

FCC PART 15.247
EMI MEASUREMENT AND TEST REPORT

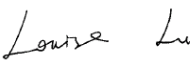
For

LAYON International Electronic & Telecom Co., Ltd

No.32, BaoHeRoad, NanZhou Street, GuangZhou, China

FCC ID: TNBUNI03

November 4, 2005

This Report Concerns: ☒ Original Report	Equipment Type: Bluetooth Headset
Test Engineer: <u>Louise Lu</u> 	
Report No.: <u>RSZ05102701</u>	
Test Date: <u>November 1, 2005</u>	
Reviewed By: <u>Chris Zeng</u> 	
Prepared By: Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008	

Note: The test report is specially limited to the above company and this particular sample only.
It may not be duplicated without prior written consent of Bay Area Compliance Lab Corp.
(ShenZhen). This report **must not** be used by the client to claim product certification,
approval, or endorsement by NVLAP, NIST or any agency of the US Government.

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION	6
DESCRIPTION OF TEST CONFIGURATION	6
EQUIPMENT MODIFICATIONS	6
CONFIGURATION OF TEST SETUP	7
BLOCK DIAGRAM OF TEST SETUP	7
SUMMARY OF TEST RESULTS	8
§15.203 - ANTENNA REQUIREMENT.....	9
APPLICABLE STANDARD	9
§15.205, §15.209, §15.247 - RADIATED EMISSION	10
APPLICABLE STANDARD	10
MEASUREMENT UNCERTAINTY.....	10
EUT SETUP.....	10
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	11
TEST EQUIPMENT LIST AND DETAILS.....	11
TEST PROCEDURE	11
CORRECTED AMPLITUDE & MARGIN CALCULATION	11
TEST RESULTS SUMMARY	12
TEST DATA	12
§15.247(a)(1)-CHANNEL SEPARATION TEST	14
APPLICABLE STANDARD	14
TEST EQUIPMENT LIST AND DETAILS.....	14
TEST PROCEDURE	14
TEST DATA	14
§15.247(a)(1) 20dB BANDWIDTH TESTING.....	18
APPLICABLE STANDARD	18
TEST EQUIPMENT LIST AND DETAILS.....	18
TEST PROCEDURE	18
TEST DATA	18
§15.247(a)(1)(iii)-QUANTITY OF HOPPING CHANNEL TEST	22
APPLICABLE STANDARD	22
TEST EQUIPMENT LIST AND DETAILS.....	22
TEST PROCEDURE	22
TEST DATA	22
§15.247(a)(1)(iii) -TIME OF OCCUPANCY (DWELL TIME).....	24
APPLICABLE STANDARD	24
TEST EQUIPMENT LIST AND DETAILS.....	24
TEST PROCEDURE	24
TEST DATA	24
§15.247(b)(1) - PEAK OUTPUT POWER MEASUREMENT	31
APPLICABLE STANDARD	31
TEST EQUIPMENT LIST AND DETAILS.....	31
TEST PROCEDURE	31
TEST DATA	31
§15.247(d)- BAND EDGES TESTING.....	35

APPLICABLE STANDARD35

TEST EQUIPMENT LIST AND DETAILS.....35

TEST PROCEDURE35

TEST DATA35

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *LAYON International Electronic & Telecom Co., Ltd*'s product, model number: U&I-03 or the "EUT" as referred to in this report is a Bluetooth Headset . The EUT is measured approximately 5.8 cm L x 2.3 cm W x 2.0 cm H, rated input voltage: DC 3.7V battery.

** The test data gathered are from production sample, serial number: 59123B003C26, provided by the manufacturer, we receive the EUT 2005-10-27.*

Objective

The following test report is prepared on behalf of *LAYON International Electronic & Telecom Co., Ltd* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, and 15.247 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

Equipment Modifications

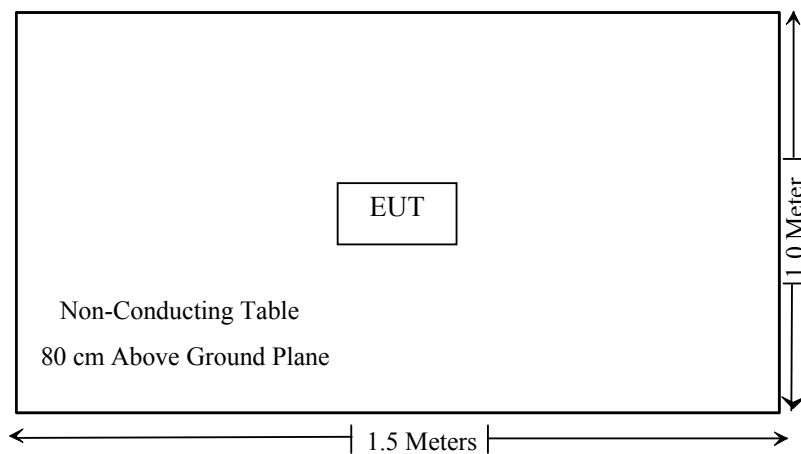
Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

Configuration of Test Setup



EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.205&§15.209	Radiated Emission	Compliant *
§15.247(a)(1)	Channel Separation Test	Compliant
§15.247(a)(1)(iii)	Time of occupancy (Dwell Time)	Compliant
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
§15.247(b)(1)	Peak Output Power Measurement	Compliant
§15.247(d)	Band edges testing	Compliant
§15.247(b)(5) § 2.1093	RF Safety Requirements	Compliant
§ 2.1051	Spurious Emission at Antenna Port	Compliant

* Within measurement uncertainty

§15.203 - ANTENNA REQUIREMENT

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a permanent antenna, fulfill the requirement of this section, Antenna Gain: 1.5dBi.

Test Result: Pass

§15.205, §15.209, §15.247 - RADIATED EMISSION

Applicable Standard

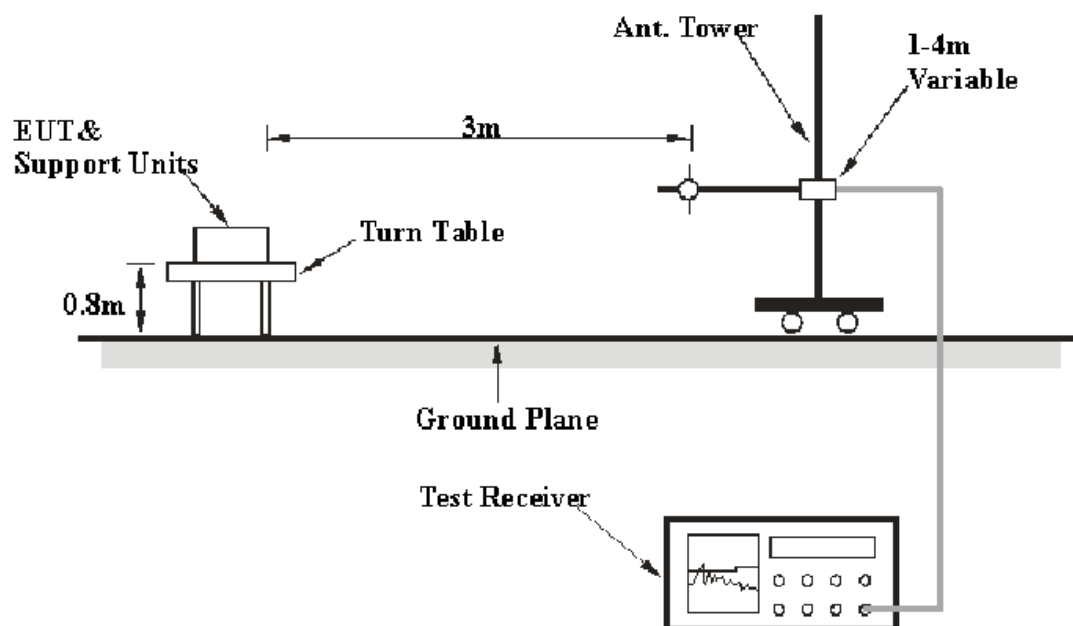
According to FCC §15.247 (d)

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Lab Corp. (ShenZhen) is ± 4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 and FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>
30MHz – 1000 MHz	100 kHz	300 kHz
1000 MHz – 25 GHz	1 MHz	3 MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
A.H. System	Horn Antenna	SAS-200/571	135	2005-4-28	2006-4-28
HP	Amplifier	HP8447D	2944A09795	2005-8-17	2006-8-17
HP	Preamplifier	8449B	3008A00277	2005-8-17	2006-8-17
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10
Rohde&Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2005-4-28	2006-4-28

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the PK&AV detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Standard Limit}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.207, and 15.247, with the worst margin reading of:

-2.5 dB at 12010 MHz in the **Horizontal** polarization, Low Channel

-2.3 dB at 12205 MHz in the **Vertical** polarization, Middle Channel

-2.7 dB at 9920 MHz in the **Vertical** polarization, High Channel

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Louise Lu on 2005-11-1.

