

TEST REPORT

Report No. : KS2311S6230E03

FCC ID : 2BDTW-P3

Applicant : Zhongke Microelectronics Technology (Shenzhen) Co., LTD

Address : 5F Building D, No. 18 Guangyao Industrial Plant, Fourth Industrial Zone,
Zhulongtian Road, Shuitian Community, Shiyan Street, Baoan District,
Shenzhen

Manufacturer : Zhongke Microelectronics Technology (Shenzhen) Co., LTD

Address : 5F Building D, No. 18 Guangyao Industrial Plant, Fourth Industrial Zone,
Zhulongtian Road, Shuitian Community, Shiyan Street, Baoan District,
Shenzhen

Product Name : Tablet

Trademark : Penguin Technology

Model/Type reference : P3_8, P3_10

Standard : 47 CFR Part 15.247

Date of Receipt : November 28, 2023

Date of Test Date : November 28, 2023 to December 14, 2023

Date of issue : December 14, 2023

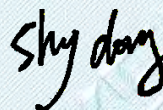
Test result : **Pass**

Conclusion : The submitted sample was found to COMPLY with the standards above.

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	December 14, 2023	Original

1.3. Test Description

Test Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	47 CFR 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), 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

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)	± 3.34dB
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 $y \pm U$, 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 %. Otherwise required by the applicant or Product Regulations. Decision Rule in this report did not consider the uncertainty.

2. GENERAL INFORMATION

2.1. General Description Of EUT

Test Sample Number:	1-1(Normal Sample), 1-2(Engineering Sample)
Product Name:	Tablet
Trademark:	Penguin Technology
Model / Type reference:	P3_8, P3_10
Model Difference:	The only difference product models is size of the appearance. Different model names are available to meet market demands. Other power supply methods, internal structures, PCB board, circuits and key components are the same, and do not affect safety and electromagnetic compatibility performance.
Power Supply:	DC 3.8V from battery
Power Adaptor:	DC 5V
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz; 802.11n(HT40): 2422MHz to 2452MHz
Number of Channels:	802.11b/g/n(HT20): 11 Channels; 802.11n(HT40): 7 Channels
Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20 and HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type:	FPC
Antenna Gain:	1.62dBi
Max TX Power:	5.43dBm
Hardware Version:	863K A523-56T25G
Software Version:	V1.0.0

Note:Antenna gain provided by the applicant Can affect the validity of results

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	802.11b mode	Keep the EUT in 802.11b transmitting mode.
Test Mode2	802.11g mode	Keep the EUT in 802.11g transmitting mode.
Test Mode3	802.11n(HT20) mode	Keep the EUT in 802.11n(HT20) transmitting mode.
Test Mode4	802.11n(HT40) mode	Keep the EUT in 802.11n(HT40) transmitting mode.

2.4. Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	/	/

2.5. Measurement Instruments List

Conducted Emission at AC power line				
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
LISN	R&S	ENV432	1326.6105.02	2024-02-17
EMI Test Receiver	R&S	ESR	102524	2024-02-17
Manual RF Switch	JS TOYO	/	MSW-01/002	2024-02-17
ISN CAT6	Schwarzbeck	CAT5 8158	227	2024-02-17
Color Signal Generator	Philips	PM5418	672926	2024-02-17
Power Absorbing Clamp	R&S	MDS-21	100925	2024-02-19

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
Power meter	Tonscend	/	/	2024-02-17

TRF RF_R1

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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.
Conclusion:	The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

4. Radio Spectrum Matter Test Results (RF)

4.1. Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2013 section 6.2		
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

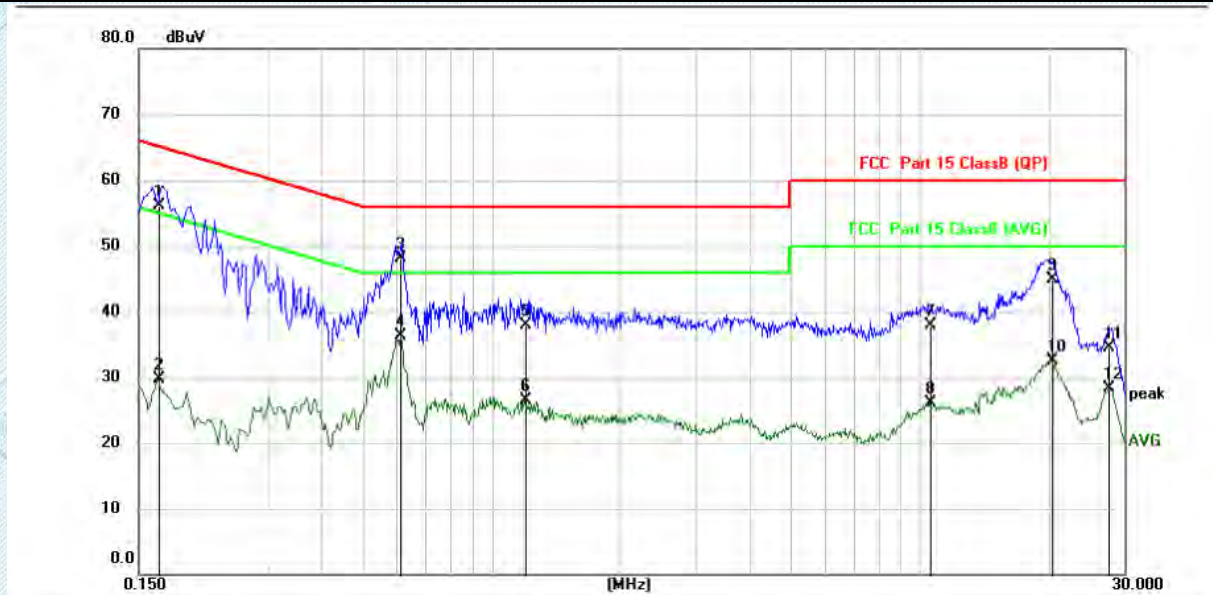
4.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1

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4.1.3. Test Data:

Test Mode1 / Line: Line

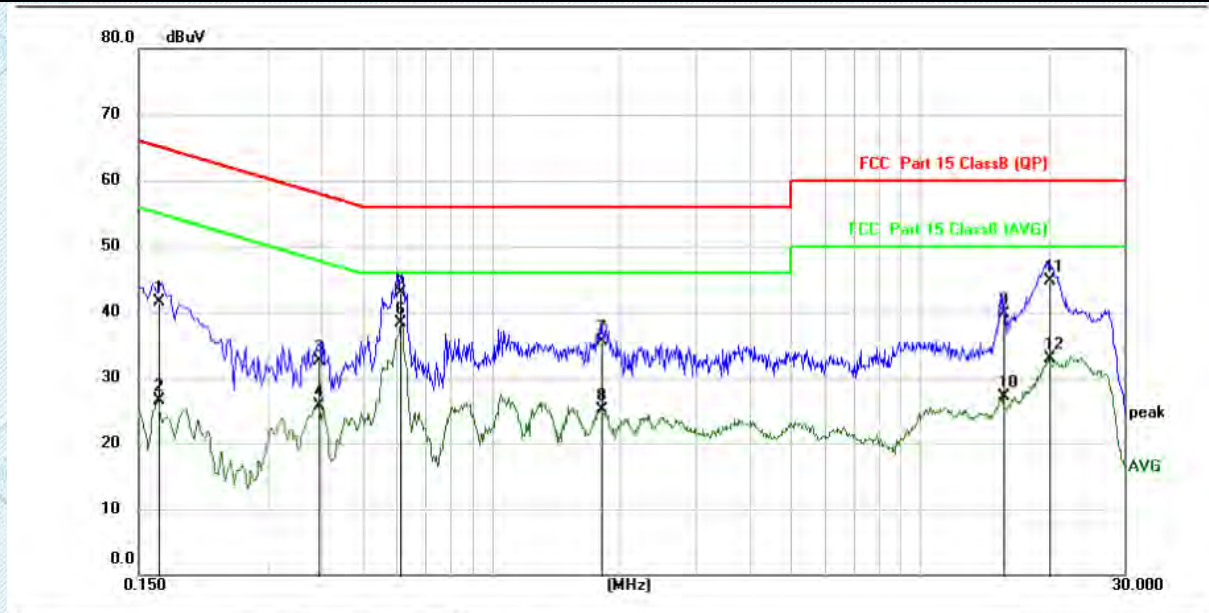


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1660	45.79	10.38	56.17	65.16	-8.99	QP	
2	0.1660	19.32	10.38	29.70	55.16	-25.46	AVG	
3 *	0.6139	37.73	10.42	48.15	56.00	-7.85	QP	
4	0.6139	25.92	10.42	36.34	46.00	-9.66	AVG	
5	1.1939	27.43	10.43	37.86	56.00	-18.14	QP	
6	1.1939	16.02	10.43	26.45	46.00	-19.55	AVG	
7	10.5100	27.26	10.70	37.96	60.00	-22.04	QP	
8	10.5100	15.48	10.70	26.18	50.00	-23.82	AVG	
9	20.3019	33.59	11.38	44.97	60.00	-15.03	QP	
10	20.3019	21.22	11.38	32.60	50.00	-17.40	AVG	
11	27.6580	22.93	11.52	34.45	60.00	-25.55	QP	
12	27.6580	16.75	11.52	28.27	50.00	-21.73	AVG	

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Test Mode1 / Line: Neutral


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1660	31.06	10.41	41.47	65.16	-23.69	QP	
2		0.1660	16.00	10.41	26.41	55.16	-28.75	AVG	
3		0.3940	22.13	10.42	32.55	57.98	-25.43	QP	
4		0.3940	15.24	10.42	25.66	47.98	-22.32	AVG	
5		0.6139	32.53	10.45	42.98	56.00	-13.02	QP	
6	*	0.6139	27.84	10.45	38.29	46.00	-7.71	AVG	
7		1.8060	25.10	10.49	35.59	56.00	-20.41	QP	
8		1.8060	14.58	10.49	25.07	46.00	-20.93	AVG	
9		15.7139	28.63	11.10	39.73	60.00	-20.27	QP	
10		15.7139	16.10	11.10	27.20	50.00	-22.80	AVG	
11		20.0419	33.23	11.42	44.65	60.00	-15.35	QP	
12		20.0419	21.40	11.42	32.82	50.00	-17.18	AVG	

Remark:

1.Both 120 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below.

2.Measurement = Reading Level+ Correct Factor

3.Over = Measurement -Limit

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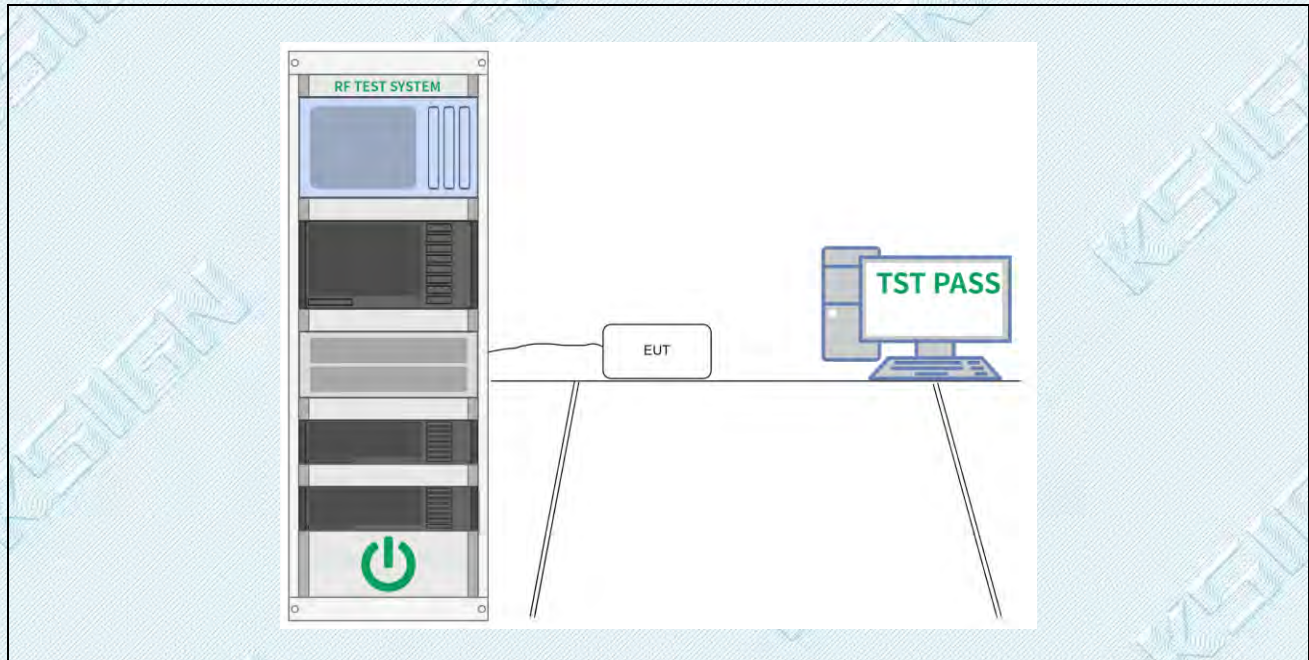
4.2. Occupied Bandwidth

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 $\geq [3 \times \text{RBW}]$. 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:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.2.2. Test Setup Diagram:



4.2.3. Test Data:

Please Refer to Appendix for Details.

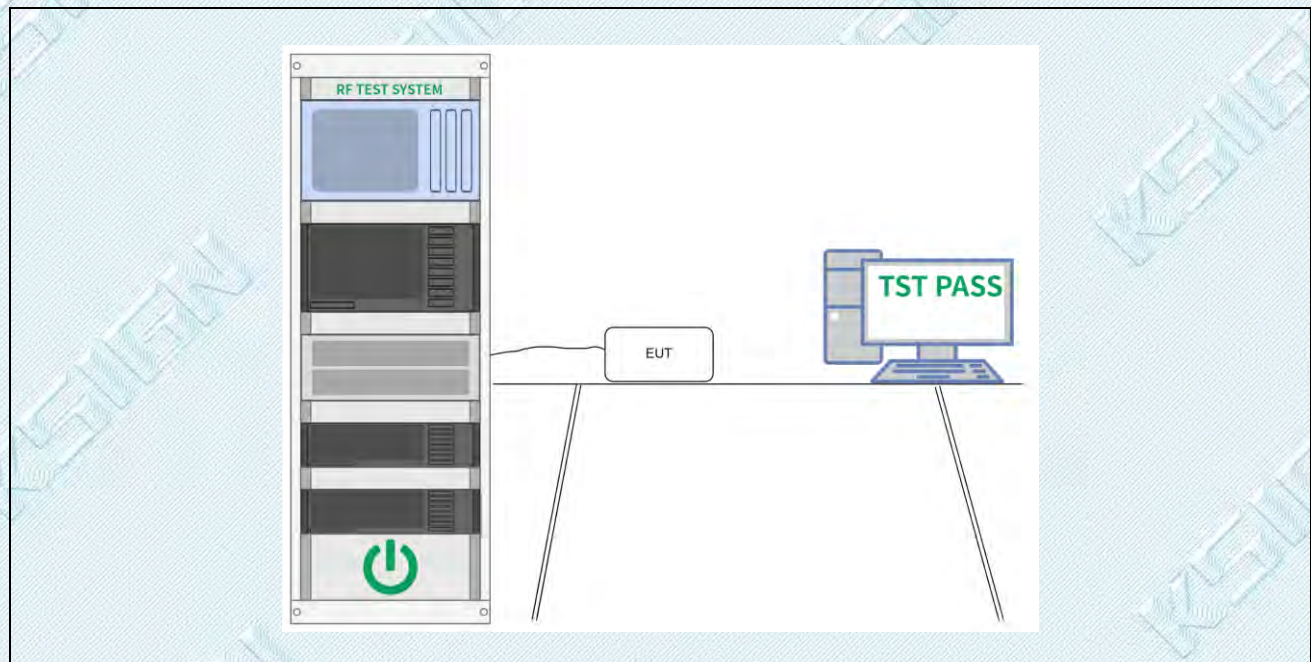
4.3. Maximum Conducted Output Power

Test Requirement:	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

4.3.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.3.2. Test Setup Diagram:



4.3.3. Test Data:

Please Refer to Appendix for Details.

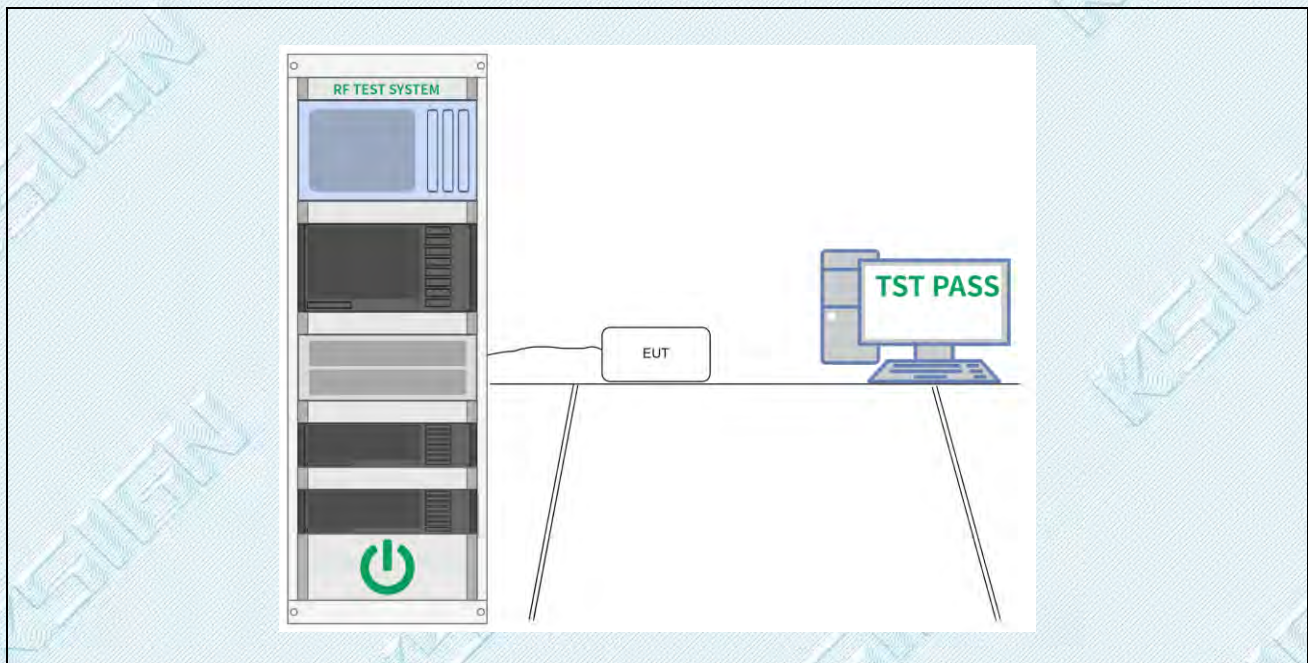
4.4. Power Spectral Density

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

4.4.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.4.2. Test Setup Diagram:



4.4.3. Test Data:

Please Refer to Appendix for Details.

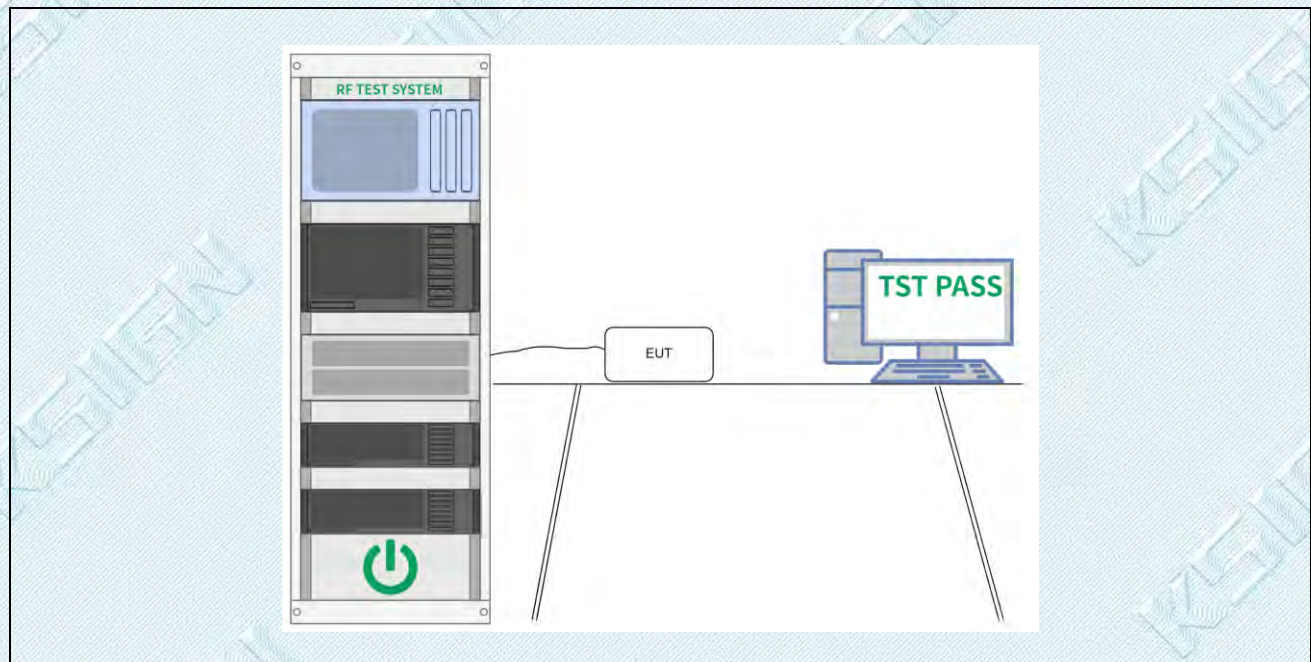
4.5. Emissions in non-restricted frequency bands

Test Requirement:	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

4.5.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.5.2. Test Setup Diagram:



4.5.3. Test Data:

Please Refer to Appendix for Details.

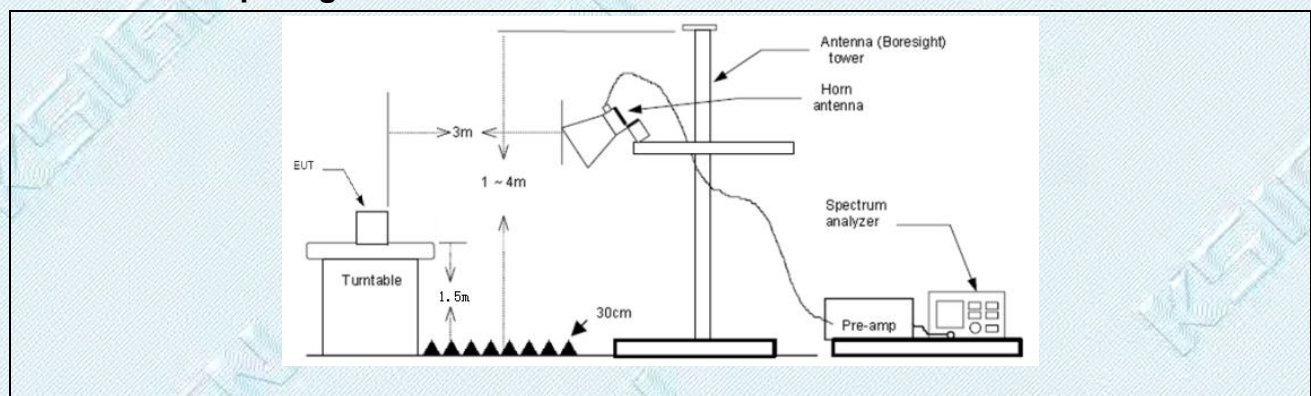
4.6. Band edge emissions (Radiated)

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. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
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		

4.6.1. E.U.T. Operation:

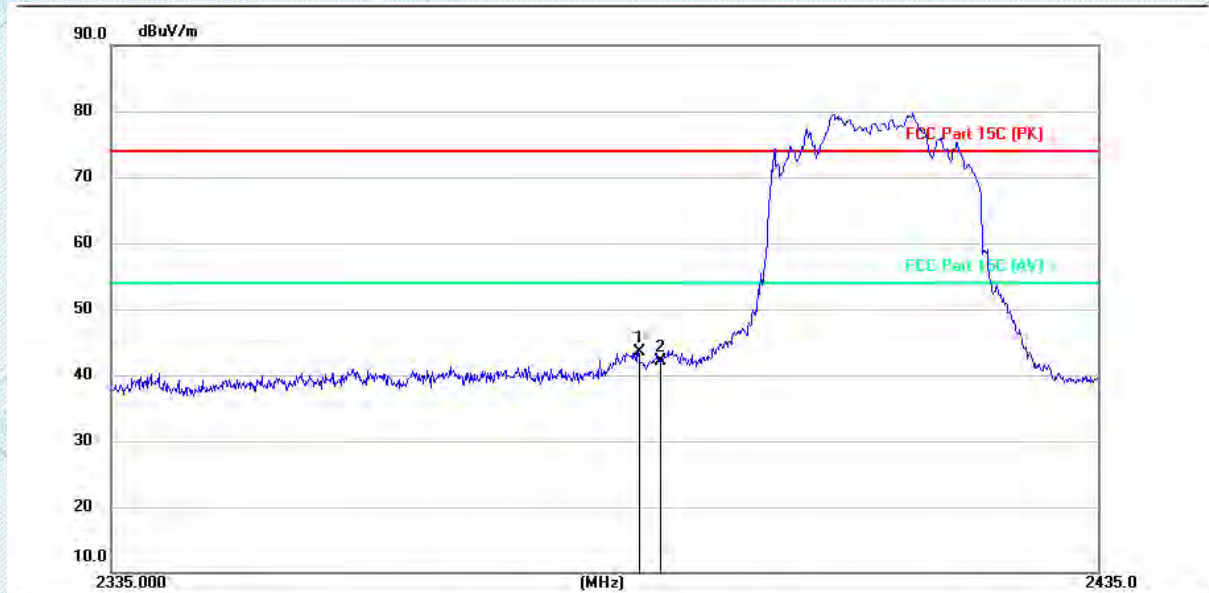
Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.6.2. Test Setup Diagram:



4.6.3. Test Data:

Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	*	2387.970	53.72	-10.13	43.59	74.00	-30.41	peak
2		2390.000	52.30	-10.12	42.18	74.00	-31.82	peak

TRF RF_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@gdksign.cn Web: www.gdksign.com

Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L

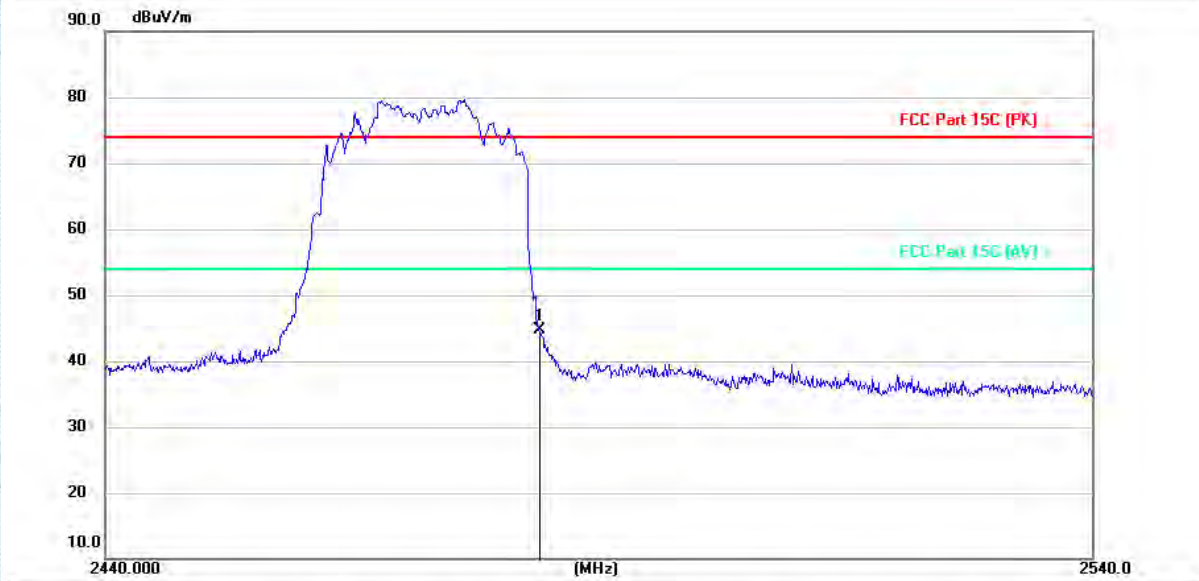


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	*	2390.000	49.37	-9.70	39.67	74.00	-34.33	peak

TRF RF_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

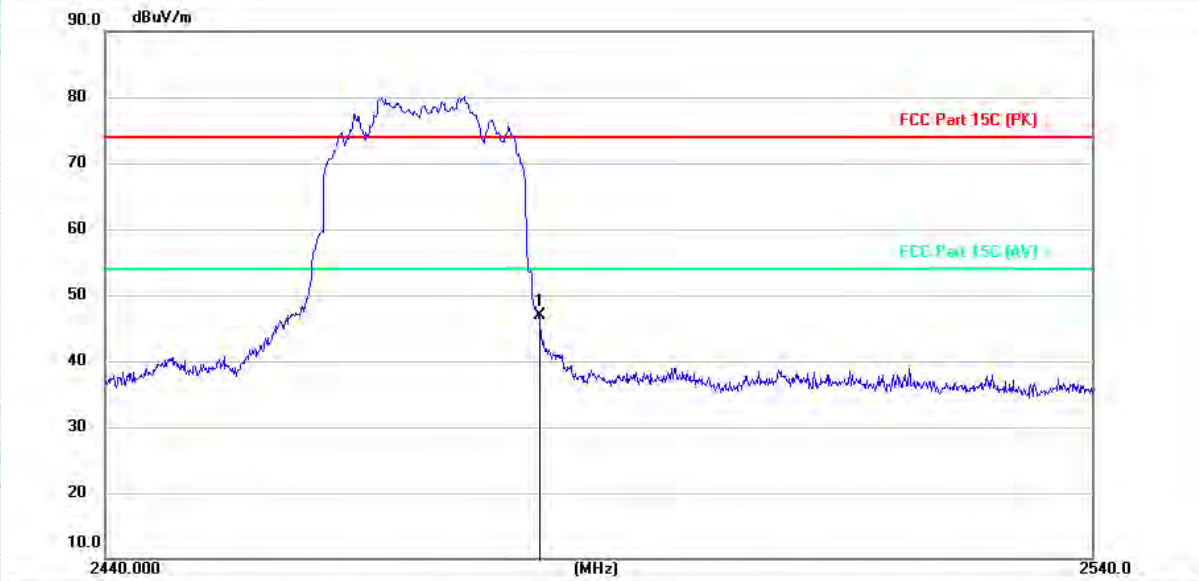
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1	*	2483.500	54.70	-10.09	44.61	74.00	-29.39	peak

TRF RF_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@gdksign.cn Web: www.gdksign.com

Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / 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	56.56	-9.68	46.88	74.00	-27.12	peak

Note:

1.Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

2.Pre-scan 802.11b, 802.11g, 802.11n(HT20) and 802.11n (HT40) mode, and found the 802.11n(HT40) mode which it is worse case, so only show the test data for worse case.

