

Page 1 of 55

Report No.: KS2502S0602E04

	TEST REPO	ORT N	
Report No	KS2502S0602E04	SZ LAST	
FCC ID	2BNXM-M43-YZZM		
Applicant	Suzhou KuYue Network Technol	logy Co., Ltd.	
Address:	Room 302, information Building, No. 66 Huanfu Road, Suzhou industrial Park		
Manufacturer:	Suzhou KuYue Network Technol	logy Co., Ltd.	
Address	Room 302, information Building, Park	, No. 66 Huanfu Road, Suzhou industrial	
Product Name	Motion-Sensing Interactive Sma	rt Screen	
Trademark	Cosmic Gate	7 (23)	
Model/Type reference	M43-YZZM		
Standard	47 CFR Part 15E		
Date of Receipt	February 21, 2025		
Date of Test Date	February 21, 2025 to April 18, 20	025	
Date of issue:	April 18, 2025		
Test result:	Pass	1987 - SS	
Conclusion	The submitted sample was foun	d to COMPLY with the standards above.	
Prepared by:	Name: Chad Lin Title: Project Engineer	ol Lin	
Approved by:	Name: Sky Dong Title: EMC Supervisor	day	
Testing Laboratory Name:	KSIGN(Guangdong) Testing C	co., Ltd.	
Address:	West Side of 1/F., Building C, Zo Park, Minzhu, Shatou, Shajing China	one A, Fuyuan New Factory, Jiujiu Industrial g, Bao'an District, Shenzhen, Guangdong,	

TRF No. RF_R1



TABLE OF CONTENTS

Page

1. TEST SUMMARY		3
1.1. Test Standards		3
1.2. Report Version	×	
1.3. Test Description	A 14	4
1.4. Test Facility		
1.5. Measurement Uncertainty		5
2. GENERAL INFORMATION		
2.1. General Description Of EUT		
2.2. Accessory Equipment Information	Mathing	6
2.3. Description of Test Modes		
2.4. Operation channel list	V	8
2.5. Measurement Instruments List		9
3. Radio Spectrum Matter Test Results (RF)		
3.1. Conducted Emission at AC power line		11
3.2. Duty Cycle		
3.3. Emission bandwidth and occupied bandwidth		15
3.4. Maximum conducted output power	AXA	17
3.5. Power spectral density		19
3.6. Band edge emissions (Radiated)		21
3.7. Undesirable emission limits (below 1GHz)		32
3.8. Undesirable emission limits (above 1GHz)		37
4. EUT TEST PHOTOS		
5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL		

TRF No. RF_R1

KSIGN

1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

47 CFR Part 15E: Unlicensed National Information Infrastructure Devices

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

KDB 789033 D02 General U-NII Test Procedures New Rules v02r01: Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) devices part 15, subpart E.

1.2. Report Version

Revised No.	Date of issue	Description
01	April 18, 2025	Original
\sim		
8		

TRF No. RF_R1



1.3. Test Description

Test Item	Standard	Requirement	Result
Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
Duty Cycle	47 CFR Part 15E		Pass
Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. 47 CFR Part 15.407(e)	Pass
Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)	Pass
Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)	Pass
Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass
Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(9)	Pass
Undesirable emission limits (above 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass

TRF No. RF_R1



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: L 13261**

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
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.

TRF No. RF_R1

Report No.: KS2502S0602E04

2. GENERAL INFORMATION

2.1. General Description Of EUT

Test Sample Number:	KS2502S0602E-01, KS2502S0602E-02
Product Name:	Motion-Sensing Interactive Smart Screen
Trademark:	Cosmic Gate
Model / Type reference:	M43-YZZM
Power Supply:	AC 120V/60Hz
Operation Frequency:	802.11a/n(HT20)/ac(HT20): U-NII Band 1: 5180MHz to 5240MHz; U-NII Band 3: 5745MHz to 5825MHz; 802.11n(HT40)/ac(HT40):
ST	U-NII Band 3: 5755MHz to 5795MHz
Number of Channels:	802.11a/n(HT20)/ac(HT20): U-NII Band 1: 4; U-NII Band 3: 5; 802.11n(HT40)/ac(HT40): U-NII Band 1: 2; U-NII Band 3: 2
Modulation Type:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Antenna Type:	External
Antenna Gain:	U-NII Band 1:2.52dBi; U-NII Band 3:1.53dBi
Max TX Power:	9.76dBm
Hardware Version:	V1.0
Software Version:	V1.0.0

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

2.2. Accessory Equipment Information

Title	Manufacturer	Model No.	Technical Parameters	Provided by
Computer	HP	15-cd028AX		Laboratory

2.3. Description of Test Modes

No.	Title	Description of Mode
Test Mode1	802.11a mode	Keep the EUT in continuously transmitting mode with 802.11a modulation type at lowest, middle and highest channel. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.
Test Mode2	802.11n mode	Keep the EUT in continuously transmitting mode with 802.11n modulation type at lowest, middle and highest channel. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
Test Mode3	802.11ac mode	Keep the EUT in continuously transmitting mode with 802.11ac modulation type at lowest, middle and highest channel. All bandwidth and data rates has been tested and

TRF No. RF_R1



	found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report.
$\boldsymbol{\mathcal{S}}$	
~	
S	
\sim	
12	
SAN .	
See .	
X	
6	
Ser 1	
RF No. RF_R1	

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



2.4. Operation channel list

U-NII Band 1

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	1	
40	5200	46	5230	1	
44	5220	1 🔨	1	1	1
48	5240	1	1	1	1

U-NII Band 3

Bandwidth:	20MHz	Bandwidth:	40MHz	Bandwidth:	80MHz
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	1	
153	5765	159	5795	1	
157	5785	1	1	1	1
161	5805		1	1	1
165	5825		1		1

TRF No. RF_R1

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	2025-12-22		
EMI Test Receiver	R&S	ESR	102524	2026-01-10		
Manual RF Switch	JS TOYO		MSW-01/002	2025-12-22		
ISN CAT6	Schwarzbeck	CAT5 8158	227	2025-12-22		
Color Signal Generator	Philips	PM5418	672926	2025-12-22		
Power Absorbing Clamp	R&S	MDS-21	100925	2025-12-25		
LISN	EVERFINE	LS-5	G657431CD14311 12	2025-12-22		
Current Sensor Probe	Beijin ZHINAN	ZN23101	23013	2025-12-10		
PV Artificial power network	Beijing KeHuan	KH8301	830120007	2025-07-23		

