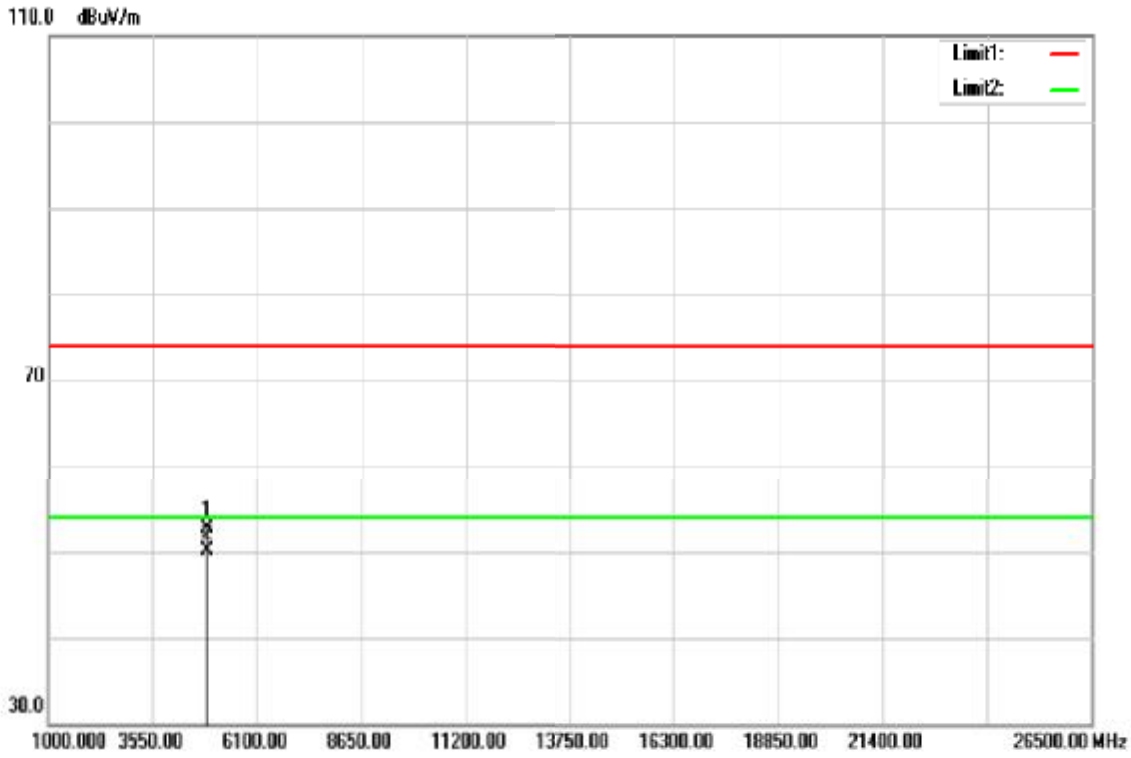


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4824.000	38.81	4.38	43.19	74.00	-30.81	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

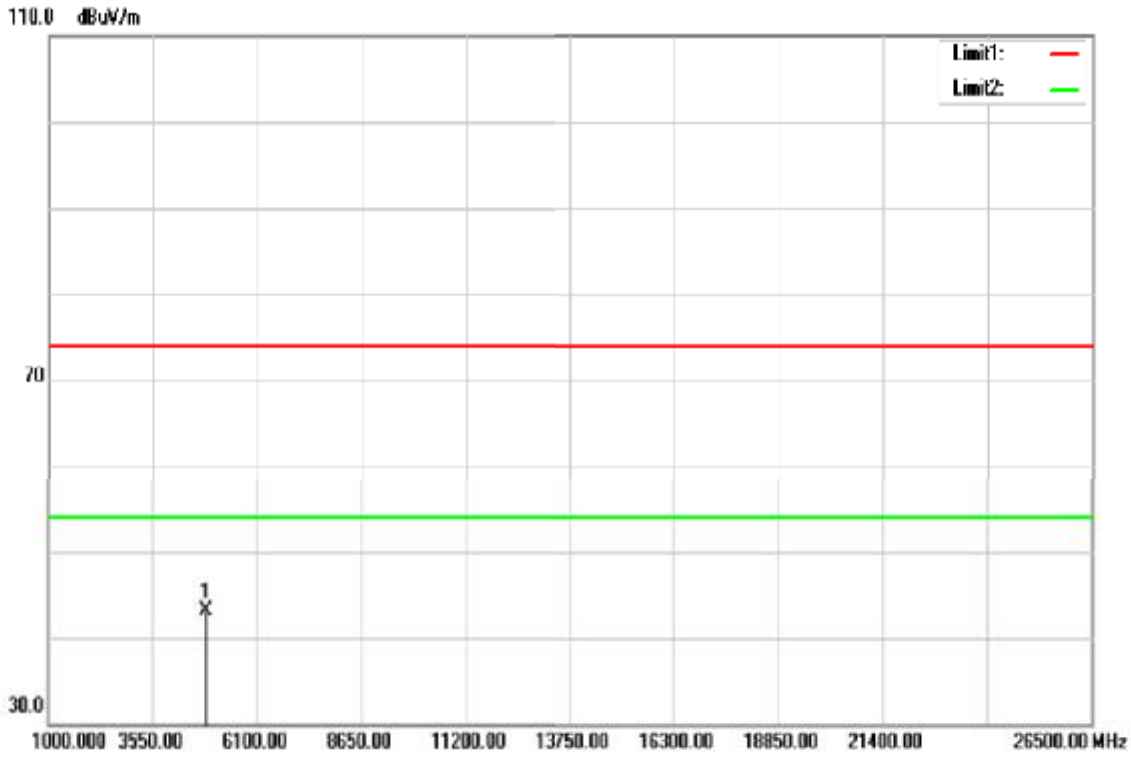


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	48.27	4.47	52.74	74.00	-21.26	peak
4876.000	45.56	4.47	50.03	54.00	-3.97	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4874.000	38.65	4.47	43.12	74.00	-30.88	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

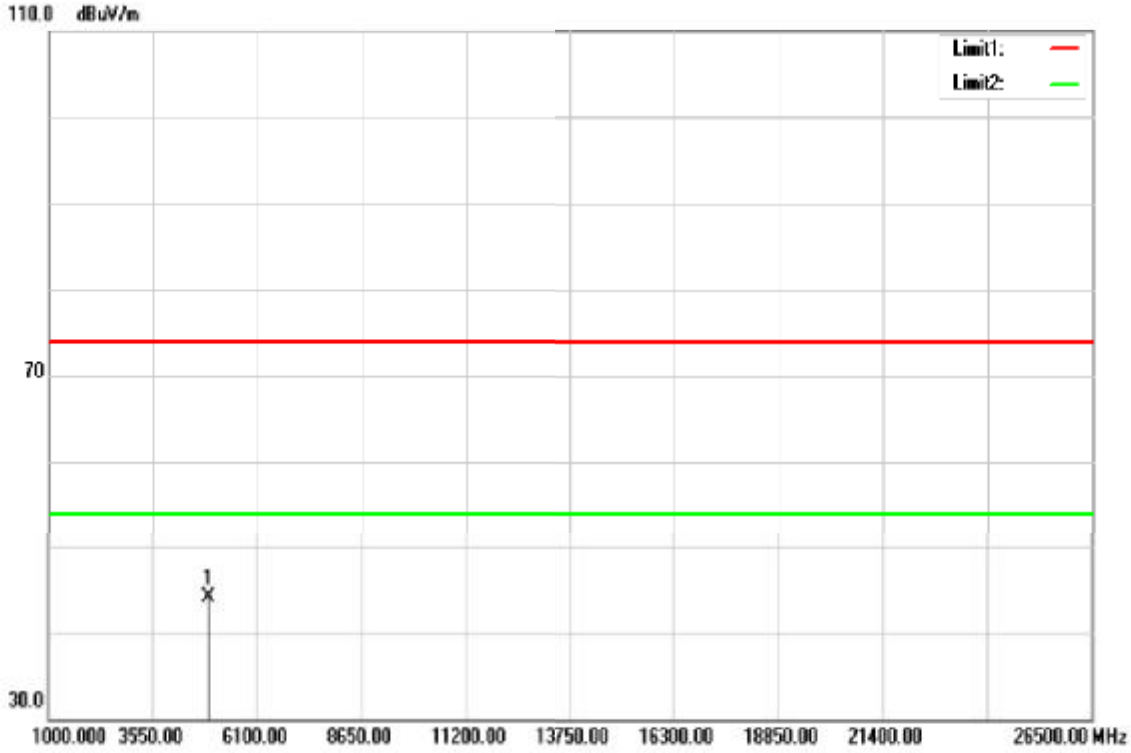
Test Mode	IEEE 802.11b High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	46.42	4.55	50.97	74.00	-23.03	peak
4925.000	45.30	4.55	49.85	54.00	-4.15	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11b High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

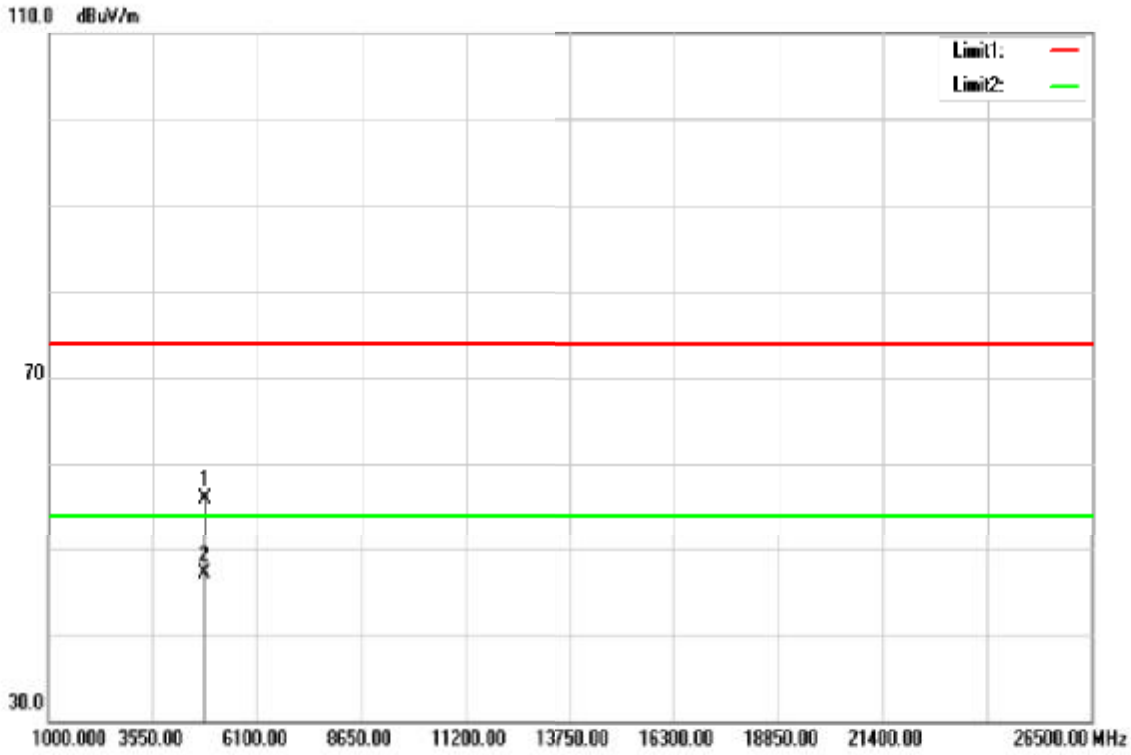


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	39.47	4.55	44.02	74.00	-29.98	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

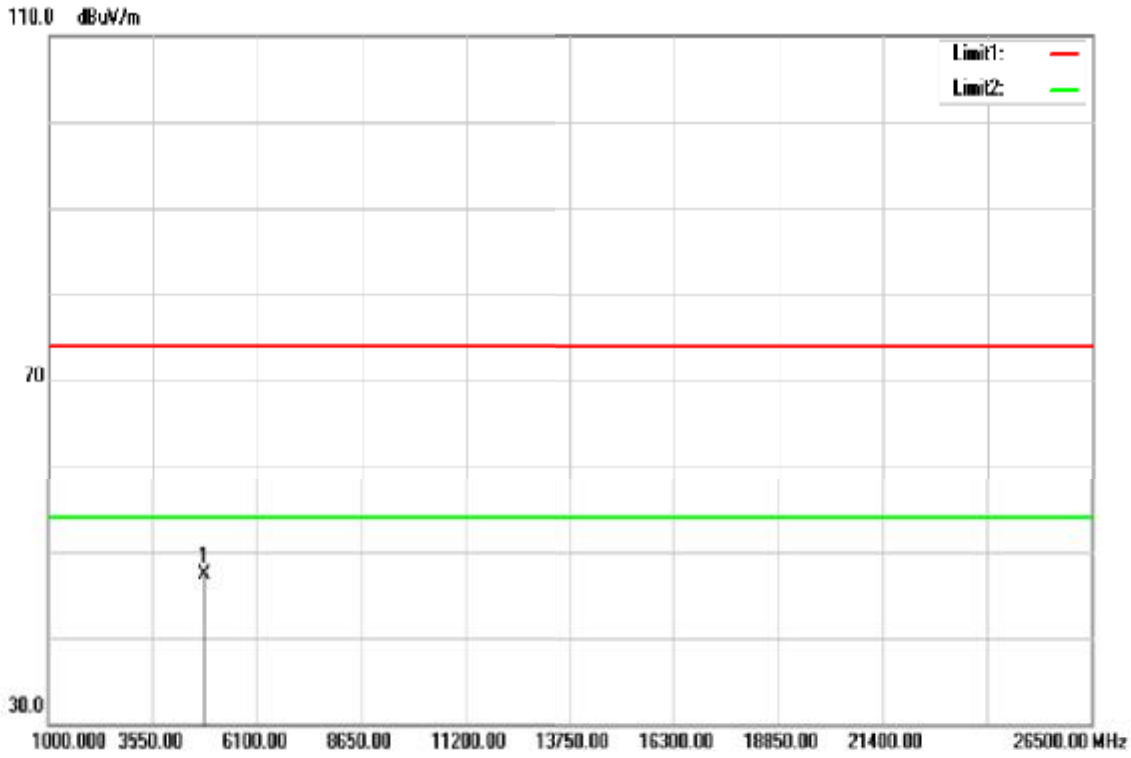


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	51.49	4.38	55.87	74.00	-18.13	peak
4827.000	42.69	4.38	47.07	54.00	-6.93	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

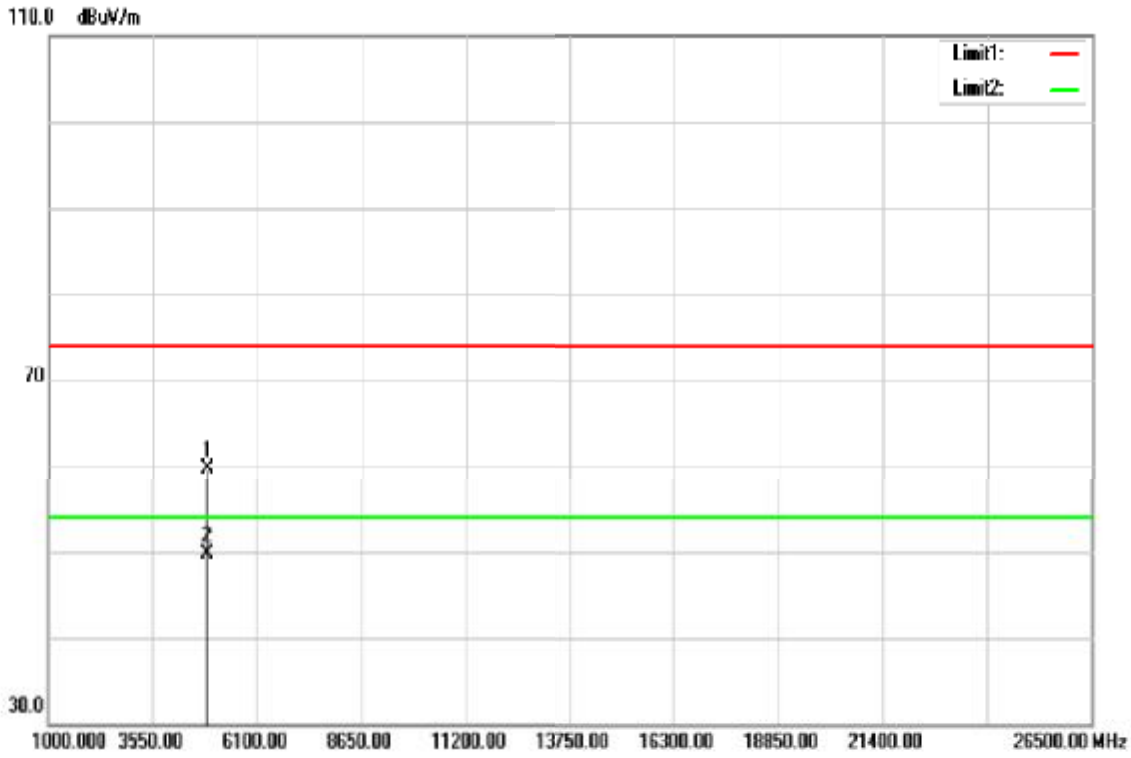


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4820.000	43.04	4.36	47.40	74.00	-26.60	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

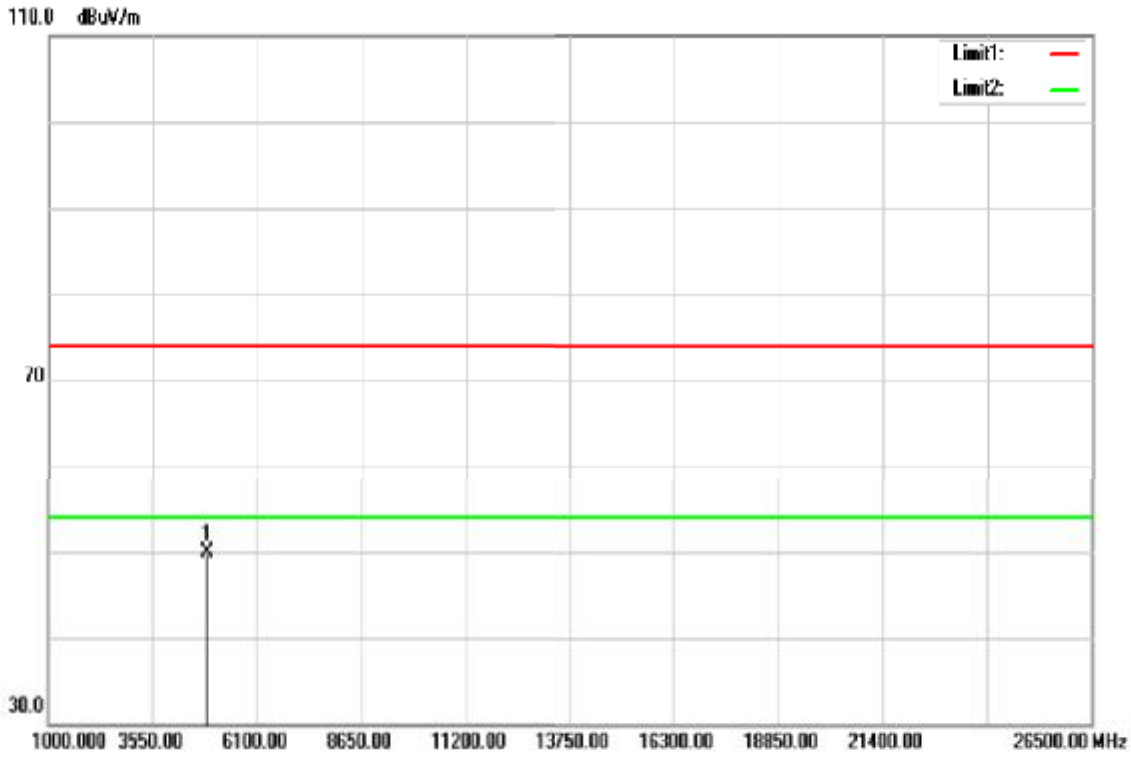


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	55.22	4.47	59.69	74.00	-14.31	peak
4876.000	45.24	4.47	49.71	54.00	-4.29	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

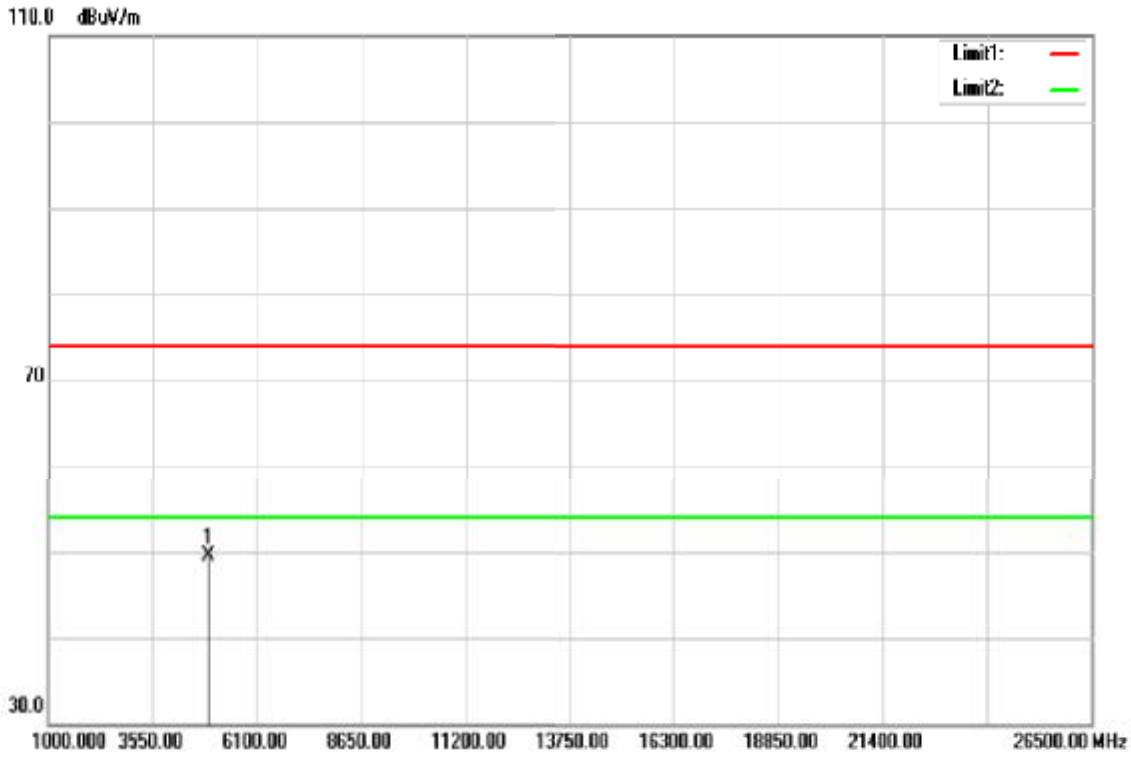


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	45.42	4.47	49.89	74.00	-24.11	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

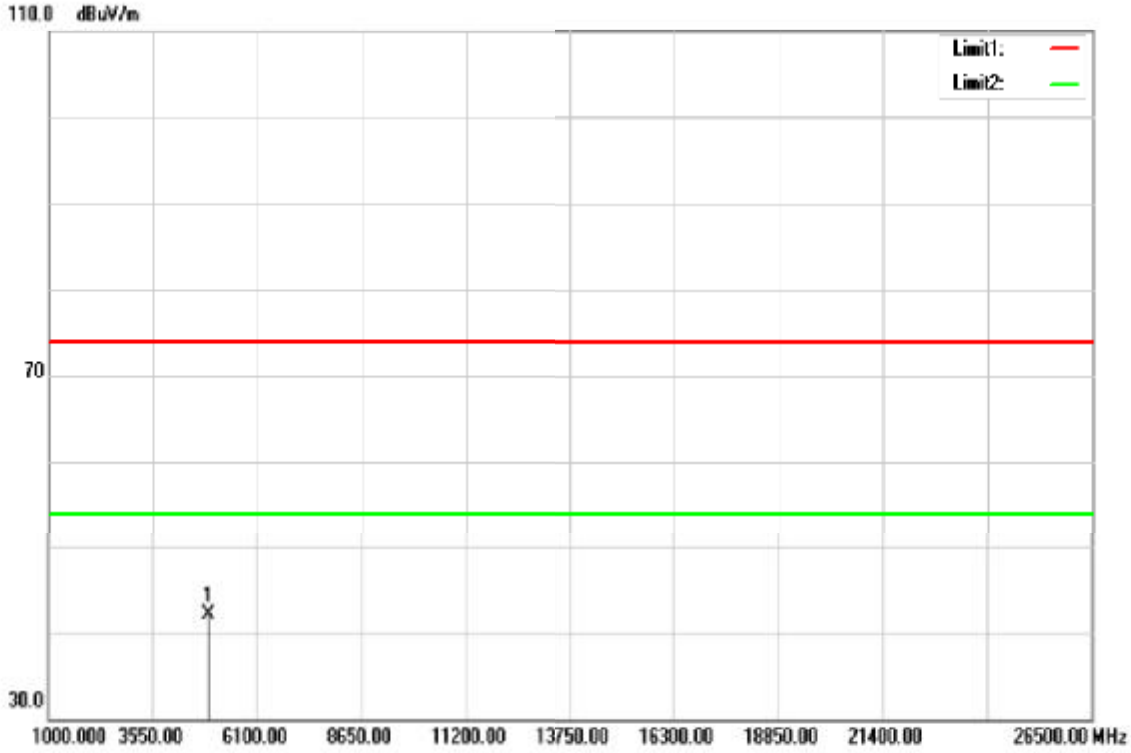


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.000	44.99	4.55	49.54	74.00	-24.46	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11g High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

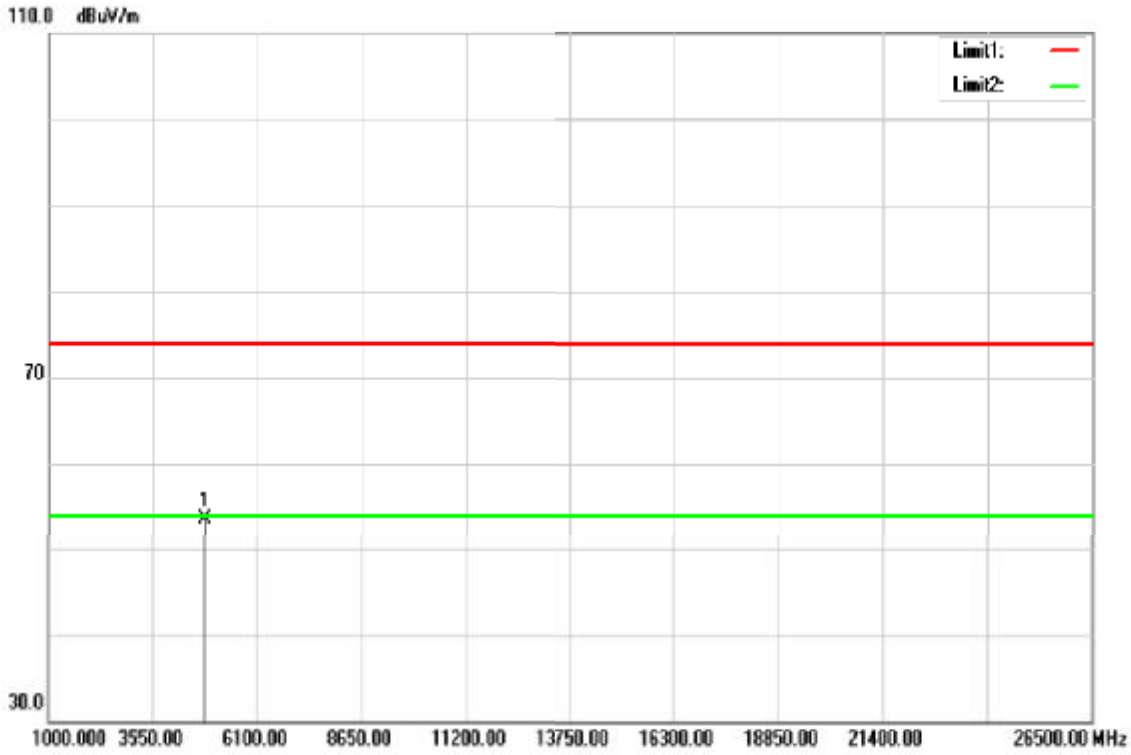


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.000	37.55	4.55	42.10	74.00	-31.90	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

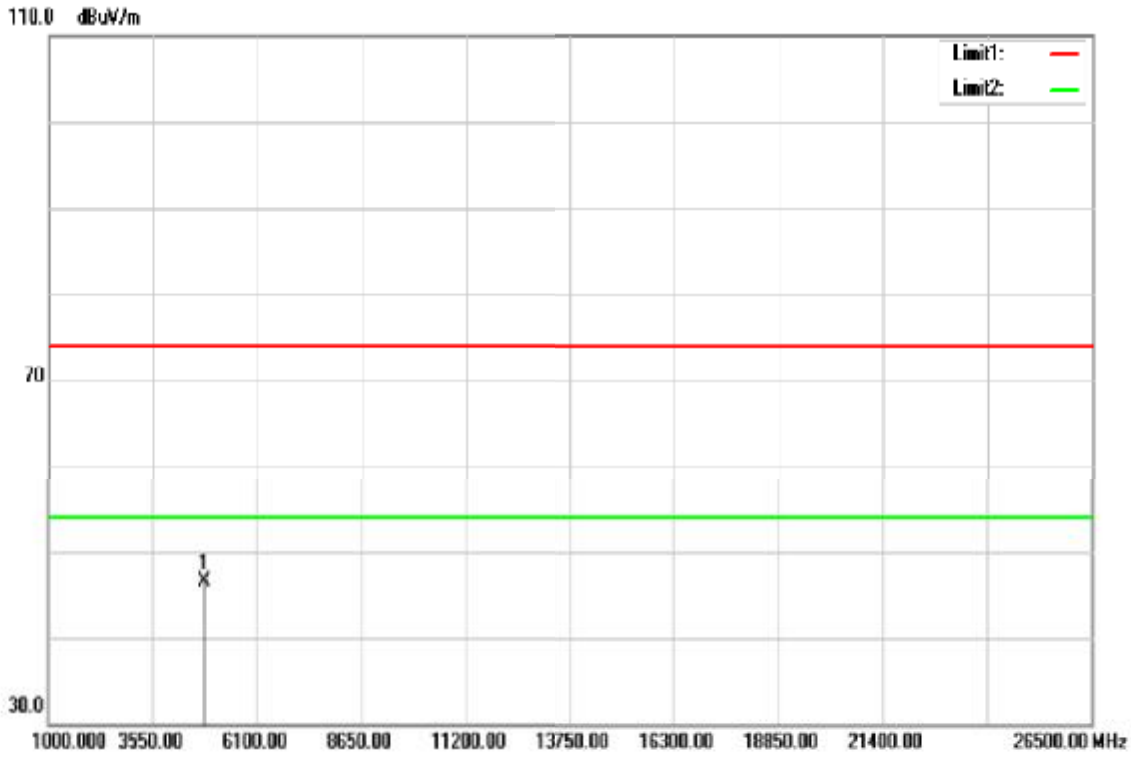


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	49.11	4.38	53.49	74.00	-20.51	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

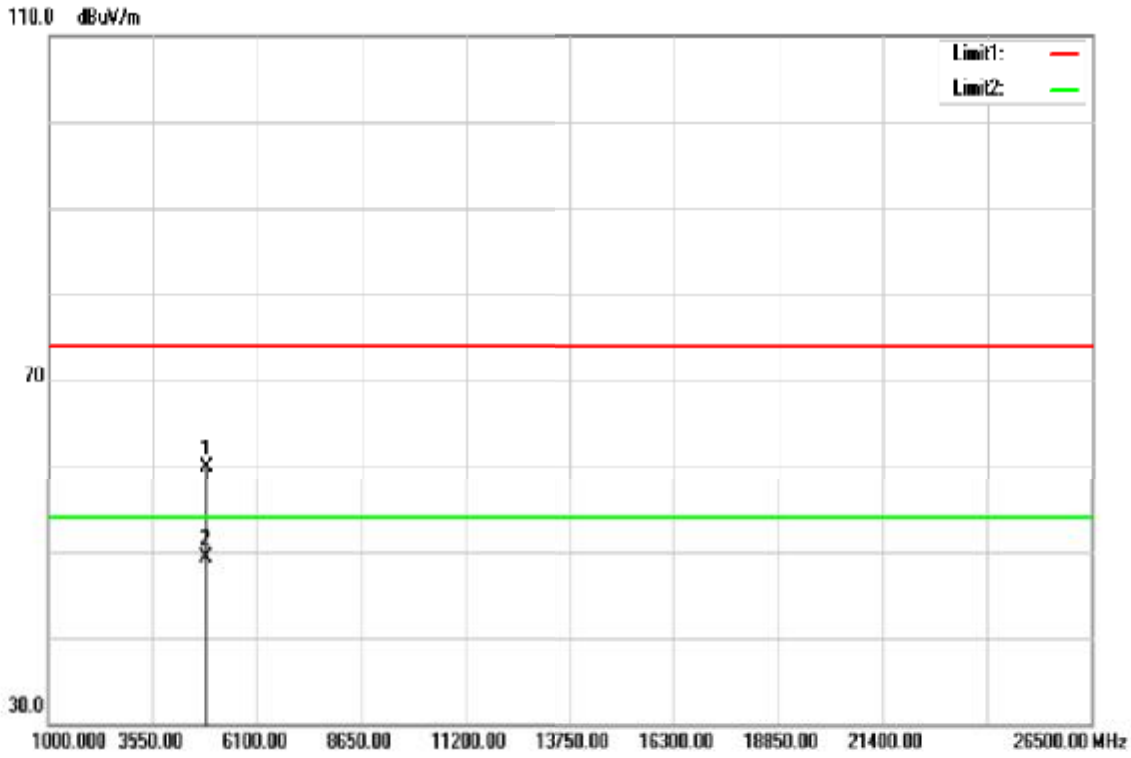


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4827.000	42.08	4.38	46.46	74.00	-27.54	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

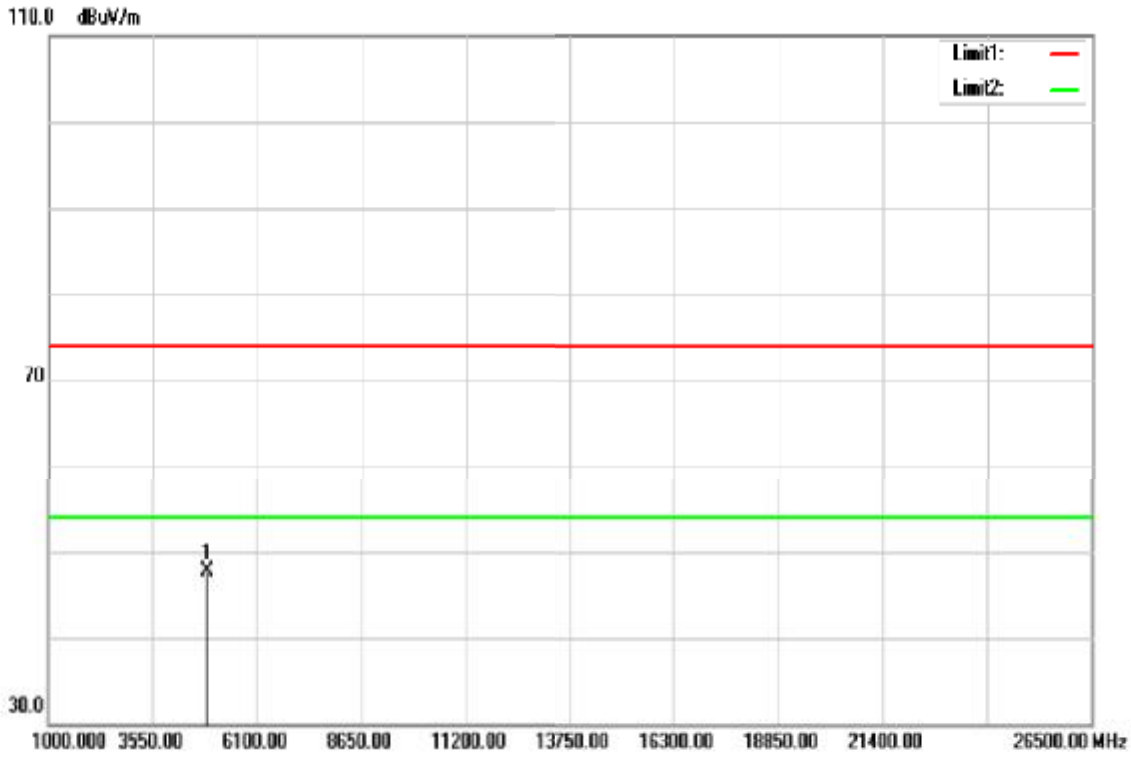


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4869.000	55.49	4.45	59.94	74.00	-14.06	peak
4869.000	44.80	4.45	49.25	54.00	-4.75	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

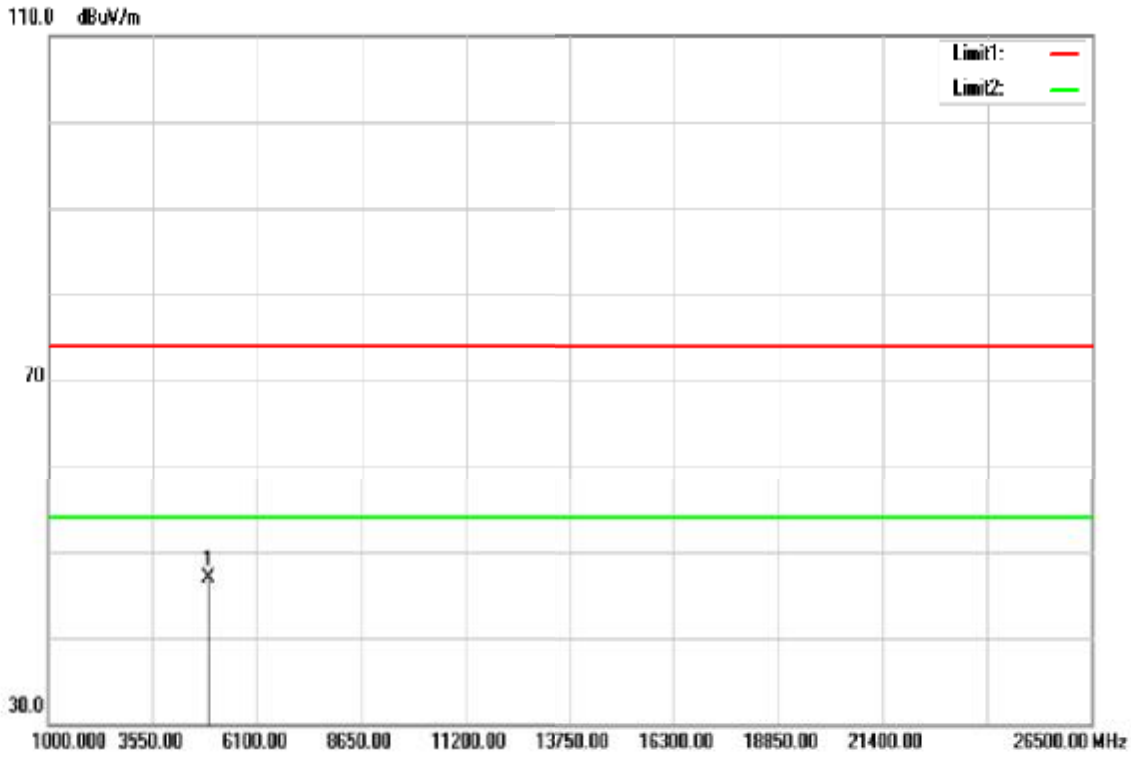


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	43.31	4.47	47.78	74.00	-26.22	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

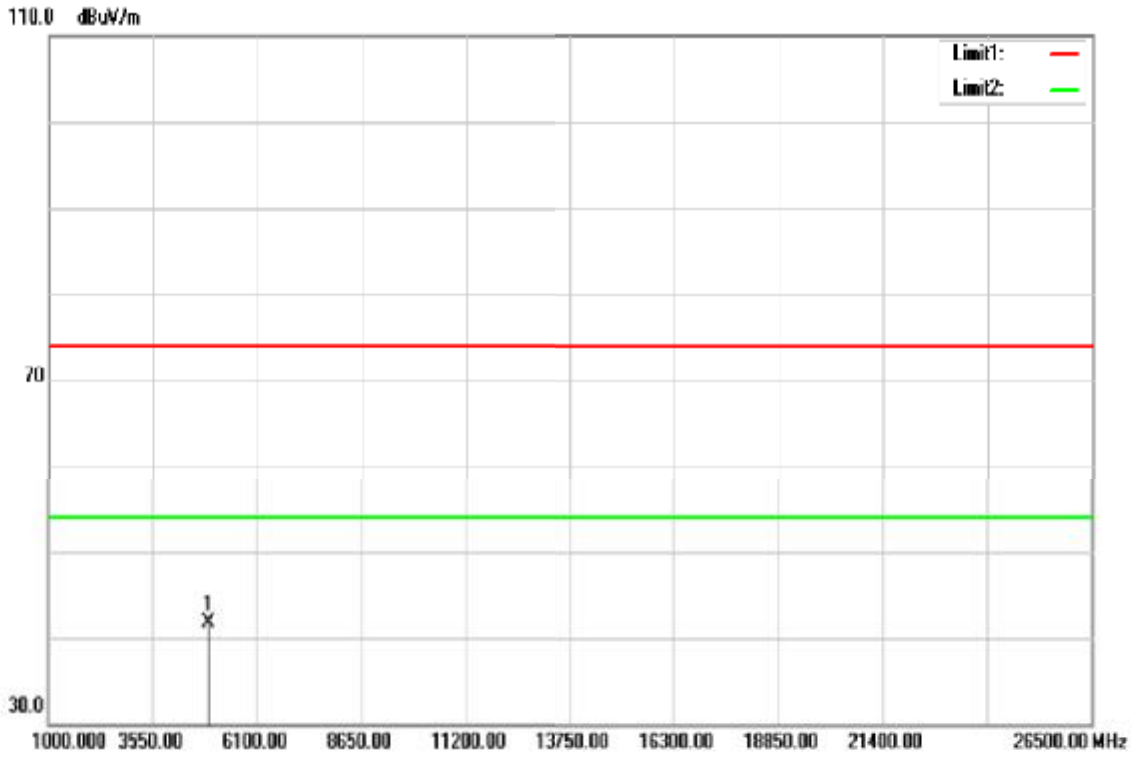


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4925.000	42.40	4.55	46.95	74.00	-27.05	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

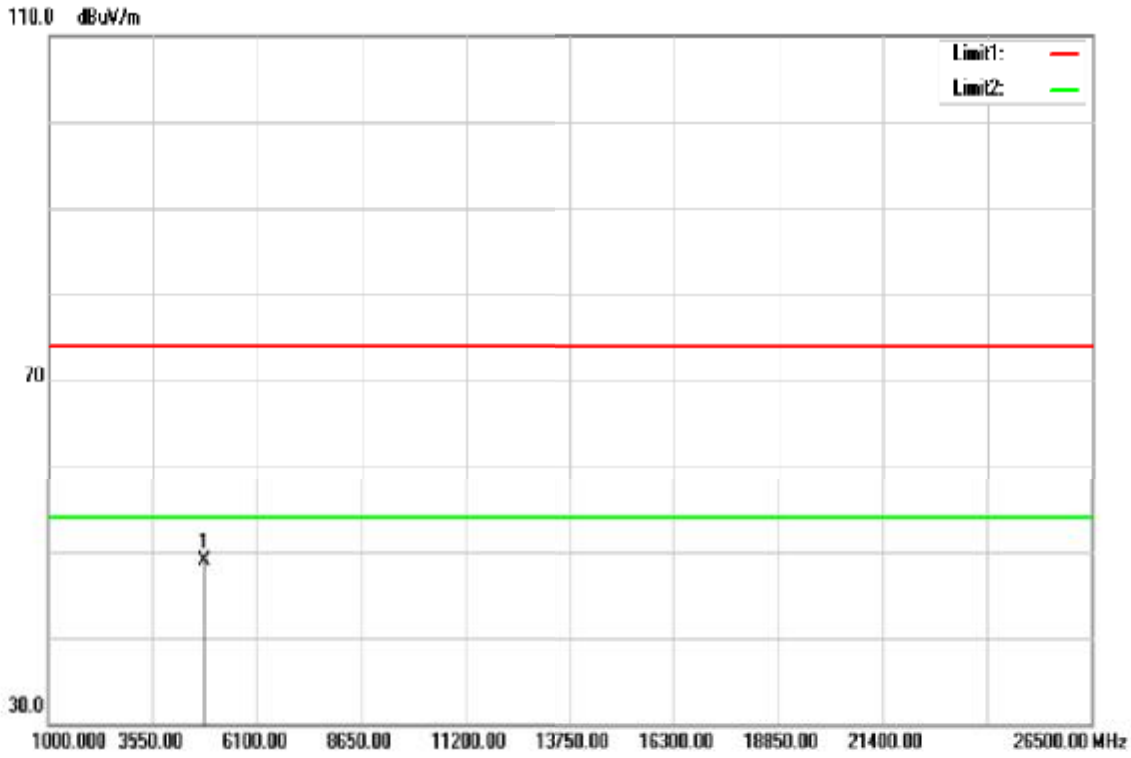


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4924.000	37.07	4.55	41.62	74.00	-32.38	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

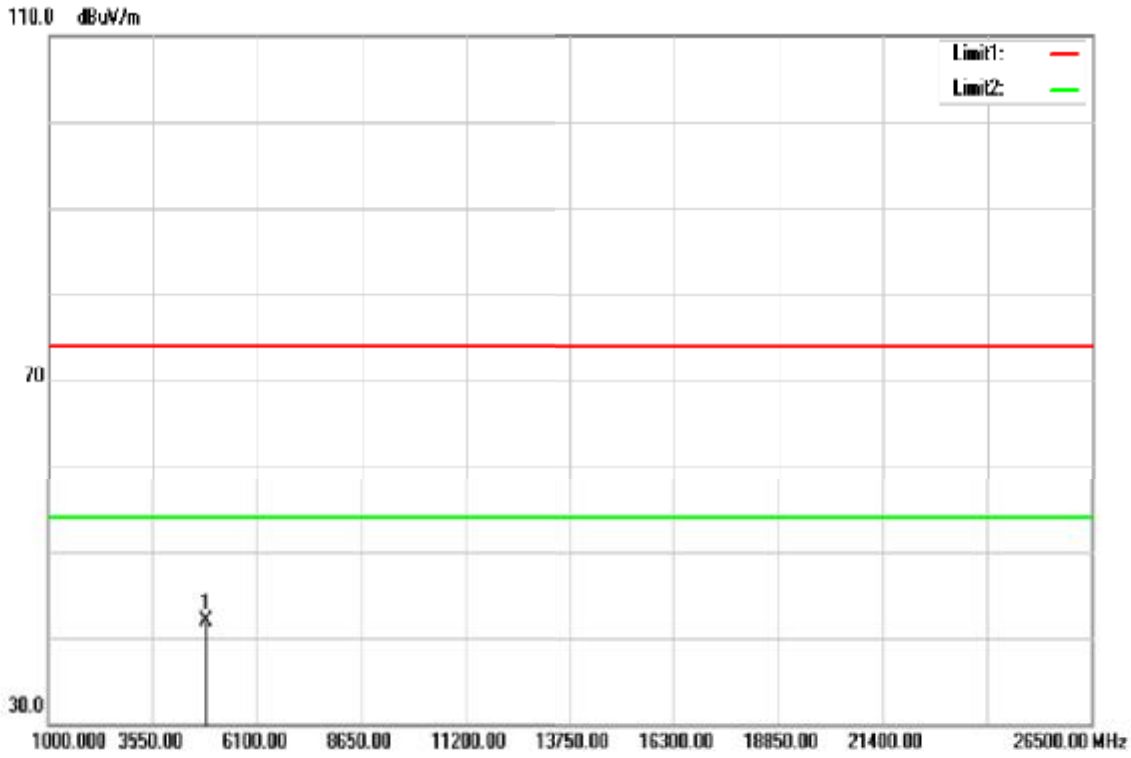


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4841.000	44.41	4.41	48.82	74.00	-25.18	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

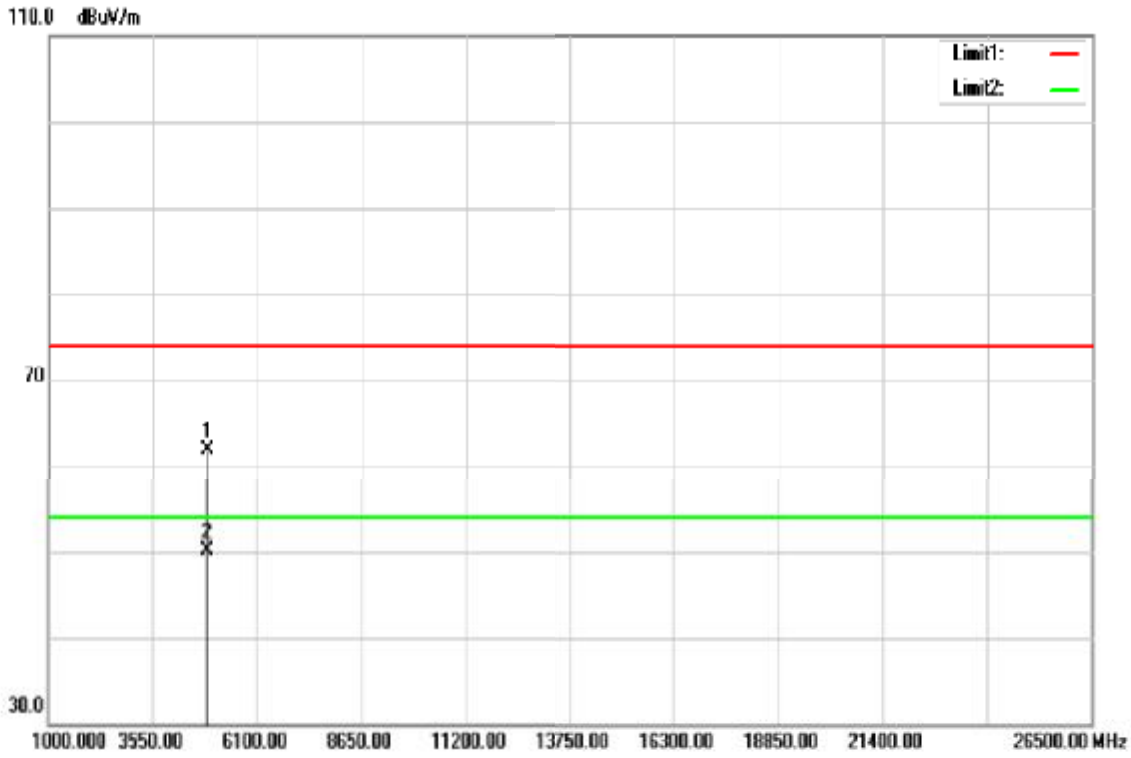


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4844.000	37.47	4.41	41.88	74.00	-32.12	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

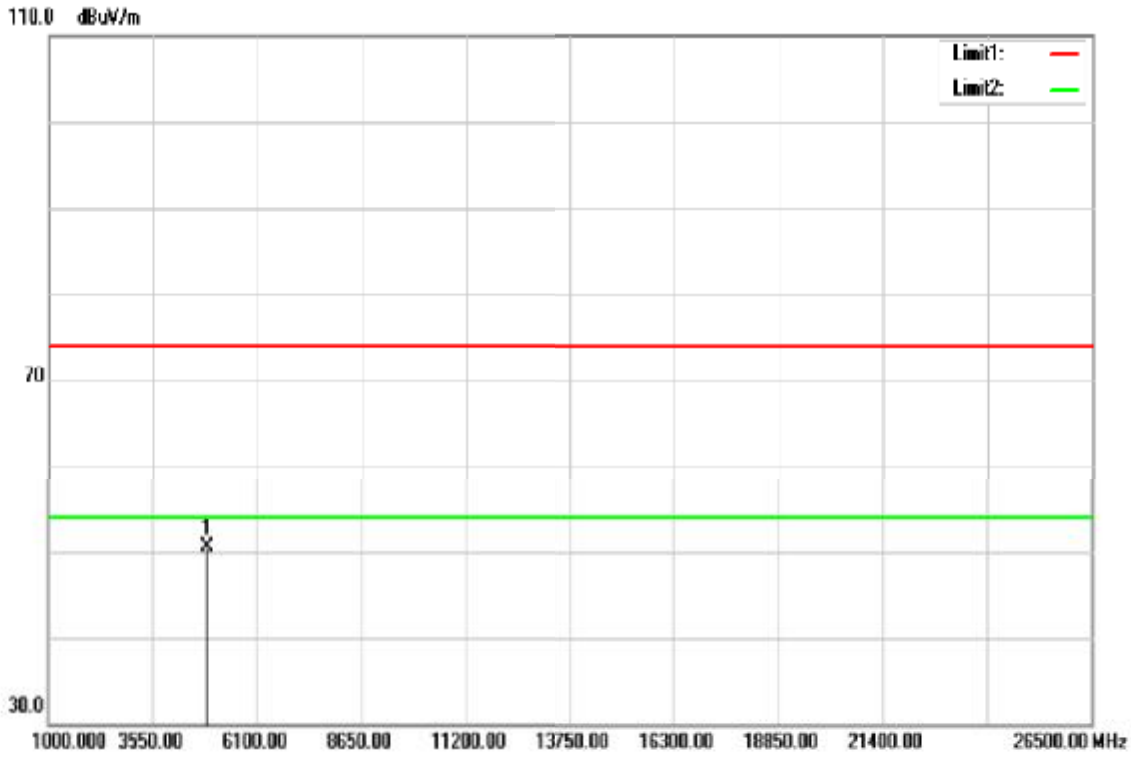


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	57.44	4.47	61.91	74.00	-12.09	peak
4876.000	45.71	4.47	50.18	54.00	-3.82	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

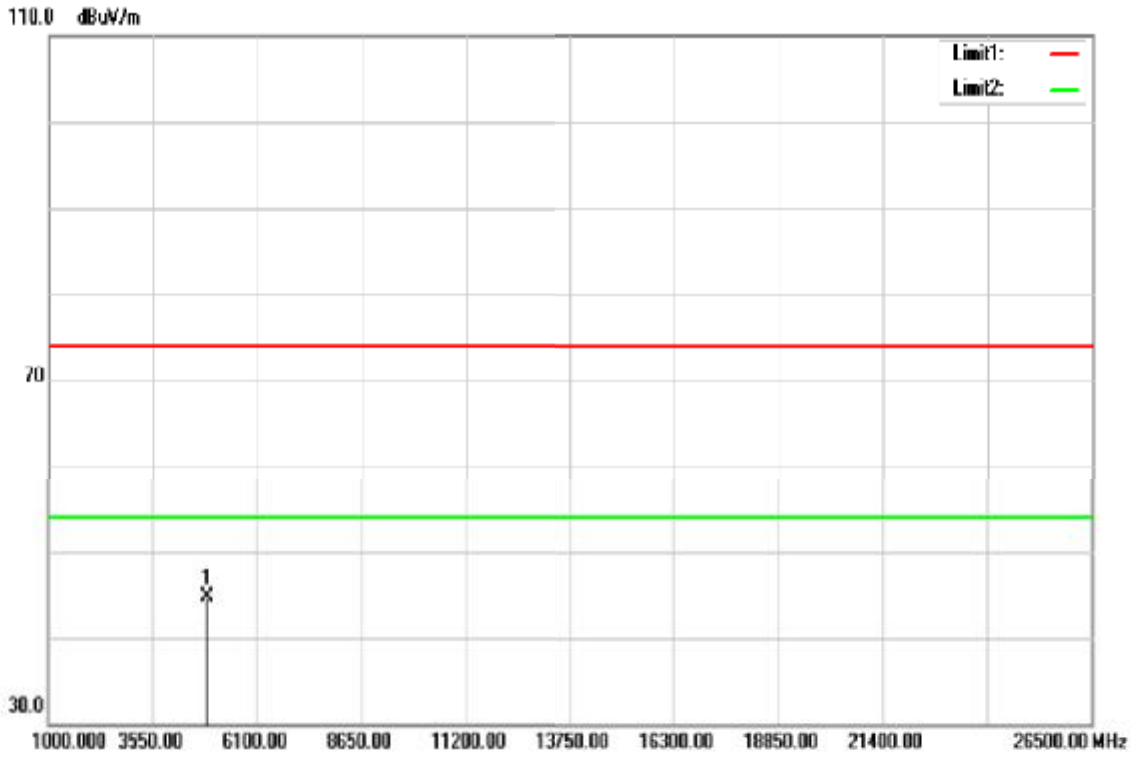


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4876.000	46.12	4.47	50.59	74.00	-23.41	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

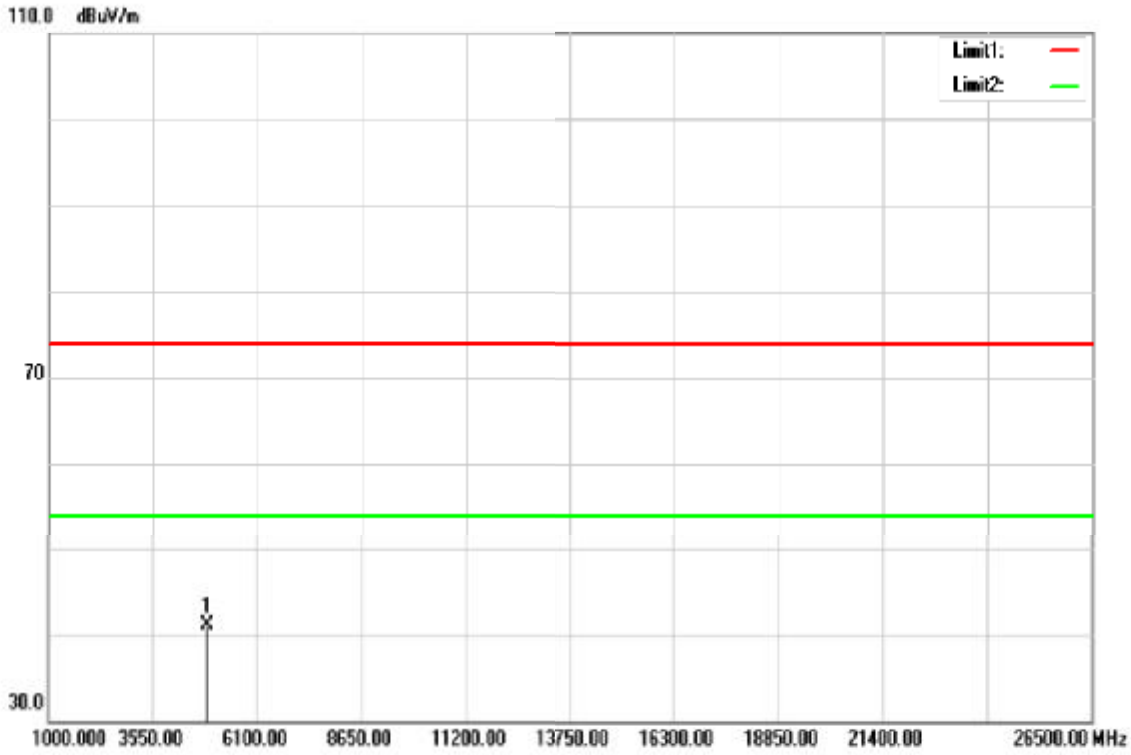


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4904.000	40.17	4.51	44.68	74.00	-29.32	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4904.000	36.53	4.51	41.04	74.00	-32.96	peak
N/A						

Remark:

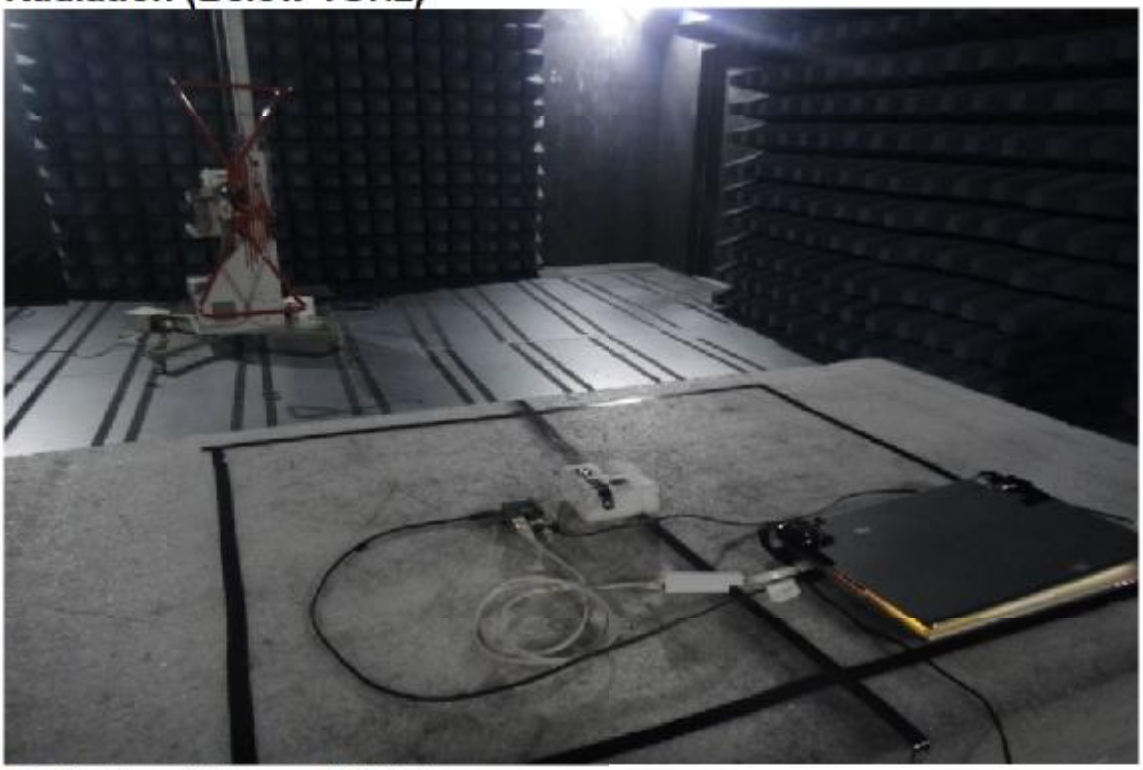
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

--End of Report--

APPENDIX-A Test Photo

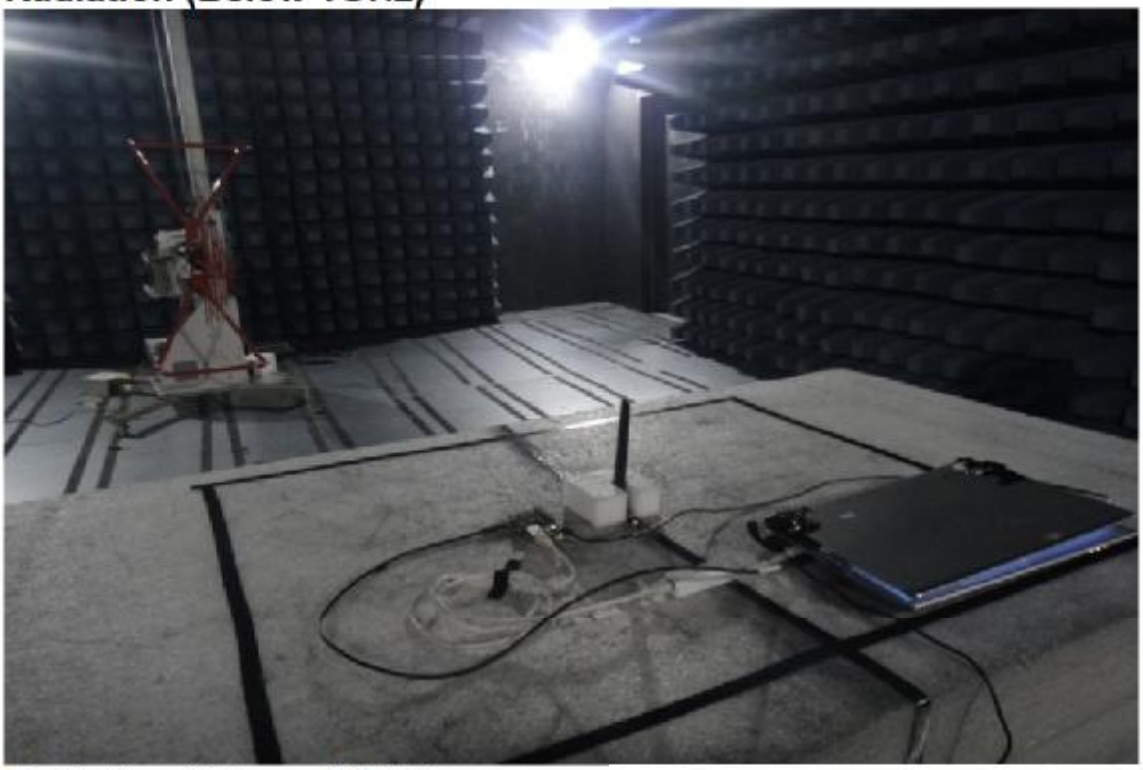
For PIFA Antenna

Radiation (Below 1GHz)



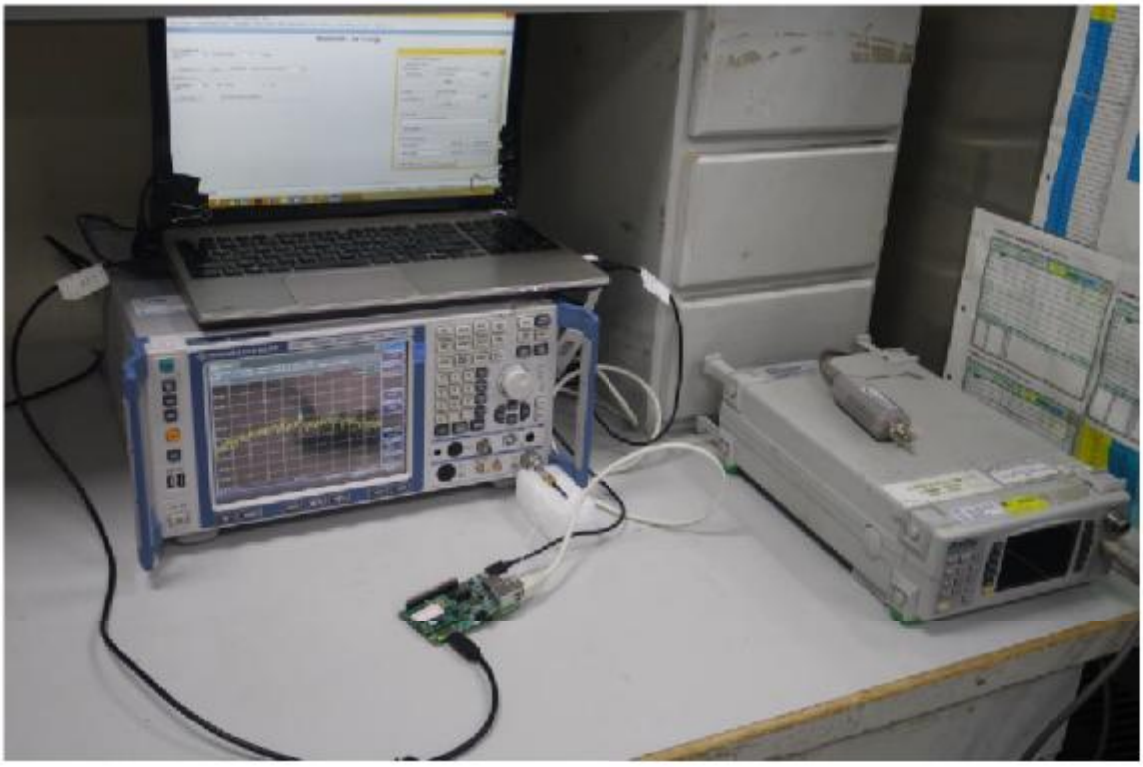
Radiation (Above 1GHz)

For Dipole Antenna
Radiation (Below 1GHz)



Radiation (Above 1GHz)

Conducted Emission Set Up Photo



Conduction

RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART E

Test Standard	**FCC Part 15.407**
Brand name	**TechNexion**
Applicant	**TechNexion Ltd.**
Product name	**WiFi+Bluetooth 4.1(HS) System on Module**
Model No.	**PIXI-9377**
Test Result	**Pass**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Sam Chuang
Manager

Reviewed by:

Jerry Chuang
Engineer

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 28, 2018	Initial Issue	ALL	May Lin
01	September 20, 2018	1. Revised EUT information、antenna information and test summary. 2. Remove "For PIFA Antenna". 3. Update KDB 937606 to KDB 414788. 4. Revised the test data and test result. 5. Modify the test mode frequency.	P.5, P.9, P.13, P.34-35 P.48, P.61, P.95, P.131-132, P.167-168, P.184-185	May Lin
02	September 27, 2018	1. Revised the worst mode of measurement.	P.11	May Lin

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Manufacturer	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Equipment	WiFi+Bluetooth 4.1(HS) System on Module
Model Name	PIXI-9377
Model Discrepancy	N/A
Received Date	June 27, 2018
Date of Test	July 13 ~ August 8, 2018
Power Supply	Power by host system
HW Version	A1
FW Version	A1
Output Power(W)	

Band	Mode	Frequency Range (MHz)	Output Power (W)
U-NII-1	IEEE 802.11a	5180 ~ 5240	0.0236
	IEEE 802.11n HT 20 MHz	5180 ~ 5240	0.0236
	IEEE 802.11n HT 40 MHz	5190 ~ 5230	0.0447
	IEEE 802.11ac VHT 80 MHz	5210	0.0048
U-NII-3	IEEE 802.11a	5745 ~ 5825	0.0187
	IEEE 802.11n HT 20 MHz	5745 ~ 5825	0.0209
	IEEE 802.11n HT 40 MHz	5755 ~ 5795	0.0376
	IEEE 802.11ac VHT 80 MHz	5775	0.0187

1.2 EUT CHANNEL INFORMATION

Frequency Range	**UNII-1**	
	IEEE 802.11a	5180 ~ 5240 MHz
	IEEE 802.11n HT 20 MHz	5180 ~ 5240 MHz
	IEEE 802.11n HT 40 MHz	5190 ~ 5230 MHz
	IEEE 802.11ac VHT 80 MHz	5210 MHz
	UNII-3	
	IEEE 802.11a	5745 ~ 5825 MHz
	IEEE 802.11n HT 20 MHz	5745 ~ 5825 MHz
	IEEE 802.11n HT 40 MHz	5755 ~ 5795 MHz
	IEEE 802.11ac VHT 80 MHz	5775 MHz
Modulation Type	1. IEEE 802.11a mode: OFDM 2. IEEE 802.11n HT 20 MHz mode: OFDM 3. IEEE 802.11n HT 40 MHz mode: OFDM 4. IEEE 802.11ac VHT 80 MHz mode: OFDM	

Remark:
Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ PIFA ☐ PCB ☒ Dipole ☐ Coils
Antenna Gain	

	Brand	P/N	Type	Peak Gain	Worst Mode
Antenna 1	TechNexion	VM2450-25523-OOX-180	PIFA	3dBi	X
Antenna 2	TechNexion	VM2450-ASSY1005	Dipole	6dBi	O

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark:
1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chuang	-
RF Conducted	Jerry Chuang	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	06/29/2018	06/28/2019
Power Meter	Anritsu	ML2495A	1012009	09/18/2017	09/17/2018
Power Seneor	Anritsu	MA2411B	1126148	02/06/2018	02/05/2019
Signal Analyzer	R&S	FSV 40	101073	10/02/2017	10/01/2018

3M 966 Chamber Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Bilog Antenna	Sunol Sciences	JB3	A030105	07/13/2018	07/12/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	07/31/2017	07/30/2018
Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	07/31/2017	07/30/2018
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	02/08/2018	02/07/2019
Double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	08/25/2017	08/24/2018
High Pass Filters	MICRO TRONICS	HPM13195	003	05/14/2018	05/13/2019
Horn Antenna	ETS LINDGREN	3116	00026370	01/04/2018	01/03/2019
Loop Ant	COM-POWER	AL-130	121051	03/21/2018	03/20/2019
Pre-Amplifier	EMEC	EM330	060609	06/29/2018	06/28/2019
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	06/21/2018	06/20/2019
Pre-Amplifier	HP	8449B	3008A00965	06/29/2018	06/28/2019
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/31/2018	05/30/2019
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R

AC Conducted Emissions Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
LISN	R&S	ENV216	101054	02/06/2018	02/05/2019
LISN	SCHWARZBECK	NSLK 8127	8127-541	02/09/2018	02/08/2019
EMI Test Receiver	R&S	ESCI	101203	11/02/2017	11/01/2018
CABLE	EMCI	CFD300-NL	CERF	07/03/2018	07/02/2019

Remark: *Each piece of equipment is scheduled for calibration once a year.*

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(K)	Toshiba	voyager	ZD 154034s	N/A
2	NB	Lenovo	TP00056A	R33B65	PD97260HU

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.407, KDB 789033 D02.

2. TEST SUMMERY

FCC Standard Sec.	Chapter	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207	4.1	AC Conducted Emission	Pass
15.403(i)	4.2	26dB Bandwidth	Pass
15.407(e)	4.2	6dB Bandwidth	Pass
2.1049	4.2	Occupied Bandwidth (99%)	Pass
15.407(a)	4.3	Output Power Measurement	Pass
15.407(a)	4.4	Power Spectral Density	Pass
15.407(b)	4.5	Radiation Band Edge	Pass
15.407(b)	4.5	Radiation Spurious Emission	Pass
15.407(g)	4.6	Frequency Stability	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	1. IEEE 802.11a mode: 6Mbps 2. IEEE 802.11n HT 20 MHz mode: MCS0 3. IEEE 802.11n HT 40 MHz mode: MCS0 4. IEEE 802.11ac VHT 80 MHz mode: MCS0
Operating Frequency Range & Number of Channels	

	Mode	Frequency Range (MHz)	Number of Channels
U-NII-1	IEEE 802.11a	5180 ~ 5240	4 Channels
	IEEE 802.11n HT 20 MHz	5180 ~ 5240	4 Channels
	IEEE 802.11n HT 40 MHz	5190 ~ 5230	2 Channels
	IEEE 802.11ac VHT 80 MHz	5210	1 Channels
U-NII-3	IEEE 802.11a	5745 ~ 5825	5 Channels
	IEEE 802.11n HT 20 MHz	5745 ~ 5825	5 Channels
	IEEE 802.11n HT 40 MHz	5755 ~ 5795	2 Channels
	IEEE 802.11ac VHT 80 MHz	5775	1 Channels

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. Covered modes are test reduction modes. The output powers on the covered modes are equal to or less than the mode referenced and use the same module

3.2 THE WORST MODE OF MEASUREMENT

For PIFA Antenna

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☒ Horizontal ☐ Vertical

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane and Horizontal) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

For Dipole Antenna

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☐ Horizontal ☒ Vertical

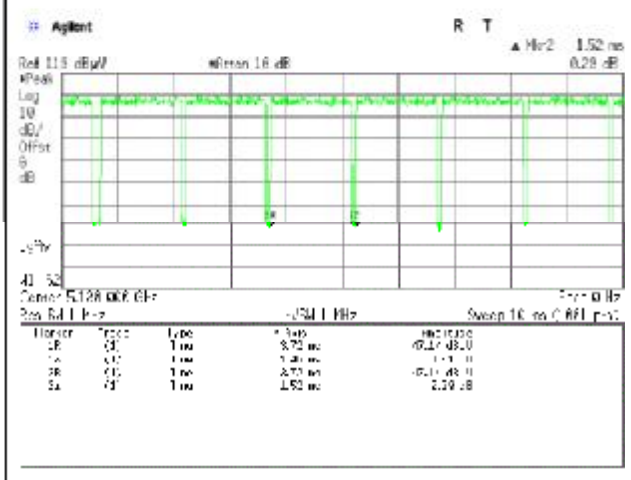
Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane and Vertical) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

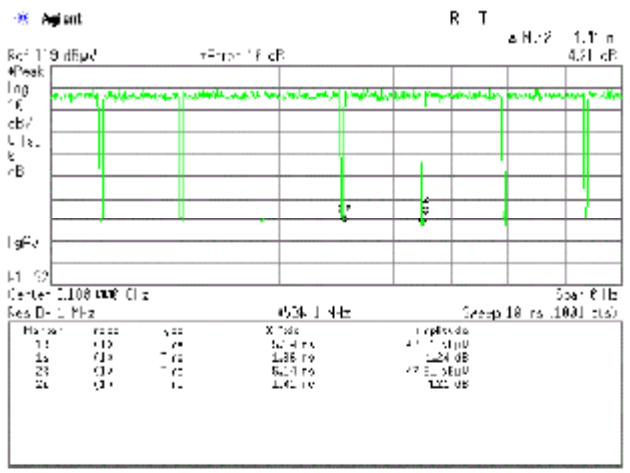
3.3 EUT DUTY CYCLE

Duty Cycle				
Configuration	TX ON (ms)	TX ALL (ms)	Duty Cycle (%)	Duty Factor(dB)
802.11a	1.4600	1.5200	96.05%	-0.17
802.11n HT20	1.3600	1.4100	96.45%	-0.16
802.11n HT40	0.7000	0.7400	94.59%	-0.24
802.11ac VHT80	0.3600	0.4000	90.00%	-0.46

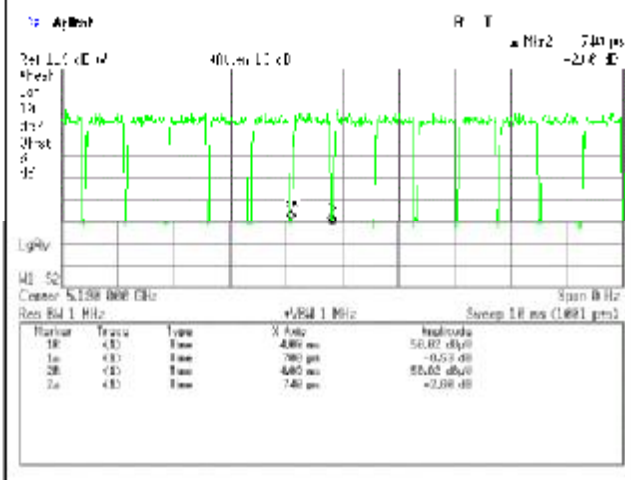
802.11a



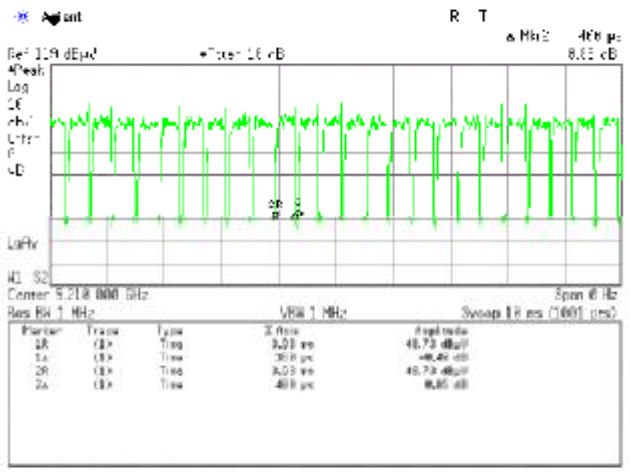
802.11n HT20



802.11n HT40



802.11ac VHT80



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

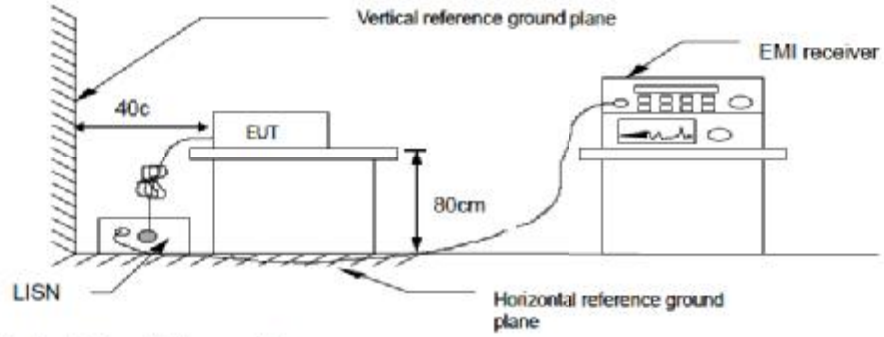
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup

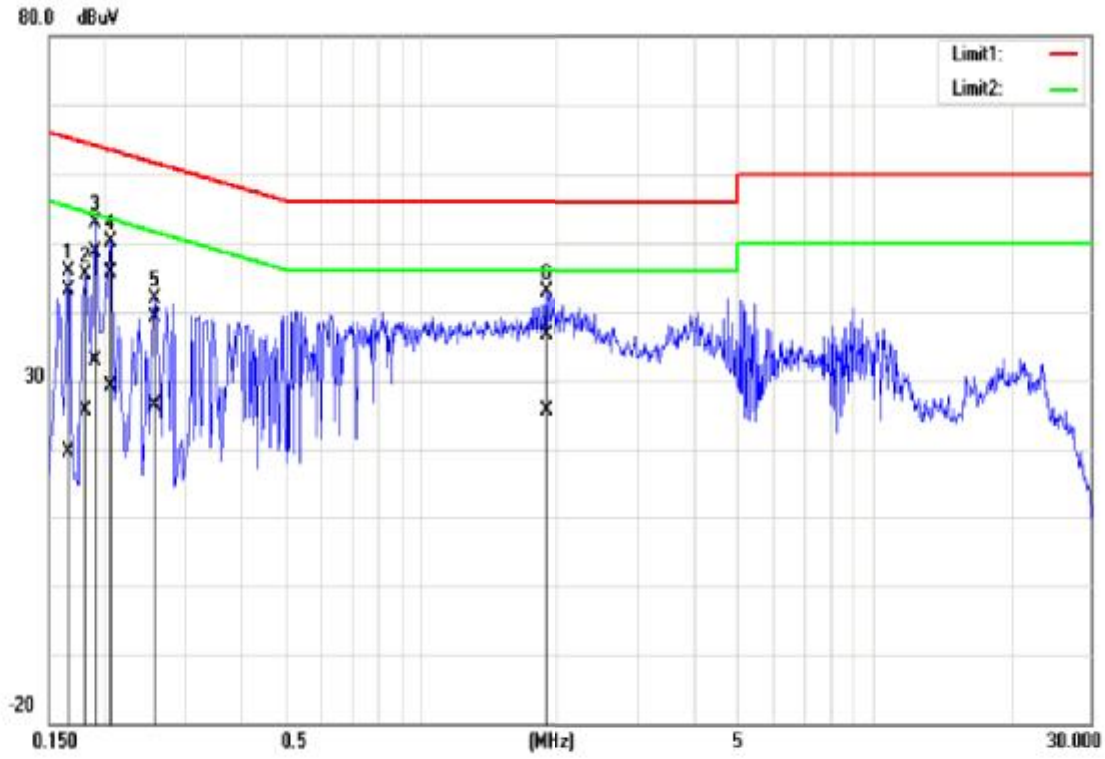


4.1.4 Test Result

Pass.

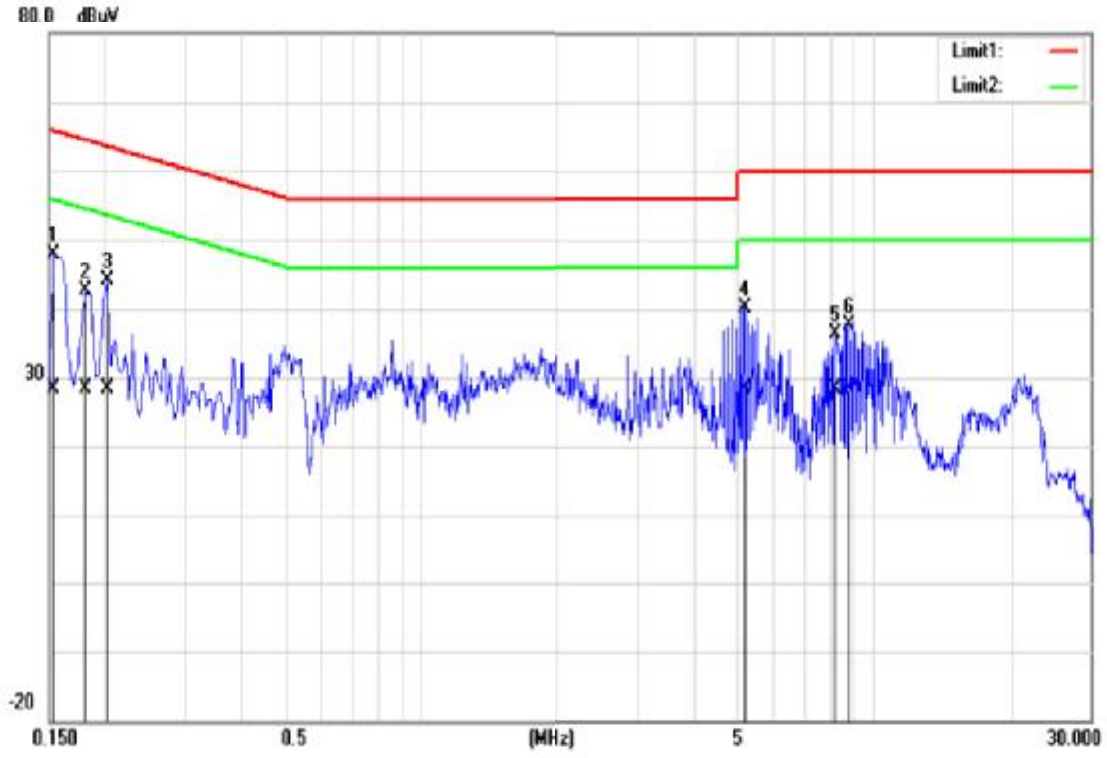
Test Data

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Line	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	43.06	19.41	0.11	43.17	19.52	65.16	55.16	-21.99	-35.64	Pass
0.1820	45.33	25.48	0.11	45.44	25.59	64.39	54.39	-18.95	-28.80	Pass
0.1900	48.46	32.72	0.11	48.57	32.83	64.04	54.04	-15.47	-21.21	Pass
0.2060	45.57	28.98	0.11	45.68	29.09	63.37	53.37	-17.69	-24.28	Pass
0.2580	39.04	26.23	0.11	39.15	26.34	61.50	51.50	-22.35	-25.16	Pass
1.8940	36.51	25.54	0.15	36.66	25.69	56.00	46.00	-19.34	-20.31	Pass

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Neutral	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBu)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
1.8940	31.03	22.97	0.16	31.19	23.13	56.00	46.00	-24.81	-22.87	Pass
0.1825	40.91	28.44	0.13	41.04	28.57	64.37	54.37	-23.33	-25.80	Pass
0.2007	40.02	26.02	0.13	40.15	26.15	63.58	53.58	-23.43	-27.43	Pass
5.1660	39.14	35.87	0.22	39.36	36.09	60.00	50.00	-20.64	-13.91	Pass
8.2300	34.97	30.49	0.27	35.24	30.76	60.00	50.00	-24.76	-19.24	Pass
8.7020	35.42	26.13	0.28	35.70	26.41	60.00	50.00	-24.30	-23.59	Pass

4.2 26dB BANDWIDTH, 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

26 dB Bandwidth : For reporting purposes only.

6 dB Bandwidth : Least 500kHz.

Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 789033 D02 Section C, D, and ANSI 63.10:2013 clause 6.9.2,

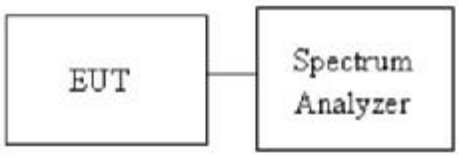
1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1

   (1) BW=20MHz : SA set RBW = 300kHz, VBW = 1MHz and Detector = Peak, to measurement 26 dB Bandwidth and 99% Bandwidth

   (2) BW=40MHz : SA set RBW = 1MHz, VBW = 3MHz and Detector = Peak, to measurement 26 dB Bandwidth and 99% Bandwidth

   (3) BW=80MHz : SA set RBW = 1MHz, VBW = 3MHz and Detector = Peak, to measurement 26 dB Bandwidth and 99% Bandwidth
4. UNII-3, SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth and 99% Bandwidth
5. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
6. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup



4.2.4 Test Result

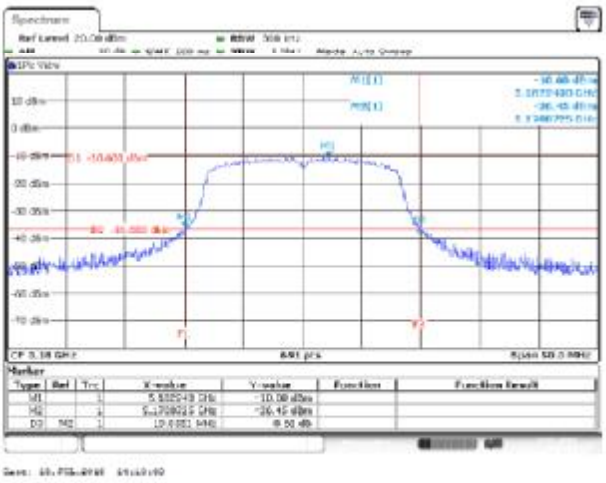
UNII-1 5150-5250 MHz			
Test mode: IEEE 802.11a mode			
Channel	Frequency (MHz)	OBW (99%) (MHz)	26dB BW (MHz)
Low	5180	16.2807	19.8551
Mid	5220	16.2807	19.8551
High	5240	16.3531	19.9275
Test mode: IEEE 802.11n HT20 mode			
Channel	Frequency (MHz)	OBW (99%) (MHz)	26dB BW (MHz)
Low	5180	17.3661	19.682
Mid	5220	17.3661	19.247
High	5240	17.3661	19.247
Test mode: IEEE 802.11n HT40 mode			
Channel	Frequency (MHz)	OBW (99%) (MHz)	26dB BW (MHz)
Low	5190	36.0057	39.02
High	5230	35.8900	39.13
Test mode: IEEE 802.11ac VHT80 mode			
Channel	Frequency (MHz)	OBW (99%) (MHz)	26dB BW (MHz)
Mid	5210	75.0217	79.88

UNII-3 5725-5825MHz			
Test mode: IEEE 802.11a mode			
Channel	**Frequency (MHz)**	**OBW(99%) (MHz)**	**6dB BW (MHz)**
Low	5745	16.2807	15.1739
Mid	5785	16.2807	15.1739
High	5825	16.2807	15.1739
Test mode: IEEE 802.11n HT20 mode			
Channel	**Frequency (MHz)**	**OBW(99%) (MHz)**	**6dB BW (MHz)**
Low	5745	17.4384	15.1739
Mid	5785	17.3661	15.087
High	5825	17.4384	15.1304
Test mode: IEEE 802.11n HT40 mode			
Channel	**Frequency (MHz)**	**OBW(99%) (MHz)**	**6dB BW (MHz)**
Low	5755	36.0057	35.13
High	5795	37.6266	35.13
Test mode: IEEE 802.11ac VHT80 mode			
Channel	**Frequency (MHz)**	**OBW(99%) (MHz)**	**6dB BW (MHz)**
Mid	5775	75.4848	75.13

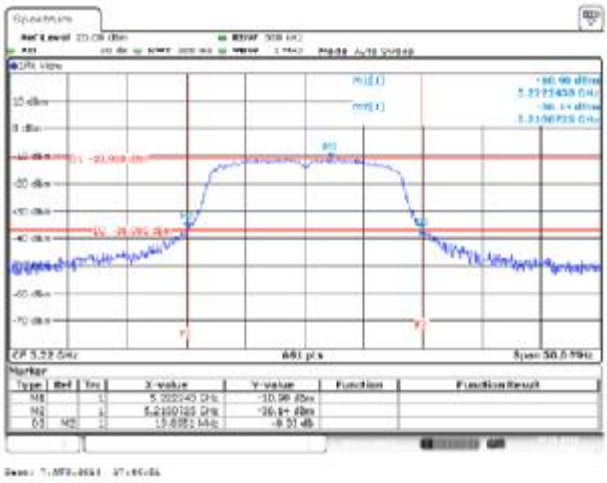
Test Data (26dB BANDWIDTH)

UNII-1 IEEE 802.11a mode

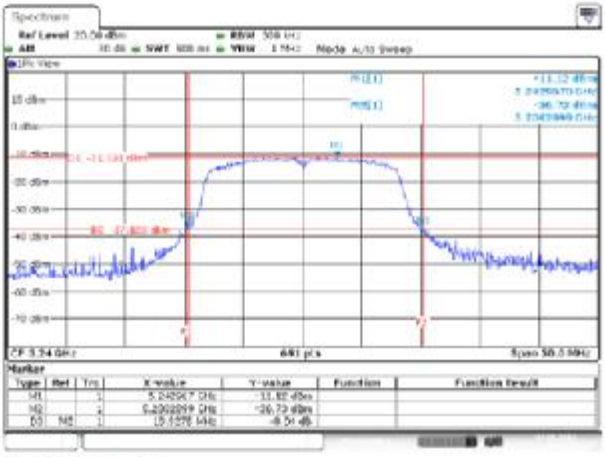
Low CH

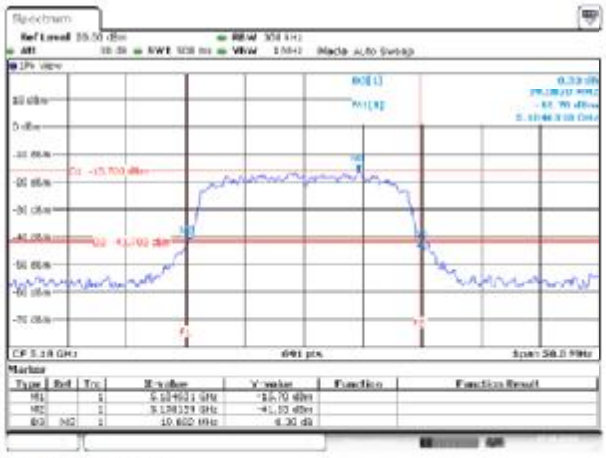
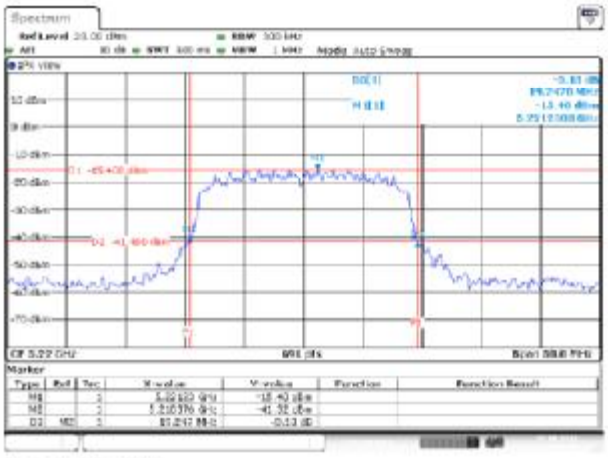
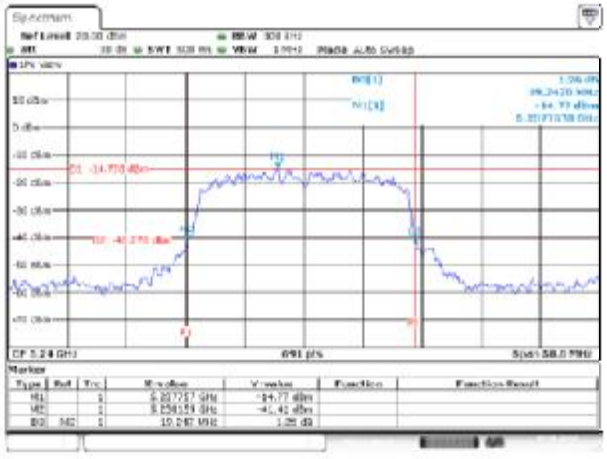


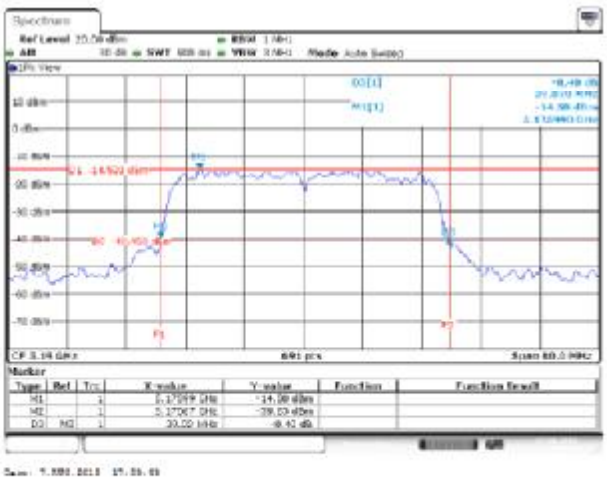
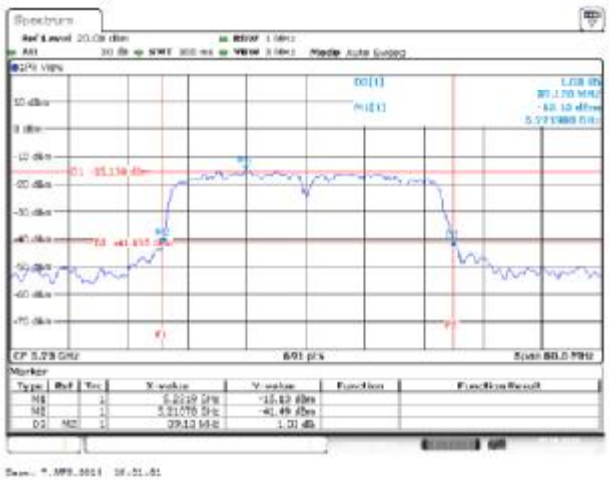
Mid CH

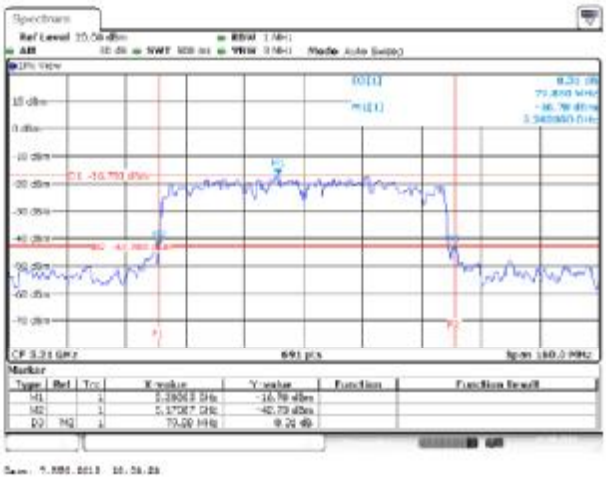


High CH

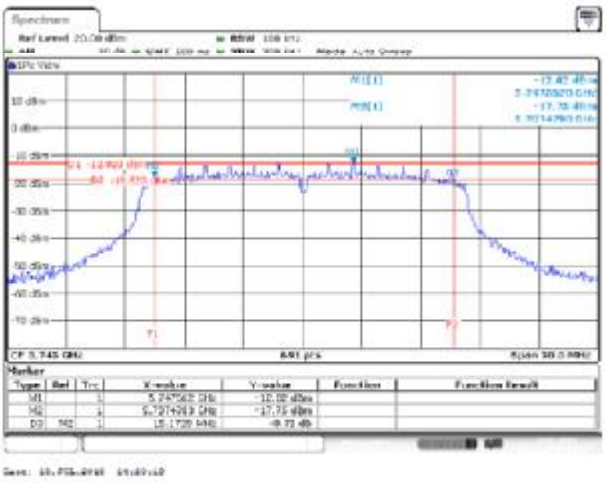
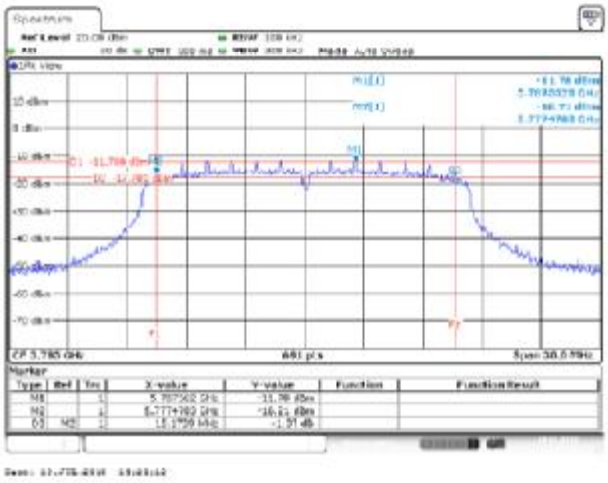
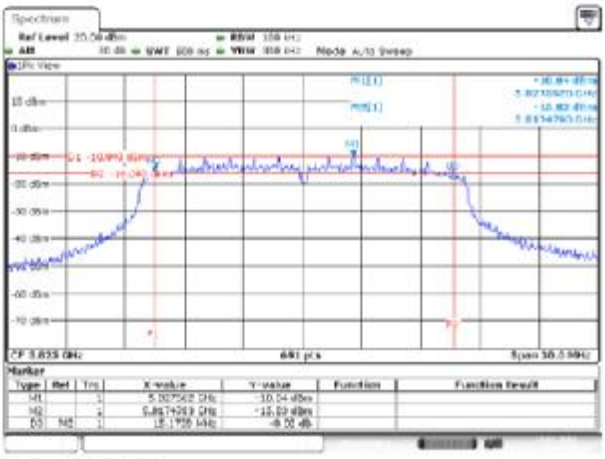


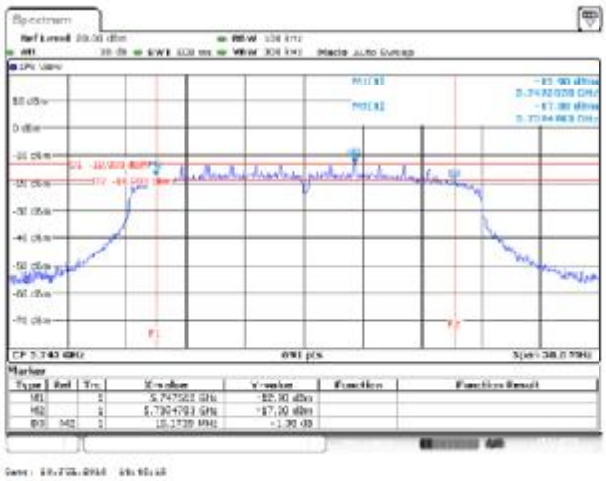
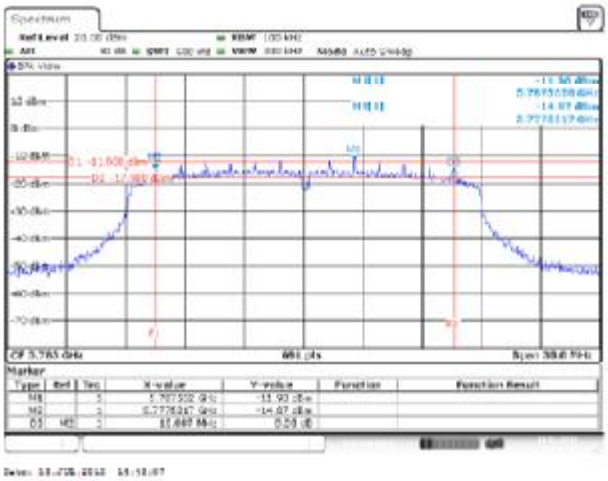
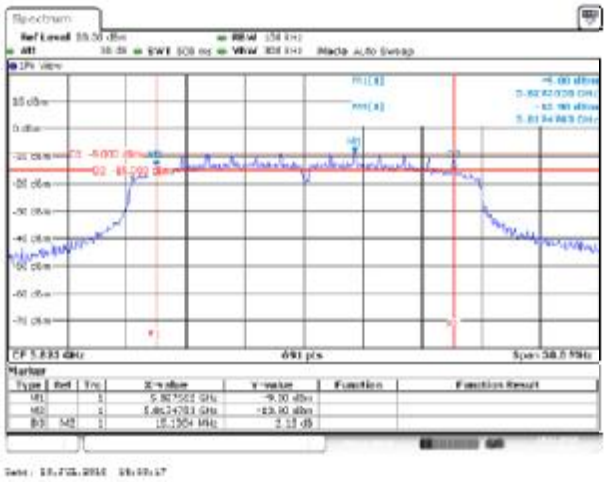
UNII-1 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

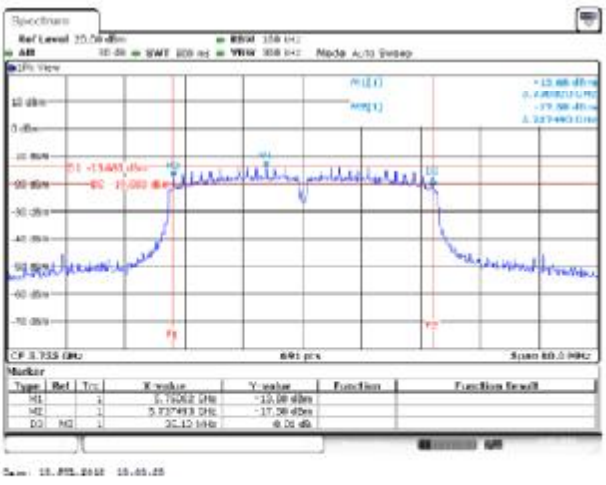
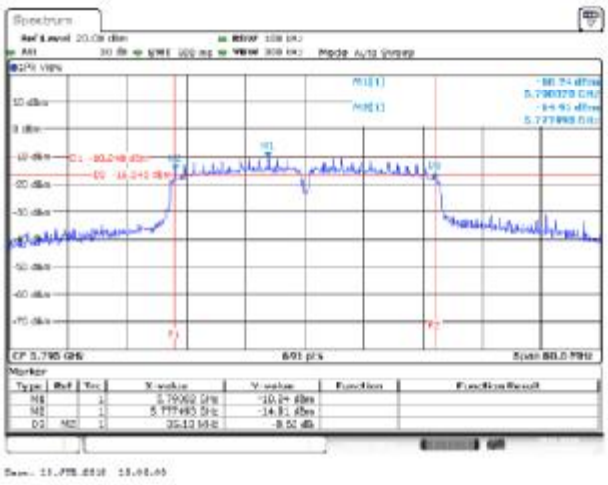
UNII-1 IEEE 802.11n HT40 mode	
Low CH	High CH
	

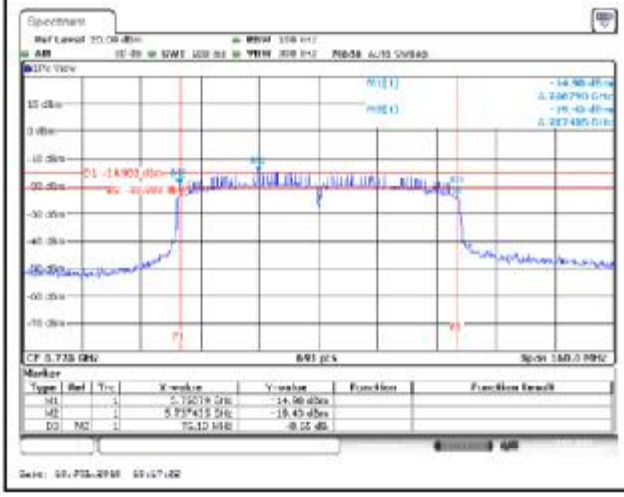
UNII-1 IEEE 802.11ac VHT80 mode
Mid CH


Test Data (6dB BANDWIDTH)

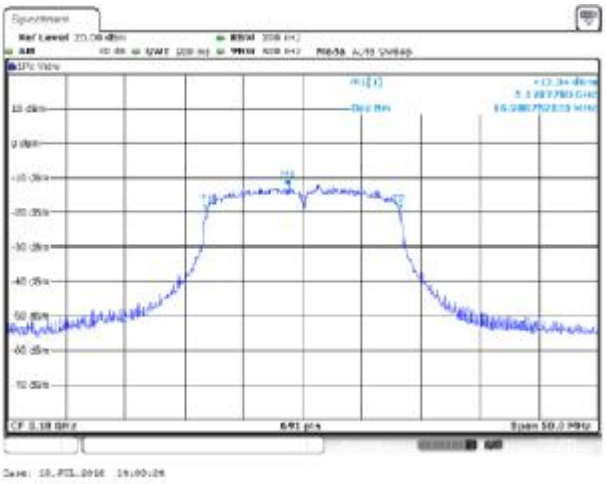
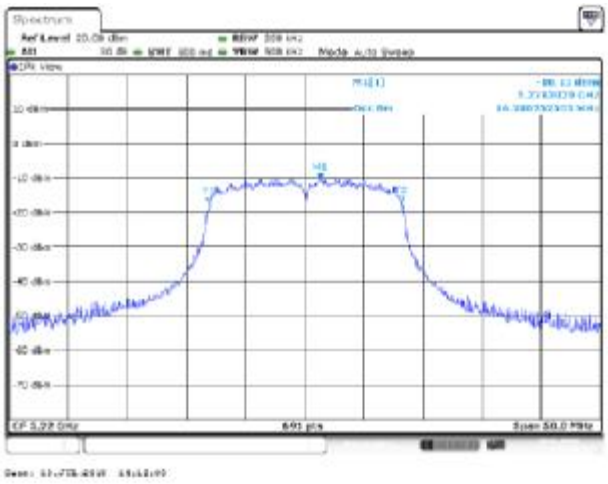
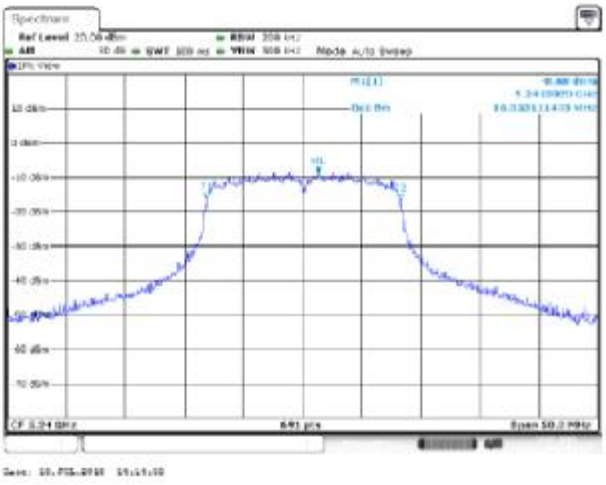
UNII-3 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

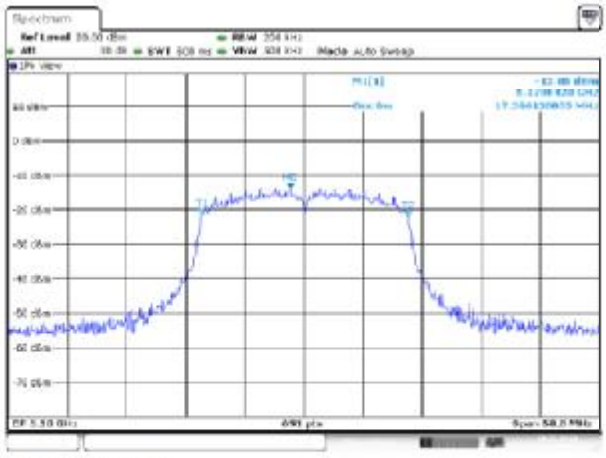
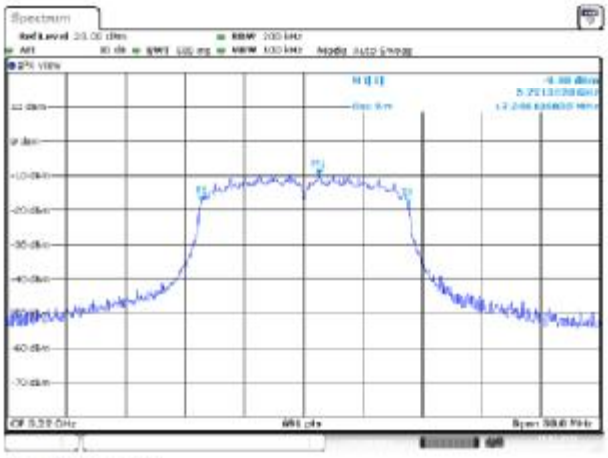
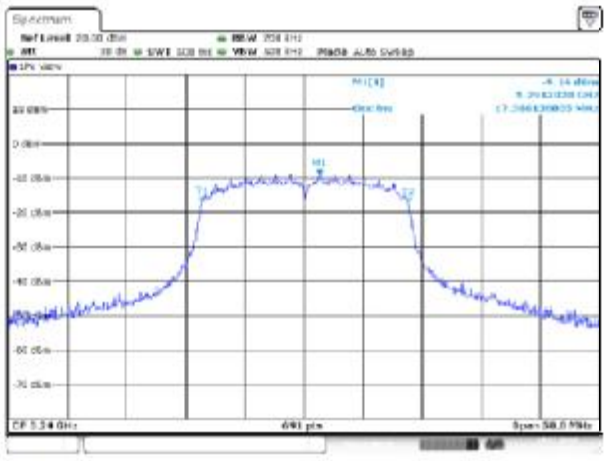
UNII-3 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

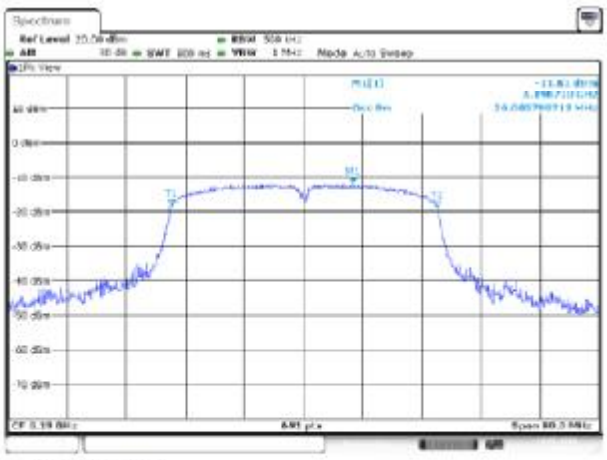
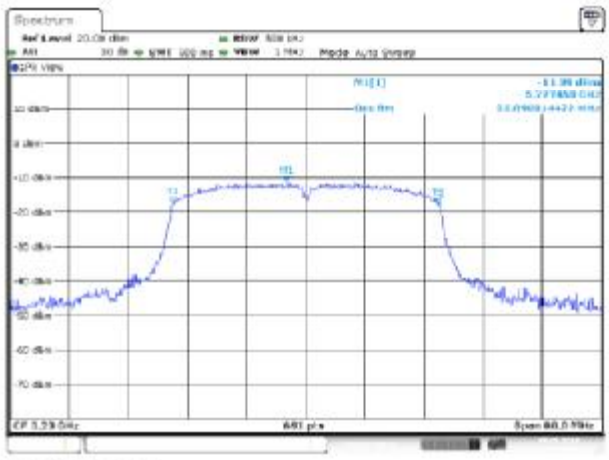
UNII-3 IEEE 802.11n HT40 mode	
Low CH	High CH
	

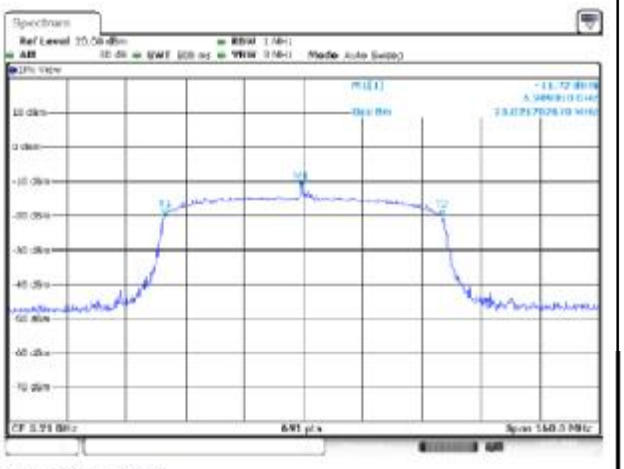
UNII-3 IEEE 802.11ac VHT80 mode	
Mid CH	
	

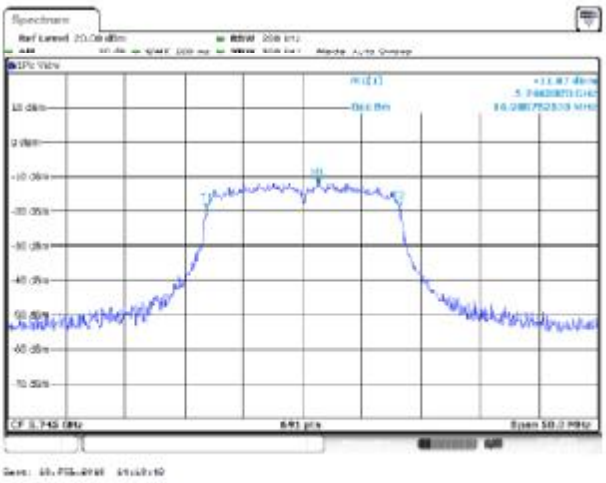
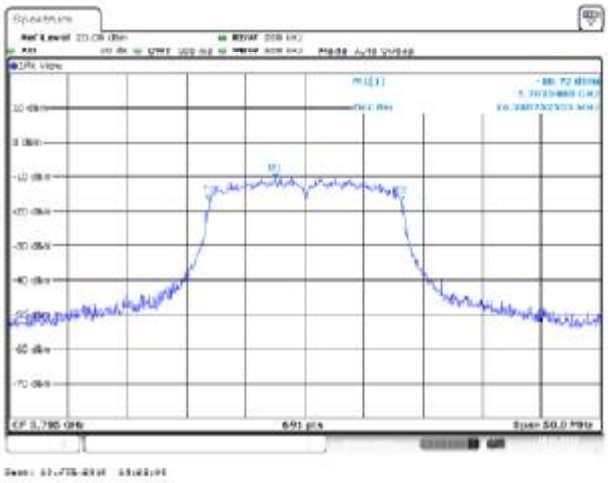
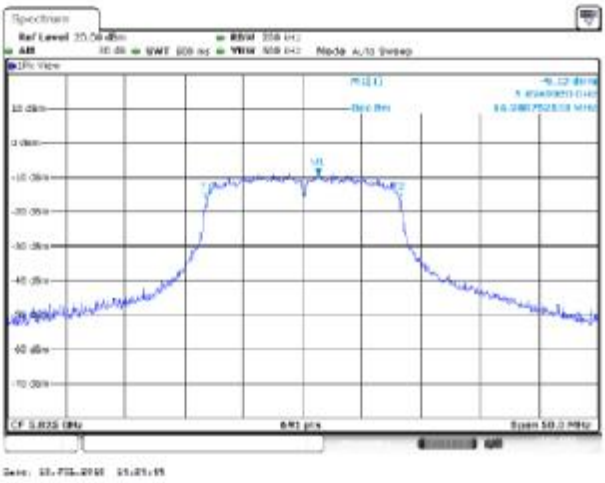
Test Data (BANDWIDTH 99%)

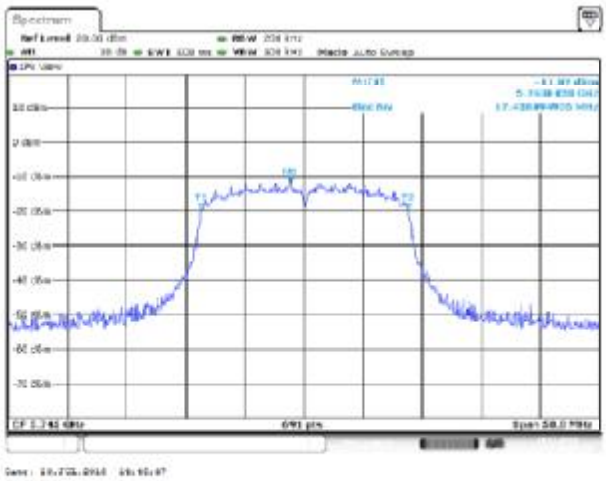
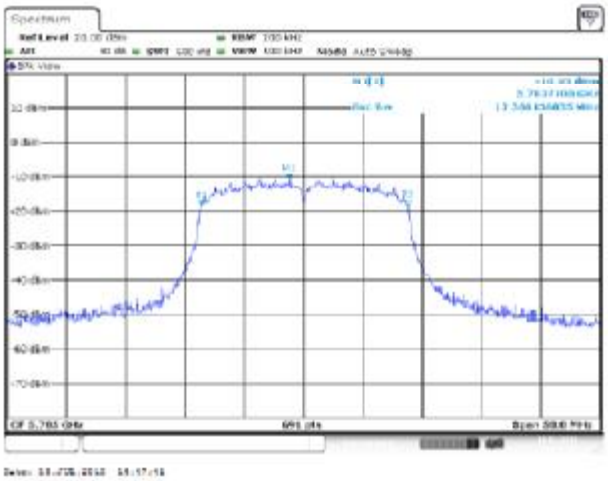
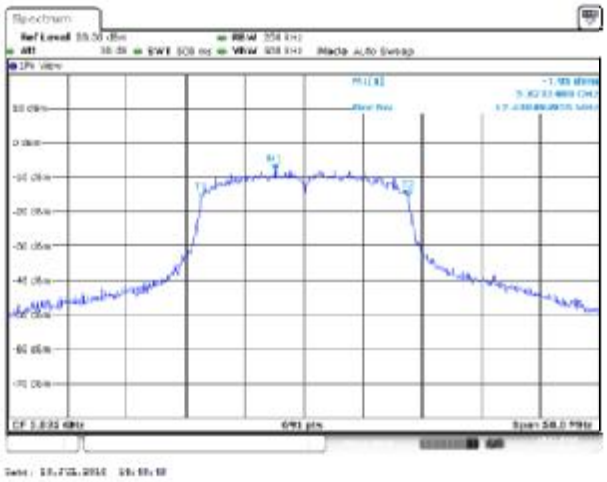
UNII-1 IEEE 802.11a mode	
Low CH	Mid CH
	
High CH	
	

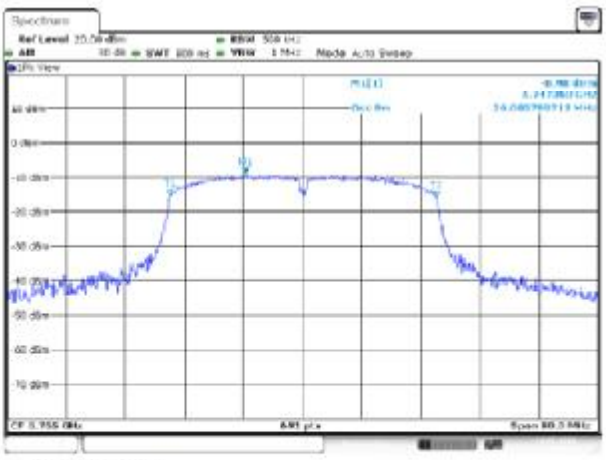
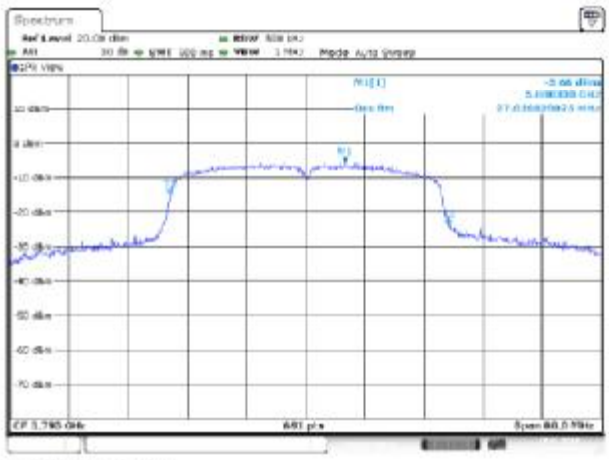
UNII-1 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

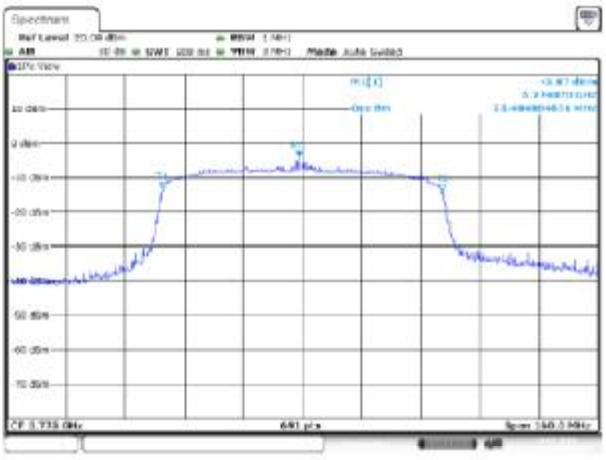
UNII-1 IEEE 802.11n HT40 mode	
Low CH	High CH
	

UNII-1 IEEE 802.11ac VHT80 mode
Mid CH


UNII-3 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT40 mode	
Low CH	High CH
	

UNII-3 IEEE 802.11ac VHT80 mode	
Mid CH	
	

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(3)

UNII-1 :

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

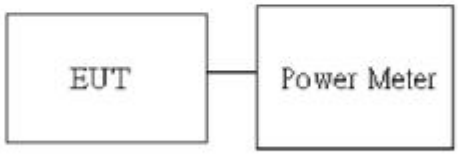
UNII-1 Limit	☒ Antenna not exceed 6 dBi : 24dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 24 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)]

4.3.2 Test Procedure

Test method Refer as KDB 789033 D02, Section E.3.b.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Average output power. in the test report.

