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Test report No:
22A0568R-RF-US-P06V01

FCC & ISED TEST REPORT

Product Name	SC2021
Trademark	Sepura
Model and /or type reference	SC2021
FCC ID	XX6SC2021M
IC	8739A-SC2021M
Applicant´s name / address	Sepura Limited 9000 Cambridge Research Park, Beach Drive, Waterbeach, Cambridge CB25 9TL, UK
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KDB558074 D01 15.247 Meas Guidance v05r02 RSS-Gen Issue 5 /RSS-247 Issue 2
Verdict Summary	IN COMPLIANCE
Tested by (name / position & signature)	Feng Jiao/ Project Manager Feng Jiao
Approved by (name / position & signature)	Jack Zhang/ Manager Jack Zhang
Date of issue	2023-04-03
Report Version	V1.0
Report template No	Template_FCC 15.247-RF-V1.0

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COMPETENCES AND GUARANTEES

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

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

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

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

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

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Nov. 08, 2022
Date (start test)	Nov. 09, 2022
Date (finish test)	Nov. 25, 2022

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
22A0568R-RF-US-P06V01	V1.0	Initial issue of report.	2023-04-03

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, RSS-Gen Issue 5, RSS-247 Issue 2.
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 Channel List;
   - Chapter 1.3 Power Setting.

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	100573	2022.09.17	2023.09.16
Two-Line V-Network	R&S	ENV216	101044	2022.03.12	2023.03.11
Current Probe	R&S	EZ-17	100678	2021.12.31	2022.12.30
50ohm Termination	SHX	TF2	07081403	2022.09.04	2023.09.03
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2022.07.07	2023.07.06
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2022.07.07	2023.07.06
Coaxial Cable	Suhner	RG 223	TR1-C2	2022.03.21	2023.03.20
Dekra test software	Dekra	-	-	-	-

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

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Agilent	N9020A	MY49100159	2022.09.18	2023.09.17
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2022.07.14	2023.07.13
4TX MIMO Power Sensor	Keysight	X8750A	MY59400102	2022.03.16	2023.03.15
Coaxial Cable	Woken	N/A	N/A	2022.01.18	2023.01.17
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2022.07.07	2023.07.06
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2022.07.07	2023.07.06
Tonscend test software	Tonscend				

Radiated Emission(30MHz-1GHz) / AC3

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2022.09.17	2023.09.16
Loop Antenna	R&S	HFH2-Z2	833799/003	2022.04.15	2023.04.14
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2021.12.03	2022.12.02
Temperature/Humidity Meter	RTS	RTS-8S	AC3-TH	2022.07.09	2023.07.08
Coaxial Cable	Huber+Suhner	RG 214	AC3-C	2022.03.30	2023.03.29
Dekra test software	Dekra	-	-	-	-

Radiated Emission(1GHz-40GHz) / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2022.08.12	2023.08.11
Pre-Amplifier	SKET	LNPA_0118G-45	SK2021090101	2021.12.13	2022.12.12
Preamplifier	CHENGYI	EMC184045SE	980263	2022.05.21	2023.05.20
DRG Horn	ETS-Lindgren	3117	00123988	2022.11.01	2023.10.31
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2022.05.19	2023.05.18
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2022.07.07	2023.07.06
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2022.03.21	2023.03.20
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2022.03.21	2023.03.20
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2022.03.21	2023.03.20
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 :± 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 OutputPower	± 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..... :	SC2021
Model No. ..... :	SC2021
FCC ID ..... :	XX6SC2021M
IC..... :	8739A-SC2021M
Hardware Version ..... :	Pre-production
Software Version..... :	1807 009 07367
Manufacturer..... :	Sepura Limited
Manufacturer Address..... :	9000 Cambridge Research Park, Beach Drive, Waterbeach, Cambridge CB25 9TL, UK
Factory ..... :	Plexus (Oradea) Manufacturing Solutions
Address ..... :	Strada Eugeniu Carada, nr. 2 – 4,Oradea,Bihor
Model difference ..... :	The SC2021 is a TETRA portable radio in the SC20 series of radios, operating in the VHF band, with operating frequencies 136-174 MHz. The SC20 is a TETRA hand-portable radio with a class 3 high power RF transmission, providing 2 Watts of audio and IP 66, 67 and 68 ratings. The SC20 has a range of options including Bluetooth, Wi-Fi and GNSS functionality. All these functions are controlled by licence.

Wireless specification..... :	Bluetooth V5.2 - BR/EDR					
Operating frequency range(s)..... :	2400~2483.5MHz					
Type of Modulation..... :	☒	GFSK	☒	Pi/4 DQPSK	☒	8DPSK
Data Rate ..... :	☒	1Mbit/s	☒	2Mbit/s	☒	3Mbit/s
Number of channel..... :	79					

Rated power supply .....:	Voltage and Frequency	
	☐	AC: 220 – 240 V, 50/60 Hz
	☐	DC: 7.4V
	☒	Adapter: INPUT : 100~240V 50/60Hz 0.55A OUTPUT:10V----2400mA
	☐	Battery:…….
Brand of adapter .....:	SWITCHIGN POWER SUPPLY	
Adapter model .....:	ABSP024100240-1	
Mounting position.....:	☐	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☒	Head-mounted 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	☐	CDD
			☐	Beam-forming
Antenna Type.....:	☐	External	☐	Dipole
			☐	Sectorized
			☐	PCB
	☒	Internal	☐	PIFA
			☒	PCB
			☐	Dipole
			☐	Others……..
Antenna Gain.....:	2.5 dBi			

1.3 Channel List

Bluetooth Working Frequency of Each Channel: (For BR/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

1.4 Power Setting

Mode	Channel	Test Frequency (MHz)	Power Setting
1Mbps(GFSK_DH5)	00	2402	Default
	39	2441	Default
	78	2480	Default
2Mbps(Pi/4 DQPSK_DH5)	00	2402	Default
	39	2441	Default
	78	2480	Default
3Mbps(8DPSK_DH5)	00	2402	Default
	39	2441	Default
	78	2480	Default

Note: The general description of the Item(s), antenna information, channel list and Power Setting in clause 1 are provided and confirmed by the client.

1.5 Test Matrix

Test item	Model / Type		
	1PR002226GK58ED	1PR002226GK58DN	1PR002226GK58E3
20dB Emission Bandwidth	☒	☐	☐
Maximum conducted output power	☒	☐	☐
Carrier frequency separation	☒	☐	☐
Time of occupancy	☒	☐	☐
Number of Hopping Frequencies	☒	☐	☐
Band edge measurements	☐	☒	☐
Conducted Spurious Emission	☒	☐	☐
Duty cycle	☒	☐	☐
Emissions in Restricted Bands	☐	☒	☐
AC Power Line Conducted Emission	☐	☒	☐

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

Note : For portable device, radiated tests was verified over X, Y, Z axis, and shown the worst case Z axis on this report.

2.2 Accessories Information

Accessories Information	Brand/model name	Cable		
		Length used during test [m]	Attached during test	Shielded
USB Cable	N/A	10	☒	☒
USB Cable	N/A	0.5	☒	☒

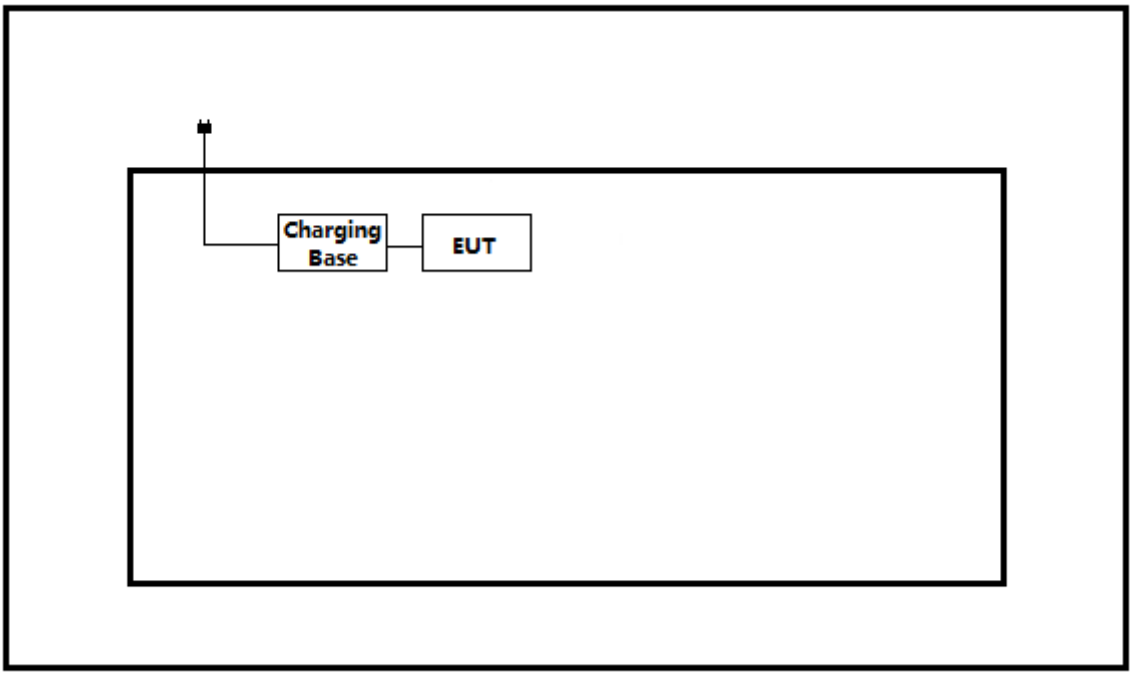
2.3 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	2526	Think Pad	N/A
Software	Type / Version	Manufacturer	Supplied by
Putty	N/A	N/A	N/A

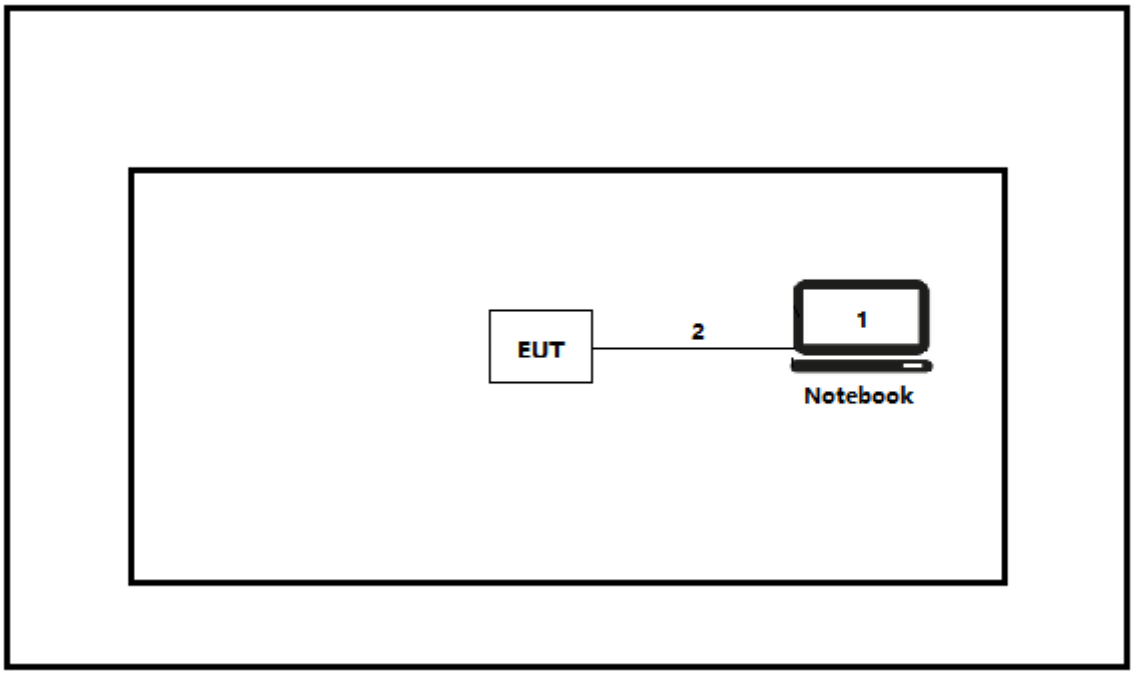
2.4 Test Configuration / Block diagram used for tests

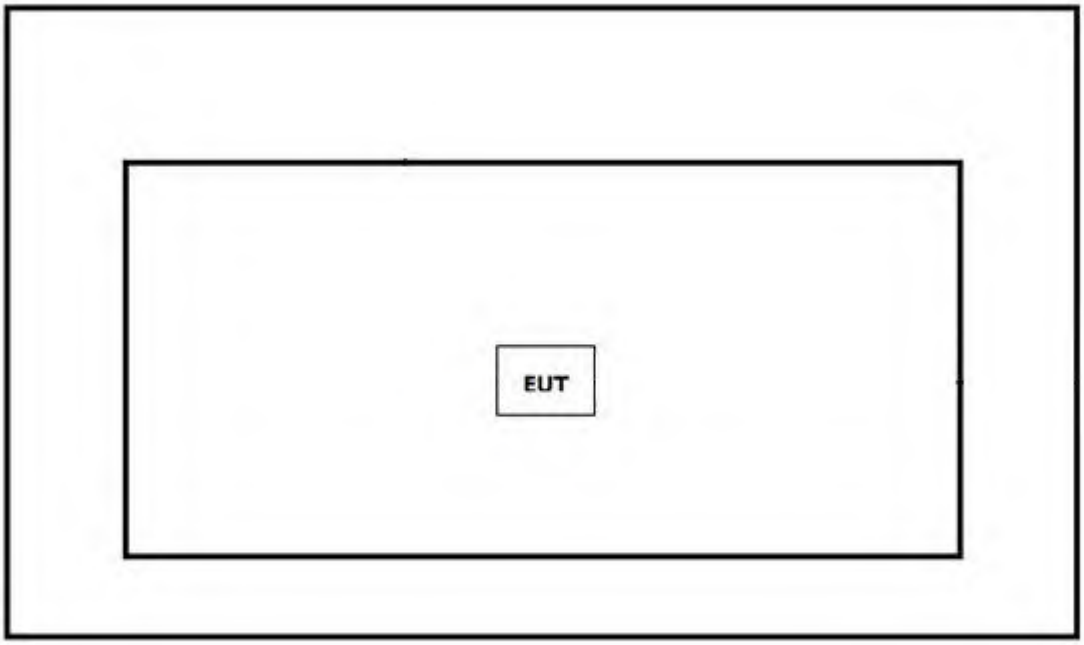
The following test setup / configuration / block diagram has been used during the tests:

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Conducted test



Test setup Diagram- Radiated test


2.5 Testing process

1	Setup the EUT as shown in Section 2.4
2	Run the software “Putty” on the notebook computer.
3	Open the serial port and enter the corresponding commands to configure the test mode, test channel, test power and 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	2021	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
KDB558074 D01 v05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247
RSS-Gen Issue 5 Amendment 2	2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2	2017	Digital Transmission Systems (DTSs),Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network(LE-LAN) Devices

3.2 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

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015Section 15.207	Yes	No
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015Section 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 OutputPower	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
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

For ISED

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 5Section 8.8	Yes	No
Radiated Emission	RSS-Gen Issue 5Section 8.9	Yes	No
20dB Bandwidth	RSS-247 Issue 2 Section 5.1	Yes	No
Carrier Frequency Separation	RSS-247 Issue 2 Section 5.1	Yes	No
Number of Hopping Frequencies	RSS-247 Issue 2 Section 5.1	Yes	No
Time of Occupancy (Dwell Time)	RSS-247 Issue 2 Section 5.1	Yes	No
Peak OutputPower	RSS-247 Issue 2 Section 5.4	Yes	No
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section 5.5	Yes	No
Band Edge	RSS-Gen Issue 5Section 8.10	Yes	No
Antenna Requirement	RSS-Gen Issue 5Section 8.3	Yes	No

3.4 Test Facility

USA	**:**	**FCC Designation Number: CN1199**
CA	**:**	**ISED CAB identifier: CN0040**

4 TEST RESULTS

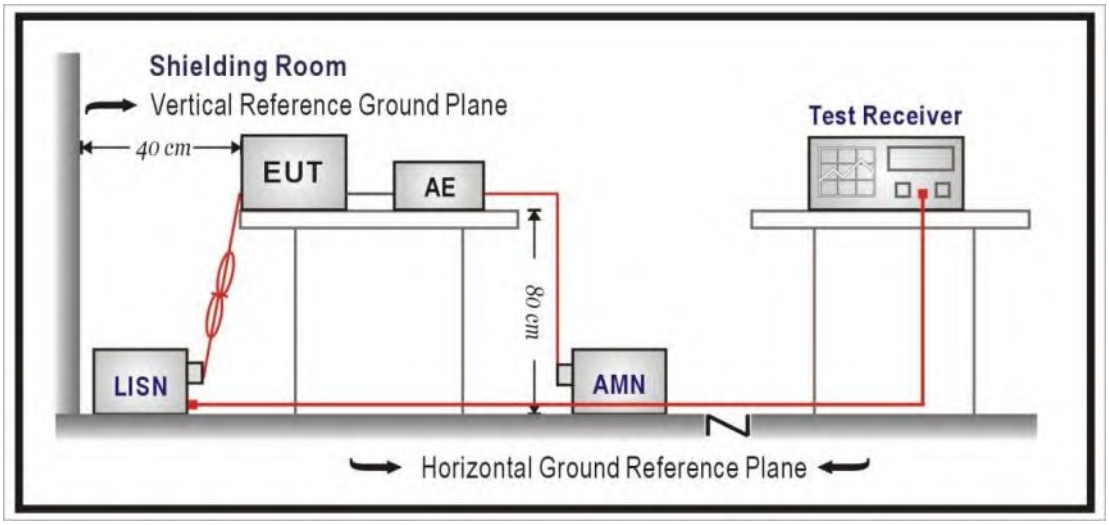
4.1 Conducted Emission	VERDICT: PASS

4.1.1 Limit

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

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

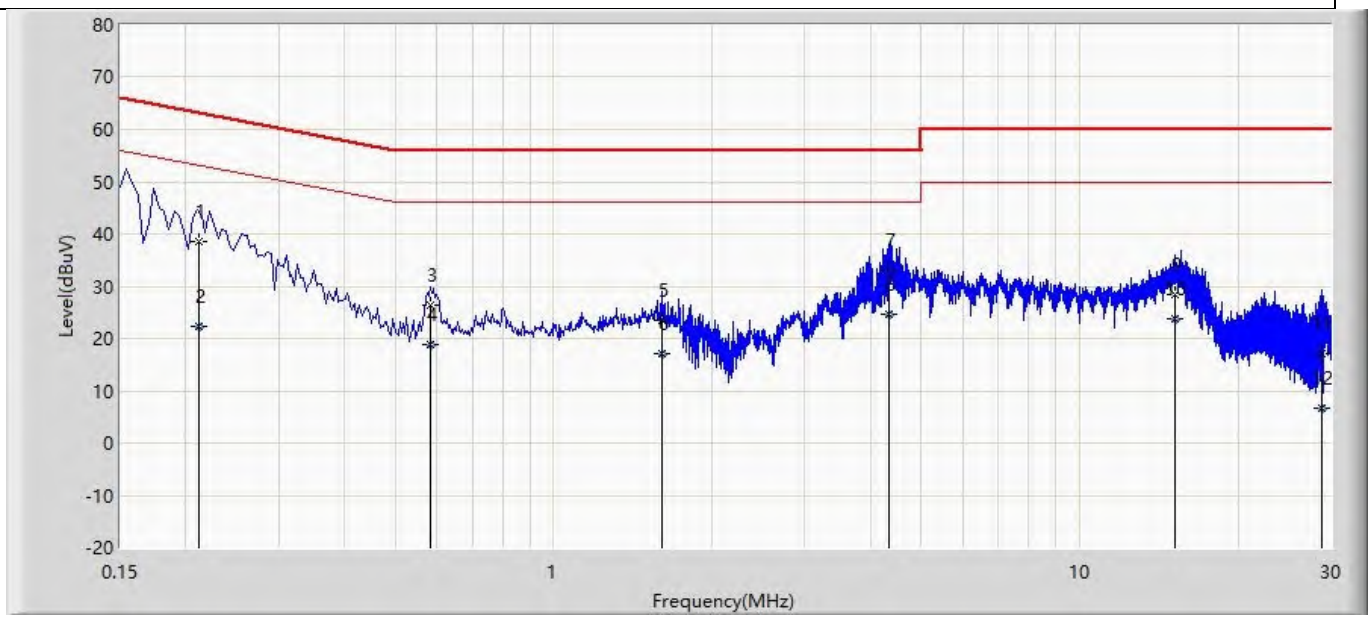


4.1.3 Test Procedure

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

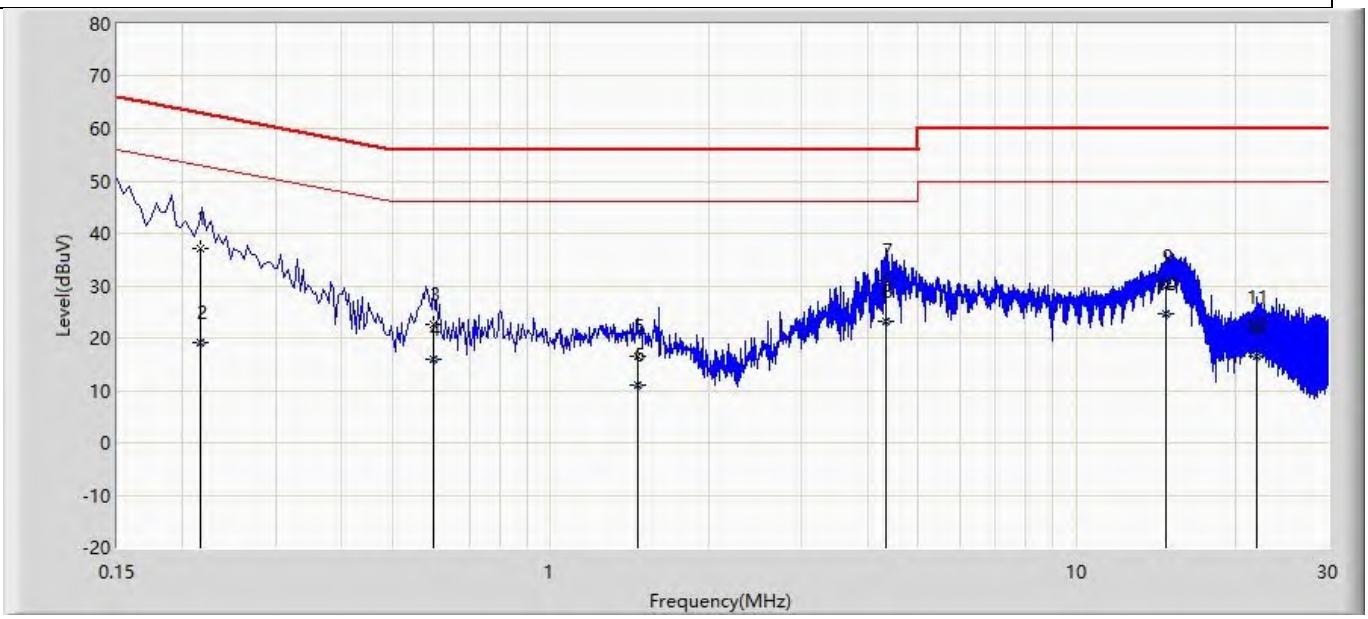
4.1.4 Test Data

Profile: 22A0568R	Page No.: 103
Engineer: Yu Liu	
Site: TR1	Time: 2022/11/21 - 21:15
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: SC2021	Power: AC 120V/60Hz
Note: Mode1:Transmit at 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.212	38.677	29.099	-24.431	63.108	9.578	QP
2		0.212	22.338	12.760	-30.770	53.108	9.578	AV
3		0.582	26.493	16.862	-29.507	56.000	9.632	QP
4		0.582	18.982	9.350	-27.018	46.000	9.632	AV
5		1.602	23.588	13.919	-32.412	56.000	9.669	QP
6		1.602	17.234	7.566	-28.766	46.000	9.669	AV
7		4.334	33.072	23.295	-22.928	56.000	9.776	QP
8	*	4.334	24.569	14.793	-21.431	46.000	9.776	AV
9		15.174	28.501	18.347	-31.499	60.000	10.154	QP
10		15.174	23.703	13.549	-26.297	50.000	10.154	AV
11		28.838	17.117	6.546	-42.883	60.000	10.571	QP
12		28.838	6.600	-3.971	-43.400	50.000	10.571	AV

Profile: 22A0568R	Page No.: 104
Engineer: Yu Liu	
Site: TR1	Time: 2022/11/21 - 21:18
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: SC2021	Power: AC 120V/60Hz
Note: Mode1:Transmit at 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.216	37.155	27.567	-25.815	62.970	9.588	QP
2		0.216	19.231	9.642	-33.739	52.970	9.588	AV
3		0.598	22.667	13.032	-33.333	56.000	9.635	QP
4		0.598	15.860	6.225	-30.140	46.000	9.635	AV
5		1.462	16.638	6.975	-39.362	56.000	9.663	QP
6		1.462	11.100	1.437	-34.900	46.000	9.663	AV
7		4.338	30.930	21.146	-25.070	56.000	9.784	QP
8	*	4.338	23.238	13.454	-22.762	46.000	9.784	AV
9		14.778	29.797	19.673	-30.203	60.000	10.124	QP
10		14.778	24.621	14.497	-25.379	50.000	10.124	AV
11		21.994	21.907	11.627	-38.093	60.000	10.280	QP
12		21.994	16.657	6.378	-33.343	50.000	10.280	AV

4.2 Emissions in restricted frequency bands	VERDICT: PASS

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

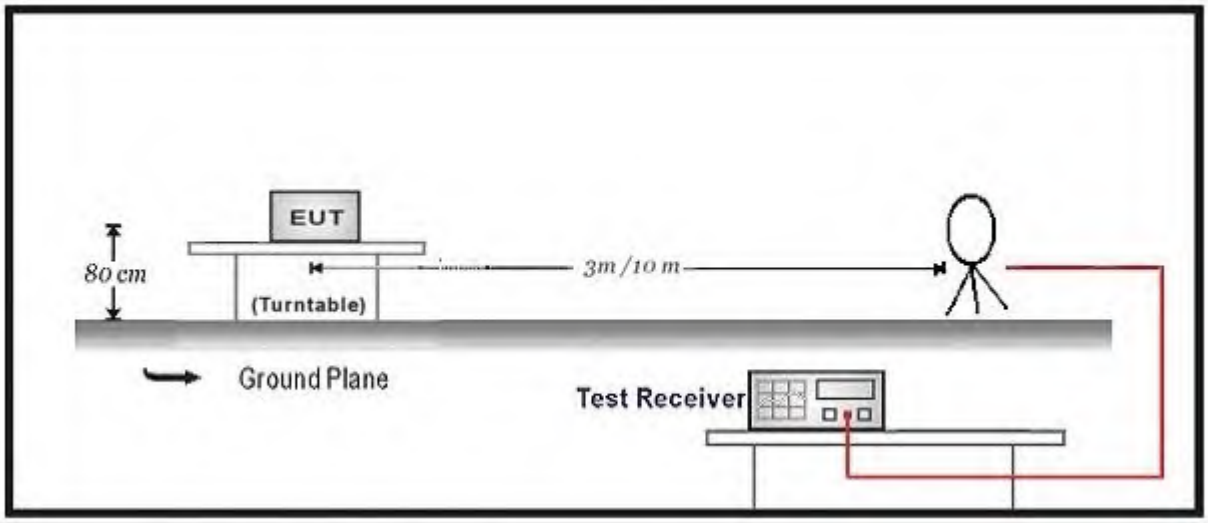
Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 -88	100	40	3(Note 2)
88-216	150	43.5	3(Note 2)
216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

