

# TEST REPORT

Report No.: SHATBL2304002W03

**Applicant** : Jiangsu Shushi Technology Co., Ltd.

**Product Name** : Smart Hub Gen2 Plus

**Brand Name** : N/A

**Model Name** : 3RSH05027BWZ

**FCC ID** : 2BAGQ-3RSH05027BWZ

**Test Standard** : FCC Part15.247

**Date of Test** : 2023.4.08-2023.04.10

**Report Prepared by** :

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(Chris Xu)

**Report Approved by** :

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**Authorized Signatory** :

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**TEST RESULT CERTIFICATION**

Applicant's Name.....: Jiangsu Shushi Technology Co., Ltd.  
Address.....: NO.9 Nanxu Road,RunZhou District,Zhenjiang,Jiangsu,China  
Manufacturer's Name.....: Jiangsu Shushi Technology Co., Ltd.  
Address.....: NO.9 Nanxu Road,RunZhou District,Zhenjiang,Jiangsu,China  
Product Description  
Product Name.....: Smart Hub Gen2 Plus  
Brand Name.....: N/A  
Model Name.....: 3RSH05027BWZ  
Series Model.....: N/A  
Test Standards.....: FCC Part15.247  
Test Procedure.....: ANSI C63.10-2013

The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the FCC Part15.247 requirements. And it is applicable only to the tested sample identified in the report.

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**Date of Test**

Date of receipt of test item.....: 2023.04.04  
Date (s) of performance of tests.....: 2023.4.08-2023.04.10  
Date of Issue.....: 2023.04.17  
Test Result.....: Pass

**Table of Contents**

**Page**

<b>1. SUMMARY OF TEST RESULTS .....</b>	<b>6</b>
<b>2. GENERAL INFORMATION .....</b>	<b>7</b>
2.1 GENERAL DESCRIPTION OF THE EUT .....	7
2.2 DESCRIPTION OF THE TEST MODES .....	10
2.3 TEST SOFTWARE AND POWER LEVEL .....	10
2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED .....	11
2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS .....	12
2.6 LABORATORY INFORMATION .....	12
2.7 MEASUREMENT UNCERTAINTY .....	12
2.8 EQUIPMENTS LIST .....	14
<b>3. EMC EMISSION TEST .....</b>	<b>15</b>
3.1 CONDUCTED EMISSION MEASUREMENT .....	15
3.2 RADIATED EMISSION MEASUREMENT .....	20
<b>4. CONDUCTED SPURIOUS &amp; BAND EDGE EMISSION .....</b>	<b>74</b>
4.1 LIMIT .....	74
4.2 TEST PROCEDURE .....	74
4.3 DEVIATION FROM STANDARD .....	74
4.4 TEST SETUP .....	74
4.5 EUT OPERATION CONDITIONS .....	74
4.6 TEST RESULTS .....	75
<b>5. POWER SPECTRAL DENSITY TEST .....</b>	<b>77</b>
5.1 LIMIT .....	77
5.2 TEST PROCEDURE .....	77
5.3 DEVIATION FROM STANDARD .....	77
5.4 TEST SETUP .....	77
5.5 EUT OPERATION CONDITIONS .....	77
5.6 TEST RESULTS .....	78
<b>6. BANDWIDTH TEST .....</b>	<b>80</b>
6.1 LIMIT .....	80
6.2 TEST PROCEDURE .....	80
6.3 DEVIATION FROM STANDARD .....	80
6.4 TEST SETUP .....	80
6.5 EUT OPERATION CONDITIONS .....	81



## Table of Contents

## Page

6.6 TEST RESULTS .....	81
<b>7. PEAK OUTPUT POWER TEST .....</b>	<b>84</b>
7.1 LIMIT .....	84
7.2 TEST PROCEDURE .....	84
7.3 DEVIATION FROM STANDARD .....	84
7.4 TEST SETUP .....	84
7.5 EUT OPERATION CONDITIONS .....	84
7.6 TEST RESULTS .....	85
<b>8. ANTENNA REQUIREMENT .....</b>	<b>87</b>
8.1 STANDARD REQUIREMENT .....	87
8.2 EUT ANTENNA .....	87
<b>9.APPENDIX-PHOTOS OF TEST SETUP .....</b>	<b>88</b>

**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	2023.04.17	SHATBL2304002W03	ALL	Initial Issue

### 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247, Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247 (a)(2)	6dB&99% Bandwidth	PASS	--
15.247 (b)(3)	Output Power	PASS	--
15.247(d) & 15.209 & 15.205	Radiated Spurious Emission	PASS	--
15.247(d) & 15.205	Conducted Spurious & Band Edge Emission	PASS	--
15.247 (e)	Power Spectral Density	PASS	--
15.205	Restricted bands of operation	PASS	--
15.203	Antenna Requirement	PASS	--

**NOTE:**

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Smart Hub Gen2 Plus	
Trade Name	N/A	
Model Name	3RSV03029BWU	
Series Model	N/A	
Model Difference	N/A	
Product Description	The EUT is Smart Hub Gen2 Plus	
	Operation Frequency:	802.11b/g/n 20: 2412~2462 MHz
	Modulation Type:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
	Bit Rate of Transmitter:	802.11b:11/5.5/2/1Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20MHz):MCS7/MCS6/MCS5/MCS4/MCS3/MCS2/MCS1/MCS0
	Number of Channel:	802.11b/g/n20: 11CH
	Antenna Designation:	Ceramic Antenna
	Antenna Gain (dBi):	2.8dBi
	Channel List	Please refer to the Note 2.
Power Input	DC5V	
Battery	N/A	
Hardware version number	P5_V2.7	
Software version number	02.00.31.00	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.



2. Operation Frequency of channel

802.11b/g/n(20MHz)		Channel List for 802.11n(40MHz)	
Channel	Frequency	Channel	Frequency
01	2412	03	2422
02	2417	04	2427
03	2422	05	2432
04	2427	06	2437
05	2432	07	2442
06	2437	08	2447
07	2442	09	2452
08	2447		
09	2452		
10	2457		
11	2462		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel

2.4GHz Test Frequency:

For 802.11b/g/n (HT20)	
Channel	Freq.(MHz)
01	2412
06	2437
11	2462

For 802.11n (HT40)	
Channel	Freq.(MHz)
03	2422
06	2437
09	2452

3.

Ant.	Model Name	Antenna Type	Connector	Gain (dBi)	Note
0	3RSH05027BWZ	Ceramic Antenna	N/A	2.8dBi	WLANANT



## 2.2 DESCRIPTION OF THE TEST MODES

Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH1	1Mbps
Mode 2	TX IEEE 802.11b CH6	1Mbps
Mode 3	TX IEEE 802.11 b CH11	1Mbps
Mode 4	TX IEEE 802.11g CH1	6Mbps
Mode 5	TX IEEE 802.11g CH6	6Mbps
Mode 6	TX IEEE 802.11g CH11	6Mbps
Mode 7	TX IEEE 802.11n HT20 CH1	MCS0
Mode 8	TX IEEE 802.11n HT20 CH6	MCS0
Mode 9	TX IEEE 802.11n HT20 CH11	MCS0

Note:

- (1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
- (2) We have be tested for all available U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report.

### Conducted Emission

Test Case	
Conducted Emission	Mode10 Keeping WIFI TX

## 2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Type	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(2.4G)	2.4G WIFI	802.11b	2.8	23	Provided by the customer
		802.11g		23	
		802.11n(HT20)		23	

## 2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

### Radiation Test Set



### Conduction Test Set



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-2	Adapter	Moveforest	MF-05001000SA1	N/A	N/A
C-1	USB	N/A	20cm	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Type No.	Note
E-3	Notebook	Lenovo	DESKTOP-USDEO09	00326-10000-00000-AA636	N/A
C-2	USB	N/A	100cm	N/A	N/A

Note:

(1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.6 LABORATORY INFORMATION

Company Name:	Shanghai ATBL Technology Co., Ltd.
Address:	Building 8, No. 160, Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai
Telephone:	+86(0)21-51298625
The FCC Registration Number (FRN):	0031025281
A2LA Number:	6184.01
CNAS Number:	CNAS L14531

2.7 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.958\text{dB}$
2	Conducted spurious emissions	$\pm 2.988\text{dB}$
3	All emissions, radiated 30MHz-1GHz	$\pm 2.50\text{dB}$
4	All emissions, radiated 1GHz-18GHz	$\pm 3.51\text{dB}$
5	Occupied bandwidth	$\pm 23.20\text{Hz}$
6	Power spectral density	$\pm 0.886\text{dB}$



## 2.8 EQUIPMENTS LIST

## 2.8.1 Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Management number	Calibrated until
Test Receiver	R&S	ESCI	100469	SHATBL-E003	2023.05.20
Spectrum Analyzer	Agilent	N9020A	MY50200811	SHATBL-E017	2023.05.20
Bilog Antenna	SCHWARZBECK	VLUB 9168	01174	SHATBL-E008	2023.05.20
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	SHATBL-E009	2023.05.20
Pre-Amplifier (0.1M-3GHz)	JPT	JPA-10M1G35	2101010003500 1	SHATBL-E005	2023.05.20
Pre-Amplifier (1G-18GHz)	JPT	JPA0118-55-30 3A	1910001800055 000	SHATBL-E006	2023.05.20
Temperature & Humidity	DeLi	DeLi	N/A	SHATBL-E016	2023.05.20
Antenna/Turntable Controller	Brilliant	N/A	N/A	SHATBL-E007	N/A
Test SW	FALA	EMC-RI(Ver.4A2)		SHATBL-E046	N/A

## 2.8.2 RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	equipment number	Calibrated until
Power meter (with pulse power sensor)	Anritsu	ML2496A	1935001	SHATBL-W030	2023.09.27
Pulse power sensor (with power meter)	Anritsu	MA2411B	1911006	SHATBL-W031	2023.09.27
Signal Analyzer	Agilent	N9020A	MY57300196	SHATBL-W004	2023.09.27
Signal Generator	Agilent	N5182B	MY46240556	SHATBL-W005	2023.09.27
Wireless Communications Test Set	R&S	CMW500	101331	SHATBL-W007	2023.09.27
Temperature & Humidity	Deli	deli	N/A	SHATBL-W011	2023.09.27
Attenuator	Agilent	8494B	DC-18G	SHATBL-W009	2023.09.27
Attenuator	Agilent	8496B	DC-18G	SHATBL-W010	2023.09.27
power splitter	MNK	MPD-DC/6-2 S	62315 G51	SHATBL-W015	2023.09.27
			62315 G52	SHATBL-W016	2023.09.27
Filter	Chengdu kangmaiwei	ZBSF-C2400 -2483.5-T3	N/A	SHATBL-W021	N/A
Constant temperature and humidity box	KSON	THS-B6C-15 0	6159K	SHATBL-W019	2024.01.16
Test SW	FALA	LZ-RF(Ver.LzRF-03A3.1)		SHATBL-W020	N/A

### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

##### 3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “ \* ” marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

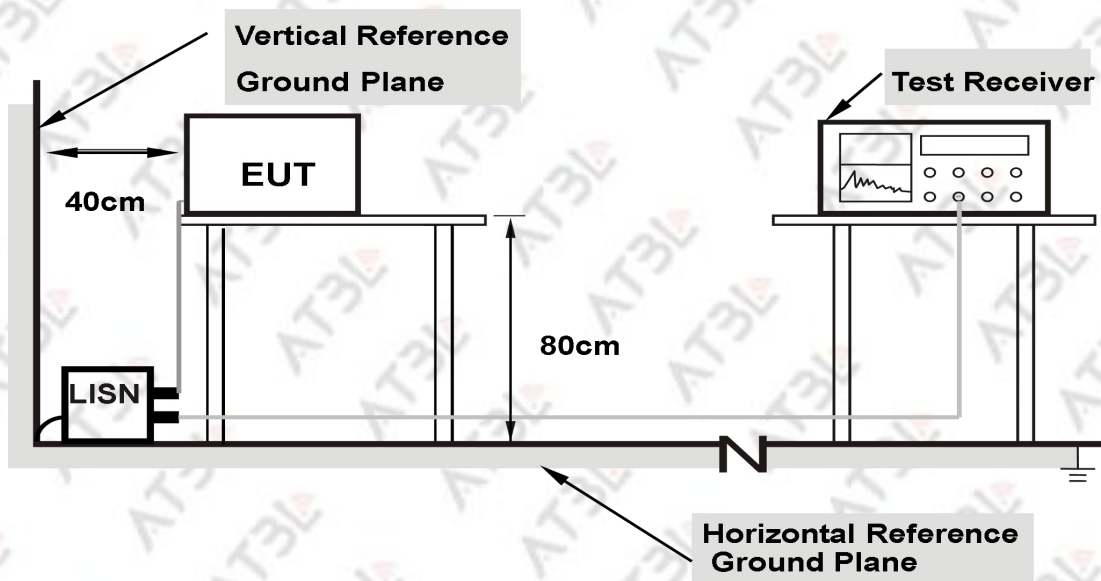
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

### 3.1.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 3.1.3 TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.**

### 3.1.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



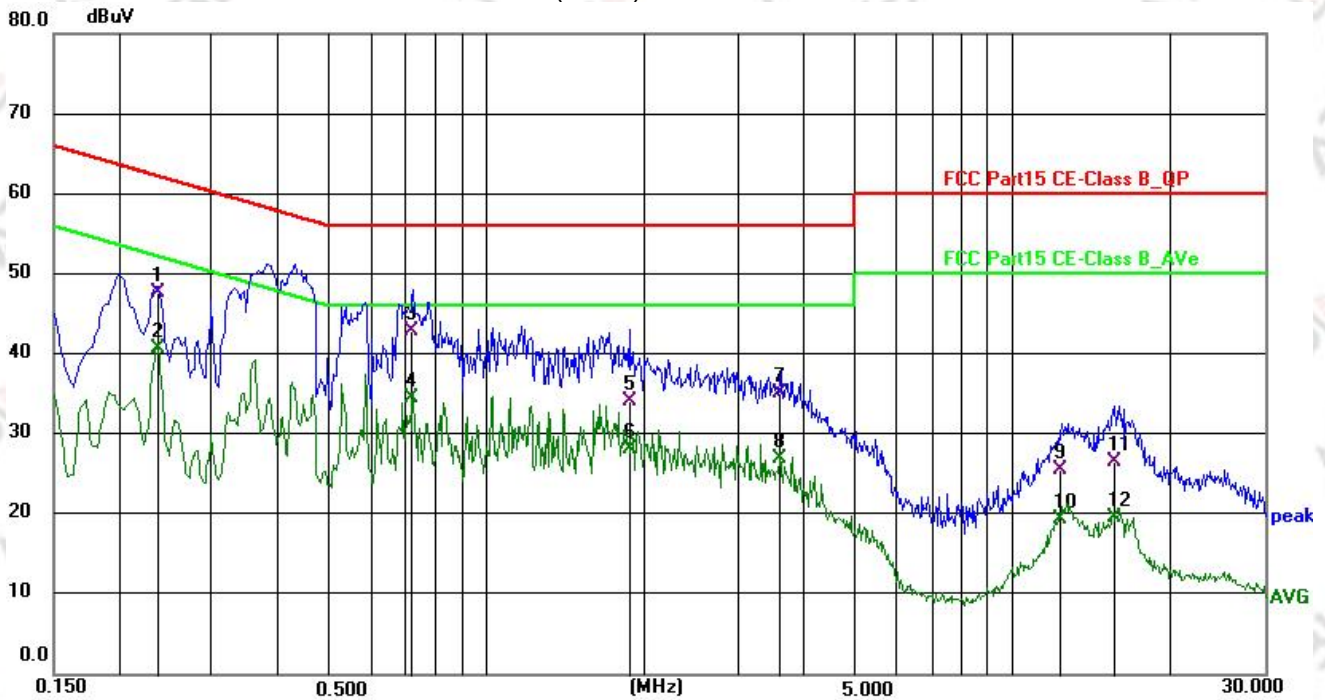
3.1.5 TEST RESULT

Temperature:	22.8°C	Relative Humidity:	51%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 10 Keeping WIFI TX		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2365	37.00	10.74	47.74	62.22	-14.48	QP
2	0.2365	29.98	10.74	40.72	52.22	-11.50	AVG
3	0.7221	32.18	10.69	42.87	56.00	-13.13	QP
4	0.7221	23.83	10.69	34.52	46.00	-11.48	AVG
5	1.8700	23.31	10.77	34.08	56.00	-21.92	QP
6	1.8700	17.35	10.77	28.12	46.00	-17.88	AVG
7	3.6120	24.37	10.81	35.18	56.00	-20.82	QP
8	3.6120	16.06	10.81	26.87	46.00	-19.13	AVG
9	12.3202	14.88	10.73	25.61	60.00	-34.39	QP
10	12.3202	8.62	10.73	19.35	50.00	-30.65	AVG
11	15.6378	15.77	10.85	26.62	60.00	-33.38	QP
12	15.6378	8.68	10.85	19.53	50.00	-30.47	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) – Limit.
3. Factor = LISN factor + Cable loss + Limiter (10dB)



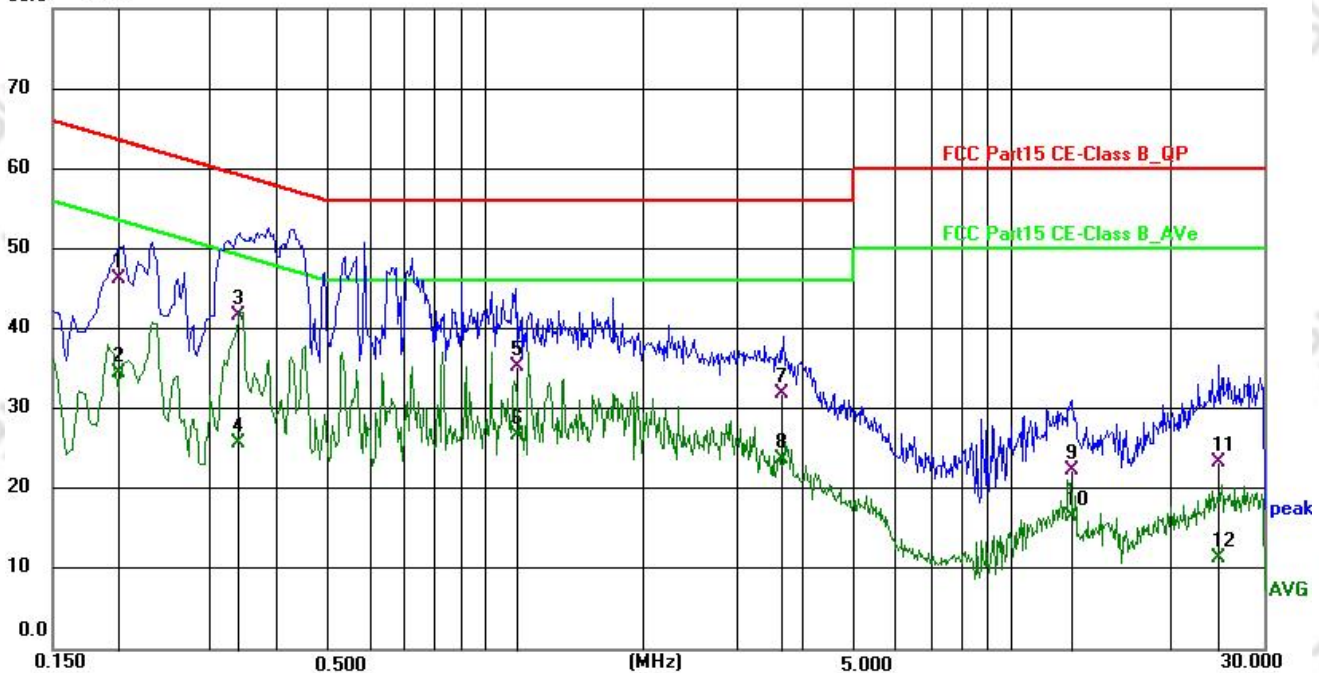
Temperature:	22.8°C	Relative Humidity:	51%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 10 Keeping WIFI TX		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2017	35.80	10.39	46.19	63.54	-17.35	QP
2	0.2017	24.06	10.39	34.45	53.54	-19.09	AVG
3	0.3379	31.35	10.31	41.66	59.25	-17.59	QP
4	0.3379	15.55	10.31	25.86	49.25	-23.39	AVG
5	1.1501	24.90	10.37	35.27	56.00	-20.73	QP
6	1.1501	16.39	10.37	26.76	46.00	-19.24	AVG
7	3.6707	21.43	10.43	31.86	56.00	-24.14	QP
8	3.6707	13.45	10.43	23.88	46.00	-22.12	AVG
9	13.0109	11.79	10.55	22.34	60.00	-37.66	QP
10	13.0109	6.02	10.55	16.57	50.00	-33.43	AVG
11	24.7967	12.20	11.09	23.29	60.00	-36.71	QP
12	24.7967	0.45	11.09	11.54	50.00	-38.46	AVG

## Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) - Limit.
3. Factor = LISN factor + Cable loss + Limiter (10dB)

80.0 dBuV



### 3.2 RADIATED EMISSION MEASUREMENT

#### 3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

Frequencies (MHz)	Field Strength (microrvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

#### LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

#### LIMITS OF RESTRICTED FREQUENCY BANDS

IC:

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			



## For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 kHz/150kHz(Peak/QP/AV)
Stop Frequency	150kHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 kHz / 300 kHz

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1MHz / 3MHz(Peak) 1 MHz/1/T MHz(AVG)

## For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	2310MHz to 2500MHz
RB / VB	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

### 3.2.2 TEST PROCEDURE

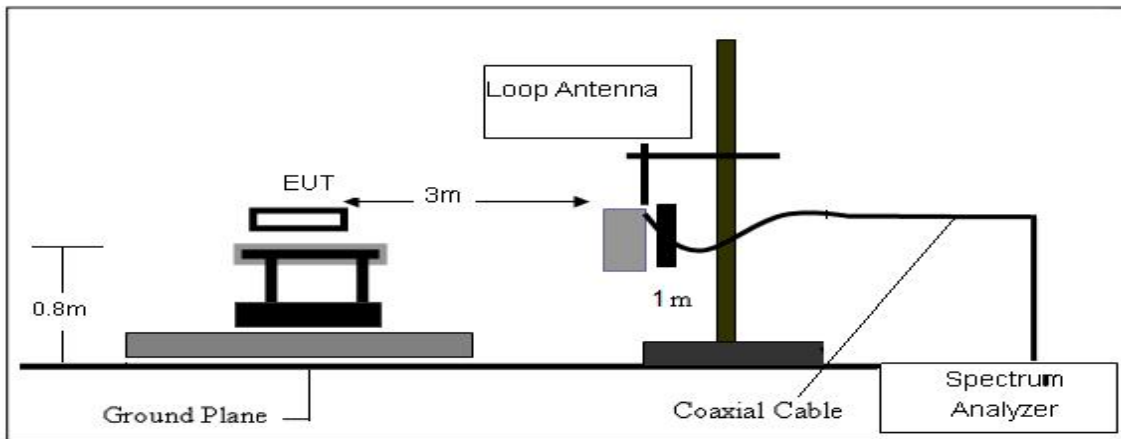
- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and Quasi Peak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