Duty Cycle Emission bandwidth and occupied bandwidth Maximum conducted output power Power spectral density					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	
Wideband Radio Communication Tester	R&S	CMU200	115297	2025-12-22	
Audio Analyzer	R&S	UPL16	100001	2025-12-22	
Shielding box	Gxiong	GX-5915A	2201113	2025-12-22	
High Pass Filter	COM-MW Technology Co., Ltd	ZHPF-M1.2-9G-1 87	09203403	2025-12-22	
Band Stop Filter	COM-MW Technology Co., Ltd	ZBSF6-C820-920 -188	09203401	2025-12-22	
Splitter	COM-MW Technology Co., Ltd	ZPD-M1-8-2103	09203407	2025-12-22	
Coaxial Cable	BEBES	A40-2.92M2.92F- 4.5M	1907021	2025-12-22	
Hygrothermograph	Anymetre	JB913	1	2025-12-22	
Climate Chamber	Angul	AGNH80L	1903042120	2025-12-22	
Spectrum Analyzer	HP	8593E	3831U02087	2025-12-22	
Dual Output DC Power Supply	Agilent	E3646A	MY40009992	2025-12-29	
RF Control Unit	Tonscend	JS0806-2		2025-12-22	
Analog Signal Generator	HP	83752A	3344A00337	2025-12-22	
Vector Signal Generator	Agilent	N5182A	MY50142520	2025-12-22	
Wideband Radio Communication Tester	R&S	CMW500	157282	2025-12-22	
Spectrum Analyzer	R&S	FSV40-N	101798	2026-02-11	

TRF No. RF_R1



Undesirable emission limits (below 1GHz) Undesirable emission limits (above 1GHz) Band edge emissions (Radiated)							
Test Equipment Manufacturer Model No. Serial No. Cal. Un							
Color Signal Generator	Philips	PM5418	672926	2025-12-22			
Log Periodic Antenna	Schwarzbeck	VULB 9163	1230	2026-01-13			
Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	2025-12-22			
Broadcast Television Signal Generator	R&S	SFE100	141038	2025-12-22			
Analog Signal Generator	Agilent	8648A	3847M00445	2025-12-22			
EMI Test Receiver	R&S	ESR	102525	2026-01-10			
Loop Antenna	Beijin ZHINAN	ZN30900C	18050	2025-12-22			
Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	2025-12-25			
Pre-Amplifier	EMCI	EMC051835SE	980662	2025-12-22			
Spectrum Analyzer	Keysight	N9020A	MY46471971	2025-12-22			



3. Radio Spectrum Matter Test Results (RF)

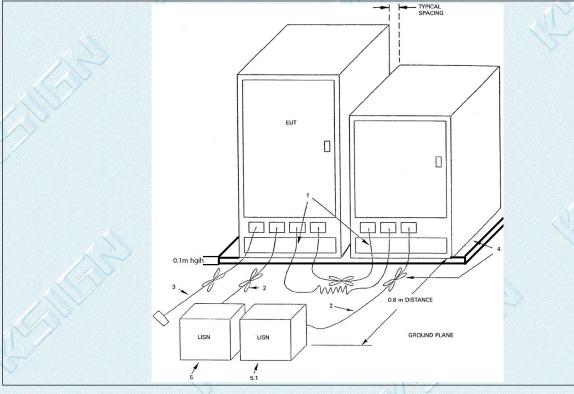
3.1. Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)	1 P		
	Frequency of emission (MHz)	Conducted limit (dBµV)		
		Quasi-peak	Average	
Test Limit:	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	×		

3.1.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1

3.1.2. Test Setup Diagram:



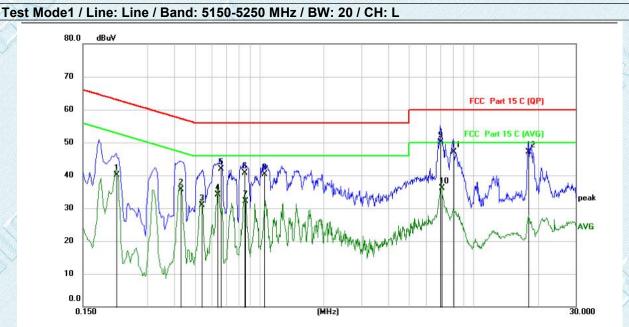
TRF No. RF_R1



Page 12 of 55

Report No.: KS2502S0602E04

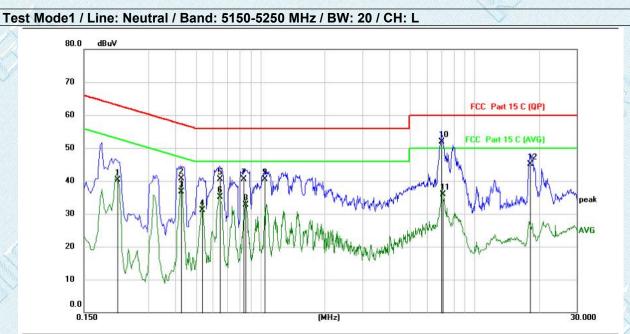
3.1.3. Test Data:



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.2140	19.24	20.81	40.05	53.05	-13.00	AVG		
2	0.4300	14.90	20.73	35.63	47.25	-11.62	AVG		
3	0.5380	10.18	20.68	30.86	46.00	-15.14	AVG		
4	0.6380	13.55	20.65	34.20	46.00	-11.80	AVG		
5	0.6580	21.36	20.64	42.00	56.00	-14.00	QP		
6	0.8540	20.12	20.58	40.70	56.00	-15.30	QP		
7	0.8580	11.57	20.58	32.15	46.00	-13.85	AVG		
8	1.0540	19.82	20.57	40.39	56.00	-15.61	QP		
9 *	7.0180	29.31	20.71	50.02	60.00	-9.98	QP		
10	7.0860	15.35	20.72	36.07	50.00	-13.93	AVG		
11	8.0500	26.37	20.75	47.12	60.00	-12.88	QP		
12	18.0620	26.17	20.92	47.09	60.00	-12.91	QP		

TRF No. RF_R1





No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.2140	19.57	20.81	40.38	53.05	-12.67	AVG		
2	0.4260	19.89	20.73	40.62	57.33	-16.71	QP		3
3	0.4260	15.94	20.73	36.67	47.33	-10.66	AVG		
4	0.5340	10.46	20.69	31.15	46.00	-14.85	AVG		
5	0.6460	19.87	20.65	40.52	56.00	-15.48	QP		
6	0.6500	14.52	20.64	35.16	46.00	-10.84	AVG		
7	0.8340	20.02	20.58	40.60	56.00	-15.40	QP		
8	0.8500	12.04	20.58	32.62	46.00	-13.38	AVG		
9	1.0460	19.94	20.57	40.51	56.00	-15.49	QP		1 1 1
10 *	7.0220	31.13	20.71	51.84	60.00	-8.16	QP		
11	7.0860	15.14	20.72	35.86	50.00	-14.14	AVG		
12	18.1940	24.23	20.92	45.15	60.00	-14.85	QP		

Note:

1.Measurement = Reading level + Correct Factor

2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

TRF No. RF_R1



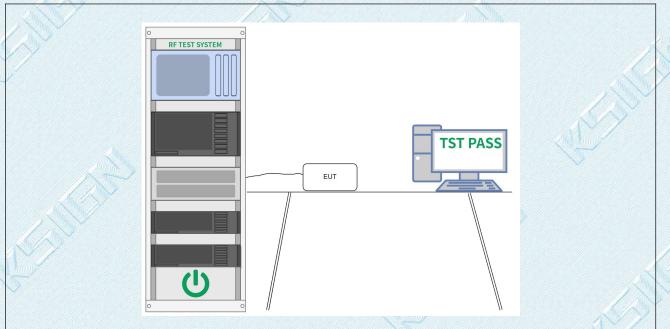
3.2. Duty Cycle

Test Requirement:	All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.
Test Limit:	No limits, only for report use.
Test Method:	ANSI C63.10-2013 section 12.2 (b)
Procedure:	 i) Set the center frequency of the instrument to the center frequency of the transmission. ii) Set RBW >= EBW if possible; otherwise, set RBW to the largest available value. iii) Set VBW >= RBW. iv) Set detector = peak. v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.