4.3.3 Test Setup



4.3.4 Test Result

Conducted output power :

UNII-1							
Config	CH	Freq. (MHz)	Power Set	AV Power (dBm)	AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
IEEE 802.11a Data rate: 6Mbps	36	5180	11	9.76	9.76	0.0095	24
	44	5220	13	12.90	12.90	0.0195	
	48	5240	14	13.73	13.73	0.0236	
IEEE 802.11n HT20 Data rate: MCS0	36	5180	10	8.61	8.61	0.0073	
	44	5220	13	12.90	12.90	0.0195	
	48	5240	14	13.73	13.73	0.0236	
IEEE 802.11n HT40 Data rate: MCS0	38	5190	11	10.08	10.08	0.0102	
	46	5230	18	16.50	16.50	0.0447	
IEEE 802.11ac VHT80 Data rate: MCS0	42	5210	8	6.82	6.82	0.0048	

UNII-3							
Config	CH	Freq. (MHz)	Power Set	AV Power (dBm)	AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
IEEE 802.11a Data rate: 6Mbps	149	5745	9	10.12	10.12	0.0103	30
	157	5785	11	11.05	11.05	0.0127	
	165	5825	14	12.73	12.73	0.0187	
IEEE 802.11n HT20 Data rate: MCS0	149	5745	9	9.90	9.90	0.0098	
	157	5785	11	10.87	10.87	0.0122	
	165	5825	15	13.20	13.20	0.0209	
IEEE 802.11n HT40 Data rate: MCS0	151	5755	11	11.64	11.64	0.0146	
	159	5795	16	15.77	15.77	0.0378	
IEEE 802.11ac VHT80 Data rate: MCS0	155	5775	13.00	12.72	12.72	0.0187	

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(3)

UNII-1 :

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.i.

UNII-1 Limit	☒ Antenna not exceed 6 dBi : 11 dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 11 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi : 30 dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)]

4.4.2 Test Procedure

Test method Refer as KDB 789033 D02, Section F

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1, SA set RBW = 1MHz, VBW = 3MHz and Detector = RMS, to measurement Power Density.
4. UNII-3, SA set RBW = 500kHz, VBW = 2MHz and Detector = RMS, to measurement Power Density
5. The path loss and Duty Factor were compensated to the results for each measurement by SA.
6. Mark the maximum level.
7. Measure and record the result of power spectral density. in the test report.

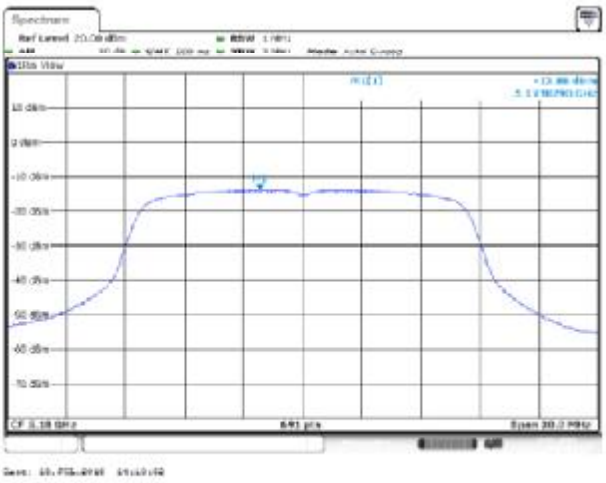
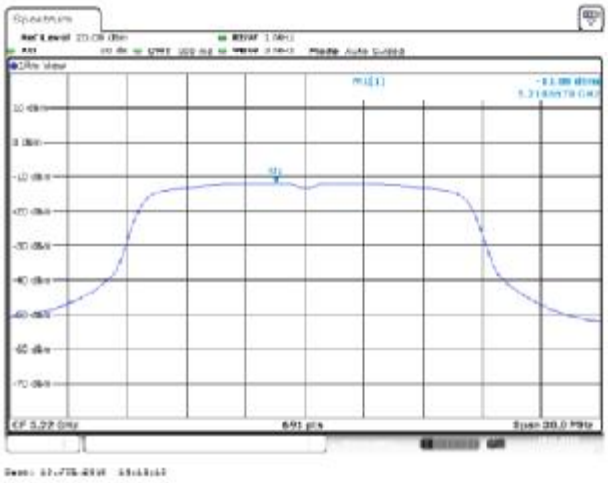
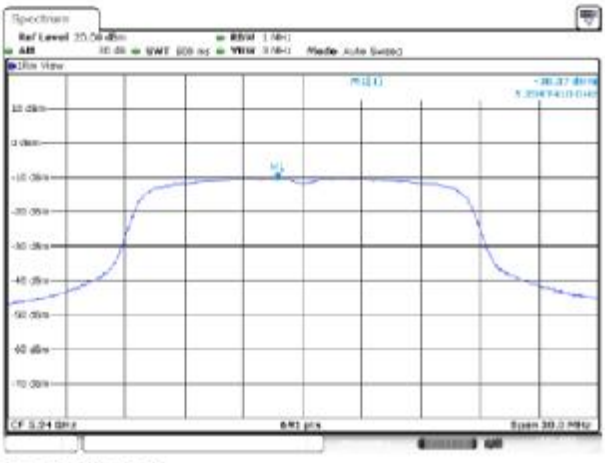
4.4.3 Test Setup

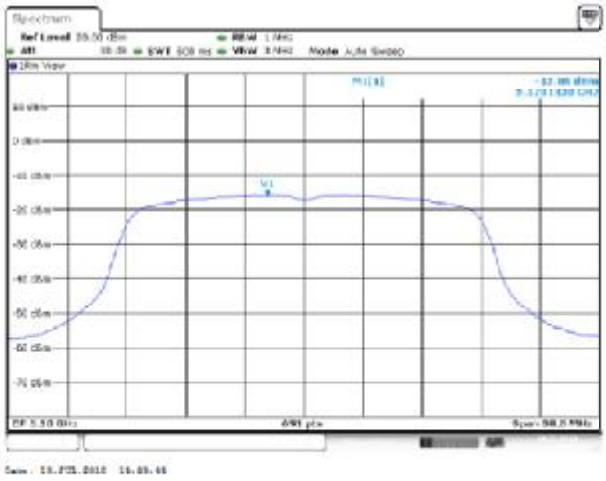
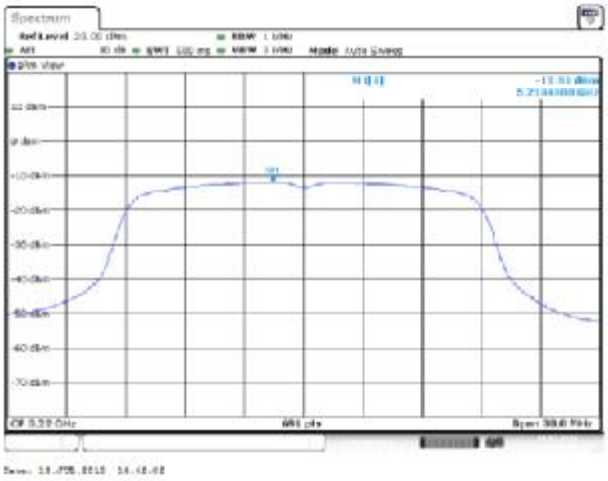
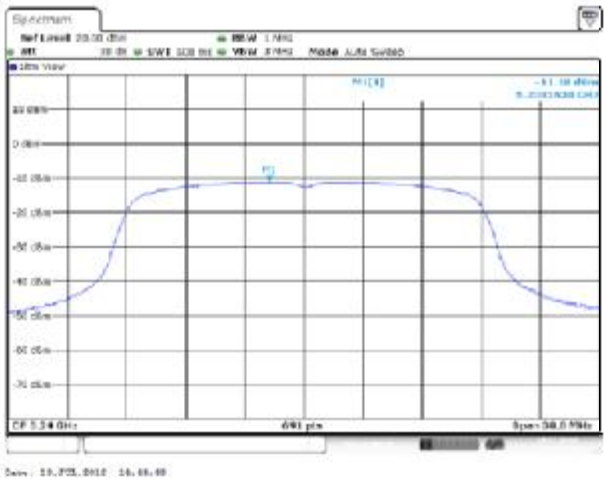
4.4.4 Test Result

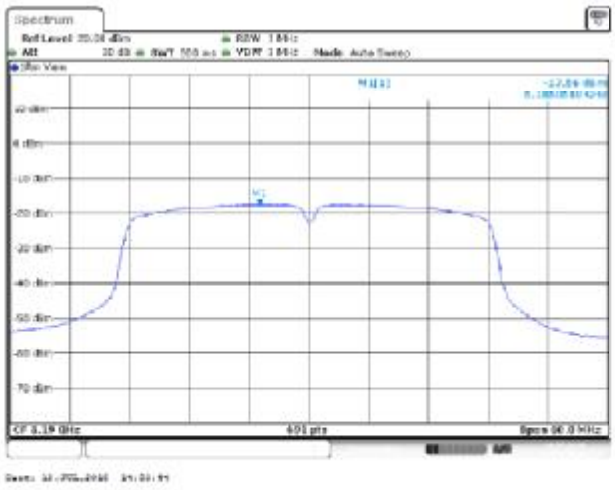
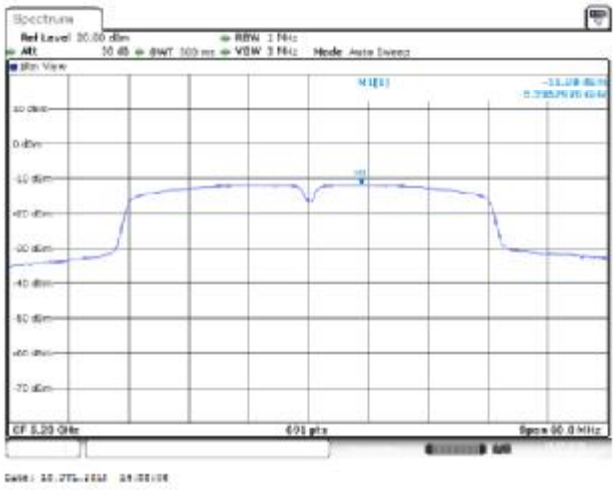
UNII-1 5150-5250 MHz			
Test mode: IEEE 802.11a mode			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	5180	-13.88	11
Mid	5220	-11.80	
High	5240	-10.37	
Test mode: IEEE 802.11n HT20 mode			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	5180	-15.86	11
Mid	5220	-12.01	
High	5240	-11.18	
Test mode: IEEE 802.11n HT40 mode			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Low	5190	-17.56	11
High	5230	-11.80	
Test mode: IEEE 802.11ac VHT80 mode			
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)
Mid	5210	-24.00	11

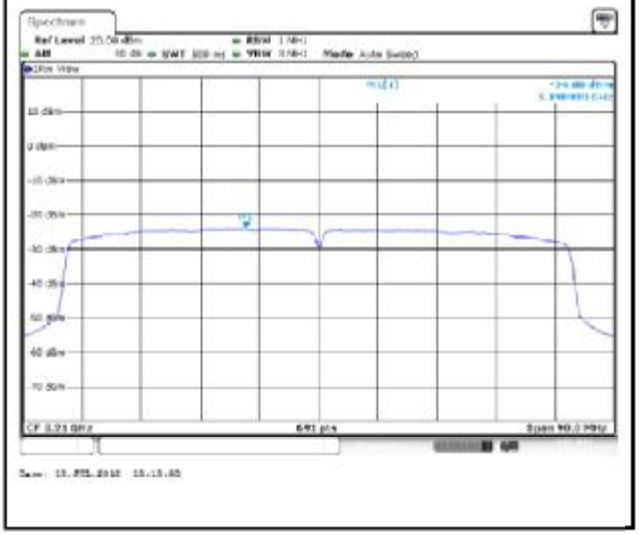
UNII-3 5725-5825 MHz			
Test mode: IEEE 802.11a mode			
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Limit (dBm)**
Low	5745	-7.55	30
Mid	5785	-6.38	
High	5825	-4.99	
Test mode: IEEE 802.11n HT20 mode			
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Limit (dBm)**
Low	5745	-8.16	30
Mid	5785	-6.48	
High	5825	-4.30	
Test mode: IEEE 802.11n HT40 mode			
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Limit (dBm)**
Low	5755	-0.09	30
High	5795	-0.26	
Test mode: IEEE 802.11ac VHT80 mode			
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Limit (dBm)**
Mid	5775	-9.75	30

Test Data

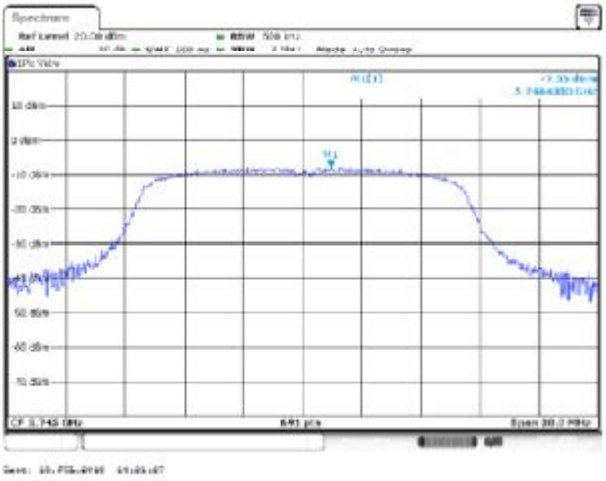
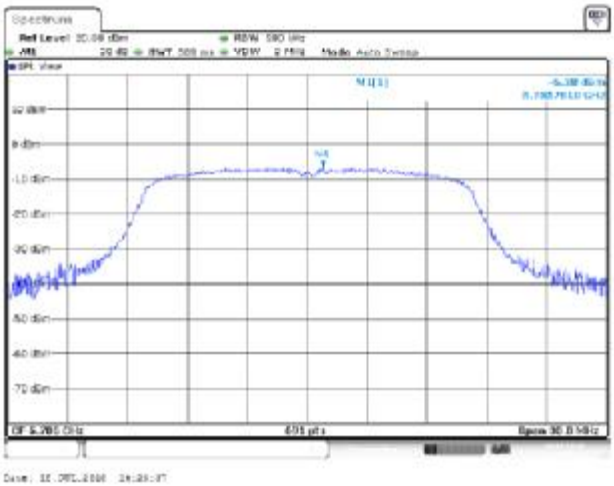
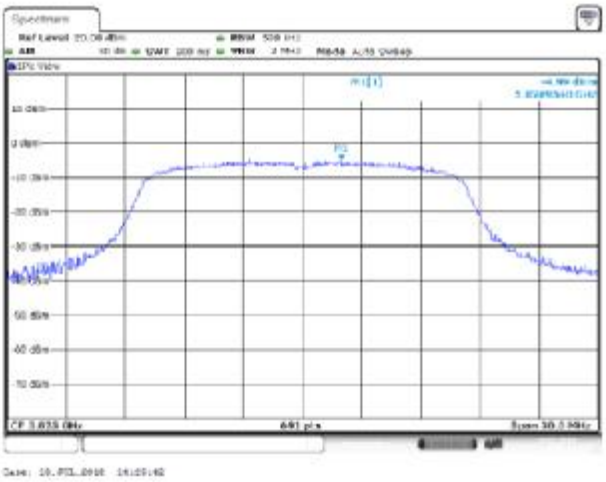
UNII-1 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

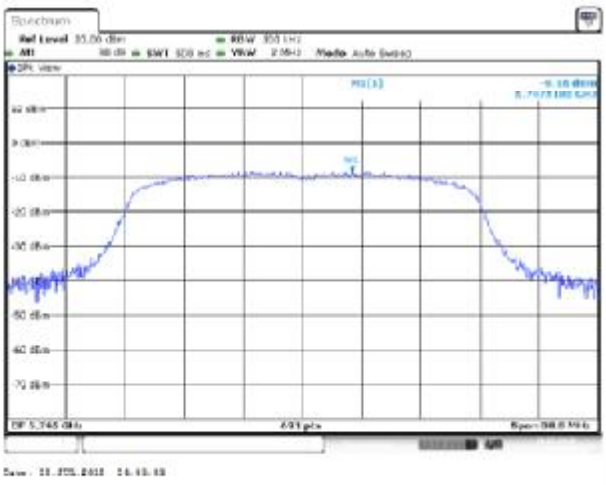
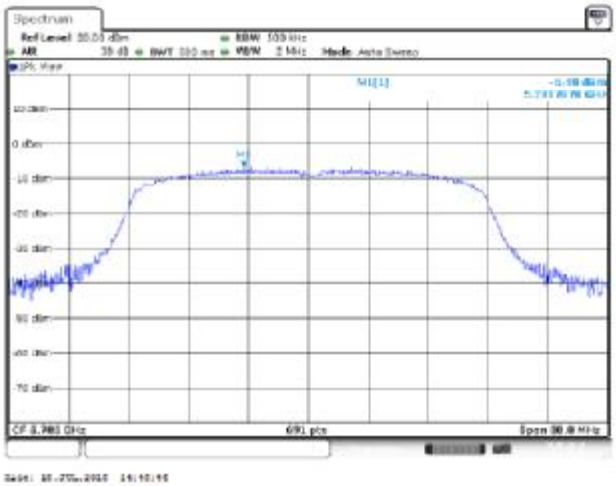
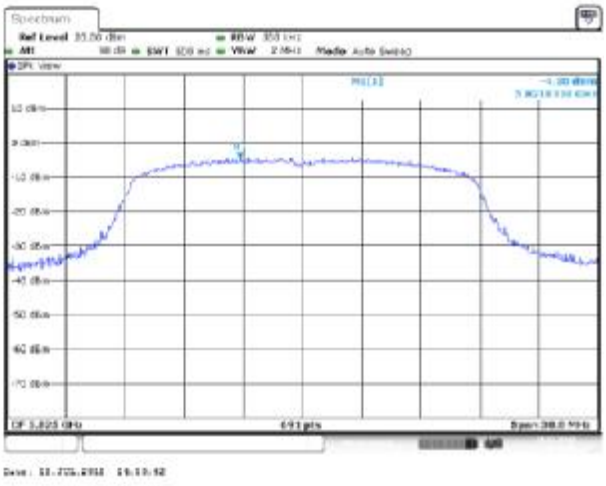
UNII-1 IEEE 802.11n HT20 mode	
Low CH	Mid CH
	
High CH	
	

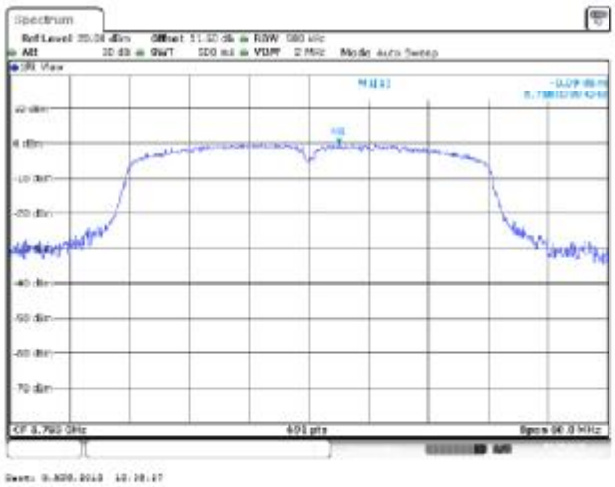
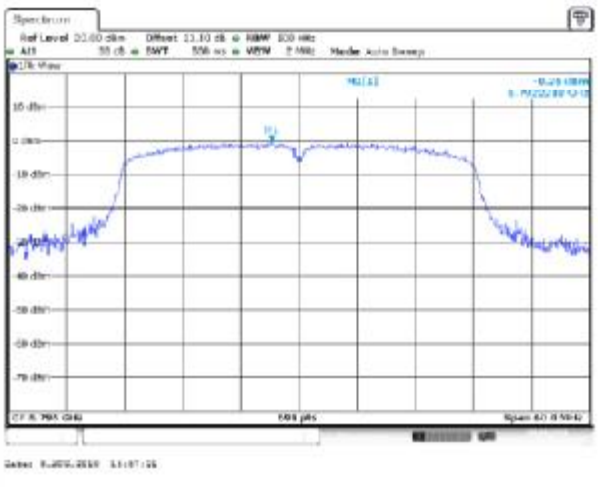
UNII-1 IEEE 802.11n HT40 mode	
Low CH	High CH
	

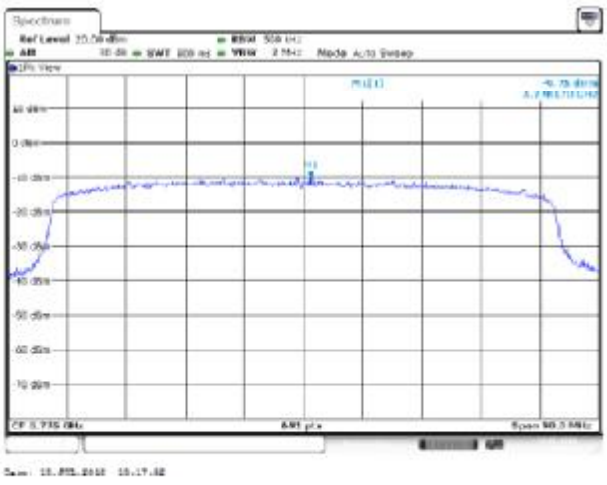
UNII-1 IEEE 802.11ac VHT80 mode
Mid CH


Test Data

UNII-3 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT40 mode	
Low CH	High CH
	

UNII-3 IEEE 802.11ac VHT80 mode	
Mid CH	
	

4.5 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

FCC according to §15.407, §15.209 and §15.205,

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

UNII-1 :

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz

UNII-3:

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.

4.5.2 Test Procedure

Test method Refer as KDB 789033 D02, Section G.3, G.4, G.5, and G.6,.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:
1. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

4. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3*RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

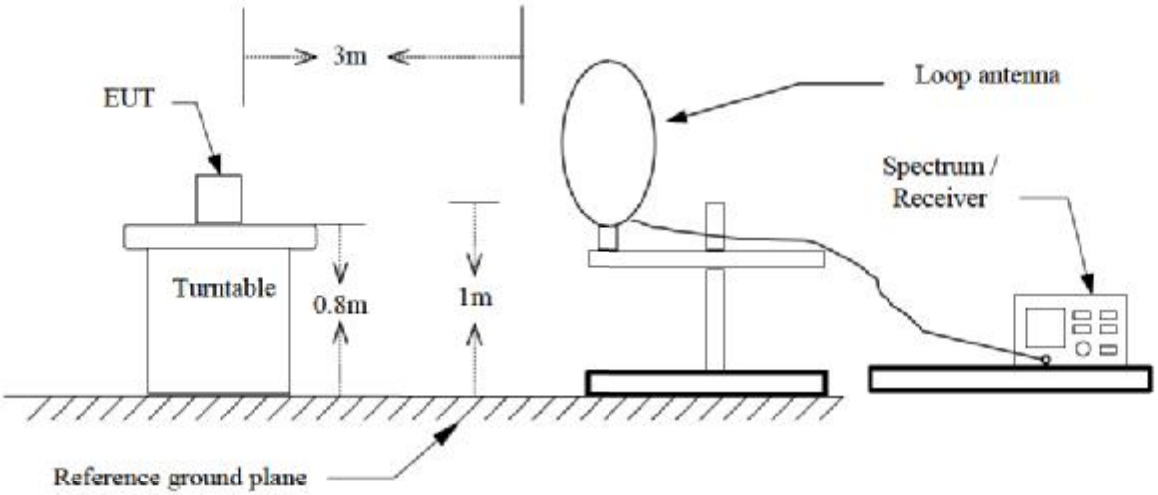
(2.2) For Average measurement：RBW = 1MHz, VBW

- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW=1/T.

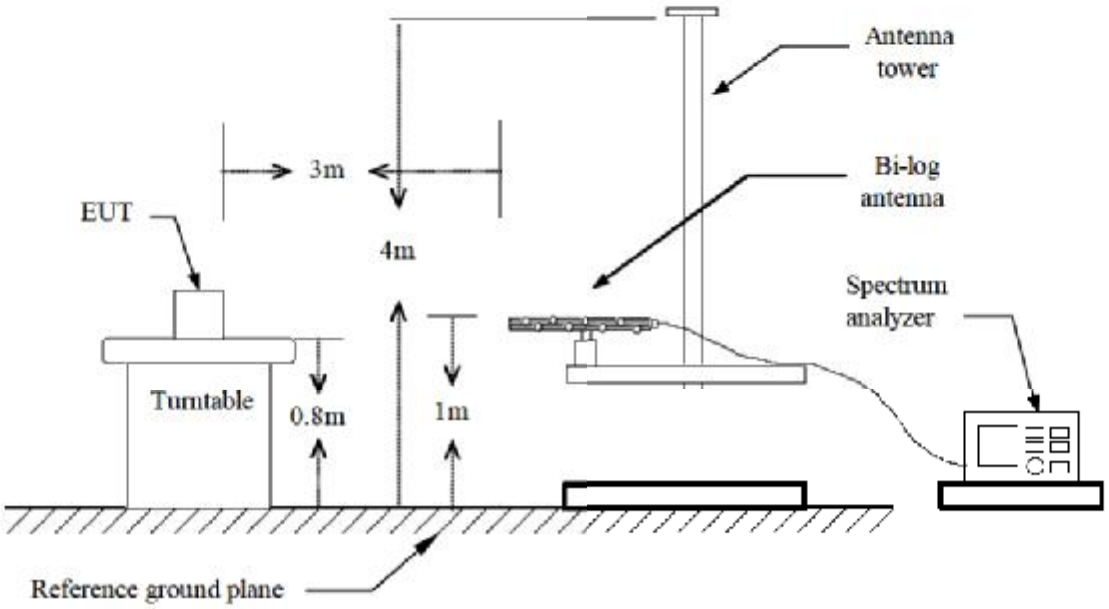
Configuration	Duty Cycle (%)	T(ms)	1/T (Hz)	VBW Setting
802.11a	96.05%	1.4600	684.932	750Hz
802.11n HT20	96.45%	1.3600	735.294	750Hz
802.11n HT40	94.59%	0.7000	1428.571	1.5KHz
802.11ac VHT80	90.00%	0.3600	2777.778	3KHz

4.5.3 Test Setup

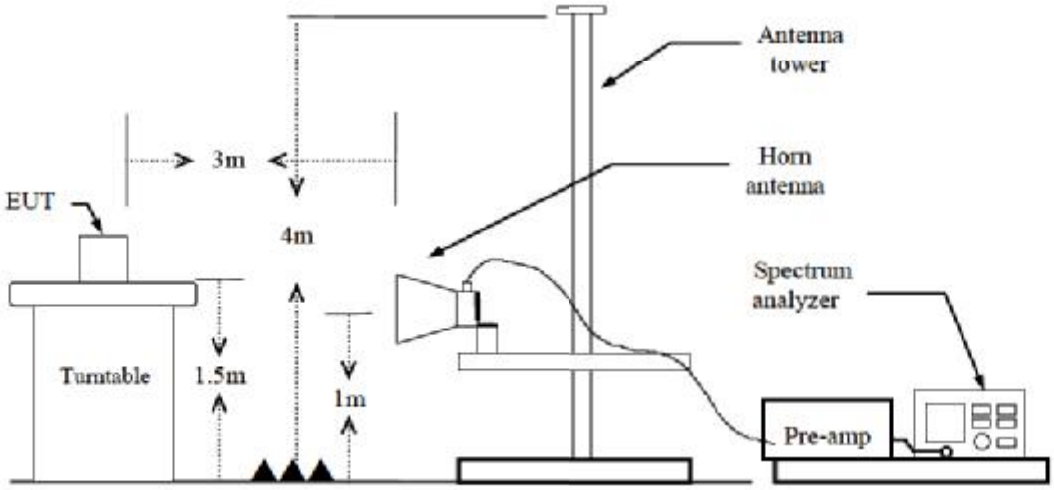
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz



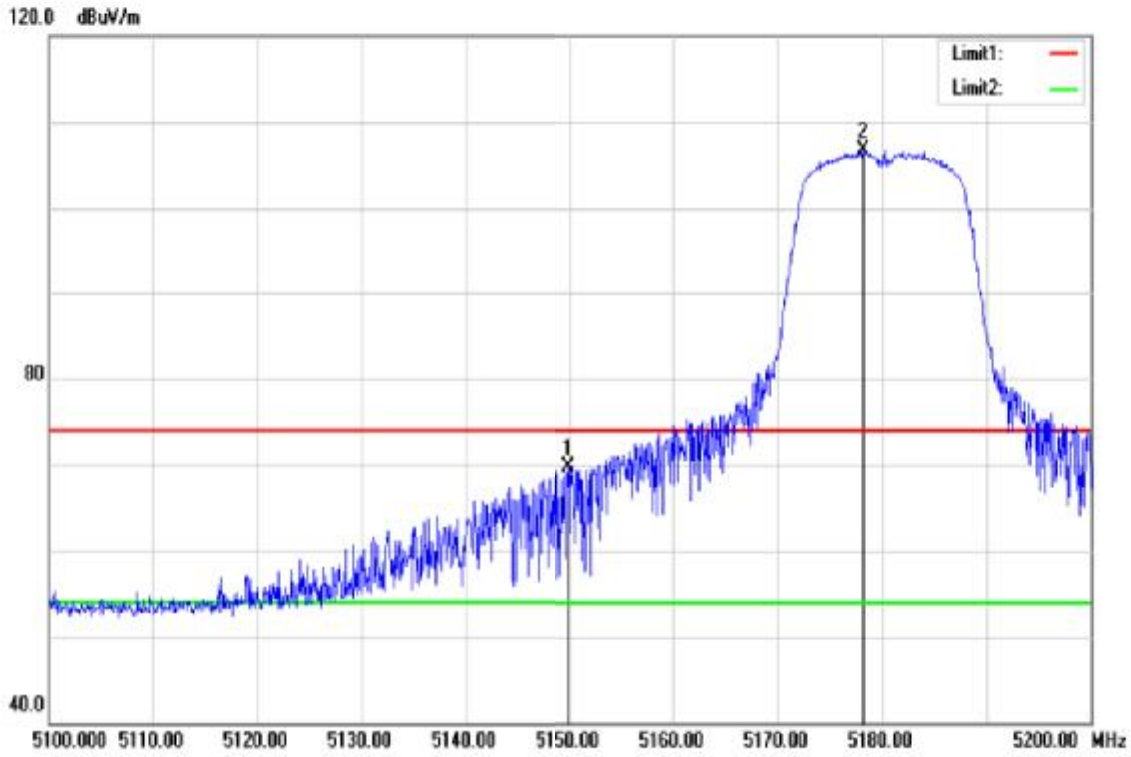
4.5.4 Test Result

Test Data

Band Edge Test Data for UNII-1

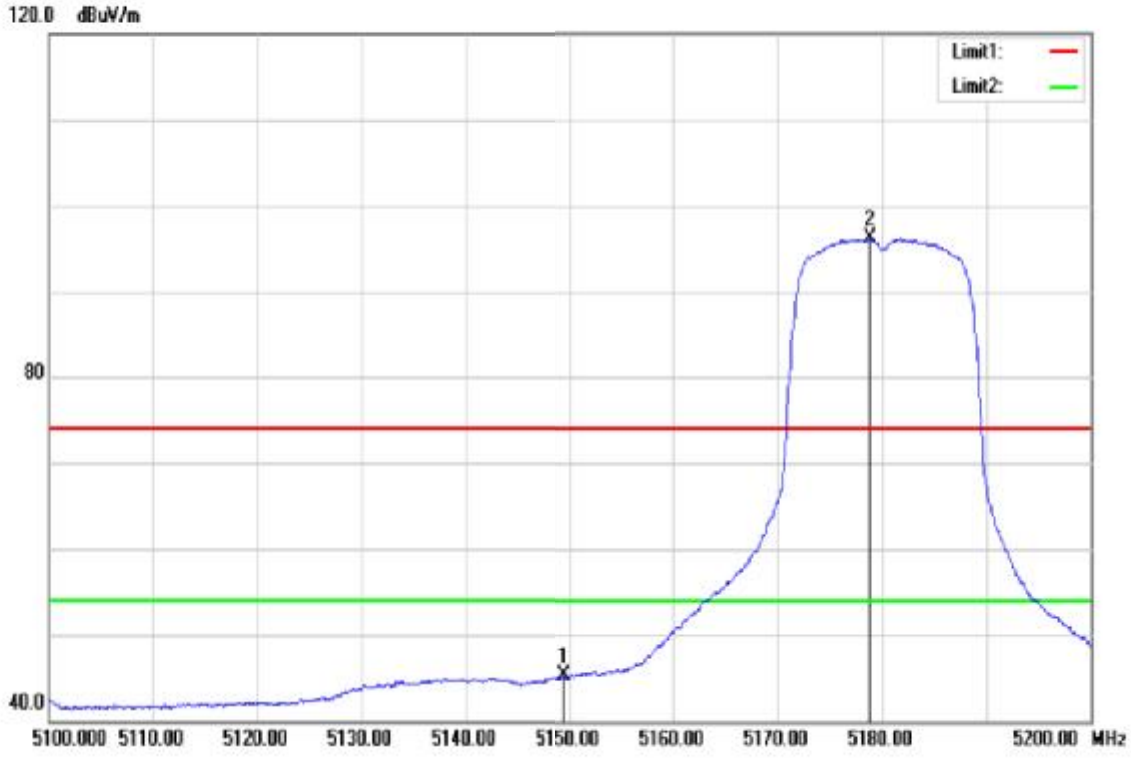
For PIFA Antenna

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



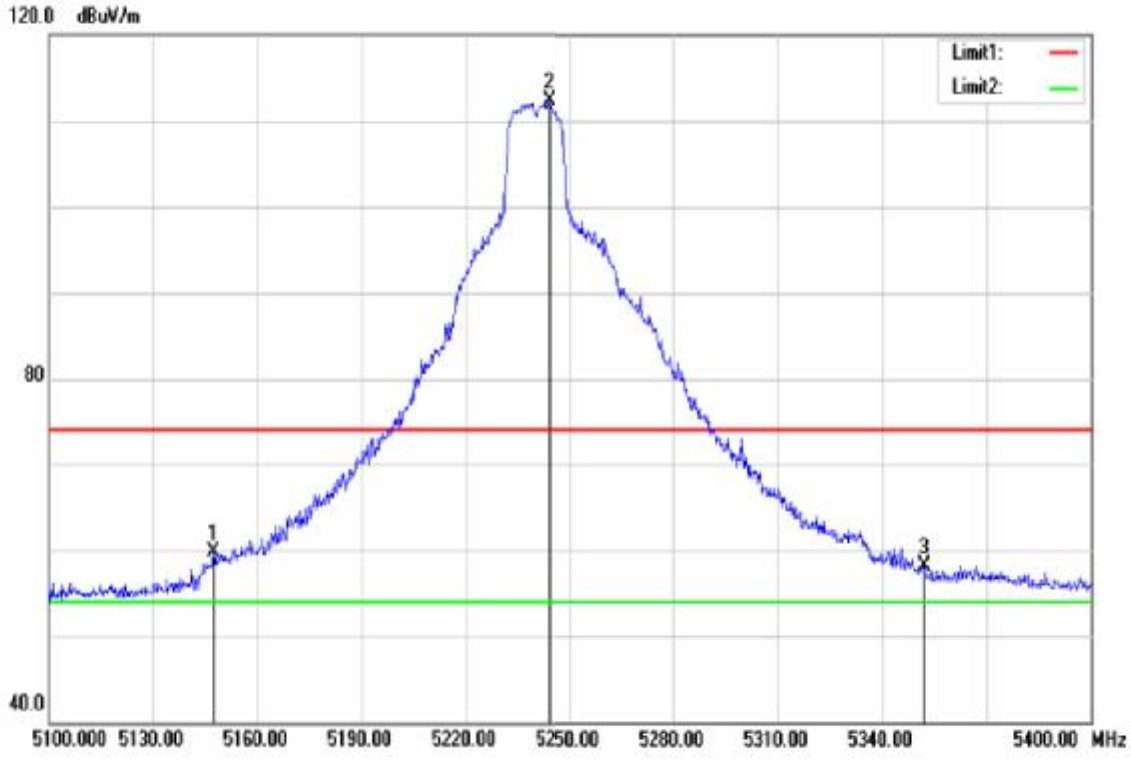
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.900	64.66	5.06	69.72	74.00	-4.28	peak
5178.200	101.61	5.14	106.75	-	-	peak

Test Mode	IEEE 802.11a / 5180MHZ	Temperature	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



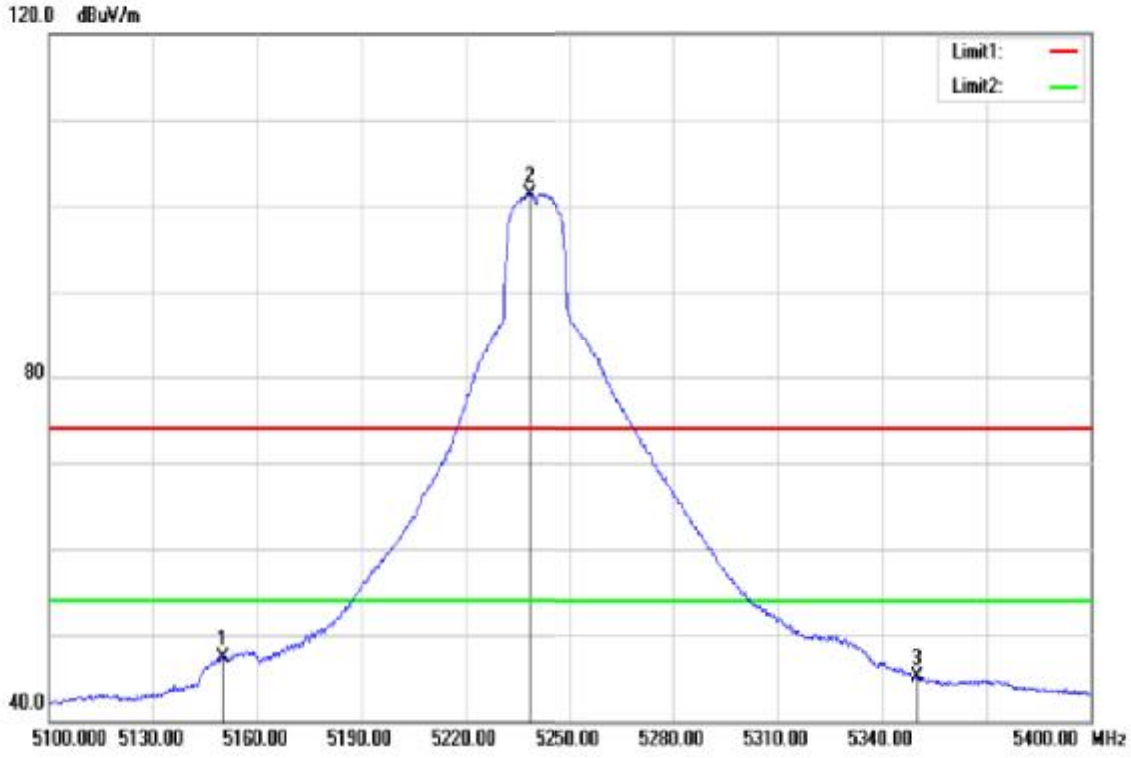
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.500	40.16	5.06	45.22	54.00	-8.78	AVG
5178.900	91.13	5.14	96.27	-	-	AVG

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



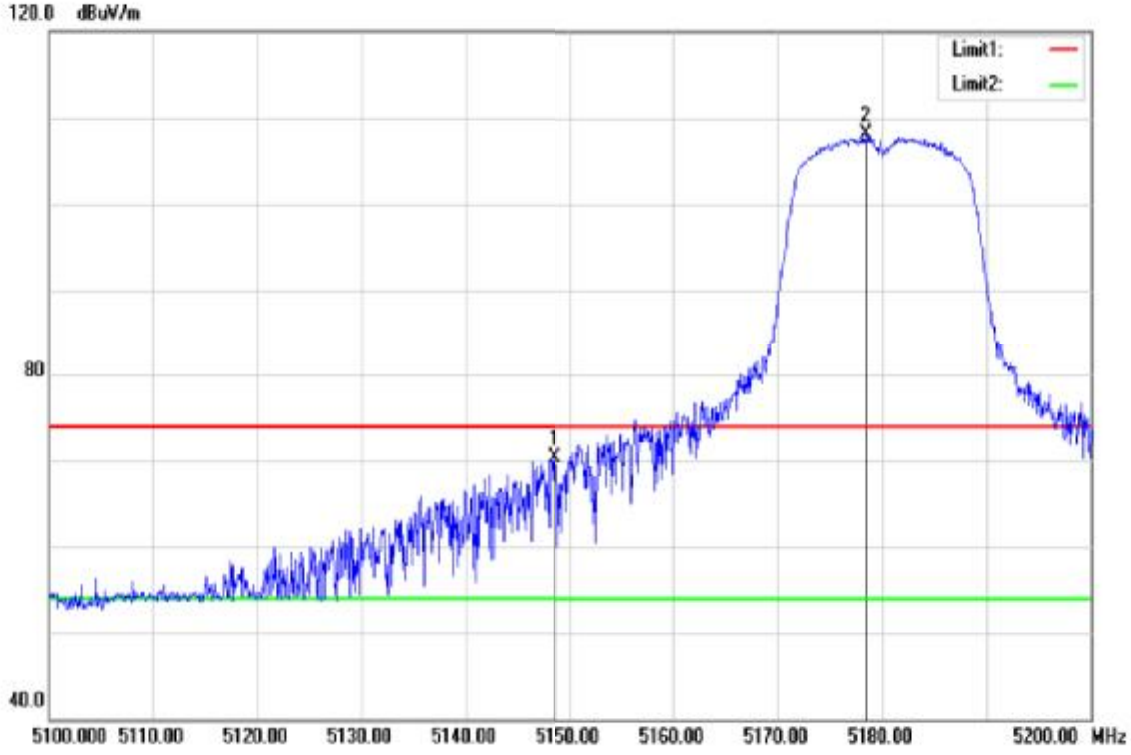
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5147.400	54.58	5.06	59.64	74.00	-14.36	peak
5244.000	107.07	5.29	112.36	-	-	peak
5352.000	52.54	5.56	58.10	74.00	-15.90	peak

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



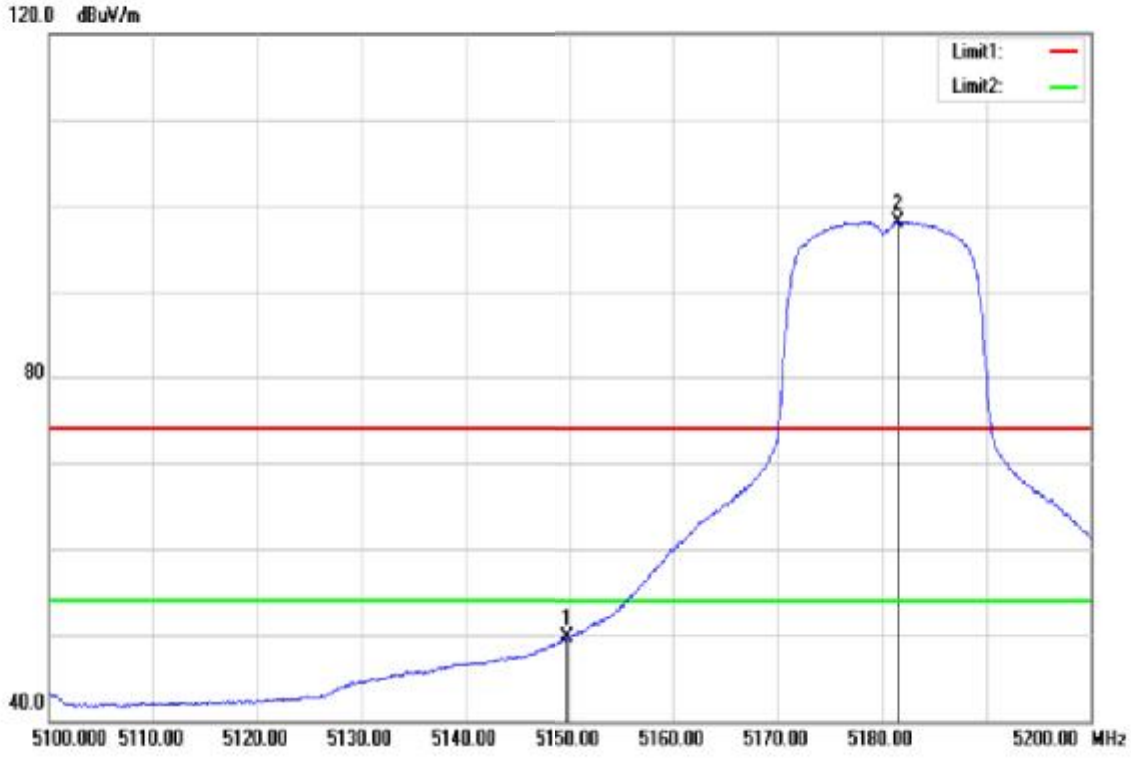
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	42.28	5.06	47.34	54.00	-6.66	AVG
5238.600	96.08	5.28	101.36	-	-	AVG
5350.000	39.46	5.56	45.02	54.00	-8.98	AVG

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



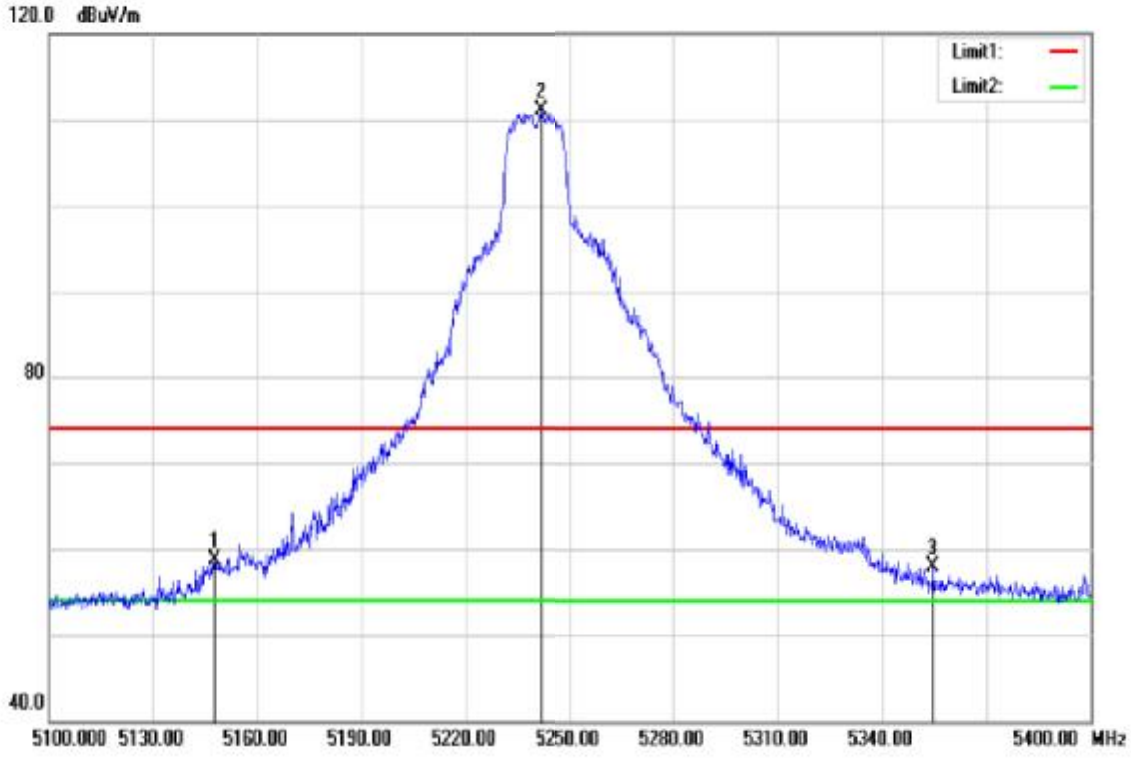
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.600	65.26	5.06	70.32	74.00	-3.68	peak
5178.400	103.06	5.14	108.20	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



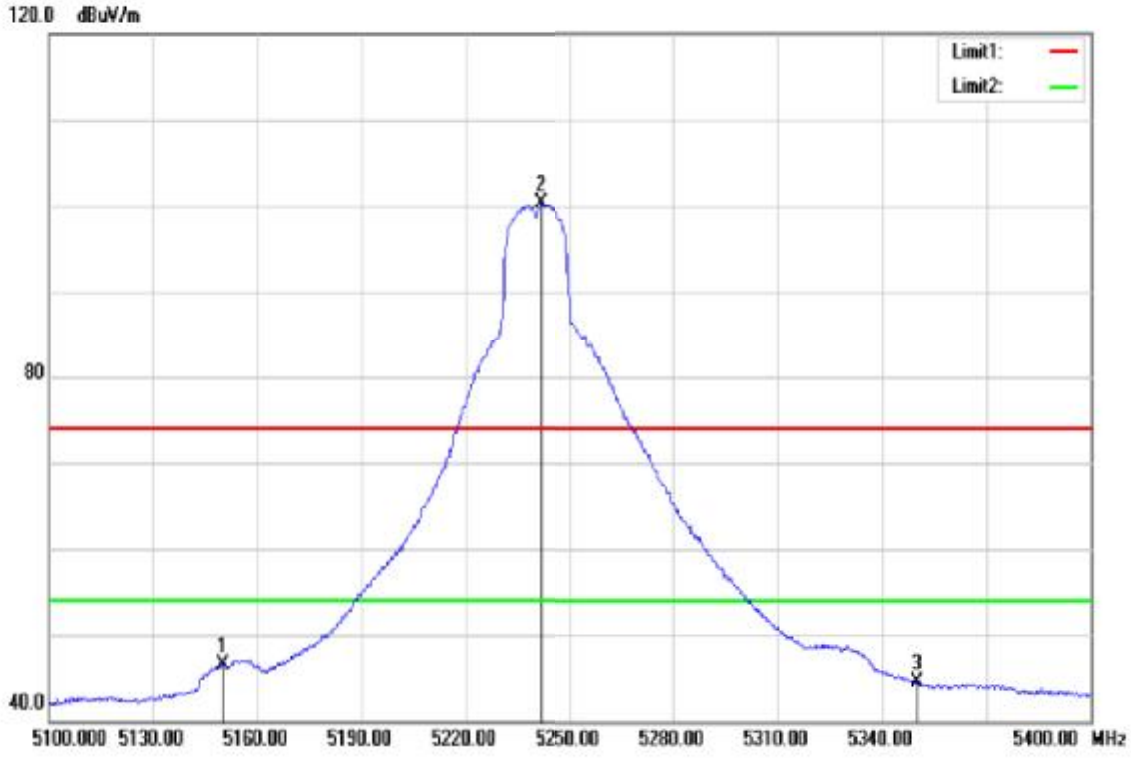
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.800	44.62	5.06	49.68	54.00	-4.32	AVG
5181.500	93.05	5.14	98.19	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



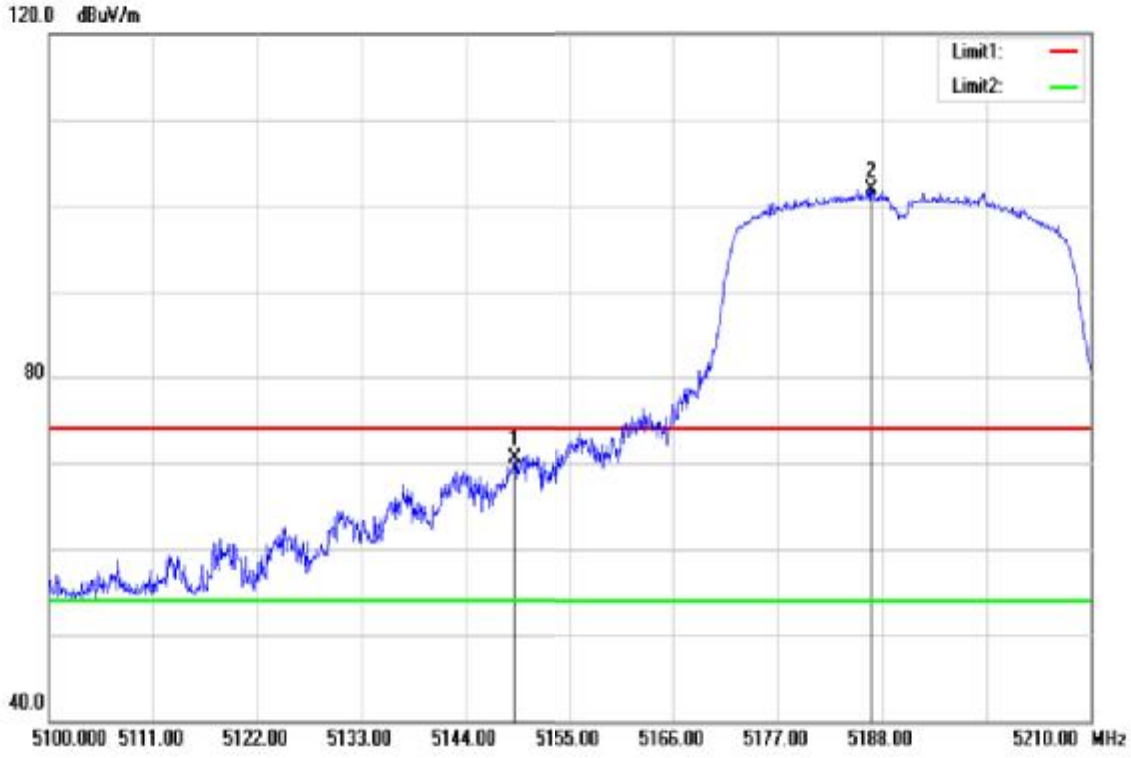
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5147.700	53.73	5.06	58.79	74.00	-15.21	peak
5241.600	105.77	5.28	111.05	-	-	peak
5354.700	52.29	5.56	57.85	74.00	-16.15	peak

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temperature	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



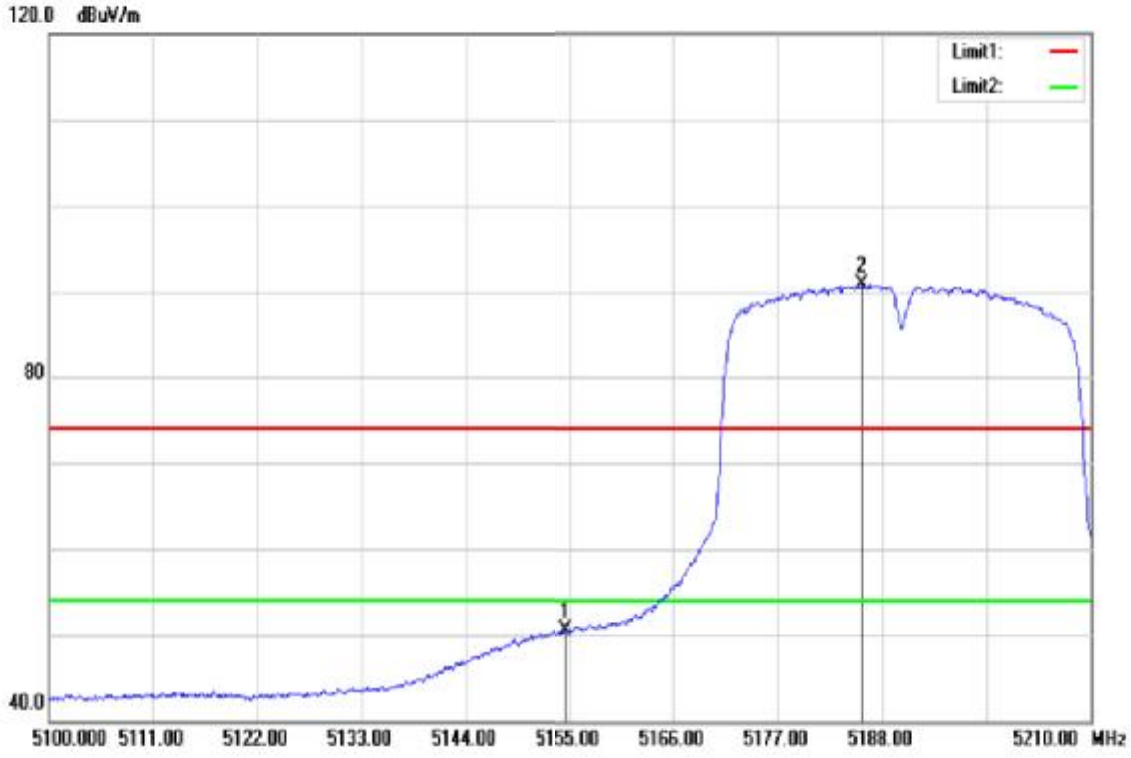
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	41.37	5.06	46.43	54.00	-7.57	AVG
5241.900	94.93	5.29	100.22	-	-	AVG
5350.000	38.99	5.56	44.55	54.00	-9.45	AVG

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



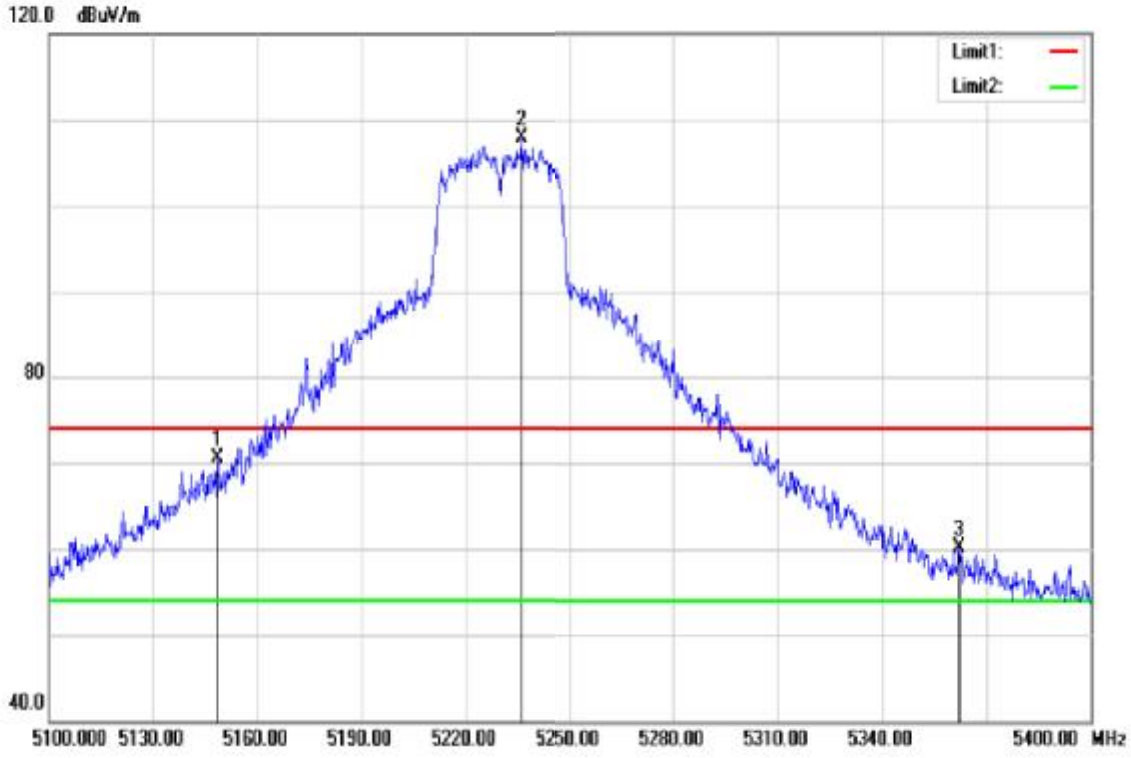
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.170	65.48	5.06	70.54	74.00	-3.46	peak
5186.900	96.71	5.15	101.86	-	-	peak

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temperature	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



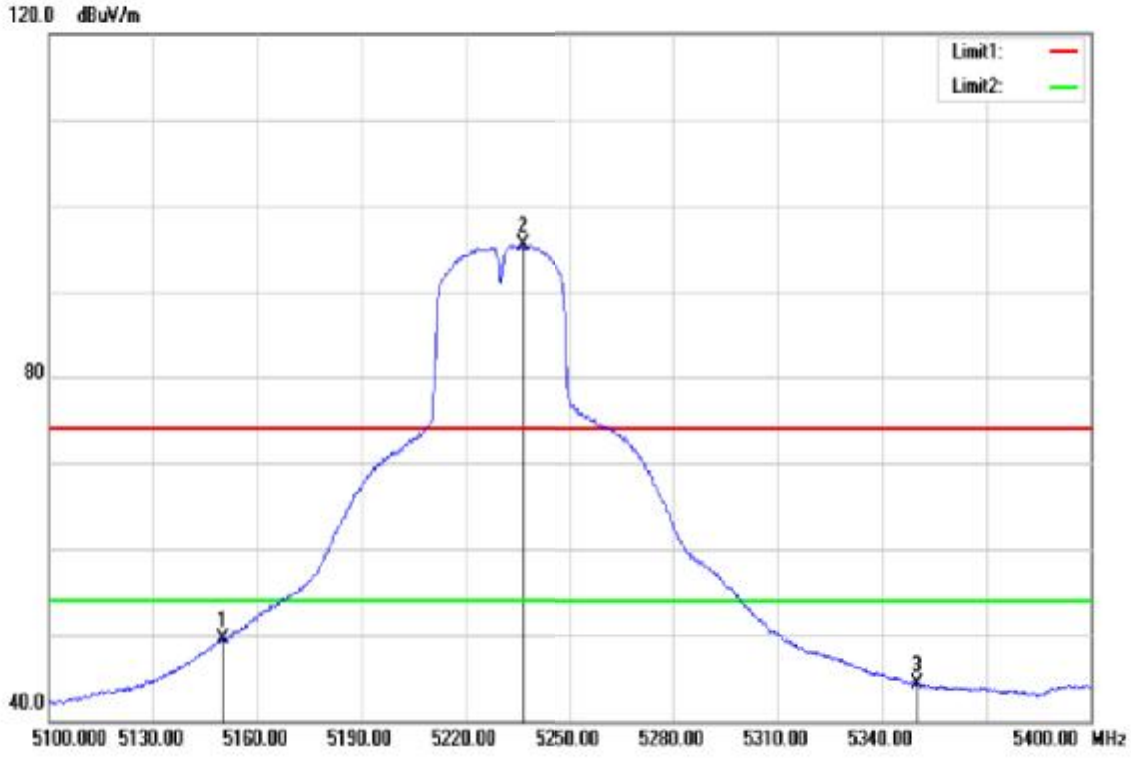
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5154.560	45.45	5.07	50.52	54.00	-3.48	AVG
5185.910	85.71	5.15	90.86	-	-	AVG

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



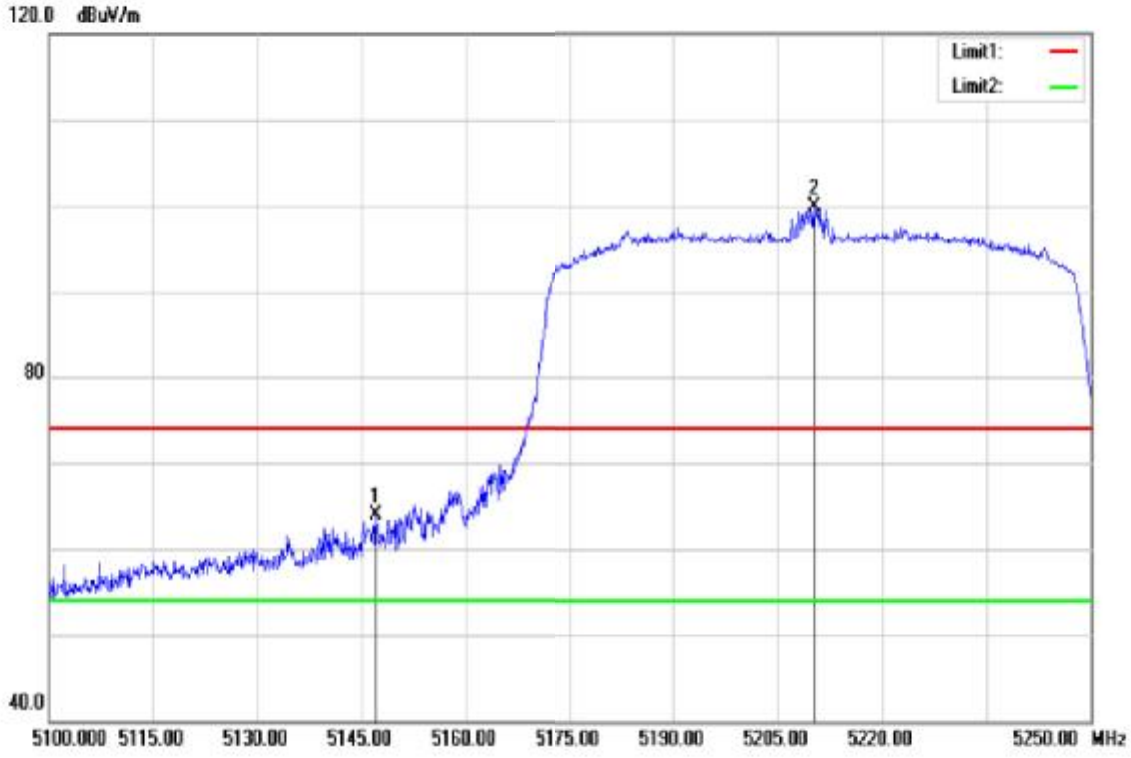
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.600	65.47	5.06	70.53	74.00	-3.47	peak
5236.200	102.58	5.28	107.86	-	-	peak
5362.200	54.45	5.59	60.04	74.00	-13.96	peak

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



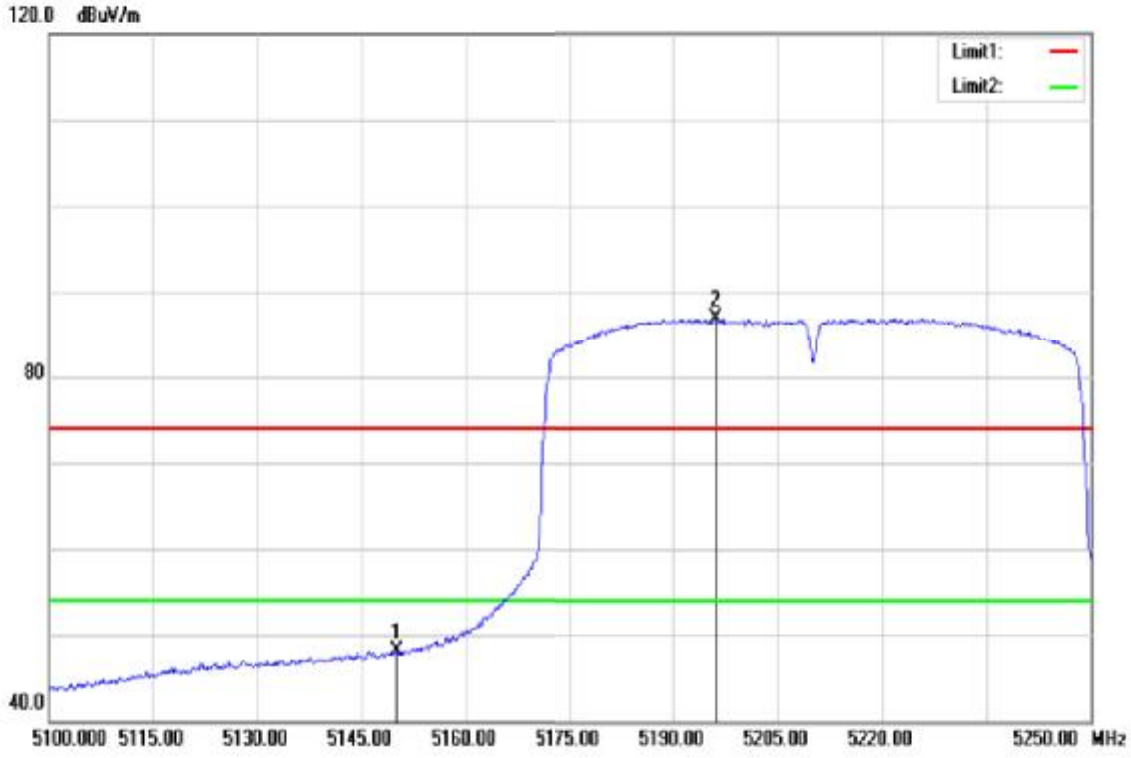
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	44.44	5.06	49.50	54.00	-4.50	AVG
5236.500	90.19	5.28	95.47	-	-	AVG
5350.000	38.64	5.56	44.20	54.00	-9.80	AVG

Test Mode	I EEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5147.100	58.88	5.06	63.94	74.00	-10.06	peak
5210.250	94.62	5.22	99.84	-	-	peak

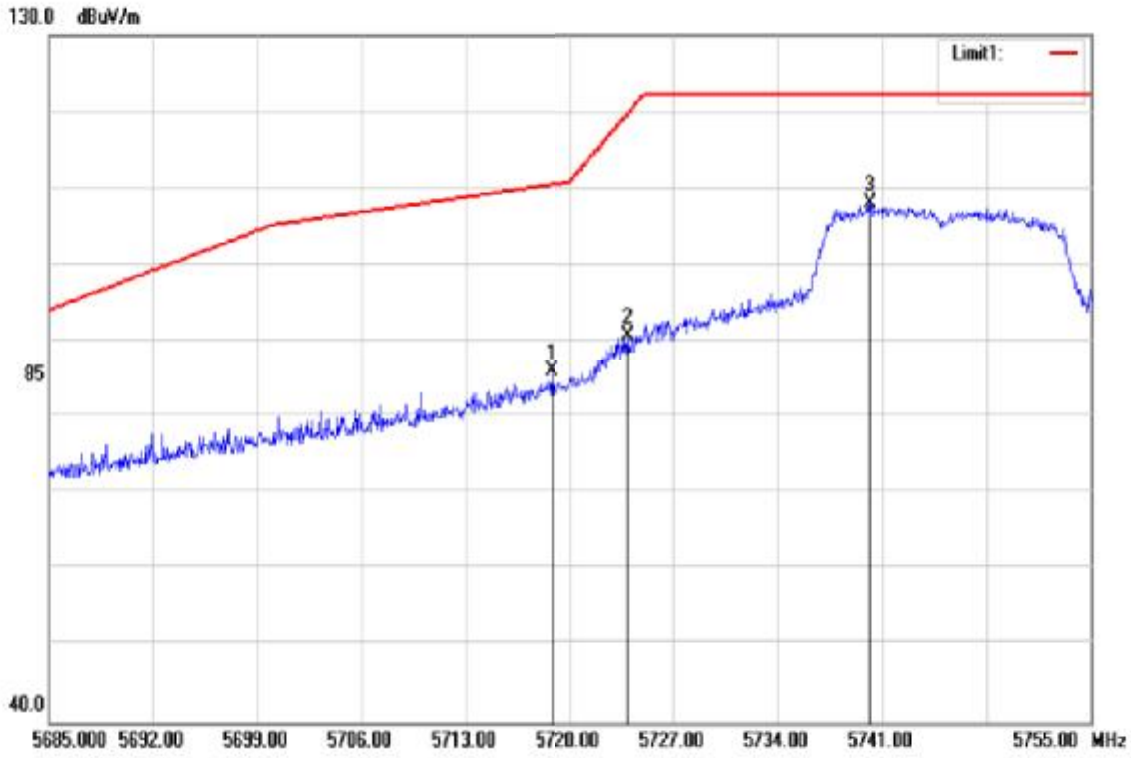
Test Mode	I EEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	42.99	5.06	48.05	54.00	-5.95	AVG
5196.150	81.70	5.18	86.88	-	-	AVG

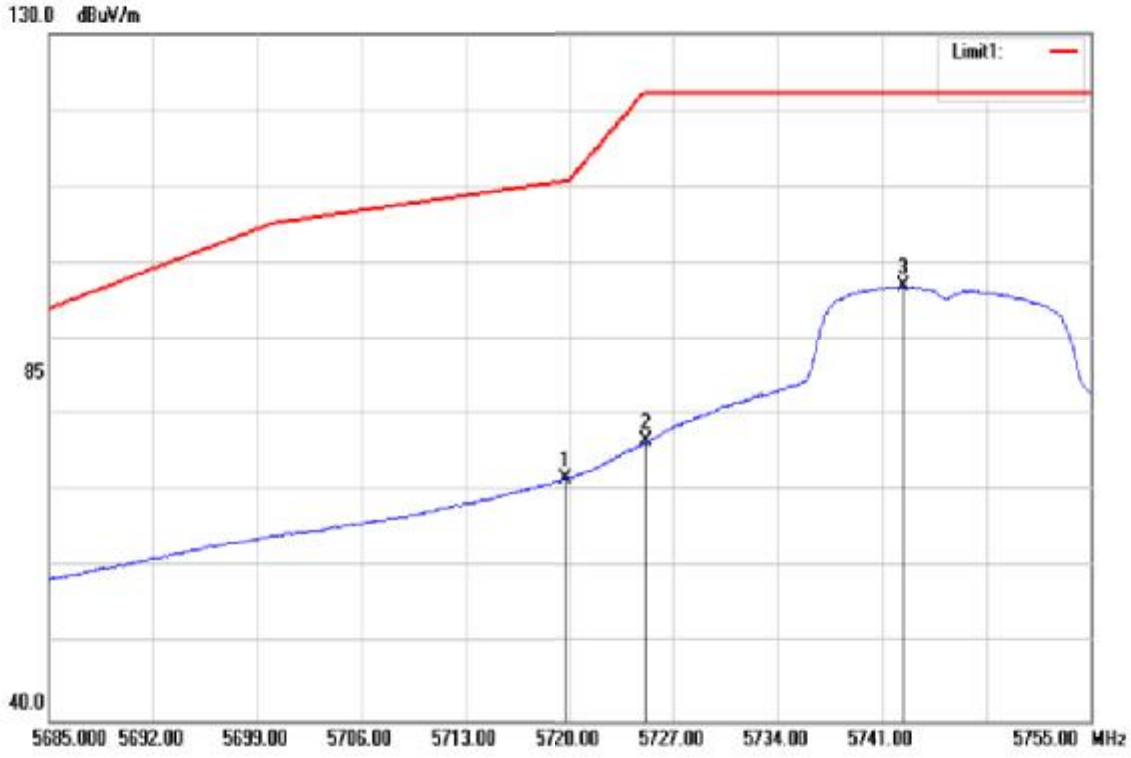
Band Edge Test Data for UNII-3

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



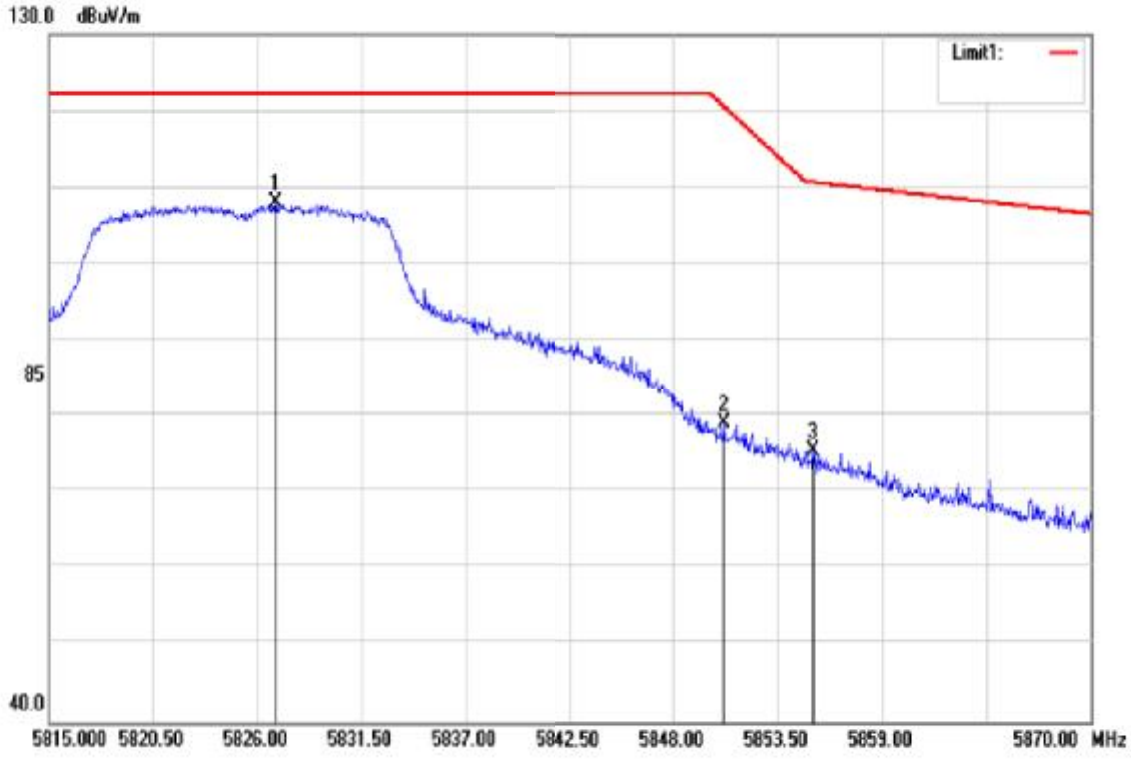
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5718.810	79.62	6.50	86.12	110.47	-24.35	peak
5723.920	84.28	6.52	90.80	119.74	-28.94	peak
5740.230	101.41	6.56	107.97	-	-	peak

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



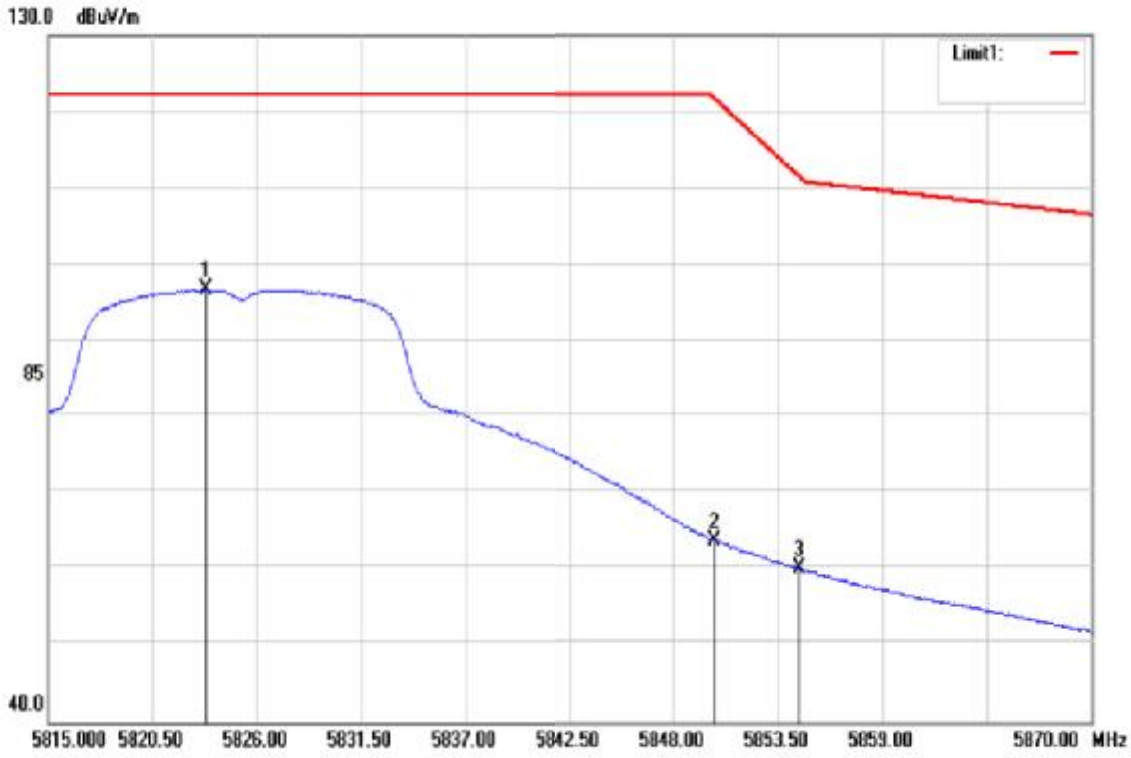
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.790	65.21	6.50	71.71	110.74	-39.03	AVG
5725.180	69.96	6.52	76.48	122.20	-45.72	AVG
5742.400	90.48	6.56	97.04	-	-	AVG

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5826.990	101.20	6.78	107.98	-	-	peak
5850.695	72.12	6.85	78.97	120.62	-41.65	peak
5855.370	68.55	6.86	75.41	110.70	-35.29	peak

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

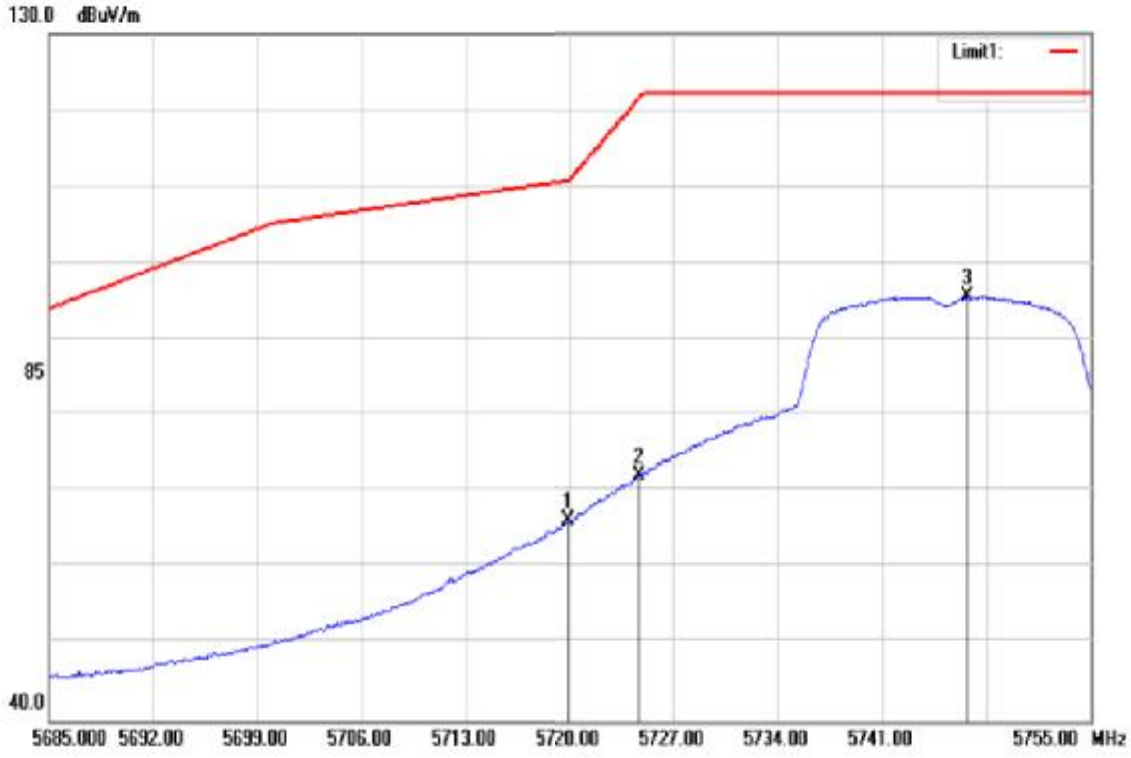


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5823.305	90.03	6.78	96.81	-	-	AVG
5850.145	56.91	6.85	63.76	121.87	-58.11	AVG
5854.600	53.27	6.86	60.13	111.71	-51.58	AVG

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

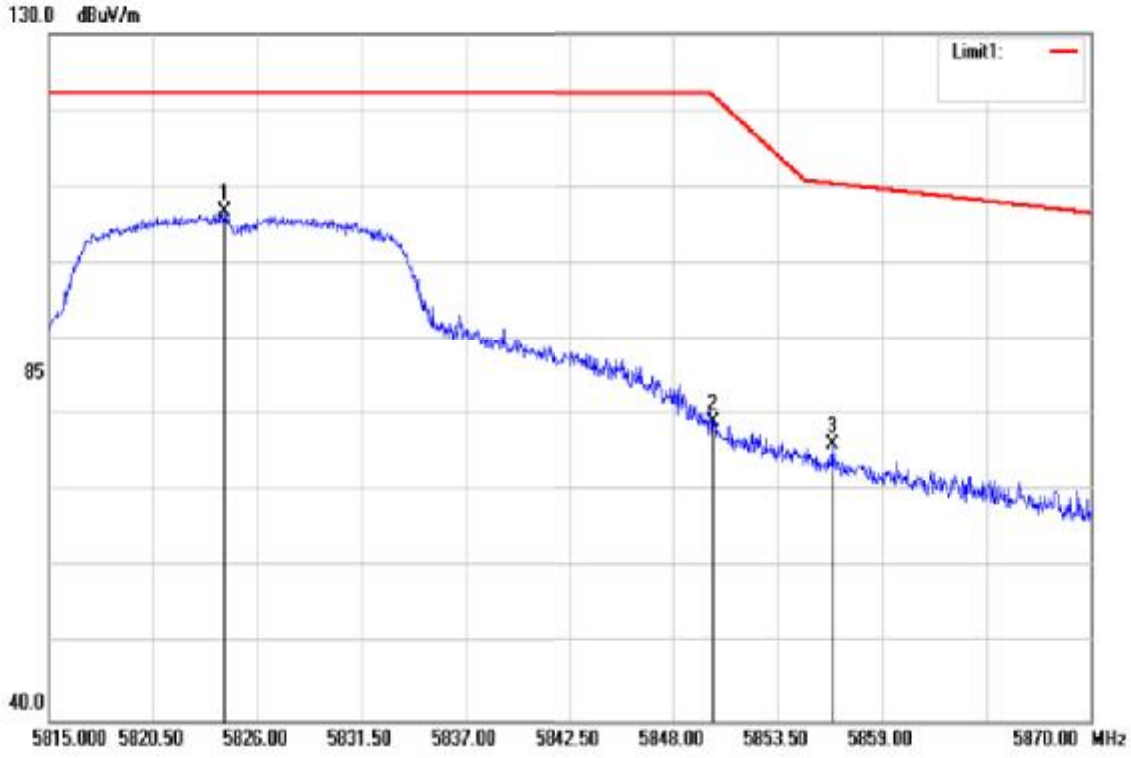
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.790	74.47	6.50	80.97	110.74	-29.77	peak
5723.500	82.03	6.52	88.55	118.78	-30.23	peak
5746.670	100.26	6.58	106.84	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



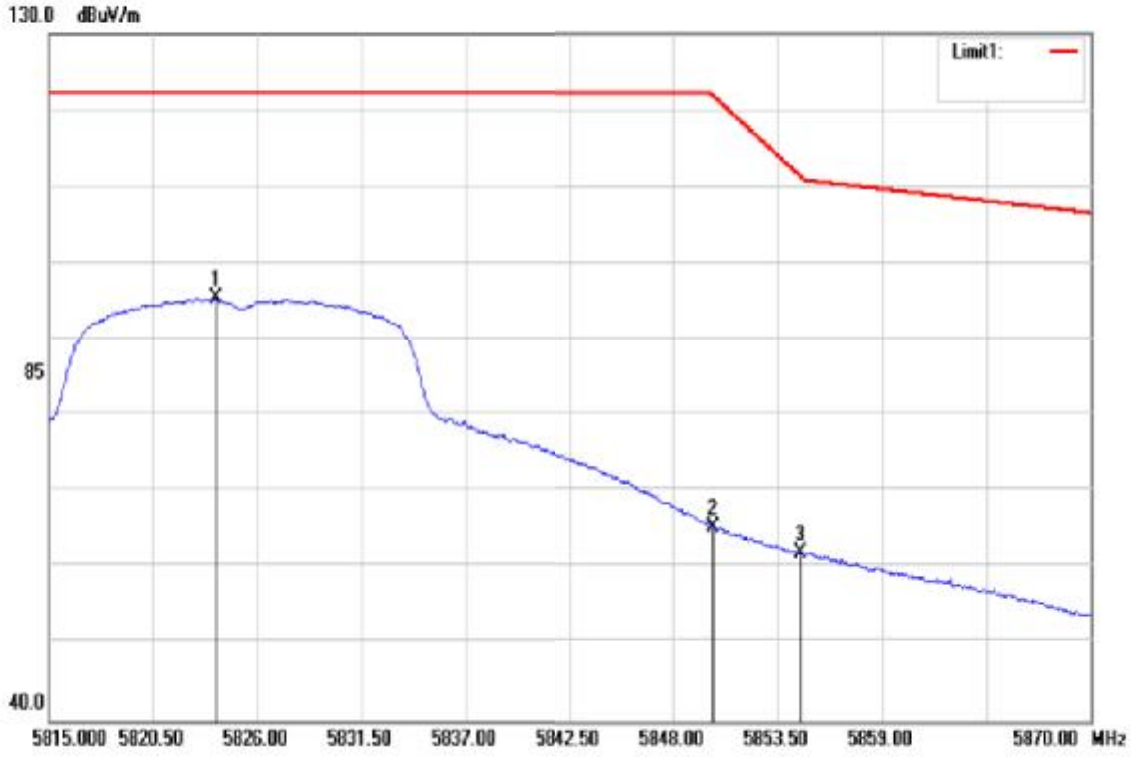
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.930	59.64	6.50	66.14	110.78	-44.64	AVG
5724.690	65.54	6.52	72.06	121.49	-49.43	AVG
5746.740	89.11	6.58	95.69	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



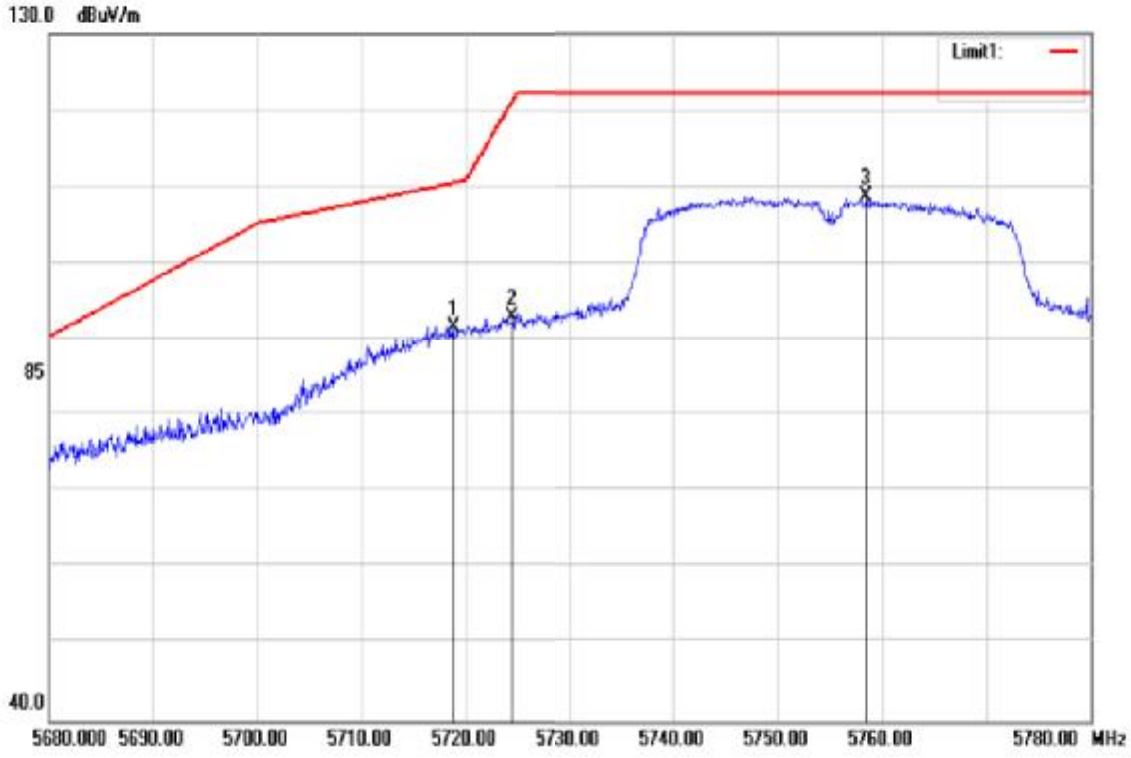
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5824.295	99.95	6.78	106.73	-	-	peak
5850.090	72.22	6.85	79.07	121.99	-42.92	peak
5856.360	69.16	6.86	76.02	110.42	-34.40	peak

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



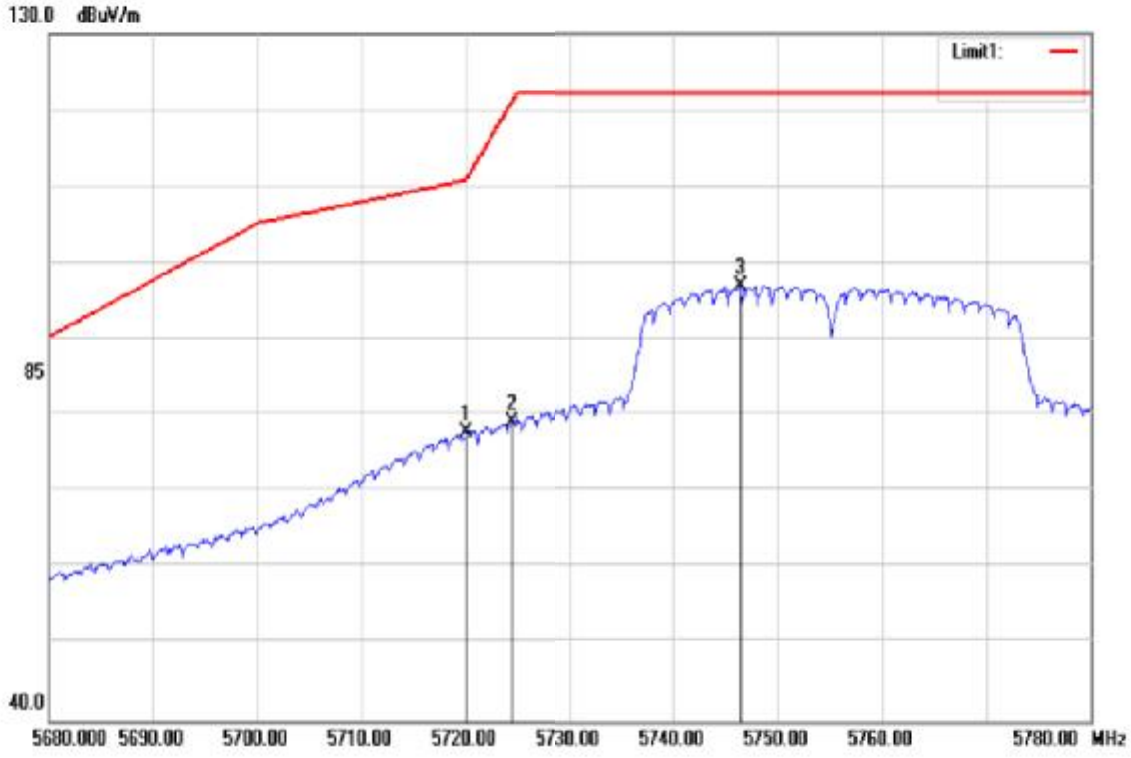
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5823.800	88.65	6.78	95.43	-	-	AVG
5850.090	58.55	6.85	65.40	121.99	-56.59	AVG
5854.710	55.12	6.86	61.98	111.46	-49.48	AVG

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



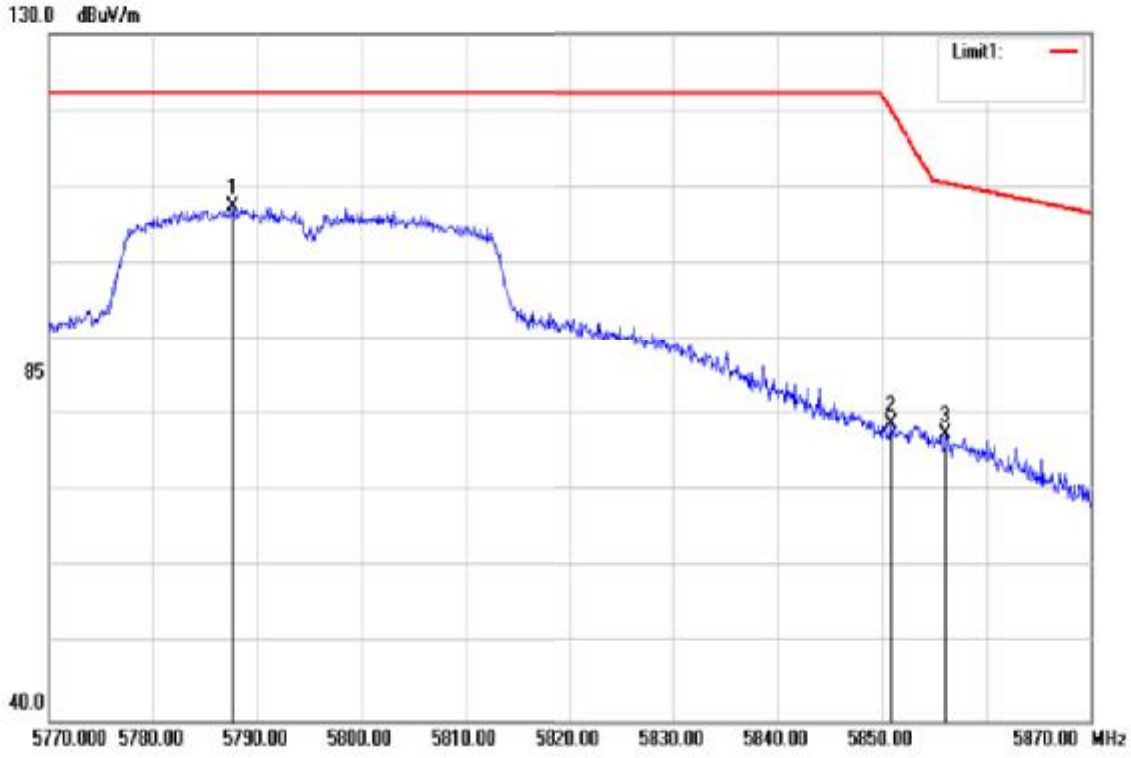
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5718.800	85.19	6.50	91.69	110.46	-18.77	peak
5724.500	86.49	6.52	93.01	121.06	-28.05	peak
5758.500	102.14	6.61	108.75	-	-	peak

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



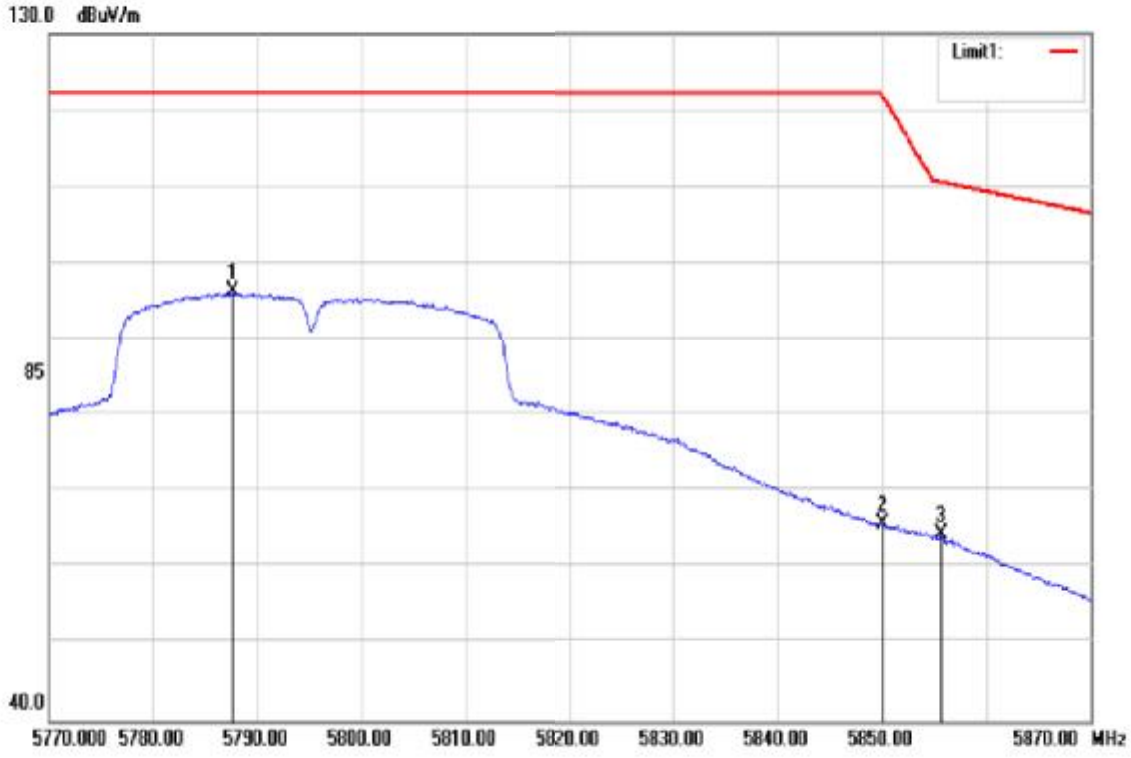
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5720.100	71.09	6.50	77.59	111.03	-33.44	AVG
5724.500	72.61	6.52	79.13	121.06	-41.93	AVG
5746.400	90.45	6.58	97.03	-	-	AVG

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5787.700	100.60	6.69	107.29	-	-	peak
5850.800	72.01	6.85	78.86	120.38	-41.52	peak
5856.100	70.64	6.86	77.50	110.49	-32.99	peak

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

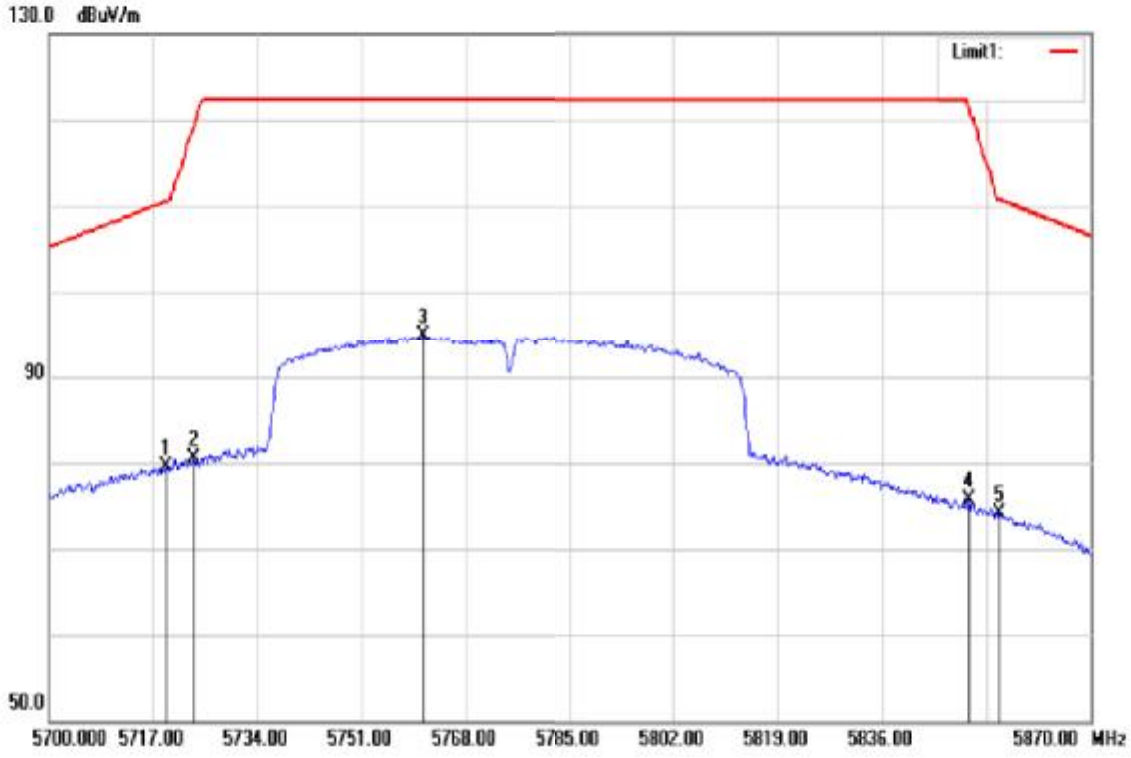


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5787.700	89.57	6.69	96.26	-	-	AVG
5850.000	58.80	6.85	65.65	122.20	-56.55	AVG
5855.600	57.58	6.86	64.44	110.63	-46.19	AVG

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5716.150	85.52	6.49	92.01	109.72	-17.71	peak
5721.080	86.14	6.51	92.65	113.26	-20.61	peak
5777.690	99.34	6.66	106.00	-	-	peak
5850.450	81.07	6.85	87.92	121.17	-33.25	peak
5854.700	80.39	6.86	87.25	111.48	-24.23	peak

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 17, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

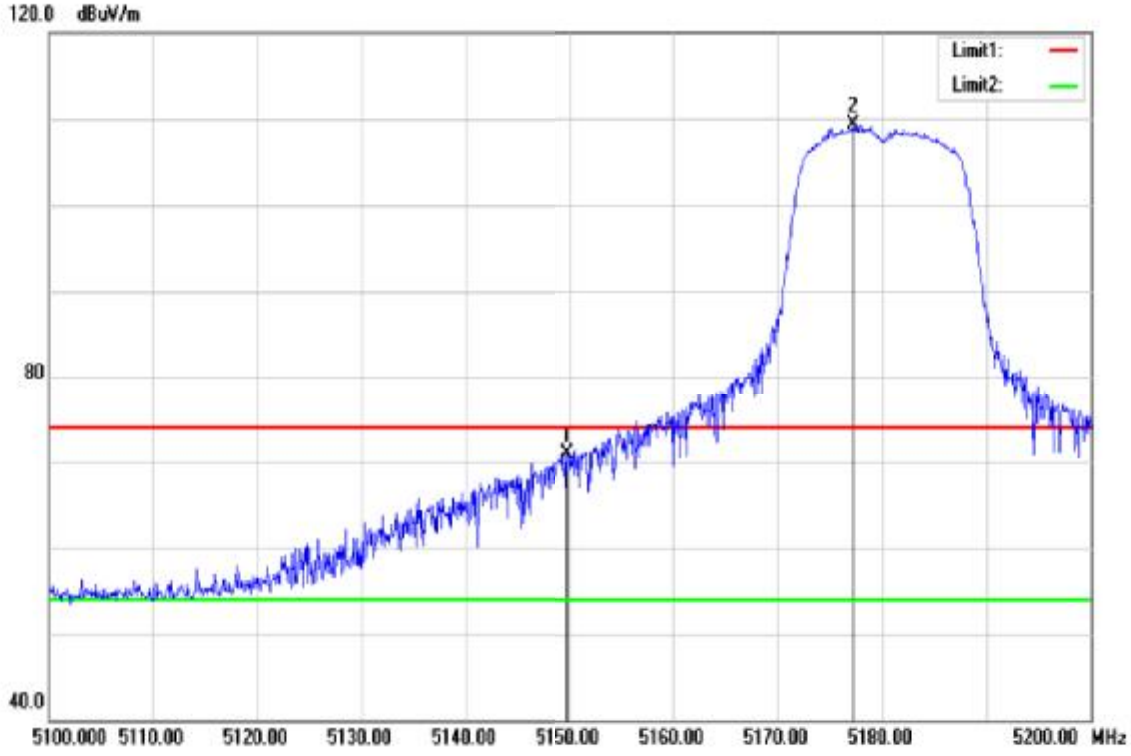


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.210	72.95	6.50	79.45	110.58	-31.13	AVG
5723.630	73.91	6.52	80.43	119.08	-38.65	AVG
5761.030	88.24	6.61	94.85	-	-	AVG
5850.110	68.84	6.85	75.69	121.95	-46.26	AVG
5855.210	67.32	6.86	74.18	110.74	-36.56	AVG

