



Test Report

FCC Part15 Subpart C & RSS-247 Issue 2

Product Name : REALMAX-QIAN
Model No. : ME835-A01
FCC ID : 2AR5WME835A01

Applicant : Tapu Yihai (Shanghai) Intelligent Technology Co., Ltd.
Address : Rm412, Tower 5, No.1082 Huyi Rd, Jiading District,
Shanghai

Date of Receipt : Jan. 15, 2019
Test Date : Jan. 16, 2019~ Mar. 26, 2019
Issued Date : Apr. 11, 2019
Report No. : 1912082R-RF-US-P06V01
Report Version : V1.1

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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Test Report Certification

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Product Name : REALMAX-QIAN
Applicant : Tapu Yihai (Shanghai) Intelligent Technology Co., Ltd.
Address : Rm412, Tower 5, No.1082 Huyi Rd, Jiading District,
Shanghai
Manufacturer : Tapu Yihai (Shanghai) Intelligent Technology Co., Ltd.
Address : Rm412, Tower 5, No.1082 Huyi Rd, Jiading District,
Shanghai
Model No. : ME835-A01
FCC ID : 2AR5WME835A01
EUT Voltage : 5 V dc, 3A
Test Voltage : AC 120V/60Hz
Brand Name : Realmax
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C
ANSI C63.10:2013;
KDB 558074 D01 v05r01
KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
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FCC Designation Number: CN1199;

Documented By :



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(Senior Project Manager: Frank He)

Approved By :



(Engineering Supervisor: Jack Zhang)

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1912082R-RF-US-P06V01	V1.0	Initial Issued Report	Mar. 29, 2019
1912082R-RF-US-P06V01	V1.1	1. P2, update the applicable standard version of KDB558074; 2. P12, update performed test item of summary of test result; 3. P75-76, add the test data of the worst case of simultaneous radiated emission; 4. P124, update antenna connector construction.	Apr. 11, 2019

1. General Information

1.1. EUT Description

Product Name	REALMAX-QIAN
Brand Name	Realmax
Model No.	ME835-A01
EUT Voltage	5 V dc, 3A
Frequency Range	For 2.4GHz Band 802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
Type of Modulation	802.11b: DSSS-DBPSK, DQPSK, CCK 802.11g/n: OFDM-BPSK, QPSK, 16QAM, 64QAM
Data Rate	802.11b: 1/2/5.5/11 Mbps 802.11g: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 300 Mbps
Channel Control	Auto

Note: We have evaluated each antenna combination, shown in the report was the worst data.

1.2. Working Frequency of Each Channel:

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

1.3. Antenna information

Model No.	N/A				
Antenna manufacturer	N/A				
Antenna Delivery	☒	1*TX+1*RX	☒	2*TX+2*RX	☐ 3*TX+3*RX
Antenna technology	☒	SISO			
	☒	MIMO	☐	Basic	
			☒	CDD	
			☐	Sectorized	
			☐	Beam-forming	
Antenna Type	☐	External	☐	Dipole	
			☐	Sectorized	
	☒	Internal	☒	PIFA	
			☐	PCB	
			☐	Ceramic Chip Antenna	
			☐	Metal plate type F antenna	
Antenna Technology	Ant Gain (dBi)			Directional Gain (dBi)	
				For Power	For PSD
☒ CDD	Ant1:1.5 Ant2: 0			1.5	4.5

1.4. Mode of Operation

Test Modes List
Mode 1: Transmit by 802.11b
Mode 2: Transmit by 802.11g
Mode 3: Transmit by 802.11n(20MHz)
Mode 4: Transmit by 802.11n(40MHz)

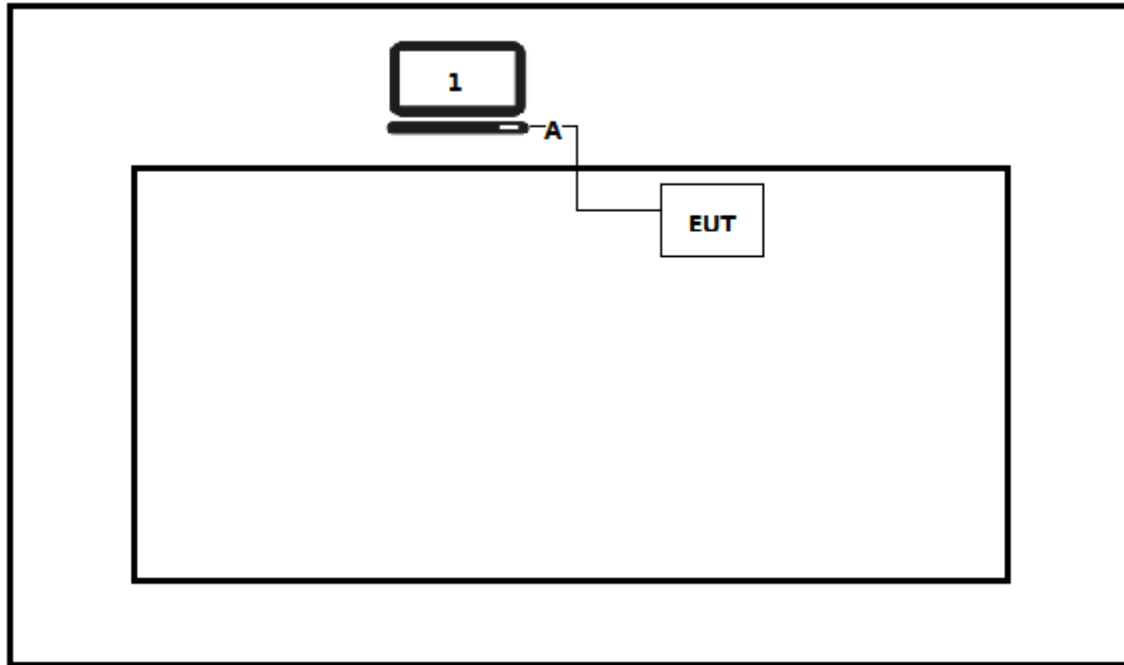
1.5. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

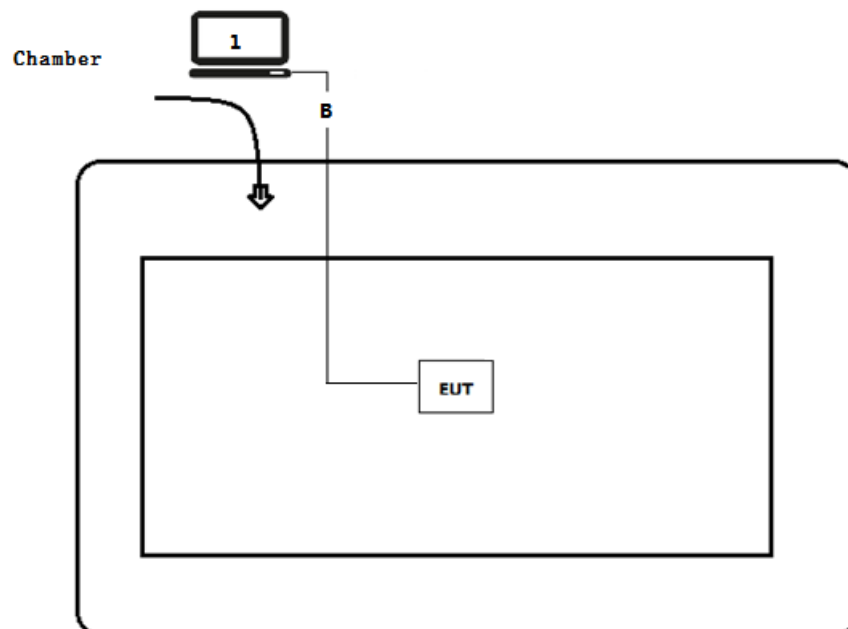
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded
A	USB cable	N/A	N/A	N/A	Shielded, 0.5m
B	USB cable	N/A	N/A	N/A	Shielded, 10m

1.6. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



1.7. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run RF software [QRCT], and set the test mode and channel, then press OK to start to continue transmit.

2. Technical Test

2.2. Summary of Test Result

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: Section 15.207	FCC 15.207	PASS
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: Section 15.209	FCC 15.209	PASS
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(d)	$\geq 20\text{dBc}$	PASS
Conducted Band Edge	FCC CFR Title 47 Part 15 Subpart C: Section 15.209	FCC 15.209	PASS
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(a)(2)	$\geq 500\text{kHz}$	PASS
Fundamental emission output power	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(b)(3)	$\leq 30\text{dBm}$	PASS
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: Section 15.247(e)	$\leq 8\text{dBm}/3\text{kHz}$	PASS
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: Section 15.203	FCC 15.203	PASS

2.3. Test Frequency configuration:

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
802.11b	01	2412 MHz	06	2437MHz	11	2462MHz
802.11g	01	2412 MHz	06	2437MHz	11	2462MHz
802.11n(20MHz)	01	2412 MHz	06	2437MHz	11	2462MHz
802.11n(40MHz)	03	2422 MHz	06	2437MHz	09	2452MHz

2.4. Power setting parameter

Test Software	QRCT			
Modulation Mode	Test Frequency	Ant 1	Ant 2	Ant 1+2
802.11b	2412	9	8	5.5
	2437	9	8	5.5
	2462	9	8	5.5
802.11g	2412	8	7	4.5
	2437	8	7	4.5
	2462	8	7	4.5
802.11n(20MHz)	2412	6	5	3
	2437	6	5	3
	2462	6	5	3
802.11n(40MHz)	2422	6	5	2.5
	2437	6	5	2.5
	2452	6	5	2.5

2.5. Power vs Data Rate

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g		20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	---	6.5	7.2	13.5	15.0
1	1	2	9	---	13.0	14.4	27.0	30.0
2	1	5.5	12	---	19.5	21.7	40.5	45.0
3	1	11	18	---	26.0	28.9	54.0	60.0
4	1	---	24	---	39.0	43.3	81.0	90.0
5	1	---	36	---	52.0	57.8	108.0	120.0
6	1	---	48	---	58.5	65.0	121.5	135.0
7	1	---	54	---	65.0	72.2	135.0	150.0
8	2	---	---	---	13.0	14.4	27.0	30.0
9	2	---	---	---	26.0	28.9	54.0	60.0
10	2	---	---	---	39.0	43.3	81.0	90.0
11	2	---	---	---	52.0	57.8	108.0	120.0
12	2	---	---	---	78.0	86.7	162.0	180.0
13	2	---	---	---	104.0	115.6	216.0	240.0
14	2	---	---	---	117.0	130.0	243.0	270.0
15	2	---	---	---	130.0	144.0	270.0	300.0
Note 1: The EUT supports all data rate above. The blue form is the maximum power data rate								
Note 2: The EUT has two spatial Streams								

2.6. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

2.7. Measurement Uncertainty

Test Items	Uncertainty
AC Power Line Conducted Emission	$\pm 2.02\text{dB}$
Radiated Emission	Below 1GHz $\pm 3.8\text{ dB}$
	Above 1GHz $\pm 3.9\text{ dB}$
RF Antenna Port Conducted Emission	$\pm 1.27\text{dB}$
Radiated Emission Band Edge	$\pm 3.9\text{dB}$
Occupied Bandwidth	$\pm 1\text{kHz}$
Power Spectral Density	$\pm 1.27\text{dB}$

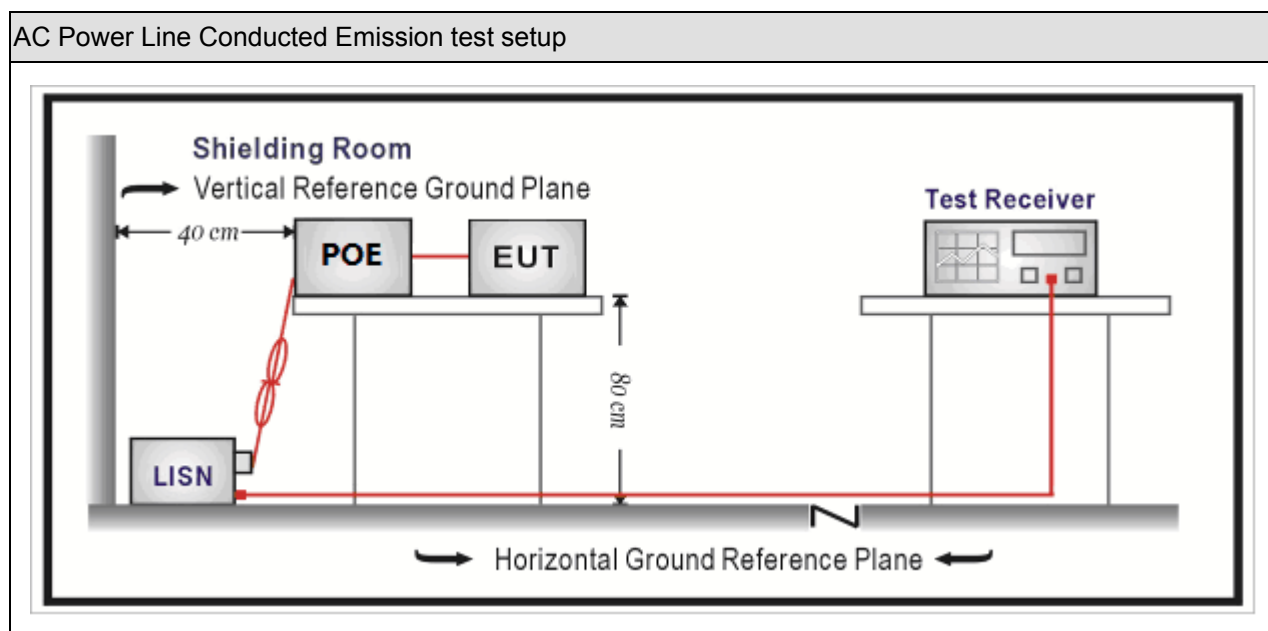
3. AC Power Line Conducted Emission

3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2018.03.29	2019.03.28
Two-Line V-Network	R&S	ENV216	100043	2018.03.29	2019.03.28
Two-Line V-Network	R&S	ENV216	100044	2018.09.17	2019.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2019.03.02	2020.03.01
50ohm Termination	SHX	TF2	07081401	2018.09.17	2019.09.16
Temperature/Humidity Meter	zhichen	ZC1-2	TR1-TH	2019.01.04	2020.01.03

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

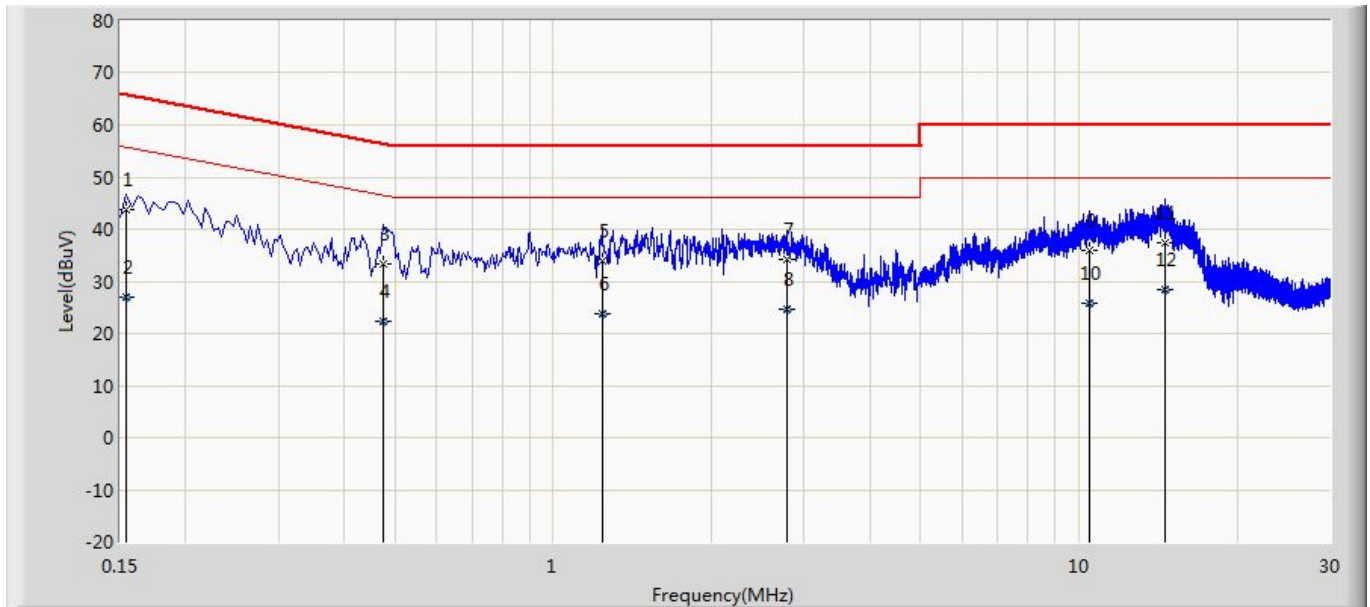
Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Note 1: The lower limit shall apply at the transition frequencies.		
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

3.4. Test Procedure

Test Method			
	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

3.5. Test Result

Engineer: Samuel	
Site: TR1	Time: 2019/01/28
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1	



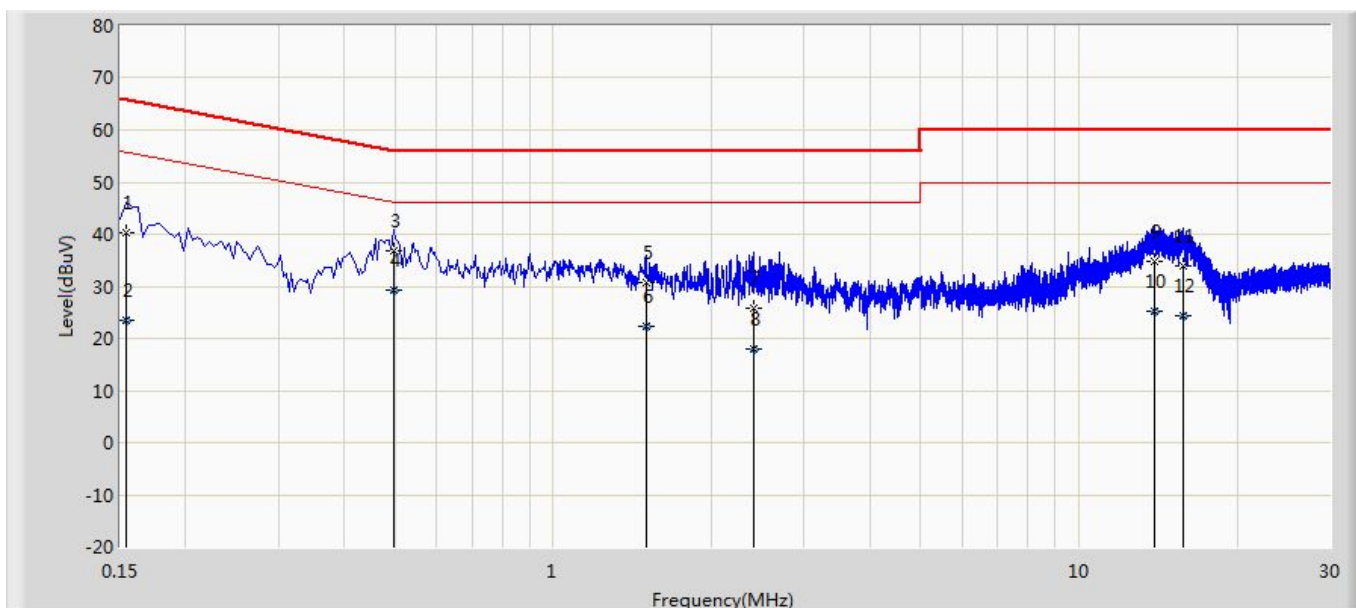
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	43.654	34.016	-22.128	65.781	9.609	0.029	0.000	QP
2		0.154	27.057	17.419	-28.725	55.781	9.609	0.029	0.000	AV
3		0.474	33.455	23.814	-22.989	56.444	9.600	0.041	0.000	QP
4		0.474	22.398	12.757	-24.046	46.444	9.600	0.041	0.000	AV
5		1.238	33.794	24.118	-22.206	56.000	9.610	0.066	0.000	QP
6		1.238	23.877	14.201	-22.123	46.000	9.610	0.066	0.000	AV
7		2.782	34.227	24.500	-21.773	56.000	9.623	0.104	0.000	QP
8	*	2.782	24.610	14.882	-21.390	46.000	9.623	0.104	0.000	AV
9		10.462	35.849	25.861	-24.151	60.000	9.782	0.206	0.000	QP
10		10.462	25.932	15.944	-24.068	50.000	9.782	0.206	0.000	AV
11		14.606	37.324	27.189	-22.676	60.000	9.890	0.245	0.000	QP
12		14.606	28.484	18.349	-21.516	50.000	9.890	0.245	0.000	AV

Note:

1. " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Samuel	
Site: TR1	Time: 2019/01/28
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	40.412	30.791	-25.369	65.781	9.593	0.029	0.000	QP
2		0.154	23.362	13.740	-32.419	55.781	9.593	0.029	0.000	AV
3		0.498	36.840	27.206	-19.194	56.033	9.590	0.044	0.000	QP
4	*	0.498	29.140	19.506	-16.893	46.033	9.590	0.044	0.000	AV
5		1.502	30.633	20.959	-25.367	56.000	9.600	0.074	0.000	QP
6		1.502	22.460	12.785	-23.540	46.000	9.600	0.074	0.000	AV
7		2.410	25.871	16.160	-30.129	56.000	9.615	0.097	0.000	QP
8		2.410	18.067	8.355	-27.933	46.000	9.615	0.097	0.000	AV
9		13.930	34.916	24.754	-25.084	60.000	9.923	0.239	0.000	QP
10		13.930	25.178	15.015	-24.822	50.000	9.923	0.239	0.000	AV
11		15.742	33.980	23.733	-26.020	60.000	9.993	0.255	0.000	QP
12		15.742	24.239	13.992	-25.761	50.000	9.993	0.255	0.000	AV

Note:

1. " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4. Emissions in restricted frequency bands

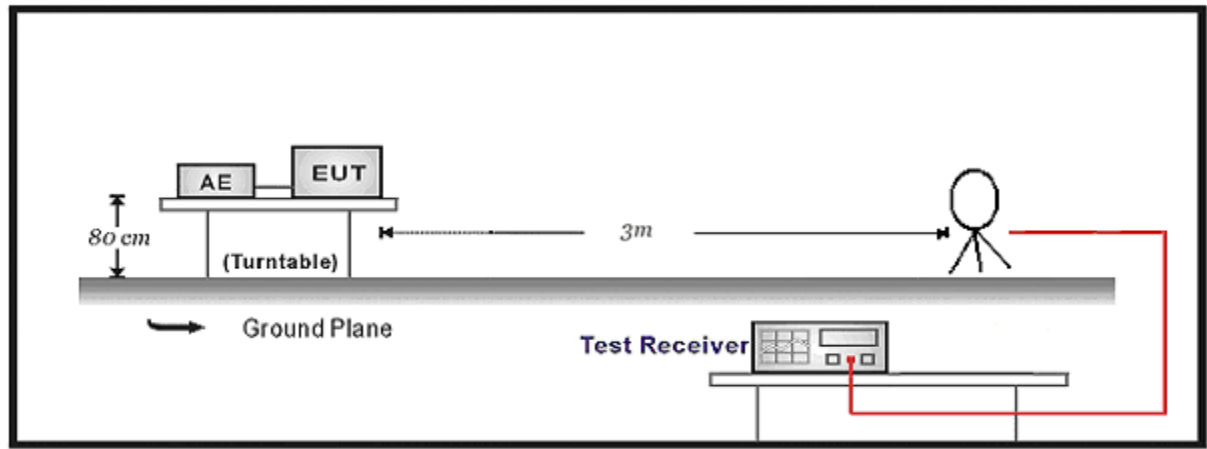
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2018.03.29	2019.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2018.11.16	2019.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2018.10.16	2019.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2019.03.02	2020.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2019.01.04	2020.01.03
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

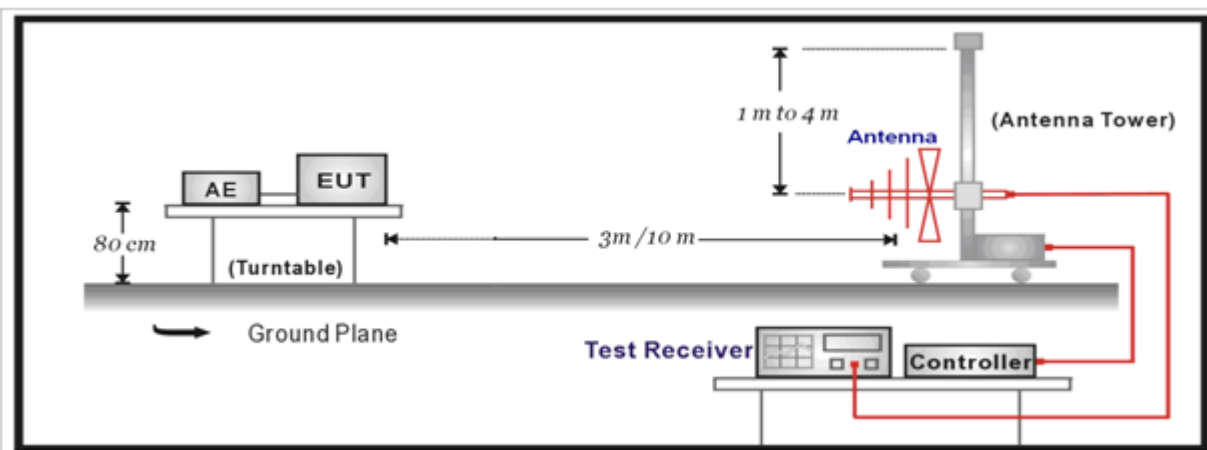
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2019.01.04	2020.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2018.05.06	2019.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2018.05.06	2019.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2019.01.22	2020.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2018.11.25	2019.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2019.03.02	2020.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2019.03.02	2020.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2019.03.02	2020.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2018.06.10	2019.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2019.01.04	2020.01.03
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

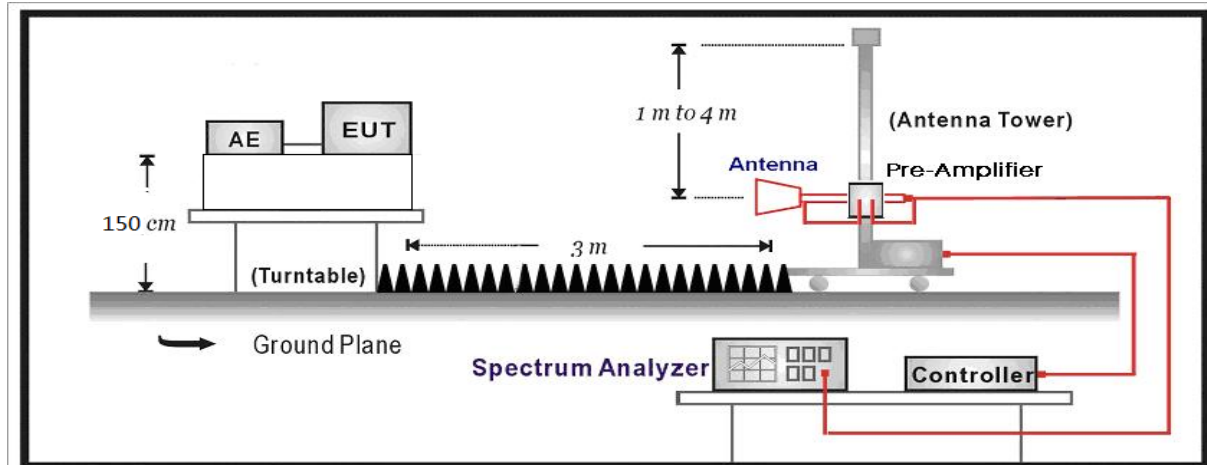
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Restricted Bands of operation			
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
8.81425 – 8.81475	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	
13.36 – 13.41			

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

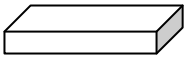
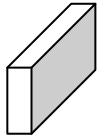
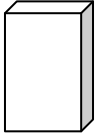
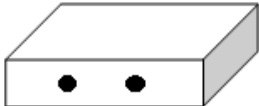
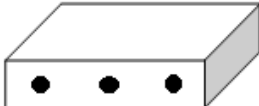
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.4. Test Procedure

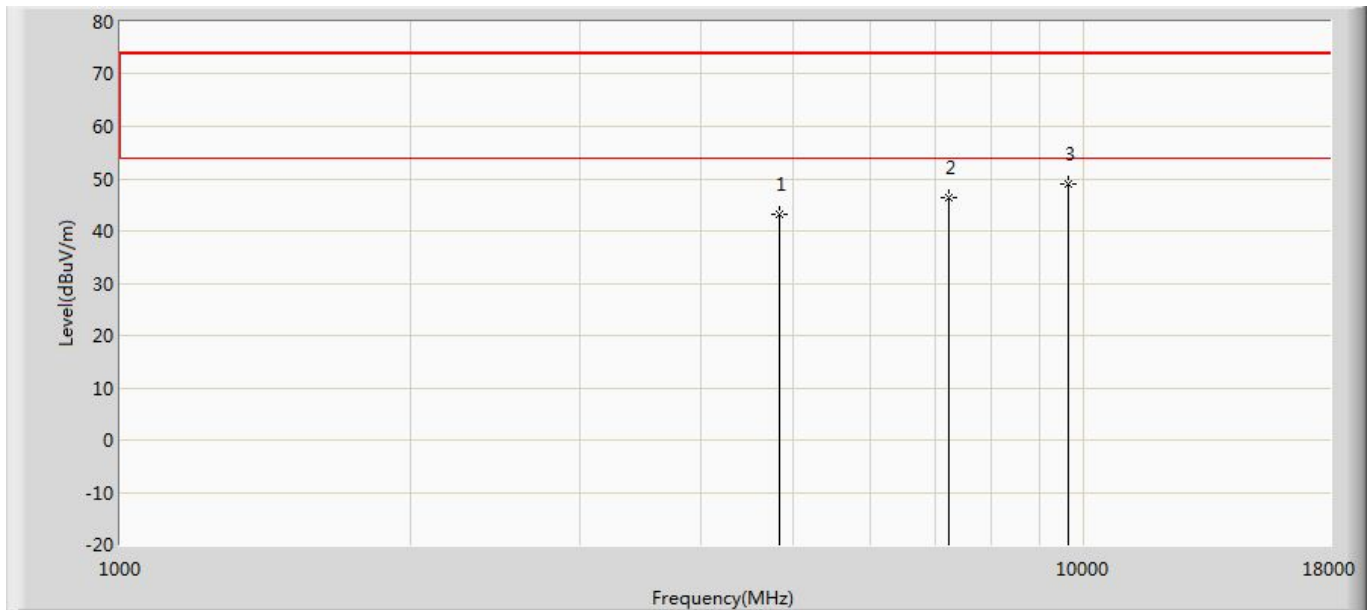
Test Method						
	References Rule		Chapter	Description		
☐	ANSI C63.10		11.11	Emissions in non-restricted frequency bands		
	☐	ANSI C63.10	11.11.2	Reference level measurement		
	☐	ANSI C63.10	11.11.3	Emission level measurement		
☒	ANSI C63.10		11.12	Emissions in restricted frequency bands		
	☒	ANSI C63.10	11.12.1	Radiated emission measurements		
	☒	ANSI C63.10	11.12.2.7	Radiated spurious emission test		
		☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz	
		☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz	
		☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz	
	☐	ANSI C63.10		11.12.2	Antenna-port conducted measurements	
		☐	ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure	
		☐	ANSI C63.10	11.12.2.4	Peak power measurement procedure	
		☐	ANSI C63.10	11.12.2.5	Average power measurement procedures	
			☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
			☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
			☐	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

