DEKRA Testing and Certification (Suzhou) Co., Ltd.
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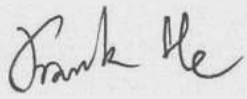
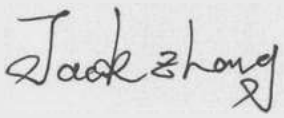
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

Test report No:
2090075R-RF-US-P06V04

FCC&ISED TEST REPORT

Product Name	Barcode Scanner
Trademark	Honeywell
Model and /or type reference	8690i
FCC ID	HD5-8690A
IC	1693B-8690A
Applicant´s name / address	HONEYWELL INTERNATIONAL INC Honeywell Safety and Productivity Solutions 9680 OLD BAILES RD FORT MILL SC 29707-7539,USA
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	2020-10-13
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)	Sept. 02, 2020
Date (start test)	Sept. 09, 2020
Date (finish test)	Sept. 28, 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
2090075R-RF-US-P06V04	V1.0	Initial issue of report.	2020-10-13

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.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. 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	2020.04.20	2021.04.19
Two-Line V-Network	R&S	ENV216	101190	2019.12.28	2020.12.27
Two-Line V-Network	R&S	ENV216	101044	2019.12.28	2020.12.27
Current Probe	R&S	EZ-17	100678	2020.03.12	2021.04.11
50ohm Termination	SHX	TF2	07081402	2020.09.23	2021.09.22
50ohm Termination	SHX	TF2	07081403	2020.09.23	2021.09.22
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2020.08.13	2021.08.12
Coaxial Cable	Suhner	RG 223	TR1-C1	2020.08.13	2021.08.12
Coaxial Cable	Suhner	RG 223	TR1-C2	2020.08.13	2021.08.12
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	2020.08.15	2021.08.14
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2020.04.17	2021.04.16
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2020.08.15	2021.08.14
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2020.08.13	2021.08.12
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	2020.03.03	2021.03.02
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2020.08.19	2021.08.18
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2020.08.13	2021.08.12
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	2020.05.08	2021.05.07
DRG Horn	ETS-Lindgren	3117	00123988	2020.05.06	2021.05.05
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170D	750	2020.05.06	2021.05.05
Pre-Amplifier	Schwarzbeck	BBV 9721	9721-024	2020.01.22	2021.01.21
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2020.08.13	2021.08.12
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%.

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)

Product Name.....:	Barcode Scanner
Model No.....:	8690i
Trademark.....:	Honeywell
FCC ID.....:	HD5-8690A
IC .....:	1693B-8690A
Manufacturer.....:	1.HONEYWELL INTERNATIONAL INC Honeywell Safety and Productivity Solutions 2.Metro(Suzhou)Technologies Co.,Ltd
Manufacturer address.....:	1. 9680 OLD BAILES RD FORT MILL SC 29707-7539,USA 2. No.221 Xinghai street China-Singapore Suzhou Industrial Park

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:
	☒	Battery: 3.7 V
Mounting position.....:	☐	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☒	Hand-held equipment
	☒	Other: Wearable equipment

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.....:	0.8 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)
	Mode 5: Simultaneous transmission.

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

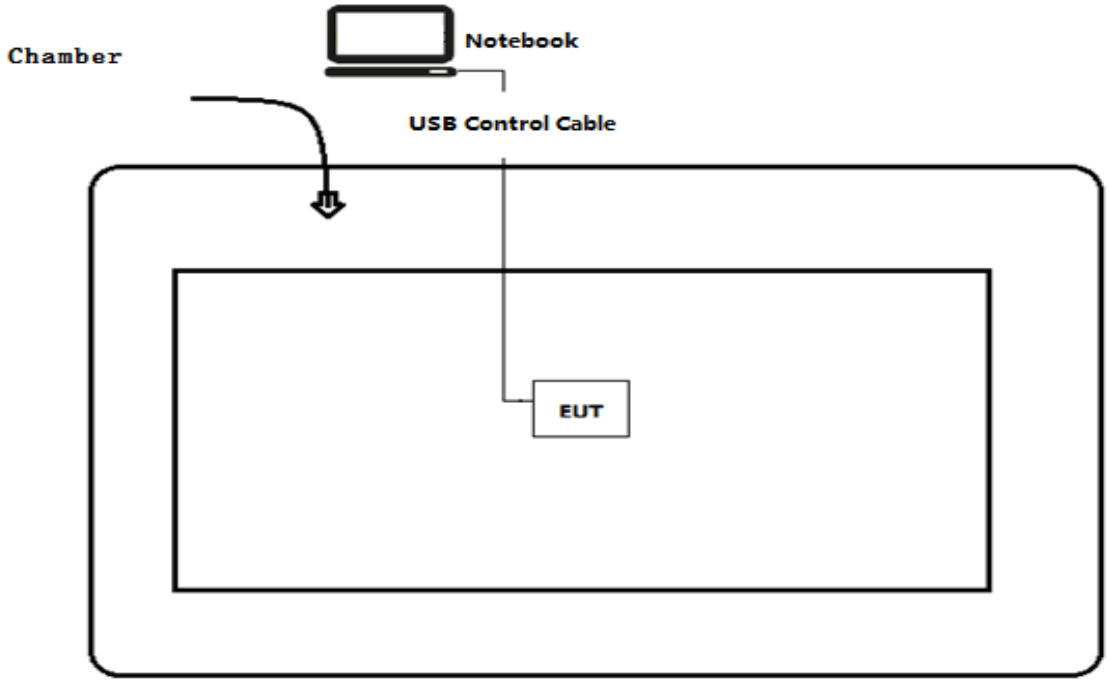
The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
software	Type / Version	Manufacturer	Supplied by
Qdart	0004.1	N/A	N/A
Putty	0.71	N/A	N/A

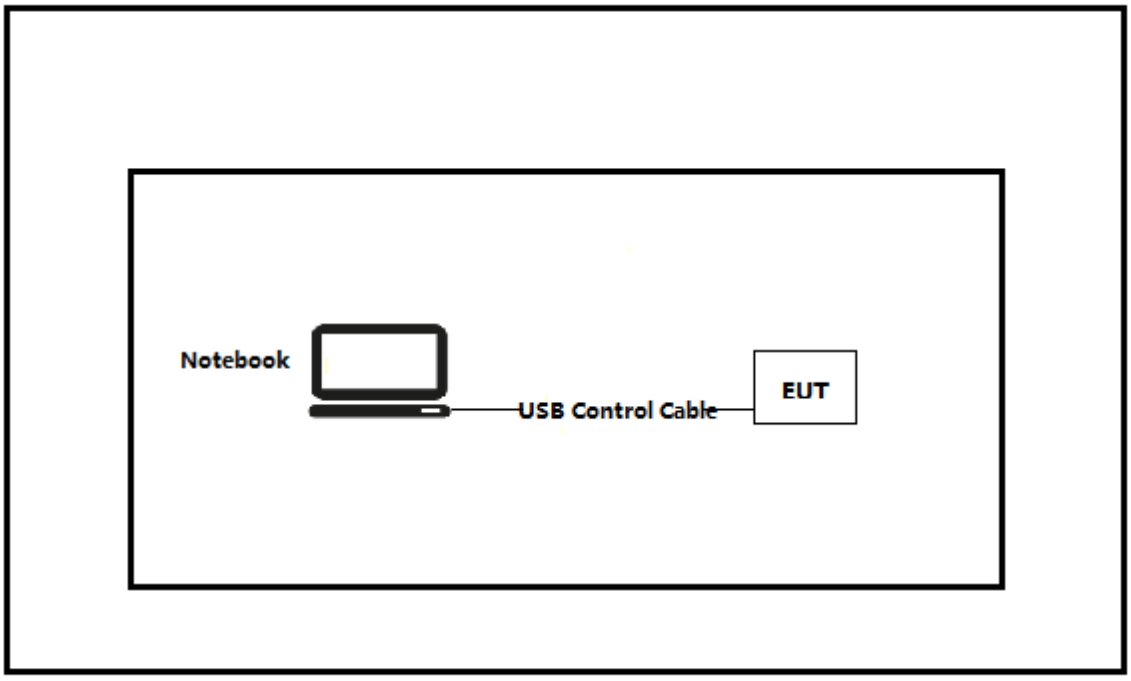
2.3 Test Configuration / Block diagram used for tests

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

Test setup Diagram- Radiated Test



Test setup Diagram- Conducted test



2.4 Testing process

1	Setup the EUT as shown in Section 2.3.
2	Execute the Putty and Qdart on the notebook.
3	Configure the test mode, the test channel, and the data rate.
4	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

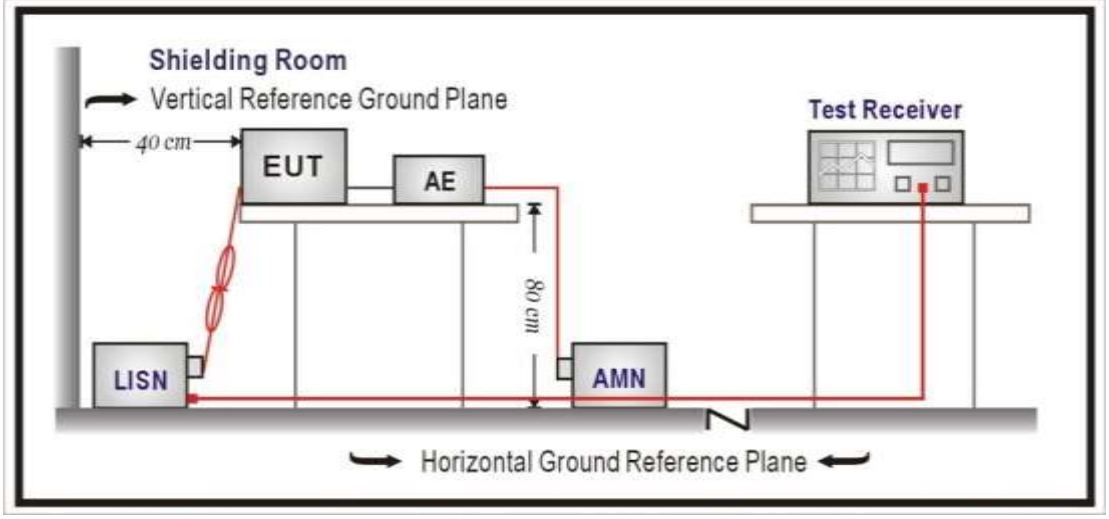
4.1 AC Power Line Conducted Emission	VERDICT: PASS

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

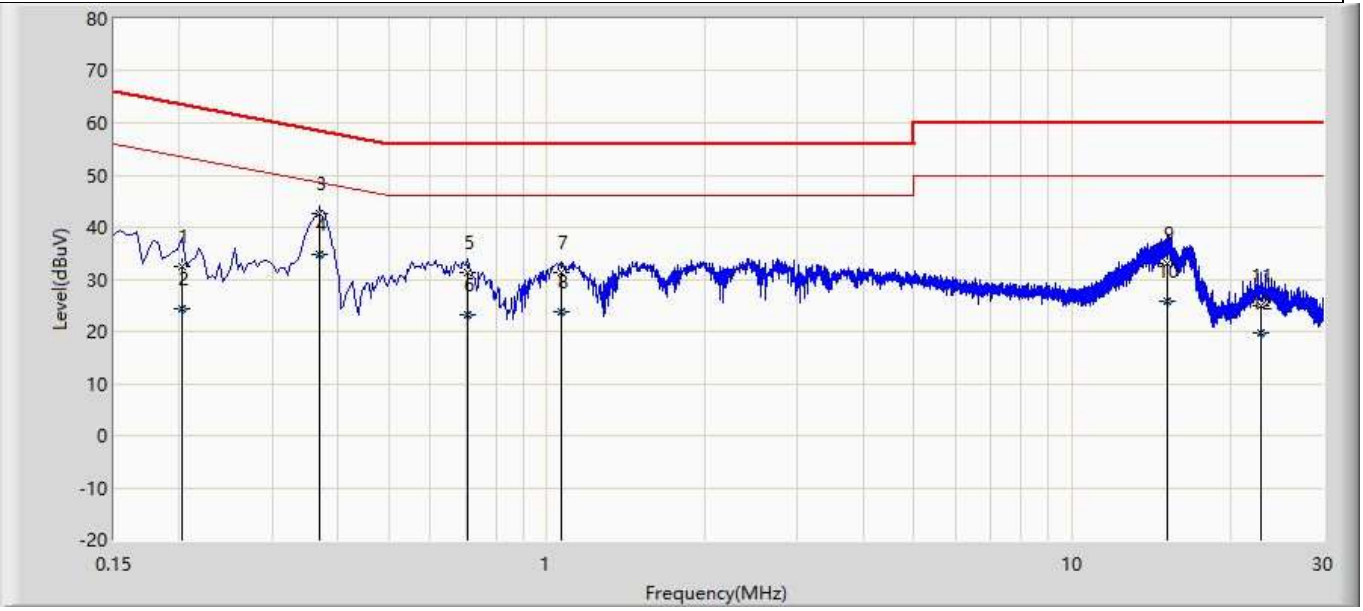


4.1.3 Test Procedure

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

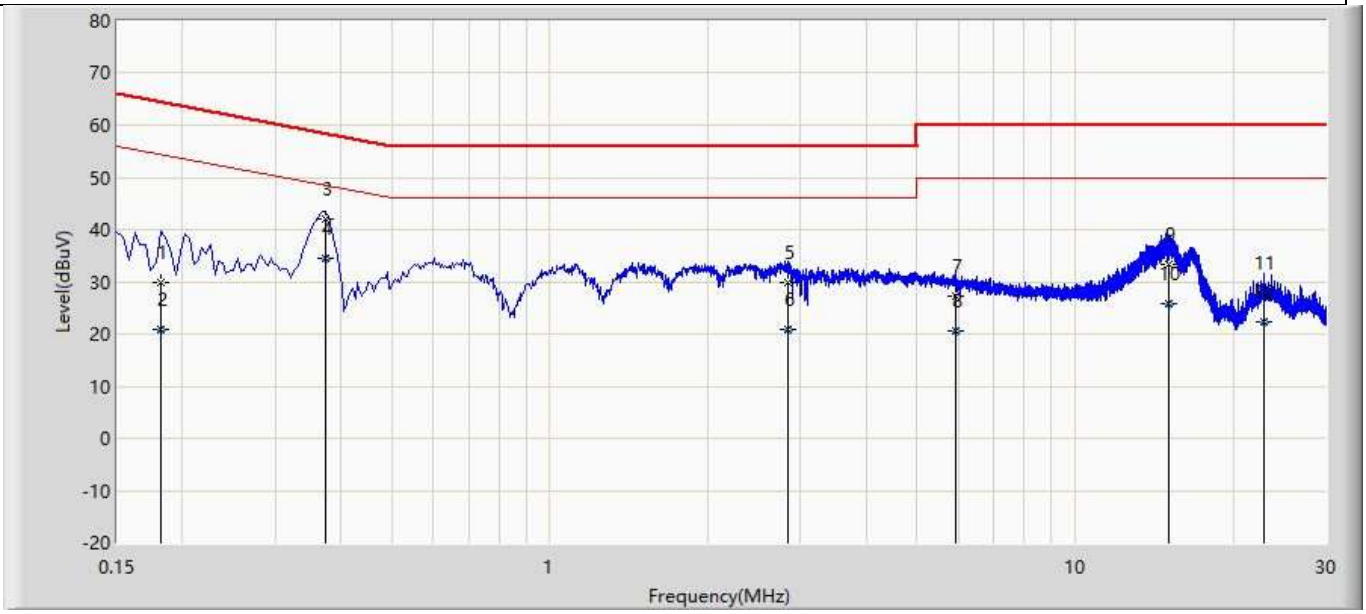
4.1.4 Test Data

Profile: 2090075R	Page No.: 9
Engineer: Pawn	
Site: TR1	Time: 2020/09/27 - 20:54
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: 8690i	Power: AC 120V/60Hz
Note:	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.202	32.436	22.786	-31.092	63.528	9.650	QP
2		0.202	24.415	14.765	-29.113	53.528	9.650	AV
3		0.370	42.511	32.854	-15.990	58.501	9.657	QP
4	*	0.370	34.815	25.158	-13.686	48.501	9.657	AV
5		0.706	31.268	21.599	-24.732	56.000	9.669	QP
6		0.706	23.271	13.603	-22.729	46.000	9.669	AV
7		1.062	31.335	21.645	-24.665	56.000	9.690	QP
8		1.062	23.833	14.143	-22.167	46.000	9.690	AV
9		15.170	32.950	22.831	-27.050	60.000	10.120	QP
10		15.170	25.875	15.755	-24.125	50.000	10.120	AV
11		22.926	24.987	14.614	-35.013	60.000	10.374	QP
12		22.926	19.802	9.428	-30.198	50.000	10.374	AV

Profile: 2090075R	Page No.: 10
Engineer: Pawn	
Site: TR1	Time: 2020/09/27 - 21:00
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: 8690i	Power: AC 120V/60Hz
Note:	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.182	29.946	20.274	-34.447	64.394	9.673	QP
2		0.182	20.988	11.315	-33.406	54.394	9.673	AV
3		0.374	41.931	32.250	-16.481	58.412	9.681	QP
4	*	0.374	34.435	24.754	-13.977	48.412	9.681	AV
5		2.834	29.928	20.168	-26.072	56.000	9.760	QP
6		2.834	20.955	11.195	-25.045	46.000	9.760	AV
7		5.902	27.350	17.493	-32.650	60.000	9.857	QP
8		5.902	20.683	10.826	-29.317	50.000	9.857	AV
9		15.074	33.364	23.235	-26.636	60.000	10.128	QP
10		15.074	25.770	15.642	-24.230	50.000	10.128	AV
11		22.906	27.762	17.377	-32.238	60.000	10.385	QP
12		22.906	22.398	12.012	-27.602	50.000	10.385	AV

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	--	--

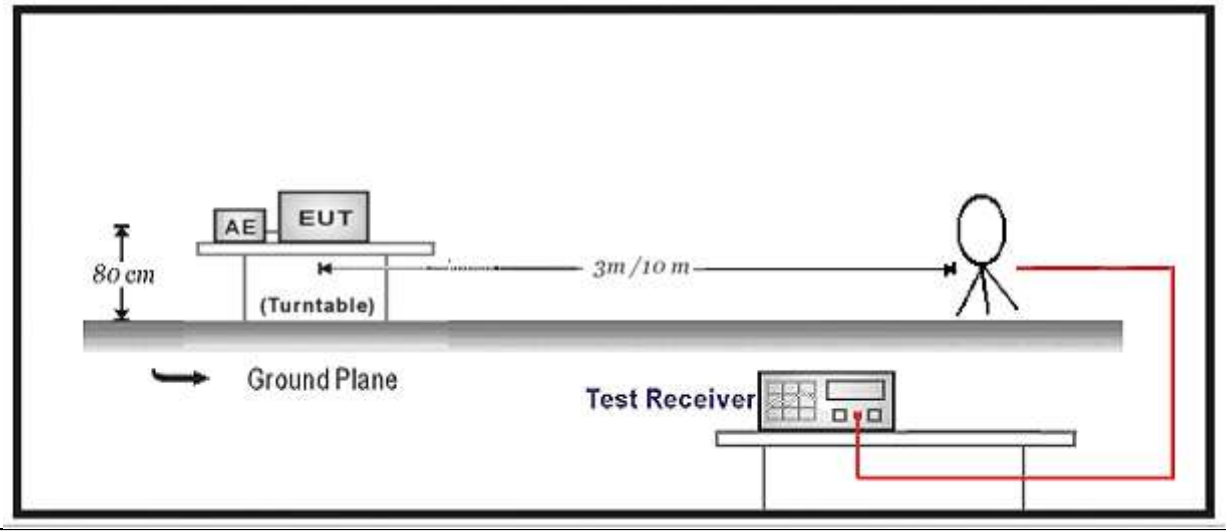
Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)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

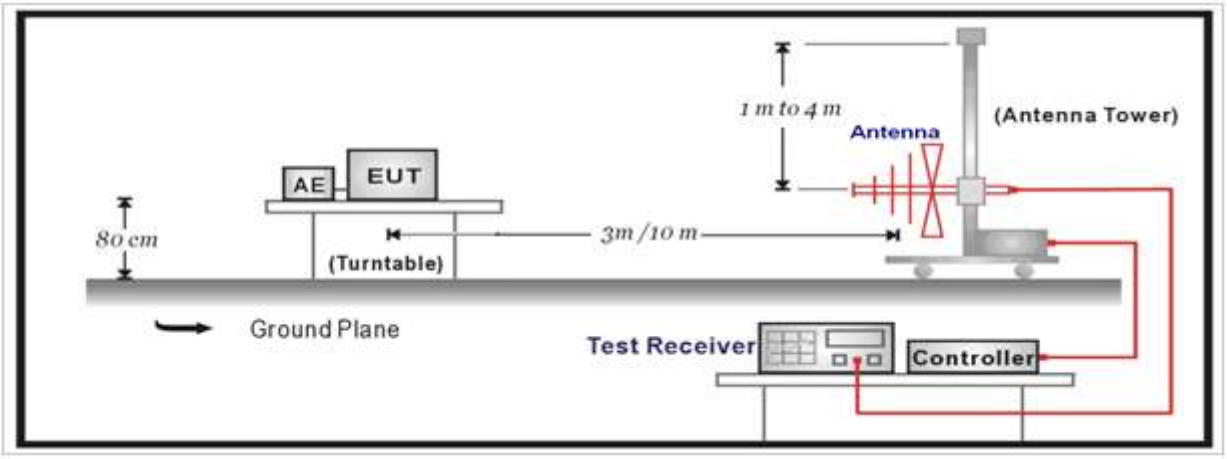
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated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

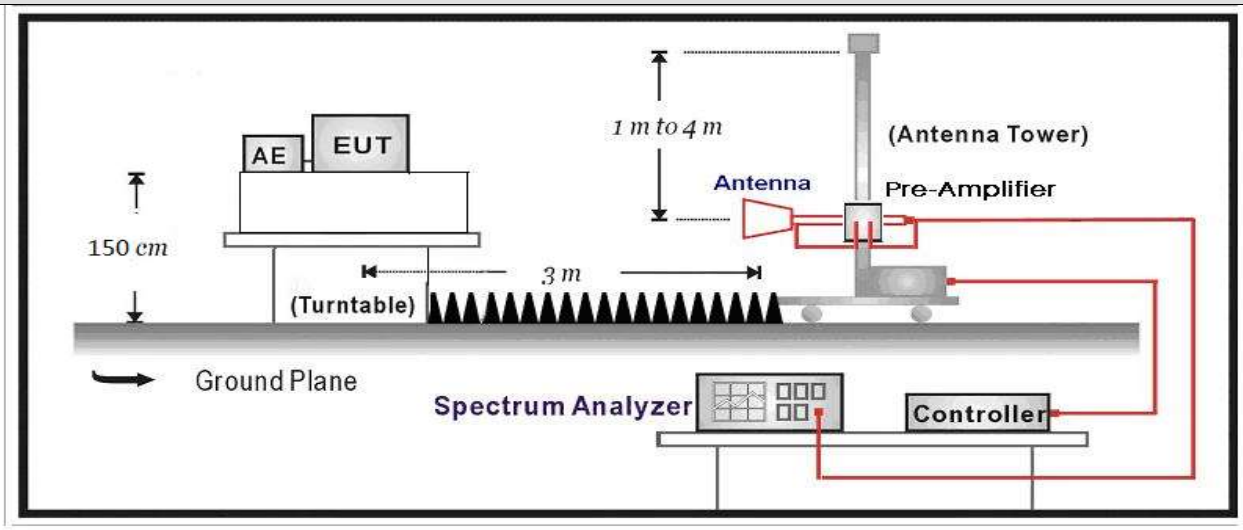
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

