DEKRA Testing and Certification (Suzhou) Co., Ltd.
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Test report No:
2070388R-RF-US-P06V01

FCC TEST REPORT & ISED TEST REPORT

Product Name	CONTROL ASM-AM/FM STERO RDOC PLYR
Trademark	SGMW
Model and /or type reference	MP-202SMY-MEXICO
FCC ID	2AVYXMP-202SMY-MX
Applicant´s name / address	SAIC GM Wuling Automobile Co., Ltd. No.18 Hexi Road, Liuzhou City, Guangxi Zhuang Autonomous Region, China
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KD558074 D01 15.247 Meas Guidance v05r02
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Kitty Li/Project Assistant
Reviewed by (name / position & signature)	Frank He/ Technical Supervisor
Approved by (name / position & signature)	Jack Zhang/ Supervisor
Date of issue	2020-08-03
Report template No	Template_FCC 15.247-RF-V1.0

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page

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)	July. 09, 2020
Date (start test)	July. 23, 2020
Date (finish test)	Aug. 01, 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
2070388R-RF-US-P06V01	V1.0	Initial issue of report.	2020-08-03

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with 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, unless the specification, standard or customer have special requirements.
4. The test results presented in this report relate only to the object tested.
5. The test results relate only to the samples tested.
6. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
7. This report will not be used for social proof function in China market.

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	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	2019.09.02	2020.09.01
50ohm Termination	SHX	TF2	07081403	2019.09.02	2020.09.01
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2019.08.21	2020.08.20
Coaxial Cable	Suhner	RG 223	TR1-C1	2019.08.25	2020.08.24
Coaxial Cable	Suhner	RG 223	TR1-C2	2019.08.25	2020.08.24
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	2019.09.28	2020.09.27
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2020.04.17	2021.04.16
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2019.08.30	2020.08.29
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2019.07.14	2020.07.13
Power Sensor	Anritsu	MA2411B	0846014	2019.08.12	2020.08.11
Coaxial Cable	Woken	SFL402	F02-150410-044	2020.01.01	2020.12.31
Dekra test software	Dekra	-	-	-	-

Radiated Emission(30MHz-1GHz) / AC3

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	2019.09.23	2020.09.22
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2019.09.02	2020.09.01
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2020.04.13	2021.04.12
Dekra test software	Dekra	-	-	-	-

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

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2020.05.08	2021.05.07
Preamplifier	Miteq	NSP1800-25	1364185	2020.05.06	2021.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2020.05.06	2021.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2020.01.22	2021.01.21
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2019.09.02	2020.09.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2020.04.13	2021.04.12
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2020.04.13	2021.04.12
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2020.04.13	2021.04.12
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% The Uncertainties is complice with standard required as below.

Test item	Uncertainty
Conducted Emission	± 2.02 dB
Emissions in restricted frequency bands	above 1G : ± 3.9 dB below 1G is :± 3.8 dB
20dB Bandwidth	± 1 kHz
Carrier Frequency Separation	± 1 kHz
Number of Hopping Frequencies	± 1 kHz
Time of Occupancy (Dwell Time)	± 0.1 us
Peak Output Power	± 1.0 dB
Emissions in non-restricted frequency bands	± 1.0 dB
Radiated Emission Band Edge	above 1G : ± 3.9 dB below 1G : ± 3.8 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name ..... :	CONTROL ASM-AM/FM STERO RDOC PLYR
Model No. ..... :	MP-202SMY-MEXICO
Trademark ..... :	SGMW
FCC ID ..... :	2AVYXMP-202SMY-MX
Hardware Version ..... :	CN202S MY_HSAE S00
Software Version ..... :	CN202S MY_MX_HSAE_MPU_V02.03
Manufacturer ..... :	Shenzhen Hangsheng Electronics Co.,Ltd
Manufacturer Address ..... :	Hangsheng Industrial Area,Fuyuan 1Rd.,Fuyong Town,Baoan District Shenzhen City, Guangdong
Factory ..... :	Jiangxi Hangsheng Electronics Technology Co.,Ltd
Factory Address ..... :	Shenzhen Road No.268,Jin Gang Mountain Economic and Technological development zone ,Ji An City,Jiangxi Province China

Wireless specifiction ..... :	Bluetooth					
Bluetooth Specification ..... :	V3.0					
Operating frequency range(s)	2400~2483.5MHz					
Type of Modulation ..... :	GFSK					
PHYs	☒	GFSK	☒	Pi/4 DQPSK	☒	8DPSK
Data Rate ..... :	☒	1 Mbit/s	☒	2 Mbit/s	☒	3 Mbit/s
Number of channel ..... :	79					
Operating Temperature Range:	-30℃ – 80 ℃					

Rated power supply ..... :	Voltage and Frequency	
	☐	AC: 220 – 240 V, 50 / 60 Hz
	☐	AC: 100 – 240 V, 50 / 60 Hz
	☒	DC: 9 -12 V
	☐	Battery: ……
Mounting position ..... :	☐	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☒	Other: Auto parts

Note: All the information is from the client.

1.2 Antenna Information

Antenna model / type number ..... :	PCB Antenna			
Antenna serial number ..... :	N/A			
Antenna Delivery ..... :	☒	1TX + 1RX		
	☐	2TX + 2RX		
Antenna technology ..... :	☒	SISO		
	☐	MIMO	☐	CDD
			☐	Beam-forming
Antenna Type ..... :	☐	External	☐	Dipole
			☐	Sectorized
	☒	Internal	☐	PIFA
			☒	PCB
			☐	Metal Monopole Antenna
			☐	Ceramic chip
			☐	Others……..
Antenna Gain ..... :	3.6 dBi			

1.3 Channel List

Bluetooth Working Frequency of Each Channel: (For BDR/EDR)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz	07	2409 MHz
08	2410 MHz	09	2411 MHz	10	2412 MHz	11	2413 MHz
12	2414 MHz	13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz	19	2421 MHz
20	2422 MHz	21	2423 MHz	22	2424 MHz	23	2425 MHz
24	2426 MHz	25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz	31	2433 MHz
32	2434 MHz	33	2435 MHz	34	2436 MHz	35	2437 MHz
36	2438 MHz	37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz	43	2445 MHz
44	2446 MHz	45	2447 MHz	46	2448 MHz	47	2449 MHz
48	2450 MHz	49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz	55	2457 MHz
56	2458 MHz	57	2459 MHz	58	2460 MHz	59	2461 MHz
60	2462 MHz	61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz	67	2469 MHz
68	2470 MHz	69	2471 MHz	70	2472 MHz	71	2473 MHz
72	2474 MHz	73	2475 MHz	74	2476 MHz	75	2477 MHz
76	2478 MHz	77	2479 MHz	78	2480 MHz	N/A	N/A

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.

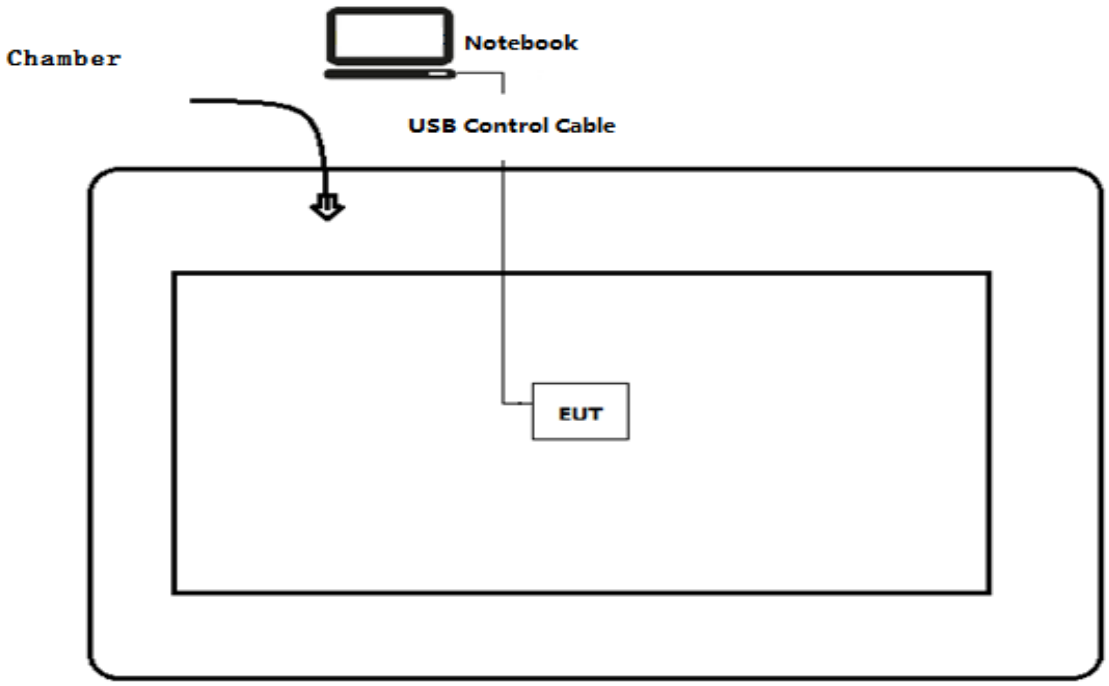
Test Mode For Bluetooth	Mode 1: Transmitter-1Mbps(GFSK_DH5)
	Mode 2: Transmitter-2Mbps(Pi/4 DQPSK_DH5)
	Mode 3: Transmitter-3Mbps(8DPSK_DH5)
	Mode 4: Transmitter-1Mbps(GFSK_DH5)-Hopping
	Mode 5: Transmitter-2Mbps(Pi/4 DQPSK_DH5)-Hopping
	Mode 6: Transmitter-3Mbps(8DPSK_DH5)-Hopping

2.2 Auxiliary equipment / Test software for the EUT

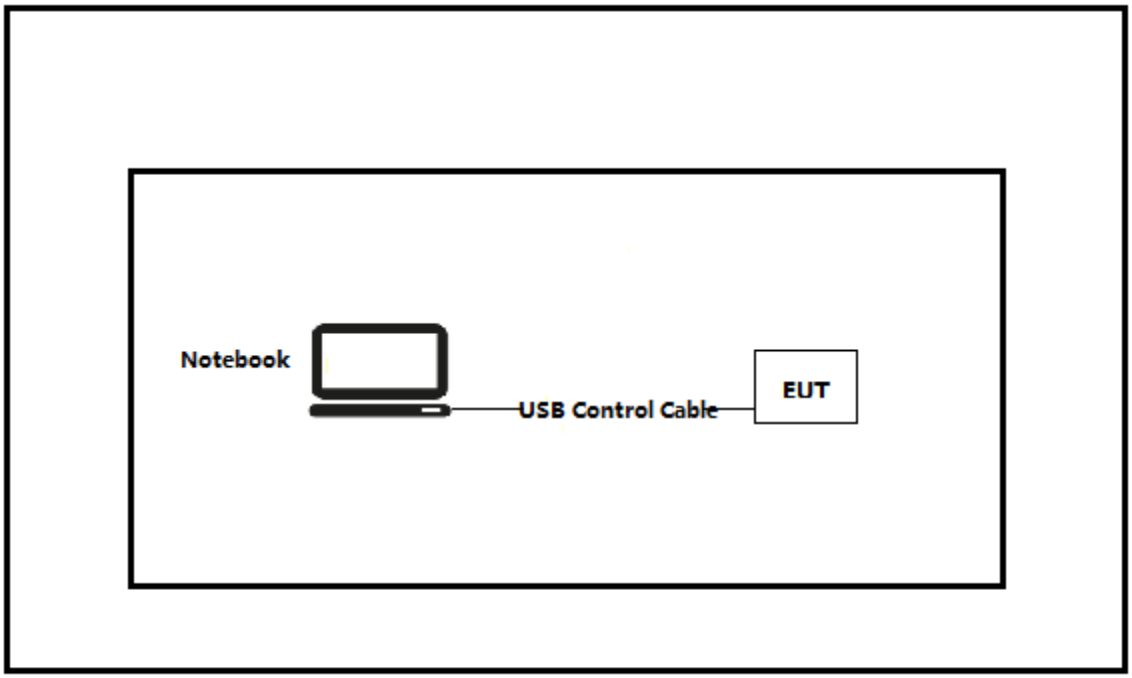
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
software	Type / Version	Manufacturer	Supplied by
Putty	0.71	N/A	N/A

2.3 Test Configuration / Block diagram used for 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 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 D01 v05r02	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

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	Yes	No
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	Yes	No
20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Carrier Frequency Separation	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Number of Hopping Frequencies	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Time of Occupancy (Dwell Time)	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Peak Output Power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(1)	Yes	No
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.215(c), 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	Yes	No
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	Yes	No

3.4 Test Facility

USA	**:**	**FCC Designation Number: CN1199**

4 TEST RESULTS

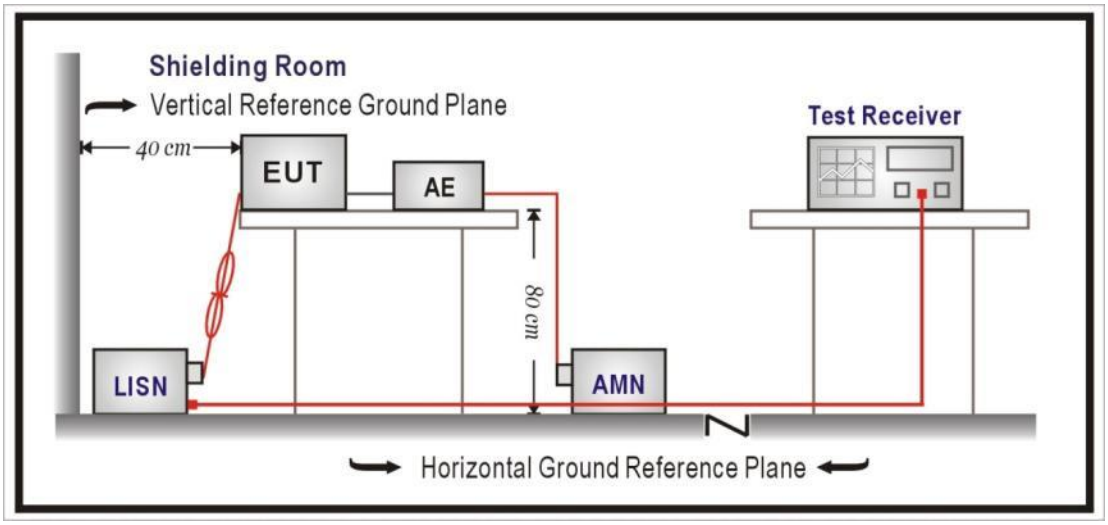
4.1 Conducted Emission	VERDICT: N/A

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.
NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.
NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

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

Not applicable：The device is DC powered.

4.2 Emissions in restricted frequency bands — VERDICT: PASS

4.2.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207		
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 –16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975–12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675–12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

Restricted Band Emissions Limit

Frequency (MHz)	Field strength (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)

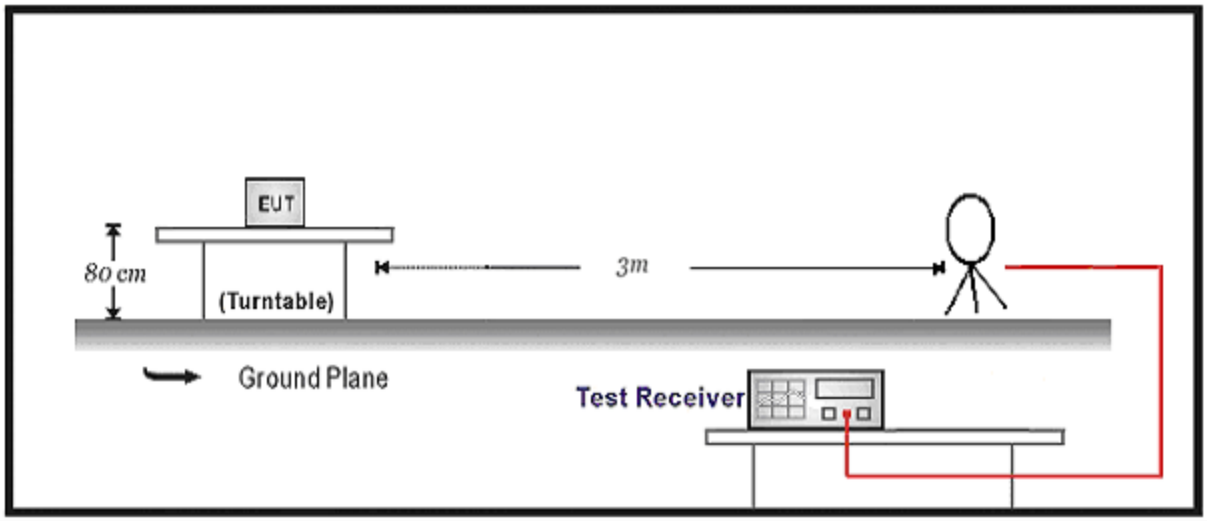
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed 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

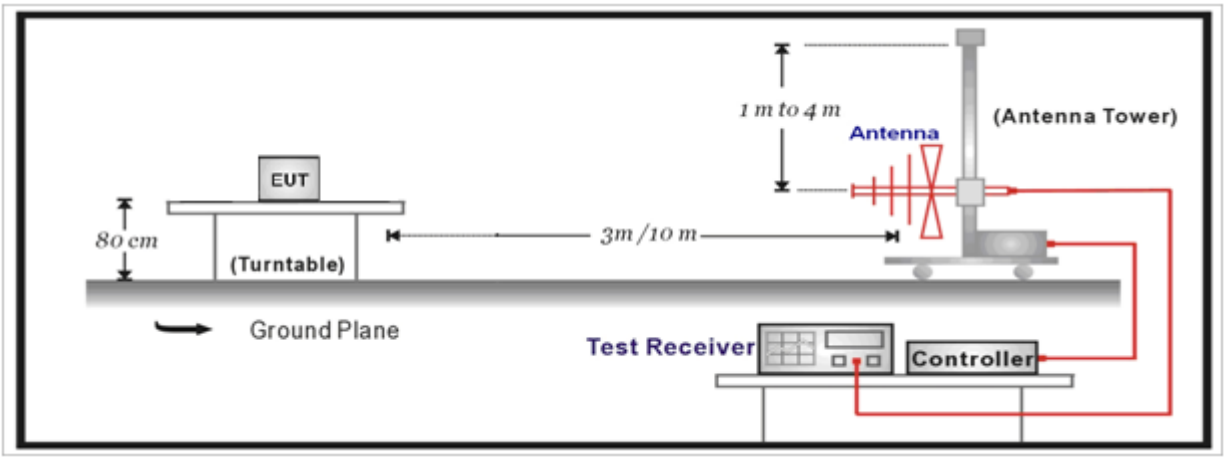
dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

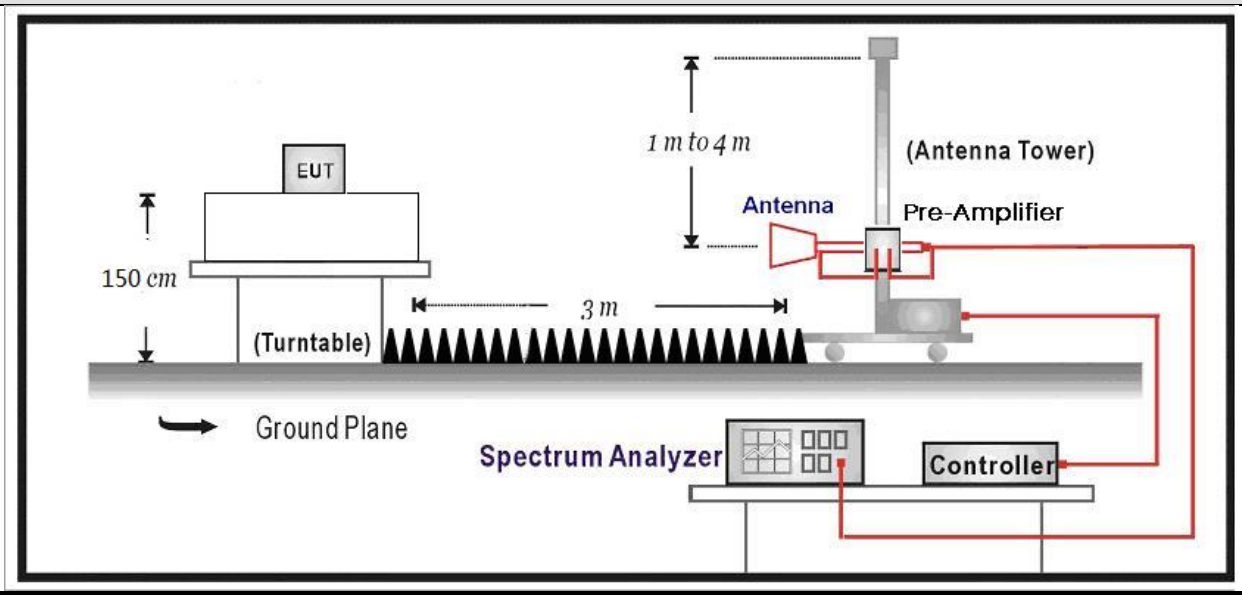
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

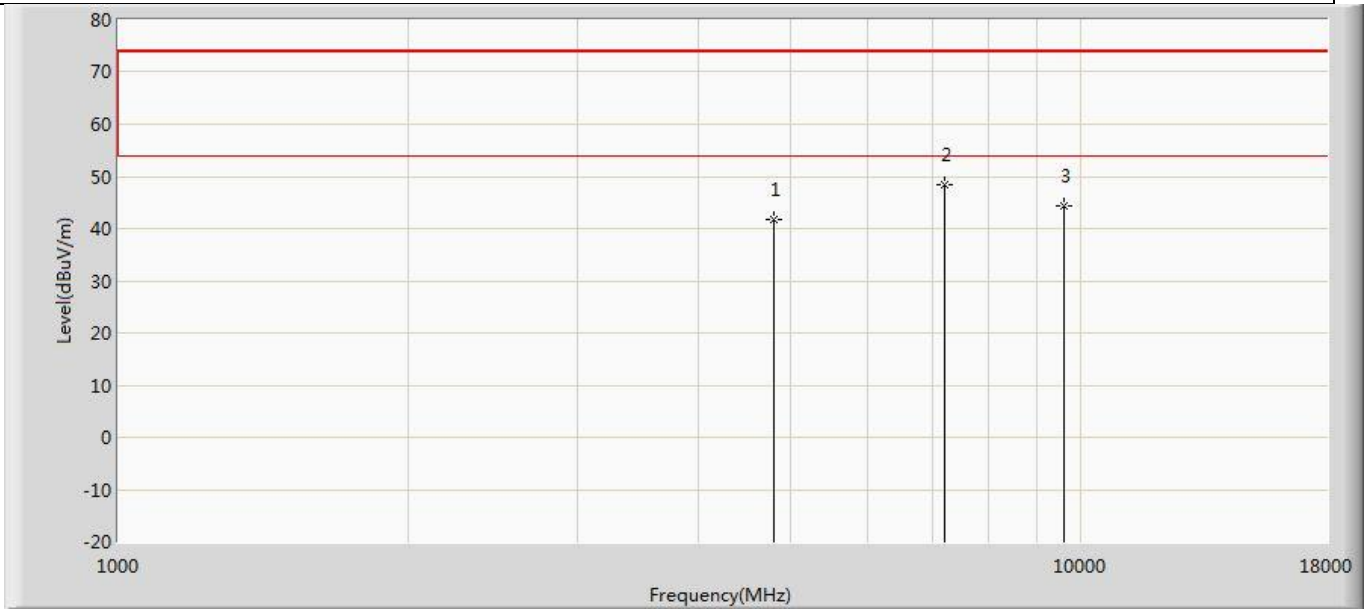


4.2.3 Test Procedure

	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		11.12.2.7	Radiated spurious emission test
		☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
		☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
		☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

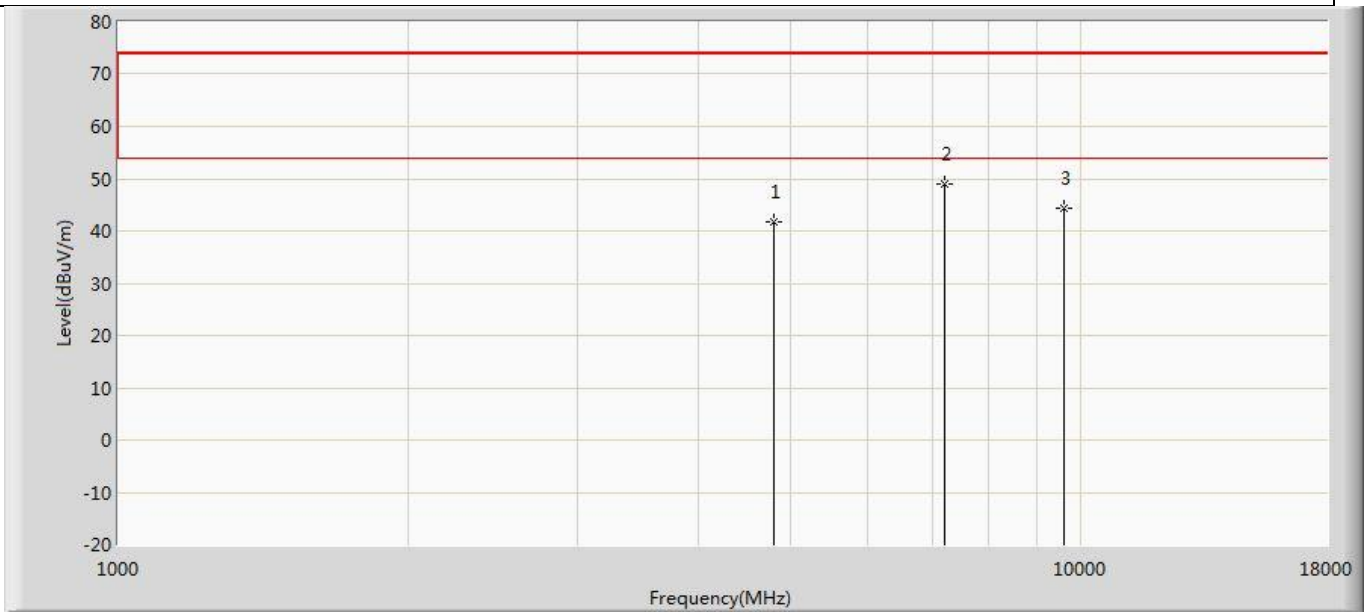
4.2.4 Test Data

Profile: 2070338R	Page No.: 107
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



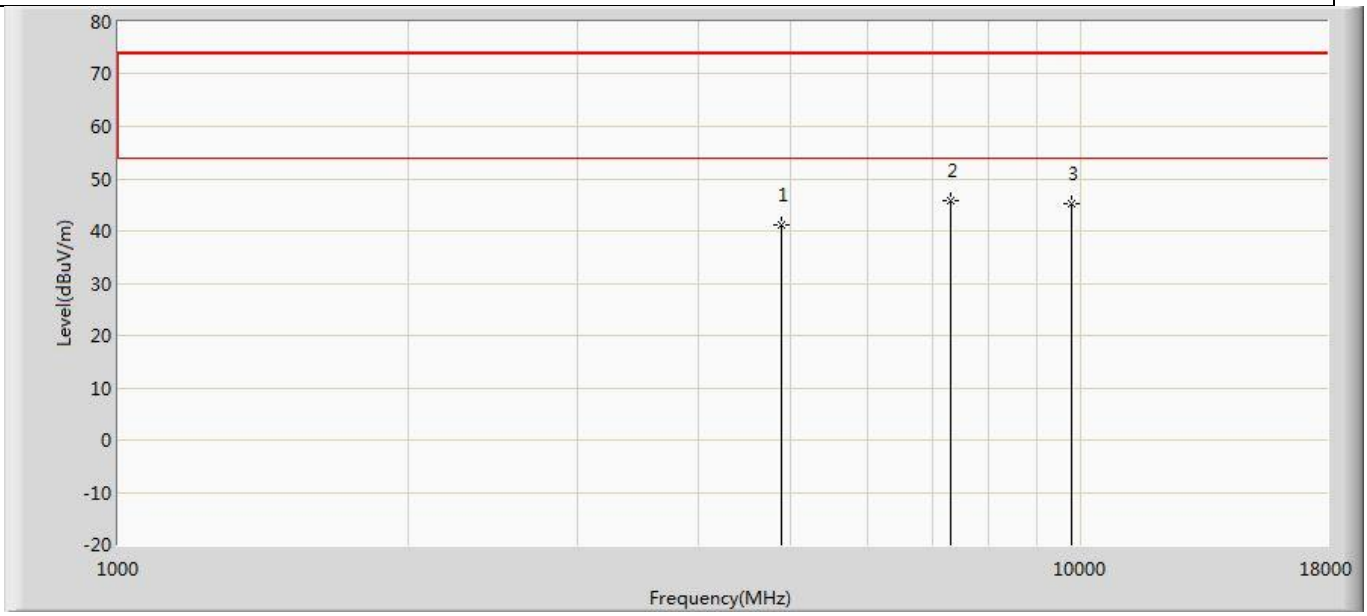
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.666	38.005	-32.334	74.000	3.662	PK
2	*	7205.000	48.276	41.615	-25.724	74.000	6.661	PK
3		9608.000	44.266	36.130	-29.734	74.000	8.137	PK

