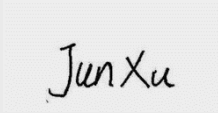
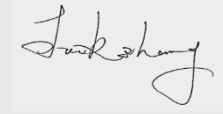




Test report No:
2150803R-RF-US-P06V01

FCC TEST REPORT

Product Name	RM2Track-1-0
Trademark	RM2 Smart Pallet Tracker
Model and /or type reference	GSM/GPS tracking device
FCC ID	2A2KZ-RM2TRACK-1-0
Applicant's name / address	RM2 S.A. Avenue de la Gare 6, Fribourg, CH-1700, Switzerland
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KDB558074 D01v05r02
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Jun Xu/ Senior Test Engineer 
Approved by (name / position & signature)	Jack Zhang/ Supervisor 
Date of issue	2021-09-10
Report Version	V1.0
Report template No	Template_FCC Part 15C-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)	Mar. 24, 2021
Date (start test)	Jun.03 , 2021
Date (finish test)	July. 07, 2021

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
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2150803R-RF-US-P06V01	V1.0	Initial issue of report.	2021-09-10

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 Part 15 Subpart C Paragraph 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 Information;
 - Chapter 1.3 Data Rate;
 - Chapter 1.4 Channel List.

USED EQUIPMENT

AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100906	2021.04.17	2022.04.16
Two-Line V-Network	R&S	ENV216	101044	2020.04.17	2022.04.16
50ohm Termination	SHX	TF2	7081402	2020.09.23	2021.09.22
50ohm Termination	SHX	TF2	7081403	2020.09.23	2021.09.22
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2020.08.23	2021.08.22
Dekra test software	Dekra	-	-	-	-

Emissions in non-restricted frequency bands/ Occupied Bandwidth/ Fundamental emission output power Power Spectral Density / TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2020.08.15	2021.08.14
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2020.08.15	2021.08.14
4TX MIMO Power Sensor	Keysight	X8750A	MY59400102	2021.02.11	2022.02.10
Coaxial Cable	Woken	SFL402	F02-150410-044	2021.01.01	2021.12.31
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2020.08.13	2021.08.12

Radiated Emission(30MHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2020.12.06	2021.12.05
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2020.09.22	2021.09.21
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2021.04.05	2022.04.04
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2020.08.13	2021.08.12
Dekra test software	Dekra	-	-	-	-

Radiated Emission / AC5(1GHz-40GHz)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2021.03.20	2022.03.19
Amplifier	Keleto	LNPA	SK20190225	2020.09.25	2021.09.24
Preamplifier	EMCI	EMC184045SE	980263	2021.05.23	2022.05.22
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2020.08.06	2021.08.05
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2021.03.23	2023.03.22
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2021.04.05	2022.04.04
Coaxial Cable	ROSENBERPHILIPSR	LA1-C011- 2000/3000	AC5-40G	2021.03.20	2022.03.19
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2020.08.13	2021.08.12
Dekra test software	Dekra	-	-	-	-

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	9kHz~150kHz: 2.80dB 150kHz~30MHz: 2.40dB
Peak Power Output	± 1.27 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.50 dB 300MHz~1GHz: 3.60 dB Vertical: 30MHz~200MHz: 3.60 dB 300MHz~1GHz: 3.50 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.00 dB Vertical: 1GHz~18GHz: 4.80 dB
RF antenna conducted test	± 1.27 dB
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	± 150 Hz
Occupied Bandwidth	± 1 kHz
Power Density	± 1.27 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name/PMN	RM2Track-1-0
Model No./HVIN	GSM/GPS tracking device
Trademark.....	RM2 Smart Pallet Tracker
FCC ID	2A2KZ-RM2TRACK-1-0
Manufacturer.....	RM2 S.A.
Manufacturer address	Avenue de la Gare 6, Fribourg, CH-1700, Switzerland

Wireless specification	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
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: 6.5 Vdc
Mounting position.....	☐	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☒	Other: Module

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	-3.75 dBi		

1.3 Data Rate

IEEE 802.11b

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

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

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.

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	-	-

Note: The General Description of the Item(s), 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: Simultaneous transmit

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

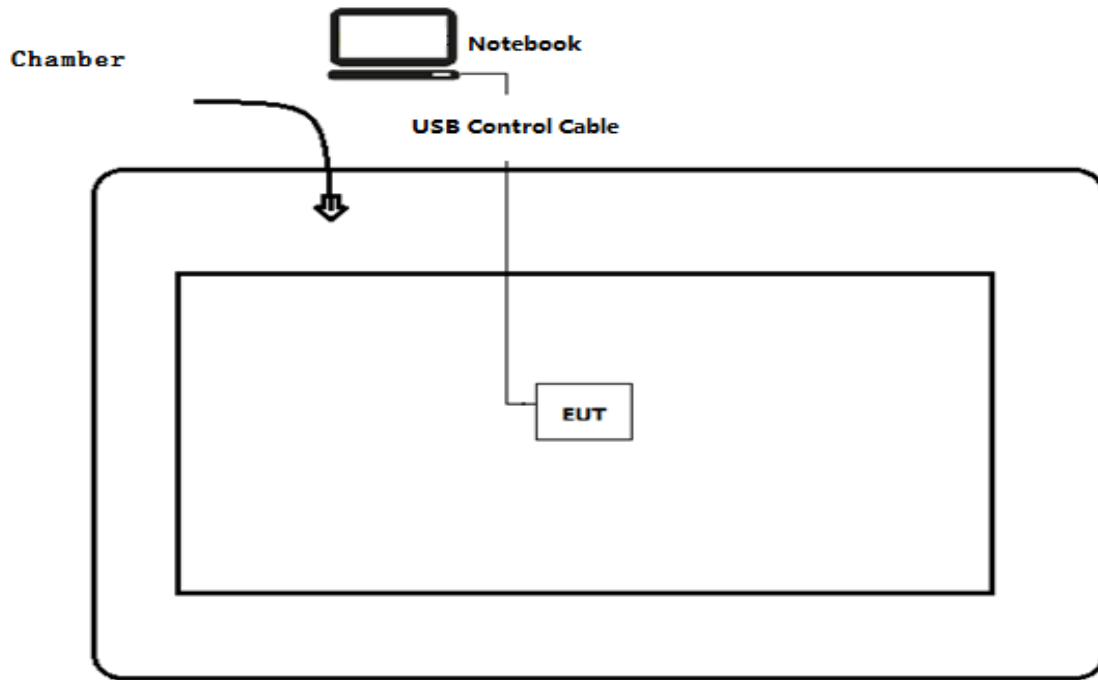
The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
Software	Type / Version	Manufacturer	Supplied by
ESP_RF_test_tool	N/A	N/A	N/A

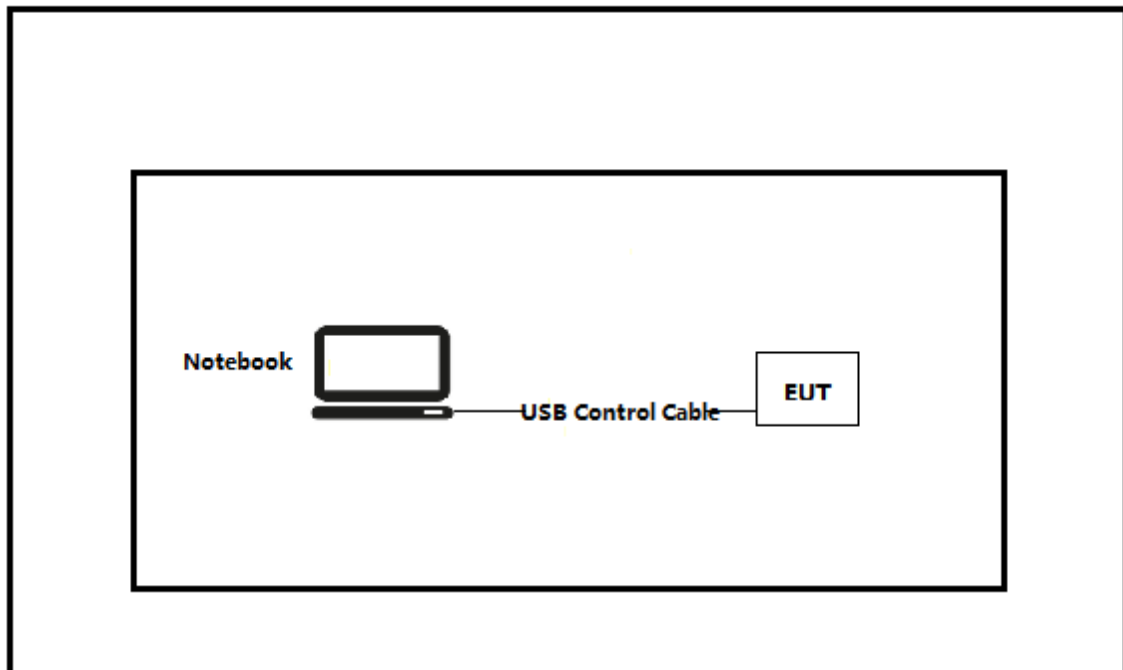
2.3 Test Configuration / Block diagram used for tests

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 “ESP_RF_test_tool” 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	2019	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

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

For FCC

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	---

3.4 Test Facility

USA : FCC Designation Number: CN1199

4 TEST RESULTS

4.1 AC Power Line Conducted Emission	VERDICT: PASS
---	----------------------

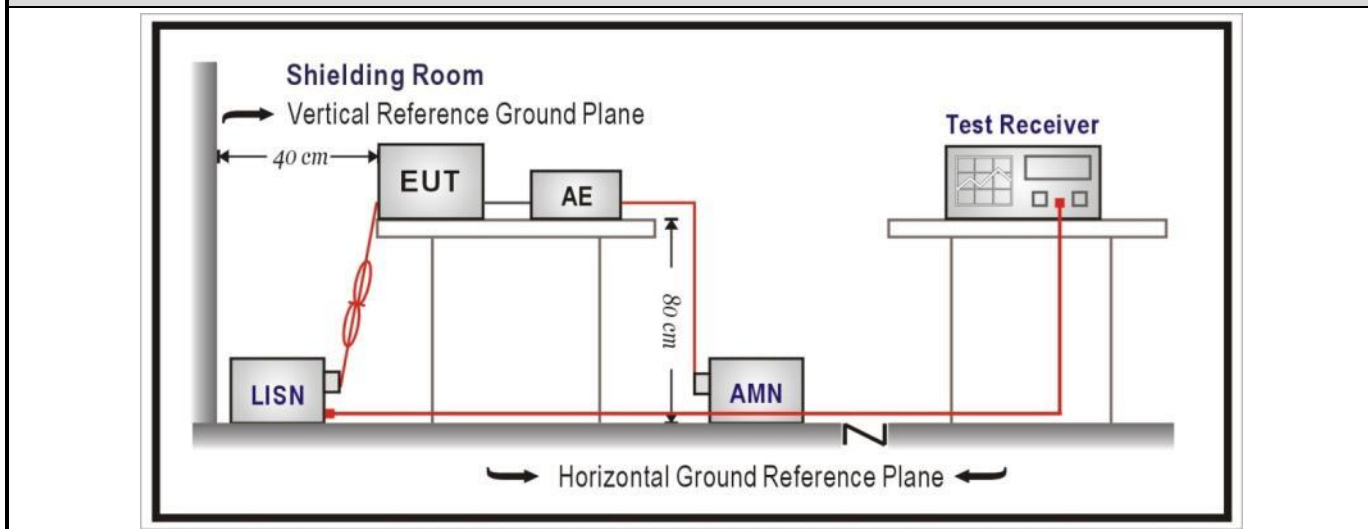
4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μ V) ¹⁾]	Limit: AV [dB(μ V) 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

N/A: EUT is powered by battery.

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 Band Emissions Limit

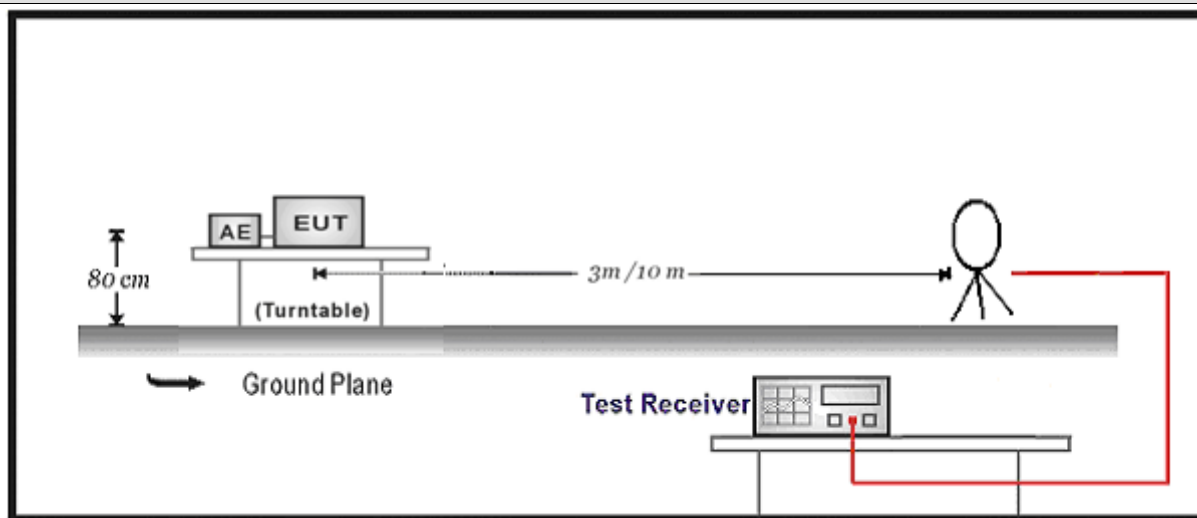
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Field strength (dB $\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216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

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

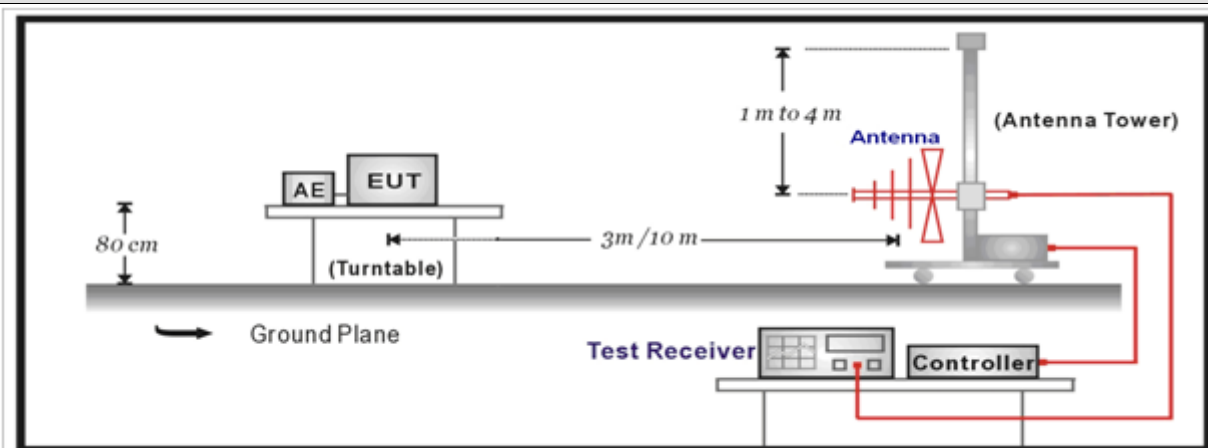
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated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

4.2.2 Test Setup

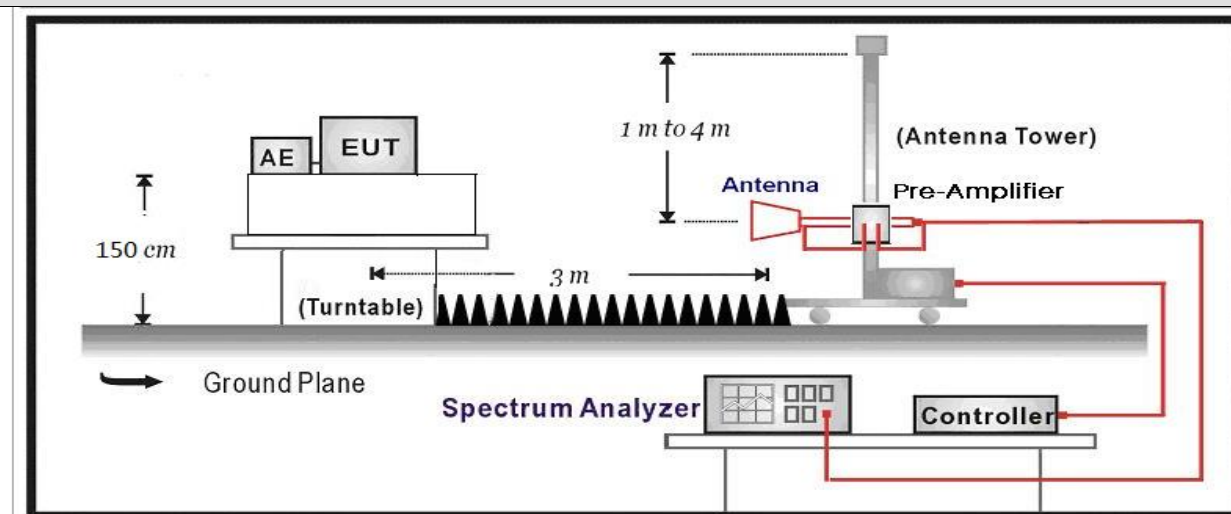
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

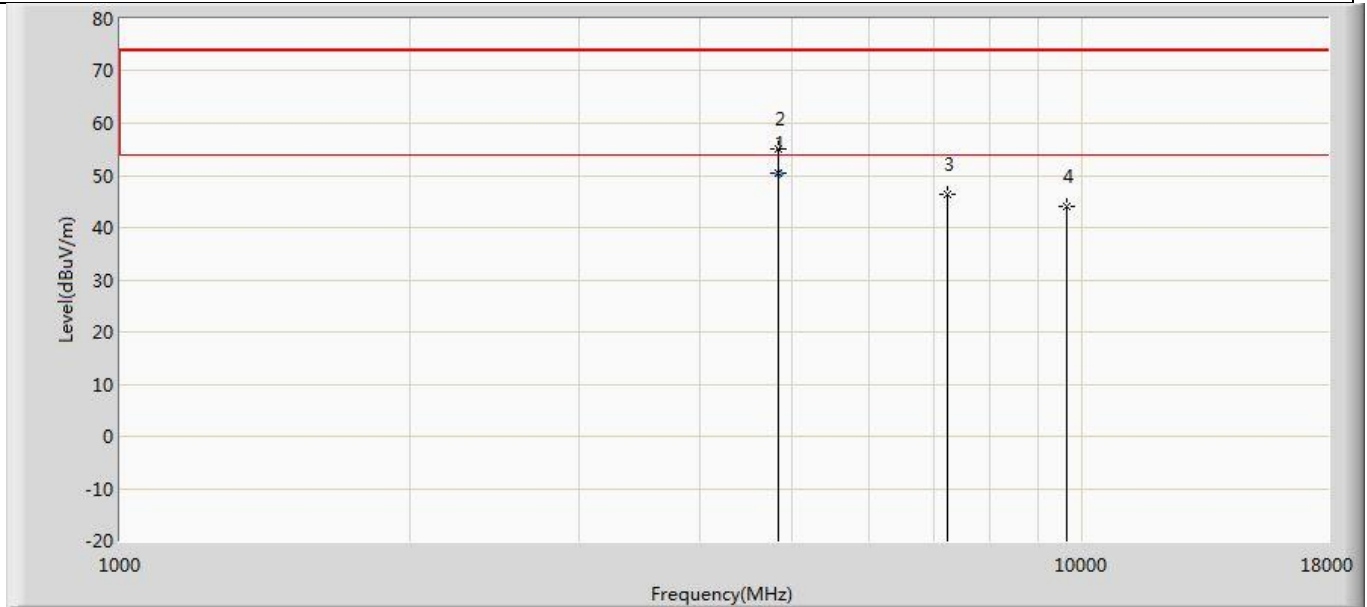


4.2.3 Test Procedure

	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

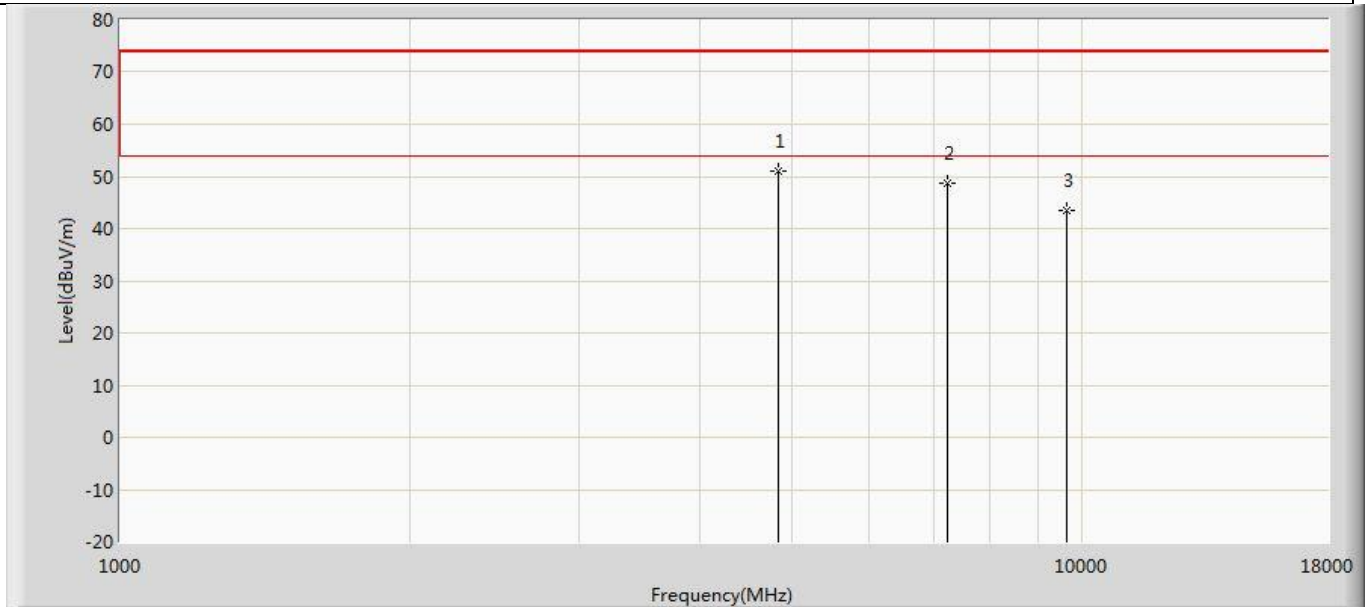
4.2.4 Test Data

Profile:2150803R	Page No.: 43
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



