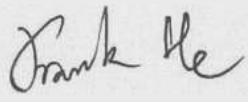
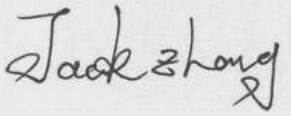
DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

Test report No:
2040170R-RF-US-P06V01

FCC&ISED TEST REPORT

Product Name	Ring Bridge
Trademark	Ring
Model and /or type reference	5C28S8
FCC ID	2AEUPRBBR003
IC	20271- RBBR003
Applicant´s name / address	Ring, LLC. 1523 26th St, Santa Monica, CA 90404
Factor´s name / address	AZ e-lite Pte Ltd 31 Ubi Road 1 Aztech Building 408694 Singapore
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KDB558074 D01v05r02 RSS-Gen Issue 5 / RSS-247 Issue 2
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Kitty Li/Project Assistant 
Reviewed by (name / position & signature)	Frank He/ Technical Supervisor 
Approved by (name / position & signature)	Jack Zhang/ Supervisor 
Date of issue	2020-08-03
Report template No	Template_FCC 15.247-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Apr. 08, 2020
Date (start test)	Jul. 09, 2020
Date (finish test)	Jul. 10, 2020

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT : Equipment Under Test
QP : Quasi-Peak
CAV : CISPR Average
AV : Average
CDN : Coupling Decoupling Network
SAC : Semi-Anechoic Chamber
OATS : Open Area Test Site
BW : Bandwidth
AM : Amplitude Modulation
PM : Pulse Modulation
HCP : Horizontal Coupling Plane
VCP : Vertical Coupling Plane
U_N : Nominal voltage
*T*x : Transmitter
*R*x : Receiver
N/A : Not Applicable
N/M : Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2040170R-RF-US-P06V01	V1.0	Initial issue of report.	2020-08-03

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with FCC 15.247.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result, unless the specification, standard or customer have special requirements.
4. The test results presented in this report relate only to the object tested.
5. The test results relate only to the samples tested.
6. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
7. This report will not be used for social proof function in China market.
8. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
   - Chapter 1.1 General Description of the Item(s);
   - Chapter 1.2 Antenna Informaion;
   - Chapter 1.3 Data Rate;
   - Chapter 1.4 Channel List;

USED EQUIPMENT

AC Power Line Conducted Emission / TR1(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100906	2020.04.18	2021.04.17
Two-Line V-Network	R&S	ENV216	101044	2020.04.18	2021.04.17
Current Probe	R&S	EZ-17	100678	2020.03.26	2021.03.25
50ohm Termination	SHX	TF2	07081403	2019.09.02	2020.09.01
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2019.08.21	2020.08.20
Coaxial Cable	Suhner	RG 223	TR1-C1	2019.09.27	2020.09.26
DEKRA test software	N/A	N/A	N/A	N/A	N/A

RF conducted test / TR8(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.09.28	2020.09.27
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2020.04.17	2021.04.16
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2019.08.30	2020.08.29
DEKRA test software	N/A	N/A	N/A	N/A	N/A

Radiated Emission(30MHz-1GHz) / AC3(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2019.12.28	2020.12.27
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2019.09.23	2020.09.22
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2019.09.02	2020.09.01
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2020.04.05	2021.04.04
DEKRA test software	N/A	N/A	N/A	N/A	N/A

Radiated Emission / AC5(1GHz-40GHz)(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Receiver	Agilent	N9038A	MY51210196	2020.04.18	2021.04.17
DRG Horn	ETS-Lindgren	3117	00123988	2019.09.25	2020.09.24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170D	750	2019.01.05	2021.01.04
Pre-Amplifier	Schwarzbeck	BBV 9721	9721-024	2019.07.17	2021.07.16
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2019.09.02	2020.09.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2020.04.05	2021.04.04
DEKRA test software	N/A	N/A	N/A	N/A	N/A

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. Uncertainties is complice with standard required as below.

Test item	Uncertainty
AC Power Line Conducted Emission	± 2.92 dB
Peak Power Output	± 1.13 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 4.60 dB 200MHz~1GHz: 4.10 dB Vertical: 30MHz~200MHz: 4.80 dB 200MHz~1GHz: 4.10 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.00 dB Vertical: 1GHz~18GHz: 4.80 dB Horizontal: 18GHz~40GHz: 4.70 dB Vertical: 18GHz~40GHz: 4.60 dB
RF antenna conducted test	± 1.13 dB
Radiated Emission Band Edge	± 5.00 dB
DTS Bandwidth	± 279 Hz
Occupied Bandwidth	± 279 Hz
Power Density	± 1.13 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

All information are form clinet.

Model / Type number ..... :	5C28S8
Trademark ..... :	Ring
Manufacturer..... :	Ring, LLC.
Manufacturer Address..... :	1523 26th St, Santa Monica, CA 90404

Wireless specifiction..... :	WIFI	
Operating frequency range(s)..... :	2400~2483.5MHz	
Type of modulation ..... :	DSSS: BPSK,QPSK,CCK OFDM: BPSK, QPSK, 16QAM, 64QAM	
Number of channel..... :	802.11b/g/n(20MHz): 11 802.11n(40MHz): 7	
Device category ..... :	☐	Fixed point-to-point
	☐	Emit multiple directional beams, simultaneously or sequentially
	☒	Other cases

Rated power supply .....:	Voltage and Frequency	
	☐	AC: 220 - 240 V, 50/60 Hz
	☐	AC: 100 - 240 V, 50/60 Hz
	☐	DC: 12 - 24 Vdc
	☐	Battery:
	☒	USB
Mounting position.....:	☐	Table top equipment
	☒	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☐	Other:

1.2 Antenna Information

Antenna model / type number ..... :	N/A			
Antenna serial number..... :	N/A			
Antenna Delivery ..... :	☒	1TX + 1RX		
	☐	2TX + 2RX		
	☐	Others:·····		
Antenna technology ..... :	☒	SISO		
	☐	MIMO	☐	Basic
			☐	CDD
			☐	Sectorized
			☐	Beam-forming
Antenna Type ..... :	☐	External	☐	Dipole
			☐	Sectorized
	☒	Internal	☒	PIFA
			☐	PCB
			☐	Metal Antenna
Antenna Gain..... :	1.8 dBi			

1.3 Data Rate

IEEE 802.11b

Modulation	Data Rate(Mb/s)
DSSS	1
DSSS	2
CCK	5.5
CCK	11

Table 1 –TX Antenna number = 1

IEEE 802.11g

Modulation	Coding rate	Data Rate(Mb/s)
BPSK	1/2	6
BPSK	3/4	9
QPSK	1/2	12
QPSK	3/4	18
16-QAM	1/2	24
16-QAM	3/4	36
64-QAM	2/3	48
64-QAM	3/4	54

Table 1 – MCS parameters for TX Antenna number = 1

IEEE 802.11n

Spatial streames	MCS Index	Modulation	Coding rate	Data Rate(Mb/s)			
				20MHz		40MHz	
				800ns GI	400ns GI	800ns GI	400ns GI
1	0	BPSK	1/2	6.5	7.2	13.5	15.0
1	1	QPSK	1/2	13.0	14.4	27.0	30.0
1	2	QPSK	3/4	19.5	21.7	40.5	45.0
1	3	16-QAM	1/2	26.0	28.9	54.0	60.0
1	4	16-QAM	3/4	39.0	43.3	81.0	90.0
1	5	64-QAM	2/3	52.0	57.8	108.0	120.0
1	6	64-QAM	3/4	58.5	65.0	121.5	135.0
1	7	64-QAM	5/6	65.0	72.2	135.0	150.0
Note 1: Support of 400ns GI is optional on transmit and receive.							

Table 1 – MCS parameters for TX Antenna number = 1

1.4 Channel List

IEEE 802.11b/g & IEEE 802.11n(20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz	-	-

IEEE 802.11n(40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
003	2422 MHz	004	2427 MHz	005	2432 MHz	006	2437 MHz
007	2442 MHz	008	2447 MHz	009	2452 MHz	-	-

Note: The General Description of the Item, antenna information, Data Rate and Channel List in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Test Mode	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)

2.2 Support / Auxiliary equipment / unit / Test software for the EUT

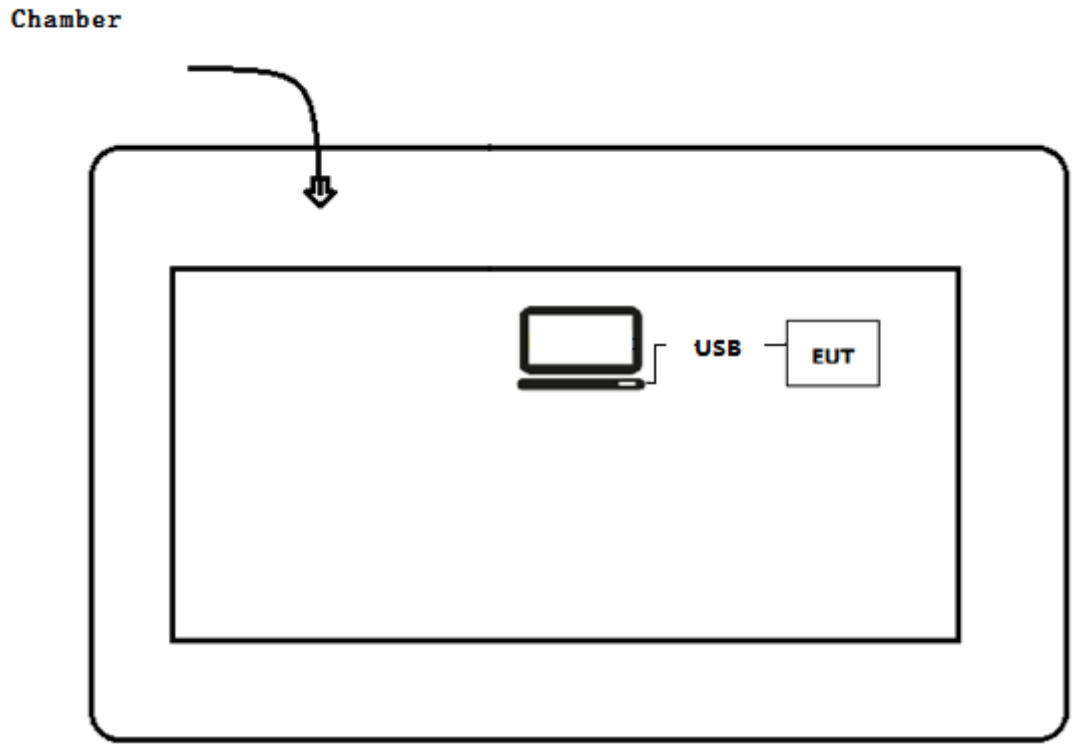
The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
USB Control Cable	Serial to USB	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
IPOP	V4.1	N/A	N/A

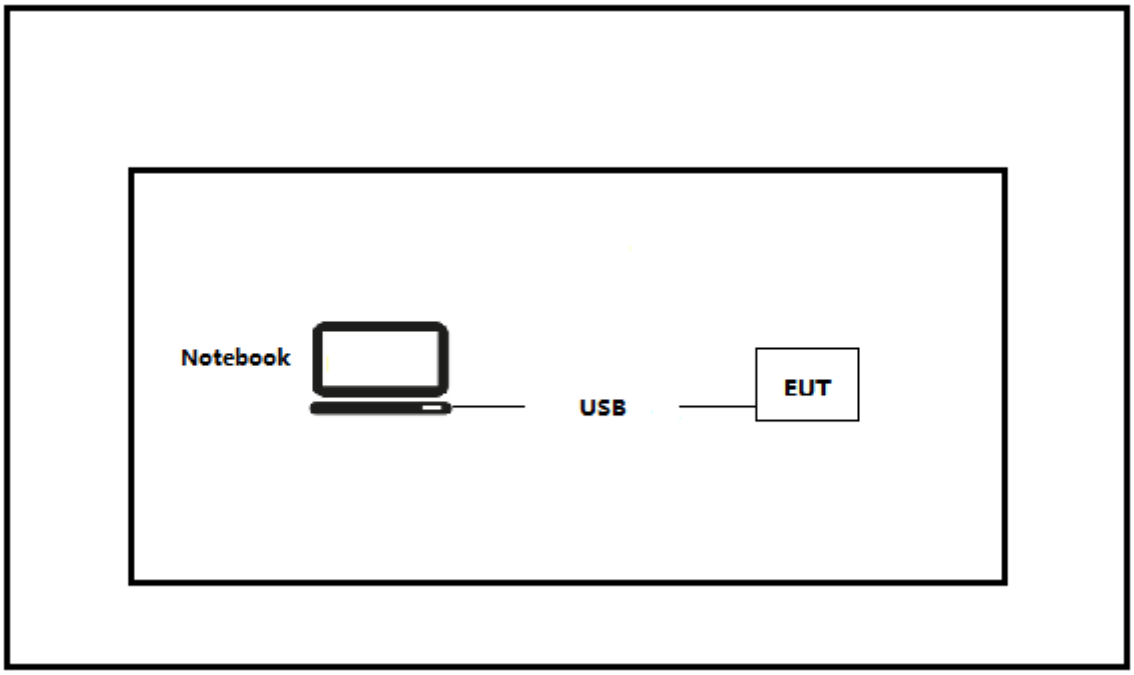
2.3 Test Configuration / Block diagram used for tests

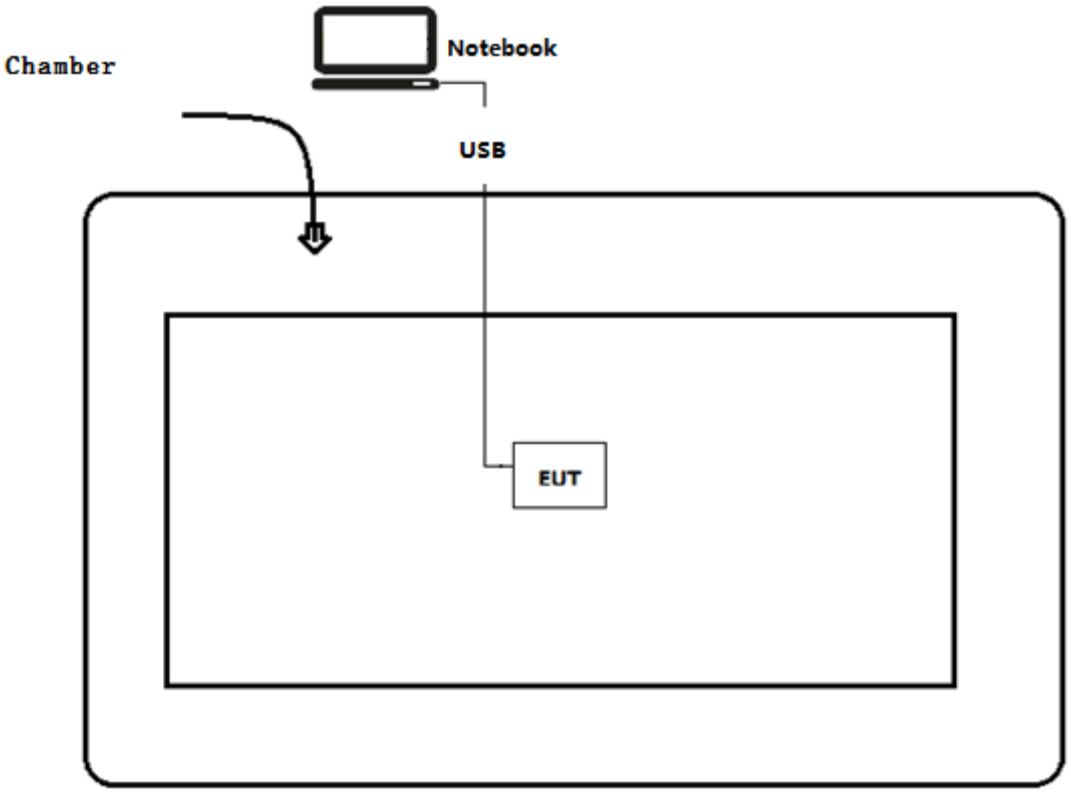
The following test setup / configuration / block diagram has been used during the tests:

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Conducted test



Test setup Diagram- Conducted test


2.4 Testing process

1	Setup the EUT as shown in Section 2.4.
2	Input the commands.
3	Configure the test mode, the test channel, and the data rate.
4	Start the continuous Transmitter.
5	Verify that the EUT works properly.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15 Subpart C Section 15.247	2020	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 D01V05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247
RSS-Gen Issue 5 Amendment 1	2019	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2	2017	Digital Transmission Systems (DTSs),Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

3.2 Overview of results

Requirement – Test case	Basic standard(s)	Verdict	Remark
AC Power Line Conducted Emission	FCC 15.207	PASS	---
Emissions in restricted frequency bands	FCC 15.247(d), 15.209	PASS	---
Emissions in non-restricted frequency bands	FCC 15.247(d)	PASS	---
Radiated Emission Band Edge	FCC 15.247(d), 15.209	PASS	---
Fundamental emission output power	FCC 15.247(b)(3)	PASS	---
DTS Bandwidth	FCC 15.247(a)(2)	PASS	---
Power Spectral Density	FCC 15.247(e)	PASS	---
Antenna Requirement	FCC 15.203	PASS	---

Requirement – Test case	Basic standard(s)	Verdict	Remark
AC Power Line Conducted Emission	RSS-Gen Issue 5 Section 8.8	PASS	---
Emissions in restricted frequency bands	RSS-Gen Issue 5 Section 8.9	PASS	---
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section A5.5	PASS	---
Radiated Emission Band Edge	RSS-247 Issue 2 Section A5.5	PASS	---
Occupied Bandwidth	RSS-Gen Issue 5 Section 6.6 RSS-247 Issue 2 Section A5.2(1)	PASS	---
Fundamental emission output power	RSS-247 Issue 2 Section A5.4(4)	PASS	---
Power Spectral Density	RSS-247 Issue 2 Section A5.2(2)	PASS	---
Antenna Requirement	RSS-Gen Issue 5 Section 8.3	PASS	---
Supplementary information:			

3.3 Test Facility

USA	**:**	**FCC Designation Number: CN1199**
Canada	**:**	**CAB identifier Number: CN0040**

4 TEST RESULTS

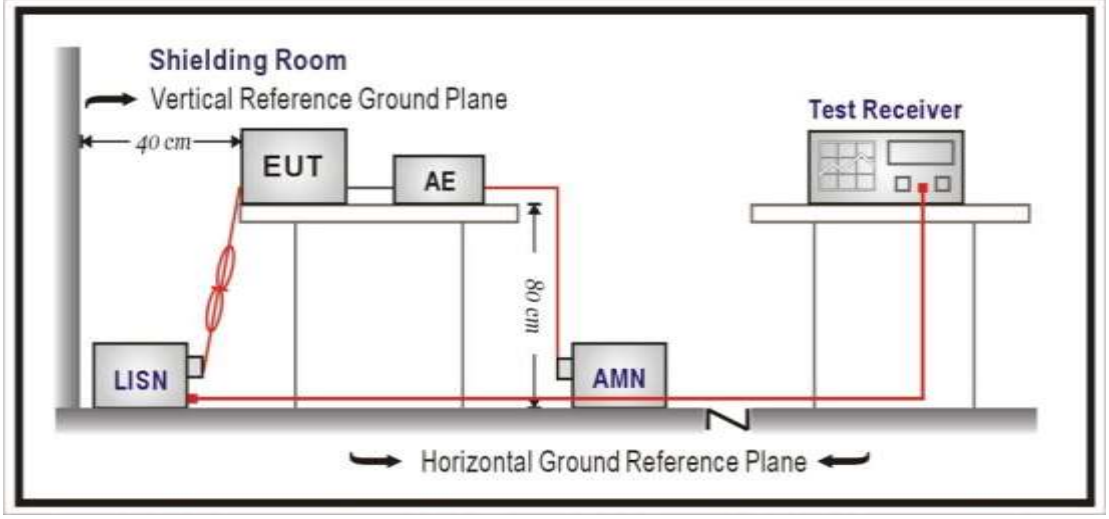
4.1 AC Power Line Conducted Emission	VERDICT: PASS

4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μV)[1)]]	Limit: AV [dB(μV) [1)]]
0,15 - 0,50	66 - 56 [2)]	56 - 46 [2)]
0,50 - 5,0	56	46
5,0 - 30	60	50

[1)] At the transition frequency, the lower limit applies.
[2)] The limit decreases linearly with the logarithm of the frequency.

4.1.2 Test Setup

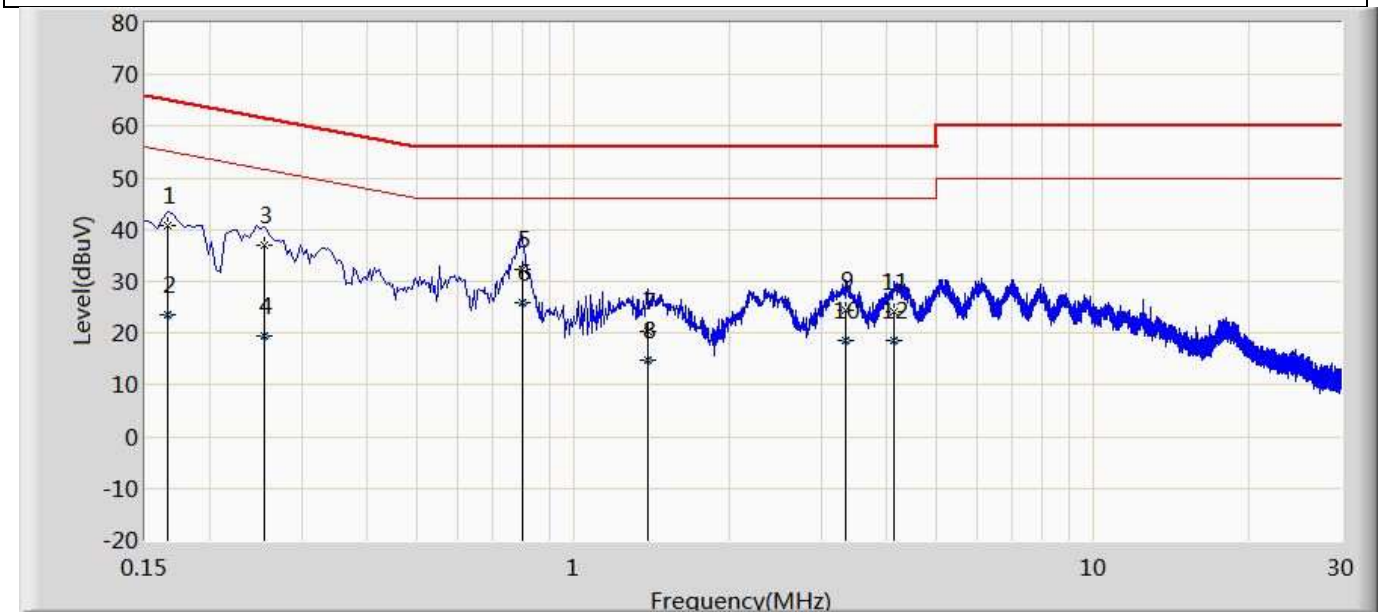


4.1.3 Test Procedure

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

4.1.4 Test Data

Engineer: Pawn	
Site: TR1	Time: 2020/04/13
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode1	

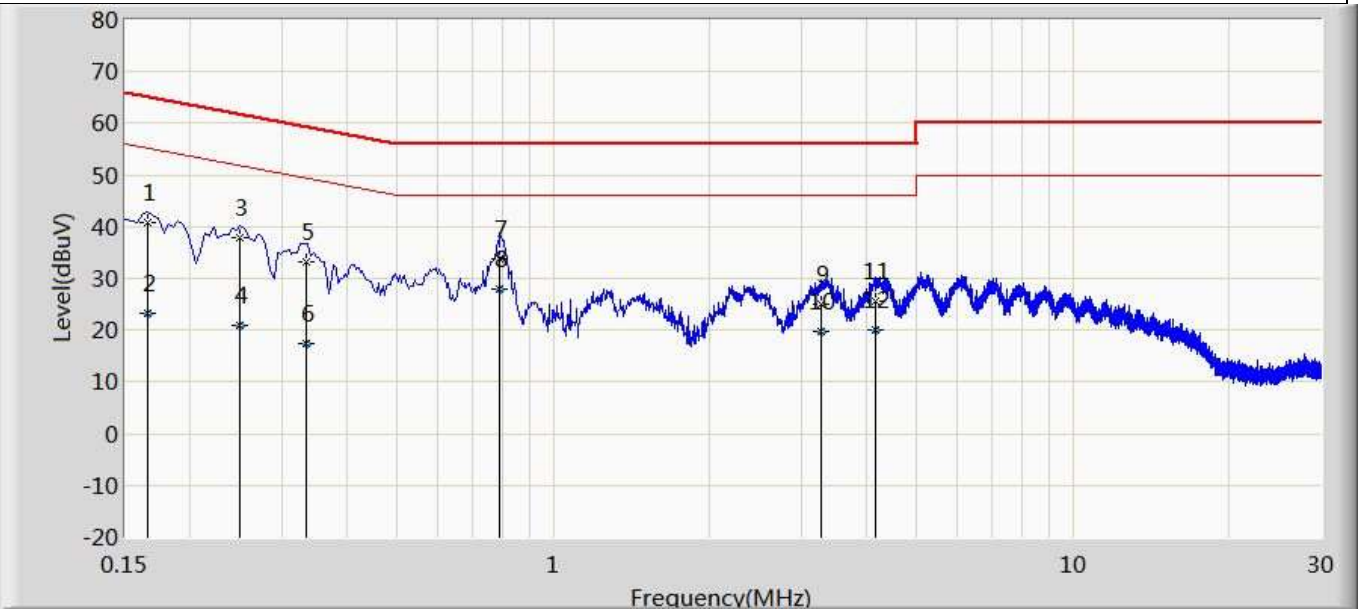


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.153	41.204	31.584	-24.474	65.158	9.593	0.027	0.000	QP
2		0.153	23.649	14.029	-31.649	55.158	9.593	0.027	0.000	AV
3		0.256	37.582	27.952	-24.884	61.625	9.598	0.031	0.000	QP
4		0.256	19.577	9.948	-32.368	51.625	9.598	0.031	0.000	AV
5		0.798	32.608	22.965	-23.872	56.000	9.590	0.053	0.000	QP
6	*	0.798	25.983	16.34	-20.297	46.000	9.590	0.053	0.000	AV
7		1.378	20.464	10.796	-35.656	56.000	9.598	0.070	0.000	QP
8		1.378	14.887	5.219	-31.153	46.000	9.598	0.070	0.000	AV
9		3.341	24.416	14.673	-31.784	56.000	9.628	0.115	0.000	QP
10		3.341	18.596	8.853	-27.524	46.000	9.628	0.115	0.000	AV
11		4.127	24.496	14.728	-32.084	56.000	9.639	0.130	0.000	QP
12		4.127	18.829	9.061	-27.791	46.000	9.639	0.130	0.000	AV