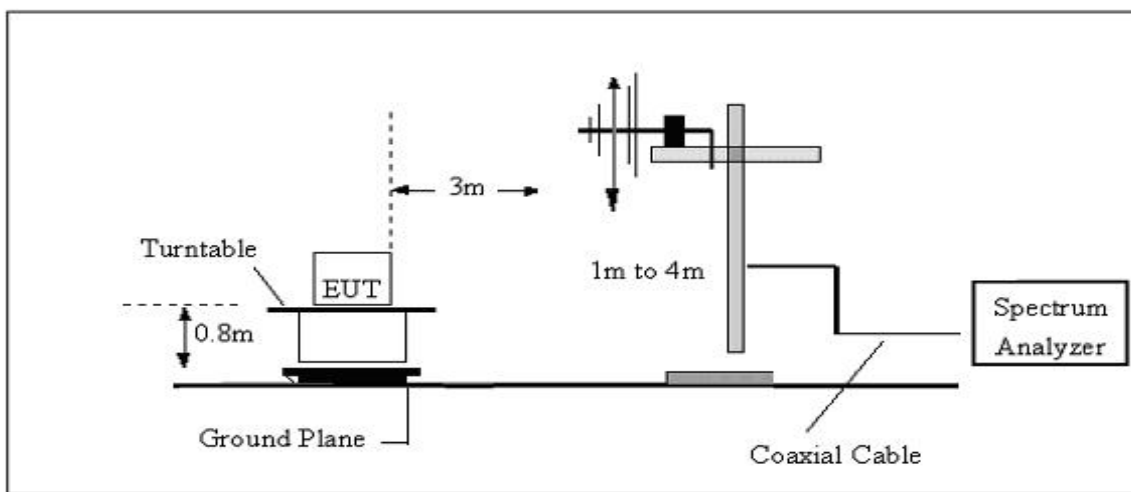
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

### 3.2.3 TEST SETUP

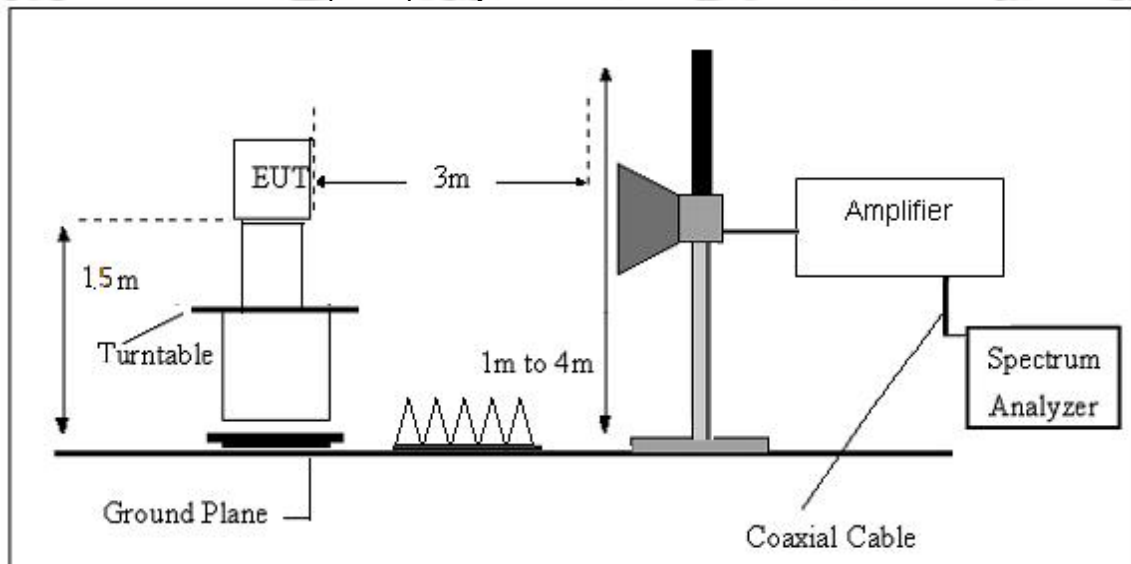
#### (A) Radiated Emission Test-Up Frequency Below 30MHz



#### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



#### (C) Radiated Emission Test-Up Frequency Above 1GHz



### 3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.



### 3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

### 3.2.6 TEST RESULTS(RADIATEDSPURIOUS EMISSIONS)

9kHz - 30MHz

Temperature:	22.8°C	Relative Humidity:	51%RH
Test Voltage:	DC5V	Polarization:	--
Test Mode:	TX Mode		

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$ ;

Limit line = specific limits(dBuv) + distance extrapolation factor.

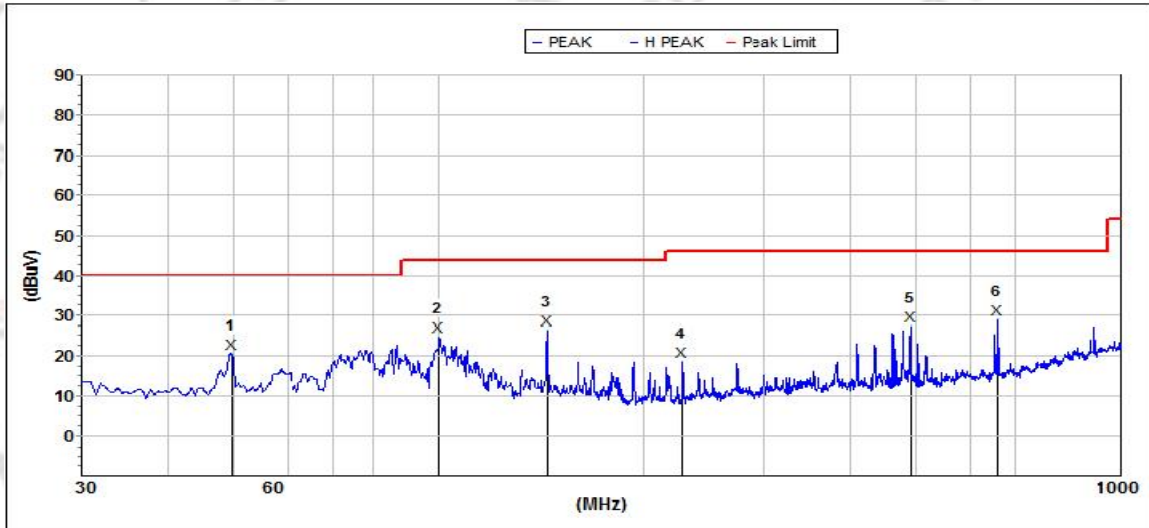
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 1		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 1 Horizontal



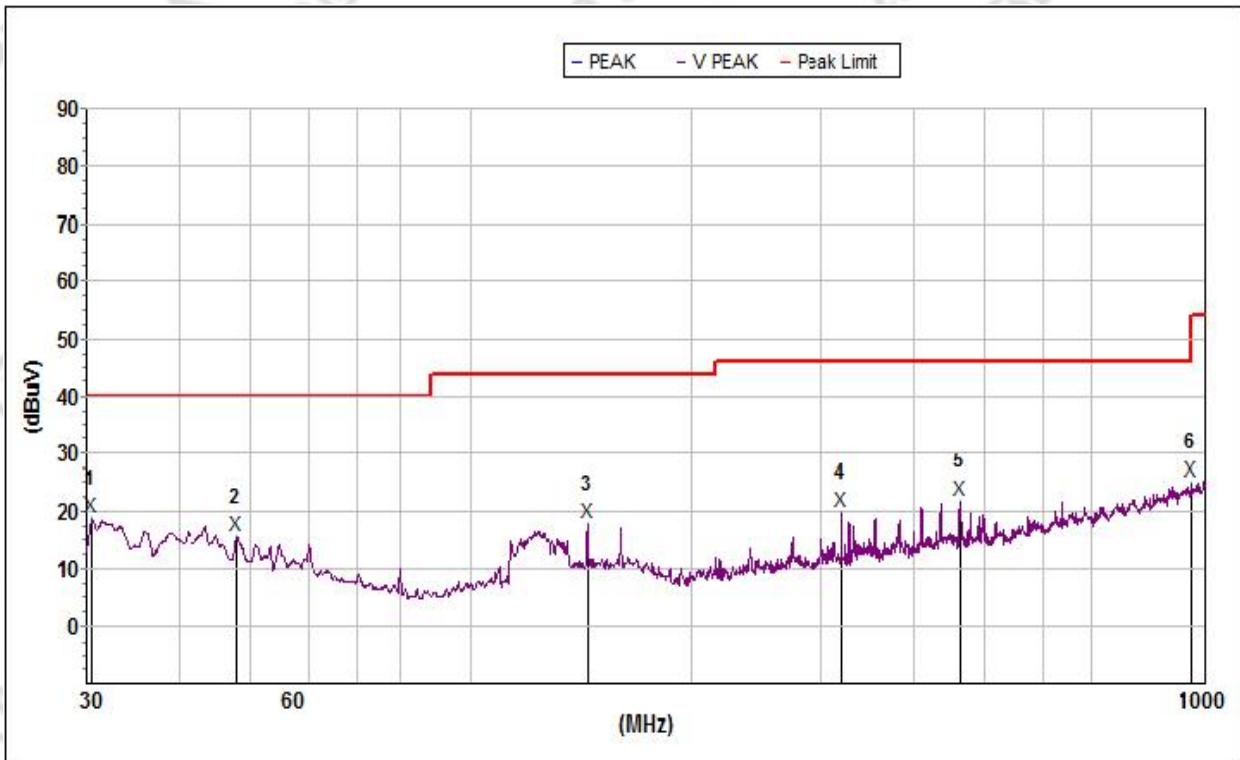
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak:								
1	49.881404	20.7	40.0	19.3	13.5	32.6	0.8	H
2	100.228572	24.8	43.5	18.7	10.2	32.9	1.4	H
3	144.334759	26.6	43.5	16.9	13.8	32.9	1.3	H
4	227.690636	18.5	46.0	27.5	11.0	32.8	2.5	H
5	491.605863	27.6	46.0	18.4	14.7	32.4	2.8	H
6	661.150466	29.1	46.0	16.9	16.3	32.3	3.4	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 1		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 1 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	30.477140	18.8	40.0	21.2	13.2	32.1	0.8	V
2	47.909933	15.6	40.0	24.4	13.7	32.6	0.8	V
3	144.334759	17.9	43.5	25.6	13.8	32.9	1.3	V
4	319.936956	19.8	46.0	26.2	13.2	32.6	2.7	V
5	463.969631	22.0	46.0	24.0	16.1	32.4	2.8	V
6	958.794326	25.2	46.0	20.8	22.2	31.2	3.8	V



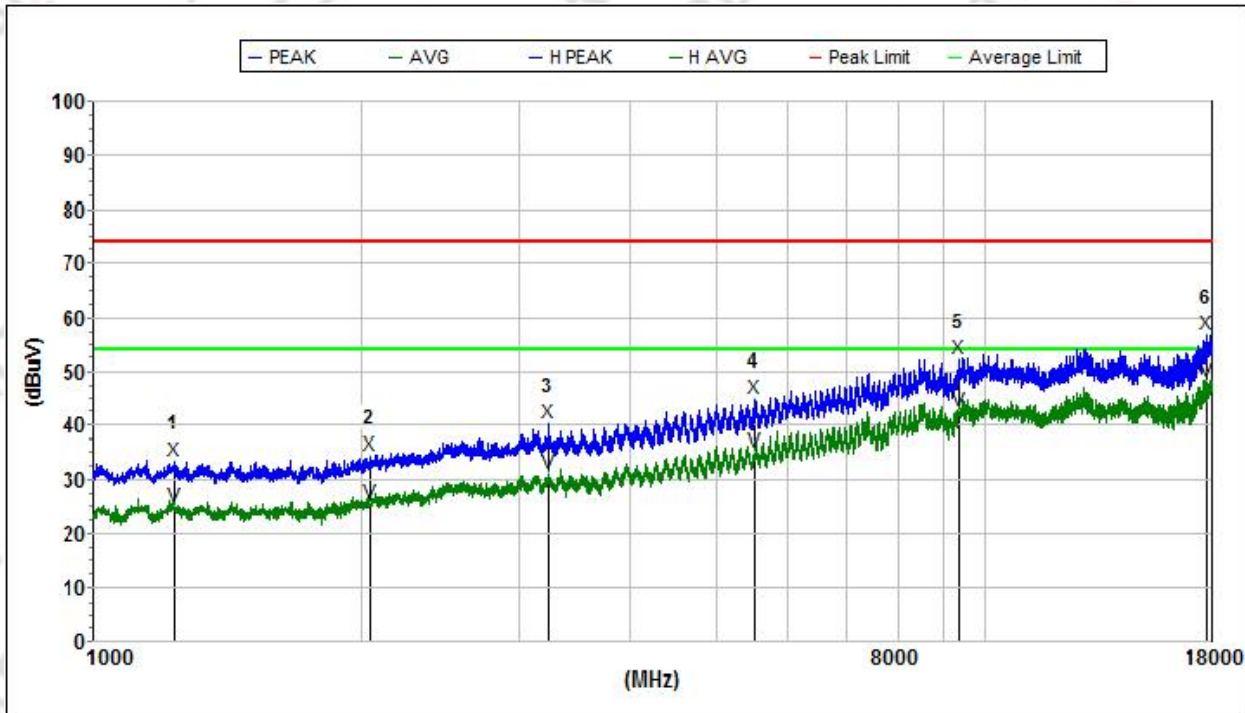
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 1		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 1 Horizontal



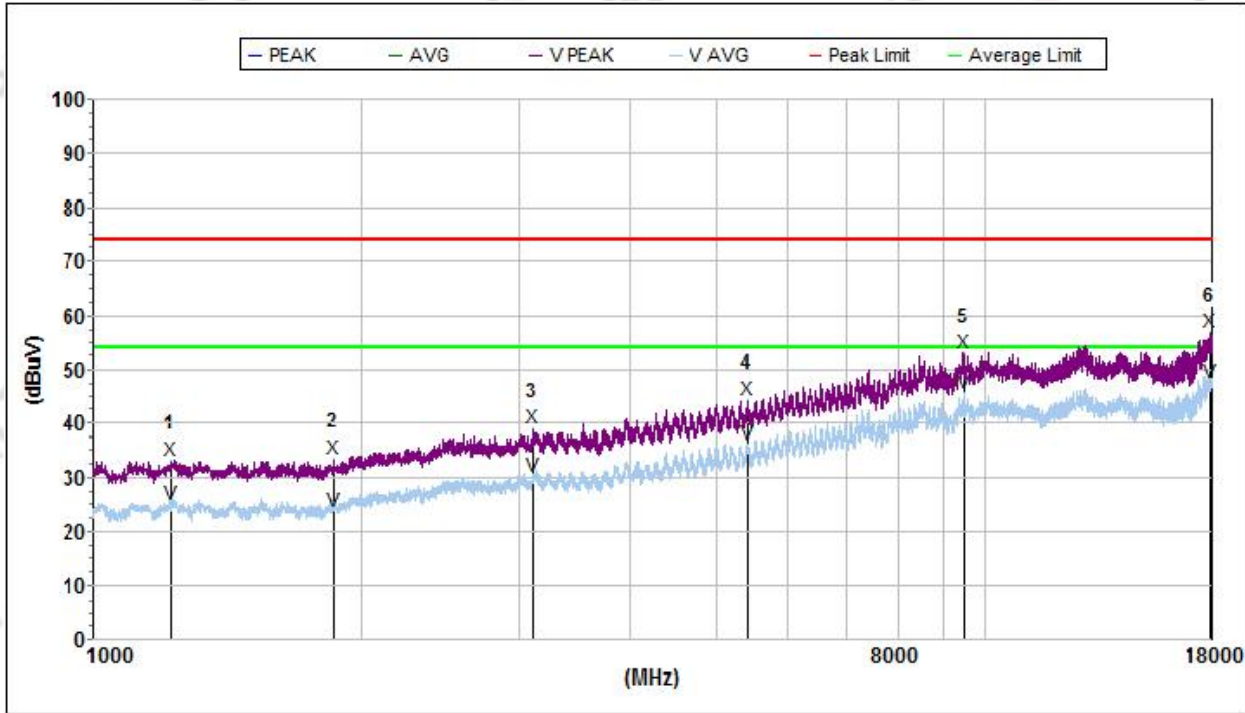
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1228.650000	33.6	74.0	40.4	25.8	60.9	2.3	H
2	2041.250000	34.6	74.0	39.4	26.8	60.9	2.7	H
3	3232.100000	40.3	74.0	33.7	29.7	58.4	3.0	H
4	5523.700000	45.1	74.0	28.9	32.8	58.1	4.0	H
5	9386.100000	52.4	74.0	21.6	38.6	59.2	5.4	H
6	17800.250000	56.8	74.0	17.2	41.1	57.8	7.0	H
Avg								
1	1228.650000	25.1	54.0	28.9	25.8	60.9	2.3	H
2	2041.250000	25.7	54.0	28.3	26.8	60.9	2.7	H
3	3232.100000	31.3	54.0	22.7	29.7	58.4	3.0	H
4	5523.700000	35.2	54.0	18.8	32.8	58.1	4.0	H
5	9386.100000	42.7	54.0	11.3	38.6	59.2	5.4	H
6	17800.250000	48.3	54.0	5.7	41.1	57.8	7.0	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 1		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

## Mode 1 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1219.300000	33.2	74.0	40.8	25.7	60.9	2.3	V
2	1863.600000	33.6	74.0	40.4	25.4	61.1	2.6	V
3	3113.950000	39.2	74.0	34.8	29.7	58.7	3.0	V
4	5414.050000	44.4	74.0	29.6	32.7	58.0	3.9	V
5	9473.650000	53.0	74.0	21.0	38.6	59.7	5.4	V
6	17894.600000	56.8	74.0	17.2	41.7	57.7	7.0	V
Avg								
1	1219.300000	25.0	54.0	29.0	25.7	60.9	2.3	V
2	1863.600000	23.7	54.0	30.3	25.4	61.1	2.6	V
3	3113.950000	30.4	54.0	23.6	29.7	58.7	3.0	V
4	5414.050000	36.1	54.0	17.9	32.7	58.0	3.9	V
5	9473.650000	45.7	54.0	8.3	38.6	59.7	5.4	V
6	17894.600000	47.8	54.0	6.2	41.7	57.7	7.0	V

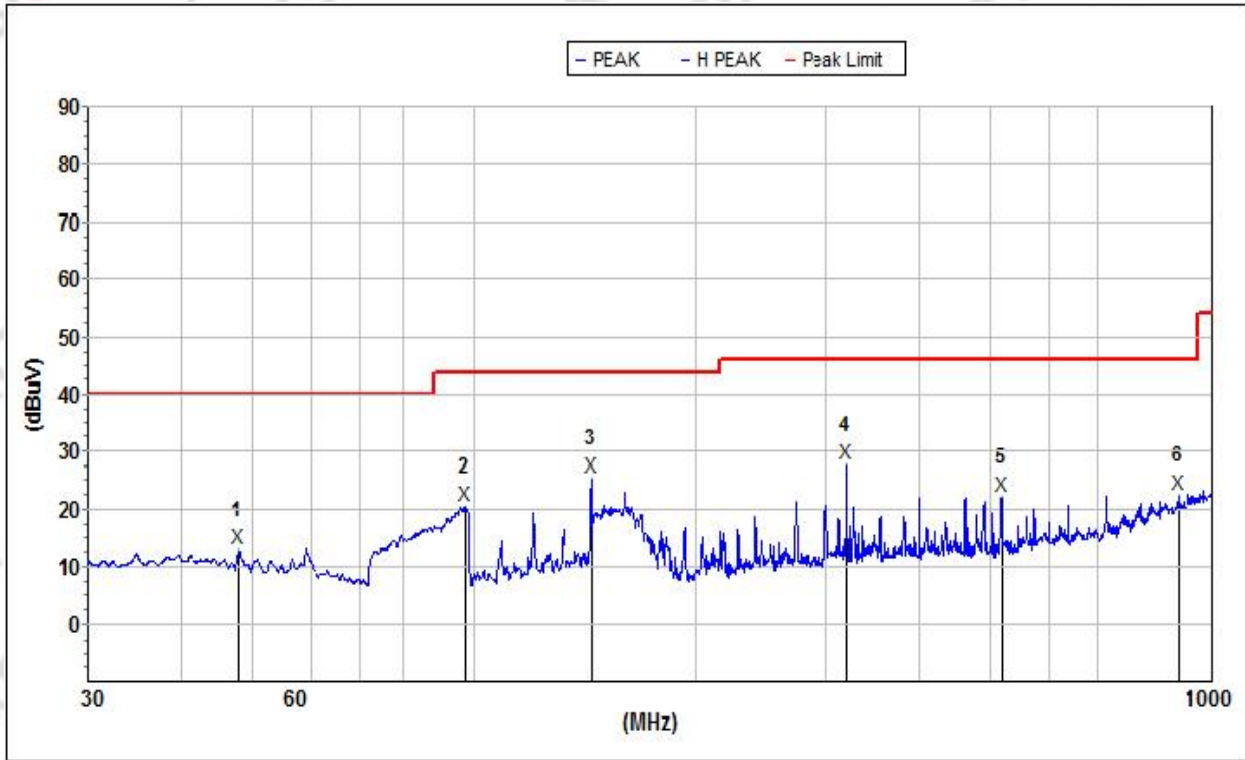
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 3		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 3 Horizontal



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	47.909933	13.1	40.0	26.9	13.7	32.6	0.8	H
2	97.285267	20.6	43.5	22.9	10.0	32.9	1.3	H
3	144.334759	25.5	43.5	18.0	13.8	32.9	1.3	H
4	319.936956	27.8	46.0	18.2	13.1	32.6	2.7	H
5	518.155647	22.1	46.0	23.9	15.0	32.4	2.9	H
6	898.570586	22.5	46.0	23.5	19.6	31.6	3.6	H

