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1 Cover Page

FCC Part 15C TEST REPORT

Application No. :	SHEM1305000890ME	
Applicant:	iHealth Lab Inc.	
FCC ID:	SLRHS4	
IC:	10913A-HS4	
Equipment Under Test (E NOTE: The following samp	EUT): ple(s) submitted was/were identified on behalf of the client as	
Product Name:	Wireless Scale Lite	
Brand Name:	iHealth	
Model:	HS4	
Added Model:	N/A	
Standards:	FCC PART 15 SUBPART C, Section 15.247:2012 RSS-210 Issue 8 (December 2010) RSS-Gen Issue 3 (December 2010)	
Date of Receipt:	May 20, 2013	
Date of Test:	June 05, 2013	
Date of Issue:	June 28, 2013	
Test Result :	PASS *	

^{*}In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Tony Wu

June 2013

E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

	Revision Record						
Version Chapter Date Modifier Remark							
00	/	June 28, 2013	/	Original			

Authorized for issue by:		
Engineer	Zenger Zhang Print Name	Zenger Zhang
	Time Nume	
Clerk	Susie Liu	Suite Lin
	Print Name	
Reviewer	Keny Xu	Kony u
	Print Name	



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3 Test Summary

Test Item	Test Requirement	Test Requirement	Test method	Result
Antenna Requirement	tenna Requirement FCC Part 15, Subpart C Section 15.203/15.247 (c)			PASS
AC Power Line Conducted Emission	FCC Part 15, Subpart C Section 15.207	RSS-Gen Section 7.2.4	ANSI C63.10 (2009) Section 6.2	N/A
Minimum 6dB Bandwidth	FCC Part 15, Subpart C Section 15.247 (a)(2)	RSS 210 A 8.2(a)	ANSI C63.10 (2009) Section 6.9	PASS
99% Occupied Bandwidth		RSS-Gen Section 4.6.1	RSS-Gen Section 4.6.1	PASS
Conducted Peak Output Power	FCC Part 15, Subpart C Section 15.247 (b)(3)	RSS 210 A 8.4(2)	ANSI C63.10 (2009) Section 6.10	PASS
Power Spectrum Density	FCC Part 15, Subpart C Section 15.247 (e)	RSS 210 A 8.2(b)	ANSI C63.10,2009 Section 6.11.2	PASS
RF Conducted Spurious Emissions	FCC Part 15, Subpart C Section 15.247(d)	RSS 210 A 8.5	ANSI C63.10 (2009) Section 7.7.10	PASS
Band-edge for RF Conducted Emissions	FCC Part 15, Subpart C Section 15.247(d)	RSS 210 A 8.5	ANSI C63.10 (2009) Section 7.7.10	PASS
Radiated Spurious emissions	' I Soction 16 200 and Soction I		ANSI C63.10 (2009) Section 6.12	PASS
Radiated Band-edge FCC Part 15, Subpart C Section 15.205 and Section15.209		RSS-Gen section 4.9	ANSI C63.10 (2009) Section 6.5	PASS



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5 General Information

5.1 Client Information

Applicant:	iHealth Lab Inc.
Address of Applicant:	719N. Shoreline Blvd. Mountain View, CA 94043
Manufacturer:	iHealth Lab Inc.
Address of Manufacturer:	719N. Shoreline Blvd. Mountain View, CA 94043
Factory:	iHealth Lab Inc.

5.2 General Description of E.U.T.

Product Name	Wireless Scale Lite
Brand Name:	iHealth
Model No:	HS4
Added Model:	N/A
Sample Type:	Portable device

5.3 Technical Specifications:

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Number of Channel:	40
Modulation Technique:	Frequency Hopping Spread Spectrum (FHSS)
Power Supply:	Battery supply
Antenna Type	Integral
Antenna Gain	5.0dBi
Power Supply:	DC 6V(The New Alkaline Battery(AA*4) is used during the test)



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5.4 Support equipments for Testing

The EUT has been tested independently.

5.5 Details of Test Mode

Test Mode	Description of Test Mode
BT Transmitting mode	The EUT set on continue transmitting mode.

Test Channel:

Channel	Frequency
The Lowest channel	2402MHz
The Middle channel	2440MHz
The Highest channel	2480MHz

5.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. No.588 West Jindu Road, Songjiang District, Shanghai, China.201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678



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5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

• FCC - Registration No.: 402683

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

Industry Canada (IC) – IC Assigned Code: 8617A

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The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

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6 Equipments Used during Test

RF Test:

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2013-02-23	2014-02-22
2	Horn Antenna	SCHWARZBECK	BBHA9120 D	9120D-679	2013-03-07	2014-03-06
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2013-06-03	2014-06-01
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2013-03-07	2014-03-06
5	Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 373	2013-03-07	2014-03-06
6	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2012-10-09	2013-10-08
7	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY – 2009P		2012-10-09	2013-10-08
8	CLAMP METER	FLUKE	316	86080010	2013-06-03	2014-06-01
9	Thermo- Hygrometer	ZHICHEN	ZC1-2	01050033	2012-10-09	2013-10-08
10	Tunable Notch	Wainwright instruments Gmbh	WRCT1800. 0/2000.0- 0.2/40-5SSK	11	2013-06-03	2014-06-01
11	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0 /880.0- 0.2/40-5SSK	9	2013-06-03	2014-06-01
12	High pass Filter	FSCW	HP 12/2800- 5AA2		2013-06-03	2014-06-01
13	Low nosie amplifier	TESEQ	LNA6900	70133	2013-02-23	2014-02-22



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7 Test Results

7.1 E.U.T. test conditions

Test Power: DC 6V

Requirements: 15.31(e) For intentional radiators, measurements of the variation of the input

power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a

new battery.