4.5. EUT test Axis definition

Item	Emissions in restricted frequency bands			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1~4			
Test method	☒	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☒	Worst Axis ☐	Worst Axis ☐
	☐	Conducted		
	☐	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

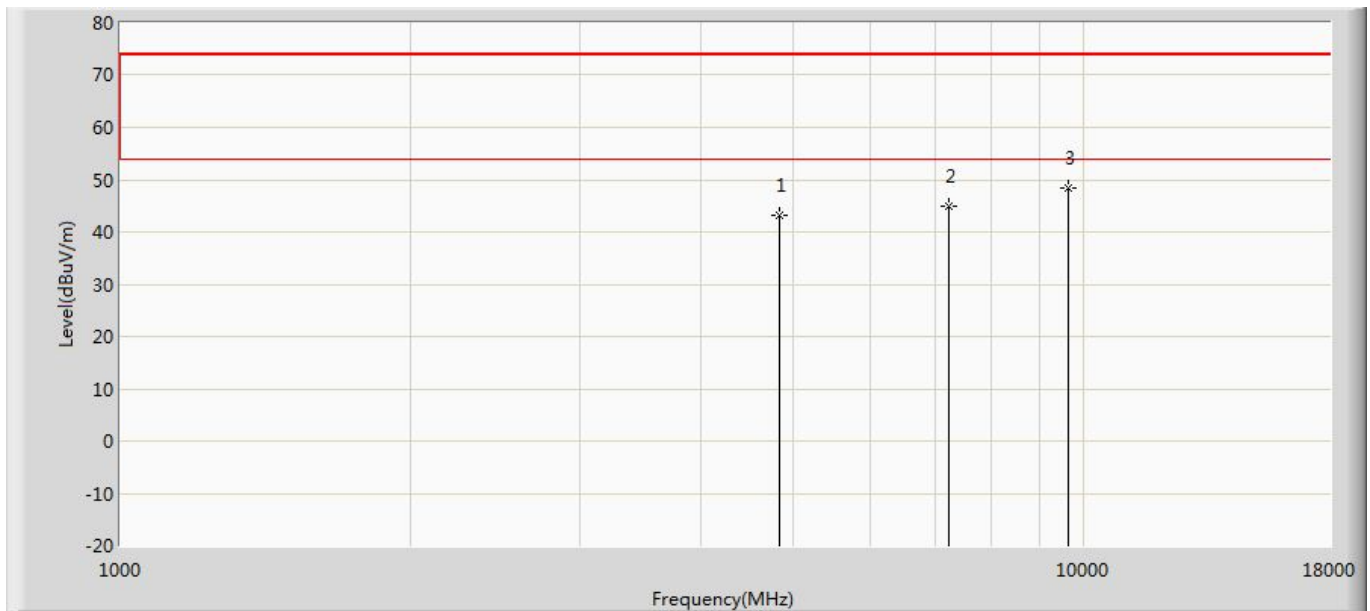
4.6. Test Result

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b SISO	



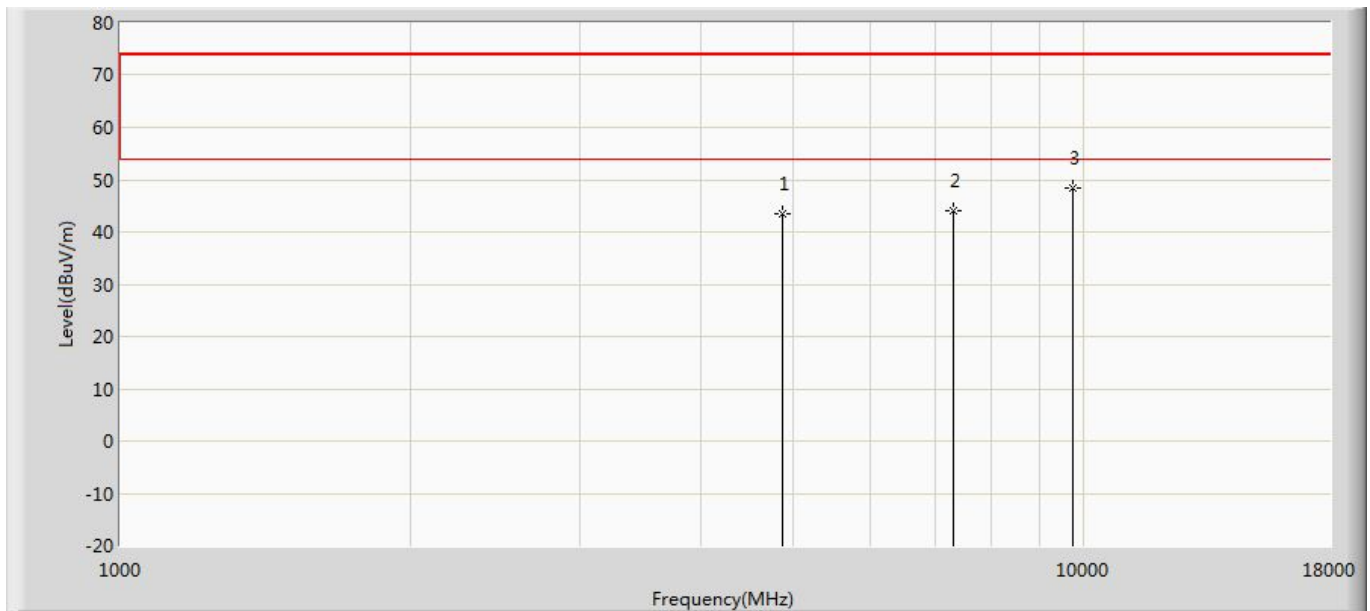
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.145	43.177	-30.855	74.000	-0.032	PK
2		7236.000	46.247	42.356	-27.753	74.000	3.891	PK
3	*	9648.000	48.989	39.656	-25.011	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b SISO	



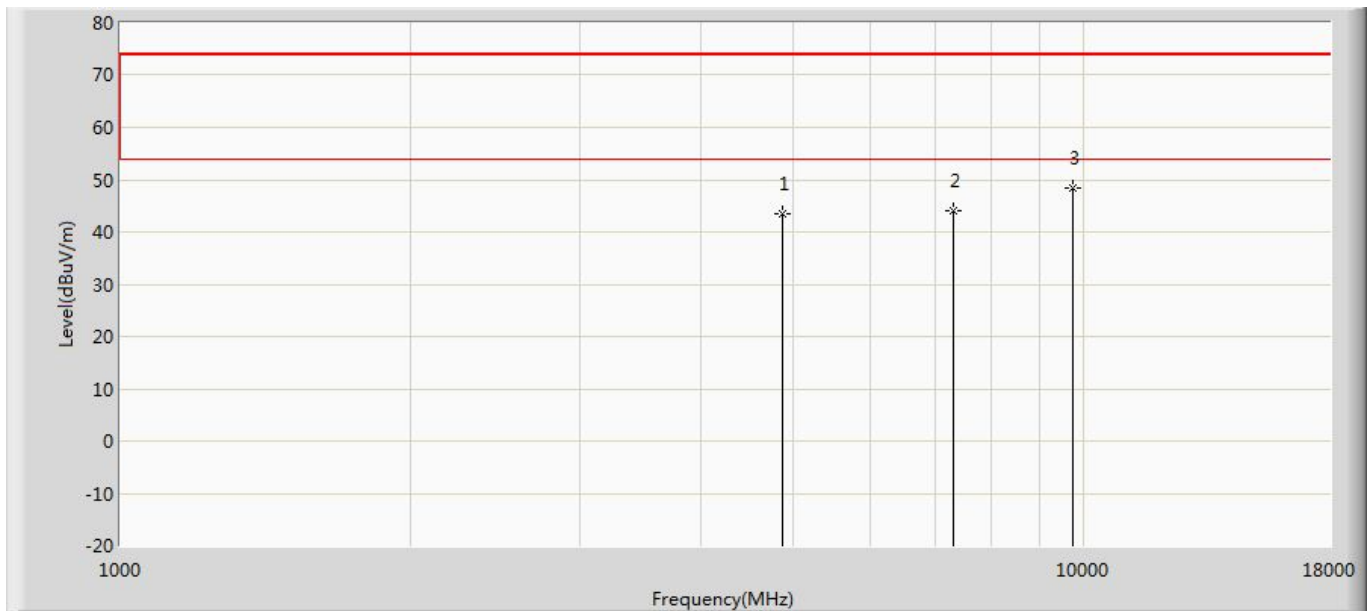
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.314	43.346	-30.686	74.000	-0.032	PK
2		7236.000	44.819	40.928	-29.181	74.000	3.891	PK
3	*	9648.000	48.490	39.157	-25.510	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b SISO	



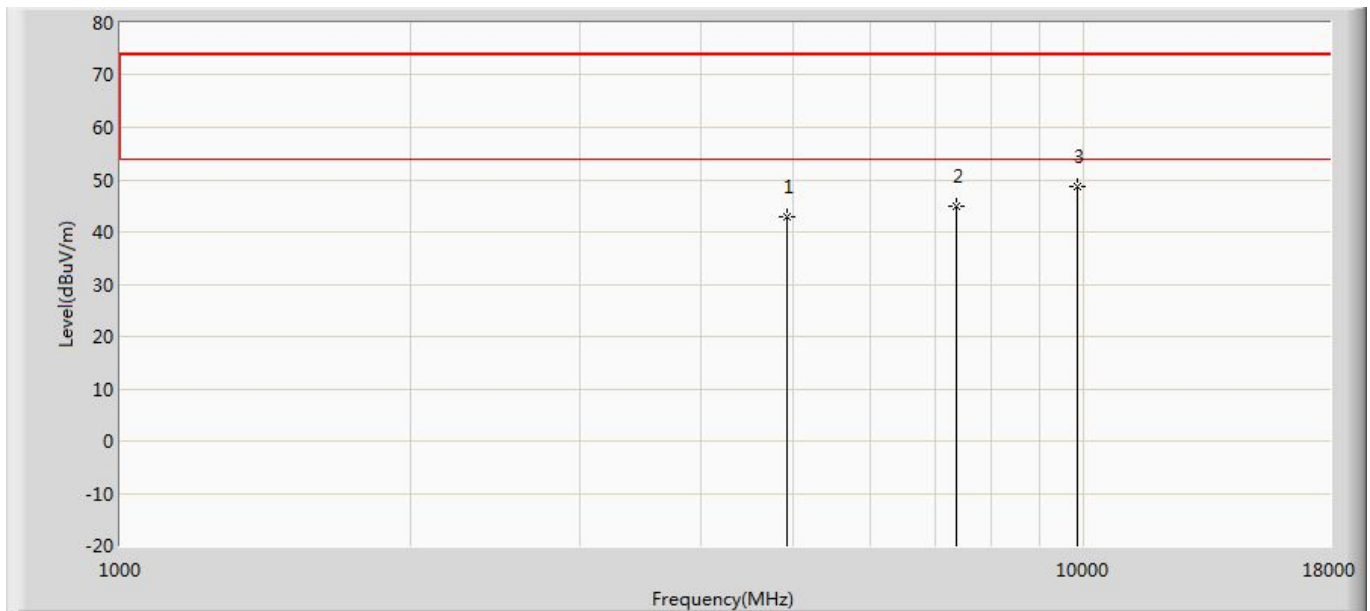
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.346	42.812	-30.654	74.000	0.535	PK
2		7311.000	43.993	40.561	-30.007	74.000	3.432	PK
3	*	9748.000	48.359	38.988	-25.641	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b SISO	



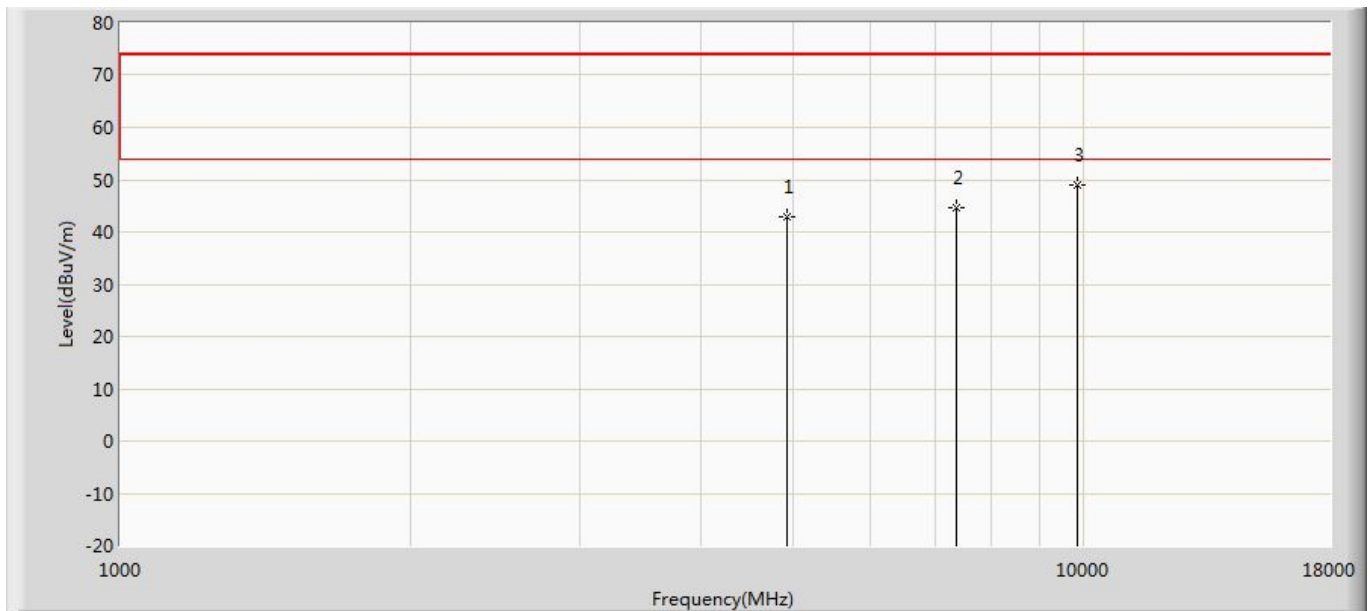
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.395	42.861	-30.605	74.000	0.535	PK
2		7311.000	43.959	40.527	-30.041	74.000	3.432	PK
3	*	9748.000	48.443	39.072	-25.557	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2462MHz by 802.11b SISO	



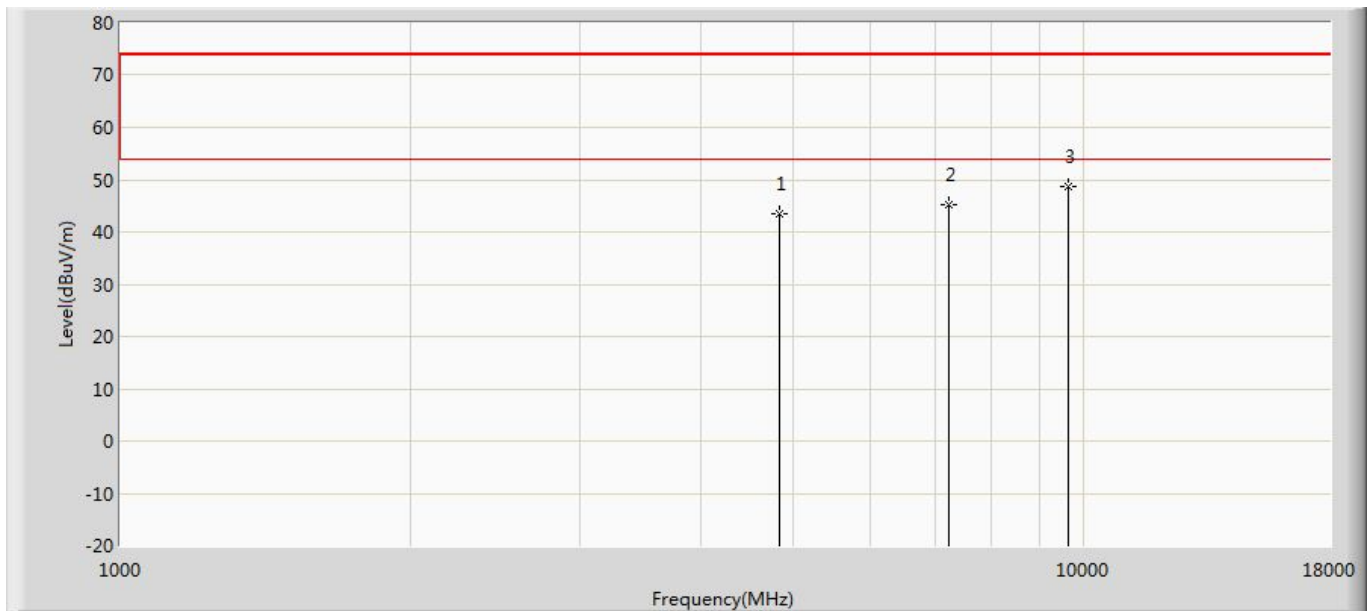
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	42.899	42.663	-31.101	74.000	0.236	PK
2		7386.000	44.848	40.955	-29.152	74.000	3.893	PK
3	*	9848.000	48.555	39.128	-25.445	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2462MHz by 802.11b SISO	



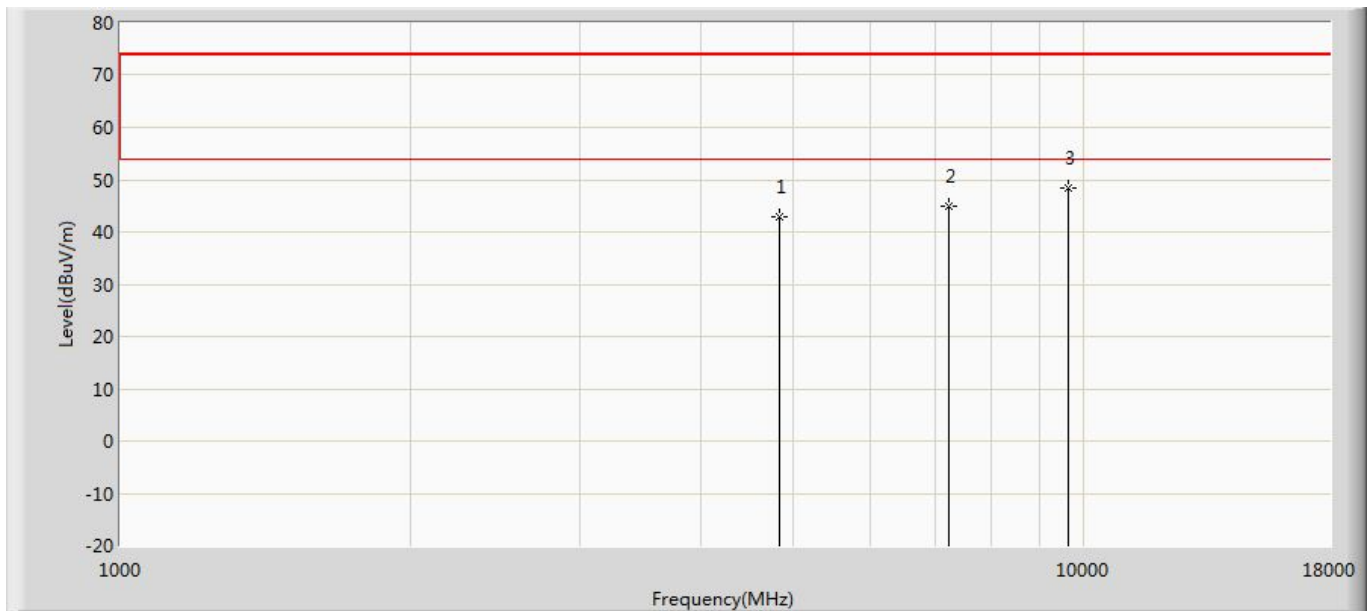
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.030	42.794	-30.970	74.000	0.236	PK
2		7386.000	44.633	40.740	-29.367	74.000	3.893	PK
3	*	9848.000	49.041	39.614	-24.959	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g SISO	



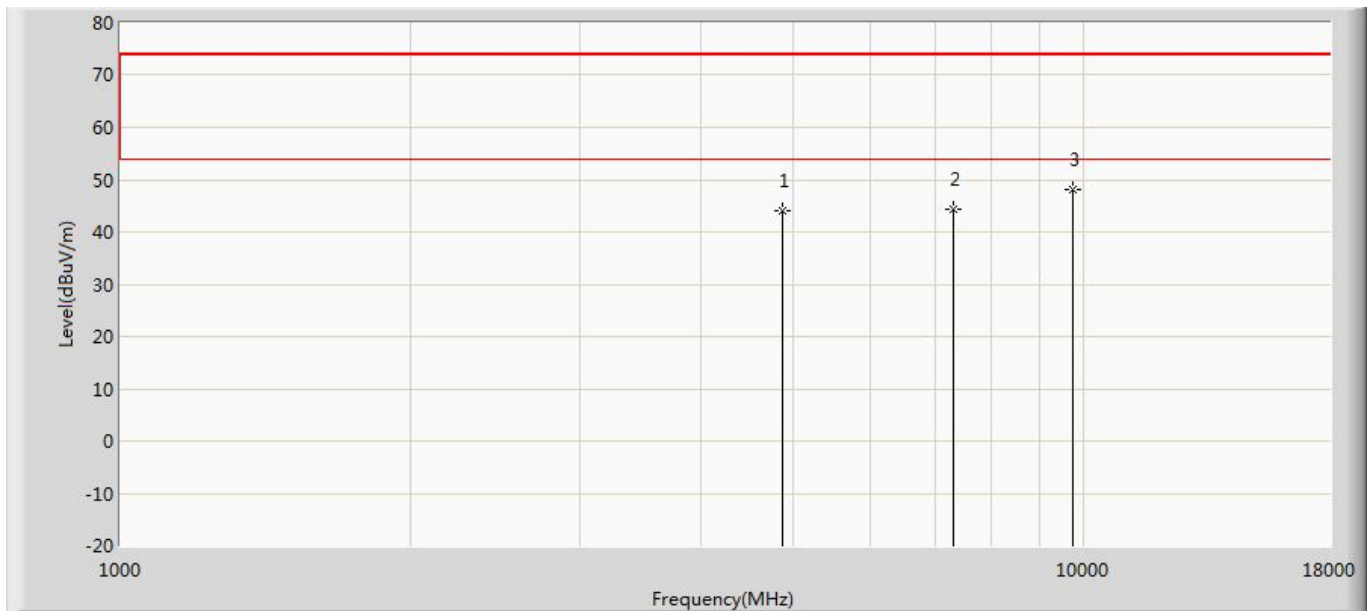
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.350	43.382	-30.650	74.000	-0.032	PK
2		7236.000	45.325	41.434	-28.675	74.000	3.891	PK
3	*	9648.000	48.788	39.455	-25.212	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g SISO	



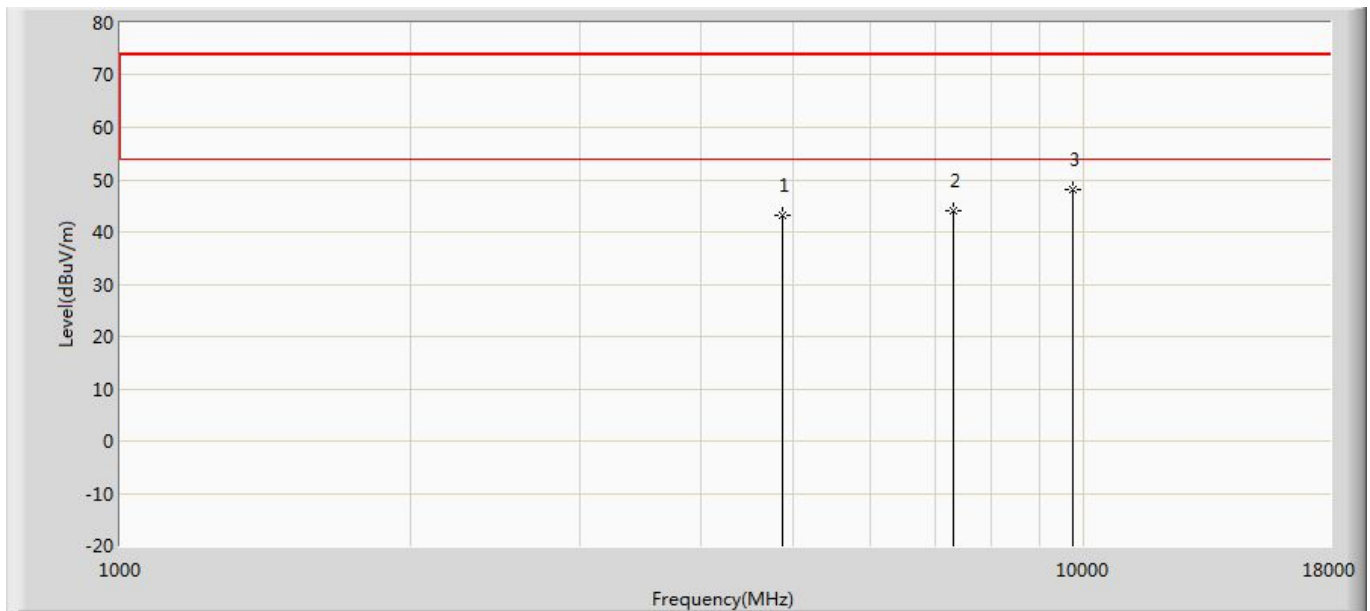
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	42.879	42.911	-31.121	74.000	-0.032	PK
2		7236.000	44.849	40.958	-29.151	74.000	3.891	PK
3	*	9648.000	48.489	39.156	-25.511	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2437MHz by 802.11g SISO	



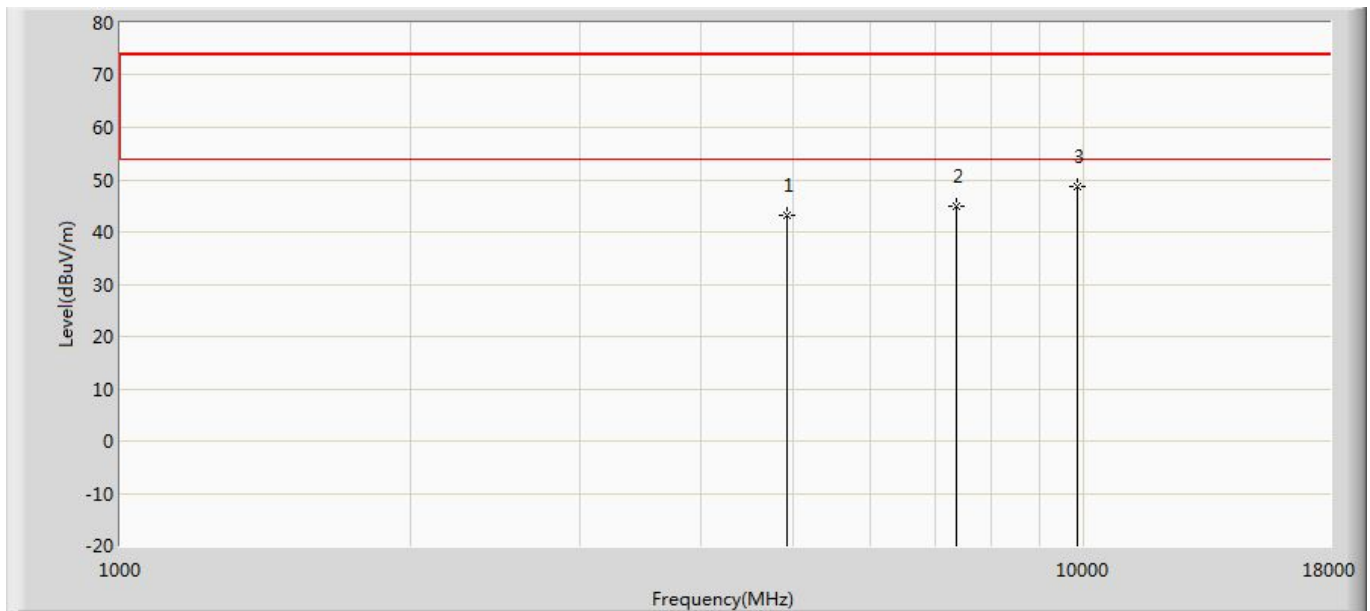
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.989	43.455	-30.011	74.000	0.535	PK
2		7311.000	44.271	40.839	-29.729	74.000	3.432	PK
3	*	9748.000	48.195	38.824	-25.805	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2437MHz by 802.11g SISO	



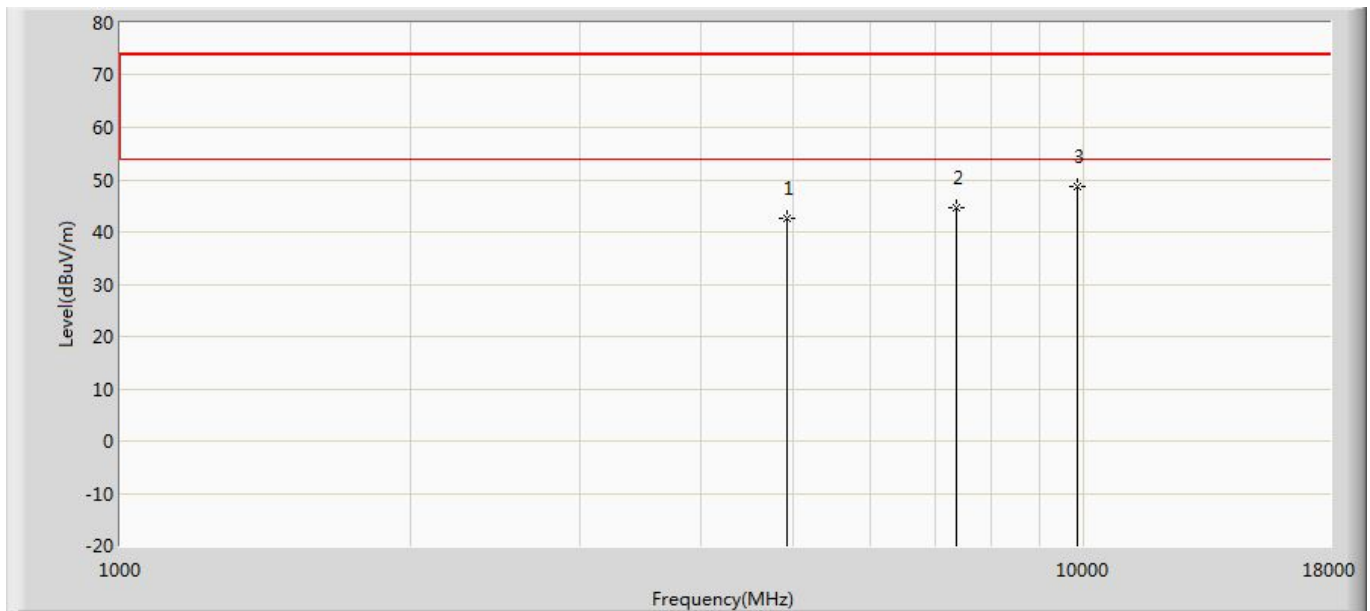
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.136	42.602	-30.864	74.000	0.535	PK
2		7311.000	44.173	40.741	-29.827	74.000	3.432	PK
3	*	9748.000	48.060	38.689	-25.940	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2462MHz by 802.11g SISO	