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

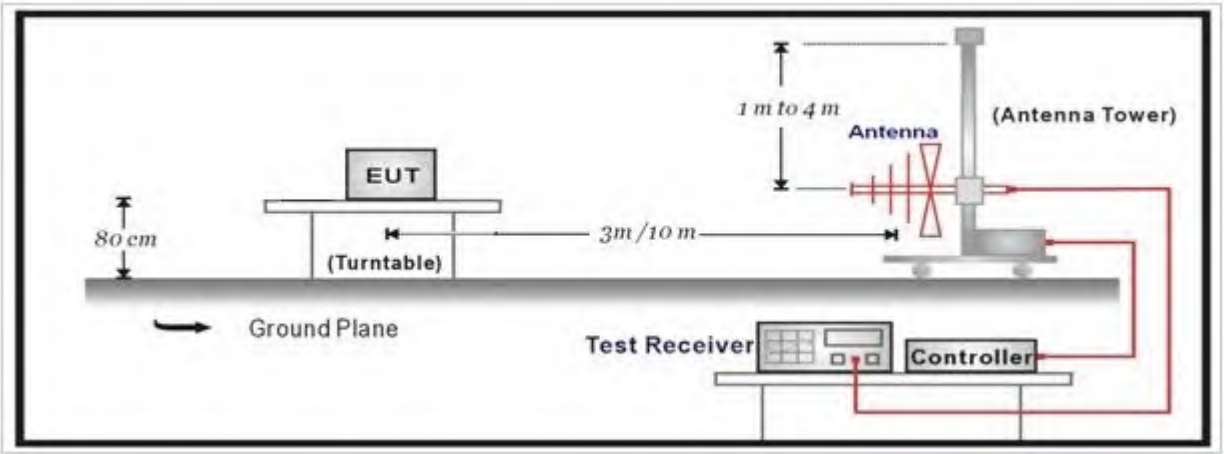
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated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

4.2.2 Test Setup

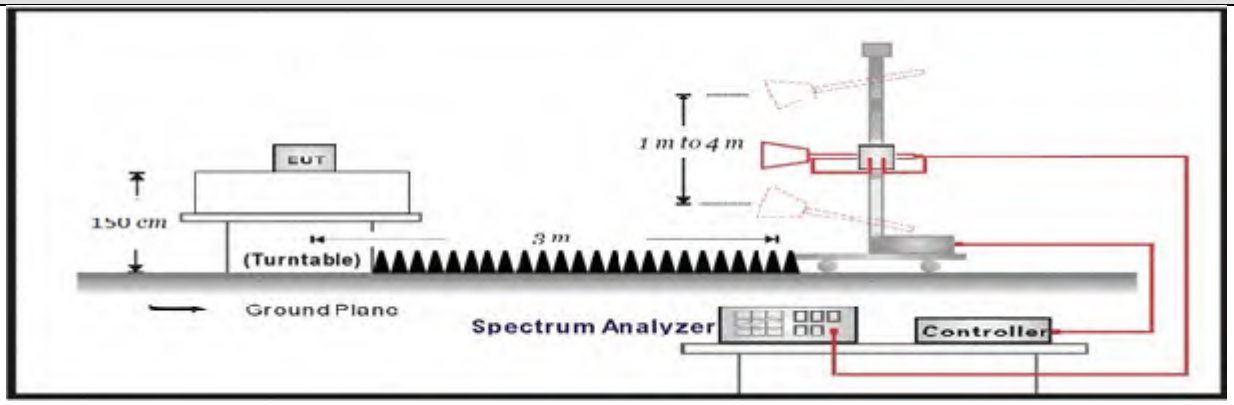
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

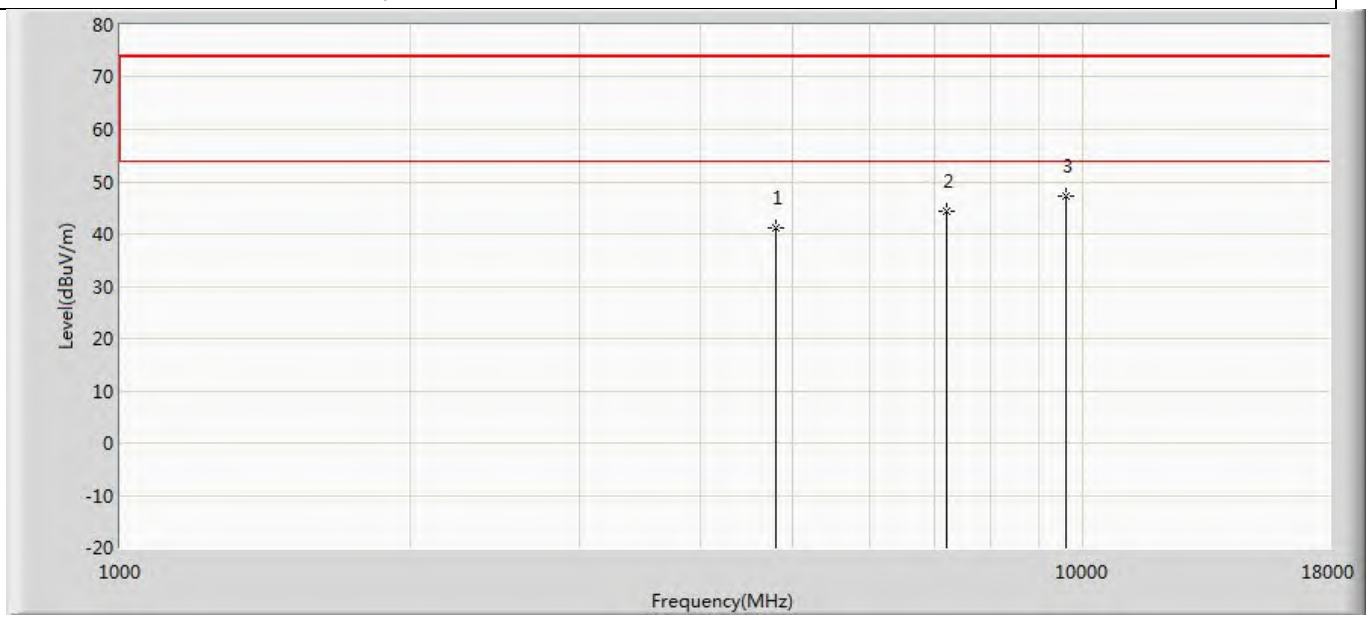


4.2.3 Test Procedure

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

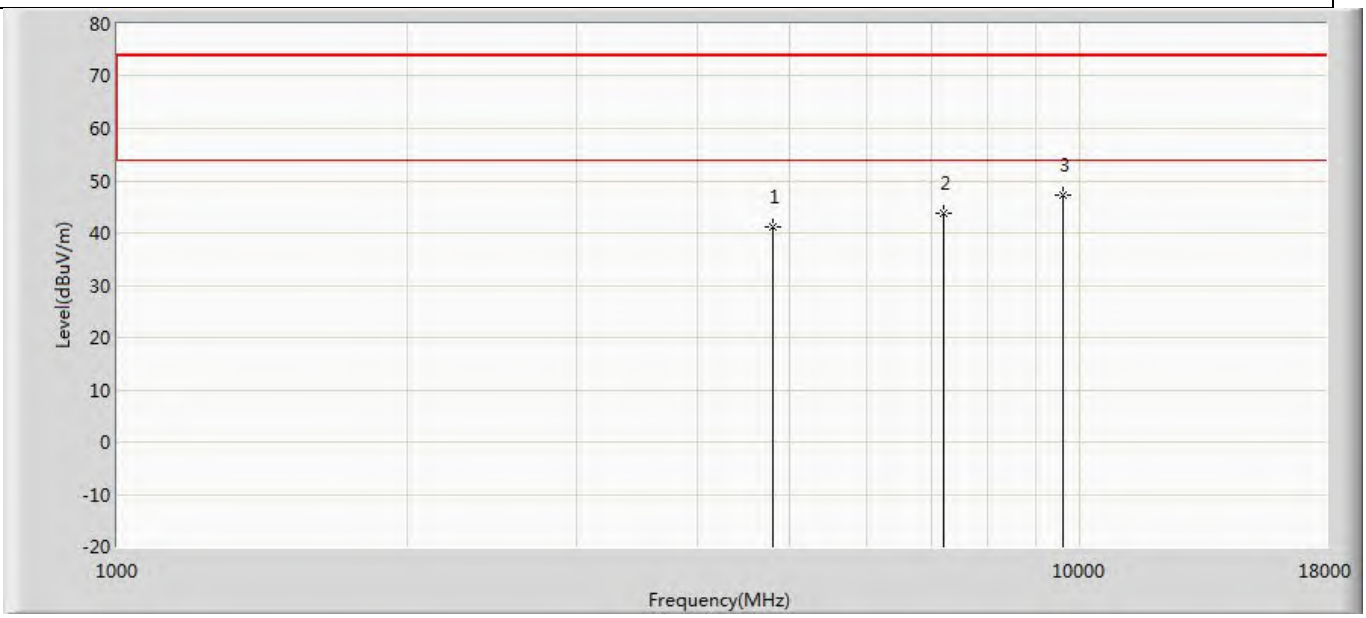
4.2.4 Test Data

Profile: 22A0568R	Page No.: 43
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



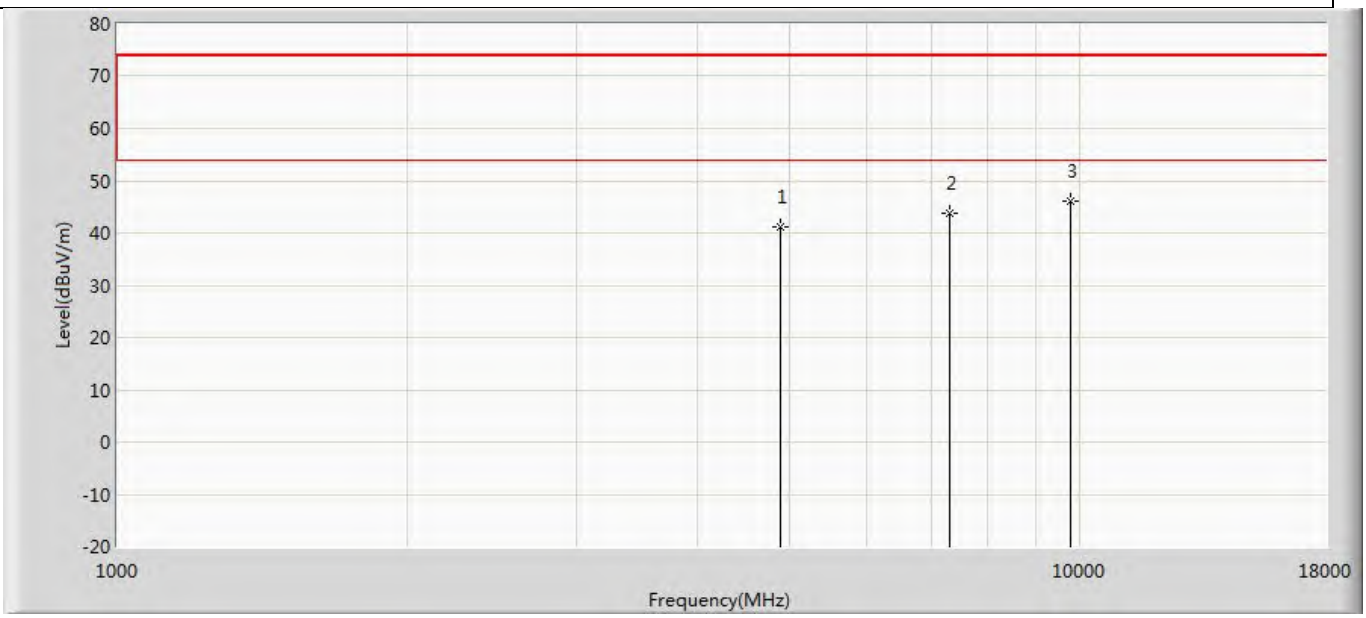
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.177	56.157	-32.823	74.000	-14.981	PK
2		7206.000	44.344	55.164	-29.656	74.000	-10.820	PK
3	*	9608.000	47.248	55.342	-26.752	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 44
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



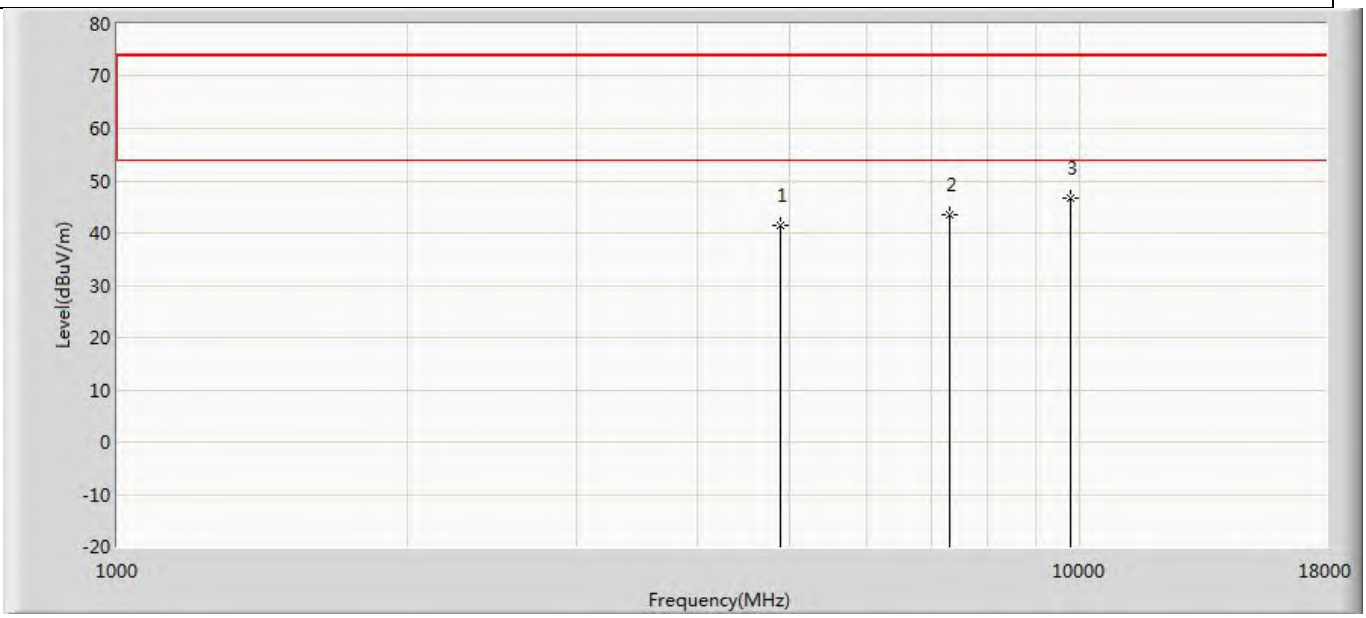
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.074	56.054	-32.926	74.000	-14.981	PK
2		7206.000	43.834	54.654	-30.166	74.000	-10.820	PK
3	*	9608.000	47.111	55.205	-26.889	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 45
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2441MHz by DH5	



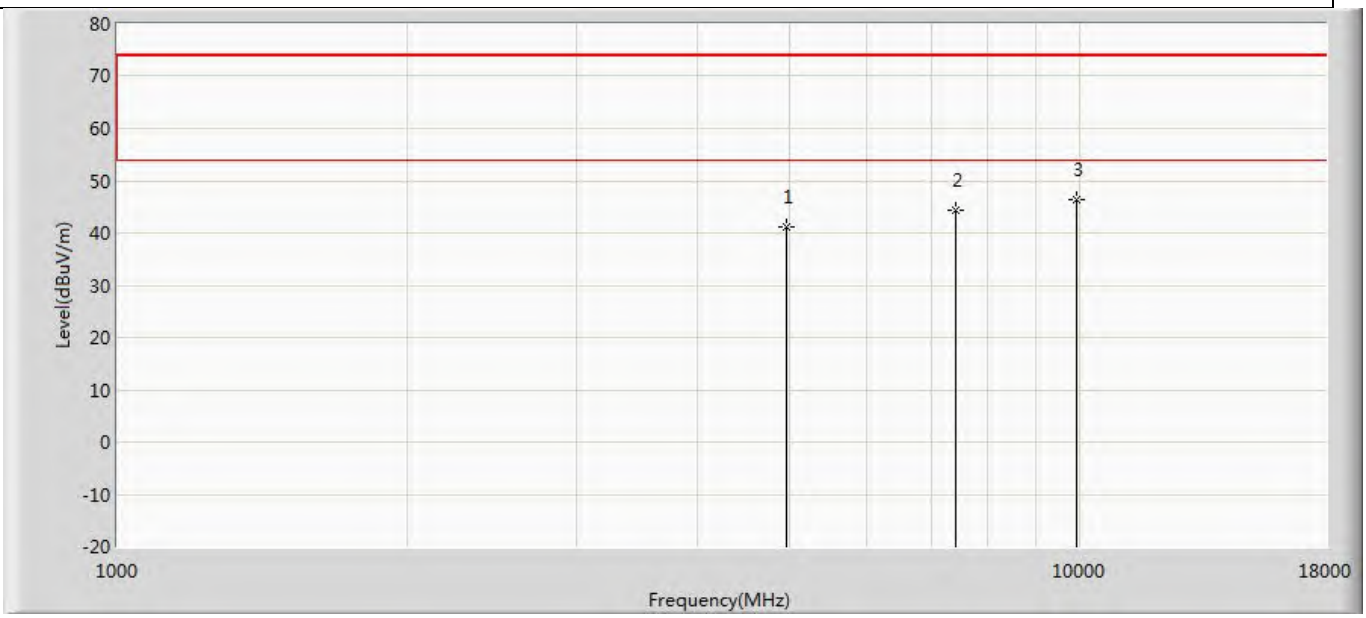
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.214	55.814	-32.786	74.000	-14.600	PK
2		7323.000	43.784	54.652	-30.216	74.000	-10.868	PK
3	*	9764.000	46.126	53.923	-27.874	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 46
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2441MHz by DH5	



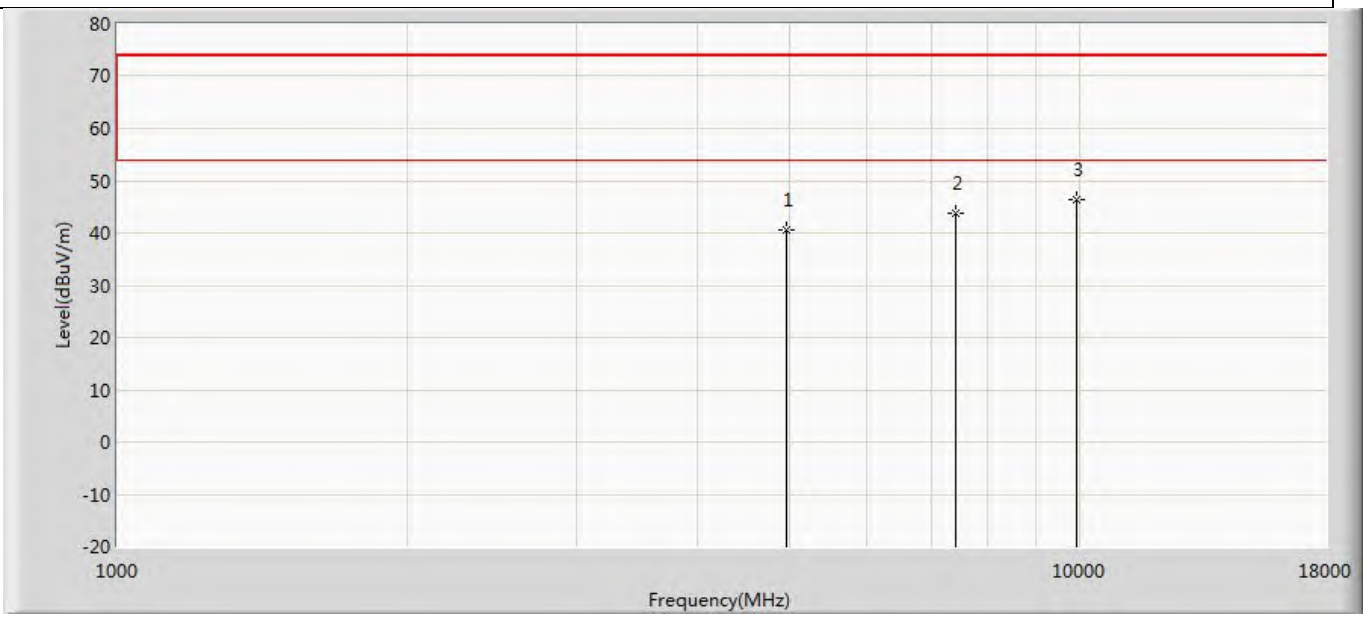
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.515	56.115	-32.485	74.000	-14.600	PK
2		7323.000	43.409	54.277	-30.591	74.000	-10.868	PK
3	*	9764.000	46.584	54.381	-27.416	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 47
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



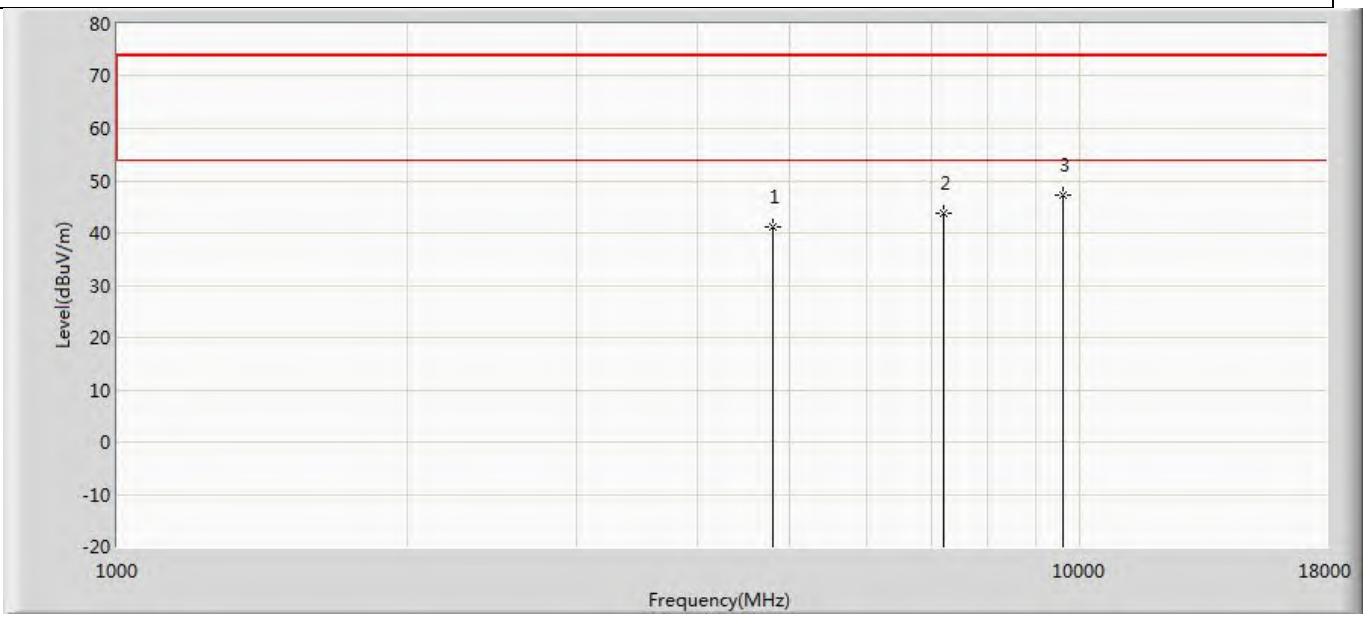
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.043	55.607	-32.957	74.000	-14.565	PK
2		7440.000	44.286	55.017	-29.714	74.000	-10.731	PK
3	*	9920.000	46.249	53.826	-27.751	74.000	-7.578	PK

Profile: 22A0568R	Page No.: 48
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



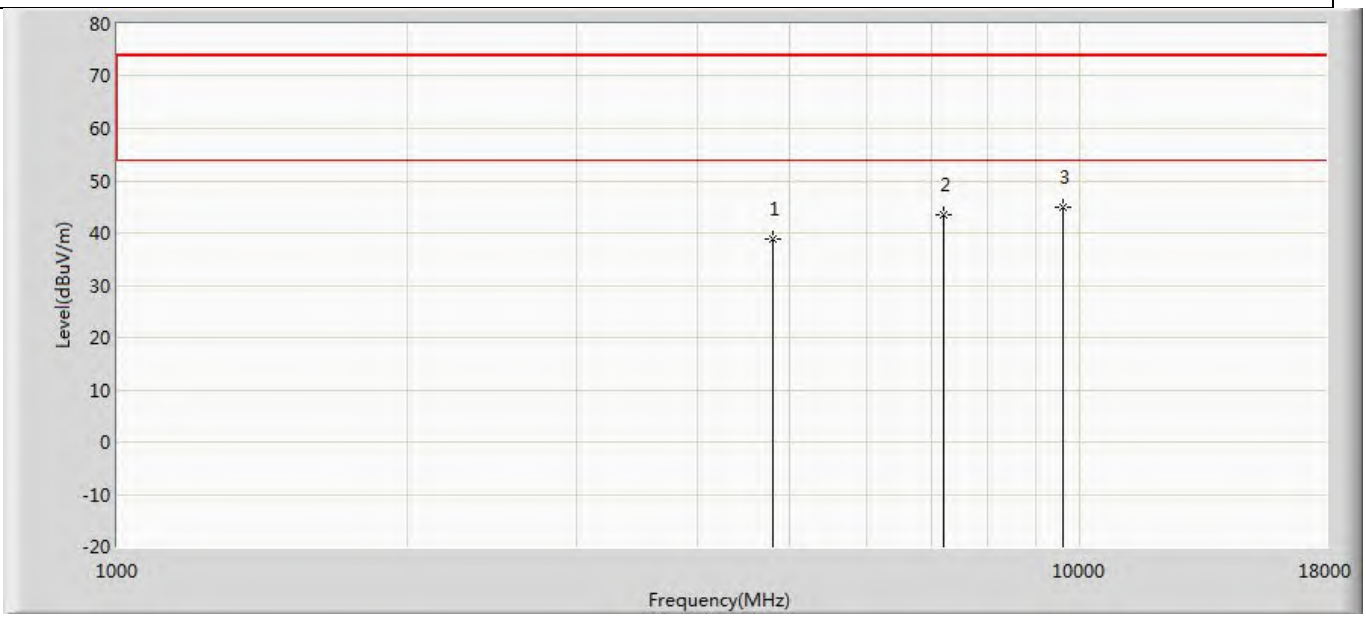
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.660	55.224	-33.340	74.000	-14.565	PK
2		7440.000	43.901	54.632	-30.099	74.000	-10.731	PK
3	*	9920.000	46.448	54.025	-27.552	74.000	-7.578	PK

Profile: 22A0568R	Page No.: 49
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



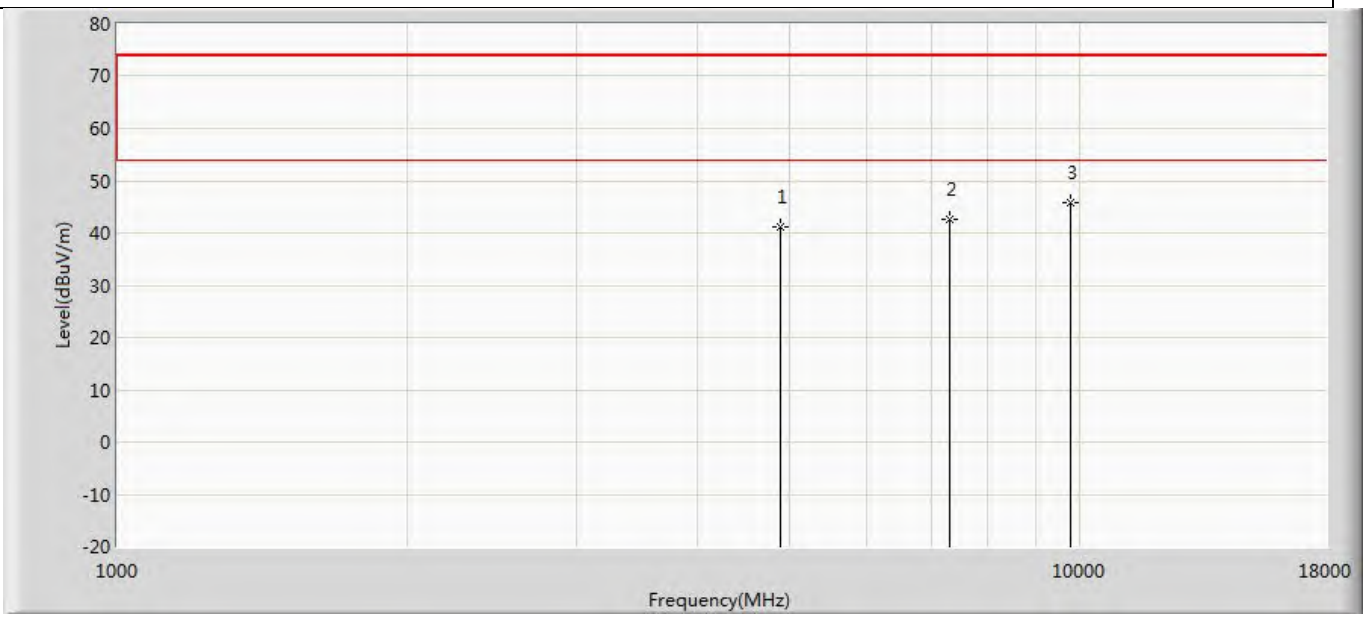
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.292	56.272	-32.708	74.000	-14.981	PK
2		7206.000	43.751	54.571	-30.249	74.000	-10.820	PK
3	*	9608.000	47.122	55.216	-26.878	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 50
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