Band Edge Test Data for UNII-1

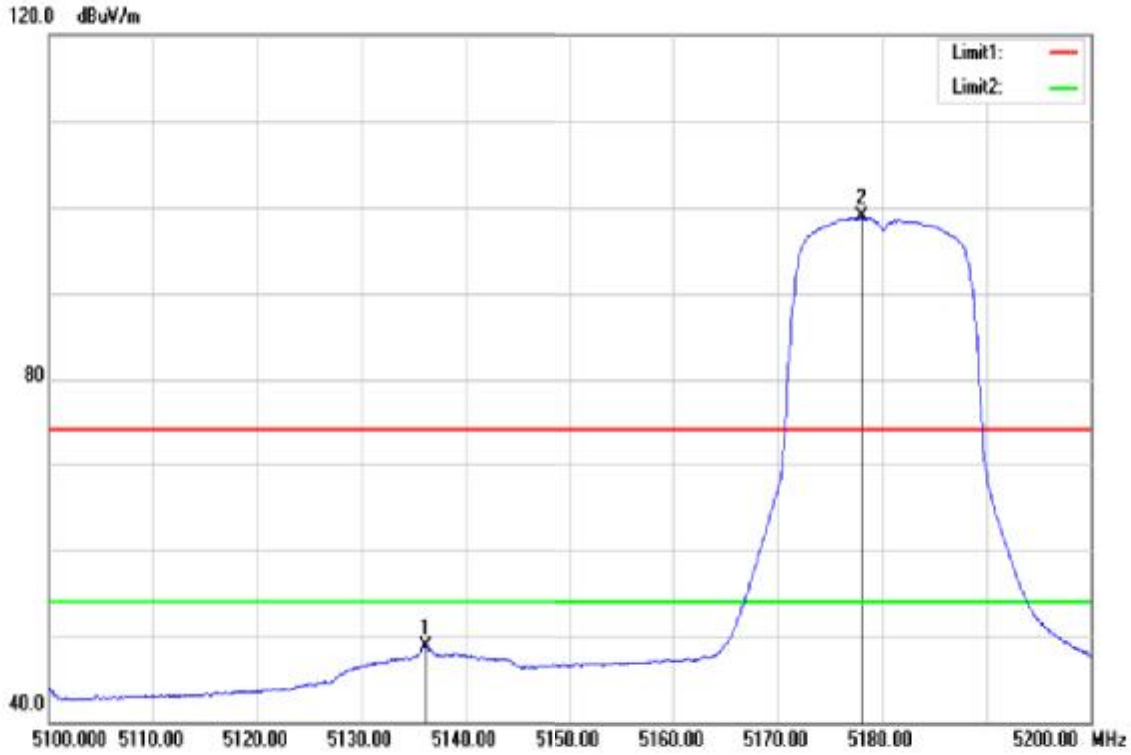
For Dipole Antenna

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



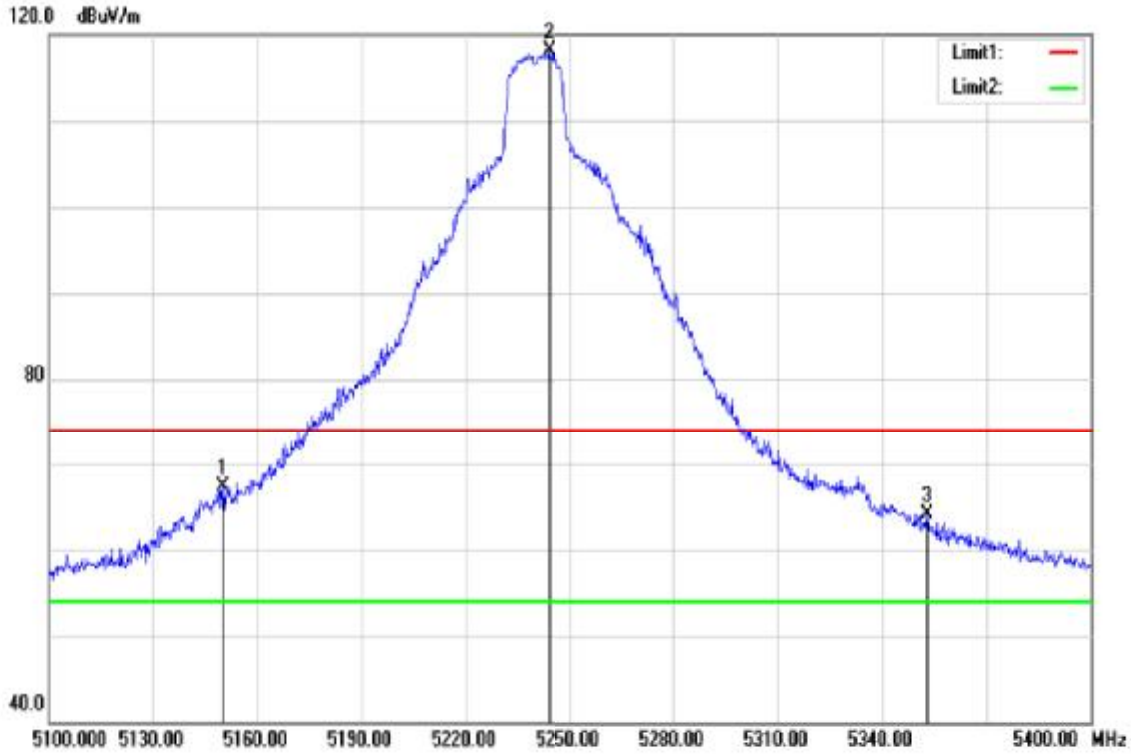
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.800	65.87	5.06	70.93	74.00	-3.07	peak
5177.300	104.20	5.14	109.34	-	-	peak

Test Mode	IEEE 802.11a / 5180MHZ	Temperature	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



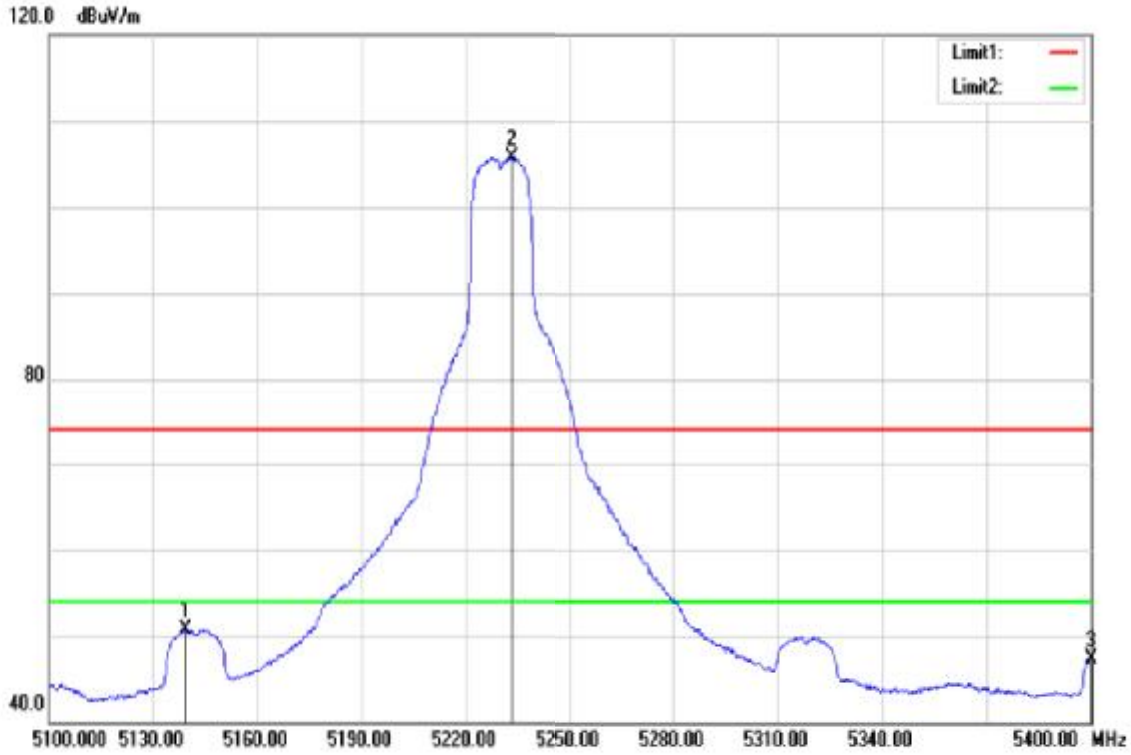
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5136.200	43.77	5.03	48.80	54.00	-5.20	AVG
5178.100	93.69	5.14	98.83	-	-	AVG

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



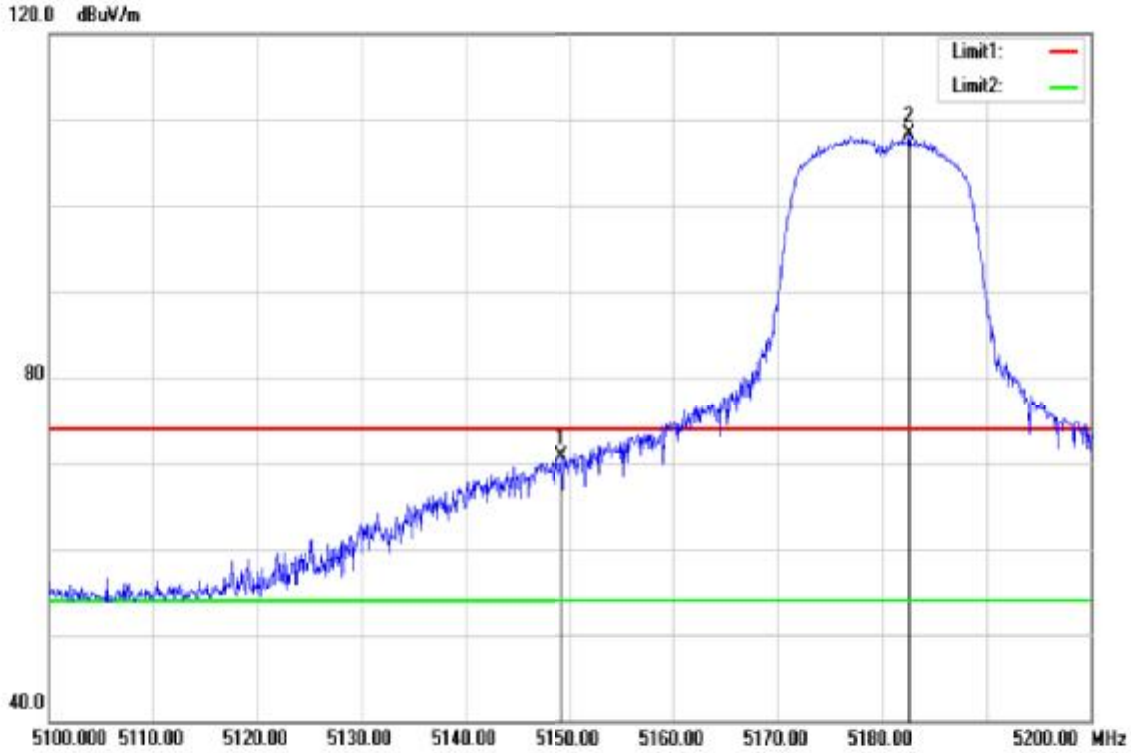
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	62.30	5.06	67.36	74.00	-6.64	peak
5244.000	112.74	5.29	118.03	-	-	peak
5352.900	58.57	5.56	64.13	74.00	-9.87	peak

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 13, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



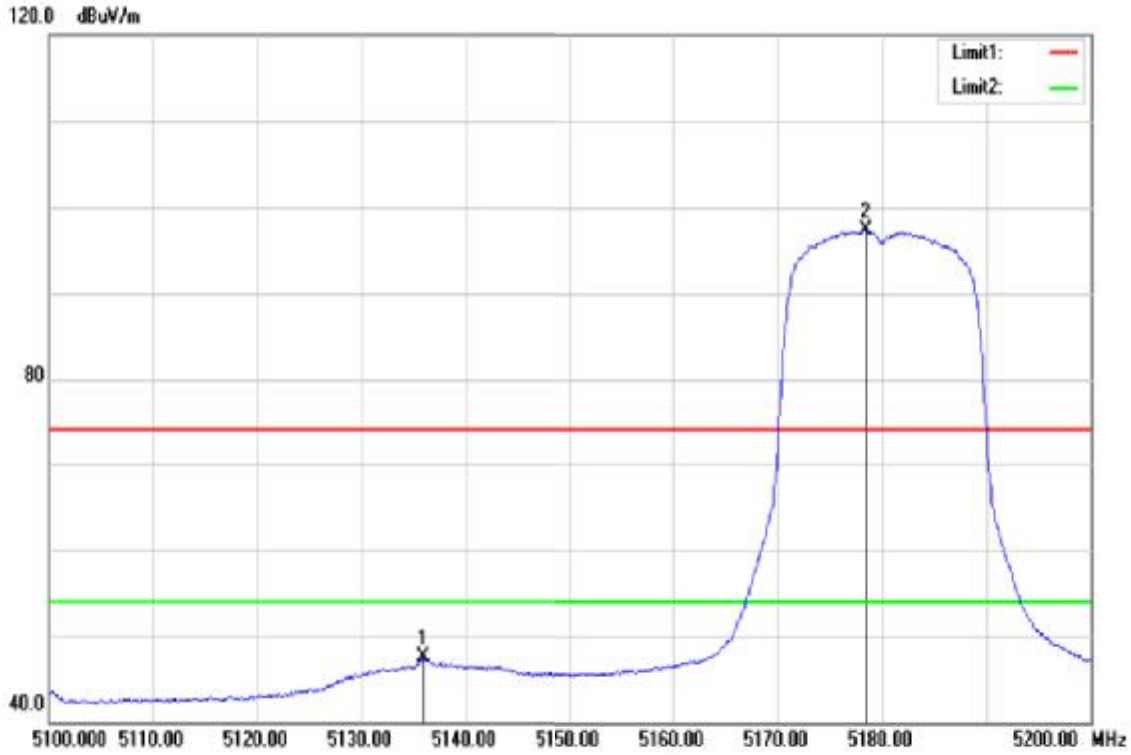
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5139.300	45.70	5.03	50.73	54.00	-3.27	AVG
5233.200	100.42	5.27	105.69	-	-	AVG
5400.000	41.72	5.68	47.40	54.00	-6.60	AVG

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



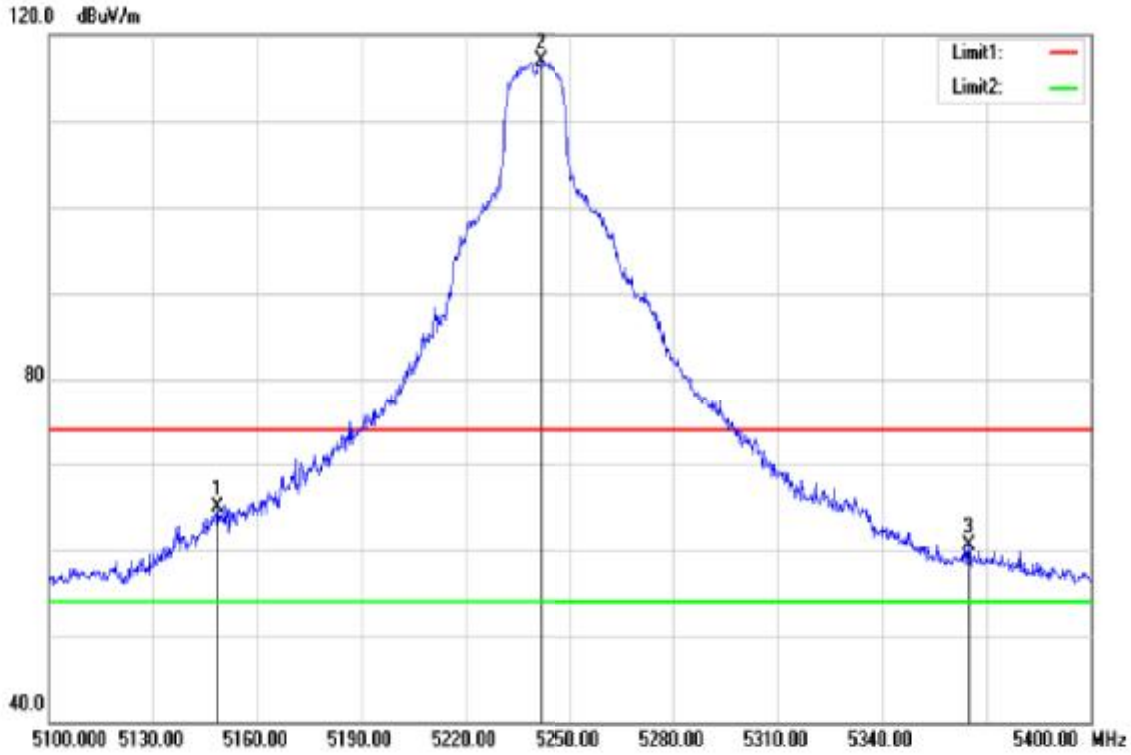
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.200	65.71	5.06	70.77	74.00	-3.23	peak
5182.600	103.18	5.14	108.32	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



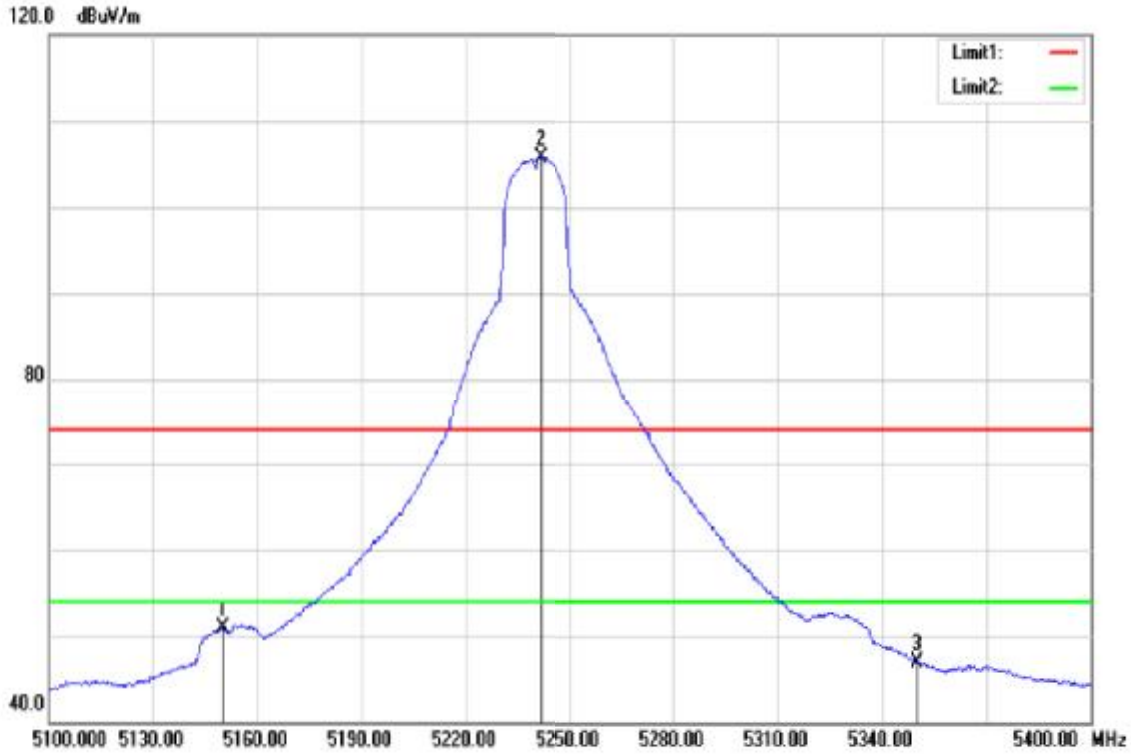
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5135.900	42.52	5.03	47.55	54.00	-6.45	AVG
5178.400	92.18	5.14	97.32	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



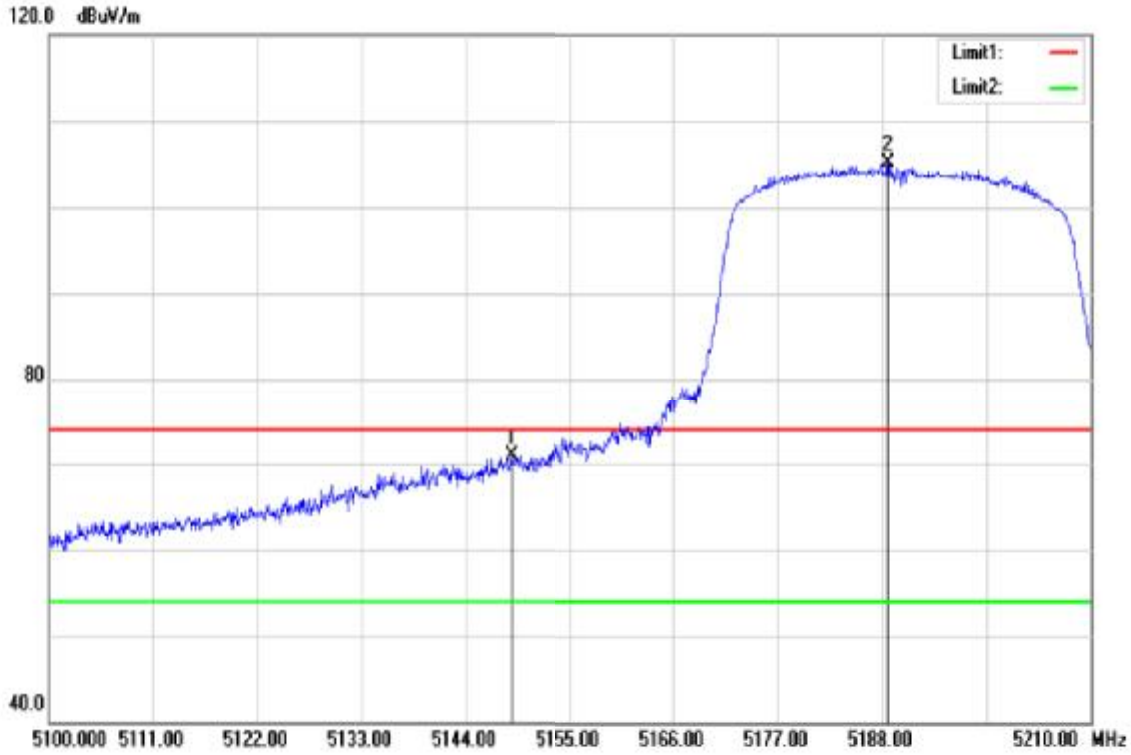
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.600	59.92	5.06	64.98	74.00	-9.02	peak
5241.600	111.57	5.28	116.85	-	-	peak
5364.900	55.00	5.59	60.59	74.00	-13.41	peak

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temperature	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



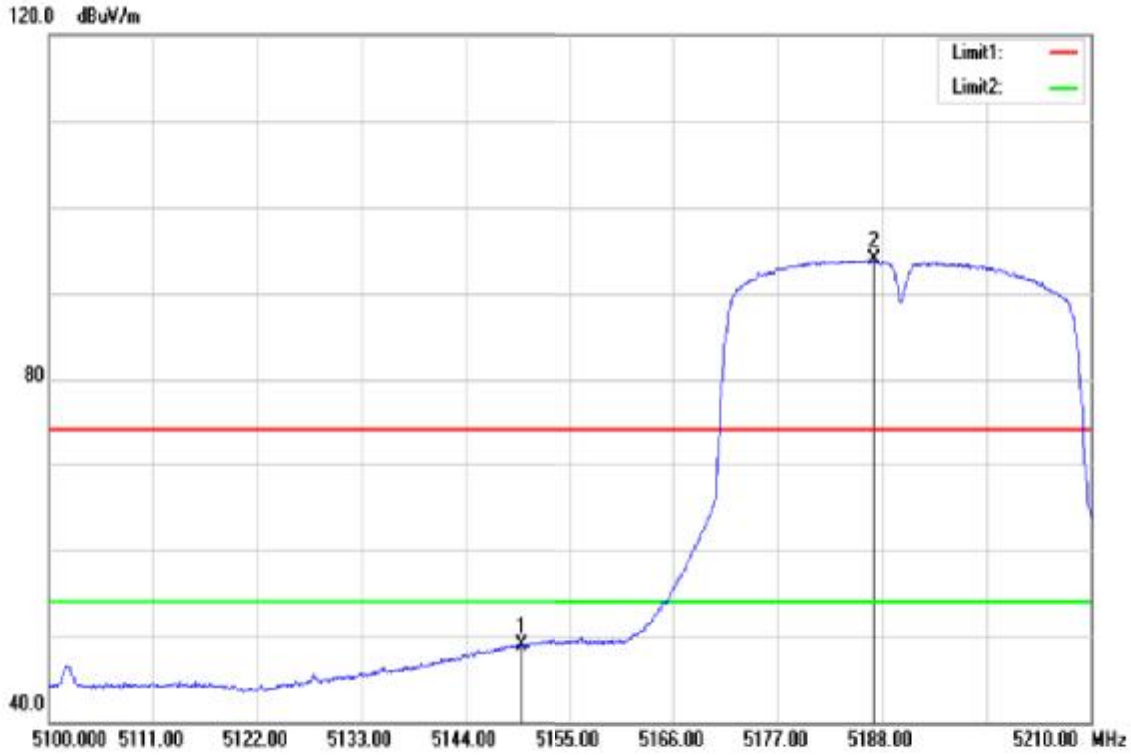
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	45.89	5.06	50.95	54.00	-3.05	AVG
5241.900	100.51	5.29	105.80	-	-	AVG
5350.200	41.39	5.56	46.95	54.00	-7.05	AVG

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



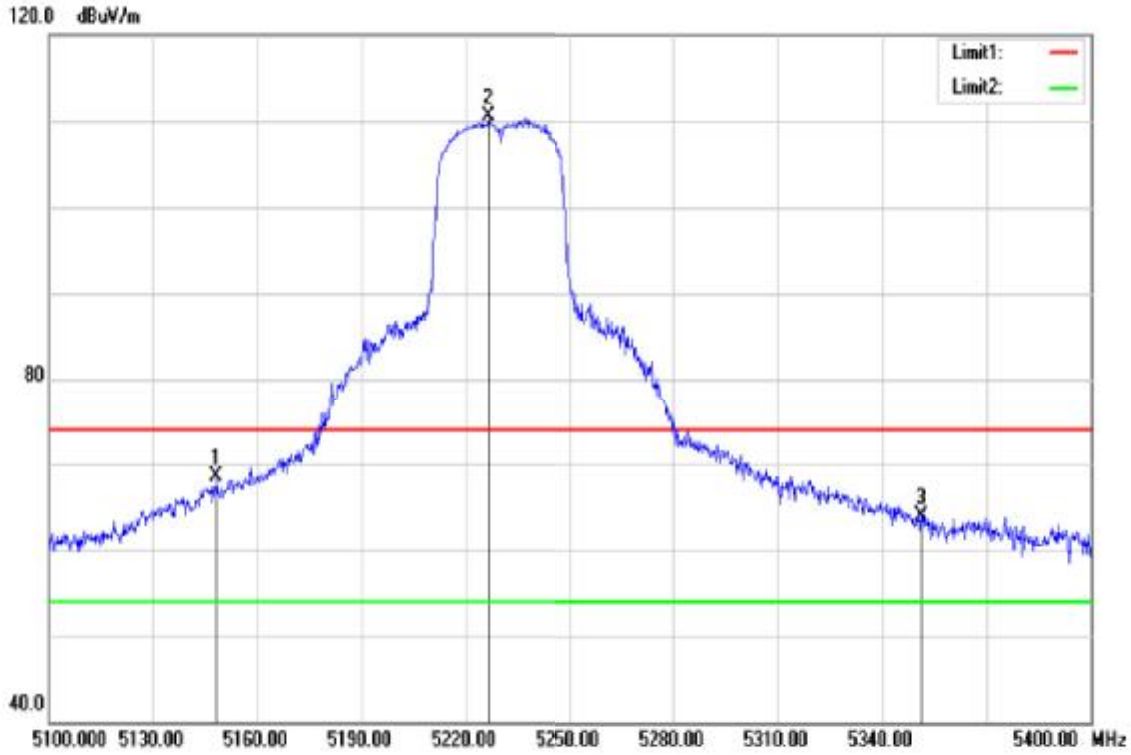
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.840	65.82	5.06	70.88	74.00	-3.12	peak
5188.660	100.04	5.16	105.20	-	-	peak

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temperature	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



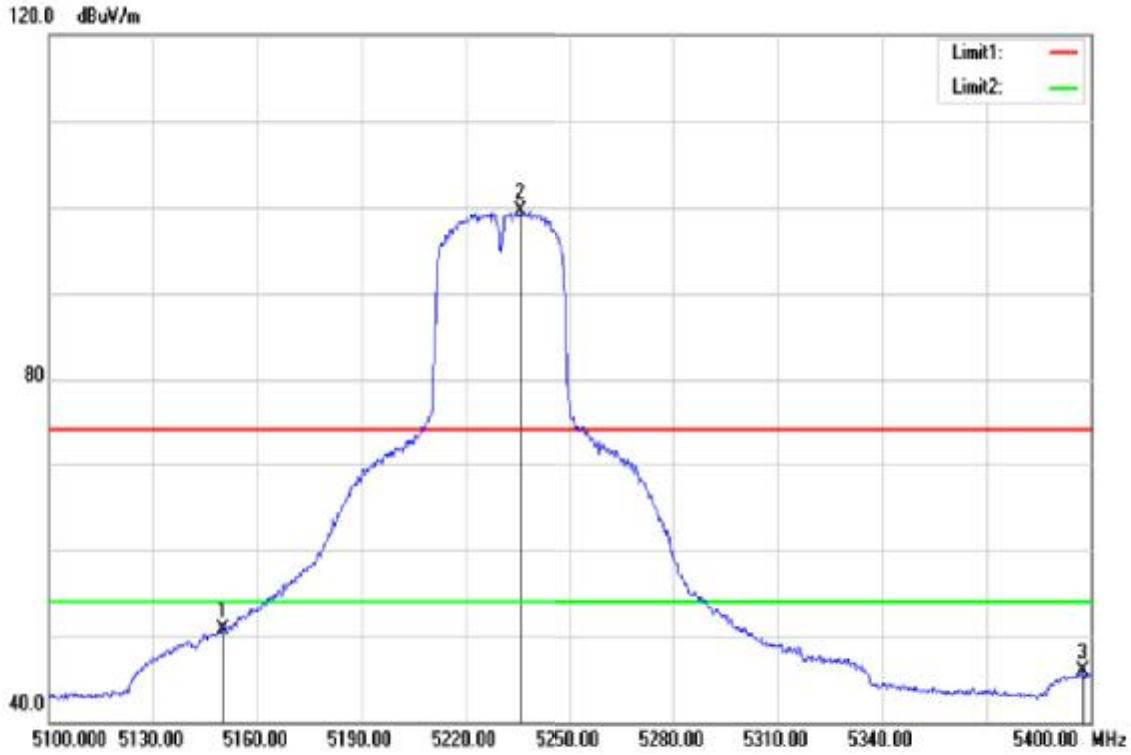
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	43.87	5.06	48.93	54.00	-5.07	AVG
5187.230	88.71	5.15	93.86	-	-	AVG

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



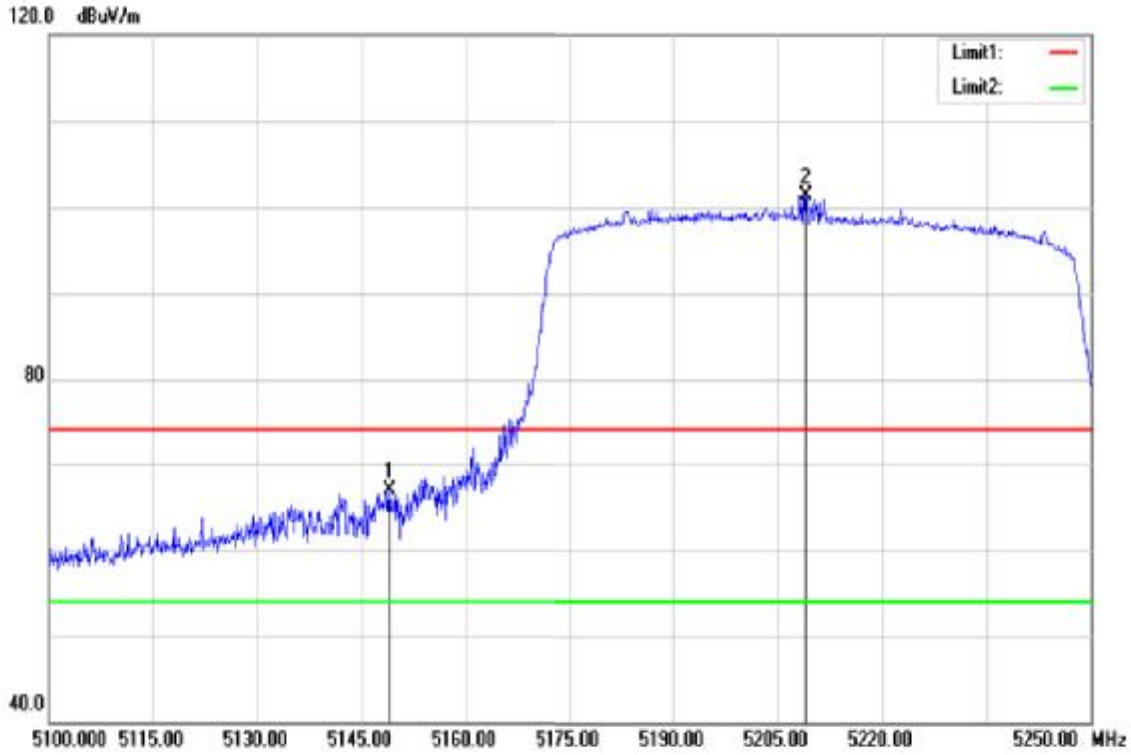
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5148.300	63.47	5.06	68.53	74.00	-5.47	peak
5226.600	105.15	5.26	110.41	-	-	peak
5351.400	58.43	5.56	63.99	74.00	-10.01	peak

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



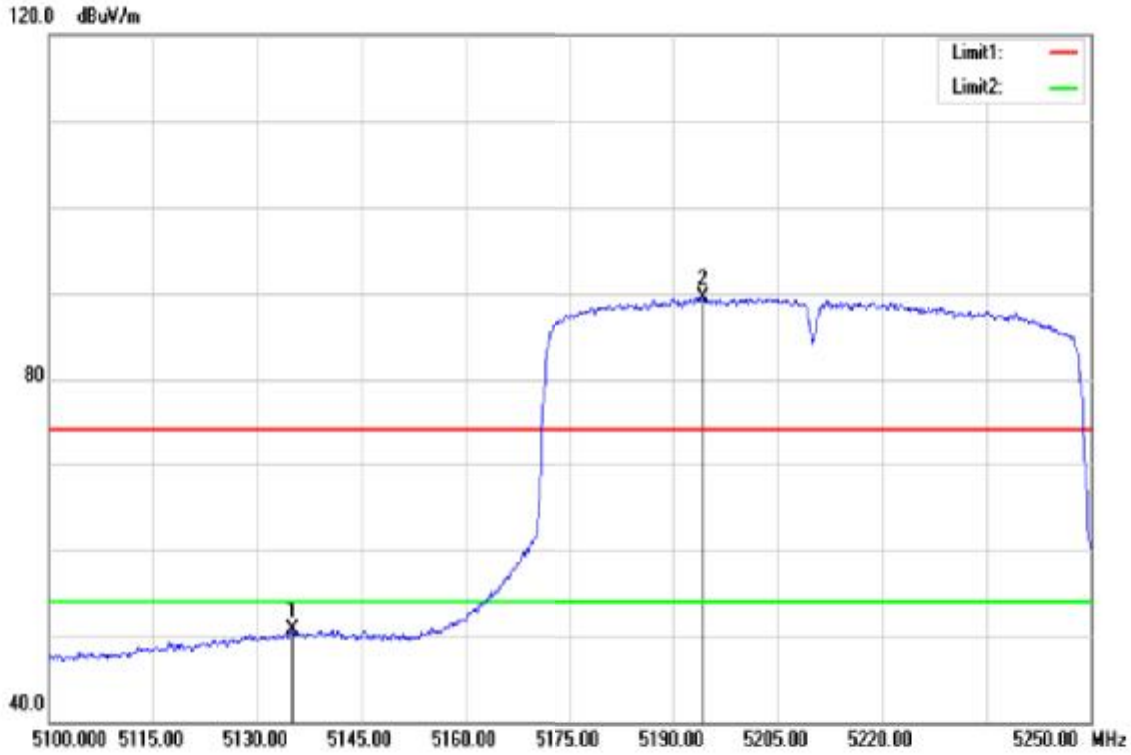
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.000	45.61	5.06	50.67	54.00	-3.33	AVG
5235.900	94.17	5.28	99.45	-	-	AVG
5397.600	40.24	5.68	45.92	54.00	-8.08	AVG

Test Mode	I EEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.050	61.75	5.06	66.81	74.00	-7.19	peak
5209.050	96.04	5.21	101.25	-	-	peak

Test Mode	I EEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



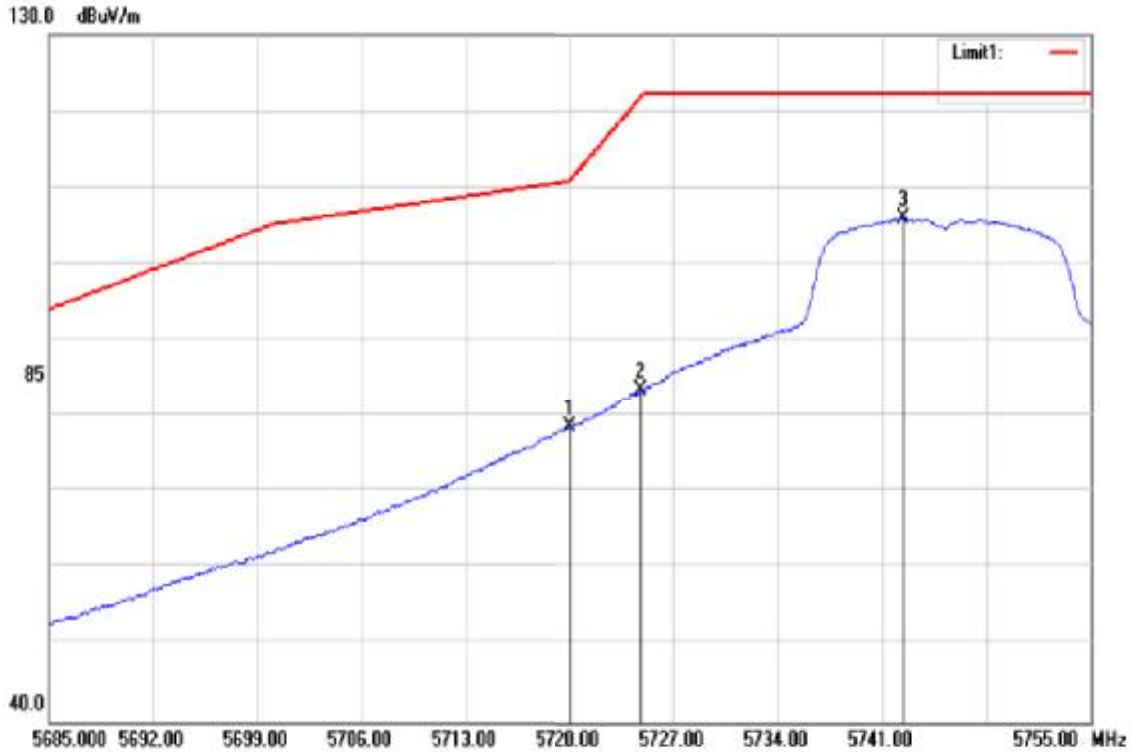
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5135.100	45.67	5.03	50.70	54.00	-3.30	AVG
5194.200	84.28	5.17	89.45	-	-	AVG

Band Edge Test Data for UNII-3

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

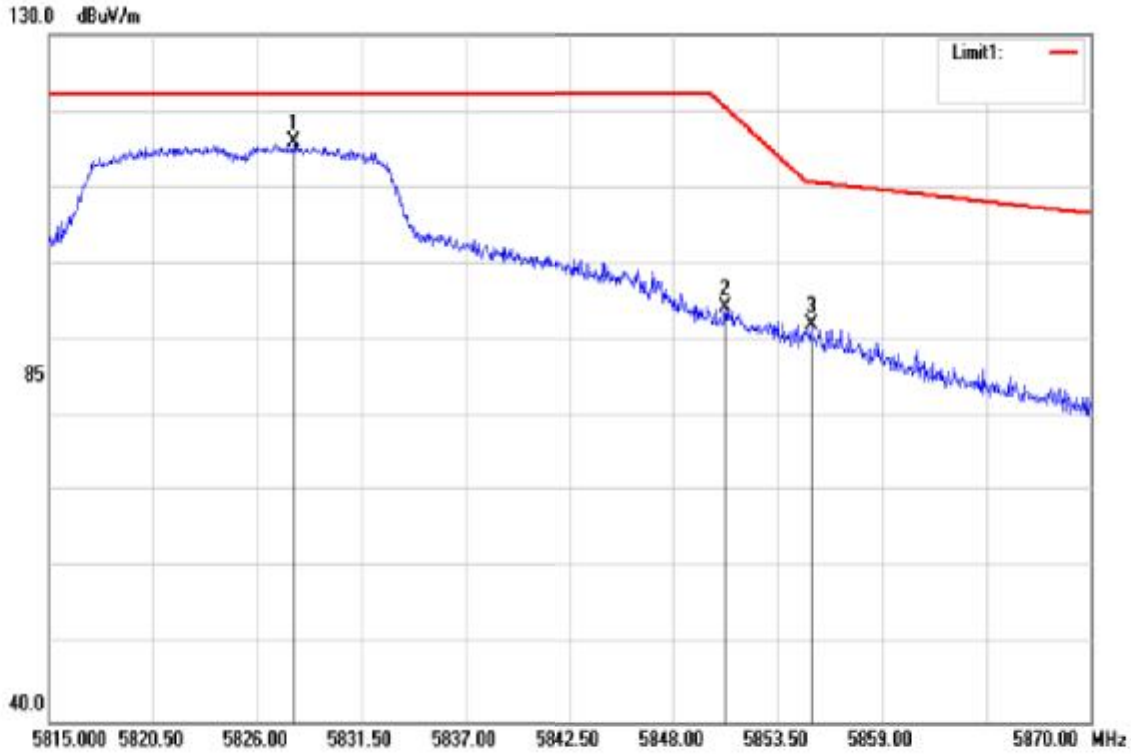
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5718.670	83.10	6.50	89.60	110.43	-20.83	peak
5724.410	87.69	6.52	94.21	120.85	-26.64	peak
5746.250	108.94	6.58	115.52	-	-	peak

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5720.000	72.14	6.50	78.64	110.80	-32.16	AVG
5724.830	77.07	6.52	83.59	121.81	-38.22	AVG
5742.400	99.40	6.56	105.96	-	-	AVG

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

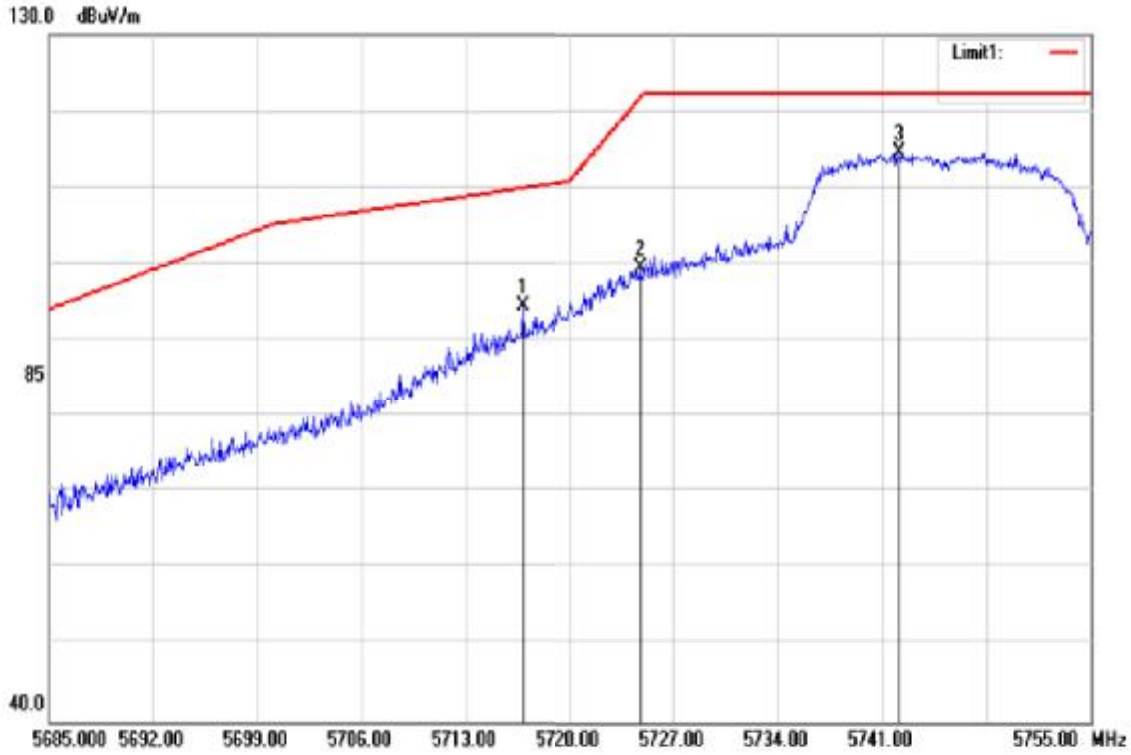


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5827.980	109.05	6.79	115.84	-	-	peak
5850.750	87.39	6.85	94.24	120.49	-26.25	peak
5855.260	85.12	6.86	91.98	110.73	-18.75	peak

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

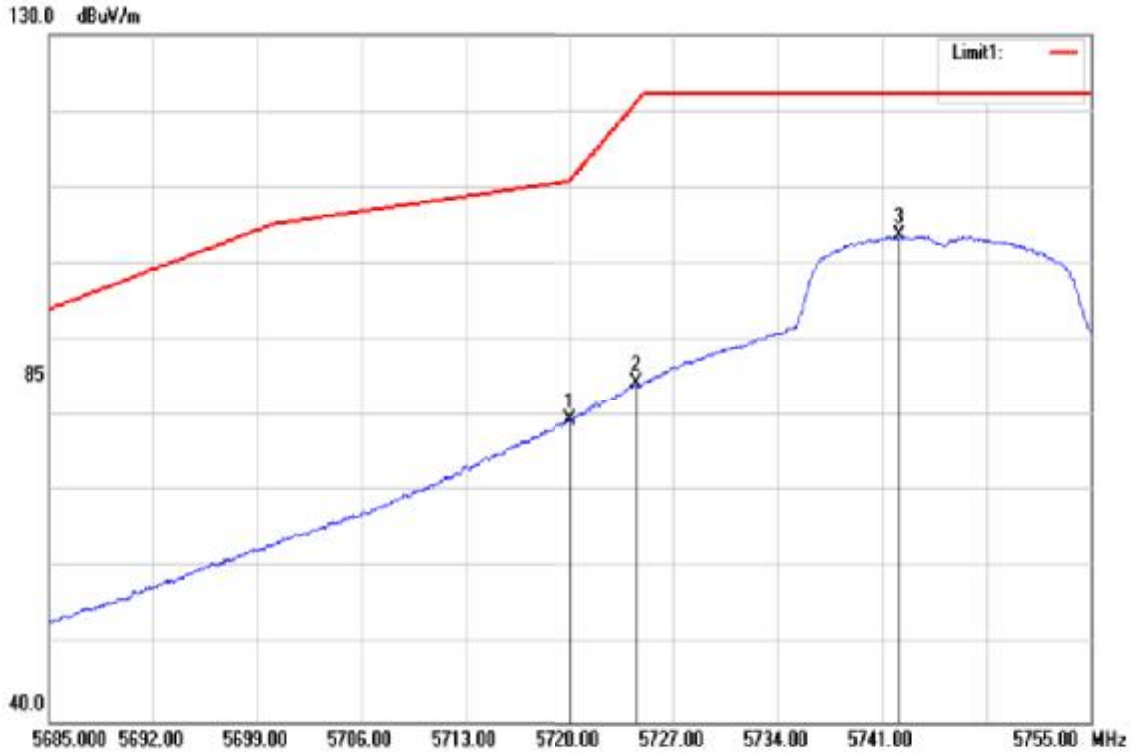
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5828.145	97.90	6.79	104.69	-	-	AVG
5850.035	72.86	6.85	79.71	122.12	-42.41	AVG
5854.765	70.09	6.86	76.95	111.34	-34.39	AVG

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



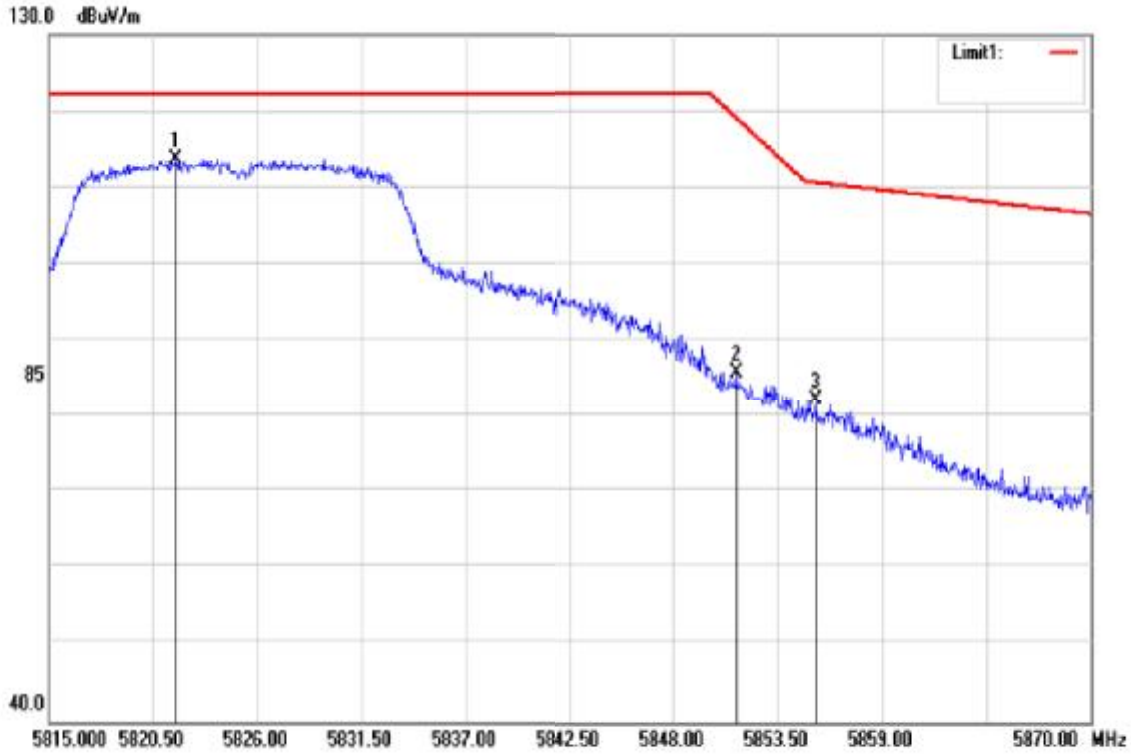
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5716.850	88.07	6.49	94.56	109.92	-15.36	peak
5724.760	93.04	6.52	99.56	121.65	-22.09	peak
5742.190	108.04	6.56	114.60	-	-	peak

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



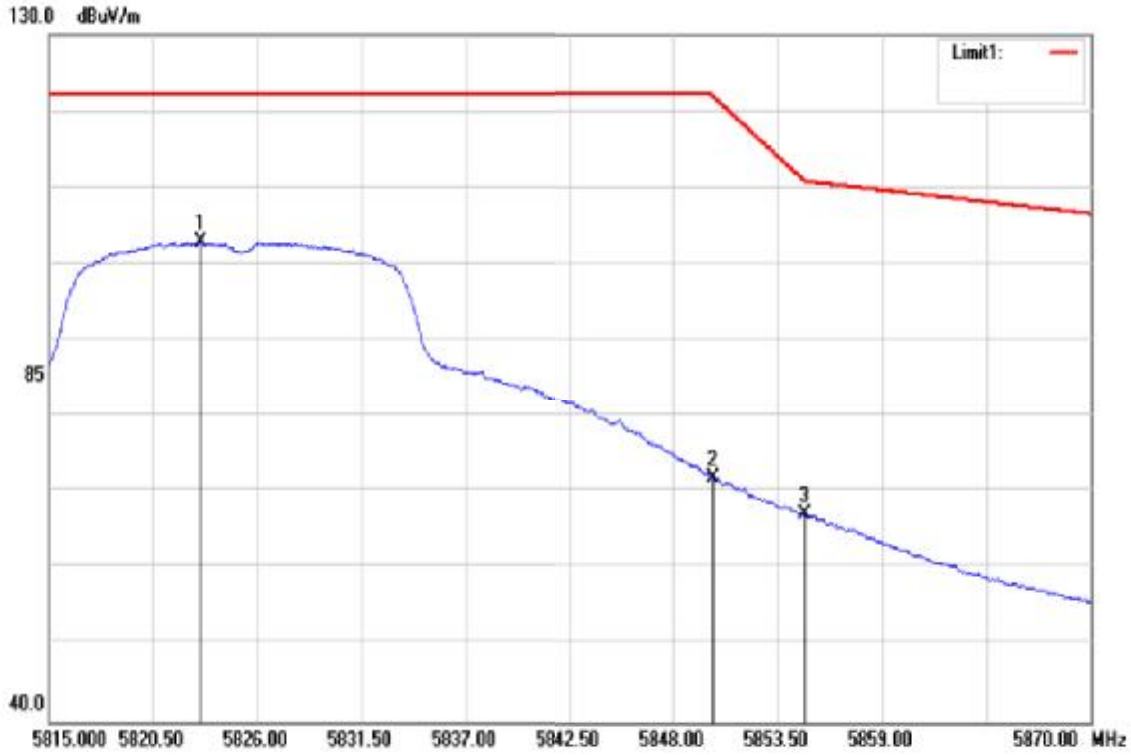
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5720.000	73.01	6.50	79.51	110.80	-31.29	AVG
5724.480	77.82	6.52	84.34	121.01	-36.67	AVG
5742.190	97.14	6.56	103.70	-	-	AVG

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



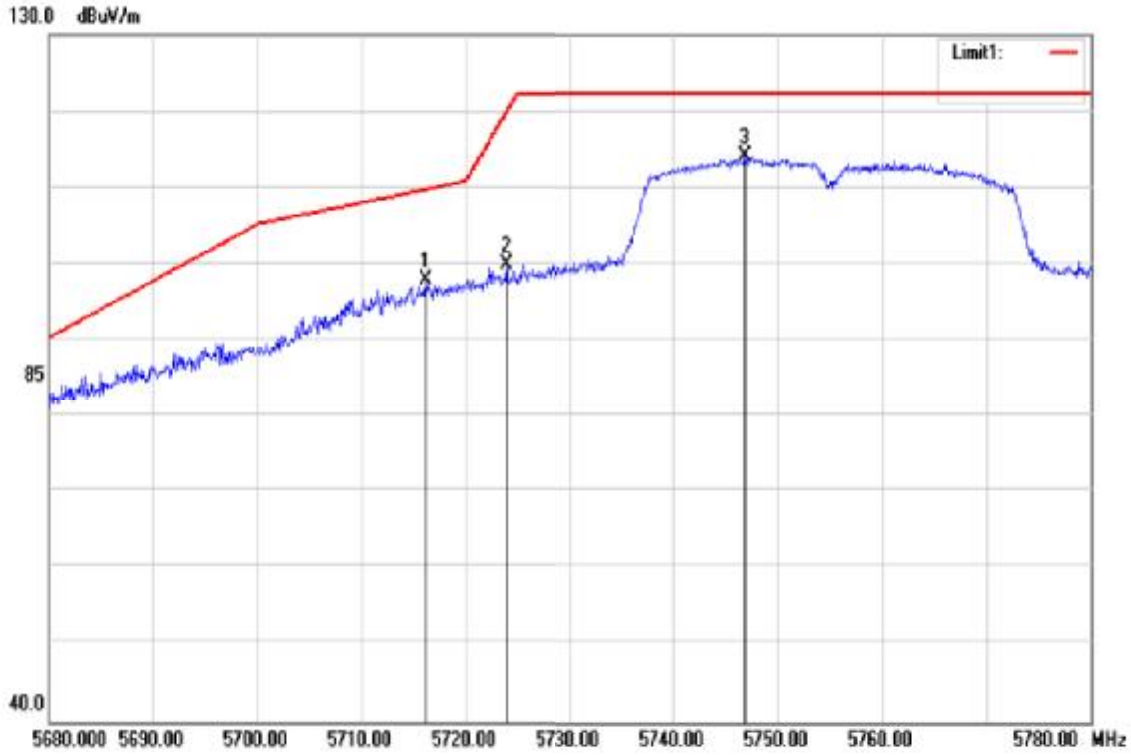
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5821.710	107.03	6.77	113.80	-	-	peak
5851.300	78.97	6.85	85.82	119.24	-33.42	peak
5855.480	75.24	6.86	82.10	110.67	-28.57	peak

Test Mode	IEEE 802.11n HT20 / 5825 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



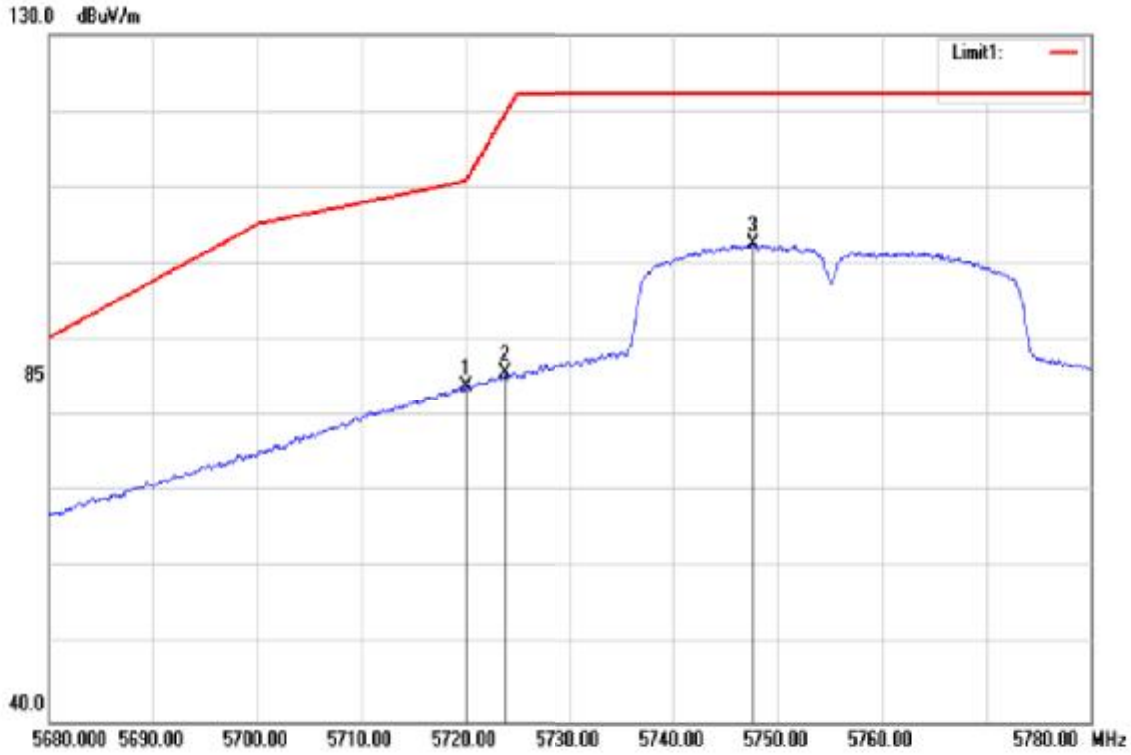
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5823.030	96.10	6.78	102.88	-	-	AVG
5850.090	65.03	6.85	71.88	121.99	-50.11	AVG
5854.930	60.31	6.86	67.17	110.96	-43.79	AVG

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



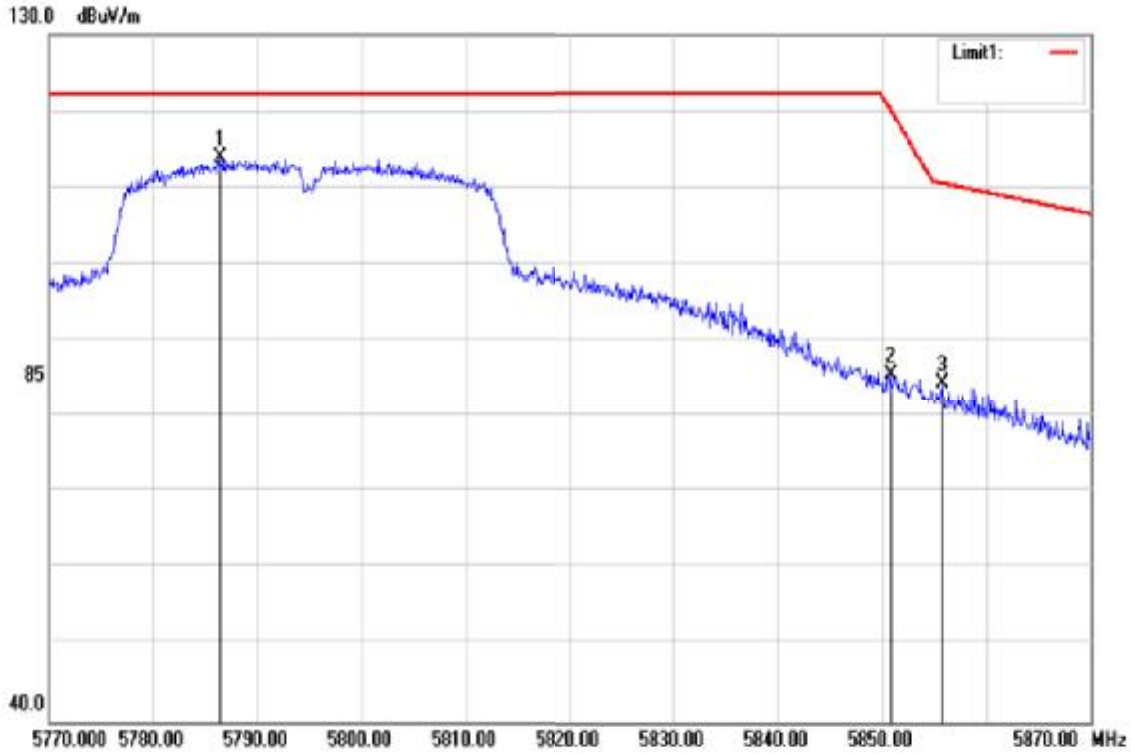
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5716.200	91.44	6.49	97.93	109.74	-11.81	peak
5723.900	93.42	6.52	99.94	119.69	-19.75	peak
5746.800	107.50	6.58	114.08	-	-	peak

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



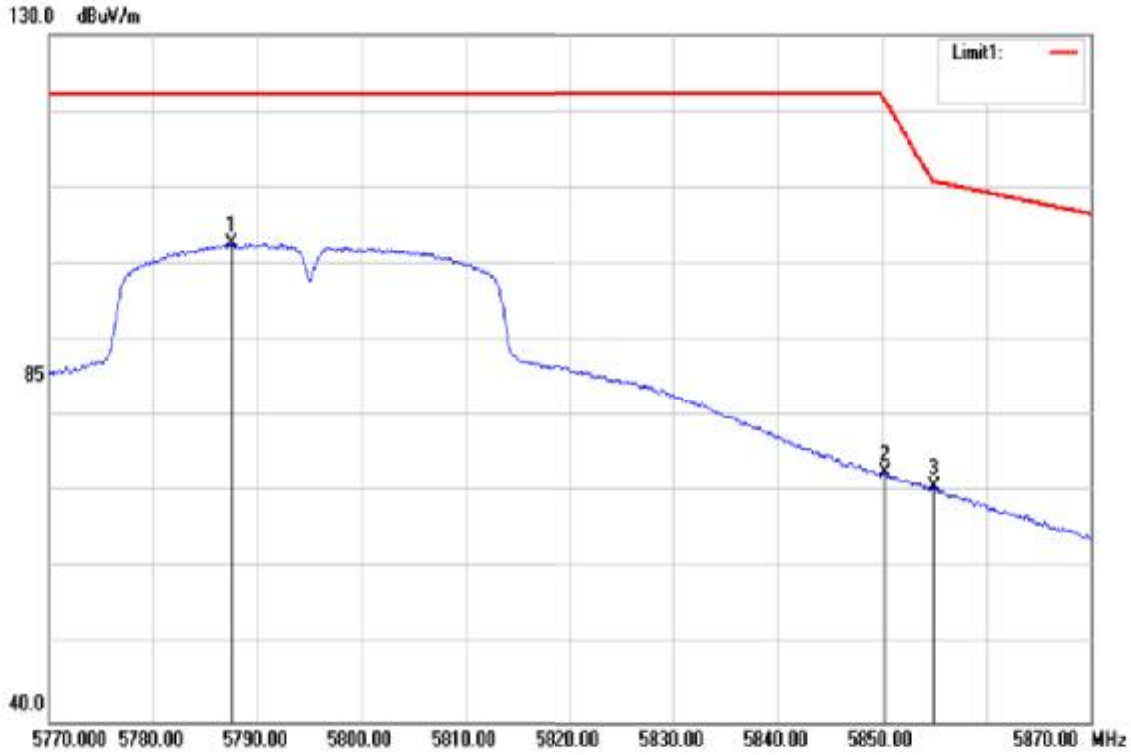
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5720.100	77.55	6.50	84.05	111.03	-26.98	AVG
5723.800	79.23	6.52	85.75	119.46	-33.71	AVG
5747.600	96.00	6.59	102.59	-	-	AVG

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



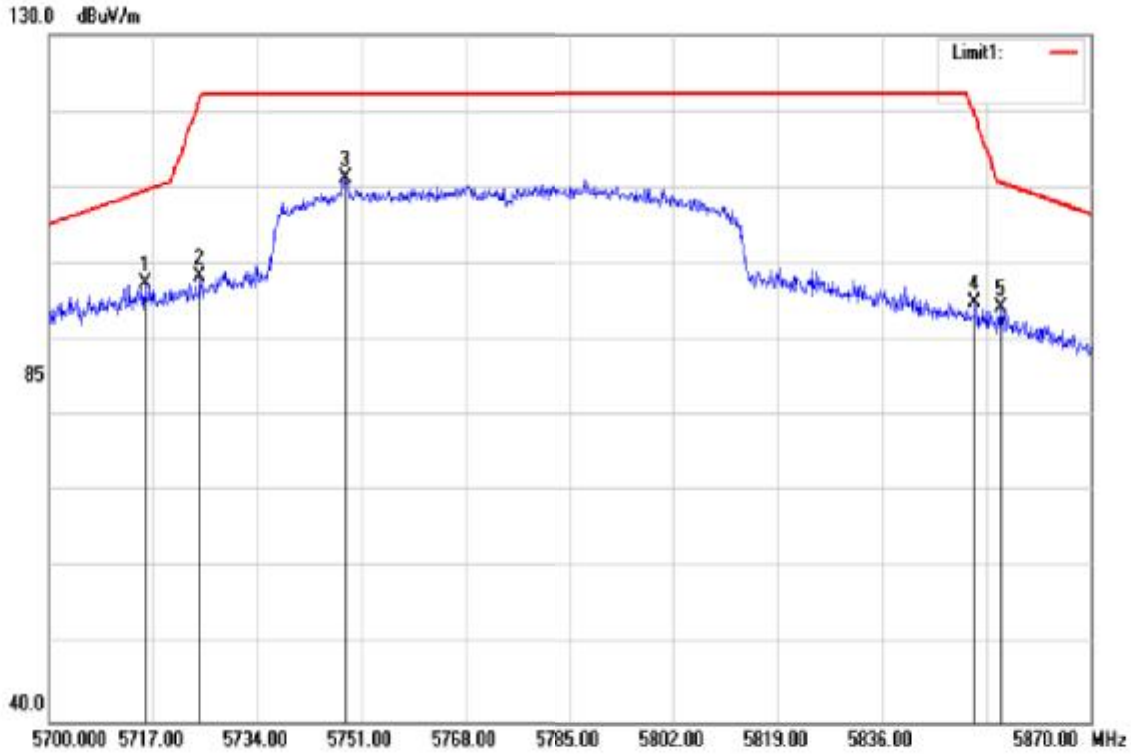
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5786.400	107.21	6.67	113.88	-	-	peak
5850.800	78.73	6.85	85.58	120.38	-34.80	peak
5855.800	77.54	6.86	84.40	110.58	-26.18	peak

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



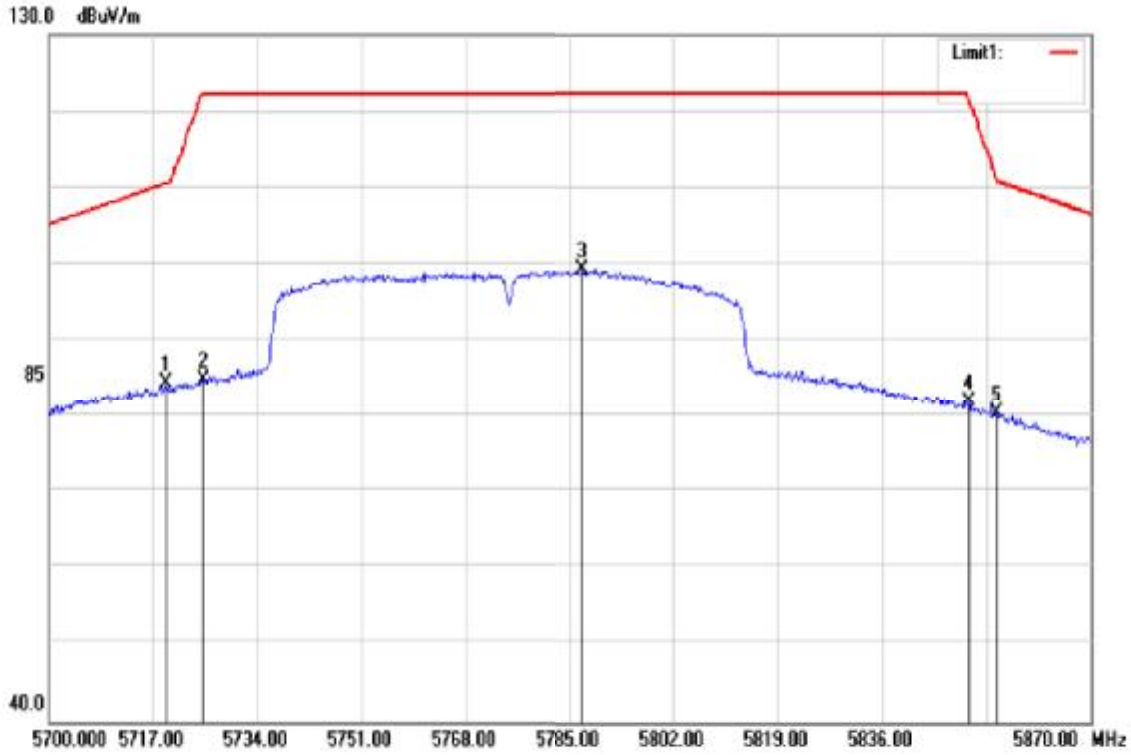
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5787.500	96.01	6.69	102.70	-	-	AVG
5850.300	65.64	6.85	72.49	121.52	-49.03	AVG
5855.000	63.86	6.86	70.72	110.80	-40.08	AVG

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5715.640	90.92	6.49	97.41	109.58	-12.17	peak
5724.650	91.82	6.52	98.34	121.40	-23.06	peak
5748.280	104.54	6.59	111.13	-	-	peak
5851.130	88.26	6.85	95.11	119.62	-24.51	peak
5855.380	87.54	6.86	94.40	110.69	-16.29	peak

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

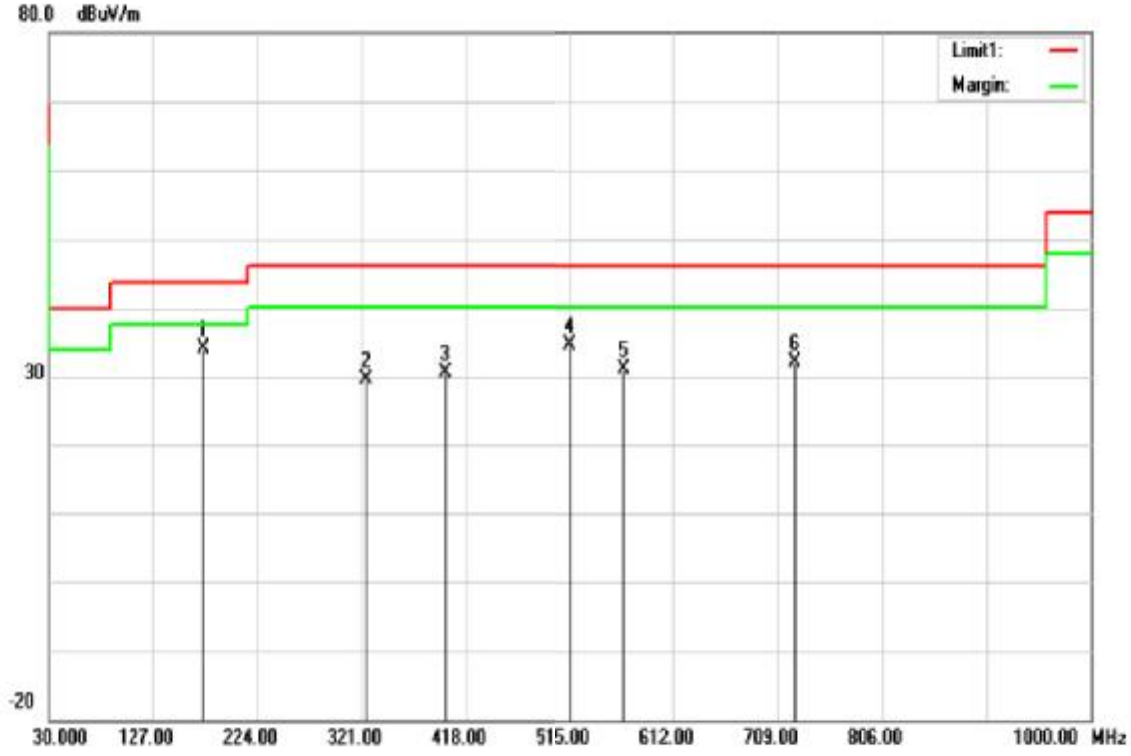


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5719.210	77.99	6.50	84.49	110.58	-26.09	AVG
5725.160	78.38	6.52	84.90	122.20	-37.30	AVG
5787.210	92.62	6.67	99.29	-	-	AVG
5850.110	75.06	6.85	81.91	121.95	-40.04	AVG
5854.700	73.45	6.86	80.31	111.48	-31.17	AVG

Below 1G Test Data

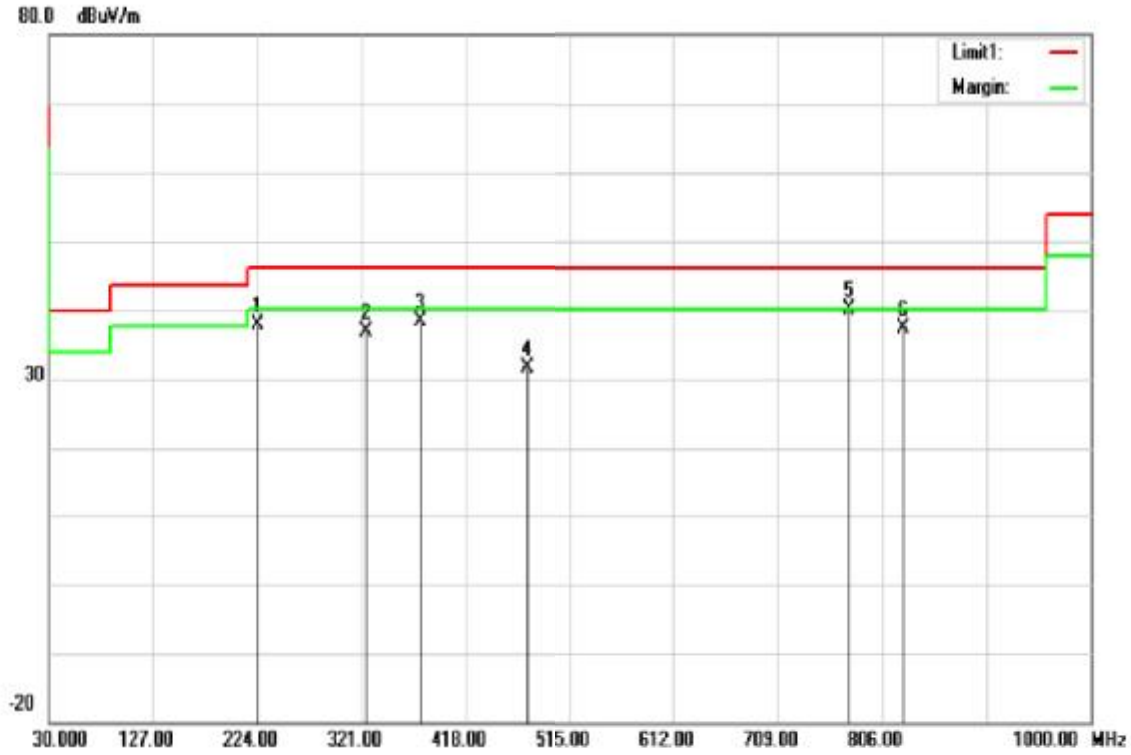
For PIFA Antenna

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
174.5300	44.87	-10.78	34.09	43.52	-9.43	peak
324.8800	36.94	-7.38	29.56	46.02	-16.46	peak
399.5700	35.99	-5.30	30.69	46.02	-15.33	peak
515.0000	36.88	-2.33	34.55	46.02	-11.47	peak
565.4400	32.75	-1.56	31.19	46.02	-14.83	peak
724.5200	30.75	1.35	32.10	46.02	-13.92	peak

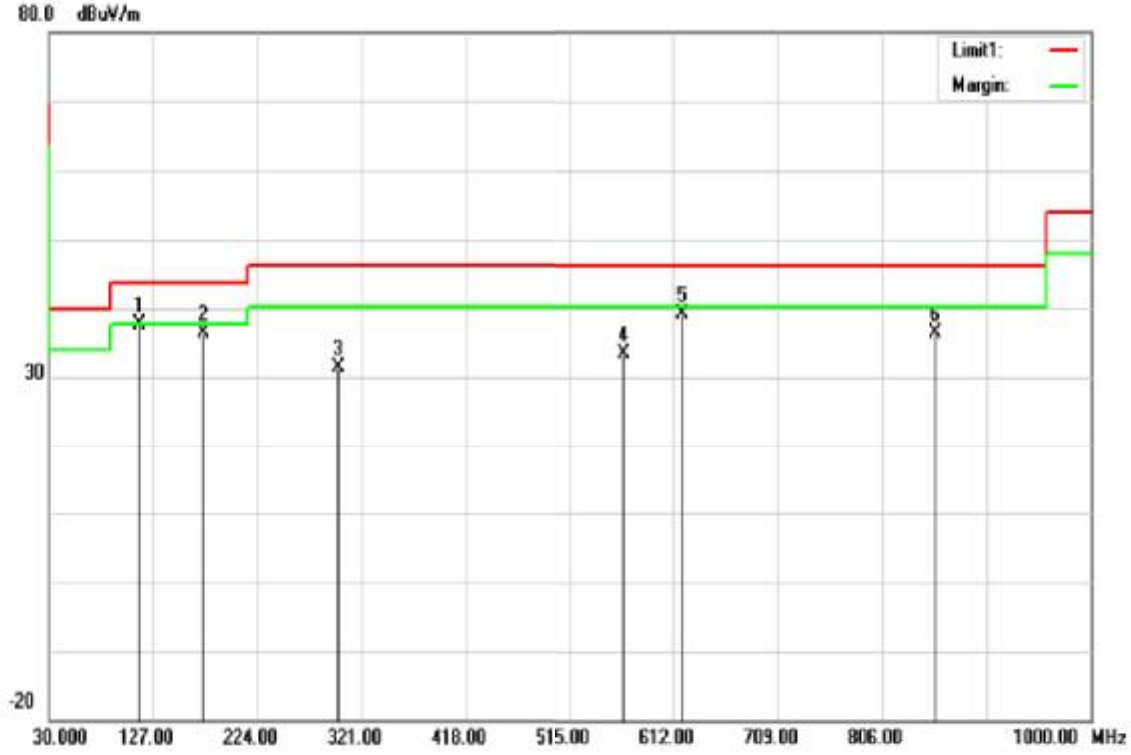
Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
224.9700	48.73	-10.97	37.76	46.02	-8.26	peak
324.8800	44.33	-7.38	36.95	46.02	-9.07	peak
375.3200	44.47	-6.02	38.45	46.02	-7.57	peak
475.2300	34.67	-3.14	31.53	46.02	-14.49	peak
774.9600	37.86	2.21	40.07	46.02	-5.95	peak
825.4000	34.36	3.04	37.40	46.02	-8.62	peak

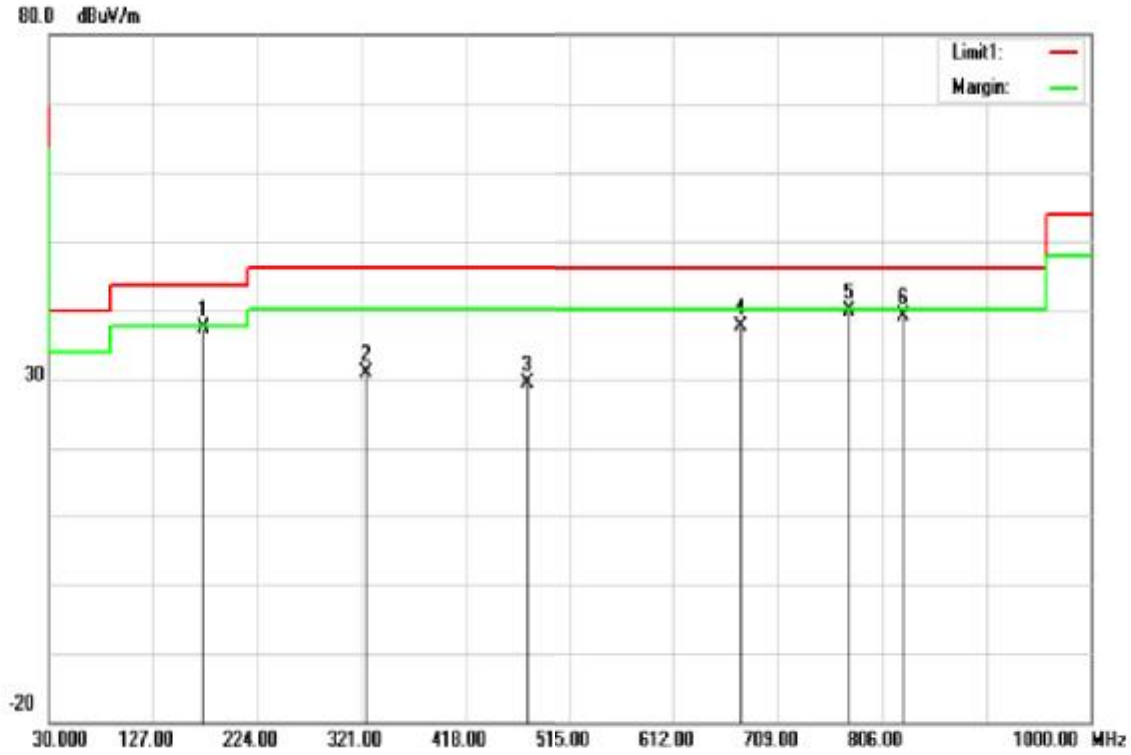
For Dipole Antenna

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
114.3900	47.47	-9.96	37.51	43.52	-6.01	peak
174.5300	47.17	-10.78	36.39	43.52	-7.13	peak
299.6600	39.28	-7.97	31.31	46.02	-14.71	peak
565.4400	34.99	-1.56	33.43	46.02	-12.59	peak
619.7600	39.69	-0.55	39.14	46.02	-6.88	peak
855.4700	32.87	3.47	36.34	46.02	-9.68	peak

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		

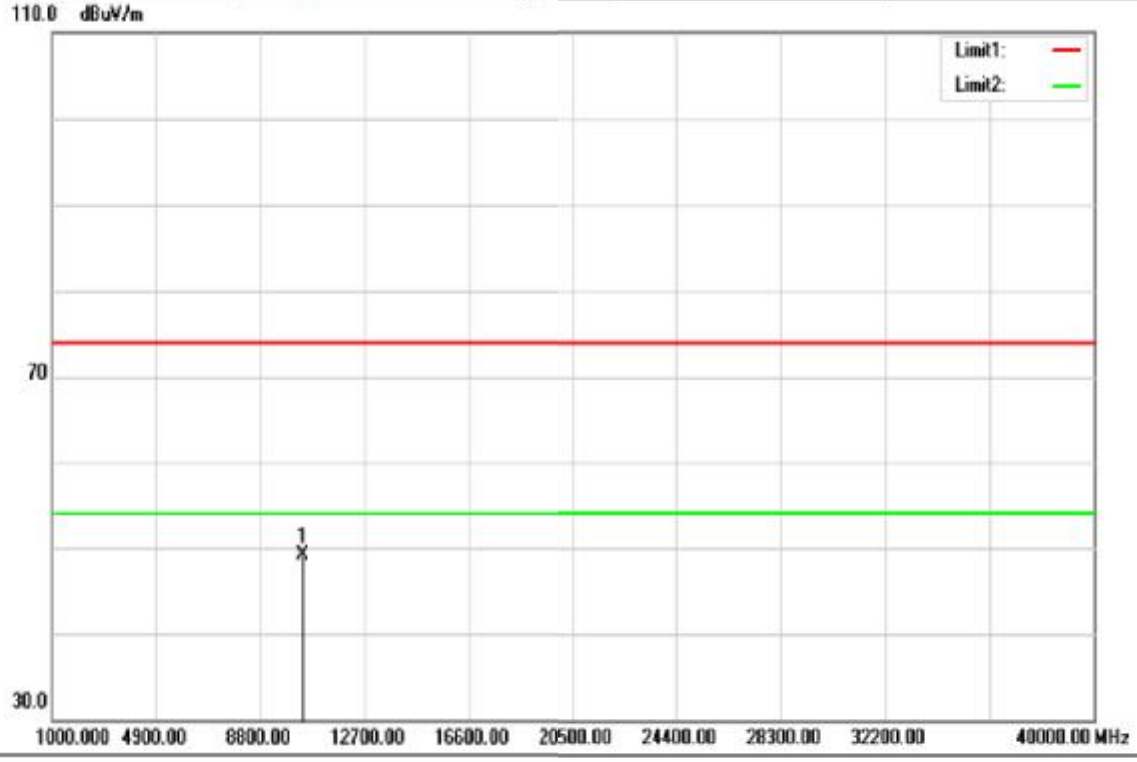


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
174.5300	48.18	-10.78	37.40	43.52	-6.12	peak
324.8800	38.18	-7.38	30.80	46.02	-15.22	peak
475.2300	32.64	-3.14	29.50	46.02	-16.52	peak
675.0500	36.87	0.68	37.55	46.02	-8.47	peak
774.9600	37.62	2.21	39.83	46.02	-6.19	peak
825.4000	36.00	3.04	39.04	46.02	-6.98	peak

For PIFA Antenna

Above 1G Test Data for UNII-1

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

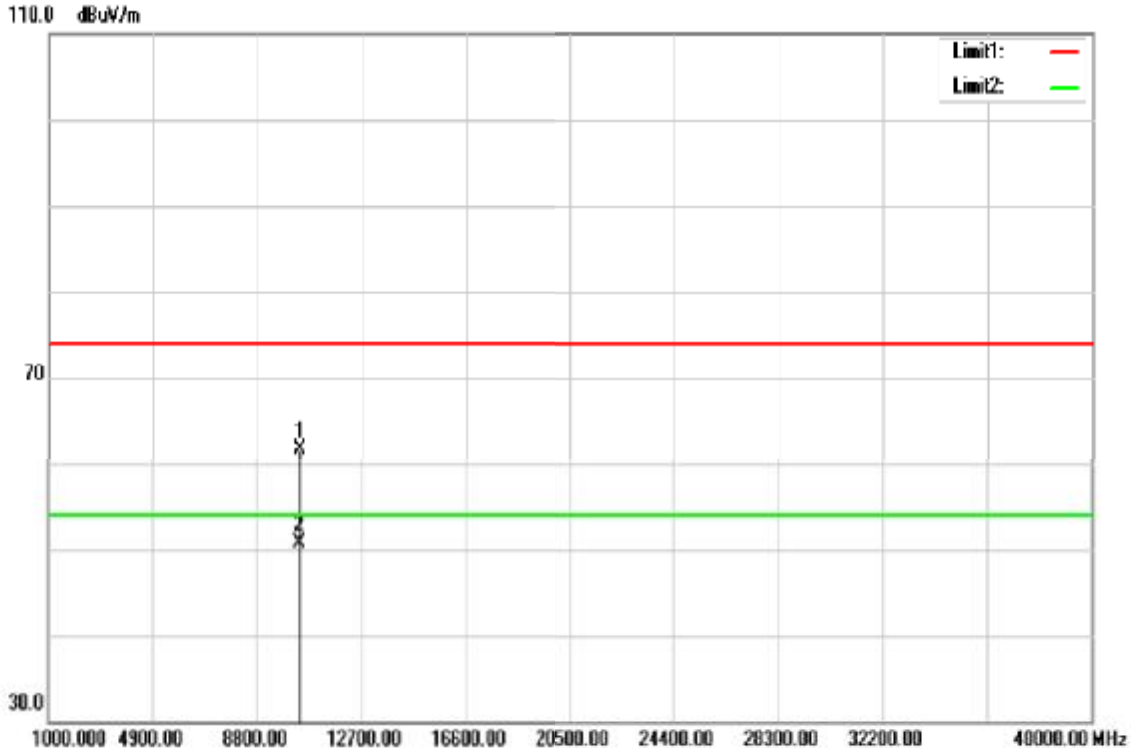


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	34.62	14.45	49.07	74.00	-24.93	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

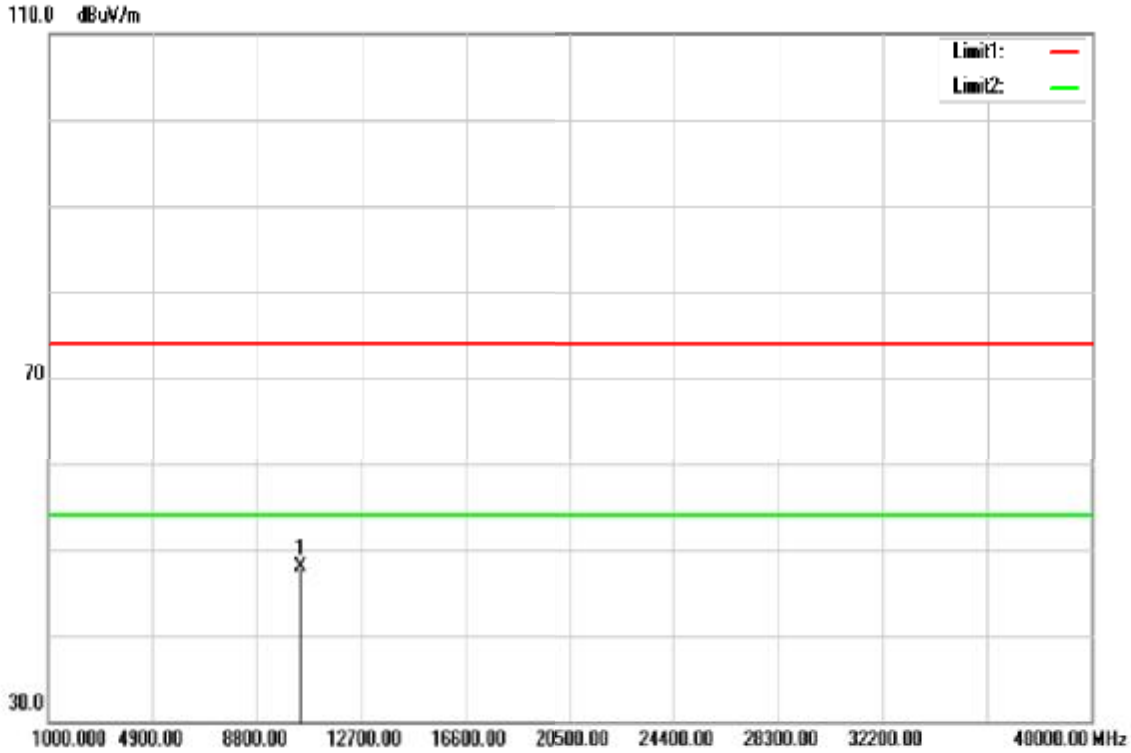


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	47.22	14.45	61.67	74.00	-12.33	peak
10360.000	36.22	14.45	50.67	54.00	-3.33	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5220 MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Horizontal	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

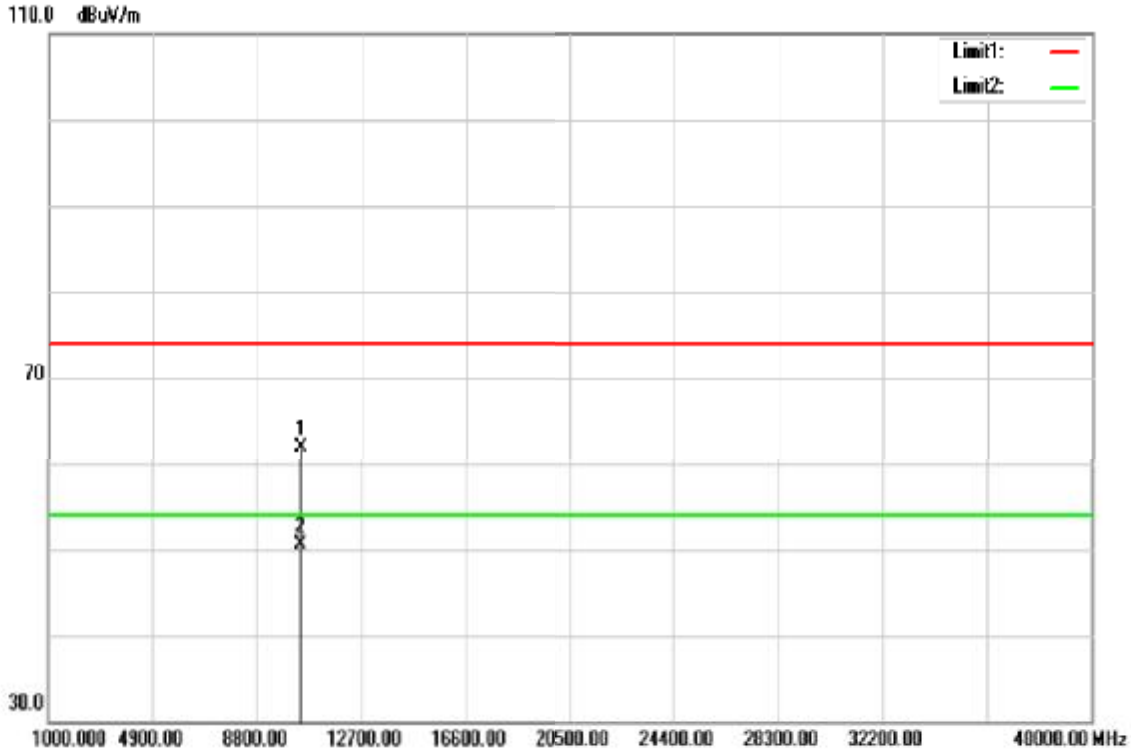


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	33.18	14.71	47.89	74.00	-26.11	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5220 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

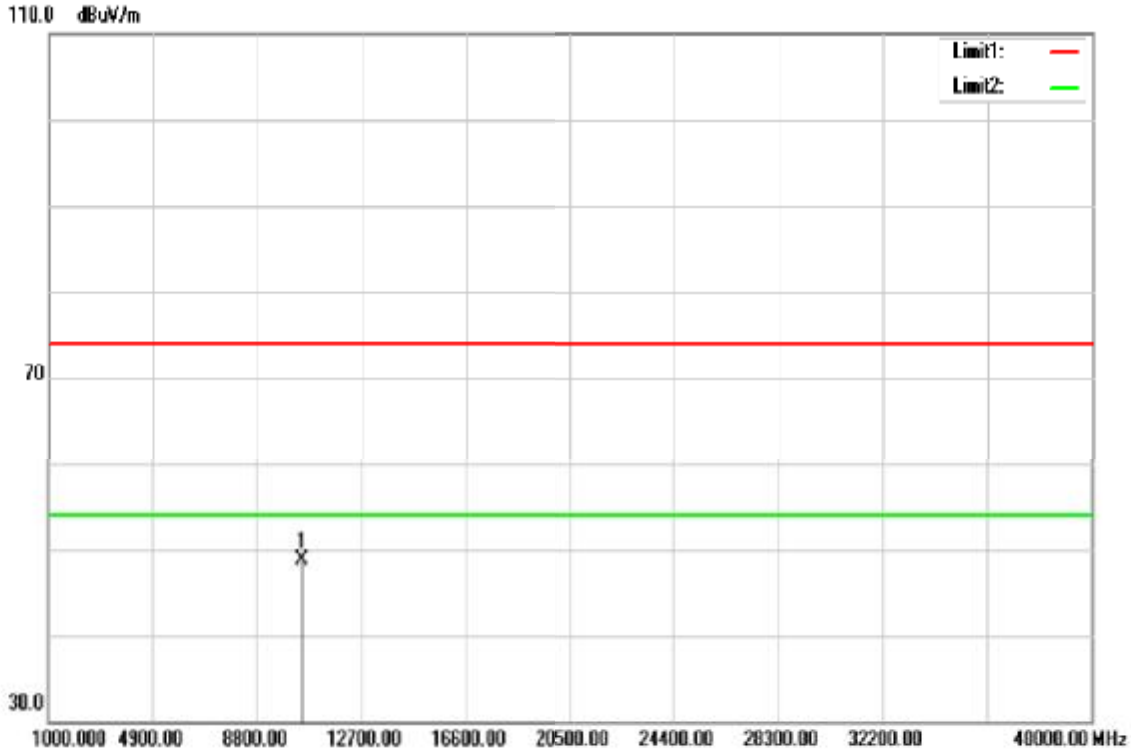


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	47.13	14.71	61.84	74.00	-12.16	peak
10440.000	35.80	14.71	50.51	54.00	-3.49	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

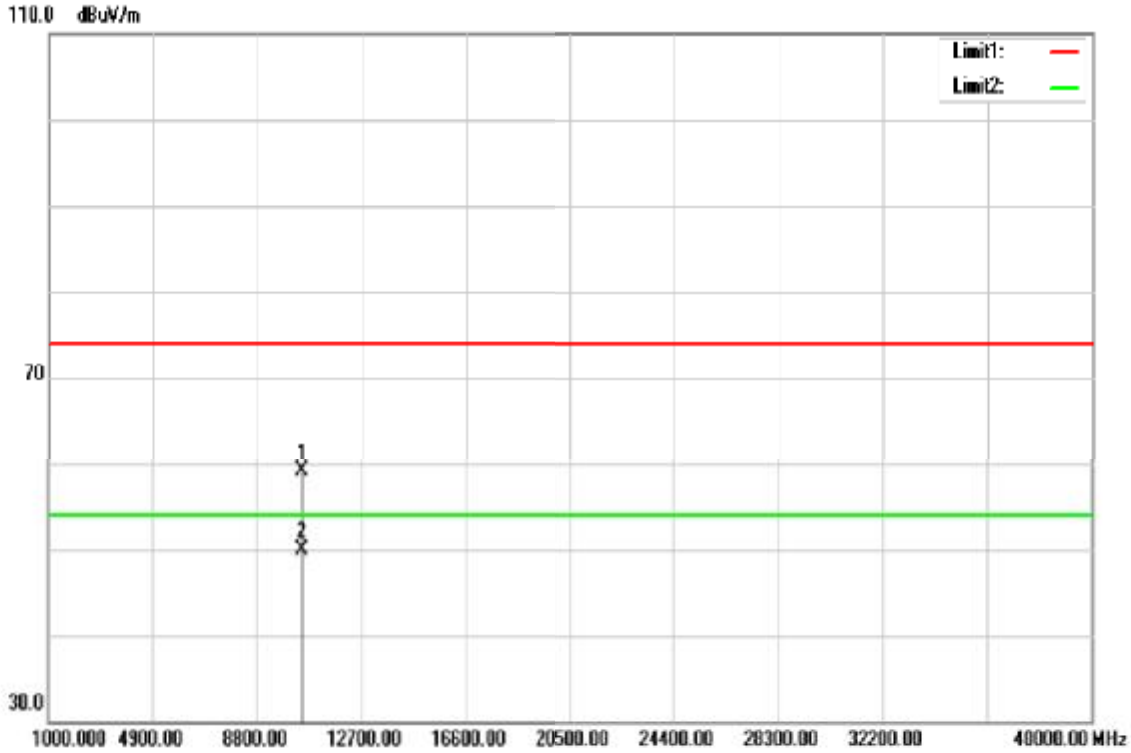


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	33.90	14.84	48.74	74.00	-25.26	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

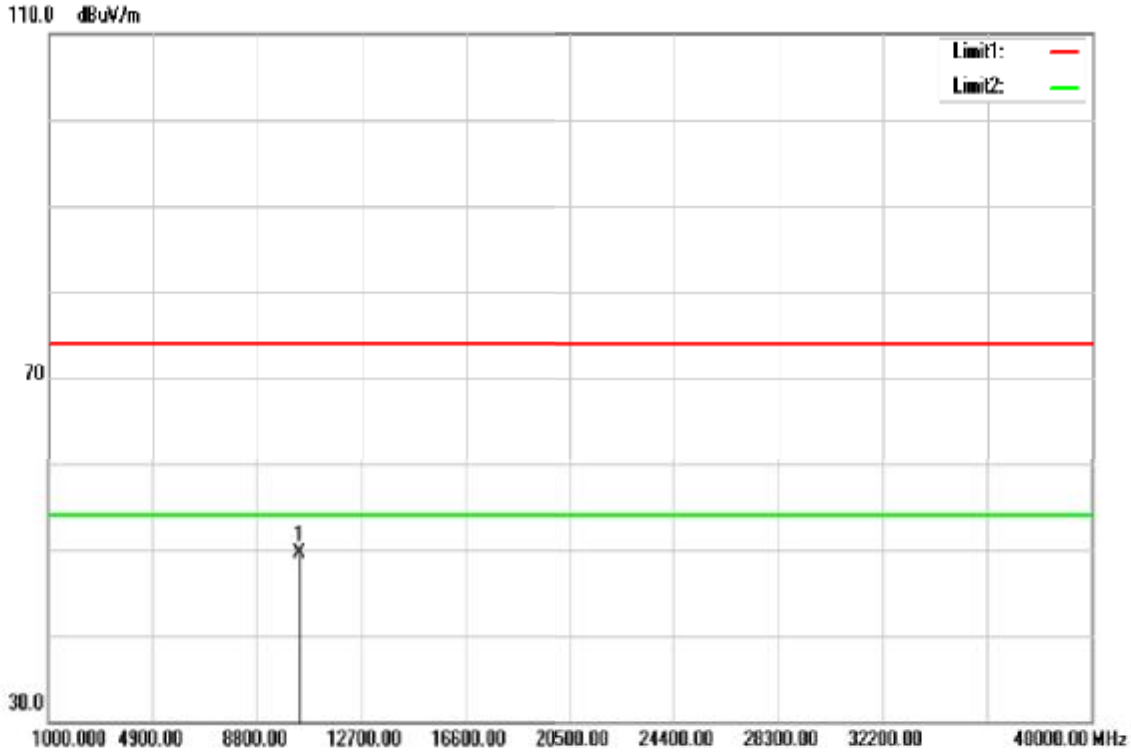


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	44.36	14.84	59.20	74.00	-14.80	peak
10480.000	35.12	14.84	49.96	54.00	-4.04	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

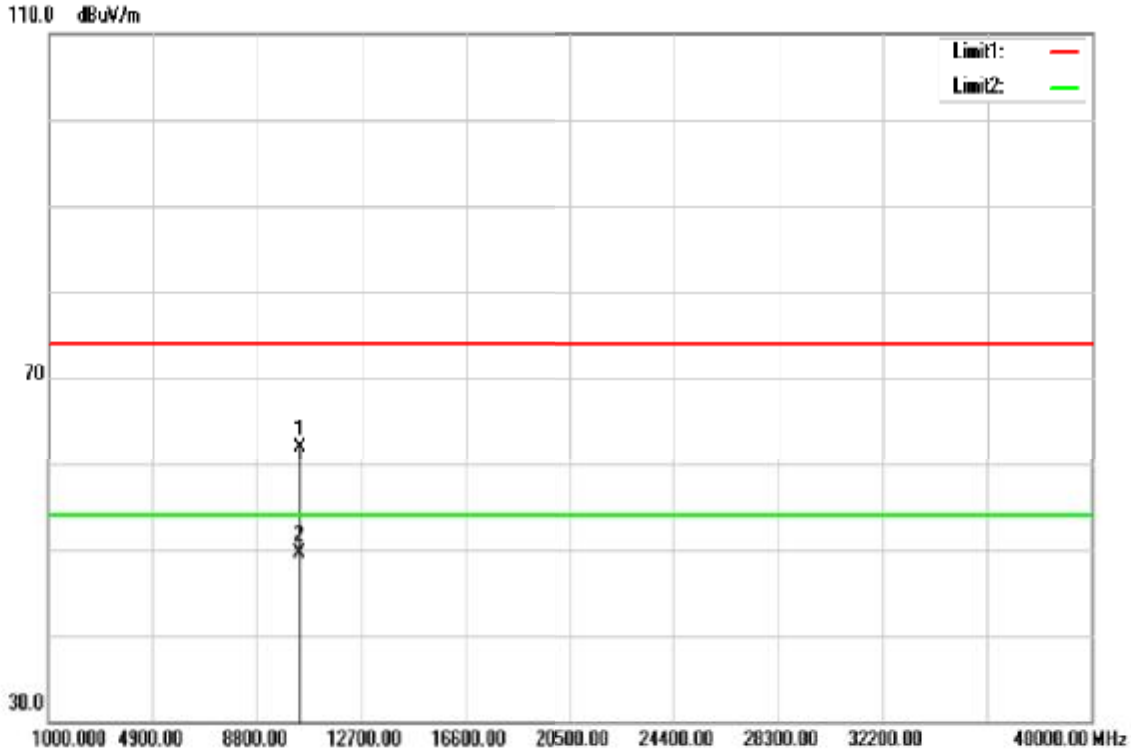


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	35.00	14.45	49.45	74.00	-24.55	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

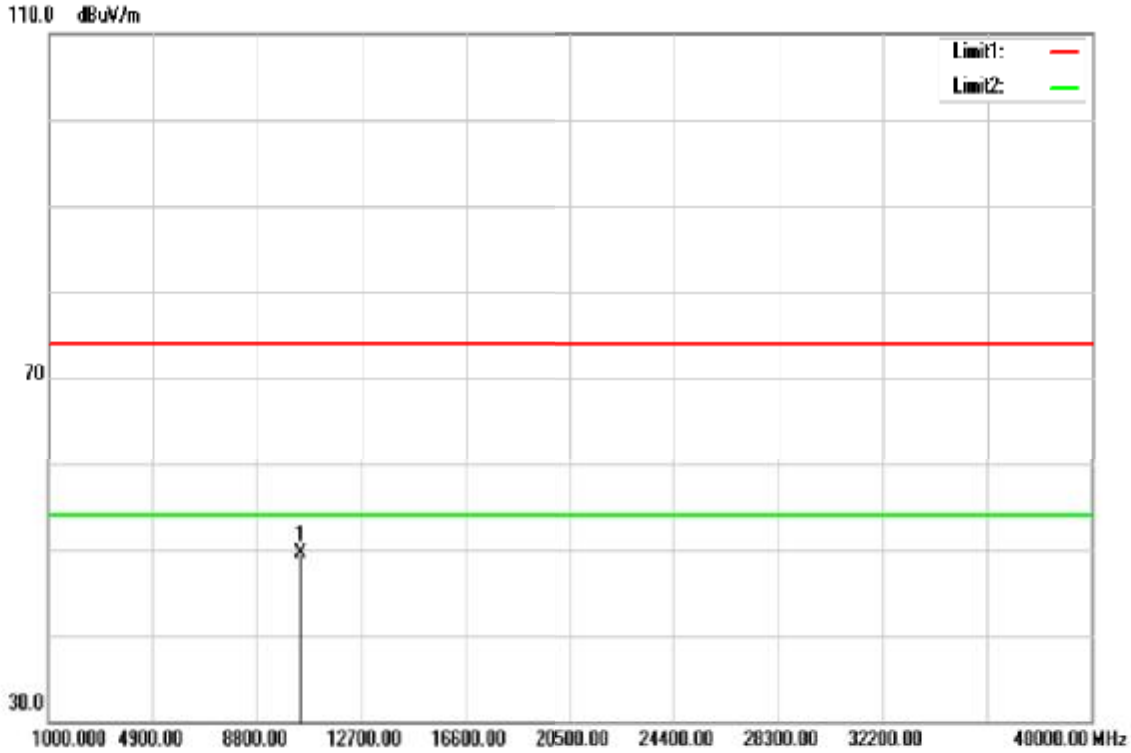


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	47.49	14.45	61.94	74.00	-12.06	peak
10360.000	35.10	14.45	49.55	54.00	-4.45	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5220MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

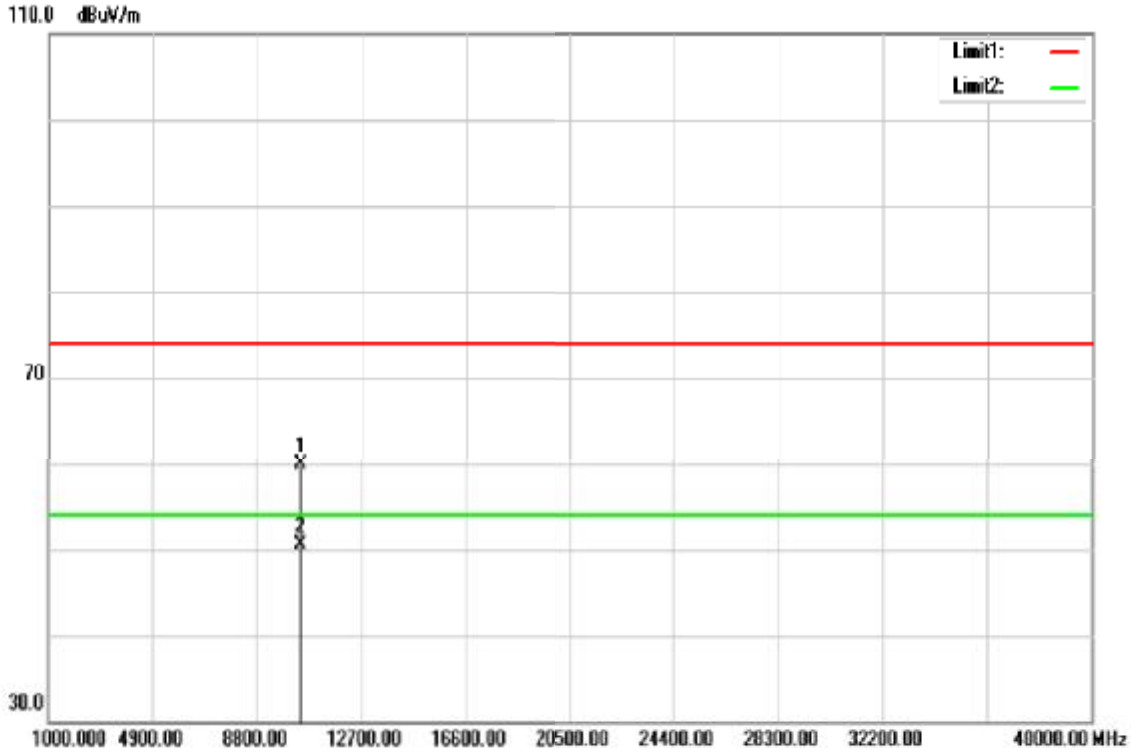


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	34.73	14.71	49.44	74.00	-24.56	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5220MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

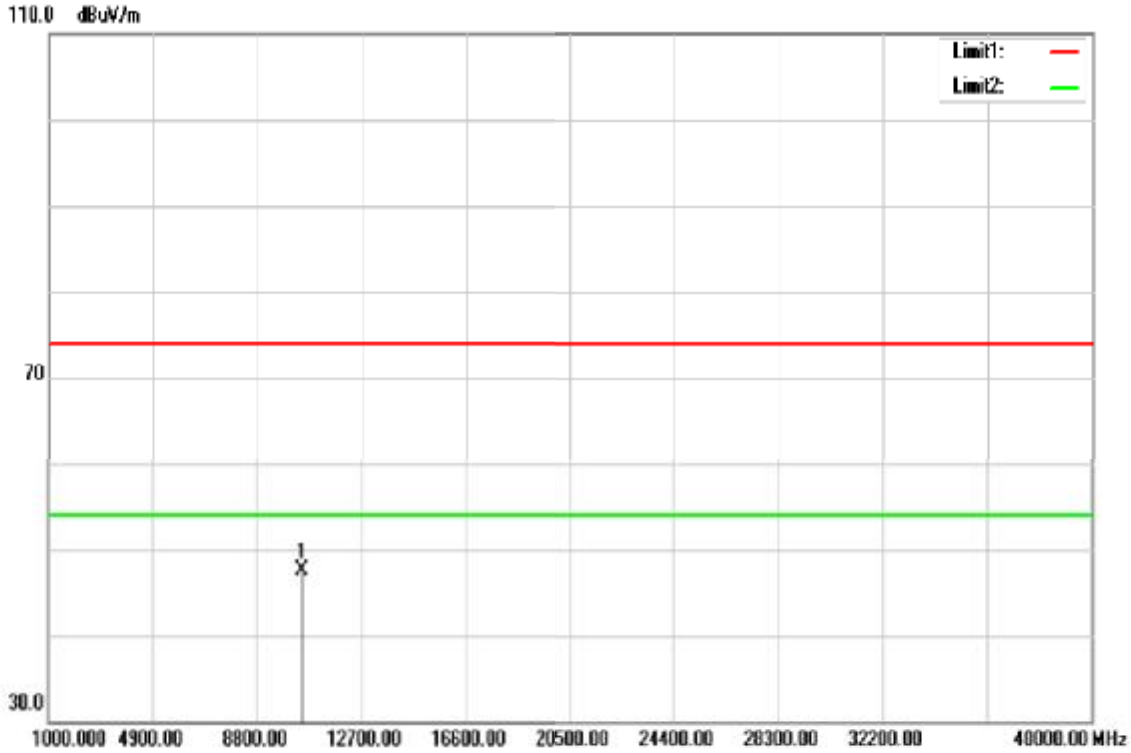


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	45.14	14.71	59.85	74.00	-14.15	peak
10440.000	35.85	14.71	50.56	54.00	-3.44	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

