TEST REPORT

Applicant: **Address:**	**SHENZHEN Hitevision Technology Co., Ltd.** **Honghe Mansion No. 1 Building A, 1 Danzi North Road, Shatian, Kengzi Street, Pingshan District, Shenzhen, 518122 Guangdong, P.R. China**		
Manufacturer: **Address:**	**SHENZHEN Hitevision Technology Co., Ltd.** **Honghe Mansion No. 1 Building A, 1 Danzi North Road, Shatian, Kengzi Street, Pingshan District, Shenzhen, 518122 Guangdong, P.R. China**		
Factory: **Address:**	**SHENZHEN Hitevision Technology Co., Ltd.** **Honghe Mansion No. 1 Building A, 1 Danzi North Road, Shatian, Kengzi Street, Pingshan District, Shenzhen, 518122 Guangdong, P.R. China**		
E.U.T.:	**USB Module**		
Model Number:	**NL-RC001D**		
Trade mark:	**newline**		
FCC ID:	**2ACYT-NL-RC001D**		
Date of Receipt:	**2025-11-20**	**Date of Test:**	**2025-11-20 to 2026-01-17**
Test Specification:	**FCC 47 CFR Part 15, Subpart C**		
Test Result:	**The equipment under test was found to be compliance with the requirements of the standards applied.**		

Prepared by:

Jerry Hu

Jerry Hu/ Engineer

Approved & Authorized Signer:

东莞市力邦检测服务有限公司 报告专用章 Special Seal for Report (02) Dongguan Lepont Testing Service Co., Ltd

Frank Shen/ Manager

Issue Date: 2026-01-17

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Dongguan Lepont Service Co., Ltd.

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Revision History of This Test Report		
Report Number	Description	Issued Date
LP25090226C01-05	Initial Issue	2026-01-17

1. GENERAL PRODUCT INFORMATION

1.1. PRODUCT FUNCTION

Refer to Technical Construction Form and User Manual.

1.2. EUT TECHNICAL DESCRIPTION

Product Name:	USB Module
Model No.:	NL-RC001D
Test Model No:	NL-RC001D
Difference:	N/A
Serial No.:	N/A
Test sample(s) ID:	LP25090226C01-S002
Sample(s) Status	Engineer sample
Hardware:	V 1.0
Software:	V 1.0
Operation Frequency:	2402MHz-2480MHz
Channel numbers:	40
Channel separation:	2MHz
Modulation type:	GFSK
Antenna Type:	Glue stick antenna
Antenna gain:	3.23dBi
Ratings:	Input: USB 5V

1.3. INDEPENDENT OPERATION MODES

The EUT has been tested under its typical operating condition.
The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for Bluetooth

Channel No.	Frequency (MHz)	Channel No.	Frequency(MHz)
1	**2402**	21	2442
2	2404	22	2444
3	2406	23	2446
4	2408	24	2448
5	2410	25	2450
6	2412	26	2452
7	2414	27	2454
8	2416	28	2456
9	2418	29	2458
10	2420	30	2460
11	2422	31	2462
12	2424	32	2464
13	2426	33	2466
14	2428	34	2468
15	2430	35	2470
16	2432	36	2472
17	2434	37	2474
18	2436	38	2476
19	2438	39	2478
20	**2440**	**40**	**2480**

1.4. TEST SOFTWARE

Software		Description
FCC_assist_1.0.2.2.exe		Set the COM Port Test Tool to set the corresponding Test conditions
TX Level		Default

1.5. GENERAL CONDITION

	Temperature	Humidity
Ambient Condition:	25℃	45%RH

1.6. SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB cable	1.5	Unshielded	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Ratings
AC Adapter	Lenovo	ADL100YLC3A	Input:100-240~, 50-60Hz,1.6A Output:5V-15V3A, 20V5A
Laptop computer	Lenovo	Xiaoxin Pro IA5HR	PF490VB0

Notes:

1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2. TEST STANDARDS AND SITES

2.1. DESCRIPTION OF STANDARDS AND RESULTS

The EUT have been tested according to the applicable standards as referenced below.

FCC Part Clause	Test Parameter	Verdict	Remark
15.207	Conducted Emission	PASS	
15.209	Radiated Emission	PASS	
15.249	Radiated Spurious Emission	PASS	
15.249	Band edge test	PASS	
15.215	20dB Bandwidth	PASS	
15.203	Antenna Requirement	PASS	

NOTE1: N/A (Not Applicable)
NOTE2: The report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

2.2. LIST OF TEST AND MEASUREMENT INSTRUMENTS

For conducted emission at the mains terminals test(Shielded Room 2)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS30	1102.4500	Dec. 10, 2025	1 Year	LEP-E002	☐
Artificial Mains Network	Baluelec	LSN016	BL041122050121	Oct. 21, 2025	1 Year	LEP-E067	☐
Shielded Room 1	MR	MR-L05	LEP-E053	Oct. 21, 2025	3 Year	LEP-E053	☐
Test software	EZ-EMC	Fala	LEPONT-03A2	N/A	N/A	N/A	☐
For radiated(9K-30M) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESR 3	101849	Dec. 10, 2025	1 Year	LEP-E006	☑
Active Loop Antenna	Schwarzbeck	FMZB 1519C	00008	Feb. 02, 2024	3 Year	LEP-E068	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(30M-1G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
EMI Test Receiver	Rohde & Schwarz	ESR 3	101849	Dec. 10, 2025	1 Year	LEP-E006	☑
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	743	Oct. 26, 2025	3 Year	LEP-E005	☑
Signal Amplifier	HP	8447D	1726A01222	Dec. 03, 2025	1 Year	LEP-E007	☐
6dB Attenuator	RswTech	5W 6dB	LEP-E084	Dec. 03, 2025	1 Year	LEP-E084	☐
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(1-18G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Agilent	N9020A	MY49100060	Nov. 26, 2025	1 Year	LEP-E020	☑
Horn antenna	Schwarzbeck	BBHA 9120D	01875	Oct. 26, 2025	3 Year	LEP-E024	☑
Preamplifier	Schwarzbeck	BBN 9718B	00010	Dec. 03, 2025	1 Year	LEP-E025	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For radiated(18-40G) emission test(966 Chamber 1)							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Rohde & Schwarz	FSV40	101412	Oct. 21, 2025	1 Year	LEP-E076	☑
Horn antenna+Preamplifier	COM-POWER	AH840	10100020	Sep. 01, 2025	3 Year	LEP-E075	☑
966 Chamber 1	MR	MR-L02	LEP-E051	Oct. 21, 2025	3 Year	LEP-E051	☑
Test software	EZ-EMC	Fala	EMEC-3A1	N/A	N/A	N/A	☑
For RF test							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Lab No.	Remark
Spectrum analyzer	Rohde & Schwarz	FSV40	101412	Nov. 26, 2025	1 Year	LEP-E076	☑
Spectrum analyzer	Agilent	N9020A	MY49100060	Nov. 26, 2025	1 Year	LEP-E020	☑
Vector source	Agilent	N5182A	MY47420382	Dec. 03, 2025	1 Year	LEP-E021	☑
Analog signal source	Agilent	N5171B	MY51350292	Dec. 03, 2025	1 Year	LEP-E022	☑
All instrument	Rohde & Schwarz	CMW 500	1201.002K50	Dec. 03, 2025	1 Year	LEP-E019	☑
High and low temperature chamber	Math-mart	MT-1202-40	LEP-E041	Dec. 03, 2025	1 Year	LEP-E041	☑
control unit	Tonscend	JS0806-2	10165	N/A	1 Year	LEP-E034	☑
Testing software	Tonscend	JSTS1120-3	Ver 2.6.77.0518	Nov. 26, 2025	N/A	N/A	☑

2.3. MEASUREMENT UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Maximum Peak Output Power Test	±1.0%
Conducted Emissions Test	±3.08dB
Radiated Emission Test	±4.60dB
Power Density	±0.9%
Occupied Bandwidth Test	±2.3%
Band Edge Test	±1.2%
Antenna Port Emission	±3dB
Temperature	±3.2%
Humidity	±2.5%
Measurement Uncertainty for a level of Confidence of 95%	

2.4. TEST FACILITY

EMC Lab. : The Laboratory has been assessed and proved to be in compliance with CNAS/CL01
The Certificate Registration Number is L10100.
The Laboratory has been assessed and proved to be in compliance with A2LA
The Certificate Registration Number is 6901.01

FCC Designation No.: CN1351
Test Firm Registration No.: 397428

ISED CAB identifier: CN0151
Test Firm Registration No.: 20133

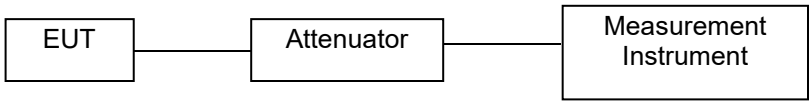
Test Location : Dongguan Lepont Testing Service Co., Ltd.

Address : Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China

3. SETUP OF EQUIPMENT UNDER TEST

3.1. RADIO FREQUENCY TEST SETUP 1

The Bluetooth V5.1 component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



3.2. RADIO FREQUENCY TEST SETUP 2

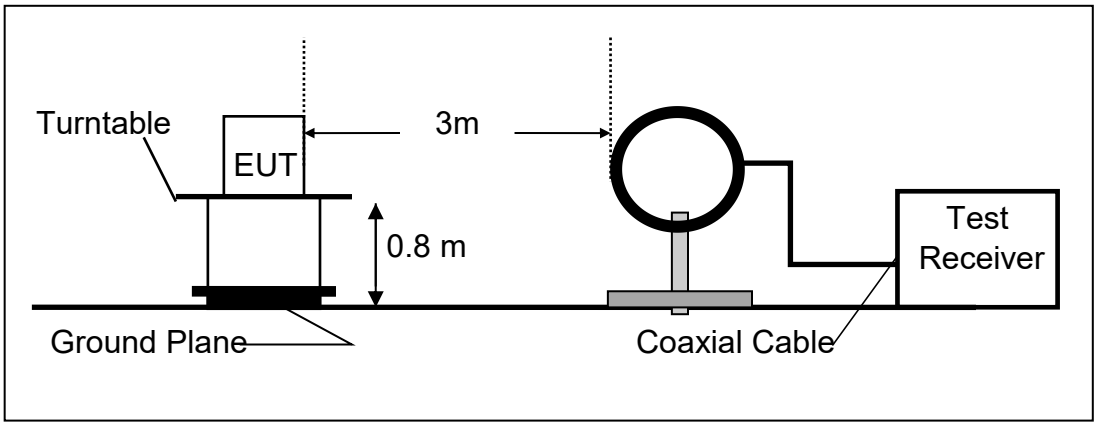
The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2020. The test distance is 3m.The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 and CAN/CSA-CEI/IEC CISPR 32.