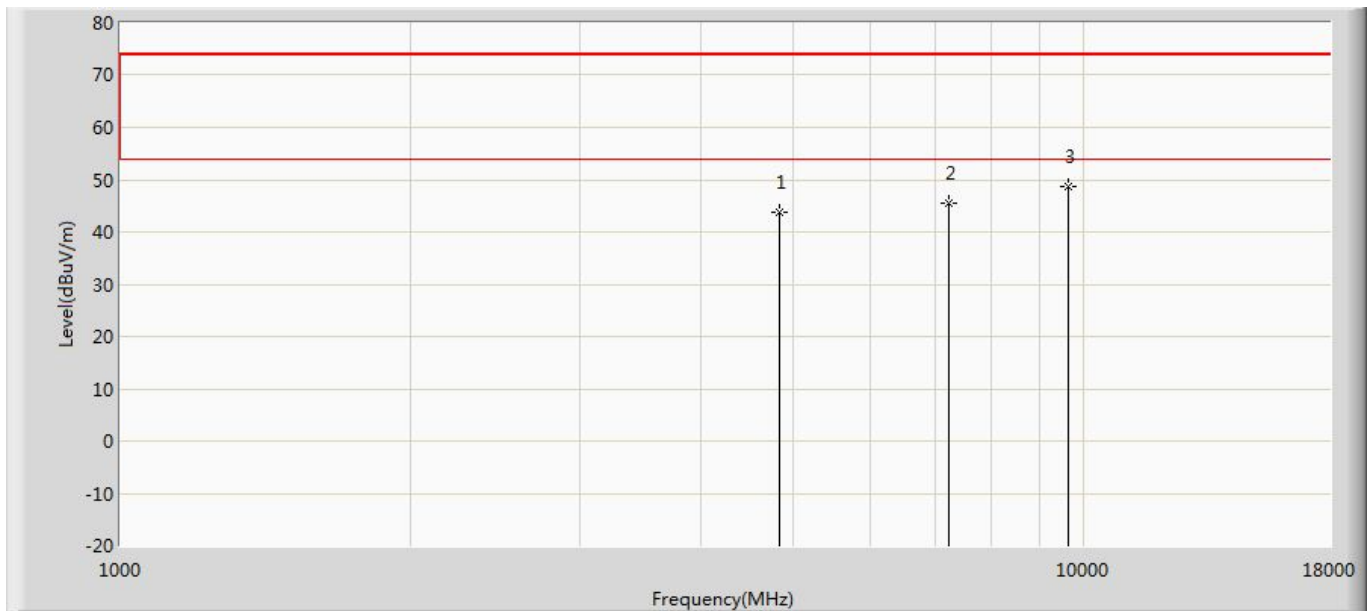
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.252	43.016	-30.748	74.000	0.236	PK
2		7386.000	44.963	41.070	-29.037	74.000	3.893	PK
3	*	9848.000	48.677	39.250	-25.323	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2462MHz by 802.11g SISO	



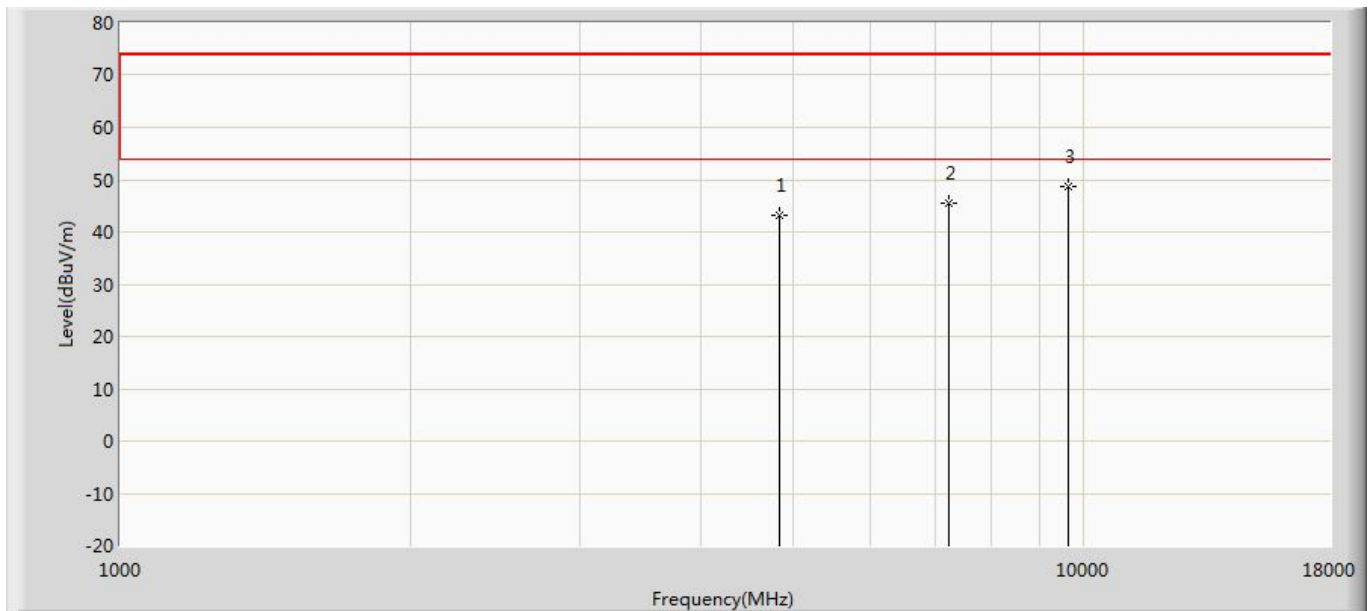
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	42.675	42.439	-31.325	74.000	0.236	PK
2		7386.000	44.505	40.612	-29.495	74.000	3.893	PK
3	*	9848.000	48.637	39.210	-25.363	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n(20MHz) SISO	



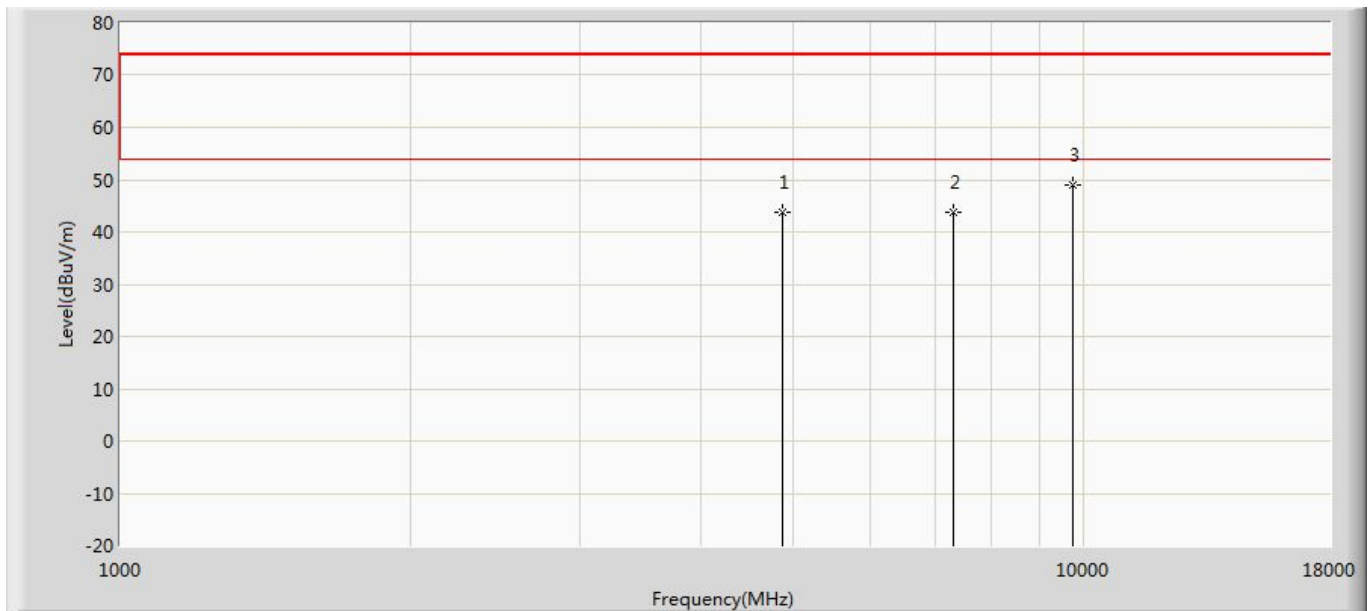
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.666	43.698	-30.334	74.000	-0.032	PK
2		7236.000	45.521	41.630	-28.479	74.000	3.891	PK
3	*	9648.000	48.676	39.343	-25.324	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n(20MHz) SISO	



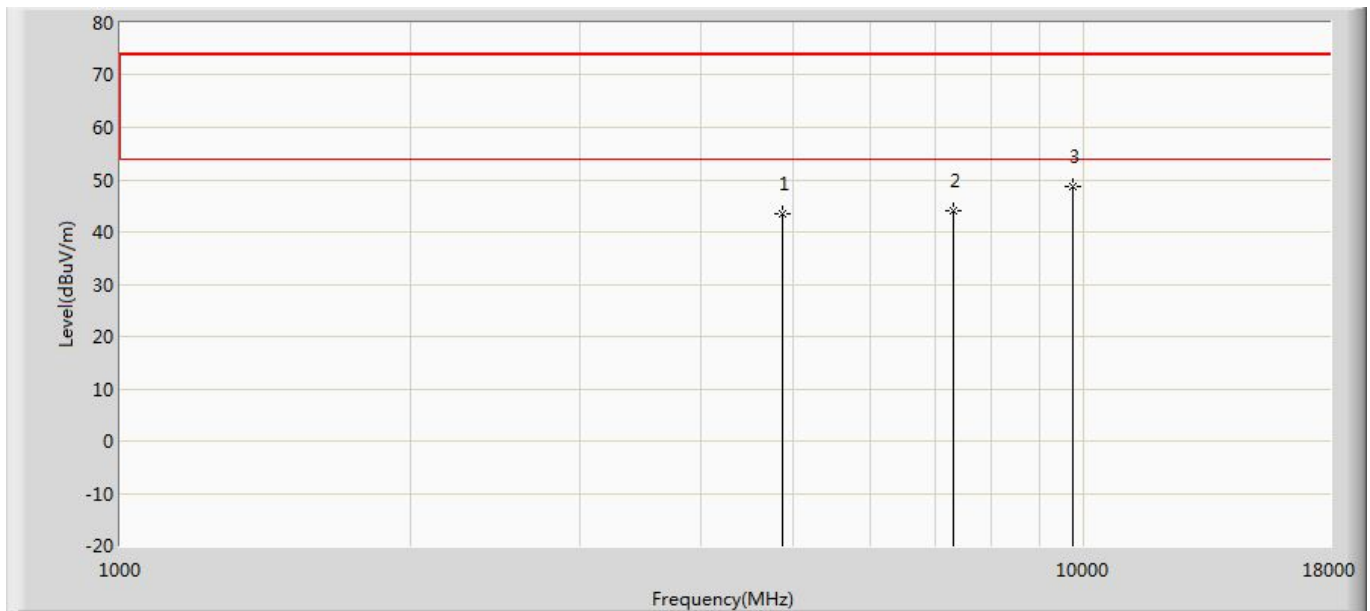
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.169	43.201	-30.831	74.000	-0.032	PK
2		7236.000	45.400	41.509	-28.600	74.000	3.891	PK
3	*	9648.000	48.569	39.236	-25.431	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2437MHz by 802.11n(20MHz) SISO	



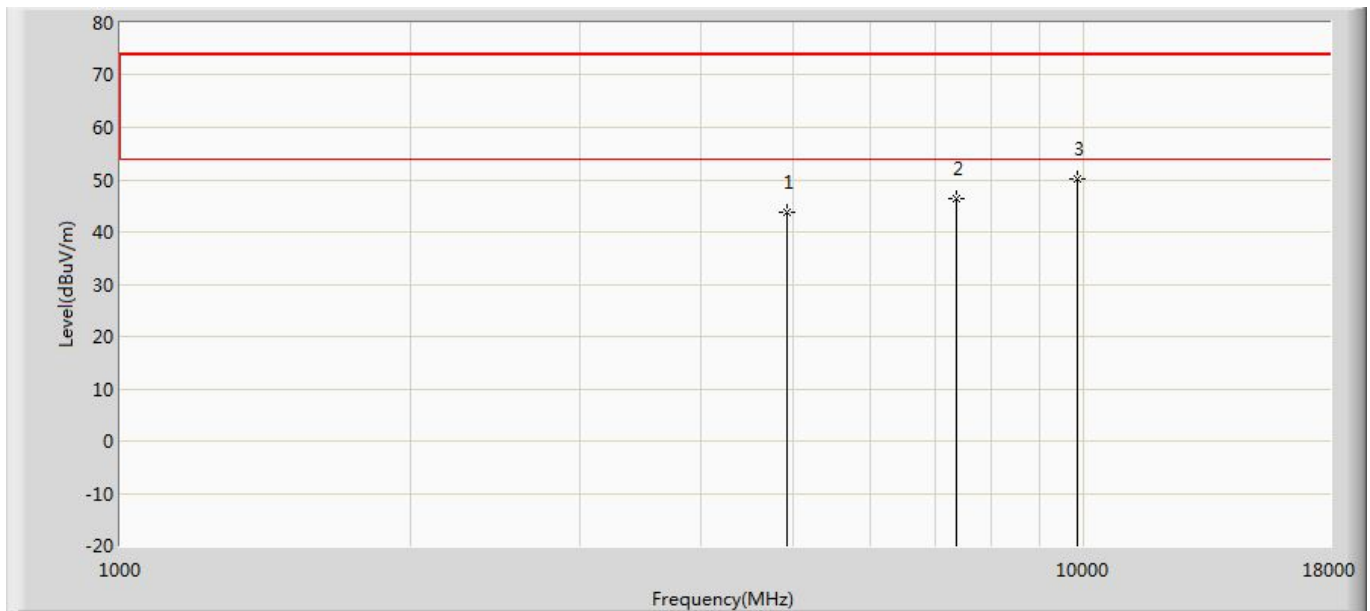
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.732	43.198	-30.268	74.000	0.535	PK
2		7311.000	43.626	40.194	-30.374	74.000	3.432	PK
3	*	9748.000	48.967	39.596	-25.033	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2437MHz by 802.11n(20MHz) SISO	



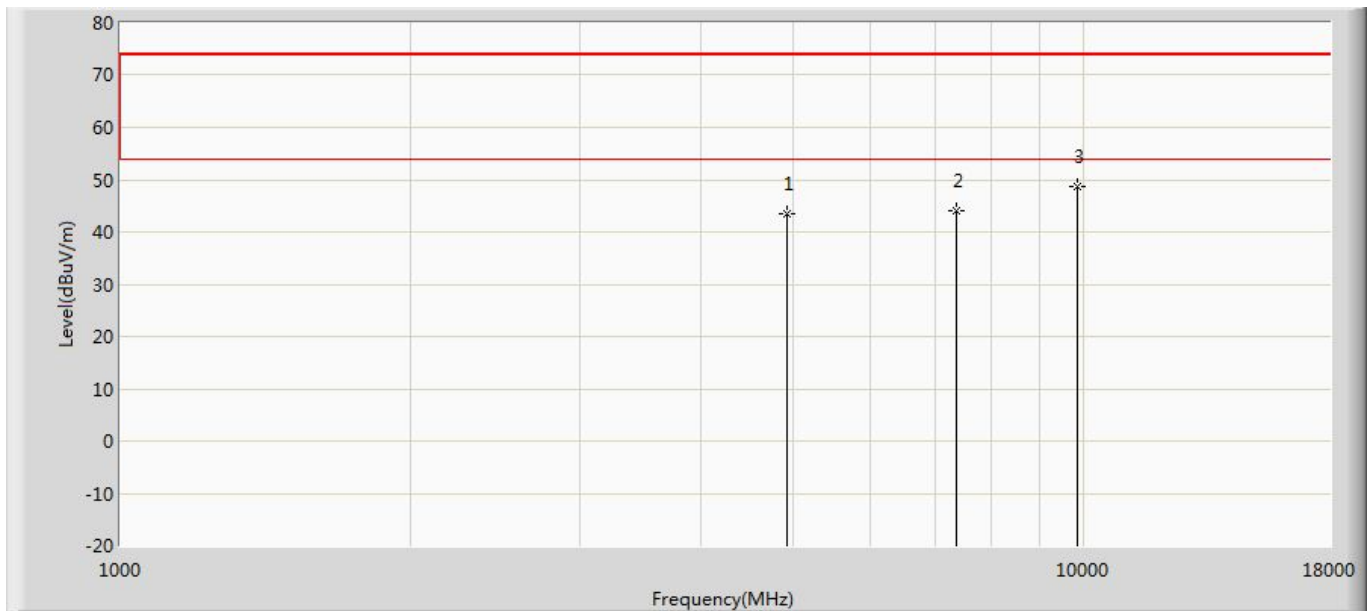
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.441	42.907	-30.559	74.000	0.535	PK
2		7311.000	44.157	40.725	-29.843	74.000	3.432	PK
3	*	9748.000	48.669	39.298	-25.331	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2462MHz by 802.11n(20MHz) SISO	



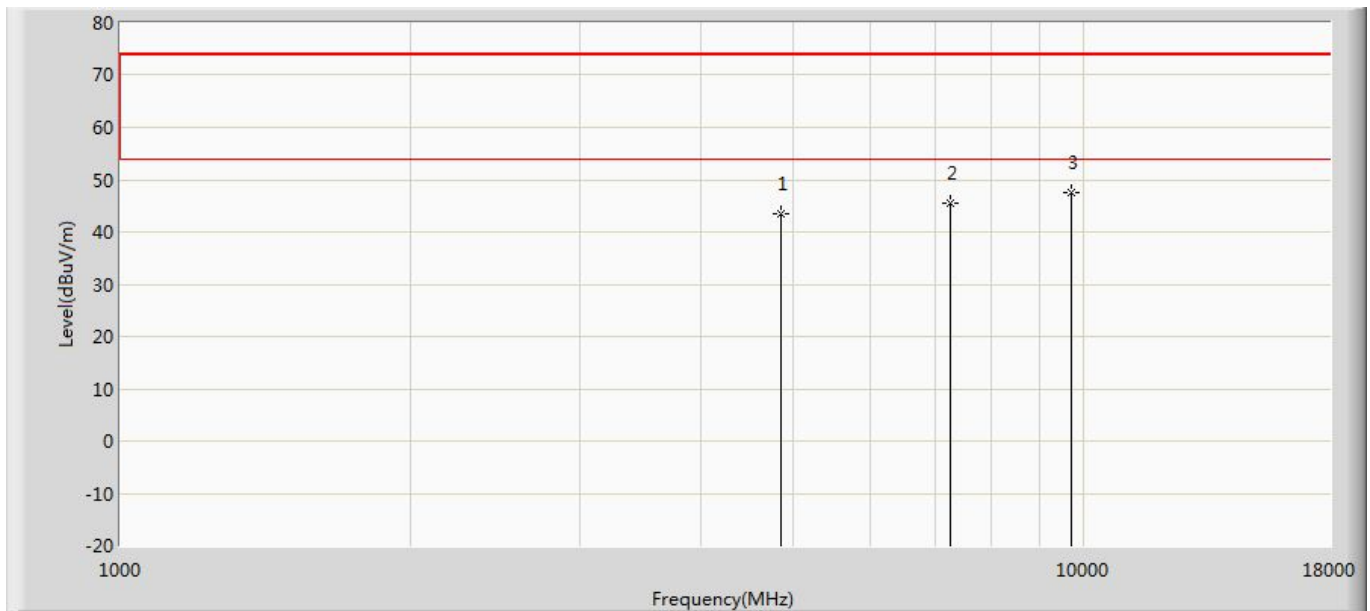
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.627	43.391	-30.373	74.000	0.236	PK
2		7386.000	46.257	42.364	-27.743	74.000	3.893	PK
3	*	9848.000	50.277	40.850	-23.723	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2462MHz by 802.11n(20MHz) SISO	



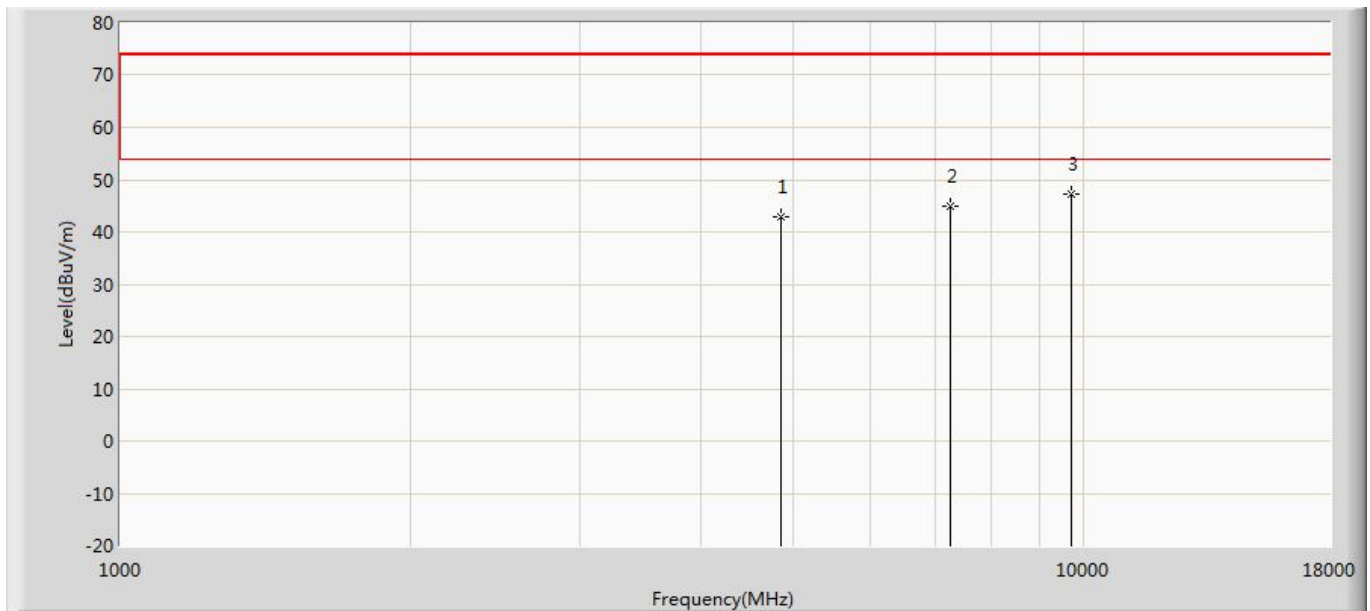
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1		4924.000	43.544	43.308	-30.456	74.000	0.236	PK
2		7386.000	44.106	40.213	-29.894	74.000	3.893	PK
3	*	9848.000	48.732	39.305	-25.268	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2422MHz by 802.11n(40MHz) SISO	



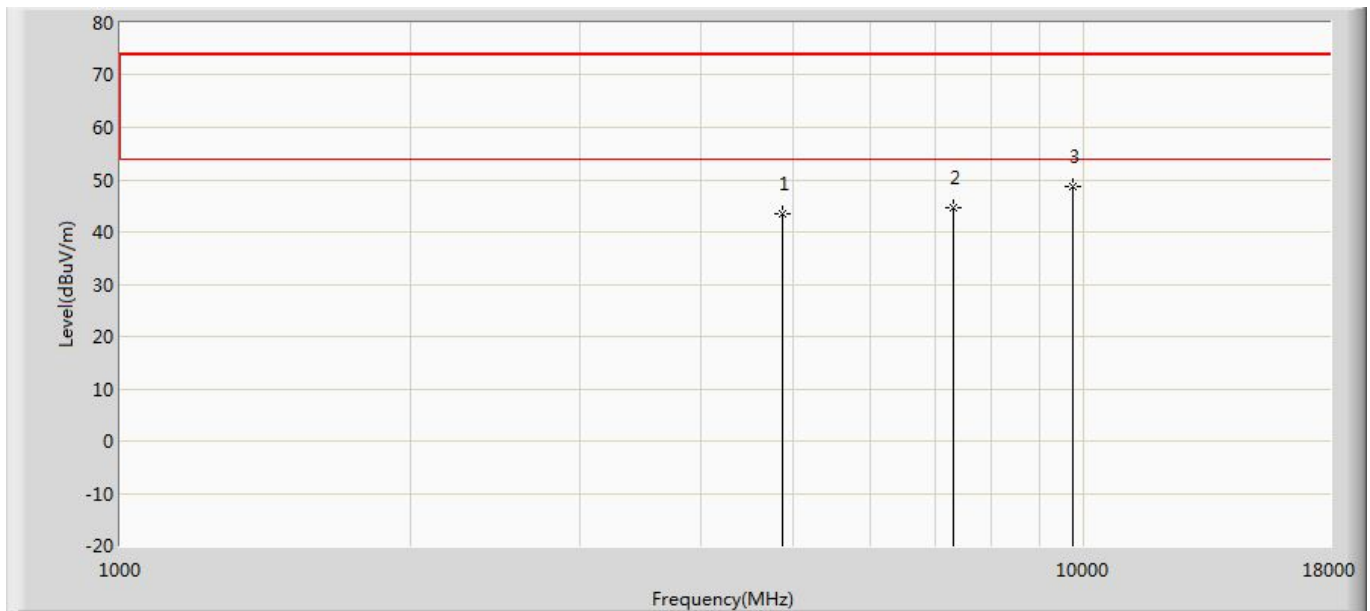
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	43.343	43.298	-30.657	74.000	0.044	PK
2		7266.000	45.478	41.653	-28.522	74.000	3.825	PK
3	*	9688.000	47.647	39.421	-26.353	74.000	8.225	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2422MHz by 802.11n(40MHz) SISO	



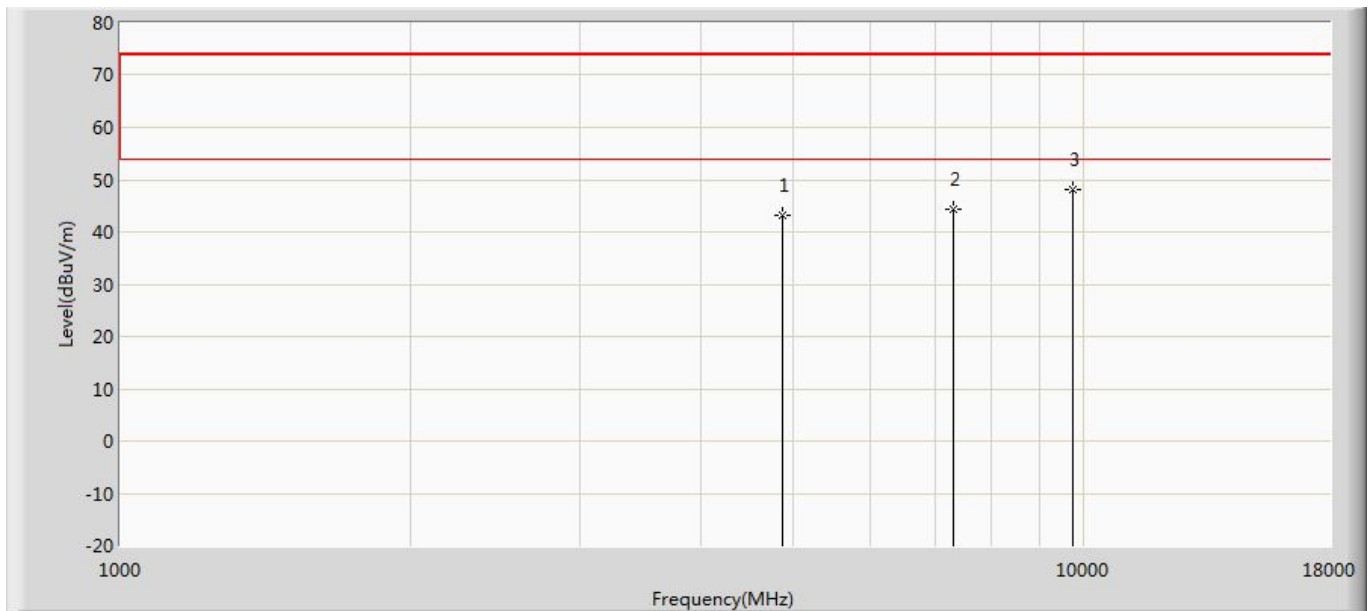
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	42.884	42.839	-31.116	74.000	0.044	PK
2		7266.000	44.826	41.001	-29.174	74.000	3.825	PK
3	*	9688.000	47.191	38.965	-26.809	74.000	8.225	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2437MHz by 802.11n(40MHz) SISO	



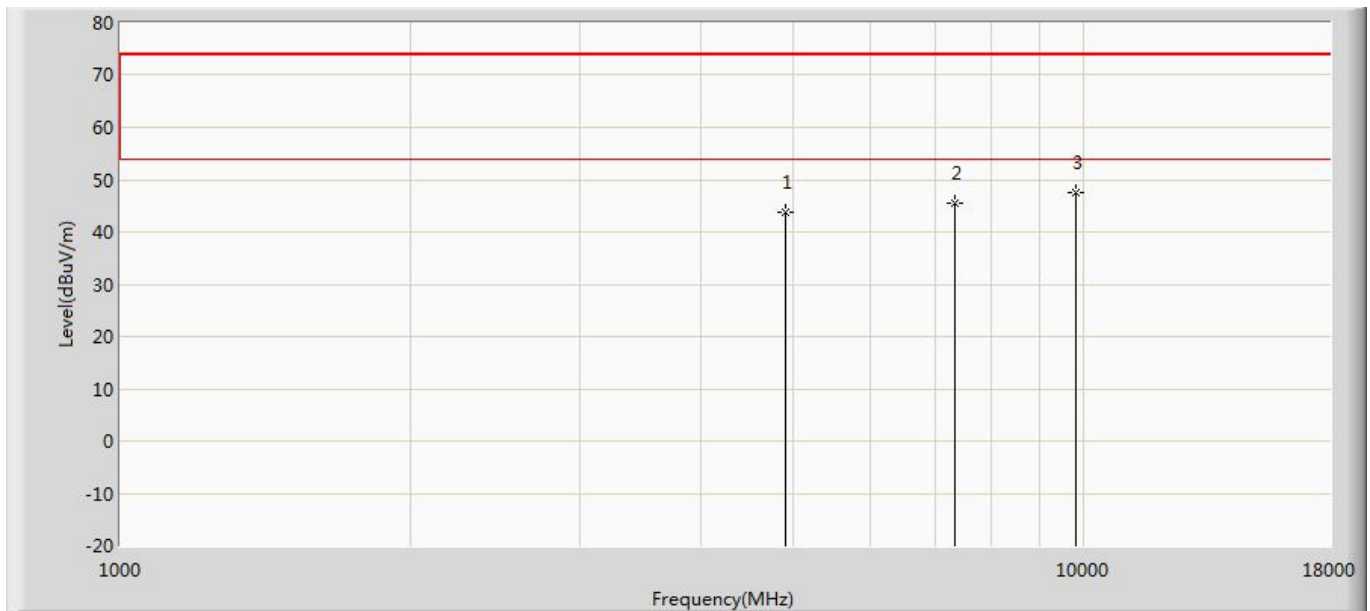
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.614	43.080	-30.386	74.000	0.535	PK
2		7311.000	44.584	41.152	-29.416	74.000	3.432	PK
3	*	9748.000	48.615	39.244	-25.385	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2437MHz by 802.11n(40MHz) SISO	