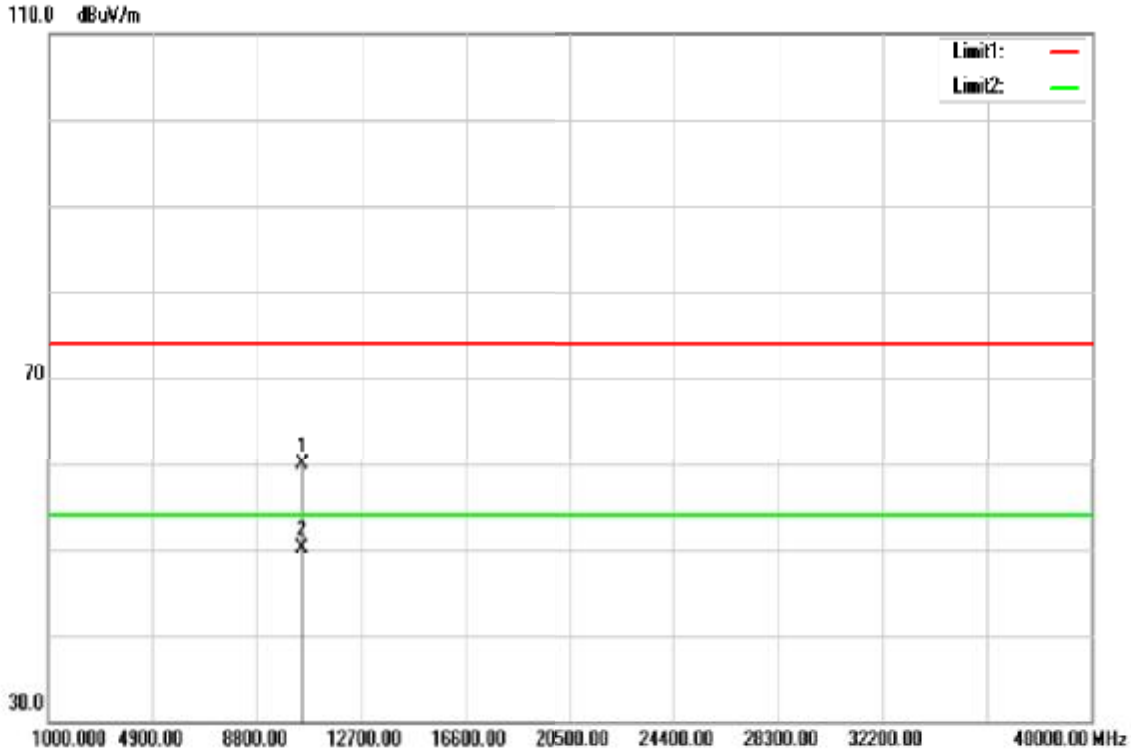


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	32.61	14.84	47.45	74.00	-26.55	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

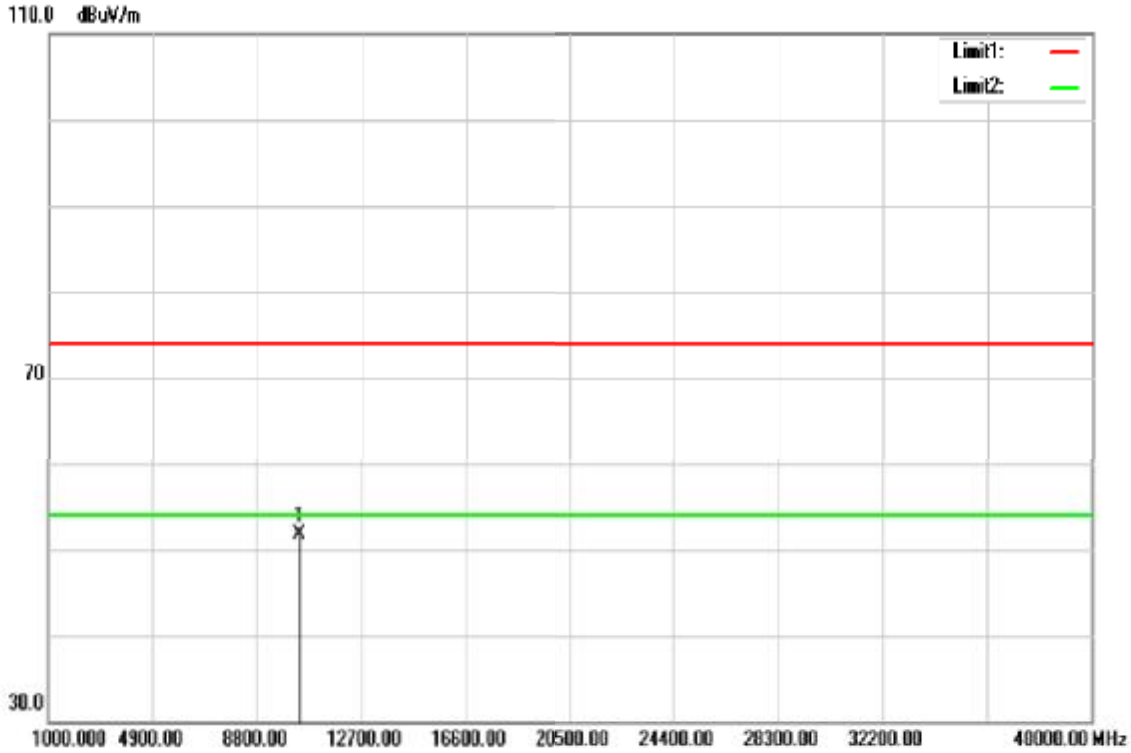


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	44.98	14.84	59.82	74.00	-14.18	peak
10480.000	35.29	14.84	50.13	54.00	-3.87	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

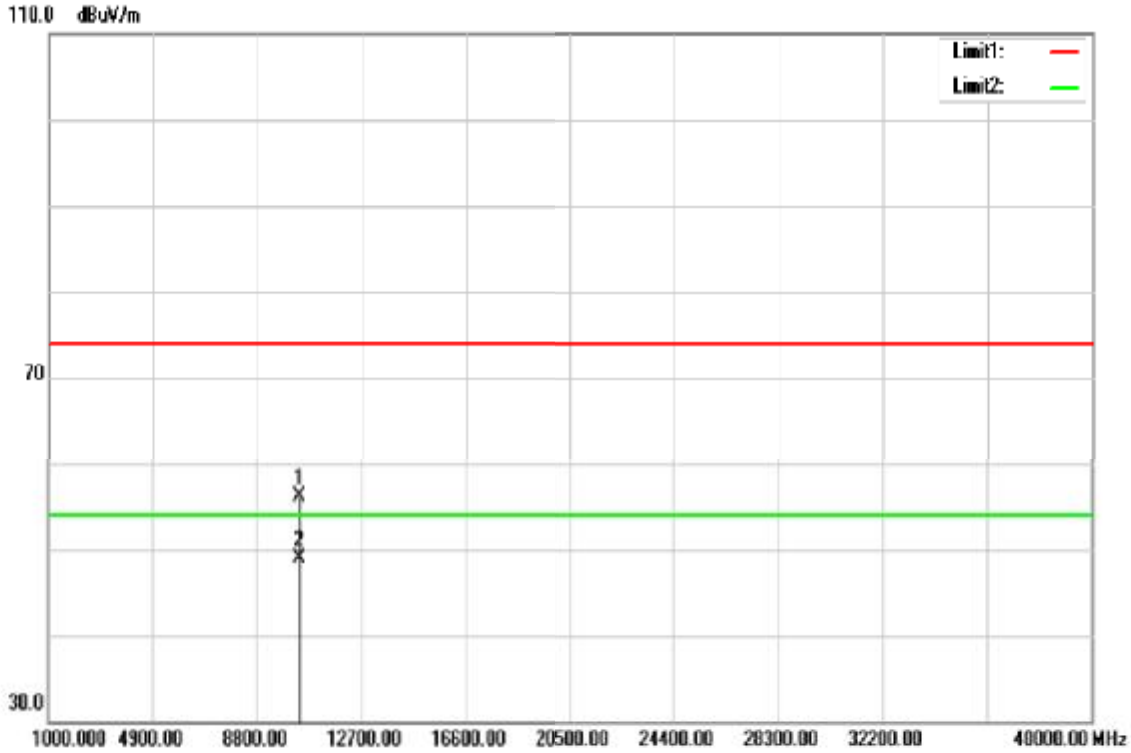


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10390.000	37.16	14.54	51.70	74.00	-22.30	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

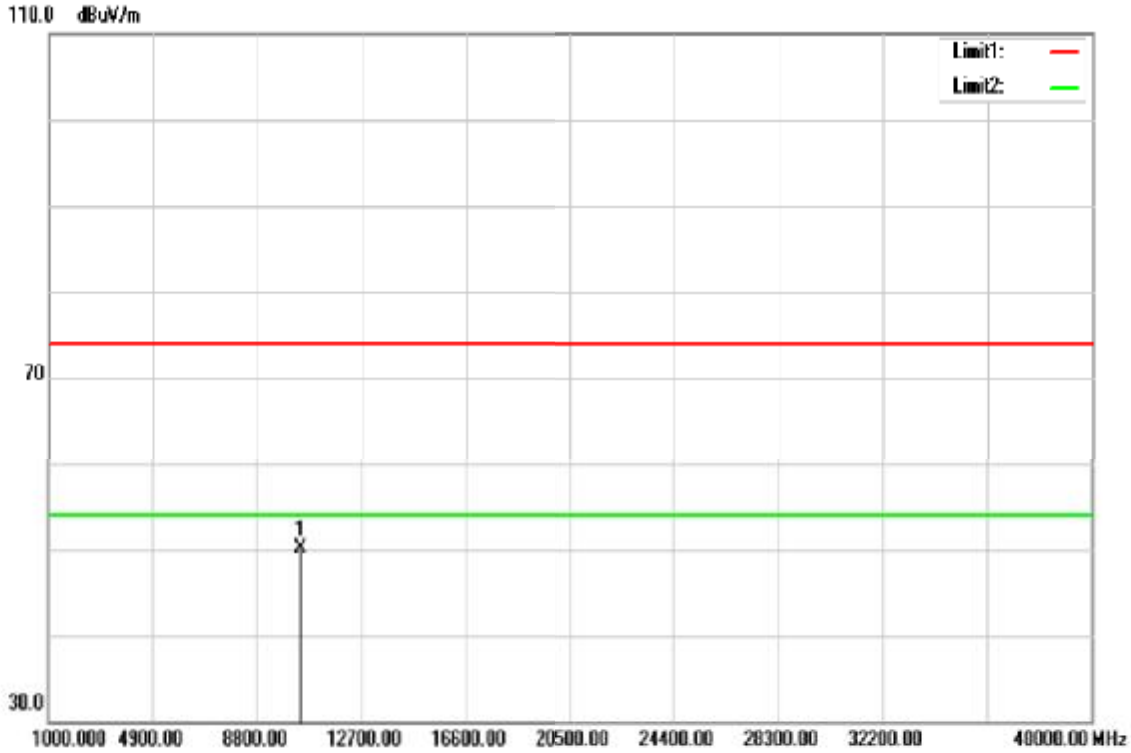


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	41.73	14.45	56.18	74.00	-17.82	peak
10360.000	34.37	14.45	48.82	54.00	-5.18	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

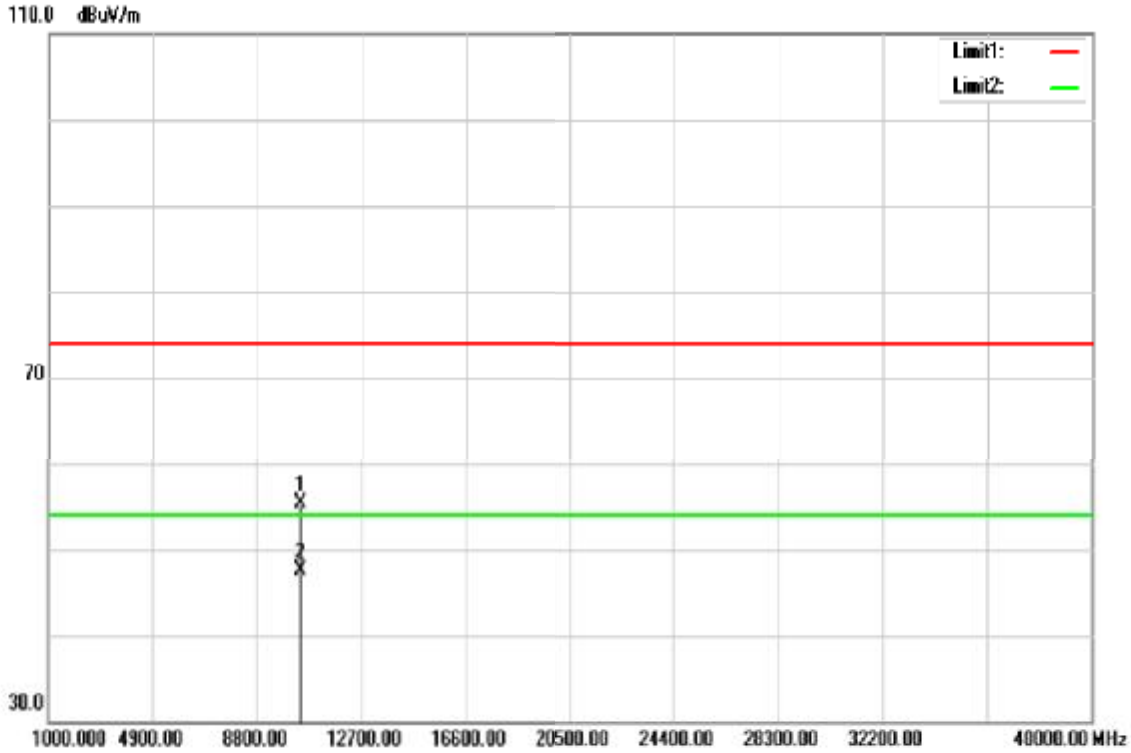


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10460.000	35.28	14.79	50.07	74.00	-23.93	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

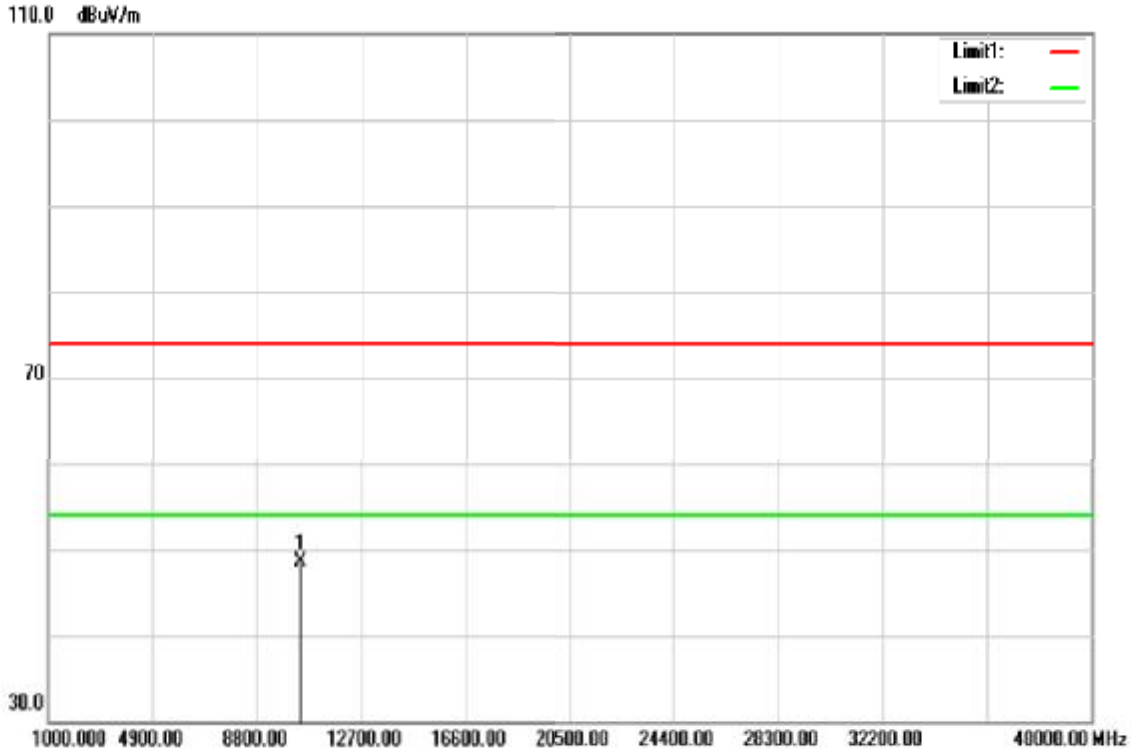


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10450.000	40.50	14.75	55.25	74.00	-18.75	peak
10450.000	32.74	14.75	47.49	54.00	-6.51	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

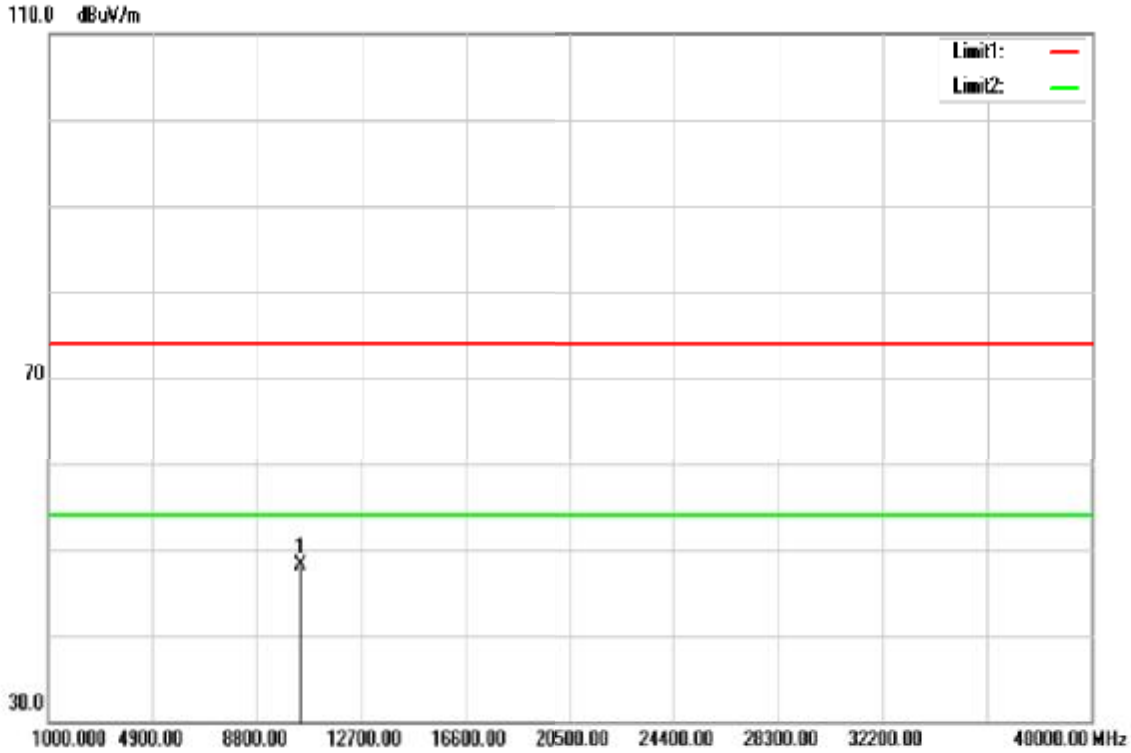


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10420.000	33.92	14.66	48.58	74.00	-25.42	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



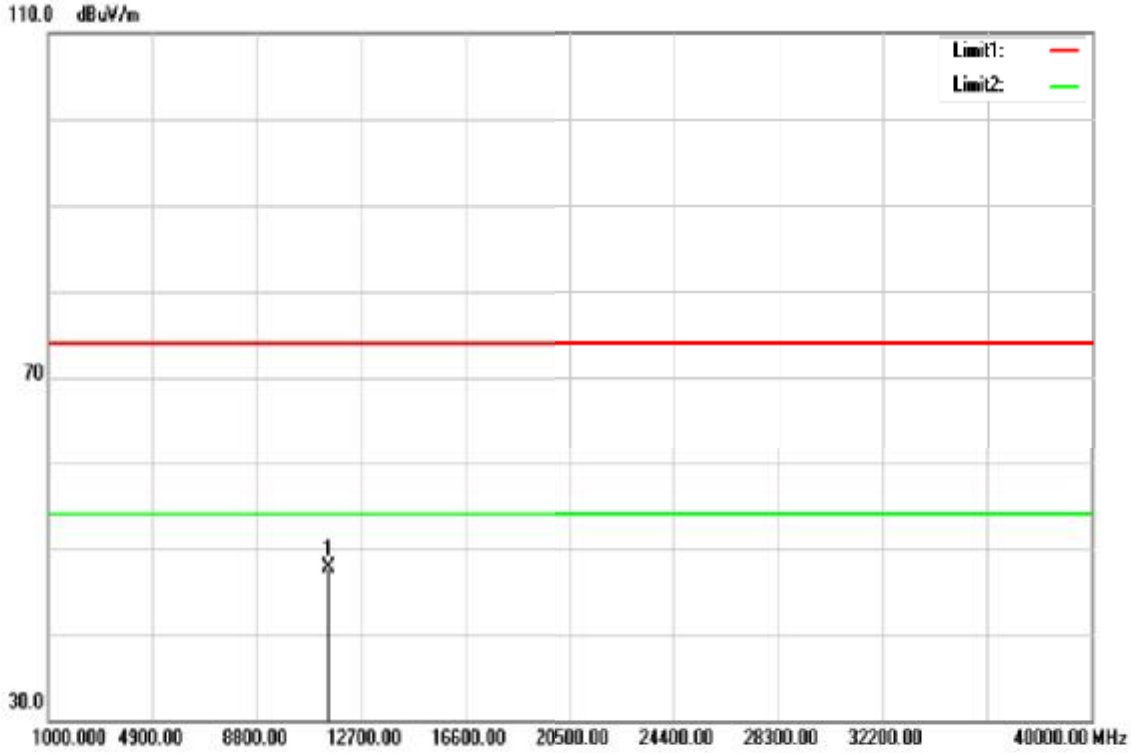
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10420.000	33.50	14.66	48.16	74.00	-25.84	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Above 1G Test Data for UNII-3

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

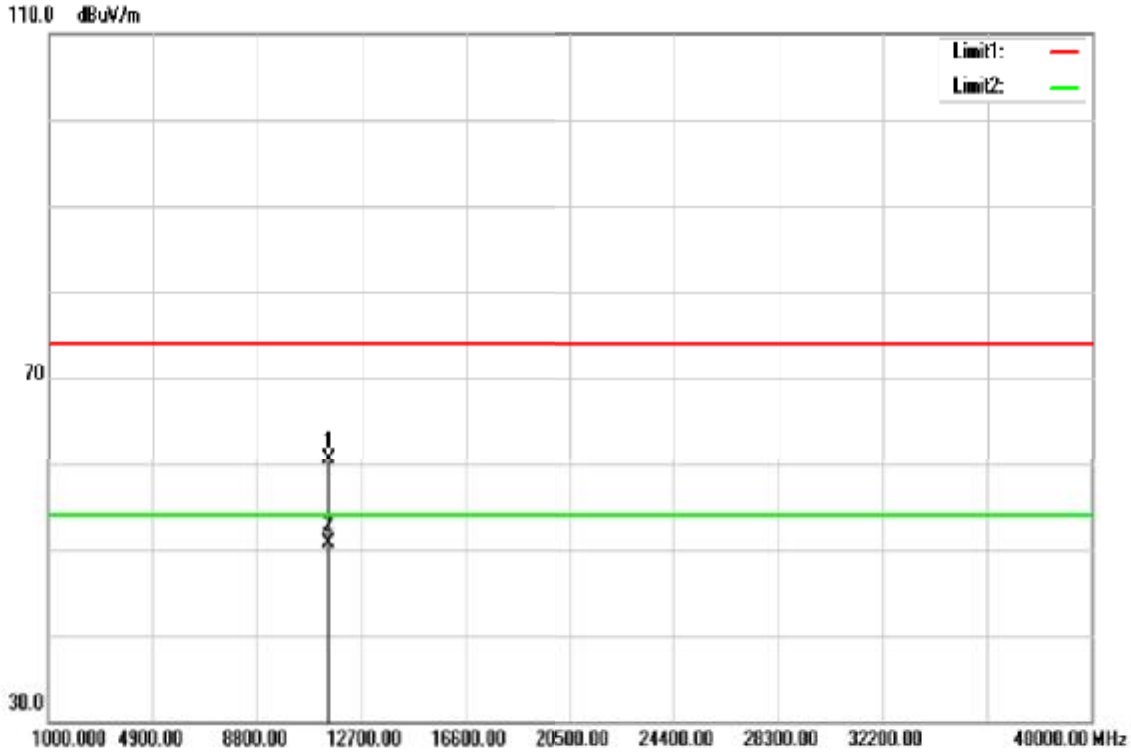


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	31.69	16.09	47.78	74.00	-26.22	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

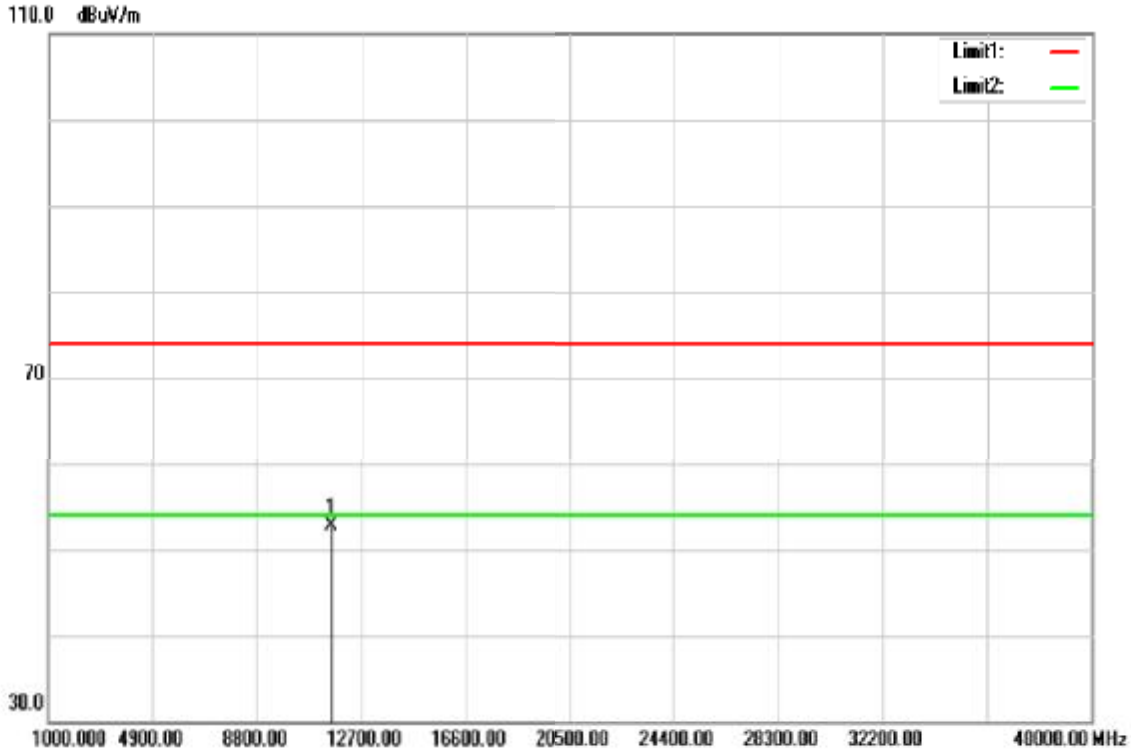


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	44.42	16.09	60.51	74.00	-13.49	peak
11490.000	34.54	16.09	50.63	54.00	-3.37	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

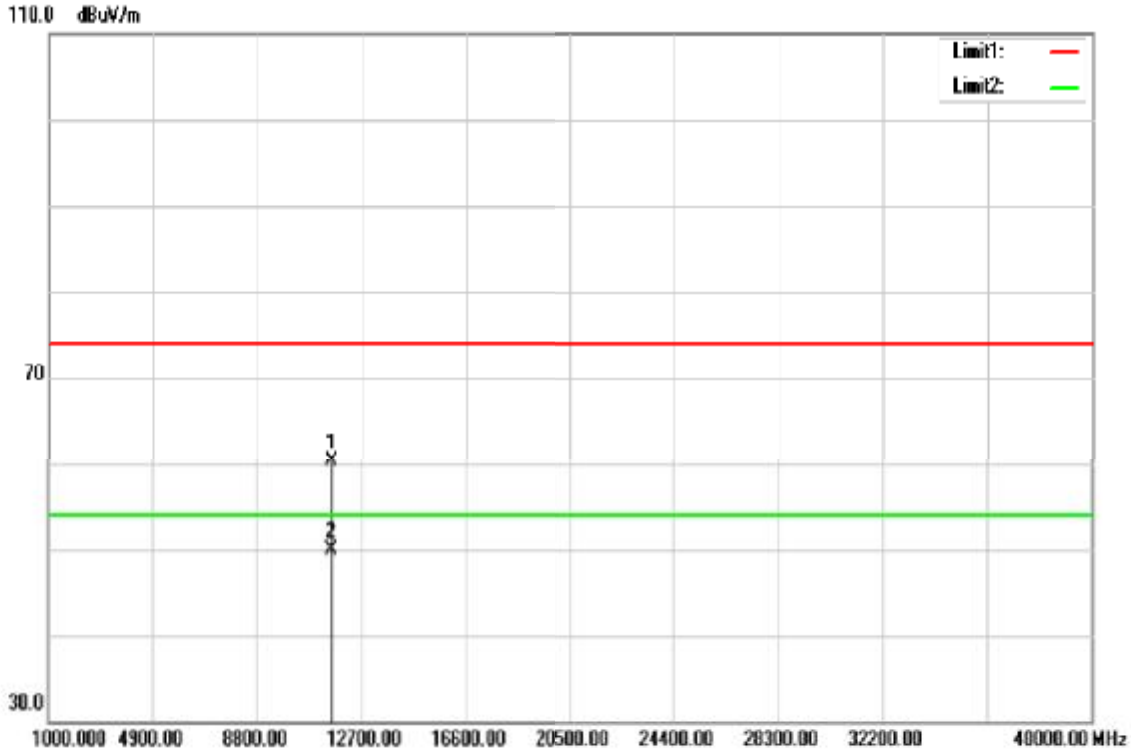


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	36.61	16.01	52.62	74.00	-21.38	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

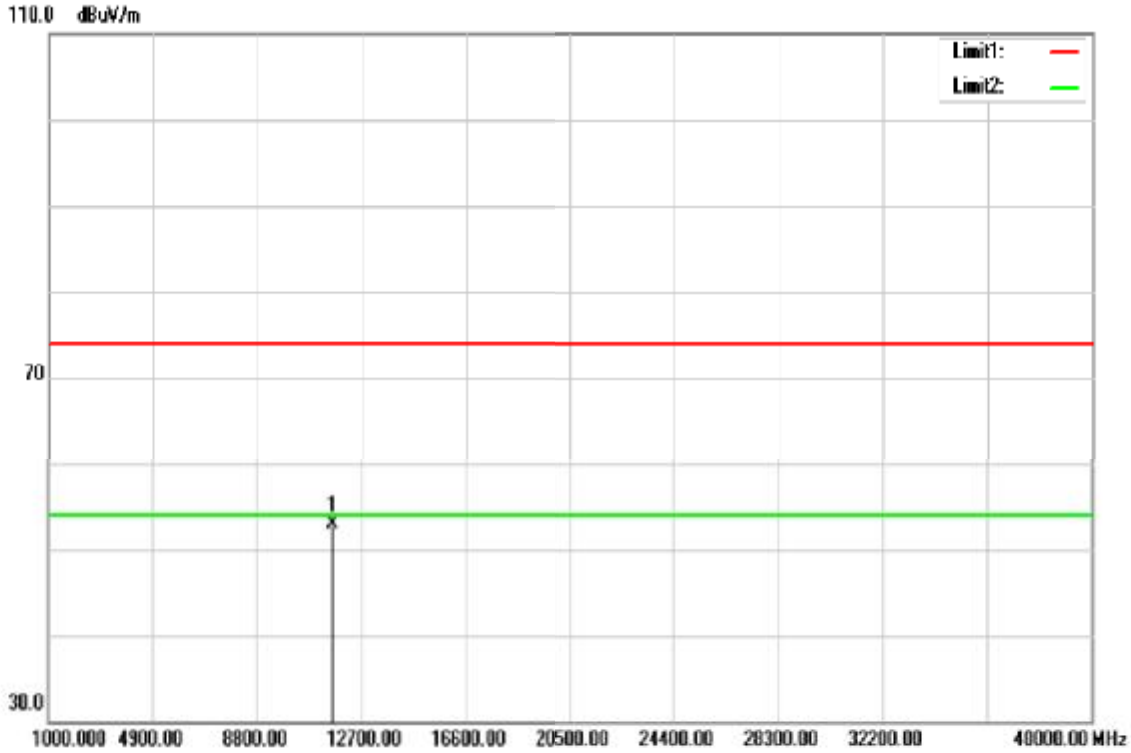


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	44.29	16.01	60.30	74.00	-13.70	peak
11570.000	33.84	16.01	49.85	54.00	-4.15	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

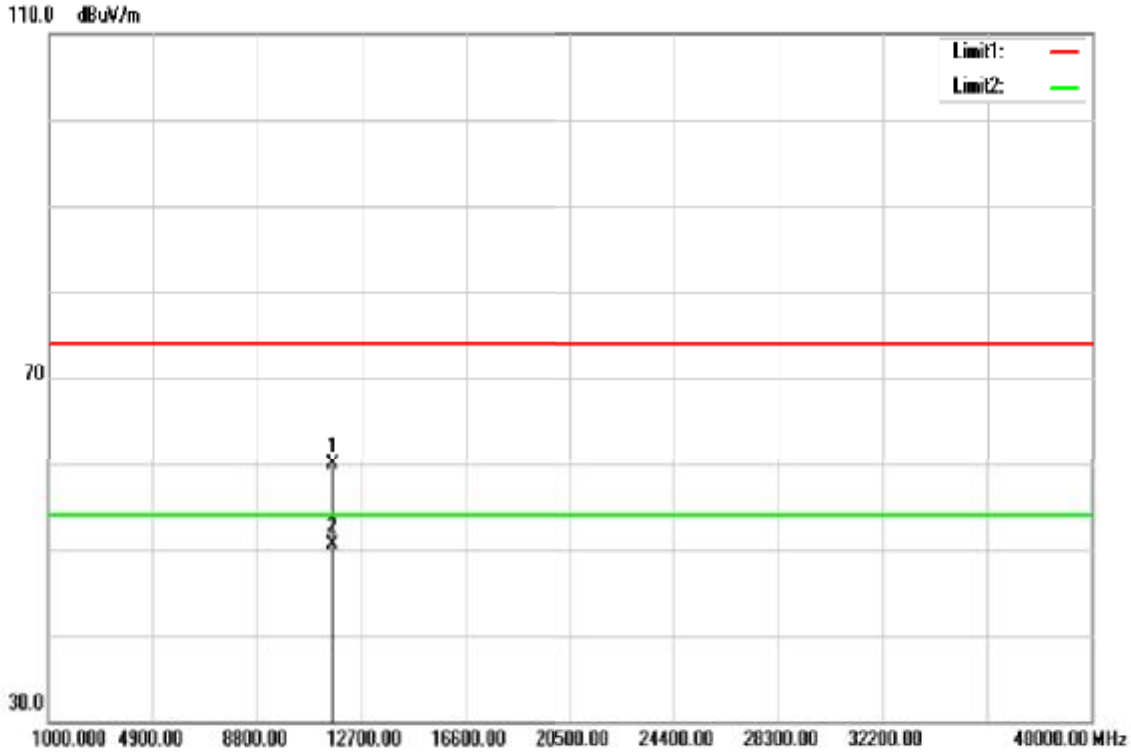


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	36.90	15.93	52.83	74.00	-21.17	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	43.95	15.93	59.88	74.00	-14.12	peak
11650.000	34.61	15.93	50.54	54.00	-3.46	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

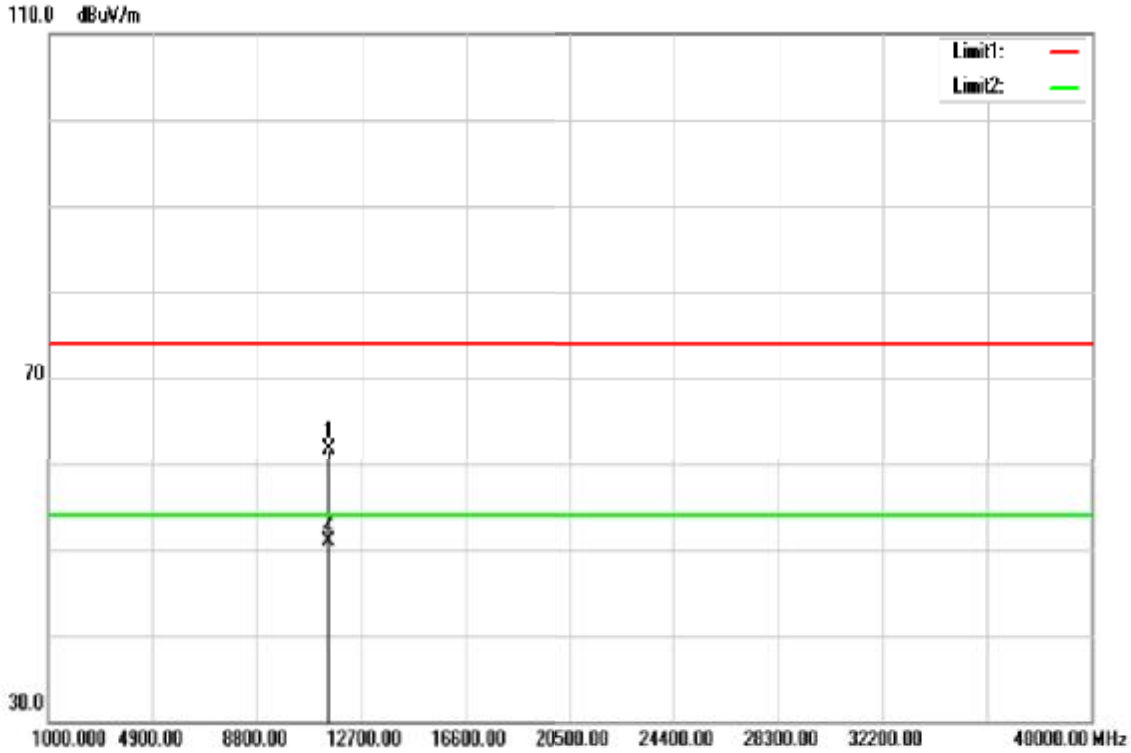
Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	35.39	16.09	51.48	74.00	-22.52	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

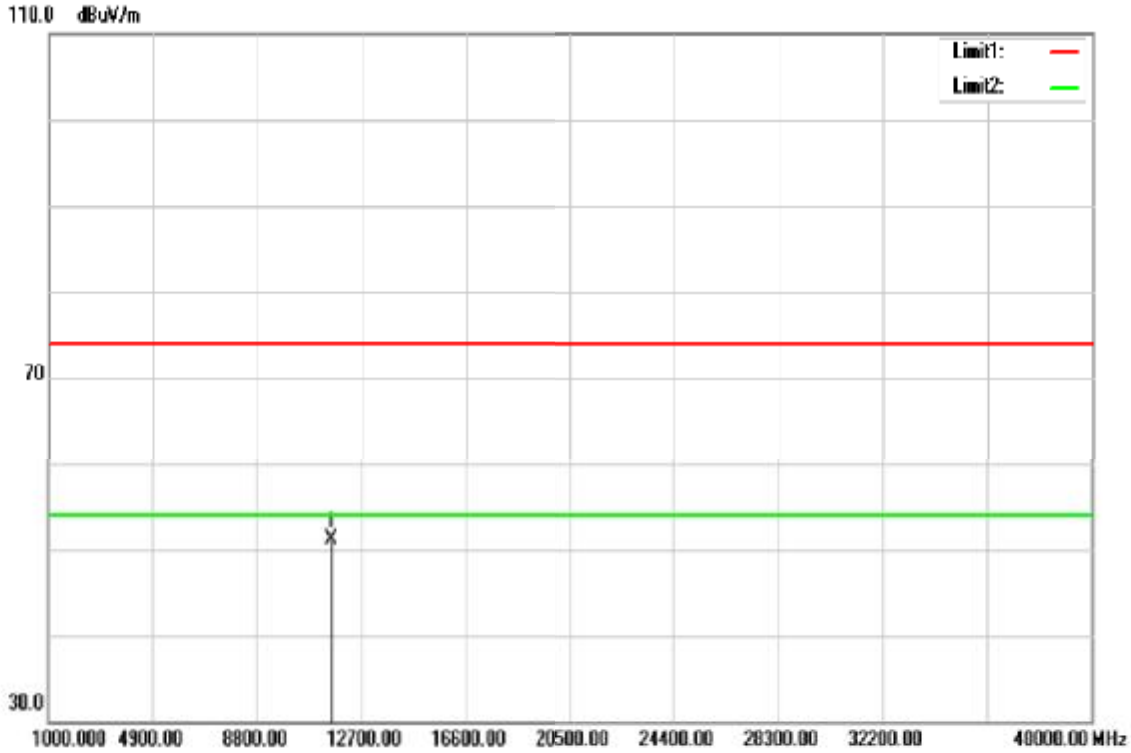


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	45.61	16.09	61.70	74.00	-12.30	peak
11490.000	34.73	16.09	50.82	54.00	-3.18	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

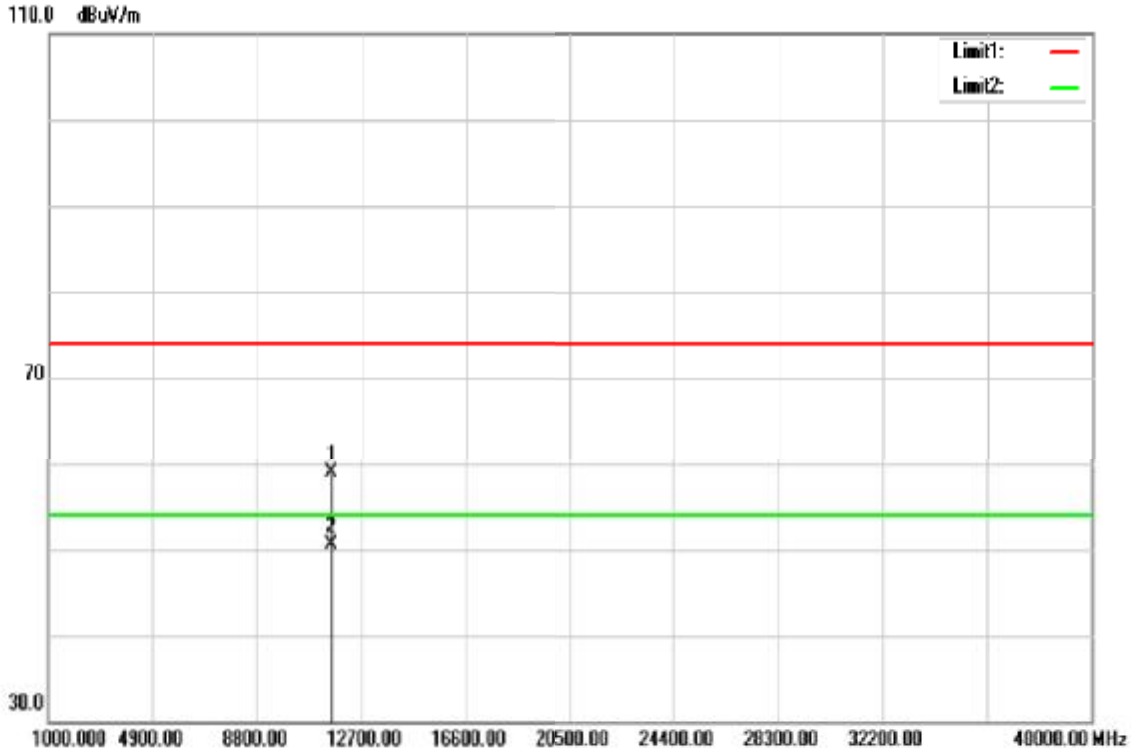


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	35.03	16.01	51.04	74.00	-22.96	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

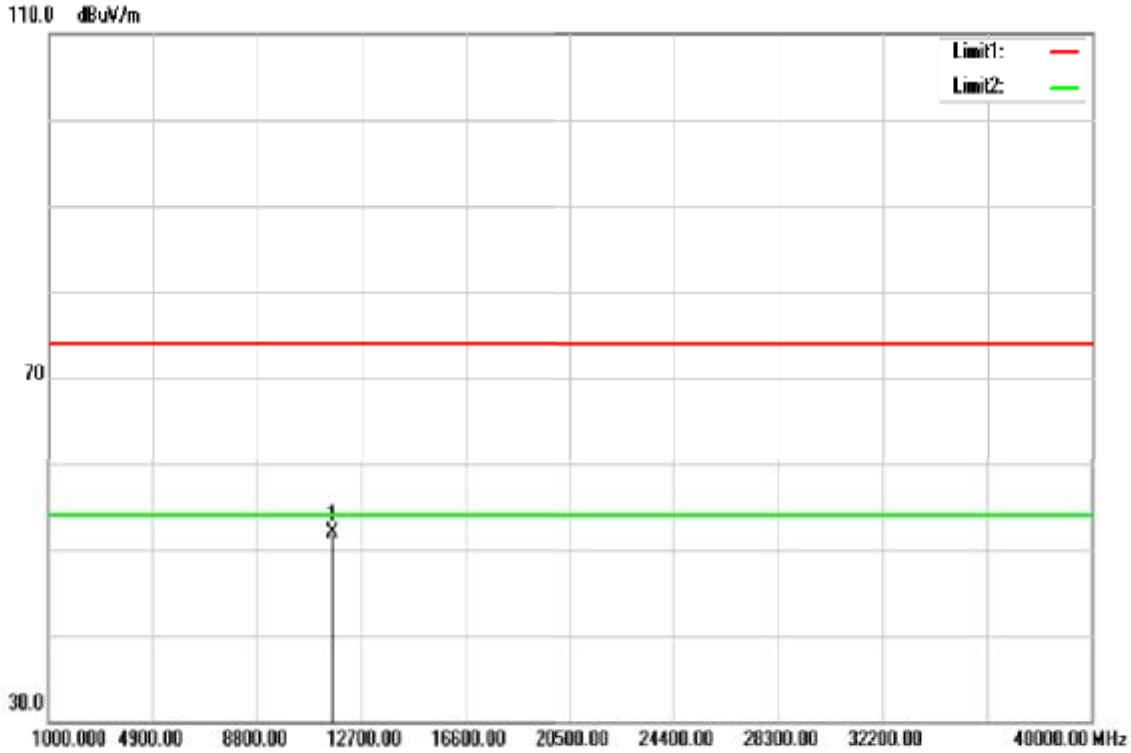


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	42.93	16.01	58.94	74.00	-15.06	peak
11570.000	34.55	16.01	50.56	54.00	-3.44	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

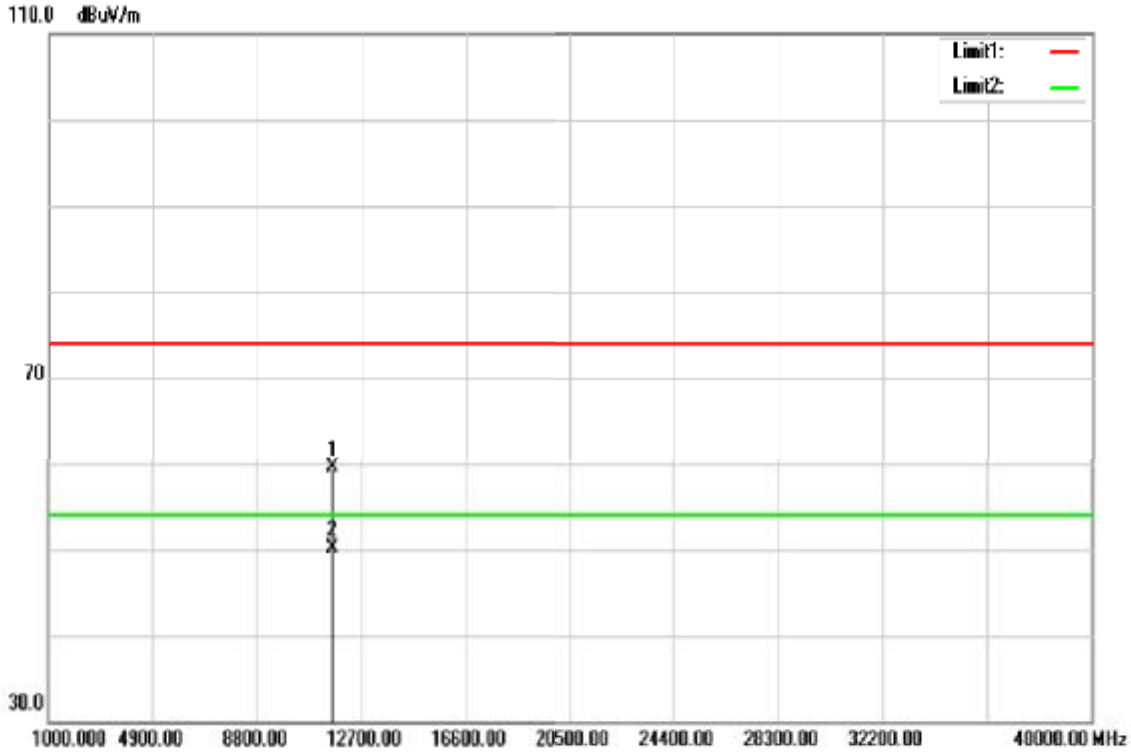


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	36.01	15.93	51.94	74.00	-22.06	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

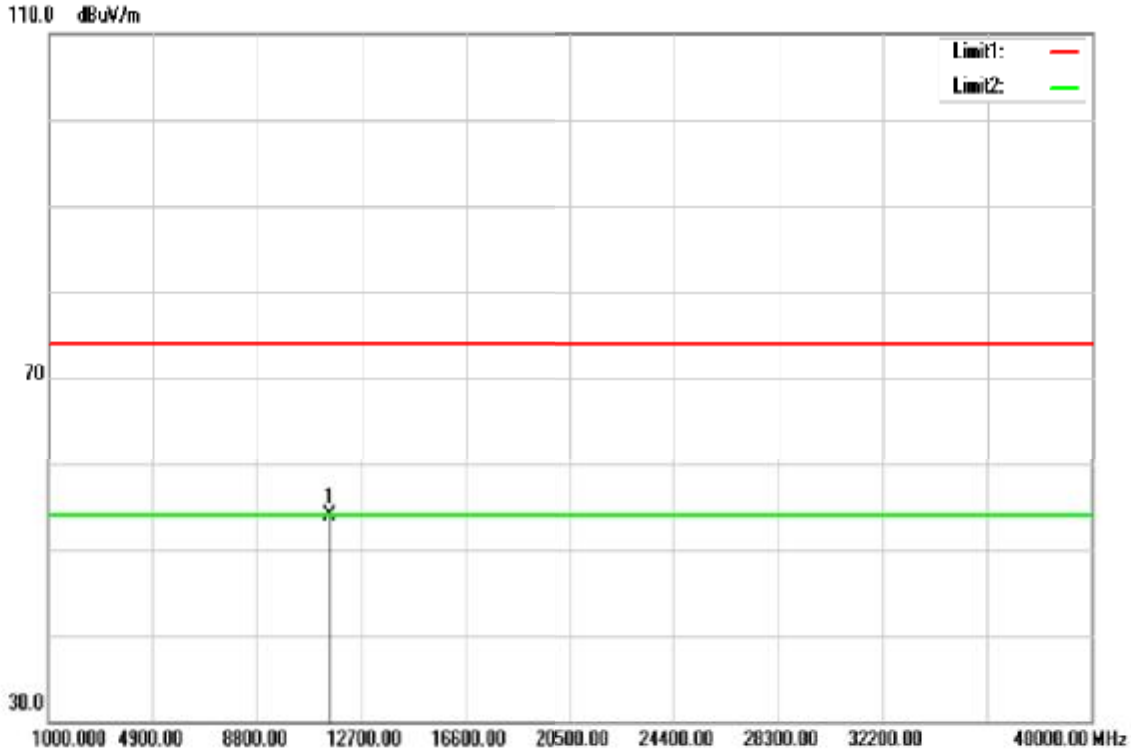


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	43.64	15.93	59.57	74.00	-14.43	peak
11650.000	34.21	15.93	50.14	54.00	-3.86	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

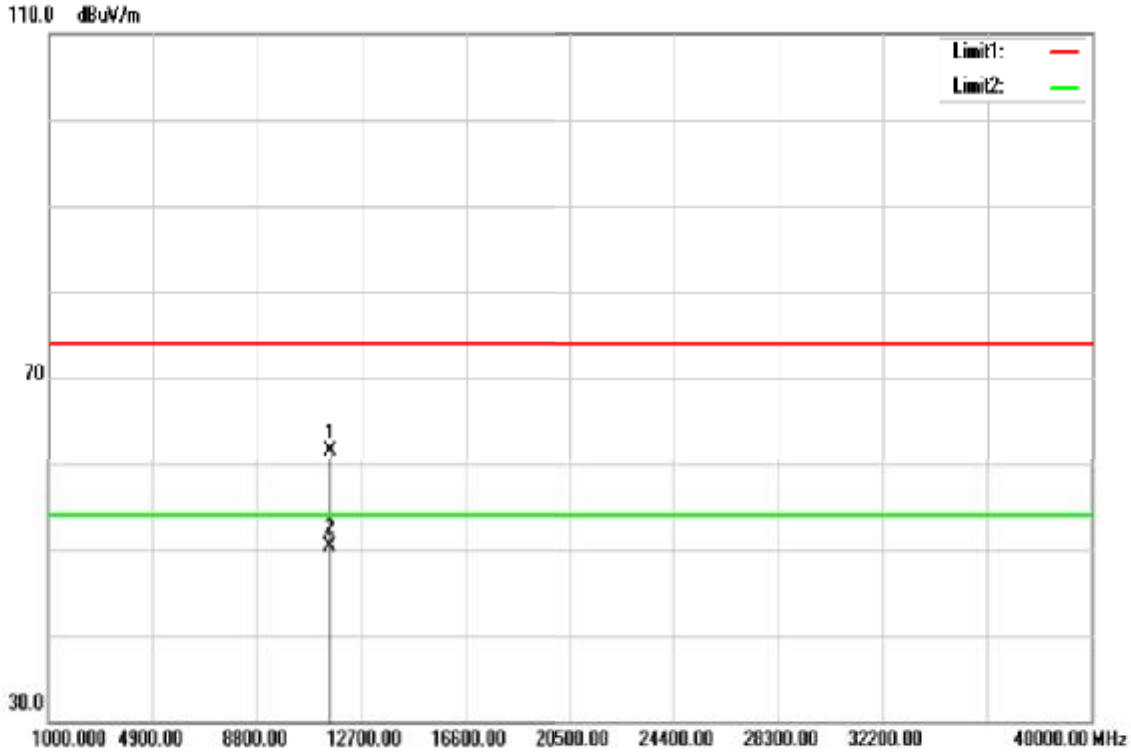


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11510.000	37.86	16.08	53.94	74.00	-20.06	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

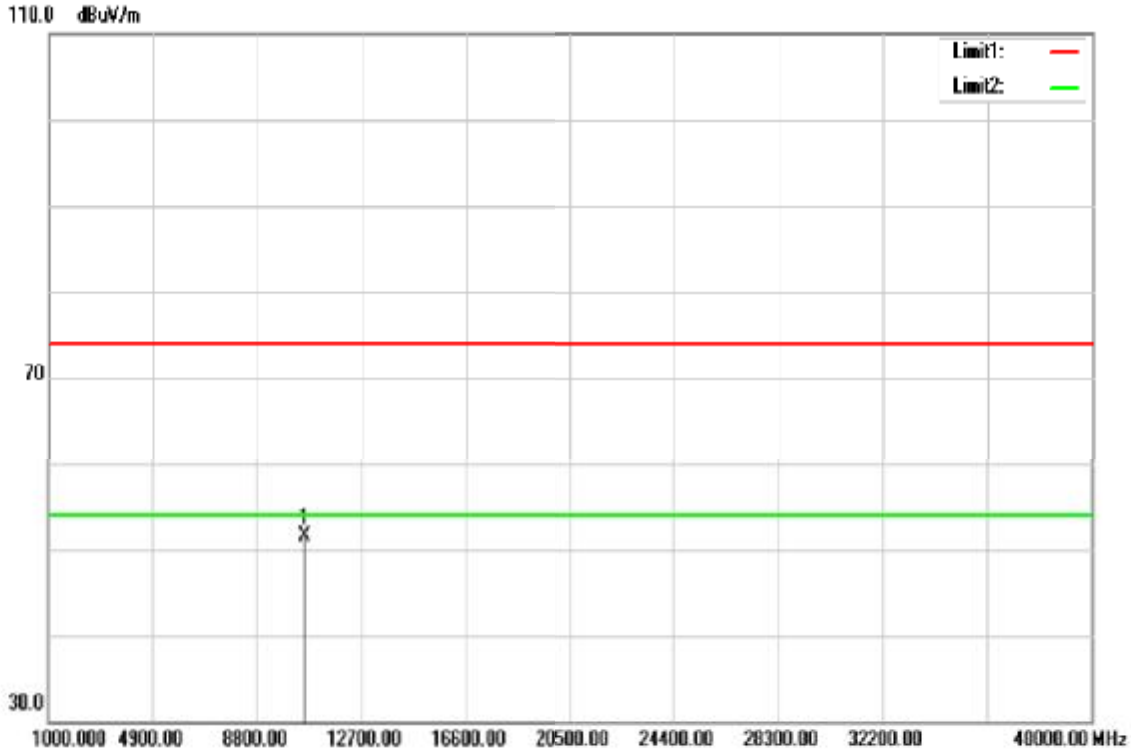


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11510.000	45.46	16.08	61.54	74.00	-12.46	peak
11510.000	34.31	16.08	50.39	54.00	-3.61	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

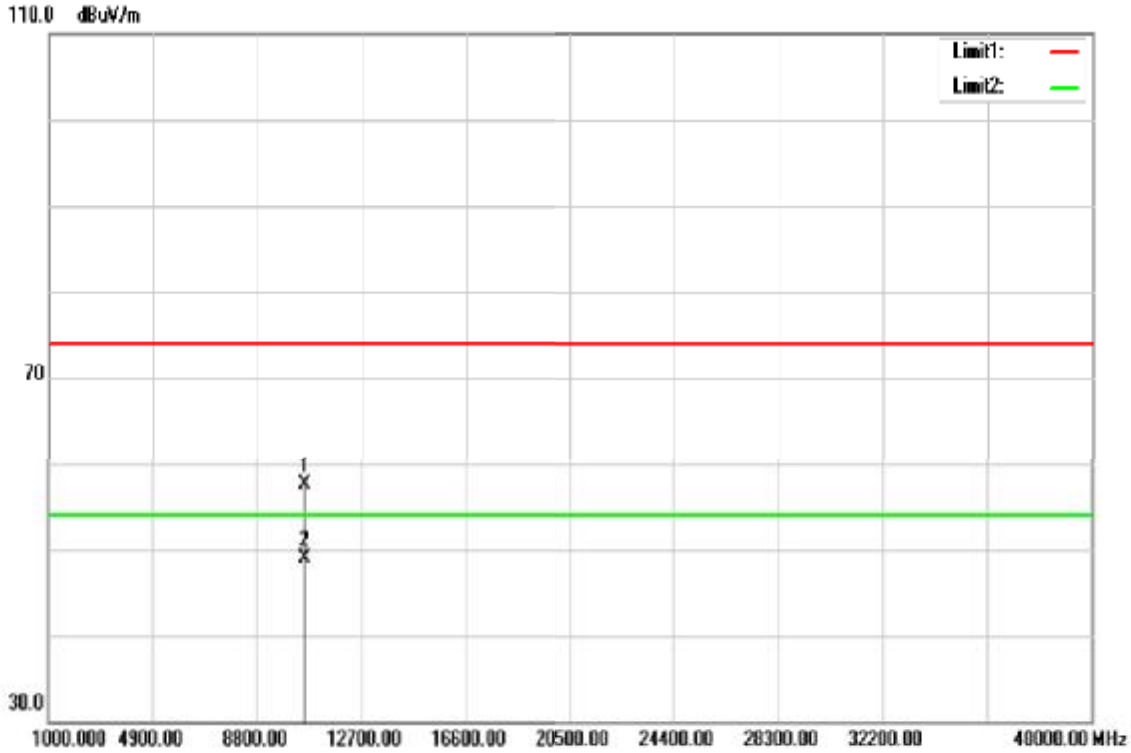


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10590.000	36.41	15.12	51.53	74.00	-22.47	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

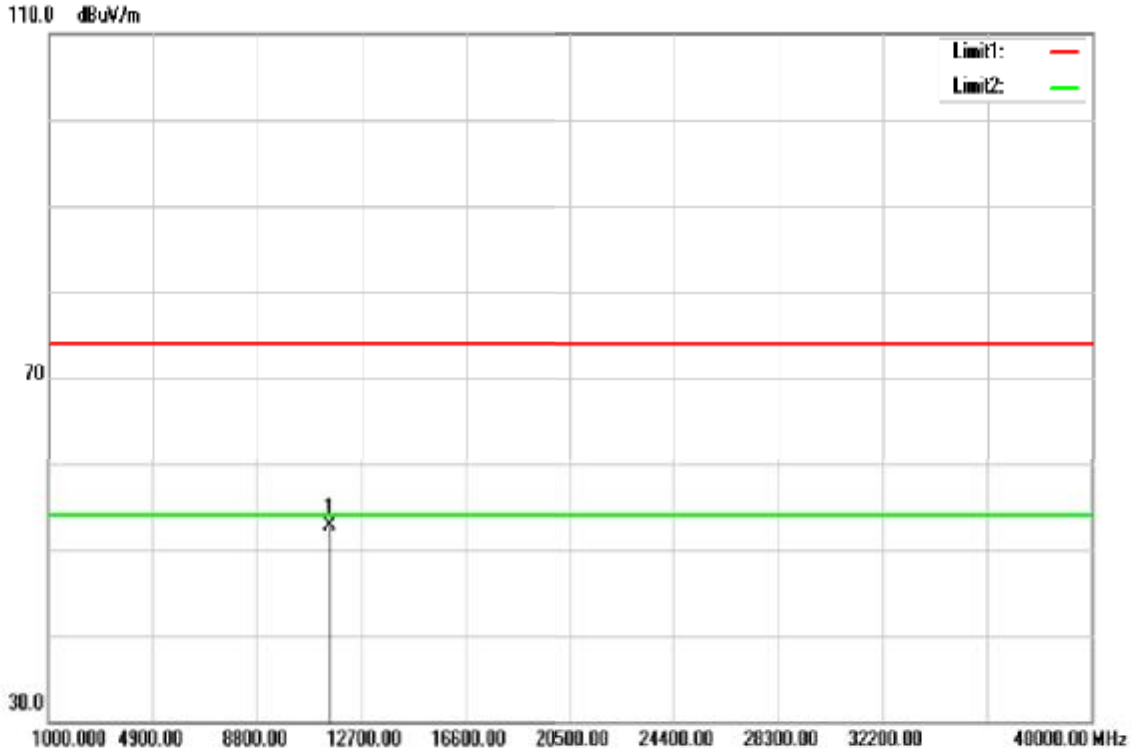


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10590.000	42.37	15.12	57.49	74.00	-16.51	peak
10590.000	33.86	15.12	48.98	54.00	-5.02	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80/ 5775 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

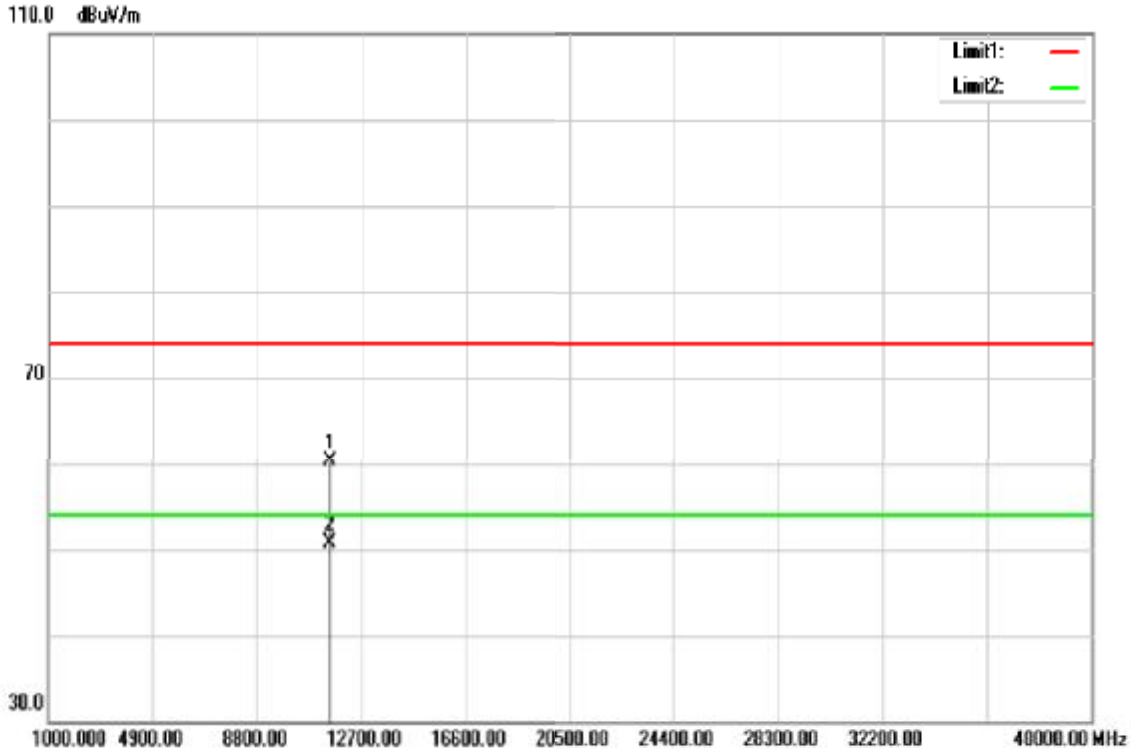


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11530.000	36.56	16.07	52.63	74.00	-21.37	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80/ 5775 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11520.000	44.20	16.06	60.26	74.00	-13.74	peak
11520.000	34.66	16.06	50.72	54.00	-3.28	AVG
N/A						

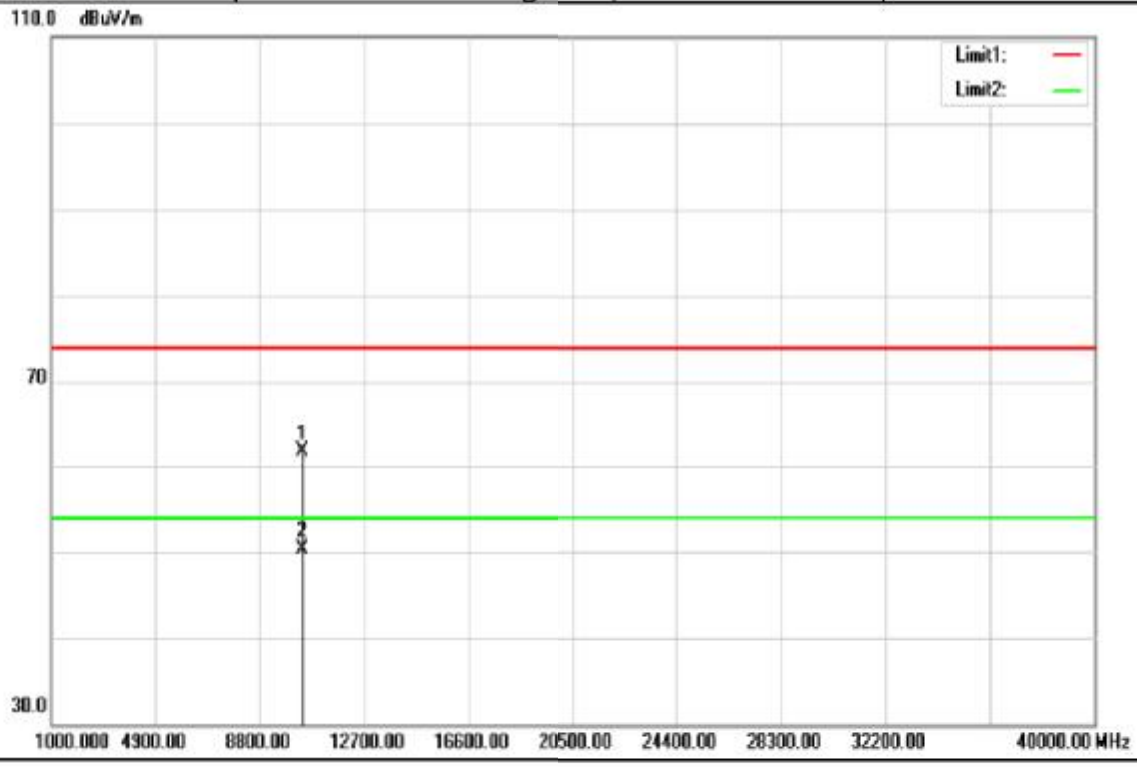
Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

For Dipole Antenna

Above 1G Test Data for UNII-1

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

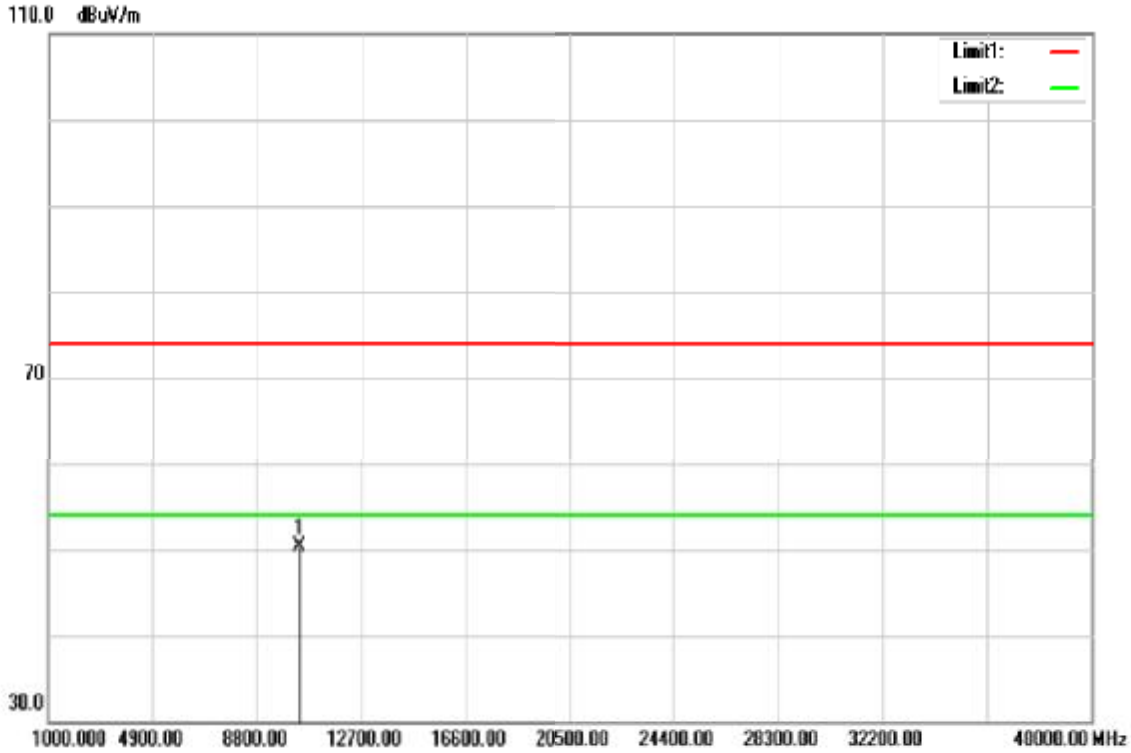


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	47.24	14.45	61.69	74.00	-12.31	peak
10360.000	35.87	14.45	50.32	54.00	-3.68	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

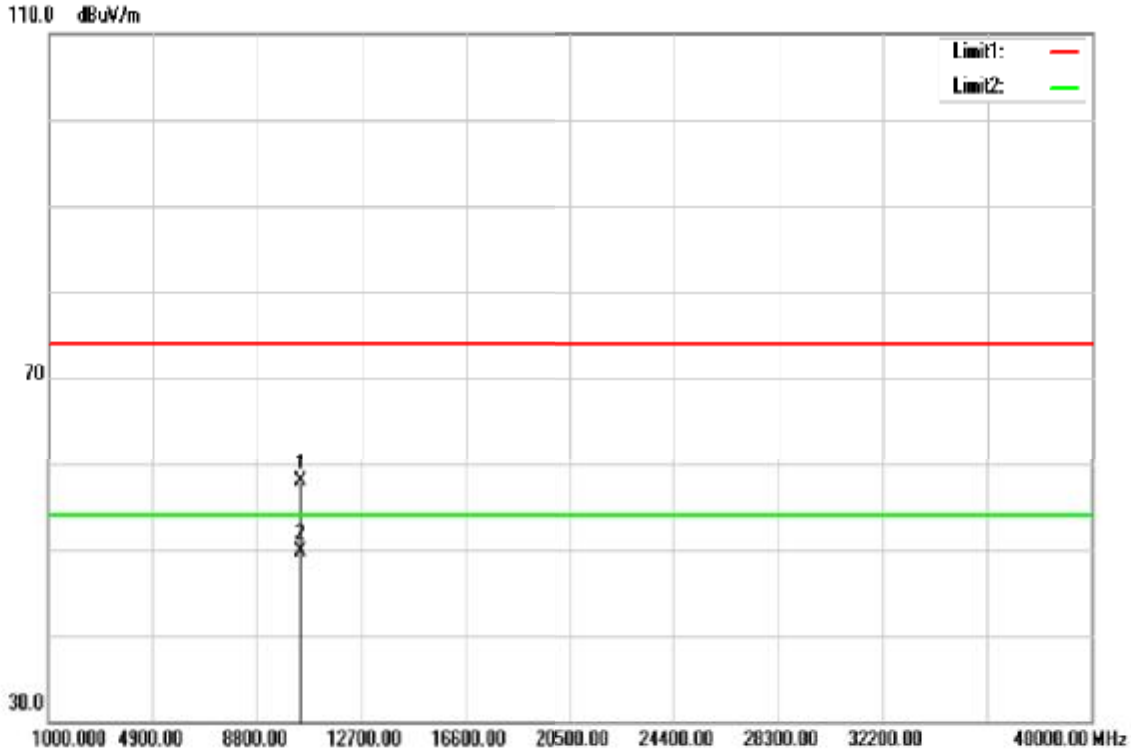


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	35.81	14.45	50.26	74.00	-23.74	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5220 MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Horizontal	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

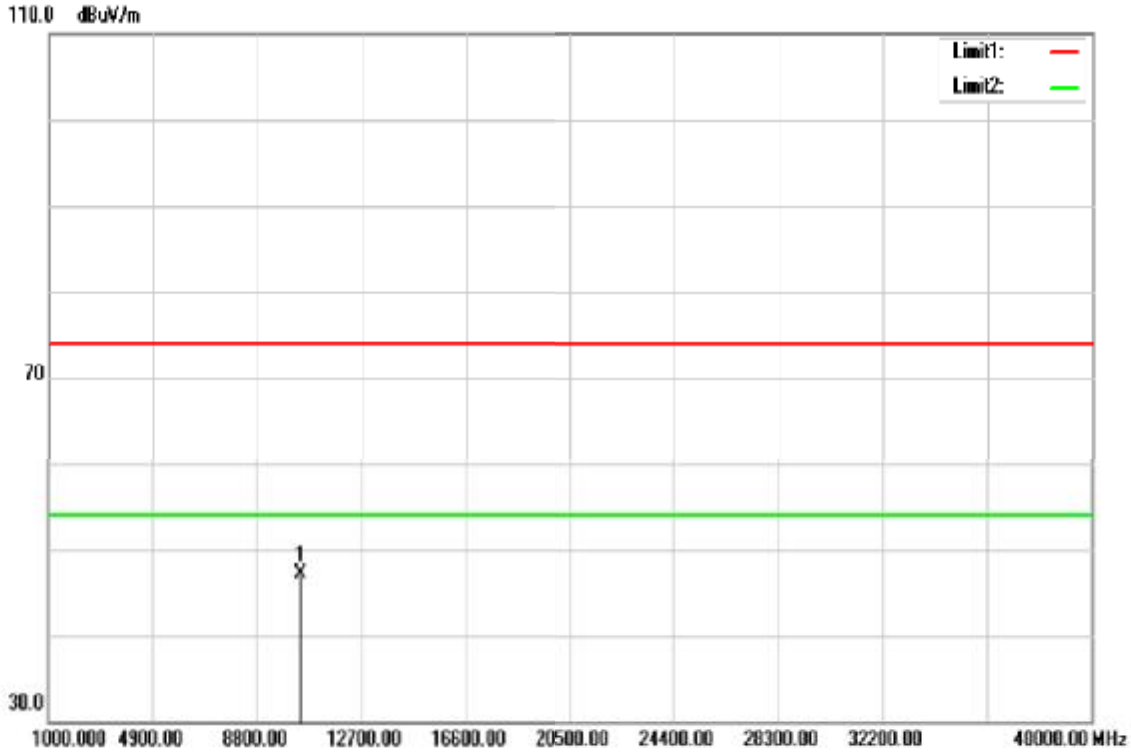


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	43.29	14.71	58.00	74.00	-16.00	peak
10440.000	34.97	14.71	49.68	54.00	-4.32	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5220 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

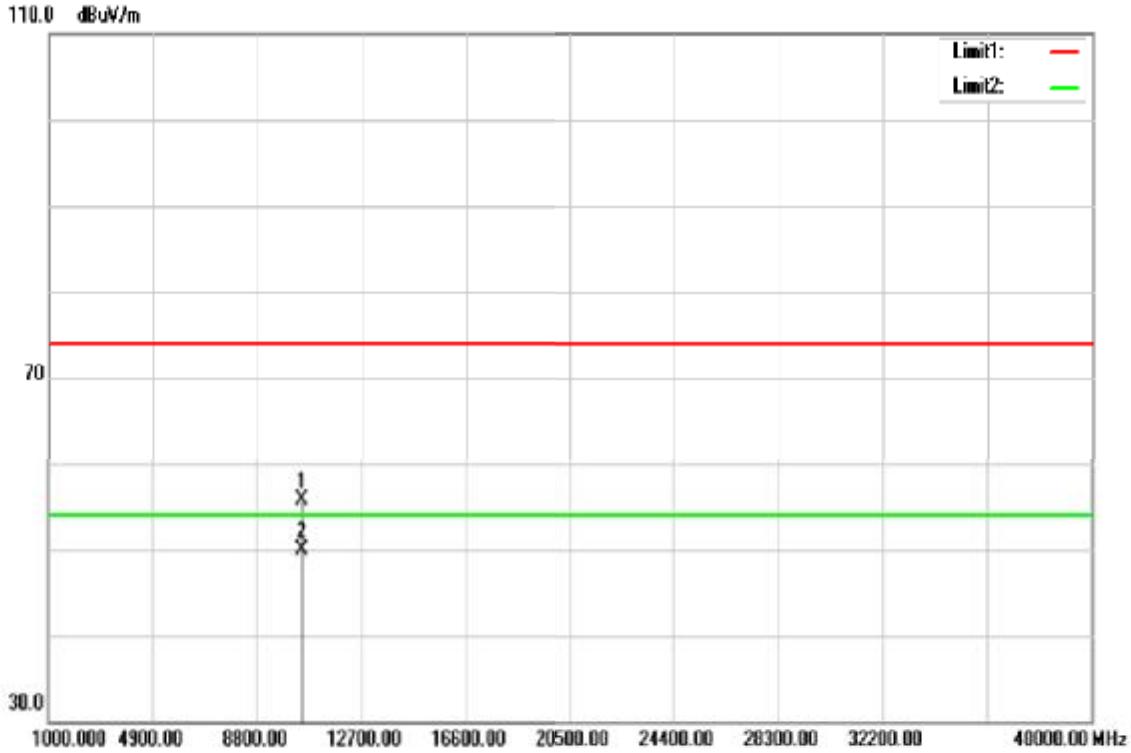


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	32.32	14.71	47.03	74.00	-26.97	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

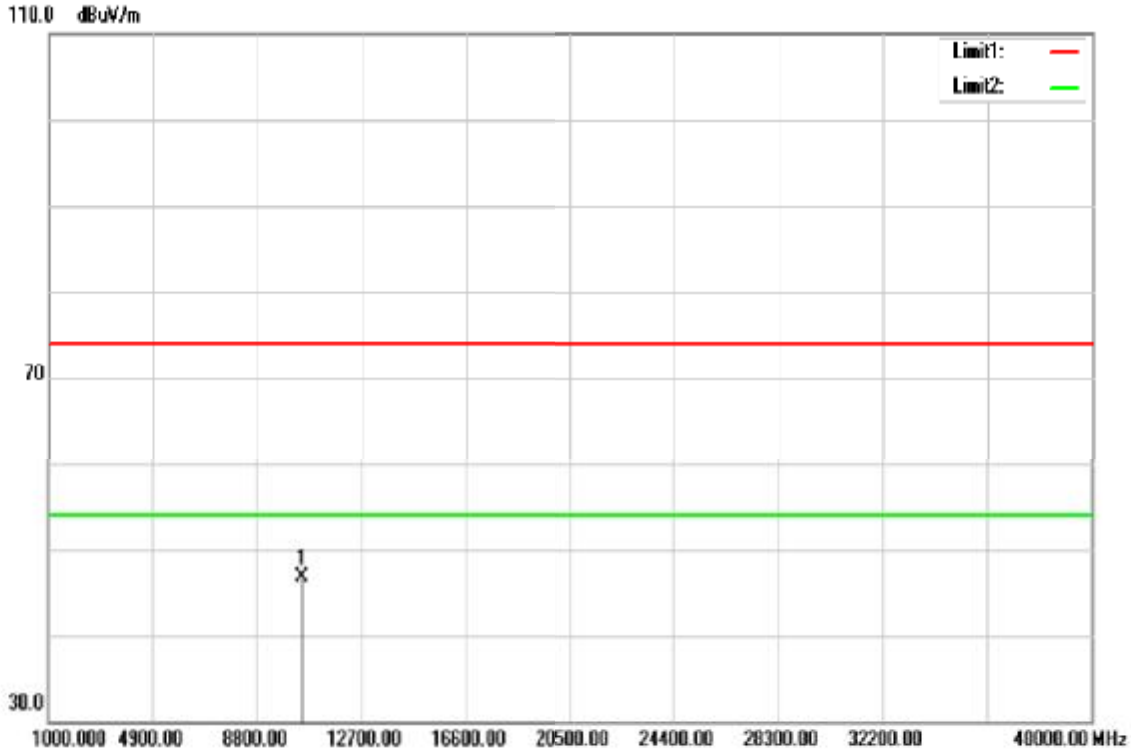


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	40.92	14.84	55.76	74.00	-18.24	peak
10480.000	35.08	14.84	49.92	54.00	-4.08	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

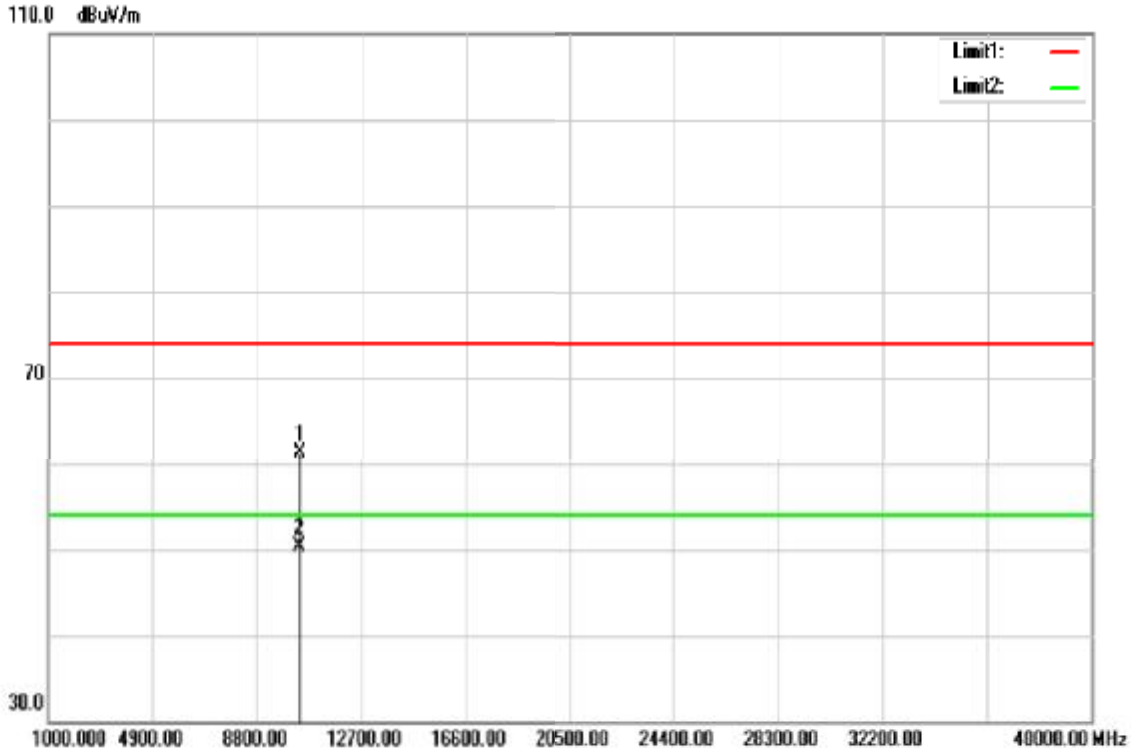


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	31.82	14.84	46.66	74.00	-27.34	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

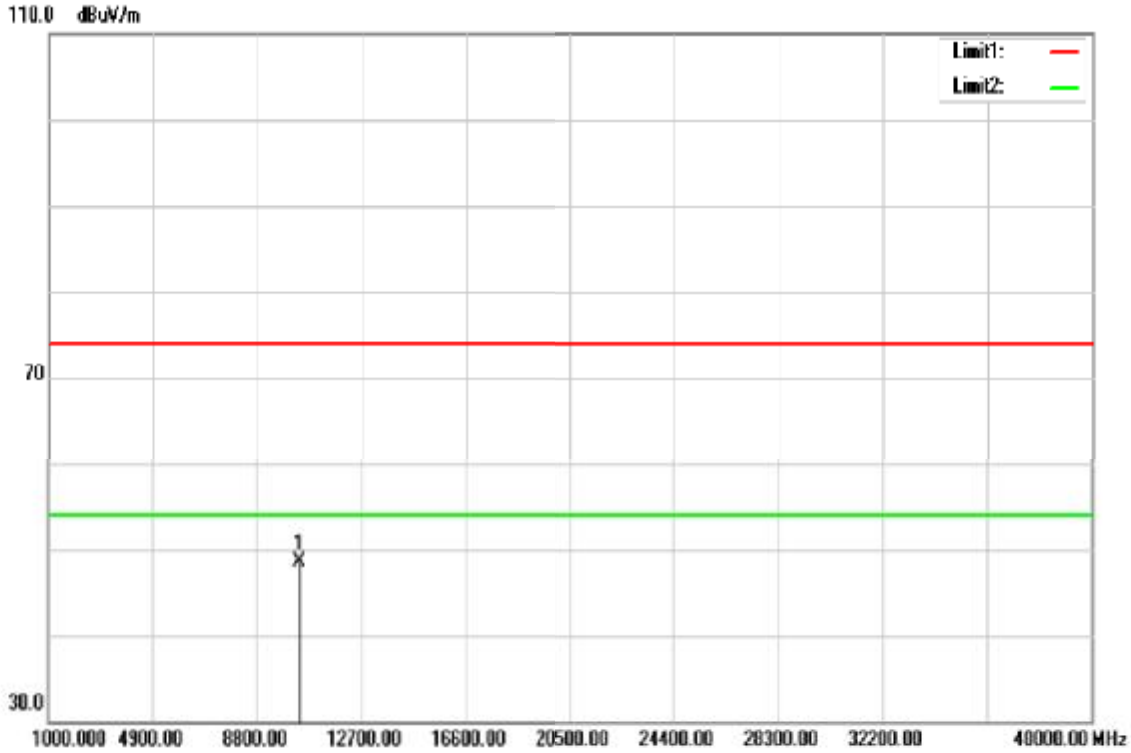


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	46.93	14.45	61.38	74.00	-12.62	peak
10360.000	35.77	14.45	50.22	54.00	-3.78	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5180MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

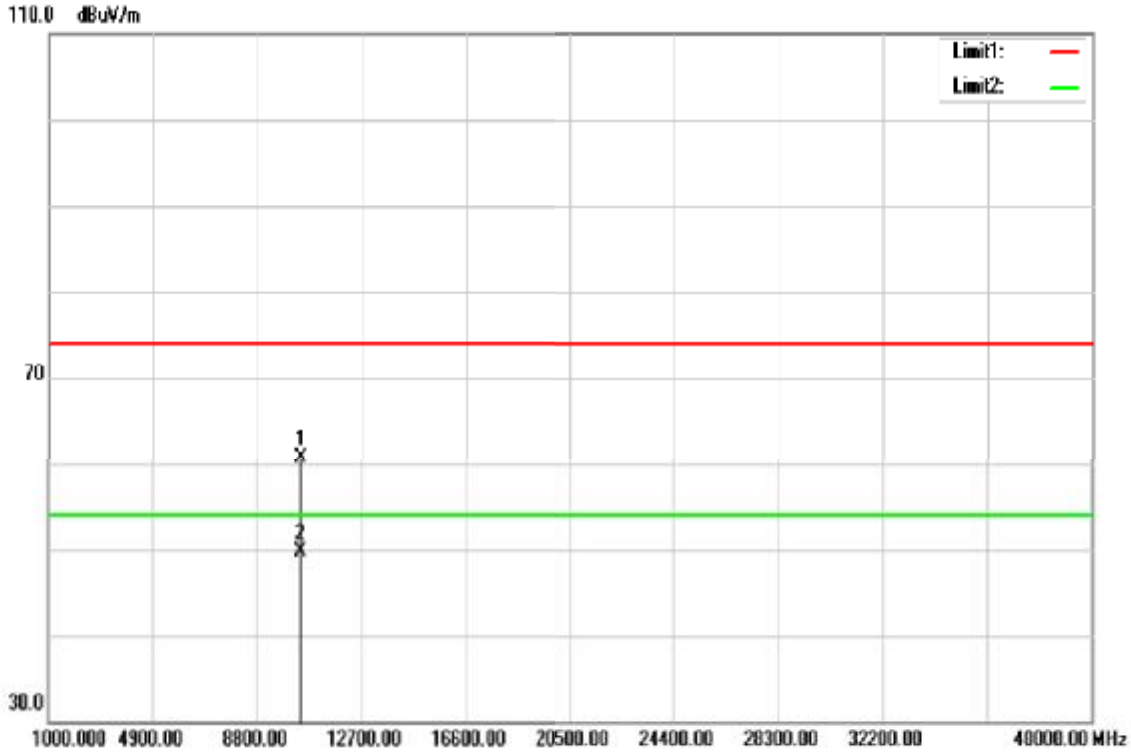


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.000	33.97	14.45	48.42	74.00	-25.58	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5220MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

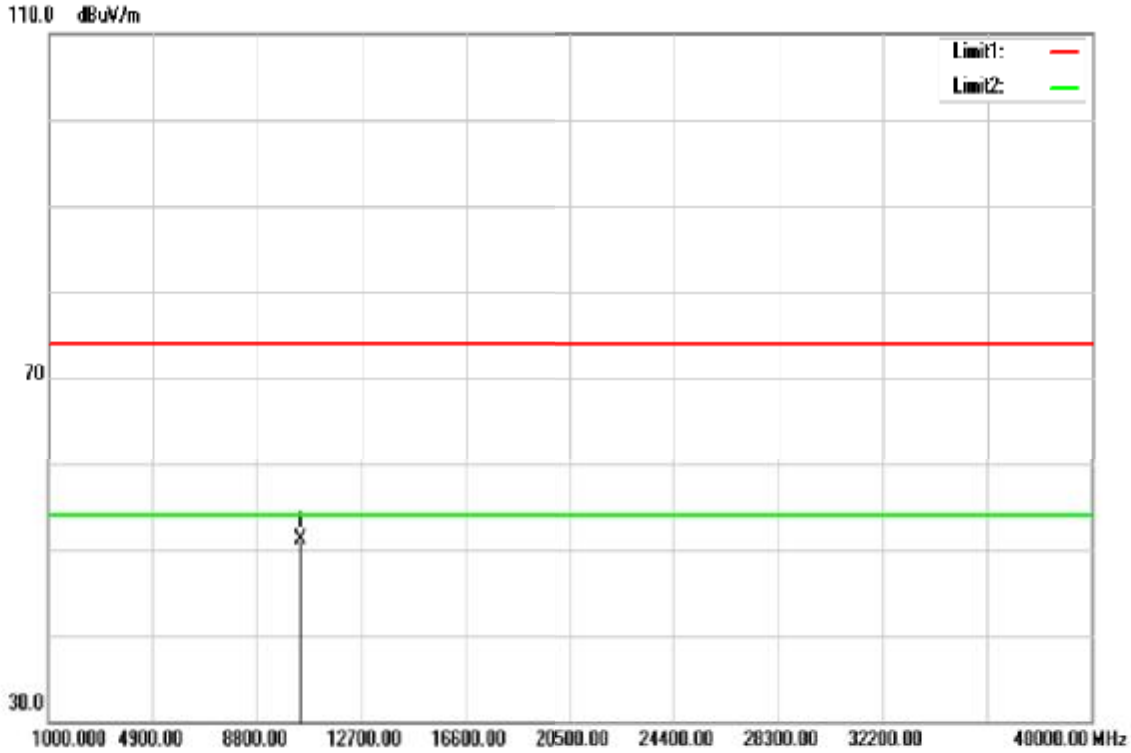


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.000	46.05	14.71	60.76	74.00	-13.24	peak
10440.000	34.98	14.71	49.69	54.00	-4.31	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5220MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

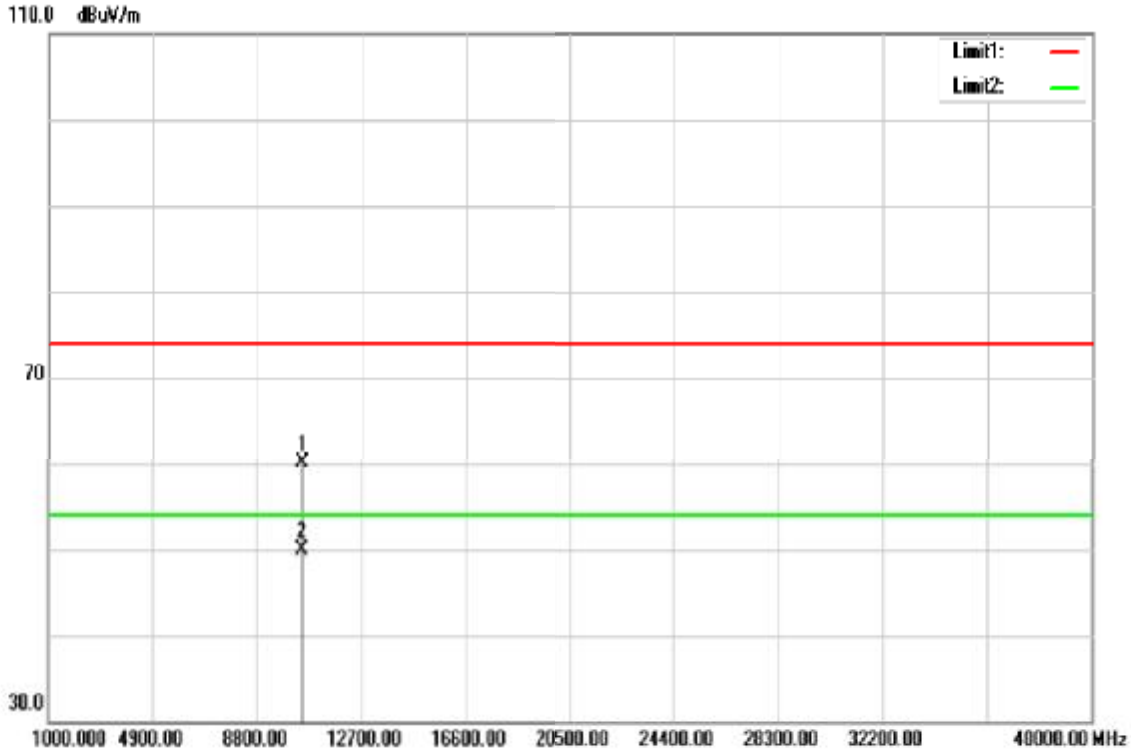


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10430.000	36.44	14.67	51.11	74.00	-22.89	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

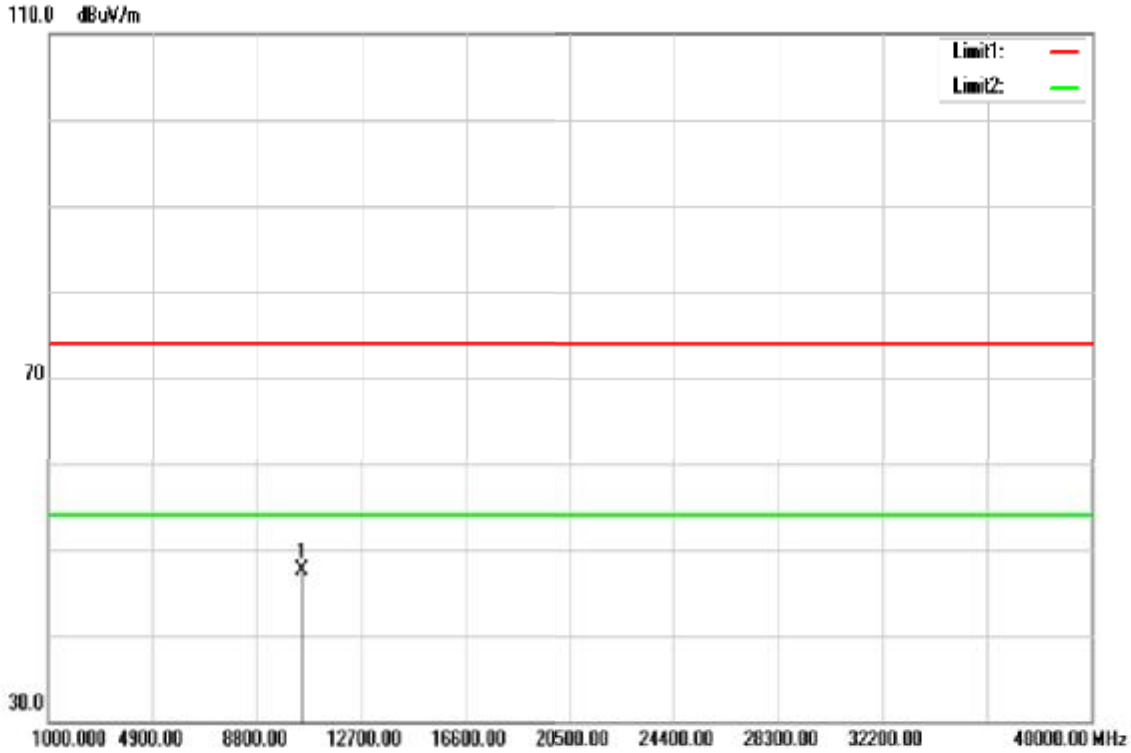


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	45.29	14.84	60.13	74.00	-13.87	peak
10480.000	35.01	14.84	49.85	54.00	-4.15	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5240MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

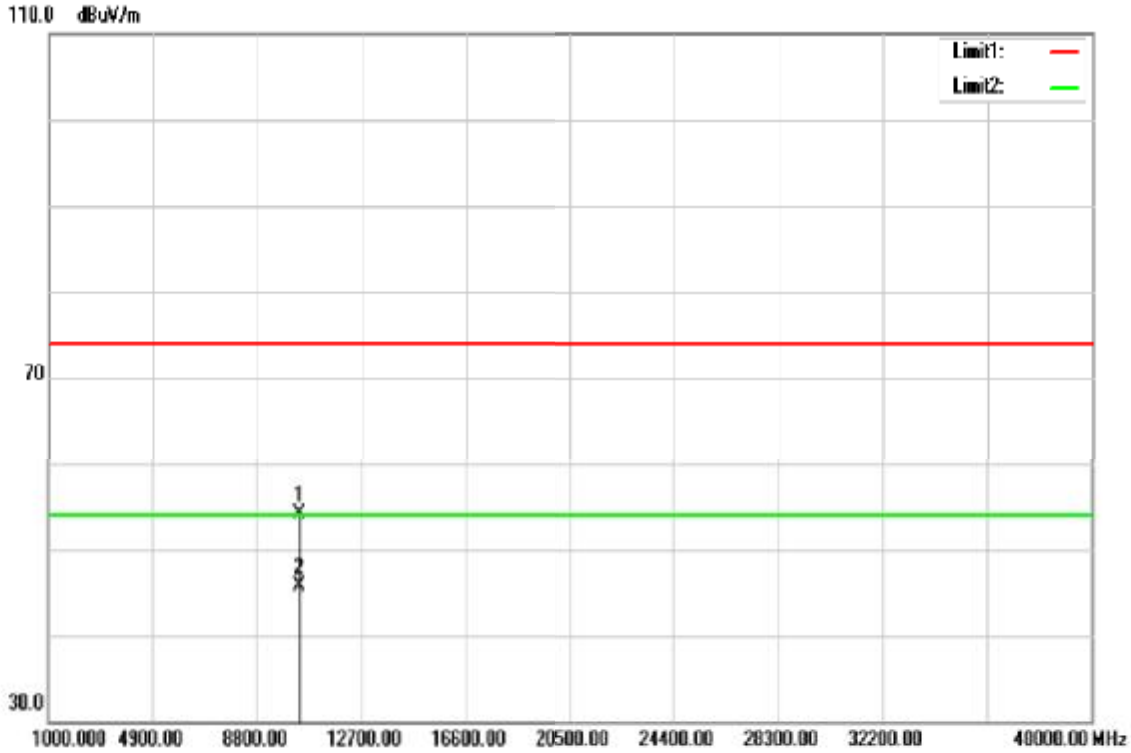


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.000	32.72	14.84	47.56	74.00	-26.44	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

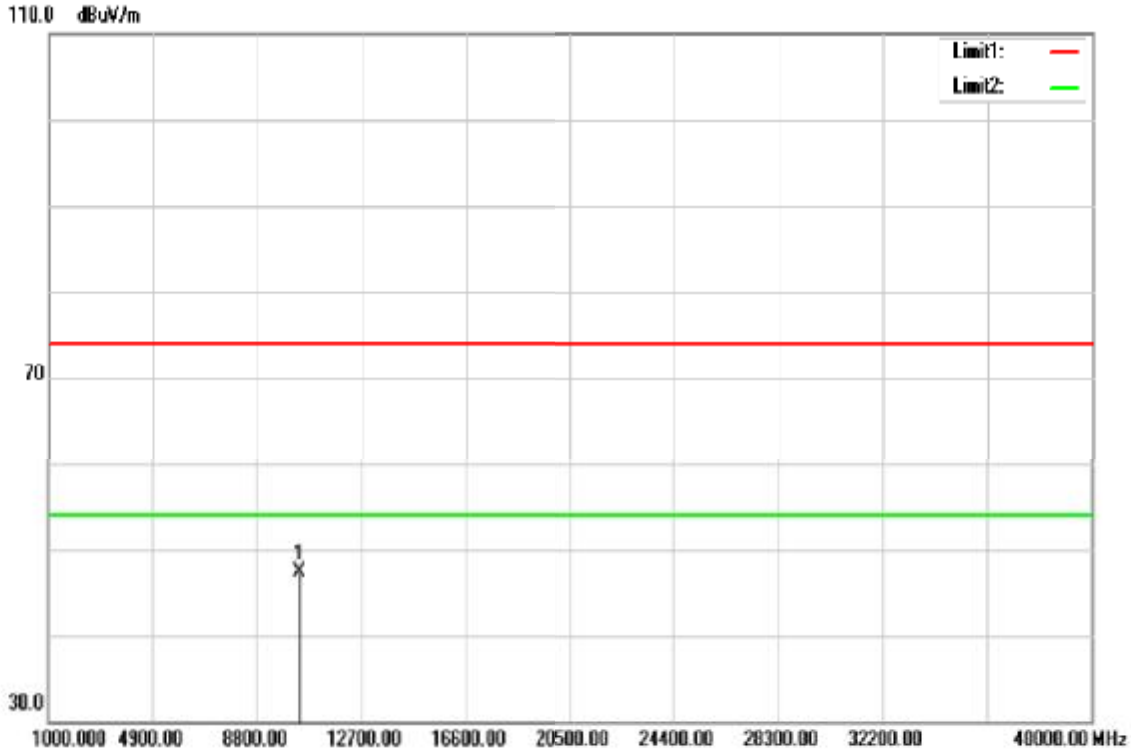


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10380.000	39.52	14.50	54.02	74.00	-19.98	peak
10380.000	31.18	14.50	45.68	54.00	-8.32	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5190MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

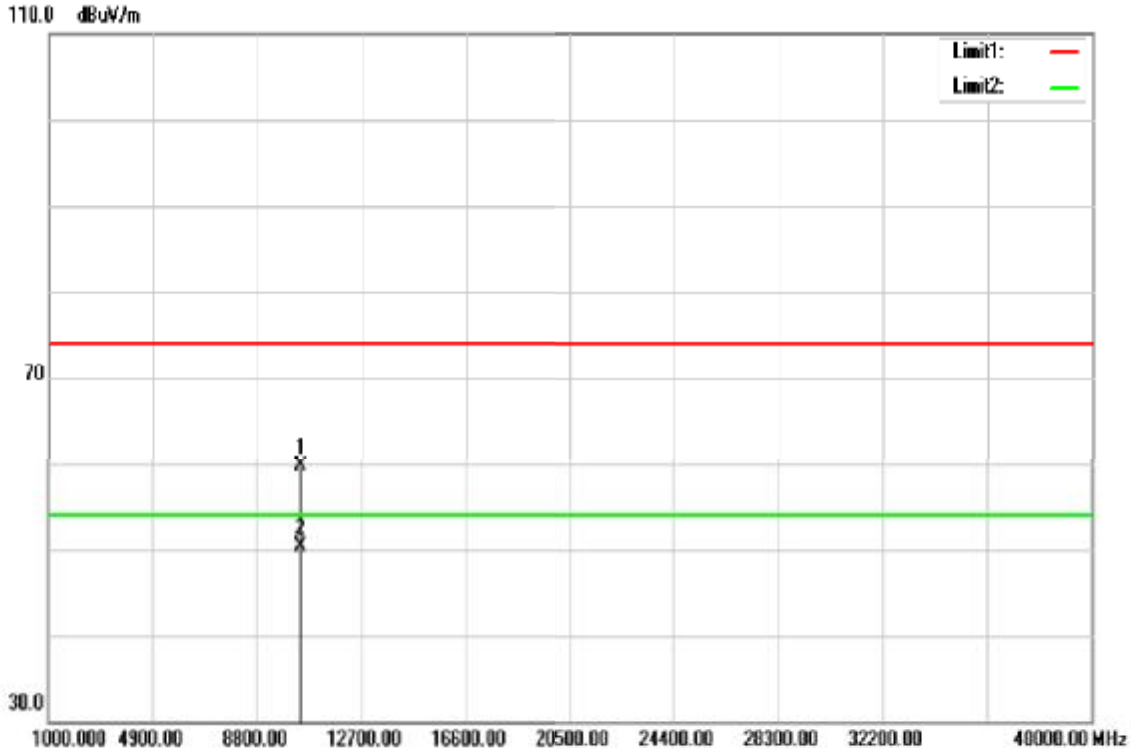


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10380.000	32.70	14.50	47.20	74.00	-26.80	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

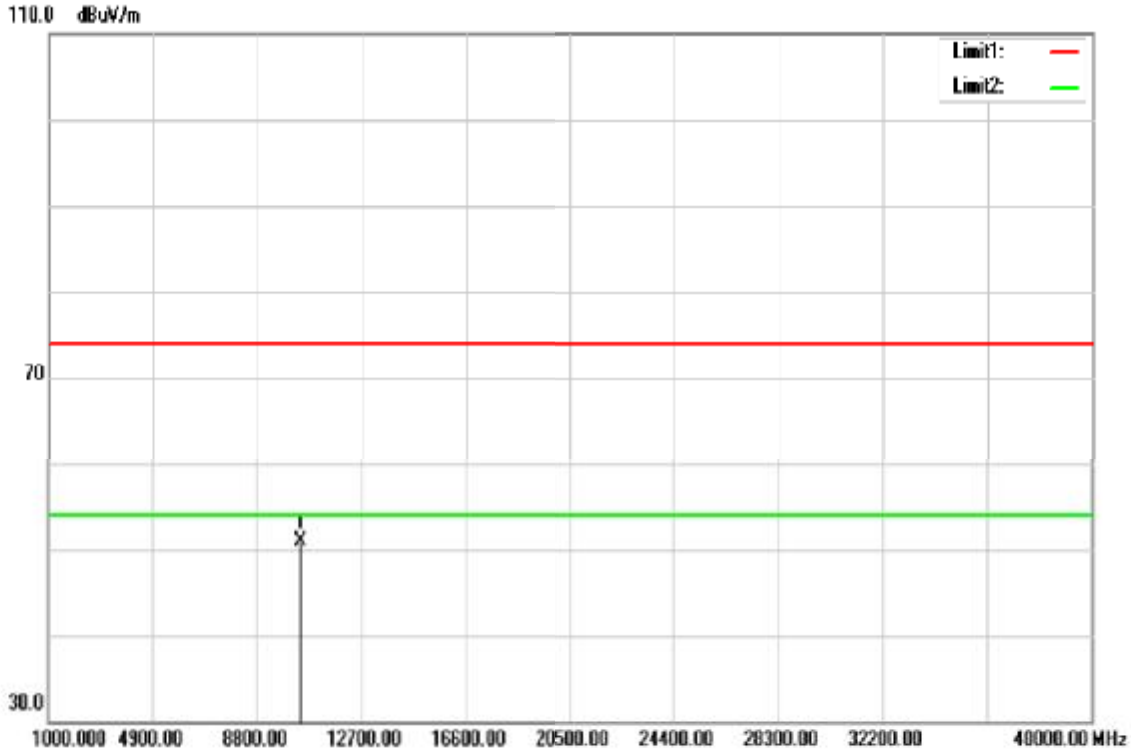


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10460.000	44.93	14.79	59.72	74.00	-14.28	peak
10460.000	35.58	14.79	50.37	54.00	-3.63	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 / 5230MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

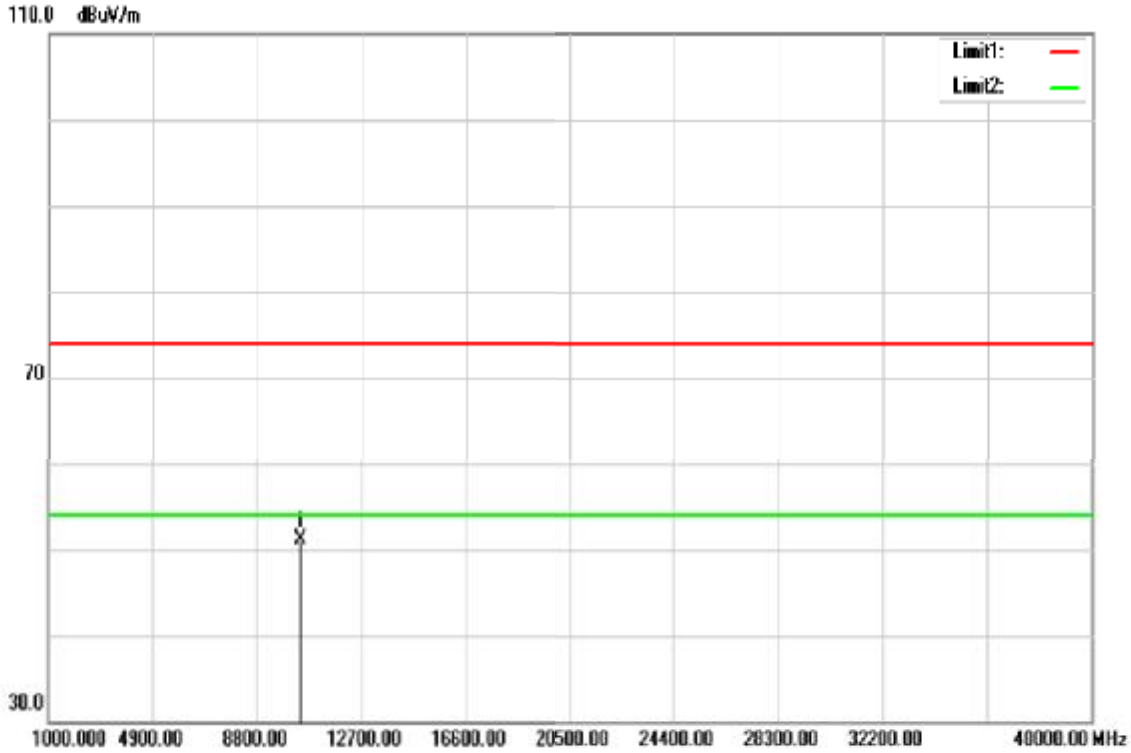


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10460.000	36.21	14.79	51.00	74.00	-23.00	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

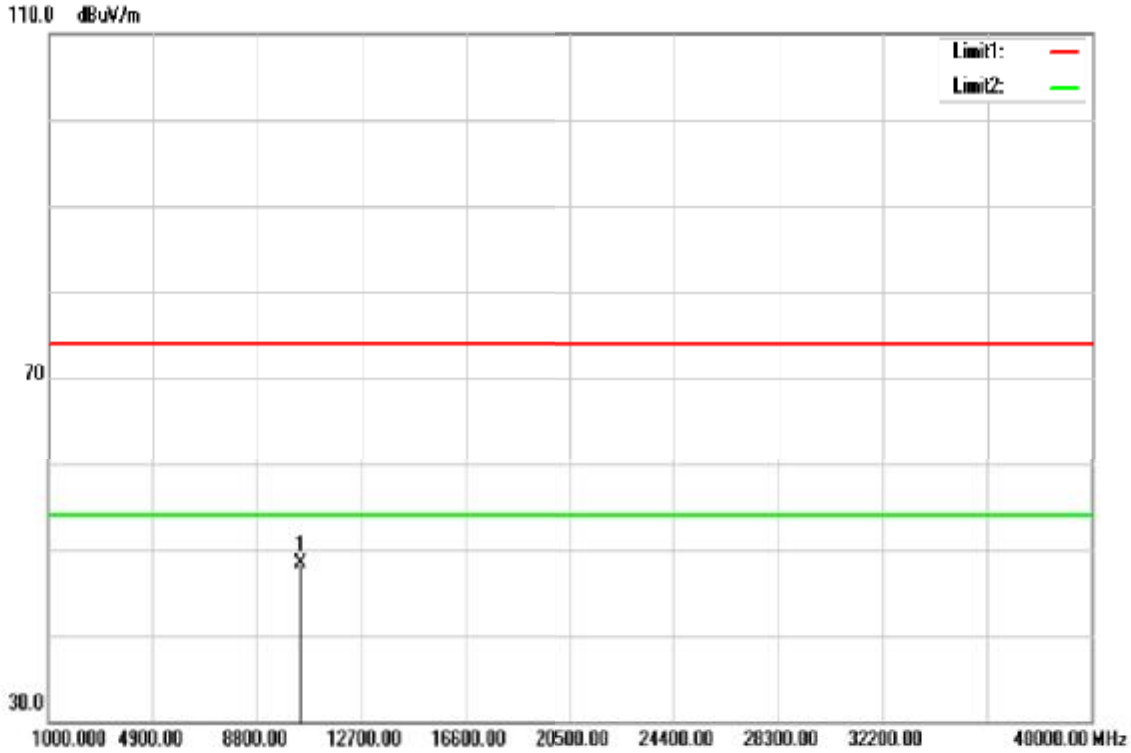


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10420.000	36.52	14.66	51.18	74.00	-22.82	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80 / 5210MHZ	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