Below 30MHz：
The EUT is placed on a turntable 0.8meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

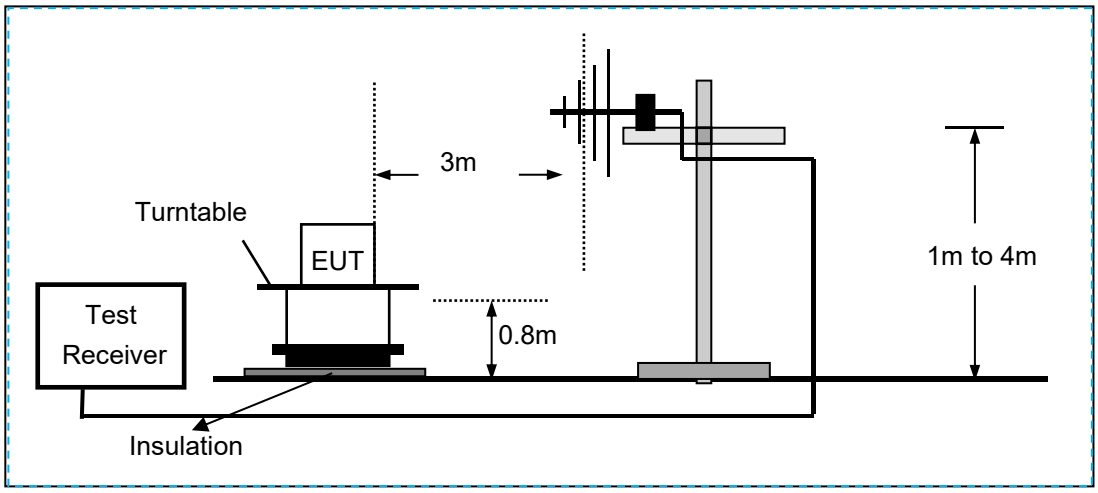
Above 30MHz：
The EUT is placed on a turntable 0.8meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)
The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

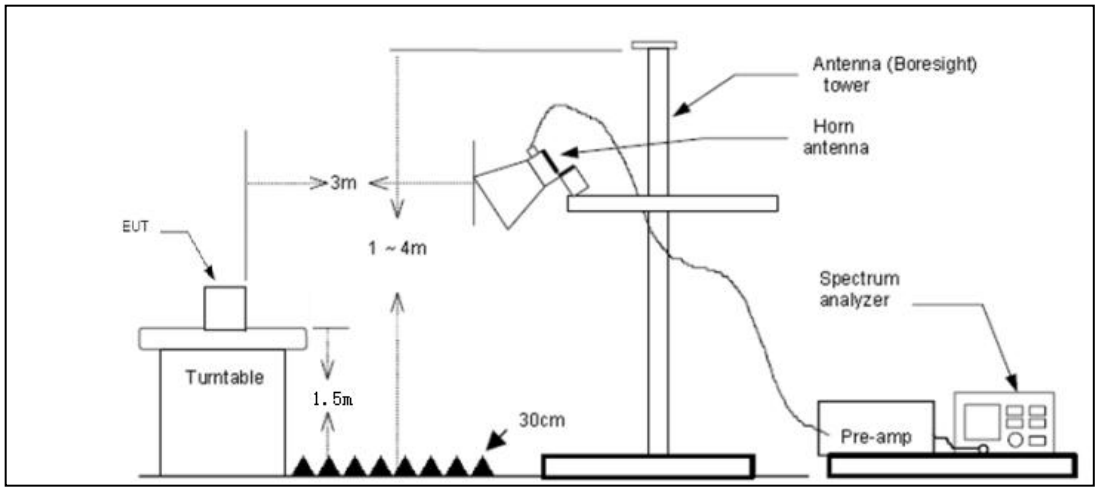
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz

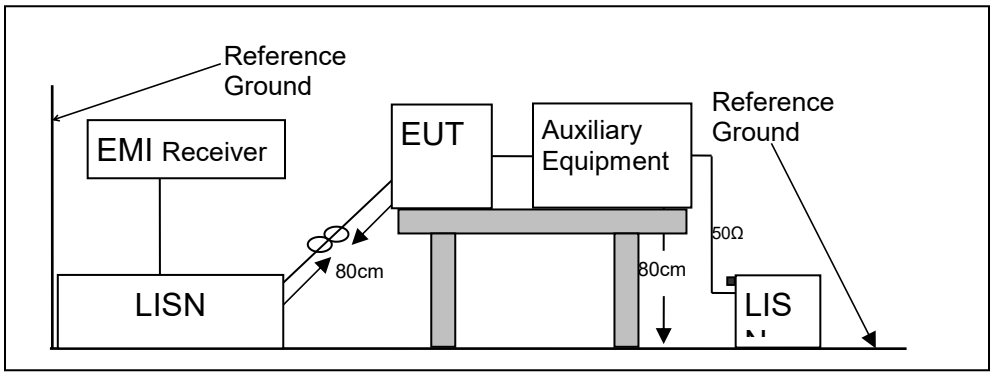


(c) Radiated Emission Test Set-Up, Frequency above 1000MHz

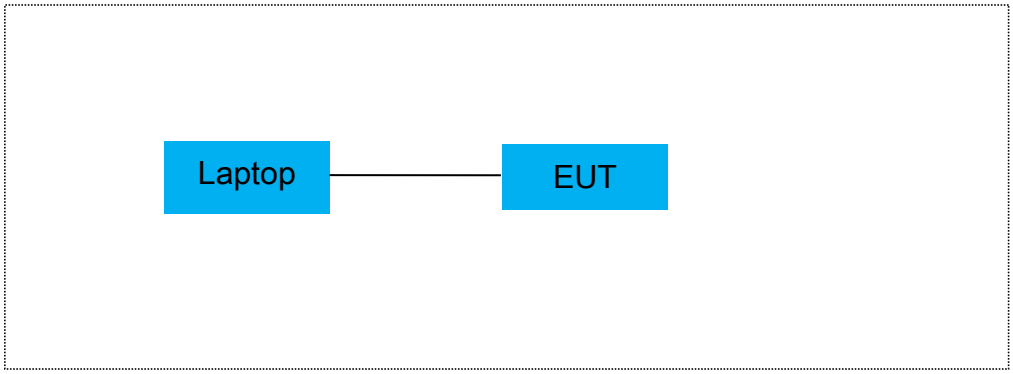


3.3. CONDUCTED EMISSION TEST SETUP

The mains cable of the EUT (Perfect Share Mini) must be connected to LISN. The LISN shall be placed 0.8m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.
Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.8m.
According to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



3.4. BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



4. TEST RESULTS AND MEASUREMENT DATA

4.1. BANDWIDTH TEST

4.1.1. Applicable Standard

According to FCC Part 15.215

4.1.2. Conformance Limit

No limit requirement.

4.1.3. Test Configuration

Test according to clause 3.1 radio frequency test setup 1

4.1.4. Test Procedure

The EUT was operating in controlled its channel. Printed out the test result from the spectrum by hard copy function.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set to the maximum power setting and enable the EUT transmit continuously
Set RBW ≥ 1% of the 20 dB bandwidth(3KHz)
Set the video bandwidth (VBW) ≥ RBW(10KHz).
Set Span= approximately 2 to 3 times the 20 dB bandwidth
Set Detector = Peak.
Set Trace mode = max hold.
Set Sweep = auto couple.
Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.
Measure and record the results in the test report.

Test Results:

Modulation Mode	Channel Number	Channel Frequency (MHz)	Measurement Bandwidth (MHz)	Limit (MHz)	Verdict
GFSK	1	2402	1.196	N/A	PASS
	20	2440	1.193	N/A	PASS
	40	2480	1.192	N/A	PASS
Note: N/A (Not Applicable)					

Test Model	20dB Bandwidth
	Channel 1: 2402MHz

Test Model	20dB Bandwidth
	Channel 20: 2440MHz

Test Model	20dB Bandwidth
	Channel 40: 2480MHz

4.2. RADIATED SPURIOUS EMISSION

4.2.1. Applicable Standard

According to FCC Part 15.249 and 15.209

4.2.2. Conformance Limit

According to FCC Part 15.249: radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	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	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
8.41425-8.41475	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	(2)
13.36-13.41			

According to FCC Part15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor.
for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the

frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

Field strength of fundamental and Field strength of harmonics Limit:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50(94 dBV/m)	500(54 dBV/m)
2400-2483.5 MHz	50(94 dBV/m)	500(54 dBV/m)
5725-5875 MHz	50(94 dBV/m)	500(54 dBV/m)
24.0-24.25 GHz	250(108 dBV/m)	2500(68 dBV/m)

As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation

4.2.3. Test Configuration

Test according to clause 6.2 radio frequency test setup 2

4.2.4. Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:
The EUT was placed on a turn table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz(1GHz to 25GHz), 100 kHz for f < 1 GHz(30MHz to 1GHz)
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Follow the guidelines in ANSI C63.10-2020 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data. Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from 20log(dwell time/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data. Repeat above procedures until all frequency measured was complete.

