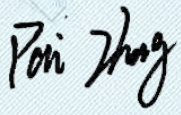
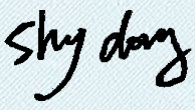
TEST REPORT

Report No. :	KS2309S4784E01
FCC ID :	2AO94-H5PRO
Applicant :	MOKO TECHNOLOGY LIMITED
Address :	Factory 201, 107 Pinshun Rd Guixiang community, Guanlan Street, Longhua, Shenzhen, China 518110
Manufacturer :	MOKO TECHNOLOGY Ltd
Address :	Factory 201, 107 Pinshun Rd Guixiang community, Guanlan Street, Longhua, Shenzhen, China 518110
Product Name :	Bluetooth Beacon
Model/Type reference :	**H5 Pro**, H5P-BNDAX-NFC, H5P-BNDNX-NFC, H5P-BNDA-NFC, H5P-BNDN-NFC, H5P-PNDA-HF_AC141
Standard :	47 CFR Part 15.247
Date of Receipt :	September 8, 2023
Date of Test Date :	September 8, 2023 to September 19, 2023
Date of issue :	September 19, 2023
**Test result : **	**Pass**
Conclusion :	When determining of test conclusion, measurement uncertainty of tests have been considered.

Prepared by: (Printed name + Signature)	Pai Zheng	
Approved by: (Printed name + Signature)	Sky Dong	

Testing Laboratory Name... :	**KSIGN(Guangdong) Testing Co., Ltd.**
Address :	West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

KDB 558074 D01 15.247 Meas Guidance v05r02: Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules.

1.2. Report Version

Revised No.	Date of issue	Description
01	September 19, 2023	Original

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1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	47 CFR 15.203	Pass
Occupied Bandwidth	47 CFR Part 15.247	47 CFR 15.247(a)(2)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(3)	Pass
Power Spectral Density	47 CFR Part 15.247	47 CFR 15.247(e)	Pass
Emissions in non-restricted frequency bands	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass

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1.4. Test Facility

KSIGN(Guangdong) Testing Co., Ltd.
West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu,Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified, or accredited by the following organizations:
CNAS-Lab Code: L13261
KSIGN(Guangdong) Testing Co., Ltd. has been assessed and proved to be in Compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.
A2LA-Lab Cert. No.: 5457.01
KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirementsfor the Competence of Testing and Calibration Laboratories and any additional program requirements in the
identified field of testing
ISED#: 25693 CAB identifier.: CN0096
KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.
FCC-Registration No.: 294912 Designation Number: CN1328
KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

1.5. Measurement Uncertainty

Test Items	Measurement Uncertainty
Output Power, Conducted	± 1.4dB
PSD, Conducted	± 1.0dB
Spurious Emissions, Conducted	± 3.3dB
RSE (1-18GHz)	± 4.68dB
RSE (30-1000MHz)	± 5.7dB
RSE (18-40GHz)	± 5.18dB

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

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2. GENERAL INFORMATION

2.1. General Description Of EUT

Test Sample Number:	1-1(Normal Sample), 1-2(Engineering Sample)
Product Name:	Bluetooth Beacon
Model / Type reference:	**H5 Pro**, H5P-BNDAX-NFC, H5P-BNDNX-NFC, H5P-BNDA-NFC, H5P-BNDN-NFC, H5P-PNDA-HF_AC141
Model Difference:	The difference between product models is only the name is different, and the different model names are for market demand. Other power supply methods, internal structure, circuit and key components are the same, do not affect the safety and electromagnetic compatibility performance.
Power Supply:	Battery powered DC 3V
Operation Frequency:	2402MHz to 2480MHz
Number of Channels:	40
Modulation Type:	GFSK
Antenna Type:	PCB antenna
Antenna Gain:	1.7dBi
Max TX Power:	4.32dBm
Hardware Version:	V1.0
Software Version:	V1.0.0

2.2. Accessory Equipment Information

The EUT was tested as an independent device.

2.3. Description of Test Modes

No.	Title	Description of Mode
Test Mode1	TX mode	Keep the EUT works in continuously transmitting mode with GFSK modulation.

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2.4. Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

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2.5. Measurement Instruments List

Occupied Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in non-restricted frequency bands				
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Wideband Radio Communication Tester	R&S	CMU200	115297	2024-02-17
Audio Analyzer	R&S	UPL16	100001	2024-02-17
Shielding box	Gxiong	GX-5915A	2201113	2024-02-17
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G-187	09203403	2024-02-17
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-920-188	09203401	2024-02-17
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2024-02-17
Coaxial Cable	BEBES	A40-2.92M2.92F-4.5M	1907021	2024-02-17
Hygrothermograph	Anymetre	JB913	/	2024-02-17
Climate Chamber	Angul	AGNH80L	1903042120	2024-02-17
Spectrum Analyzer	HP	8593E	3831U02087	2024-02-17
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2024-02-17
RF Control Unit	Tonscend	JS0806-2	/	2024-02-17
Analog Signal Generator	HP	83752A	3344A00337	2024-02-17
Vector Signal Generator	Agilent	N5182A	MY50142520	2024-02-17
Wideband Radio Communication Tester	R&S	CMW500	157282	2024-02-17
Spectrum Analyzer	R&S	FSV40-N	101798	2024-02-17

Band edge emissions (Radiated) Emissions in frequency bands (below 1GHz) Emissions in frequency bands (above 1GHz)				
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	1230	2025-02-18
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2024-02-17
Broadcast Television Signal Generator	R&S	SFE100	141038	2024-02-17
Analog Signal Generator	Agilent	8648A	3847M00445	2024-02-17
EMI Test Receiver	R&S	ESR	102525	2024-02-17
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2024-02-19
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2026-02-19
Pre-Amplifier	EMCI	EMC051835SE	980662	2024-02-17
Spectrum Analyzer	Keysight	N9020A	MY46471971	2024-02-17

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3. Evaluation Results (Evaluation)

3.1. Antenna requirement

Test Requirement:	Refer to 47 CFR 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.

3.1.1. Conclusion:

The directional gain of the antenna less than 6dBi. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.
Antenna structure please refer to the EUT internal photographs antenna photo.

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4. Radio Spectrum Matter Test Results (RF)

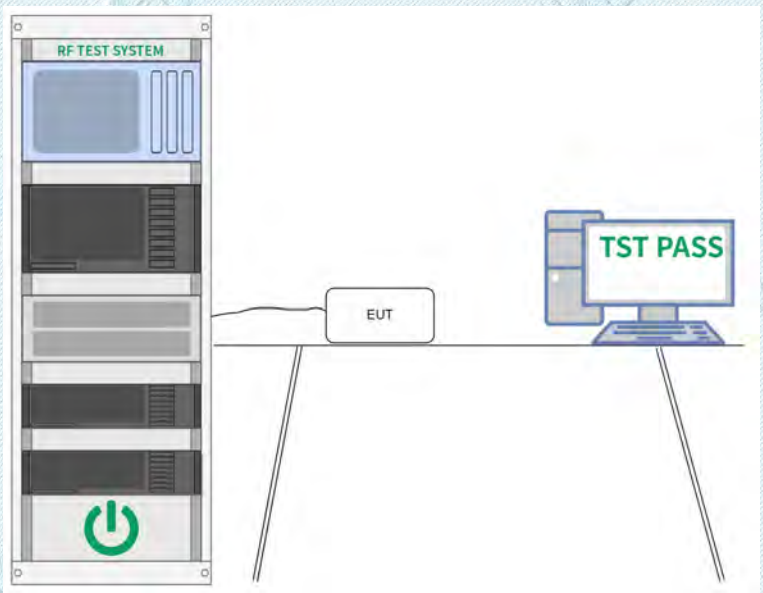
4.1. Occupied Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2013, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	a) Set RBW = 100 kHz. b) Set the VBW >= [3 × RBW]. c) Detector = peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) 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 6 dB relative to the maximum level measured in the fundamental emission.

4.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.1.2. Test Setup Diagram:



4.1.3. Test Data:

Please Refer to Appendix for Details.

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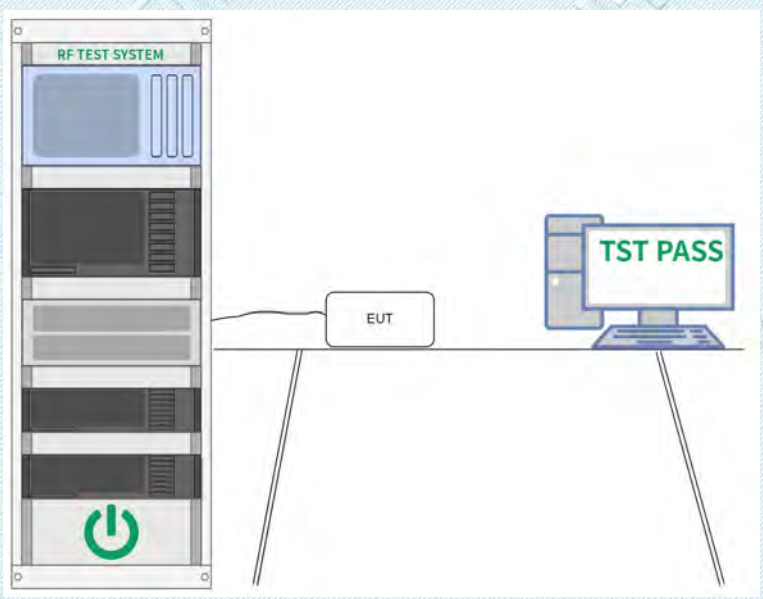
4.2. Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2013, section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.9.1 Maximum peak conducted output power

4.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.2.2. Test Setup Diagram:



4.2.3. Test Data:

Please Refer to Appendix for Details.

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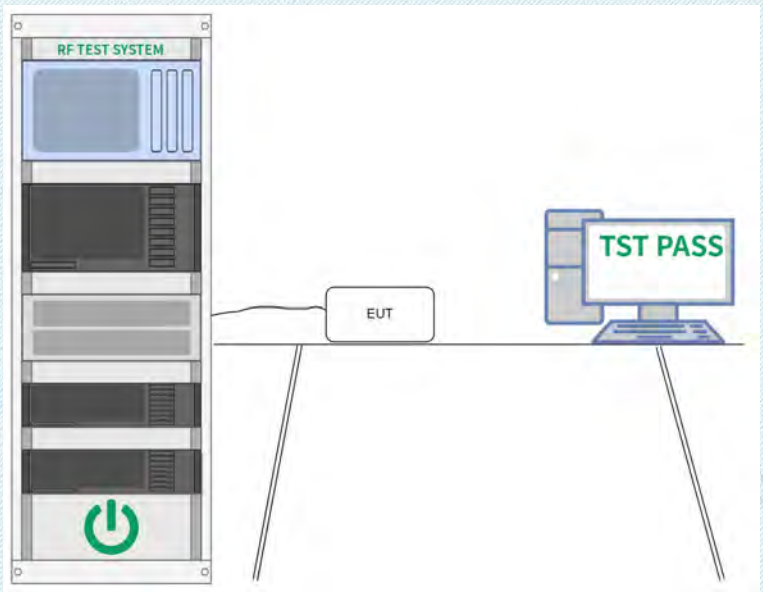
4.3. Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), 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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2013, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.10, Maximum power spectral density level in the fundamental emission

4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.3.2. Test Setup Diagram:



4.3.3. Test Data:

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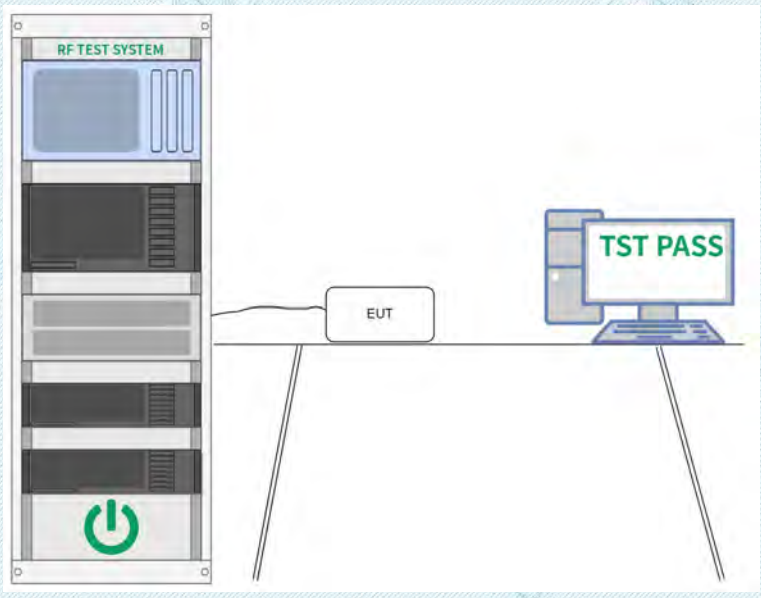
4.4. Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d), 15.209, 15.205
Test Limit:	Refer to 47 CFR 15.247(d), 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.
Test Method:	ANSI C63.10-2013 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 Section 11.11.1, Section 11.11.2, Section 11.11.3

4.4.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.4.2. Test Setup Diagram:



4.4.3. Test Data:

Please Refer to Appendix for Details.

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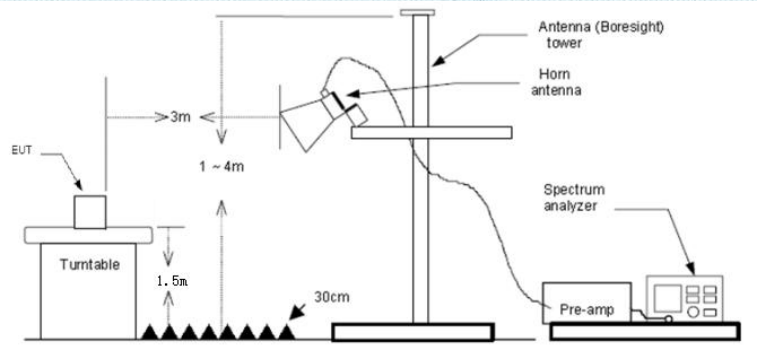
4.5. Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)).`
Test Limit:	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 ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
Test Method:	ANSI C63.10-2013 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 section 6.10.5.2

4.5.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.5.2. Test Setup Diagram:



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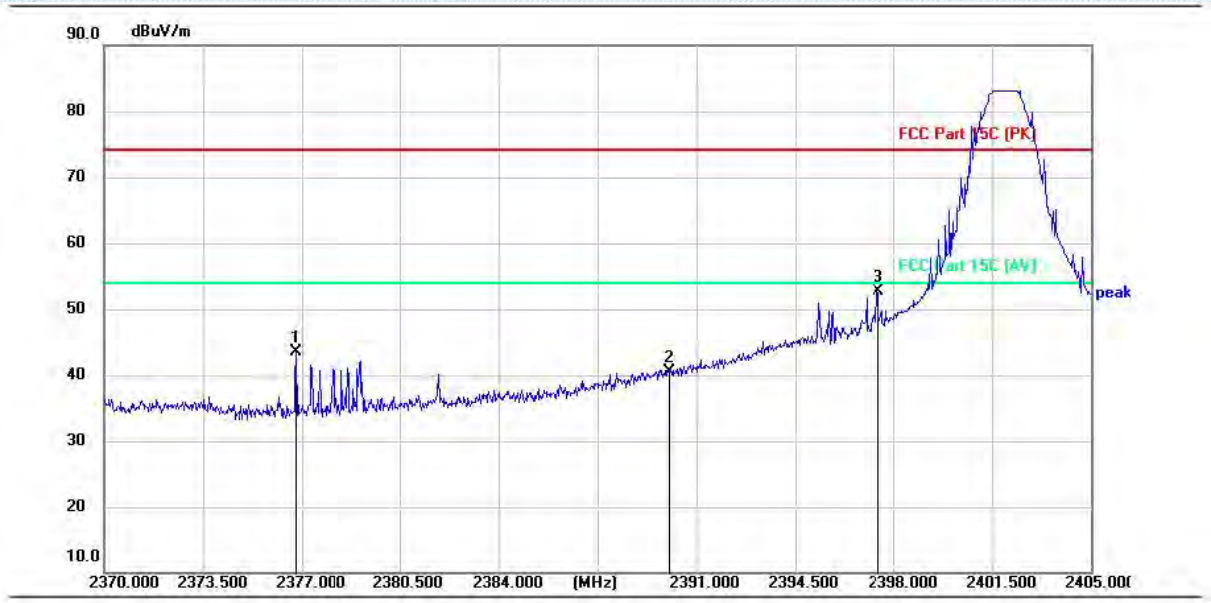
4.5.3. Test Data:

Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2376.807	53.73	-10.14	43.59	74.00	30.41	peak
2		2390.000	50.59	-10.12	40.47	74.00	33.53	peak
3	*	2397.412	62.82	-10.12	52.70	74.00	21.30	peak