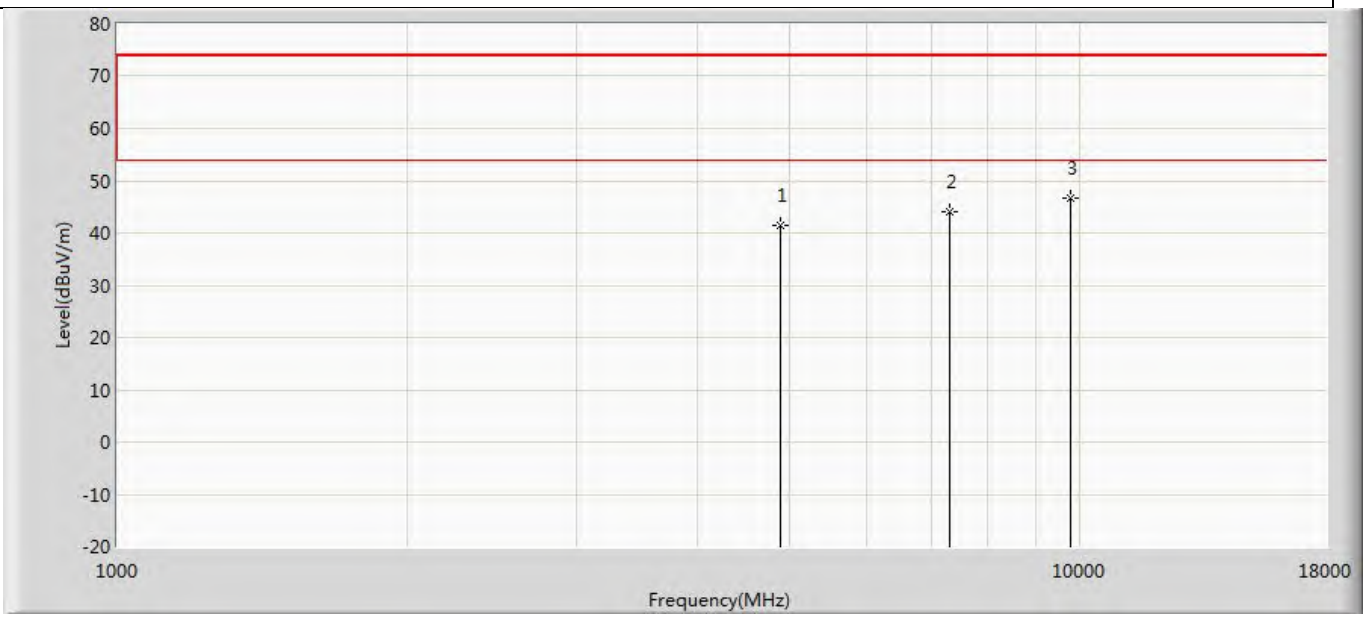
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.981	53.961	-35.019	74.000	-14.981	PK
2		7206.000	43.487	54.307	-30.513	74.000	-10.820	PK
3	*	9608.000	45.042	53.136	-28.958	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 51
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2441MHz by 2DH5	



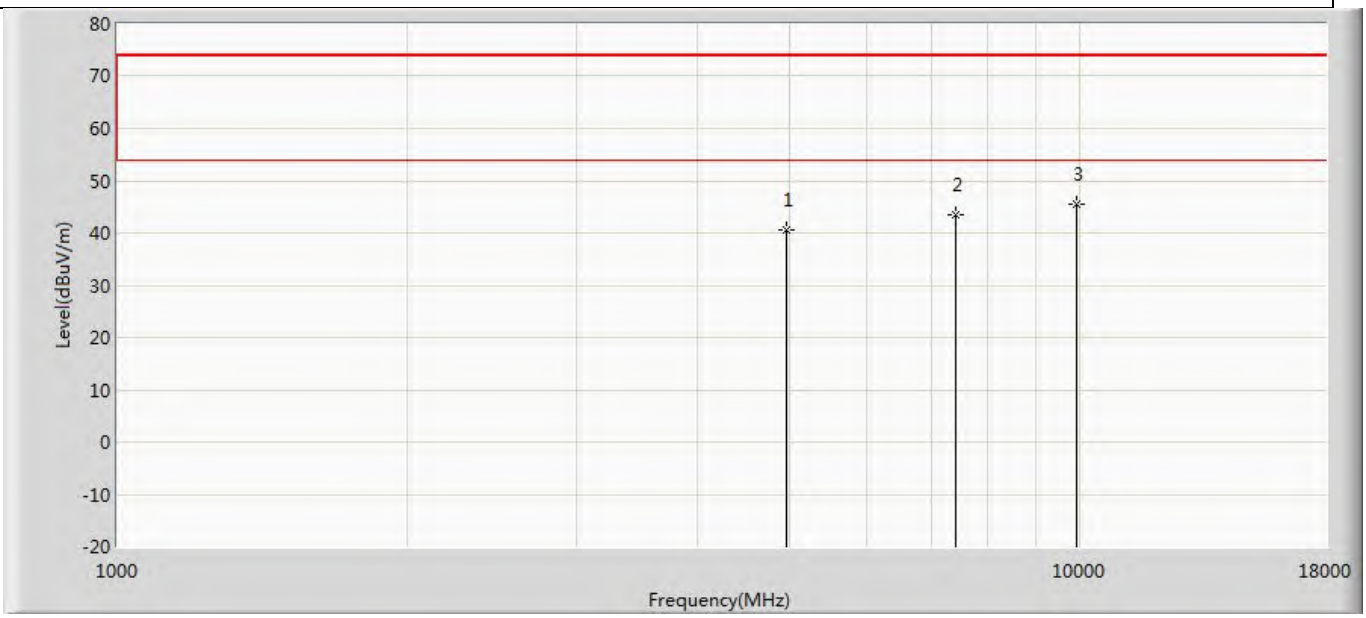
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.170	55.770	-32.830	74.000	-14.600	PK
2		7323.000	42.671	53.539	-31.329	74.000	-10.868	PK
3	*	9764.000	45.887	53.684	-28.113	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 52
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2441MHz by 2DH5	



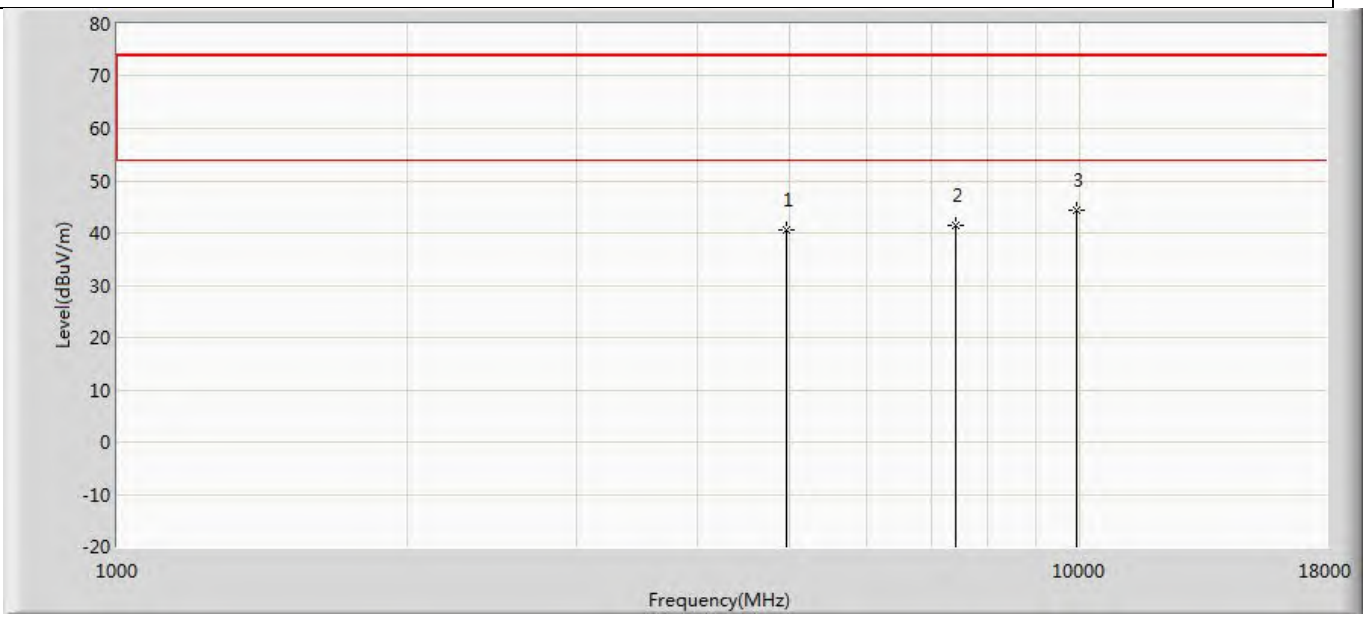
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	41.470	56.070	-32.530	74.000	-14.600	PK
2		7323.000	44.046	54.914	-29.954	74.000	-10.868	PK
3	*	9764.000	46.783	54.580	-27.217	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 53
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



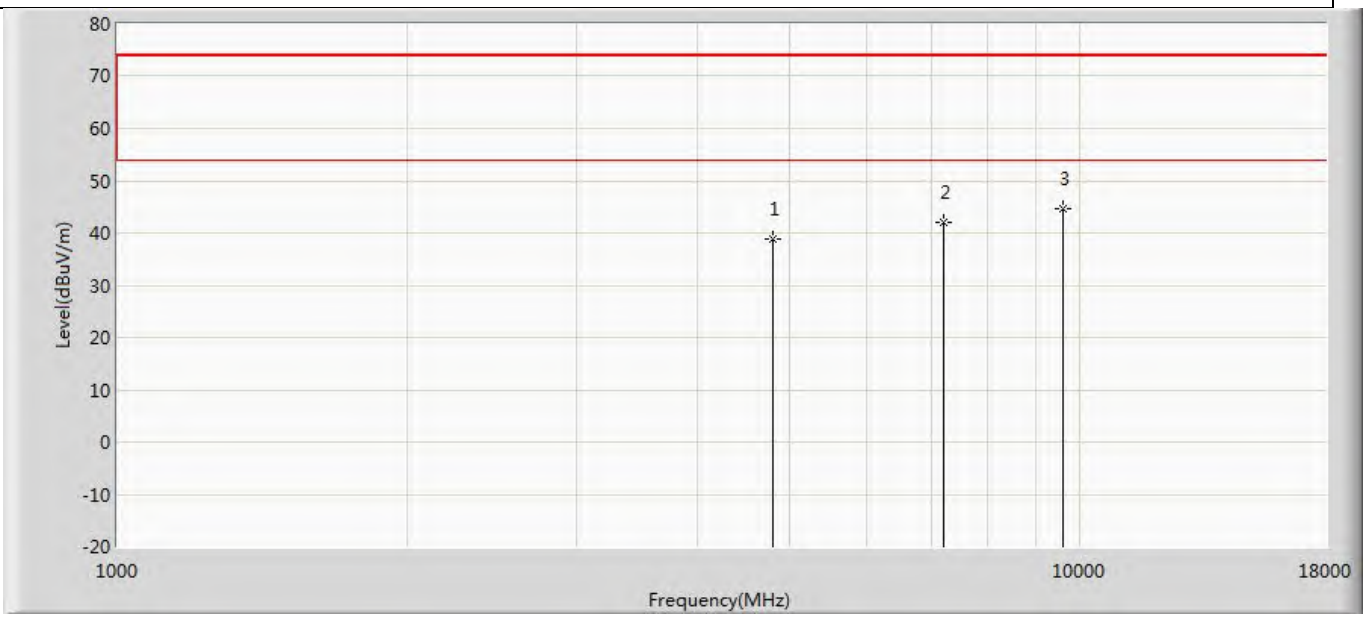
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.643	55.207	-33.357	74.000	-14.565	PK
2		7440.000	43.512	54.243	-30.488	74.000	-10.731	PK
3	*	9920.000	45.538	53.115	-28.462	74.000	-7.578	PK

Profile: 22A0568R	Page No.: 54
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



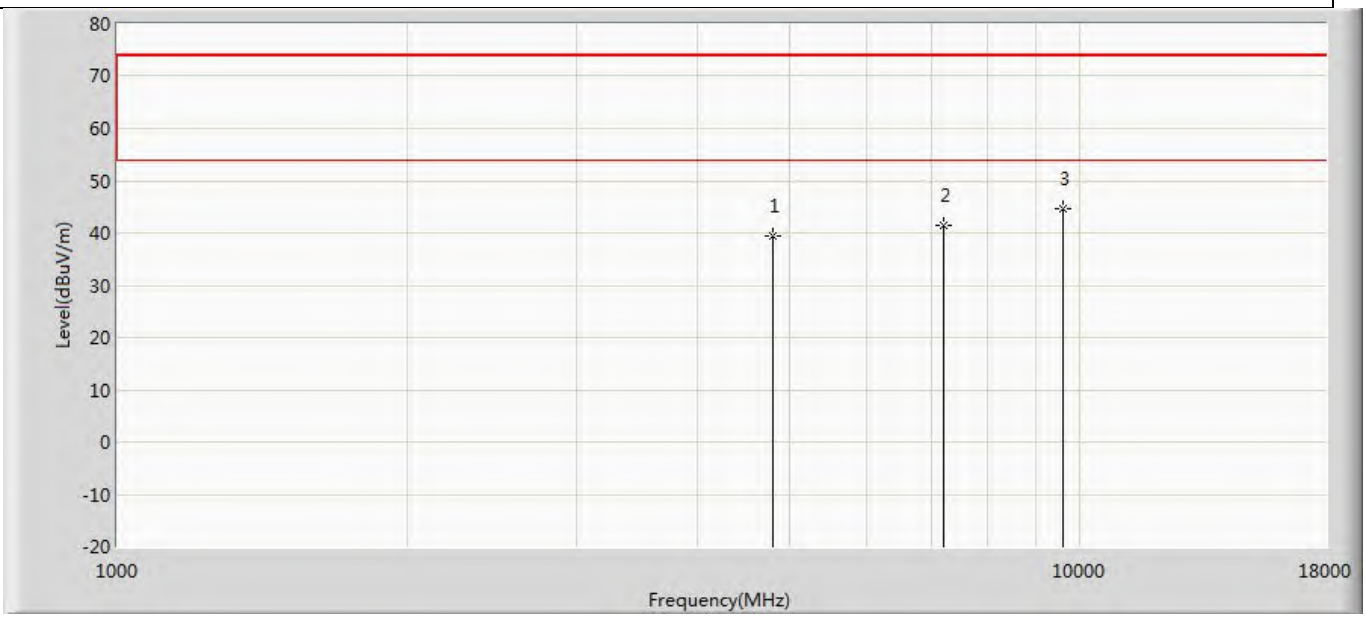
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.517	55.081	-33.483	74.000	-14.565	PK
2		7440.000	41.561	52.292	-32.439	74.000	-10.731	PK
3	*	9920.000	44.330	51.907	-29.670	74.000	-7.578	PK

Profile: 22A0568R	Page No.: 55
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



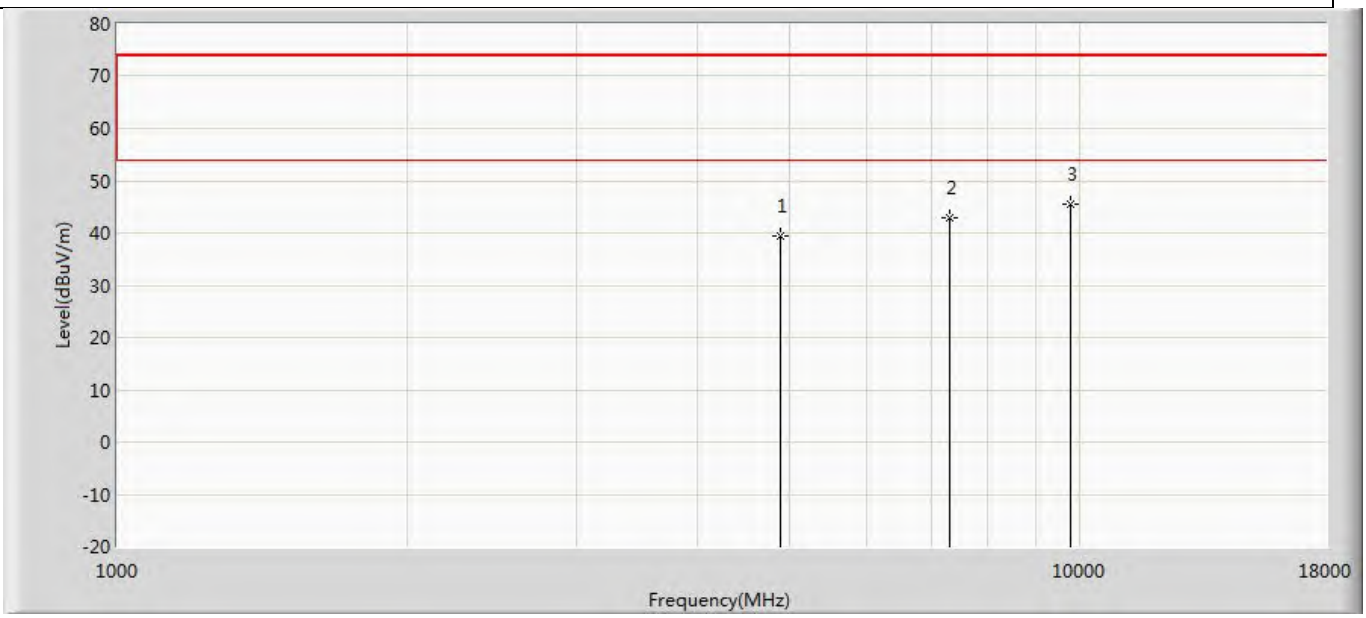
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.817	53.797	-35.183	74.000	-14.981	PK
2		7206.000	42.009	52.829	-31.991	74.000	-10.820	PK
3	*	9608.000	44.649	52.743	-29.351	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 56
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



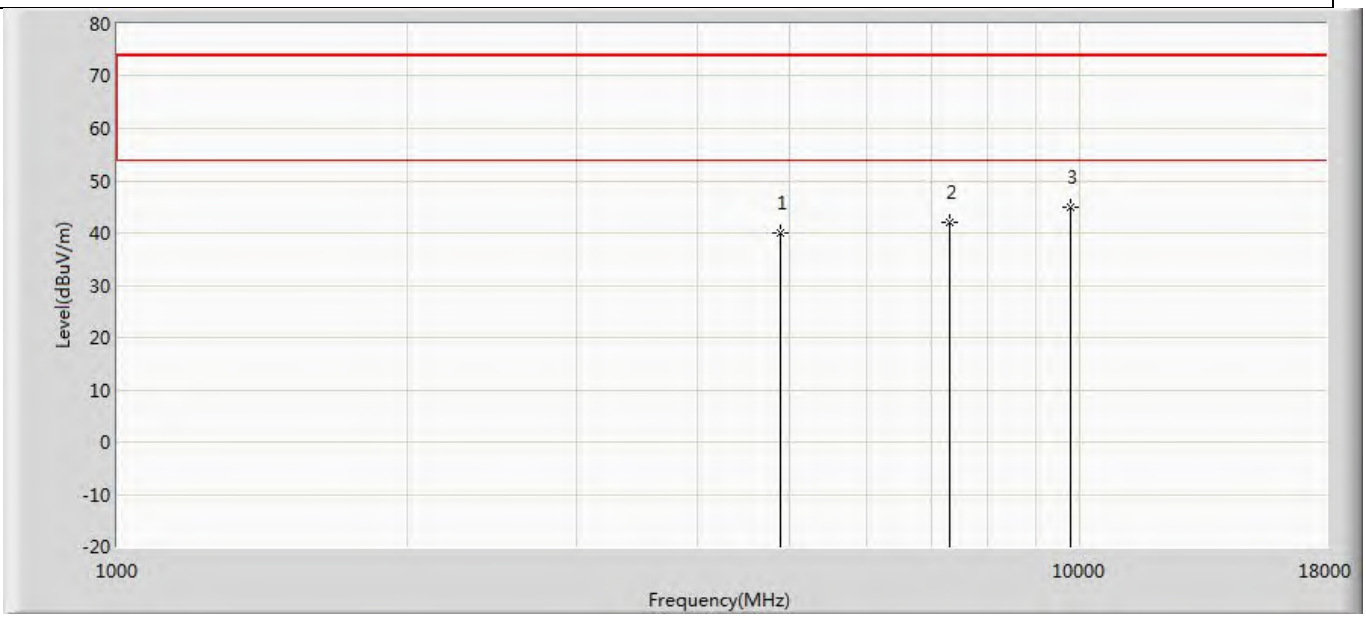
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.404	54.384	-34.596	74.000	-14.981	PK
2		7206.000	41.456	52.276	-32.544	74.000	-10.820	PK
3	*	9608.000	44.509	52.603	-29.491	74.000	-8.094	PK

Profile: 22A0568R	Page No.: 57
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2441MHz by 3DH5	



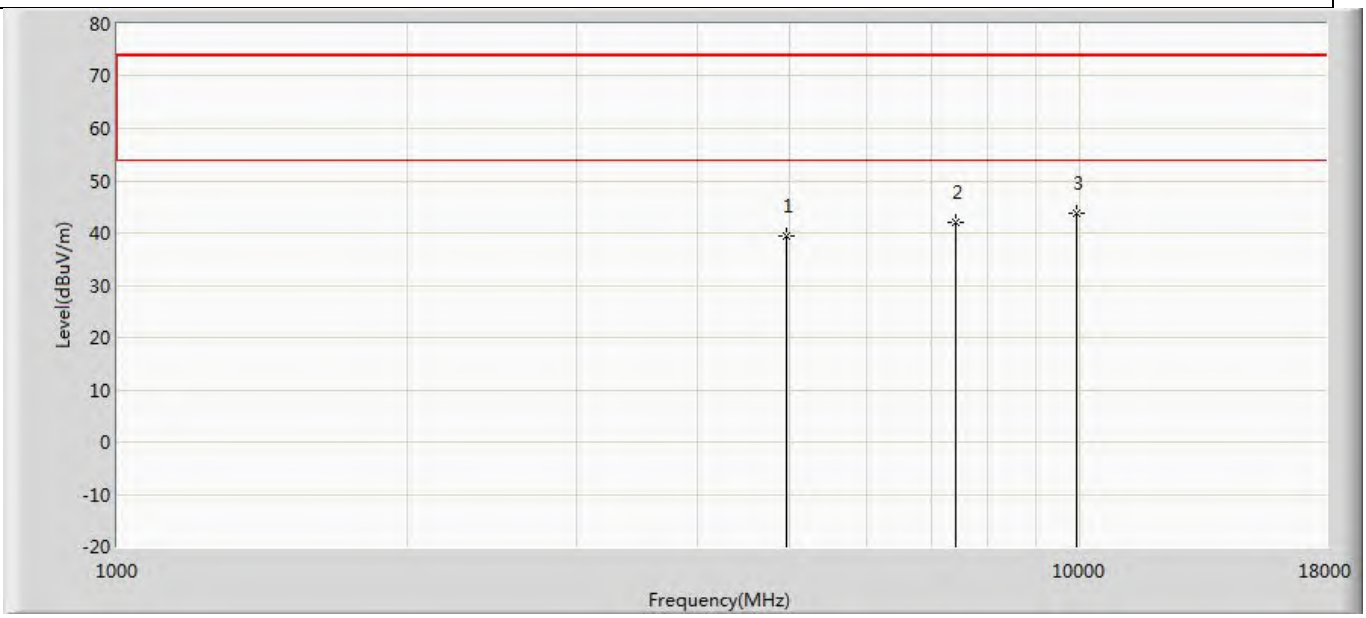
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	39.521	54.121	-34.479	74.000	-14.600	PK
2		7323.000	43.008	53.876	-30.992	74.000	-10.868	PK
3	*	9764.000	45.438	53.235	-28.562	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 58
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2441MHz by 3DH5	



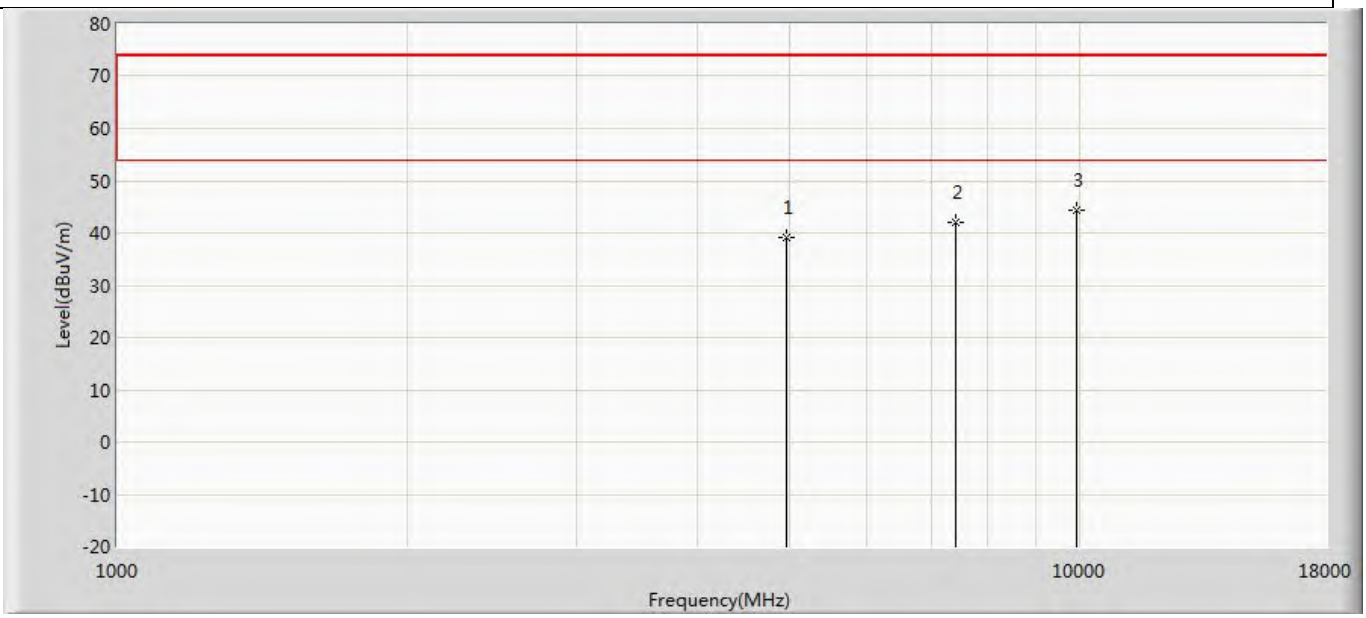
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	40.043	54.643	-33.957	74.000	-14.600	PK
2		7323.000	42.172	53.040	-31.828	74.000	-10.868	PK
3	*	9764.000	45.039	52.836	-28.961	74.000	-7.797	PK

Profile: 22A0568R	Page No.: 59
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
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	39.415	53.979	-34.585	74.000	-14.565	PK
2		7440.000	41.955	52.686	-32.045	74.000	-10.731	PK
3	*	9920.000	43.802	51.379	-30.198	74.000	-7.578	PK

Profile: 22A0568R	Page No.: 60
Engineer: Noah	
Site: AC5	Time: 2022/11/21 - 03:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2480MHz by 3DH5	

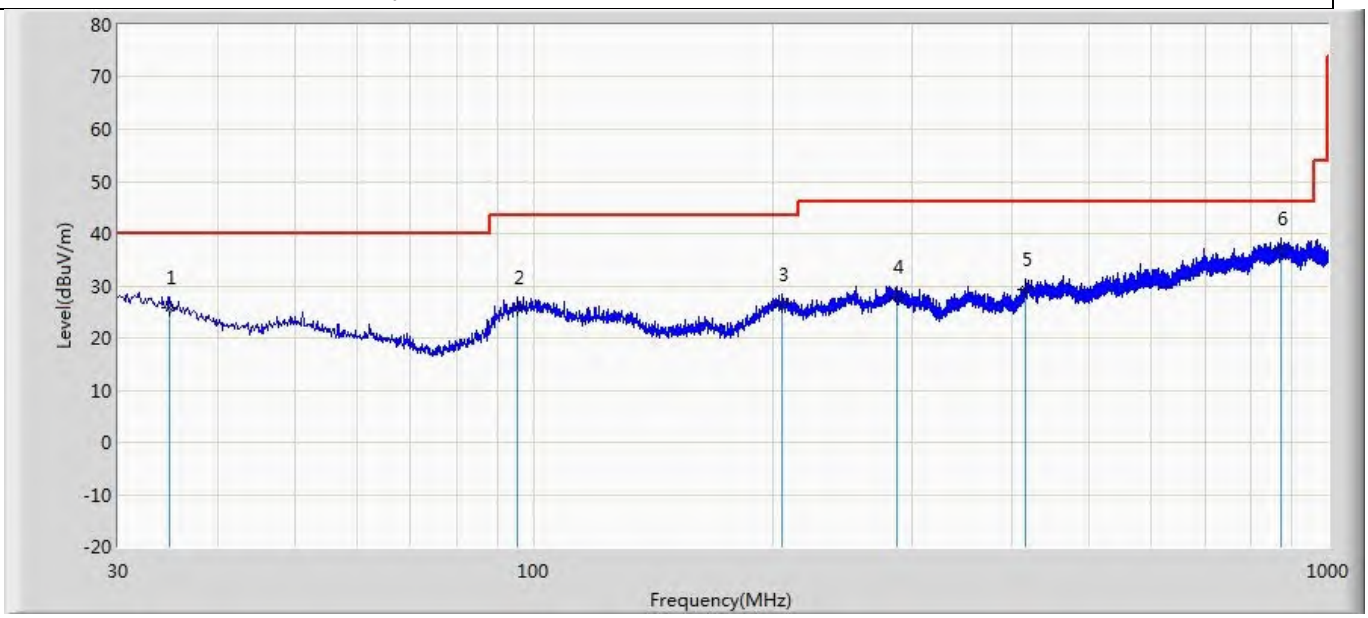


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.182	53.746	-34.818	74.000	-14.565	PK
2		7440.000	41.968	52.699	-32.032	74.000	-10.731	PK
3	*	9920.000	44.425	52.002	-29.575	74.000	-7.578	PK

Note:
1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for both peak and average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4.The points in graph are the highest data in test frequency range.
5.We use band filter 2400-2483.5Mhz, starting frequency 1GHz, ending frequency 6GHz, we also use high pass filter 3Ghz-18Ghz, the plots in the report is composite.

