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

588 West Jindu Road,Songjiang District,Shanghai,China

Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5655
ee.shanghai@sgs.com

TEST REPORT

Application No. :	SHEM111000139004
Applicant:	HANSON TECHNOLOGY LIMITED
FCC ID:	YY2-M100
Equipment Under Test (EUT):	
Product Name:	Magic Touchpad
Brand Name:	Feltouch
Model:	MAGIC 100
Standards:	FCC PART 15 Subpart C: 2009
Date of Receipt:	Oct. 18, 2011
Date of Test:	Oct. 20, 2011 to Nov 09, 2011
Date of Issue:	Nov 14, 2011
Test Result :	**PASS ***

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

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

E&E Section Head
SGS-CSTC(Shanghai) Co., Ltd.

E&E EMC Engineer
SGS-CSTC(Shanghai) Co., Ltd.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

2 Change History

Version	Change Contents	Author	Date
V1.0	First Edition	Zenger Zhang	14-Nov-2011

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

3 Test Summary

Test items	Test Requirement	Standard Paragraph	Result
Antenna Requirement	FCC PART 15 :2009	Section 15.247 (c)	PASS
Occupied Bandwidth	FCC PART 15 :2009	Section 15.247 (a1)	PASS
Carrier Frequencies Separated	FCC PART 15 :2009	Section 15.247(a)(1)	PASS
Hopping Channel Number	FCC PART 15 :2009	Section 15.247(a)(1)(iii)	PASS
Dwell Time	FCC PART 15 :2009	Section 15.247(a)(1)(iii)	PASS
Maximum Peak Output Power	FCC PART 15 :2009	Section 15.247(b)(1)	PASS
RF Exposure Compliance Requirement	FCC PART 15 :2009	15.247(b)(4)& TCB Exclusion List (7 July 2002)	PASS
Conducted Spurious Emission (30MHz to 25GHz)	FCC PART 15 :2009	Section 15.207 &15.247(d)	PASS
Radiated Spurious Emission (30MHz to 25GHz)	FCC PART 15 :2009	Section 15.209 &15.247(d)	PASS
Band Edges Measurement	FCC PART 15 :2009	Section 15.247 (d) &15.205	PASS

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

4 Contents

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

5 General Information

5.1 Client Information

Applicant:	HANSON TECHNOLOGY LIMITED
Address of Applicant:	Rm 1503, Kun Yang Building, No. 798, Zhao Jia Bang Road, Shanghai, China
Manufacturer:	HANSON TECHNOLOGY LIMITED
Address of Manufacturer:	Rm 1503, Kun Yang Building, No. 798, Zhao Jia Bang Road, Shanghai, China

5.2 General Description of E.U.T.

Product Name	Magic Touchpad
Brand Name:	Feltouch
Model No:	MAGIC 100
Supported Frequency Bands:	2.402GHz to 2.480GHz
Test Frequency Bands:	2.402GHz to 2.480GHz

5.3 Details of E.U.T.

Bluetooth Version:	V3.0
AC Adaptor :	No Adaptor
Battery:	Fix Battery

5.4 Standards Applicable for Testing

The standard used were FCC PART 15 Subpart C: 2009, DA 00-705, ANSI C63.10: 2009.

5.5 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 5655

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

5.6 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: 2012-03-17.

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

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-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

6 Equipments Used during Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	Spectrum Analyzer	Rohde & Schwarz	FSP-30	100324	2011-04-19	2012-04-17
2	EMI test receiver	Rohde & Schwarz	ESU40	100109	2011-06-04	2012-06-03
3	Low nosie amplifier	TESEQ	LNA6900	70133	2011-07-06	2012-07-05
4	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2010-12-09	2011-12-08
5	Horn Antenna	Rohde & Schwarz	HF906	100284	2011-03-12	2012-03-10
6	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2011-06-04	2012-06-03
7	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY-2003P	--	2011-10-15	2012-10-14
8	CLAMP METER	FLUKE	316	86080010	2011-04-22	2012-04-20
9	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2010-10-15	2012-10-14
10	TEMPERATURE& HUMIDITY BOX	KSON	THS-D2C-100	K40723	2011-01-22	2012-01-21
11	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2011-06-17	2012-06-16
12	DC power	KIKUSUI	PMC35－3	NF100260	2011-01-16	2012-01-15
13	High pass Filter	FSCW	HP 12/2800-5AA2	19A45-02	2011-04-08	2012-04-07

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7 Test Results

7.1 E.U.T. test conditions

Power supply:	Input :110-240V~ 50/60 Hz, 0.14A, Output : 5.0 VDC, 1.0A
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.
Type of antenna:	integral
Operating Environment:	
Temperature:	20.0 -25.0 °C
Humidity:	38-52 % RH
Atmospheric Pressure:	992 -1010 mbar
Test frequencies:	According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and. if required. reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top. 1 near middle and 1 near bottom

Pursuant to Part 15.31(c) For swept frequency equipment, measurements shall be made with the frequency sweep stopped at those frequencies chosen for the measurements to be reported.

Test frequency is the lowest channel: 0 channel (2402MHz), middle channel: 39 channel (2441MHz) and highest channel: 78 channel (2480MHz) with fixed at channel.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.2 Antenna Requirement

7.2.1 Standard requirement

15.203 requirement:
For intentional device. according to 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.
15.247(c) (1)(i) requirement:
(i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed. point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

7.2.2 EUT Antenna

The antenna is integrated on the main PCB and no consideration of replacement. The gain of the antenna is less than 0.6 dBi.

Test result: The EUT does meet the FCC requirements.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.3 Occupied Bandwidth

Test Requirement: FCC Part 15 C

Test Method: Based on FCC Part15 C Section 15.247, DA 00-705

Test Date: Nov 07, 2011

Test Status: Test in fixing operating frequency at lowest, Middle, highest channel.

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, centered on the hopping channel;
3. Set the spectrum analyzer: RBW >= 1% of the 20dB bandwidth (set 10kHz). VBW >= RBW. Sweep = auto; Detector Function = Peak. Trace = Max Hold.
4. Mark the peak frequency and -20dB points.

Test result: Pass

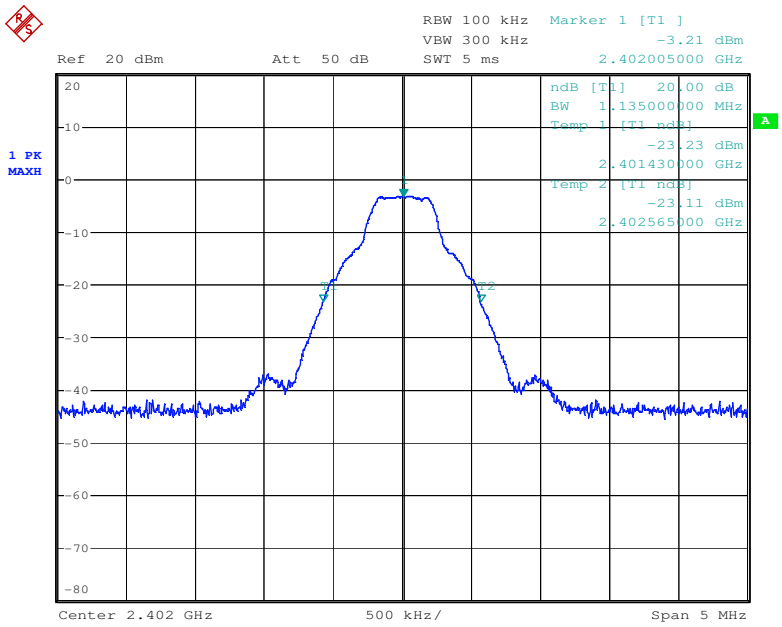
Normal mode:

Test Channel	Modulation	Bandwidth(MHz)
Low	GFSK	1.135
Middle	GFSK	1.145
High	GFSK	1.135

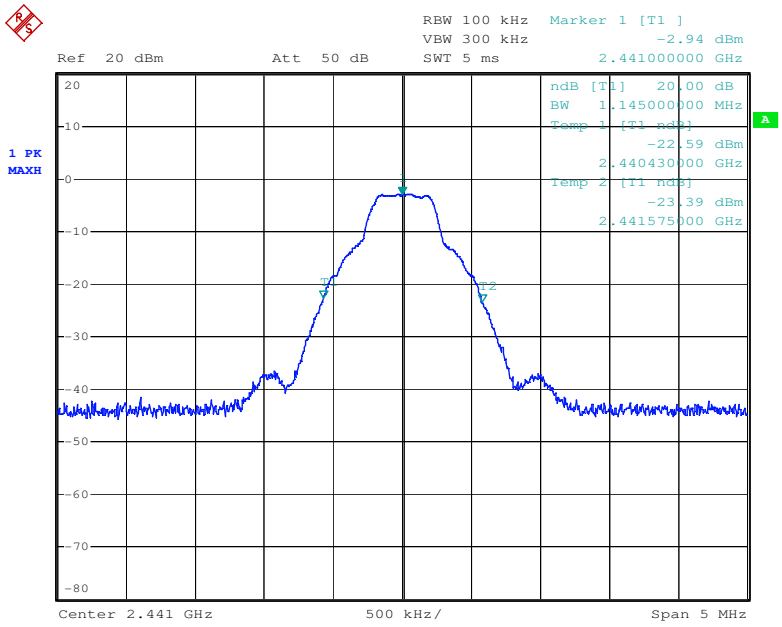
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Result plot as follows:

Lowest Channel – GFSK:

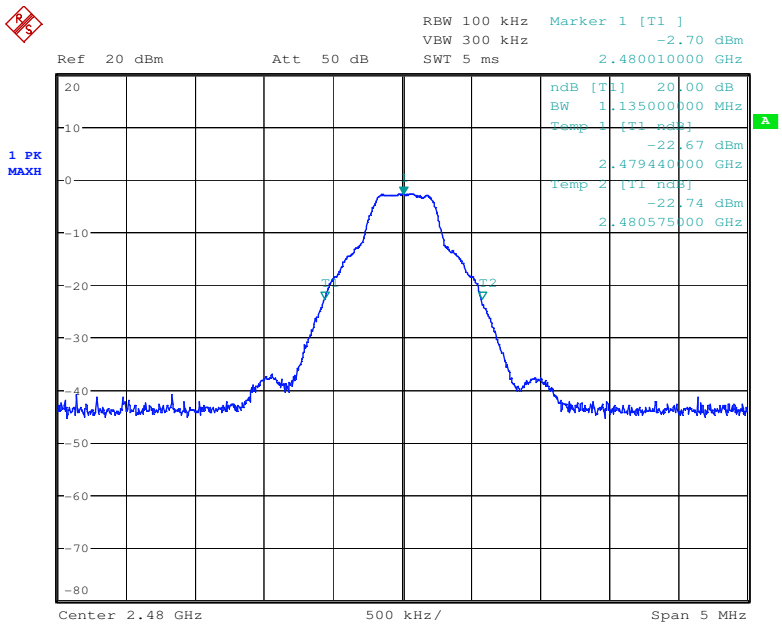


Middle Channel – GFSK:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Highest Channel – GFSK:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.4 Carrier Frequencies Separated

Test Requirement: FCC Part 15 C

Test Method: Based on FCC Part15 C Section 15.247, DA 00-705

Test Date: Nov 03, 2011

Test requirements: Regulation 15.247(a),(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Status: Test in hopping transmitting operating mode.