Test mode: Transmitting

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209 & FCC 15.247	
Frequency	Meter Reading	Comments	Angle	Height	Polar	Antenna Loss	Cable Loss	Amp. Gain	Corr. Ampl.	Limit	Margin
MHz	dBμV/m		Degree	Meter	H/ V	dB	dB	dB	dBμV/m	dBμV/m	dB
Low Channel, 1GHz-25GHz											
2402	92.82	PK (Fundamental)	180	1.2	H	28.1	3.7	35.00	89.6		
2402	91.45	AV (Fundamental)	90	1.0	H	28.1	3.7	35.00	88.3		
2402	91.46	PK (Fundamental)	60	1.2	V	28.1	3.7	35.00	88.3		
2402	90.38	AV (Fundamental)	270	1.0	V	28.1	3.7	35.00	87.2		
12010	38.12	AV (Harmonics)	90	1.2	H	40.5	7.9	35.00	51.5	54	-2.5 *
12010	36.23	AV (Harmonics)	45	1.2	V	40.5	7.9	35.00	49.6	54	-4.4
12010	42.54	PK (Harmonics)	90	1.2	H	40.5	7.9	35.00	55.9	74	-18.1
12010	41.27	PK (Harmonics)	45	1.2	V	40.5	7.9	35.00	54.7	74	-19.3
7206	43.82	PK (Harmonics)	90	1.2	H	36.8	6.0	33.50	53.1	74	-20.9
9608	43.28	PK (Harmonics)	45	1.2	V	36.7	7.0	34.72	52.3	74	-21.7
7206	42.69	PK (Harmonics)	270	1.0	V	36.8	6.0	33.50	52.0	74	-22.0
9608	42.19	PK (Harmonics)	60	1.2	H	36.7	7.0	34.72	51.2	74	-22.8
4804	44.68	PK (Harmonics)	60	1.2	H	33.8	5.2	33.00	50.7	74	-23.3
4804	44.31	PK (Harmonics)	60	1.0	V	33.8	5.2	33.00	50.3	74	-23.7

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209 & FCC 15.247	
Frequency MHz	Meter Reading dBμV/m	Comments	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB	Cable Loss dB	Amp. Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
Middle Channel, 1GHz-25GHz											
2441	91.24	PK (Fundamental)	180	1.2	H	28.1	3.7	35.00	88.0		
2441	90.50	AV (Fundamental)	90	1.0	H	28.1	3.7	35.00	87.3		
2441	89.30	PK (Fundamental)	60	1.2	V	28.1	3.7	35.00	86.1		
2441	87.80	AV (Fundamental)	270	1.0	V	28.1	3.7	35.00	84.6		
12205	38.29	AV (Harmonics)	60	1.2	V	40.5	7.9	35.00	51.7	54	-2.3 *
12205	42.06	PK (Harmonics)	60	1.2	V	40.5	7.9	35.00	55.5	74	-18.5
9764	42.88	PK (Harmonics)	60	1.2	V	38.0	7.0	34.72	53.2	74	-20.8
12205	39.20	PK (Harmonics)	45	1.2	H	40.5	7.9	35.00	52.6	74	-21.4
7323	42.95	PK (Harmonics)	60	1.0	H	35.8	6.1	33.50	51.4	74	-22.7
9764	40.23	PK (Harmonics)	60	1.0	H	38.0	7.0	34.72	50.5	74	-23.5
7323	41.65	PK (Harmonics)	270	1.0	V	35.8	6.1	33.50	50.1	74	-24.0
4882	43.27	PK (Harmonics)	45	1.2	V	33.8	5.2	33.00	49.3	74	-24.7
4882	43.24	PK (Harmonics)	45	1.2	H	33.8	5.2	33.00	49.2	74	-24.8
High Channel, 1GHz-25GHz											
2480	91.42	PK (Fundamental)	180	1.2	H	28.1	3.7	35.00	88.2		
2480	90.03	AV (Fundamental)	90	1.0	H	28.1	3.7	35.00	86.8		
2480	90.07	PK (Fundamental)	60	1.2	V	28.1	3.7	35.00	86.9		
2480	88.63	AV (Fundamental)	270	1.0	V	28.1	3.7	35.00	85.4		
9920	40.92	AV (Harmonics)	45	1.2	V	37.6	7.3	34.50	51.3	54	-2.7 *
12400	36.54	AV (Harmonics)	45	1.0	V	41.2	7.9	34.58	51.1	54	-2.9 *
12400	35.86	AV (Harmonics)	45	1.2	H	41.2	7.9	34.58	50.4	54	-3.6 *
12400	40.69	PK (Harmonics)	45	1.0	V	41.2	7.9	34.58	55.2	74	-18.8
12400	40.35	PK (Harmonics)	45	1.2	H	41.2	7.9	34.58	54.9	74	-19.1
9920	43.81	PK (Harmonics)	45	1.2	V	37.6	7.3	34.50	54.2	74	-19.8
9920	41.28	PK (Harmonics)	90	1.2	H	37.6	7.3	34.50	51.7	74	-22.3
4960	45.64	PK (Harmonics)	60	1.2	H	33.8	5.2	33.00	51.6	74	-22.4
7440	43.82	PK (Harmonics)	60	1.2	H	35.8	6.1	34.11	51.6	74	-22.4
7440	42.65	PK (Harmonics)	60	1.0	V	35.8	6.1	34.11	50.4	74	-23.6
4960	44.32	PK (Harmonics)	60	1.0	V	33.8	5.2	33.00	50.3	74	-23.7

* Within measurement uncertainty

§15.247(a)(1)-CHANNEL SEPARATION TEST**Applicable Standard**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB 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 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 100 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another truce.
3. Measure the channel separation.

Test Data**Environmental Conditions**

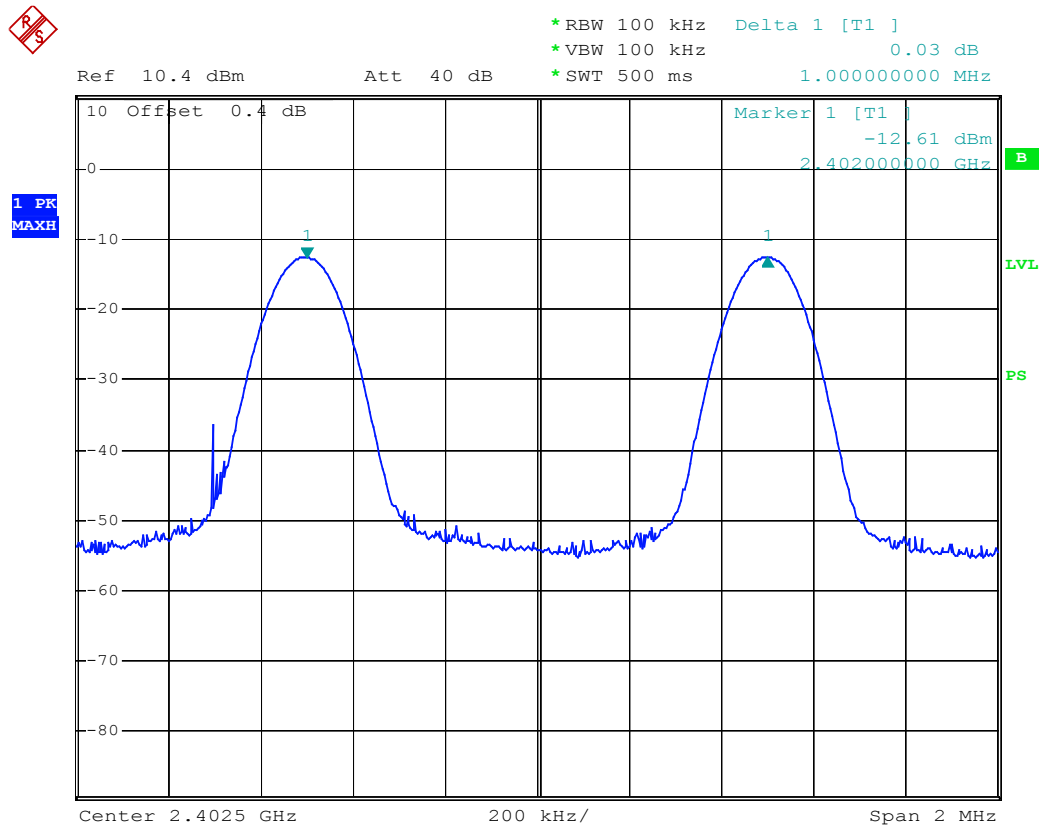
Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

