Lab Code: 200707-0

Bay Area Compliance Lab Corp.

FCC PART 15.247

EMI MEASUREMENT AND TEST REPORT

For

ShenZhen PROF Telecom Co., Ltd

Rm1202, 4/F, Se Ge Ke Ji Yuan, Hua Qiang Bei Futian District, Shen Zhen

FCC ID: UNMPBH-8W

October 25, 2006

This Report Concerns:	**Equipment Type:**
☒ Original Report	Bluetooth Headset

Test Engineer:	Merry Zhao
Report No.:	RSZ06092101
Test Date:	October 23-24, 2006
Reviewed By:	EMC Manager: Boni Baniqued
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.

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *ShenZhen PROF Telecom Co., Ltd's* product, model number: *PBH-8W* or the "EUT" as referred to in this report is a *Bluetooth Headset*, which measures approximately: 5.8cm L x 6.0 cm W x 2.5 cm H, rated input voltage: Battery 3.7V.

** The test data gathered are from production sample, serial number: 0609031. Provided by the manufacturer, we receive the EUT on 2006-9-21.*

Objective

This Type approval report is prepared on behalf of *ShenZhen PROF Telecom Co., Ltd* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203,15.205, 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 emissions measurement was performed and 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 and Industrial Canada registration test site No.: 5500A. 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.

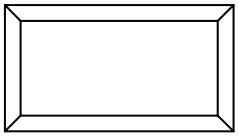
EUT Exercise Software

The exercise software is available.

Special Accessories

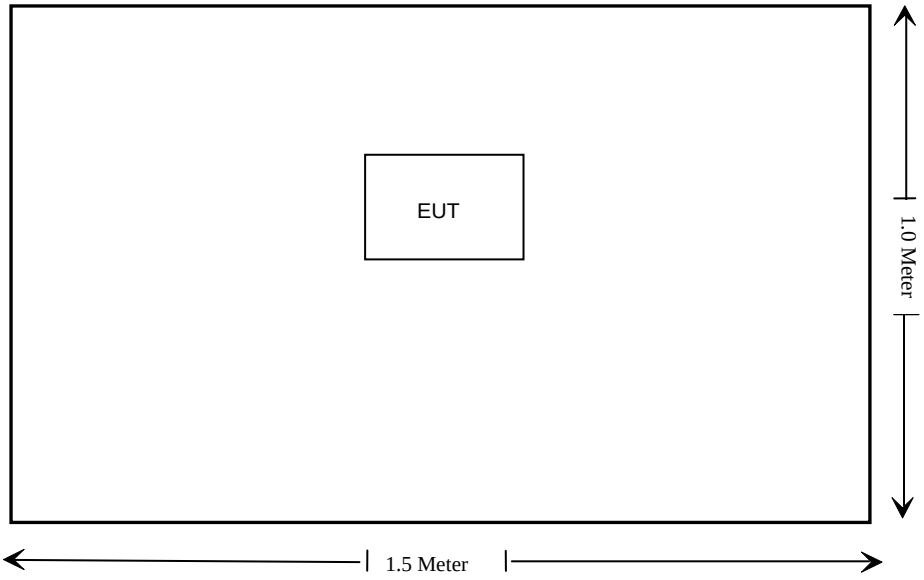
The special Accessories were provided by Bay Area Compliance Lab Corp. (ShenZhen).

Configuration of Test Setup



EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247(b)	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.205	Restricted Band	Compliant
§15.205, §15.209, §15.247(d)	Radiated Emission	Compliant
§15.247 (a)(1)	20 dB Bandwidth	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) - RF EXPOSURE

Limit

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Since the maximum output power of this device was so low (0.000181 Watts) and it is below the threshold of (25mW). EUT is not subject to any SAR evaluation.

§15.203 - ANTENNA REQUIREMENT

Standard Applicable

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.

Antenna Connected Construction

The EUT has a permanently attached antenna which, in accordance to the above sections, is considered sufficient to comply with the provisions of these sections. Please see EUT photo for details.

§15.205, §15.209, §15.247 - RADIATED EMISSION

Applicable Standard

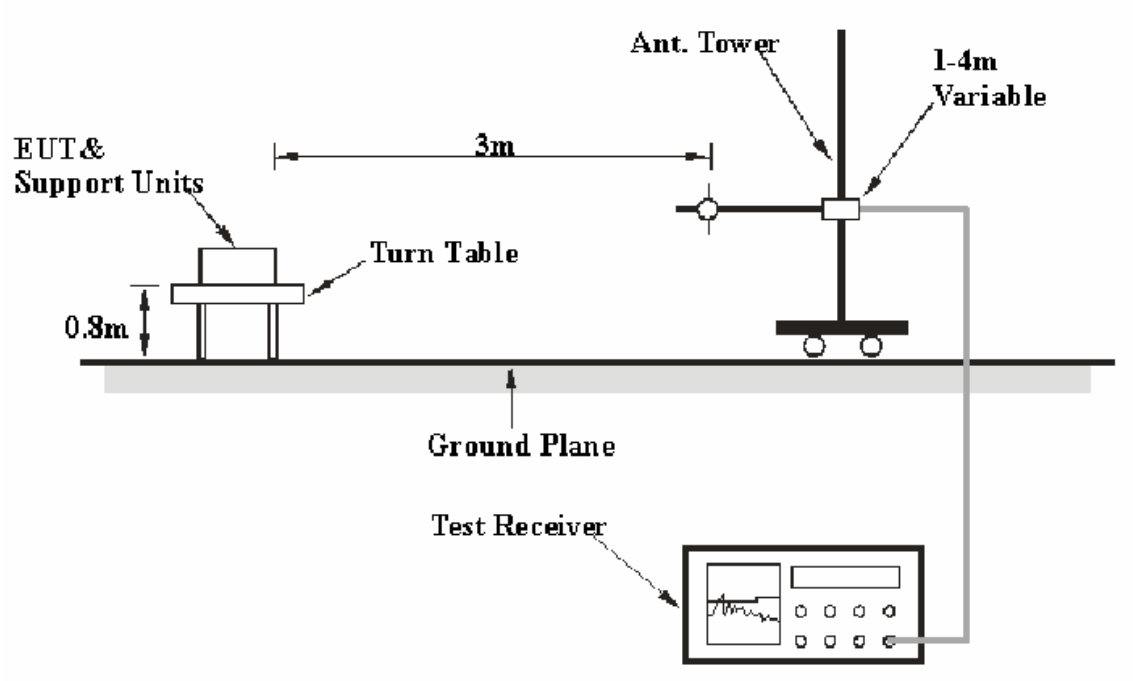
According to FCC §15.247 (d)

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:

Frequency Range	***RBW***	***Video B/W***
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	2006-4-28	2007-4-28
HP	Amplifier	HP8447D	2944A09795	2006-8-17	2007-8-17
HP	Preamplifier	8449B	3008A00277	2006-8-17	2007-8-17
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2005-11-10	2006-11-10
Rohde&Schwarz	EMI Test Receiver	ESCI	100035	2006-8-17	2007-8-17
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2006-4-28	2007-4-28

*** 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 Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Meter Reading + Antenna Loss + Cable Loss- 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 maximum limit. The equation for margin calculation is as follows:

Margin = Corr. Ampl. - 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, 15.209, and 15.247, with the worst margin reading of:

-16.43 dB at **1200.56 MHz** in the **Vertical** polarization 1GHz---25GHz: Low Channel
-14.43 dB at **1220.67 MHz** in the **Vertical** polarization 1GHz---25GHz: Middle Channel
-18.08 dB at **4960.00 MHz** in the **Horizontal** polarization 1GHz---25GHz: High Channel

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	52%
ATM Pressure:	1009mbar

The testing was performed by Merry Zhao on 2006-10-23.