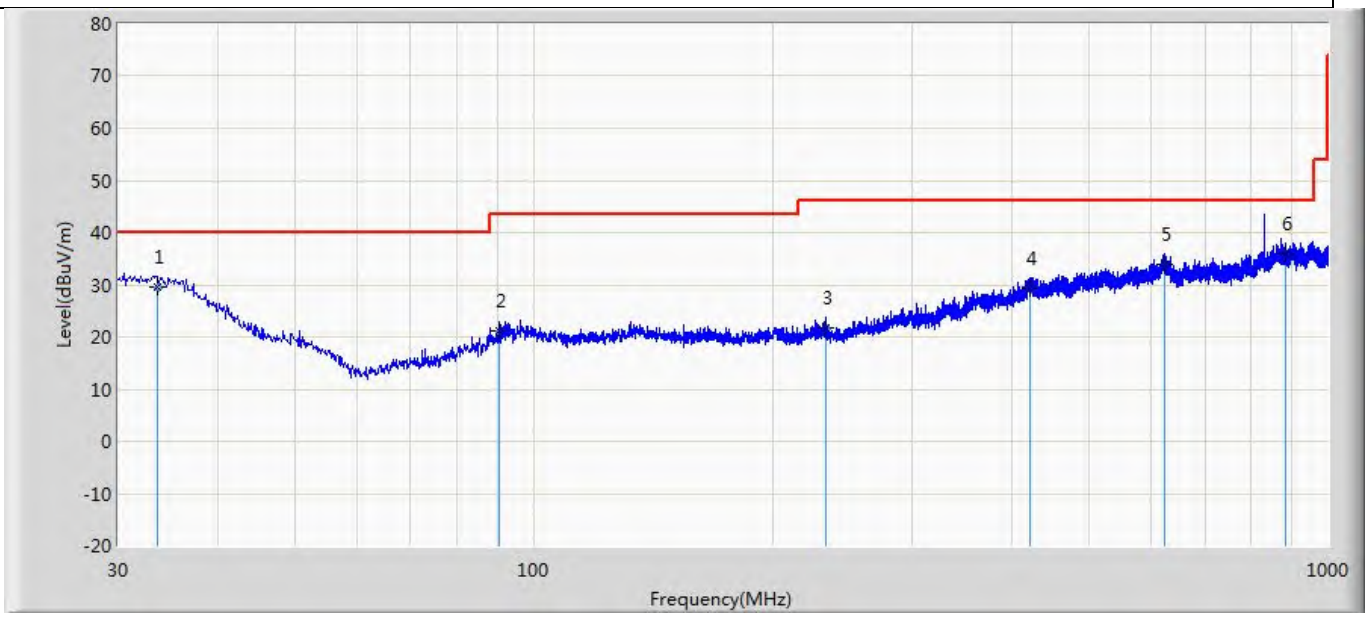
The worst case of Radiated Emission below 1GHz:

Profile: 22A0568R	Page No.: 42
Engineer: Yu Liu	
Site: AC3	Time: 2022/11/21 - 20:15
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3M(30-1000M)	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode 1: 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		34.850	25.823	3.163	-14.177	40.000	22.660	QP
2		95.596	25.695	5.622	-17.805	43.500	20.072	QP
3		205.206	26.506	3.037	-16.994	43.500	23.469	QP
4		286.686	27.809	2.766	-18.191	46.000	25.043	QP
5		417.030	29.204	2.800	-16.796	46.000	26.404	QP
6	*	871.111	37.139	4.132	-8.861	46.000	33.007	QP

Profile: 22A0568R	Page No.: 43
Engineer: Yu Liu	
Site: AC3	Time: 2022/11/21 - 20:24
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3M(30-1000M)	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode 1: Transmit at 2441MHz by DH5	

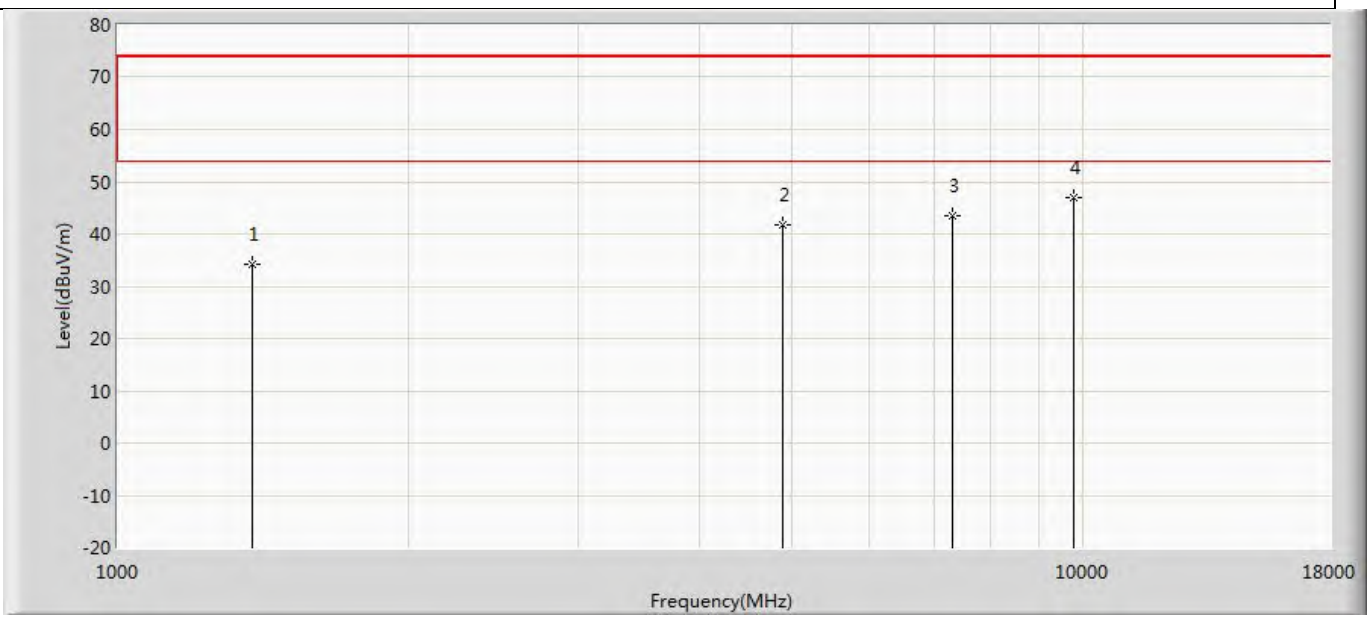


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		33.638	29.546	2.478	-10.454	40.000	27.068	QP
2		90.625	21.023	7.339	-22.477	43.500	13.684	QP
3		233.458	21.650	3.748	-24.350	46.000	17.902	QP
4		421.274	29.142	1.965	-16.858	46.000	27.177	QP
5		624.004	34.024	3.339	-11.976	46.000	30.685	QP
6	*	885.297	36.079	3.550	-9.921	46.000	32.529	QP

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

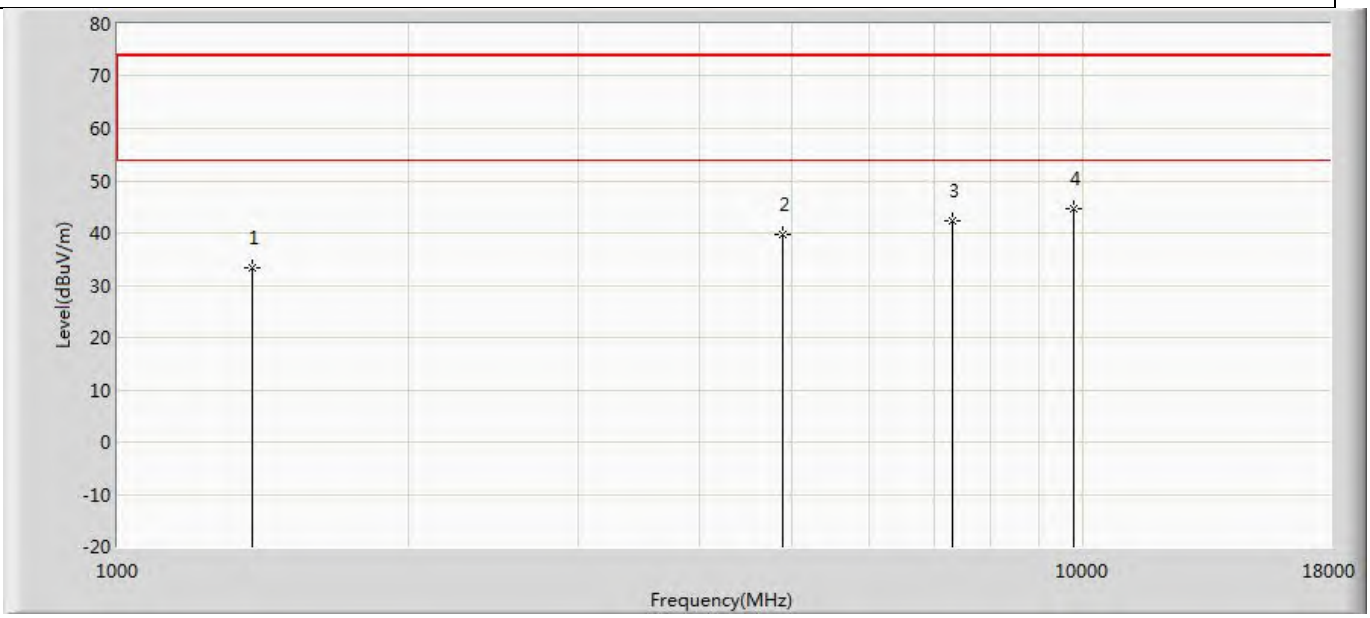
The worst case of Simultaneous Radiated Emission:

Profile: 22A0568R	Page No.: 19
Engineer: Yu Liu	
Site: AC5	Time: 2022/11/20 - 23:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power:AC 120V/60HZ
Note: Mode1: BT3.0+Tetra	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1380.125	34.094	55.488	-39.906	74.000	-21.394	PK
2		4882.000	41.703	56.316	-32.297	74.000	-14.612	PK
3		7323.000	43.487	54.363	-30.513	74.000	-10.876	PK
4	*	9764.000	46.939	54.790	-27.061	74.000	-7.850	PK

Profile: 22A0568R	Page No.: 20
Engineer: Yu Liu	
Site: AC5	Time: 2022/11/20 - 23:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power:AC 120V/60HZ
Note: Mode1: BT3.0+Tetra	

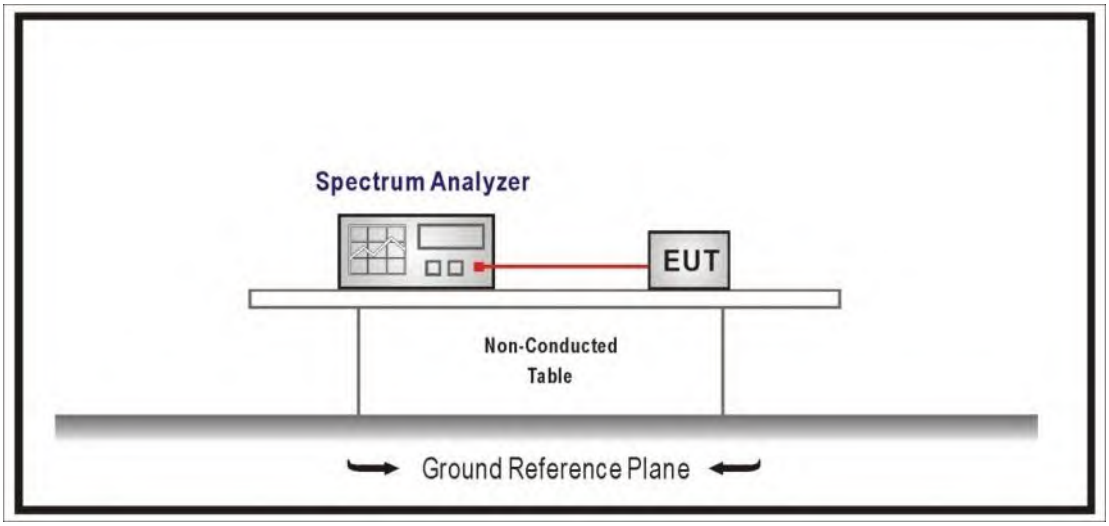


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		1380.125	33.195	54.589	-40.805	74.000	-21.394	PK
2		4882.000	39.680	54.293	-34.320	74.000	-14.612	PK
3		7323.000	42.273	53.149	-31.727	74.000	-10.876	PK
4	*	9764.000	44.636	52.487	-29.364	74.000	-7.850	PK

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

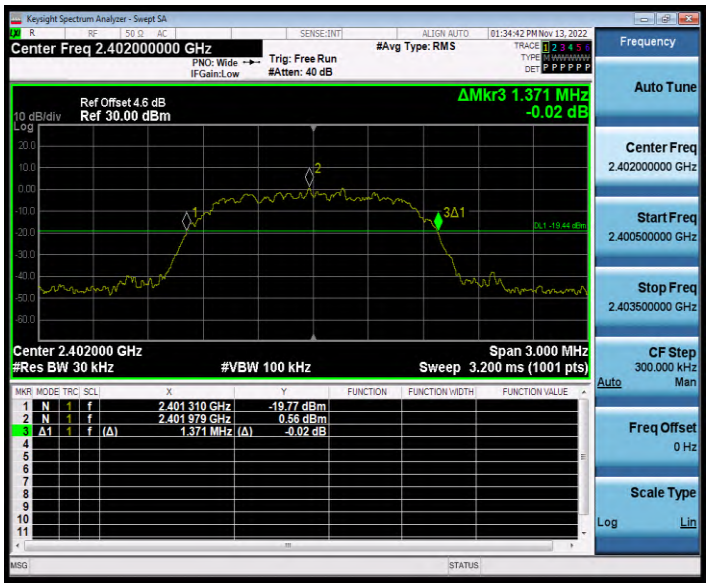
References Rule			Chapter	Description
☒	ANSI C63.10		6.9	Occupied bandwidth tests
	☒	ANSI C63.10	6.9.2	Occupied bandwidth—relative measurement procedure

4.3.4 Test Data

Mode	Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
1	00	2402	1.017	0.92159
	39	2441	1.026	0.91398
	78	2480	0.987	0.90536
2	00	2402	1.371	1.1991
	39	2441	1.362	1.2173
	78	2480	1.359	1.2208
3	00	2402	1.332	1.2107
	39	2441	1.347	1.2193
	78	2480	1.344	1.2225

Note 1: The worst data plot as below:

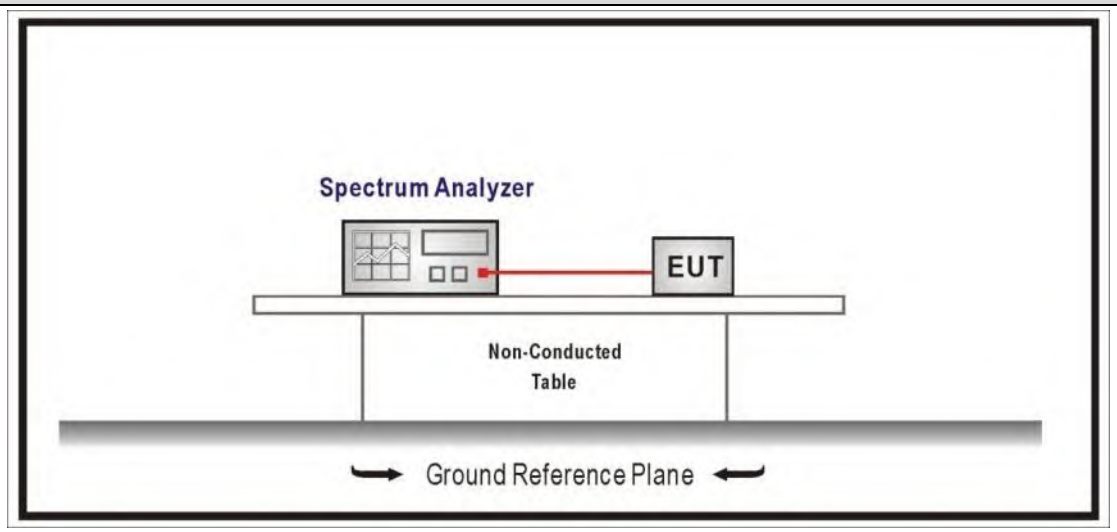
Mode2/CH00/2402MHz



4.4 CarrierFrequencySeparation	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 seconds within a
☐	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
☐	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

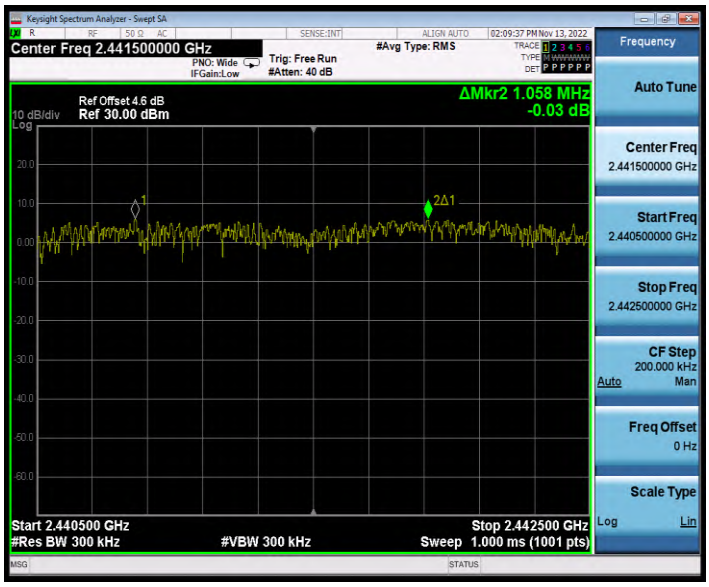
References Rule		Chapter	Description
☒	ANSI C63.10	7.8	Evaluation of frequency-hopping device parameters
	☒ ANSI C63.10	7.8.2	Carrier frequency separation

4.4.4 Test Data

Mode	Channel	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
1	00	2402	1.004	619.53	Pass
	39	2441	1.004	618.33	Pass
	78	2480	1.004	620.2	Pass
2	00	2402	1.2	892.67	Pass
	39	2441	1.2	898	Pass
	78	2480	1.2	898.67	Pass
3	00	2402	1.058	872	Pass
	39	2441	1.058	886	Pass
	78	2480	1.058	884	Pass

Note 1: The worst data plot as below:

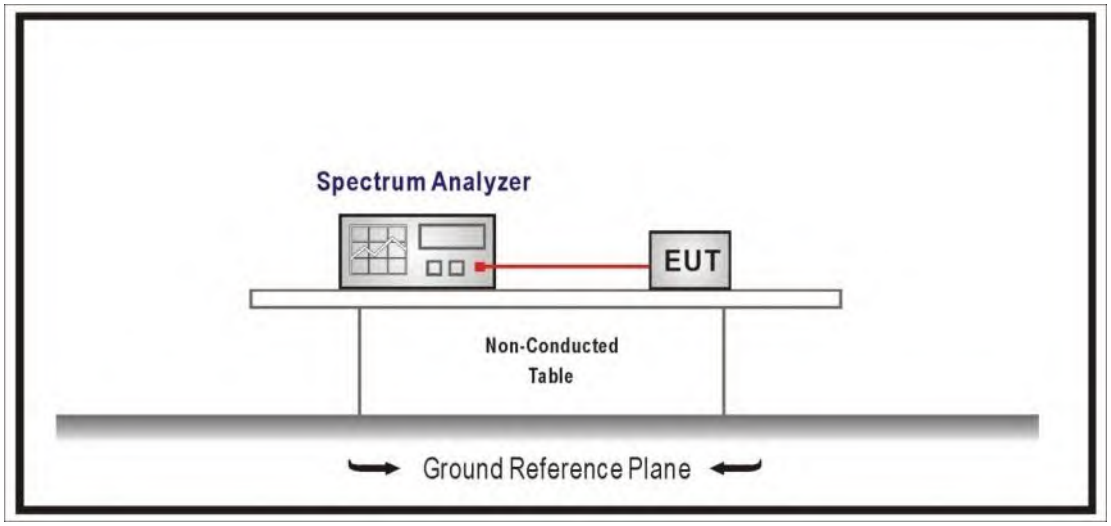
Mode3



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



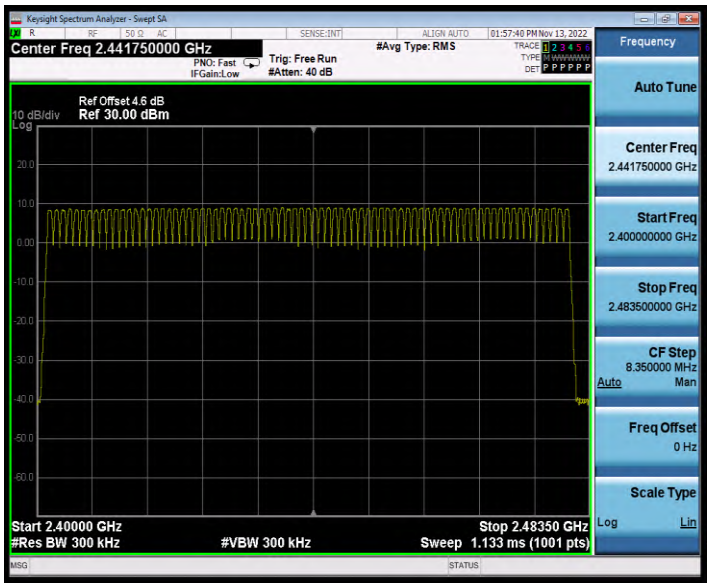
4.5.3 Test Procedure

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

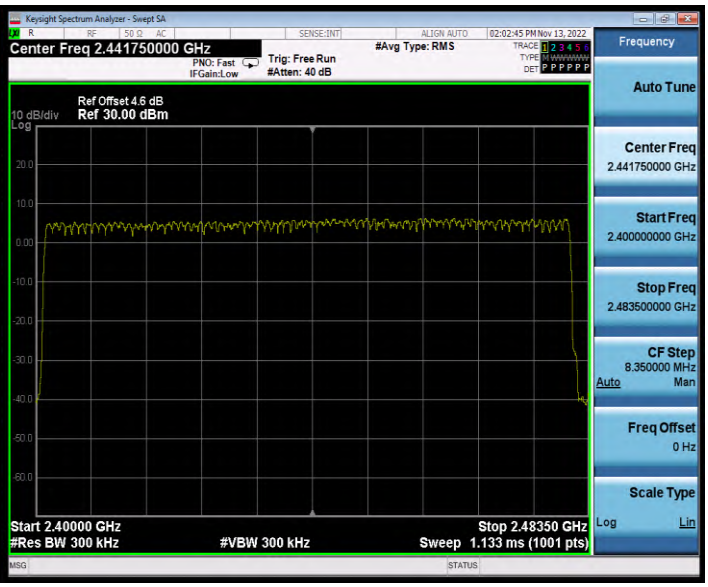
4.5.4 Test Data

Mode	Number of Hopping Frequencies	Limit	Result
1	79	>15	Pass
2	79	>15	Pass
3	79	>15	Pass

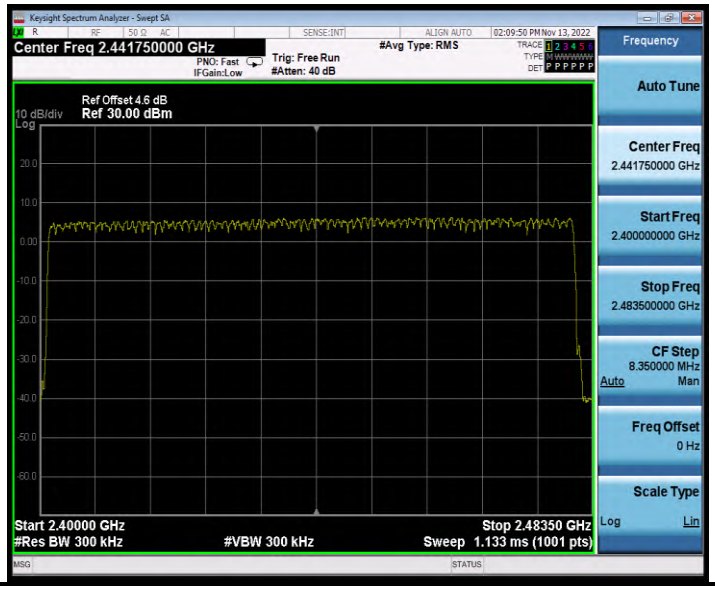
Mode 1



Mode2



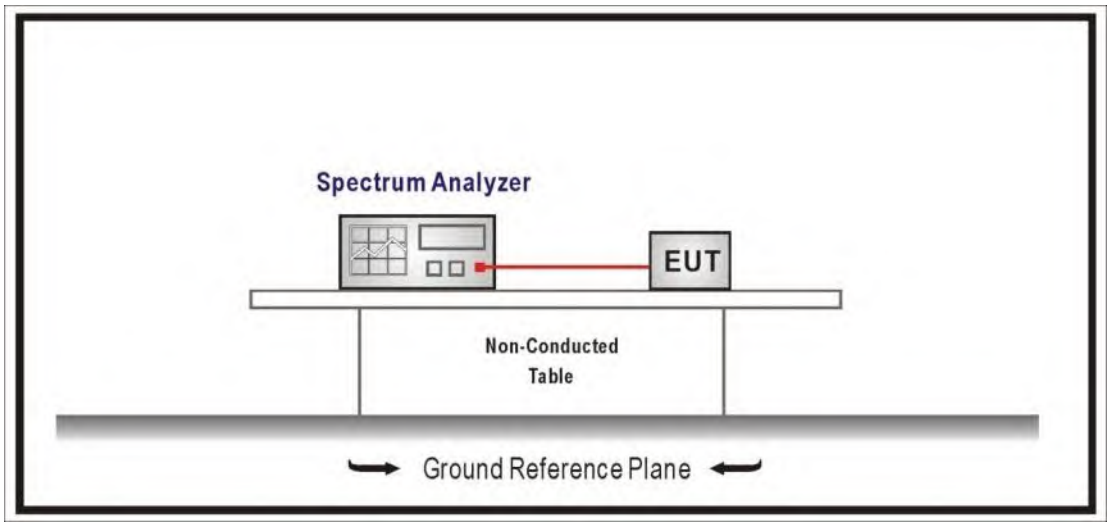
Mode 3



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 second period
☐	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 second period.
☐	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