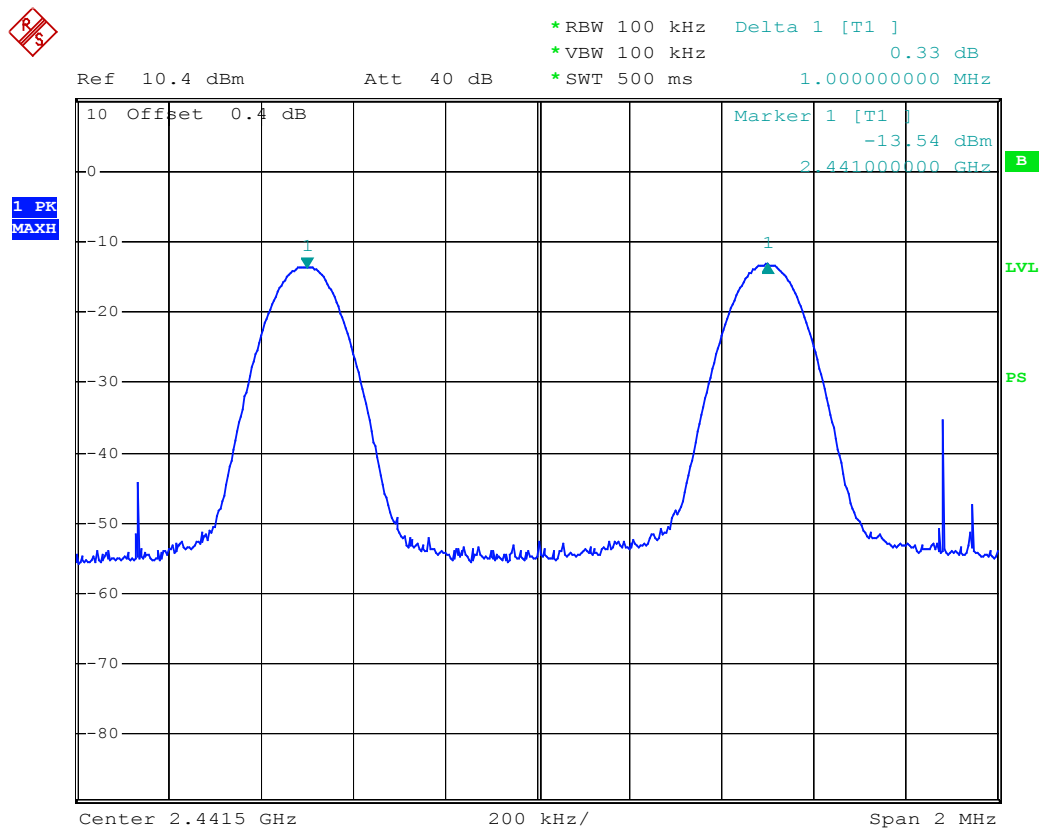
Test mode: Transmitting

CHANNEL	CHANNEL FREQUENCY (MHz)	SEPARATION READ VALUE (kHz)
Low Channel	2402	1000
Adjacency Channel	2403	
Middle Channel	2441	1000
Adjacency Channel	2442	
High Channel	2480	1000
Adjacency Channel	2479	



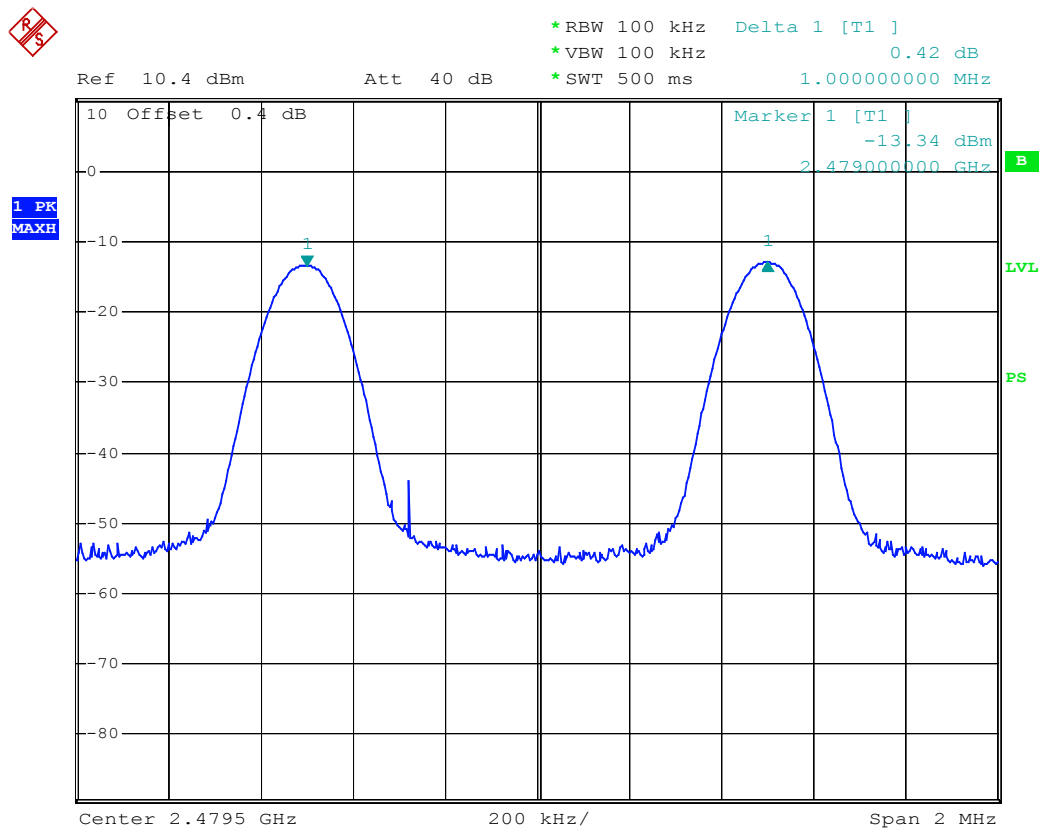
Channel seperation low

Date: 1.NOV.2005 13:32:04



Channel seperation mid

Date: 1.NOV.2005 13:34:08



Channel seperation high

Date: 1.NOV.2005 13:35:30

§15.247(a)(1) 20dB BANDWIDTH TESTING**Applicable Standard**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB Bandwidth of the hopping channel, whichever is greater.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to the tunable table. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data**Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	1032mbar

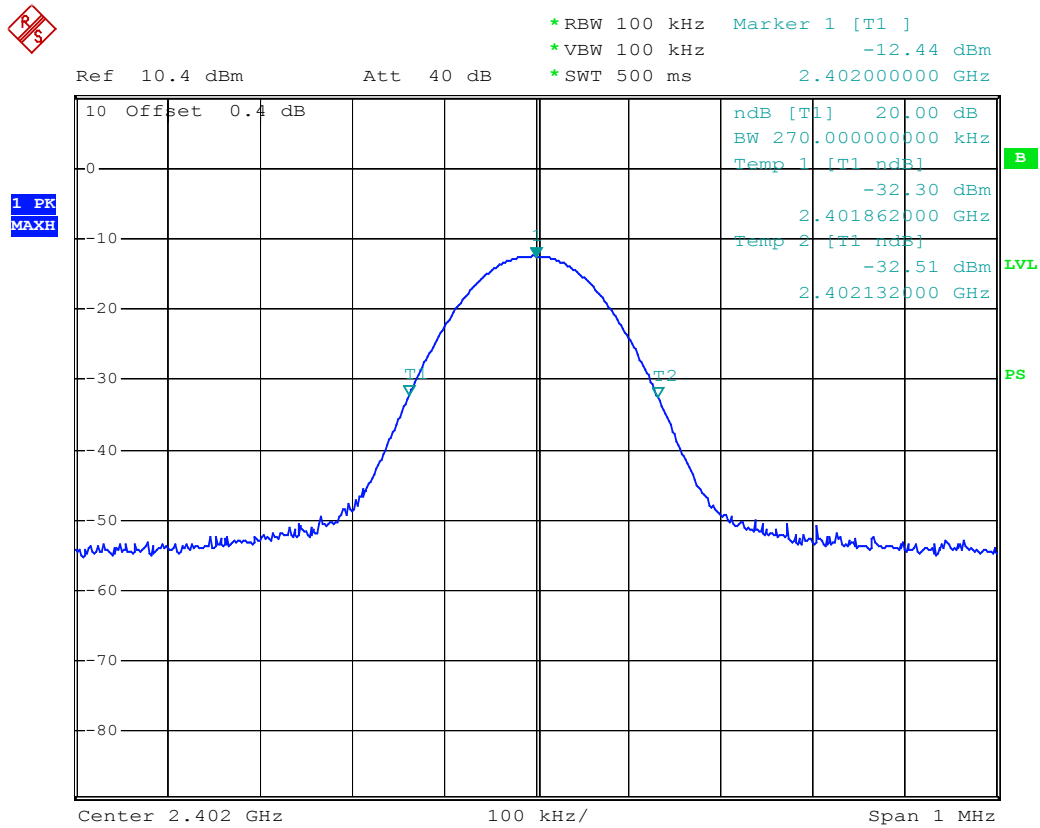
The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