3.2.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3

3.2.2. Test Setup Diagram:



3.2.3. Test Data: Please Refer to Appendix for Details.

TRF No. RF_R1



3.3. Emission bandwidth and occupied bandwidth

	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Requirement:	U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.
Test Limit:	U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.
Test Method:	ANSI C63.10-2013, section 6.9 & 12.4 KDB 789033 D02, Clause C.2
	Emission bandwidth: a) Set RBW = approximately 1% of the emission bandwidth. b) Set the VBW > RBW. c) Detector = peak. d) Trace mode = max hold. e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
	 Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
Procedure:	c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given
	 in 4.1.5.2. d) Step a) through step c) might require iteration to adjust within the specified range. e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be
	 used. f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached;
A Martine Contraction	that frequency is recorded as the lower frequency. The process is repeated unti

TRF No. RF_R1

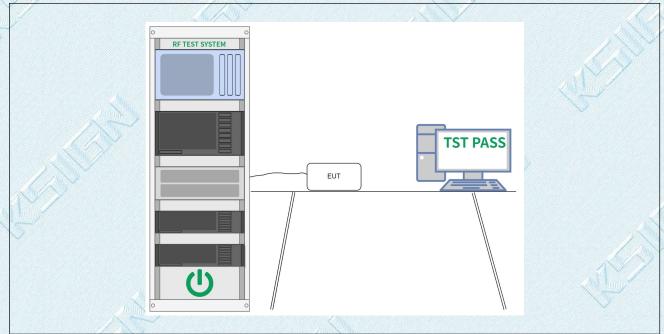


	99.5% of the
25°	total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is
	the difference between these two frequencies.
~	h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument
. S	display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may
	be reported in addition to the plot(s).
	6 dB emission bandwidth:
	a) Set RBW = 100 kHz.
× .	b) Set the video bandwidth (VBW) ≥ 3 >= RBW.
	c) Detector = Peak.
	d) Trace mode = max hold.
	e) Sweep = auto couple.
	f) Allow the trace to stabilize.
	g) Measure the maximum width of the emission that is constrained by the
) I fa	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.

3.3.1. E.U.T. Operation:

23.1 °C	
44.2 %	
101 kPa	
Test Mode1, Test Mode2, Test Mode3	
	44.2 % 101 kPa

3.3.2. Test Setup Diagram:



3.3.3. Test Data:

Please Refer to Appendix for Details.

TRF No. 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



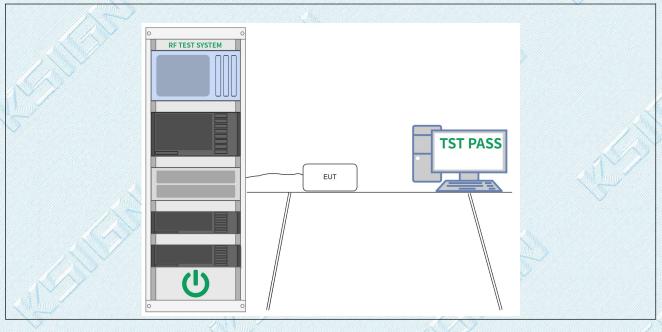
3.4. Maximum conducted output power

Test Requirement:	47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)
Test Limit:	For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test Method:	ANSI C63.10-2013, section 12.3
Procedure:	Refer to ANSI C63.10-2013 section 12.3

3.4.1. E.U.T. Operation:

23.1 °C
44.2 %
101 kPa
Test Mode1, Test Mode2, Test Mode3
-

3.4.2. Test Setup Diagram:



TRF No. RF_R1



Page 18 of 55

Report No.: KS2502S0602E04

3.4.3. Test Data:

Please Refer to Appendix for Details.

TRF No. RF_R1



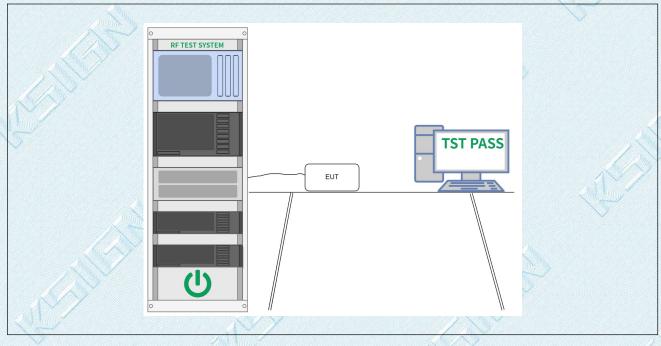
3.5. Power spectral density

Test Requirement:	47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)
Test Limit:	For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test Method:	ANSI C63.10-2013, section 12.5
Procedure:	Refer to ANSI C63.10-2013, section 12.5

3.5.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3

3.5.2. Test Setup Diagram:



TRF No. RF_R1



Page 20 of 55

Report No.: KS2502S0602E04

3.5.3. Test Data:

Please Refer to Appendix for Details.

TRF No. RF_R1



3.6. Band edge emissions (Radiated)

Test Requirement:	47 CFR Part 15.407(b) 47 CFR Part 15.407(b) 47 CFR Part 15.407(b)	(4)	lin.	20
S.	For transmitters operati the 5.15-5.35 GHz band For transmitters operati All emissions shall be li above or below the band above or below the band edge increasing linearly the band edge, and from linearly to a level of 27	d shall not exceed an e ing solely in the 5.725- mited to a level of -27 id edge increasing line id edge, and from 25 M / to a level of 15.6 dBm m 5 MHz above or belo	e.i.r.p. of -27 dBr 5.850 GHz band dBm/MHz at 75 arly to 10 dBm/M 1Hz above or be n/MHz at 5 MHz ow the band edge	n/MHz. : MHz or more IHz at 25 MHz ow the band above or below
	MHz	MHz	MHz	GHz
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\sim	10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
	2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
	4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
201	4.20725-4.20775	73-74.6	1645.5-1646.	9.3-9.5
	4.20120 4.20110	1014.0	5	0.0 0.0
	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
	6.26775-6.26825	108-121.94	1718.8-1722.	13.25-13.4
	0.20110 0.20020	100 121.01	2	10.20 10.1
A P	6.31175-6.31225	123-138	2200-2300	14.47-14.5
	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
	8.362-8.366	156.52475-156.525	2483.5-2500	17.7-21.4
		25		
\sim	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
est Limit:	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
	12.57675-12.57725	322-335.4	3600-4400	(2)
	13.36-13.41			
	¹ Until February 1, 1999 ² Above 38.6 The field strength of em not exceed the limits sh 1000 MHz, compliance measurement instrume 1000 MHz, compliance demonstrated based or provisions in § 15.35ap	nissions appearing with nown in § 15.209. At free with the limits in § 15.2 ntation employing a CI with the emission limit in the average value of	in these frequen equencies equal 209shall be dem SPR quasi-peak s in § 15.209sha the measured er	cy bands shall to or less than onstrated using detector. Above Il be
	Except as provided else radiator shall not excee	1. / Million Control Control Control Control Control Control (Control Control Cont		

