FCC Test Report

Report No.:	2405Z104533ED
Applicant:	Shenzhen Baida Moxing Co.,Ltd.
Address:	Room 2005-2, Building 6, Tian'an Cloud Park, Gangtou Community, Bantian St., Longgang Dist. Shenzhen China
Product Name:	LiteRadio 4 Radio Transmitter
Product Model:	LiteRadio 4 SE
Multiple Models:	LiteRadio 4
Trade Mark:	BETAFPV
FCC ID:	2AT6X-LITERADIO4SE
Standards:	FCC CFR Title 47 Part 15C (§15.247)
Test Date:	2024-11-21 to 2025-04-15
Test Result:	Complied
Report Date:	2025-04-15

Reviewed by:	Abel chen	**Approved by:**	Jacob Gong
	Abel Chen Project Engineer		Jacob Kong Manager

Prepared by:

World Alliance Testing & Certification (Shenzhen) Co., Ltd

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Revision History

Version No.	Issued Date	Description
00	*2025-04-15*	*Original*

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1 General Information

1.1 Client Information

Applicant:	Shenzhen Baida Moxing Co.,Ltd.
Address:	Room 2005-2, Building 6, Tian'an Cloud Park, Gangtou Community, Bantian St., Longgang Dist. Shenzhen China
Manufacturer:	Shenzhen Baida Moxing Co.,Ltd.
Address:	Room 2005-2, Building 6, Tian'an Cloud Park, Gangtou Community, Bantian St., Longgang Dist. Shenzhen China

1.2 Product Description of EUT

The EUT is LiteRadio 4 Radio Transmitter that contains BLE, 2.4G WLAN and 2.4G SRD radios, this report covers the full testing of the 2.4G SRD radio.

Sample Serial Number	2UDZ-1(LiteRadio 4 SE), 2UDZ-6(LiteRadio 4) for CE Test, 2UDZ-2(LiteRadio 4 SE), 2UDZ-6(LiteRadio 4) for RE test, 2UDZ-3(LiteRadio 4 SE) for RF conducted test (assigned by WATC)
Sample Received Date	2024-11-13
Sample Status	Good Condition
Frequency Range	2403.4MHz – 2479.4MHz
Maximum Conducted Peak Output Power	16.77dBm
Modulation Technology	GFSK
Spatial Streams	SISO (1TX, 1RX)
Antenna Gain#	2.09dBi
Power Supply	DC 3.7V from battery or DC 5.0V from type C port
Adapter Information	N/A
Modification	Sample No Modification by the test lab

1.3 Antenna information

15.203 requirement:

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, 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.

Device Antenna information:	

The SRD antenna is an internal antenna which cannot replace by end-user, please see product internal photos for details.

1.4 Related Submittal(s)/Grant(s)

FCC Part 15, Subpart C, Equipment Class: DTS, FCC ID: 2AT6X-LITERADIO4SE

1.5 Measurement Uncertainty

Parameter		Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
AC Power Lines Conducted Emissions		±3.14dB
Emissions, Radiated	Below 30MHz	±2.78dB
	Below 1GHz	±4.84dB
	Above 1GHz	±5.44dB
Emissions, Conducted		1.75dB
Conducted Power		0.74dB
Frequency Error		150Hz
Bandwidth		0.34%
Power Spectral Density		0.74dB
Note: *The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*		

1.6 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

1.7 Test Methodology

FCC CFR 47 Part 2

FCC CFR 47 Part 15

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method

2 Description of Measurement

2.1 Test Configuration

Operating channels:					
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2403.4	27	2429.4	53	2455.4
2	2404.4	…	…	…	…
…	…	39	2441.4	77	2479.4
…	…	…	…	/	/
26	2428.4	52	2454.4	/	/

According to ANSI C63.10-2013 chapter 5.6.1 Table 11 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2403.4	39	2441.4	77	2479.4

Test Mode:				
Transmitting mode:	Keep the EUT in continuous transmitting with modulation			
Exercise software#:	flash_download_tool_3.9.7			
Mode	**Data rate**	**Power Level Setting#**		
		Low Channel	**Middle Channel**	**High Channel**
2.4G SRD	/	default	default	default
The exercise software and the maximum power setting that provided by manufacturer.				

Worst-Case Configuration:
For radiated emissions, EUT was investigated in three orthogonal orientation, the worst-case orientation was recorded in report For AC power line conducted emission and radiated emission 9kHz-1GHz and above 18GHz were performed with the EUT transmits at the channel with highest output power as worst-case scenario. For radiated emissions below 30MHz, three antenna orientations (parallel, perpendicular, gound-parallel) were tested, only record the worse case test data in report. EUT model LiteRadio 4 SE and LiteRadio 4 are electrical identical, except model LiteRadio 4 with two more fine-tune joystick, detail please refer EUT photo and DOS letter# provided by applicant, model LiteRadio 4 SE was selected for full test, model LiteRadio 4 were check AC line conducted emission and radiated emission of below 1GHz

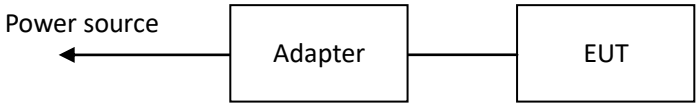
2.2 Test Auxiliary Equipment

Manufacturer	Description	Model	Serial Number
Xiaomi	Adapter	MDY-08-ES	unknown

2.3 Interconnecting Cables

Manufacturer	Description	Length(m)	From	To
unknown	USB Cable	1.0/0.2	Adapter	EUT

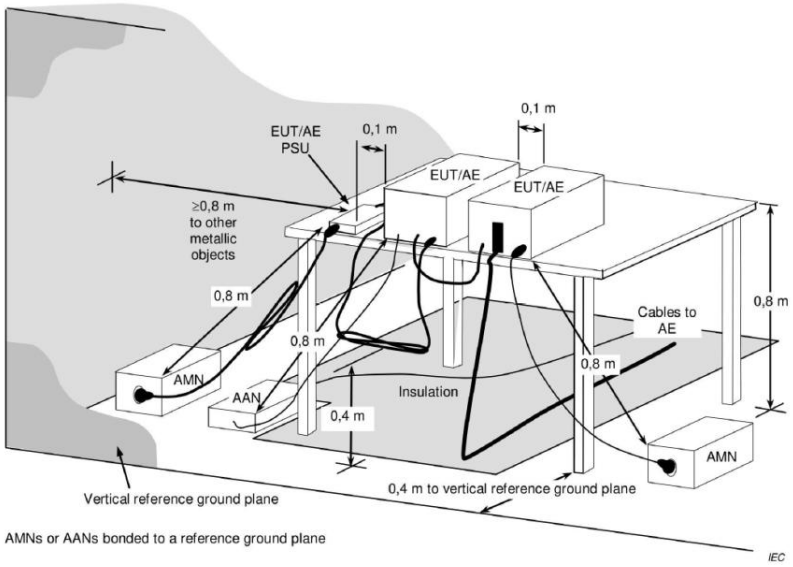
2.4 Block Diagram of Connection between EUT and AE



Note: for reference only, the actual connection setup used for testing please refer to the test photos.

2.5 Test Setup

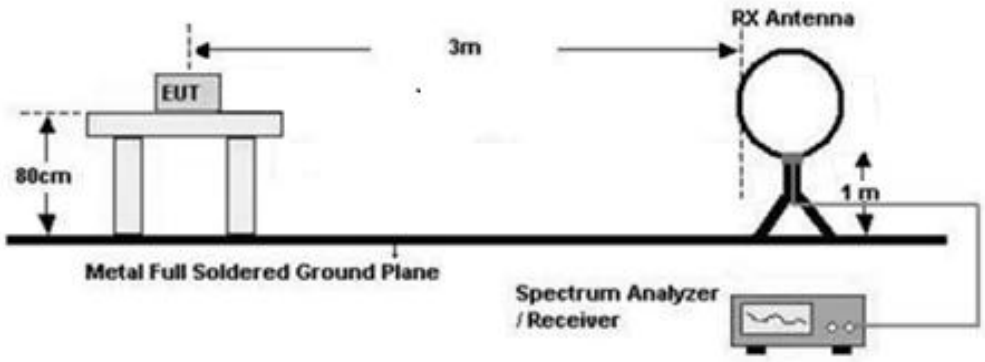
1) Conducted emission measurement:



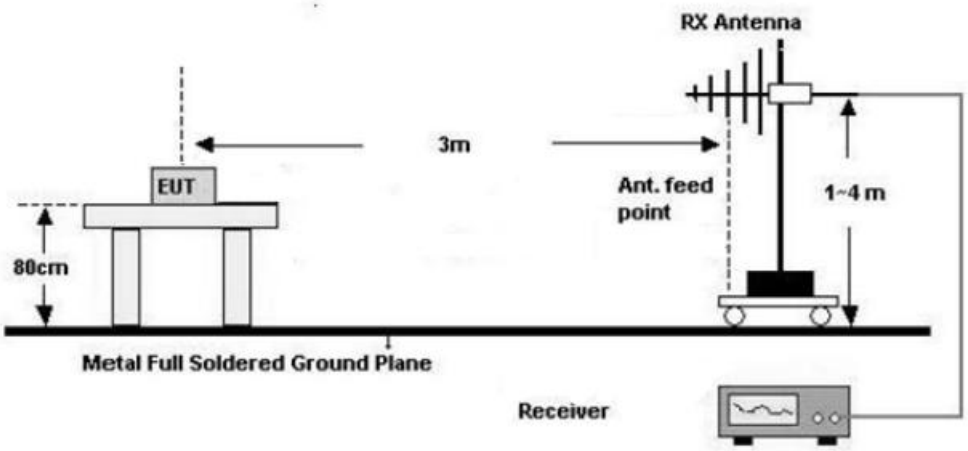
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

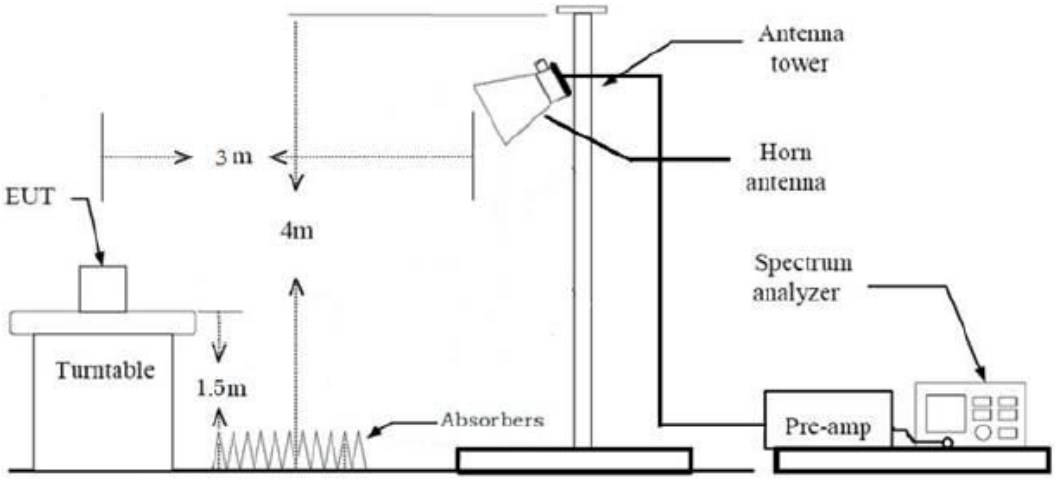
Below 30MHz (3m SAC)



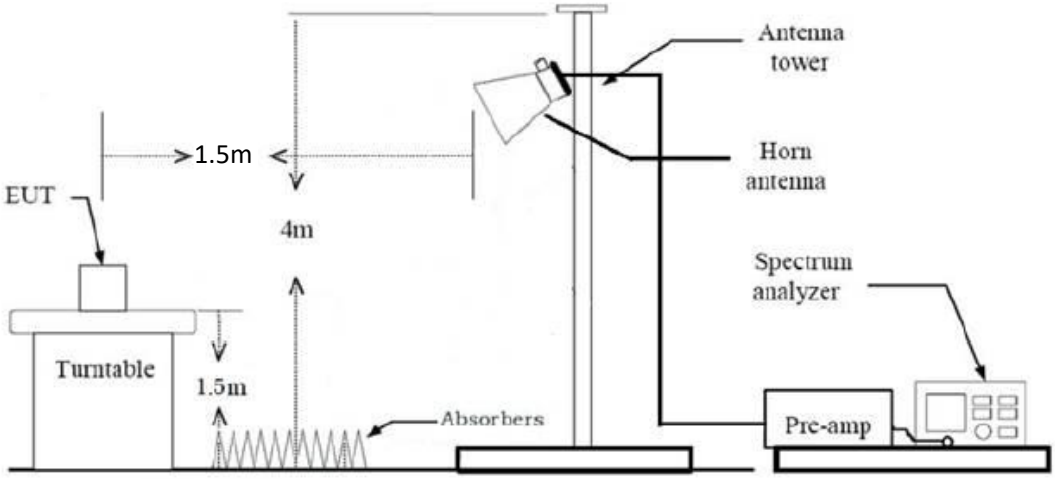
30MHz-1GHz (3m SAC)



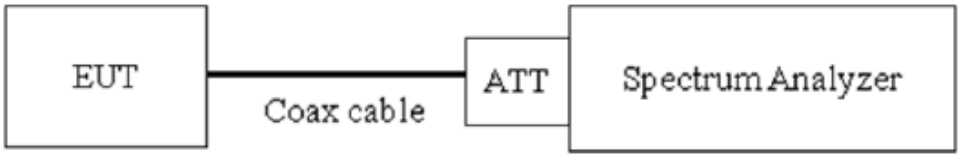
1GHz-18GHz



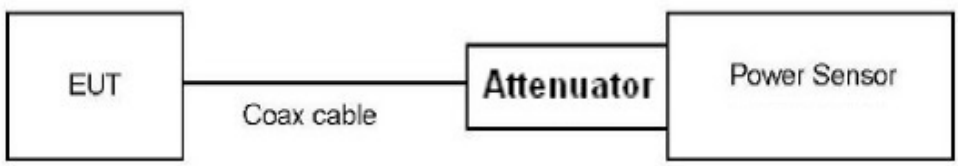
Above 18GHz



3) RF Conducted Test



or



2.6 Test Procedure

Conducted emission:

1. The E.U.T is placed on a non-conducting table 40cm from the vertical ground plane and 80cm above the horizontal ground plane (Please refer to the block diagram of the test setup and photographs).
2. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
3. Line conducted data is recorded for both Line and Neutral

Radiated Emission Procedure:

a) For below 30MHz

1. All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz- 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).
2. Loop antenna use, investigation was done on the three antenna orientations (parallel, perpendicular, gound-parallel)
3. The RBW/VBW of receiver is set to 300Hz/1kHz for 9kHz to 150kHz range, to 10kHz/30kHz for 150kHz to 30MHz range for scan Peak emission, 200Hz/9kHz IF BW was used for final measurement in the Quasi-peak or average detection mode for frequency range 9~150kHz/150kHz~30MHz respectively.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

b) For 30MHz-1GHz:

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. The RBW/VBW of receiver is set to 100kHz/300kHz for scan Peak emission, 120kHz IF BW was used for final measurement in the Quasi-peak detection mode.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

c) For above 1GHz:

1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m chamber. The measurement distance from the EUT to the receiving antenna is 3 m (1-18GHz) and 1.5 m (above 18GHz).
2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.