Note:

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

Engineer: Pawn	
Site: TR1	Time: 2020/04/13
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.169	41.308	31.688	-24.71	65.158	9.593	0.027	0.000	QP
2		0.169	23.433	13.813	-31.765	55.158	9.593	0.027	0.000	AV
3		0.252	38.134	28.505	-24.043	61.757	9.598	0.031	0.000	QP
4		0.252	21.387	11.758	-31.271	51.757	9.598	0.031	0.000	AV
5		0.331	33.345	23.715	-26.066	59.351	9.595	0.035	0.000	QP
6		0.331	17.726	8.095	-32.266	49.351	9.595	0.035	0.000	AV
7		0.790	33.849	24.206	-22.211	56.000	9.590	0.052	0.000	QP
8	*	0.790	27.987	18.344	-18.353	46.000	9.590	0.052	0.000	AV
9		3.269	25.093	15.352	-31.247	56.000	9.627	0.114	0.000	QP
10		3.269	19.995	10.254	-26.665	46.000	9.627	0.114	0.000	AV
11		4.152	25.764	15.996	-30.816	56.000	9.639	0.129	0.000	QP
12		4.152	20.368	10.599	-26.392	46.000	9.639	0.129	0.000	AV

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

4.2 Emissions in restricted frequency bands — VERDICT: PASS

4.2.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.205; 15.209		
Restricted Bands of operation for FCC			
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	Above 38.6
13.36 – 13.41	--	--	--
Restricted Bands of operation for ISED			
0.090 - 0.110	13.36 - 13.41	960 - 1427	9.0 - 9.2
0.495 - 0.505	16.42 - 16.423	1435 - 1626.5	9.3 - 9.5
2.1735 - 2.1905	16.69475 - 16.69525	1645.5 - 1646.5	10.6 - 12.7
3.020 - 3.026	16.80425 - 16.80475	1660 - 1710	13.25 - 13.4
4.125 - 4.128	25.5 - 25.67	1718.8 - 1722.2	14.47 - 14.5
4.17725 - 4.17775	37.5 - 38.25	2200 - 2300	15.35 - 16.2
4.20725 - 4.20775	73 - 74.6	2310 - 2390	17.7 - 21.4
5.677 - 5.683	74.8 - 75.2	2483.5 - 2500	22.01 - 23.12
6.215 - 6.218	108 - 138	2655 - 2900	23.6 - 24.0
6.26775 - 6.26825	149.9 - 150.05	3260 - 3267	31.2 - 31.8
6.31175 - 6.31225	156.52475 - 156.52525	3332 - 3339	36.43 - 36.5
8.291 - 8.294	156.7 - 156.9	3345.8 - 3358	Above 38.6
8.362 - 8.366	162.0125 - 167.17	3500 - 4400	--
8.37625 - 8.38675	167.72 - 173.2	4500 - 5150	--
8.41425 - 8.41475	240 - 285	5350 - 5460	--
12.29 - 12.293	322 - 335.4	7250 - 7750	--
12.51975 - 12.52025	399.9 - 410	8025 - 8500	--
12.57675 - 12.57725	608 - 614	--	--

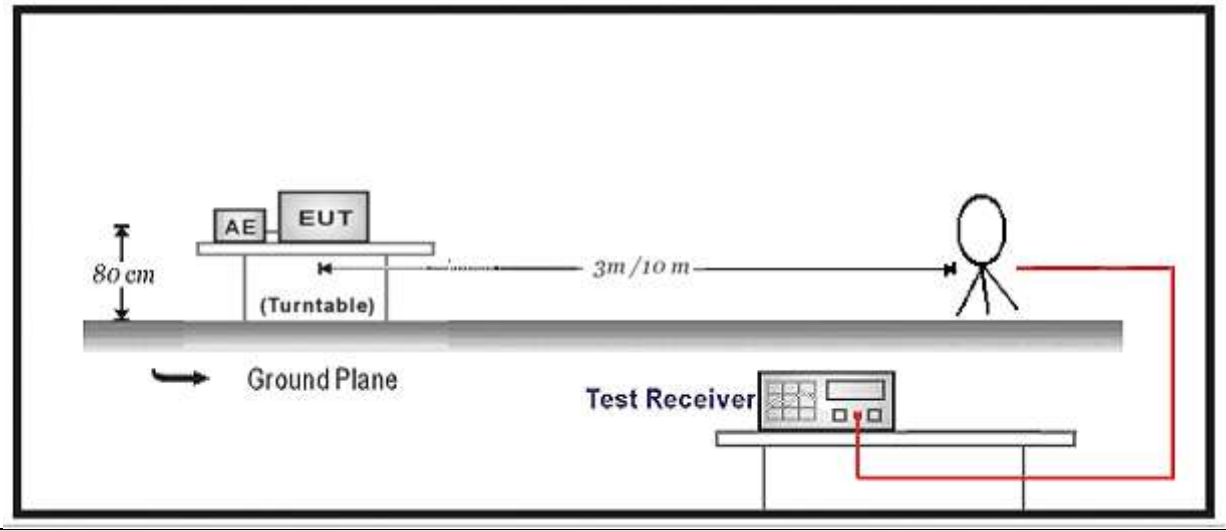
Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)
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).

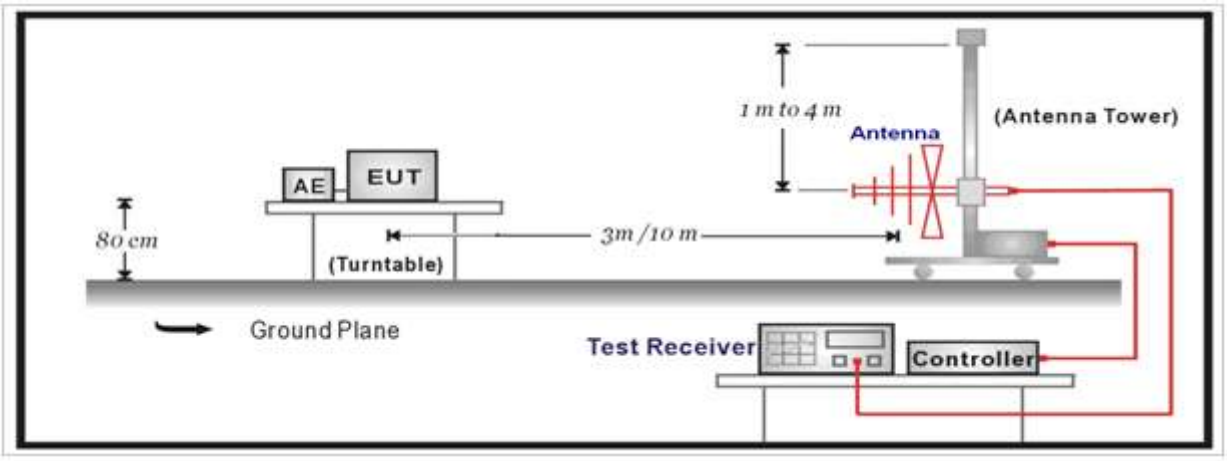
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated 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).

4.2.2 Test Setup

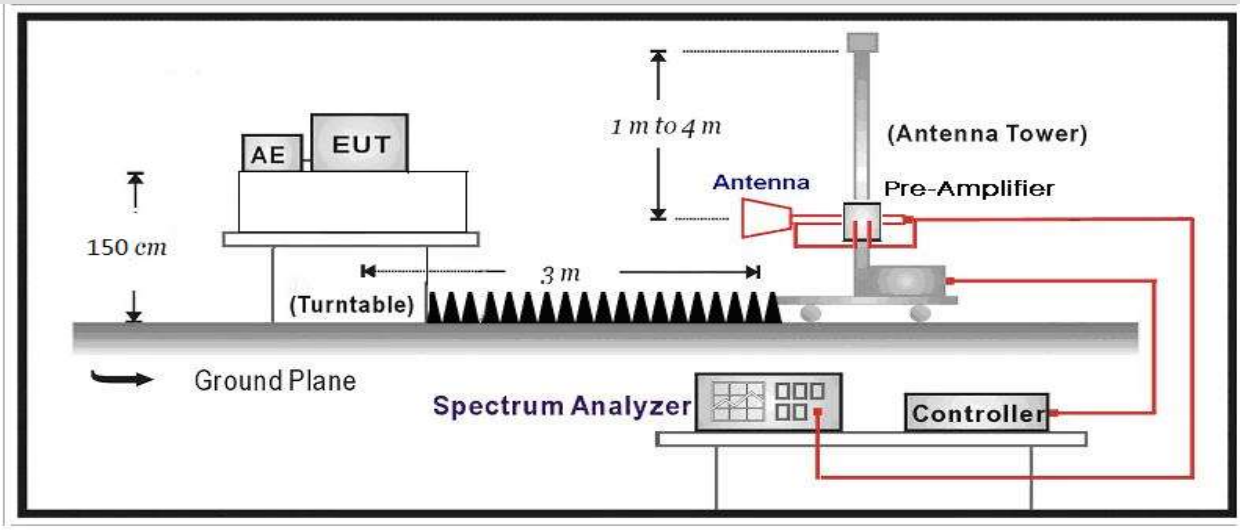
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.2.3 Test Procedure

	References Rule	Chapter	Description
☒	ANSI C63.10	11.12	Emissions in restricted frequency bands
	☒ ANSI C63.10	11.12.1	Radiated emission measurements
	☒ ANSI C63.10	6.3	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

4.2.4 Test Data

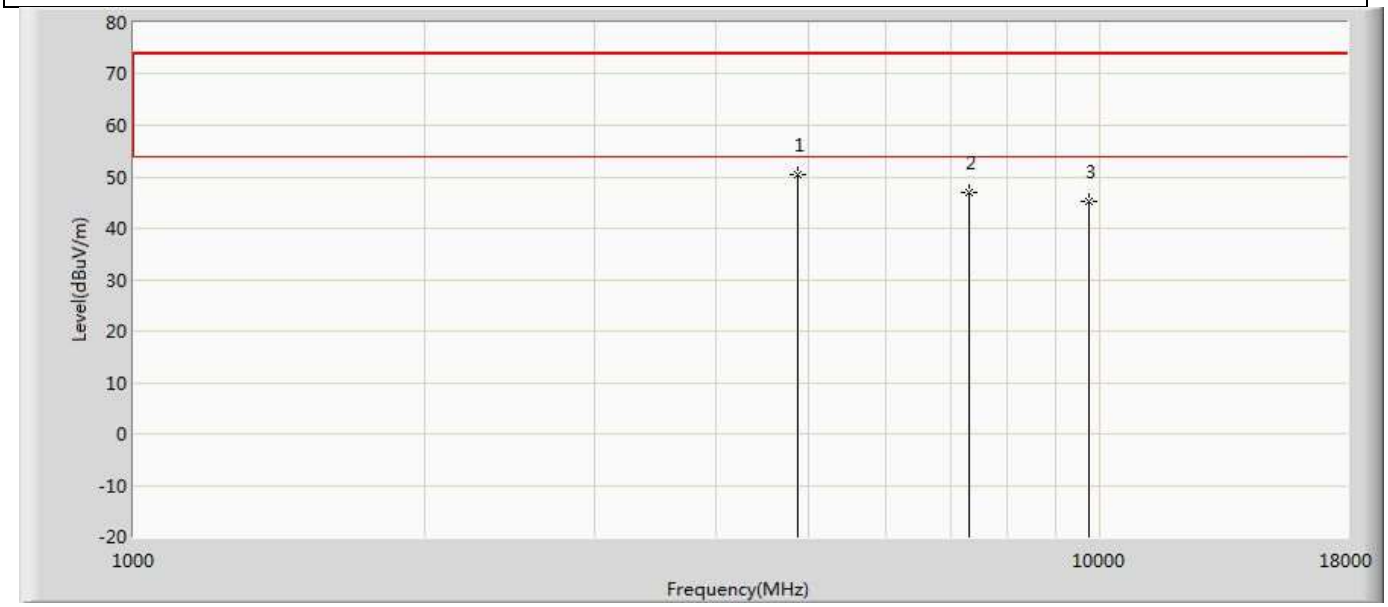
Profile: 2040170R	Page No.: 57
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	51.563	48.063	-22.437	74.000	3.500	PK
2		7236.000	45.497	38.649	-28.503	74.000	6.847	PK
3		9648.000	44.924	36.392	-29.076	74.000	8.531	PK

Profile: 2040170R	Page No.: 58
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	52.958	49.458	-21.042	74.000	3.500	PK
2		7236.000	44.571	37.723	-29.429	74.000	6.847	PK
3		9648.000	45.076	36.544	-28.924	74.000	8.531	PK

Profile: 2040170R	Page No.: 59
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4874.000	50.410	46.723	-23.590	74.000	3.687	PK
2		7311.000	46.980	40.350	-27.020	74.000	6.630	PK
3		9748.000	45.237	36.617	-28.763	74.000	8.620	PK

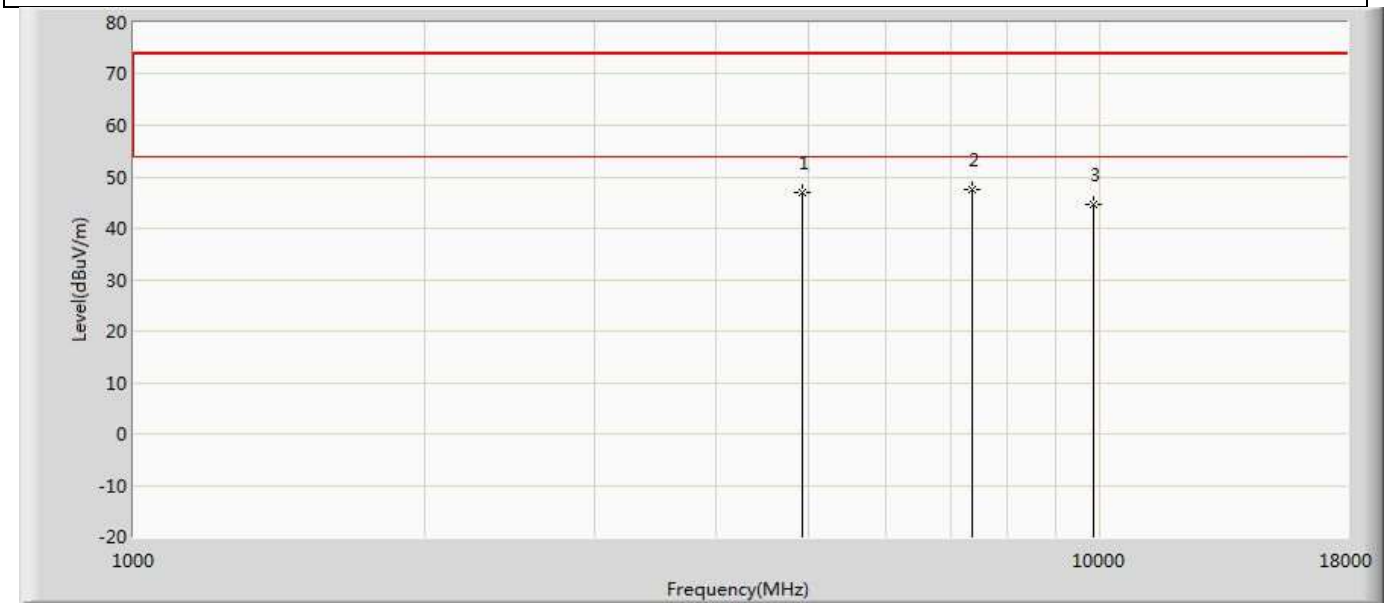
Profile: 2040170R	Page No.: 60
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4874.000	50.570	46.883	-23.430	74.000	3.687	PK
2		7311.000	48.233	41.603	-25.767	74.000	6.630	PK
3		9748.000	44.983	36.363	-29.017	74.000	8.620	PK

Profile: 2040170R	Page No.: 61
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	

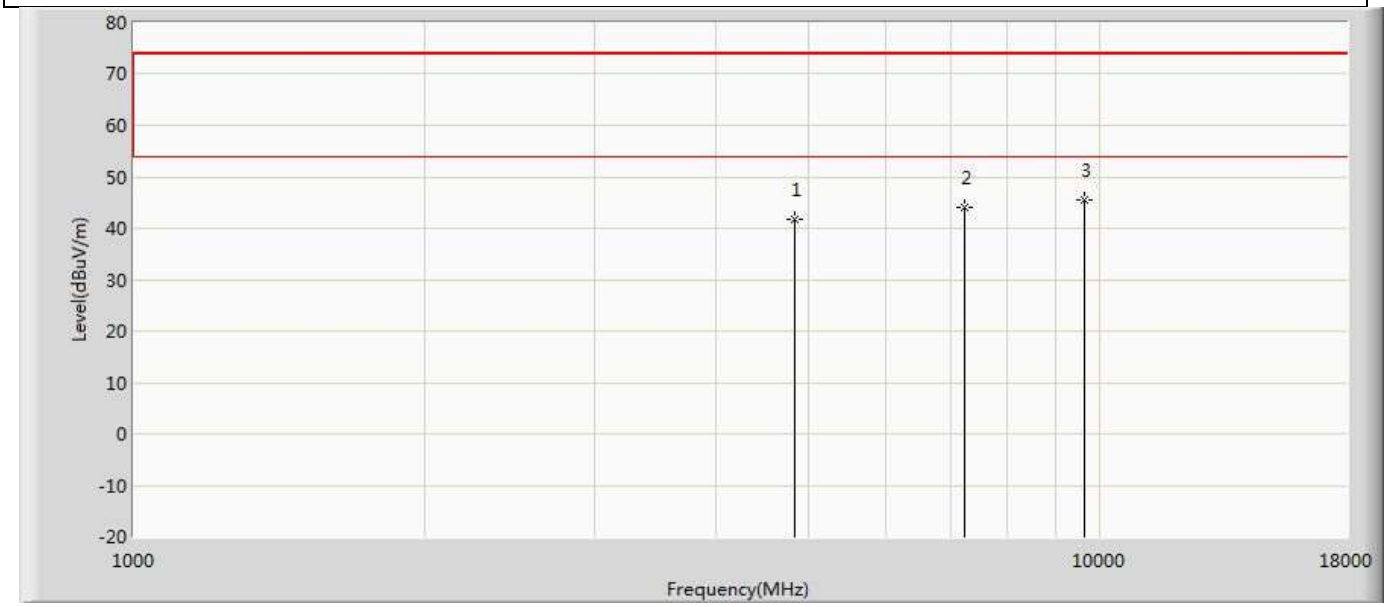
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	47.296	43.732	-26.704	74.000	3.563	PK
2	*	7386.000	47.781	40.997	-26.219	74.000	6.783	PK
3		9848.000	44.604	36.147	-29.396	74.000	8.458	PK

Profile: 2040170R	Page No.: 62
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



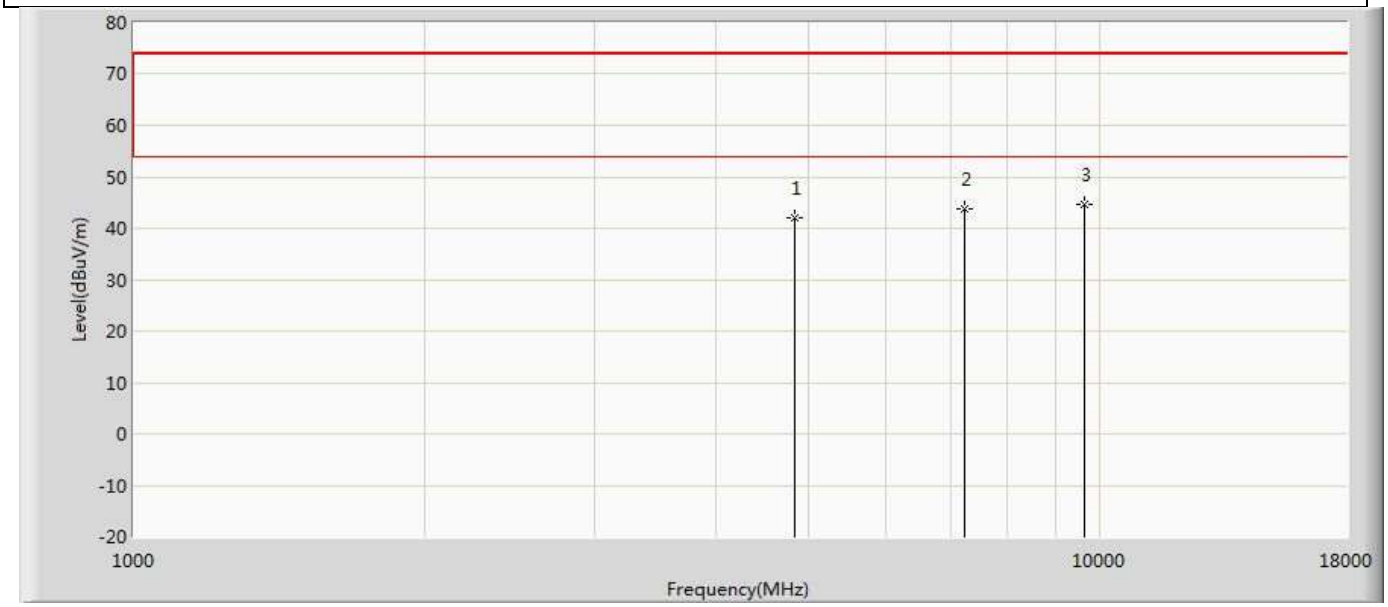
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	46.846	43.282	-27.154	74.000	3.563	PK
2	*	7386.000	47.424	40.640	-26.576	74.000	6.783	PK
3		9848.000	44.521	36.064	-29.479	74.000	8.458	PK

Profile: 2040170R	Page No.: 63
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.851	38.351	-32.149	74.000	3.500	PK
2		7236.000	43.927	37.079	-30.073	74.000	6.847	PK
3	*	9648.000	45.535	37.003	-28.465	74.000	8.531	PK

Profile: 2040170R	Page No.: 64
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	

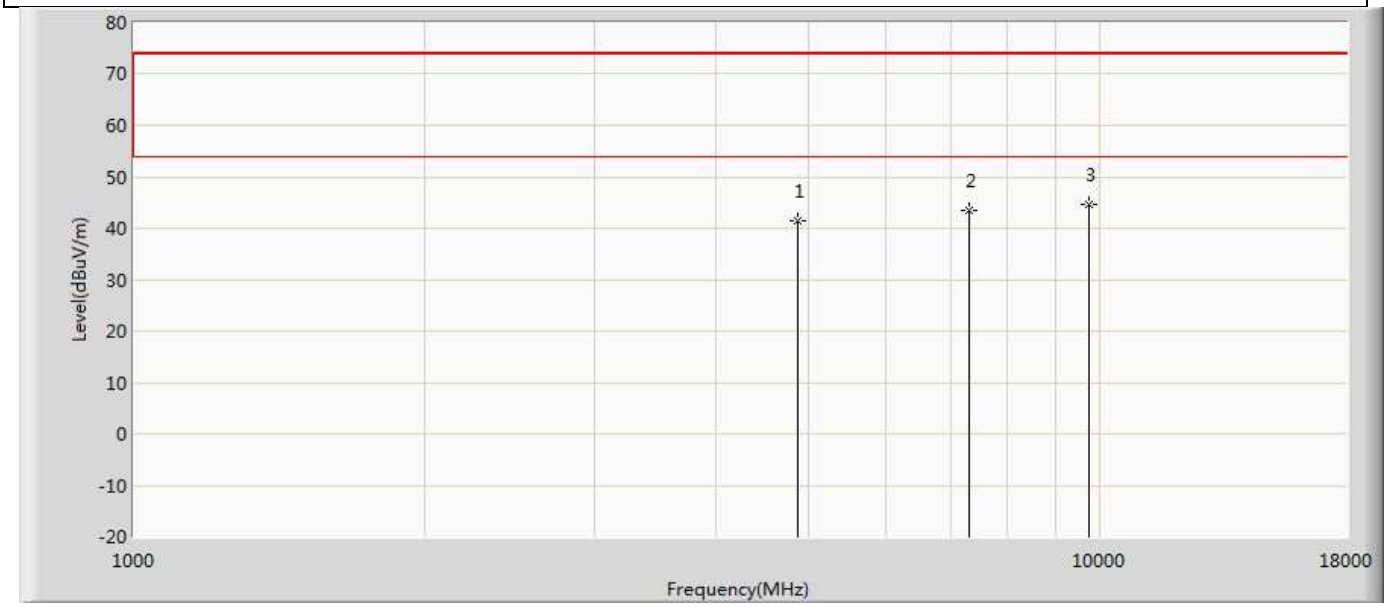


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	42.027	38.527	-31.973	74.000	3.500	PK
2		7236.000	43.627	36.779	-30.373	74.000	6.847	PK
3	*	9648.000	44.613	36.081	-29.387	74.000	8.531	PK

