



FCC TEST REPORT

FCC ID: 2BU6F-AS3112

On Behalf of

Silicon XPandas Electronics Co., Ltd.

BLE module

Model No.: AS3112

Prepared for : Silicon XPandas Electronics Co., Ltd.
Address : 8F., No.439, Ruiguang Rd., Neihu Dist., Taipei City 11492, Taiwan

Prepared By : Shenzhen PSI Testing Co., Ltd.
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TEST REPORT DECLARATION

Applicant : Silicon XPandas Electronics Co., Ltd.
Address : 8F., No.439, Ruiguang Rd., Neihu Dist., Taipei City 11492, Taiwan
Manufacturer : Silicon XPandas Electronics Co., Ltd.
Address : 8F., No.439, Ruiguang Rd., Neihu Dist., Taipei City 11492, Taiwan
EUT Description : BLE module
(A) Model No. : AS3112
(B) Trademark : N/A

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247

ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024

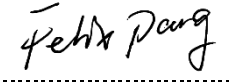
Test Result: PASS

The device described above is tested by Shenzhen PSI Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen PSI Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the FCC Part 15C requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen PSI Testing Co., Ltd.

Tested by (name + signature).....:

Felix Pang
Test Engineer



Approved by (name + signature).....:

Simple Guan
Project Manager



Date of issue.....:

March 23, 2026

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 23, 2026	Initial released Issue	Felix Pang

1. Summary Of Standards And Results

1.1. Description of Standards and Results

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

Test Item	Standards Paragraph	Result
Conducted Emission	FCC Part 15: 15.207ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
6dB Bandwidth	FCC PART 15:15.247(a)(2), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Output Power	FCC Part 15: 15.247(b)(3), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Radiated Spurious Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Conducted Spurious & Band Edge Emission	FCC Part 15: 15.247(d), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Power Spectral Density	FCC PART 15:15.247(e), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Radiated Band Edge Emission	FCC Part 15: 15.247(d), ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024	P
Antenna Requirement	FCC Part 15: 15.203	P
Note: 1. P is an abbreviation for Pass. 2. F is an abbreviation for Fail. 3. N/A is an abbreviation for Not Applicable. 4. Conclusion determination rules of this report: Unless there are clear provisions on measurement uncertainty in the standard or customer requirements, decision by actual test data without considering measurement uncertainty. 5. Measurement method usage KDB 558074 D01 15.247 Meas Guidance v05r02.		

2. General Information

2.1. Description of Device (EUT)

Product Name : BLE module
Model : AS3112
Diff : N/A
Test Voltage : DC 3V

Radio Technology : Bluetooth Low Energy V5.3

Operation frequency : 2402-2480MHz

Channel No. : 40 channels

Channel Separation : 2MHz

Rate : 1Mbps, 2Mbps

Modulation : GFSK

Antenna Type : Internal PCB antenna, maximum gain is -0.91dBi.

Software version : V1.0

Hardware version : V2.0

Note : Antenna information is provided by applicant.
Testing lab is not responsible for the accuracy of the information.

2.2. Accessories of Device (EUT)

Accessories : /
Manufacturer : /
Model : /
Rating : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number
1	PC	DELL	3511	N/A
2	UART-01	N/A	N/A	N/A

2.4. Block Diagram of Connection Between EUT and Simulators



2.5. Test Mode Description

Keeping TX

Mode	Data rate (Mbps)	Channel	Frequency(MHz)
GFSK Tx Mode	1	CH0	2402
	1	CH19	2440
	1	CH39	2480
GFSK Tx Mode	2	CH0	2402
	2	CH19	2440
	2	CH39	2480

Note: According exploratory test, EUT will have maximum output power in those data rate. So those data rate were used for all test.

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH0	2402	CH14	2430	CH28	2458
CH1	2404	CH15	2432	CH29	2460
CH2	2406	CH16	2434	CH30	2462
CH3	2408	CH17	2436	CH31	2464
CH4	2410	CH18	2438	CH32	2466
CH5	2412	CH19	2440	CH33	2468
CH6	2414	CH20	2442	CH34	2470
CH7	2416	CH21	2444	CH35	2472
CH8	2418	CH22	2446	CH36	2474
CH9	2420	CH23	2448	CH37	2476
CH10	2422	CH24	2450	CH38	2478
CH11	2424	CH25	2452	CH39	2480
CH12	2426	CH26	2454	--	--
CH13	2428	CH27	2456	--	--

2.6. Software test version and power setting information

Software testing version	Actions BLE FCC Tool V1.08.exe		
Mode	The client 's preset testing software is used to control the operation of EUT in continuous transmission mode and select the testing channel, wireless mode:		
Power level setup by client			
Mode	Channel	Frequency (MHz)	Soft Set
GFSK Tx Mode 1Mbps/2Mbps	CH0	2402	TX level is set as defaults value.
	CH19	2440	TX level is set as defaults value.
	CH39	2480	TX level is set as defaults value.

2.7. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	26℃
Humidity range:	25-75%	54%
Pressure range:	86-106kPa	101kPa

2.8. Test Facility

Shenzhen PSI Testing Co., Ltd.

1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

September 13, 2023 File on Federal Communication Commission
Registration Number: 916281

FCC Designation Number: CN1362

2.9. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Power Line Conducted Emissions Test	2.13dB
Radiation Emission test in 3m chamber(Below 30MHz)	4.07dB
Radiation Emission test in 3m chamber(30MHz to 1GHz)	4.51dB
Radiation Emission test in 3m chamber(1GHz to 18GHz)	5.07dB
Radiation Emission test in 3m chamber(18GHz to 40GHz)	5.21dB
Radio Frequency	48.24KHz
Conducted RF Power	0.41dB
Power Spectral Density	0.39 dB
Occupied-Bandwidth	968Hz
Duty Cycle	1%
Conducted-Spurious Emission	1.26dB