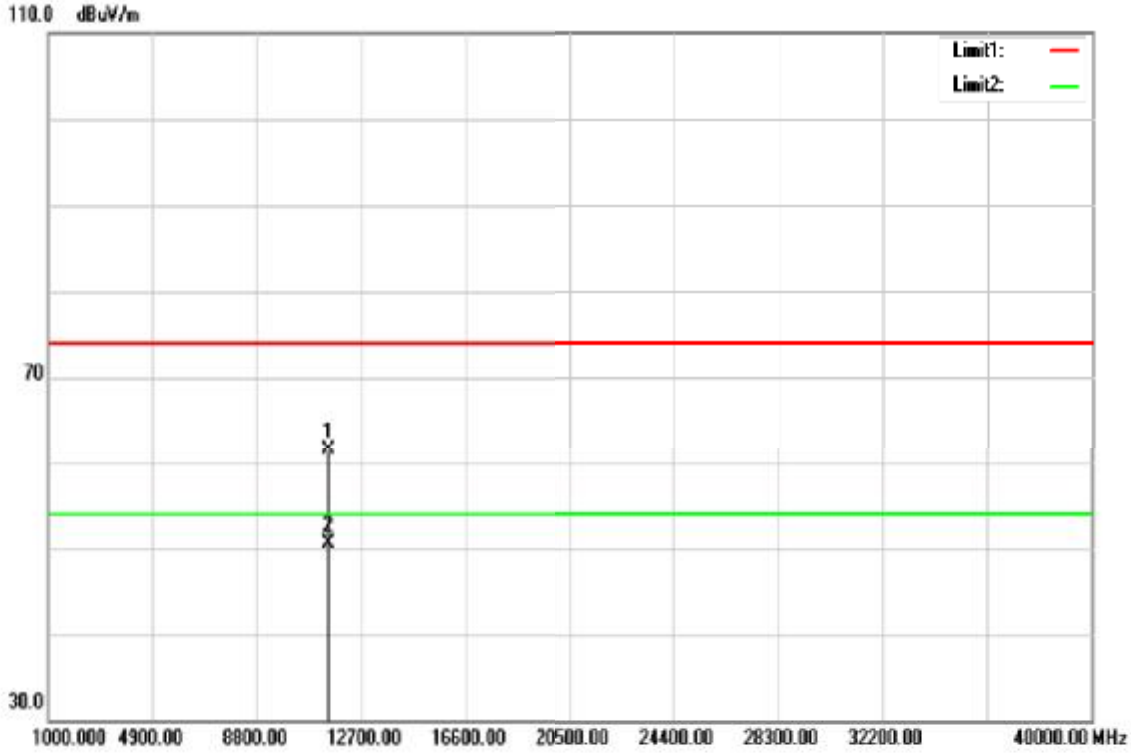
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10420.000	33.65	14.66	48.31	74.00	-25.69	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Above 1G Test Data for UNII-3

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

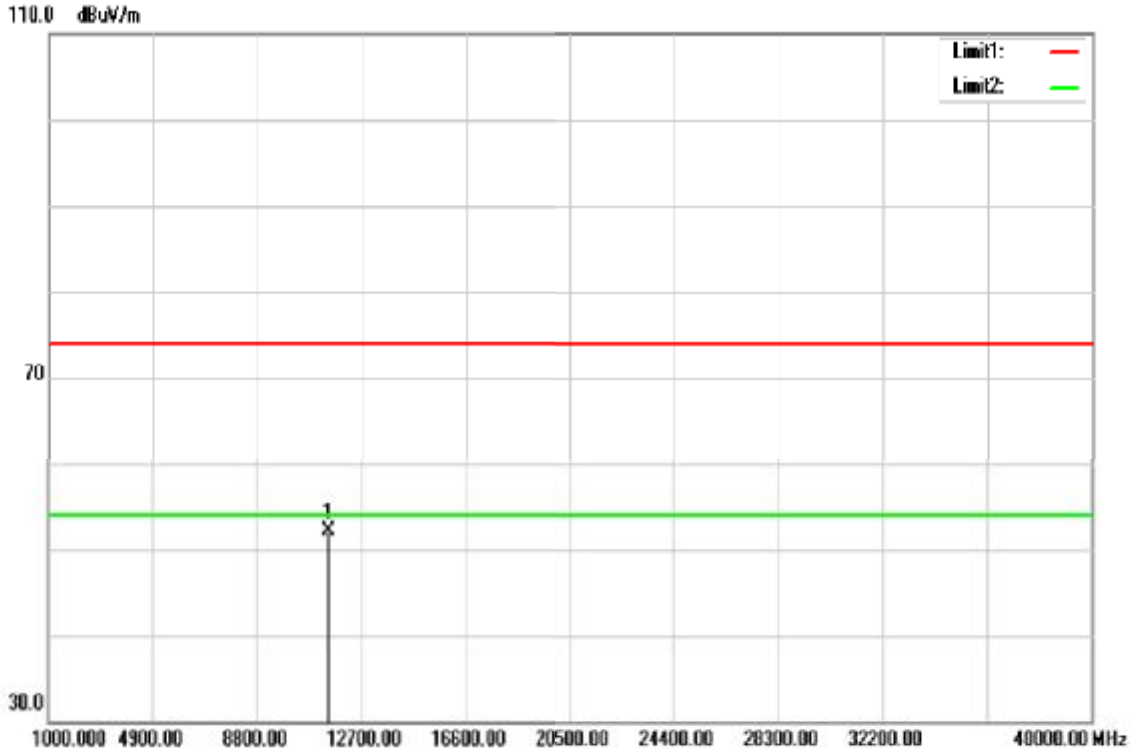


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	45.38	16.09	61.47	74.00	-12.53	peak
11490.000	34.37	16.09	50.46	54.00	-3.54	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

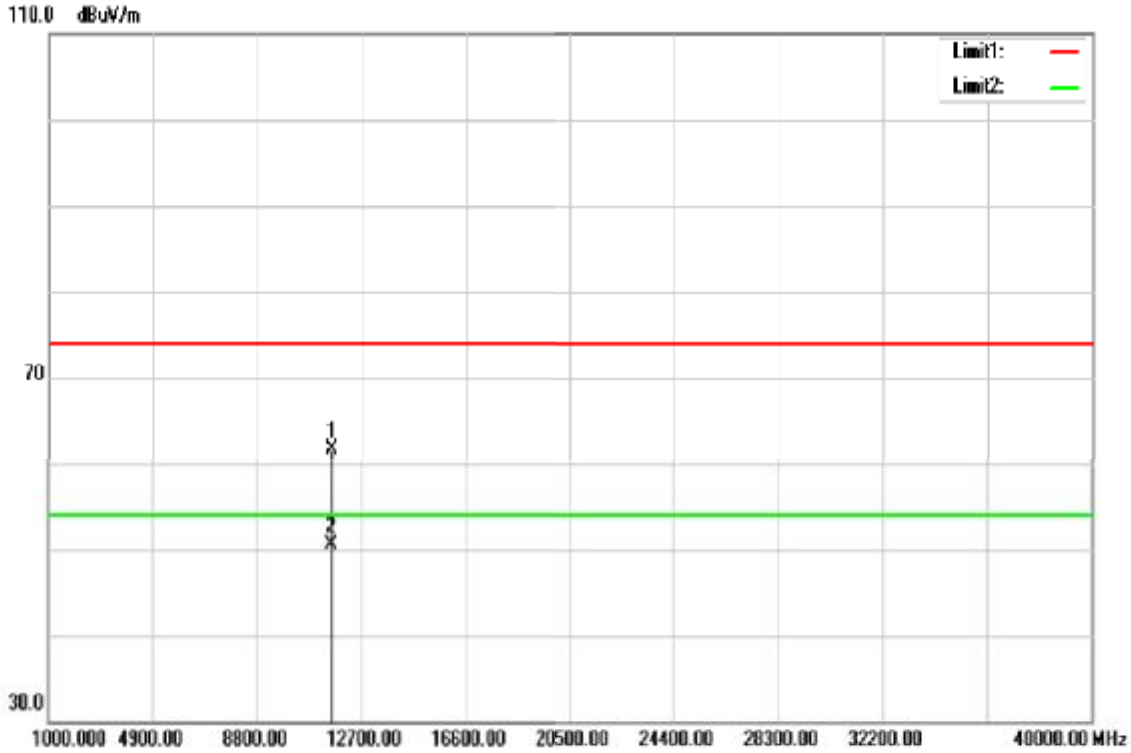


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	35.94	16.09	52.03	74.00	-21.97	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

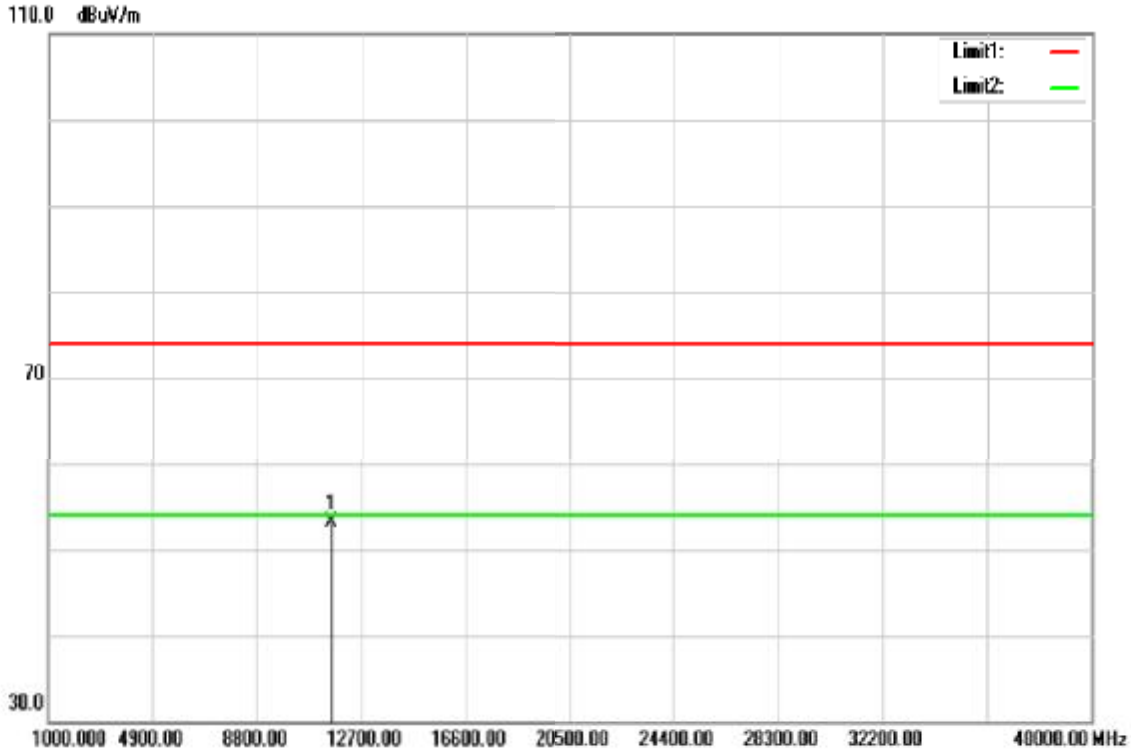


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	45.64	16.01	61.65	74.00	-12.35	peak
11570.000	34.47	16.01	50.48	54.00	-3.52	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

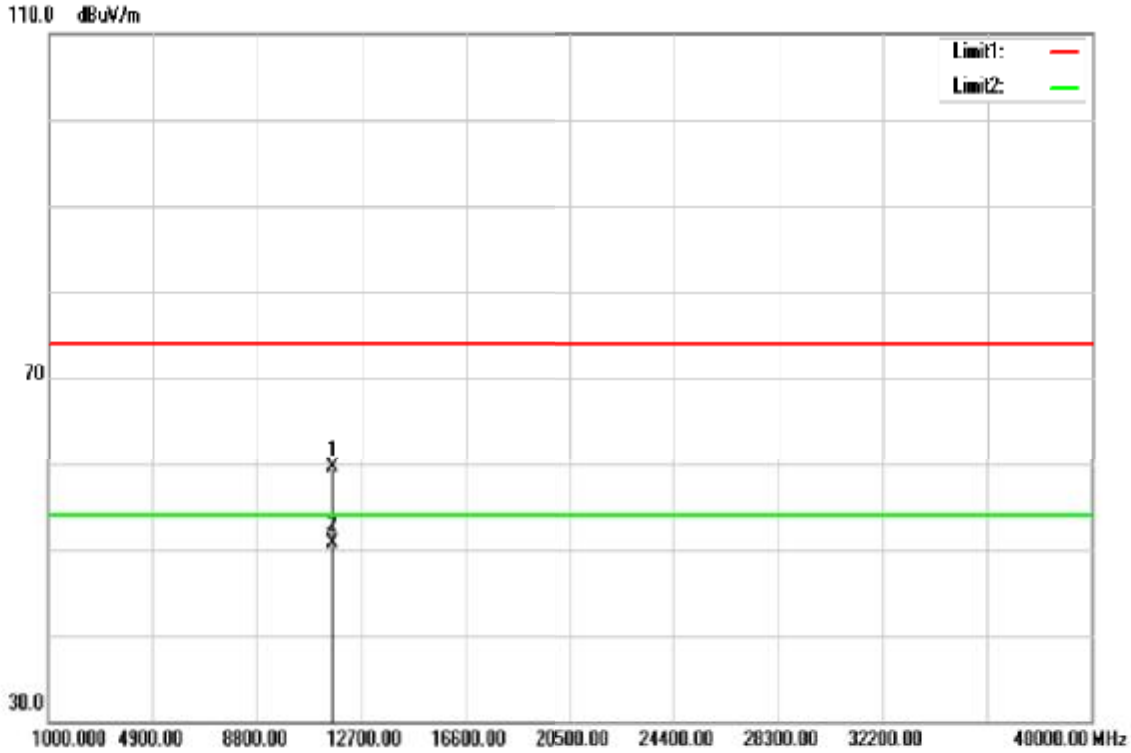


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	37.10	16.01	53.11	74.00	-20.89	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

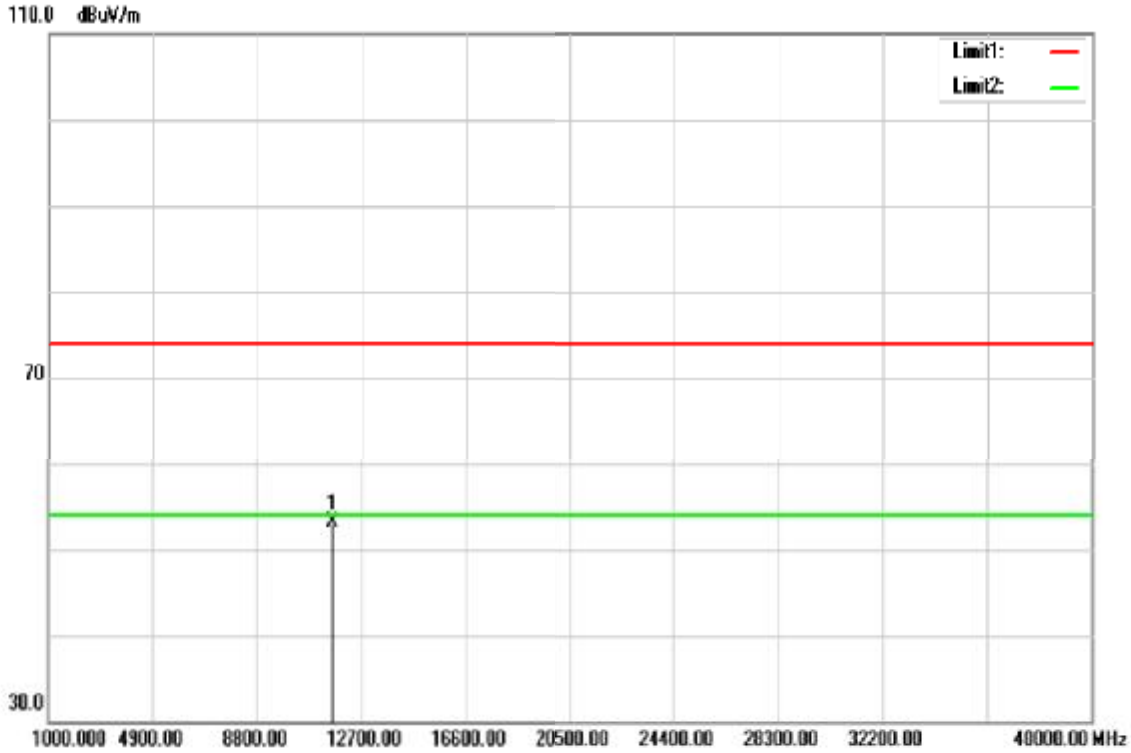


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	43.64	15.93	59.57	74.00	-14.43	peak
11650.000	34.84	15.93	50.77	54.00	-3.23	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a / 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

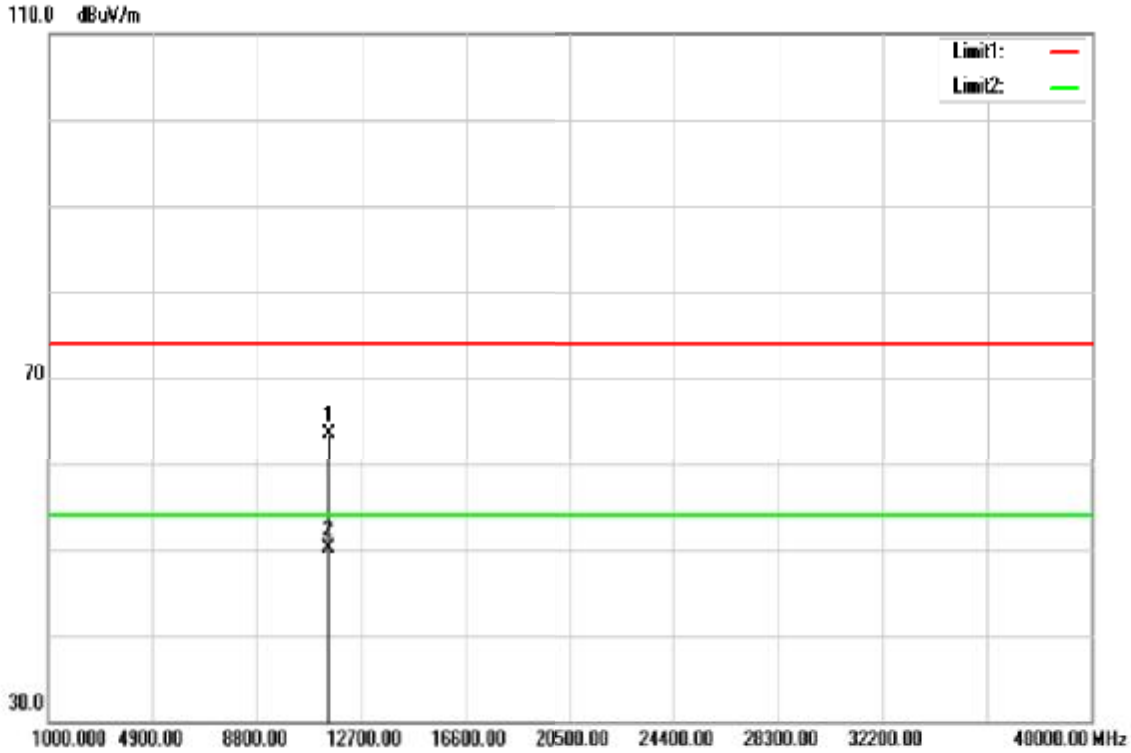


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	37.09	15.93	53.02	74.00	-20.98	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

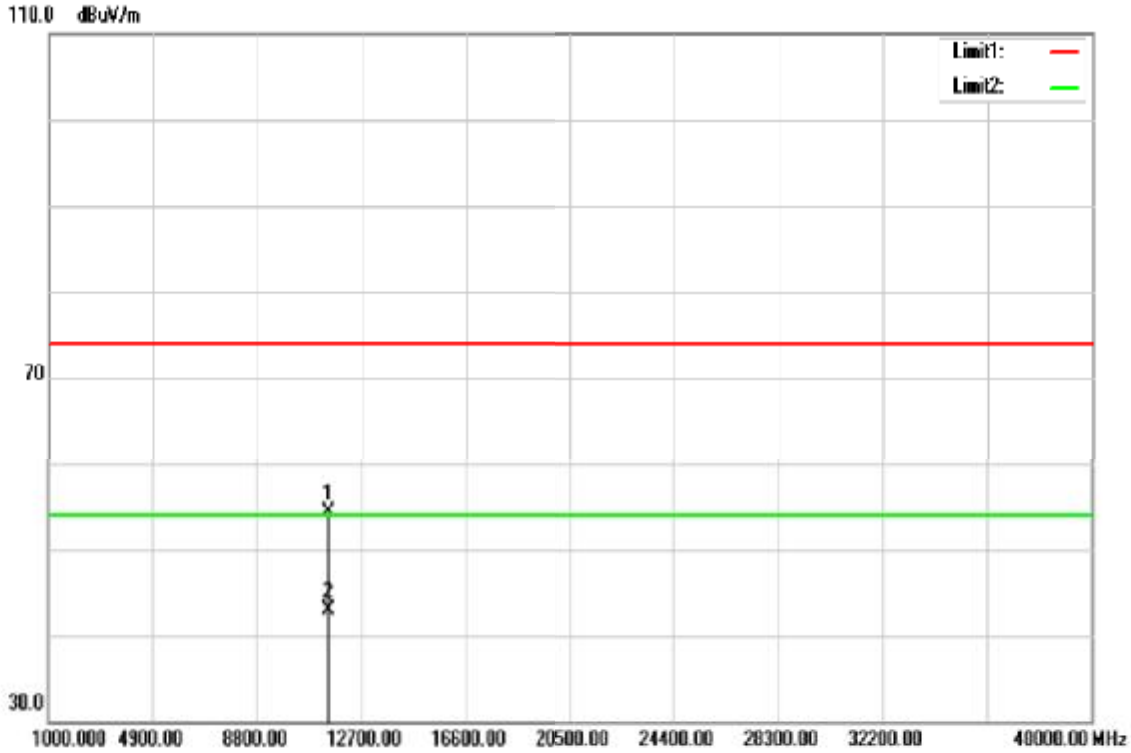


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	47.41	16.09	63.50	74.00	-10.50	peak
11490.000	34.09	16.09	50.18	54.00	-3.82	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 / 5745 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

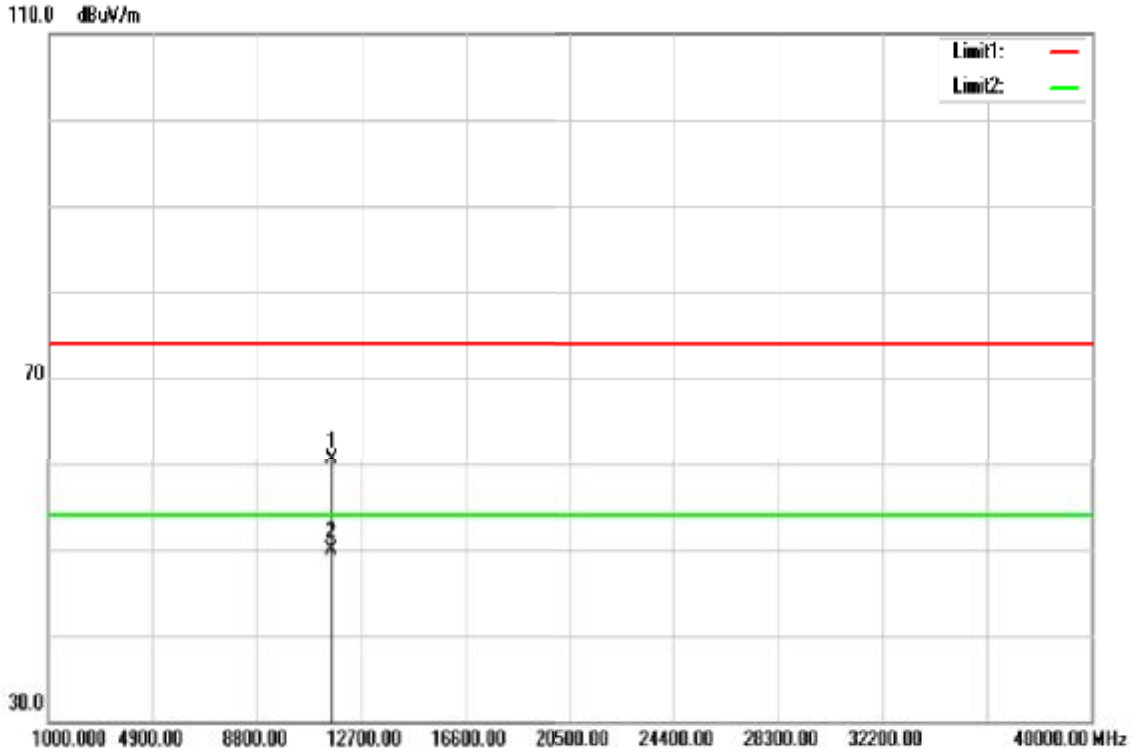


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.000	38.31	16.09	54.40	74.00	-19.60	peak
11490.000	26.76	16.09	42.85	54.00	-11.15	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

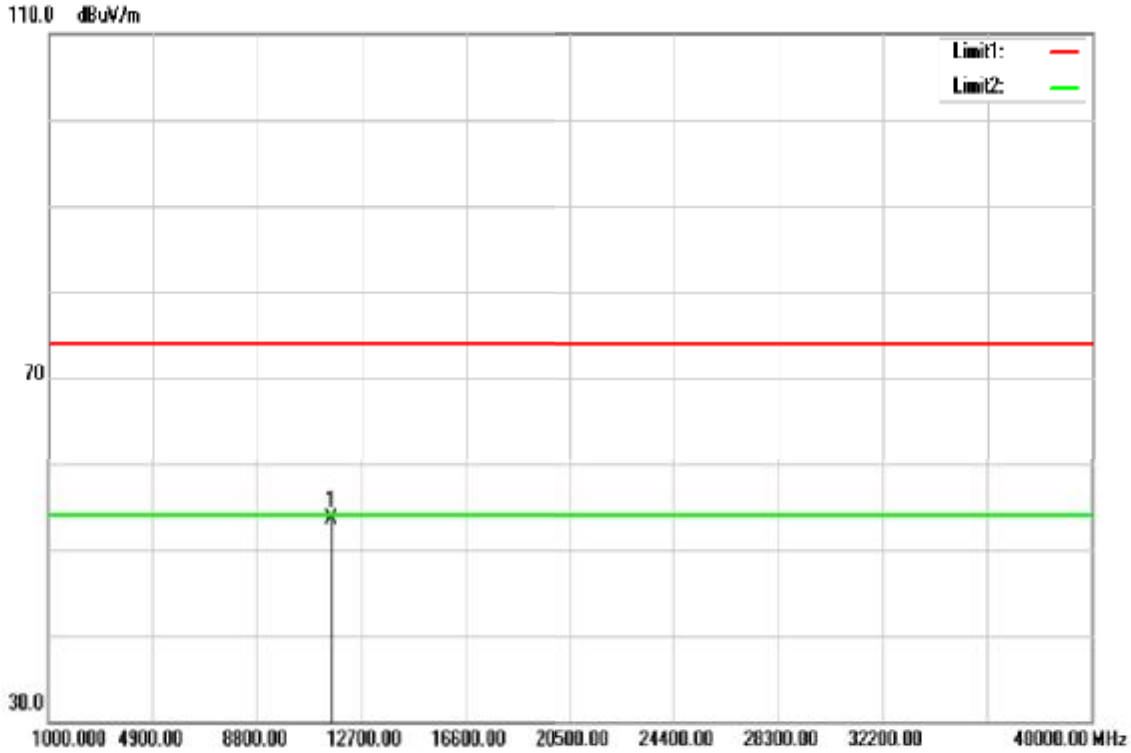


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	44.53	16.01	60.54	74.00	-13.46	peak
11570.000	33.94	16.01	49.95	54.00	-4.05	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5785 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

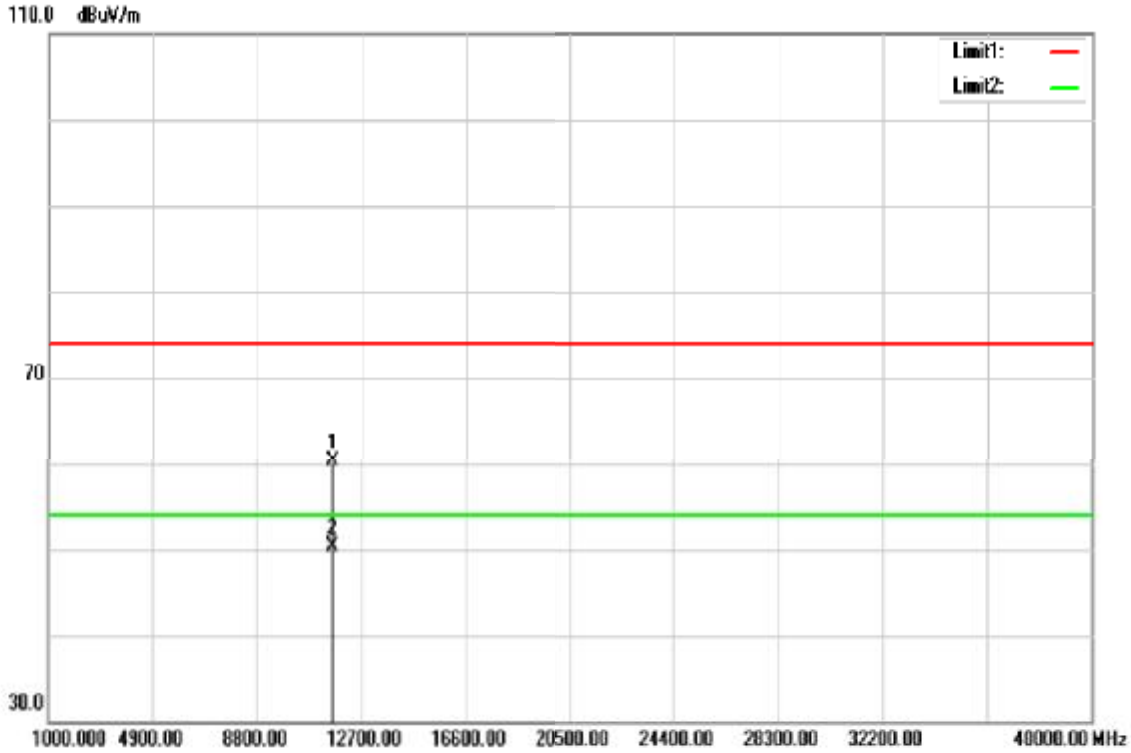


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.000	37.50	16.01	53.51	74.00	-20.49	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

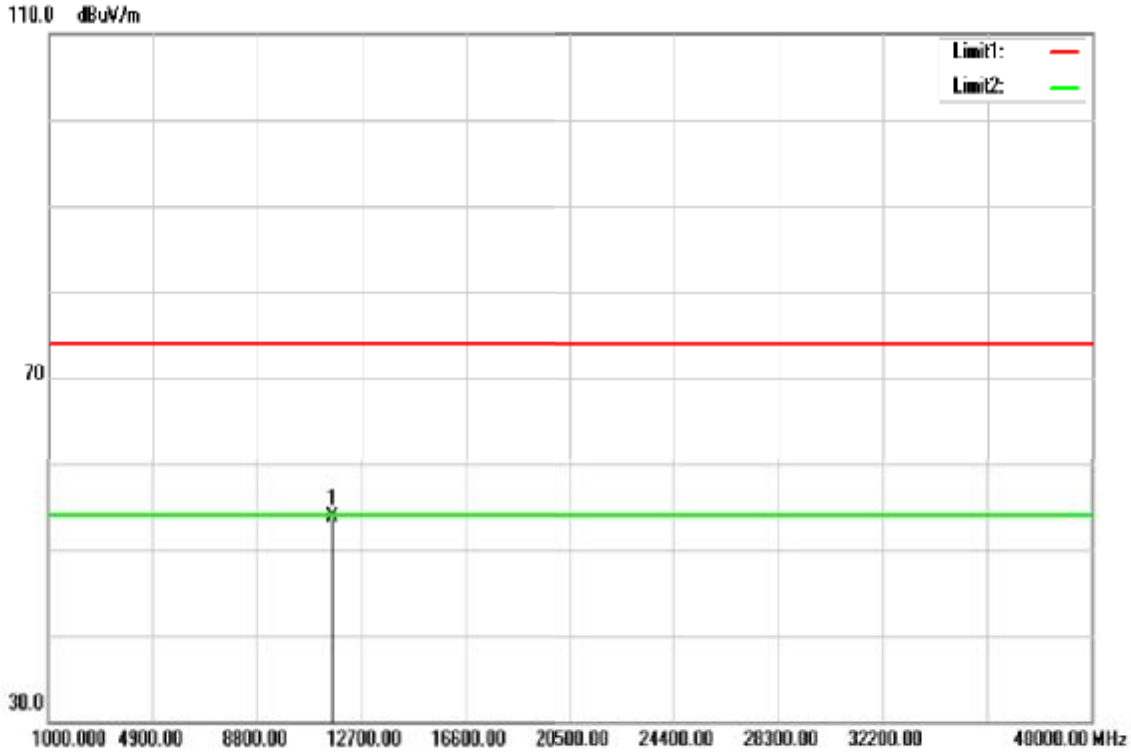


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	44.41	15.93	60.34	74.00	-13.66	peak
11650.000	34.29	15.93	50.22	54.00	-3.78	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20/ 5825 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

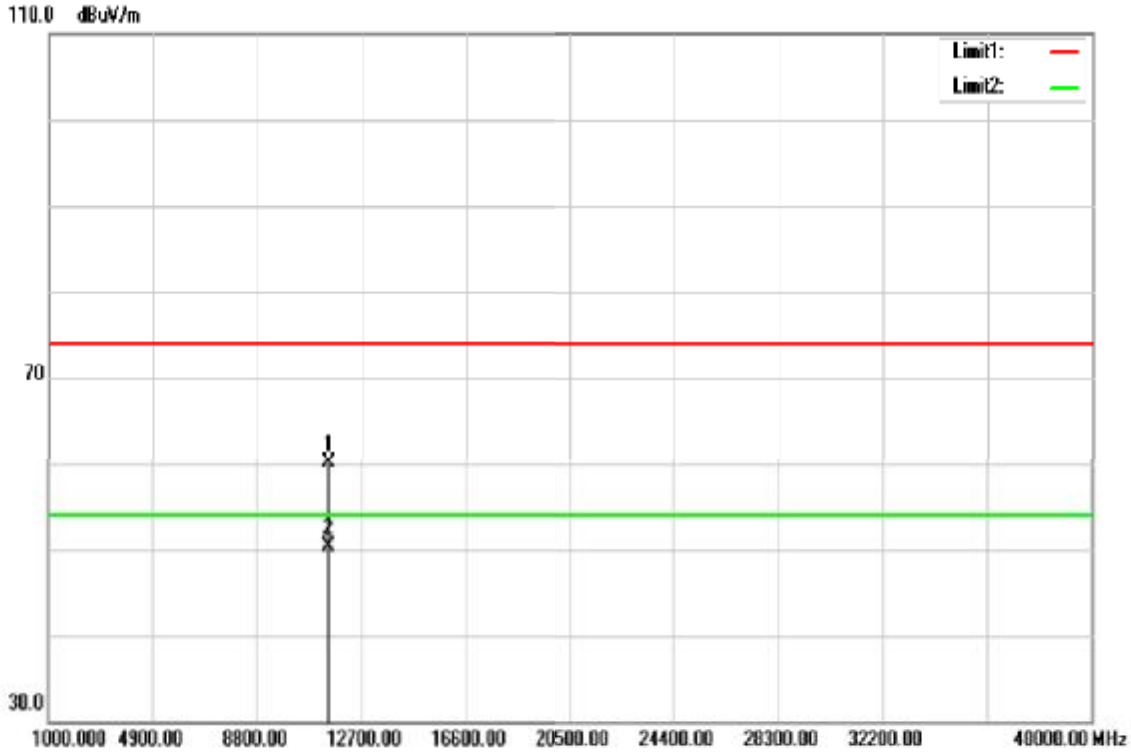


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.000	37.75	15.93	53.68	74.00	-20.32	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

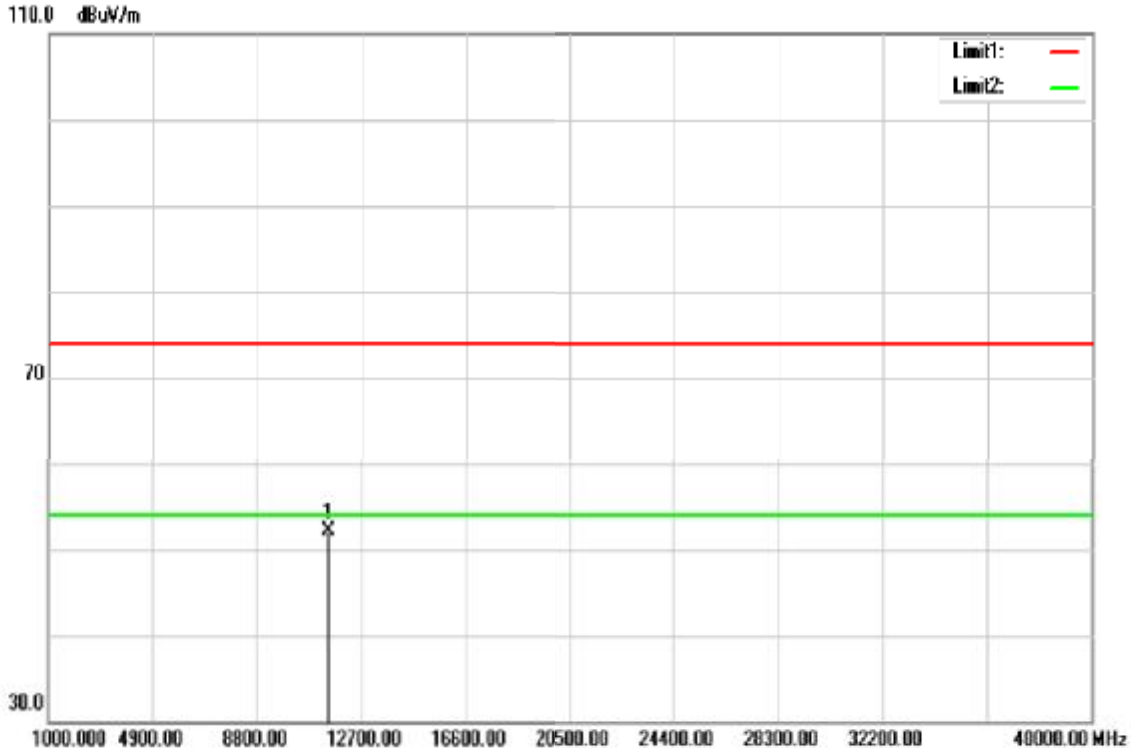


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11500.000	44.01	16.09	60.10	74.00	-13.90	peak
11500.000	34.12	16.09	50.21	54.00	-3.79	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5755 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

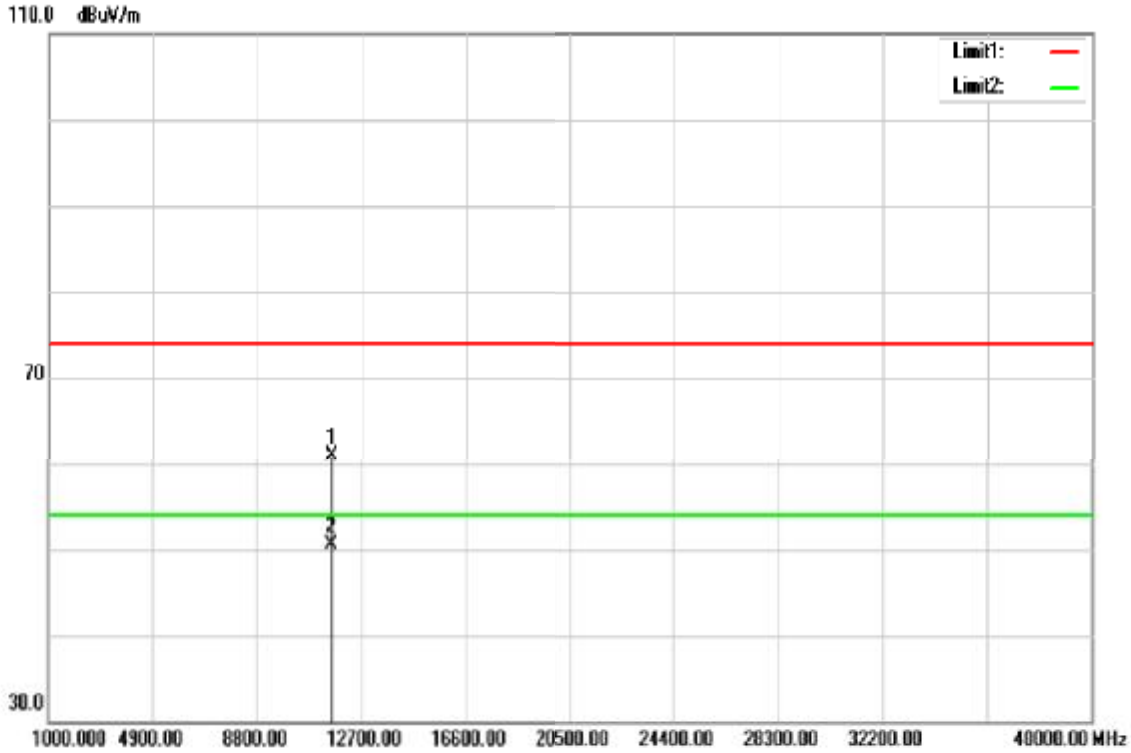


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11500.000	35.96	16.09	52.05	74.00	-21.95	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

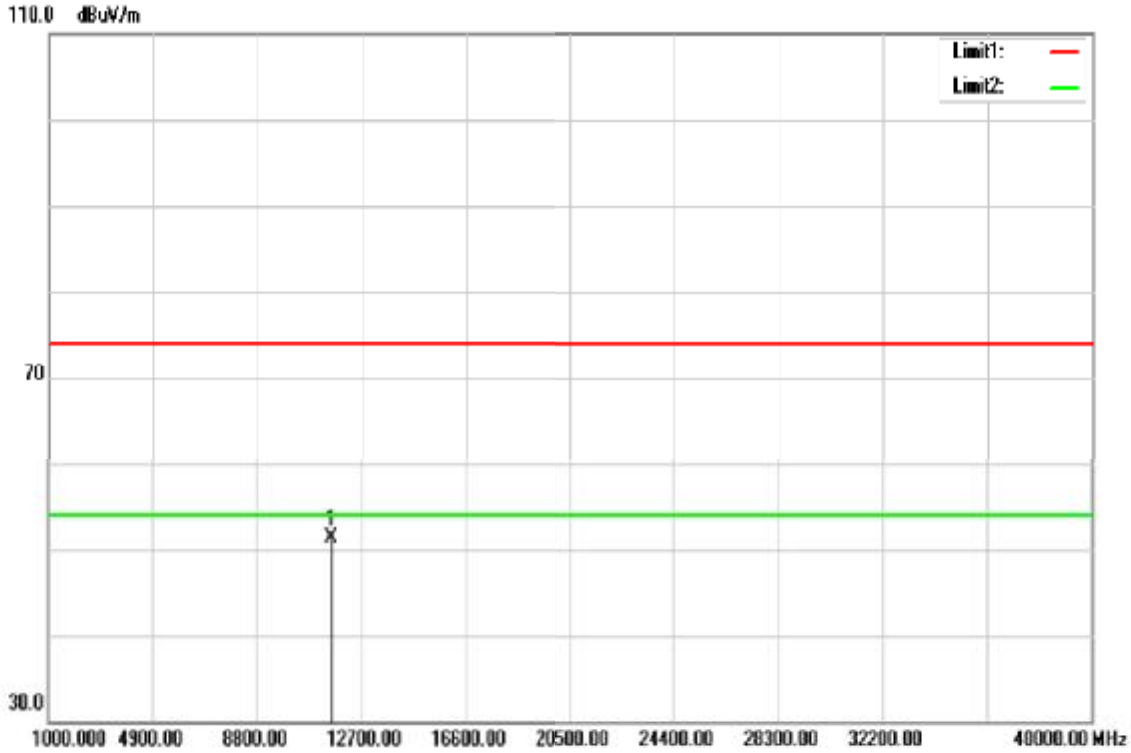


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11590.000	44.88	16.00	60.88	74.00	-13.12	peak
11590.000	34.55	16.00	50.55	54.00	-3.45	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40/ 5795 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

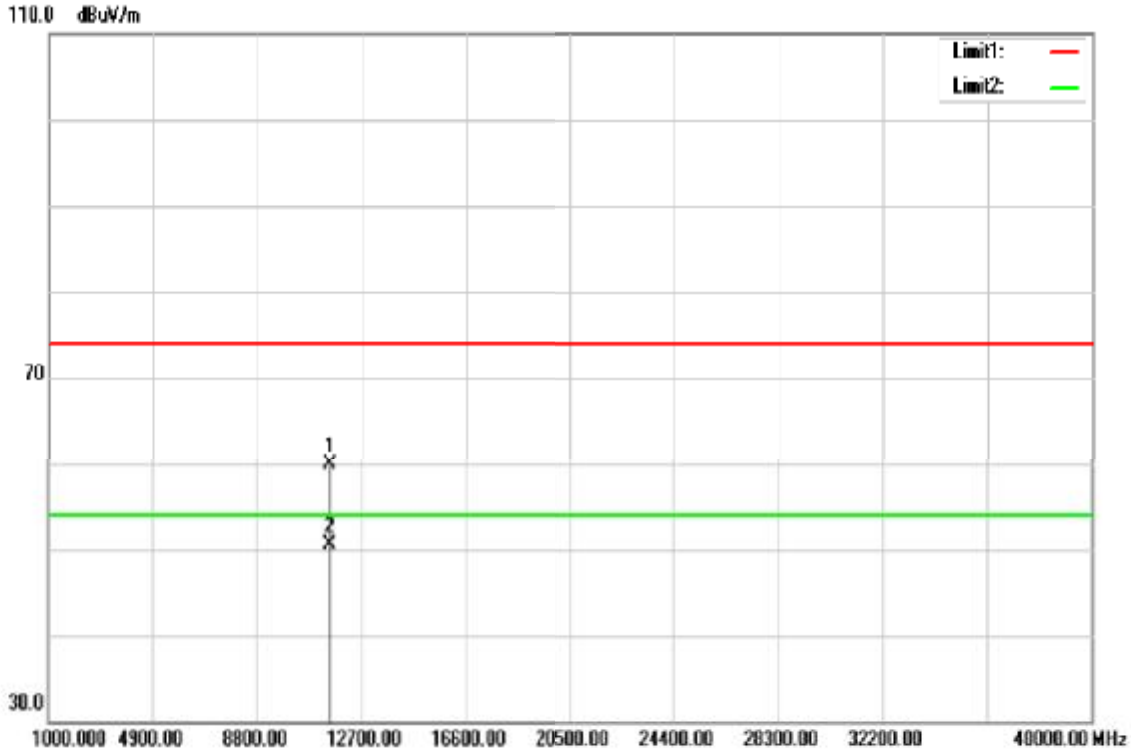


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11590.000	35.23	16.00	51.23	74.00	-22.77	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80/ 5775 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

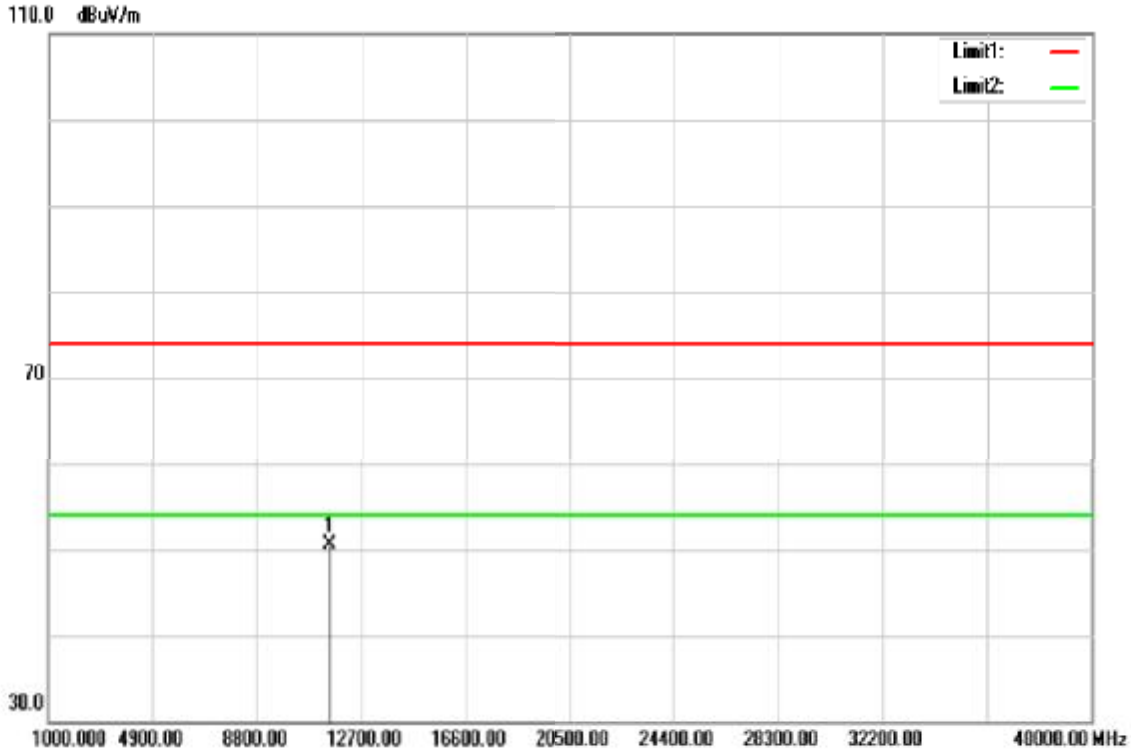


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11510.000	43.82	16.08	59.90	74.00	-14.10	peak
11510.000	34.38	16.08	50.46	54.00	-3.54	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11ac VHT80/ 5775 MHz	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11550.000	34.37	16.04	50.41	74.00	-23.59	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

4.6 FREQUENCY STABILITY

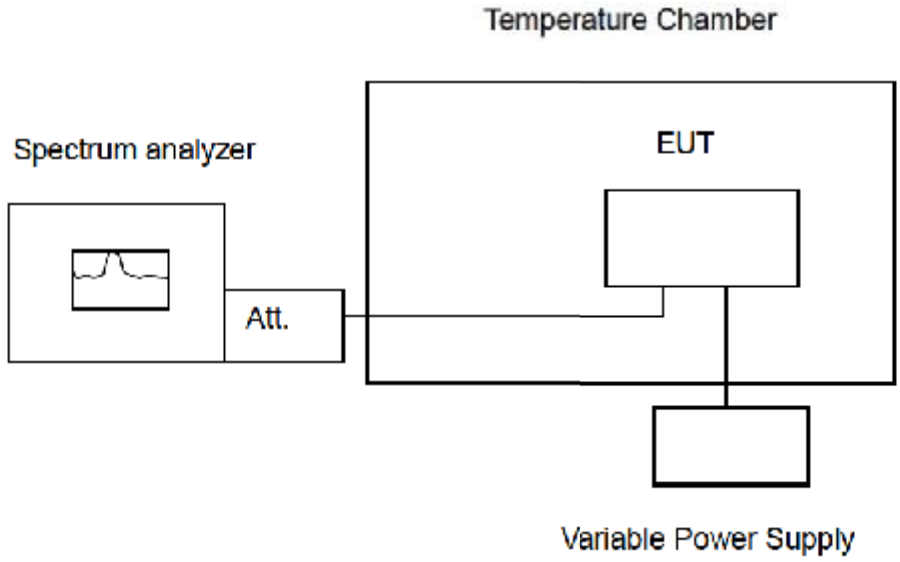
4.6.1 Test Limit

According to §15.407(g) manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

4.6.2 Test Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

4.6.3 Test Setup



4.6.4 Test Result

Temp. (°C)	Voltage (V)	Measured Frequency	5180		(MHz)					Result
		Time (min)								
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
50	Normal	5180.10320	5180.07641	5180.10120	5180.10090	19.9228	14.7510	19.5367	19.4788	Pass
40	Normal	5180.09510	5180.09514	5180.09423	5180.09231	18.3591	18.3658	18.1911	17.8205	Pass
30	Normal	5180.08123	5180.08412	5180.07641	5180.07964	15.6815	16.2394	14.7510	15.3745	Pass
20	Normal	5180.08531	5180.07561	5179.98310	5180.06513	16.4691	14.5965	-3.2625	12.5734	Pass
10	Normal	5180.04564	5180.08531	5180.04645	5180.03156	8.8108	16.4691	8.9672	6.0927	Pass
0	Normal	5180.02199	5180.02564	5180.03457	5180.02000	4.2450	4.9506	6.6735	3.8610	Pass
-10	Normal	5180.00156	5180.00321	5180.07641	5180.07910	0.3012	0.6197	14.7510	15.2703	Pass
-20	Normal	5179.98310	5180.10090	5180.03156	5179.94532	-3.2625	19.4788	6.0927	-10.5560	Pass
Temp. (°C)	Voltage (V)	Measured Frequency	5180		(MHz)					Result
		Time (min)								
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
20	Minimum	5180.085250	5180.08531	5180.05325	5180.06432	16.4575	16.4691	10.2799	12.4170	Pass
20	Normal	5180.08531	5180.07561	5179.98310	5180.06513	16.4691	14.5965	-3.2625	12.5734	Pass
20	Maximum	5180.084320	5180.06150	5180.06312	5180.07651	16.2780	11.8726	12.1853	14.7703	Pass

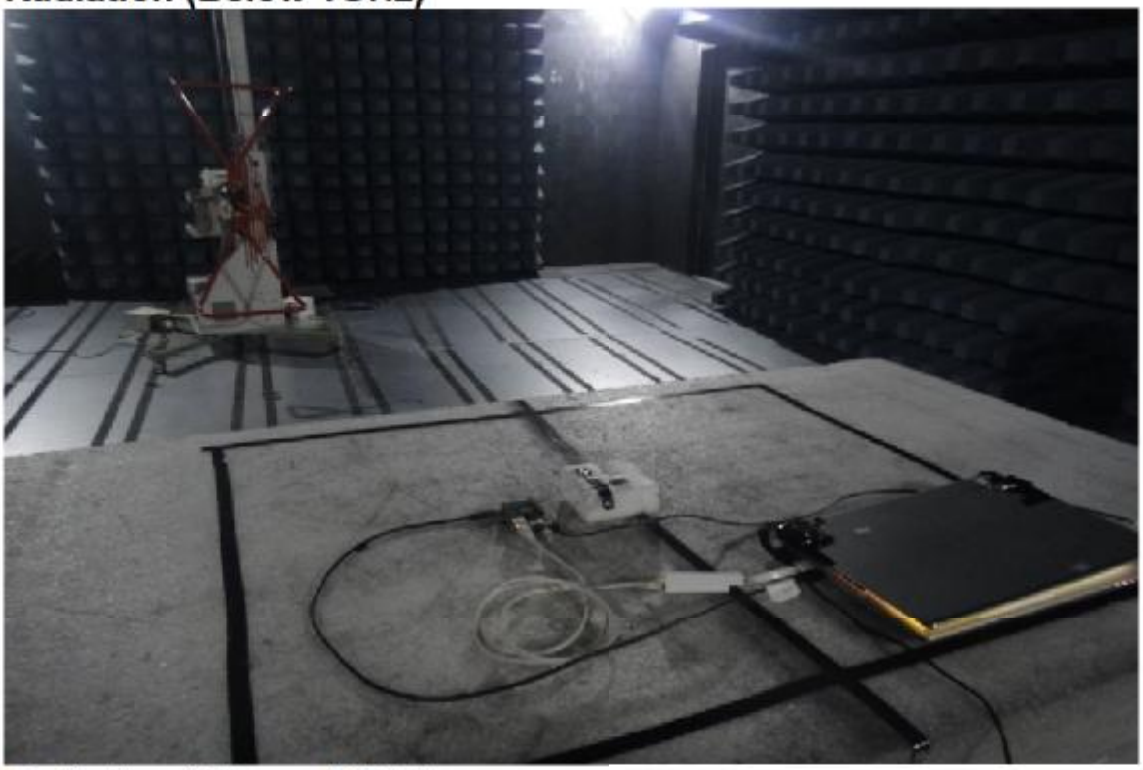
Temp. (°C)	Voltage (V)	Measured Frequency	5745		(MHz)					Result
		Time (min)								
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
50	Normal	5745.10549	5745.10189	5745.10695	5745.10980	18.3619	17.7354	18.6157	19.1123	Pass
40	Normal	5745.09784	5745.00071	5745.09212	5745.00040	17.0306	0.1238	16.0353	0.0696	Pass
30	Normal	5745.08412	5745.08048	5745.05059	5745.07022	14.6428	14.0085	8.8057	12.2222	Pass
20	Normal	5745.07023	5745.07319	5745.07154	5745.07945	12.2247	12.7391	12.4519	13.8296	Pass
10	Normal	5745.05153	5745.05123	5745.05979	5745.05059	8.9697	8.9175	10.4071	8.8057	Pass
0	Normal	5745.03486	5745.03741	5745.03312	5745.03987	6.0687	6.5117	5.7654	6.9406	Pass
-10	Normal	5745.08412	5745.09078	5745.00923	5745.00874	14.6428	15.8016	1.6069	1.5215	Pass
-20	Normal	5745.00040	5745.00048	5745.00071	5745.00084	0.0696	0.0833	0.1238	0.1464	Pass
Temp. (°C)	Voltage (V)	Measured Frequency	5745		(MHz)					Result
		Time (min)								
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
20	Minimum	5745.06916	5745.06915	5745.06905	5745.06811	12.0376	12.0362	12.0188	11.8555	Pass
20	Normal	5745.07023	5745.07319	5745.07154	5745.07945	12.2247	12.7391	12.4519	13.8296	Pass
20	Maximum	5745.07123	5745.07849	5745.07278	5745.07212	12.3988	13.6625	12.6684	12.5541	Pass

--End of Report--

APPENDIX- Test Photo

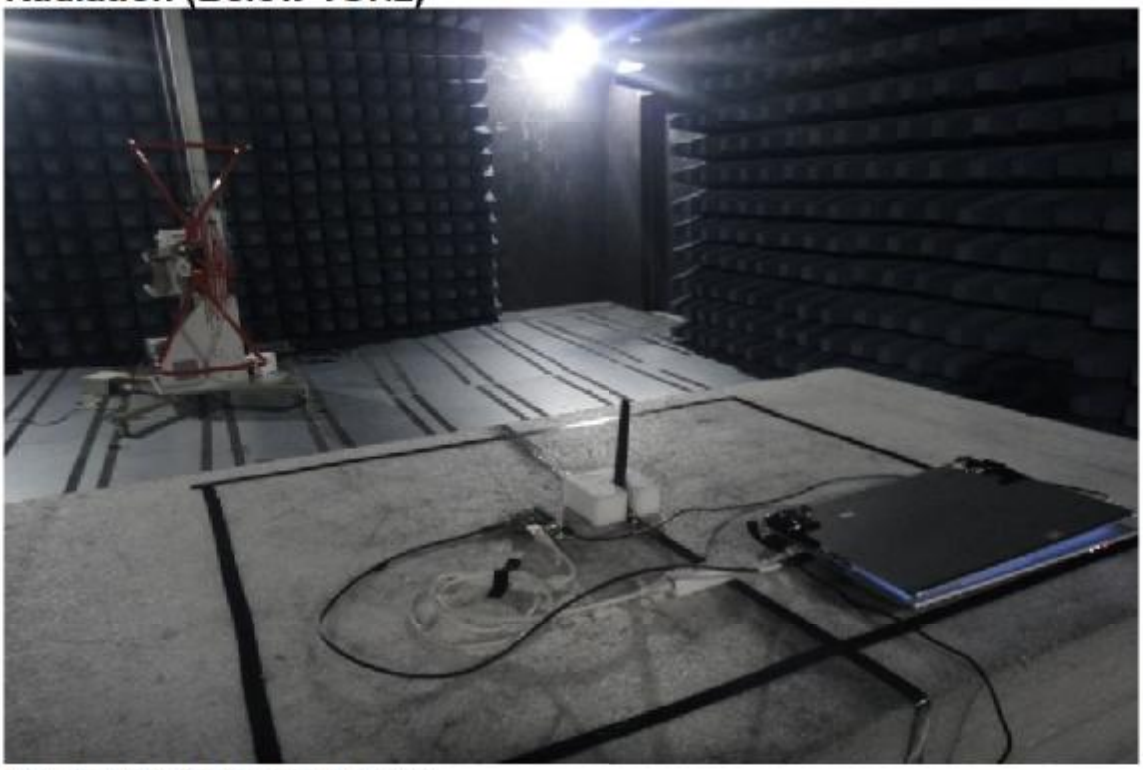
For PIFA Antenna

Radiation (Below 1GHz)

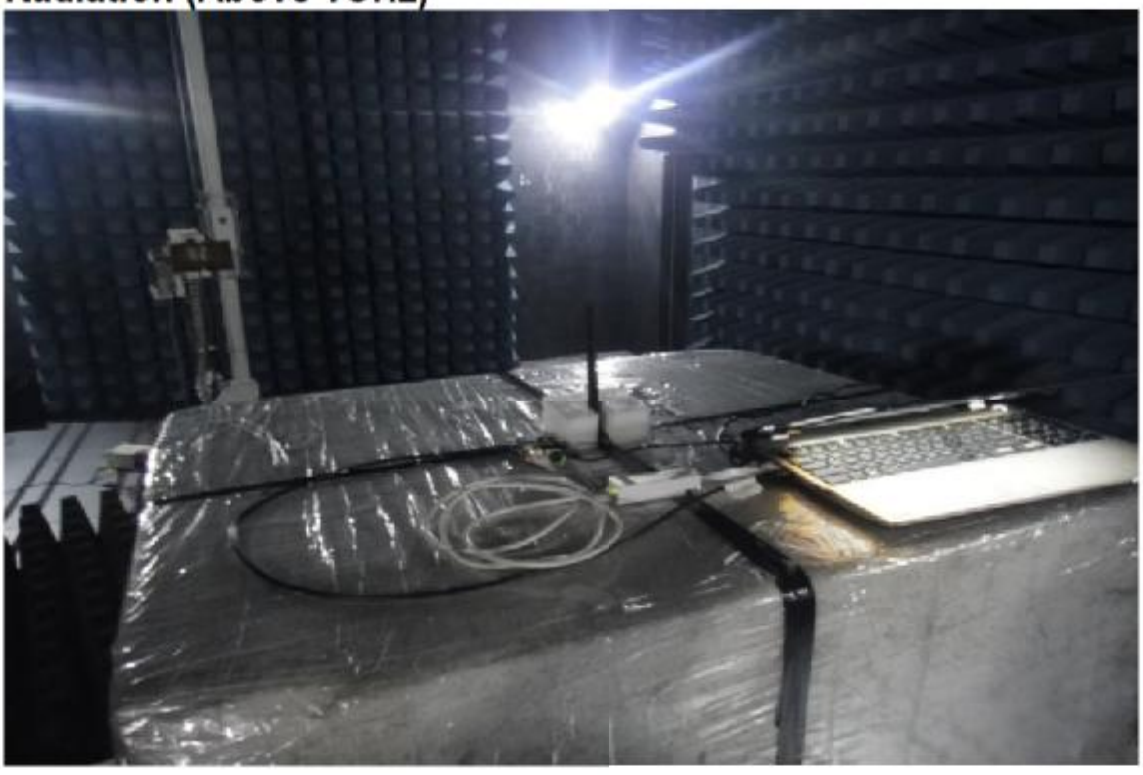


Radiation (Above 1GHz)

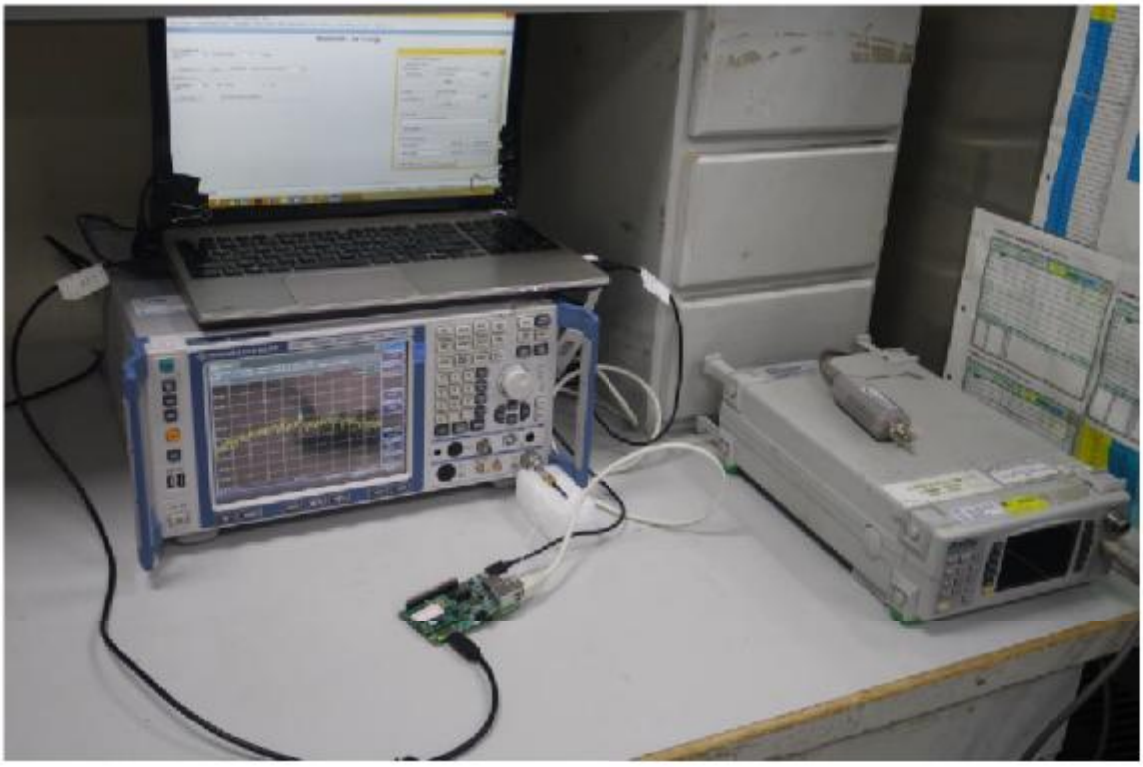
For Dipole Antenna
Radiation (Below 1GHz)



Radiation (Above 1GHz)



Conducted Emission Set up Photo



Conduction

RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Product name	**WiFi+Bluetooth 4.1(HS) System on Module**
Brand Name	**TechNexion**
Model No.	**PIXI-9377**
Test Result	**Pass**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Sam Chuang
Manager

Reviewed by:

Jerry Chuang
Engineer

Revision History

Rev.	Issue Date	Revisions	Revised By
00	August 28, 2018	Initial Issue	May Lin
01	September 20, 2018	1. Added information about the FHSS characteristics in P.5. 2. Revised antenna information in P.6. 3. Revised the test procedure in P.19, P.33. 4. Added note in P.29-30, P.35, P.39. 5. Revised the test result and test data in P.38-39. 6. Update KDB 937606 to KDB 414788 in P.40.	May Lin
02	September 27, 2018	1. Revised the worst mode of measurement in P.13.	May Lin

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Manufacturer	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Equipment	WiFi+Bluetooth 4.1(HS) System on Module
Model No.	PIXI-9377
Model Discrepancy	N/A
Trade Name	TechNexion
Received Date	June 27, 2018
Date of Test	July 16 ~August 10, 2018
Output Power (W)	GFSK : 0.0111 8DPSK : 0.0097
Power Operation	Power by host system
HW Version	A1
FW Version	A1

1.2 INFORMATION ABOUT THE FHSS CHARACTERISTICS

1.2.1 Pseudorandom Frequency Hopping Sequence

The channel is represented by a pseudo-random hopping sequence hopping through the 79 RF channels. The hopping sequence is unique for the piconet and is determined by the Bluetooth device address of the master; the phase in the hopping sequence is determined by the Bluetooth clock of the master. The channel is divided into time slots where each slot corresponds to an RF hop frequency. Consecutive hops correspond to different RF hop frequencies. The nominal hop rate is 1 600 hops/s.

1.2.2 Equal Hopping Frequency Use

The channels of this system will be used equally over the long-term distribution of the hopsets.

1.2.3 Example of a 79 hopping sequence in data mode:

02, 05, 31, 24, 20, 10, 43, 36, 30, 23, 40, 06, 21, 50, 44, 09, 71, 78, 01, 13, 73, 07, 70, 72, 35, 62, 42, 11, 41, 08, 16, 29, 60, 15, 34, 61, 58, 04, 67, 12, 22, 53, 57, 18, 27, 76, 39, 32, 17, 77, 52, 33, 56, 46, 37, 47, 64, 49, 45, 38, 69, 14, 51, 26, 79, 19, 28, 65, 75, 54, 48, 03, 25, 66, 05, 16, 68, 74, 59, 63, 55

1.2.4 System Receiver Input Bandwidth

Each channel bandwidth is 1MHz.
The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

1.2.5 Equipment Description

15.247(a)(1) that the Rx input bandwidths shift frequencies in synchronization with the transmitted signals.
15.247(g): In accordance with the Bluetooth Industry Standard, the system is designed to comply with all of the regulations in Section 15.247 when the transmitter is presented with a continuous data (or information) system.
15.247(h): In accordance with the Bluetooth Industry Standard, the system does not coordinate it channels selection/ hopping sequence with other frequency hopping systems for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

1.3 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	1. GFSK for BR-1Mbps 2. π/4-DQPSK for EDR-2Mbps 3. 8DPSK for EDR-3Mbps
Number of channel	79 Channels

Remark:
Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.4 ANTENNA INFORMATION

Antenna Type	☒ Dipole ☒ PIFA ☐ PCB ☐ Coils
Antenna Gain	

	Brand	P/N	Type	Peak Gain	Worst Mode
Antenna 1	TechNexion	VM2450-25523-OOX-180	PIFA	2.5dBi	X
Antenna 2	TechNexion	VM2450-ASSY1005	Dipole	4dBi	O

1.5 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark:

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

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.6 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at *No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)*

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chuang	-
RF Conducted	Jerry Chuang	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

1.7 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	06/29/2018	06/28/2019
Power Meter	Anritsu	ML2495A	1012009	09/18/2017	09/17/2018
Power Seneor	Anritsu	MA2411B	1126148	02/06/2018	02/05/2019
Signal Analyzer	R&S	FSV 40	101073	10/02/2017	10/01/2018

Wugu 966 Chamber A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Band Reject Filters	MICRO TRONICS	BRM 50702	120	05/14/2018	05/13/2019
Bilog Antenna	Sunol Sciences	JB3	A030105	07/13/2018	07/12/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	07/31/2017	07/30/2018
Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	07/31/2017	07/30/2018
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	02/08/2018	02/07/2019
Double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	08/25/2017	08/24/2018
Loop Ant	COM-POWER	AL-130	121051	03/21/2018	03/20/2019
Pre-Amplifier	EMEC	EM330	060609	06/29/2018	06/28/2019
Pre-Amplifier	HP	8449B	3008A00965	06/29/2018	06/28/2019
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/31/2018	05/30/2019
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R

Conducted Emission Room # B					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
LISN	R&S	ENV216	101054	02/06/2018	02/05/2019
LISN	SCHWARZBECK	NSLK 8127	8127-541	02/09/2018	02/08/2019
EMI Test Receiver	R&S	ESCI	101203	11/02/2017	11/01/2018
CABLE	EMCI	CFD300-NL	CERF	07/03/2018	07/02/2019

Remark: *Each piece of equipment is scheduled for calibration once a year.*

1.8 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(K)	Toshiba	voyager	ZD 154034s	N/A
2	NB	Lenovo	TP00056A	R33B65	PD97260HU

1.9 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247

2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(1)	4.2	20 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(1)	4.3	Output Power Measurement	Pass
15.247(a)(1)	4.4	Frequency Separation	Pass
15.247(a)(1)(iii)	4.5	Number of Hopping	Pass
15.247(d)	4.6	Conducted Band Edge	Pass
15.247(d)	4.6	Conducted Emission	Pass
15.247(a)(1)(iii)	4.7	Time of Occupancy	Pass
15.247(d)	4.8	Radiation Band Edge	Pass
15.247(d)	4.8	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	GFSK for BR-1Mbps (DH5) 8DPSK for EDR-3Mbps (3DH5)
Test Channel Frequencies	**GFSK for BR-1Mbps:** 1.Lowest Channel : 2402MHz 2.Middle Channel : 2441MHz 3.Highest Channel : 2480MHz **8DPSK for EDR-3Mbps:** 1.Lowest Channel : 2402MHz 2.Middle Channel : 2441MHz 3.Highest Channel : 2480MHz

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

For PIFA Antenna

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☒ Horizontal ☐ Vertical

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane and Horizontal) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

For Dipole Antenna

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

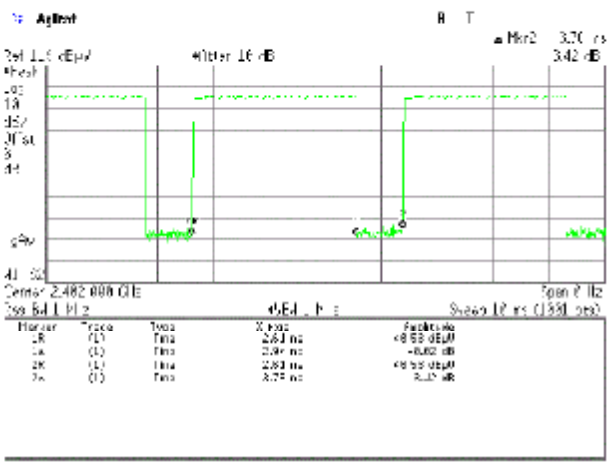
Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☐ Horizontal ☒ Vertical

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane and Vertical) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

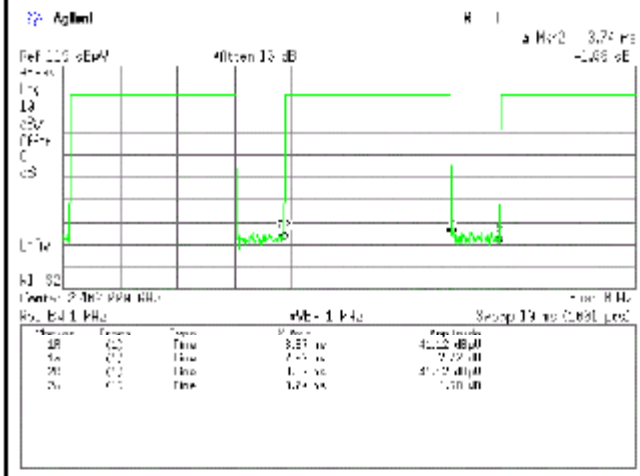
3.3 EUT DUTY CYCLE

Duty Cycle			
Configuration	TX ON (ms)	TX ALL (ms)	Duty Cycle (%)
BR-1Mbps	2.9400	3.7600	78.19%
EDR-3Mbps	2.9200	3.7400	78.07%

BR-1Mbps



EDR-3Mbps



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

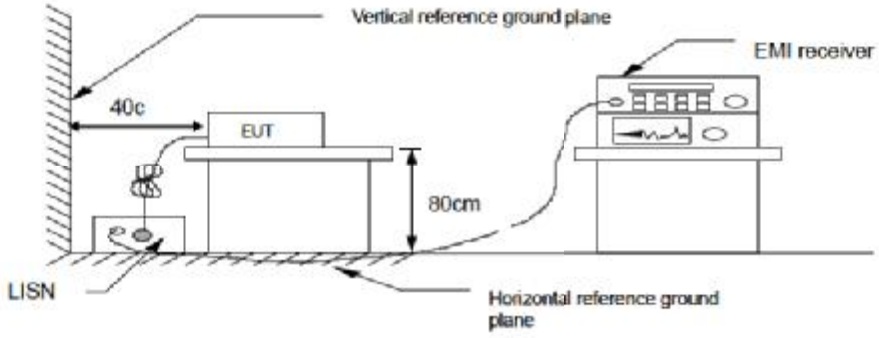
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup

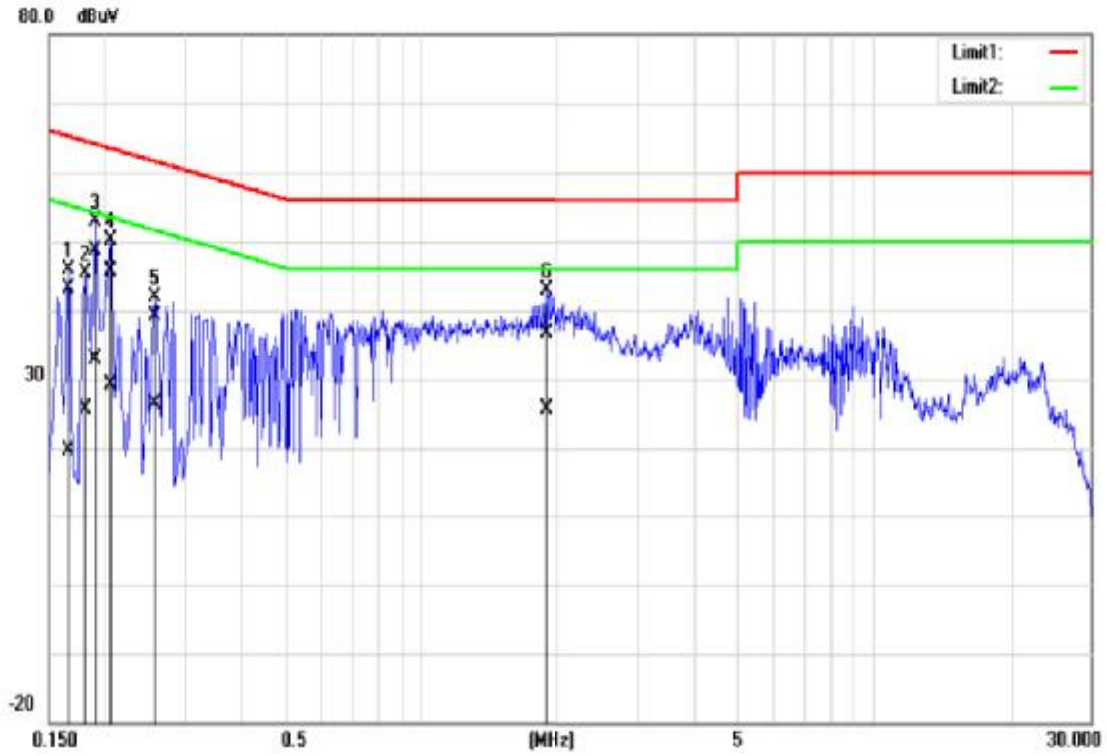


4.1.4 Test Result

PASS

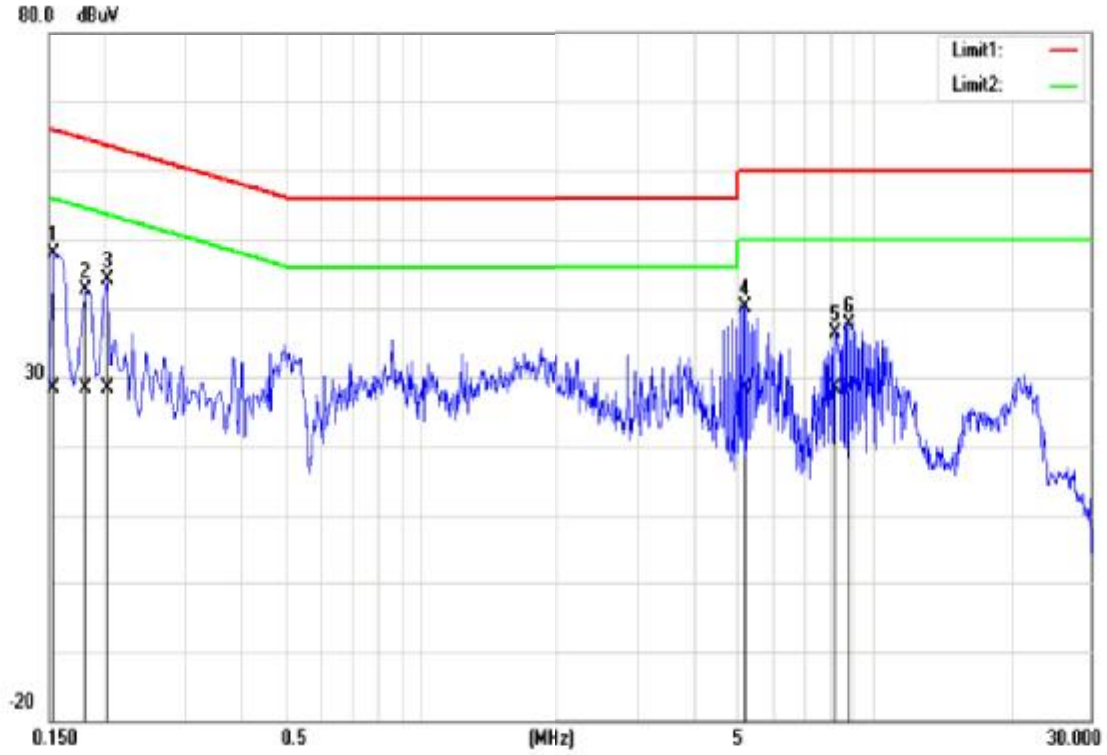
Test Data

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Line	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (d uV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	43.06	19.41	0.11	43.17	19.52	65.16	55.16	-21.99	-35.64	Pass
0.1820	45.33	25.48	0.11	45.44	25.59	64.39	54.39	-18.95	-28.80	Pass
0.1900	48.46	32.72	0.11	48.57	32.83	64.04	54.04	-15.47	-21.21	Pass
0.2060	45.57	28.98	0.11	45.68	29.09	63.37	53.37	-17.69	-24.28	Pass
0.2580	39.04	26.23	0.11	39.15	26.34	61.50	51.50	-22.35	-25.16	Pass
1.8940	36.51	25.54	0.15	36.66	25.69	56.00	46.00	-19.34	-20.31	Pass

Test Mode:	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase:	Neutral	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
1.8940	31.03	22.97	0.16	31.19	23.13	56.00	46.00	-24.81	-22.87	Pass
0.1825	40.91	28.44	0.13	41.04	28.57	64.37	54.37	-23.33	-25.80	Pass
0.2007	40.02	26.02	0.13	40.15	26.15	63.58	53.58	-23.43	-27.43	Pass
5.1660	39.14	35.87	0.22	39.36	36.09	60.00	50.00	-20.64	-13.91	Pass
8.2300	34.97	30.49	0.27	35.24	30.76	60.00	50.00	-24.76	-19.24	Pass
8.7020	35.42	26.13	0.28	35.70	26.41	60.00	50.00	-24.30	-23.59	Pass

4.2 20dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

According to §15.247(a) (1)

20 dB Bandwidth : For reporting purposes only.

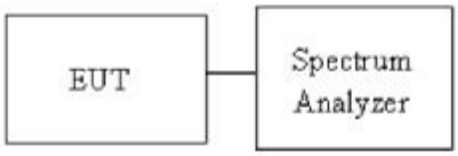
Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 11.8.1,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 30kHz, VBW = 100kHz and Detector = Peak, to measurement 20 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth.
5. Measure and record the result of 20 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup



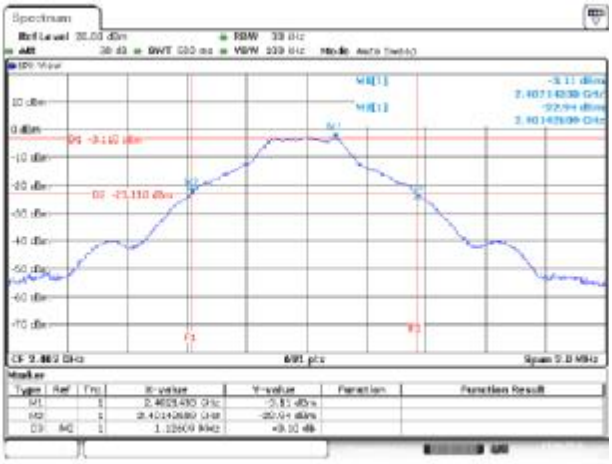
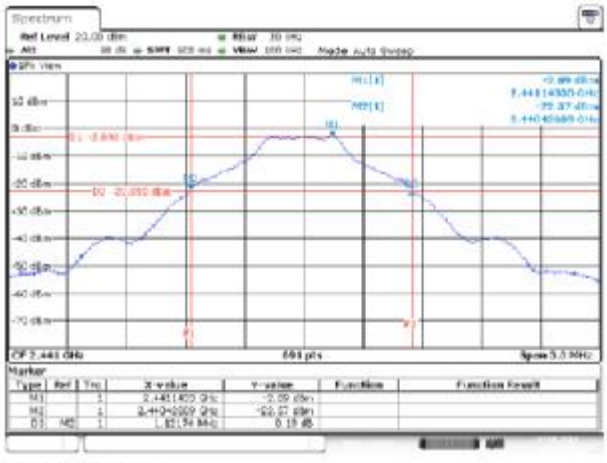
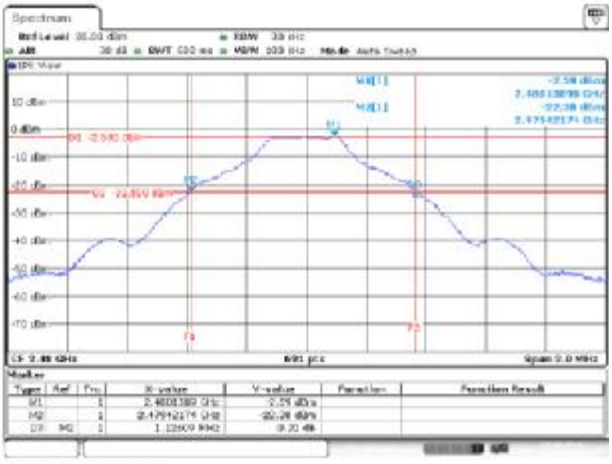
4.2.4 Test Result

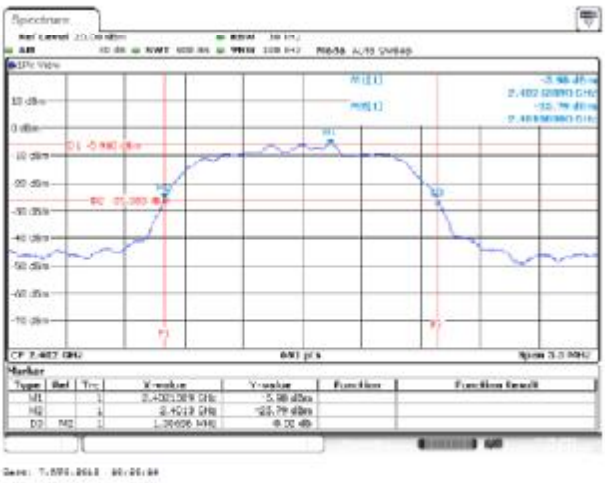
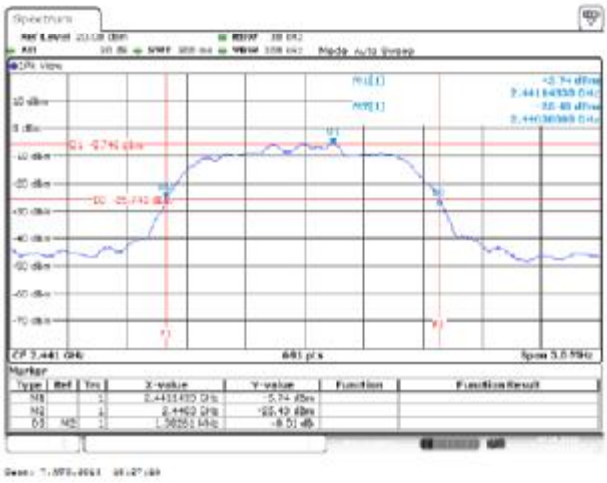
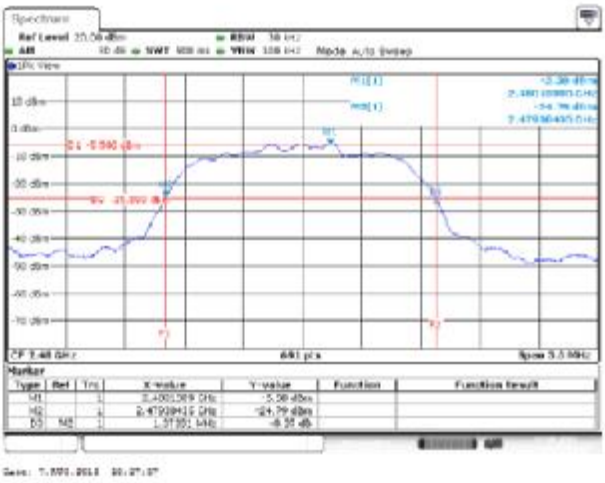
Test mode: GFSK_BR-1Mbps mode / 2402-2480 MHz			
Channel	Frequency (MHz)	OBW (99%) (MHz)	20dB BW (MHz)
Low	2402	0.9073	1.1260
Mid	2441	0.8986	1.1217
High	2480	0.8986	1.1260

Test mode: 8DPSK_EDR-3Mbps mode / 2402-2480 MHz			
Channel	Frequency (MHz)	OBW (99%) (MHz)	20dB BW (MHz)
Low	2402	1.1852	1.3869
Mid	2441	1.1765	1.3826
High	2480	1.1722	1.3739

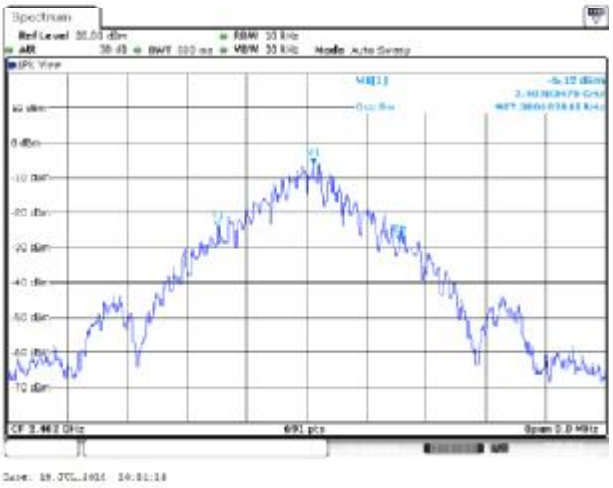
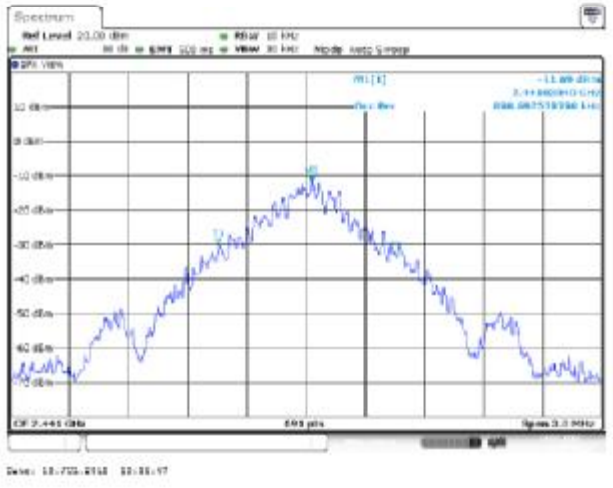
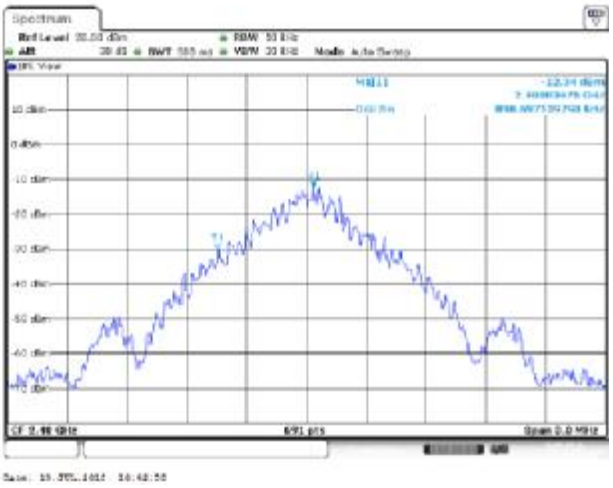
Test Data

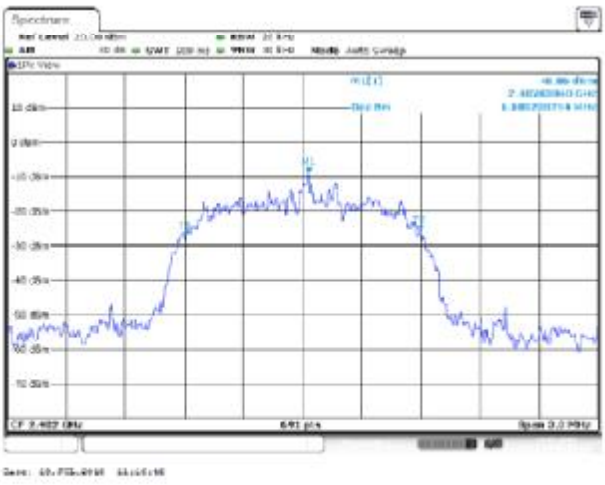
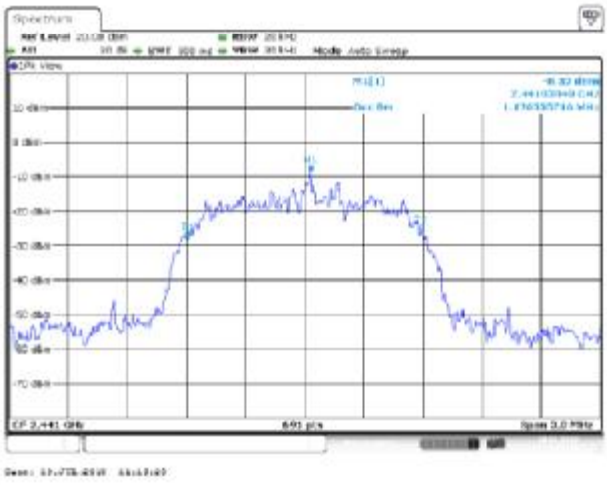
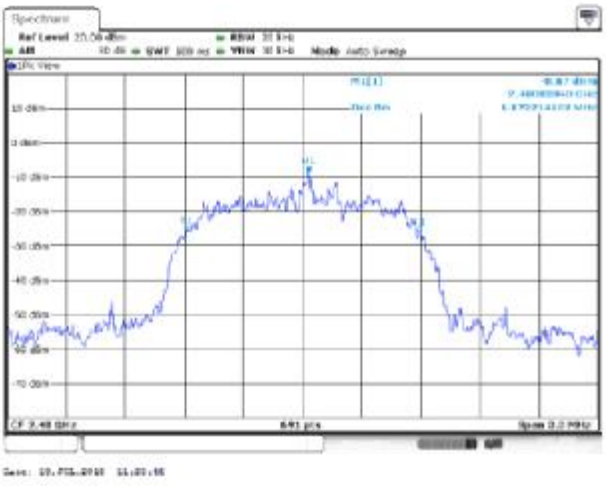
20dB BANDWIDTH

GFSK_BR-1Mbps mode	
Low CH	Mid CH
	
High CH	
	

8DPSK_EDR-3Mbps mode	
Low CH	Mid CH
	
High CH	
	

BANDWIDTH (99%)

GFSK_BR-1Mbps mode	
Low CH	Mid CH
	
High CH	
	

8DPSK_EDR-3Mbps mode	
Low CH	Mid CH
	
High CH	
	

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(a)(1)

Peak output power：

FCC

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

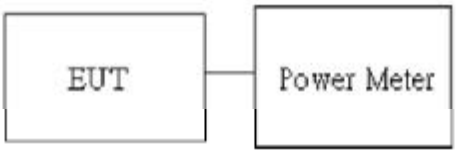
Limit	☒ Antenna not exceed 6 dBi：21dBm ☐ Antenna with DG greater than 6 dBi：21dBm [Limit = 30 – (DG – 6)]

Average output power：For reporting purposes only.

4.3.2 Test Procedure

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup



4.3.4 Test Result

Peak output power :

BT					
Config.	CH	Freq. (MHz)	PK Power (dBm)	PK Power (W)	FCC Limit (dBm)
GFSK BR-1Mbps (DH5)	0	2402	10.13	0.0103	21
	39	2441	10.46	0.0111	
	78	2480	10.41	0.0110	
8DPSK EDR-3Mbps (DH5)	0	2402	9.23	0.0084	
	39	2441	9.87	0.0097	
	78	2480	9.83	0.0096	

Average output power :

BT			
Config.	CH	Freq. (MHz)	AV Power (dBm)
GFSK BR-1Mbps (DH5)	0	2402	10.00
	39	2441	10.37
	78	2480	10.29
8DPSK EDR-3Mbps (DH5)	0	2402	6.73
	39	2441	7.03
	78	2480	6.99

4.4 FREQUENCY SEPARATION

4.4.1 Test Limit

According to §15.247(a)(1)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

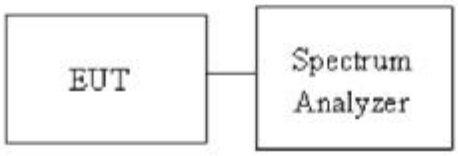
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Limit	> two-thirds of the 20 dB bandwidth

4.4.2 Test Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. EUT RF output port connected to the SA by RF cable.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Sweep = auto. Max hold, mark 3 peaks of hopping channel and record the 3 peaks frequency

4.4.3 Test Setup



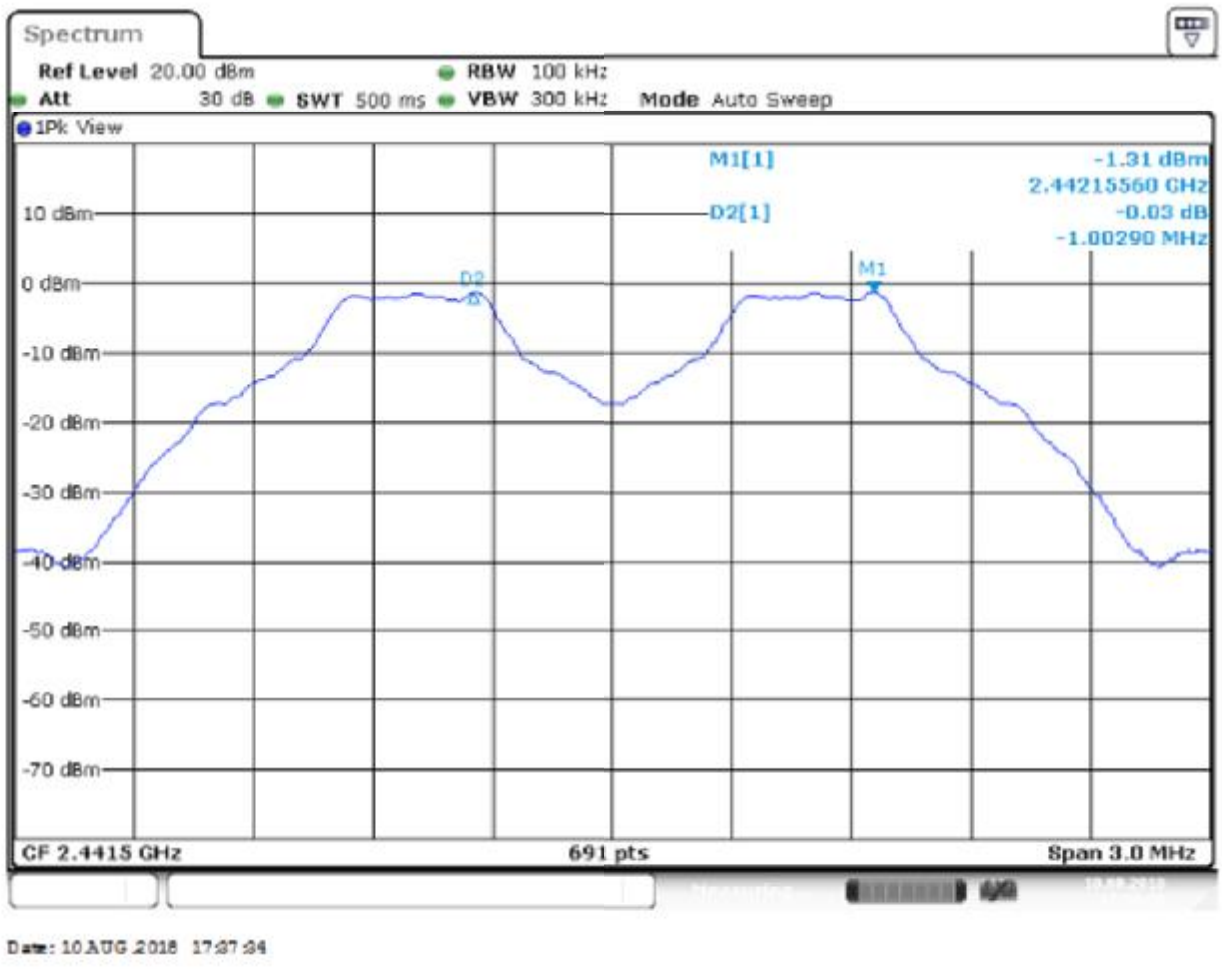
4.4.4 Test Result

Test mode: GFSK_BR-1Mbps mode / 2402-2480 MHz				
Channel	Frequency (MHz)	Channel Separation (MHz)	Channel Separation Limits (MHz)	Result
Low	2402	1.0029	>0.7507	PASS
Mid	2441	1.0029	>0.7478	PASS
High	2480	1.0029	>0.7507	PASS

Test mode: 8DPSK_EDR-3Mbps mode / 2402-2480 MHz				
Channel	Frequency (MHz)	Channel Separation (MHz)	Channel Separation Limits (MHz)	Result
Low	2402	1.0029	>0.9246	PASS
Mid	2441	1.0029	>0.9217	PASS
High	2480	1.0029	>0.9159	PASS

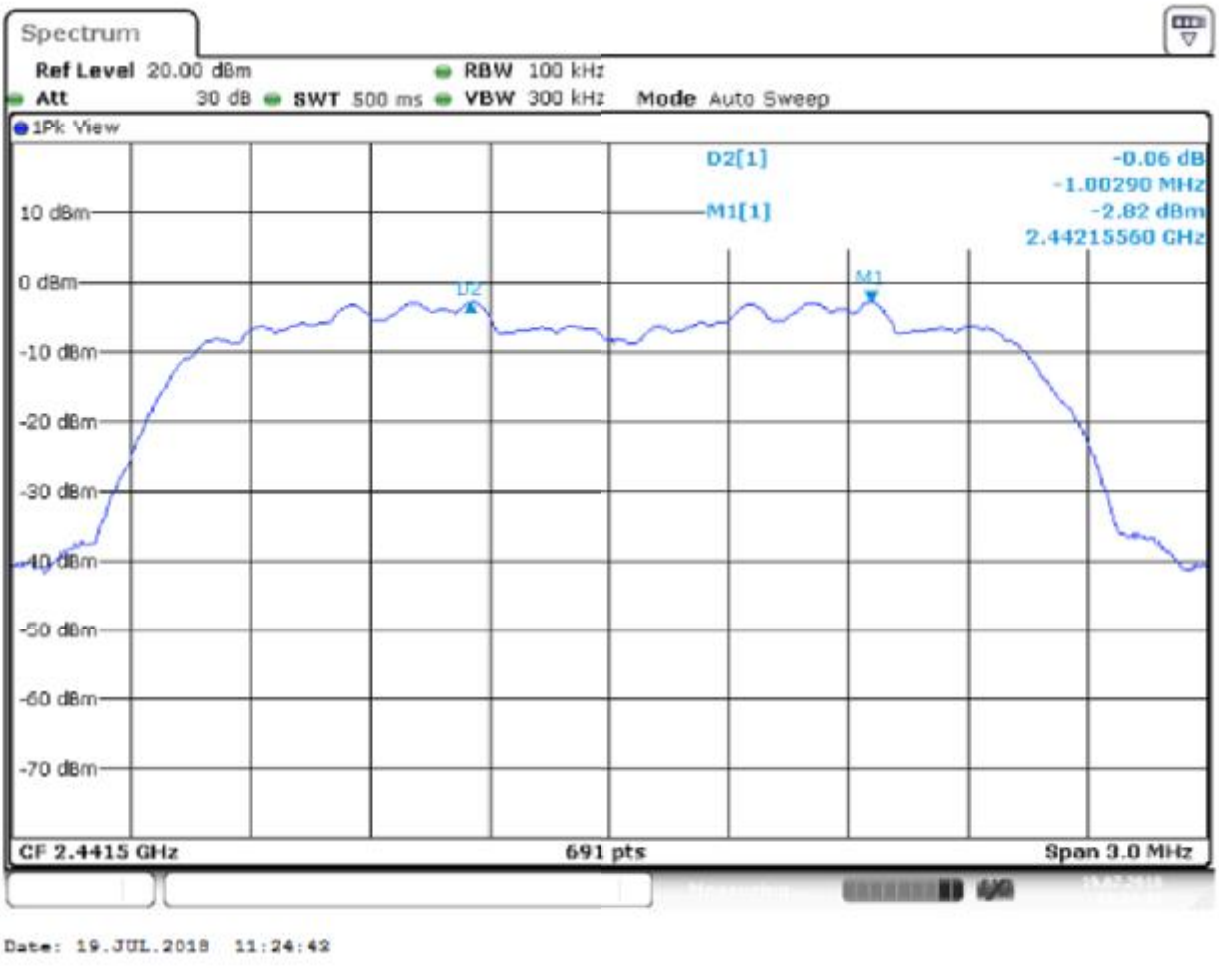
Test Data

GFSK_BR-1Mbps mode



Note: We selected worst case to performed test in middle channel, The results can be meet other channel.

8DPSK_EDR-3Mbps mode



Note: We selected worst case to performed test in middle channel, The results can be meet other channel.

4.5 NUMBER OF HOPPING

4.5.1 Test Limit

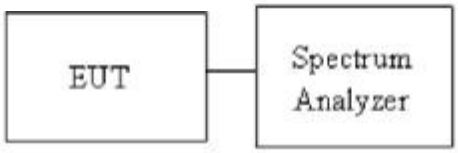
According to §15.247(a)(1)(iii)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

4.5.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 7.8.3
1. Place the EUT on the table and set it in transmitting mode.
2. EUT RF output port connected to the SA by RF cable.
3. Set spectrum analyzer Start Freq. = 2400 MHz, Stop Freq. = 2483.5 MHz, RBW =100KHz, VBW = 300KHz.
4. Max hold, view and count how many channel in the band.

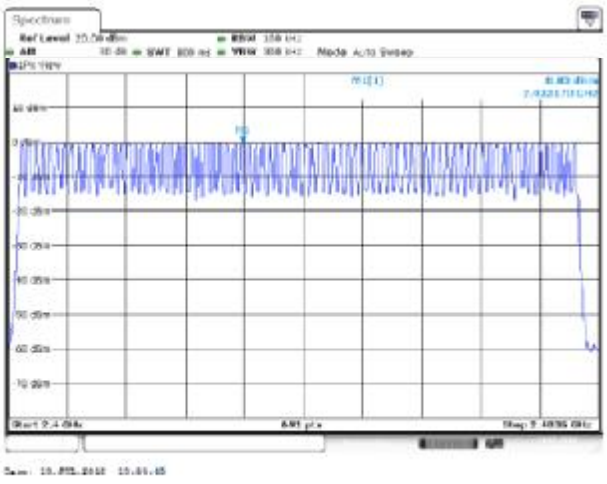
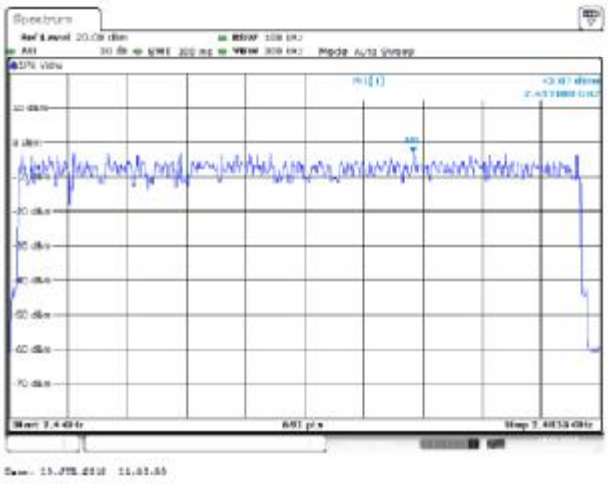
4.5.3 Test Setup



4.5.4 Test Result

Number of Hopping				
Mode	Frequency (MHz)	Hopping Channel Number	Hopping Channel Number Limits	Result
BR-1Mbps	2402-2480	79	15	Pass
EDR-3Mbps	2402-2480	79	15	

Test Data

Number of Hopping	
GFSK_BR-1Mbps mode	8DPSK_EDR-3Mbps mode
	

4.6 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

According to §15.247(d)

Limit	-20 dBc

.

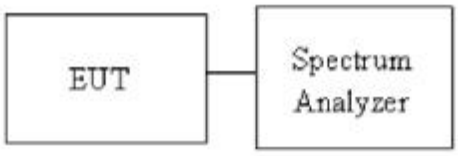
4.6.2 Test Procedure

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

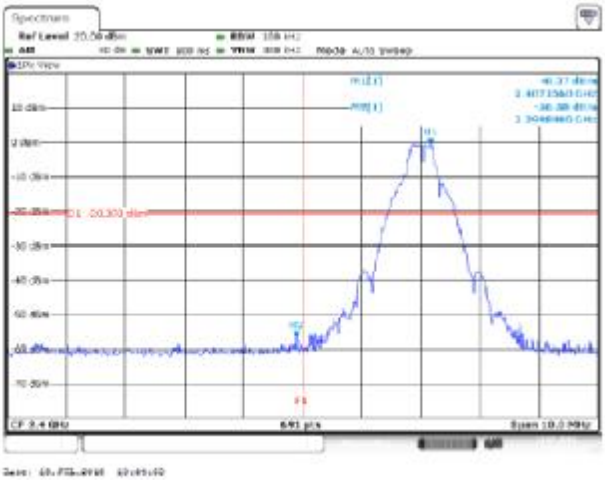
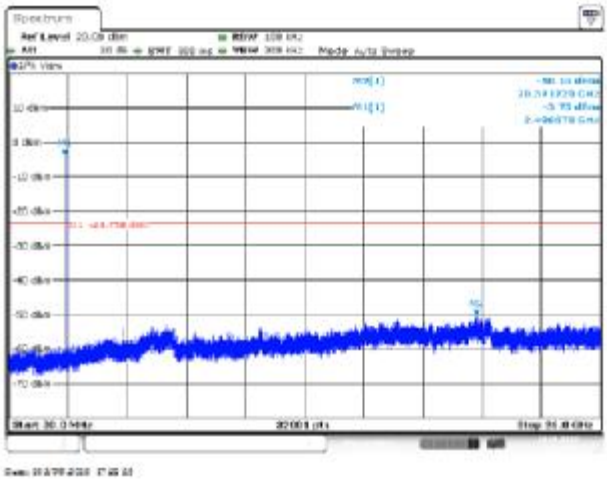
3. The Band Edge at 2.4GHz and 2.4835GHz are investigated with both hopping "ON" and "OFF" modes ".