Profile: 2040170R	Page No.: 65
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11g	

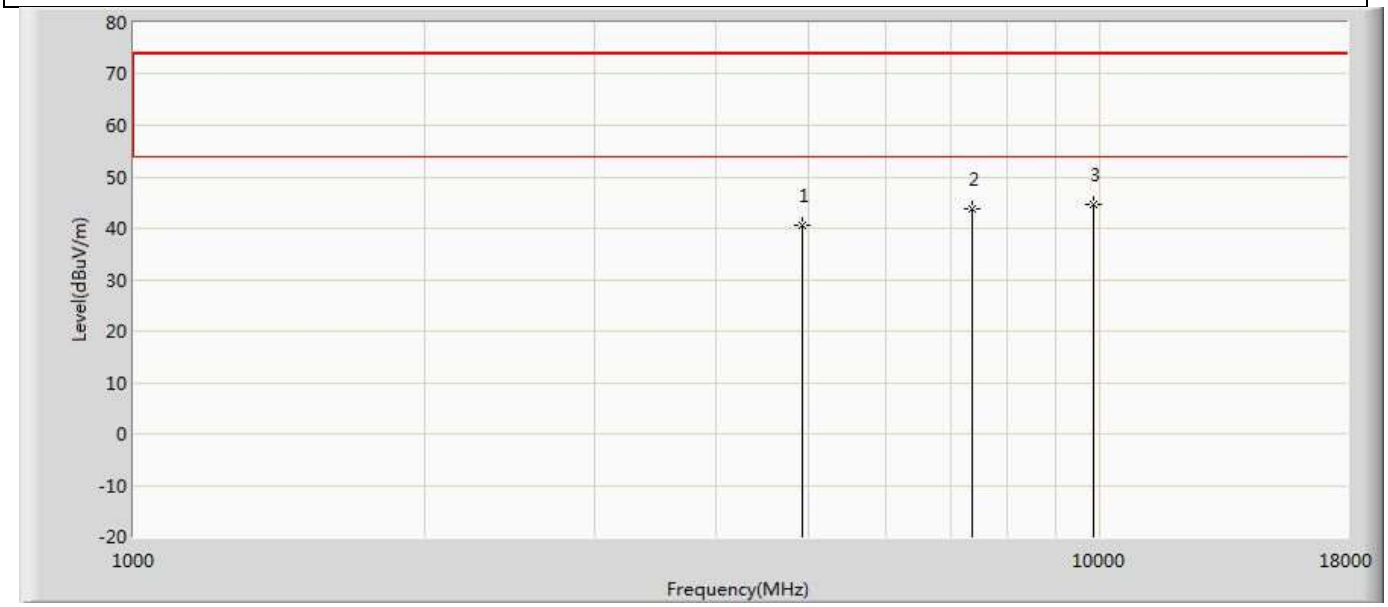
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.653	36.966	-33.347	74.000	3.687	PK
2		7311.000	43.426	36.796	-30.574	74.000	6.630	PK
3	*	9748.000	44.319	35.699	-29.681	74.000	8.620	PK

Profile: 2040170R	Page No.: 66
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11g	



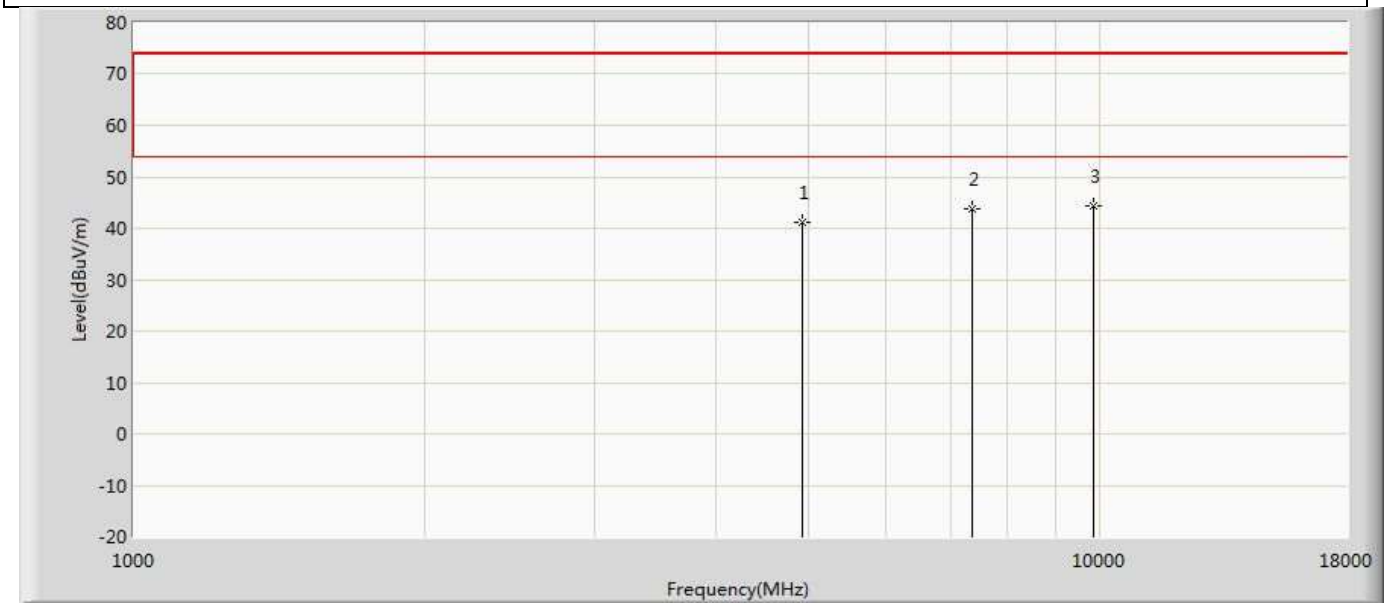
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	41.348	37.661	-32.652	74.000	3.687	PK
2		7311.000	43.405	36.775	-30.595	74.000	6.630	PK
3	*	9748.000	44.681	36.061	-29.319	74.000	8.620	PK

Profile: 2040170R	Page No.: 67
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



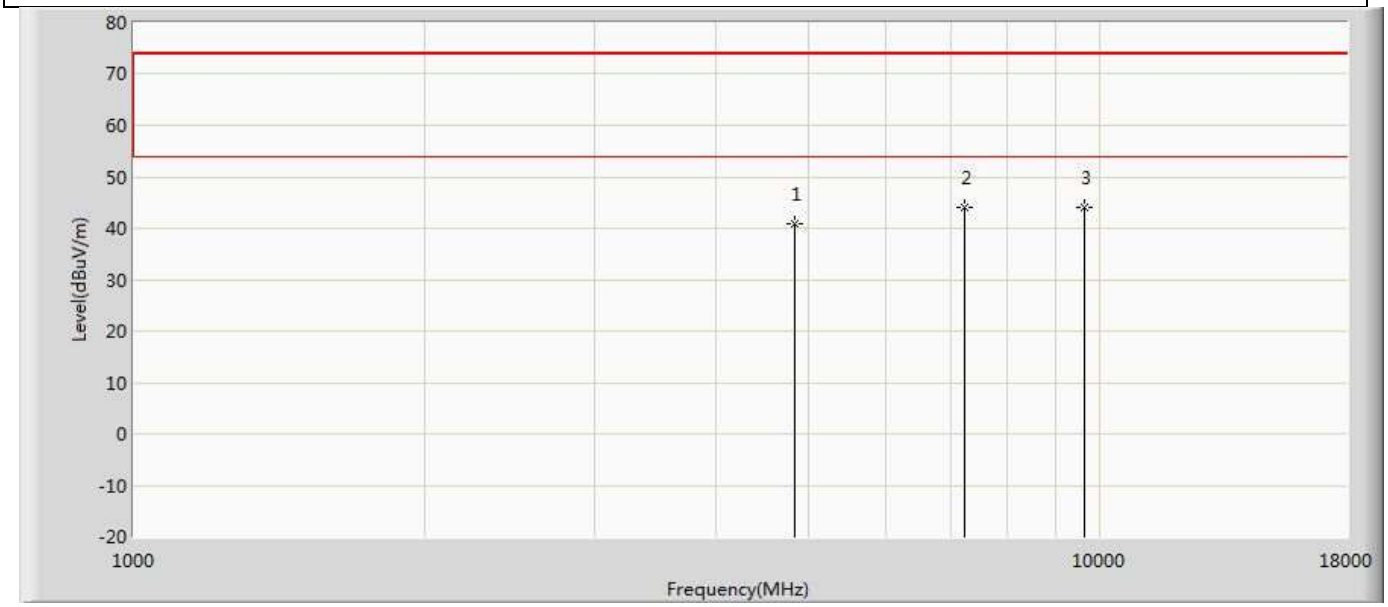
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	40.554	36.990	-33.446	74.000	3.563	PK
2		7386.000	43.843	37.059	-30.157	74.000	6.783	PK
3	*	9848.000	44.624	36.167	-29.376	74.000	8.458	PK

Profile: 2040170R	Page No.: 68
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	41.018	37.454	-32.982	74.000	3.563	PK
2		7386.000	43.639	36.855	-30.361	74.000	6.783	PK
3	*	9848.000	44.251	35.794	-29.749	74.000	8.458	PK

Profile: 2040170R	Page No.: 69
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	40.819	37.319	-33.181	74.000	3.500	PK
2		7236.000	43.939	37.091	-30.061	74.000	6.847	PK
3	*	9648.000	44.166	35.634	-29.834	74.000	8.531	PK

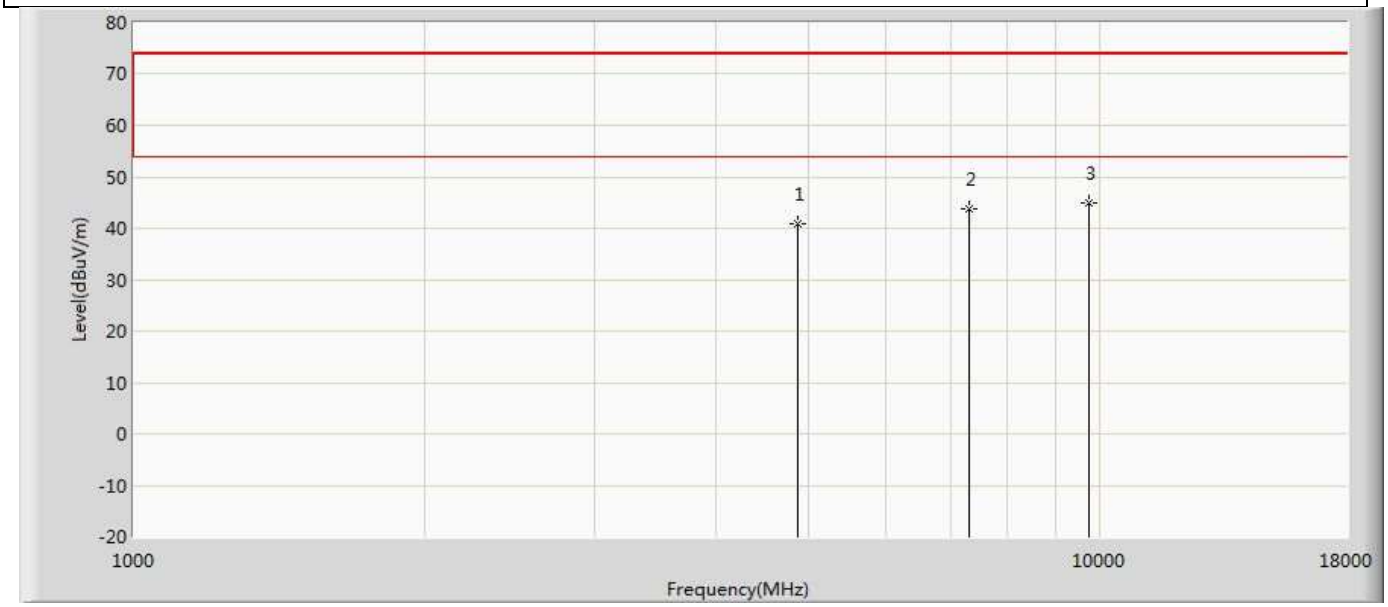
Profile: 2040170R	Page No.: 70
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.573	38.073	-32.427	74.000	3.500	PK
2		7236.000	43.680	36.832	-30.320	74.000	6.847	PK
3	*	9648.000	44.185	35.653	-29.815	74.000	8.531	PK

Profile: 2040170R	Page No.: 71
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	

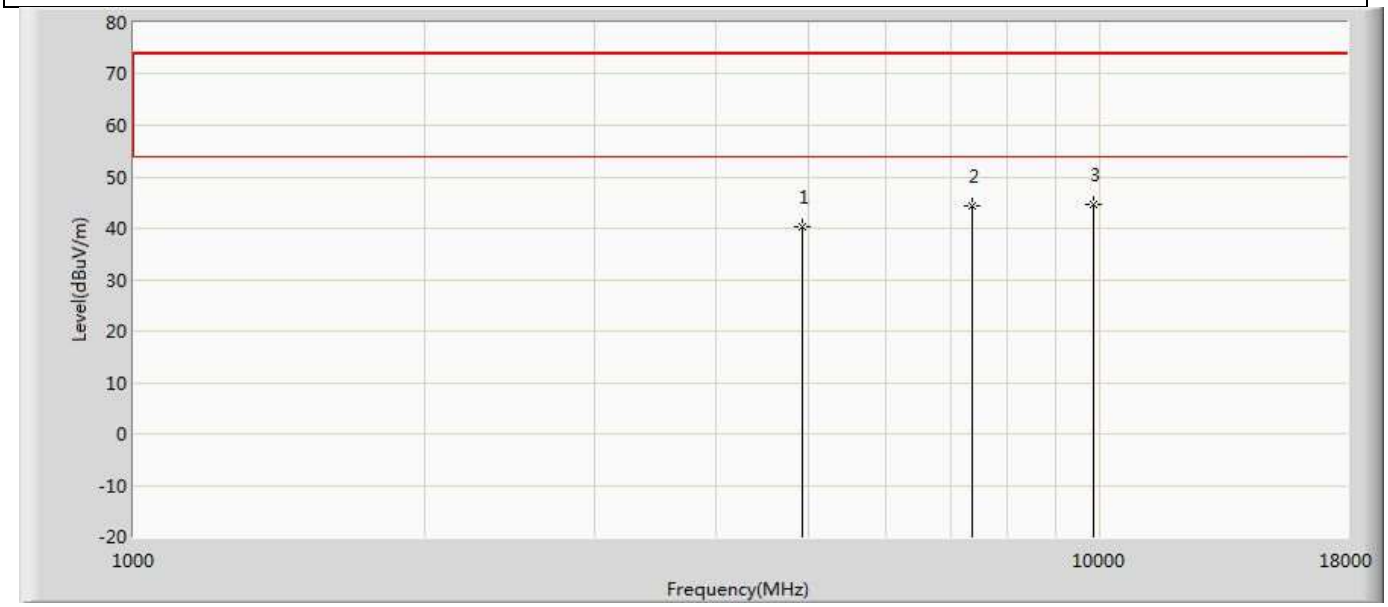
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.975	37.288	-33.025	74.000	3.687	PK
2		7311.000	43.520	36.890	-30.480	74.000	6.630	PK
3	*	9748.000	45.130	36.510	-28.870	74.000	8.620	PK

Profile: 2040170R	Page No.: 72
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.876	37.189	-33.124	74.000	3.687	PK
2		7311.000	43.706	37.076	-30.294	74.000	6.630	PK
3	*	9748.000	44.879	36.259	-29.121	74.000	8.620	PK

Profile: 2040170R	Page No.: 73
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	

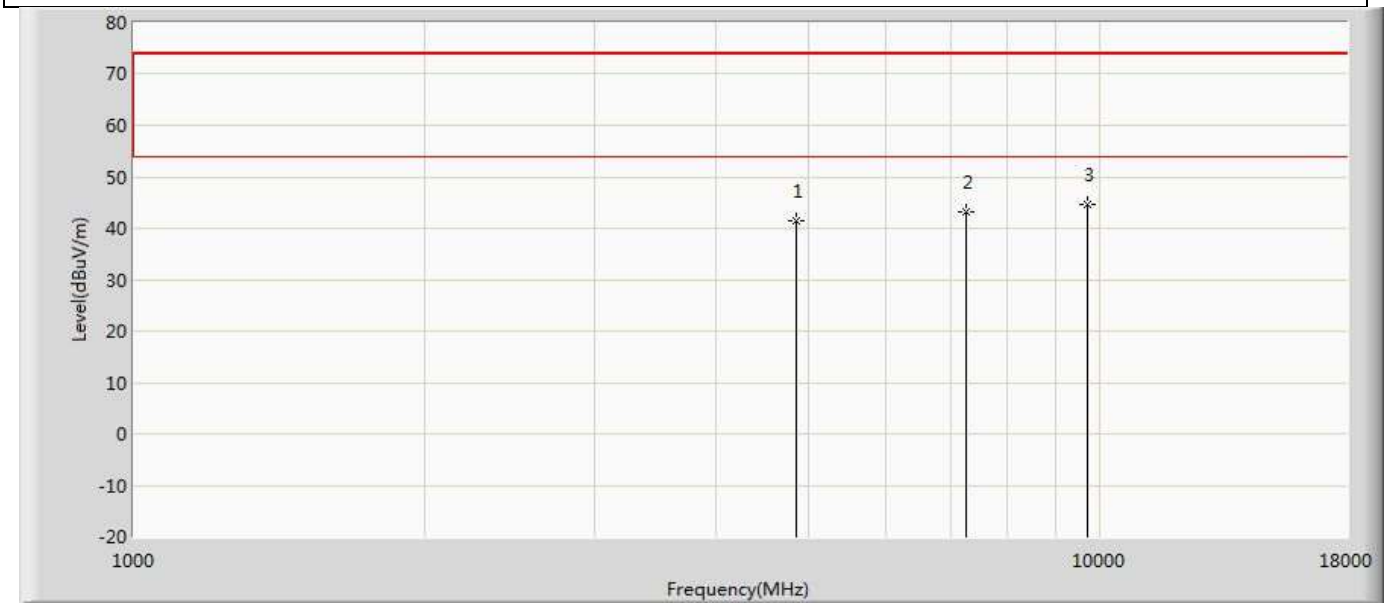


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	40.389	36.825	-33.611	74.000	3.563	PK
2		7386.000	44.242	37.458	-29.758	74.000	6.783	PK
3	*	9848.000	44.627	36.170	-29.373	74.000	8.458	PK

Profile: 2040170R	Page No.: 74
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	

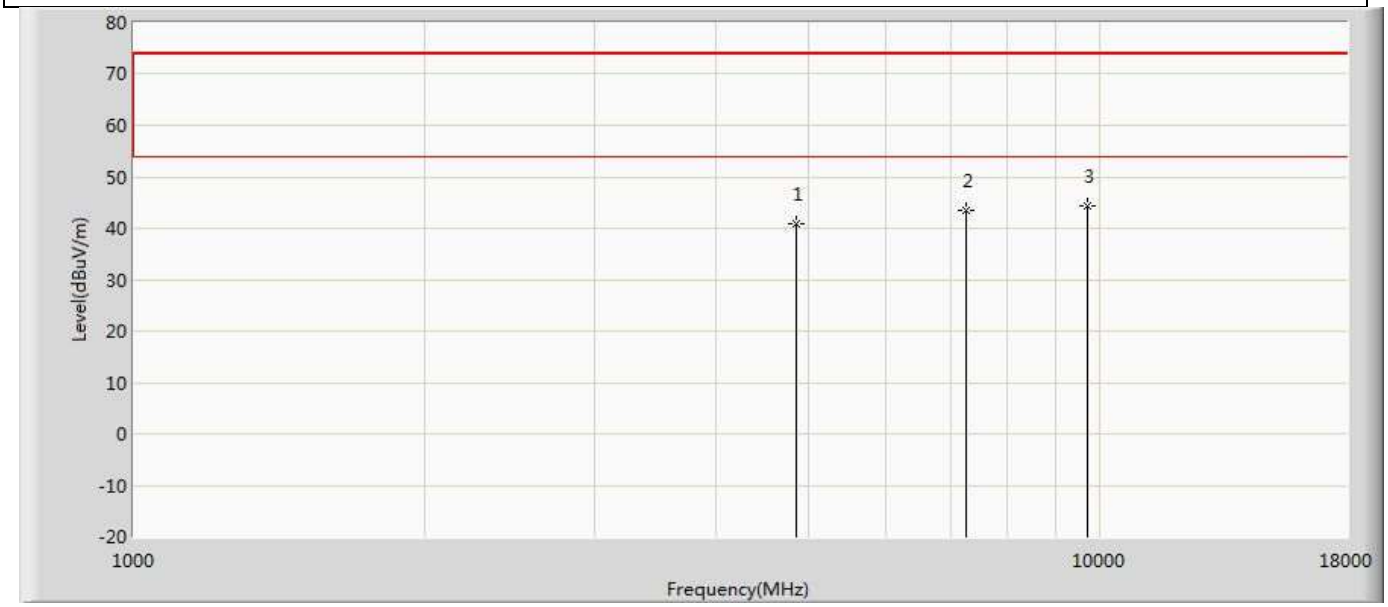
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	41.021	37.457	-32.979	74.000	3.563	PK
2		7386.000	43.476	36.692	-30.524	74.000	6.783	PK
3	*	9848.000	43.759	35.302	-30.241	74.000	8.458	PK

Profile: 2040170R	Page No.: 75
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



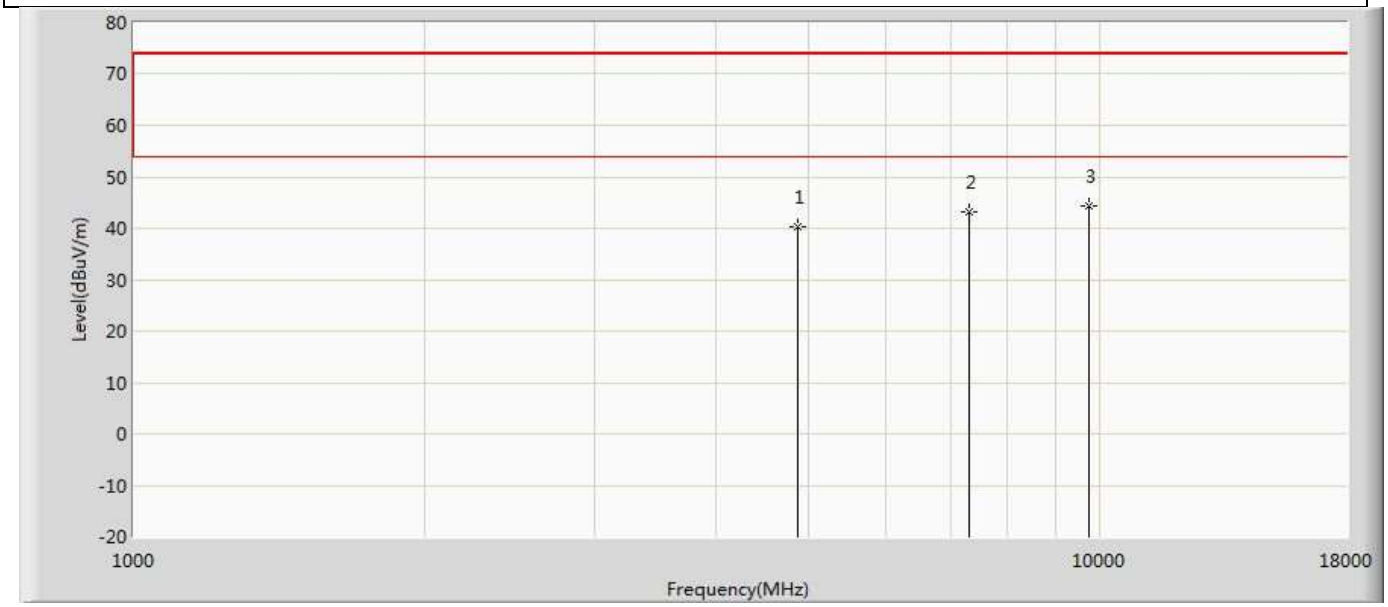
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	41.486	37.810	-32.514	74.000	3.676	PK
2		7266.000	43.099	36.457	-30.901	74.000	6.642	PK
3	*	9688.000	44.582	36.149	-29.418	74.000	8.434	PK

Profile: 2040170R	Page No.: 76
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