Test Results:

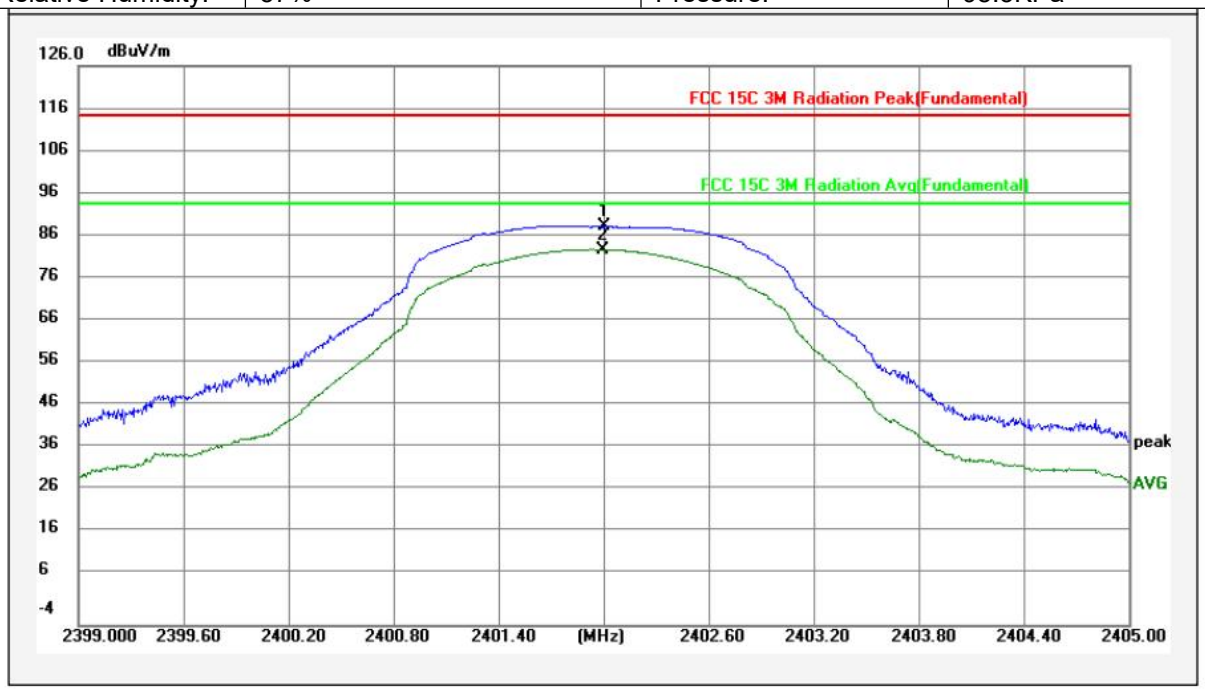
■ Spurious Emission below 30MHz (9KHz to 30MHz)

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
--	--	--	--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible
limit has no need to be reported.
Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor

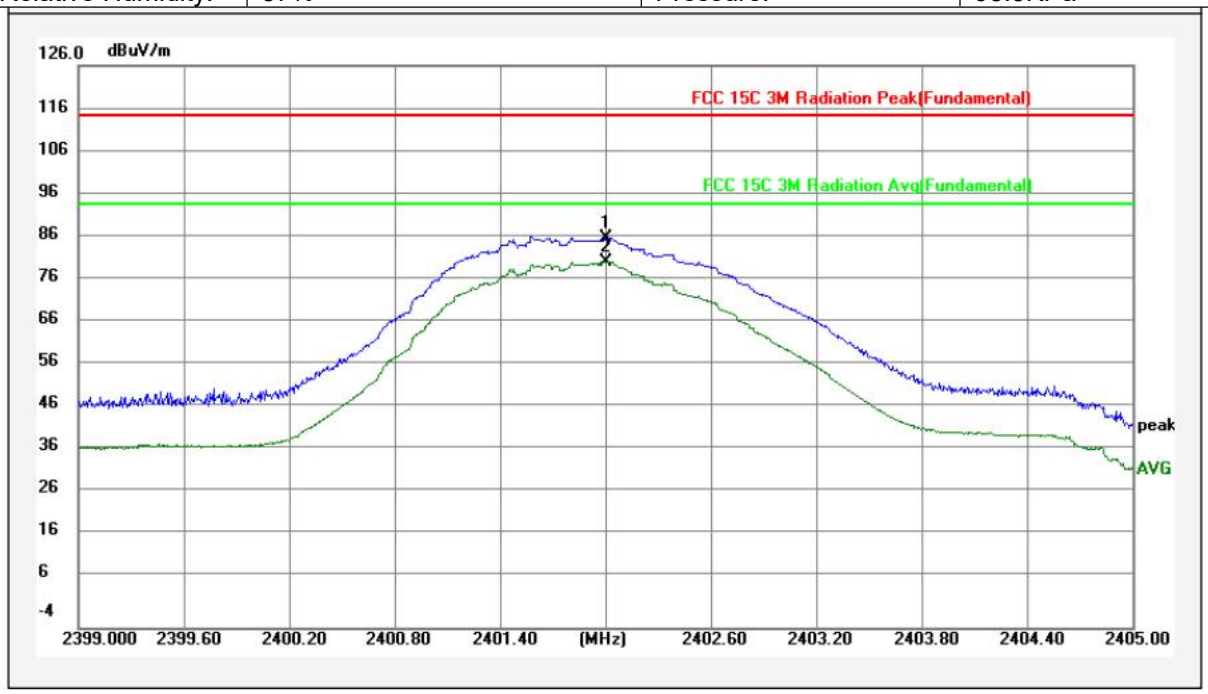
■ Field Strength of the fundamental signal

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	98.3KPa



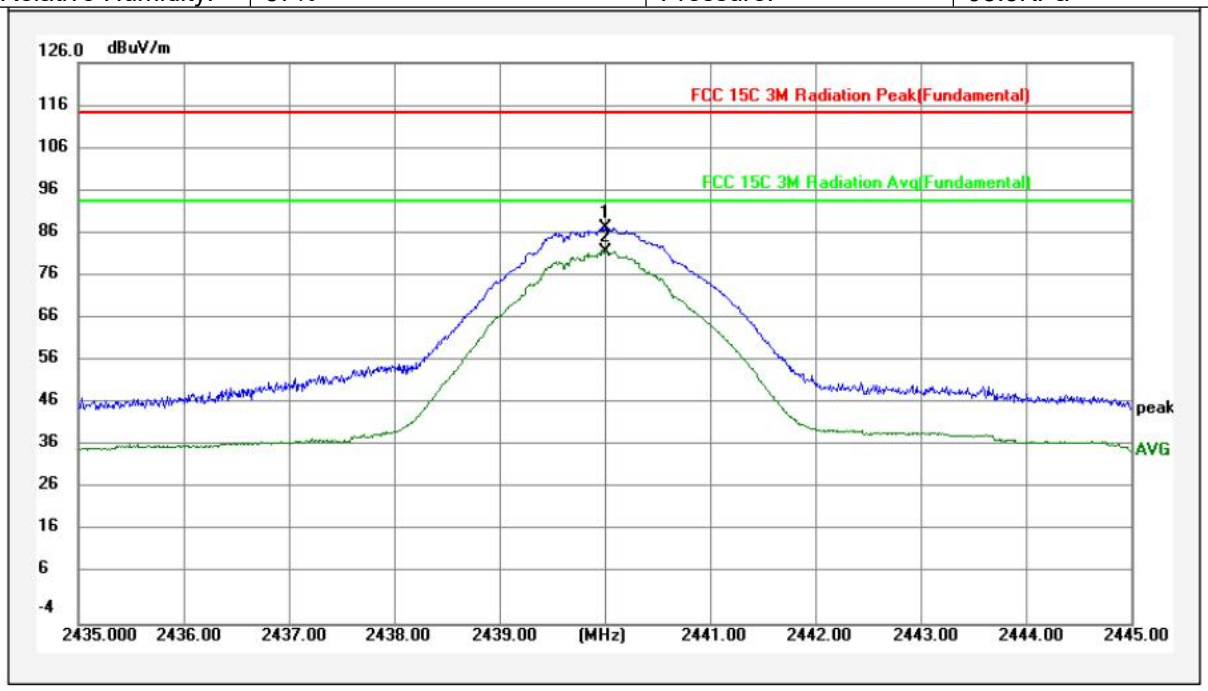
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2402.000	-6.28	94.98	88.70	114.00	-25.30	peak		
2	2401.994	-6.28	89.67	83.39	94.00	-10.61	AVG	*	

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	98.3KPa



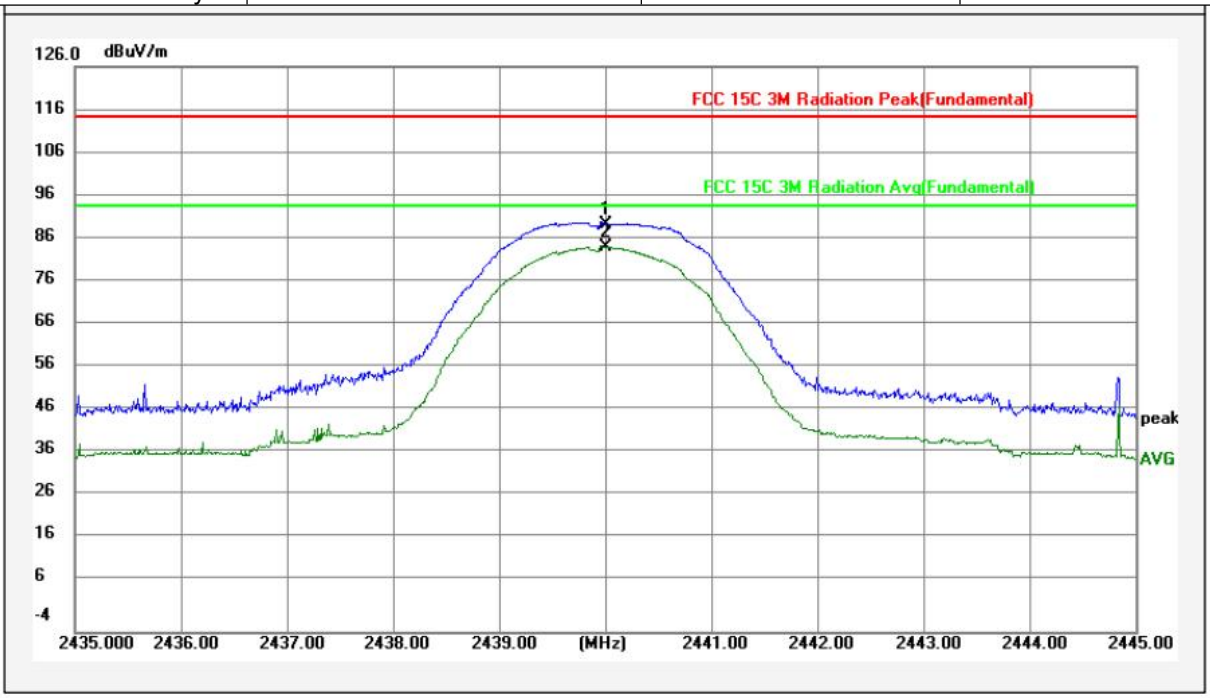
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2402.000	-6.28	92.31	86.03	114.00	-27.97	peak		
2	2402.000	-6.28	86.94	80.66	94.00	-13.34	AVG	*	

