

TEST REPORT

Report No..... KS2210S4407E01

FCC ID..... 2A7SL-ZORDAI Z8ULTRA

Applicant..... Shenzhen Zhongdai e-commerce Co., Ltd

Address..... 14,block C,electronic technology building,No.2070 Shennan Middle Road,Shenzhen

Manufacturer..... Shenzhen Zhongdai e-commerce Co., Ltd

Address..... 14,block C,electronic technology building,No.2070 Shennan Middle Road,Shenzhen

Product Name..... ZORDAI Smart wear

Trademark..... ZORDAI

Model/Type reference..... ZORDAI Z8Ultra,
ZORDAI Z8,ZORDAI Z8pro,ZORDAI Z8promax,ZORDAI Z8Ultrapro,ZORDAI Z8Ultramax

Standard..... 47 CFR Part 15.247

Date of Receipt..... October 12, 2022

Date of Test Date..... October 12, 2022 to October 21, 2022

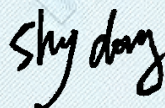
Date of issue..... October 21, 2022

Test result..... Pass

Prepared by:
(Printed name + Signature) pandy pan



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

1.2. Report Version

Revised No.	Date of issue	Description
01	October 21, 2022	Original

1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.247	47 CFR 15.207(a)	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)	Pass
Emissions around the fundamental	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
Emissions in restricted frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
Emissions in restricted frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d)	Pass

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 Requirements for 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
Conducted Emission (150k-30MHz)	$\pm 3.34\text{dB}$
Output Power, Conducted	$\pm 1.4\text{dB}$
PSD, Conducted	$\pm 1.0\text{dB}$
Spurious Emissions, Conducted	$\pm 3.3\text{dB}$
RSE (1-18GHz)	$\pm 4.68\text{dB}$
RSE (30-1000MHz)	$\pm 5.7\text{dB}$
RSE (18-40GHz)	$\pm 5.18\text{dB}$

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

2. GENERAL INFORMATION

2.1. General Description Of EUT

Product Name:	ZORDAI Smart wear
Trademark:	ZORDAI
Model / Type reference:	ZORDAI Z8Ultra, ZORDAI Z8,ZORDAI Z8pro,ZORDAI Z8promax,ZORDAI Z8Ultrapro,ZORDAI Z8 Ultramax
Model Difference:	The only difference between product models is the color.Different model names are available to meet market demands. Other power supply methods, internal structures, circuits and key components are the same, and do not affect safety and electromagnetic compatibility performance.
Power Supply:	DC3.7V from the battery
Operation Frequency:	2402MHz to 2480MHz
Number of Channels:	40
Modulation Type:	GFSK
Antenna Type:	Internal Antenna
Antenna Gain:	1.4dBi

2.2. Accessory Equipment Information

The EUT was tested as an independent device.

2.3. Description of Test Modes

No.	Title	Description of Mode
TM1	TX mode	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.

2.4. Measurement Instruments List

Conducted Emission at AC power line				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
ISN	Schwarzbeck	CAT5 8158	227	2023-03-04
EMF Test Fixture	Schwarzbeck	VDHH 9502	176	2023-03-06
Manual RF Switch	JS TOYO	/	MSW-01/002	2023-03-04
EMI Test Receiver	R&S	ESR	102524	2023-03-04
LISN	R&S	ENV432	1326.6105.02	2023-03-04
Power Absorbing Clamp	R&S	MDS-21	100925	2023-03-06
Triple Loop Antenna	Beijin ZHINAN	ZN30401	17028	2023-03-04
Hygrothermograph	/	HTC-1	/	2023-03-07
High Voltage Probe	Tektronix	P6015A	X070429	2023-03-04
Flexible current probe	DKFLEX	DK-7000	181327	2023-03-04
LISN	Schwarzbeck	NNLK 8121	8121-442	2023-03-04
Current Sensor Probe	TESEQ	CSP9160A	71674	2023-03-04
Capacitive Voltage Probe	TESEQ	CPV2200A	27045	2023-03-04
Click Analyzer	SCHAFFNER	DIA1512D	5244	2023-03-04
Digital Multimeter	FLUKE	17B+	38830666WS	2023-03-04
854 shield room	JS TOYO Corporation	854	/	2024-11-24

Occupied Bandwidth				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40-N	101798	2023-03-04
Wideband Radio Communication Tester	R&S	CMW500	157282	2023-03-04
Vector Signal Generator	Agilent	N5182A	MY50142520	2023-03-04
Analog Signal Generator	HP	83752A	3344A00337	2023-03-04
RF Control Unit	Tonscend	JS0806-2	/	2023-03-04
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2023-03-04
Spectrum Analyzer	HP	8593E	3831U02087	2023-03-04
Climate Chamber	Angul	AGNH80L	1903042120	2023-03-04
Hygrothermograph	Anymetre	JB913	/	2023-03-07
Coaxial Cable	BEBES	A40-2.92M2.92 F-4.5M	1907021	2023-03-04
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2023-03-04
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-92 0-188	09203401	2023-03-04
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G-187	09203403	2023-03-04
Shielding box	Gxiong	GX-5915A	2201113	2023-04-23

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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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Audio Analyzer	R&S	UPL16	100001	2023-03-04
Wideband Radio Communication Tester	R&S	CMU200	115297	2023-03-04

Maximum Conducted Output Power				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40-N	101798	2023-03-04
Wideband Radio Communication Tester	R&S	CMW500	157282	2023-03-04
Vector Signal Generator	Agilent	N5182A	MY50142520	2023-03-04
Analog Signal Generator	HP	83752A	3344A00337	2023-03-04
RF Control Unit	Tonscend	JS0806-2	/	2023-03-04
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2023-03-04
Spectrum Analyzer	HP	8593E	3831U02087	2023-03-04
Climate Chamber	Angul	AGNH80L	1903042120	2023-03-04
Hygrothermograph	Anymetre	JB913	/	2023-03-07
Coaxial Cable	BEBES	A40-2.92M2.92 F-4.5M	1907021	2023-03-04
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2023-03-04
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-92 0-188	09203401	2023-03-04
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G- 187	09203403	2023-03-04
Shielding box	Gxiong	GX-5915A	2201113	2023-04-23
Audio Analyzer	R&S	UPL16	100001	2023-03-04
Wideband Radio Communication Tester	R&S	CMU200	115297	2023-03-04

Power Spectral Density				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40-N	101798	2023-03-04
Wideband Radio Communication Tester	R&S	CMW500	157282	2023-03-04
Vector Signal Generator	Agilent	N5182A	MY50142520	2023-03-04
Analog Signal Generator	HP	83752A	3344A00337	2023-03-04
RF Control Unit	Tonscend	JS0806-2	/	2023-03-04
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2023-03-04
Spectrum Analyzer	HP	8593E	3831U02087	2023-03-04
Climate Chamber	Angul	AGNH80L	1903042120	2023-03-04
Hygrothermograph	Anymetre	JB913	/	2023-03-07

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Coaxial Cable	BEBES	A40-2.92M2.92 F-4.5M	1907021	2023-03-04
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2023-03-04
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-92 0-188	09203401	2023-03-04
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G- 187	09203403	2023-03-04
Shielding box	Gxiong	GX-5915A	2201113	2023-04-23
Audio Analyzer	R&S	UPL16	100001	2023-03-04
Wideband Radio Communication Tester	R&S	CMU200	115297	2023-03-04

Emissions in non-restricted frequency bands				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	R&S	FSV40-N	101798	2023-03-04
Wideband Radio Communication Tester	R&S	CMW500	157282	2023-03-04
Vector Signal Generator	Agilent	N5182A	MY50142520	2023-03-04
Analog Signal Generator	HP	83752A	3344A00337	2023-03-04
RF Control Unit	Tonscend	JS0806-2	/	2023-03-04
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2023-03-04
Spectrum Analyzer	HP	8593E	3831U02087	2023-03-04
Climate Chamber	Angul	AGNH80L	1903042120	2023-03-04
Hygrothermograph	Anymetre	JB913	/	2023-03-07
Coaxial Cable	BEBES	A40-2.92M2.92 F-4.5M	1907021	2023-03-04
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2023-03-04
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-92 0-188	09203401	2023-03-04
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G- 187	09203403	2023-03-04
Shielding box	Gxiong	GX-5915A	2201113	2023-04-23
Audio Analyzer	R&S	UPL16	100001	2023-03-04
Wideband Radio Communication Tester	R&S	CMU200	115297	2023-03-04

Emissions around the fundamental				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Ultra-Broadband logarithmic period	Schwarzbeck	VULB 9163	01230	2023-12-04

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Antenna				
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2023-03-04
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2023-03-29
Pre-Amplifier	EMCI	EMC051835SE	980662	2023-03-04
Spectrum Analyzer	Keysight	N9020A	MY46471971	2023-03-04
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2023-03-05
High Pass Filter	Chengdu E-Microwave	OHF-3-18-S	0E01901038	2023-03-04
High Pass Filter	Chengdu E-Microwave	OHF-6.5-18-S	0E01901039	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-2400-248 3.5-50N	0E01901040	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-5100-590 0-50N	/	2023-03-04
EMI Test Receiver	R&S	ESR	102525	2023-03-04
Hygrothermograph	/	HTC-1	/	2023-03-07
RF Switch	JS TOYO Corporation	NS 4903	1901-214	2023-03-04
996 chamber	JS TOYO Corporation	966	/	2024-11-24
Horn Antenna	Schwarzbeck	BBHA9170	00943	2022-11-28
Pre-Amplifier	EMCI	BBV 9721	BBV 9721-57	2023-03-04

Emissions in restricted frequency bands (below 1GHz)				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	01230	2023-12-04
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2023-03-04
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2023-03-29
Pre-Amplifier	EMCI	EMC051835SE	980662	2023-03-04
Spectrum Analyzer	Keysight	N9020A	MY46471971	2023-03-04
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2023-03-05
High Pass Filter	Chengdu E-Microwave	OHF-3-18-S	0E01901038	2023-03-04
High Pass Filter	Chengdu E-Microwave	OHF-6.5-18-S	0E01901039	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-2400-248 3.5-50N	0E01901040	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-5100-590 0-50N	/	2023-03-04
EMI Test Receiver	R&S	ESR	102525	2023-03-04
Hygrothermograph	/	HTC-1	/	2023-03-07
RF Switch	JS TOYO Corporation	NS 4903	1901-214	2023-03-04
996 chamber	JS TOYO Corporation	966	/	2024-11-24
Horn Antenna	Schwarzbeck	BBHA9170	00943	2022-11-28
Pre-Amplifier	EMCI	BBV 9721	BBV 9721-57	2023-03-04

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Emissions in restricted frequency bands (above 1GHz)				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	01230	2023-12-04
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2023-03-04
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2023-03-29
Pre-Amplifier	EMCI	EMC051835SE	980662	2023-03-04
Spectrum Analyzer	Keysight	N9020A	MY46471971	2023-03-04
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2023-03-05
High Pass Filter	Chengdu E-Microwave	OHF-3-18-S	0E01901038	2023-03-04
High Pass Filter	Chengdu E-Microwave	OHF-6.5-18-S	0E01901039	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-2400-248 3.5-50N	0E01901040	2023-03-04
Band Stop Filter	Chengdu E-Microwave	OBSF-5100-590 0-50N	/	2023-03-04
EMI Test Receiver	R&S	ESR	102525	2023-03-04
Hygrothermograph	/	HTC-1	/	2023-03-07
RF Switch	JS TOYO Corporation	NS 4903	1901-214	2023-03-04
996 chamber	JS TOYO Corporation	966	/	2024-11-24
Horn Antenna	Schwarzbeck	BBHA9170	00943	2022-11-28
Pre-Amplifier	EMCI	BBV 9721	BBV 9721-57	2023-03-04

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3. Evaluation Results (Evaluation)

3.1. Antenna requirement

Test 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 shall be considered sufficient to comply with the provisions of this section.
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3.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.7 °C
Humidity:	46.4 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

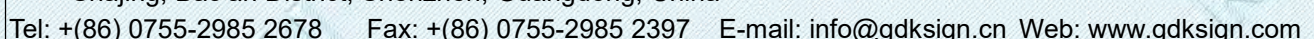
3.1.2. Test Data:

The antenna gain is 1.4dB, 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.

4.1. Conducted Emission at AC power line

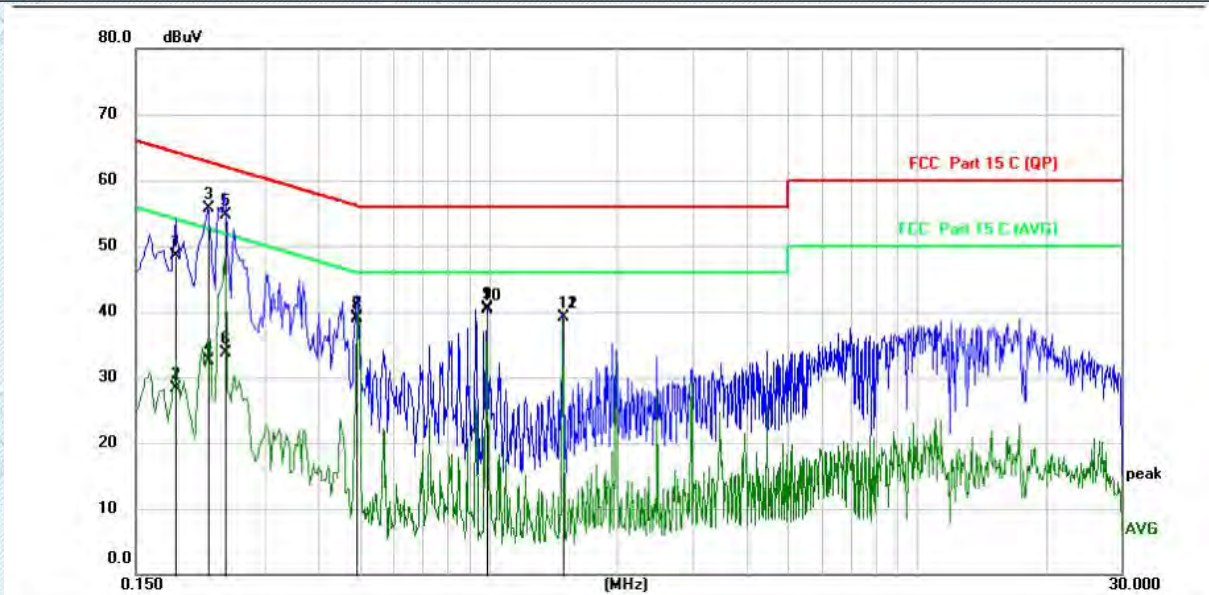
4.1.1. E.U.T. Operation:

4.1.2. Test Setup Diagram:



4.1.3. Test Data:

TM1 / Line: Line / Band: 2.4G / BW: 1 / CH: L

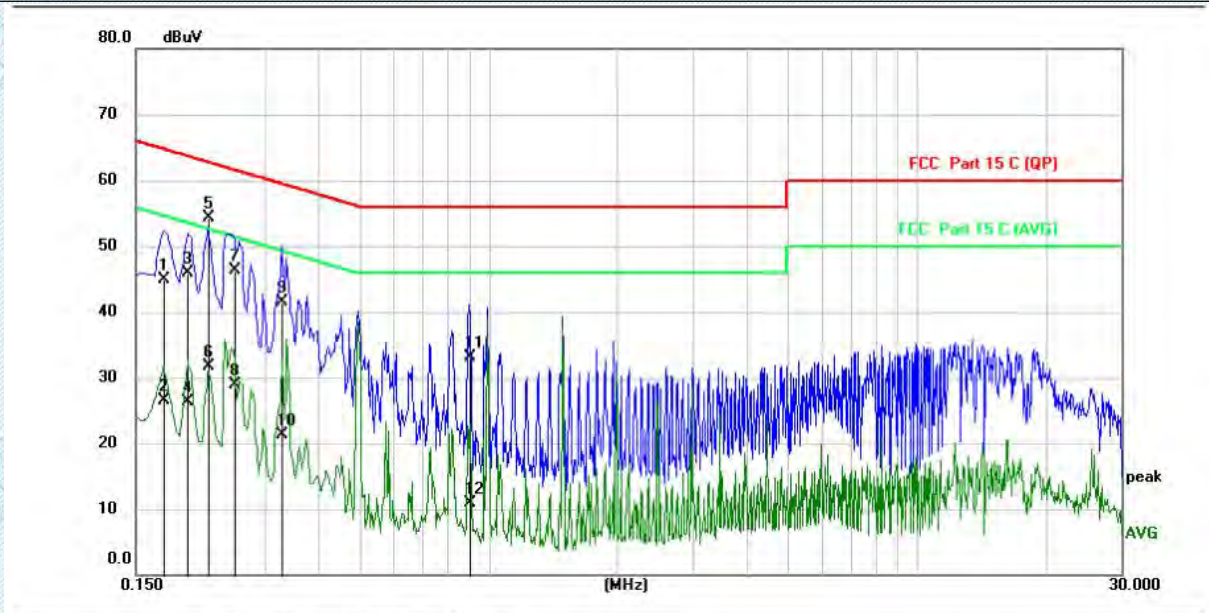


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1860	37.81	10.75	48.56	64.21	-15.65	QP	
2	0.1860	17.48	10.75	28.23	54.21	-25.98	AVG	
3	0.2220	45.02	10.73	55.75	62.74	-6.99	QP	
4	0.2220	21.80	10.73	32.53	52.74	-20.21	AVG	
5	0.2420	43.90	10.72	54.62	62.03	-7.41	QP	
6	0.2420	22.95	10.72	33.67	52.03	-18.36	AVG	
7	0.4940	28.55	10.52	39.07	56.10	-17.03	QP	
8	0.4940	28.31	10.52	38.83	46.10	-7.27	AVG	
9	0.9940	29.98	10.50	40.48	56.00	-15.52	QP	
10 *	0.9940	29.84	10.50	40.34	46.00	-5.66	AVG	
11	1.4900	28.61	10.50	39.11	56.00	-16.89	QP	
12	1.4900	28.62	10.50	39.12	46.00	-6.88	AVG	

TRF EMC_R1

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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TM1 / Line: Neutral / Band: 2.4G / BW: 1 / CH: L


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1740	34.09	10.73	44.82	64.77	-19.95	QP	
2	0.1740	15.85	10.73	26.58	54.77	-28.19	AVG	
3	0.1980	35.05	10.76	45.81	63.69	-17.88	QP	
4	0.1980	15.52	10.76	26.28	53.69	-27.41	AVG	
5 *	0.2220	43.63	10.75	54.38	62.74	-8.36	QP	
6	0.2220	20.88	10.75	31.63	52.74	-21.11	AVG	
7	0.2540	35.53	10.71	46.24	61.63	-15.39	QP	
8	0.2540	18.17	10.71	28.88	51.63	-22.75	AVG	
9	0.3300	30.93	10.54	41.47	59.45	-17.98	QP	
10	0.3300	10.71	10.54	21.25	49.45	-28.20	AVG	
11	0.9020	22.58	10.48	33.06	56.00	-22.94	QP	
12	0.9020	0.47	10.48	10.95	46.00	-35.05	AVG	

TRF EMC_R1

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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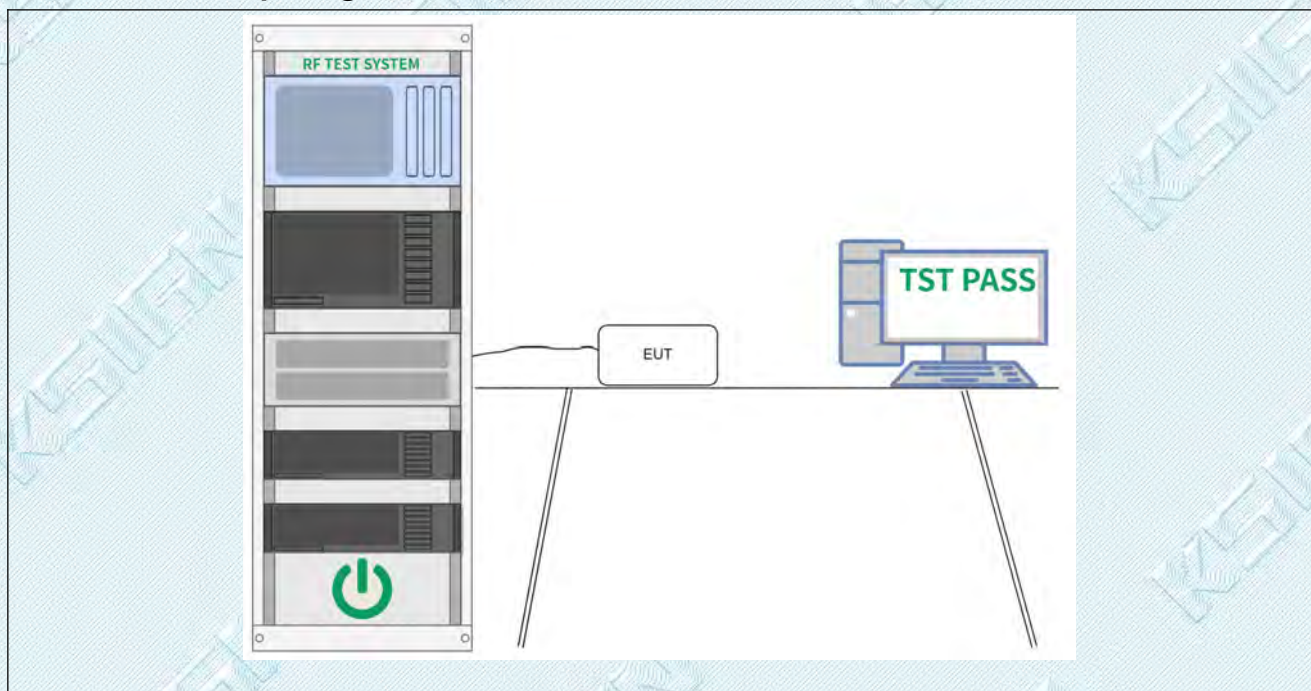
4.2. Occupied Bandwidth

Test Requirement:	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 Limit:	Section (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:	DTS bandwidth
Procedure:	a) Set RBW = 100 kHz. b) Set the VBW $\geq [3 \times \text{RBW}]$. 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.