2.10. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Last Cal.	Cal. Interval
1.	9*6*6 anechoic chamber	SKET	9*6*6	N/A	/	2025.12.18	3 Year
2.	Test Receiver	Rohde&Schwarz	ESCI 7	101032/003	4.42 SP3	2025.12.18	1 Year
3.	L.I.S.N.#1	Rohde&Schwarz	ENV 216	102282	/	2025.12.18	1 Year
4.	L.I.S.N.#2	EMCO	3810-2	00094944	/	2025.12.18	1 Year
5.	Loop Antenna	Schwarz beck	FMZB 1519B	00128	/	2025.01.02	2 Year
6.	Bilog Antenna	Schwarz beck	VULB 9168	01448	/	2025.01.02	2 Year
7.	Spectrum Analyzer	Rohde&Schwarz	FSV40-N	101648	3.70	2025.12.18	1 Year
8.	Horn Antenna	Schwarz beck	BBHA 9120 D	02706	/	2025.01.02	2 Year
9.	Amplifier	SKET	LNPA_0118 G-50	SK20220329 01	/	2025.12.18	1 Year
10.	Horn Antenna	Schwarz beck	BBHA 9170	00946	/	2024.12.31	2 Year
11.	Amplifier	SKET	LNPA_1840 G-50	SK20190403 02	/	2025.12.18	1 Year
12.	RF Power Probe	Rohde&Schwarz	NRP-Z11	1138.3004.0 2-1111533-F Z	/	2025.12.18	1 Year
13.	RF Sensor Unit	Tachoy	TR1029-2	20220428P0 08	/	2025.12.18	1 Year
14.	Spectrum Analyzer	Agilent	N9020A	MY51281067	A.14.03	2025.12.18	1 Year
15.	Temp. & Humid Chamber	Auchno	9606	/	/	2025.12.18	1 Year
16.	Regulated DC Power Supply	Xinouhua	ADC120V10 A	2022112516 38	/	2025.12.18	1 Year
17.	Cable	SKET	Cable-RE-1	#02/#03	/	2025.12.18	1 Year
18.	Cable	SKET	Cable-RE-2	#01	/	2025.12.18	1 Year
19.	Cable	SKET	Cable-RE-3	#04	/	2025.12.18	1 Year
20.	Cable	SKET	Cable-CE-1	A-E-24	/	2025.12.18	1 Year
21.	6dB Attenuator	Schwarzbeck	DGA 9552N 6dB	CK4186	/	2025.12.18	1 Year
22.	Power meter	Agilent	E4419B	GB40202121	/	2025.12.18	1 Year
23.	Comprehensive Test Instrument	Rohde&Schwarz	CMW 500	145266	/	2025.12.18	1 Year
For Test Software Information							
Item	Software Name	Manufacturer			Version		
RE	EZ EMC	Farad			PSI-3A1		
CE	EZ EMC	Farad			PSI-3A1		
RF	RTS	TACHOY			V1.0.0		

3. Spurious Emission

3.1. Test Limits

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

Note: The peak limit is 20 dB higher than the average limit

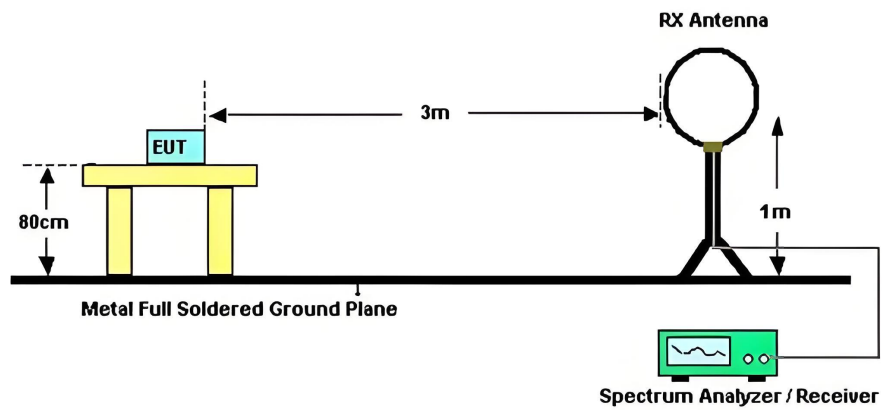
All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

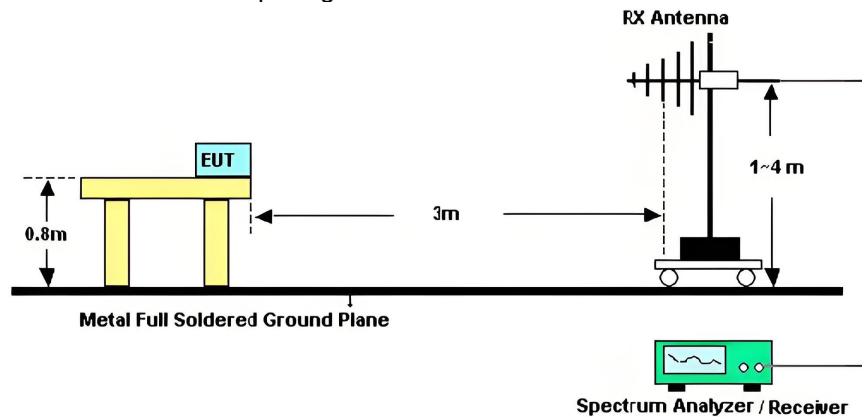
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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
8.41425 - 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)

3.2. Block Diagram of Test setup

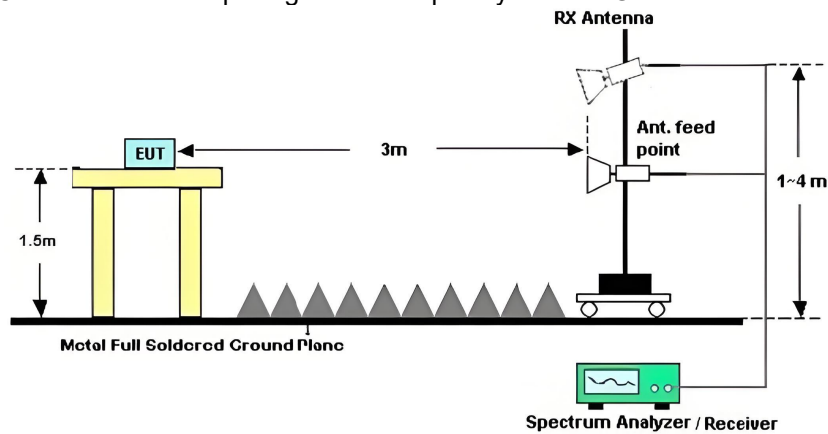
a. In 3m Anechoic Chamber Test Setup Diagram for below 30MHz



b. In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



c. In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



3.3. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.

(2) Setup EUT and simulator

(3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.

(a) Change work frequency or channel of device if practicable.

(b) Change modulation type of device if practicable.

(c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions

(4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated

(5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSIC63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024 on Radiated Emission test.

(6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW > [1 / (minimum transmitter on time)] and no less than 1Hz, RMS detector for AV value.

Test setup information:

9KHz~150KHz	RBW 200Hz	VBW 1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHz~1GHz	RBW 120KHz	VBW 300KHz
Above1GHz	RBW 1MHz	VBW 3MHz