Test Mode:	GFSK	2440	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	98.3KPa



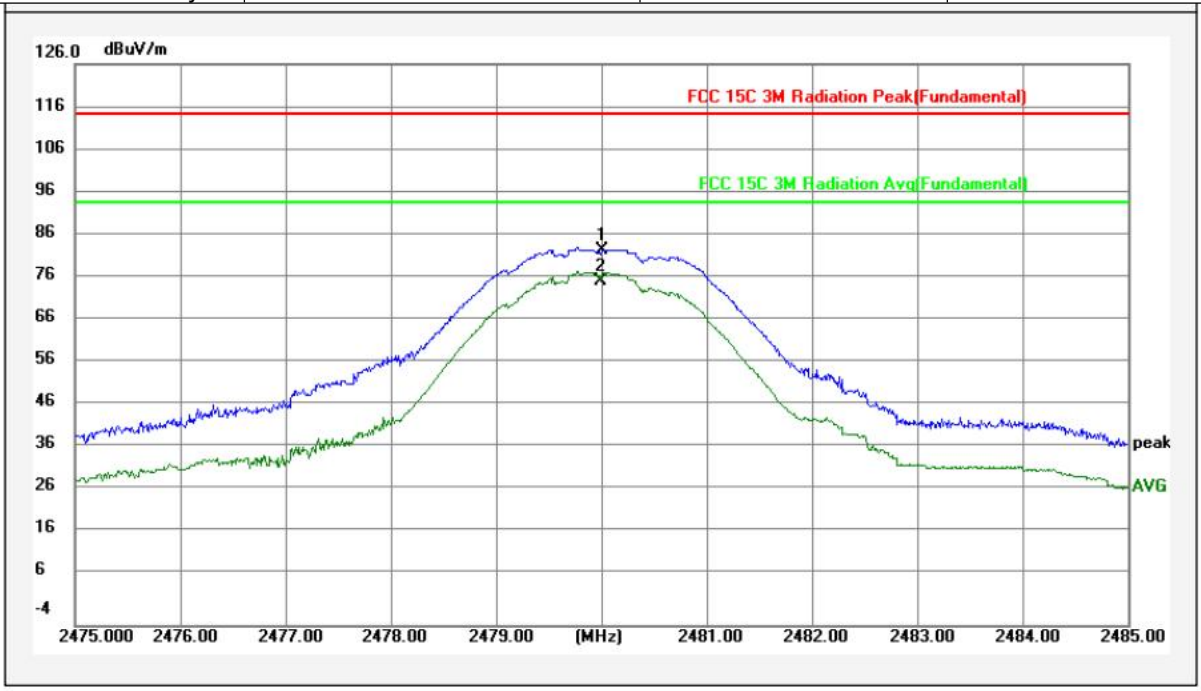
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2440.000	-6.15	93.90	87.75	114.00	-26.25	peak		
2	2440.000	-6.15	88.60	82.45	94.00	-11.55	AVG	*	

Test Mode:	GFSK	2440	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	98.3KPa



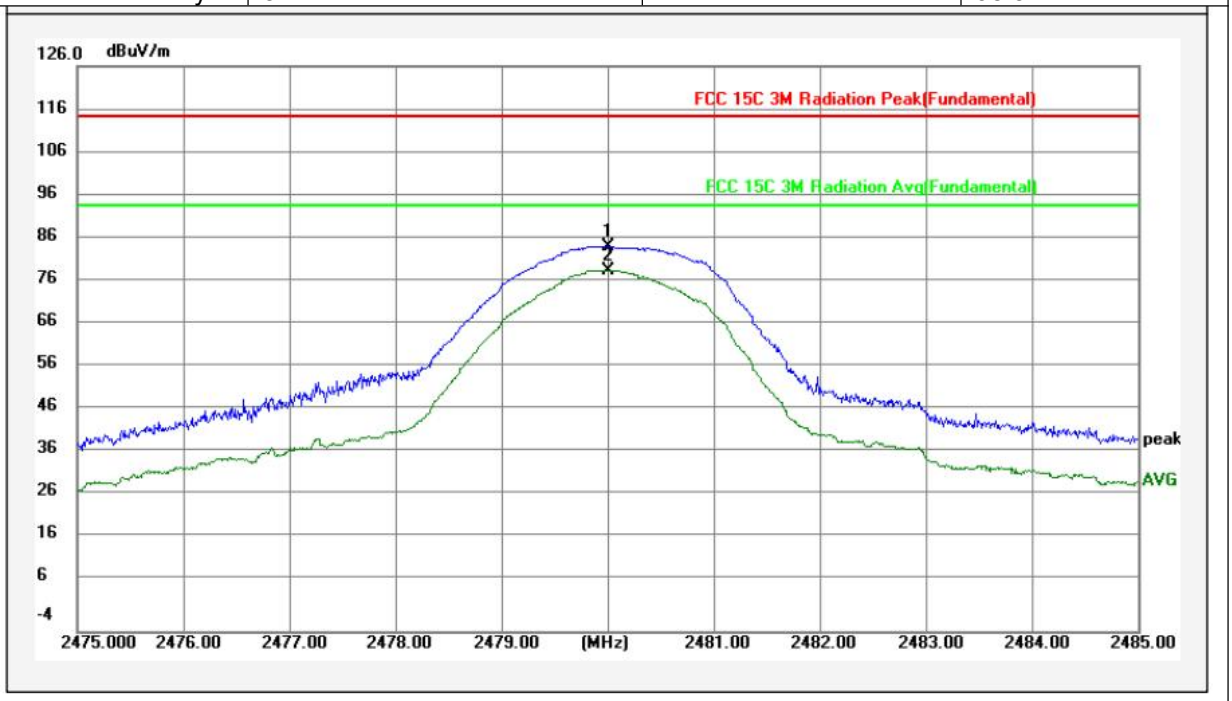
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2440.000	-6.15	95.99	89.84	114.00	-24.16	peak		
2	2440.000	-6.15	90.66	84.51	94.00	-9.49	AVG	*	

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	98.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2480.000	-6.01	89.01	83.00	114.00	-31.00	peak		
2	2479.990	-6.01	81.72	75.71	94.00	-18.29	AVG	*	

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	98.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	2480.000	-6.01	90.48	84.47	114.00	-29.53	peak		
2	2480.000	-6.01	85.11	79.10	94.00	-14.90	AVG	*	

Note: (1) Correct Factor= Antenna Factor +Cable Loss- Amplifier Gain
(2) Emission Level= Reading Level+Probe Factor +Cable Loss

■ Spurious Emission Above 1GHz (1GHz to 25GHz)

Test mode:	GFSK	Frequency:	Channel 1: 2402MHz

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
7120	40.43	2.74	43.17	74	-30.83	peak	V
8888	39.94	3.82	43.76	74	-30.24	peak	V
11948	38.95	7.72	46.67	74	-27.33	peak	V
7103	30.01	2.74	32.75	54	-21.25	AVG	V
8888	28.75	3.82	32.57	54	-21.43	AVG	V
11948	28.37	7.72	36.09	54	-17.91	AVG	V
7154	40.46	2.72	43.18	74	-30.82	peak	H
9704	41.01	4.33	45.34	74	-28.66	peak	H
12050	39.49	7.83	47.32	74	-26.68	peak	H
7086	30.07	2.76	32.83	54	-21.17	AVG	H
9704	29.99	4.33	34.32	54	-19.68	AVG	H
12135	28.52	7.85	36.37	54	-17.63	AVG	H

Test mode:	GFSK	Frequency:	Channel 20: 2440MHz

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
7103	40.03	2.74	42.77	74	-31.23	peak	V
8650	41.65	3.39	45.04	74	-28.96	peak	V
12101	39.31	7.85	47.16	74	-26.84	peak	V
7103	30.04	2.74	32.78	54	-21.22	AVG	V
8667	29.44	3.41	32.85	54	-21.15	AVG	V
12084	28.42	7.84	36.26	54	-17.74	AVG	V
7103	39.98	2.74	42.72	74	-31.28	peak	H
8412	40.73	2.91	43.64	74	-30.36	peak	H
11897	39.62	7.62	47.24	74	-26.76	peak	H
7103	30.02	2.74	32.76	54	-21.24	AVG	H
8480	29.64	3.06	32.7	54	-21.3	AVG	H
11880	28.5	7.59	36.09	54	-17.91	AVG	H