3. Since the peak value is less than the limit of the AVG value, there is no AVG data.

TRF RF_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

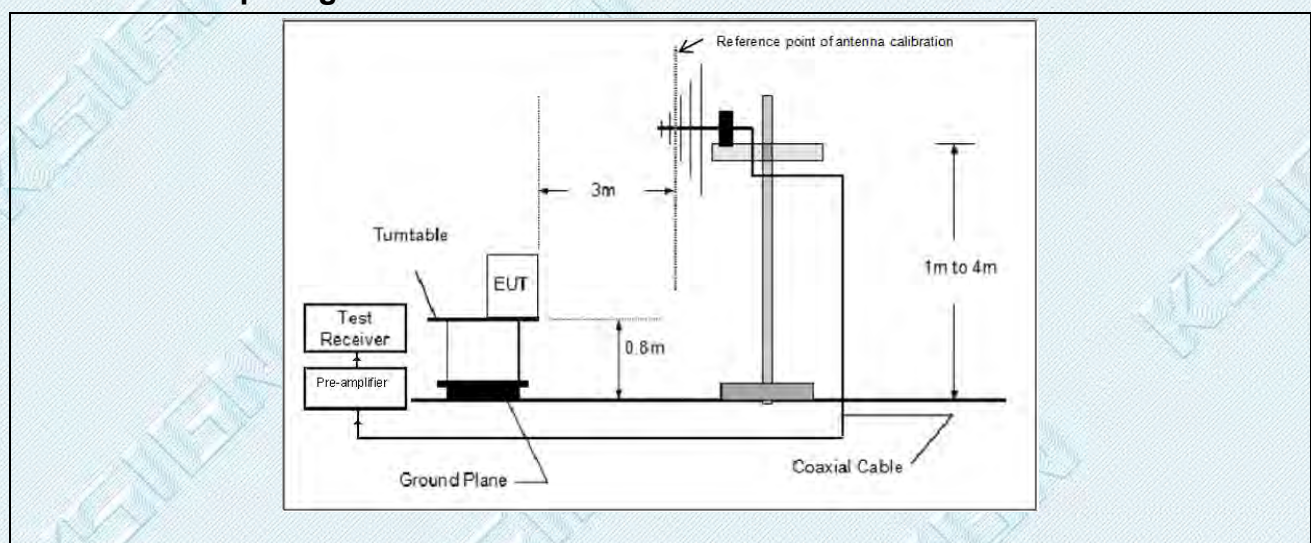
4.7. Emissions in frequency bands (below 1GHz)

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. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
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:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.7.2. Test Setup Diagram:



TRF RF_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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4.7.3. Test Data:

9 KHz - 30 MHz:

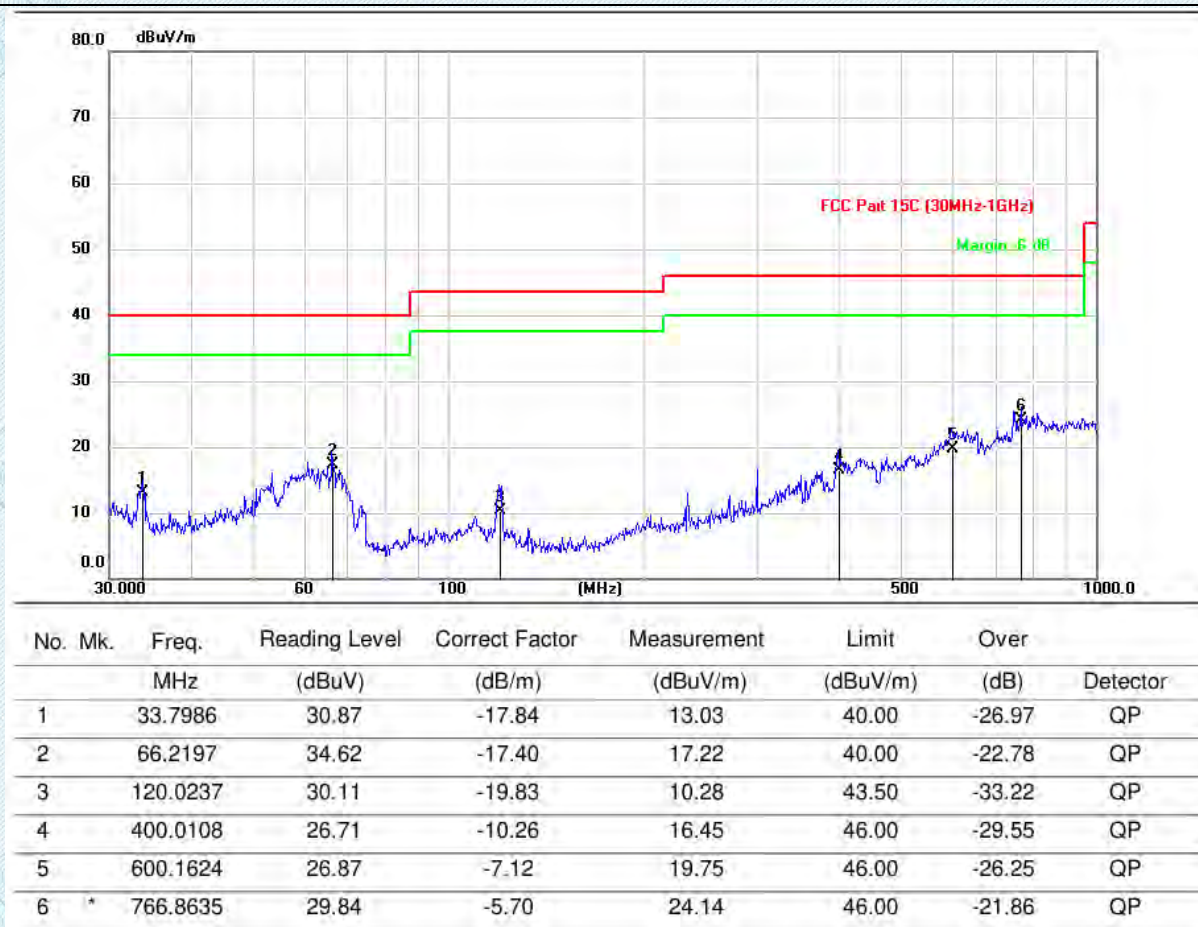
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

30MHz - 1GHz:

Test Mode1 / Polarization: Horizontal



No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		59.4405	25.60	-16.38	9.22	40.00	-30.78	QP
2		101.3949	27.95	-18.70	9.25	43.50	-34.25	QP
3		277.6770	28.92	-16.49	12.43	46.00	-33.57	QP
4		396.1025	29.61	-10.45	19.16	46.00	-26.84	QP
5		653.7730	28.92	-6.98	21.94	46.00	-24.06	QP
6	*	792.2839	30.43	-4.97	25.46	46.00	-20.54	QP

Test Mode1 / Polarization: Vertical

Note:

1.Pre-scan 802.11b/g/n(HT20,HT40) modulation, and found the 802.11b modulation which it is 2412MHz channel which it is worse case for below 1GHz, so only show the test data for worse case.

2. Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

TRF RF_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

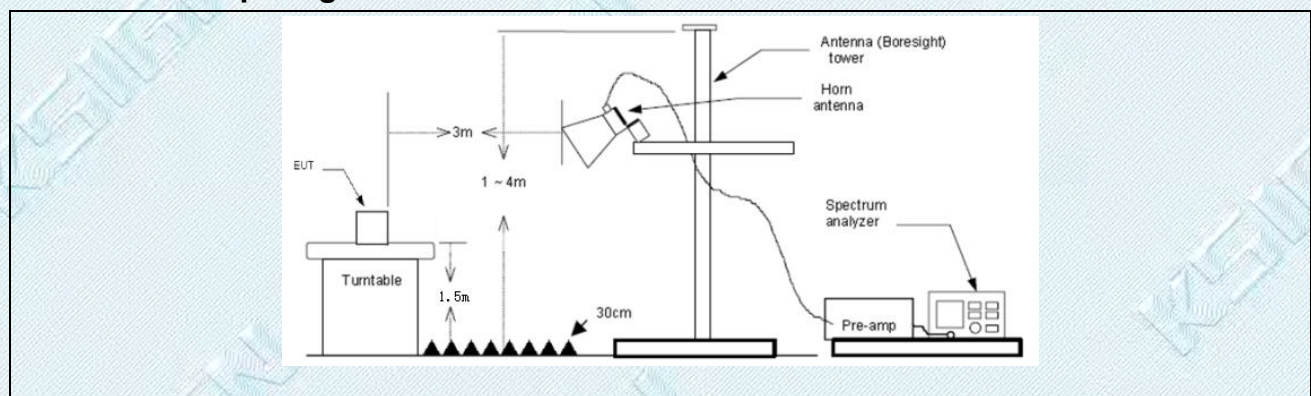
4.8. Emissions in frequency bands (above 1GHz)

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. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
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		

4.8.1. E.U.T. Operation:

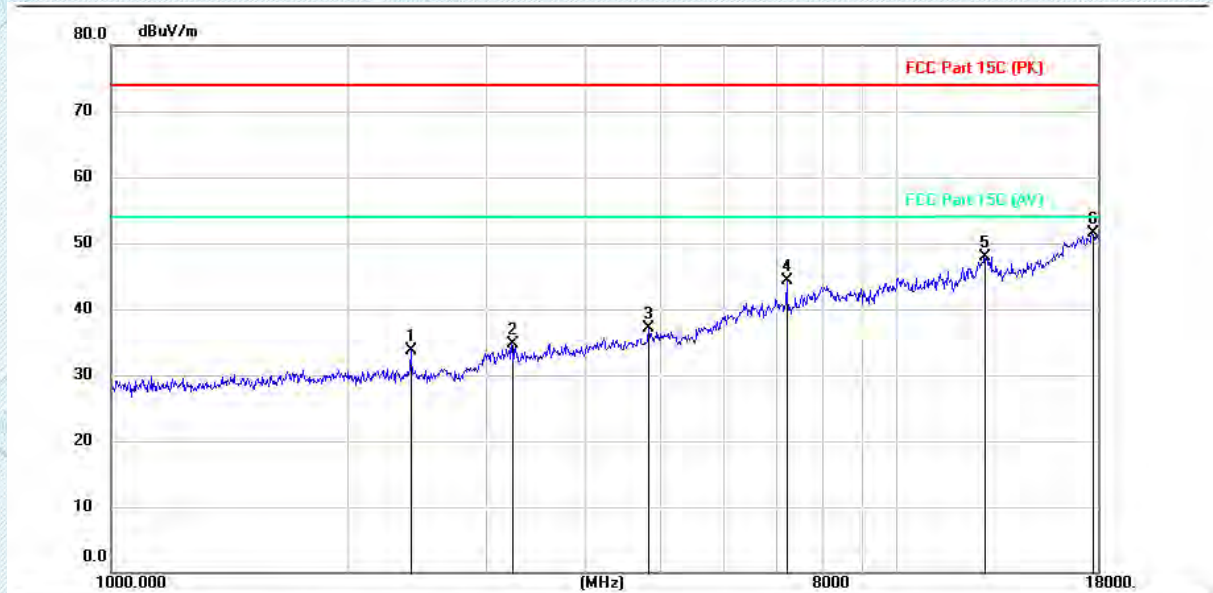
Operating Environment:	
Temperature:	23.4 °C
Humidity:	50.6 %
Atmospheric Pressure:	102 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3, Test Mode4

4.8.2. Test Setup Diagram:



4.8.3. Test Data:

Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L

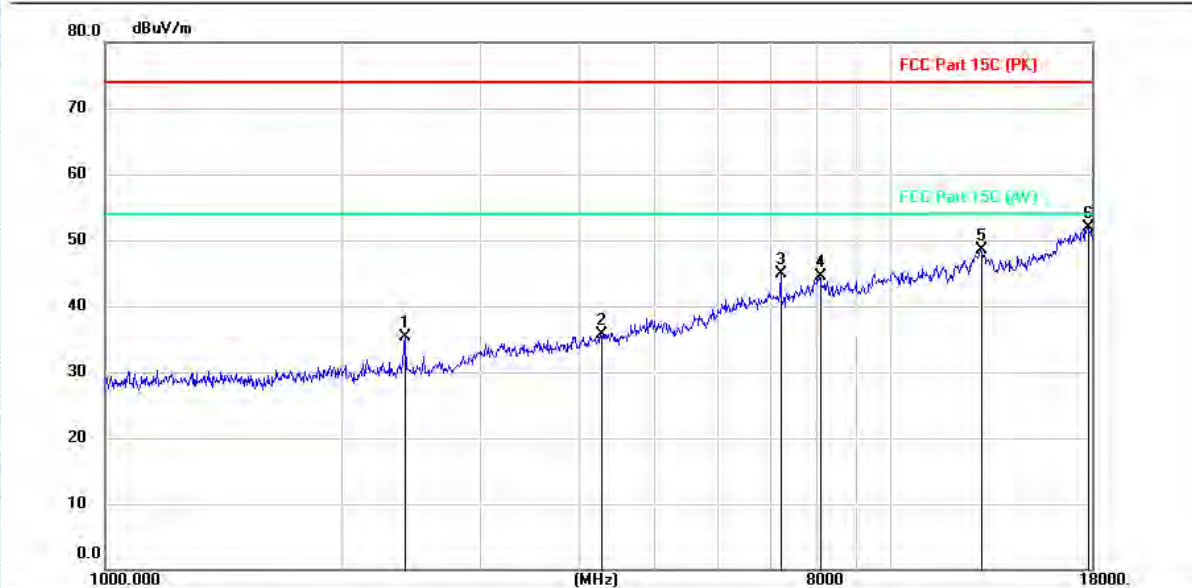


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		2414.400	43.82	-10.11	33.71	74.00	-40.29	peak
2		3242.300	43.93	-9.24	34.69	74.00	-39.31	peak
3		4823.300	43.10	-5.97	37.13	74.00	-36.87	peak
4		7237.300	43.42	0.83	44.25	74.00	-29.75	peak
5		12937.400	37.06	10.92	47.98	74.00	-26.02	peak
6	*	17726.300	36.60	14.90	51.50	74.00	-22.50	peak

TRF RF_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

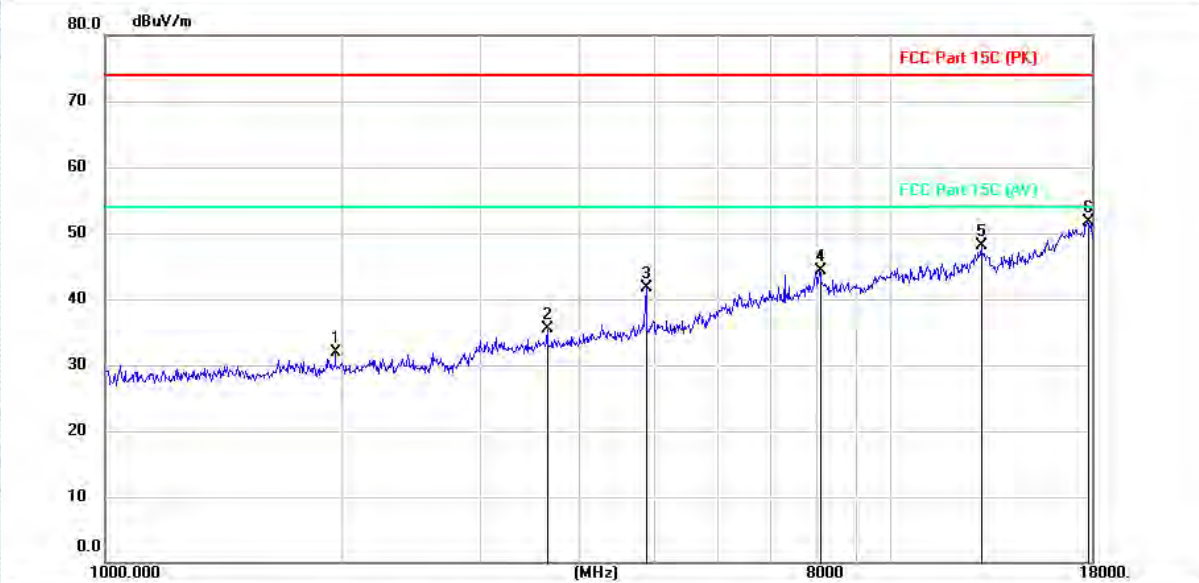
Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		2412.700	45.10	-9.70	35.40	74.00	-38.60	peak
2		4272.500	42.36	-6.63	35.73	74.00	-38.27	peak
3		7235.600	43.39	1.53	44.92	74.00	-29.08	peak
4		8085.600	40.83	3.71	44.54	74.00	-29.46	peak
5		13005.400	36.42	12.01	48.43	74.00	-25.57	peak
6	*	17816.400	36.72	15.21	51.93	74.00	-22.07	peak

TRF RF_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@gdksign.cn Web: www.gdksign.com

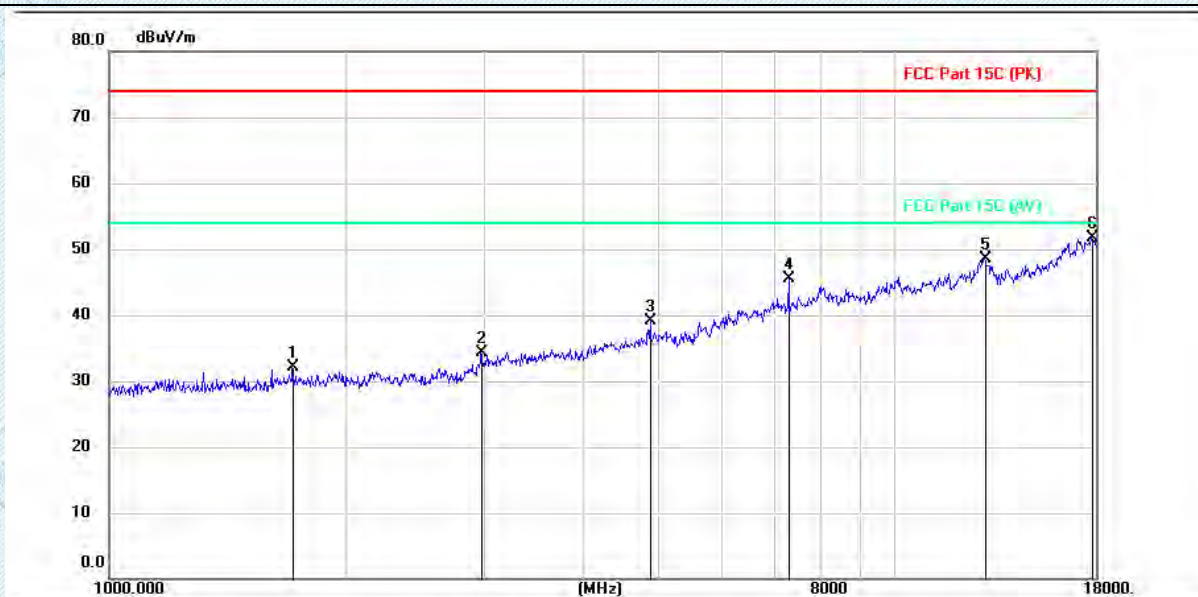
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: M


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1963.900	42.60	-10.74	31.86	74.00	-42.14	peak
2		3653.700	43.98	-8.45	35.53	74.00	-38.47	peak
3		4874.300	47.43	-5.78	41.65	74.00	-32.35	peak
4		8095.800	41.46	2.90	44.36	74.00	-29.64	peak
5		13042.800	36.98	11.09	48.07	74.00	-25.93	peak
6	*	17758.600	36.72	14.91	51.63	74.00	-22.37	peak

TRF RF_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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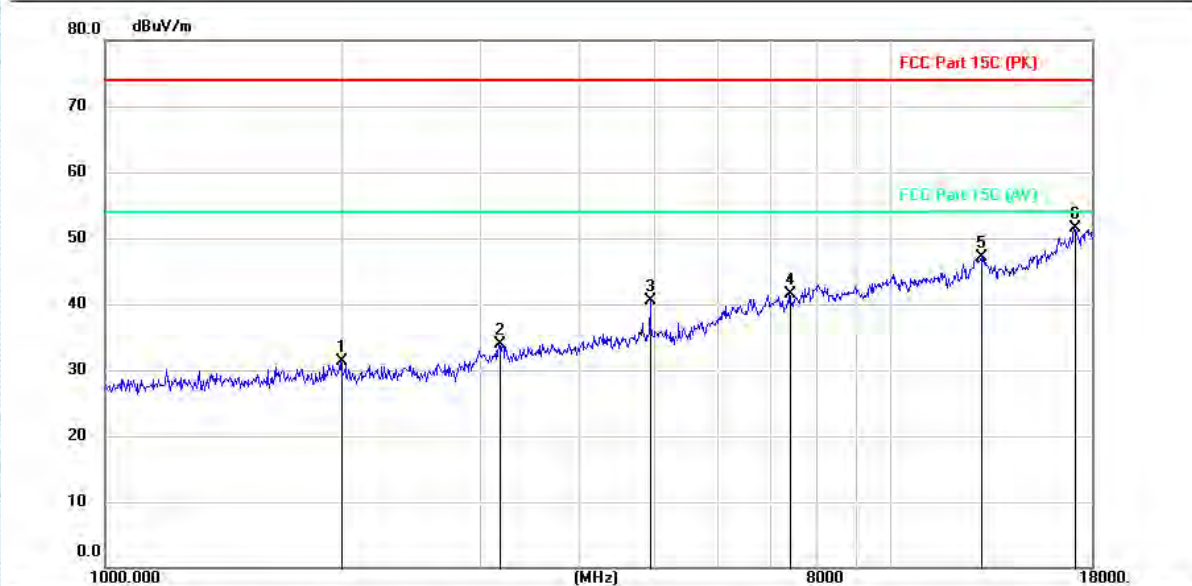
Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: M


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1708.900	42.64	-10.51	32.13	74.00	-41.87	peak
2		2975.400	43.32	-8.95	34.37	74.00	-39.63	peak
3		4874.300	44.03	-4.98	39.05	74.00	-34.95	peak
4		7310.400	43.91	1.53	45.44	74.00	-28.56	peak
5		13010.500	36.59	11.99	48.58	74.00	-25.42	peak
6	*	17753.500	36.60	15.16	51.76	74.00	-22.24	peak

TRF RF_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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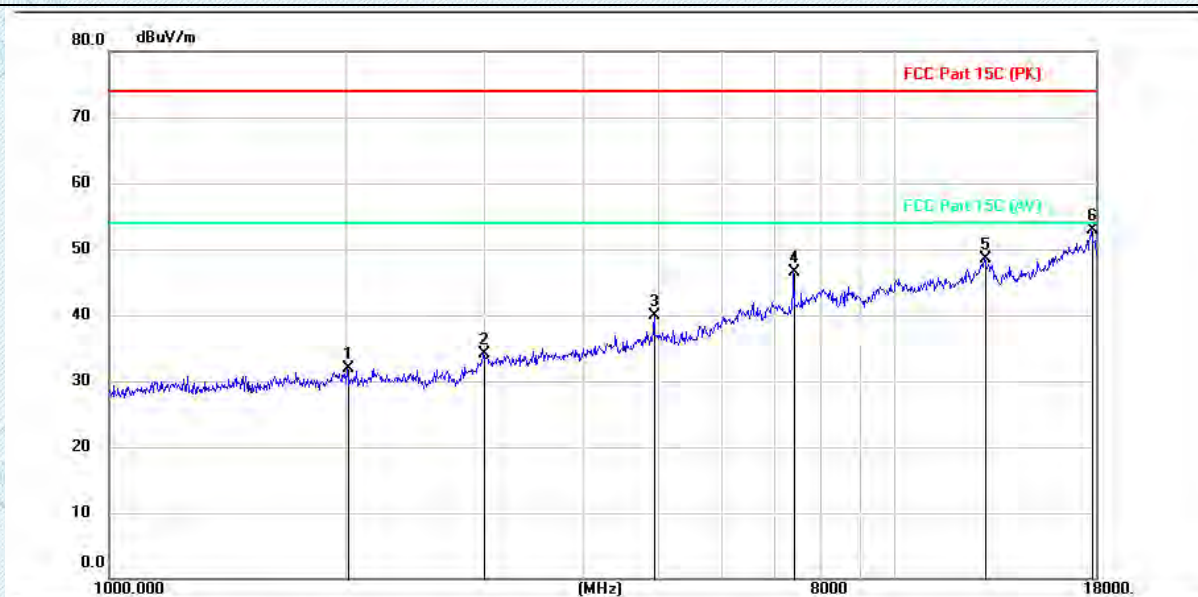
Test Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		1997.900	42.00	-10.75	31.25	74.00	-42.75	peak
2		3172.600	43.08	-9.22	33.86	74.00	-40.14	peak
3		4944.000	46.03	-5.50	40.53	74.00	-33.47	peak
4		7415.800	40.57	0.86	41.43	74.00	-32.57	peak
5		13032.600	36.05	11.12	47.17	74.00	-26.83	peak
6	*	17124.500	36.95	14.53	51.48	74.00	-22.52	peak

TRF RF_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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Test Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: H


No.	Mk.	Freq. MHz	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector
1		2013.200	42.19	-10.23	31.96	74.00	-42.04	peak
2		2990.700	42.97	-8.92	34.05	74.00	-39.95	peak
3		4944.000	44.67	-4.70	39.97	74.00	-34.03	peak
4		7417.500	44.96	1.55	46.51	74.00	-27.49	peak
5		12988.400	36.63	11.97	48.60	74.00	-25.40	peak
6	*	17772.200	37.77	15.18	52.95	74.00	-21.05	peak

Note:

1.Pre-scan 802.11b/g/n(HT20,HT40) modulation, and found the 802.11n(HT40) modulation which it is worse case for above 1GHz , so only show the test data for worse case.

2.Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

3.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.

4.Since the peak value is less than the limit of the AVG value, there is no AVG data

TRF RF_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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5. EUT TEST PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



TRF RF_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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Emissions in frequency bands (above 1GHz)



RF Conducted



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6. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Refer to Appendix - EUT Photos for KS2311S6230E.