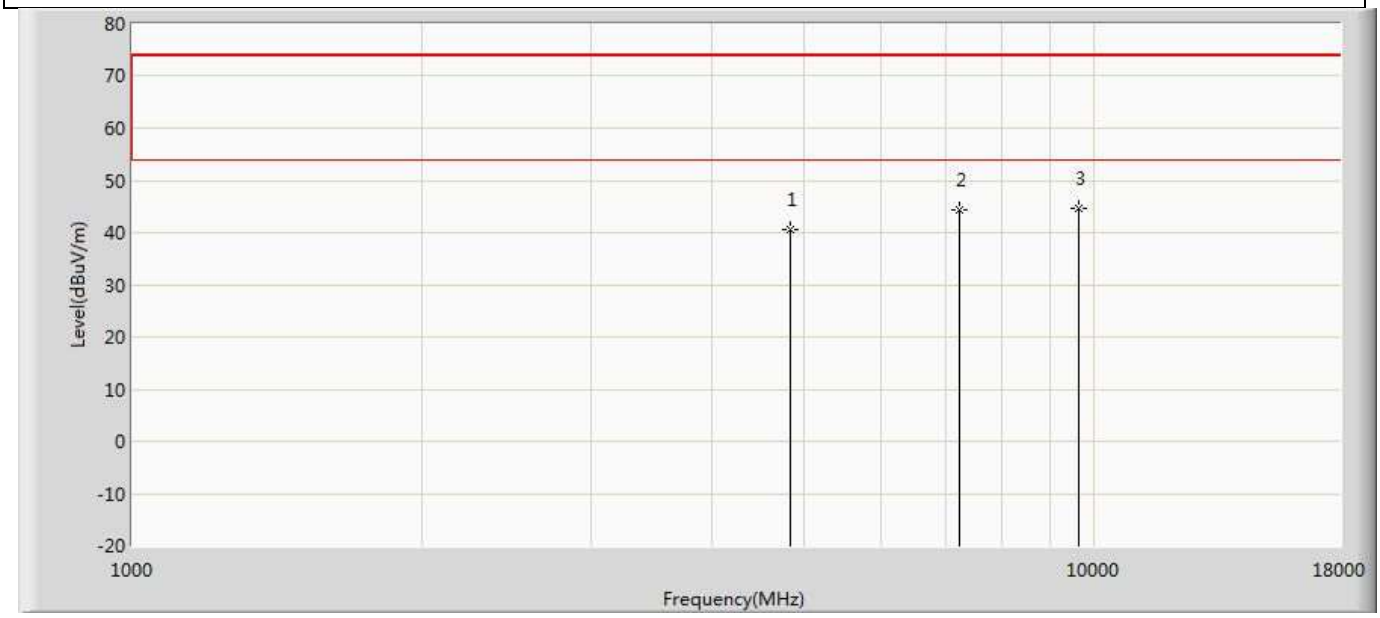


4.2.3 Test Procedure

	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

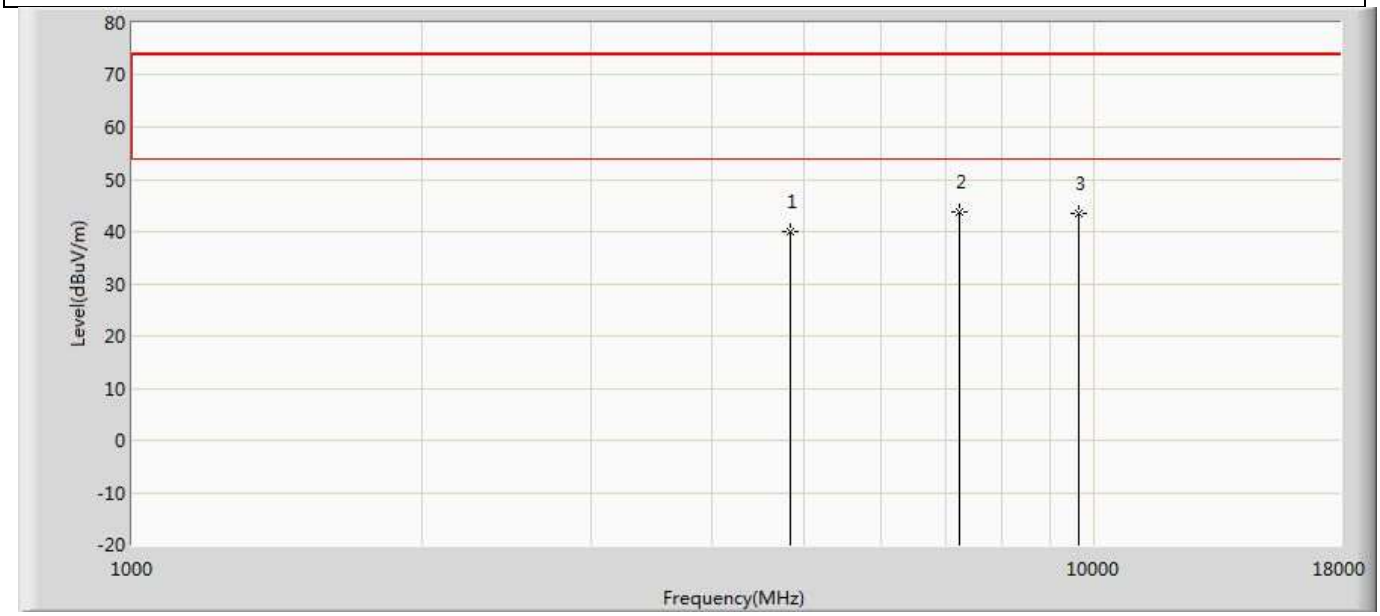
4.2.4 Test Data

Profile: 2090075R	Page No.: 57
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



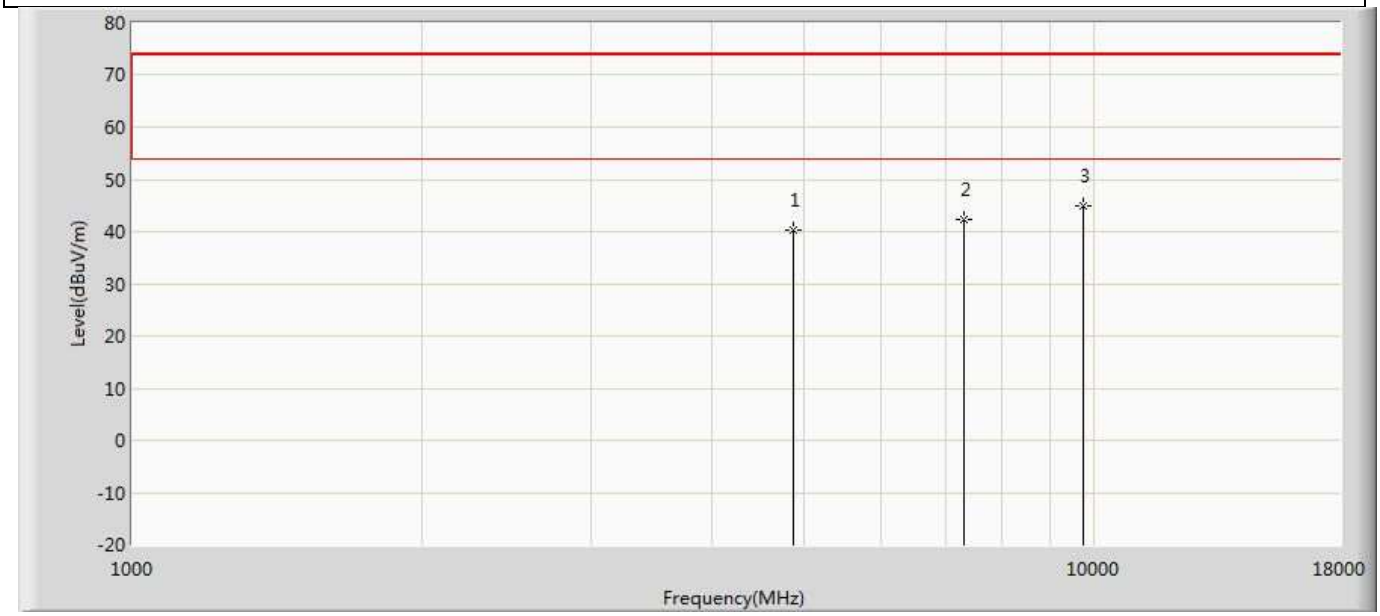
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	40.659	37.159	-33.341	74.000	3.500	PK
2		7236.000	44.318	37.470	-29.682	74.000	6.847	PK
3	*	9648.000	44.629	36.097	-29.371	74.000	8.531	PK

Profile: 2090075R	Page No.: 58
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



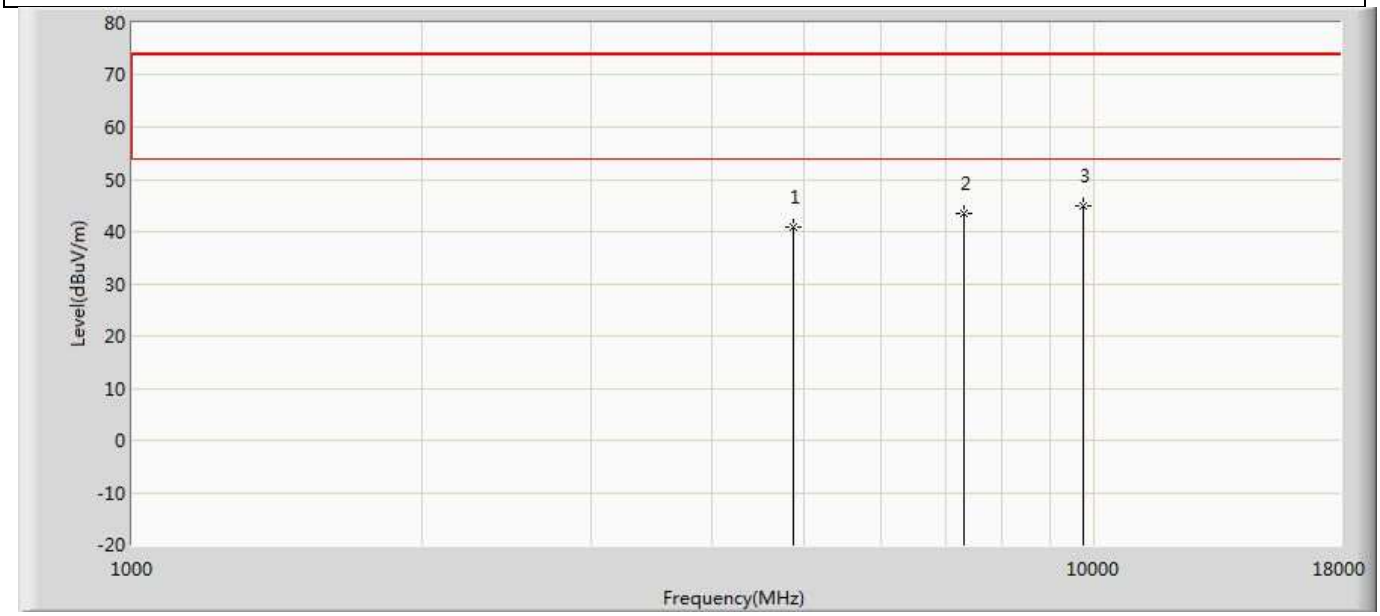
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	39.918	36.418	-34.082	74.000	3.500	PK
2	*	7236.000	43.768	36.920	-30.232	74.000	6.847	PK
3		9648.000	43.614	35.082	-30.386	74.000	8.531	PK

Profile: 2090075R	Page No.: 59
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2437MHz by 802.11b	



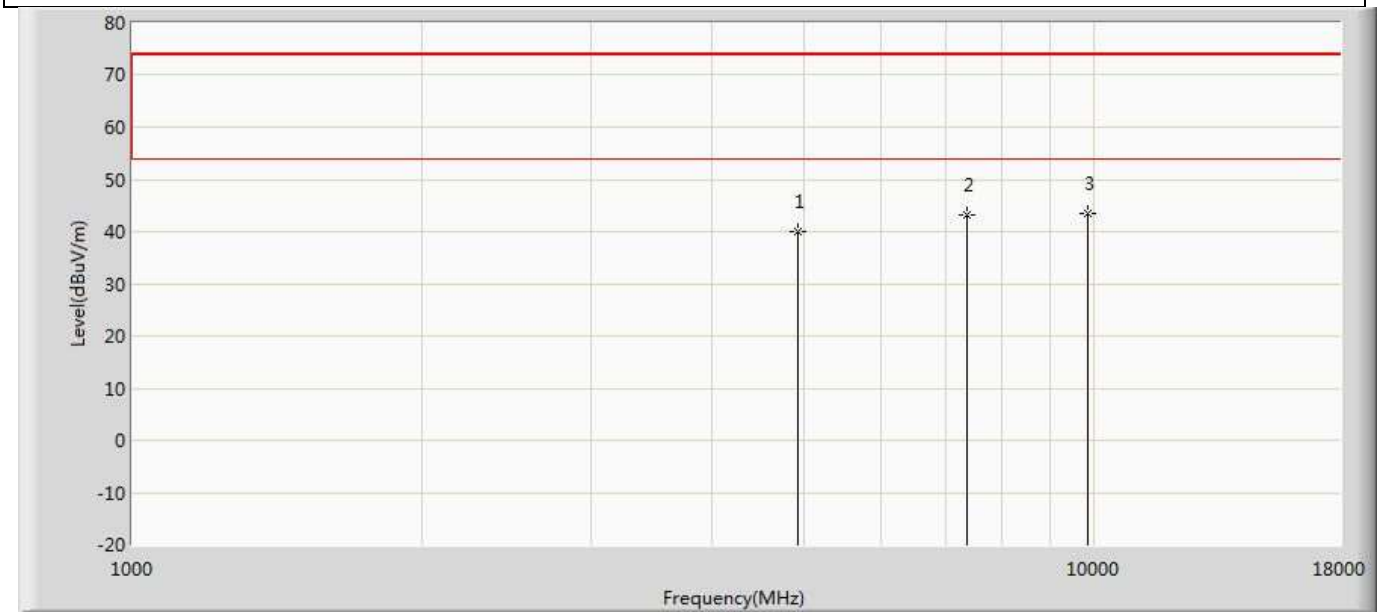
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.363	36.676	-33.637	74.000	3.687	PK
2		7311.000	42.417	35.787	-31.583	74.000	6.630	PK
3	*	9748.000	45.012	36.392	-28.988	74.000	8.620	PK

Profile: 2090075R	Page No.: 60
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2437MHz by 802.11b	



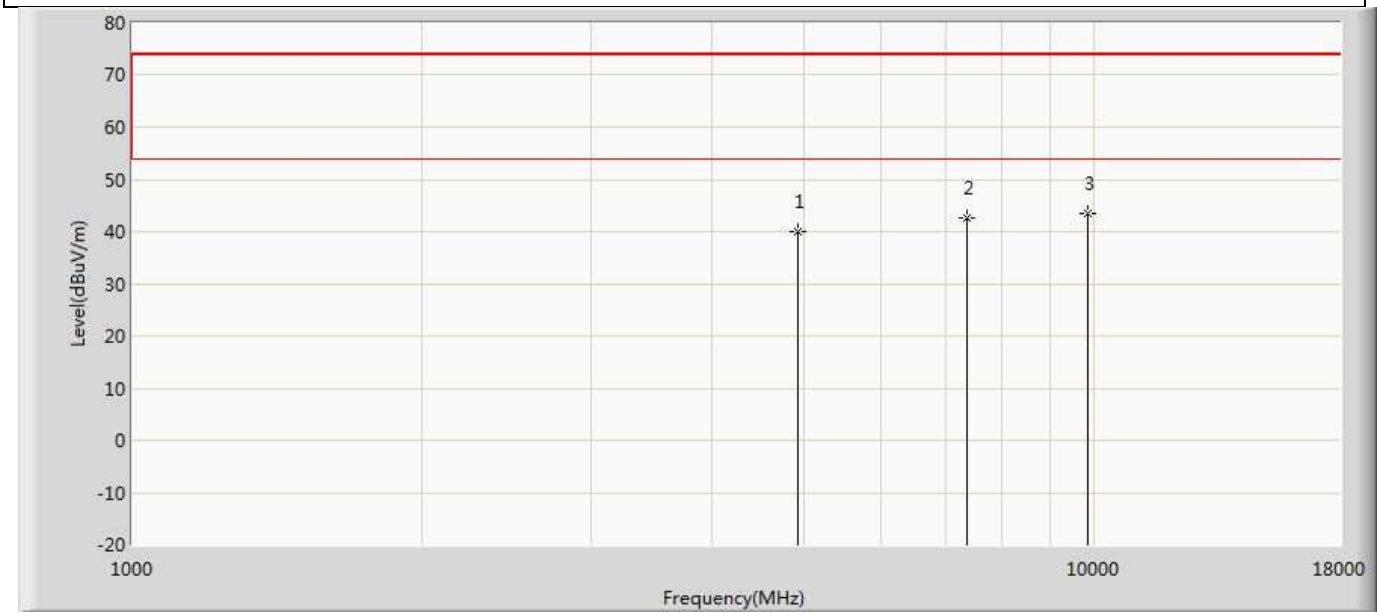
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.904	37.217	-33.096	74.000	3.687	PK
2		7311.000	43.464	36.834	-30.536	74.000	6.630	PK
3	*	9748.000	45.044	36.424	-28.956	74.000	8.620	PK

Profile: 2090075R	Page No.: 61
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



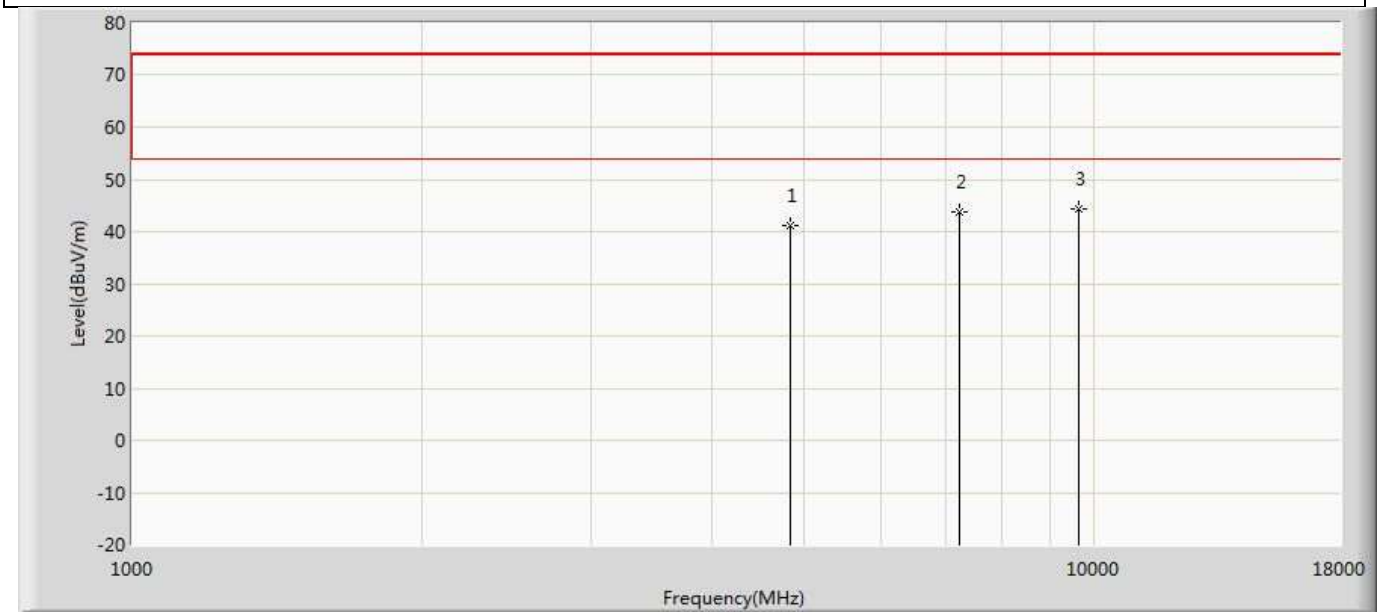
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	40.049	36.485	-33.951	74.000	3.563	PK
2		7386.000	43.244	36.460	-30.756	74.000	6.783	PK
3	*	9848.000	43.394	34.937	-30.606	74.000	8.458	PK

Profile: 2090075R	Page No.: 62
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



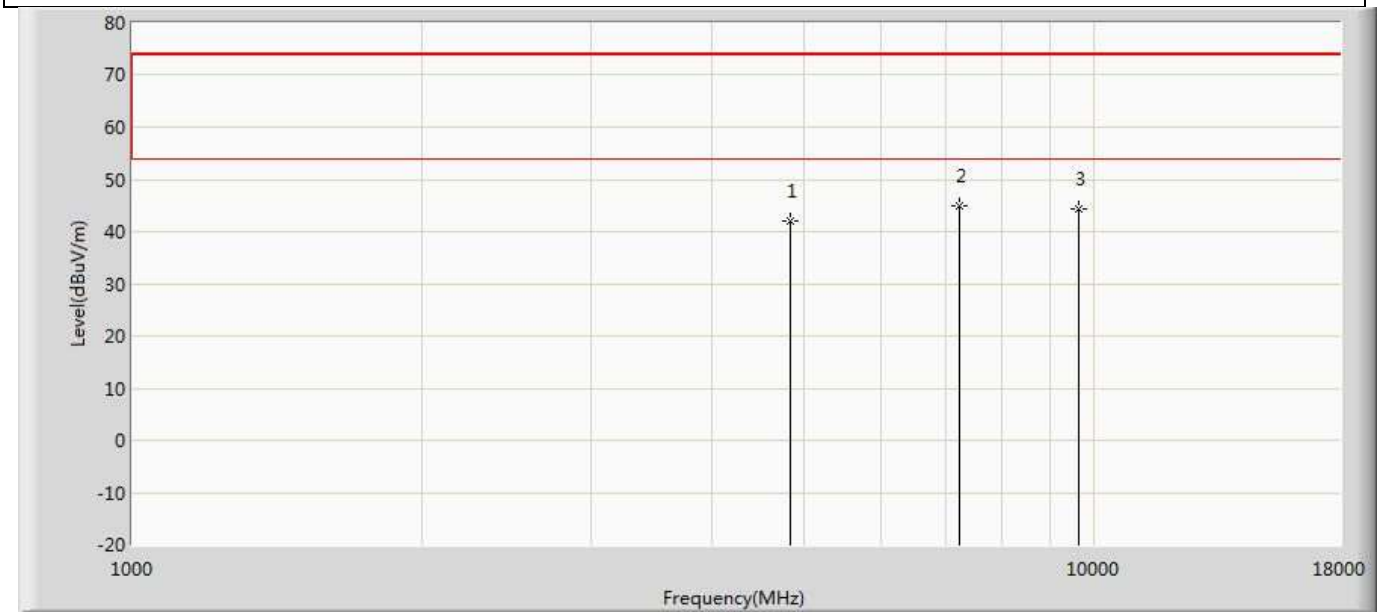
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	40.077	36.513	-33.923	74.000	3.563	PK
2		7386.000	42.600	35.816	-31.400	74.000	6.783	PK
3	*	9848.000	43.595	35.138	-30.405	74.000	8.458	PK

Profile: 2090075R	Page No.: 63
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



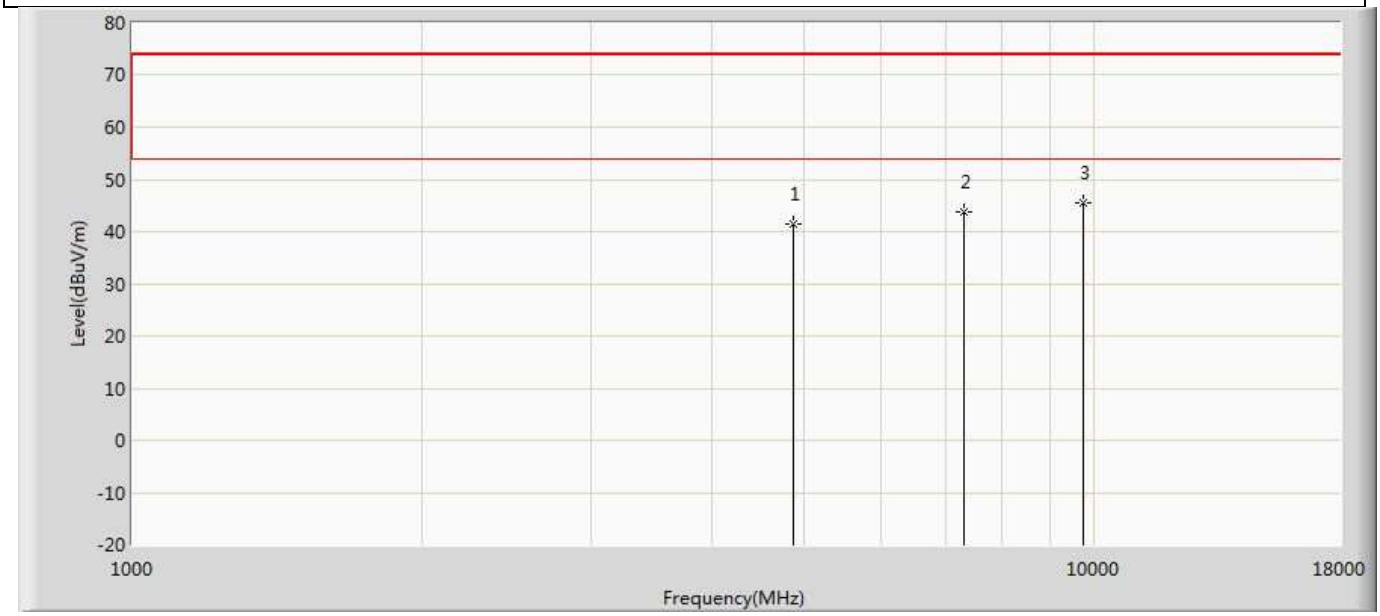
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.218	37.718	-32.782	74.000	3.500	PK
2		7236.000	43.771	36.923	-30.229	74.000	6.847	PK
3	*	9648.000	44.265	35.733	-29.735	74.000	8.531	PK

Profile: 2090075R	Page No.: 64
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



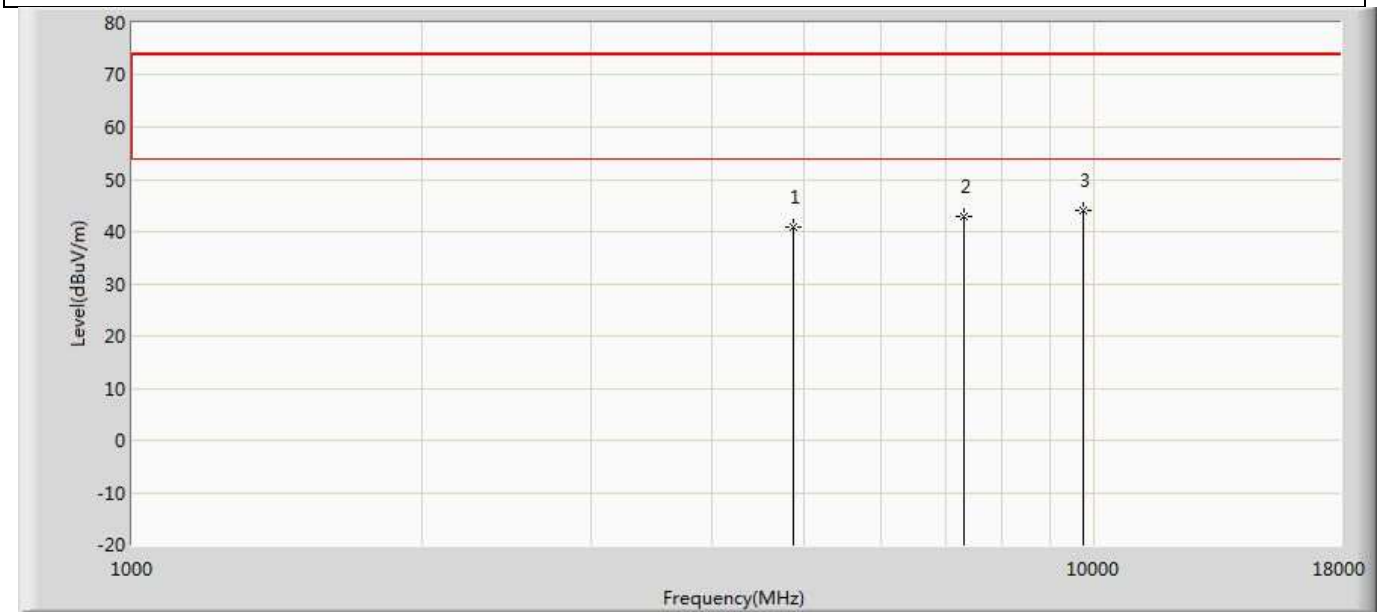
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	42.012	38.512	-31.988	74.000	3.500	PK
2	*	7236.000	44.885	38.037	-29.115	74.000	6.847	PK
3		9648.000	44.381	35.849	-29.619	74.000	8.531	PK