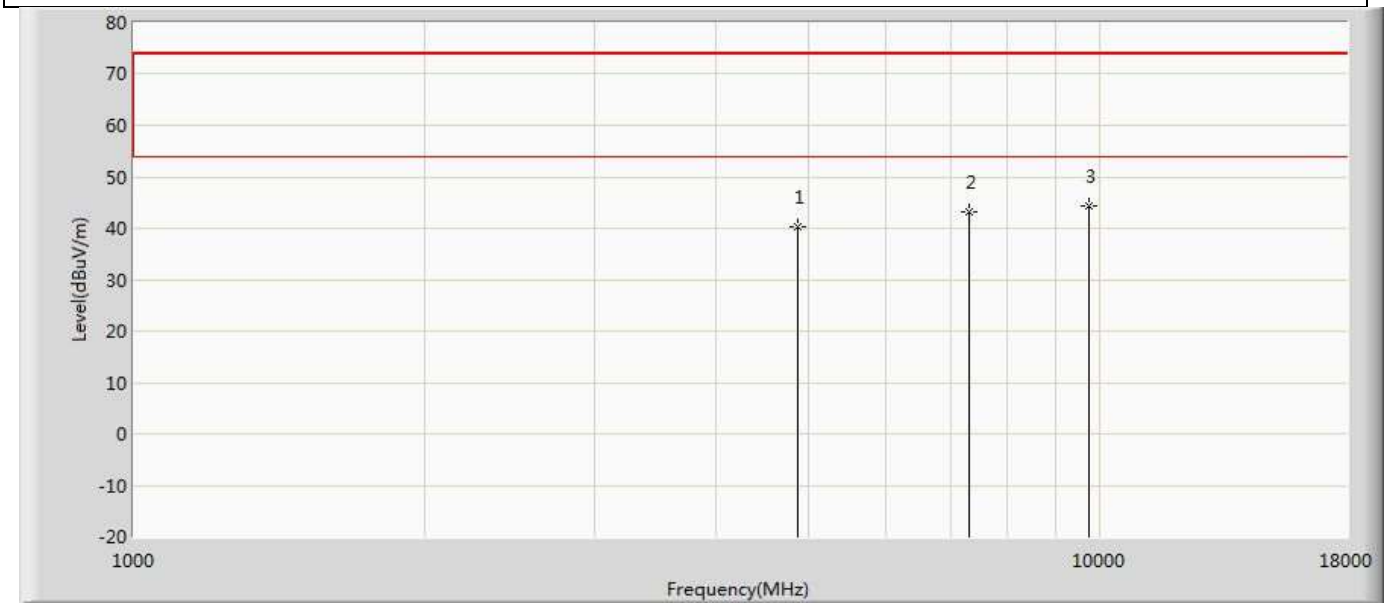
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	40.992	37.316	-33.008	74.000	3.676	PK
2		7266.000	43.367	36.725	-30.633	74.000	6.642	PK
3	*	9688.000	44.417	35.984	-29.583	74.000	8.434	PK

Profile: 2040170R	Page No.: 77
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2437MHz by 802.11n(40MHz)	



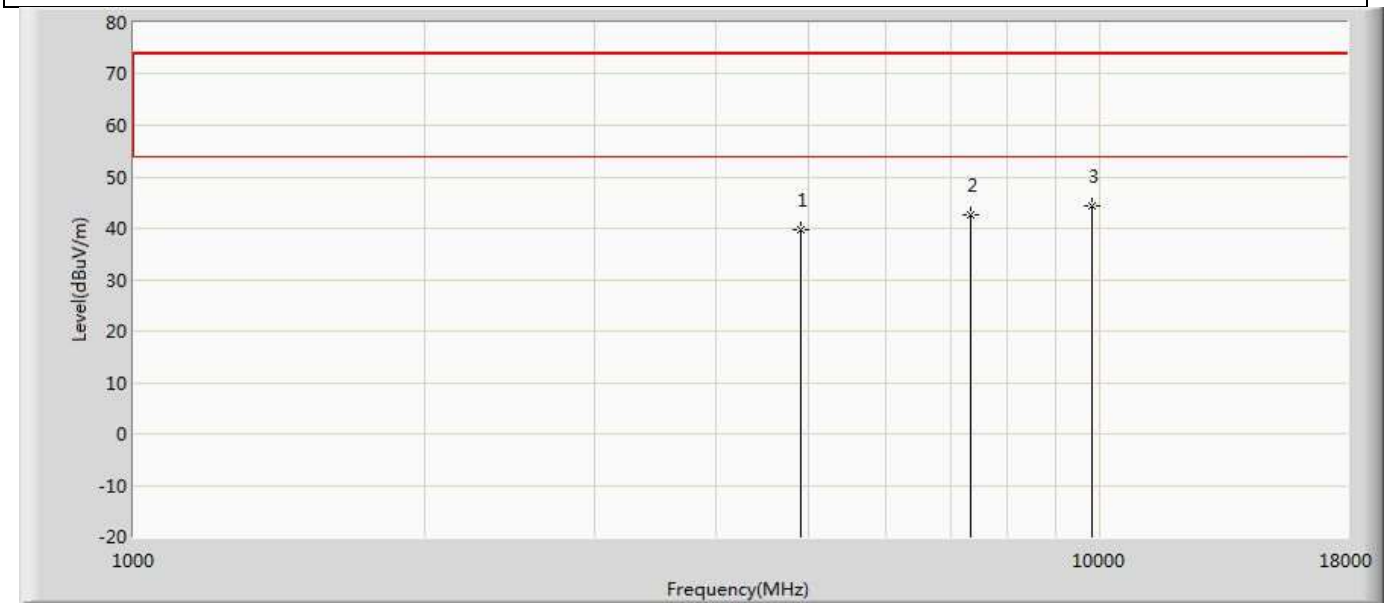
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.288	36.601	-33.712	74.000	3.687	PK
2		7311.000	43.161	36.531	-30.839	74.000	6.630	PK
3	*	9748.000	44.284	35.664	-29.716	74.000	8.620	PK

Profile: 2040170R	Page No.: 78
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2437MHz by 802.11n(40MHz)	



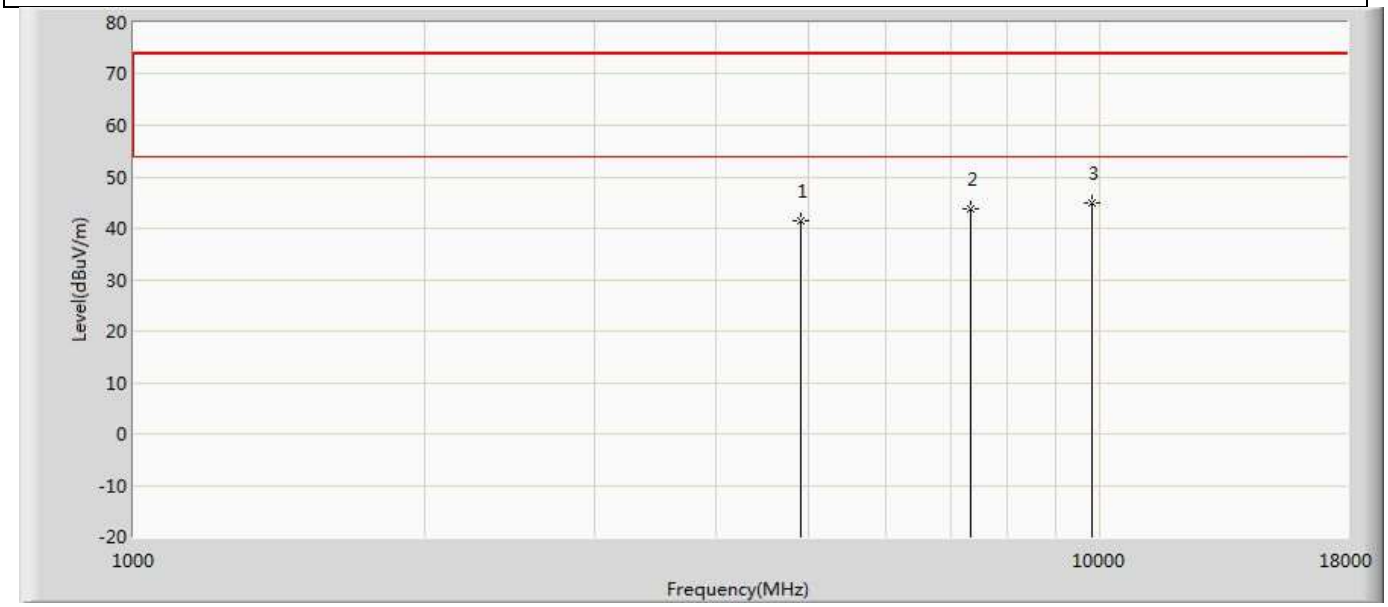
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.189	36.502	-33.811	74.000	3.687	PK
2		7311.000	43.073	36.443	-30.927	74.000	6.630	PK
3	*	9748.000	44.380	35.760	-29.620	74.000	8.620	PK

Profile: 2040170R	Page No.: 79
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	39.844	36.245	-34.156	74.000	3.598	PK
2		7356.000	42.572	35.608	-31.428	74.000	6.964	PK
3	*	9808.000	44.316	35.459	-29.684	74.000	8.857	PK

Profile: 2040170R	Page No.: 80
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 15:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	

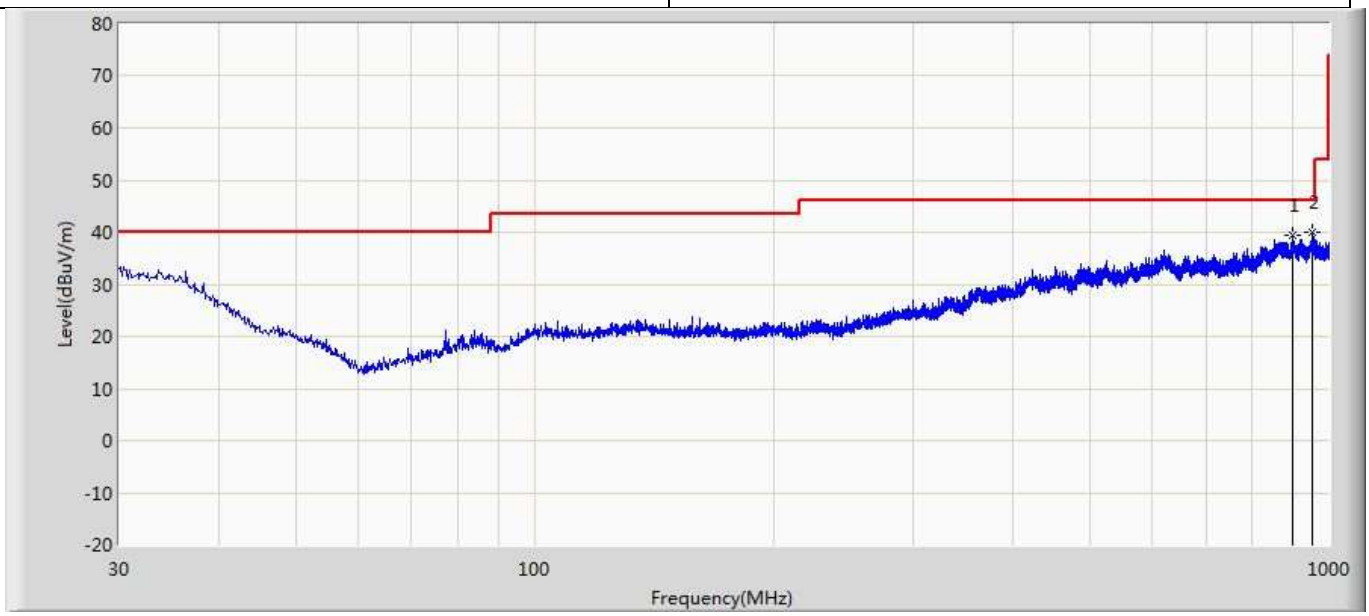


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	41.394	37.795	-32.606	74.000	3.598	PK
2		7356.000	43.698	36.734	-30.302	74.000	6.964	PK
3	*	9808.000	44.826	35.969	-29.174	74.000	8.857	PK

Remark	1. " * ", means this data is the worst emission level. 2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp). 3. The test frequency range, 9kHz~30MHz and Above 18GHz worst case are at least 6dB below the limits, therefore no data appear in the report. 4. 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.

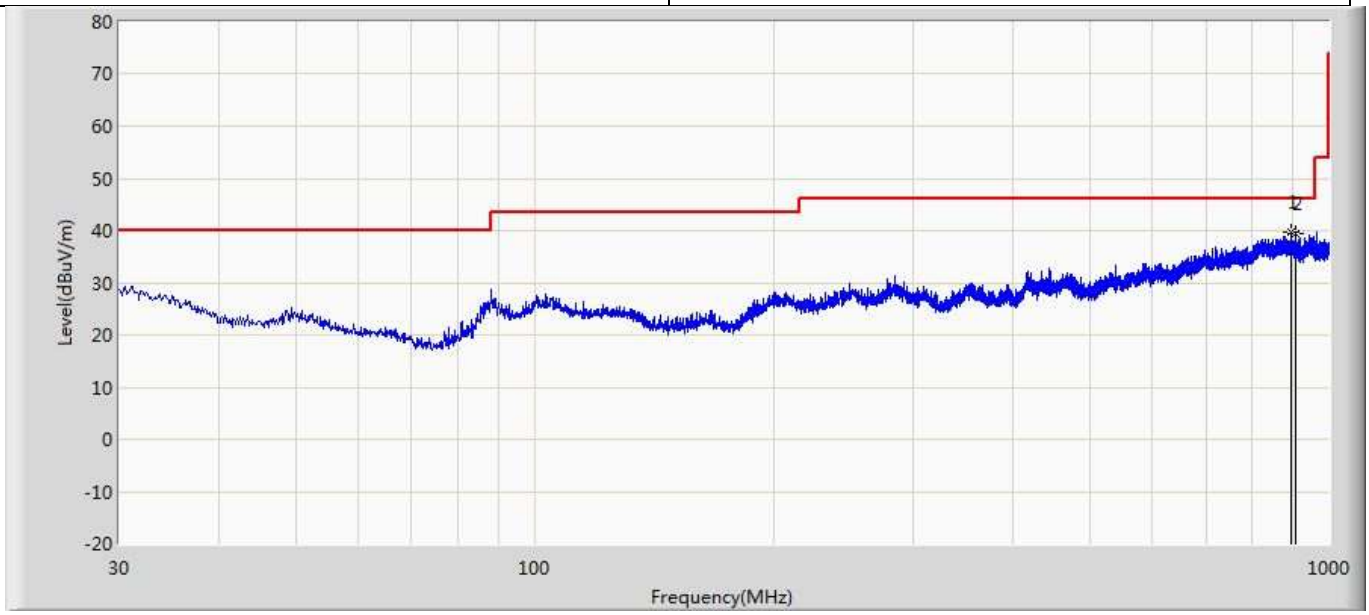
The worst case of Radiated Emission below 1GHz:

Profile: 2040170R	Page No.: 1
Engineer: Pawn	
Site: AC2	Time: 2020/04/13 - 14:16
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/50Hz



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		900.333	39.490	6.262	-6.510	46.000	23.977	9.251	0.000	0	0	PK
2	*	954.653	39.908	6.659	-6.092	46.000	23.890	9.360	0.000	0	0	PK

Profile: 2040170R	Page No.: 2
Engineer: Pawn	
Site: AC2	Time: 2020/04/13 - 14:22
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/50Hz



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	*	895.725	39.636	5.983	-6.364	46.000	24.413	9.239	0.000	0	0	PK
2		909.790	39.548	6.757	-6.452	46.000	23.522	9.269	0.000	0	0	PK

Remark	1. " * ", means this data is the worst emission level. 2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp). 3. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.

4.3 Emissions in non-restricted frequency band	VERDICT: PASS

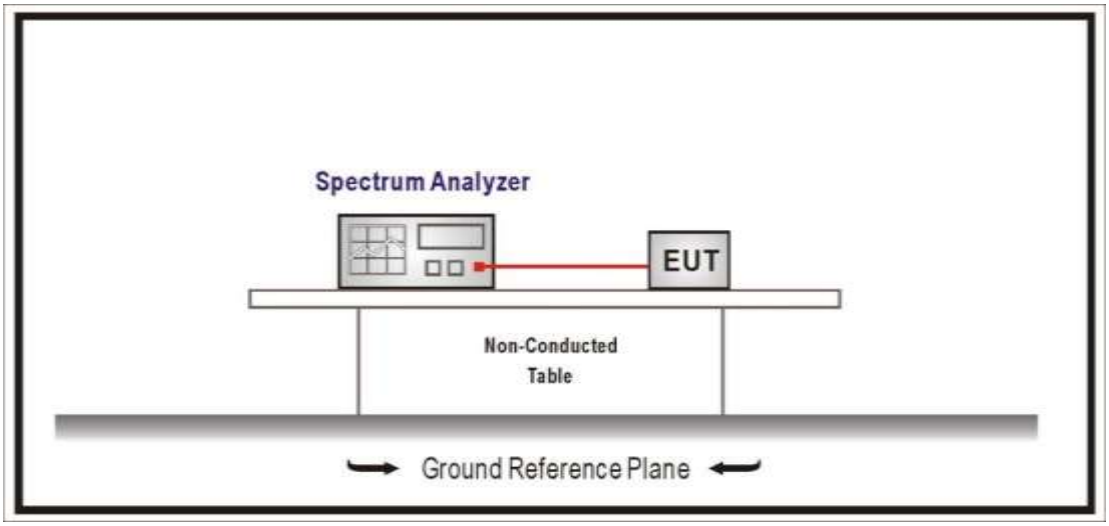
4.3.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d)
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output power(PK detector)	20dBc(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).

4.3.2 Test Setup



4.3.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		11.11	Emissions in non-restricted frequency bands
	☒	ANSI C63.10	11.11.1	General
	☒	ANSI C63.10	11.11.2	Reference level measurement
	☒	ANSI C63.10	11.11.3	Emission level measurement

4.3.4 Test Data

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	1	2412	7.653	2398.015	-32.515	40.168	⩾20	Pass
	11	2462	8.111	2513.179	-45.750	53.861	⩾20	Pass
2	1	2412	-3.568	2399.500	-29.116	25.548	⩾20	Pass
	11	2462	-0.776	2500.000	-50.089	49.313	⩾20	Pass
3	1	2412	-4.656	2400.000	-35.086	30.43	⩾20	Pass
	11	2462	-4.685	2500.000	-52.260	47.575	⩾20	Pass
4	3	2422	-10.817	2400.000	-42.000	31.183	⩾20	Pass
	9	2452	-8.294	2500.000	-52.941	44.647	⩾20	Pass

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

Mode 2 CH01(2412MHz)

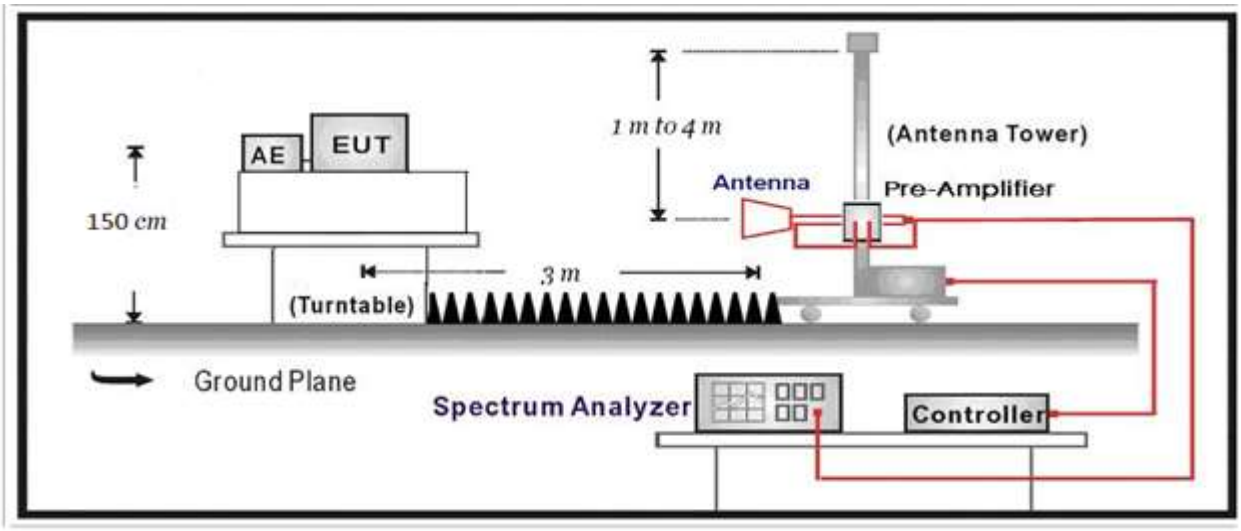
4.4 Radiated Emission Band Edge	VERDICT: PASS

4.4.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d) , 15.205, 15.209			
Frequency bands (MHz)	Detector	Limit (dBμV/m)	RBW (MHz)	Distance (m)
2310-2390 2483.5-2500	PK	74	1	3
	AV	54	1	3
Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.				

4.4.2 Test Setup

Above 1GHz Test Setup:



4.4.3 Test Procedure

	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	6.3	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

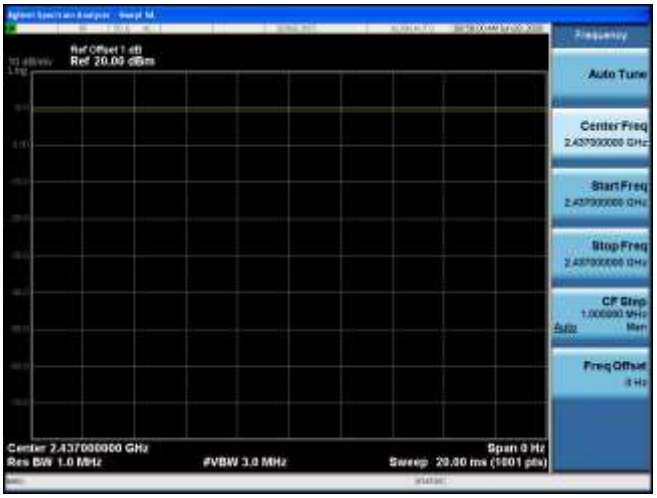
4.4.4 Test Data

Test Mode	Tx On (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
1	--	10Hz	--	100%
2	--	10Hz	--	100%
3	--	10Hz	--	100%
4	--	10Hz	--	100%

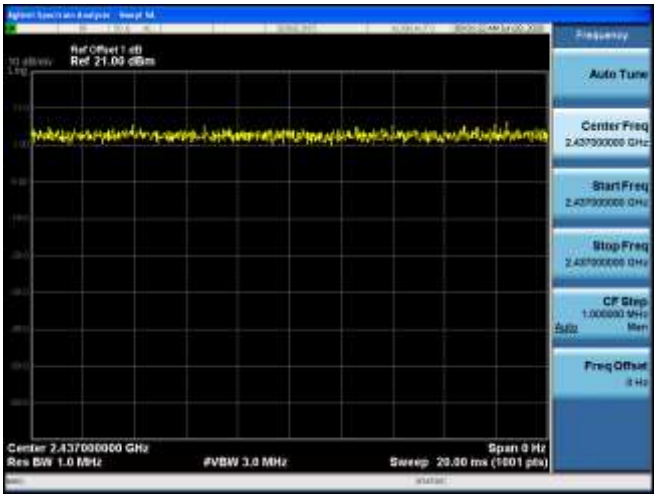
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Note 2: According to KDB 558074, when test for Radiated Emission Band Edge and Radiated Emission, for average detector set: VBW ≥ 1/T will be used.