Appendix

6.1. Appendix A: DTS Bandwidth

6.1.1. Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.56	2407.96	2415.52	0.5	PASS
		2437	7.08	2433.44	2440.52	0.5	PASS
		2462	7.56	2458.44	2466.00	0.5	PASS
11G	Ant1	2412	16.24	2403.88	2420.12	0.5	PASS
		2437	15.44	2429.44	2444.88	0.5	PASS
		2462	16.04	2453.84	2469.88	0.5	PASS
11N20SISO	Ant1	2412	16.56	2403.60	2420.16	0.5	PASS
		2437	15.68	2428.84	2444.52	0.5	PASS
		2462	15.72	2453.84	2469.56	0.5	PASS
11N40SISO	Ant1	2422	35.12	2404.40	2439.52	0.5	PASS
		2437	35.12	2419.40	2454.52	0.5	PASS
		2452	35.20	2434.40	2469.60	0.5	PASS

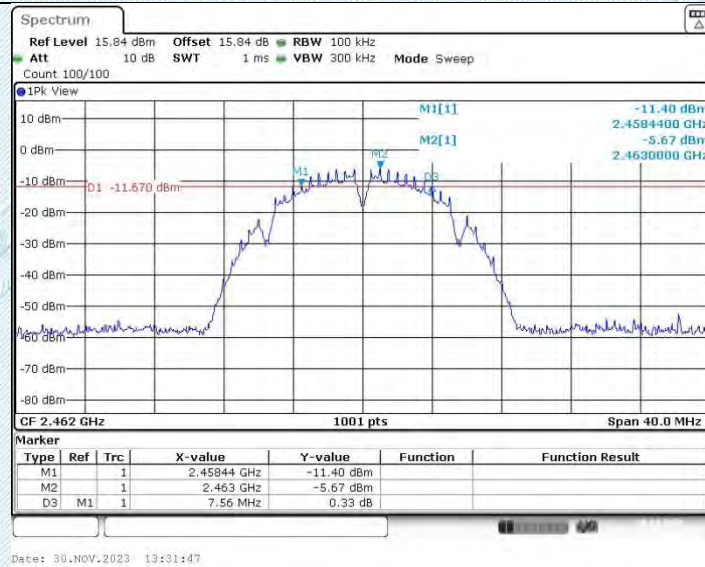
6.1.2. Test Graphs



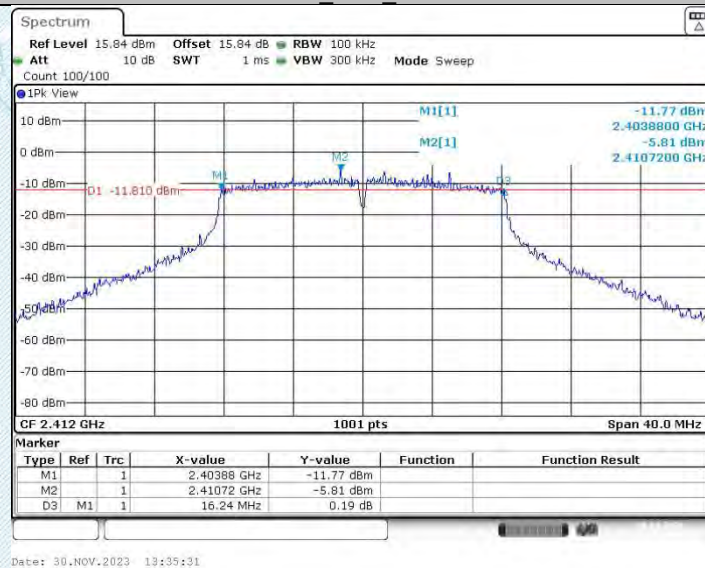
TRF RF_R1

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

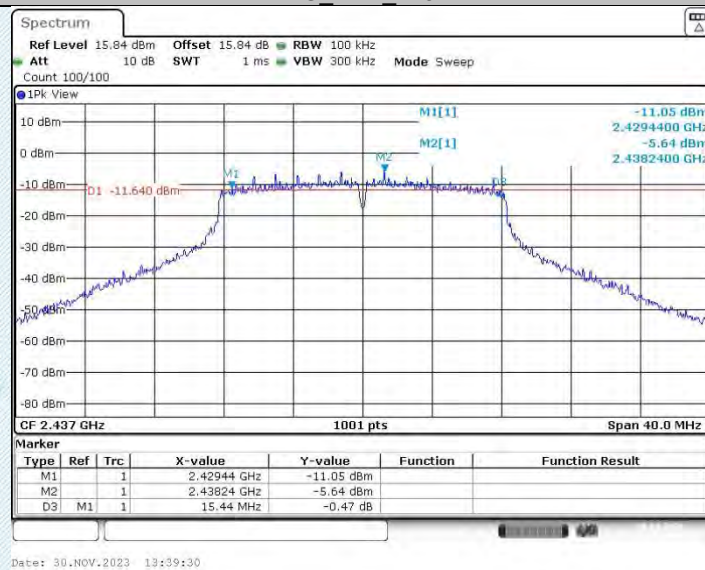
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11G Ant1_2412



11G Ant1_2437

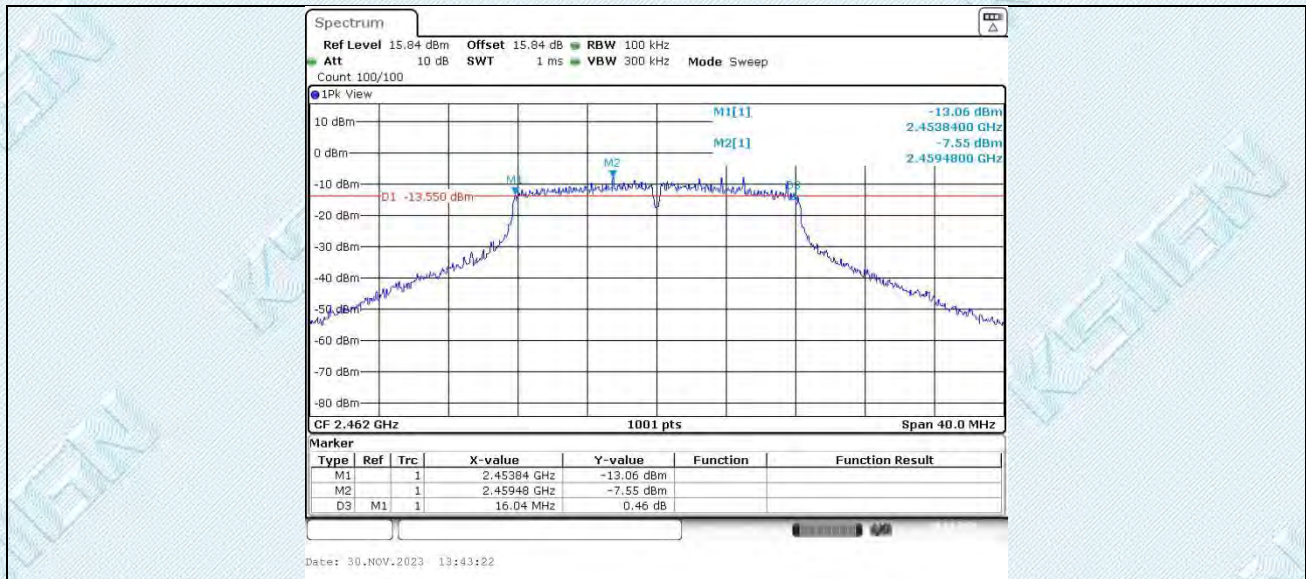


11G Ant1_2462

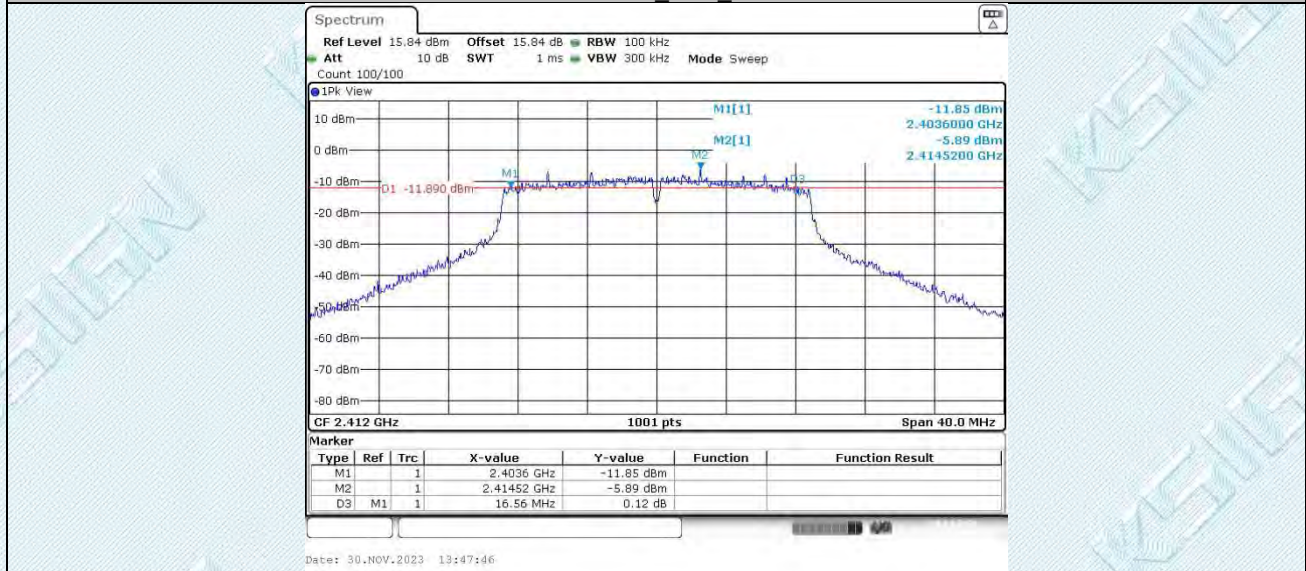
TRF RF_R1

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

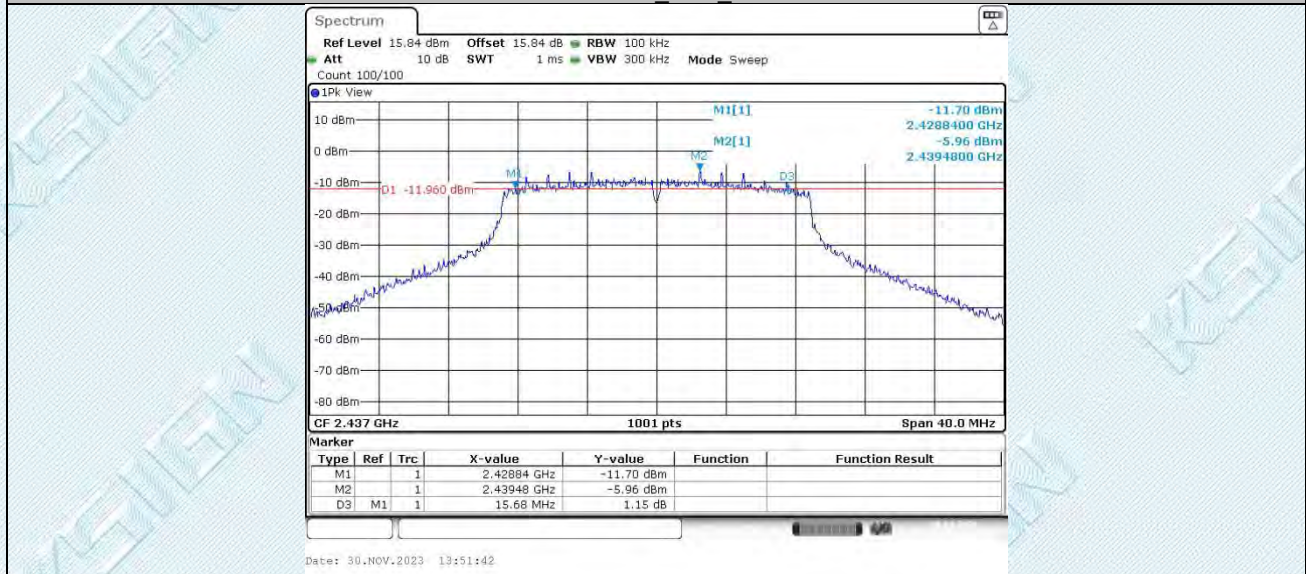
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

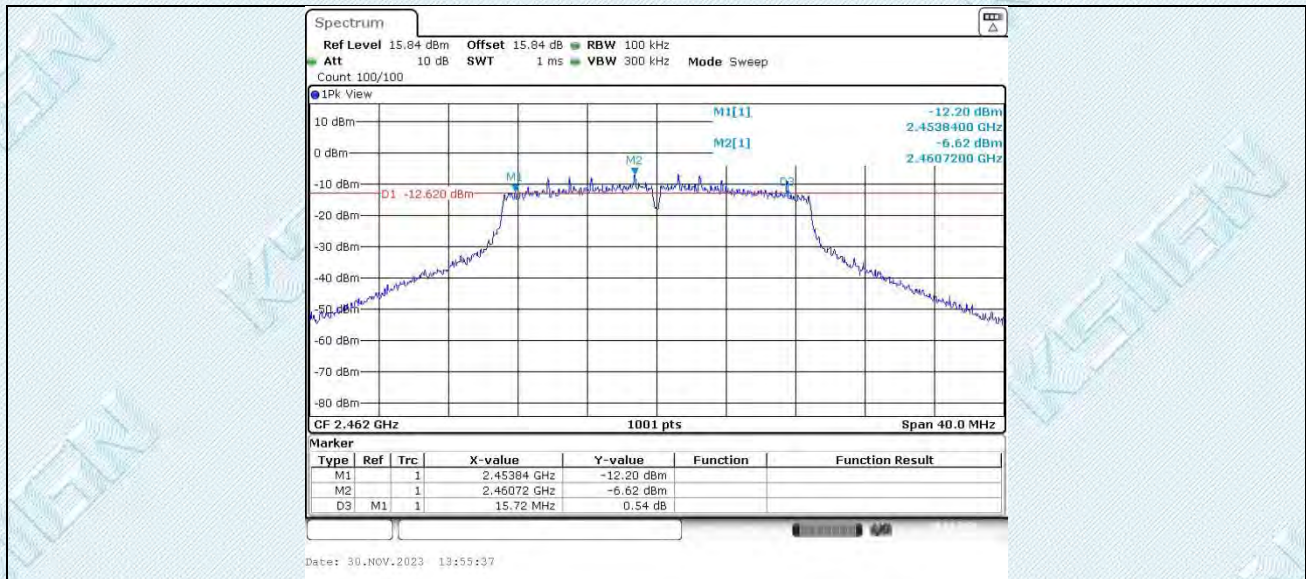


11N20SISO_Ant1_2462

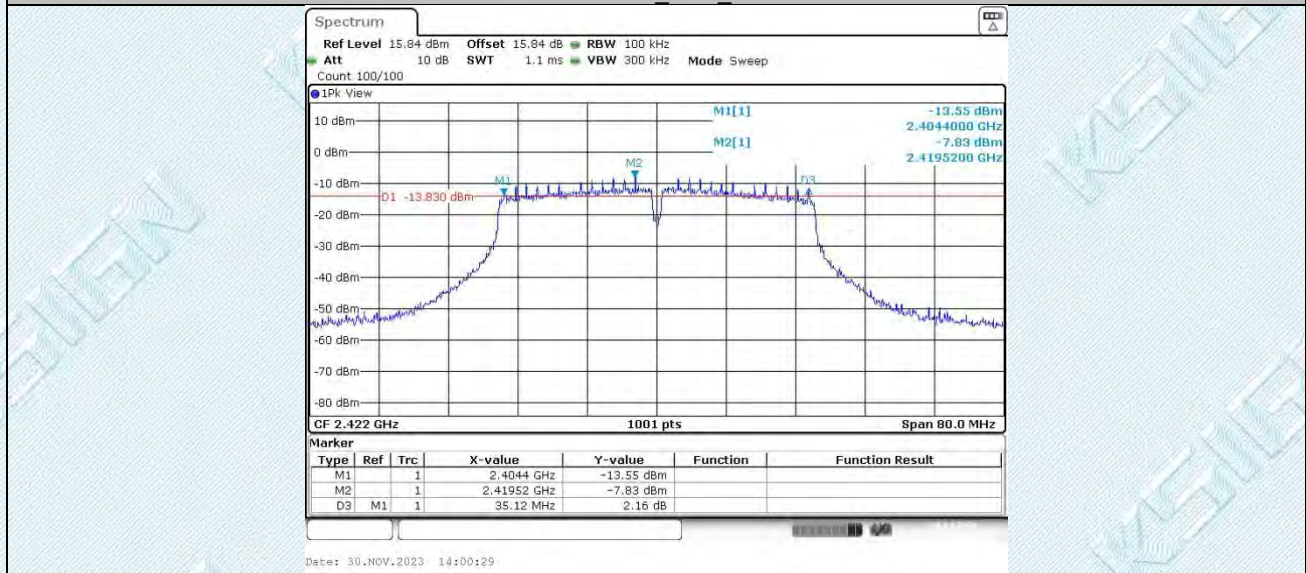
TRF RF_R1

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

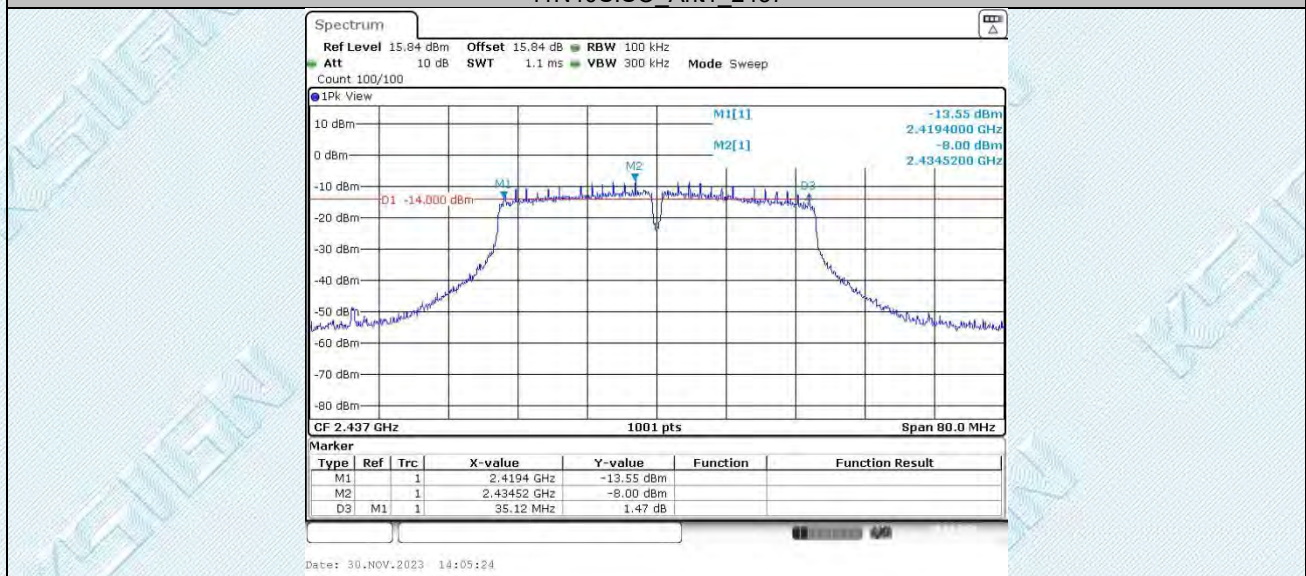
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

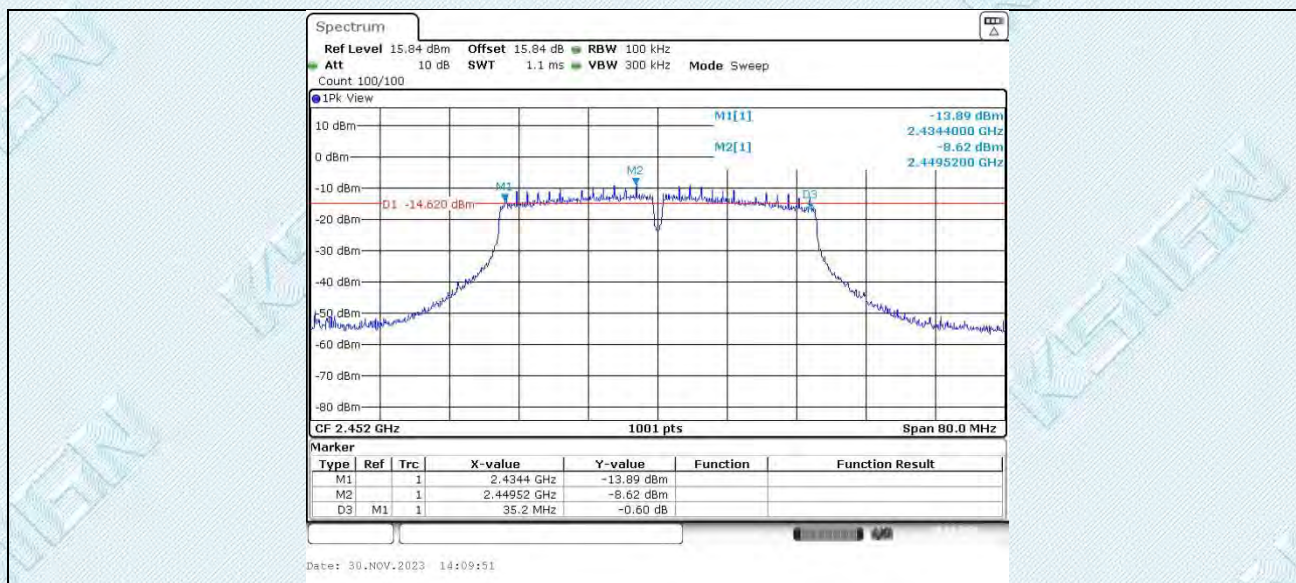


11N40SISO_Ant1_2452

TRF RF_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@gdksign.cn Web: www.gdksign.com



TRF RF_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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6.2. Appendix B: Occupied Channel Bandwidth

6.2.1. Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.349	2406.366	2417.714	---	PASS
		2437	11.309	2431.366	2442.674	---	PASS
		2462	11.349	2456.326	2467.674	---	PASS
11G	Ant1	2412	17.782	2402.969	2420.751	---	PASS
		2437	17.902	2427.849	2445.751	---	PASS
		2462	17.862	2452.889	2470.751	---	PASS
11N20SISO	Ant1	2412	18.861	2402.490	2421.351	---	PASS
		2437	18.861	2427.450	2446.311	---	PASS
		2462	18.821	2452.490	2471.311	---	PASS
11N40SISO	Ant1	2422	36.923	2403.538	2440.462	---	PASS
		2437	36.843	2418.459	2455.302	---	PASS
		2452	36.923	2433.379	2470.302	---	PASS

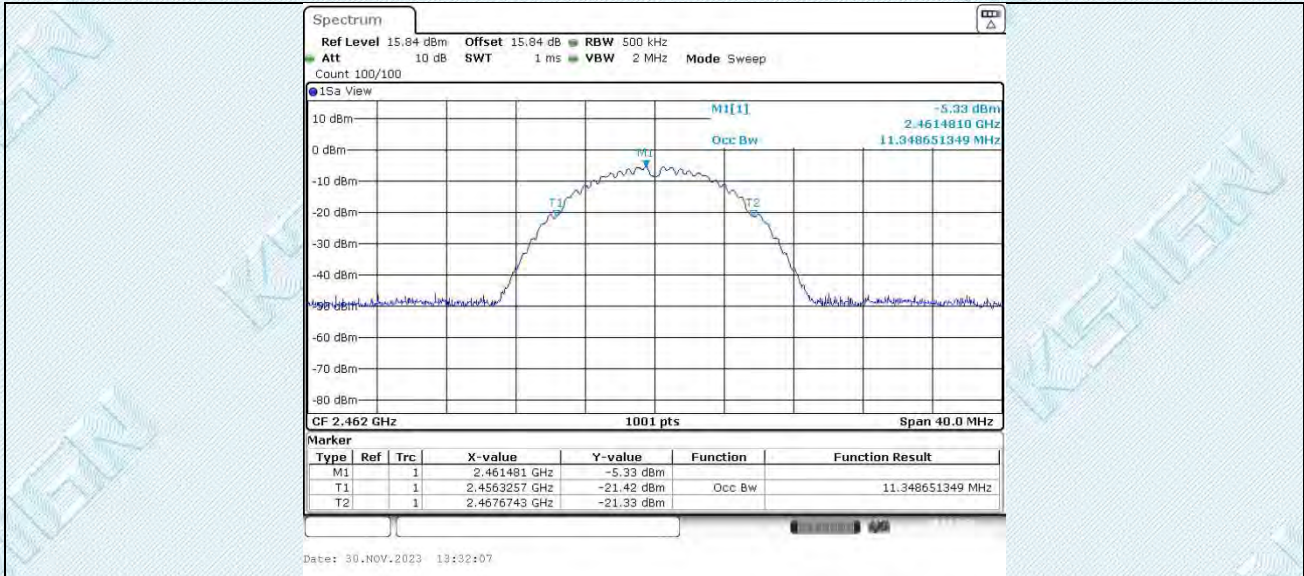
6.2.2. Test Graphs



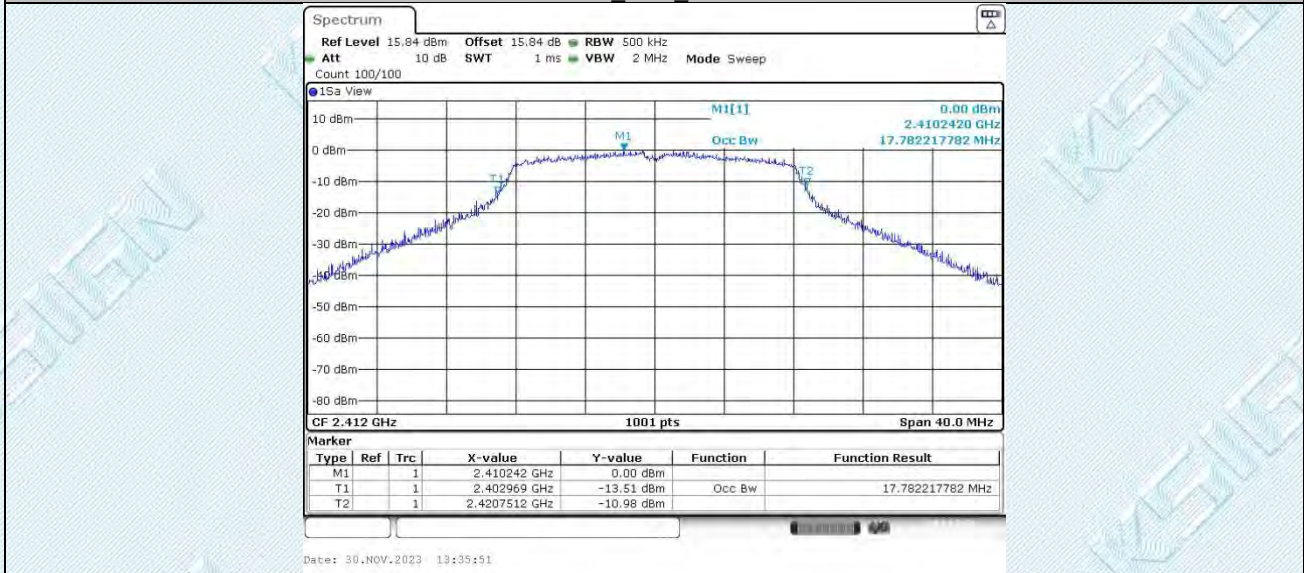
TRF RF_R1

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

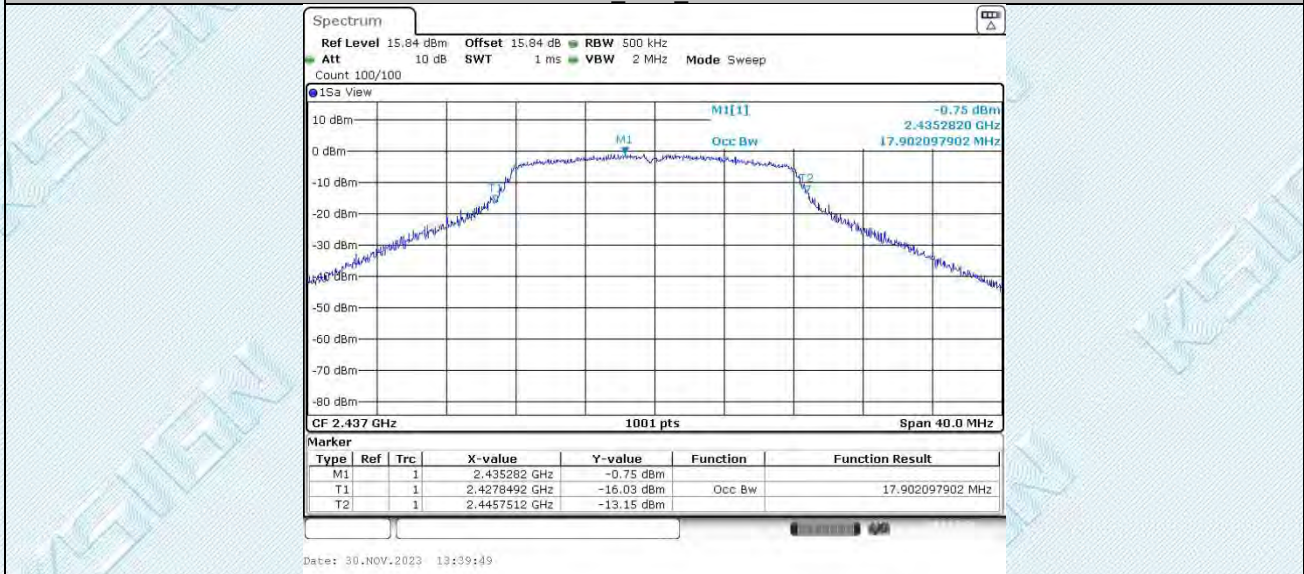
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11G Ant1_2412