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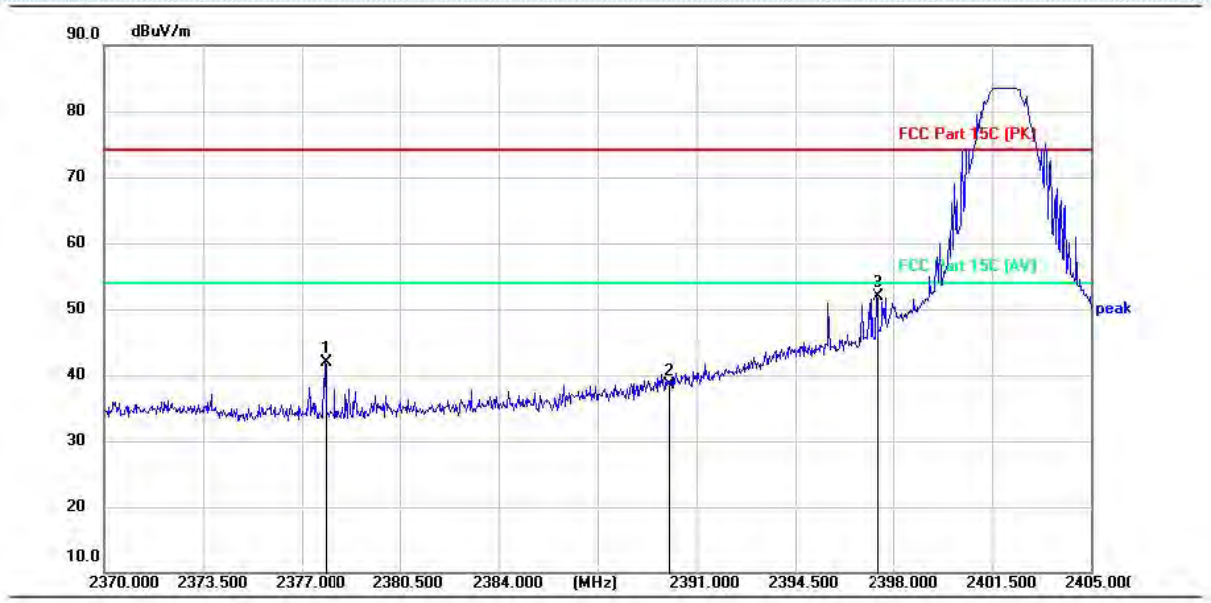
Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2377.809	51.59	-9.72	41.87	74.00	32.13	peak
2		2390.000	48.19	-9.70	38.49	74.00	35.51	peak
3	*	2397.433	61.67	-9.70	51.97	74.00	22.03	peak

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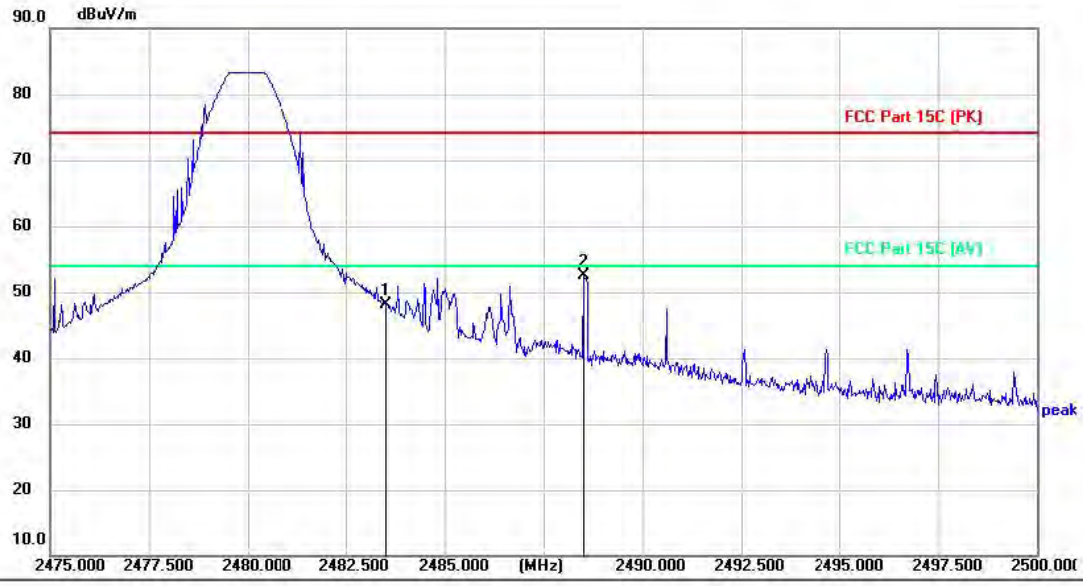
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2483.500	58.12	-10.09	48.03	74.00	25.97	peak
2	*	2488.523	62.57	-10.08	52.49	74.00	21.51	peak

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2483.500	58.28	-9.68	48.60	74.00	25.40	peak
2	*	2486.190	60.78	-9.68	51.10	74.00	22.90	peak

Note:
1.Measurement = Reading level + Correct Factor
2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
3.Both modes of BLE 1Mpbs and 2Mpbs were tested at Low and High channel and recorded worst mode at BLE 1Mpbs.

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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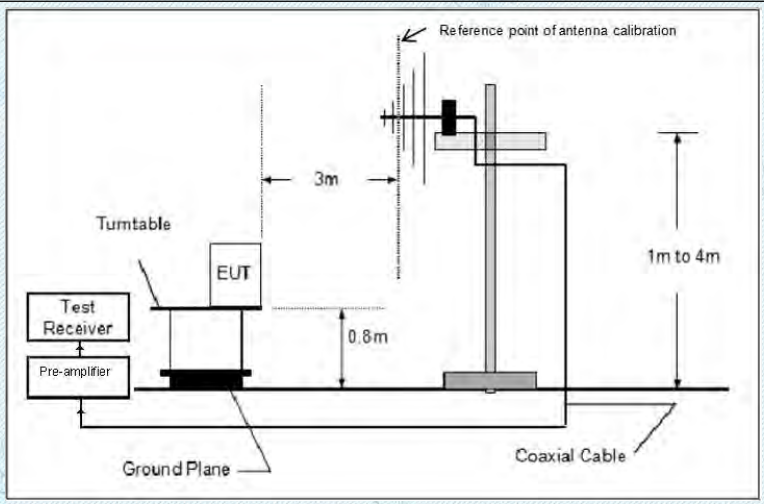
4.6. Emissions in frequency bands (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)).`
Test Limit:	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 ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
Test Method:	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 section 6.6.4

4.6.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.6.2. Test Setup Diagram:



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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4.6.3. Test Data:

Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		31.5759	28.04	-18.11	9.93	40.00	-30.07	QP
2		37.5084	29.41	-17.24	12.17	40.00	-27.83	QP
3		300.0514	26.52	-15.56	10.96	46.00	-35.04	QP
4		400.0109	26.38	-10.26	16.12	46.00	-29.88	QP
5		666.7380	25.99	-6.80	19.19	46.00	-26.81	QP
6	*	833.3171	27.19	-4.63	22.56	46.00	-23.44	QP

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Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		31.8986	30.33	-18.07	12.26	40.00	-27.74	QP
2		37.2463	29.90	-17.30	12.60	40.00	-27.40	QP
3	*	63.1359	35.37	-16.73	18.64	40.00	-21.36	QP
4		66.2662	33.27	-17.42	15.85	40.00	-24.15	QP
5		666.7380	27.80	-6.80	21.00	46.00	-25.00	QP
6		783.4434	28.83	-5.22	23.61	46.00	-22.39	QP

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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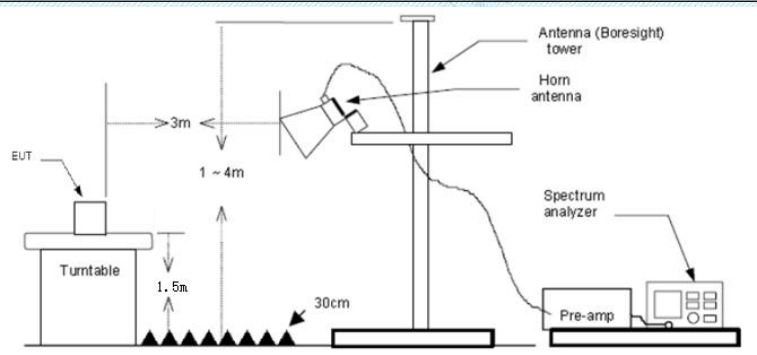
4.7. Emissions in frequency bands (above 1GHz)

Test Requirement:	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)).`
Test Limit:	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 ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
Test Method:	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 section 6.6.4

4.7.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	48.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

4.7.2. Test Setup Diagram:



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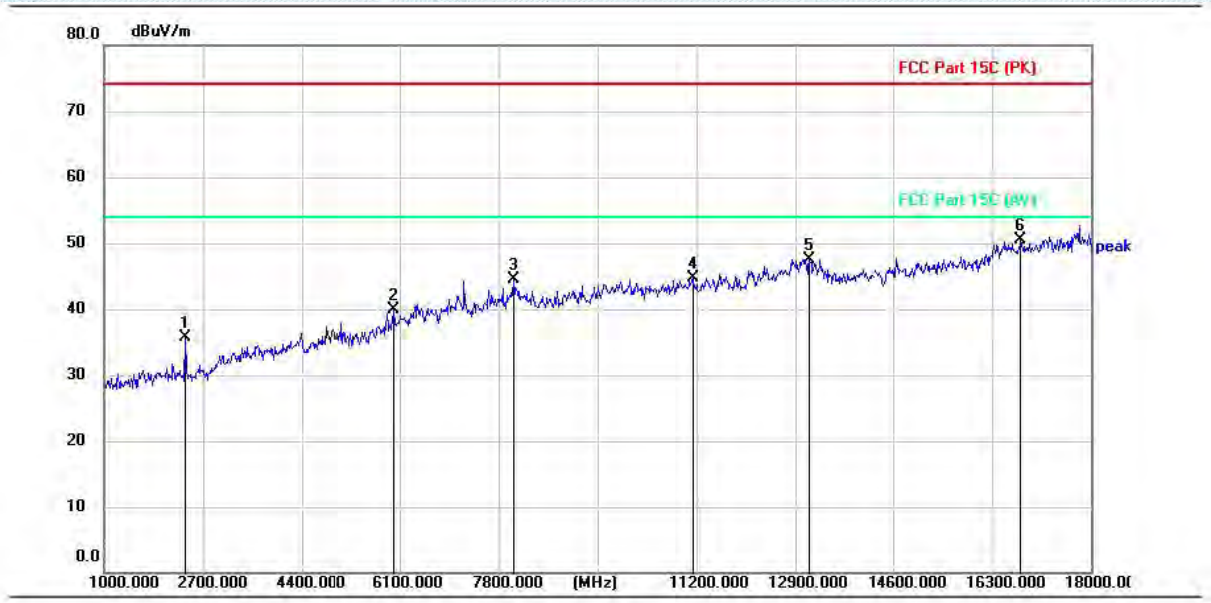
4.7.3. Test Data:

Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		2402.500	45.85	-10.11	35.74	74.00	38.26	peak
2		6001.400	42.21	-2.40	39.81	74.00	34.19	peak
3		8060.100	41.52	2.93	44.45	74.00	29.55	peak
4		11143.900	38.31	6.36	44.67	74.00	29.33	peak
5		13151.600	36.78	10.72	47.50	74.00	26.50	peak
6	*	16801.500	36.14	14.38	50.52	74.00	23.48	peak

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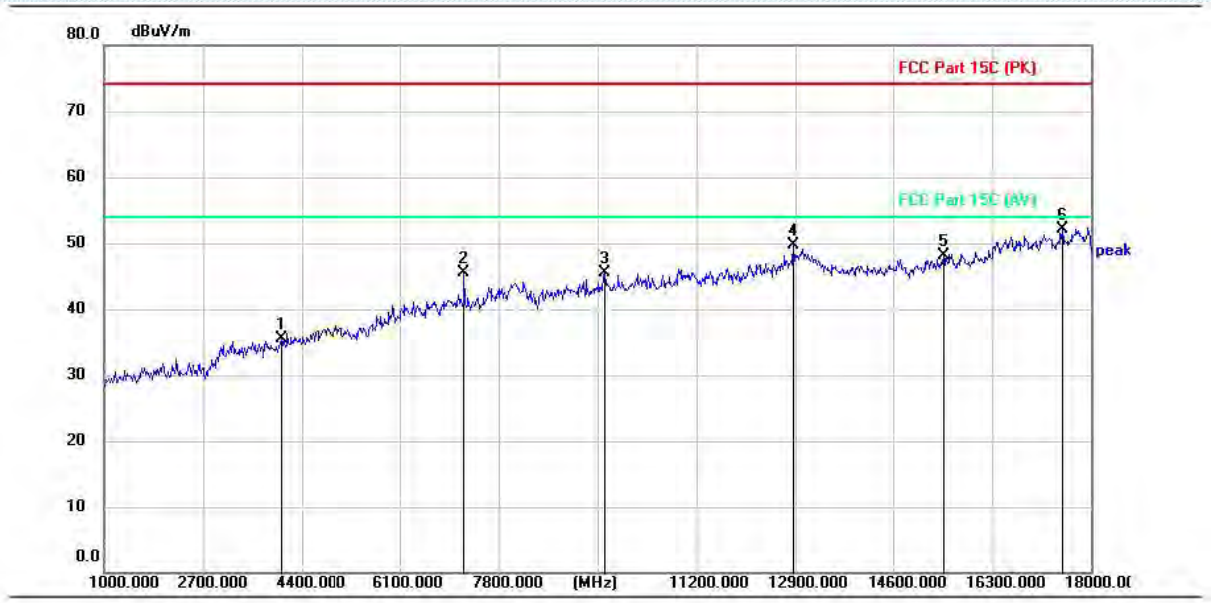
Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		4056.600	42.84	-7.30	35.54	74.00	38.46	peak
2		7205.000	44.03	1.52	45.55	74.00	28.45	peak
3		9632.600	40.49	4.92	45.41	74.00	28.59	peak
4		12881.300	38.23	11.44	49.67	74.00	24.33	peak
5		15478.900	36.02	12.08	48.10	74.00	25.90	peak
6	*	17508.700	37.14	15.00	52.14	74.00	21.86	peak

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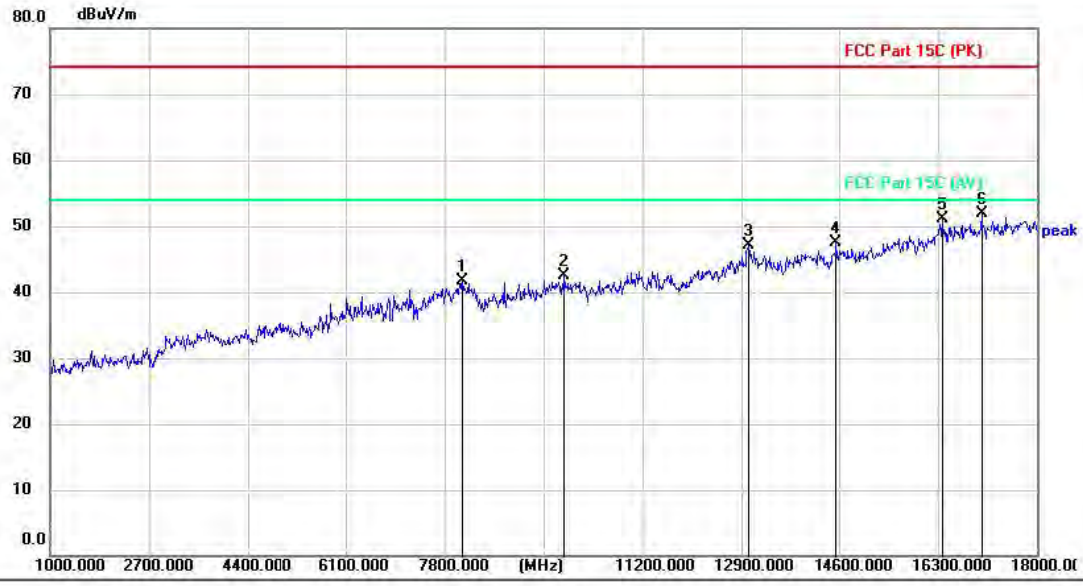
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		8106.000	38.90	2.89	41.79	74.00	32.21	peak
2		9860.400	37.91	4.60	42.51	74.00	31.49	peak
3		13029.200	35.91	11.13	47.04	74.00	26.96	peak
4		14555.800	37.27	10.21	47.48	74.00	26.52	peak
5		16376.500	37.14	14.01	51.15	74.00	22.85	peak
6	*	17063.300	37.42	14.47	51.89	74.00	22.11	peak

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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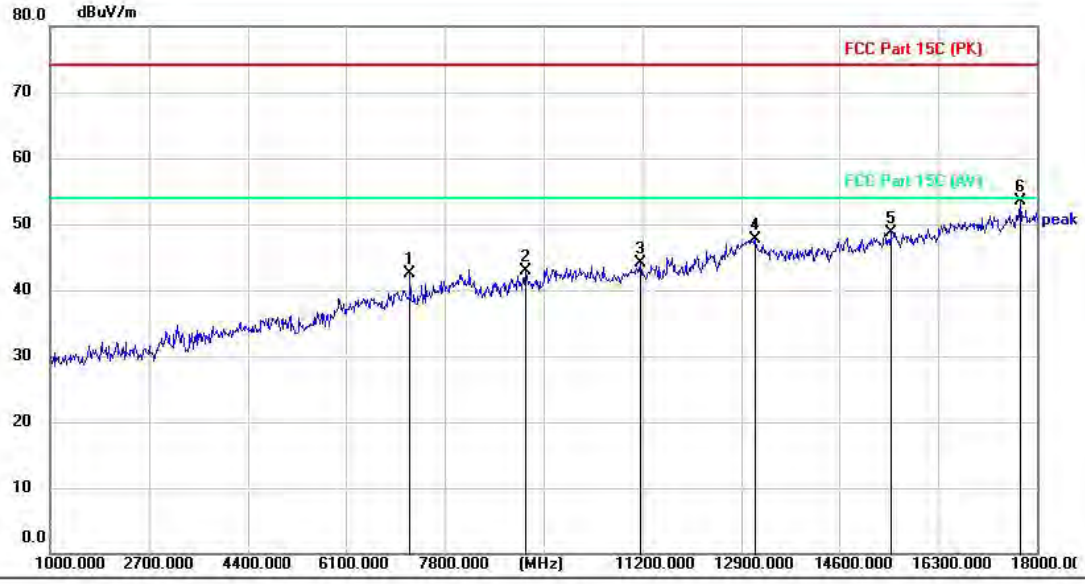
Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		7206.700	41.04	1.53	42.57	74.00	31.43	peak
2		9195.700	38.89	4.09	42.98	74.00	31.02	peak
3		11181.300	36.95	7.22	44.17	74.00	29.83	peak
4		13149.900	36.29	11.48	47.77	74.00	26.23	peak
5		15495.900	36.63	12.10	48.73	74.00	25.27	peak
6	*	17711.000	38.27	15.14	53.41	74.00	20.59	peak