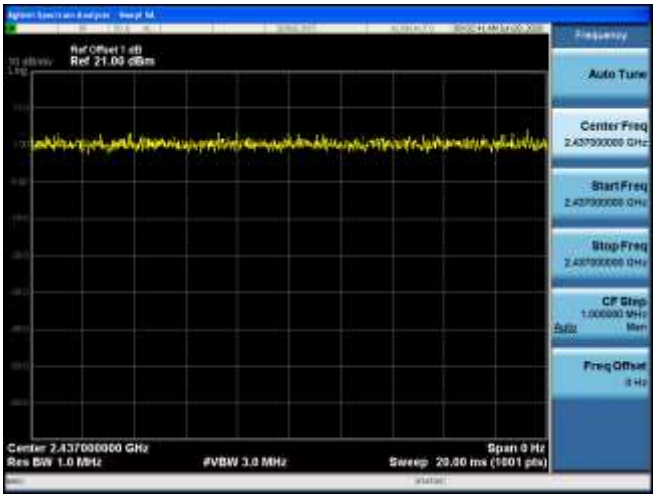
802.11b



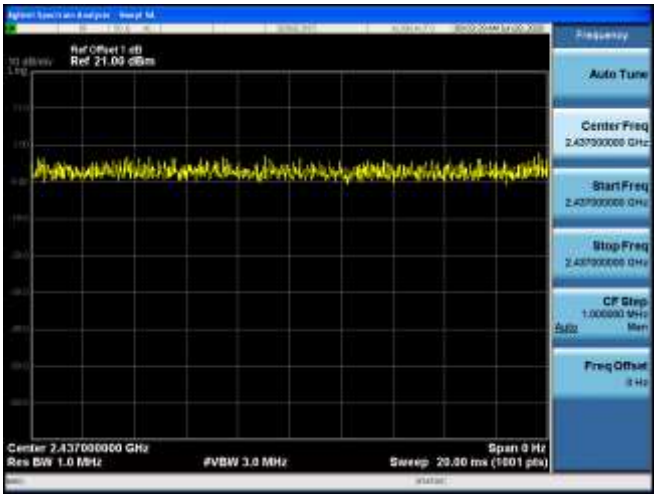
802.11g



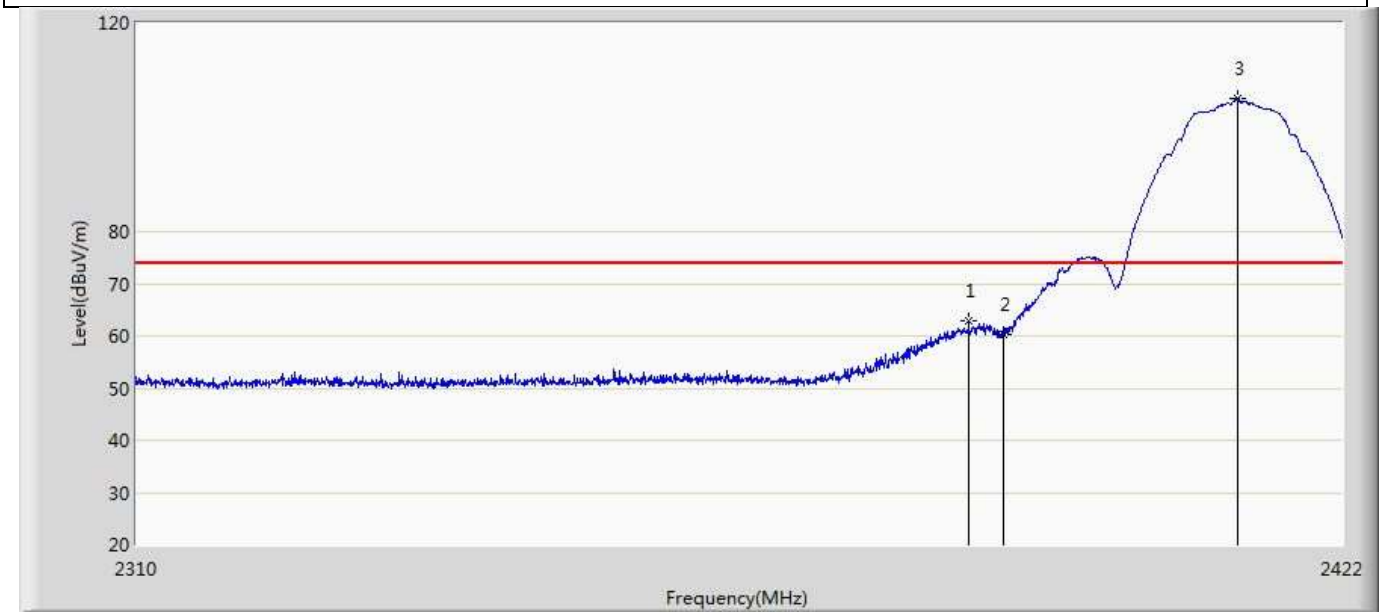
802.11n(20MHz)



802.11n(40MHz)

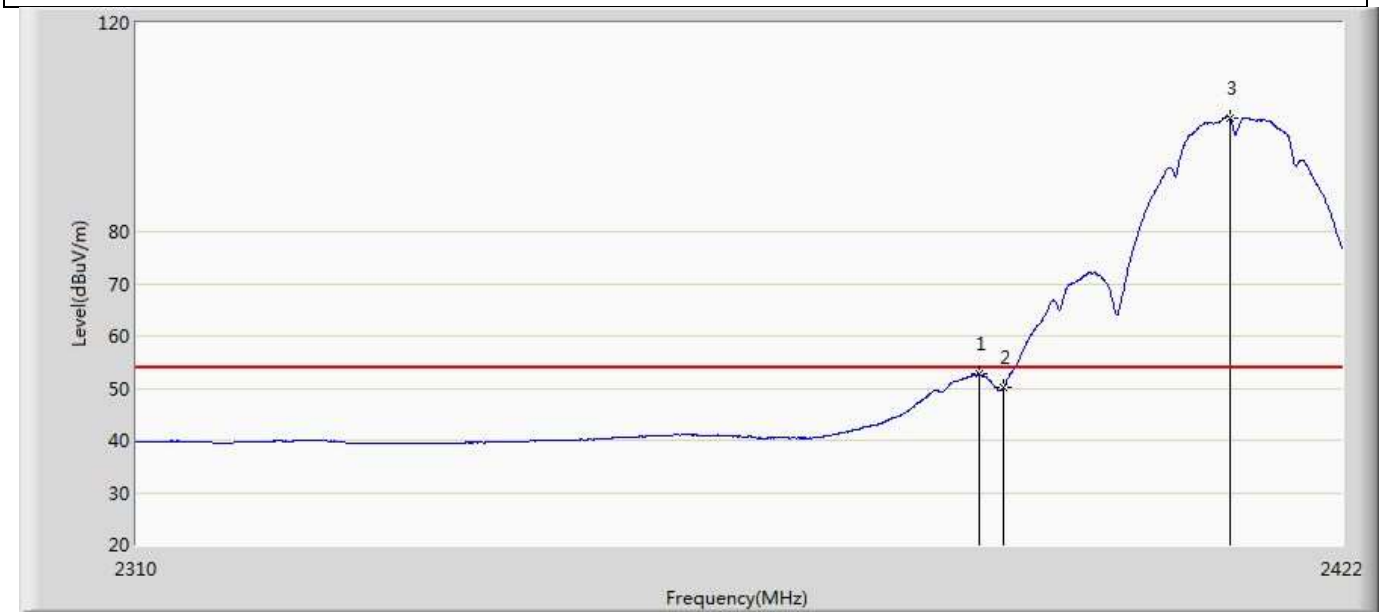


Profile: 2040170R	Page No.: 1
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 10:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



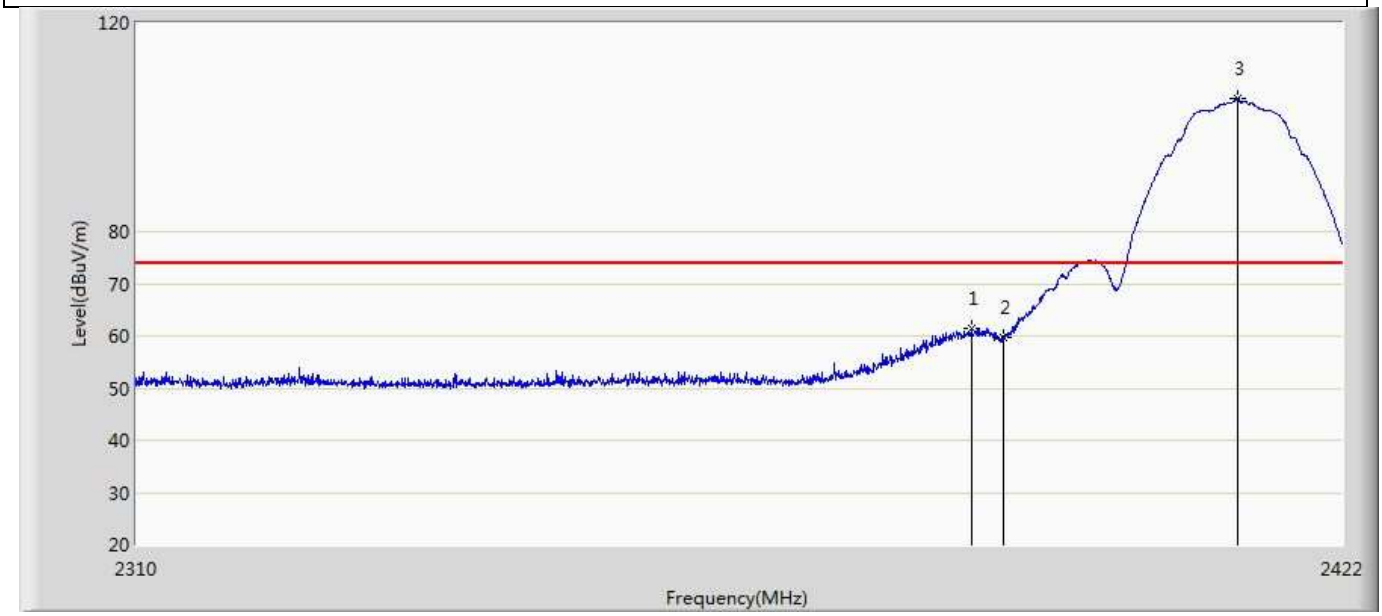
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.776	62.766	27.452	-11.234	74.000	35.314	PK
2		2390.000	60.305	24.990	-13.695	74.000	35.315	PK
3	*	2412.088	105.564	70.256	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 2
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 11:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



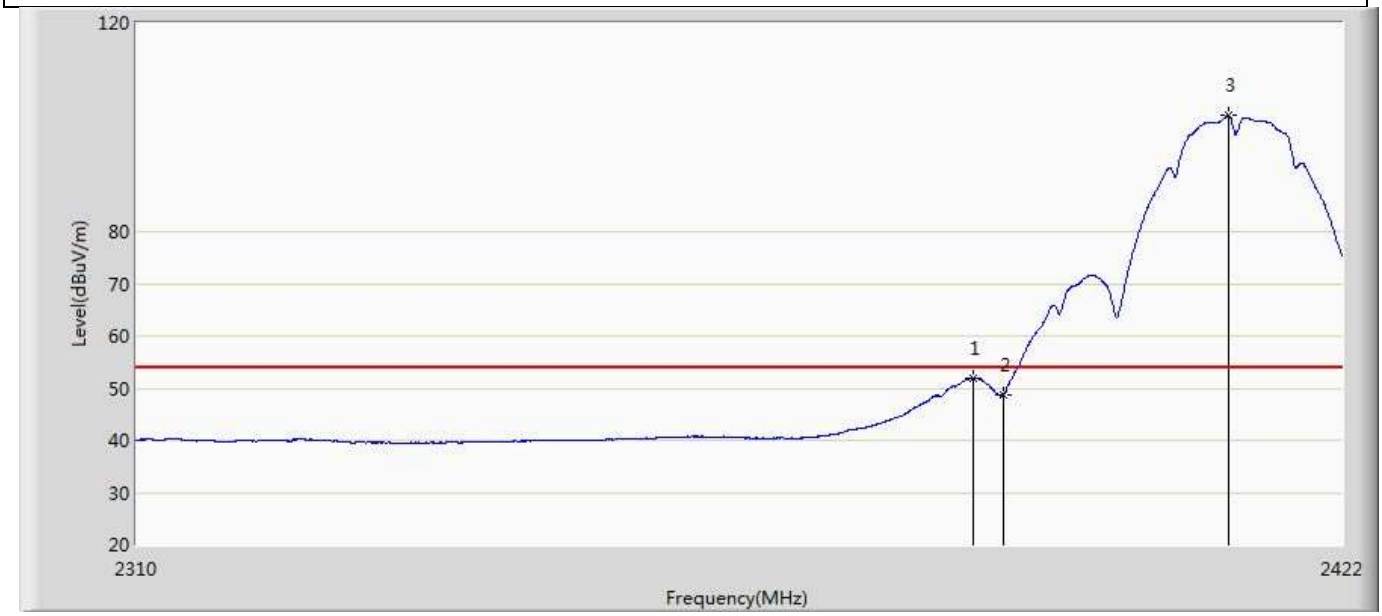
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.728	52.609	17.295	-1.391	54.000	35.314	AV
2		2390.000	50.073	14.758	-3.927	54.000	35.315	AV
3	*	2411.360	101.862	66.554	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 3
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 11:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



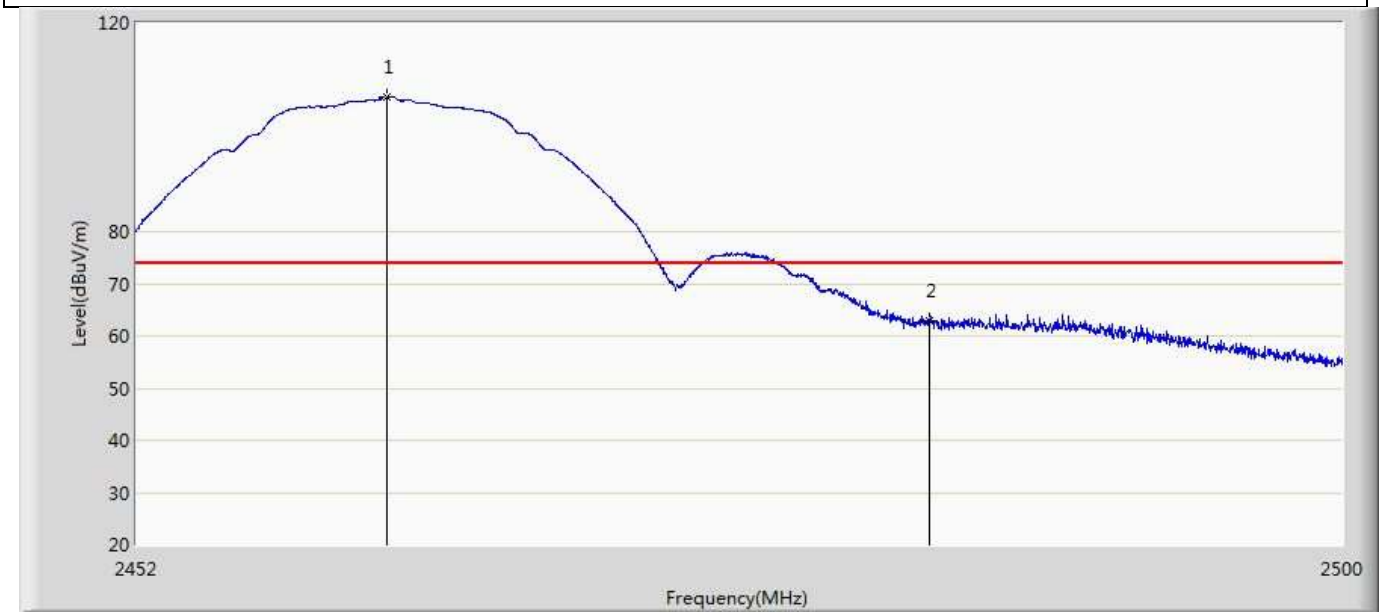
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.056	61.376	26.062	-12.624	74.000	35.314	PK
2		2390.000	59.616	24.301	-14.384	74.000	35.315	PK
3	*	2412.088	105.608	70.300	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 4
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 11:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



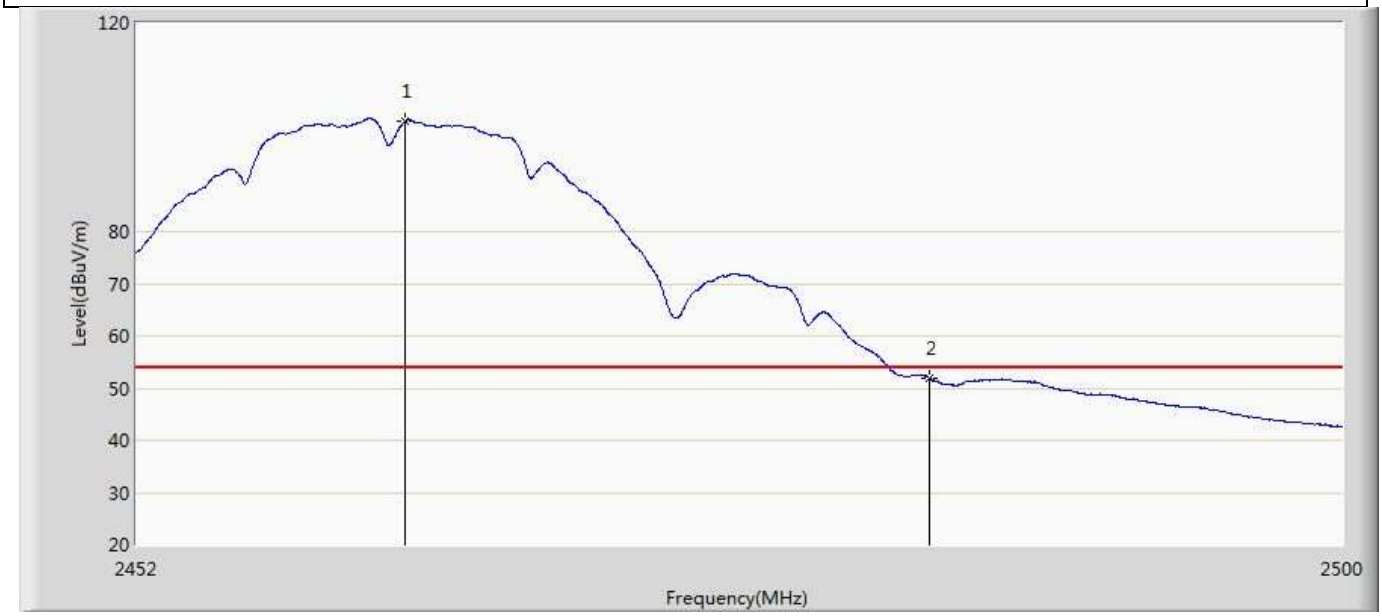
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.224	51.919	16.605	-2.081	54.000	35.314	AV
2		2390.000	48.811	13.496	-5.189	54.000	35.315	AV
3	*	2411.192	102.188	66.880	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 5
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



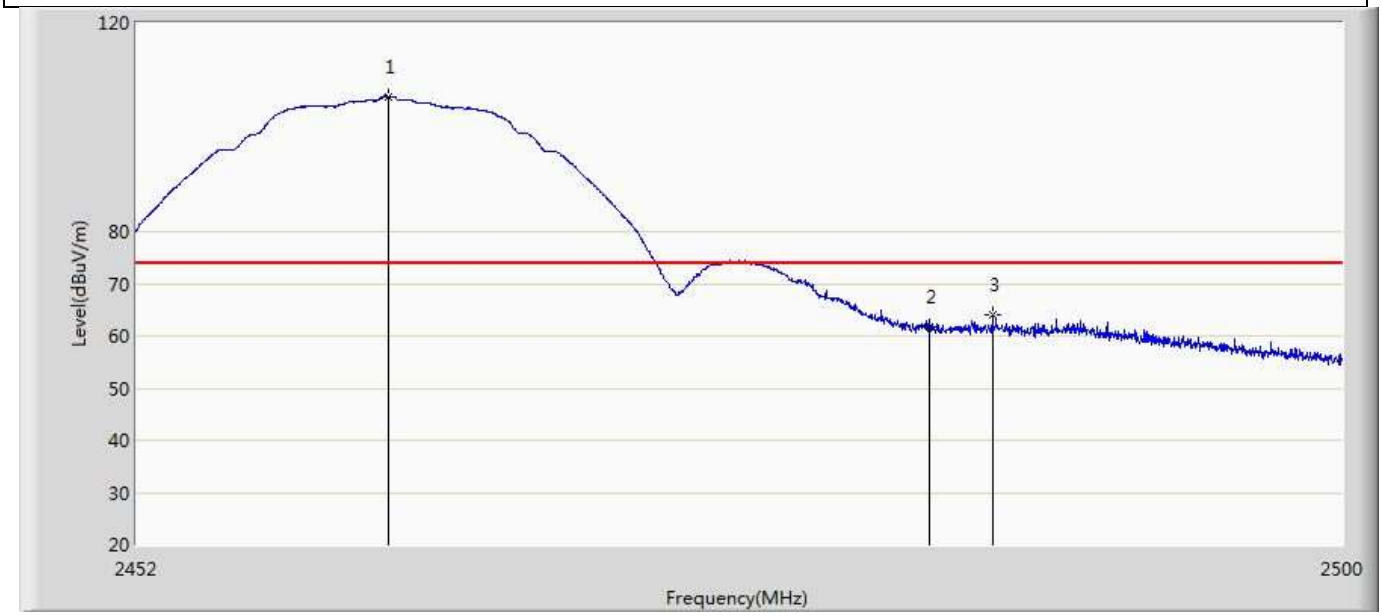
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.888	105.904	70.595	N/A	N/A	35.309	PK
2		2483.500	62.833	27.535	-11.167	74.000	35.297	PK

Profile: 2040170R	Page No.: 6
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



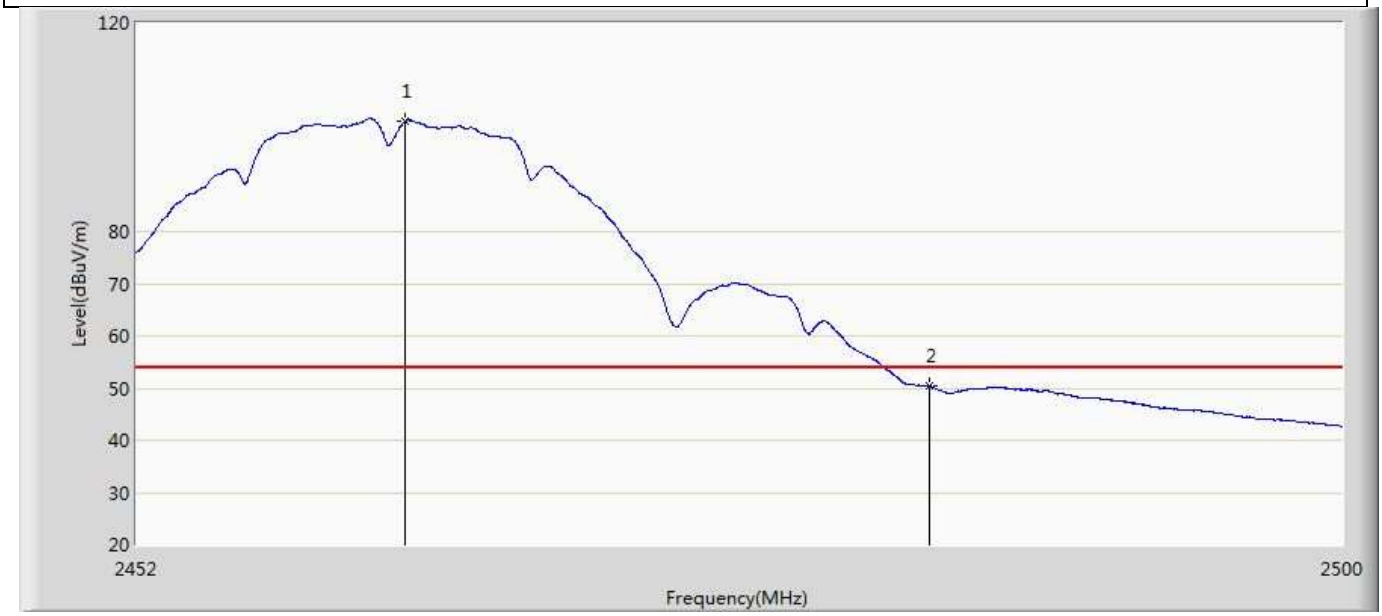
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.656	101.214	65.906	N/A	N/A	35.309	AV
2		2483.500	51.914	16.616	-2.086	54.000	35.297	AV

Profile: 2040170R	Page No.: 7
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



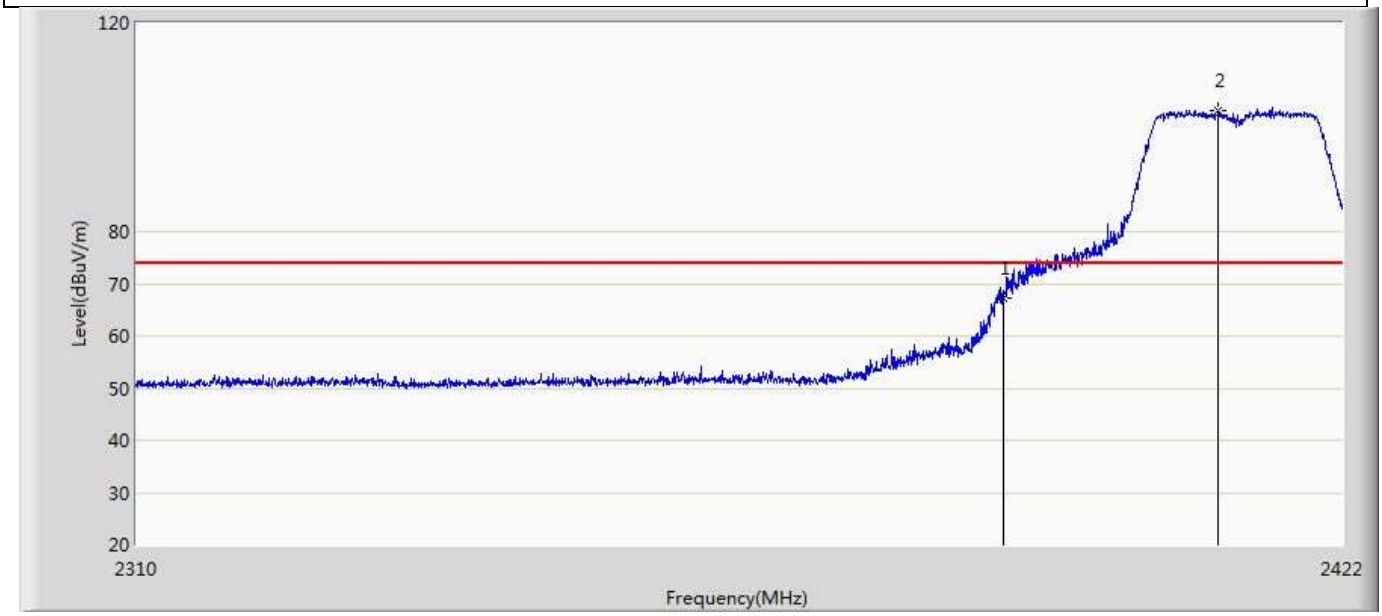
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.960	105.884	70.575	N/A	N/A	35.309	PK
2		2483.500	61.621	26.323	-12.379	74.000	35.297	PK
3		2486.008	64.053	28.756	-9.947	74.000	35.297	PK

Profile: 2040170R	Page No.: 8
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