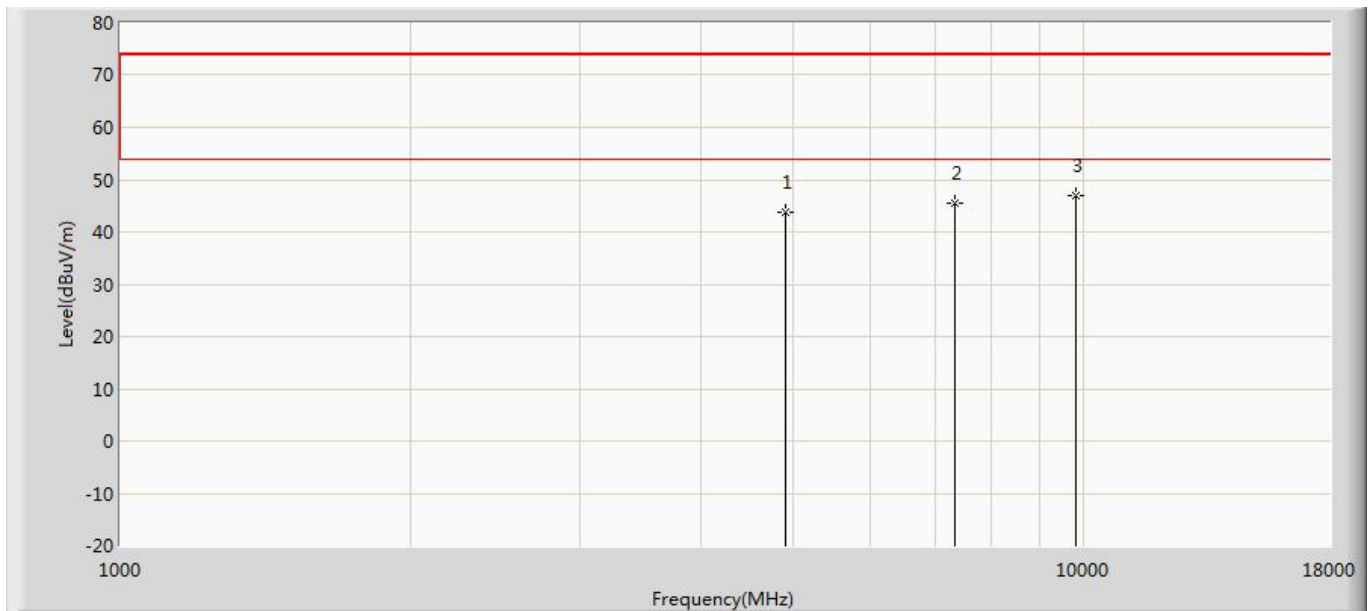
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.148	42.614	-30.852	74.000	0.535	PK
2		7311.000	44.379	40.947	-29.621	74.000	3.432	PK
3	*	9748.000	48.081	38.710	-25.919	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2452MHz by 802.11n(40MHz) SISO	



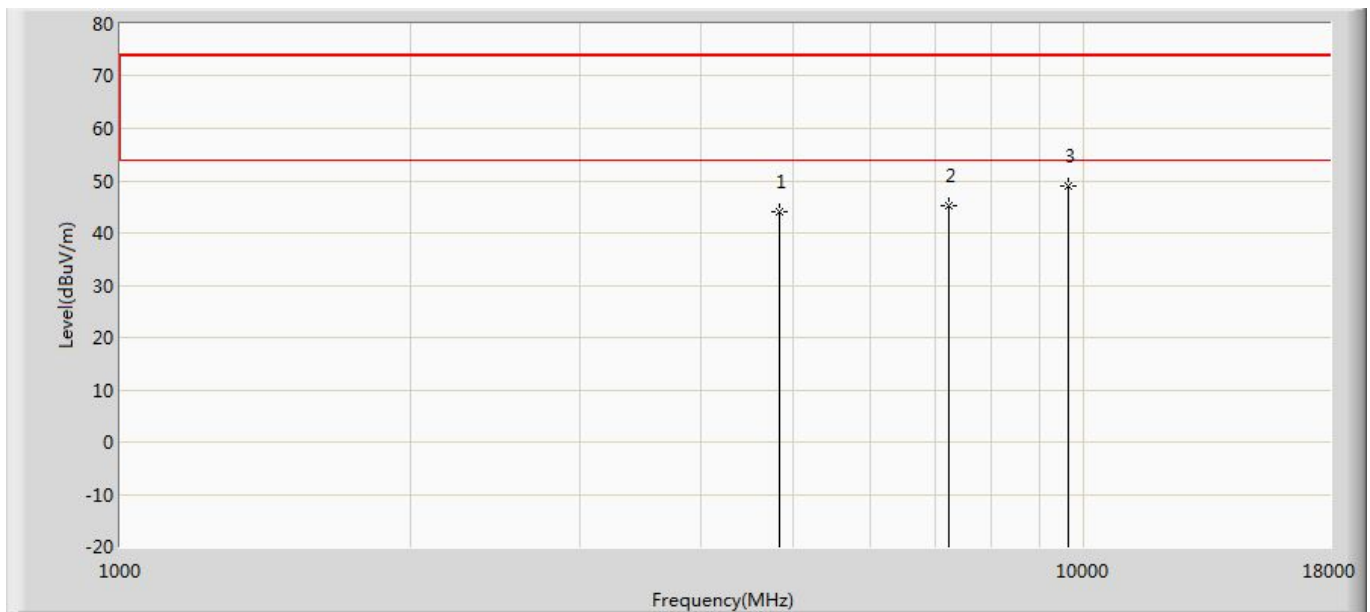
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	43.894	43.727	-30.106	74.000	0.167	PK
2		7356.000	45.488	41.221	-28.512	74.000	4.268	PK
3	*	9808.000	47.554	40.020	-26.446	74.000	7.533	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2452MHz by 802.11n(40MHz) SISO	



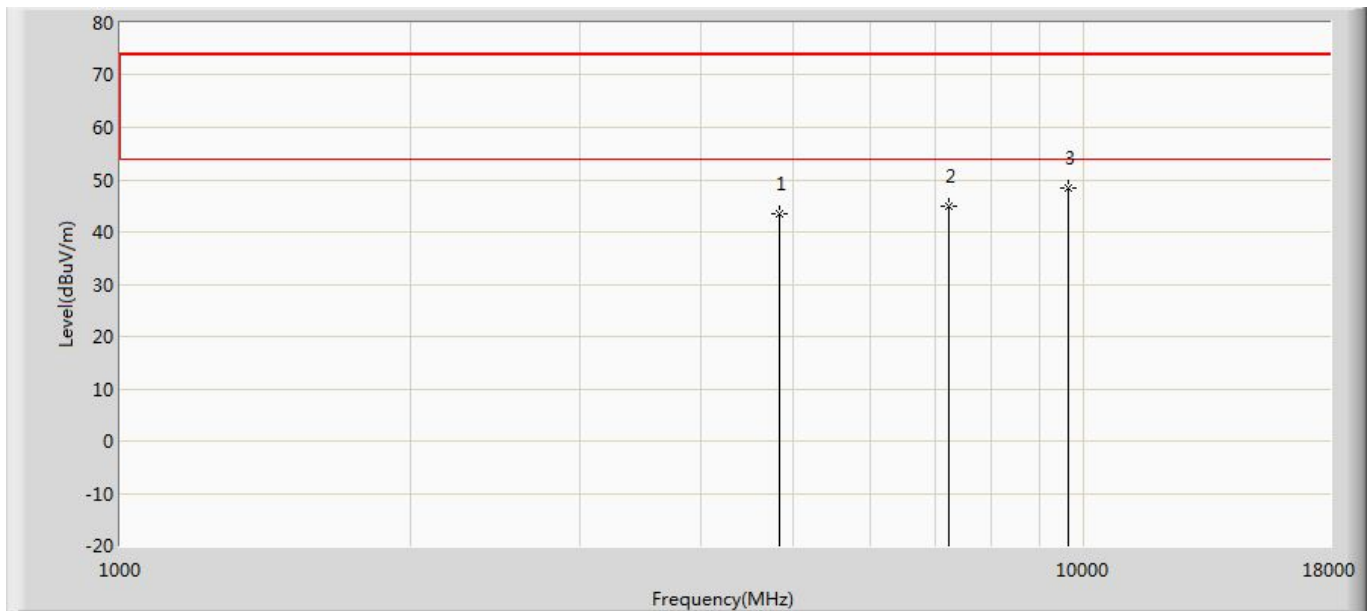
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	43.905	43.738	-30.095	74.000	0.167	PK
2		7356.000	45.422	41.155	-28.578	74.000	4.268	PK
3	*	9808.000	46.976	39.442	-27.024	74.000	7.533	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b MIMO	



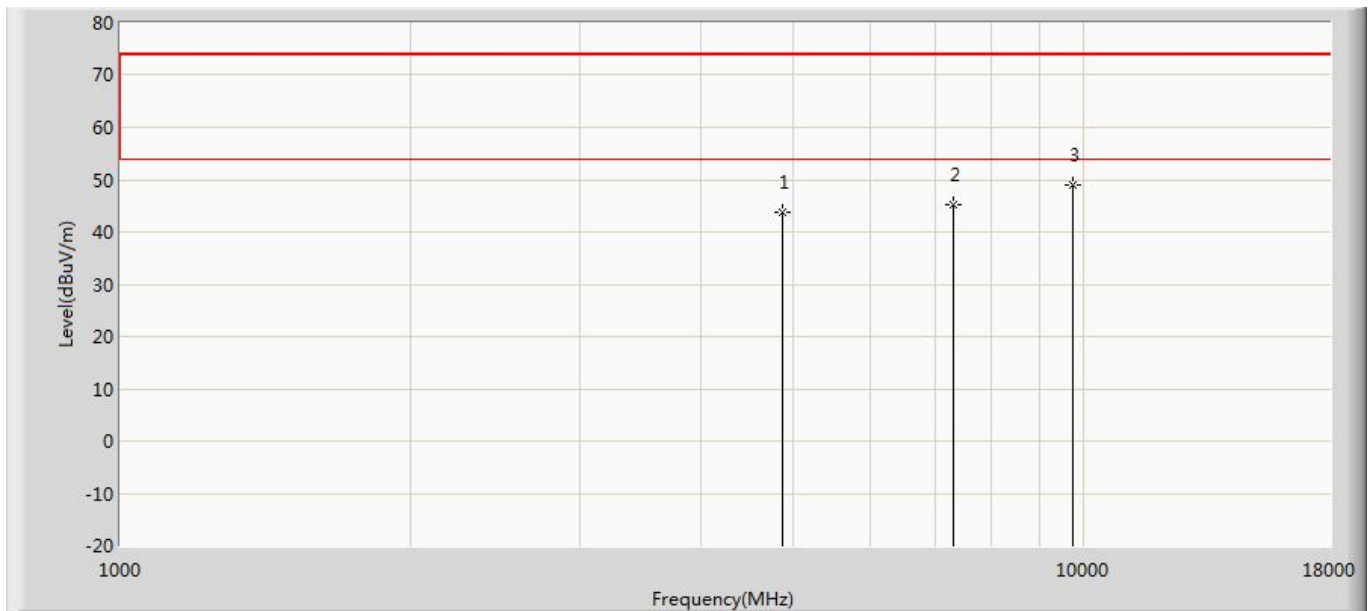
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.979	44.011	-30.021	74.000	-0.032	PK
2		7236.000	45.257	41.366	-28.743	74.000	3.891	PK
3	*	9648.000	49.050	39.717	-24.950	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b MIMO	



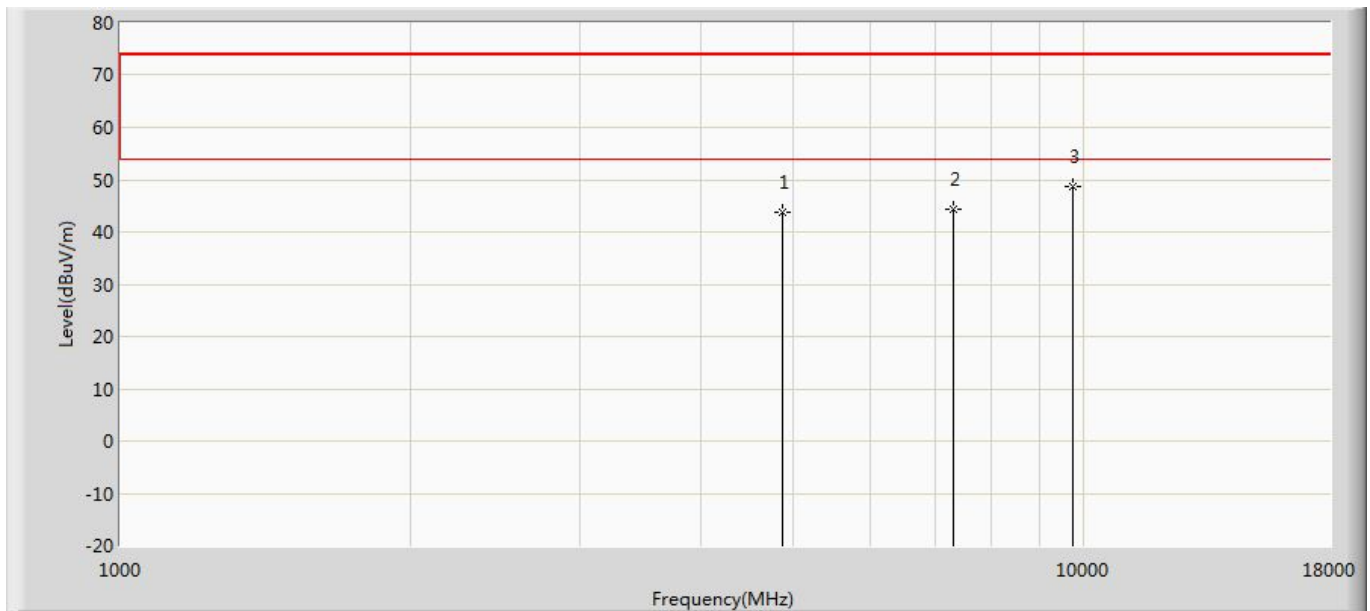
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.394	43.426	-30.606	74.000	-0.032	PK
2		7236.000	44.914	41.023	-29.086	74.000	3.891	PK
3	*	9648.000	48.435	39.102	-25.565	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b MIMO	



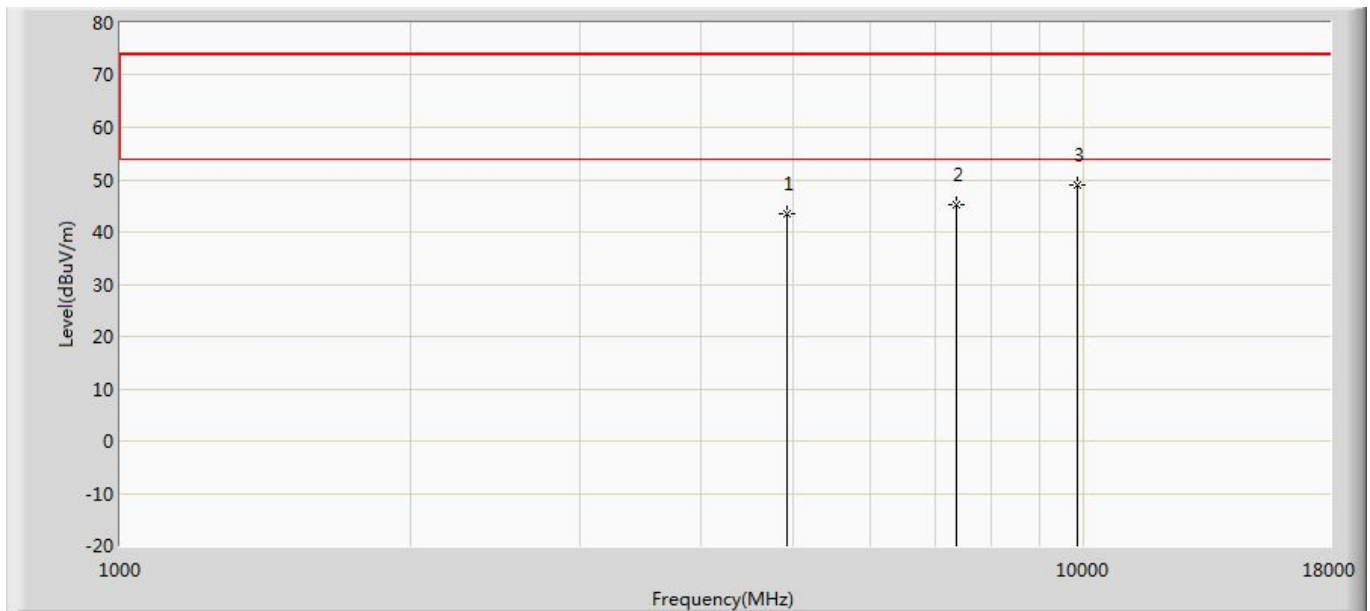
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.760	43.226	-30.240	74.000	0.535	PK
2		7311.000	45.230	41.798	-28.770	74.000	3.432	PK
3	*	9748.000	49.036	39.665	-24.964	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b MIMO	



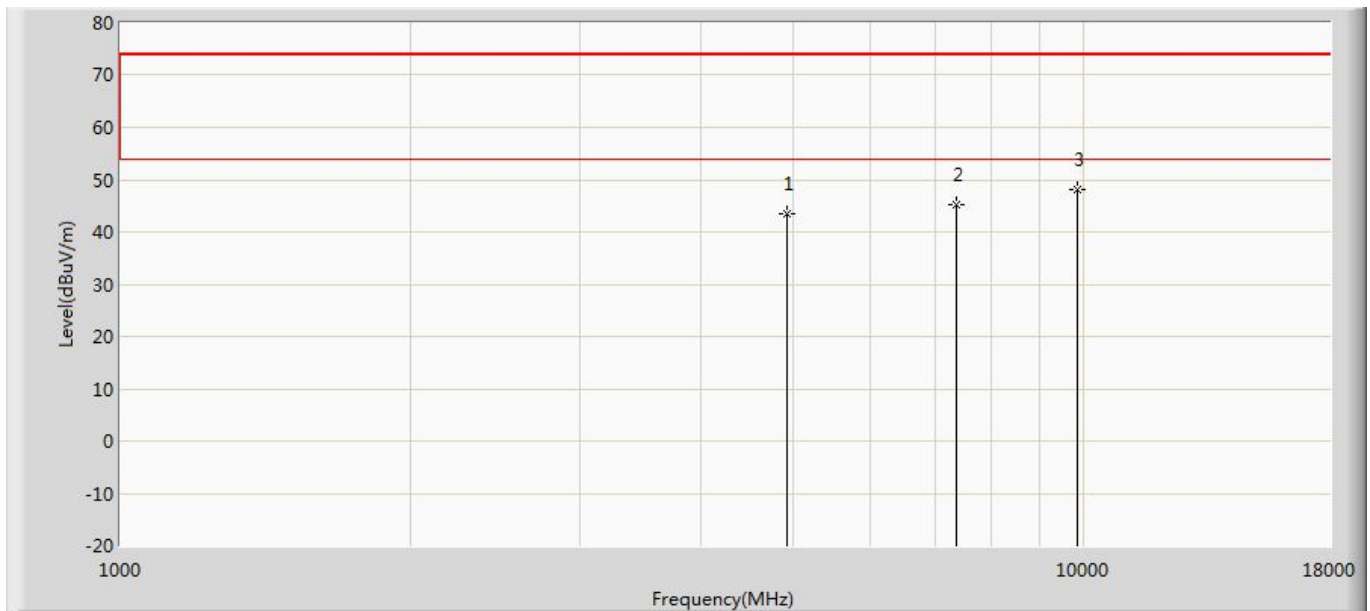
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1		4874.000	43.717	43.183	-30.283	74.000	0.535	PK
2		7311.000	44.343	40.911	-29.657	74.000	3.432	PK
3	*	9748.000	48.558	39.187	-25.442	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2462MHz by 802.11b MIMO	



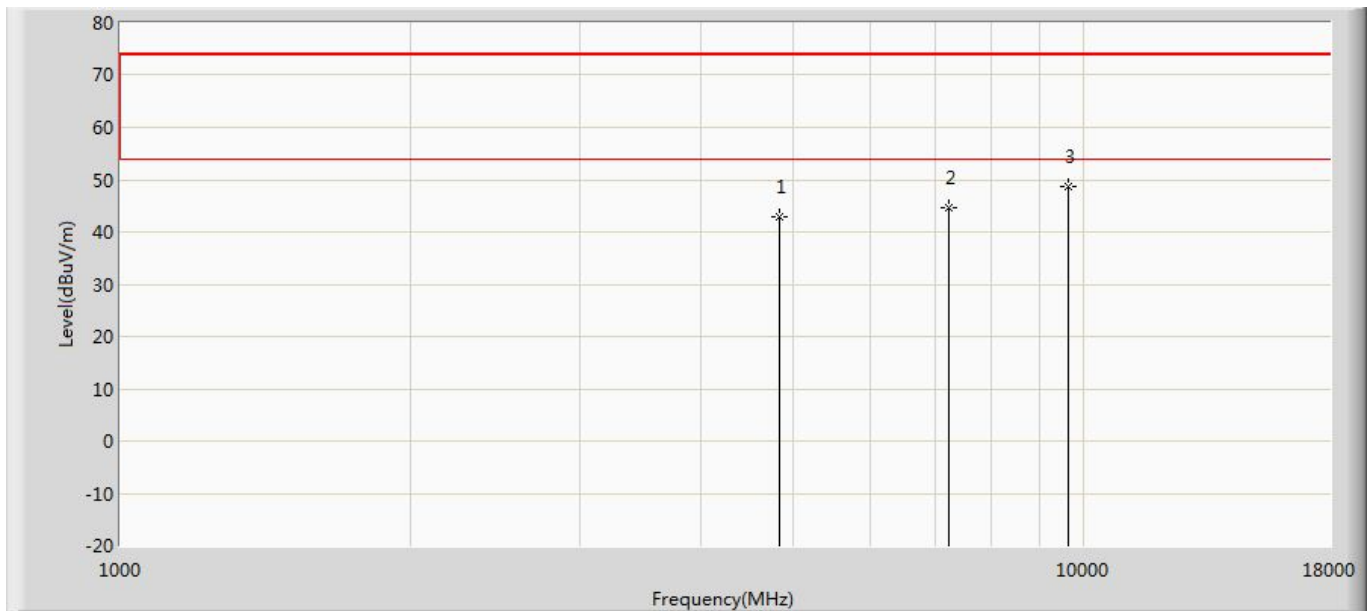
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1		4924.000	43.389	43.153	-30.611	74.000	0.236	PK
2		7386.000	45.123	41.230	-28.877	74.000	3.893	PK
3	*	9848.000	48.960	39.533	-25.040	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2462MHz by 802.11b MIMO	



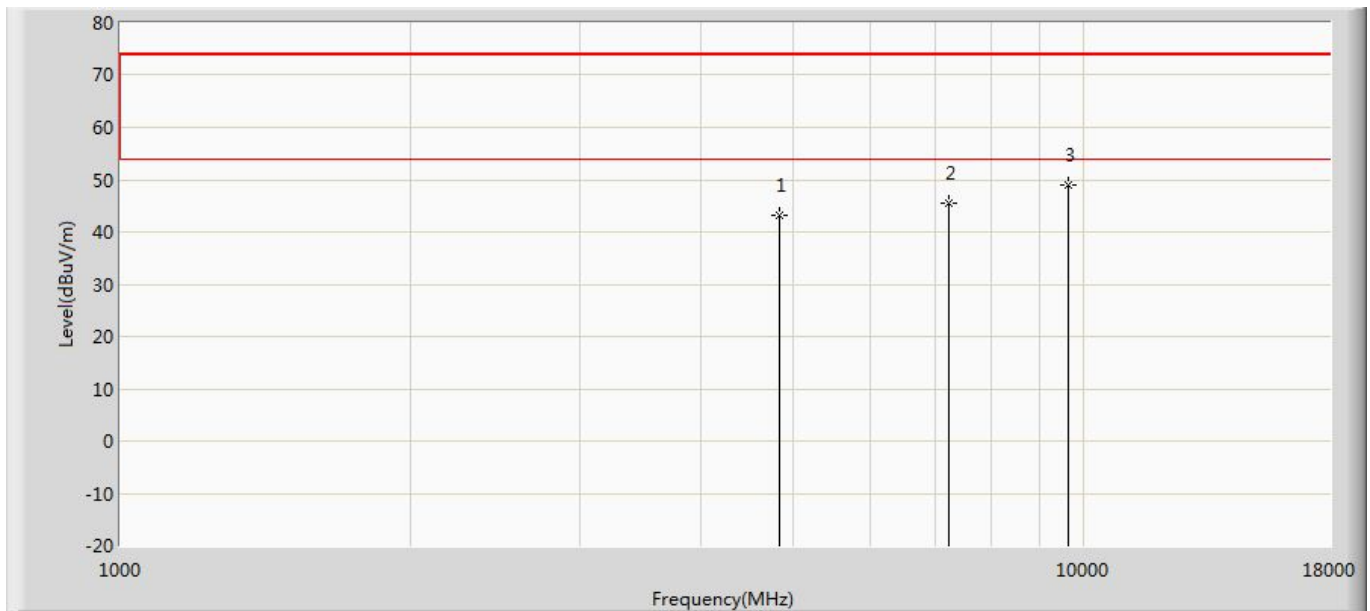
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1		4924.000	43.559	43.323	-30.441	74.000	0.236	PK
2		7386.000	45.184	41.291	-28.816	74.000	3.893	PK
3	*	9848.000	48.196	38.769	-25.804	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g MIMO	



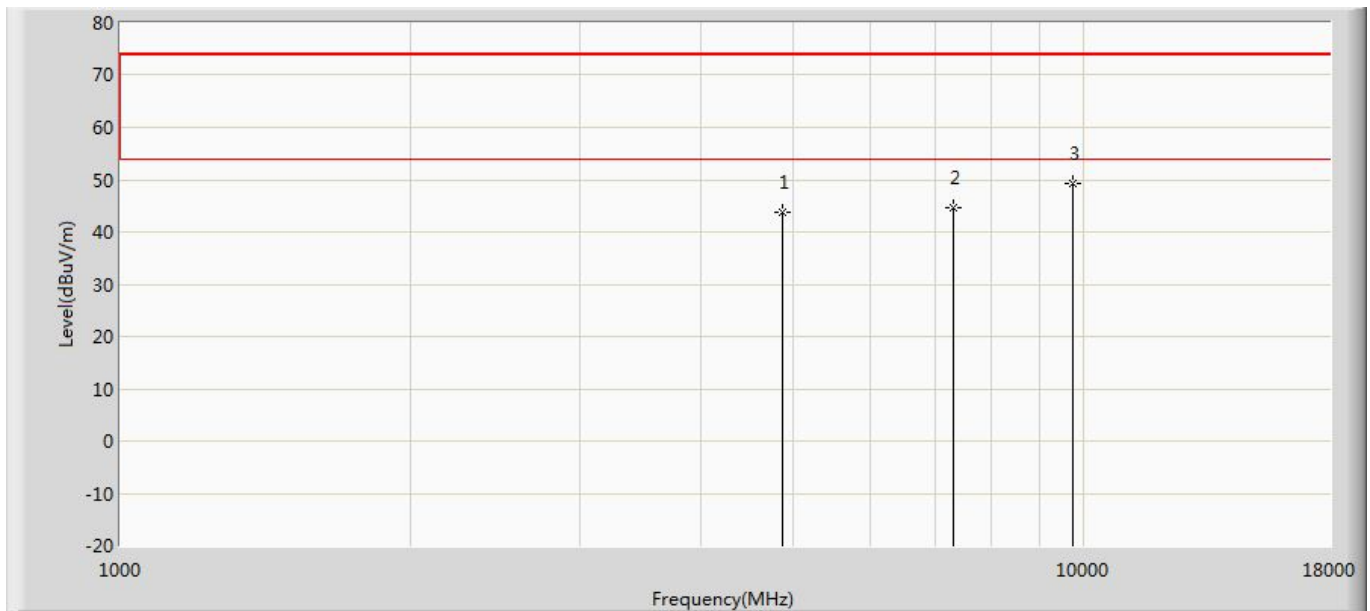
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	42.892	42.924	-31.108	74.000	-0.032	PK
2		7236.000	44.773	40.882	-29.227	74.000	3.891	PK
3	*	9648.000	48.617	39.284	-25.383	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g MIMO	



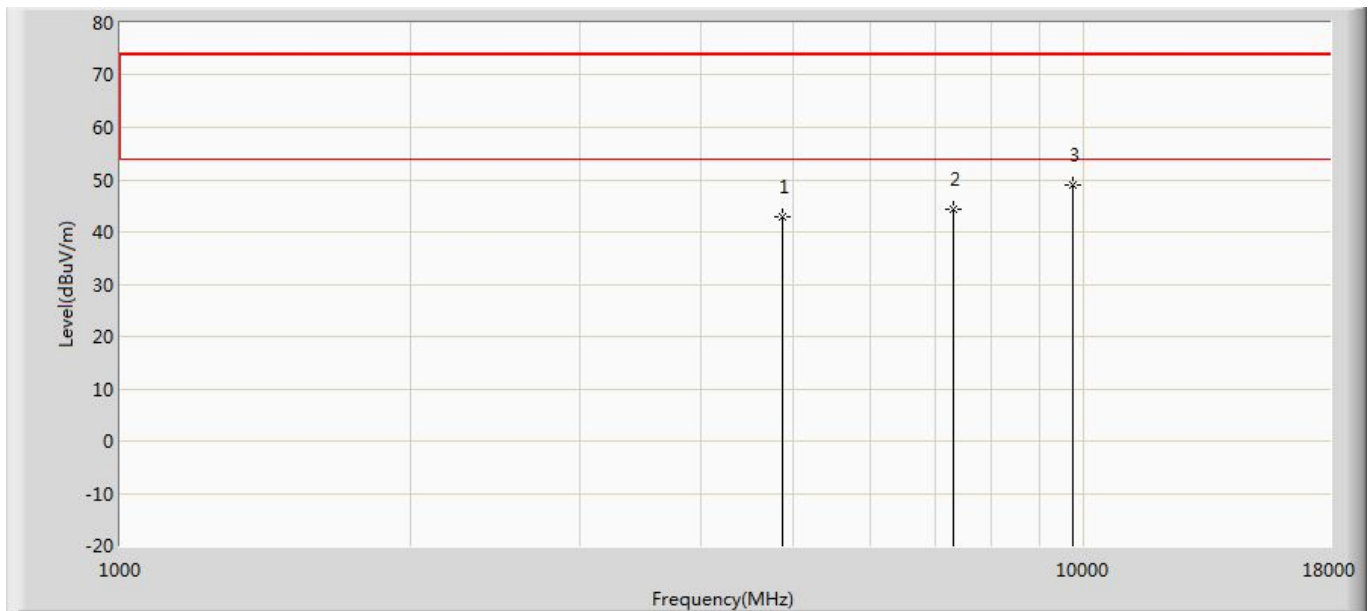
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1		4824.000	43.265	43.297	-30.735	74.000	-0.032	PK
2		7236.000	45.372	41.481	-28.628	74.000	3.891	PK
3	*	9648.000	48.970	39.637	-25.030	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2437MHz by 802.11g MIMO	