11G Ant1_2437

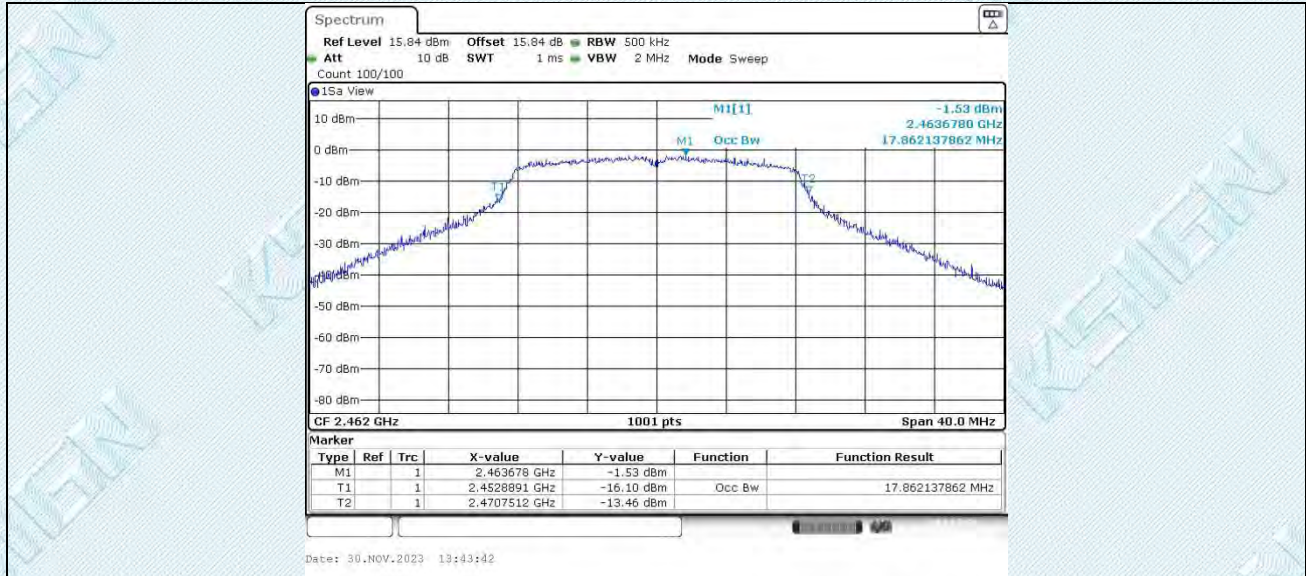


11G Ant1_2462

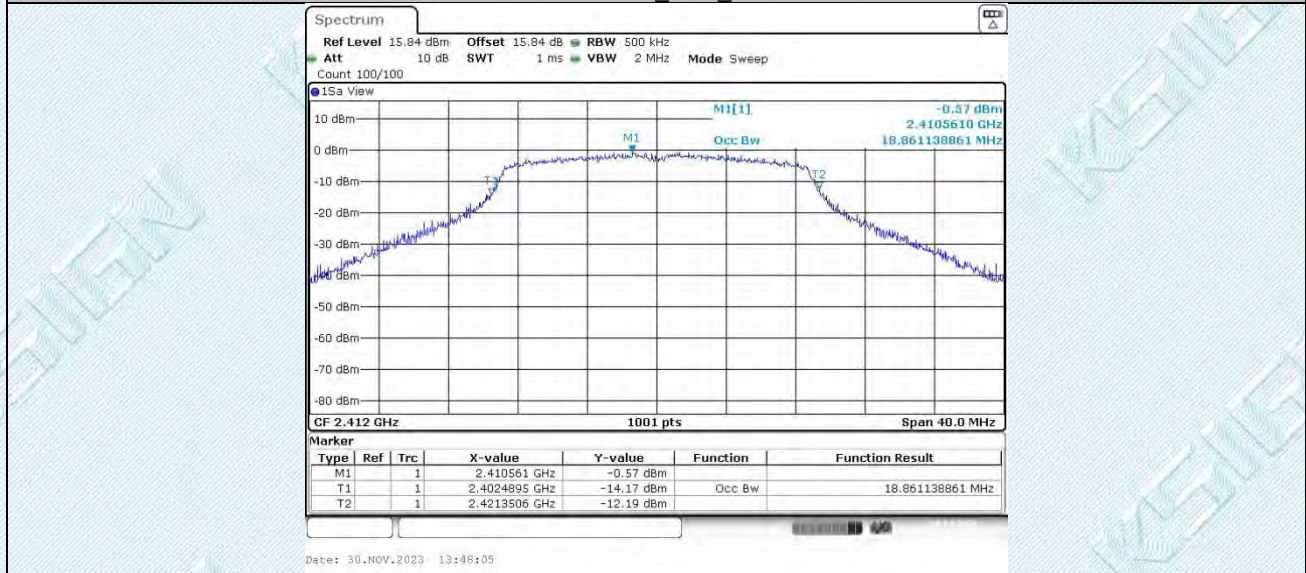
TRF RF_R1

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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11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462

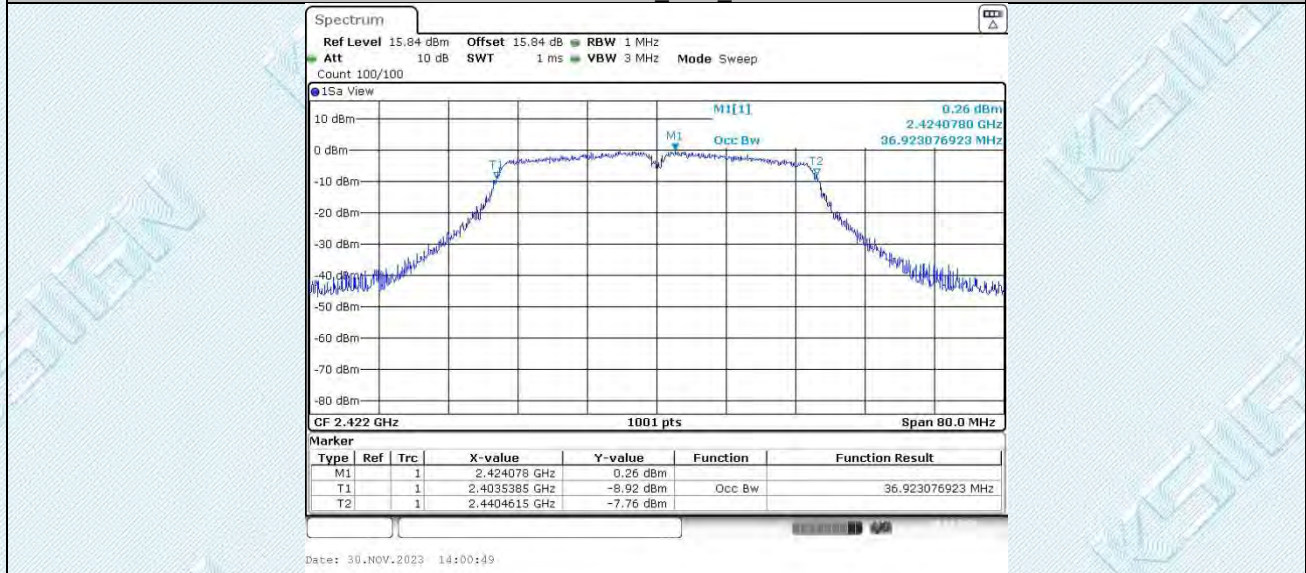
TRF RF_R1

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

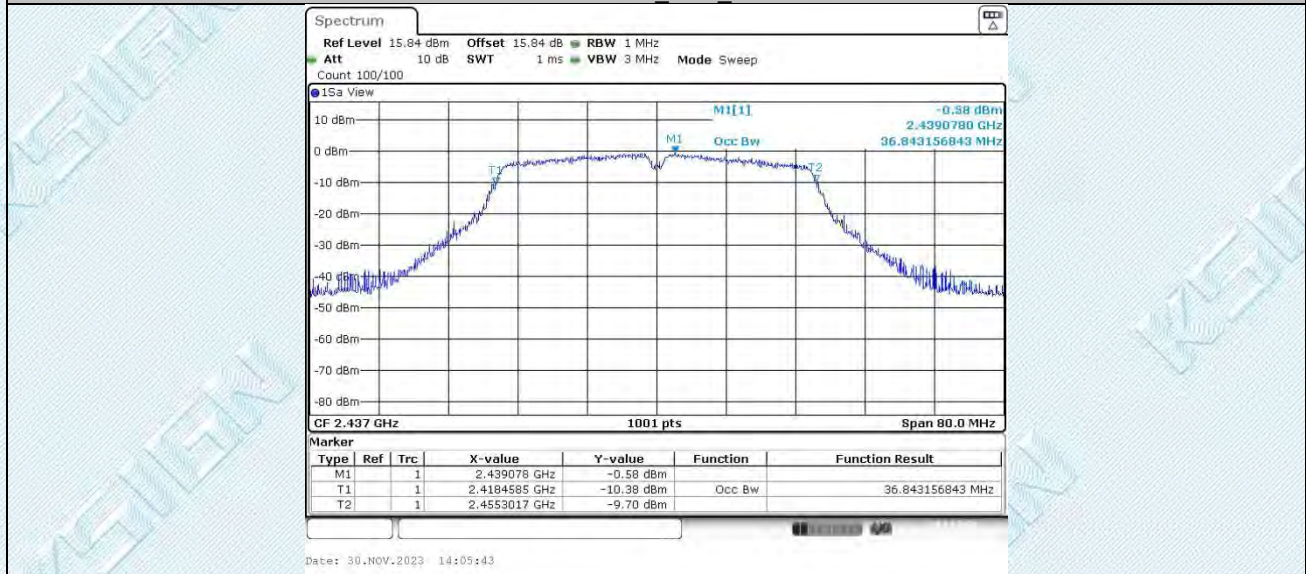
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

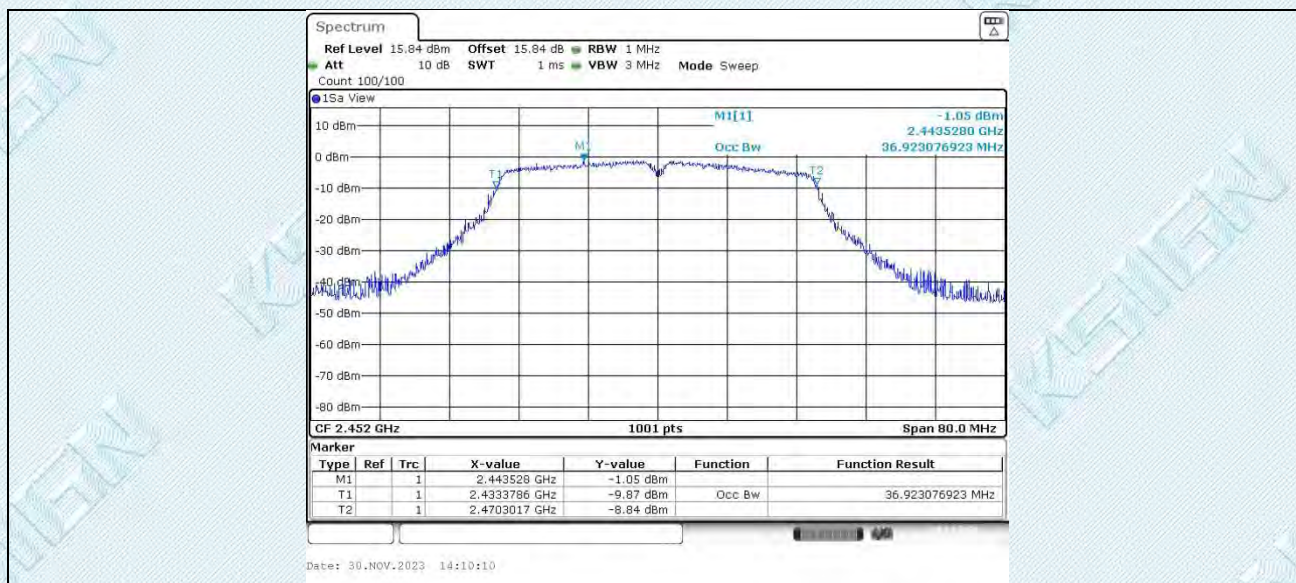


11N40SISO_Ant1_2452

TRF RF_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@gdksign.cn Web: www.gdksign.com



TRF RF_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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6.3. Appendix C: Maximum conducted output power

6.3.1. Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Peak power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	2.57	83.95	0.76	3.68	≤30.00	PASS
		2437	3.59	87.74	0.57	4.46	≤30.00	PASS
		2462	1.56	91.89	0.37	2.09	≤30.00	PASS
11G	Ant1	2412	3.63	66.67	1.76	5.33	≤30.00	PASS
		2437	3.39	66.56	1.77	5.33	≤30.00	PASS
		2462	2.45	66.89	1.75	4.08	≤30.00	PASS
11N20SISO	Ant1	2412	3.17	64.73	1.89	5.43	≤30.00	PASS
		2437	3.22	64.95	1.87	5.19	≤30.00	PASS
		2462	2.06	64.73	1.89	3.97	≤30.00	PASS
11N40SISO	Ant1	2422	1.33	47.45	3.24	5.10	≤30.00	PASS
		2437	1.84	47.69	3.22	4.79	≤30.00	PASS
		2452	1.42	47.45	3.24	4.61	≤30.00	PASS

Note: The Conducted power is measured using a power meter (RF control unit contains a power meter).

6.4. Appendix D: Maximum power spectral density

6.4.1. Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-27.56	≤8.00	PASS
		2437	-26.76	≤8.00	PASS
		2462	-29.05	≤8.00	PASS
11G	Ant1	2412	-28.63	≤8.00	PASS
		2437	-28.59	≤8.00	PASS
		2462	-29.54	≤8.00	PASS
11N20SISO	Ant1	2412	-28.52	≤8.00	PASS
		2437	-28.6	≤8.00	PASS
		2462	-30.06	≤8.00	PASS
11N40SISO	Ant1	2422	-32.42	≤8.00	PASS
		2437	-32.41	≤8.00	PASS
		2452	-32.64	≤8.00	PASS

6.4.2. Test Graphs



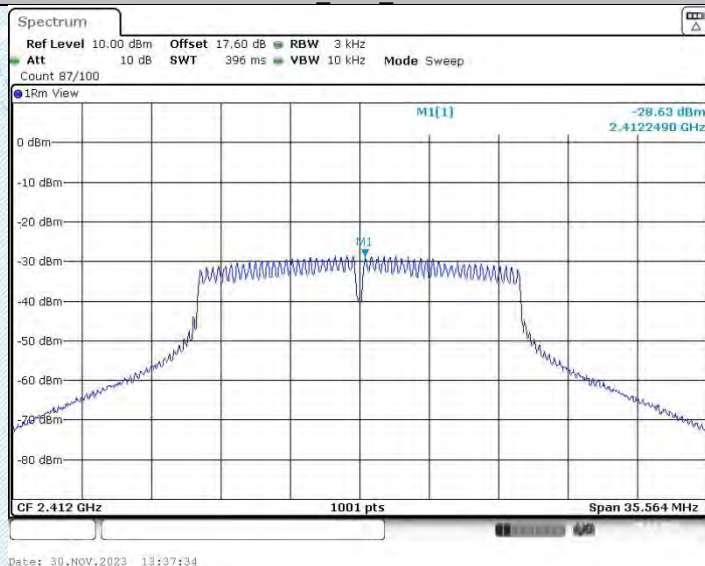
TRF RF_R1

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

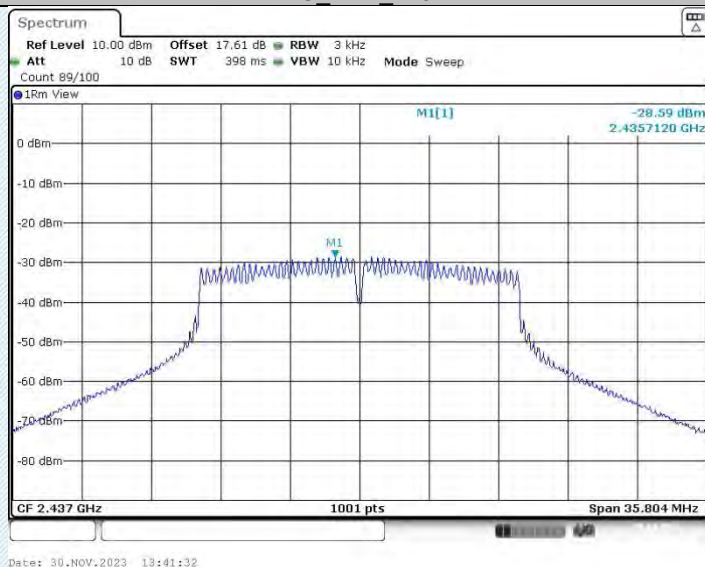
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11G Ant1_2412



11G Ant1_2437

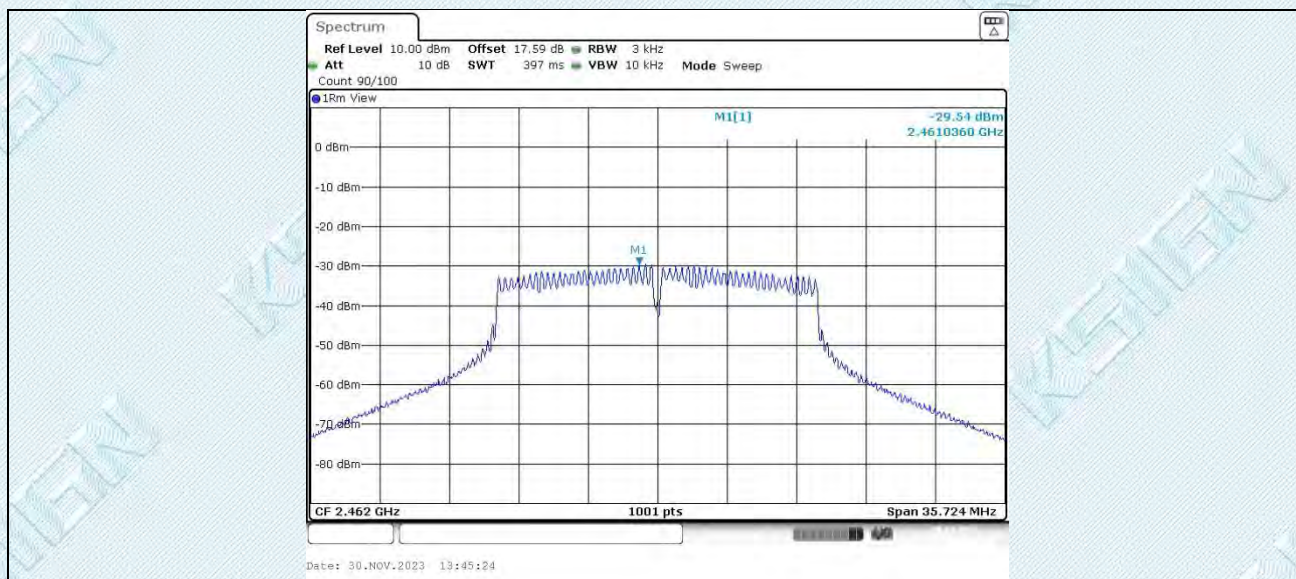


11G Ant1_2462

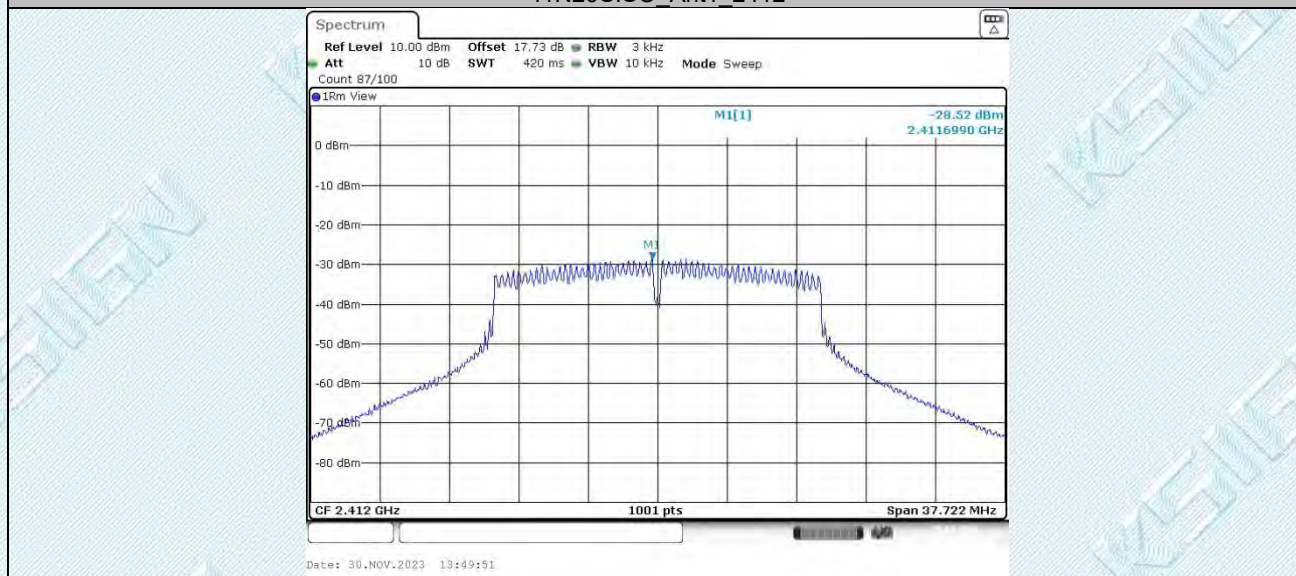
TRF RF_R1

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

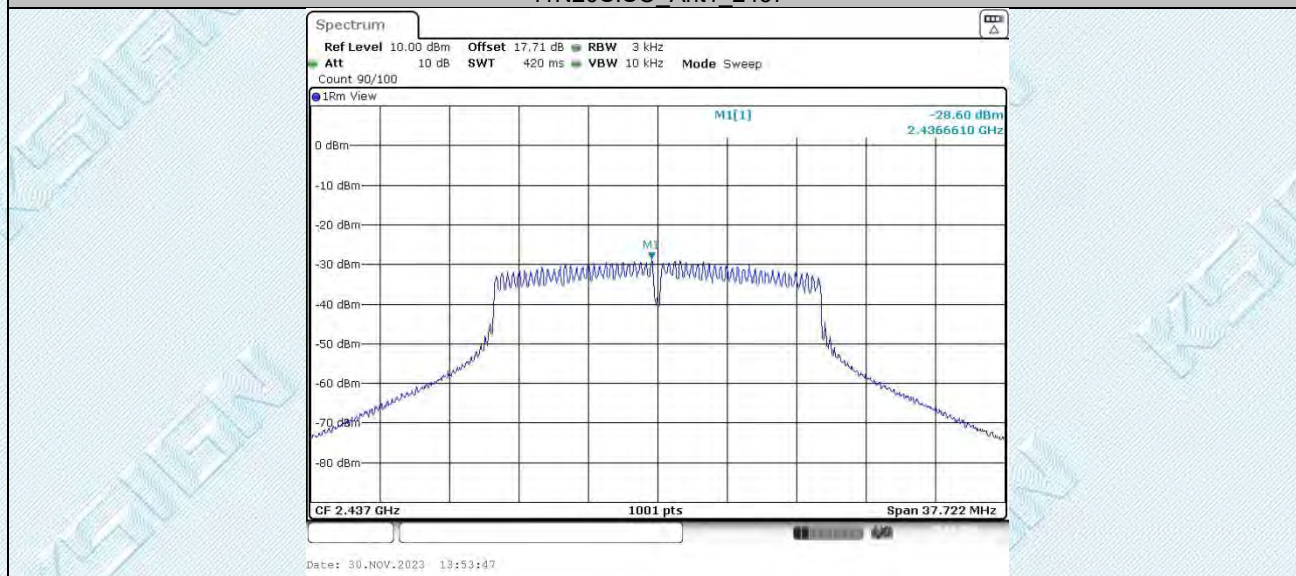
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

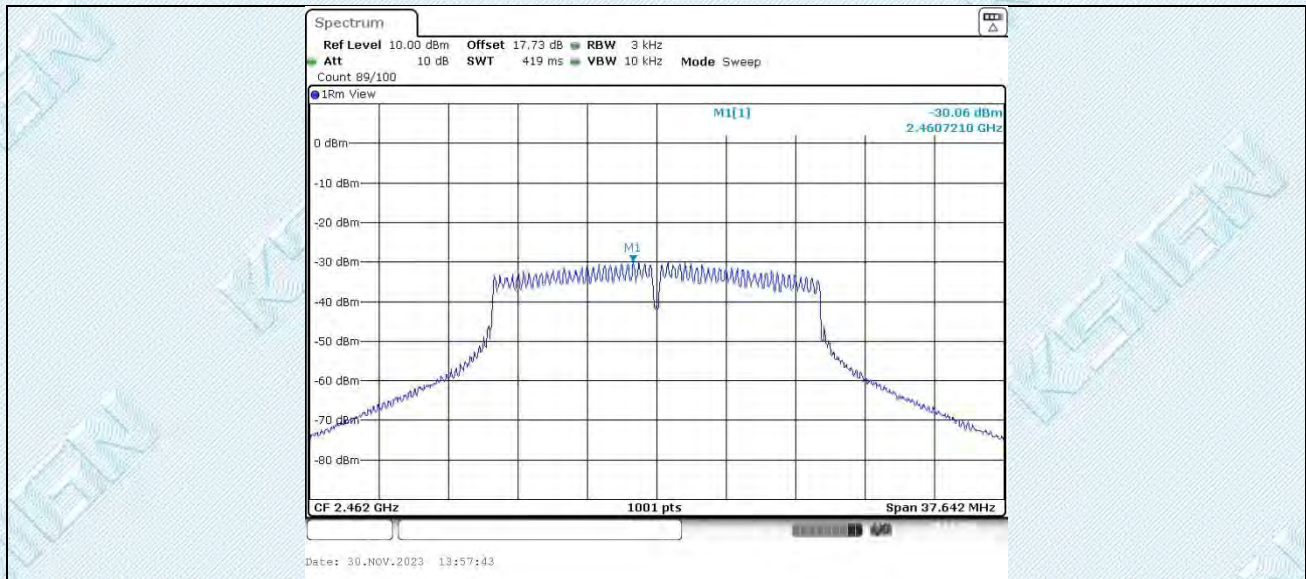


11N20SISO_Ant1_2462

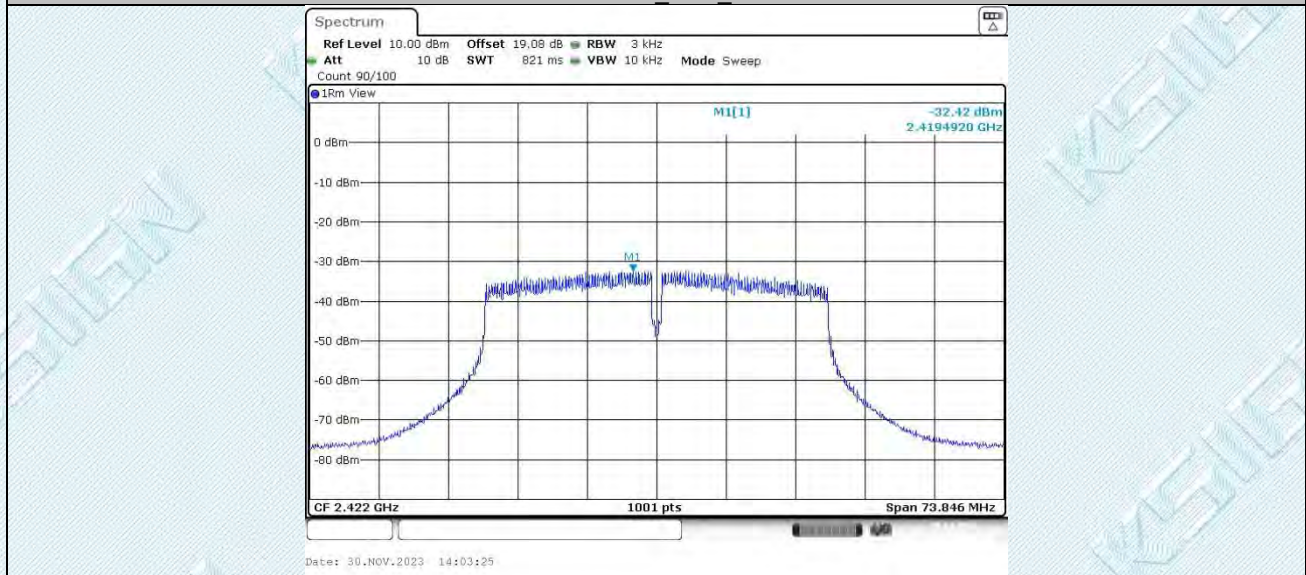
TRF RF_R1

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

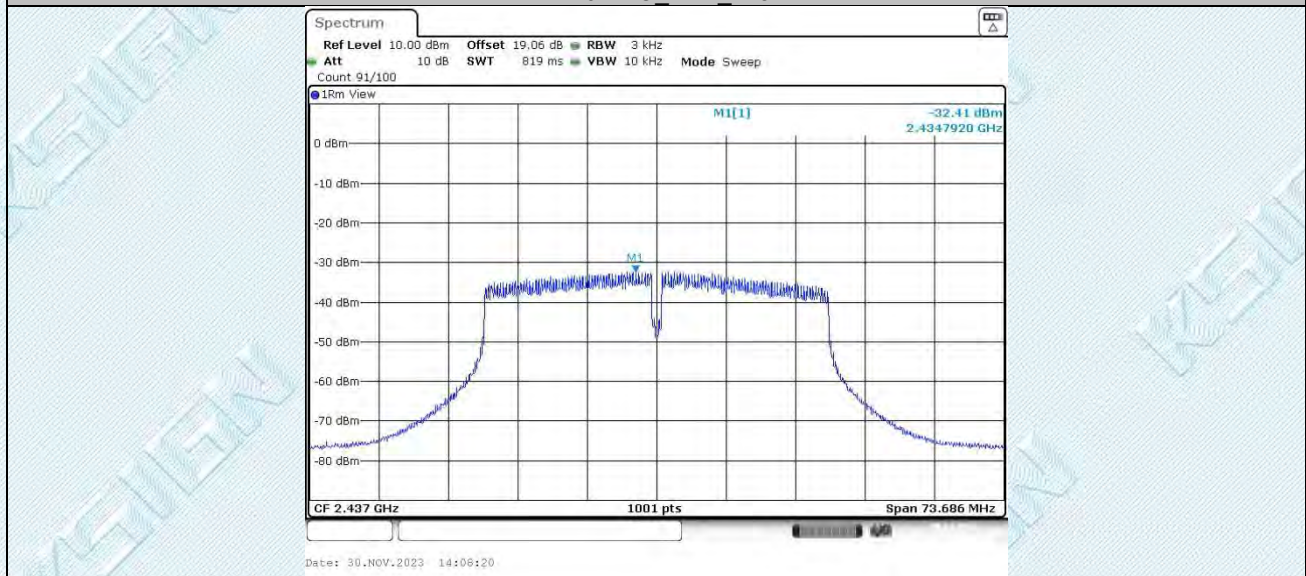
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