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 >= 1% of the span (set 100 kHz). VBW >= RBW , Span = 5MHz. Sweep = auto; Detector Function = Peak. Trace = Max,hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

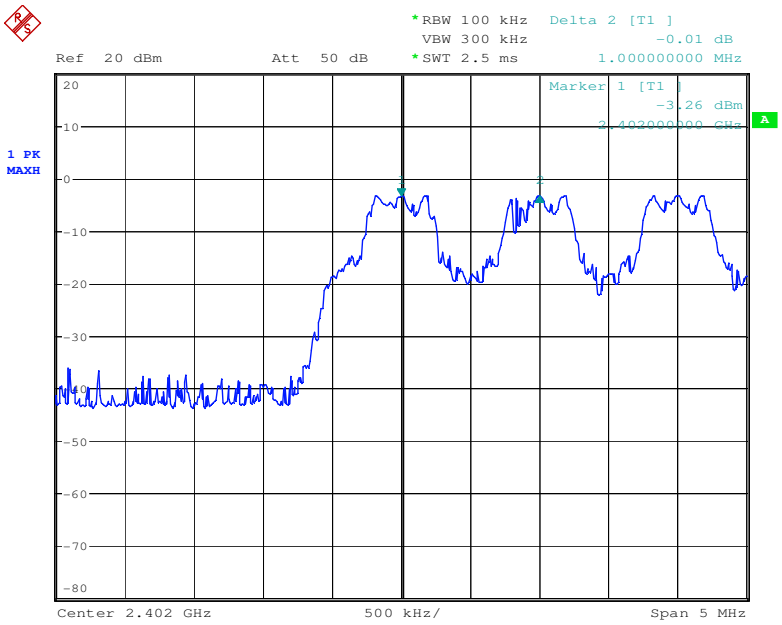
Test result: Pass

Test Channel	Carrier Frequencies Separated	PASS/FAIL
Lower Channels (channel 0 and channel 1)	1.0MHz	PASS
Middle Channels (channel 39 and channel 40)	1.0MHz	PASS
Upper Channels (channel 77 and channel 78)	1.0MHz	PASS

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

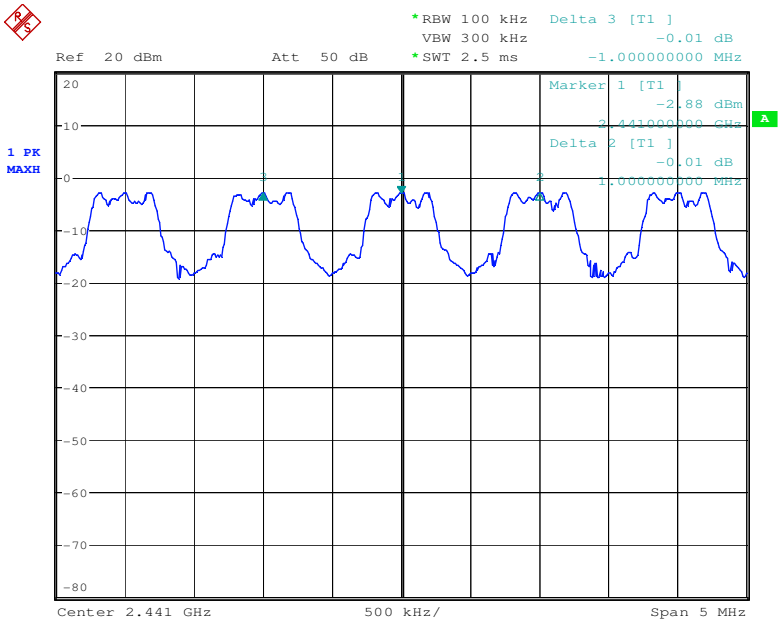
Result plot as follows:

Lowest Channels: Carrier Frequencies Separated



Date: 3.NOV.2011 13:06:23

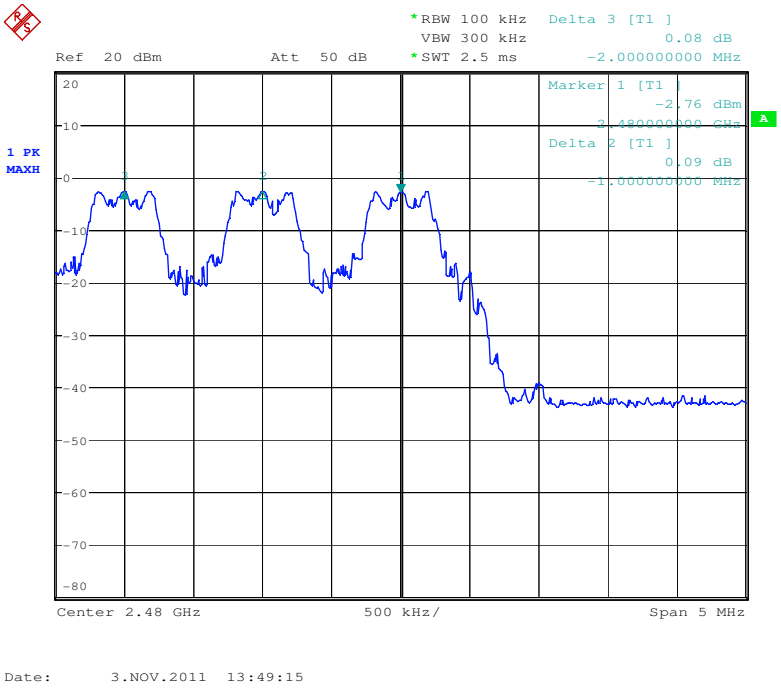
Middle Channels: Carrier Frequencies Separated



Date: 3.NOV.2011 13:38:23

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Highest Channels: Carrier Frequencies Separated



Test result: The EUT does meet the FCC requirements.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

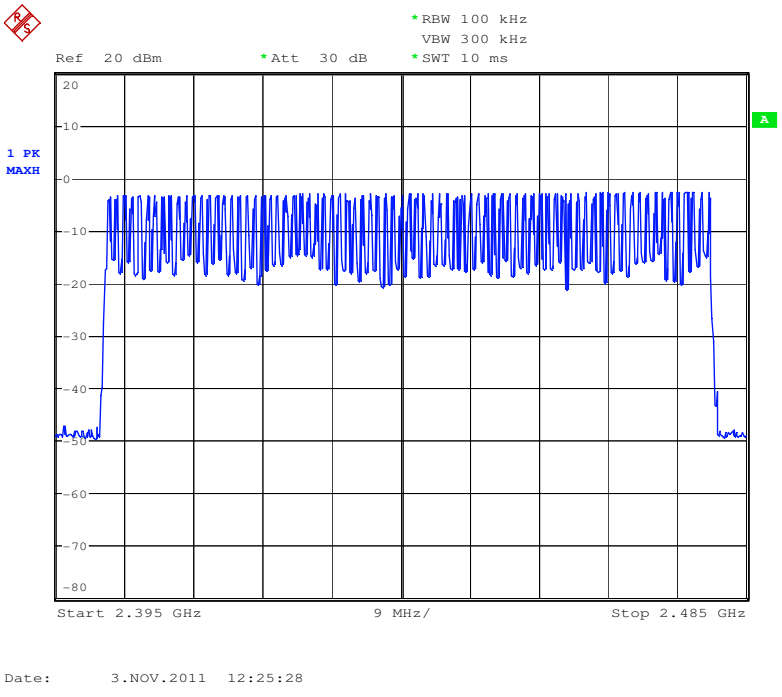
7.5 Hopping Channel Number

Test Requirement:	FCC Part15 C
Test Method:	Based on FCC Part15 C Section 15.247, DA 00-705
Test Date:	Nov 03, 2011
Requirements:	Regulation 15.247 (a) (1)(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.
Test Status:	Test in hopping transmitting operating mode.

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 = 100 kHz. VBW = 300 kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: start frequency = 2400MHz. stop frequency = 2483.5MHz. Submit the test result graph.

Test result: Total channels are 79 channels. The EUT does meet the FCC requirements.



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.6 Dwell Time

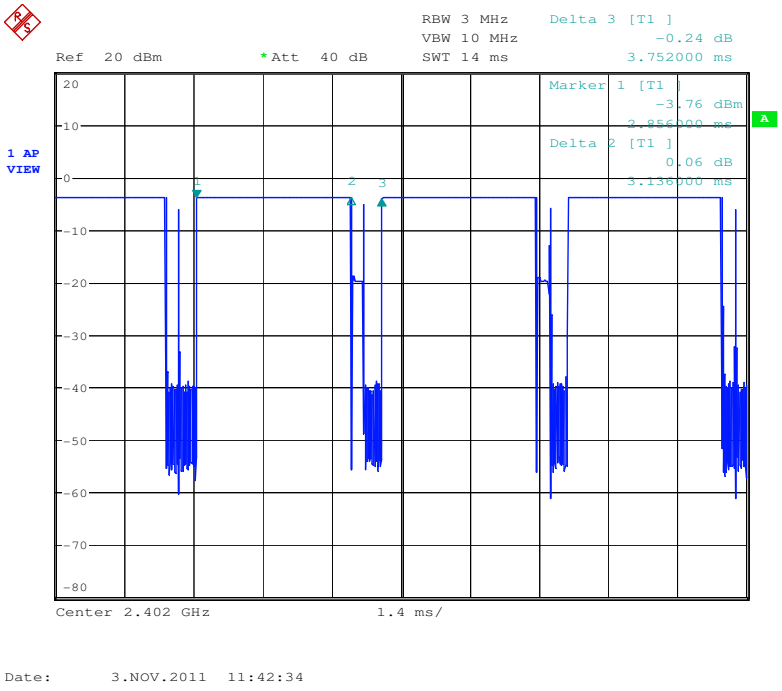
Test Requirement:	FCC Part 15 C
Test Method:	Based on FCC Part15 C Section 15.247, DA 00-705
Test Date:	Nov 03, 2011
Test requirements:	Regulation 15.247(a)(1)(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Status:	Test in transmitting operating mode with DH5 packet.