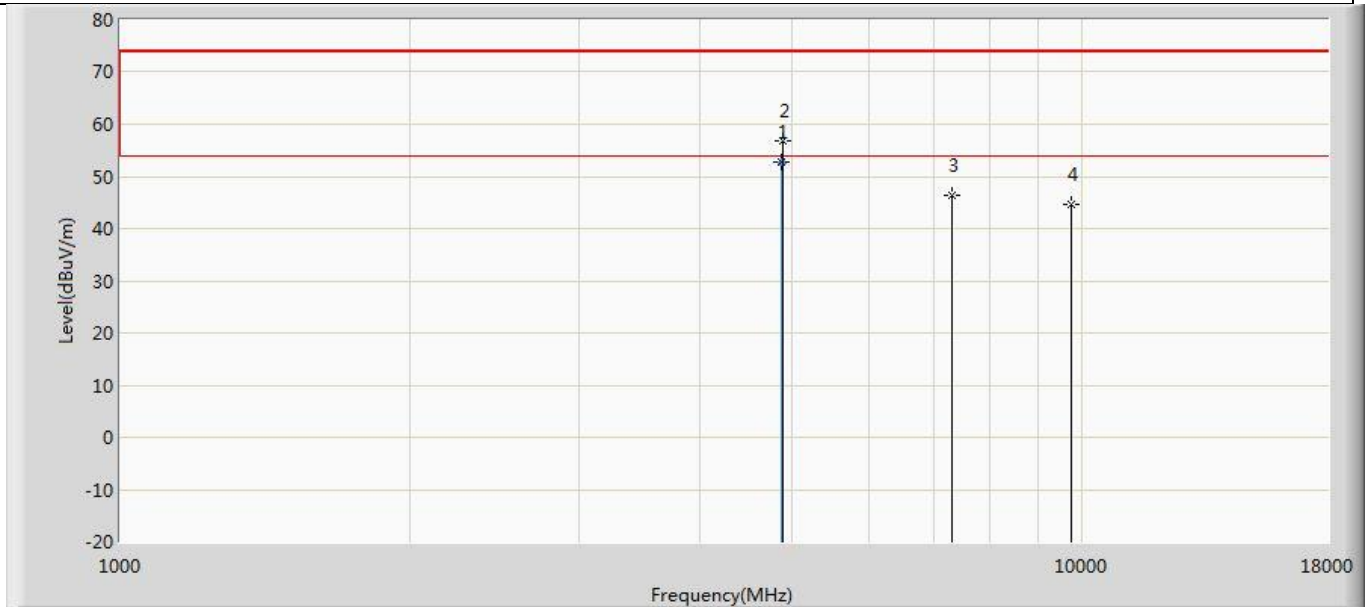
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4823.920	50.457	46.956	-3.543	54.000	3.502	AV
2		4825.000	55.156	51.667	-18.844	74.000	3.489	PK
3		7236.000	46.246	39.398	-27.754	74.000	6.847	PK
4		9648.000	43.926	35.394	-30.074	74.000	8.531	PK

Profile:2150803R	Page No.: 44
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



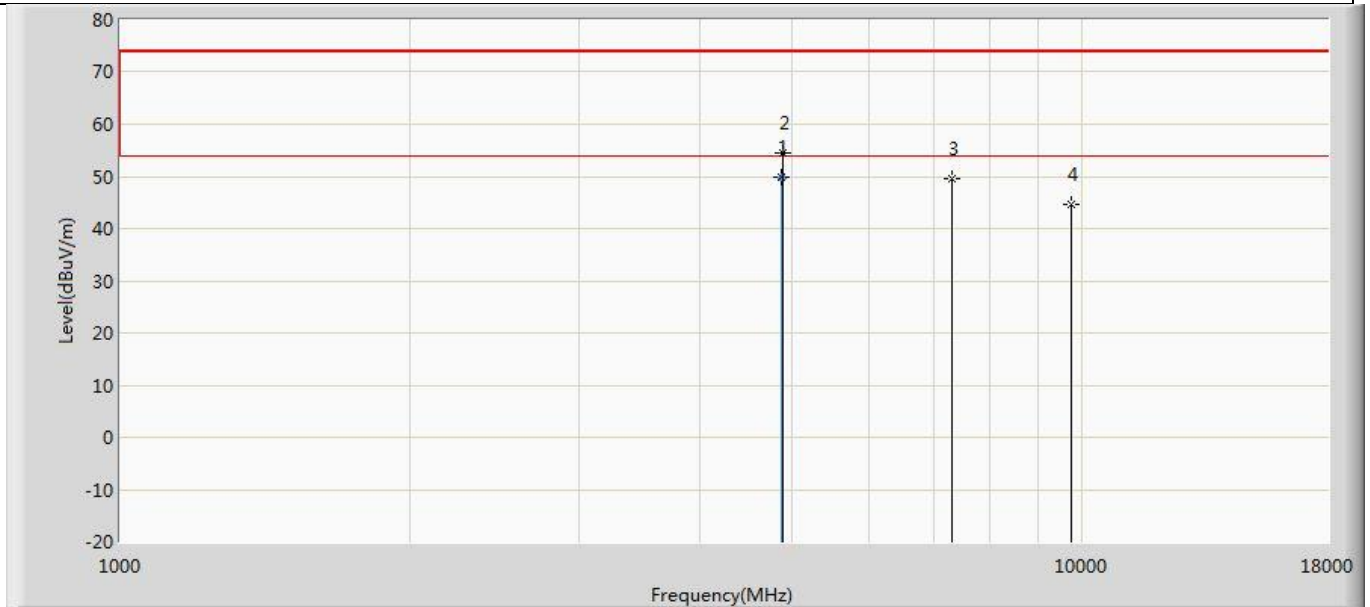
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	51.012	47.512	-22.988	74.000	3.500	PK
2		7236.000	48.624	41.776	-25.376	74.000	6.847	PK
3		9648.000	43.540	35.008	-30.460	74.000	8.531	PK

Profile:2150803R	Page No.: 45
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	



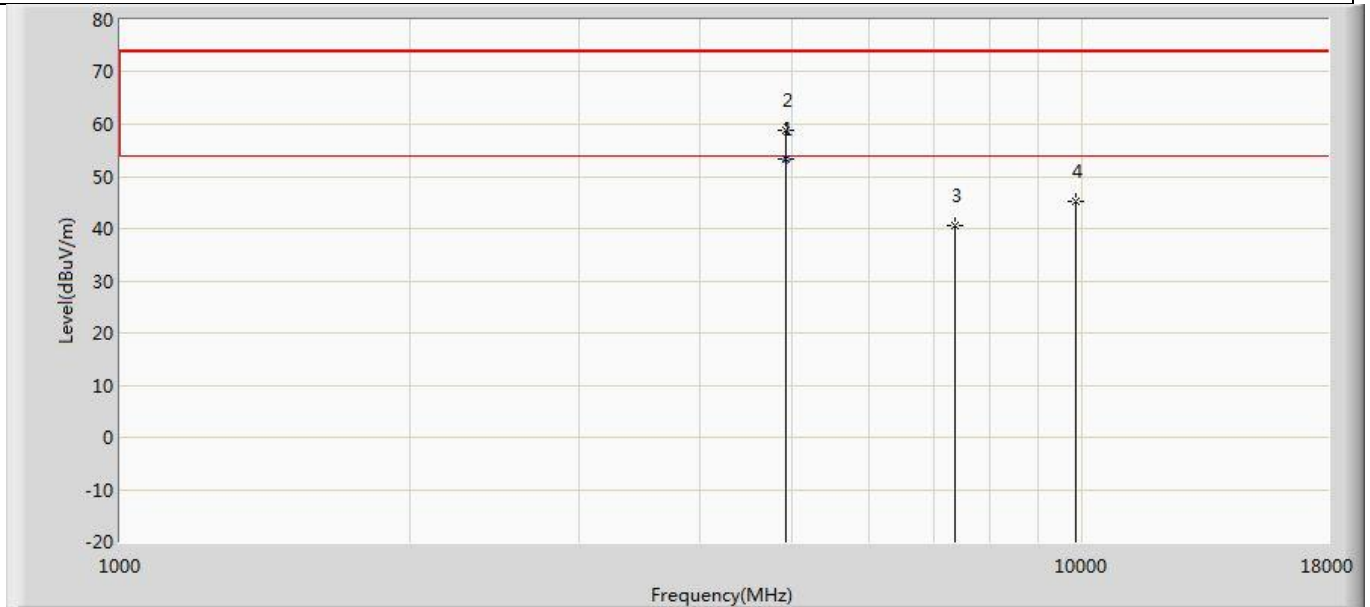
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4873.920	52.877	49.190	-1.123	54.000	3.687	AV
2		4876.000	56.832	53.147	-17.168	74.000	3.685	PK
3		7311.000	46.459	39.829	-27.541	74.000	6.630	PK
4		9748.000	44.511	35.891	-29.489	74.000	8.620	PK

Profile:2150803R	Page No.: 46
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	



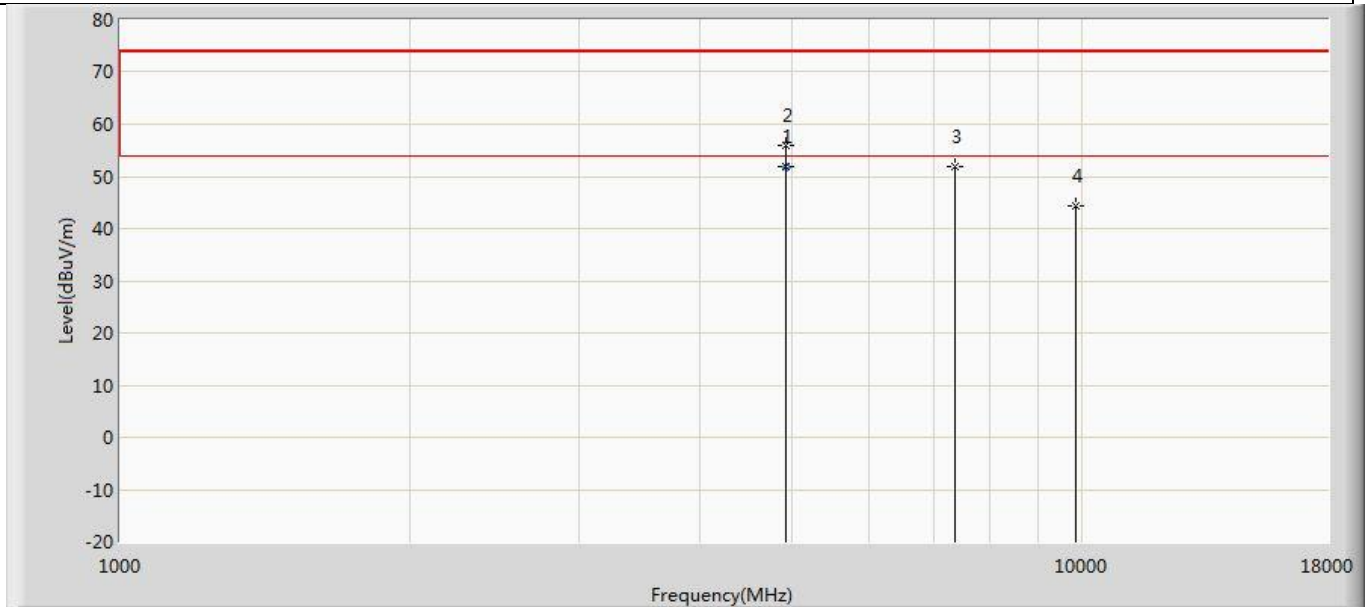
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4873.920	49.876	46.189	-4.124	54.000	3.687	AV
2		4876.000	54.567	50.882	-19.433	74.000	3.685	PK
3		7311.000	49.455	42.825	-24.545	74.000	6.630	PK
4		9748.000	44.701	36.081	-29.299	74.000	8.620	PK

Profile:2150803R	Page No.: 47
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



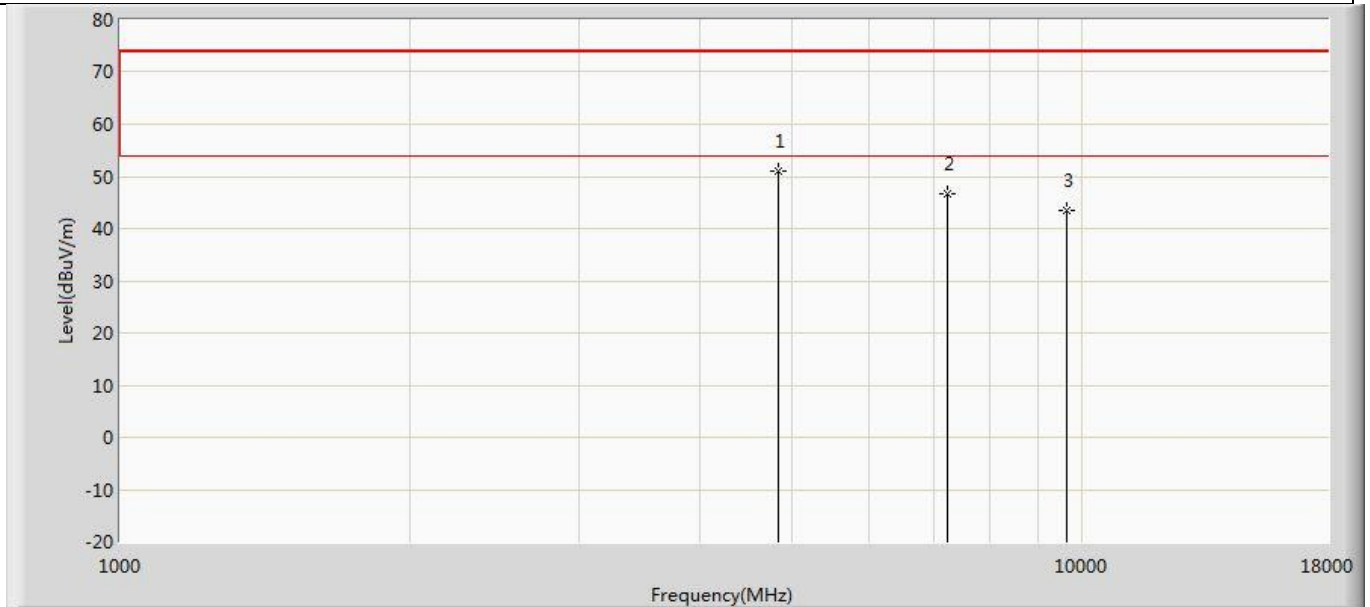
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4923.860	53.405	49.840	-0.595	54.000	3.564	AV
2		4927.000	58.697	55.153	-15.303	74.000	3.545	PK
3		7386.000	40.696	33.912	-33.304	74.000	6.783	PK
4		9848.000	45.137	36.680	-28.863	74.000	8.458	PK

Profile:2150803R	Page No.: 48
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



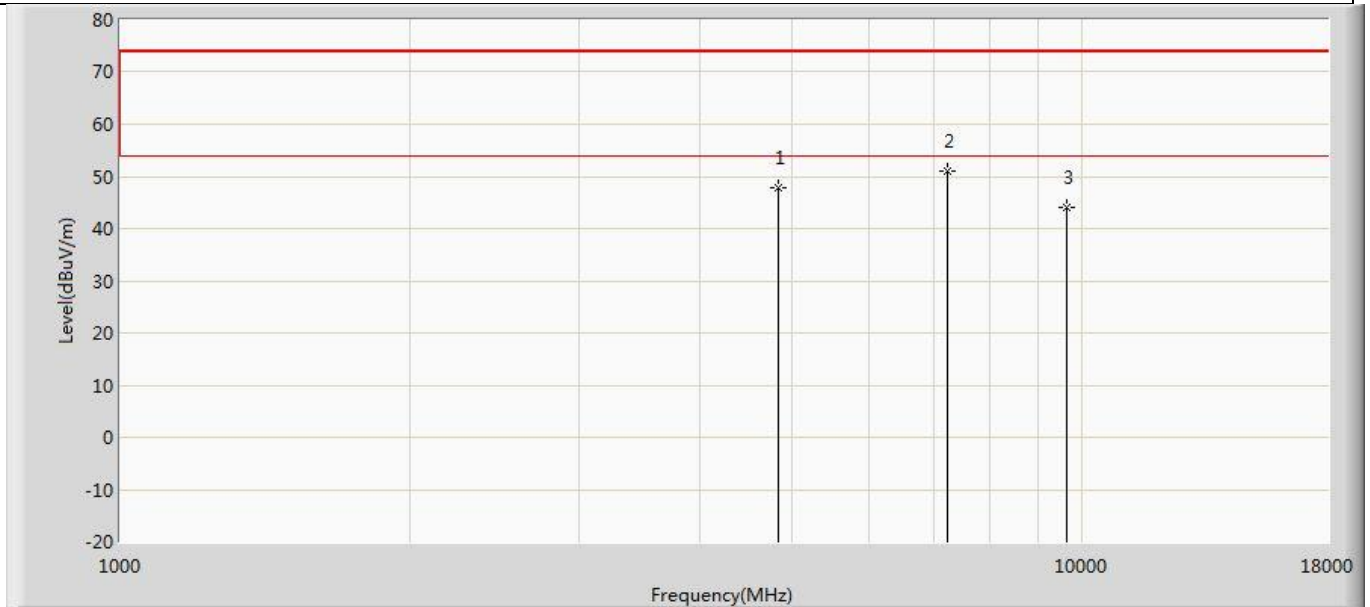
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4923.880	51.889	48.324	-2.111	54.000	3.564	AV
2		4927.000	55.977	52.433	-18.023	74.000	3.545	PK
3		7386.000	52.013	45.229	-21.987	74.000	6.783	PK
4		9848.000	44.405	35.948	-29.595	74.000	8.458	PK

Profile:2150803R	Page No.: 49
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



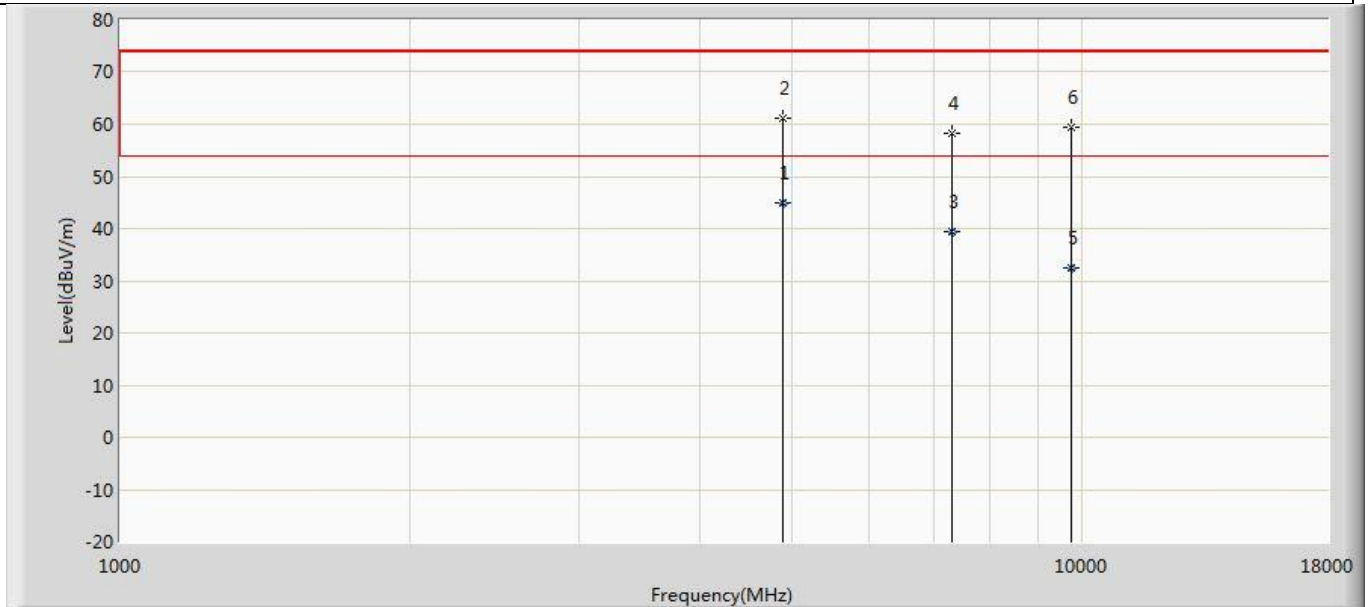
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	50.948	47.448	-23.052	74.000	3.500	PK
2		7236.000	46.760	39.912	-27.240	74.000	6.847	PK
3		9648.000	43.478	34.946	-30.522	74.000	8.531	PK

Profile:2150803R	Page No.: 50
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