Test Mode: Transmitting: 1GHz---25GHz (Low Channel)

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.247		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
Low Channel (1GHz---25GHz)												
1200.56	46.27	AV	90	1.0	V	24.8	2.50	36.0	37.57	54	-16.43	Spurious
4804.00	33.33	AV	90	1.0	H	31.3	4.64	33.4	35.87	54	-18.13	Harmonic
1210.50	43.55	AV	180	1.2	H	24.8	2.50	36.0	34.85	54	-19.15	Spurious
4804.00	30.77	AV	90	1.0	V	31.3	4.64	33.4	33.31	54	-20.69	Harmonic
1983.75	35.17	AV	180	1.2	H	27.4	3.09	35.0	30.66	54	-23.34	Spurious
1983.75	34.77	AV	180	1.2	V	27.4	3.09	35.0	30.26	54	-23.74	Spurious
4804.00	37.83	PK	180	1.2	H	31.3	4.64	33.4	40.37	74	-33.63	Harmonic
1200.56	47.93	PK	180	1.2	V	24.8	2.50	36.0	39.23	74	-34.77	Spurious
1983.75	42.77	PK	45	1.2	V	27.4	3.09	35.0	38.26	74	-35.74	Spurious
1210.50	46.67	PK	45	1.2	H	24.8	2.50	36.0	37.97	74	-36.03	Spurious
4804.00	35.43	PK	180	1.2	V	31.3	4.64	33.4	37.97	74	-36.03	Harmonic
1983.75	39.17	PK	45	1.2	H	27.4	3.09	35.0	34.66	74	-39.34	Spurious
2402.00	92.00	PK	90	1	H	27.4	3.61	35.0	88.01			Fundamental
2402.00	90.67	AV	45	1	H	27.4	3.61	35.0	86.68			Fundamental
2402.00	93.17	PK	90	1	V	27.4	3.61	35.0	89.18			Fundamental
2402.00	92.67	AV	45	1	V	27.4	3.61	35.0	88.68			Fundamental

Test Mode: Transmitting: 1GHz---25GHz (Middle Channel)

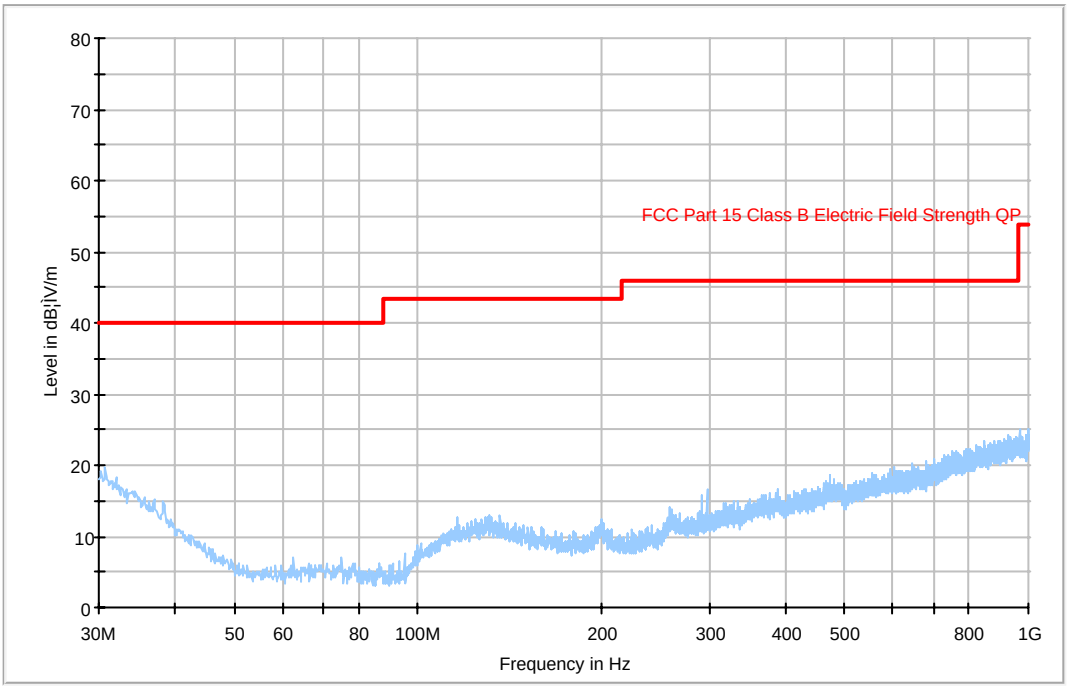
Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.247		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
Middle Channel (1GHz---25GHz)												
1220.67	48.27	AV	270	1.2	V	24.8	2.50	36.0	39.57	54	-14.43	Spurious
4882.00	32.40	AV	243	1.4	H	31.3	4.64	33.4	34.94	54	-19.06	Harmonic
4882.00	31.93	AV	142	1.6	V	31.3	4.64	33.4	34.47	54	-19.53	Harmonic
1975.00	38.43	AV	135	1.3	V	27.4	3.09	35.0	33.92	54	-20.08	Spurious
1982.5	34.90	AV	85	1.5	H	27.4	3.09	35.0	30.39	54	-23.61	Spurious
4882.00	45.27	PK	234	1.8	V	31.3	4.64	33.4	47.81	74	-26.19	Harmonic
1190.00	34.57	AV	120	1.0	H	24.8	2.50	36.0	25.87	54	-28.13	Spurious
1975.00	46.27	PK	156	1.4	V	27.4	3.09	35.0	41.76	74	-32.24	Spurious
1220.67	49.77	PK	210	1.2	V	24.8	2.50	36.0	41.07	74	-32.93	Spurious
4882.00	36.73	PK	153	1.5	H	31.3	4.64	33.4	39.27	74	-34.73	Harmonic
1982.5	39.57	PK	265	1.4	H	27.4	3.09	35.0	35.06	74	-38.94	Spurious
1190.00	39.07	PK	90	1.2	H	24.8	2.50	36.0	30.37	74	-43.63	Spurious
2441.00	91.0	PK	60	1.4	V	27.4	3.61	35.0	87.01			Fundamental
2441.00	90.17	AV	152	1.3	V	27.4	3.61	35.0	86.18			Fundamental
2441.00	90.07	PK	128	1.5	H	27.4	3.61	35.0	86.08			Fundamental
2441.00	87.57	AV	156	1.2	H	27.4	3.61	35.0	83.58			Fundamental

Test Mode: Transmitting: 1GHz---25GHz (High Channel)

Frequency	Meter Reading	Detector	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifer Gain	Corr. Ampl.	FCC Part 15.247		
MHz	dBuV/m	PK/QP/AV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
High Channel (1GHz---25GHz)												
4960.00	32.77	AV	256	1.8	H	32.0	4.55	33.4	35.92	54	-18.08	Harmonic
4960.00	30.77	AV	142	1.5	V	32.0	4.55	33.4	33.92	54	-20.08	Harmonic
1982.7	37.27	AV	324	1.2	V	27.4	3.09	35.0	32.76	54	-21.24	Spurious
1983.0	36.60	AV	156	1.2	H	27.4	3.09	35.0	32.09	54	-21.91	Spurious
1200.75	34.47	AV	45	1.6	H	24.8	2.50	36.0	25.77	54	-28.23	Spurious
1200.75	33.93	AV	210	1.2	V	24.8	2.50	36.0	25.23	54	-28.77	Spurious
4960.00	35.60	PK	145	1.4	H	32.0	4.55	33.4	38.75	74	-35.25	Harmonic
4960.00	34.93	PK	142	1.4	V	32.0	4.55	33.4	38.08	74	-35.92	Harmonic
1982.7	42.43	PK	324	1.3	V	27.4	3.09	35.0	37.92	74	-36.08	Spurious
1983.0	42.33	PK	128	1.5	H	27.4	3.09	35.0	37.82	74	-36.18	Spurious
1200.75	38.60	PK	240	1.4	V	24.8	2.50	36.0	29.9	74	-44.10	Spurious
1200.75	38.27	PK	56	1.4	H	24.8	2.50	36.0	29.57	74	-44.43	Spurious
2480.00	90.60	PK	89	1.5	H	27.4	3.61	35.0	86.61			Fundamental
2480.00	87.77	AV	65	1.5	H	27.4	3.61	35.0	83.78			Fundamental
2480.00	88.77	PK	65	1.4	V	27.4	3.61	35.0	84.78			Fundamental
2480.00	86.27	AV	65	1.6	V	27.4	3.61	35.0	82.28			Fundamental

Test Mode: Transmitting (up to 1GHz)

Auto Test (FCC 15.247)



Scan Setup: FCC 15 Class B Scan QP [EMI radiated]

Hardware Setup:	BACL chamber A hardware
Level Unit:	dB µ V/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30MHz - 1GHz	QuasiPeak	120kHz	1s	Receiver

NOTE: The emission from 30MHz to 1GHz is very low, thus no emission level is recorded.