Test Procedure:

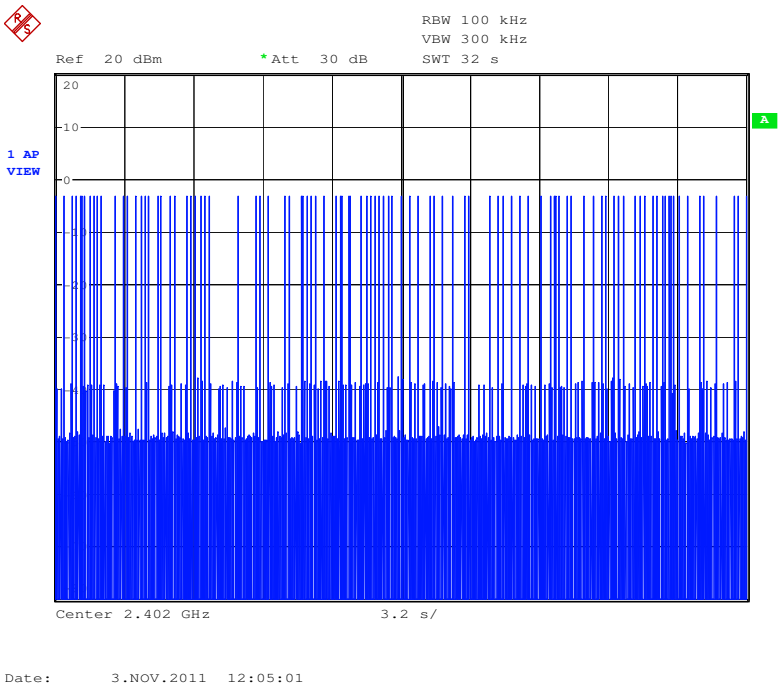
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set spectrum analyzer span = 0. centered on a hopping channel;
3. Use Emission width / No. of Hopping Channels in 31.6s to determine the dwell time.

Refer testing graph as below:

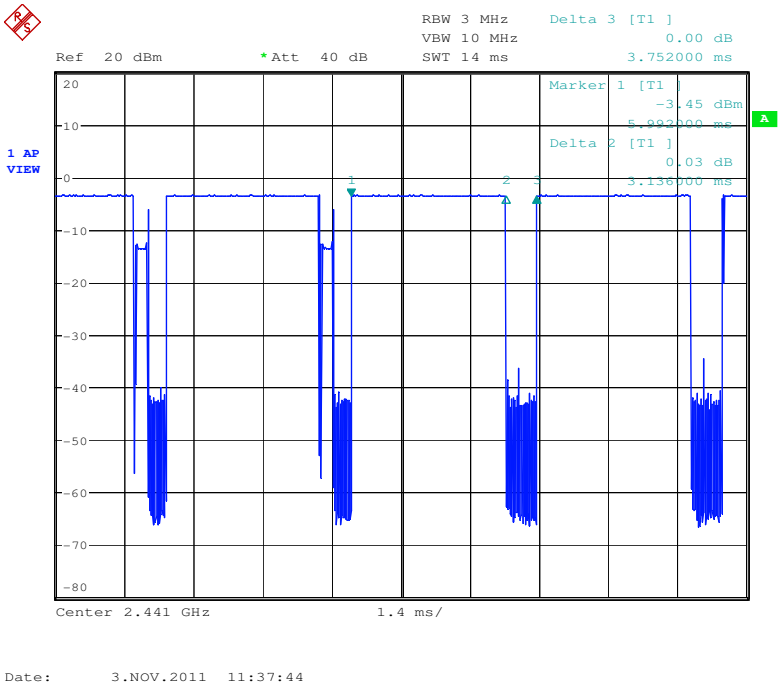
Frequency 2402MHz:



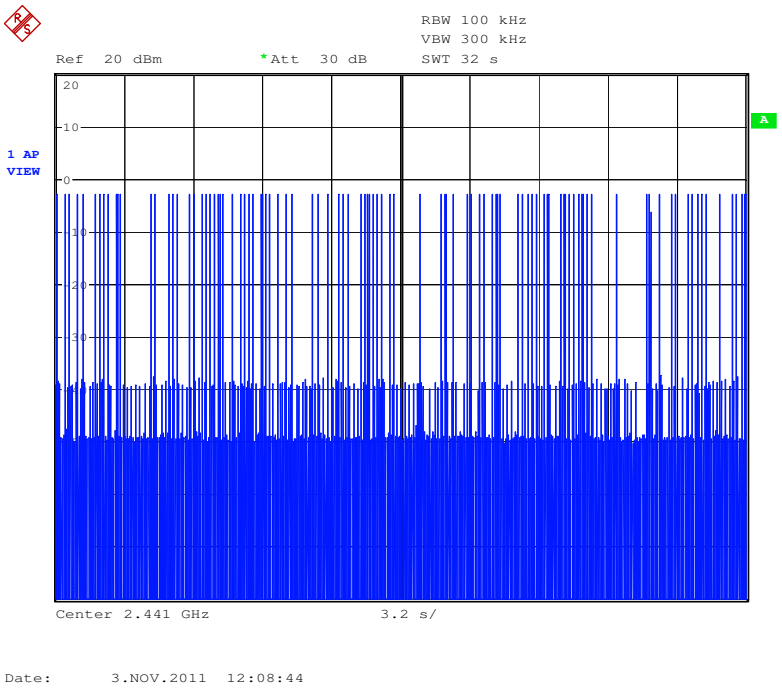
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only



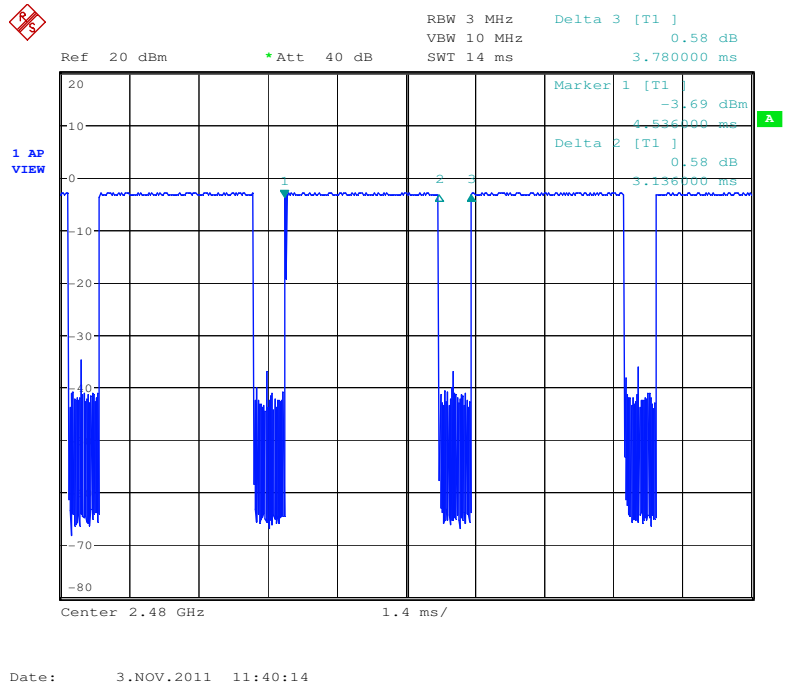
Frequency 2441MHz:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

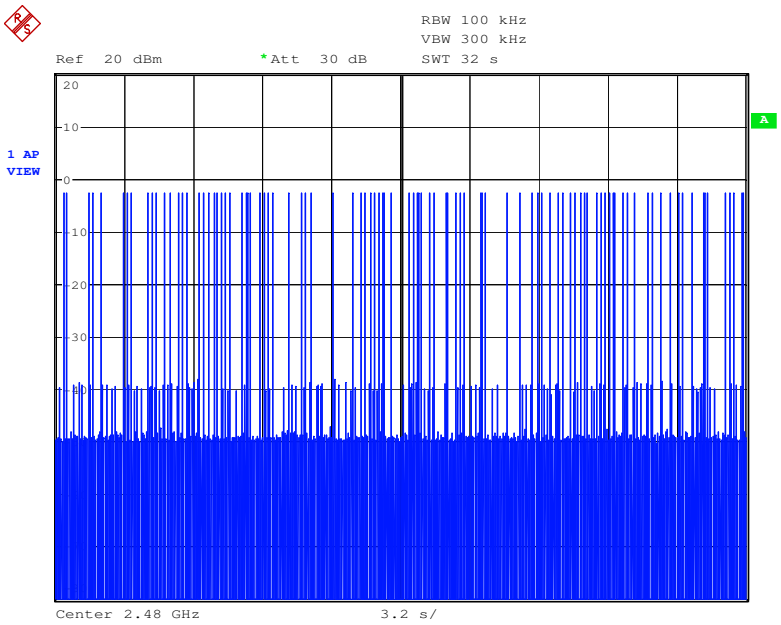


Frequency 2480MHz:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
588 West Jindu Road,Songjiang District,Shanghai,China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5655
ee.shanghai@sgs.com



Freqency (MHz)	Emission Width (ms)	Number of Hopping Channel in 31.6s	Average Time of Occupancy(s)	Limit(s)	Margin(s)	Result
2402	2.856	93	0.266	0.4	0.134	Pass
2441	3.136	88	0.276	0.4	0.124	Pass
2480	3.136	89	0.279	0.4	0.121	Pass

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.7 Maximum Peak Output Power

Test Requirement: FCC Part 15.247

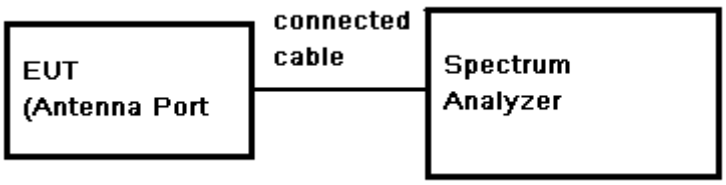
Test Method: Base on ANSI 63.10,DA 00-705

Test Date: Nov 03, 2011

Test Limit: Regulation 15.247 (b)(1)For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Refer to the result "Hopping channel number" of this document. The 1 watt (30.0dBm) limit applies.