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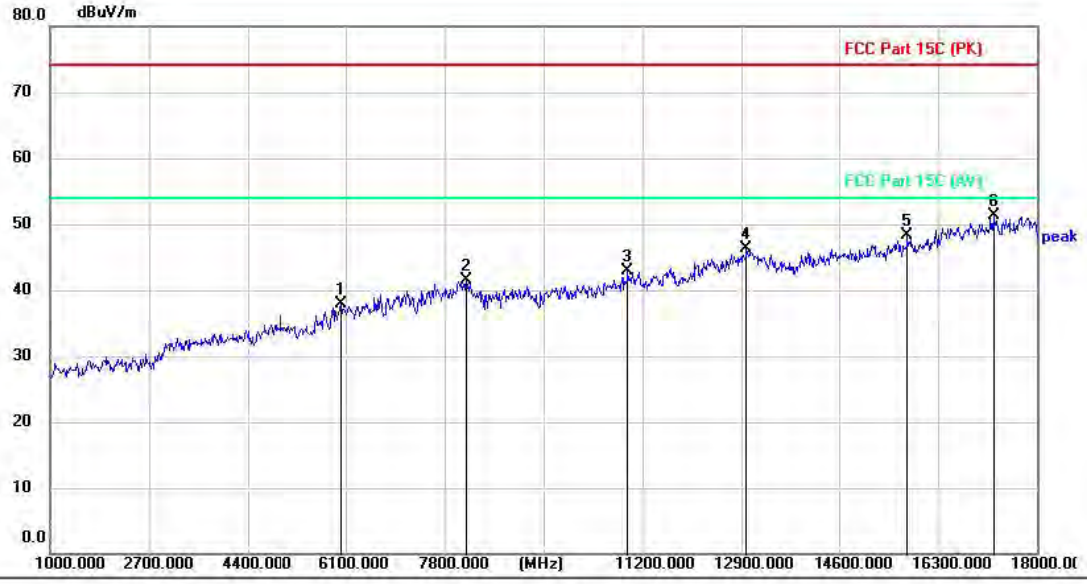
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		6028.600	40.29	-2.34	37.95	74.00	36.05	peak
2		8187.600	38.61	2.82	41.43	74.00	32.57	peak
3		10958.600	36.79	6.02	42.81	74.00	31.19	peak
4		12990.100	35.18	11.17	46.35	74.00	27.65	peak
5		15783.200	35.65	12.56	48.21	74.00	25.79	peak
6	*	17257.100	36.59	14.62	51.21	74.00	22.79	peak

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Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		7206.700	43.49	1.53	45.02	74.00	28.98	peak
2		9615.600	38.22	4.87	43.09	74.00	30.91	peak
3		11686.200	37.63	8.08	45.71	74.00	28.29	peak
4		13056.400	38.26	11.82	50.08	74.00	23.92	peak
5		16651.900	35.88	14.48	50.36	74.00	23.64	peak
6	*	17804.500	37.82	15.19	53.01	74.00	20.99	peak

Note:
1.From 18GHz to 26.5GHz,the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2.Since the peak value is less than the limit of the AVG value, there is no AVG data.

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5. EUT TEST PHOTOS

Emissions in frequency bands (below 1GHz)


Emissions in frequency bands (above 1GHz)


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6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

External

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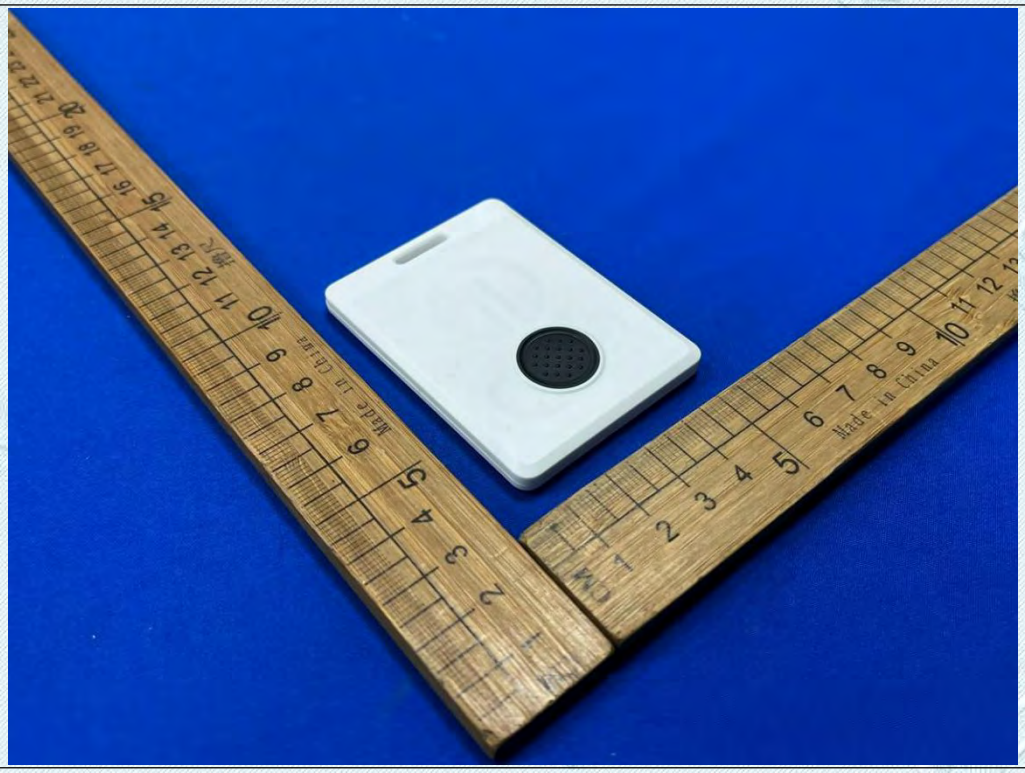

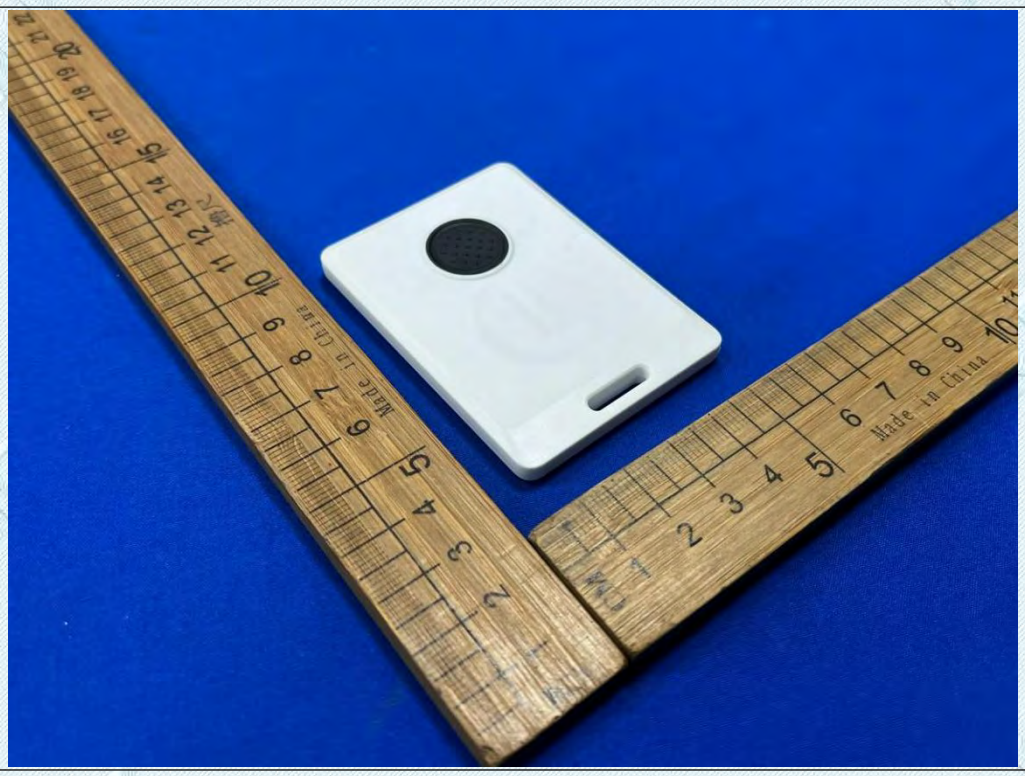

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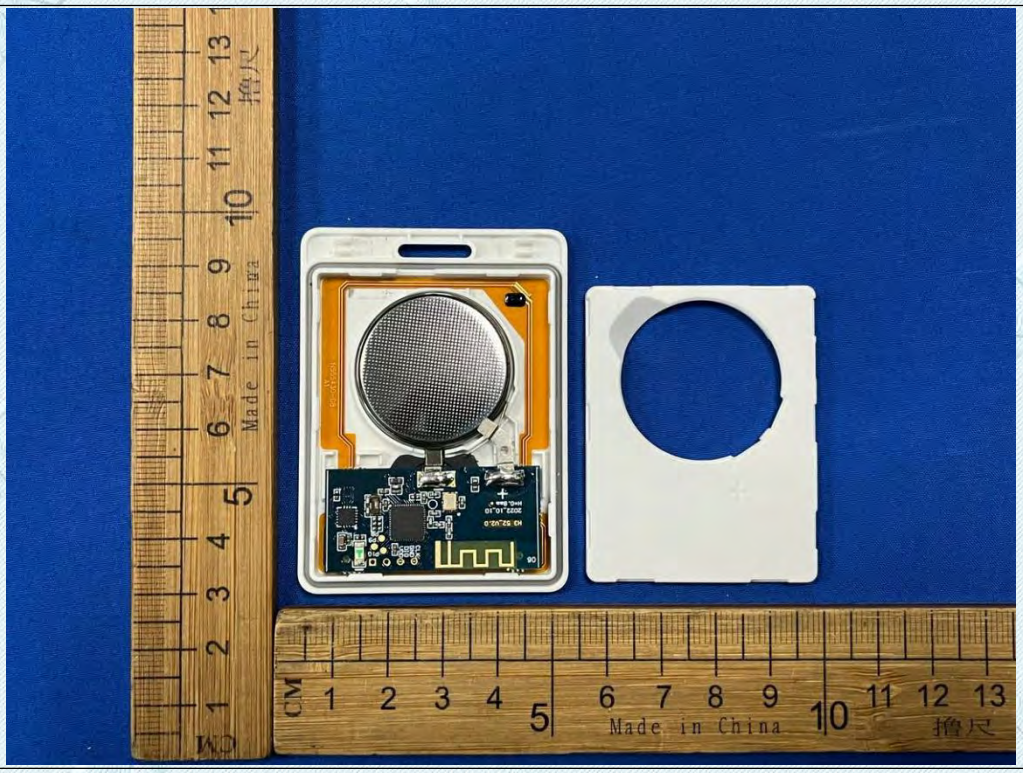
Internal

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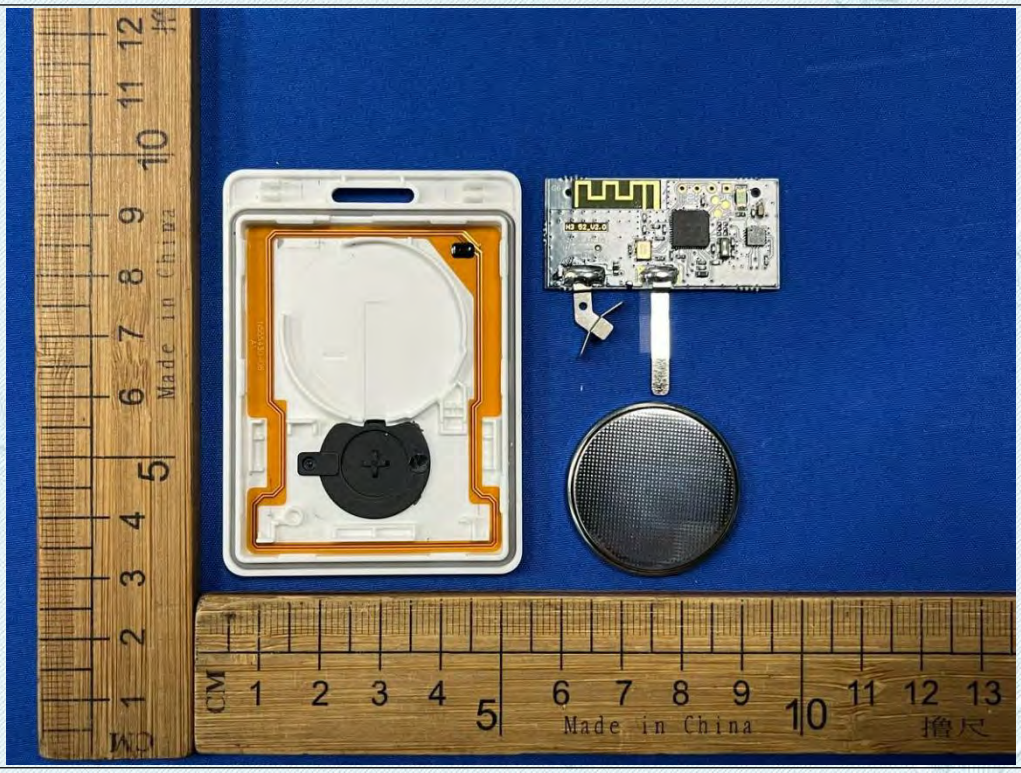

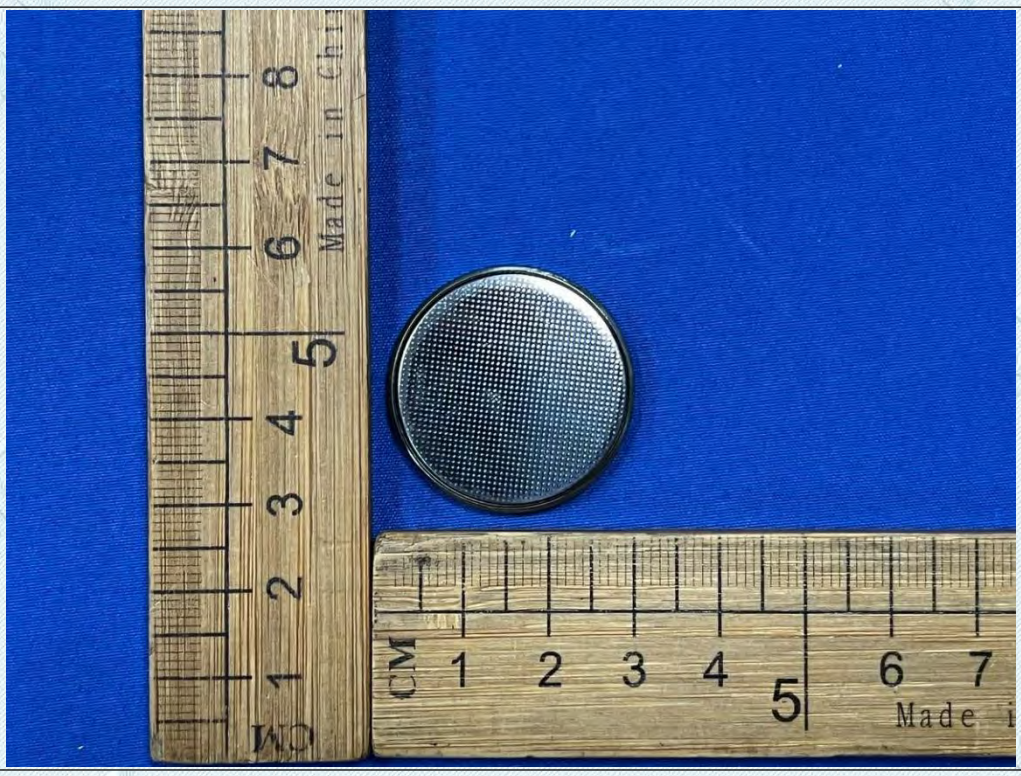

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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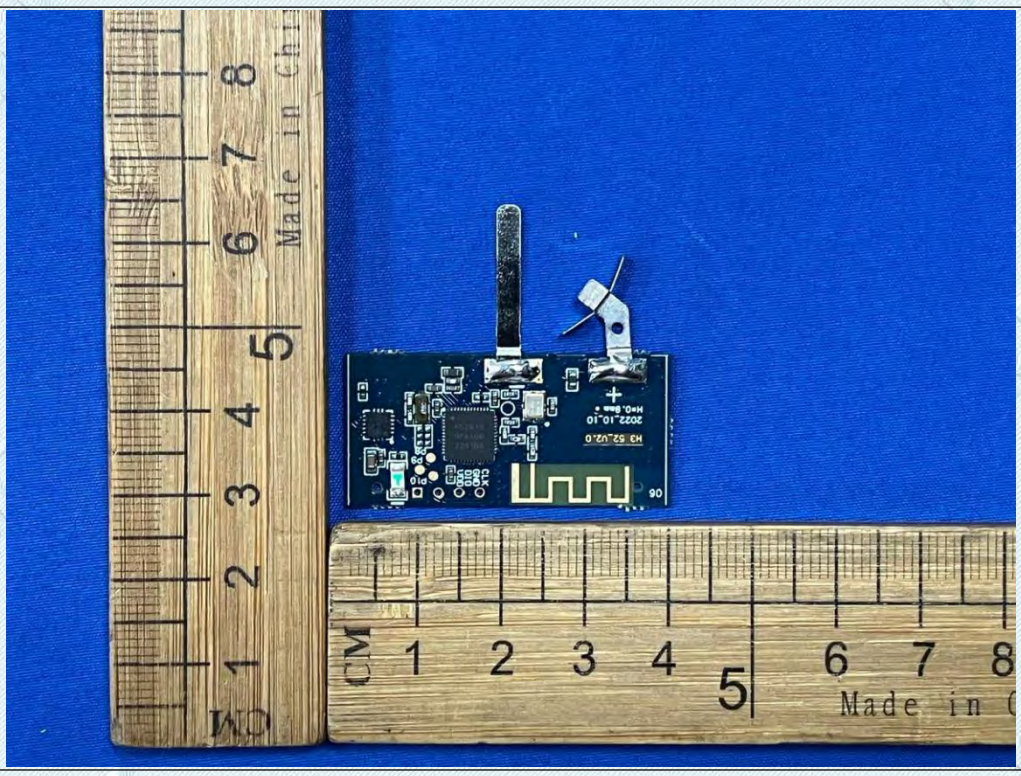