§15.247(a) (1)-CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hoping 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	100028	2006-8-17	2007-8-17

*** 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.

Limit

FCC Part 15, Subpart C Section 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.

FREQUENCY RANGE (MHz)	Limit (kHz)
902-928	>25kHz or the 20dB bandwidth
2400-2483.5	>25kHz or two-thirds of the 20dB bandwidth
5725-5850	>25kHz or the 20dB bandwidth

Test Data

Environmental Conditions

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

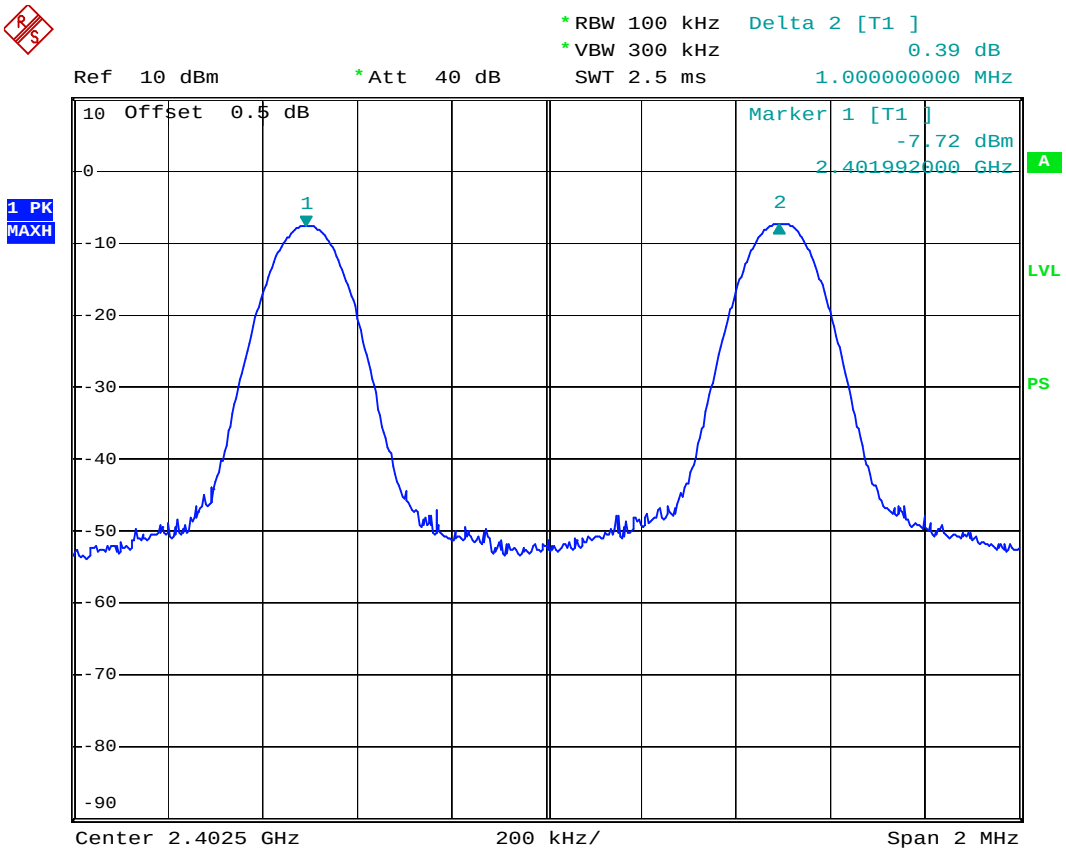
The testing was performed by Merry Zhao on 2006-10-24.

Test Result: Pass

Test mode: Transmitting

Channel	Channel Frequency (MHz)	Channel Separation (KHz)	Limit (kHz)	Result
Low Channel	2402	1000	182.67	Pass
Adjacency Channel	2403			
Mid Channel	2441	1004	180.00	Pass
Adjacency Channel	2442			
High Channel	2480	1000	182.67	Pass
Adjacency Channel	2479			

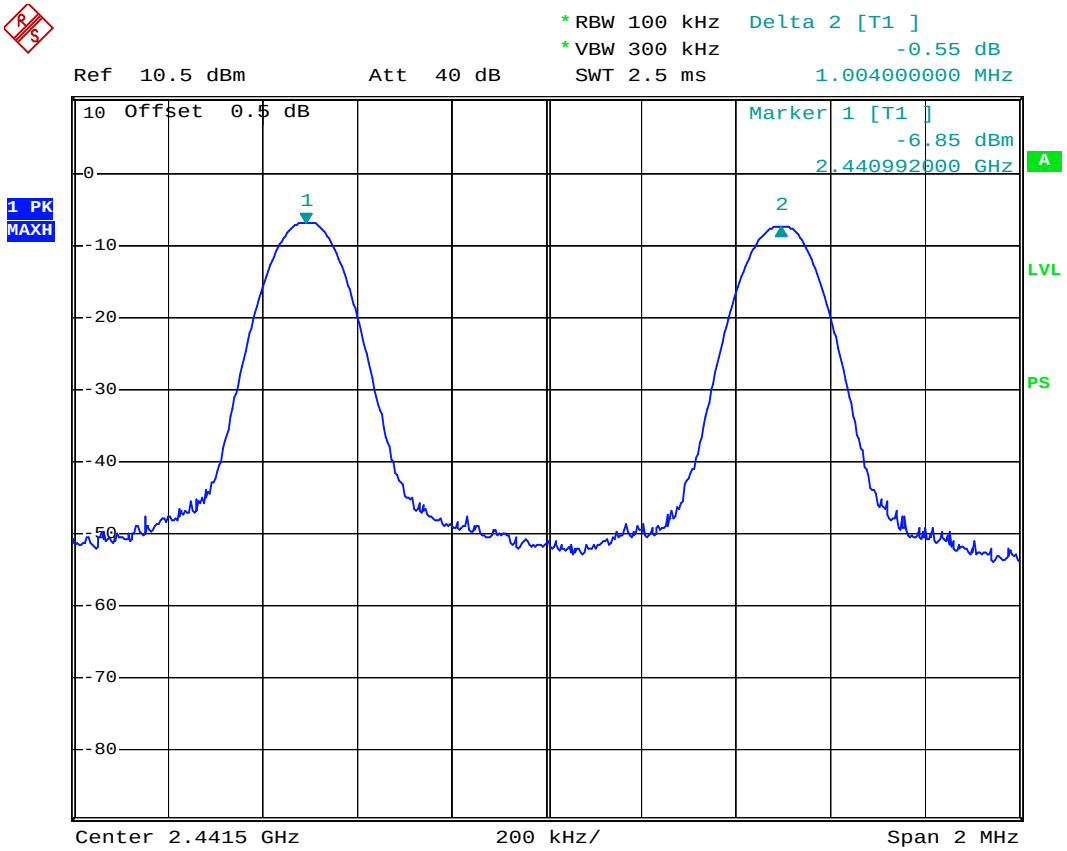
Low channel:



Low channel channel separation

Date: 24.OCT.2006 18:48:44

Middle channel



Middle channel channel separation

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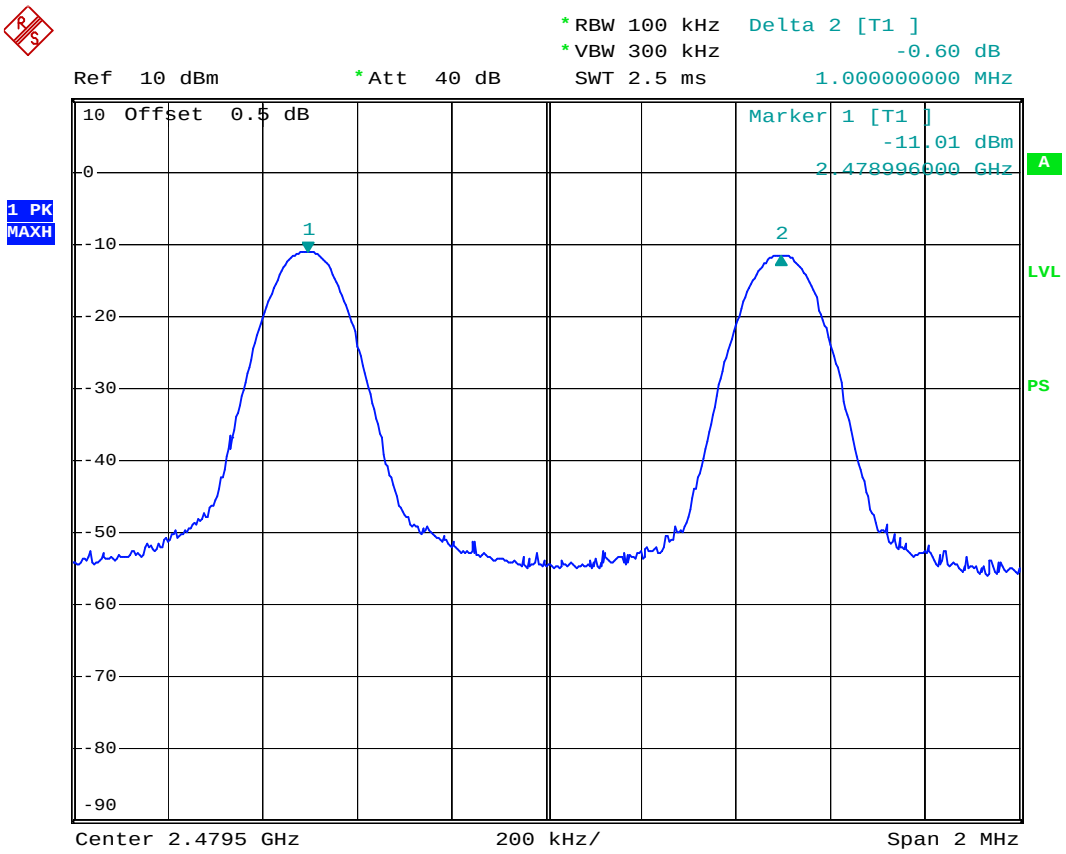
High channel



High channel channel separation

Date: 24.OCT.2006 18:36:24

§15.247(a) (1) –20dB BANDWIDTH TESTING

Applicable Standard

Frequency hopping systems shall have hoping 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	2006-8-17	2007-8-17

*** 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 either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. 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:	53%
ATM Pressure:	1009mbar

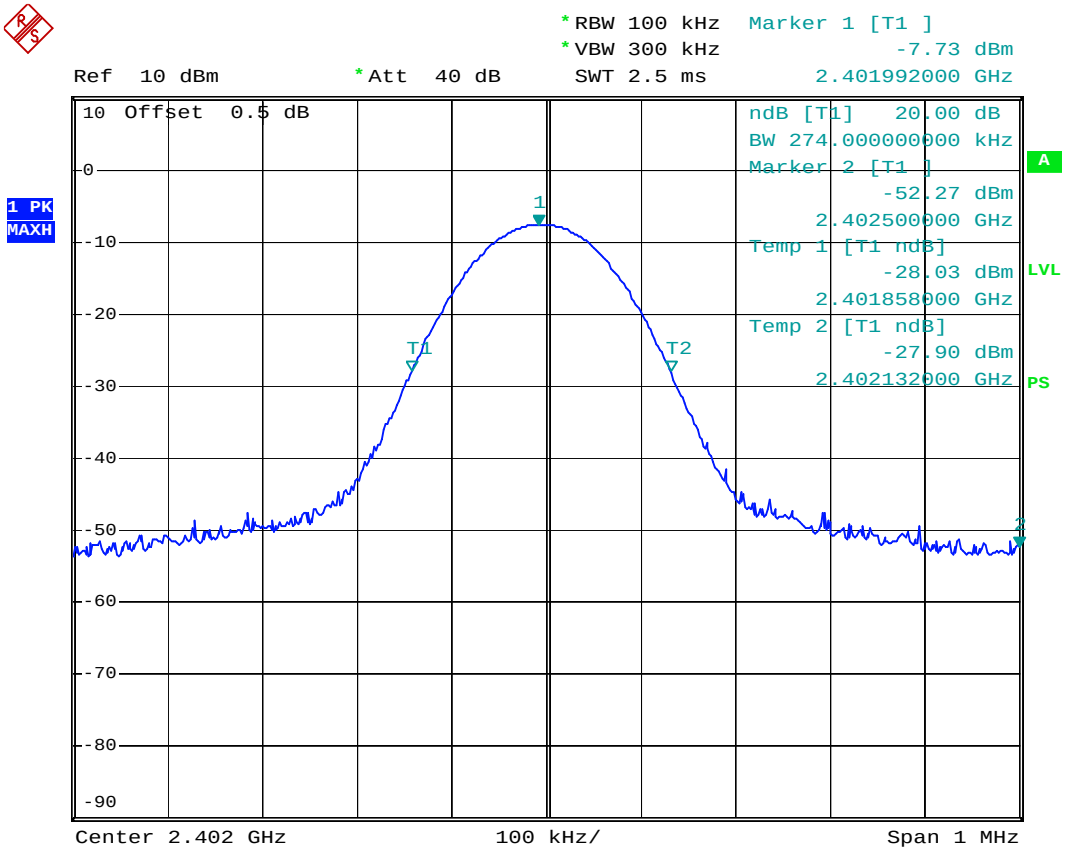
The testing was performed by Merry Zhao on 2006-10-24.

Test Mode: Transmitting

Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Result
Low Channel	2402	274	Pass
Mid Channel	2441	270	Pass
High Channel	2480	274	Pass