Profile: 2090075R	Page No.: 65
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2437MHz by 802.11g	



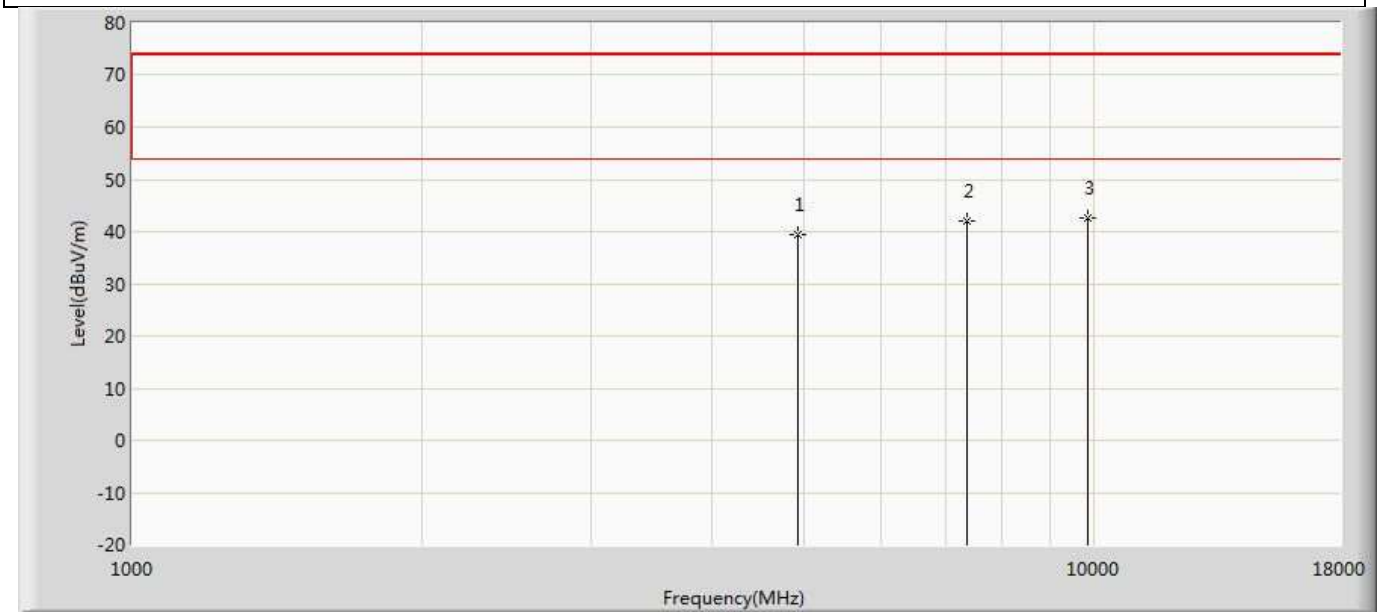
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	41.517	37.830	-32.483	74.000	3.687	PK
2		7311.000	43.837	37.207	-30.163	74.000	6.630	PK
3	*	9748.000	45.485	36.865	-28.515	74.000	8.620	PK

Profile: 2090075R	Page No.: 66
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2437MHz by 802.11g	



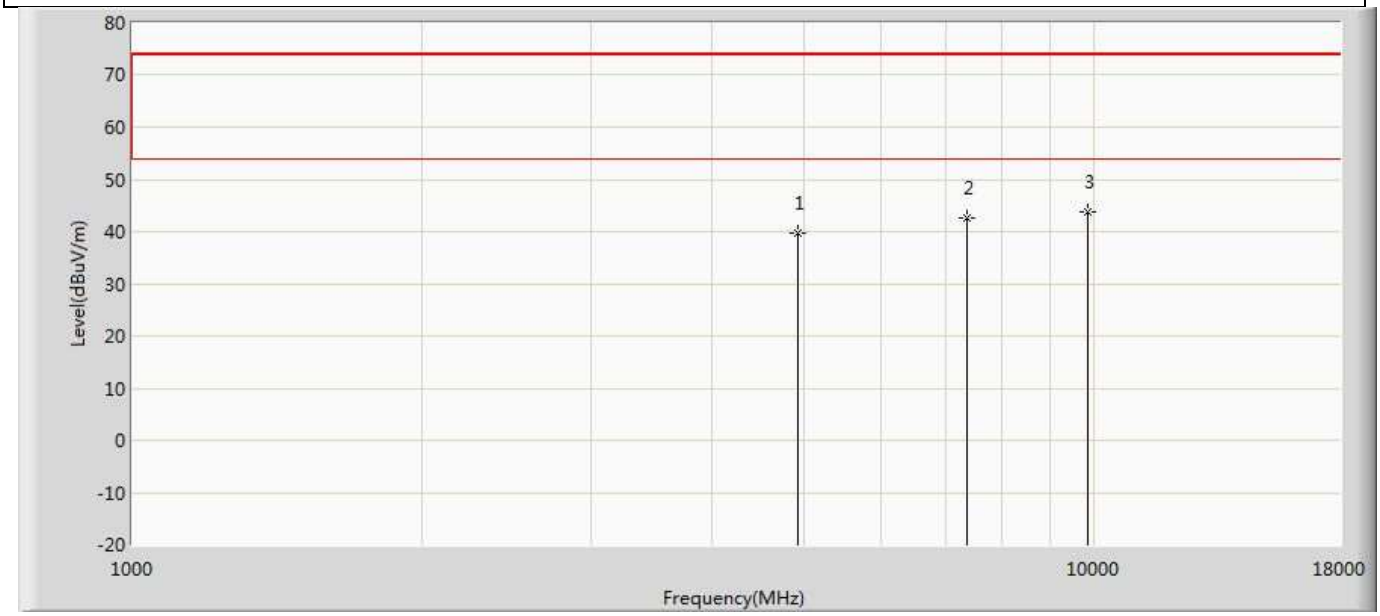
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.805	37.118	-33.195	74.000	3.687	PK
2		7311.000	42.769	36.139	-31.231	74.000	6.630	PK
3	*	9748.000	44.173	35.553	-29.827	74.000	8.620	PK

Profile: 2090075R	Page No.: 67
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2462MHz by 802.11g	



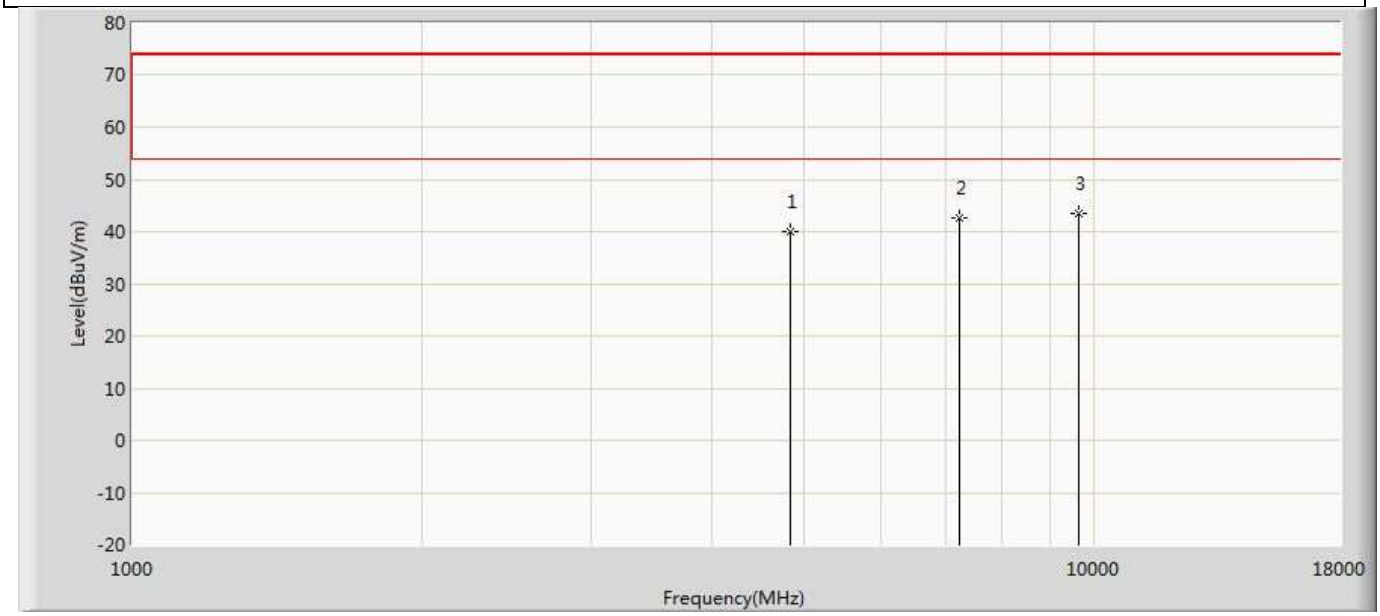
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	39.418	35.854	-34.582	74.000	3.563	PK
2		7386.000	42.132	35.348	-31.868	74.000	6.783	PK
3	*	9848.000	42.676	34.219	-31.324	74.000	8.458	PK

Profile: 2090075R	Page No.: 68
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
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	39.669	36.105	-34.331	74.000	3.563	PK
2		7386.000	42.518	35.734	-31.482	74.000	6.783	PK
3	*	9848.000	43.721	35.264	-30.279	74.000	8.458	PK

Profile: 2090075R	Page No.: 69
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	

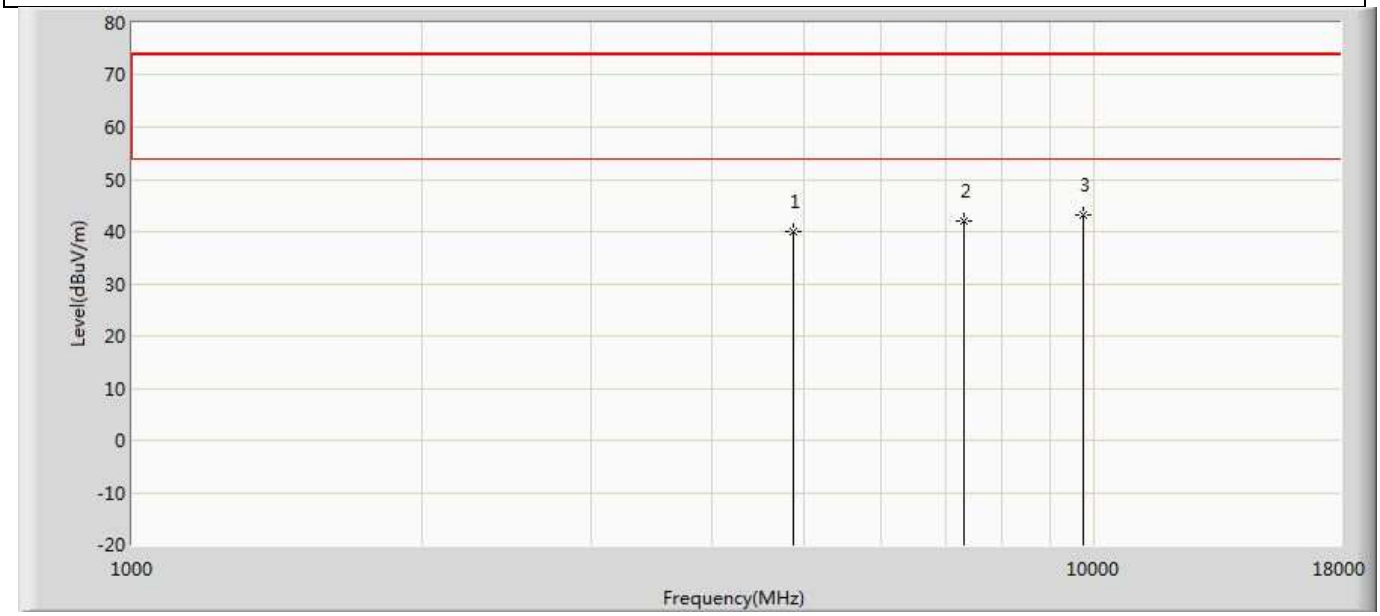


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	39.997	36.497	-34.003	74.000	3.500	PK
2		7236.000	42.484	35.636	-31.516	74.000	6.847	PK
3	*	9648.000	43.560	35.028	-30.440	74.000	8.531	PK

Profile: 2090075R	Page No.: 70
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	

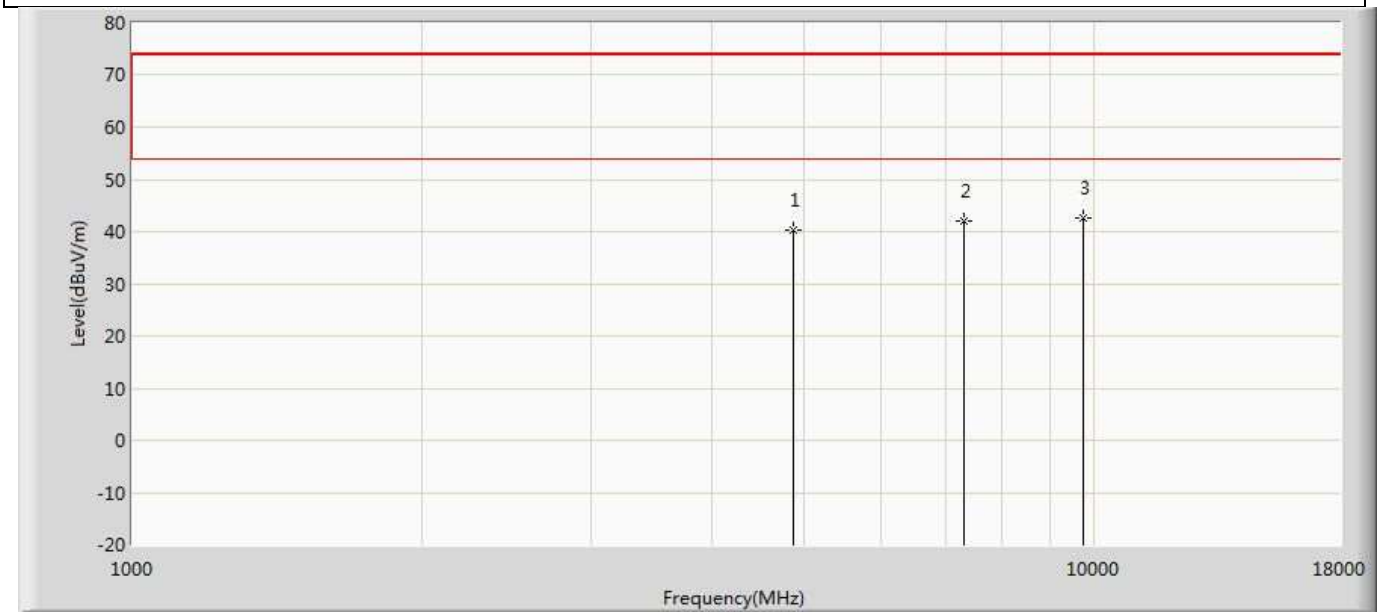
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	39.633	36.133	-34.367	74.000	3.500	PK
2		7236.000	42.992	36.144	-31.008	74.000	6.847	PK
3	*	9648.000	43.249	34.717	-30.751	74.000	8.531	PK

Profile: 2090075R	Page No.: 71
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	



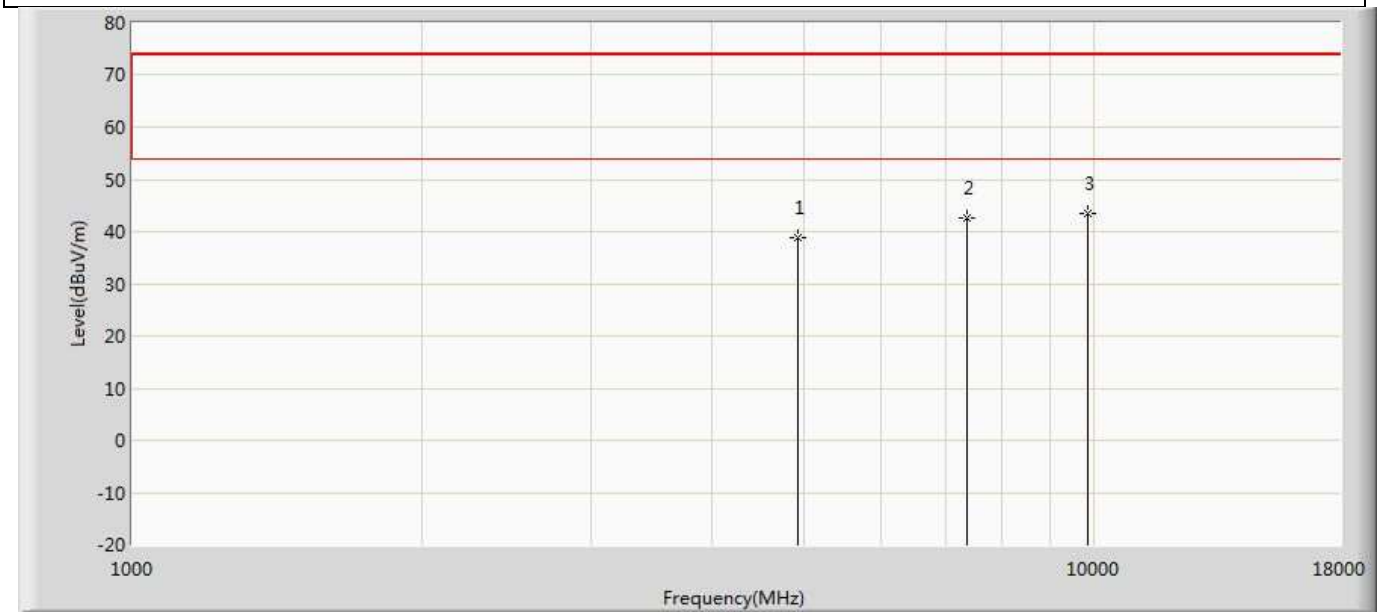
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	39.916	36.229	-34.084	74.000	3.687	PK
2		7311.000	42.075	35.445	-31.925	74.000	6.630	PK
3	*	9748.000	43.166	34.546	-30.834	74.000	8.620	PK

Profile: 2090075R	Page No.: 72
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	



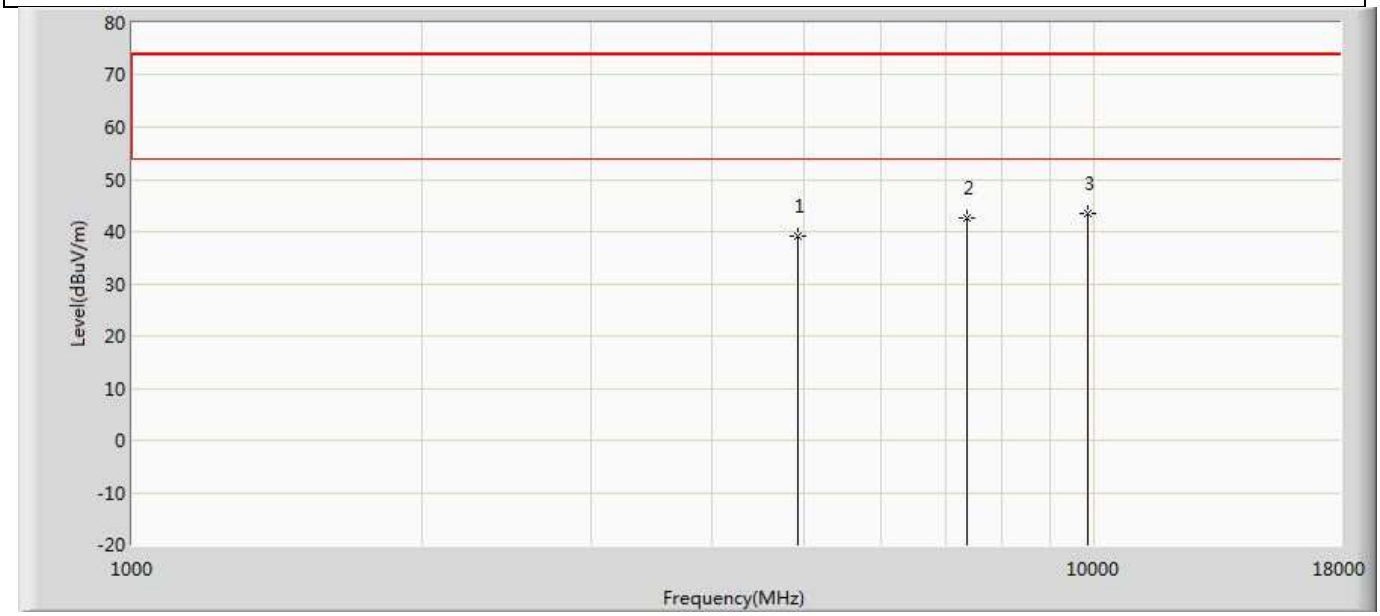
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.352	36.665	-33.648	74.000	3.687	PK
2		7311.000	41.997	35.367	-32.003	74.000	6.630	PK
3	*	9748.000	42.674	34.054	-31.326	74.000	8.620	PK

Profile: 2090075R	Page No.: 73
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



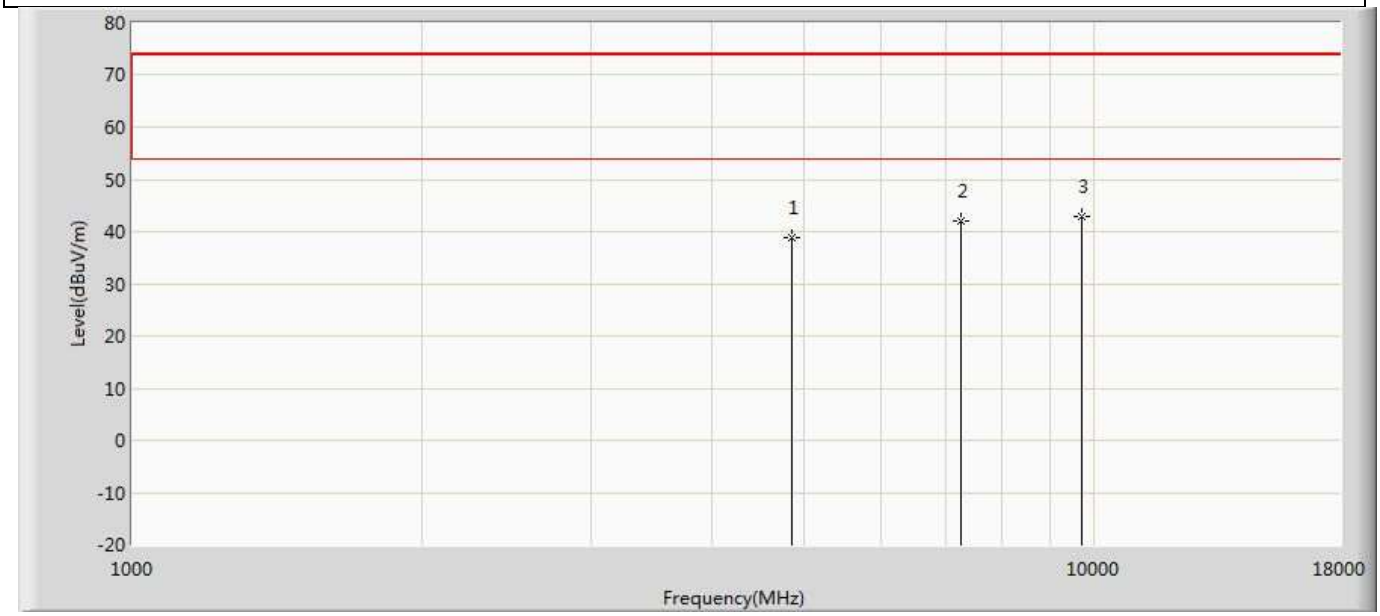
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	38.866	35.302	-35.134	74.000	3.563	PK
2		7386.000	42.658	35.874	-31.342	74.000	6.783	PK
3	*	9848.000	43.587	35.130	-30.413	74.000	8.458	PK

Profile: 2090075R	Page No.: 74
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