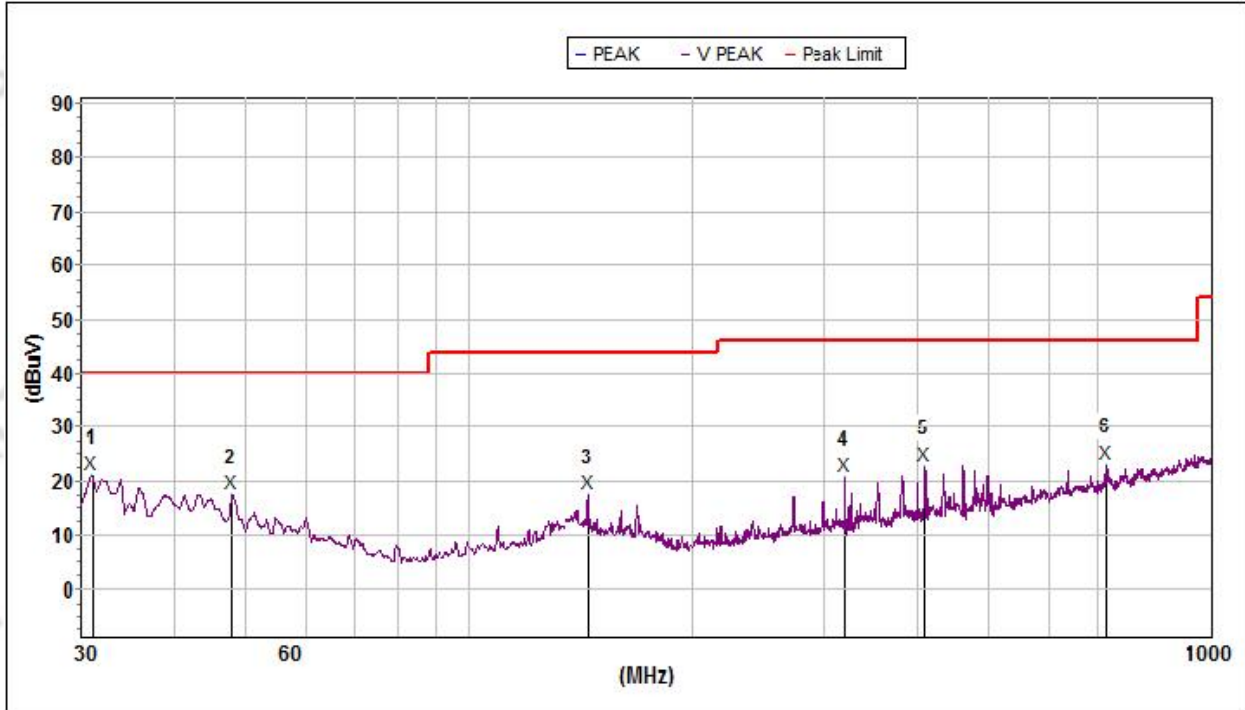


Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 3		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 3 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	30.961869	21.4	40.0	18.6	13.3	32.1	0.8	V
2	47.909933	17.6	40.0	22.4	13.7	32.6	0.8	V
3	144.334759	17.6	43.5	25.9	13.8	32.9	1.3	V
4	319.936956	20.9	46.0	25.1	13.2	32.6	2.7	V
5	408.229590	22.8	46.0	23.2	14.9	32.3	2.7	V
6	719.199535	23.4	46.0	22.6	19.9	32.2	3.6	V

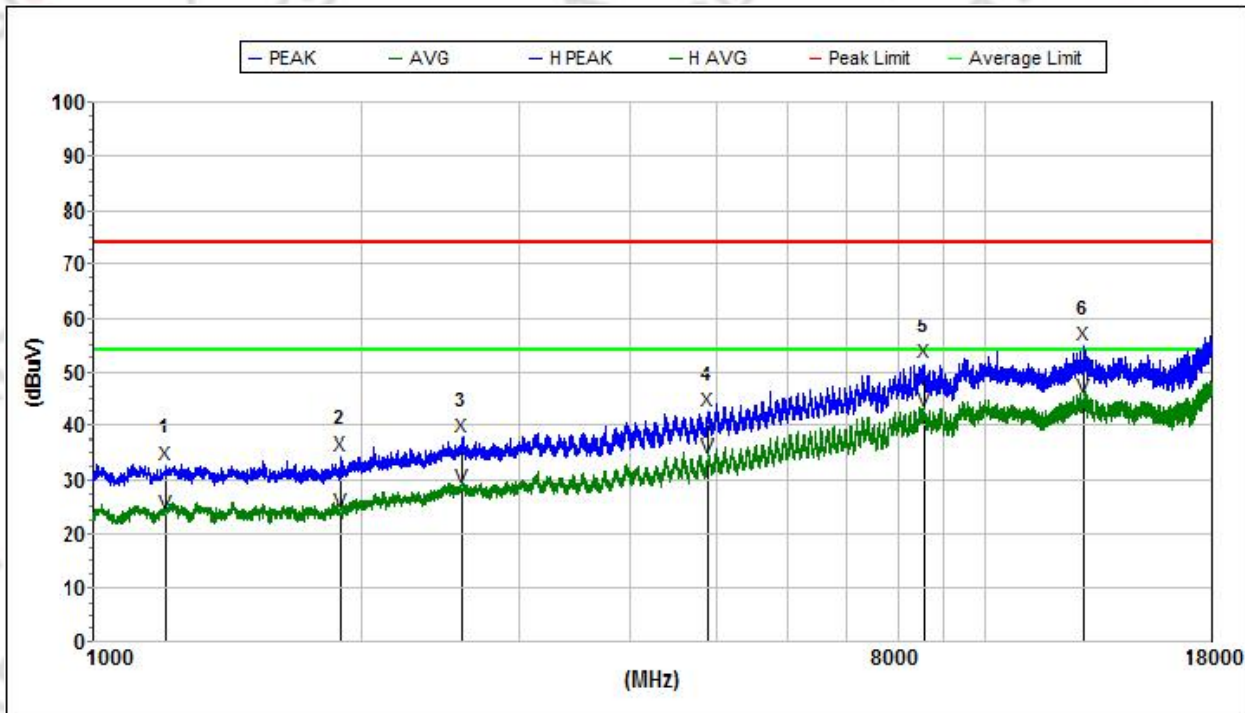
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 3		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 3 Horizontal



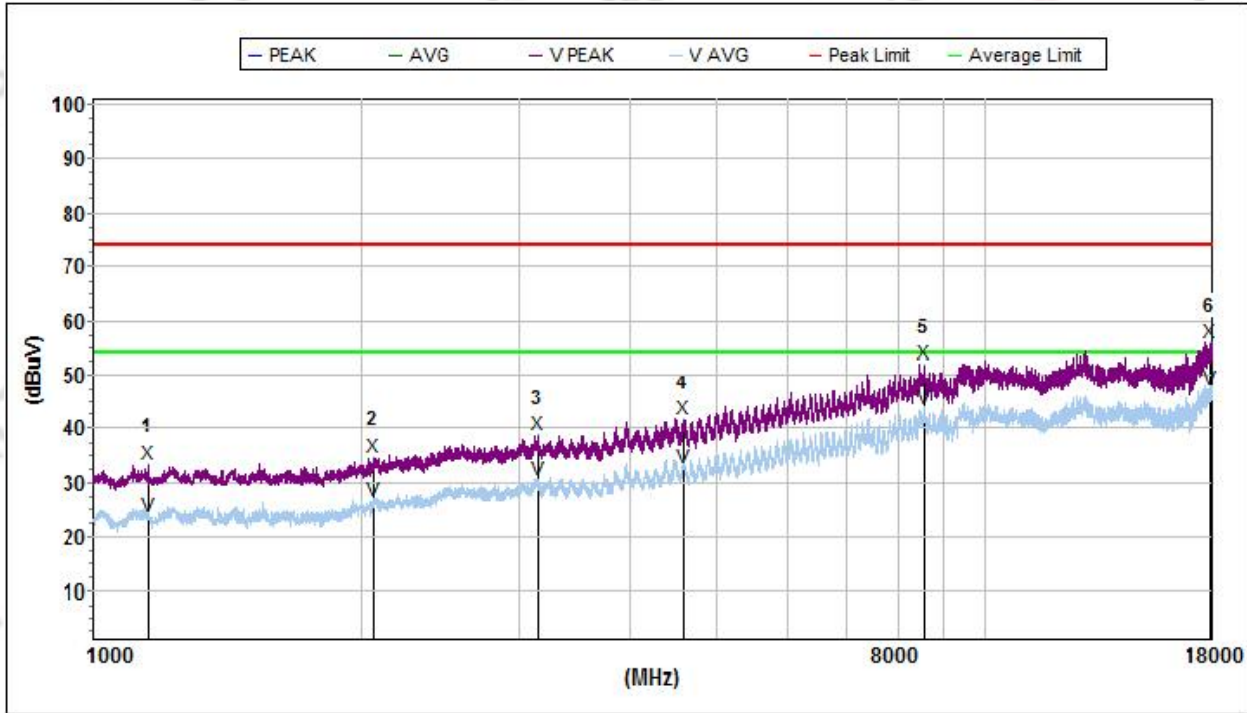
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1203.150000	33.0	74.0	41.0	25.7	60.8	2.3	H
2	1899.300000	34.4	74.0	39.6	25.6	61.0	2.6	H
3	2598.850000	37.9	74.0	36.1	28.0	59.0	2.9	H
4	4906.600000	42.6	74.0	31.4	32.7	57.4	3.6	H
5	8521.650000	51.6	74.0	22.4	37.7	55.9	5.1	H
6	12927.200000	55.0	74.0	19.0	39.7	57.8	6.1	H
Avg								
1	1203.150000	23.6	54.0	30.4	25.7	60.8	2.3	H
2	1899.300000	24.1	54.0	29.9	25.6	61.0	2.6	H
3	2598.850000	28.5	54.0	25.5	28.0	59.0	2.9	H
4	4906.600000	34.2	54.0	19.8	32.7	57.4	3.6	H
5	8521.650000	42.8	54.0	11.2	37.7	55.9	5.1	H
6	12927.200000	45.4	54.0	8.6	39.7	57.8	6.1	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 3		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 3 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1149.600000	33.5	74.0	40.5	25.6	60.7	2.2	V
2	2063.350000	34.8	74.0	39.2	26.9	60.9	2.7	V
3	3147.100000	38.9	74.0	35.1	29.7	58.6	3.0	V
4	4586.150000	41.9	74.0	32.1	31.6	57.9	3.6	V
5	8535.250000	52.1	74.0	21.9	37.8	56.2	5.1	V
6	17887.800000	55.9	74.0	18.1	41.7	57.7	7.0	V
Avg								
1	1149.600000	23.8	54.0	30.2	25.6	60.7	2.2	V
2	2063.350000	26.5	54.0	27.5	26.9	60.9	2.7	V
3	3147.100000	30.7	54.0	23.3	29.7	58.6	3.0	V
4	4586.150000	33.0	54.0	21.0	31.6	57.9	3.6	V
5	8535.250000	43.7	54.0	10.3	37.8	56.2	5.1	V
6	17887.800000	47.5	54.0	6.5	41.7	57.7	7.0	V



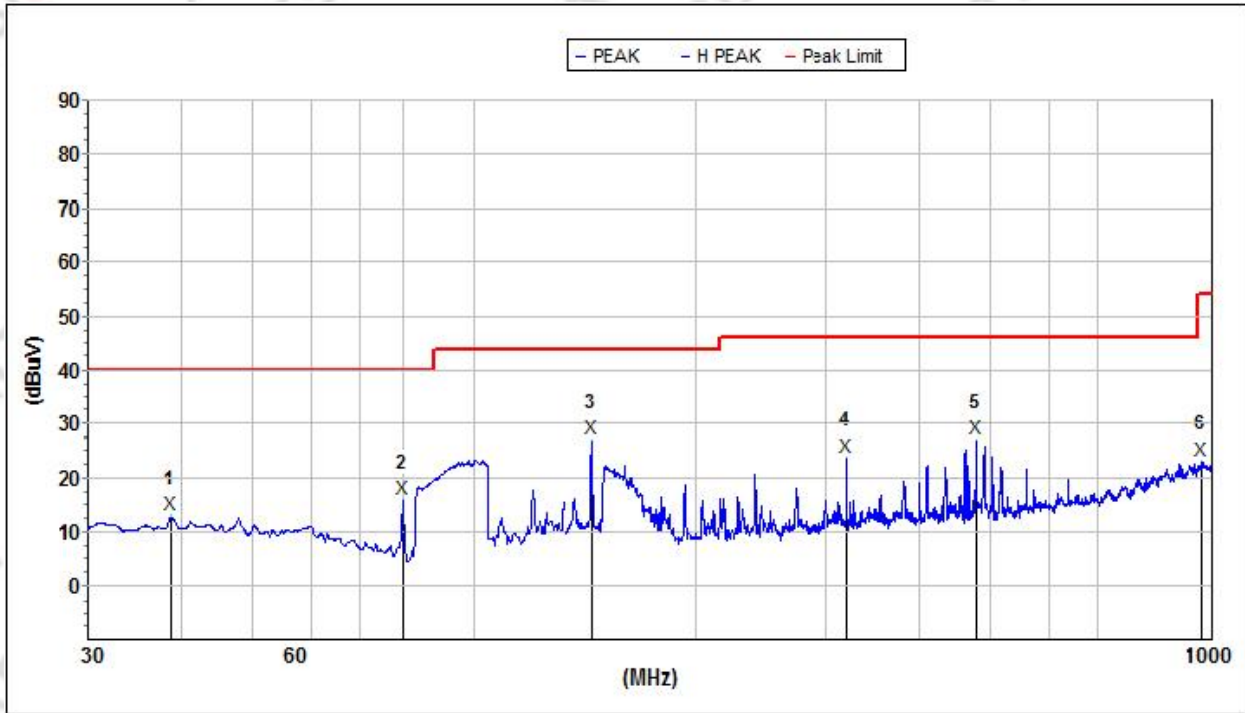
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 4		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 4 Horizontal



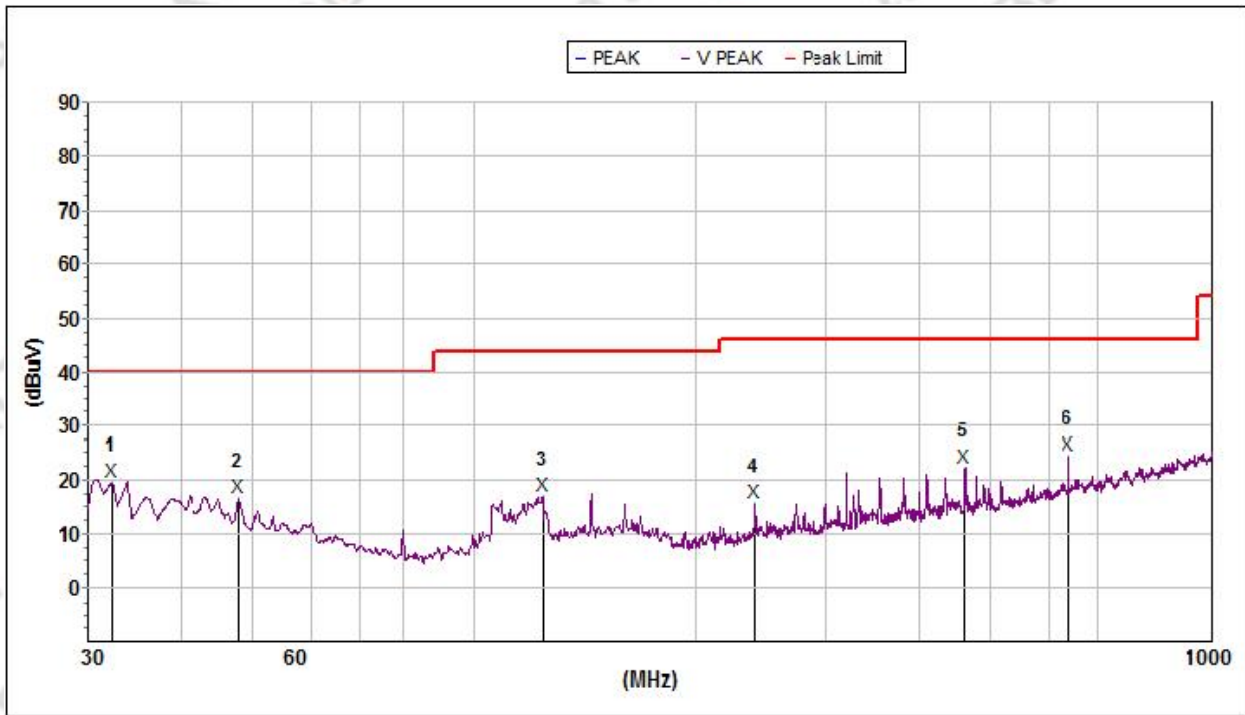
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak:								
1	38.683874	13.0	40.0	27.0	13.9	32.3	0.8	H
2	79.940317	15.9	40.0	24.1	9.3	32.9	0.9	H
3	144.334759	27.3	43.5	16.2	13.8	32.9	1.3	H
4	319.936956	24.0	46.0	22.0	13.1	32.6	2.7	H
5	479.685845	27.2	46.0	18.8	14.6	32.4	2.8	H
6	970.634069	23.2	54.0	30.8	20.4	31.2	3.8	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 4		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 4 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	32.405937	19.7	40.0	20.3	13.3	32.2	0.8	V
2	47.909933	16.5	40.0	23.5	13.7	32.6	0.8	V
3	123.481765	17.0	43.5	26.5	12.4	32.9	1.4	V
4	239.987350	15.8	46.0	30.2	11.4	32.8	2.5	V
5	462.345544	22.3	46.0	23.7	16.1	32.4	2.8	V
6	639.488826	24.5	46.0	21.5	19.2	32.3	3.4	V

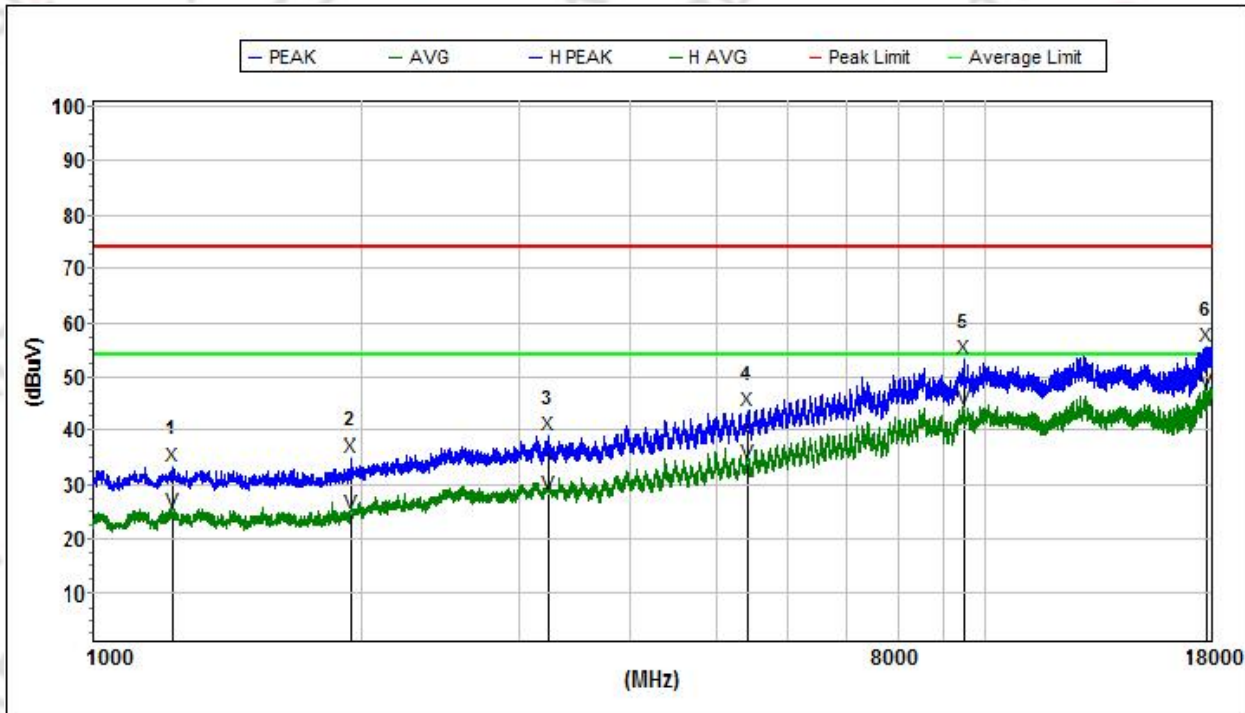
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 4		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 4 Horizontal



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1225.250000	33.6	74.0	40.4	25.8	60.9	2.3	H
2	1948.600000	35.1	74.0	38.9	26.0	60.9	2.6	H
3	3238.050000	39.3	74.0	34.7	29.7	58.4	3.0	H
4	5408.100000	43.8	74.0	30.2	32.7	58.0	3.9	H
5	9486.400000	53.2	74.0	20.8	38.6	59.8	5.4	H
6	17801.100000	55.6	74.0	18.4	41.1	57.8	7.0	H
Avg								
1	1225.250000	24.9	54.0	29.1	25.8	60.9	2.3	H
2	1948.600000	24.7	54.0	29.3	26.0	60.9	2.6	H
3	3238.050000	28.3	54.0	25.7	29.7	58.4	3.0	H
4	5408.100000	34.2	54.0	19.8	32.7	58.0	3.9	H
5	9486.400000	44.0	54.0	10.0	38.6	59.8	5.4	H
6	17801.100000	47.3	54.0	6.7	41.1	57.8	7.0	H

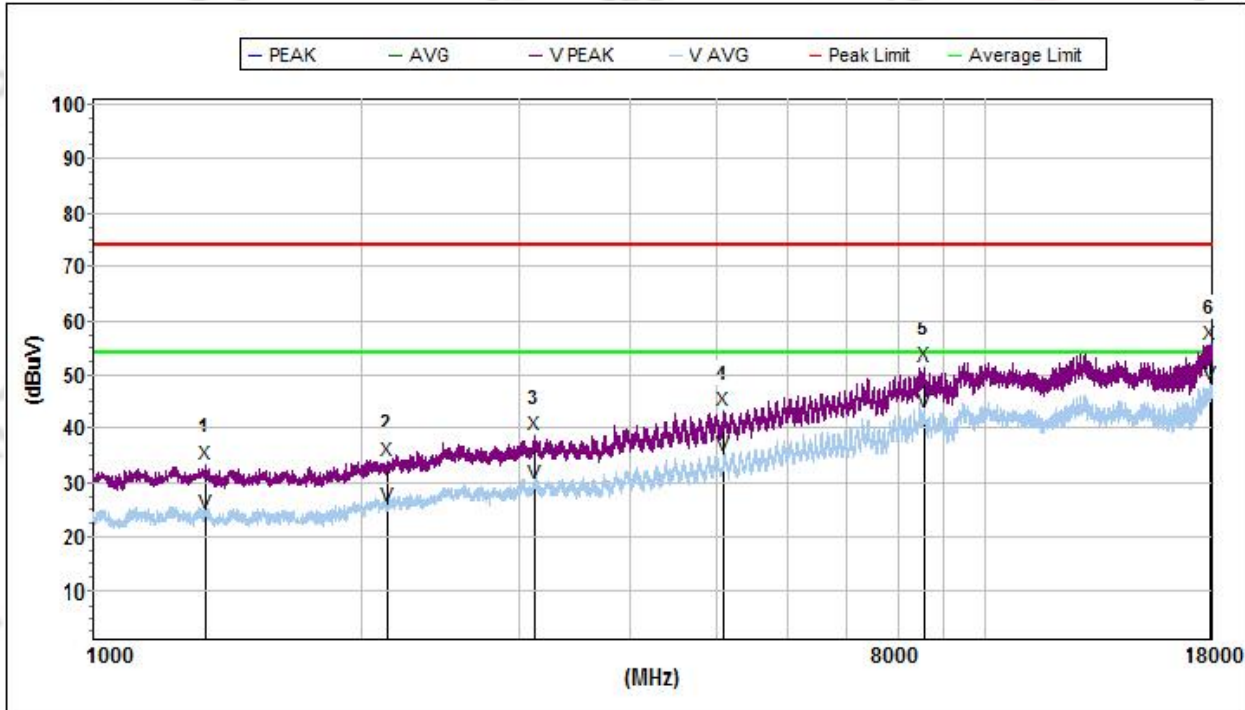


Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 4		

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) – Amplifier gain

## Mode 4 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1338.300000	33.5	74.0	40.5	25.7	61.2	2.3	V
2	2137.300000	34.3	74.0	39.7	27.2	60.7	2.7	V
3	3125.000000	38.7	74.0	35.3	29.7	58.6	3.0	V
4	5106.350000	43.3	74.0	30.7	33.1	57.5	3.7	V
5	8533.550000	51.5	74.0	22.5	37.7	56.1	5.1	V
6	17885.250000	55.5	74.0	18.5	41.6	57.7	7.0	V
Avg								
1	1338.300000	24.2	54.0	29.8	25.7	61.2	2.3	V
2	2137.300000	25.8	54.0	28.2	27.2	60.7	2.7	V
3	3125.000000	29.9	54.0	24.1	29.7	58.6	3.0	V
4	5106.350000	35.1	54.0	18.9	33.1	57.5	3.7	V
5	8533.550000	43.2	54.0	10.8	37.7	56.1	5.1	V
6	17885.250000	48.3	54.0	5.7	41.6	57.7	7.0	V