Test mode: Transmitting

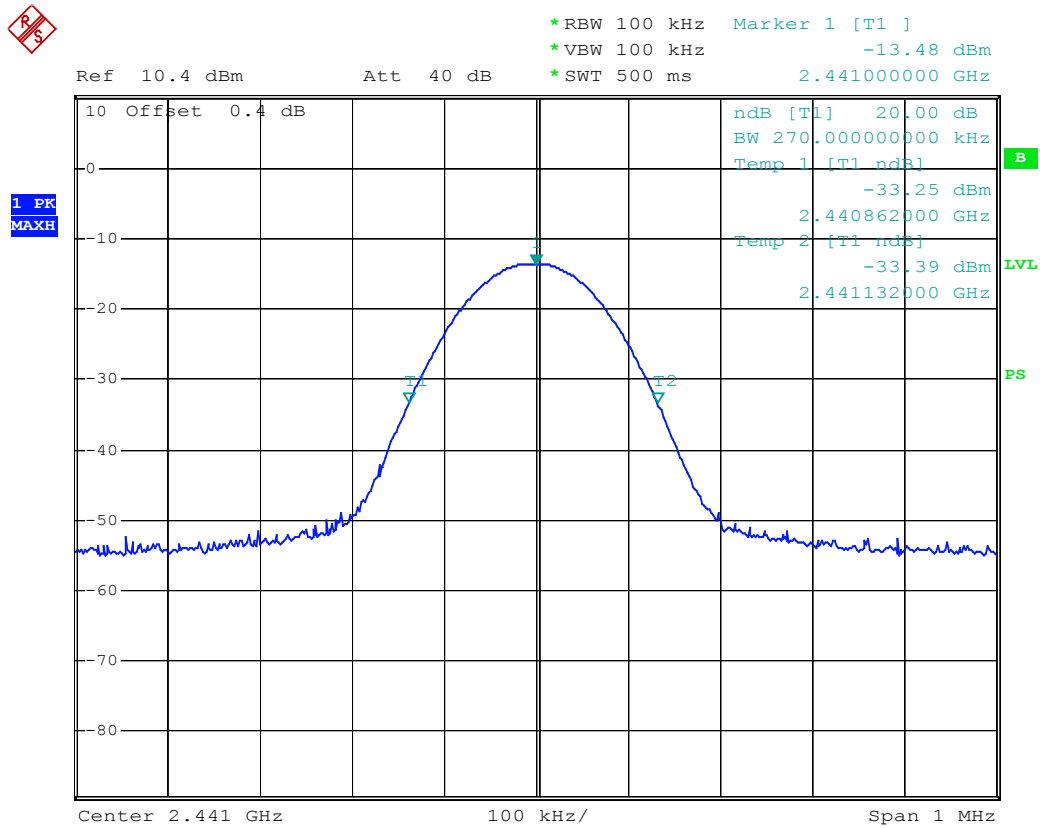
The result has been complied with the §15.247(a)(1), see the following plot:

Channel	Channel frequency (MHz)	20dB Bandwidth (KHz)
Low channel	2402	270
Middle channel	2441	270
High channel	2480	272



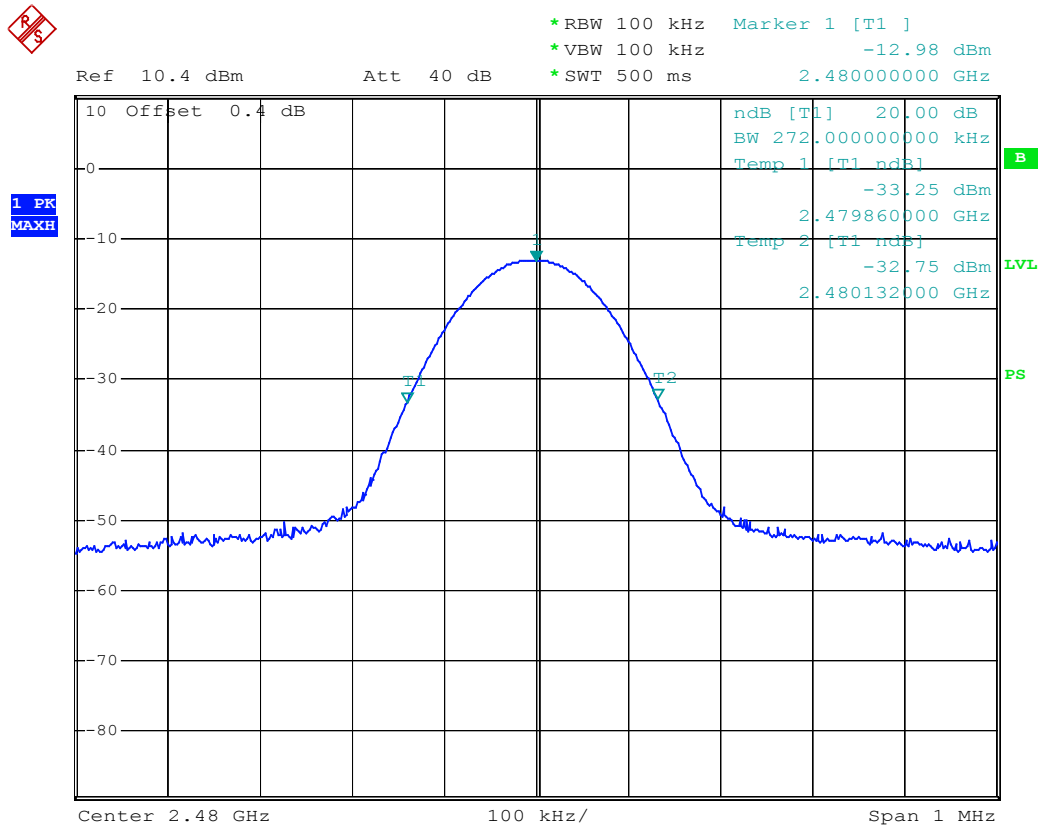
20dB BW low CH

Date: 1.NOV.2005 13:29:00



20dB BW mid CH

Date: 1.NOV.2005 13:23:15



20dB BW high CH

Date: 1.NOV.2005 13:28:10

§15.247(a)(1)(iii)-QUANTITY OF HOPPING CHANNEL TEST**Applicable Standard**

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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Set the EUT in transmitting mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

Limit

FCC Part 15, Subpart C Section 15.247

FREQUENCY RANGE (MHz)	Limit (Quantity of Hopping Channel)			
	20 dB bandwidth <250 kHz	20 dB bandwidth >250 kHz	20 dB bandwidth <1 MHz	20 dB bandwidth >1 MHz
902-928	50	25	N/A	N/A
2400-2483.5	N/A	N/A	15	15
5725-5850	N/A	N/A	75	N/A

Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

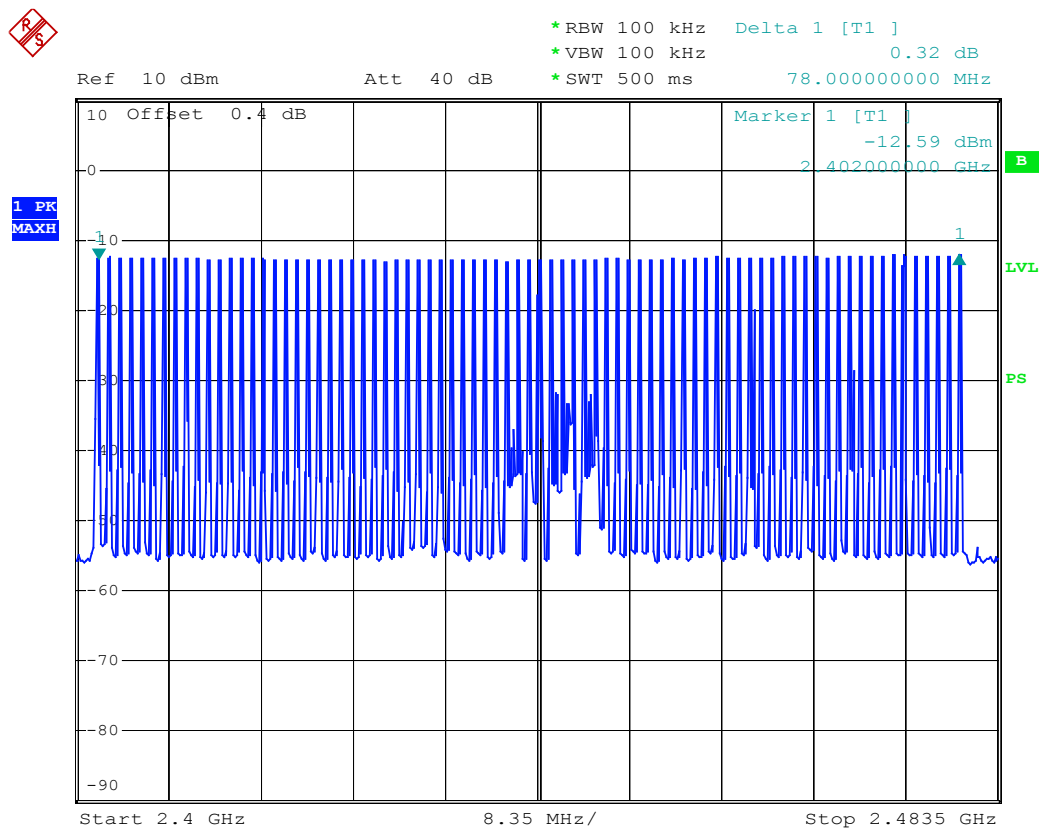
The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

Test mode: Transmitting

The frequency hopping systems operating in 2.4~2.4835 GHz band employ 79 nonoverlapping channels.

Hopping Channel Frequency Range (MHz)	Quantity OF hopping Channel Read Value (Channel)	Quantity Of Hopping channel limit (Channel)
2402 ~ 2480	79	>15



Quantity of Hopping Channel

Date: 1.NOV.2005 15:02:55

§15.247(a)(1)(iii) - TIME OF OCCUPANCY (DWELL TIME)**Applicable Standard**

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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0 Hz, Sweep was set as 0.4 X channel no.(s), The quantity of False was get from single sweep. In addition, the time of single Pluses was tested.

Limit

FCC Part 15, Subpart C Section 15.247.

FREQUENCY RANGE (MHz)	LIMIT (ms)		
	20dB bandwidth <250kHz (50 Channel)	20dB bandwidth >250kHz (50 Channel)	20dB bandwidth <1 MHz (79 Channel)
902-928	400(20s)	400(10s)	N/A
2400-2483.5	N/A	N/A	400(31.6s)
5725-5850	N/A	N/A	400(30s)

Test Data**Environmental Conditions**

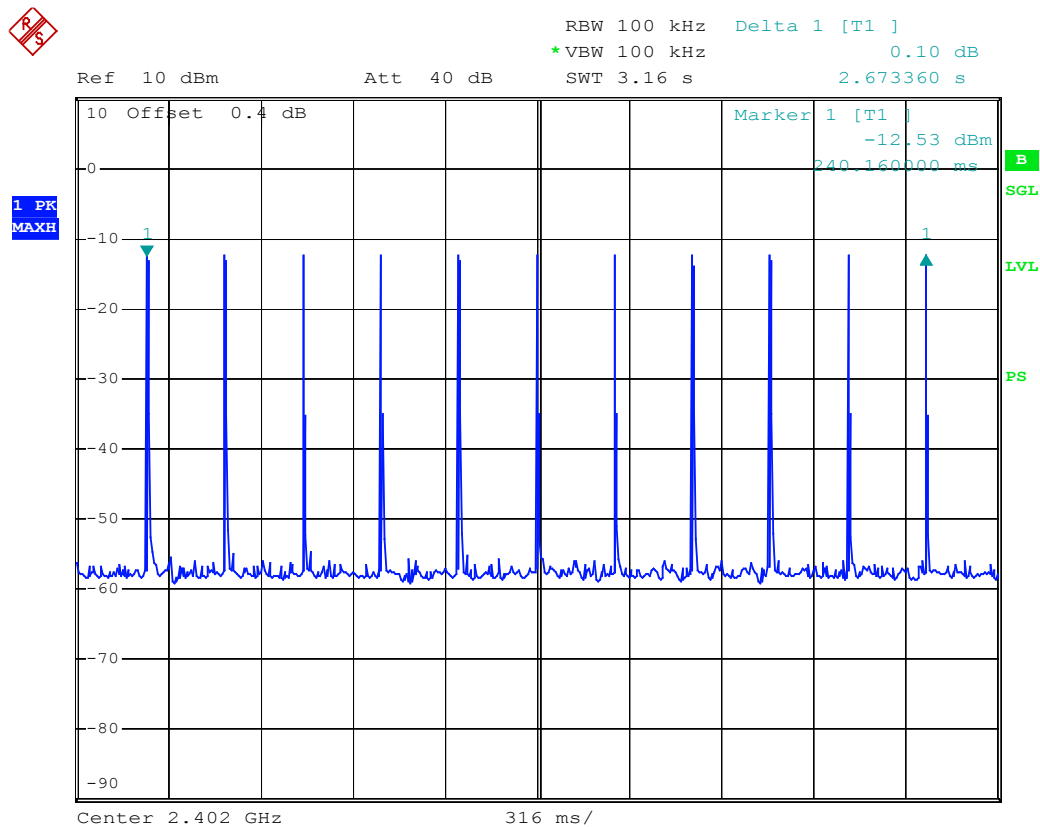
Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

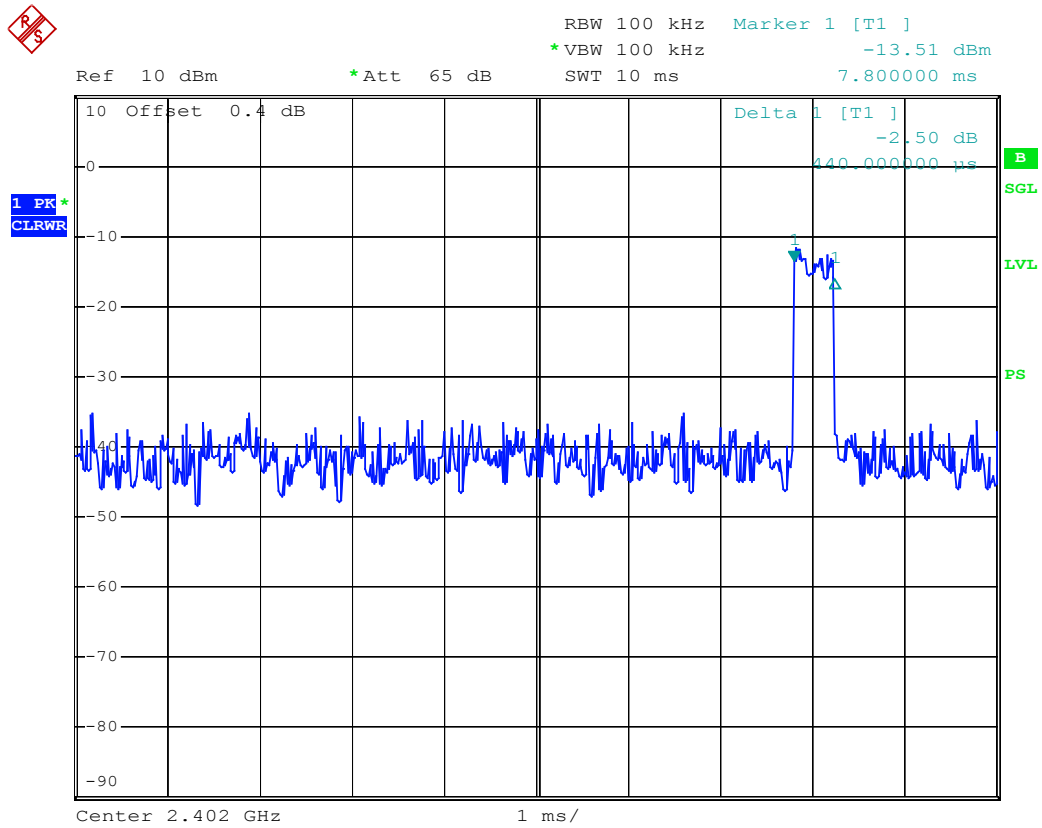
Test mode: Transmitting

Channel	Pulse wide (msec)	0.4 s *hopping channel	Dwell time (sec)	Limit (sec)
Low Channel	0.44	120	0.0528	0.4
Mid Channel	0.44	120	0.0528	0.4
High Channel	0.44	120	0.0528	0.4