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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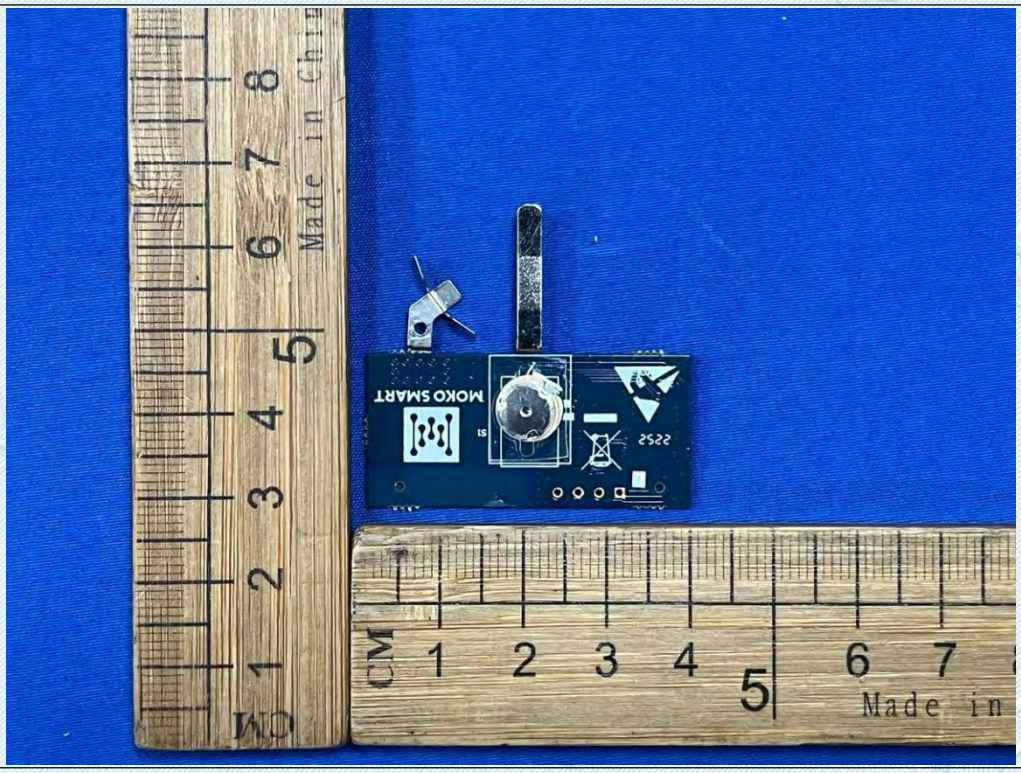

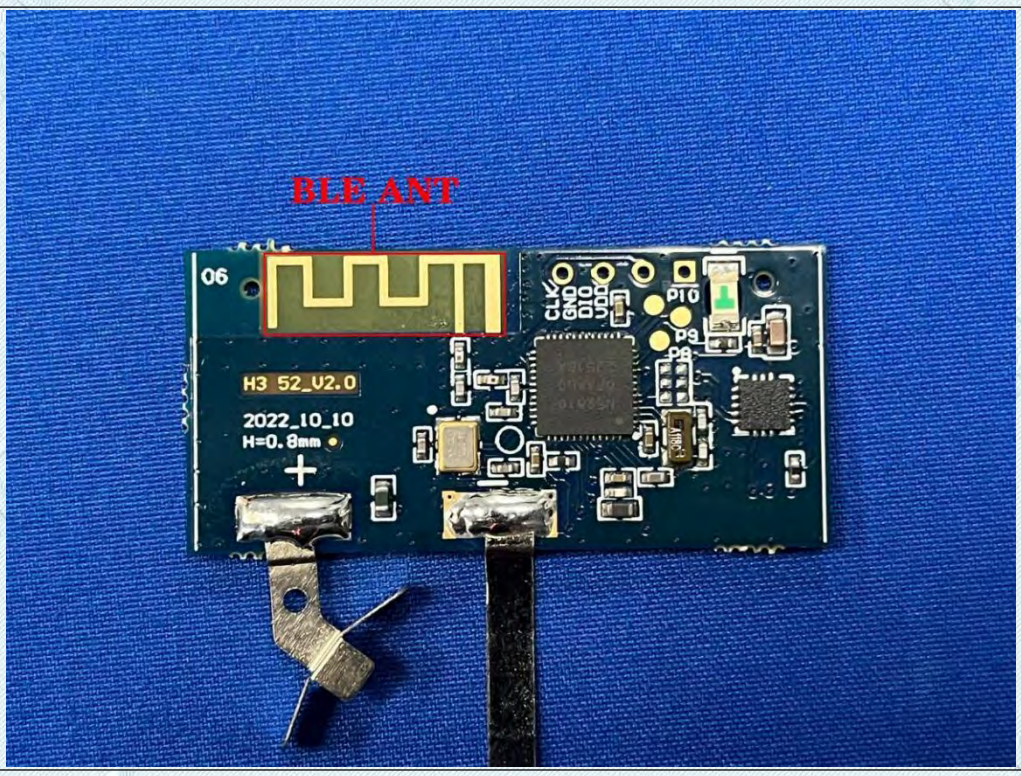

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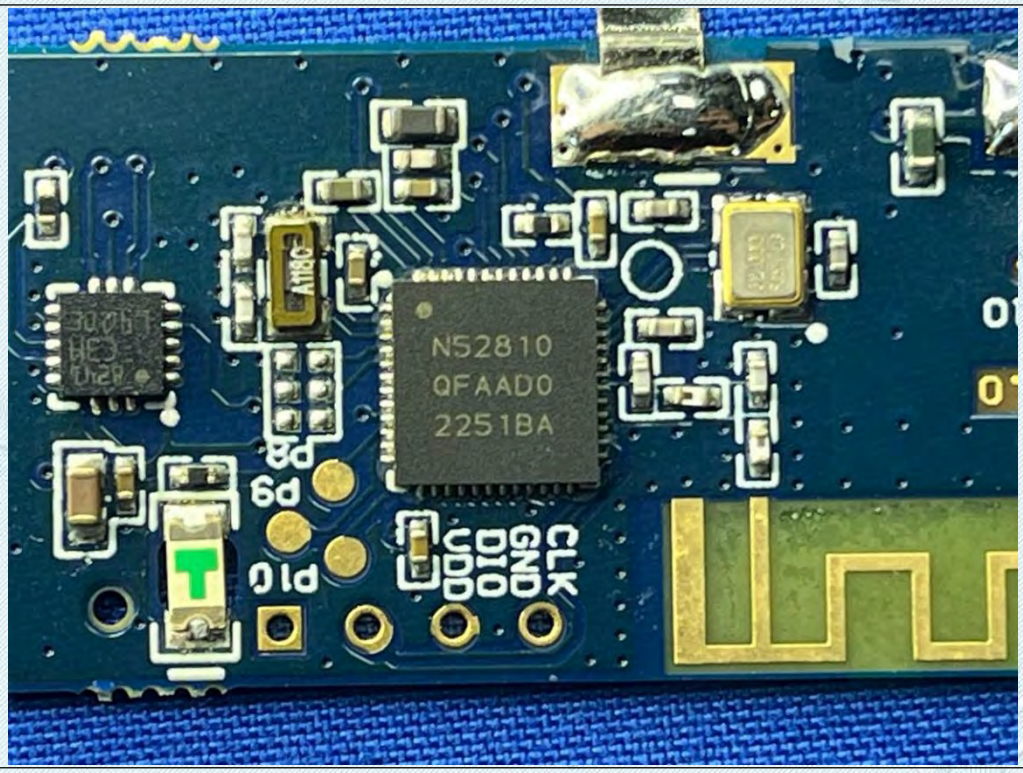

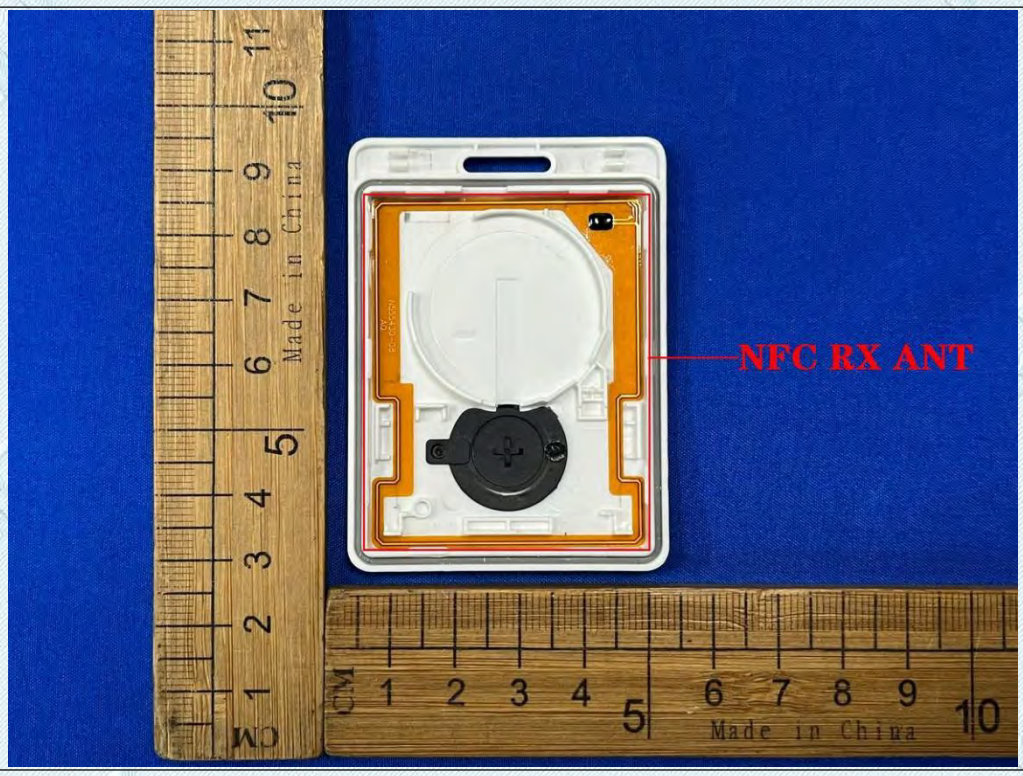

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6.1. Appendix A: DTS Bandwidth

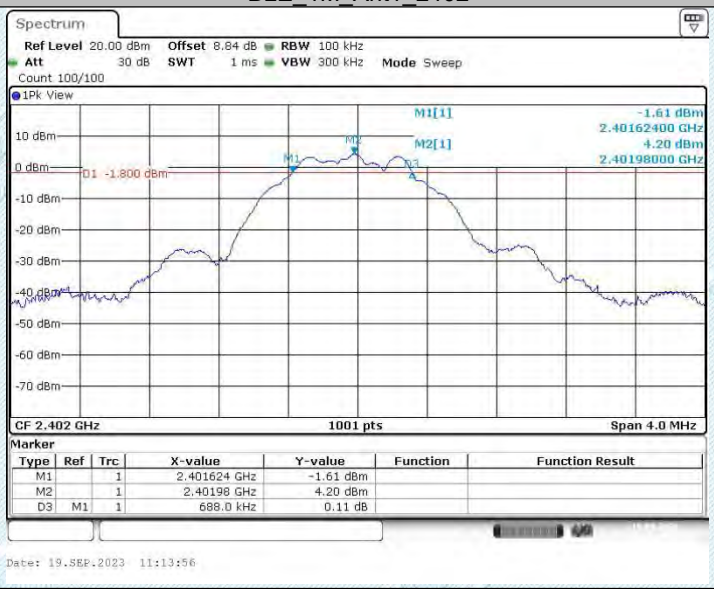
6.1.1. Test Result

TestMode	Antenna	Freq[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.69	2401.62	2402.31	0.5	PASS
		2440	0.69	2439.62	2440.31	0.5	PASS
		2480	0.69	2479.62	2480.31	0.5	PASS
BLE_2M	Ant1	2402	1.18	2401.36	2402.54	0.5	PASS
		2440	1.18	2439.35	2440.54	0.5	PASS
		2480	1.18	2479.36	2480.54	0.5	PASS

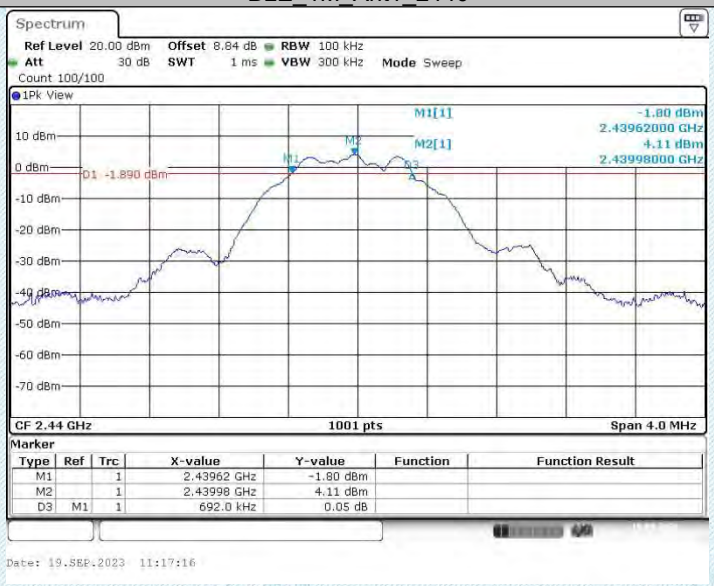
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.1.2. Test Graphs

BLE_1M_Ant1_2402

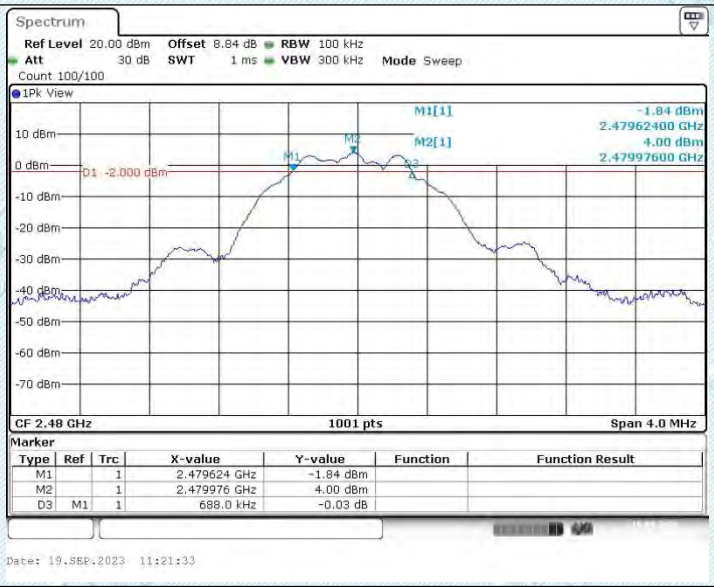


BLE_1M_Ant1_2440

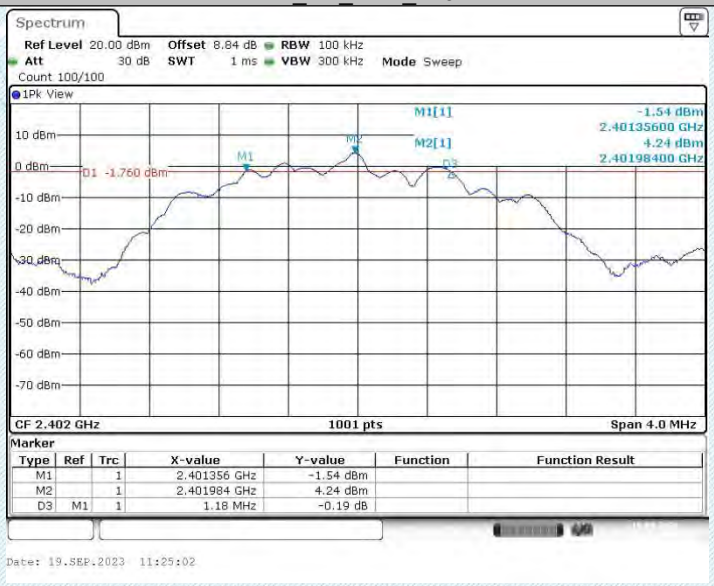


BLE_1M_Ant1_2480

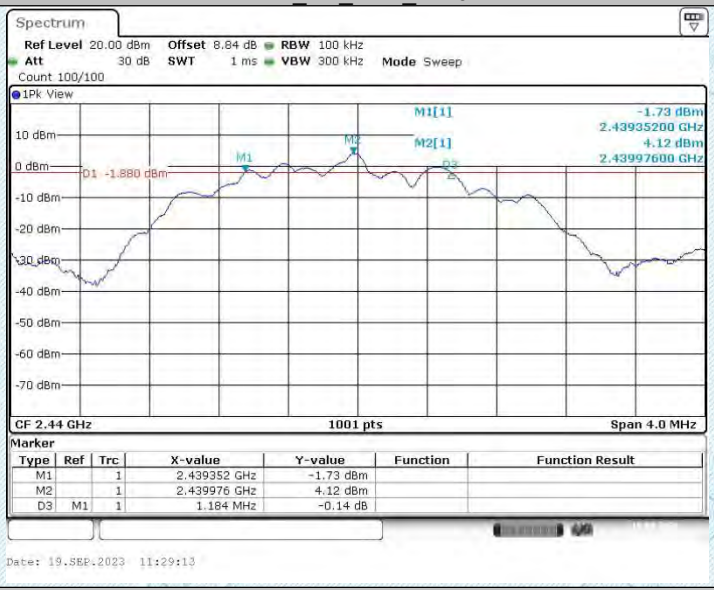
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_2402