3. The RBW/VBW of spectrum analyzer is set to 1MHz/3MHz for scan Peak emission, for measured average emission, reduce the VBW to 10Hz (Note: a high VBW (for example 1kHz, not less than 1/T) may used to scan average emissions to avoid long sweep time.)
4. If the Peak emission complies with the Average limit, then perform average measurement is optional.
5. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
6. Base on FCC 15.31 (f): 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.

RF Conducted Test:

1. The antenna port of EUT was connected to the RF port of the test equipment (Power Meter or Spectrum analyzer) through Attenuator and RF cable.
2. The cable assembly insertion loss of 8.0dB (including 6.0 dB Attenuator and 2.0 dB cable) was entered as an offset in the power meter. Note: Actual cable loss was unavailable at the time of testing, therefore a loss of 2.0dB was assumed as worst case. This was later verified to be true by laboratory. (if the RF cable provided by client, the cable loss declared by client)
3. The EUT is keeping in continuous transmission mode and tested in all modulation modes.

2.7 Measurement Method

Description of Test	Measurement Method
AC Line Conducted Emissions	ANSI C63.10-2013 Section 6.2
Maximum Conducted Output Power	ANSI C63.10-2013 Section 7.8.5
20 dB Emission Bandwidth	ANSI C63.10-2013 Section 6.9.2
99% Occupied Bandwidth	ANSI C63.10-2013 Section 6.9.3
Channel separation	ANSI C63.10-2013 Section 7.8.2
Number of hopping Frequency	ANSI C63.10-2013 Section 7.8.3
Time of occupancy (dwell time)	ANSI C63.10-2013 Section 7.8.4
100kHz Bandwidth of Frequency Band Edge	ANSI C63.10-2013 Section 7.8.7.2&6.10
Radiated emission	ANSI C63.10-2013 Section 7.8&6.3&6.4&6.5&6.6

2.8 Measurement Equipment

Manufacturer	Description	Model	Management No.	Calibration Date	Calibration Due Date
AC Line Conducted Emission Test					
ROHDE& SCHWARZ	EMI TEST RECEIVER	ESR	101817	2024/6/4	2025/6/3
R&S	LISN	ENV216	101748	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.12	N/A	2024/6/4	2025/6/3
Farad	Test Software	EZ-EMC	Ver. EMEC-3A1	/	/
Radiated Emission Test					
R&S	EMI test receiver	ESR3	102758	2024/6/4	2025/6/3
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40-N	101608	2024/6/4	2025/6/3
SONOMA INSTRUMENT	Low frequency amplifier	310	186014	2024/6/4	2025/6/3
A.H. Systems	PREAMPLIFIER	PAM-0118P	531	2024/6/4	2025/6/3
COM-POWER	Amplifier	PAM-840A	461306	2024/8/7	2025/8/6
BACL	Loop Antenna	1313-1A	4010611	2024/2/7	2027/2/6
SCHWARZBECK	Log - periodic wideband antenna	VULB 9163	9163-872	2023/7/7	2026/7/6
Astro Antenna Ltd	Horn antenna	AHA-118S	3015	2023/7/6	2026/7/5
Ducommun technologies	Horn Antenna	ARH-4223-02	1007726-03	2023/7/10	2026/7/9
Oulitong	Band Reject Filter	OBSF-2400-248 3.5-50N	OE02103119	2024/6/4	2025/6/3
Unknown	6.7G High Pass Filter	Unknown	6.7G	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.9	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.13	N/A	2024/8/7	2025/8/6
N/A	Coaxial Cable	NO.15	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.16	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.17	N/A	2024/6/4	2025/6/3
Audix	Test Software	E3	191218 V9	/	/
RF Conducted Test					
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40	101419	2024/6/4	2025/6/3
narda	6dB attenuator	603-06-1	N/A	2024/6/4	2025/6/3

Note: All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or International standards.

3 Test Results

3.1 Test Summary

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247 (a)(1)	20dB Emission Bandwidth	Report only
-	99% Occupied Bandwidth	Report only
§15.247 (a)(1)	Channel separation	Compliance
§15.247 (a)(1)(iii)	Number of hopping Frequency	Compliance
§15.247 (a)(1)(iii)	Time of occupancy (dwell time)	Compliance
§15.247(b)(1)	Maximum Conducted Output Power	Compliance
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Compliance
§15.205, §15.209, §15.247(d)	Radiated emission	Compliance

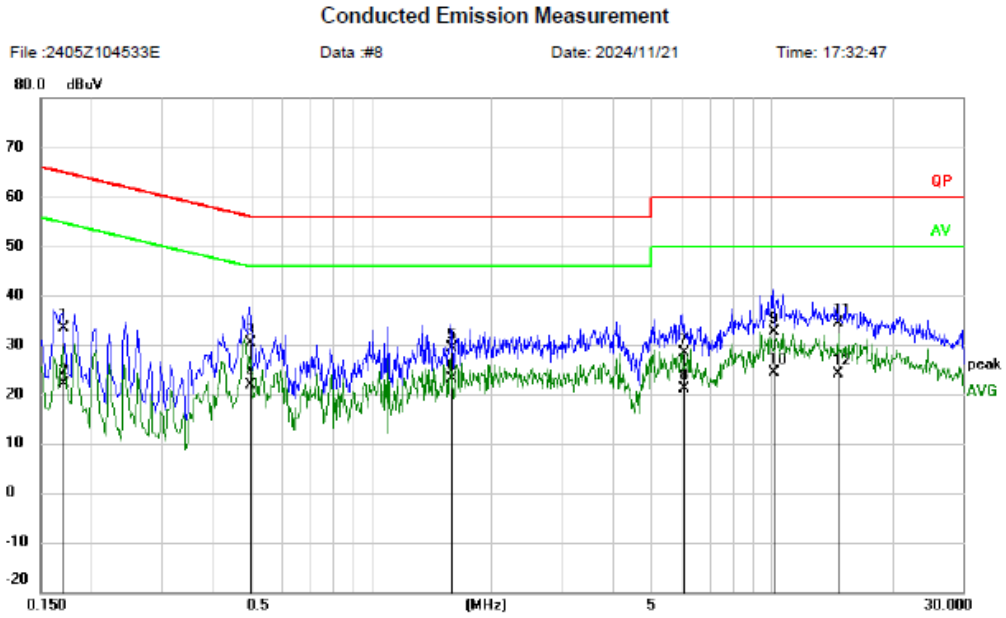
3.2 Limit

Test items	Limit
AC Line Conducted Emissions	See details §15.207 (a)
Conducted Output Power	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.
6dB Emission Bandwidth	The minimum 6 dB bandwidth shall be at least 500 kHz.
Power Spectral Density	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
Spurious Emissions, 100kHz Bandwidth of Frequency Band Edge	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, 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)).

3.3 AC Line Conducted Emissions Test Data

Test Date:	2024-11-21~2025-04-09	Test By:	Lirou Li; Ryan Zhang
Environment condition:	Temperature: 23.6~24.8°C; Relative Humidity:60~79%; ATM Pressure: 100.9~101.0kPa		

Model: LiteRadio 4 SE



Limit: QP
Mode:transmitting
Note: SRD 2.4G Low Channel

Phase: L1
Power: AC 120V/60Hz

Temperature: 23.6 ℃
Humidity: 60 %
Air Pressure: 1009 hpa

Receiver Setting:
9~150kHz(if apply): Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV
0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

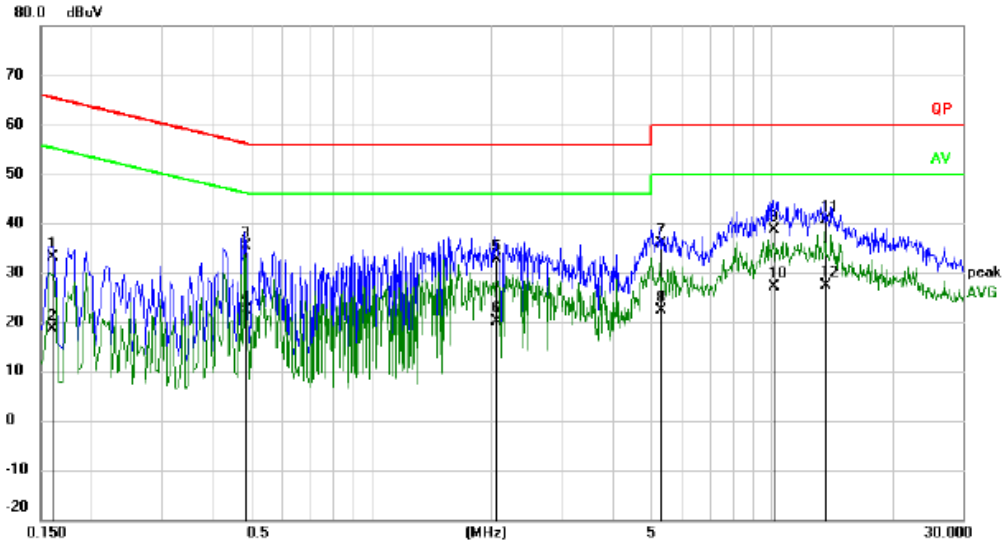
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1700	23.09	10.37	33.46	64.96	-31.50	QP	
2		0.1700	11.81	10.37	22.18	54.96	-32.78	AVG	
3		0.4980	19.87	10.51	30.38	56.03	-25.65	QP	
4		0.4980	11.34	10.51	21.85	46.03	-24.18	AVG	
5		1.5859	18.65	10.74	29.39	56.00	-26.61	QP	
6	*	1.5859	12.48	10.74	23.22	46.00	-22.78	AVG	
7		6.0380	17.86	10.43	28.29	60.00	-31.71	QP	
8		6.0380	10.70	10.43	21.13	50.00	-28.87	AVG	
9		10.0940	22.23	10.41	32.64	60.00	-27.36	QP	
10		10.0940	14.08	10.41	24.49	50.00	-25.51	AVG	
11		14.6660	24.01	10.30	34.31	60.00	-25.69	QP	
12		14.6660	13.76	10.30	24.06	50.00	-25.94	AVG	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Lirou

Conducted Emission Measurement

File :2405Z104533E Data :#7 Date: 2024/11/21 Time: 17:20:59



Limit: QP Phase: N Temperature: 23.6 ℃

Mode: transmitting Power: AC 120V/60Hz Humidity: 60 %

Note: SRD 2.4G Low Channel Air Pressure: 1009 hpa

Receiver Setting:

9~150kHz(if apply): Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV

0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

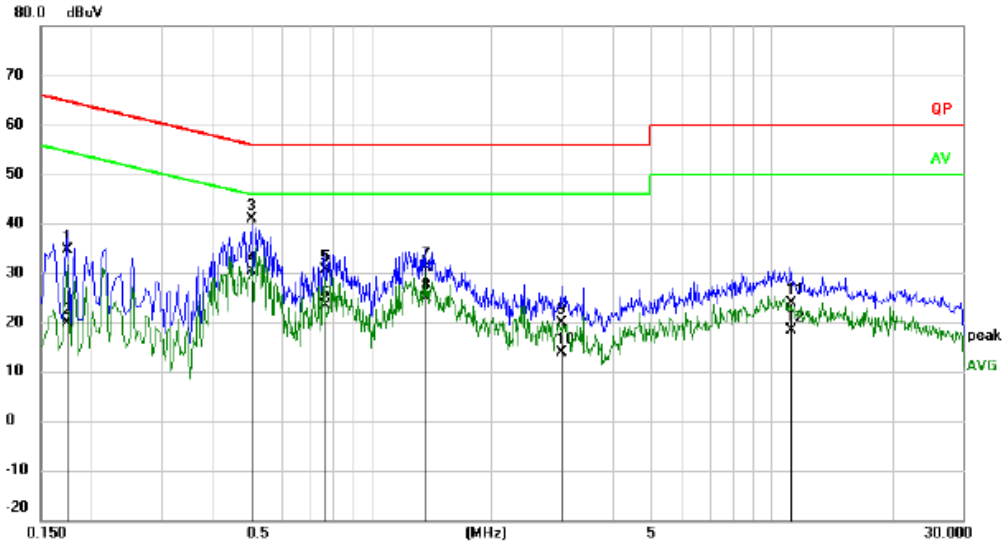
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1607	22.95	10.23	33.18	65.43	-32.25	QP	
2		0.1607	8.48	10.23	18.71	55.43	-36.72	AVG	
3		0.4860	24.77	10.51	35.28	56.24	-20.96	QP	
4		0.4860	11.76	10.51	22.27	46.24	-23.97	AVG	
5		2.0460	21.88	10.68	32.56	56.00	-23.44	QP	
6		2.0460	9.51	10.68	20.19	46.00	-25.81	AVG	
7		5.2660	25.43	10.44	35.87	60.00	-24.13	QP	
8		5.2660	12.01	10.44	22.45	50.00	-27.55	AVG	
9		10.0980	28.14	10.41	38.55	60.00	-21.45	QP	
10		10.0980	16.60	10.41	27.01	50.00	-22.99	AVG	
11	*	13.6180	30.16	10.39	40.55	60.00	-19.45	QP	
12		13.6180	16.96	10.39	27.35	50.00	-22.65	AVG	