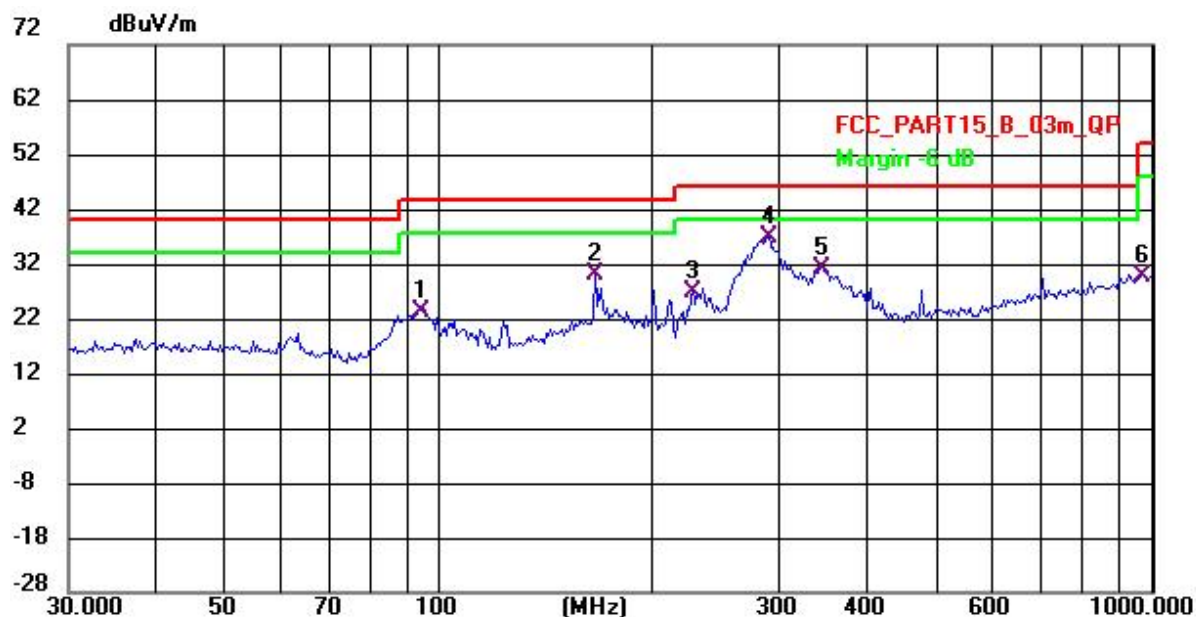
3.4. Test Results

We have scanned from 9kHz to the 10th harmonic of the EUT's highest frequency.
Detailed information please see the following page.

From 9KHz to 30MHz:	
Test Date : 2026.02.10	Temperature : 26℃
Test Engineer : Felix Pang	Humidity : 54%
Test Mode : GFSK mode	
Test Results : PASS	
Note:	The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

From 30MHz to 1000MHz:	
Test Date : 2026.02.10	Temperature : 26℃
Test Engineer : Felix Pang	Humidity : 54%
Test Mode : GFSK mode	
Test Results : PASS	
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out. 3. All modes have been tested, and only worst data of 1Mbps GFSK 2402MHz mode was listed in this report.

Polarization: Horizontal

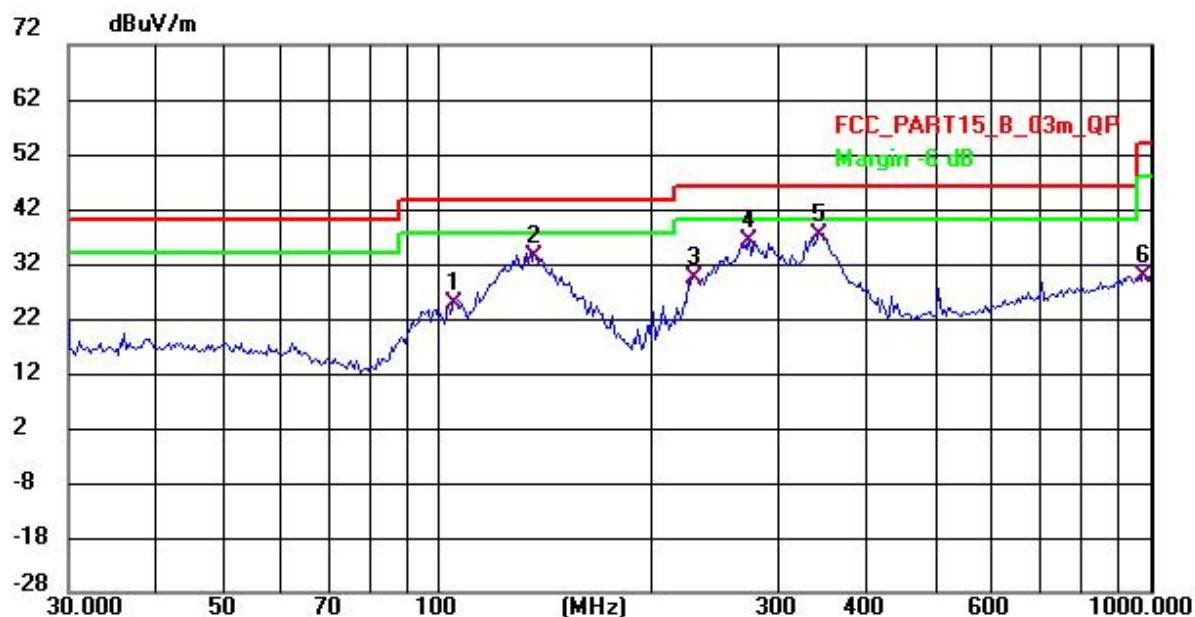


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	94.3135	41.62	-18.34	23.28	43.50	-20.22	QP	200	27	P	
2	165.4716	44.50	-14.39	30.11	43.50	-13.39	QP	100	109	P	
3	227.0164	43.87	-17.00	26.87	46.00	-19.13	QP	100	43	P	
4 *	290.3170	51.57	-14.84	36.73	46.00	-9.27	QP	100	102	P	
5	343.6505	44.57	-13.51	31.06	46.00	-14.94	QP	100	117	P	
6	972.2826	31.26	-1.61	29.65	54.00	-24.35	QP	200	94	P	

Level = Reading + Factor Margin = Level – Limit

Factor= Antenna Factor + Cable loss - Amp Factor

Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	104.7978	42.20	-17.36	24.84	43.50	-18.66	QP	100	85	P	
2	135.9162	48.10	-14.78	33.32	43.50	-10.18	QP	200	143	P	
3	228.6173	46.37	-16.94	29.43	46.00	-16.57	QP	200	257	P	
4	272.5245	51.56	-15.39	36.17	46.00	-9.83	QP	100	236	P	
5 *	341.2441	50.86	-13.57	37.29	46.00	-8.71	QP	200	338	P	
6	979.1391	31.28	-1.53	29.75	54.00	-24.25	QP	100	251	P	

Level = Reading + Factor Margin = Level – Limit

Factor= Antenna Factor + Cable loss - Amp Factor

From 1GHz to 25GHz:	
Test Date : 2026.02.10	Temperature : 26℃
Test Engineer : Felix Pang	Humidity : 54%
Test Mode : GFSK mode	
Test Results : PASS	
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out. 3. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

1Mbps:

Test Mode: GFSK TX Low										
No.	Freq MHz	Reading (dBuV/m)	Polar (H/V)	Antenna Factor (dB)	Cable loss (dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	4804	52.92	V	33.93	10.18	34.26	62.77	74	-11.23	PK
2	4804	33.88	V	33.93	10.18	34.26	43.73	54	-10.27	AV
3	7206	/	/	/	/	/	/	/	/	/
4	9608	/	/	/	/	/	/	/	/	/
5	4804	53.13	H	33.93	10.18	34.26	62.98	74	-11.02	PK
6	4804	33.20	H	33.93	10.18	34.26	43.05	54	-10.95	AV
7	7206	/	/	/	/	/	/	/	/	/
8	9608	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid										
1	4880	52.75	V	33.95	10.2	34.97	61.93	74	-12.07	PK
2	4880	33.03	V	33.95	10.2	34.97	42.21	54	-11.79	AV
3	7320	/	/	/	/	/	/	/	/	/
4	9760	/	/	/	/	/	/	/	/	/
5	4880	53.36	H	33.95	10.2	34.97	62.54	74	-11.46	PK
6	4880	33.31	H	33.95	10.2	34.97	42.49	54	-11.51	AV
7	7320	/	/	/	/	/	/	/	/	/
8	9760	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High										
1	4960	52.71	V	33.98	10.22	34.25	62.66	74	-11.34	PK
2	4960	33.56	V	33.98	10.22	34.25	43.51	54	-10.49	AV
3	7440	/	/	/	/	/	/	/	/	/
4	9920	/	/	/	/	/	/	/	/	/
5	4960	53.43	H	33.98	10.22	34.25	63.38	74	-10.62	PK
6	4960	33.47	H	33.98	10.22	34.25	43.42	54	-10.58	AV
7	7440	/	/	/	/	/	/	/	/	/
8	9920	/	/	/	/	/	/	/	/	/

Result=Reading + Antenna Factor+ Cable loss-Amp Factor

Margin= Result-Limit.

Note: Other emission levels comply with standard requirements and at least have 20dB margin.

2Mbps:

Test Mode: GFSK TX Low										
No.	Freq MHz	Reading (dBuV/m)	Polar (H/V)	Antenna Factor (dB)	Cable loss (dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	4804	53.15	V	33.93	10.18	34.26	63.00	74	-11.00	PK
2	4804	33.66	V	33.93	10.18	34.26	43.51	54	-10.49	AV
3	7206	/	/	/	/	/	/	/	/	/
4	9608	/	/	/	/	/	/	/	/	/
5	4804	53.15	H	33.93	10.18	34.26	63.00	74	-11.00	PK
6	4804	32.63	H	33.93	10.18	34.26	42.48	54	-11.52	AV
7	7206	/	/	/	/	/	/	/	/	/
8	9608	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid										
1	4880	51.99	V	33.95	10.2	34.97	61.17	74	-12.83	PK
2	4880	32.62	V	33.95	10.2	34.97	41.80	54	-12.20	AV
3	7320	/	/	/	/	/	/	/	/	/
4	9760	/	/	/	/	/	/	/	/	/
5	4880	53.27	H	33.95	10.2	34.97	62.45	74	-11.55	PK
6	4880	33.26	H	33.95	10.2	34.97	42.44	54	-11.56	AV
7	7320	/	/	/	/	/	/	/	/	/
8	9760	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High										
1	4960	52.51	V	33.98	10.22	34.25	62.46	74	-11.54	PK
2	4960	34.01	V	33.98	10.22	34.25	43.96	54	-10.04	AV
3	7440	/	/	/	/	/	/	/	/	/
4	9920	/	/	/	/	/	/	/	/	/
5	4960	53.90	H	33.98	10.22	34.25	63.85	74	-10.15	PK
6	4960	33.51	H	33.98	10.22	34.25	43.46	54	-10.54	AV
7	7440	/	/	/	/	/	/	/	/	/
8	9920	/	/	/	/	/	/	/	/	/

Result=Reading + Antenna Factor+ Cable loss-Amp Factor

Margin= Result-Limit.

Note: Other emission levels comply with standard requirements and at least have 20dB margin.

4. Power Line Conducted Emission

4.1. Test Limits

Frequency (MHz)	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

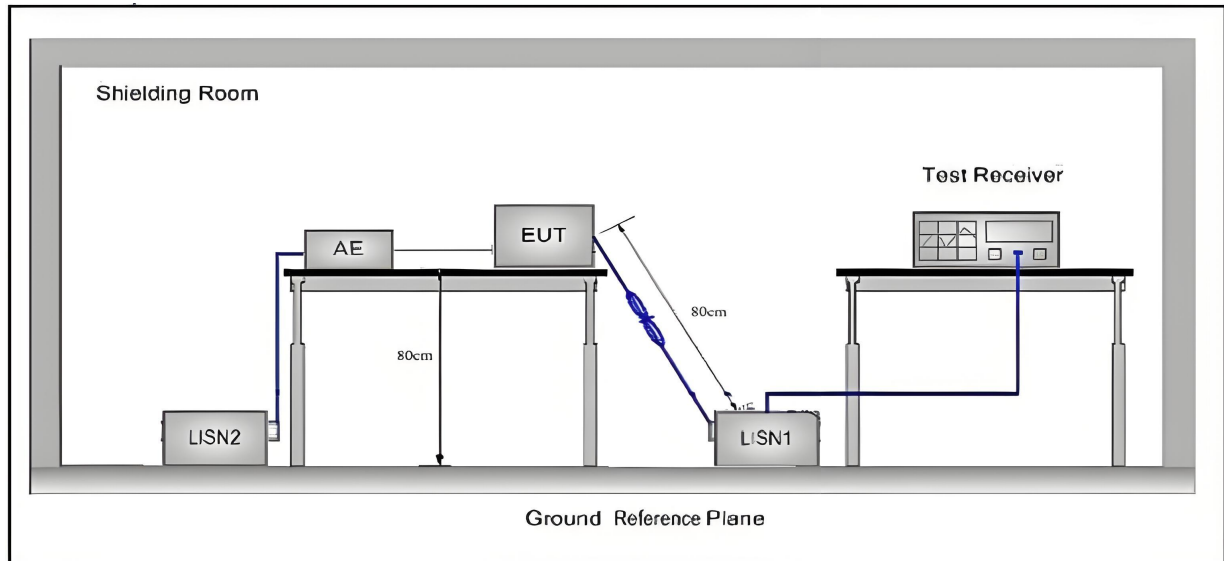
4.2. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSIC63.10-2020+Cor.

1-2023+C63.10a-2024 +Errata to C63.10a-2024 on Conducted Emission Measurement.

The bandwidth of test receiver is set at 9 kHz.