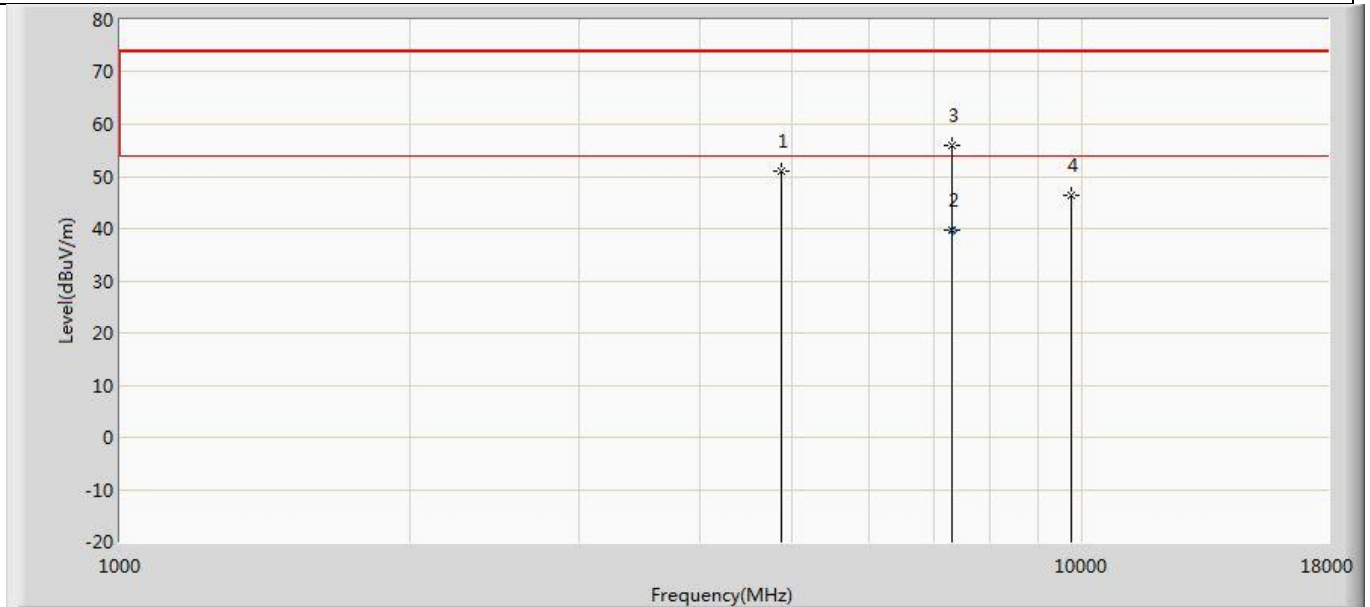
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	47.878	44.378	-26.122	74.000	3.500	PK
2	*	7236.000	50.905	44.057	-23.095	74.000	6.847	PK
3		9648.000	44.082	35.550	-29.918	74.000	8.531	PK

Profile:2150803R	Page No.: 16
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 12:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



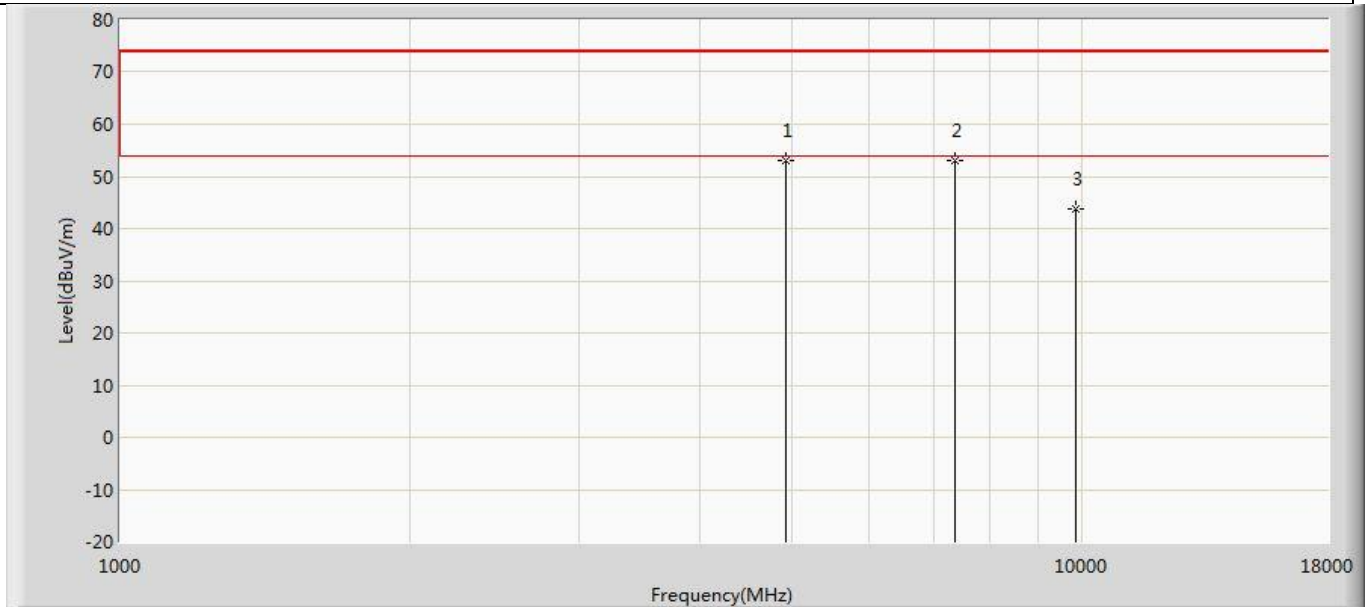
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4875.850	45.020	40.156	-8.980	54.000	4.865	AV
2		4876.000	61.146	56.280	-12.854	74.000	4.866	PK
3		7310.850	39.300	31.310	-14.700	54.000	7.990	AV
4		7324.000	58.210	50.105	-15.790	74.000	8.105	PK
5		9746.000	32.596	22.866	-21.404	54.000	9.730	AV
6		9746.500	59.424	49.700	-14.576	74.000	9.723	PK

Profile:2150803R	Page No.: 51
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11g	



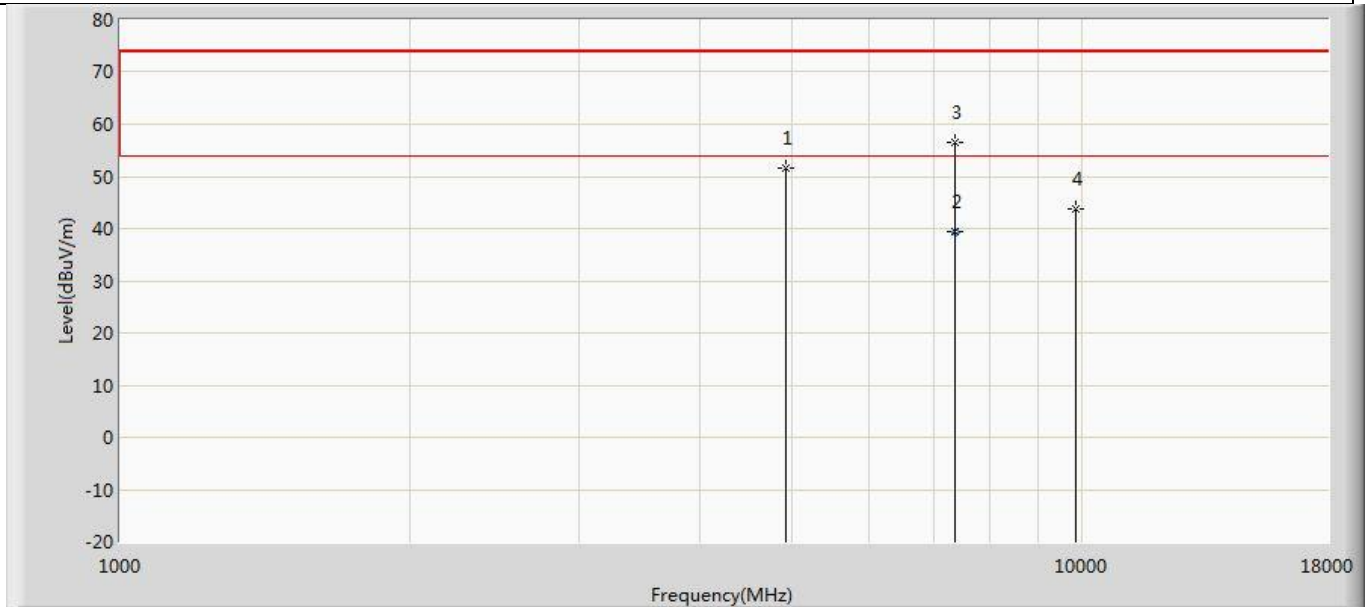
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	50.991	47.304	-23.009	74.000	3.687	PK
2	*	7309.280	39.593	32.973	-14.407	54.000	6.620	AV
3		7311.000	55.854	49.224	-18.146	74.000	6.630	PK
4		9748.000	46.397	37.777	-27.603	74.000	8.620	PK

Profile:2150803R	Page No.: 52
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



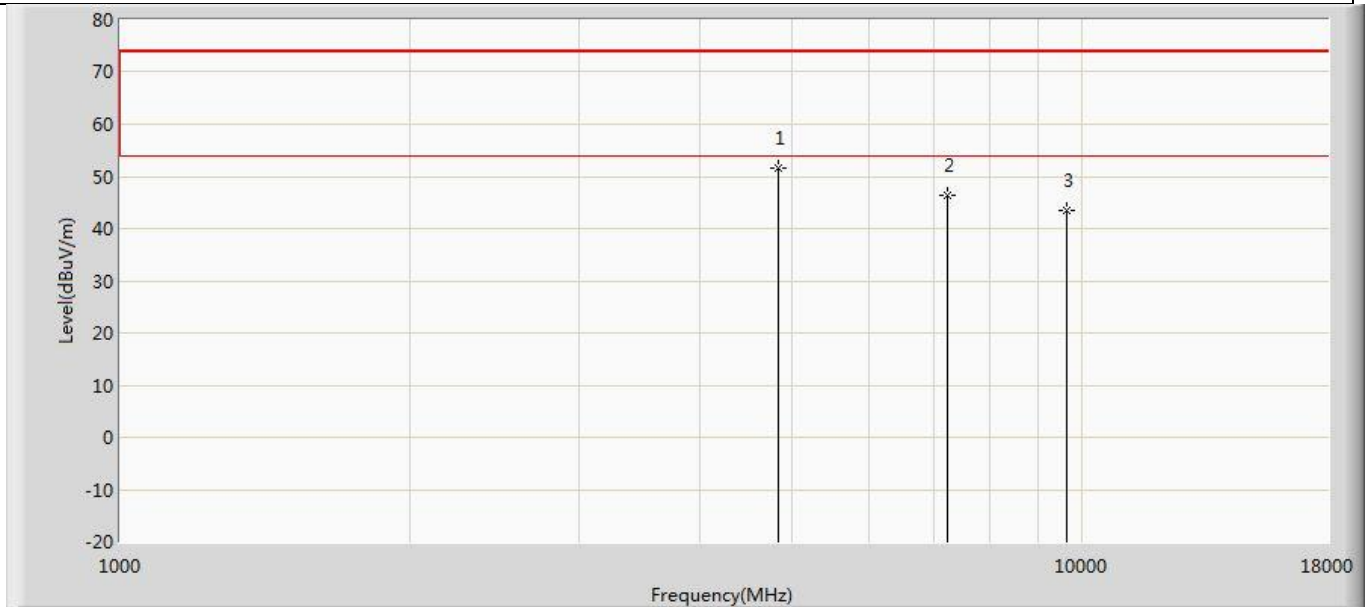
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	53.111	49.547	-20.889	74.000	3.563	PK
2	*	7386.000	53.139	46.355	-20.861	74.000	6.783	PK
3		9848.000	43.758	35.301	-30.242	74.000	8.458	PK

Profile:2150803R	Page No.: 53
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



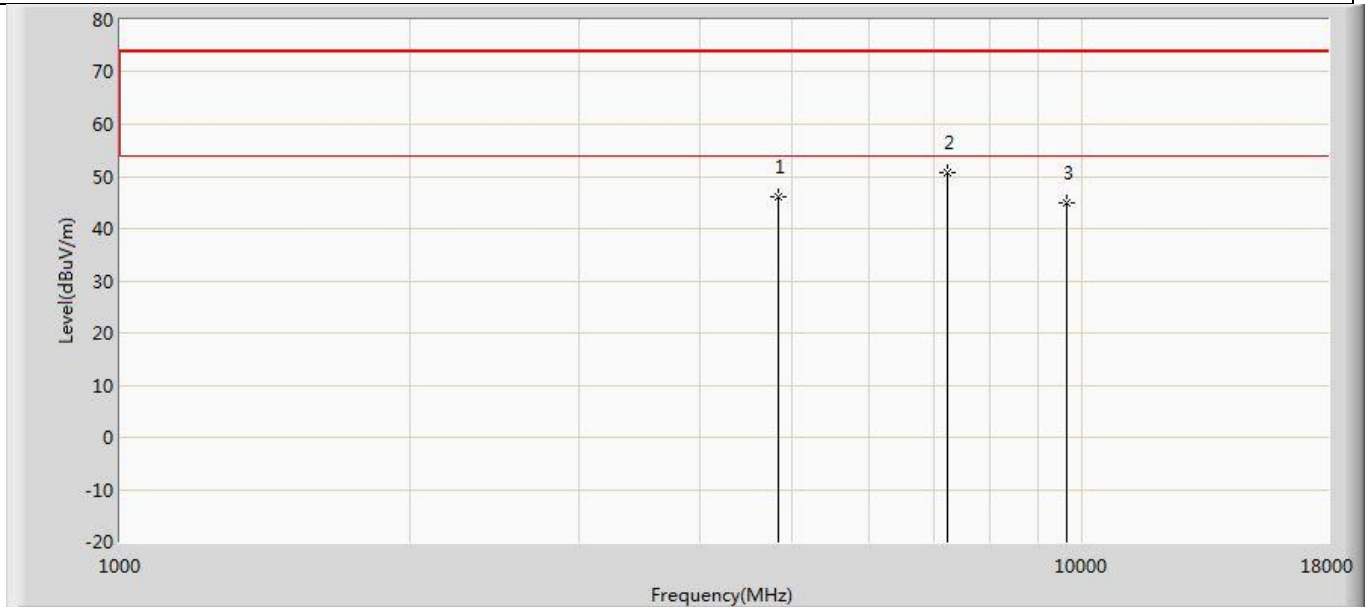
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	51.569	48.005	-22.431	74.000	3.563	PK
2	*	7384.280	39.399	32.656	-14.601	54.000	6.743	AV
3		7386.000	56.434	49.650	-17.566	74.000	6.783	PK
4		9848.000	43.869	35.412	-30.131	74.000	8.458	PK

Profile:2150803R	Page No.: 54
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



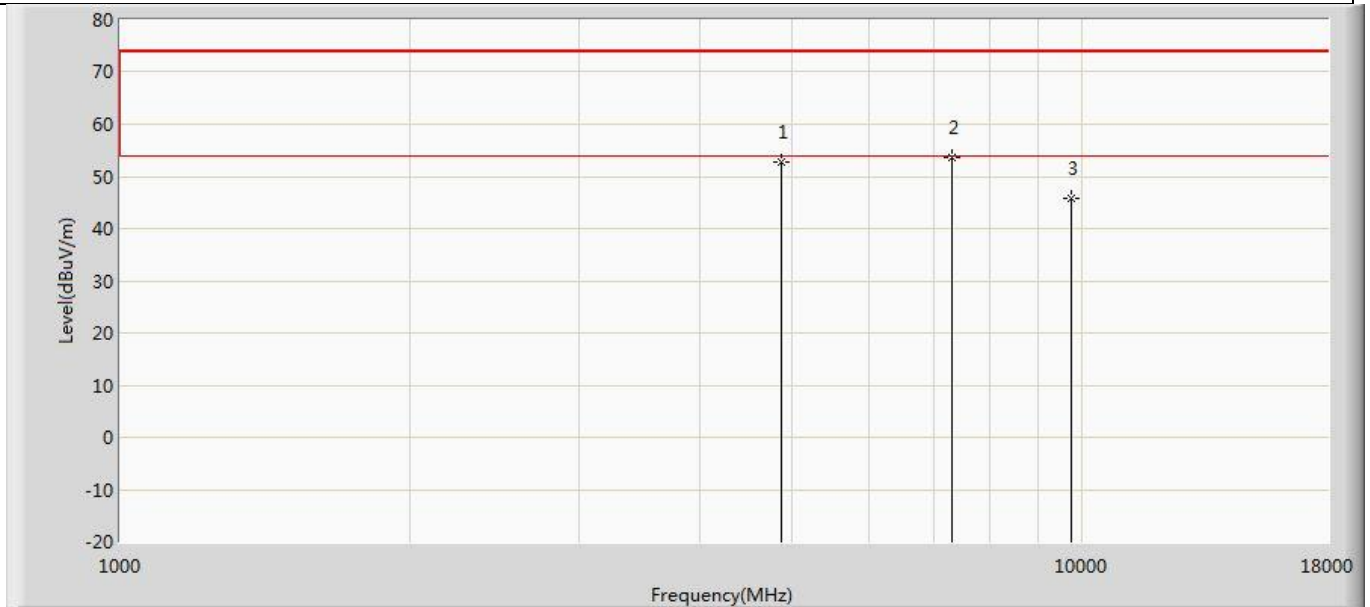
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	51.518	48.018	-22.482	74.000	3.500	PK
2		7236.000	46.505	39.657	-27.495	74.000	6.847	PK
3		9648.000	43.473	34.941	-30.527	74.000	8.531	PK

Profile:2150803R	Page No.: 55
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



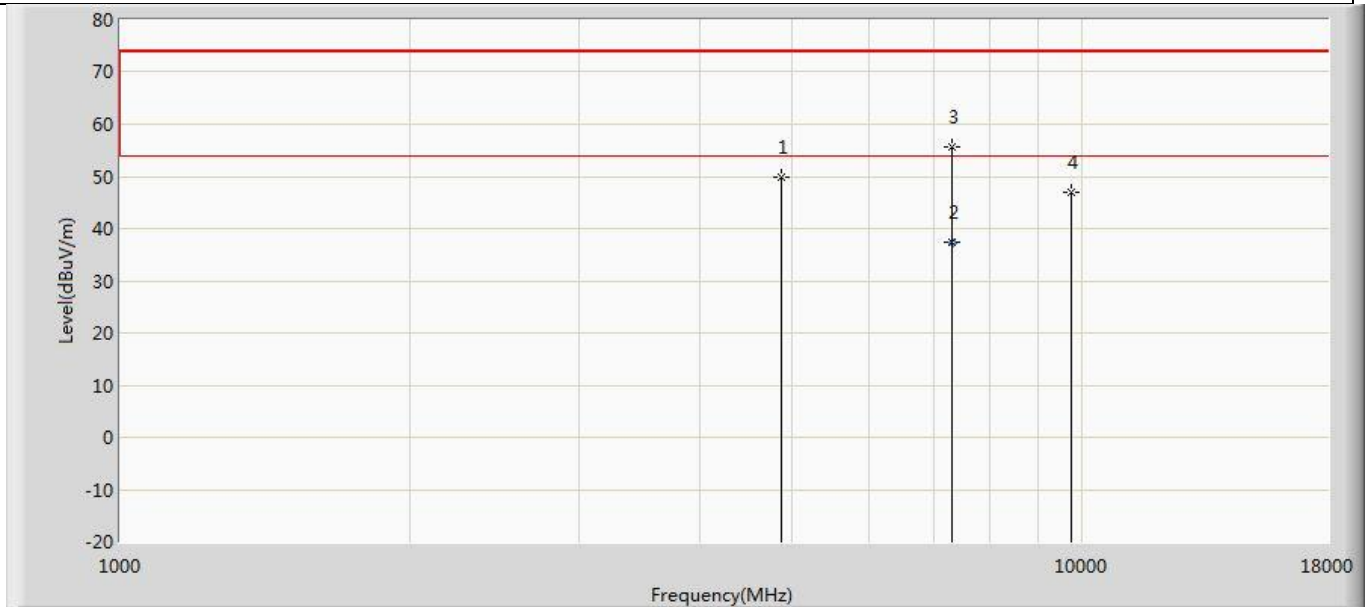
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	46.124	42.624	-27.876	74.000	3.500	PK
2	*	7236.000	50.810	43.962	-23.190	74.000	6.847	PK
3		9648.000	45.045	36.513	-28.955	74.000	8.531	PK

Profile:2150803R	Page No.: 56
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n20	