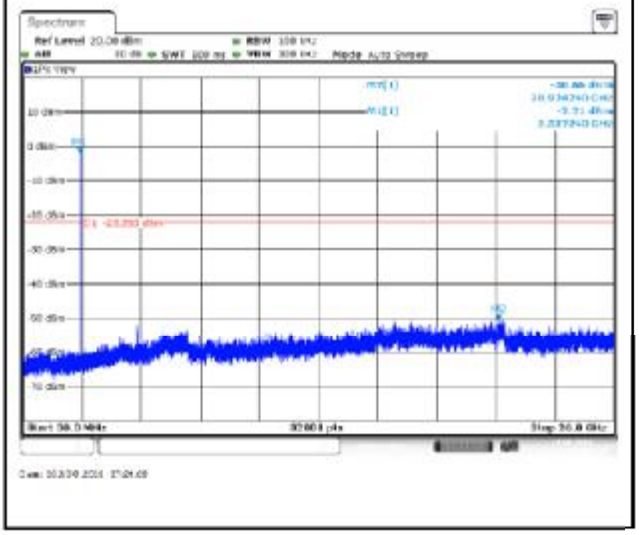
4.6.3 Test Setup

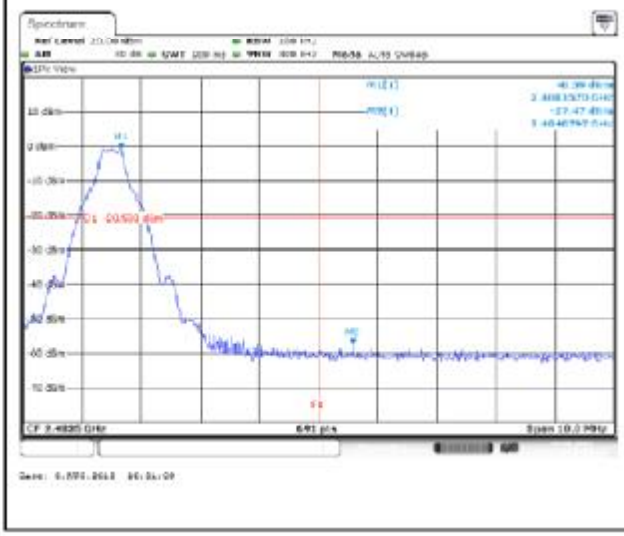
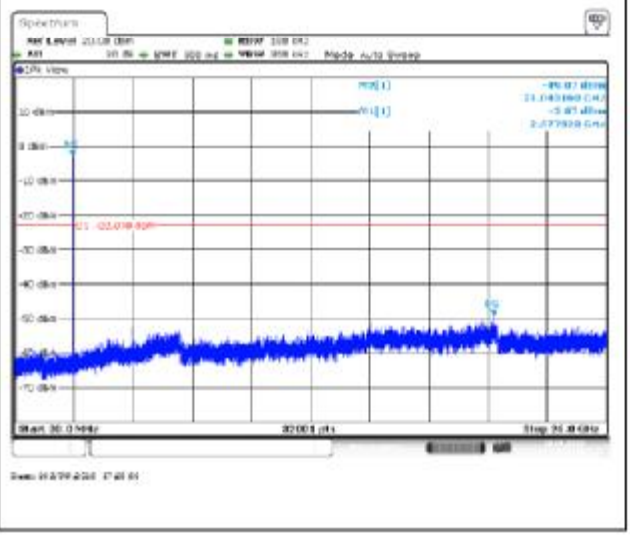


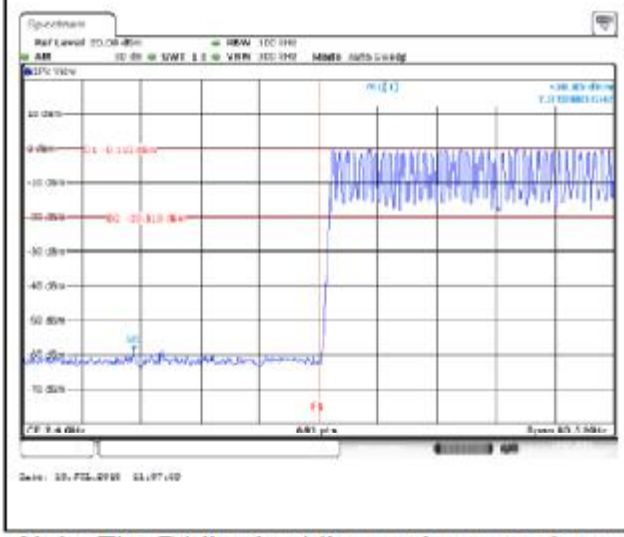
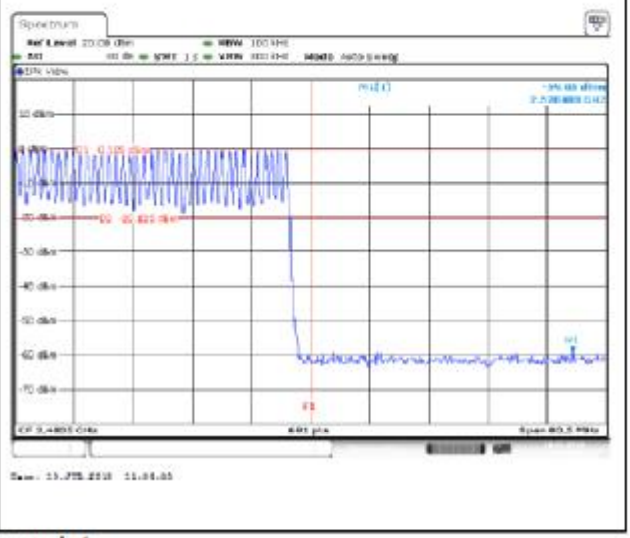
4.6.4 Test Result

Test Data

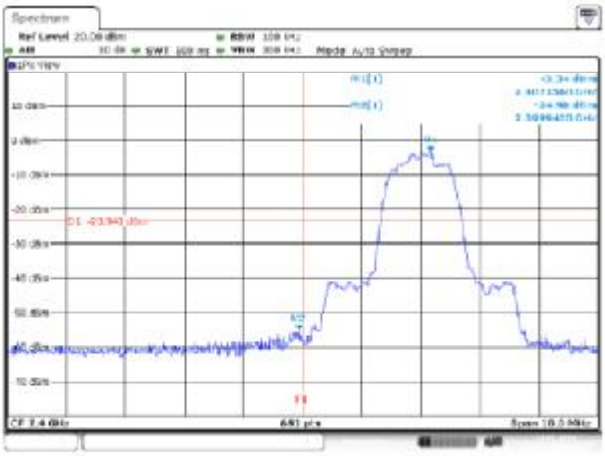
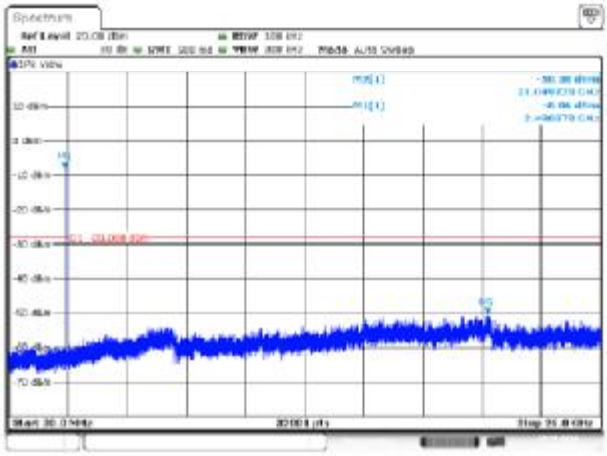
GFSK_BR-1Mbps mode Low CH	
Band Edge	Spurious Emission 30MHz-25GHz
	

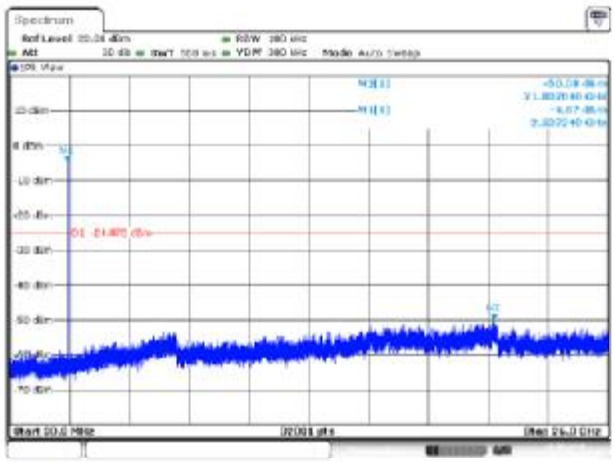
GFSK_BR-1Mbps mode Mid CH
Spurious Emission 30MHz-25GHz


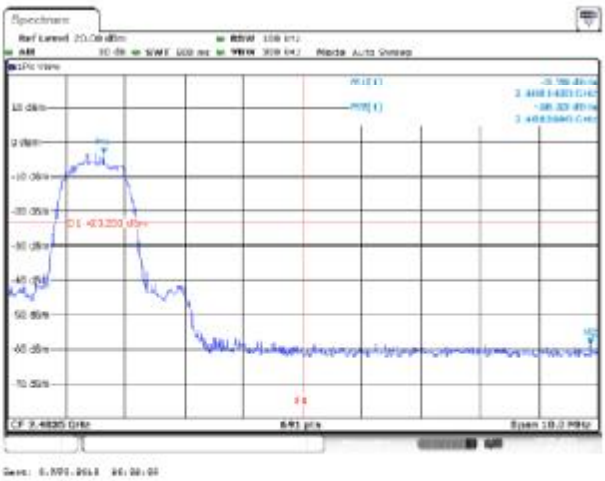
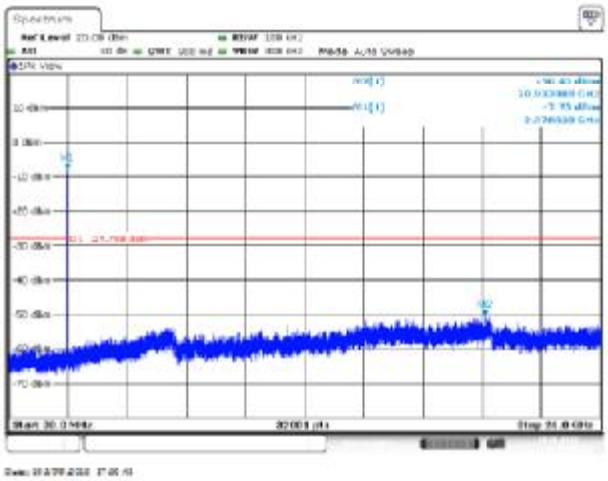
GFSK_BR-1Mbps mode High CH	
Band Edge	**Spurious Emission 30MHz-25GHz**
	

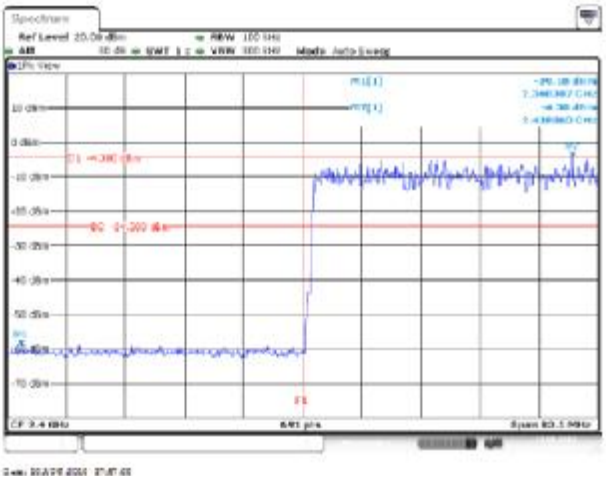
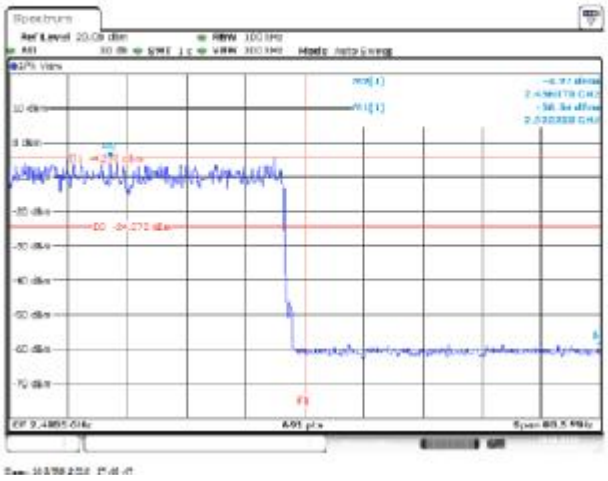
GFSK_BR-1Mbps Hopping mode	
Low Band Edge	**High Band Edge**
	

Note: The D1 line is at the maximum peak power point.

8DPSK_EDR-3Mbps mode Low CH	
Band Edge	**Spurious Emission 30MHz-25GHz**
	

8DPSK_EDR-3Mbps mode Mid CH
Spurious Emission 30MHz-25GHz


8DPSK_EDR-3Mbps mode High CH	
Band Edge	**Spurious Emission 30MHz-25GHz**
	

8DPSK_EDR-3Mbps Hopping mode	
Low Band Edge	**High Band Edge**
	

4.7 TIME OF OCCUPANCY (DWELL TIME)

4.7.1 Test Limit

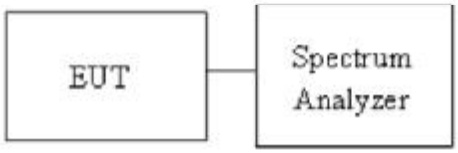
According to §15.247(a)(1)(iii)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

4.7.2 Test Procedure

1. EUT RF output port connected to the SA by RF cable.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW, VBW=1MHz, Sweep = 1 ms

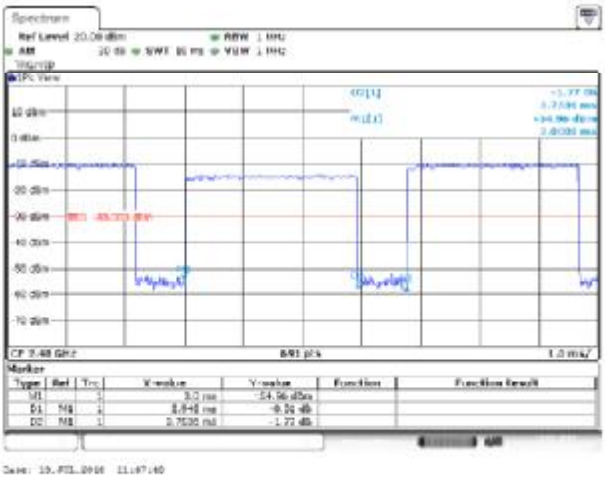
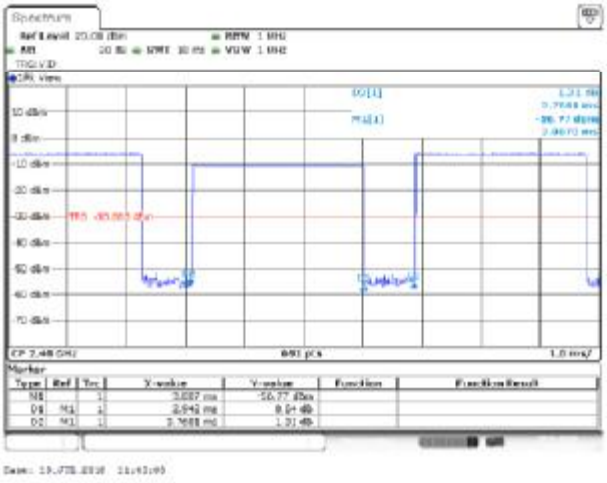
4.7.3 Test Setup



4.7.4 Test Result

Time of Occupancy (Dwell Time)							
Mode	Frequency (MHz)	Pulse Time Per Hopping (ms)	Minimum Number of Hopping Freq.	Number of pulse in (0.4 * N sec)	Dwell Time IN (0.4 * N sec)	Dwell Time Limits (s)	Result
BR-1Mbps	2441	2.942	79	106.67	0.3138	0.4	Pass
EDR-3Mbps	2441	2.942	79	106.67	0.3138	0.4	
Non-AFH: DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 * 0.4 *79 = 106.6							

Test Data

Time of Occupancy (Dwell Time)	
GFSK_BR-1Mbps mode	8DPSK_EDR-3Mbps mode
	

Note: We selected worst case to performed test in middle channel, The results can be meet other channel.

4.8 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.8.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Remark:
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

4.8.2 Test Procedure

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

4. For harmonic, the worst case of output power was BR-1Mbps. Therefore only BR-1Mbps record in the report.

5. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

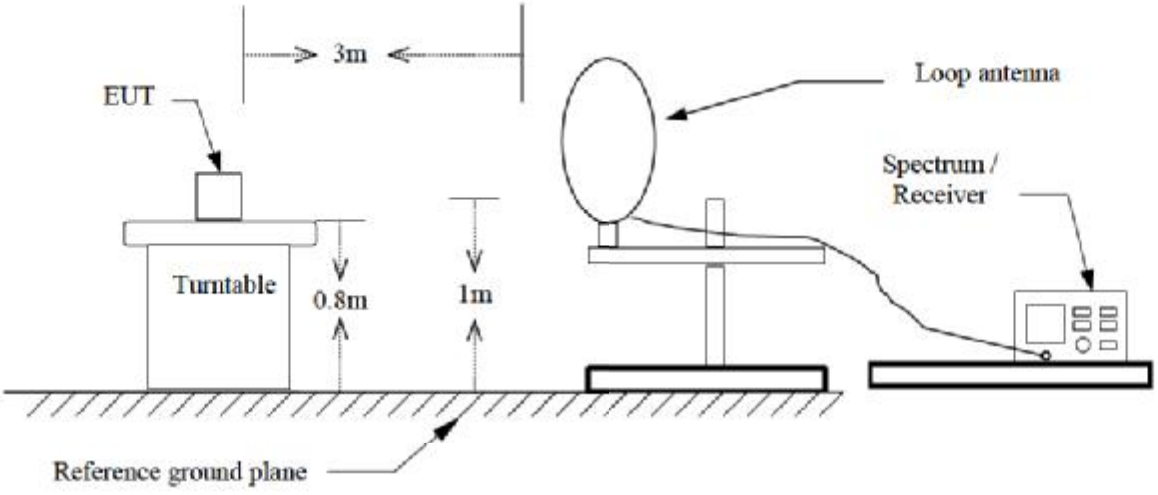
(2.2) For Average measurement：RBW = 1MHz, VBW

- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW≥1/T.

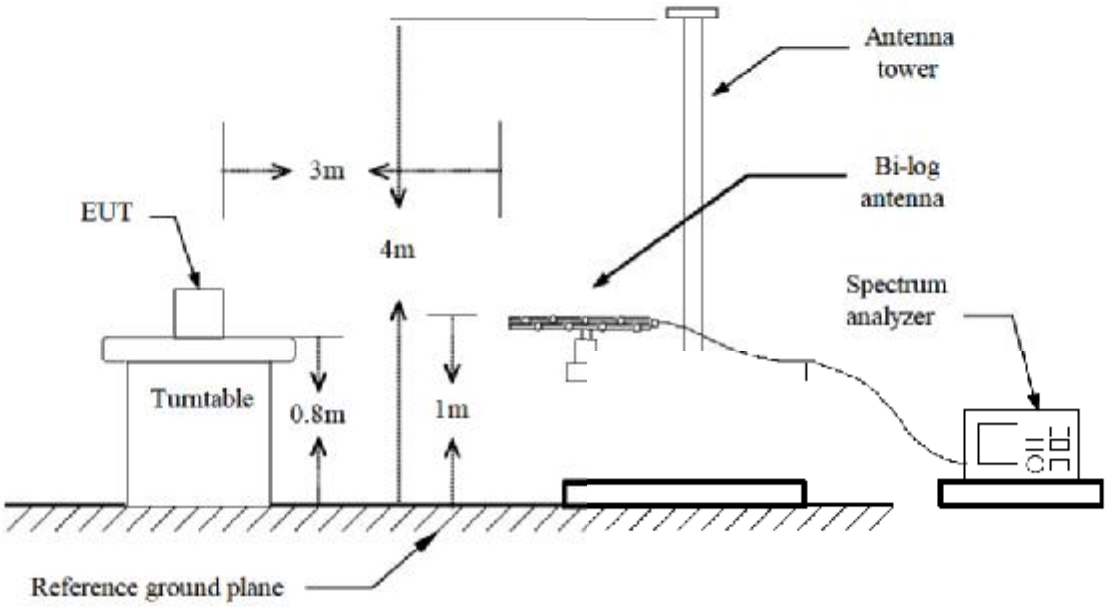
Configuration	Duty Cycle (%)	T(ms)	1/T (Hz)	VBW setting
GFSK_BR-1Mbps	78.19%	2.9400	0.340	360Hz
8DPSK_EDR-3Mbps	78.07%	2.9200	0.342	360Hz

4.8.3 Test Setup

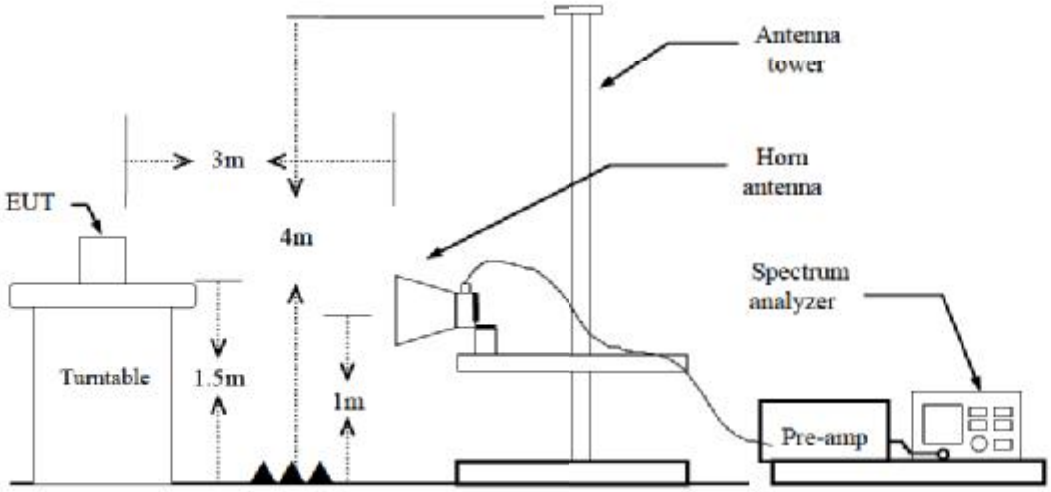
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz

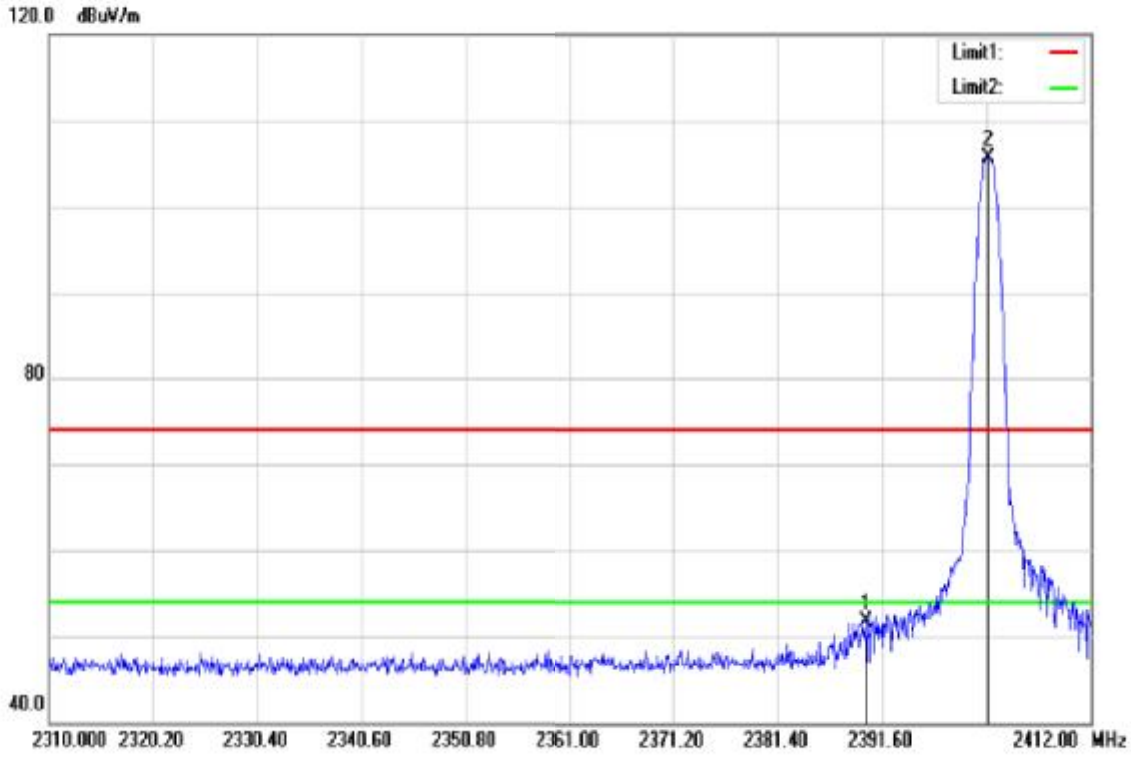


4.8.4 Test Result

Band Edge Test Data

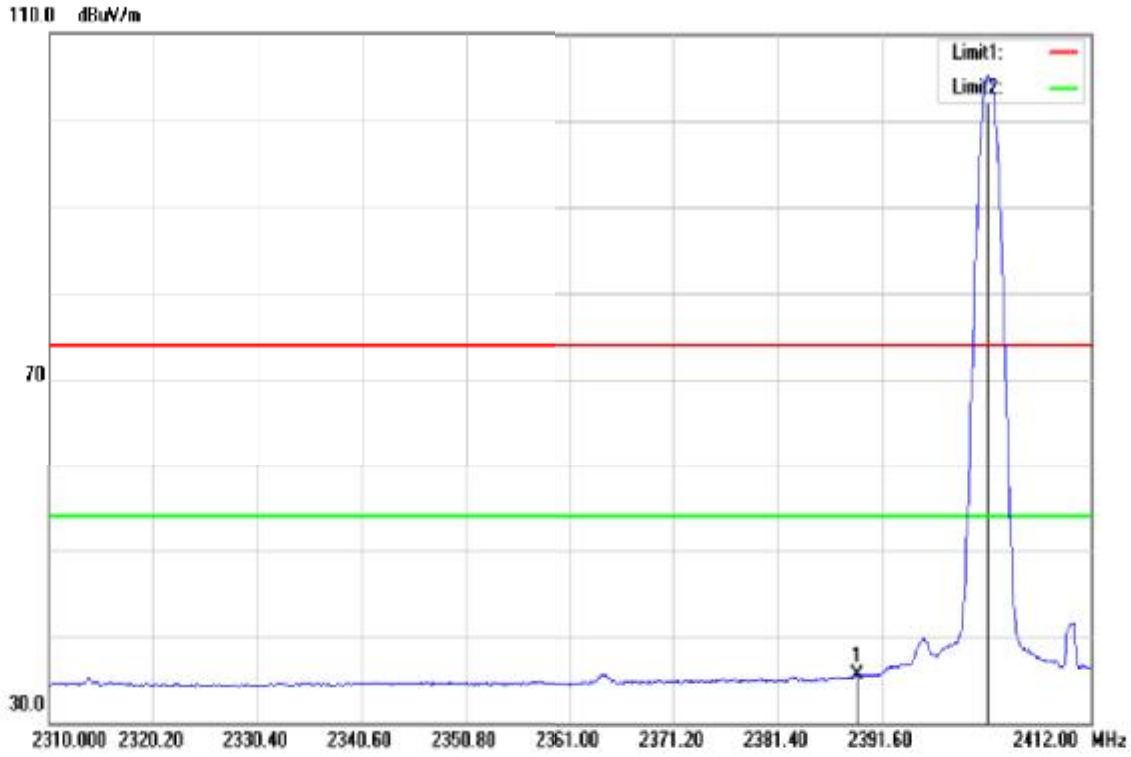
For PIFA Antenna

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



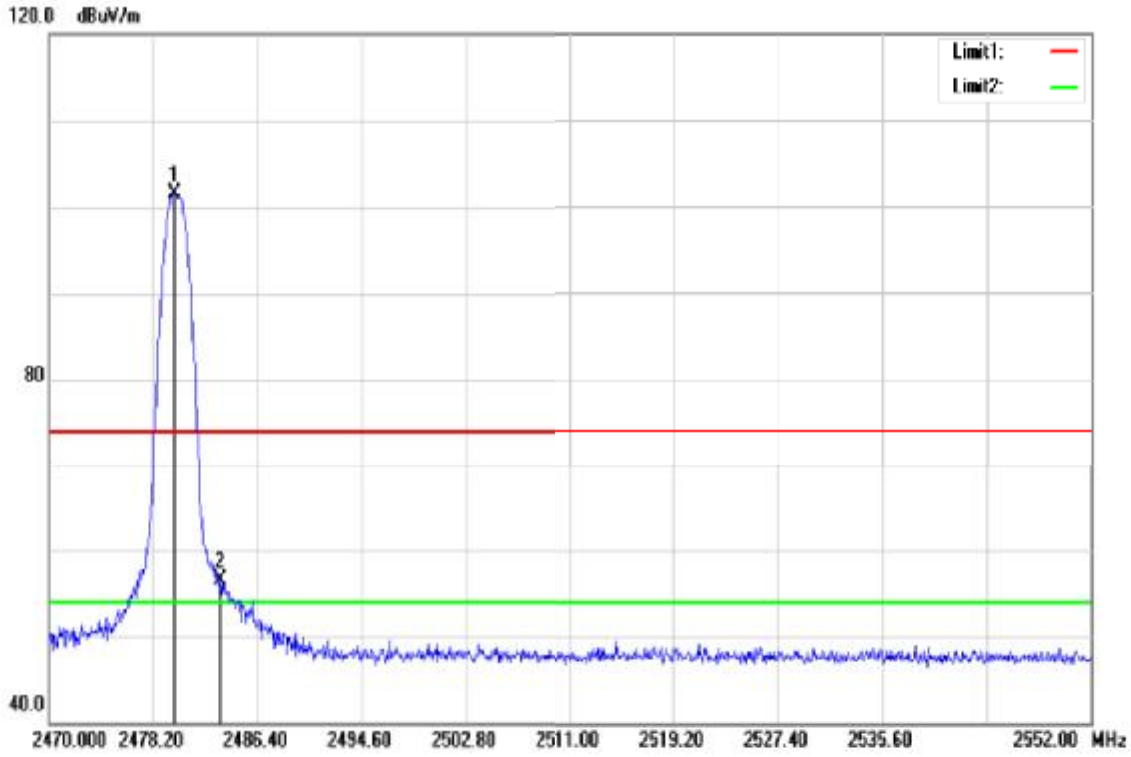
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	54.77	-2.98	51.79	74.00	-22.21	peak
2	2402.004	108.64	-2.95	105.69	-	-	peak

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



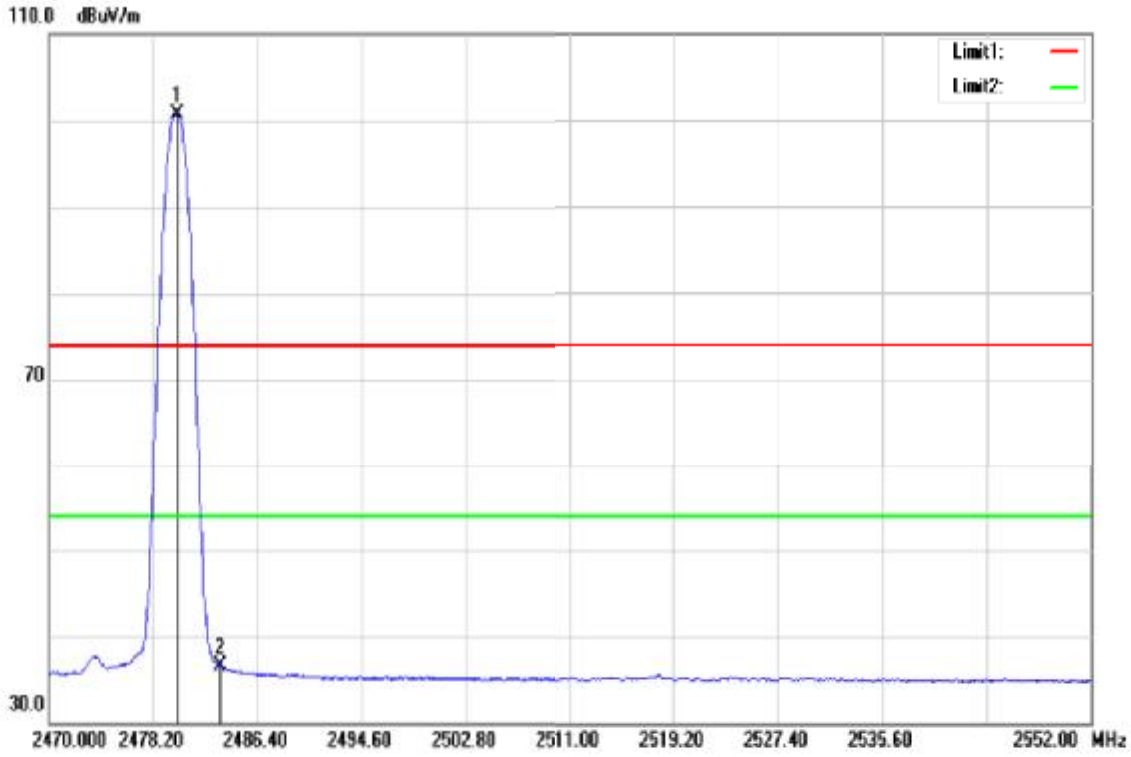
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.152	38.57	-2.98	35.59	54.00	-18.41	AVG
2	2402.004	108.25	-2.95	105.30	-	-	AVG

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



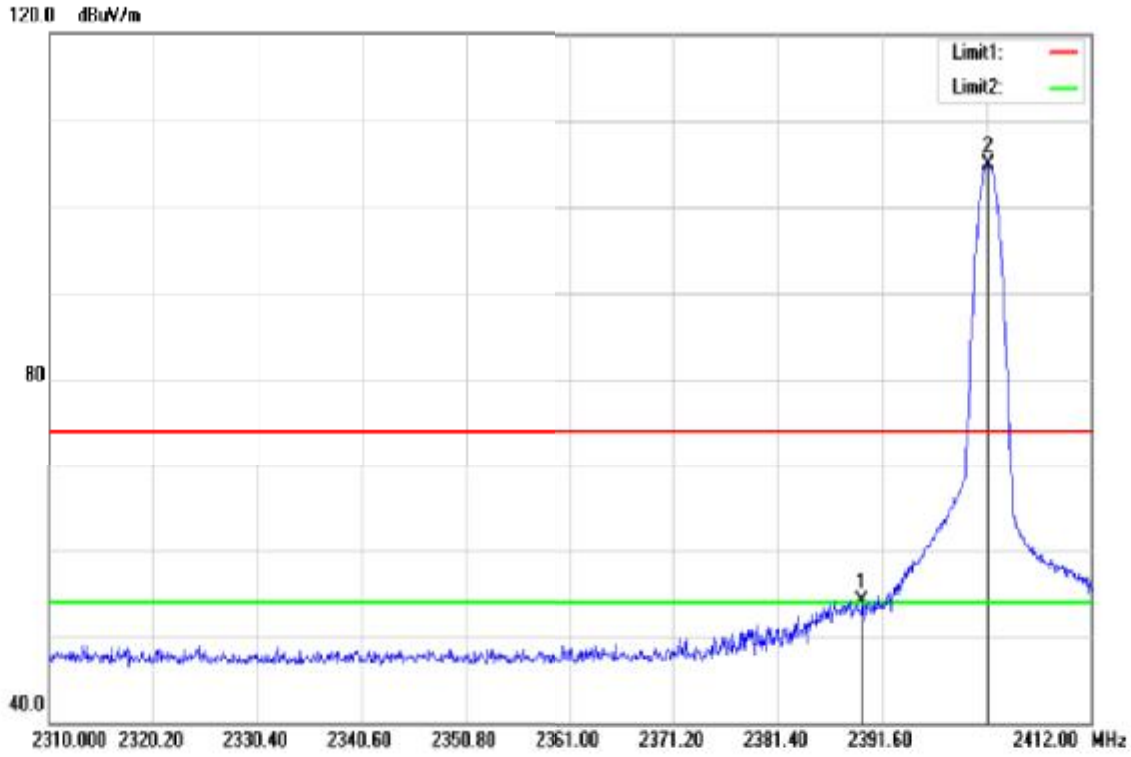
No.	Fre uency	R ading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2479.840	104.14	-2.70	101.44	-	-	peak
2	2483.500	59.29	-2.69	56.60	74.00	-17.40	peak

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



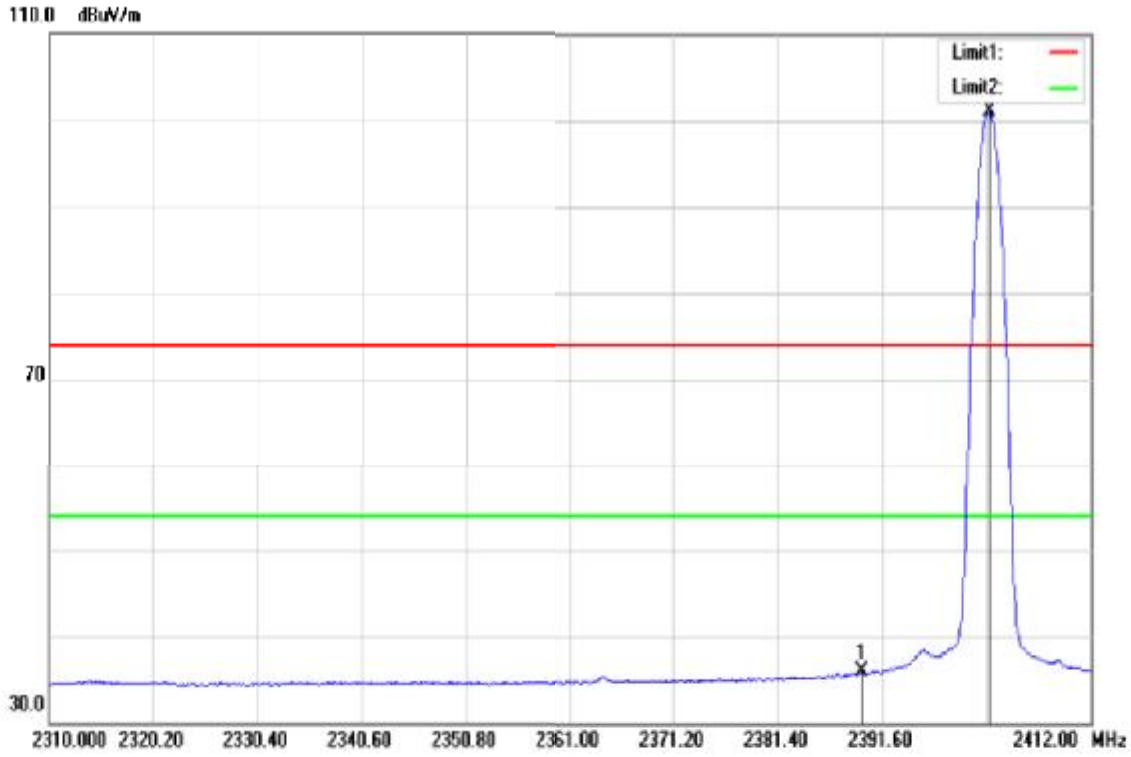
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.086	103.50	-2.70	100.80	-	-	AVG
2	2483.500	39.16	-2.69	36.47	54.00	-17.53	AVG

Test Mode:	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.662	57.17	-2.98	54.19	74.00	-19.81	peak
2	2402.004	107.92	-2.95	104.97	-	-	peak

Test Mode:	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

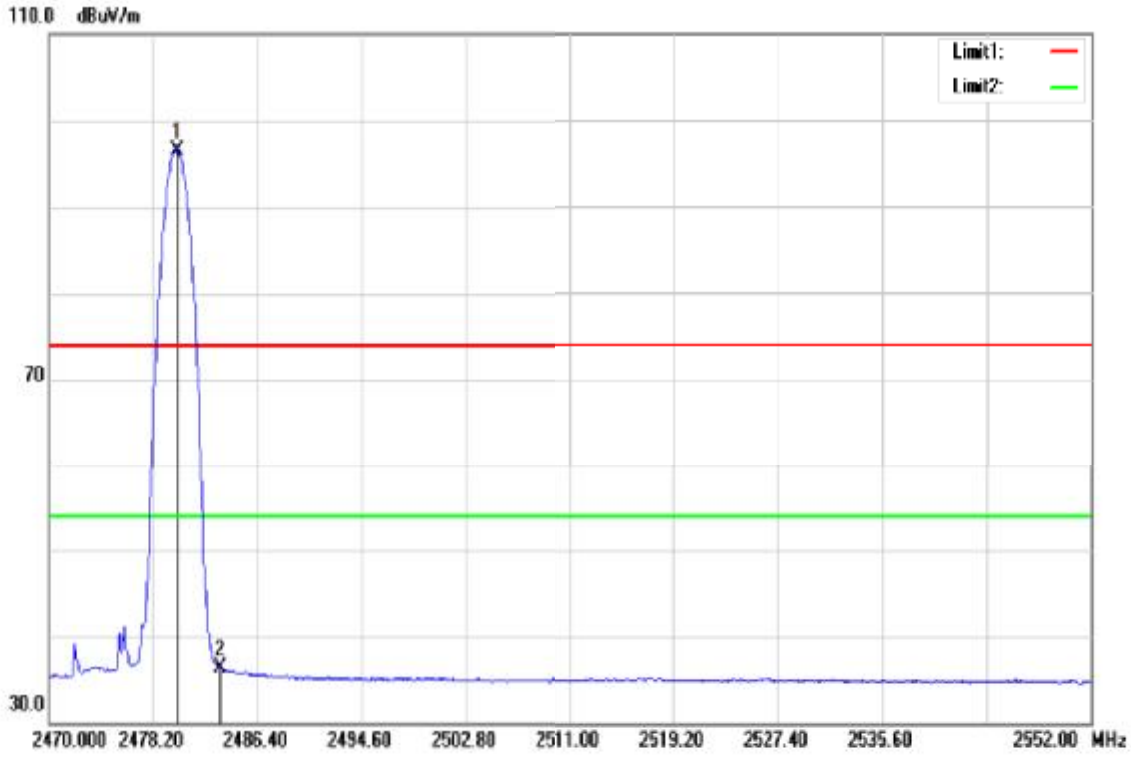


No.	Freque cy	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.662	38.90	-2.98	35.92	54.00	-18.08	AVG
2	2402.106	103.96	-2.95	101.01	-	-	AVG

Test Mode:	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.004	103.30	-2.70	100.60	-	-	peak
2	2484.104	58.37	-2.69	55.68	74.00	-18.32	peak

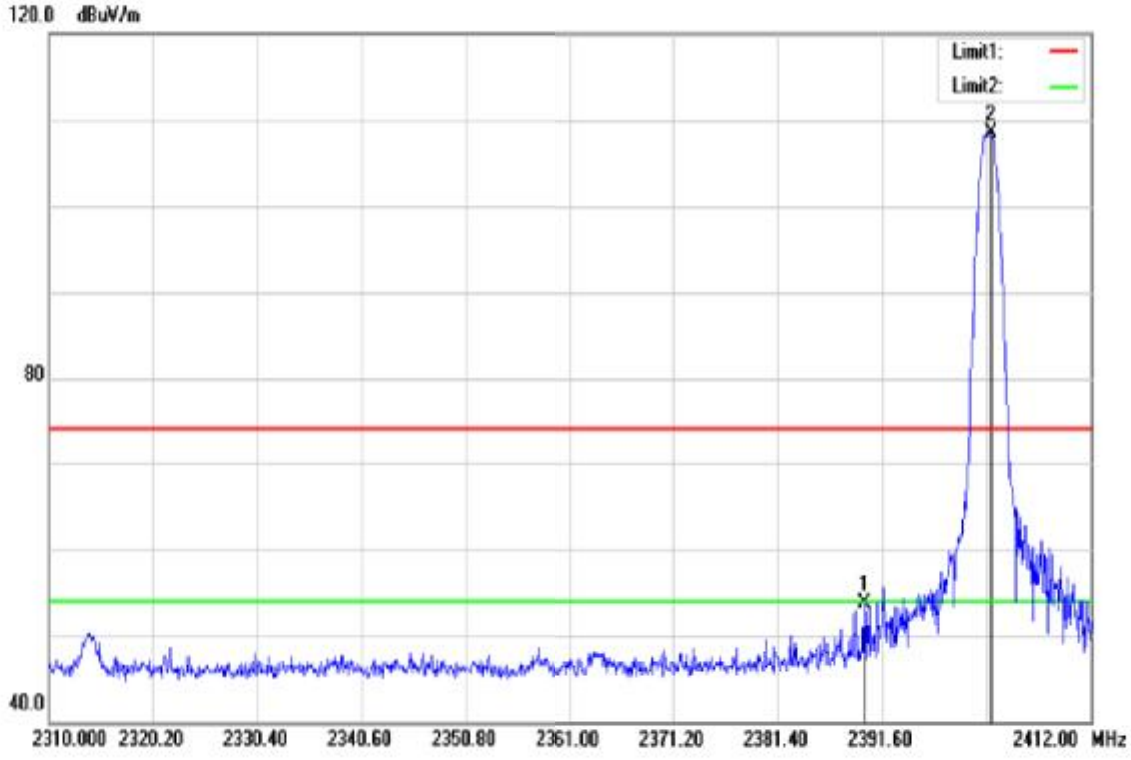
Test Mode:	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.086	99.21	-2.70	96.51	-	-	AVG
2	2483.500	38.95	-2.69	36.26	54.00	-17.74	AVG

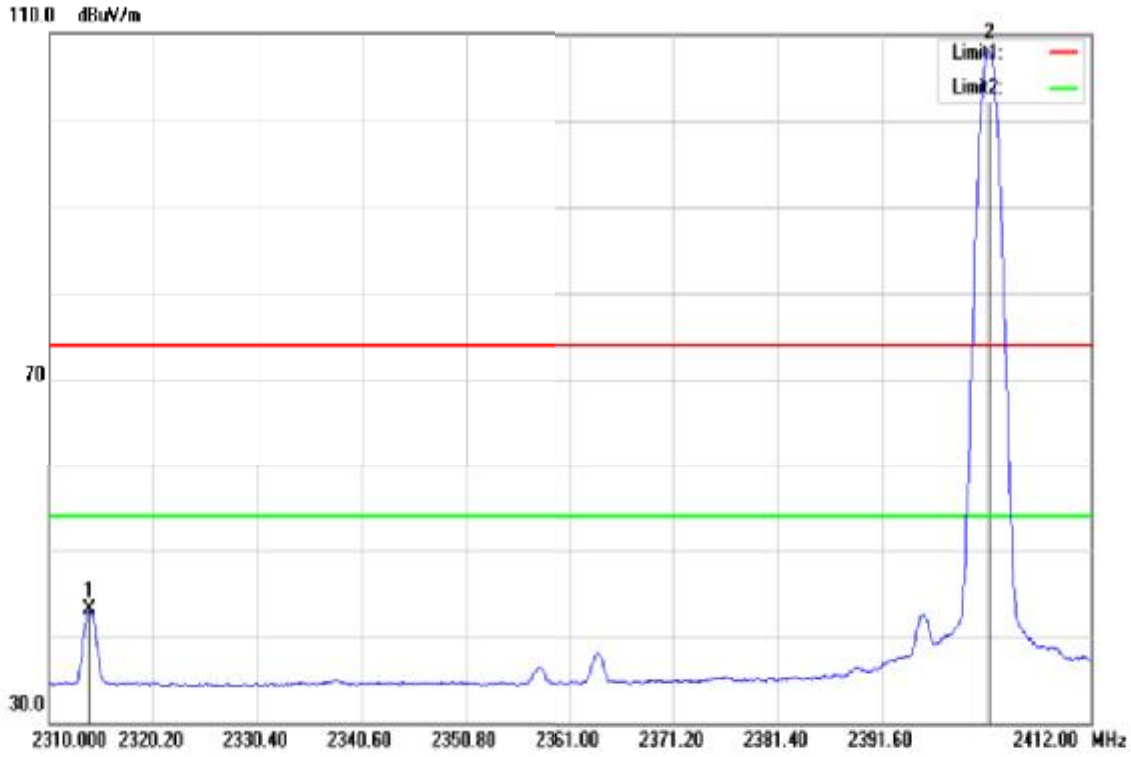
For Dipole Antenna

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.866	56.60	-2.98	53.62	74.00	-20.38	peak
2	2402.208	111.38	-2.95	108.43	-	-	peak

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

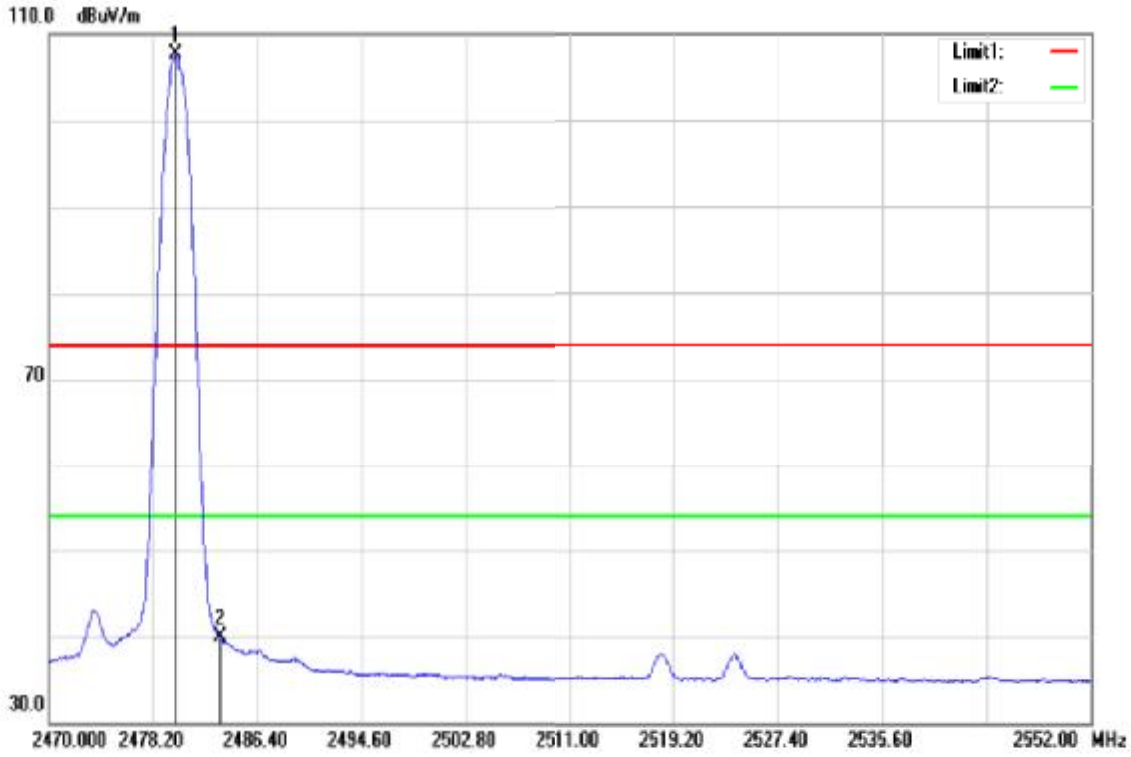


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2313.978	46.23	-3.22	43.01	54.00	-10.99	AVG
2	2402.106	111.01	-2.95	108.06	-	-	AVG

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

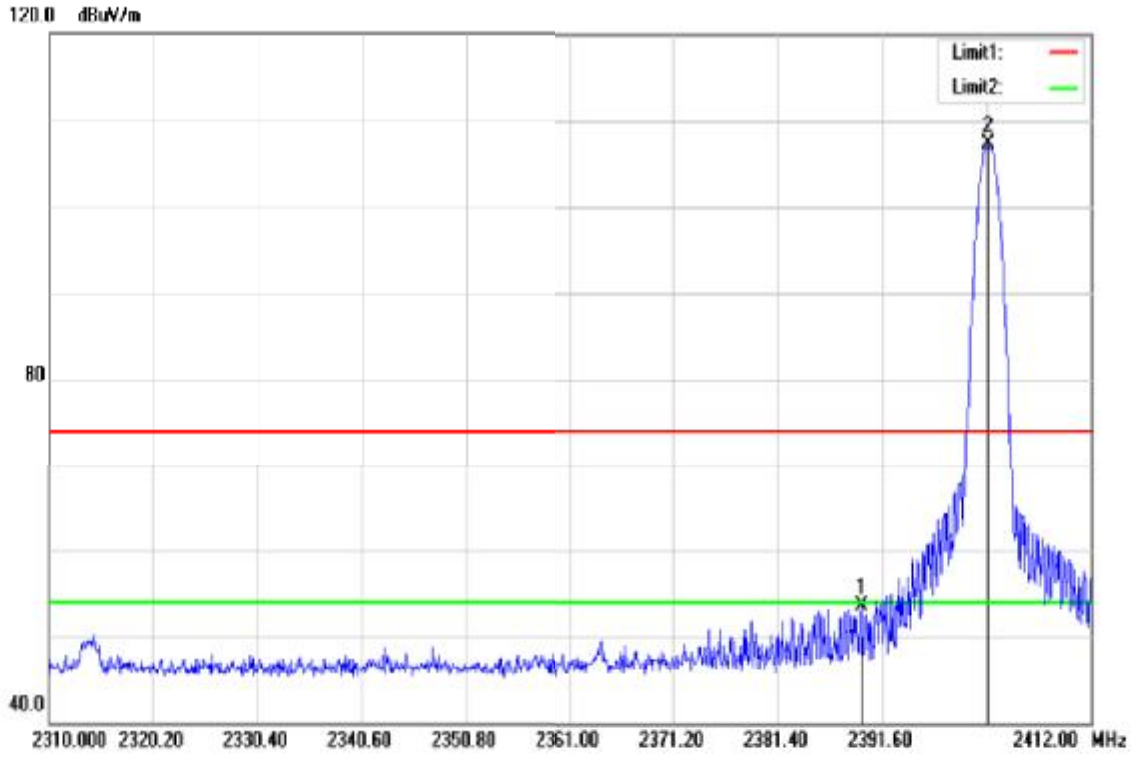
No.	Fre uency	R ading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.168	110.76	-2.70	108.06	-	-	peak
2	2483.500	65.05	-2.69	62.36	74.00	-11.64	peak

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



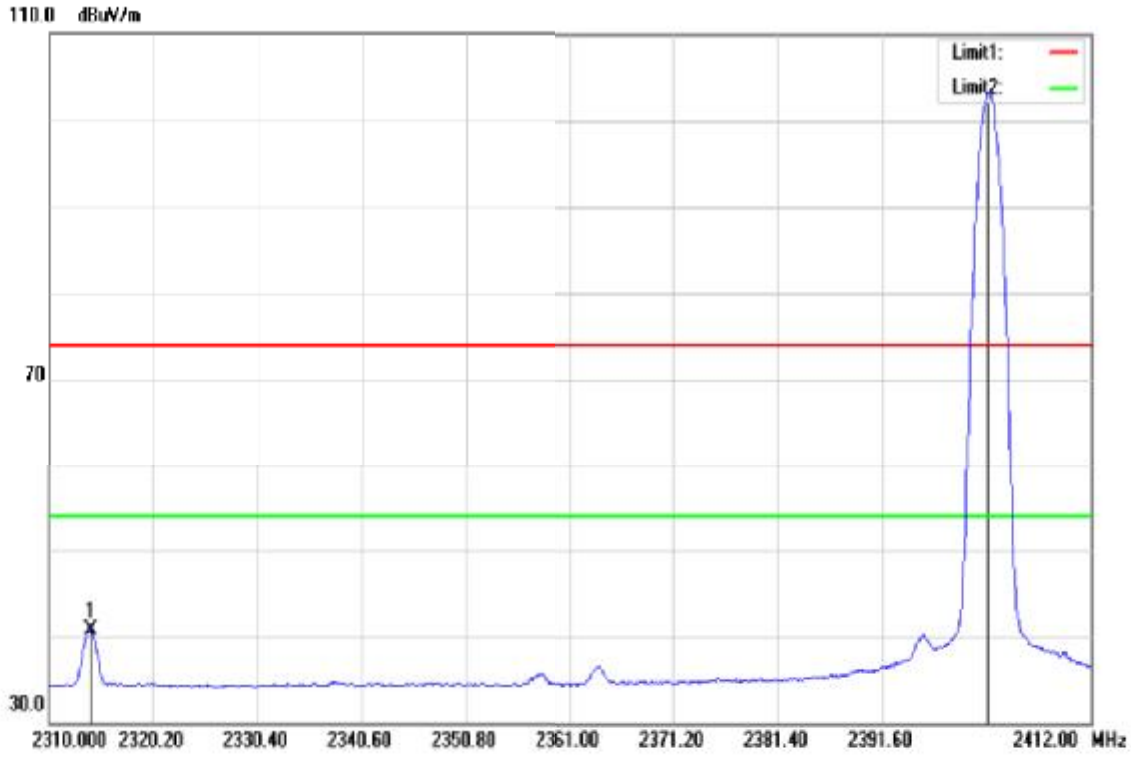
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.004	110.38	-2.70	107.68	-	-	AVG
2	2483.500	42.59	-2.69	39.90	54.00	-14.10	AVG

Test Mode:	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



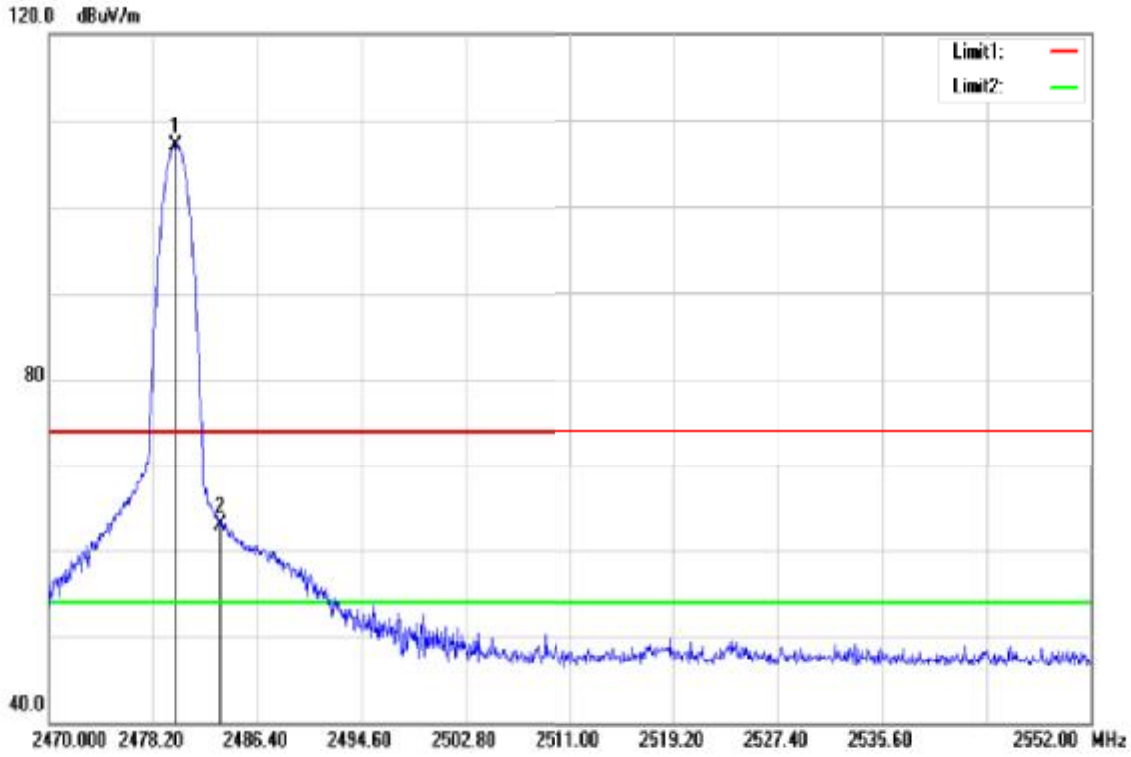
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.560	56.54	-2.98	53.56	74.00	-20.44	peak
2	2402.004	110.22	-2.95	107.27	-	-	peak

Test Mode:	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



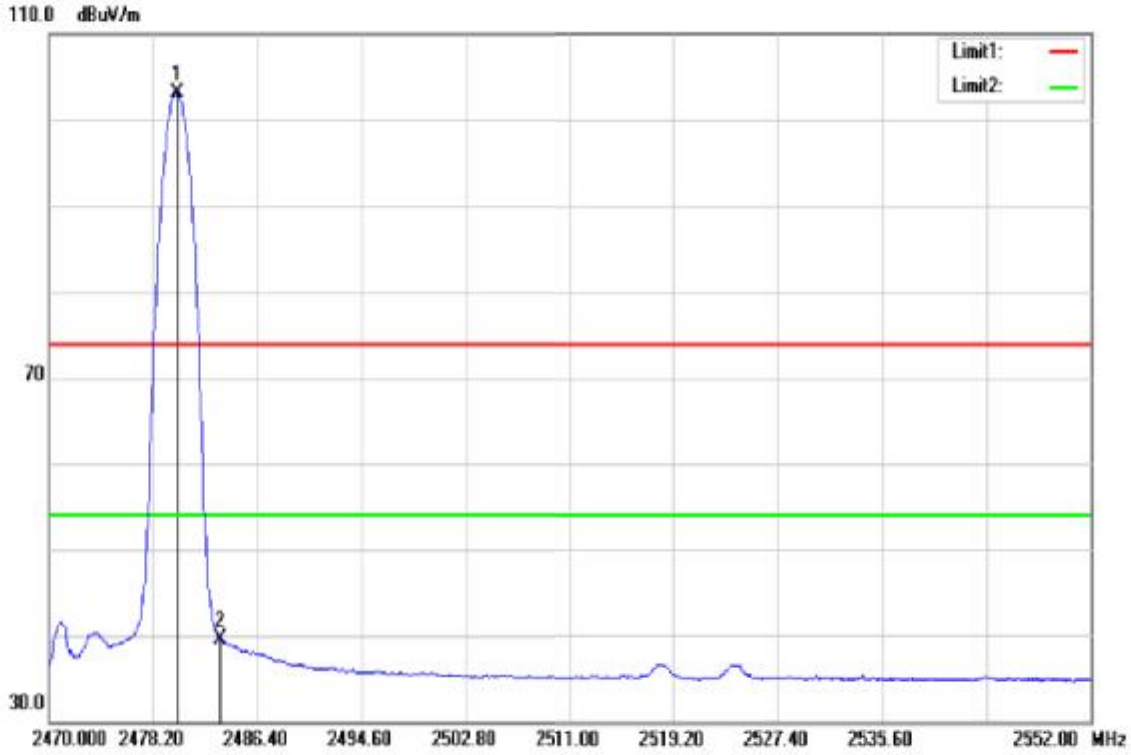
No.	Freque cy	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2314.080	43.91	-3.22	40.69	54.00	-13.31	AVG
2	2402.004	106.16	-2.95	103.21	-	-	AVG

Test Mode:	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.004	109.81	-2.70	107.11	-	-	peak
2	2483.500	65.68	-2.69	62.99	74.00	-11.01	peak

Test Mode:	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

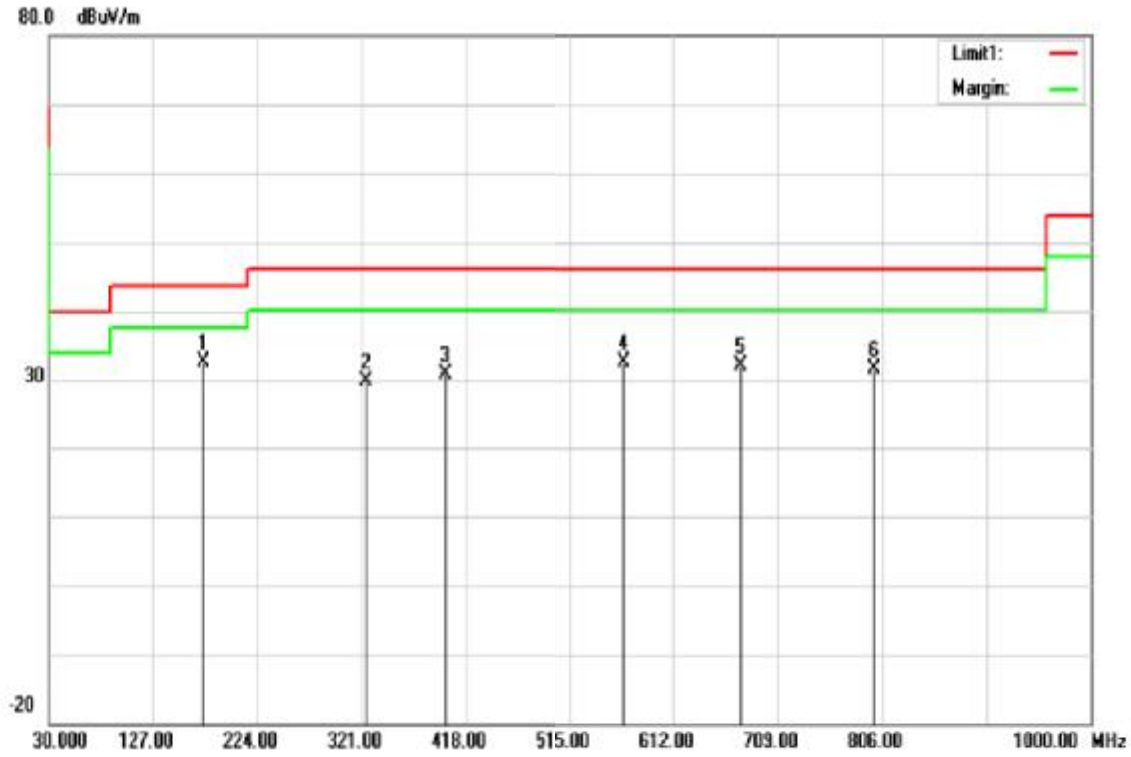


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.086	105.75	-2.70	103.05	-	-	AVG
2	2483.500	42.22	-2.69	39.53	54.00	-14.47	AVG

Below 1G Test Data

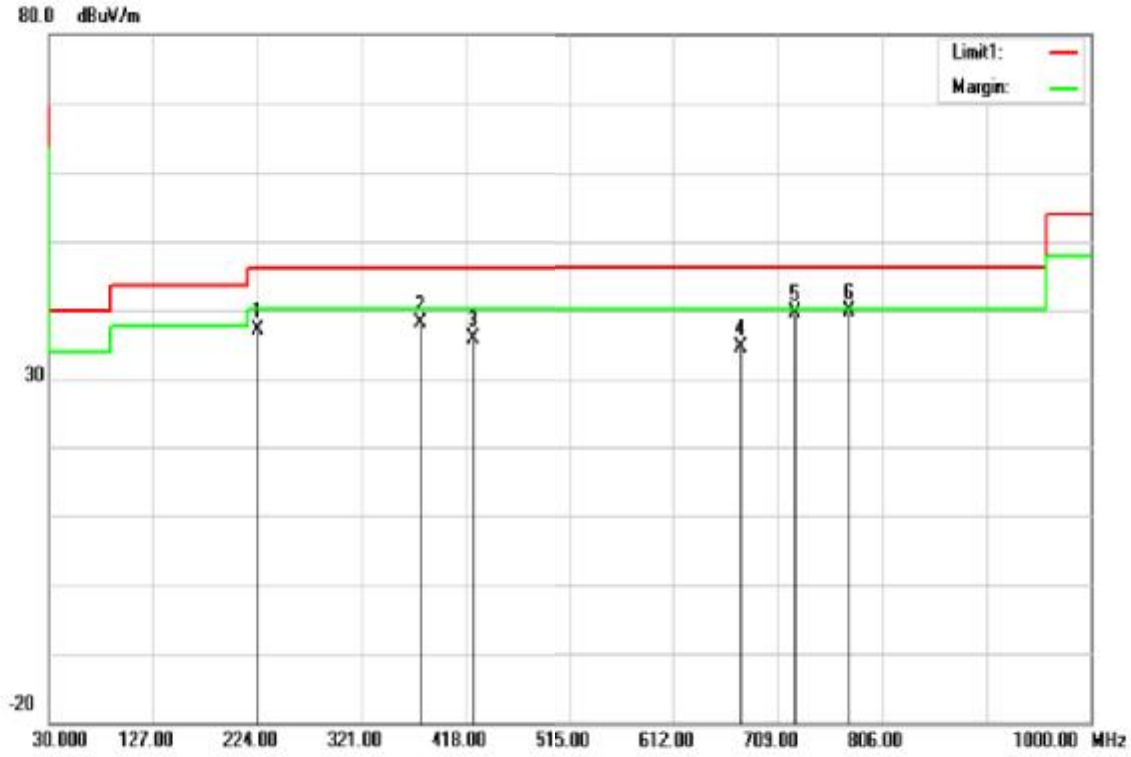
For PIFA Antenna

Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	requency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	174.5300	43.35	-10.78	32.57	43.52	-10.95	peak
2	324.8800	37.32	-7.38	29.94	46.02	-16.08	peak
3	399.5700	36.19	-5.30	30.89	46.02	-15.13	peak
4	565.4400	34.14	-1.56	32.58	46.02	-13.44	peak
5	675.0500	31.43	0.68	32.11	46.02	-13.91	peak
6	798.2400	28.97	2.68	31.65	46.02	-14.37	peak

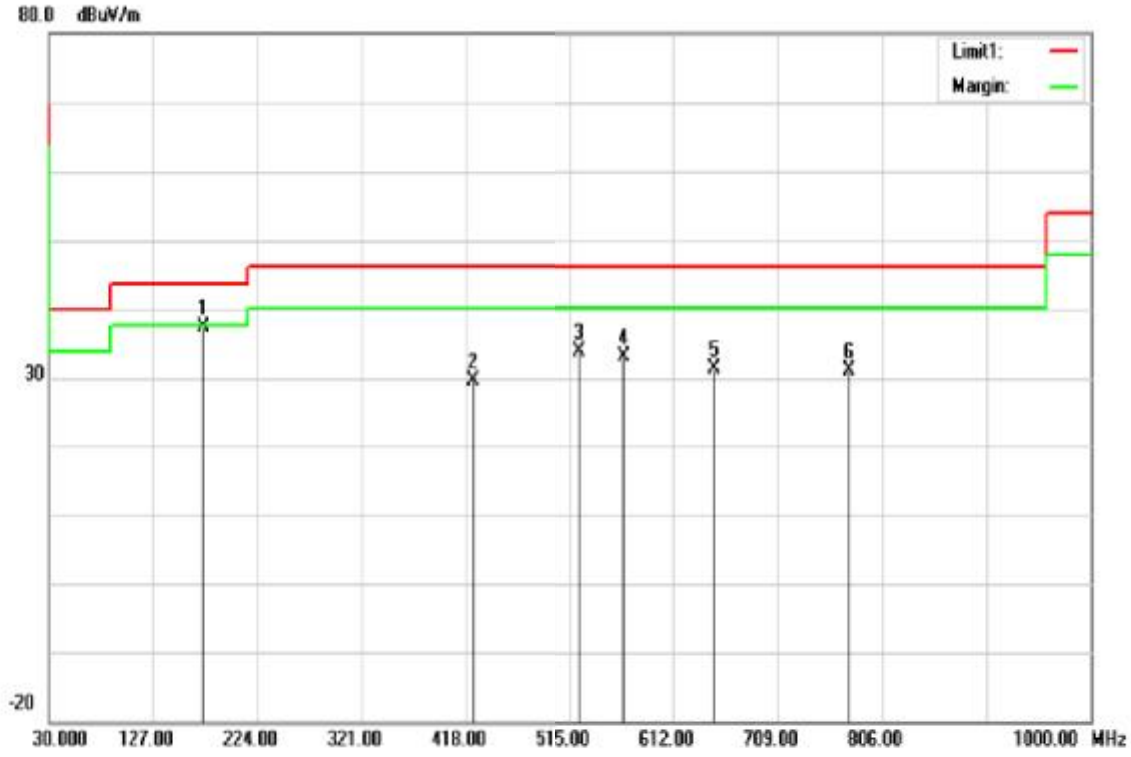
Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	224.9700	48.22	-10.97	37.25	46.02	-8.77	peak
2	375.3200	44.05	-6.02	38.03	46.02	-7.99	peak
3	424.7900	40.51	-4.51	36.00	46.02	-10.02	peak
4	675.0500	33.92	0.68	34.60	46.02	-11.42	peak
5	725.4900	38.15	1.37	39.52	46.02	-6.50	peak
6	774.9600	37.64	2.21	39.85	46.02	-6.17	QP

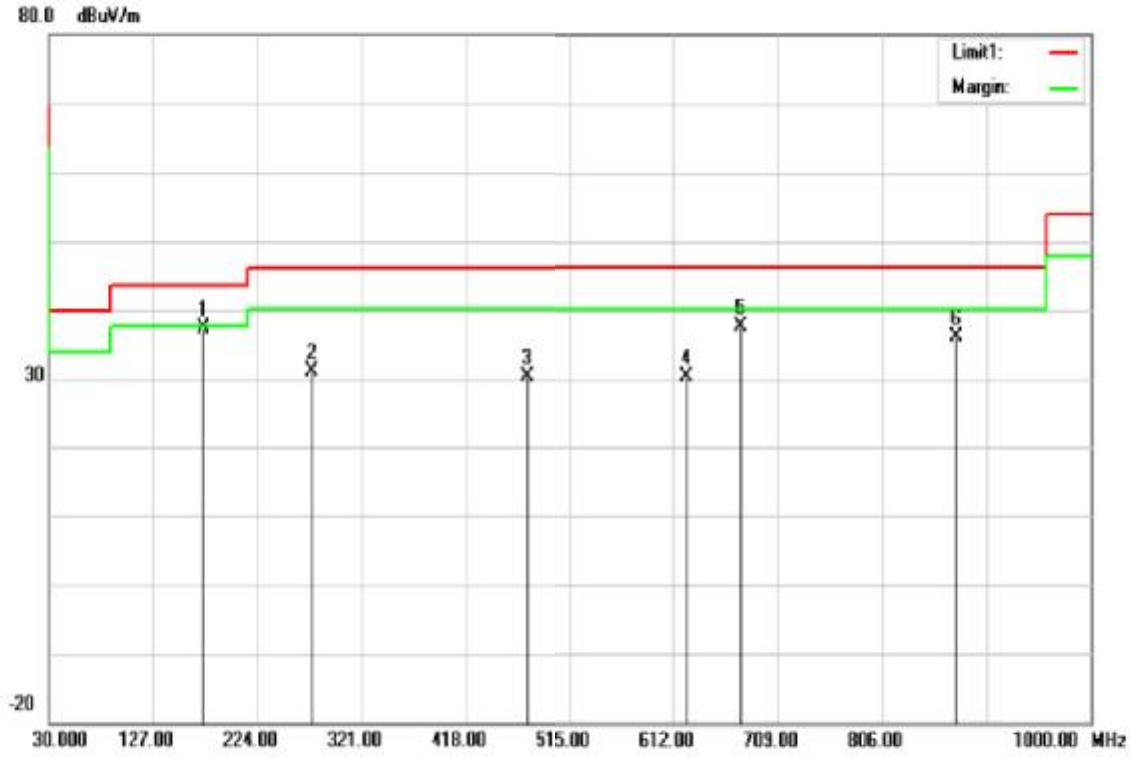
For Dipole Antenna

Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	requency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	174.5300	48.13	-10.78	37.35	43.52	-6.17	peak
2	424.7900	34.10	-4.51	29.59	46.02	-16.43	peak
3	524.7000	36.05	-2.18	33.87	46.02	-12.15	peak
4	565.4400	34.71	-1.56	33.15	46.02	-12.87	peak
5	649.8300	31.13	0.35	31.48	46.02	-14.54	peak
6	774.9600	28.94	2.21	31.15	46.02	-14.87	peak

Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak		

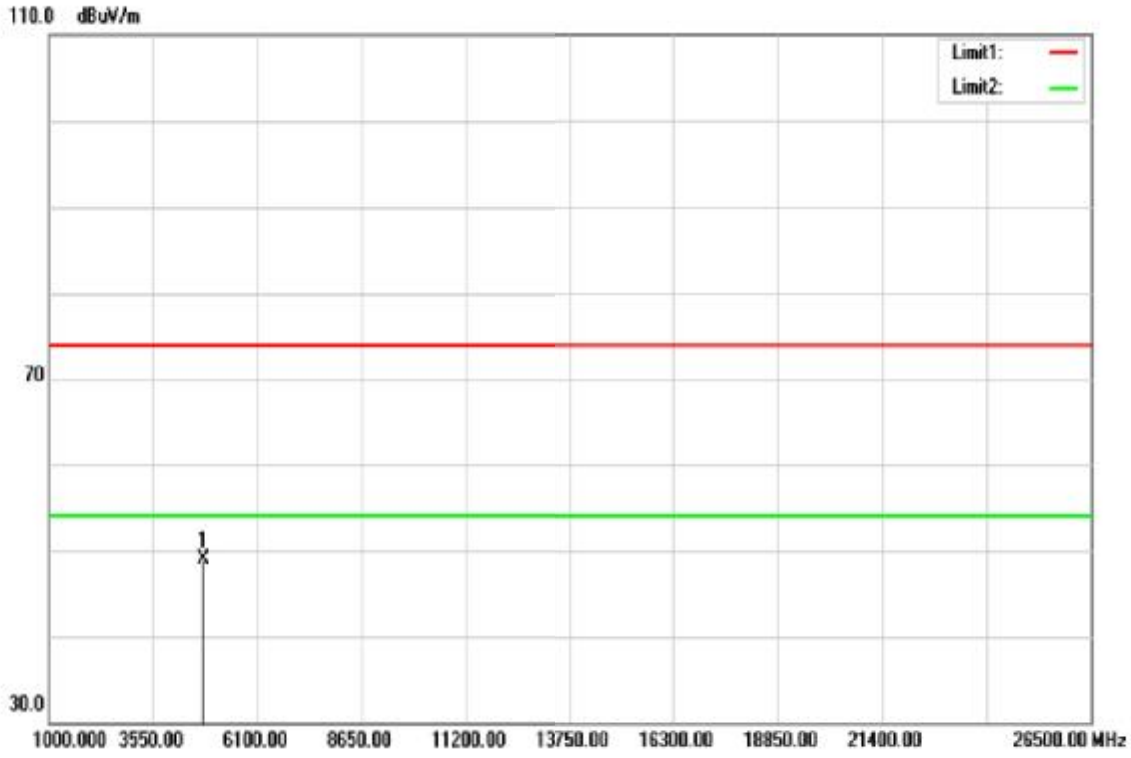


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	174.5300	48.10	-10.78	37.32	43.52	-6.20	peak
2	275.4100	39.57	-8.49	31.08	46.02	-14.94	peak
3	475.2300	33.46	-3.14	30.32	46.02	-15.70	peak
4	624.6100	30.76	-0.40	30.36	46.02	-15.66	peak
5	675.0500	37.05	0.68	37.73	46.02	-8.29	peak
6	874.8700	32.28	3.91	36.19	46.02	-9.83	peak

Above 1G Test Data

For PIFA Antenna

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

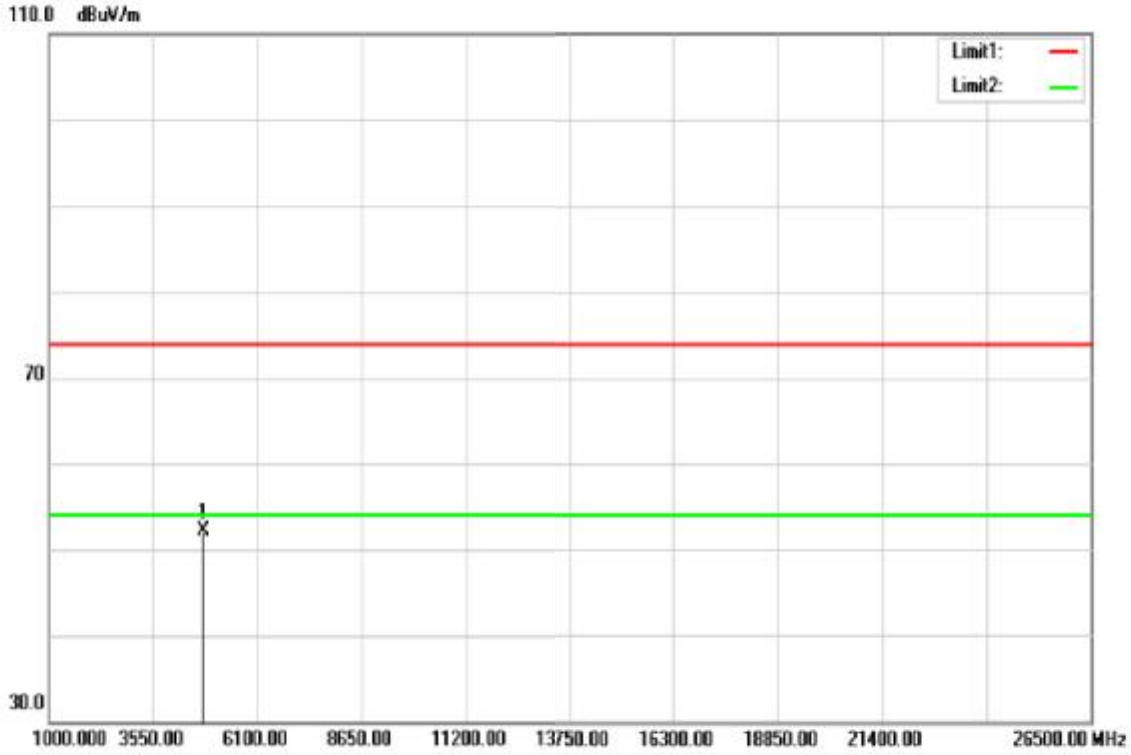


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4806.000	44.58	4.35	48.93	74.00	-25.07	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

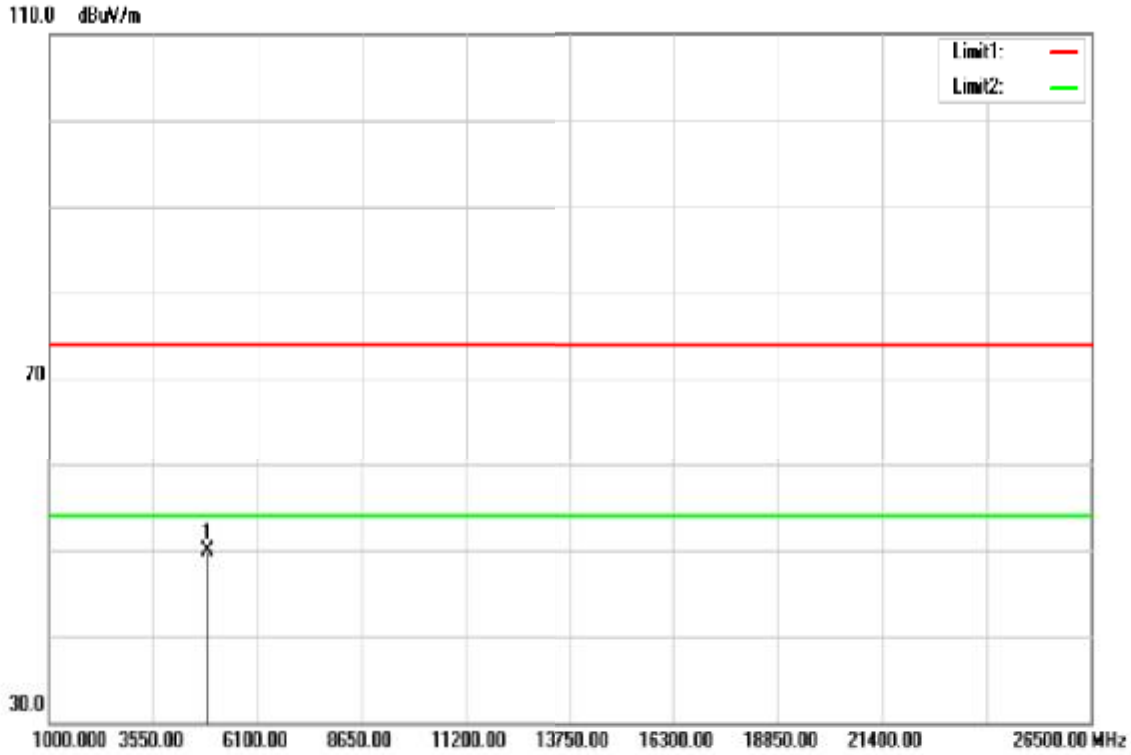


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4806.000	47.82	4.35	52.17	74.00	-21.83	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

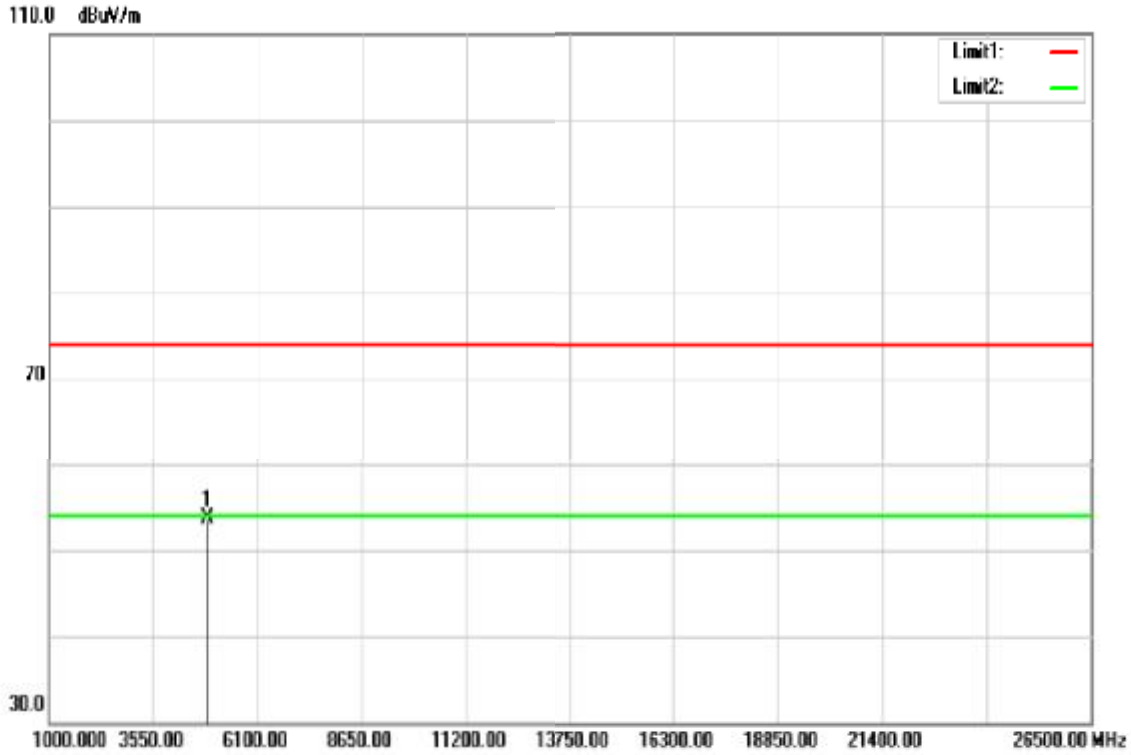


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4883.000	45.40	4.49	49.89	74.00	-24.11	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

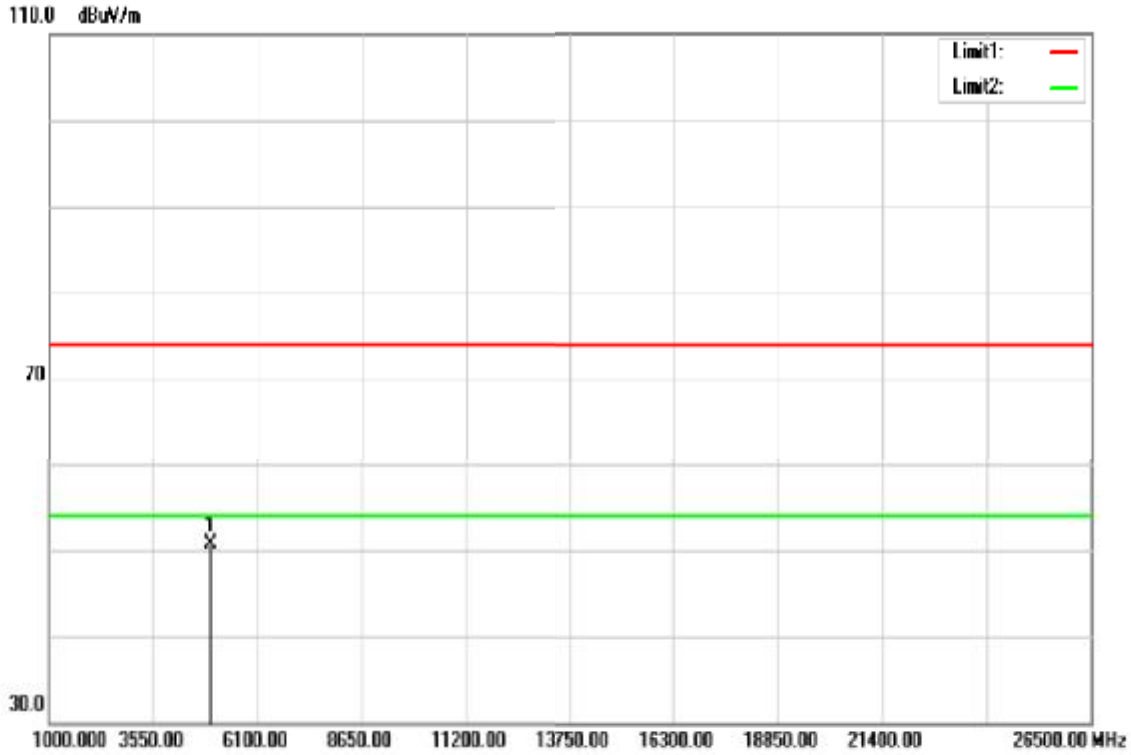


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4883.000	49.30	4.49	53.79	74.00	-20.21	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

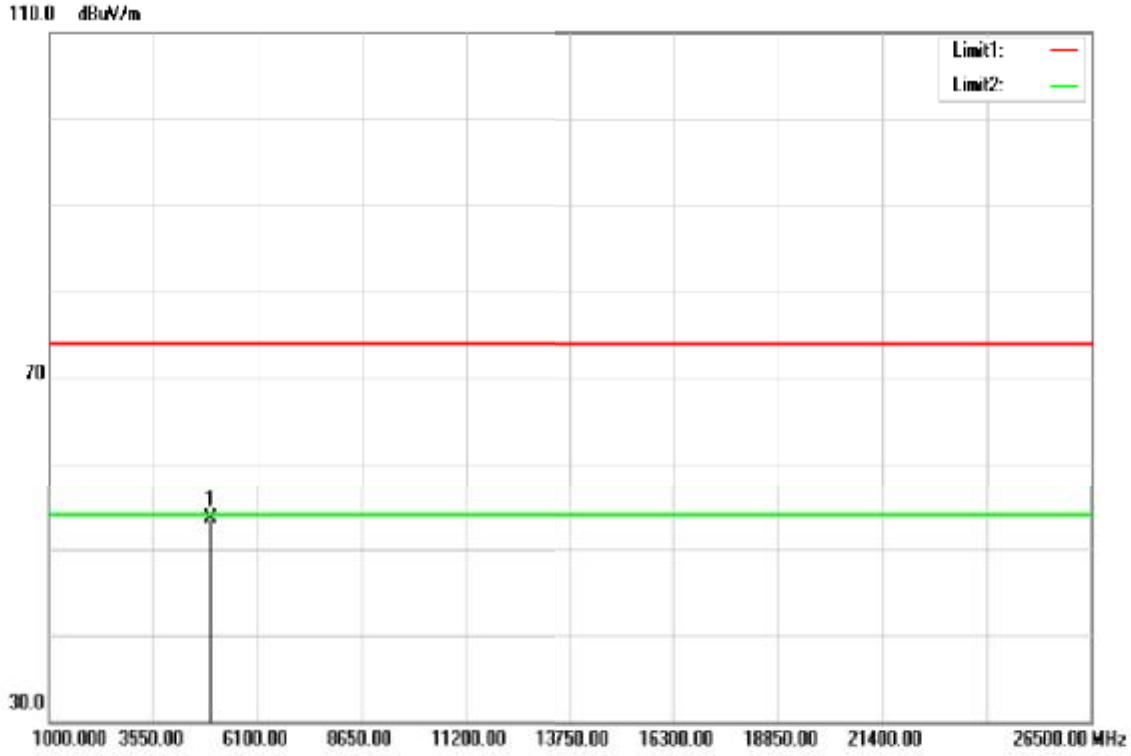


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	46.09	4.61	50.70	74.00	-23.30	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

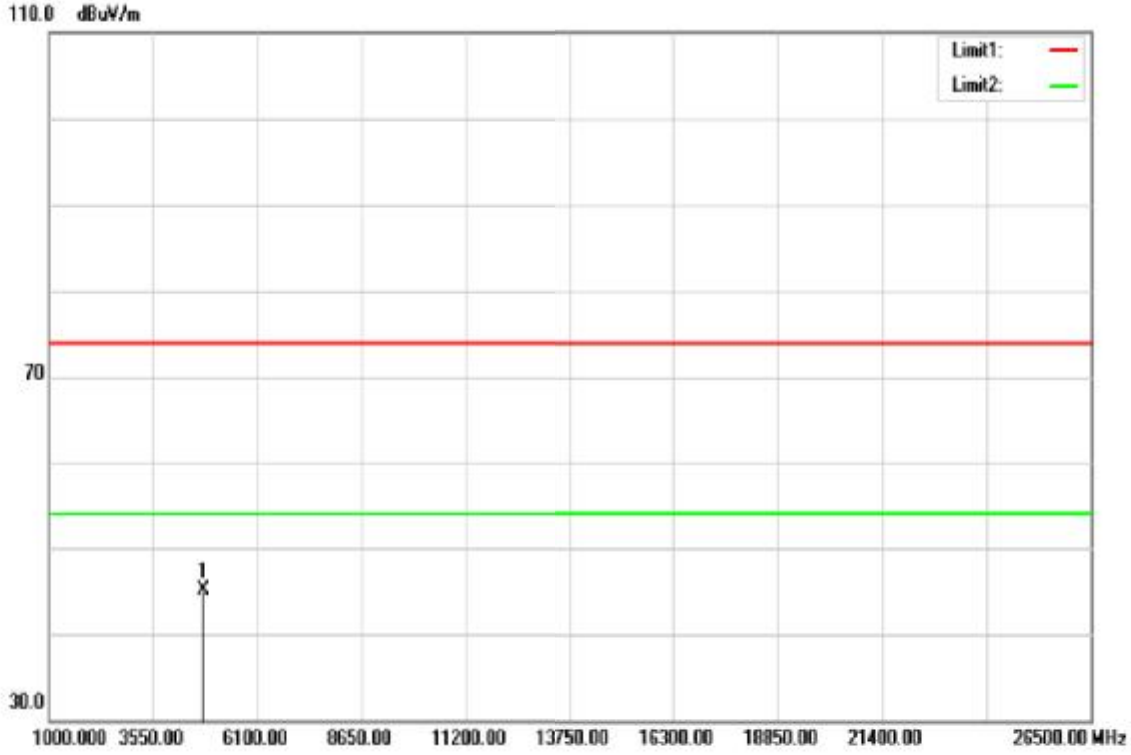


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	48.89	4.61	53.50	74.00	-20.50	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

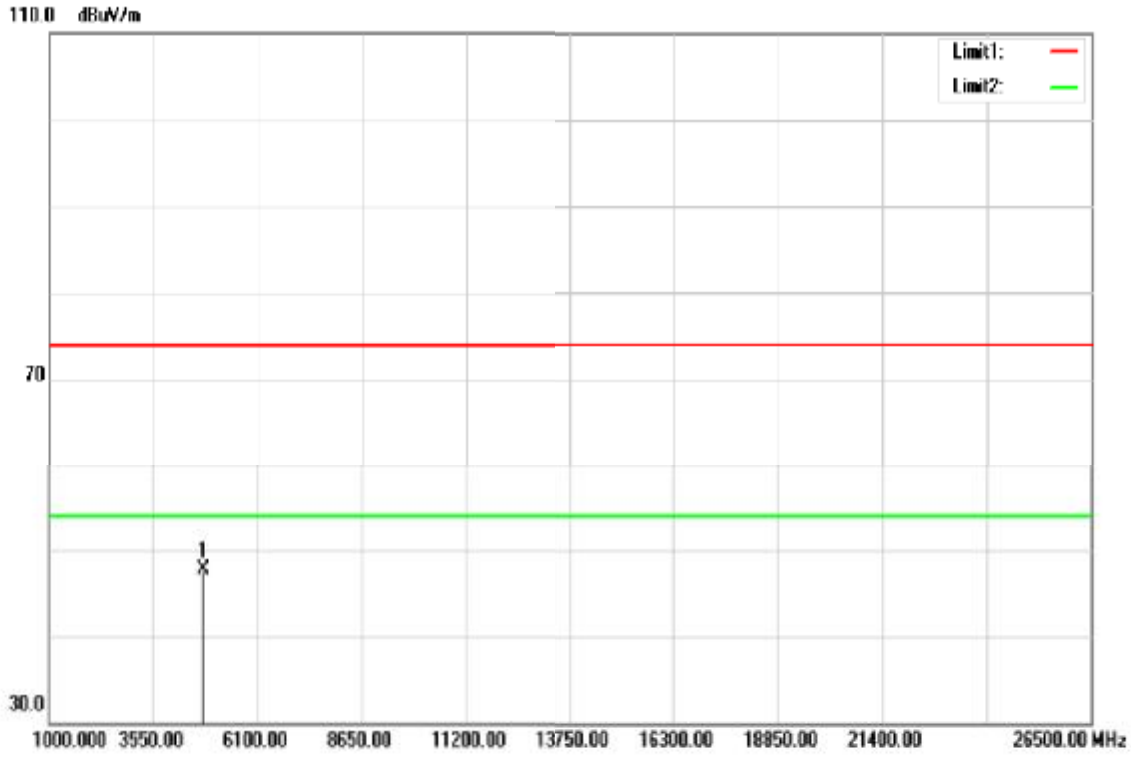


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4804.000	40.85	4.34	45.19	74.00	-28.81	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

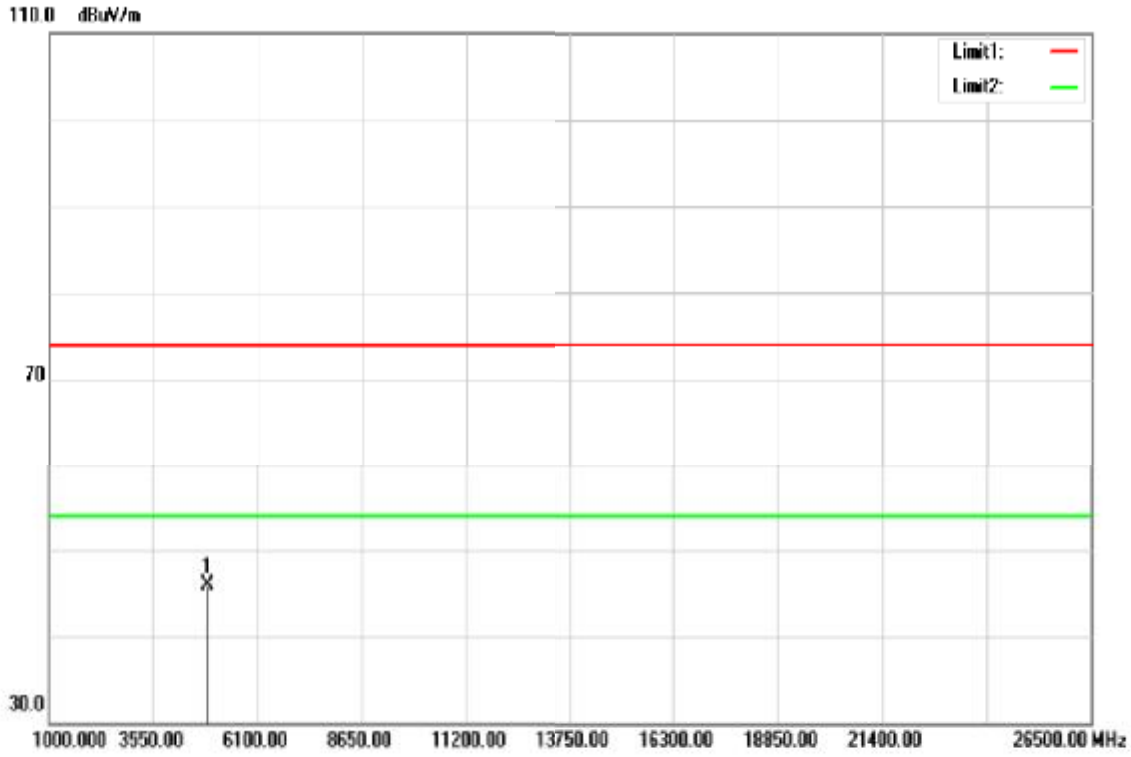


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4806.000	43.36	4.35	47.71	74.00	-26.29	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

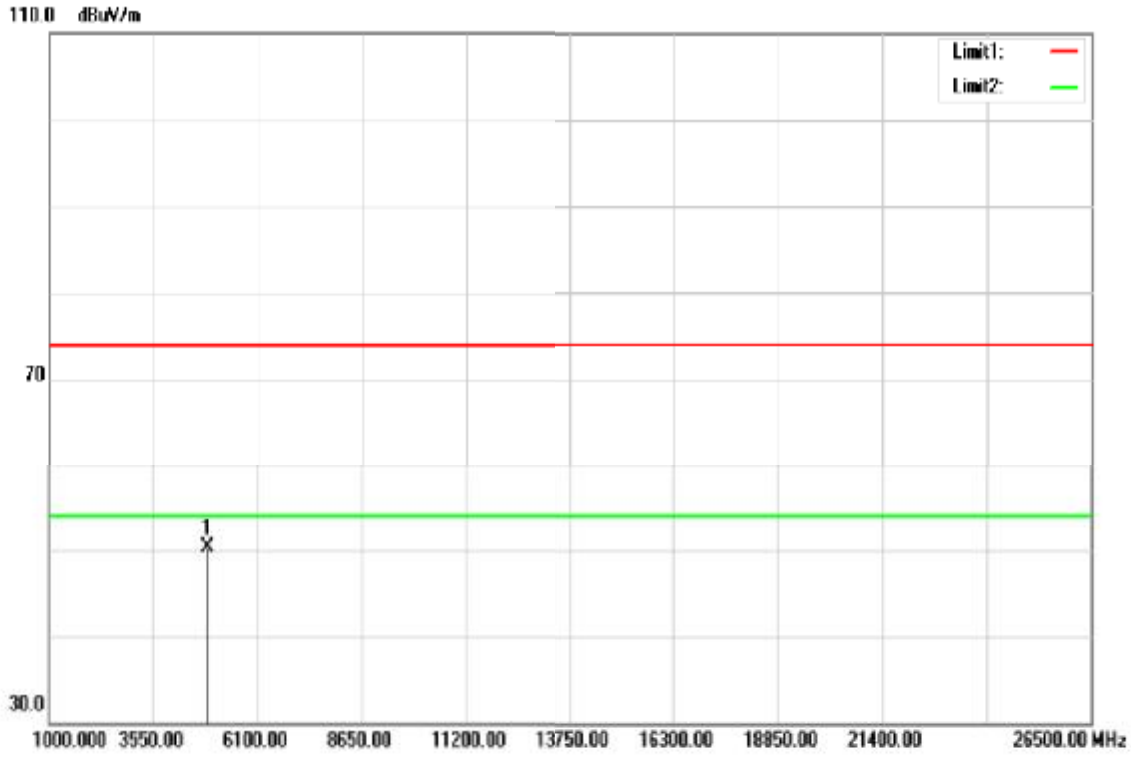


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4883.000	41.45	4.49	45.94	74.00	-28.06	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

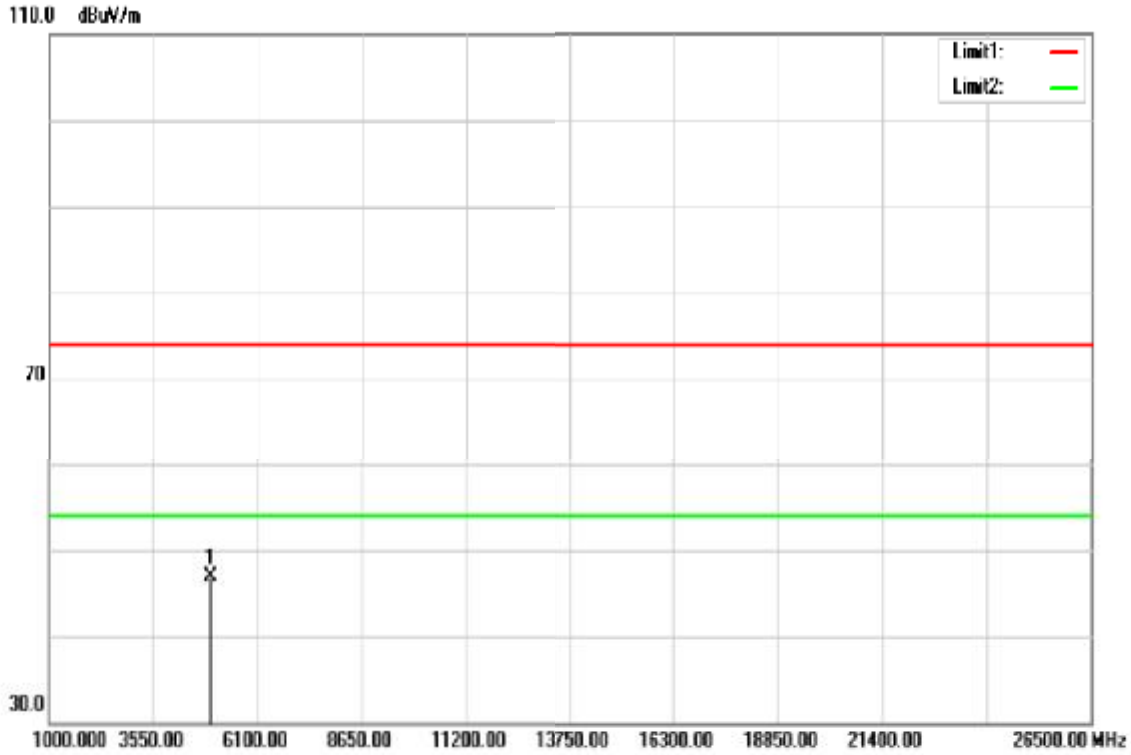


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4883.000	45.82	4.49	50.31	74.00	-23.69	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

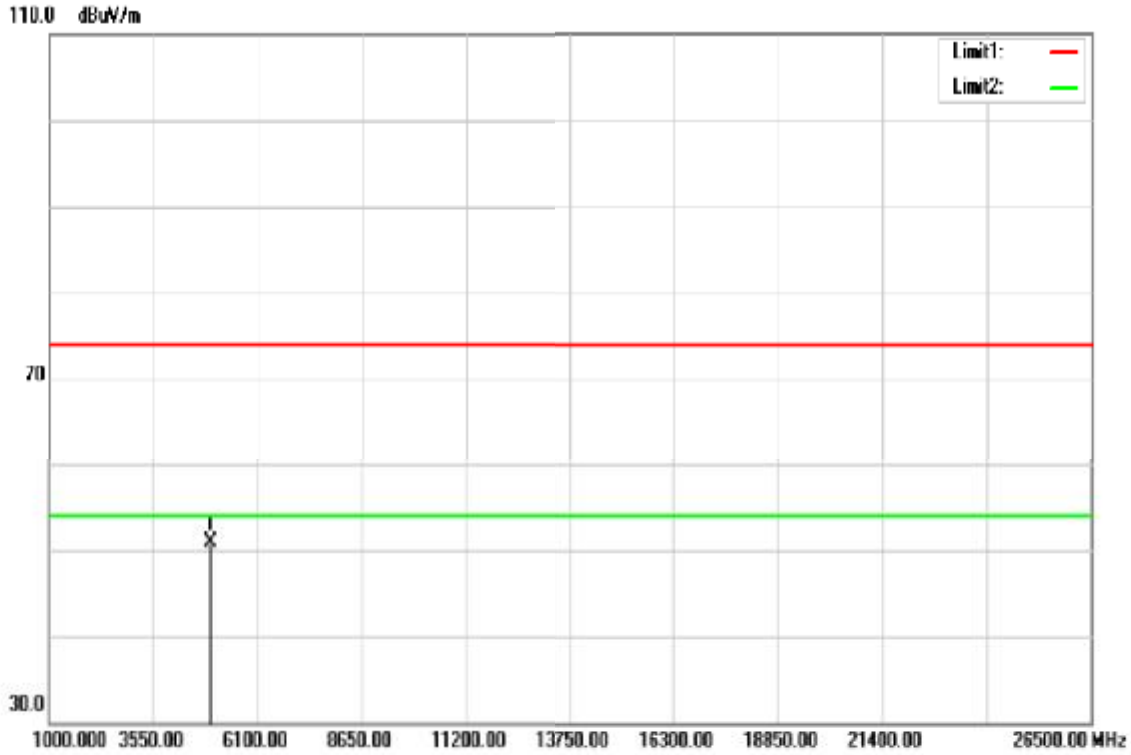


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	42.25	4.61	46.86	74.00	-27.14	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



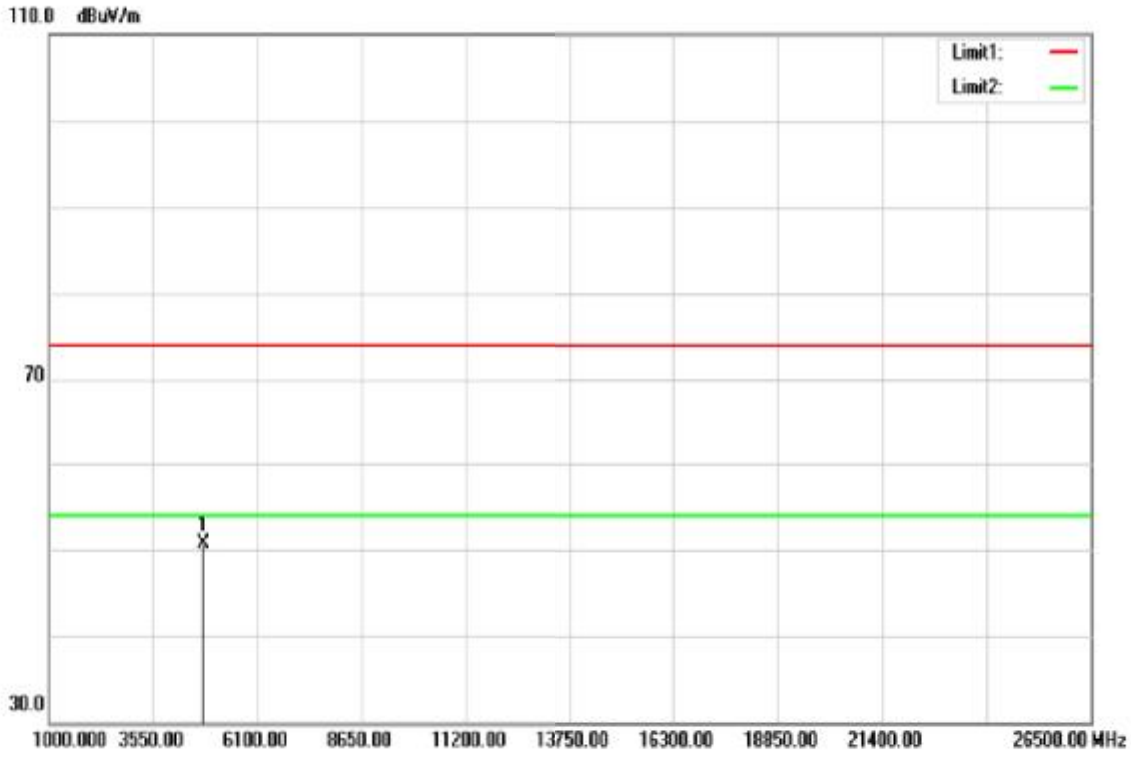
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	46.20	4.61	50.81	74.00	-23.19	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

For Dipole Antenna

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

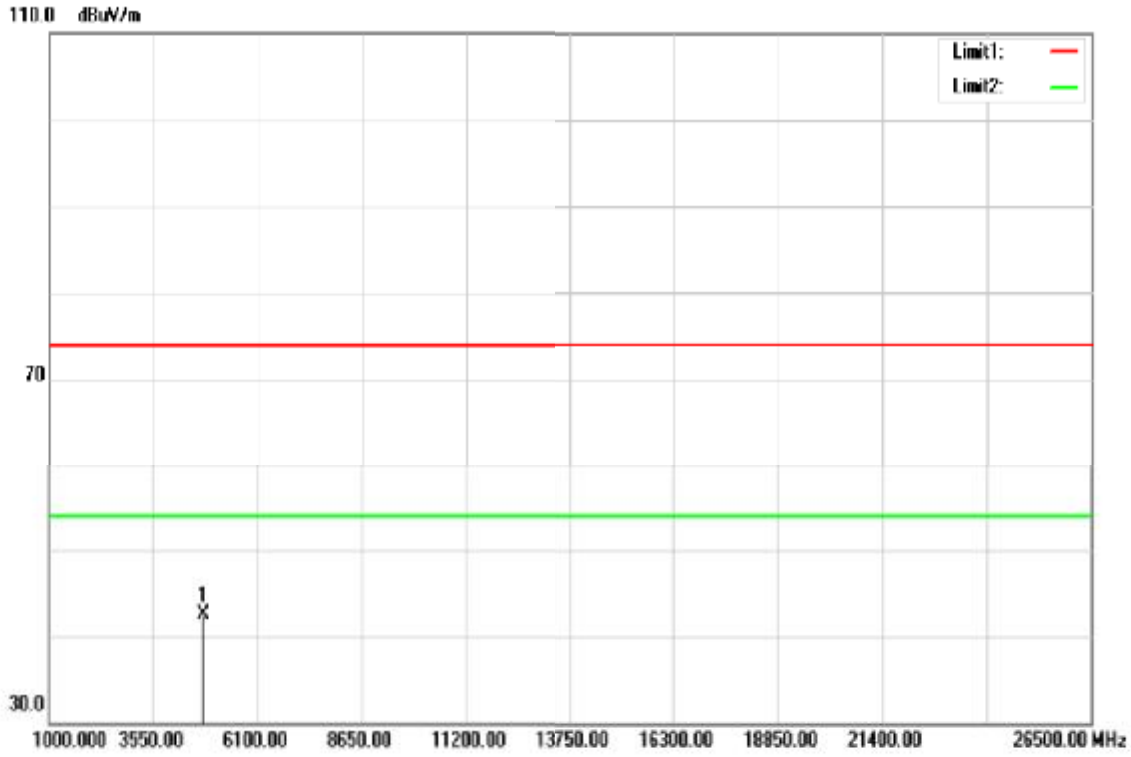


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4806.000	46.35	4.35	50.70	74.00	-23.30	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4804.000	38.15	4.34	42.49	74.00	-31.51	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

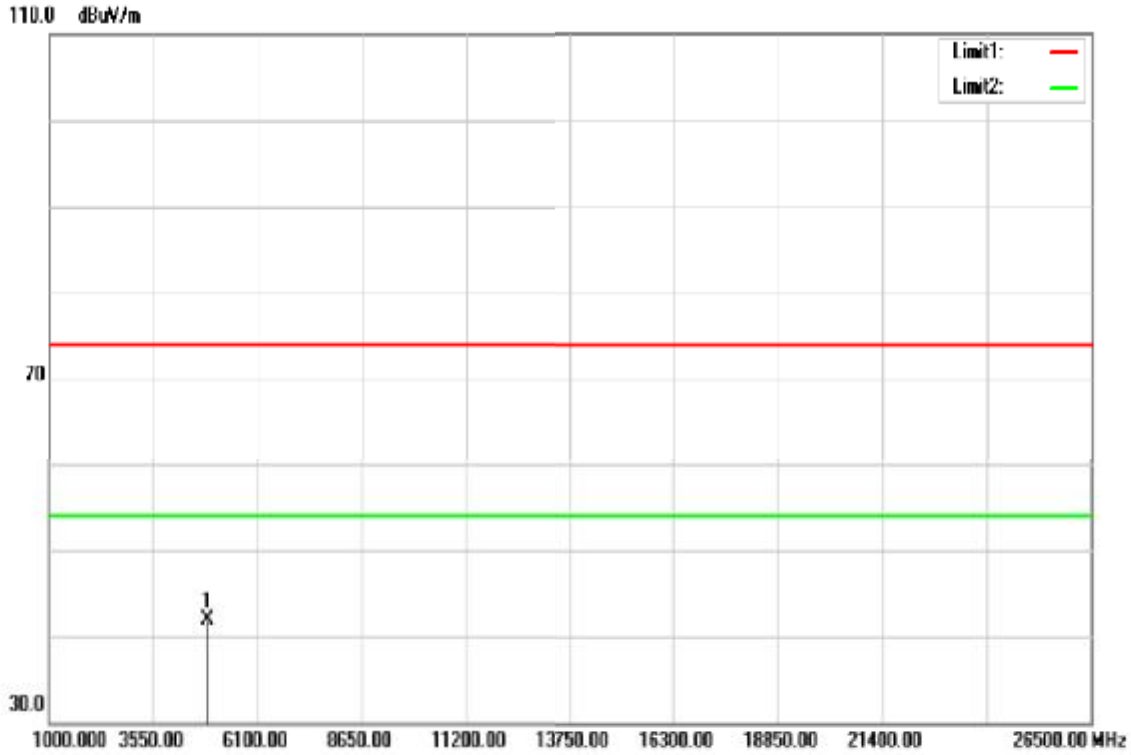
Test Mode:	GFSK_BR-1Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4883.000	48.33	4.49	52.82	74.00	-21.18	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