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

TRF No. 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



		×	Chi August
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	** Except as provided	l in paragraph (g), fundamental	emissions from intentiona
		nder this section shall not be loo	
		-88 MHz, 174-216 MHz or 470	
		e frequency bands is permitted	
	part, e.g., §§ 15.231 a	and 15.241.	
\sim	In the emission table	above, the tighter limit applies a	at the band edges.
	The emission limits s	hown in the above table are bas	sed on measurements
	employing a CISPR of	uasi-peak detector except for t	he frequency bands 9–90
	kHz, 110–490 kHz an	d above 1000 MHz. Radiated e	emission limits in these
	three bands are base	d on measurements employing	an average detector.
Test Method:	ANSI C63.10-2013, s	ection 12.7.4, 12.7.6, 12.7.7	
	Above 1GHz:		
\sim		he EUT was placed on the top of	of a rotating table 0.1
9	The second s	und at a 3 meter fully-anechoic	
		to determine the position of the	
. I		8 meters away from the interfere	a contenent a contra contra contra contra contra da contra contra contra contra contra contra contra contra con
		on the top of a variable-height a	
	c. The antenna height is varied from one meter to four meters above the ground		
	· · · · · · · · · · · · · · · · · · ·	imum value of the field strength	
		of the antenna are set to make	
		d emission, the EUT was arran	
	then the antenna was	tuned to heights from 1 meter	to 4 meters (for the test
	frequency of below 30	OMHz, the antenna was tuned t	o heights 1 meter) and the
	rotatable table was tu	rned from 0 degrees to 360 deg	grees to find the maximum
	reading.		
	e. The test-receiver s	ystem was set to Peak Detect F	Function and Specified
d and a second s	Bandwidth with Maxir	num Hold Mode.	
	f. If the emission leve	I of the EUT in peak mode was	10dB lower than the limit
		g could be stopped and the pea	
		se the emissions that did not ha	
	re-tested one by one	using peak or average method	as specified and then
Procedure:	reported in a data she		
		lowest channel, the middle cha	
		surements are performed in X, `	
		nd found the X axis positioning	
		edures until all frequencies mea	asured was complete.
	Remark:	L Cabla Lacard Anta	
N		+ Cable Loss+ Antenna Factor-	•
		to 40GHz, the disturbance above above plate are the highest or	
		above plots are the highest er	
		above points had been display	an a
		om the radiator which are atten	luated more than 200B
	below the limit need r	· · · · · · · · · · · · · · · · · · ·	Uz the field strength limit
- M.		ction, for frequencies above 1G	
		e limits. However, the peak field	
		maximum permitted average lin	
		er any condition of modulation.	No. 2010.
		an the average limit, only the pe	eak measurement is shown
	in the report.	ave 19CHz were very low and	the hormonics were the
		bove 18GHz were very low and	
		e found when testing, so only th	le above narmonics nad
	been displayed.		

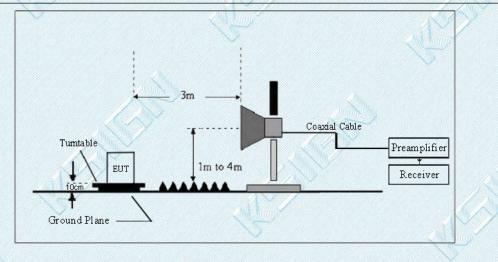


Report No.: KS2502S0602E04

3.6.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3

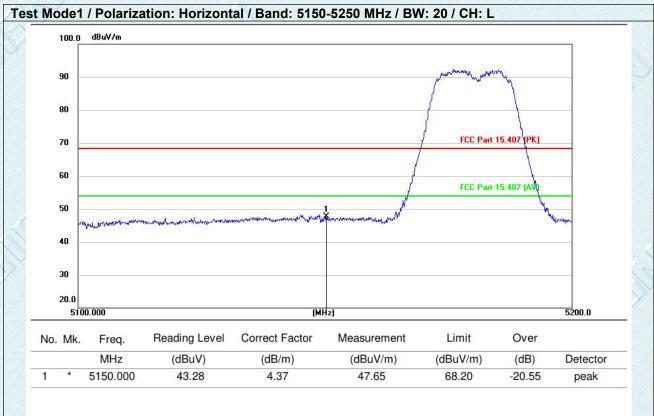
3.6.2. Test Setup Diagram:



TRF No. RF_R1

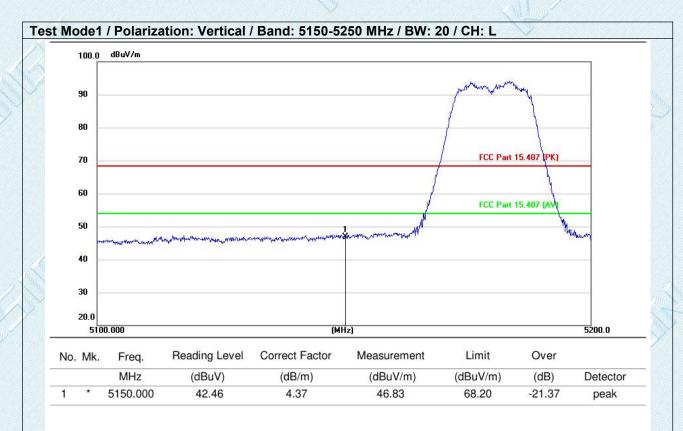


3.6.3. Test Data:



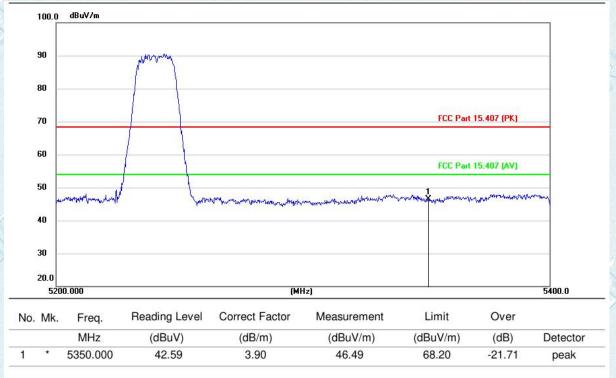
TRF No. RF_R1



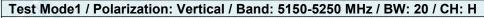


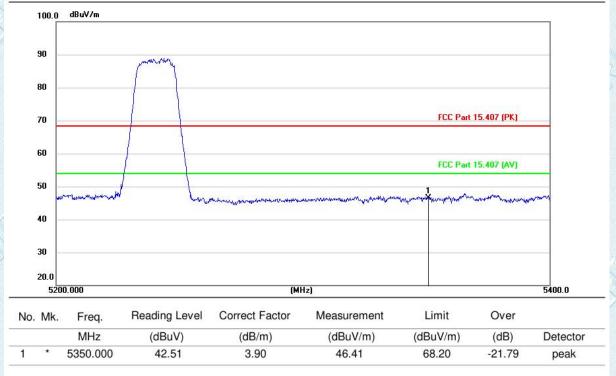




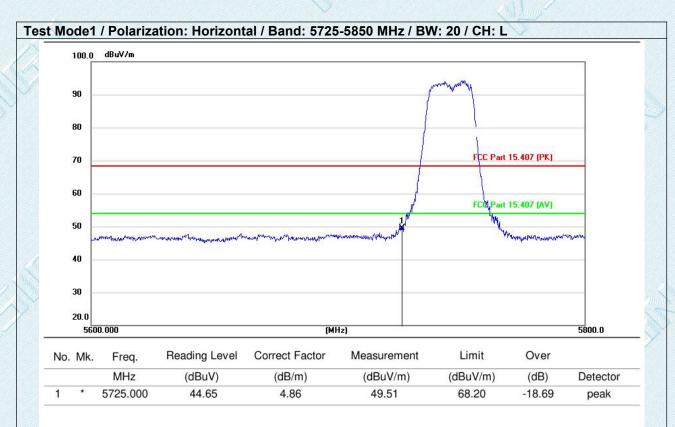




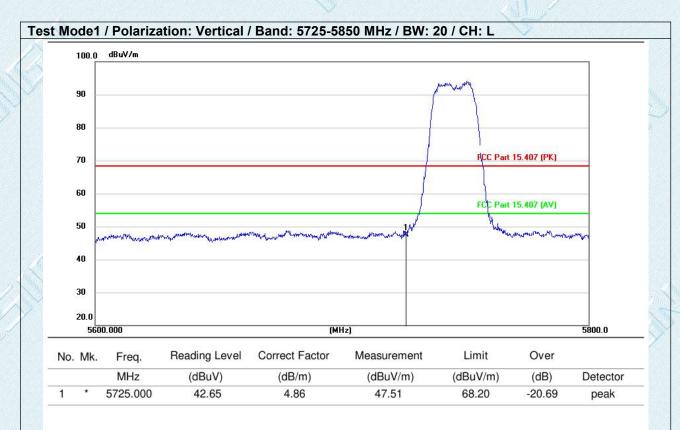






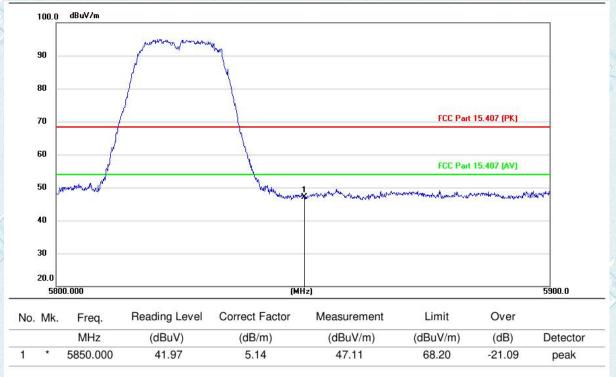






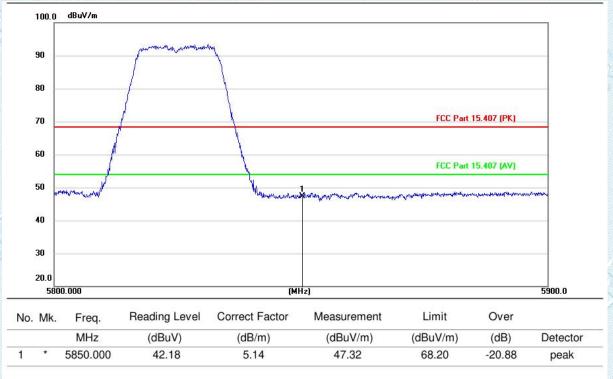












Note:

1.Measurement = Reading level + Correct Factor

- 2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
- 3. Since the peak value is less than the limit of the AVG value, there is no AVG data
- 4.Pre-scan all mode, and found the A mode which it is worse case, so only show the test data for worse case.

TRF No. RF R1



3.7. Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)			
		Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.		
Ń	Except as provided elsewhere in this subpart, the emissions from an intentiona radiator shall not exceed the field strength levels specified in the following table			
	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	
AP I	1.705-30.0	30	30	
$\langle \rangle \rangle$	30-88	100 **	3	
Test Limit:	88-216	150 **	3	
	216-960	200 **	3	
	Above 960	500	3	
		paragraph (g), fundamental em		
	part, e.g., §§ 15.231 and In the emission table ab The emission limits show employing a CISPR qua kHz, 110–490 kHz and a	ove, the tighter limit applies at th wn in the above table are based si-peak detector except for the t above 1000 MHz. Radiated emis	ne band edges. on measurements frequency bands 9–90 ssion limits in these	
		on measurements employing an	average detector.	
Test Method:	ANSI C63.10-2013, sec	tion 12.7.4, 12.7.5		
Procedure:	 meters above the groun rotated 360 degrees to or b. The EUT was set 3 or antenna, which was more c. The antenna height is to determine the maximu vertical polarizations of the d. For each suspected end then the antenna was the frequency of below 30M rotatable table was turned reading. e. The test-receiver system Bandwidth with Maximum f. If the emission level of specified, then testing carbon be reported. Otherwise the re-tested one by one usin a data sheet. g. Test the EUT in the low h. The radiation measured 	EUT was placed on the top of a d at a 3 meter semi-anechoic character and at a 3 meter semi-anechoic character and the position of the high the position of the high the position of the high the anterna are set to make the mission, the EUT was arranged ned to heights from 1 meter to 4 Hz, the antenna was tuned to he defrom 0 degrees to 360 degree and the EUT in peak mode was 100 be stopped and the peak variable be anternal to the top and the peak variable be stopped be	namber. The table was hest radiation. erence-receiving eight antenna tower. heters above the ground oth horizontal and measurement. I to its worst case and 4 meters (for the test eights 1 meter) and the es to find the maximum ction and Specified dB lower than the limit alues of the EUT would 10dB margin would be fied and then reported el, the Highest channel axis positioning for	
	i. Repeat above procedu Remark: 1. Level= Read Level+ (ires until all frequencies measu	red was complete.	