4.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.2 °C
Humidity:	52.1 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.2.2. Test Setup Diagram:



4.2.3. Test Data:

Please Refer to Appendix for Details.

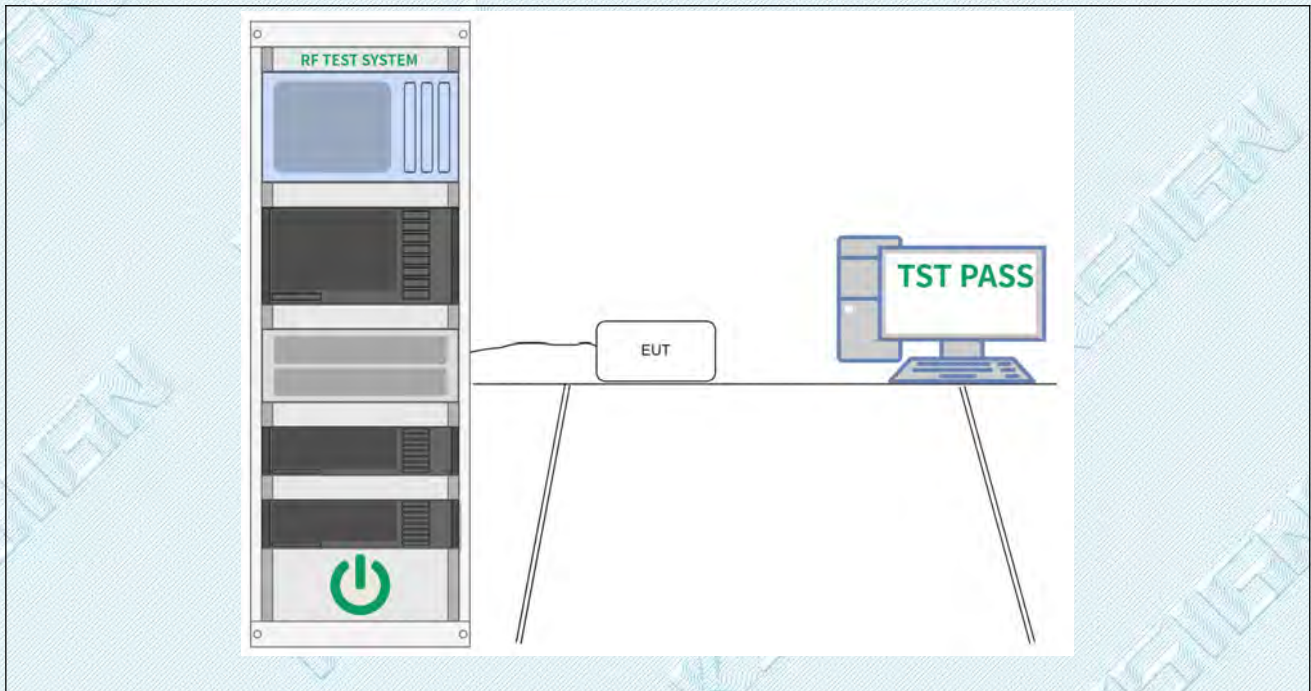
4.3. Maximum Conducted Output Power

Test Requirement:	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 Limit:	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:	Maximum peak conducted output power
Procedure:	ANSI C63.10-2013, section 11.9.1 Maximum peak conducted output power

4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.1 °C
Humidity:	52.6 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.3.2. Test Setup Diagram:



4.3.3. Test Data:

Please Refer to Appendix for Details.

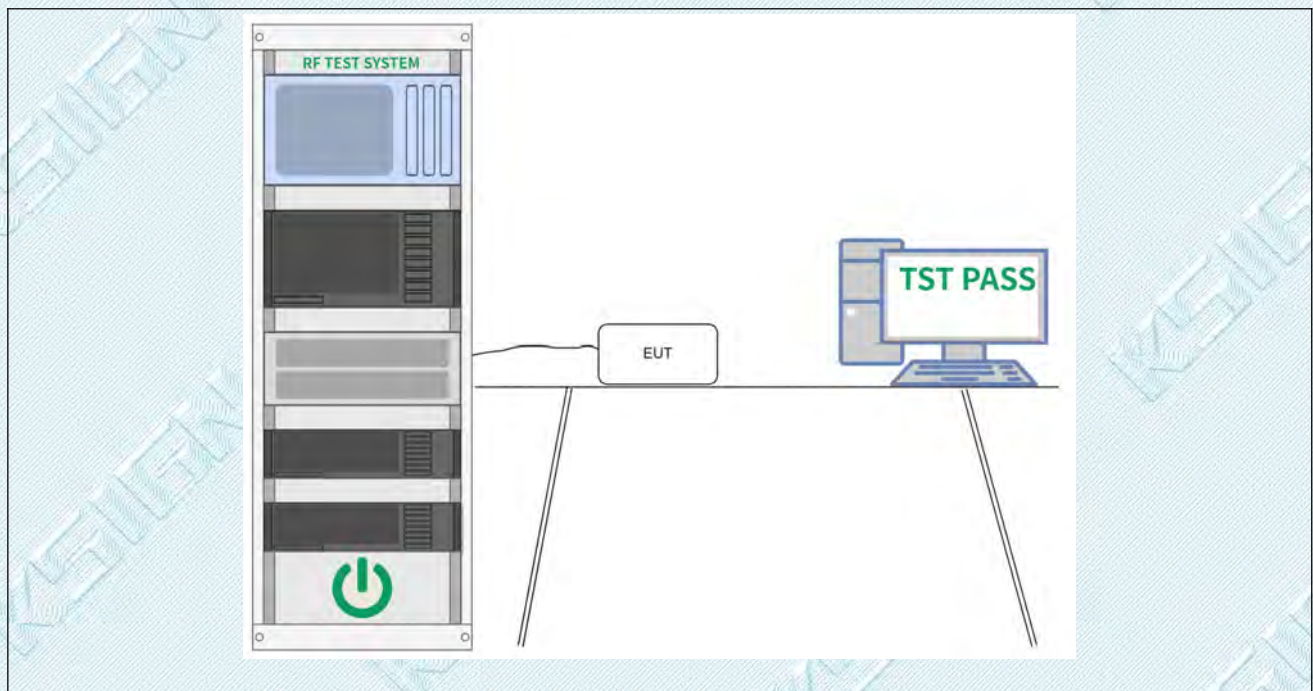
4.4. Power Spectral Density

Test Requirement:	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 Limit:	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:	Maximum power spectral density level in the fundamental emission

4.4.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	47.7 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.4.2. Test Setup Diagram:



4.4.3. Test Data:

Please Refer to Appendix for Details.

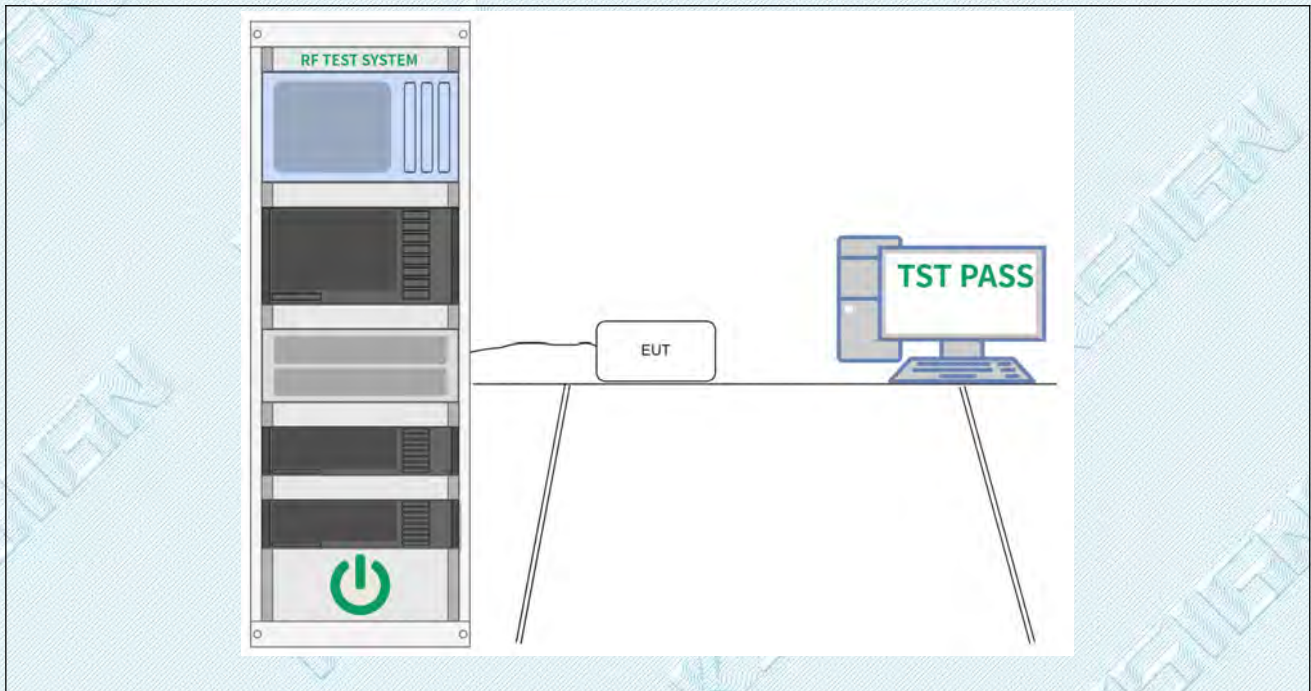
4.5. Emissions in non-restricted frequency bands

Test Requirement:	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 Limit:	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:	Emissions in nonrestricted frequency bands
Procedure:	ANSI C63.10-2013 Section 11.11.1, Section 11.11.2, Section 11.11.3

4.5.1. E.U.T. Operation:

Operating Environment:	
Temperature:	25.9 °C
Humidity:	48 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.5.2. Test Setup Diagram:



4.5.3. Test Data:

Please Refer to Appendix for Details.

4.6. Emissions around the fundamental

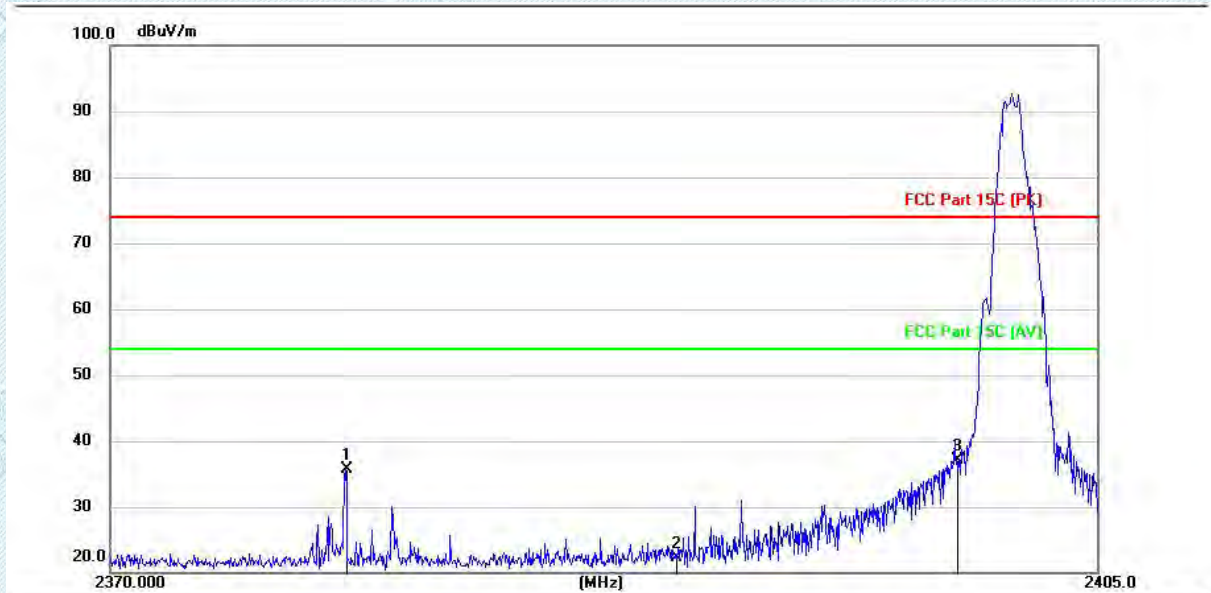
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

4.6.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	42.3 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.6.2. Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L

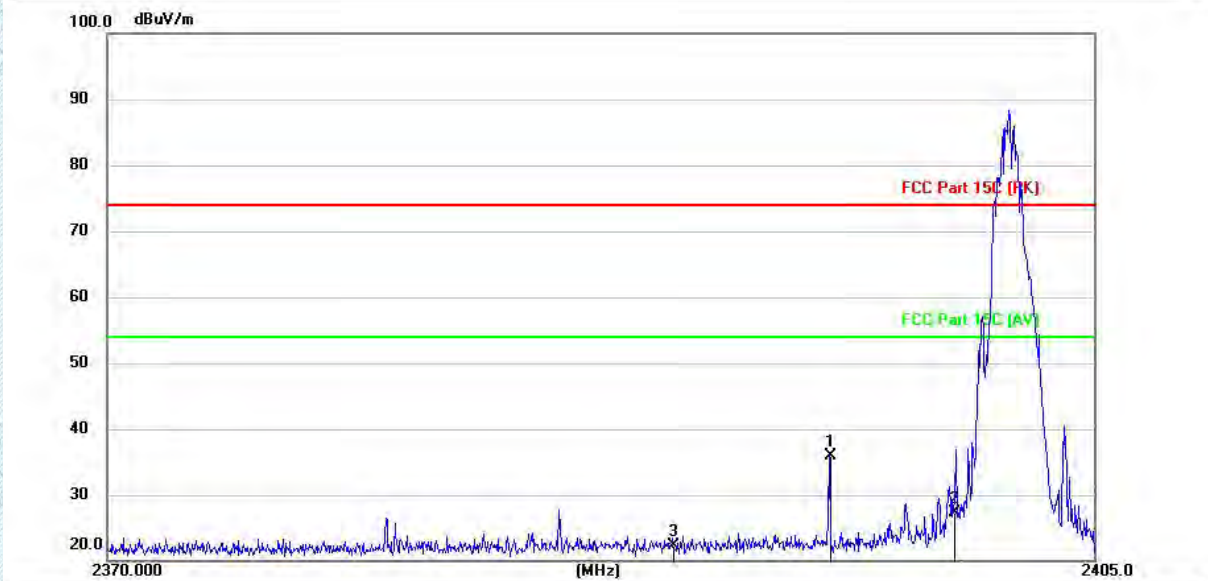


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		2378.340	46.66	-10.92	35.74	74.00	-38.26	peak
2		2390.000	33.15	-10.92	22.23	74.00	-51.77	peak
3	*	2400.000	47.93	-10.92	37.01	74.00	-36.99	peak

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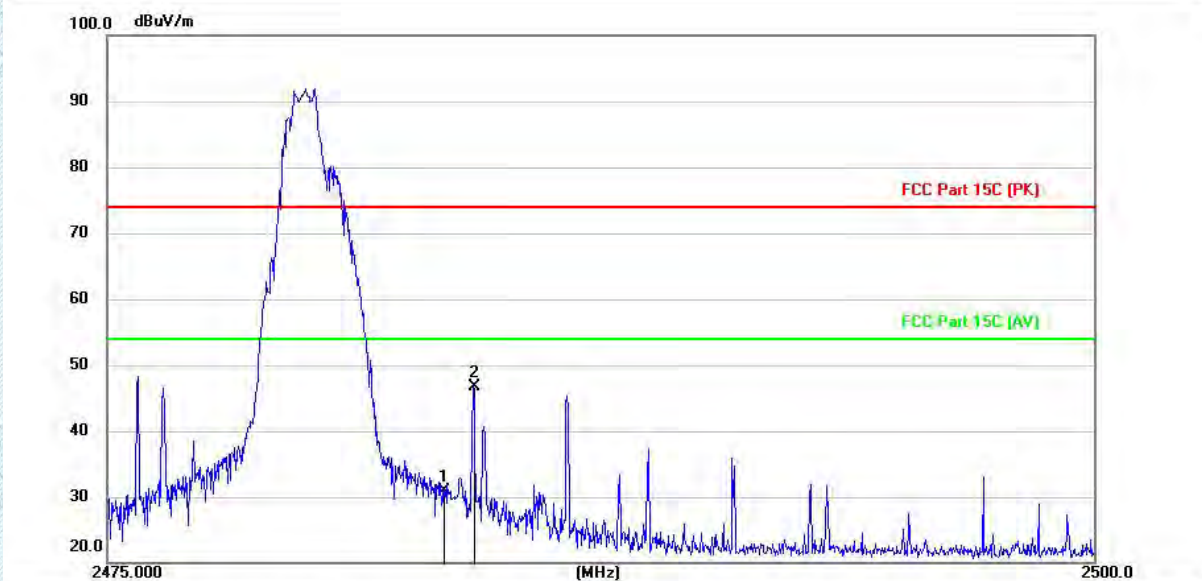
TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	*	2395.564	46.83	-10.91	35.92	74.00	-38.08	peak
2		2400.000	38.15	-10.92	27.23	74.00	-46.77	peak
3		2390.000	33.17	-10.92	22.25	74.00	-51.75	peak

TRF EMC_R1

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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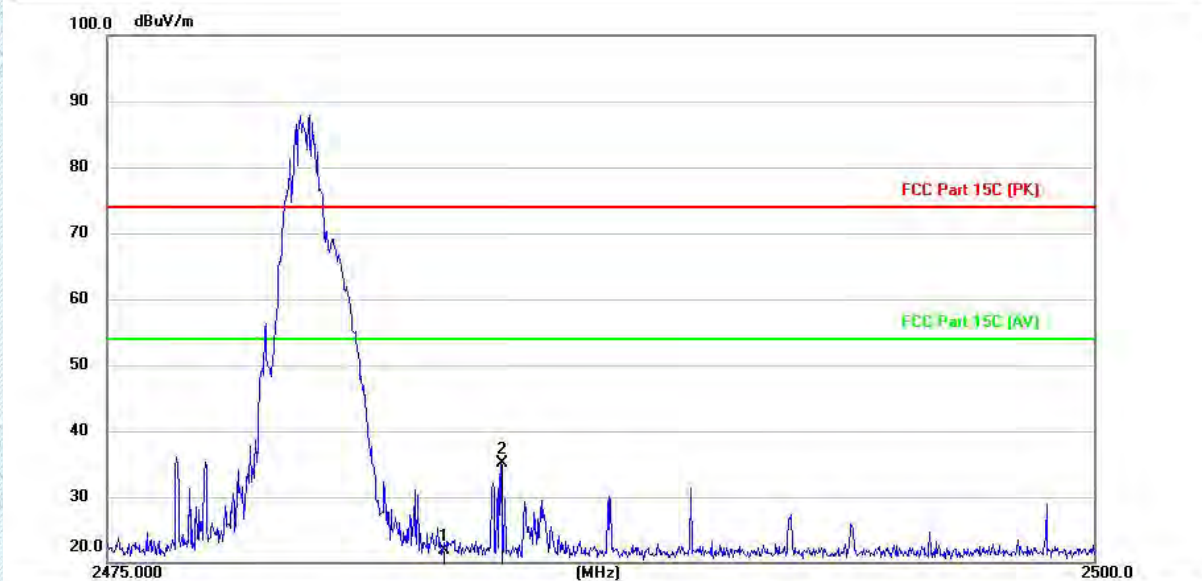
TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		2483.500	41.82	-10.88	30.94	74.00	-43.06	peak
2	*	2484.247	57.55	-10.88	46.67	74.00	-27.33	peak

TRF EMC_R1

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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TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1		2483.500	32.68	-10.88	21.80	74.00	-52.20	peak
2	*	2484.950	46.01	-10.88	35.13	74.00	-38.87	peak

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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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4.7. Emissions in restricted frequency bands (below 1GHz)