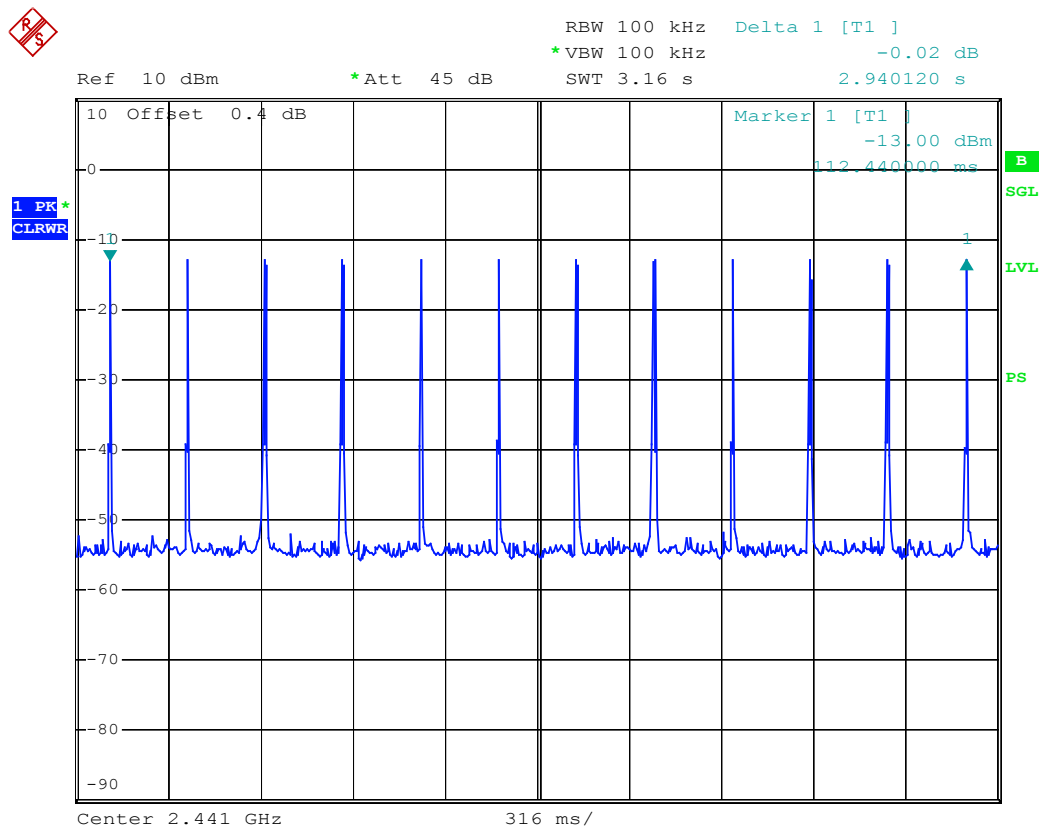
No. of pluses low CH

Date: 1.NOV.2005 14:17:05



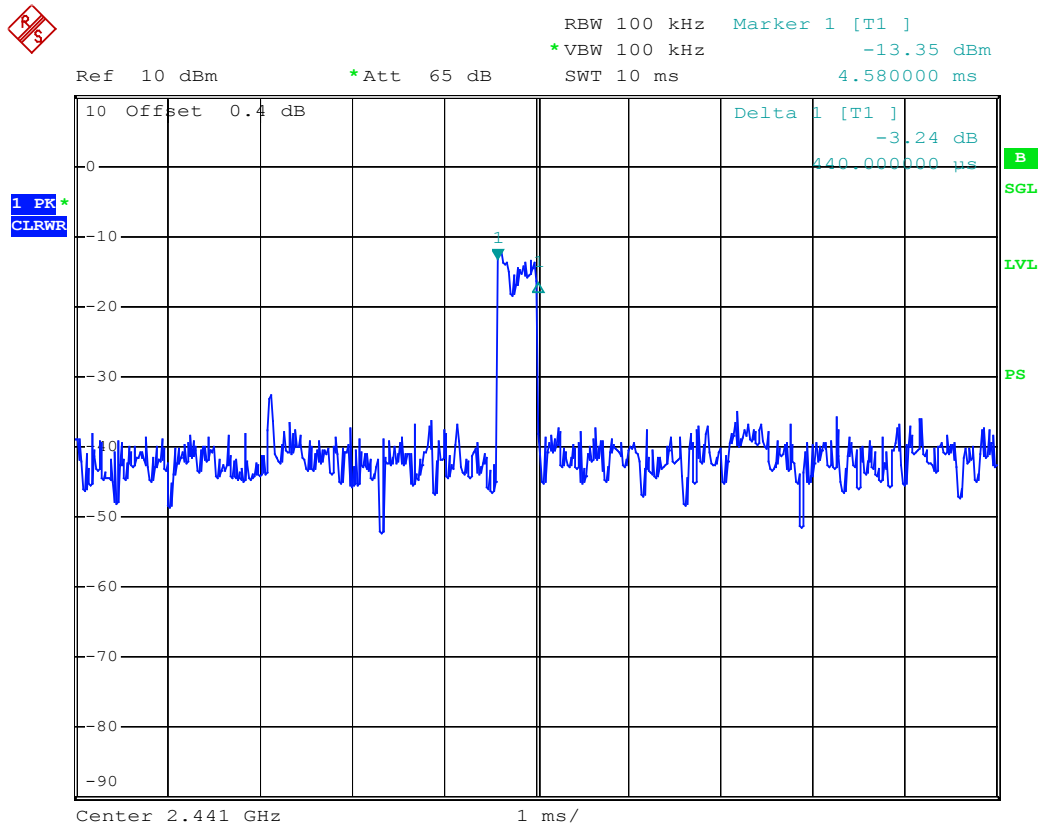
Pluses wide low CH

Date: 1.NOV.2005 14:41:58



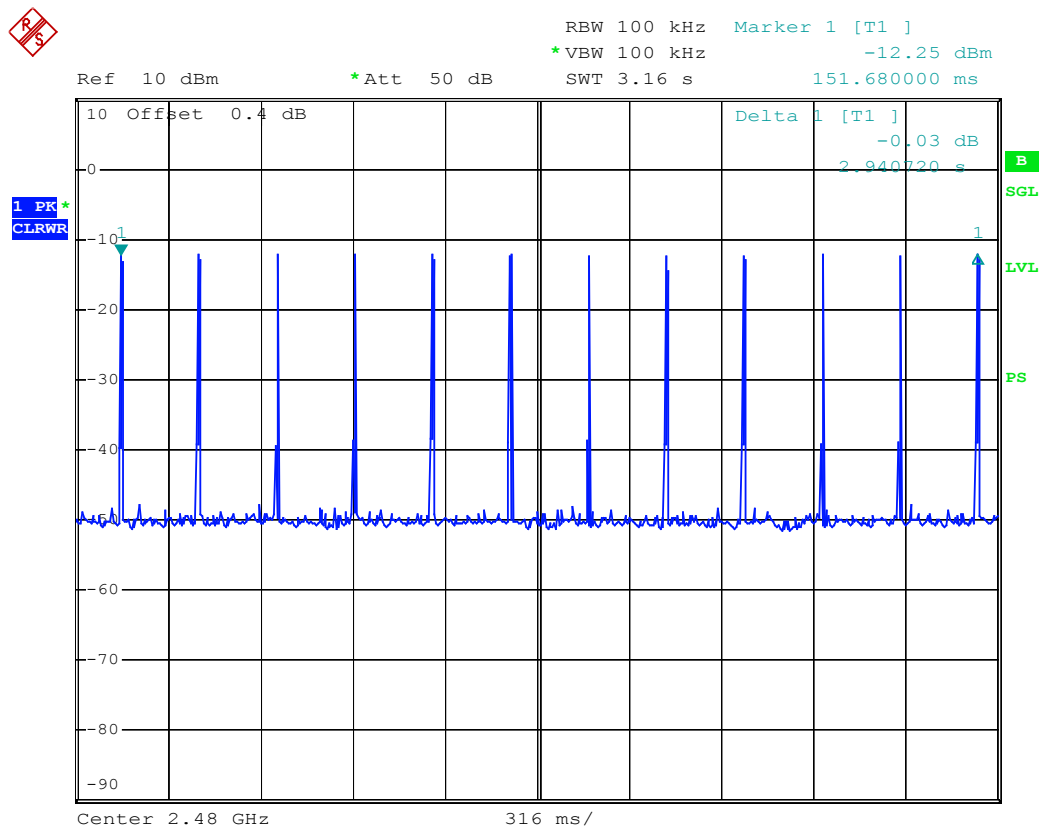
NO. of pluses mid CH

Date: 1.NOV.2005 14:33:04



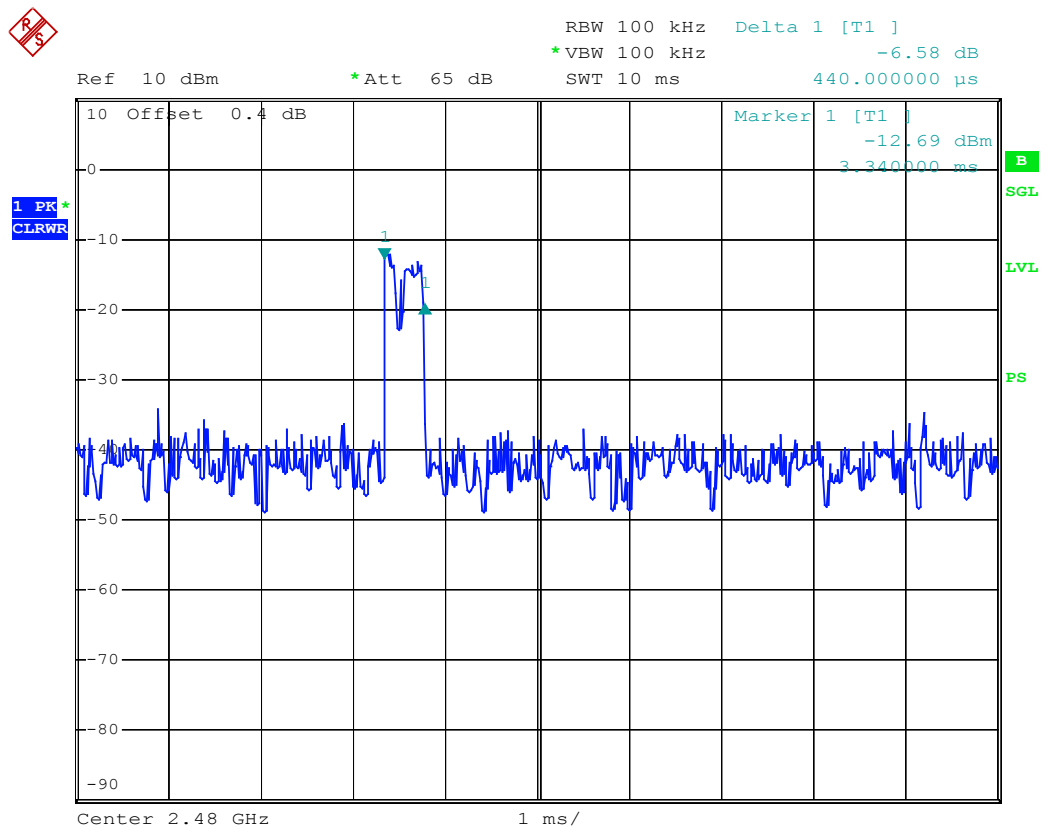
Pluses wide mid CH

Date: 1.NOV.2005 14:39:22



NO of Pluses high CH

Date: 1.NOV.2005 14:54:29