Test Result: Pass

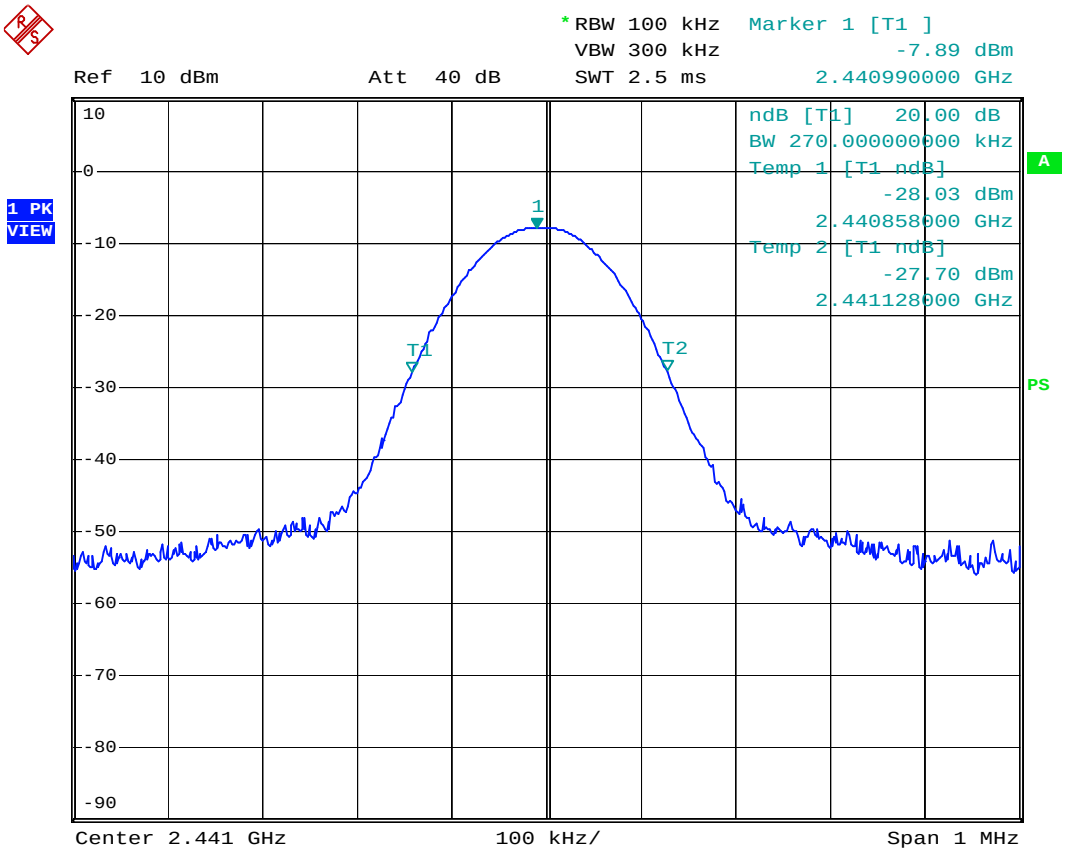
Low channel



Low channel 20dB bandwidth

Date: 24.OCT.2006 18:44:34

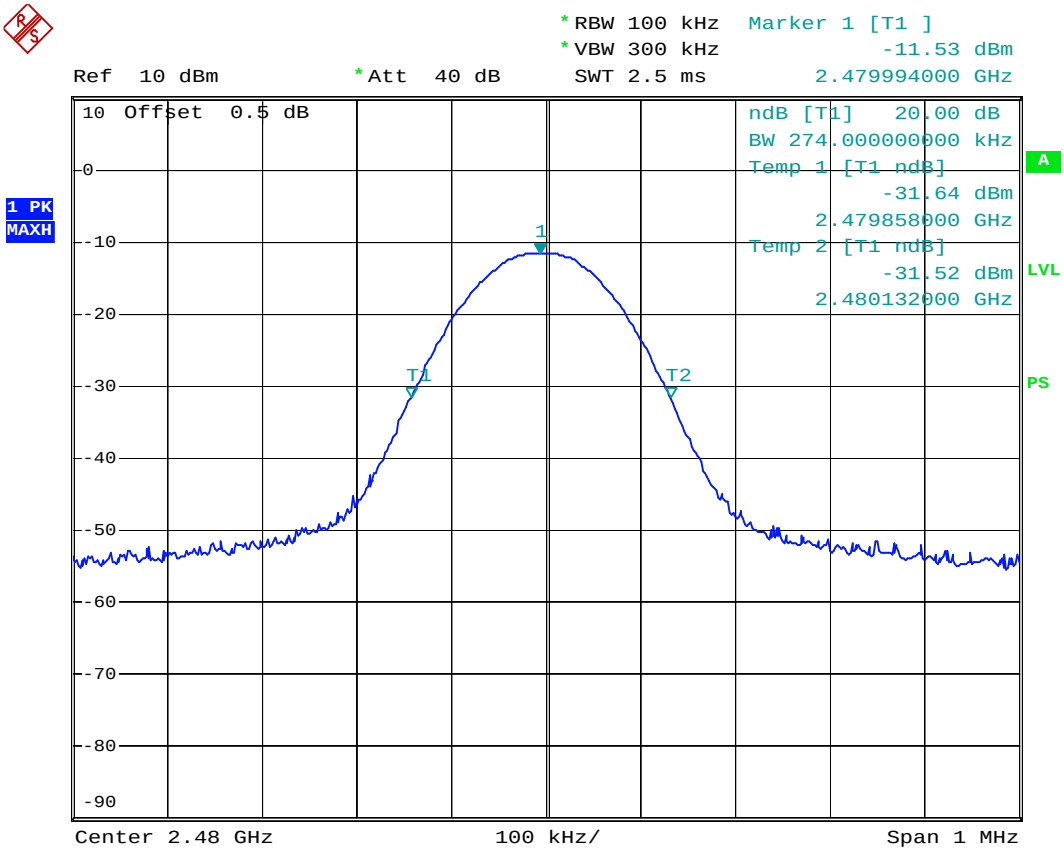
Middle channel



Middle channel 20dB bandwidth

Date: 24.OCT.2006 17:34:36

High channel



High channel 20dB bandwidth

Date: 24.OCT.2006 18:31:27

§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	2006-8-17	2007-8-17

*** 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	N/A	N/A

Test Data

Environmental Conditions

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

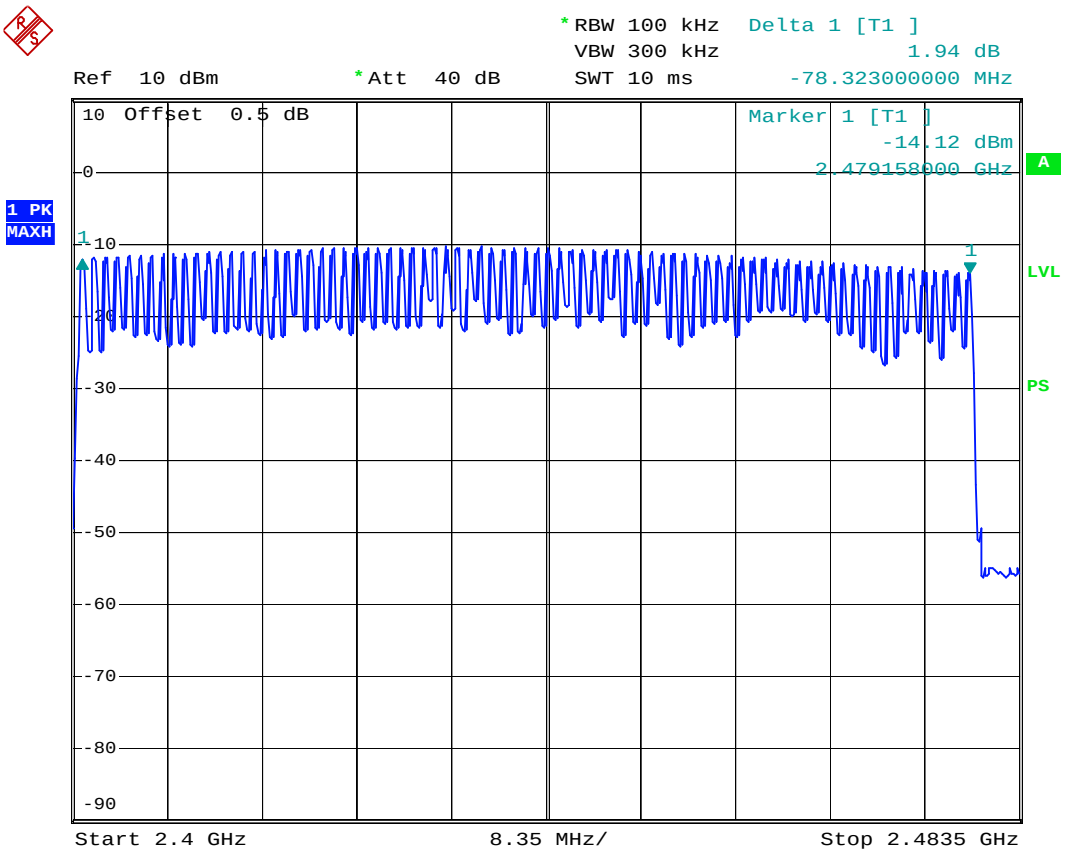
The testing was performed by Merry Zhao on 2006-10-24.