4.3. Test Setup



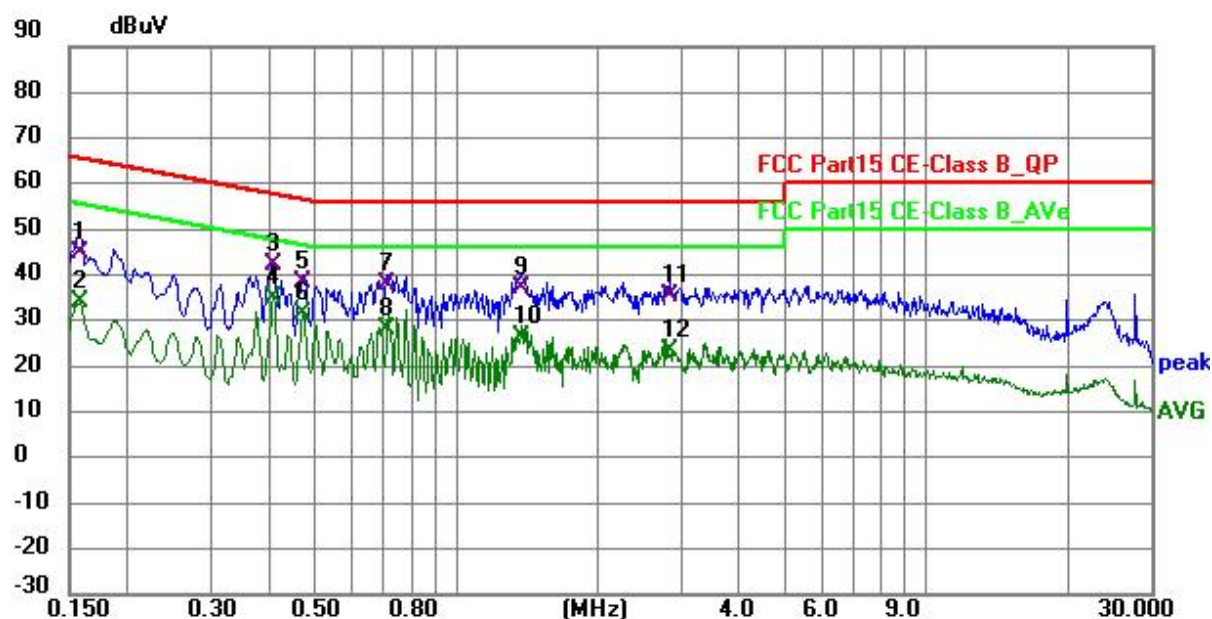
4.4. Test Results

Test Date	: 2026.02.10	Temperature	: 26℃
Test Engineer	: Felix Pang	Humidity	: 54%
Test Mode	: GFSK 1Mbps mode		
Test Results	: PASS		

Note: 1. The test results are listed in next pages.

2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.
3. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.
4. All modes have been tested, and only worst data of GFSK 1Mbps mode, Channel 2402MHz (AC 120V/ 60Hz) was listed in this report.

Polarization: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1580	35.34	9.64	44.98	65.57	-20.59	QP	P	
2	0.1580	24.41	9.64	34.05	55.57	-21.52	AVG	P	
3	0.4060	32.79	9.60	42.39	57.73	-15.34	QP	P	
4 *	0.4060	25.49	9.60	35.09	47.73	-12.64	AVG	P	
5	0.4700	28.68	9.61	38.29	56.51	-18.22	QP	P	
6	0.4700	22.07	9.61	31.68	46.51	-14.83	AVG	P	
7	0.7100	28.15	9.61	37.76	56.00	-18.24	QP	P	
8	0.7100	18.62	9.61	28.23	46.00	-17.77	AVG	P	
9	1.3779	27.50	9.63	37.13	56.00	-18.87	QP	P	
10	1.3779	16.93	9.63	26.56	46.00	-19.44	AVG	P	
11	2.8460	25.79	9.64	35.43	56.00	-20.57	QP	P	
12	2.8460	13.62	9.64	23.26	46.00	-22.74	AVG	P	

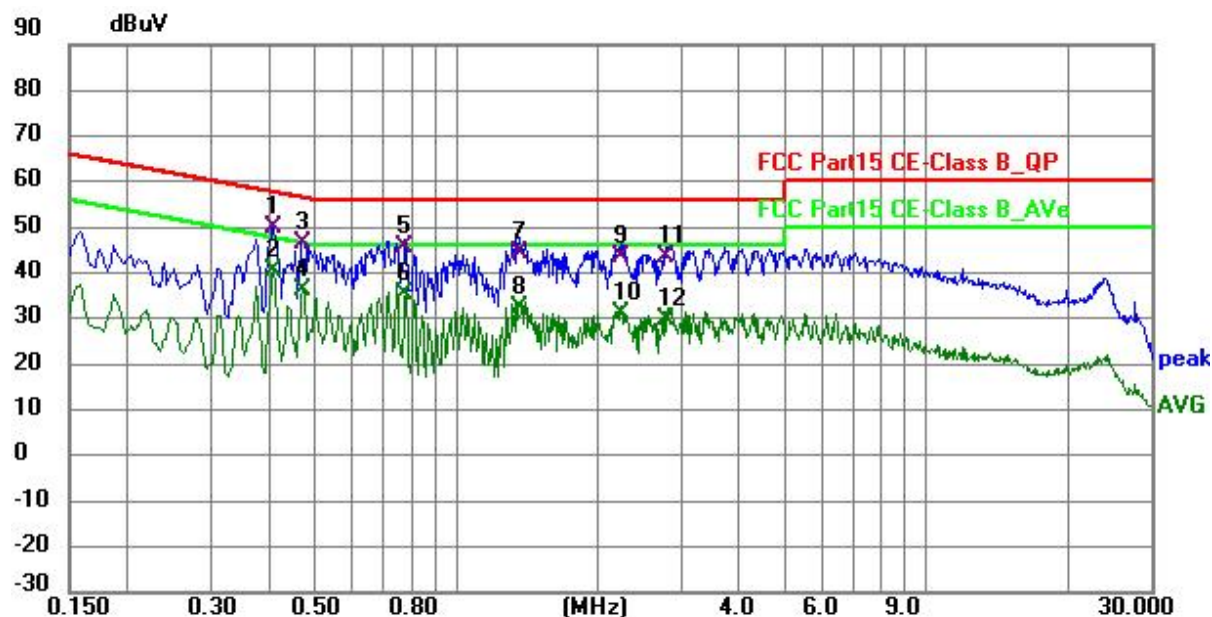
Note:

Level = Reading + Factor

Margin = Level – Limit

Factor = LISN factor + Cable loss

Polarization: N



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.4060	40.19	9.63	49.82	57.73	-7.91	QP	P	
2 *	0.4060	30.95	9.63	40.58	47.73	-7.15	AVG	P	
3	0.4700	36.83	9.66	46.49	56.51	-10.02	QP	P	
4	0.4700	26.76	9.66	36.42	46.51	-10.09	AVG	P	
5	0.7780	35.93	9.65	45.58	56.00	-10.42	QP	P	
6	0.7780	25.80	9.65	35.45	46.00	-10.55	AVG	P	
7	1.3619	34.87	9.66	44.53	56.00	-11.47	QP	P	
8	1.3619	22.88	9.66	32.54	46.00	-13.46	AVG	P	
9	2.2420	33.81	9.66	43.47	56.00	-12.53	QP	P	
10	2.2420	21.22	9.66	30.88	46.00	-15.12	AVG	P	
11	2.8020	33.80	9.67	43.47	56.00	-12.53	QP	P	
12	2.8020	20.28	9.67	29.95	46.00	-16.05	AVG	P	

Note:

Level = Reading + Factor

Margin = Level – Limit

Factor = LISN factor + Cable loss

5. Out-of-band Emissions

5.1. Test Limits

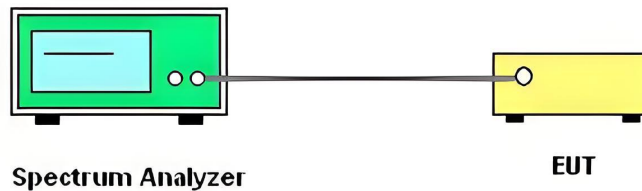
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

5.2. Test Procedure

ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 +Errata to C63.10a-2024 Section 11.11.1, Section 11.11.2, Section 11.11.3

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, band edge and out-of-band emissions.