Profile: 2070338R	Page No.: 108
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



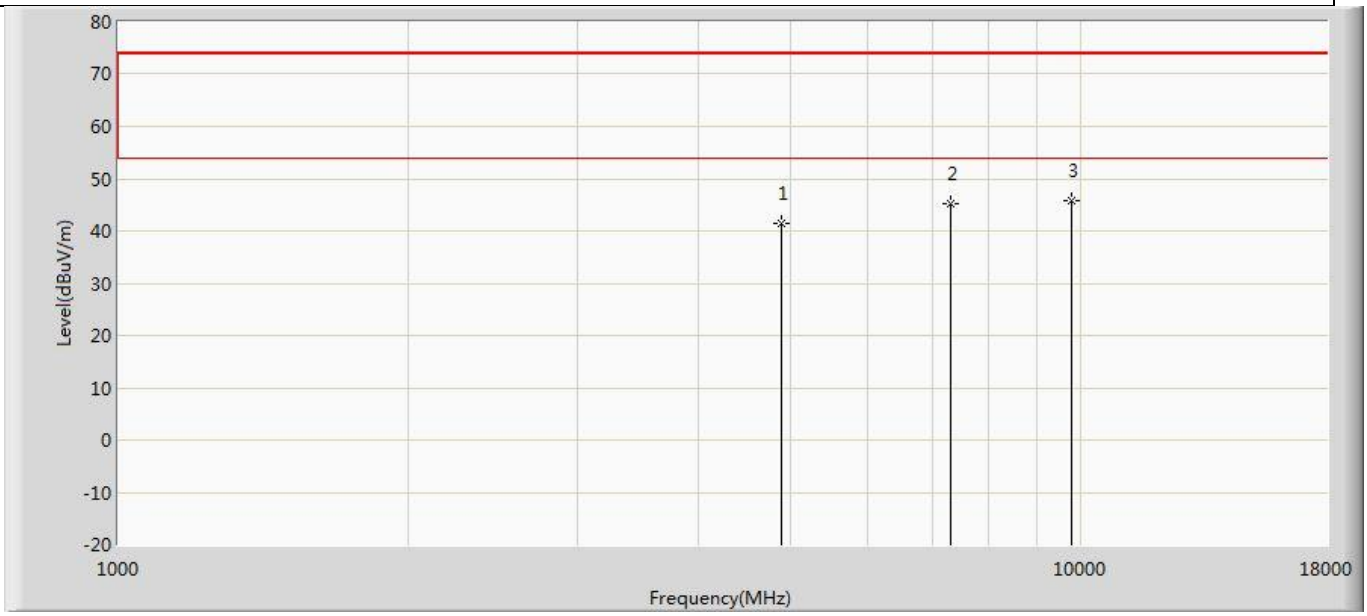
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.670	38.009	-32.330	74.000	3.662	PK
2	*	7205.000	49.103	42.442	-24.897	74.000	6.661	PK
3		9608.000	44.471	36.335	-29.529	74.000	8.137	PK

Profile: 2070338R	Page No.: 109
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2441MHz by DH5	



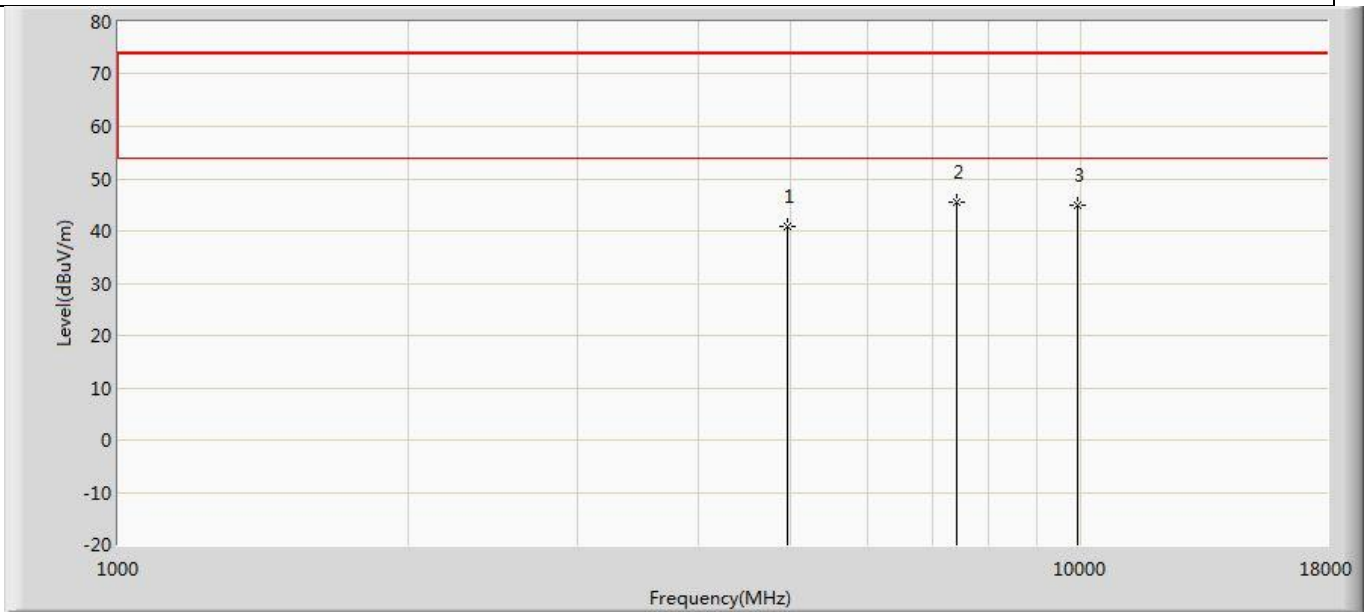
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.038	37.420	-32.962	74.000	3.619	PK
2	*	7323.000	45.773	39.070	-28.227	74.000	6.702	PK
3		9764.000	45.192	36.424	-28.808	74.000	8.767	PK

Profile: 2070338R	Page No.: 110
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2441MHz by DH5	



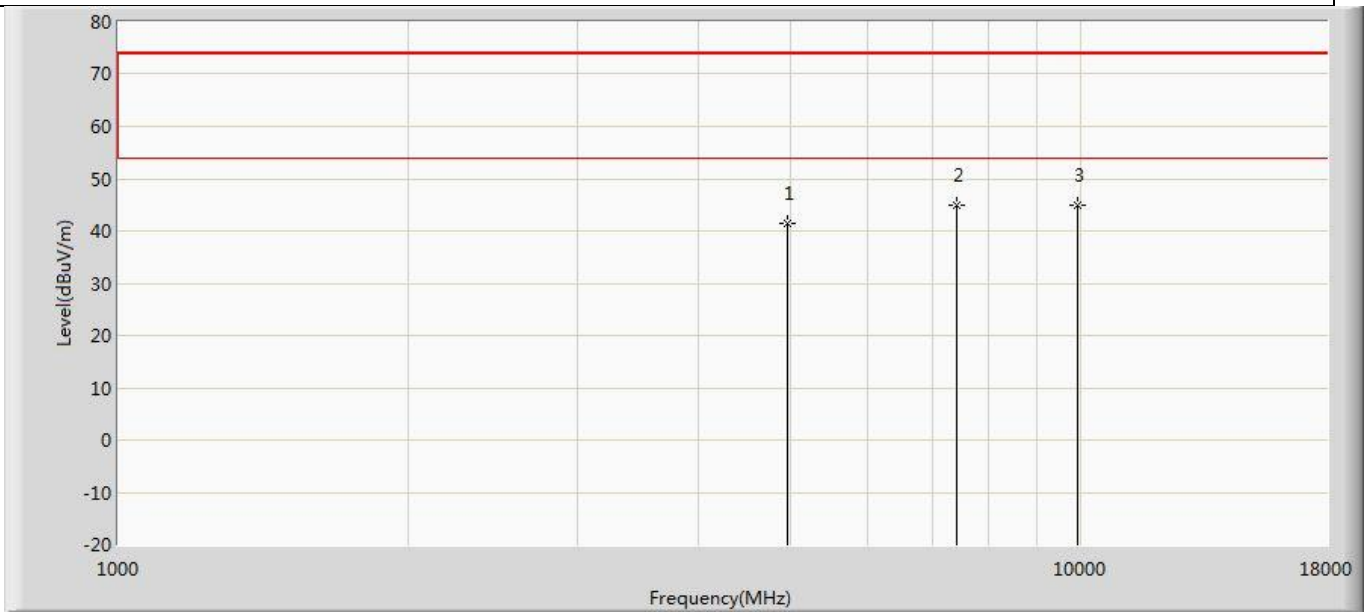
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.512	37.894	-32.488	74.000	3.619	PK
2		7323.000	45.080	38.377	-28.920	74.000	6.702	PK
3	*	9764.000	45.742	36.974	-28.258	74.000	8.767	PK

Profile: 2070338R	Page No.: 111
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



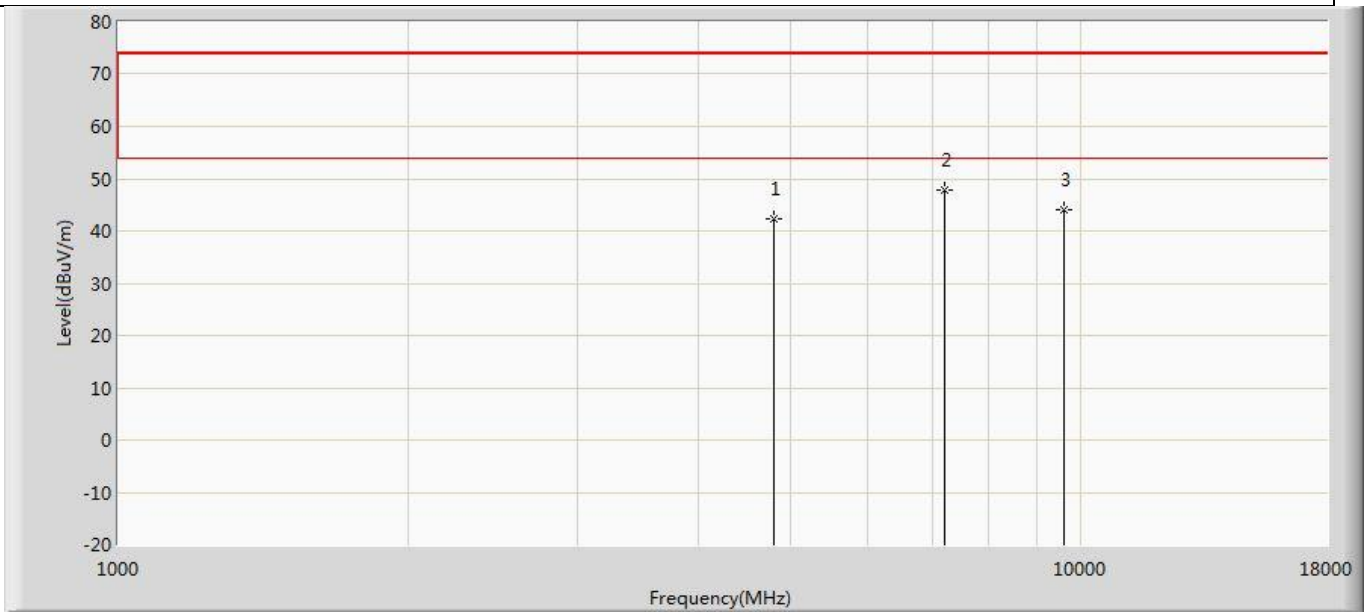
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.803	37.192	-33.197	74.000	3.611	PK
2	*	7440.000	45.367	38.782	-28.633	74.000	6.585	PK
3		9920.000	45.065	36.340	-28.935	74.000	8.725	PK

Profile: 2070338R	Page No.: 112
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



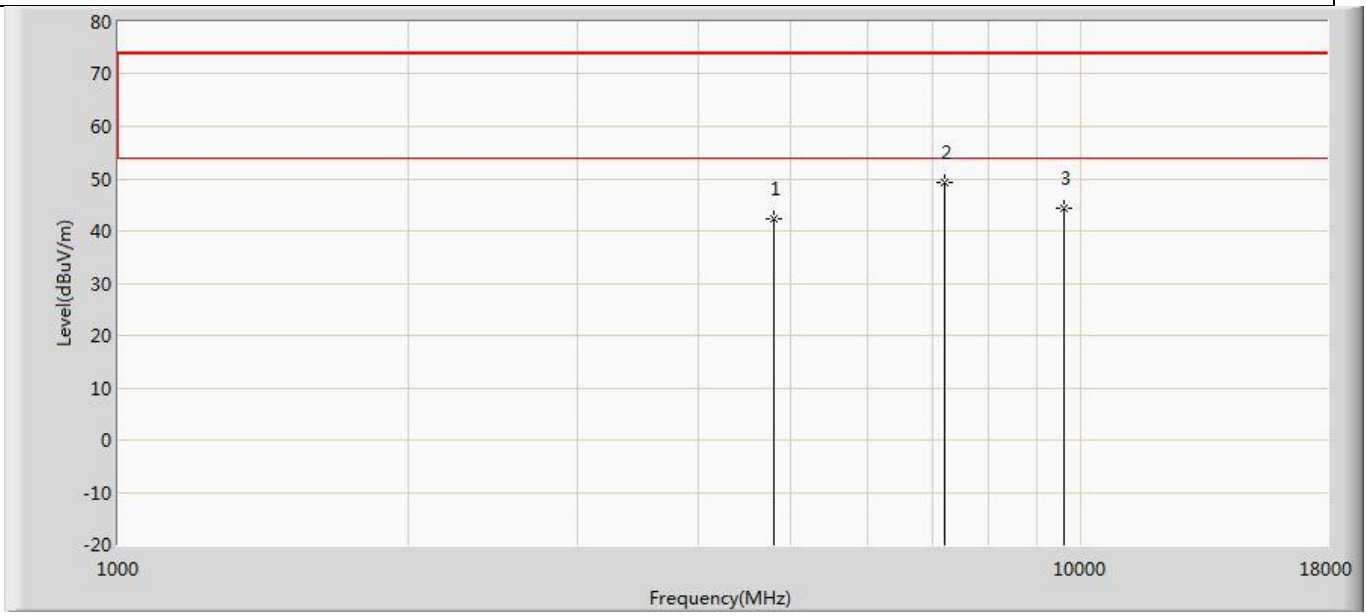
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.455	37.844	-32.545	74.000	3.611	PK
2	*	7440.000	45.050	38.465	-28.950	74.000	6.585	PK
3		9920.000	44.887	36.162	-29.113	74.000	8.725	PK

Profile: 2070338R	Page No.: 113
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



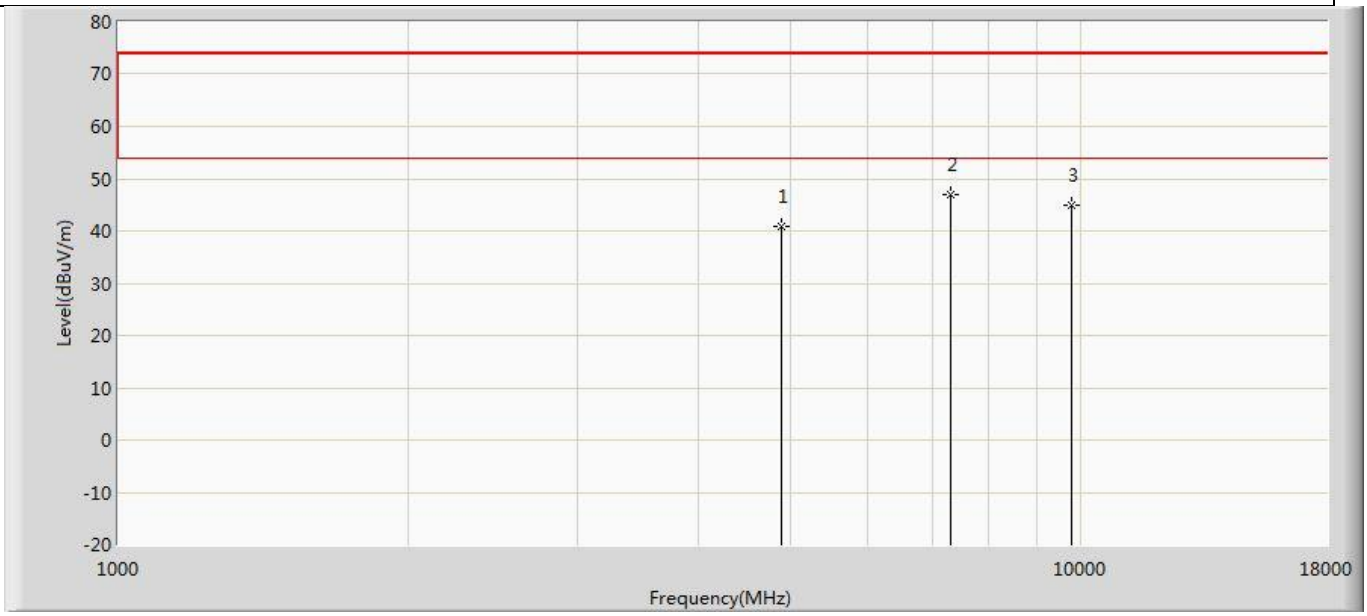
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	42.363	38.702	-31.637	74.000	3.662	PK
2	*	7205.000	47.951	41.290	-26.049	74.000	6.661	PK
3		9608.000	44.074	35.938	-29.926	74.000	8.137	PK

Profile: 2070338R	Page No.: 114
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



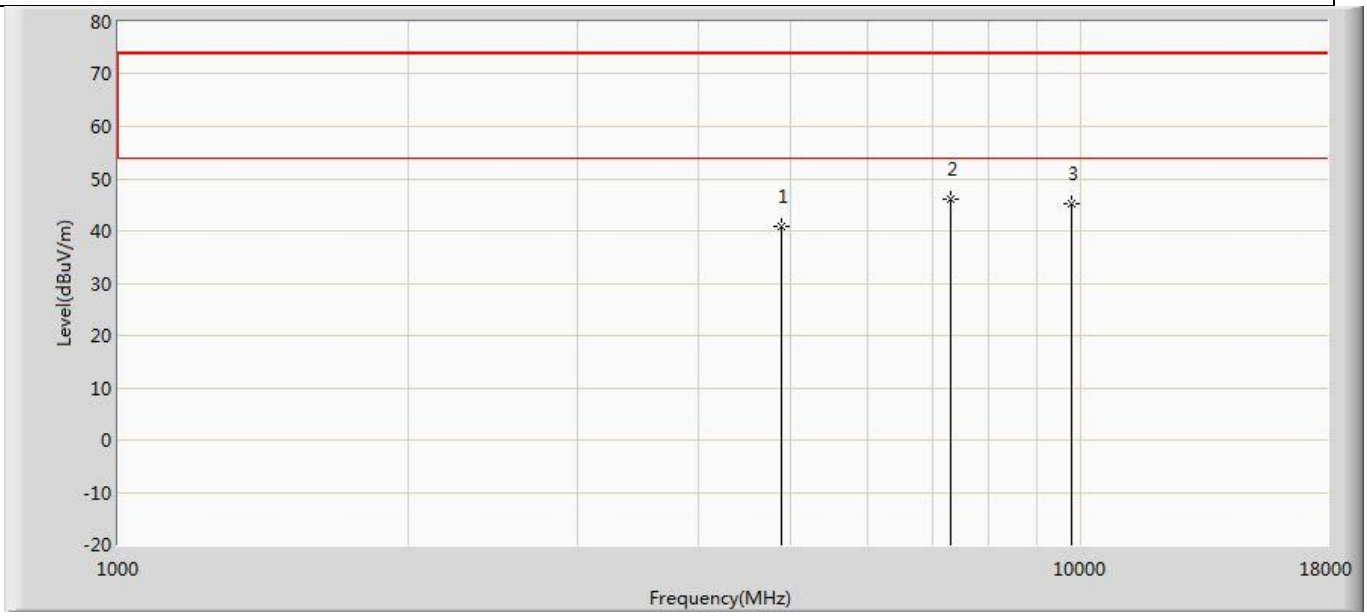
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	42.218	38.557	-31.782	74.000	3.662	PK
2	*	7205.000	49.283	42.622	-24.717	74.000	6.661	PK
3		9608.000	44.280	36.144	-29.720	74.000	8.137	PK

Profile: 2070338R	Page No.: 115
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2441MHz by 2DH5	



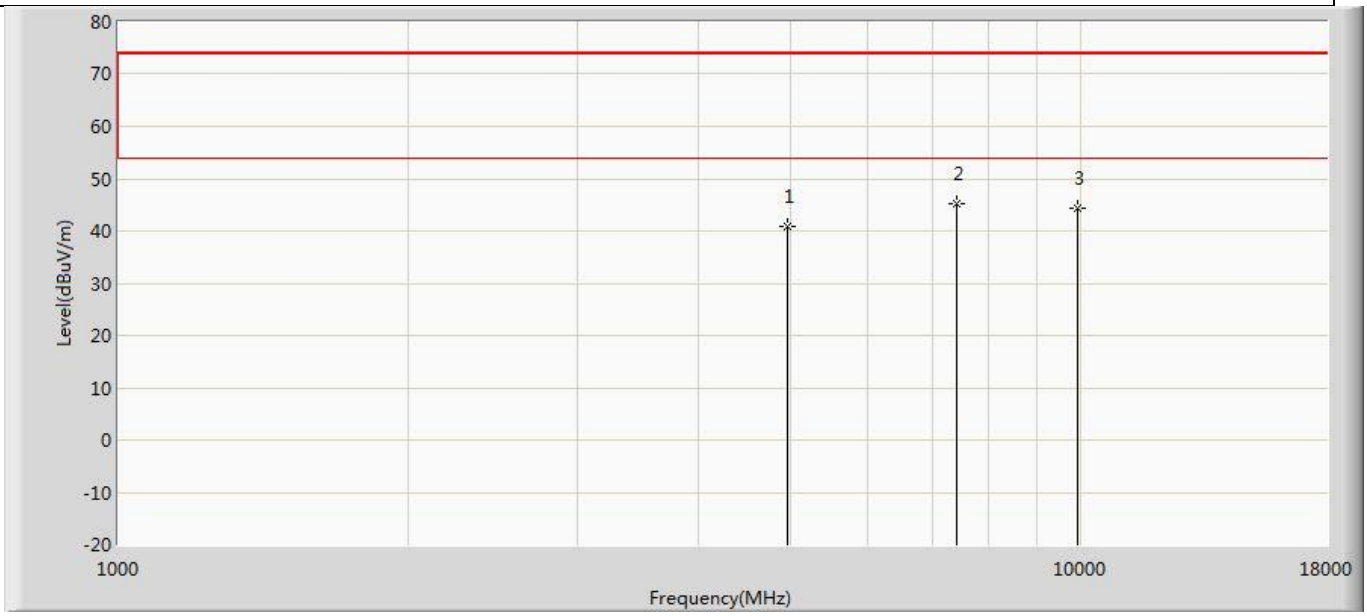
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	40.982	37.364	-33.018	74.000	3.619	PK
2	*	7324.000	46.973	40.264	-27.027	74.000	6.709	PK
3		9764.000	44.817	36.049	-29.183	74.000	8.767	PK

Profile: 2070338R	Page No.: 116
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2441MHz by 2DH5	



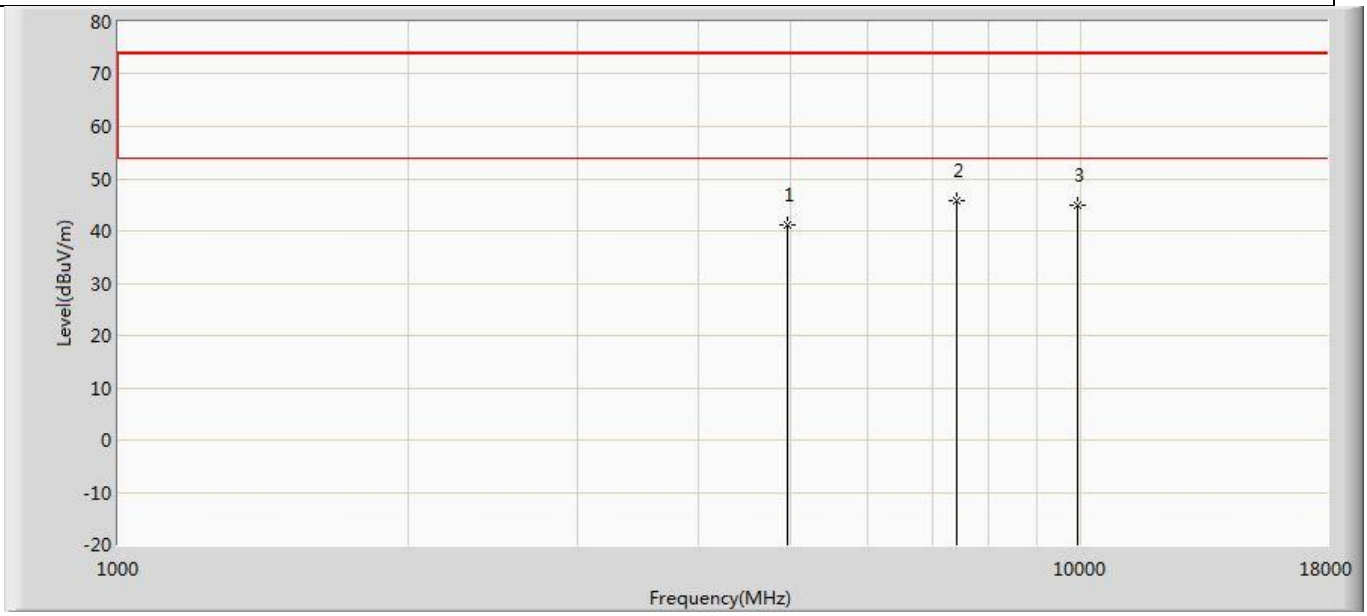
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	40.901	37.283	-33.099	74.000	3.619	PK
2	*	7324.000	45.954	39.245	-28.046	74.000	6.709	PK
3		9764.000	45.265	36.497	-28.735	74.000	8.767	PK

Profile: 2070338R	Page No.: 117
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