Test mode: Transmitting

The frequency hopping systems operating in 2.400~2.4835 GHz band employ 79 nonoverlapping channels.

Hopping Channel Frequency Range (MHz)	Quantity OF hopping Channel Read Value (Channel)	Limit (CH)
2402-2480	79	15

Test Result: Pass



Quantity of hopping channel

Date: 24.OCT.2006 18:02:31

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

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz 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	2006-8-17	2007-8-17

*** 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. Sweep was set as 0.4 X channel no.(s), The quantity of Pulse was measured from single sweep. In addition, the time of single Pulse was measured.

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	N/A	N/A	N/A
2400-2483.5	N/A	N/A	31.6s
5725-5850	N/A	N/A	N/A

Dwell Time= time slot length * hope rate/ number of hopping channels * 31.6s

Test Data

Environmental Conditions

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

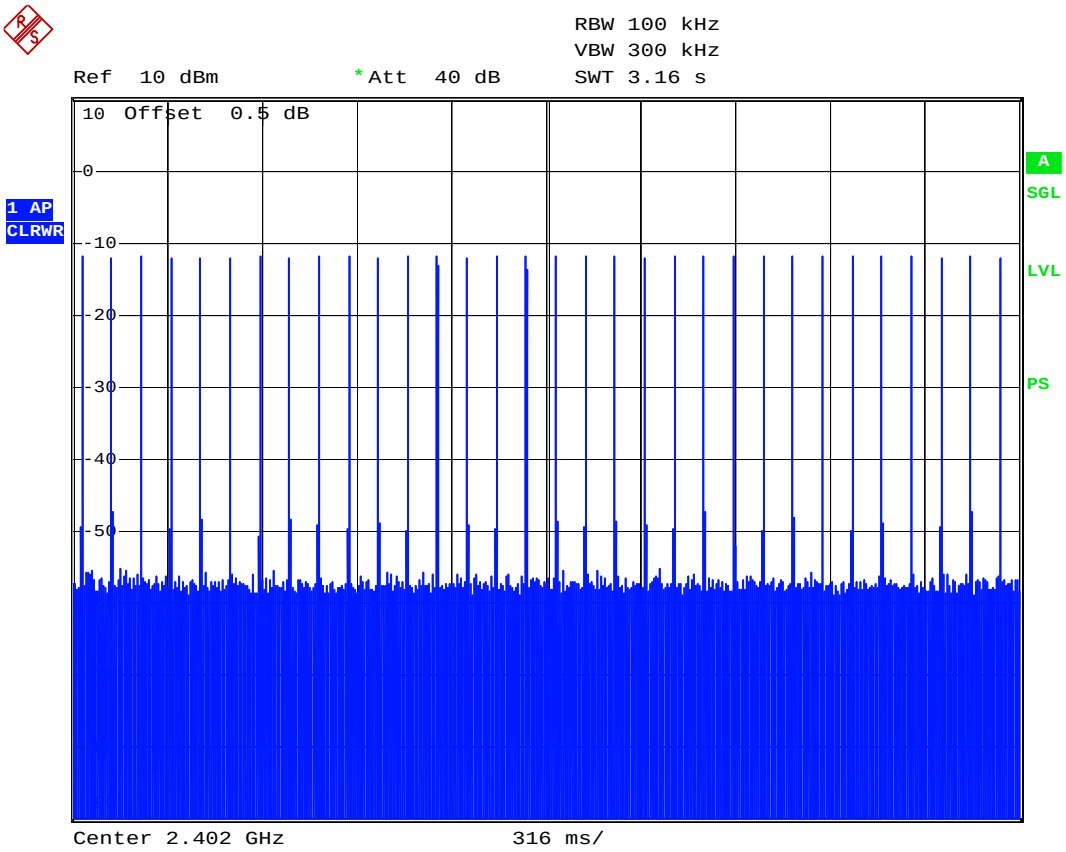
The testing was performed by Merry Zhao on 2006-10-24.

Test mode: Transmitting

Channel	Pulse wide (msec)	Number of hopping Pulses in 0.4*channel number	Dwell time (sec)	Limit (sec)	Result
Low Channel	0.52	0.52×320	0.1664	0.4	Pass
Mid Channel	0.54	0.54×320	0.1728	0.4	Pass
High Channel	0.54	0.54×320	0.1728	0.4	Pass