5.3. Test Setup



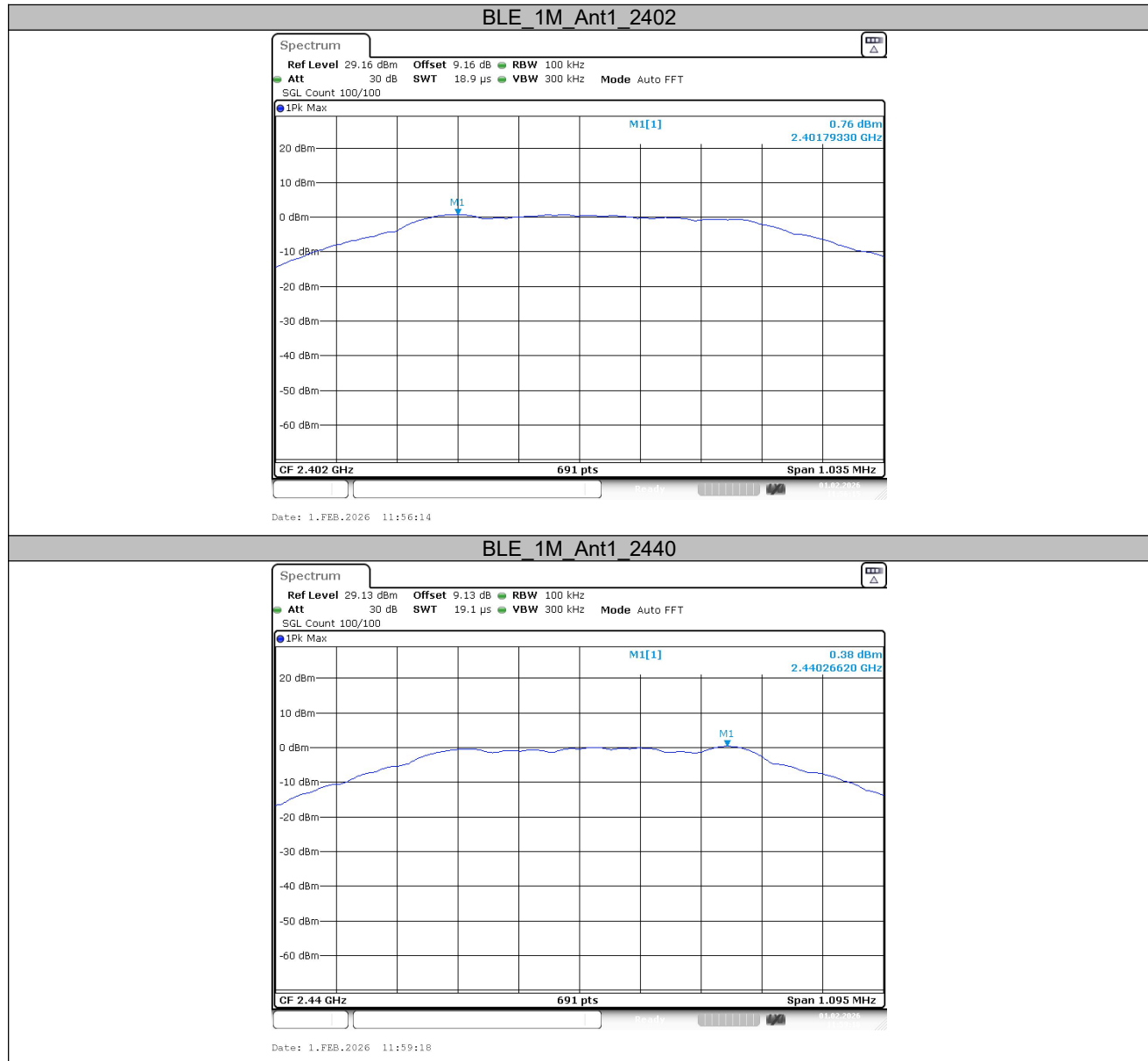
5.4. Test Results

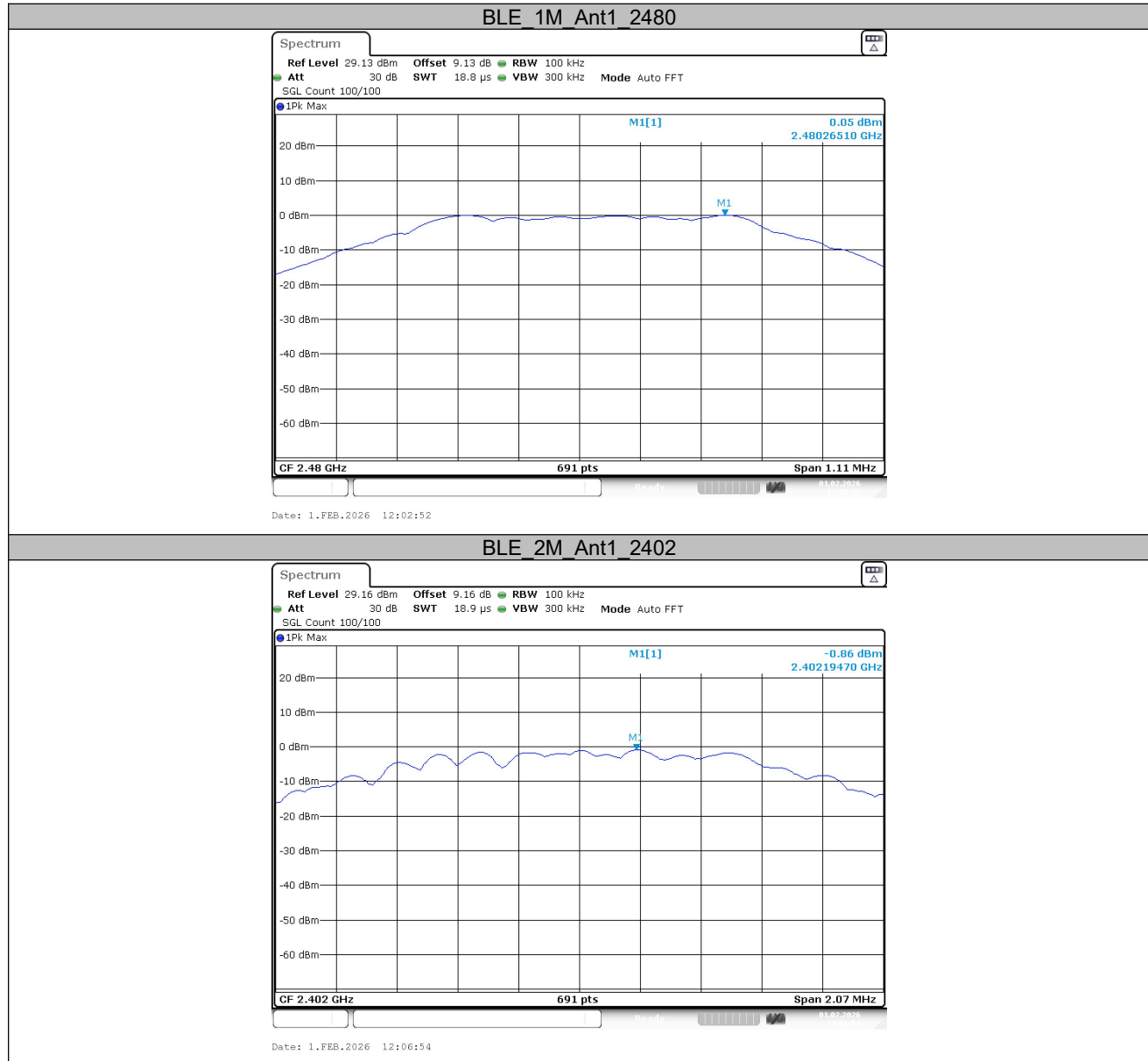
PASS.