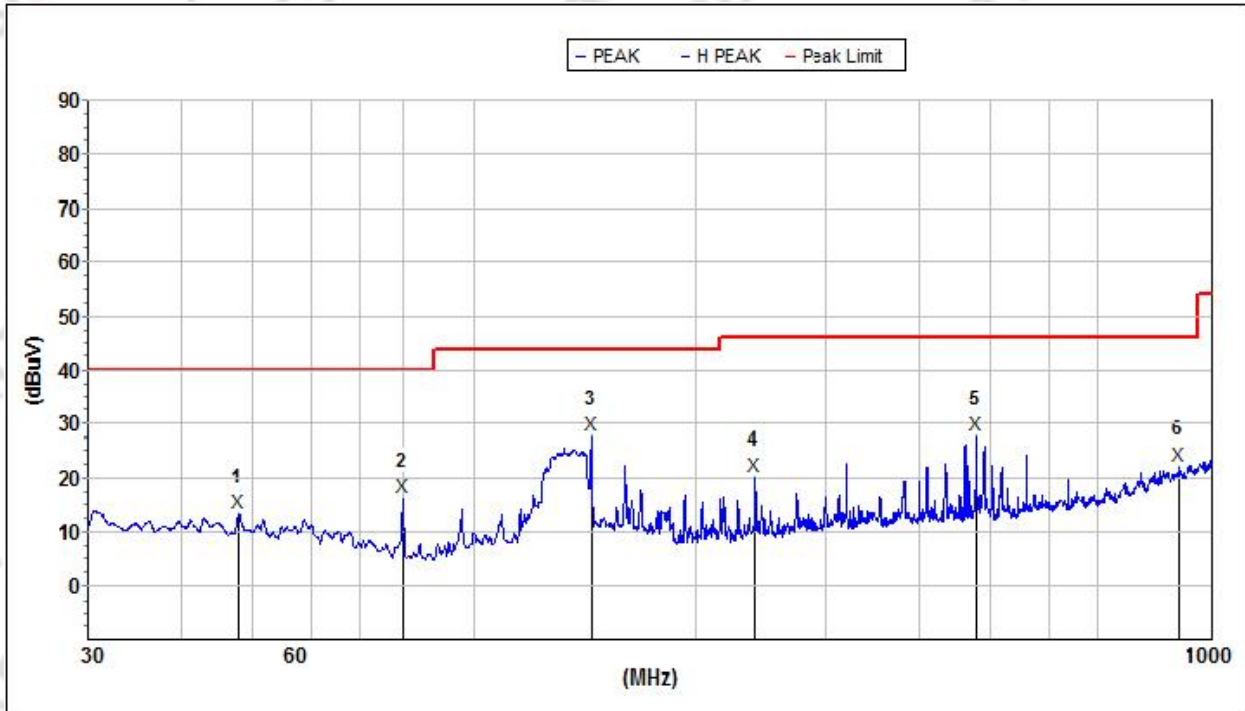
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 6		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 6 Horizontal



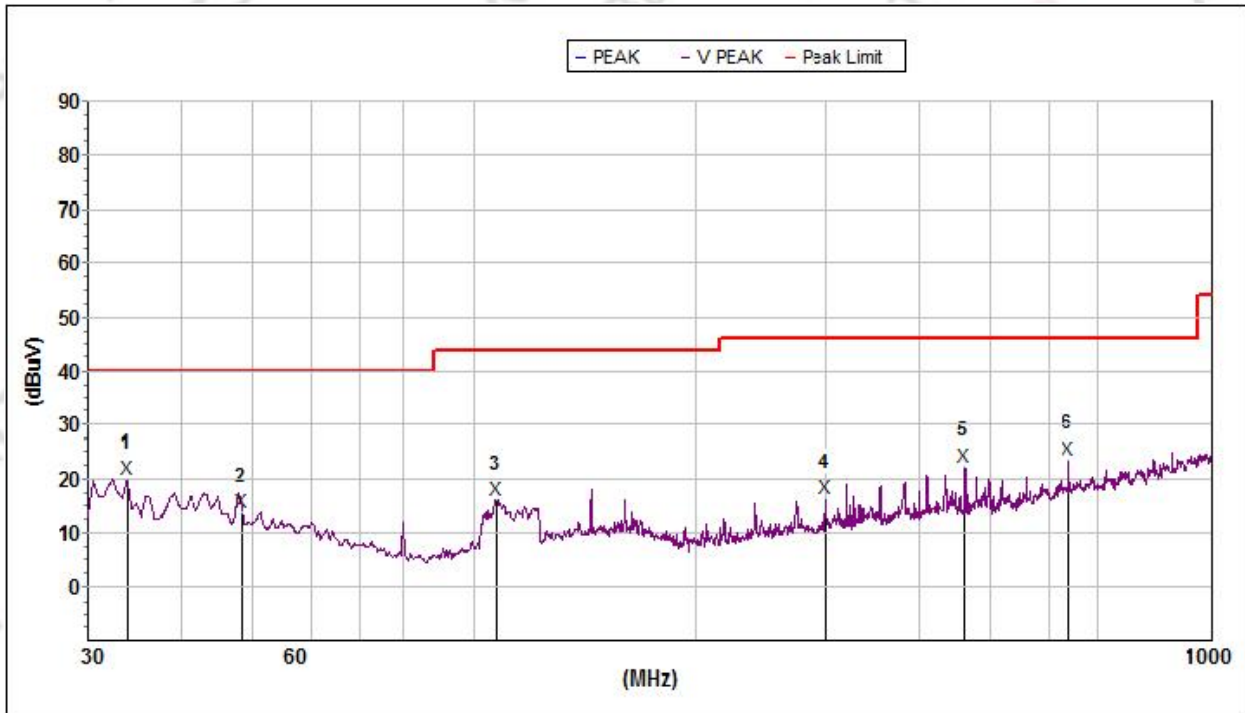
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	47.909933	13.5	40.0	26.5	13.7	32.6	0.8	H
2	79.940317	16.4	40.0	23.6	9.3	32.9	0.9	H
3	144.334759	27.8	43.5	15.7	13.8	32.9	1.3	H
4	239.987350	20.4	46.0	25.6	11.4	32.8	2.5	H
5	479.685845	27.9	46.0	18.1	14.6	32.4	2.8	H
6	900.147413	22.4	46.0	23.6	19.6	31.6	3.7	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 6		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 6 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	33.857943	19.8	40.0	20.2	13.4	32.2	0.8	V
2	48.586664	13.7	40.0	26.3	13.6	32.6	0.8	V
3	106.946063	16.1	43.5	27.4	10.8	32.9	1.4	V
4	299.315848	16.3	46.0	29.7	12.8	32.7	2.7	V
5	462.345544	22.2	46.0	23.8	16.1	32.4	2.8	V
6	639.488826	23.6	46.0	22.4	19.2	32.3	3.4	V



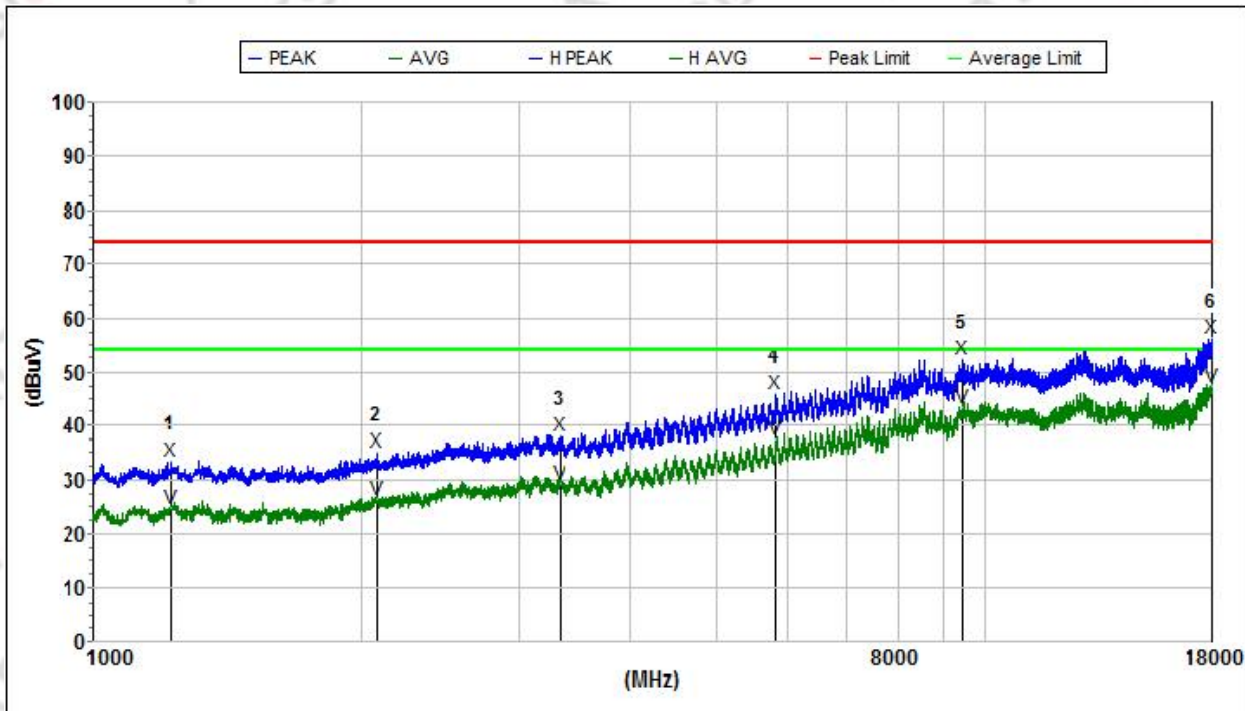
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 6		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 6 Horizontal



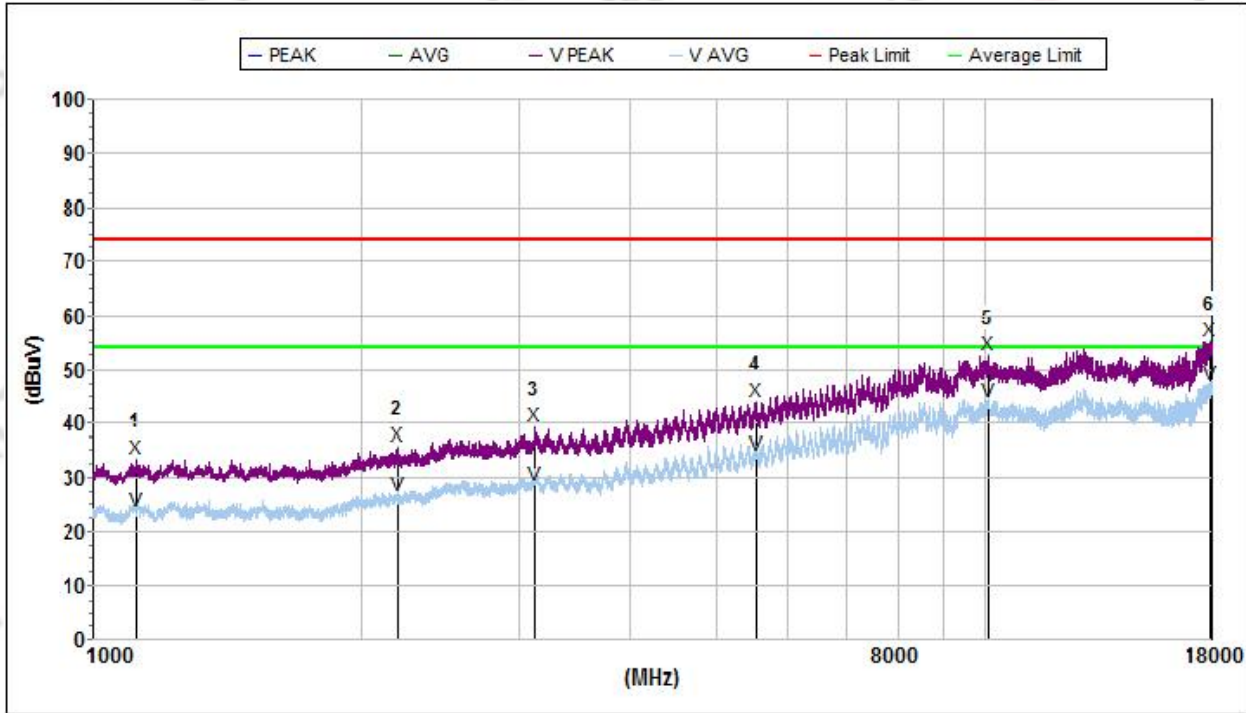
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1219.300000	33.7	74.0	40.3	25.7	60.9	2.3	H
2	2076.950000	35.1	74.0	38.9	27.0	60.9	2.7	H
3	3329.000000	38.2	74.0	35.8	29.6	58.2	3.1	H
4	5828.850000	46.2	74.0	27.8	33.9	58.1	4.1	H
5	9450.700000	52.3	74.0	21.7	38.6	59.6	5.4	H
6	17994.050000	56.1	74.0	17.9	42.3	57.6	7.0	H
Avg								
1	1219.300000	24.8	54.0	29.2	25.7	60.9	2.3	H
2	2076.950000	26.3	54.0	27.7	27.0	60.9	2.7	H
3	3329.000000	29.3	54.0	24.7	29.6	58.2	3.1	H
4	5828.850000	37.5	54.0	16.5	33.9	58.1	4.1	H
5	9450.700000	43.3	54.0	10.7	38.6	59.6	5.4	H
6	17994.050000	47.5	54.0	6.5	42.3	57.6	7.0	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 6		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 6 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1117.300000	33.5	74.0	40.5	25.5	60.7	2.2	V
2	2196.800000	35.7	74.0	38.3	27.2	60.5	2.7	V
3	3118.200000	39.5	74.0	34.5	29.7	58.7	3.0	V
4	5544.950000	44.0	74.0	30.0	32.8	58.1	4.0	V
5	10083.950000	52.6	74.0	21.4	38.6	60.4	5.4	V
6	17893.750000	55.4	74.0	18.6	41.7	57.7	7.0	V
Avg								
1	1117.300000	23.8	54.0	30.2	25.5	60.7	2.2	V
2	2196.800000	26.5	54.0	27.5	27.2	60.5	2.7	V
3	3118.200000	28.7	54.0	25.3	29.7	58.7	3.0	V
4	5544.950000	34.3	54.0	19.7	32.8	58.1	4.0	V
5	10083.950000	44.0	54.0	10.0	38.6	60.4	5.4	V
6	17893.750000	47.4	54.0	6.6	41.7	57.7	7.0	V

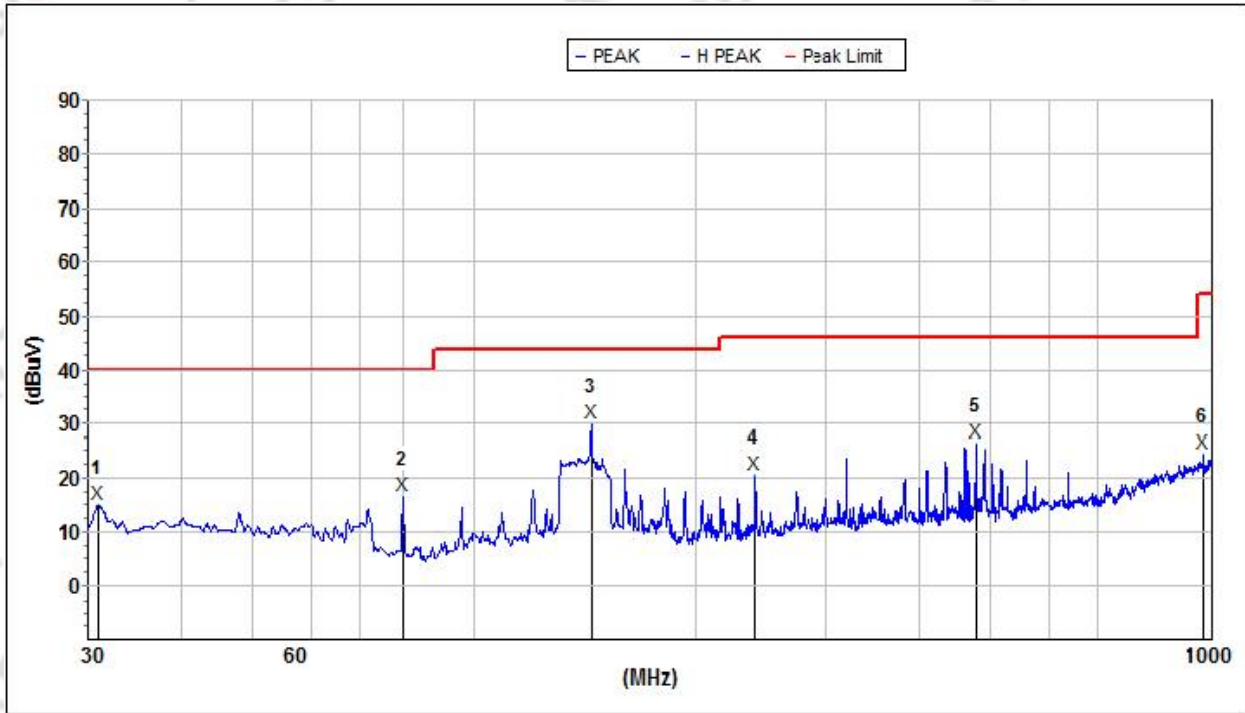
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 7		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 7 Horizontal



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak:								
1	30.961869	15.1	40.0	24.9	13.3	32.1	0.8	H
2	79.940317	16.8	40.0	23.2	9.3	32.9	0.9	H
3	144.334759	30.1	43.5	13.4	13.8	32.9	1.3	H
4	239.987350	20.7	46.0	25.3	11.4	32.8	2.5	H
5	479.685845	26.6	46.0	19.4	14.6	32.4	2.8	H
6	974.043628	24.5	54.0	29.5	20.5	31.1	3.8	H

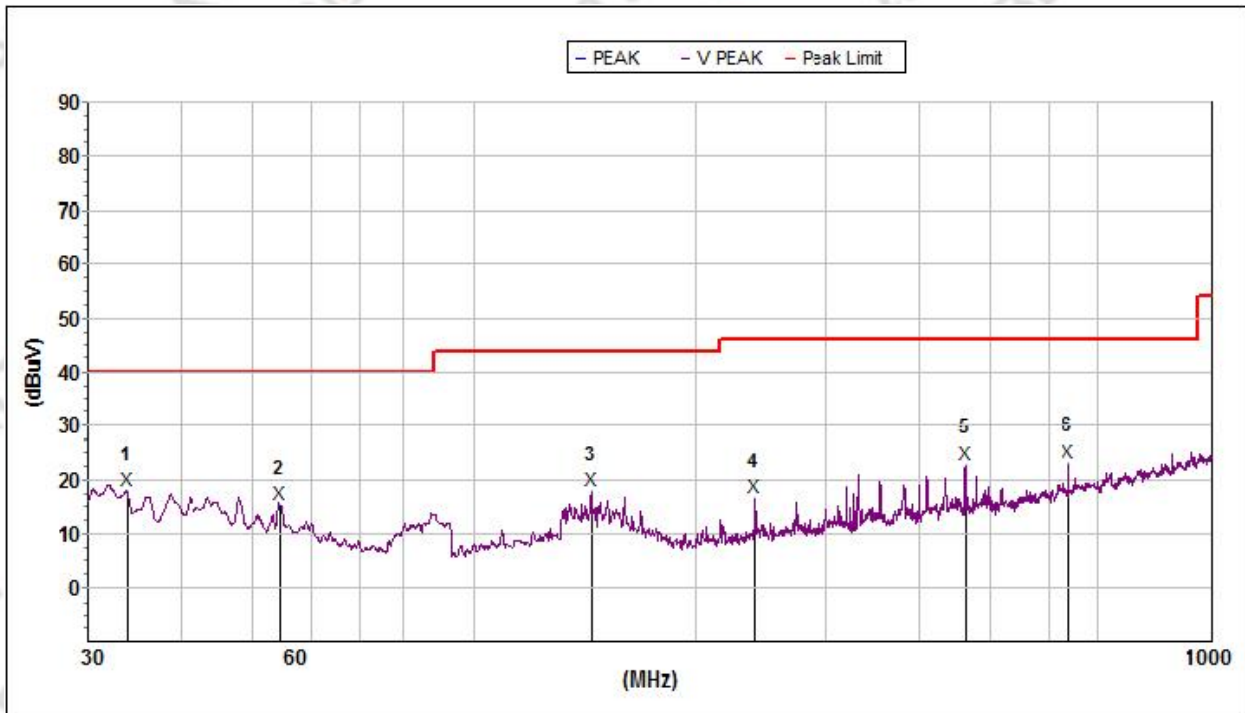


Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 7		

Remark:

1. Margin = Result (Result =Reading + Factor )-Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

### Mode 7 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	33.857943	18.1	40.0	21.9	13.4	32.2	0.8	V
2	54.547152	15.2	40.0	24.8	13.2	32.7	0.8	V
3	144.334759	18.1	43.5	25.4	13.8	32.9	1.3	V
4	239.987350	16.5	46.0	29.5	11.4	32.8	2.5	V
5	463.969631	22.9	46.0	23.1	16.1	32.4	2.8	V
6	639.488826	23.2	46.0	22.8	19.2	32.3	3.4	V