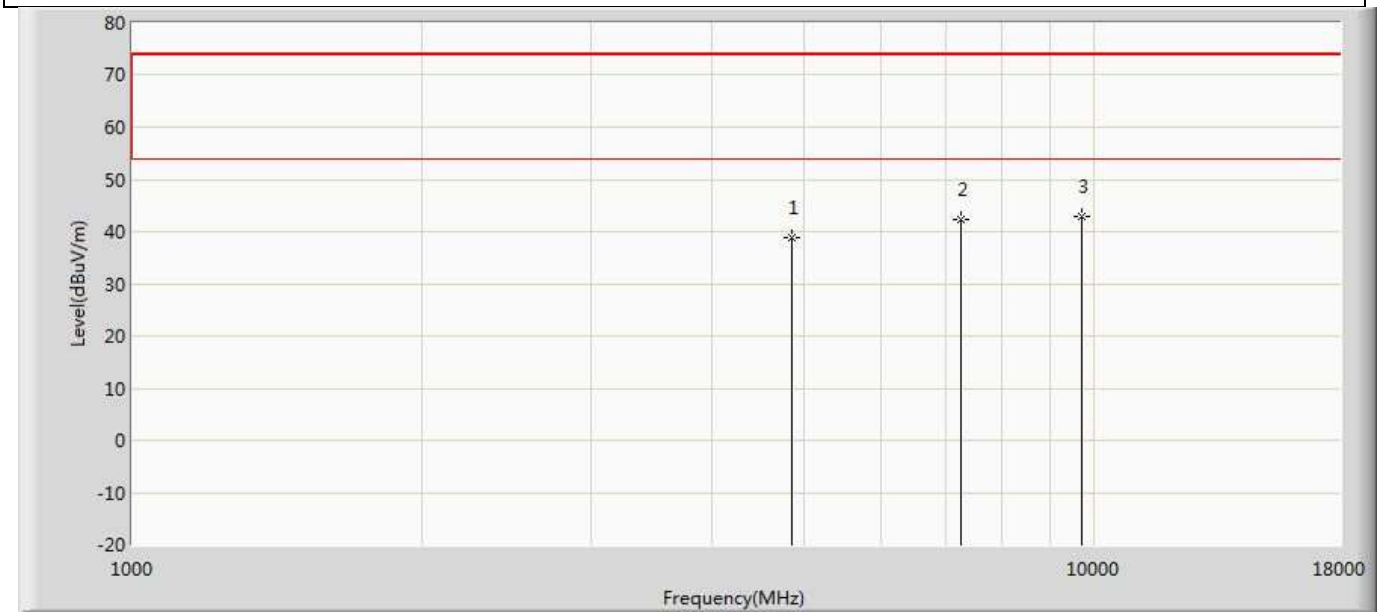
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	39.269	35.705	-34.731	74.000	3.563	PK
2		7386.000	42.493	35.709	-31.507	74.000	6.783	PK
3	*	9848.000	43.495	35.038	-30.505	74.000	8.458	PK

Profile: 2090075R	Page No.: 75
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



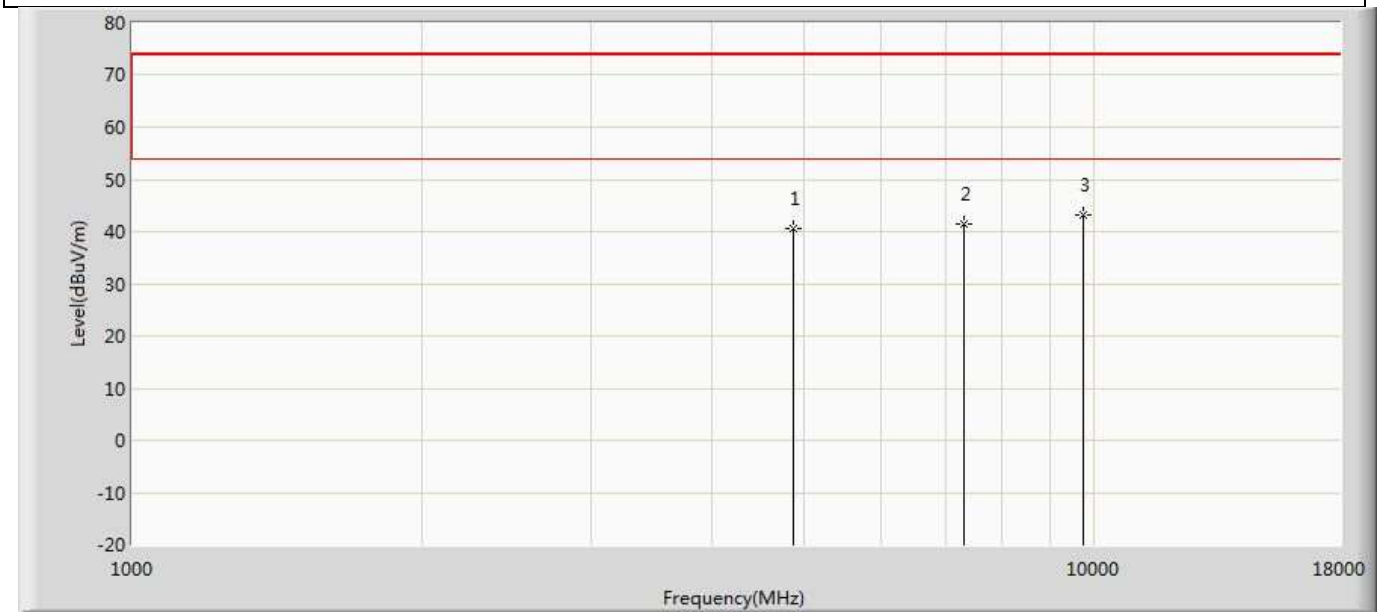
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	38.976	35.300	-35.024	74.000	3.676	PK
2		7266.000	42.080	35.438	-31.920	74.000	6.642	PK
3	*	9688.000	43.006	34.573	-30.994	74.000	8.434	PK

Profile: 2090075R	Page No.: 76
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



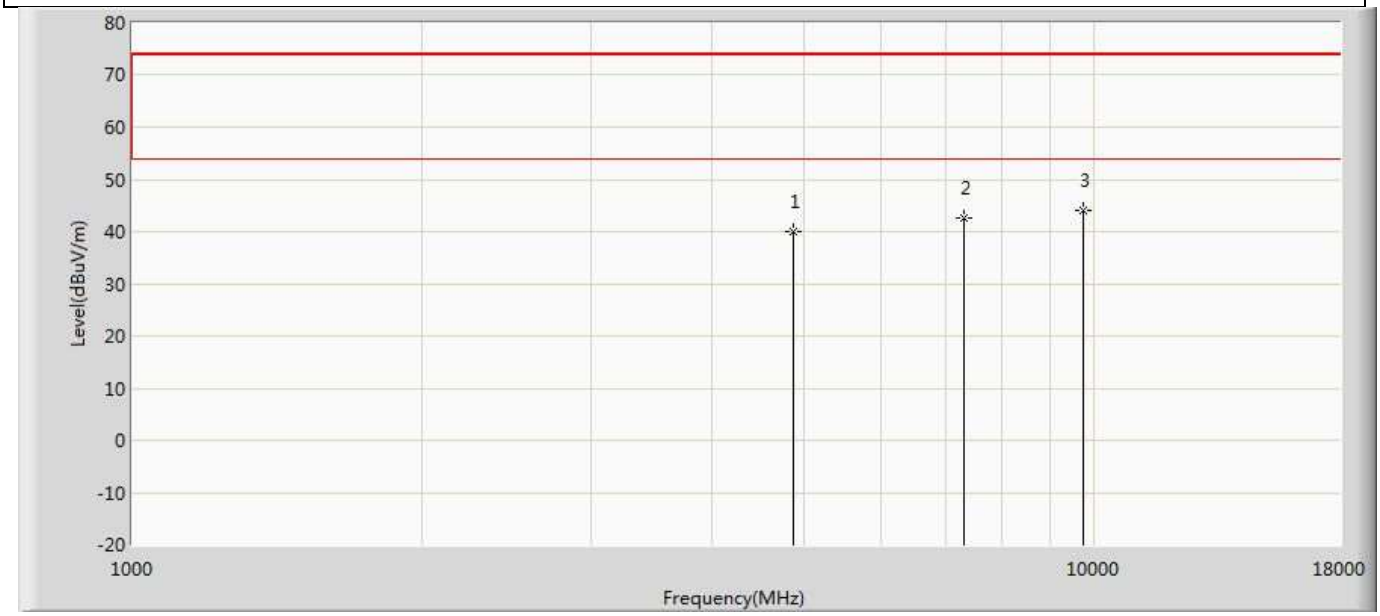
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	38.765	35.089	-35.235	74.000	3.676	PK
2		7266.000	42.387	35.745	-31.613	74.000	6.642	PK
3	*	9688.000	42.883	34.450	-31.117	74.000	8.434	PK

Profile: 2090075R	Page No.: 77
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
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	40.653	36.966	-33.347	74.000	3.687	PK
2		7311.000	41.585	34.955	-32.415	74.000	6.630	PK
3	*	9748.000	43.178	34.558	-30.822	74.000	8.620	PK

Profile: 2090075R	Page No.: 78
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
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	40.104	36.417	-33.896	74.000	3.687	PK
2		7311.000	42.629	35.999	-31.371	74.000	6.630	PK
3	*	9748.000	44.200	35.580	-29.800	74.000	8.620	PK

Profile: 2090075R	Page No.: 79
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
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	39.163	35.564	-34.837	74.000	3.598	PK
2	*	7356.000	43.156	36.192	-30.844	74.000	6.964	PK
3		9808.000	42.959	34.102	-31.041	74.000	8.857	PK

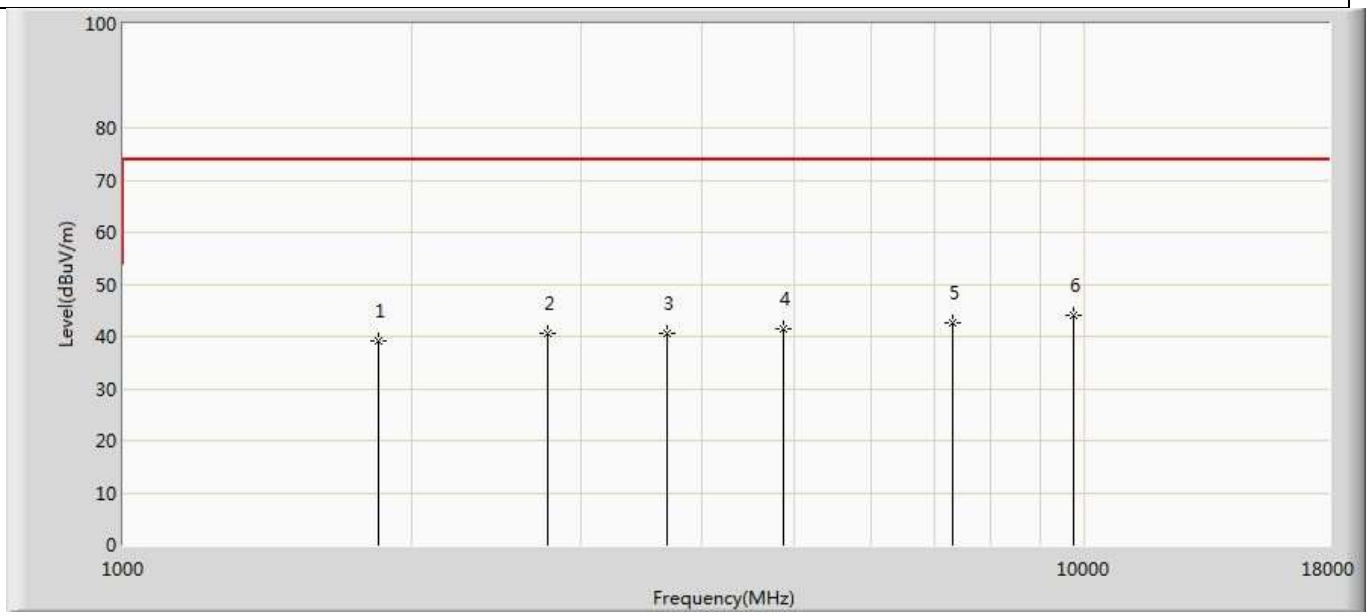
Profile: 2090075R	Page No.: 80
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/18 - 09:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	40.270	36.671	-33.730	74.000	3.598	PK
2	*	7356.000	42.843	35.879	-31.157	74.000	6.964	PK
3		9808.000	42.563	33.706	-31.437	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.

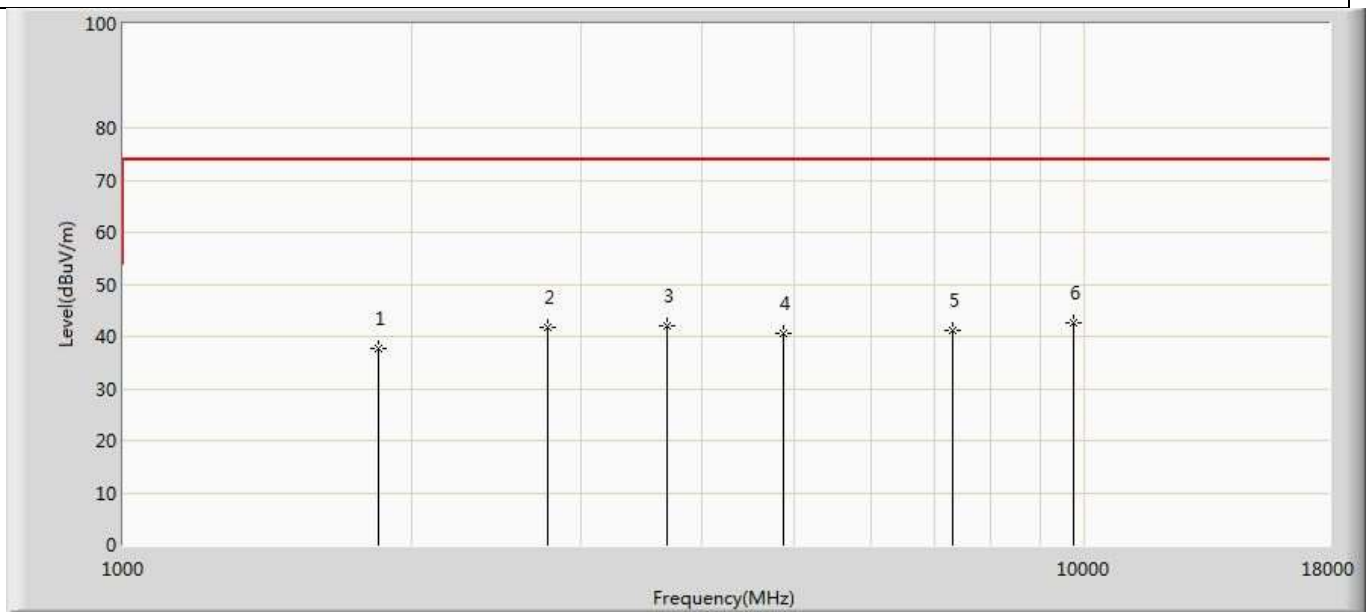
The worst case of Simultaneous transmission:

Profile: 2090075R	Page No.: 1
Engineer: Yingfei.wang	
Site: AC5	Time: 2020/09/22 - 16:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8690i	Power: Battery
Note: Mode 5：Transmit at 2437 MHz by 802.11n(20MHz) and 920.75 MHz by RFID	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1841.500	39.270	39.038	-34.730	74.000	0.233	PK
2		2762.250	40.572	38.733	-33.428	74.000	1.838	PK
3		3683.000	40.684	36.774	-33.316	74.000	3.910	PK
4		4874.000	41.357	36.510	-32.643	74.000	4.846	PK
5		7311.000	42.658	34.667	-31.342	74.000	7.991	PK
6	*	9748.000	44.019	34.314	-29.981	74.000	9.705	PK

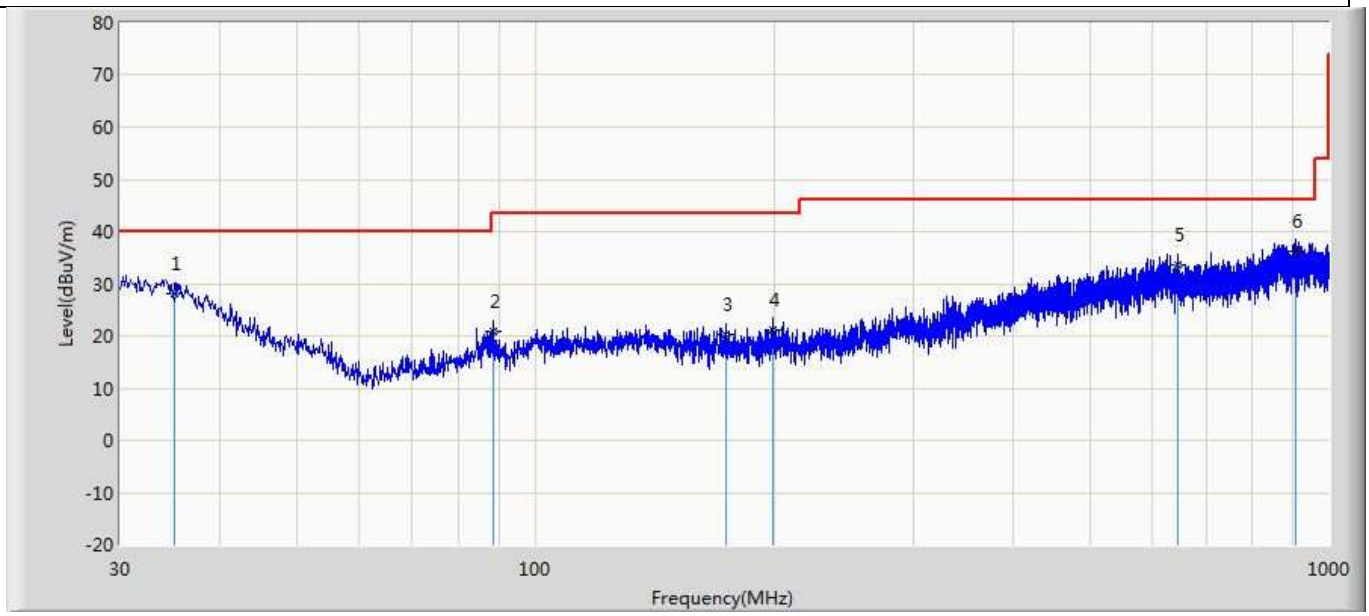
Profile: 2090075R	Page No.: 2
Engineer: Yingfei.wang	
Site: AC5	Time: 2020/09/22 - 16:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8690i	Power: Battery
Note: Mode 5：Transmit at 2437 MHz by 802.11n(20MHz) and 920.75 MHz by RFID	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1841.500	37.663	37.431	-36.337	74.000	0.233	PK
2		2762.250	41.770	39.931	-32.230	74.000	1.838	PK
3		3683.000	42.105	38.195	-31.895	74.000	3.910	PK
4		4874.000	40.680	35.833	-33.320	74.000	4.846	PK
5		7311.000	41.275	33.284	-32.725	74.000	7.991	PK
6	*	9748.000	42.556	32.851	-31.444	74.000	9.705	PK

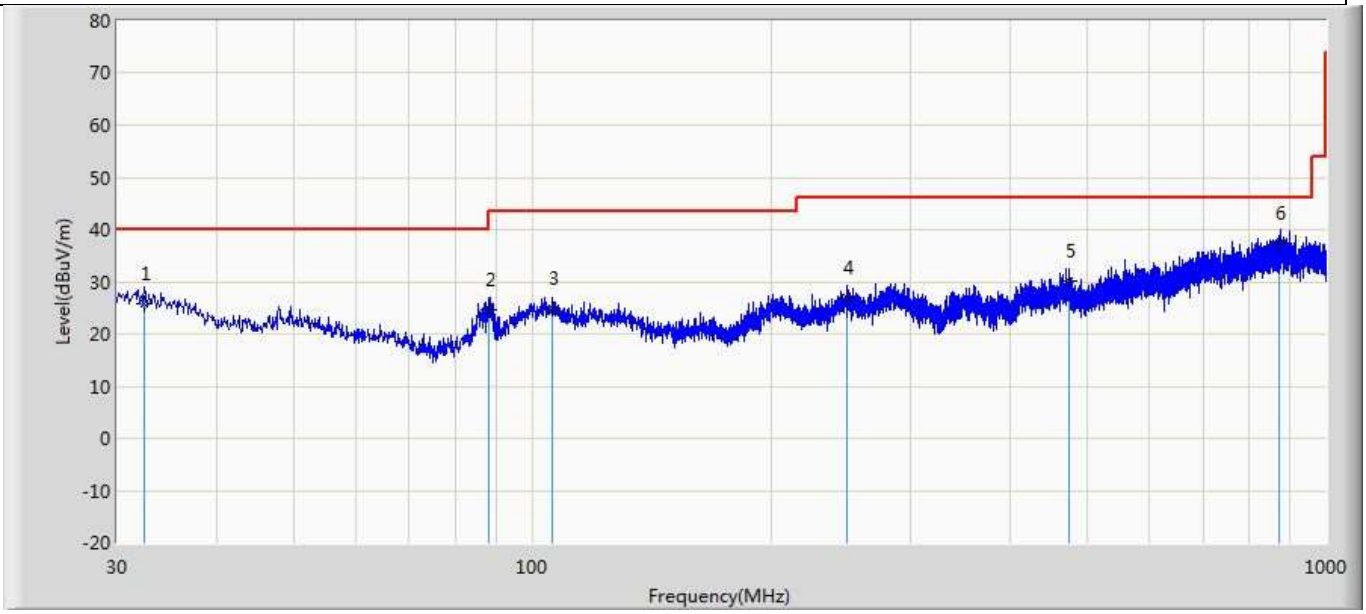
The worst case of Radiated Emission below 1GHz:

Profile: 2090075R	Page No.: 1
Engineer: Yingfei.Wang	
Site: AC2	Time: 2020/09/22 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: 8690i	Power: Battery
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		35.092	28.076	1.258	-11.924	40.000	26.817	QP
2		88.564	20.749	6.987	-22.751	43.500	13.762	QP
3		174.045	20.218	3.123	-23.282	43.500	17.095	QP
4		199.023	21.161	3.458	-22.339	43.500	17.703	QP
5		644.616	33.668	5.485	-12.332	46.000	28.183	QP
6	*	906.759	36.172	3.458	-9.828	46.000	32.714	QP

Profile: 2090075R	Page No.: 2
Engineer: Yingfei.Wang	
Site: AC2	Time: 2020/09/22 - 20:28
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: 8690i	Power: Battery
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		32.425	25.903	2.698	-14.097	40.000	23.205	QP
2		88.200	24.643	7.984	-18.857	43.500	16.659	QP
3		106.024	25.019	3.012	-18.481	43.500	22.007	QP
4		248.977	26.901	2.589	-19.099	46.000	24.312	QP
5		475.473	30.098	3.984	-15.902	46.000	26.114	QP
6	*	873.051	37.397	4.516	-8.603	46.000	32.881	QP

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

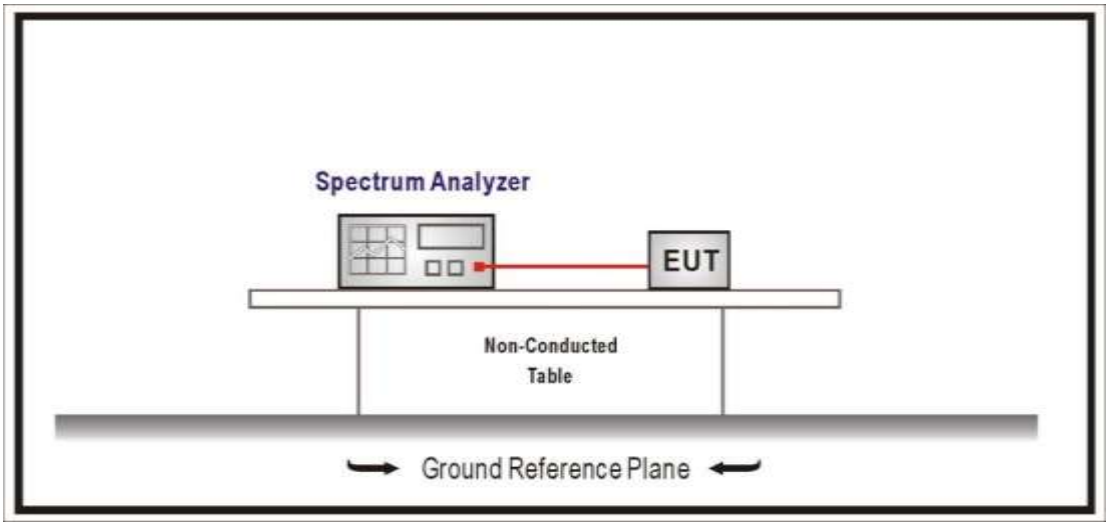
4.3.1 Limit

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	7.971	2400	-45.91	53.881	⩾20	Pass
	11	2462	8.666	2500	-57.29	65.956	⩾20	Pass
2	1	2412	5.674	2400	-34.39	40.064	⩾20	Pass
	11	2462	5.499	2500	-56.22	61.719	⩾20	Pass
3	1	2412	5.793	2400	-33.85	39.643	⩾20	Pass
	11	2462	6.151	2500	-57.93	64.081	⩾20	Pass
4	3	2422	4.711	2400	-29.88	34.591	⩾20	Pass
	9	2452	4.139	2500	-59.48	63.619	⩾20	Pass

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

Mode 4 CH03(2422MHz)

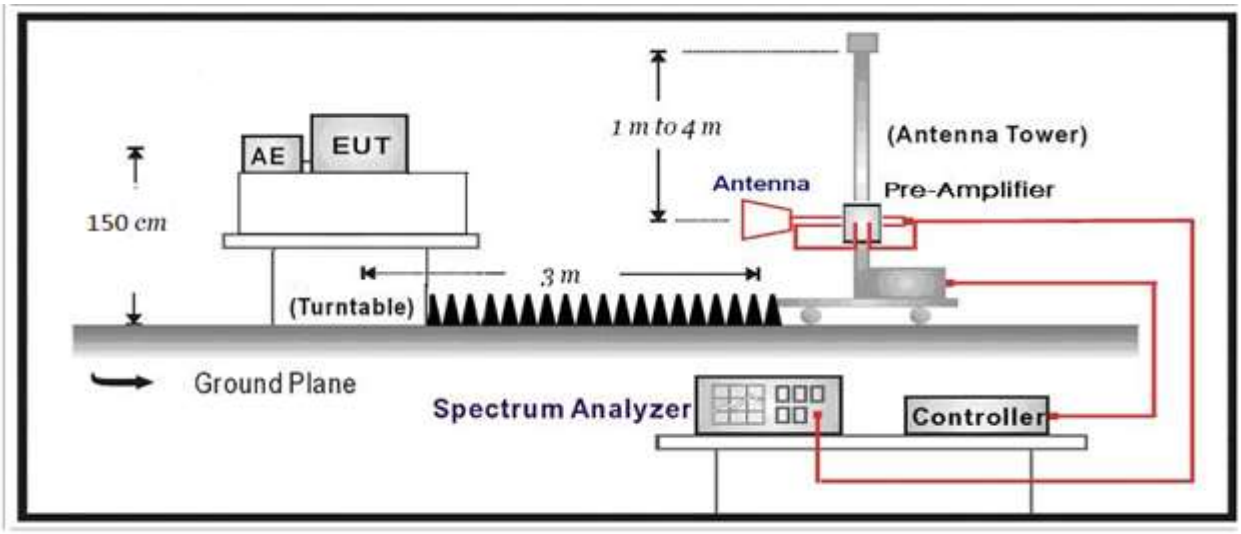
4.4 Radiated Emission Band Edge	VERDICT: PASS

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 (kHz)	Tx On + Tx Off (ms)	Duty Cycle
1	--	0.01	--	100%
2	19.98	0.01	20.16	99.11%
3	16.65	0.01	16.90	98.52%
4	8.01	0.13	8.25	97.09%

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.