Test mode:	GFSK	Frequency:	Channel 40: 2480MHz

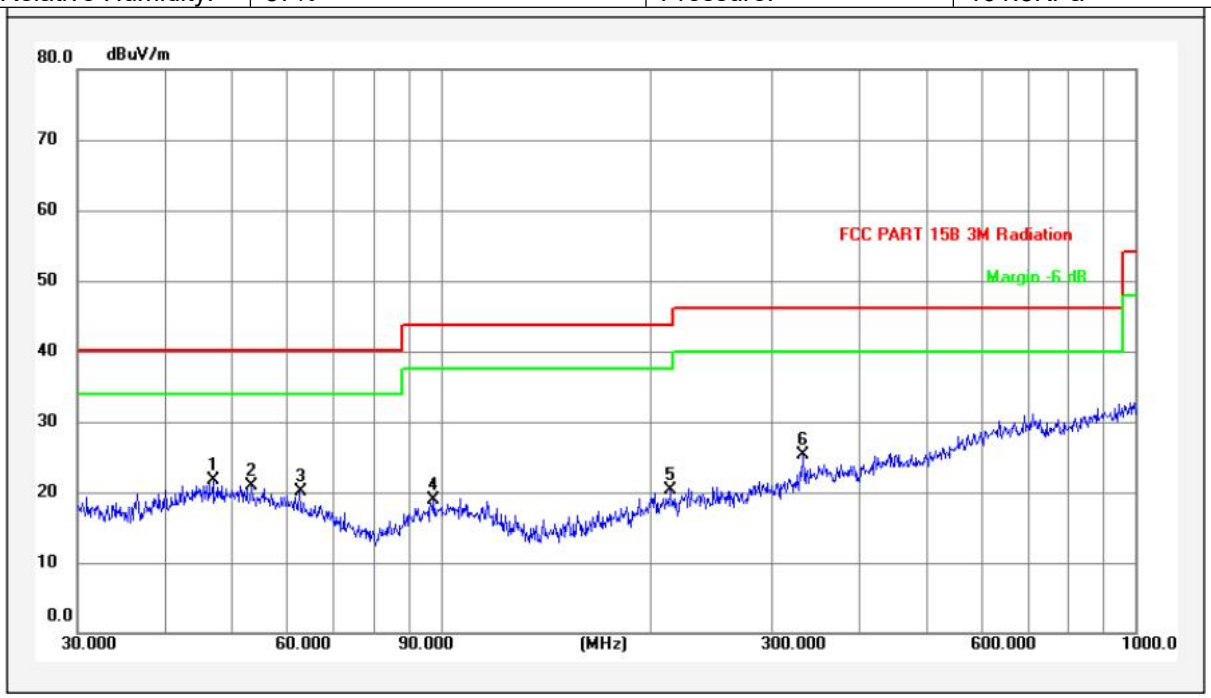
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	Ant. Pol.
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V
7103	40.58	2.74	43.32	74	-30.68	peak	V
9483	40.14	4.24	44.38	74	-29.62	peak	V
11914	38.95	7.66	46.61	74	-27.39	peak	V
7103	30.18	2.74	32.92	54	-21.08	AVG	V
9500	29.59	4.24	33.83	54	-20.17	AVG	V
11948	28.67	7.72	36.39	54	-17.61	AVG	V
7086	41.05	2.76	43.81	74	-30.19	peak	H
9432	40.34	4.21	44.55	74	-29.45	peak	H
12067	39.09	7.84	46.93	74	-27.07	peak	H
7103	30.1	2.74	32.84	54	-21.16	AVG	H
9500	29.71	4.24	33.95	54	-20.05	AVG	H
12135	28.55	7.85	36.4	54	-17.6	AVG	H

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

■ Spurious Emission below 1GHz (30MHz to 1GHz)

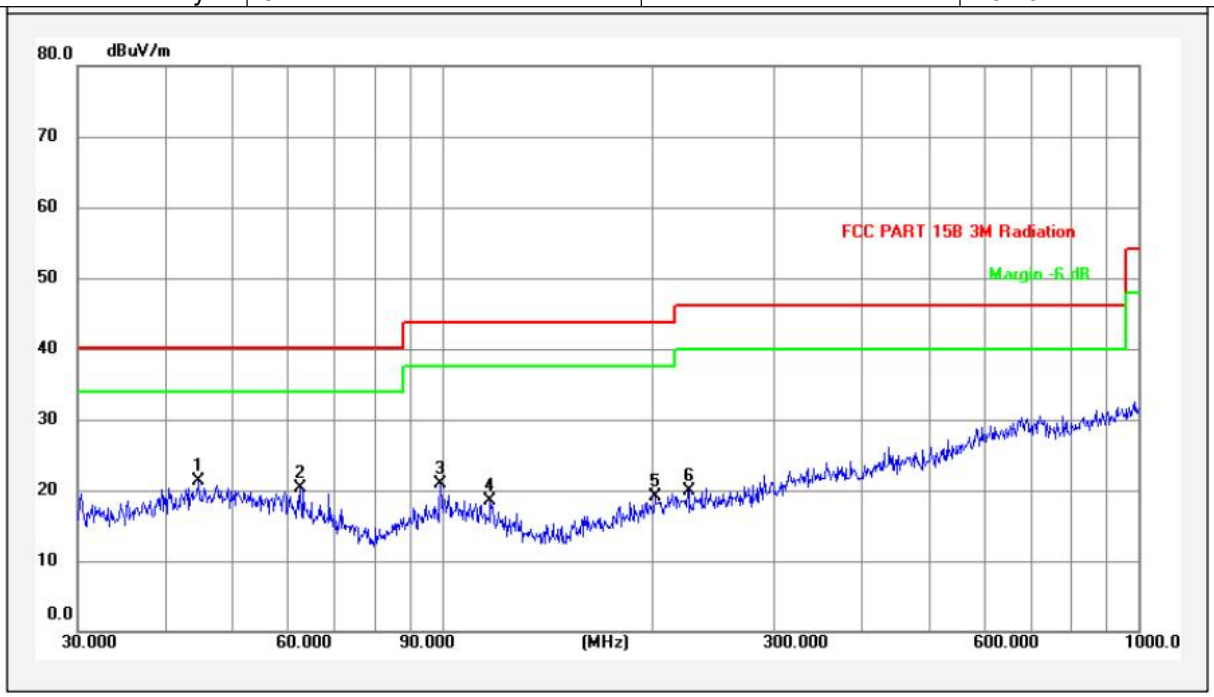
All modes have been tested, and the worst result recorded was report as below:

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	101.3KPa



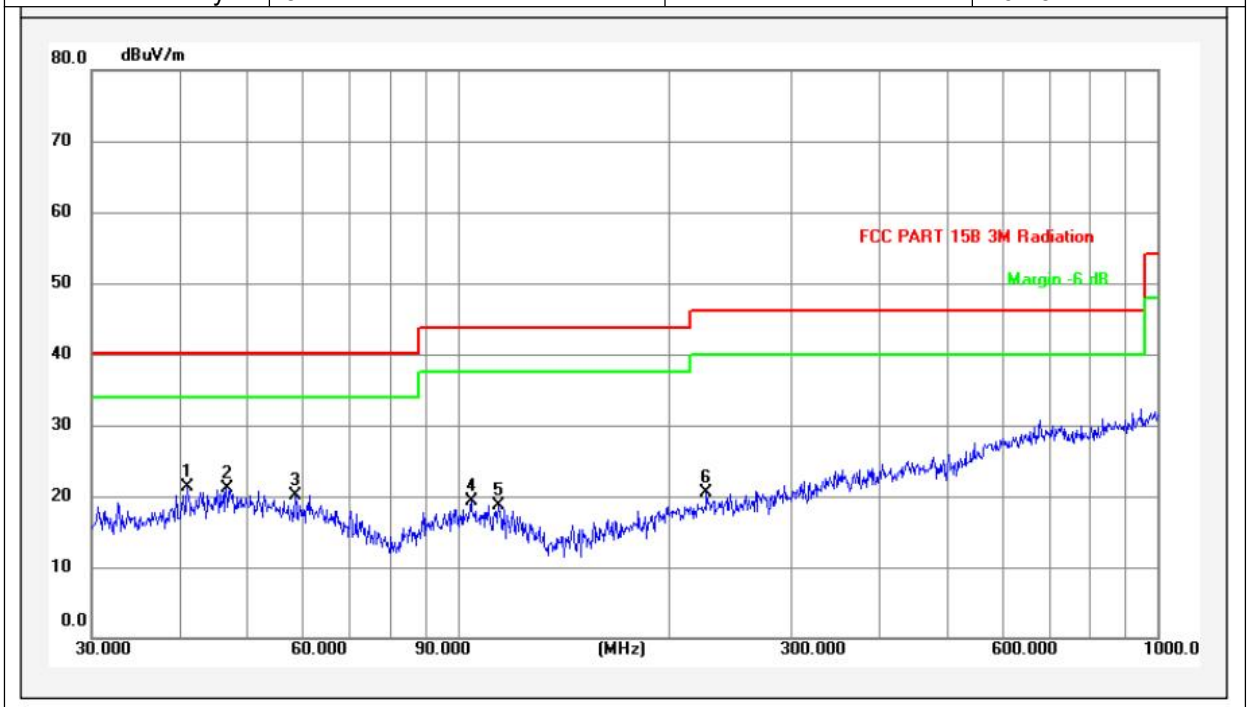
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	46.9948	12.63	9.11	21.74	40.00	-18.26	QP	*	
2	53.5052	12.04	8.77	20.81	40.00	-19.19	QP		
3	62.6507	10.74	9.35	20.09	40.00	-19.91	QP		
4	97.7983	10.18	8.64	18.82	43.50	-24.68	QP		
5	213.7634	10.91	9.43	20.34	43.50	-23.16	QP		
6	332.5187	13.81	11.42	25.23	46.00	-20.77	QP		

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	101.3KPa



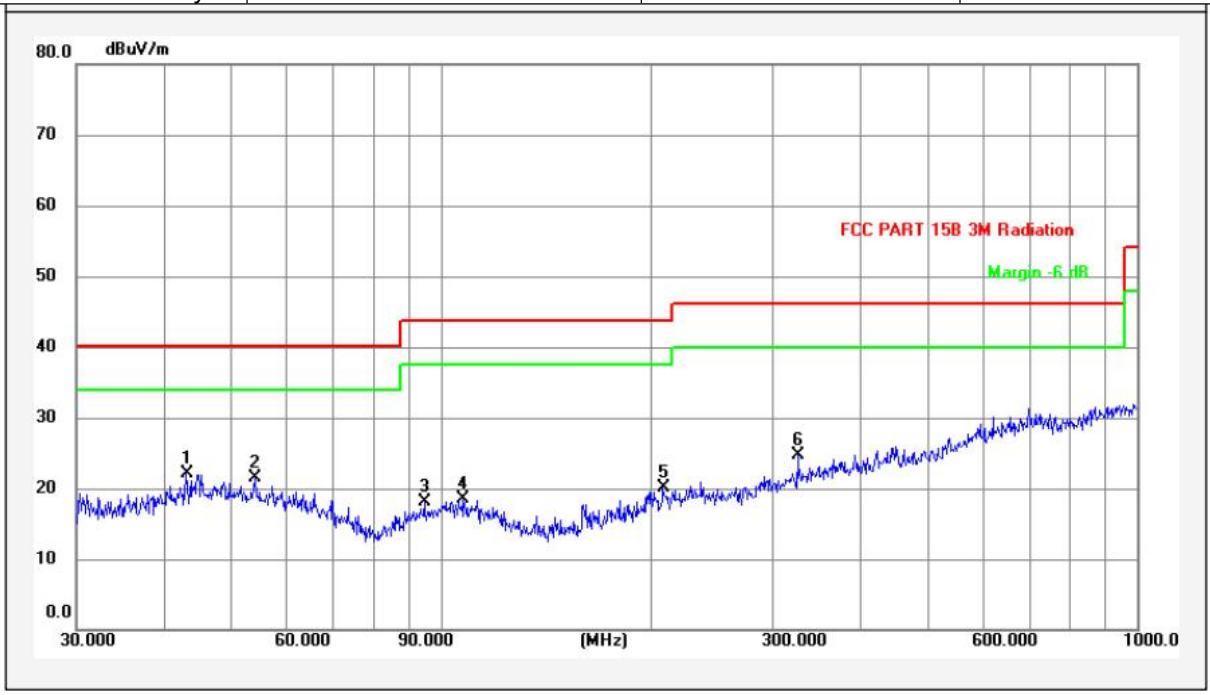
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	44.7433	12.70	8.64	21.34	40.00	-18.66	QP	*	
2	62.6506	10.74	9.60	20.34	40.00	-19.66	QP		
3	99.5281	10.51	10.45	20.96	43.50	-22.54	QP		
4	117.3602	9.47	9.08	18.55	43.50	-24.95	QP		
5	202.1004	10.82	8.37	19.19	43.50	-24.31	QP		
6	226.0994	11.01	8.91	19.92	46.00	-26.08	QP		