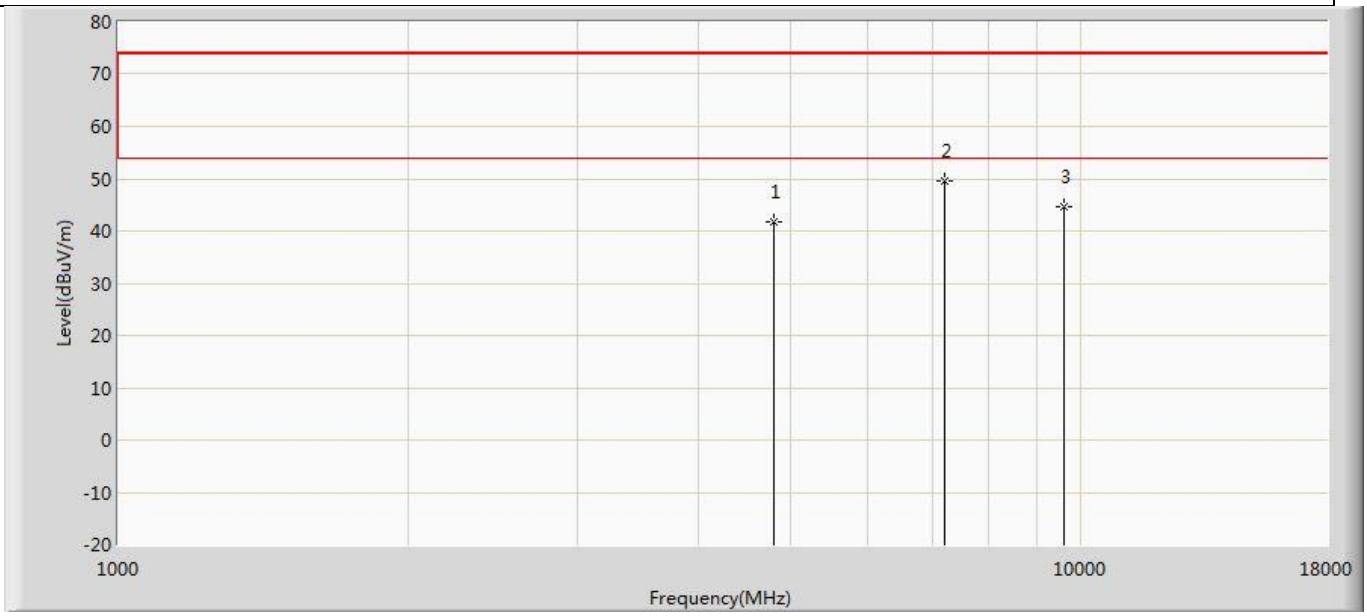
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.984	37.373	-33.016	74.000	3.611	PK
2	*	7440.000	45.107	38.522	-28.893	74.000	6.585	PK
3		9920.000	44.460	35.735	-29.540	74.000	8.725	PK

Profile: 2070338R	Page No.: 118
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



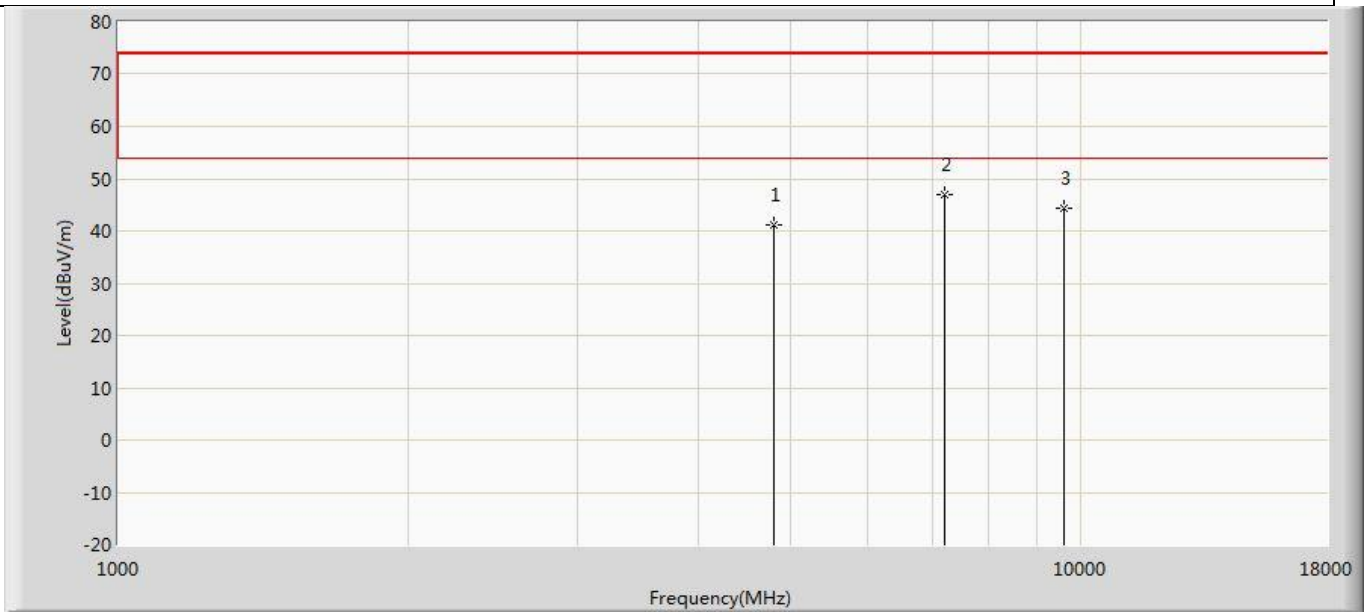
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.197	37.586	-32.803	74.000	3.611	PK
2	*	7440.000	45.758	39.173	-28.242	74.000	6.585	PK
3		9920.000	44.951	36.226	-29.049	74.000	8.725	PK

Profile: 2070338R	Page No.: 119
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



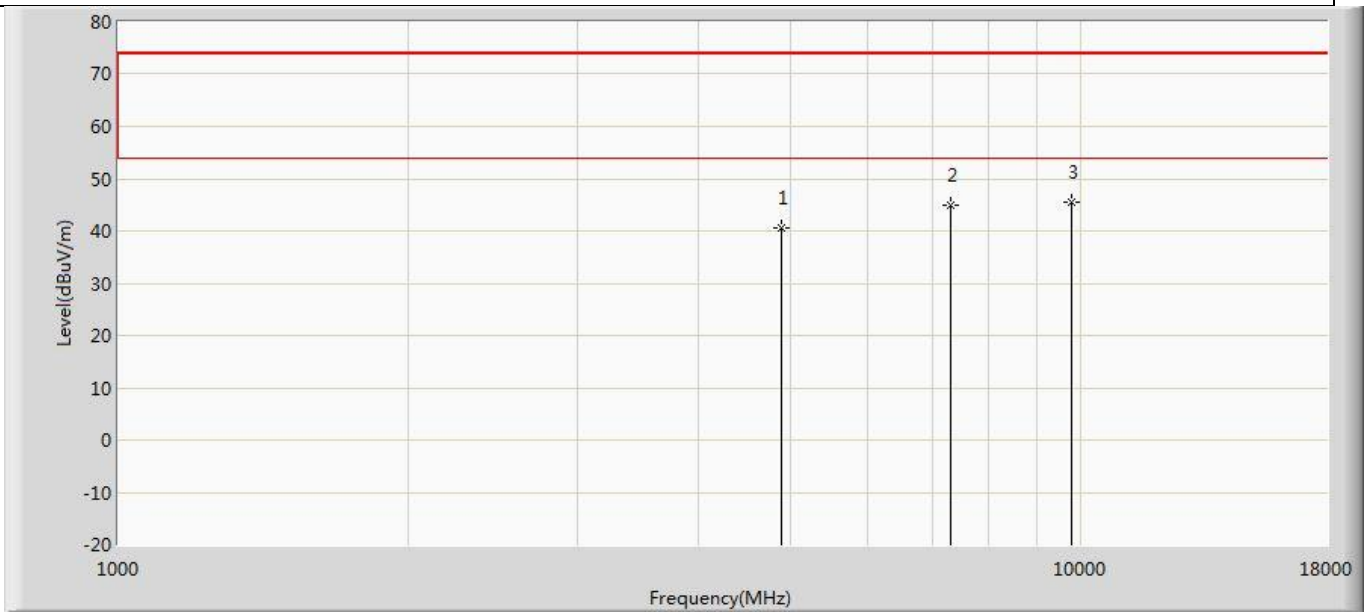
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.651	37.990	-32.349	74.000	3.662	PK
2	*	7205.000	49.547	42.886	-24.453	74.000	6.661	PK
3		9608.000	44.513	36.377	-29.487	74.000	8.137	PK

Profile: 2070338R	Page No.: 120
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



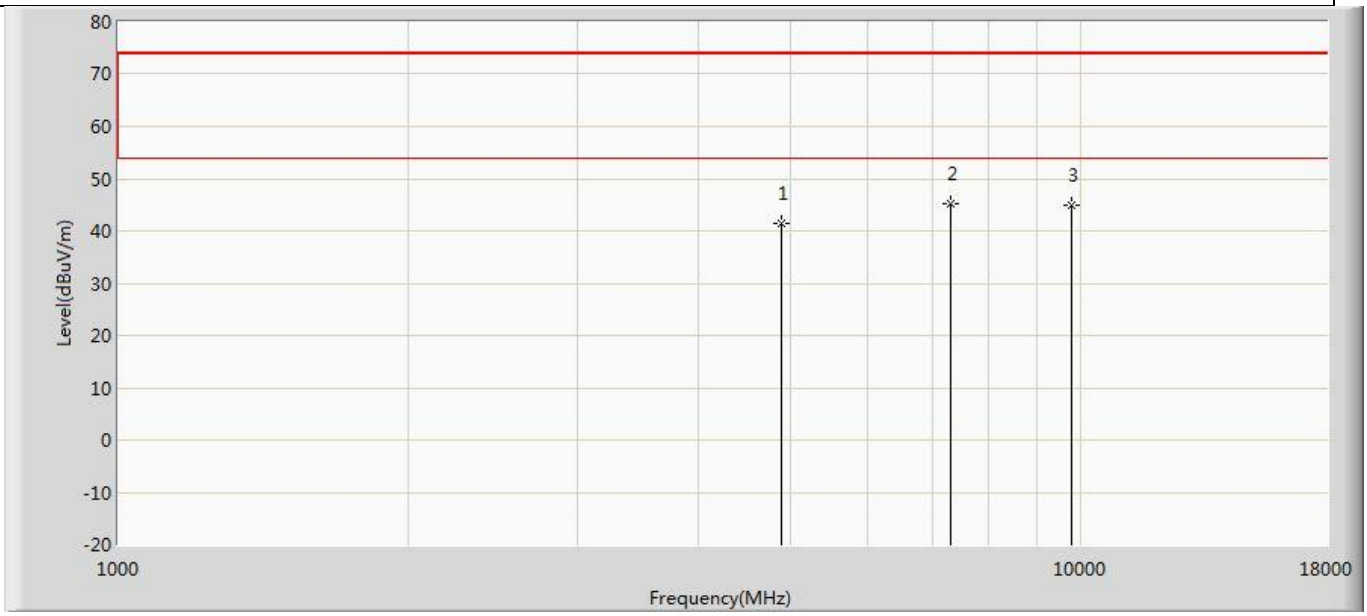
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.234	37.573	-32.766	74.000	3.662	PK
2	*	7205.000	46.836	40.175	-27.164	74.000	6.661	PK
3		9608.000	44.209	36.073	-29.791	74.000	8.137	PK

Profile: 2070338R	Page No.: 121
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2441MHz by 3DH5	



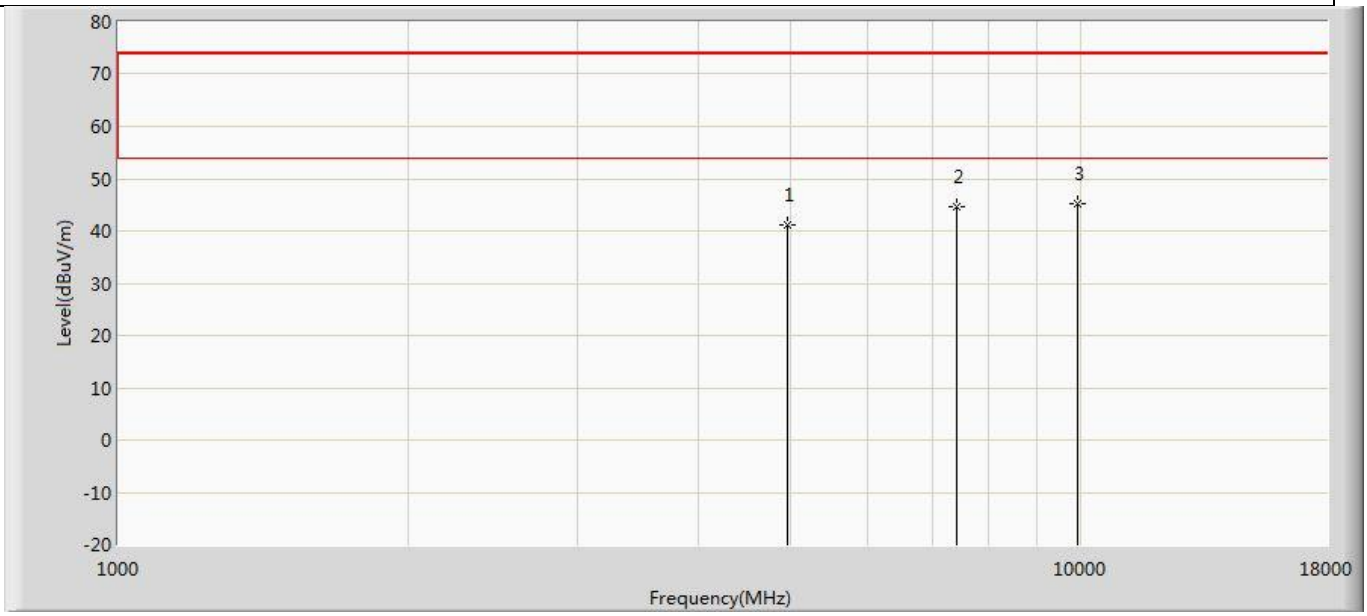
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	40.554	36.936	-33.446	74.000	3.619	PK
2		7323.000	45.049	38.346	-28.951	74.000	6.702	PK
3	*	9764.000	45.451	36.683	-28.549	74.000	8.767	PK

Profile: 2070338R	Page No.: 122
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2441MHz by 3DH5	



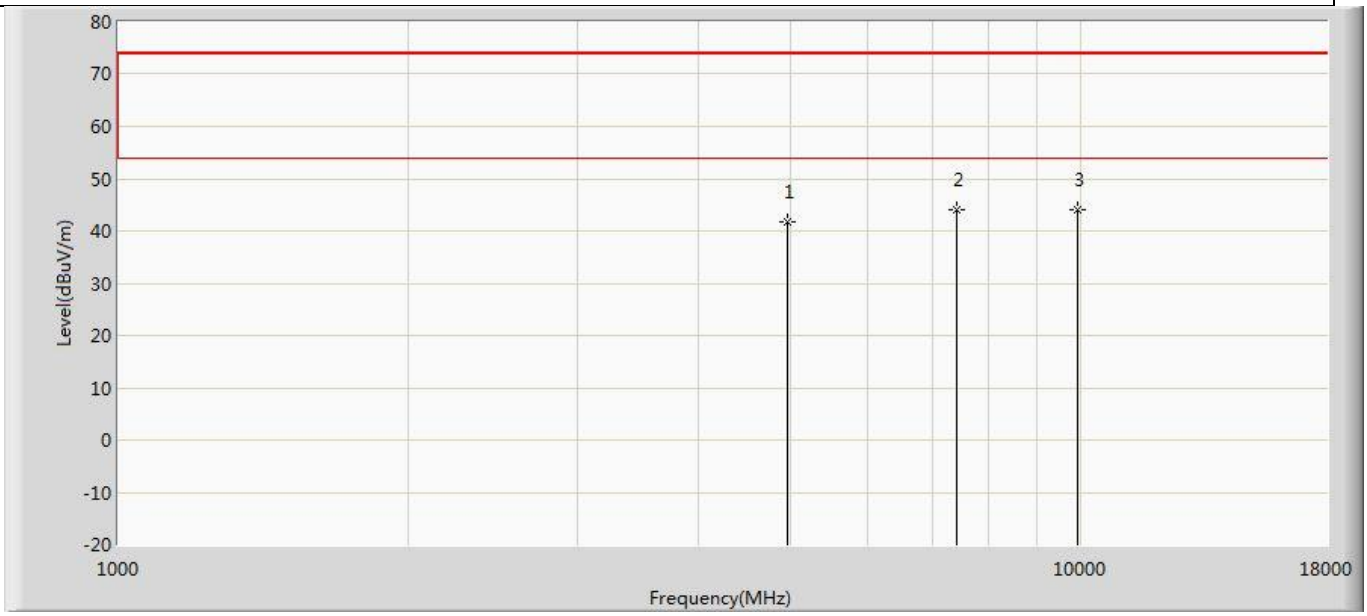
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.546	37.928	-32.454	74.000	3.619	PK
2	*	7323.000	45.234	38.531	-28.766	74.000	6.702	PK
3		9764.000	44.881	36.113	-29.119	74.000	8.767	PK

Profile: 2070338R	Page No.: 123
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.303	37.692	-32.697	74.000	3.611	PK
2		7440.000	44.559	37.974	-29.441	74.000	6.585	PK
3	*	9920.000	45.336	36.611	-28.664	74.000	8.725	PK

Profile: 2070338R	Page No.: 124
Engineer: Pawn	
Site: AC5	Time: 2020/08/01 - 15:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



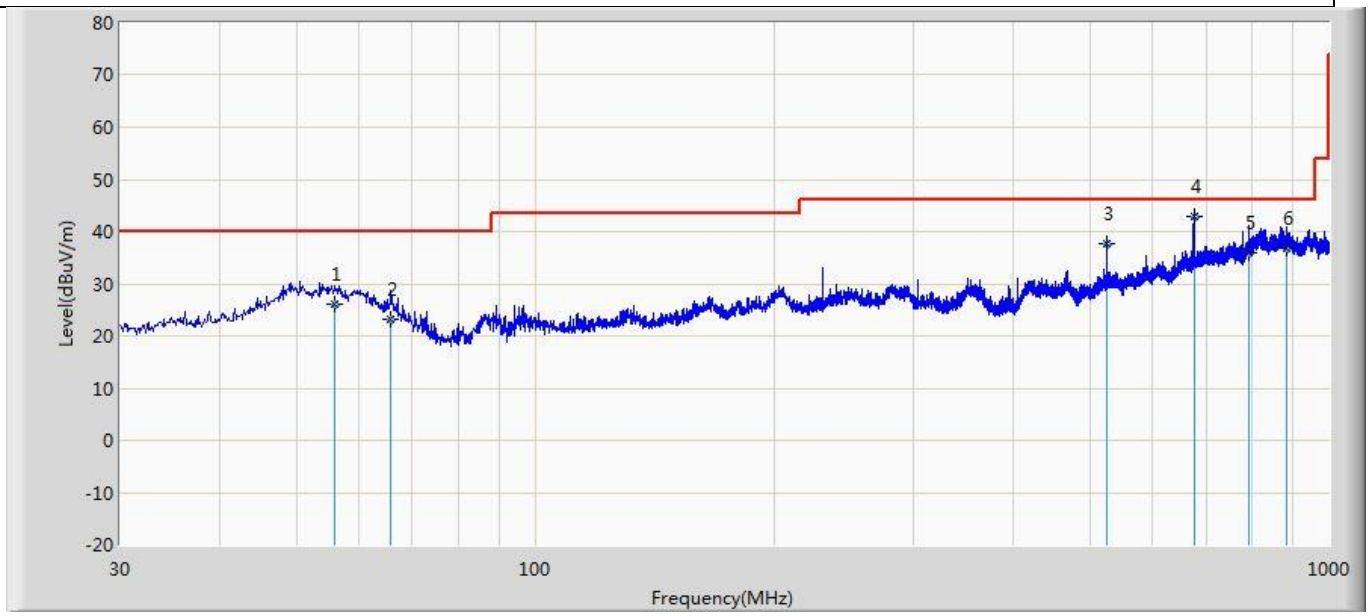
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.808	38.197	-32.192	74.000	3.611	PK
2	*	7440.000	44.082	37.497	-29.918	74.000	6.585	PK
3		9920.000	44.046	35.321	-29.954	74.000	8.725	PK

Note:

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

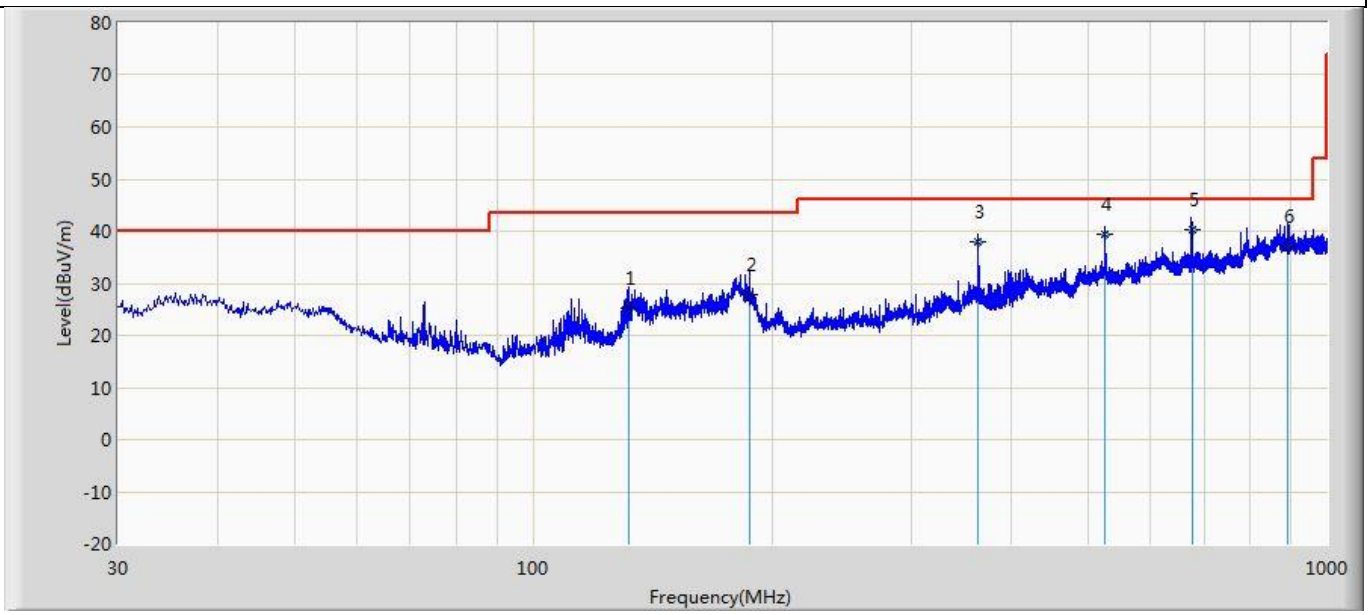
The worst case of Radiated Emission below 1GHz:

Profile: 2070338R	Page No.: 19
Engineer: Shuo	
Site: AC3	Time: 2020/07/20 - 15:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: SuZ-2141	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode 1:	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		55.985	26.046	1.100	-13.954	40.000	18.458	6.488	0.000	100	205	QP
2		65.759	23.282	2.500	-16.718	40.000	14.233	6.549	0.000	100	148	QP
3		525.600	37.613	10.400	-8.387	46.000	19.043	8.170	0.000	100	338	QP
4	*	676.000	42.887	12.200	-3.113	46.000	22.137	8.550	0.000	100	320	QP
5		792.905	36.048	2.500	-9.952	46.000	24.748	8.800	0.000	100	70	QP
6		884.257	36.679	1.400	-9.321	46.000	26.269	9.010	0.000	100	360	QP

Profile: 2070338R	Page No.: 20
Engineer: Shuo	
Site: AC3	Time: 2020/07/20 - 16:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: SuZ-2141	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		131.728	25.112	8.600	-18.388	43.500	9.622	6.890	0.000	100	24	QP
2		187.019	27.835	10.200	-15.665	43.500	10.507	7.129	0.000	200	334	QP
3		364.000	37.996	13.500	-8.004	46.000	16.776	7.720	0.000	100	265	QP
4		525.000	39.387	9.900	-6.613	46.000	21.317	8.170	0.000	200	329	QP
5	*	676.000	40.416	10.500	-5.584	46.000	21.366	8.550	0.000	100	360	QP
6		893.254	37.217	3.400	-8.783	46.000	24.788	9.030	0.000	100	160	QP

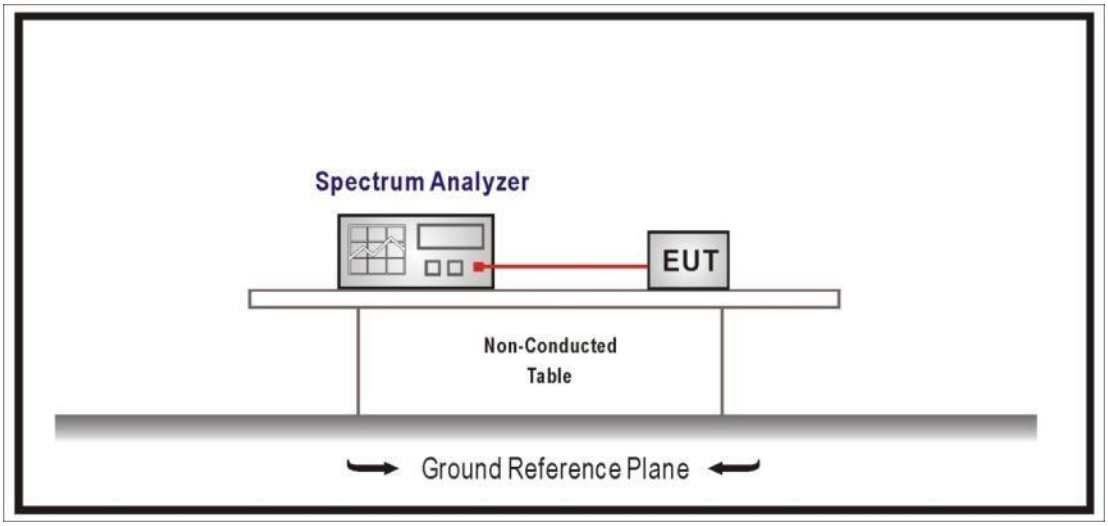
Note:

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

4.3 20dB Bandwidth	VERDICT: PASS

4.3.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247(a)
☒	For frequency hopping systems operating in 2400-2483.5 MHz band, within frequency range.
☐	For frequency hopping systems operating in 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
☐	For frequency hopping systems operating in 5725-5850 MHz band, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

4.3.2 Test Setup



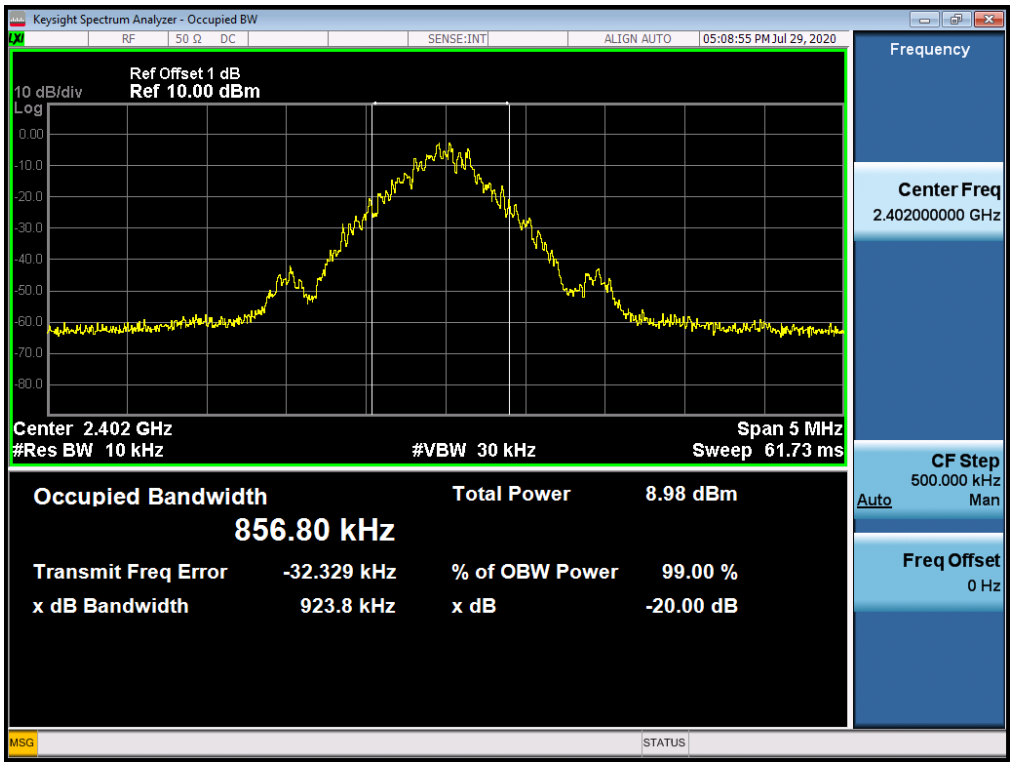
4.3.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		6.9	Occupied bandwidth tests
	☒	ANSI C63.10	6.9.2	Occupied bandwidth—relative measurement procedure