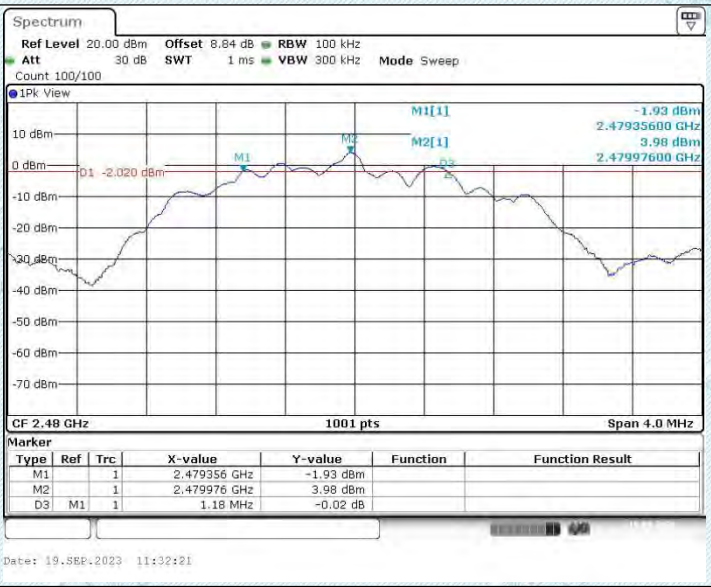


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.2. Appendix B: Occupied Channel Bandwidth

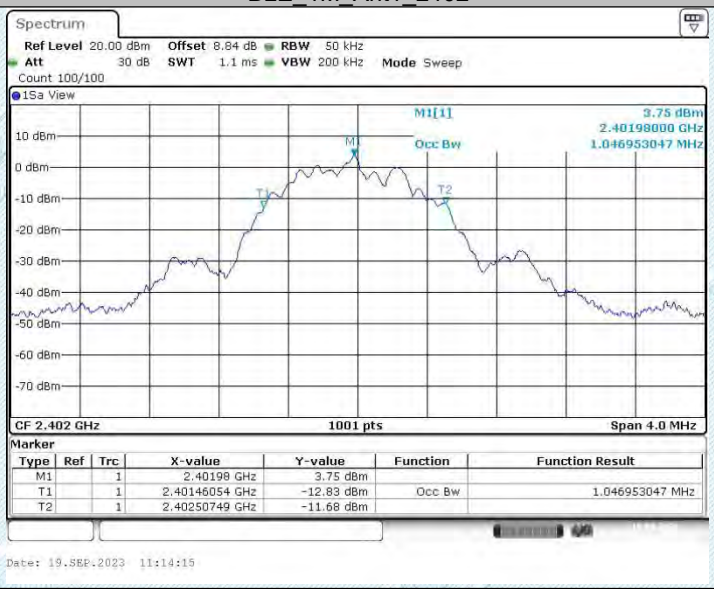
6.2.1. Test Result

TestMode	Antenna	Freq[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.047	2401.461	2402.507	---	PASS
		2440	1.047	2439.461	2440.507	---	PASS
		2480	1.051	2479.457	2480.507	---	PASS
BLE_2M	Ant1	2402	2.062	2400.957	2403.019	---	PASS
		2440	2.062	2438.957	2441.019	---	PASS
		2480	2.066	2478.953	2481.019	---	PASS

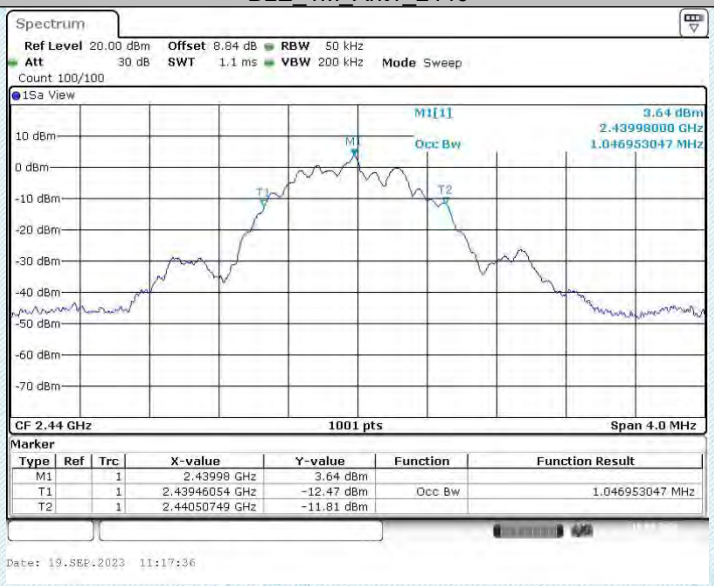
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.2.2. Test Graphs

BLE_1M_Ant1_2402

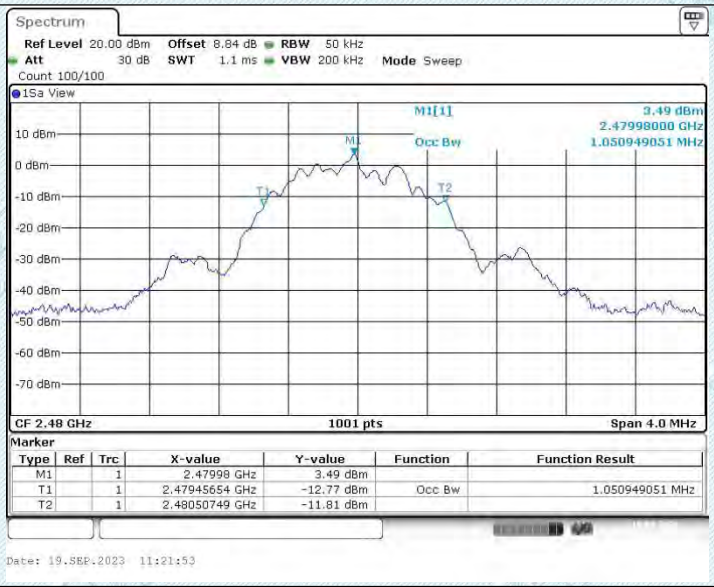


BLE_1M_Ant1_2440

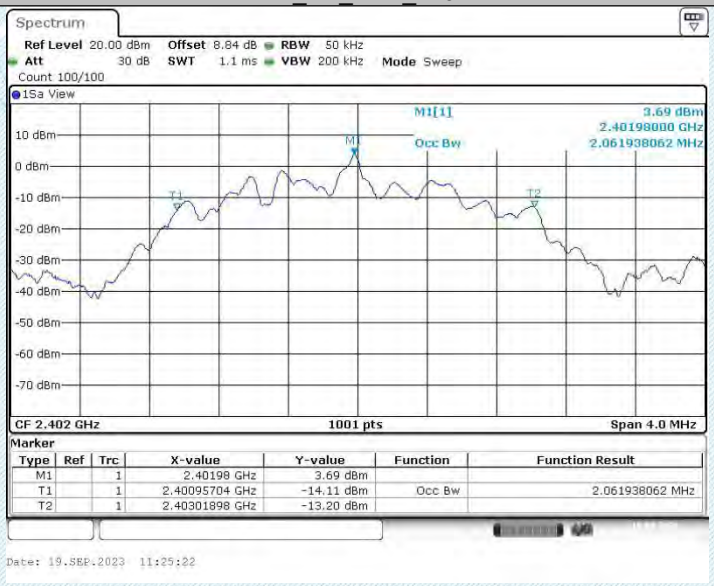


BLE_1M_Ant1_2480

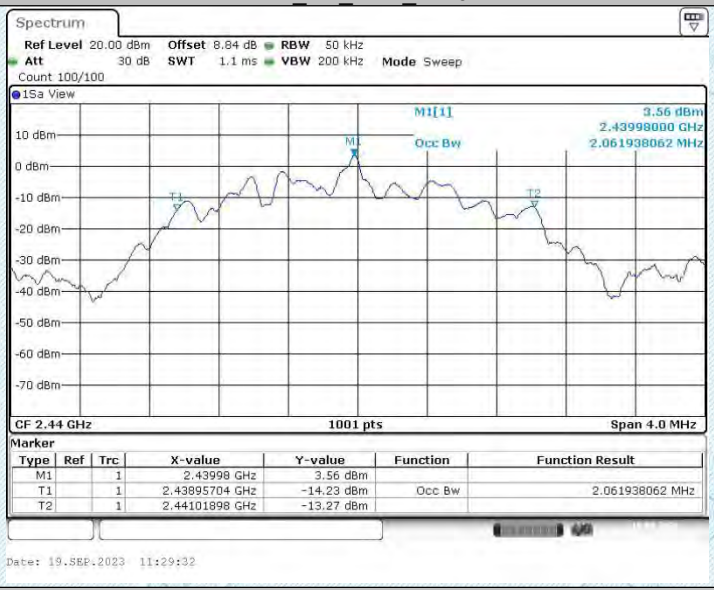
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_2402

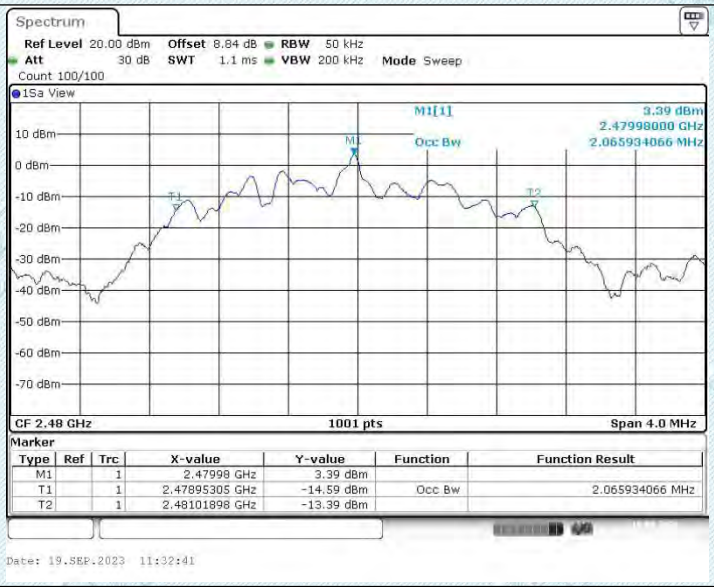


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.3. Appendix C: Maximum conducted output power

6.3.1. Test Result Peak

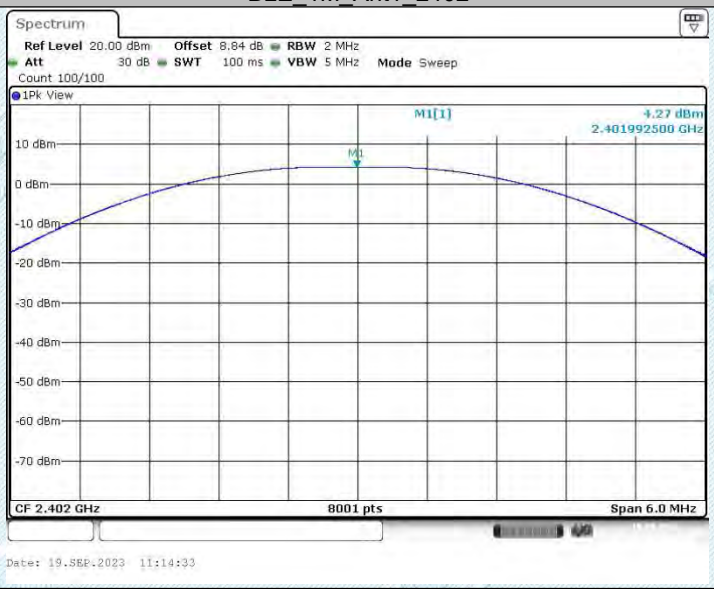
TestMode	Antenna	Freq[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	4.27	≤30	5.97	≤36	PASS
		2440	4.19	≤30	5.89	≤36	PASS
		2480	4.05	≤30	5.75	≤36	PASS
BLE_2M	Ant1	2402	4.32	≤30	6.02	≤36	PASS
		2440	4.18	≤30	5.88	≤36	PASS
		2480	4.05	≤30	5.75	≤36	PASS

Note:
Antenna Gain:1.7dBi
EIRP=Conducted Power+Antenna Gain

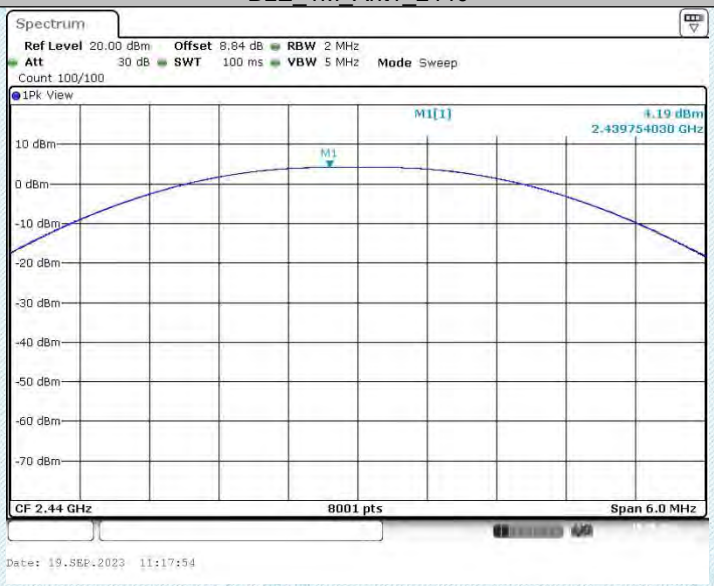
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.3.2. Test Graphs Peak

BLE_1M_Ant1_2402

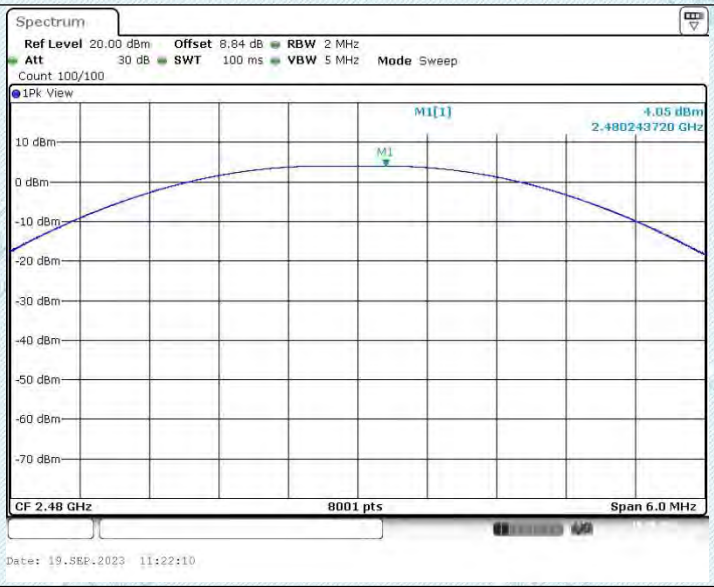


BLE_1M_Ant1_2440

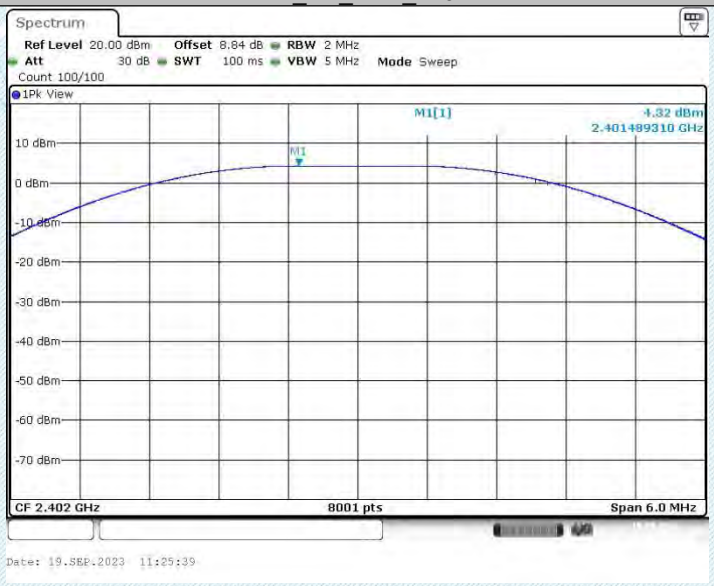


BLE_1M_Ant1_2480

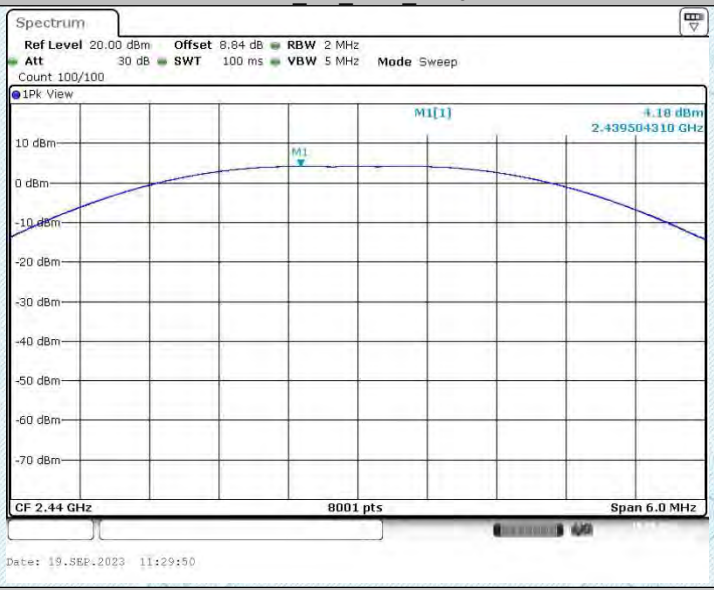
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_2402