Test Mode:	GFSK	2440	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	101.3KPa



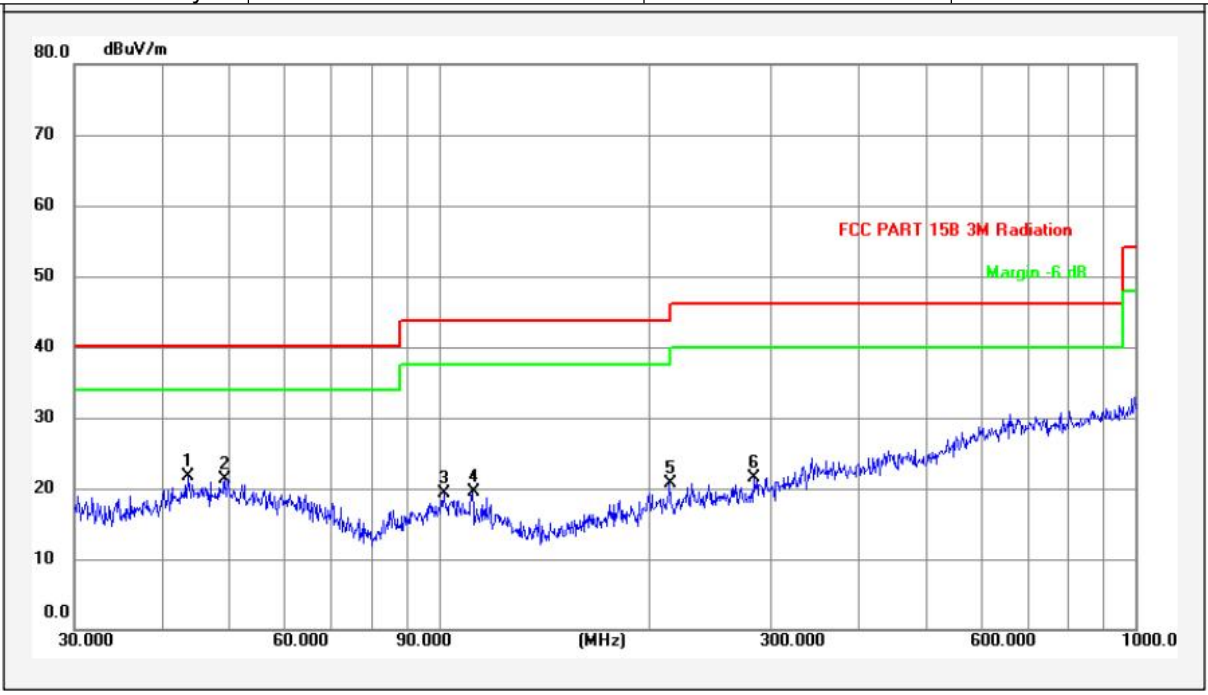
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	41.1320	11.75	9.59	21.34	40.00	-18.66	QP	*	
2	46.6664	12.65	8.44	21.09	40.00	-18.91	QP		
3	58.6126	11.52	8.61	20.13	40.00	-19.87	QP		
4	104.5361	10.30	8.93	19.23	43.50	-24.27	QP		
5	114.5146	9.66	9.04	18.70	43.50	-24.80	QP		
6	226.8936	11.02	9.39	20.41	46.00	-25.59	QP		

Test Mode:	GFSK	2440	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	101.3KPa



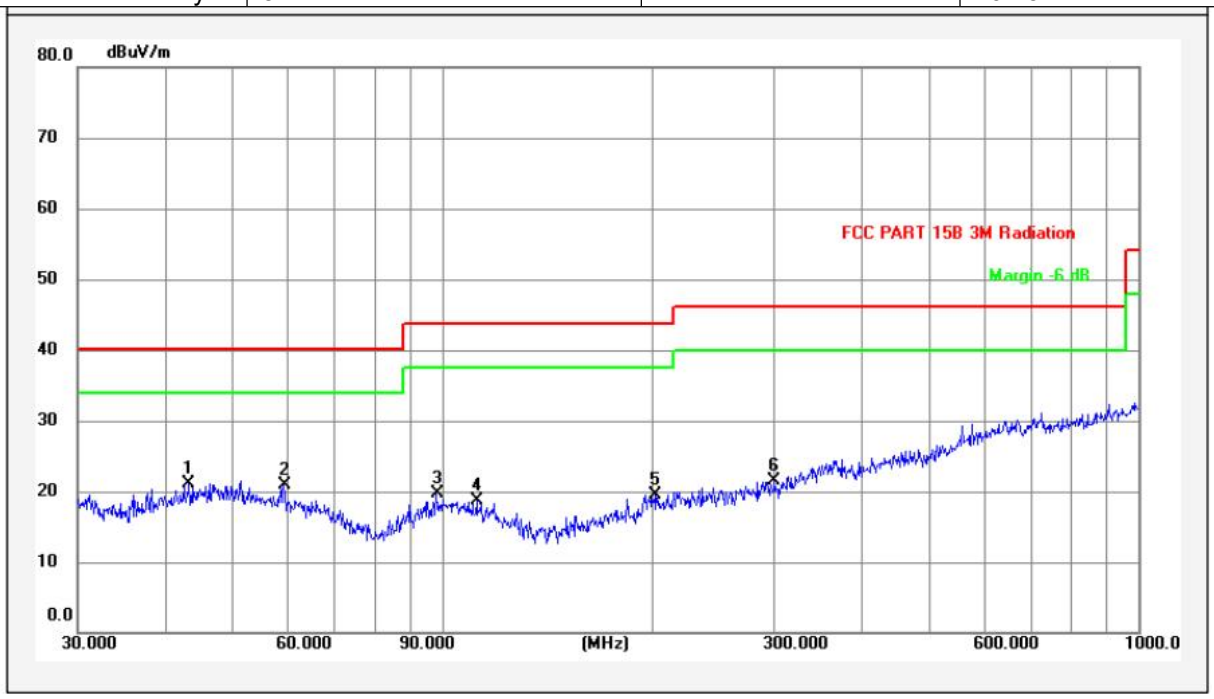
No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	43.0505	12.26	9.93	22.19	40.00	-17.81	QP	*	
2	54.0711	11.98	9.50	21.48	40.00	-18.52	QP		
3	94.7601	9.62	8.41	18.03	43.50	-25.47	QP		
4	107.8877	10.09	8.35	18.44	43.50	-25.06	QP		
5	208.5803	10.87	9.20	20.07	43.50	-23.43	QP		
6	325.5958	13.51	11.25	24.76	46.00	-21.24	QP		

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Vertical
Relative Humidity:	57%		Pressure:	101.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	43.6584	12.42	9.27	21.69	40.00	-18.31	QP	*	
2	49.3594	12.45	8.95	21.40	40.00	-18.60	QP		
3	101.6443	10.49	8.74	19.23	43.50	-24.27	QP		
4	111.7380	9.84	9.67	19.51	43.50	-23.99	QP		
5	214.5143	10.93	9.68	20.61	43.50	-22.89	QP		
6	282.9852	12.02	9.51	21.53	46.00	-24.47	QP		

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	24.2℃		Phase:	Horizontal
Relative Humidity:	57%		Pressure:	101.3KPa



No.	Frequency (MHz)	Factor (dBuV/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	MK.	Remark
1	43.3534	12.34	8.78	21.12	40.00	-18.88	QP	*	
2	59.2325	11.45	9.46	20.91	40.00	-19.09	QP		
3	98.1419	10.26	9.48	19.74	43.50	-23.76	QP		
4	112.1305	9.81	8.85	18.66	43.50	-24.84	QP		
5	202.1005	10.82	8.73	19.55	43.50	-23.95	QP		
6	300.3672	12.45	9.06	21.51	46.00	-24.49	QP		

4.3. BAND EDGES REQUIREMENT

4.3.1. Applicable Standard

According to FCC Part 15.249(d)

4.3.2. Test Configuration

Test according to clause 3.2 radio frequency test setup 2

4.3.3. Test Procedure

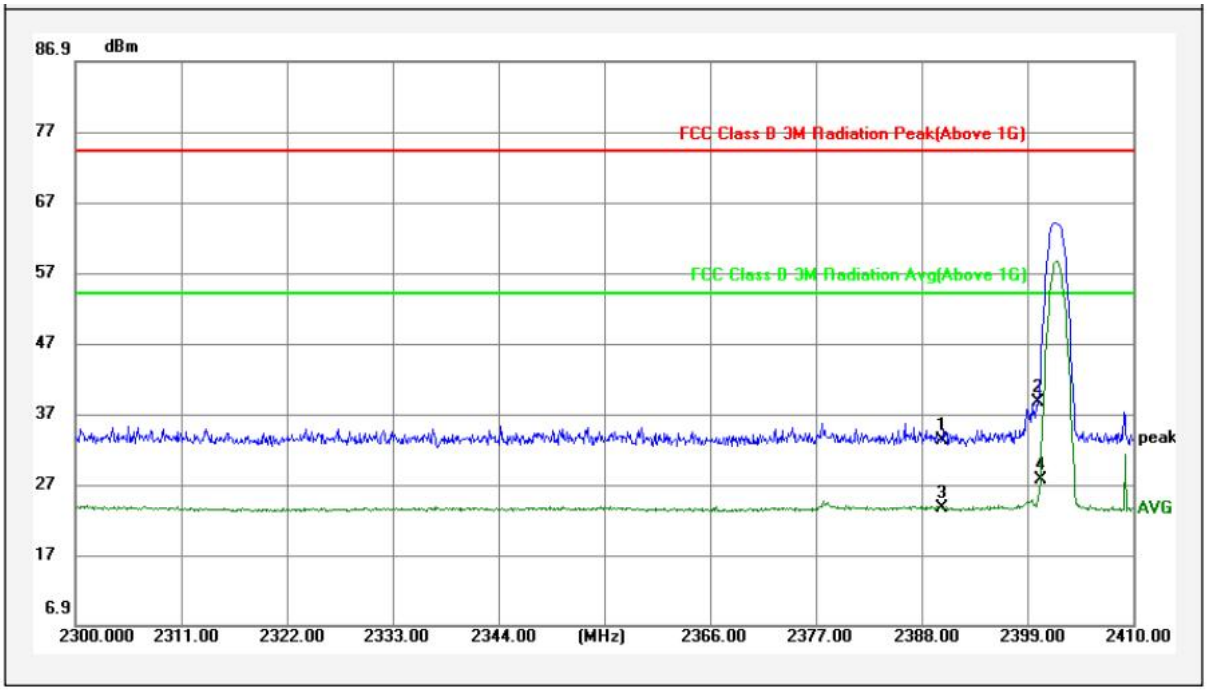
Follow the guidelines in ANSI C63.10: Clause 6.10

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports(if EUT with antenna diversity architecture). The lowest, middle and highest channels were selected for the final test as listed below.