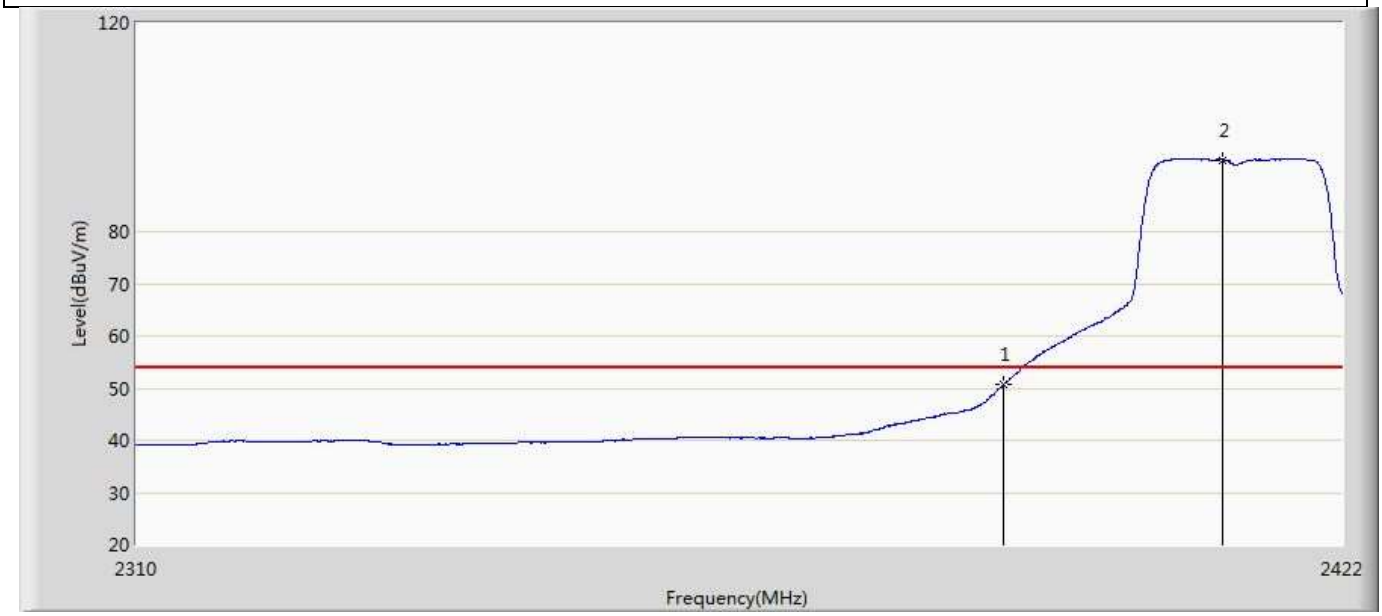
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.656	101.218	65.910	N/A	N/A	35.309	AV
2		2483.500	50.296	14.998	-3.704	54.000	35.297	AV

Profile: 2040170R	Page No.: 9
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



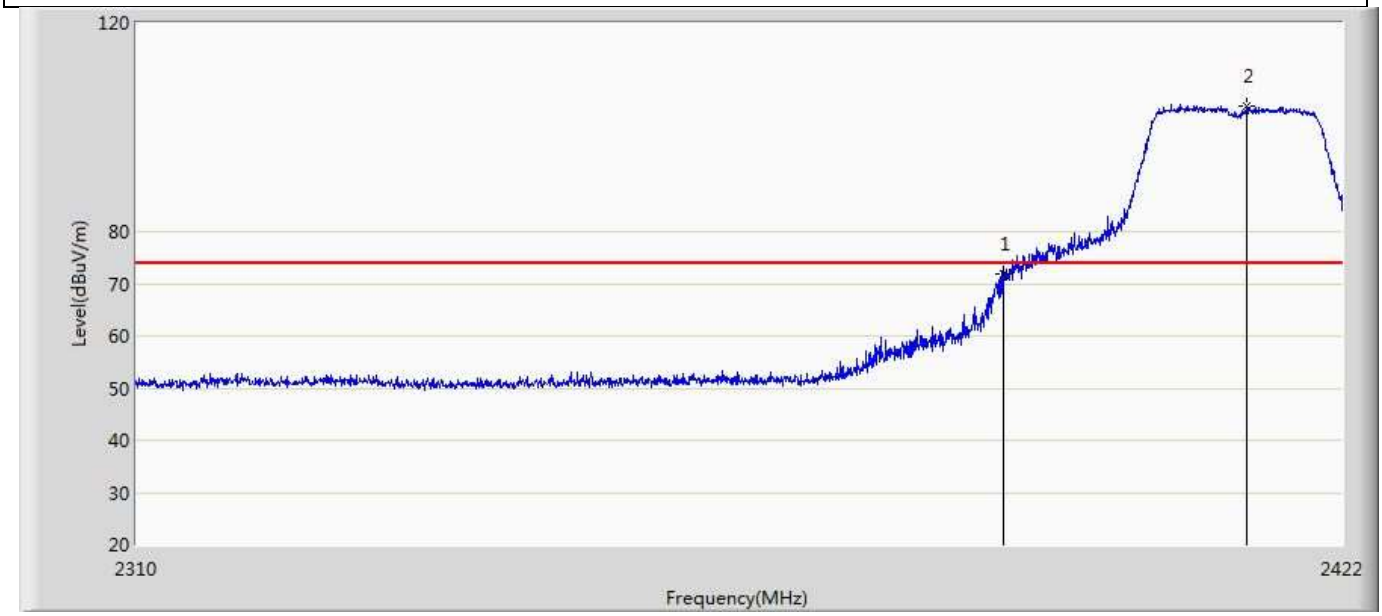
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	67.155	31.840	-6.845	74.000	35.315	PK
2	*	2410.296	103.115	67.806	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 10
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



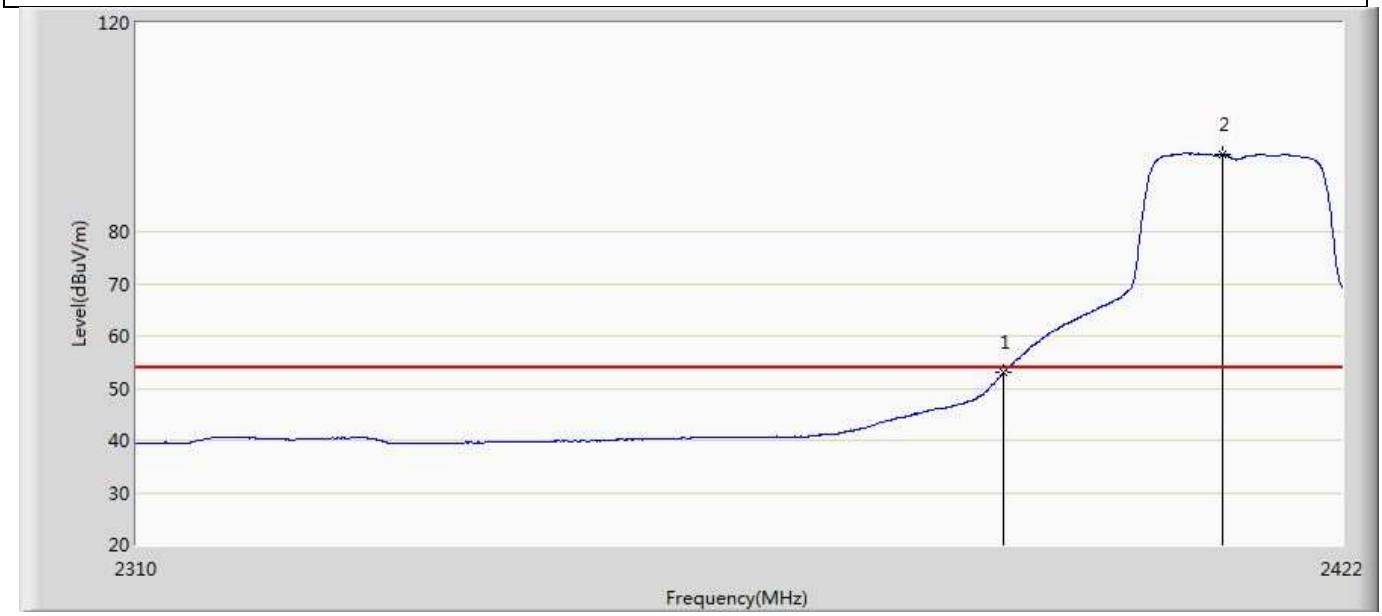
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.590	15.275	-3.410	54.000	35.315	AV
2	*	2410.632	93.768	58.460	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 11
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



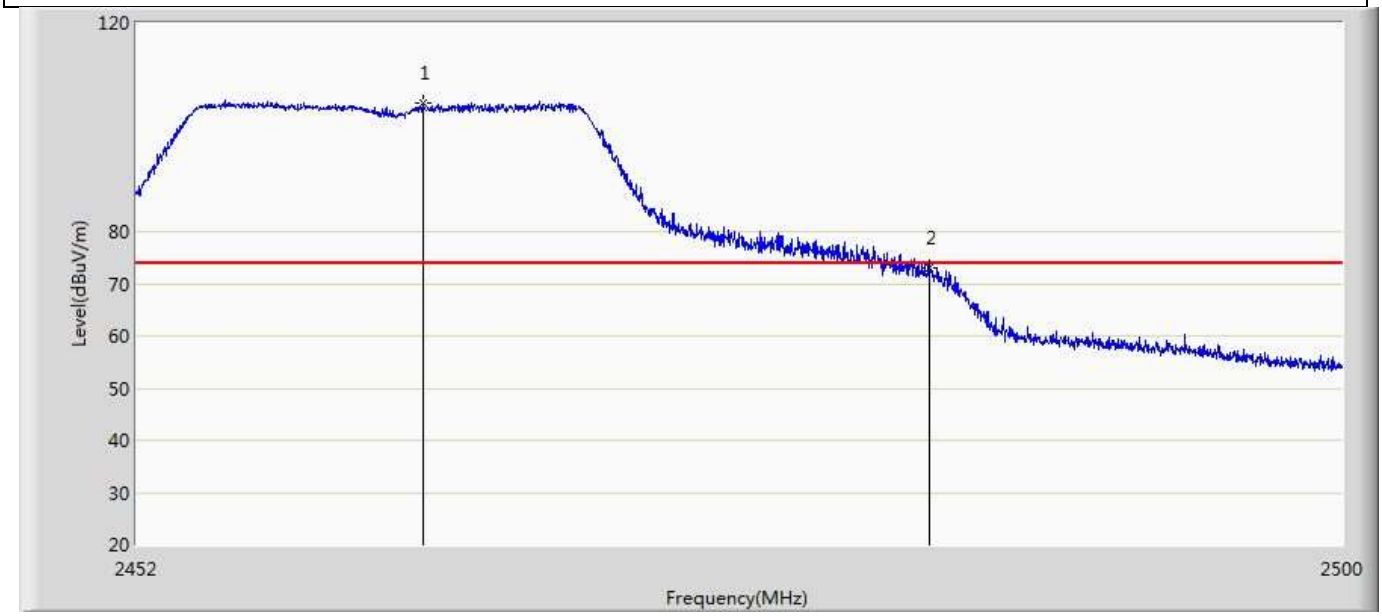
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	71.961	36.646	-2.039	74.000	35.315	PK
2	*	2412.984	104.093	68.785	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 12
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



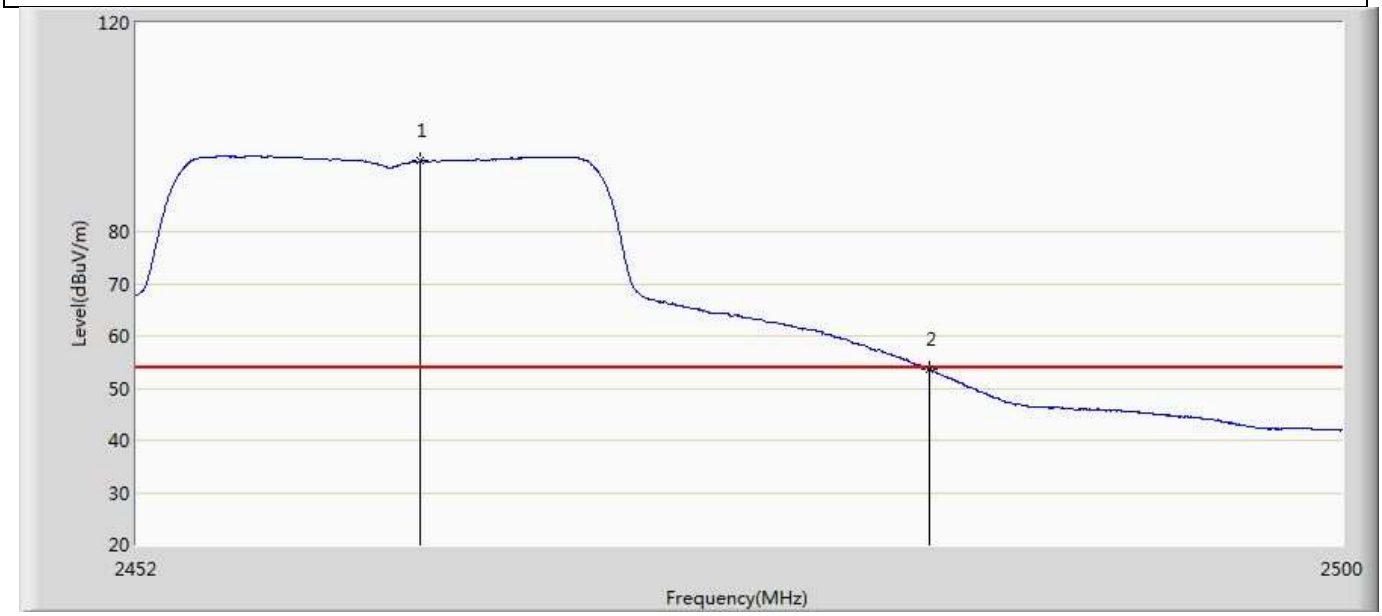
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.986	17.671	-1.014	54.000	35.315	AV
2	*	2410.632	94.732	59.424	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 13
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



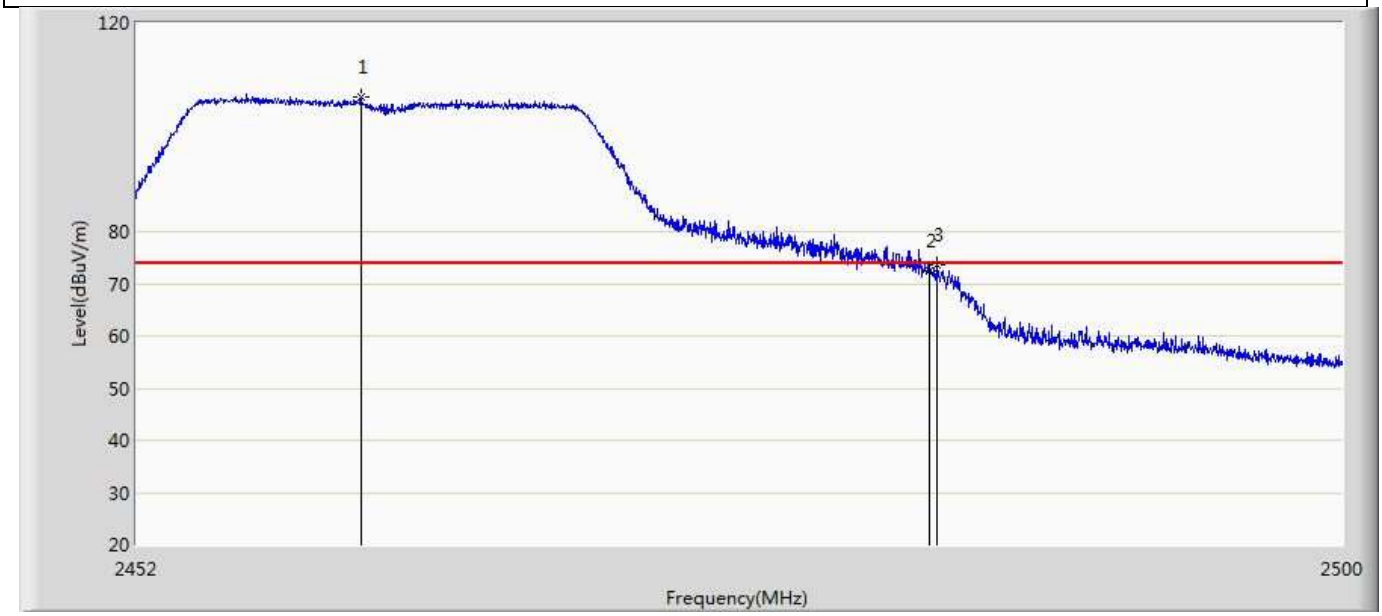
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.352	104.542	69.234	N/A	N/A	35.307	PK
2		2483.500	72.975	37.677	-1.025	74.000	35.297	PK

Profile: 2040170R	Page No.: 14
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 12:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



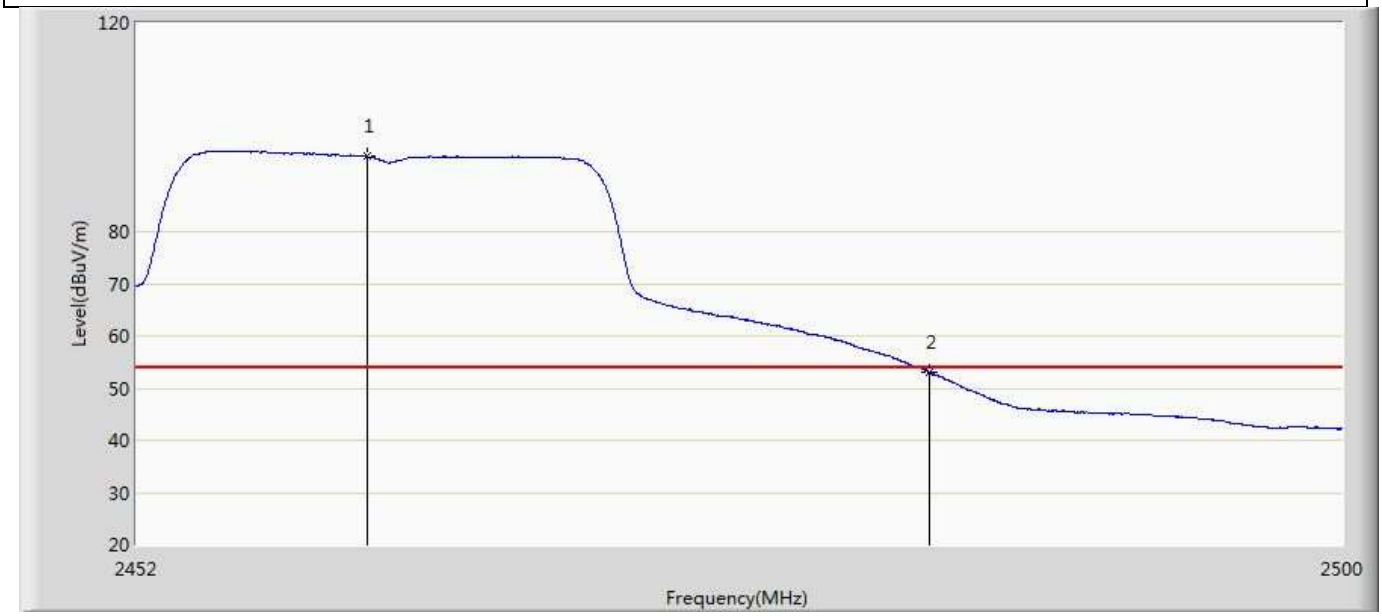
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.232	93.482	58.174	N/A	N/A	35.307	AV
2		2483.500	53.576	18.278	-0.424	54.000	35.297	AV

Profile: 2040170R	Page No.: 15
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



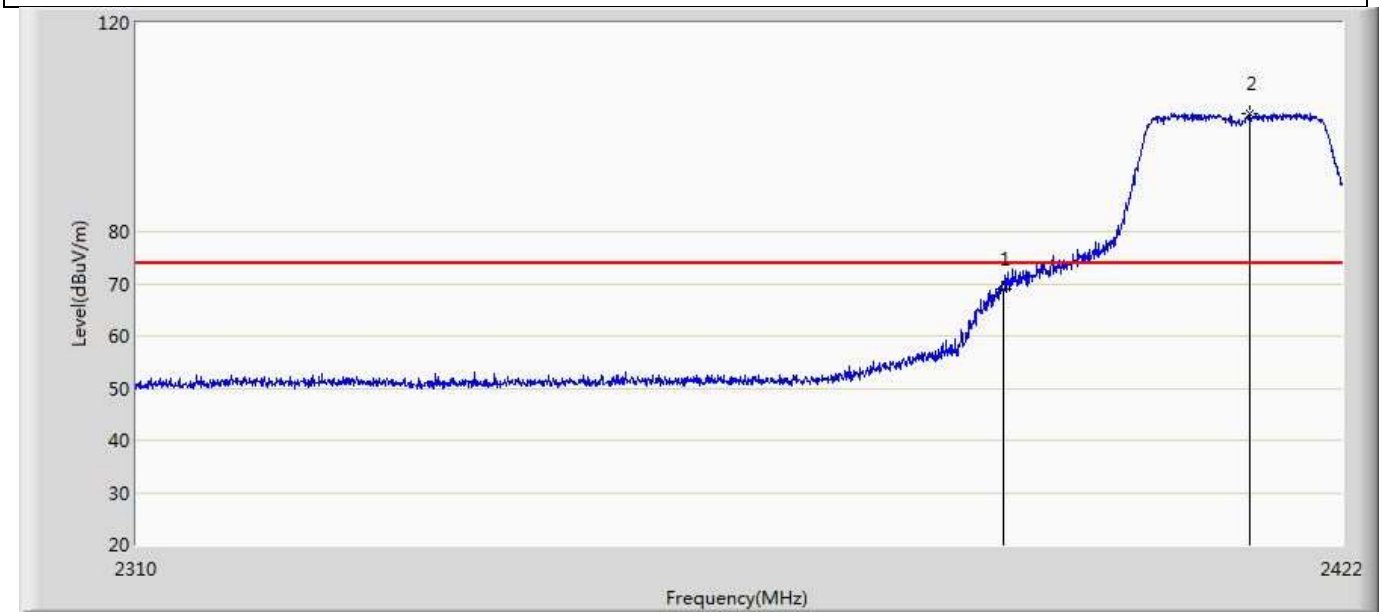
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.880	105.655	70.346	N/A	N/A	35.309	PK
2		2483.500	72.375	37.077	-1.625	74.000	35.297	PK
3		2483.800	73.608	38.311	-0.392	74.000	35.297	PK

Profile: 2040170R	Page No.: 16
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



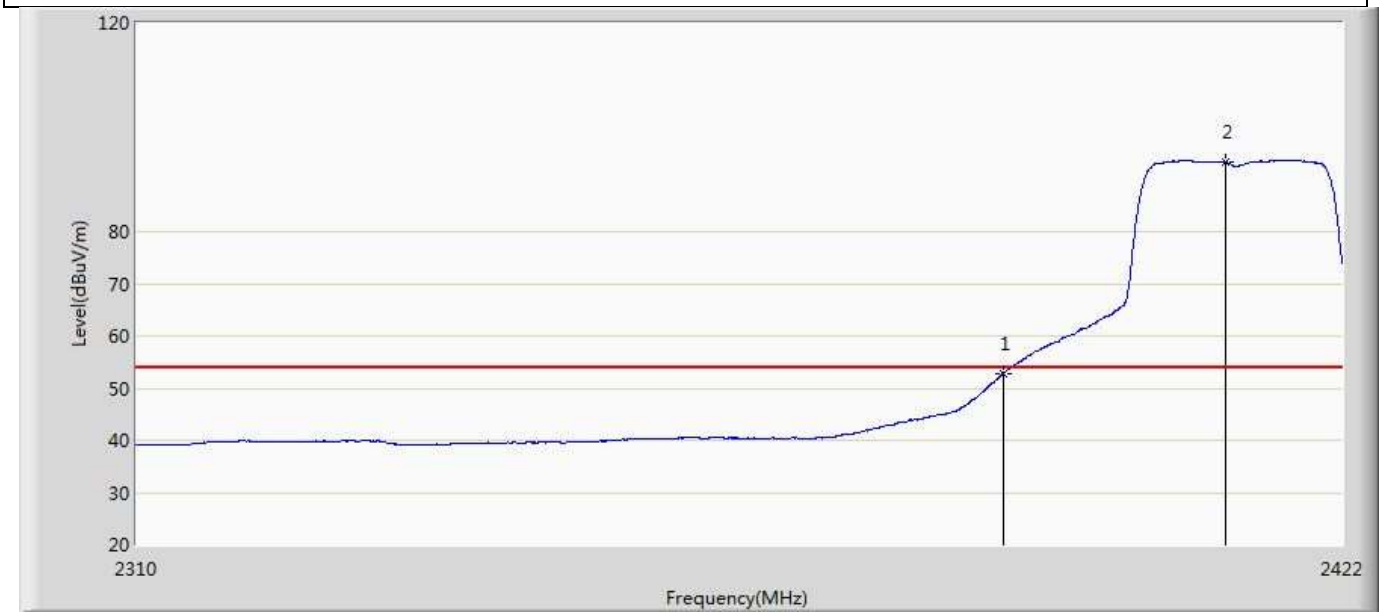
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.144	94.394	59.085	N/A	N/A	35.309	AV
2		2483.500	53.082	17.784	-0.918	54.000	35.297	AV

Profile: 2040170R	Page No.: 17
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