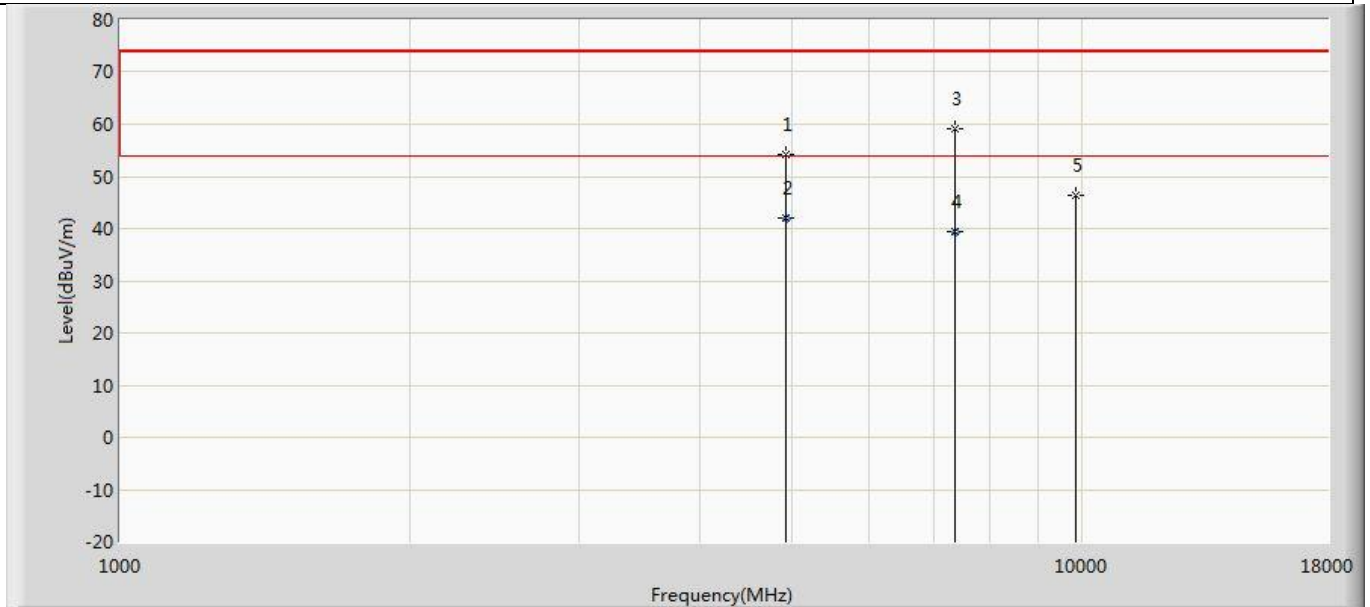
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	52.770	49.083	-21.230	74.000	3.687	PK
2	*	7311.000	53.663	47.033	-20.337	74.000	6.630	PK
3		9748.000	45.811	37.191	-28.189	74.000	8.620	PK

Profile:2150803R	Page No.: 57
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n20	



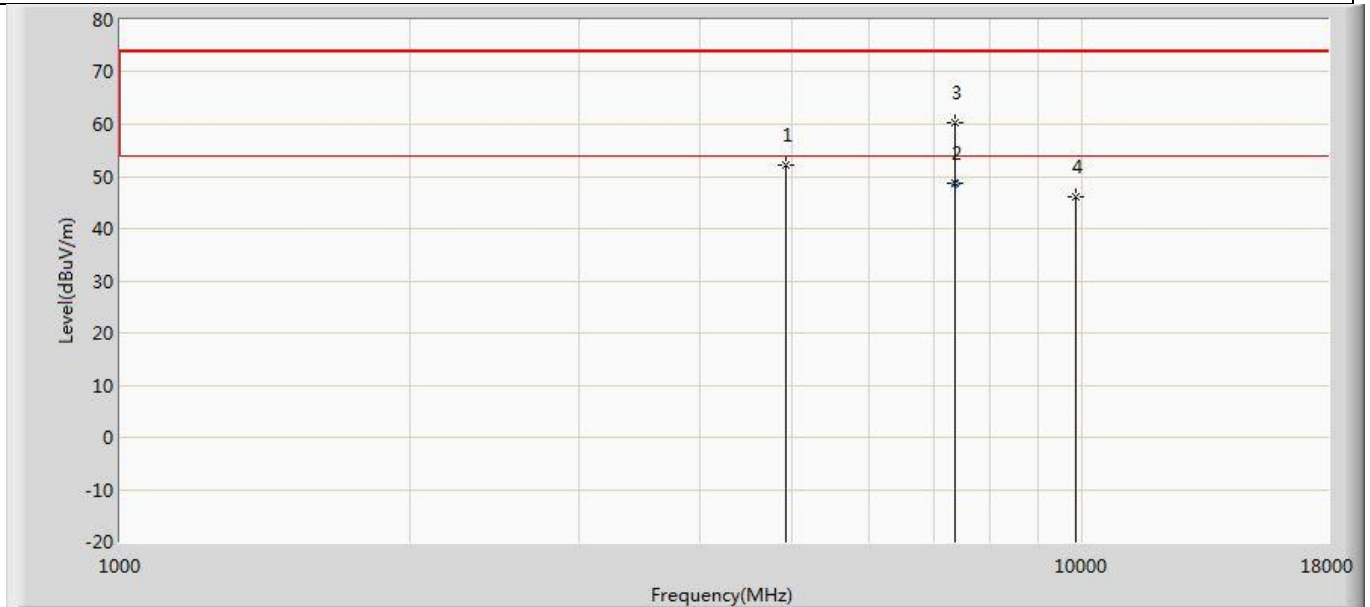
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	49.729	46.042	-24.271	74.000	3.687	PK
2	*	7311.080	37.507	30.876	-16.493	54.000	6.630	AV
3		7324.000	55.744	49.035	-18.256	74.000	6.709	PK
4		9748.000	47.046	38.426	-26.954	74.000	8.620	PK

Profile:2150803R	Page No.: 58
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4927.000	54.125	50.581	-19.875	74.000	3.545	PK
2	*	4927.600	42.107	38.560	-11.893	54.000	3.547	AV
3		7375.000	59.170	52.646	-14.830	74.000	6.523	PK
4		7384.520	39.517	32.768	-14.483	54.000	6.749	AV
5		9848.000	46.330	37.873	-27.670	74.000	8.458	PK

Profile:2150803R	Page No.: 59
Engineer: Tongben	
Site: AC5	Time: 2021/06/16 - 22:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



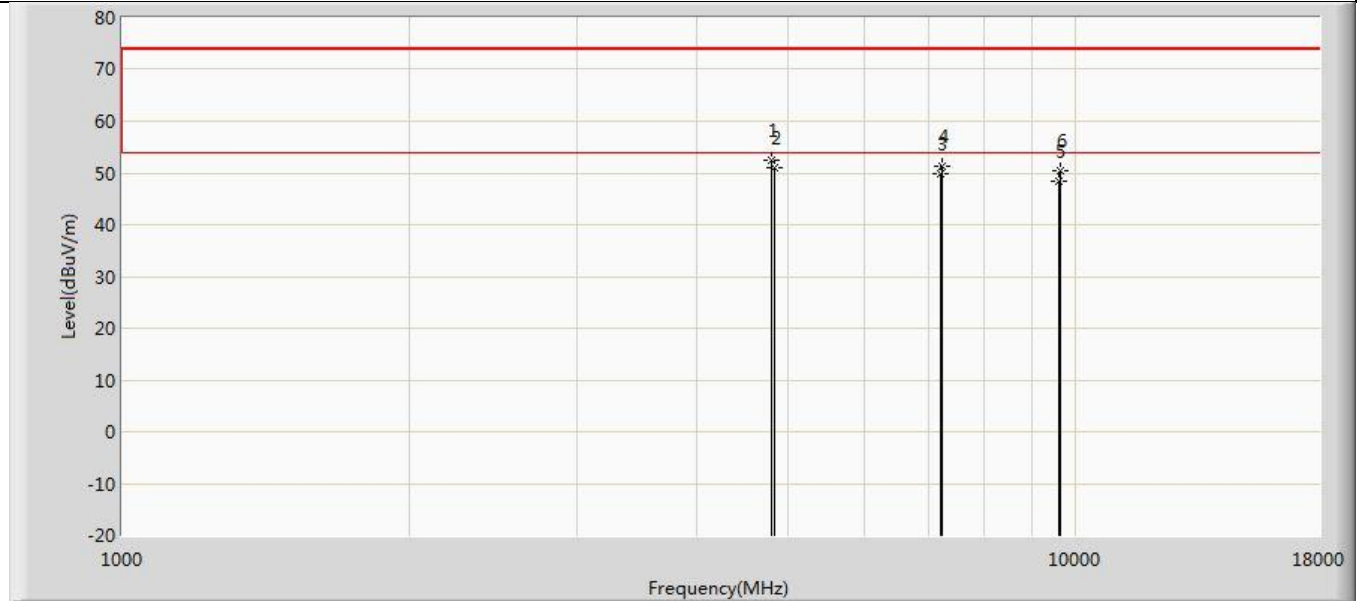
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	52.292	48.728	-21.708	74.000	3.563	PK
2	*	7384.520	48.745	41.996	-5.255	54.000	6.749	AV
3		7386.000	60.343	53.559	-13.657	74.000	6.783	PK
4		9848.000	46.024	37.567	-27.976	74.000	8.458	PK

Note:

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 of peak is lower than average limit, then average measurement needn't be performed.

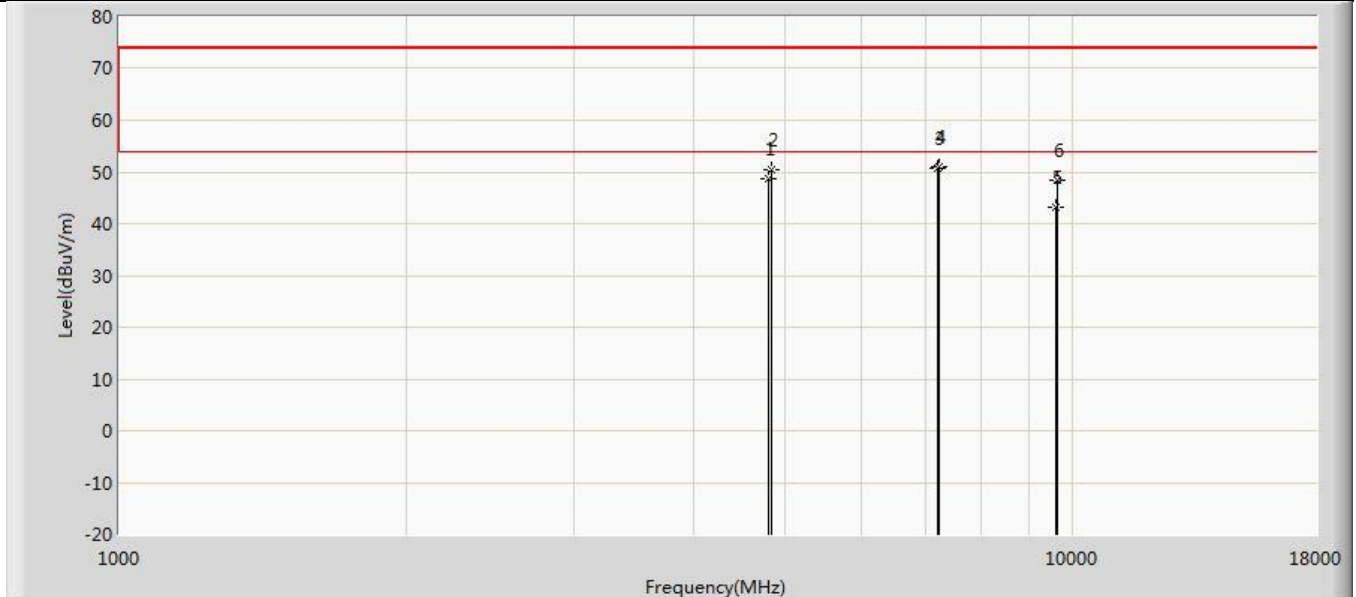
The worst case of simultaneous transmit:

Profile: 2150803R	Page No.: 101
Engineer: Tongben	
Site: AC5	Time: 2021/07/08 - 18:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 4: Simultaneous transmit at 2412MHz by 802.11b & 2402 MHz by LE_1Mbps(GFSK_LE)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4804.000	52.449	45.336	-21.551	74.000	7.113	PK
2		4824.000	51.012	47.512	-22.988	74.000	3.500	PK
3		7206.000	49.961	39.715	-24.039	74.000	10.247	PK
4		7236.000	51.390	40.776	-22.610	74.000	10.614	PK
5		9608.000	48.547	35.332	-25.453	74.000	13.216	PK
6		9648.000	50.399	36.039	-23.601	74.000	14.360	PK

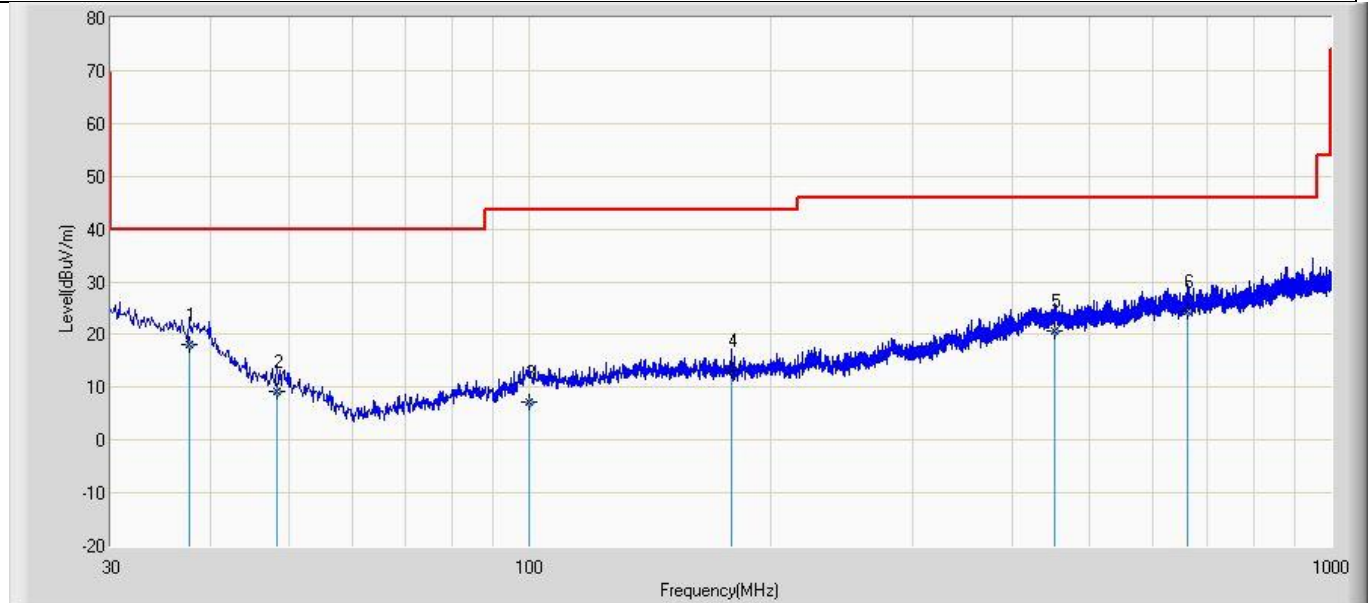
Profile: 2150803R	Page No.: 102
Engineer: Tongben	
Site: AC5	Time: 2021/07/08 - 18:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 4: Simultaneous transmit at 2412MHz by 802.11b & 2402 MHz by LE_1Mbps(GFSK_LE)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	48.634	41.521	-25.366	74.000	7.113	PK
2		4824.000	50.349	43.378	-23.651	74.000	6.971	PK
3		7206.000	50.775	40.529	-23.225	74.000	10.247	PK
4	*	7236.000	50.905	44.057	-23.095	74.000	6.847	PK
5		9608.000	43.231	30.016	-30.769	74.000	13.216	PK
6		9648.000	48.412	34.052	-25.588	74.000	14.360	PK

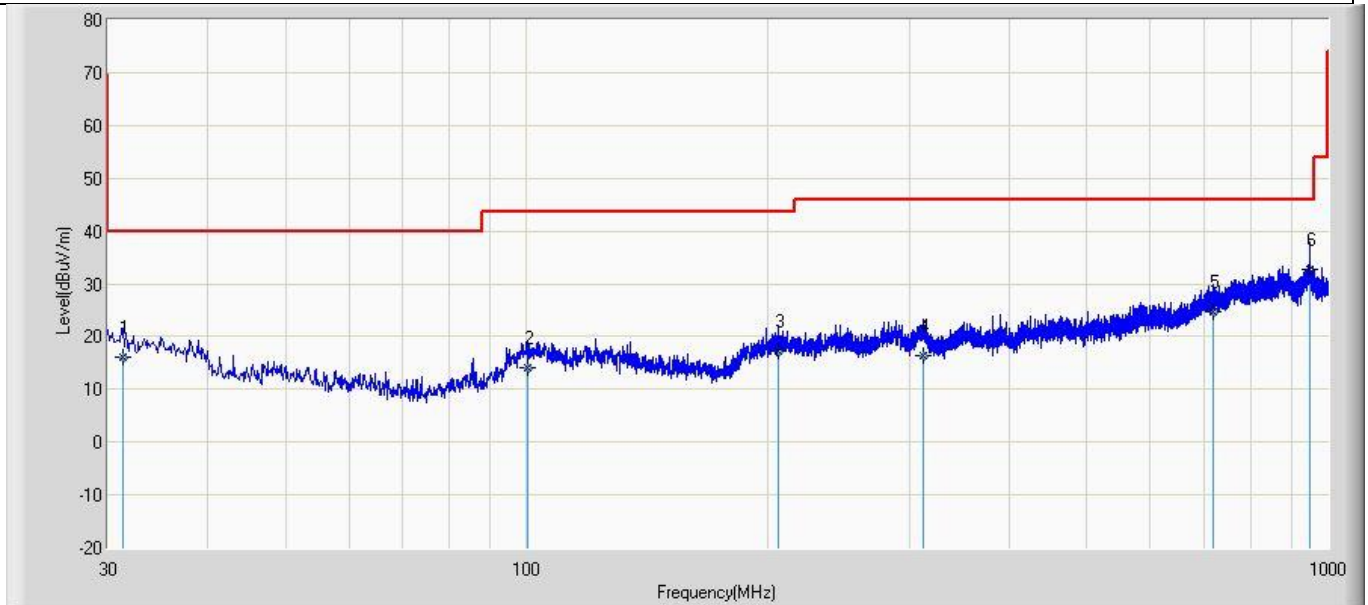
The worst case of Radiated Emission below 1GHz:

Profile: 2150803R	Page No.: 1
Engineer: Tongben	
Site: AC3	Time: 2021/06/28 - 21:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		37.518	18.235	-5.953	-21.765	40.000	24.189	QP
2		48.430	9.160	-6.638	-30.840	40.000	15.798	QP
3		99.840	7.165	-9.679	-36.335	43.500	16.844	QP
4		178.167	13.231	-3.749	-30.269	43.500	16.980	QP
5		452.193	20.673	-6.300	-25.327	46.000	26.973	QP
6	*	661.349	24.361	-5.022	-21.639	46.000	29.383	QP

Profile: 2150803R	Page No.: 2
Engineer: Tongben	
Site: AC3	Time: 2021/06/28 - 21:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1	



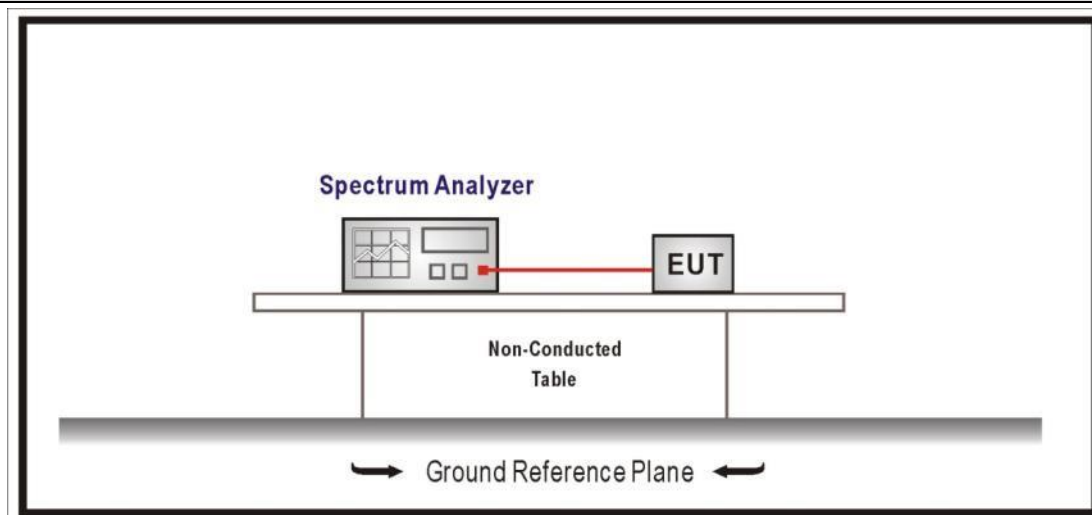
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		31.334	16.216	-7.330	-23.784	40.000	23.546	QP
2		100.446	14.041	-7.959	-29.459	43.500	22.001	QP
3		205.812	17.171	-5.839	-26.329	43.500	23.010	QP
4		312.513	16.336	-8.516	-29.664	46.000	24.851	QP
5		720.398	24.765	-5.287	-21.235	46.000	30.052	QP
6	*	948.347	32.677	-2.175	-13.323	46.000	34.852	QP