Operating Environment:

Temperature: 20.0 -25.0 °C

Humidity: 35-75 % RH

Atmospheric Pressure: 992 -1020 mbar

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

7.2 Antenna Requirement

Standard requirement

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna

The antenna is integrated on the main PCB and no consideration of replacement. The gain of the antenna is less than 5.0 dBi.



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7.3 6dB Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.247 (a)(2) **Test Method:** ANSI C63.10 (2009) Section 6.9

Test Date: June 05, 2013

Test Result: Pass

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Limit: ≥ 500 kHz

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Test Procedure:

1. Place the EUT on the table and set it in transmitting mode.

- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
 - 3. Set the spectrum analyzer as RBW=100KHz, VBW =3* RBW, Span=30/50MHz, Sweep=auto
 - 4. Mark the peak frequency and -6dB (upper and lower) frequency.
 - 5. Repeat above procedures until all frequency measured was complete.

Test date

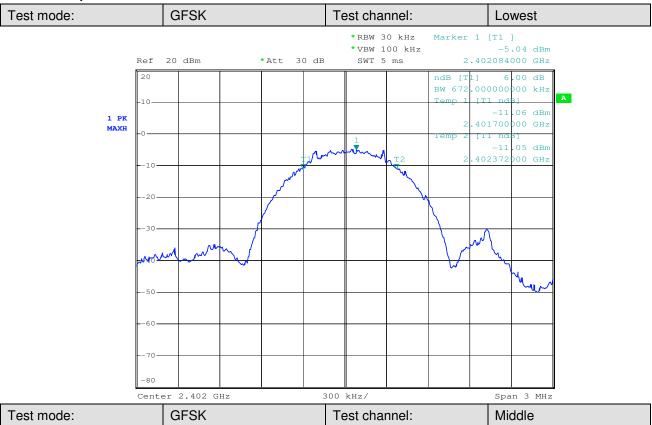
EUT Mode	Test Channel	6dB Occupy Bandwidth (kHz)	Limit (kHz)	Results
	Low	672	500	Pass
GFSK	Middle	744	500	Pass
	High	690	500	Pass



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Test plot as follows:



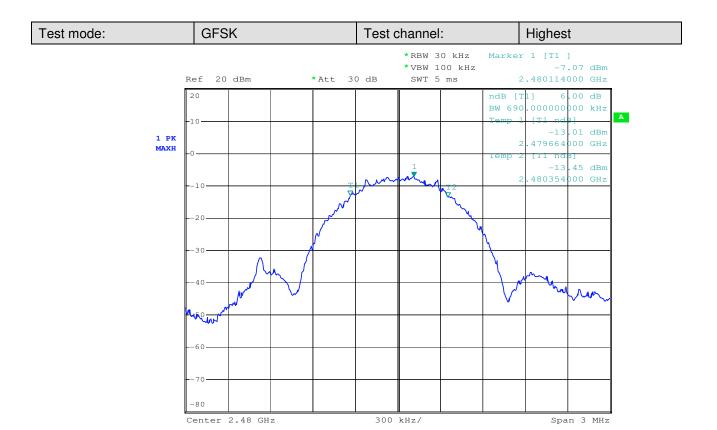


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7.4 99% Occupied Bandwidth

Test Requirement: RSS-Gen section 4.6.1 **Test Method:** RSS-Gen section 4.6.1

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Test Procedure:

- 1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- 2. Set the spectrum analyzer: Span = approximately 2 to 3 times the 20dB bandwidth, centred on the hopping channel;
- 3. Set the spectrum analyzer: RBW >= 1% of the 20dB bandwidth (set 100 kHz). VBW >= RBW. Sweep = auto; Detector Function = Peak. Trace = Max Hold.
- 4. Mark the peak frequency and -20dB points.