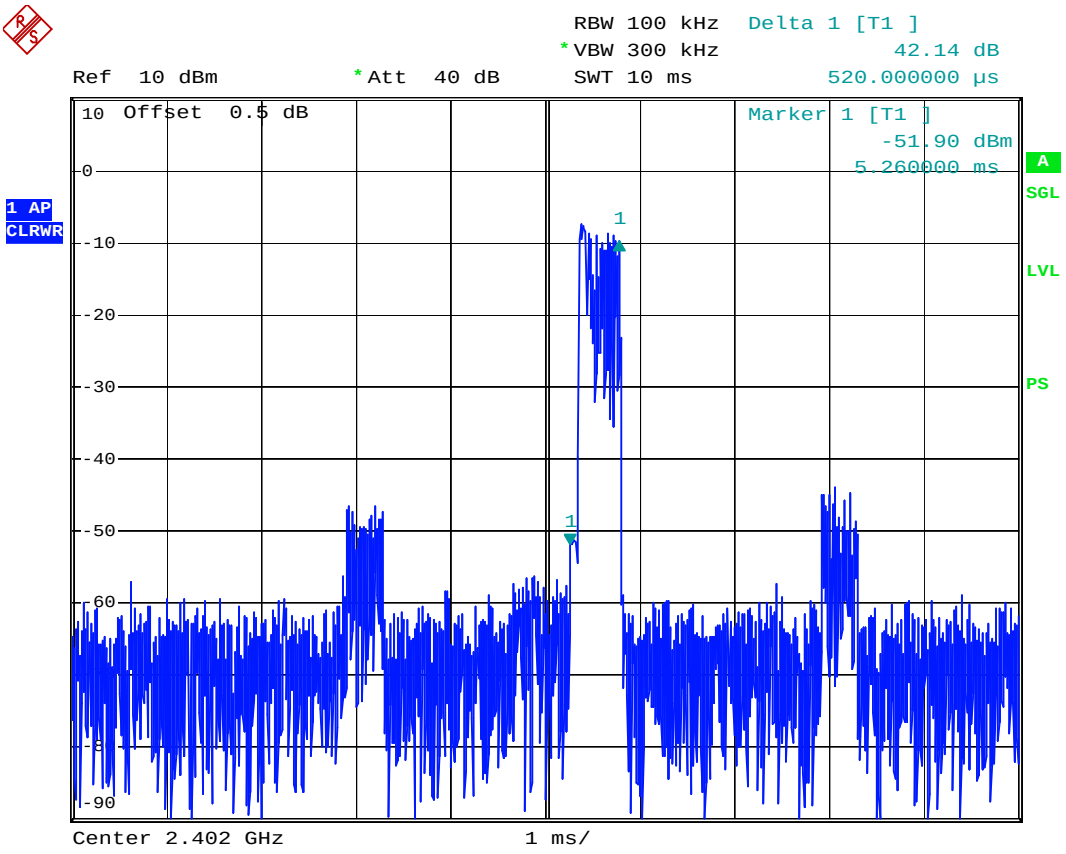
Test Result: Pass

Low channel



Low channel dwell time

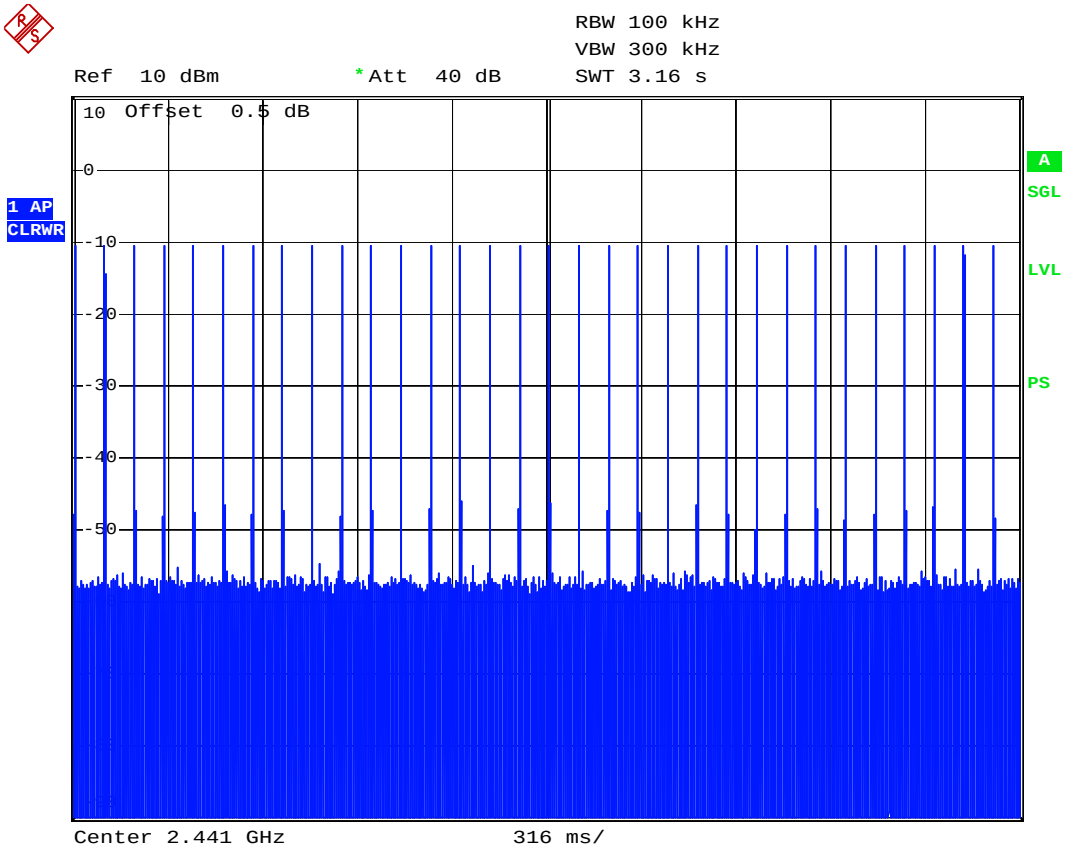
Date: 24.OCT.2006 18:14:22



Low channel dwell time

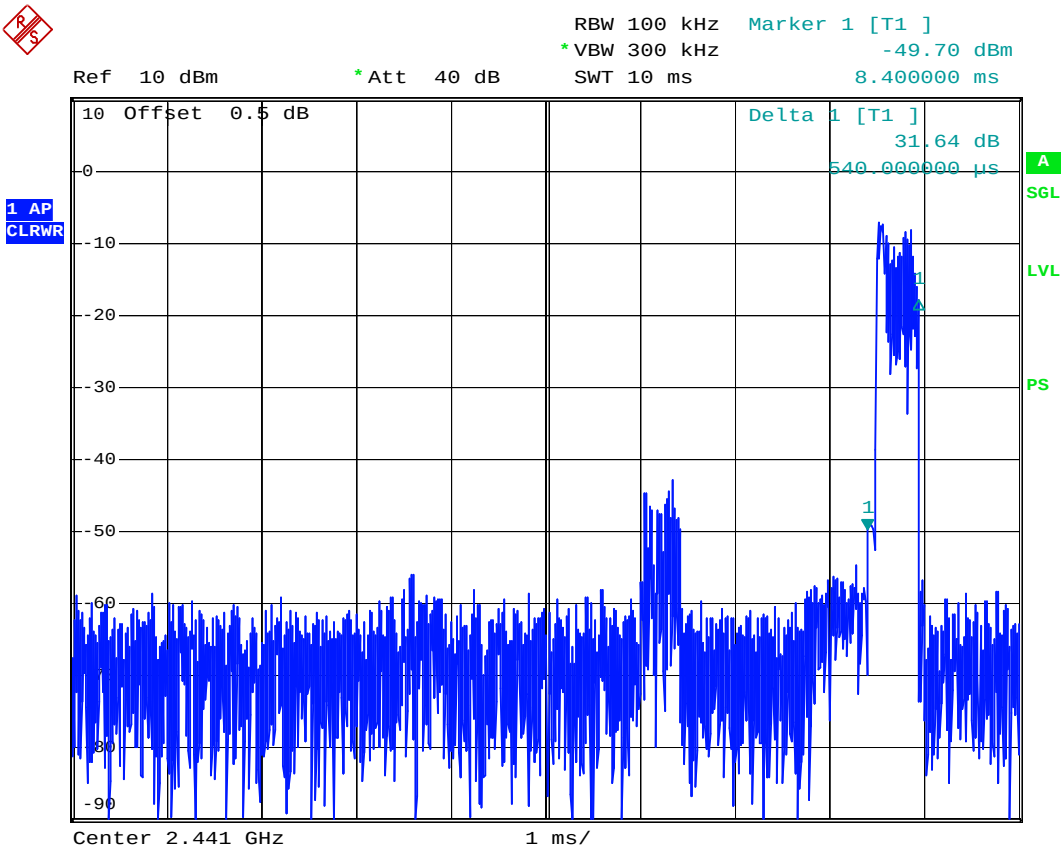
Date: 24.OCT.2006 19:10:42

Middle channel



Middle channel dwell time

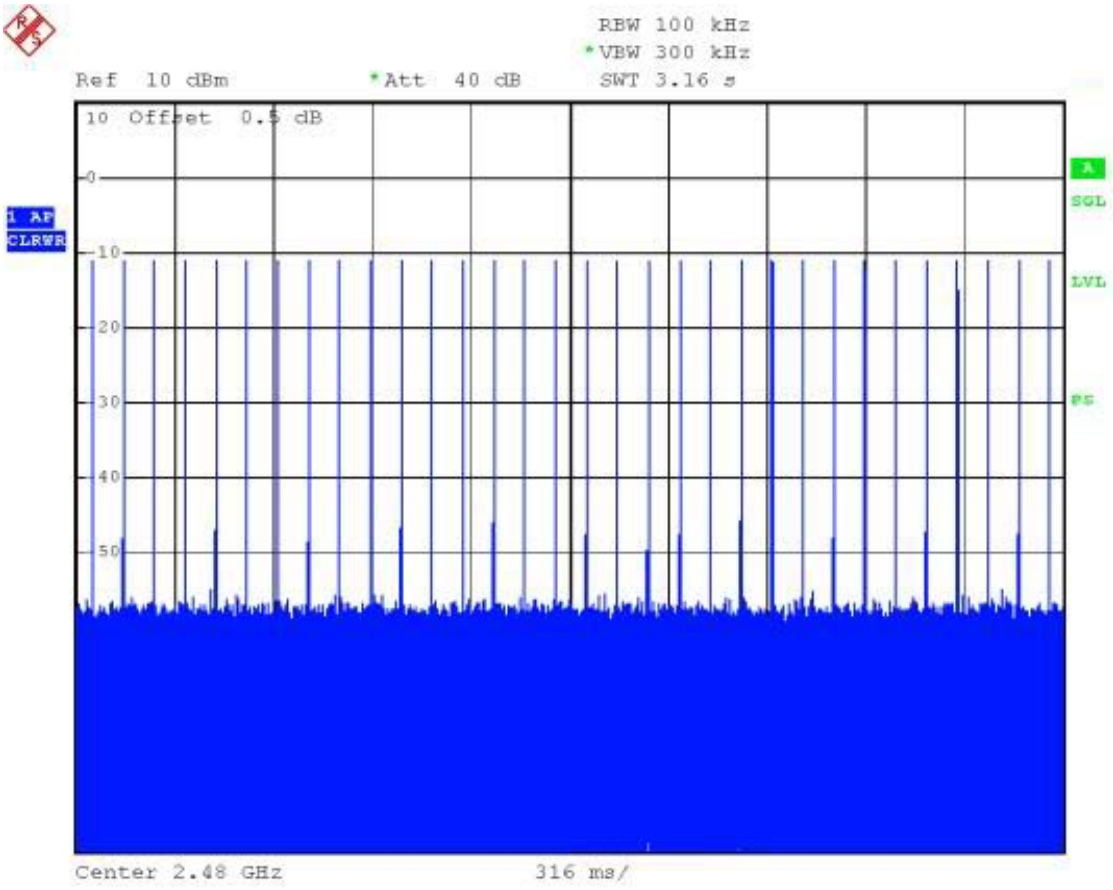
Date: 24.OCT.2006 18:11:51



Middle channel dwell time

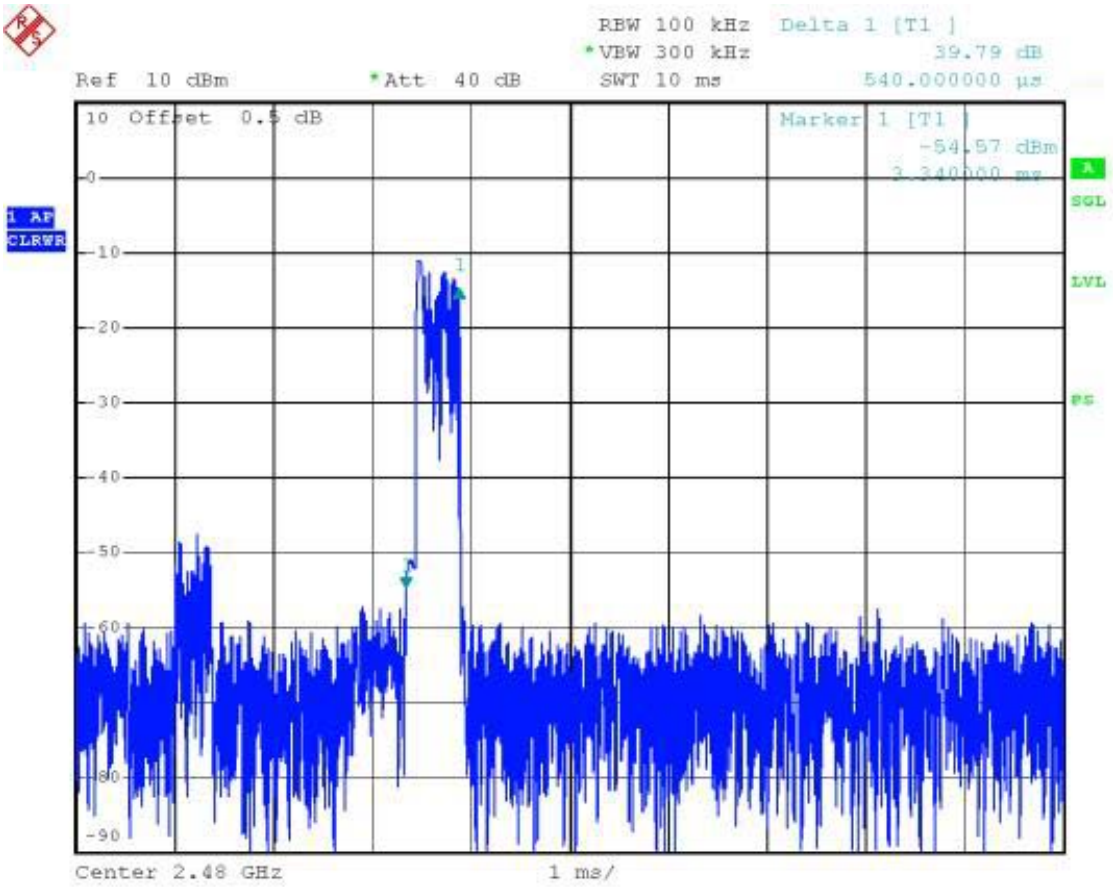
Date: 24.OCT.2006 19:16:13

High channel



HIigh channel dwell time

Date: 24.OCT.2006 19:04:48



High channel dwell time