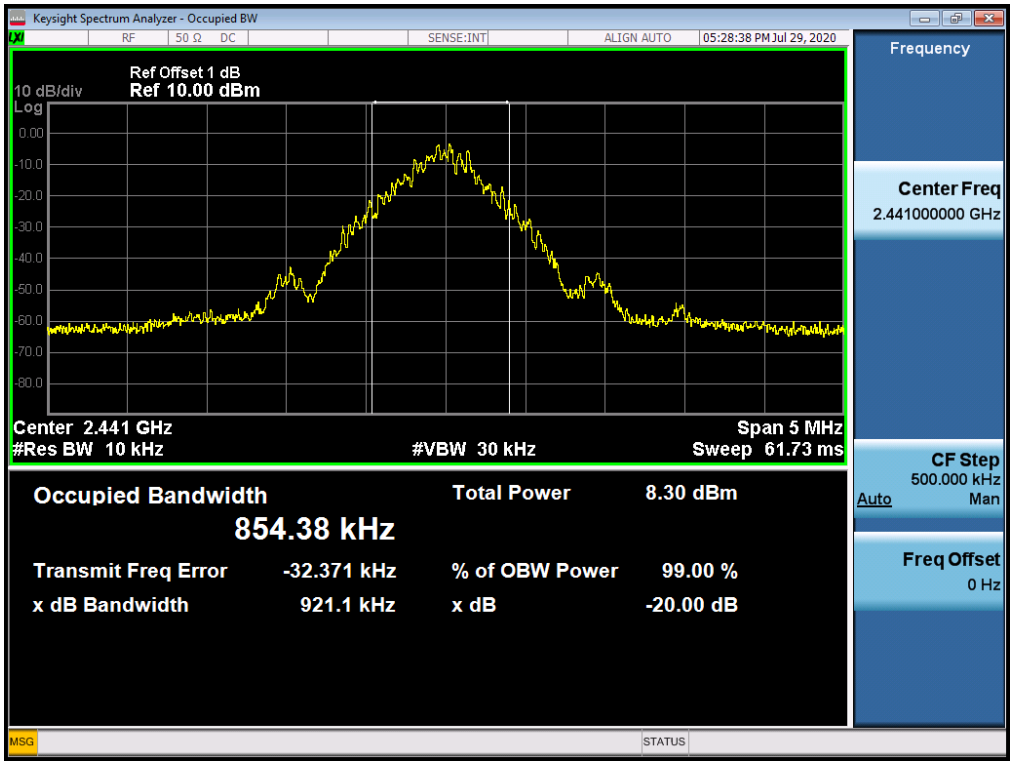
4.3.4 Test Data

Mode	Channel	Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)
1	00	2402	923.8	⩾ 500
	39	2441	921.1	⩾ 500
	79	2480	916.0	⩾ 500
2	00	2402	1446.0	⩾ 500
	39	2441	1445.0	⩾ 500
	79	2480	1441.0	⩾ 500
3	00	2402	1423.0	⩾ 500
	39	2441	1447.0	⩾ 500
	79	2480	1423.0	⩾ 500

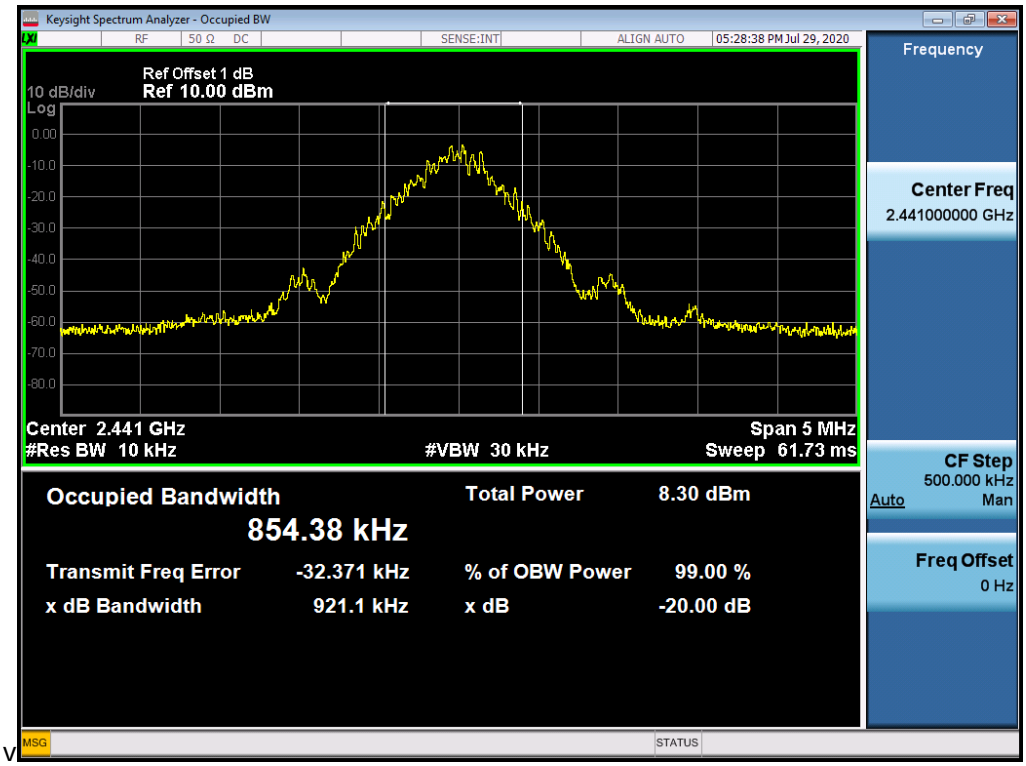
Mode 1 CH00(2402MHz)



Mode 1 CH39(2441MHz)

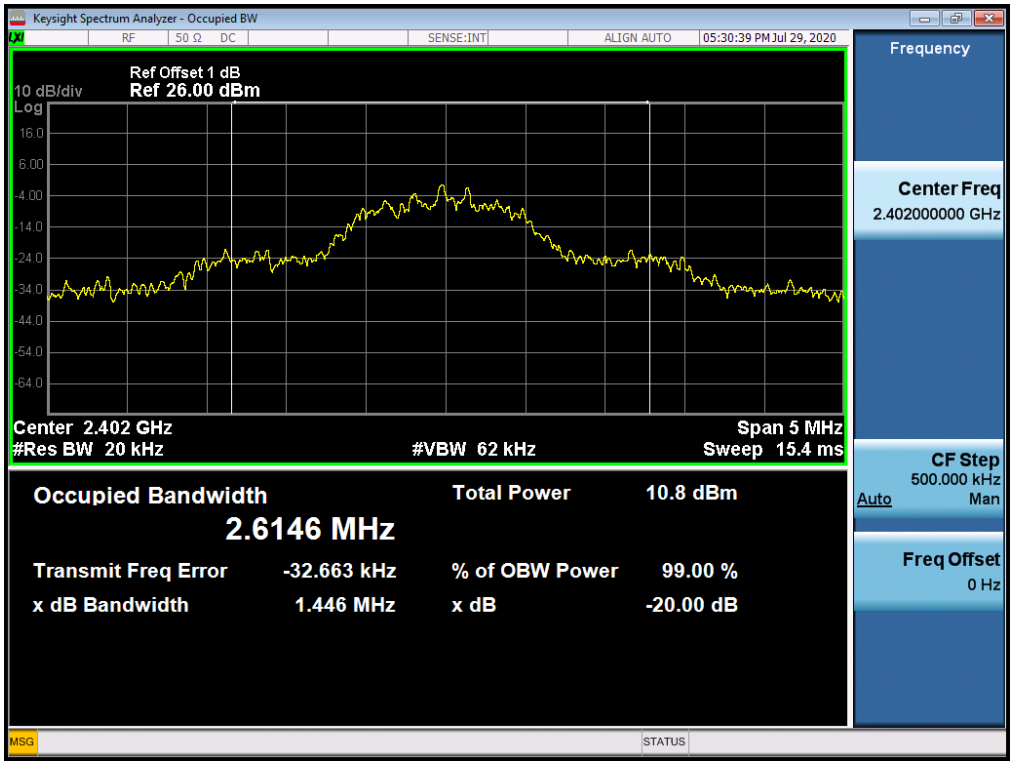


Mode 1 CH78(2480MHz)

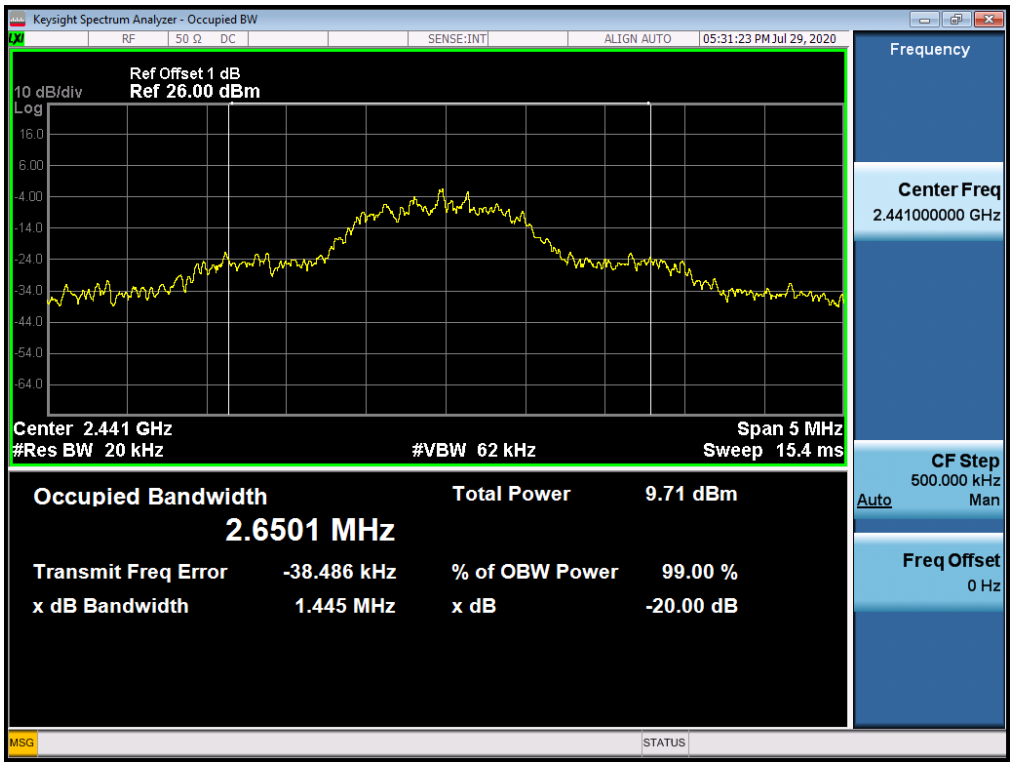


V

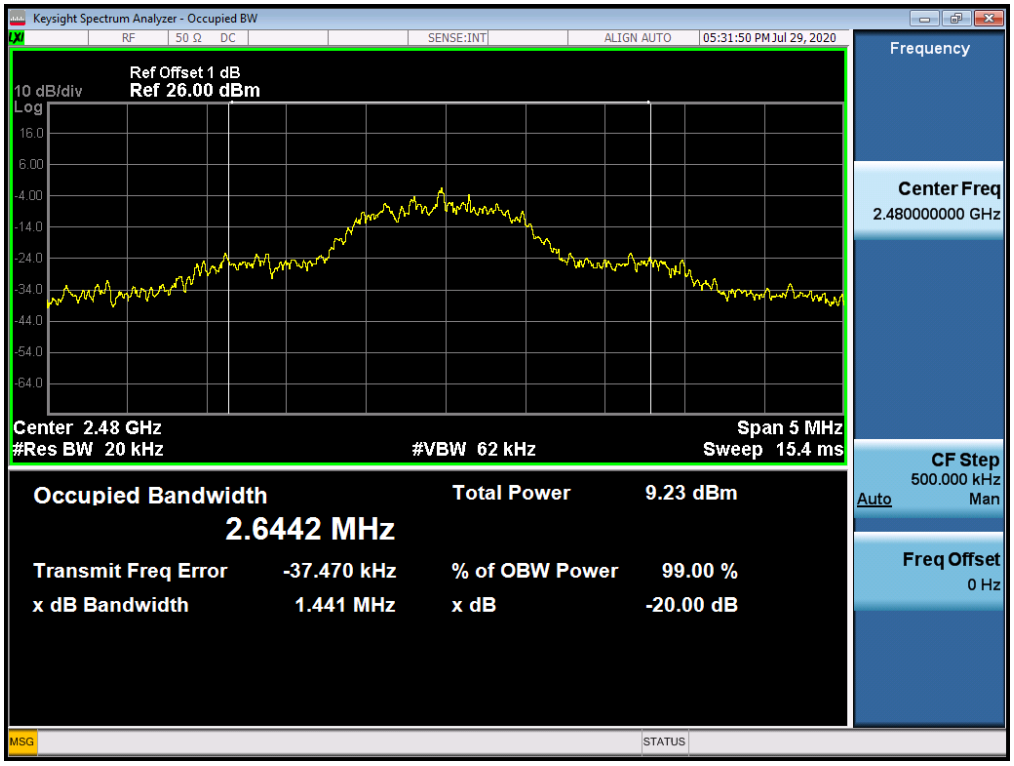
Mode 2 CH00(2402MHz)



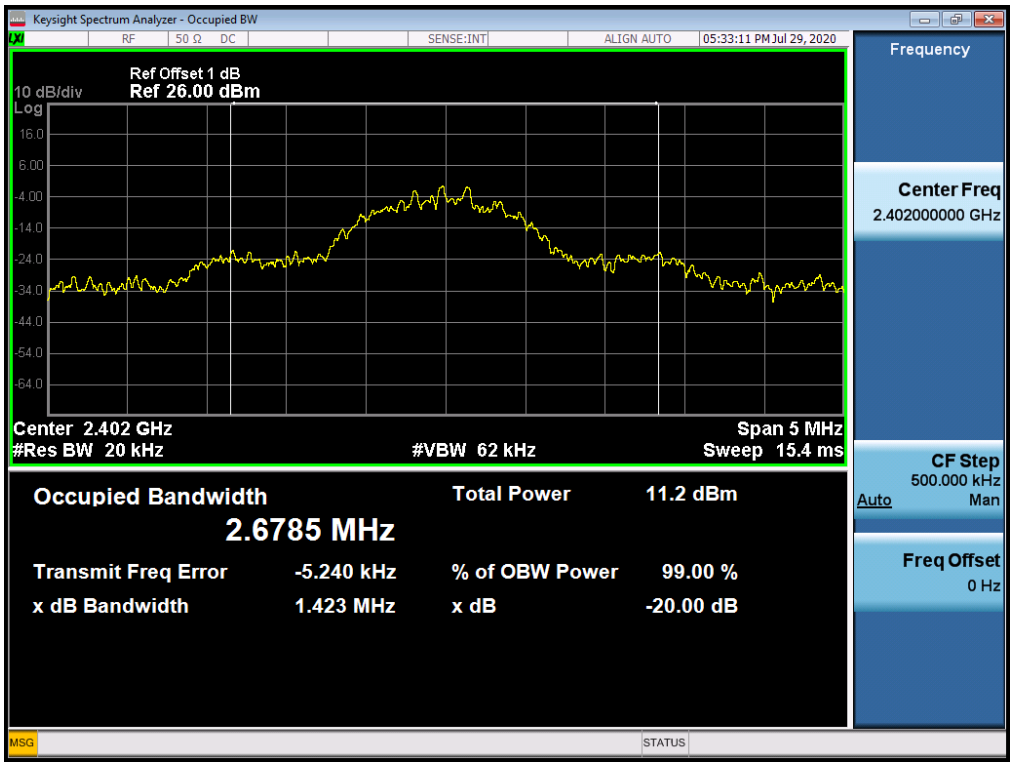
Mode 2 CH39(2441MHz)



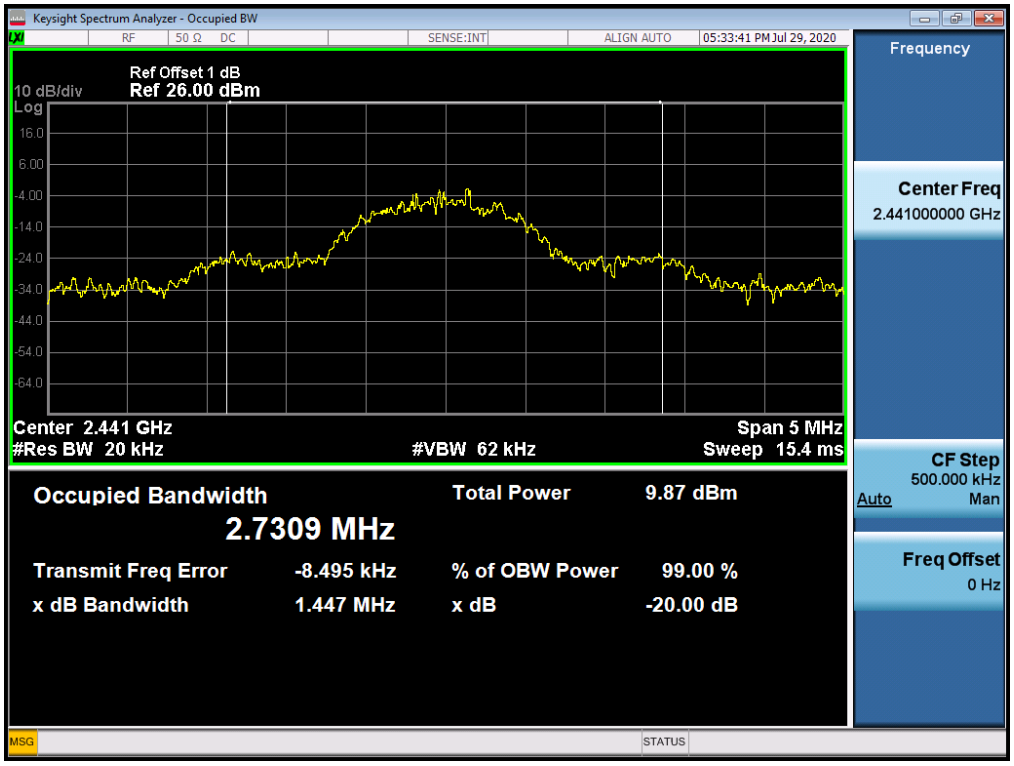
Mode 2 CH78(2480MHz)



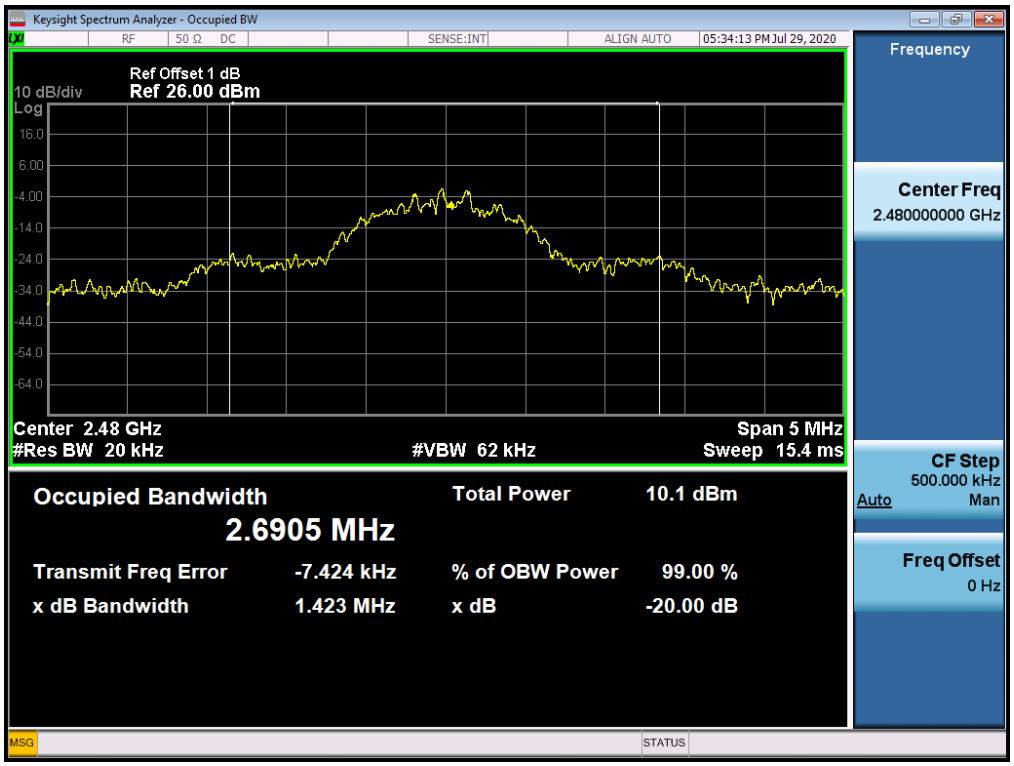
Mode 3 CH00(2402MHz)



Mode 3 CH39(2441MHz)



Mode 3 CH78(2480MHz)

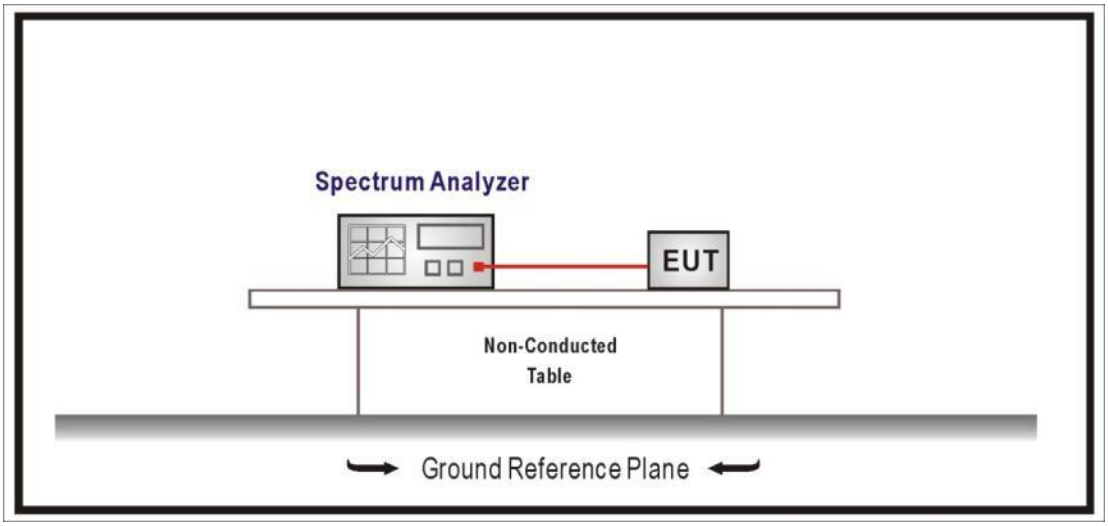


4.4 Carrier Frequency Separation	VERDICT: PASS

4.4.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(a)
☐	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
☒	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel.
☐	The 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4
☐	The 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

4.4.2 Test Setup



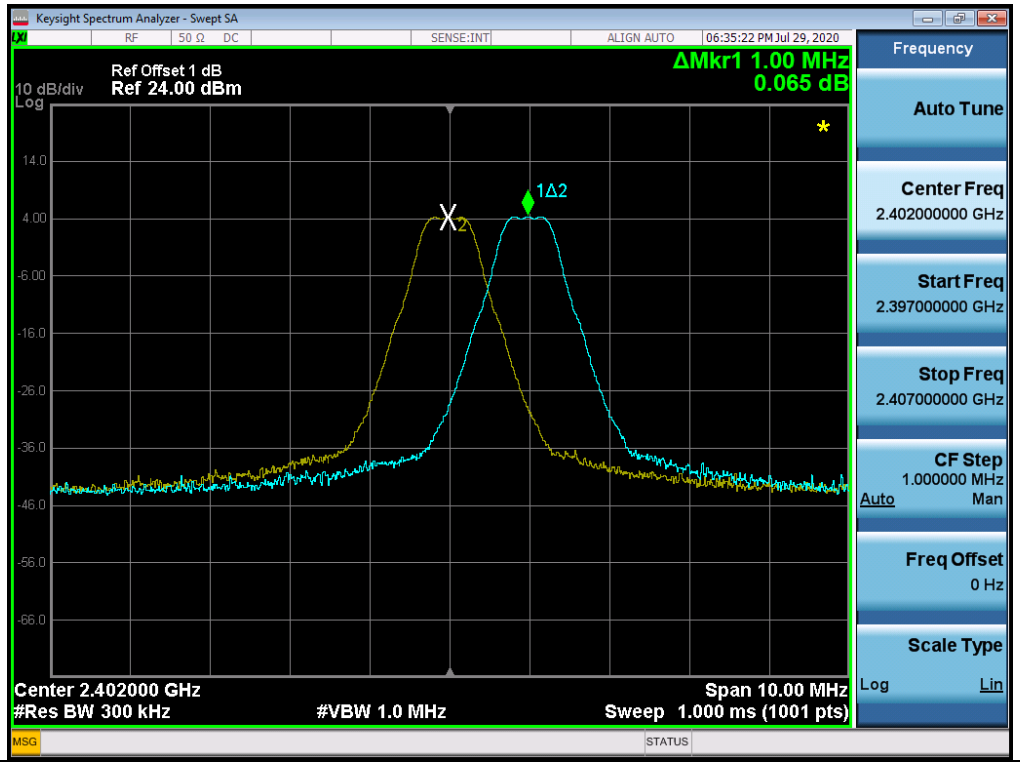
4.4.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		7.8	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.2	Carrier frequency separation