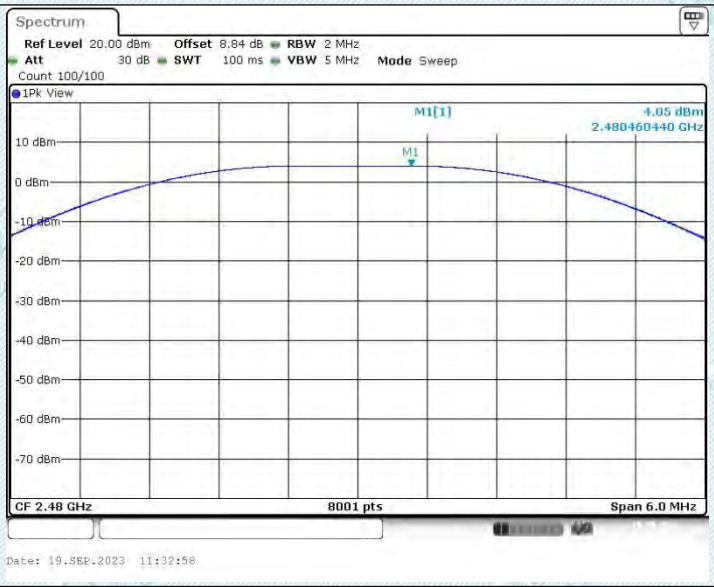


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.4. Appendix D: Maximum power spectral density

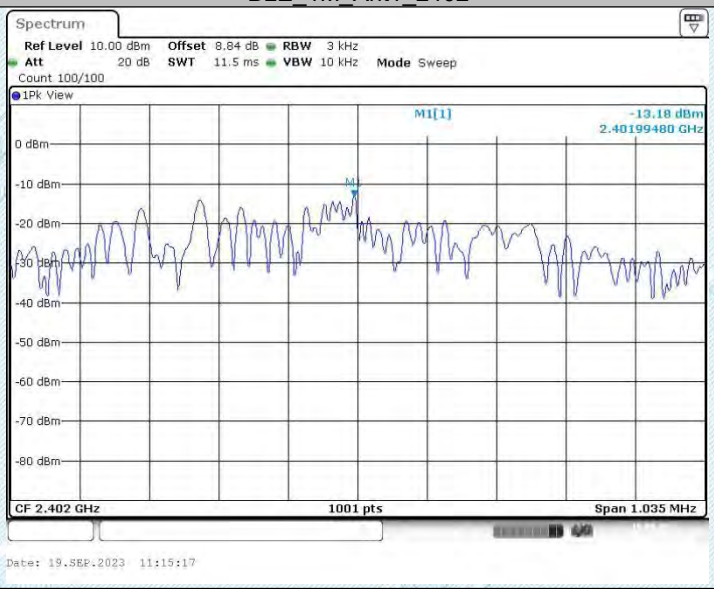
6.4.1. Test Result

TestMode	Antenna	Freq[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-13.18	≤8.00	PASS
		2440	-13.18	≤8.00	PASS
		2480	-13.56	≤8.00	PASS
BLE_2M	Ant1	2402	-15.12	≤8.00	PASS
		2440	-15.17	≤8.00	PASS
		2480	-15.34	≤8.00	PASS

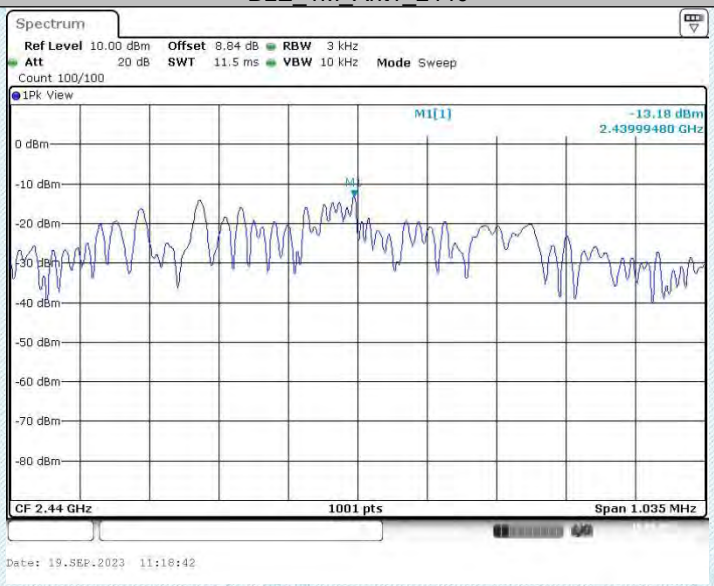
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.4.2. Test Graphs

BLE_1M_Ant1_2402

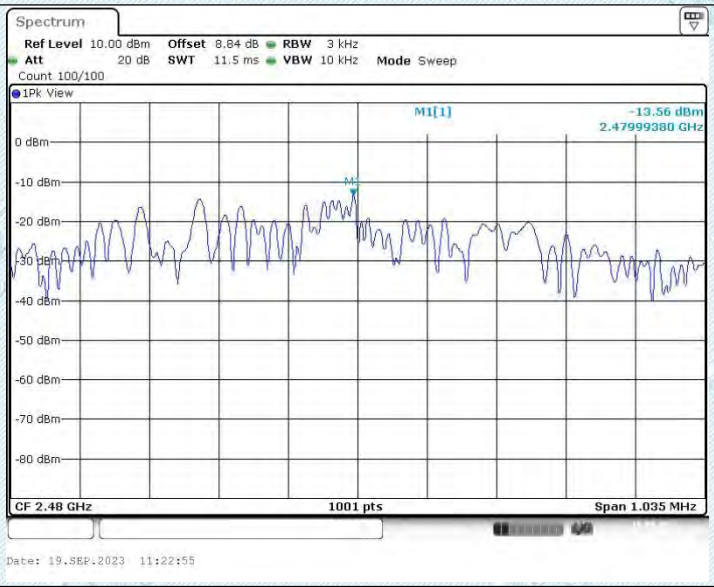


BLE_1M_Ant1_2440

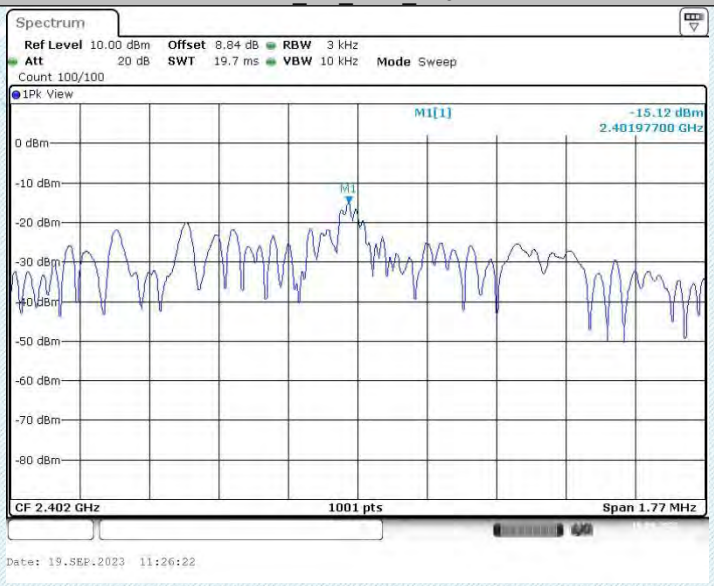


BLE_1M_Ant1_2480

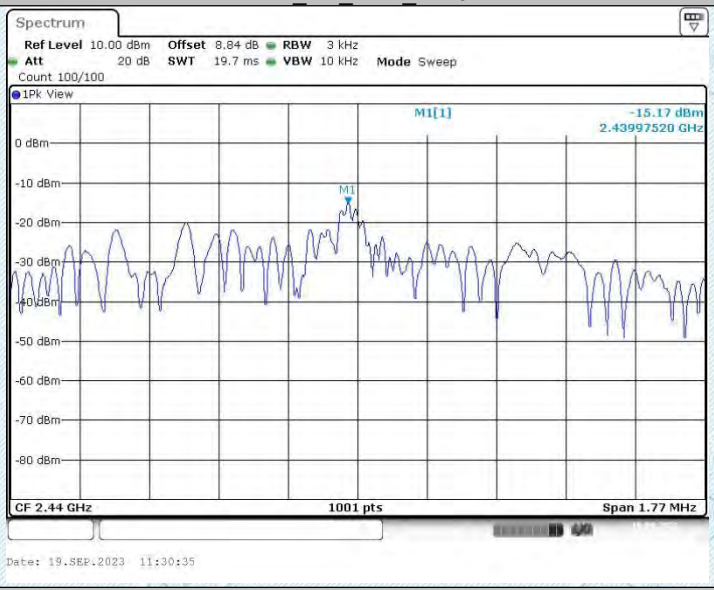
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_2402

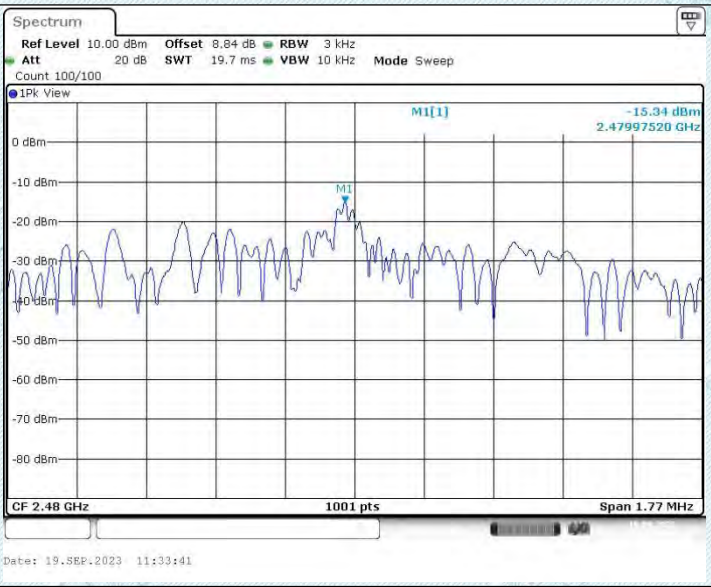


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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6.5. ppendix E: Reference level measurement

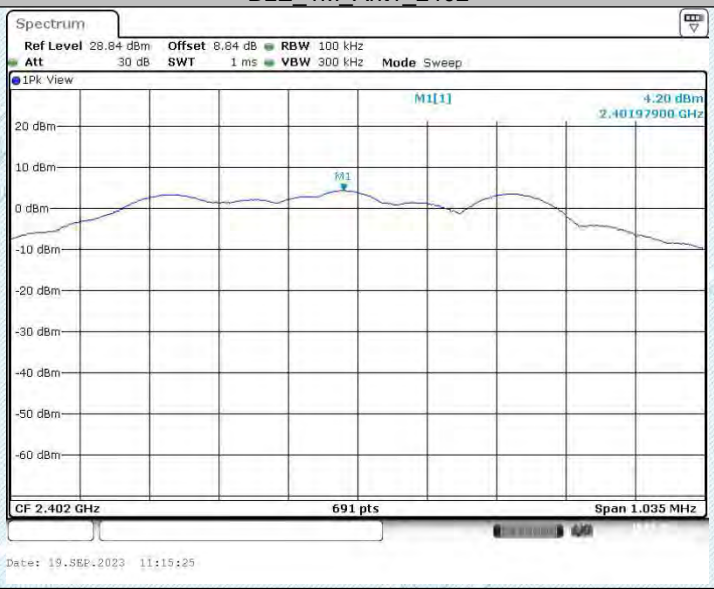
6.5.1. Test Result

TestMode	Antenna	Freq[MHz]	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2401.98	4.20
		2440	2439.98	4.10
		2480	2479.98	3.97
BLE_2M	Ant1	2402	2401.98	4.22
		2440	2439.98	4.08
		2480	2479.98	3.97

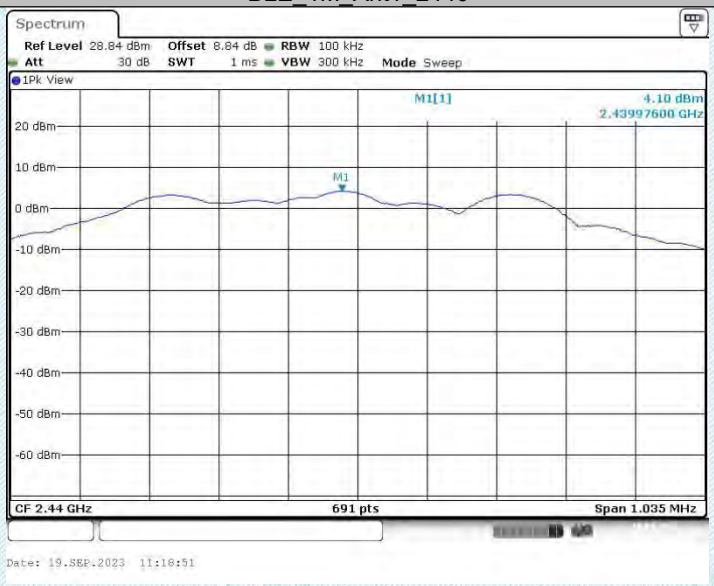
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.5.2. Test Graphs

BLE_1M_Ant1_2402

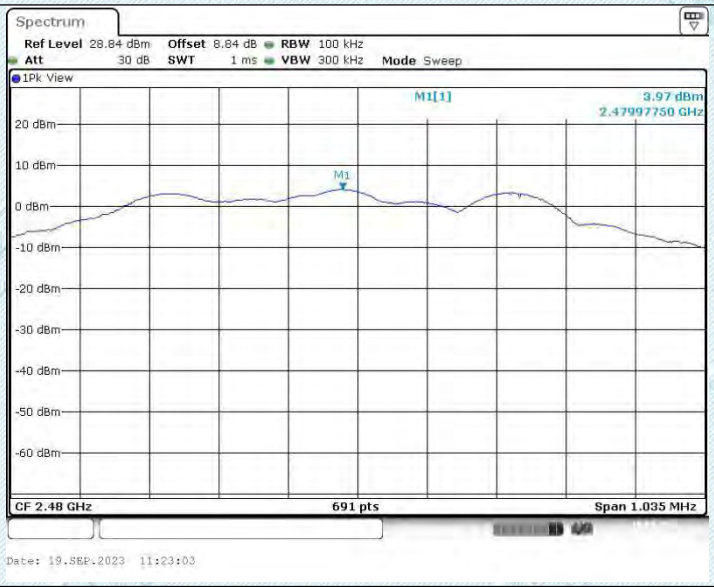


BLE_1M_Ant1_2440

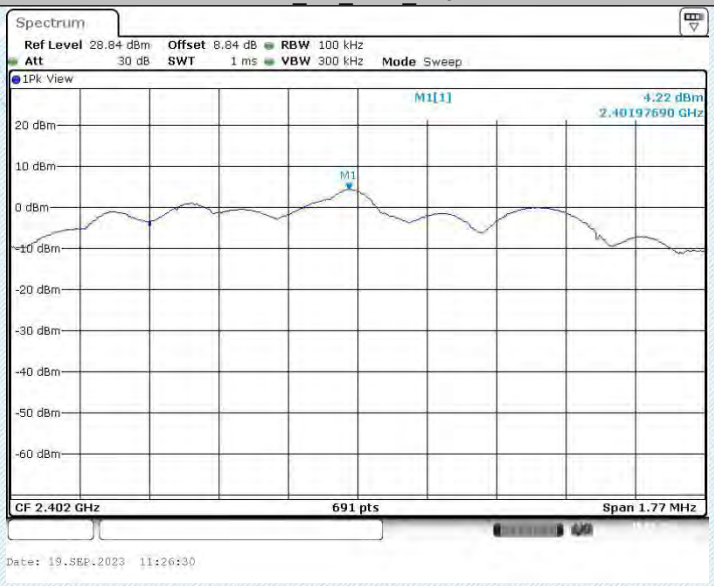


BLE_1M_Ant1_2480

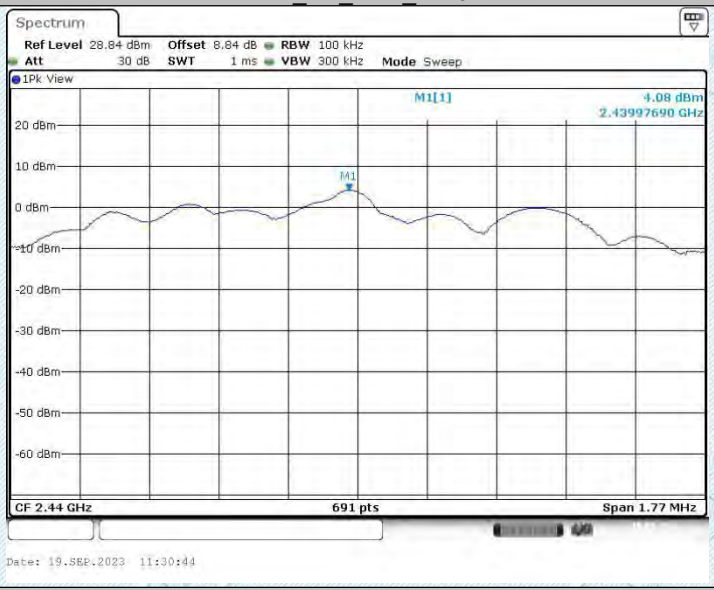
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_2402