Test mode: Test in fixing frequency transmitting mode.

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 = 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.

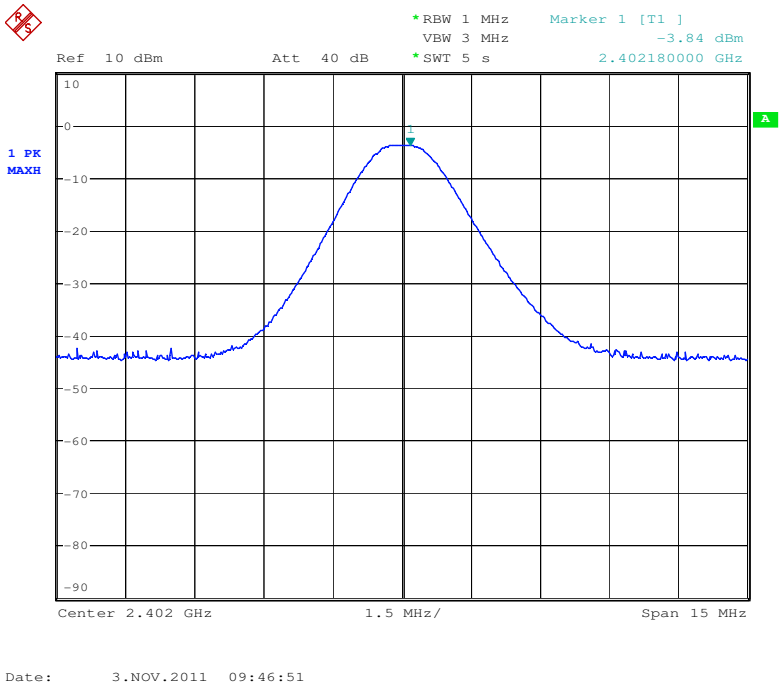
Test Result: Pass

Test Channel	Modulation	Fundamental Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Power		Limit (dBm)	Margin (dB)
					(dBm)	(mW)		
Lowest	GFSK	2.402	-3.84	0.9	-2.94	0.508	30	32.94
Middle	GFSK	2.441	-3.49	0.9	-2.59	0.551	30	32.59
Highest	GFSK	2.480	-3.17	0.9	-2.27	0.593	30	32.27

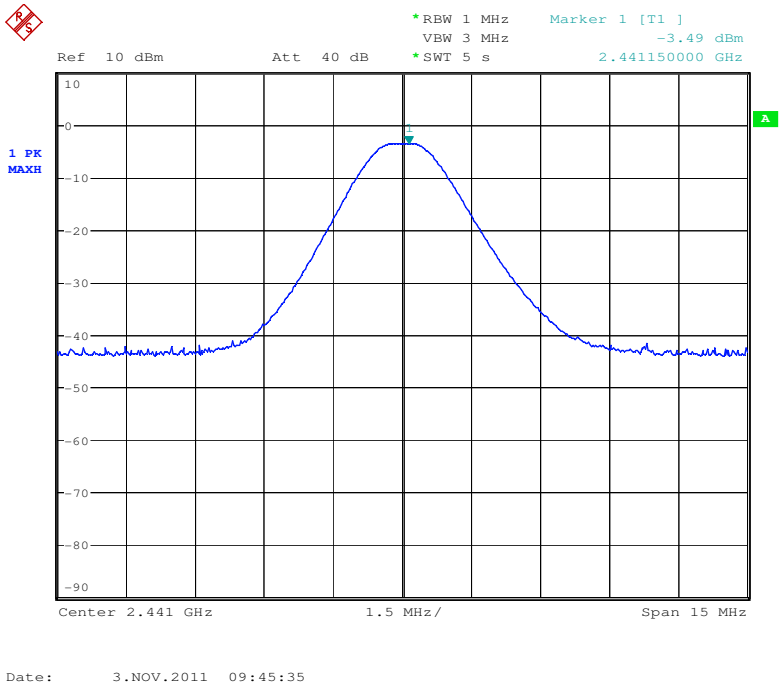
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test result plot as follows:

Low Channel – GFSK:

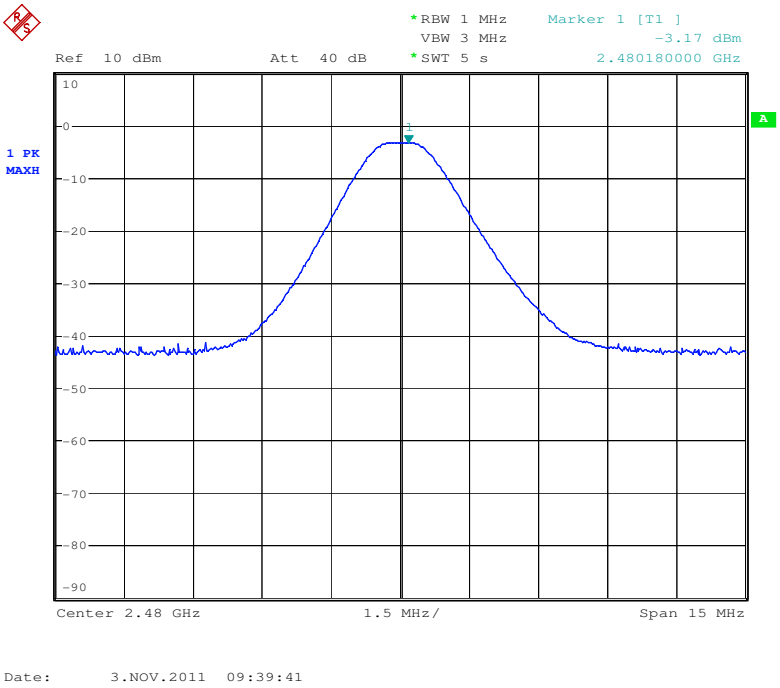


Mid Channel – GFSK:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

High Channel – GFSK:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.8 RF Exposure Compliance Requirement

7.8.1 Standard requirement

15.247(b)(4) requirement:
(4) 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.

TCB Exclusion List (7 July 2002)

Exposure category	low threshold	high threshold
General population	(60/*f*GHz) mW. $d < 2.5$ cm (120/*f*GHz) mW. $d \geq 2.5$ cm	(900/*f*GHz) mW. $d < 20$ cm
Occupational	(375/*f*GHz) mW. $d < 2.5$ cm (900/*f*GHz) mW. $d \geq 2.5$ cm	(2250/*f*GHz) mW. $d < 20$ cm

7.8.2 EUT RF Exposure

The Max Conducted Peak Output Power is -2.27dBm(0.593mW) at 2480MHz.
And the antenna gain at 2441MHz is 0.6dBi PCB integrated in the actual use logarithmic terms convert to numeric result is nearly 1.148;

According to the formula. calculate the EIRP test result:

EIRP= P x G = 0.593 mW x 1.148 = 0.681 mW ①

SAR requirement:

S= 60 / f(GHz) = 60/2.441 = 24.580 mW ② ;

① < ②.

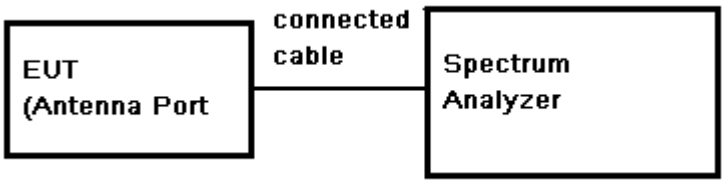
So the SAR test for Bluetooth is not required.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.9 Conducted Spurious Emissions

Test Requirement:	FCC Part 15.247 & DA 00-705
Test Method:	Based on FCC Part15 C Section 15.247&15.209, DA 00-705, ANSI 63.10: 2009.
Test Date:	Nov 07, 2011
Test requirements:	(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.
Test Status:	Test the lowest. Middle, highest channel.

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.

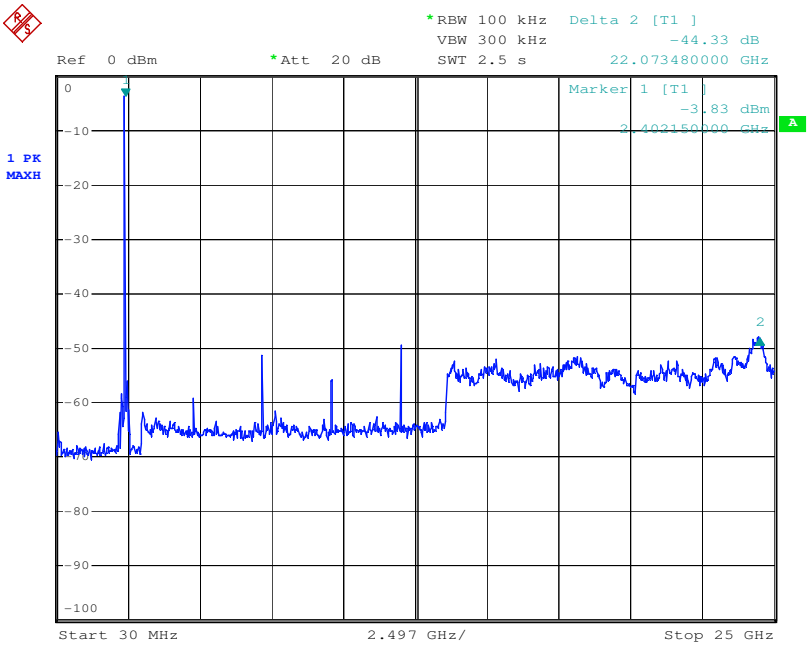
2. Set the spectrum analyzer: RBW = 100KHz. VBW >= RBW. Sweep = auto; Detector Function = Peak (Max. hold).

Test Results: The EUT does meet the FCC requirements.