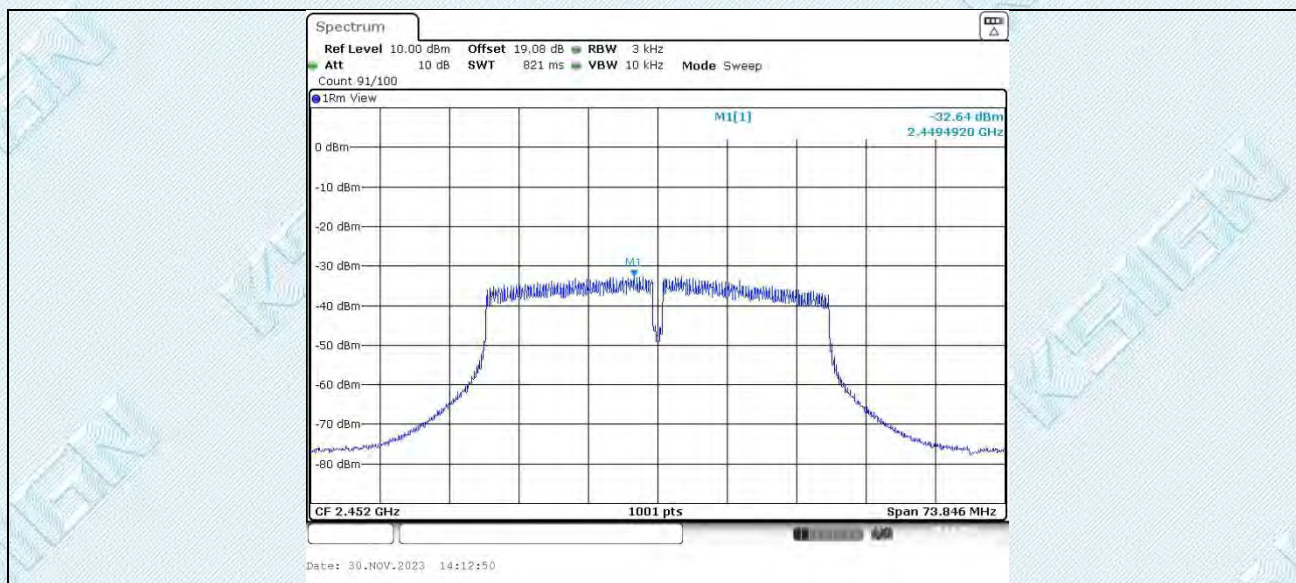


11N40SISO_Ant1_2452

TRF RF_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 RF_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

6.5. Appendix E: Reference level measurement

6.5.1. Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.48	-4.20
		2437	2437.48	-3.25
		2462	2462.99	-5.90
11G	Ant1	2412	2410.73	-5.16
		2437	2433.25	-6.94
		2462	2460.75	-6.62
11N20SISO	Ant1	2412	2416.96	-6.39
		2437	2438.23	-5.63
		2462	2460.70	-6.72
11N40SISO	Ant1	2422	2419.48	-7.92
		2437	2434.48	-8.07
		2452	2449.48	-8.58

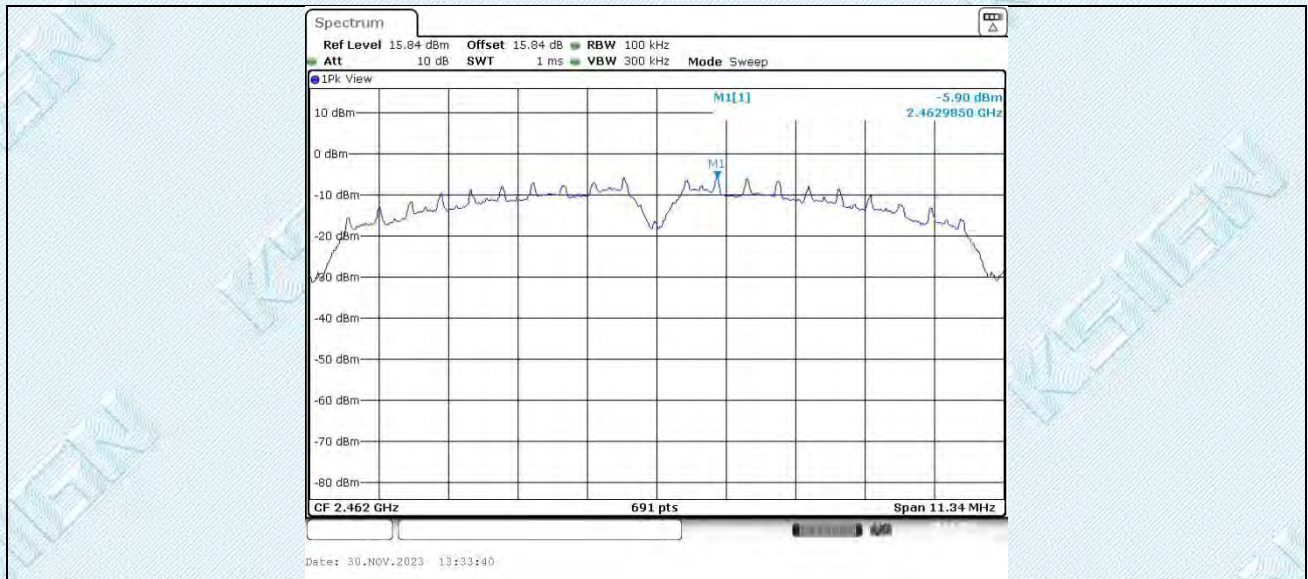
6.5.2. Test Graphs



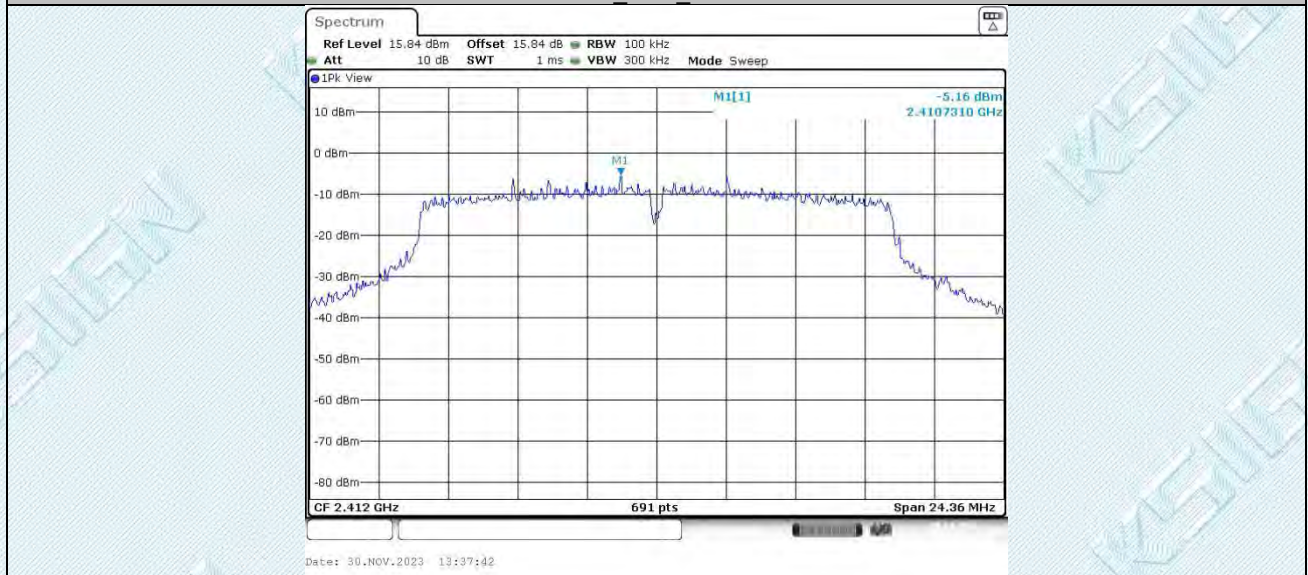
TRF RF_R1

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

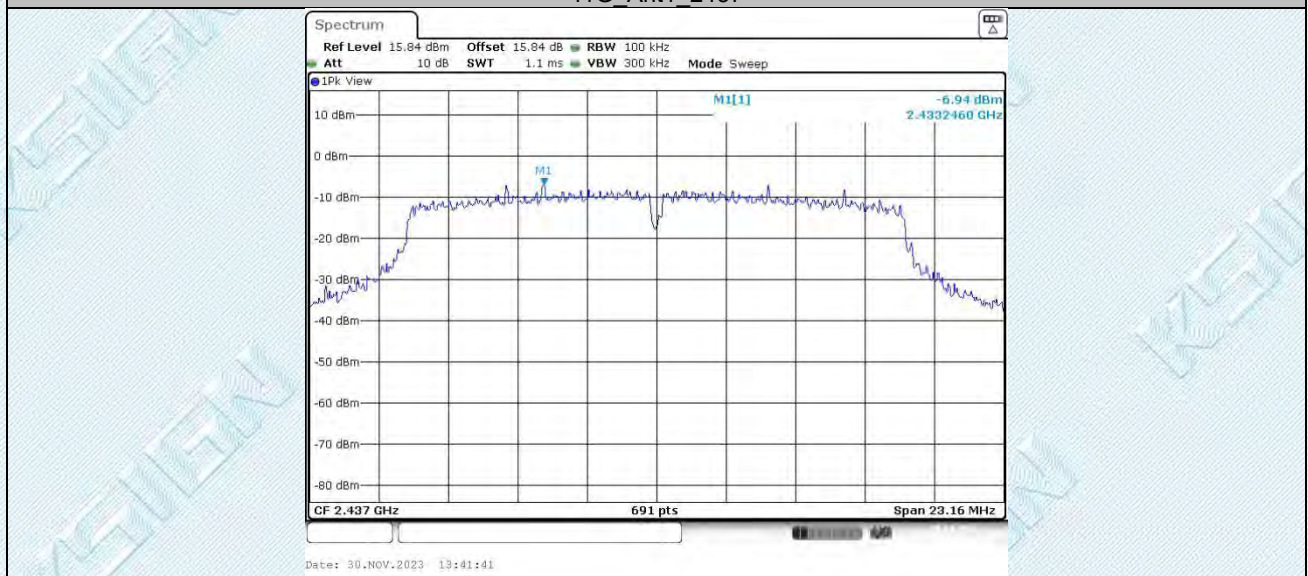
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11G Ant1_2412



11G Ant1_2437

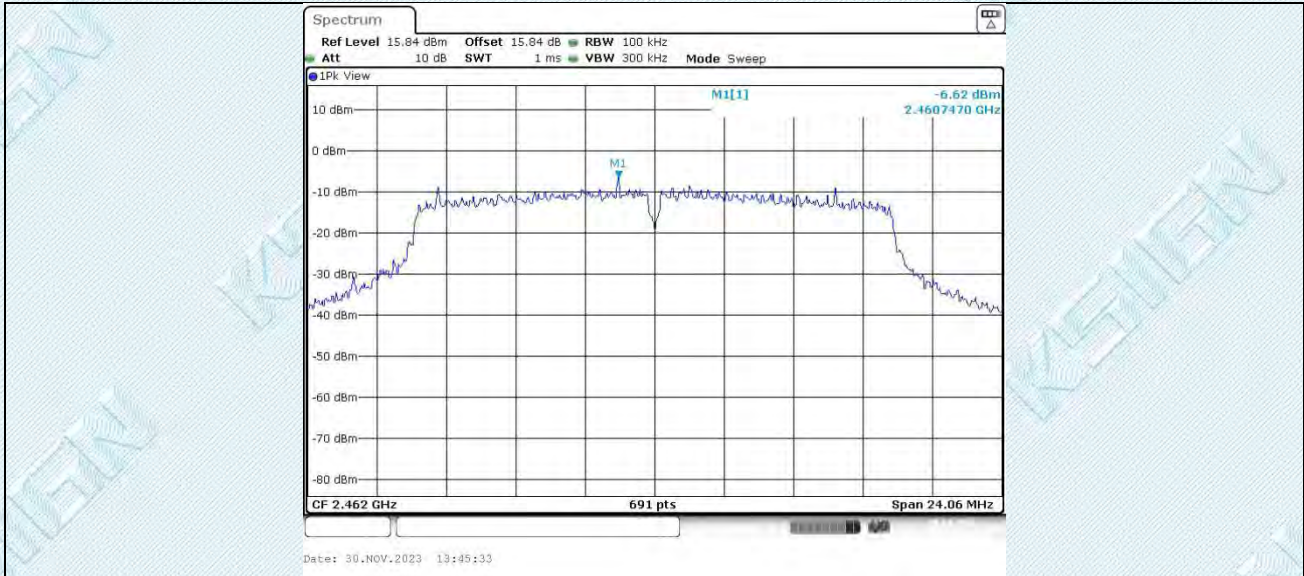


11G Ant1_2462

TRF RF_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

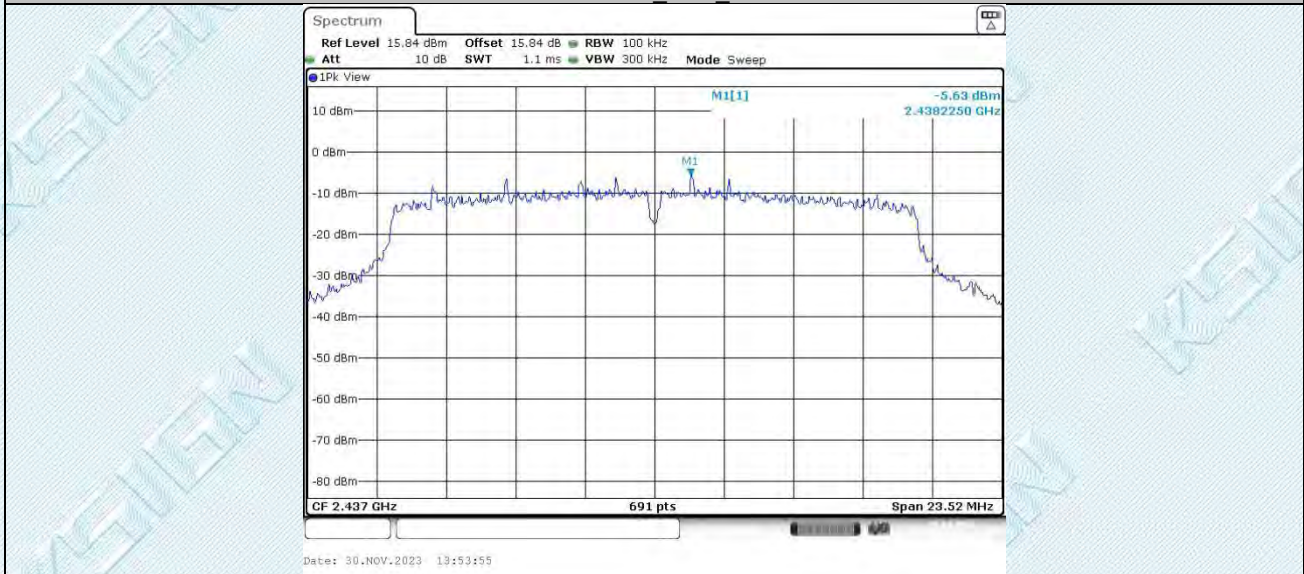
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

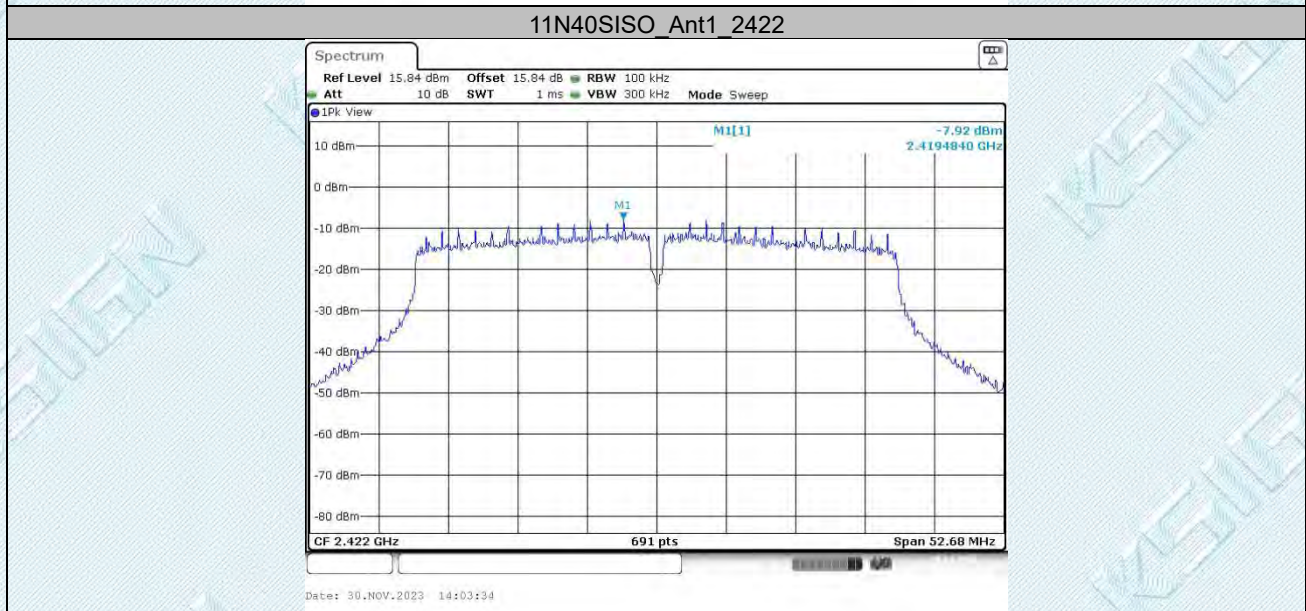
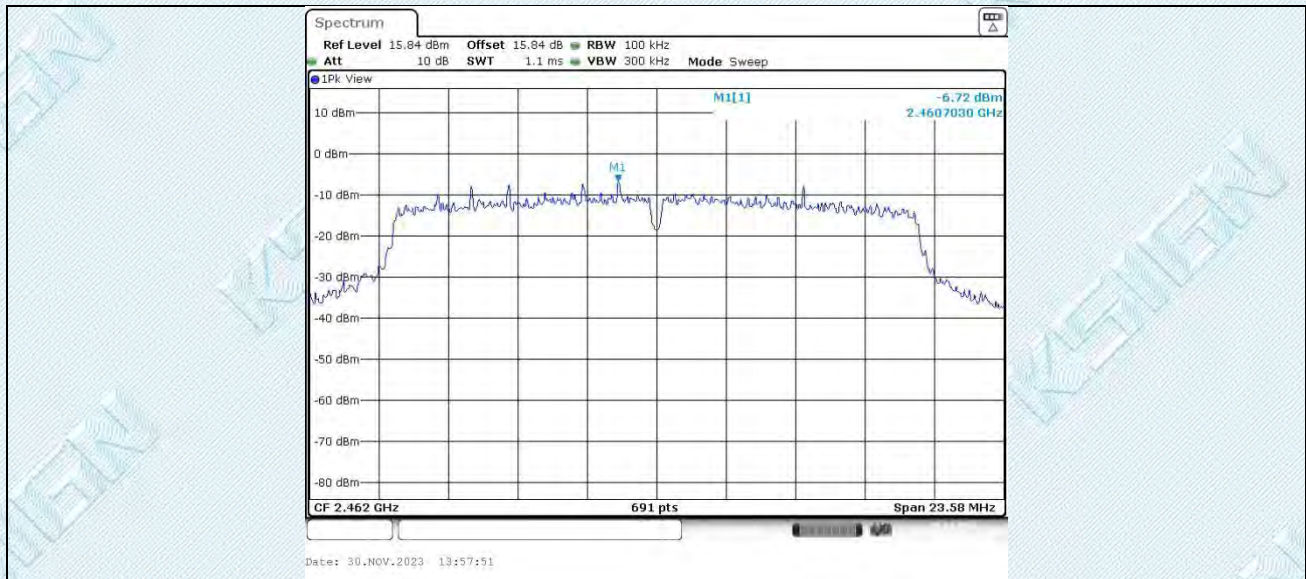


11N20SISO_Ant1_2462

TRF RF_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

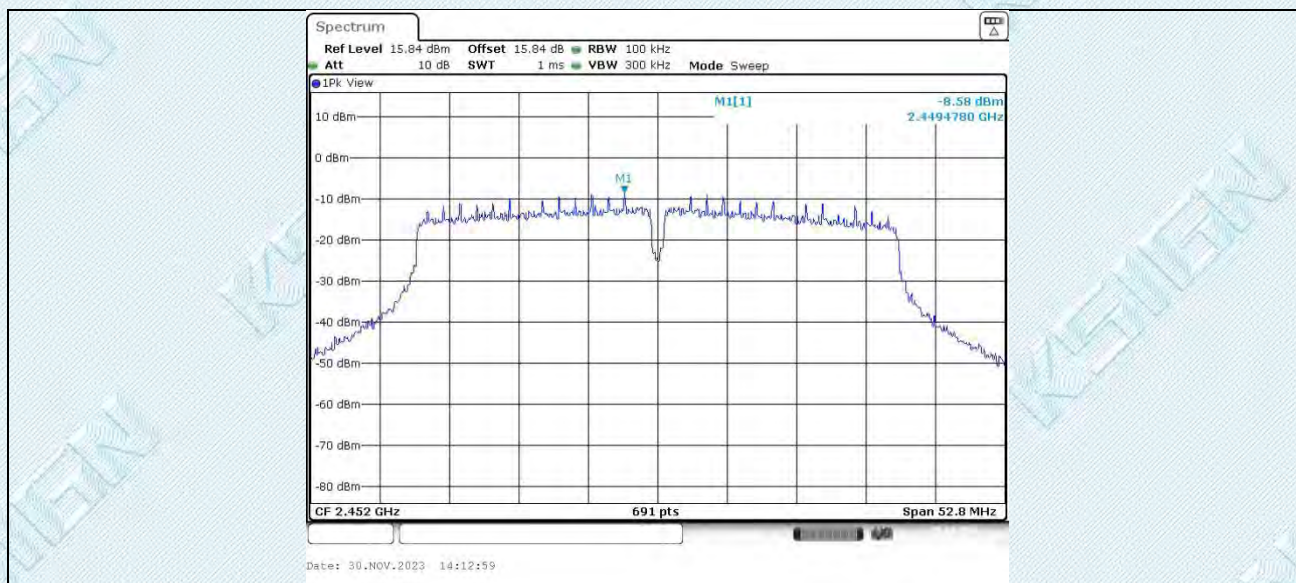
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



TRF RF_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 RF_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@gdksign.cn Web: www.gdksign.com

6.6. Appendix F: Band edge measurements

6.6.1. Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-4.20	-51.5	≤ -24.2	PASS
		High	2462	-5.90	-57.97	≤ -25.9	PASS
11G	Ant1	Low	2412	-5.16	-51.32	≤ -25.16	PASS
		High	2462	-6.62	-56.8	≤ -26.62	PASS
11N20SISO	Ant1	Low	2412	-6.39	-52.26	≤ -26.39	PASS
		High	2462	-6.72	-56.29	≤ -26.72	PASS
11N40SISO	Ant1	Low	2422	-7.92	-49.63	≤ -27.92	PASS
		High	2452	-8.58	-52.95	≤ -28.58	PASS

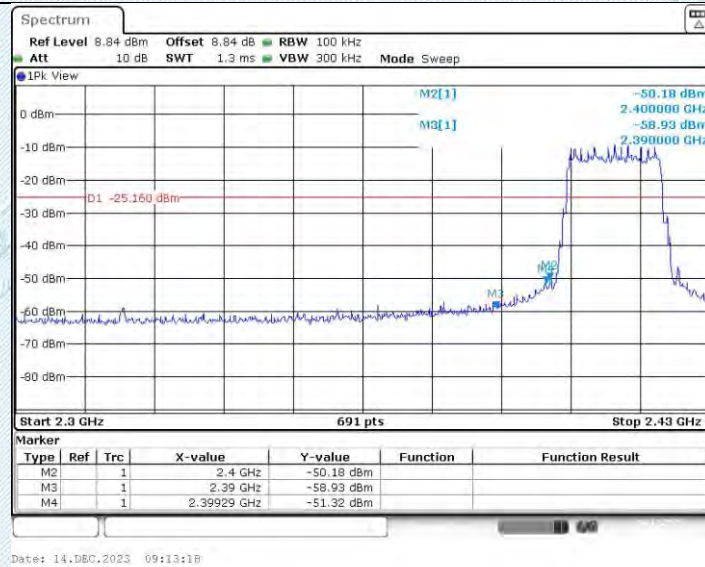
6.6.2. Test Graphs



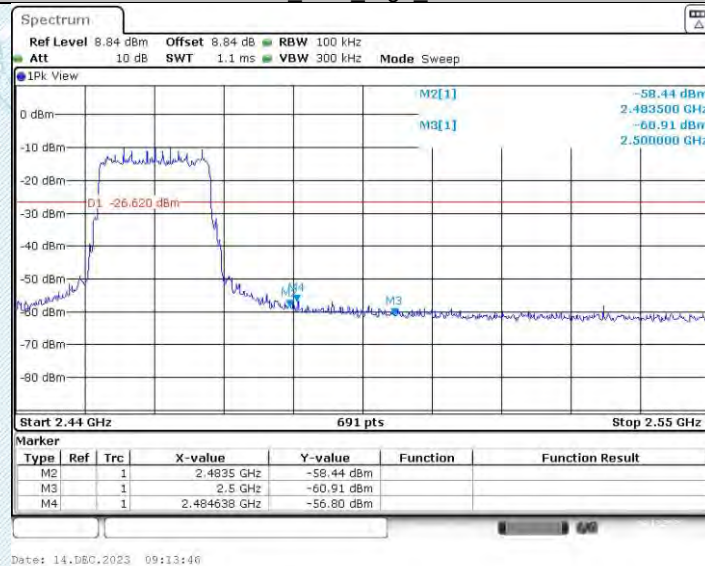
TRF_RF_R1

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

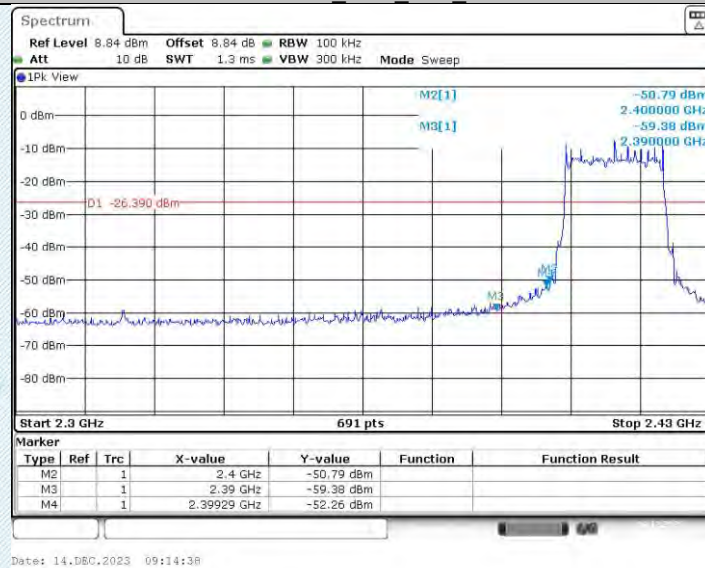
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11G Ant1 High 2462