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

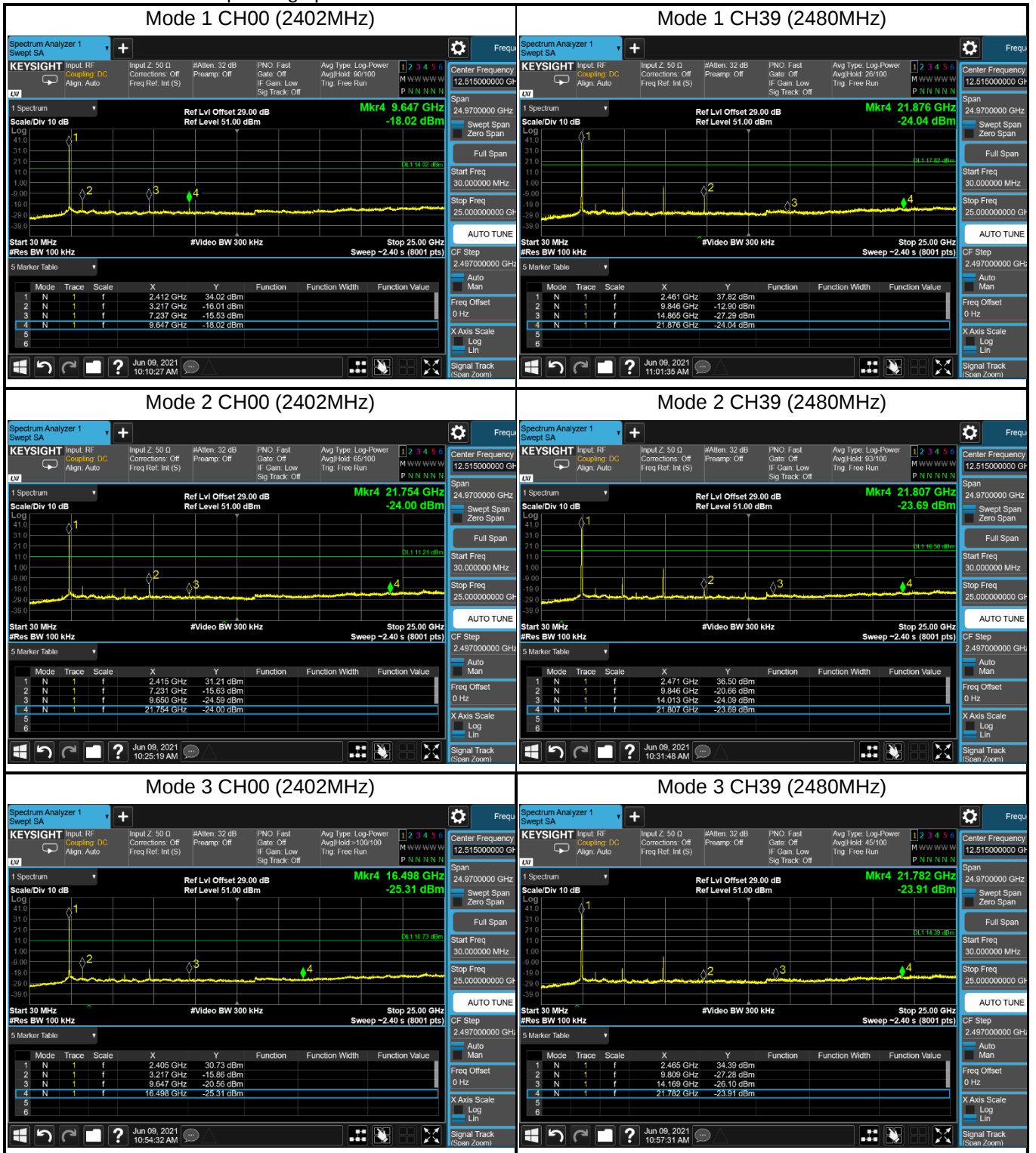
Mode	Channel	Test Frequency (MHz)	Maximum In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	1	2412	9.168	2400.000	-47.83	56.998	≥20	Pass
	11	2462	8.594	2500.000	-53.73	62.324	≥20	Pass
2	1	2412	6.329	2400.000	-30.59	36.919	≥20	Pass
	11	2462	5.525	2500.000	-48.10	53.625	≥20	Pass
3	1	2412	6.454	2400.000	-30.59	37.044	≥20	Pass
	11	2462	5.591	2500.000	-51.72	57.311	≥20	Pass

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

Mode 2 CH03(2412MHz)



The data of entire corresponding spectrum:



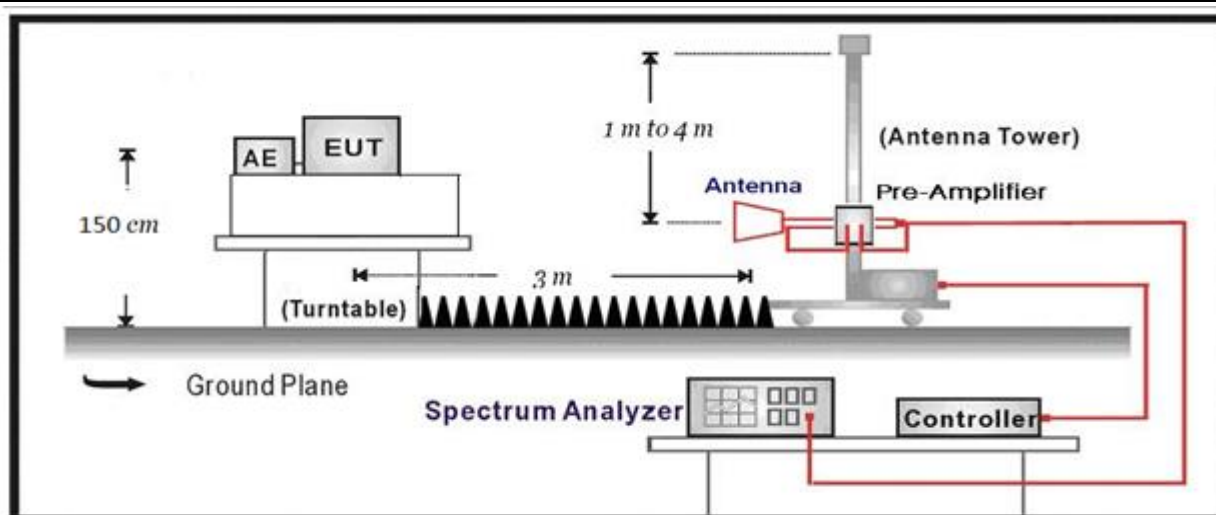
4.4 Radiated Emission Band Edge**VERDICT: PASS****4.4.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) , 15.205, 15.209		
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

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

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

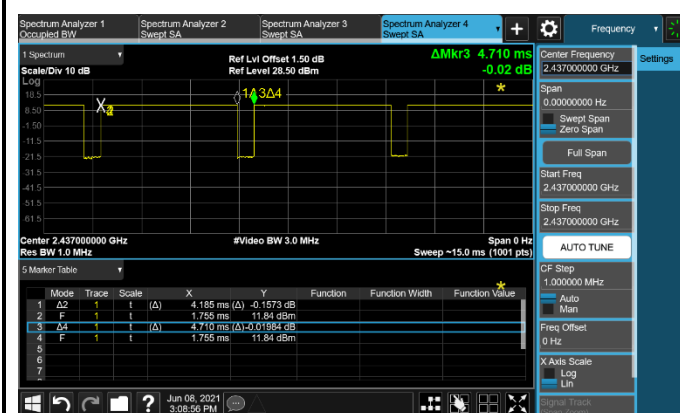
4.4.4 Test Data

Test Mode	Tx On (ms)	VBW (KHz)	Tx On + Tx Off (ms)	Duty Cycle (%)
1	4.185	0.24	4.710	88.85
2	0.684	1.46	0.786	87.02
3	0.648	1.54	0.760	85.26

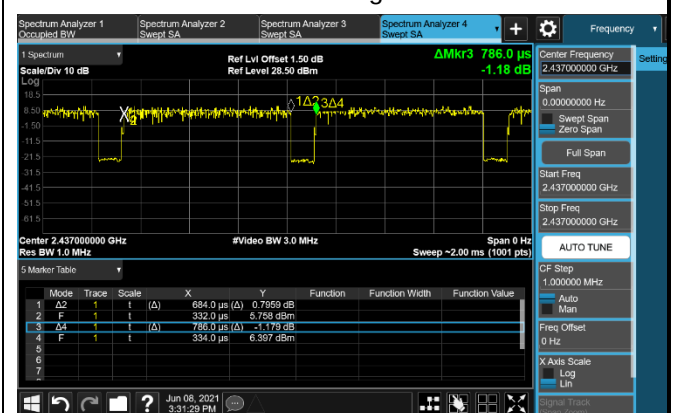
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

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

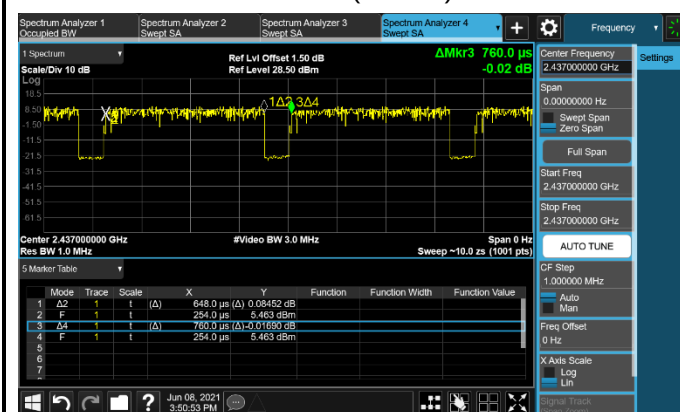
802.11b



802.11g

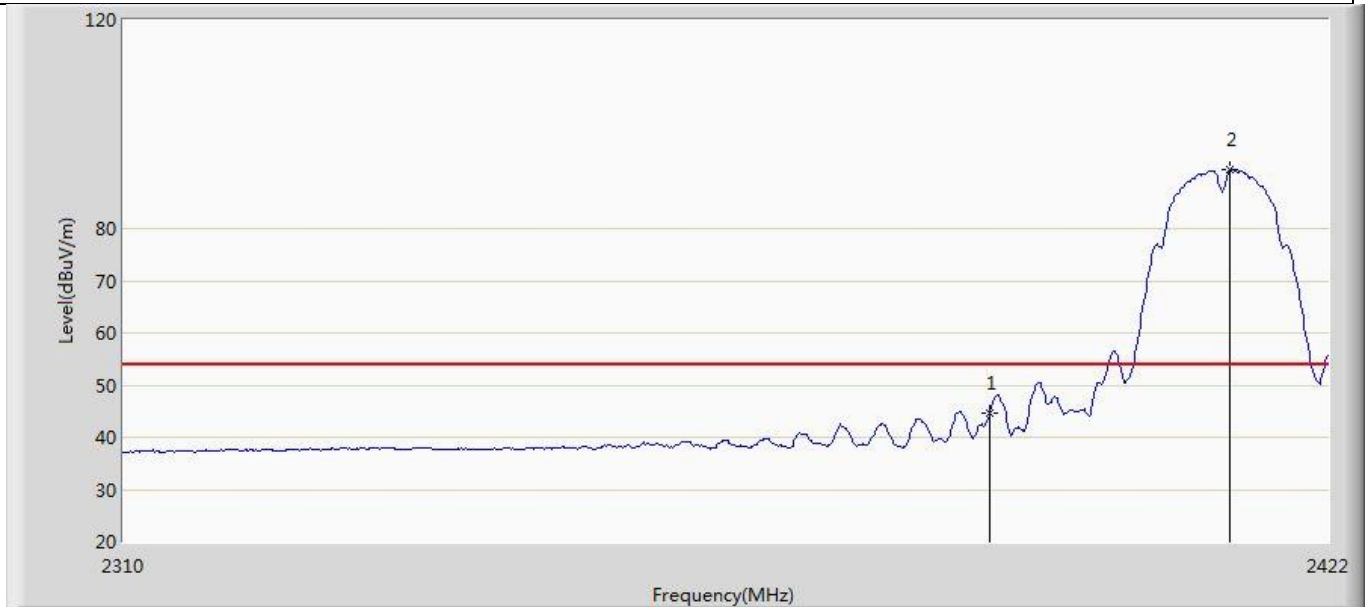


802.11n(20MHz)



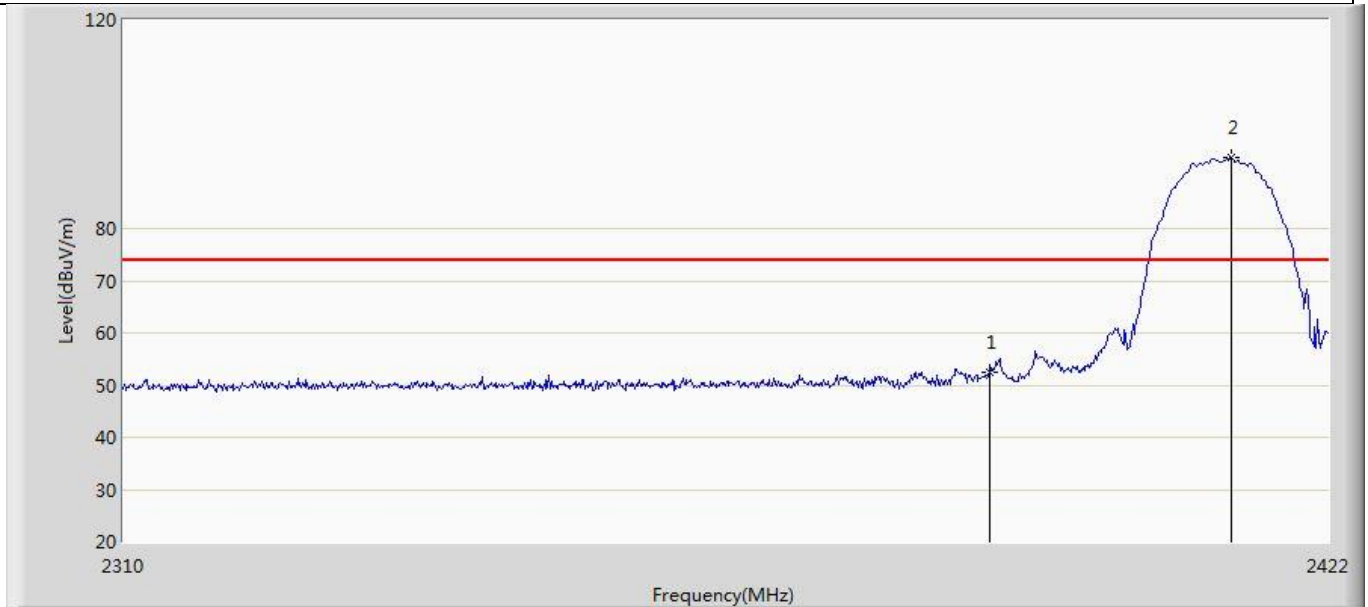
)

Profile:2150803R	Page No.: 1
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 00:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



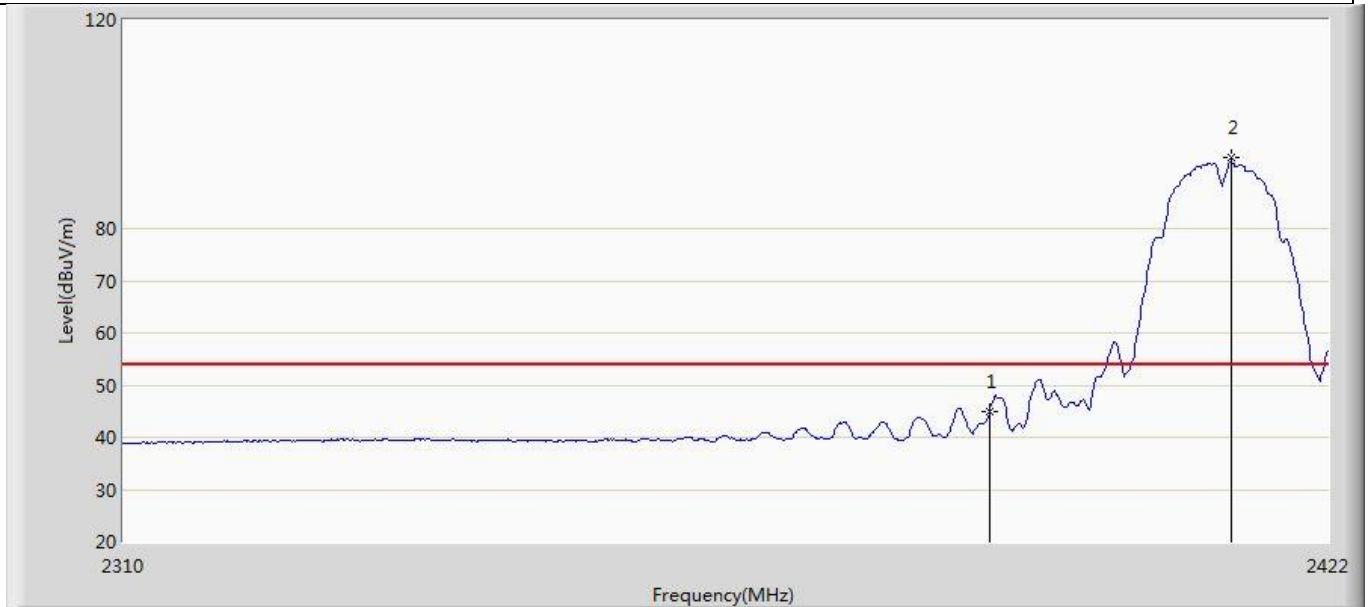
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	44.517	9.202	-9.483	54.000	35.315	AV
2	*	2412.704	91.301	55.993	N/A	N/A	35.307	AV

Profile:2150803R	Page No.: 2
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



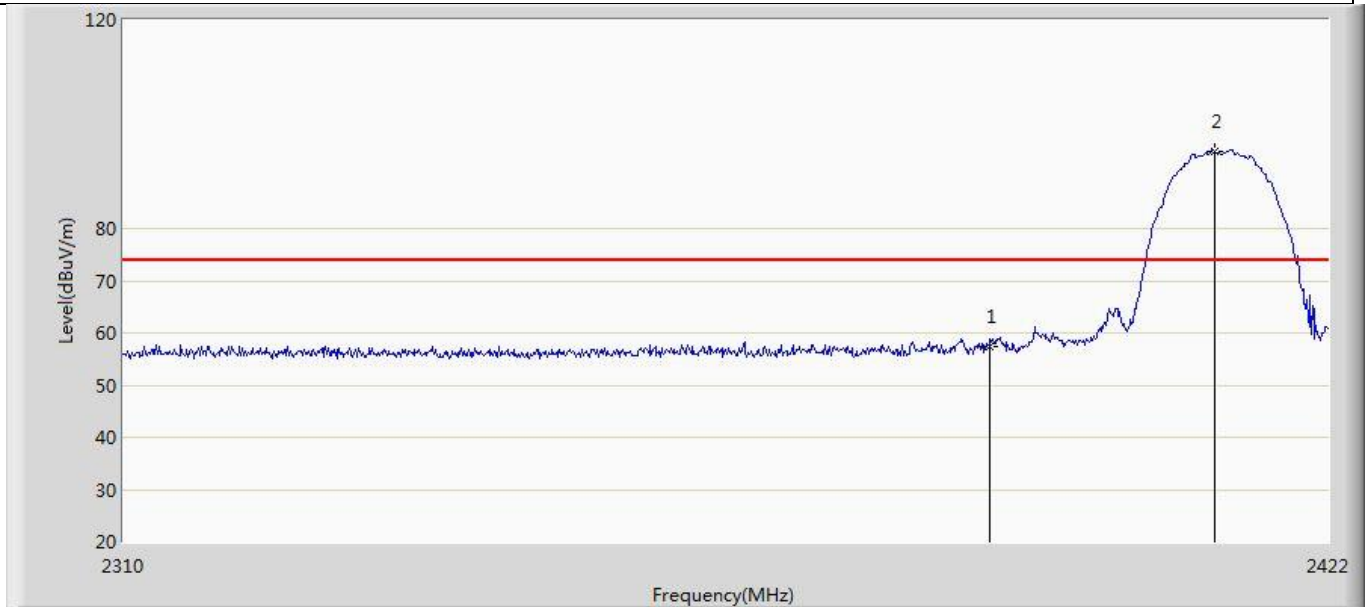
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.482	17.167	-21.518	74.000	35.315	PK
2	*	2412.816	93.538	58.230	N/A	N/A	35.308	PK

Profile:2150803R	Page No.: 3
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



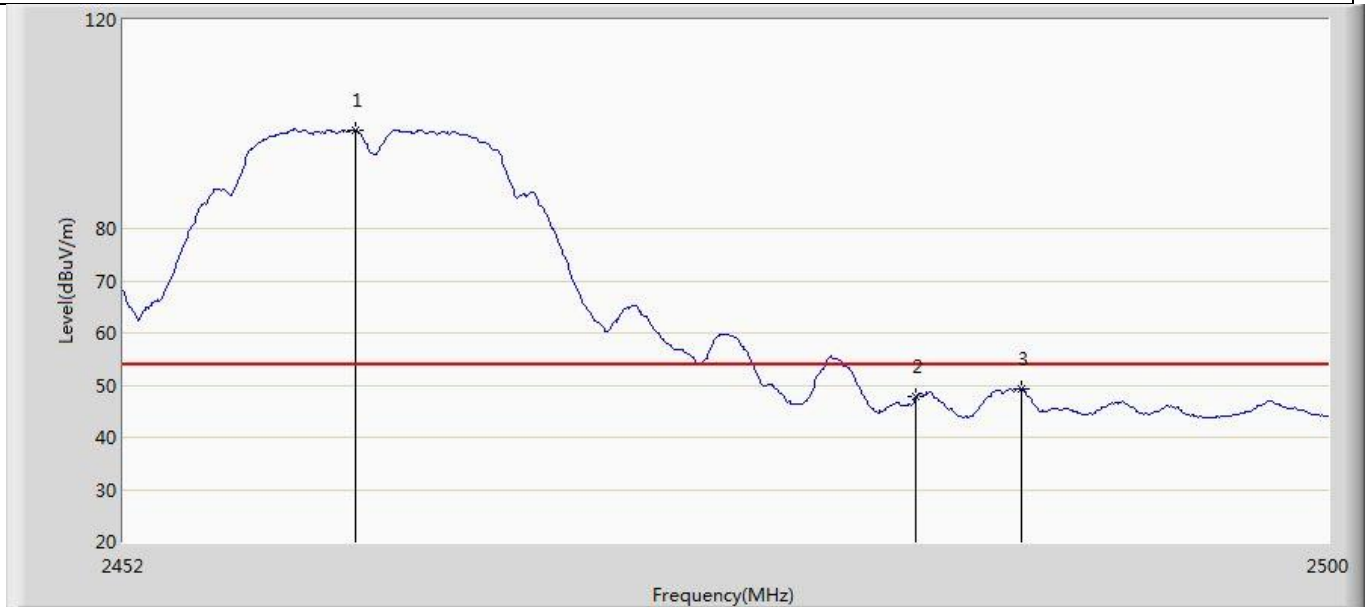
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	44.860	9.545	-9.140	54.000	35.315	AV
2	*	2412.816	93.538	58.230	N/A	N/A	35.308	AV