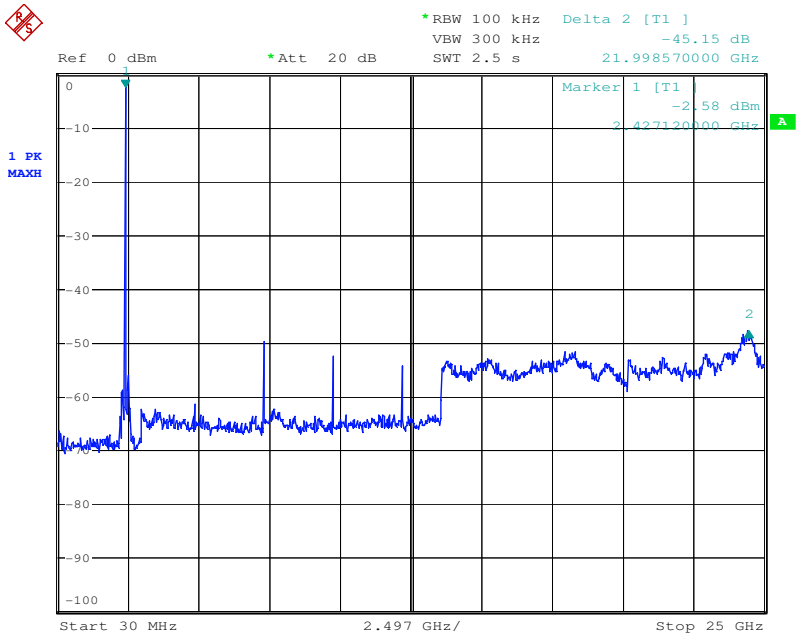
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test result plots as follows:

GFSK Mode: Low Channel:

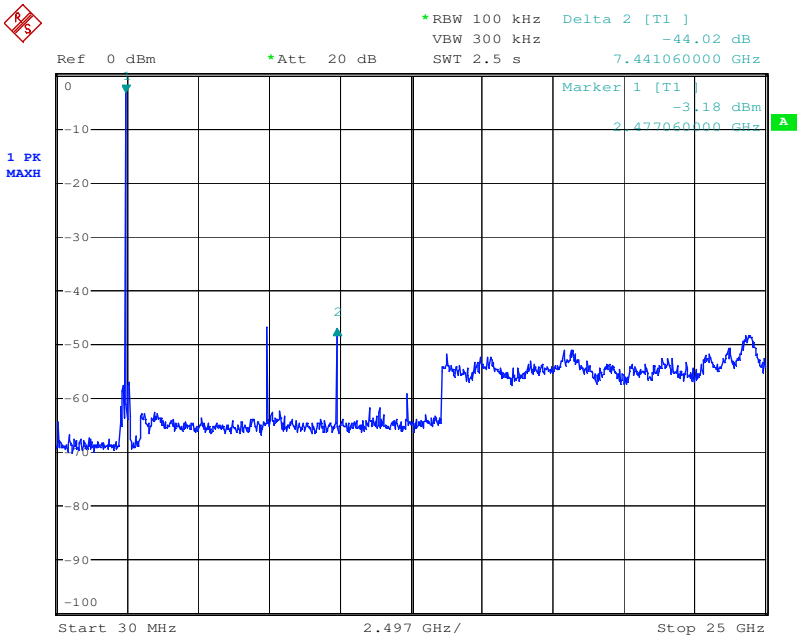


Middle Channel:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

High Channel:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.10 Radiated Spurious Emissions

Test Requirement:	FCC 15.247(d) & 15.209
Test Method:	ANSI C63.10 section 8 & 13
Test Date:	Nov 09 ,2011
Test Status:	Test the lowest. Middle, highest channel.
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 ≥ 1 GHz VBW ≥ 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 dBμV/m above 960MHz
15.247(d) 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test Configuration:

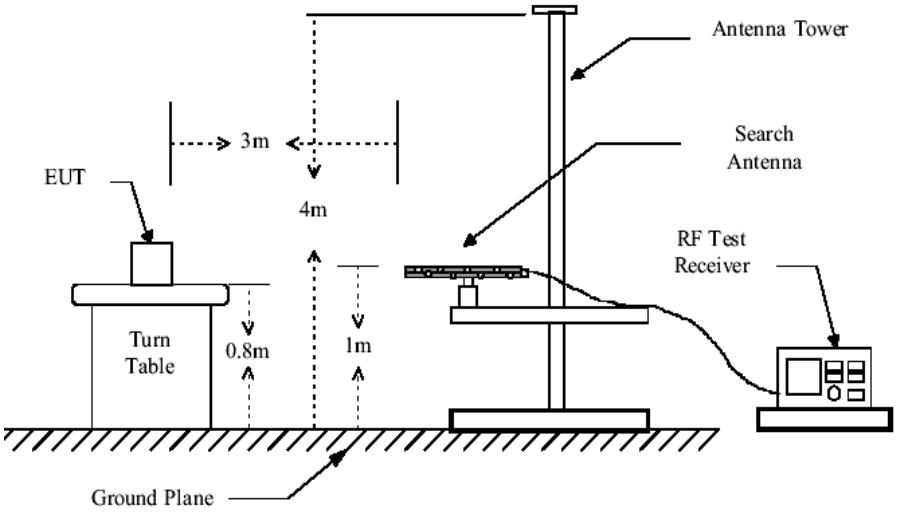


Figure 1. 30MHz to 1GHz radiated emissions test configuration

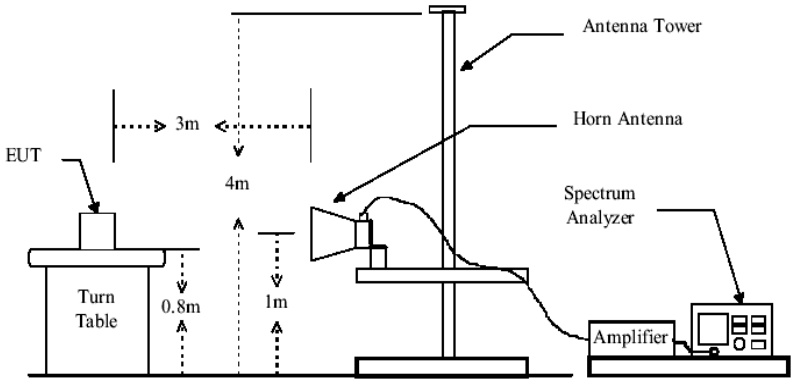


Figure 2. Above 1GHz radiated emissions test configuration

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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

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

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.

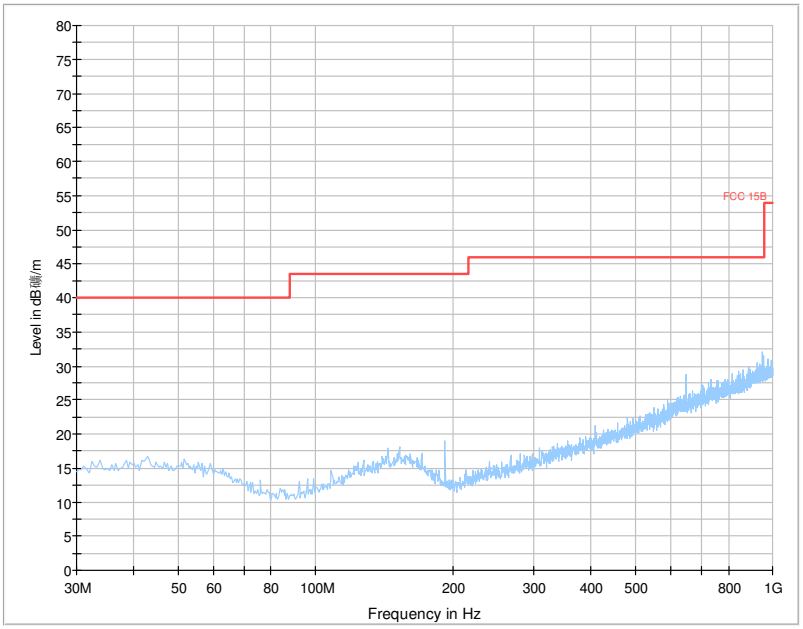
As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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

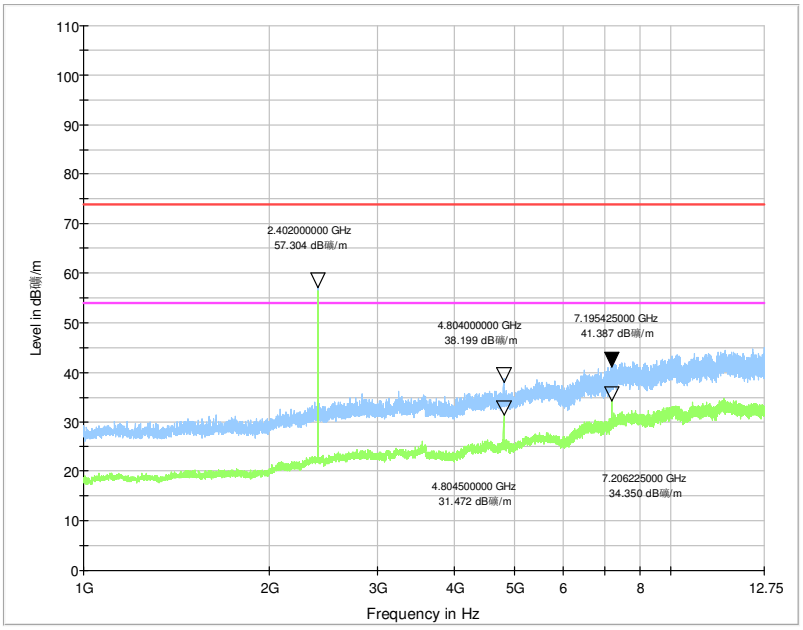
Test Results: The EUT does meet the FCC requirements.