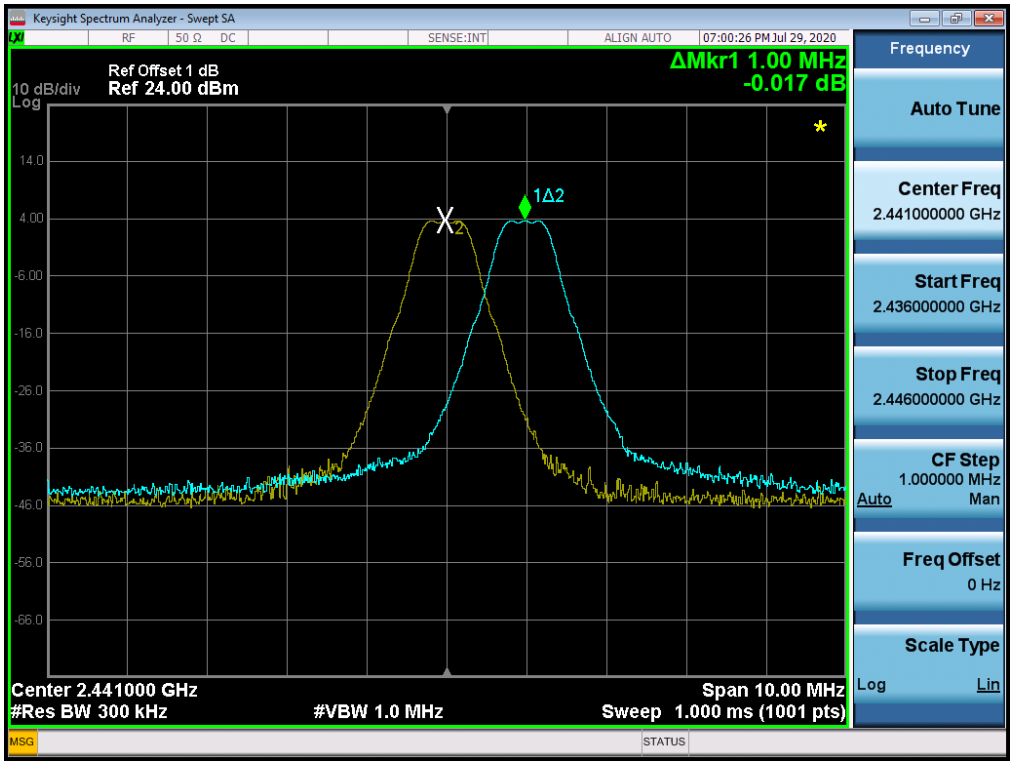
4.4.4 Test Data

Mode	Channel	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
1	00	2402	1000	615.87	Pass
	39	2441	1000	614.07	Pass
	78	2480	1000	610.67	Pass
2	00	2402	1000	964.00	Pass
	39	2441	1000	963.33	Pass
	78	2480	1000	960.67	Pass
3	00	2402	1000	948.67	Pass
	39	2441	1000	964.67	Pass
	78	2480	1000	948.67	Pass

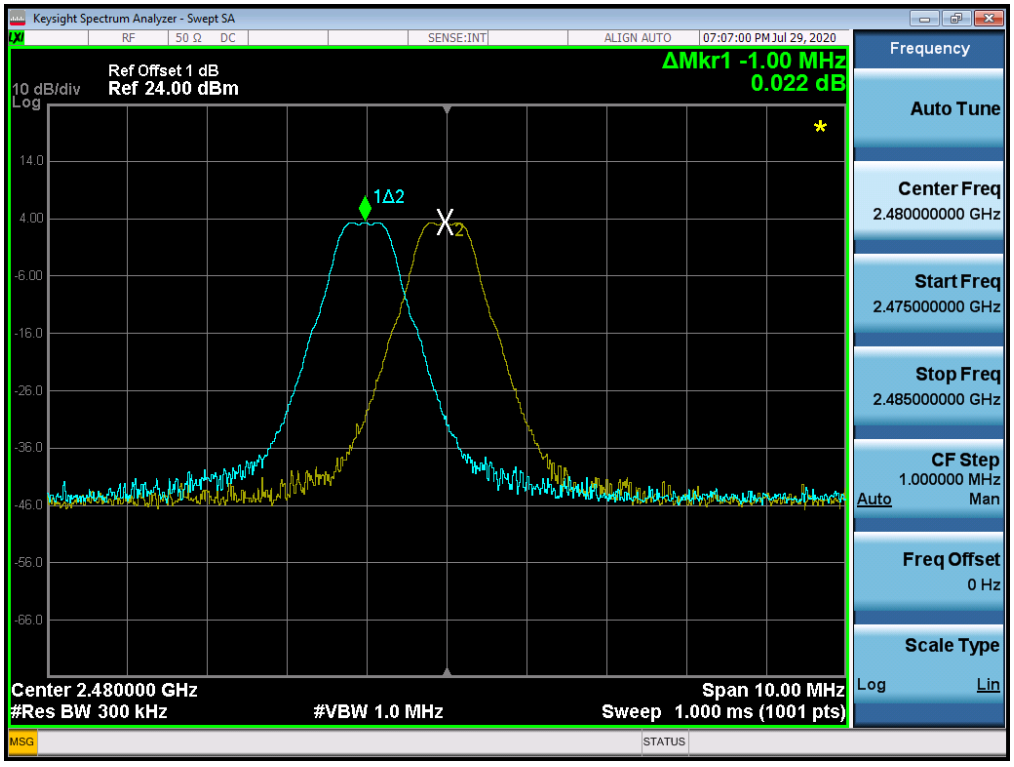
Mode 1 CH00(2402MHz)



Mode 1 CH39(2441MHz)

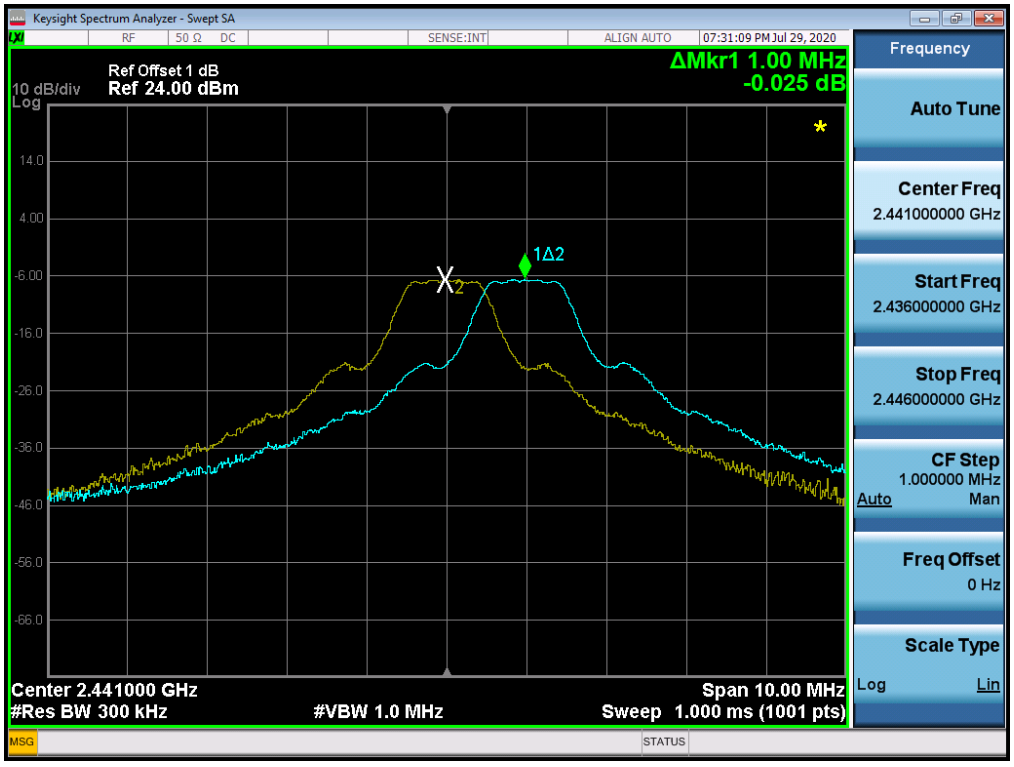


Mode 1 CH78(2480MHz)

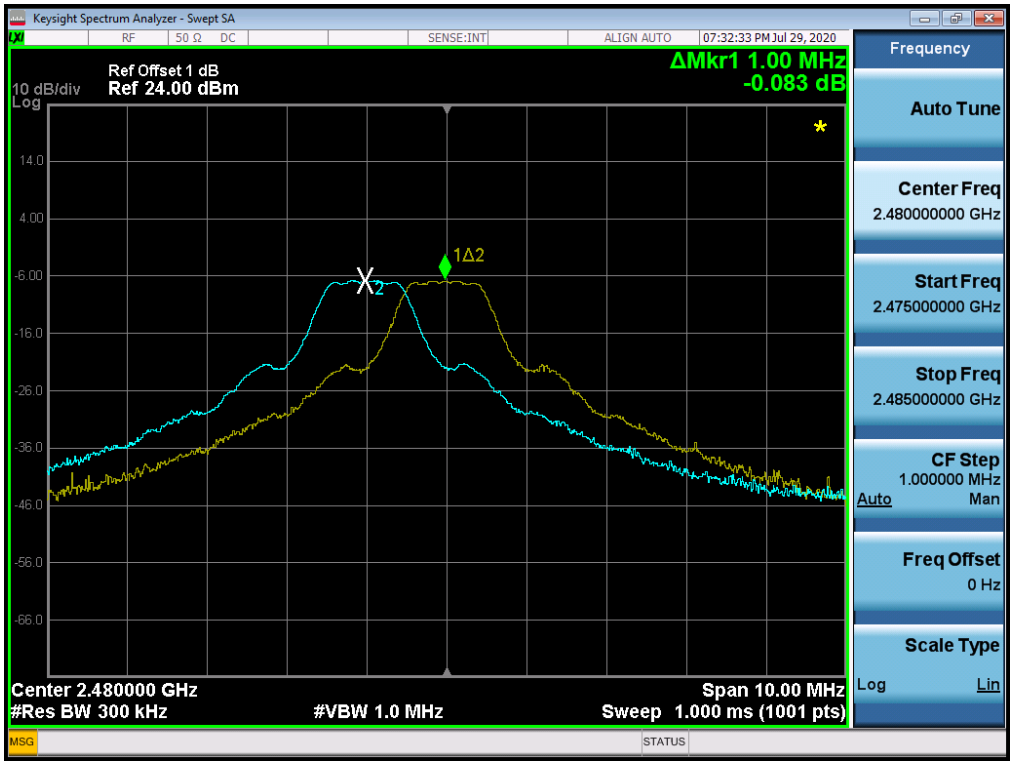


Mode 2 CH00(2402MHz)

Mode 2 CH39(2441MHz)



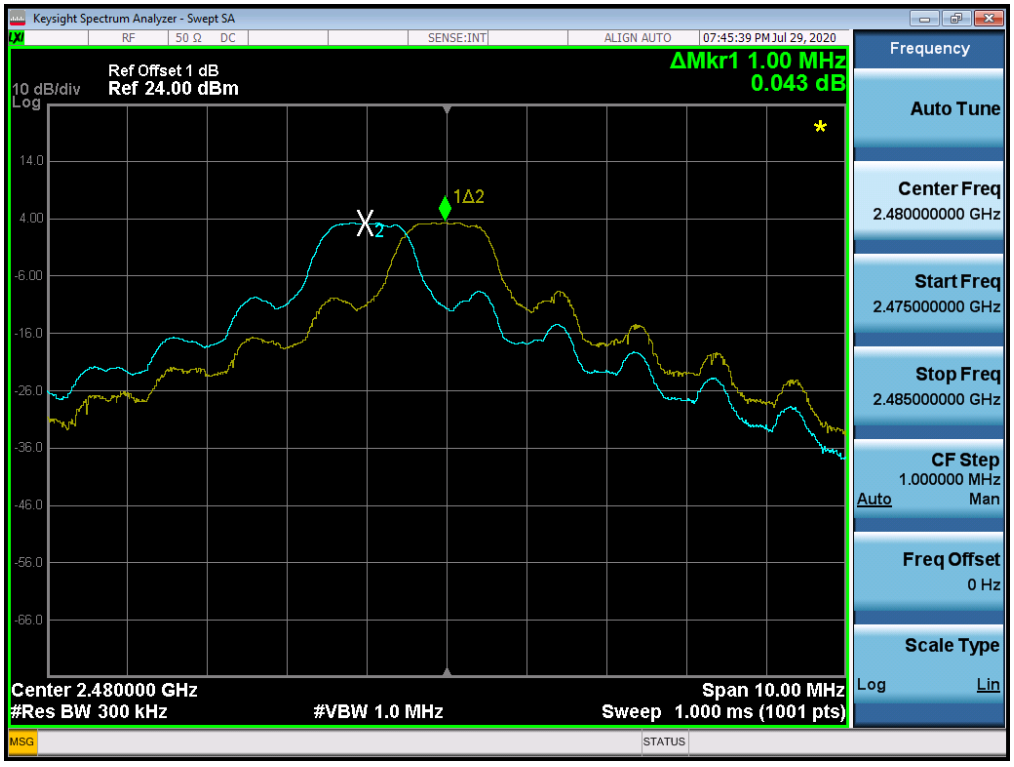
Mode 2 CH78(2480MHz)



Mode 3 CH00(2402MHz)

Mode 3 CH39(2441MHz)

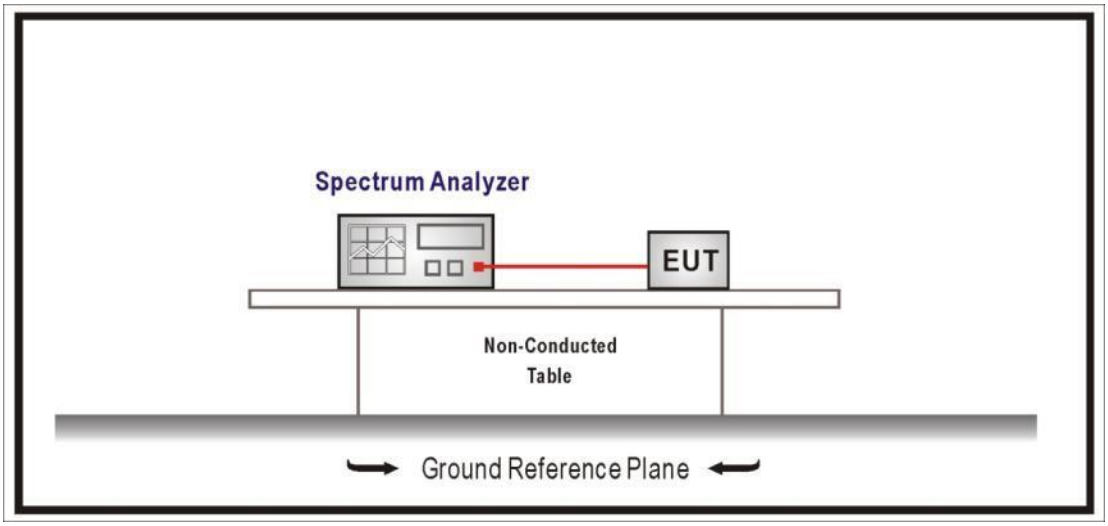
Mode 3 CH78(2480MHz)



4.5 Number of hopping Frequencies	VERDICT: PASS

4.5.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247(a)
☒	For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is less than 250 kHz, shall use at least 50 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is higher than 250 kHz, shall use at least 25 hopping frequencies.
☐	For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

4.5.2 Test Setup



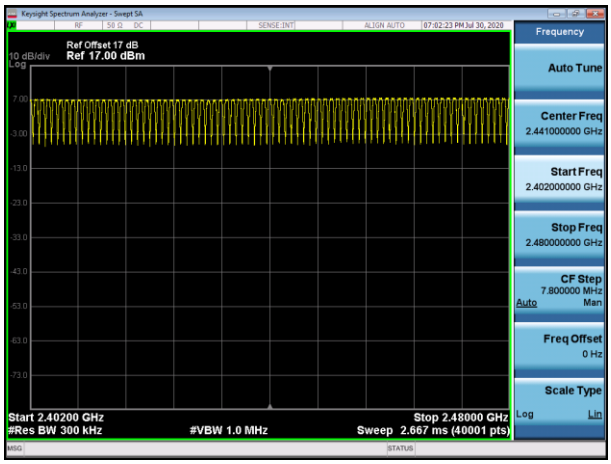
4.5.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		7.8.	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.3	Number of Hopping Frequencies

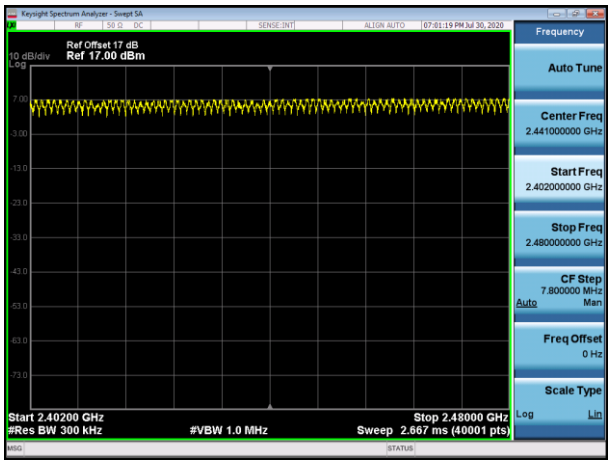
4.5.4 Test Data

Mode	Number of Hopping Frequencies	Limit	Result
4	79	>15	Pass
5	79	>15	Pass
6	79	>15	Pass

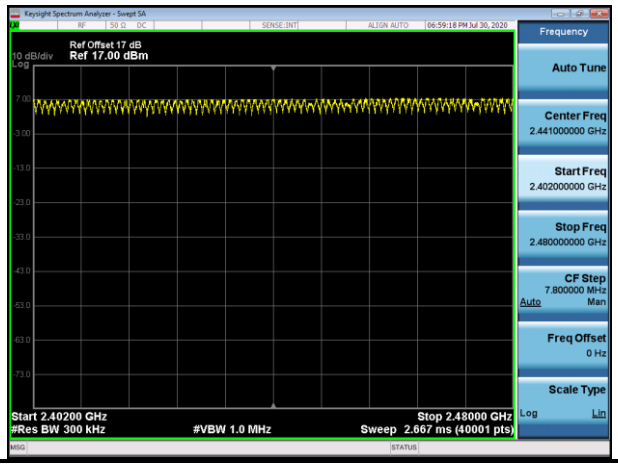
Mode 1



Mode 2



Mode 3

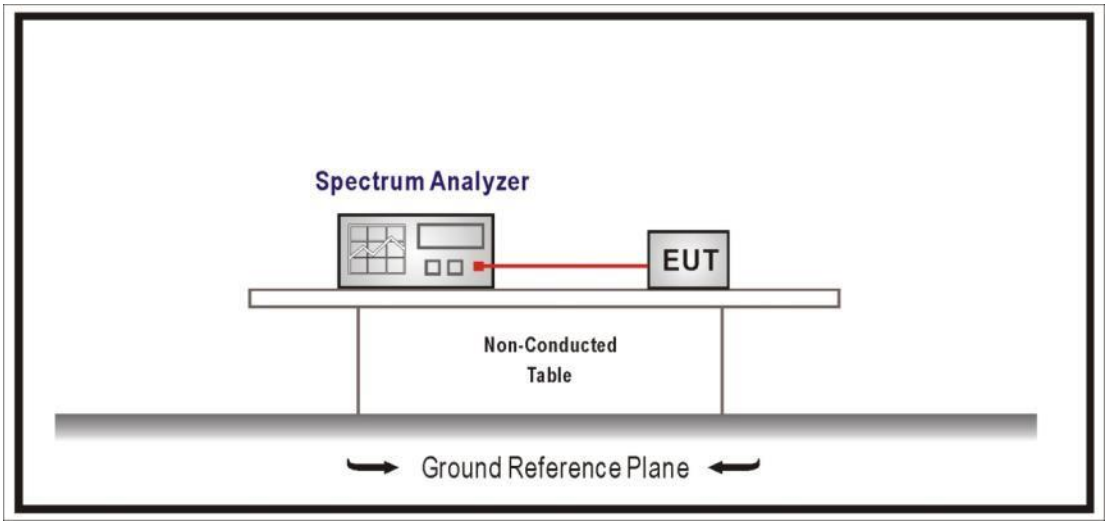


4.6 Time of Occupancy(Dwell Time)	VERDICT: PASS

4.6.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(a)
☒	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

4.6.2 Test Setup



4.6.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		7.8	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.4	Time of occupancy (dwell time)

4.6.4 Test Data

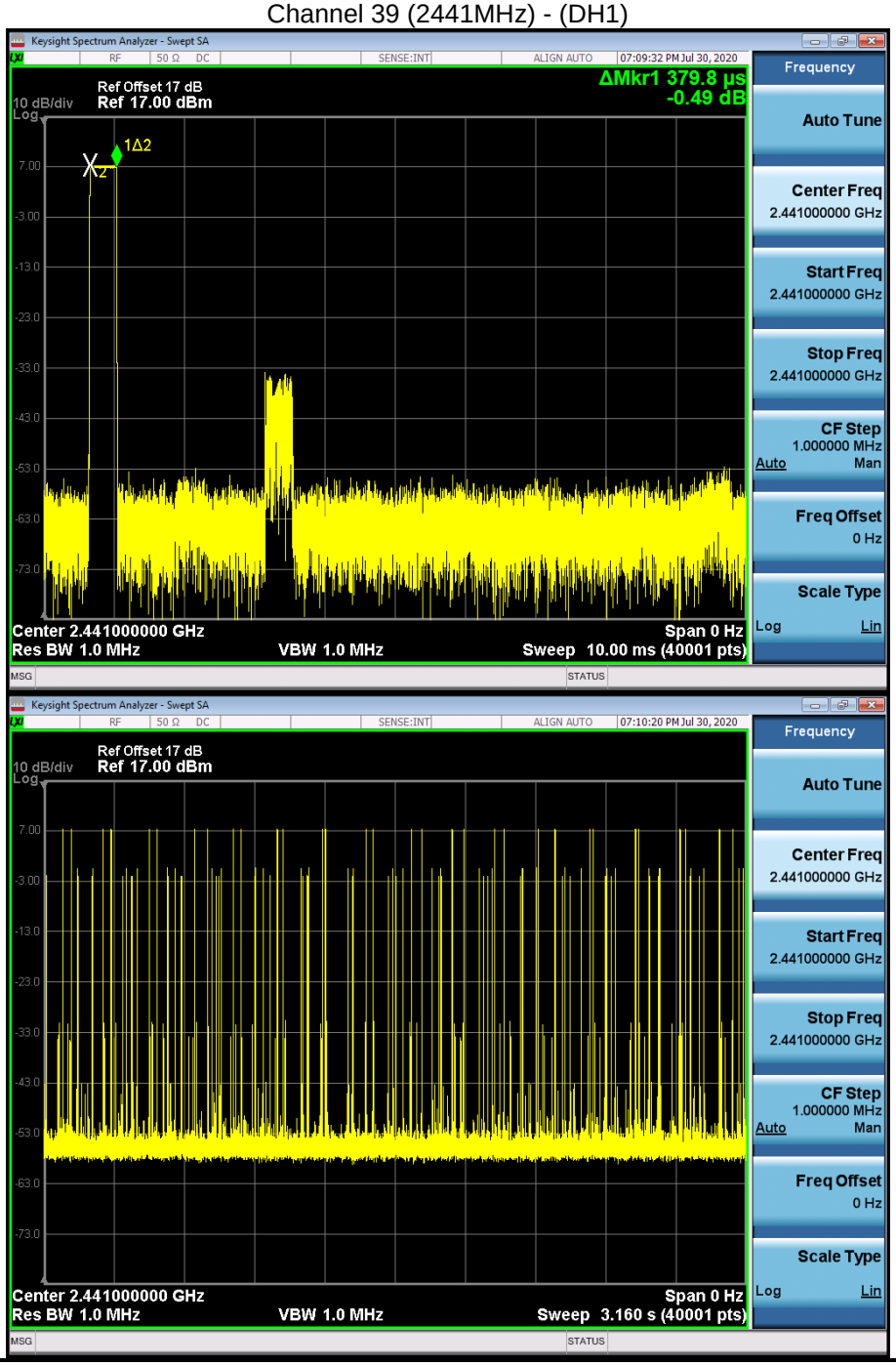
Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
4	39	2441	121.60	< 400	Pass

Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=0.380*32*31.6/3.16=121.60ms

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz) - (DH1)



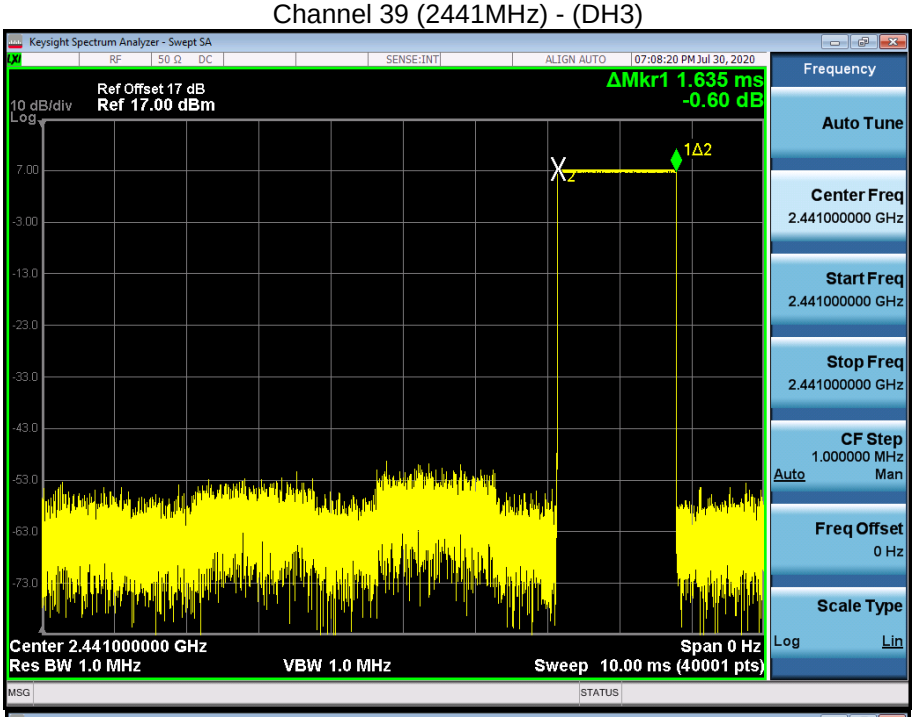
Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
1	39	2441	245.25	< 400	Pass

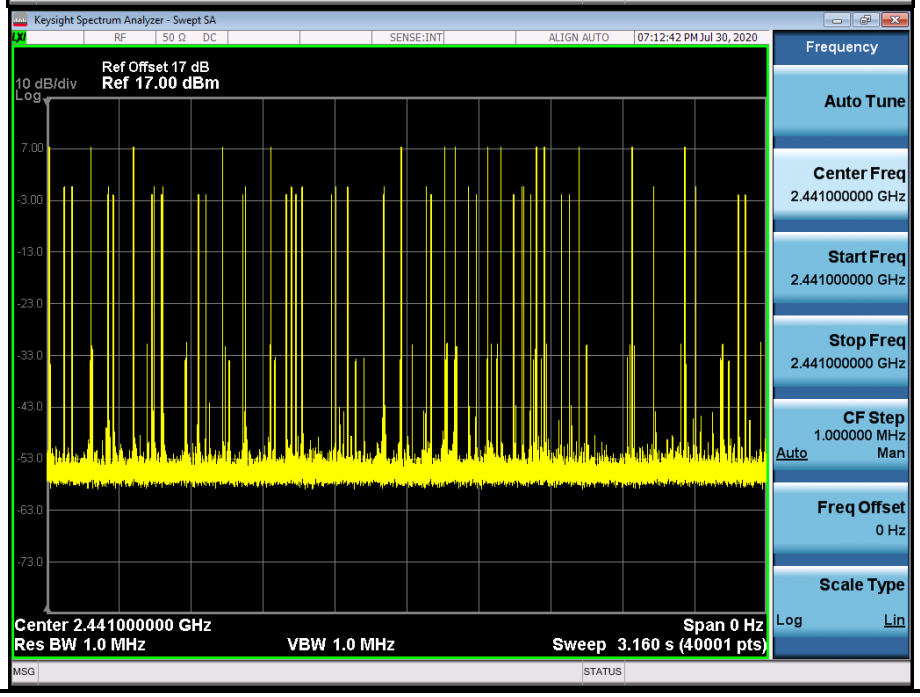
Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=1.635*15*31.6/3.16=245.25ms

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz) - (DH3)





Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
1	39	2441	314.93	< 400	Pass

Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=2.863*11*31.6/3.16=314.93ms

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz) - (DH5)

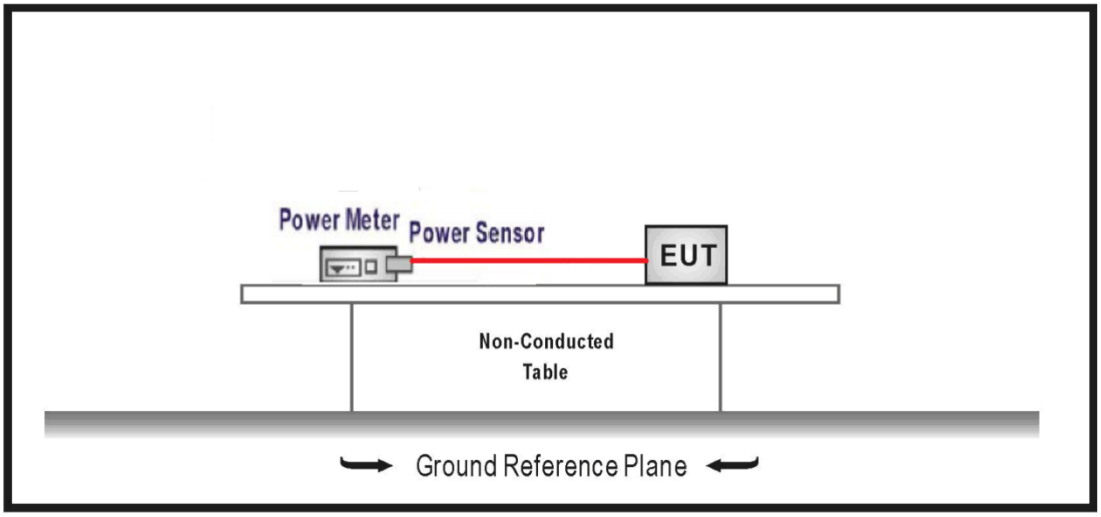
Note: The packet time of AFH mode is same as normal mode, due to the packet time of AFH mode multiply with lesser factor is dwell time of 0.4X20=8S, the dwell time of AFH mode comply with the limit.