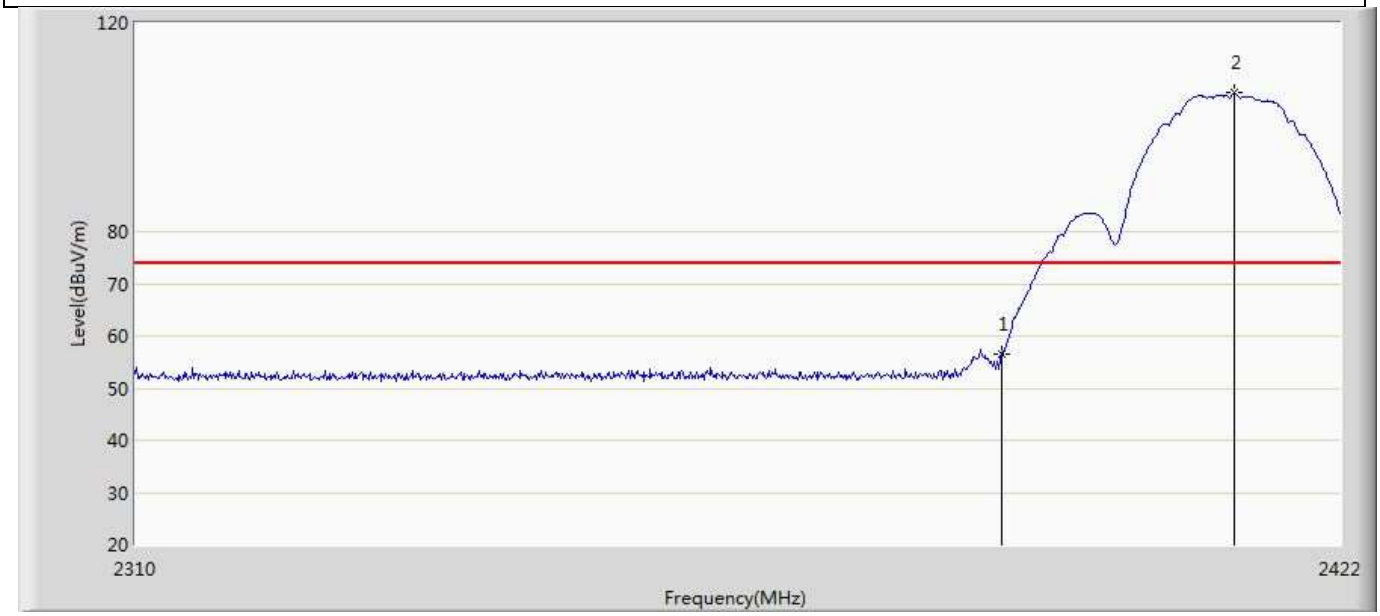
802.11b

802.11g

802.11n(20MHz)

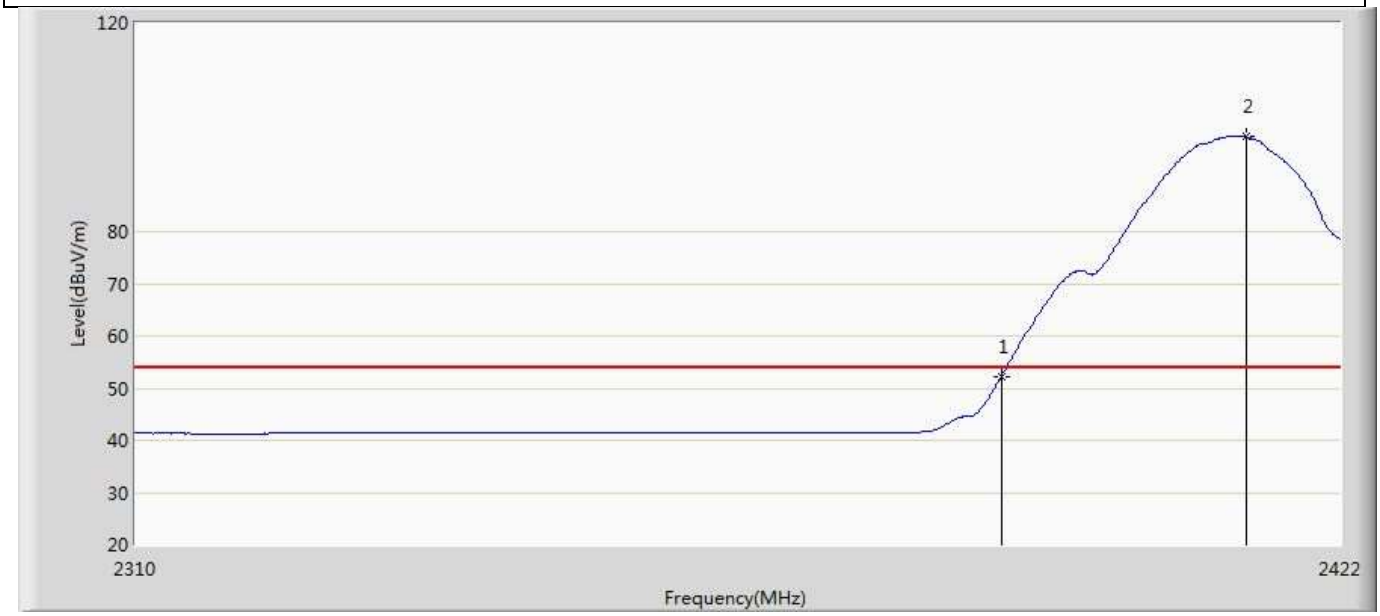
802.11n(40MHz)

Profile: 2090075R	Page No.: 1
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 10:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



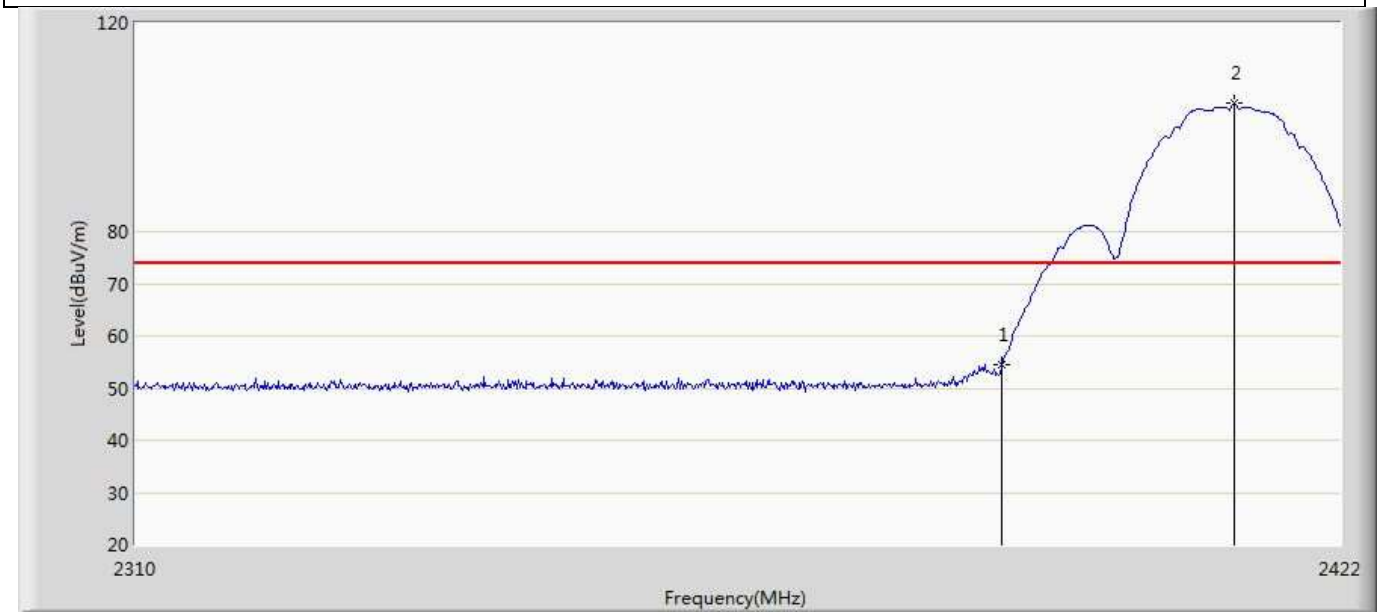
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	56.490	21.175	-17.510	74.000	35.315	PK
2	*	2411.920	106.606	71.298	32.606	74.000	35.308	PK

Profile: 2090075R	Page No.: 2
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 11:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



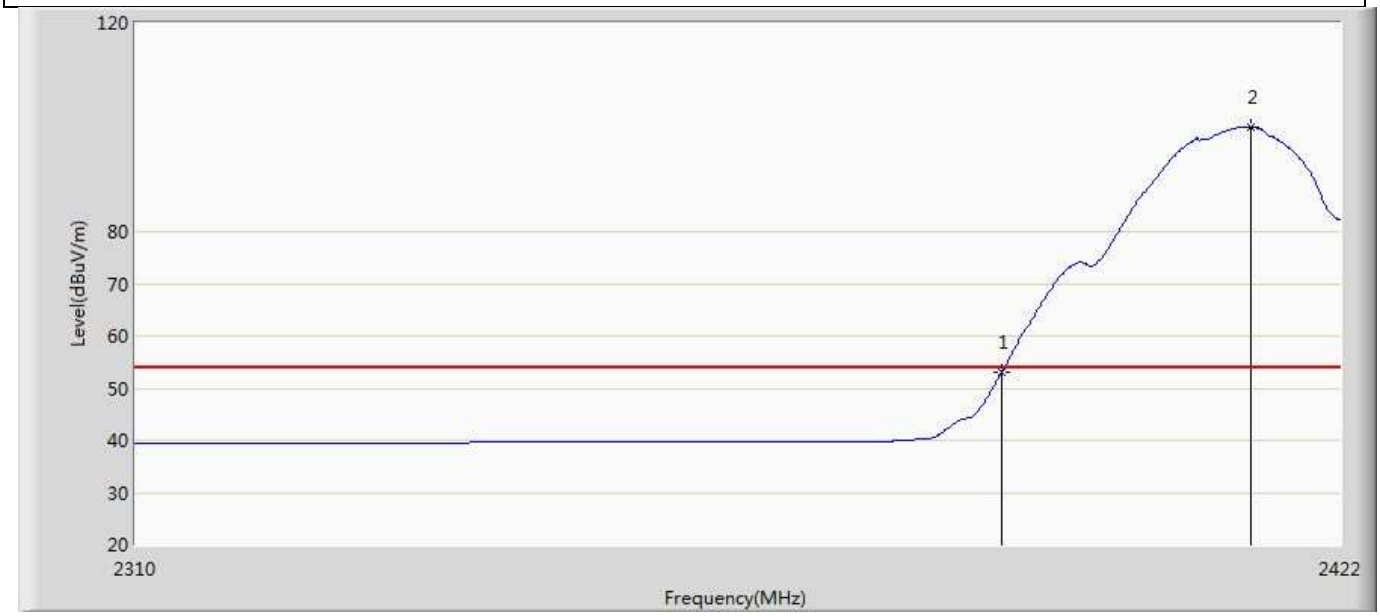
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.214	16.899	-1.786	54.000	35.315	AV
2	*	2413.040	98.138	62.830	44.138	54.000	35.308	AV

Profile: 2090075R	Page No.: 3
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 11:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



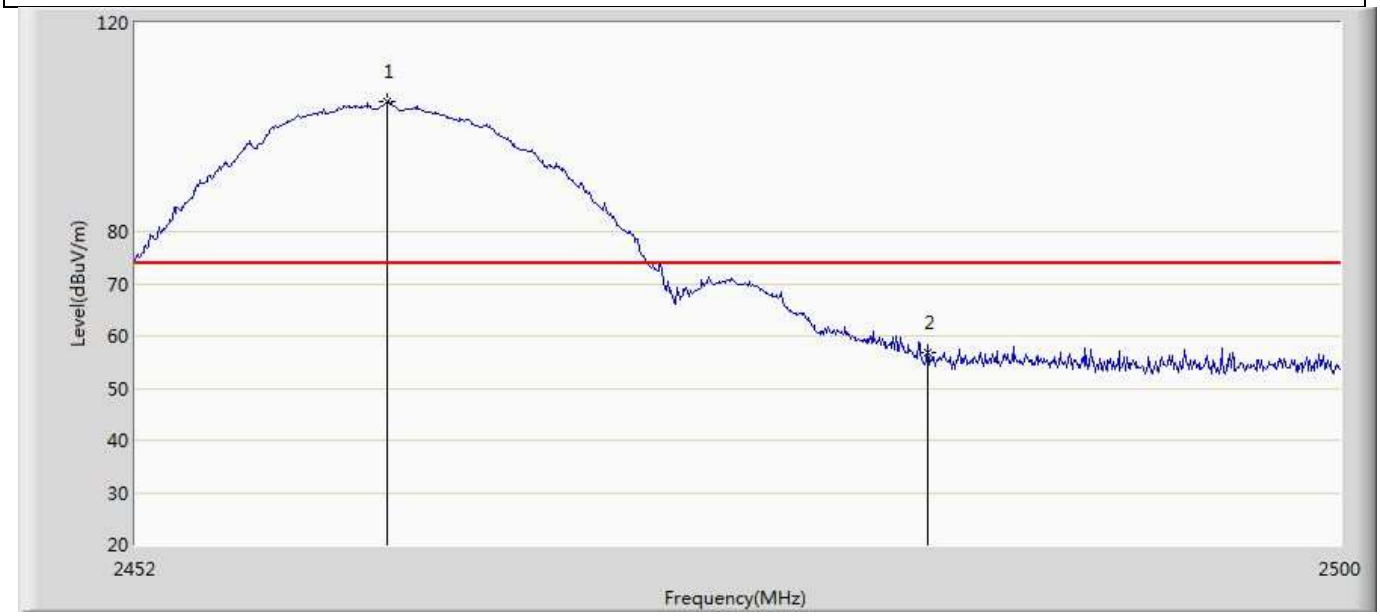
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	54.387	19.072	-19.613	74.000	35.315	PK
2	*	2411.920	104.630	69.322	30.630	74.000	35.308	PK

Profile: 2090075R	Page No.: 4
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 11:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2412MHz by 802.11b	



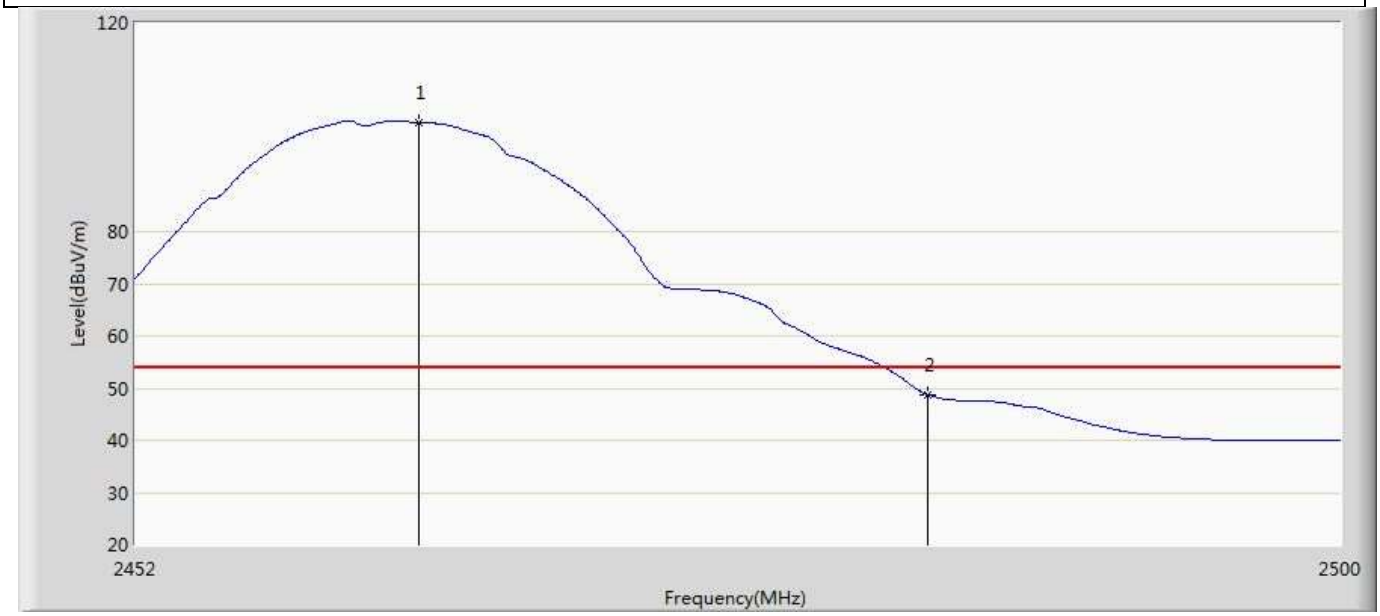
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.908	17.593	-1.092	54.000	35.315	AV
2	*	2413.600	99.970	64.662	45.970	54.000	35.308	AV

Profile: 2090075R	Page No.: 5
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



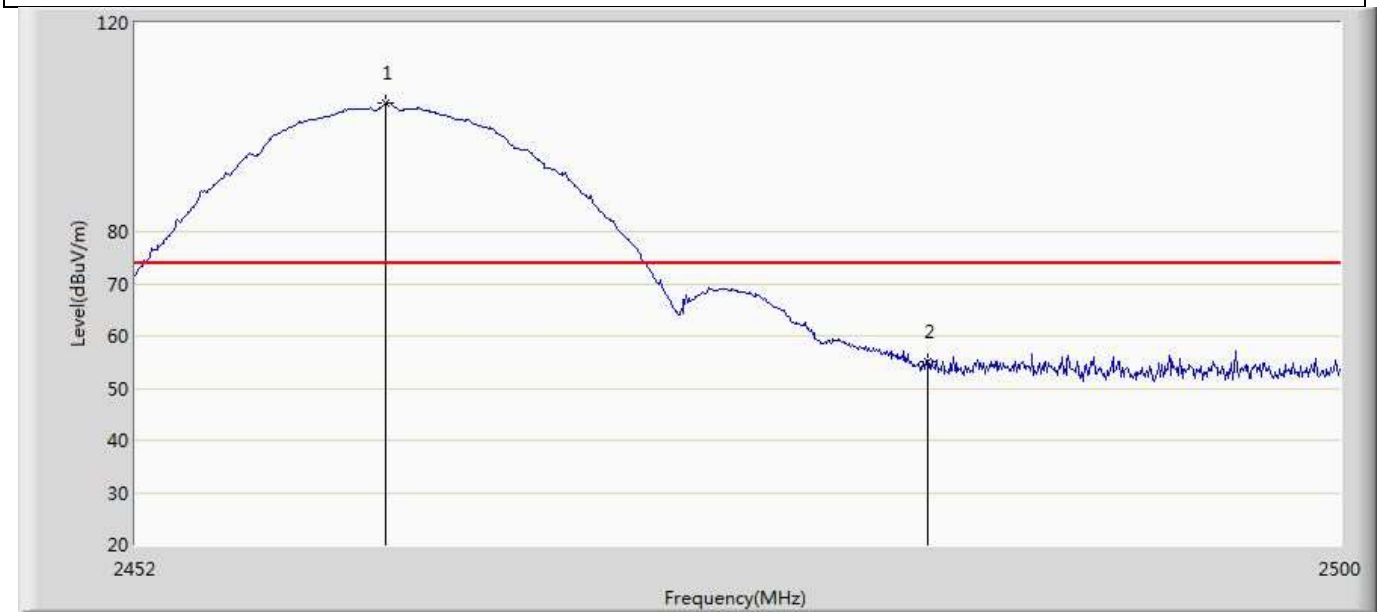
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.984	104.840	69.531	30.840	74.000	35.309	PK
2		2483.500	56.794	21.496	-17.206	74.000	35.297	PK

Profile: 2090075R	Page No.: 6
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



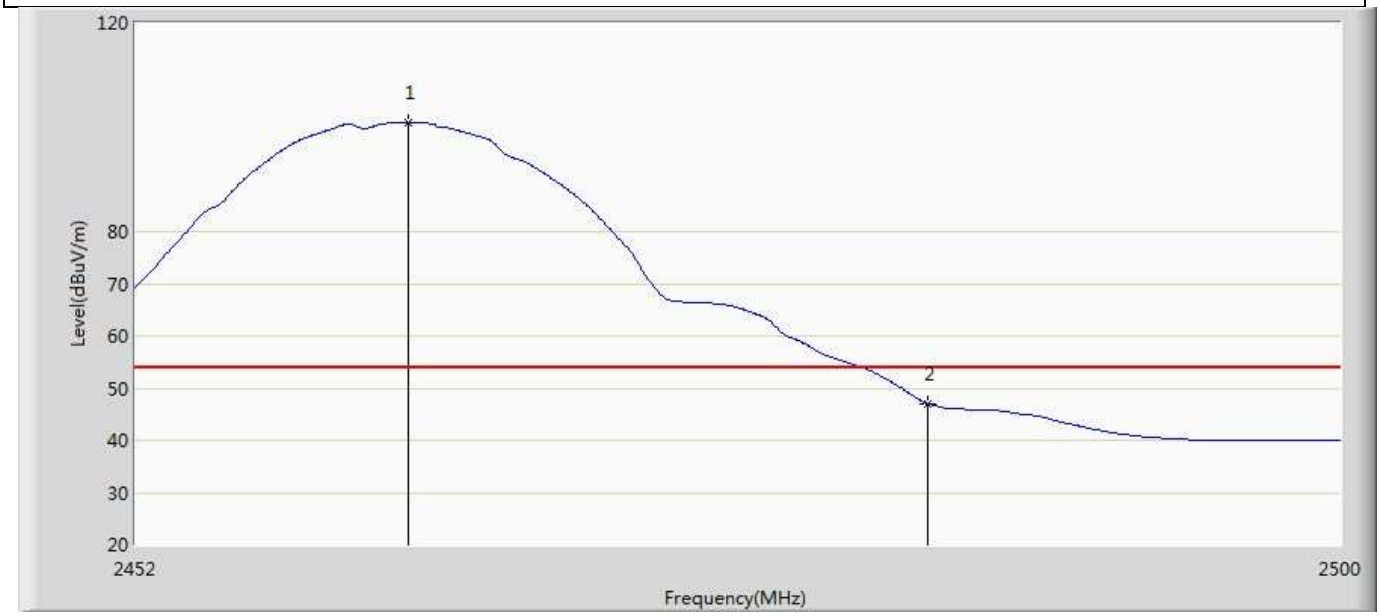
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.232	100.962	65.654	46.962	54.000	35.307	AV
2		2483.500	48.718	13.420	-5.282	54.000	35.297	AV

Profile: 2090075R	Page No.: 7
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



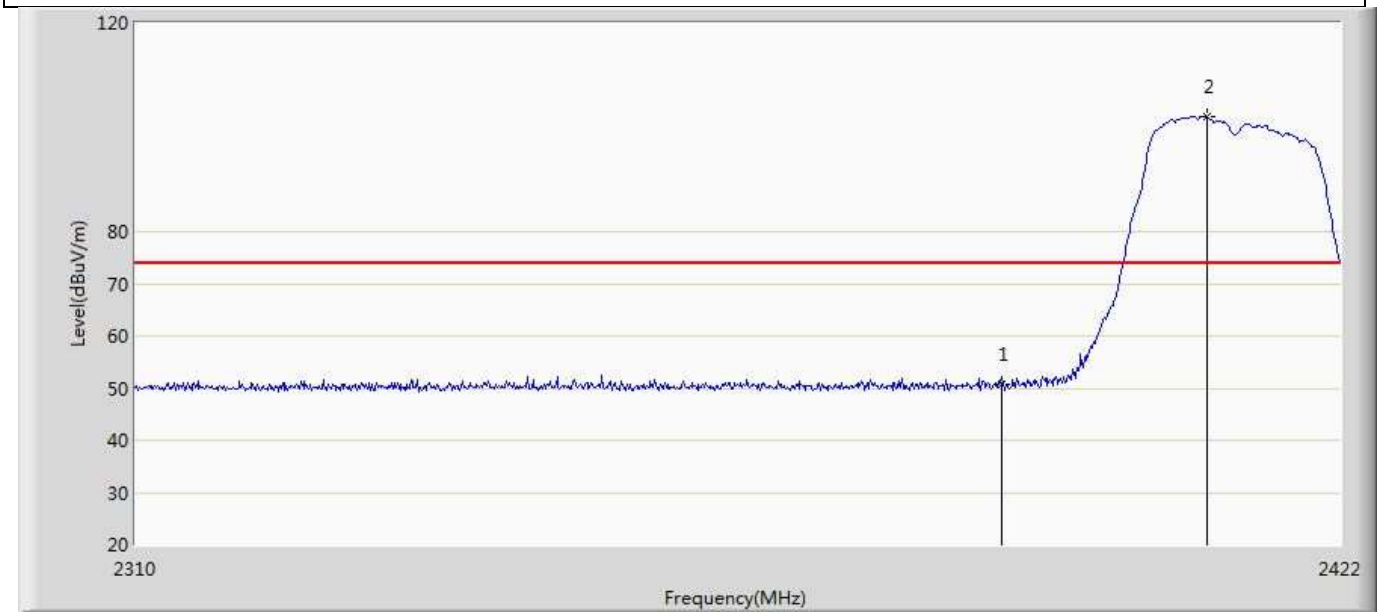
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.936	104.659	69.350	30.659	74.000	35.309	PK
2		2483.500	55.006	19.708	-18.994	74.000	35.297	PK