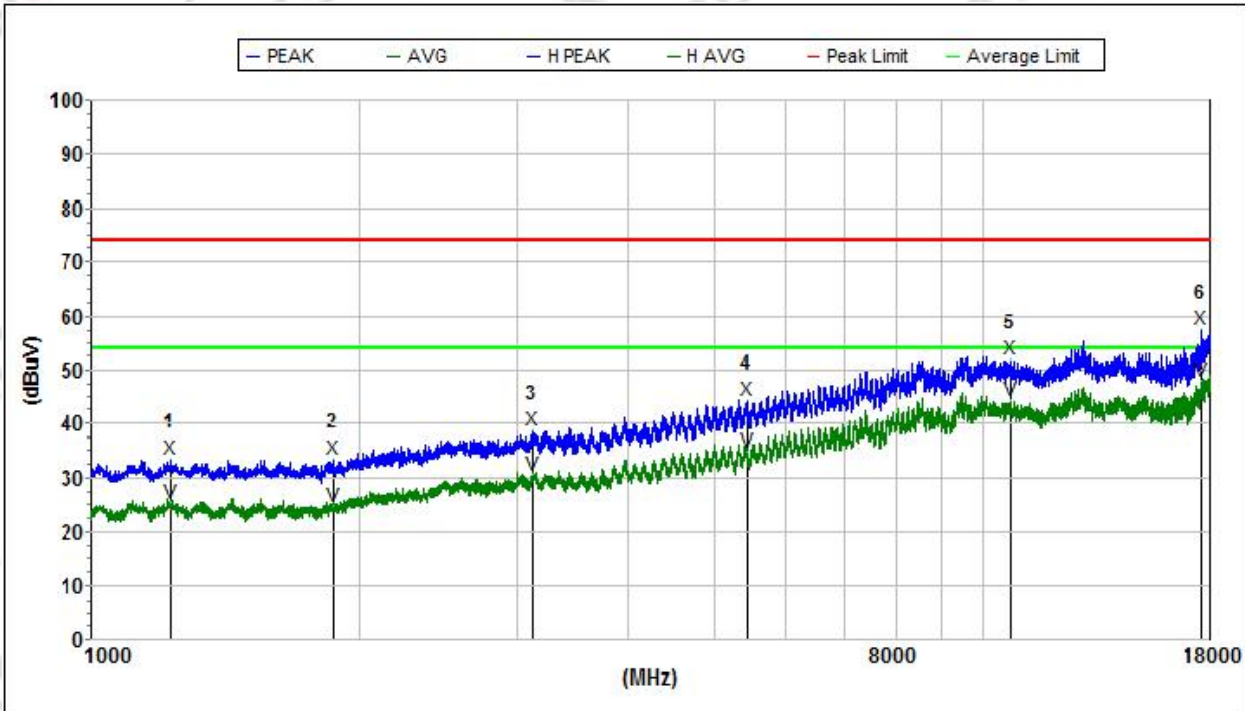
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 7		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 7 Horizontal



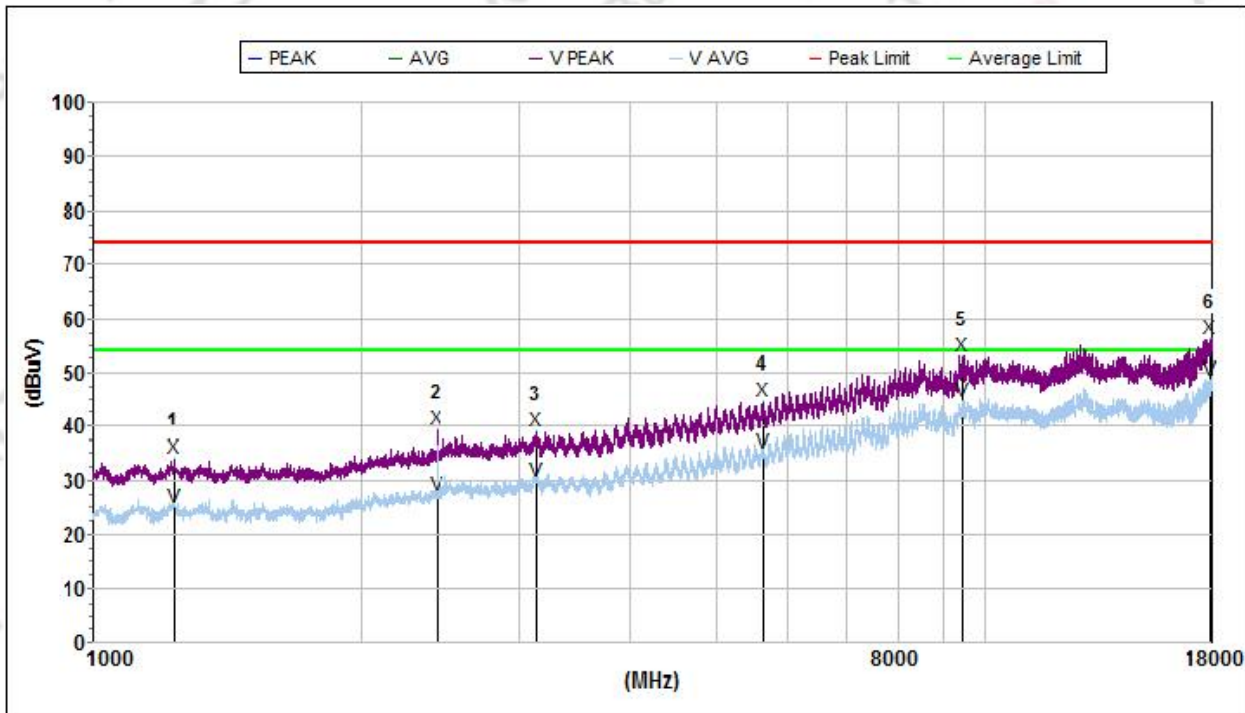
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1223.550000	33.6	74.0	40.4	25.7	60.9	2.3	H
2	1874.650000	33.4	74.0	40.6	25.5	61.1	2.6	H
3	3128.400000	38.7	74.0	35.3	29.7	58.6	3.0	H
4	5437.000000	44.4	74.0	29.6	32.8	58.0	3.9	H
5	10730.800000	51.9	74.0	22.1	38.9	61.1	5.6	H
6	17589.450000	57.5	74.0	16.5	39.8	58.0	6.9	H
Avg								
1	1223.550000	25.3	54.0	28.7	25.7	60.9	2.3	H
2	1874.650000	24.7	54.0	29.3	25.5	61.1	2.6	H
3	3128.400000	30.5	54.0	23.5	29.7	58.6	3.0	H
4	5437.000000	34.8	54.0	19.2	32.8	58.0	3.9	H
5	10730.800000	44.3	54.0	9.7	38.9	61.1	5.6	H
6	17589.450000	47.9	54.0	6.1	39.8	58.0	6.9	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 7		

Remark:

- Margin = Result (Result = Reading + Factor) – Limit
- Factor = Antenna factor + Cable attenuation factor (cable loss) – Amplifier gain

## Mode 7 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1229.500000	34.1	74.0	39.9	25.8	60.9	2.3	V
2	2425.450000	39.4	74.0	34.6	27.4	59.3	2.8	V
3	3133.500000	39.1	74.0	34.9	29.7	58.6	3.0	V
4	5628.250000	44.8	74.0	29.2	33.1	58.1	4.0	V
5	9461.750000	53.1	74.0	20.9	38.6	59.6	5.4	V
6	17892.900000	56.4	74.0	17.6	41.7	57.7	7.0	V
Avg								
1	1229.500000	25.0	54.0	29.0	25.8	60.9	2.3	V
2	2425.450000	27.2	54.0	26.8	27.4	59.3	2.8	V
3	3133.500000	30.0	54.0	24.0	29.7	58.6	3.0	V
4	5628.250000	35.1	54.0	18.9	33.1	58.1	4.0	V
5	9461.750000	44.9	54.0	9.1	38.6	59.6	5.4	V
6	17892.900000	48.8	54.0	5.2	41.7	57.7	7.0	V



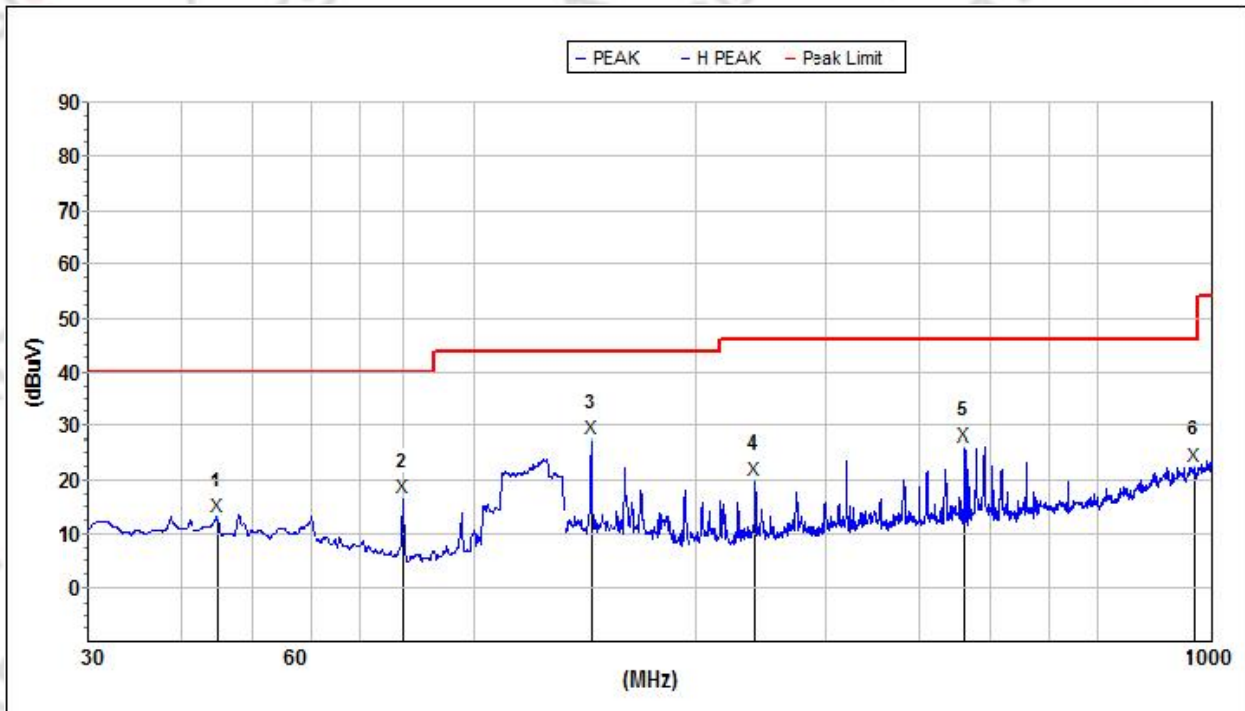
(30MHz -1000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 9		

Remark:

- Margin = Result (Result =Reading + Factor )–Limit
- Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

## Mode 9 Horizontal



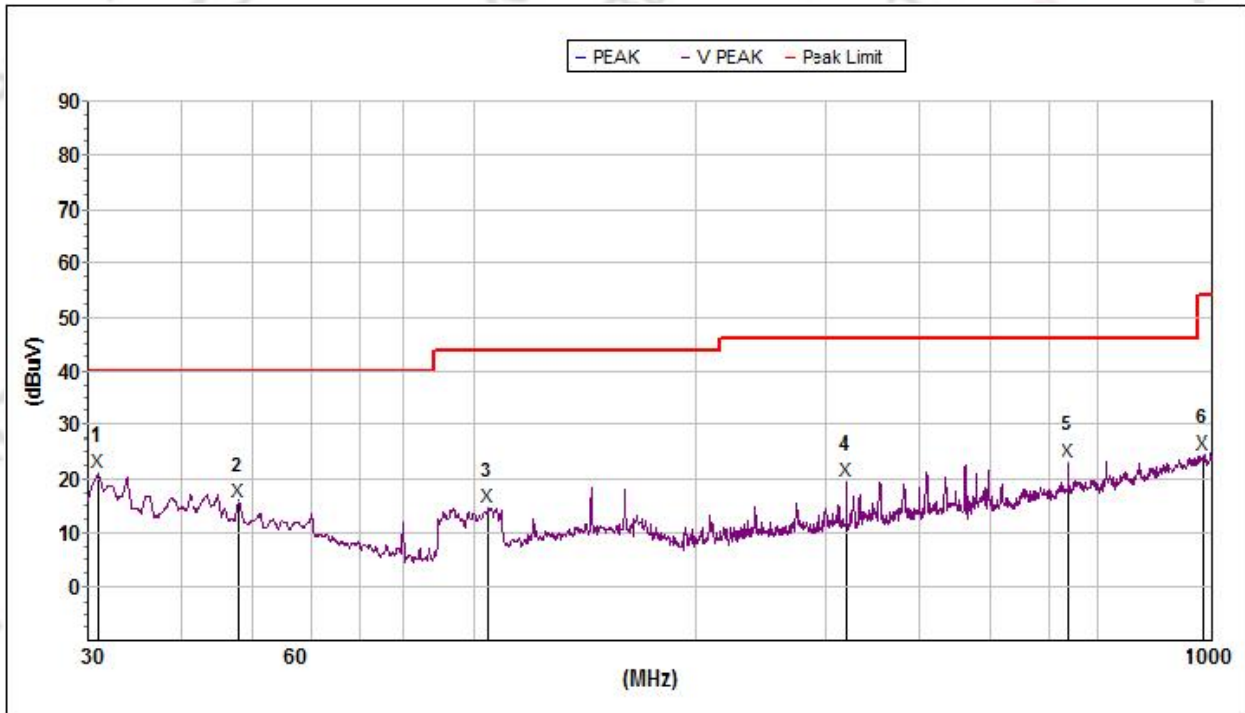
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	44.979410	13.1	40.0	26.9	13.8	32.5	0.8	H
2	79.940317	16.6	40.0	23.4	9.3	32.9	0.9	H
3	144.334759	27.4	43.5	16.1	13.8	32.9	1.3	H
4	239.987350	19.8	46.0	26.2	11.4	32.8	2.5	H
5	462.345544	26.3	46.0	19.7	14.4	32.4	2.8	H
6	948.760988	22.6	46.0	23.4	20.3	31.3	3.7	H

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 9		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 9 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	30.961869	21.1	40.0	18.9	13.3	32.1	0.8	V
2	47.994007	15.7	40.0	24.3	13.6	32.6	0.8	V
3	104.536051	14.7	43.5	28.8	10.6	32.9	1.4	V
4	319.936956	19.6	46.0	26.4	13.2	32.6	2.7	V
5	639.488826	23.1	46.0	22.9	19.2	32.3	3.4	V
6	974.043628	24.5	54.0	29.5	22.2	31.1	3.8	V

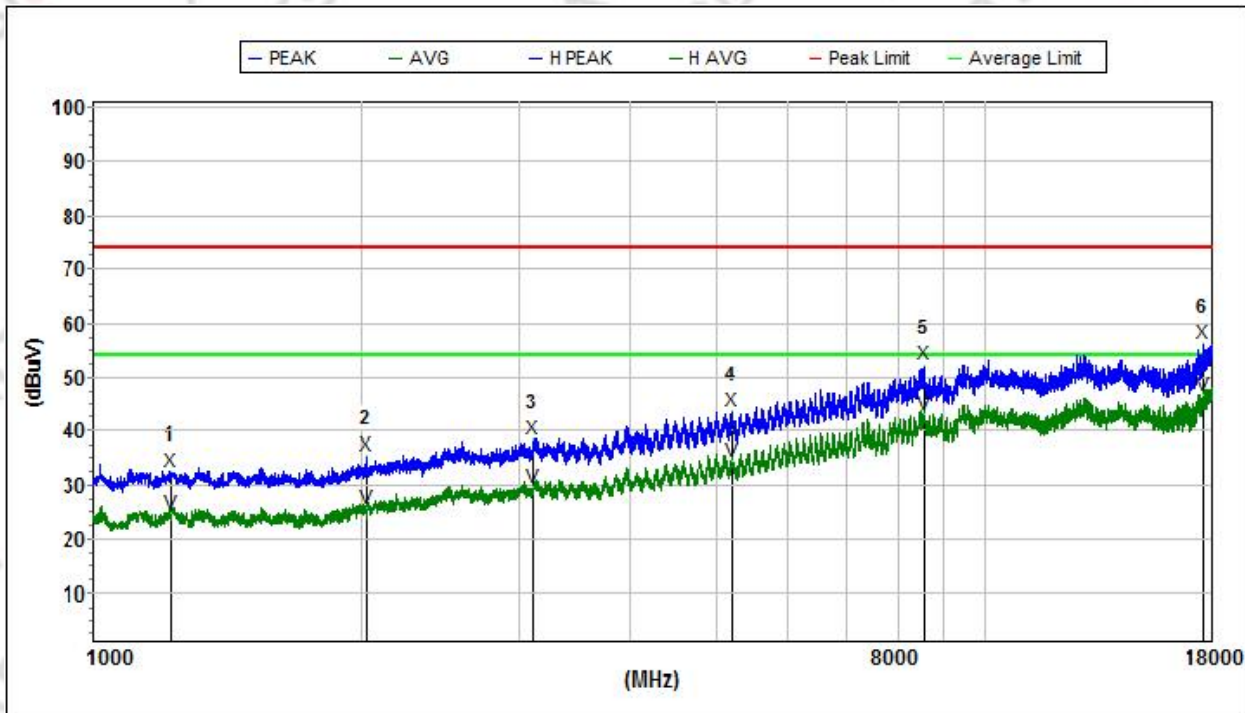
(1000MHz -18000MHz)

Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Horizontal
Test Mode:	TX Mode 9		

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain

Mode 9 Horizontal



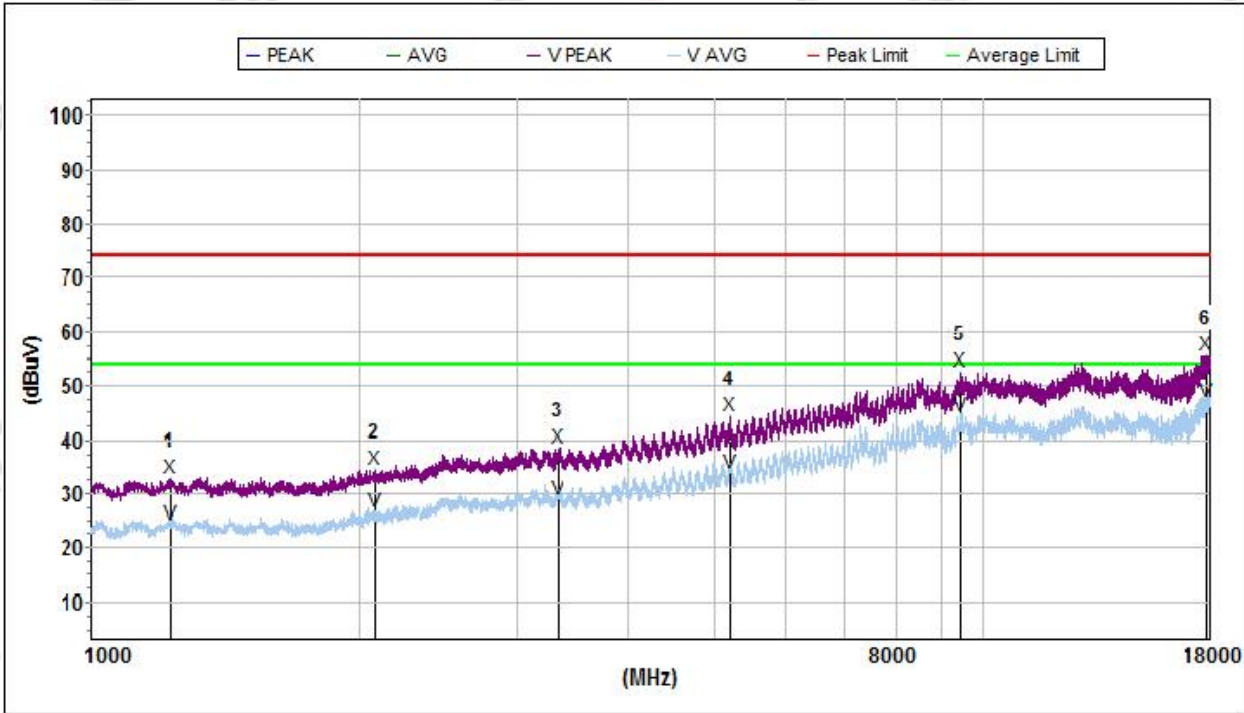
Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1221.000000	32.6	74.0	41.4	25.7	60.9	2.3	H
2	2026.800000	35.5	74.0	38.5	26.7	60.9	2.7	H
3	3114.800000	38.6	74.0	35.4	29.7	58.7	3.0	H
4	5214.300000	43.7	74.0	30.3	32.9	57.6	3.8	H
5	8526.750000	52.3	74.0	21.7	37.7	56.0	5.1	H
6	17591.150000	56.1	74.0	17.9	39.8	58.0	6.9	H
Avg								
1	1221.000000	24.8	54.0	29.2	25.7	60.9	2.3	H
2	2026.800000	25.7	54.0	28.3	26.7	60.9	2.7	H
3	3114.800000	29.6	54.0	24.4	29.7	58.7	3.0	H
4	5214.300000	34.6	54.0	19.4	32.9	57.6	3.8	H
5	8526.750000	43.2	54.0	10.8	37.7	56.0	5.1	H
6	17591.150000	46.7	54.0	7.3	39.8	58.0	6.9	H



Temperature:	23.2°C	Relative Humidity:	52%RH
Test Voltage:	DC 5V	Phase:	Vertical
Test Mode:	TX Mode 9		

Remark:

- Margin = Result (Result = Reading + Factor) – Limit
  - Factor = Antenna factor + Cable attenuation factor (cable loss) – Amplifier gain
- Mode 9 Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1222.700000	33.0	74.0	41.0	25.7	60.9	2.3	V
2	2076.950000	34.6	74.0	39.4	27.0	60.9	2.7	V
3	3331.550000	38.6	74.0	35.4	29.6	58.2	3.1	V
4	5216.850000	44.5	74.0	29.5	32.9	57.6	3.8	V
5	9470.250000	52.6	74.0	21.4	38.6	59.7	5.4	V
6	17807.050000	55.5	74.0	18.5	41.2	57.8	7.0	V
Avg								
1	1222.700000	24.5	54.0	29.5	25.7	60.9	2.3	V
2	2076.950000	26.6	54.0	27.4	27.0	60.9	2.7	V
3	3331.550000	28.9	54.0	25.1	29.6	58.2	3.1	V
4	5216.850000	33.9	54.0	20.1	32.9	57.6	3.8	V
5	9470.250000	44.6	54.0	9.4	38.6	59.7	5.4	V
6	17807.050000	47.2	54.0	6.8	41.2	57.8	7.0	V

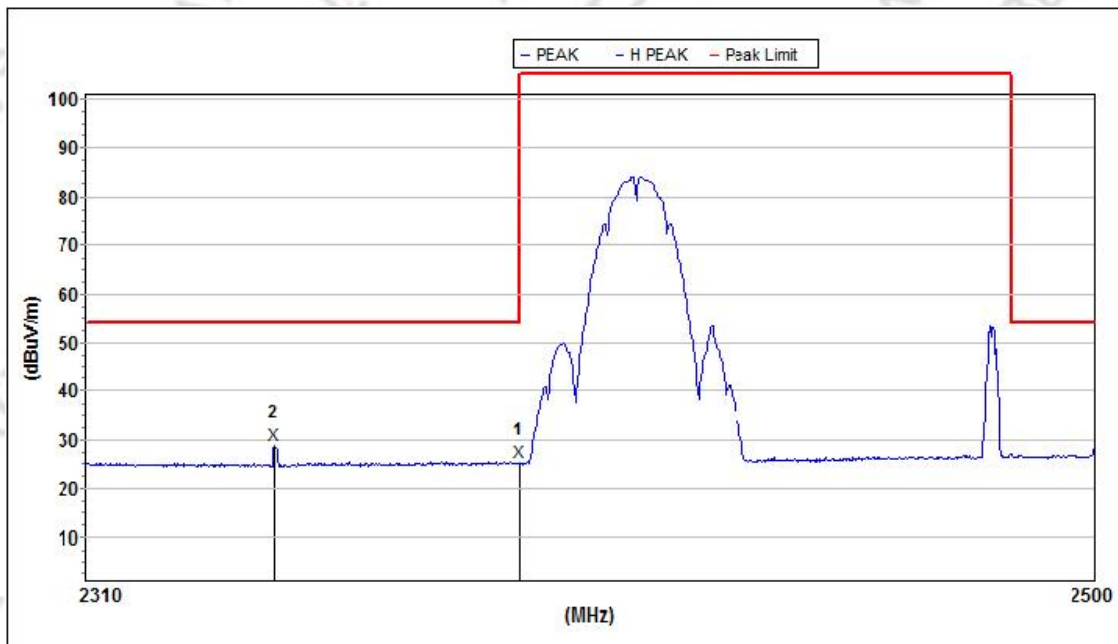
Note:

- 802.11b, 802.11g, 802.11n (HT-20), mode all have been tested, only show the worst case.
- Other 18G-25G Emission detected are more than 20dB below the limit.