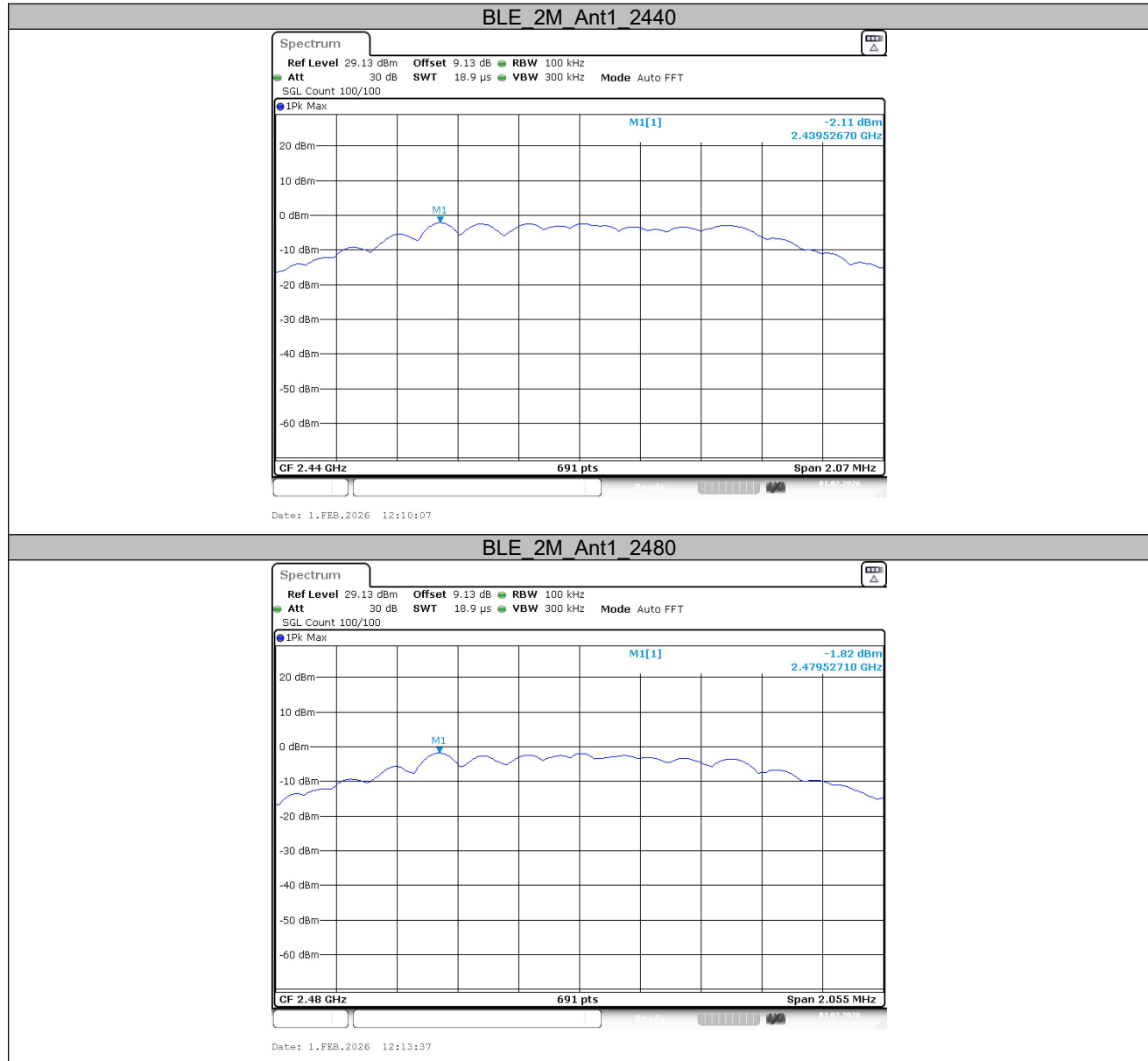
The test results are listed in next pages.

Reference level measurement:

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.79	0.76
		2440	2440.27	0.38
		2480	2480.27	0.05
BLE_2M	Ant1	2402	2402.19	-0.86
		2440	2439.53	-2.11
		2480	2479.53	-1.82