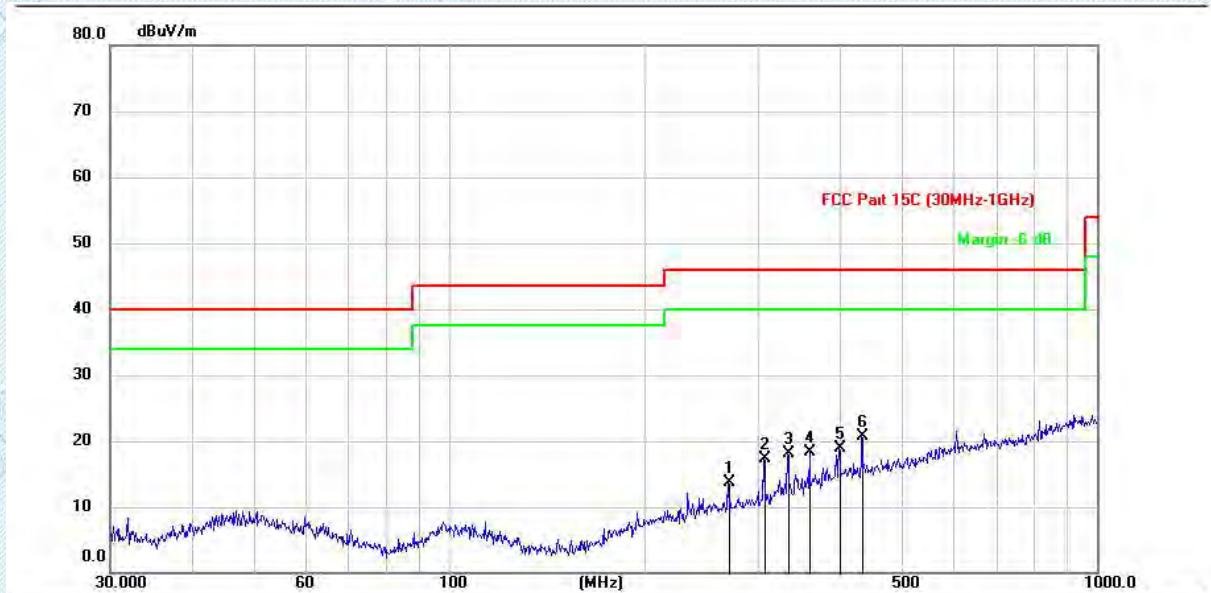
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

4.7.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24.2 °C
Humidity:	44.2 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.7.2. Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L

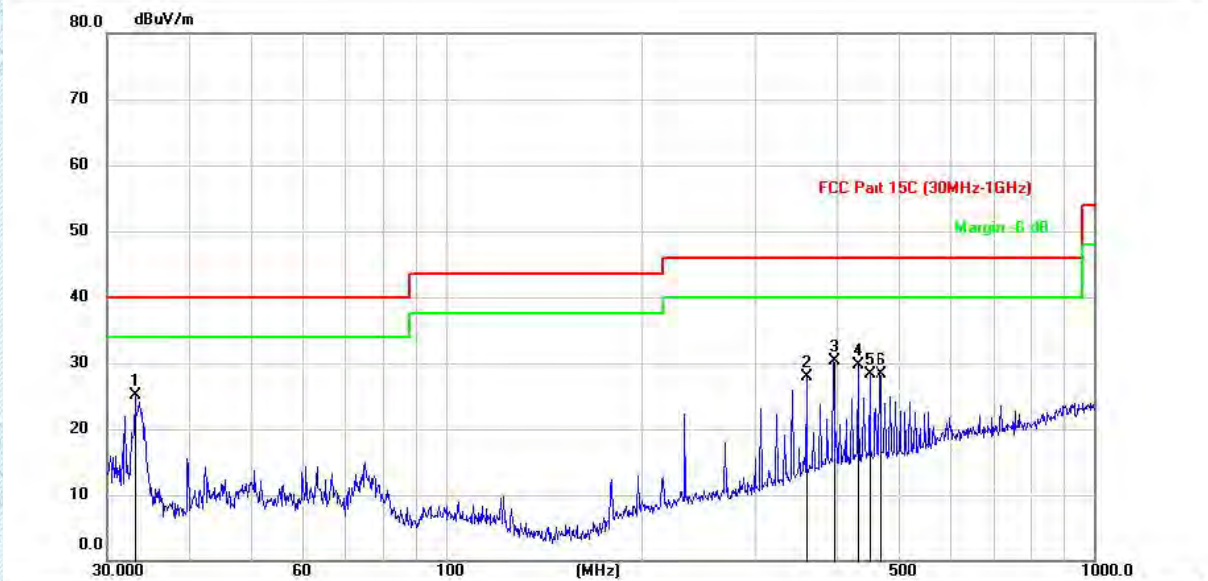


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		269.9958	28.98	-15.36	13.62	46.00	-32.38	QP
2		306.0017	31.75	-14.41	17.34	46.00	-28.66	QP
3		333.3359	31.40	-13.24	18.16	46.00	-27.84	QP
4		360.0687	30.61	-12.21	18.40	46.00	-27.60	QP
5		400.0109	29.82	-10.91	18.91	46.00	-27.09	QP
6	*	433.3047	31.15	-10.51	20.64	46.00	-25.36	QP

TRF EMC_R1

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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TM1 / Polarization: Vertical / Band: 2.4G / 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	*	33.1066	43.90	-18.87	25.03	40.00	-14.97	QP
2		360.0687	40.05	-12.21	27.84	46.00	-18.16	QP
3		395.9638	41.43	-11.04	30.39	46.00	-15.61	QP
4		432.0909	40.14	-10.53	29.61	46.00	-16.39	QP
5		450.0290	38.67	-10.32	28.35	46.00	-17.65	QP
6		468.0549	38.43	-10.18	28.25	46.00	-17.75	QP

TRF EMC_R1

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4.8. Emissions in restricted frequency bands (above 1GHz)

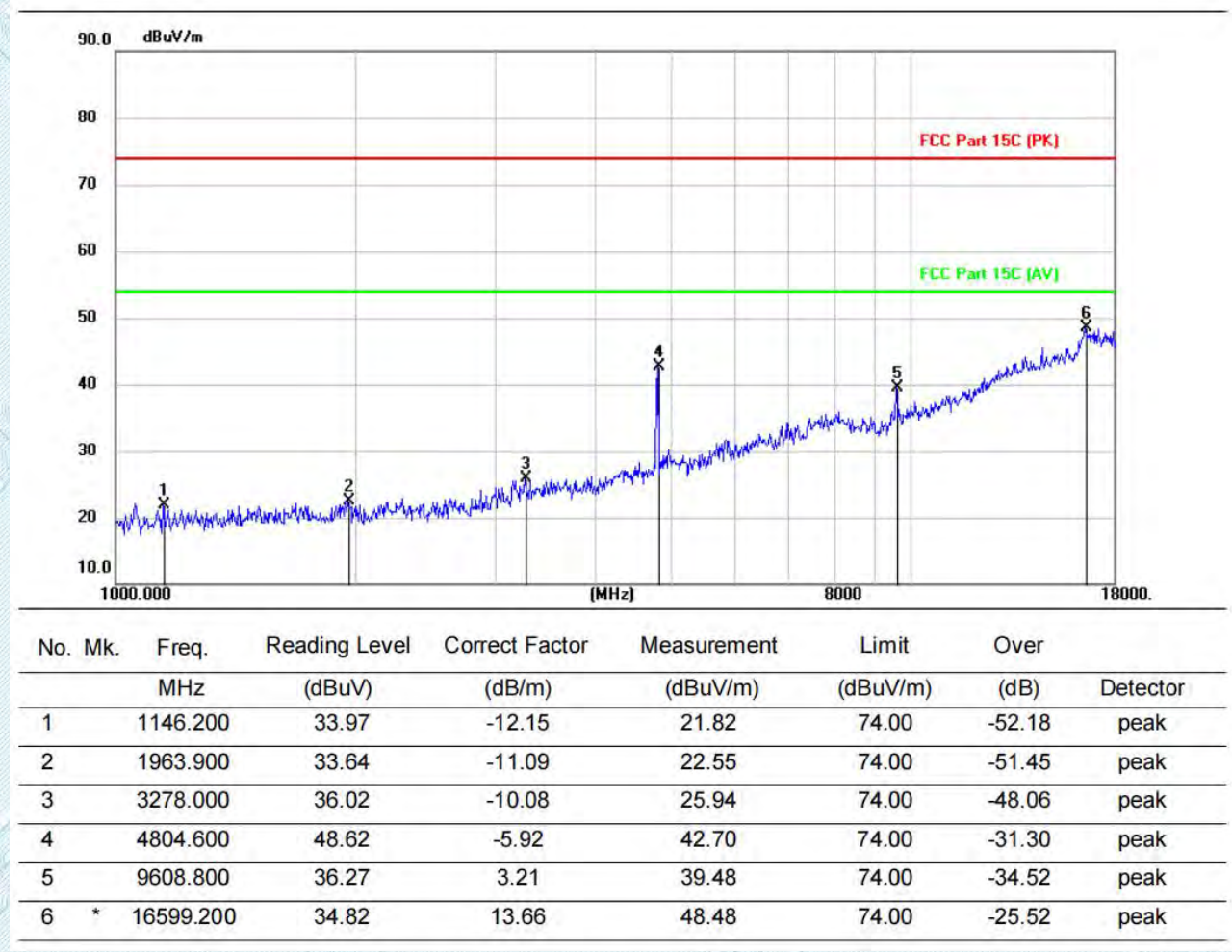
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

4.8.1. E.U.T. Operation:

Operating Environment:	
Temperature:	24 °C
Humidity:	43.2 %
Atmospheric Pressure:	102 mbar
Final test mode:	TM1

4.8.2. Test Data:

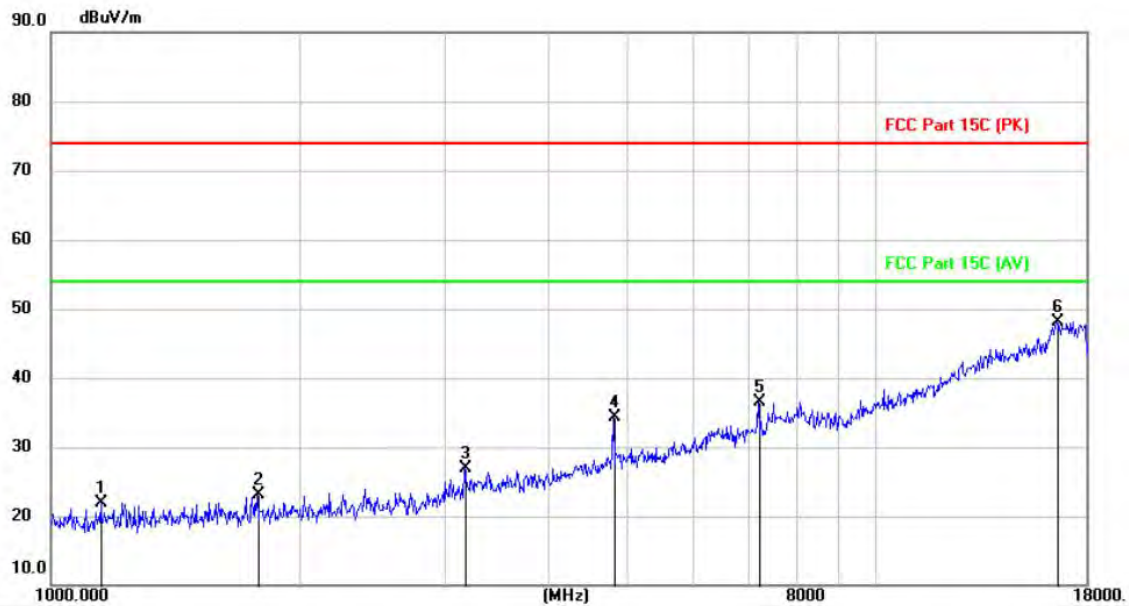
TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L



TRF EMC_R1

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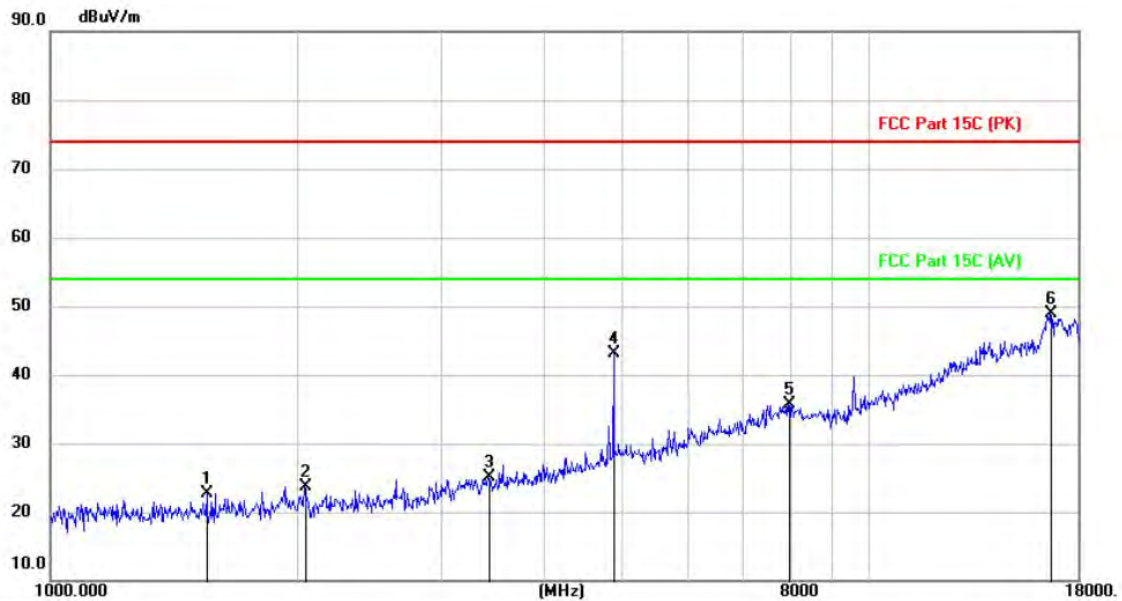
TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1		1149.600	34.11	-12.13	21.98	74.00	-52.02	peak
2		1780.300	34.43	-11.27	23.16	74.00	-50.84	peak
3		3169.200	37.23	-10.29	26.94	74.00	-47.06	peak
4		4804.600	40.14	-5.92	34.22	74.00	-39.78	peak
5		7206.700	36.56	-0.07	36.49	74.00	-37.51	peak
6	*	16573.700	34.41	13.69	48.10	74.00	-25.90	peak

TRF EMC_R1

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TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: M


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1554.200	34.36	-11.67	22.69	74.00	-51.31	peak
2		2045.500	34.77	-11.04	23.73	74.00	-50.27	peak
3		3434.400	34.81	-9.80	25.01	74.00	-48.99	peak
4		4881.100	48.81	-5.71	43.10	74.00	-30.90	peak
5		7981.900	33.71	2.03	35.74	74.00	-38.26	peak
6	*	16662.100	35.41	13.56	48.97	74.00	-25.03	peak

TRF EMC_R1

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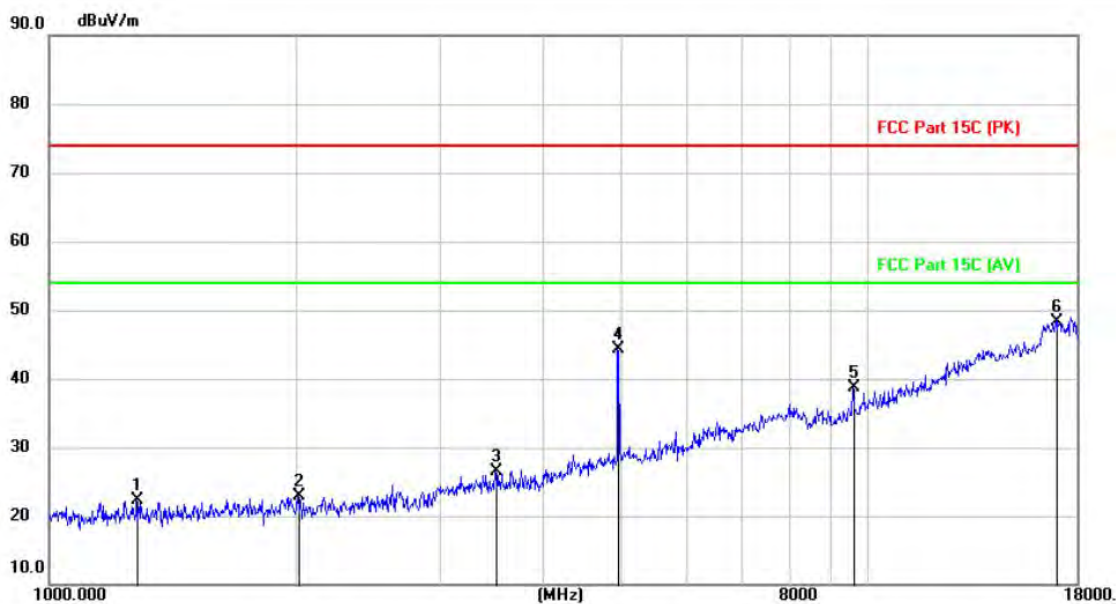
TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: M


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1314.500	35.36	-11.96	23.40	74.00	-50.60	peak
2		1938.400	34.37	-11.11	23.26	74.00	-50.74	peak
3		3255.900	36.45	-10.13	26.32	74.00	-47.68	peak
4		6462.100	35.49	-2.24	33.25	74.00	-40.75	peak
5		10882.100	33.71	5.52	39.23	74.00	-34.77	peak
6	*	16645.100	34.49	13.58	48.07	74.00	-25.93	peak

TRF EMC_R1

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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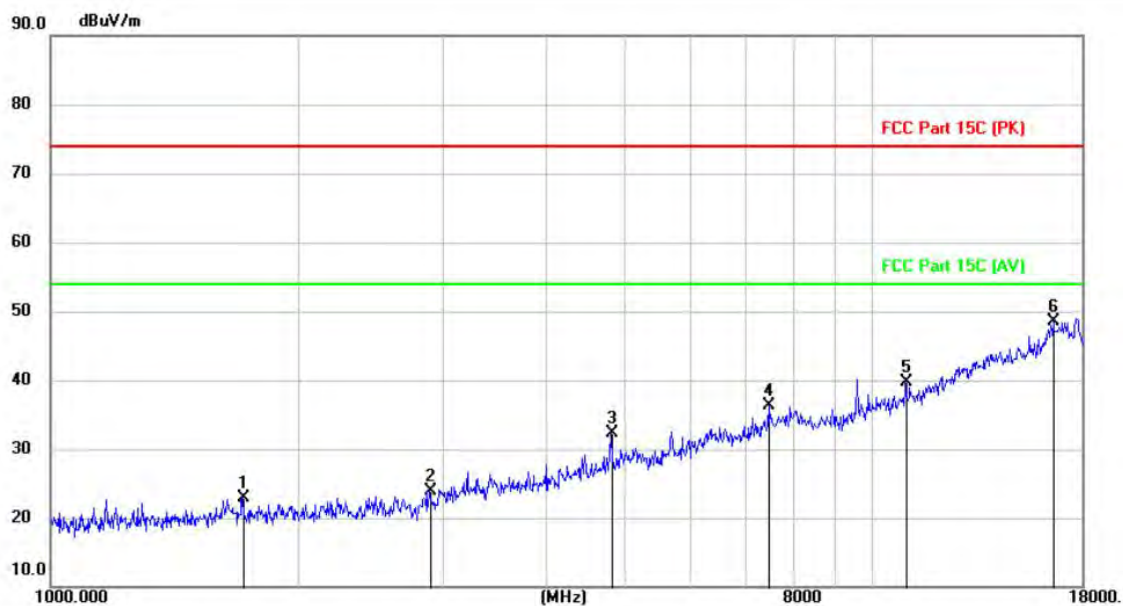
TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1278.800	34.21	-11.99	22.22	74.00	-51.78	peak
2		2018.300	33.89	-11.05	22.84	74.00	-51.16	peak
3		3512.600	36.13	-9.64	26.49	74.00	-47.51	peak
4		4959.300	49.79	-5.51	44.28	74.00	-29.72	peak
5		9608.800	35.57	3.21	38.78	74.00	-35.22	peak
6	*	16971.500	35.18	13.07	48.25	74.00	-25.75	peak

TRF EMC_R1

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TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1712.300	34.34	-11.39	22.95	74.00	-51.05	peak
2		2892.100	34.56	-10.65	23.91	74.00	-50.09	peak
3		4804.600	38.16	-5.92	32.24	74.00	-41.76	peak
4		7480.400	35.56	0.76	36.32	74.00	-37.68	peak
5		10990.900	33.94	5.69	39.63	74.00	-34.37	peak
6	*	16602.600	34.77	13.65	48.42	74.00	-25.58	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.