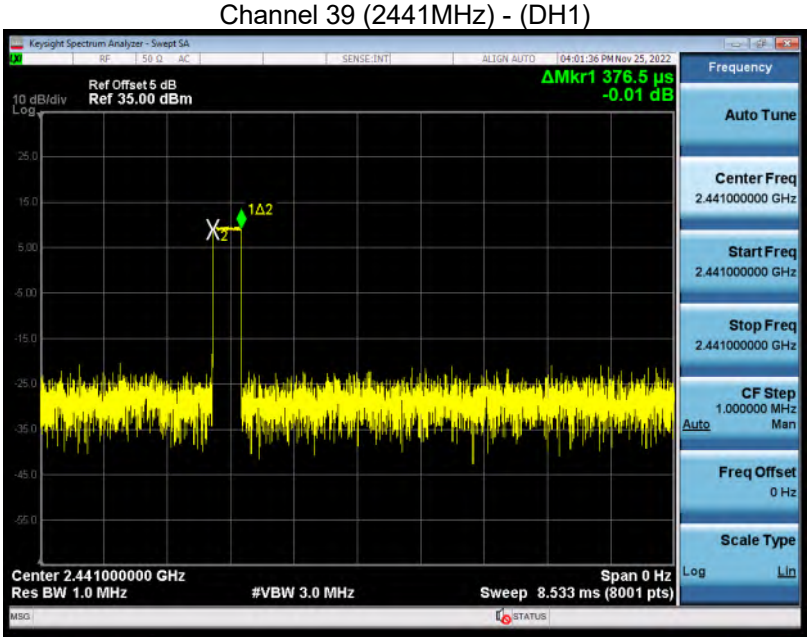
Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
1	39	2441	116.715	< 400	Pass

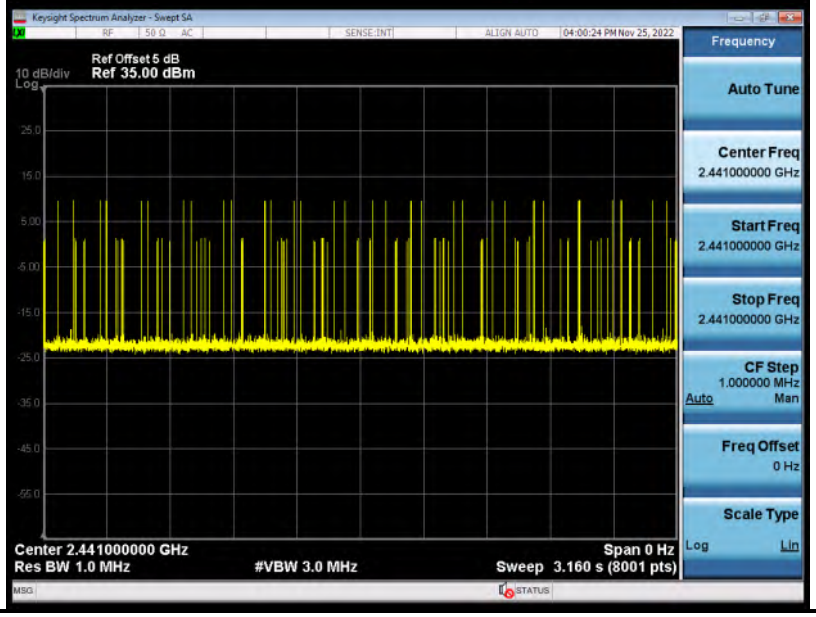
Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=0.3765*31*31.6/3.16=116.715ms

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

Channel 39 (2441MHz) - (DH1)





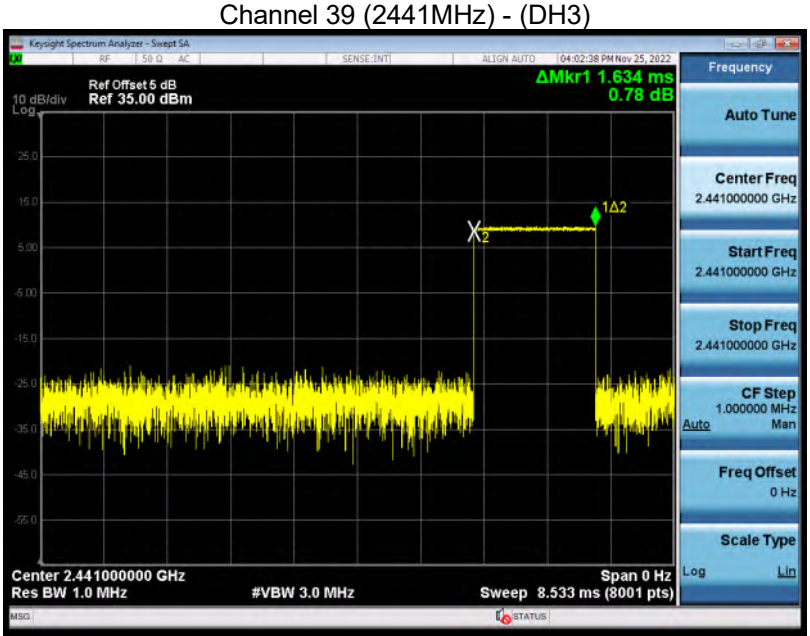
Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
1	39	2441	228.76	< 400	Pass

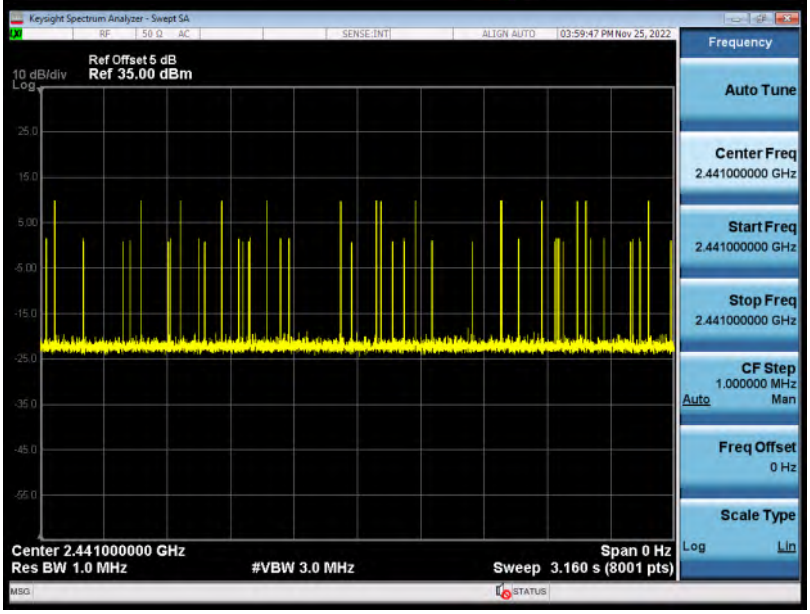
Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=1.634*14*31.6/3.16=228.76ms

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

Channel 39 (2441MHz) - (DH3)





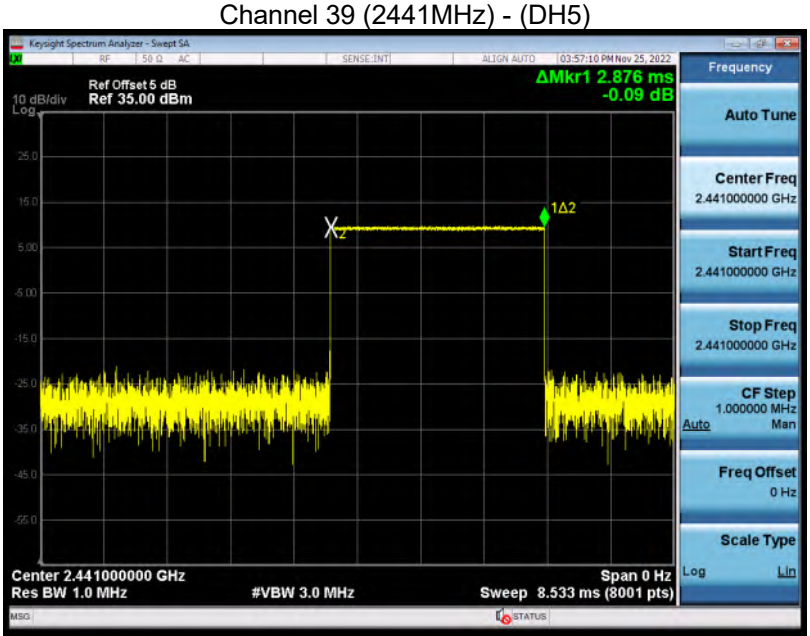
Mode	Channel	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
1	39	2441	373.88	< 400	Pass

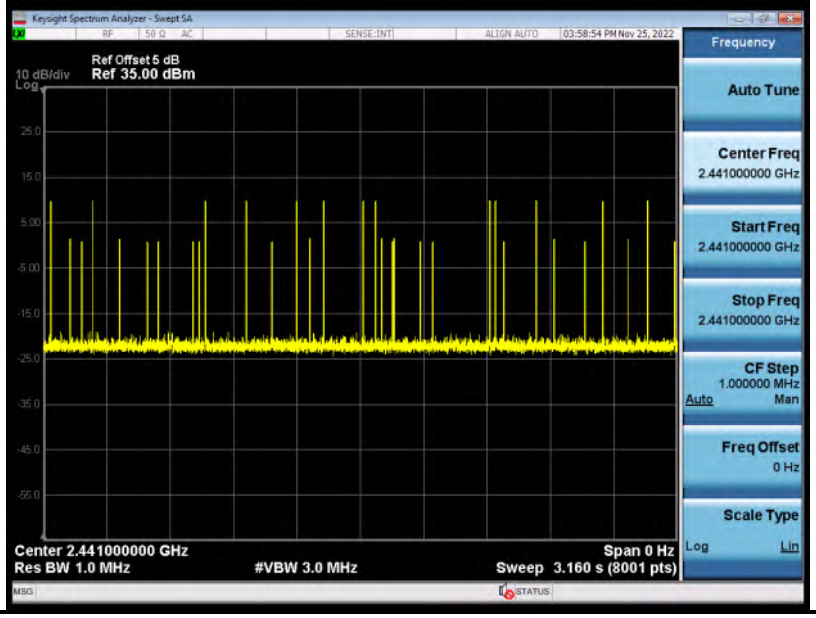
Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy=2.876*13*31.6/3.16=373.88ms

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

Channel 39 (2441MHz) - (DH5)



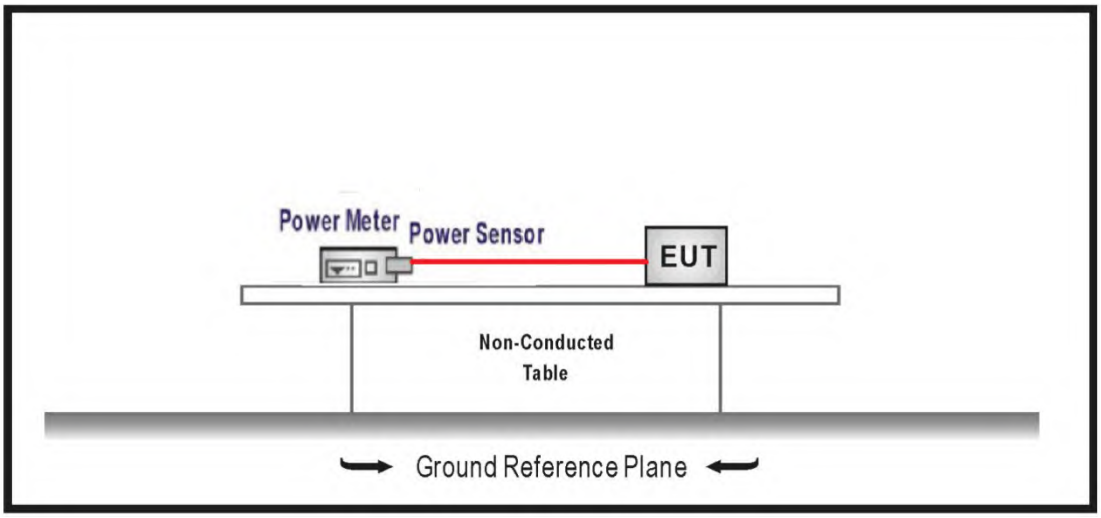


Note: The packet time of AFH mode is same as normal mode, due to the packet time of AFH mode multiply with lesser factor is dwell time of 0.4X20=8S, the dwell time of AFH mode comply with the limit.

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)	Conducted Power (dBm)	Conducted Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
Mode 1	00	2402	8.87	≤21	11.37	≤27	Pass
	39	2441	9.19	≤21	11.69	≤27	Pass
	78	2480	8.95	≤21	11.45	≤27	Pass
Mode 2	00	2402	7.48	≤21	9.98	≤27	Pass
	39	2441	8.02	≤21	10.52	≤27	Pass
	78	2480	7.90	≤21	10.4	≤27	Pass
Mode 3	00	2402	7.86	≤21	10.36	≤27	Pass
	39	2441	8.38	≤21	10.88	≤27	Pass
	78	2480	8.22	≤21	10.72	≤27	Pass

4.8 Emissions in non-restricted frequency band	VERDICT: PASS

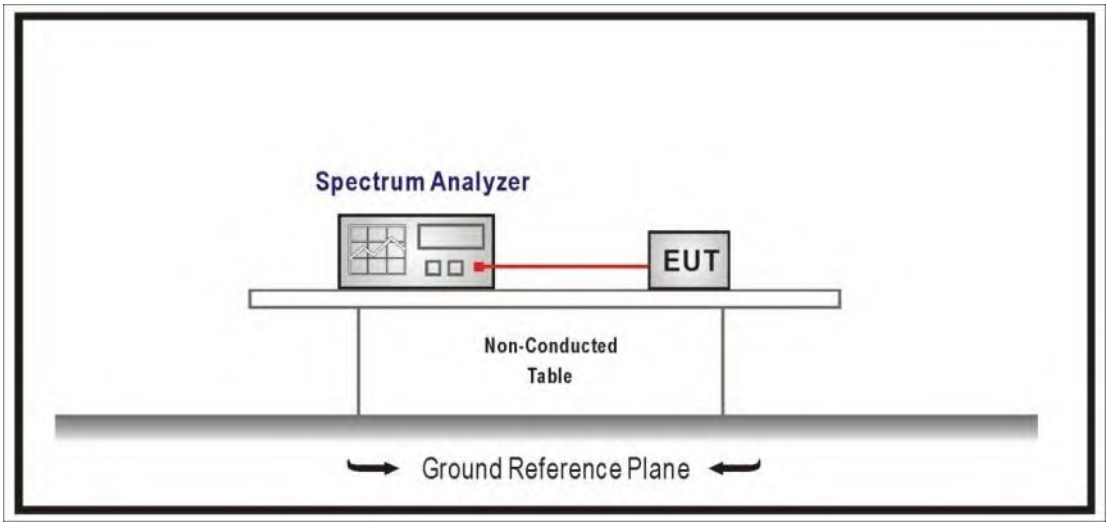
4.8.1 Limit

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

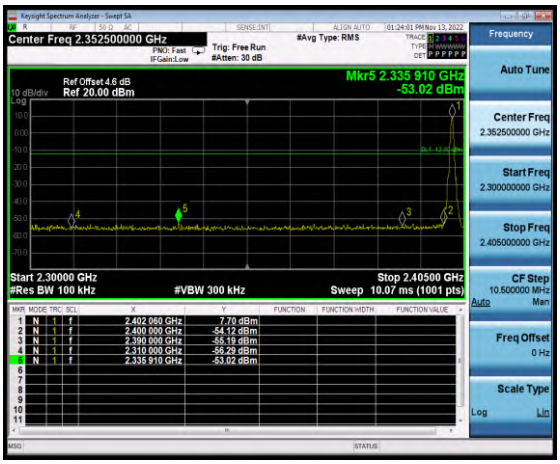


4.8.3 Test Procedure

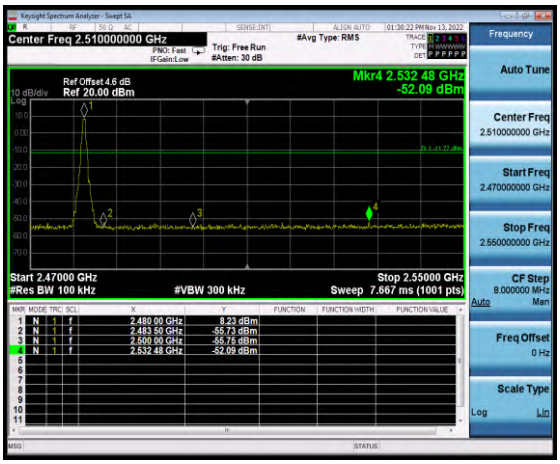
References Rule			Chapter	Description
☒	ANSI C63.10		7.8	Evaluation of frequency-hopping device parameters
	☒	ANSI C63.10	7.8.6	Band-edge measurements for RF conducted emissions

4.8.4 Test Data

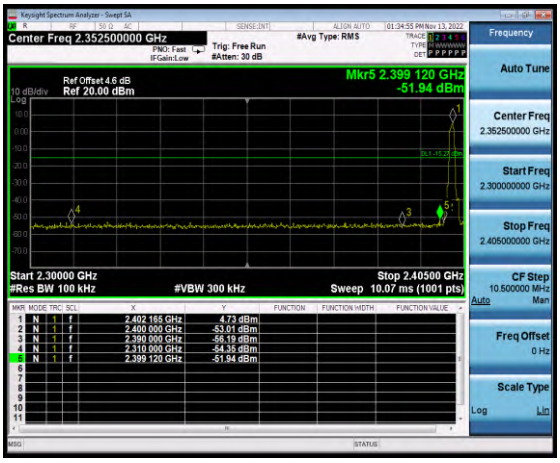
Mode 1 CH00(2402MHz)



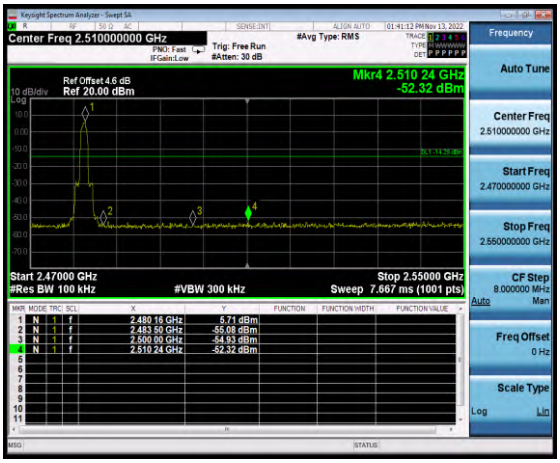
Mode 1 CH78(2480MHz)



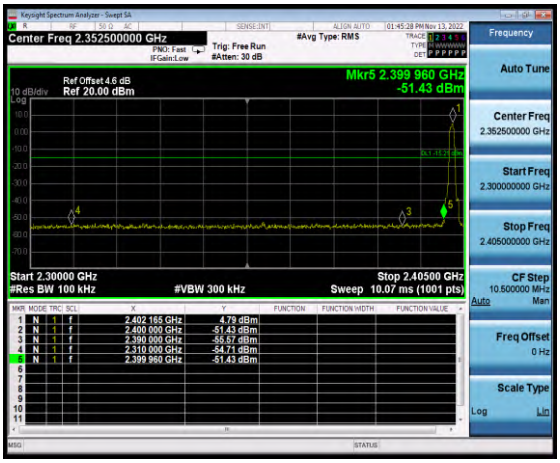
Mode 2 CH00(2402MHz)



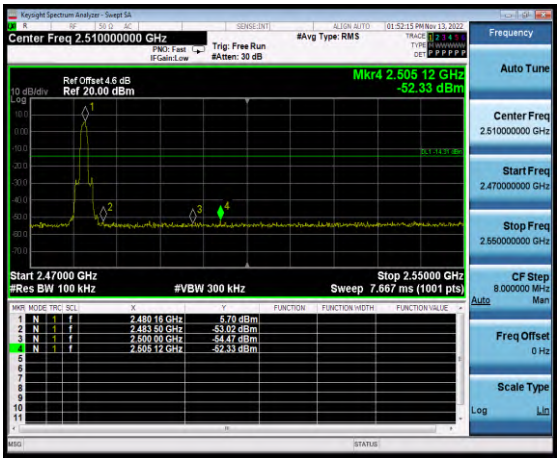
Mode 2 CH78(2480MHz)



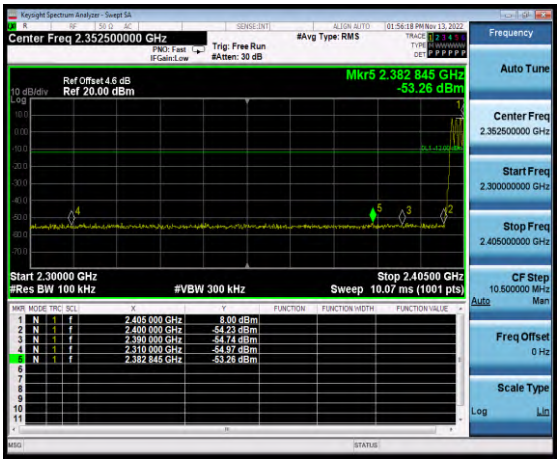
Mode 3 CH00(2402MHz)



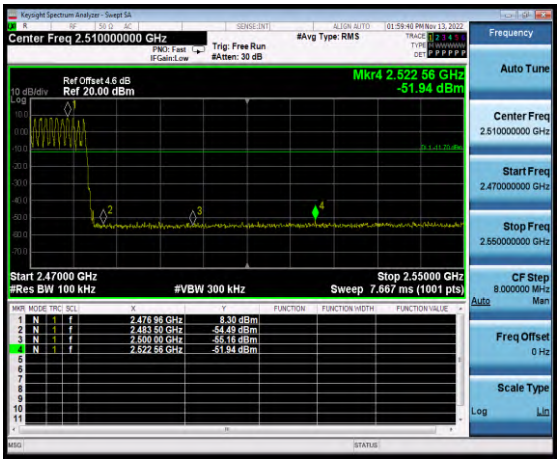
Mode 3 CH78(2480MHz)



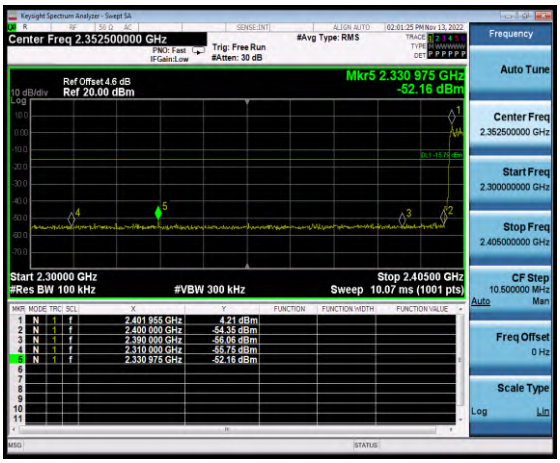
Mode 4 Frequency Hopping - GFSK_DH5



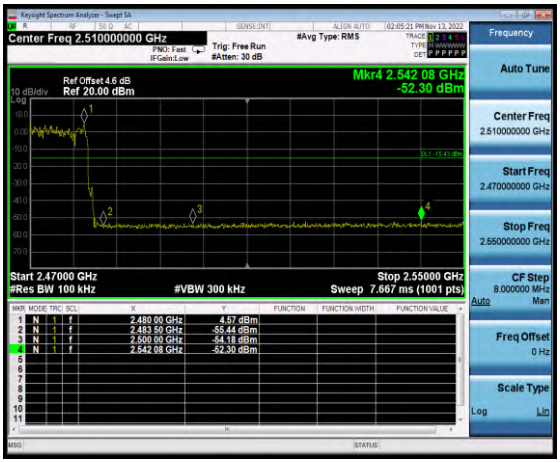
Mode 4 Frequency Hopping - GFSK_DH5



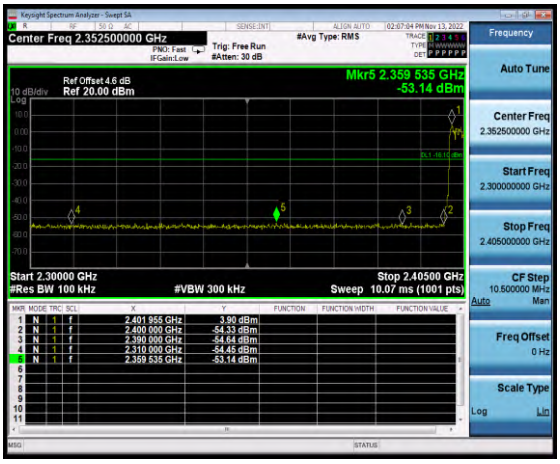
Mode 5 Frequency Hopping - Pi/4 DQPSK_DH5



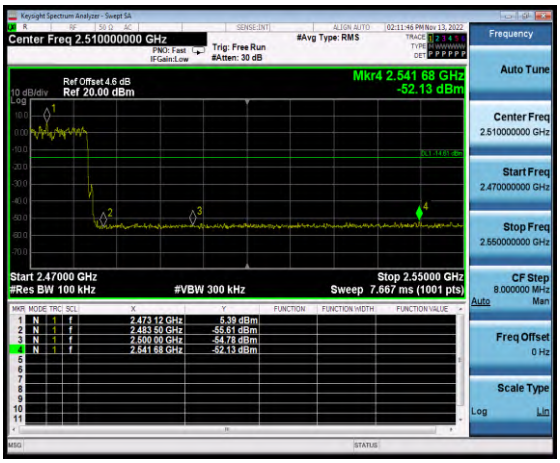
Mode 5 Frequency Hopping - Pi/4 DQPSK_DH5



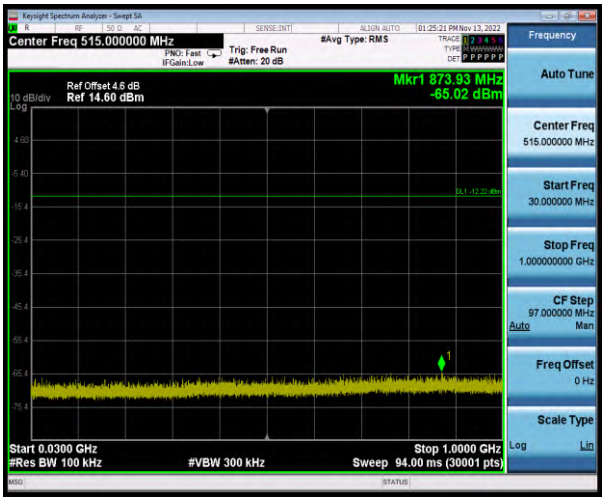
Mode 6 Frequency Hopping - 8DPSK_DH5



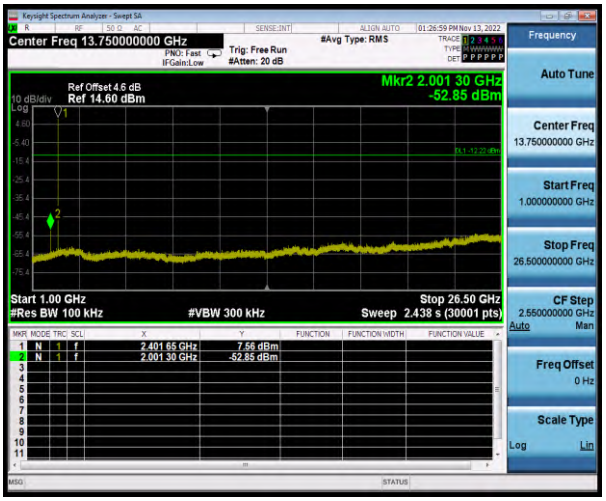
Mode 6 Frequency Hopping - 8DPSK_DH5



Mode 1 CH00(2402MHz)