*:Maximum data x:Over limit !:over margin Engineer Signature: Lirou

Model: LiteRadio 4

Conducted Emission Measurement

File :2405Z104533E-RF Data :#11 Date: 2025/4/9 Time: 13:08:17



Limit: QP
Mode: Transmitting
Note: SRD2.4G 2403.4

Phase: L1
Power: AC 120V/60Hz

Temperature: 24.8 ℃
Humidity: 79 %
Air Pressure: 1010 hpa

Receiver Setting:
9~150kHz(if apply): Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV
0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

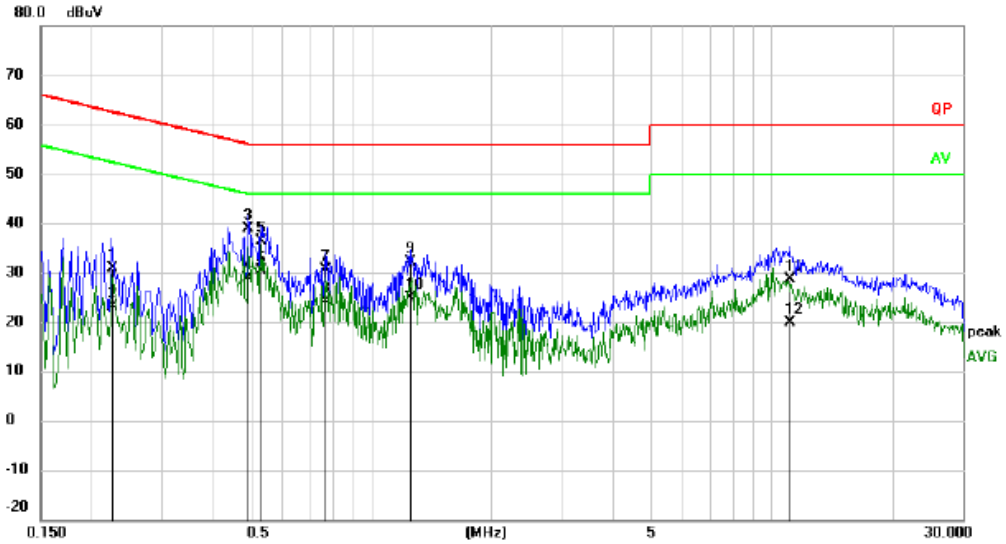
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1740	24.07	10.60	34.67	64.77	-30.10	QP	
2		0.1740	9.17	10.60	19.77	54.77	-35.00	AVG	
3	*	0.5020	30.09	10.69	40.78	56.00	-15.22	QP	
4		0.5020	19.78	10.69	30.47	46.00	-15.53	AVG	
5		0.7660	19.99	10.73	30.72	56.00	-25.28	QP	
6		0.7660	12.75	10.73	23.48	46.00	-22.52	AVG	
7		1.3700	20.30	10.86	31.16	56.00	-24.84	QP	
8		1.3700	13.99	10.86	24.85	46.00	-21.15	AVG	
9		2.9900	9.48	10.44	19.92	56.00	-36.08	QP	
10		2.9900	3.32	10.44	13.76	46.00	-32.24	AVG	
11		11.1820	13.28	10.57	23.85	60.00	-36.15	QP	
12		11.1820	7.72	10.57	18.29	50.00	-31.71	AVG	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Ryan

Conducted Emission Measurement

File :2405Z104533E-RF Data :#12 Date: 2025/4/9 Time: 13:09:50



Limit: QP Phase: N Temperature: 24.8 ℃
Mode: Transmitting Power: AC 120V/60Hz Humidity: 79 %
Note: SRD2.4G 2403.4 Air Pressure: 1010 hpa

Receiver Setting:
9~150kHz(if apply): Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV
0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2260	20.33	10.50	30.83	62.60	-31.77	QP	
2		0.2260	12.69	10.50	23.19	52.60	-29.41	AVG	
3		0.4940	28.04	10.78	38.82	56.10	-17.28	QP	
4		0.4940	18.06	10.78	28.84	46.10	-17.26	AVG	
5		0.5299	25.73	10.76	36.49	56.00	-19.51	QP	
6	*	0.5299	19.54	10.76	30.30	46.00	-15.70	AVG	
7		0.7700	20.03	10.59	30.62	56.00	-25.38	QP	
8		0.7700	13.54	10.59	24.13	46.00	-21.87	AVG	
9		1.2500	21.85	10.28	32.13	56.00	-23.87	QP	
10		1.2500	14.53	10.28	24.81	46.00	-21.19	AVG	
11		11.0940	18.03	10.65	28.68	60.00	-31.32	QP	
12		11.0940	9.26	10.65	19.91	50.00	-30.09	AVG	

*:Maximum data x:Over limit !:over margin Engineer Signature: Ryan

Remark:

Measurement (dBuV)= Reading Level (dBuV) + Correct Factor(dB)

Correct Factor(dB)= LISN Voltage Division Factor (dB)+ Cable loss(dB)

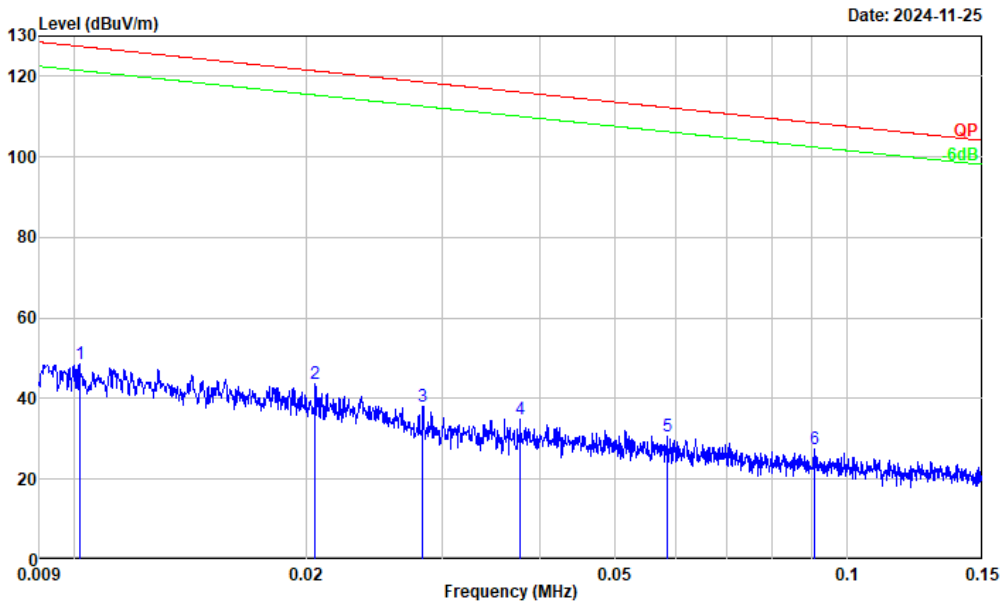
Over Limit = Measurement – Limit

3.4 Radiated emission Test Data

9 kHz-30MHz:

Test Date:	2024-11-25~2025-04-08	**Test By:**	Bard Huang; Luke Li
Environment condition:	Temperature: 23.4~24.0°C; Relative Humidity:57~60%; ATM Pressure: 101.1kPa		

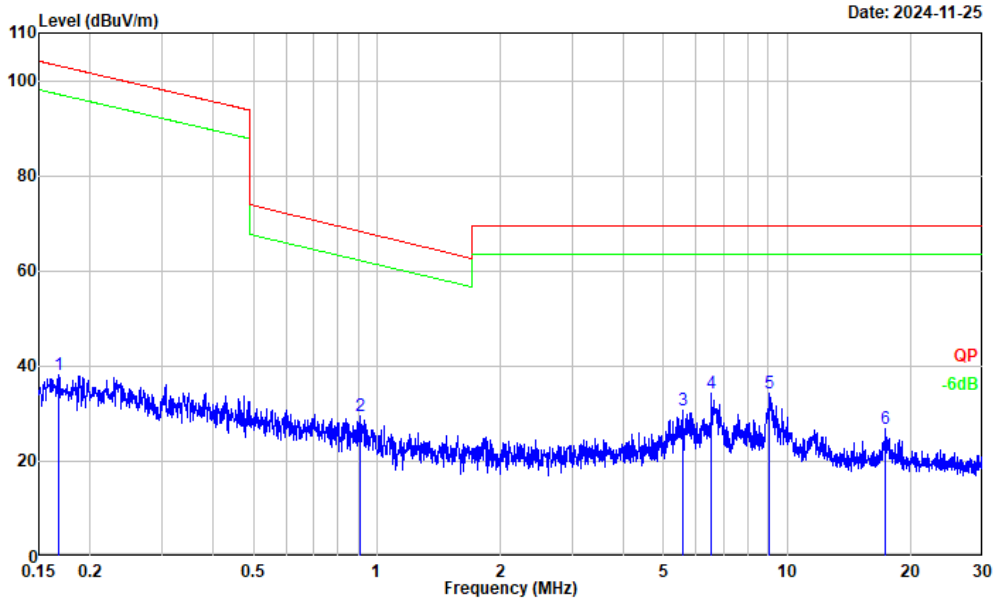
Model: LiteRadio 4 SE



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.4℃/60%R.H./101.1kPa
Tested by : Bard Huang
Polarization : PARALLEL
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.010	11.40	37.12	48.52	127.47	-78.95	Peak
2	0.021	13.00	30.55	43.55	121.37	-77.82	Peak
3	0.028	12.48	25.62	38.10	118.58	-80.48	Peak
4	0.038	11.86	22.93	34.79	116.06	-81.27	Peak
5	0.059	11.38	19.23	30.61	112.25	-81.64	Peak
6	0.091	11.81	15.59	27.40	108.46	-81.06	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VBW: 200Hz/1kHz, DET: PK

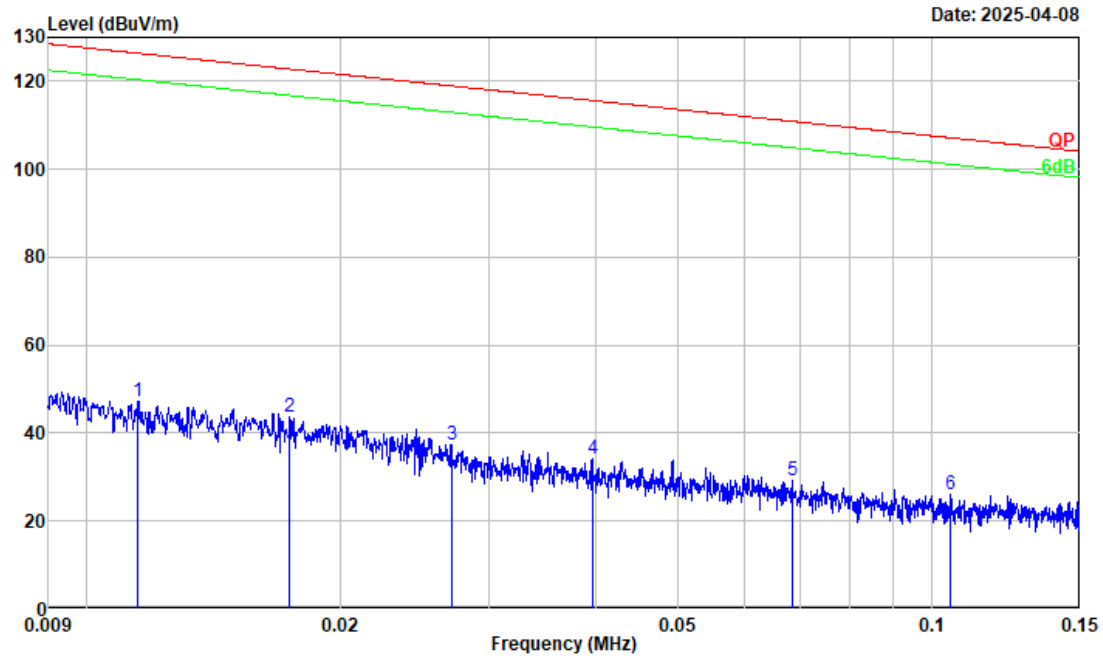


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.4℃/60%R.H./101.1kPa
Tested by : Bard Huang
Polarization : PARALLEL
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.168	25.07	13.07	38.14	103.10	-64.96	Peak
2	0.913	28.11	1.29	29.40	68.28	-38.88	Peak
3	5.571	34.84	-4.04	30.80	69.54	-38.74	Peak
4	6.542	38.46	-4.04	34.42	69.54	-35.12	Peak
5	9.056	38.05	-3.66	34.39	69.54	-35.15	Peak
6	17.349	30.04	-3.26	26.78	69.54	-42.76	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VBW: 9kHz/30kHz, DET: PK