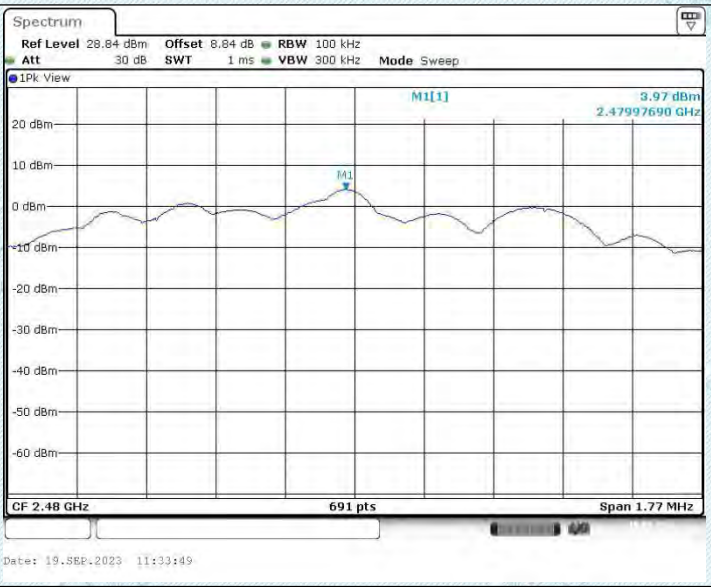


BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.6. Appendix F: Band edge measurements

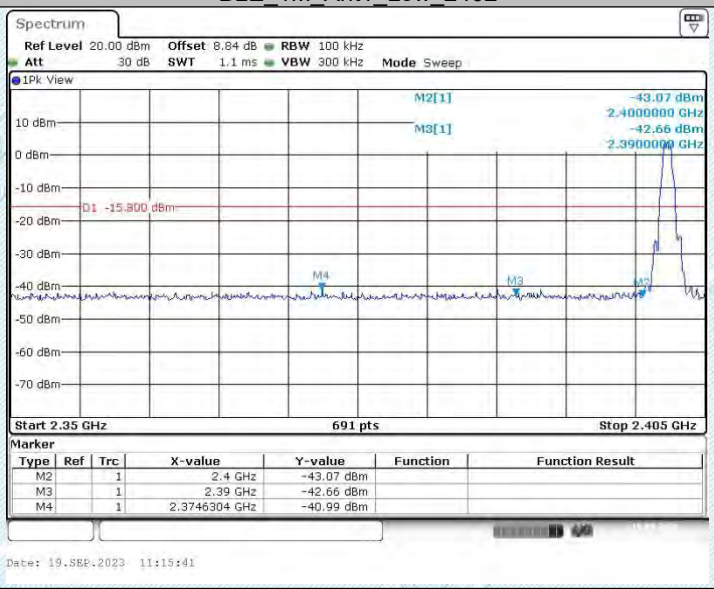
6.6.1. Test Result

TestMode	Antenna	ChName	Freq[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	4.20	-40.99	≤-15.8	PASS
		High	2480	3.97	-39.92	≤-16.03	PASS
BLE_2M	Ant1	Low	2402	4.22	-27.39	≤-15.78	PASS
		High	2480	3.97	-40.97	≤-16.03	PASS

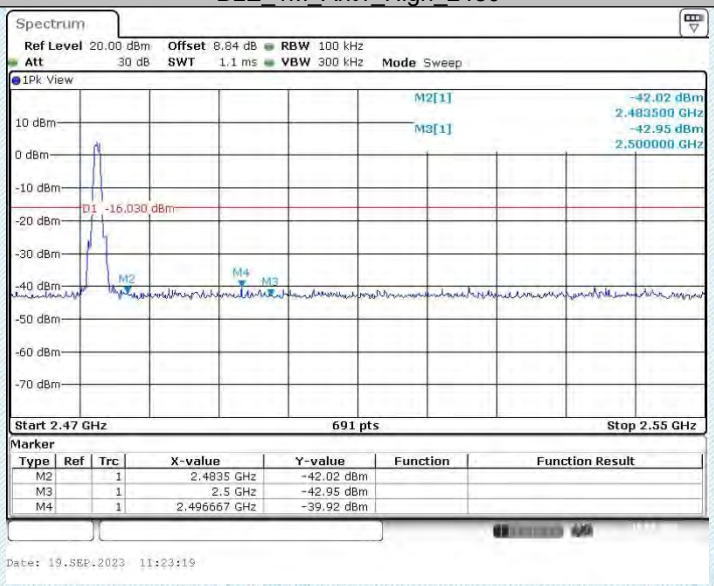
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.6.2. Test Graphs

BLE_1M_Ant1_Low_2402

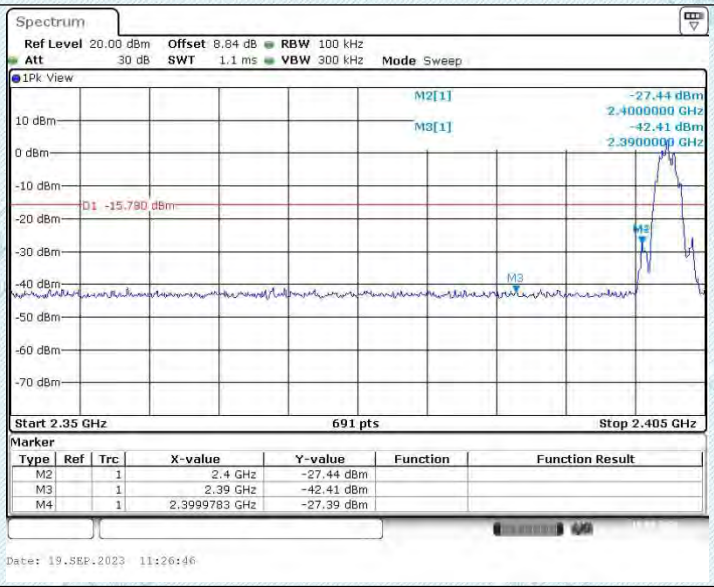


BLE_1M_Ant1_High_2480

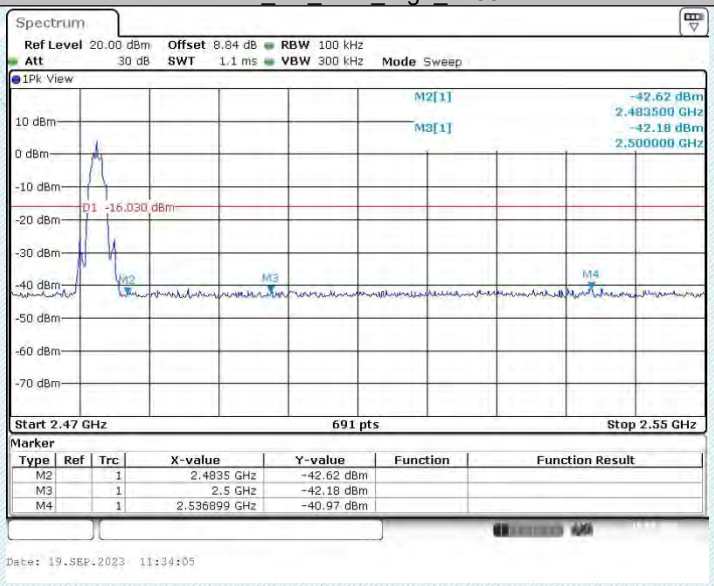


BLE_2M_Ant1_Low_2402

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



BLE_2M_Ant1_High_2480



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com

6.7. Appendix G: Conducted Spurious Emission

6.7.1. Test Result

TestMode	Antenna	Freq[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	4.20	-51.65	≤-15.8	PASS
			1000~26500	4.20	-44.93	≤-15.8	PASS
		2440	30~1000	4.10	-52.53	≤-15.9	PASS
			1000~26500	4.10	-46.24	≤-15.9	PASS
		2480	30~1000	3.97	-52.57	≤-16.03	PASS
			1000~26500	3.97	-46.71	≤-16.03	PASS
BLE_2M	Ant1	2402	30~1000	4.22	-52.01	≤-15.78	PASS
			1000~26500	4.22	-44.95	≤-15.78	PASS
		2440	30~1000	4.08	-52.07	≤-15.92	PASS
			1000~26500	4.08	-45.42	≤-15.92	PASS
		2480	30~1000	3.97	-52.04	≤-16.03	PASS
			1000~26500	3.97	-46.43	≤-16.03	PASS

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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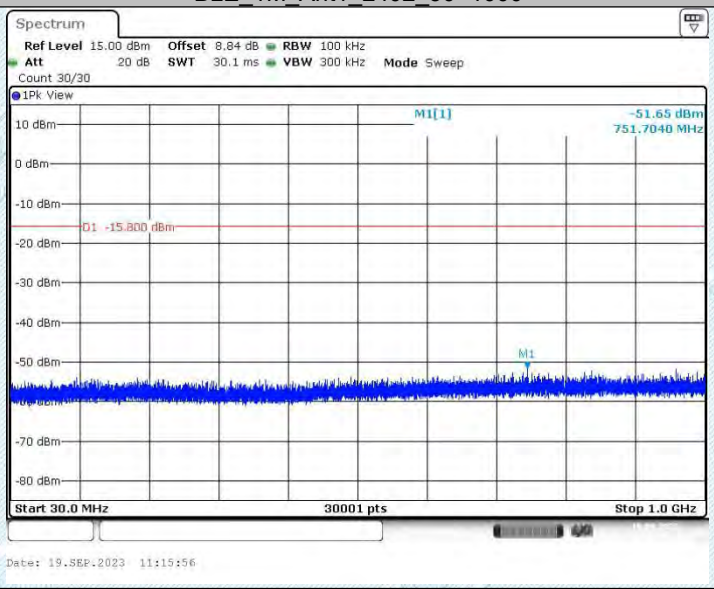
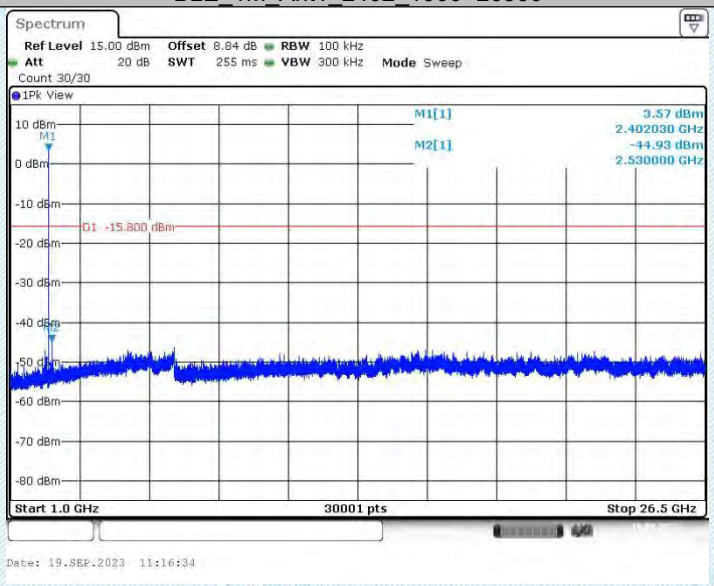
6.7.2. Test Graphs

BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_30~1000

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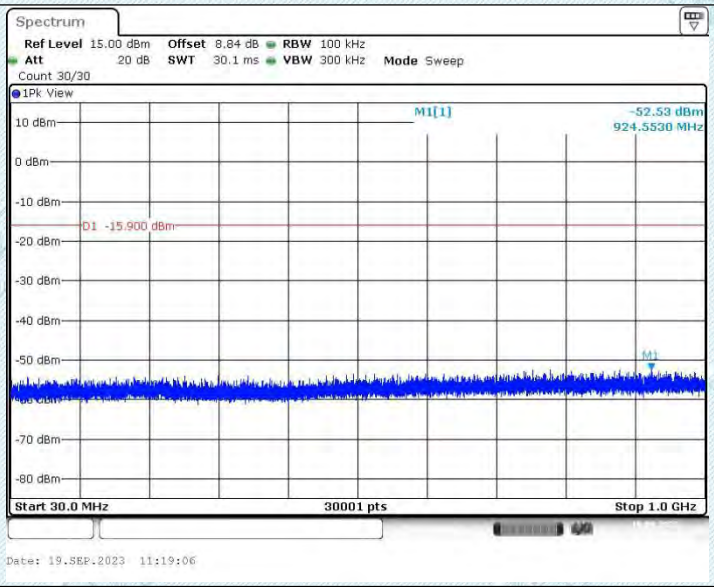
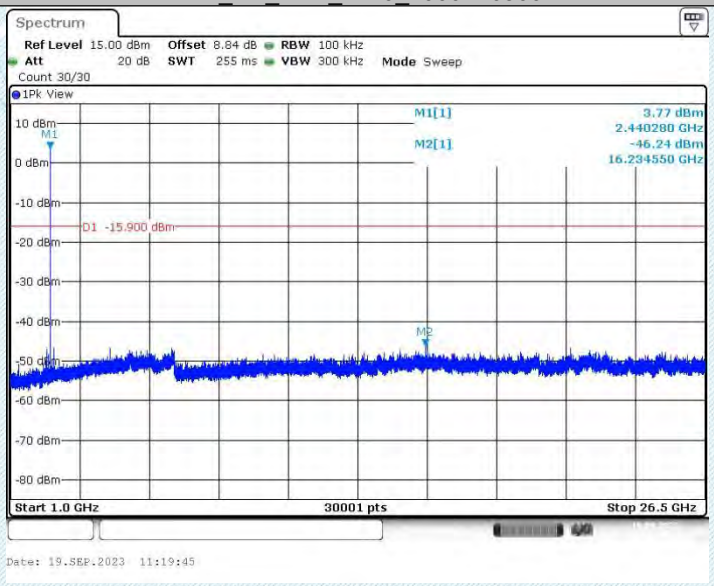
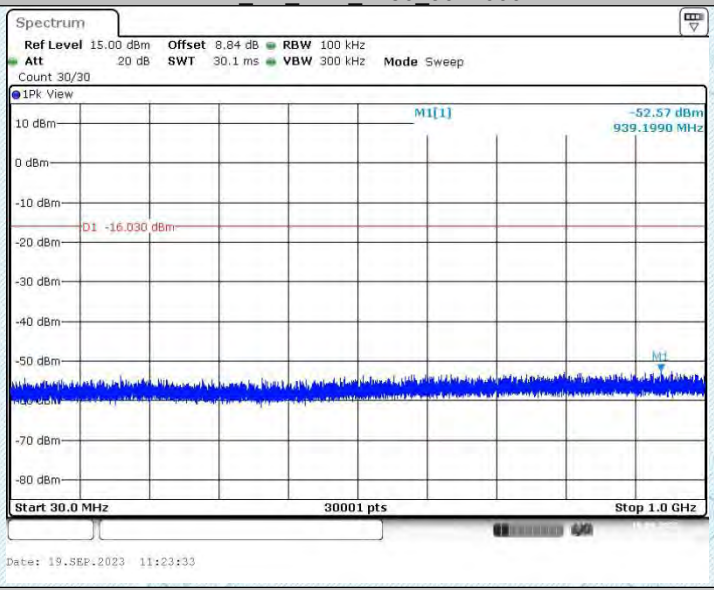


BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_30~1000



BLE_1M_Ant1_2480_1000~26500

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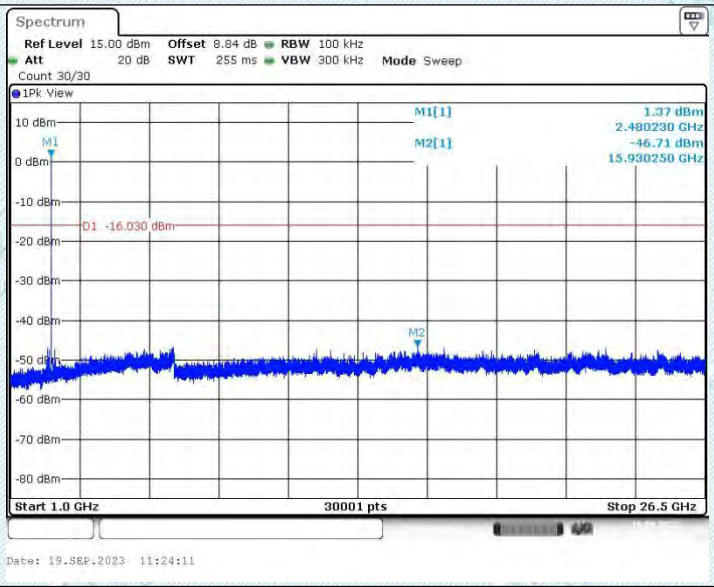
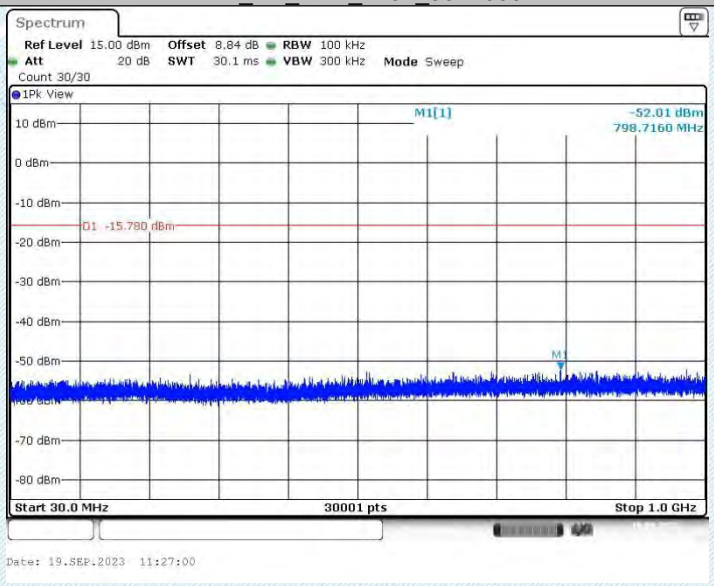
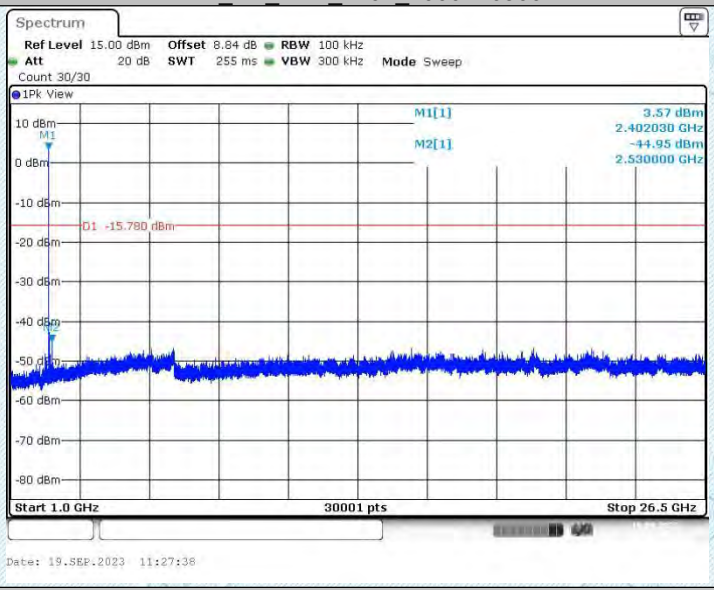


BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~26500



BLE_2M_Ant1_2440_30~1000

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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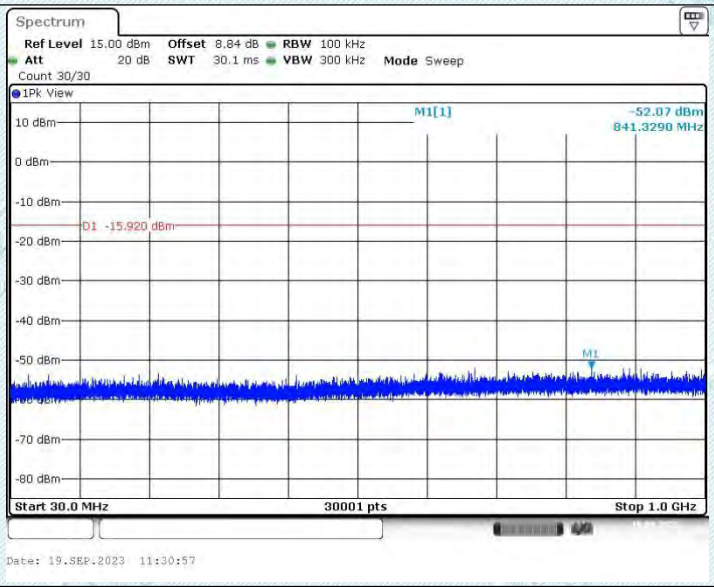
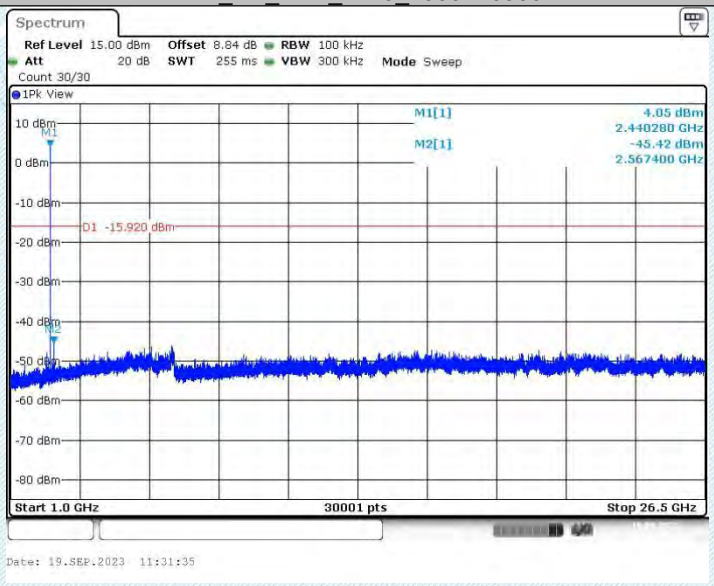
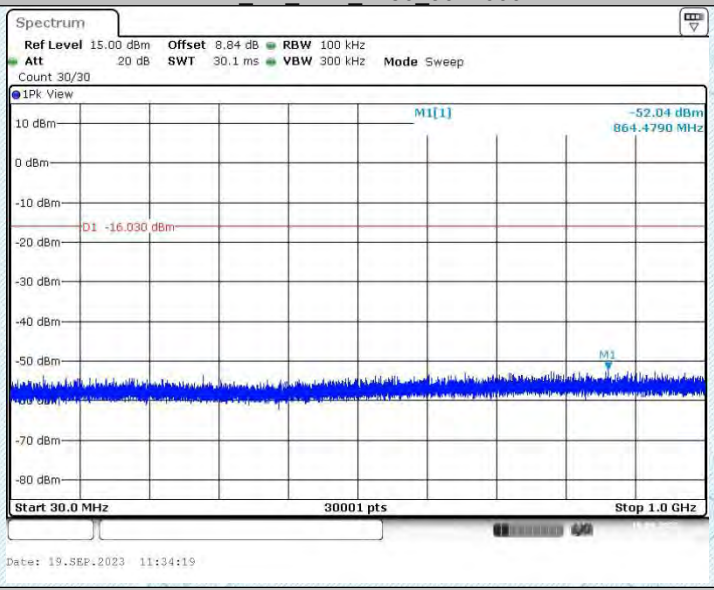


BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500

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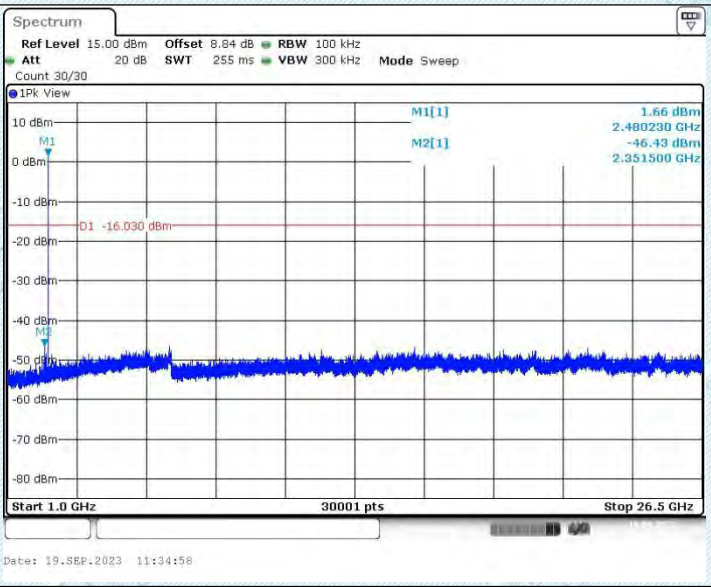

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6.8. Appendix H: Duty Cycle

6.8.1. Test Result

TestMode	Antenna	Freq[MHz]	ON Time [ms]	Period [ms]	DC [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.11	0.63	17.46	---	PASS
		2440	0.11	0.63	17.46	---	PASS
		2480	0.11	0.63	17.46	---	PASS
BLE_2M	Ant1	2402	0.06	0.62	9.68	---	PASS
		2440	0.06	0.62	9.68	---	PASS
		2480	0.06	0.62	9.68	---	PASS

DC=ON Time/Period*100%

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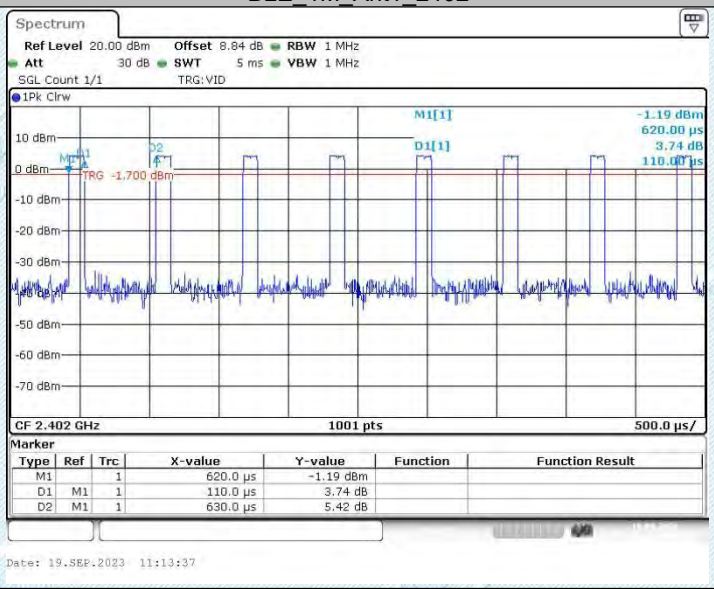
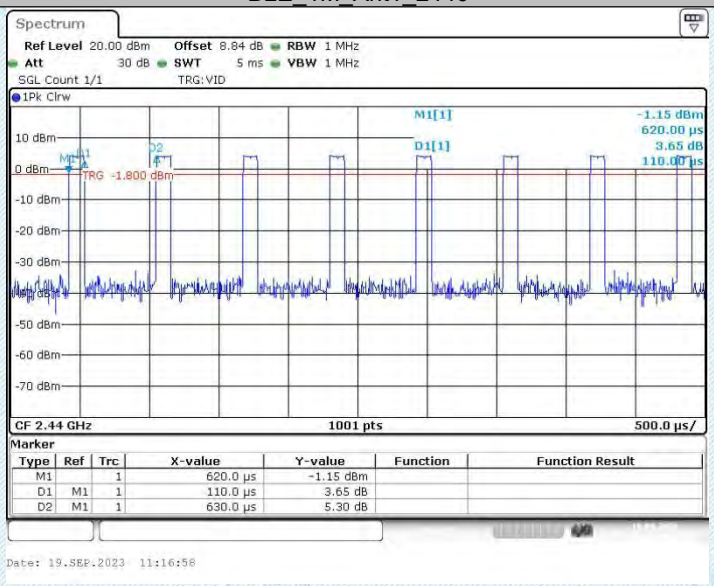
6.8.2. Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China
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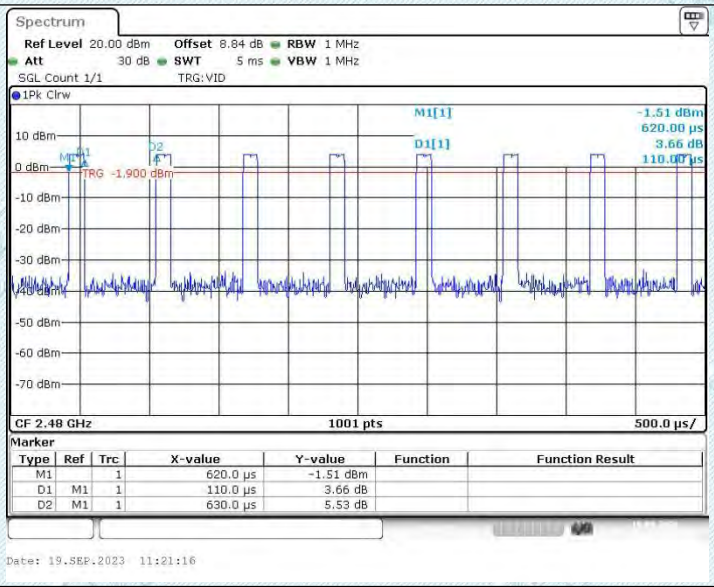
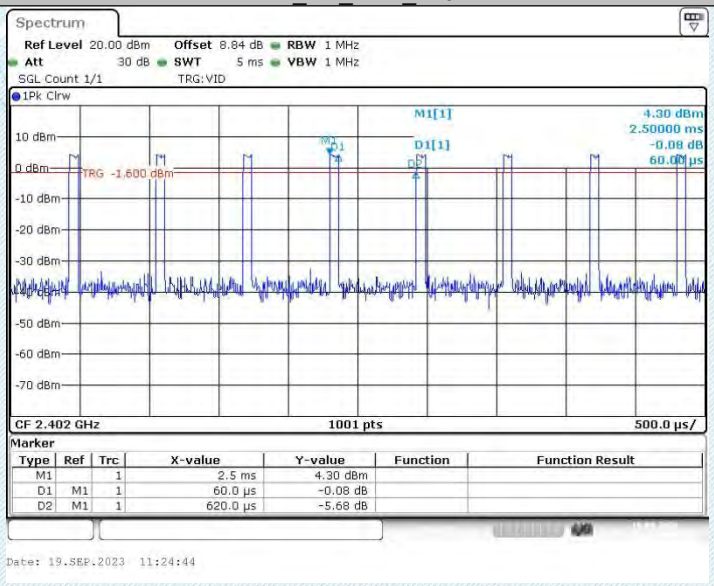
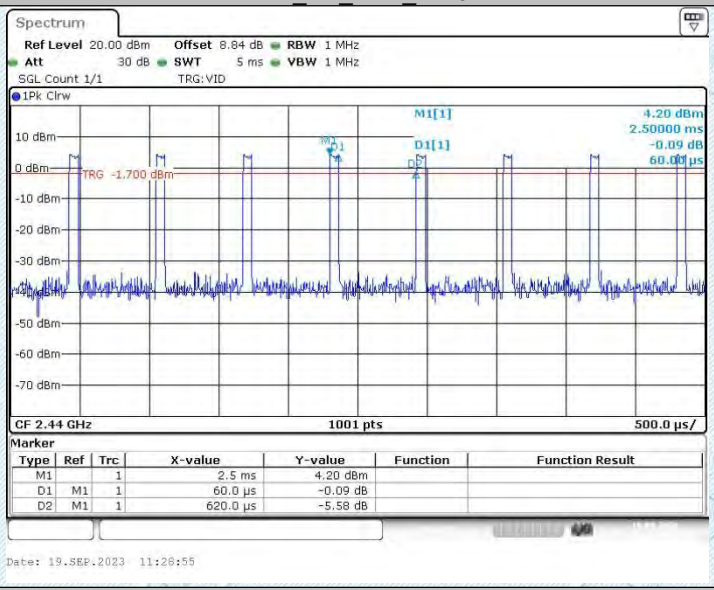


BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

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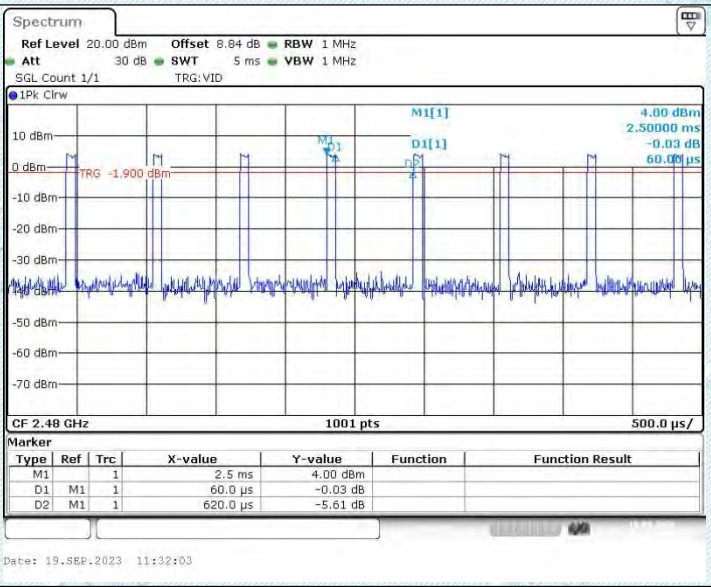

--THE END--

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