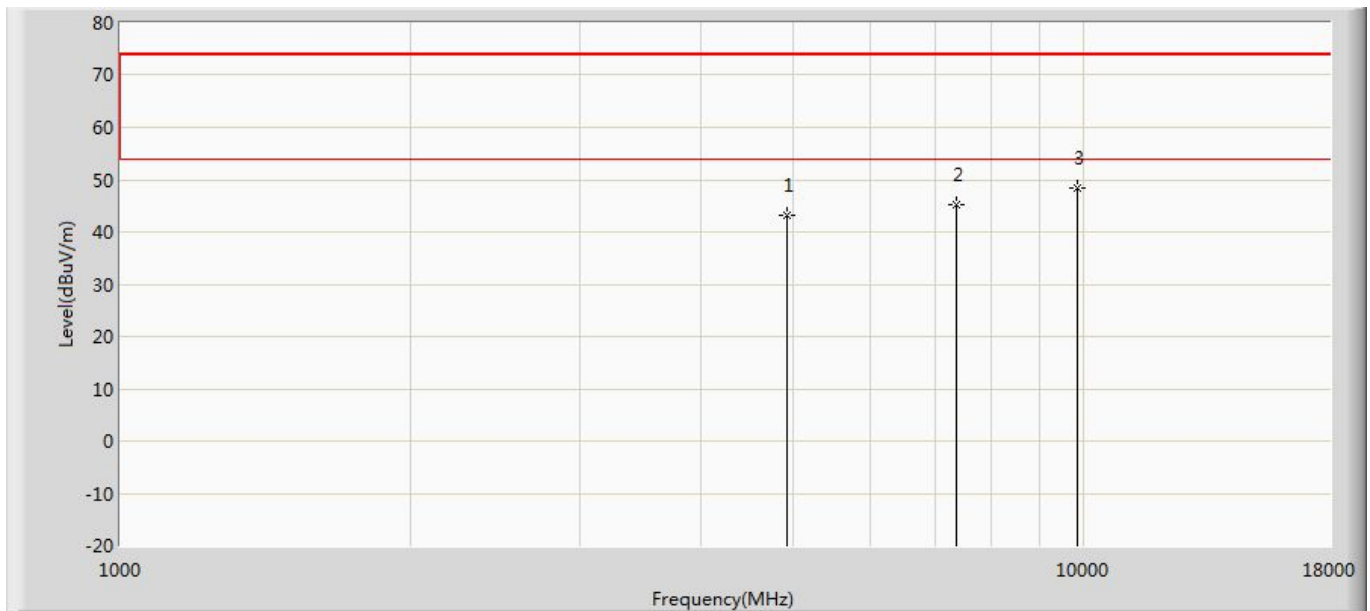
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.744	43.210	-30.256	74.000	0.535	PK
2		7311.000	44.536	41.104	-29.464	74.000	3.432	PK
3	*	9748.000	49.351	39.980	-24.649	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2437MHz by 802.11g MIMO	



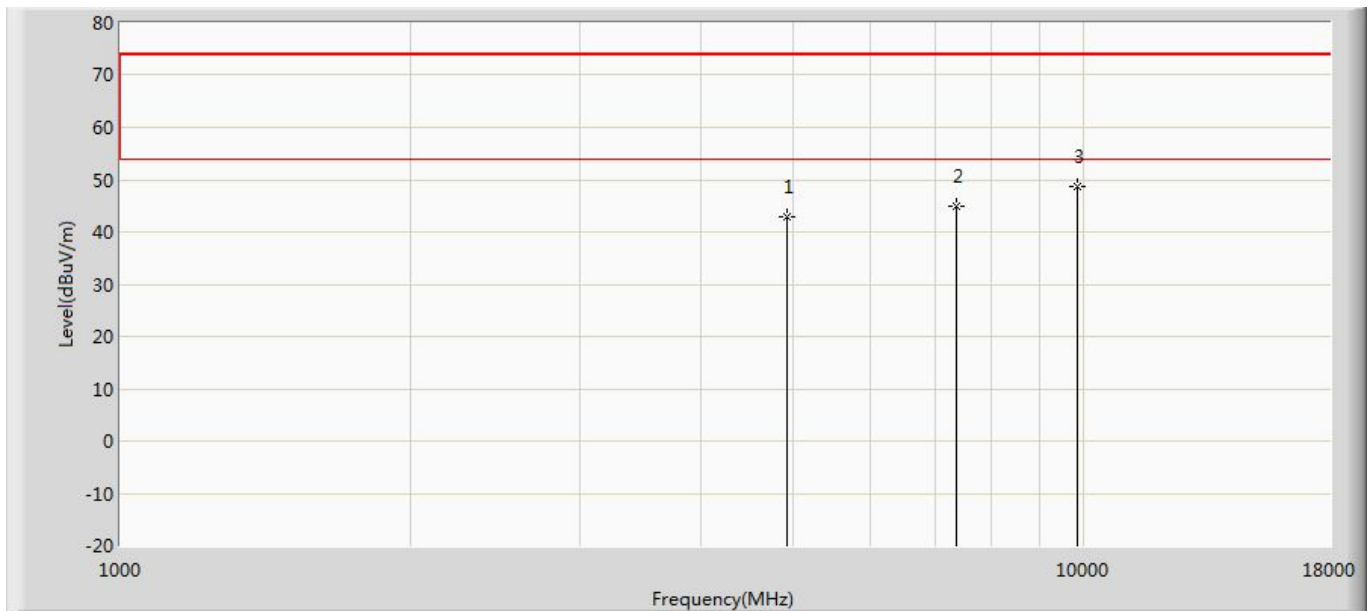
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	42.761	42.227	-31.239	74.000	0.535	PK
2		7311.000	44.249	40.817	-29.751	74.000	3.432	PK
3	*	9748.000	49.075	39.704	-24.925	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2462MHz by 802.11g MIMO	



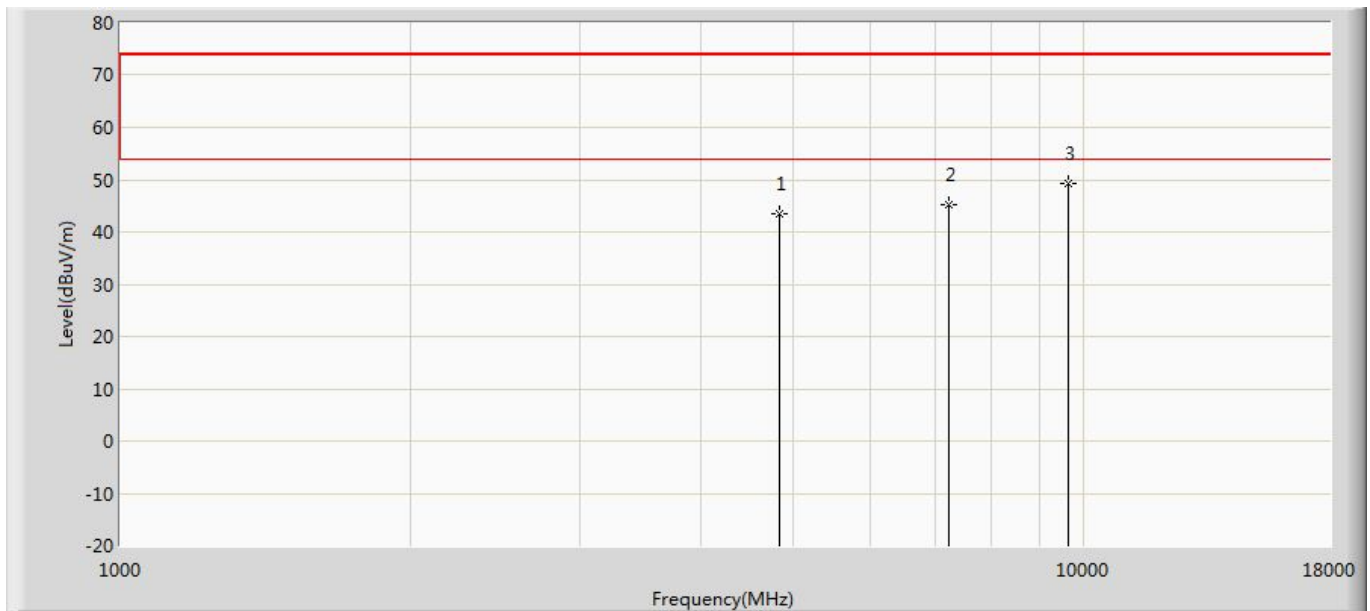
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.290	43.054	-30.710	74.000	0.236	PK
2		7386.000	45.079	41.186	-28.921	74.000	3.893	PK
3	*	9848.000	48.309	38.882	-25.691	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2462MHz by 802.11g MIMO	



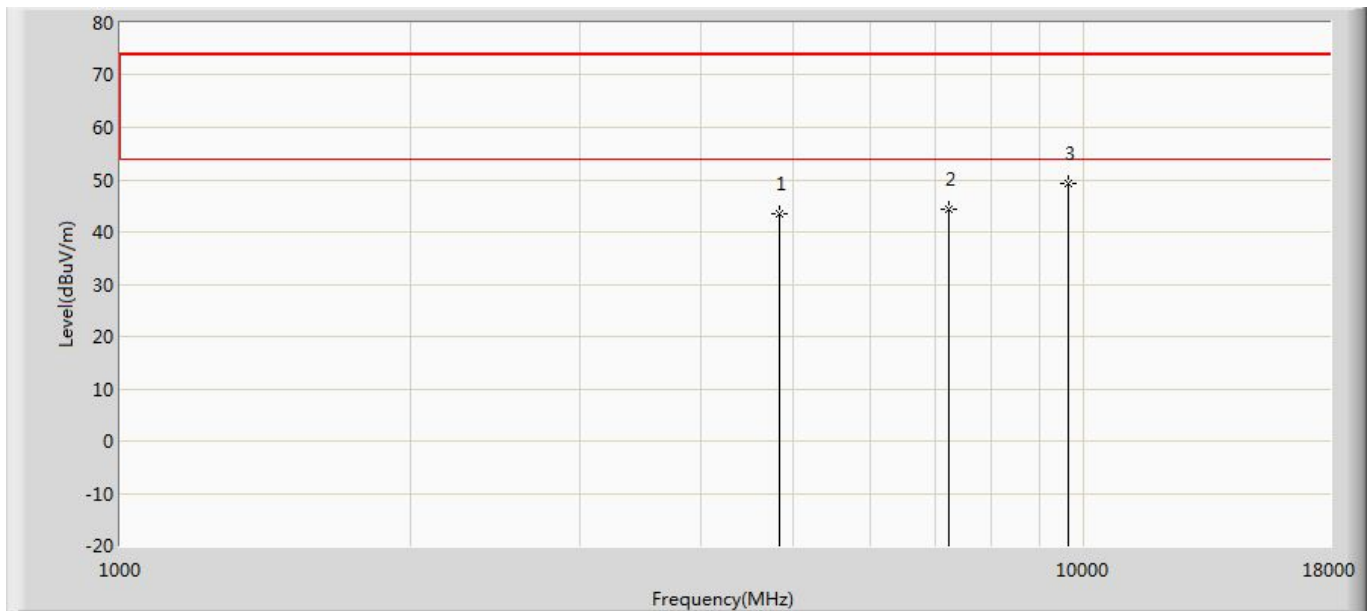
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	42.918	42.682	-31.082	74.000	0.236	PK
2		7386.000	44.884	40.991	-29.116	74.000	3.893	PK
3	*	9848.000	48.773	39.346	-25.227	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n(20MHz) MIMO	



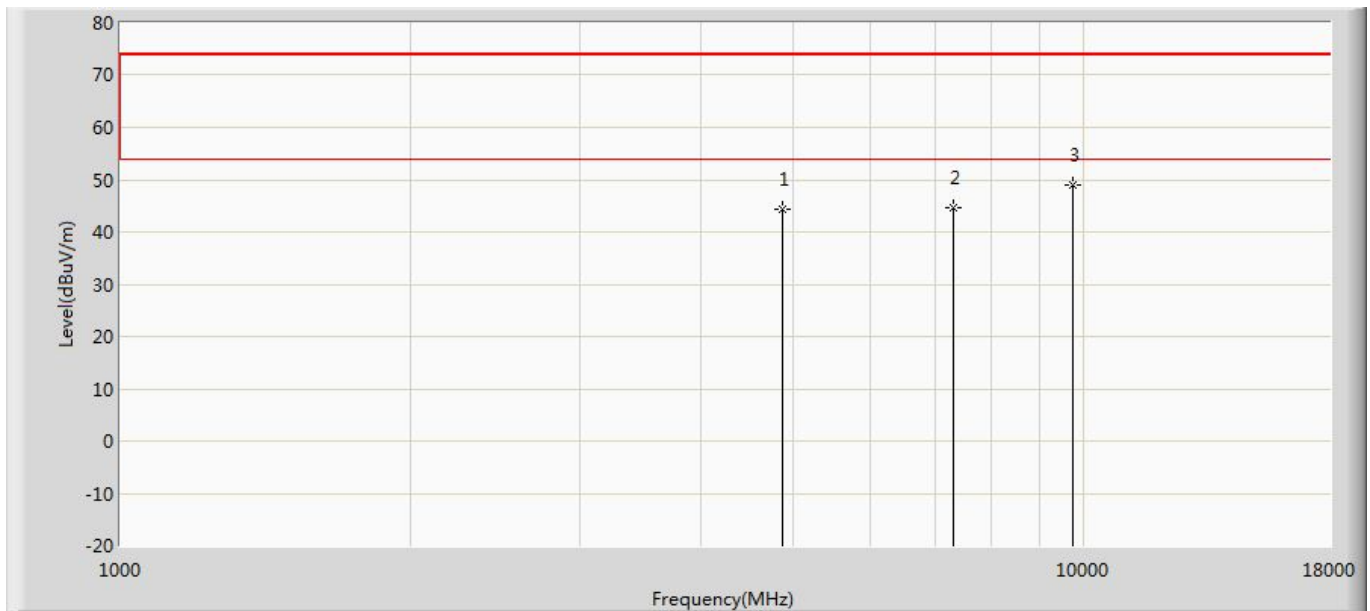
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.385	43.417	-30.615	74.000	-0.032	PK
2		7236.000	45.218	41.327	-28.782	74.000	3.891	PK
3	*	9648.000	49.324	39.991	-24.676	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n(20MHz) MIMO	



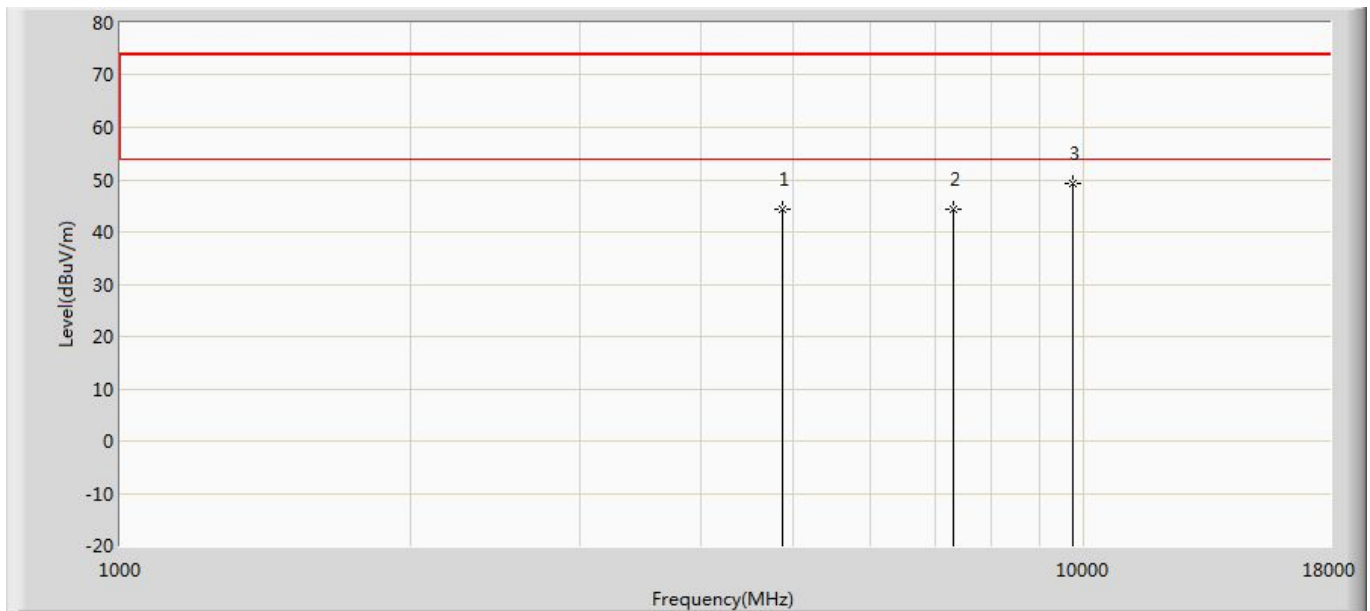
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	43.470	43.502	-30.530	74.000	-0.032	PK
2		7236.000	44.222	40.331	-29.778	74.000	3.891	PK
3	*	9648.000	49.204	39.871	-24.796	74.000	9.333	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2437MHz by 802.11n(20MHz) MIMO	



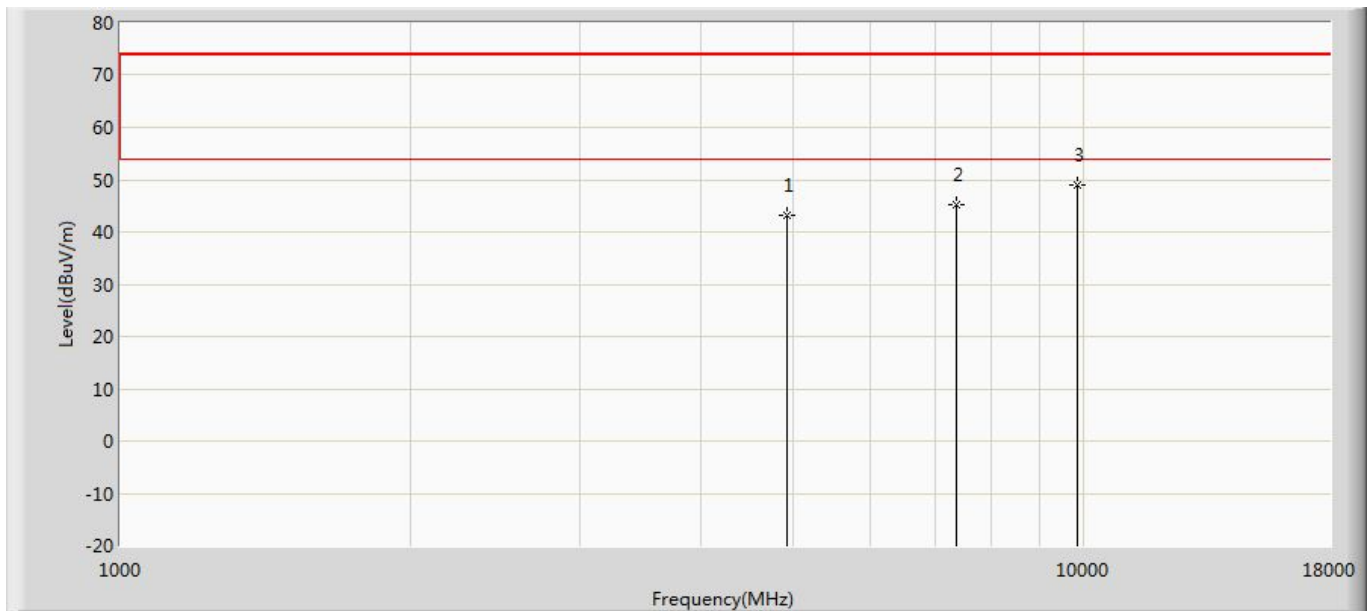
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	44.466	43.932	-29.534	74.000	0.535	PK
2		7311.000	44.523	41.091	-29.477	74.000	3.432	PK
3	*	9748.000	48.937	39.566	-25.063	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2437MHz by 802.11n(20MHz) MIMO	



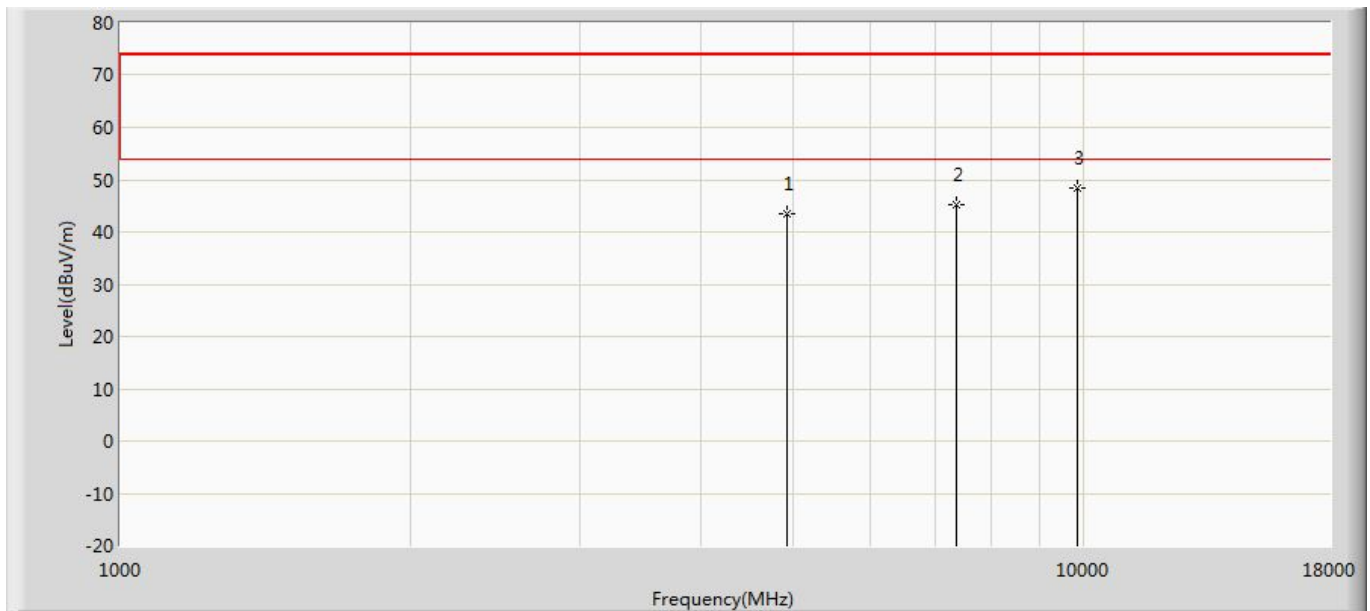
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	44.311	43.777	-29.689	74.000	0.535	PK
2		7311.000	44.276	40.844	-29.724	74.000	3.432	PK
3	*	9748.000	49.189	39.818	-24.811	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2462MHz by 802.11n(20MHz) MIMO	



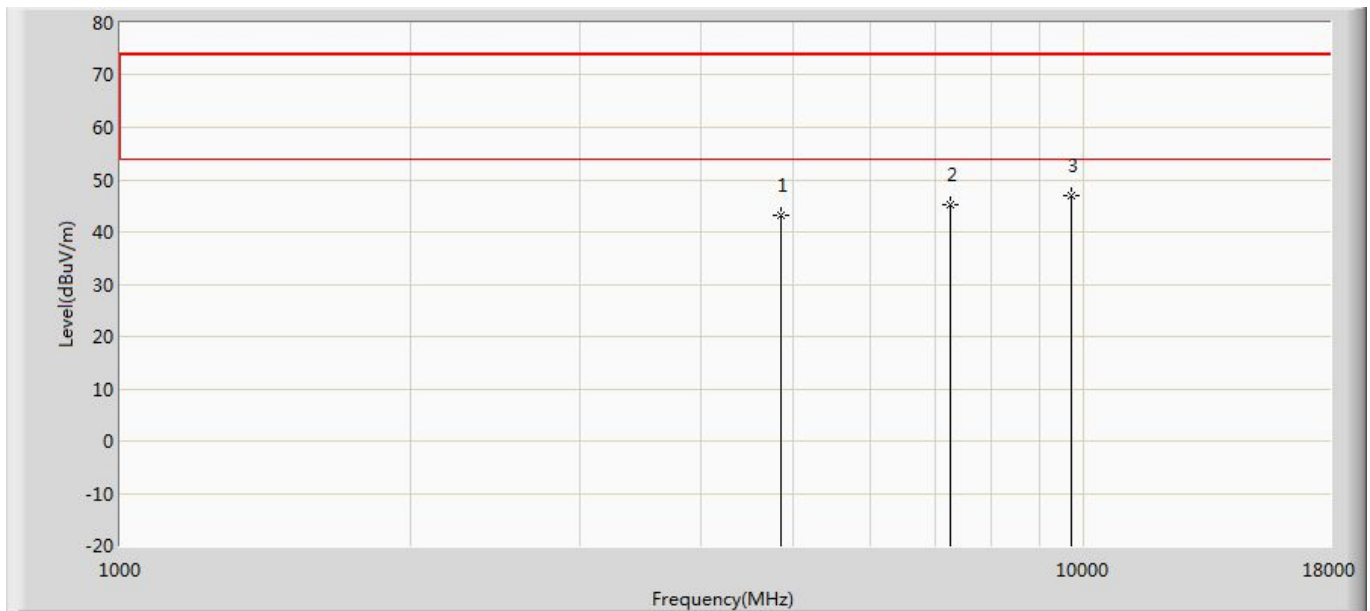
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.202	42.966	-30.798	74.000	0.236	PK
2		7386.000	45.085	41.192	-28.915	74.000	3.893	PK
3	*	9848.000	48.854	39.427	-25.146	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2462MHz by 802.11n(20MHz) MIMO	



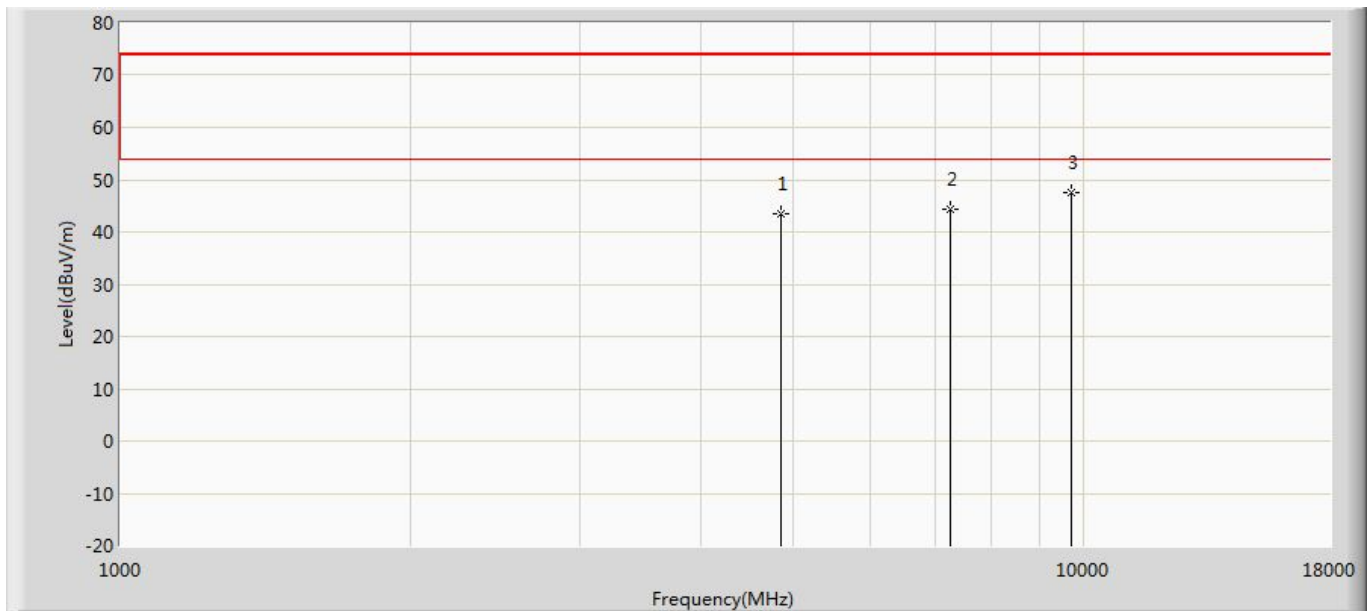
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.545	43.309	-30.455	74.000	0.236	PK
2		7386.000	45.194	41.301	-28.806	74.000	3.893	PK
3	*	9848.000	48.427	39.000	-25.573	74.000	9.427	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2422MHz by 802.11n(40MHz) MIMO	