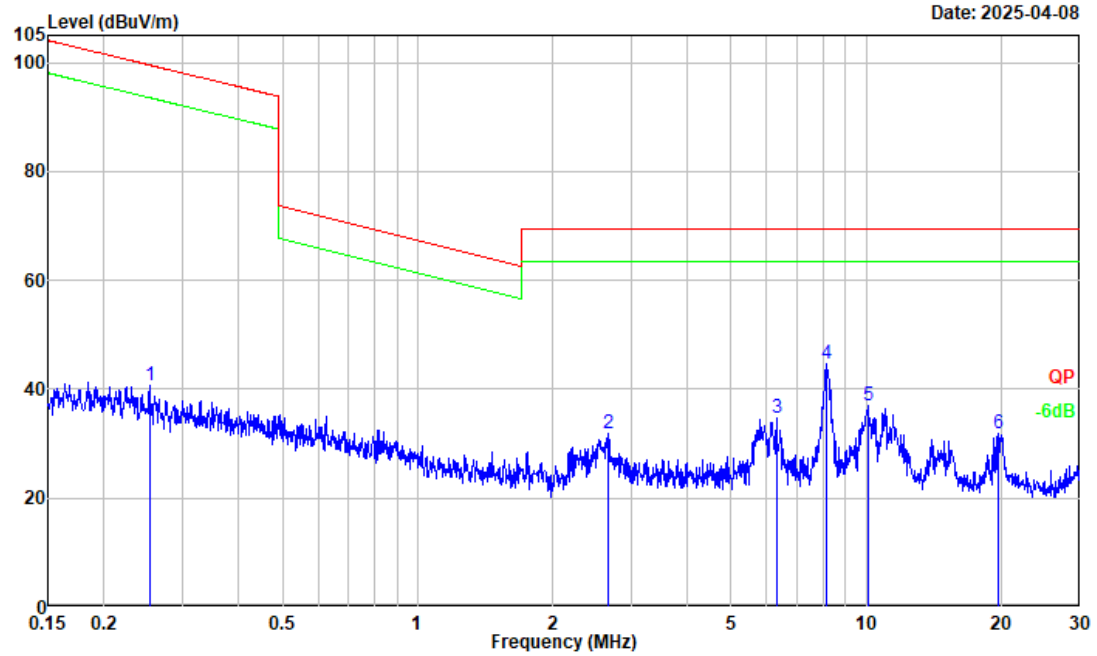
Model: LiteRadio 4



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.0℃/57%R.H./101.1kPa
Tested by : Luke Li
Polarization : PARALLEL
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.012	10.98	36.33	47.31	126.38	-79.07	Peak
2	0.017	11.09	32.58	43.67	122.79	-79.12	Peak
3	0.027	10.84	26.50	37.34	118.97	-81.63	Peak
4	0.040	11.60	22.62	34.22	115.63	-81.41	Peak
5	0.068	11.14	17.97	29.11	110.90	-81.79	Peak
6	0.105	10.96	14.96	25.92	107.15	-81.23	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VBW: 200Hz/1kHz, DET: PK



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.0℃/57%R.H./101.1kPa
Tested by : Luke Li
Polarization : PARALLEL
Remark : SRD2.4G 2403.4

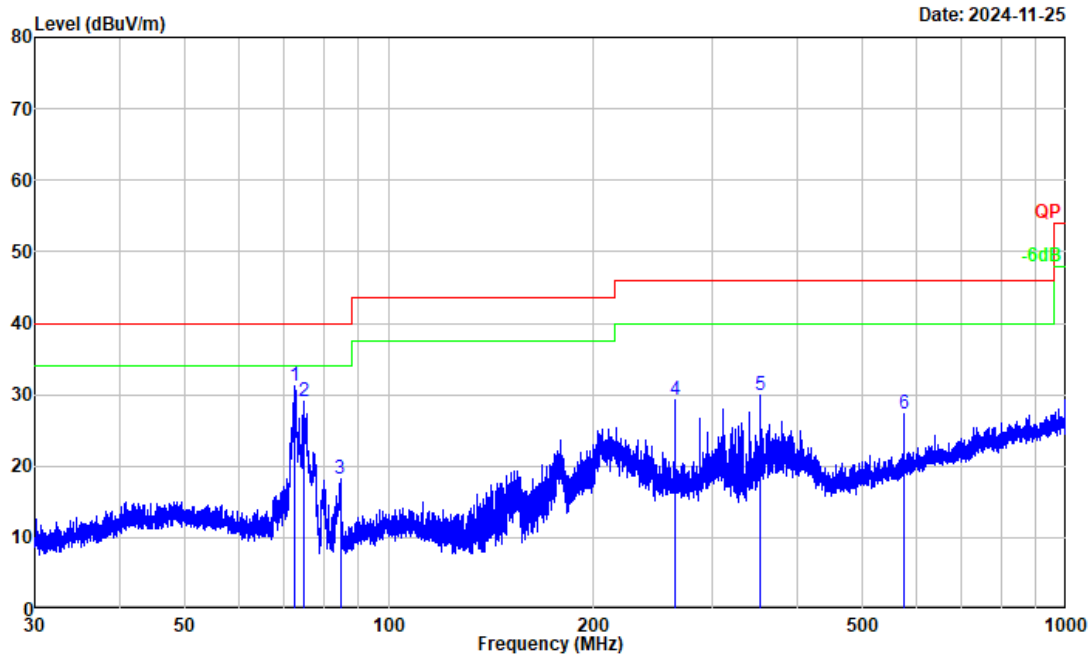
--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.253	29.80	10.77	40.57	99.55	-58.98	Peak
2	2.664	34.80	-2.89	31.91	69.54	-37.63	Peak
3	6.319	38.82	-4.03	34.79	69.54	-34.75	Peak
4	8.148	48.54	-3.81	44.73	69.54	-24.81	Peak
5	10.099	40.46	-3.41	37.05	69.54	-32.49	Peak
6	19.740	34.90	-3.08	31.82	69.54	-37.72	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VBW: 9kHz/30kHz, DET: PK

30MHz-1GHz:

Test Date:	2024-11-25~2025-04-08	Test By:	Bard Huang; Luke Li
Environment condition:	Temperature: 23.4~24.0°C; Relative Humidity:57~60%; ATM Pressure: 101.1kPa		

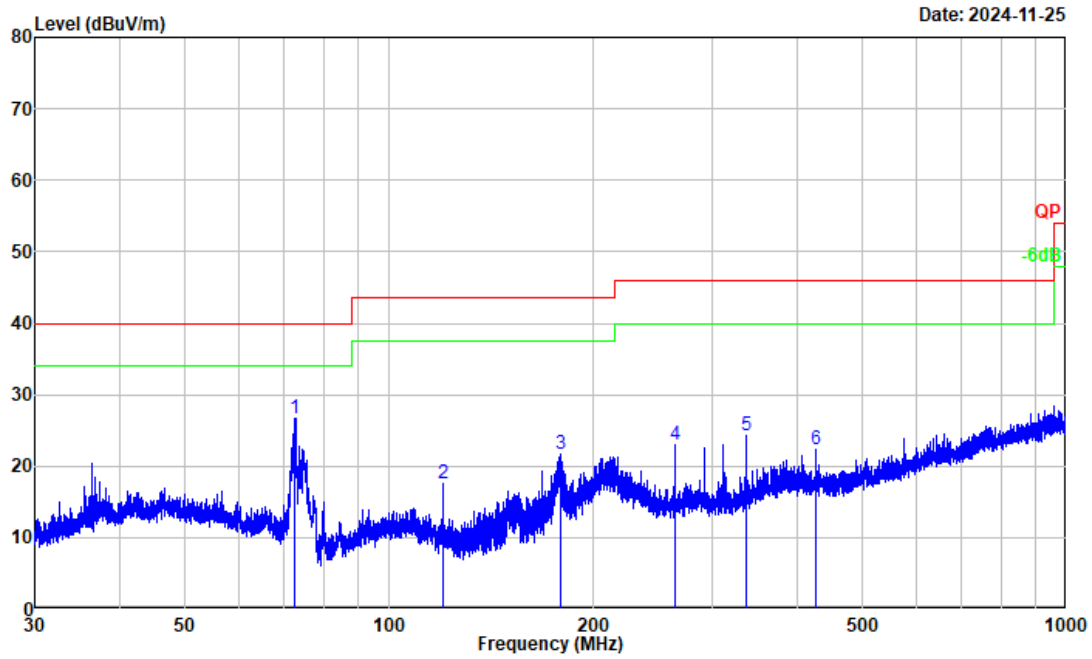
Model: LiteRadio 4 SE



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.4℃/60%R.H./101.1kPa
Tested by : Bard Huang
Polarization : horizontal
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	72.719	48.65	-17.35	31.30	40.00	-8.70	Peak
2	74.919	46.92	-17.90	29.02	40.00	-10.98	Peak
3	84.739	35.33	-17.18	18.15	40.00	-21.85	Peak
4	264.050	41.45	-12.18	29.27	46.00	-16.73	Peak
5	353.718	39.61	-9.71	29.90	46.00	-16.10	Peak
6	576.139	33.25	-6.02	27.23	46.00	-18.77	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

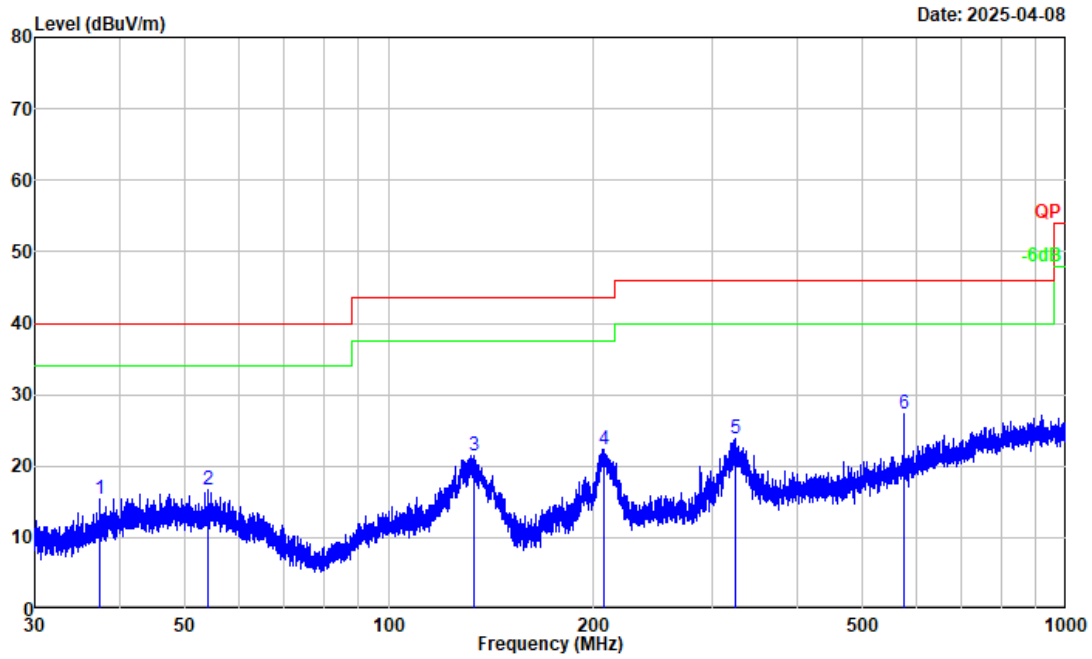


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.4℃/60%R.H./101.1kPa
Tested by : Bard Huang
Polarization : vertical
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	72.687	44.05	-17.34	26.71	40.00	-13.29	Peak
2	120.013	33.40	-15.84	17.56	43.50	-25.94	Peak
3	179.386	37.37	-15.71	21.66	43.50	-21.84	Peak
4	264.050	35.25	-12.18	23.07	46.00	-22.93	Peak
5	336.477	34.55	-10.22	24.33	46.00	-21.67	Peak
6	426.708	30.70	-8.42	22.28	46.00	-23.72	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