■ BAND EDGES REQUIREMENT DATA

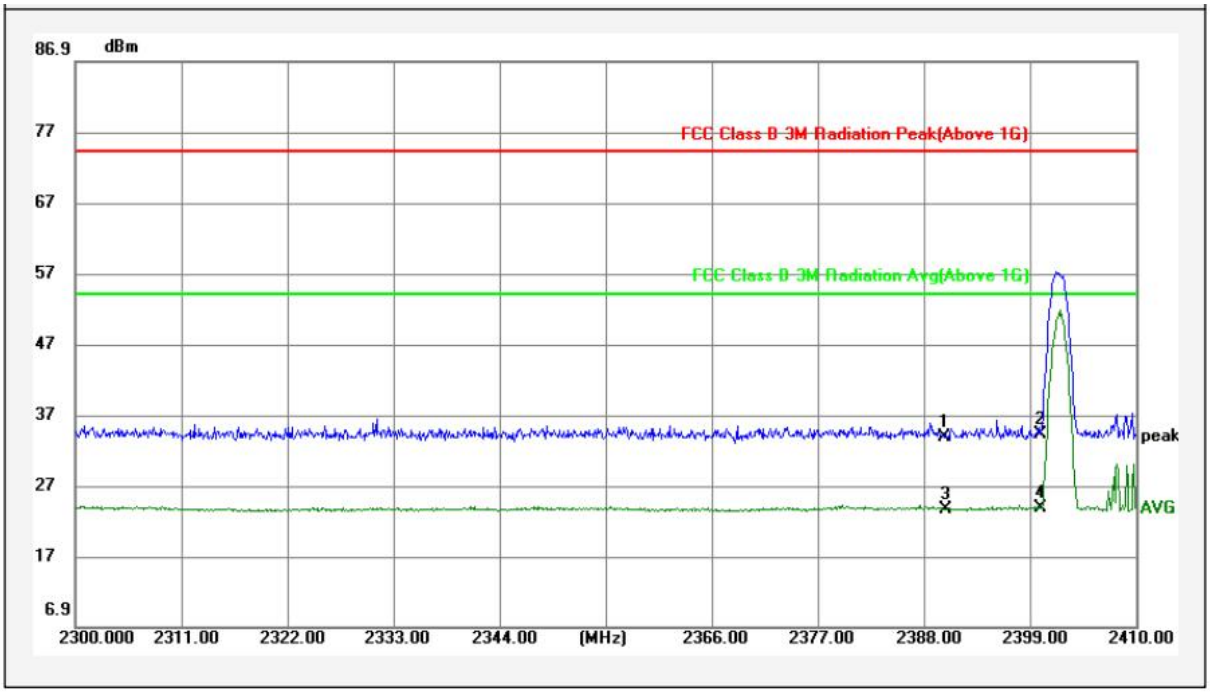
Alls mode have been tested, and the worst result was report as below:

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	52%		Pressure:	102.6KPa



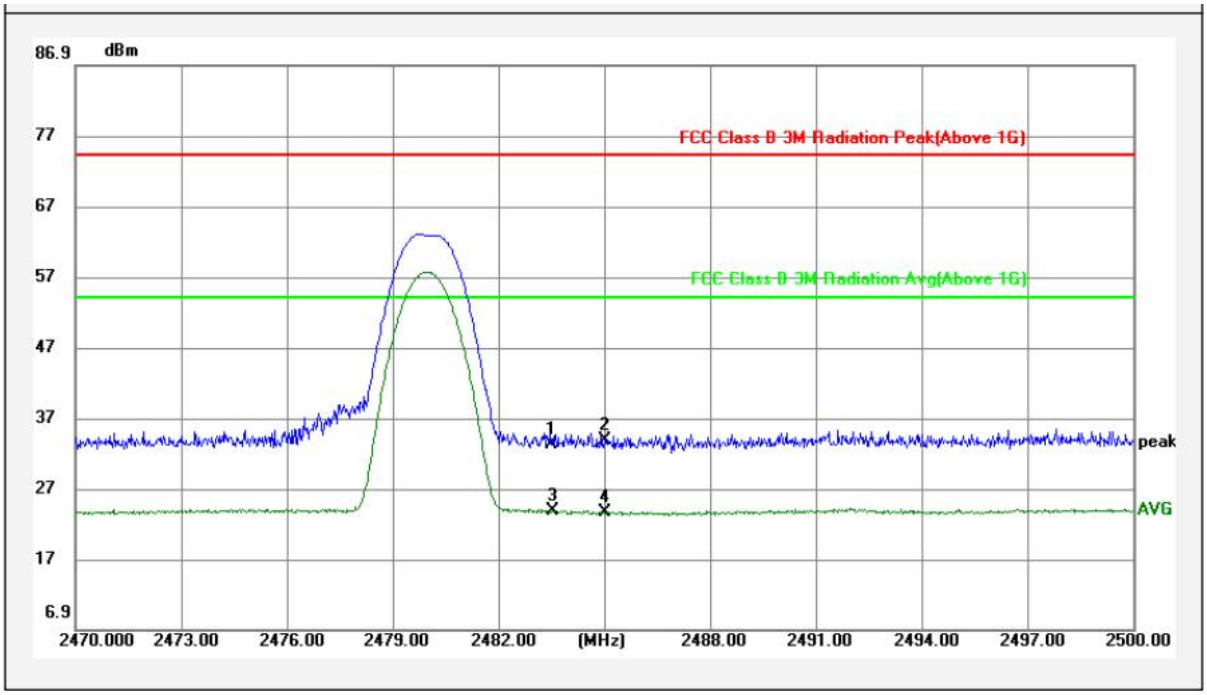
No.	Frequency (MHz)	Factor (dBm)	Reading (dBuV)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	MK.	Remark
1	2390.000	-6.33	39.51	33.18	74.00	-40.82	peak		
2	2400.000	-6.29	44.84	38.55	74.00	-35.45	peak		
3	2390.090	-6.33	29.94	23.61	54.00	-30.39	AVG		
4	2400.320	-6.29	33.89	27.60	54.00	-26.40	AVG	*	

Test Mode:	GFSK	2402	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	52%		Pressure:	102.6KPa



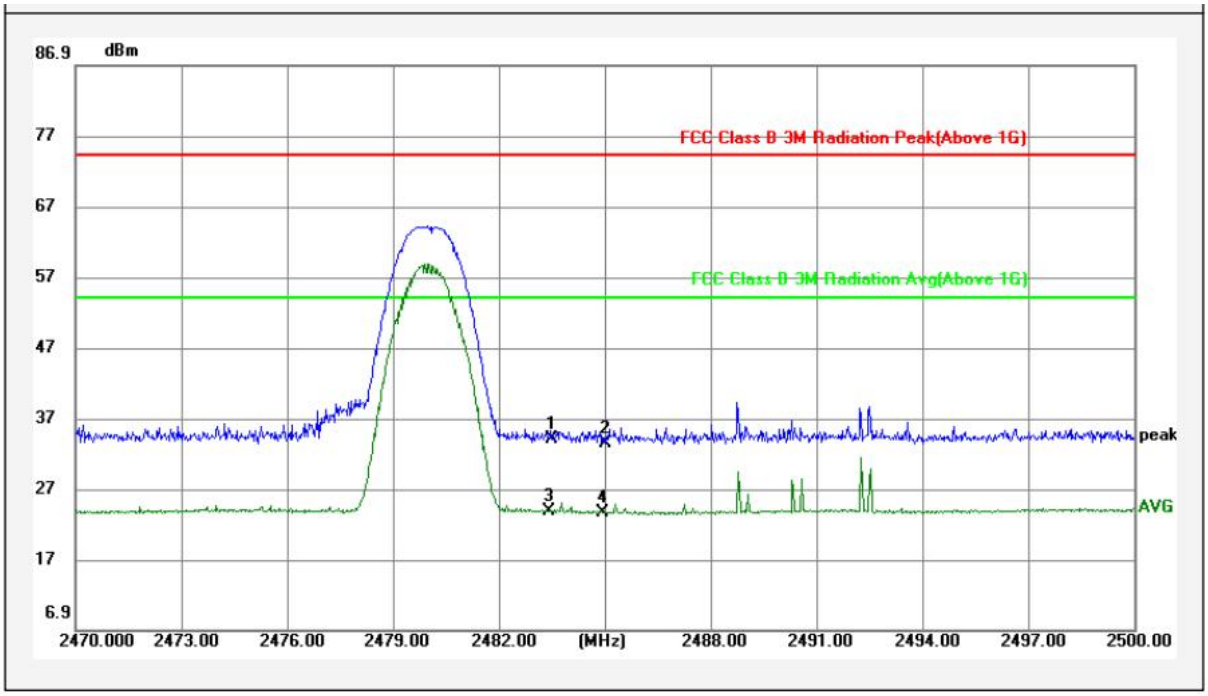
No.	Frequency (MHz)	Factor (dBm)	Reading (dBuV)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	MK.	Remark
1	2390.000	-6.33	40.04	33.71	74.00	-40.29	peak		
2	2400.000	-6.29	40.48	34.19	74.00	-39.81	peak		
3	2390.200	-6.33	29.96	23.63	54.00	-30.37	AVG		
4	2400.100	-6.29	30.05	23.76	54.00	-30.24	AVG	*	