## 3.2.6 TEST RESULTS (BAND EDGE REQUIREMENTS)

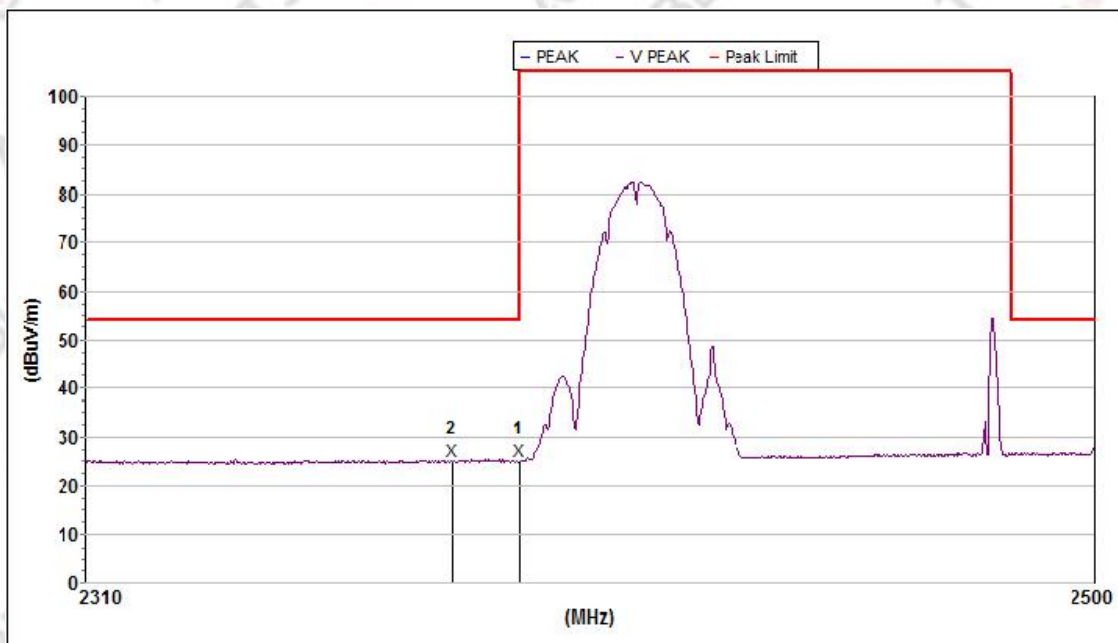
## 802.11b-Low

## Horizontal

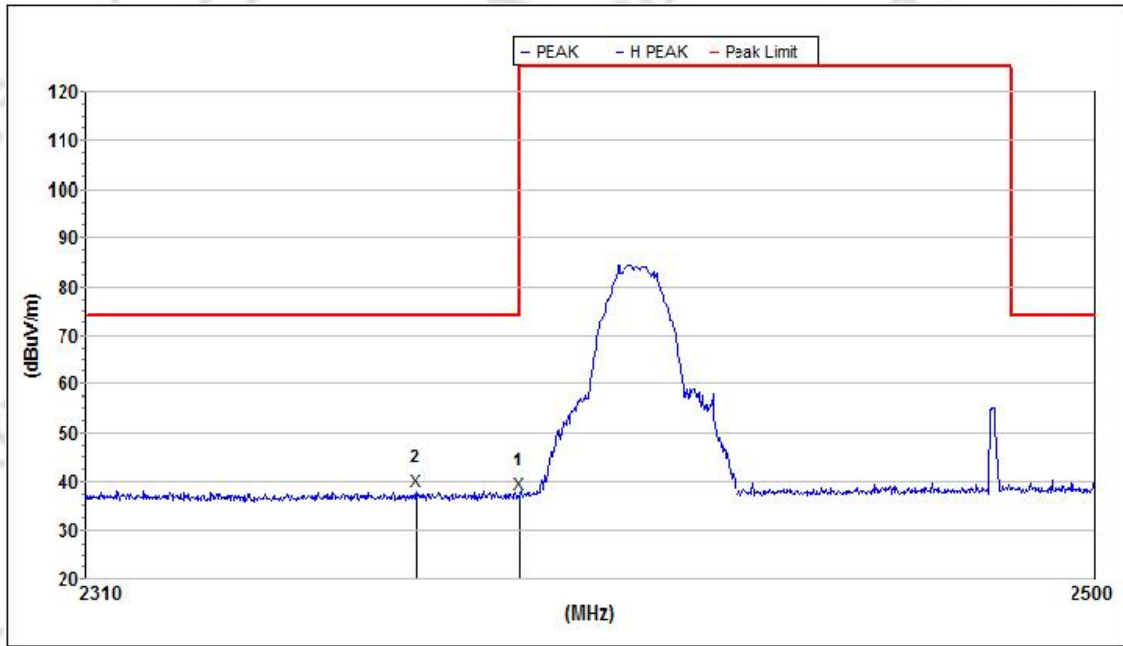


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	25.2	54.0	28.8	27.3	59.6	2.8	H
2	2344.212586	29.0	54.0	25.0	27.2	59.8	2.8	H

## Vertical

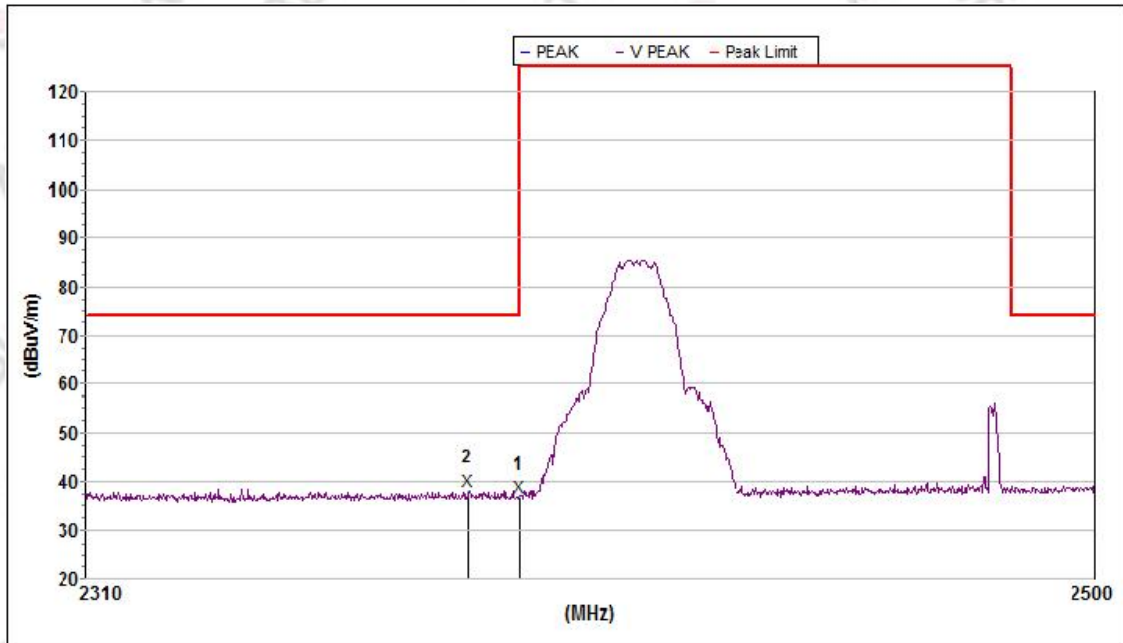


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	25.0	54.0	29.0	27.3	59.6	2.8	V
2	2377.428050	25.1	54.0	28.9	27.3	59.6	2.8	V

802.11b -Low  
 Horizontal


Mk.	Frequency (MHz)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	37.5	74.0	36.5	27.3	59.6	2.8	H
2	2370.859955	38.0	74.0	36.0	27.3	59.6	2.8	H

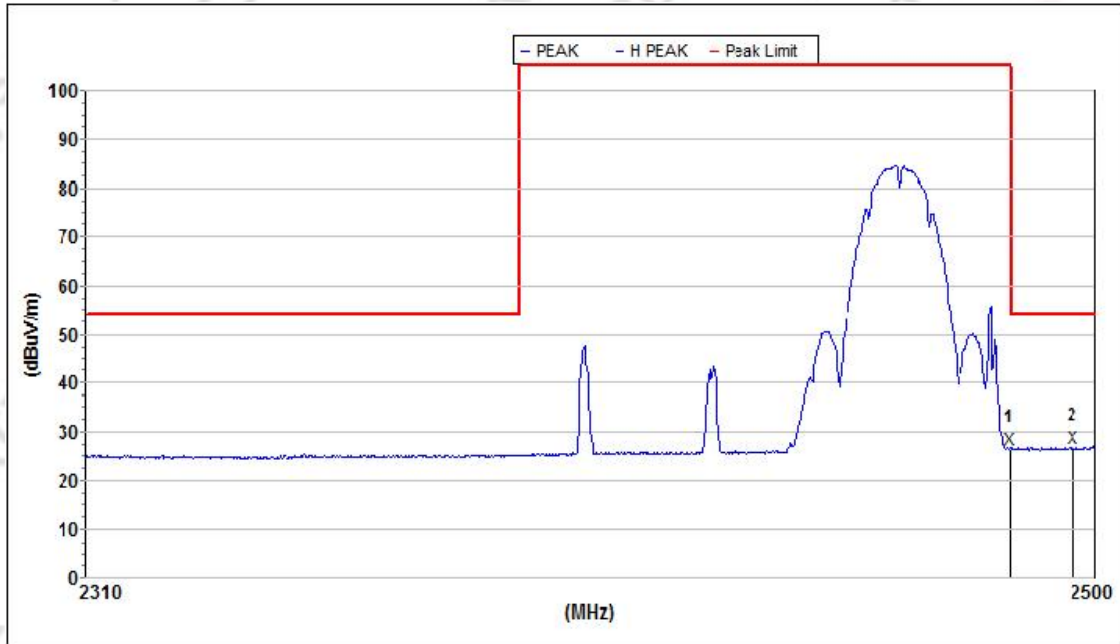
## Vertical



Mk.	Frequency (MHz)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	36.7	74.0	37.3	27.3	59.6	2.8	V
2	2380.248515	38.1	74.0	35.9	27.3	59.6	2.8	V

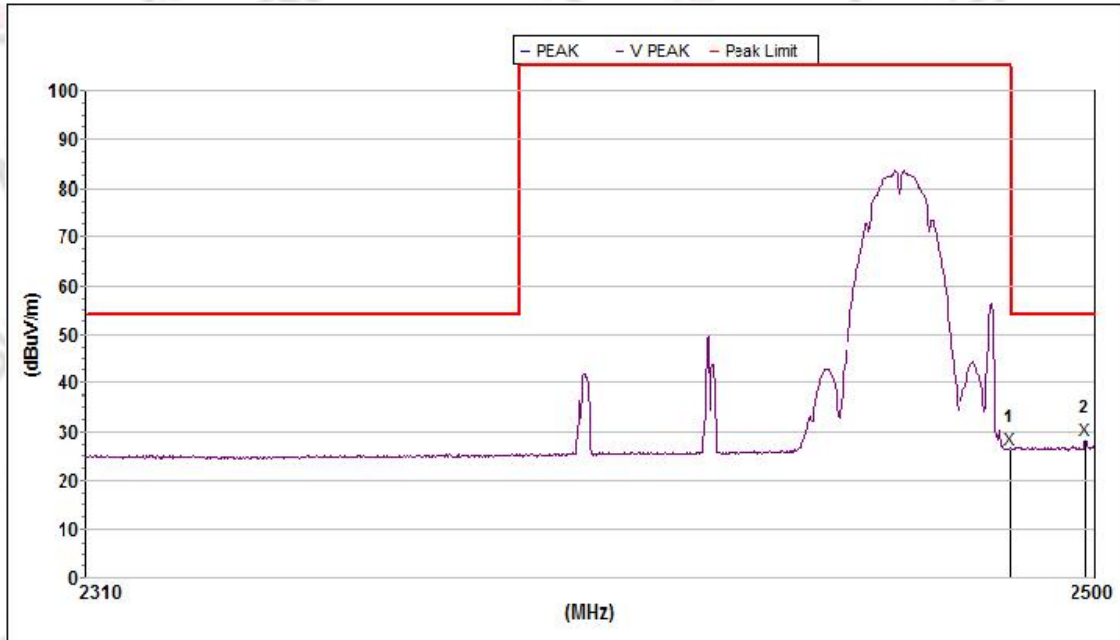


### 802.11b -High Horizontal

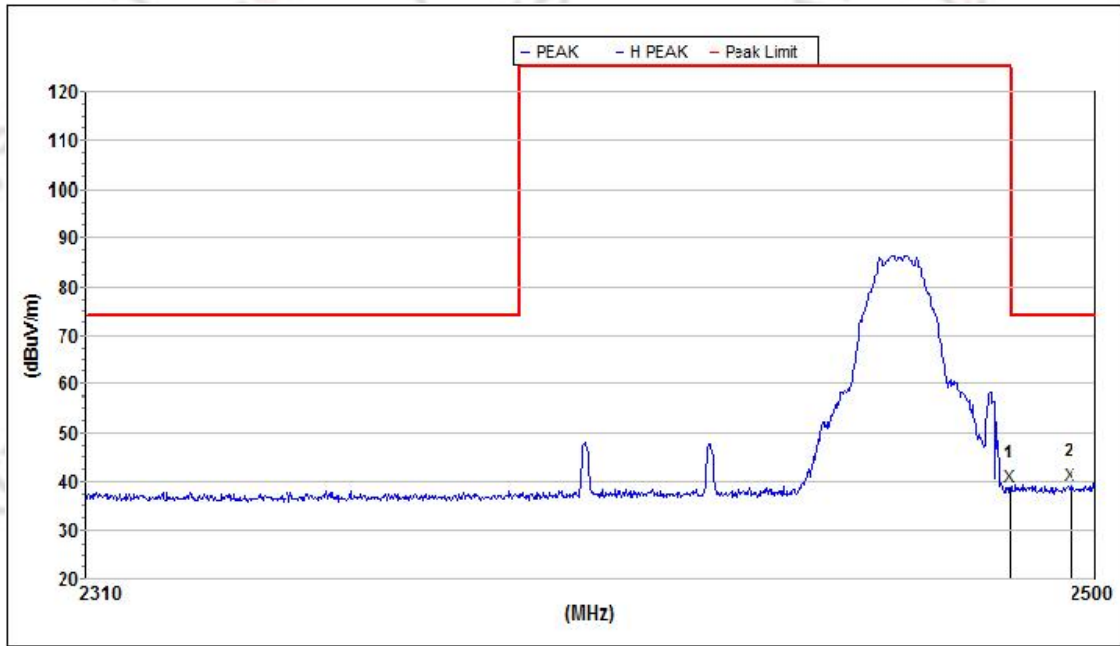


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	26.4	54.0	27.6	27.7	58.9	2.8	H
2	2495.853674	26.7	54.0	27.3	27.7	58.8	2.8	H

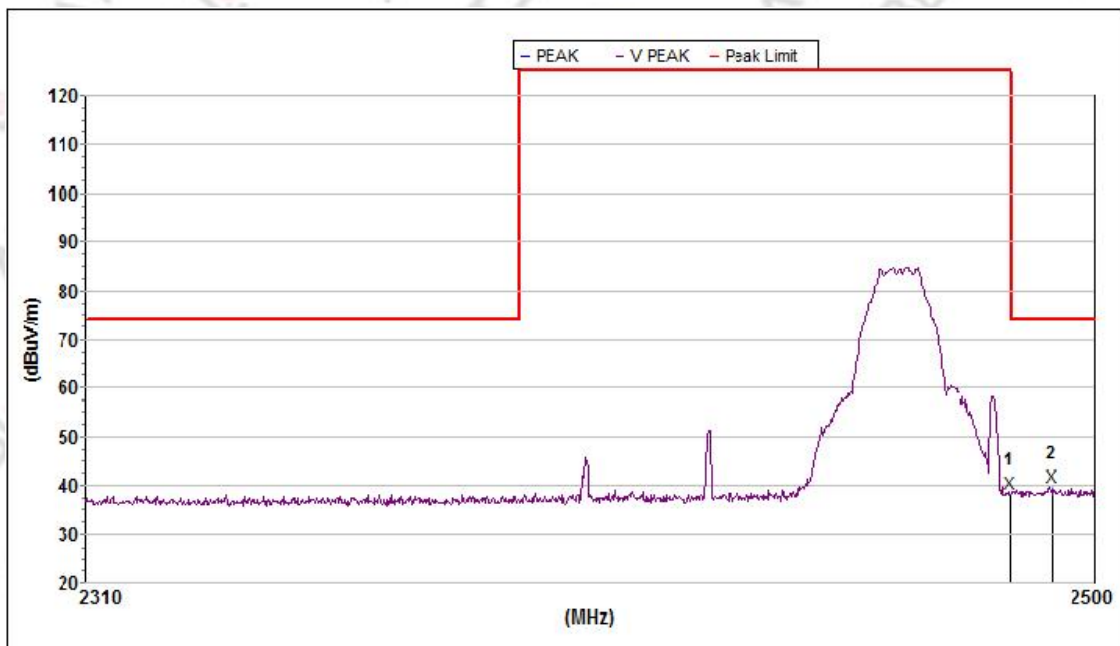
### Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	26.4	54.0	27.6	27.7	58.9	2.8	V
2	2498.222160	28.4	54.0	25.6	27.7	58.8	2.8	V

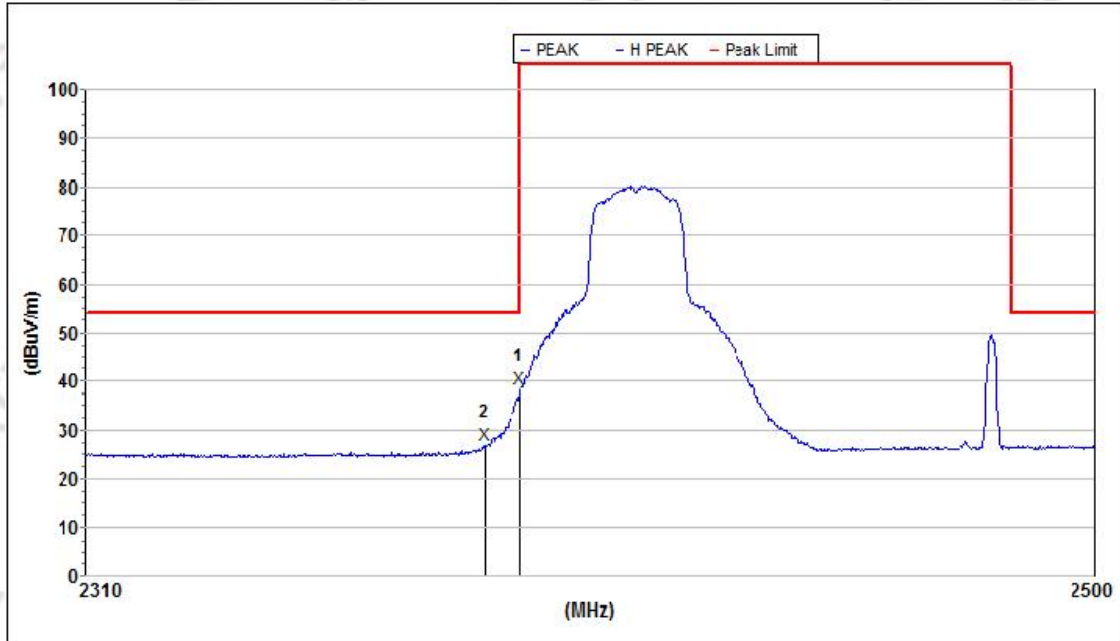
**802.11b -High Horizontal**


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	39.0	74.0	35.0	27.7	58.9	2.8	H
2	2495.261903	39.5	74.0	34.5	27.7	58.8	2.8	H

**Vertical**


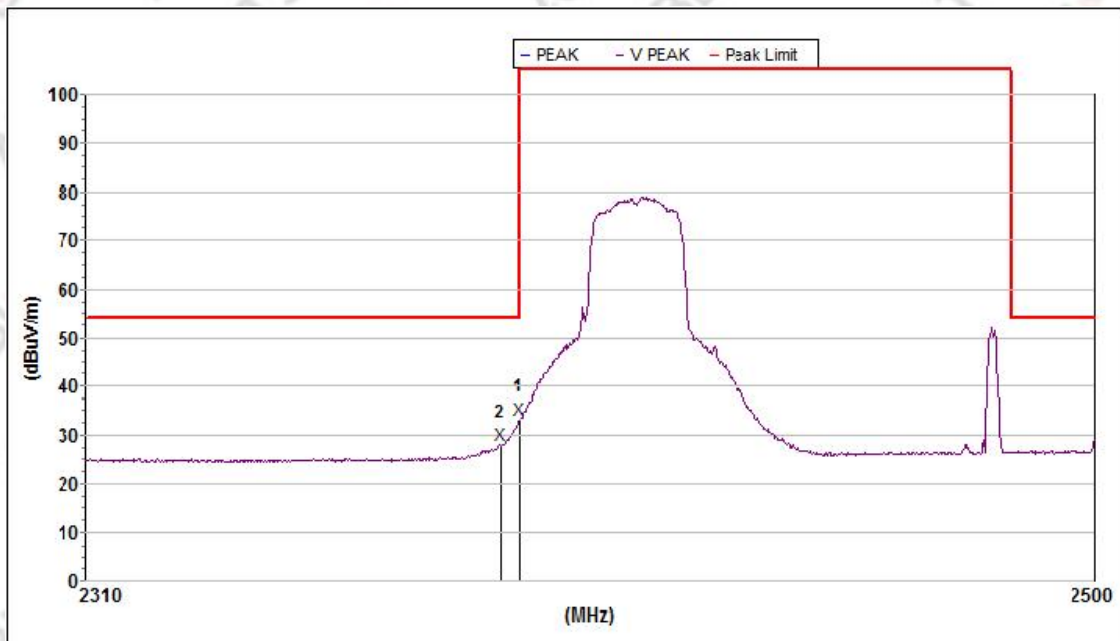
Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	38.4	74.0	35.6	27.7	58.9	2.8	V
2	2491.714224	39.9	74.0	34.1	27.7	58.8	2.8	V