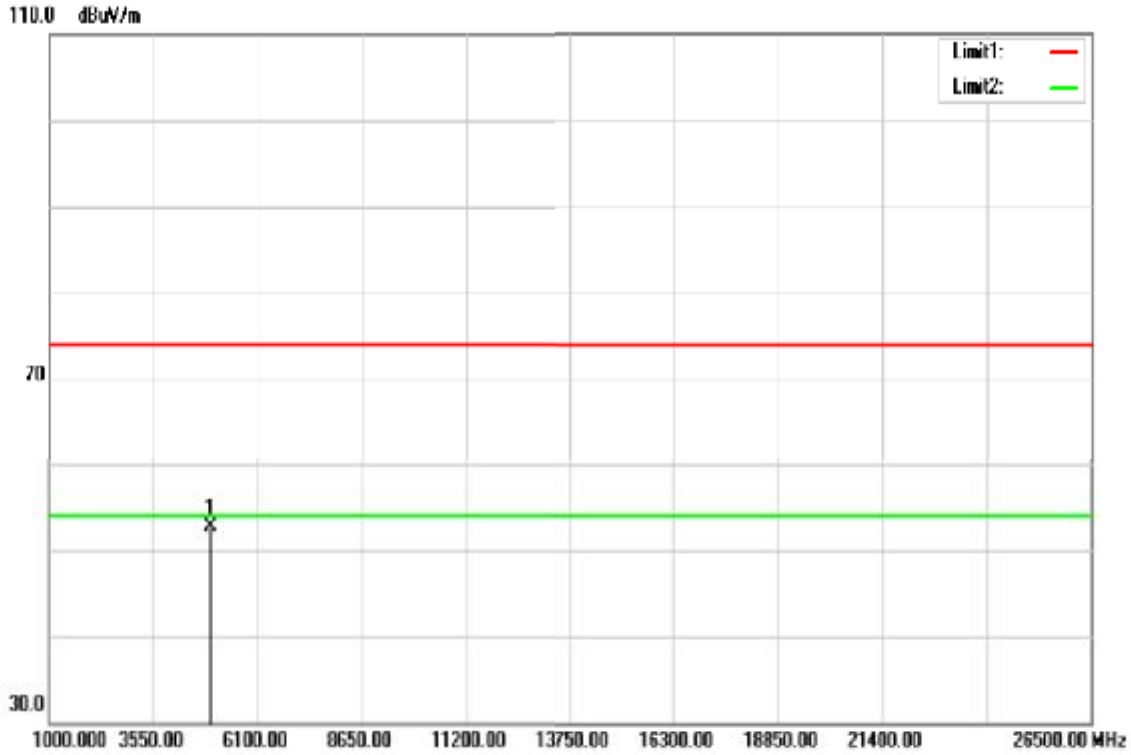


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4882.000	37.49	4.49	41.98	74.00	-32.02	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

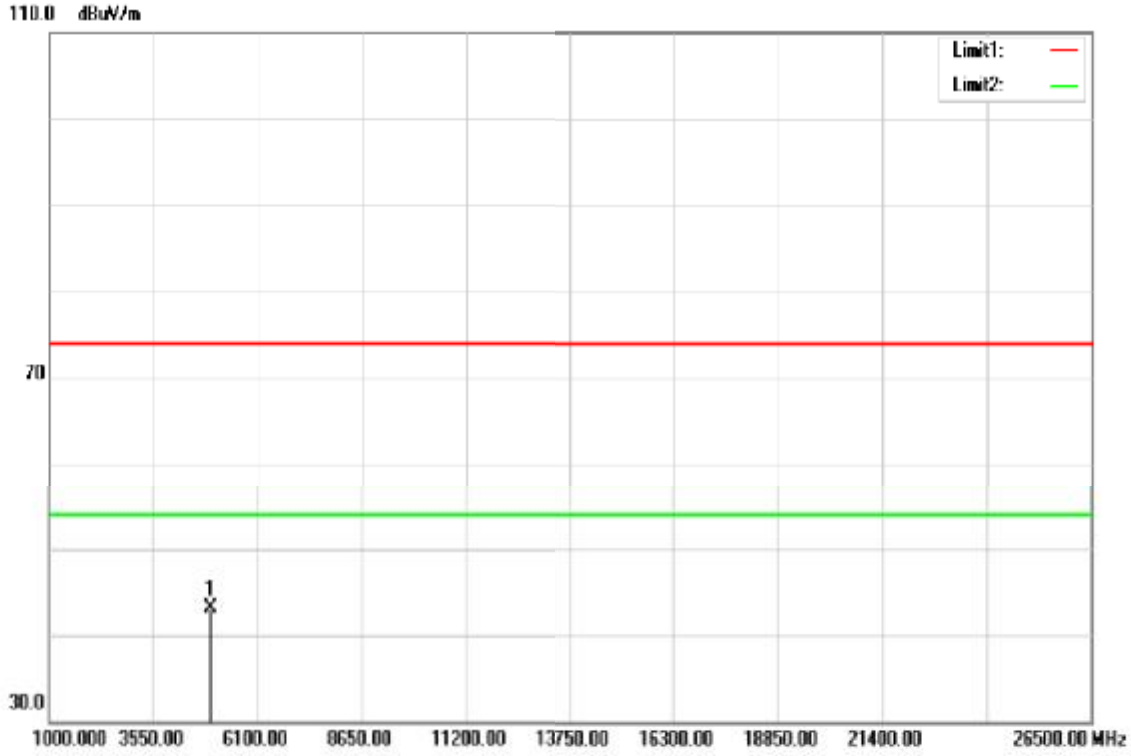


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	48.17	4.61	52.78	74.00	-21.22	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	GFSK_BR-1Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

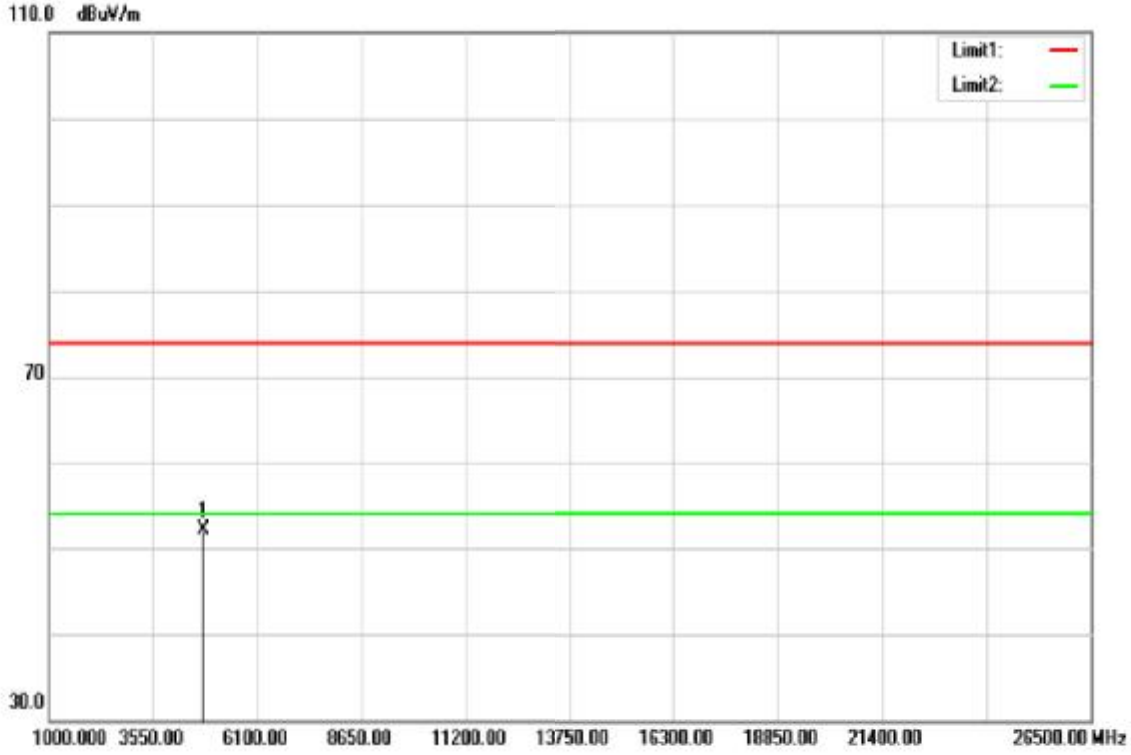


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	38.55	4.61	43.16	74.00	-30.84	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

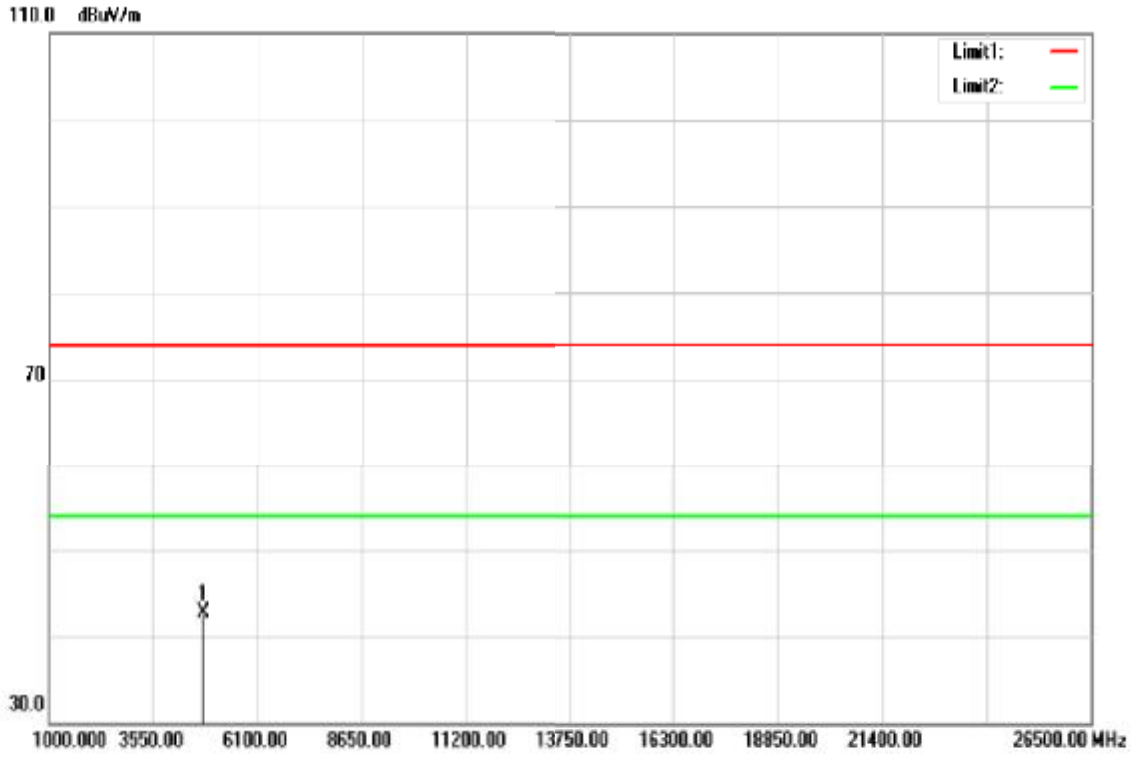


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4806.000	47.69	4.35	52.04	74.00	-21.96	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

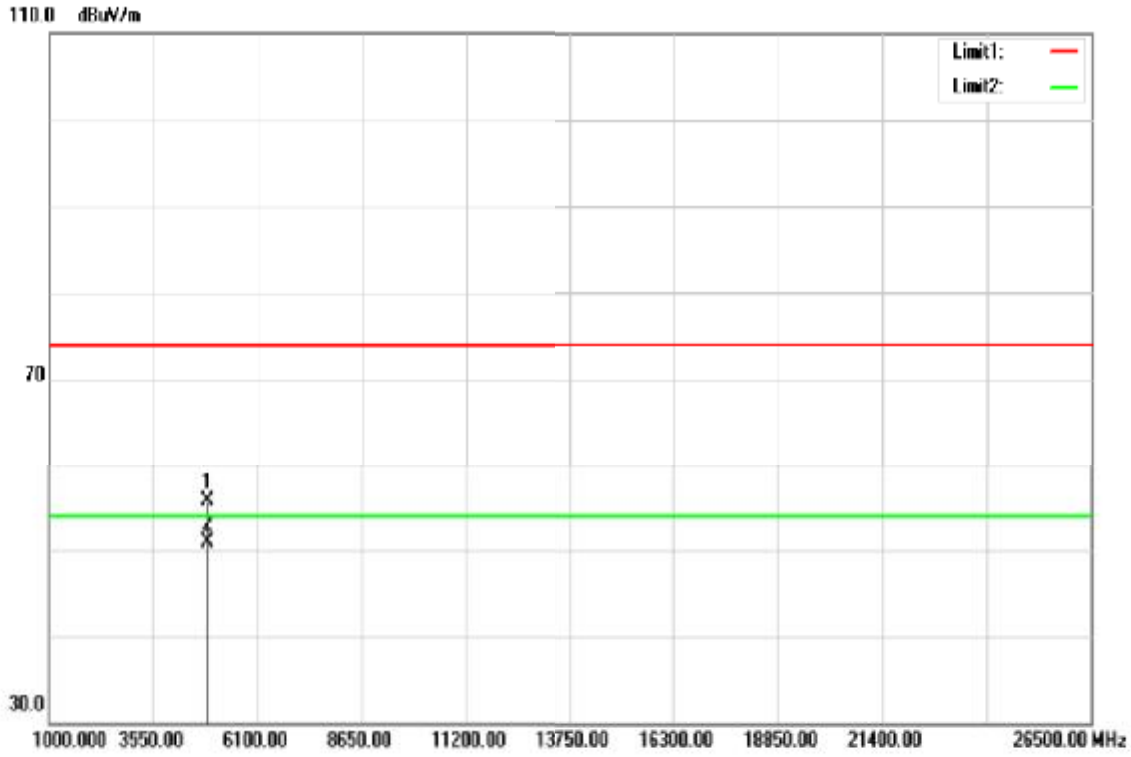


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4804.000	38.33	4.34	42.67	74.00	-31.33	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

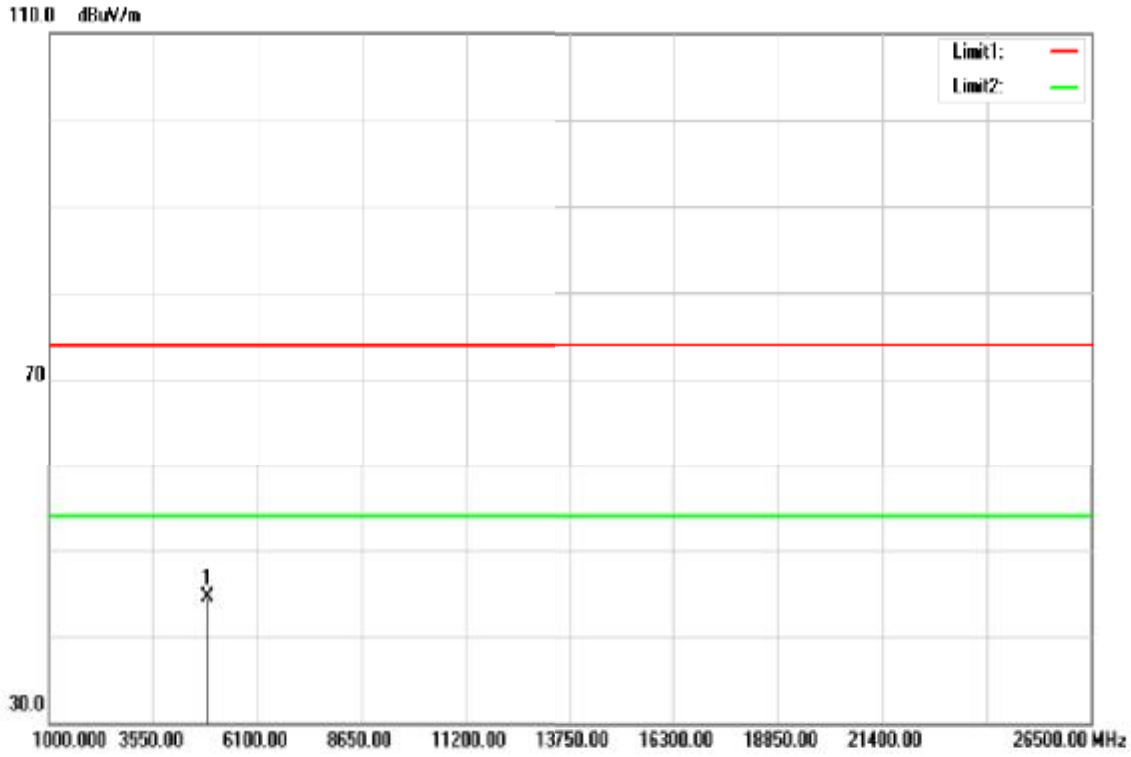


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4883.000	51.20	4.49	55.69	74.00	-18.31	peak
2	4883.000	46.36	4.49	50.85	54.00	-3.15	AVG

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

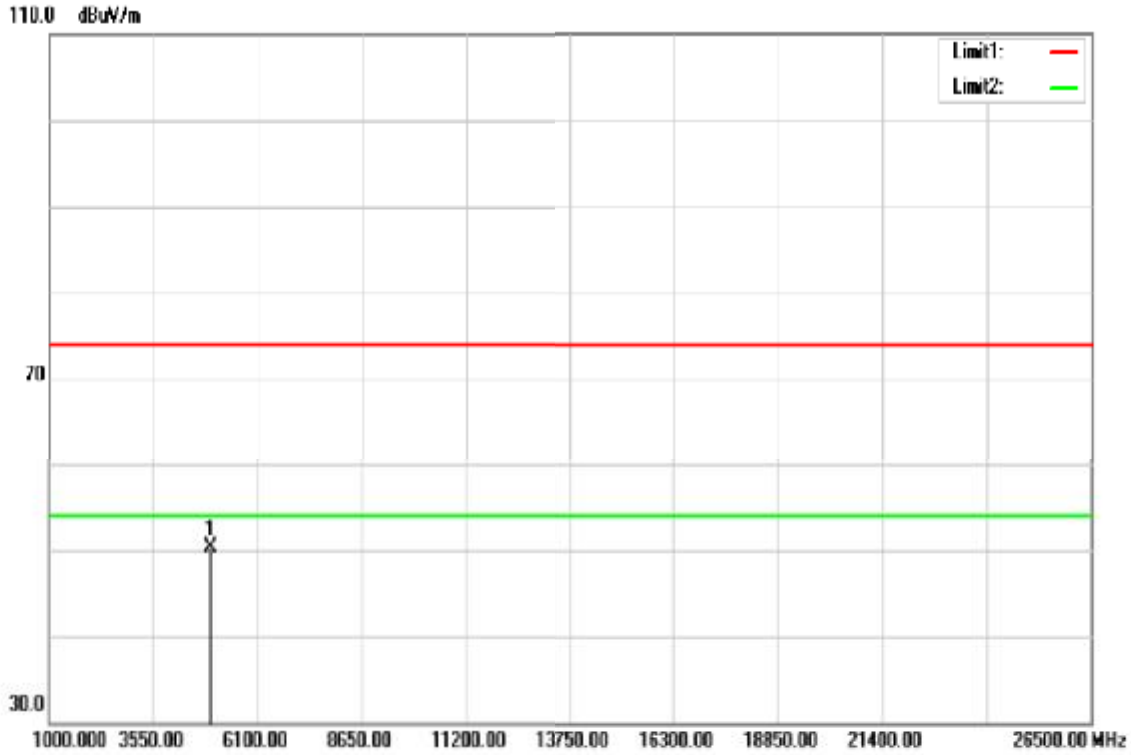


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4883.000	39.96	4.49	44.45	74.00	-29.55	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

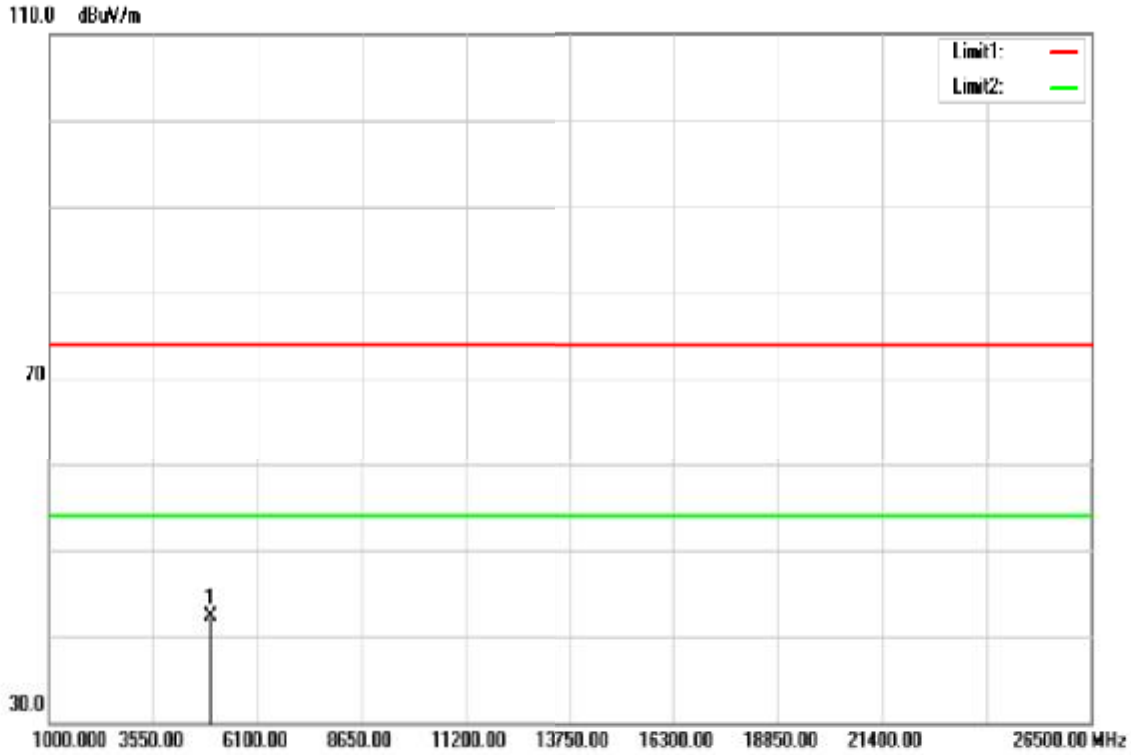


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	45.69	4.61	50.30	74.00	-23.70	peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	8DPSK_EDR-3Mbps High CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	37.75	4.61	42.36	74.00	-31.64	peak

Remark:

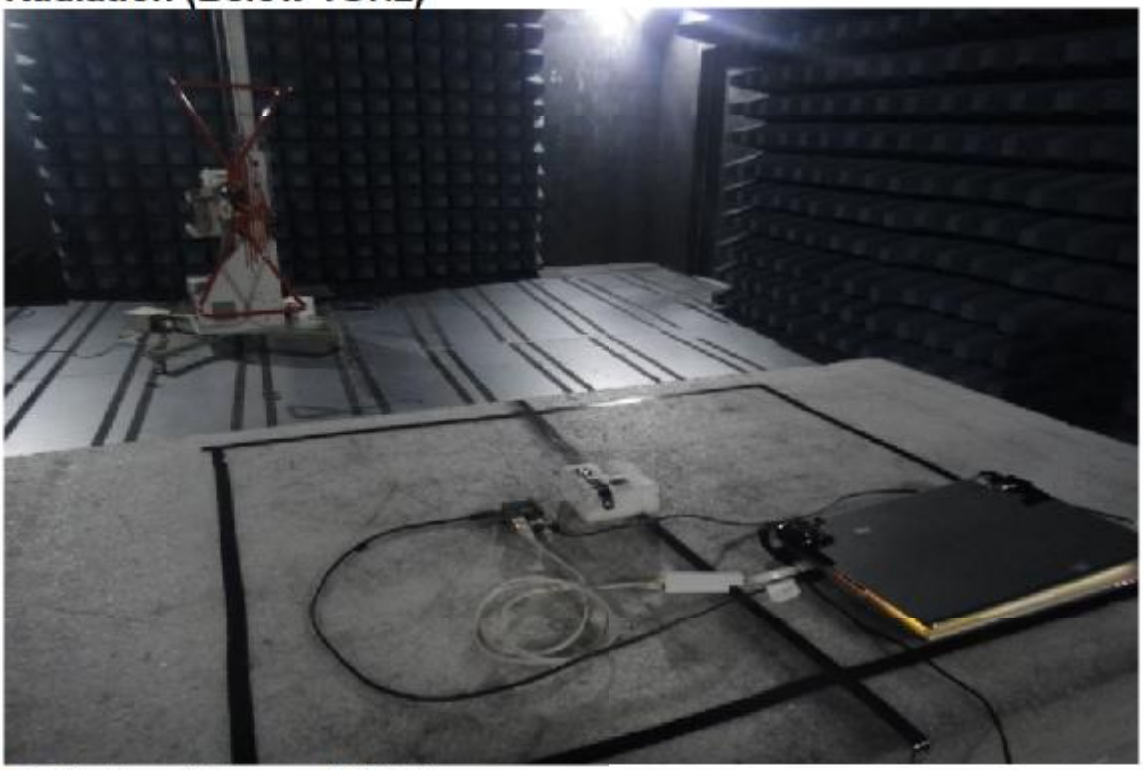
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

--End of Report--

APPENDIX-A Test Photo

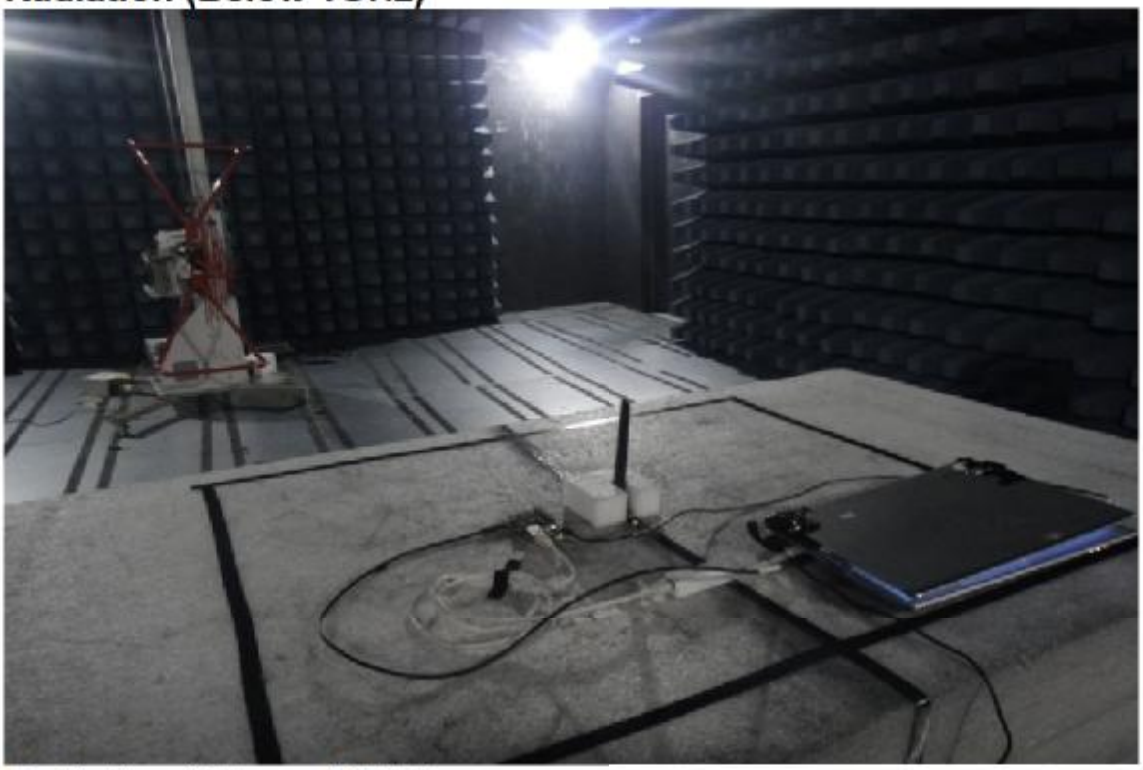
For PIFA Antenna

Radiation (Below 1GHz)



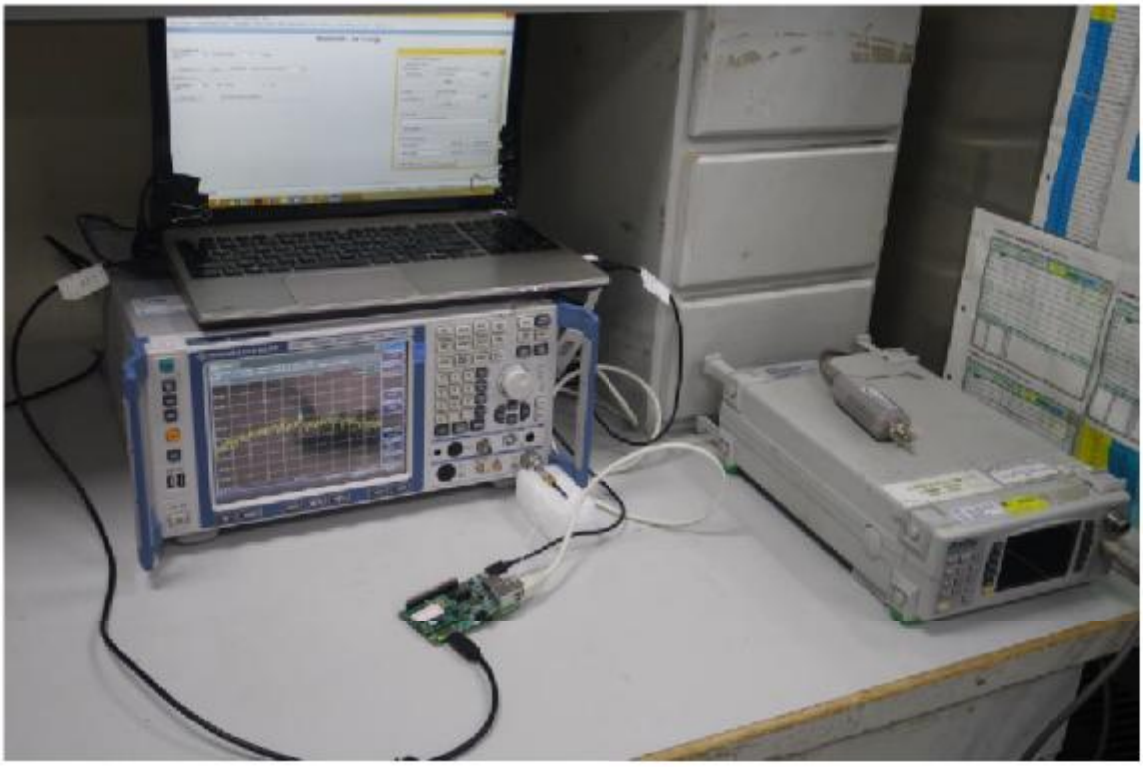
Radiation (Above 1GHz)

For Dipole Antenna
Radiation (Below 1GHz)



Radiation (Above 1GHz)

Conducted Emission Set Up Photo



Conduction

RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Product name	**WiFi+Bluetooth 4.1(HS) System on Module**
Brand Name	**TechNexion**
Model No.	**PIXI-9377**
Test Result	**Pass**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Sam Chuang
Manager

Tested by:

Jerry Chuang
Engineer

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 28, 2018	Initial Issue	ALL	May Lin
01	September 20, 2018	1. Revised antenna information. 2. Update KDB 937606 to KDB 414788.	P.5, P29-30	May Lin
02	September 27, 2018	1. Revised the worst mode of measurement.	P.12	May Lin

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Manufacturer	TechNexion Ltd. 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Equipment	WiFi+Bluetooth 4.1(HS) System on Module
Model No.	PIXI-9377
Model Discrepancy	N/A
Trade Name	TechNexion
Received Date	June 27, 2018
Date of Test	July 16 ~30, 2018
Output Power (W)	BLE: 0.0042
Power Operation	Power by host system
H/W Version	A1
F/W Version	A1

1.2 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	GFSK for BLE-1Mbps
Number of channel	40 Channels

Remark:
Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ PIFA ☐ PCB ☒ Dipole ☐ Coils
Antenna Gain	

	Brand	P/N	Type	Peak Gain	Worst Mode
Antenna 1	TechNexion	VM2450-25523-OOX-180	PIFA	2.5dBi	X
Antenna 2	TechNexion	VM2450-ASSY1005	Dipole	4dBi	O

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

Remark:

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

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Jerry Chuang	-
RF Conducted	Jerry Chuang	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	06/29/2018	06/28/2019
Power Meter	Anritsu	ML2495A	1012009	09/18/2017	09/17/2018
Power Seneor	Anritsu	MA2411B	1126148	02/06/2018	02/05/2019
Signal Analyzer	R&S	FSV 40	101073	10/02/2017	10/01/2018

3M 966 Chamber Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Band Reject Filters	MICRO TRONICS	BRM 50702	120	05/14/2018	05/13/2019
Bilog Antenna	Sunol Sciences	JB3	A030105	07/13/2018	07/12/2019
Cable	HUBER SUHNER	SUCOFLEX 104PEA	25157	07/31/2017	07/30/2018
Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	07/31/2017	07/30/2018
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	02/08/2018	02/07/2019
Double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	08/25/2017	08/24/2018
Loop Ant	COM-POWER	AL-130	121051	03/21/2018	03/20/2019
Pre-Amplifier	EMEC	EM330	060609	06/29/2018	06/28/2019
Pre-Amplifier	HP	8449B	3008A00965	06/29/2018	06/28/2019
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/31/2018	05/30/2019
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R

AC Conducted Emissions Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
LISN	R&S	ENV216	101054	02/06/2018	02/05/2019
LISN	SCHWARZBECK	NSLK 8127	8127-541	02/09/2018	02/08/2019
EMI Test Receiver	R&S	ESCI	101203	11/02/2017	11/01/2018
CABLE	EMCI	CFD300-NL	CERF	07/03/2018	07/02/2019

Remark: *Each piece of equipment is scheduled for calibration once a year.*

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
	N/A				

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1	NB(K)	Toshiba	voyager	ZD 154034s	N/A
2	NB	Lenovo	TP00056A	R33B65	PD97260HU

1.8 Test methodology and applied standards

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074 D01

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2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d)	4.6	Radiation Band Edge	Pass
15.247(d)	4.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	BT4.1 Mode (1Mbps)
Test Channel Frequencies	1.Lowest Channel : 2402MHz 2.Middle Channel : 2440MHz 3.Highest Channel : 2480MHz

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

For PIFA Antenna

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☒ Horizontal ☐ Vertical

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane and Horizontal) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

For Dipole Antenna

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)
Worst Polarity	☐ Horizontal ☒ Vertical

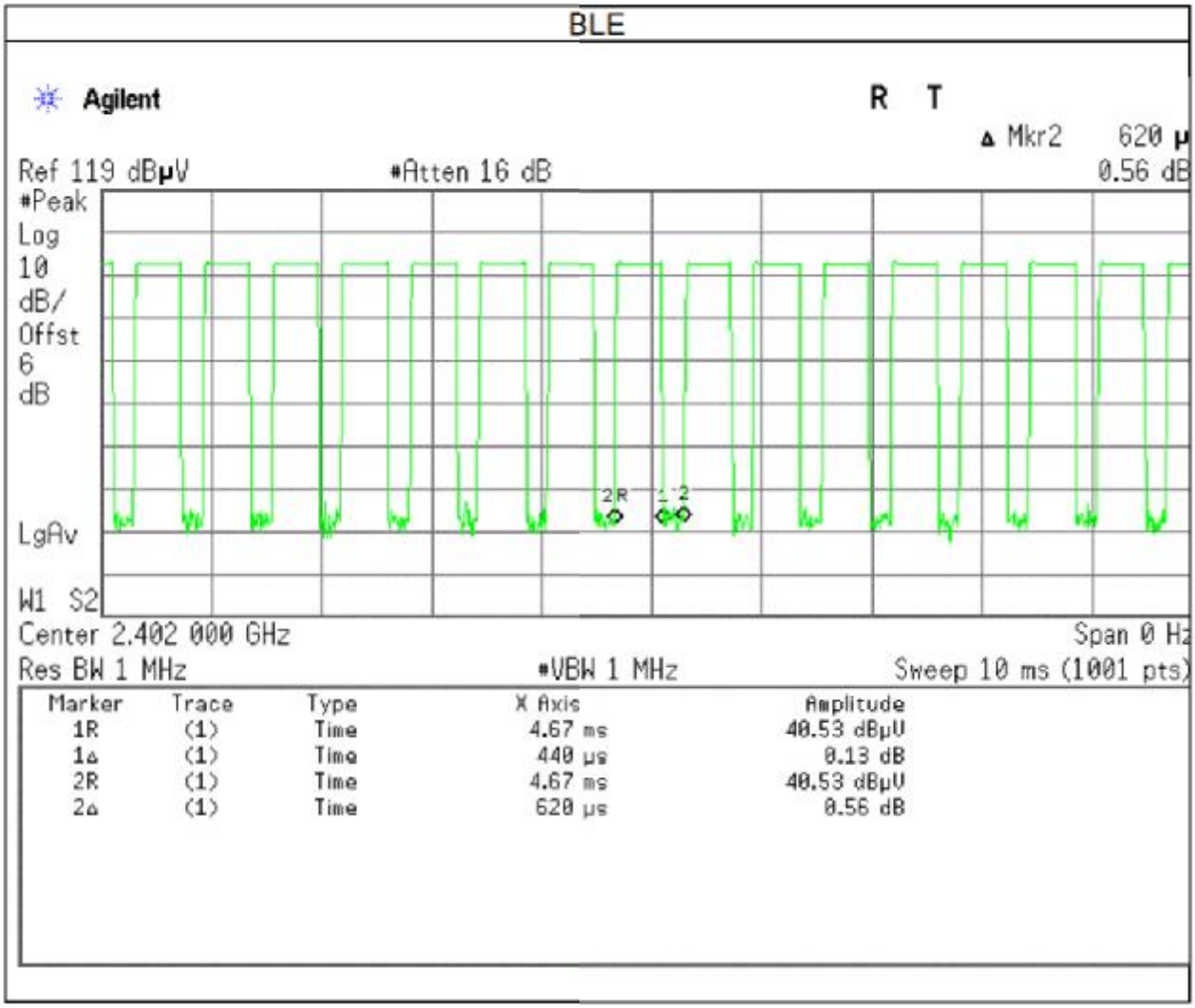
Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis, X, Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane and Vertical) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

3.3 EUT DUTY CYCLE

Duty Cycle				
Configuration	TX ON (ms)	TX ALL (ms)	Duty Cycle (%)	Duty Factor(dB)
BLE	0.4400	0.6200	70.97%	-1.49

BLE



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

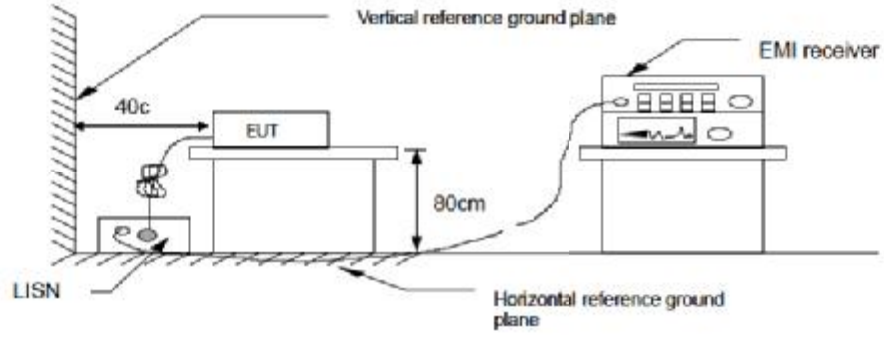
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup

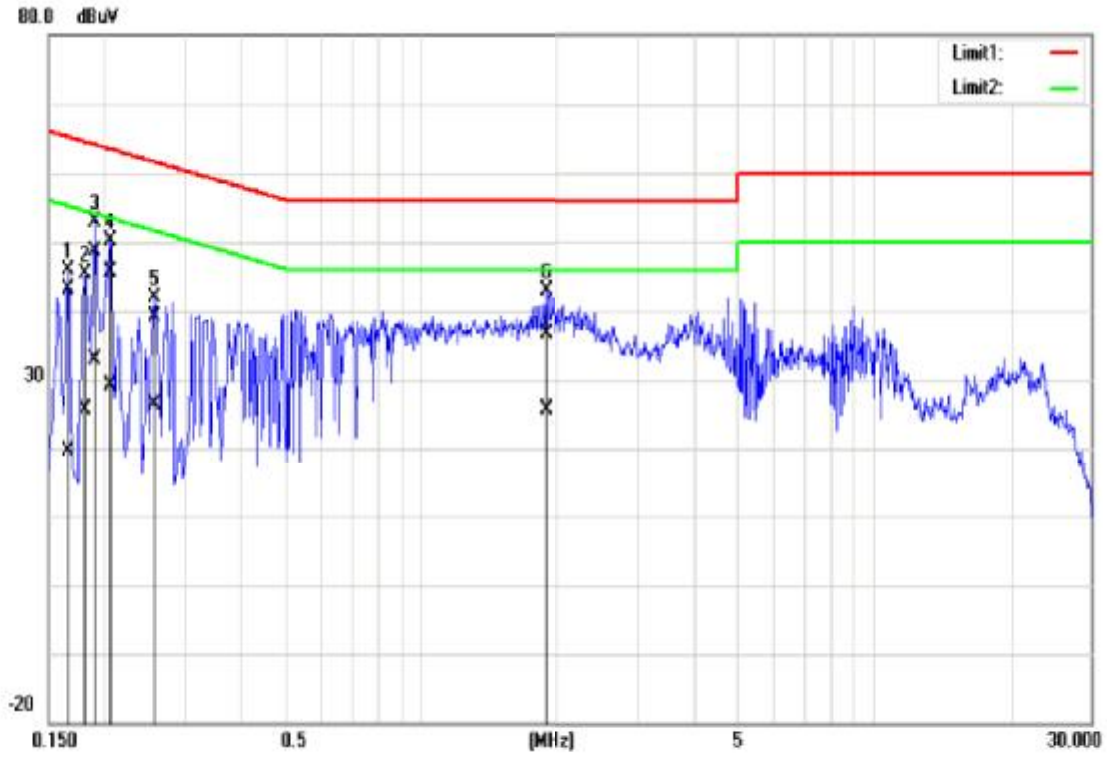


4.1.4 Test Result

Pass

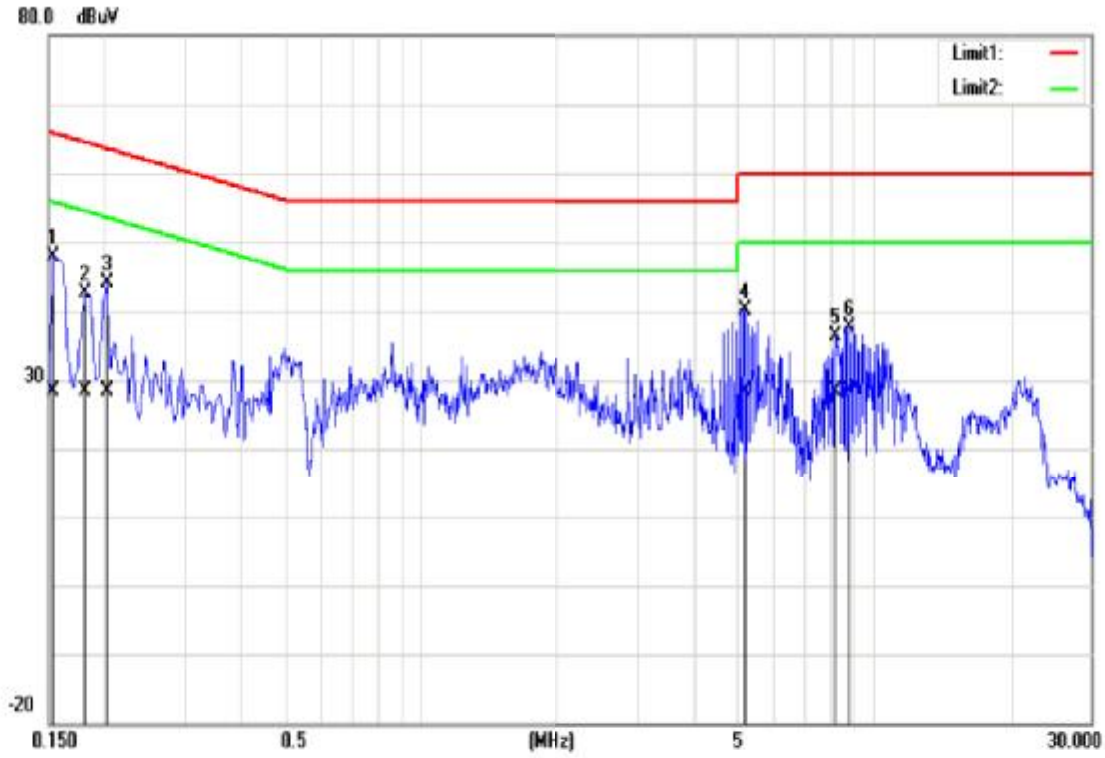
Test Data

Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Line	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1660	43.06	19.41	0.11	43.17	19.52	65.16	55.16	-21.99	-35.64	Pass
0.1820	45.33	25.48	0.11	45.44	25.59	64.39	54.39	-18.95	-28.80	Pass
0.1900	48.46	32.72	0.11	48.57	32.83	64.04	54.04	-15.47	-21.21	Pass
0.2060	45.57	28.98	0.11	45.68	29.09	63.37	53.37	-17.69	-24.28	Pass
0.2580	39.04	26.23	0.11	39.15	26.34	61.50	51.50	-22.35	-25.16	Pass
1.8940	36.51	25.54	0.15	36.66	25.69	56.00	46.00	-19.34	-20.31	Pass

Test Mode:	Mode 1	Temp/Hum	24(°C)/ 50%RH
Phase:	Neutral	Test Date	July 19, 2018
Test Voltage:	120Vac	Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBu)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
1.8940	31.03	22.97	0.16	31.19	23.13	56.00	46.00	-24.81	-22.87	Pass
0.1825	40.91	28.44	0.13	41.04	28.57	64.37	54.37	-23.33	-25.80	Pass
0.2007	40.02	26.02	0.13	40.15	26.15	63.58	53.58	-23.43	-27.43	Pass
5.1660	39.14	35.87	0.22	39.36	36.09	60.00	50.00	-20.64	-13.91	Pass
8.2300	34.97	30.49	0.27	35.24	30.76	60.00	50.00	-24.76	-19.24	Pass
8.7020	35.42	26.13	0.28	35.70	26.41	60.00	50.00	-24.30	-23.59	Pass

4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

According to §15.247(a)(2), RSS-247 section 5.2(a)

6 dB Bandwidth :

Limit	Shall be at least 500kHz

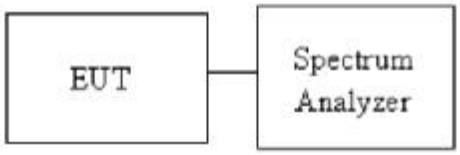
Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01, section 8.1 and ANSI 63.10:2013 clause 6.9.2 & 6.9.3.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup

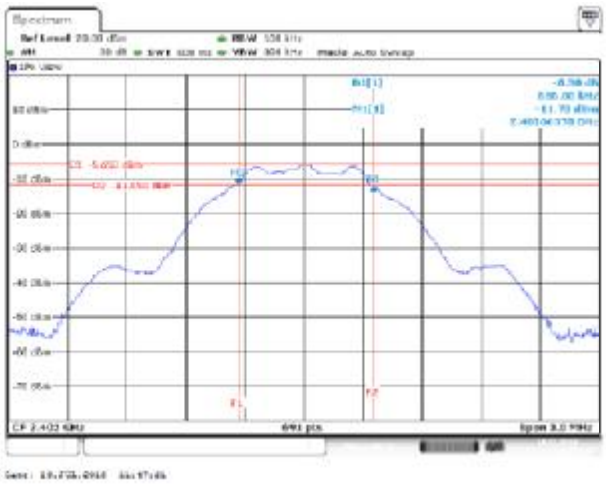
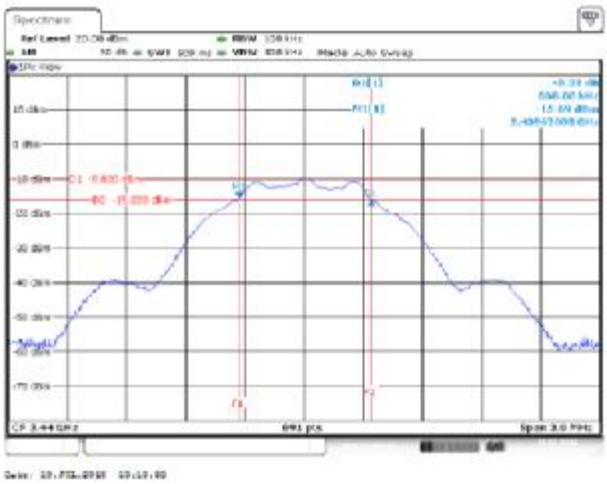
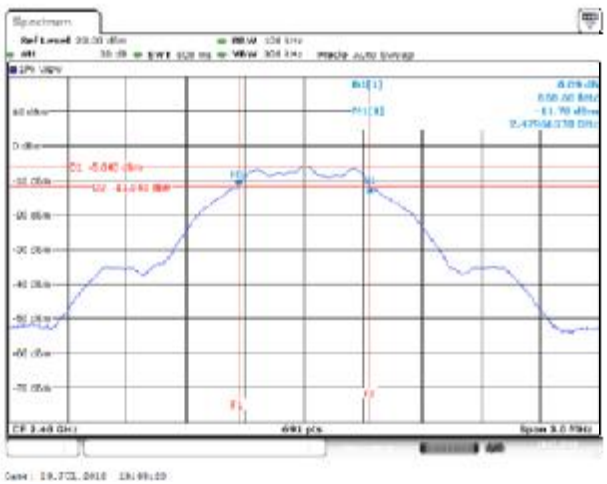


4.2.4 Test Result

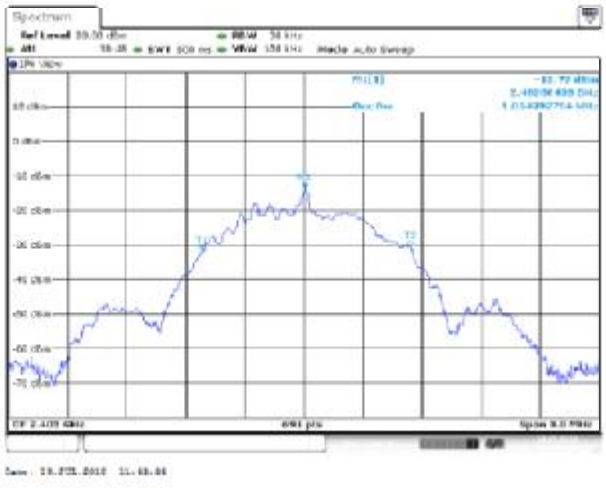
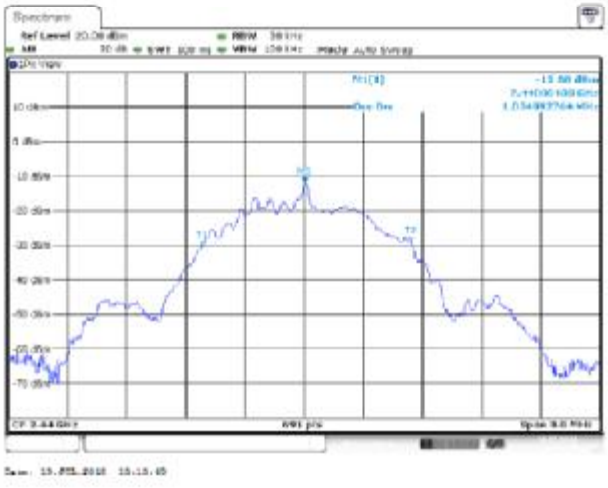
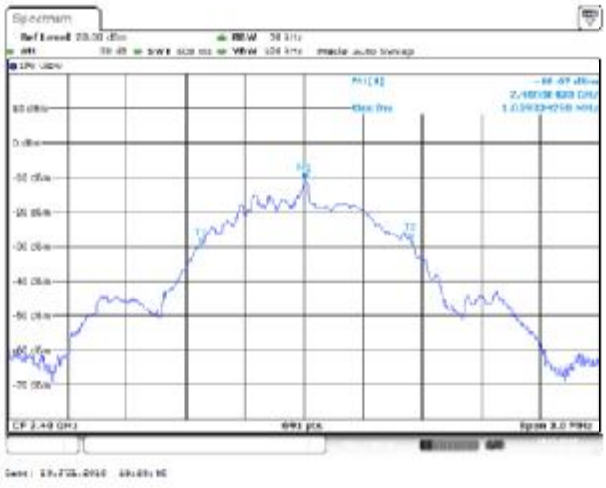
Test mode: BLE mode / 2402-2480 MHz				
Channel	Frequency (MHz)	OBW(99%) (MHz)	6dB BW (MHz)	6dB limit (kHz)
Low	2402	1.0549	0.6860	>500
Mid	2440	1.0549	0.6686	
High	2480	1.0593	0.6686	

Test Data

6dB BANDWIDTH

BLE mode	
Low CH	Mid CH
	
High CH	
	

BANDWIDTH(99%)

BLE mode	
Low CH	Mid CH
	
High CH	
	

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)

Peak output power :

FCC

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi [Limit = 30 – (DG – 6)] ☐ Point-to-point operation

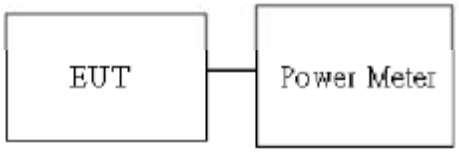
Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01, section 9.1.2.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup



4.3.4 Test Result

Peak output power :

BLE Mode					
Config.	CH	Freq. (MHz)	PK Power (dBm)	PK Power (W)	FCC Limit (dBm)
BLE Data rate: 1Mbps	0	2402	4.97	0.0031	30
	19	2440	5.79	0.0038	
	39	2480	6.26	0.0042	

Average output power :

BLE Mode			
Config.	CH	Freq. (MHz)	AV Power (dBm)
BLE Data rate: 1Mbps	0	2402	4.82
	19	2440	5.65
	39	2480	5.99

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e)

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.

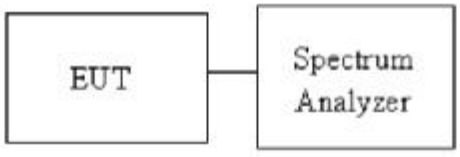
Limit	☒ Antenna not exceed 6 dBi : 8dBm ☐ Antenna with DG greater than 6 dBi [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 10.2

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

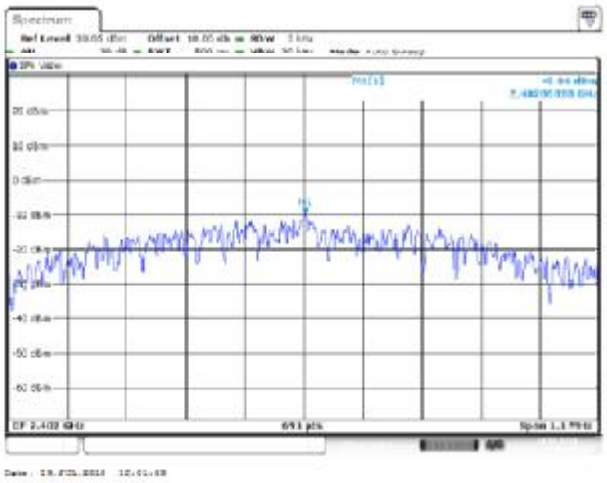
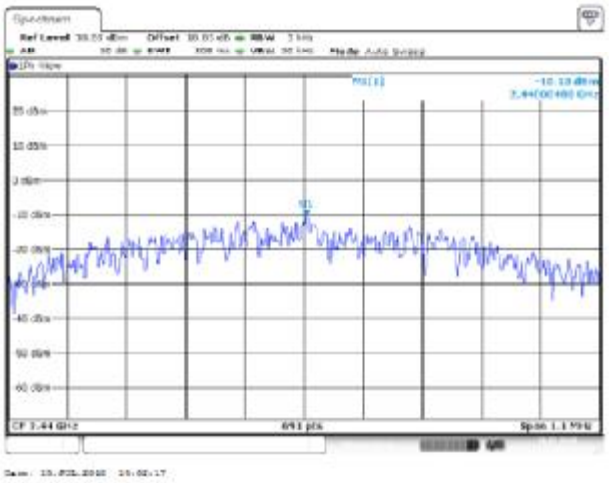
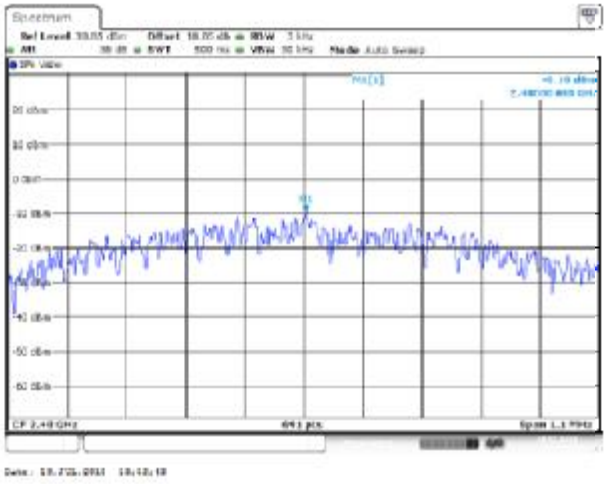
4.4.3 Test Setup



4.4.4 Test Result

Test mode: BLE mode / 2402-2480 MHz			
Channel	**Frequency (MHz)**	**PSD (dBm)**	**IC/FCC limit (dBm)**
Low	2402	-9.84	8
Mid	2440	-10.13	
High	2480	-9.19	

Test Data

BLE mode	
Low CH	Mid CH
	
High CH	
	

4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d)

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

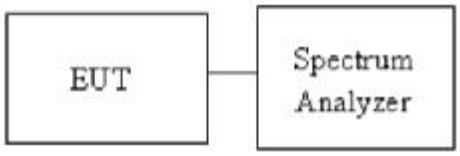
Test method Refer as KDB 558074 D01, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

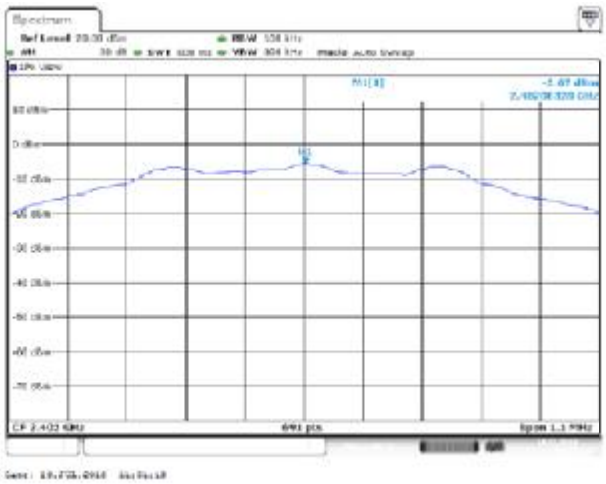
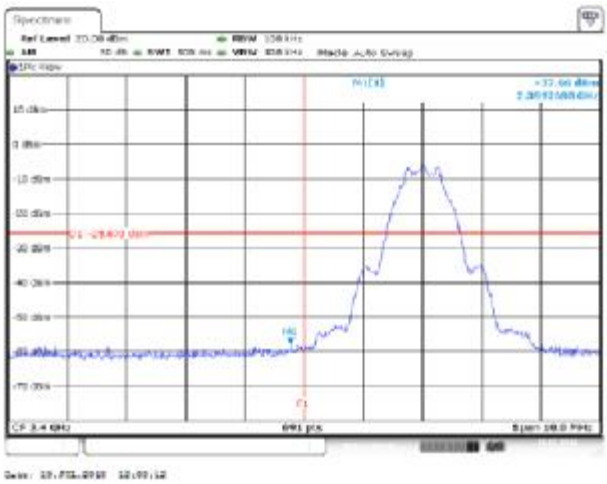
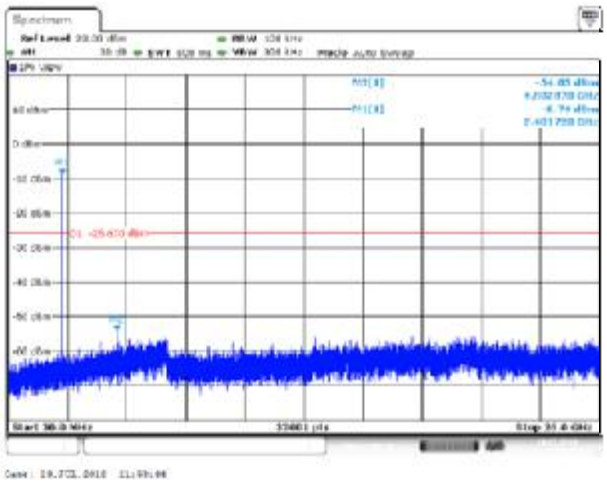
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

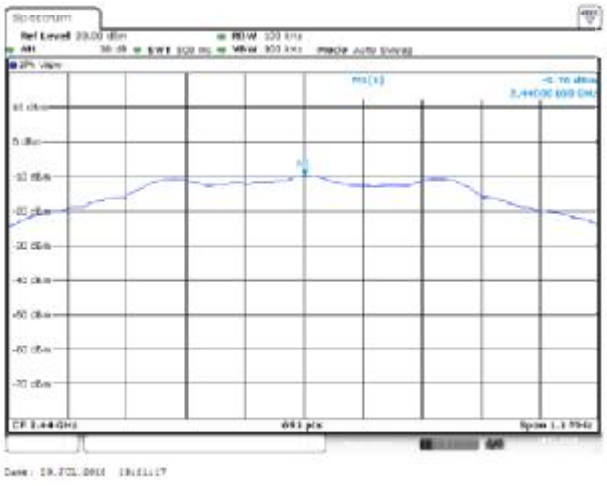
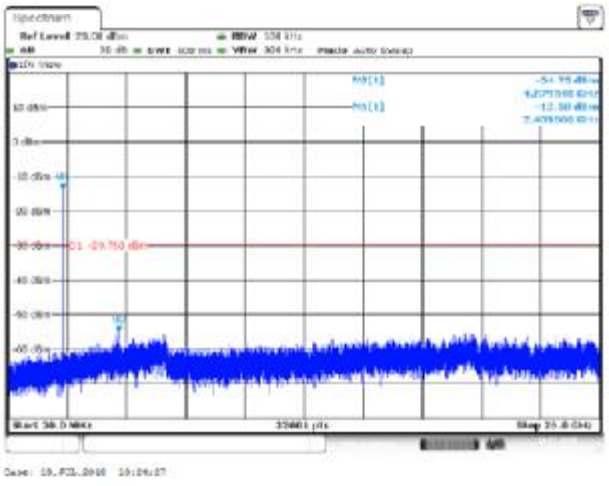
4.5.3 Test Setup



4.5.4 Test Result

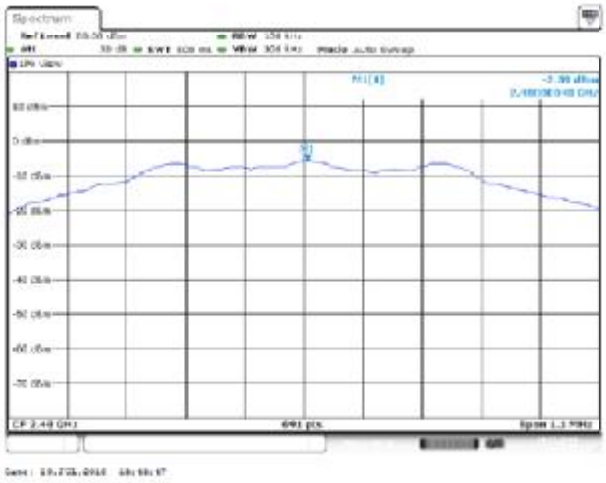
Test Data

BLE mode Low CH	
Reference Level of PSD in 100kHz	**Band Edge**
	
Spurious Emission 30MHz-25GHz	
	

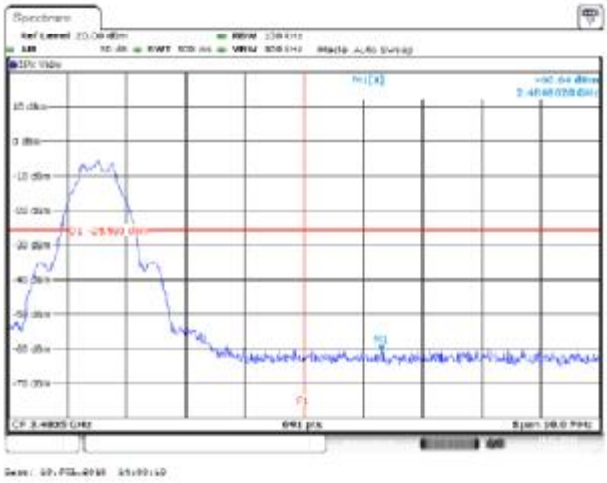
BLE mode Mid CH	
Reference Level of PSD in 100kHz	Spurious Emission 30MHz-25GHz
	

BLE mode High CH

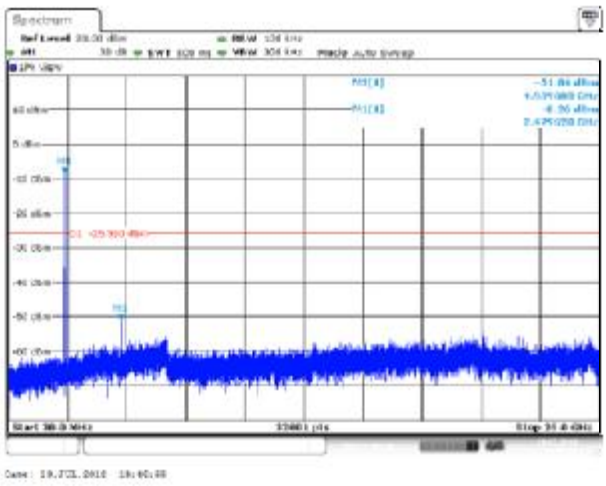
Reference Level of PSD in 100kHz



Band Edge



Spurious Emission 30MHz-25GHz



4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Remark:
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

4.6.2 Test Procedure

Test method Refer as KDB 558074 D01, Section 12.1.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9KHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

1. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

4. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

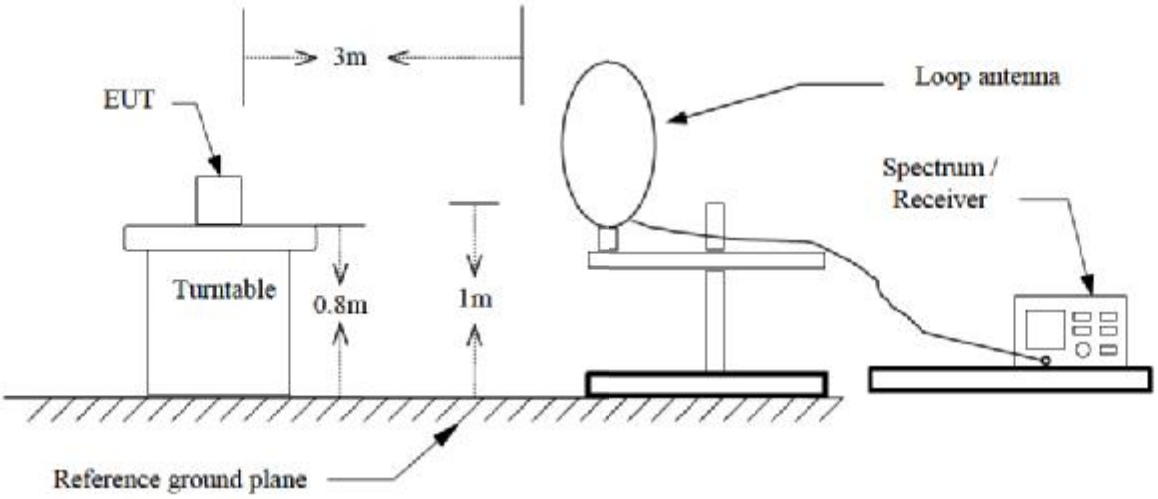
(2.2) For Average measurement：RBW = 1MHz, VBW

- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW=1/T.

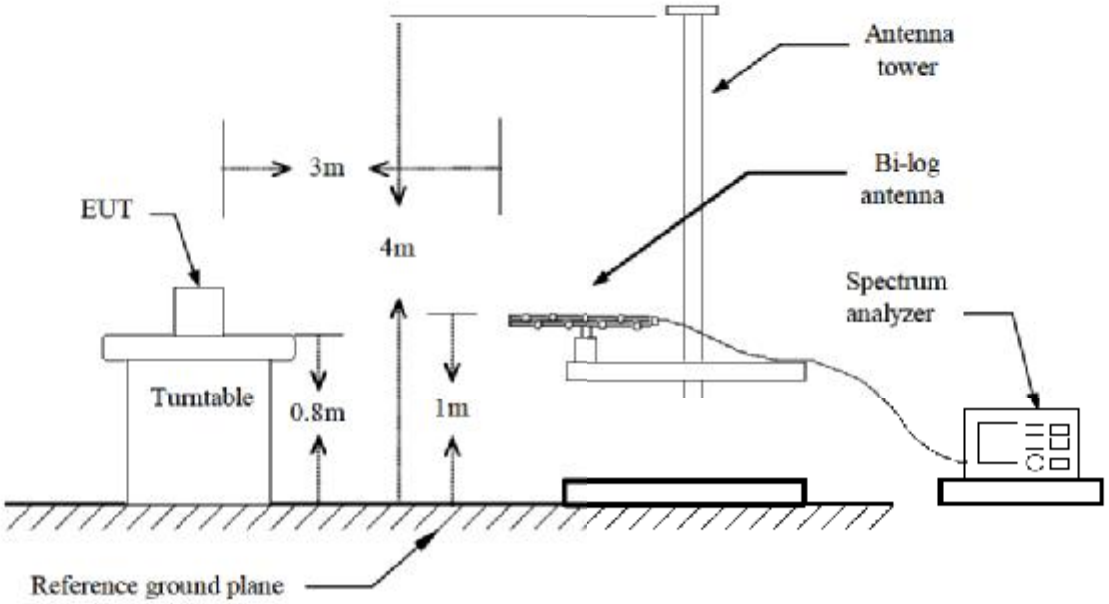
Configuration	Duty Cycle (%)	T(ms)	1/T (kHz)	VBW Setting
BLE	70.97%	0.4400	2.273	2.4K

4.6.3 Test Setup

9kHz ~ 30MHz

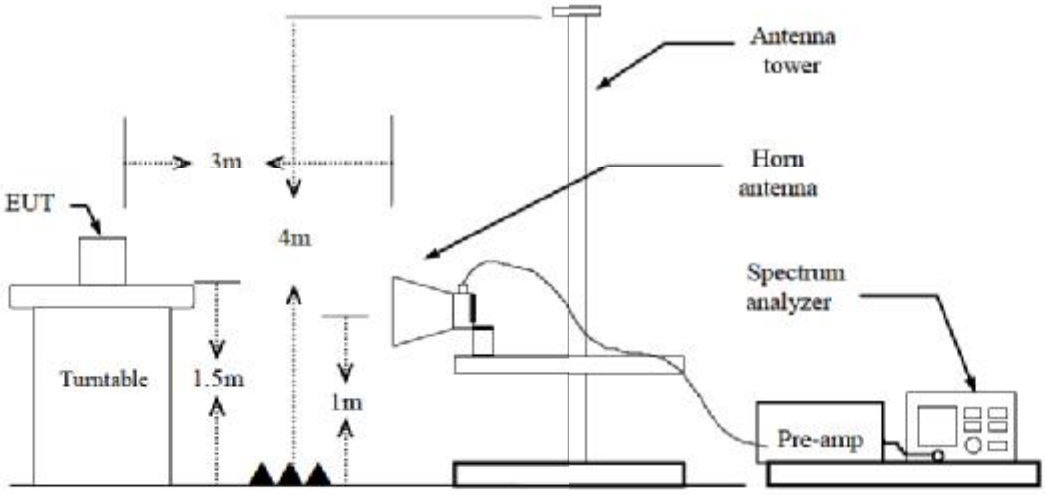


30MHz ~ 1GHz



Report No.: T180627D11-RP2

Above 1 GHz

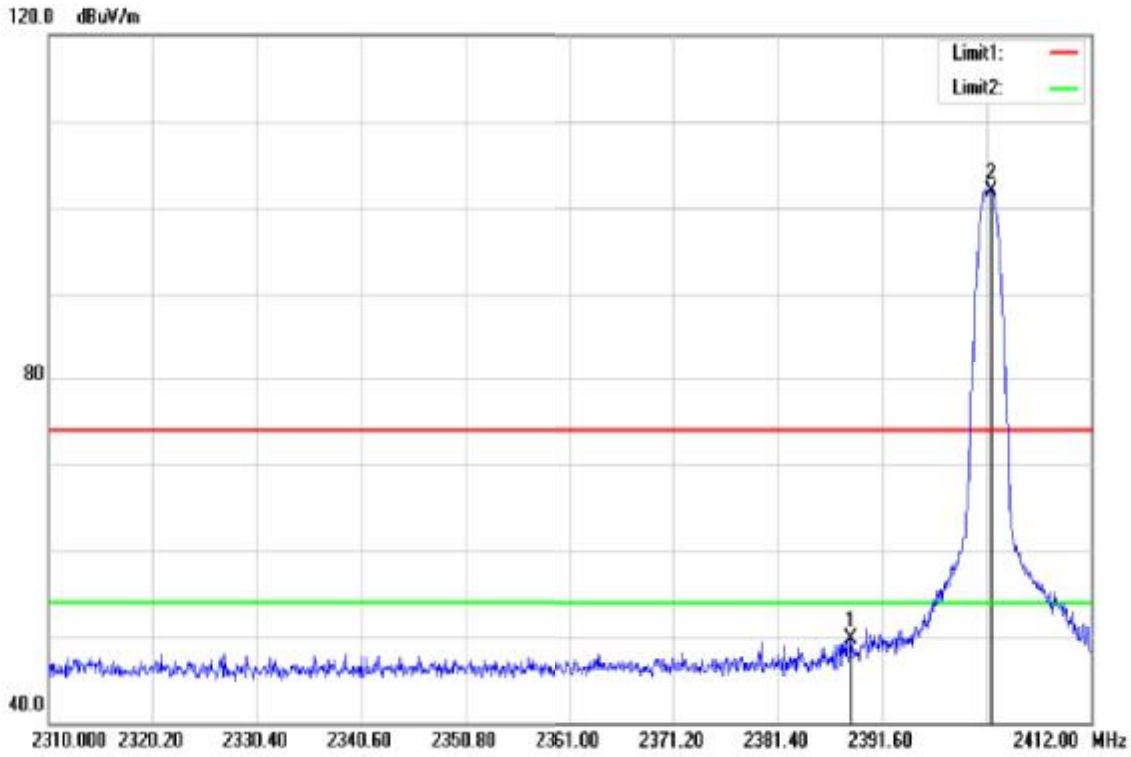


4.6.4 Test Result

Band Edge Test Data

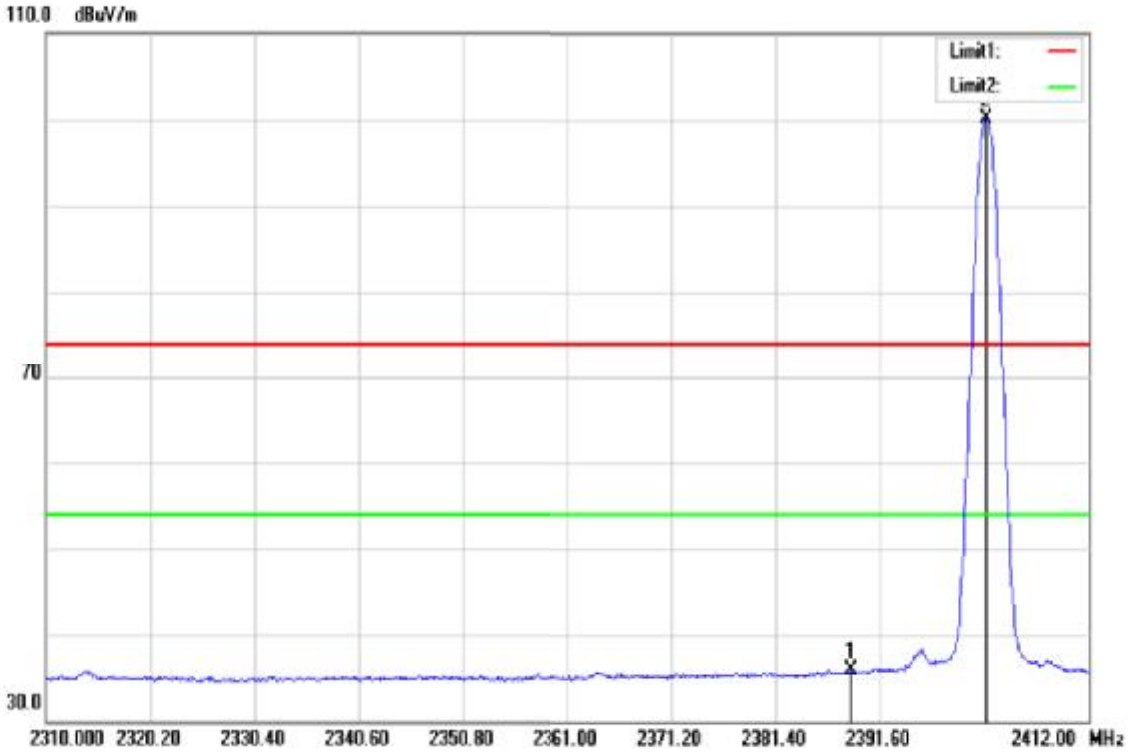
For PIFA Antenna

Test Mode:	BLE Low CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



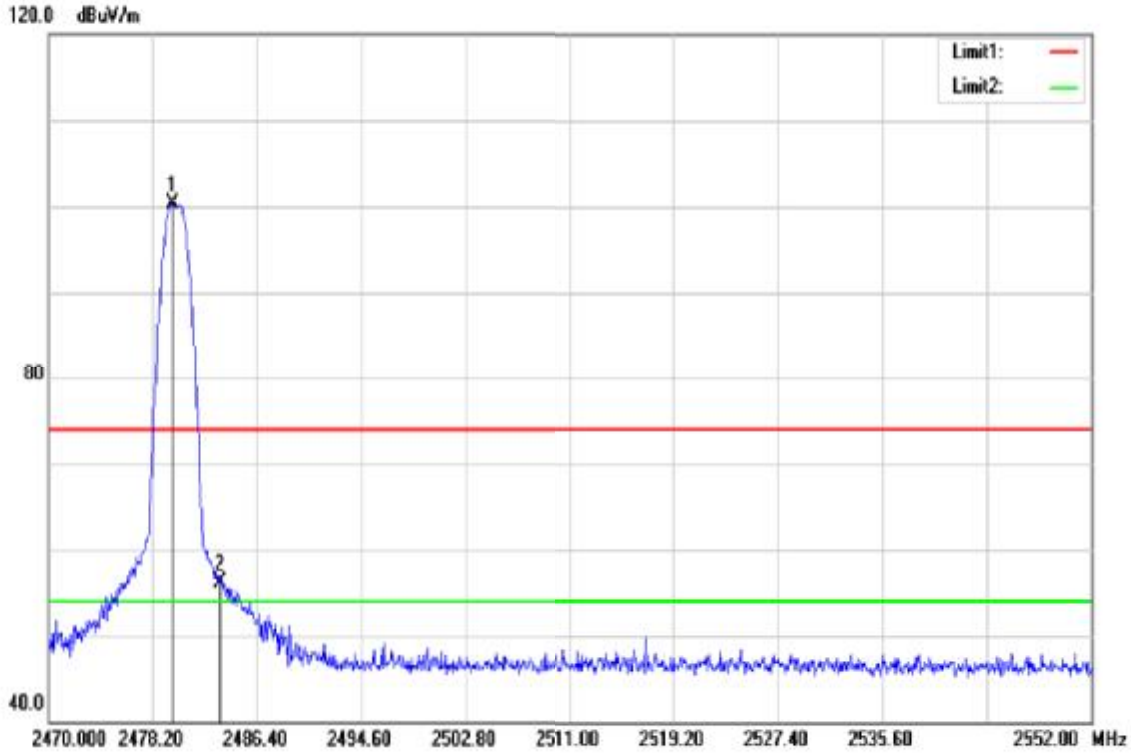
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.540	52.78	-2.98	49.80	74.00	-24.20	peak
2	2402.208	104.95	-2.95	102.00	-	-	peak

Test Mode:	BLE Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



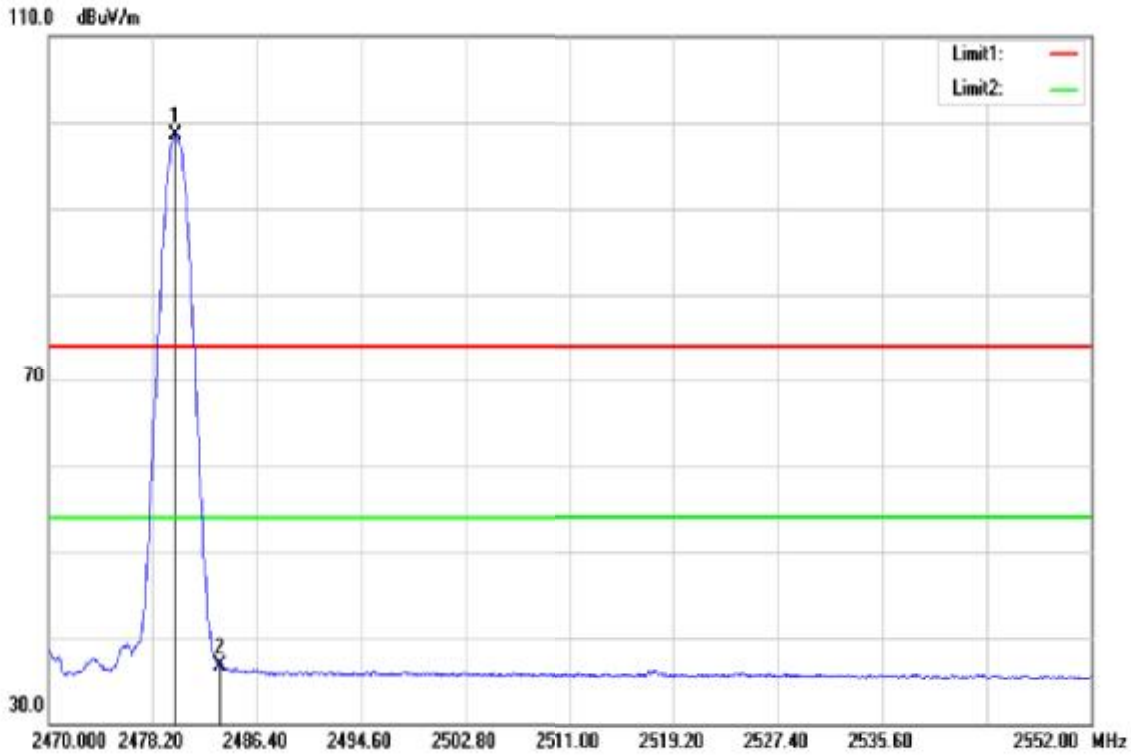
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.744	38.80	-2.98	35.82	54.00	-18.18	AVG
2	2402.004	103.14	-2.95	100.19	-	-	AVG

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2479.758	102.92	-2.70	100.22	-	-	peak
2	2483.500	58.78	-2.69	56.09	74.00	-17.91	peak

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

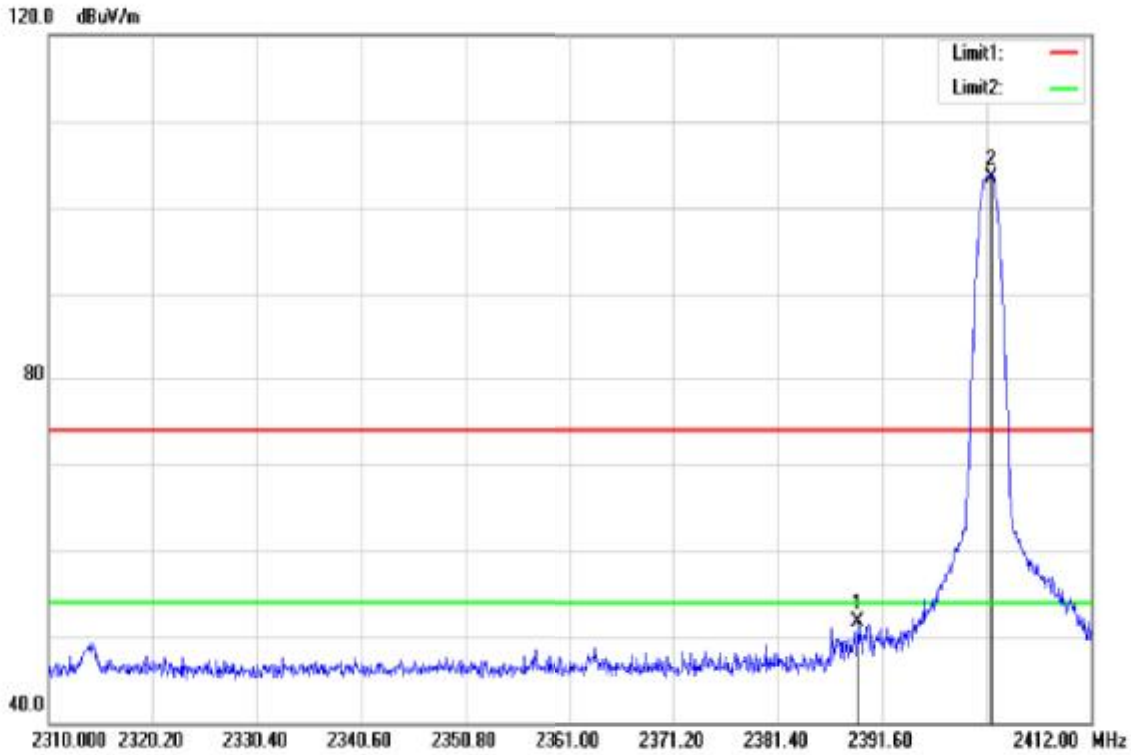


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.004	101.16	-2.70	98.46	-	-	AVG
2	2483.500	39.39	-2.69	36.70	54.00	-17.30	AVG

Band Edge Test Data

For Dipole Antenna

Test Mode:	BLE Low CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		

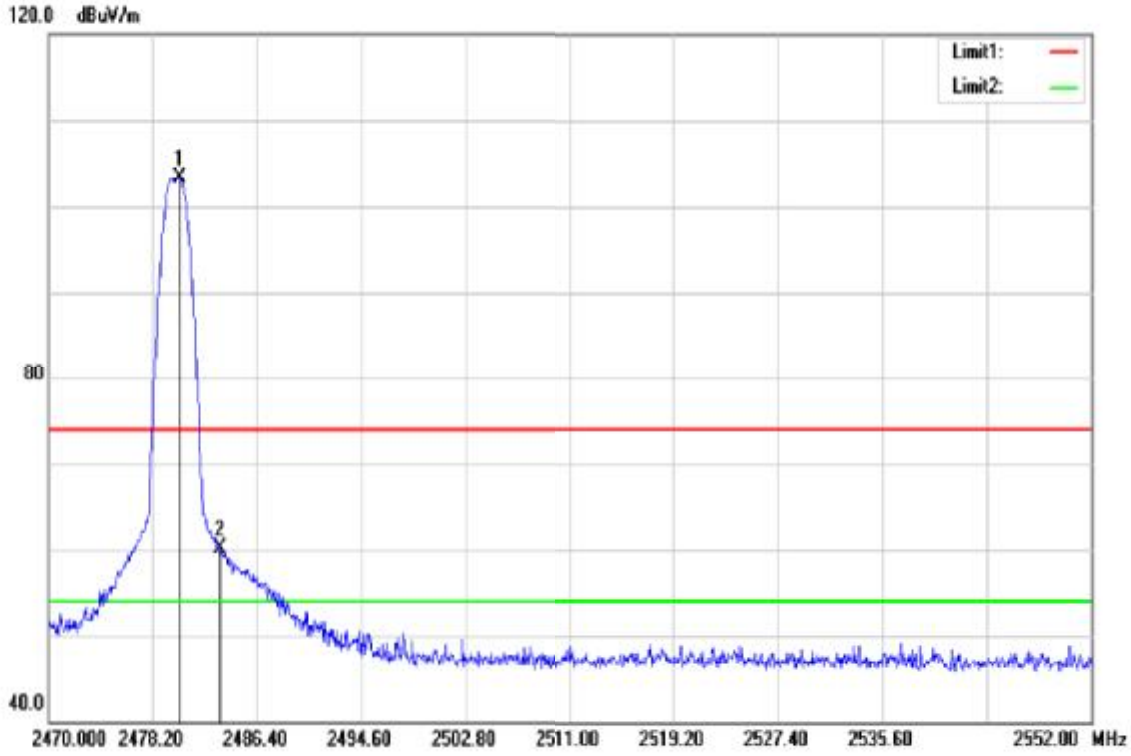


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.254	54.68	-2.98	51.70	74.00	-22.30	peak
2	2402.208	106.55	-2.95	103.60	-	-	peak

Test Mode:	BLE Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		

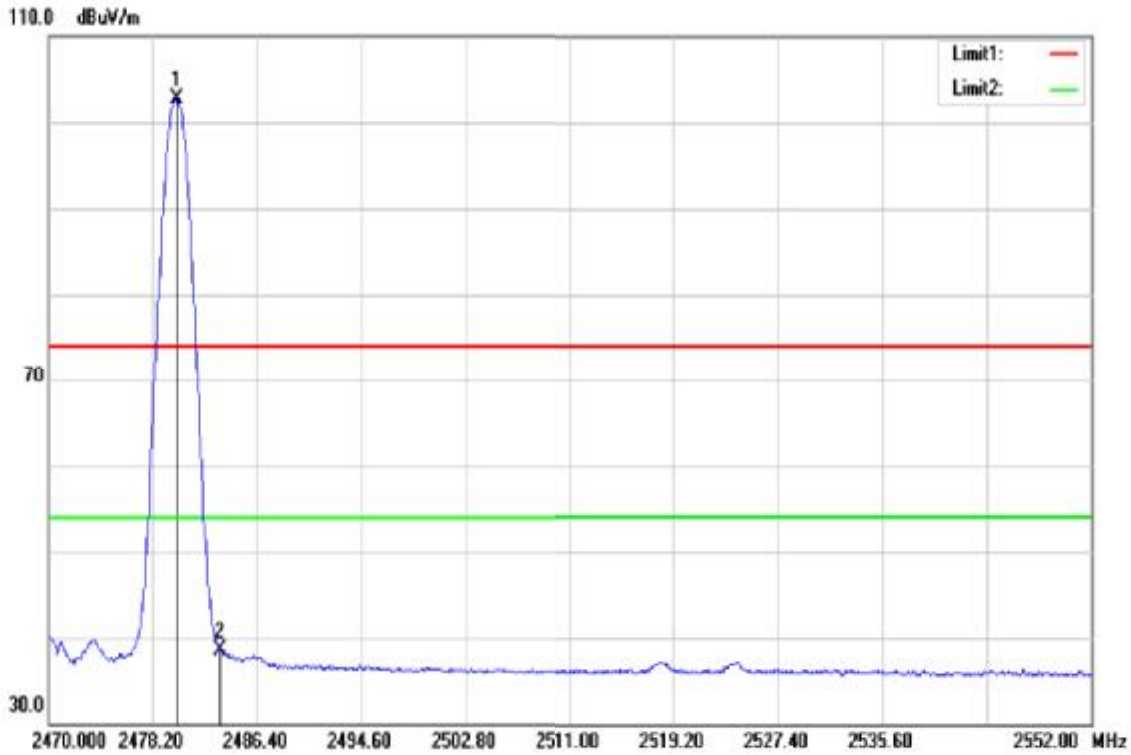
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2313.978	43.25	-3.22	40.03	54.00	-13.97	AVG
2	2402.004	105.85	-2.95	102.90	-	-	AVG

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.332	106.06	-2.70	103.36	-	-	peak
2	2483.500	62.81	-2.69	60.12	74.00	-13.88	peak

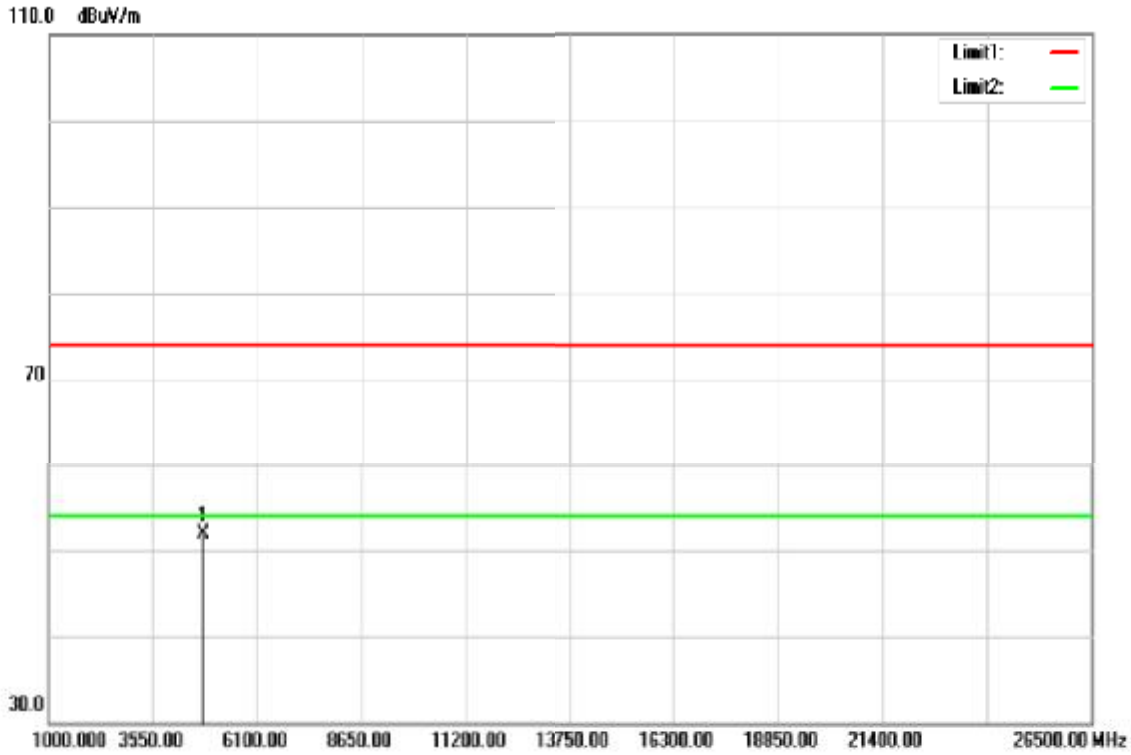
Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Band Edge	Test Date	July 16, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Average		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.086	105.33	-2.70	102.63	-	-	peak
2	2483.500	41.18	-2.69	38.49	54.00	-15.51	peak

Above 1G Test Data
For PIFA Antenna

Test Mode:	BLE Low CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

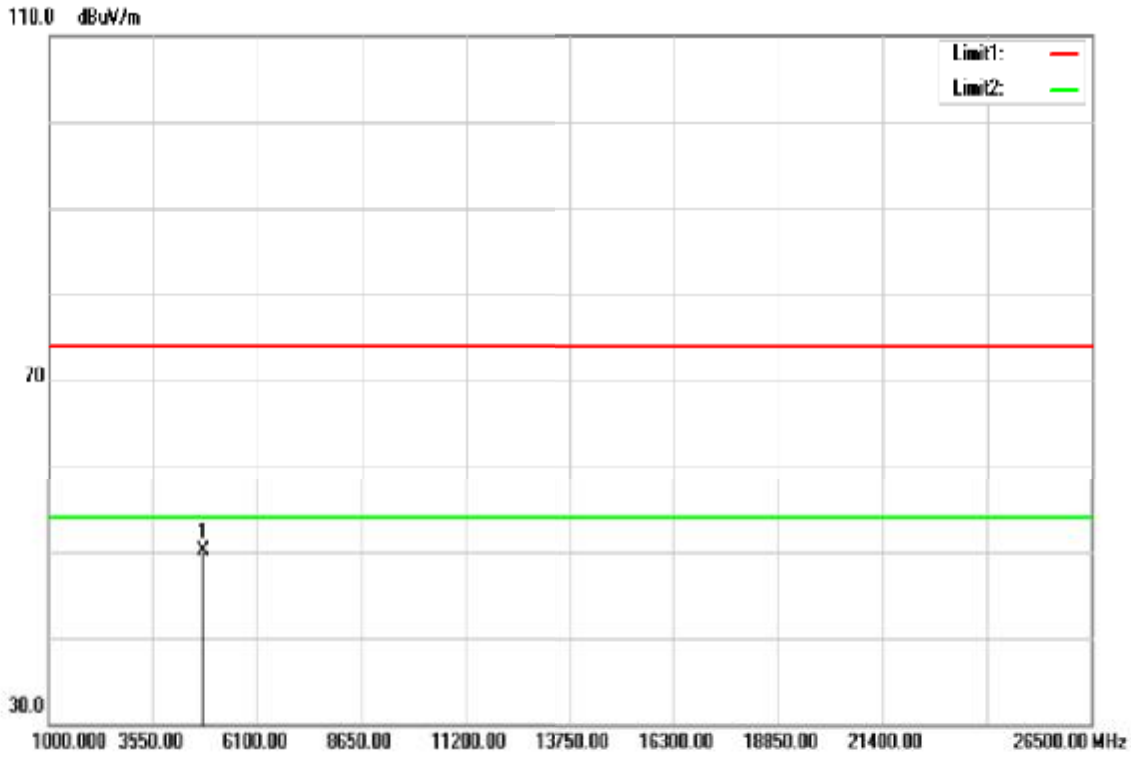


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4806.000	47.51	4.35	51.86	74.00	-22.14	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

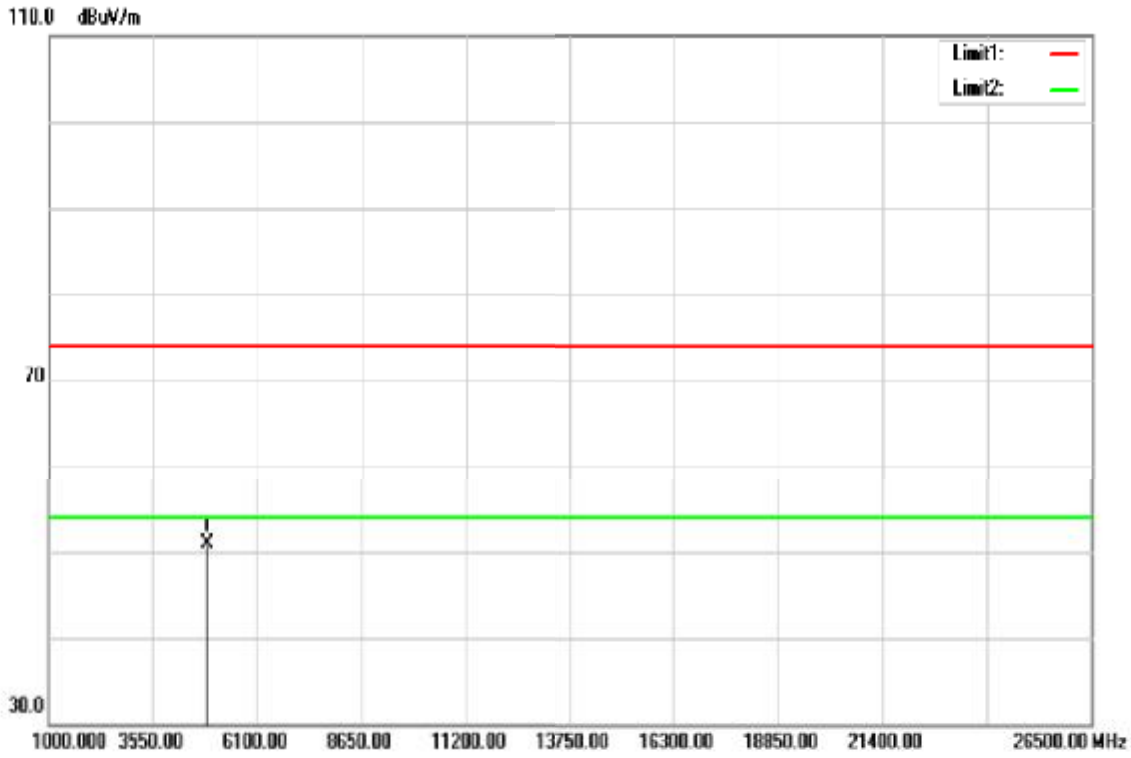


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4806.000	45.77	4.35	50.12	74.00	-23.88	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

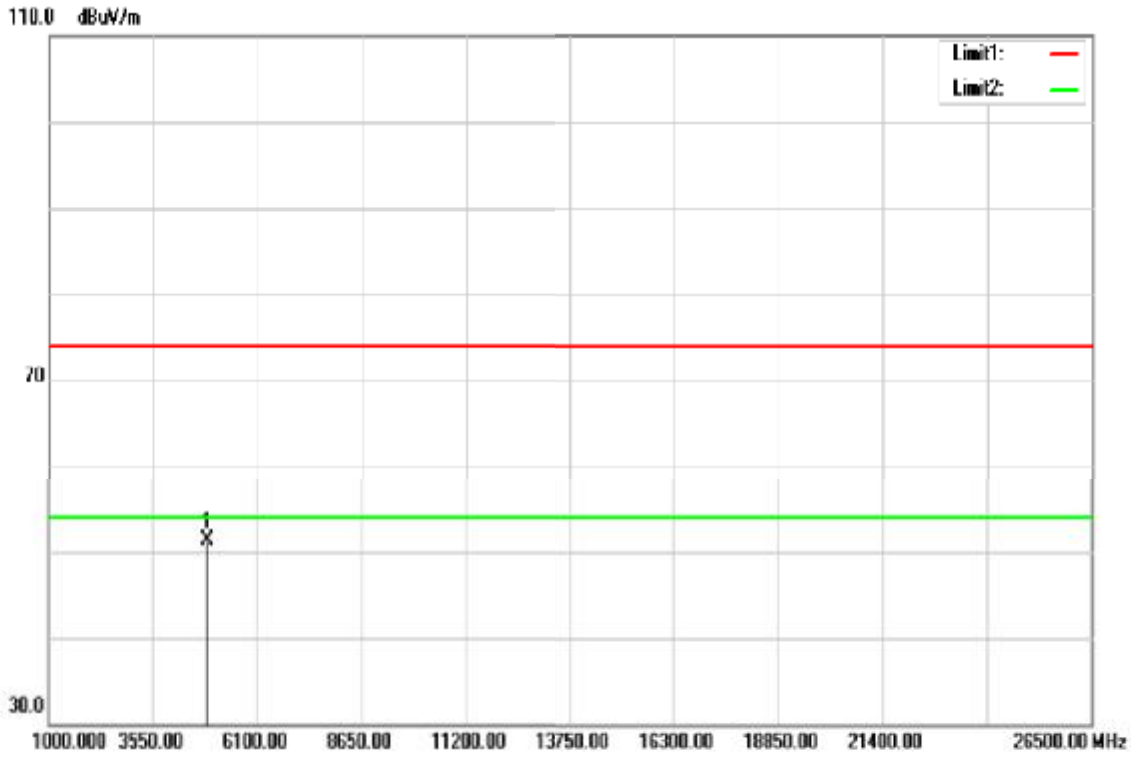


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	46.45	4.49	50.94	74.00	-23.06	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Mid CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

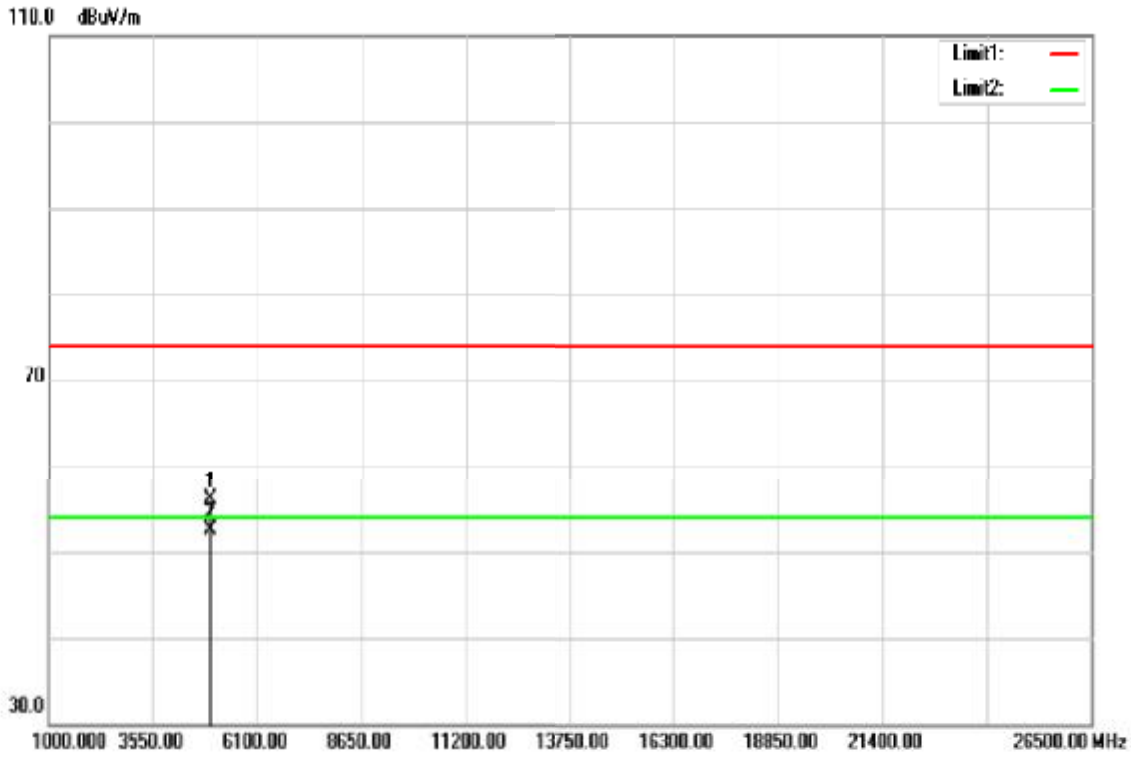


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	46.86	4.49	51.35	74.00	-22.65	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

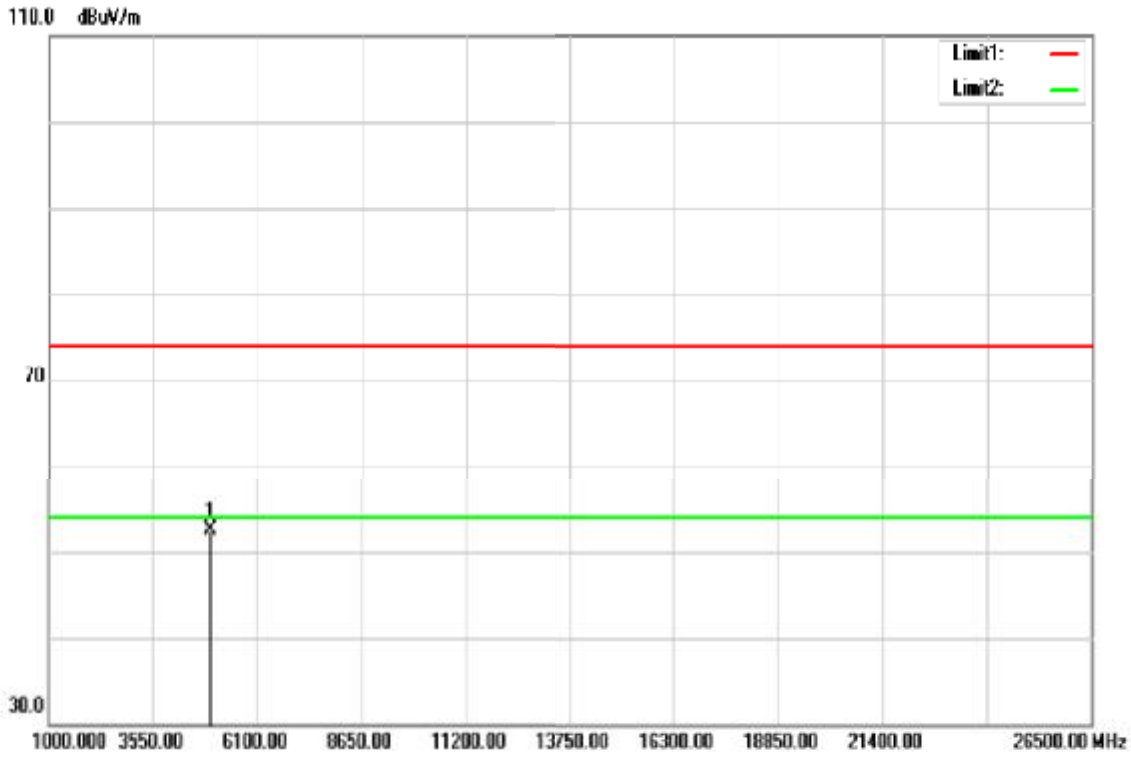


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4960.000	51.48	4.61	56.09	74.00	-17.91	peak
4960.000	47.80	4.61	52.41	54.00	-1.59	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



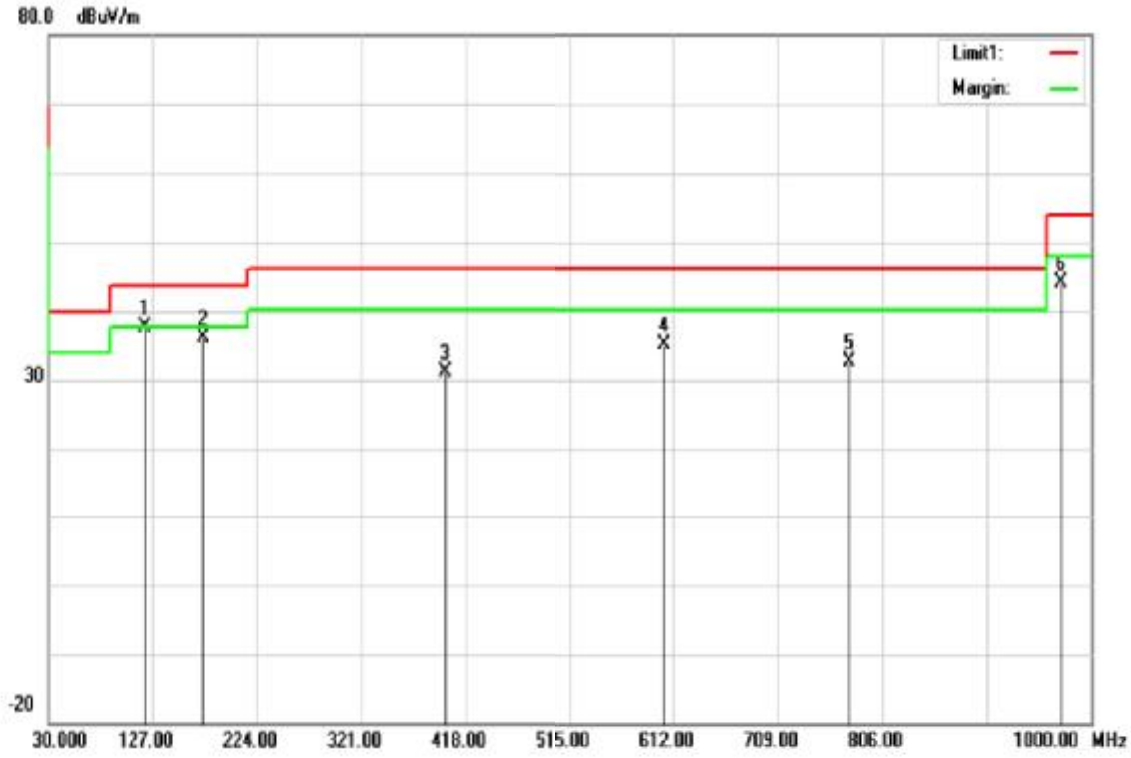
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4960.000	47.93	4.61	52.54	74.00	-21.46	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

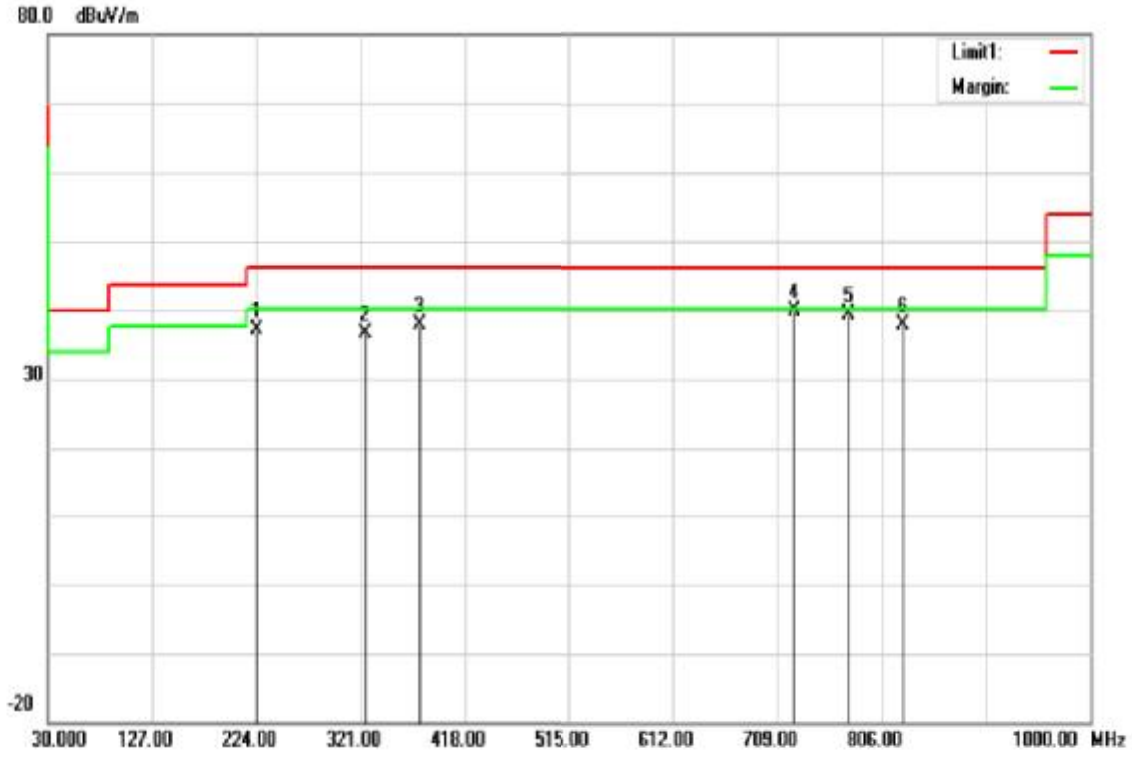
Below 1G Test Data

Test Mode:	BT Mode	Temp/Hum	22(°C)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
119.2400	46.66	-9.05	37.61	43.52	-5.91	peak
174.5300	46.82	-10.78	36.04	43.52	-7.48	peak
399.5700	36.35	-5.30	31.05	46.02	-14.97	peak
603.2700	36.11	-1.03	35.08	46.02	-10.94	peak
774.9600	30.54	2.21	32.75	46.02	-13.27	peak
971.8700	38.67	5.50	44.17	54.00	-9.83	peak

Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		

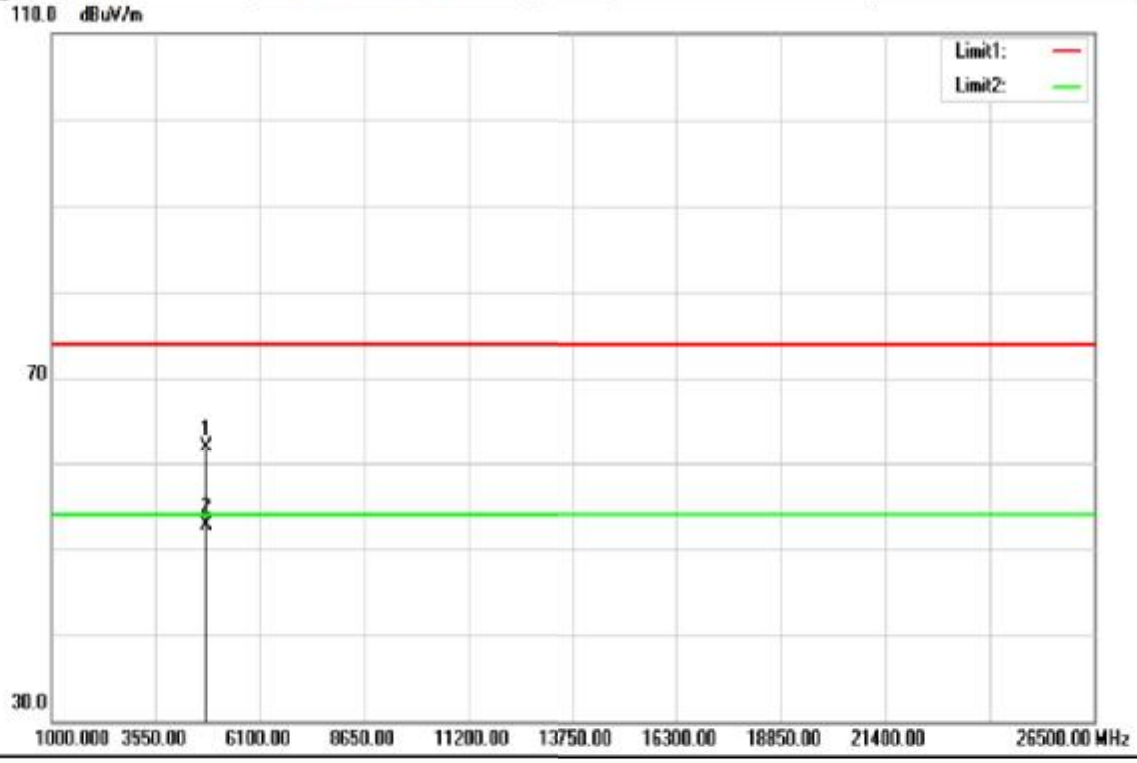


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
224.9700	48.20	-10.97	37.23	46.02	-8.79	peak
324.8800	44.02	-7.38	36.64	46.02	-9.38	peak
375.3200	43.98	-6.02	37.96	46.02	-8.06	peak
724.5200	38.59	1.35	39.94	46.02	-6.08	peak
774.9600	37.05	2.21	39.26	46.02	-6.76	QP
825.4000	34.76	3.04	37.80	46.02	-8.22	peak

Above 1G Test Data

For Dipole Antenna

Test Mode:	BLE Low CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

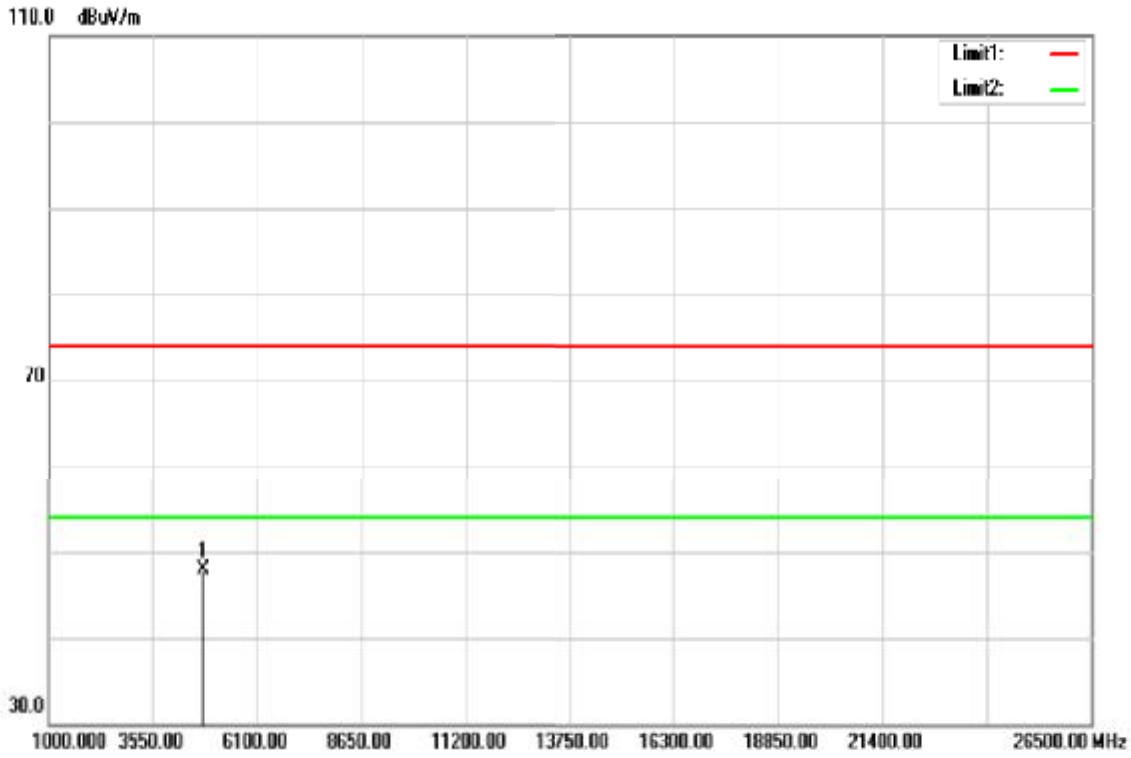


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4806.000	57.48	4.35	61.83	74.00	-12.17	peak
4806.000	48.44	4.35	52.79	54.00	-1.21	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Low CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

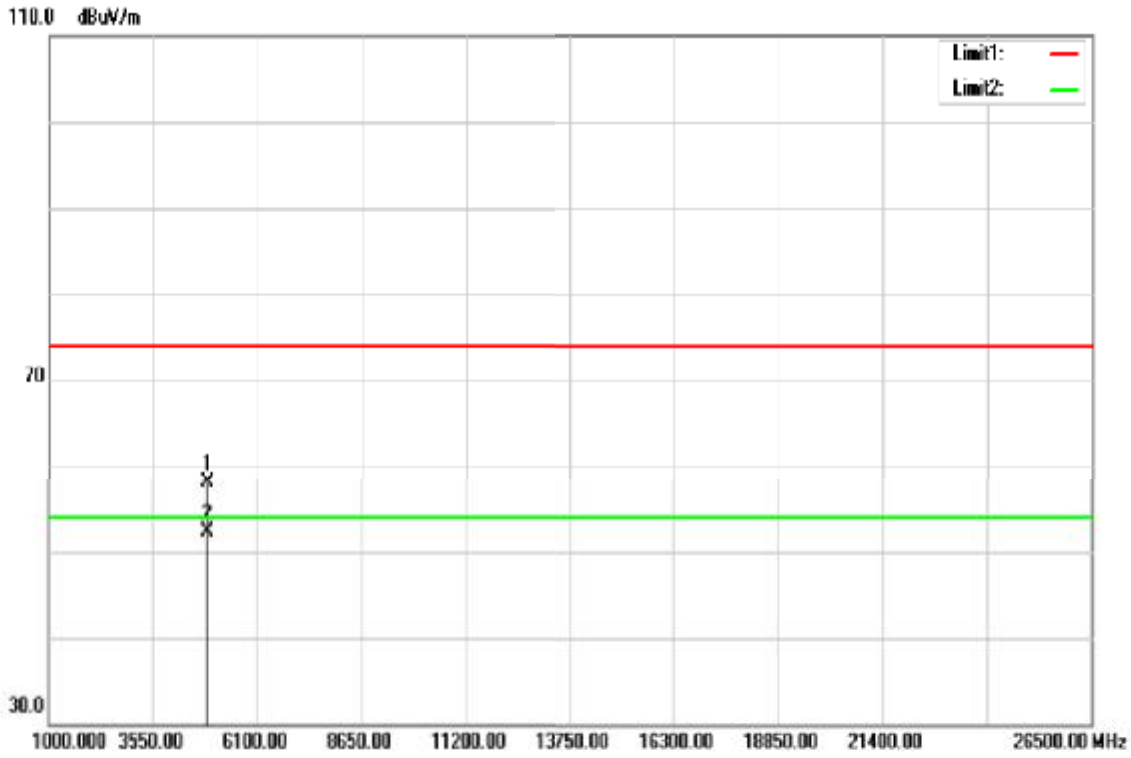


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4806.000	43.49	4.35	47.84	74.00	-26.16	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Mid CH	Temp/Hum	22(℃)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

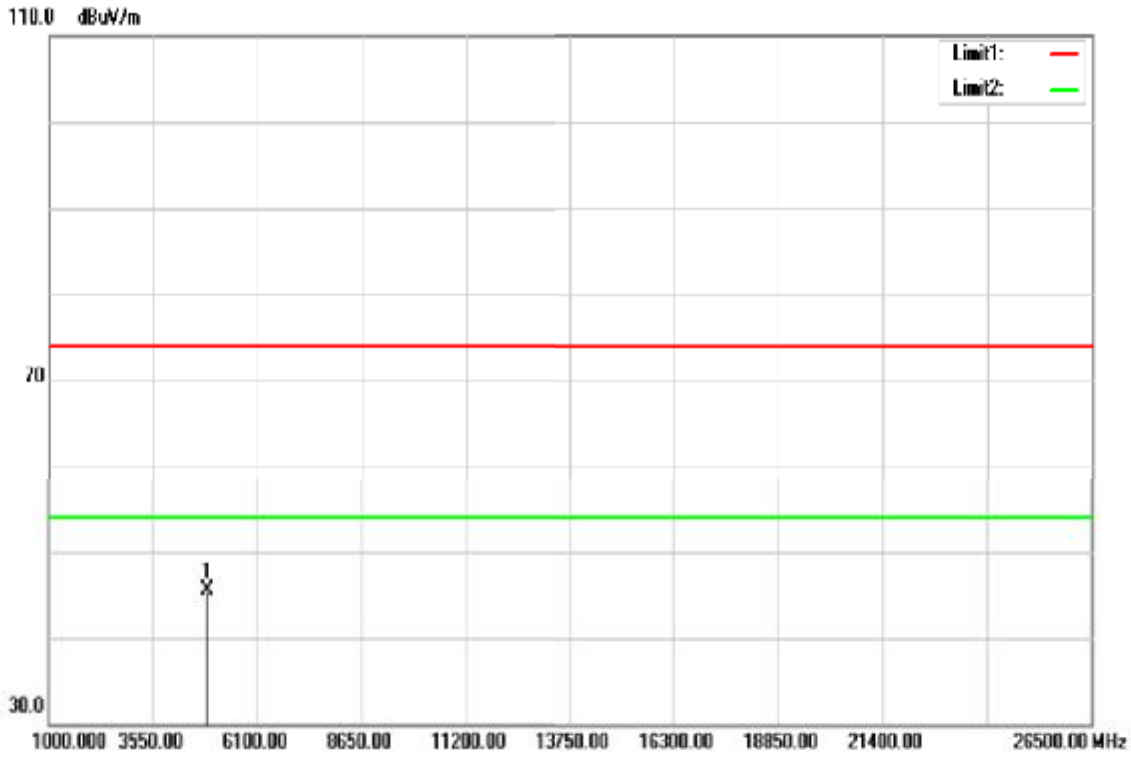


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	53.67	4.49	58.16	74.00	-15.84	peak
4883.000	47.80	4.49	52.29	54.00	-1.71	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE Mid CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		

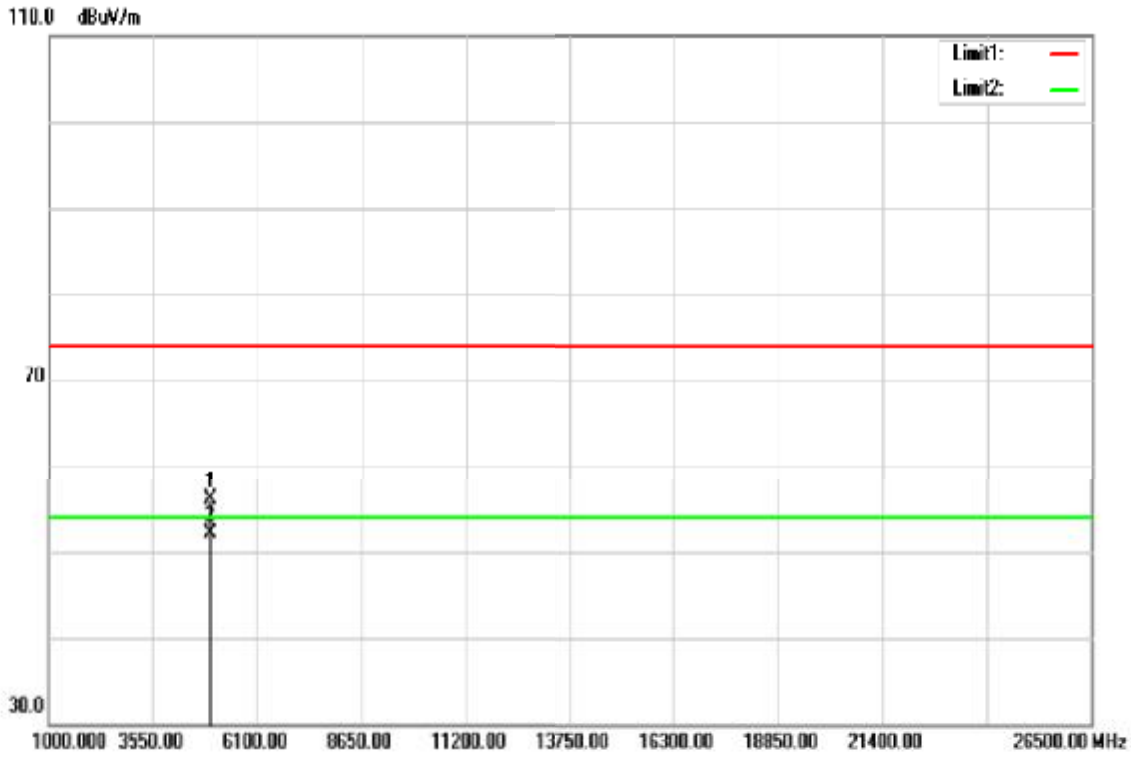


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4883.000	40.92	4.49	45.41	74.00	-28.59	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Average		

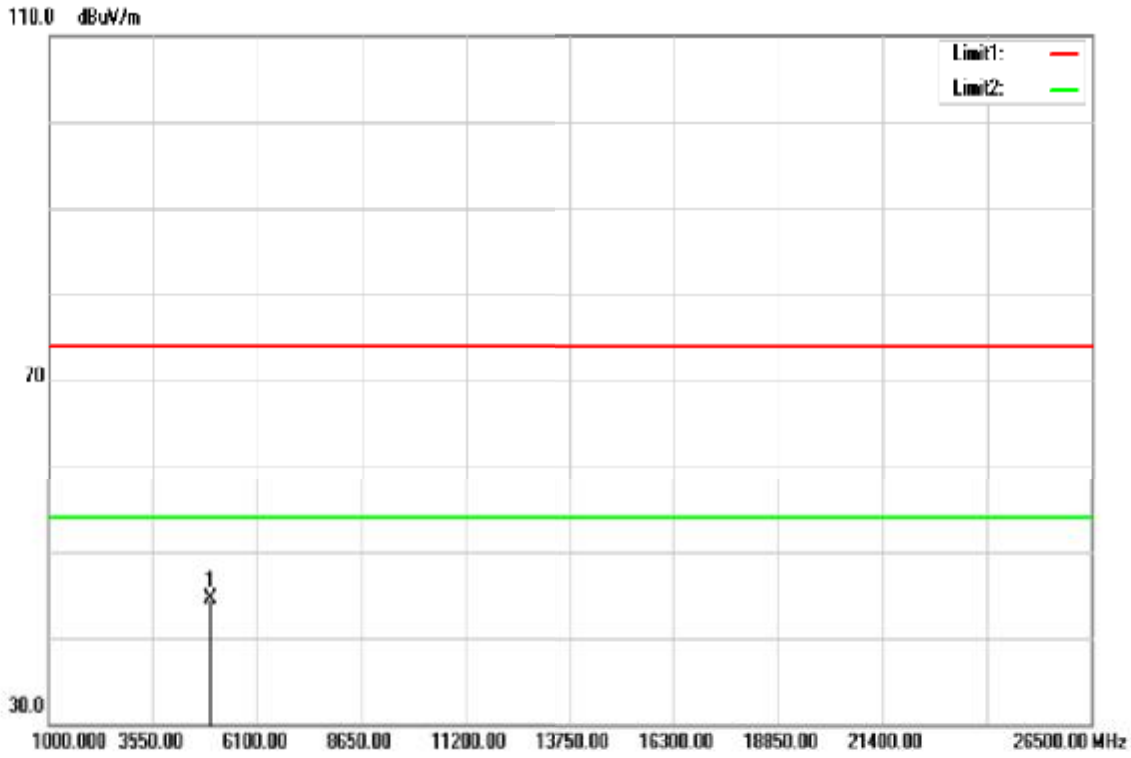


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4960.000	51.56	4.61	56.17	74.00	-17.83	peak
4960.000	47.44	4.61	52.05	54.00	-1.95	AVG
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode:	BLE High CH	Temp/Hum	22(°C)/ 34%RH
Test Item	Harmonic	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Average		



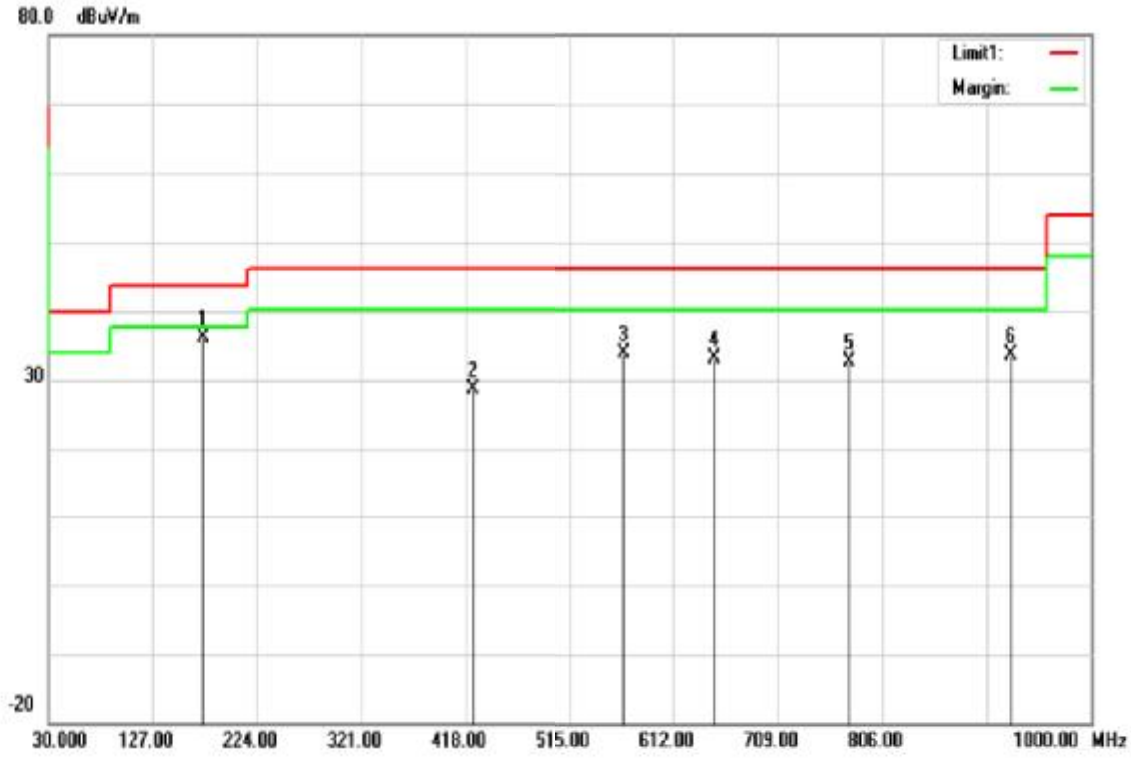
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4960.000	39.97	4.61	44.58	74.00	-29.42	peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

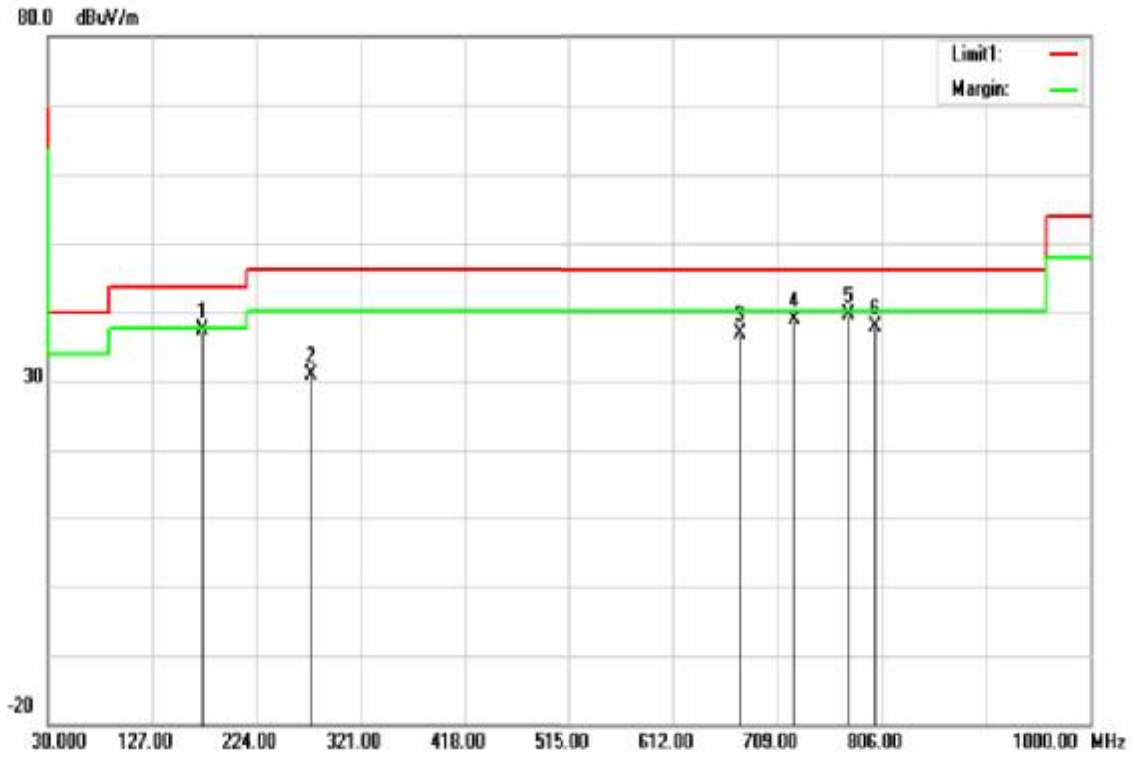
Below 1G Test Data

Test Mode:	BT Mode	Temp/Hum	22(°C)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Vertical	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
174.5300	47.00	-10.78	36.22	43.52	-7.30	peak
424.7900	33.21	-4.51	28.70	46.02	-17.32	peak
565.4400	35.37	-1.56	33.81	46.02	-12.21	peak
649.8300	32.89	0.35	33.24	46.02	-12.78	peak
774.9600	30.38	2.21	32.59	46.02	-13.43	peak
925.3100	28.83	4.76	33.59	46.02	-12.43	peak

Test Mode:	BT Mode	Temp/Hum	22(℃)/ 34%RH
Test Item	30MHz-1GHz	Test Date	July 30, 2018
Polarize	Horizontal	Test Engineer	Jerry Chuang
Detector	Peak and Quasi-peak		



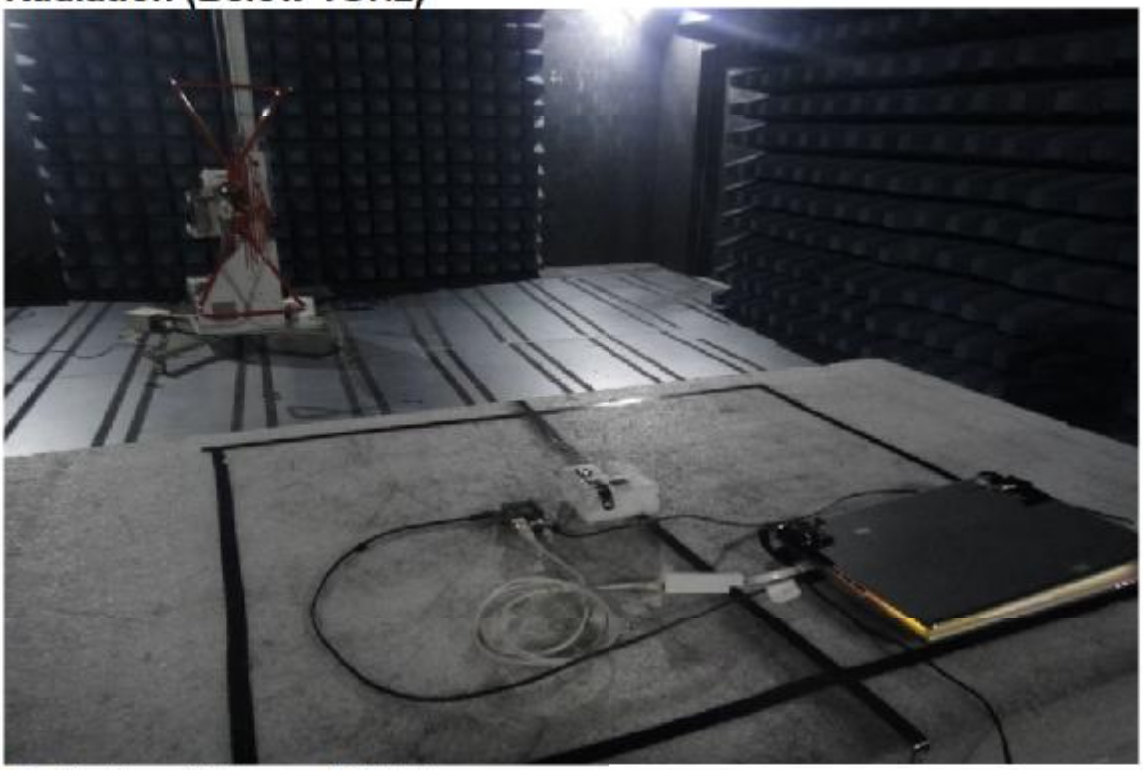
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
174.5300	48.18	-10.78	37.40	43.52	-6.12	peak
275.4100	39.35	-8.49	30.86	46.02	-15.16	peak
675.0500	36.32	0.68	37.00	46.02	-9.02	peak
724.5200	37.57	1.35	38.92	46.02	-7.10	peak
774.9600	37.50	2.21	39.71	46.02	-6.31	peak
800.1800	35.09	2.72	37.81	46.02	-8.21	peak

--End of Report--

APPENDIX-A Test Photo

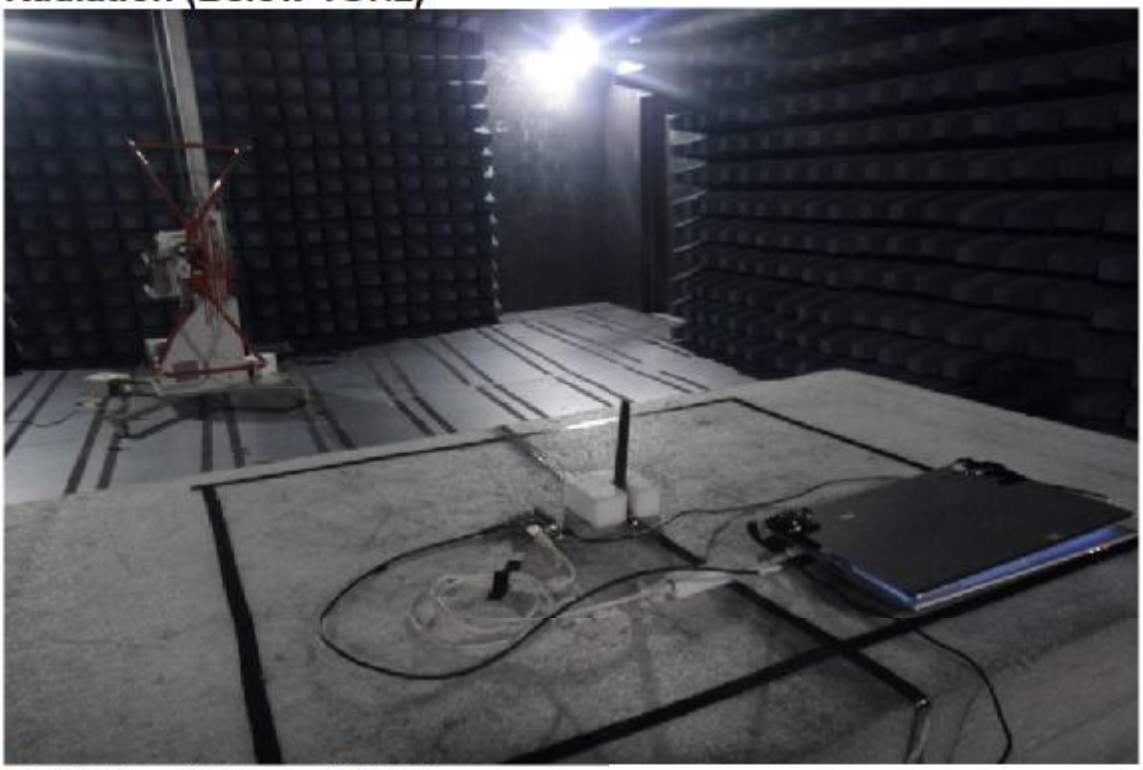
For PIFA Antenna

Radiation (Below 1GHz)



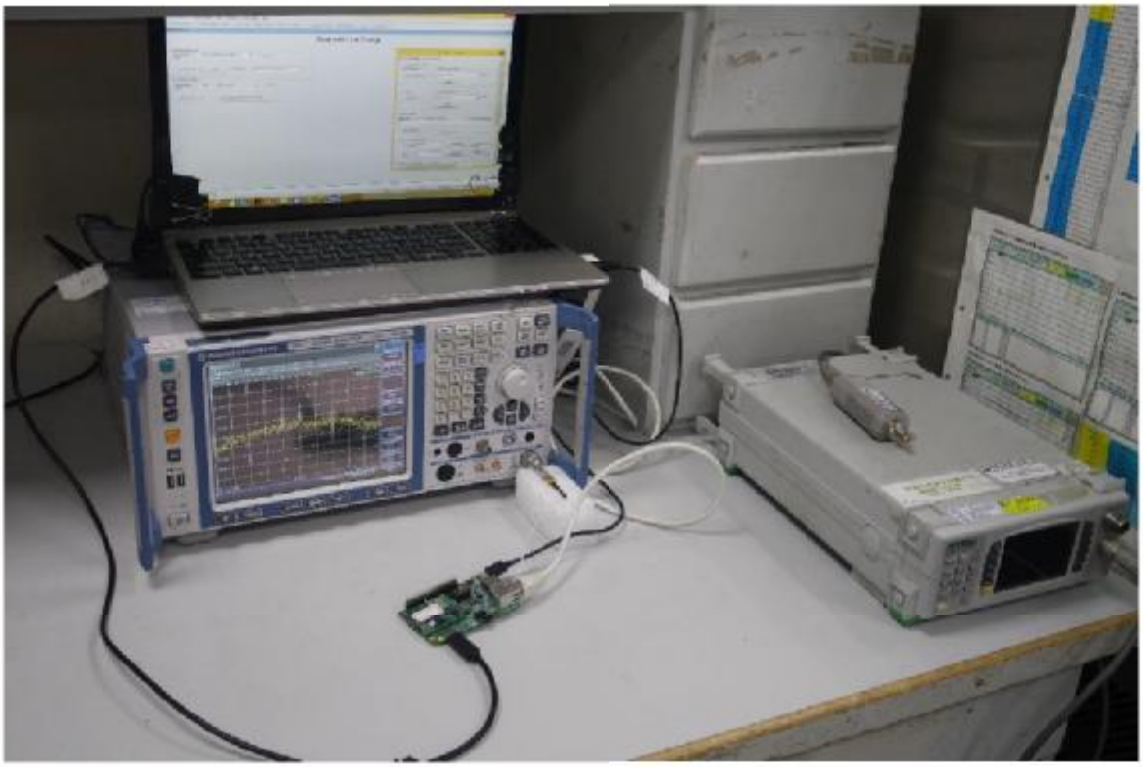
Radiation (Above 1GHz)

For Dipole Antenna
Radiation (Below 1GHz)



Radiation (Above 1GHz)

Conducted Emission Set up Photo



Conduction

IEEE C95.1 2005
KDB 447498 D01 V06
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

WiFi+Bluetooth 4.1(HS) System on Module

Model: PIXI-9377

Trade Name: TechNexion

Issued to

TechNexion Ltd.
16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
http://www.ccsrf.com
Issued Date: September 20, 2018

Note: *This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NIST or any government agencies. The test results in the report only apply to the tested sample.*

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 28, 2018	Initial Issue	ALL	May Lin
01	September 20, 2018	1. Modify antenna specification.	P.5	May Lin

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Sam Chuang
Manager
Compliance Certification Services Inc.

Reporter:

May Lin
Report coordinator
Compliance Certification Services Inc.

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

<table>
<tr><td>EUT</td><td>WiFi+Bluetooth 4.1(HS) System on Module</td></tr>
<tr><td>Model</td><td>PIXI-9377</td></tr>
<tr><td>Trade Name</td><td>TechNexion</td></tr>
<tr><td>Model Discrepancy</td><td>N/A</td></tr>
<tr><td>Frequency band (Operating)</td><td>☒ Bluetooth 2.1 + EDR / 4.1: 2402 ~ 2480 MHz
IEEE 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz
IEEE 802.11n HT40: 2.422GHz ~ 2.452GHz
IEEE 802.11a/n HT20: 5180MHz ~ 5240MHz / 5745MHz ~ 5825MHz
IEEE 802.11n HT40: 5190MHz ~ 5230MHz / 5755MHz ~ 5795MHz
IEEE 802.11ac VHT80: 5210MHz / 5775MHz
☐ Others</td></tr>
<tr><td>Device category</td><td>☐ Portable (<20cm separation)
☒ Mobile (>20cm separation)
☐ Others</td></tr>
<tr><td>Exposure classification</td><td>☐ Occupational/Controlled exposure (S = 5mW/cm^2)
☒ General Population/Uncontrolled exposure (S=1mW/cm^2)</td></tr>
<tr><td>Antenna Specification</td><td>Bluetooth and WIFI 2.4G:
<table>
<tr><th></th><th>Brand</th><th>P/N</th><th>Type</th><th>Peak Gain</th><th>Worst Mode</th></tr>
<tr><td>Antenna 1</td><td>TechNexion</td><td>VM2450-25523-OOX-180</td><td>PIFA</td><td>2.5dBi</td><td>X</td></tr>
<tr><td>Antenna 2</td><td>TechNexion</td><td>VM2450-ASSY1005</td><td>Dipole</td><td>4dBi</td><td>O</td></tr>
</table>
WIFI 5G:
<table>
<tr><th></th><th>Brand</th><th>P/N</th><th>Type</th><th>Peak Gain</th><th>Worst Mode</th></tr>
<tr><td>Antenna 1</td><td>TechNexion</td><td>VM2450-25523-OOX-180</td><td>PIFA</td><td>3dBi</td><td>X</td></tr>
<tr><td>Antenna 2</td><td>TechNexion</td><td>VM2450-ASSY1005</td><td>Dipole</td><td>6dBi</td><td>O</td></tr>
</table>
Bluetooth : Antenna Gain : 4.00 dBi (Numeric gain 2.51)
2.4GHz: Antenna Gain : 4.00 dBi (Numeric gain 2.51)
5GHz: Antenna Gain : 6.00 dBi (Numeric gain 3.98)</td></tr>
</table>

Max tune up Power	Bluetooth:	11.00 dBm	(12.589 mW)
	IEEE 802.11b Mode:	17.50 dBm	(56.234 mW)
	IEEE 802.11g Mode:	18.50 dBm	(70.795 mW)
	IEEE 802.11n HT 20 Mode:	18.50 dBm	(70.795 mW)
	IEEE 802.11n HT 40 Mode:	18.00 dBm	(63.096 mW)
	IEEE 802.11a Mode:	14.50 dBm	(28.184 mW)
	IEEE 802.11n HT 20 Mode:	14.50 dBm	(28.184 mW)
	IEEE 802.11n HT 40 Mode:	17.50 dBm	(56.234 mW)
	IEEE 802.11ac VHT 80 Mode:	13.50 dBm	(22.387 mW)
Evaluation applied	☒ MPE Evaluation*		
	☐ SAR Evaluation		
	☐ N/A		

Notes: For Bluetooth and WIFI could not be use as transmit/receive at the same time.

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where *E = Field strength in Volts / meter*
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ ***Equation 1***

Where *d = Distance in cm*
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm²

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where *P = Power in mW*
G = Numeric antenna gain
S = Power density in mW / cm²

Bluetooth mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm²)
79	2480	12.589	2.51	20	0.0063	1.653

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm²)
6	2437	56.234	2.51	20	0.0281	1.625

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm²)
11	2462	70.795	2.51	20	0.0354	1.641

IEEE 802.11n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm²)
6	2437	70.795	2.51	20	0.0354	1.625

IEEE 802.11n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm²)
6	2437	63.960	2.51	20	0.0319	1.625

IEEE 802.11 a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
48	5240	28.184	3.98	20	0.0223	1

IEEE 802.11 n HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
48	5240	28.184	3.98	20	0.0223	1

IEEE 802.11 n HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
46	5230	56.234	3.98	20	0.0445	1

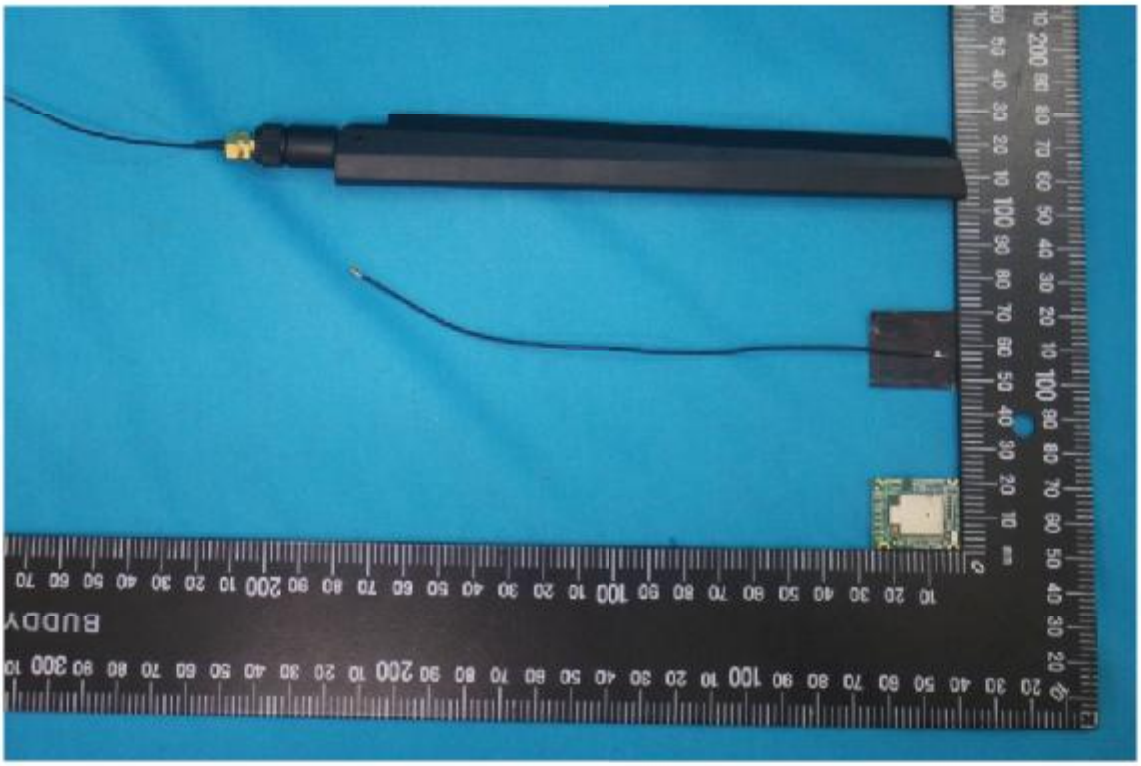
IEEE 802.11 ac VHT80:

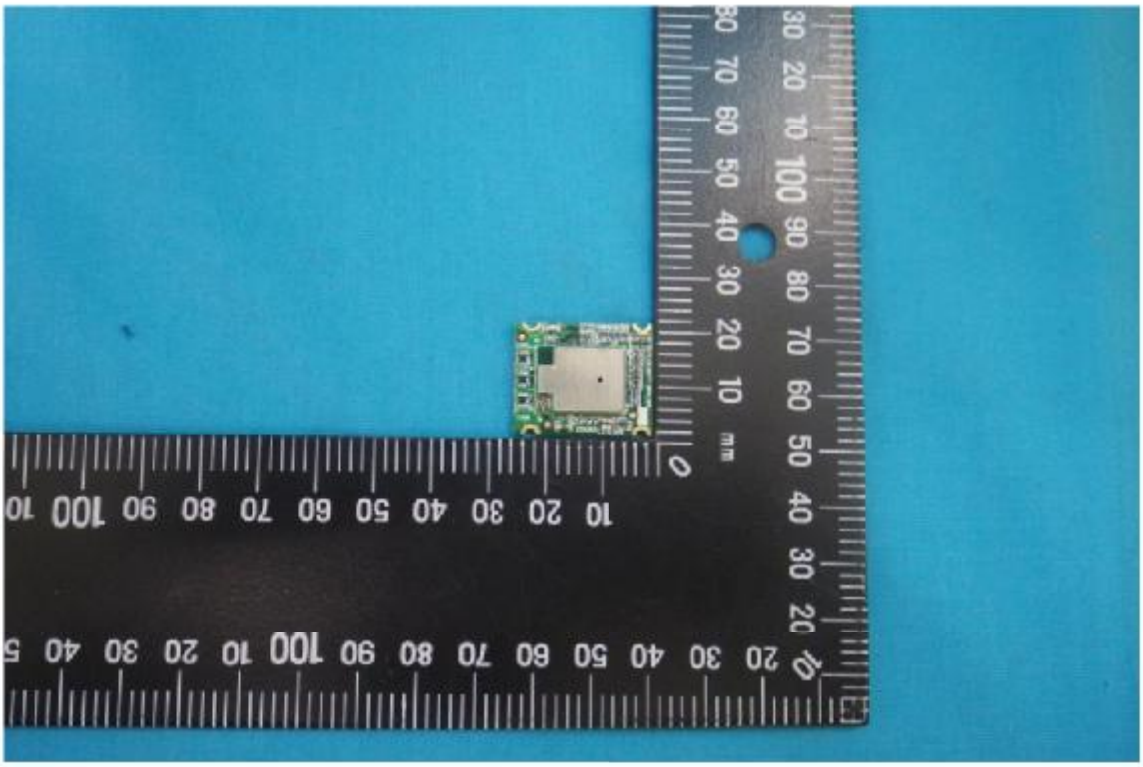
Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
155	5775	22.387	3.98	20	0.0177	1

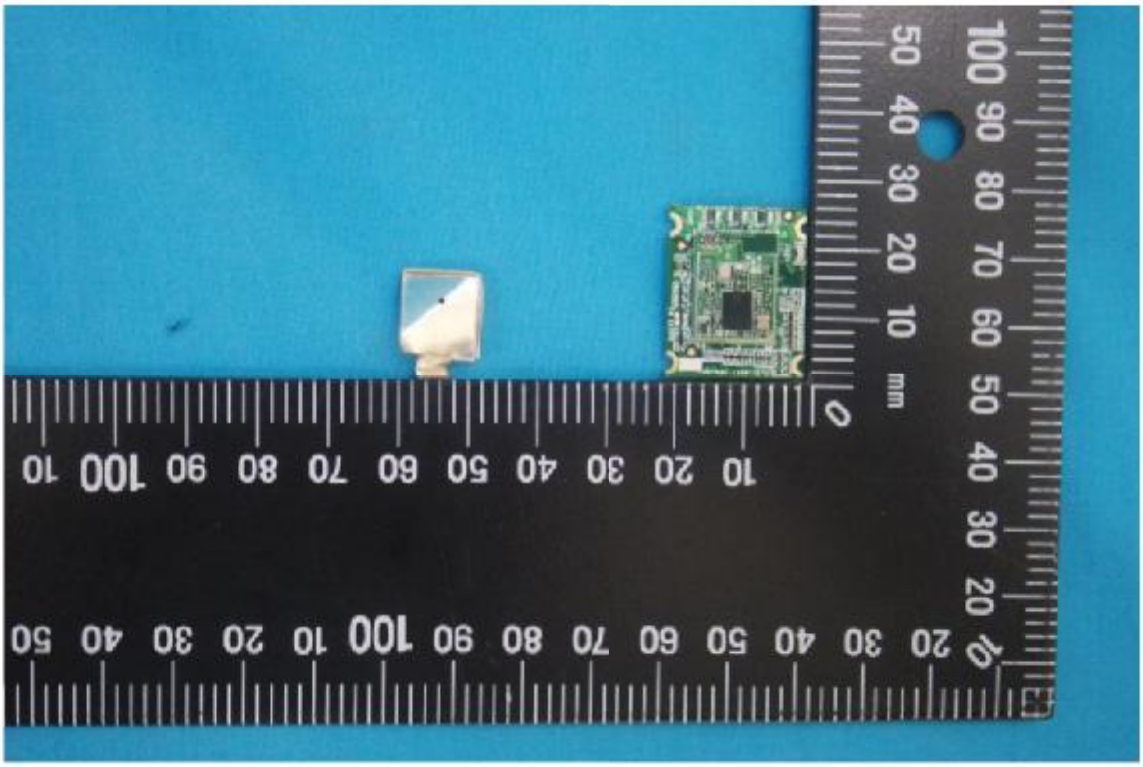
--End of Report--

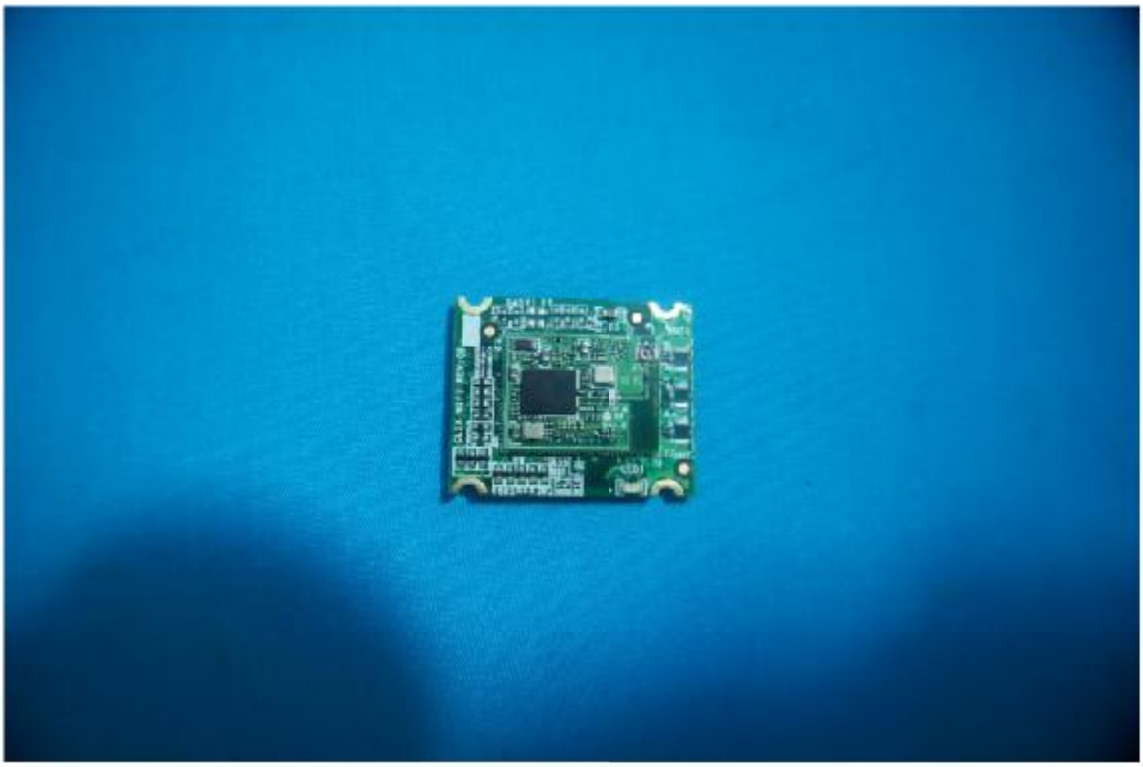
Report No.: T180627D11

APPENDIX 1 - PHOTOGRAPHS OF EUT

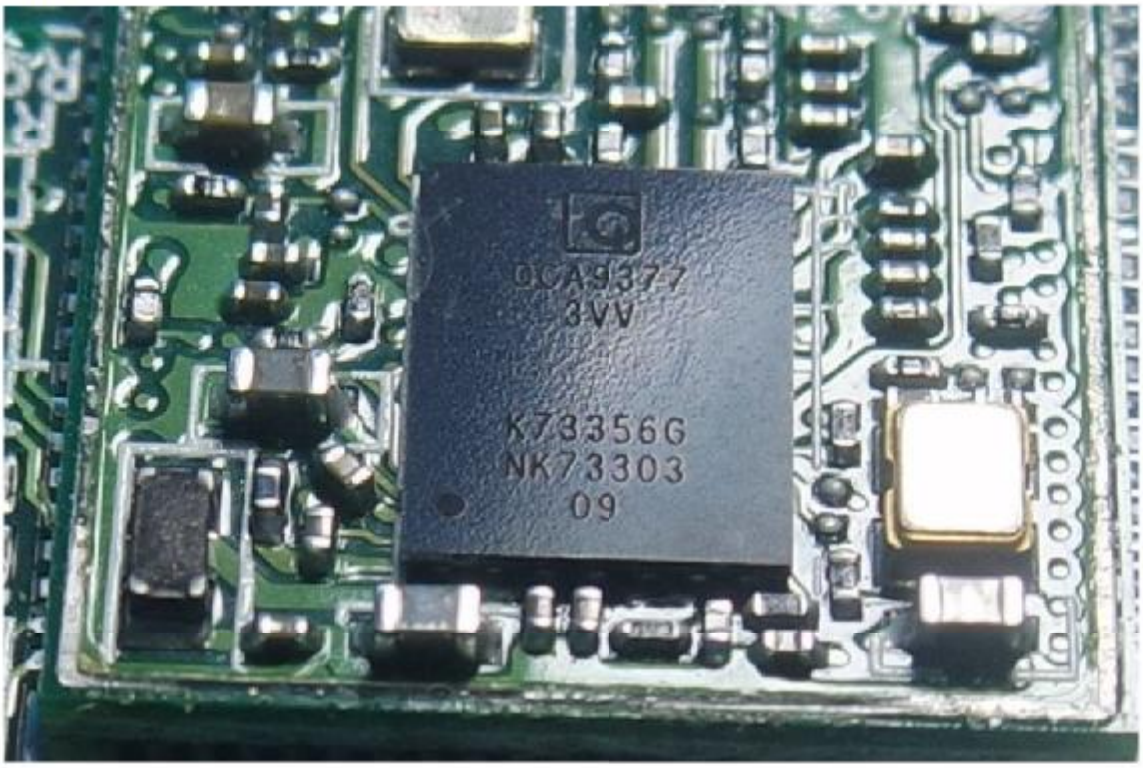




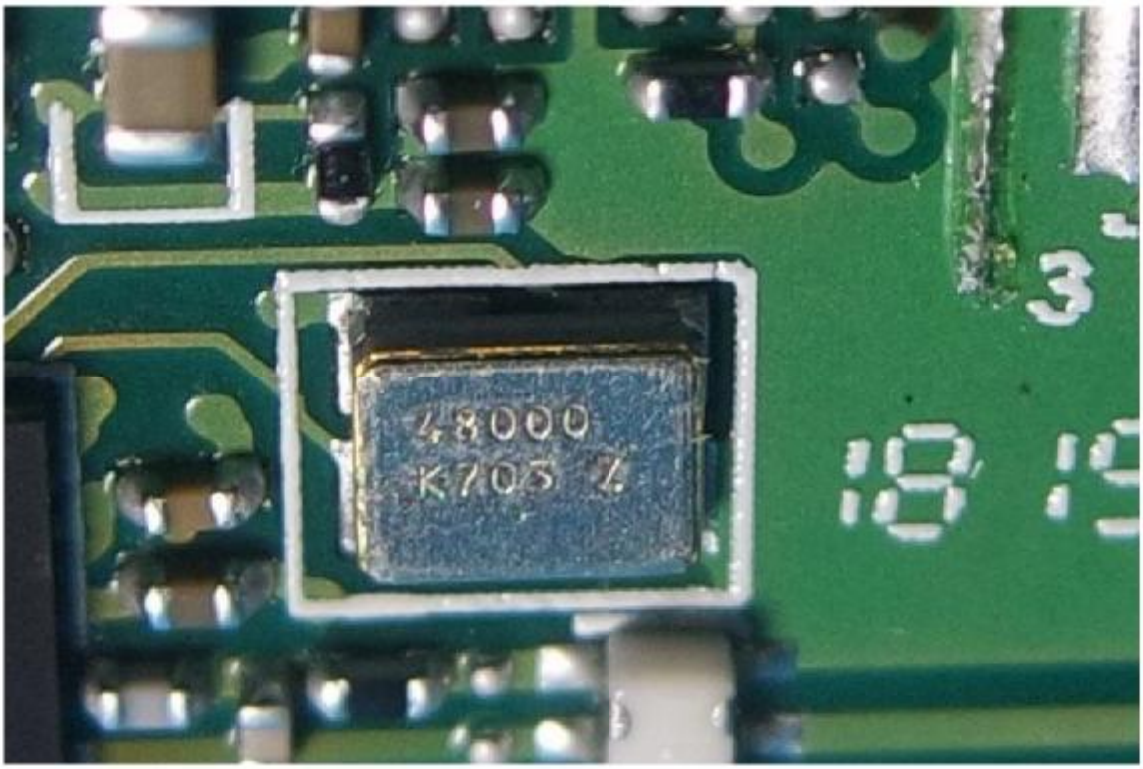




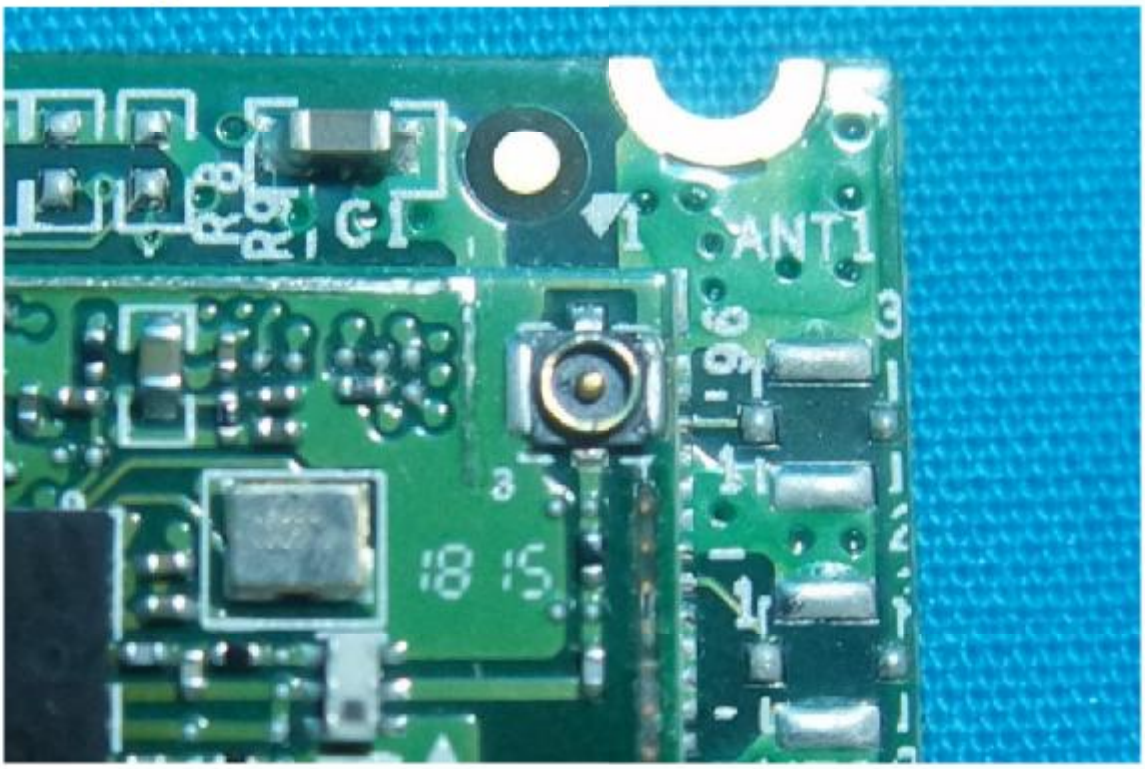
Module



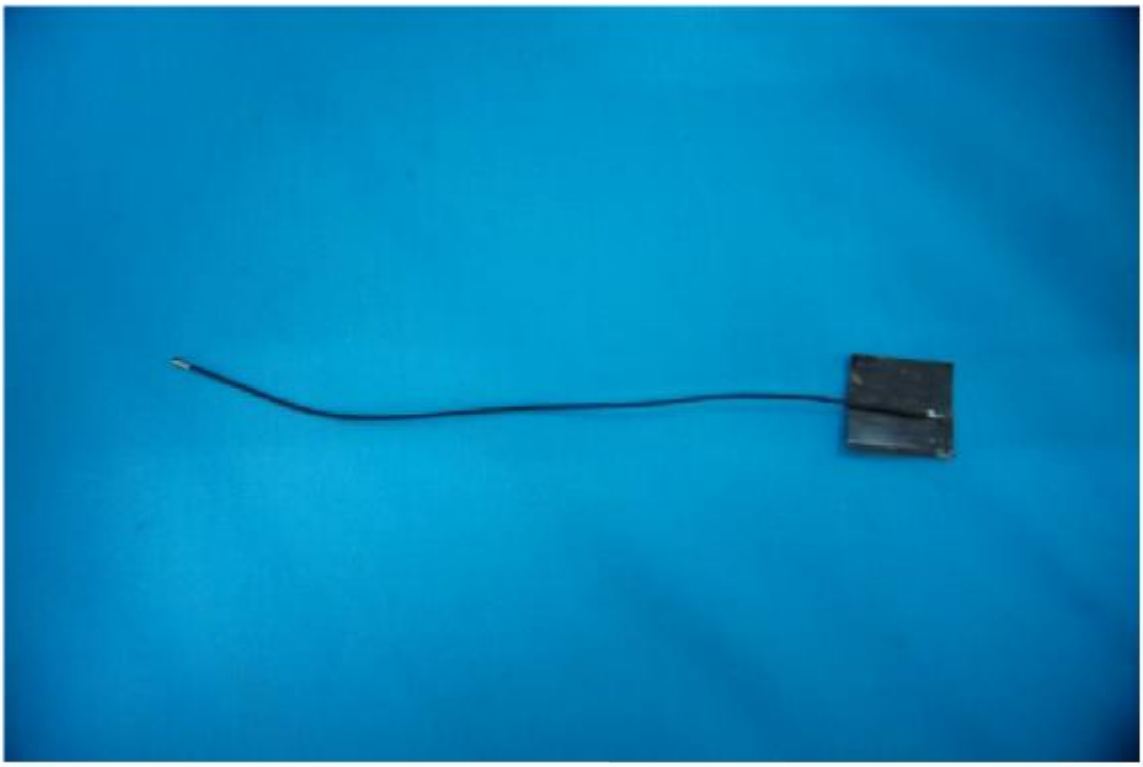
Crystal

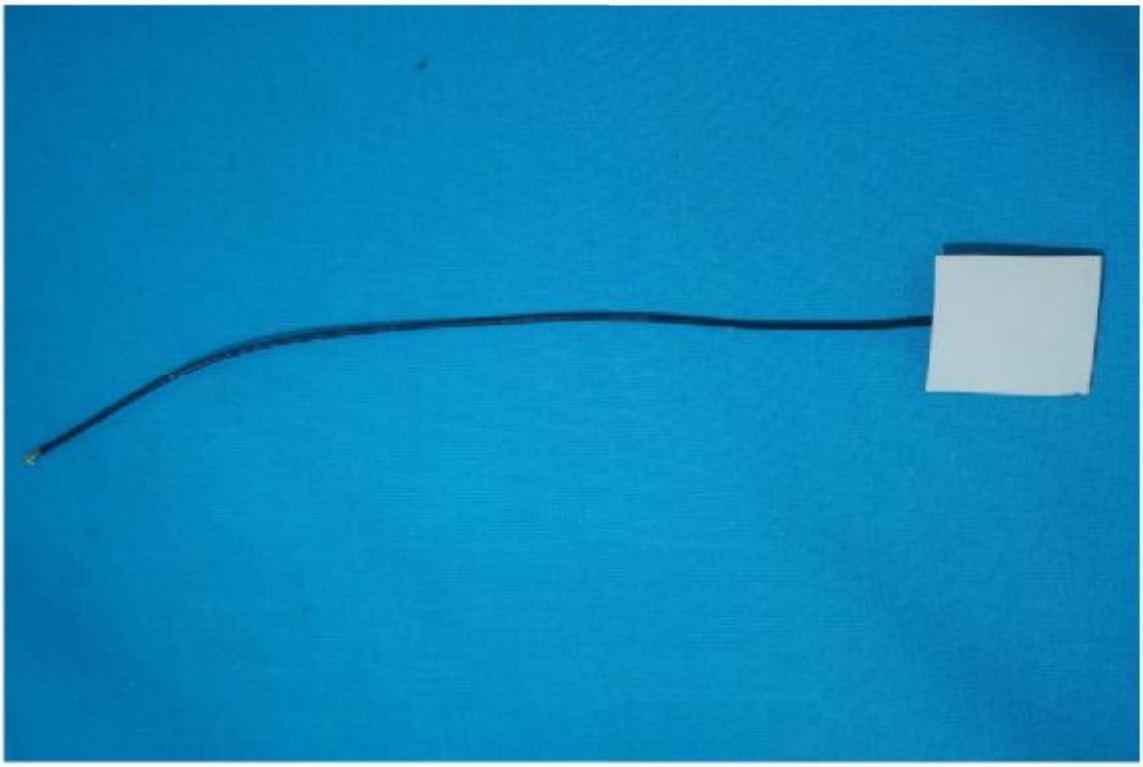


Antenna port

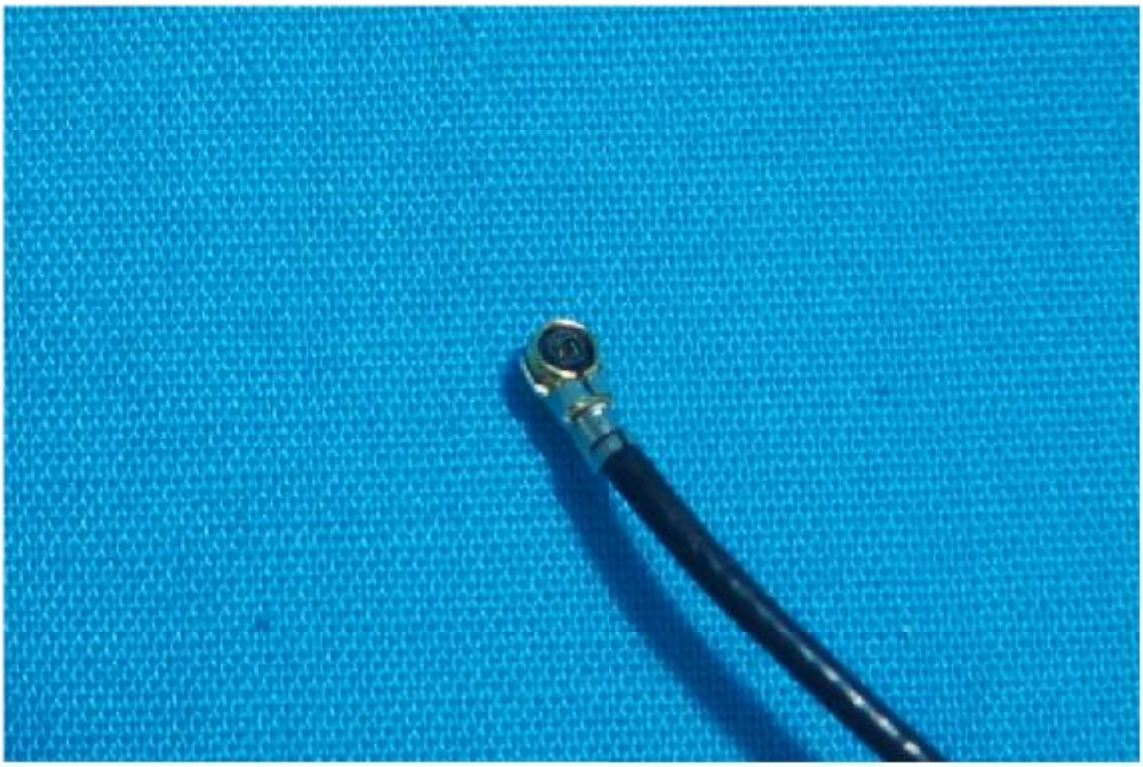


FPC Antenna





FPC Antenna port

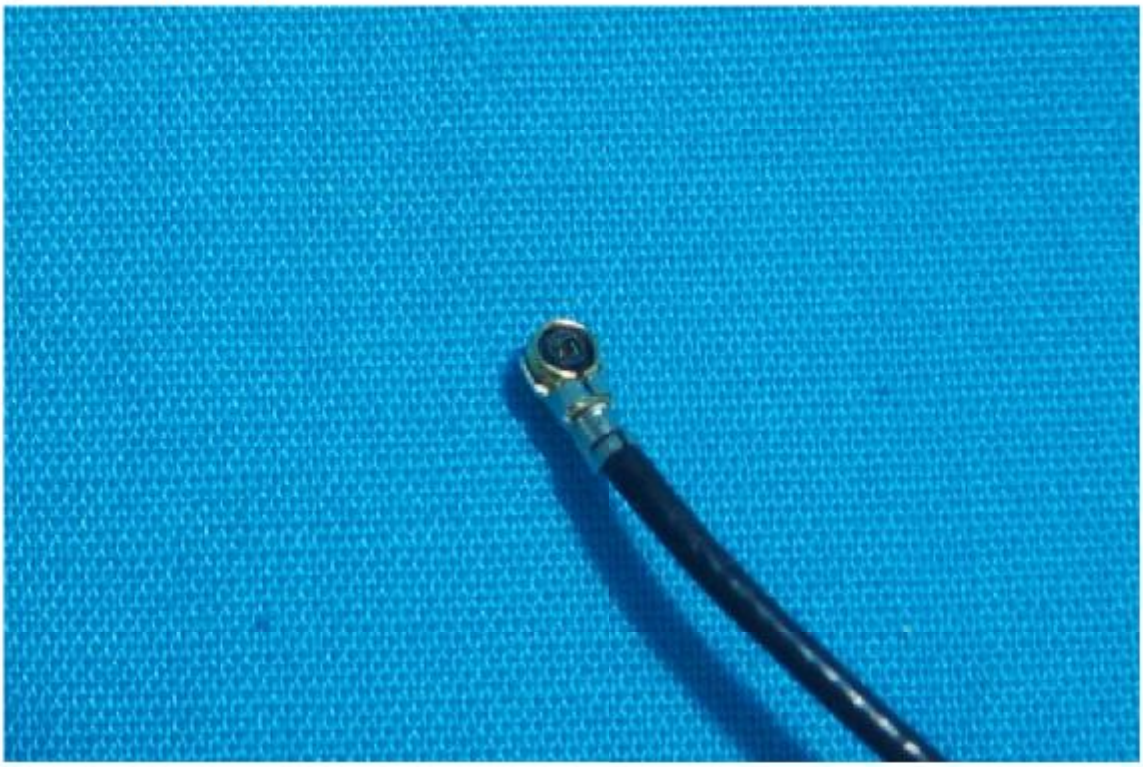


Dipole Antenna

Dipole Antenna port

Ipex to SMA Cable

Ipex to SMA Cable Port



VERIFICATION OF COMPLIANCE

This Verification of Compliance is hereby issued to the below named company and for below described product, based on

Technical Standard : FCC 47 CFR Part 15 Subpart B
ANSI C63.4:2014
ISED ICES-003 (Issue 6)

General Information

Applicant : TechNexion Ltd.
Address of Applicant : 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC

Product Description

Product Name : WiFi+Bluetooth 4.1(HS) System on Module
Brand Name : TechNexion
Model Number : PIXI-9377

Measurement Facilities

Company Name : **Compliance Certification Services Inc.**
Test Laboratory : Xindian Lab.
Address of Test Lab. : No.163-1, Jhongsheng Rd., Xindian Dist.,New Taipei City, 23151 Taiwan.

This device has been tested and found to be in compliance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report with the number: T180627D11-D

The test results shown in this report are applicable only to the investigated sample identified in this report.

Sam Hu / Assistant Manager
Date: July 13, 2018

FCC TEST REPORT

for

WiFi+Bluetooth 4.1(HS) System on Module

MODEL: PIXI-9377

Test Report Number:
T180627D11-D

Issued to:

TechNexion Ltd.
16f-5, No.736, Zhongzheng Road, Zhonghe Dist.,
New Taipei City, 23511 Taiwan ROC

Issued by:

Compliance Certification Services Inc.
Xindian Lab.
No.163-1, Jhongsheng Rd., Xindian Dist.,
New Taipei City, 23151 Taiwan.
TEL: 886-2-22170894
FAX: 886-2-22171029

Issued Date: July 13, 2018

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		July 13, 2018		Initial Issue	ALL	Amy Wang

TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION

Product:	WiFi+Bluetooth 4.1(HS) System on Module
Model:	PIXI-9377
Brand:	TechNexion
Applicant:	**TechNexion Ltd.** 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Manufacturer:	**TechNexion Ltd.** 16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511 Taiwan ROC
Tested:	June 29, 2018 ~ July 5, 2018

EMISSION			
Standard	**Item**	**Result**	**Remarks**
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 6-2016 ANSI C63.4-2014	Conducted (Power Port)	PASS	Meet Class B limit
	Radiated	PASS	Meet Class B limit

Note: 1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.
2. The information of measurement uncertainty is available upon the customer's request.

Deviation from Applicable Standard
None

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Sam Hu
Assistant Manager

Reviewed by:

Eva Fan
Supervisor of report document dept.

2 EUT DESCRIPTION

Product	WiFi+Bluetooth 4.1(HS) System on Module
Brand Name	TechNexion
Model	PIXI-9377
Applicant	TechNexion Ltd.
Housing material	N/A
Identify Number	T180627D11
Received Date	June 27, 2018
EUT Power Rating	5VDC from Host PC Power Supply
AC Power During Test	120VAC / 60Hz to Host PC Power Supply
EUT I/O Cable Type	Antenna Cable: Unshielded, 0.1m (Detachable) X2

I/O PORT

I/O PORT TYPES	Q'TY	TESTED WITH

Note: Client consigns only one model sample to test (Model Number: PIXI-9377).

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the below additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The test configuration modes are as the following:

Conduction Modes:

1	**WIFI 2.4G Mode**
2	**WIFI 5G Mode**
3	**BT Mode**
4	**FPC 2.4G Mode**

Radiation Modes:

1	**WIFI 2.4G Mode**
	WIFI 2.4G Mode / 1-25GHz
2	**WIFI 5G Mode**
3	**BT Mode**
4	**FPC 2.4G Mode**

Worst:

Conduction: Mode 1

Radiation: Mode 1

3.2. EUT SYSTEM OPERATION

1. Windows 7 boots system.
2. Run Emctest.exe to activate all peripherals and display “H” pattern on monitor screen.
3. Run Putty.exe and set rate “115200” to test EUT.

   Note: Test program is self-repeating throughout the test.

4 SETUP OF EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Host PC Devices:

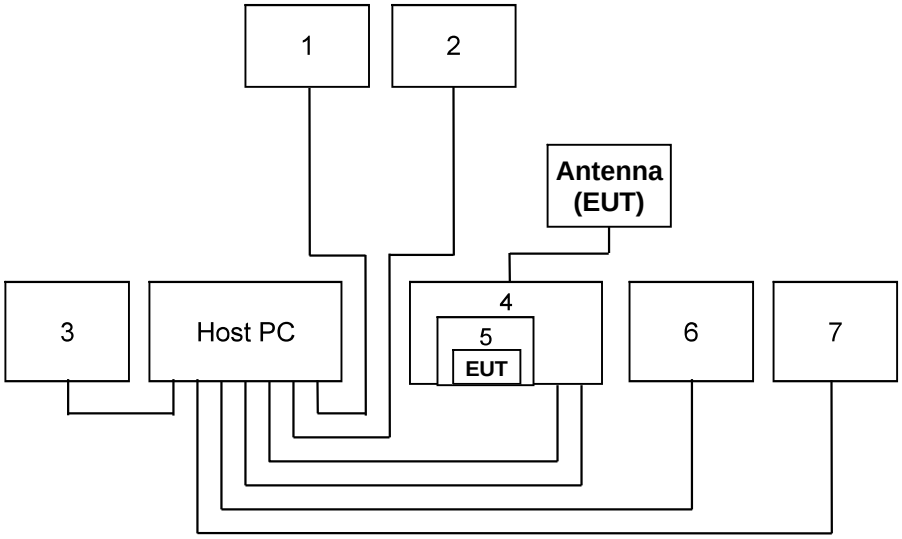
No.	Equipment	Model No.	Brand Name
1	HDD	DT01ACA100	TOSHIBA
2	CPU (3.5GHz / Socket: FCLGA1151)	i5-6600K	INTEL
3	RAM (DDR4 / 2666)	N/A	Samsung
4	Graphic Card	GTX980	NVIDIA
5	Power Supply	DPS-600WB B	DELTA
6	Motherboard	IPM17-TP	HP
7	ODD	DU-8AESH	LiteOn

Peripherals Devices:

No.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Brand Name	Data Cable	Power Cord
1	USB Mouse	M-U0026	810-002181	DOC BSMI: T41126	Logitech	Shielded, 1.8m	N/A
2	USB Keyboard	Y-U0011	N/A	DOC BSMI: T51160	Logitech	Shielded, 1.8m	N/A
3	Modem	AL-56ERM	0MERM04A0201	N/A	GALILEO	Shielded, 1.8m	Unshielded, 1.8m
4	ARM Cortex-A7 NXP i.MX7, Small Footprint, System on Module	PICO-IMX7	N/A	N/A	TechNexion	Micro USB: Shielded, 0.6m USB Type C: Shielded, 0.6m	N/A
5	Qualcomm Atheros QCA-9377 CLIX module	CLIX-9377	N/A	N/A	TechNexion	N/A	N/A
6	Monitor	PA248Q	G5LMQS071275	DOC BSMI: R31018	ASUS	Shielded, 1.8m	Unshielded, 1.8m
7	Printer	SNPRB-1202-01	CN54K185HY	DOC BSMI: R33001	HP	Shielded, 1.6m	Unshielded, 1.8m

Note:
1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST



5 FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCSrf Taiwan Xindian Lab. at No.163-1, Jhongsheng Rd., Xindian Dist., New Taipei City, 23151 Taiwan.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and CISPR 16-1-5.

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
USA	A2LA

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	0.15MHz ~ 30MHz	± 2.8
Radiated emissions	30MHz ~ 1000MHz	± 5.3
	1000MHz ~ 18000MHz	± 4.6
	18000MHz ~ 40000MHz	± 3.8

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

Consistent with industry standard (e.g. CISPR 22: 2005, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE:
(1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

6.2. TEST INSTRUMENTS

Conducted Emission room # A				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
BNC CABLE	EMEC	EMG178	BNC#A9	03/26/2019
EMI Test Receiver	R&S	ESCI	101201	09/28/2018
LISN	Schwarzbeck	NNLK 8129	8129-286	08/15/2018
LISN(EUT)	Schwarzbeck	NSLK 8127	8127527	08/15/2018
Pulse Limiter	R&S	ESH3Z2	SD-C002	08/17/2018
Thermo-Hygro Meter	Wisewind	201A	No. 02	05/06/2019
Test S/W	EZ-EMC			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

6.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

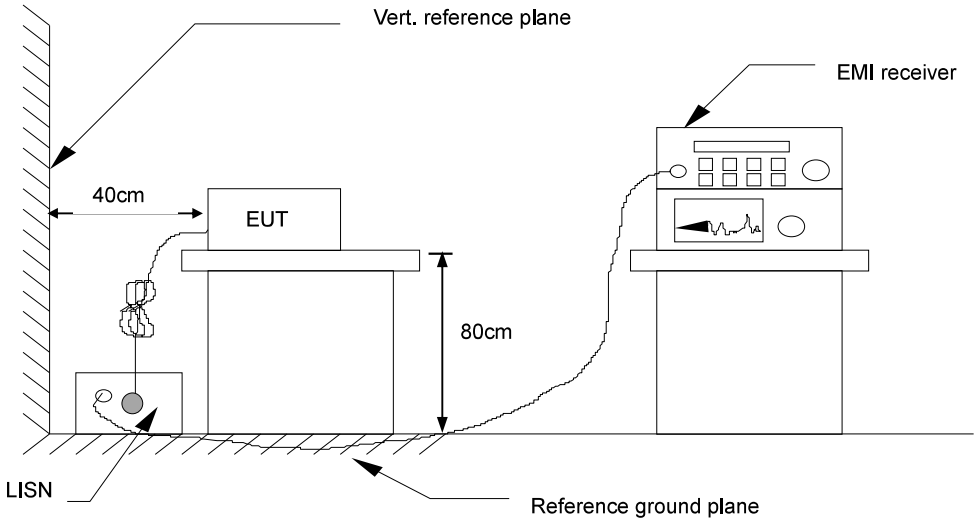
Procedure of Preliminary Test

- The EUT and support equipment, if needed, were set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from a second LISN.
- The test program of the EUT was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.

6.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

6.5. DATA SAMPLE

Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
x.xx	42.95	0.55	43.50	56	-12.50	Q	L1

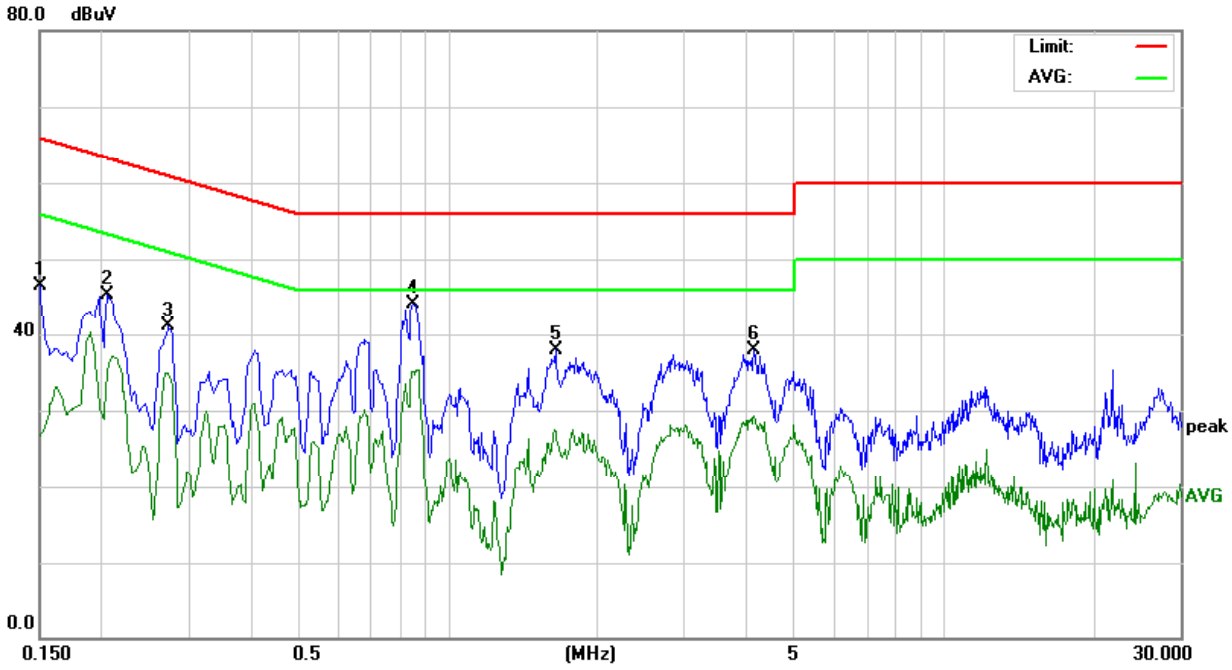
Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Insertion loss of LISN + Cable Loss + Pulse Limit
Result = Reading + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
A = Average Reading
L1 = Hot side
L2 = Neutral side

Calculation Formula

Margin (dB) = Result (dBuV) – Limit (dBuV)

6.6. TEST RESULTS

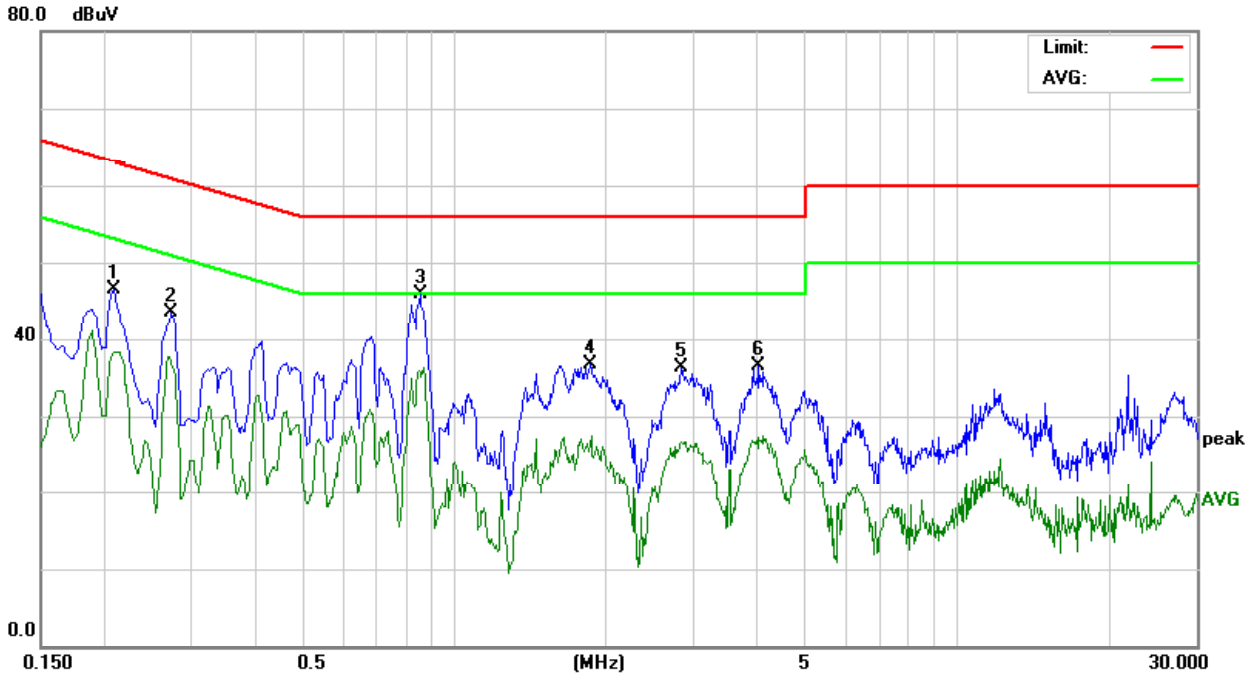
Model No.	PIXI-9377	6dB Bandwidth	9 kHz
Environmental Conditions	26°C, 53% RH	Test Mode	Mode 1
Tested by	Alee Shen	Phase	L1
Standard	FCC CLASS B		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.1500	36.49	10.01	46.50	66.00	-19.50	P	L1
0.2060	35.22	10.02	45.24	63.37	-18.13	P	L1
0.2740	31.07	10.02	41.09	61.00	-19.91	P	L1
0.8500	33.99	10.07	44.06	56.00	-11.94	P	L1
1.6500	27.86	10.12	37.98	56.00	-18.02	P	L1
4.1420	27.64	10.26	37.90	56.00	-18.10	P	L1

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Model No.	PIXI-9377	6dB Bandwidth	9 kHz
Environmental Conditions	26°C, 53% RH	Test Mode	Mode 1
Tested by	Alee Shen	Phase	L2
Standard	FCC CLASS B		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2100	36.45	10.02	46.47	63.20	-16.73	P	L2
0.2740	33.52	10.02	43.54	60.99	-17.45	P	L2
0.8540	35.78	10.06	45.84	56.00	-10.16	P	L2
1.8660	26.61	10.11	36.72	56.00	-19.28	P	L2
2.8300	26.14	10.16	36.30	56.00	-19.70	P	L2
4.0379	26.34	10.22	36.56	56.00	-19.44	P	L2

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

Below 1GHz (for digital device)

FREQUENCY (MHz)	dBuV/m (At 10m)	
	Class A	Class B
30 ~ 230	40	30
230 ~ 1000	47	37

Limit tables for non-digital device:

Class A Radiated Emission limit at 10m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	90	39
88 - 216	150	43.5
216 – 960	210	46.4
Above 960	300	49.5

Class B Radiated Emission limit at 3m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	100	40
88 - 216	150	43.5
216 – 960	200	46
Above 960	500	54

Above 1GHz(for all device)

Frequency (MHZ)	Class A (dBuV/m) (At 10m)		Class B (dBuV/m) (At 3m)	
	Average	Peak	Average	Peak
Above 1000	49.5	69.5	54	74

NOTE: (1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
(3) The measurement above 1GHz is at close-in distances 3m,and determine the limit **L_2** corresponding to the close-in distance **d_2** by applying the following relation: **$L_2 = L_1 (d_1/d_2)$**, where **L_1** is the specified limit in microvolts per metre (**uV/m**) at the distance **d_1** (**10m**), **L_2** is the new limit for distance **d_2** (**3m**).
So the new Class A limit above 1GHz at 3m is as following table:

Frequency (MHZ)	Class A (dBuV/m) (At 3m)	
	Average	Peak
Above 1000	60	80

According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

7.2. TEST INSTRUMENTS

Open Area Test Site # H				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Bilog Antenna	Teseq	CBL 6112D	36995	06/25/2019
Cable	EMEC	CFD400NL-LW	N-Type#H11	08/17/2018
EMI Test Receiver	R&S	ESCI	101340	03/26/2019
Pre-Amplifier	HP	8447D	1937A01554	09/28/2018
Thermo-Hygro Meter	Wisewind	201A	No. 03	05/27/2019
Test S/W	EZ-EMC			
Above 1GHz Used				
Horn Antenna	EMCO	3115	00022256	08/09/2018
K-Type Cable	Rosnol	K1K50-UP0264-K1k 50-1000	170803-1	08/22/2018
Microflex Cable	Rosnol	N1K50-EW0630-N1 k50-7000	170803-1	08/22/2018
Pre-Amplifier	Com-Power	PAM-118A	551041	06/18/2019
Signal Analyzer	R&S	FSV40	101269	04/17/2019
Horn Antenna	Schwarzbeck	BBHA 9170	666	04/10/2019
K-Type Cable	Rosnol	K1K50-UP0264-K1k 50-5000	170803-1	08/22/2018
Pre-Amplifier	Com-Power	PAM-840A	461310	06/07/2019
Test S/W	EZ-EMC			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

7.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

Procedure of Preliminary Test

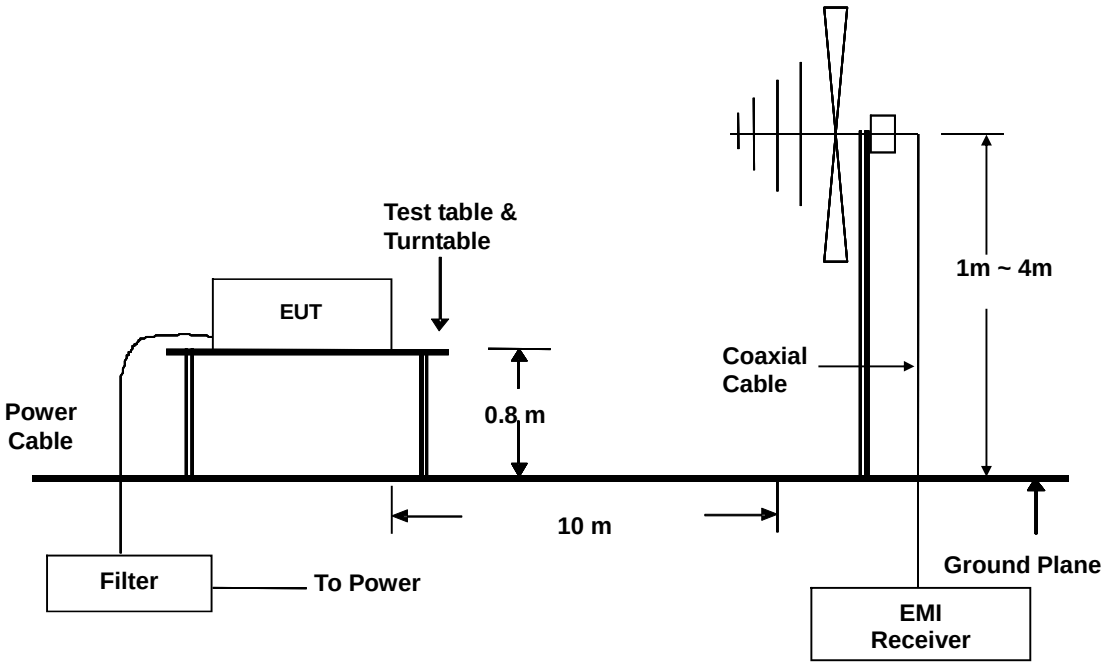
- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

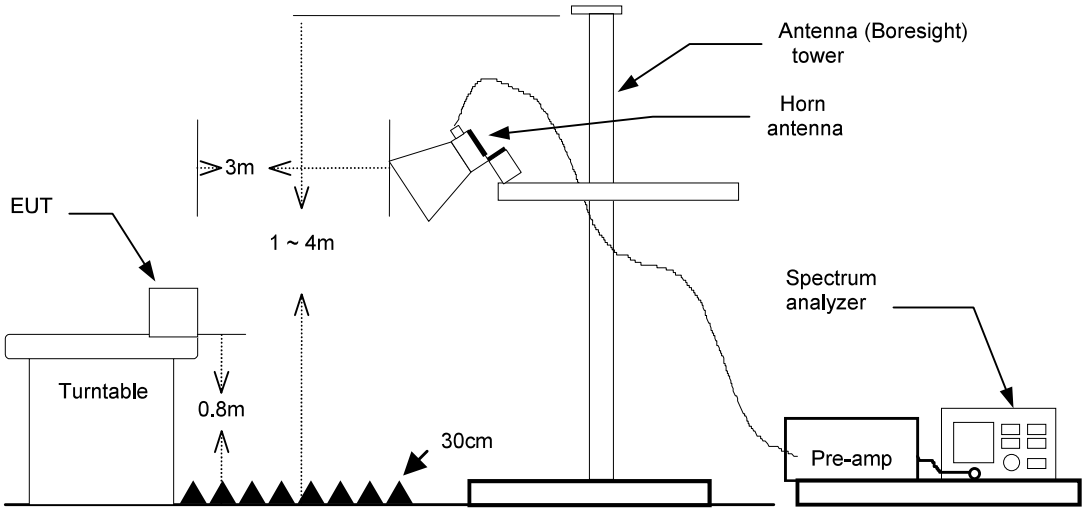
- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. Below 1GHz the Q.P. reading and above 1GHz the Peak and Average reading are presented.
- The test data of the worst-case condition(s) was recorded.

7.4. TEST SETUP

Below 1GHz



Above 1GHz



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5. DATA SAMPLE

Below 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/Q)	Pol. (H/V)
x.xx	14.0	12.2	26.2	30	-10.8	Q	H

Above 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
x.xx	42.95	0.55	43.50	54	-10.50	A	H

Freq. = Emission frequency in MHz
Reading = Uncorrected Analyzer/Receiver reading
Factor = Antenna Factor + Cable Loss - Amplifier Gain
Result = Reading + Factor
Limit = Limit stated in standard
Margin = Reading in reference to limit
P = Peak Reading
Q = Quasi-peak Reading
A = Average Reading
H = Antenna Polarization: Horizontal
V = Antenna Polarization: Vertical

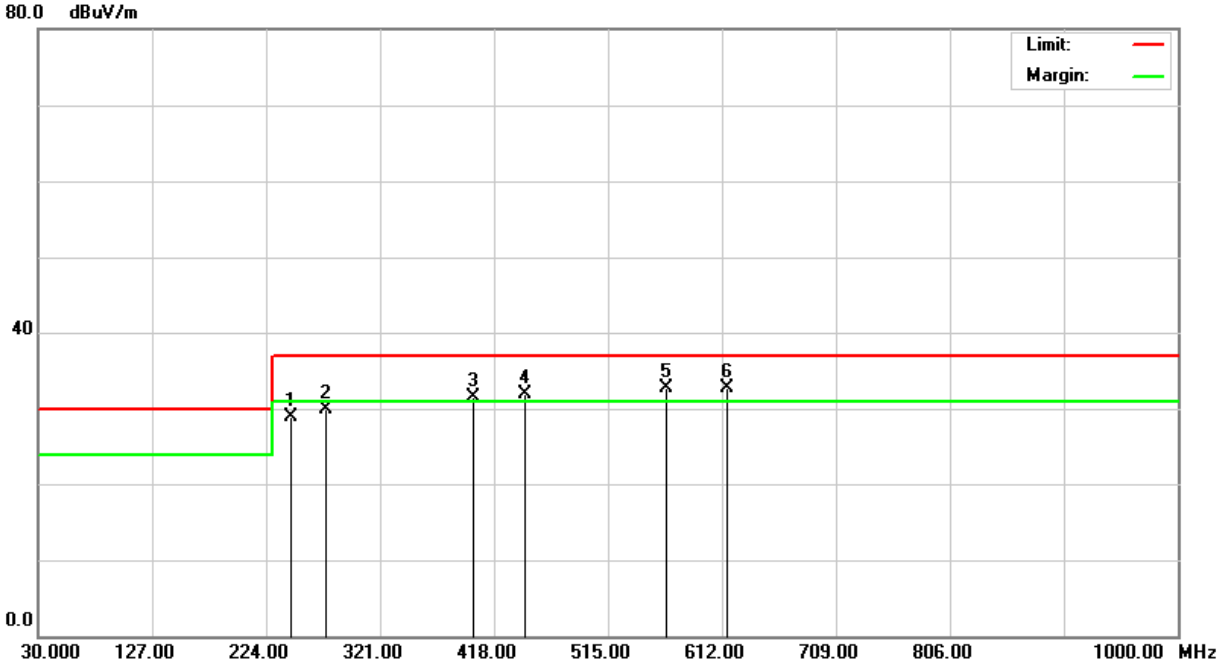
Calculation Formula

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

7.6. TEST RESULTS

Below 1GHz

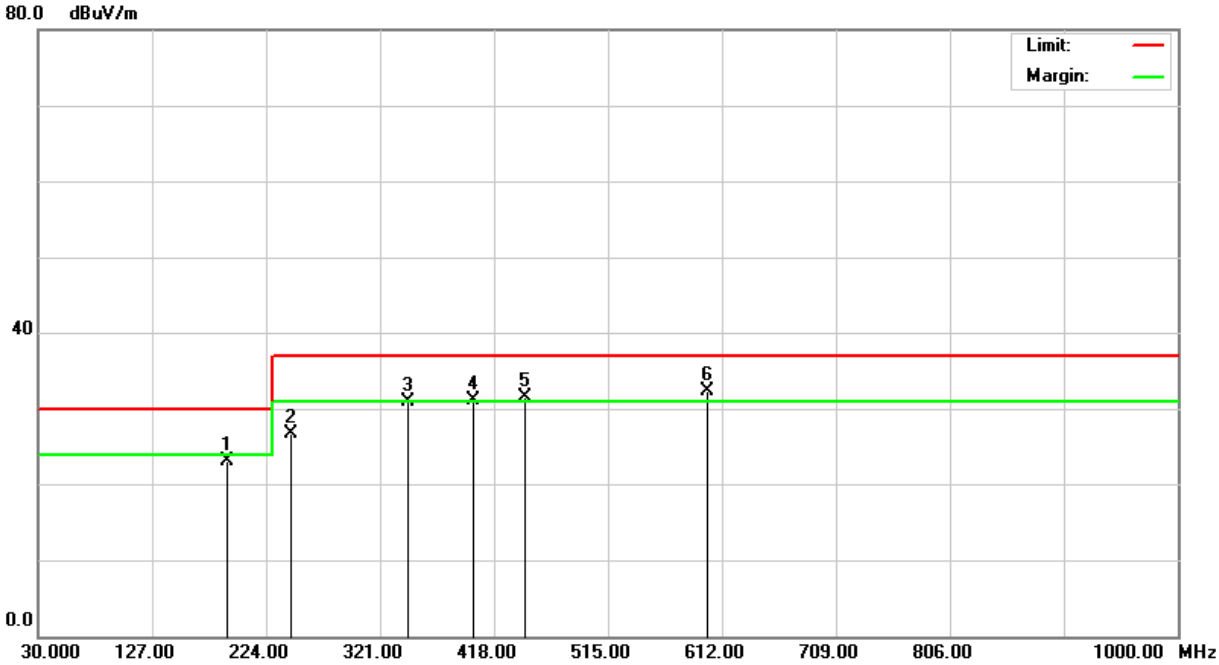
Model No.	PIXI-9377	Test Mode	Mode 1
Environmental Conditions	29°C, 56% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Alee Shen
Standard	FCC CLASS B W/ CISPR 22 CLASS B LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
245.0060	36.80	-7.81	28.99	37.00	-8.01	100	11	Q	V
275.0020	36.50	-6.68	29.82	37.00	-7.18	100	162	Q	V
400.0100	34.50	-3.07	31.43	37.00	-5.57	400	325	Q	V
445.0100	34.10	-2.13	31.97	37.00	-5.03	400	108	Q	V
565.0600	32.40	0.38	32.78	37.00	-4.22	400	198	Q	V
616.0500	32.50	0.27	32.77	37.00	-4.23	400	241	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

Model No.	PIXI-9377	Test Mode	Mode 1
Environmental Conditions	29°C, 56% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Alee Shen
Standard	FCC CLASS B W/ CISPR 22 CLASS B LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
191.5300	34.10	-10.92	23.18	30.00	-6.82	400	99	Q	H
245.0600	34.50	-7.80	26.70	37.00	-10.30	400	180	Q	H
345.0020	36.20	-5.30	30.90	37.00	-6.10	400	162	Q	H
400.0110	34.10	-3.07	31.03	37.00	-5.97	100	22	Q	H
445.0600	33.60	-2.13	31.47	37.00	-5.53	100	150	Q	H
600.0100	32.40	-0.13	32.27	37.00	-4.73	100	54	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

Above 1GHz

Model No.	PIXI-9377	Test Mode	Mode 1
Environmental Conditions	26°C, 60% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical	Antenna Distance	3m & 1m
Highest frequency generated or used	5000MHz	Upper frequency	25000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS B		

Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1034.000	65.43	-9.09	56.34	74.00	-17.66	P	V
1039.534	58.49	-9.07	49.42	54.00	-4.58	A	V
1476.000	59.37	-8.30	51.07	74.00	-22.93	P	V
1782.000	61.69	-6.40	55.29	74.00	-18.71	P	V
1782.400	52.82	-6.41	46.41	54.00	-7.59	A	V
2071.000	54.36	-4.88	49.48	74.00	-24.52	P	V
2224.000	53.53	-4.71	48.82	74.00	-25.18	P	V
3193.000	49.18	-4.14	45.04	74.00	-28.96	P	V
5981.000	47.42	-0.23	47.19	74.00	-26.81	P	V

Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 1m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
18063.000	47.70	7.34	55.04	83.50	-28.46	P	V
18777.000	48.70	6.65	55.35	83.50	-28.15	P	V
19120.000	49.62	6.40	56.02	83.50	-27.48	P	V
19477.000	49.91	6.18	56.09	83.50	-27.41	P	V
21633.000	51.01	7.15	58.16	83.50	-25.34	P	V
21990.000	50.61	8.93	59.54	83.50	-23.96	P	V
22732.000	51.14	6.65	57.79	83.50	-25.71	P	V

Note: 1. P= Peak Reading; A= Average Reading.

Model No.	PIXI-9377	Test Mode	Mode 1
Environmental Conditions	26°C, 60% RH	6dB Bandwidth	1 MHz
Antenna Pole	Horizontal	Antenna Distance	3m & 1m
Highest frequency generated or used	5000MHz	Upper frequency	25000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS B		

Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1034.000	64.05	-9.09	54.96	74.00	-19.04	P	H
1039.774	56.15	-9.07	47.08	54.00	-6.92	A	H
1476.000	55.96	-8.30	47.66	74.00	-26.34	P	H
1782.000	58.62	-6.40	52.22	74.00	-21.78	P	H
2224.000	57.83	-4.71	53.12	74.00	-20.88	P	H
2394.000	56.44	-4.50	51.94	74.00	-22.06	P	H
2989.000	52.55	-4.14	48.41	74.00	-25.59	P	H

Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 1m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
19078.000	49.99	6.41	56.40	83.50	-27.10	P	H
19526.000	49.49	6.15	55.64	83.50	-27.86	P	H
21591.000	50.69	6.94	57.63	83.50	-25.87	P	H
21990.000	51.21	8.93	60.14	83.50	-23.36	P	H
22487.000	50.58	7.30	57.88	83.50	-25.62	P	H
24587.000	52.70	7.22	59.92	83.50	-23.58	P	H
24993.000	51.42	7.35	58.77	83.50	-24.73	P	H

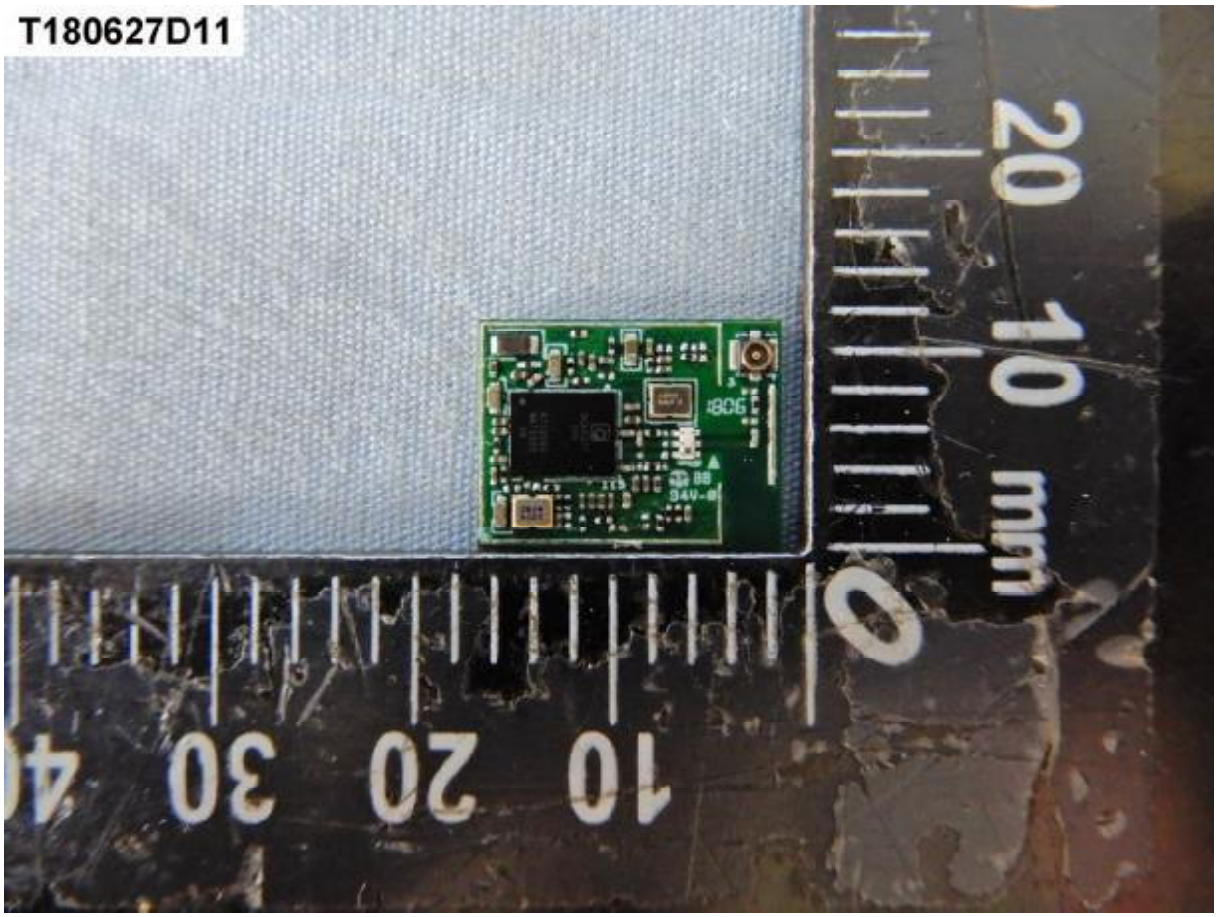
Note: 1. P= Peak Reading; A= Average Reading.

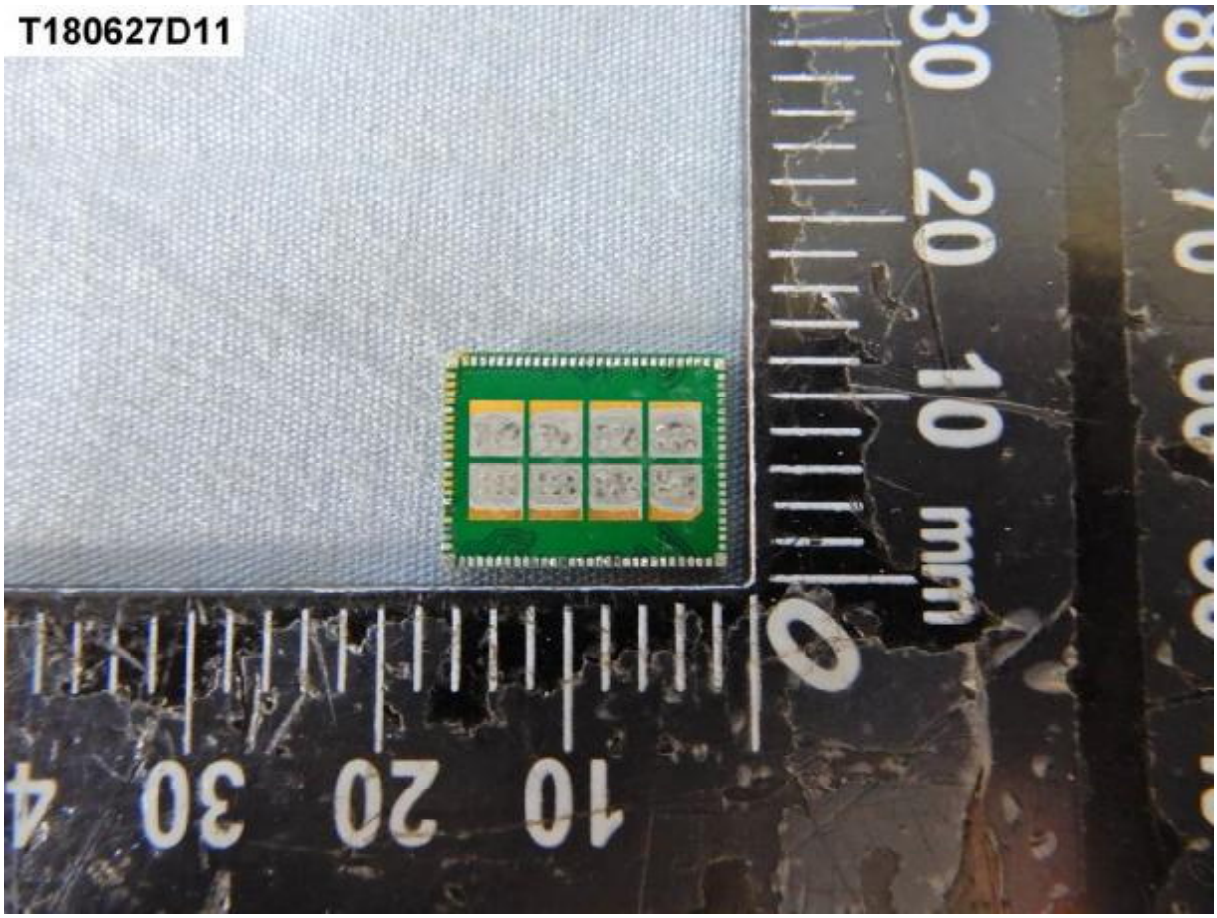
8 PHOTOGRAPHS OF THE TEST CONFIGURATION

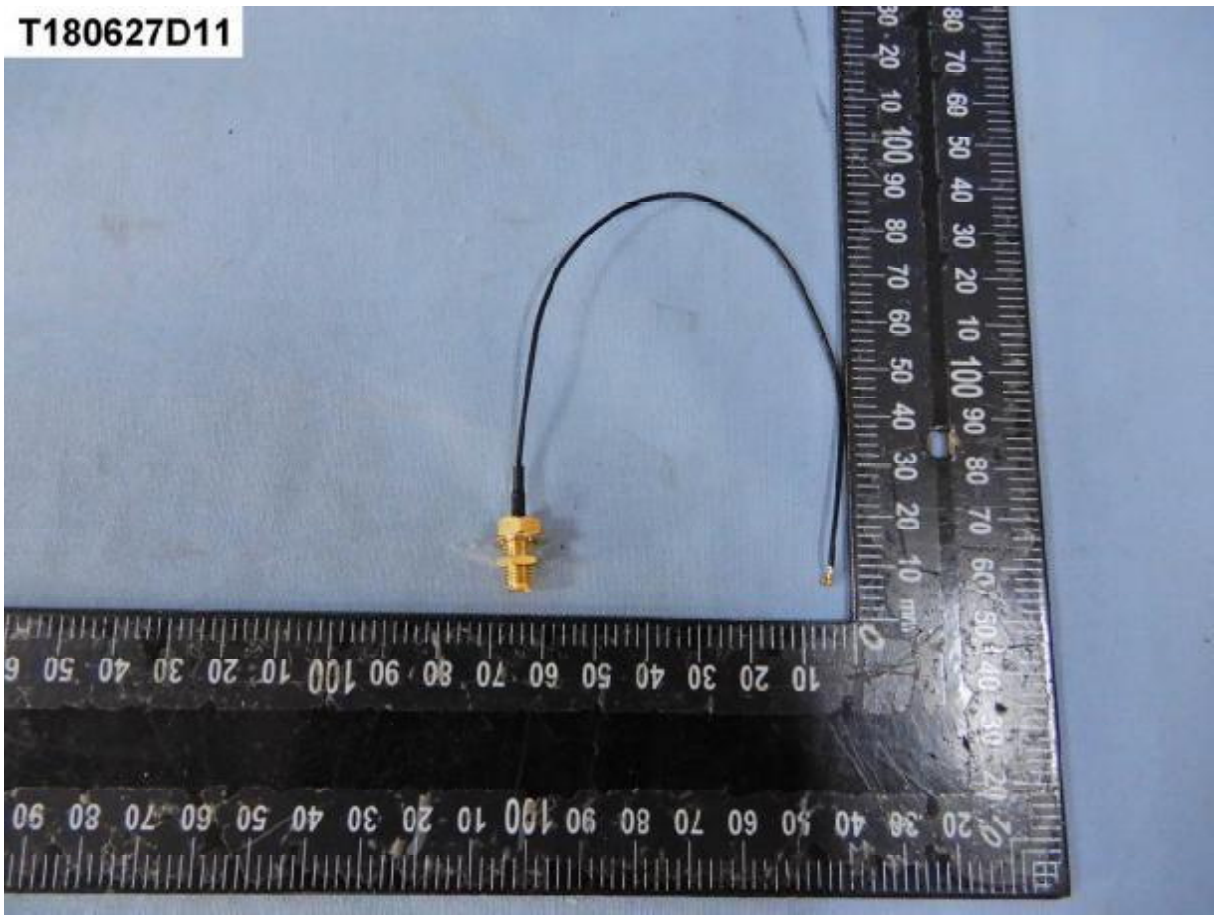
CONDUCTED EMISSION TEST

RADIATED EMISSION TEST

APPENDIX 1 - PHOTOGRAPHS OF EUT



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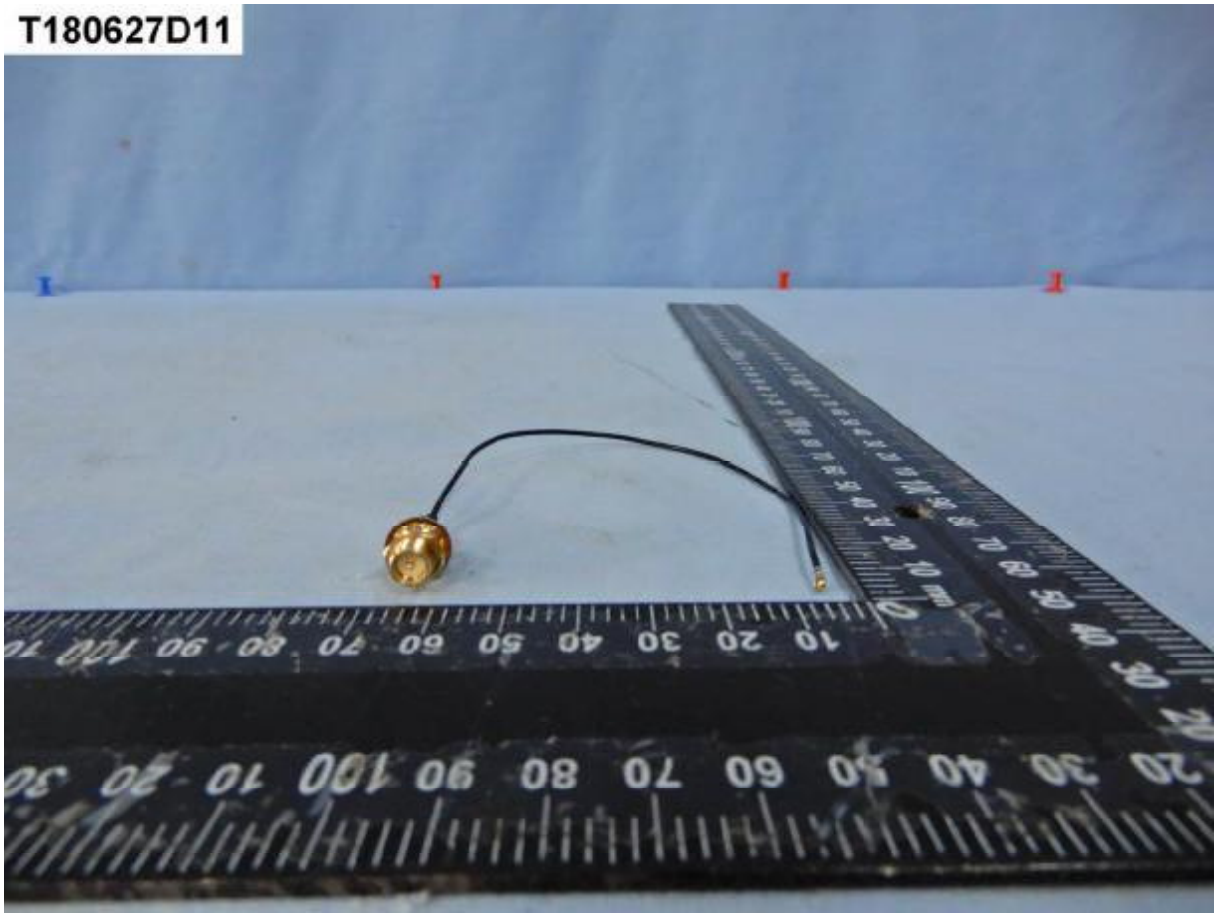
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