Profile:2150803R	Page No.: 4
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



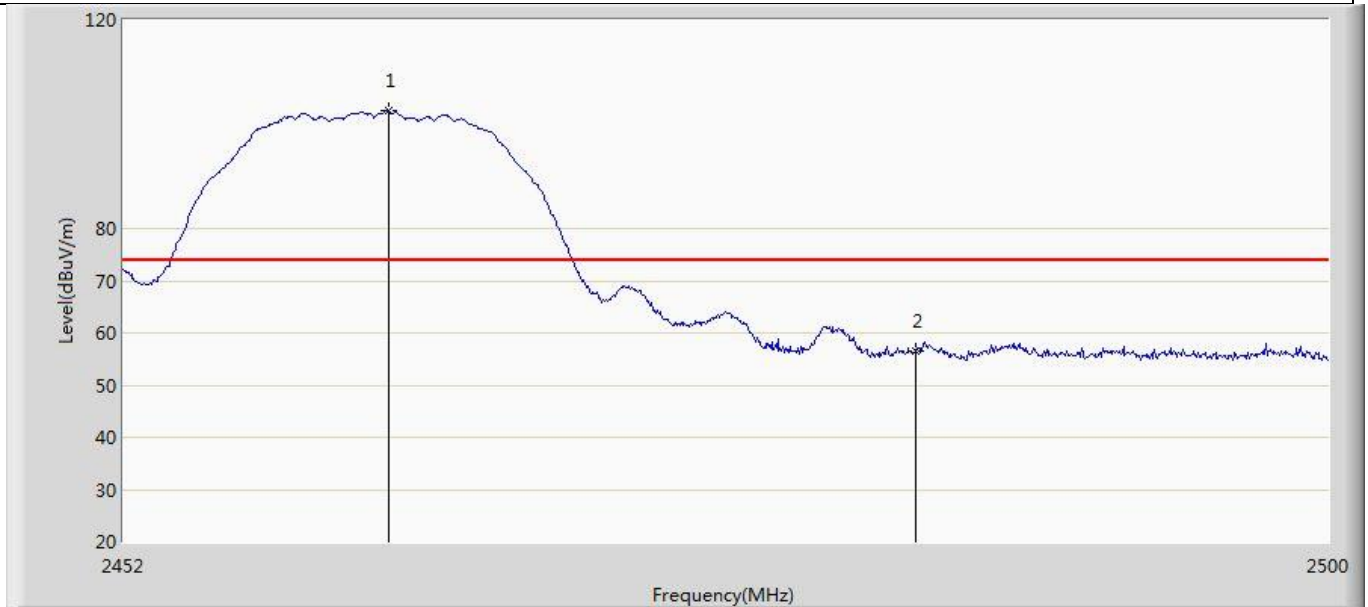
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	57.488	22.173	-16.512	74.000	35.315	PK
2	*	2411.248	94.788	59.480	N/A	N/A	35.308	PK

Profile:2150803R	Page No.: 5
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



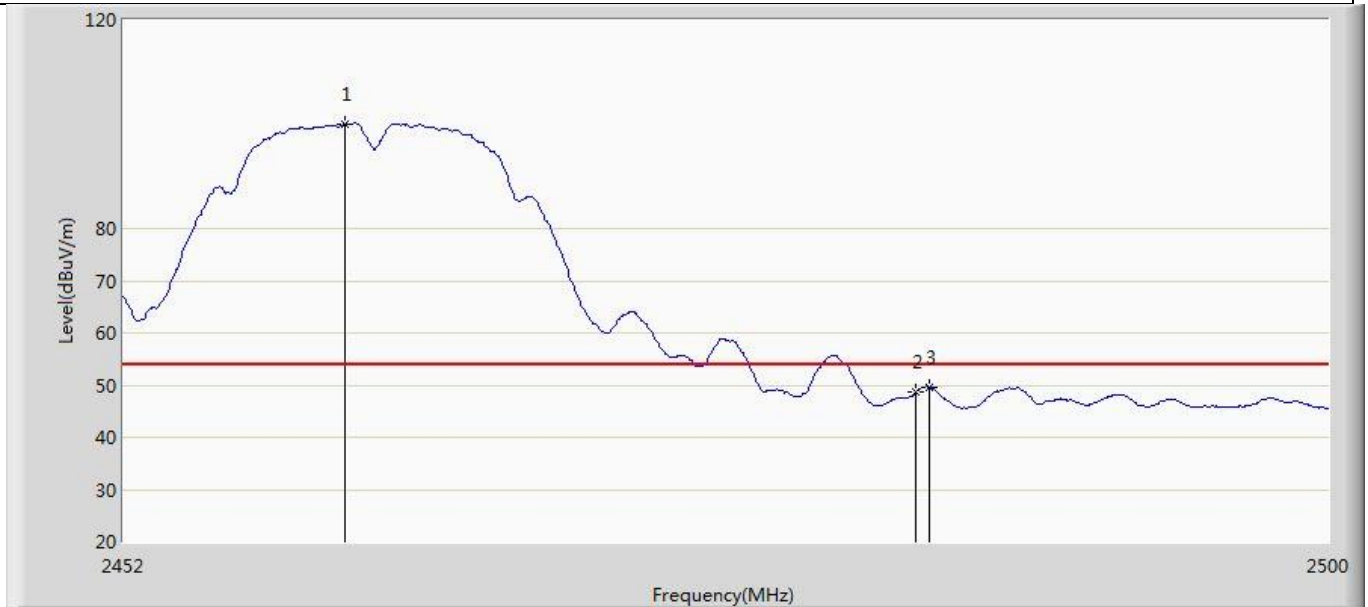
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	98.890	63.581	N/A	N/A	35.309	AV
2		2483.500	47.706	12.408	-6.294	54.000	35.297	AV
3		2487.712	49.396	14.100	-4.604	54.000	35.296	AV

Profile:2150803R	Page No.: 6
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



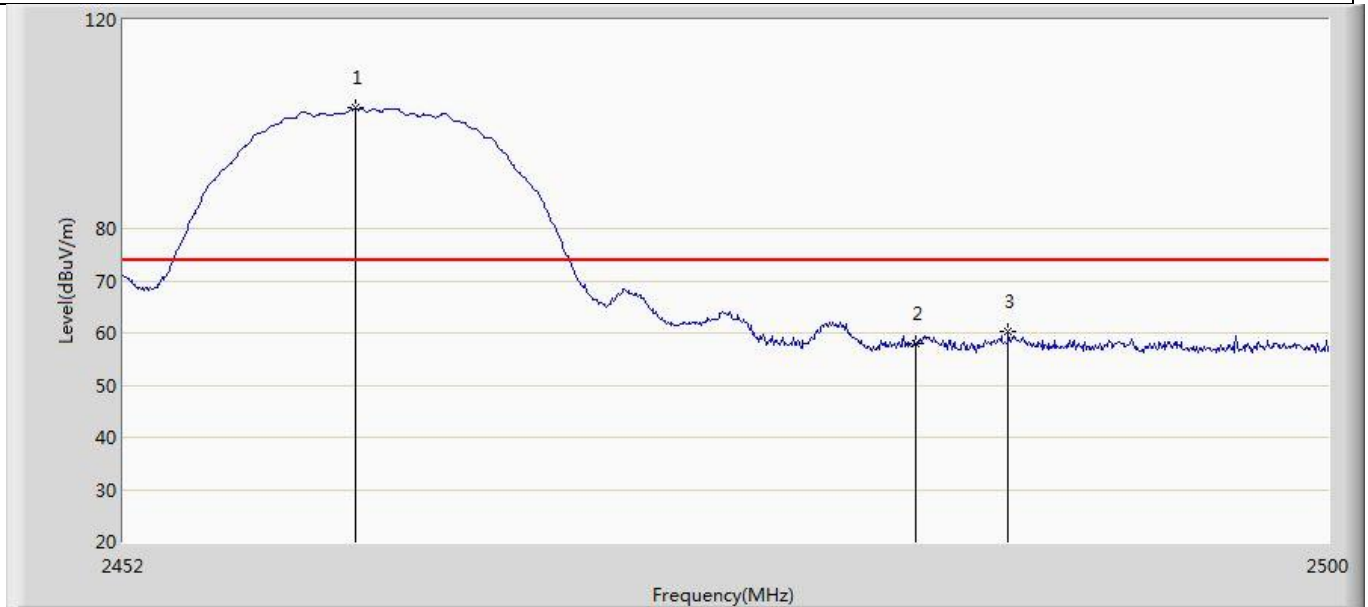
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.512	102.513	67.205	N/A	N/A	35.309	PK
2		2483.500	56.636	21.338	-17.364	74.000	35.297	PK

Profile:2150803R	Page No.: 7
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



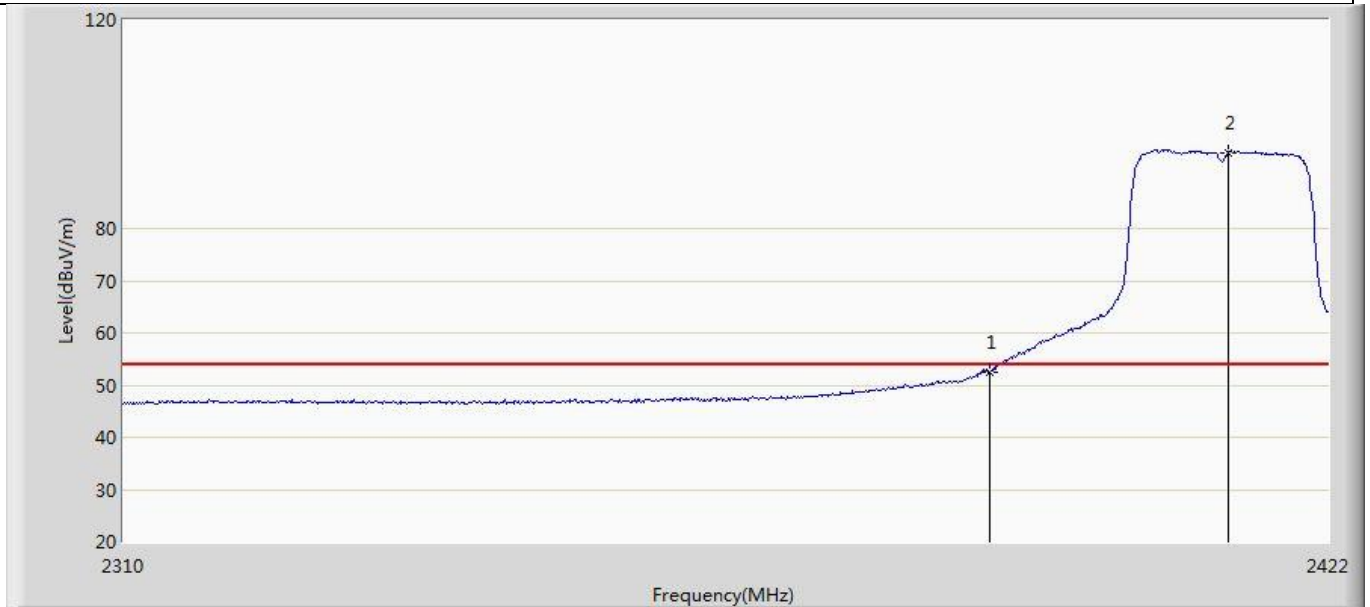
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.784	100.001	64.692	N/A	N/A	35.310	AV
2		2483.500	48.738	13.440	-5.262	54.000	35.297	AV
3		2484.016	49.697	14.400	-4.303	54.000	35.297	AV

Profile:2150803R	Page No.: 8
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



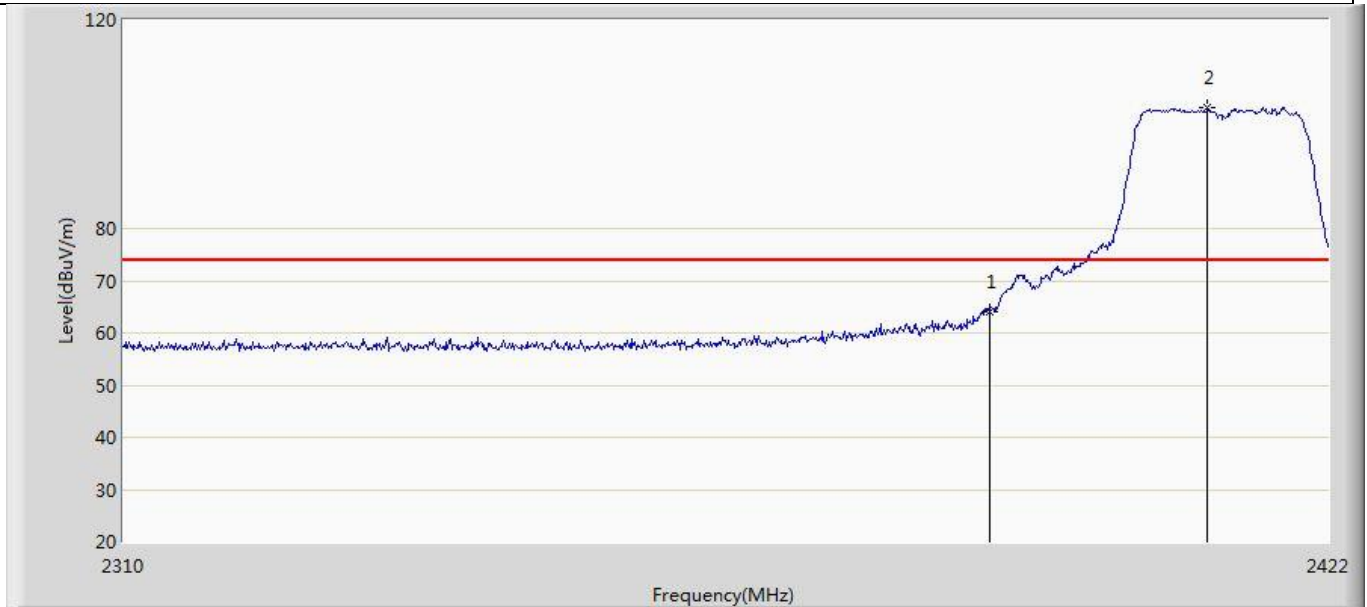
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	103.064	67.755	N/A	N/A	35.309	PK
2		2483.500	57.921	22.623	-16.079	74.000	35.297	PK
3		2487.184	60.194	24.898	-13.806	74.000	35.296	PK

Profile:2150803R	Page No.: 9
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



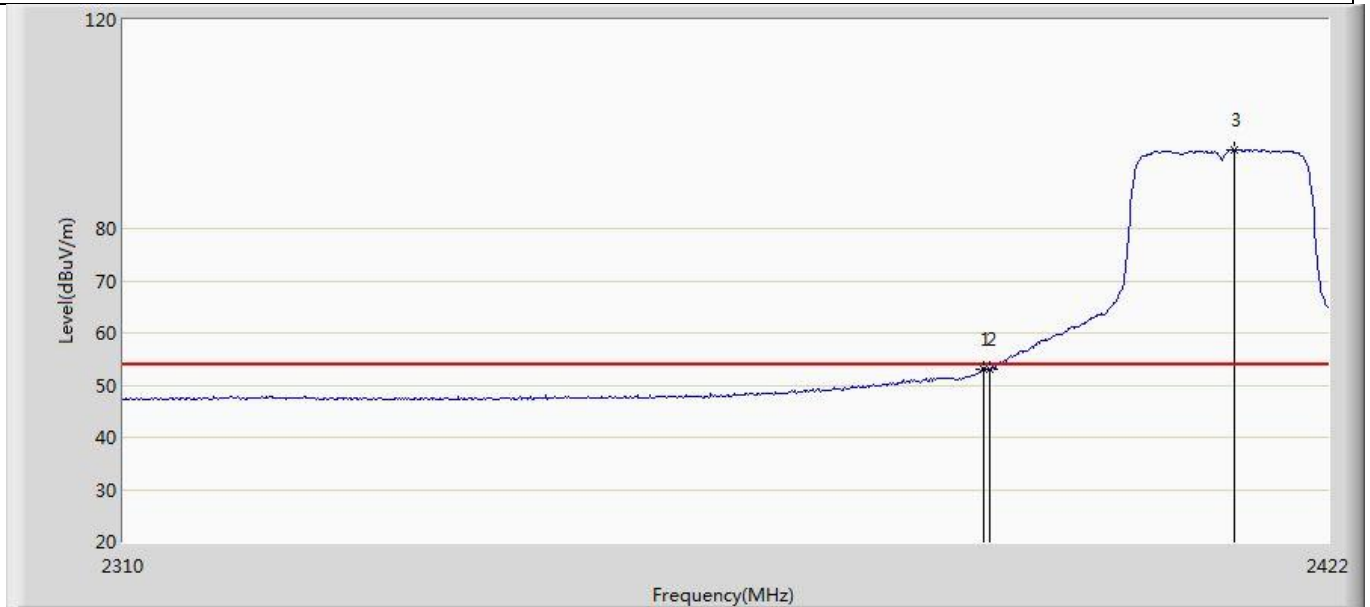
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.467	17.152	-1.533	54.000	35.315	AV
2	*	2412.480	94.552	59.244	N/A	N/A	35.307	AV

Profile:2150803R	Page No.: 10
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



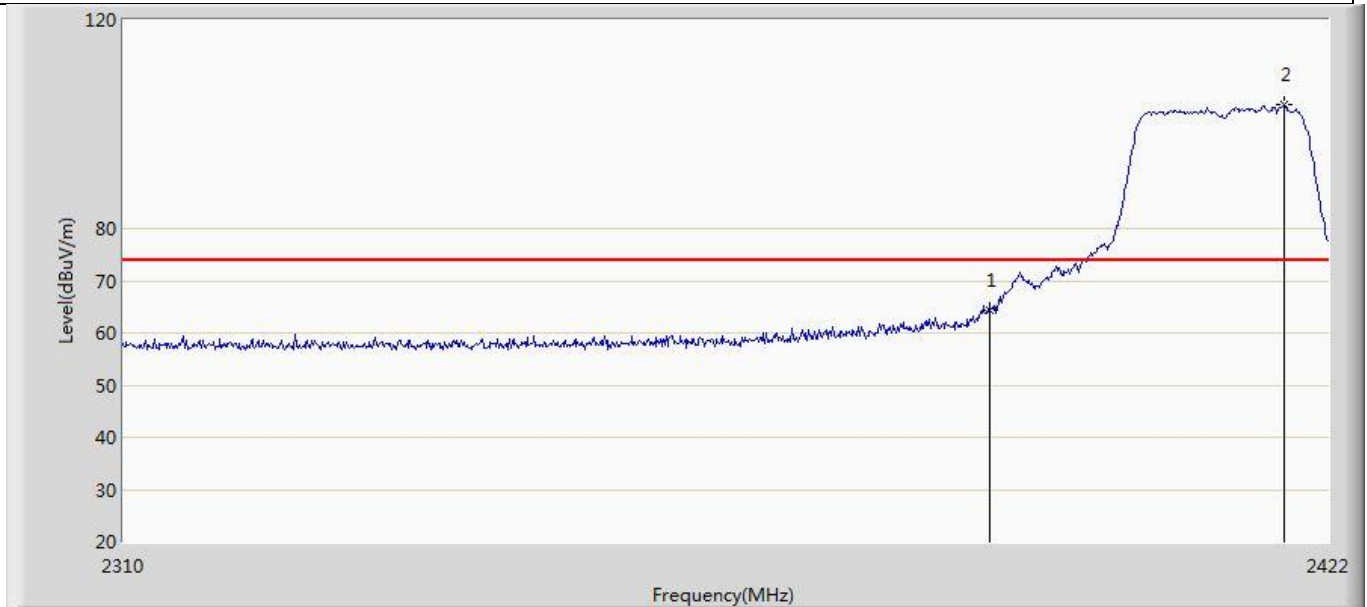
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	64.073	28.758	-9.927	74.000	35.315	PK
2	*	2410.576	103.234	67.926	N/A	N/A	35.308	PK

Profile:2150803R	Page No.: 11
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



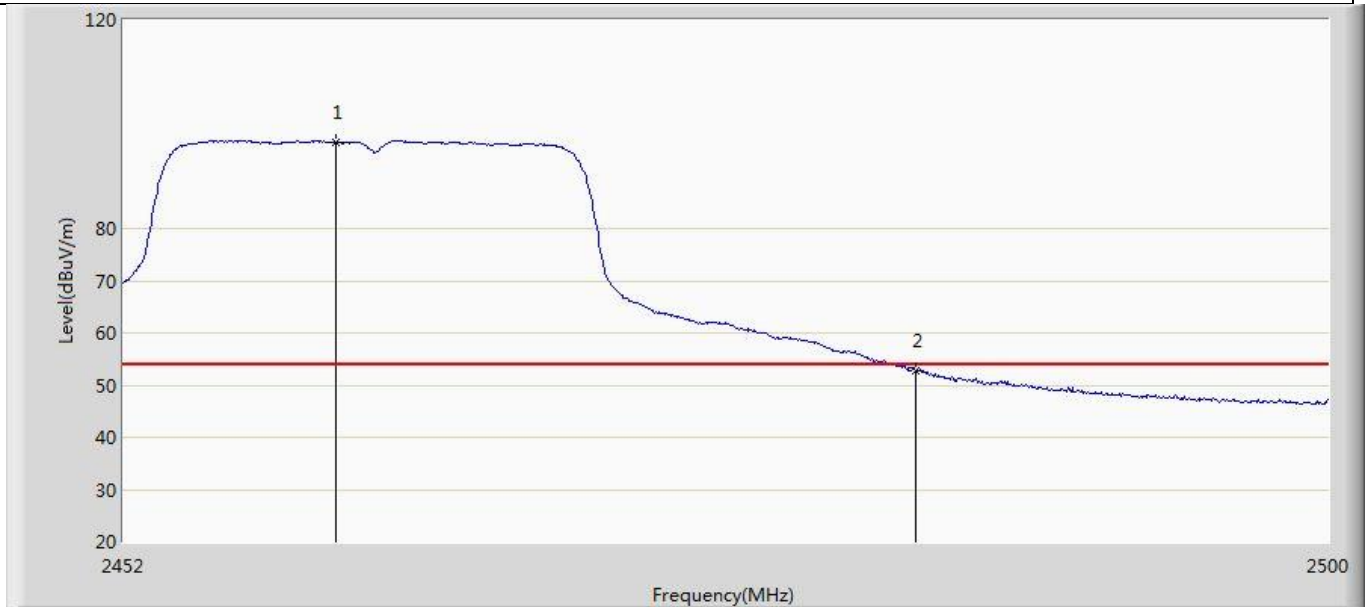
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.408	53.131	17.816	-0.869	54.000	35.315	AV
2		2390.000	52.945	17.630	-1.055	54.000	35.315	AV
3	*	2413.152	95.113	59.805	N/A	N/A	35.308	AV