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Test date

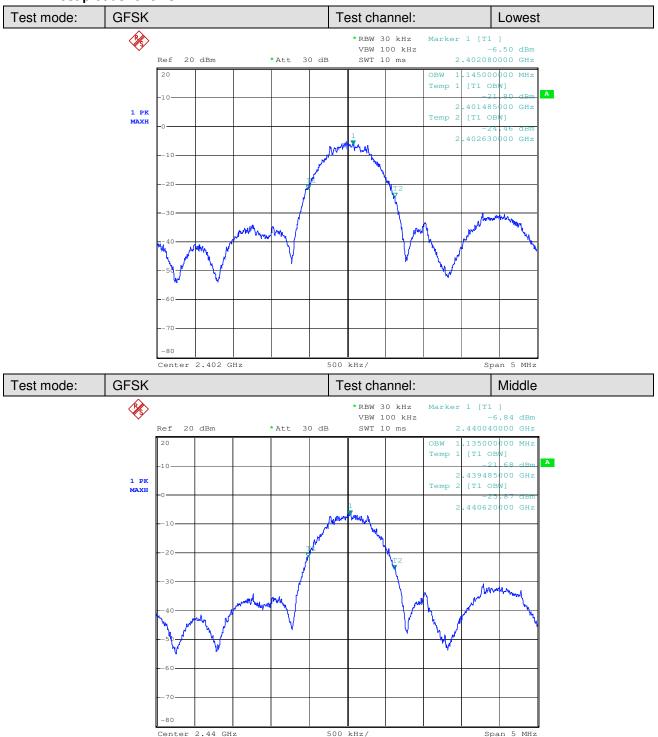
Modulation	Test Channel	Channel Frequency (MHz)	Bandwidth(MHz)	
	Low	2402	1.145	
GFSK	Middle	2440	1.135	
	High	2480	1.090	



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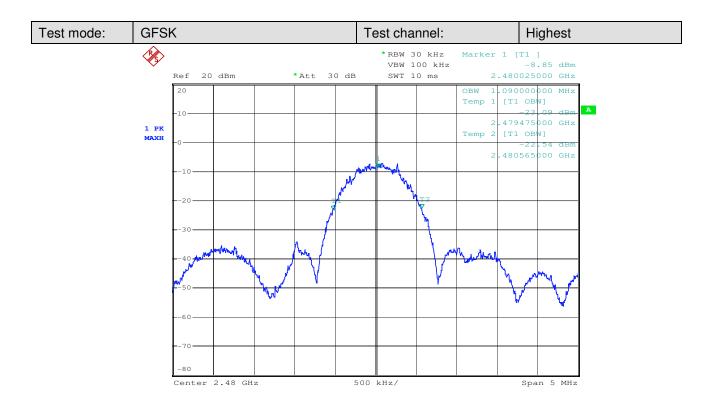
Test plot as follows:





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7.5 Conducted Peak Output Power

Test Requirement: FCC Part 15.247 Section 15.247(b)(1)

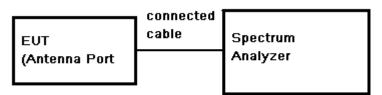
Test Method: ANSI C64.10:2009 Section 6.10.1

Test Date: June 05, 2013

Test Result: Pass
Test Limit: 30dBm

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Test Configuration:



Test Procedure:

- Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- 2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak.
- 3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

Test Results record:

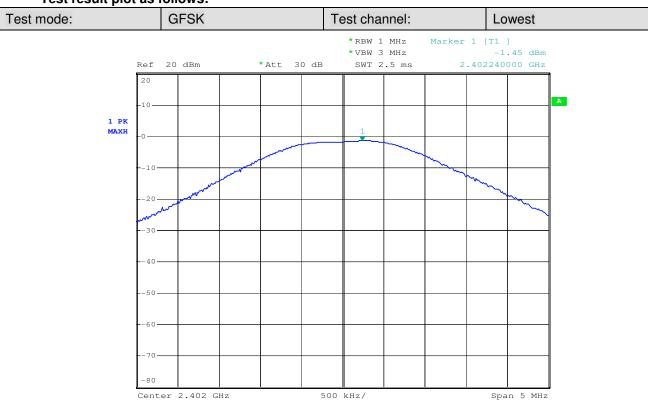
Test	est		Reading			t Power	Limit	Margin
Channel	Modulation	Frequency (MHz)	Power (dBm)	Loss (dB)	(dBm)	(mW)	(dBm)	(dB)
Lowest	GFSK	2402	-1.45	1.2	-0.25	0.944	30	-30.25
Middle	GFSK	2441	-2.59	1.2	-1.39	0.726	30	-31.39
Highest	GFSK	2480	-3.59	1.2	-2.39	0.577	30	-33.39



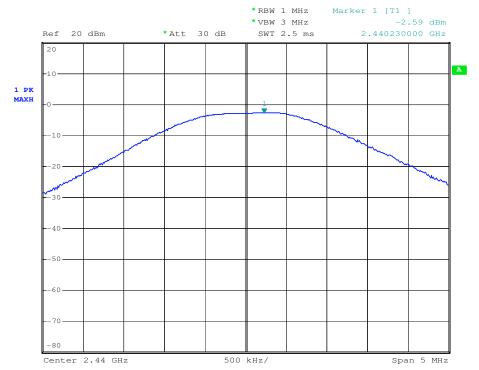
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Test result plot as follows:





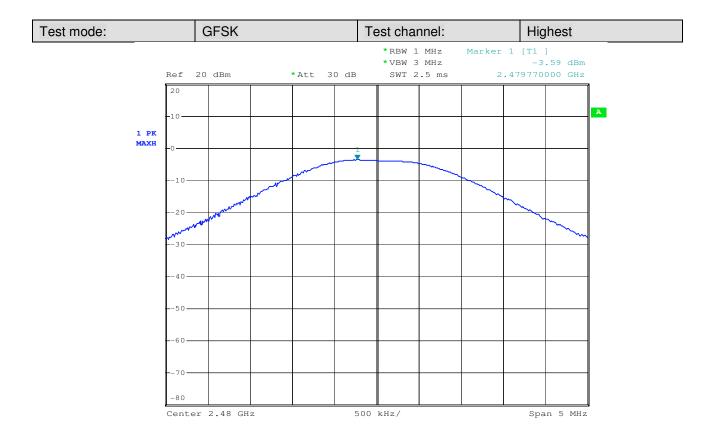


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7.6 Peak Power Spectral Density

Test Requirement: FCC Part 15, Subpart C Section 15.247 (e)

Test Method: ANSI C63.10,2009 Section 6.11.2

Test Date: June 05, 2013

Test Result: Pass

Test Limit: 8dBm/3kHz

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Measurement Procedure: 1. Remove the antenna from the EUT and then connect a low RF

cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: Centre Frequency= Channel Frequency, RBW = 3kHz VBW = 10kHz. Span= fully encompass the bandwidth, Sweep = auto; Detector Function = Peak Trace

mode=max hold,

3. Set MKR=Centre Frequency, Trace=Clear Write.

4. Set the spectrum analyzer: Span = 300 kHz, Sweep Time=100s, Trace=Max Hold. MKR=Peak Search.

5. Record the marker level for the particular mode.

6. Repeat these steps for other channel and device modes.

Test Results record:

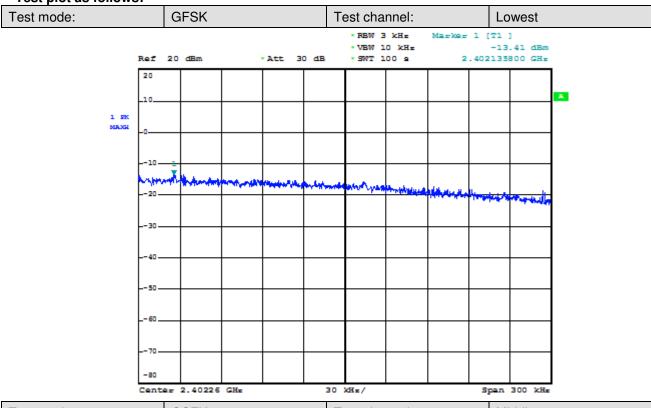
Test mode	Channel	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Peak Power Limit (dBm)	Result
	Low	-13.41	1.2	-12.21	8	PASS
GFSK	Mid	-14.76	1.2	-13.56	8	PASS
	High	-15.58	1.2	-14.38	8	PASS

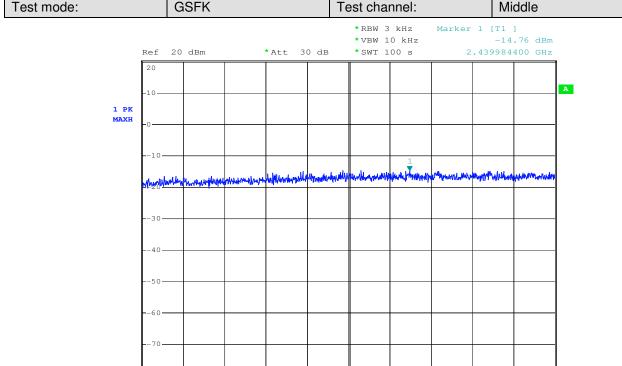


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Test plot as follows:



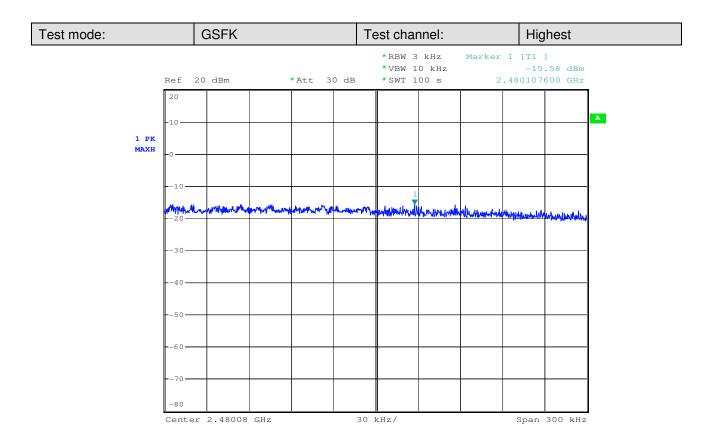


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7.7 Conducted Spurious Emissions

Test Requirement: FCC Part 15 Section 15.247(d) **Test Method:** ANSI C63.10:2009 Clause 7.7.10

Test Date: June 05, 2013

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Test Result: Pass

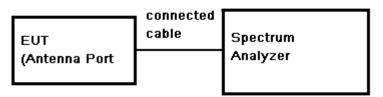
Limit: (d) In any 100 kHz bandwidth outside the frequency band in which the spread

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.