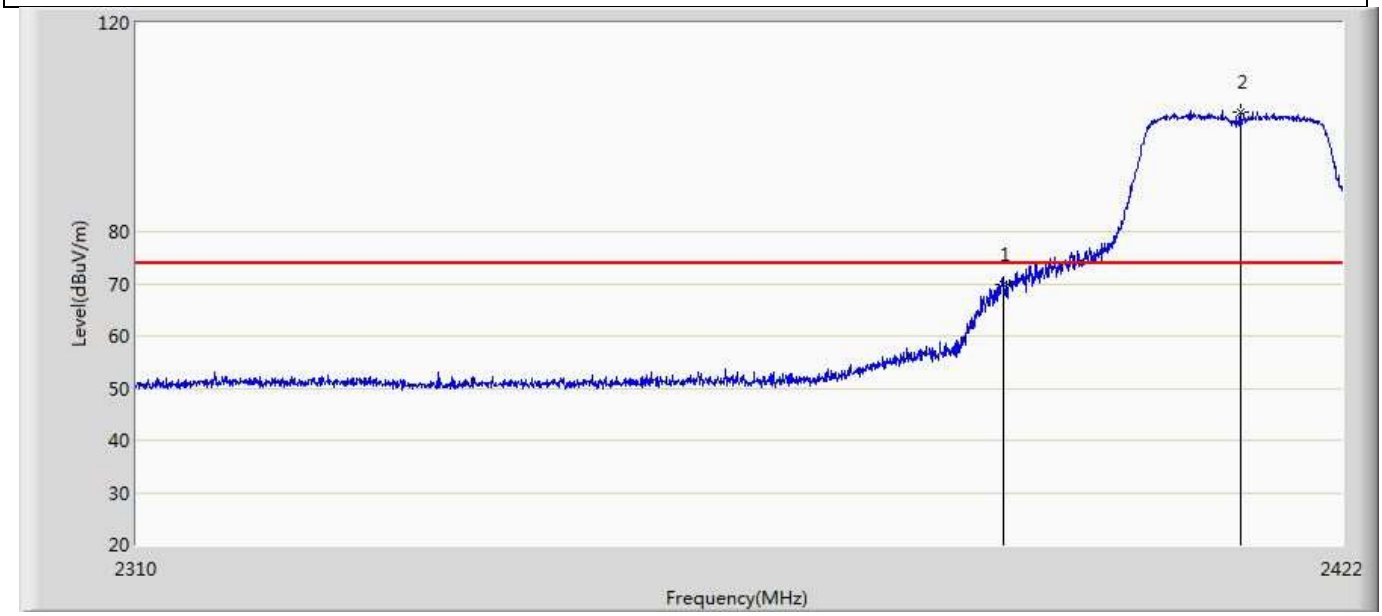
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	68.861	33.546	-5.139	74.000	35.315	PK
2	*	2413.264	102.503	67.195	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 18
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



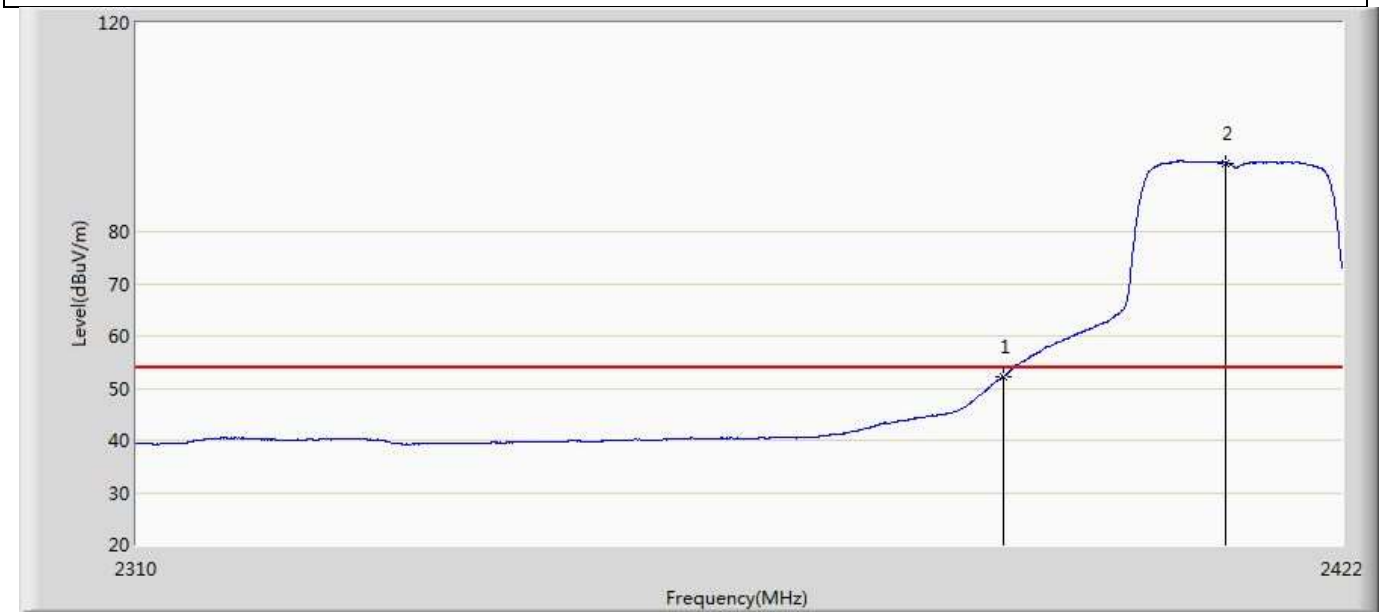
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.760	17.445	-1.240	54.000	35.315	AV
2	*	2411.024	93.302	57.994	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 19
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



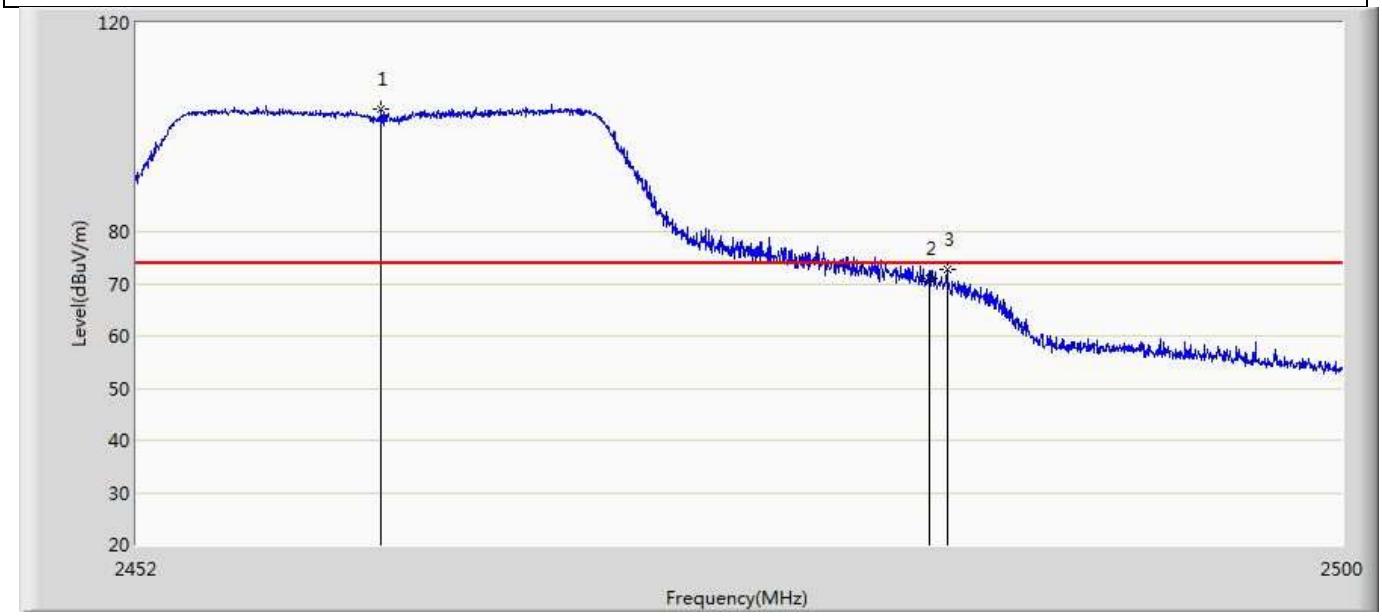
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	69.893	34.578	-4.107	74.000	35.315	PK
2	*	2412.424	102.953	67.645	N/A	N/A	35.307	PK

Profile: 2040170R	Page No.: 20
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



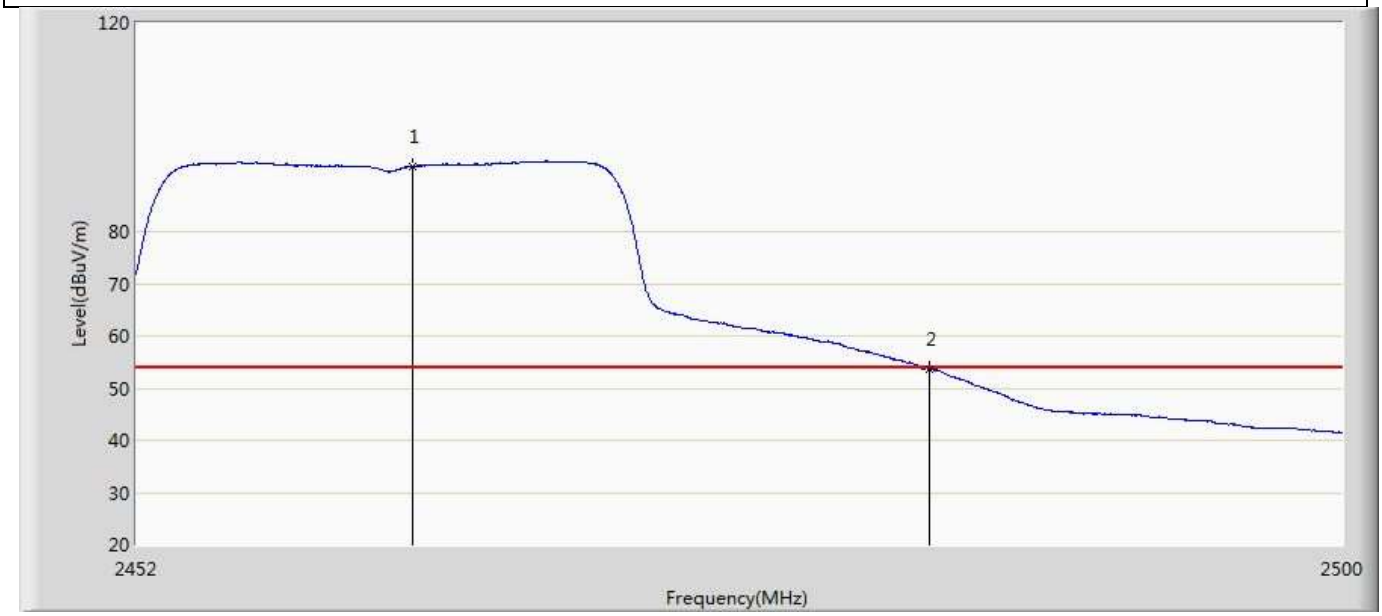
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.162	16.847	-1.838	54.000	35.315	AV
2	*	2411.024	93.159	57.851	N/A	N/A	35.308	AV

Profile: 2040170R	Page No.: 21
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



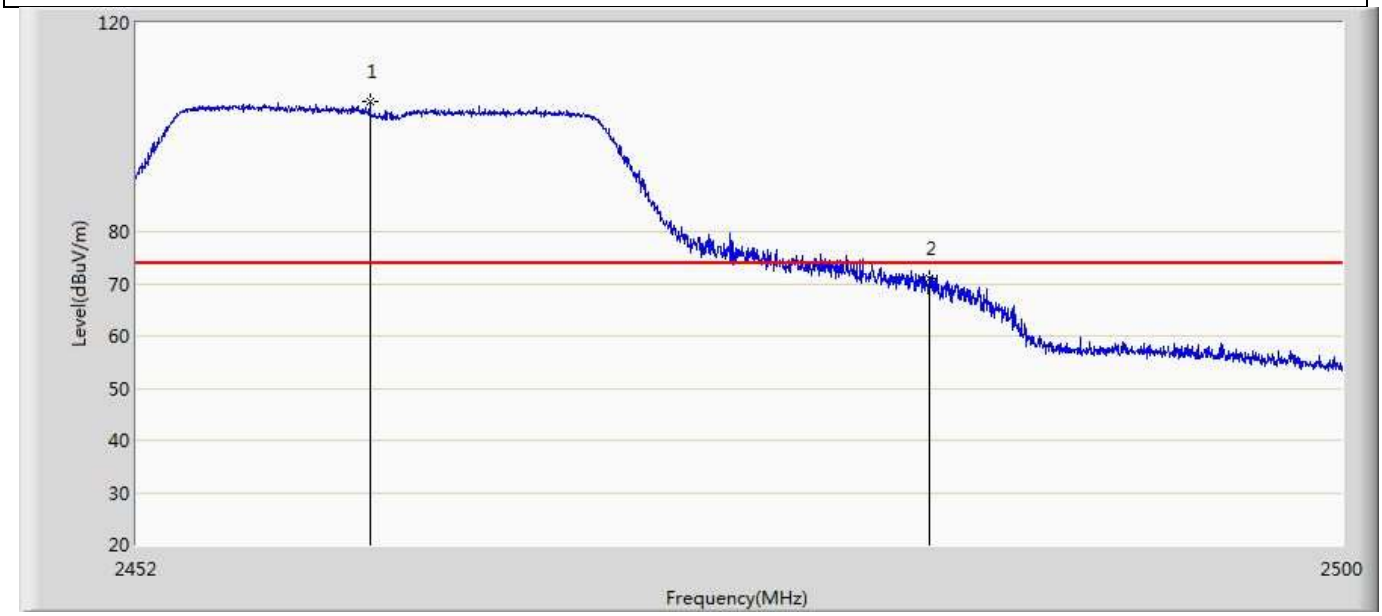
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.696	103.620	68.311	N/A	N/A	35.309	PK
2		2483.500	70.949	35.651	-3.051	74.000	35.297	PK
3		2484.184	72.670	37.373	-1.330	74.000	35.297	PK

Profile: 2040170R	Page No.: 22
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



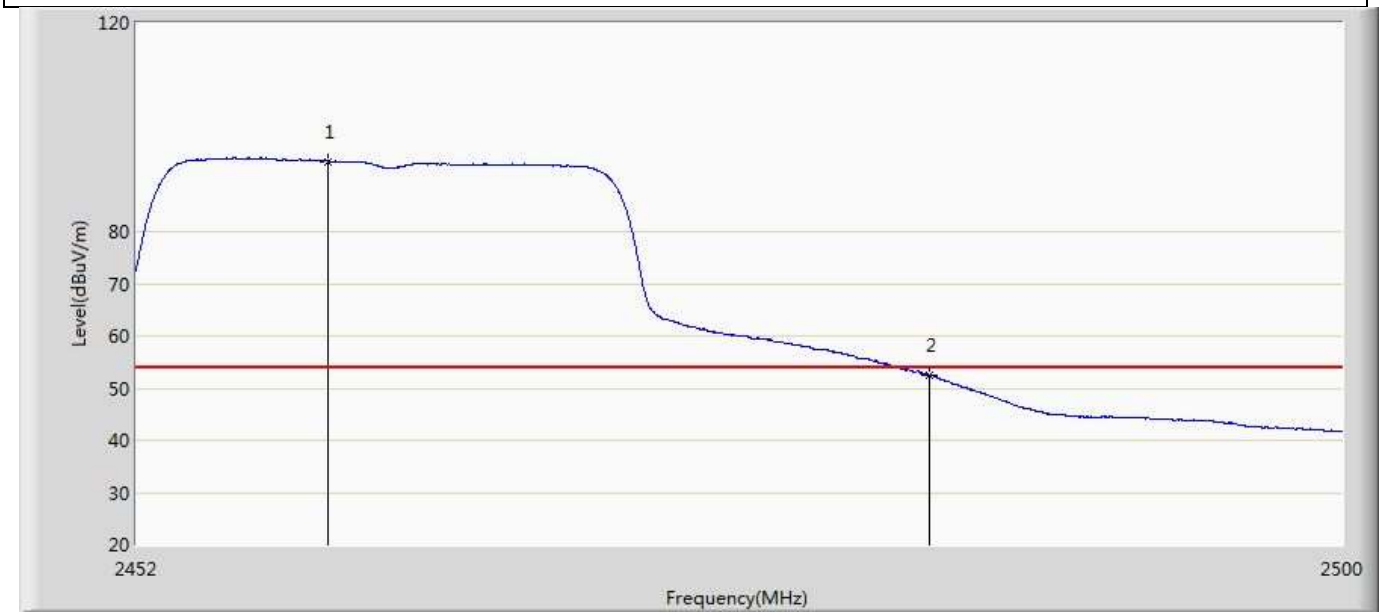
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.944	92.543	57.235	N/A	N/A	35.308	AV
2		2483.500	53.551	18.253	-0.449	54.000	35.297	AV

Profile: 2040170R	Page No.: 23
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



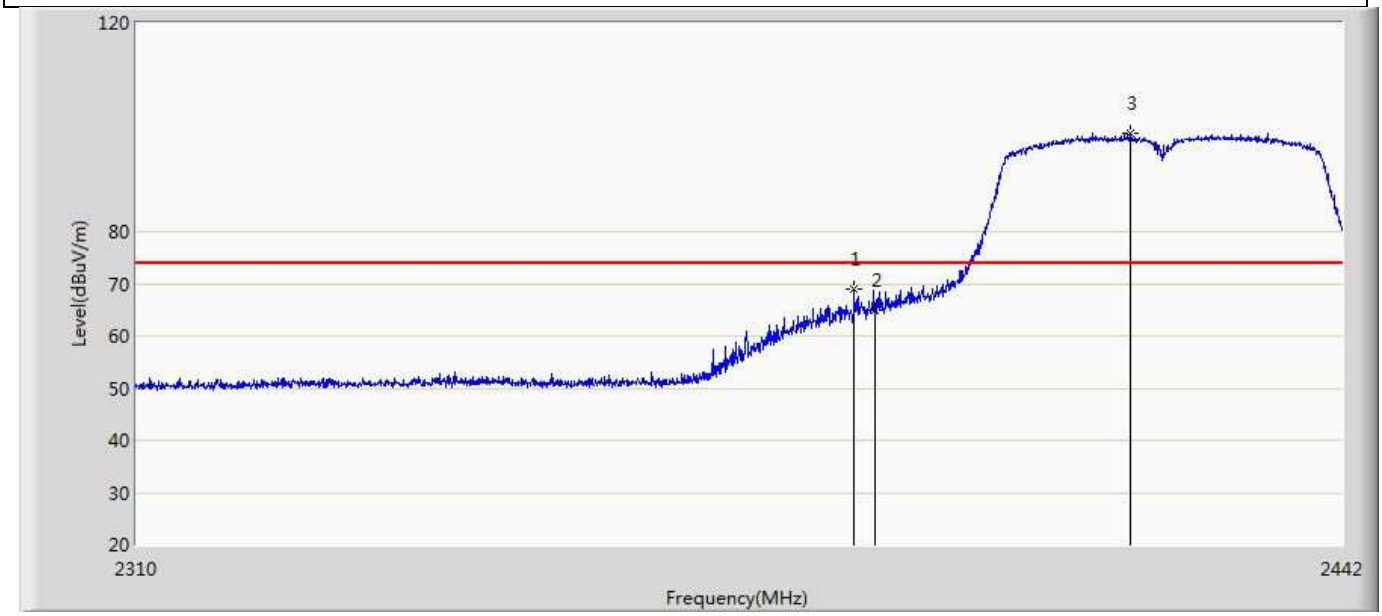
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.240	104.859	69.550	N/A	N/A	35.309	PK
2		2483.500	71.048	35.750	-2.952	74.000	35.297	PK

Profile: 2040170R	Page No.: 24
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



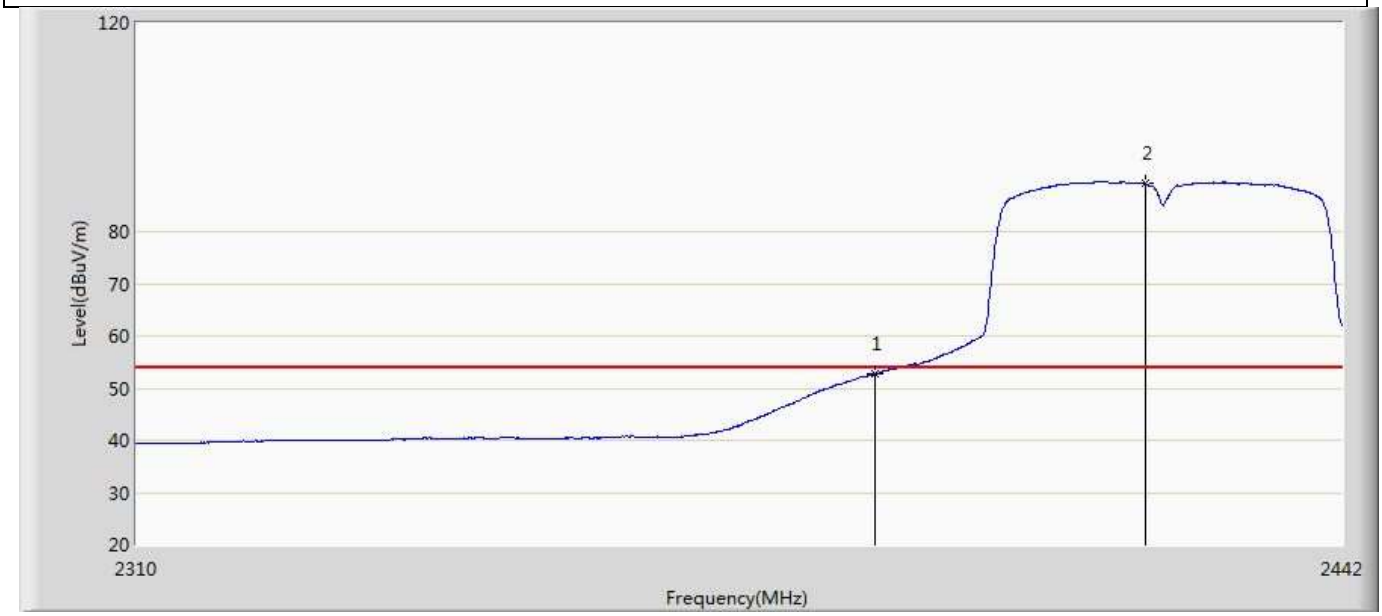
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.584	93.463	58.154	N/A	N/A	35.309	AV
2		2483.500	52.509	17.211	-1.491	54.000	35.297	AV

Profile: 2040170R	Page No.: 25
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



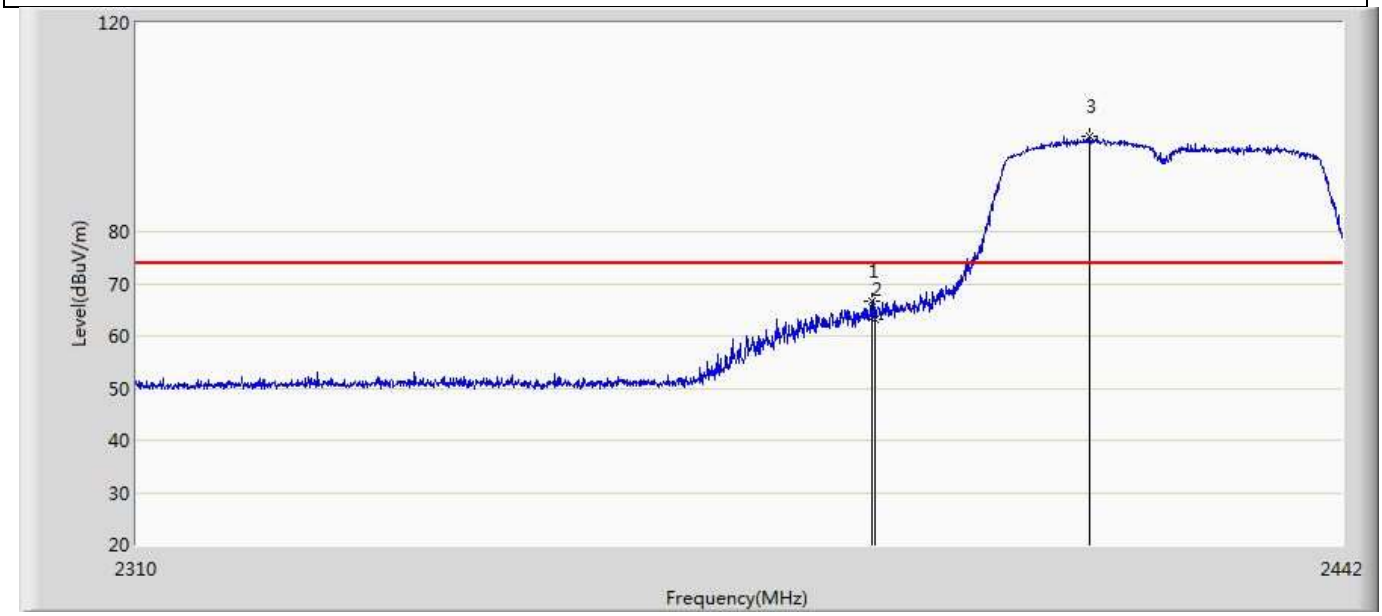
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2387.682	69.014	33.700	-4.986	74.000	35.314	PK
2		2390.000	64.949	29.634	-9.051	74.000	35.315	PK
3	*	2418.240	98.804	63.498	N/A	N/A	35.306	PK

Profile: 2040170R	Page No.: 26
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