2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

3.7.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa

TRF No. RF_R1

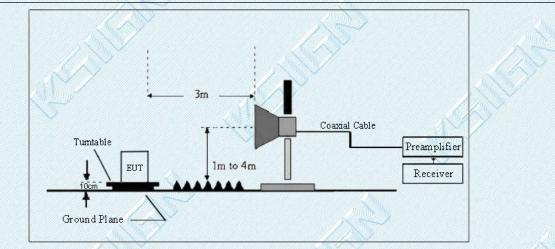


Report No.: KS2502S0602E04

Final test mode:

Test Mode1, Test Mode2, Test Mode3

3.7.2. Test Setup Diagram:



TRF No. RF_R1



Page 35 of 55

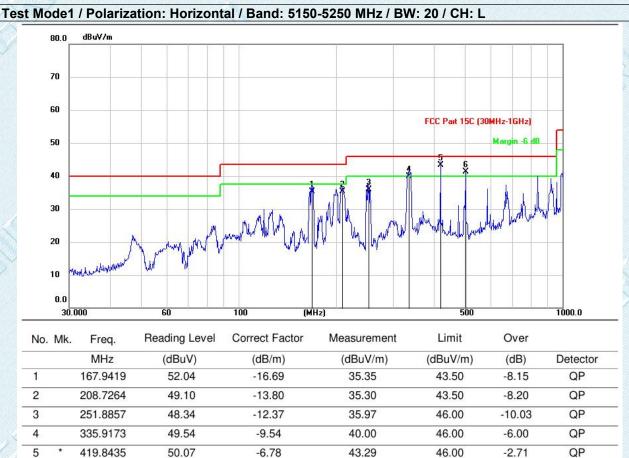
3.7.3. Test Data:

503.8220

6

47.00

-5.75



41.25

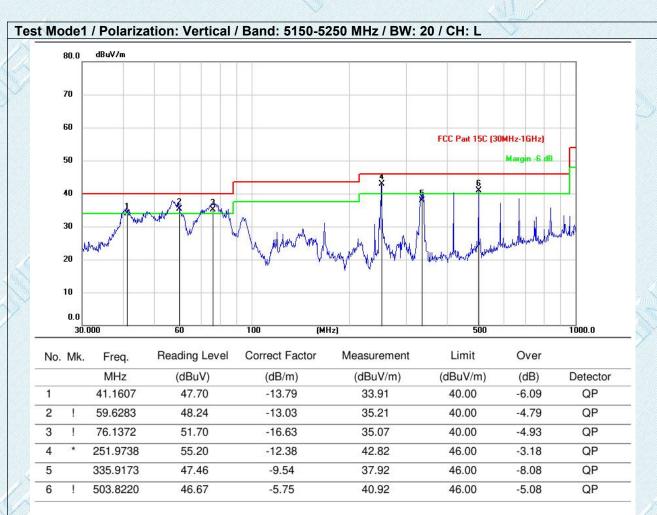
46.00

-4.75

QP

TRF No. RF_R1





Note:

1.Measurement = Reading level + Correct Factor

2.Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

3.Over = Measurement -Limit

4.Pre-scan all mode, and found the low channel of A Mode which it is worse case, so only show the test data for worse case.

TRF No. RF R1



3.8. Undesirable emission limits (above 1GHz)

est Requirement:	47 CFR Part 15.407(b) 47 CFR Part 15.407(b) 47 CFR Part 15.407(b)	(4)	%	
R.	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. For transmitters operating solely in the 5.725-5.850 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at 5 MHz above or below the band edge.			
	MHz	MHz	MHz	GHz
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
	10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
	2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
1 A A A A A A A A A A A A A A A A A A A	4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
2011	4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
	4.20725-4.20775	73-74.6	1645.5-1646.	9.3-9.5
			5	
	6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
1. P	6.26775-6.26825	108-121.94	1718.8-1722. 2	13.25-13.4
XX	6.31175-6.31225	123-138	2200-2300	14.47-14.5
	8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
	8.362-8.366	156.52475-156.525 25	2483.5-2500	17.7-21.4
Test Limit:	8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
	8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
	12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
	12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
	12.57675-12.57725	322-335.4	3600-4400	(2)
	13.36-13.41			

1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Field strength (microvolts/meter)	Measurement distance (meters)
2400/F(kHz)	300
24000/F(kHz)	30
	(microvolts/meter) 2400/F(kHz)

TRF No. 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



	4 705 00 0	20	
	1.705-30.0	30	30
	30-88	100 **	3
\sim	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	radiators operating ur bands 54-72 MHz, 76 operation within these part, e.g., §§ 15.231 a In the emission table The emission limits sh employing a CISPR q kHz, 110–490 kHz an	in paragraph (g), fundamental der this section shall not be loc -88 MHz, 174-216 MHz or 470- e frequency bands is permitted us and 15.241. above, the tighter limit applies a nown in the above table are bas uasi-peak detector except for the d above 1000 MHz. Radiated ed d on measurements employing	cated in the frequency 806 MHz. However, under other sections of this at the band edges. sed on measurements he frequency bands 9–90 mission limits in these
Test Method:		ection 12.7.4, 12.7.6, 12.7.7	dir aronago aotooton.
	Above 1GHz:		
Procedure:	 above the ground at a 360 degrees to determ b. The EUT was set 3 which was mounted of c. The antenna height to determine the maximum vertical polarizations of d. For each suspected then the antenna was frequency of below 30 rotatable table was tureading. e. The test-receiver sy Bandwidth with Maxim f. If the emission level specified, then testing be reported. Otherwise re-tested one by one 	of the EUT in peak mode was could be stopped and the peal e the emissions that did not ha using peak or average method	er. The table was rotated radiation. ence-receiving antenna, intenna tower. In meters above the ground be both horizontal and the measurement. ged to its worst case and to 4 meters (for the test o heights 1 meter) and the grees to find the maximum function and Specified 10dB lower than the limit k values of the EUT would ve 10dB margin would be
Procedure:	reported in a data she g. Test the EUT in the h. The radiation meas Transmitting mode, an i. Repeat above proce Remark:		annel, the Highest channel Y, Z axis positioning for which it is the worst case. asured was complete.
	2. Scan from 18GHz t The points marked on when testing, so only spurious emissions fro	to 40GHz, the disturbance above above plots are the highest en above points had been display om the radiator which are atten	ve 18GHz was very low. nissions could be found ed. The amplitude of
	are based on average shall not exceed the r more than 20 dB unde peak level is lower tha in the report.	not be reported. ction, for frequencies above 1G e limits. However, the peak field naximum permitted average lim er any condition of modulation. an the average limit, only the pe nove 18GHz were very low and	strength of any emission hits specified above by For the emissions whose eak measurement is shown
		e found when testing, so only th	
	2 Mil Monte		

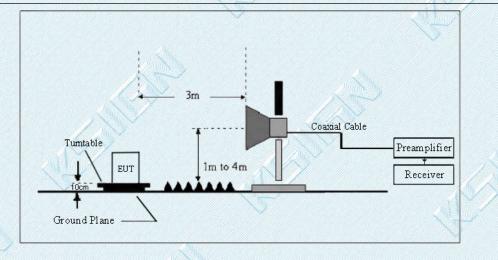


12 2 2	42.4.4	
been	aisp	layed.