4.7 Peak Output Power	VERDICT: PASS

4.7.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(1)
☐	Frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
☒	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
☐	For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels

4.7.2 Test Setup



4.7.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		7.8	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.5	Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices

4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Limit (dBm)	Result
Mode 1	00	2402	4.23	≤21	Pass
	39	2442	4.15	≤21	Pass
	78	2480	4.17	≤21	Pass
Mode 2	00	2402	3.56	≤21	Pass
	39	2442	3.49	≤21	Pass
	78	2480	3.51	≤21	Pass
Mode 3	00	2402	3.63	≤21	Pass
	39	2442	3.56	≤21	Pass
	78	2480	3.59	≤21	Pass

4.8 Emissions in non-restricted frequency band	VERDICT: PASS

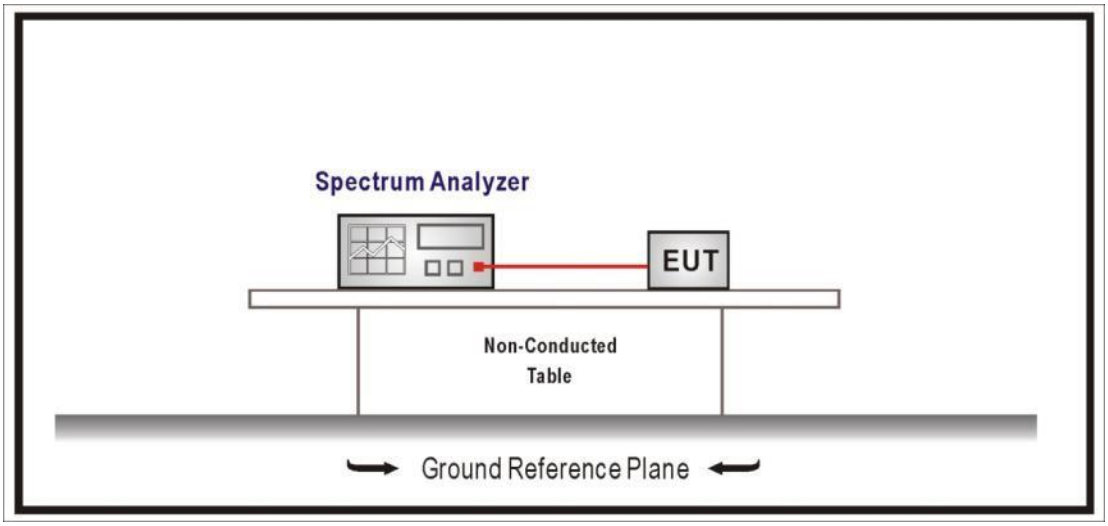
4.8.1 Limit

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).

4.8.2 Test Setup



4.8.3 Test Procedure

References Rule			Chapter	Description
☒	ANSI C63.10		7.8	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.6	Band-edge measurements for RF conducted emissions

4.8.4 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	00	2402	4.207	2400	-49.998	54.205	>20	Pass
	78	2480	3.193	2576.149	-32.456	35.649	>20	Pass
2	00	2402	4.168	2400	-23.681	27.849	>20	Pass
	78	2480	2.974	2576.149	-34.668	37.642	>20	Pass
3	00	2402	4.131	2400	-21.870	26.001	>20	Pass
	78	2480	3.174	2575.875	-34.222	37.396	>20	Pass

Note: The worst data as shown in below:

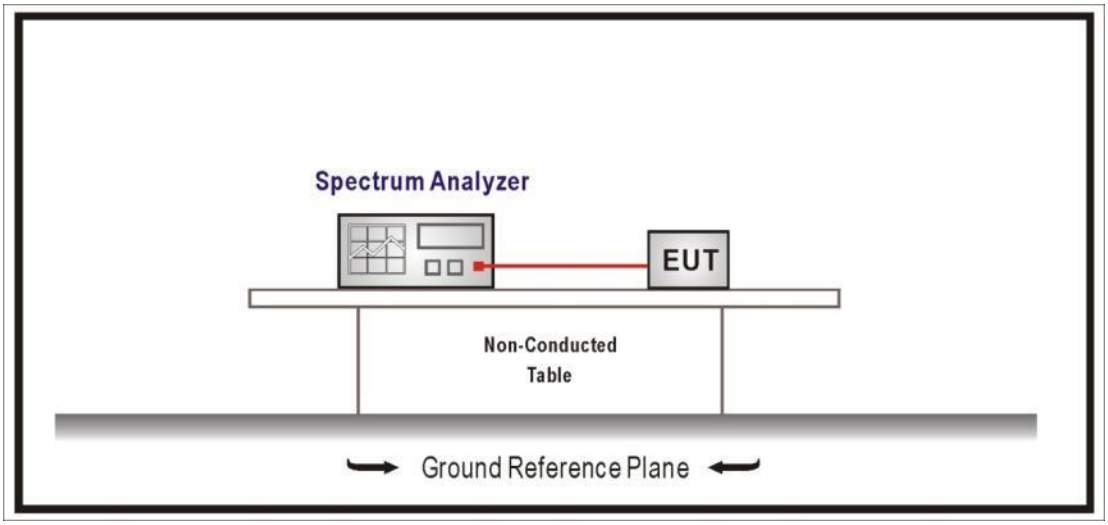
Mode 3 CH00(2402MHz)

4.9 Duty cycle	VERDICT: PASS

4.9.1 Limit

N/A

4.9.2 Test Setup



4.9.3 Test Procedure

References Rule		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

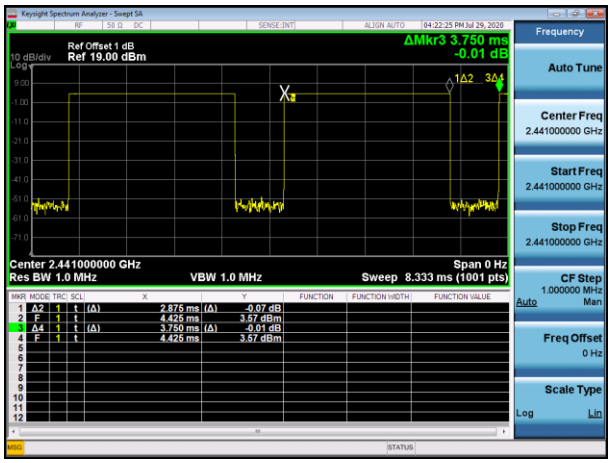
4.9.4 Test Data

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
Mode 1	2.875	0.875	0.350	3.750	76.67%
Mode 2	2.880	0.870	0.350	3.750	76.80%
Mode 3	2.880	0.870	0.350	3.750	76.80%

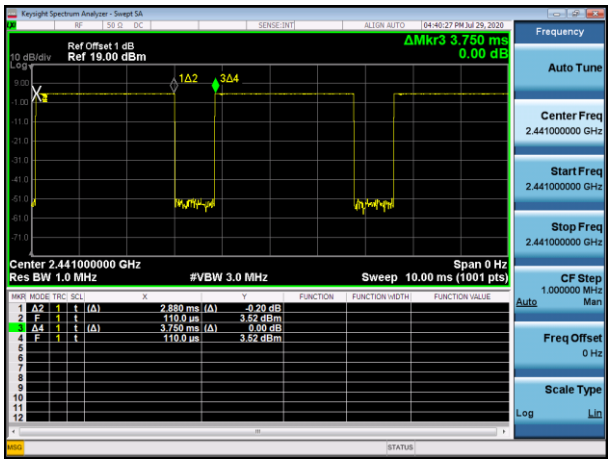
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

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.

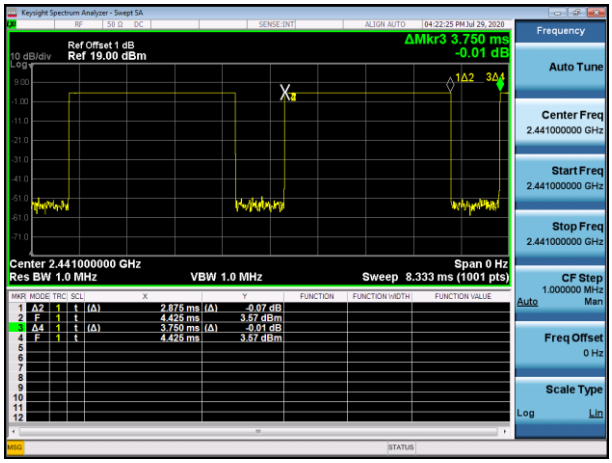
Mode 1 CH39 2441MHz



Mode 2 CH39 2441MHz



Mode 3 CH39 2441MHz



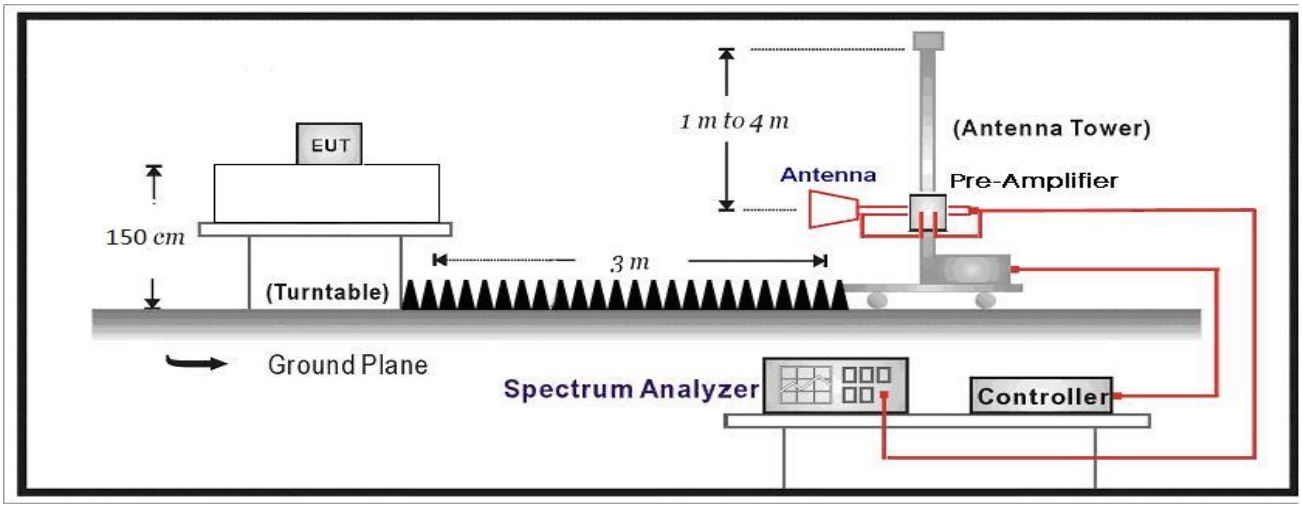
4.10 Radiated Emission Band Edge	VERDICT: PASS

4.10.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d) , 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.				

4.10.2 Test Setup

Above 1GHz Test Setup:



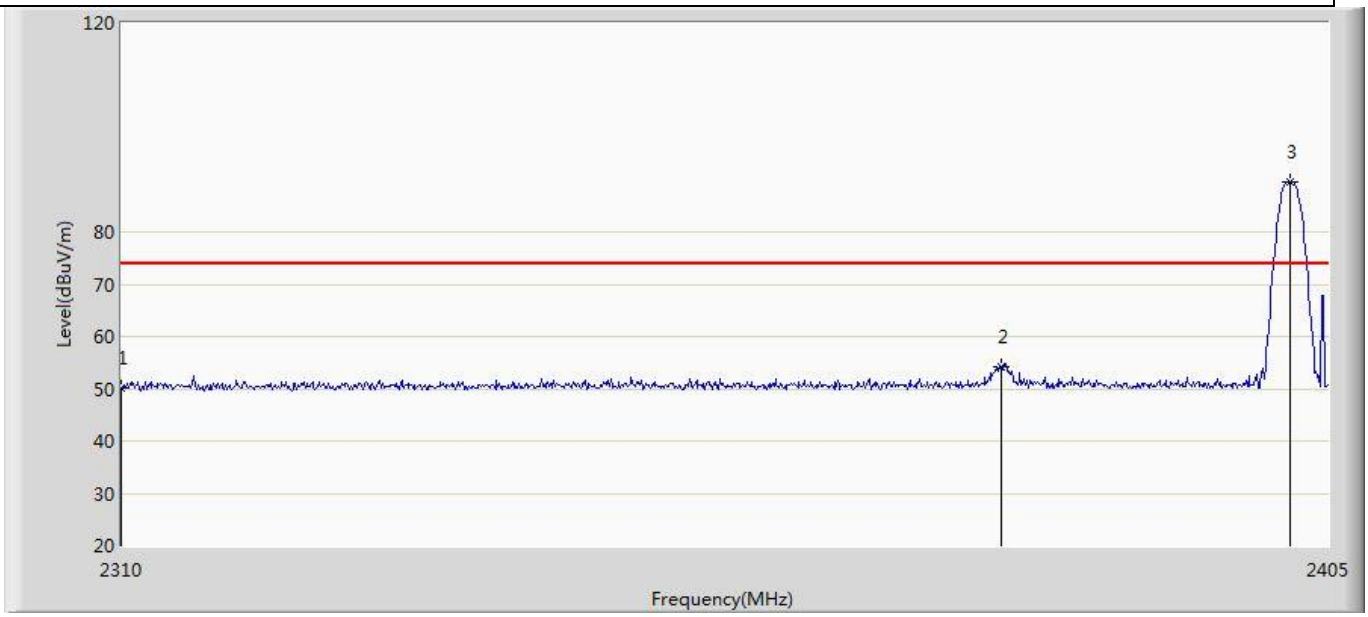
4.10.3 Test Procedure

Test Method

	References Rule		Chapter	Description
☐	DA 00-705		N/A	duty cycle correction factor
☒	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		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

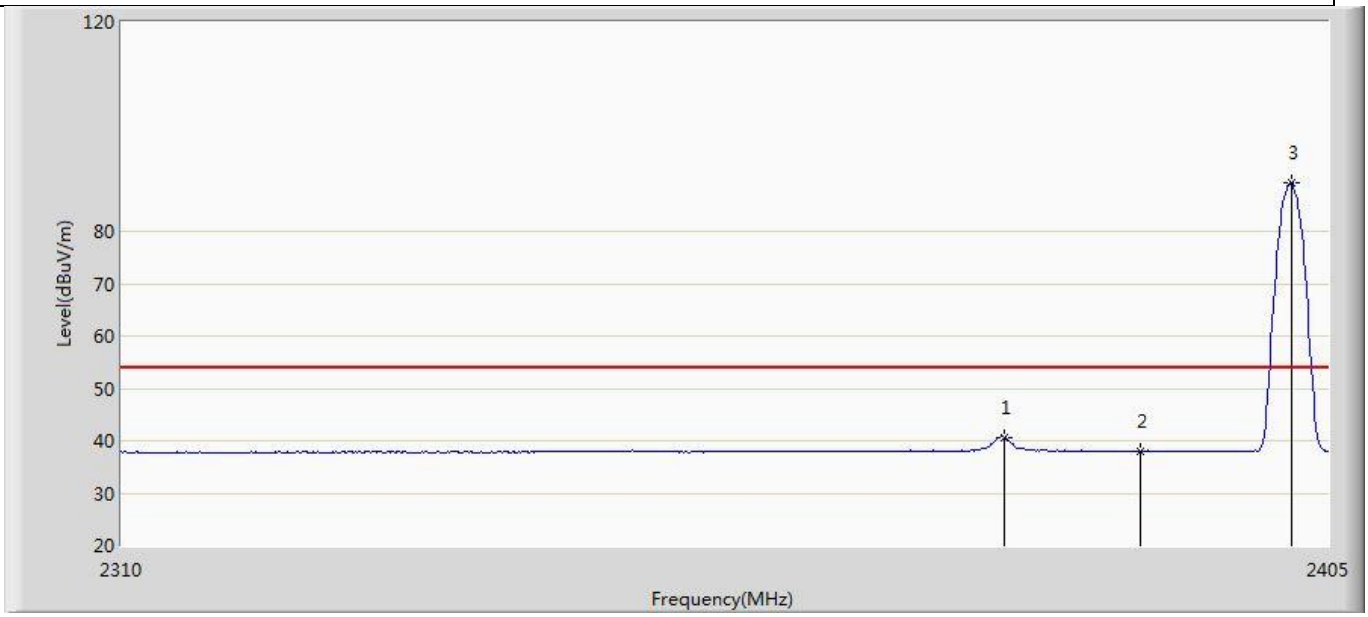
4.10.4 Test Data

Profile: 2070338R	Page No.: 1
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 20:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



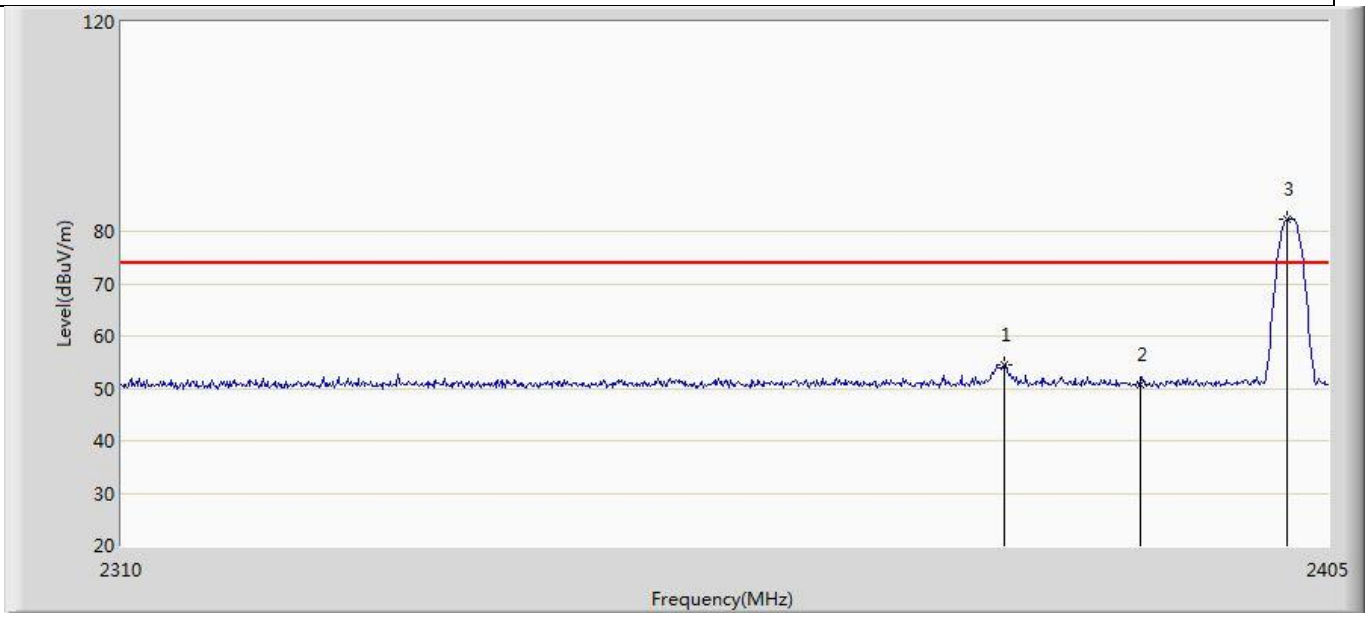
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	50.155	14.838	-23.845	74.000	35.317	PK
2		2378.875	54.275	18.964	-19.725	74.000	35.310	PK
3	*	2401.960	89.601	54.289	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 2
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 20:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



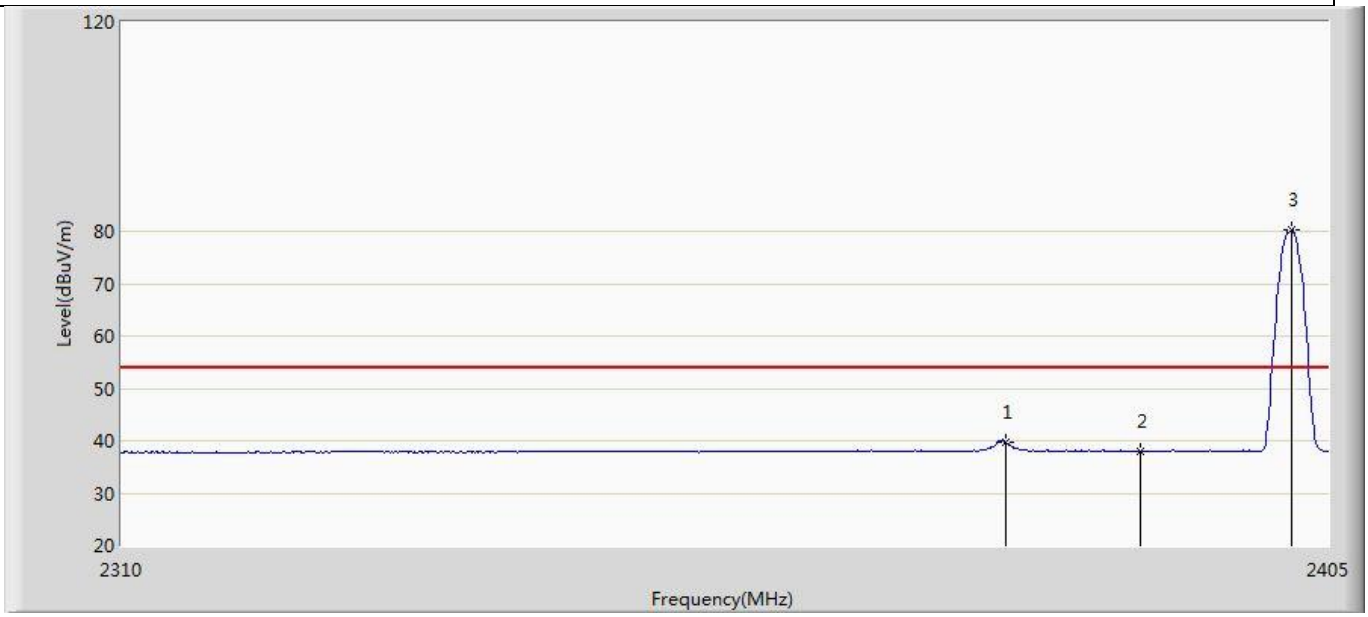
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.160	40.689	5.378	-13.311	54.000	35.311	AV
2		2390.000	37.994	2.679	-16.006	54.000	35.315	AV
3	*	2402.055	89.234	53.922	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 3
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



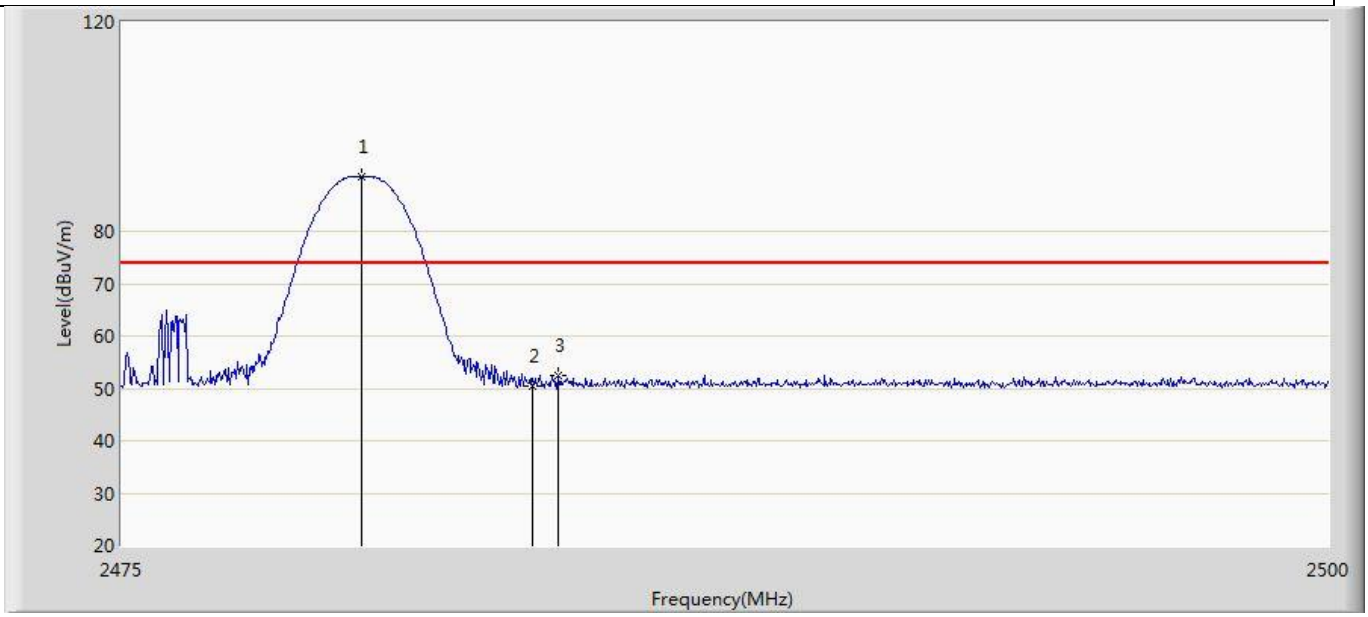
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.160	54.552	19.241	-19.448	74.000	35.311	PK
2		2390.000	50.838	15.523	-23.162	74.000	35.315	PK
3	*	2401.770	82.450	47.137	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 4
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2402MHz by DH5	