Test results:

Low Channel Vertical

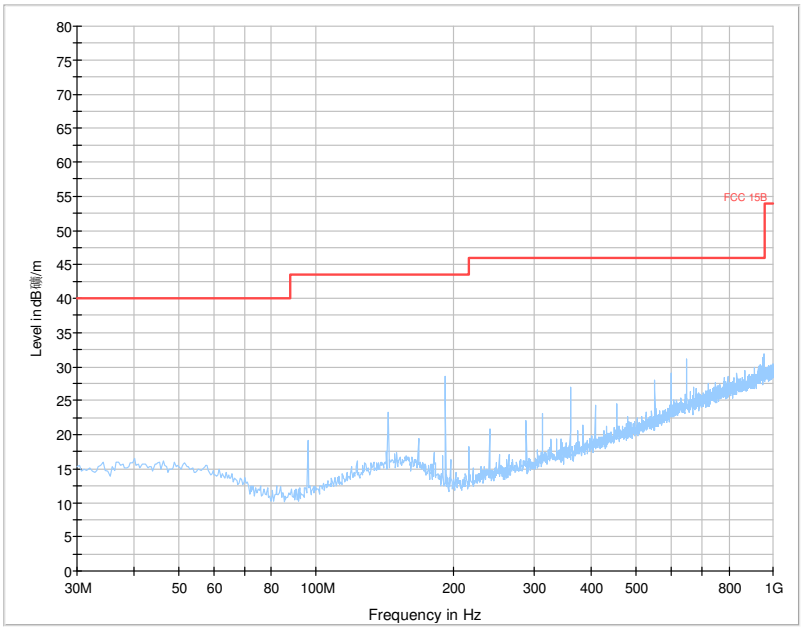


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

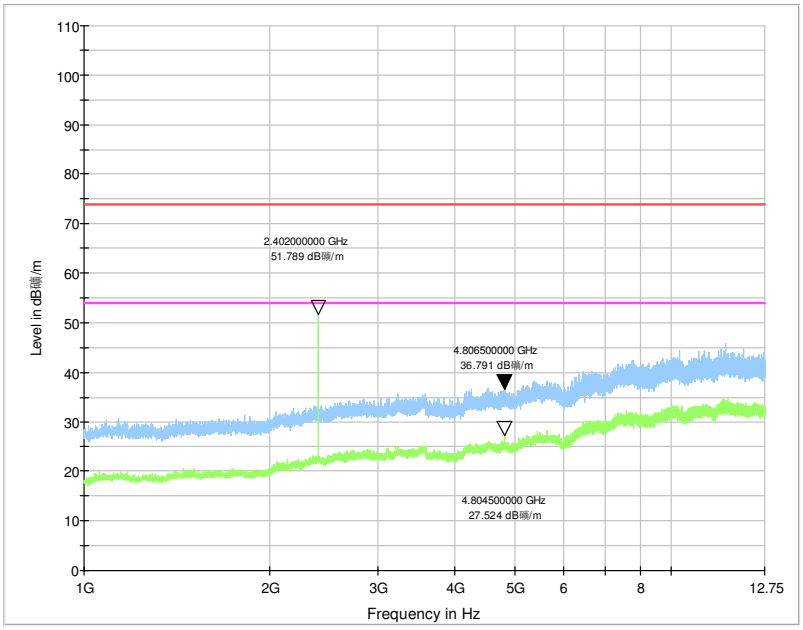


Note: From 2400 MHz to 2483.5MHz is the EUT Bluetoothe working frequency.

Low Channel Horizontal

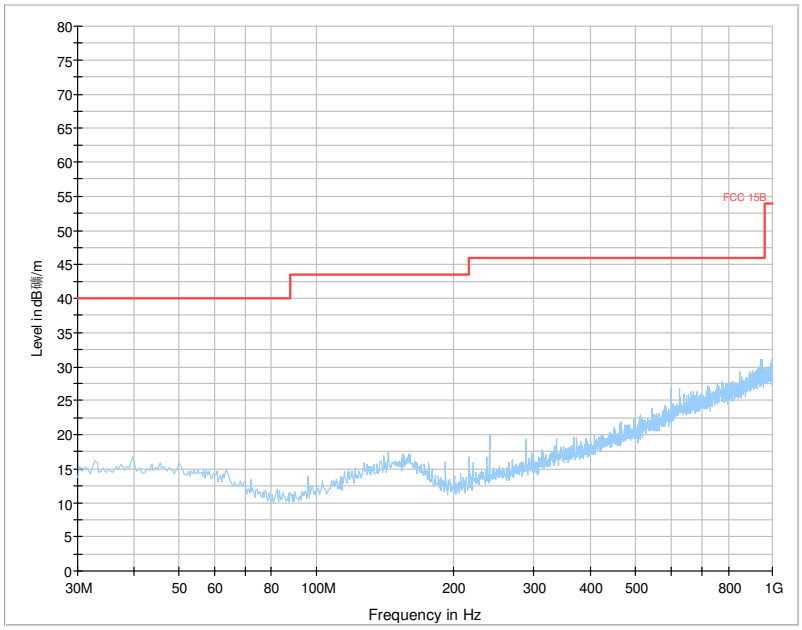


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

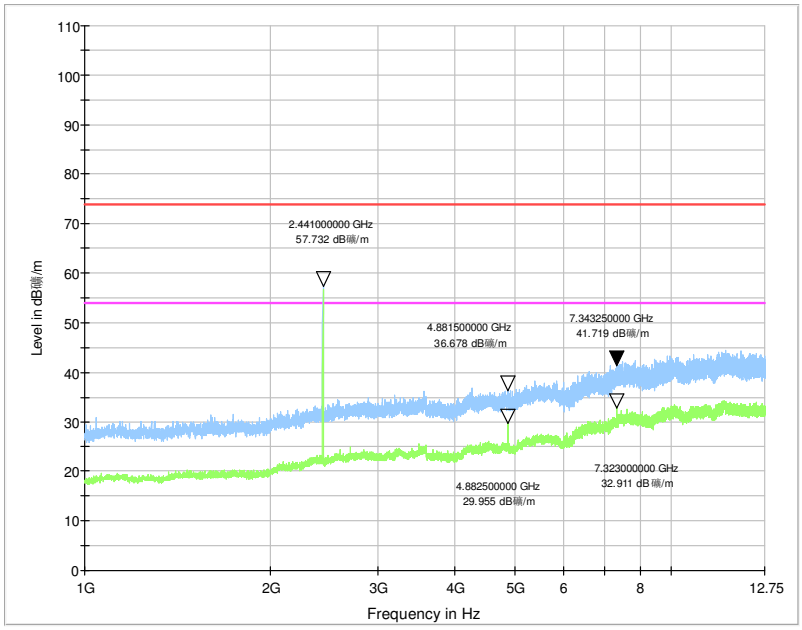


Note: 2400 MHz to 2483.5 MHz is the EUT Bluetoothe working frequency.

Middle Channel Vertical

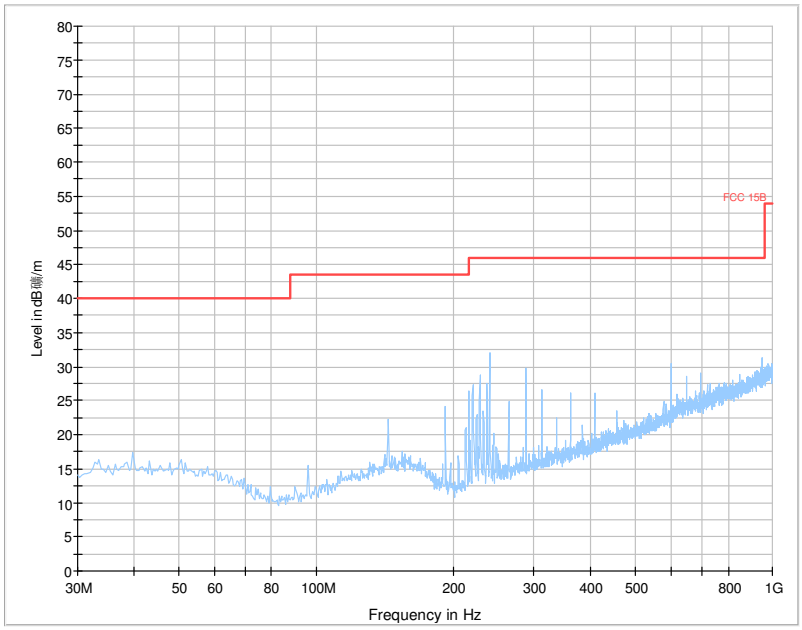


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

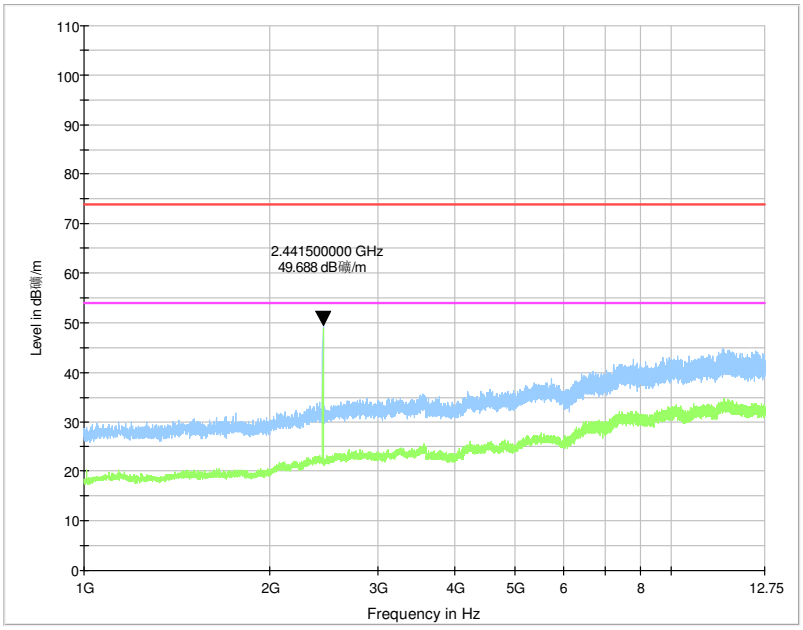


Note: 2400 MHz to 2483.5 MHz is the EUT Bluetoothe working frequency.