Profile: 2090075R	Page No.: 8
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 1:Transmit at 2462MHz by 802.11b	



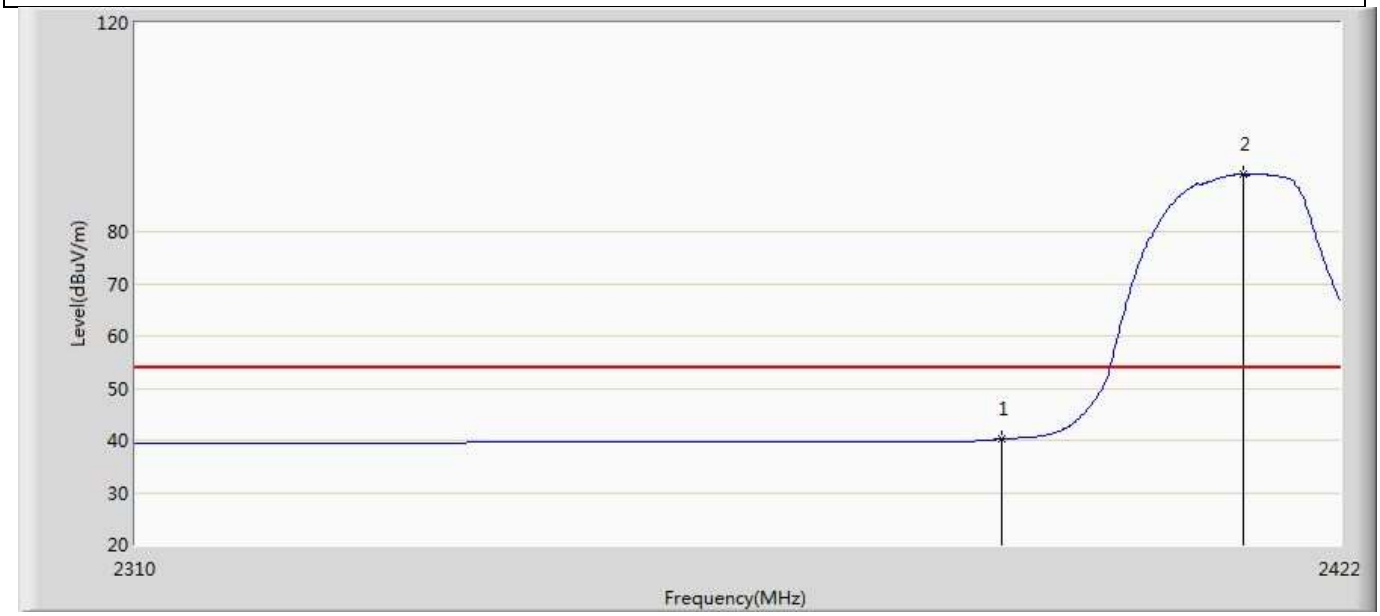
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.800	100.843	65.535	46.843	54.000	35.308	AV
2		2483.500	46.978	11.680	-7.022	54.000	35.297	AV

Profile: 2090075R	Page No.: 9
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



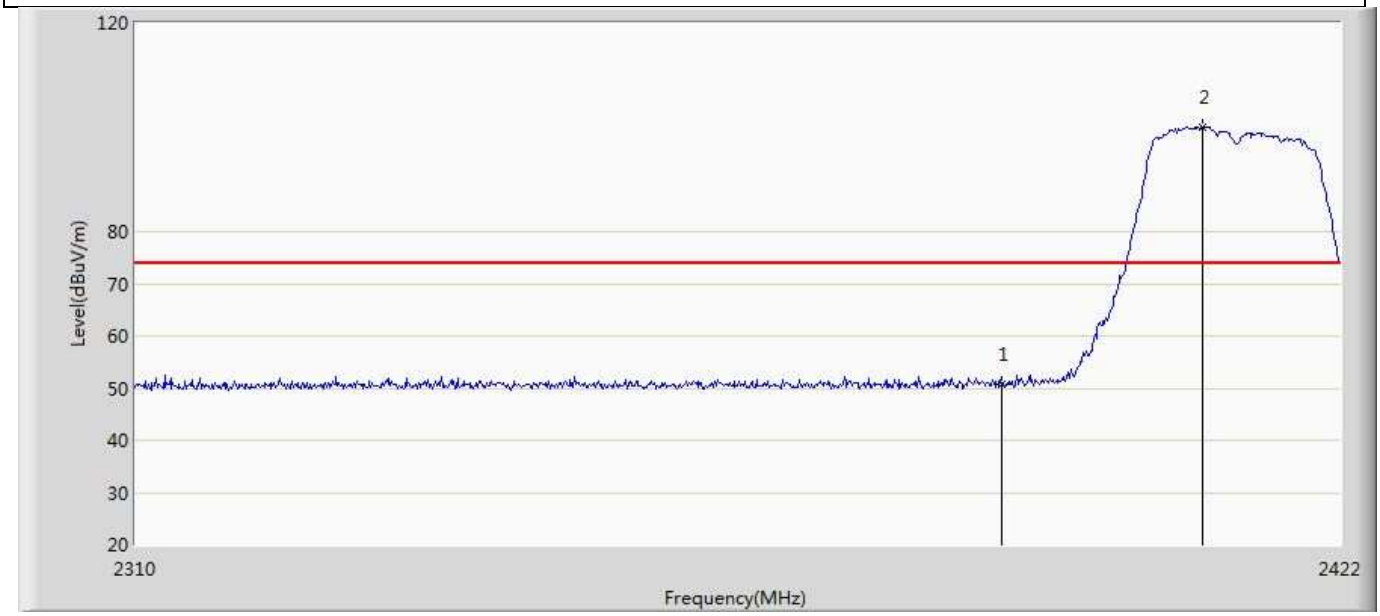
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.774	15.459	-23.226	74.000	35.315	PK
2	*	2409.456	101.906	66.597	27.906	74.000	35.309	PK

Profile: 2090075R	Page No.: 10
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



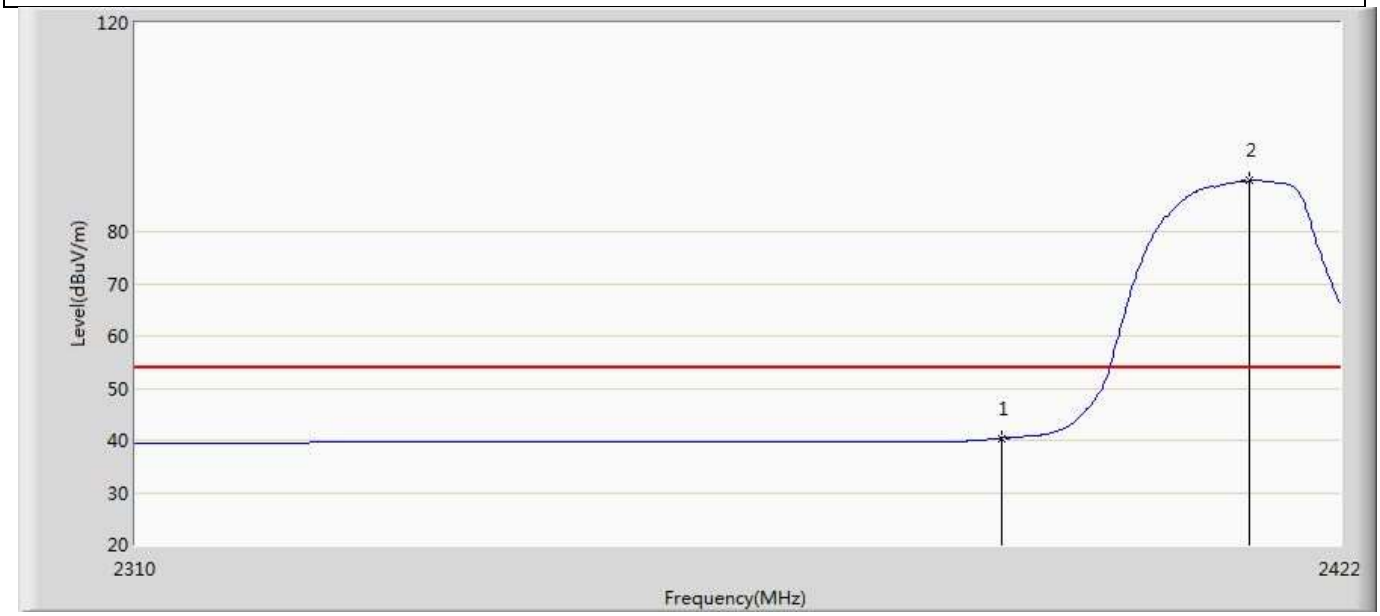
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.205	4.890	-13.795	54.000	35.315	AV
2	*	2412.816	91.096	55.788	37.096	54.000	35.308	AV

Profile: 2090075R	Page No.: 11
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



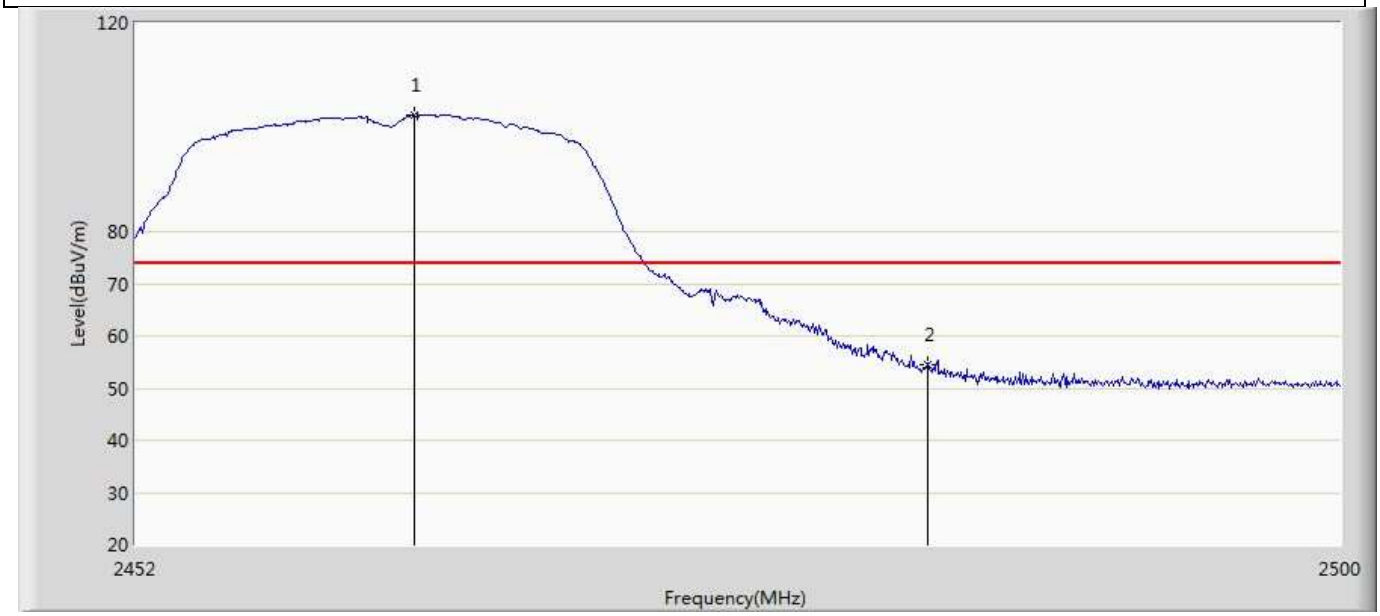
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.688	15.373	-23.312	74.000	35.315	PK
2	*	2409.008	100.002	64.693	26.002	74.000	35.309	PK

Profile: 2090075R	Page No.: 12
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2412MHz by 802.11g	



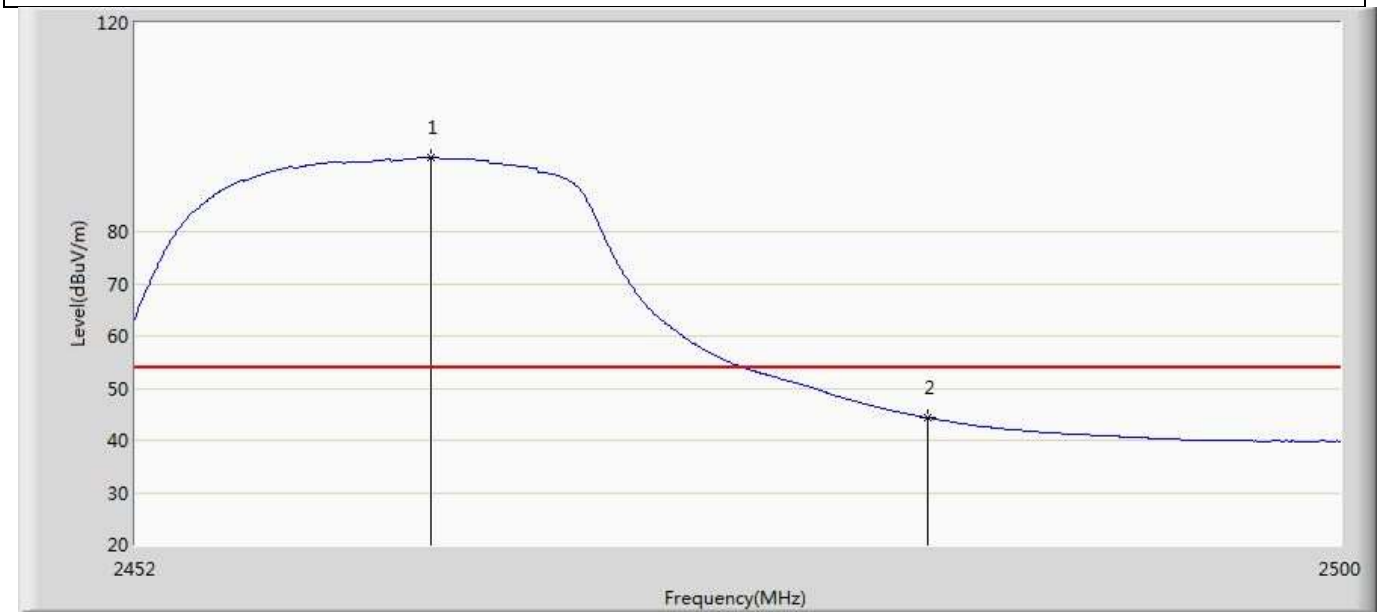
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.425	5.110	-13.575	54.000	35.315	AV
2	*	2413.376	89.720	54.412	35.720	54.000	35.308	AV

Profile: 2090075R	Page No.: 13
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2462MHz by 802.11g	



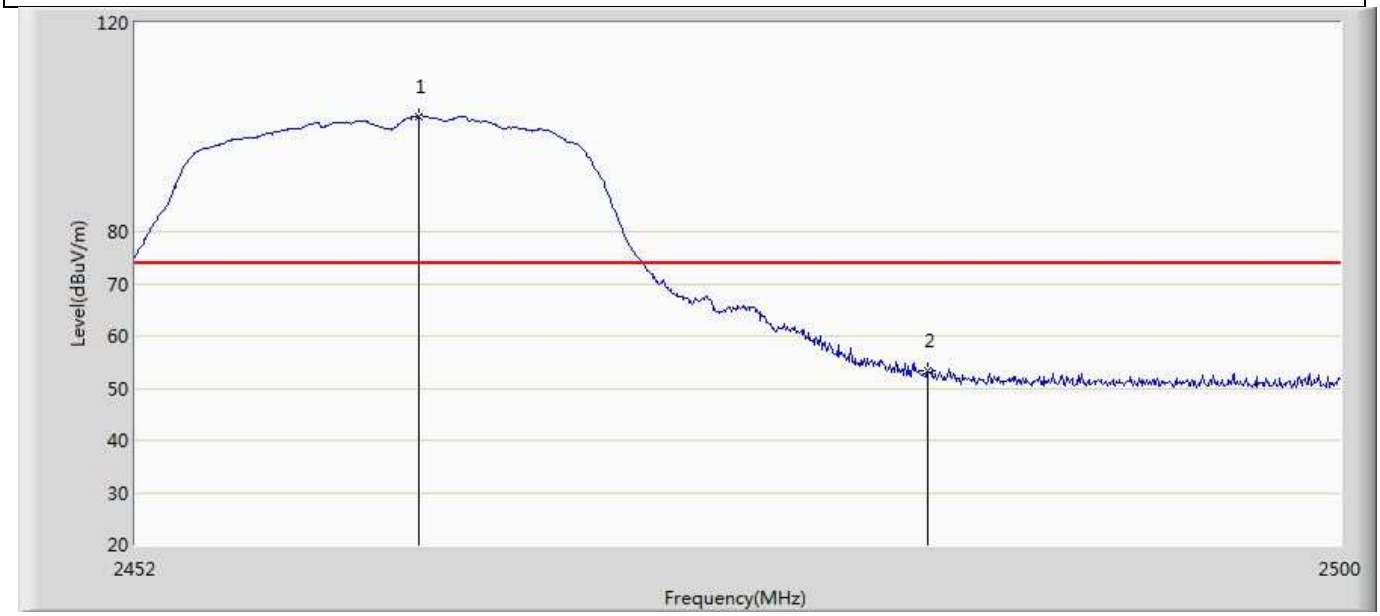
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.040	102.458	67.150	28.458	74.000	35.308	PK
2		2483.500	54.420	19.122	-19.580	74.000	35.297	PK

Profile: 2090075R	Page No.: 14
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 12:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2462MHz by 802.11g	



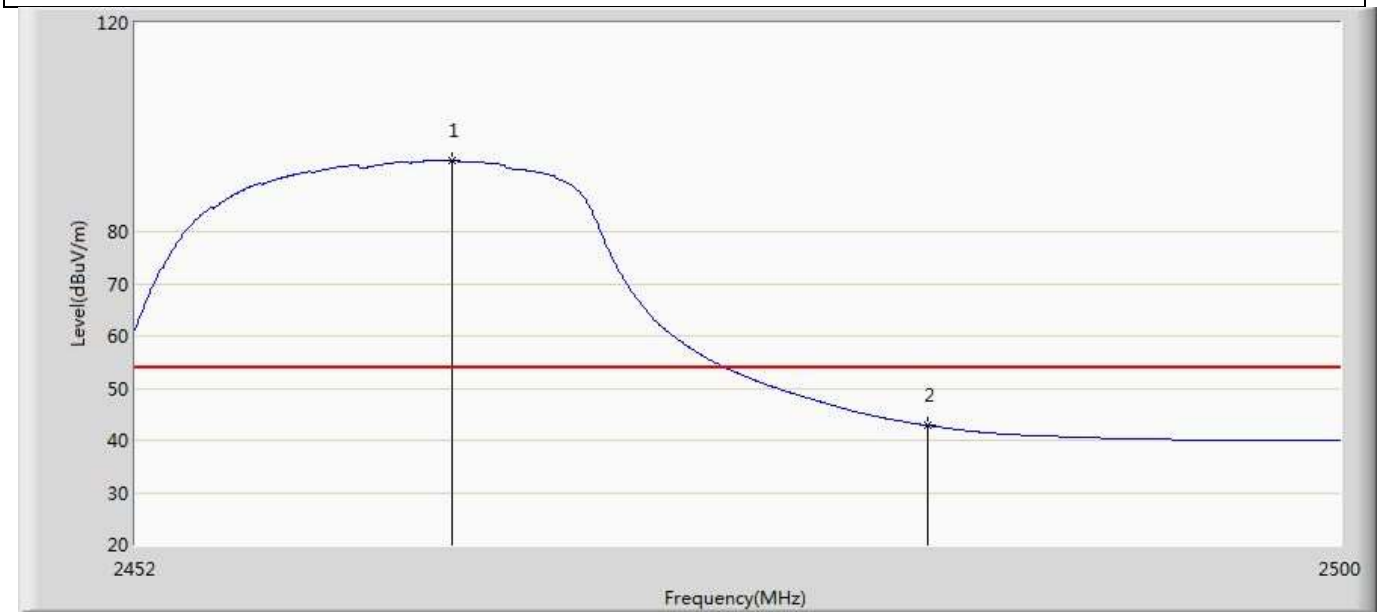
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.712	94.176	58.868	40.176	54.000	35.307	AV
2		2483.500	44.281	8.983	-9.719	54.000	35.297	AV

Profile: 2090075R	Page No.: 15
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2462MHz by 802.11g	



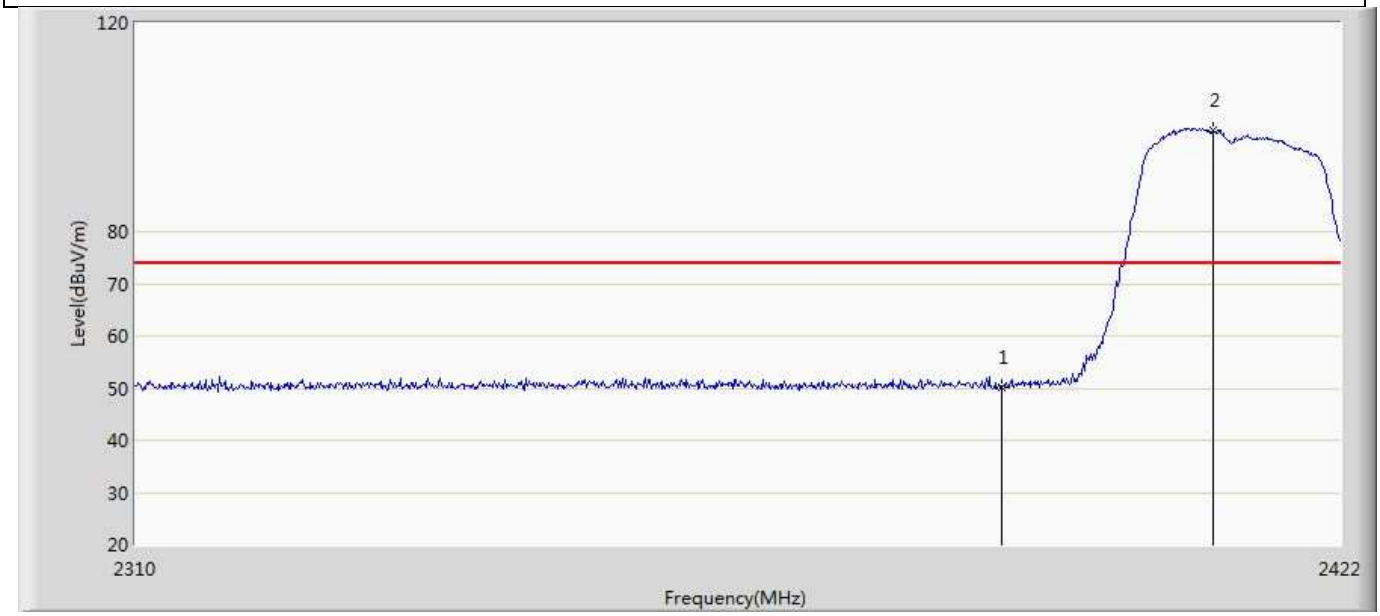
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.232	102.144	66.836	28.144	74.000	35.307	PK
2		2483.500	53.199	17.901	-20.801	74.000	35.297	PK

Profile: 2090075R	Page No.: 16
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 2:Transmit at 2462MHz by 802.11g	



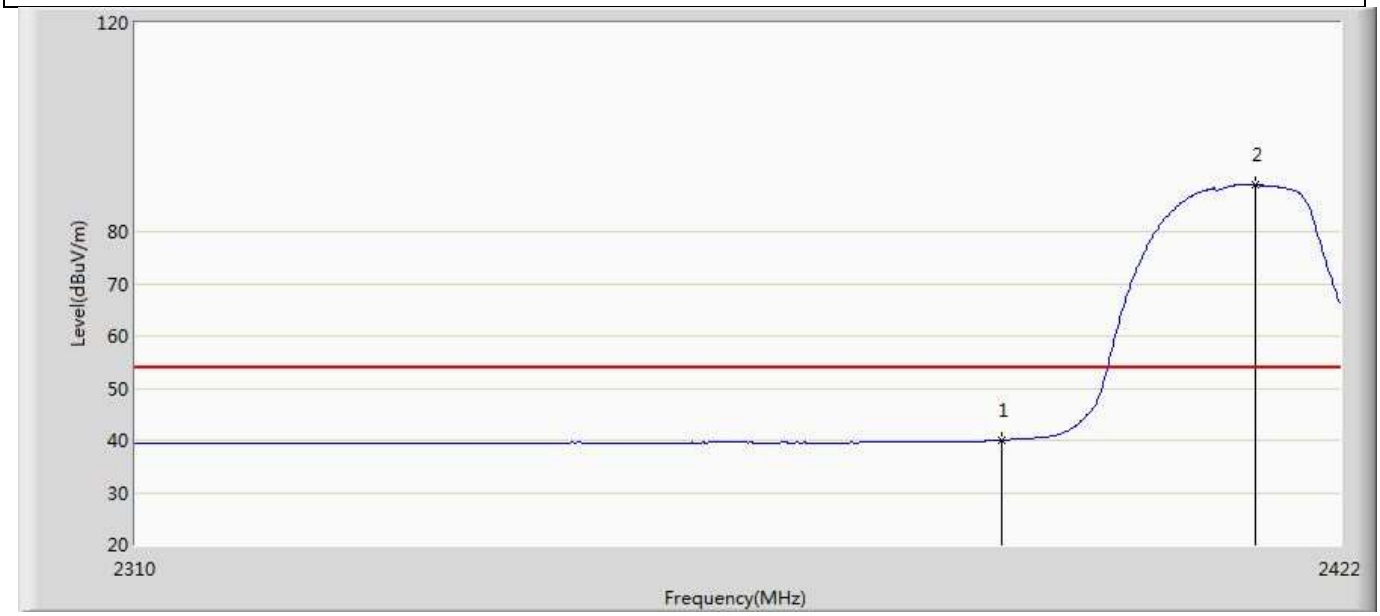
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.528	93.716	58.409	39.716	54.000	35.307	AV
2		2483.500	42.857	7.559	-11.143	54.000	35.297	AV