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Test Configuration:



Test Procedure:

- 1. Remove the antenna from the EUT and then connect a low RF cable from
- the antenna port to the spectrum.
- 2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).



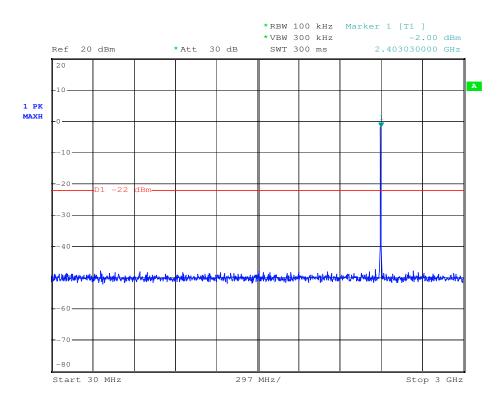
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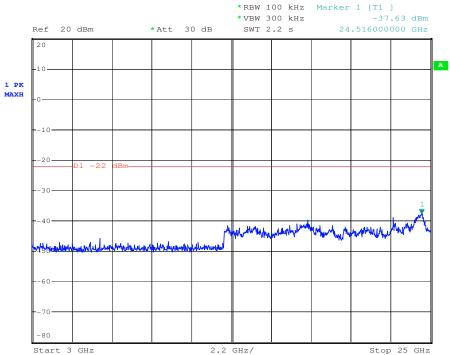
est plot as follows:

Test mode:	GFSK	Test channel:	Lowest
------------	------	---------------	--------

30M to 3G:



3G to 25G



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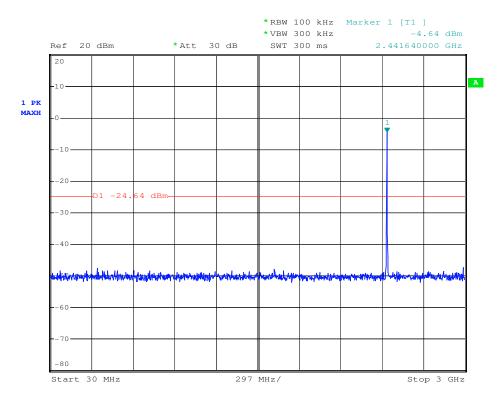


Report No.: SHEM130500089001

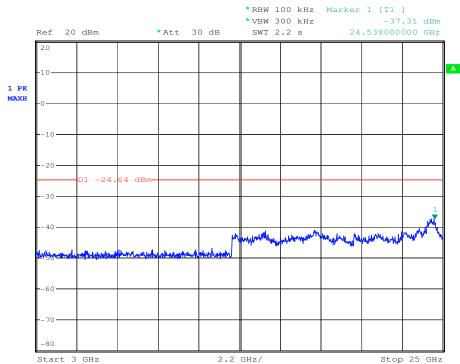
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Test mode: GFSK Test channel: Middle

30M to 3G:



3G to 25G:



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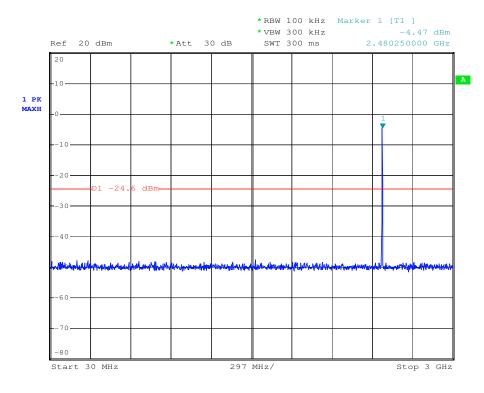


Report No.: SHEM130500089001

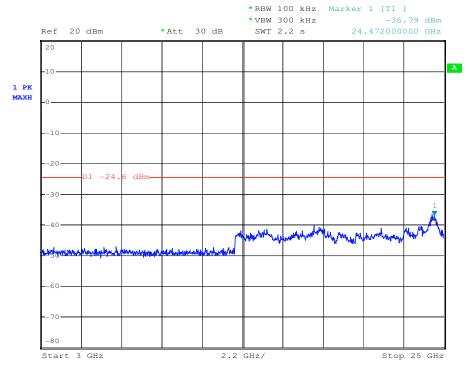
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Test mode: GFSK Test channel: Highest

30M to 3G:



3G to 25M:





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7.8 Conducted Band-edge

Test Requirement: FCC Part 15 Section 15.247(d) **Test Method:** ANSI C63.10:2009 Clause 7.7.10

Test Date: June 05, 2013

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Test Result: Pass

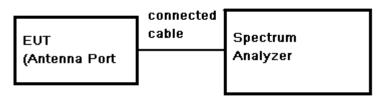
Limit: (d) In any 100 kHz bandwidth outside the frequency band in which the spread

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.

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Test Configuration:



Test Procedure:

- 1. Remove the antenna from the EUT and then connect a low RF cable from
- the antenna port to the spectrum.
- 2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).