11N20SISO Ant1 Low 2412

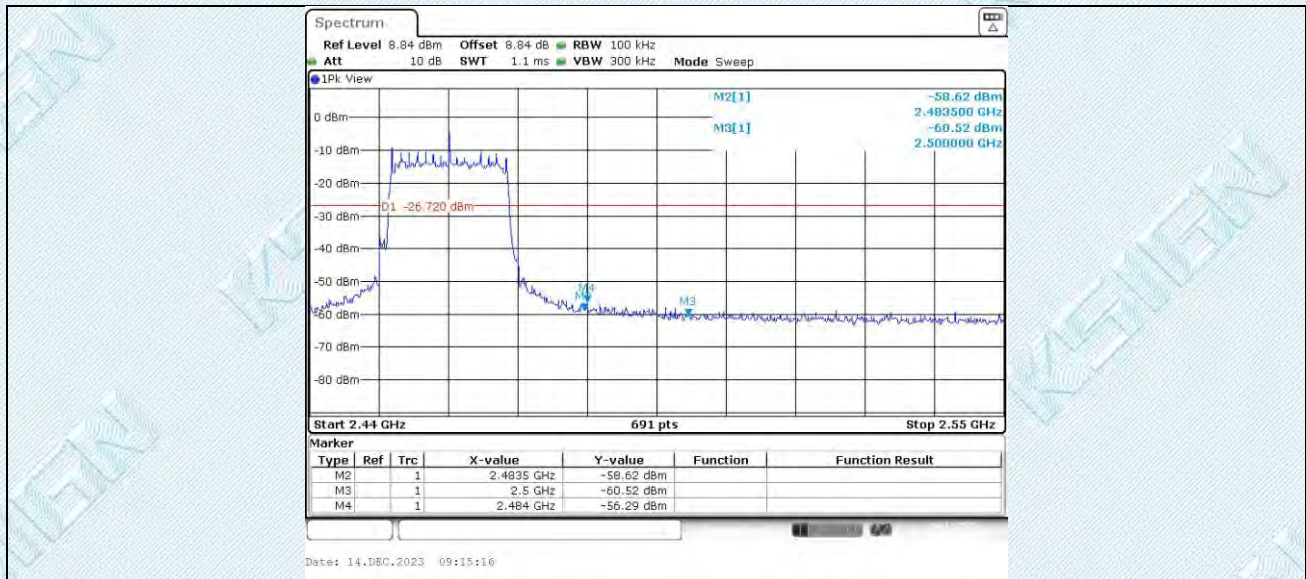


11N20SISO Ant1 High 2462

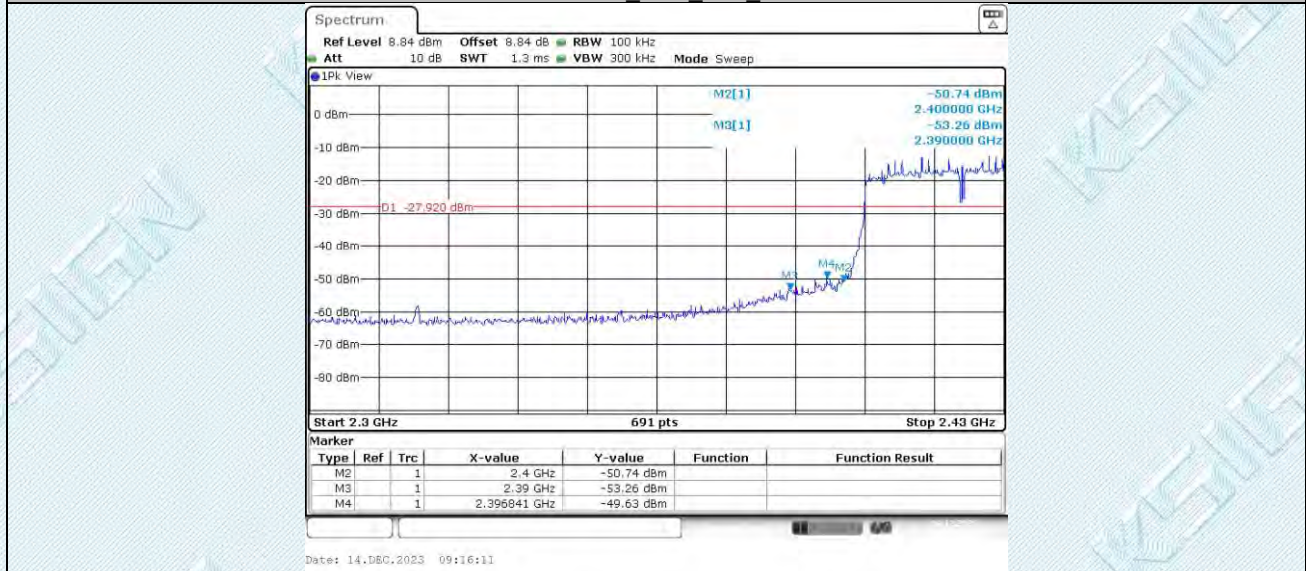
TRF RF_R1

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

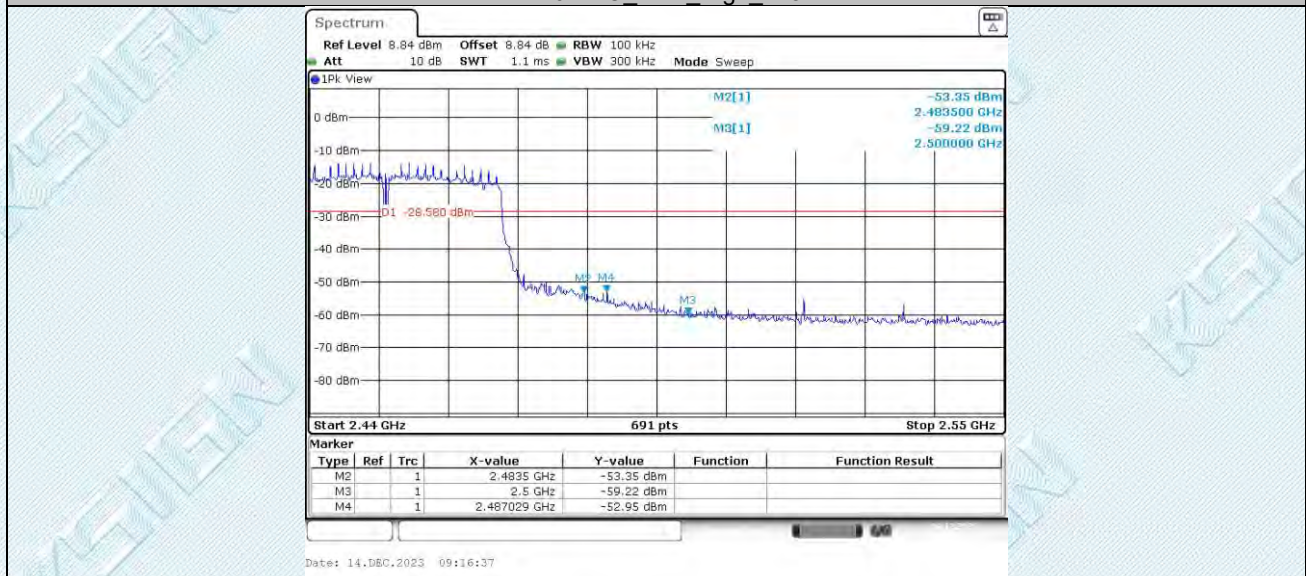
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



TRF RF_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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6.7. Appendix G: Conducted Spurious Emission

6.7.1. Test Result

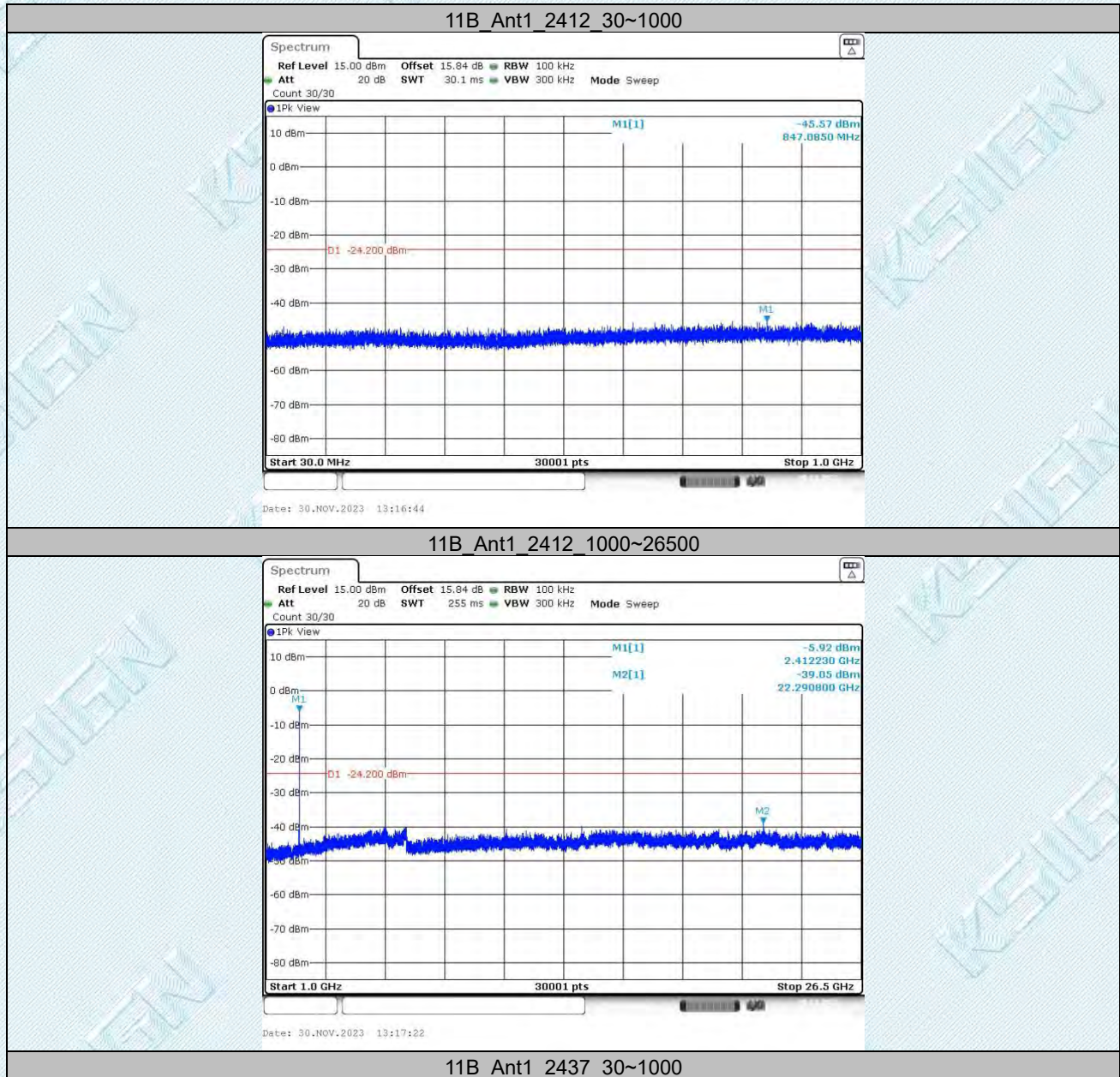
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	-4.20	-45.57	≤-24.2	PASS
			1000~26500	-4.20	-39.05	≤-24.2	PASS
		2437	30~1000	-3.25	-45.02	≤-23.25	PASS
			1000~26500	-3.25	-40.13	≤-23.25	PASS
		2462	30~1000	-5.90	-44.89	≤-25.9	PASS
			1000~26500	-5.90	-38.86	≤-25.9	PASS
11G	Ant1	2412	30~1000	-5.16	-45.14	≤-25.16	PASS
			1000~26500	-5.16	-39.92	≤-25.16	PASS
		2437	30~1000	-6.94	-44.96	≤-26.94	PASS
			1000~26500	-6.94	-40.05	≤-26.94	PASS
		2462	30~1000	-6.62	-44.77	≤-26.62	PASS
			1000~26500	-6.62	-39.67	≤-26.62	PASS
11N20SISO	Ant1	2412	30~1000	-6.39	-45.31	≤-26.39	PASS
			1000~26500	-6.39	-38.66	≤-26.39	PASS
		2437	30~1000	-5.63	-45.2	≤-25.63	PASS
			1000~26500	-5.63	-39.43	≤-25.63	PASS
		2462	30~1000	-6.72	-44.9	≤-26.72	PASS
			1000~26500	-6.72	-39.88	≤-26.72	PASS
11N40SISO	Ant1	2422	30~1000	-7.92	-44.73	≤-27.92	PASS
			1000~26500	-7.92	-39.96	≤-27.92	PASS
		2437	30~1000	-8.07	-45.47	≤-28.07	PASS
			1000~26500	-8.07	-39.99	≤-28.07	PASS
		2452	30~1000	-8.58	-44.18	≤-28.58	PASS
			1000~26500	-8.58	-39.32	≤-28.58	PASS

TRF RF_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

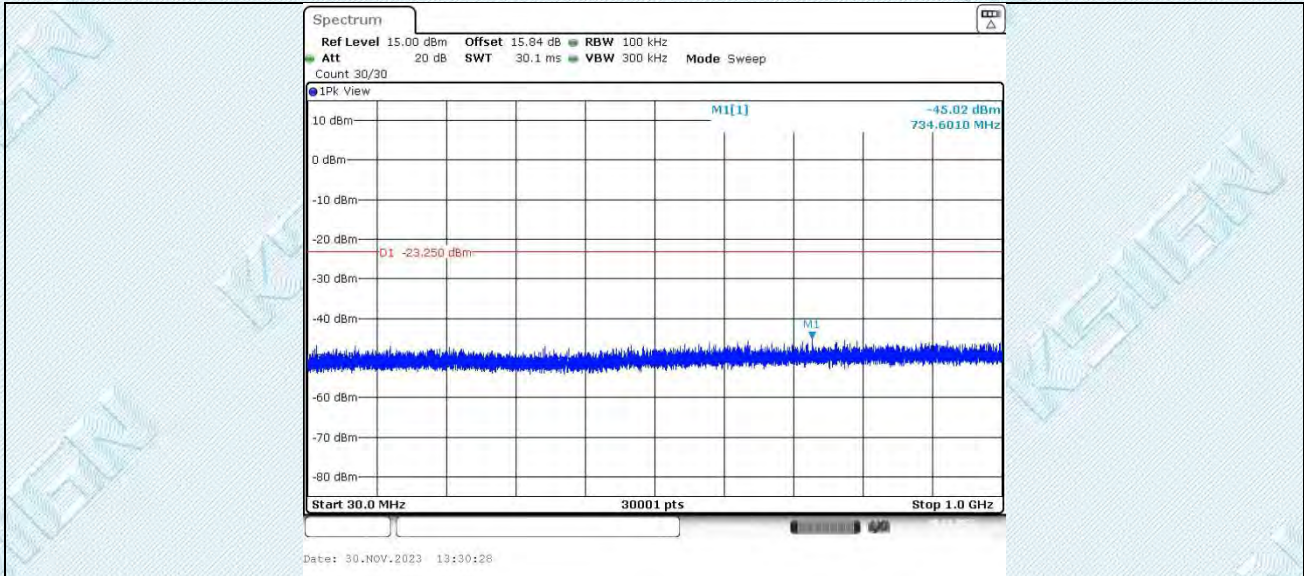
6.7.2. Test Graphs



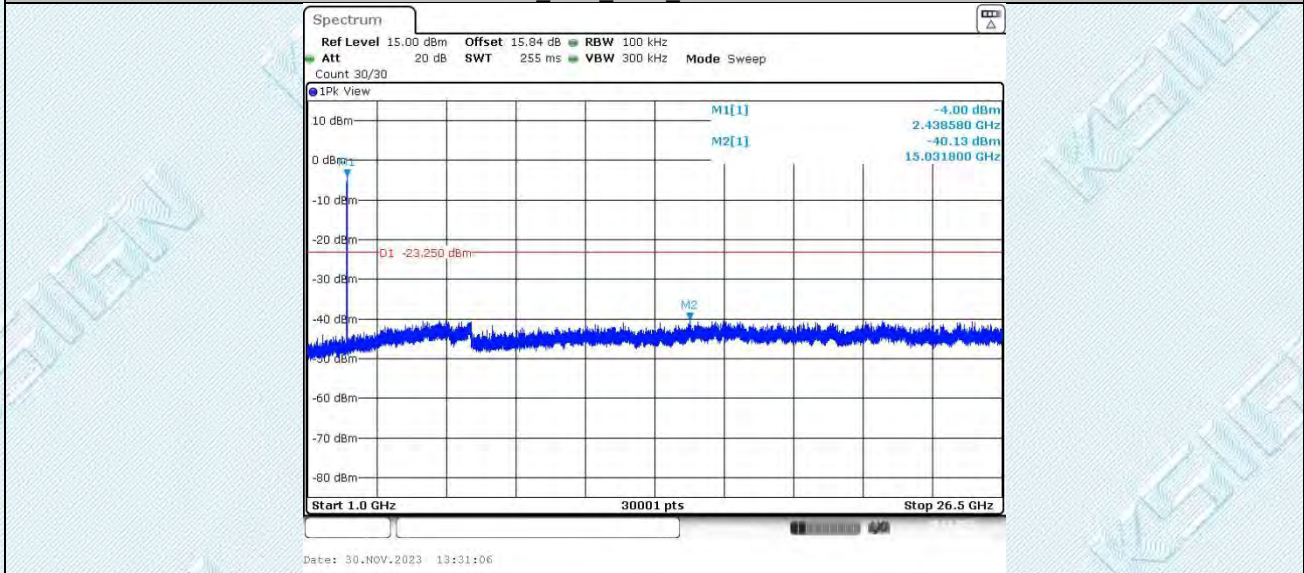
TRF RF_R1

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

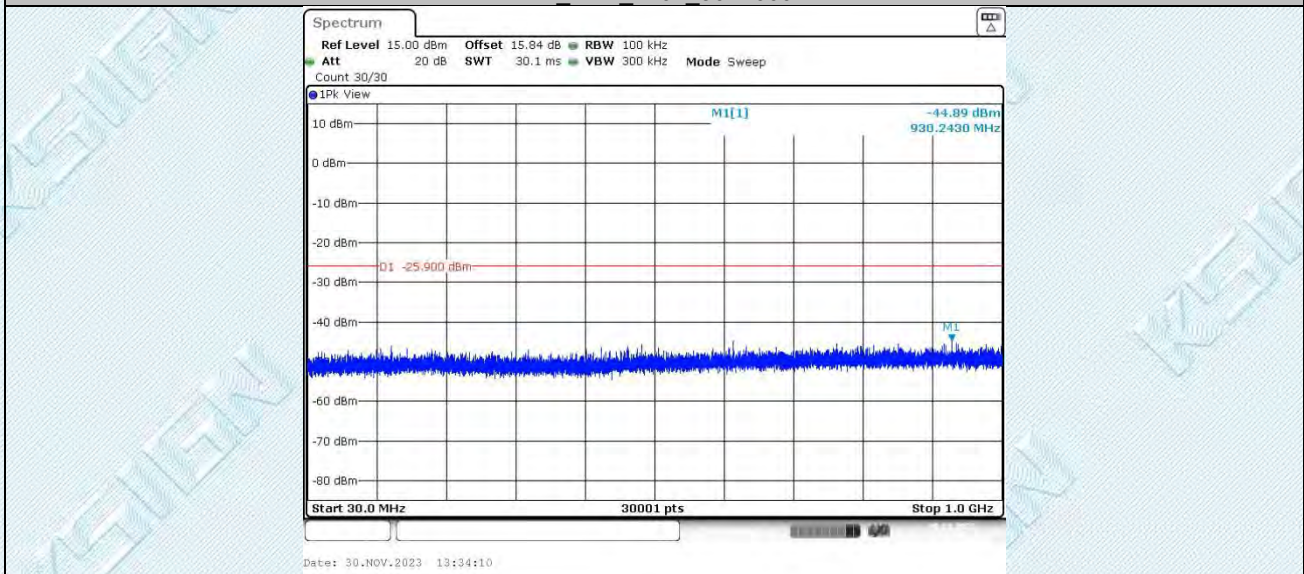
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11B_Ant1_2437_1000~26500



11B_Ant1_2462_30~1000

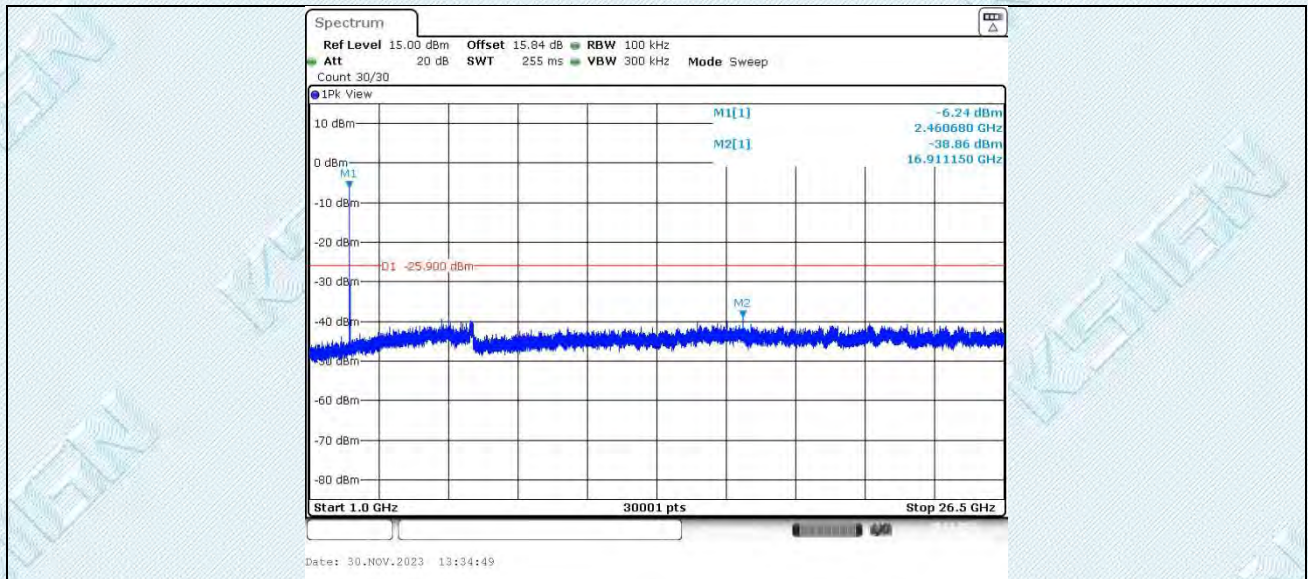


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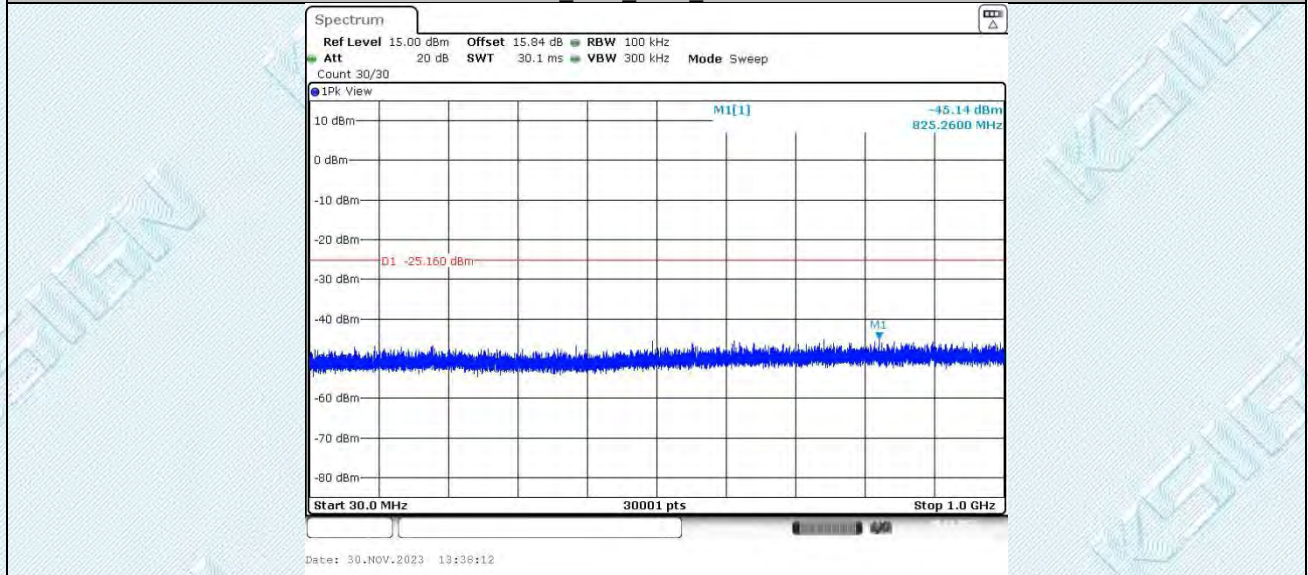
TRF RF_R1

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

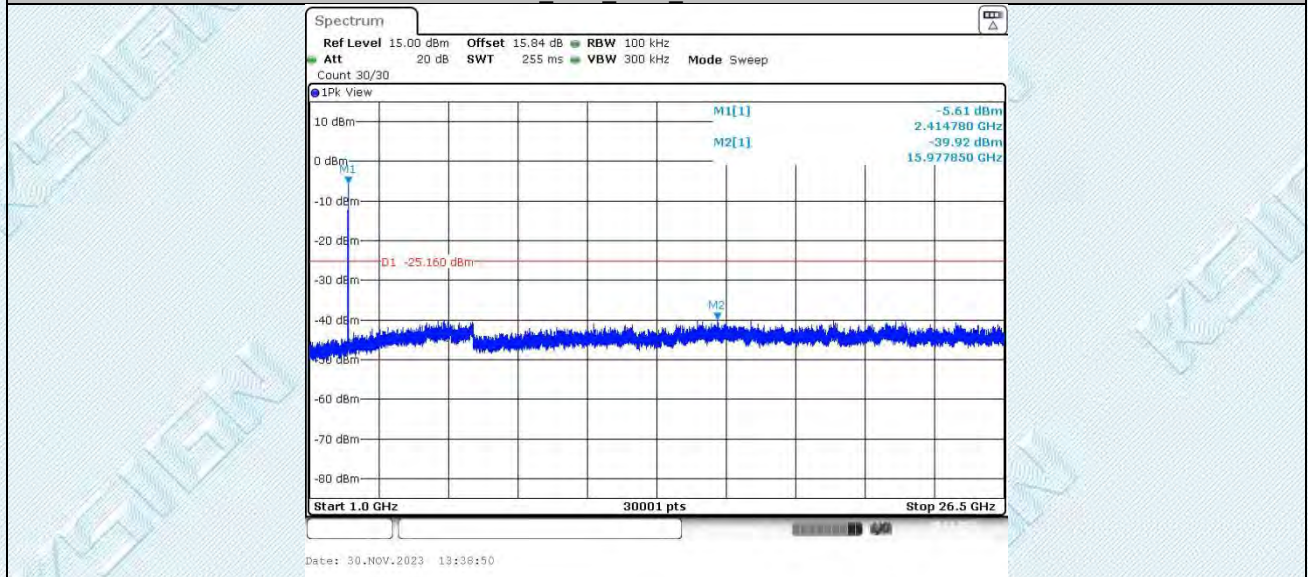
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11G Ant1 2412 30~1000



11G Ant1 2412 1000~26500

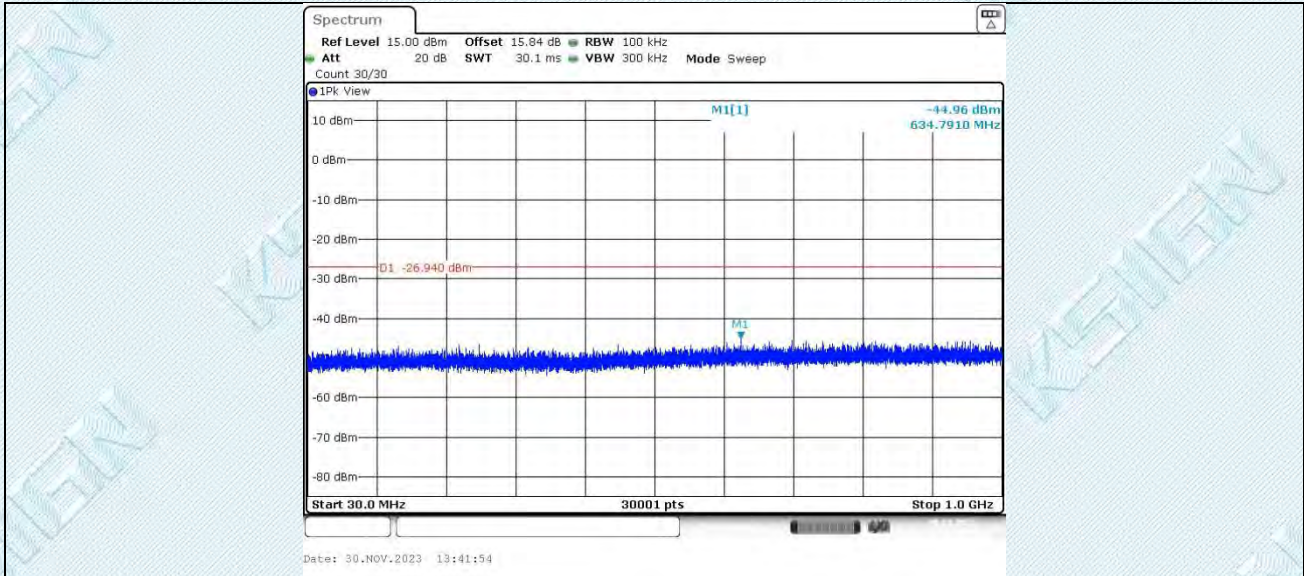


11G Ant1 2437 30~1000

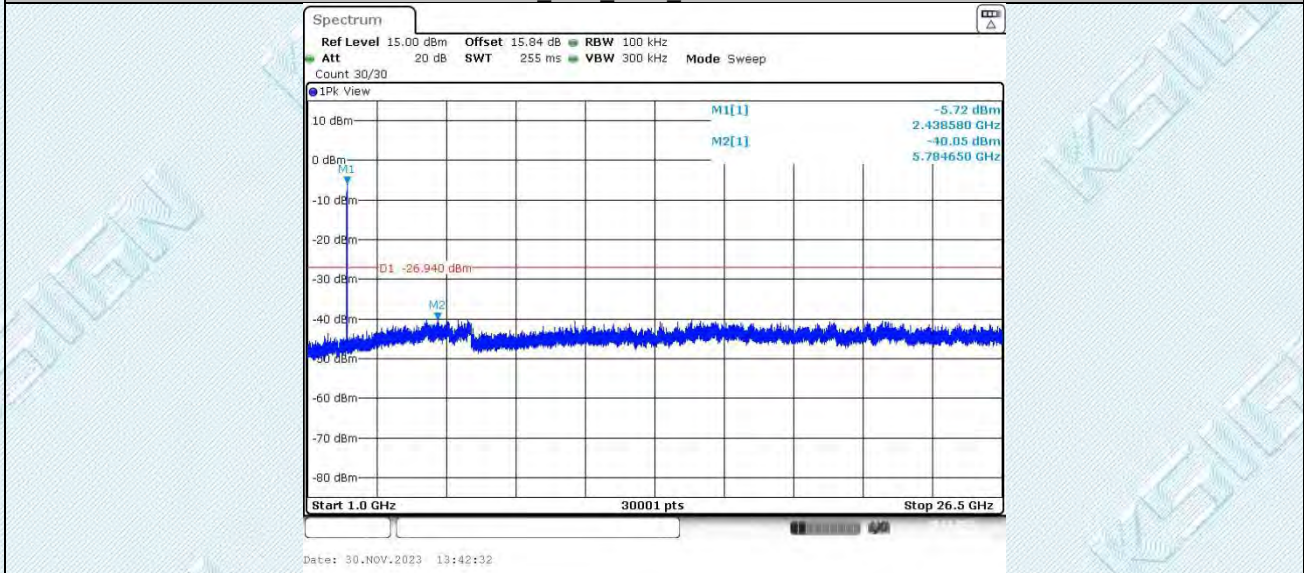
TRF RF_R1

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

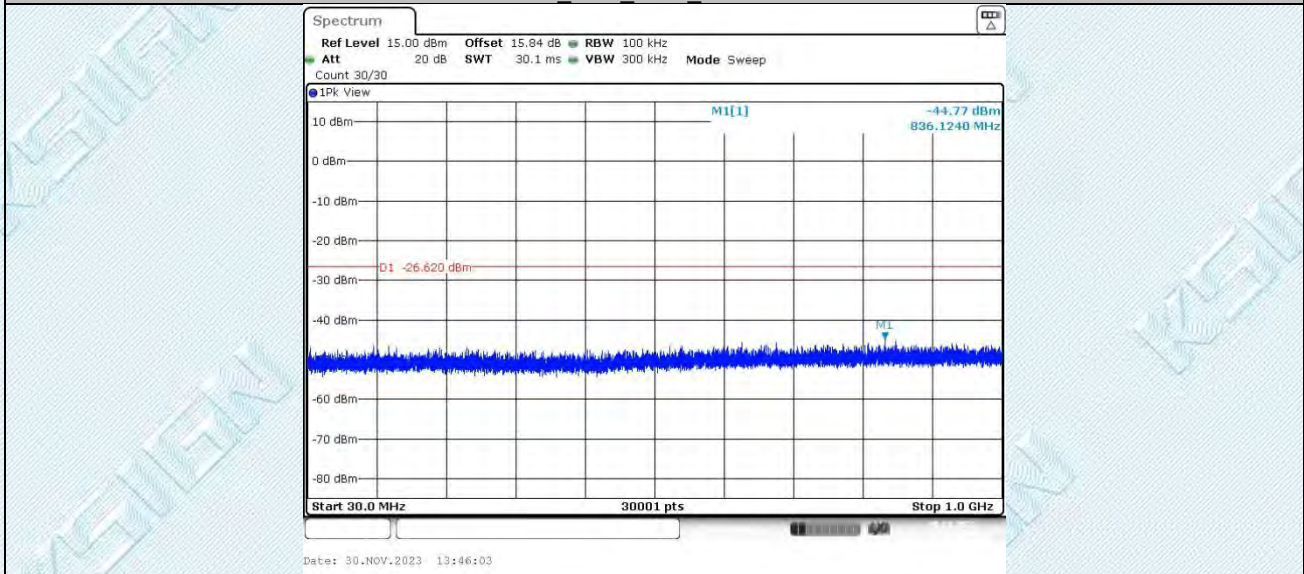
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11G_Ant1_2437_1000~26500