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Vertical
Relative Humidity:	52%		Pressure:	102.6KPa



No.	Frequency (MHz)	Factor (dBm)	Reading (dBuV)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	MK.	Remark
1	2483.500	-5.99	39.19	33.20	74.00	-40.80	peak		
2	2485.000	-5.99	39.70	33.71	74.00	-40.29	peak		
3	2483.530	-5.99	29.79	23.80	54.00	-30.20	AVG	*	
4	2485.000	-5.99	29.60	23.61	54.00	-30.39	AVG		

Test Mode:	GFSK	2480	Test Voltage:	DC 5V
Temperature:	23.7℃		Phase:	Horizontal
Relative Humidity:	52%		Pressure:	102.6KPa



No.	Frequency (MHz)	Factor (dBm)	Reading (dBuV)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	MK.	Remark
1	2483.500	-5.99	39.99	34.00	74.00	-40.00	peak		
2	2485.000	-5.99	39.39	33.40	74.00	-40.60	peak		
3	2483.410	-5.99	29.72	23.73	54.00	-30.27	AVG	*	
4	2484.940	-5.99	29.67	23.68	54.00	-30.32	AVG		

4.4. CONDUCTED EMISSIONS TEST

4.4.1. Applicable Standard

According to FCC Part 15.207(a)

4.4.2. Conformance Limit

Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50
Note: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.		

4.4.3. Test Configuration

Test according to clause 6.3 conducted emission test setup

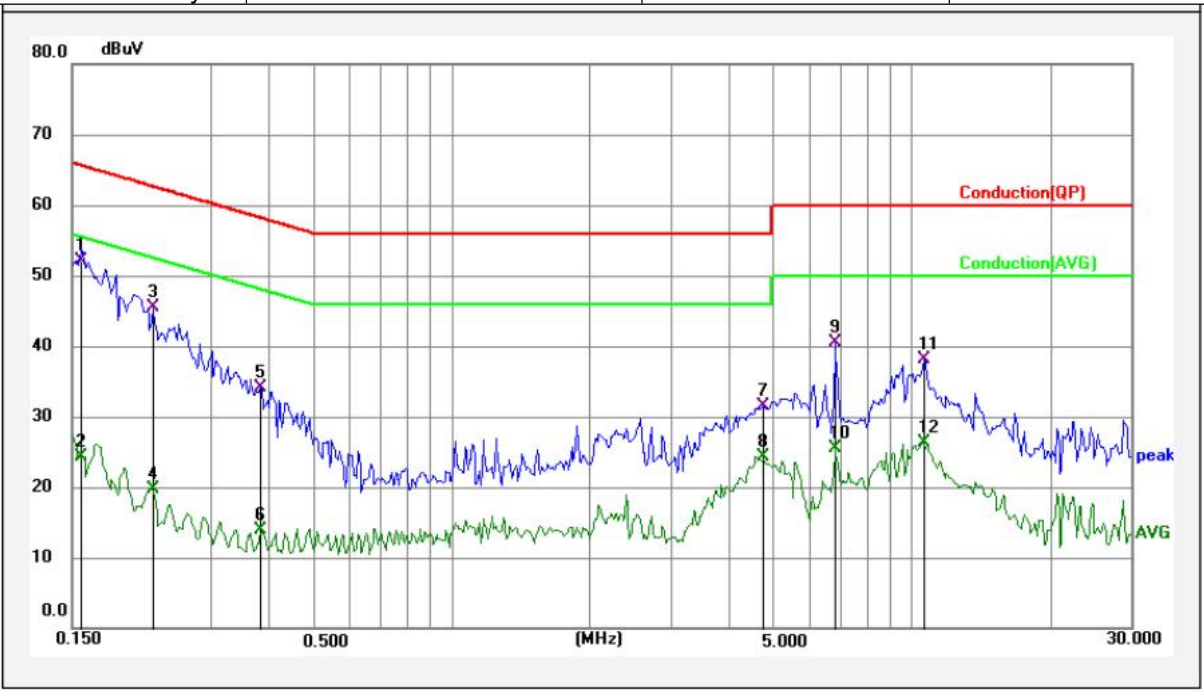
4.4.4. Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.
Maximum procedure was performed on the highest emissions to ensure EUT compliance.
Repeat above procedures until all frequency measured were complete.

4.4.5. Test Results:

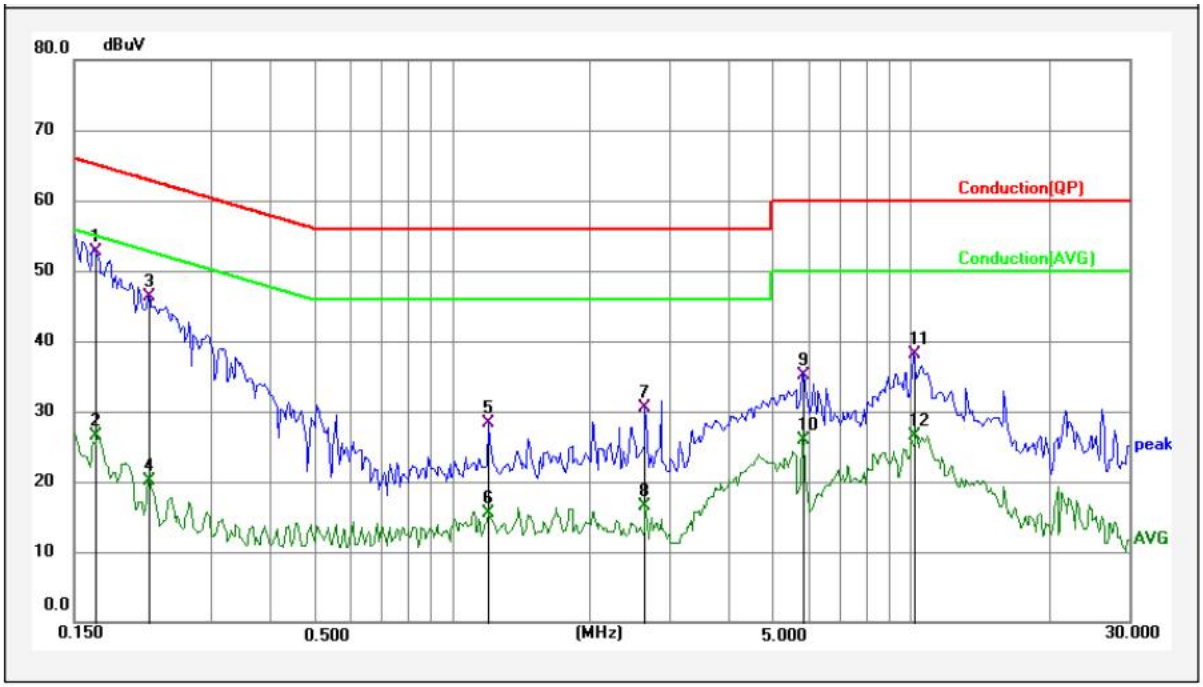
PASS

Test Mode:	On		Test Voltage:	AC 120V/60Hz
Temperature:	23.8℃		Phase:	L1
Relative Humidity:	53%		Pressure:	101.4KPa



No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	MK.	Remark
1	0.1572	10.71	41.40	52.11	65.61	-13.50	QP	*	
2	0.1572	10.71	13.53	24.24	55.61	-31.37	AVG		
3	0.2252	10.73	34.72	45.45	62.62	-17.17	QP		
4	0.2252	10.73	9.04	19.77	52.62	-32.85	AVG		
5	0.3870	10.79	23.30	34.09	58.13	-24.04	QP		
6	0.3870	10.79	3.08	13.87	48.13	-34.26	AVG		
7	4.7624	11.20	20.22	31.42	56.00	-24.58	QP		
8	4.7624	11.20	13.07	24.27	46.00	-21.73	AVG		
9	6.8163	11.26	29.28	40.54	60.00	-19.46	QP		
10	6.8163	11.26	14.18	25.44	50.00	-24.56	AVG		
11	10.6500	11.42	26.62	38.04	60.00	-21.96	QP		
12	10.6500	11.42	14.85	26.27	50.00	-23.73	AVG		

Test Mode:	On		Test Voltage:	AC 120V/60Hz
Temperature:	23.8℃		Phase:	N
Relative Humidity:	53%		Pressure:	101.4KPa



No.	Frequency (MHz)	Factor (dBuV)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	MK.	Remark
1	0.1666	10.86	41.76	52.62	65.13	-12.51	QP	*	
2	0.1666	10.86	15.65	26.51	55.13	-28.62	AVG		
3	0.2180	10.91	35.46	46.37	62.89	-16.52	QP		
4	0.2180	10.91	9.24	20.15	52.89	-32.74	AVG		
5	1.2002	10.92	17.44	28.36	56.00	-27.64	QP		
6	1.2002	10.92	4.60	15.52	46.00	-30.48	AVG		
7	2.6414	10.87	19.68	30.55	56.00	-25.45	QP		
8	2.6414	10.87	5.54	16.41	46.00	-29.59	AVG		
9	5.8357	10.95	24.08	35.03	60.00	-24.97	QP		
10	5.8357	10.95	15.04	25.99	50.00	-24.01	AVG		
11	10.1526	11.16	27.04	38.20	60.00	-21.80	QP		
12	10.1526	11.16	15.30	26.46	50.00	-23.54	AVG		

4.5. ANTENNA APPLICATION

4.5.1. Antenna Requirement

Standard	Requirement
FCC CRF Part 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.

For intentional device, according to FCC 47 CFR Section 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.

4.5.2. Result:PASS.

The EUT has 1 antennas: an Glue stick antenna for 2402-2480MHz, antenna has a gain of **3.23** dBi;

☐ Antenna use a permanently attached antenna which is not replaceable.
☐ Not using a standard antenna jack or electrical connector for antenna replacement
☐ The antenna has to be professionally installed (please provide method of installation)

Note:which in accordance to section 15.203, please refer to the internal photos.

--------- END OF REPORT --------