Middle Channel Horizontal

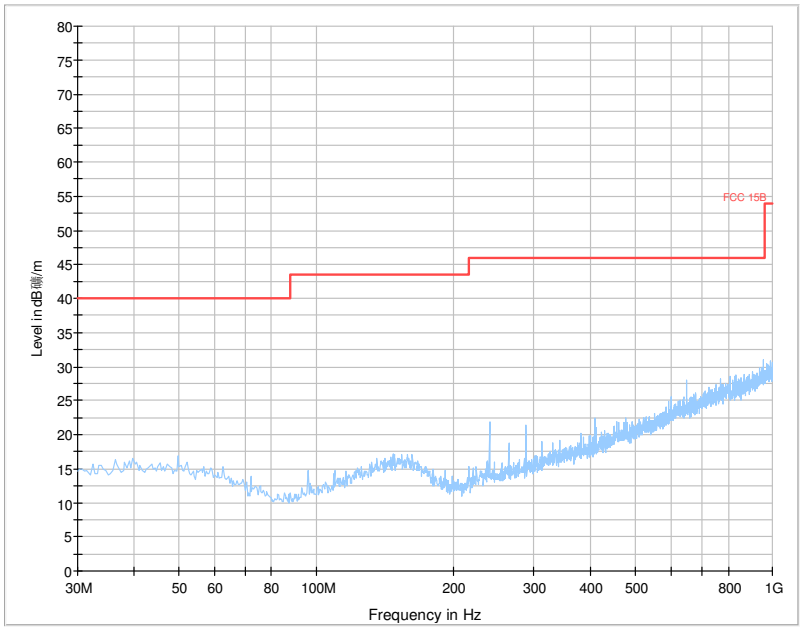


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

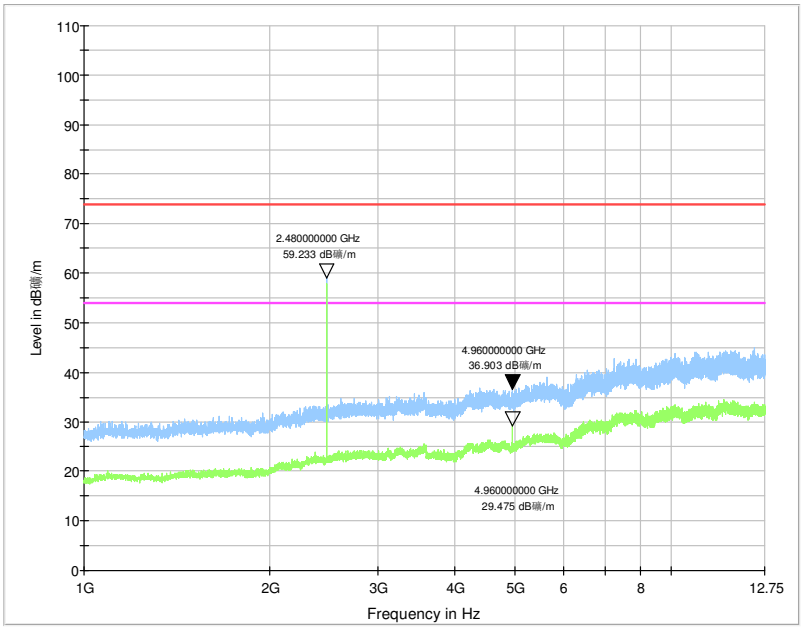


Note: 2400 MHz to 2483.5 MHz is the EUT Bluetoothe working frequency.

High Channel Vertical

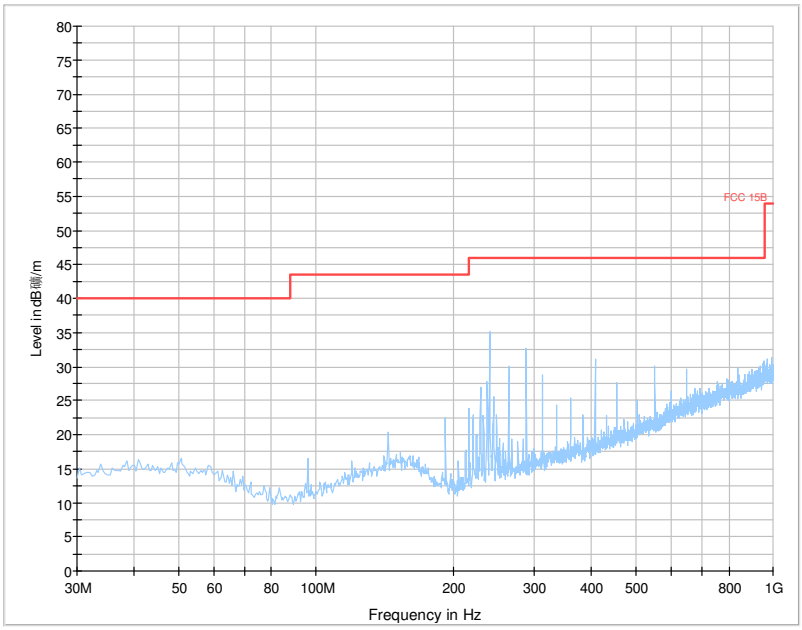


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

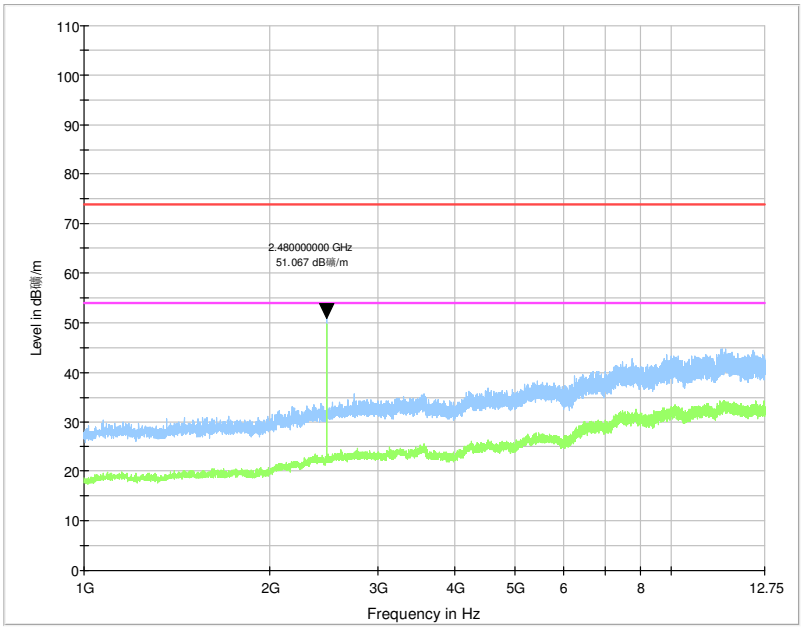


Note: 2400 MHz to 2483.5 MHz is the EUT Bluetoothe working frequency.

High Channel Horizontal



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only



Note: 2400 MHz to 2483.5 MHz is the EUT Bluetoothe working frequency.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

GFSK mode Harmonics test data as follows:

Transmitter:

Test in **Channel Low** in transmitting status- **Vertical** polarization

30MHz~1GHz Spurious Emission,Quasi-Peak Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
42.80	14.2	0.18	24.6	26.92	16.70	40.0
191.80	10.9	0.25	24.5	32.25	18.90	43.5
949.95	22.8	0.42	24.0	32.80	32.02	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4804.0	30.8	1.2	0.5	43.4	49.1	38.20	74.0
7195.4	36.0	1.7	0.8	43.1	45.99	41.39	74.0
12208.7	37.8	2.2	0.9	43.9	47.61	44.61	74.0

Average Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4804.5	30.8	1.2	0.5	43.4	42.37	31.47	54.0
7206.2	36.0	1.7	0.8	43.1	38.95	34.35	54.0
12168.8	37.8	2.2	0.9	43.9	36.71	33.71	54.0

Remark: No other radiation has been found.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test in **Channel Low** in transmitting status- **Horizontal** polarization

30MHz~1GHz Spurious Emissions, Quasi-Peak Measurement:

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
40.09	14.2	0.18	24.6	26.76	16.54	40.0
191.80	10.9	0.25	24.5	41.85	28.50	43.5
952.66	22.8	0.42	24.0	32.67	31.89	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4806.5	30.8	1.2	0.5	43.4	47.69	36.79	74.0
9268.4	36.0	1.7	0.8	43.1	49.08	44.48	74.0
11778.7	37.8	2.2	0.9	43.9	47.74	44.74	74.0

Average Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Filter (dB)	Preamp (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4804.5	30.8	1.2	0.5	43.4	38.42	27.52	54.0
9341.9	36.0	1.7	0.8	43.1	37.82	33.22	54.0
12257.9	37.8	2.2	0.9	43.9	37.00	34.00	54.0

Remark: No other radiation has been found.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test in **Channel Middle** in transmitting status- **Vertical** polarization

30MHz~1GHz Spurious Emissions ,Quasi-Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
39.70	14.2	0.18	24.6	26.85	16.63	40.0
239.91	10.9	0.25	24.5	33.42	20.07	46.0
944.13	22.8	0.42	24.0	31.73	30.95	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4881.5	30.8	1.2	0.5	43.4	47.58	36.68	74.0
7343.3	36.0	1.7	0.8	43.1	46.32	41.72	74.0
11654.5	37.8	2.2	0.9	43.9	47.12	44.12	74.0

Average Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4882.5	30.8	1.2	0.5	43.4	40.86	29.96	54.0
7323.0	36.0	1.7	0.8	43.1	37.51	32.91	54.0
12277.5	37.8	2.2	0.9	43.9	36.71	33.71	54.0

Remark: No other radiation has been found.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test in **Channel Middle** in transmitting status- **Horizontal** polarization

30MHz~1GHz Spurious Emissions ,Quasi-Peak Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
39.70	14.2	0.18	24.6	27.58	17.36	40.0
239.91	10.9	0.25	24.5	45.29	31.94	46.0
949.95	22.8	0.42	24.0	32.05	31.27	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4205.5	30.8	1.2	0.5	43.4	47.00	36.10	74.0
7805.6	36.0	1.7	0.8	43.1	47.20	42.60	74.0
10871.5	37.8	2.2	0.9	43.9	47.69	44.69	74.0

Average Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4233.5	30.8	1.2	0.5	43.4	37.02	26.12	54.0
7877.9	36.0	1.7	0.8	43.1	36.58	31.98	54.0
10955.2	37.8	2.2	0.9	43.9	37.78	34.78	54.0

Remark: No other radiation has been found.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test in **Channel High** in transmitting status- **Vertical** polarization

30MHz~1GHz Spurious Emissions ,Quasi-Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
49.79	14.2	0.18	24.6	27.02	16.80	40.0
239.91	10.9	0.25	24.5	35.30	21.95	43.5
954.60	22.8	0.42	24.0	31.72	30.94	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4960.0	30.8	1.2	0.5	43.4	47.80	36.90	74.0
7278.5	36.0	1.7	0.8	43.1	47.50	42.90	74.0
12226.9	37.8	2.2	0.9	43.9	48.00	45.00	74.0

Average Measurement.

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
4960.0	30.8	1.2	0.5	43.4	40.38	29.48	54.0
7386.5	36.0	1.7	0.8	43.1	36.42	31.82	54.0
12272.8	37.8	2.2	0.9	43.9	37.03	34.03	54.0

Remark: No other radiation has been found.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test in **Channel High** in transmitting status- **Horizontal** polarization

30MHz~1GHz Spurious Emissions ,Quasi-Peak Measurement

Frequency (MHz)	Antenna factors(dB/m)	Cable loss(dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
50.56	14.2	0.18	24.6	26.76	16.54	40.0
239.91	10.9	0.25	24.5	48.54	35.19	43.5
970.51	22.8	0.42	24.0	31.83	31.05	46.0

1~25 GHz Harmonics & Spurious Emissions, Peak & Average Measurement

Peak Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
2742.0	30.8	1.2	0.5	43.4	46.54	35.64	74.0
7773.2	36.0	1.7	0.8	43.1	47.31	42.71	74.0
12207.3	37.8	2.2	0.9	43.9	47.45	44.45	74.0

Average Measurement

Frequency (MHz)	Antenna factors (dB/m)	Cable loss(dB)	Filter (dB)	Preamp factor(dB)	Emission Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)
2784.0	30.8	1.2	0.5	43.4	35.43	24.53	54.0
7869.8	36.0	1.7	0.8	43.1	37.20	32.60	54.0
12293.0	37.8	2.2	0.9	43.9	37.09	34.09	54.0

Remark: No other radiation has been found.