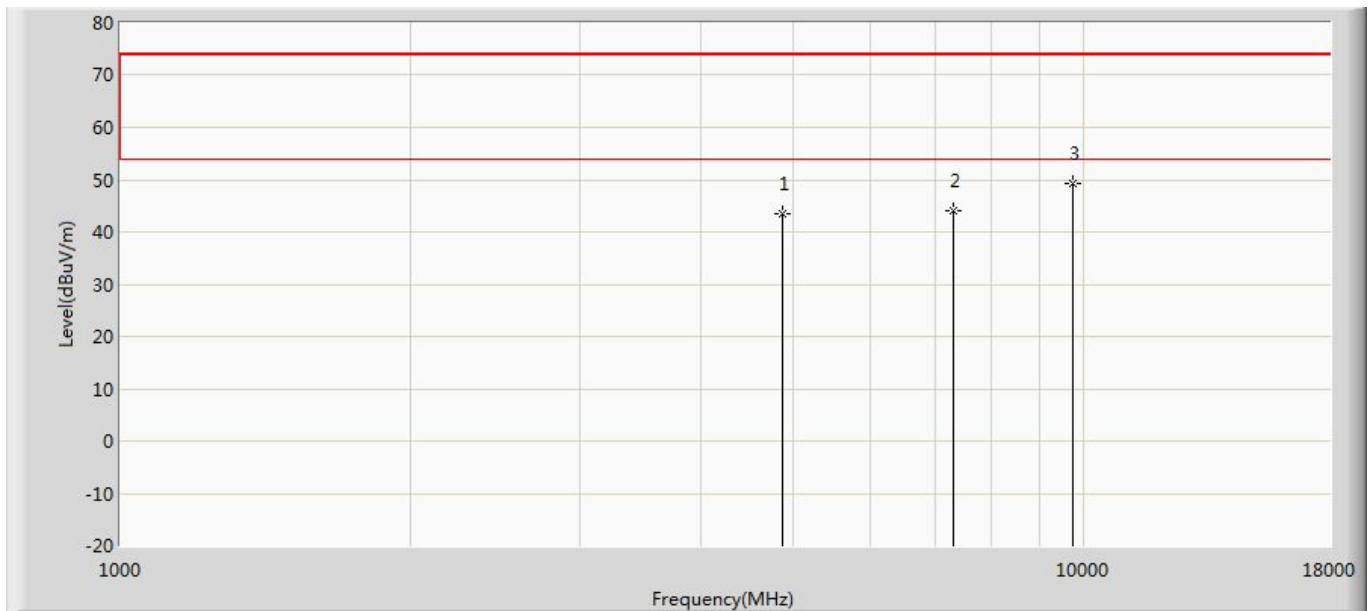
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	43.291	43.246	-30.709	74.000	0.044	PK
2		7266.000	45.082	41.257	-28.918	74.000	3.825	PK
3	*	9688.000	46.910	38.684	-27.090	74.000	8.225	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2422MHz by 802.11n(40MHz) MIMO	



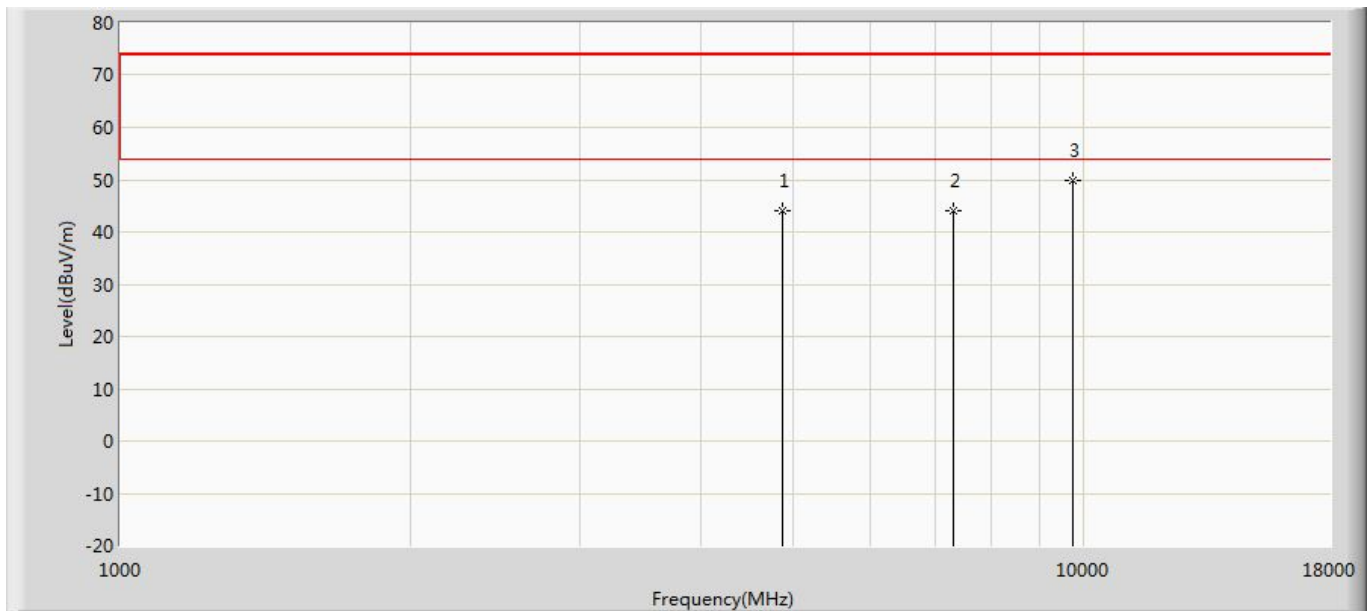
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	43.391	43.346	-30.609	74.000	0.044	PK
2		7266.000	44.290	40.465	-29.710	74.000	3.825	PK
3	*	9688.000	47.632	39.406	-26.368	74.000	8.225	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2437MHz by 802.11n(40MHz) MIMO	



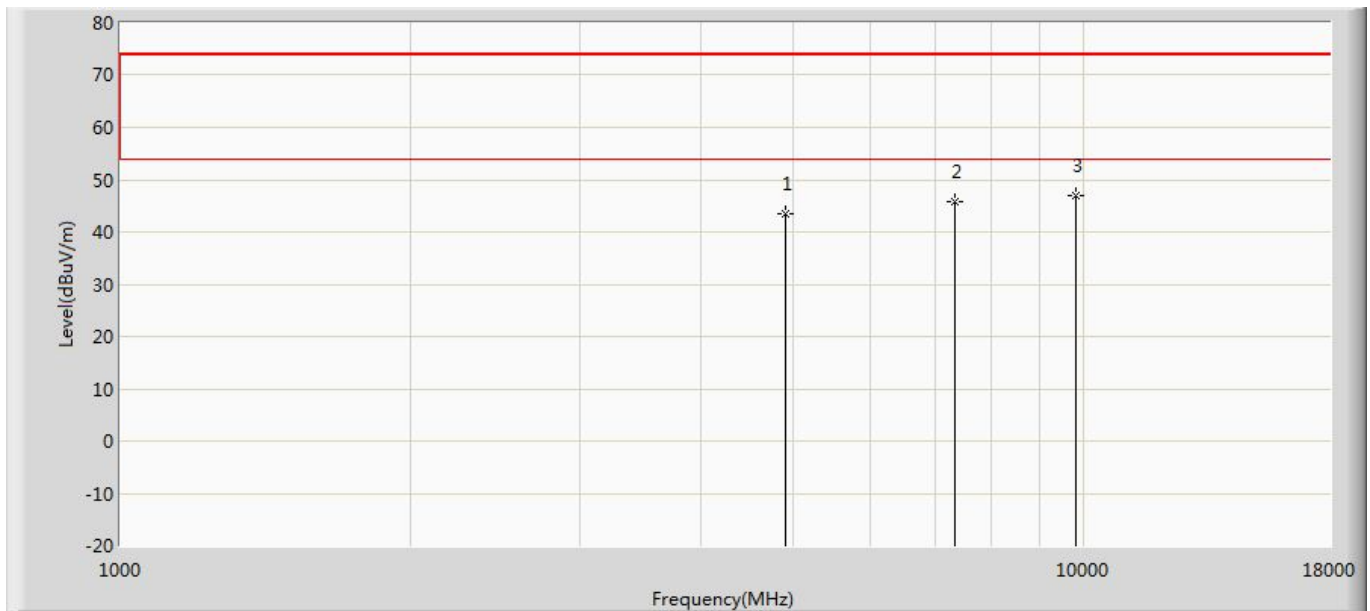
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.519	42.985	-30.481	74.000	0.535	PK
2		7311.000	43.917	40.485	-30.083	74.000	3.432	PK
3	*	9748.000	49.211	39.840	-24.789	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2437MHz by 802.11n(40MHz) MIMO	



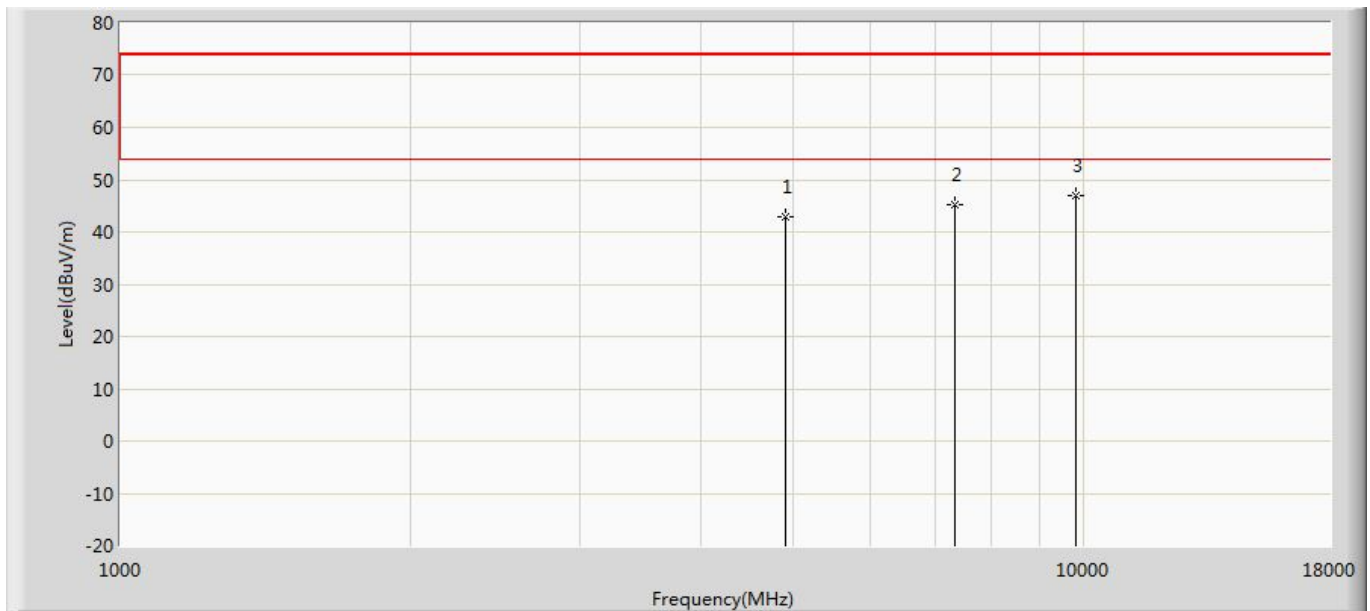
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.941	43.407	-30.059	74.000	0.535	PK
2		7311.000	43.983	40.551	-30.017	74.000	3.432	PK
3	*	9748.000	49.801	40.430	-24.199	74.000	9.371	PK

Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2452MHz by 802.11n(40MHz) MIMO	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	43.531	43.364	-30.469	74.000	0.167	PK
2		7356.000	45.777	41.510	-28.223	74.000	4.268	PK
3	*	9808.000	47.085	39.551	-26.915	74.000	7.533	PK

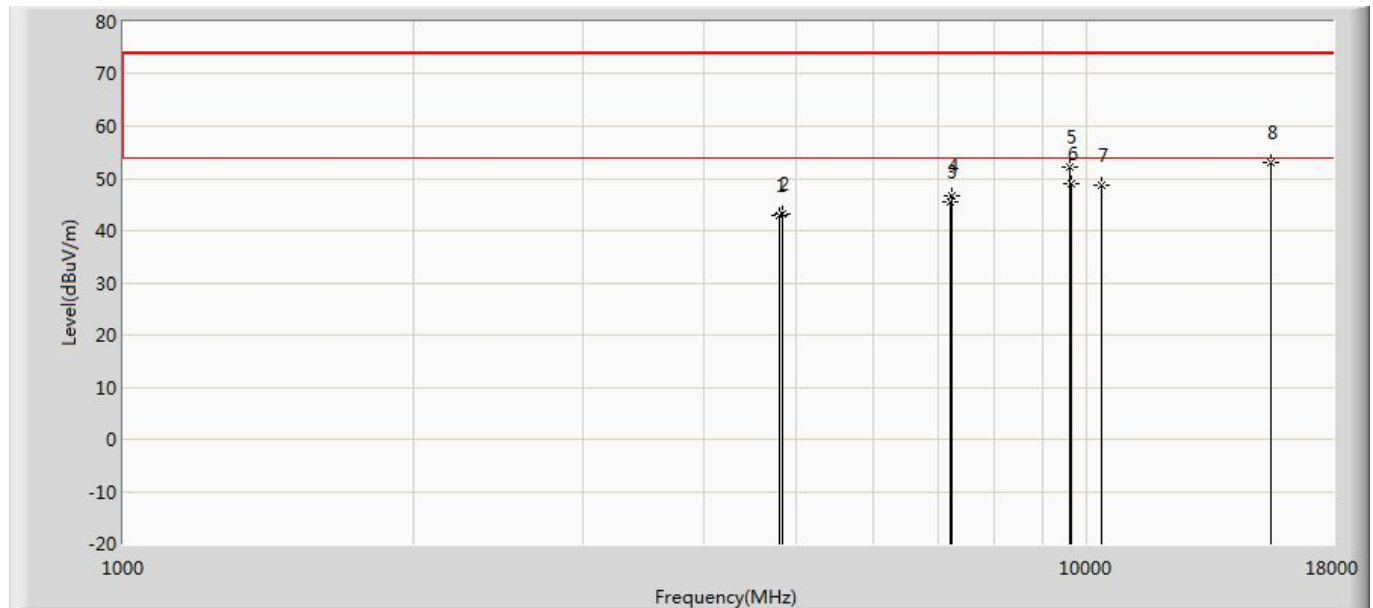
Engineer: Tommie	
Site: AC5	Time: 2019/03/26 - 10:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 4: Transmit at 2452MHz by 802.11n(40MHz) MIMO	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	42.974	42.807	-31.026	74.000	0.167	PK
2		7356.000	45.287	41.020	-28.713	74.000	4.268	PK
3	*	9808.000	46.897	39.363	-27.103	74.000	7.533	PK

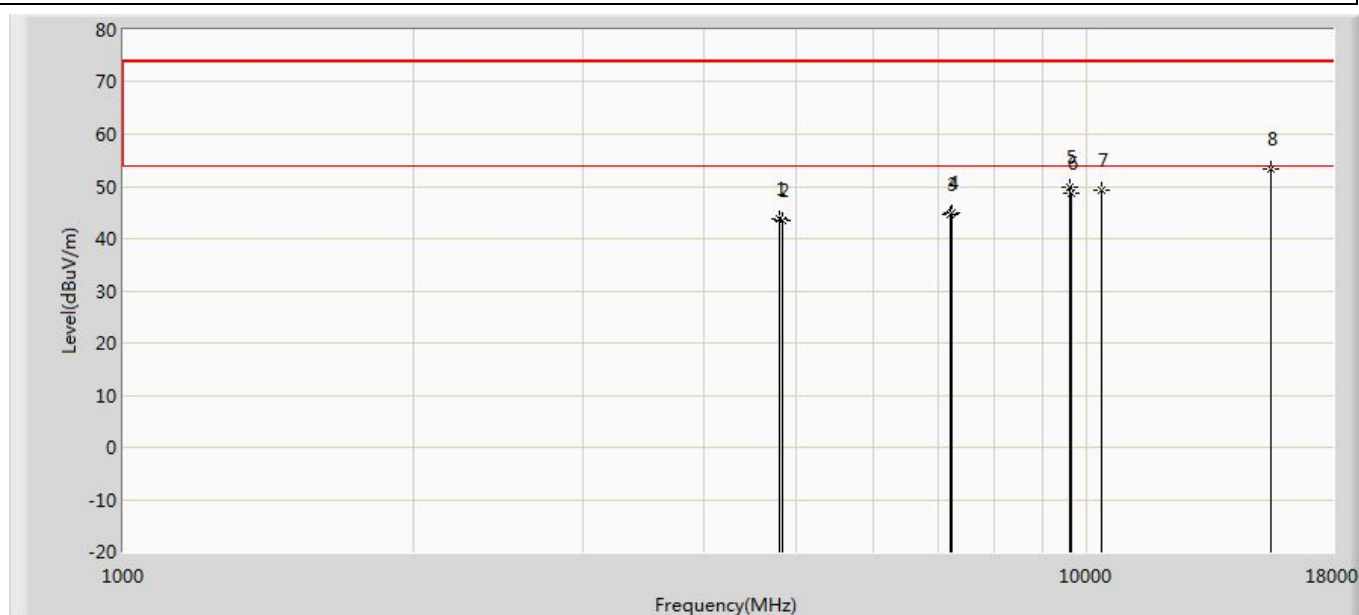
The worst case of Simultaneous Radiated Emission:

Site: AC5	Time: 2019/04/10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Transmit at 2402MHz by BT3.0&2412MHz by 2.4G WIFI&5180MHz by 5G WIFI	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	42.817	39.124	-31.183	74.000	3.693	PK
2		4824.000	43.257	39.965	-30.743	74.000	3.292	PK
3		7206.000	45.629	38.867	-28.371	74.000	6.762	PK
4		7236.000	46.634	39.266	-27.366	74.000	7.368	PK
5		9608.000	52.230	41.741	-21.770	74.000	10.489	PK
6		9648.000	48.881	37.697	-25.119	74.000	11.184	PK
7		10360.000	48.674	37.460	-25.326	74.000	11.214	PK
8	*	15540.000	53.057	36.297	-20.943	74.000	16.760	PK

Site: AC5	Time: 2019/04/10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Transmit at 2402MHz by BT3.0&2412MHz by 2.4G WIFI&5180MHz by 5G WIFI	



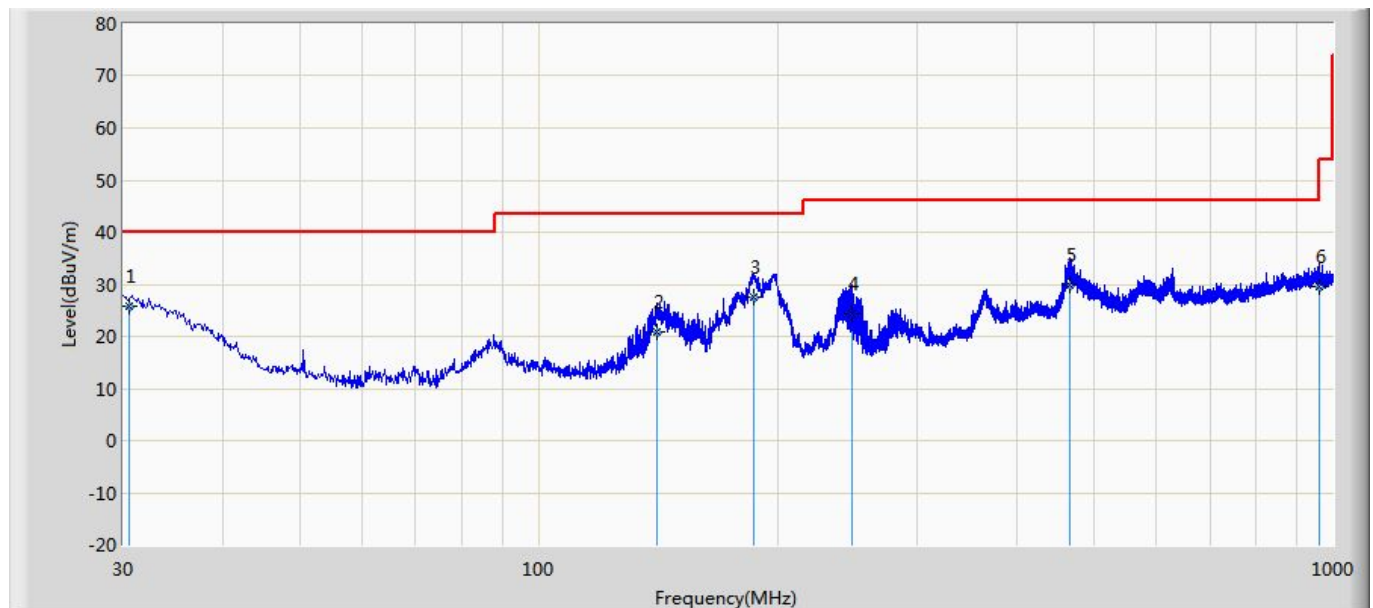
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	43.763	40.070	-30.237	74.000	3.693	PK
2		4824.000	43.497	40.205	-30.503	74.000	3.292	PK
3		7206.000	44.629	37.867	-29.371	74.000	6.762	PK
4		7236.000	45.071	37.703	-28.929	74.000	7.368	PK
5		9608.000	49.834	39.345	-24.166	74.000	10.489	PK
6		9648.000	48.556	37.372	-25.444	74.000	11.184	PK
7		10360.000	49.192	37.978	-24.808	74.000	11.214	PK
8	*	15540.000	53.238	36.478	-20.762	74.000	16.760	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~26GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

The worst case of Radiated Emission below 1GHz:

Engineer: Barlow	
Site: AC3	Time: 2019/01/25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: REALMAX-QIAN	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	30.500	25.678	-2.000	-14.322	40.000	21.221	6.457	0.000	100	8	QP
2		141.158	20.842	3.200	-22.658	43.500	10.599	7.043	0.000	100	254	QP
3		186.536	27.585	10.244	-15.915	43.500	10.112	7.228	0.000	100	7	QP
4		247.788	24.291	6.200	-21.709	46.000	10.637	7.454	0.000	200	77	QP
5		466.259	29.912	3.300	-16.088	46.000	18.534	8.078	0.000	100	78	QP
6		961.459	29.658	-3.000	-24.342	54.000	23.431	9.227	0.000	200	96	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Barlow

Site: AC3

Time: 2019/01/25

Limit: FCC_Part15.209_RE(3m)

Margin: 0

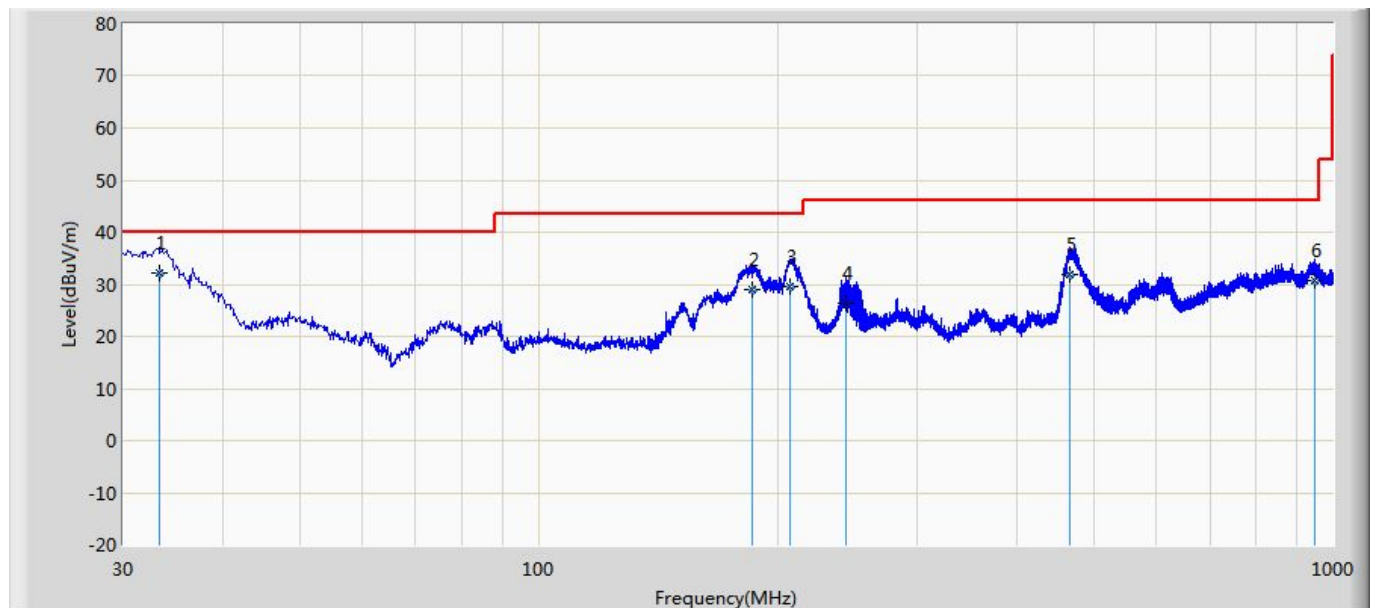
Probe: AC3_3m (30-1000MHz)

Polarity: Vertical

EUT: REALMAX-QIAN

Power: AC 120V/60Hz

Note: Mode 1



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	33.300	32.239	9.200	-7.761	40.000	16.564	6.474	0.000	100	78	QP
2		185.458	28.912	8.200	-14.588	43.500	13.486	7.226	0.000	200	9	QP
3		207.659	29.543	6.300	-13.957	43.500	15.935	7.309	0.000	300	14	QP
4		243.658	26.439	3.200	-19.561	46.000	15.802	7.437	0.000	100	8	QP
5		466.437	31.787	6.200	-14.213	46.000	17.508	8.079	0.000	200	7	QP
6		947.457	30.850	-4.000	-15.150	46.000	25.653	9.197	0.000	200	56	QP

Note:

1. " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

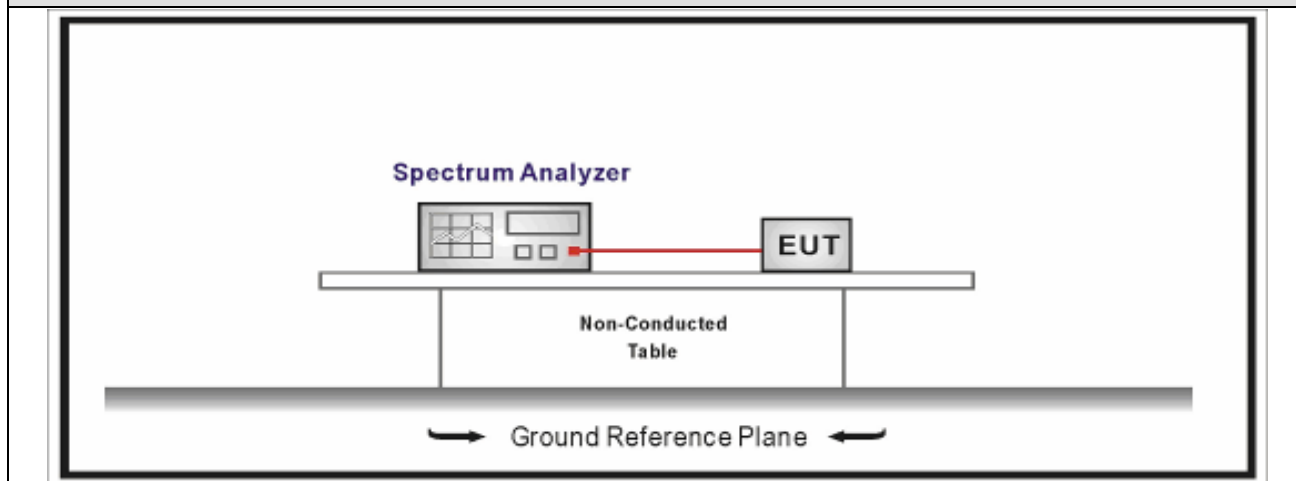
5. Emissions in non-restricted frequency bands

5.1. Test Equipment

Emissions in non-restricted frequency bands / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

5.2. Test Setup

Emissions in non-restricted frequency bands



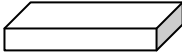
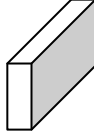
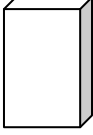
5.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)
Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc). Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).	