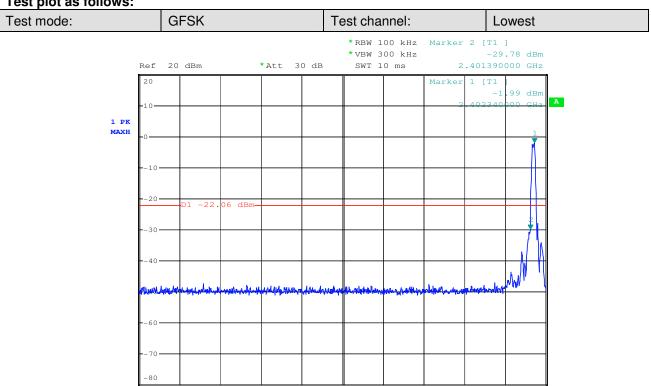


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Stop 2.405 GHz

Test plot as follows:

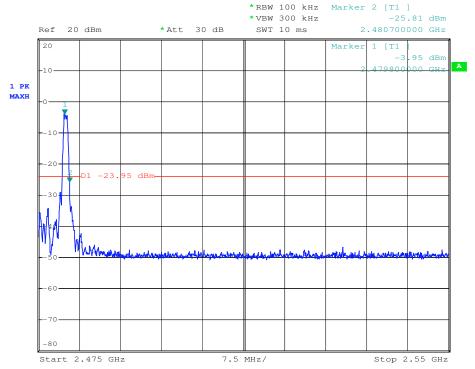




9.5 MHz/

Start 2.31 GHz

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only



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7.9 Radiated Spurious Emissions

Test Requirement: FCC Part 15 Section 15.209 and Section 15.205

Test Method: ANSI C63.10:2009 Clause 6.12

Test frequency range: 9KHz – 25GHz

Test Date: June 05, 2013

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

Test Result: Pass

Final Test Mode: The EUT on continue transmitting mode with GFSK.

Test site/setup: Measurement Distance: 3m (Semi-Anechoic Chamber)

Test instrumentation resolution bandwidth 120 kHz and Quasi-Peak

detector applies (30 MHz - 1000 MHz).

For PK value:

RBW = 1 MHz for $f \ge 1$ GHz VBW \ge RBW; Sweep = auto Detector function = peak

Trace = max hold For AV value:

RBW = 1 MHz for f ≥ 1 GHz VBW =10Hz; Sweep = auto Detector function = peak

Trace = max hold

Receive antenna scan height 1 m - 4 m. polarization Vertical / Horizontal

15.209 Limit: 40.0 dBμV/m between 30MHz & 88MHz

43.5 dBµV/m between 88MHz & 216MHz

46.0 dBµV/m between 216MHz & 960MHz

 $54.0 \text{ dB}\mu\text{V/m}$ above 960MHz



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Test Configuration:

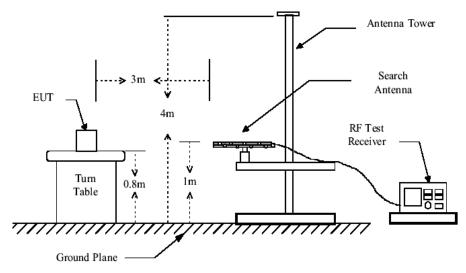


Figure 1. 30MHz to 1GHz radiated emissions test configuration

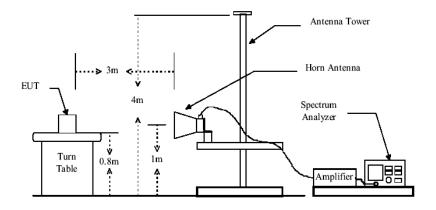


Figure 2. Above 1GHz radiated emissions test configuration

Test Procedure:

The procedure used was ANSI Standard C63.10:2009. The receiver was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

Low nosie amplifier was used below 1GHz, High pass Filter was used above 3GHz. Between 1G and 3GHz, we did not use any amplifier or filter.

Test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was sumitted.

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1) For this intentional radiator operates below 25 GHz. the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 5rd harmonic.

As shown in Section, for frequencies above 1000 MHz. the above 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.

The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.



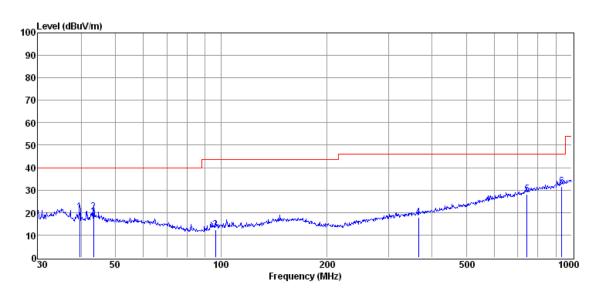
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Below show the worst Test results:

30MHz to 1GHz

Transmitting mode GFSK Test Antenna Status: Vertical



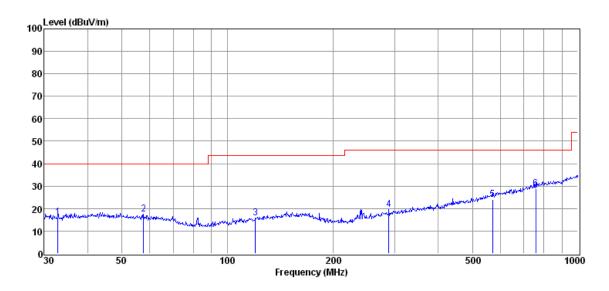
Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		
39.52	31.29	13.21	24.70	0.55	20.35	40.00	-19.65	QP	Vertical
43.28	31.20	13.17	24.70	0.59	20.26	40.00	-19.74	QP	Vertical
96.44	27.06	8.95	24.70	1.01	12.32	43.50	-31.18	QP	Vertical
365.54	26.08	14.04	24.44	2.18	17.86	46.00	-28.14	QP	Vertical
745.93	27.40	21.43	24.02	3.32	28.13	46.00	-17.87	QP	Vertical
935.81	28.07	23.62	23.80	3.75	31.64	46.00	-14.36	QP	Vertical



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Transmitting mode GFSK Test Antenna Status: Horizontal



Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBμV/m)	(dB)		
32.86	28.09	12.27	24.70	0.46	16.12	40.00	-23.88	QP	Horizontal
57.59	29.19	12.34	24.70	0.71	17.54	40.00	-22.46	QP	Horizontal
120.28	28.19	11.21	24.70	1.14	15.84	43.50	-27.66	QP	Horizontal
289.00	29.94	12.09	24.50	1.90	19.43	46.00	-26.57	QP	Horizontal
571.57	27.09	18.50	24.21	2.82	24.20	46.00	-21.80	QP	Horizontal
758.67	27.85	21.67	24.00	3.35	28.87	46.00	-17.13	QP	Horizontal



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1GHz-12GHz:

Transmittir	Transmitting mode GFSK			el: Low	Test Antenna: Horizontal			
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1	5183	53.18	0.77	53.95	54	-0.05	peak	
2	7145.25	43.12	5.94	49.06	54	-4.94	peak	
3	7603.5	44.73	7.73	52.46	54	-1.54	peak	
4	9377.75	41.13	11.43	52.56	54	-1.44	peak	
5	10975.75	43.47	10.01	53.48	54	-0.52	peak	
6	12021.5	44.38	8.81	53.19	54	-0.81	peak	

Transmittii	Transmitting mode GFSK		Test Chann	Test Channel: Low		Test Antenna: Vertical		
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
1	5124.25	53.91	0.72	54.63	54	0.63	peak	
2	7145.25	42.63	5.94	48.57	54	-5.43	peak	
3	7873.75	44.31	7.74	52.05	54	-1.95	peak	
4	9366	41.26	11.4	52.66	54	-1.34	peak	
5	10494	41.36	10.58	51.94	54	-2.06	peak	
6	11387	43.35	9.35	52.7	54	-1.3	peak	

Transmitting mode GFSK			Test Chann	Middle	Test Antenna: Horizontal		
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	6980.75	46.31	5.13	51.44	54	-2.56	peak
2	7920.75	44.72	7.74	52.46	54	-1.54	peak
3	9612.75	41.78	11.74	53.52	54	-0.48	peak
4	10423.5	41.55	10.67	52.22	54	-1.78	peak
5	11034.5	42.22	9.93	52.15	54	-1.85	peak
6	11962.75	43.62	8.88	52.5	54	-1.5	peak



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Transmitting mode GFSK		Test Chann	Test Channel: Middle		Test Antenna: Vertical		
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	6969	44.03	5.1	49.13	54	-4.87	peak
2	7838.5	45.01	7.73	52.74	54	-1.26	peak
3	9330.75	42.4	11.25	53.65	54	-0.35	peak
4	9753.75	41.15	11.54	52.69	54	-1.31	peak
5	11046.25	42.22	9.91	52.13	54	-1.87	peak
6	11892.25	43.69	8.93	52.62	54	-1.38	peak

Transmitting mode GFSK		Test Channel: High		Test Antenna: Horizontal			
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3585	54.56	-3.54	51.02	54	-2.98	peak
2	5006.75	52.61	0.62	53.23	54	-0.77	peak
3	7627	44.42	7.73	52.15	54	-1.85	peak
4	9295.5	42.77	11.11	53.88	54	-0.12	peak
5	11175.5	43.84	9.7	53.54	54	-0.46	peak
6	11704.25	43.46	9.05	52.51	54	-1.49	peak

Transmitting mode GFSK		Test Channel: High		Test Antenna: Vertical			
Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	6957.25	43.74	5.05	48.79	54	-5.21	peak
2	7615.25	45	7.74	52.74	54	-1.26	peak
3	8355.5	43.29	8.28	51.57	54	-2.43	peak
4	9366	37.8	11.4	49.2	54	-4.8	peak
5	10940.5	43.45	10.05	53.5	54	-0.5	peak
6	11892.25	43.4	8.93	52.33	54	-1.67	peak

Note: The Peak Emission is below the Average Limit, so the Average Emission doesn't need to be test.