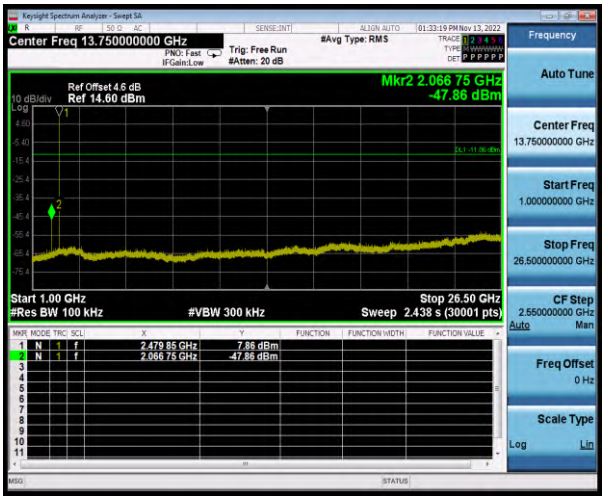


Mode 1 CH00(2402MHz)



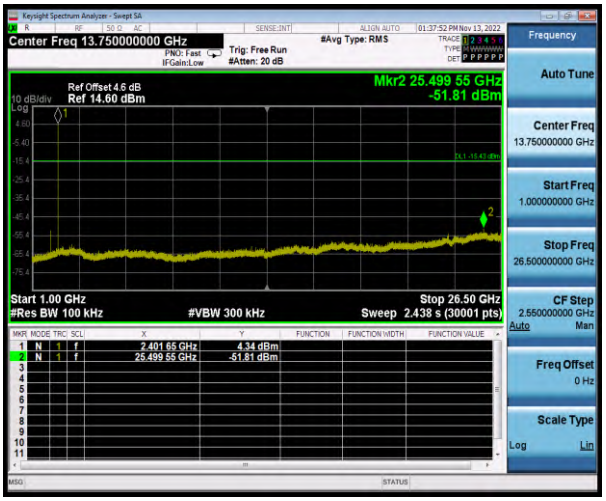
Mode 1 CH78(2480MHz)

Mode 1 CH78(2480MHz)

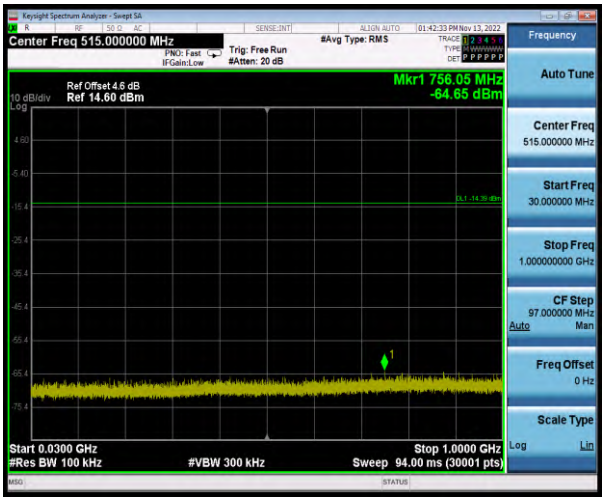


Mode 2 CH00(2402MHz)

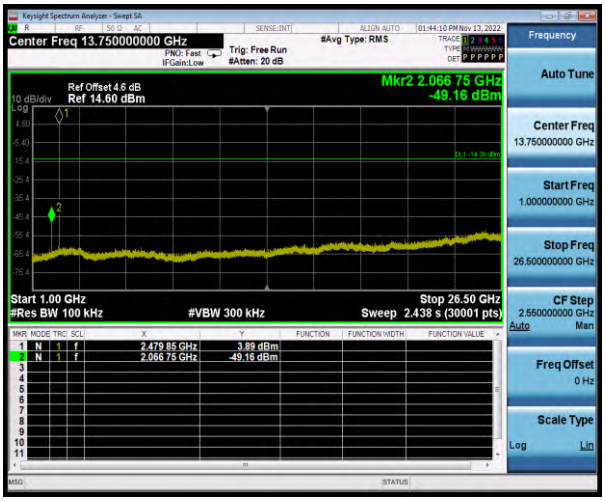
Mode 2 CH00(2402MHz)



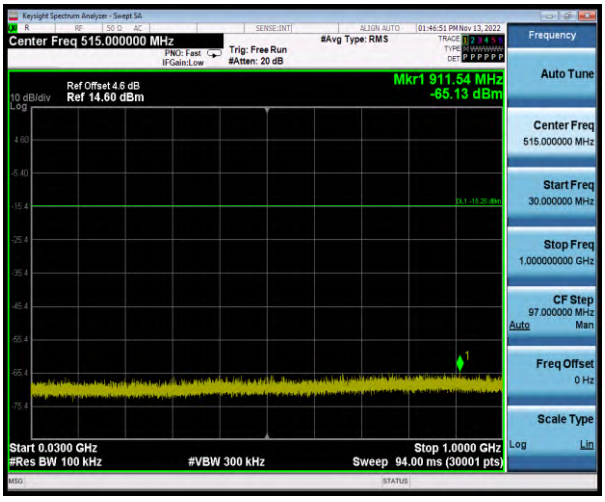
Mode 2 CH78(2480MHz)



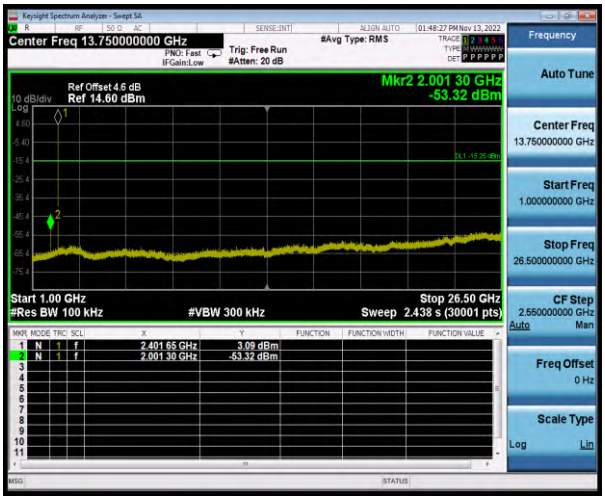
Mode 2 CH78(2480MHz)



Mode 3 CH00(2402MHz)

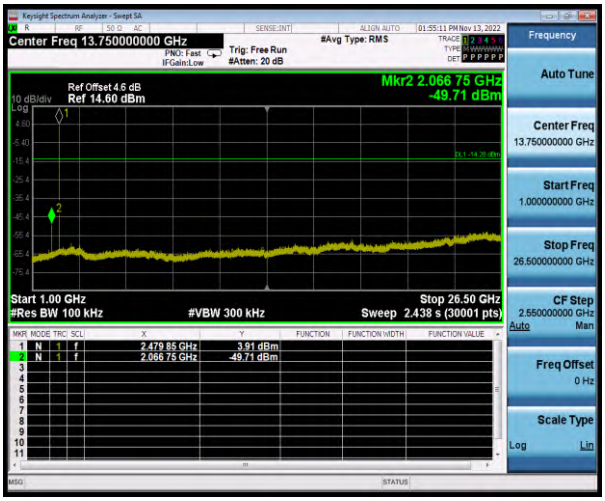


Mode 3 CH00(2402MHz)



Mode 3 CH78(2480MHz)

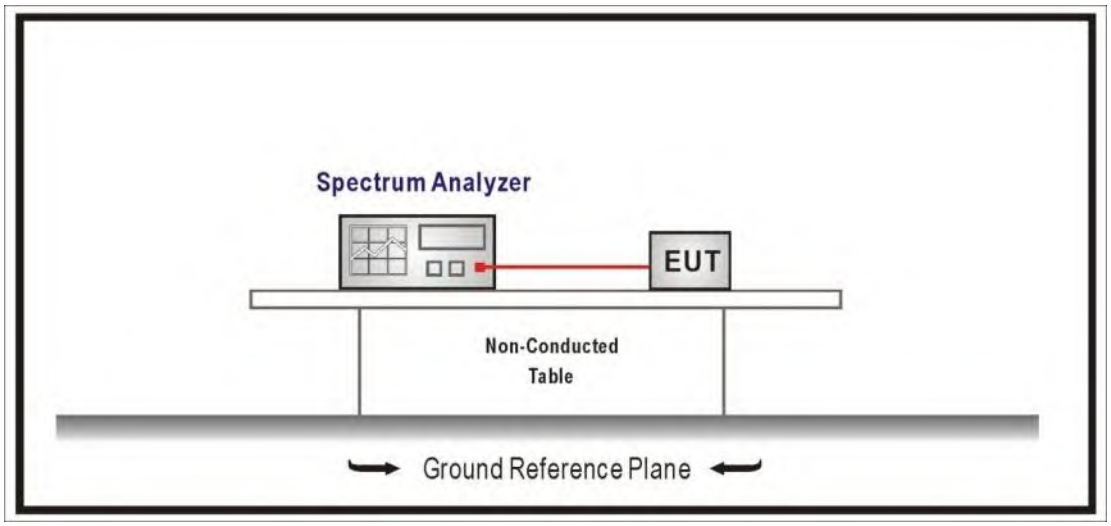
Mode 3 CH78(2480MHz)



4.9 Duty cycle	VERDICT: PASS

4.9.1 Limit
N/A

4.9.2 Test Setup



4.9.3 Test Procedure

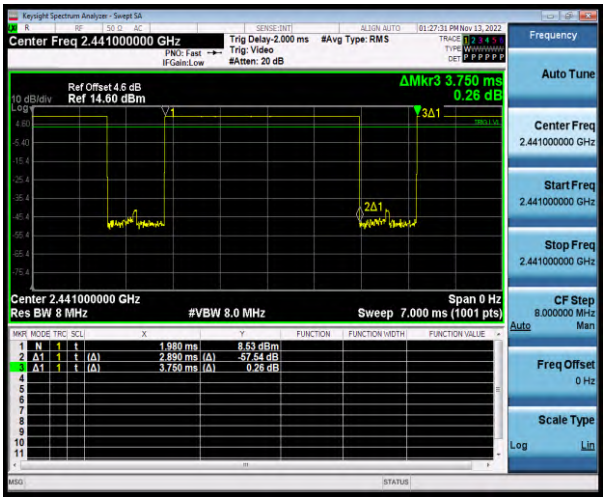
References Rule		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

4.9.4 Test Data

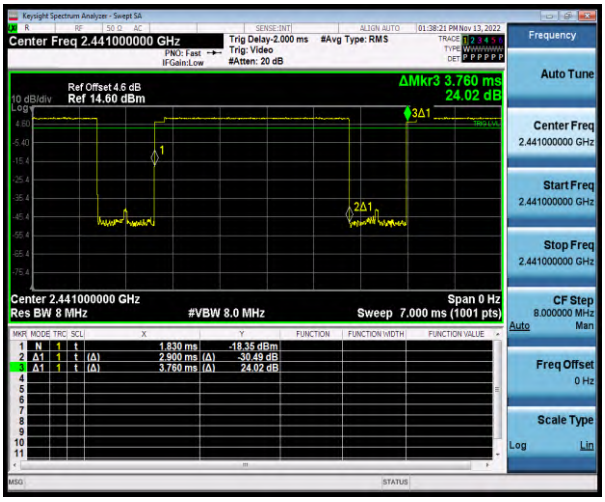
Test Mode	Tx On (ms)	Tx Off (ms)	Tx On + Tx Off (ms)	Duty Cycle (%)
Mode 1	2.890	0.860	3.750	77.07
Mode 2	2.900	0.860	3.760	77.13
Mode 3	2.890	0.860	3.750	77.07

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.

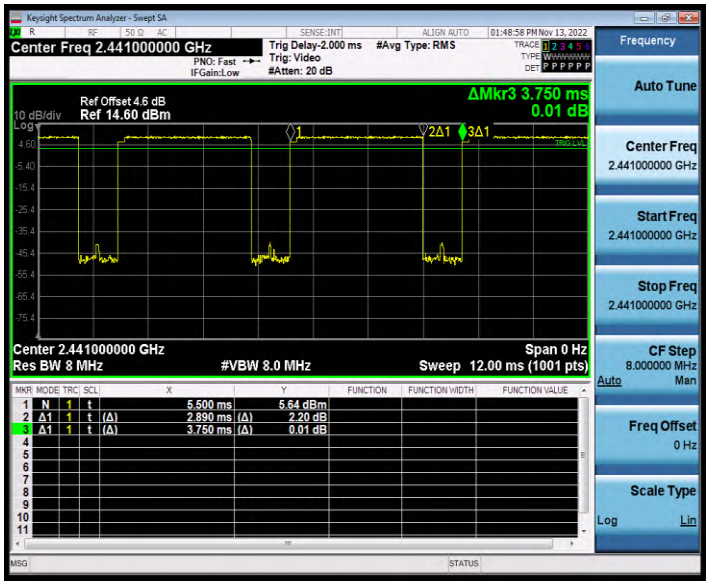
Mode 1 CH39 2441MHz



Mode 2 CH39 2441MHz



Mode 3 CH39 2441MHz

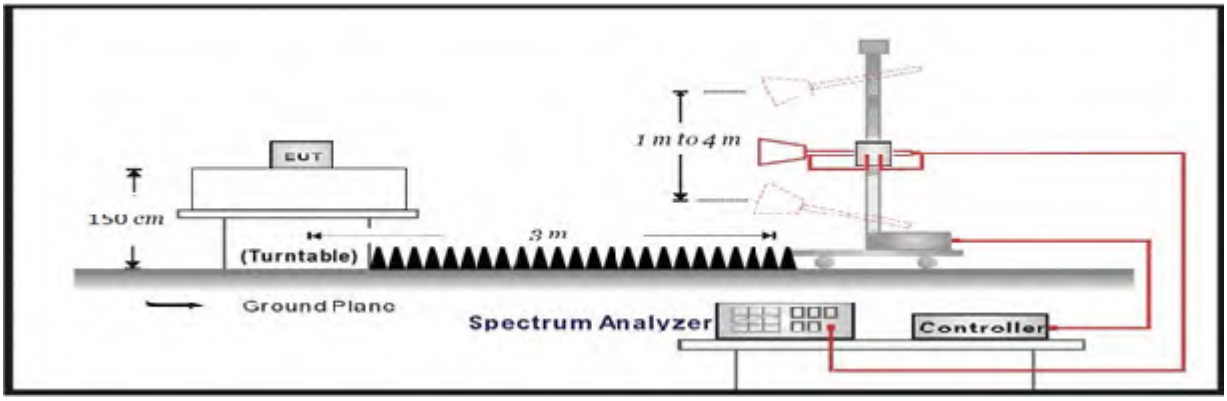


4.10 Band Edge — VERDICT: PASS

4.10.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d) ,15.209			
Frequency bands (MHz)	Detector	Limit (dB μ V/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



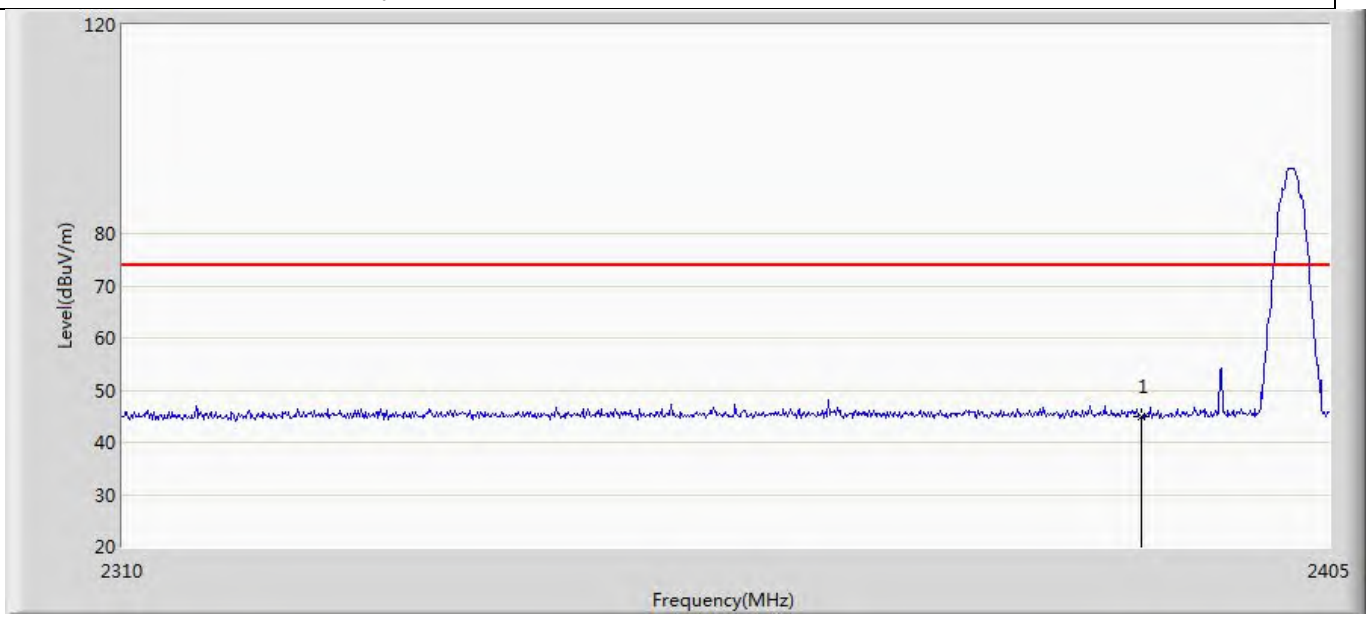
4.10.3 Test Procedure

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

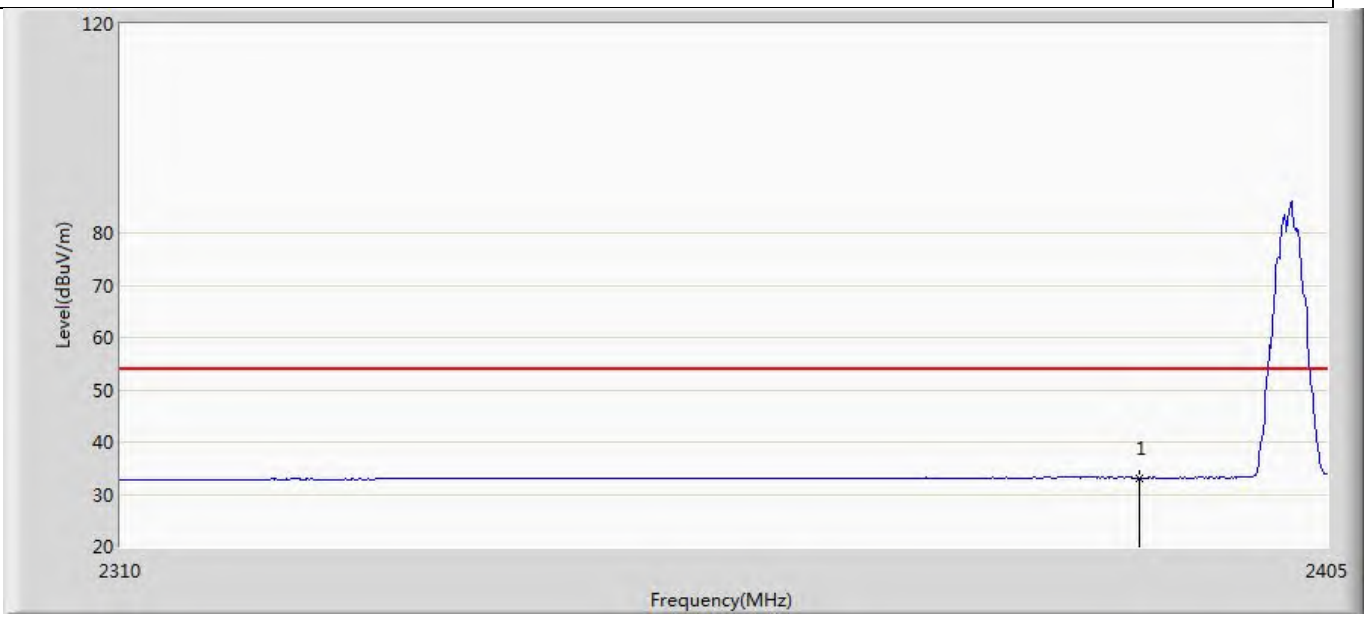
4.10.4 Test Data

Profile: 22A0568R	Page No.: 1
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 01:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



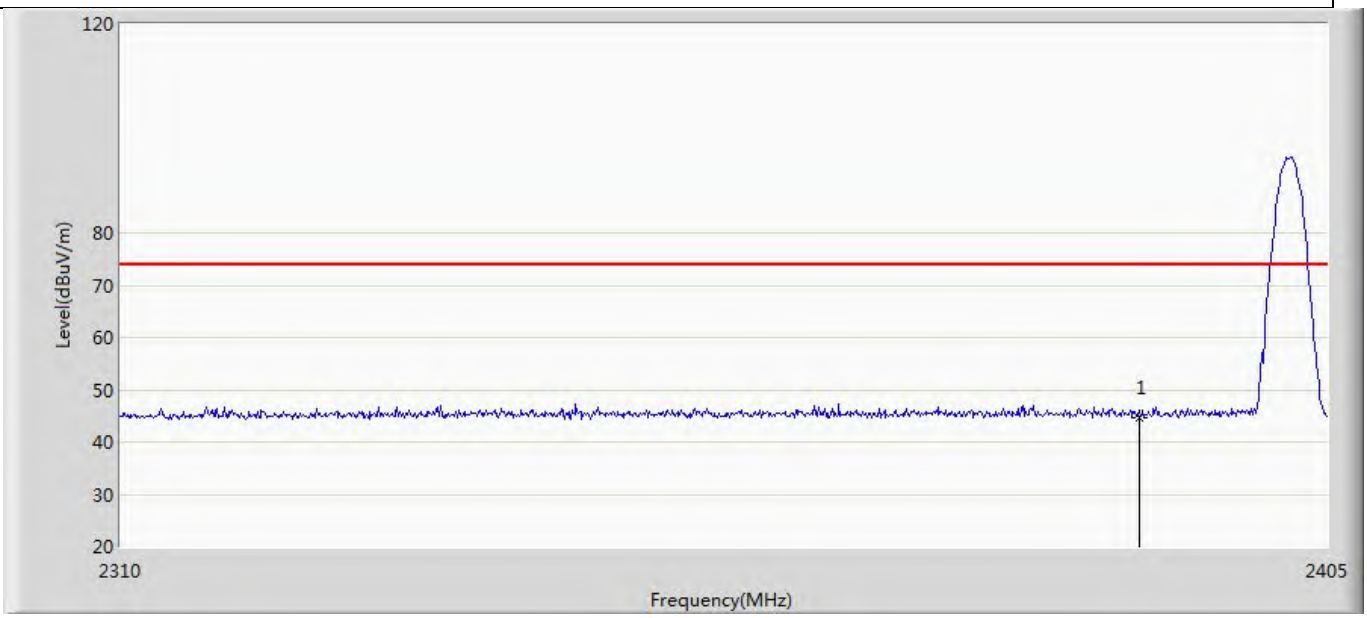
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.937	10.853	-29.063	74.000	34.084	PK

Profile: 22A0568R	Page No.: 2
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 01:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



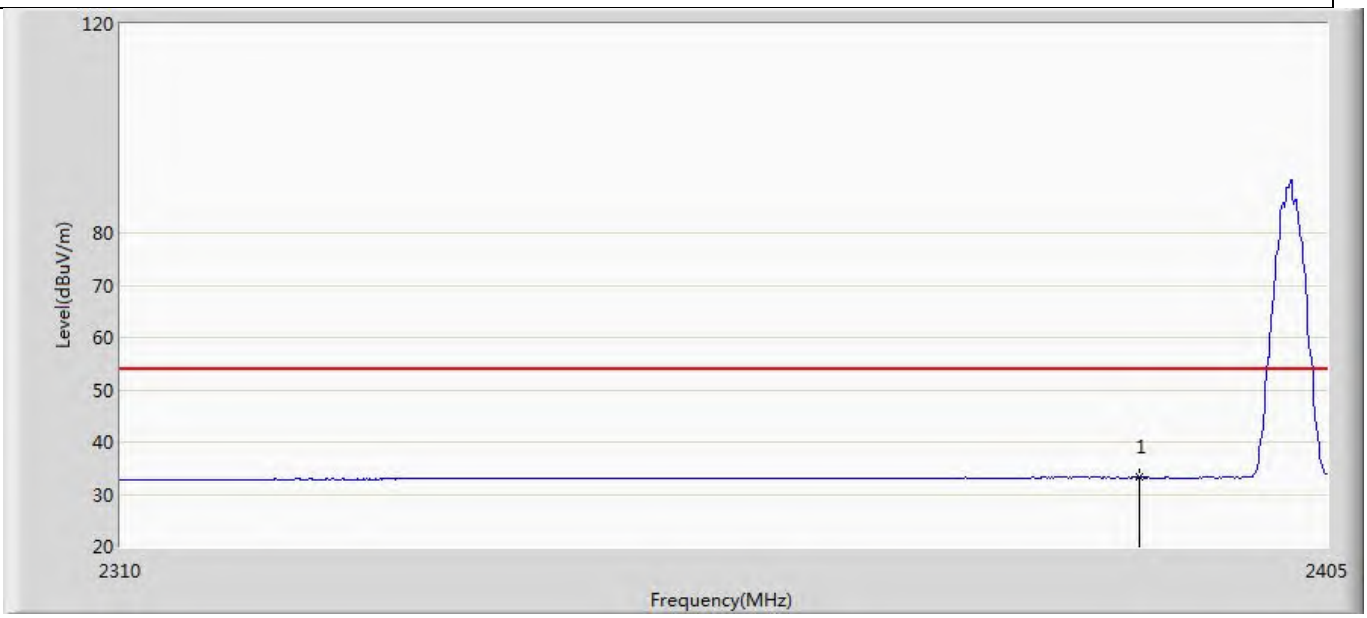
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.149	-0.935	-20.851	54.000	34.084	AV

Profile: 22A0568R	Page No.: 3
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 01:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