Profile:2150803R	Page No.: 12
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



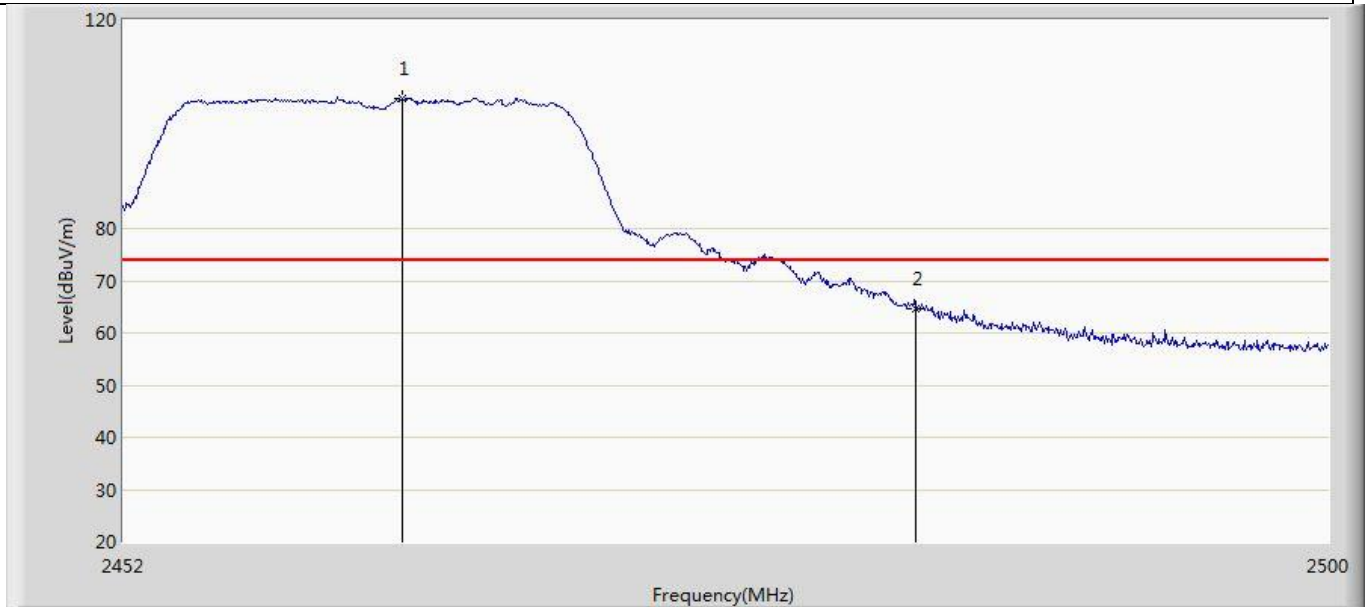
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	64.382	29.067	-9.618	74.000	35.315	PK
2	*	2417.856	103.769	68.463	N/A	N/A	35.306	PK

Profile:2150803R	Page No.: 13
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



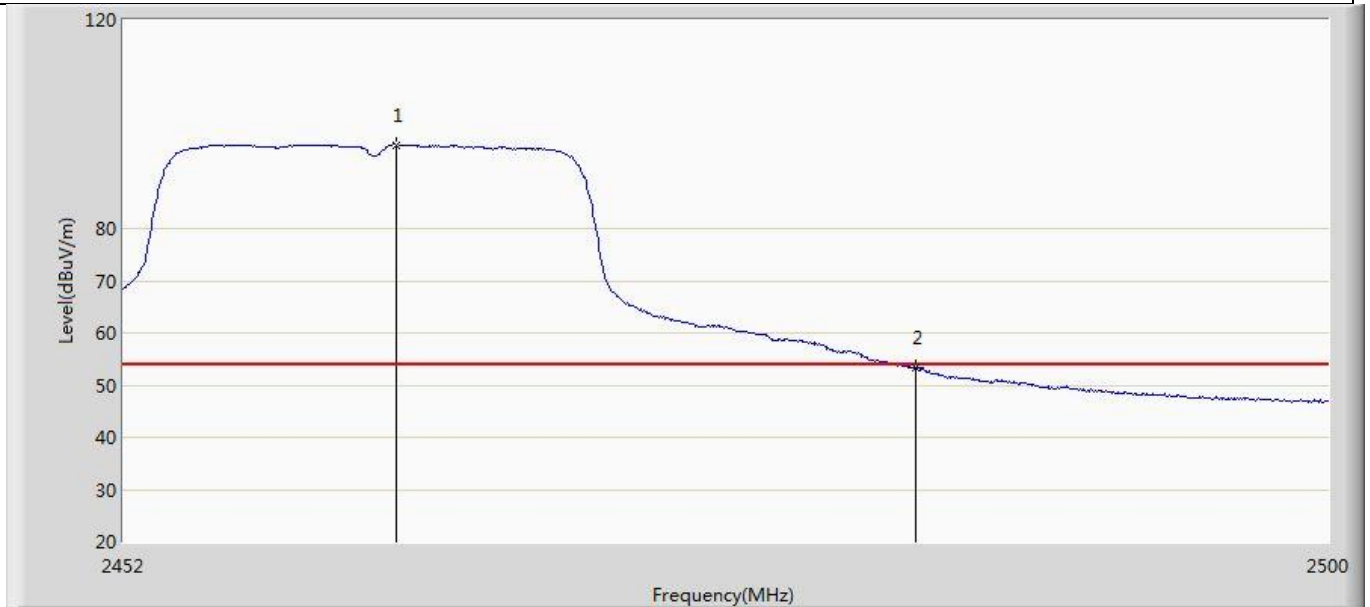
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.400	96.541	61.232	N/A	N/A	35.310	AV
2		2483.500	52.839	17.541	-1.161	54.000	35.297	AV

Profile:2150803R	Page No.: 14
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



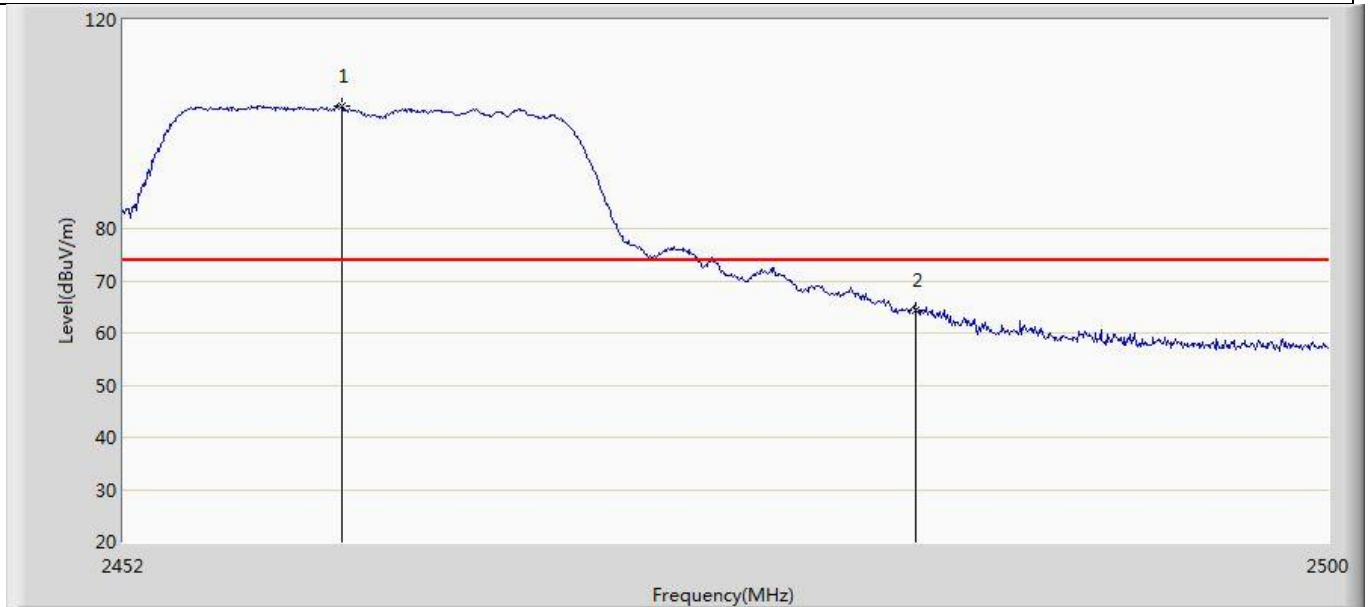
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.040	104.790	69.482	N/A	N/A	35.308	PK
2		2483.500	64.661	29.363	-9.339	74.000	35.297	PK

Profile:2150803R	Page No.: 15
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



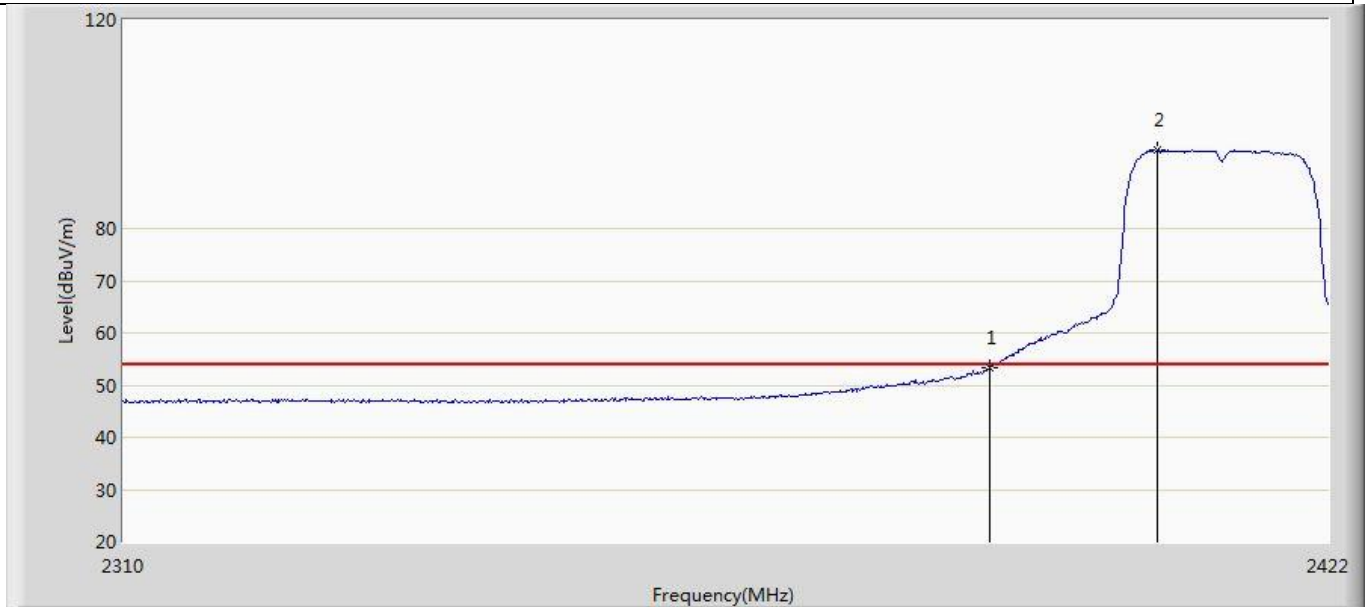
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.800	95.921	60.613	N/A	N/A	35.308	AV
2		2483.500	53.248	17.950	-0.752	54.000	35.297	AV

Profile:2150803R	Page No.: 16
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



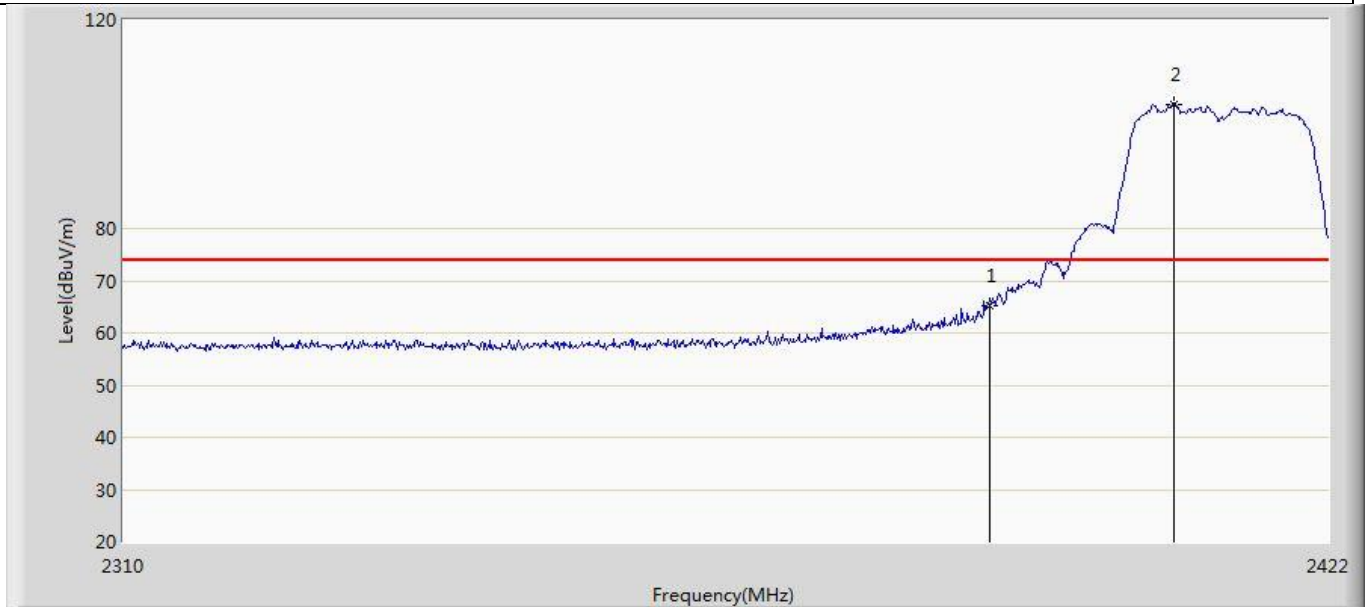
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.640	103.440	68.131	N/A	N/A	35.310	PK
2		2483.500	64.379	29.081	-9.621	74.000	35.297	PK

Profile:2150803R	Page No.: 17
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 19:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



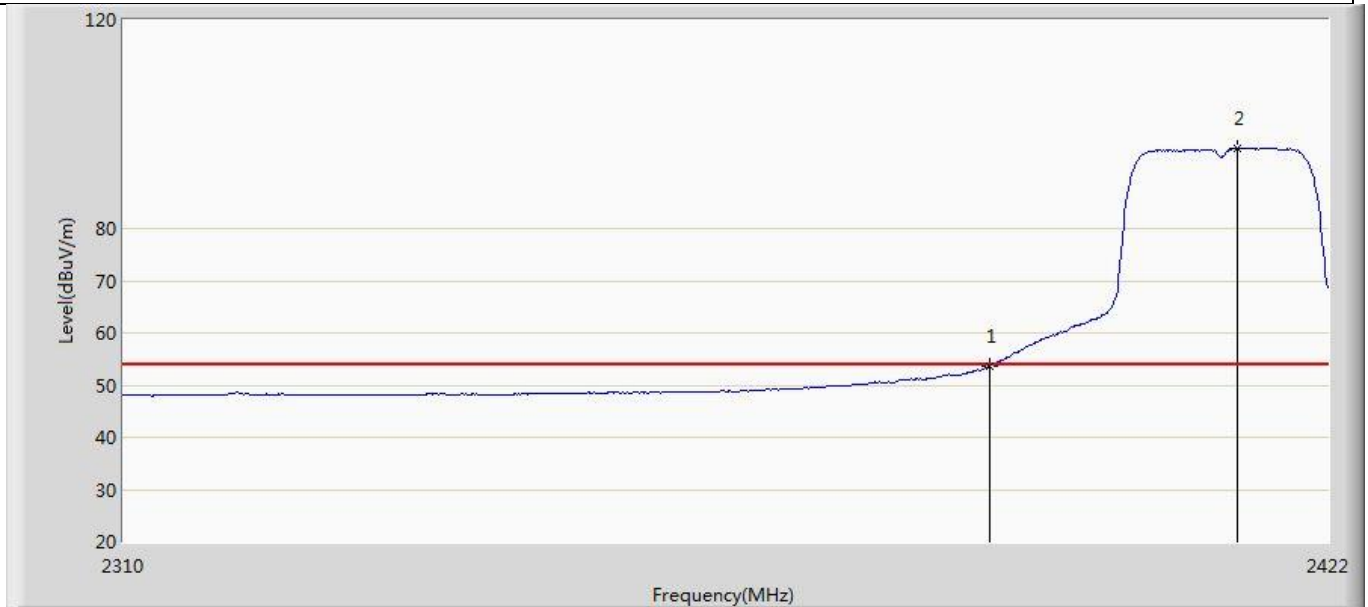
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.411	18.096	-0.589	54.000	35.315	AV
2	*	2405.872	95.195	59.884	N/A	N/A	35.311	AV

Profile:2150803R	Page No.: 18
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



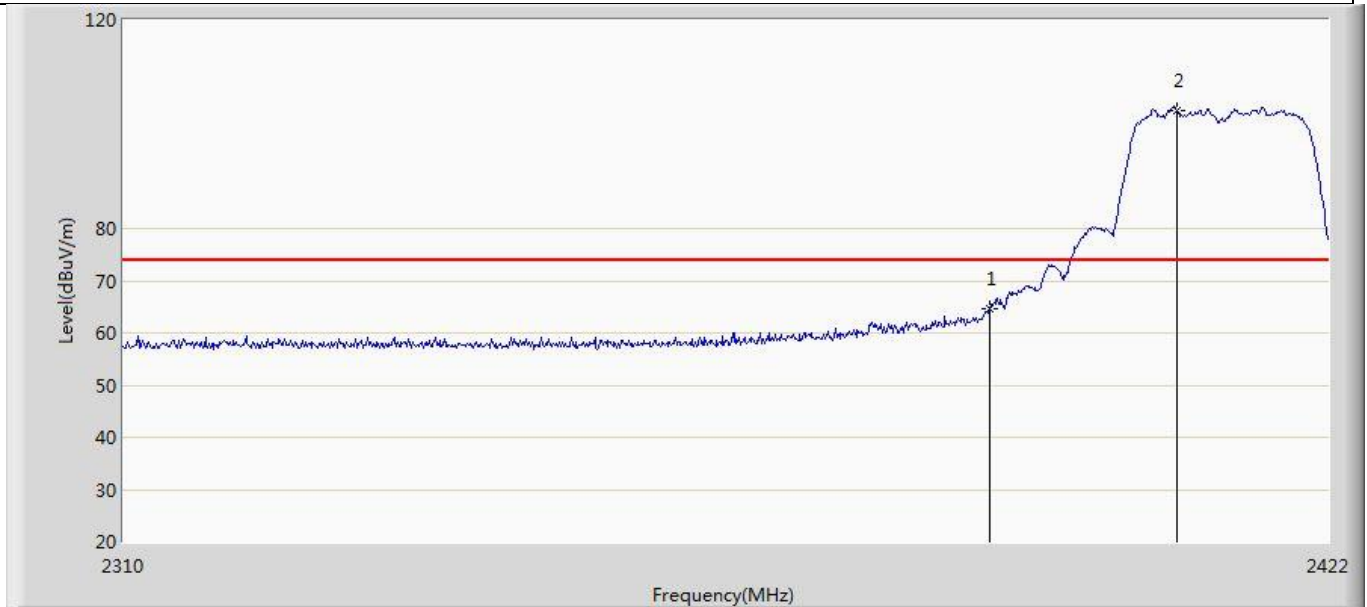
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	65.116	29.801	-8.884	74.000	35.315	PK
2	*	2407.440	103.708	68.398	N/A	N/A	35.310	PK

Profile:2150803R	Page No.: 19
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:02
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