### 802.11G-Low Horizontal



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	38.5	54.0	15.5	27.3	59.6	2.8	H
2	2383.449087	26.9	54.0	27.1	27.3	59.6	2.8	H

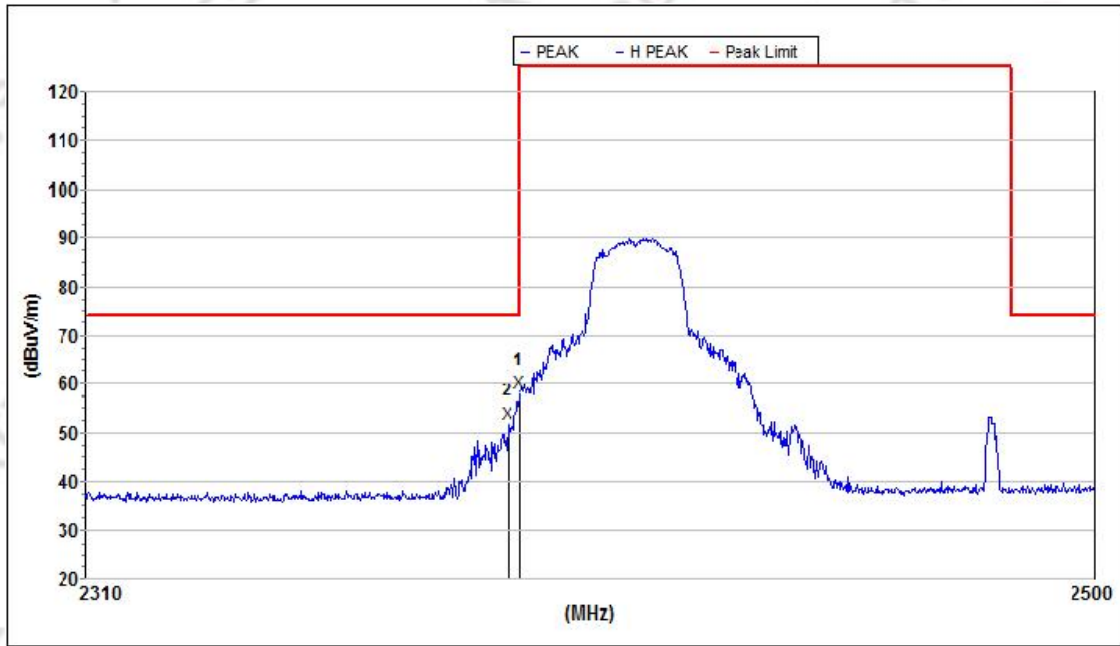
### Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	33.2	54.0	20.8	27.3	59.6	2.8	V
2	2386.088083	28.0	54.0	26.0	27.3	59.6	2.8	V

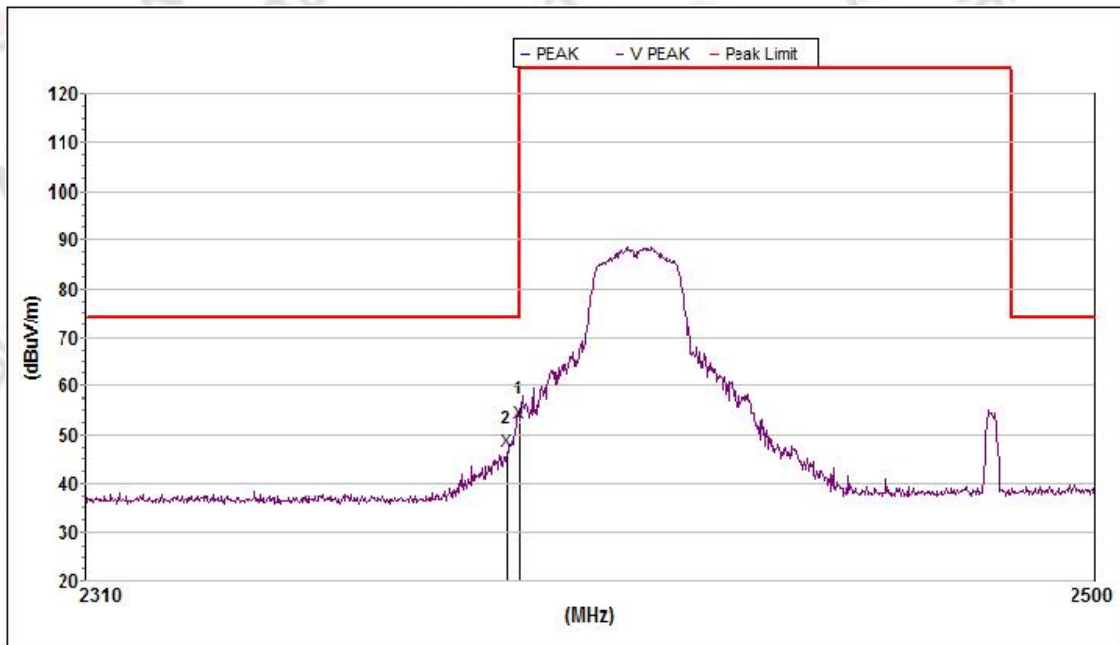


802.11G -Low  
Horizontal



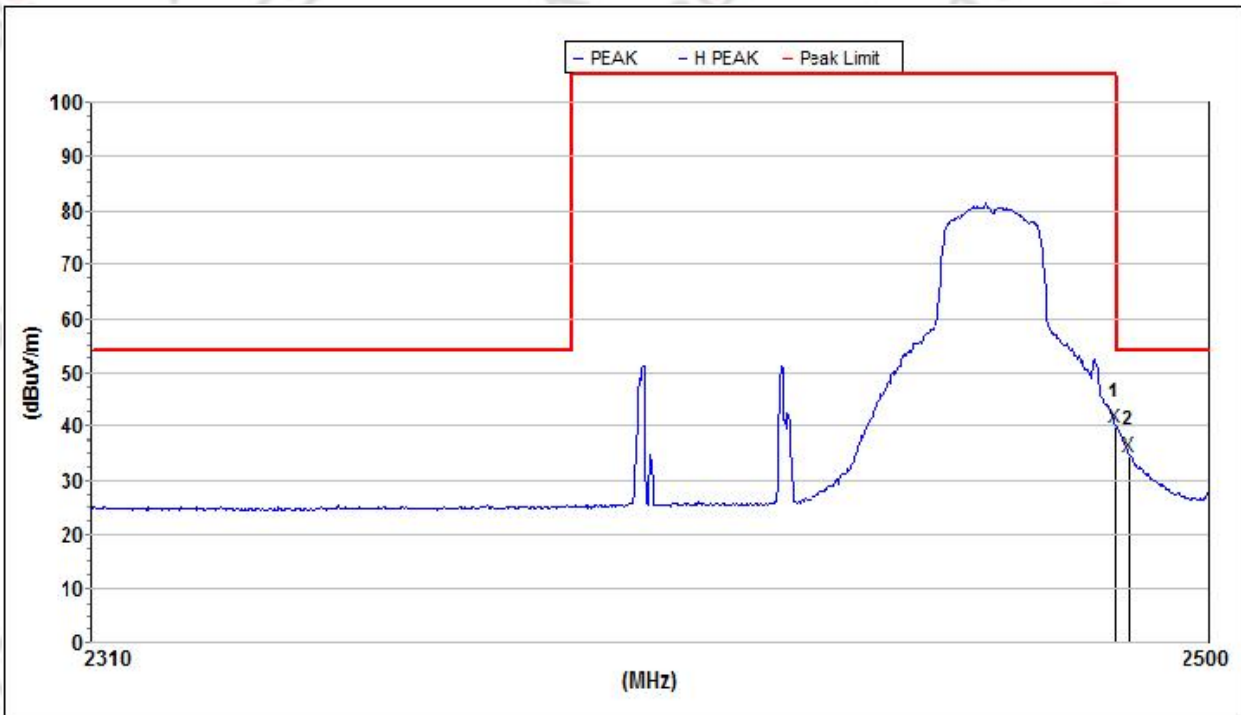
Mk.	Frequency (MHz)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	58.2	74.0	15.8	27.3	59.6	2.8	H
2	2387.597392	51.8	74.0	22.2	27.3	59.6	2.8	H

Vertical



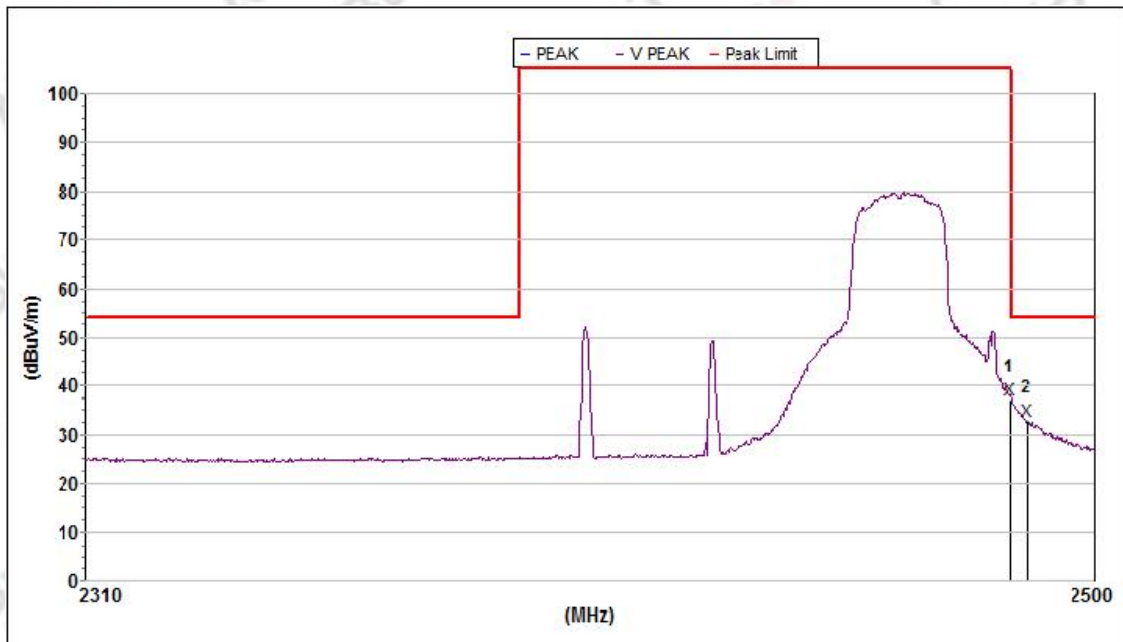
Mk.	Frequency (MHz)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	52.5	74.0	21.5	27.3	59.6	2.8	V
2	2387.408677	46.5	74.0	27.5	27.3	59.6	2.8	V

### 802.11G-High Horizontal

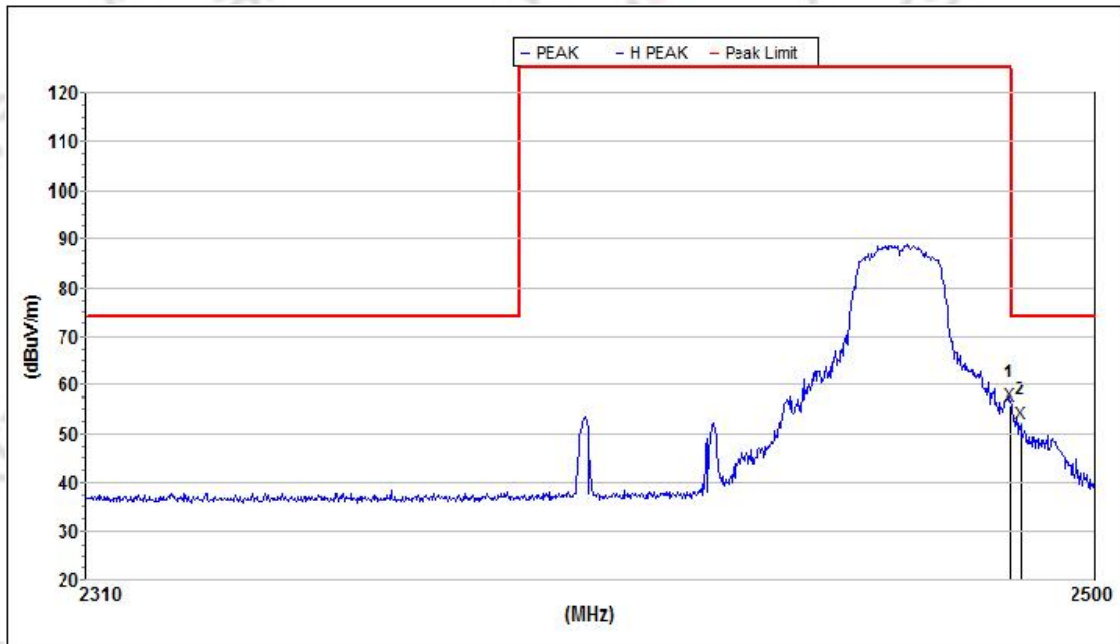


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	39.9	54.0	14.1	27.7	58.9	2.8	H
2	2486.009126	34.5	54.0	19.5	27.7	58.9	2.8	H

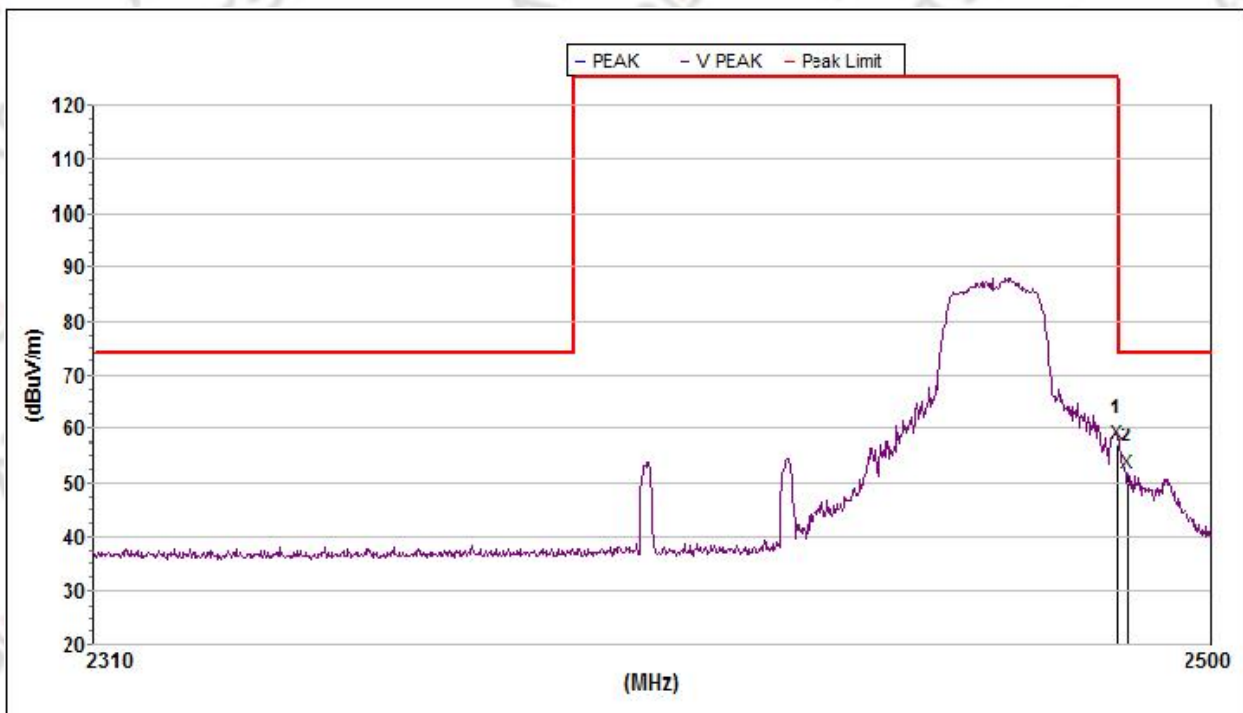
### Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	37.3	54.0	16.7	27.7	58.9	2.8	V
2	2486.795259	32.8	54.0	21.2	27.7	58.9	2.8	V

**802.11G -High Horizontal**


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	55.7	74.0	18.3	27.7	58.9	2.8	H
2	2485.419690	52.3	74.0	21.7	27.7	58.9	2.8	H

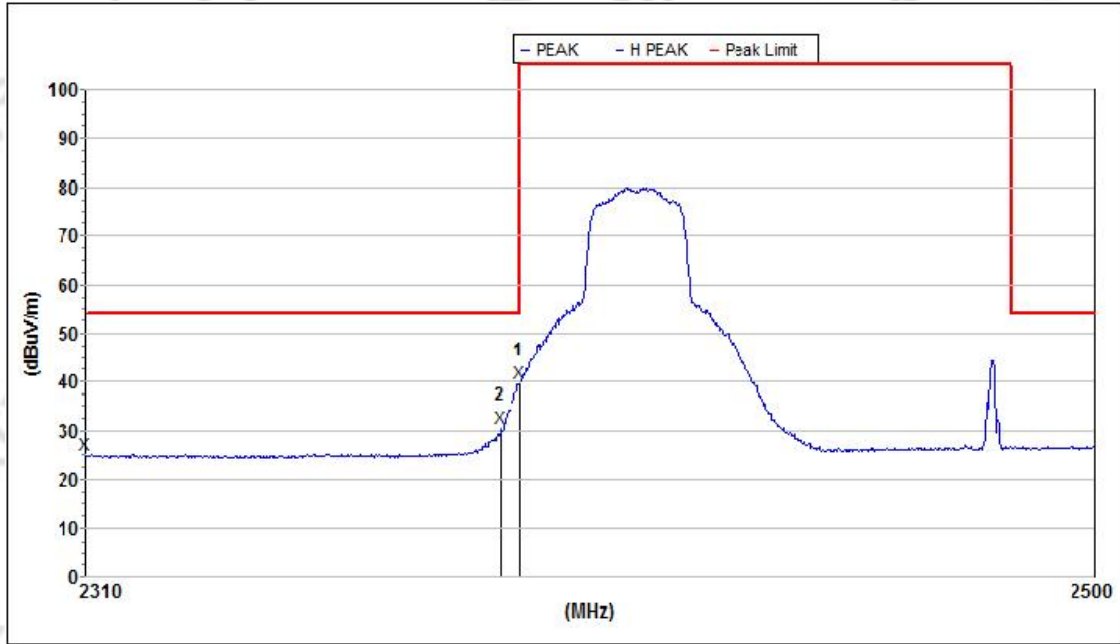
**Vertical**


Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	57.3	74.0	16.7	27.7	58.9	2.8	V
2	2485.223242	51.8	74.0	22.2	27.7	58.9	2.8	V



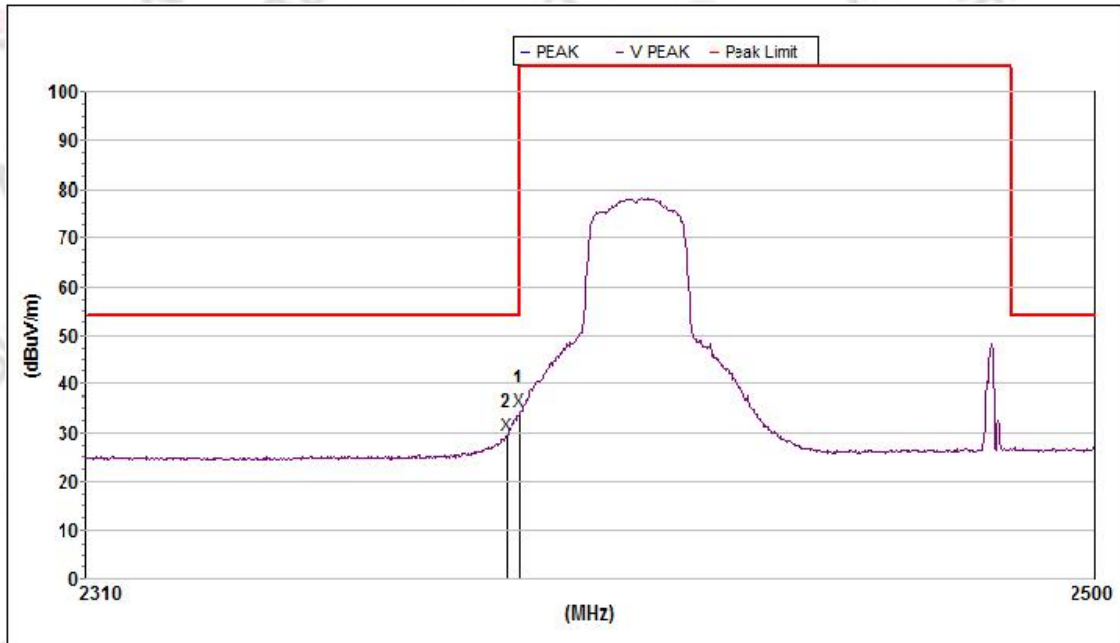
## 802.11N20-Low

## Horizontal



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	39.8	54.0	14.2	27.3	59.6	2.8	H
2	2386.276694	30.6	54.0	23.4	27.3	59.6	2.8	H

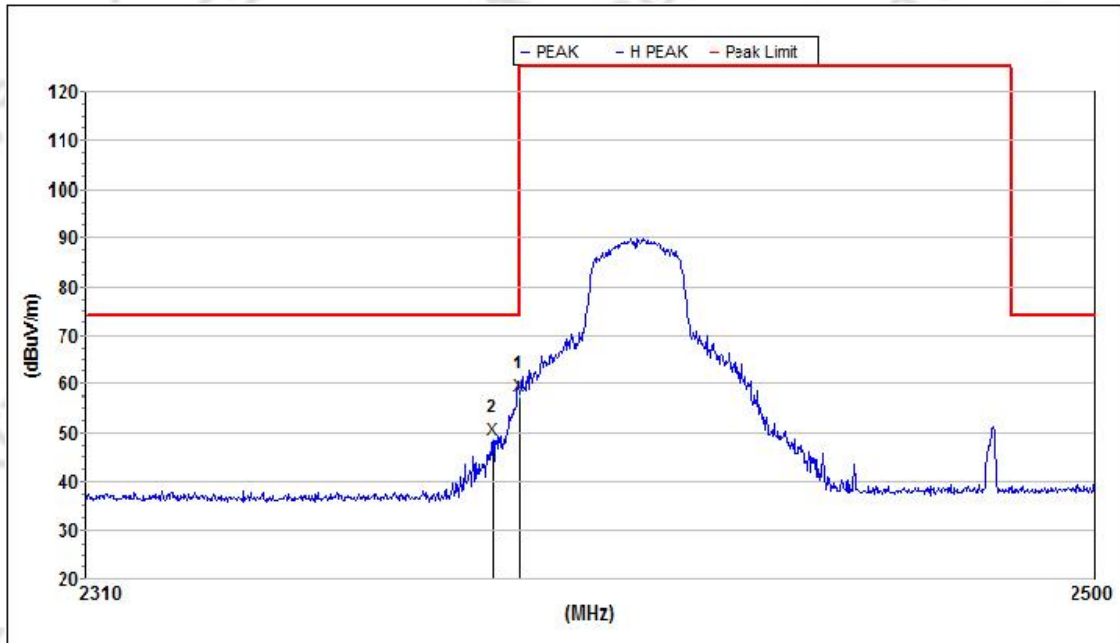
## Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2390.000000	34.6	54.0	19.4	27.3	59.6	2.8	V
2	2387.408677	29.6	54.0	24.4	27.3	59.6	2.8	V