5. EUT TEST PHOTOS

Conducted Emission at AC power line



Emissions in restricted frequency bands (above 1GHz)



Emissions in restricted frequency bands (below 1GHz)

TRF EMC_R1

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6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

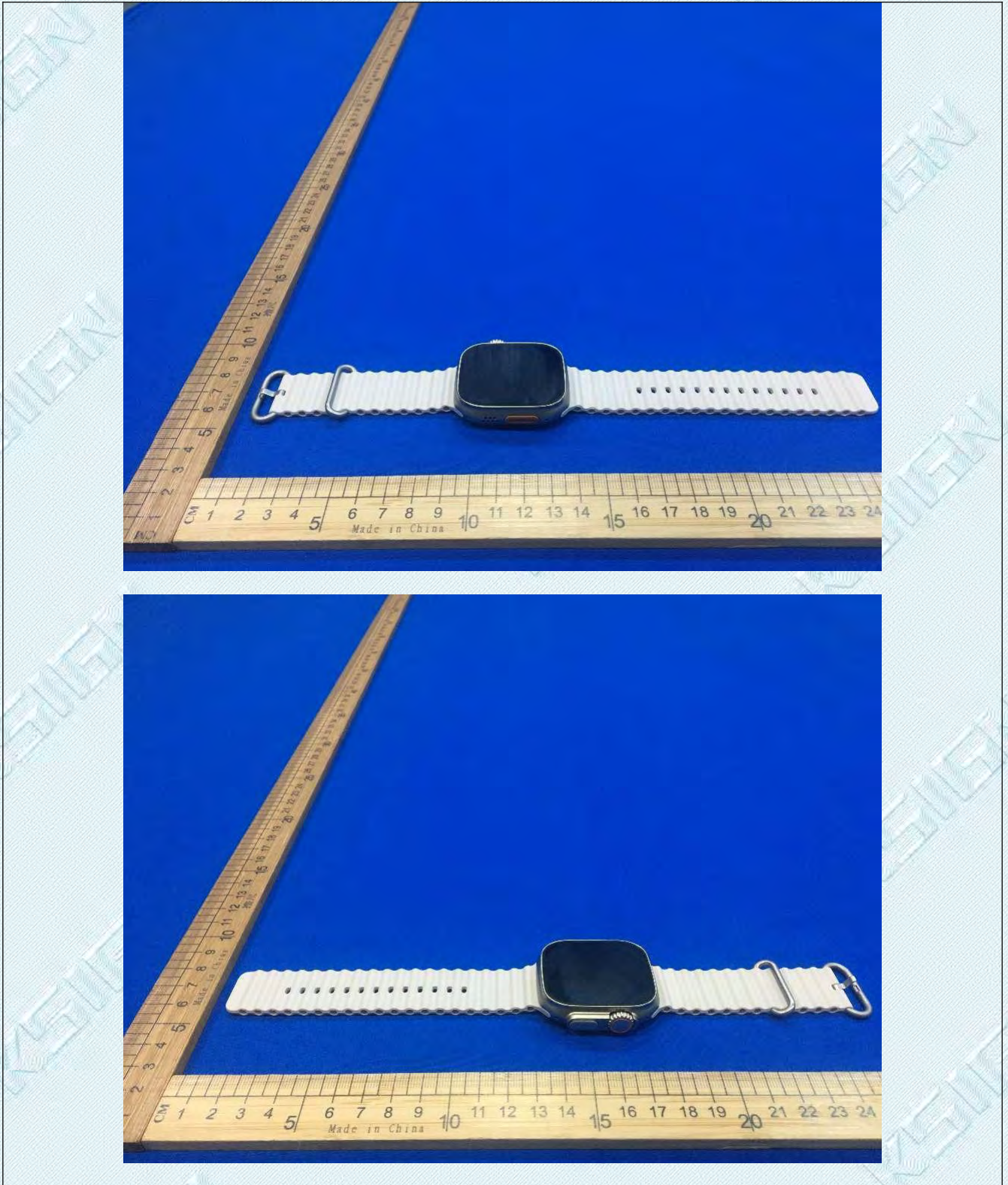
External



TRF EMC_R1

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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TRF EMC_R1

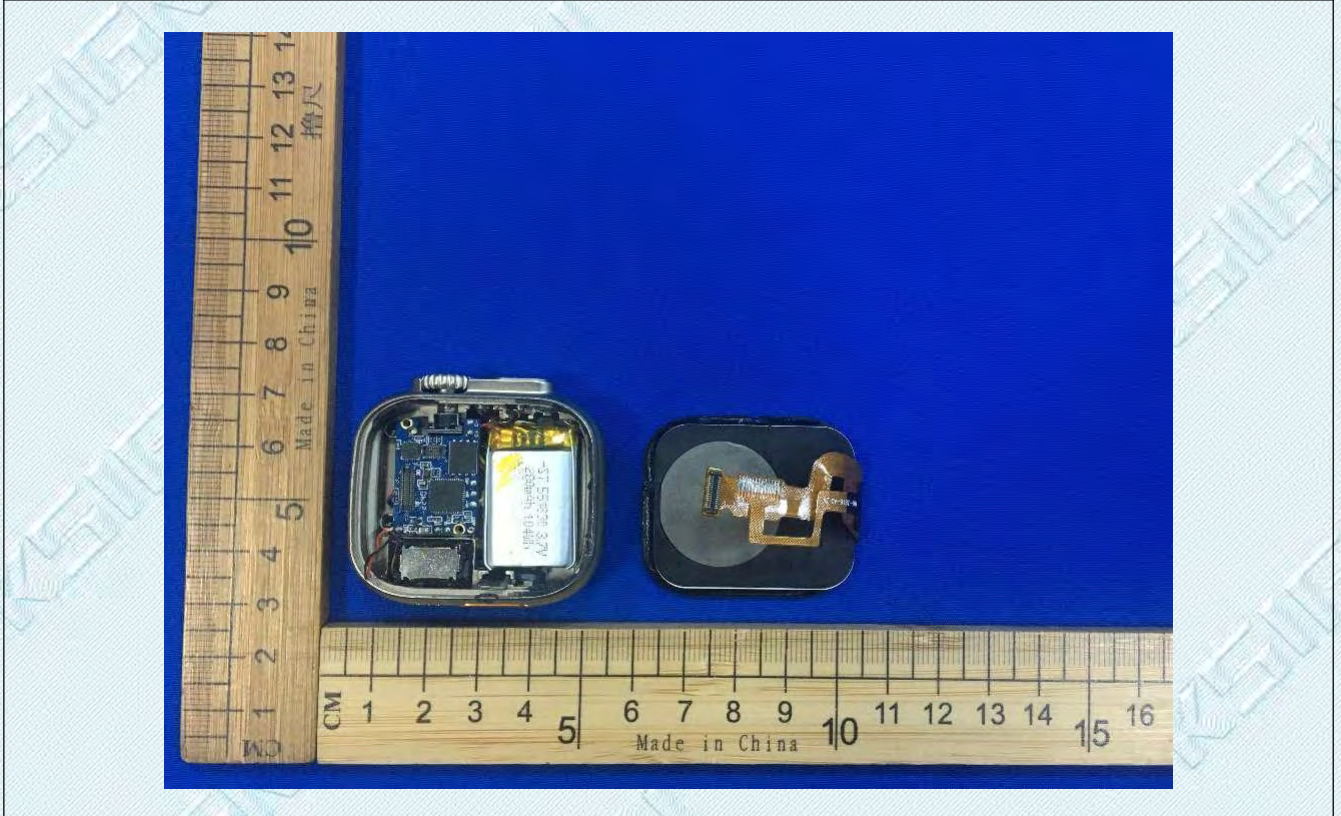
Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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Internal



TRF EMC_R1

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

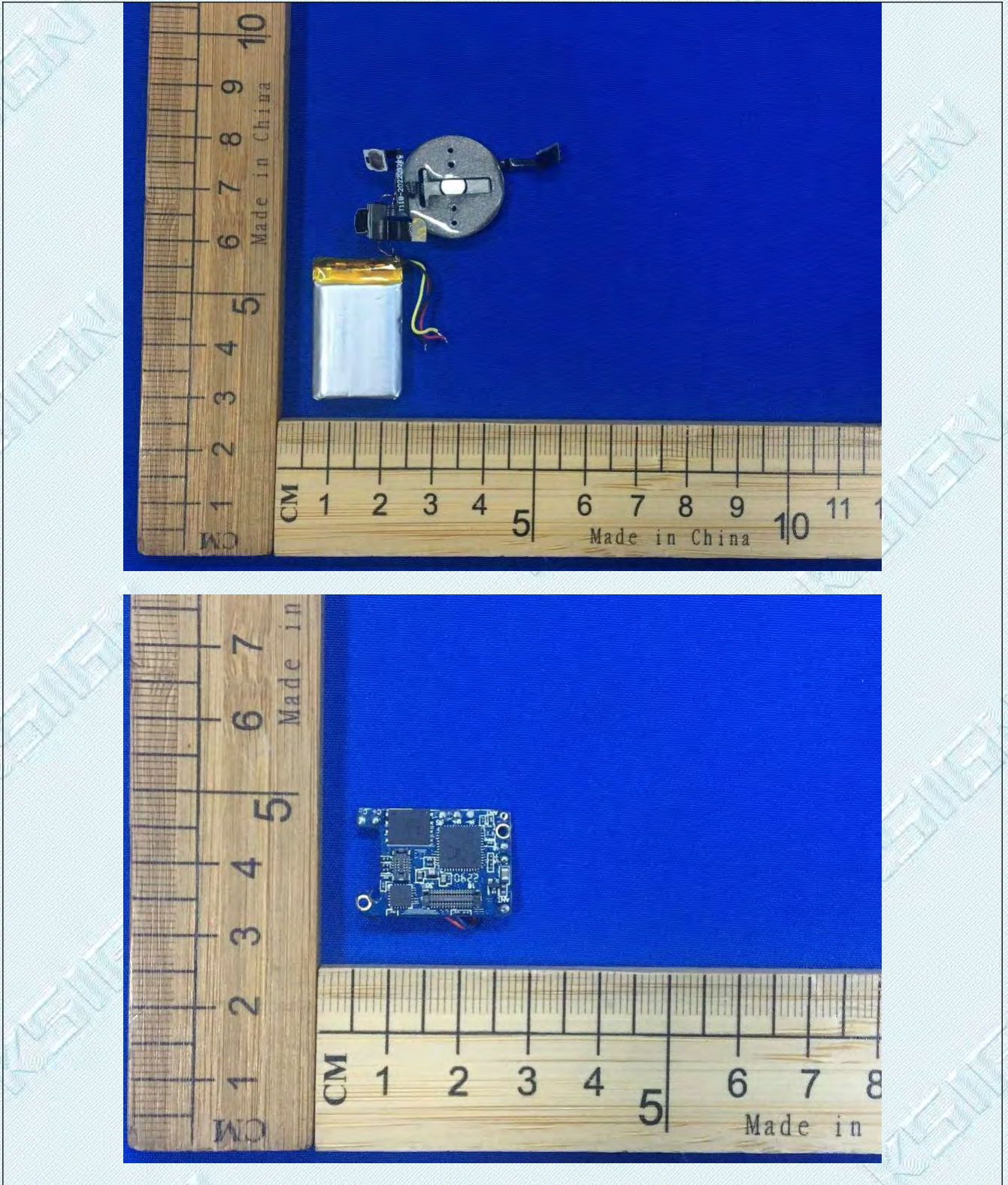
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TRF EMC_R1

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

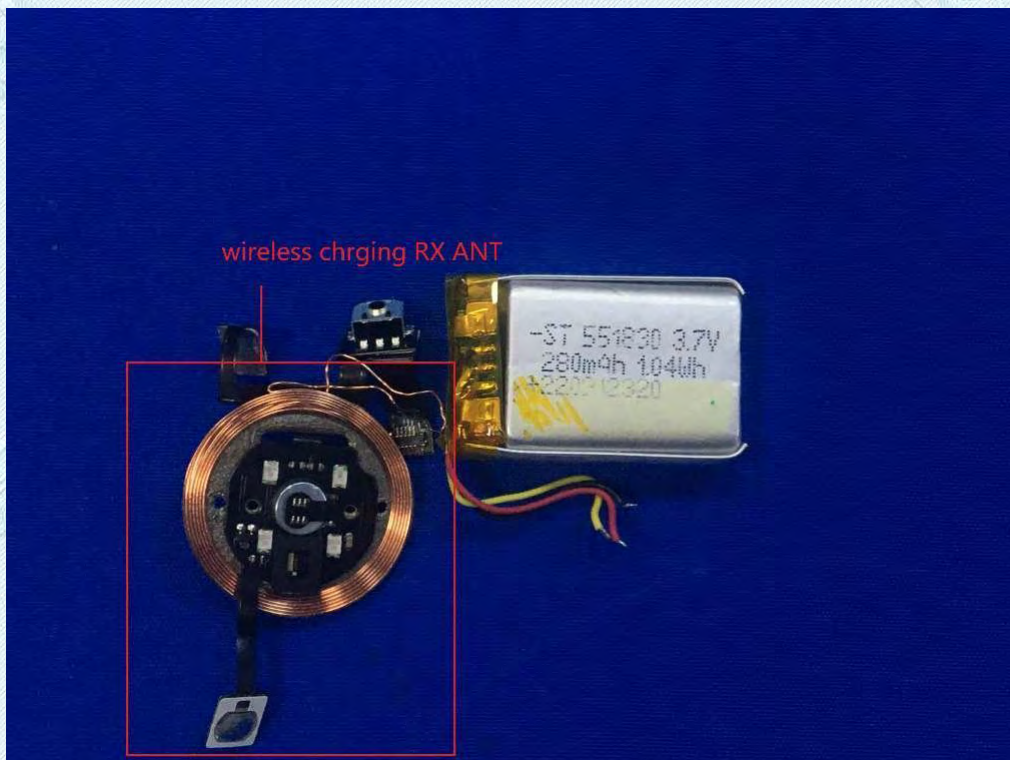
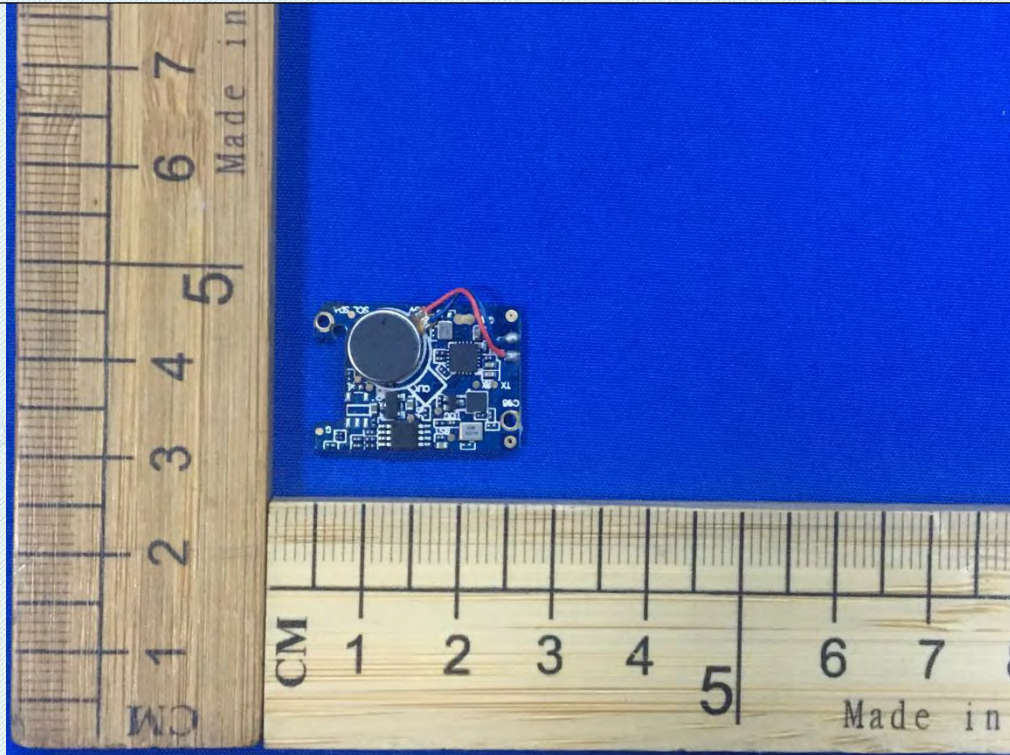
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com

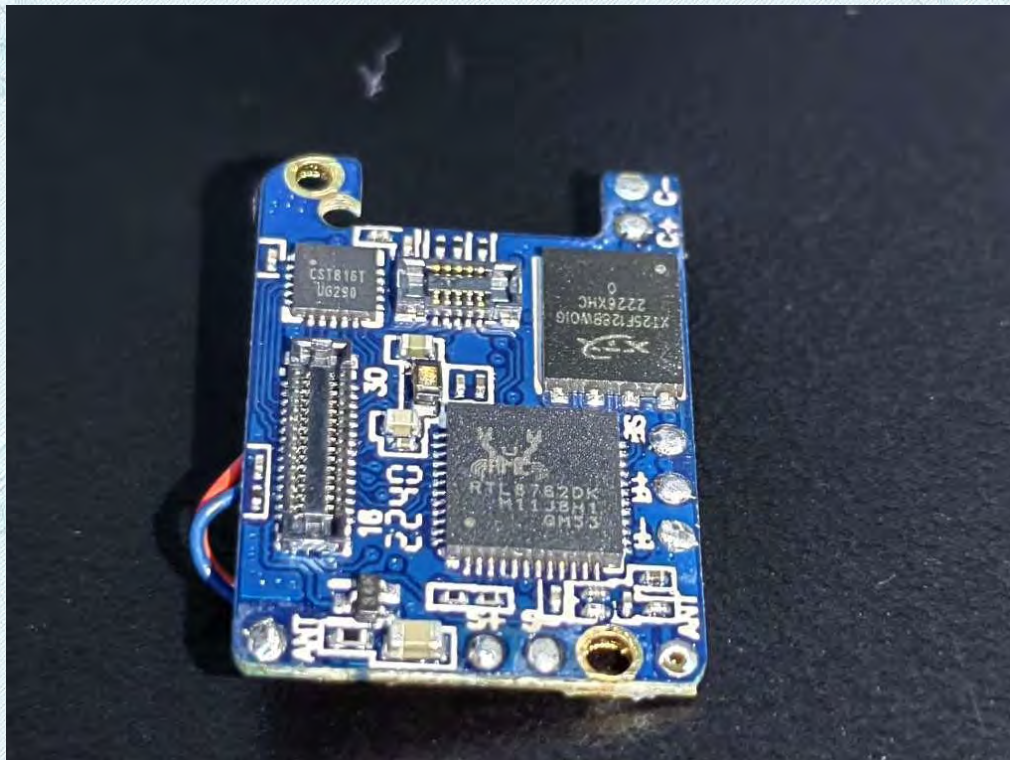
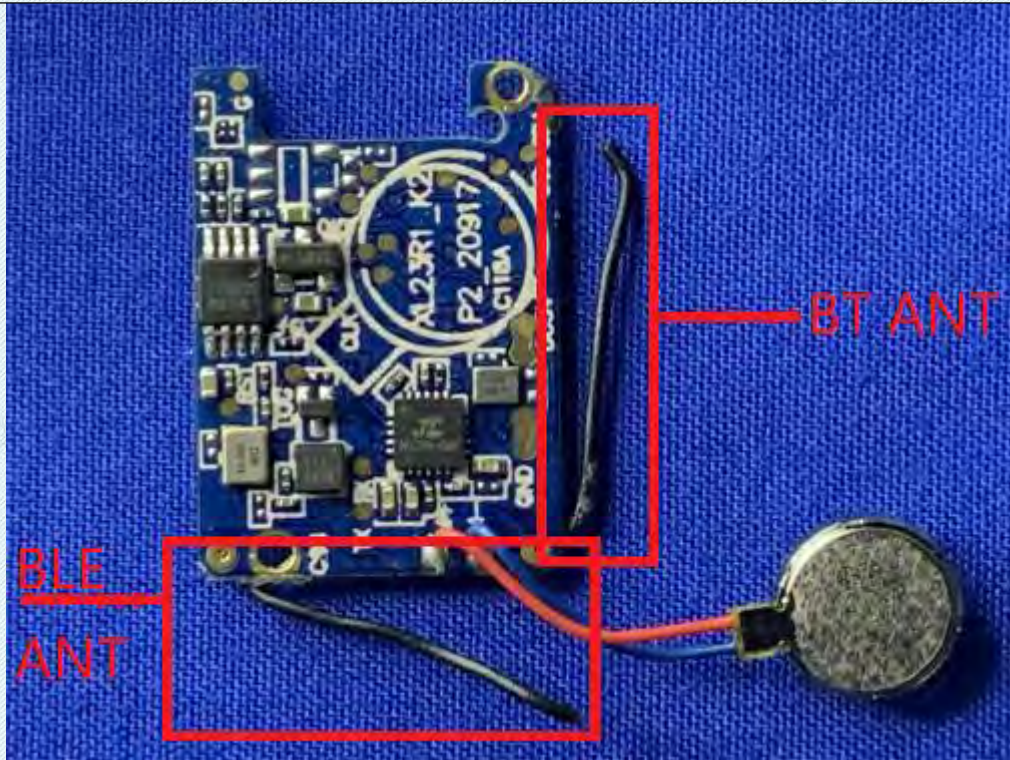


TRF EMC_R1

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Appendix

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	2401.63	2402.32	0.5	PASS
		2440	0.76	2439.56	2440.31	0.5	PASS
		2480	0.84	2479.47	2480.31	0.5	PASS
BLE_2M	Ant1	2402	1.14	2401.41	2402.56	0.5	PASS
		2440	1.14	2439.41	2440.56	0.5	PASS
		2480	1.14	2479.41	2480.55	0.5	PASS