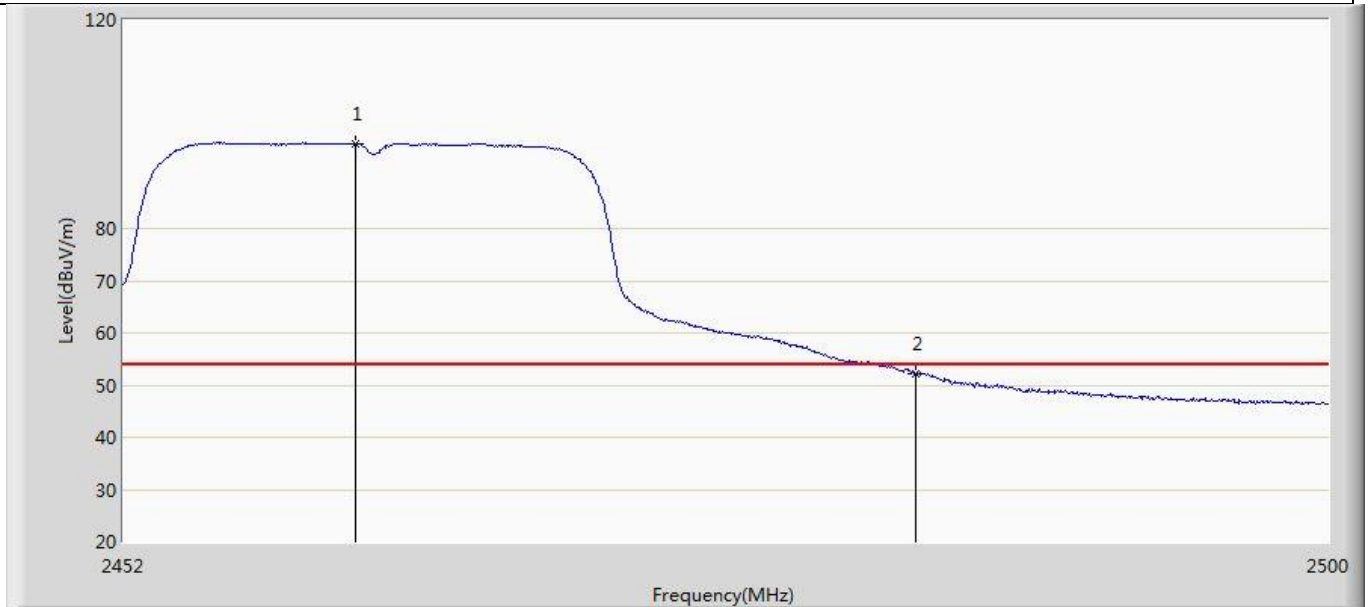
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.740	18.425	-0.260	54.000	35.315	AV
2	*	2413.376	95.313	60.005	N/A	N/A	35.308	AV

Profile:2150803R	Page No.: 20
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n20	



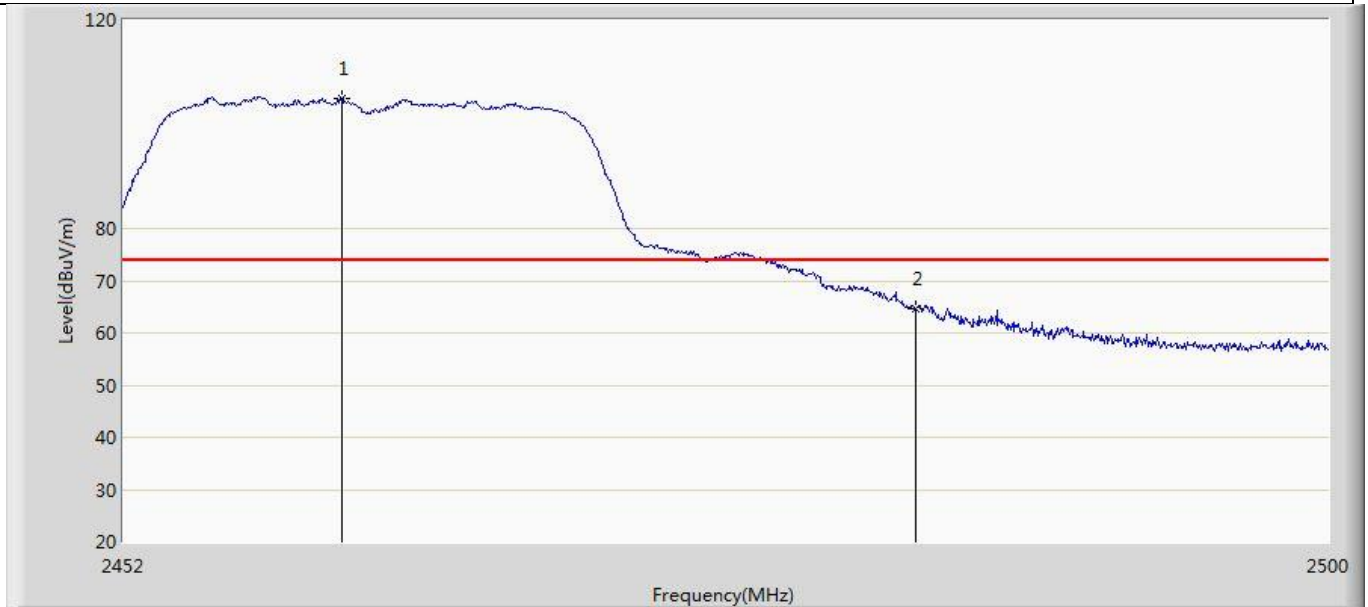
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	64.509	29.194	-9.491	74.000	35.315	PK
2	*	2407.664	102.575	67.265	N/A	N/A	35.310	PK

Profile:2150803R	Page No.: 21
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



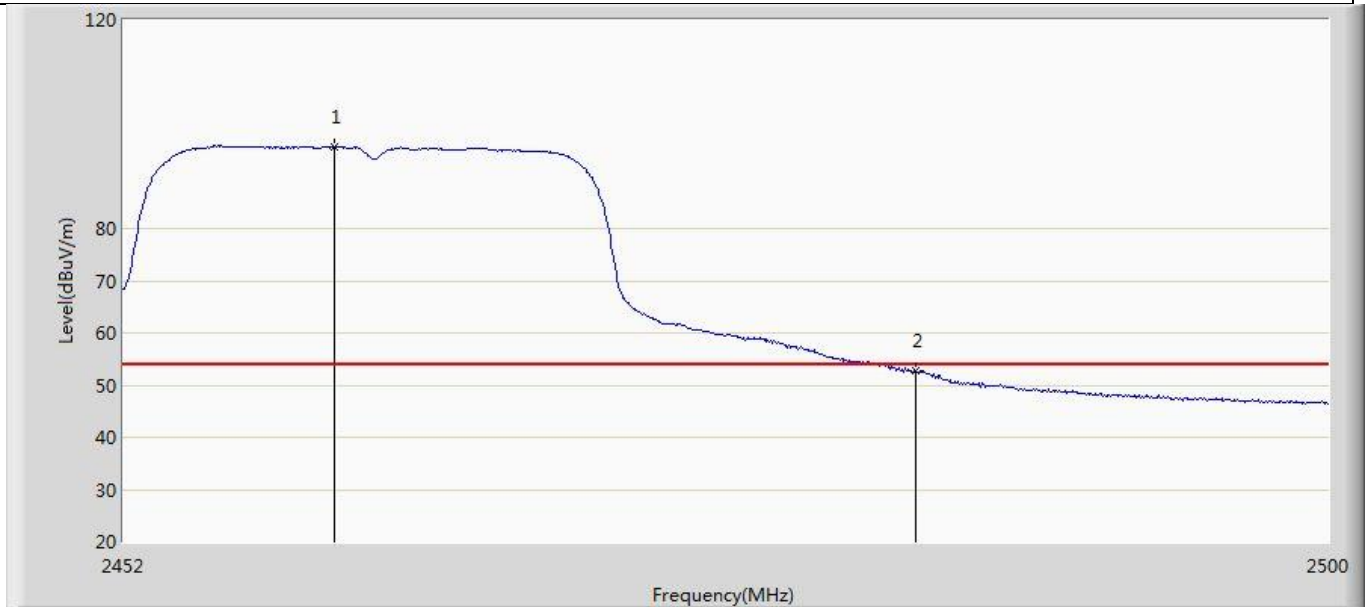
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	96.259	60.950	N/A	N/A	35.309	AV
2		2483.500	52.195	16.897	-1.805	54.000	35.297	AV

Profile:2150803R	Page No.: 22
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



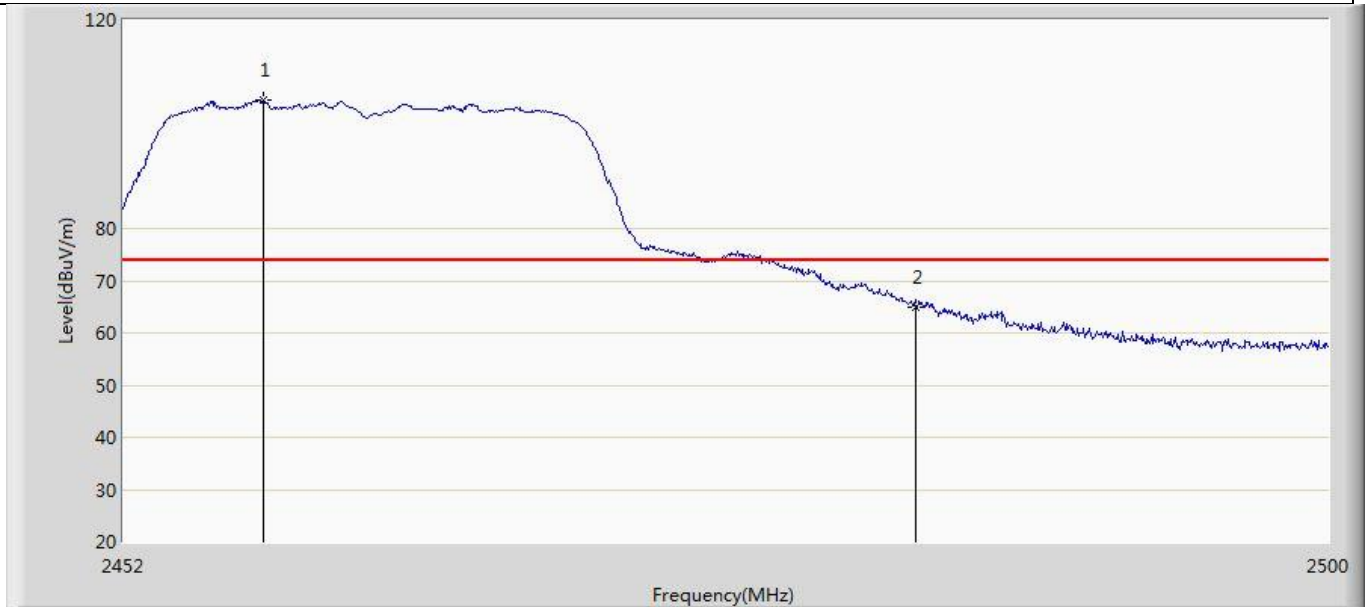
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.640	104.991	69.682	N/A	N/A	35.310	PK
2		2483.500	64.779	29.481	-9.221	74.000	35.297	PK

Profile:2150803R	Page No.: 23
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.352	95.633	60.324	N/A	N/A	35.309	AV
2		2483.500	52.622	17.324	-1.378	54.000	35.297	AV

Profile:2150803R	Page No.: 24
Engineer: Tongben	
Site: AC5	Time: 2021/06/12 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: RM2-Track-1-0	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n20	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2457.520	104.688	69.378	N/A	N/A	35.310	PK
2		2483.500	64.807	29.509	-9.193	74.000	35.297	PK

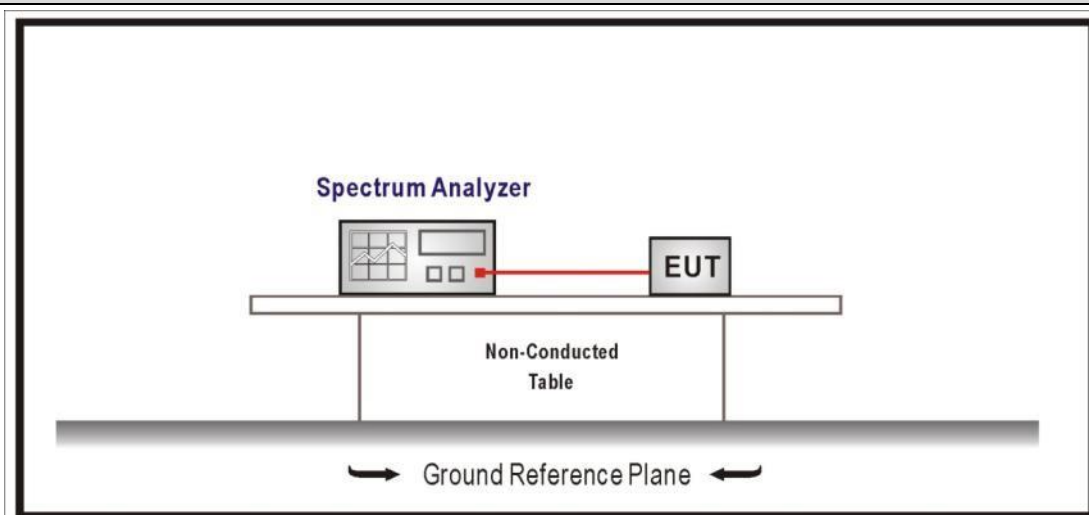
4.5 DTS Bandwidth**VERDICT: PASS****4.5.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
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Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

Standard	ANSI C63.10 Paragraph 6.7
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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 be 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

4.6 Fundamental emission output power

VERDICT: PASS

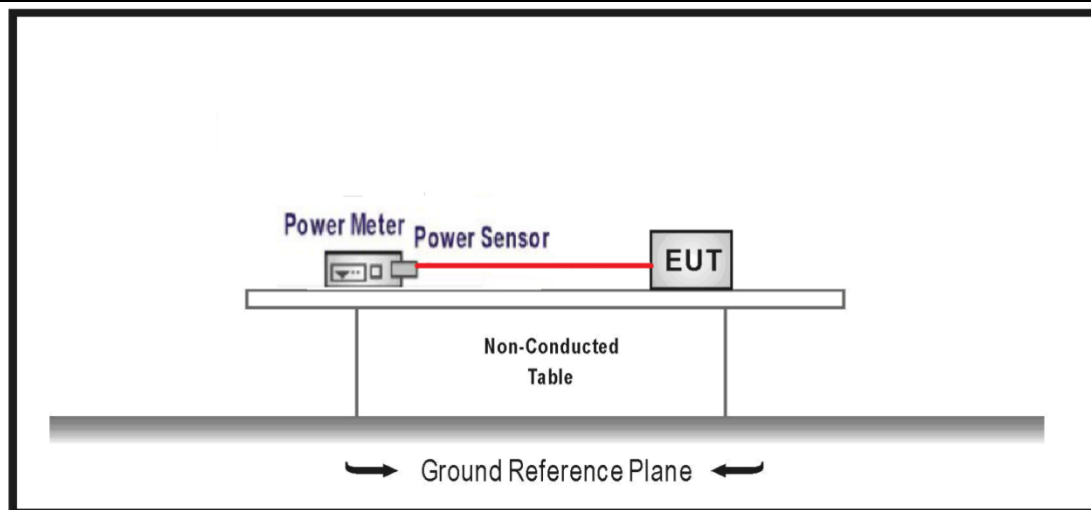
4.6.1 Limit

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

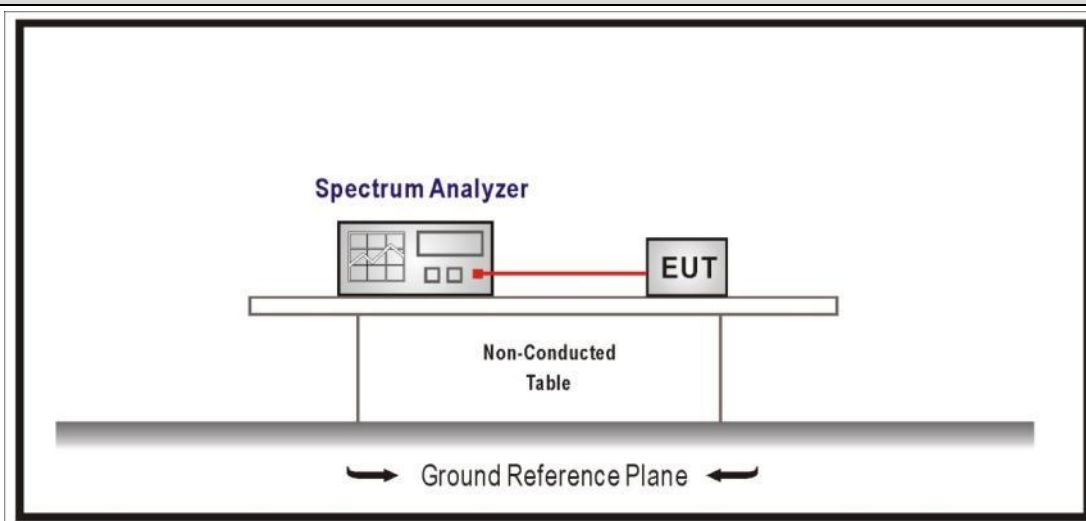
	References Rule		Chapter	Description
☒	ANSI C63.10		11.9	Fundamental emission output power
	☒	ANSI C63.10	11.9.1	Maximum peak conducted output power
	☐	ANSI C63.10	11.9.1.1	RBW $\geq$ DTS bandwidth
		ANSI C63.10	11.9.1.2	Integrated band power method
		☒ ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method
	☐	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 $\geq$ 98%)
		☐ ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle $\geq$ 98%)
		☐ ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle $\leq$ 98%)
		☐ ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle $\leq$ 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)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Result
Mode 1	1	2412	19.91	≤ 30	Pass
	6	2437	18.01	≤ 30	Pass
	11	2462	17.56	≤ 30	Pass
Mode 2	1	2412	24.62	≤ 30	Pass
	6	2437	24.33	≤ 30	Pass
	11	2462	22.16	≤ 30	Pass
Mode 3	1	2412	24.69	≤ 30	Pass
	6	2437	24.36	≤ 30	Pass
	11	2462	22.14	≤ 30	Pass

4.7 Power Density**VERDICT: PASS****4.7.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.247 (e)

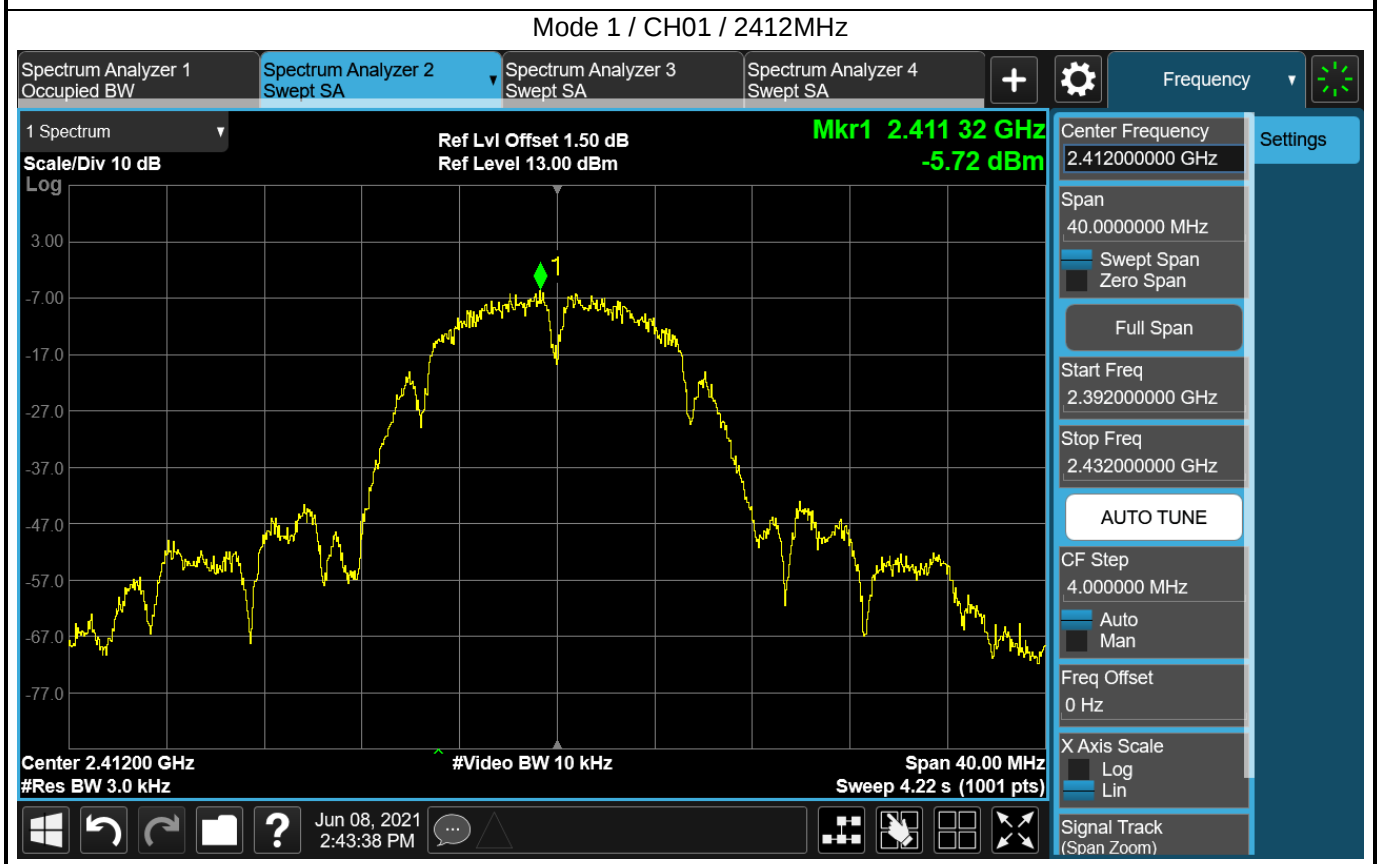
Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$ **4.7.2 Test Setup****4.7.3 Test Procedure**

	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 $\geq 98\%$)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq 98\%$)
	☐	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.7	Method AVGPSD-3
	☐	ANSI C63.10	11.10.8	Method AVGPSD-3A

4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	1	2412	-5.72	≤8	Pass
	6	2437	-6.31	≤8	Pass
	11	2462	-5.82	≤8	Pass
2	1	2412	-9.11	≤8	Pass
	6	2437	-9.57	≤8	Pass
	11	2462	-8.45	≤8	Pass
3	1	2412	-8.00	≤8	Pass
	6	2437	-9.72	≤8	Pass
	11	2462	-8.83	≤8	Pass

Note: The worst case of PSD as below:



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.

5 TEST SETUP PHOTO AND EUT PHOTO

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

_____ The End _____