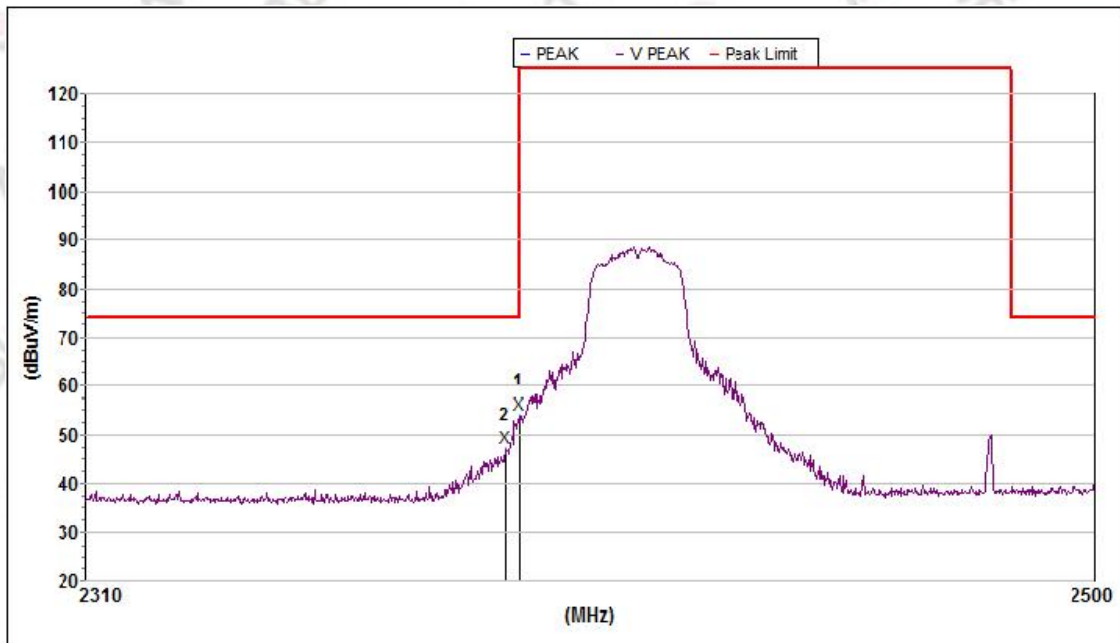
## 802.11N20 -Low

## Horizontal



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	57.5	74.0	16.5	27.3	59.6	2.8	H
2	2384.768220	48.6	74.0	25.4	27.3	59.6	2.8	H

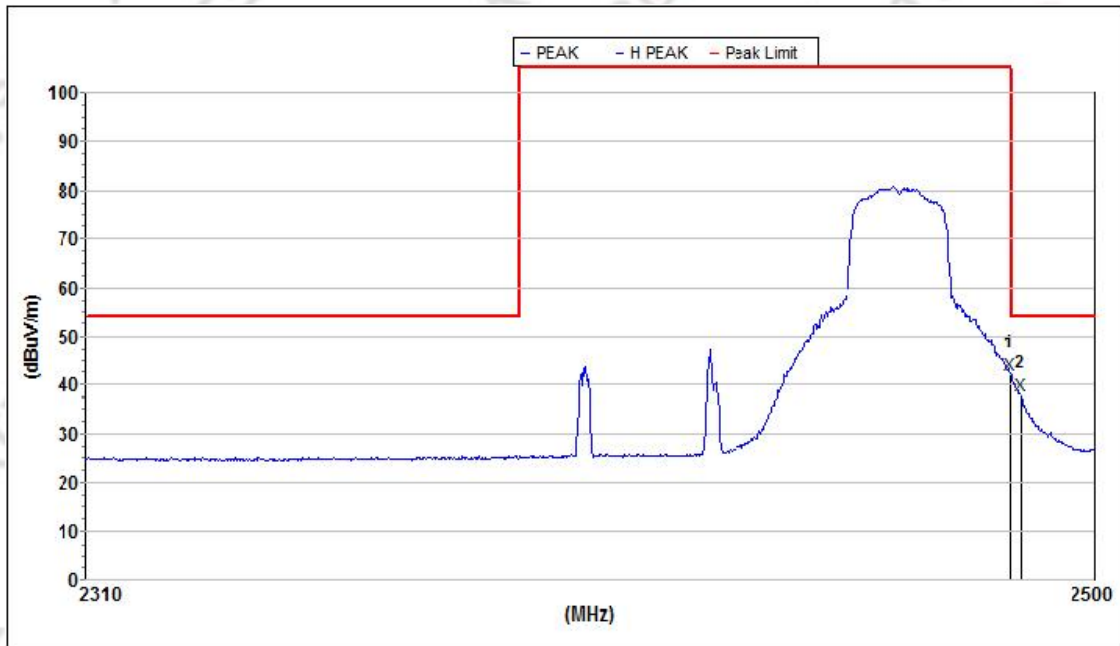
## Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2390.000000	54.3	74.0	19.7	27.3	59.6	2.8	V
2	2387.031290	47.3	74.0	26.7	27.3	59.6	2.8	V

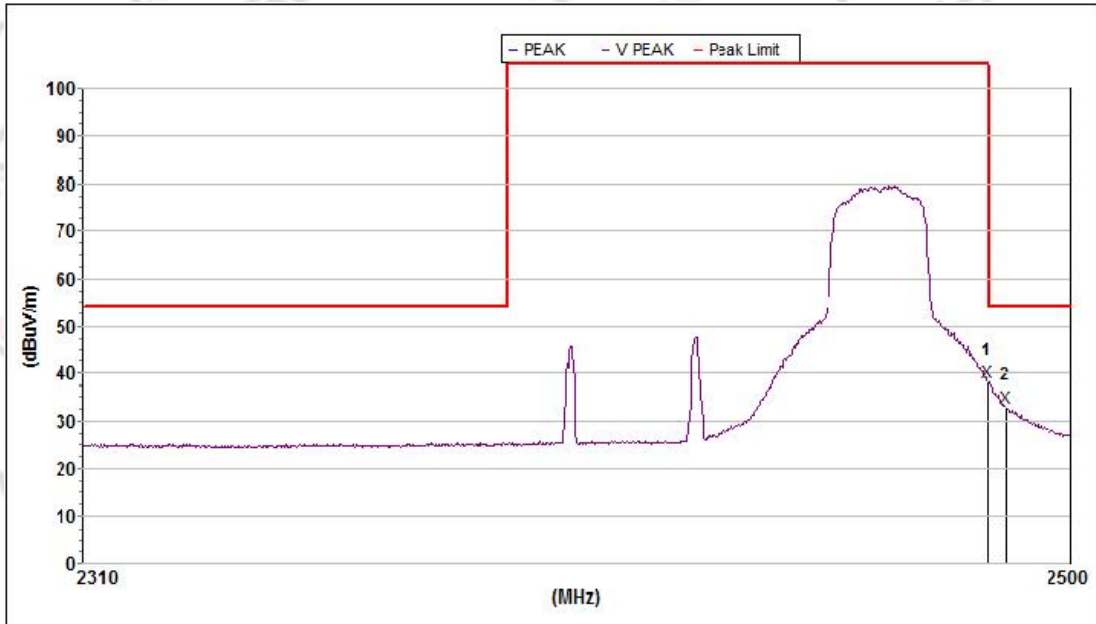
**802.11N20-High**

Horizontal



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	42.2	54.0	11.8	27.7	58.9	2.8	H
2	2485.616153	37.9	54.0	16.1	27.7	58.9	2.8	H

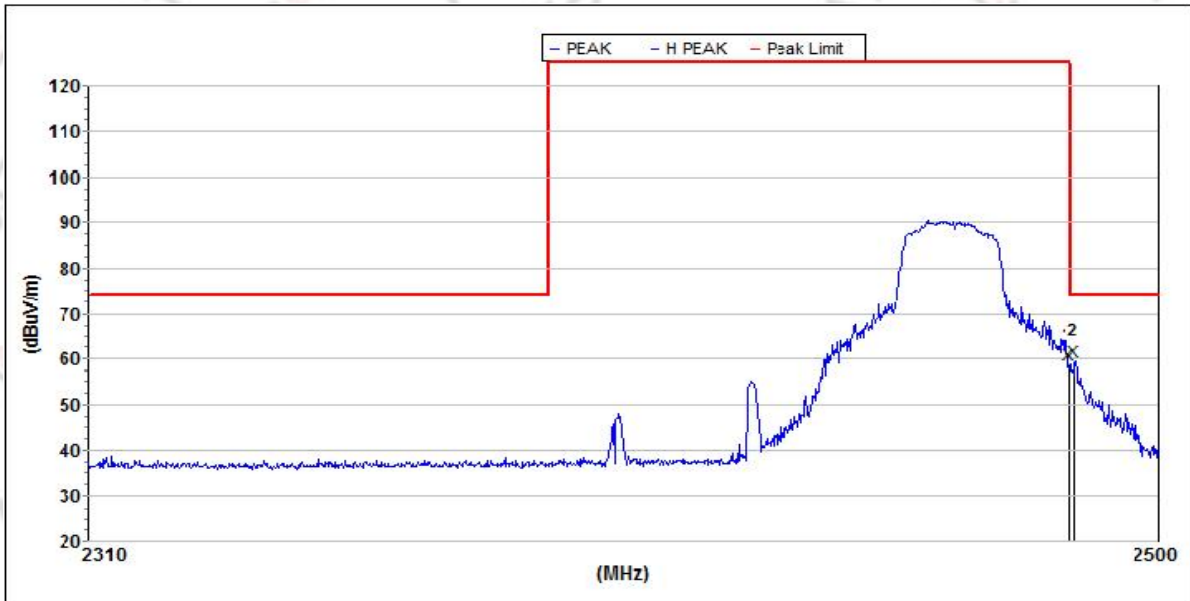
Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
AVG								
1	2483.501000	38.2	54.0	15.8	27.7	58.9	2.8	V
2	2487.188419	32.9	54.0	21.1	27.7	58.9	2.8	V

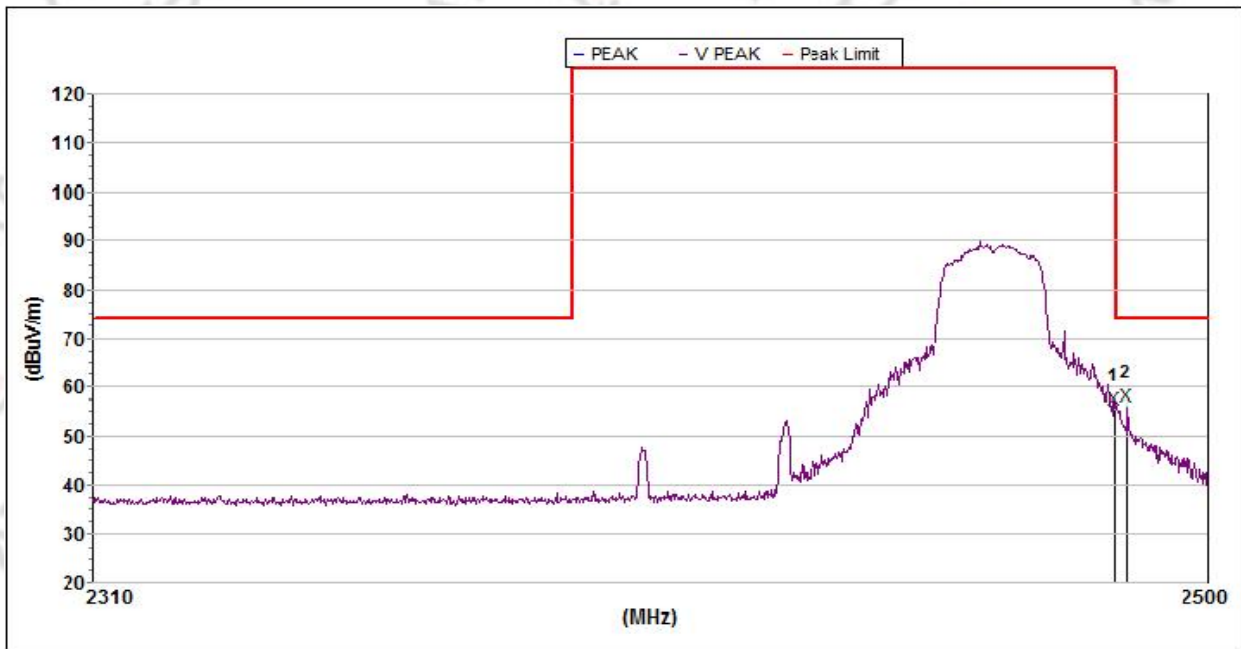


## 802.11N20 -High Horizontal



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	58.9	74.0	15.1	27.7	58.9	2.8	H
2	2484.437606	59.6	74.0	14.4	27.7	58.9	2.8	H

## Vertical



Mk.	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant.F/G. (dB/m)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	2483.501000	55.4	74.0	18.6	27.7	58.9	2.8	V
2	2485.616153	56.2	74.0	17.8	27.7	58.9	2.8	V

#### 4.CONDUCTED SPURIOUS & BAND EDGE EMISSION

##### 4.1 LIMIT

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

##### 4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 kHz/300 kHz
Trace-Mode:	Max hold

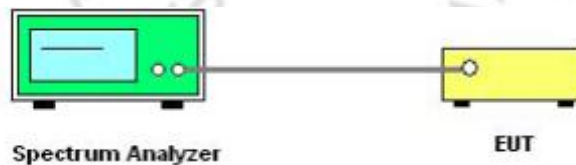
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2310 to 2445 MHz Upper Band Edge: 2430 to 2565 MHz
RB / VB (emission in restricted band)	100 kHz/300 kHz
Trace-Mode:	Max hold

##### 4.3 DEVIATION FROM STANDARD

No deviation.

##### 4.4 TEST SETUP



The EUT which is powered by the Battery, is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

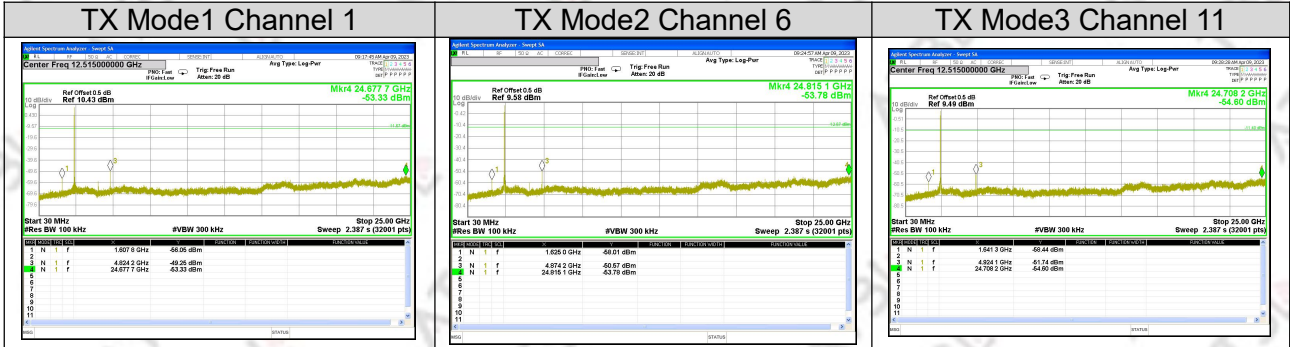
##### 4.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

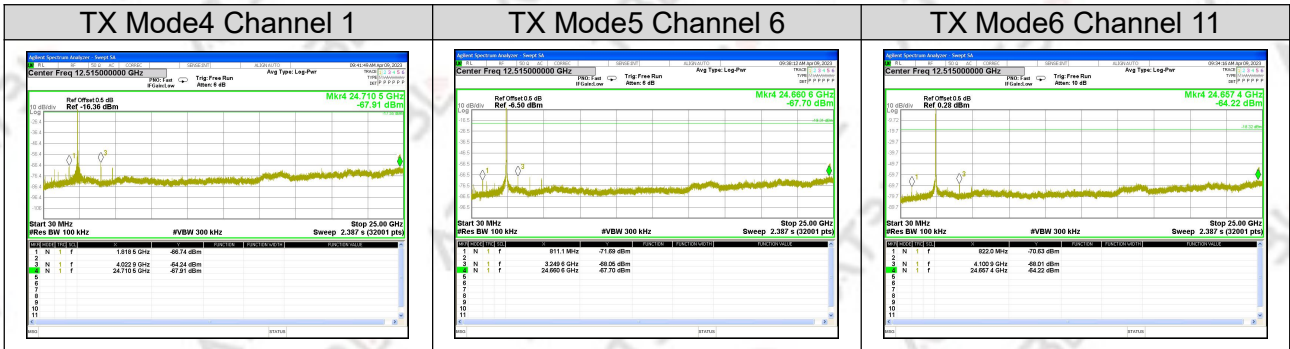
4.6 TEST RESULTS

Temperature:	22.8°C	Relative Humidity:	51%RH
Test Voltage:	DC 5V	Test Mode:	TX Mode1/2/3/4/5/6/7/8/9

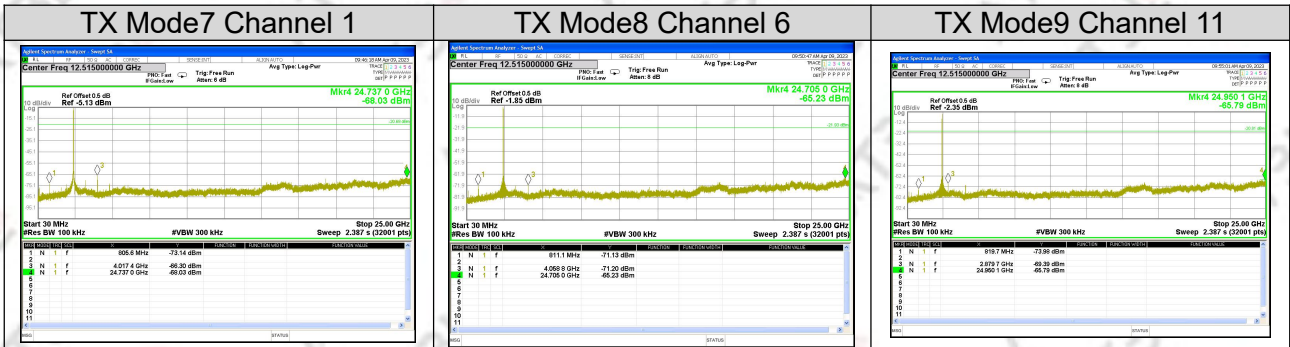
802.11b



802.11g



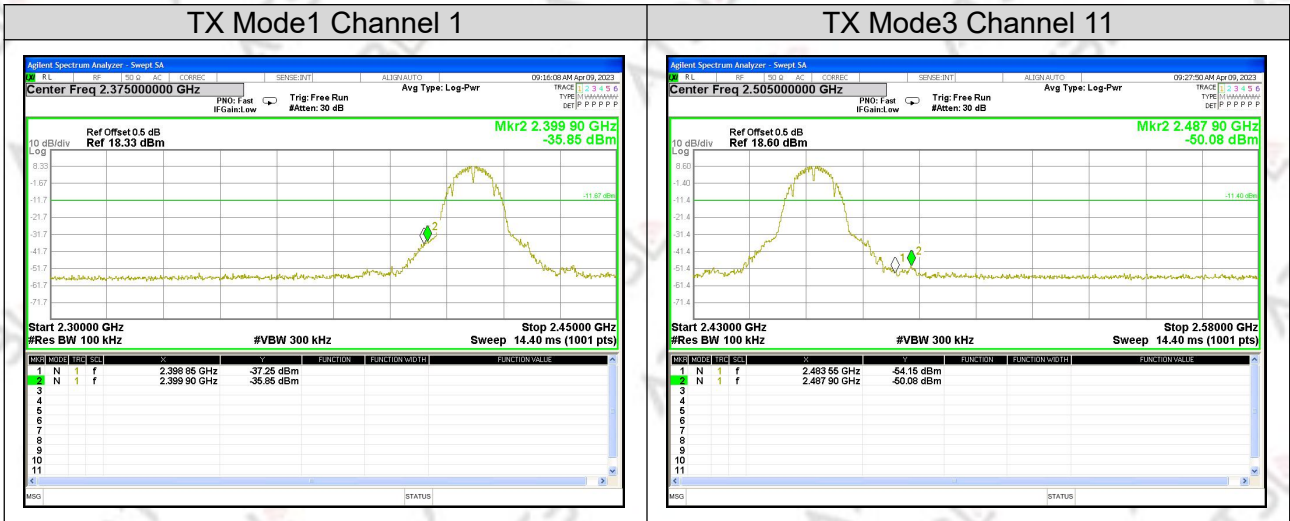
802.11n20



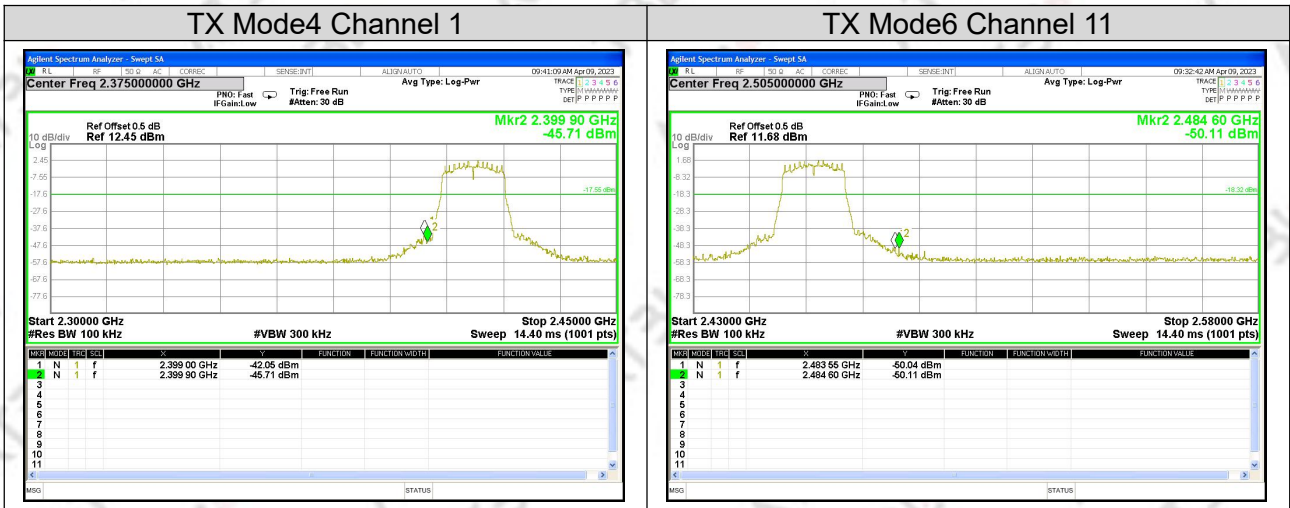


For Band edge(it's also the reference level for conducted spurious emission)

802.11b



802.11g



802.11n20