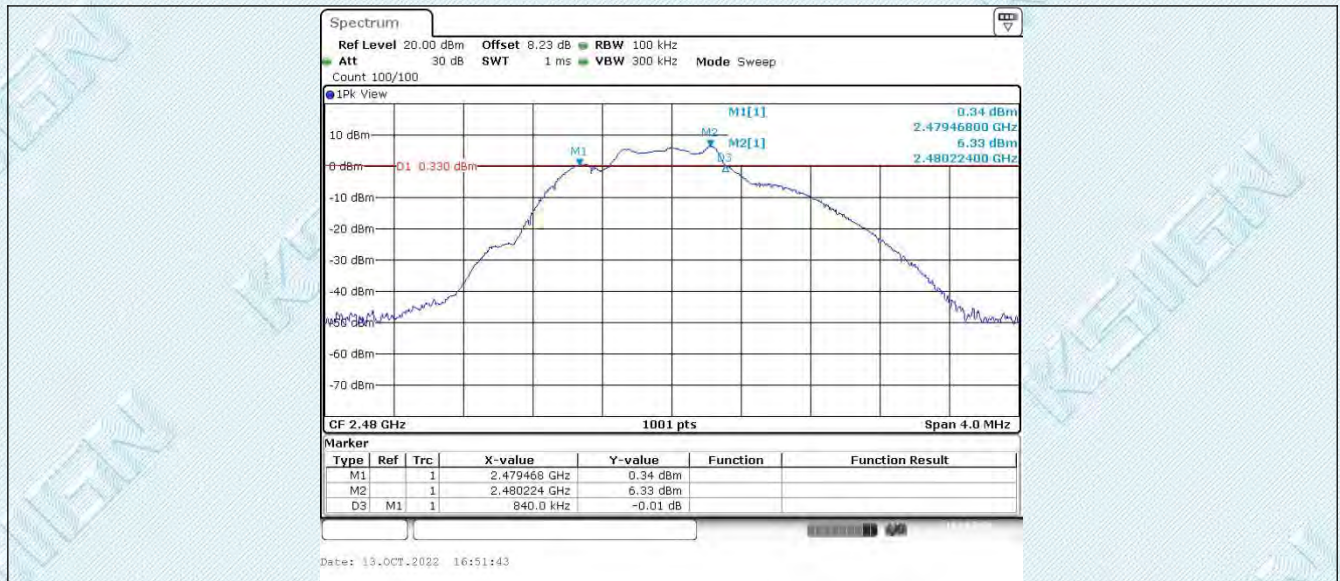
6.1.2. Test Graphs



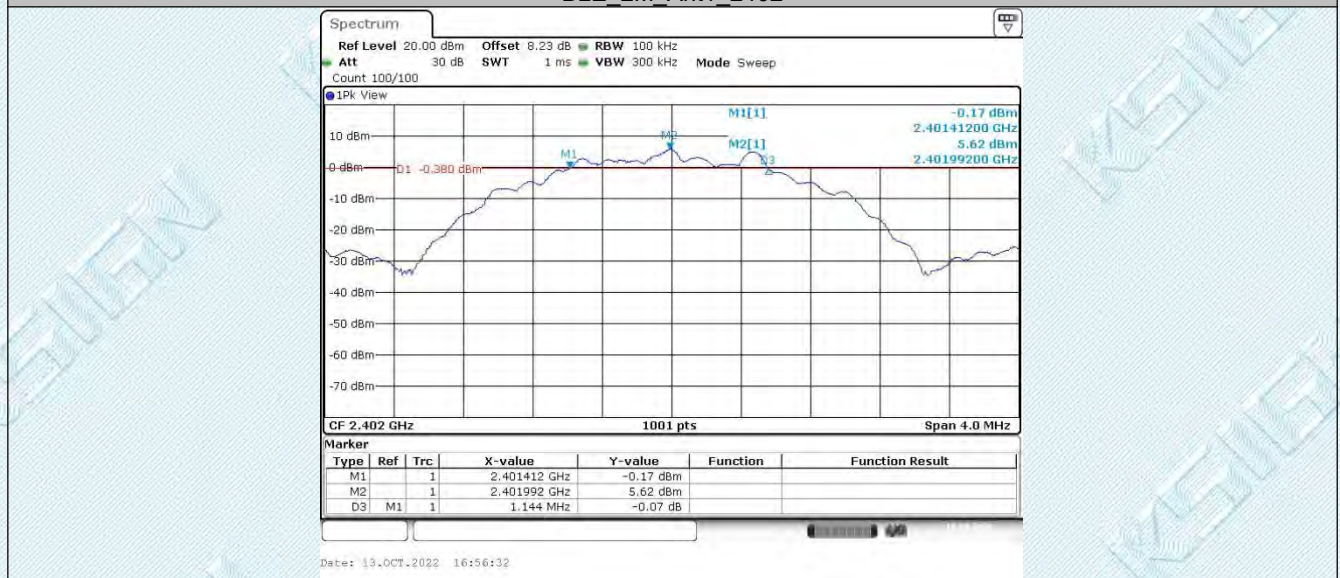
TRF EMC_R1

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

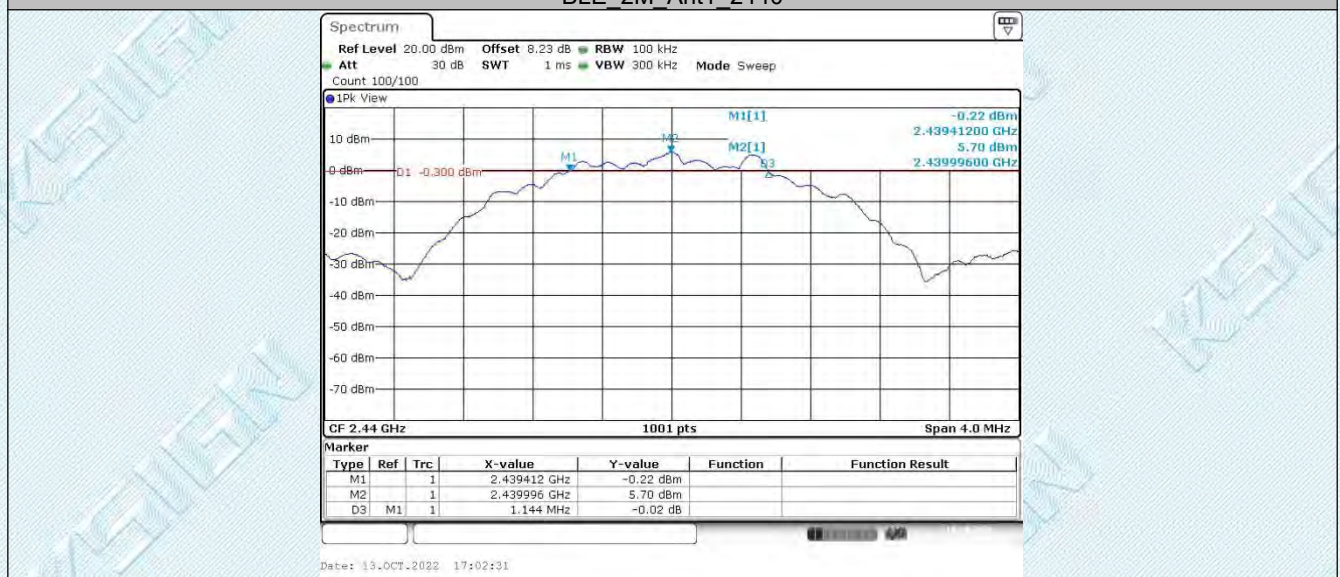
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BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

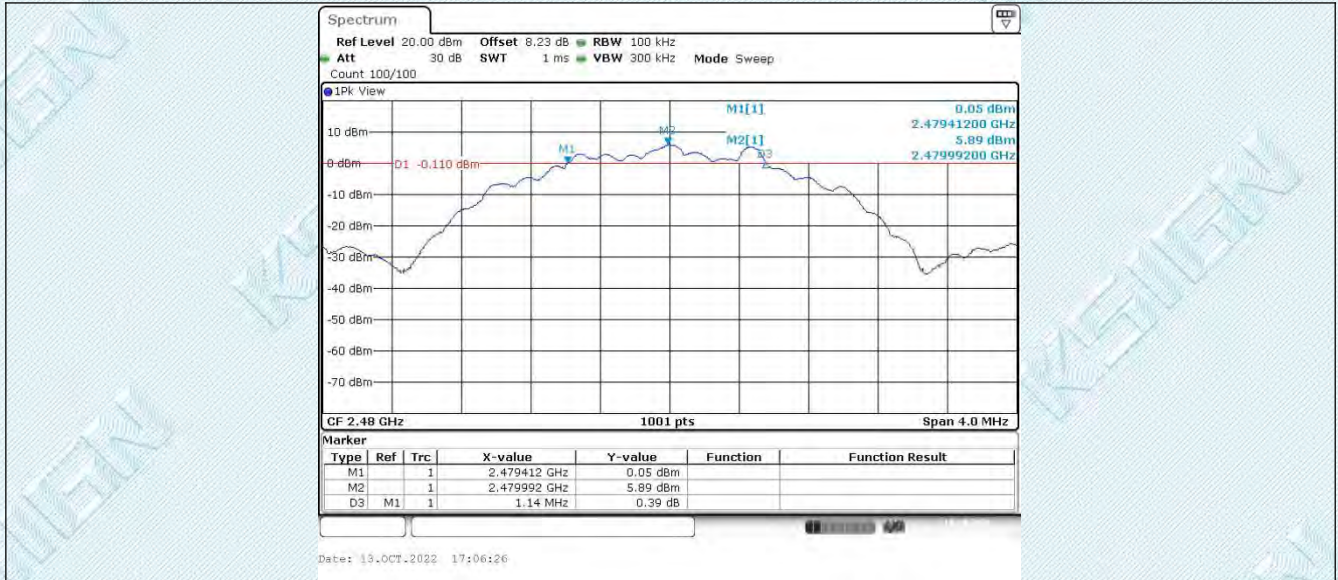


BLE_2M_Ant1_2480

TRF EMC_R1

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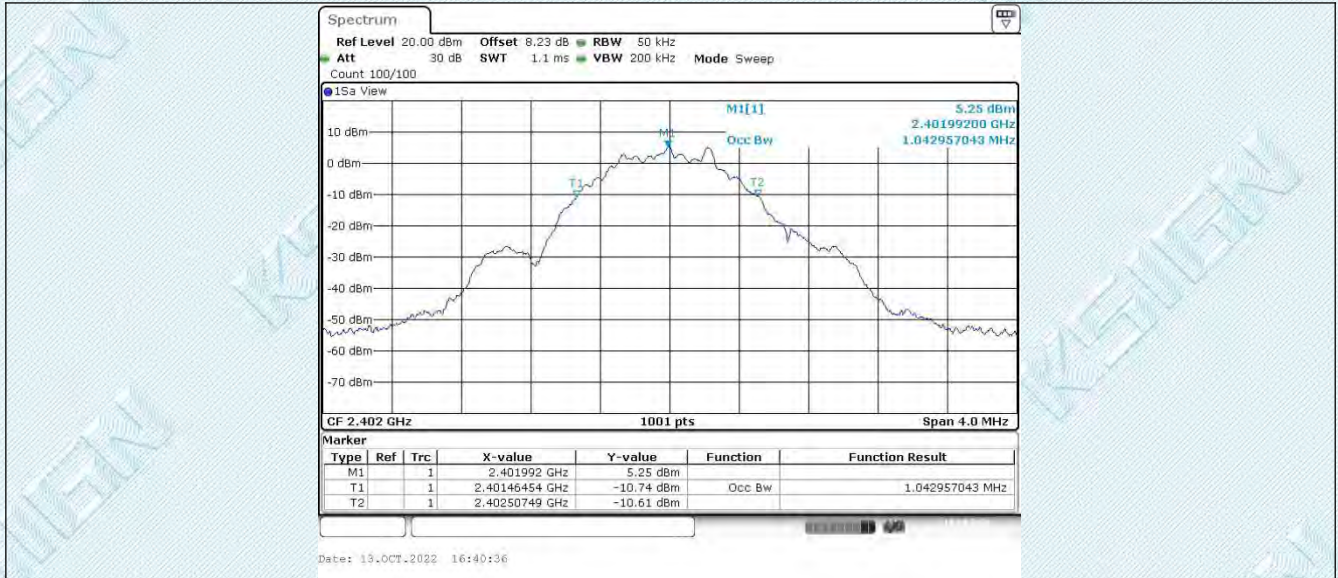
6.2. Appendix B: Occupied Channel Bandwidth

6.2.1. Test Result

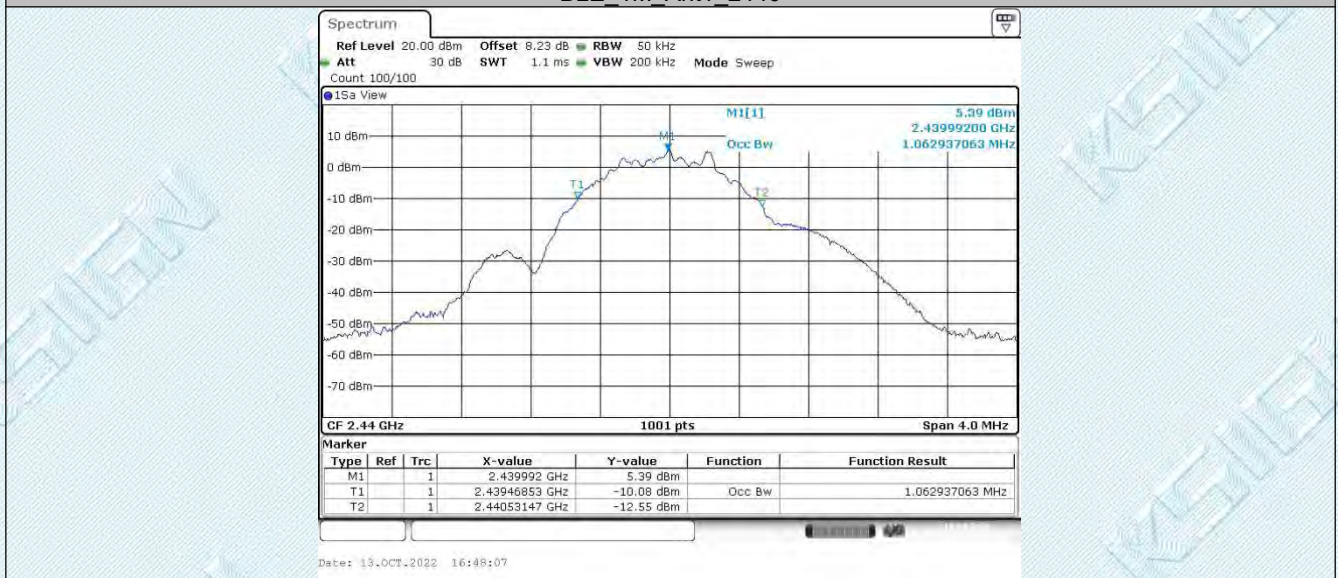
TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.043	2401.465	2402.507	---	---
		2440	1.063	2439.469	2440.531	---	---
		2480	1.359	2479.353	2480.711	---	---
BLE_2M	Ant1	2402	2.046	2400.973	2403.019	---	---
		2440	2.038	2438.977	2441.015	---	---
		2480	2.03	2478.977	2481.007	---	---

6.2.2. Test Graphs

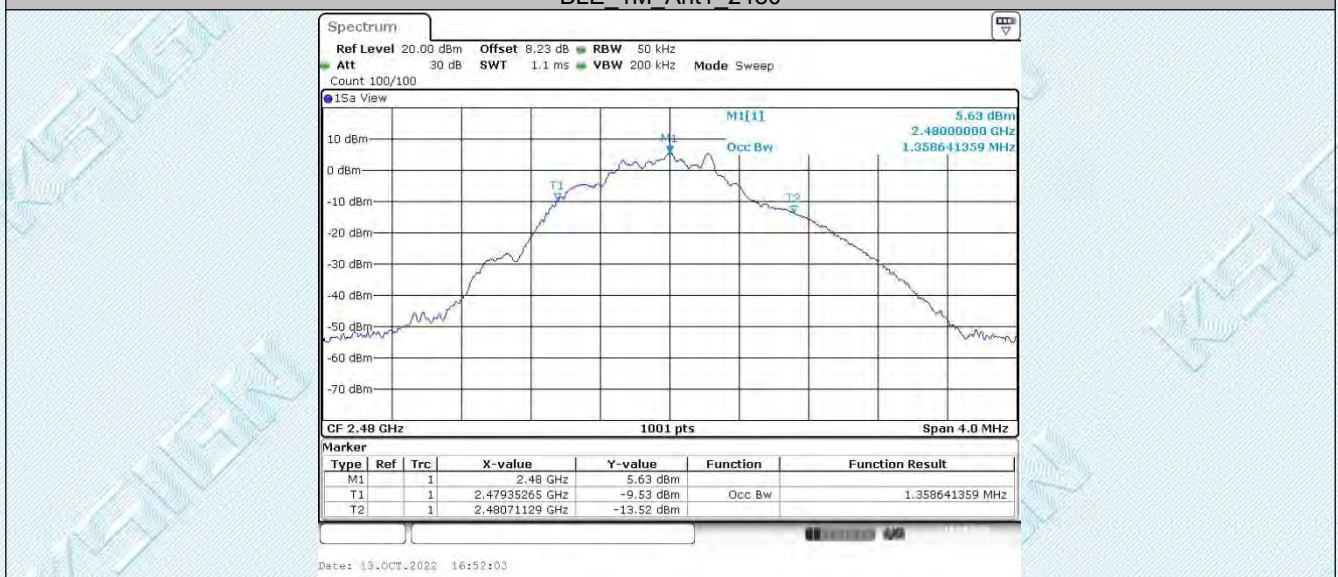
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

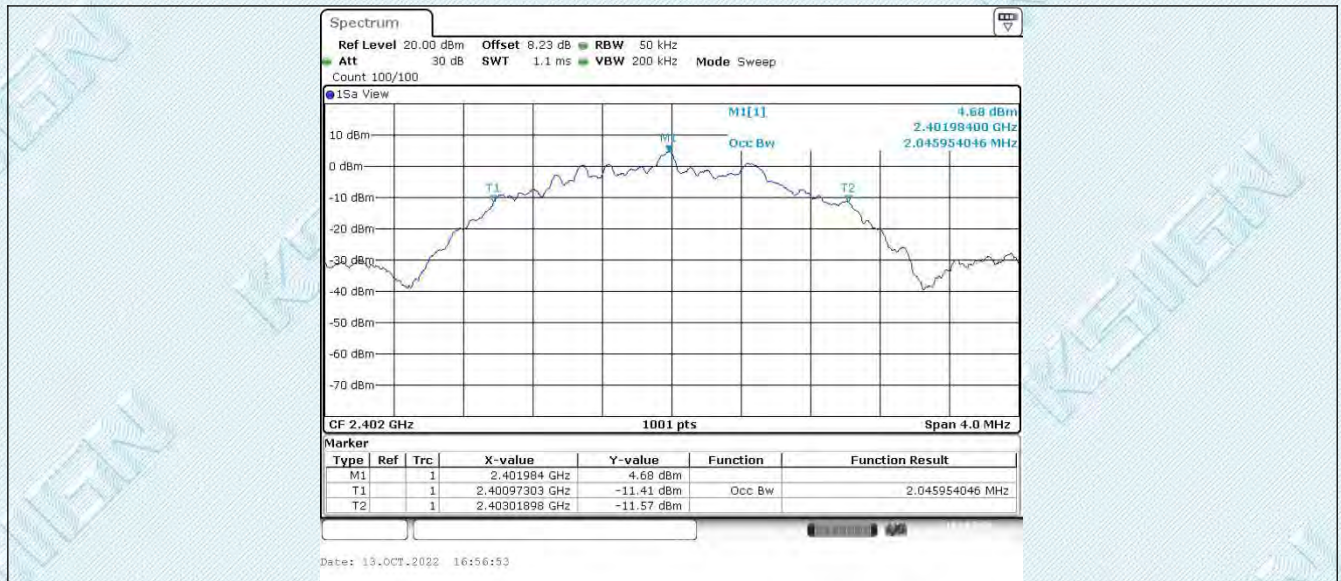


BLE_2M_Ant1_2402

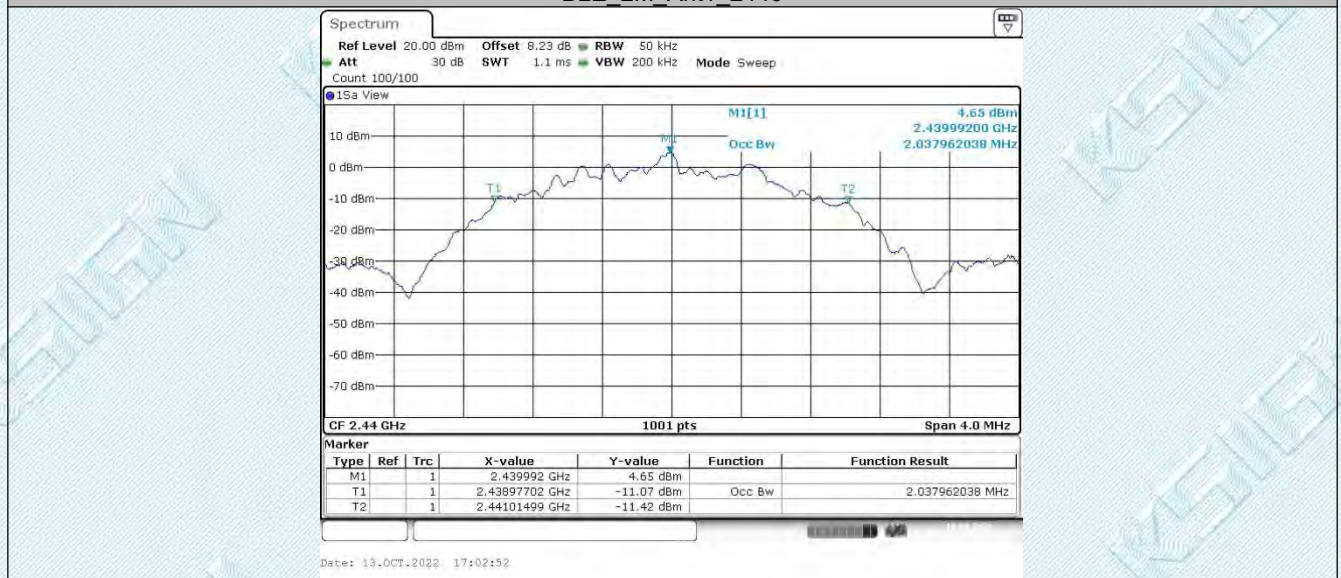
TRF EMC_R1

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

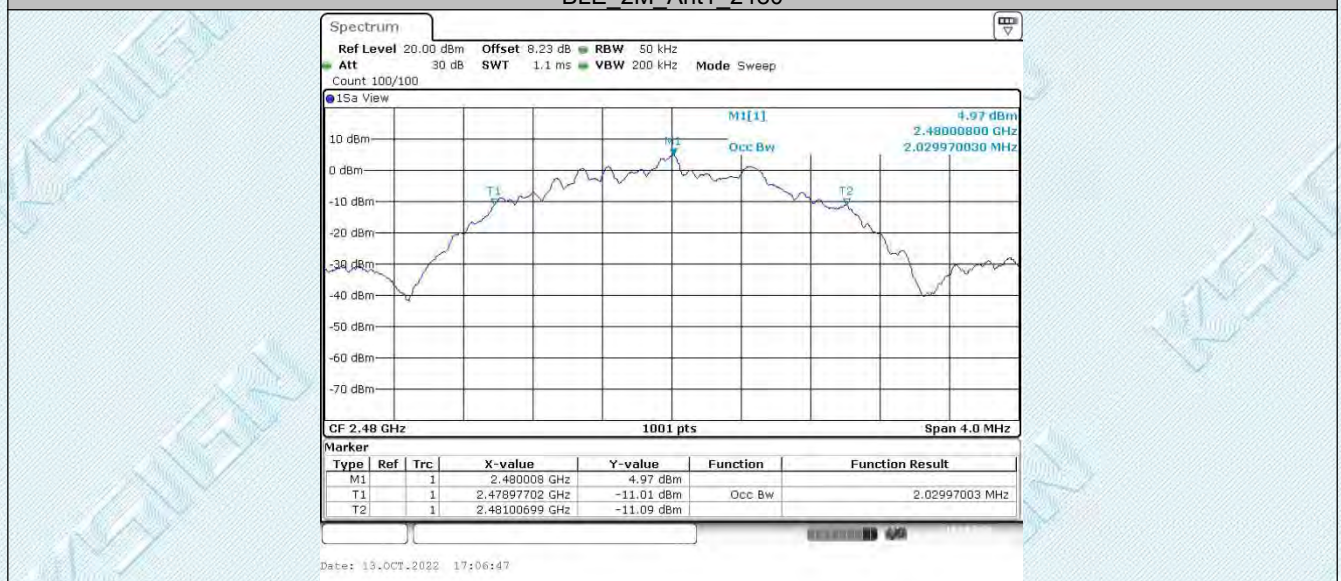
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BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