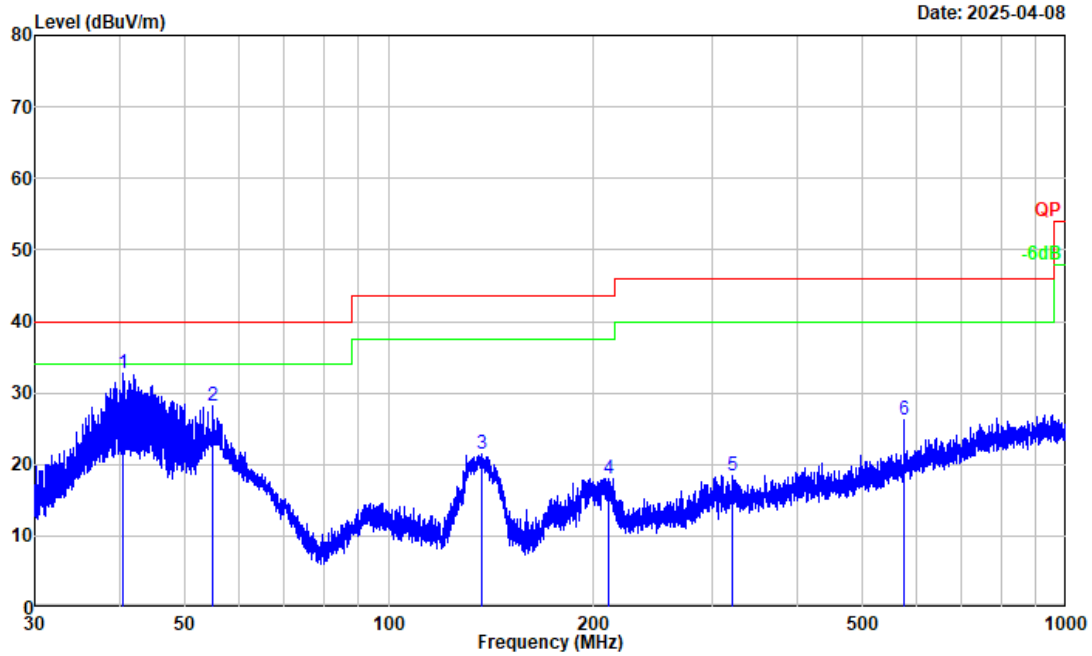
Model: LiteRadio 4



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.0℃/57%R.H./101.1kPa
Tested by : Luke Li
Polarization : horizontal
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	37.466	29.14	-13.75	15.39	40.00	-24.61	Peak
2	54.118	29.08	-12.44	16.64	40.00	-23.36	Peak
3	133.502	38.91	-17.35	21.56	43.50	-21.94	Peak
4	207.395	36.10	-13.77	22.33	43.50	-21.17	Peak
5	324.030	34.53	-10.64	23.89	46.00	-22.11	Peak
6	576.139	33.20	-5.84	27.36	46.00	-18.64	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.0℃/57%R.H./101.1kPa
Tested by : Luke Li
Polarization : vertical
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	40.506	45.60	-12.86	32.74	40.00	-7.26	Peak
2	54.835	40.67	-12.59	28.08	40.00	-11.92	Peak
3	136.999	38.77	-17.41	21.36	43.50	-22.14	Peak
4	210.601	31.89	-13.81	18.08	43.50	-25.42	Peak
5	321.202	29.24	-10.77	18.47	46.00	-27.53	Peak
6	575.887	32.04	-5.85	26.19	46.00	-19.81	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VBW: 100kHz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

Above 1GHz:

Test Date:	2025-03-11~2025-03-19	**Test By:**	Luke Li
Environment condition:	Temperature: 20.0~23.5°C; Relative Humidity:41~66%; ATM Pressure:100.7~101.9k Pa		

Frequency (MHz)	Reading level (dBμV)	Polar	Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
SRD 2.4G							
Low Channel							
4806.800	56.07	horizontal	-2.41	53.66	54.00	-0.34	Average
4806.800	59.18	horizontal	-2.41	56.77	74.00	-17.23	Peak
4806.800	56.03	vertical	-2.41	53.62	54.00	-0.38	Average
4806.800	58.17	vertical	-2.41	55.76	74.00	-18.24	Peak
7210.200	42.97	horizontal	-1.39	41.58	54.00	-12.42	Average
7210.200	56.28	horizontal	-1.39	54.89	74.00	-19.11	Peak
7210.200	42.68	vertical	-1.39	41.29	54.00	-12.71	Average
7210.200	55.88	vertical	-1.39	54.49	74.00	-19.51	Peak
9613.600	42.64	horizontal	-0.07	42.57	54.00	-11.43	Average
9613.600	54.99	horizontal	-0.07	54.92	74.00	-19.08	Peak
9613.600	42.53	vertical	-0.07	42.46	54.00	-11.54	Average
9613.600	54.92	vertical	-0.07	54.85	74.00	-19.15	Peak
Middle Channel							
4882.800	55.84	horizontal	-1.86	53.98	54.00	-0.02	Average
4882.800	59.36	horizontal	-1.86	57.50	74.00	-16.50	Peak
4882.800	55.26	vertical	-1.86	53.40	54.00	-0.60	Average
4882.800	58.31	vertical	-1.86	56.45	74.00	-17.55	Peak
7324.200	43.64	horizontal	-1.6	42.04	54.00	-11.96	Average
7324.200	58.78	horizontal	-1.60	57.18	74.00	-16.82	Peak
7324.200	42.64	vertical	-1.6	41.04	54.00	-12.96	Average
7324.200	57.01	vertical	-1.60	55.41	74.00	-18.59	Peak
9765.600	42.73	horizontal	-0.30	42.43	54.00	-11.57	Average
9765.600	56.05	horizontal	-0.3	55.75	74.00	-18.25	Peak
9765.600	42.73	vertical	-0.30	42.43	54.00	-11.57	Average

9765.600	55.95	vertical	-0.30	55.65	74.00	-18.35	Peak
High Channel							
4958.800	55.23	horizontal	-1.69	53.54	54.00	-0.46	Average
4958.800	57.80	horizontal	-1.69	56.11	74.00	-17.89	Peak
4958.800	54.70	vertical	-1.69	53.01	54.00	-0.99	Average
4958.800	57.44	vertical	-1.69	55.75	74.00	-18.25	Peak
7438.200	43.48	horizontal	-1.37	42.11	54.00	-11.89	Average
7438.200	56.51	horizontal	-1.37	55.14	74.00	-18.86	Peak
7438.200	42.93	vertical	-1.37	41.56	54.00	-12.44	Average
7438.200	55.53	vertical	-1.37	54.16	74.00	-19.84	Peak
9917.600	42.03	horizontal	0.52	42.55	54.00	-11.45	Average
9917.600	53.68	horizontal	0.52	54.20	74.00	-19.80	Peak
9917.600	41.99	vertical	0.52	42.51	54.00	-11.49	Average
9917.600	53.32	vertical	0.52	53.84	74.00	-20.16	Peak

Remark:

Corrected Amplitude= Reading level + corrected Factor

Corrected Factor = Antenna factor + Cable loss – Amplifier gain

Margin = Corrected Amplitude – Limit

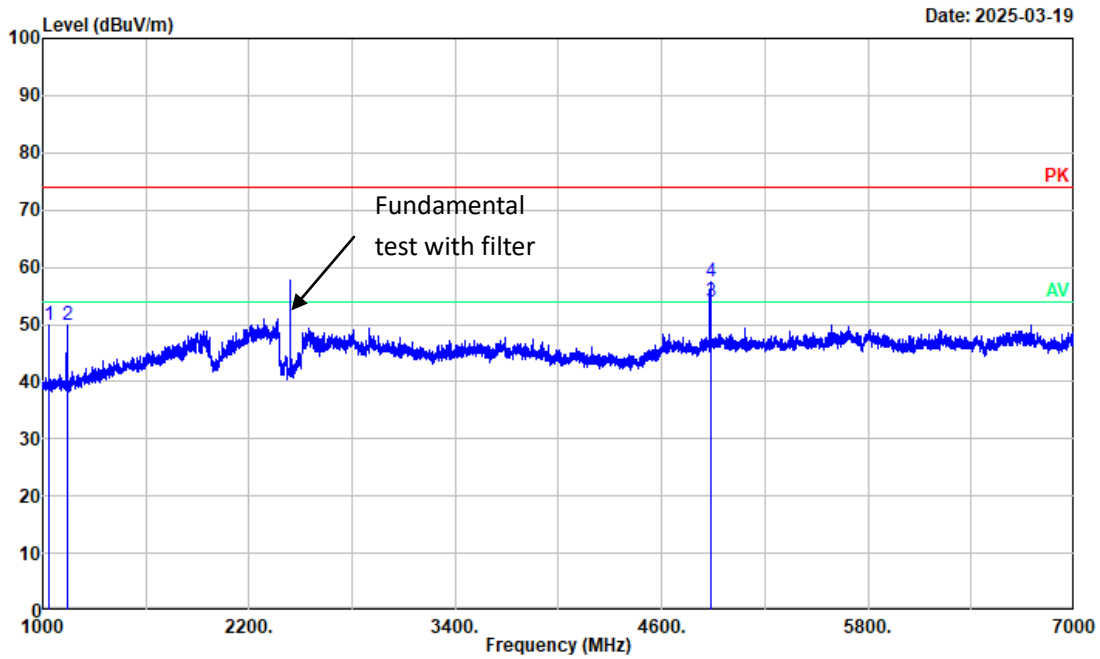
For the test result of Peak below the Peak limit more than 20dB, which can compliance with the average limit, just the Peak level was recorded.

The emission levels of other frequencies that were lower than the limit 20dB, not show in test report.

For emissions in 18GHz-25GHz range, all emissions were investigated and in the noise floor level.

Test plot for worst case as below:

Mode:	2.4G SRD	Channel:	2441.4MHz

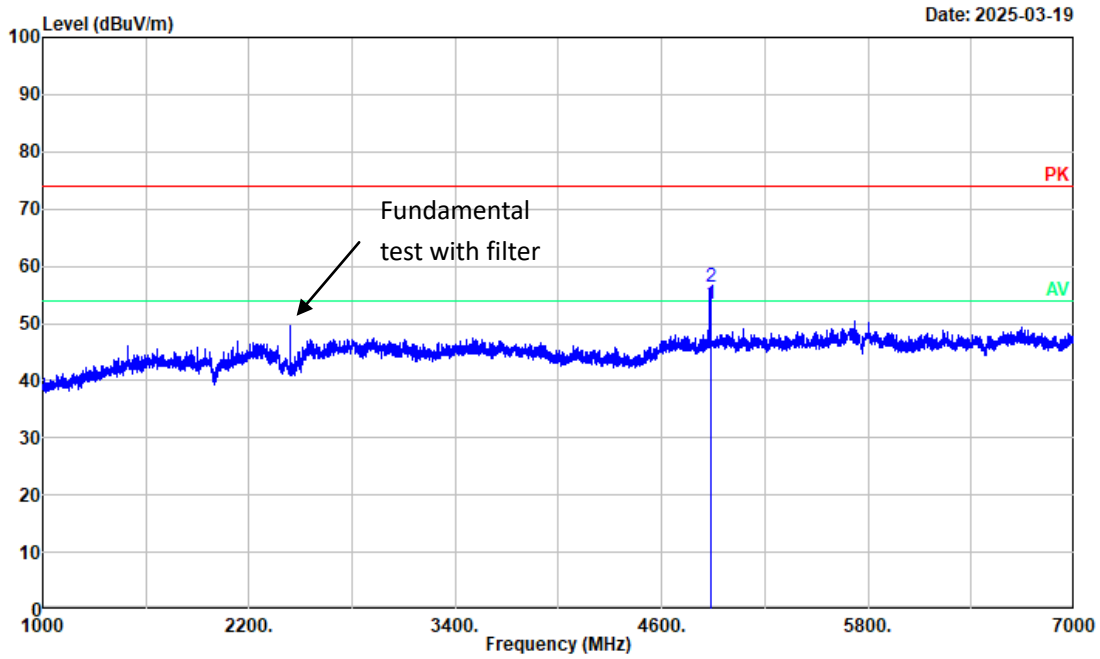


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.1℃/41%R.H./101.9kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 2441.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	1036.000	57.89	-7.98	49.91	74.00	-24.09	Peak
2	1140.000	57.37	-7.46	49.91	74.00	-24.09	Peak
3	4882.800	55.84	-1.86	53.98	54.00	-0.02	Average
4	4882.800	59.36	-1.86	57.50	74.00	-16.50	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2441.4MHz

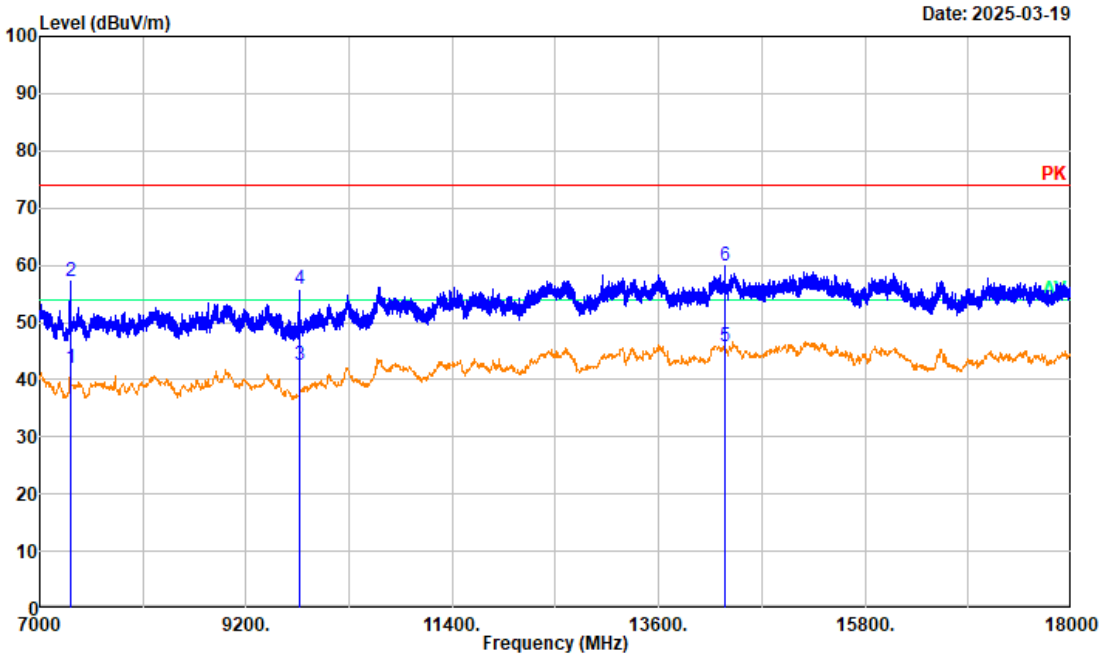


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.1℃/41%R.H./101.9kPa
Tested by : Luke Li
Polarization : vertical
Remark : 2441.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	4882.800	55.26	-1.86	53.40	54.00	-0.60	Average
2	4882.800	58.31	-1.86	56.45	74.00	-17.55	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2441.4MHz