Profile: 2090075R	Page No.: 17
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



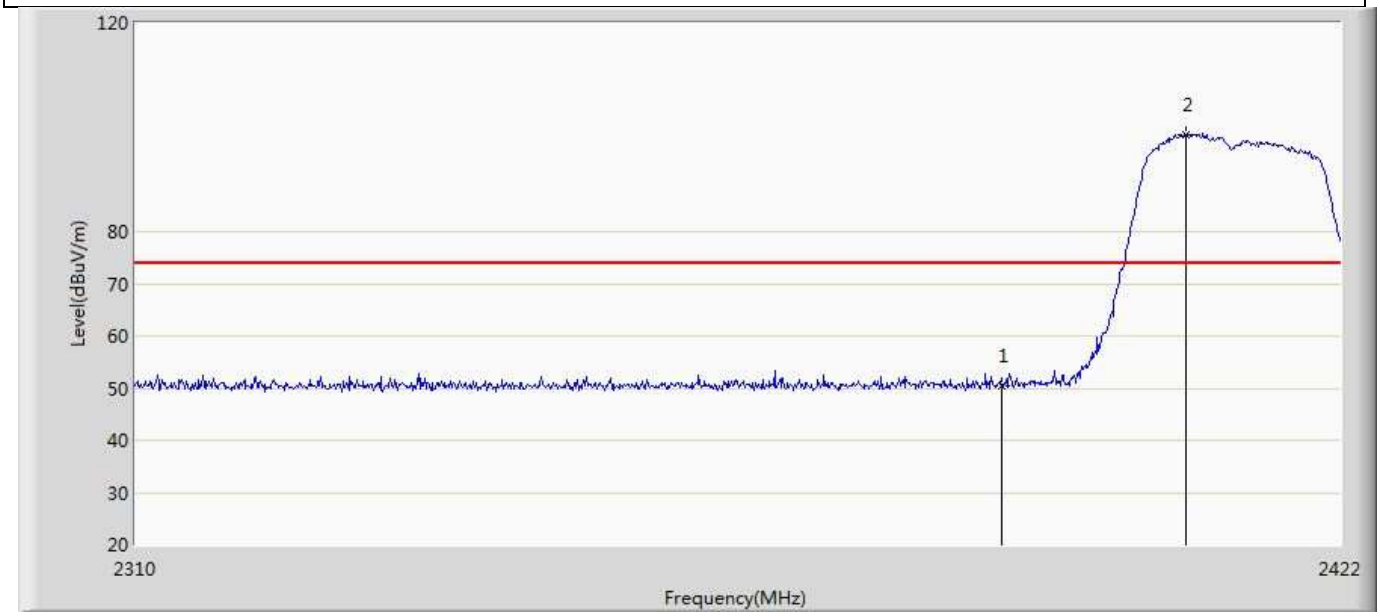
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.158	14.843	-23.842	74.000	35.315	PK
2	*	2410.016	99.482	64.173	25.482	74.000	35.308	PK

Profile: 2090075R	Page No.: 18
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



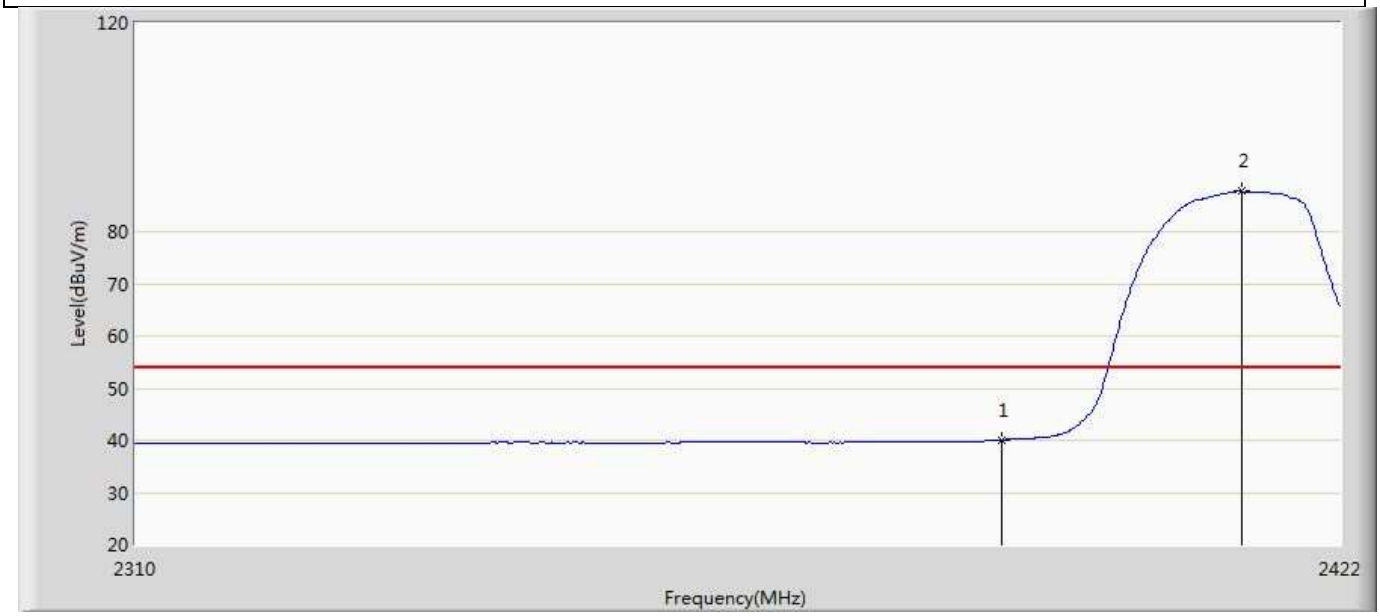
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.046	4.731	-13.954	54.000	35.315	AV
2	*	2413.936	89.100	53.793	35.100	54.000	35.308	AV

Profile: 2090075R	Page No.: 19
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



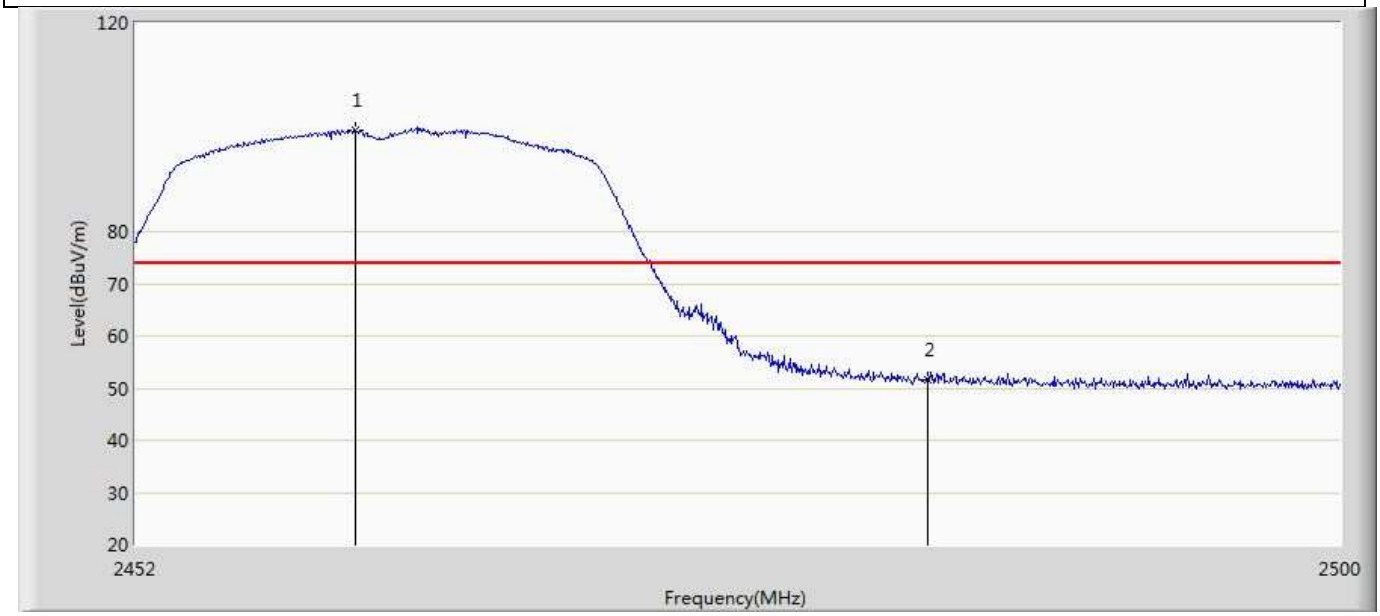
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.367	15.052	-23.633	74.000	35.315	PK
2	*	2407.328	98.422	63.112	24.422	74.000	35.310	PK

Profile: 2090075R	Page No.: 20
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



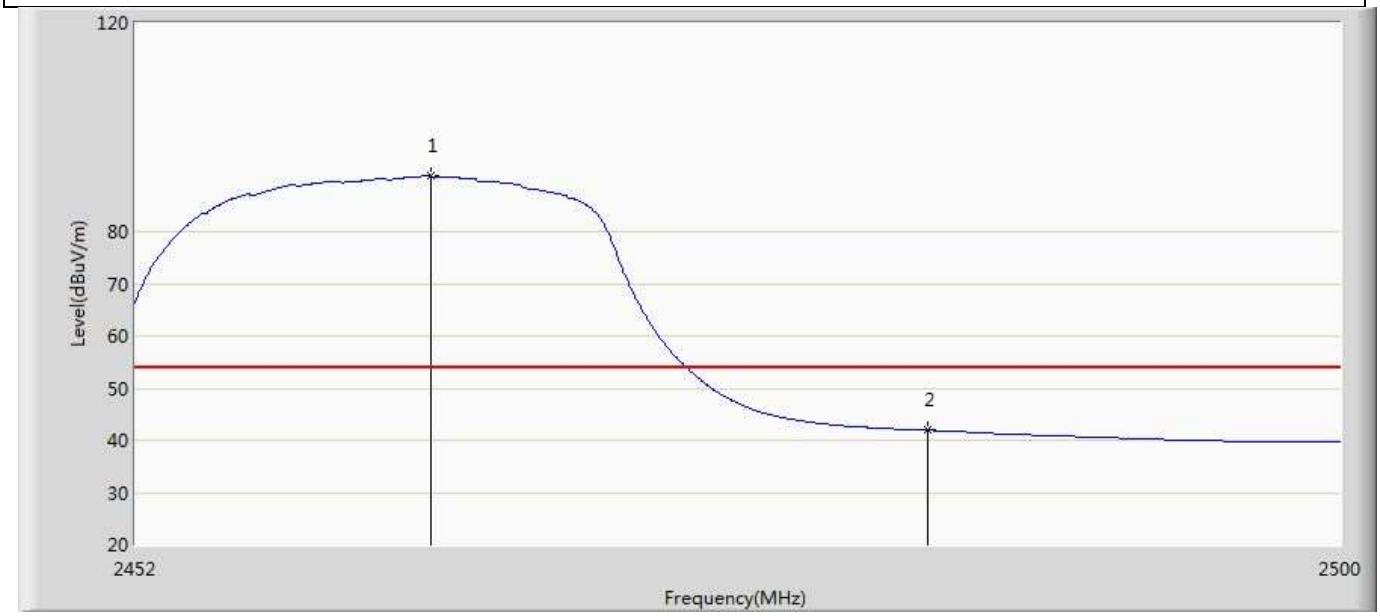
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.101	4.786	-13.899	54.000	35.315	AV
2	*	2412.704	87.782	52.474	33.782	54.000	35.307	AV

Profile: 2090075R	Page No.: 21
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



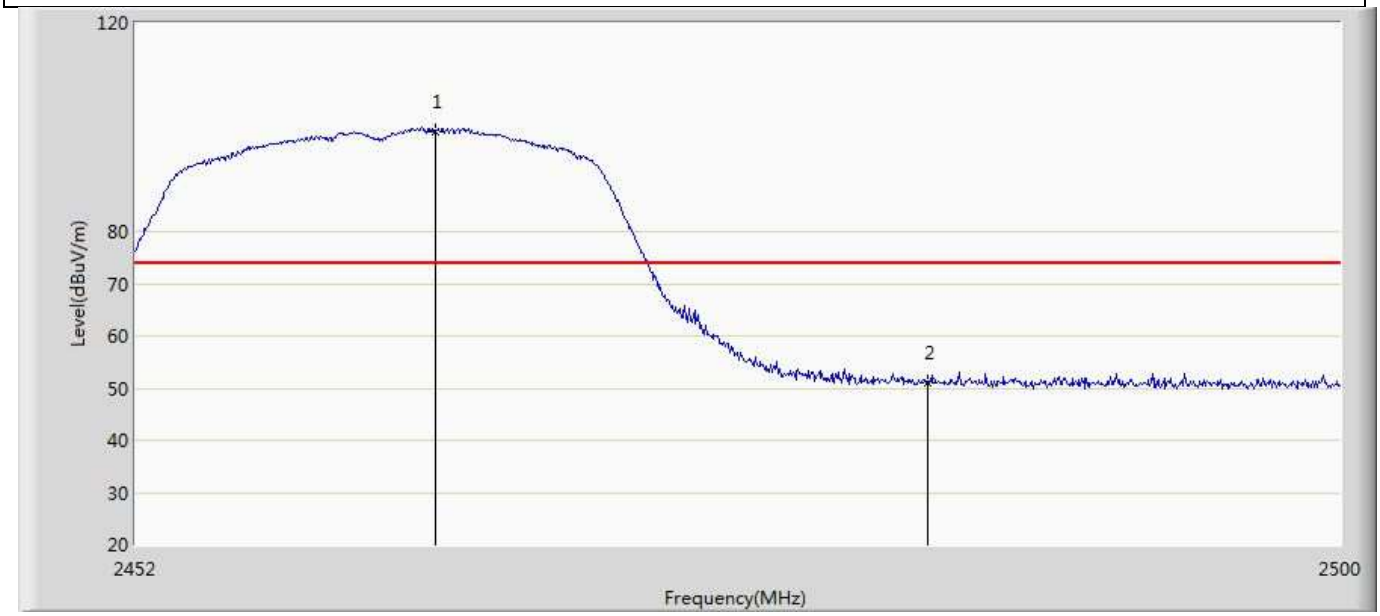
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.736	99.358	64.049	25.358	74.000	35.310	PK
2		2483.500	51.731	16.433	-22.269	74.000	35.297	PK

Profile: 2090075R	Page No.: 22
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



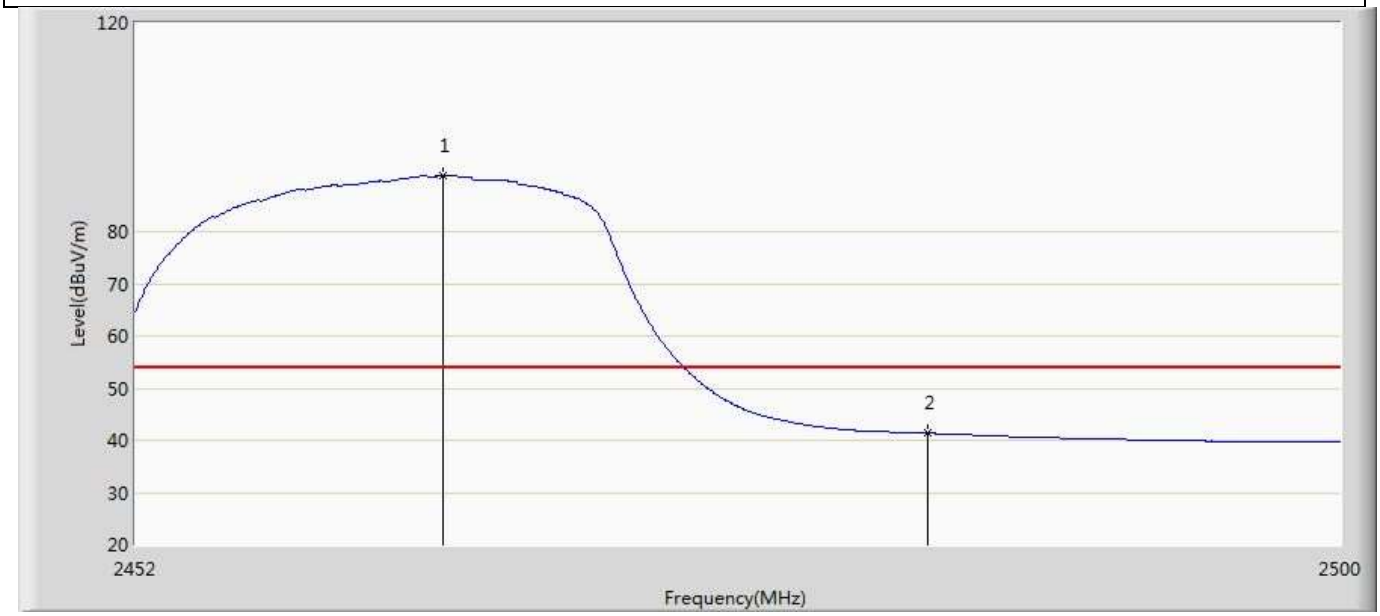
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.712	90.689	55.381	36.689	54.000	35.307	AV
2		2483.500	41.927	6.629	-12.073	54.000	35.297	AV

Profile: 2090075R	Page No.: 23
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



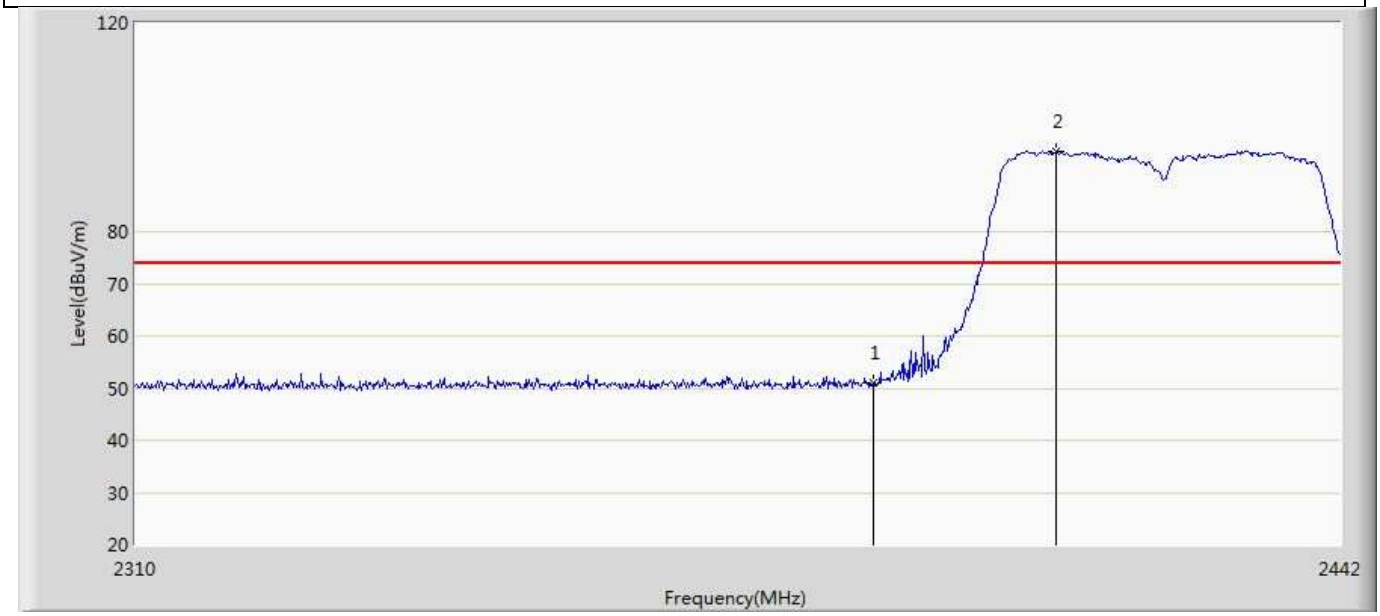
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.904	99.068	63.760	25.068	74.000	35.307	PK
2		2483.500	51.092	15.794	-22.908	74.000	35.297	PK

Profile: 2090075R	Page No.: 24
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



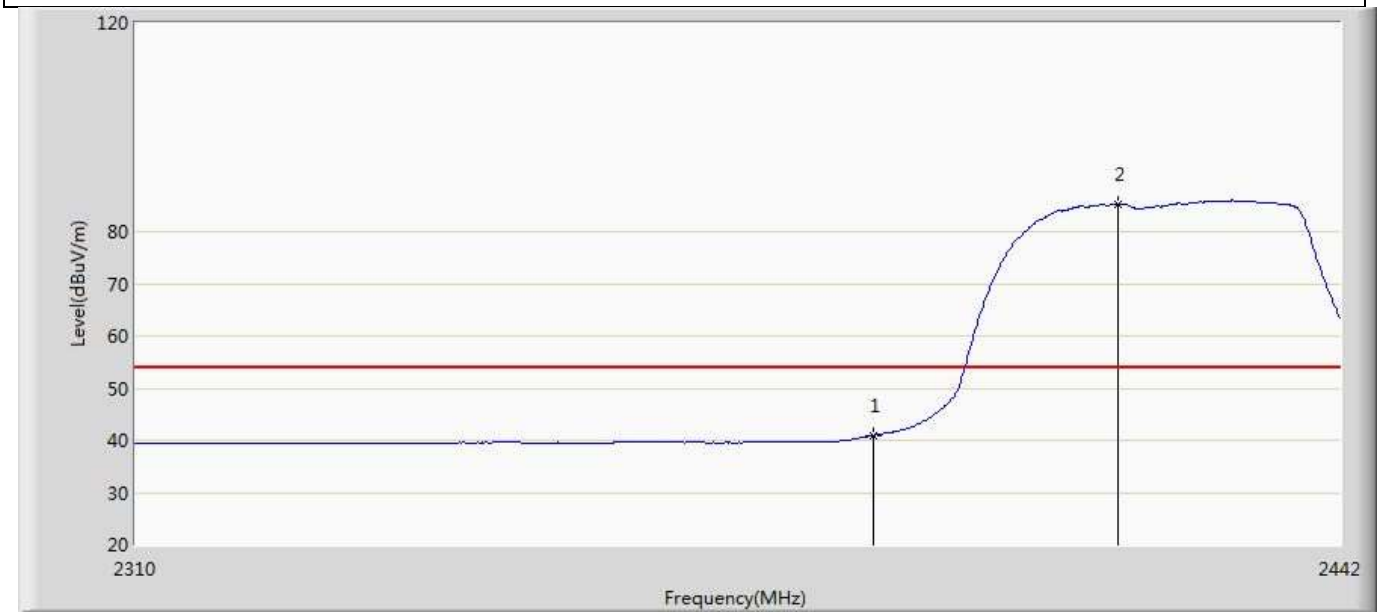
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.192	90.656	55.349	36.656	54.000	35.307	AV
2		2483.500	41.351	6.053	-12.649	54.000	35.297	AV

Profile: 2090075R	Page No.: 25
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



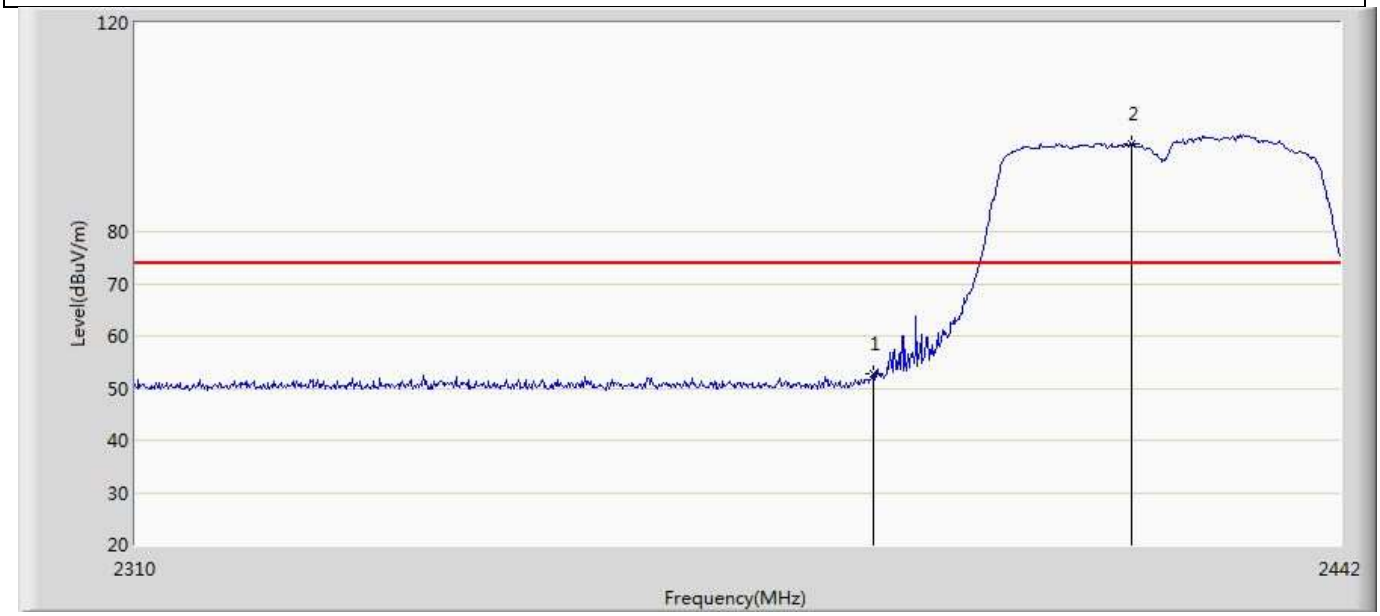
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.887	15.572	-23.113	74.000	35.315	PK
2	*	2410.320	95.438	60.129	21.438	74.000	35.308	PK