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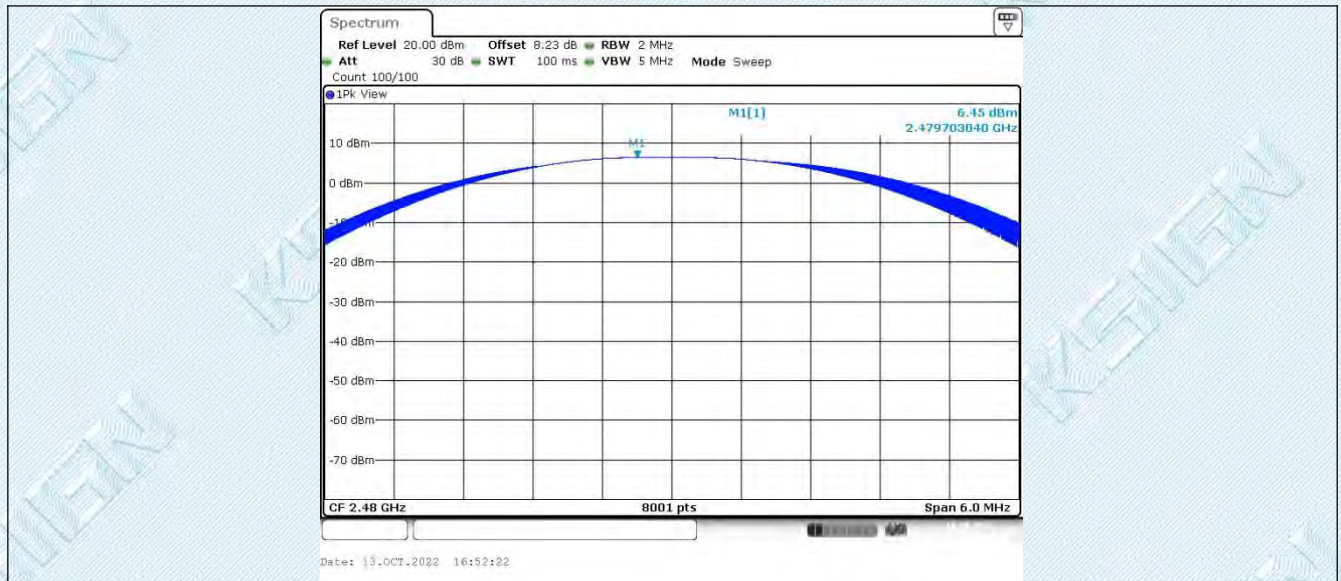
6.3. Appendix C: Maximum conducted output power

6.3.1. Test Result Peak

TestMode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	6.12	≤30	PASS
		2440	6.21	≤30	PASS
		2480	6.45	≤30	PASS
BLE_2M	Ant1	2402	6.12	≤30	PASS
		2440	6.22	≤30	PASS
		2480	6.47	≤30	PASS

6.3.2. Test Graphs Peak

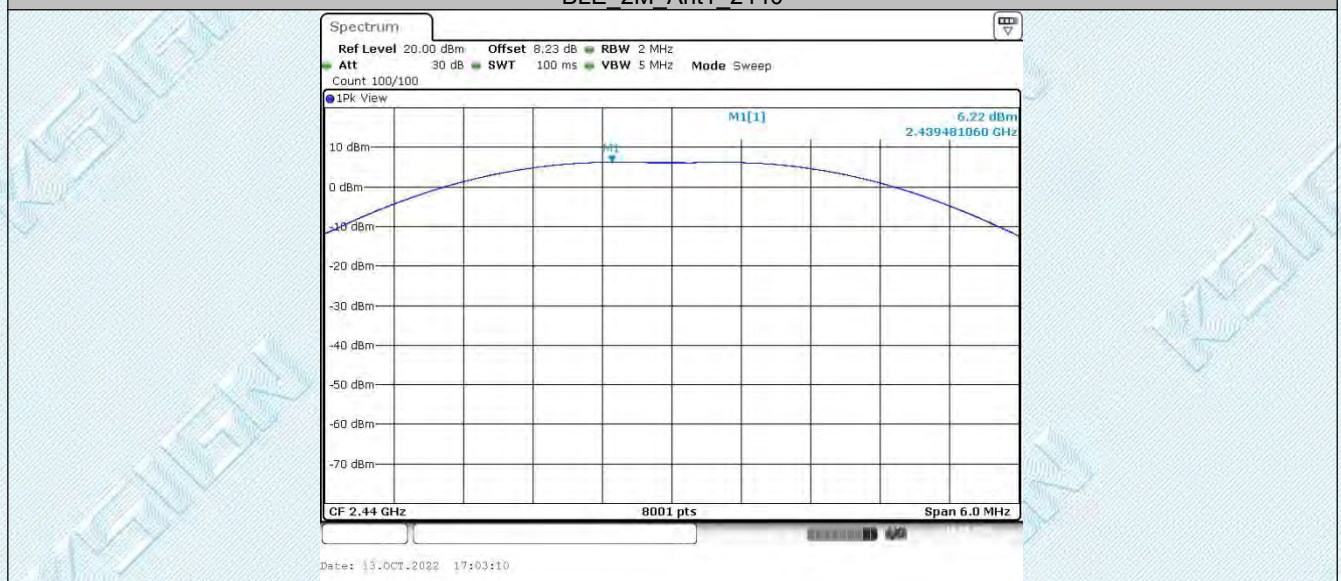




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

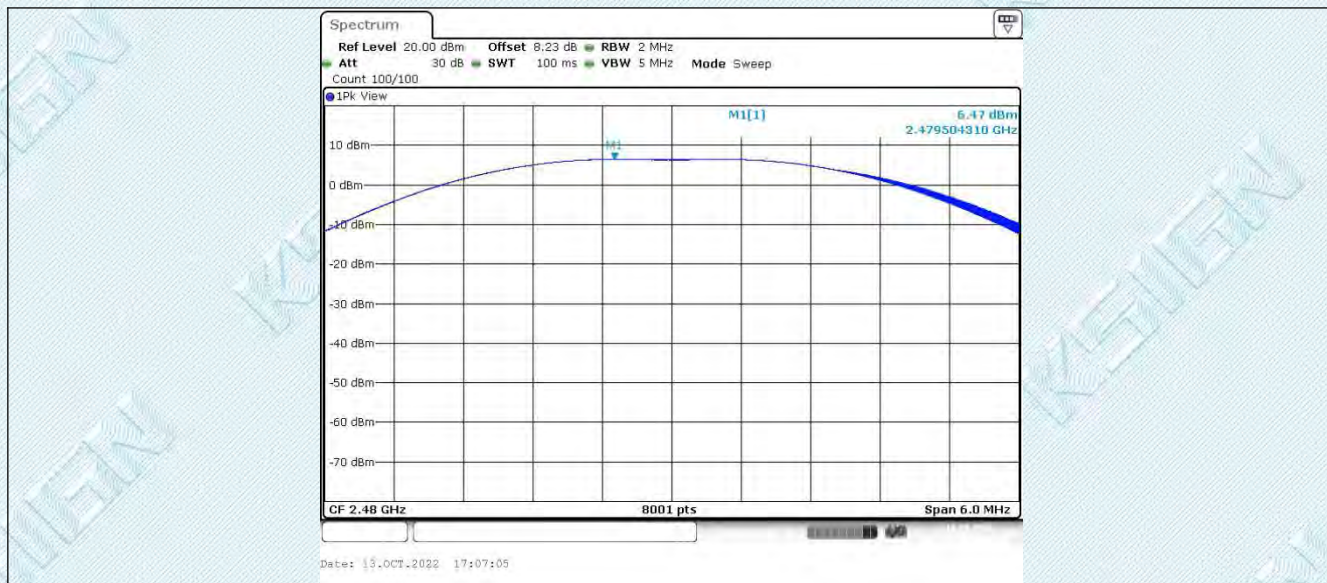


BLE_2M_Ant1_2480

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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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TRF EMC_R1

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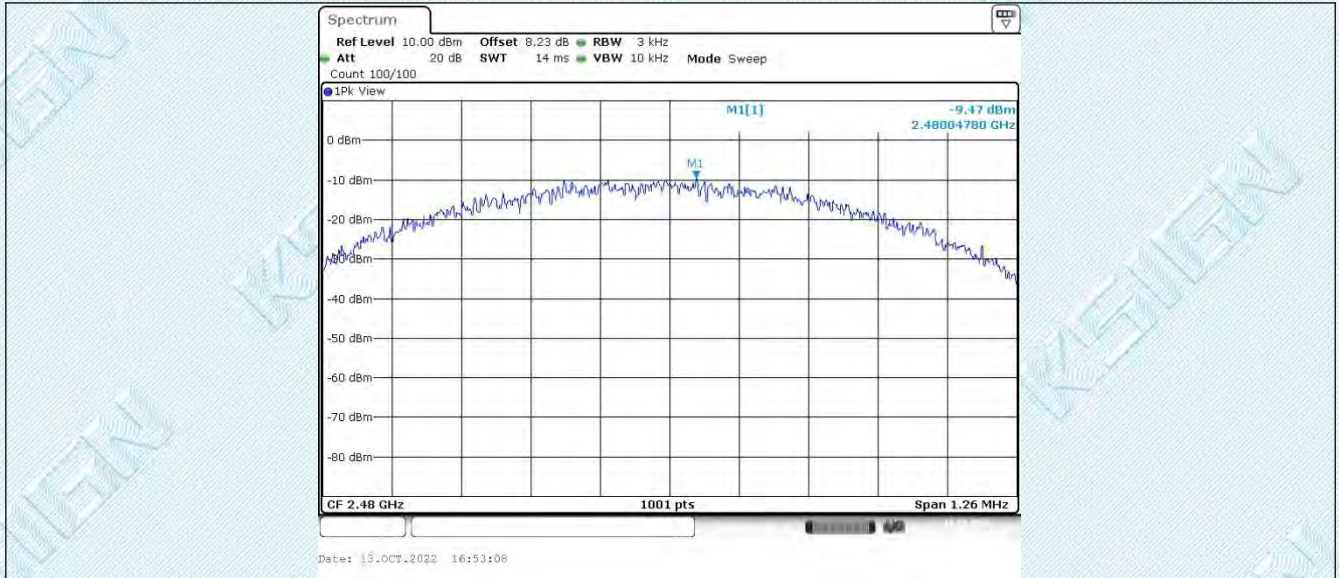
6.4. Appendix D: Maximum power spectral density

6.4.1. Test Result

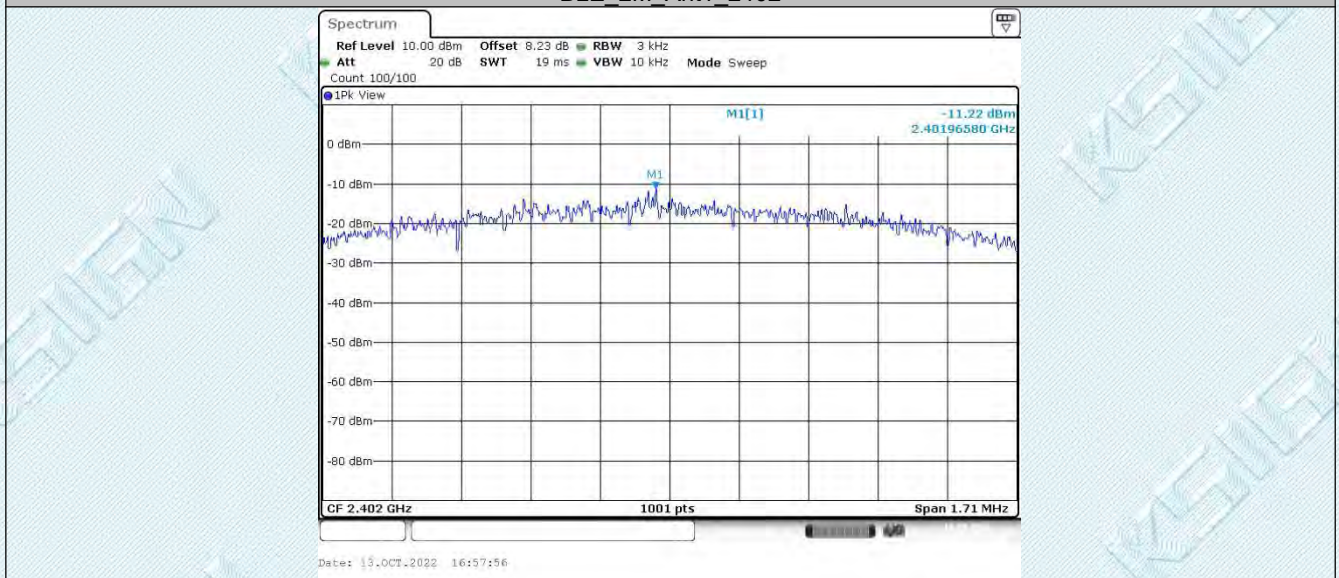
TestMode	Antenna	Freq(MHz)	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.91	≤8.00	PASS
		2440	-9.9	≤8.00	PASS
		2480	-9.47	≤8.00	PASS
BLE_2M	Ant1	2402	-11.22	≤8.00	PASS
		2440	-11.04	≤8.00	PASS
		2480	-11.62	≤8.00	PASS

6.4.2. Test Graphs

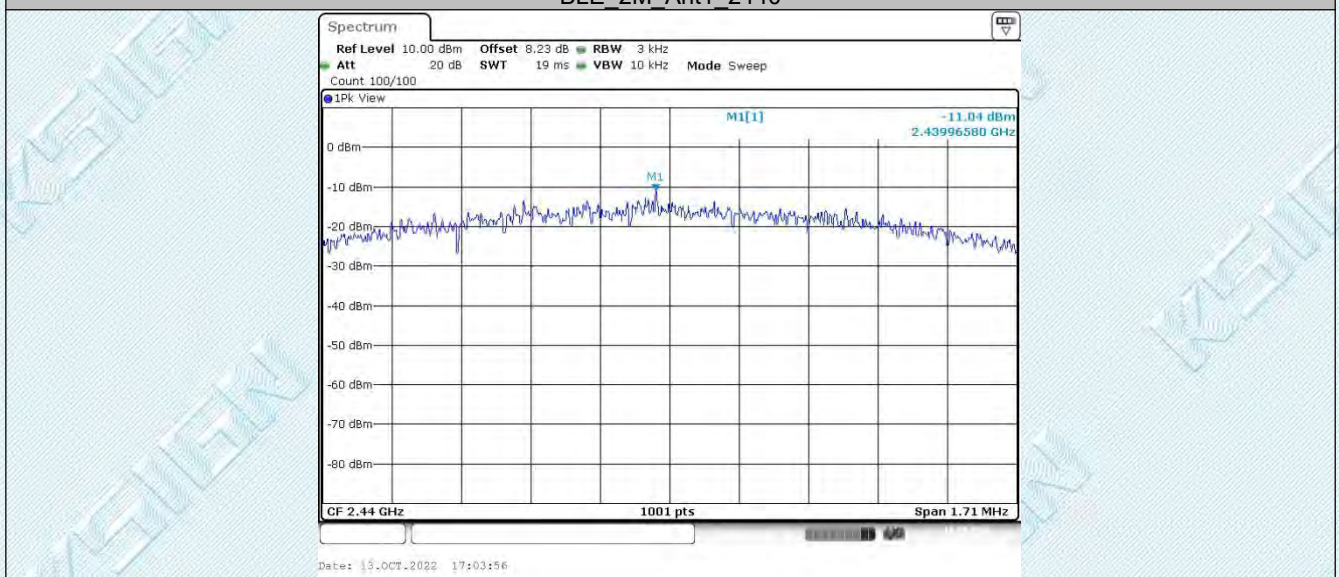




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

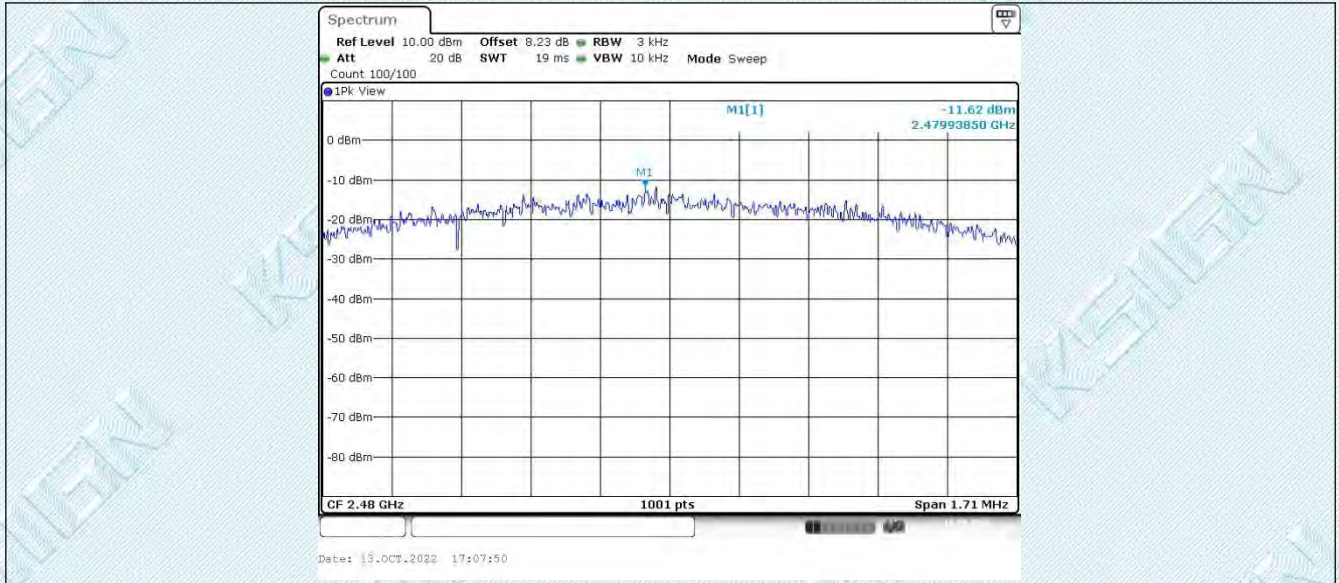


BLE_2M_Ant1_2480

TRF EMC_R1

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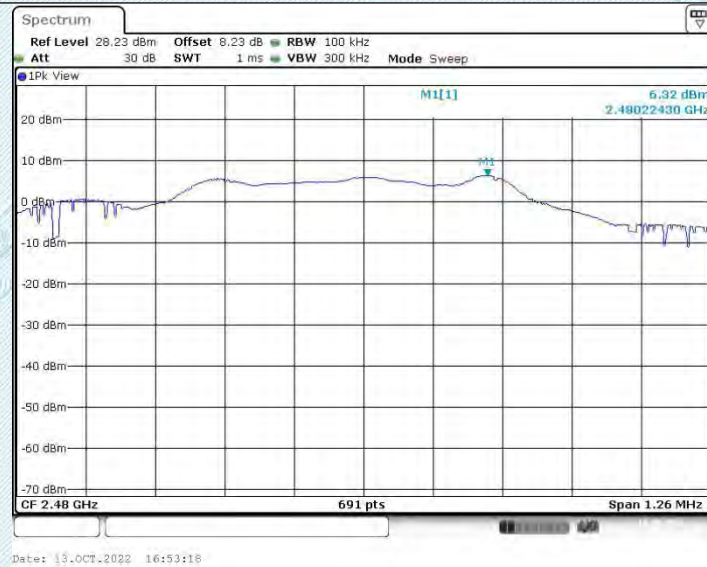
6.5. ppendix E: Reference level measurement