Pluses wide high CH

Date: 1.NOV.2005 14:40:25

§15.247(b)(1) - PEAK OUTPUT POWER MEASUREMENT**Applicable Standard**

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde&Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the UFL port of EUT to a Peak Power Meter.

**Test Data****Environmental Conditions**

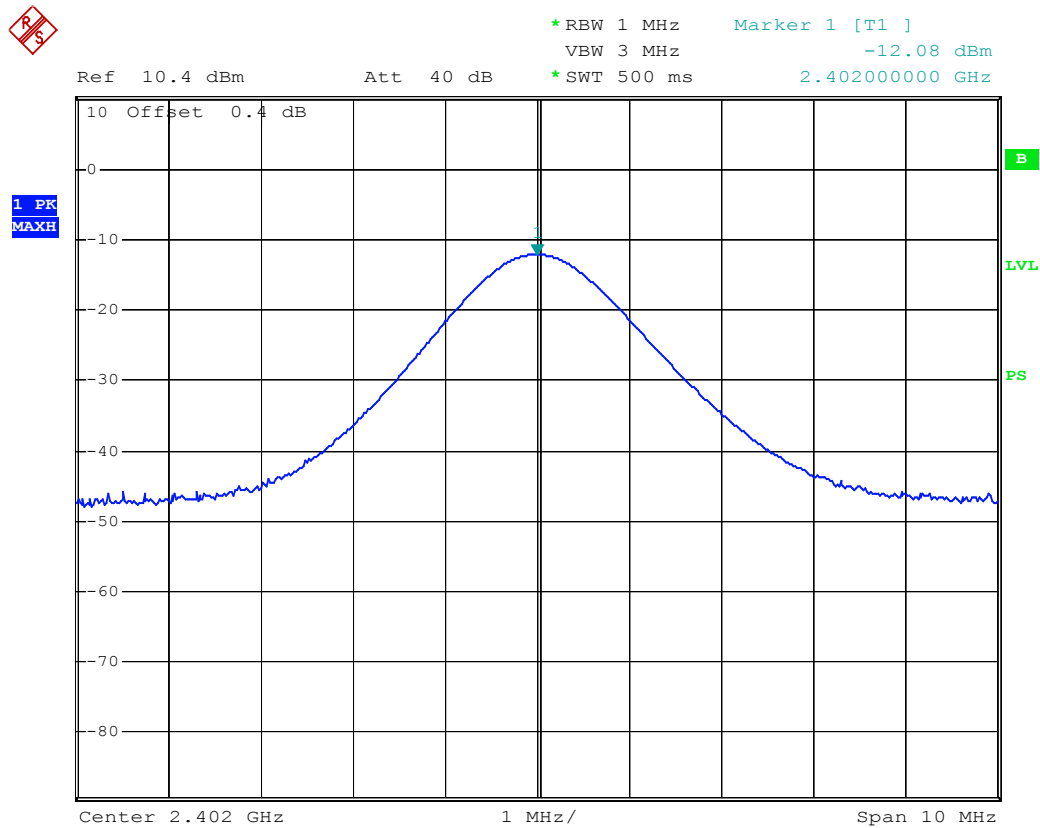
Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