5.4. Test Procedure

Test Method					
	References Rule		Chapter	Description	
☒	ANSI C63.10		11.11	Emissions in non-restricted frequency bands	
	☒	ANSI C63.10	11.11.2	Reference level measurement	
	☒	ANSI C63.10	11.11.3	Emission level measurement	
☐	ANSI C63.10		11.12	Emissions in restricted frequency bands	
	☐	ANSI C63.10	11.12.1	Radiated emission measurements	
	☐	ANSI C63.10	11.12.2.7	Radiated spurious emission test	
☐	ANSI C63.10		6.4	Radiated emissions from unlicensed wireless devices below 30 MHz	
☐	ANSI C63.10		6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz	
☐	ANSI C63.10		6.6	Radiated emissions from unlicensed wireless devices above 1 GHz	
	☐	ANSI C63.10		11.12.2	Antenna-port conducted measurements
		☐	ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
		☐	ANSI C63.10	11.12.2.4	Peak power measurement procedure
		☐	ANSI C63.10	11.12.2.5	Average power measurement procedures
		☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
		☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
		☐	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

5.5. EUT test Axis definition

Item	Emissions in non-restricted frequency bands			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1 ~ Mode 4			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 1		
				
	☒	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

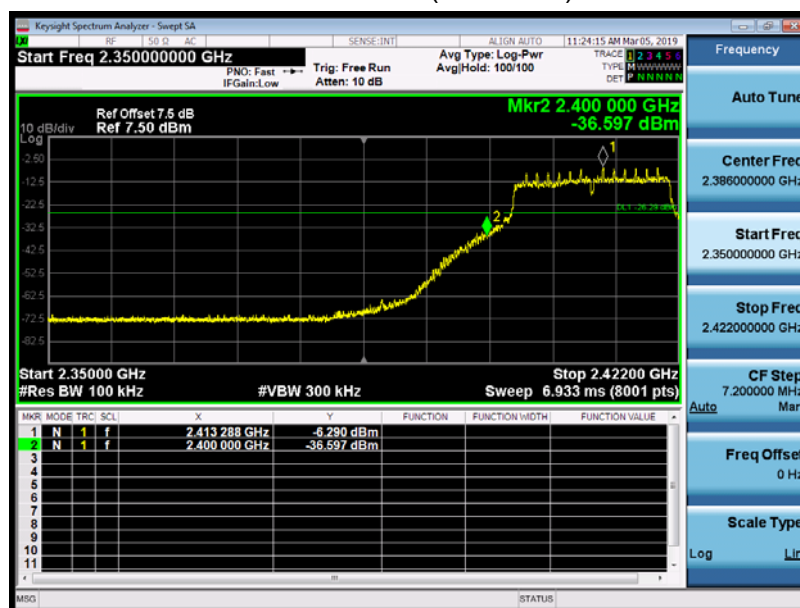
5.6. Test Result

Product Name	: REALMAX-QIAN	Power	: AC 120V/60Hz
Test Mode	: Mode1~4	Test Site	: TR8
Test Date	: 2019.03.05	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Maximum In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2412	-1.450	2400	-49.938	48.488	>20	Pass
1	11	2462	-3.025	2500	-72.797	69.772	>20	Pass
2	01	2412	-4.881	2400	-36.840	31.959	>20	Pass
2	11	2462	-5.390	2500	-75.126	69.736	>20	Pass
3	01	2412	-6.290	2400	-36.597	30.307	>20	Pass
3	11	2462	-5.596	2500	-73.161	67.565	>20	Pass
4	03	2422	-7.910	2400	-49.382	41.472	>20	Pass
4	09	2452	-9.785	2500	-73.749	63.964	>20	Pass

Note: The worst case of emissions in non-restricted frequency bands as below:

Mode 3 CH01(2412MHz)

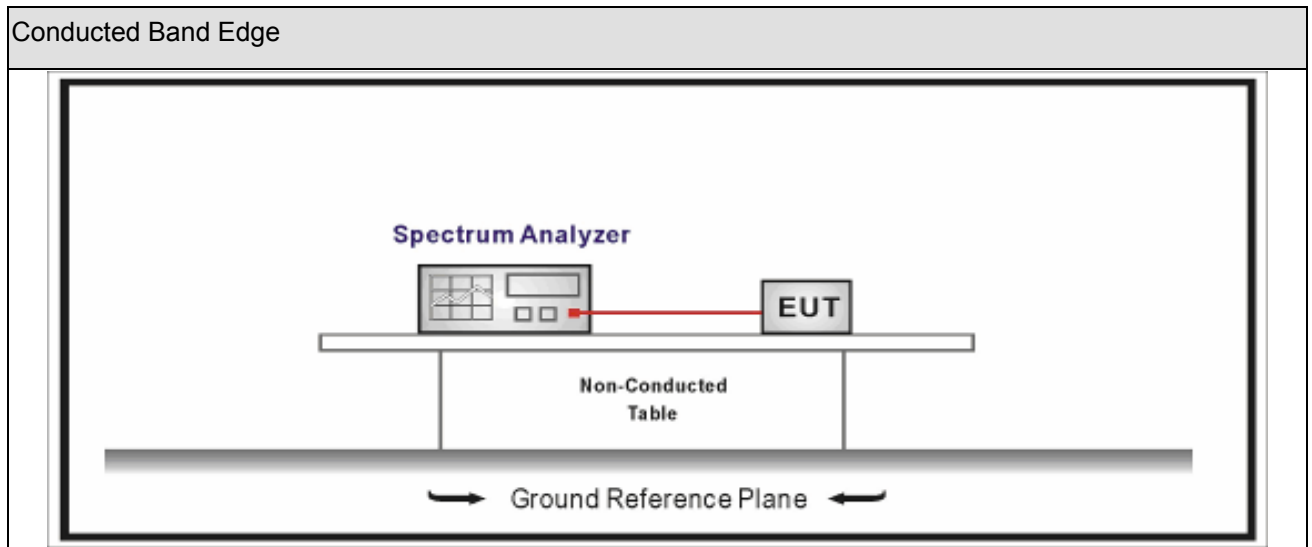


6. Conducted Band Edge

6.1. Test Equipment

Conducted Band Edge / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

6.2. Test Setup



6.3. Limit

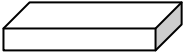
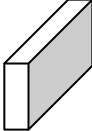
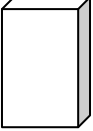
Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

6.4. Test Procedure

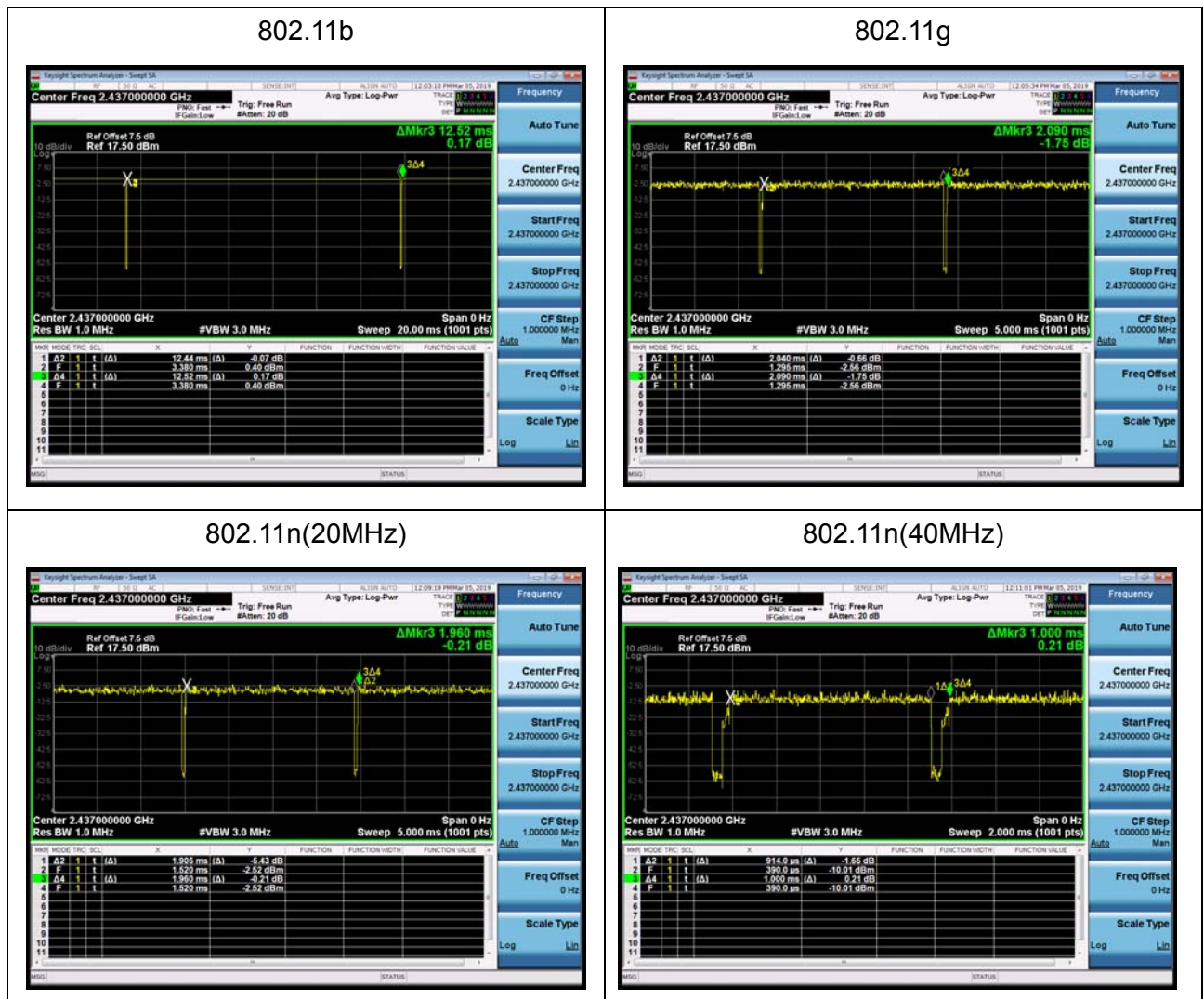
Radiated Emission Band Edge					
	References Rule			Chapter	Description
☒	ANSI C63.10			6.10	Band-edge testing
	☒	ANSI C63.10		6.10.5	Restricted-band band-edge measurements
	☐	ANSI C63.10		6.10.6	Marker-delta method
☐	ANSI C63.10			11.12	Emissions in restricted frequency bands
	☐	ANSI C63.10		11.12.1	Radiated emission measurements
	☐	ANSI C63.10		11.12.2.7	Radiated spurious emission test
☐	ANSI C63.10			6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10			6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☐	ANSI C63.10			6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	☒	ANSI C63.10		11.12.2	Antenna-port conducted measurements
		☐	ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
		☒	ANSI C63.10	11.12.2.4	Peak power measurement procedure
		☒	ANSI C63.10	11.12.2.5	Average power measurement procedures
		☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
		☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
		☒	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

6.5. EUT test definition

Item	Radiated Emission Band Edge			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1~4			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☒	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

6.6. Duty Cycle

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11b	12.44	0.08	82Hz	12.52	99.36%
802.11g	2.04	0.05	510Hz	2.09	97.61%
802.11n(20MHz)	1.905	0.055	560Hz	1.96	97.19%
802.11n(40MHz)	0.914	0.086	1.1KHz	1.000	91.40%



6.7. Test Result

SISO PK Limit=74dBuV/m-95.2-1.5(Antenna Gain)=-22.7dBm

SISO AV Limit=54dBuV/m-95.2-1.5(Antenna Gain)=-42.7dBm

MIMO PK Limit=74dBuV/m-95.2-10lg2(2Tx)-4.5(Directional Gain)=-28.7dBm

MIMO AV Limit=54dBuV/m-95.2-10lg2(2Tx)-4.5(Directional Gain)=-48.7dBm

AV Limit-SISO:

2412MHz by 802.11b:



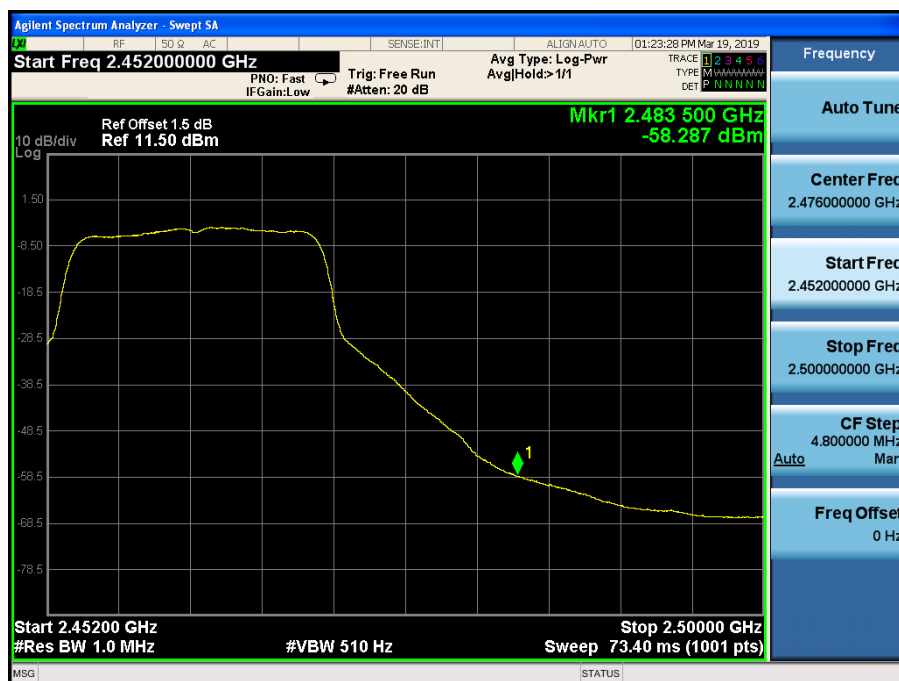
2462MHz by 802.11b:



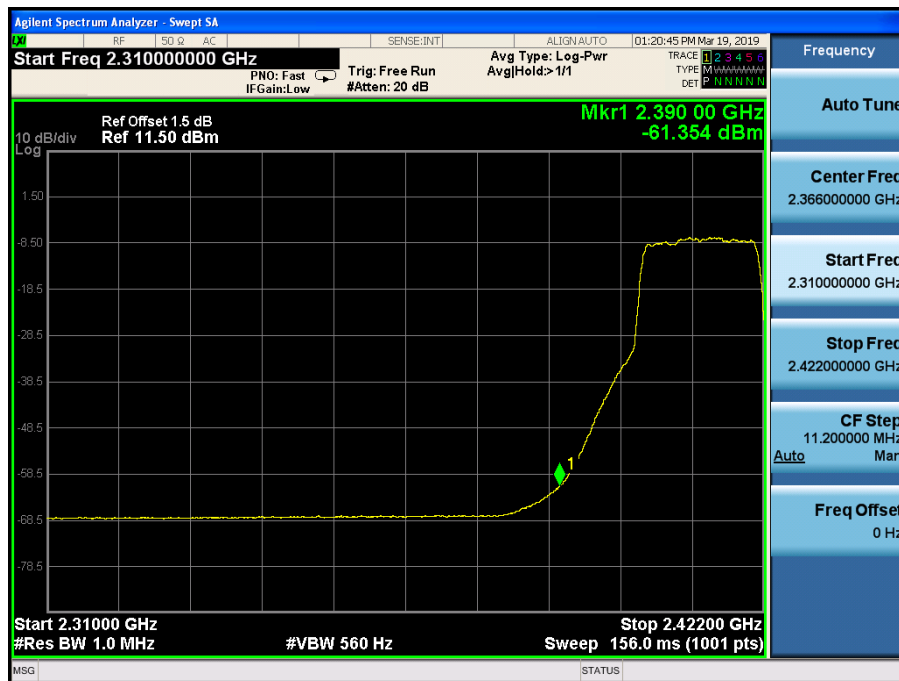
2412MHz by 802.11g:



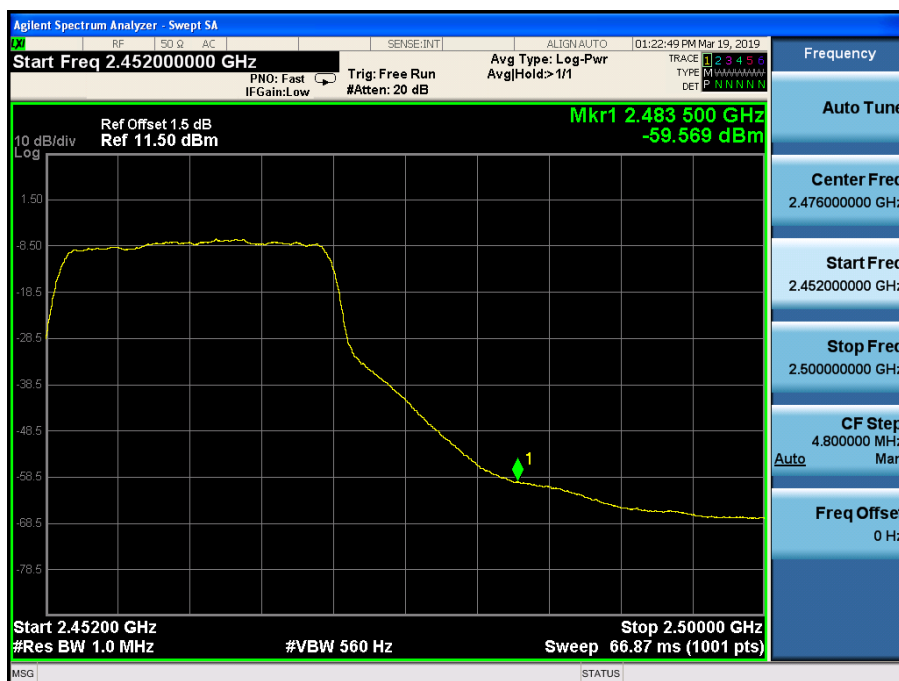
2462MHz by 802.11g:



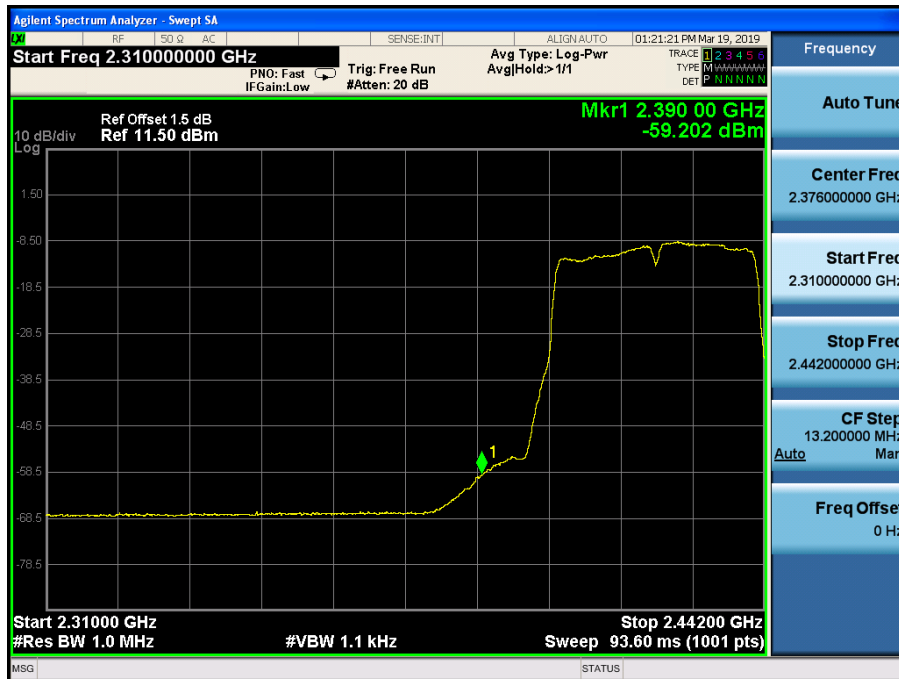
2412MHz by 802.11n(20MHz):



2462MHz by 802.11n(20MHz):



2422MHz by 802.11n(40MHz):

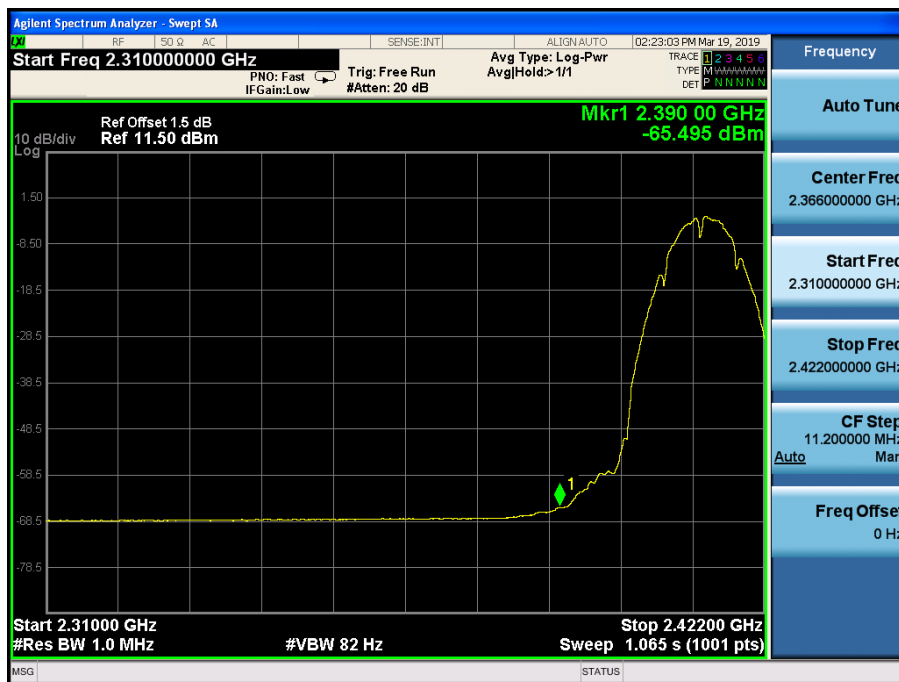


2452MHz by 802.11n(40MHz):

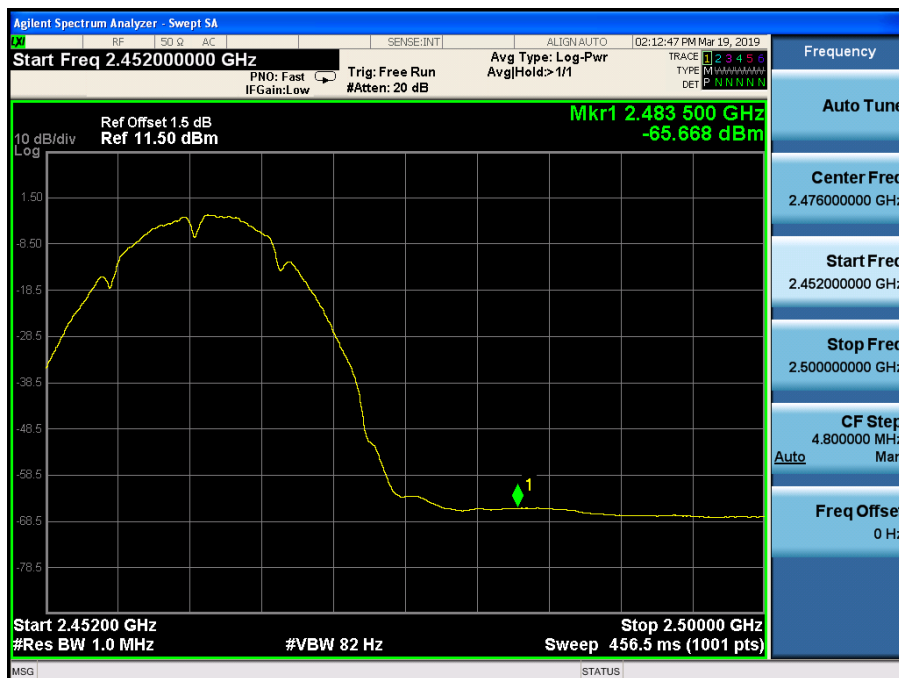


AV Limit-MIMO:

2412MHz by 802.11b:



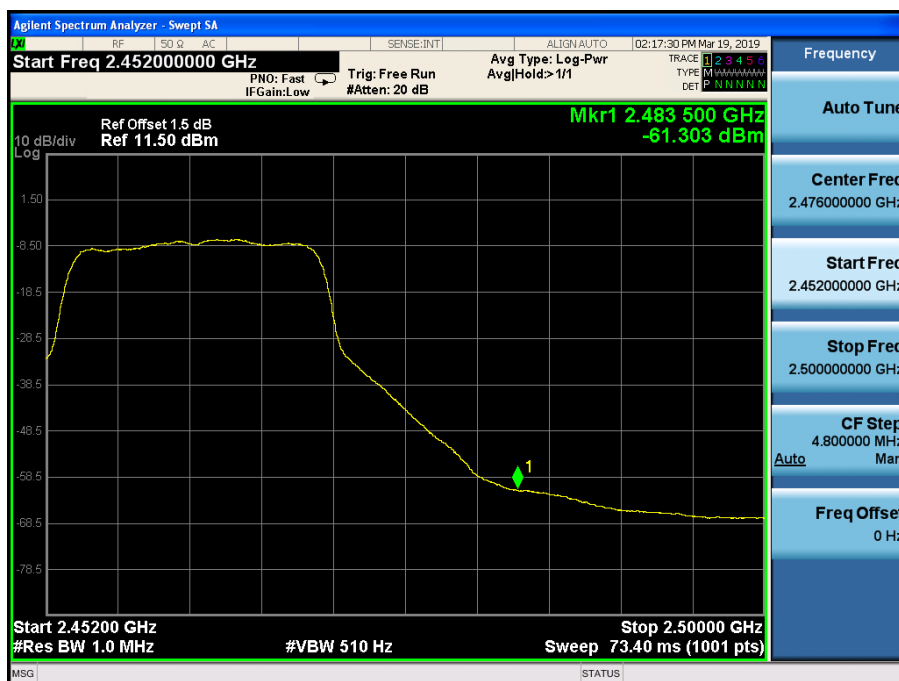
2462MHz by 802.11b:



2412MHz by 802.11g:



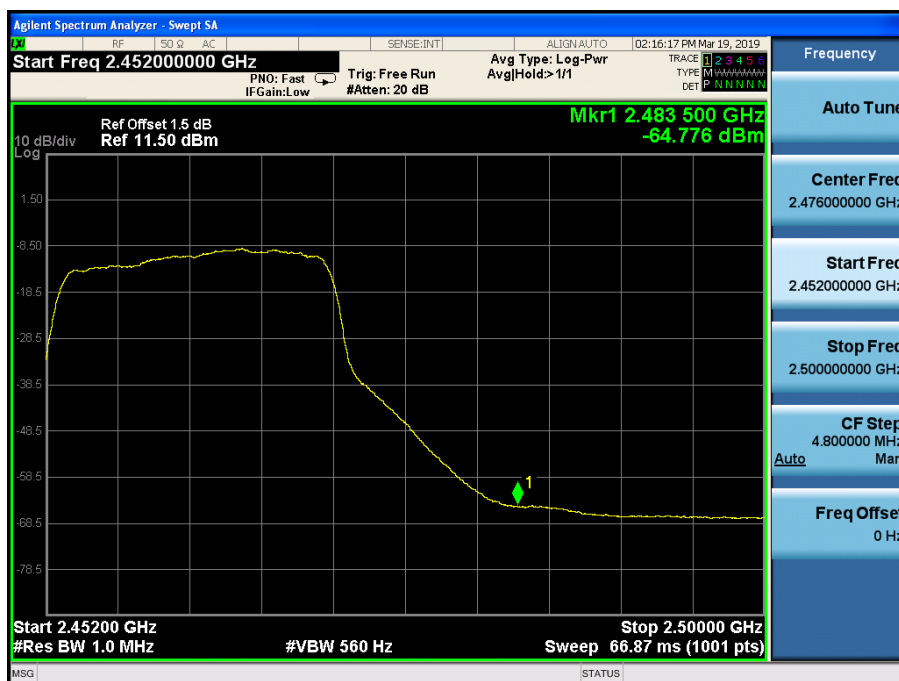
2462MHz by 802.11g:



2412MHz by 802.11n20:



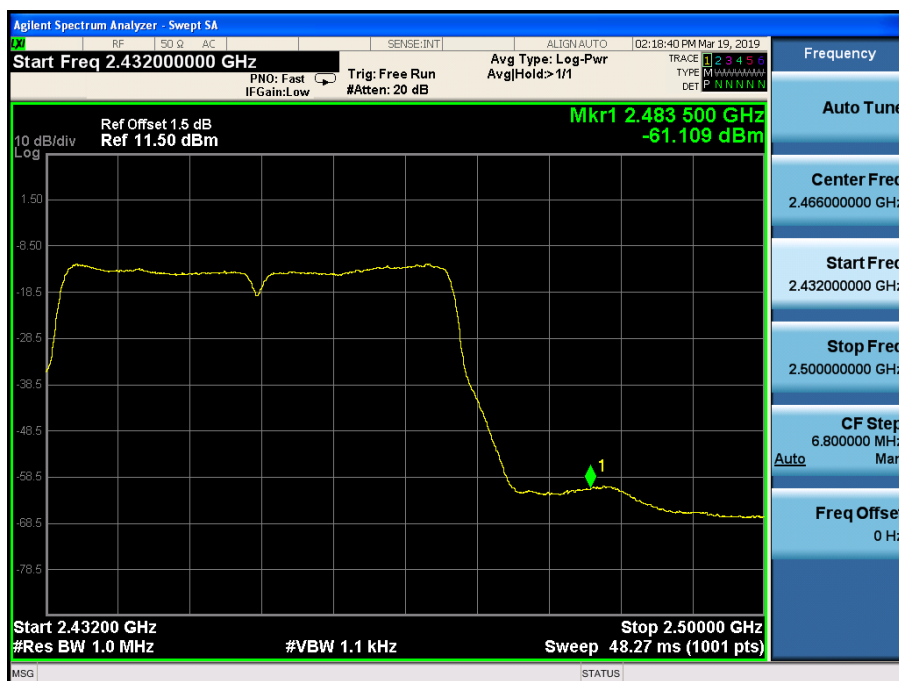
2462MHz by 802.11n20:



2422MHz by 802.11n40:

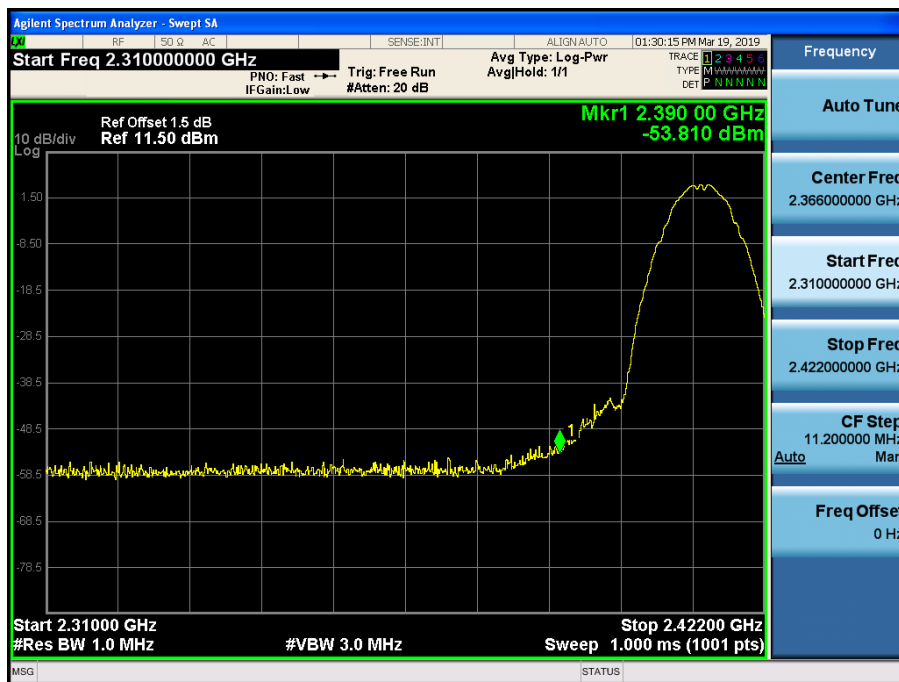


2452MHz by 802.11n40:



PK Limit-SISO:

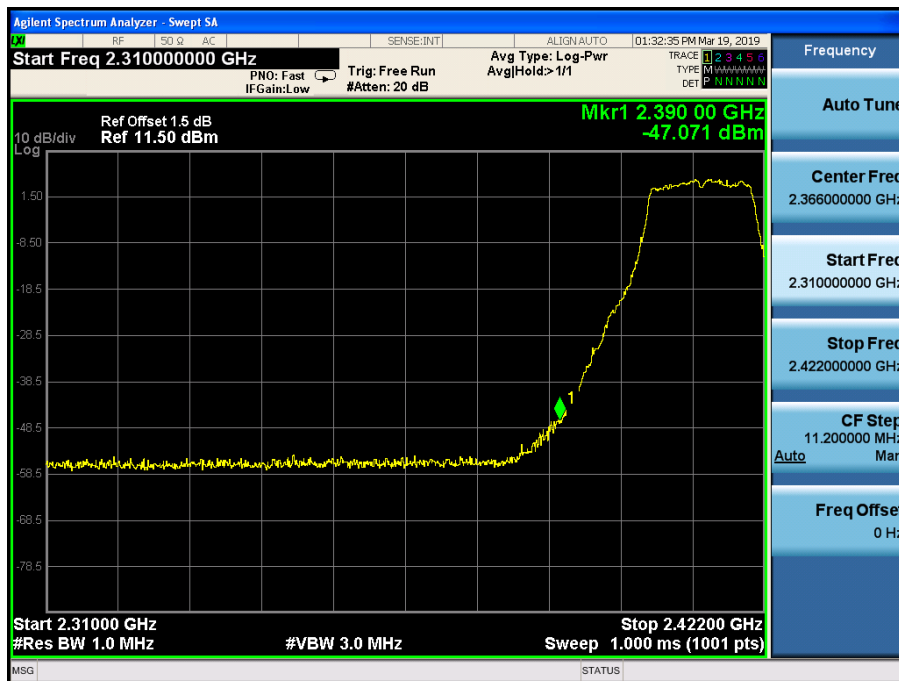
2412MHz by 802.11b:



2462MHz by 802.11b:



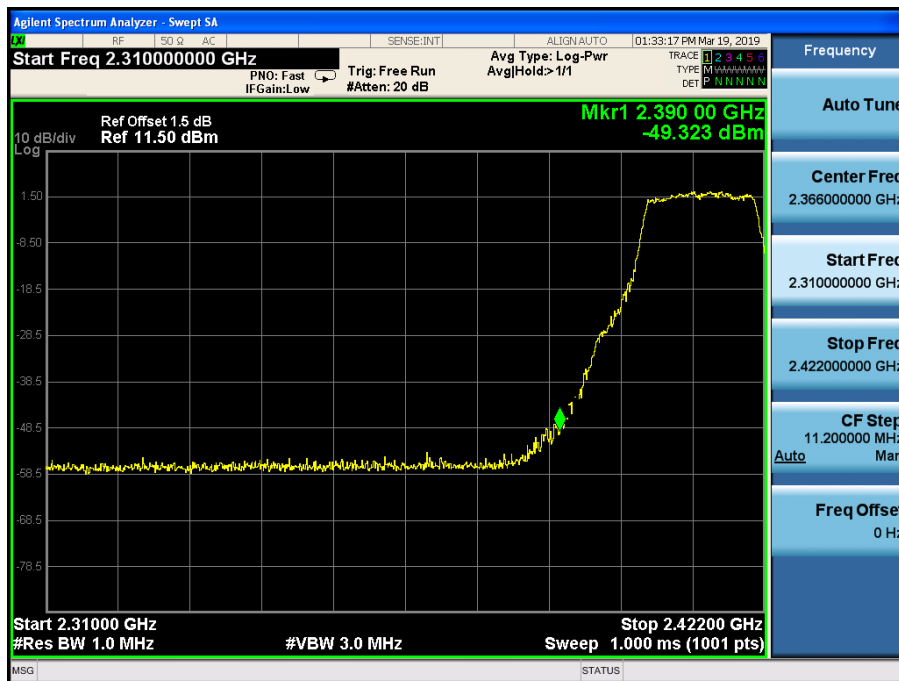
2412MHz by 802.11g:



2462MHz by 802.11g:



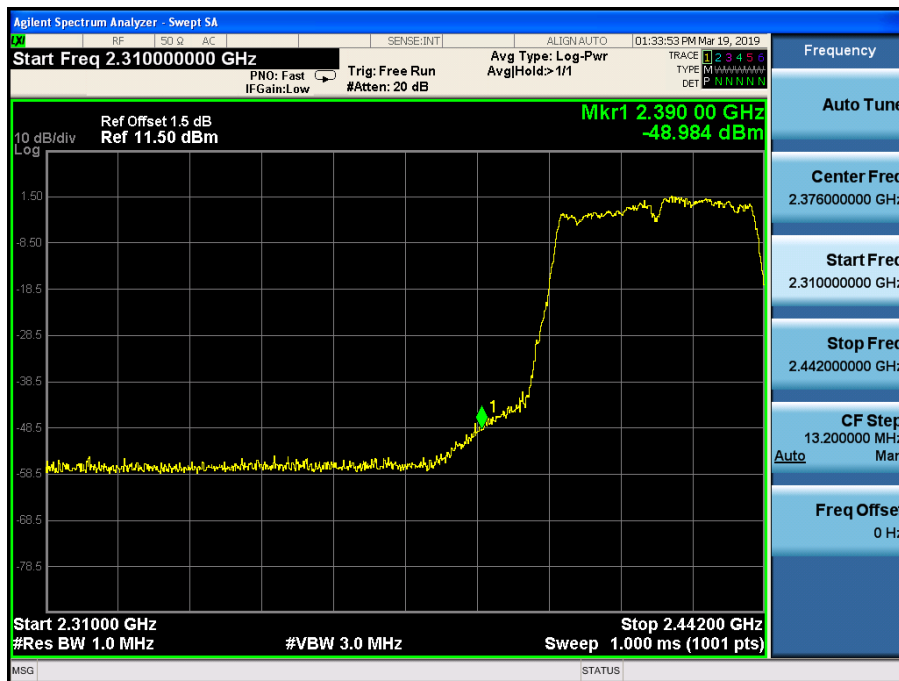
2412MHz by 802.11n(20MHz):



2462MHz by 802.11n(20MHz):



2422MHz by 802.11n(40MHz):

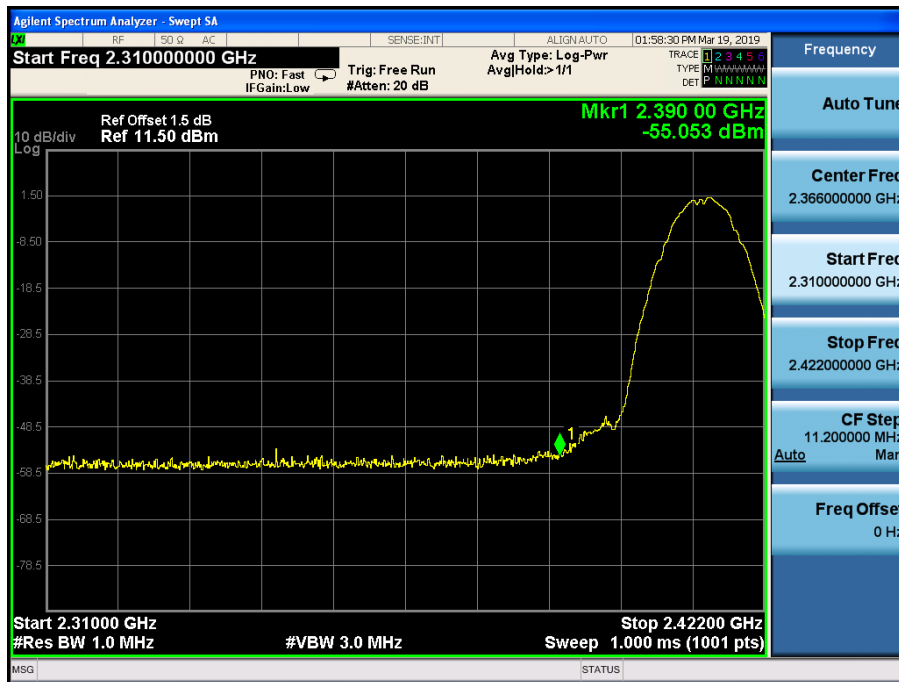


2452MHz by 802.11n(40MHz):



PK Limit-MIMO:

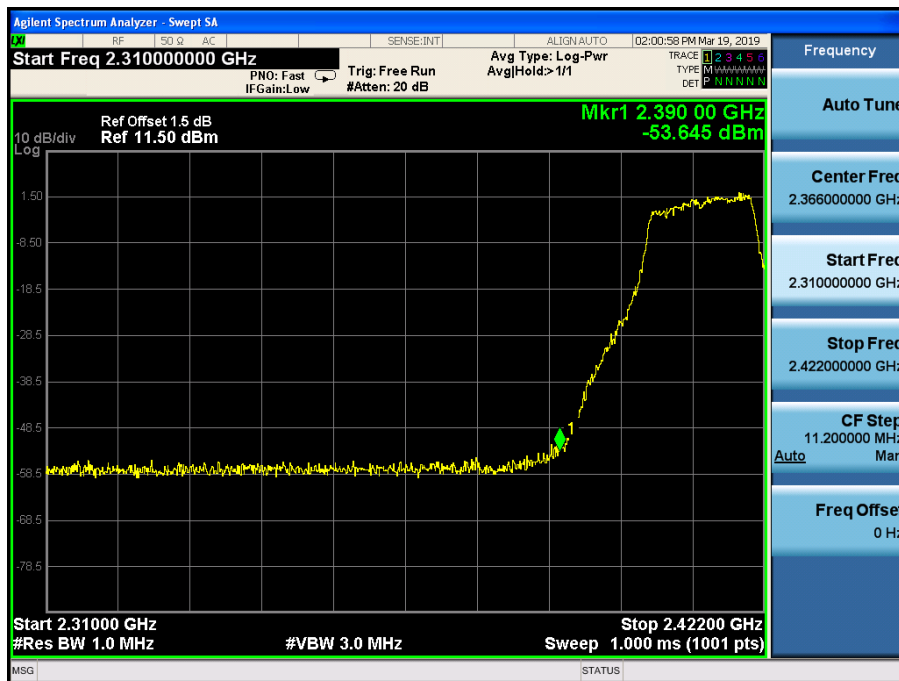
2412MHz by 802.11b:



2462MHz by 802.11b:

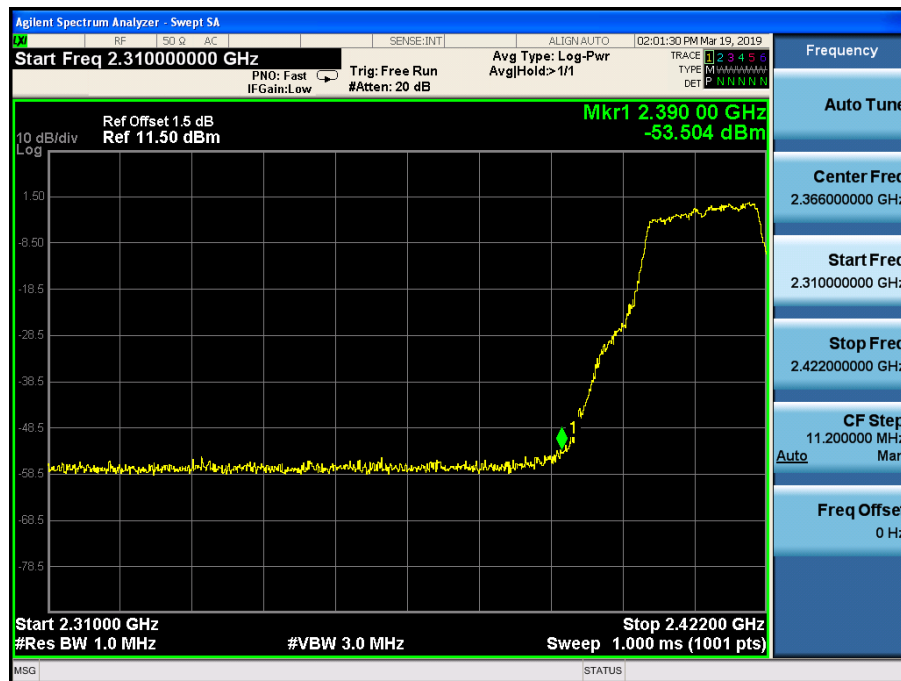


2412MHz by 802.11g:

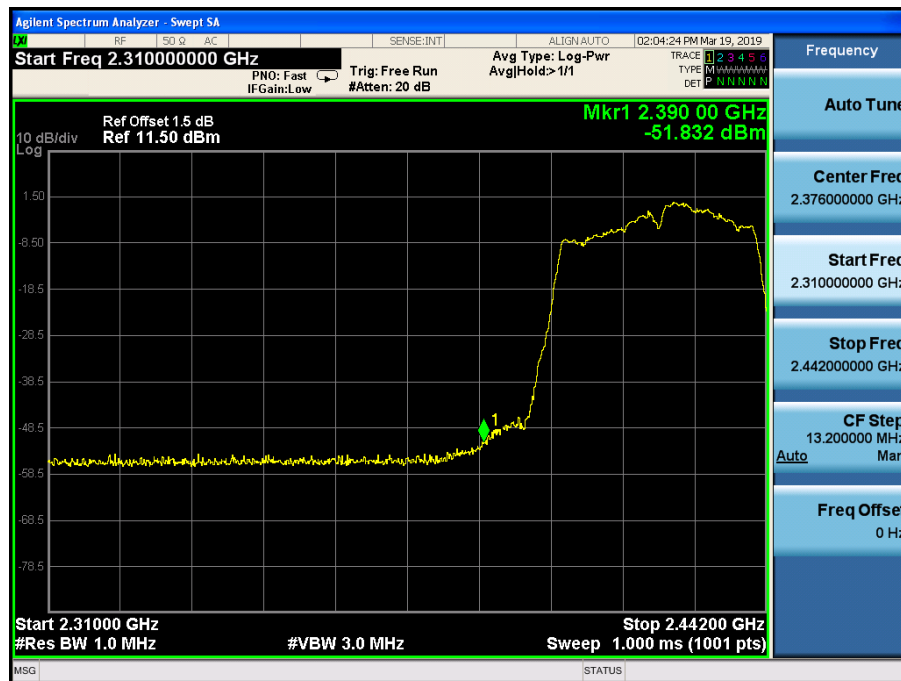


2462MHz by 802.11g:



2412MHz by 802.11n(20MHz):**2462MHz by 802.11n(20MHz):**

2422MHz by 802.11n(40MHz):



2452MHz by 802.11n(40MHz):



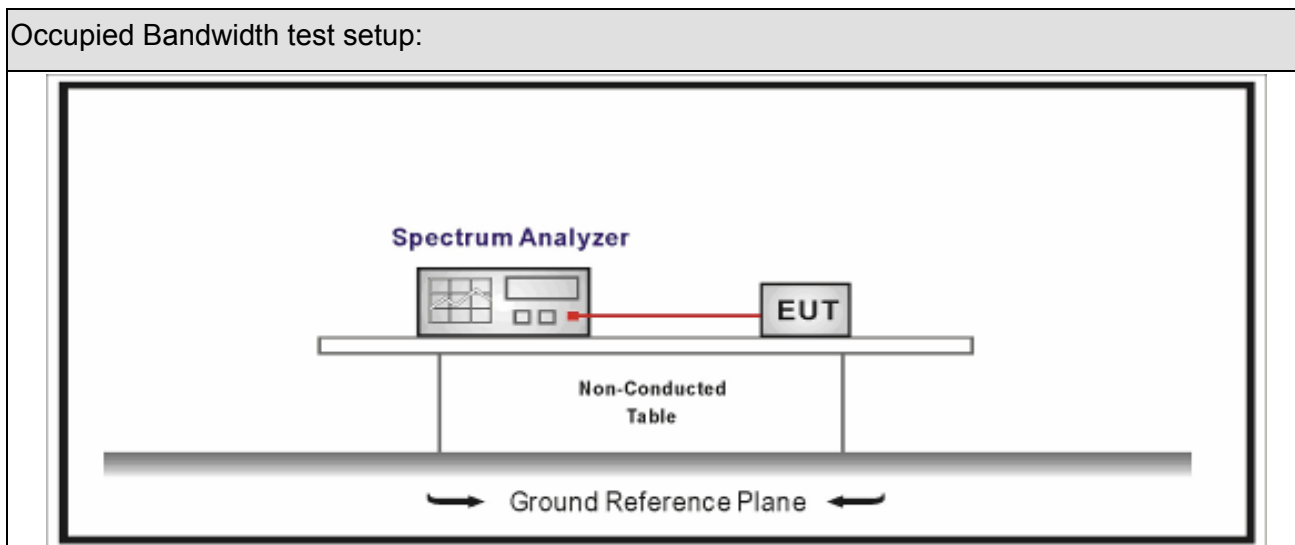
7. Occupied Bandwidth

7.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

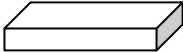
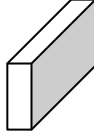
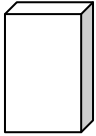
Occupied Bandwidth

Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

7.4. Test Procedure

Test Method				
	Reference Rule		Chapter	Description
☒	ANSI C63.10		11.8	DTS bandwidth
	☐	ANSI C63.10	11.8.1	Option 1
	☒	ANSI C63.10	11.8.2	Option 2

7.5. EUT test definition

Item	Occupied Bandwidth			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1~4			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 1		
				
	☒	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

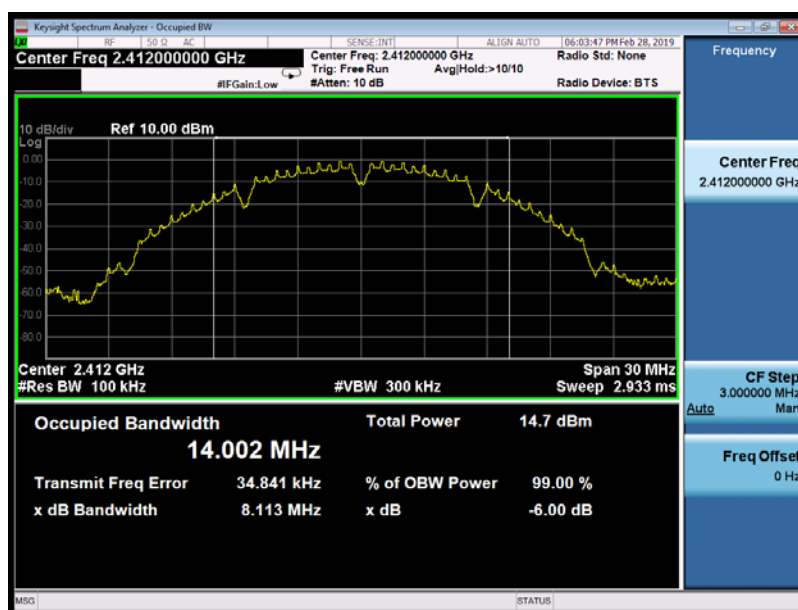
7.6. Test Result

Product Name	: REALMAX-QIAN	Power	: AC 120V/60Hz
Test Mode	: Mode1~4	Test Site	: TR8
Test Date	: 2019.02.28	Test Engineer	: Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)		6dB Occupied Bandwidth (MHz)		Limit (kHz)	Result
			Ant 1	Ant 2	Ant 1	Ant 2		
1	01	2412	14.175	14.002	9.078	8.113	>500	Pass
1	06	2437	13.772	13.703	9.049	8.117	>500	Pass
1	11	2462	13.600	13.843	9.054	9.065	>500	Pass
2	01	2412	16.679	16.508	14.51	16.33	>500	Pass
2	06	2437	16.465	16.395	15.72	15.16	>500	Pass
2	11	2462	16.373	16.444	15.51	14.50	>500	Pass
3	01	2412	17.821	17.712	16.32	16.43	>500	Pass
3	06	2437	17.642	17.617	13.87	15.98	>500	Pass
3	11	2462	17.616	17.633	15.97	15.71	>500	Pass
4	03	2422	35.673	36.069	26.31	35.19	>500	Pass
4	06	2437	35.755	35.906	28.91	35.12	>500	Pass
4	09	2452	36.295	36.154	36.35	36.31	>500	Pass

Note : The worst case of Occupied Bandwidth as below in next page:

Mode 1 CH01 (2412MHz) Ant 2

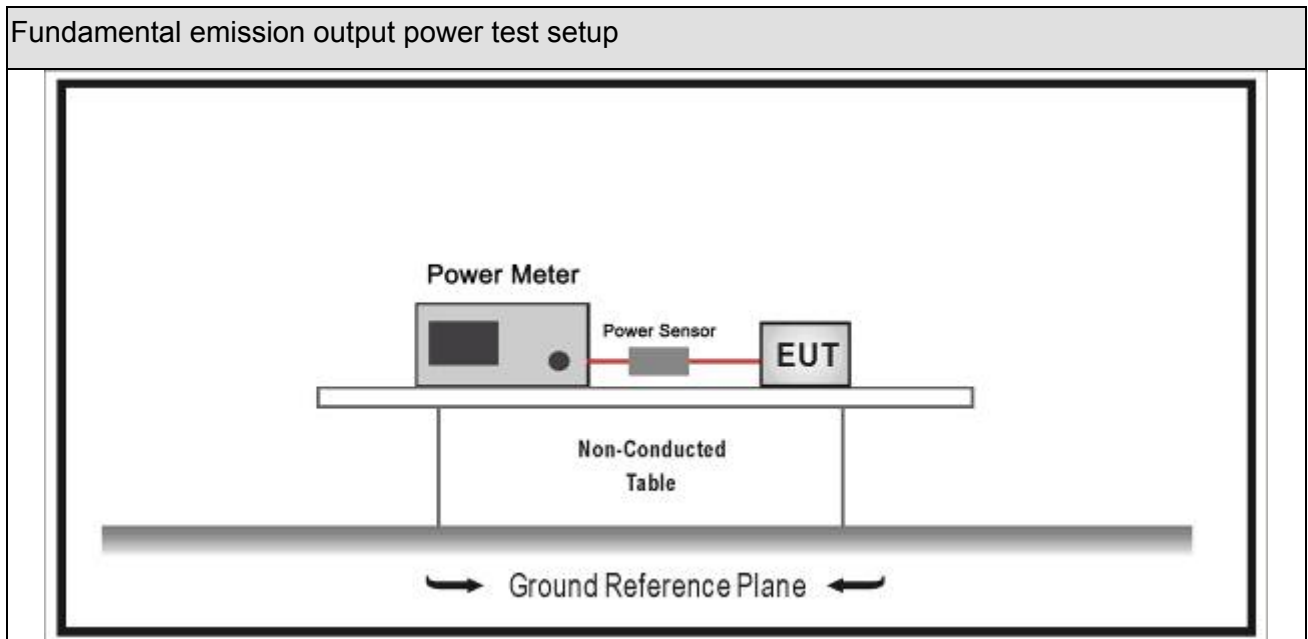


8. Fundamental emission output power

8.1. Test Equipment

Fundamental emission output power/ TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2019.01.04	2020.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2018.10.14	2019.10.13
Power Sensor	Anritsu	MA2411B	0846014	2018.10.14	2019.10.13
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2018.04.10	2019.04.09
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

8.2. Test Setup



8.3. Limit

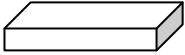
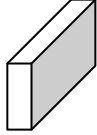
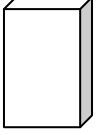
Fundamental emission output power Limit		
☒	$G_{TX} < 6\text{dBi}$	$P_{out} \leq 30\text{dBm}$
☐	$G_{TX} > 6\text{dBi}$	
☐	Non-Fix point-point	$P_{out} \leq 30 - (G_{TX} - 6)$
☐	Fix point-point	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
☐	Point-to-multipoint	$P_{out} \leq 30 - (G_{TX} - 6)$
☐	Overlap Beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
☐	Aggregate power transmitted simultaneously on all beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
☐	single directional beam	$P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$
Note 1 : G_{TX} directional gain of transmitting antennas.		
Note 2 : P_{out} is maximum peak conducted output power .		

8.4. Test Procedure

Fundamental emission output power Test Method						
	References Rule			Chapter	Description	
☒	ANSI C63.10			11.9	Fundamental emission output power	
	☒	ANSI C63.10		11.9.1	Maximum peak conducted output power	
		☐	ANSI C63.10	11.9.1.1	RBW ≥ DTS bandwidth	
		☐	ANSI C63.10	11.9.1.2	Integrated band power method	
		☒	ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method	
	☐	ANSI C63.10		11.9.2	Maximum conducted (average) output power	
		☐	ANSI C63.10		11.9.2.2	Measurement using a spectrum analyzer (SA)
			☐	ANSI C63.10	11.9.2.2.2	Method AVGSA-1(Duty cycle≥98%)
			☐	ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle≥98%)
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle≤98%)
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle≤98%)
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-3
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-3A
		☐	ANSI C63.10		11.9.2.3	Measurement using a power meter (PM)
			☐	ANSI C63.10	11.9.2.3.1	Method AVGPM
			☐	ANSI C63.10	11.9.2.3.2	Method AVGPM-G

Directional Gain Calculations for In-Band test method				
	References Rule		Chapter	Description
☐	KDB 662911		F2)a)	Basic methodology
	☐	KDB 662911	F2)a) (i)	transmit signals are correlated
	☐	KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)b)	Sectorized antenna systems.
☐	KDB 662911		F2)c)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (i)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (ii)	Multiple antennas
☒	KDB 662911		F2)e)	Spatial Multiplexing
	☐	KDB 662911	F2)e) (i)	Antennas have the same gain
	☐	KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	☒	KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
☒	KDB 662911		F2)f)	Cyclic Delay Diversity (CDD)
	☐	KDB 662911	F2)f) (i)	Antennas have the same gain
	☒	KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)f) (iii)	Antenna have the different gain with more than one spatial stream

8.5. EUT test definition

Item	Fundamental emission output power			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1~4			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☒	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

8.6. Test Result

Product Name	:	REALMAX-QIAN	Power	:	AC 120V/60Hz
Test Mode	:	Mode1~4	Test Site	:	TR8
Test Date	:	2019.02.20	Test Engineer	:	Simon

SISO:

Mode	Channel	Test Frequency (MHz)	Peak Power Output (dBm)		Directional Gain (dBi)	Limit (dBm)	Result
			Ant 1	Ant 2			
1	01	2412	12.34	12.71	1.5	30	Pass
1	06	2437	12.51	12.61	1.5	30	Pass
1	11	2462	12.81	12.77	1.5	30	Pass
2	01	2412	11.37	11.44	1.5	30	Pass
2	06	2437	11.43	11.37	1.5	30	Pass
2	11	2462	11.63	11.56	1.5	30	Pass
3	01	2412	9.24	9.32	1.5	30	Pass
3	06	2437	9.12	9.08	1.5	30	Pass
3	11	2462	9.47	9.42	1.5	30	Pass
4	03	2422	9.87	9.54	1.5	30	Pass
4	06	2437	9.65	9.51	1.5	30	Pass
4	09	2452	9.56	9.44	1.5	30	Pass

MIMO

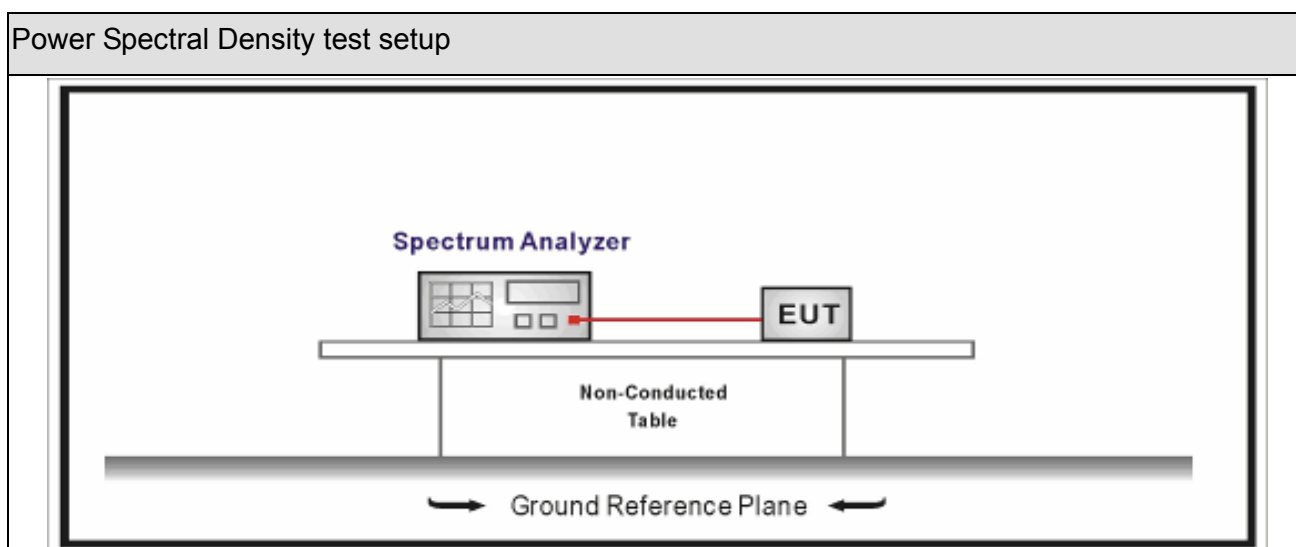
Mode	Channel	Test Frequency (MHz)	Peak Power Output (dBm)		Total Power (dBm)	Directional Gain (dBi)	Limit (dBm)	Result
			Ant 1	Ant 2				
1	01	2412	9.12	9.98	12.58	1.5	30	Pass
1	06	2437	9.01	9.72	12.39	1.5	30	Pass
1	11	2462	9.48	10.01	12.76	1.5	30	Pass
2	01	2412	7.93	8.74	11.36	1.5	30	Pass
2	06	2437	7.74	8.58	11.19	1.5	30	Pass
2	11	2462	8.23	8.82	11.55	1.5	30	Pass
3	01	2412	6.24	7.07	9.69	1.5	30	Pass
3	06	2437	6.14	7.11	9.66	1.5	30	Pass
3	11	2462	6.46	7.01	9.75	1.5	30	Pass
4	03	2422	6.35	6.76	9.57	1.5	30	Pass
4	06	2437	6.28	7.33	9.85	1.5	30	Pass
4	09	2452	6.22	6.92	9.59	1.5	30	Pass

9. Power Spectral Density

9.1. Test Equipment

Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

9.2. Test Setup



9.3. Limit

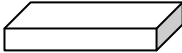
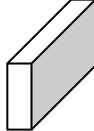
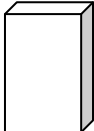
Power Spectral Density Limit
Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$

9.4. Test Procedure

Power Spectral Density Test Method				
	References Rule		Chapter	Description
☒	ANSI C63.10		11.10	Maximum power spectral density level in the fundamental emission
	☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
	☐	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle $\geq 98\%$)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq 98\%$)
	☐	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.7	Method AVGPSD-3
	☐	ANSI C63.10	11.10.8	Method AVGPSD-3A

Directional Gain Calculations for In-Band test method				
	Referred Rule		Chapter	Description
☐	KDB 662911		F2)a)	Basic methodology
	☐	KDB 662911	F2)a) (i)	transmit signals are correlated
	☐	KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)b)	Sectorized antenna systems.
☐	KDB 662911		F2)c)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (i)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (ii)	Multiple antennas
☒	KDB 662911		F2)e)	Spatial Multiplexing
	☐	KDB 662911	F2)e) (i)	Antennas have the same gain
	☐	KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	☒	KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
☒	KDB 662911		F2)f)	Cyclic Delay Diversity (CDD)
	☐	KDB 662911	F2)f) (i)	Antennas have the same gain
	☒	KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)f) (iii)	Antenna have the different gain with more than one spatial stream

9.5. EUT test definition

Item	Power Spectral Density Test Method			
Device Category	☐	Fixed point-to-point		
	☐	Emit multiple directional beams, simultaneously or sequentially		
	☒	Other cases		
Test mode	Mode 1~4			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 1		
				
	☒	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

9.6. Test Result

Product Name	: REALMAX-QIAN	Power	: AC 120V/60Hz
Test Mode	: Mode1~4	Test Site	: TR8
Test Date	: 2019.02.28	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)		Total Measurement PSD (dBm/3kHz)	Directional Gain (dBi)	Limit (dBm/3kHz)	Result
			Ant 1	Ant 2				
1	01	2412	-19.047	-18.453	-15.73	4.5	8.0	Pass
1	06	2437	-20.665	-18.882	-16.67	4.5	8.0	Pass
1	11	2462	-18.833	-17.736	-15.24	4.5	8.0	Pass
2	01	2412	-21.304	-21.054	-18.17	4.5	8.0	Pass
2	06	2437	-21.573	-20.413	-17.94	4.5	8.0	Pass
2	11	2462	-20.784	-21.319	-18.03	4.5	8.0	Pass
3	01	2412	-23.250	-22.382	-19.78	4.5	8.0	Pass
3	06	2437	-22.623	-23.366	-19.97	4.5	8.0	Pass
3	11	2462	-23.122	-22.021	-19.53	4.5	8.0	Pass
4	03	2422	-24.756	-26.183	-22.40	4.5	8.0	Pass
4	06	2437	-24.370	-24.358	-21.35	4.5	8.0	Pass
4	09	2452	-25.415	-25.395	-22.39	4.5	8.0	Pass

Mode 1 CH11(2462MHz) Ant 1



Mode 1 CH11(2462MHz) Ant 2



10. Antenna Requirement

10.1. Limit

Antenna Requirement Limit	
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	

10.2. Antenna Connector Construction

Antenna Connector Construction	
☒	The use of a permanently attached antenna
☐	The antenna use of a unique coupling to the intentional radiator
☐	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document "Internal Photograph" to show the antenna connector.	

_____ The End _____