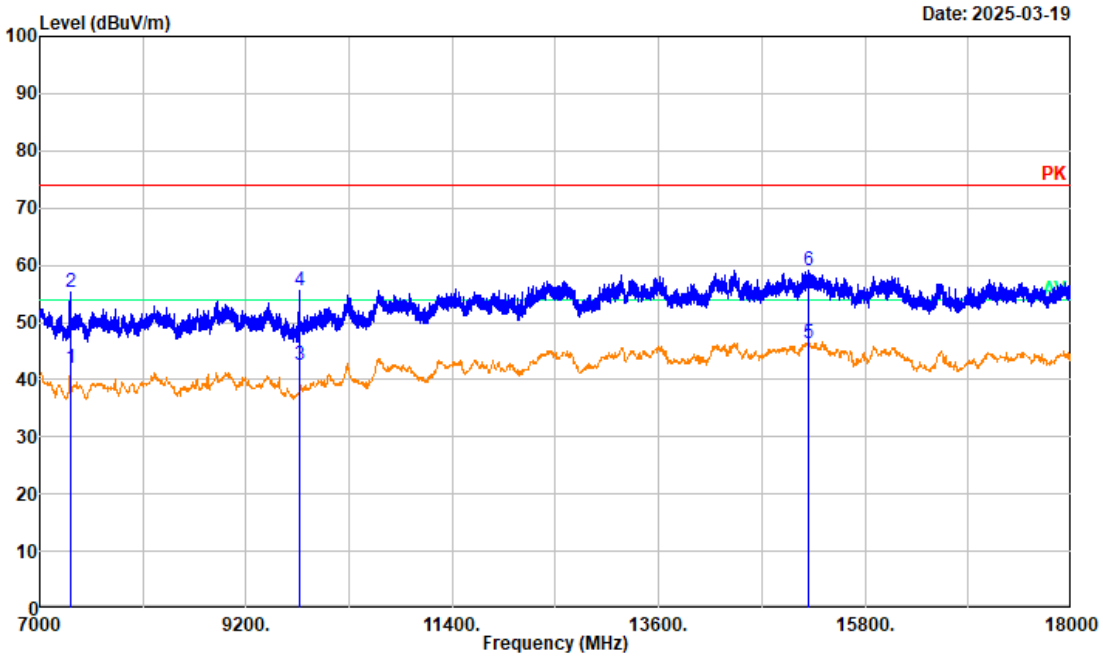


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.1℃/41%R.H./101.9kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 2441.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	7324.200	43.64	-1.60	42.04	54.00	-11.96	Average
2	7324.200	58.78	-1.60	57.18	74.00	-16.82	Peak
3	9765.600	42.73	-0.30	42.43	54.00	-11.57	Average
4	9765.600	56.04	-0.30	55.74	74.00	-18.26	Peak
5	14307.000	38.89	6.88	45.77	54.00	-8.23	Average
6	14307.000	53.04	6.88	59.92	74.00	-14.08	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2441.4MHz

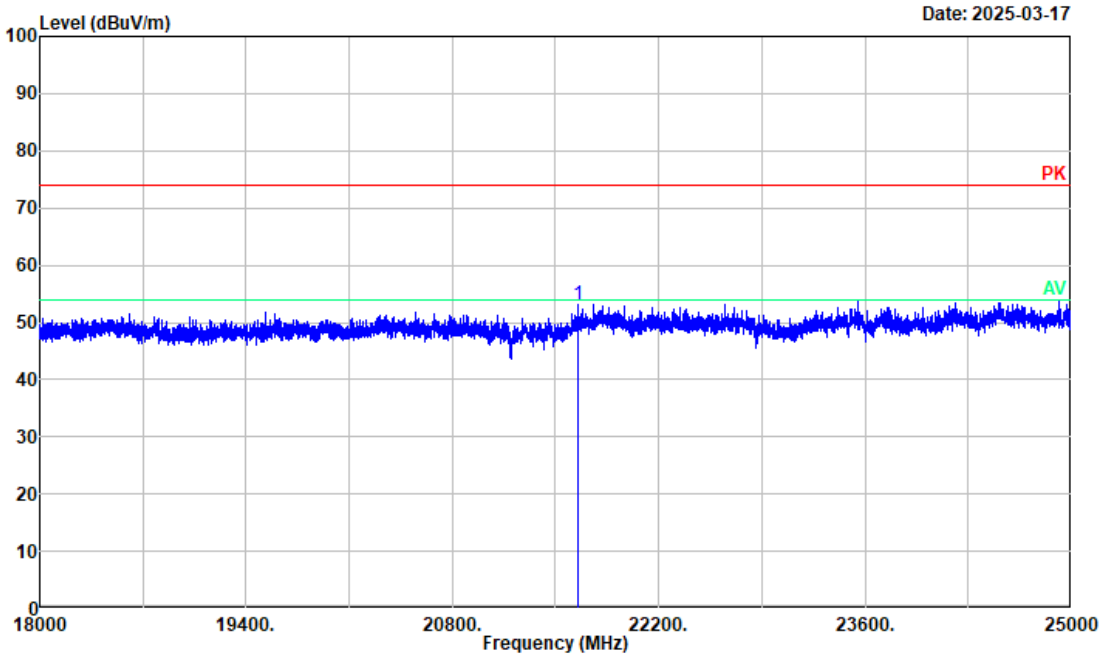


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 23.1℃/41%R.H./101.9kPa
Tested by : Luke Li
Polarization : vertical
Remark : 2441.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	7324.200	43.64	-1.60	42.04	54.00	-11.96	Average
2	7324.200	57.01	-1.60	55.41	74.00	-18.59	Peak
3	9765.600	42.73	-0.30	42.43	54.00	-11.57	Average
4	9765.600	55.95	-0.30	55.65	74.00	-18.35	Peak
5	15198.000	39.92	6.29	46.21	54.00	-7.79	Average
6	15198.000	52.79	6.29	59.08	74.00	-14.92	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2403.4MHz

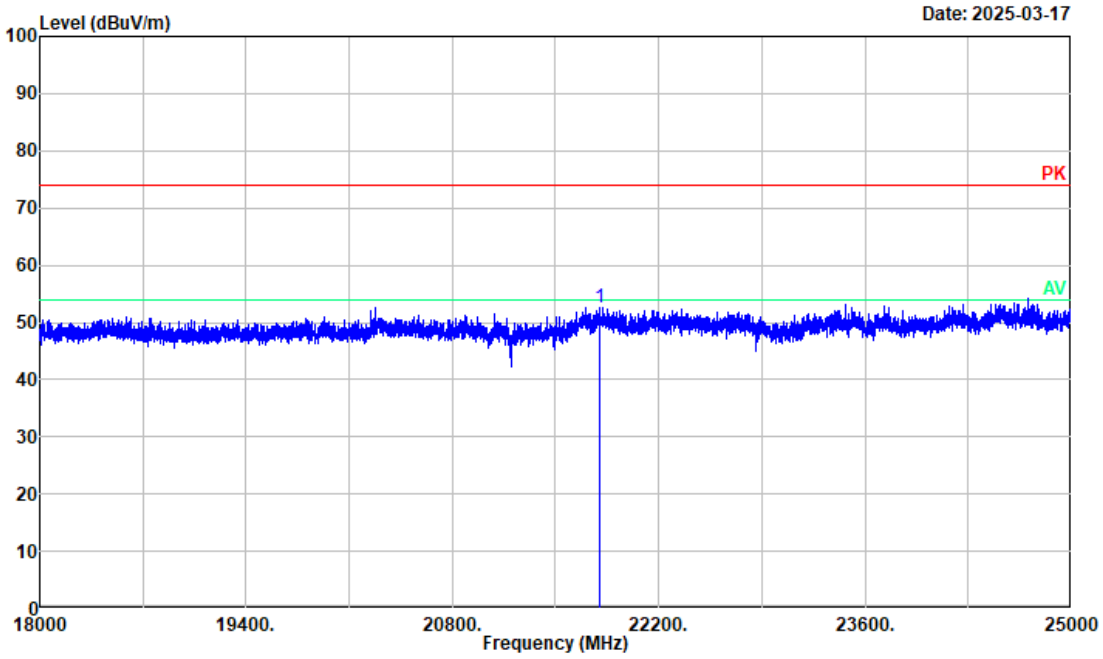


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 20.0℃/66%R.H./101.6kPa
Tested by : Luke Li
Polarization : horizontal
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	21653.000	56.62	-3.37	53.25	74.00	-20.75	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain - Distance extrapolate factor
Distance extrapolate factor = 20*log(specified distance/measured distance)
Specified distance = 3 meters, measured distance = 1.5 meters
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2403.4MHz



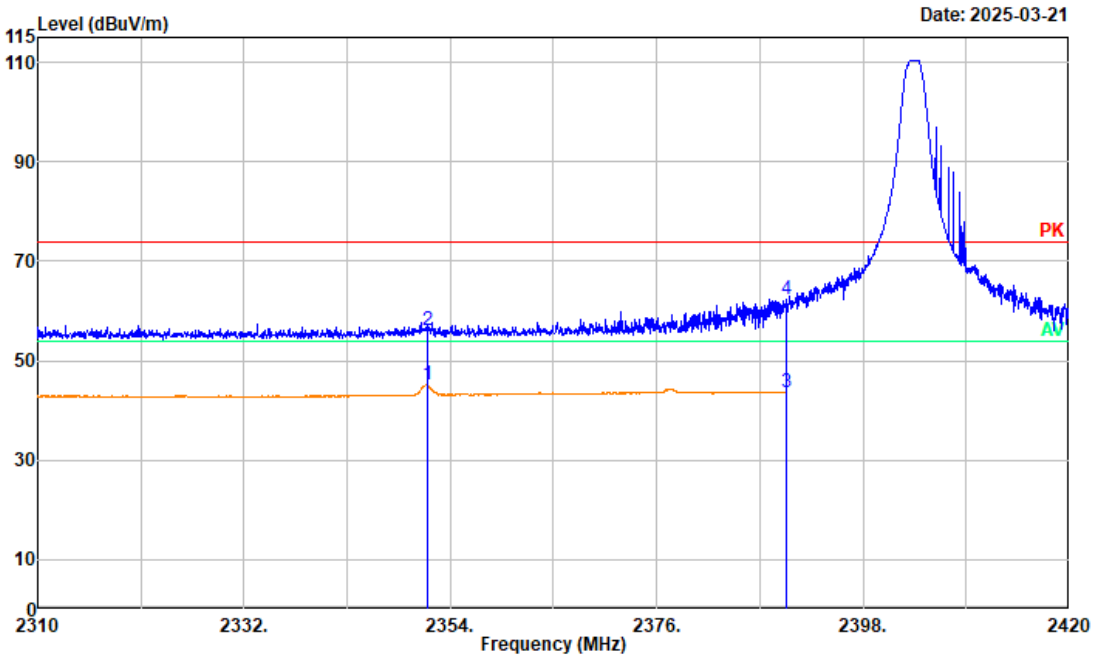
Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 20.0℃/66%R.H./101.6kPa
Tested by : Luke Li
Polarization : vertical
Remark : SRD2.4G 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	21800.000	55.90	-3.21	52.69	74.00	-21.31	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain - Distance extrapolate factor
Distance extrapolate factor = 20*log(specified distance/measured distance)
Specified distance = 3 meters, measured distance = 1.5 meters
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Radiated Band edge:

Mode:	2.4G SRD	Channel:	2403.4MHz

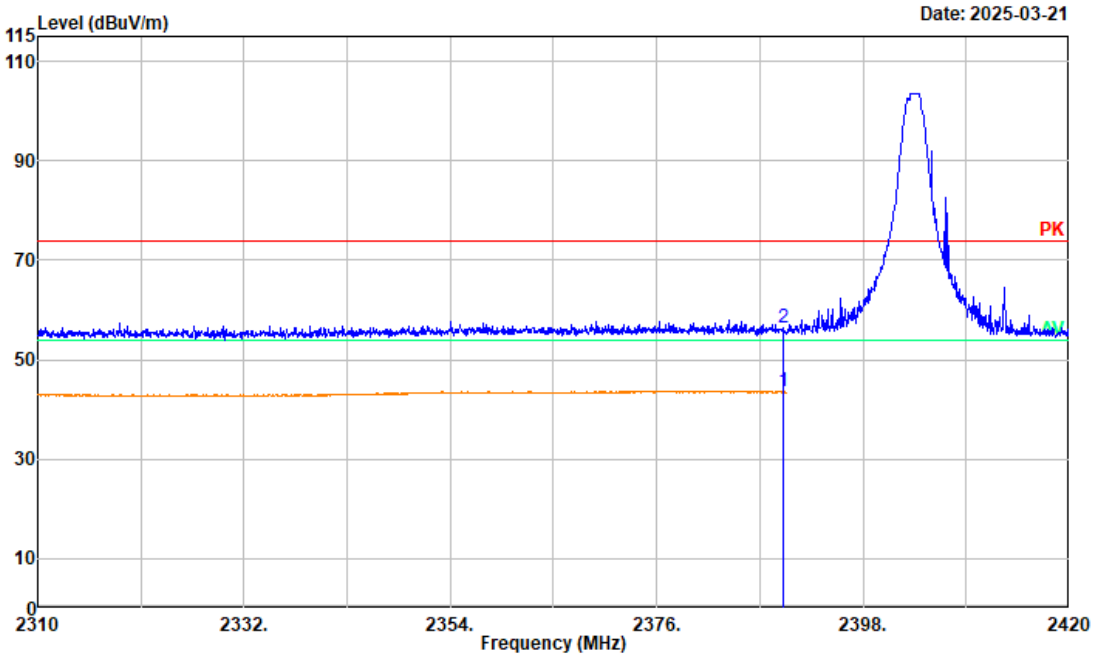


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 22.1℃/52%R.H./101.1kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 2403.4