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Remark: No other radiation has been found.

Test Level = Receiver Reading + Corrected factor (Antenna Factor + Cable Loss - Preamplifier Factor).

Remark: No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.



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7.10 Band edge (Radiated Emission)

Test Requirement:

Section 15.247(d) In addition, radiated emissions which fall in the

restricted bands. As defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section

15.205(c).

Test Method: ANSI 63.10:2009 Clause 6.12

Test Date: June 05, 2013

Test Result: Pass

Measurement Distance: 3m (Semi-Anechoic Chamber)

Limit: 40.0 dB μ V/m between 30MHz & 88MHz;

 $43.5 \text{ dB}\mu\text{V/m}$ between 88MHz & 216MHz; $46.0 \text{ dB}\mu\text{V/m}$ between 216MHz & 960MHz;

 $54.0 \text{ dB}\mu\text{V/m}$ above 960MHz.

Detector: For PK value:

report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

RBW = 1 MHz for $f \ge 1$ GHz VBW \ge RBW; Sweep = auto Detector function = peak

Trace = max hold For AV value:

RBW = 1 MHz for f ≥ 1 GHz VBW =10Hz; Sweep = auto Detector function = peak

Trace = max hold

According to section,15.35(b) for frequencies above 1000 MHz. the above 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.

Pre-test were performed for there spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was sumitted.

Test Result: The EUT does meet the FCC requirements.



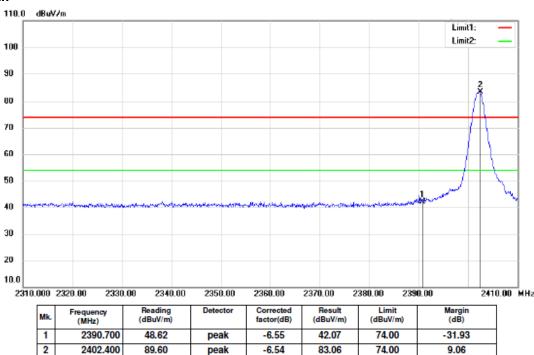
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Measurement Result:

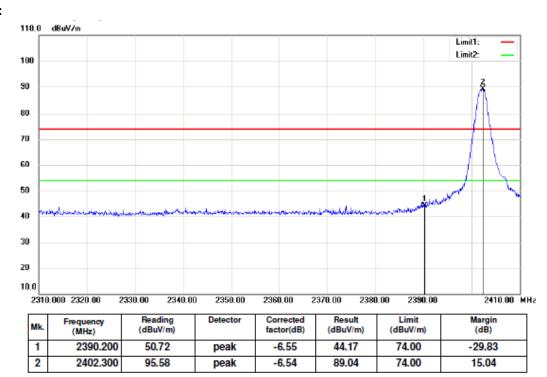
CH Low 2402MHz Radiated Bandage

Horizontal:



Modulation: GFSK

Vertical:



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90

80 70

60 50 40

30

20 10.0

1

2

2479,760

2483.280

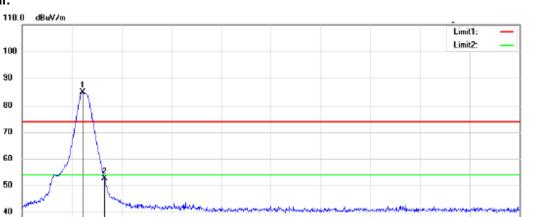
2470.000 2478.00

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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CH Low 2480MHz Radiated Bandedge Horizontal:



Modulation: GFSK

Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2479.760	91.07	peak	-6.42	84.65	74.00	10.65
2	2483.280	58.97	peak	-6.41	52.56	74.00	-21.44

2510.00

2526.00

2534.00

74.00

74.00

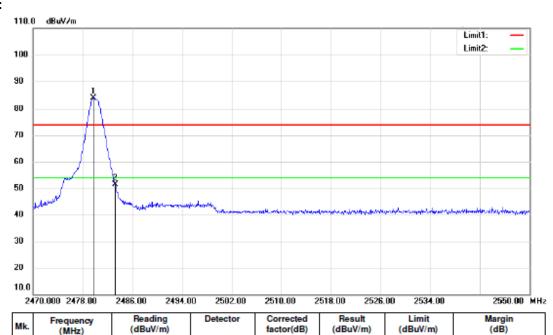
9.62

-22.67

2550.00 MHz

2502.00

Vertical:



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peak

peak

-6.42

-6.41

83.62

51.33

90.04

57.74

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Remark: No any other emission which fall in restricted bands can be detected and be reported.

Test Level = Receiver Reading + Corrected factor (Antenna Factor + Cable Loss- Preamplifier Factor)

All frequencies within the "Restricted bands" have been evaluated to compliance. Section 15.205 Restricted bands of operation.

Except as shown in paragraph of this section. Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		



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8 Test Setup Photographs

Refer to the < HS4 Test Setup photos>.

9 EUT Constructional Details

Refer to the < HS4_External Photos > & < HS4_Internal Photos >.

End of Report