Test Level =Receiver Reading + Antenna Factor + Cable Factor+ Filter –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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.10.1 Radiated Emissions which fall in the restricted bands

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:	Base on ANSI 63.10:2009
Test Date:	Nov 09, 2011
Measurement Distance:	3m (Semi-Anechoic Chamber)
Limit:	40.0 dBμV/m between 30MHz & 88MHz; 43.5 dBμV/m between 88MHz & 216MHz; 46.0 dBμV/m between 216MHz & 960MHz; 54.0 dBμV/m above 960MHz.
Detector:	For PK value: RBW = 1 MHz for f ≥ 1 GHz VBW ≥ 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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Test Result: Pass

Low Channel, Horizontal

Frequency (MHz)	Factor (dB/m)	Peak Reading Level (dBμV)	Average Reading Level (dBμV)	Peak Emission Level (dBμV/m)	Average Emission Level (dBμV/m)
2400	-10.04	43.57	39.60	33.53	29.56

Low Channel, Vertical

Frequency (MHz)	Factor (dB/m)	Peak Reading Level (dBμV)	Average Reading Level (dBμV)	Peak Emission Level (dBμV/m)	Average Emission Level (dBμV/m)
2400	-10.04	43.06	33.35	33.02	23.31

High Channel, Horizontal

Frequency (MHz)	Factor (dB/m)	Peak Reading Level (dBμV)	Average Reading Level (dBμV)	Peak Emission Level (dBμV/m)	Average Emission Level (dBμV/m)
2483.5	-10.04	45.68	34.58	35.64	24.54

High Channel, Vertical

Frequency (MHz)	Factor (dB/m)	Peak Reading Level (dBμV)	Average Reading Level (dBμV)	Peak Emission Level (dBμV/m)	Average Emission Level (dBμV/m)
2483.5	-10.04	45.14	35	35.10	24.96

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

Test Level = Receiver Reading + Factor

(Remark: Factor = Antenna Factor + Cable Factor- Preamplifier Factor)

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company’s findings at the time of its intervention only and within the limits of Client’s instructions, if any. The Company’s sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

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		

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

7.11 Band Edges Requirement

Test Requirement:	FCC Part 15 C
Test Method:	Based on ANSI 63.10
	Operation within the band 2400M – 2483.5 MHz
Test Date:	Nov 07,2011
Requirements:	Section 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 Section 15.209(a) is not required. 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)).
Method of Measurement:	Set RBW of spectrum analyzer to 100 kHz and VBW of spectrum analyzer to 300 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

The band edges was measured and recorded Result:

The Lower Edges attenuated more than 20dB.

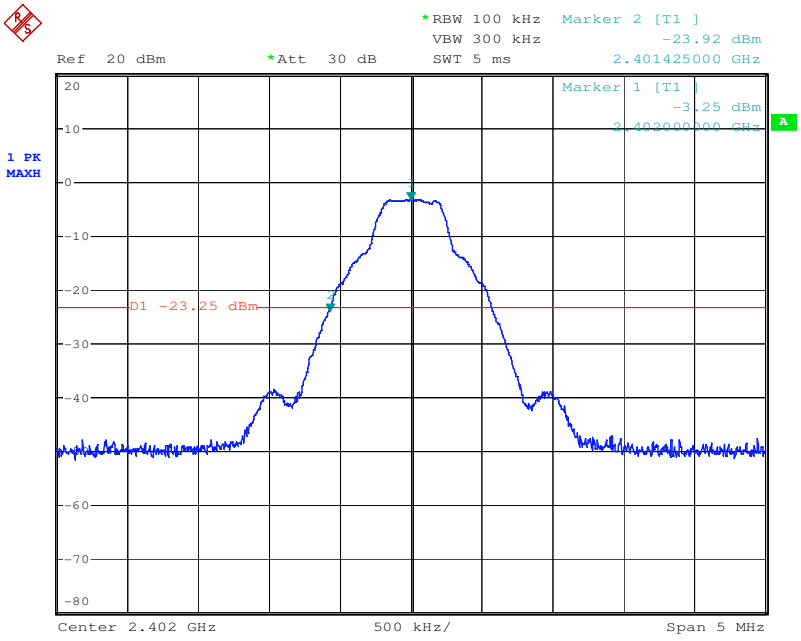
The Upper Edges attenuated more than 20dB.

Test Result: The EUT does meet the FCC requirements.

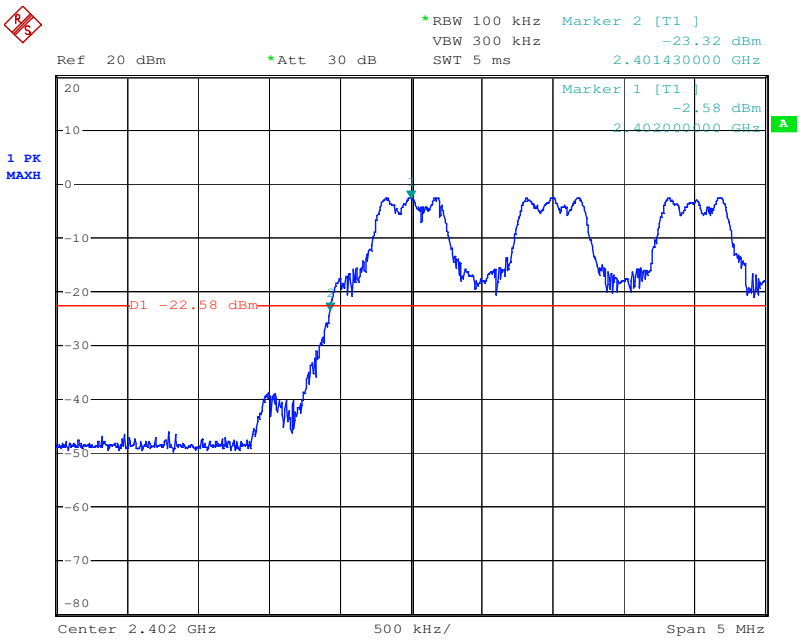
The graph as below. represents the emissions take for this device.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Static GFSK Low Channel:



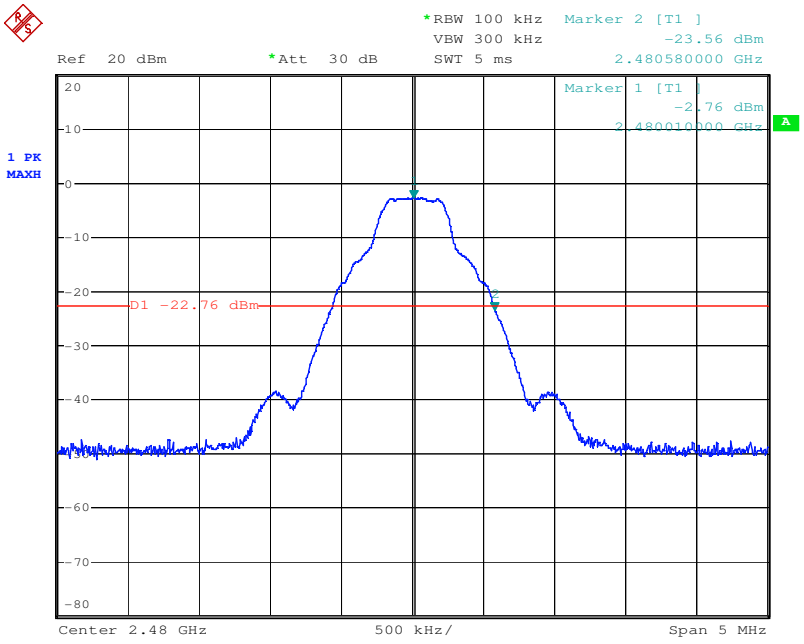
Hopping GFSK Low Channel:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

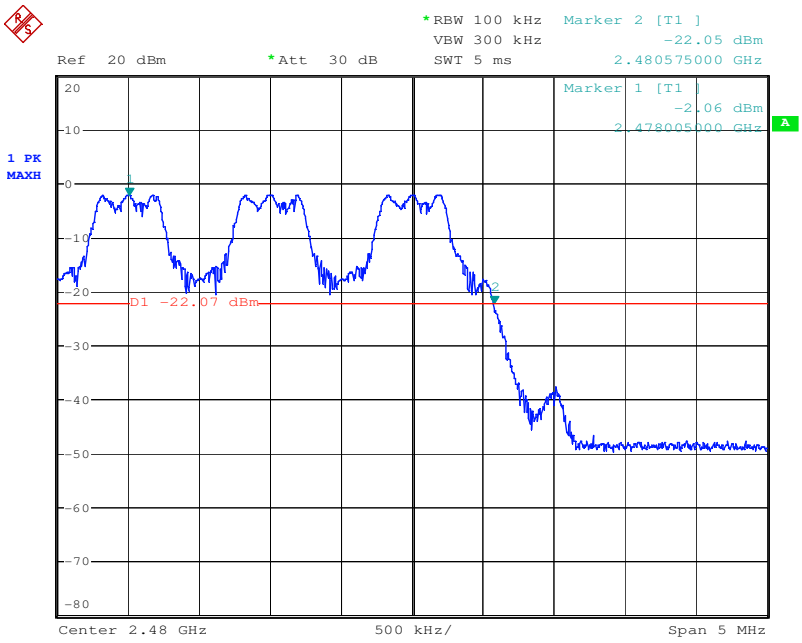
Channel	Peak Point		-20dB Point	
	Frequency(MHz)	Power (dBm)	Frequency(MHz)	Power (dBm)
Static	2402.00	-3.25	2401.43	-23.92
Hopping	2402.00	-2.58	2401.43	-23.32

Static GFSK High Channel:



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only

Hopping GFSK High Channel:



Channel	Peak Point		-20dB Point	
	Frequency(MHz)	Power (dBm)	Frequency(MHz)	Power (dBm)
Static	2480.01	-2.76	2480.58	-23.56
Hopping	2478.01	-2.06	2480.58	-22.05

The end of report

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to thesample(s) tested and such sample(s) are retained for 90 days only