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	2351.525	38.24	6.95	45.19	54.00	-8.81	Average
2	2351.525	49.17	6.95	56.12	74.00	-17.88	Peak
3	2389.860	36.70	7.00	43.70	54.00	-10.30	Average
4	2389.860	55.29	7.00	62.29	74.00	-11.71	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2403.4MHz

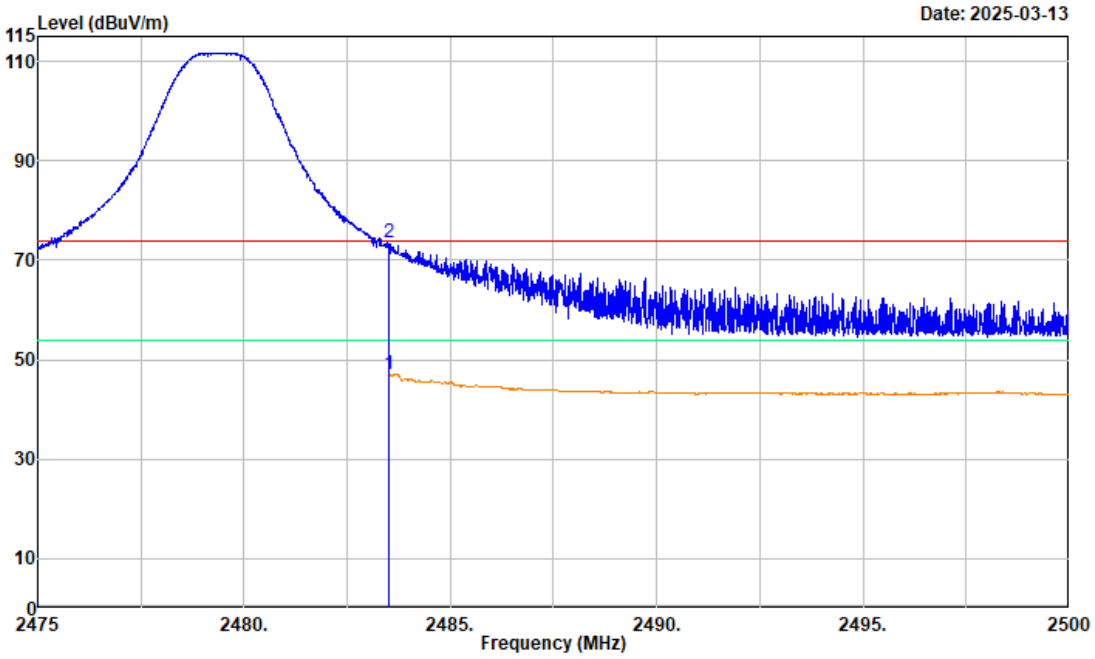


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 22.1℃/52%R.H./101.1kPa
Tested by : Luke Li
Polarization : vertical
Remark : 2403.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.530	36.60	7.00	43.60	54.00	-10.40	Average
2	2389.530	49.28	7.00	56.28	74.00	-17.72	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2479.4MHz

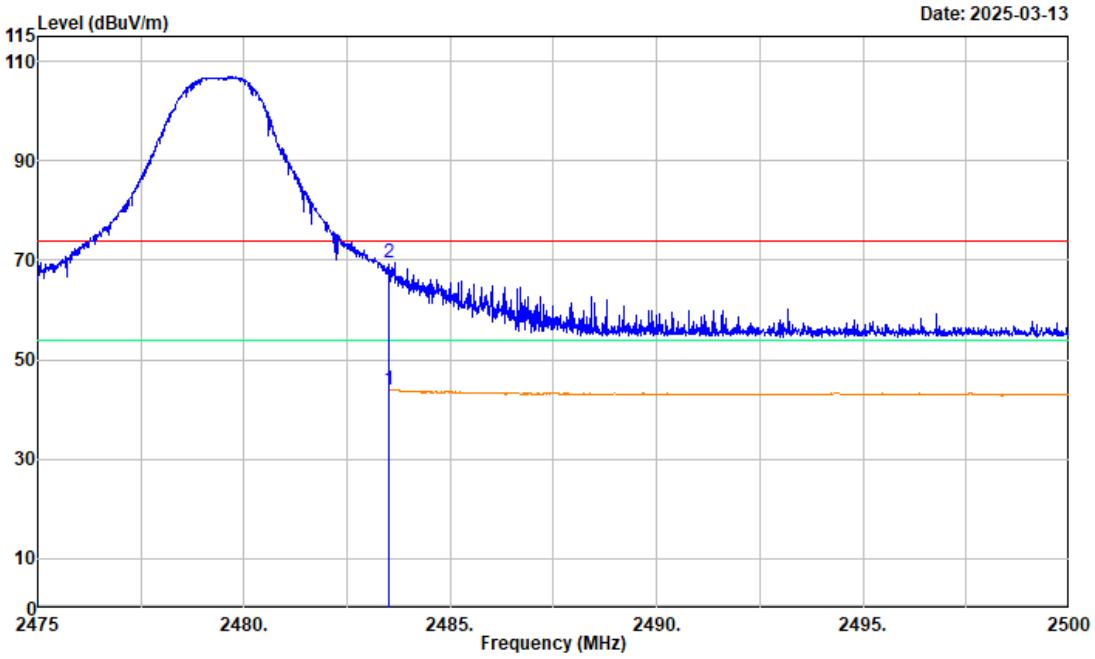


Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 22.1℃/52%R.H./101.1kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 2479.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.500	39.83	7.20	47.03	54.00	-6.97	Average
2	2483.500	66.33	7.20	73.53	74.00	-0.47	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

Mode:	2.4G SRD	Channel:	2479.4MHz



Project No. : 2405Z104533E-RF
Test Mode : Transmitting
Test Voltage : Power by battery
Environment : 22.1℃/52%R.H./101.1kPa
Tested by : Luke Li
Polarization : vertical
Remark : 2479.4

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.500	36.85	7.20	44.05	54.00	-9.95	Average
2	2483.500	62.26	7.20	69.46	74.00	-4.54	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VBW: 1MHz/3MHz, DET: PK
Average: RBW/VBW: 1MHz/1kHz, DET: PK

3.5 RF Conducted Test Data

Test Date:	2025-01-06~2025-04-15	Test By:	Ryan Zhang
Environment condition:	Temperature: 23.5~24.6°C;RelativeHumidity:57~61%; ATM Pressure: 100.8~101.1kPa		

3.5.1 20 dB Emission Bandwidth

Mode	Antenna	Test Frequency (MHz)	Result (MHz)	Verdict
GFSK	Chain 0	2403.4	1.056	Pass
		2441.4	1.050	Pass
		2479.4	1.056	Pass

3.5.2 99% Occupied Bandwidth

Mode	Antenna	Test Frequency (MHz)	99% OBW (MHz)
GFSK	Chain 0	2403.4	0.916
		2441.4	0.916
		2479.4	0.920

3.5.3 Maximum Conducted Peak Output Power

Mode	Antenna	Test Frequency (MHz)	Peak Output Power(dBm)	Limit (dBm)	Verdict
GFSK	Chain 0	2403.4	16.77	30	Pass
		2441.4	16.62	30	Pass
		2479.4	16.64	30	Pass

3.5.4 Channel separation

Mode	Antenna	Test Frequency (MHz)	Result (MHz)	Limit (MHz)	Verdict
GFSK	Chain 0	2403.4	0.981	0.704	Pass
		2441.4	1.021	0.700	Pass
		2479.4	1.008	0.704	Pass

Note: Limit≤2/3*20dB BW

3.5.5 Number of hopping Frequency

Mode	Antenna	Frequency Range [MHz]	Number of hopping Frequency	Limit	Verdict
GFSK	Chain 0	2400-2483.5	77	≥15	Pass

3.5.6 Time of occupancy (dwell time)

Mode	Antenna	Test Frequency (MHz)	Pulse time (ms)	Observe period (s)	Total hopping numbers in observe period	Dwell time (ms)	Limit (s)	Verdict
GFSK	Chain 0	2441.4	3.373	30.8	30	101.19	0.4	Pass

Note:

Observe period= 0.4s*hopping numbers=0.4s*77=30.8s

Total hopping number in observe period= hopping numbers in3.08s*10

Dwell time= Pulse time*Total hopping numbers

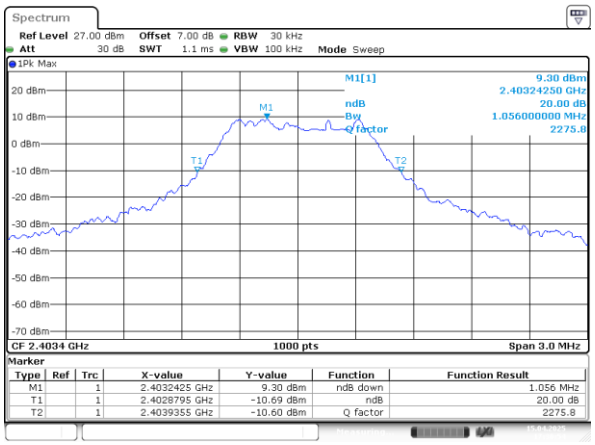
3.5.7 100 kHz Bandwidth of Frequency Band Edge

Mode	Antenna	Test Frequency	Result (dB)	Limit (dB)	Verdict
GFSK	Chain 0	Low	49.95	20	Pass
		Low_hop	48.23	20	Pass
		High	50.47	20	Pass
		High_hop	55.80	20	Pass

Test Plots:

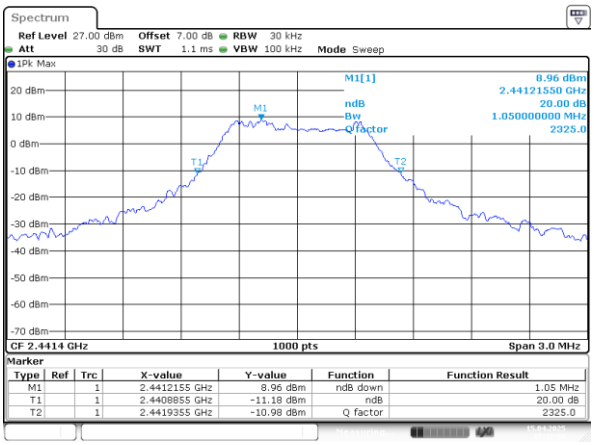
20 dB Emission Bandwidth:

2403.4MHz



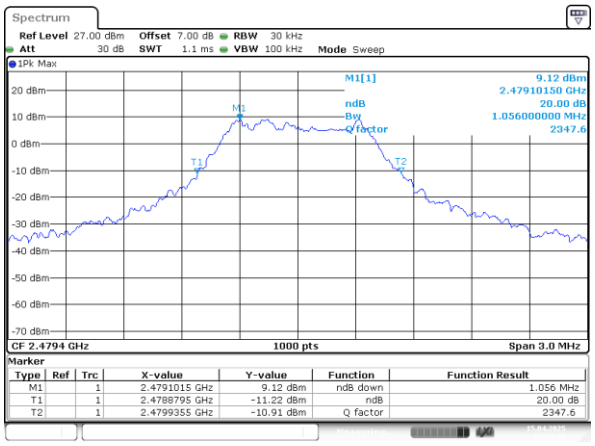
ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 15.APR.2025 17:30:55

2441.4MHz



ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 15.APR.2025 17:32:59

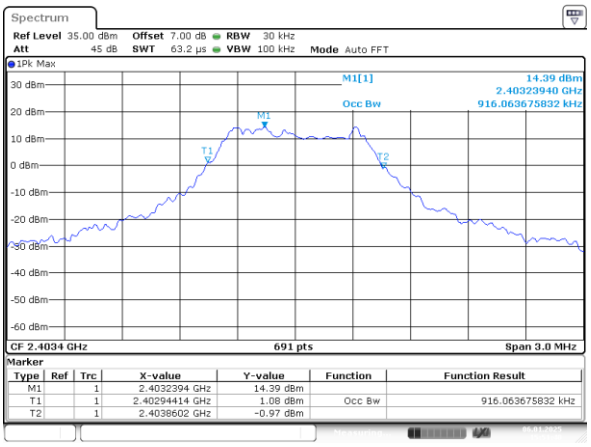
2479.4MHz



ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 15.APR.2025 17:34:56

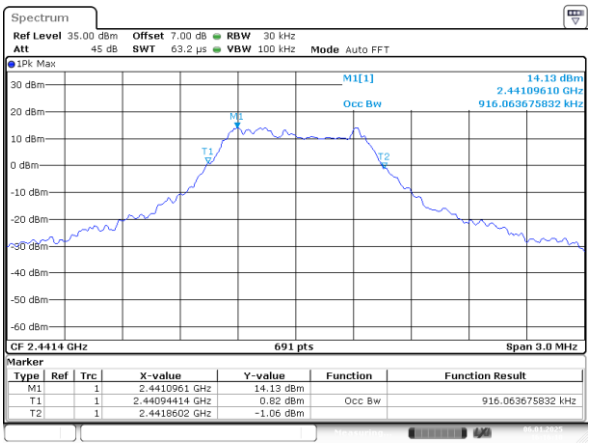
99% Occupied Bandwidth:

2403.4MHz



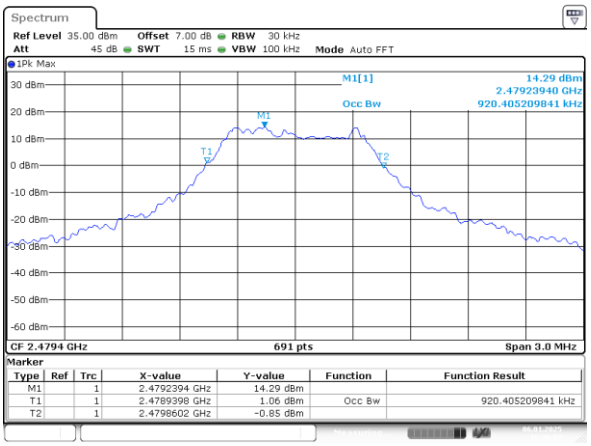
ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 15:51:40

2441.4MHz



ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 16:16:10

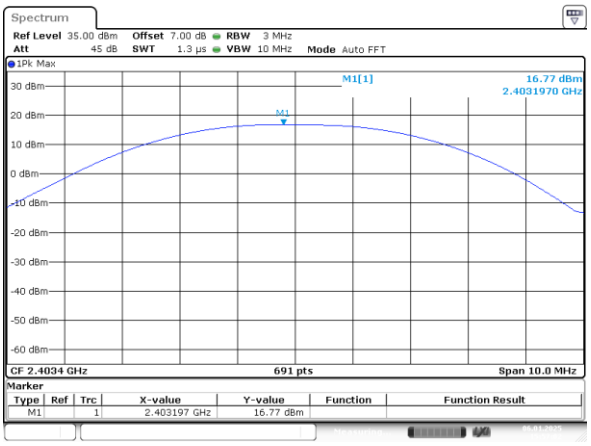
2479.4MHz



ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 16:30:57

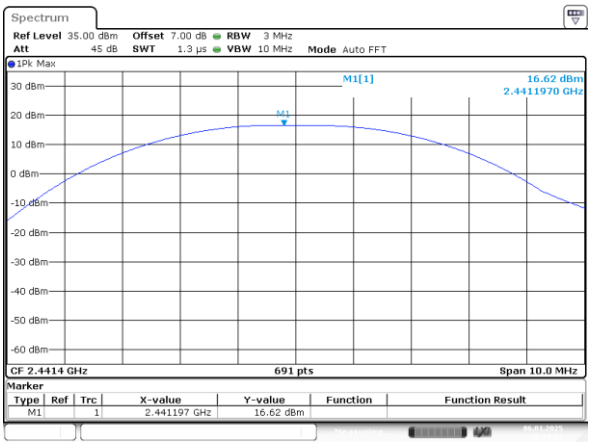
Maximum Conducted Peak Output Power:

2403.4MHz



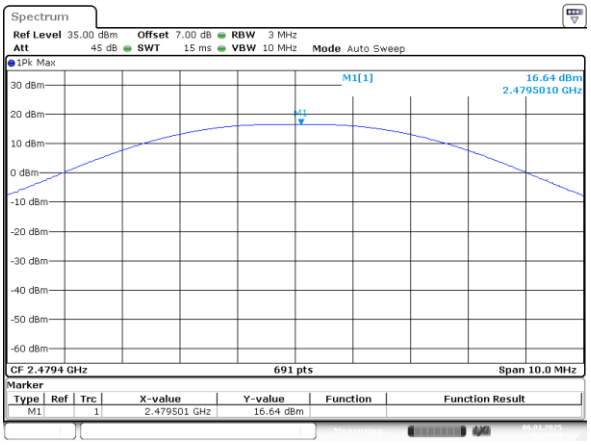
ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 15:57:02

2441.4MHz



ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 16:18:53

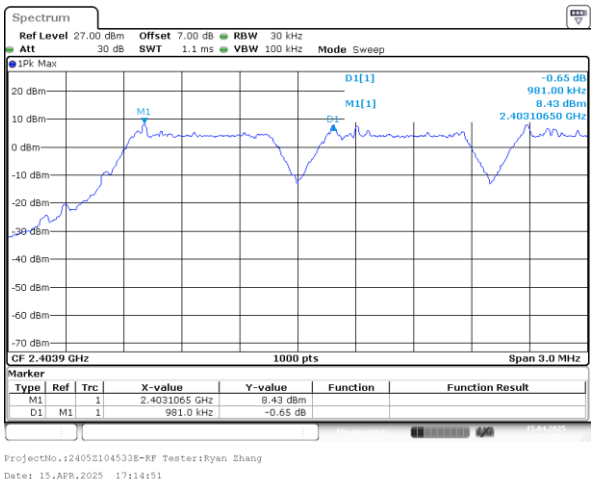
2479.4MHz



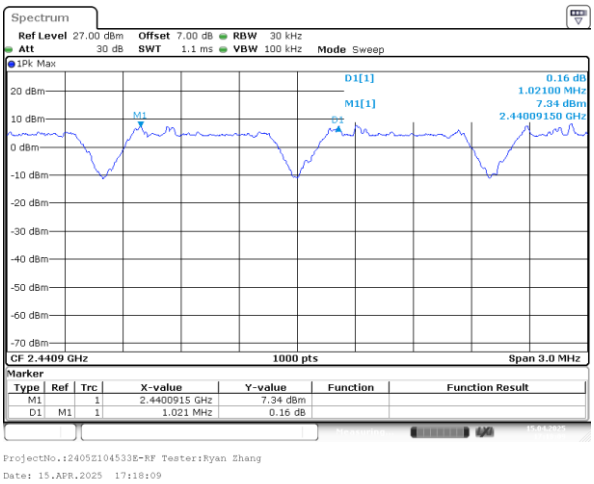
ProjectNo.:2405Z104533E-RF Tester:Ryan Zhang
Date: 6.JAN.2025 16:33:18

Channel separation:

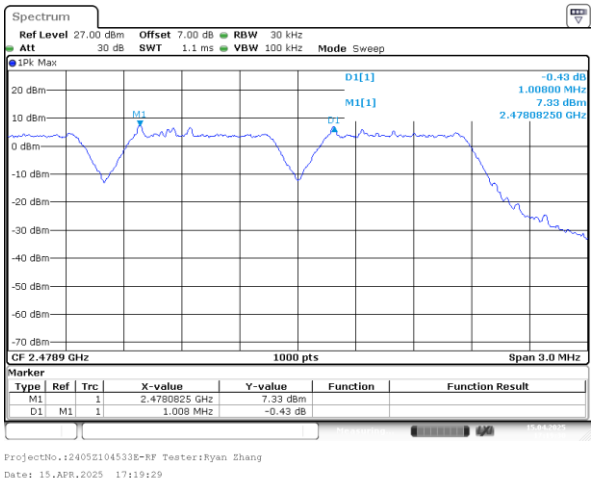
2403.4MHz



2441.4MHz

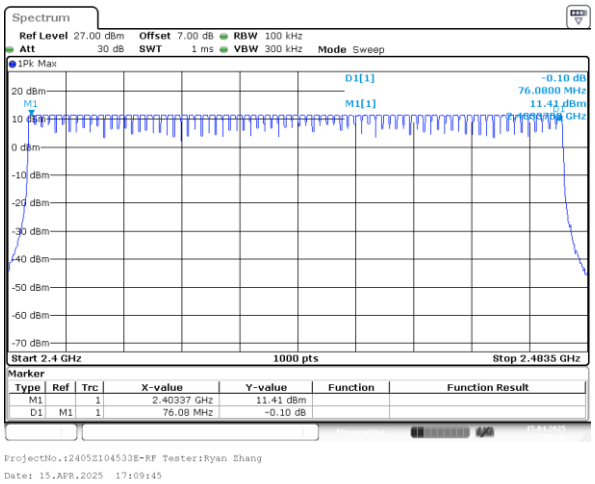


2479.4MHz



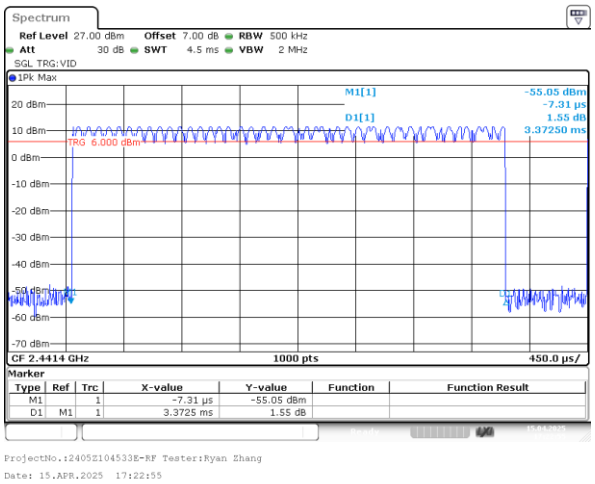
Number of hopping Frequency:

GFSK

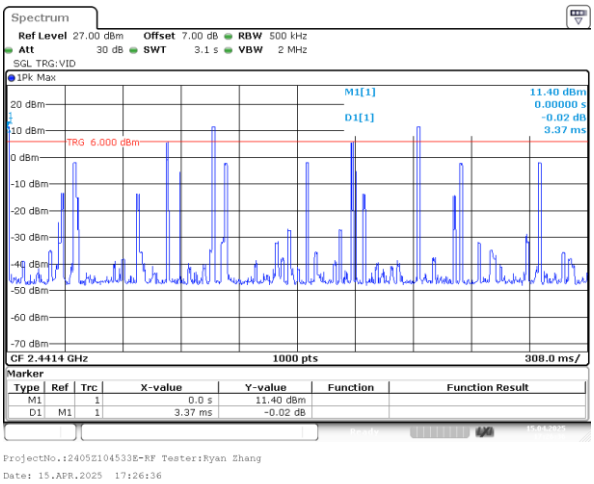


Time of occupancy (dwell time):

Pulse time

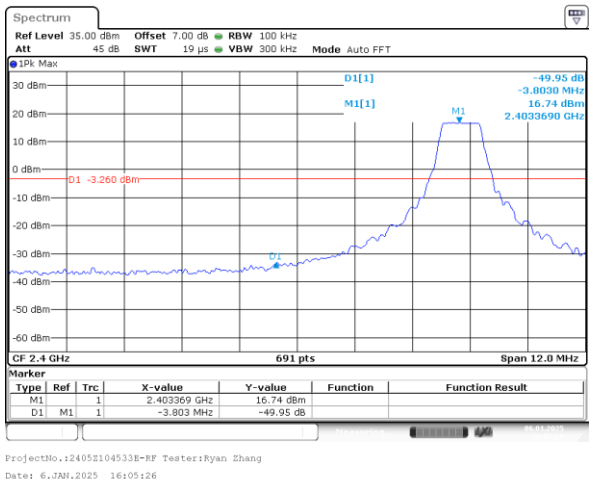


Hopping number in 3.08s

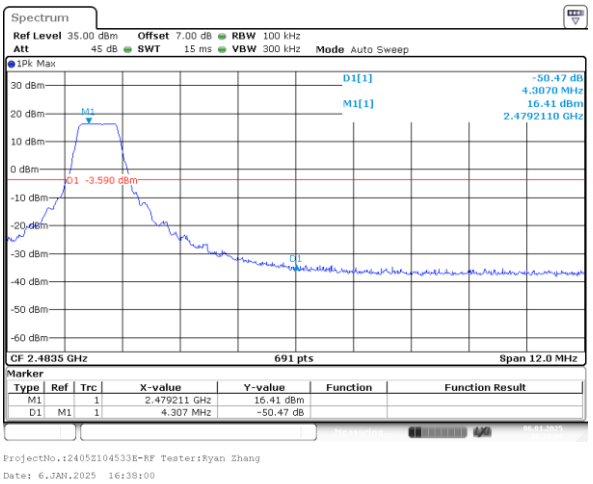


100kHz Bandwidth of Frequency Band Edge:

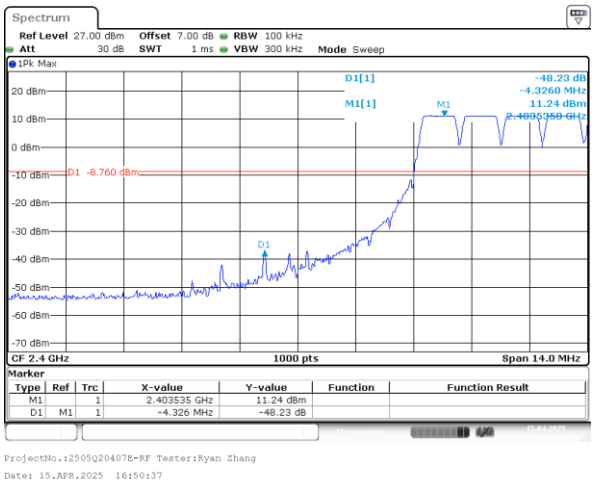
Low



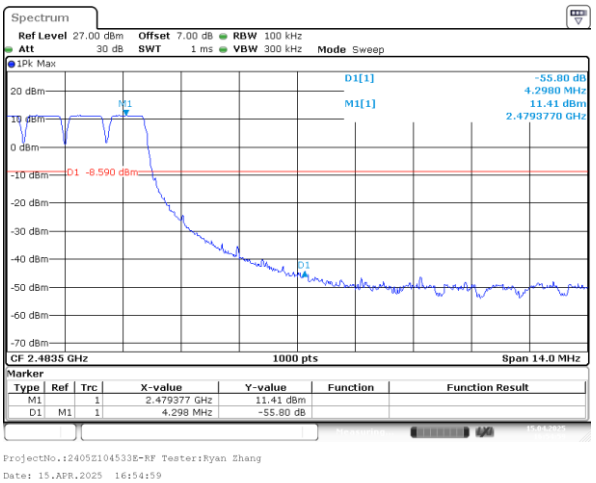
High



Low_hop



High_hop



4 Test Setup Photo

Please refer to the attachment 2405Z104533E Test Setup photo.

5 E.U.T Photo

Please refer to the attachment 2405Z104533E External photo and 2405Z104533E Internal photo.

---End of Report---