6.5.1. Test Result

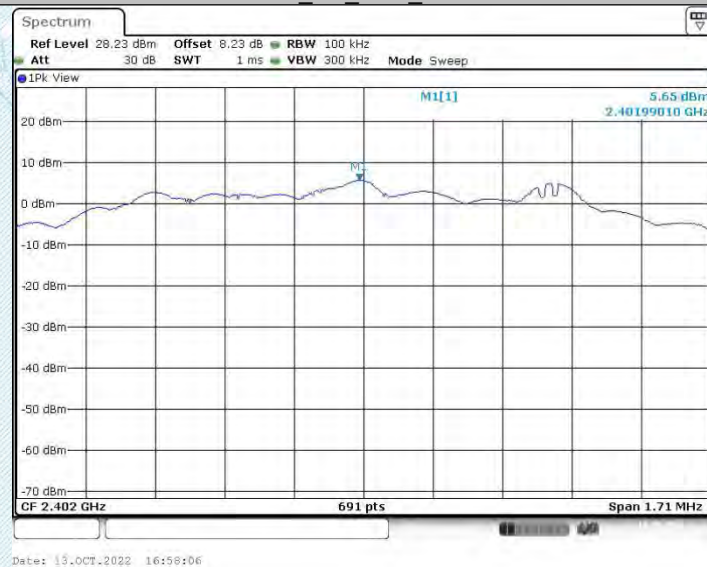
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.22	6.01
		2440	2440.22	6.10
		2480	2480.22	6.32
BLE_2M	Ant1	2402	2401.99	5.65
		2440	2439.99	5.70
		2480	2479.99	5.94

6.5.2. Test Graphs

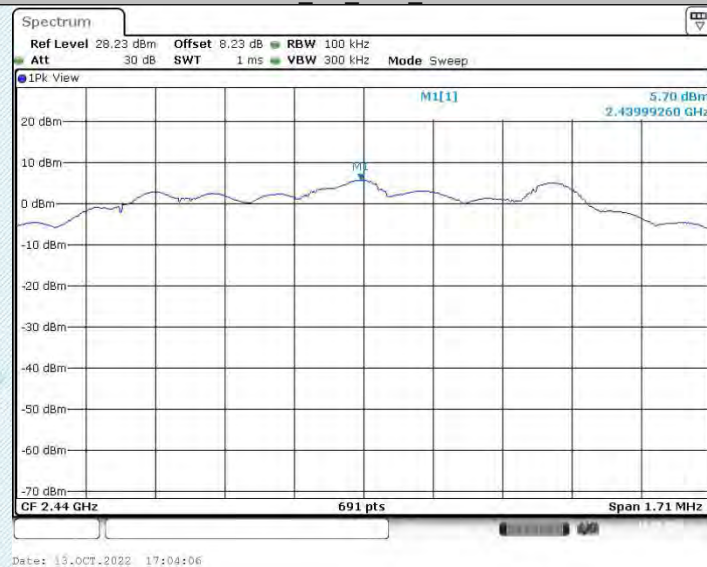




BLE_2M_Ant1_2402



BLE_2M_Ant1_2440

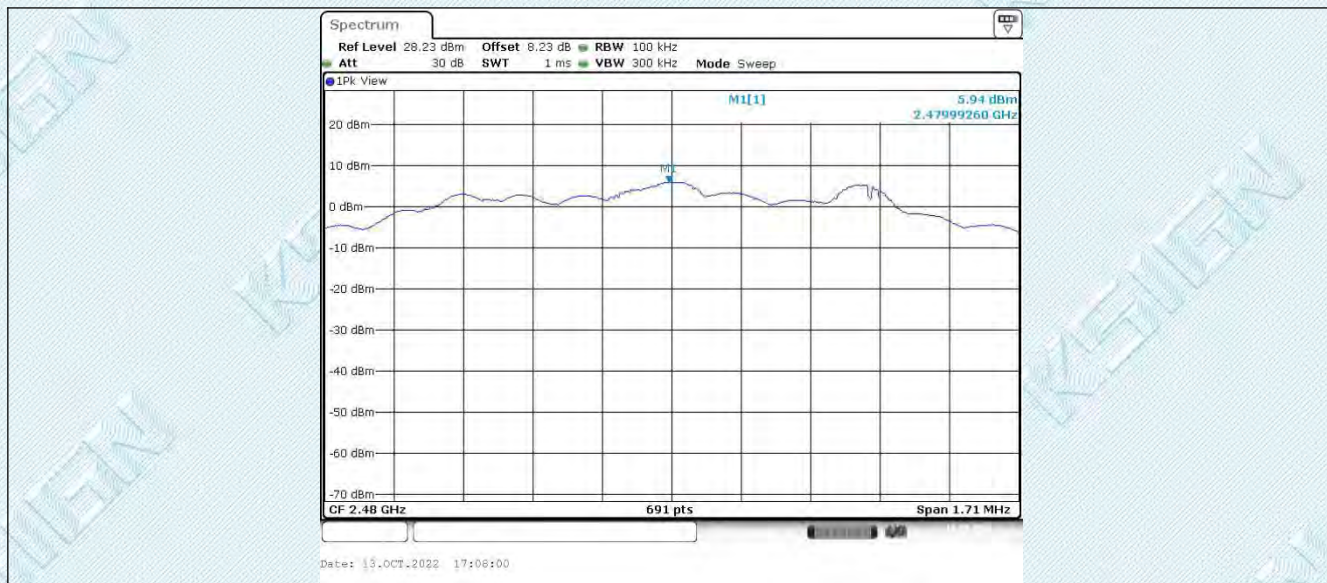


BLE_2M_Ant1_2480

TRF EMC_R1

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TRF EMC_R1

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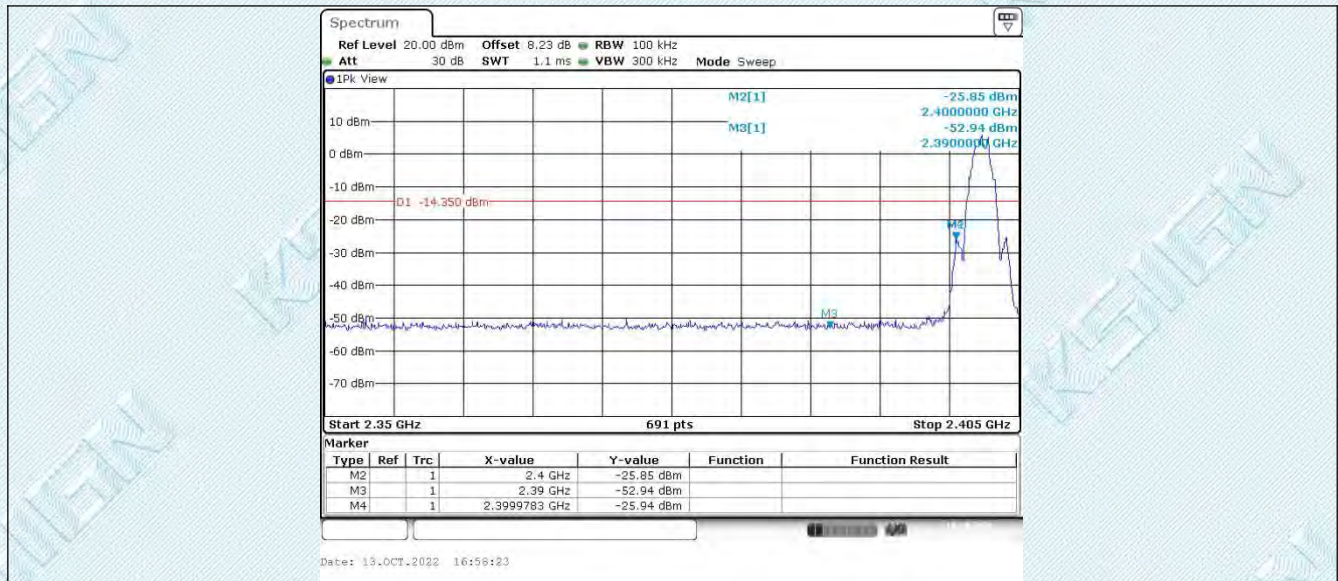
6.6. Appendix F: Band edge measurements

6.6.1. Test Result

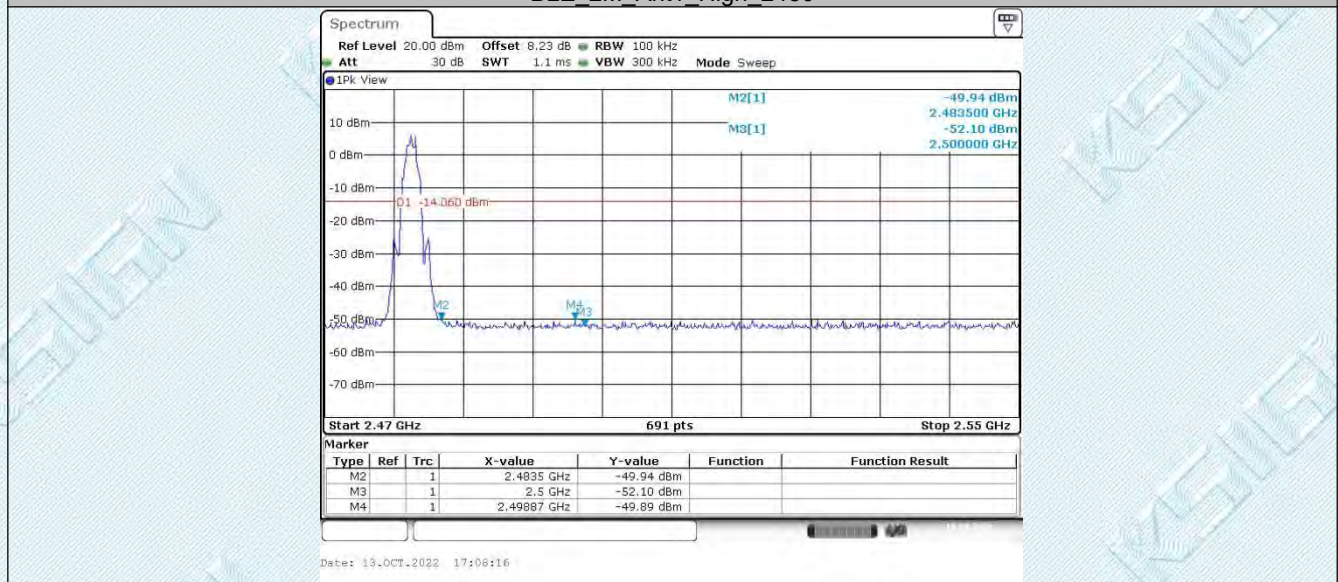
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.01	-49.61	≤-13.99	PASS
		High	2480	6.32	-49.24	≤-13.68	PASS
BLE_2M	Ant1	Low	2402	5.65	-25.94	≤-14.35	PASS
		High	2480	5.94	-49.89	≤-14.06	PASS

6.6.2. Test Graphs





BLE_2M_Ant1_High_2480



TRF EMC_R1

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

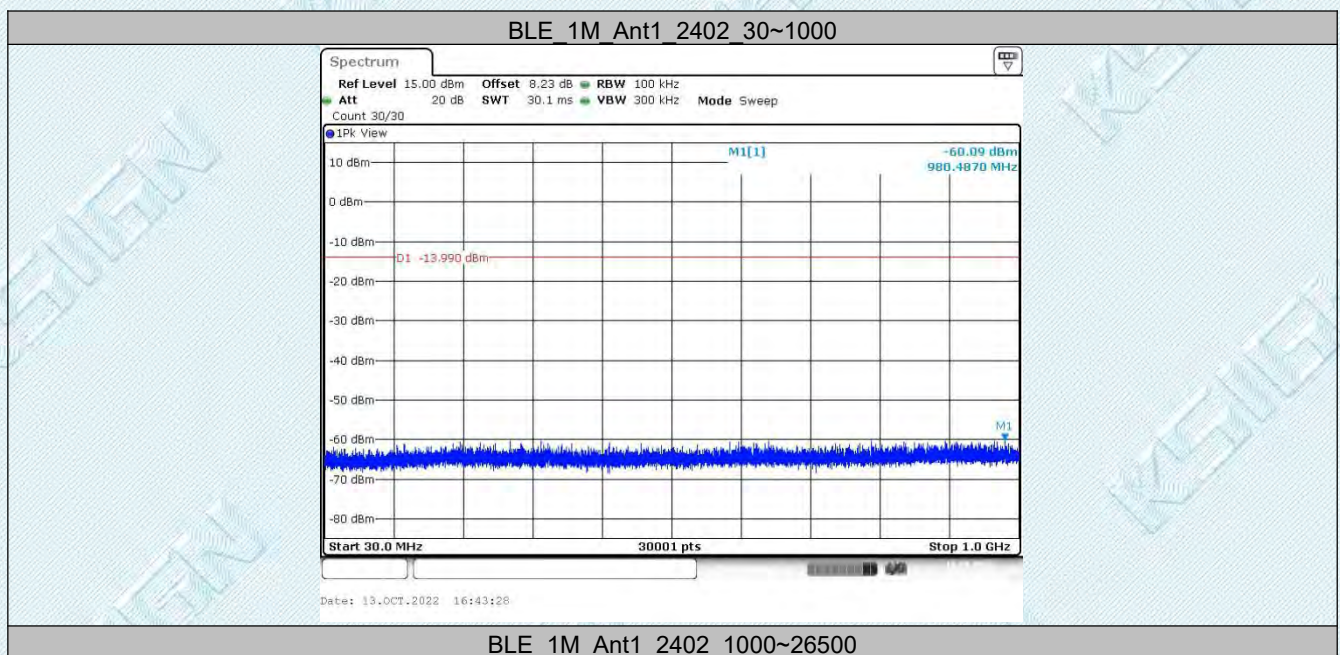
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com

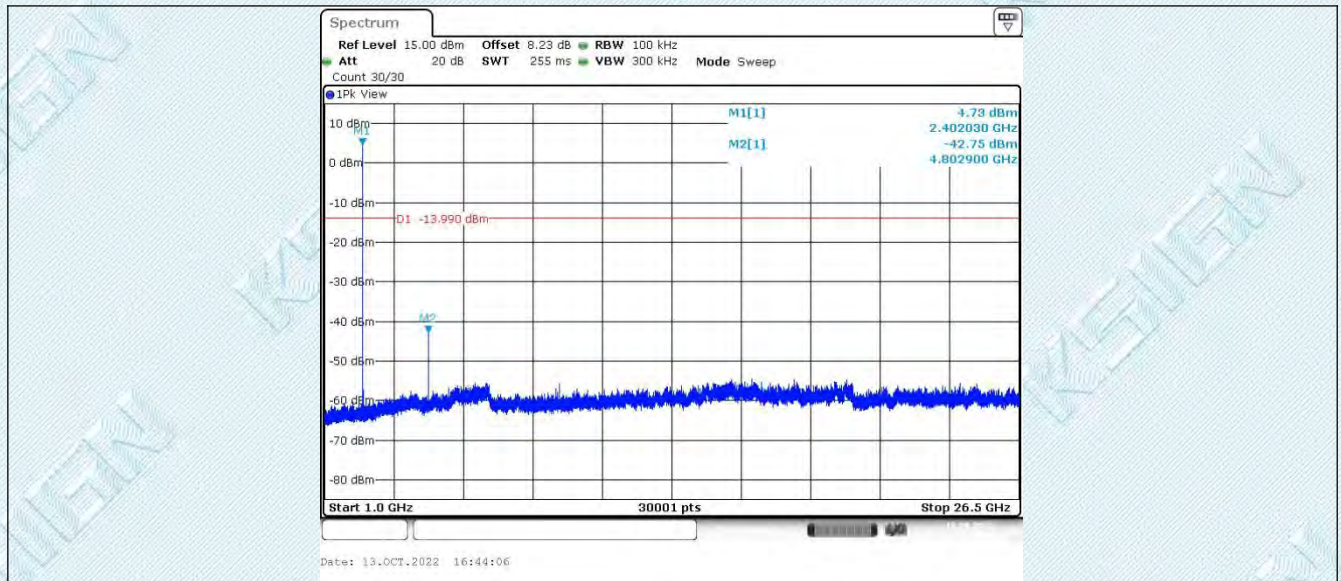
6.7. Appendix G: Conducted Spurious Emission

6.7.1. Test Result

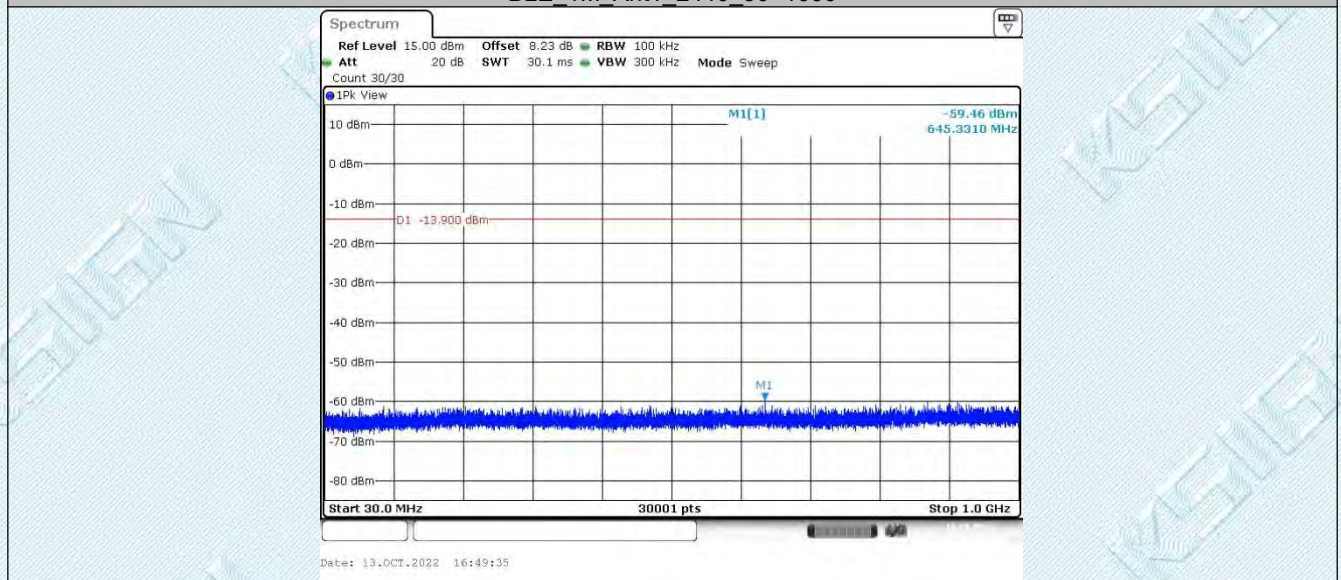
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	6.01	-60.09	≤-13.99	PASS
			1000~26500	6.01	-42.75	≤-13.99	PASS
		2440	30~1000	6.10	-59.46	≤-13.9	PASS
			1000~26500	6.10	-42.95	≤-13.9	PASS
		2480	30~1000	6.32	-60.22	≤-13.68	PASS
			1000~26500	6.32	-44.82	≤-13.68	PASS
BLE_2M	Ant1	2402	30~1000	5.65	-59.7	≤-14.35	PASS
			1000~26500	5.65	-45.34	≤-14.35	PASS
		2440	30~1000	5.70	-59.36	≤-14.3	PASS
			1000~26500	5.70	-41.08	≤-14.3	PASS
		2480	30~1000	5.94	-59.84	≤-14.06	PASS
			1000~26500	5.94	-46.7	≤-14.06	PASS