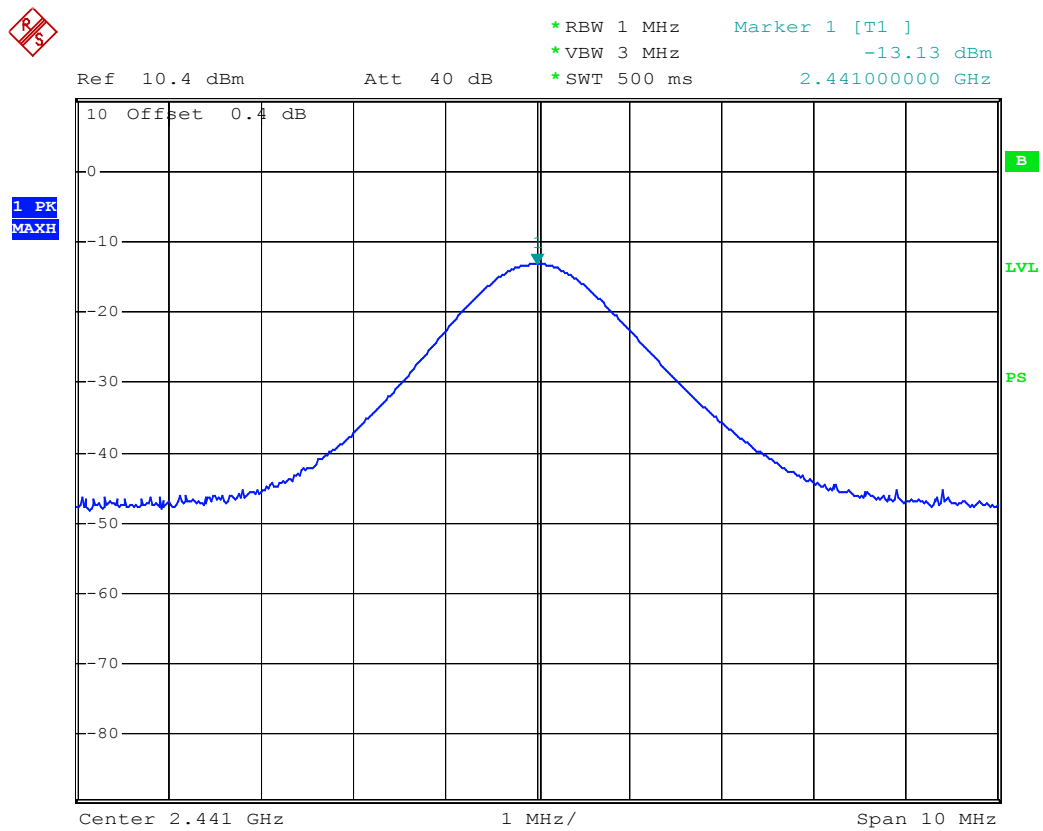
Test mode: Transmitting

Channel	Channel Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Power Output (w)	Limit (w)
Low Channel	2402	-12.08	/	0.0619×10^{-3}	0.125
Middle Channel	2441	-13.13	/	0.0486×10^{-3}	0.125
High Channel	2480	-12.92	/	0.0511×10^{-3}	0.125



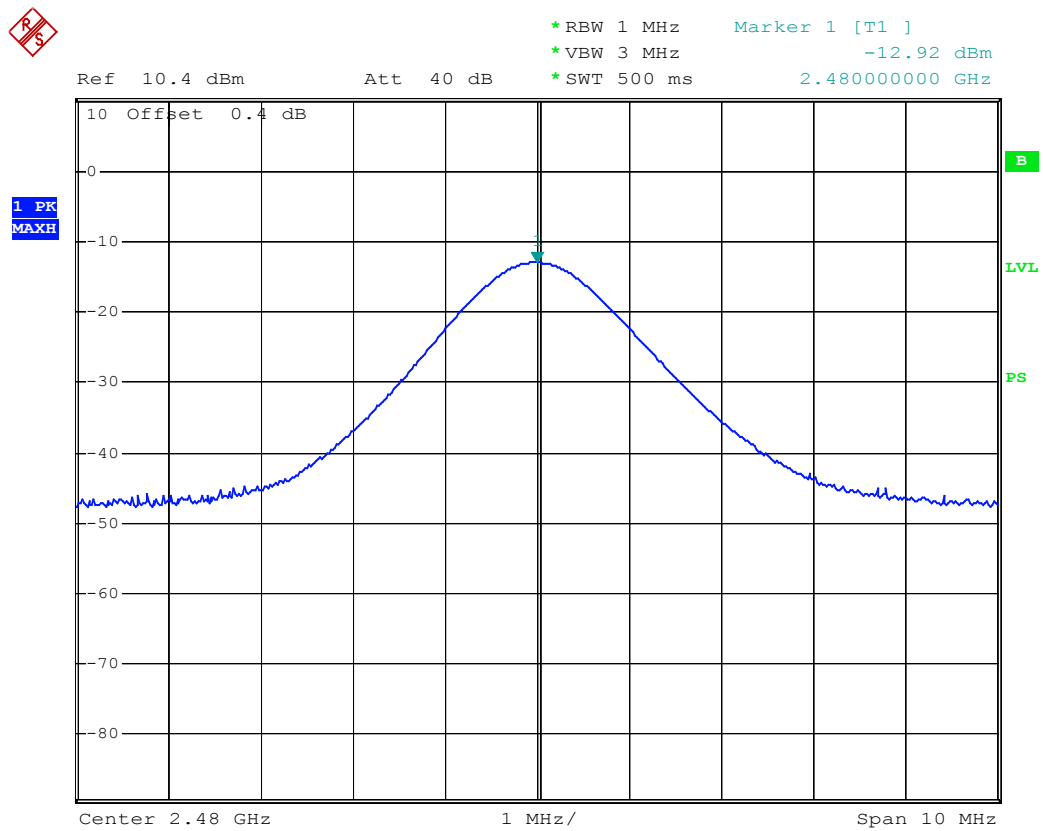
Peak output power low CH

Date: 1.NOV.2005 13:11:36



Peak output power mid CH

Date: 1.NOV.2005 13:19:36



Peak output power high CH

Date: 1.NOV.2005 13:18:29

§15.247(d)- BAND EDGES TESTING

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2005-8-17	2006-8-17

* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Start 2.4 G Hz, stop 2.4835 GHz, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the frequency edge point amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the edge frequency.

Test Data

Environmental Conditions

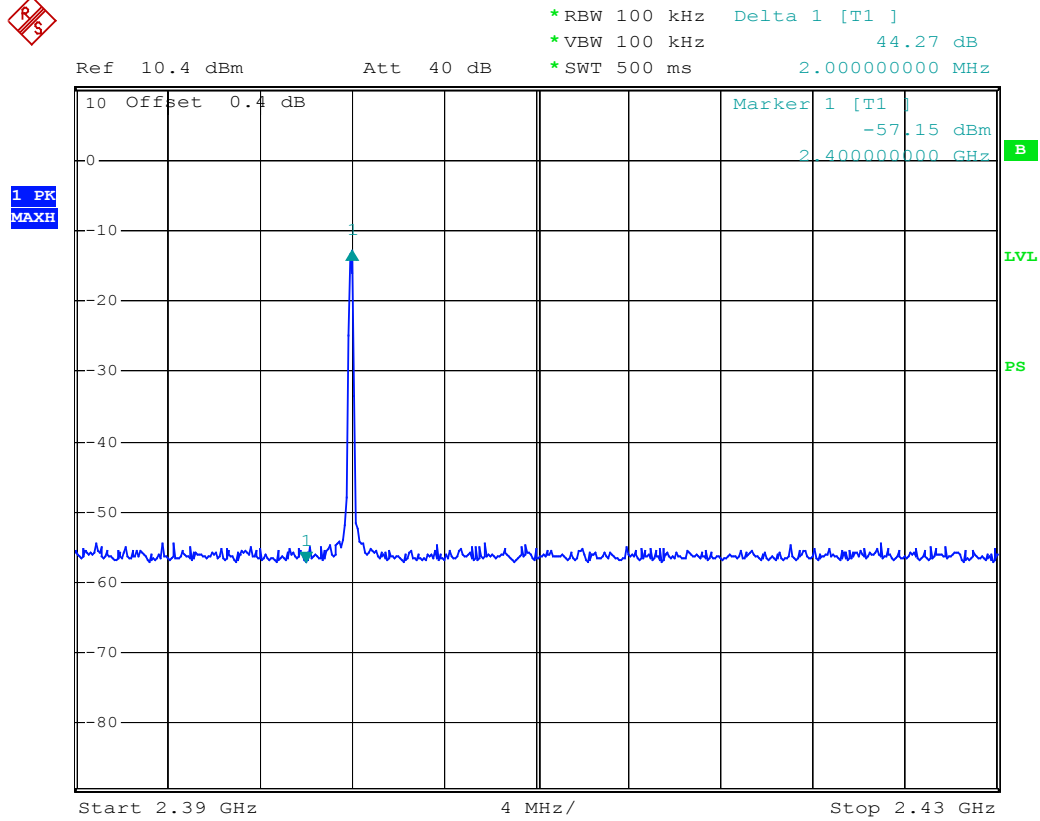
Temperature:	27 °C
Relative Humidity:	50 %
ATM Pressure:	1009 mbar

The testing was performed by Louise Lu on 2005-11-1.

Test Result: Pass

Test mode: Transmitting

Frequency (MHz)	Delta of Peak to Edge Point	Limit
2400.0	44.27	>20 dB
2438.5	42.26	>20 dB



Band edge low

Date: 1.NOV.2005 13:40:44