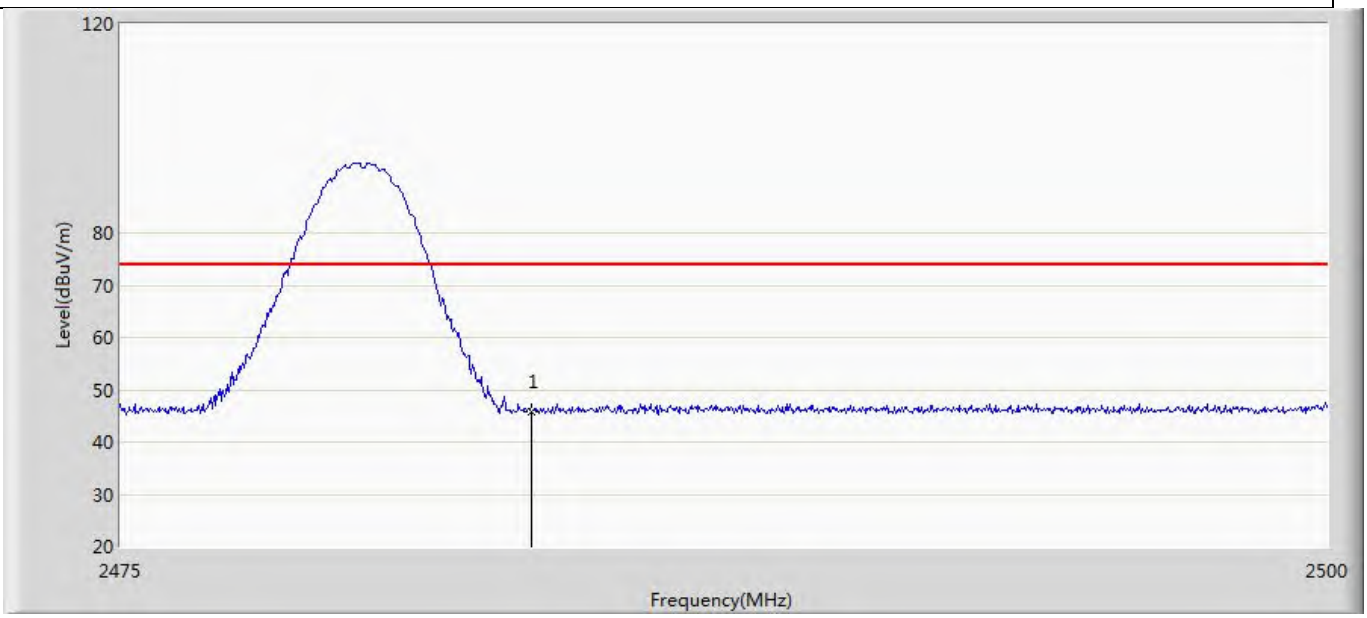
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.688	10.604	-29.312	74.000	34.084	PK

Profile: 22A0568R	Page No.: 4
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 01:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2402MHz by DH5	



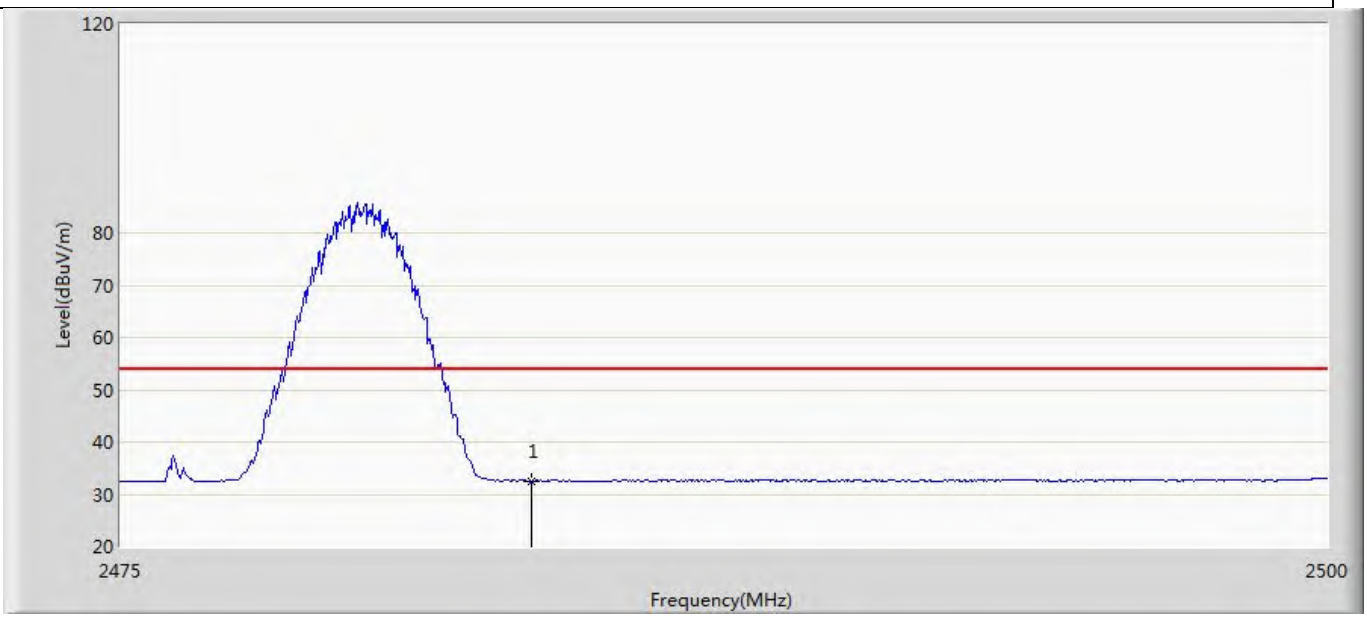
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.193	-0.891	-20.807	54.000	34.084	AV

Profile: 22A0568R	Page No.: 5
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 01:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



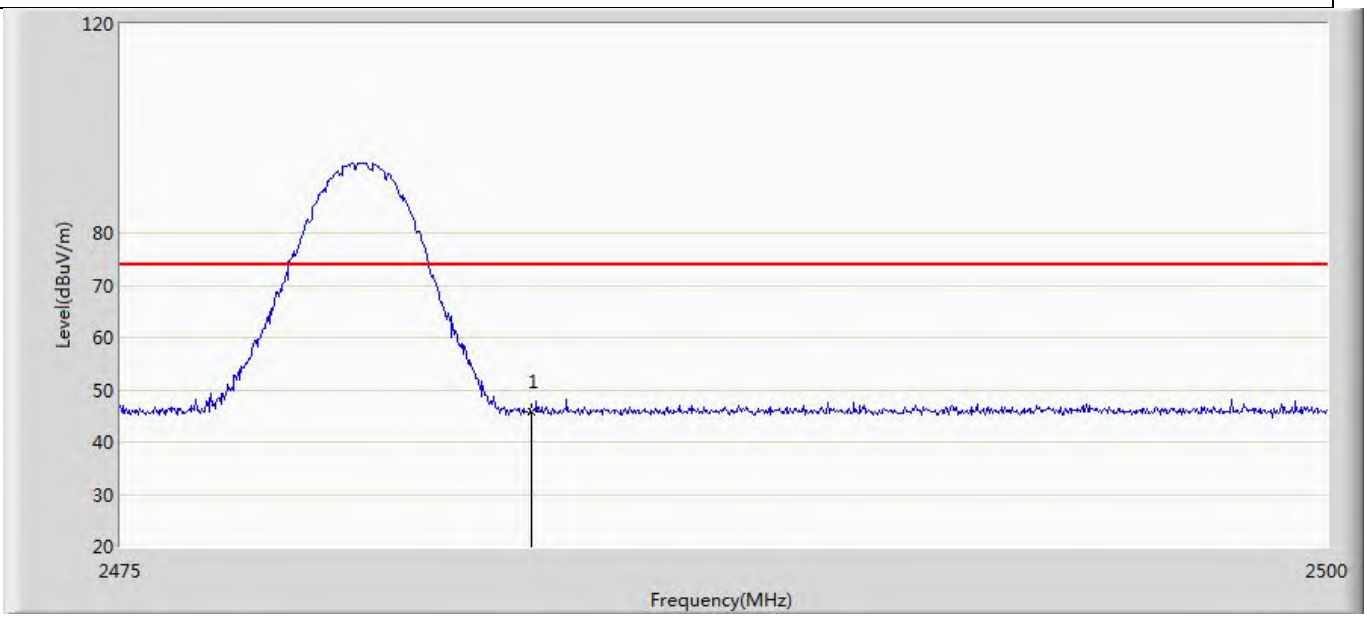
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	45.688	11.197	-28.312	74.000	34.491	PK

Profile: 22A0568R	Page No.: 6
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:02
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



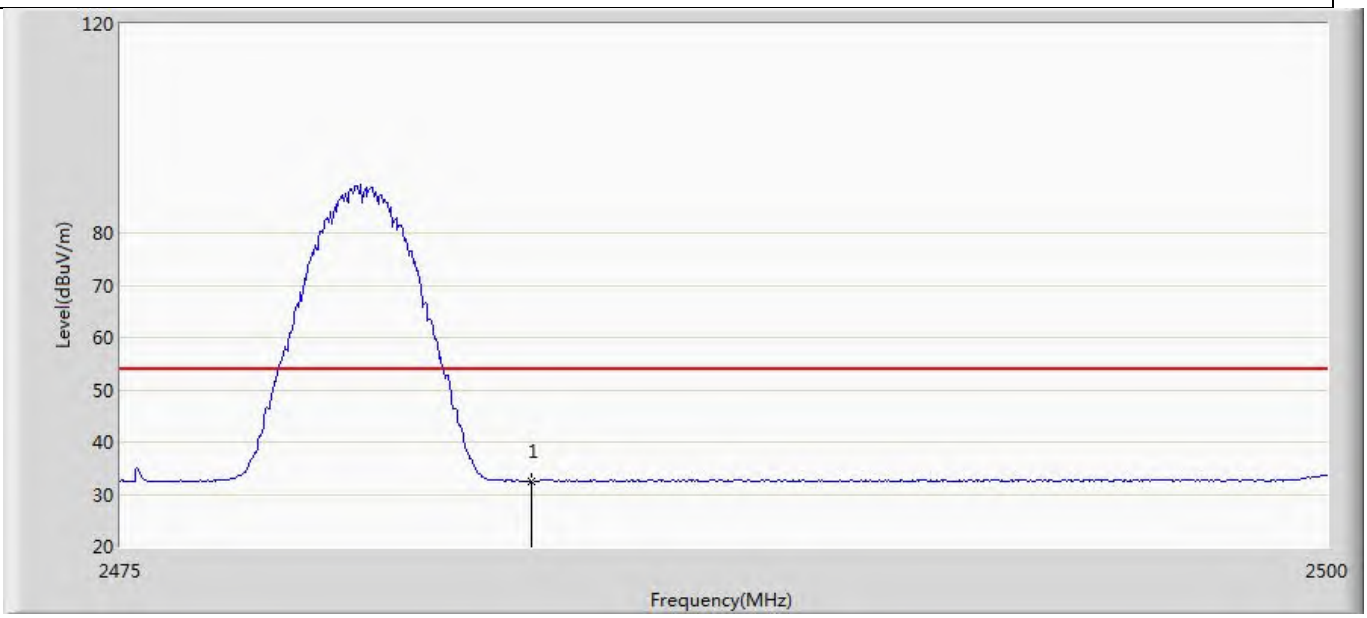
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	32.591	-1.900	-21.409	54.000	34.491	AV

Profile: 22A0568R	Page No.: 7
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



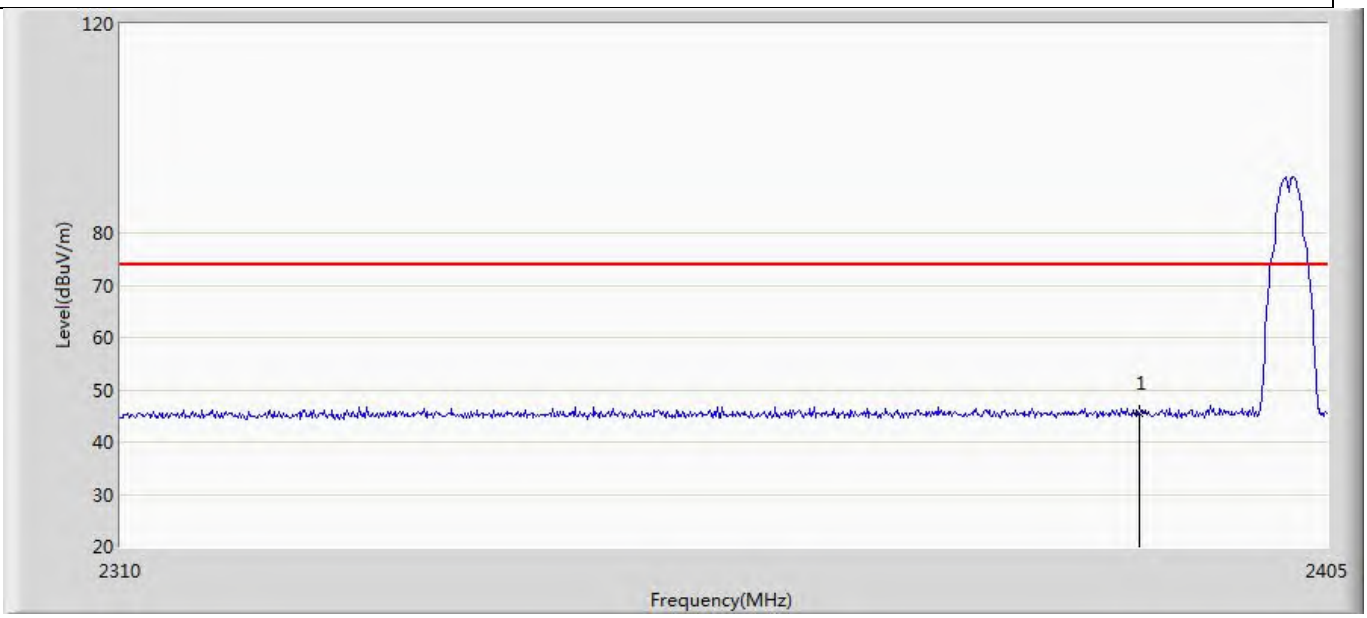
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	45.882	11.391	-28.118	74.000	34.491	PK

Profile: 22A0568R	Page No.: 8
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode1:Transmit at 2480MHz by DH5	



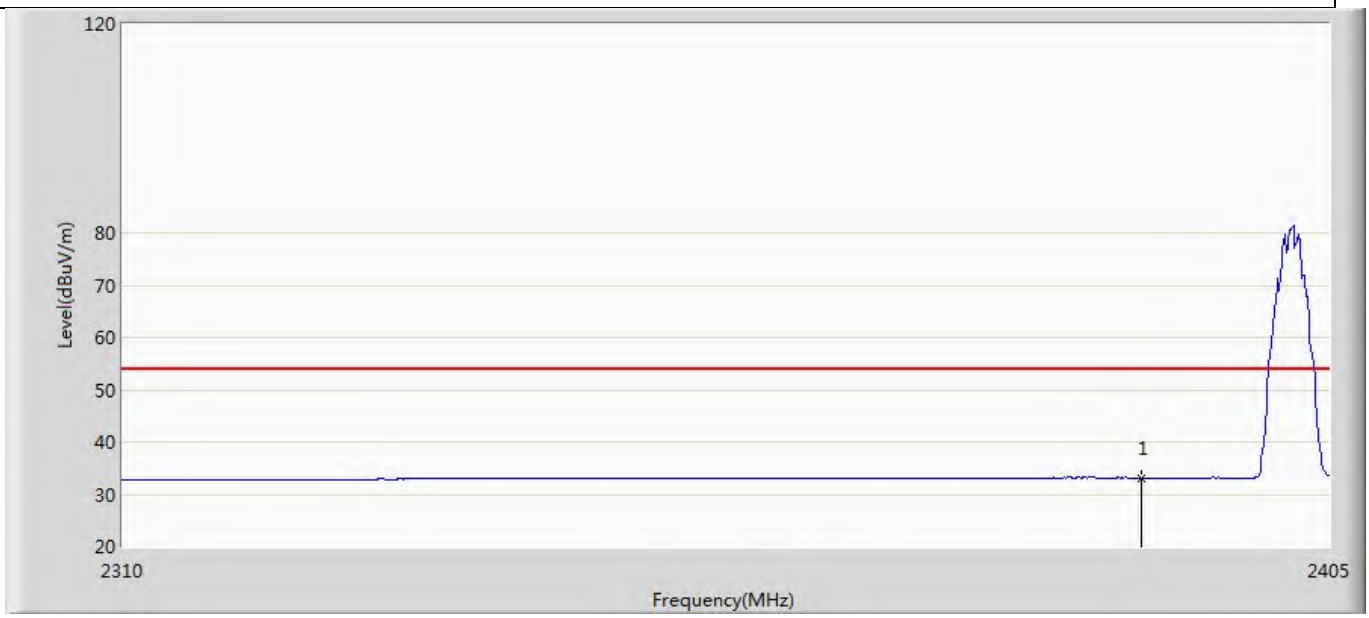
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	32.603	-1.888	-21.397	54.000	34.491	AV

Profile: 22A0568R	Page No.: 9
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



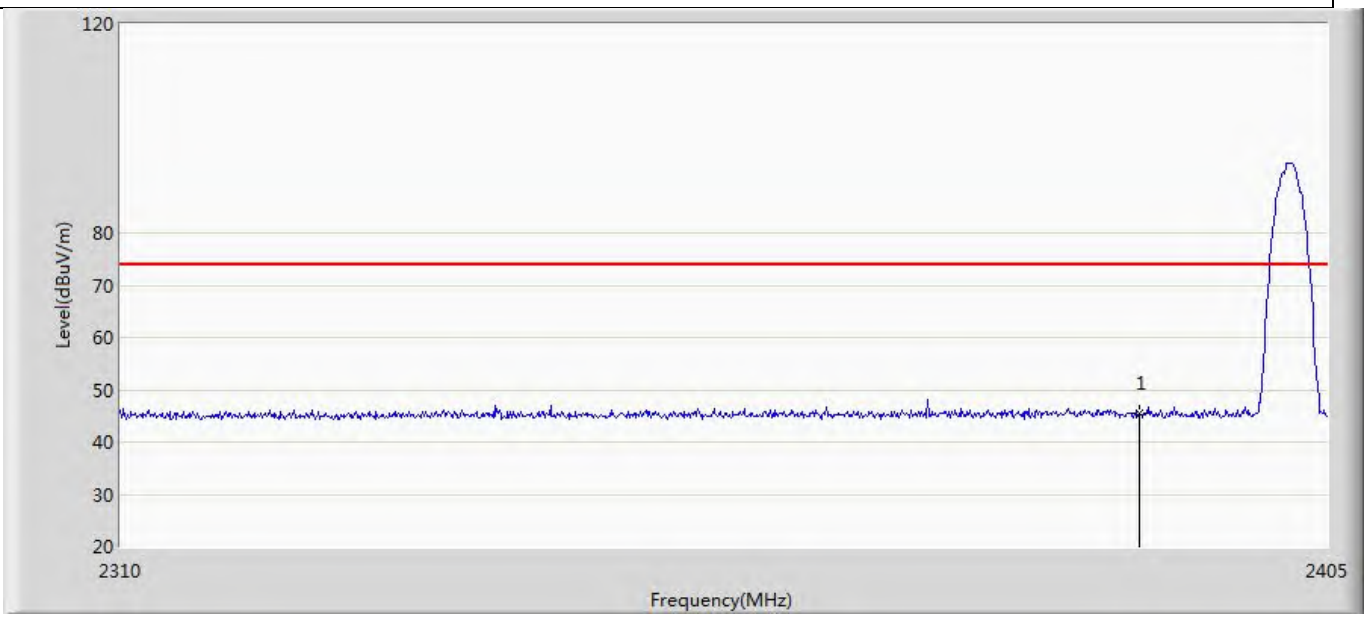
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	45.391	11.307	-28.609	74.000	34.084	PK

Profile: 22A0568R	Page No.: 10
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



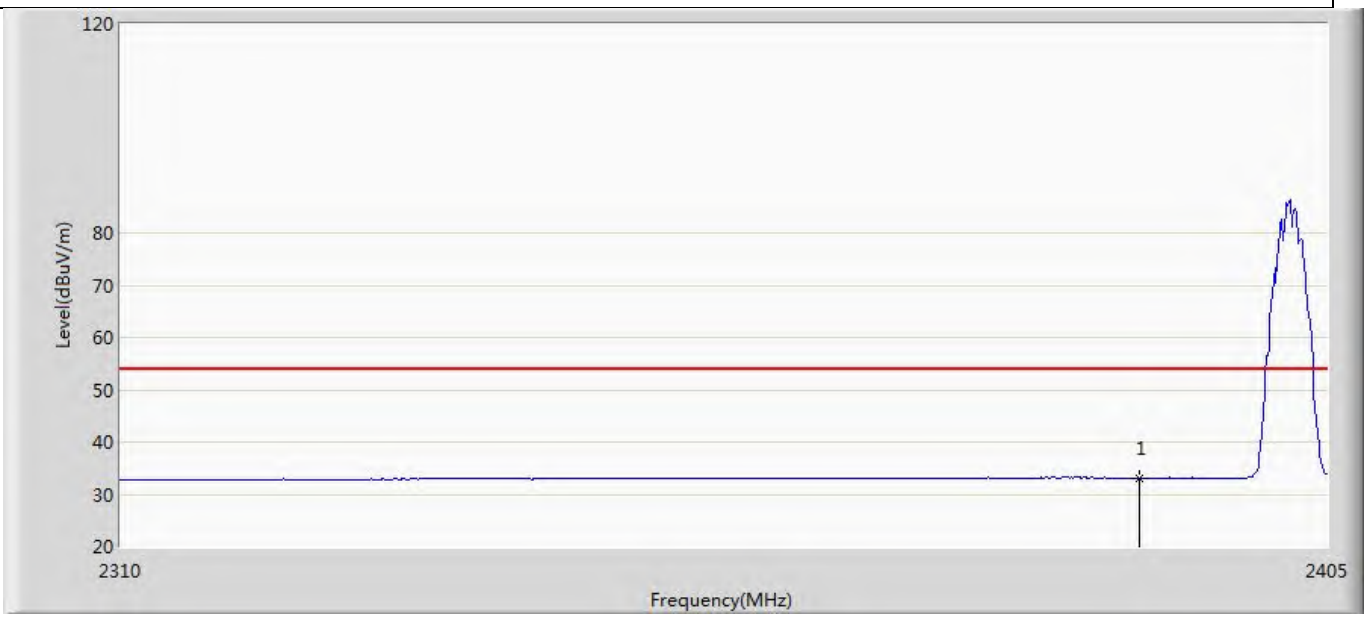
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.120	-0.964	-20.880	54.000	34.084	AV

Profile: 22A0568R	Page No.: 11
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



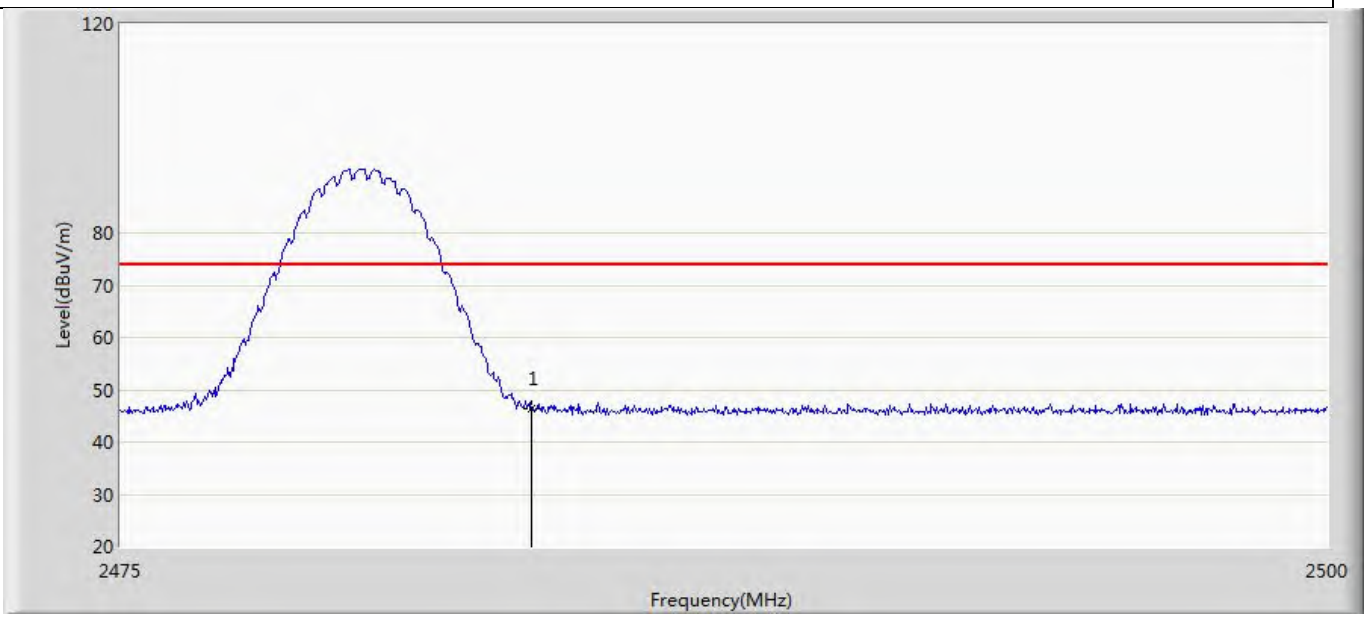
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	45.590	11.506	-28.410	74.000	34.084	PK

Profile: 22A0568R	Page No.: 12
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2402MHz by 2DH5	



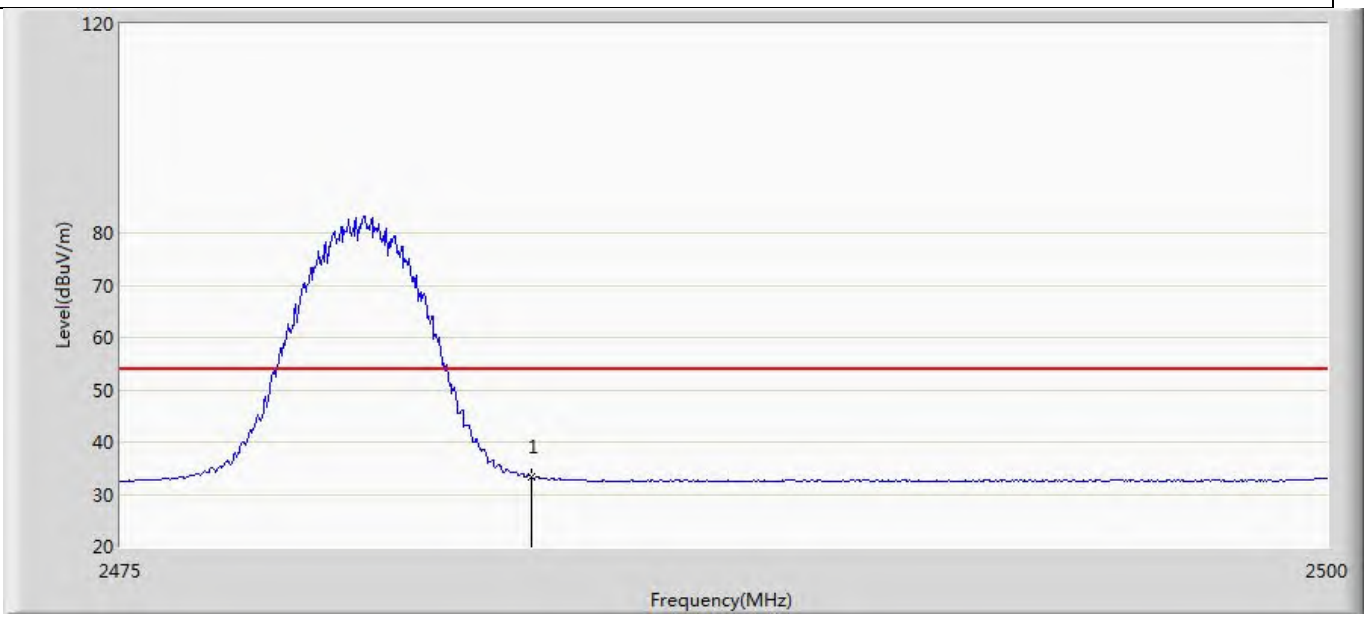
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.093	-0.991	-20.907	54.000	34.084	AV

Profile: 22A0568R	Page No.: 13
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