Profile: 2090075R	Page No.: 26
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



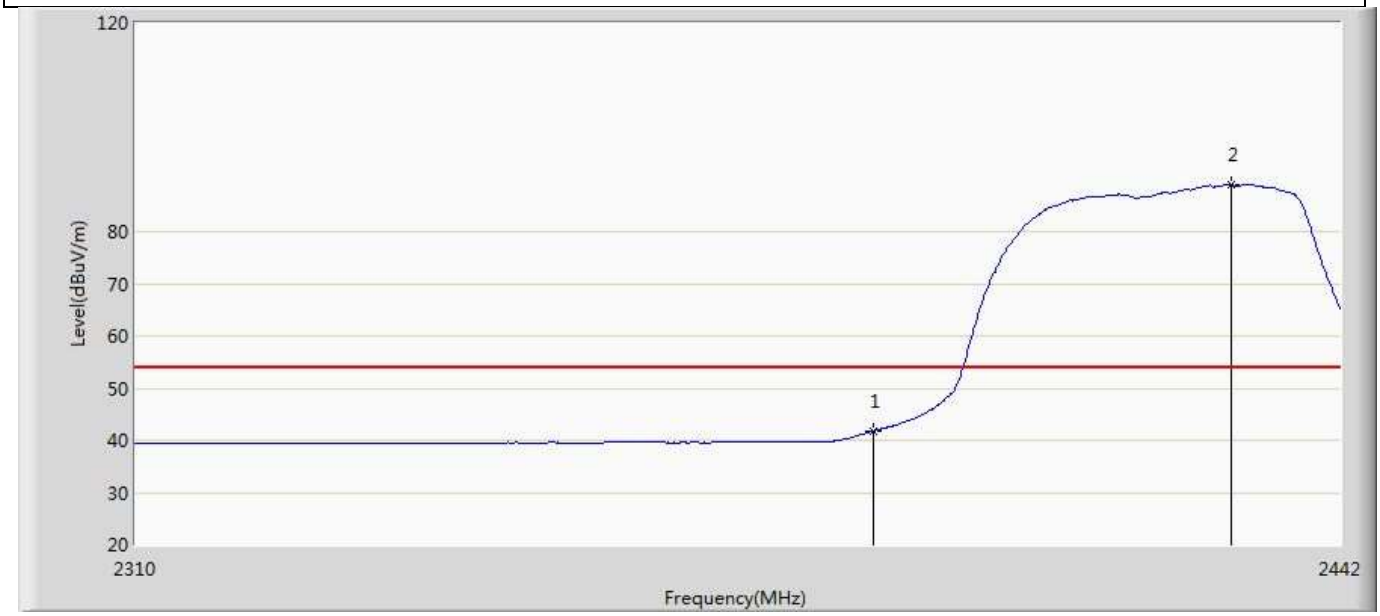
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	40.949	5.634	-13.051	54.000	35.315	AV
2	*	2417.184	85.110	49.803	31.110	54.000	35.306	AV

Profile: 2090075R	Page No.: 27
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



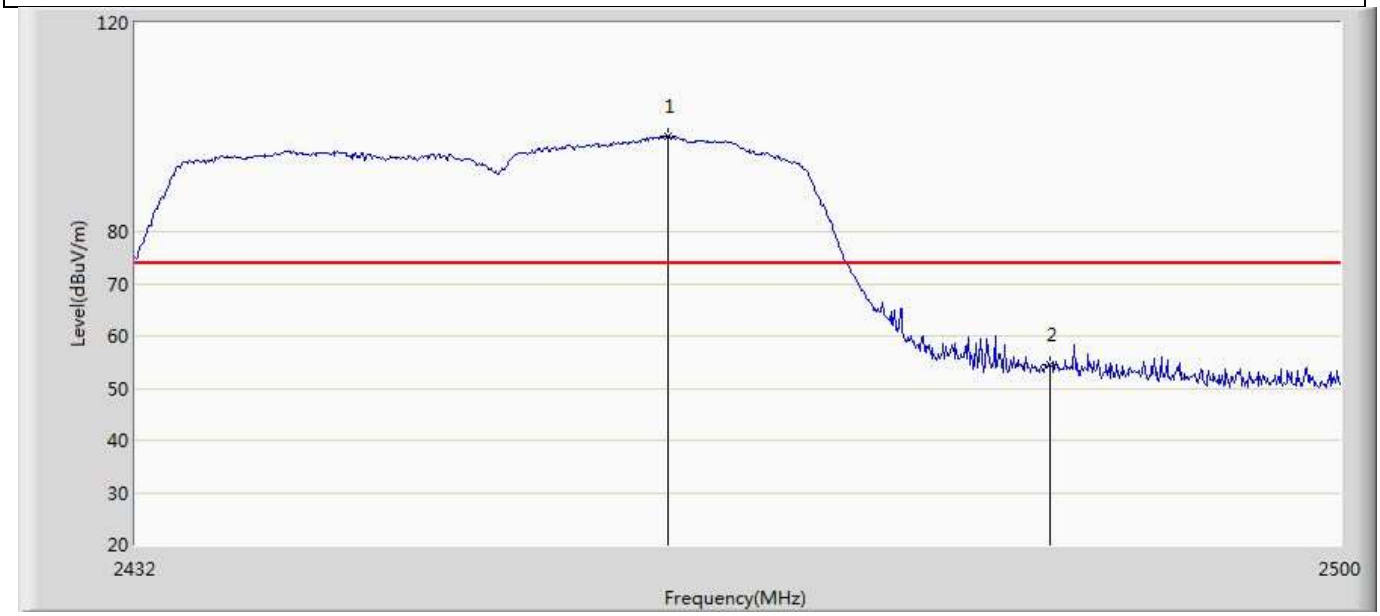
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.700	17.385	-21.300	74.000	35.315	PK
2	*	2418.636	96.880	61.574	22.880	74.000	35.306	PK

Profile: 2090075R	Page No.: 28
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



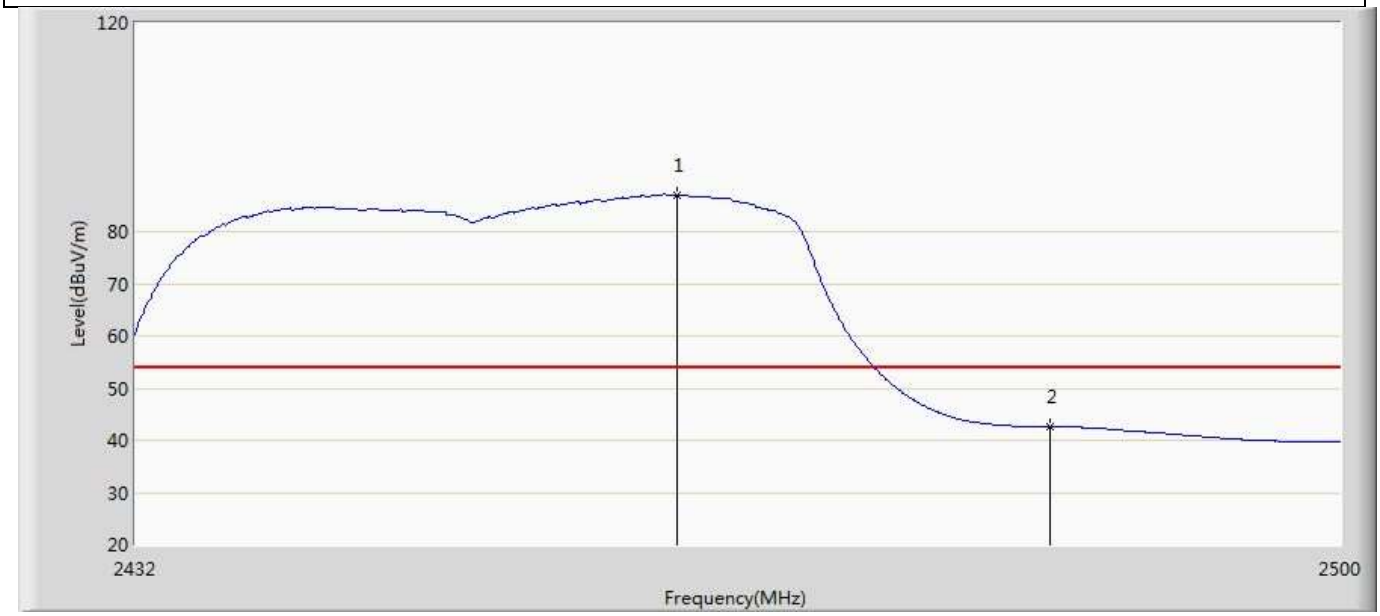
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.753	6.438	-12.247	54.000	35.315	AV
2	*	2429.856	89.042	53.737	35.042	54.000	35.305	AV

Profile: 2090075R	Page No.: 29
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



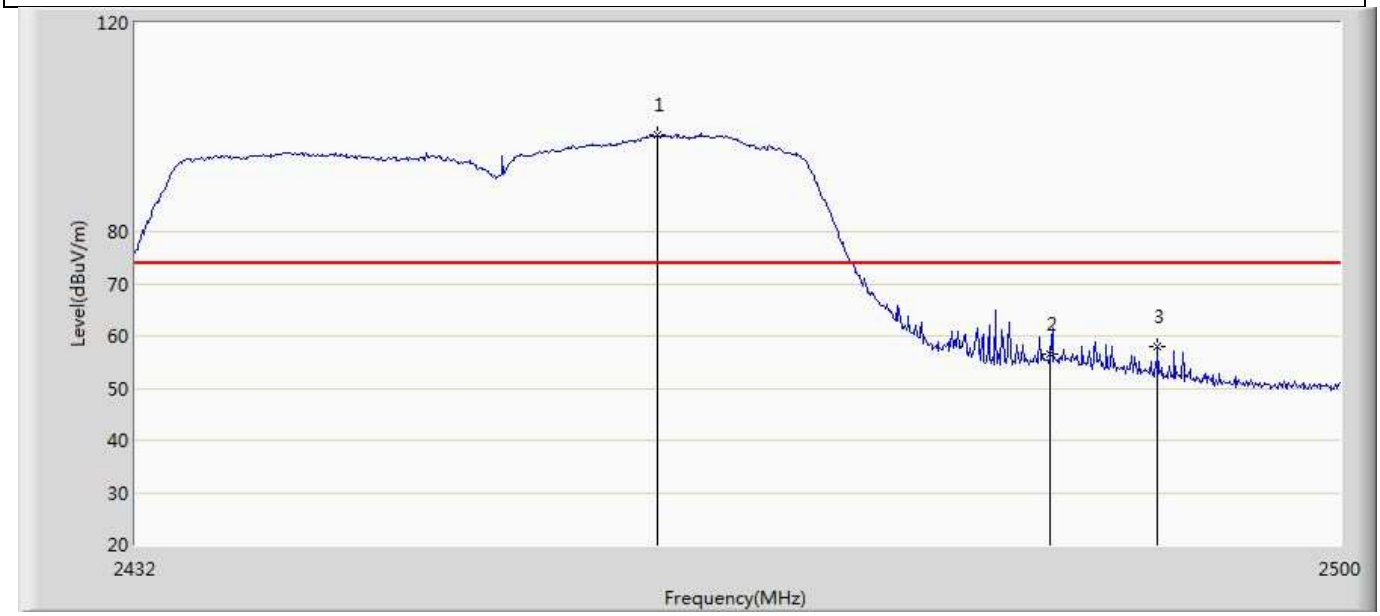
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.852	98.183	62.874	24.183	74.000	35.309	PK
2		2483.500	54.450	19.152	-19.550	74.000	35.297	PK

Profile: 2090075R	Page No.: 30
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



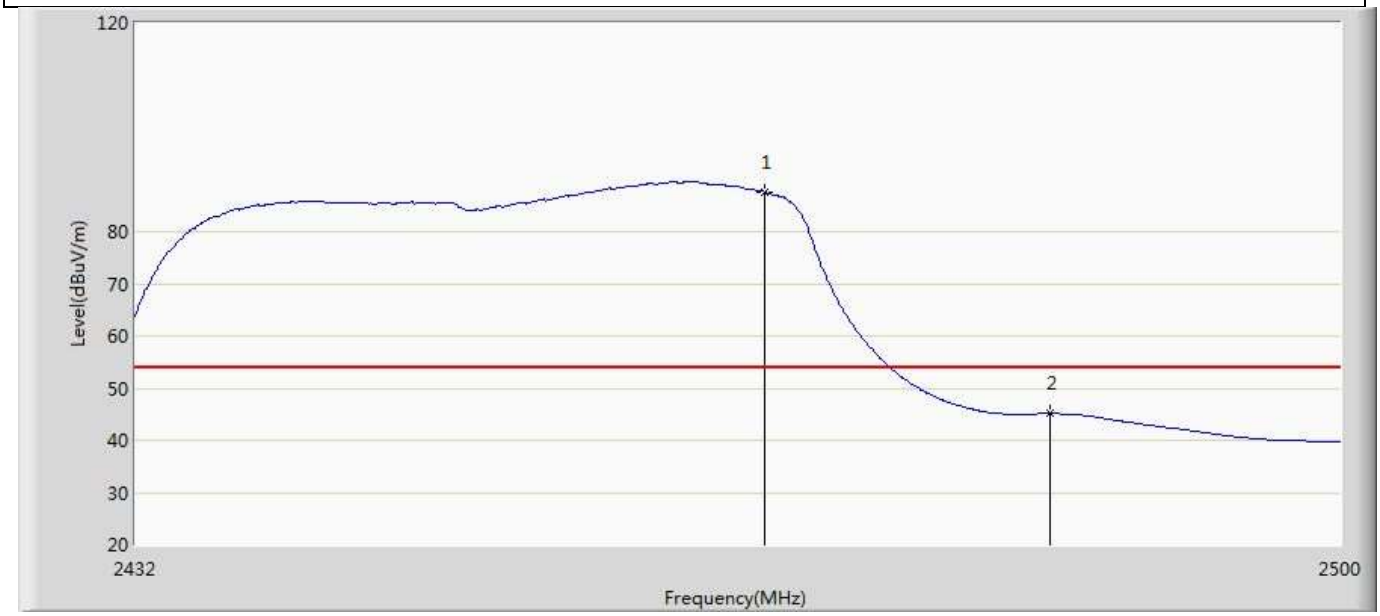
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.396	86.996	51.688	32.996	54.000	35.309	AV
2		2483.500	42.653	7.355	-11.347	54.000	35.297	AV

Profile: 2090075R	Page No.: 31
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
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	*	2461.240	98.513	63.204	24.513	74.000	35.309	PK
2		2483.500	56.608	21.310	-17.392	74.000	35.297	PK
3		2489.596	58.063	22.767	-15.937	74.000	35.295	PK

Profile: 2090075R	Page No.: 32
Engineer: Yingfeiwang	
Site: AC5	Time: 2020/08/17 - 13:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 8960i	Power: Battery
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



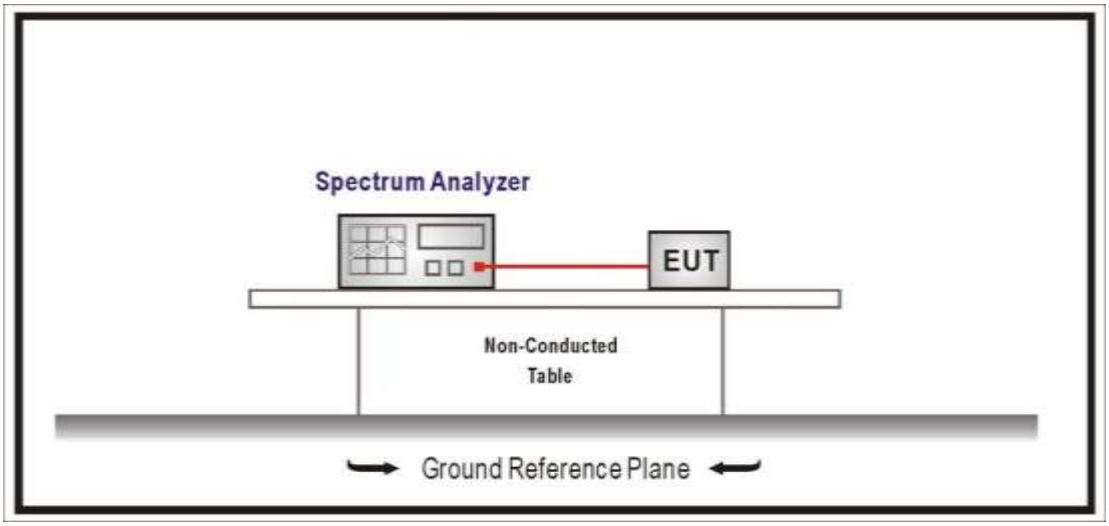
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2467.292	87.617	52.311	33.617	54.000	35.306	AV
2		2483.500	45.109	9.811	-8.891	54.000	35.297	AV

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

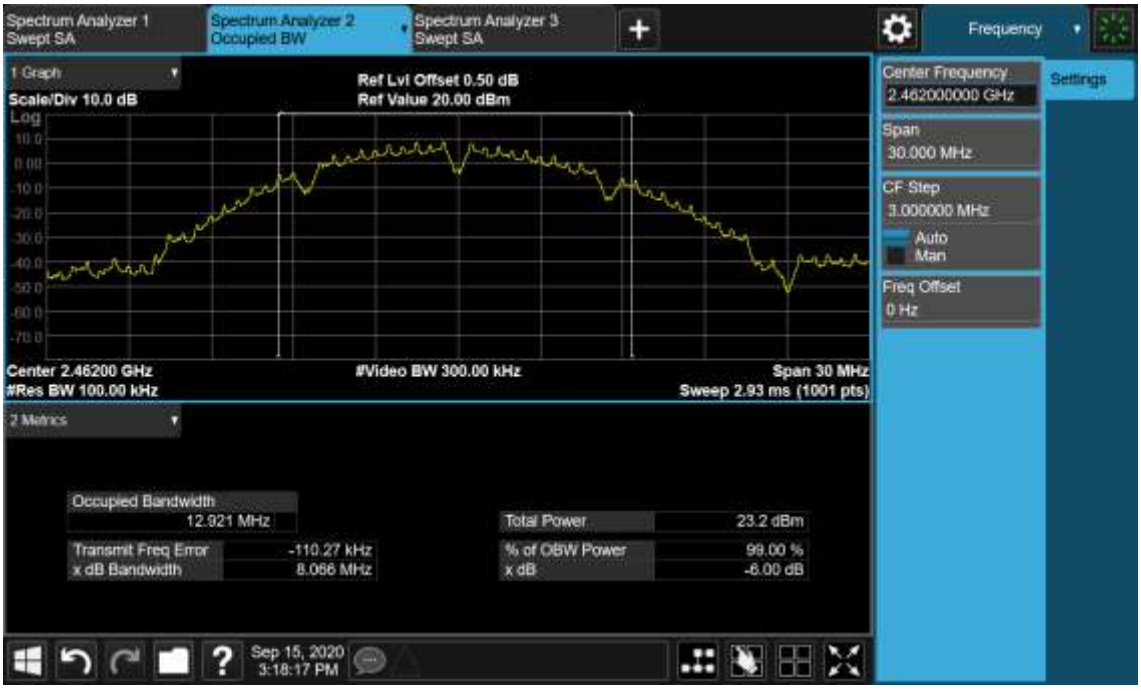
4.5.4 Test Data

Mode	CH.	Test Freq. (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
1	1	2412	8.073	⩾500	Pass
	6	2437	9.047	⩾500	Pass
	11	2462	8.066	⩾500	Pass
2	1	2412	12.420	⩾500	Pass
	6	2437	15.670	⩾500	Pass
	11	2462	14.810	⩾500	Pass
3	1	2412	15.720	⩾500	Pass
	6	2437	16.410	⩾500	Pass
	11	2462	15.420	⩾500	Pass
4	3	2422	26.390	⩾500	Pass
	6	2437	36.340	⩾500	Pass
	9	2452	23.750	⩾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	12.587	Within frequency range	Pass
	6	2437	13.864	Within frequency range	Pass
	11	2462	12.871	Within frequency range	Pass
2	1	2412	16.113	Within frequency range	Pass
	6	2437	16.382	Within frequency range	Pass
	11	2462	16.151	Within frequency range	Pass
3	1	2412	17.229	Within frequency range	Pass
	6	2437	17.576	Within frequency range	Pass
	11	2462	17.300	Within frequency range	Pass
4	3	2422	35.354	Within frequency range	Pass
	6	2437	35.317	Within frequency range	Pass
	9	2452	35.277	Within frequency range	Pass

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

99% Occupied Bandwidth

Mode 1 CH11 (2462MHz)

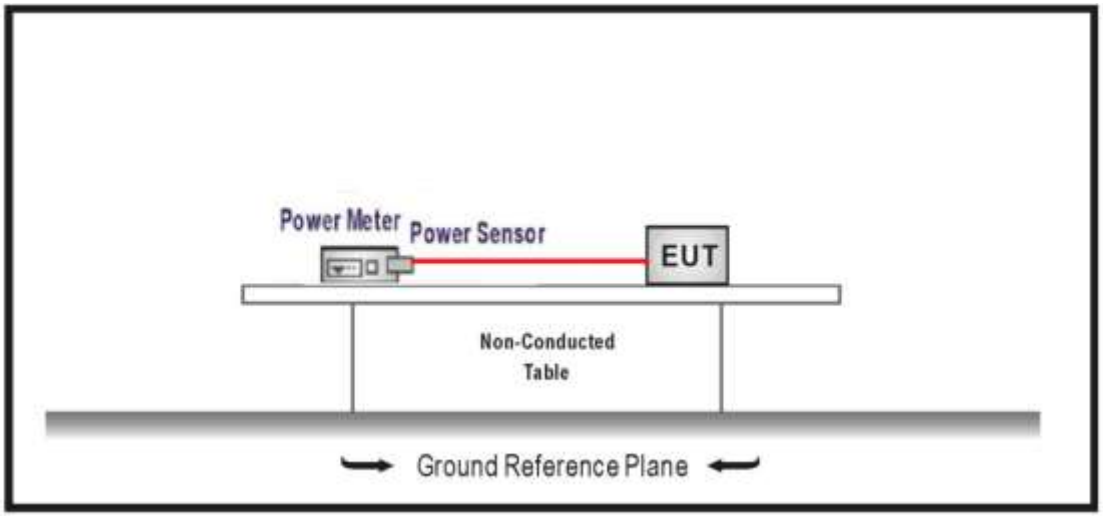
4.6 Fundamental emission output power — VERDICT: PASS

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

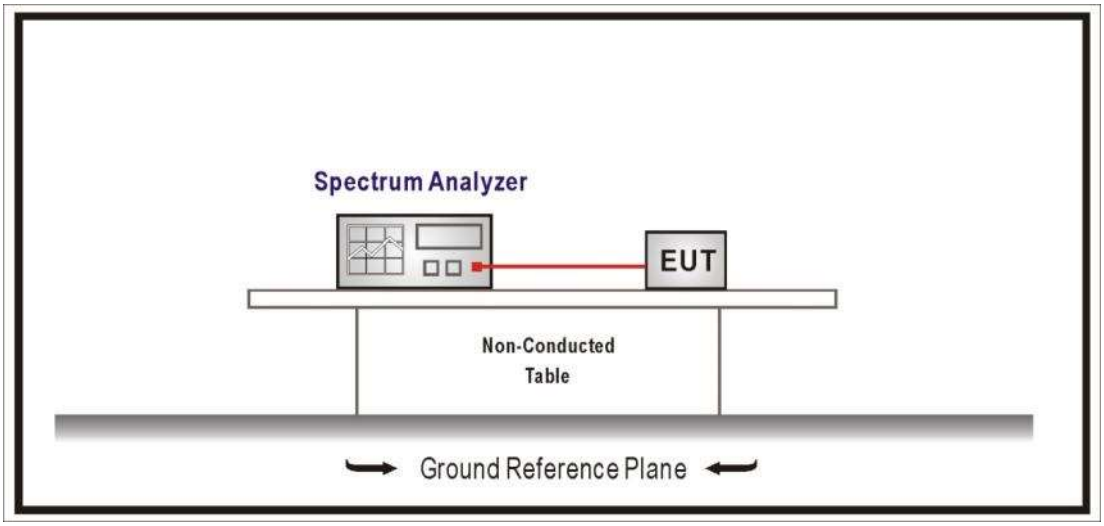
4.6.4 Test Data

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Conducted Limit (dBm)	Result
1	1	2412	18.63	30.00	Pass
	6	2437	21.37	30.00	Pass
	11	2462	19.16	30.00	Pass
2	1	2412	23.38	30.00	Pass
	6	2437	25.78	30.00	Pass
	11	2462	23.93	30.00	Pass
3	1	2412	23.86	30.00	Pass
	6	2437	26.02	30.00	Pass
	11	2462	24.21	30.00	Pass
4	3	2422	23.62	30.00	Pass
	6	2437	25.59	30.00	Pass
	9	2452	24.91	30.00	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	-11.74	≤8	Pass
	6	2437	-10.88	≤8	Pass
	11	2462	-10.83	≤8	Pass
2	1	2412	-11.85	≤8	Pass
	6	2437	-11.67	≤8	Pass
	11	2462	-10.97	≤8	Pass
3	1	2412	-11.48	≤8	Pass
	6	2437	-11.66	≤8	Pass
	11	2462	-10.79	≤8	Pass
4	3	2422	-11.48	≤8	Pass
	6	2437	-13.83	≤8	Pass
	9	2452	-11.10	≤8	Pass

Remark 1: The worst case of PSD as below:

Mode 1 / CH11 / 2462MHz

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