11G_Ant1_2462_30~1000

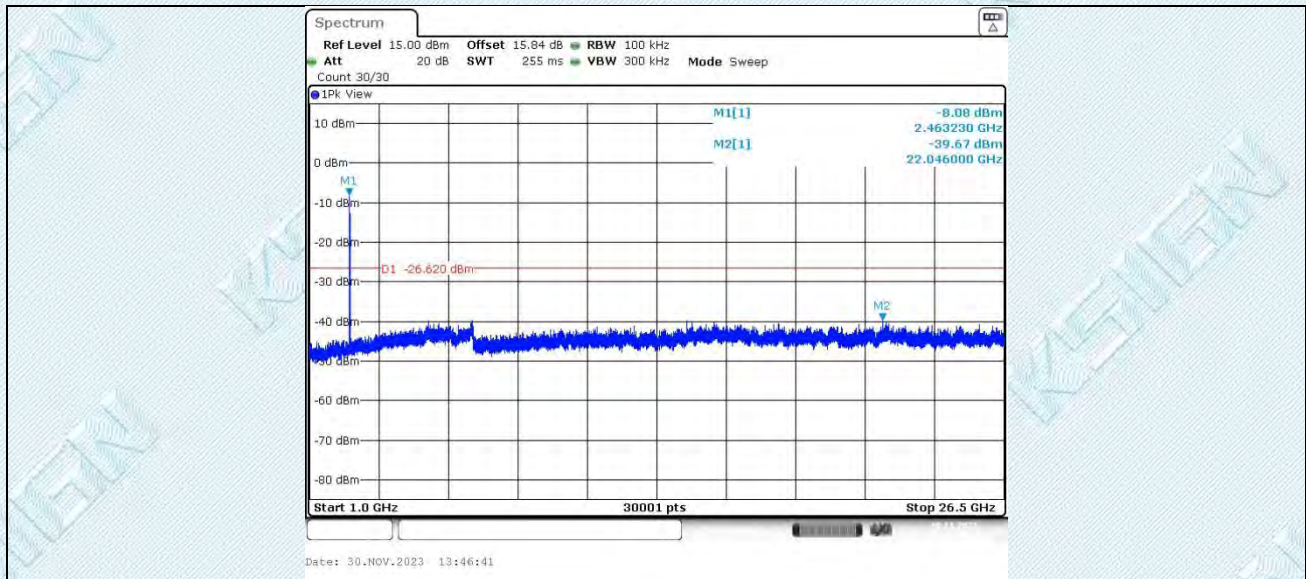


11G_Ant1_2462_1000~26500

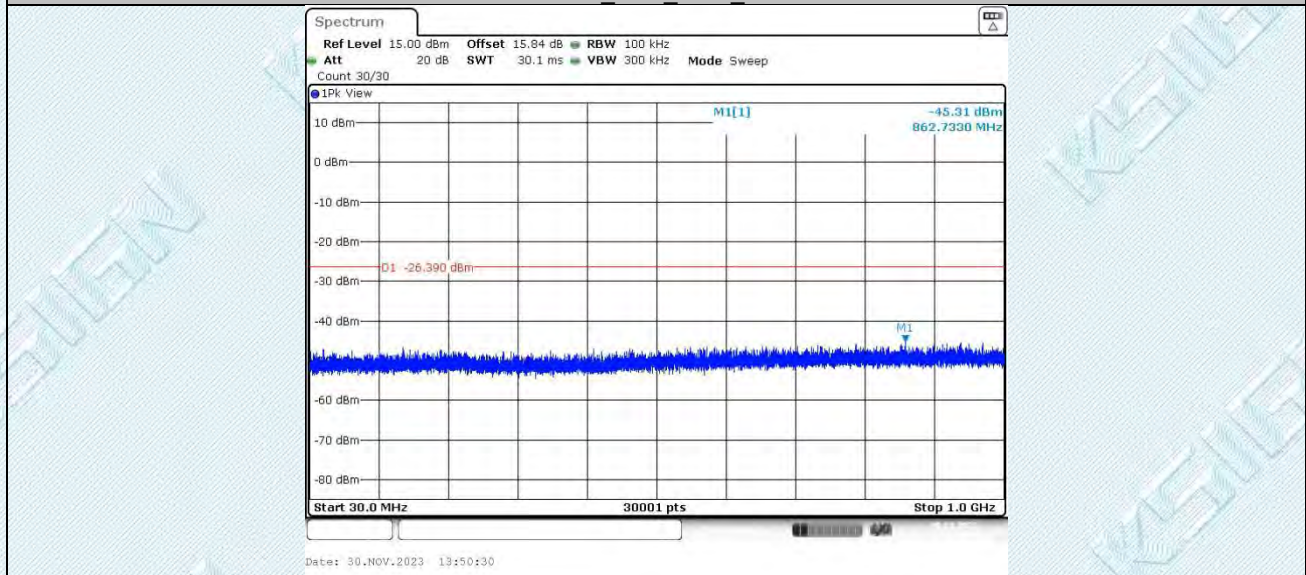
TRF RF_R1

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

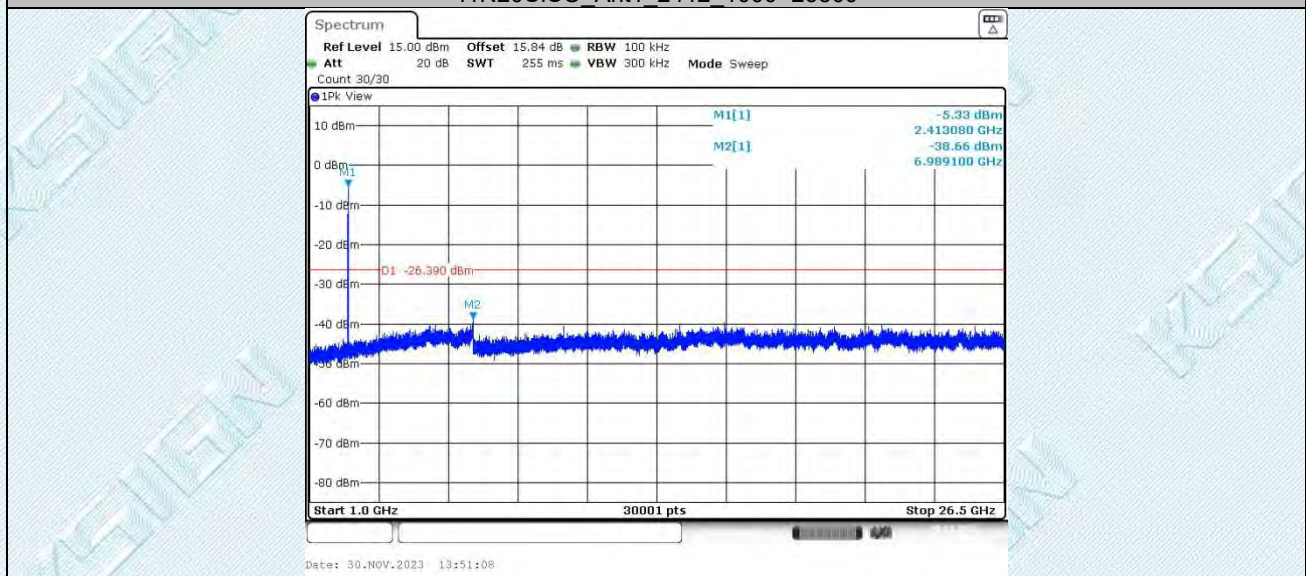
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11N20SISO Ant1 2412 30~1000



11N20SISO Ant1 2412 1000~26500

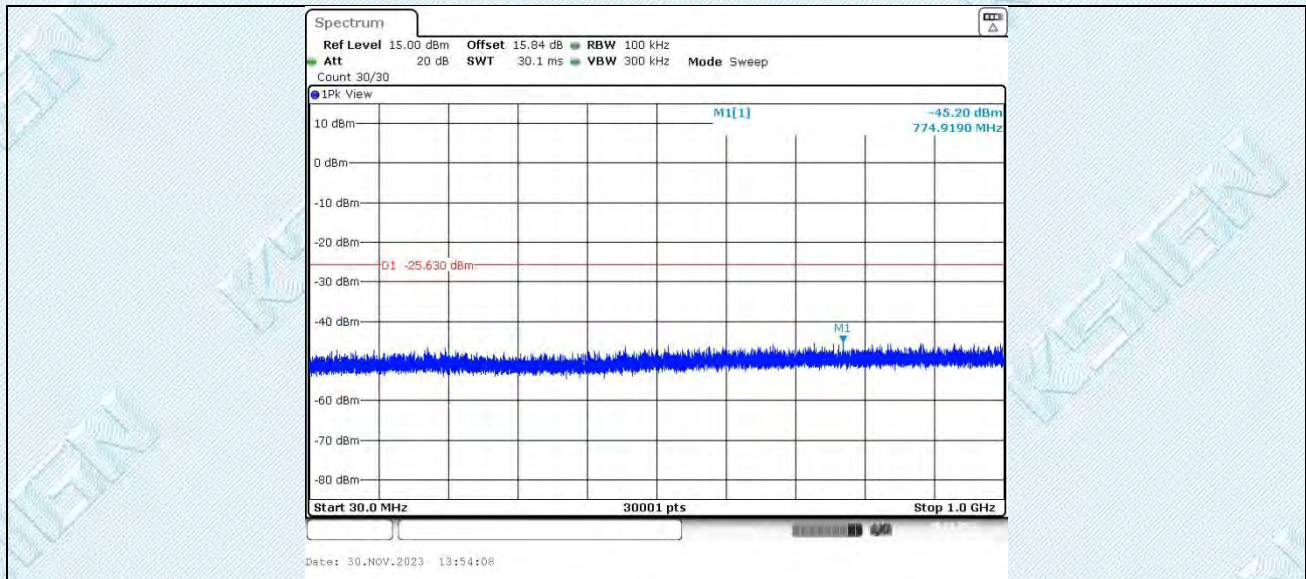


11N20SISO Ant1 2437 30~1000

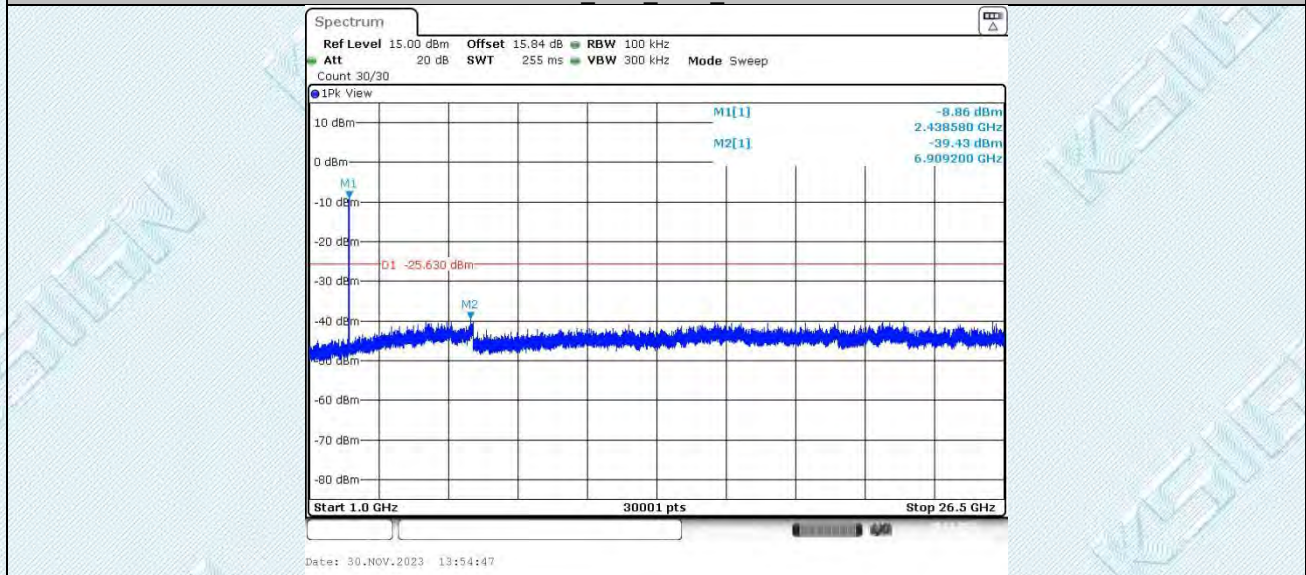
TRF RF_R1

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

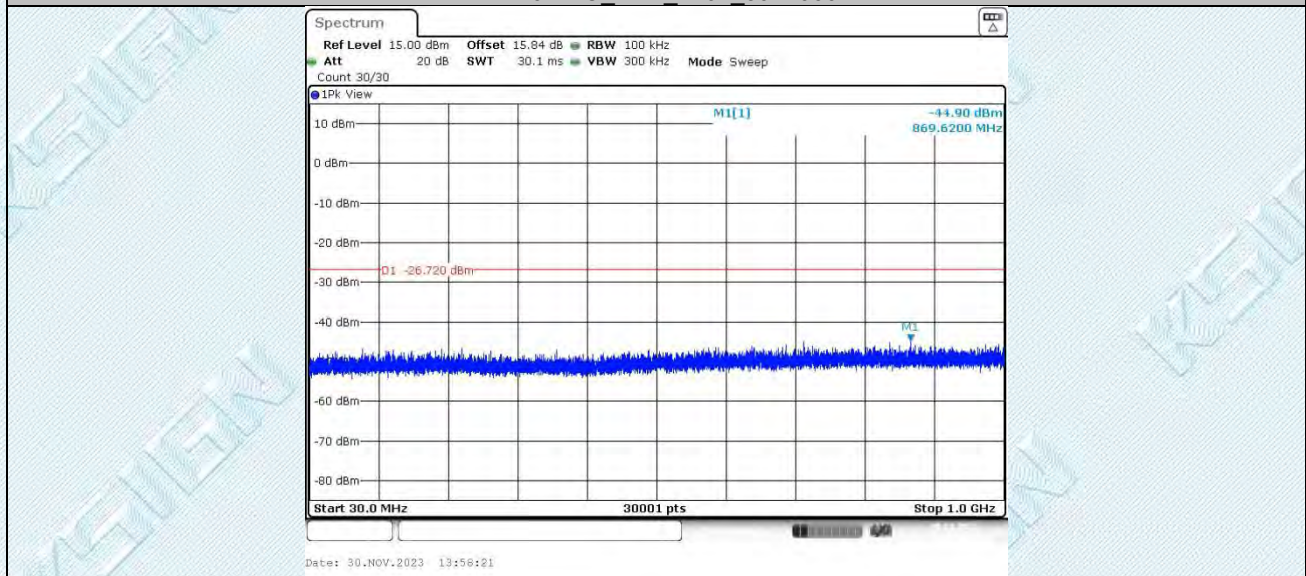
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_30~1000

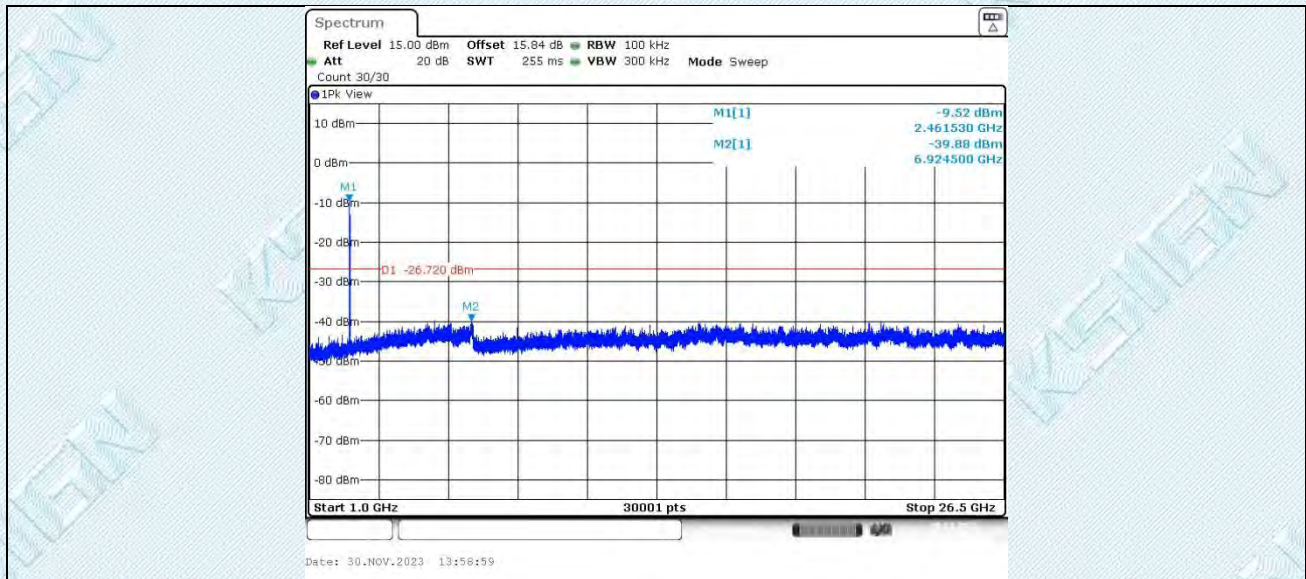


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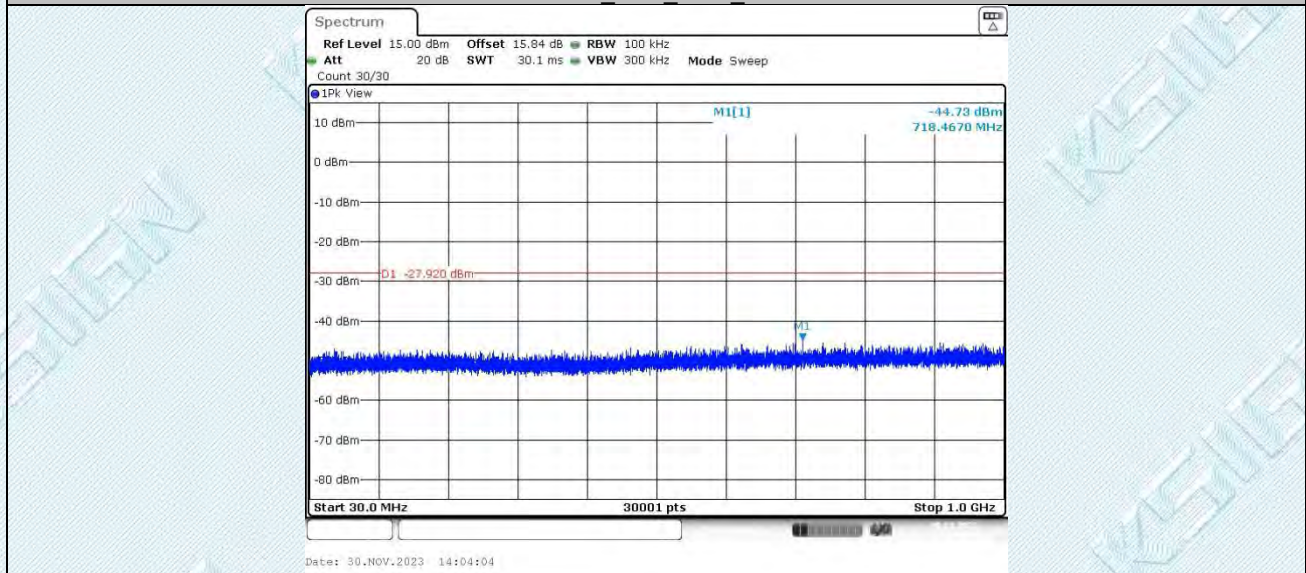
TRF RF_R1

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

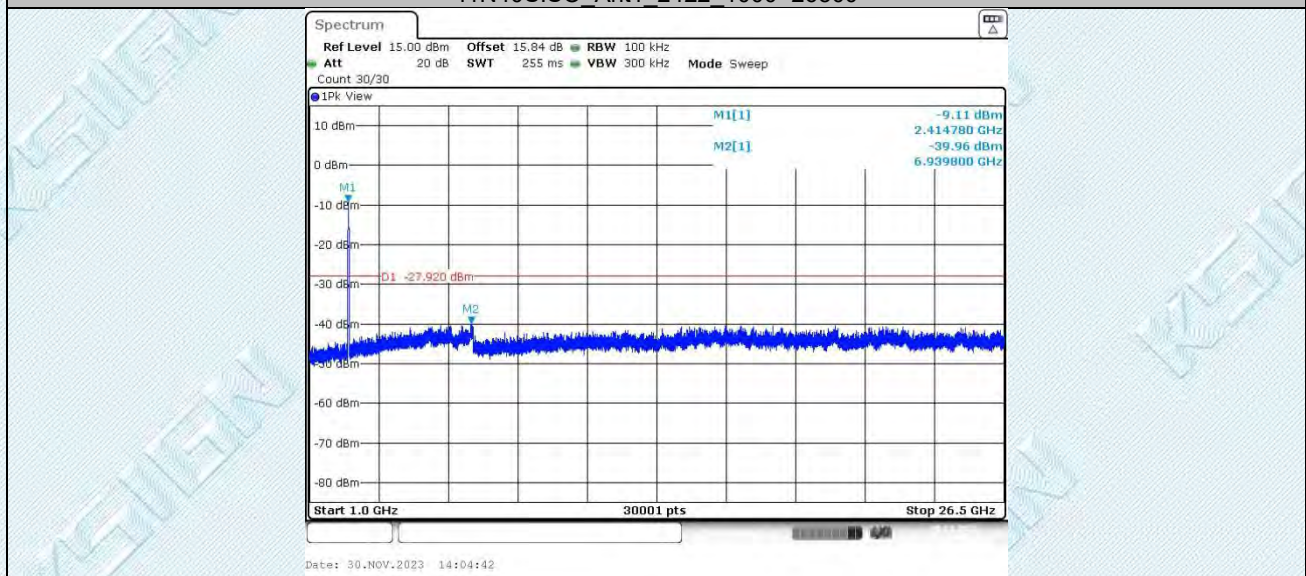
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11N40SISO Ant1 2422 30~1000



11N40SISO Ant1 2422 1000~26500

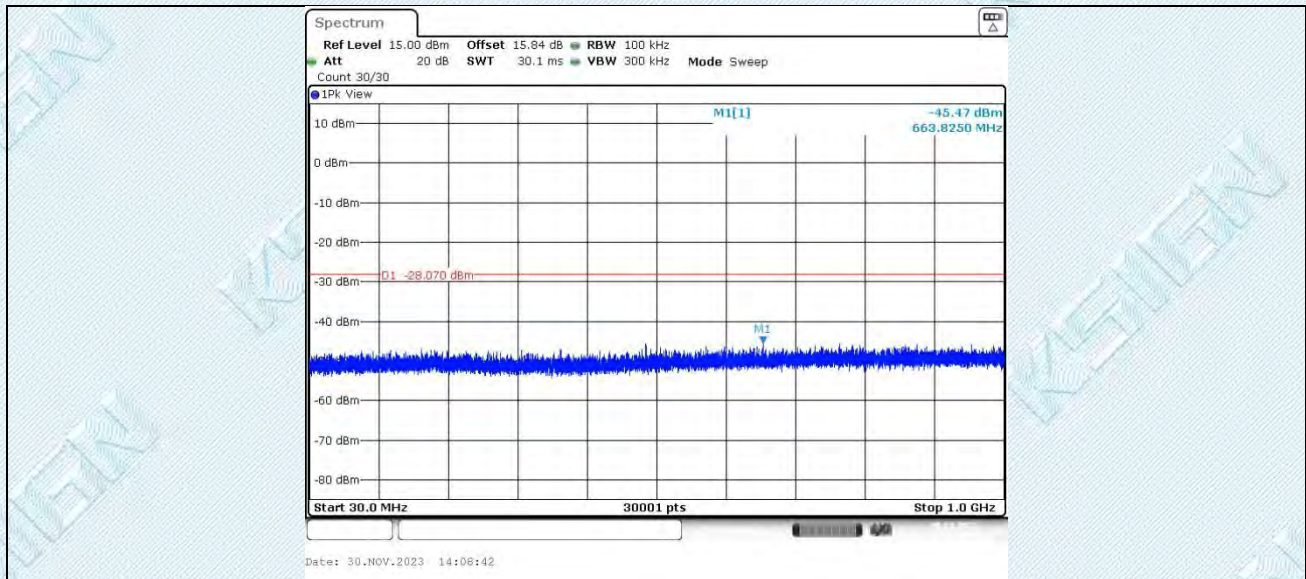


11N40SISO Ant1 2437 30~1000

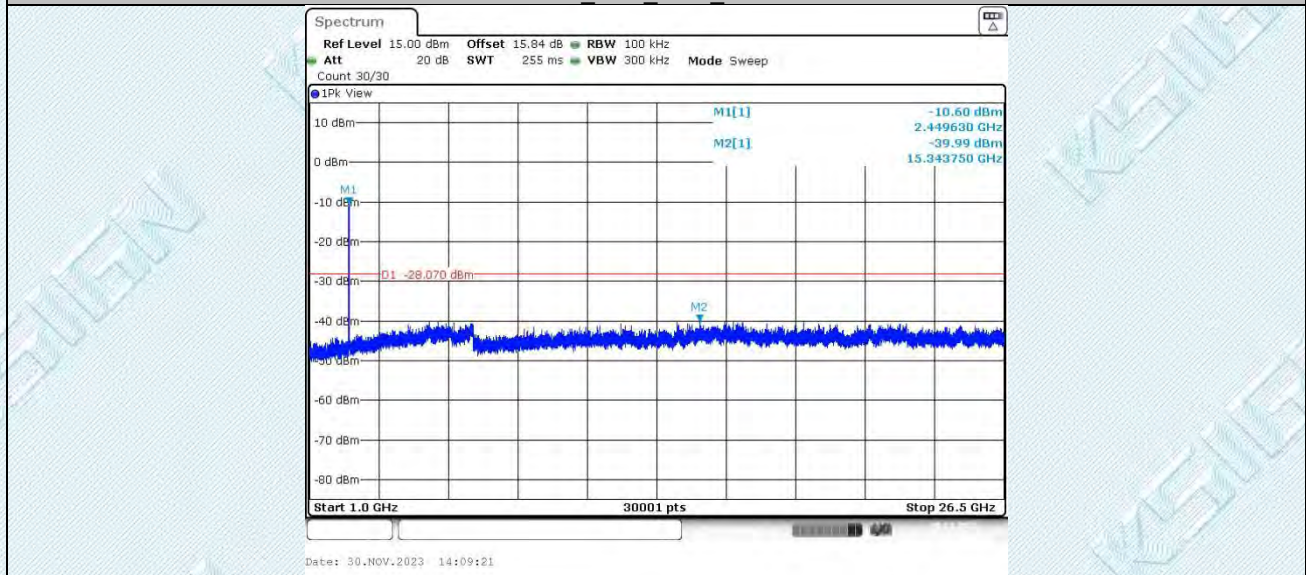
TRF RF_R1

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

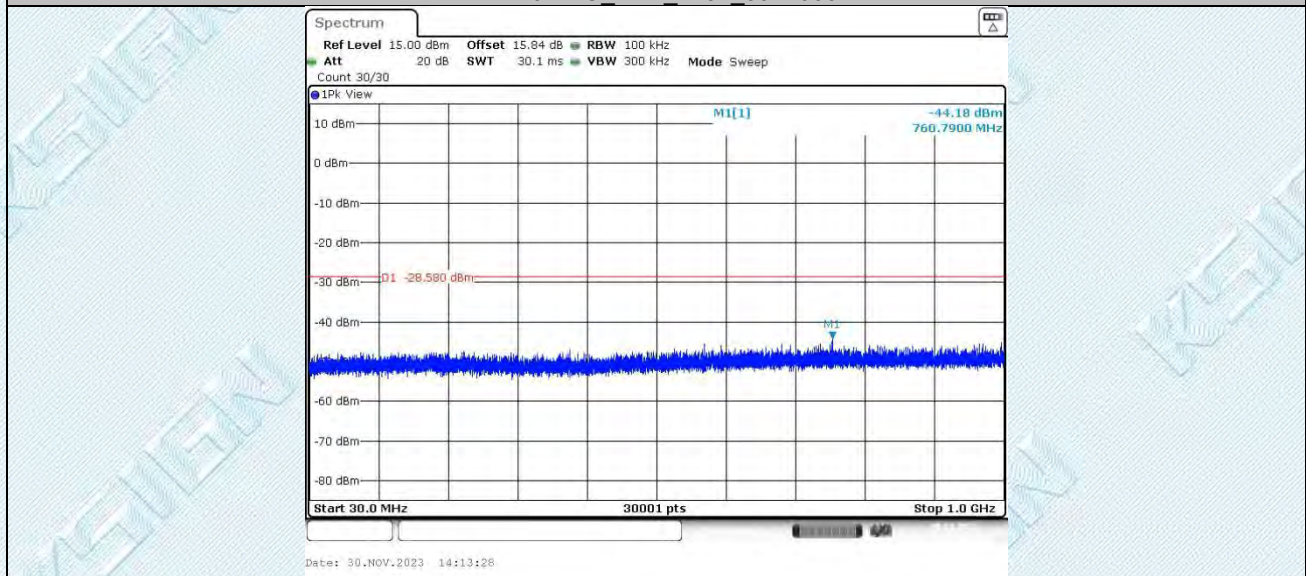
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_30~1000