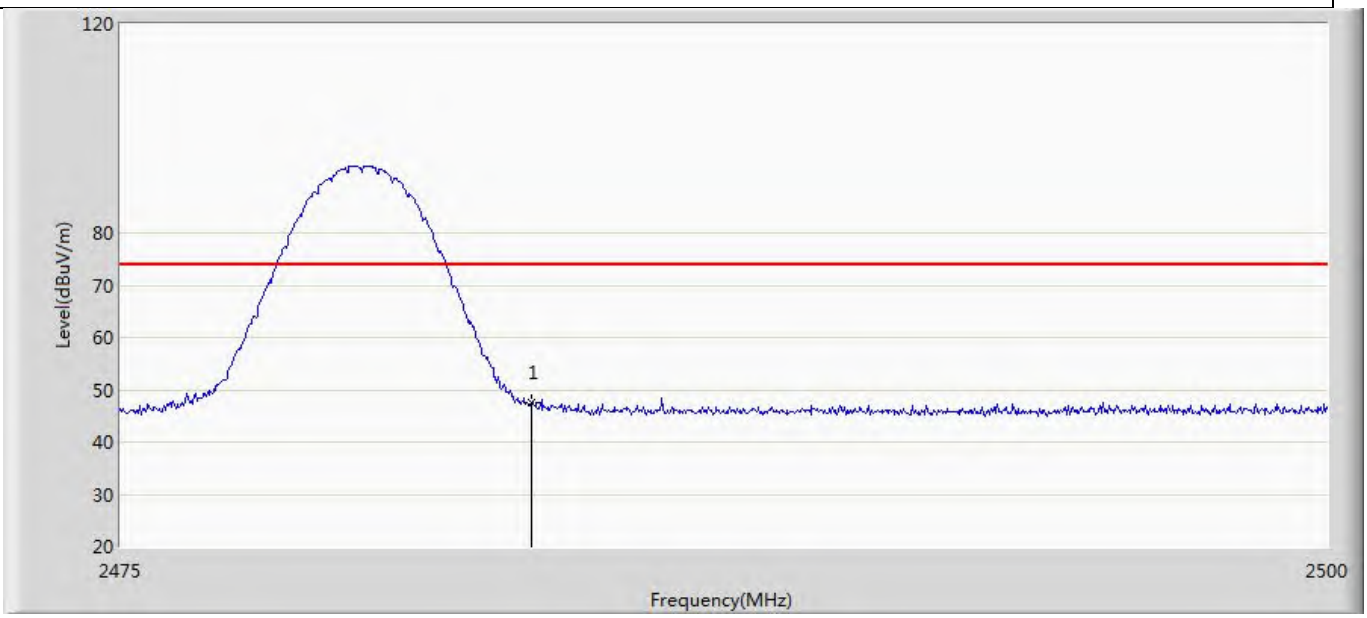
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	46.437	11.946	-27.563	74.000	34.491	PK

Profile: 22A0568R	Page No.: 14
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



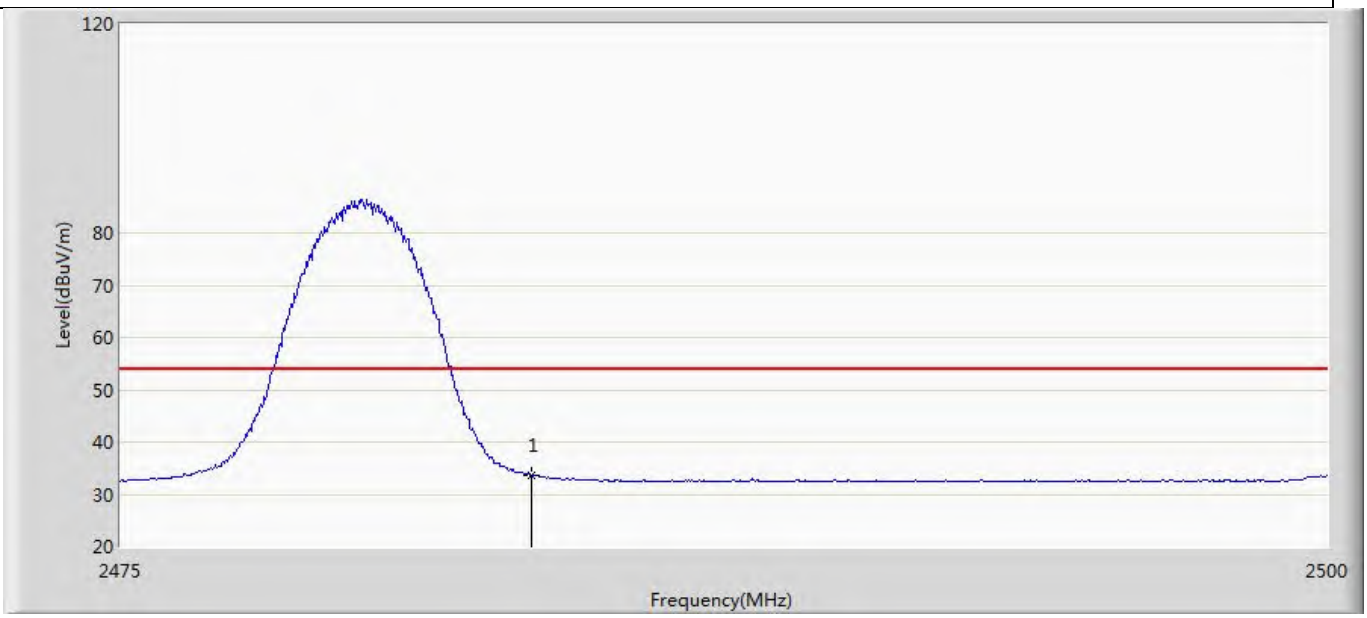
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	33.406	-1.085	-20.594	54.000	34.491	AV

Profile: 22A0568R	Page No.: 15
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



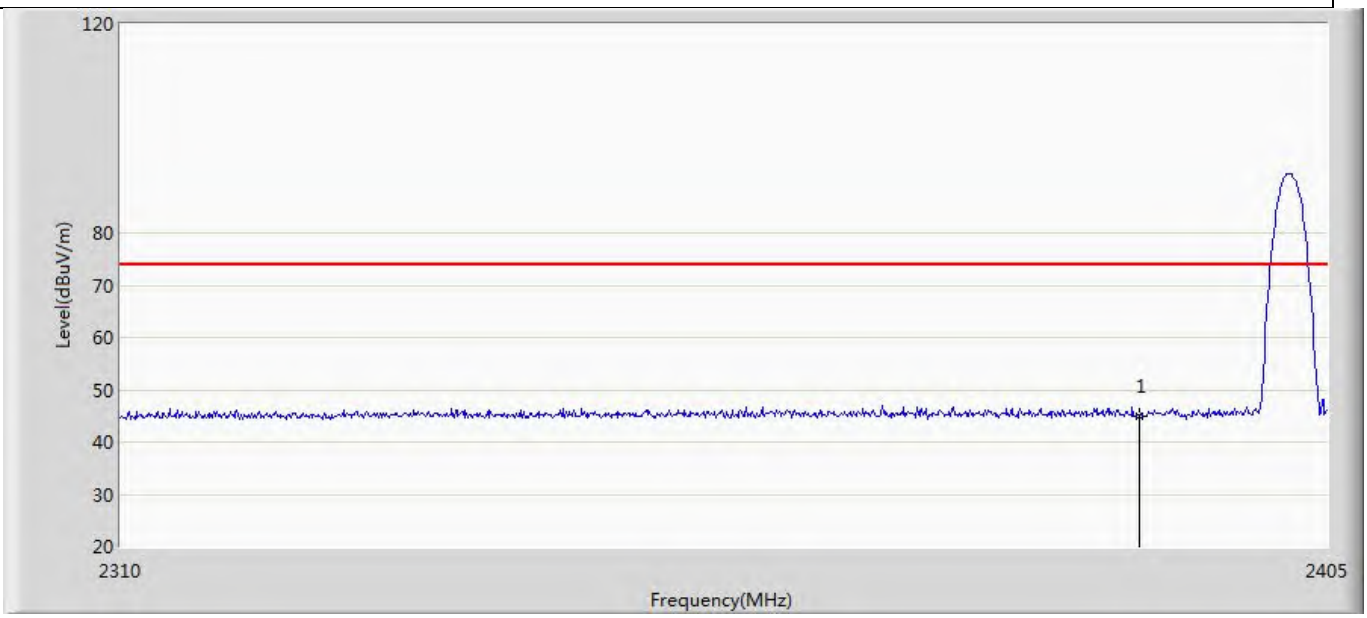
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	47.671	13.180	-26.329	74.000	34.491	PK

Profile: 22A0568R	Page No.: 16
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode2:Transmit at 2480MHz by 2DH5	



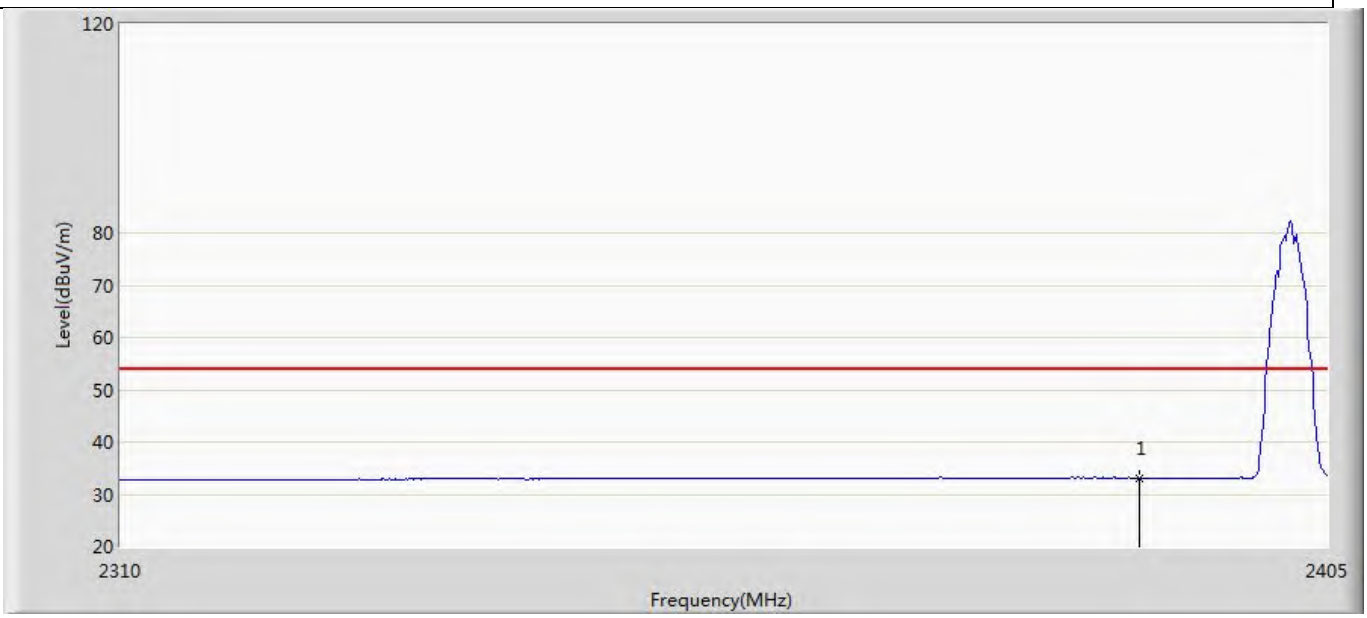
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	33.521	-0.970	-20.479	54.000	34.491	AV

Profile: 22A0568R	Page No.: 17
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



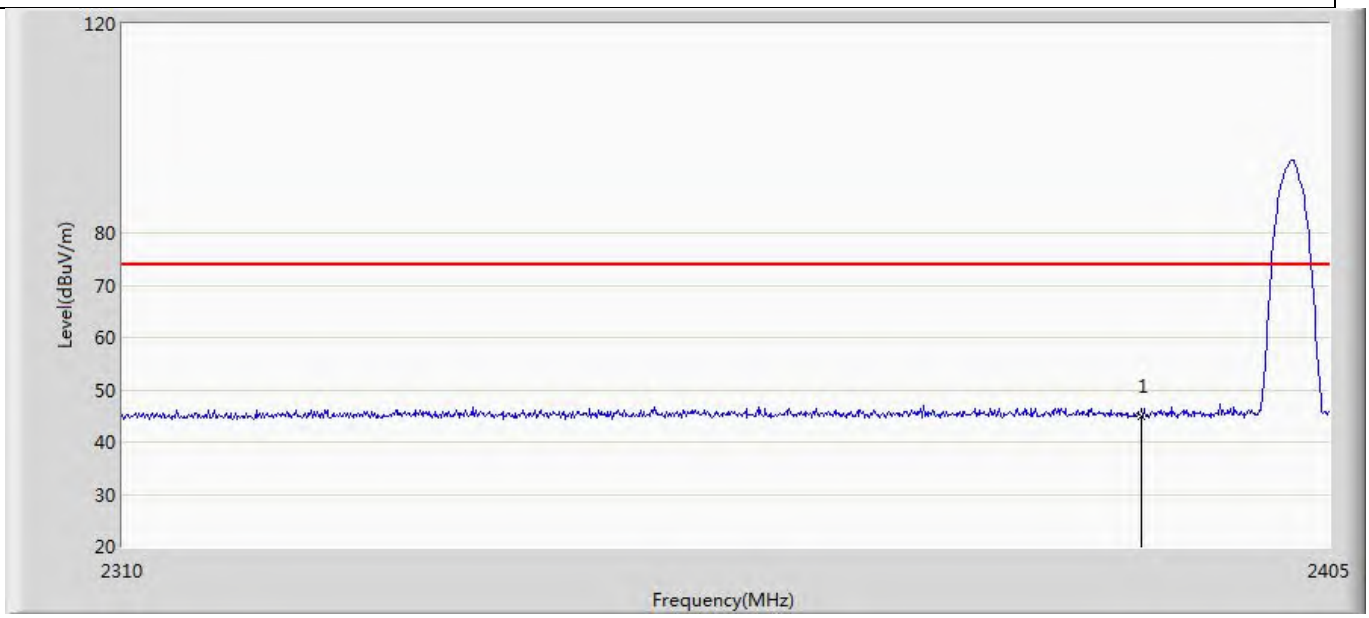
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.976	10.892	-29.024	74.000	34.084	PK

Profile: 22A0568R	Page No.: 18
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



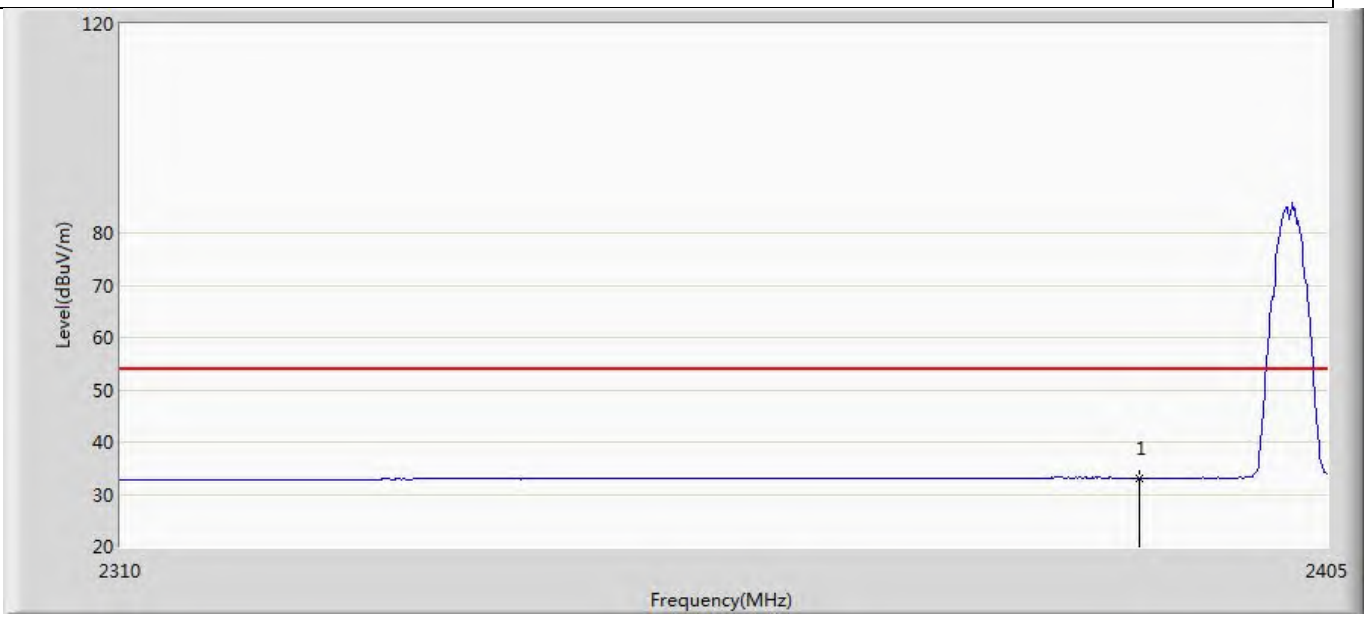
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.131	-0.953	-20.869	54.000	34.084	AV

Profile: 22A0568R	Page No.: 19
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



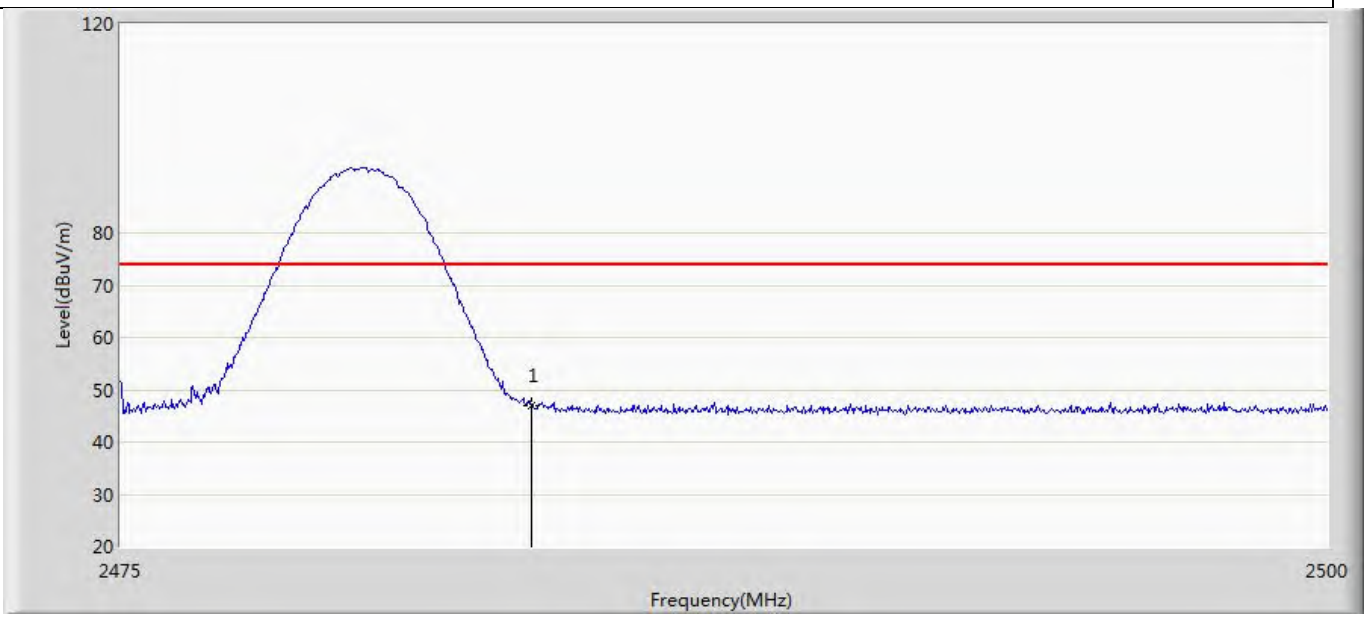
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.840	10.756	-29.160	74.000	34.084	PK

Profile: 22A0568R	Page No.: 20
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2402MHz by 3DH5	



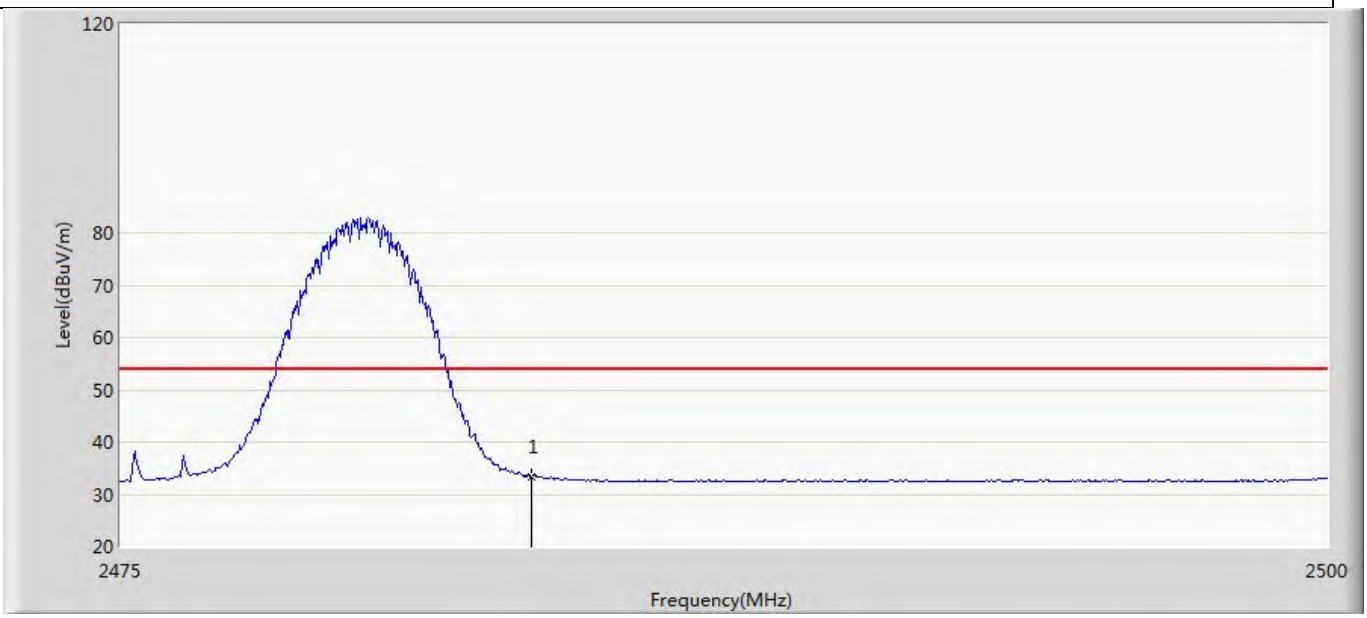
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.153	-0.931	-20.847	54.000	34.084	AV

Profile: 22A0568R	Page No.: 21
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2480MHz by 3DH5	



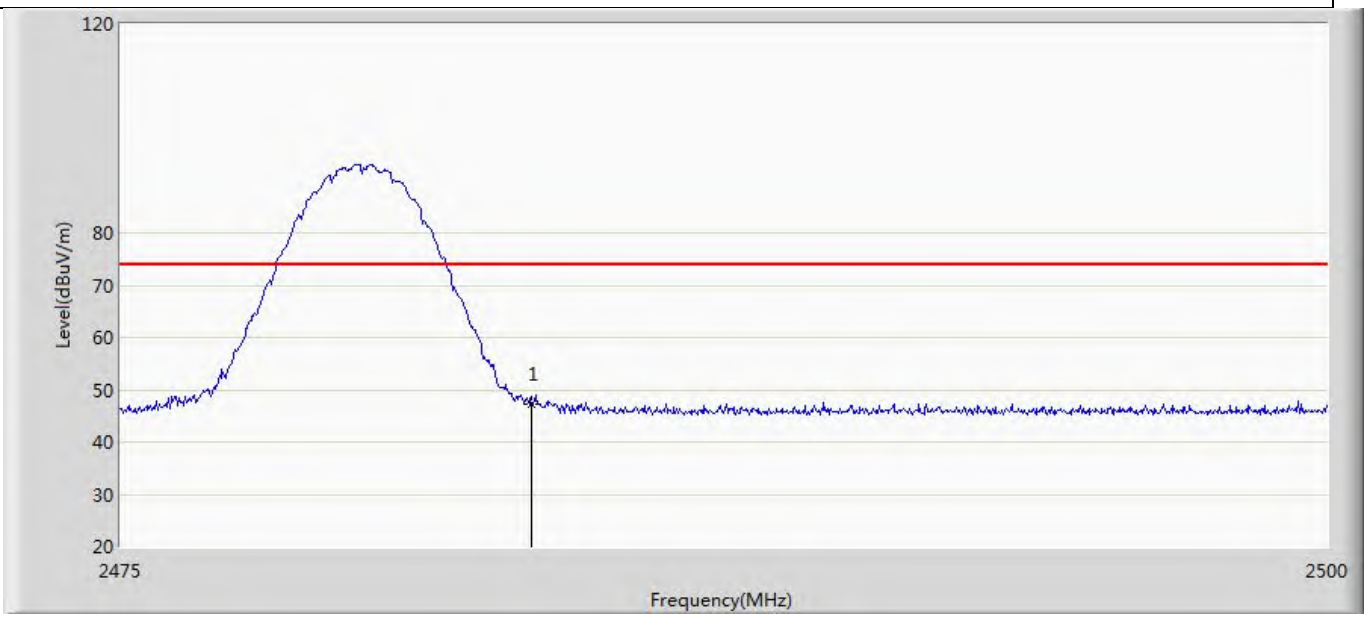
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	47.051	12.560	-26.949	74.000	34.491	PK

Profile: 22A0568R	Page No.: 22
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Horizontal
EUT: SC2021	Power: AC 120V/60HZ
Note: Mode3:Transmit at 2480MHz by 3DH5	



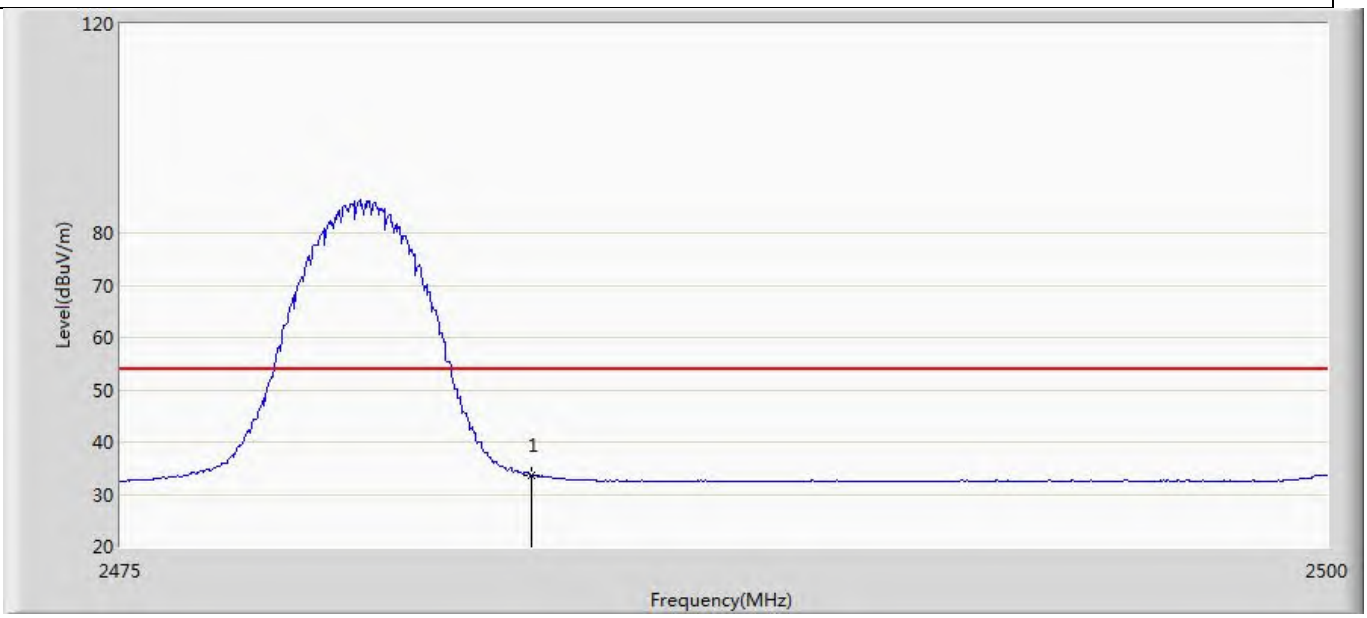
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	33.438	-1.053	-20.562	54.000	34.491	AV

Profile: 22A0568R	Page No.: 23
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
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	*	2483.500	47.348	12.857	-26.652	74.000	34.491	PK

Profile: 22A0568R	Page No.: 24
Engineer:Yu Liu	
Site: AC5	Time: 2022/11/21 - 02:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)2022	Polarity: Vertical
EUT: SC2021	Power: AC 120V/60HZ
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	*	2483.500	33.747	-0.744	-20.253	54.000	34.491	AV

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

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