3.8.1. E.U.T. Operation:

Operating Environment:	
Temperature:	23.1 °C
Humidity:	44.2 %
Atmospheric Pressure:	101 kPa
Final test mode:	Test Mode1, Test Mode2, Test Mode3

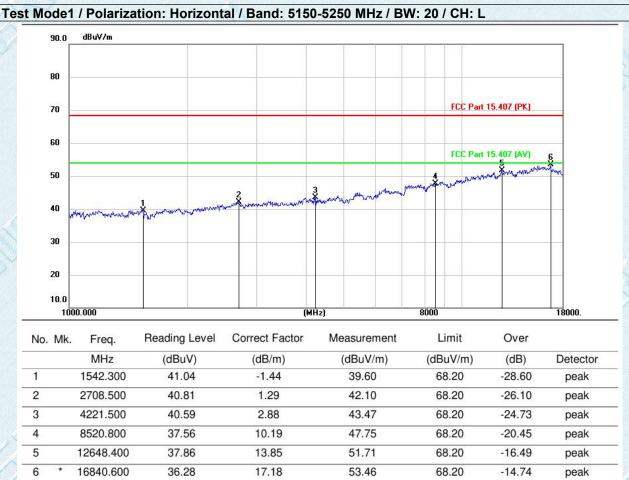
3.8.2. Test Setup Diagram:



TRF No. RF_R1

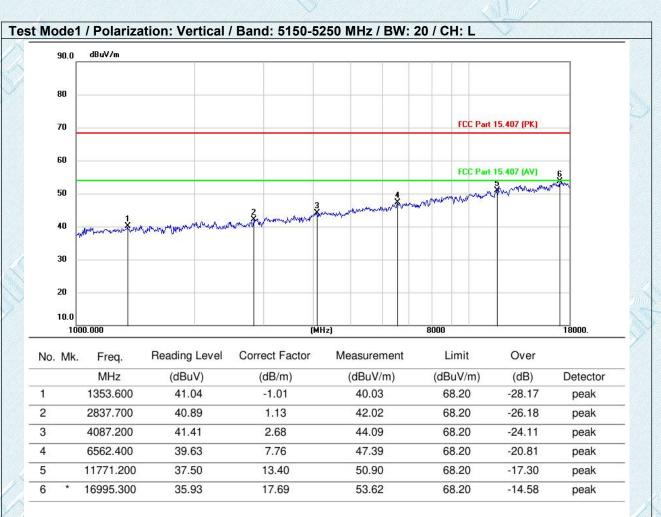


3.8.3. Test Data:

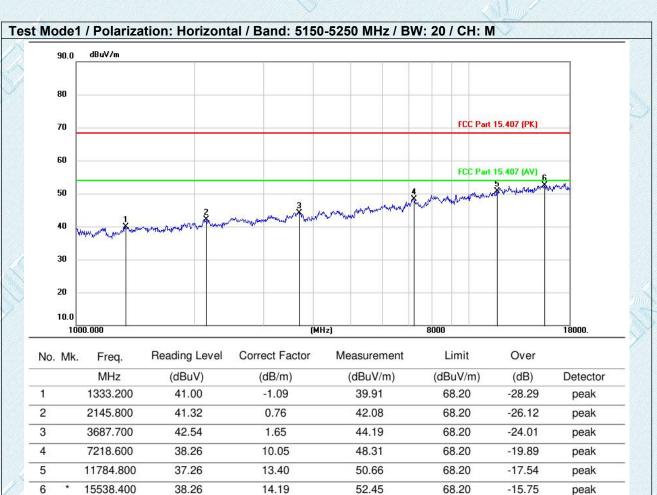


TRF No. RF_R1

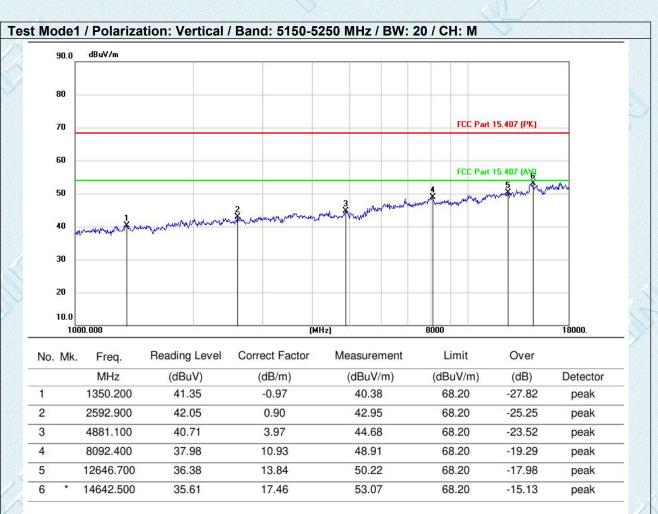




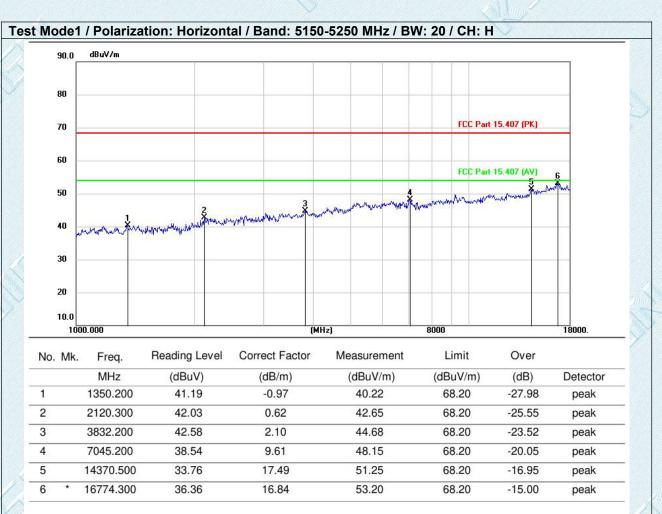




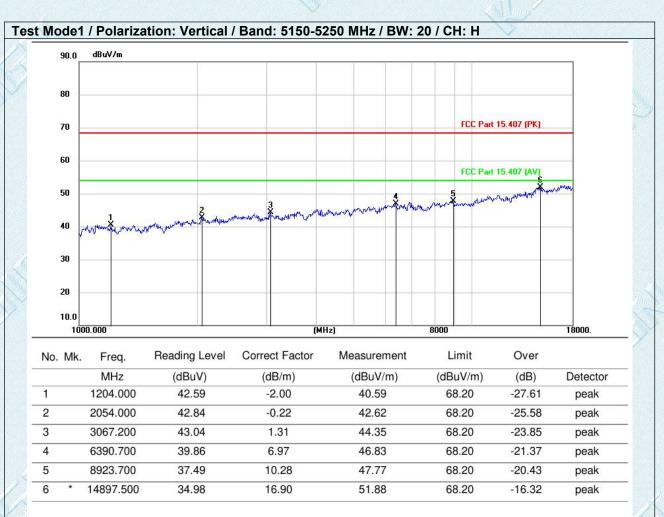




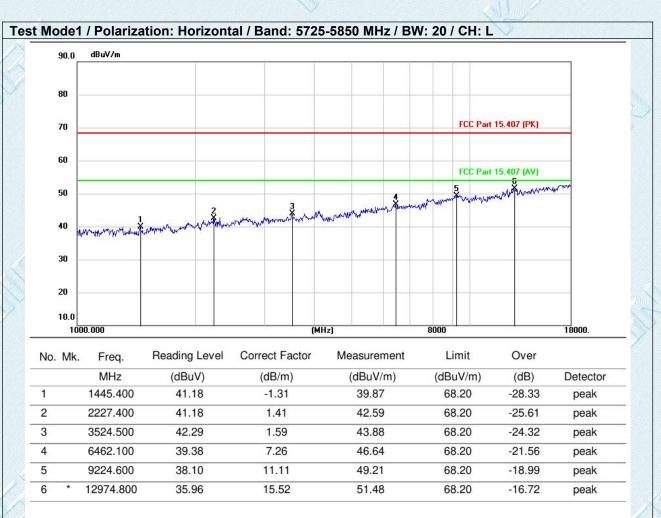




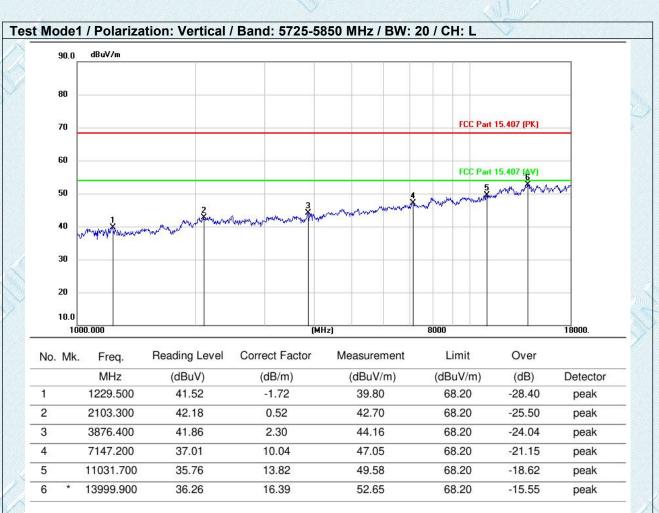








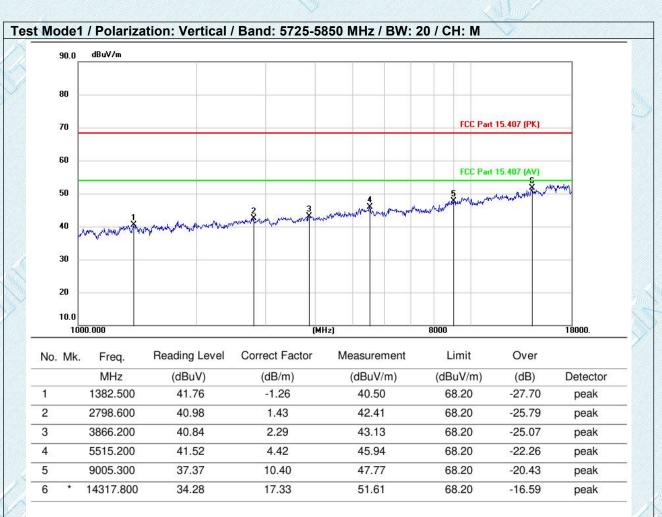




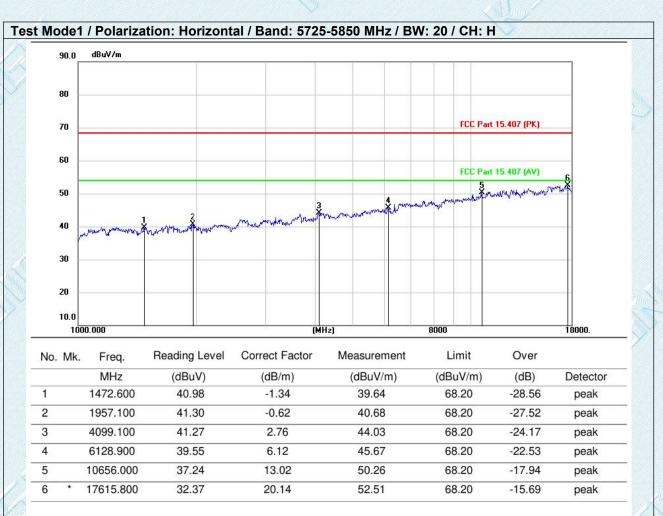




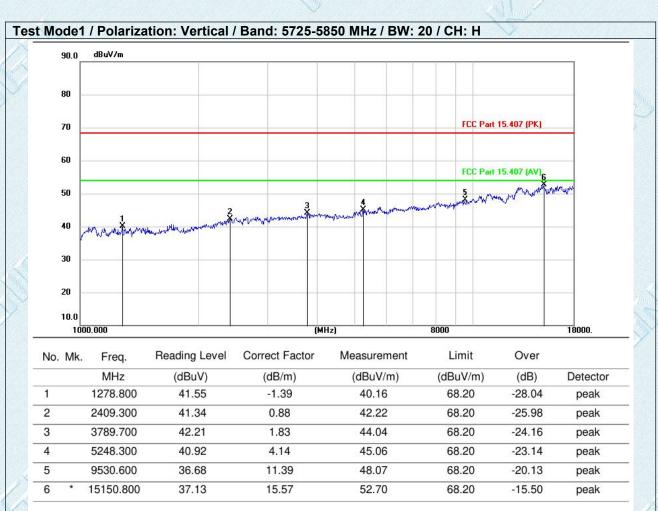












Note:

1.Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

Over = Measurement -Limit

2.Pre-scan all mode, and found the A 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.

4.From 18GHz to 40GHz,the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

TRF No. 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



4. EUT TEST PHOTOS





TRF No. RF_R1





TRF No. RF_R1



Page 54 of 55

Report No.: KS2502S0602E04

5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Refer to Appendix - EUT Photos for KS2502S0602E.

--THE END--

TRF No. RF_R1



Important Notice

- 1. The results are valid only for the samples submitted.
- 2. The report is invalid without the "APPROVED Seal" and the "Riding Seam Seal".
- 3. This report is invalid without the signature of the main inspector, reviewer, or approver.
- 4. The testing report cannot be partially copied without the written consent of our laboratory.
- 5. If the report is not stamped with the "CMA" logo, it indicates that the report does not have any social certification effect in China.
- 6. Product information, customer information, and sample sources are all provided by the client, and we are not responsible for their authenticity.
- 7. The inspection basis or inspection items marked with "★" are not within the scope of CNAS,CMA and A2LA accreditation in this laboratory.
- 8. Reports that are transferred, copied, stolen, impersonated, altered, or tampered with in any media form without authorization are invalid.
- 9. If you have any objections to this report, you can appeal to our unit within 15 days after receiving the report. Failure to do so will not be accepted.
- 10. For situations where compliance decision needs to be made based on test result, such as when there are no relevant decision rules required by the regulations, standards, or technical specifications used, or when there are no relevant customer requirements, the report issued by our laboratory refer to ILAC-G8:09-2019 and CNAS-GL015:2022 using simple acceptance decision rules.

Laboratory:	KSIGN(Guangdong)	Testing Co., Ltd.

First Floor West Side, Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial

- Address:
 - :: Park, Minzhu Village, Shatou Community, Shajing Street, Bao'an District, Shenzhen City, Guangdong Province, P. R. China. 518104
 - Tel.: +(86) 0755-29852678
 - Fax.: +(86) 0755-29852397
 - E-mail: info@gdksign.cn
 - Web: www.gdksign.com

TRF No. RF_R1