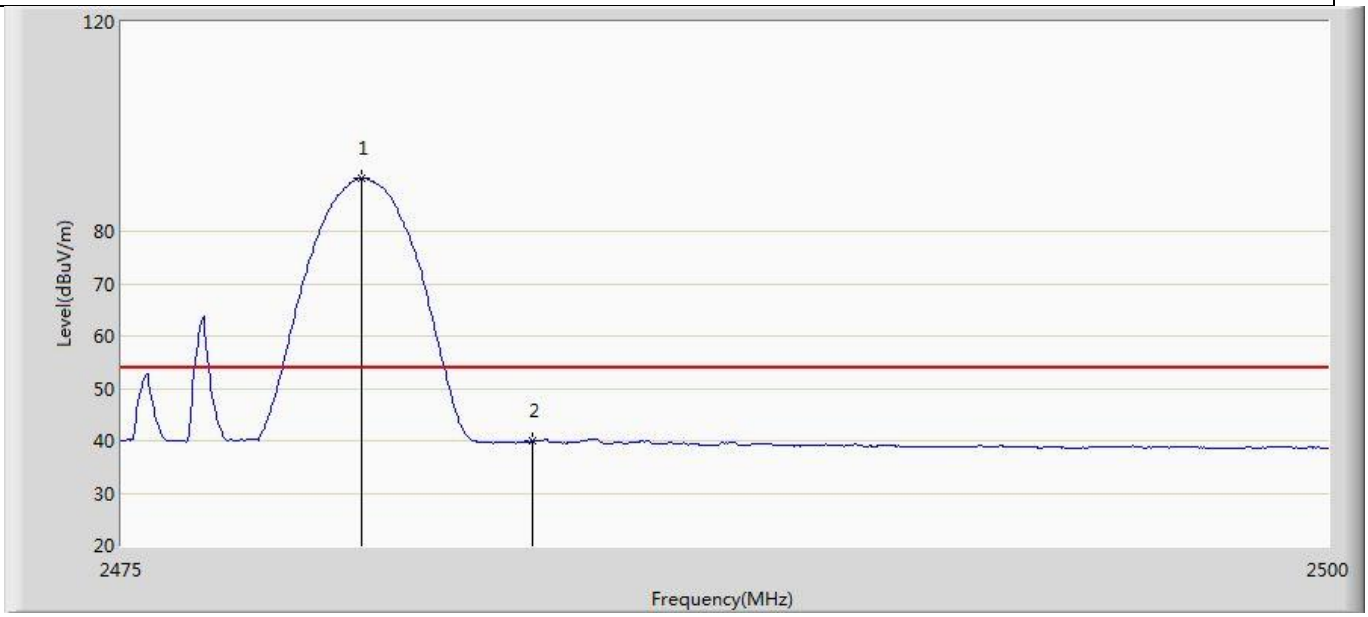
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.255	39.759	4.448	-14.241	54.000	35.311	AV
2		2390.000	37.970	2.655	-16.030	54.000	35.315	AV
3	*	2402.055	80.187	44.875	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 5
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



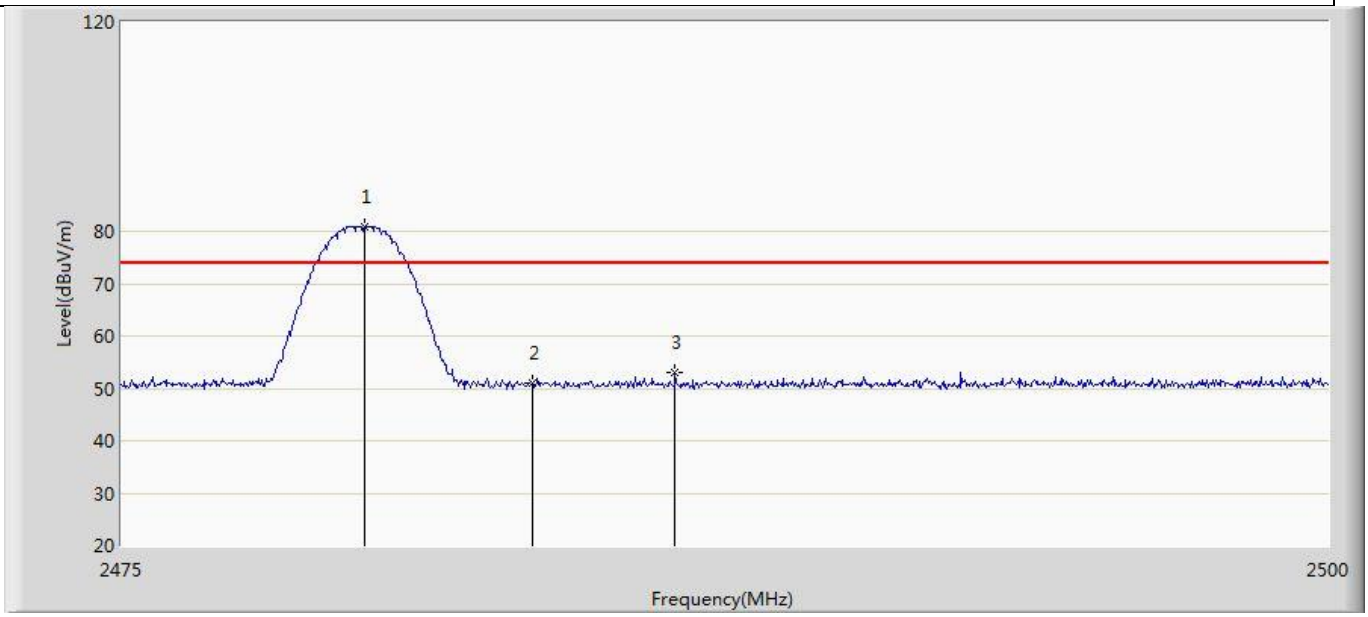
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.950	90.432	55.133	N/A	N/A	35.299	PK
2		2483.500	50.577	15.279	-23.423	74.000	35.297	PK
3		2484.025	52.494	17.197	-21.506	74.000	35.297	PK

Profile: 2070338R	Page No.: 6
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



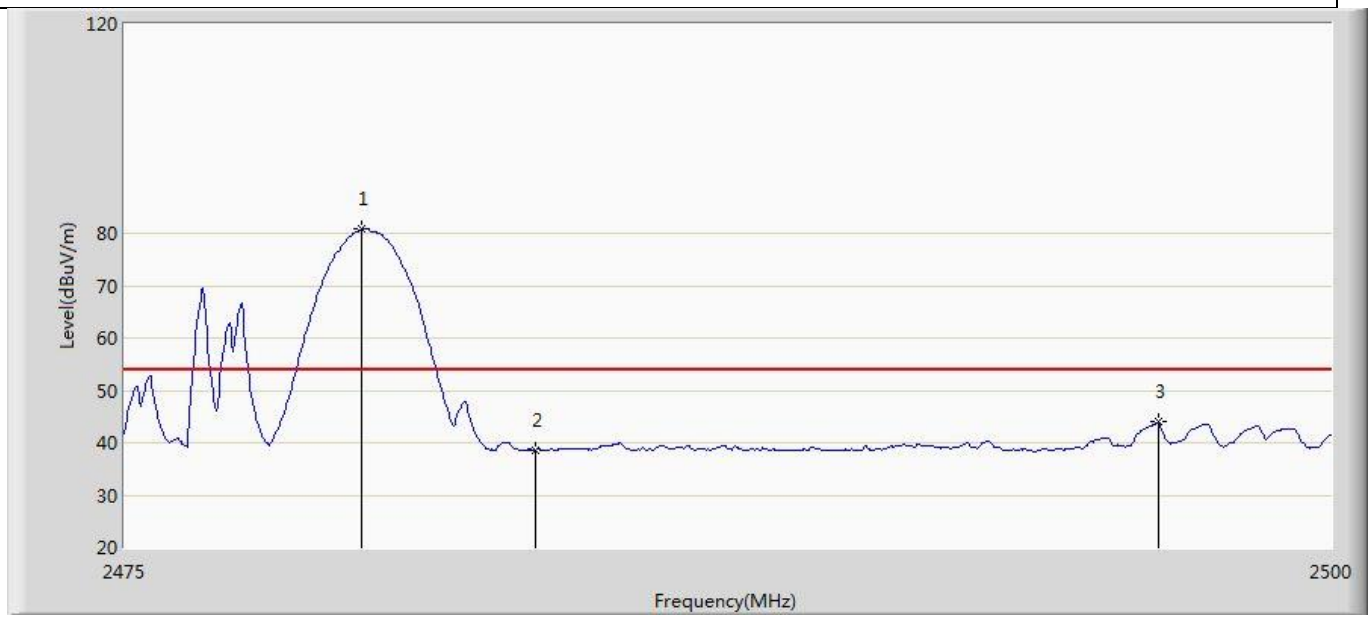
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.950	90.142	54.843	N/A	N/A	35.299	AV
2		2483.500	39.915	4.617	-14.085	54.000	35.297	AV

Profile: 2070338R	Page No.: 7
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



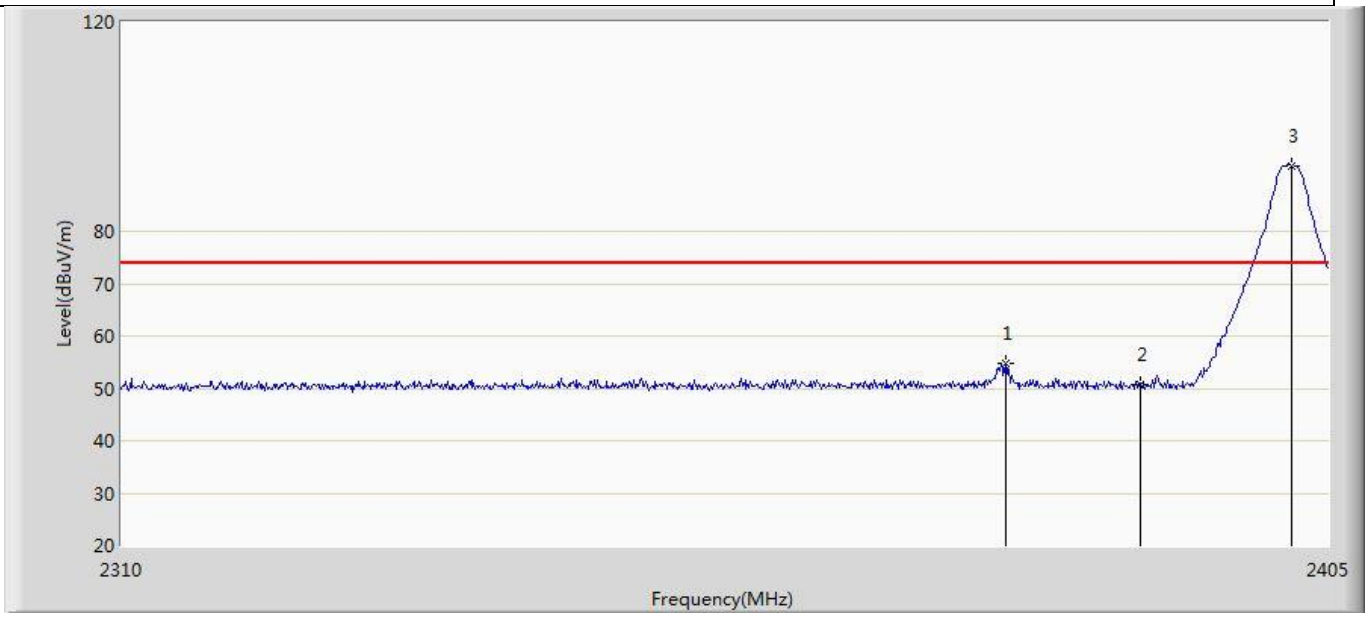
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.025	80.953	45.654	N/A	N/A	35.299	PK
2		2483.500	50.874	15.576	-23.126	74.000	35.297	PK
3		2486.450	53.122	17.825	-20.878	74.000	35.296	PK

Profile: 2070338R	Page No.: 8
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode1:Transmit at 2480MHz by DH5	



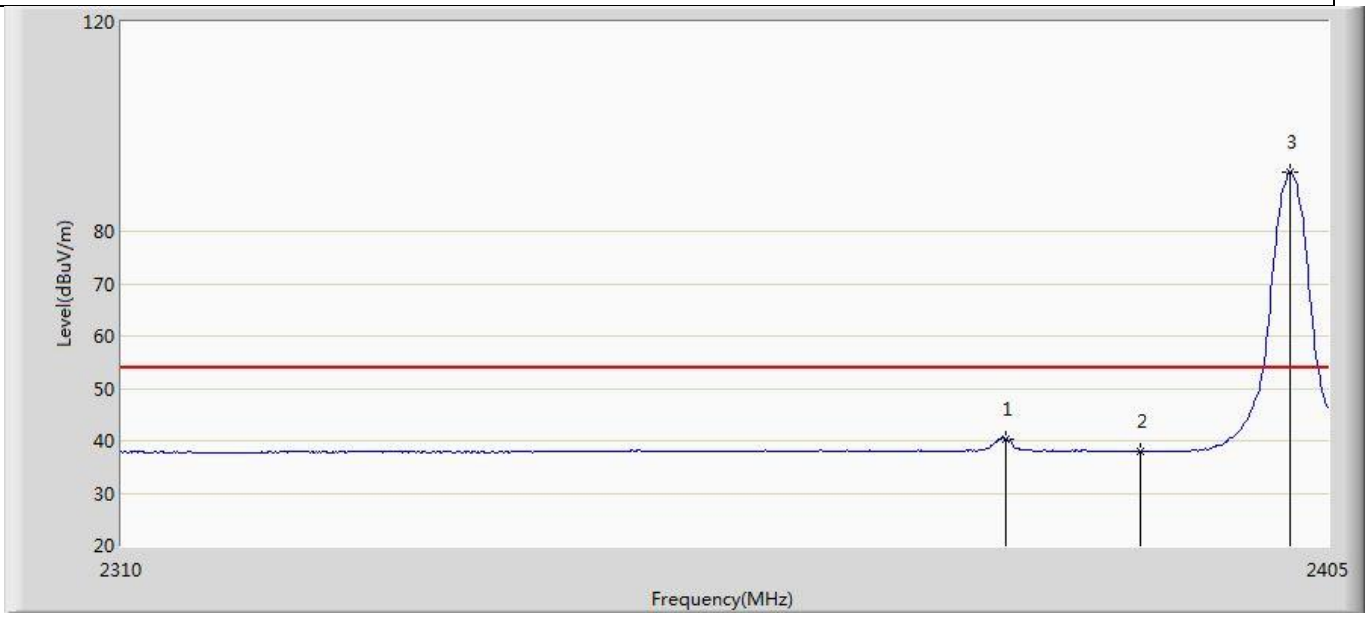
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.900	80.762	45.463	N/A	N/A	35.299	AV
2		2483.500	38.683	3.385	-15.317	54.000	35.297	AV
3		2496.425	43.947	8.653	-10.053	54.000	35.294	AV

Profile: 2070338R	Page No.: 9
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



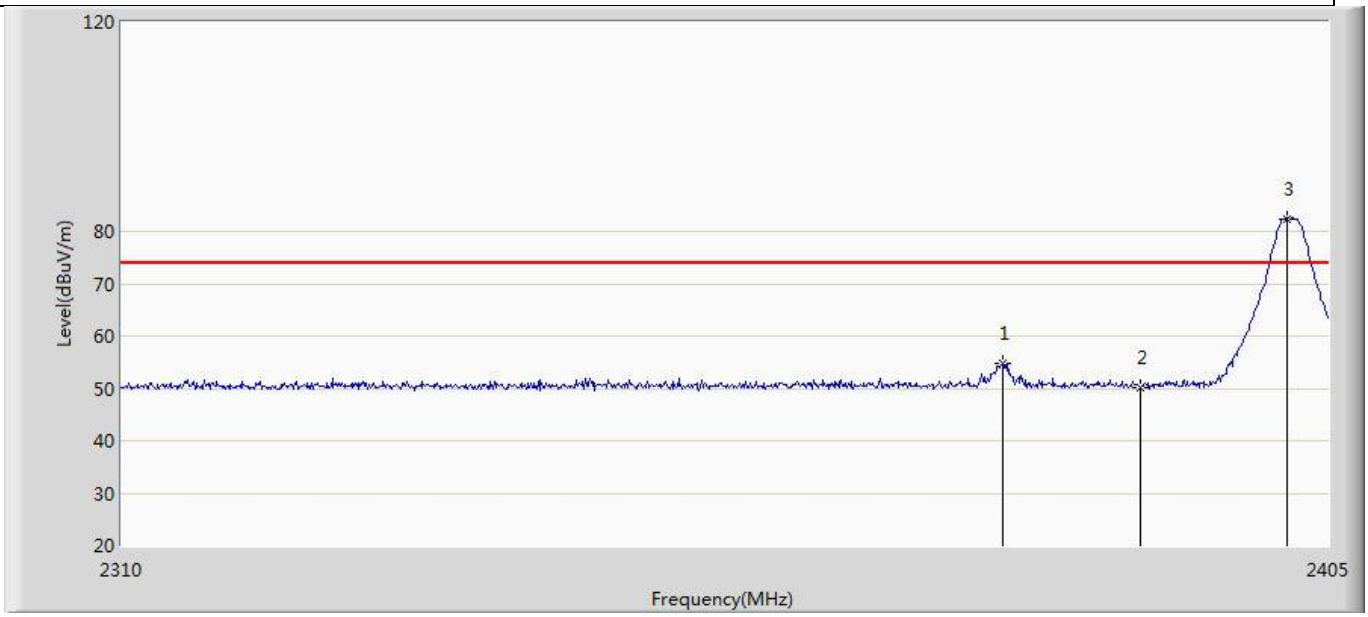
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.255	54.794	19.483	-19.206	74.000	35.311	PK
2		2390.000	50.846	15.531	-23.154	74.000	35.315	PK
3	*	2402.055	92.542	57.230	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 10
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



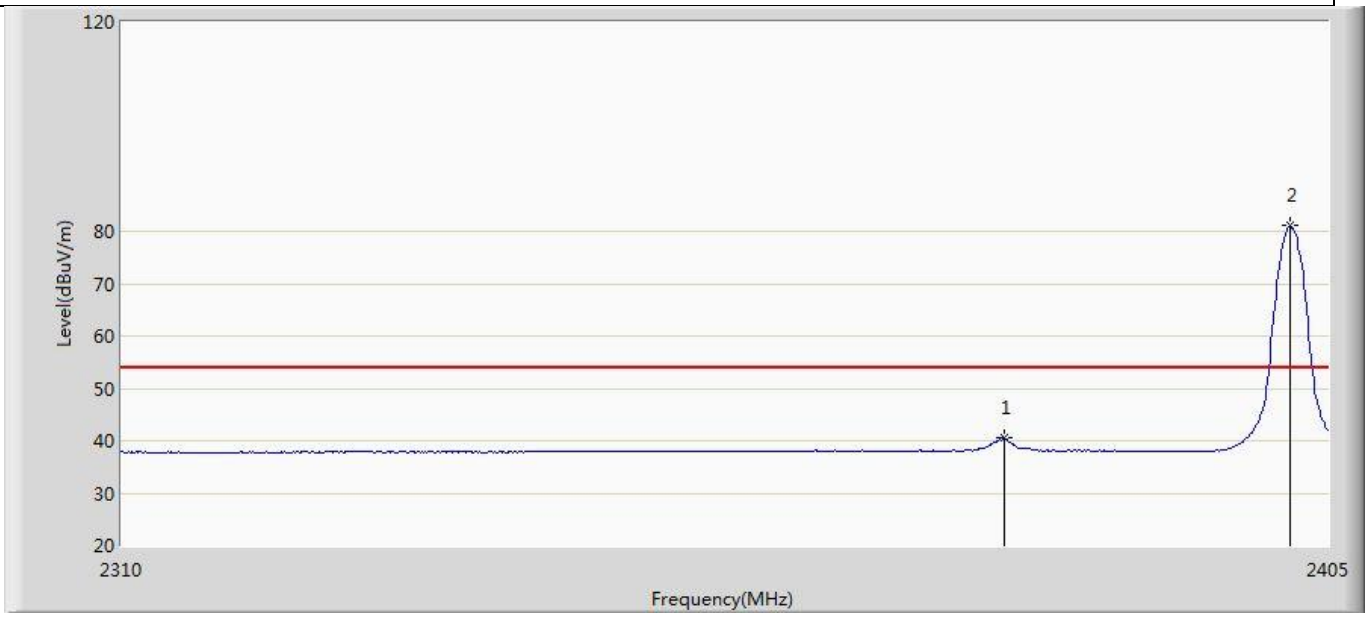
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.255	40.381	5.070	-13.619	54.000	35.311	AV
2		2390.000	38.031	2.716	-15.969	54.000	35.315	AV
3	*	2401.960	91.330	56.018	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 11
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



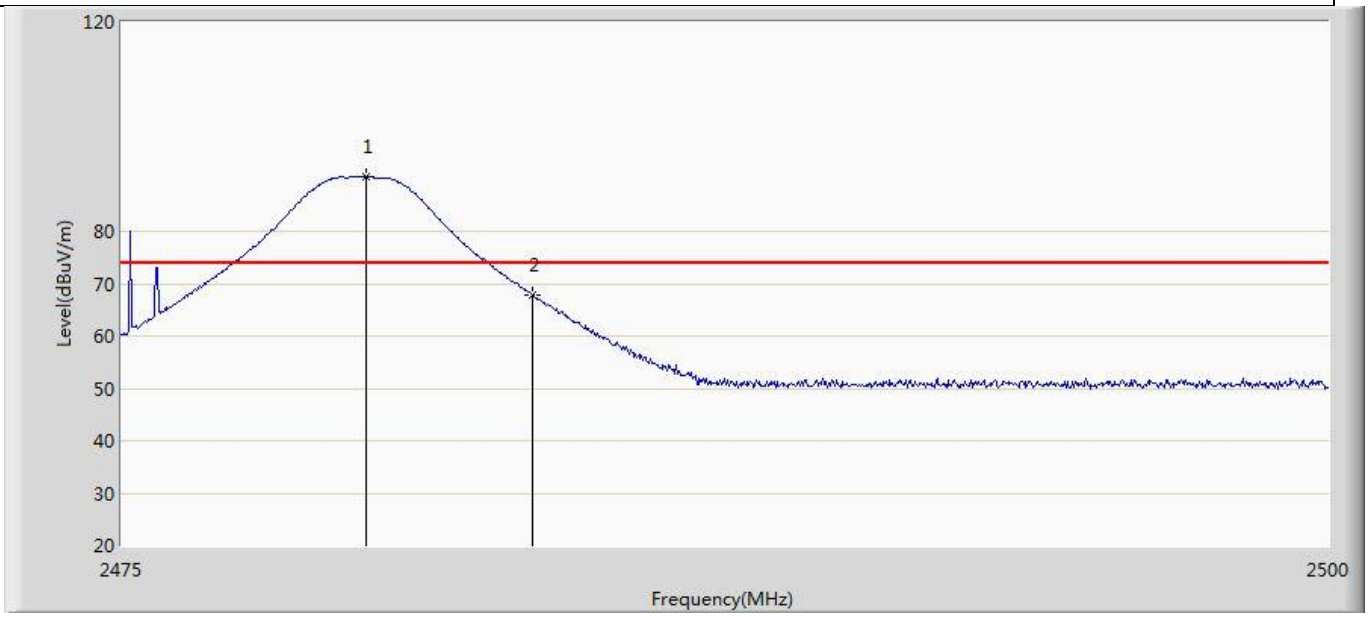
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2378.970	54.895	19.584	-19.105	74.000	35.311	PK
2		2390.000	50.261	14.946	-23.739	74.000	35.315	PK
3	*	2401.675	82.375	47.062	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 12
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2402MHz by 2DH5	



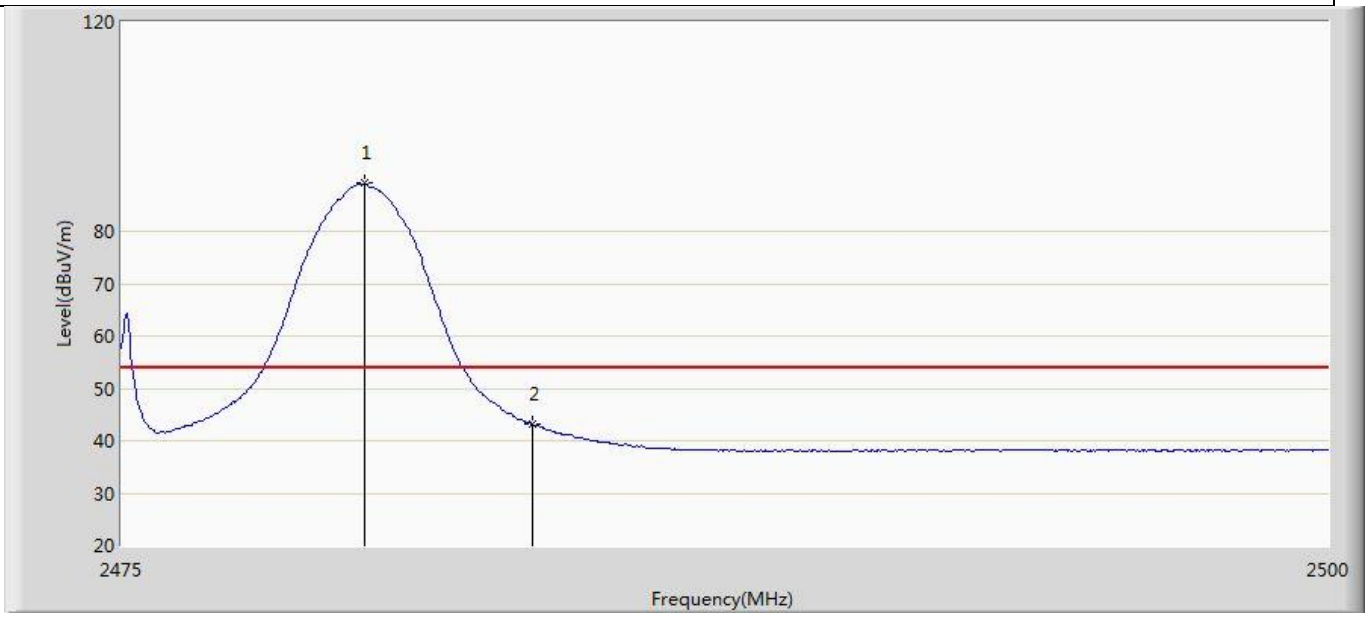
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.160	40.505	5.194	-13.495	54.000	35.311	AV
2	*	2401.960	81.153	45.841	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 13
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



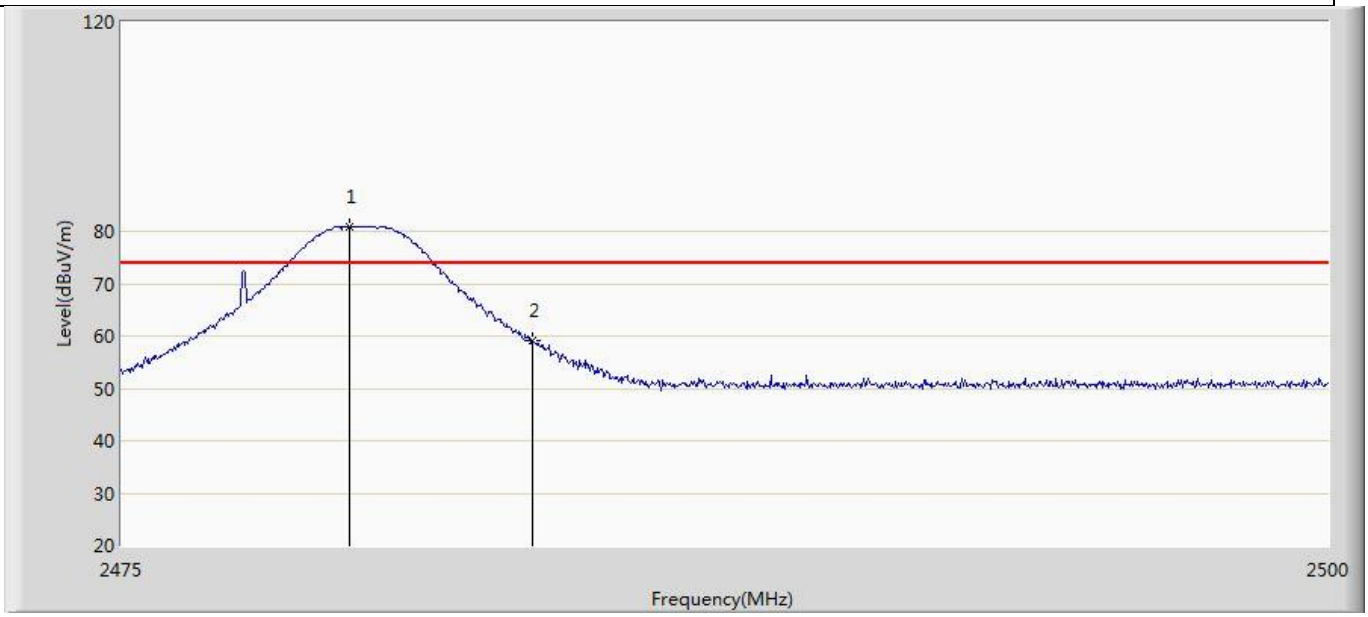
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.050	90.375	55.076	N/A	N/A	35.299	PK
2		2483.500	67.727	32.429	-6.273	74.000	35.297	PK