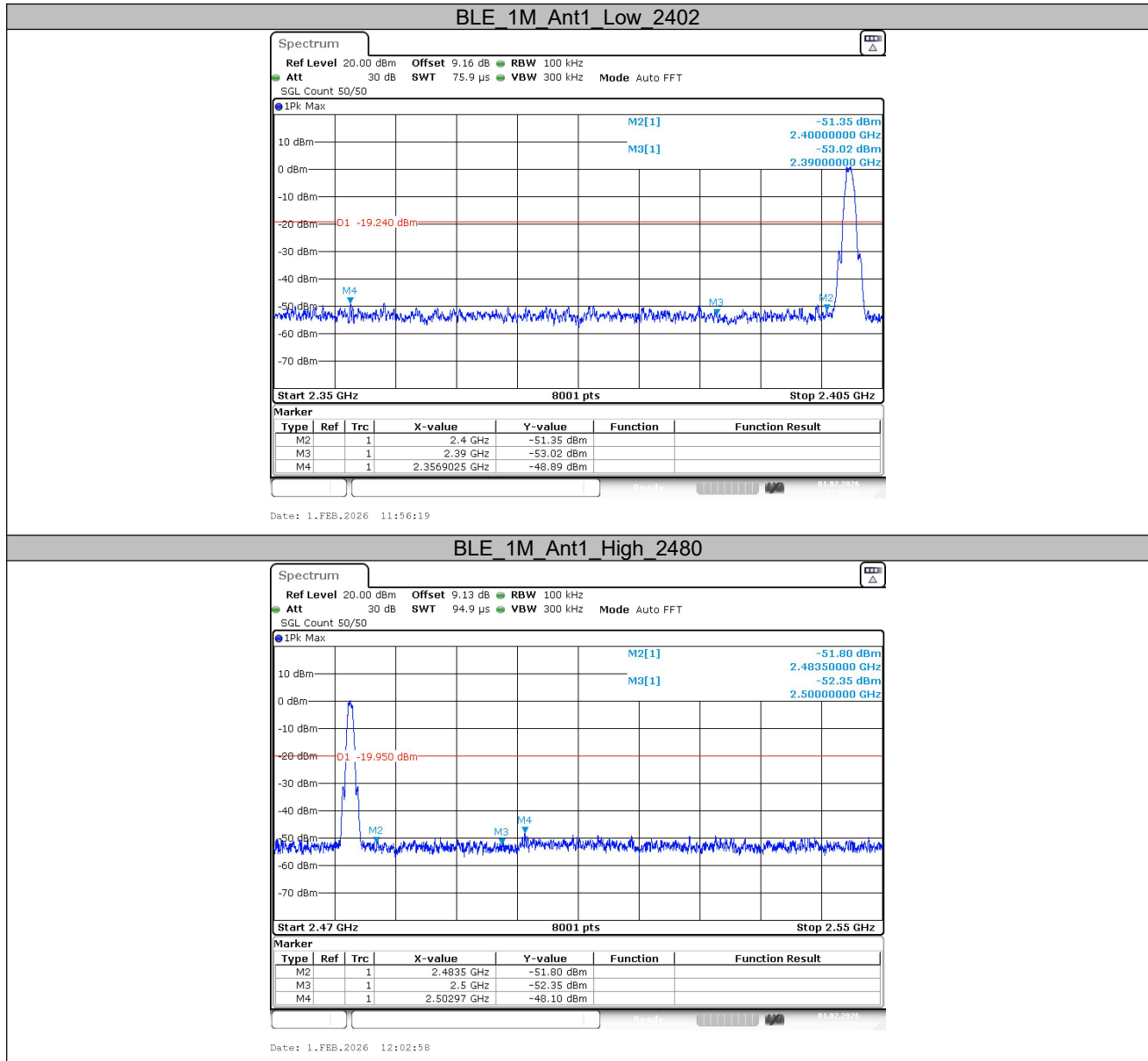


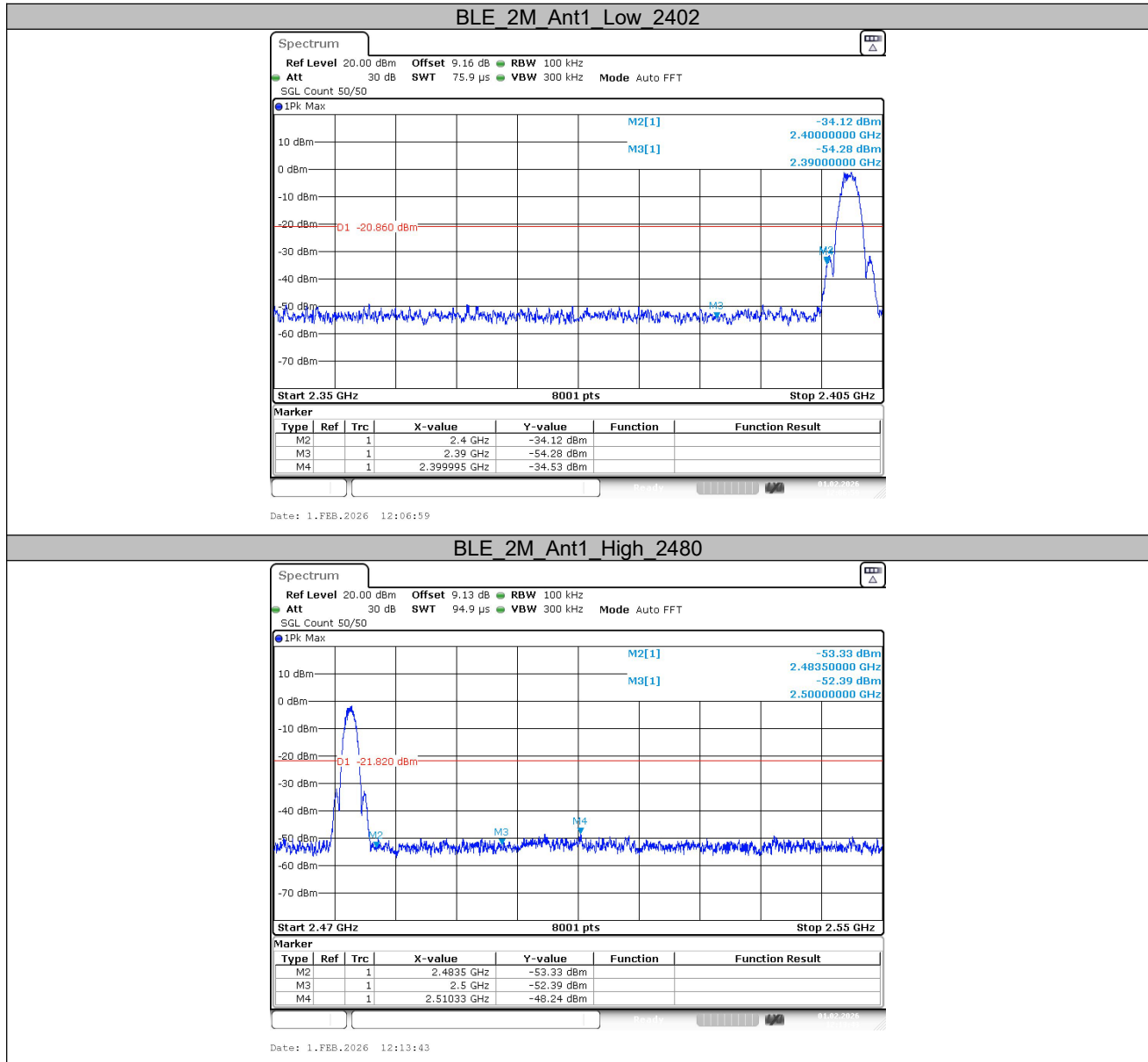


Band Edge: Pass

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	0.76	-48.89	≤-19.24	PASS
		High	2480	0.05	-48.1	≤-19.95	PASS
BLE_2M	Ant1	Low	2402	-0.86	-34.53	≤-20.86	PASS
		High	2480	-1.82	-48.24	≤-21.82	PASS

Note: All modes have been tested, and only worst data was listed in this report.





Spurious Emission: Pass

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	0.76	-49.43	≤-19.24	PASS
			1000~26500	0.76	-45.48	≤-19.24	PASS
		2440	30~1000	0.38	-60.16	≤-19.62	PASS
			1000~26500	0.38	-44.74	≤-19.62	PASS
		2480	30~1000	0.05	-58.13	≤-19.95	PASS
			1000~26500	0.05	-44.82	≤-19.95	PASS
BLE_2M	Ant1	2402	30~1000	-0.86	-59.44	≤-20.86	PASS
			1000~26500	-0.86	-45.58	≤-20.86	PASS
		2440	30~1000	-2.11	-59.91	≤-22.11	PASS
			1000~26500	-2.11	-45.9	≤-22.11	PASS
		2480	30~1000	-1.82	-59.9	≤-21.82	PASS
			1000~26500	-1.82	-46.19	≤-21.82	PASS