6.7.2. Test Graphs

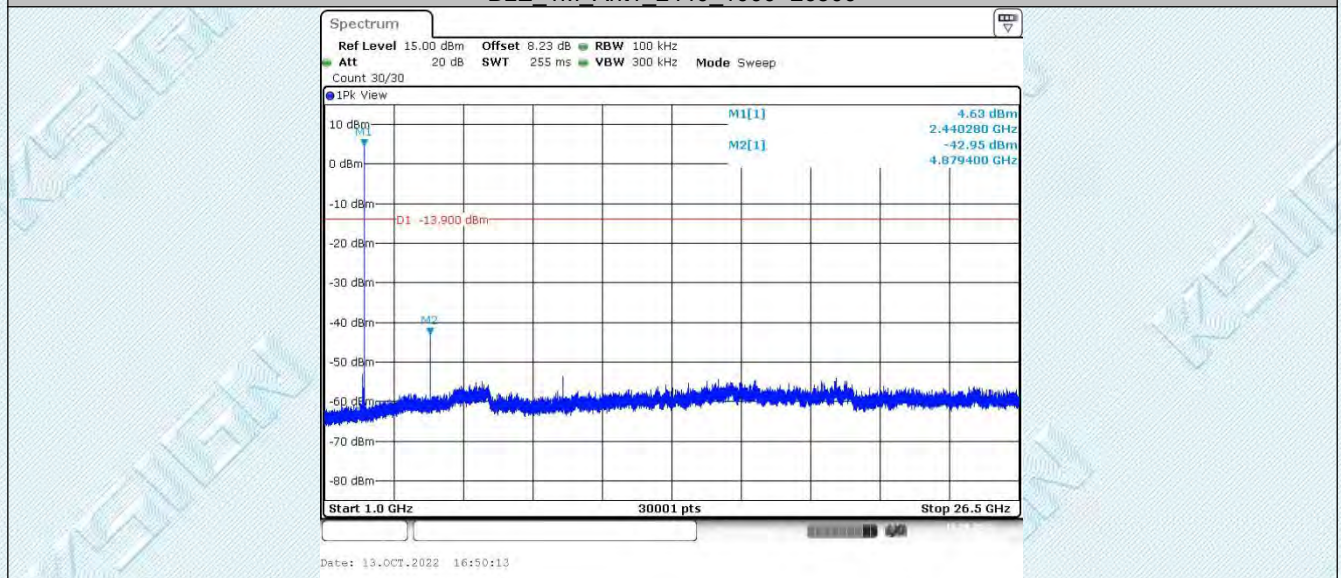




BLE 1M Ant1 2440 30~1000



BLE 1M Ant1 2440 1000~26500

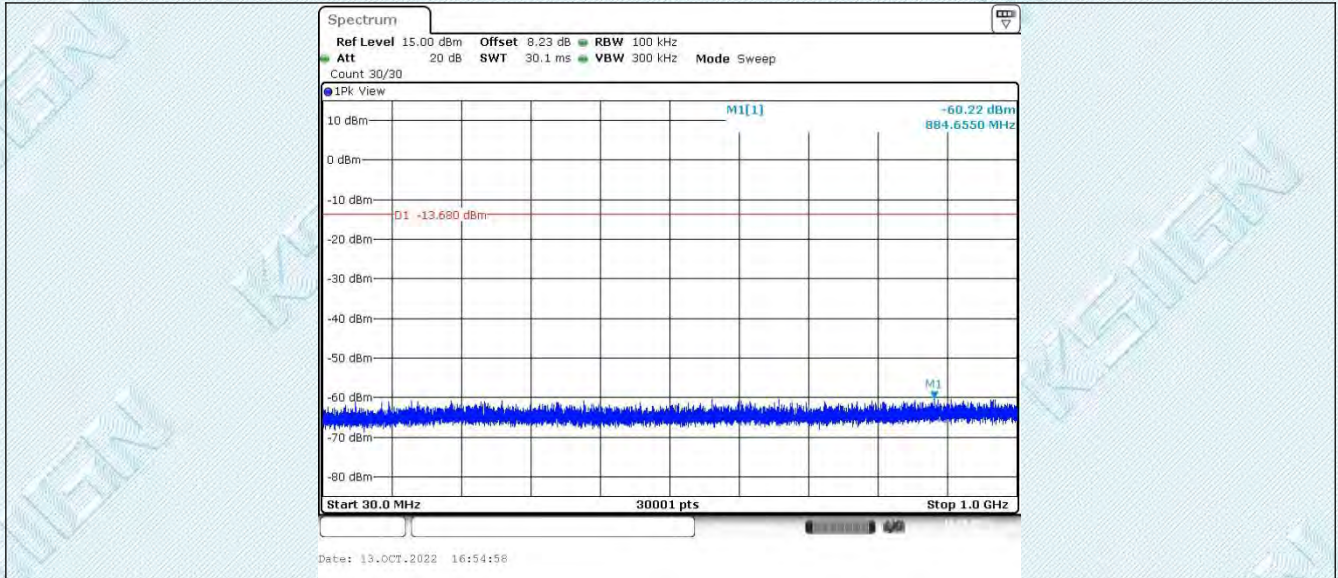


BLE 1M Ant1 2480 30~1000

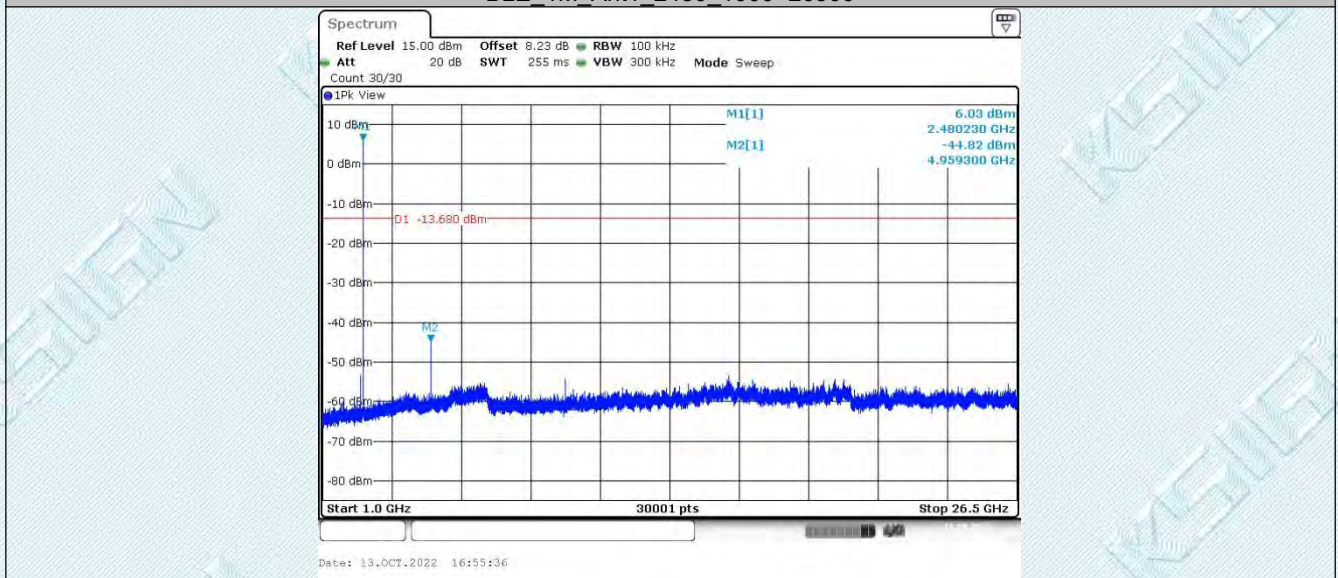
TRF EMC_R1

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

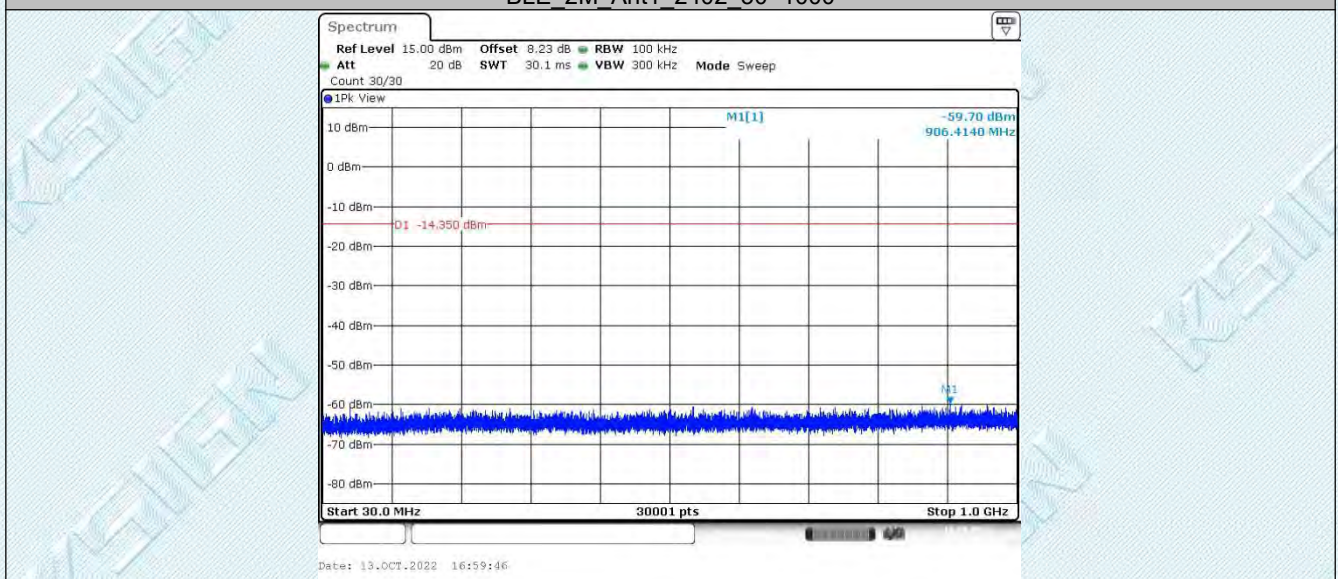
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BLE_1M_Ant1_2480_1000~26500



BLE_2M_Ant1_2402_30~1000

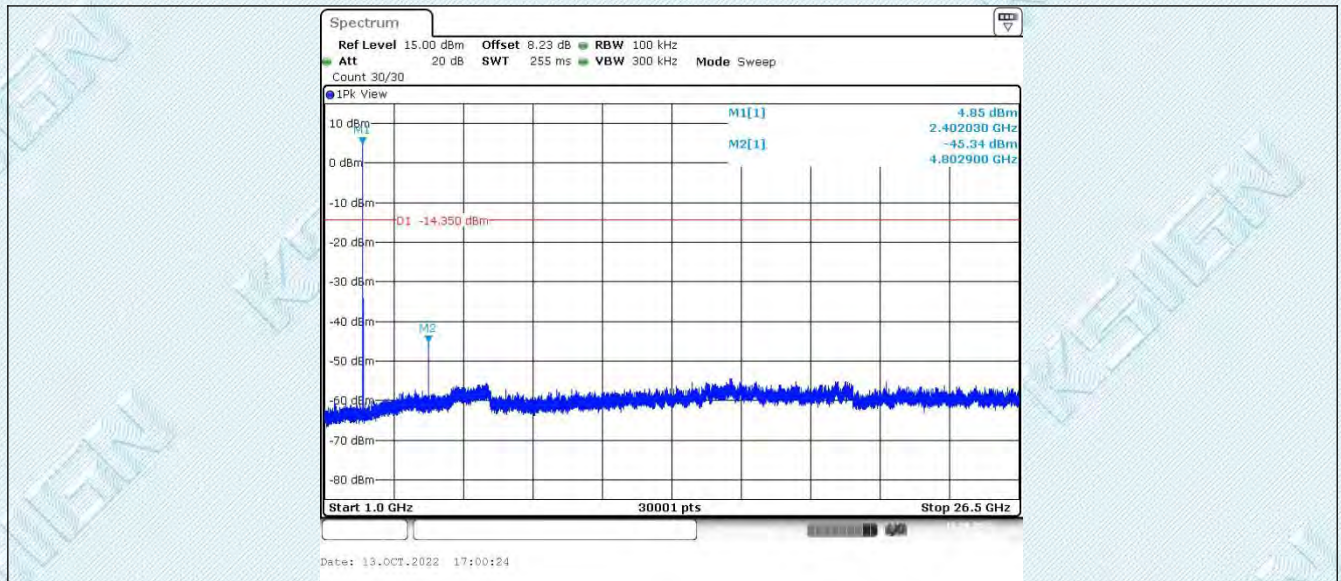


BLE_2M_Ant1_2402_1000~26500

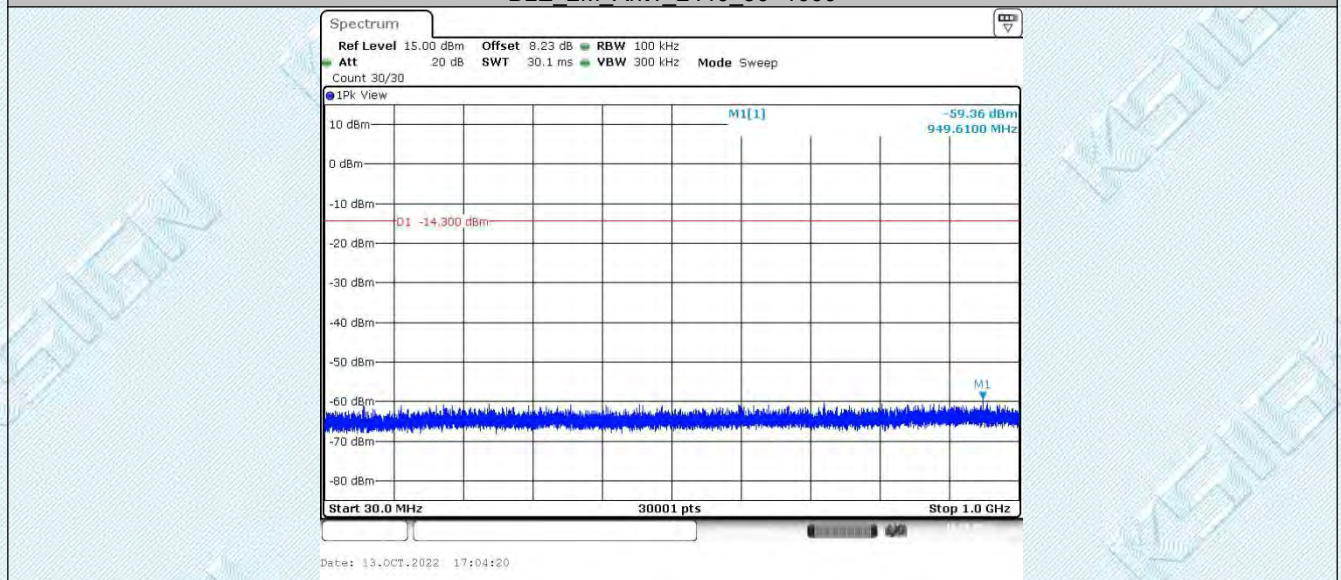
TRF EMC_R1

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

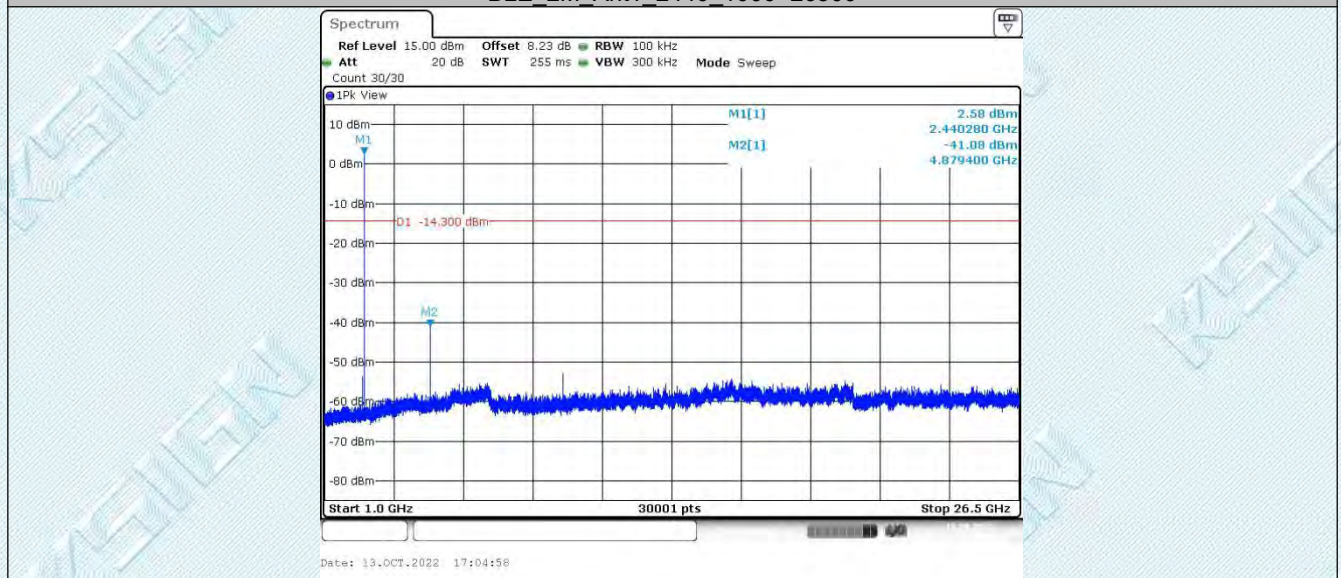
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



BLE 2M Ant1 2440 30~1000



BLE 2M Ant1 2440 1000~26500

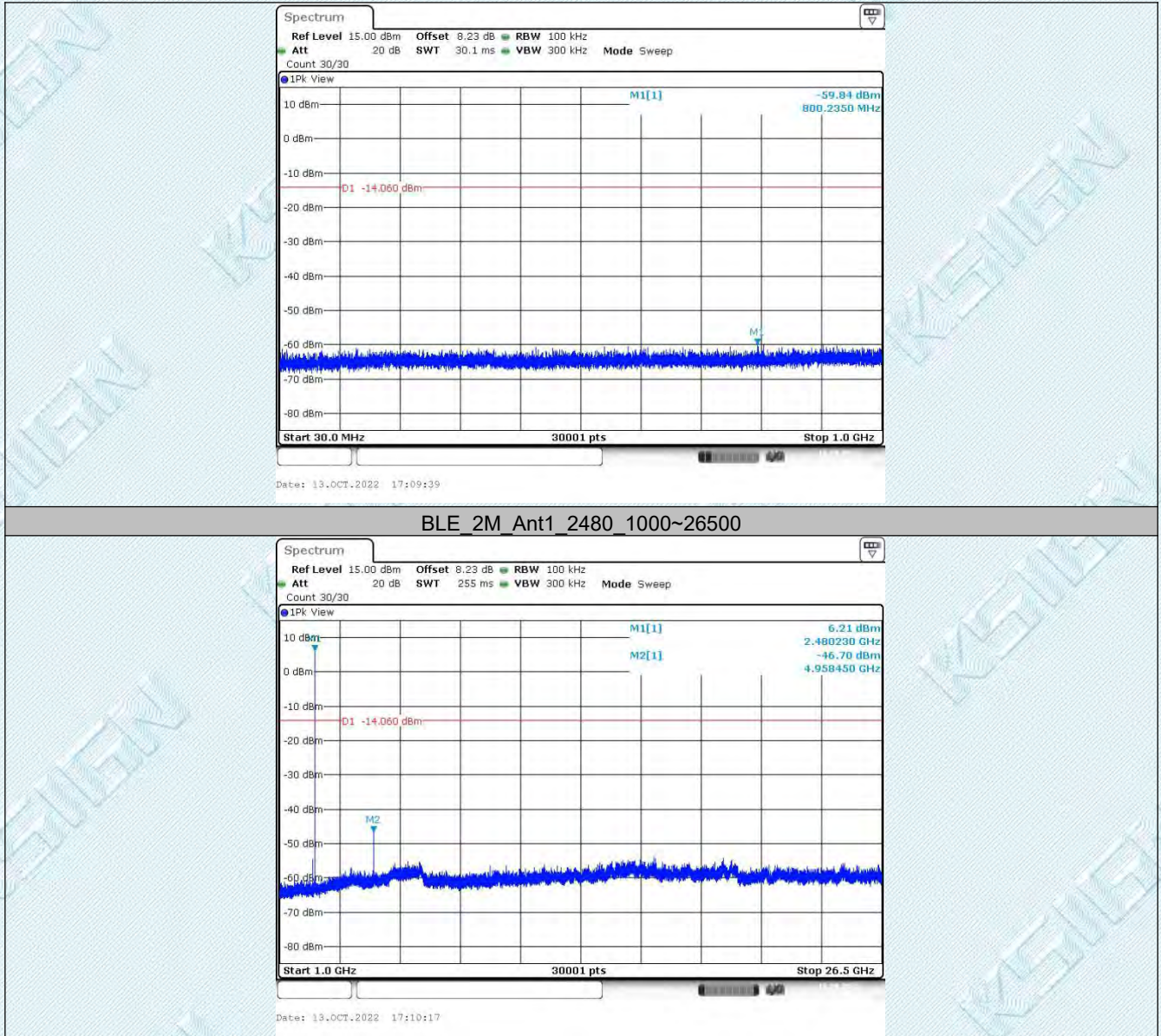


BLE 2M Ant1 2480 30~1000

TRF EMC_R1

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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TRF EMC_R1

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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6.8. Appendix H: Duty Cycle

6.8.1. Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	Factor	Limit	Verdict
BLE_1M	Ant1	2440	2.16	2.50	86.40	0.63	---	---
BLE_2M	Ant1	2440	1.11	1.88	59.04	2.29	---	---

6.8.2. Test Graphs



6.9. Appendix I: Emissions in Restricted Bands

6.9.1. Test Result

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	Peak	2310.000	-39.75	≤-21.20	55.45	≤74	PASS
				Peak	2365.283	-38.17	≤-21.20	57.03	≤74	PASS
				Peak	2390.000	-39.74	≤-21.20	55.46	≤74	PASS
		High	2480	Peak	2483.500	-32.15	≤-21.20	63.05	≤74	PASS
				Peak	2483.797	-31.64	≤-21.20	63.56	≤74	PASS
				Peak	2500.000	-37.91	≤-21.20	57.29	≤74	PASS
BLE_2M	Ant1	Low	2402	Peak	2310.000	-39.79	≤-21.20	55.41	≤74	PASS
				Peak	2336.674	-37.55	≤-21.20	57.65	≤74	PASS
				Peak	2390.000	-39.07	≤-21.20	56.13	≤74	PASS
		High	2480	Peak	2483.500	-32.26	≤-21.20	62.94	≤74	PASS
				Peak	2483.681	-31.23	≤-21.20	63.97	≤74	PASS
				Peak	2500.000	-38.88	≤-21.20	56.32	≤74	PASS

Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

6.9.2. Test Graphs



TRF EMC_R1

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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--THE END--