Profile: 2070338R	Page No.: 14
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



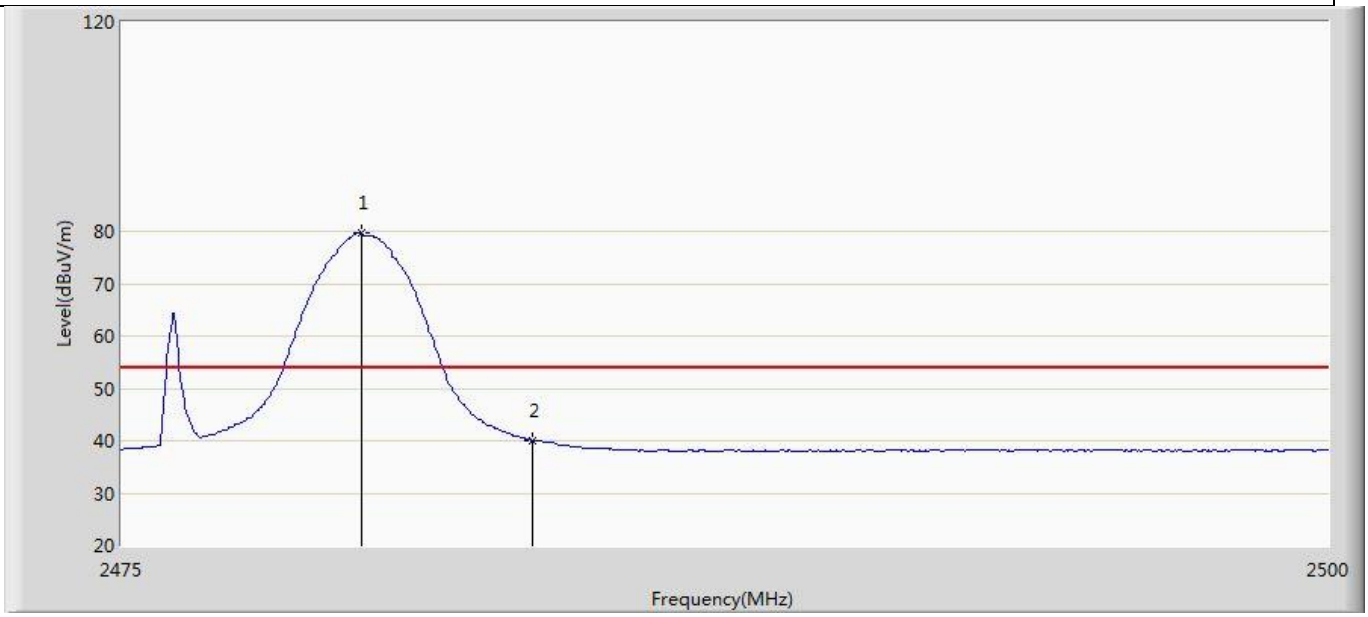
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.025	89.137	53.838	N/A	N/A	35.299	AV
2		2483.500	43.065	7.767	-10.935	54.000	35.297	AV

Profile: 2070338R	Page No.: 15
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



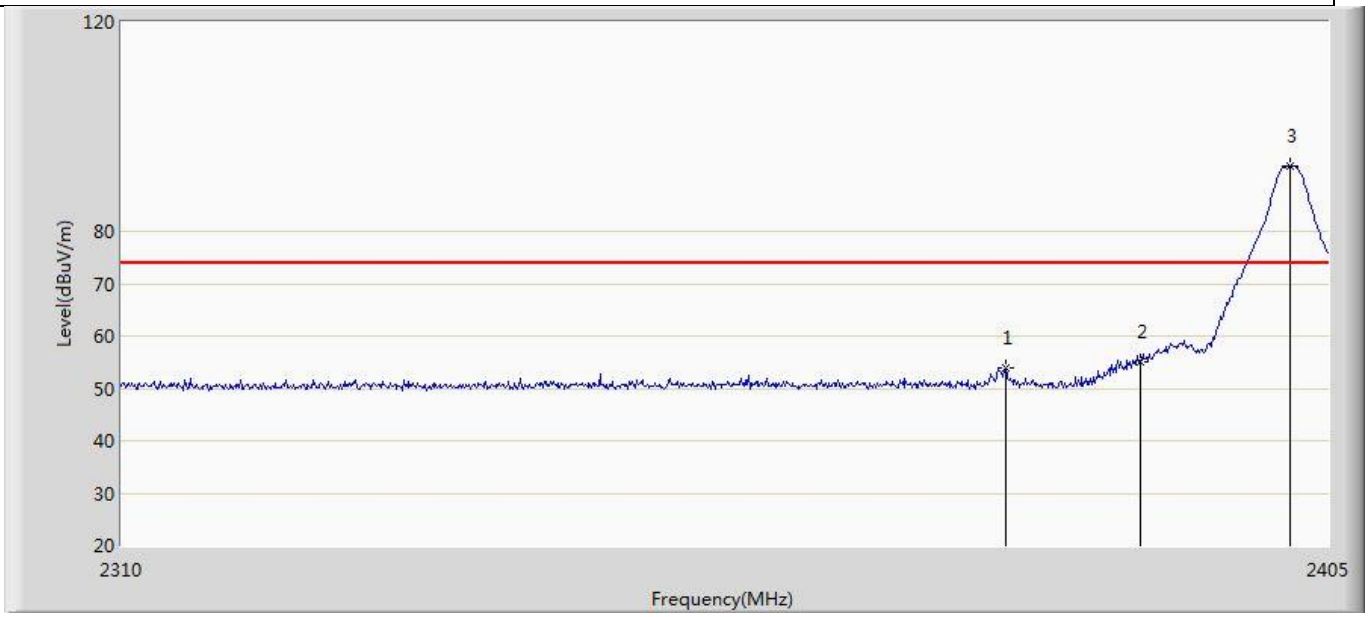
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.700	80.891	45.592	N/A	N/A	35.299	PK
2		2483.500	59.104	23.806	-14.896	74.000	35.297	PK

Profile: 2070338R	Page No.: 16
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode2:Transmit at 2480MHz by 2DH5	



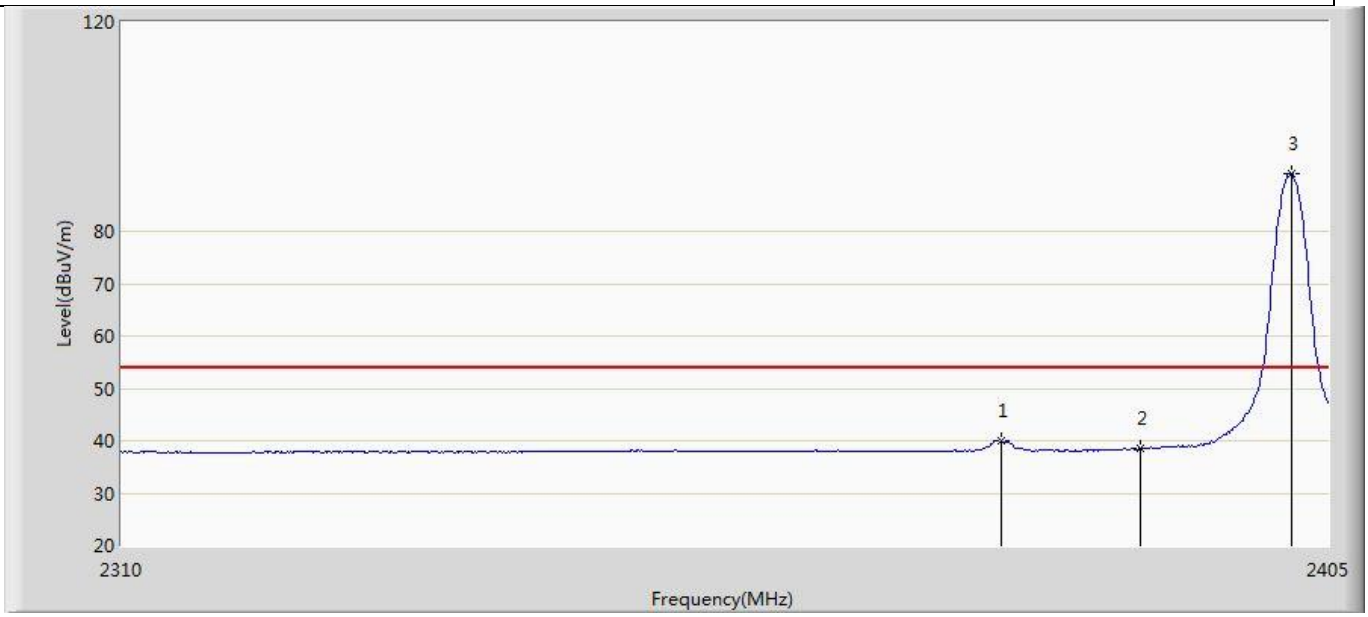
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.975	79.755	44.456	N/A	N/A	35.299	AV
2		2483.500	40.017	4.719	-13.983	54.000	35.297	AV

Profile: 2070338R	Page No.: 17
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



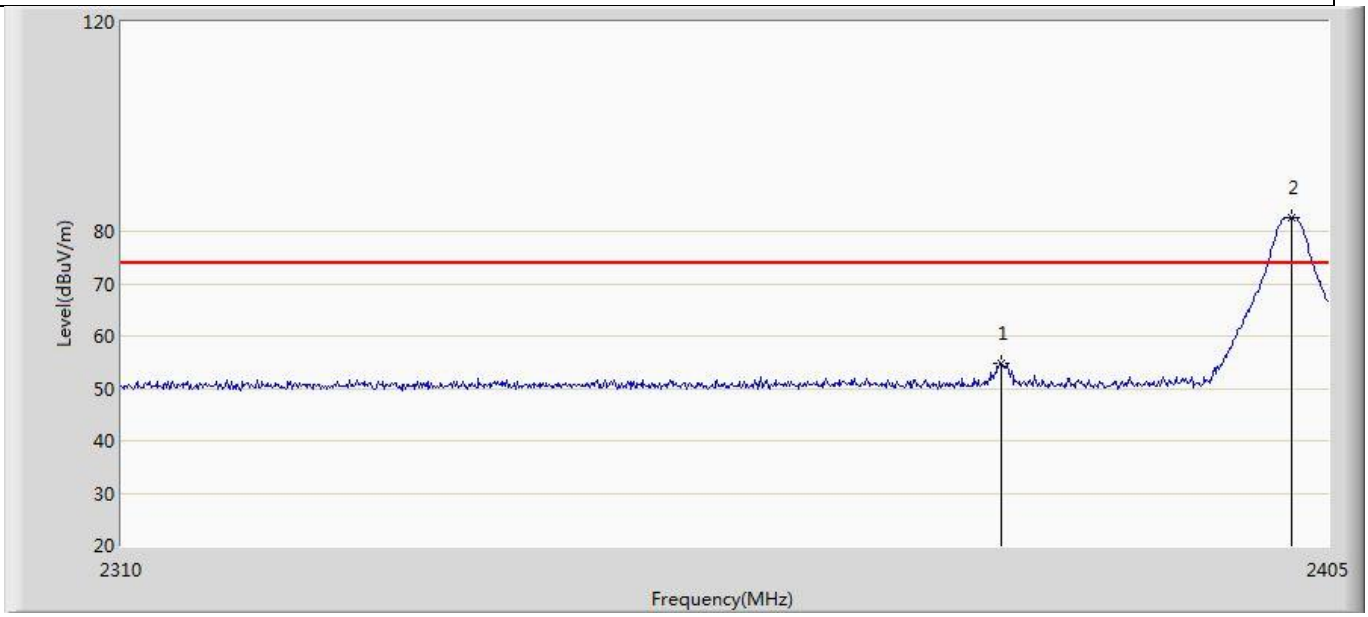
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.255	53.910	18.599	-20.090	74.000	35.311	PK
2		2390.000	55.028	19.713	-18.972	74.000	35.315	PK
3	*	2401.960	92.391	57.079	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 18
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 21:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



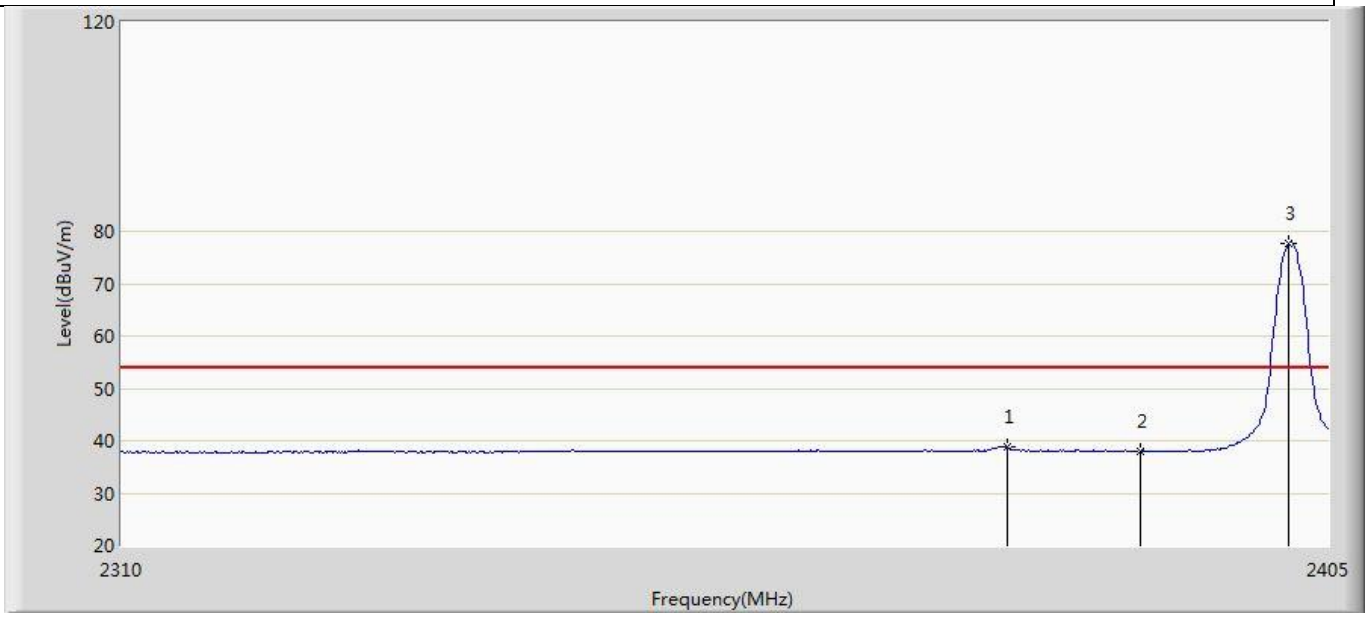
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2378.875	39.923	4.612	-14.077	54.000	35.310	AV
2		2390.000	38.457	3.142	-15.543	54.000	35.315	AV
3	*	2402.055	91.156	55.844	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 19
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



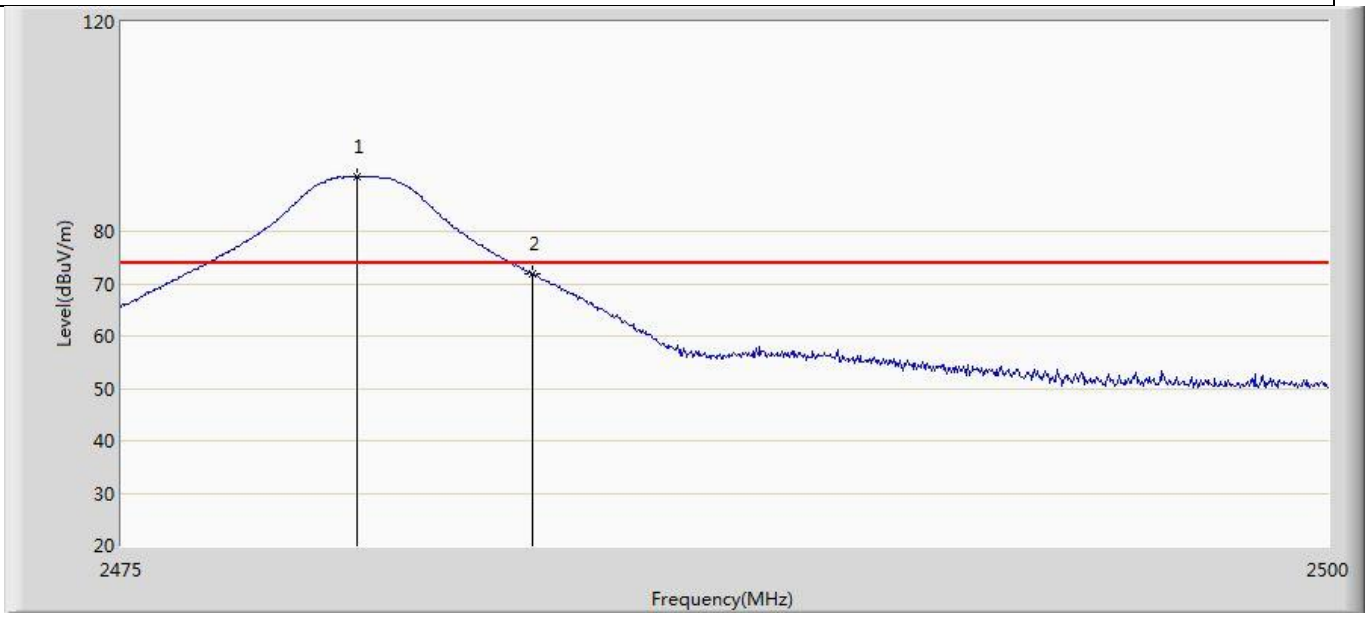
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2378.875	54.795	19.484	-19.205	74.000	35.310	PK
2	*	2402.055	82.591	47.279	N/A	N/A	35.312	PK

Profile: 2070338R	Page No.: 20
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2402MHz by 3DH5	



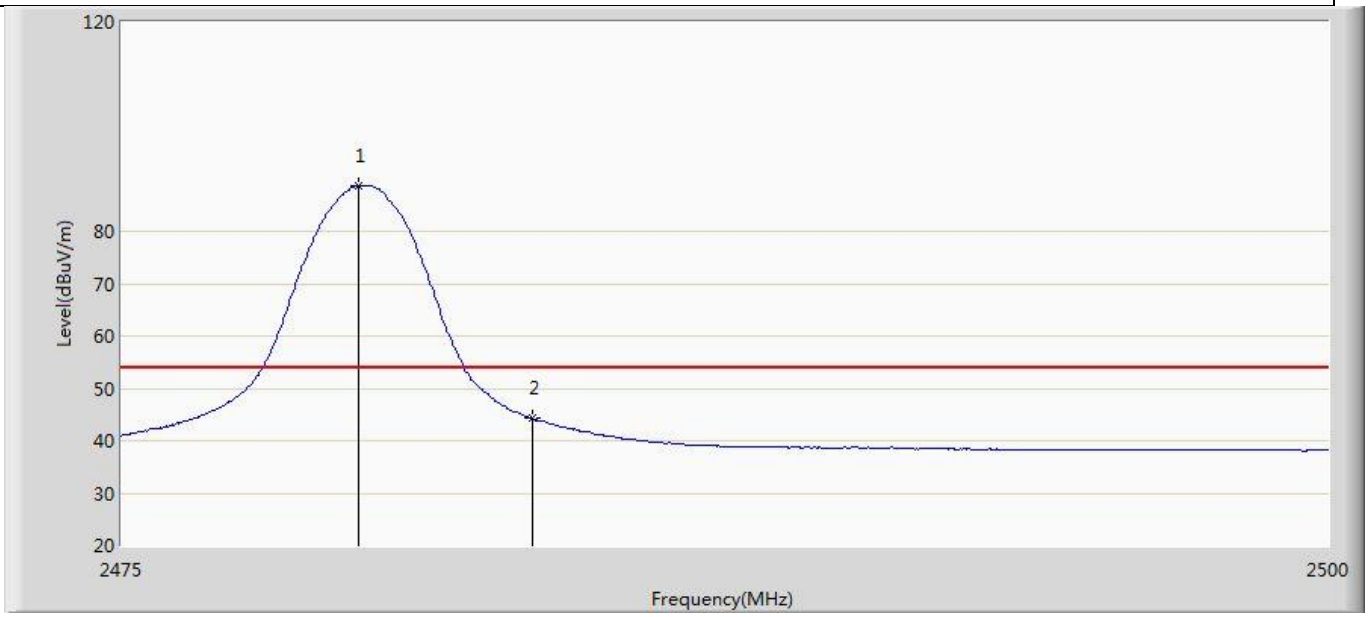
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2379.350	38.804	3.493	-15.196	54.000	35.311	AV
2		2390.000	37.963	2.648	-16.037	54.000	35.315	AV
3	*	2401.865	77.730	42.417	N/A	N/A	35.312	AV

Profile: 2070338R	Page No.: 21
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



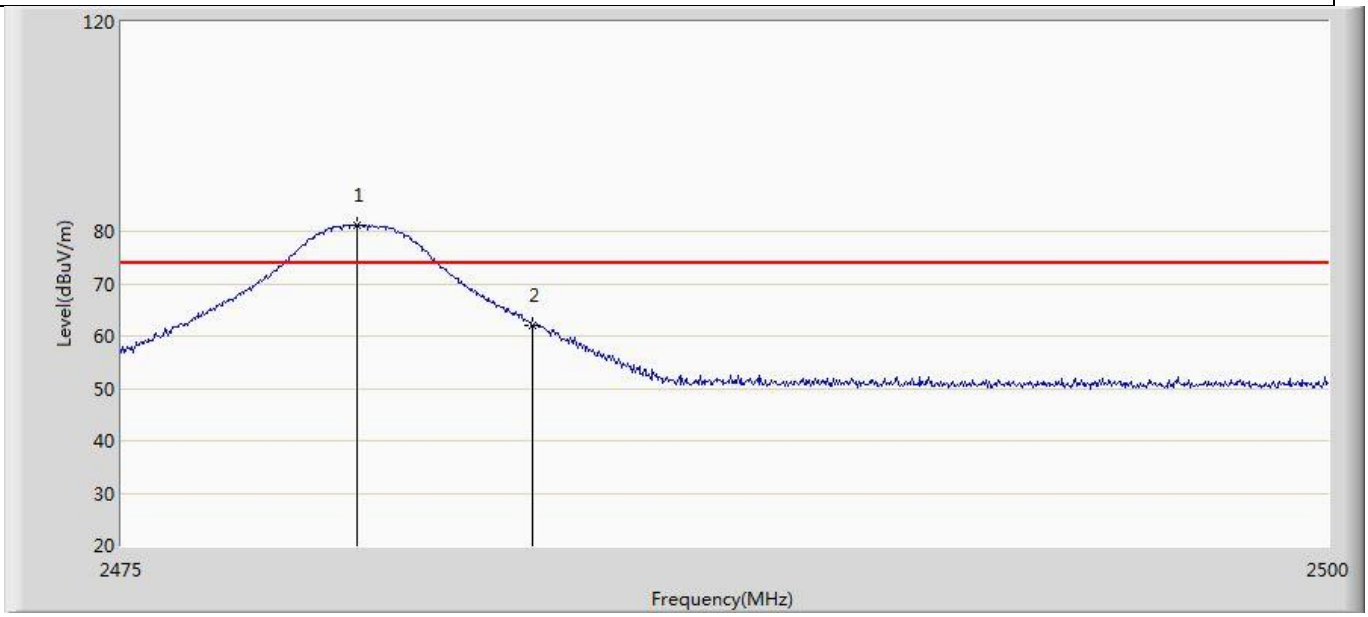
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.875	90.386	55.087	N/A	N/A	35.299	PK
2		2483.500	71.784	36.486	-2.216	74.000	35.297	PK

Profile: 2070338R	Page No.: 22
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



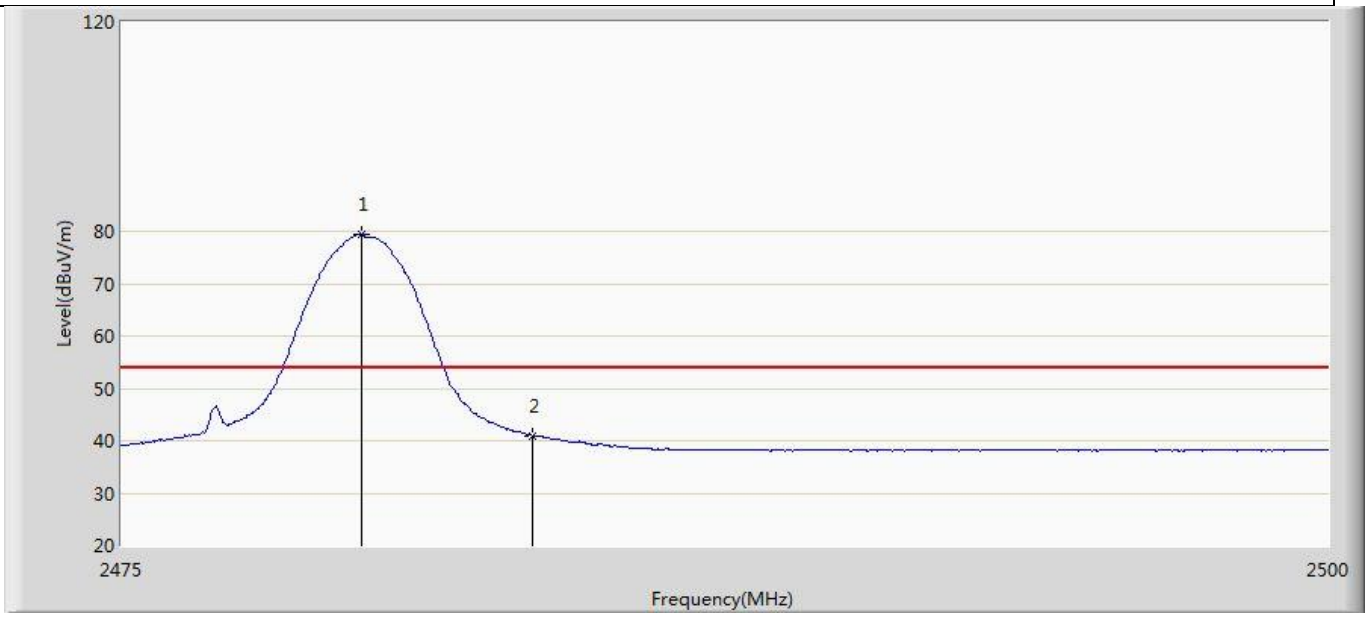
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.900	88.803	53.504	N/A	N/A	35.299	AV
2		2483.500	44.294	8.996	-9.706	54.000	35.297	AV

Profile: 2070338R	Page No.: 23
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.875	81.058	45.759	N/A	N/A	35.299	PK
2		2483.500	61.995	26.697	-12.005	74.000	35.297	PK

Profile: 2070338R	Page No.: 24
Engineer: Pawn	
Site: AC5	Time: 2020/07/31 - 22:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: MP-202SMY-MEXICO	Power: DC 12V
Note: Mode3:Transmit at 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.975	79.507	44.208	N/A	N/A	35.299	AV
2		2483.500	40.907	5.609	-13.093	54.000	35.297	AV

Note:
1. Measured Level = Reading Level + Factor.
2. 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.
3. As the radiated emission was performed, so conducted emission was not tested.

4.11 Antenna Requirement	VERDICT: PASS

4.11.1 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.	

4.11.2 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