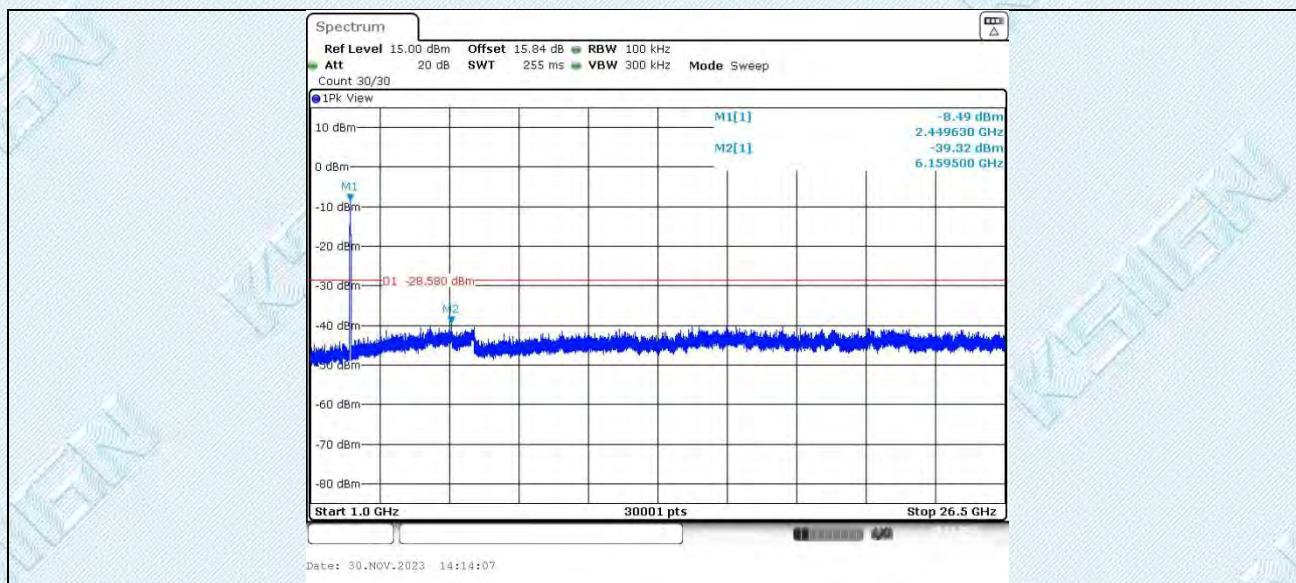


11N40SISO_Ant1_2452_1000~26500

TRF RF_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 RF_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	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	12.24	14.58	83.95
		2437	12.24	13.95	87.74
		2462	12.24	13.32	91.89
11G	Ant1	2412	2.04	3.06	66.67
		2437	2.03	3.05	66.56
		2462	2.04	3.05	66.89
11N20SISO	Ant1	2412	1.89	2.92	64.73
		2437	1.89	2.91	64.95
		2462	1.89	2.92	64.73
11N40SISO	Ant1	2422	0.93	1.96	47.45
		2437	0.93	1.95	47.69
		2452	0.93	1.96	47.45

Duty Cycle=Transmission Duration/Transmission Period*100%

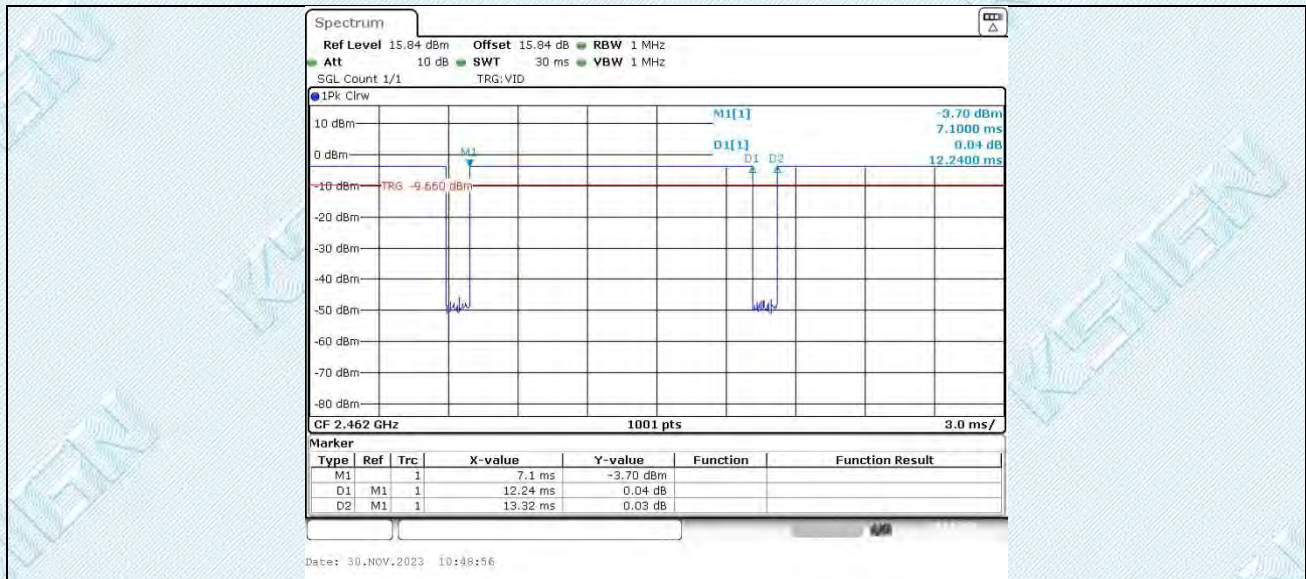
6.8.2. Test Graphs



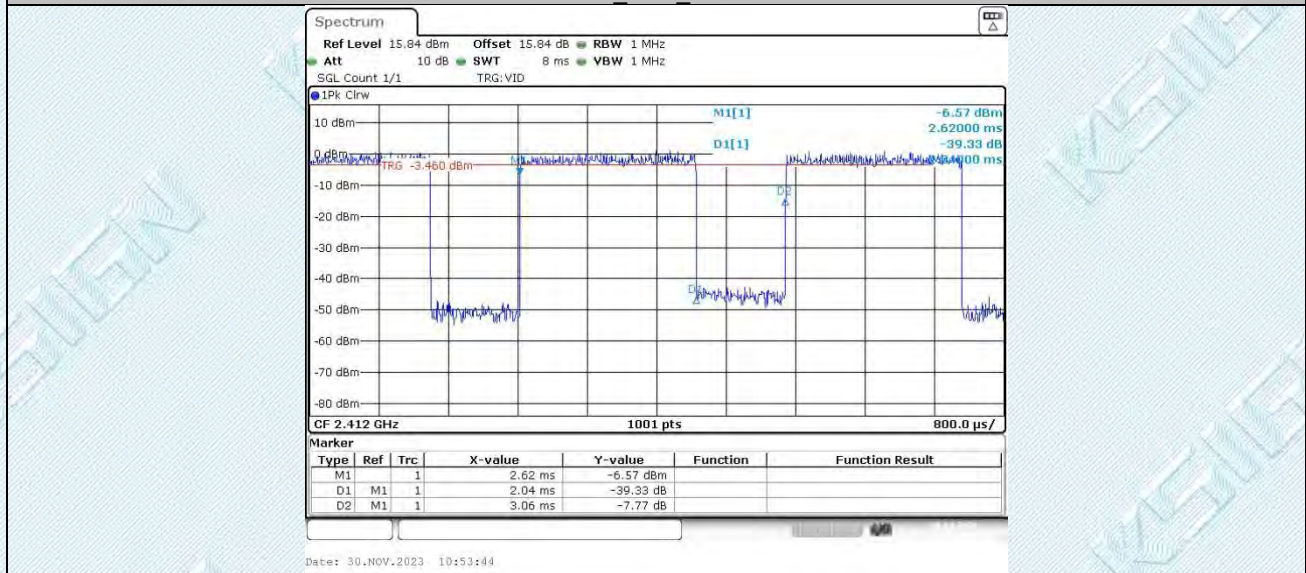
TRF RF_R1

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

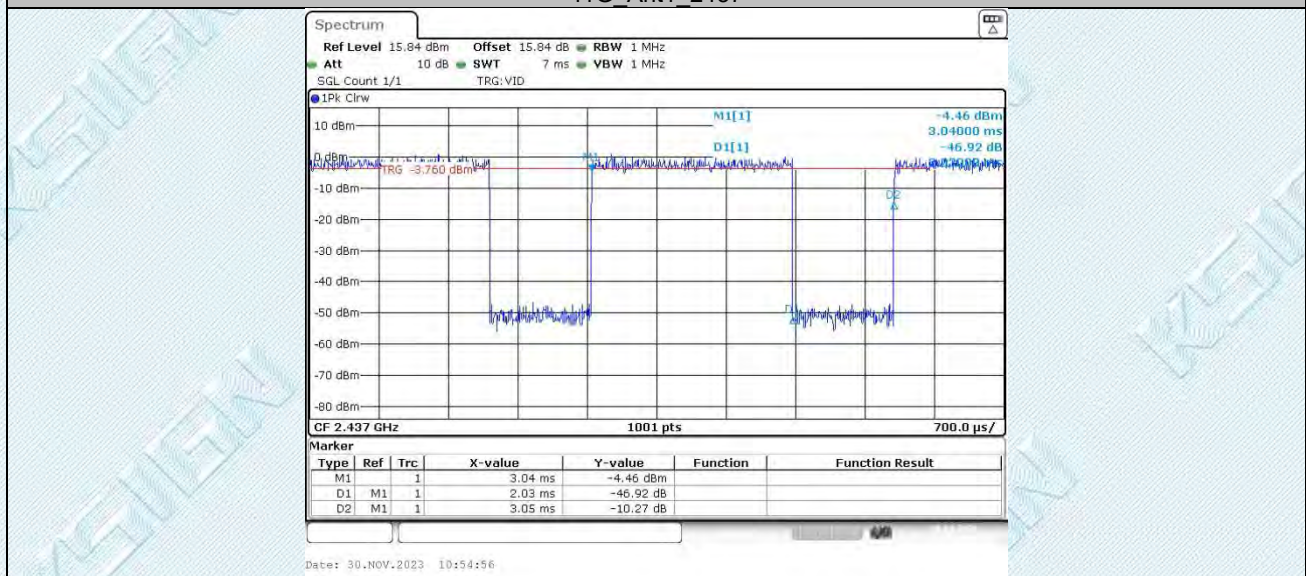
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdksign.cn Web: www.gdksign.com



11G Ant1_2412



11G Ant1_2437

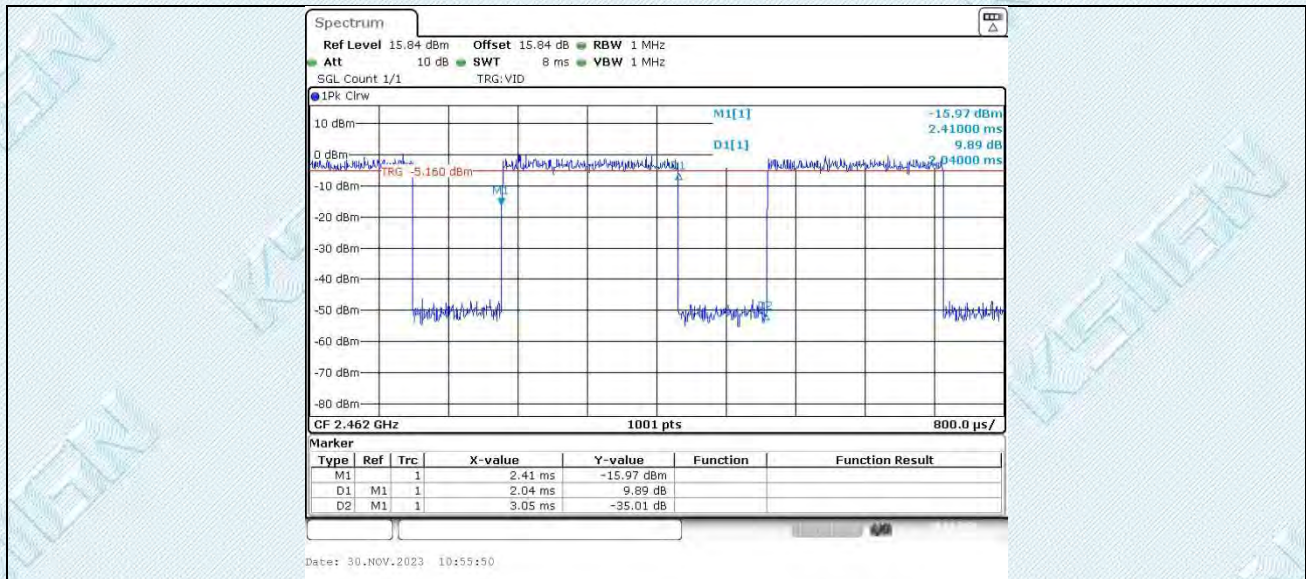


11G Ant1_2462

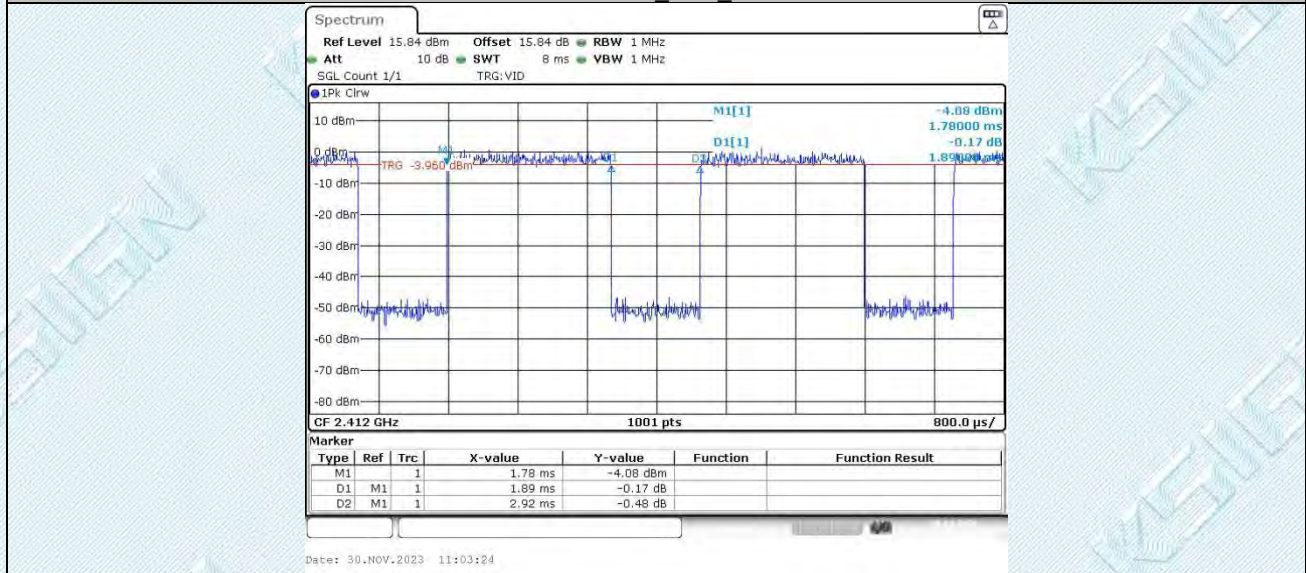
TRF RF_R1

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

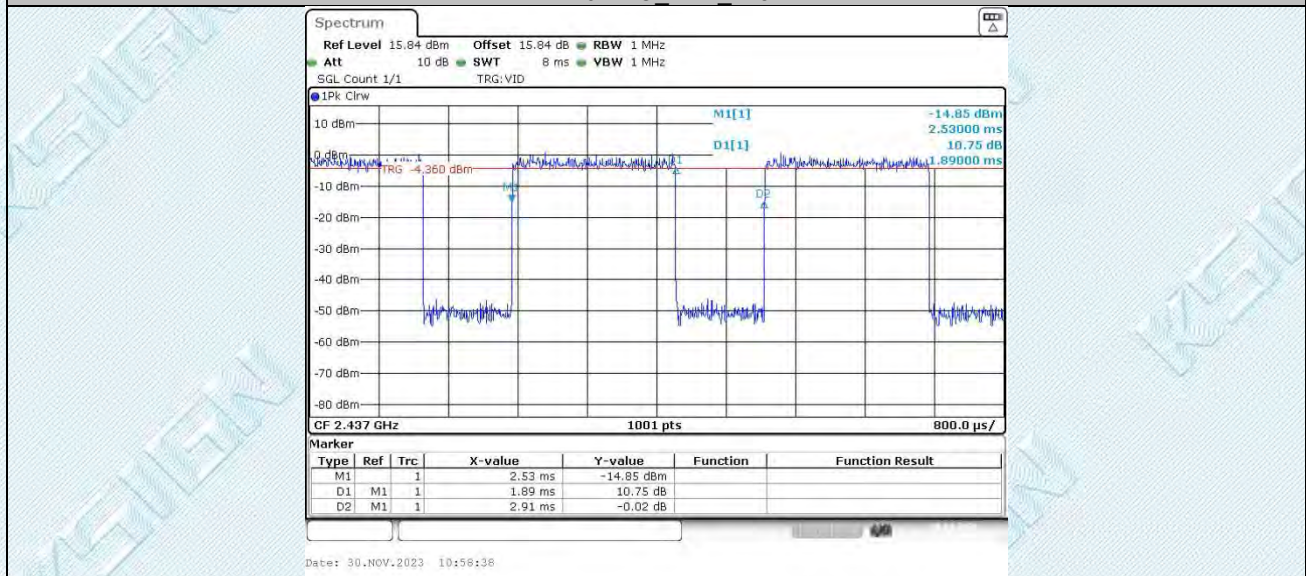
Tel: +(86) 0755-2985 2678 Fax: +(86) 0755-2985 2397 E-mail: info@gdkesign.cn Web: www.gdkesign.com



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437

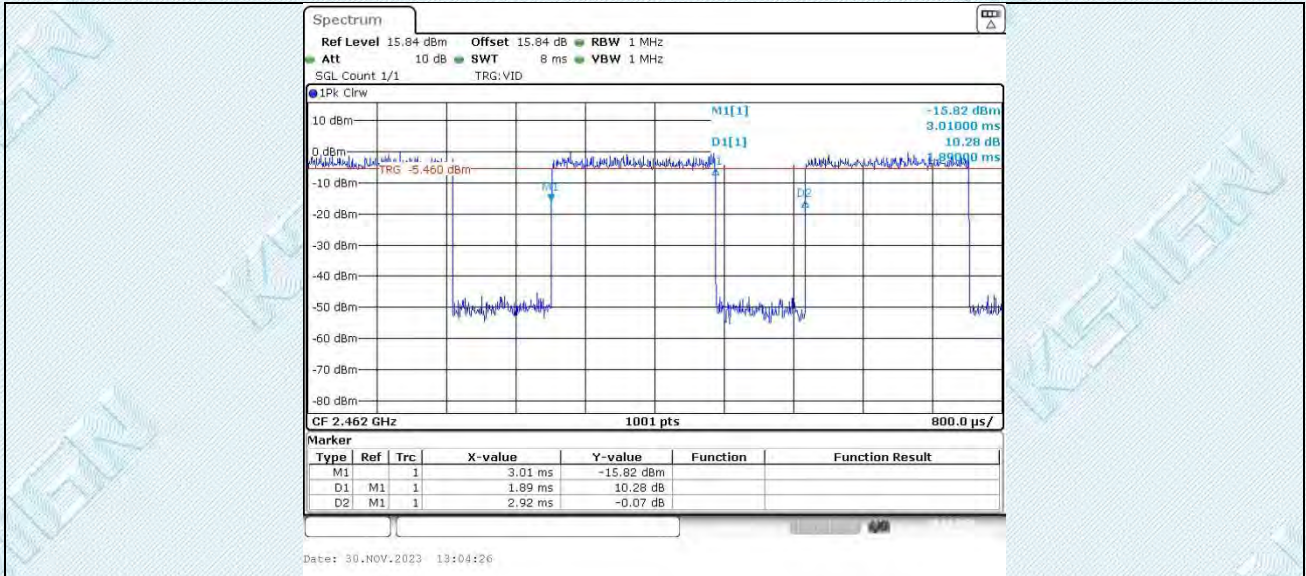


11N20SISO_Ant1_2462

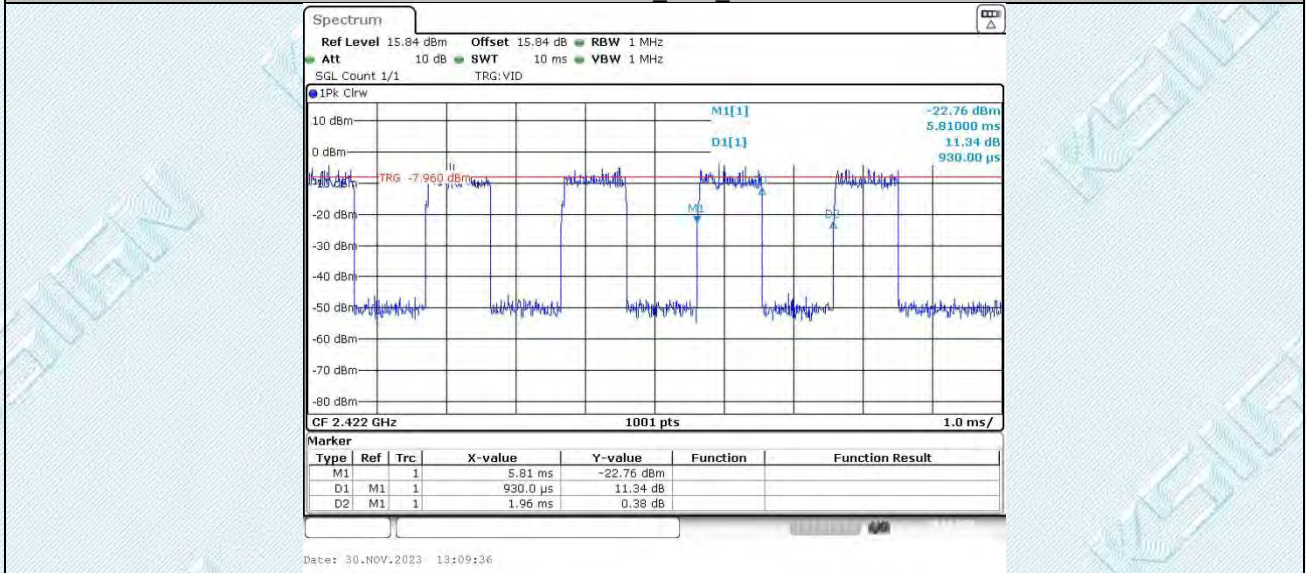
TRF RF_R1

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

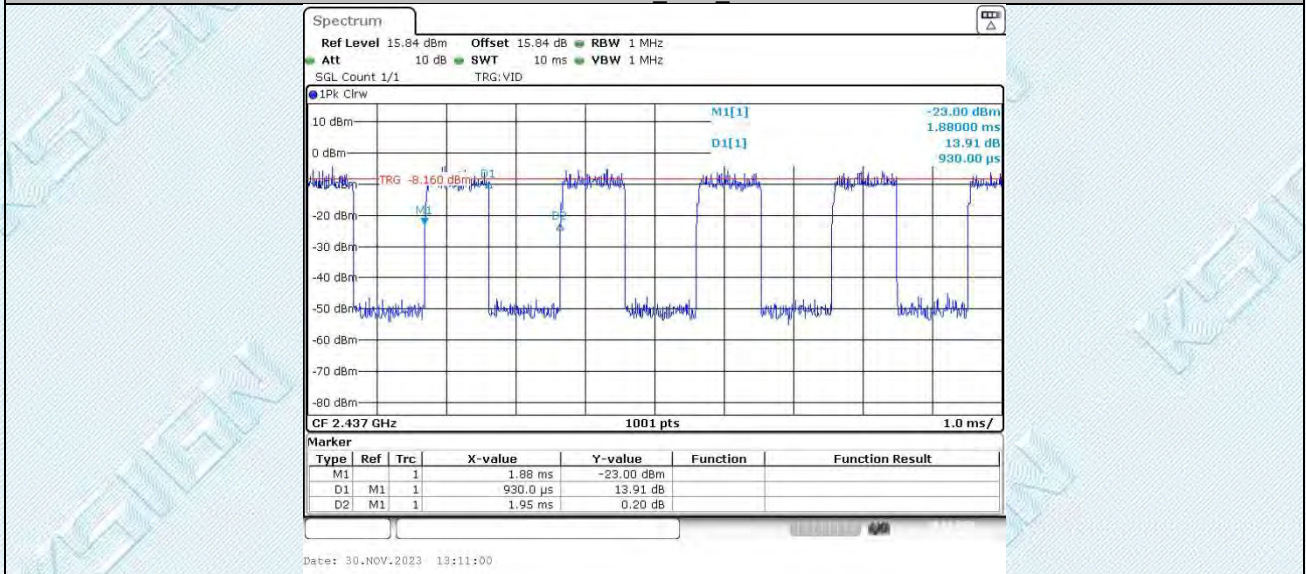
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11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

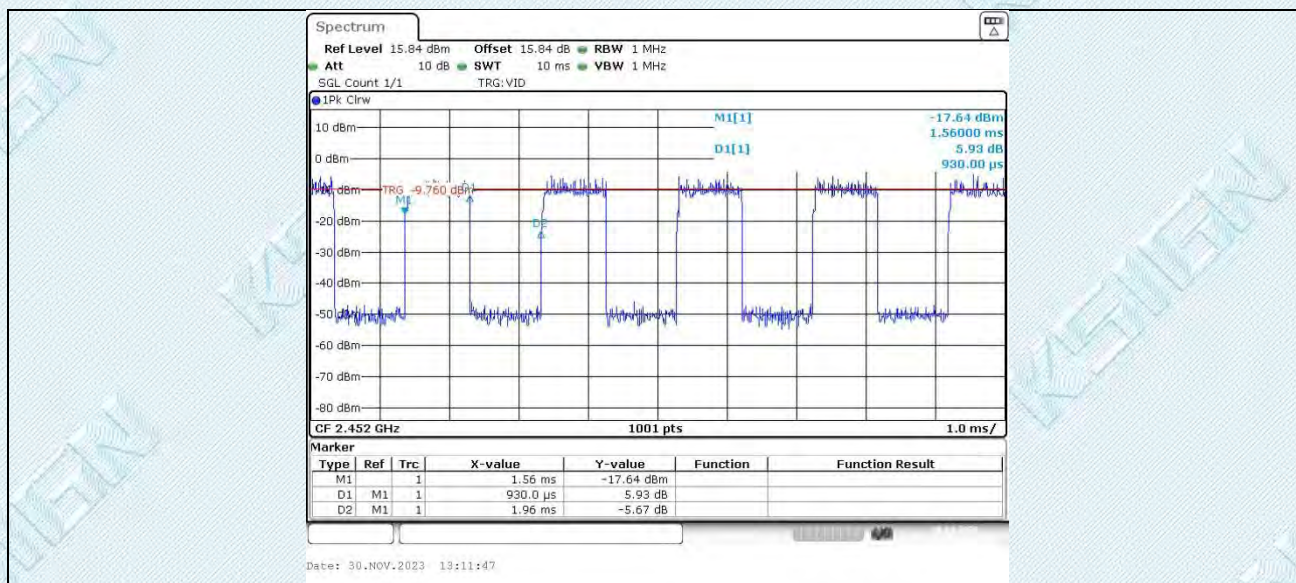


11N40SISO_Ant1_2452

TRF RF_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--

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3.	The test report is invalid without the signatures of Approver, Reviewer and Testing engineer.
4.	The test report can not be partially copied unless prior written approval is issued from our lab.
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