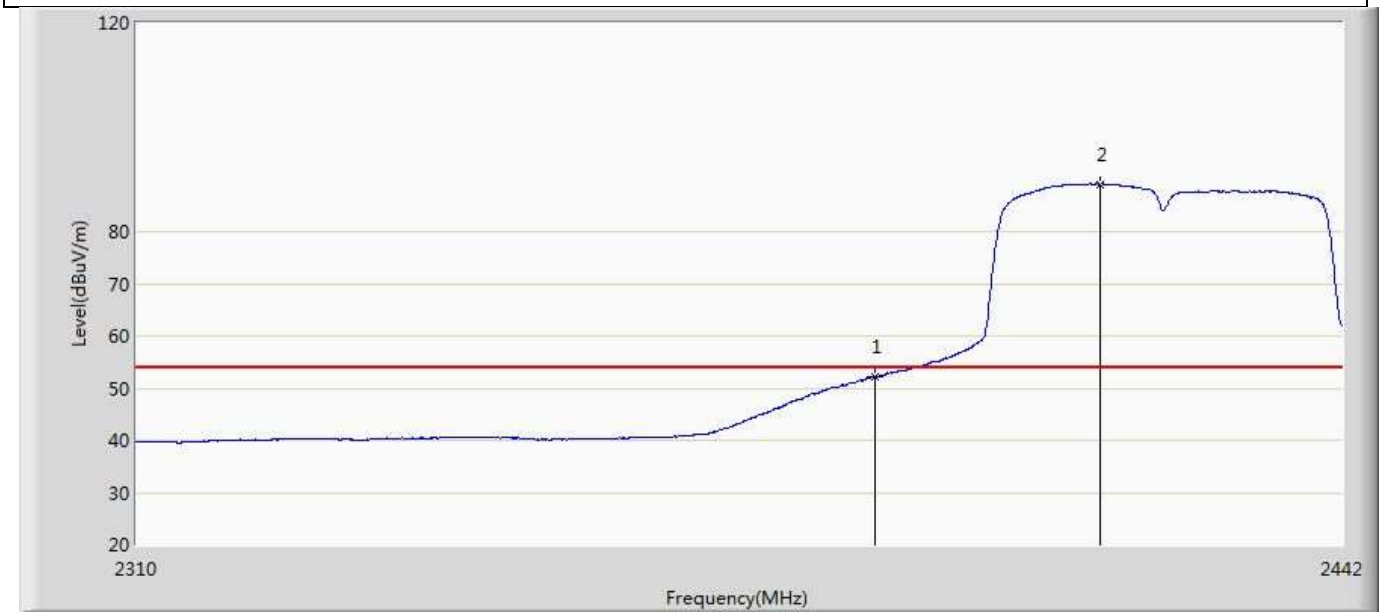
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.702	17.387	-1.298	54.000	35.315	AV
2	*	2419.956	89.150	53.844	N/A	N/A	35.306	AV

Profile: 2040170R	Page No.: 27
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



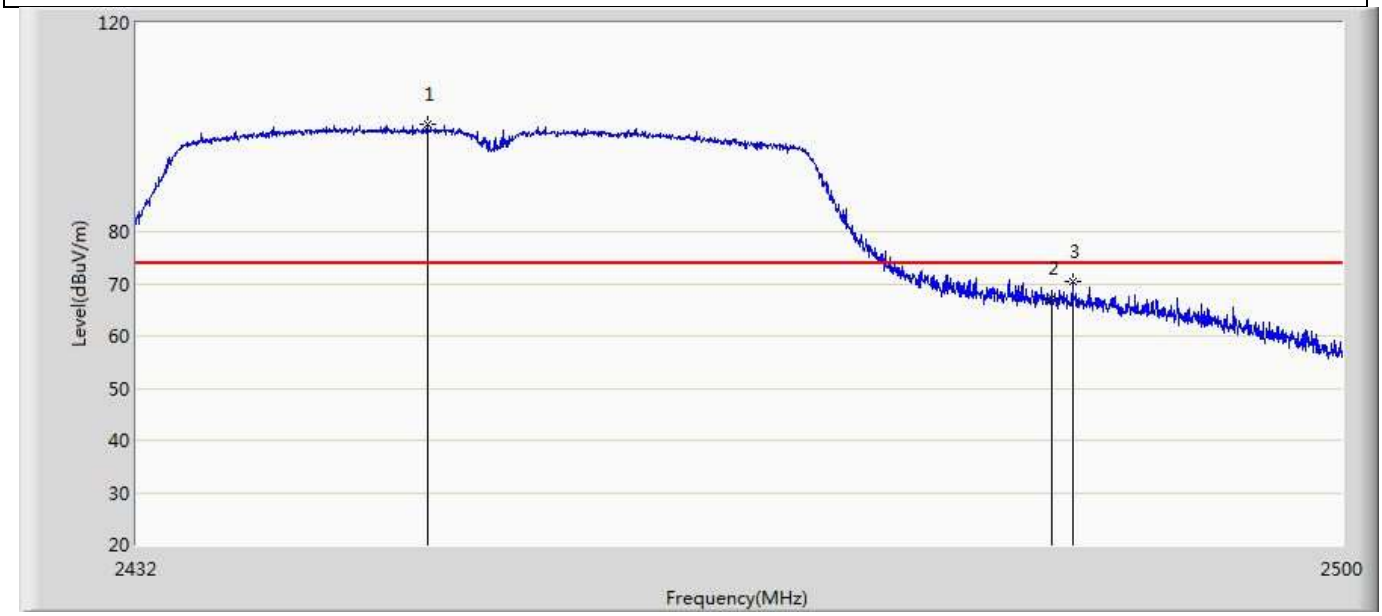
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.662	66.696	31.381	-7.304	74.000	35.315	PK
2		2390.000	63.278	27.963	-10.722	74.000	35.315	PK
3	*	2413.686	98.296	62.988	N/A	N/A	35.308	PK

Profile: 2040170R	Page No.: 28
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



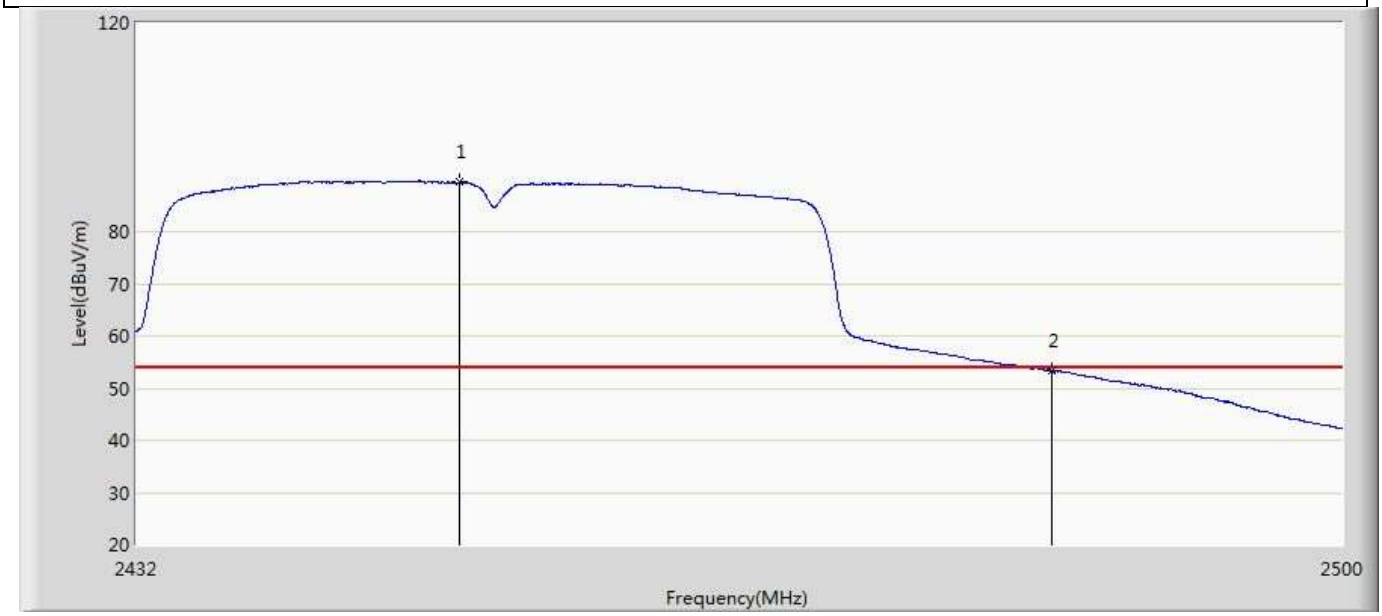
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.230	16.915	-1.770	54.000	35.315	AV
2	*	2414.874	89.117	53.810	N/A	N/A	35.307	AV

Profile: 2040170R	Page No.: 29
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



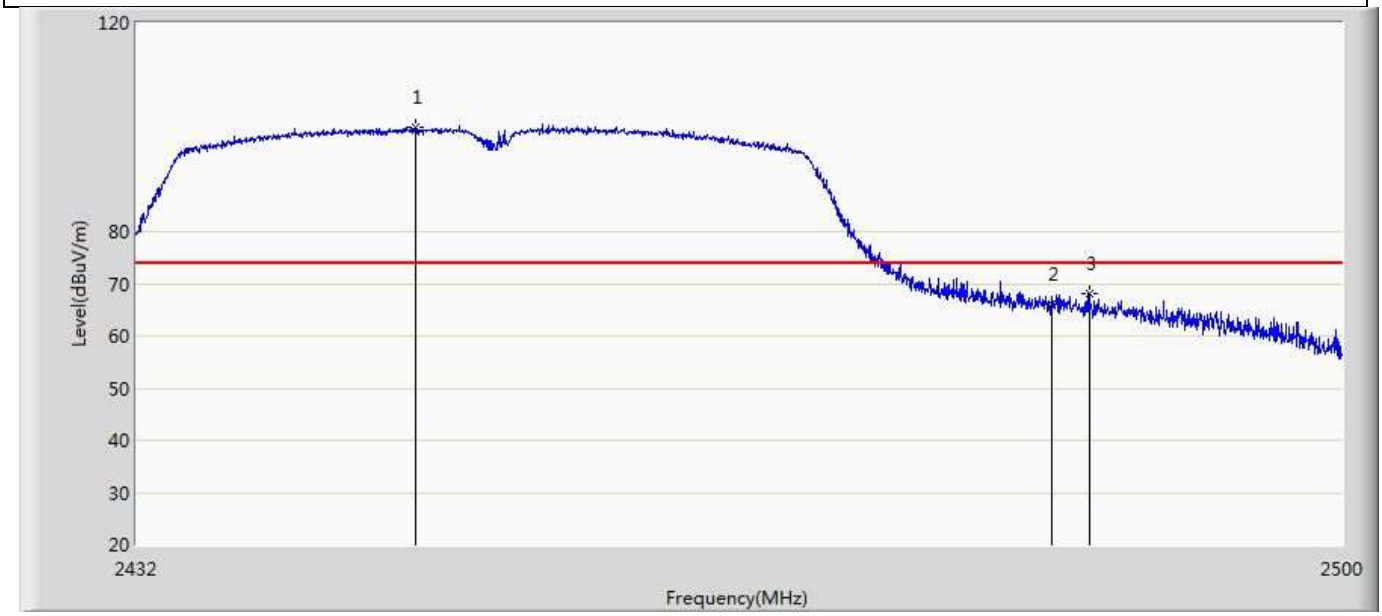
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2448.252	100.694	65.381	N/A	N/A	35.314	PK
2		2483.500	67.309	32.011	-6.691	74.000	35.297	PK
3		2484.666	70.456	35.159	-3.544	74.000	35.297	PK

Profile: 2040170R	Page No.: 30
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



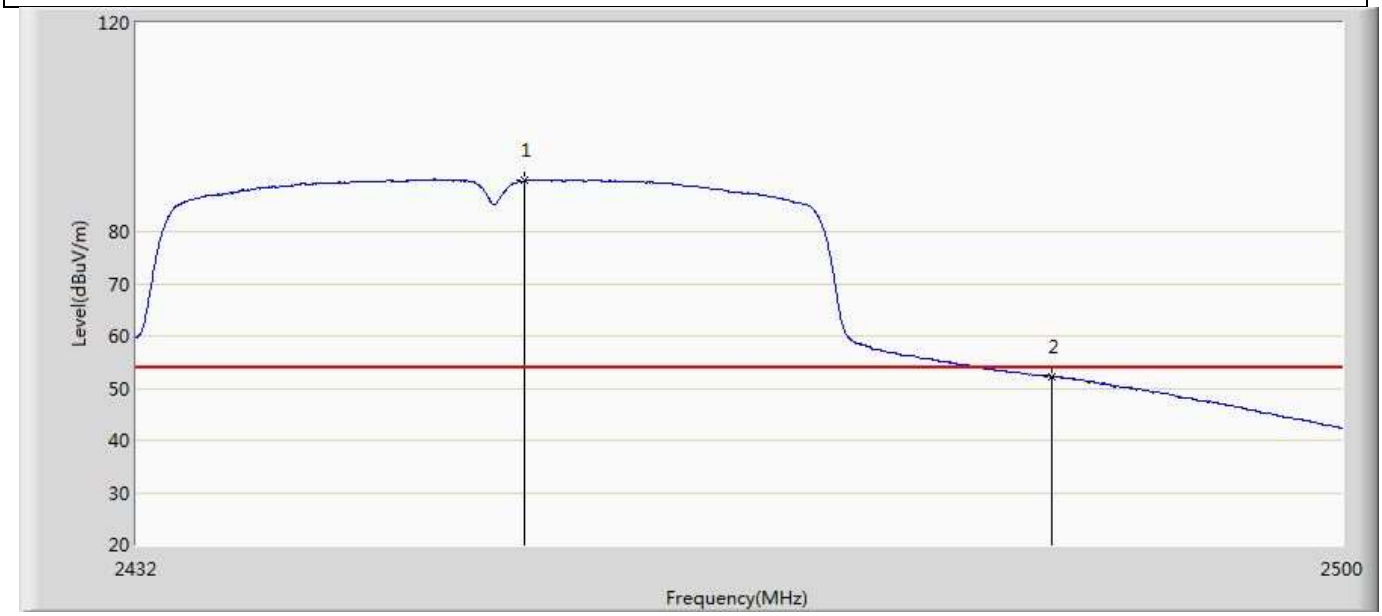
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2450.020	89.468	54.155	N/A	N/A	35.313	AV
2		2483.500	53.292	17.994	-0.708	54.000	35.297	AV

Profile: 2040170R	Page No.: 31
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2447.640	100.064	64.750	N/A	N/A	35.314	PK
2		2483.500	66.044	30.746	-7.956	74.000	35.297	PK
3		2485.584	68.015	32.718	-5.985	74.000	35.297	PK

Profile: 2040170R	Page No.: 32
Engineer: Tongben	
Site: AC5	Time: 2020/06/21 - 13:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Ring Bridge	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



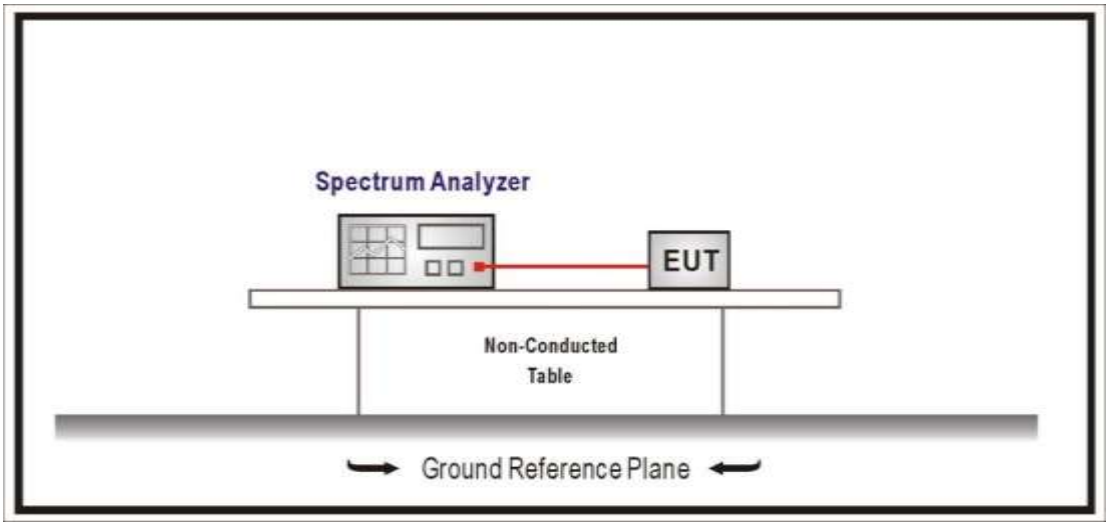
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2453.692	89.728	54.417	N/A	N/A	35.311	AV
2		2483.500	52.125	16.827	-1.875	54.000	35.297	AV

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

4.5 DTS Bandwidth	VERDICT: PASS

4.5.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
Systems using digital modulation techniques operate in the2400-2483.5 MHz .The minimum 6 dB bandwidth shall be at least 500 kHz	
Standard	ANSI C63.10 Paragraph 6.7
The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs. The occupied bandwidth should within the required frequency range.	

4.5.2 Test Setup



4.5.3 Test Procedure

	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
☒	ANSI C63.10		6.9	Occupied bandwidth
	☐	ANSI C63.10	6.9.2	relative measurement procedure
	☒	ANSI C63.10	6.9.3	power bandwidth (99%) measurement procedure

4.5.4 Test Data

Mode	CH.	Test Freq. (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
1	1	2412	7.12	⩾500	Pass
	6	2437	7.105	⩾500	Pass
	11	2462	7.100	⩾500	Pass
2	1	2412	16.55	⩾500	Pass
	6	2437	16.53	⩾500	Pass
	11	2462	16.53	⩾500	Pass
3	1	2412	17.80	⩾500	Pass
	6	2437	17.77	⩾500	Pass
	11	2462	17.79	⩾500	Pass
4	3	2422	36.39	⩾500	Pass
	6	2437	35.39	⩾500	Pass
	9	2452	35.12	⩾500	Pass

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

6dB Occupied Bandwidth

Mode 1 CH11 (2462MHz)

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
1	1	2412	12.874	Within frequency range	Pass
	6	2437	12.923	Within frequency range	Pass
	11	2462	12.847	Within frequency range	Pass
2	1	2412	16.437	Within frequency range	Pass
	6	2437	16.480	Within frequency range	Pass
	11	2462	16.465	Within frequency range	Pass
3	1	2412	17.634	Within frequency range	Pass
	6	2437	17.651	Within frequency range	Pass
	11	2462	17.628	Within frequency range	Pass
4	3	2422	35.937	Within frequency range	Pass
	6	2437	35.963	Within frequency range	Pass
	9	2452	35.863	Within frequency range	Pass

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

99% Occupied Bandwidth

Mode 1 CH11 (2462MHz)

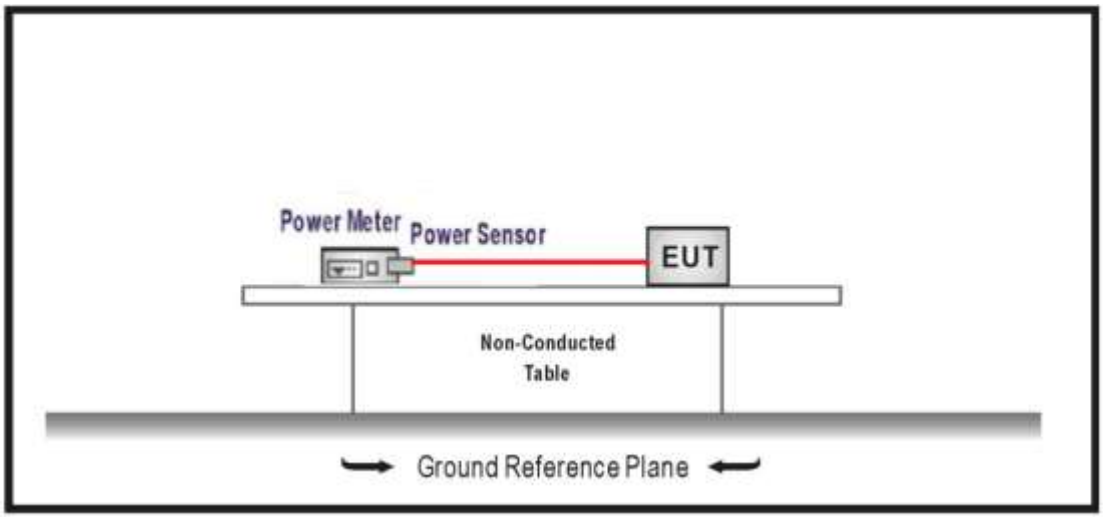
4.6 Fundamental emission output power	VERDICT: PASS

4.6.1 Limit

Standard			FCC Part 15 Subpart C Paragraph 15.247 (b)(3)
☒	GTX ＜6dBi		Pout≤30dBm
☐	GTX ＞6dBi		
	☐	Non-Fix point-point	Pout≤30-(GTX -6)
	☐	Fix point-point	Pout≤30-[(GTX-6)]/3
	☐	Point-to-multipoint	Pout≤30-(GTX-6)
	☐	Overlap Beams	Pout≤30-[(GTX-6)]/3
	☐	Aggregate power transmitted simultaneously on all beams	Pout≤30-[(GTX-6)]/3
	☐	single directional beam	Pout≤30-[(GTX-6)]/3+8dB

Note 1 : GTX directional gain of transmitting antennas.
Note 2 : Pout is maximum peak conducted output power .

4.6.2 Test Setup



4.6.3 Test Procedure								
	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

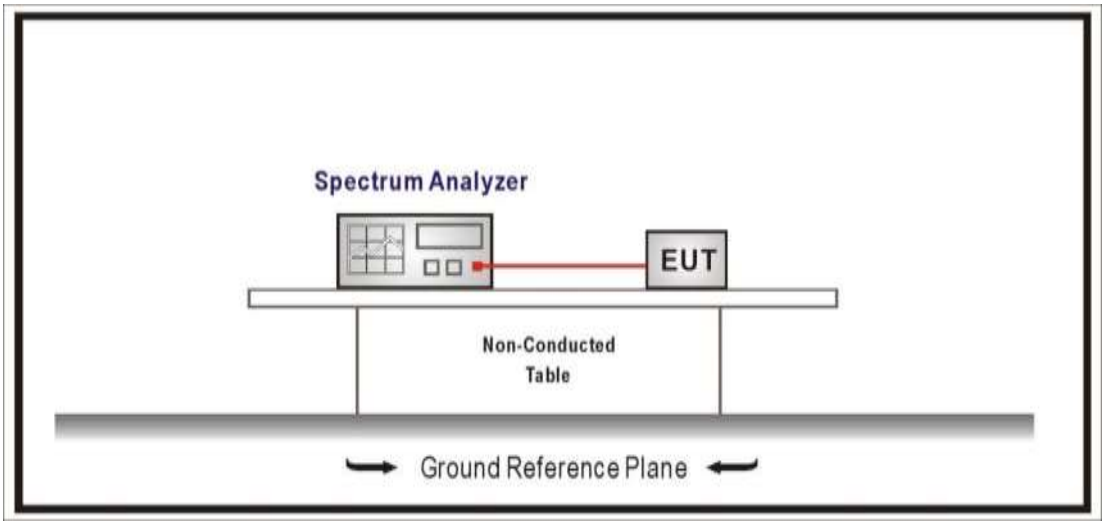
4.6.4 Test Data

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	E.I.R.P (dBm)	Conducted Limit (dBm)	E.I.R.P Limit (dBm)	Result
1	1	2412	18.26	20.06	30.00	36.00	Pass
	2	2417	18.32	20.12	30.00	36.00	Pass
	6	2437	18.44	20.24	30.00	36.00	Pass
	11	2462	18.37	20.17	30.00	36.00	Pass
2	1	2412	18.01	19.81	30.00	36.00	Pass
	2	2417	17.82	19.62	30.00	36.00	Pass
	6	2437	19.56	21.36	30.00	36.00	Pass
	11	2462	19.87	21.67	30.00	36.00	Pass
3	1	2412	16.56	18.36	30.00	36.00	Pass
	2	2417	16.73	18.53	30.00	36.00	Pass
	6	2437	18.06	19.86	30.00	36.00	Pass
	11	2462	18.47	20.27	30.00	36.00	Pass
4	3	2422	14.05	15.85	30.00	36.00	Pass
	4	2427	13.97	15.77	30.00	36.00	Pass
	6	2437	16.32	18.12	30.00	36.00	Pass
	9	2452	16.44	18.24	30.00	36.00	Pass

4.7 Power Density	VERDICT: PASS

4.7.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.247 (e)
Power Spectral Density≤8dBm/3kHz	

4.7.2 Test Setup



4.7.3 Test Procedure

	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≥98%)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle≥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

4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	1	2412	3.118	≤8	Pass
	6	2437	3.247	≤8	Pass
	11	2462	3.609	≤8	Pass
2	1	2412	-9.042	≤8	Pass
	6	2437	-9.637	≤8	Pass
	11	2462	-10.310	≤8	Pass
3	1	2412	-12.690	≤8	Pass
	6	2437	-15.650	≤8	Pass
	11	2462	-11.910	≤8	Pass
4	3	2422	-14.950	≤8	Pass
	6	2437	-13.680	≤8	Pass
	9	2452	-14.940	≤8	Pass
Remark: 1. Total PSD = Measurement PSD + Duty Factor					

4.8 Antenna Requirement	VERDICT: PASS

4.8.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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.	

4.8.2 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.	

4.9 Test setup photo and EUT Photo	VERDICT: PASS

Remark: The test setup photo and EUT Photo please see appendix.

The End