Date: 24.OCT.2006 19:19:24

§15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to §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.

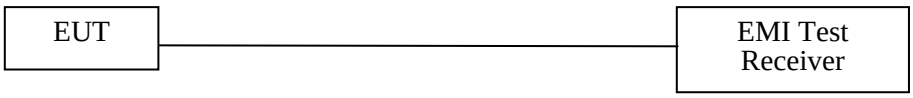
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2006-8-17	2007-8-17

*** 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 antenna port to a EMI Test Receiver.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

The testing was performed by Merry Zhao on 2006-10-24.

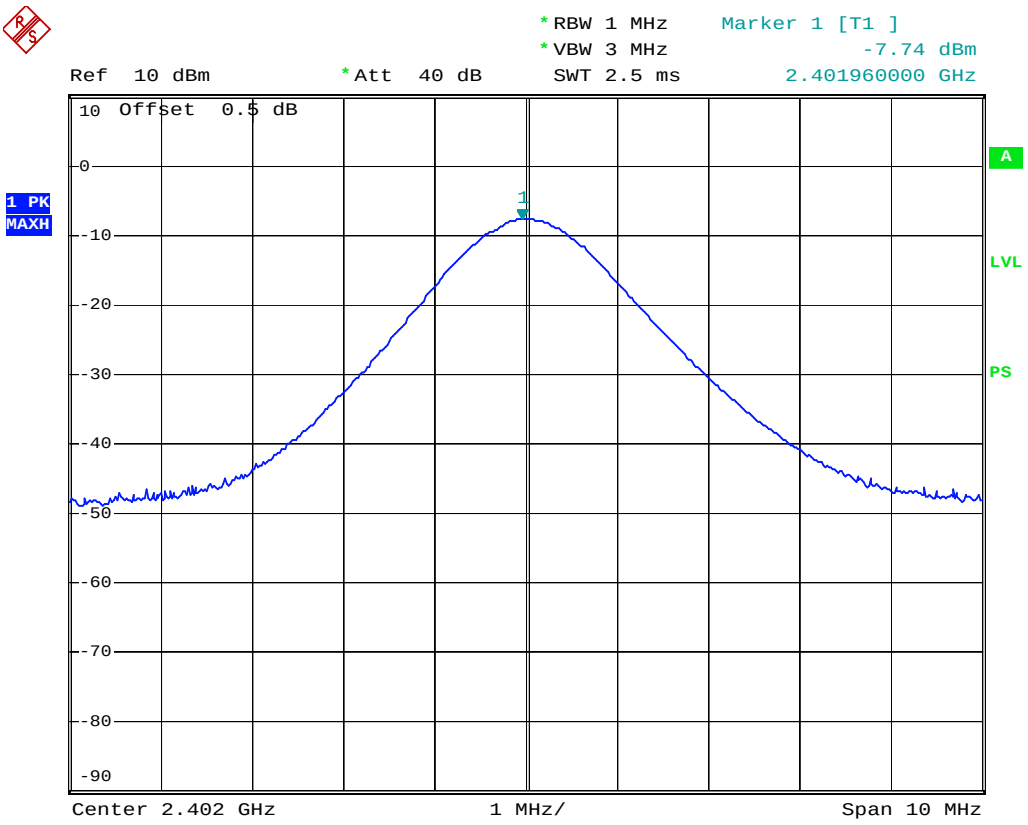
Test mode: Transmitting

Please refer to the following plots.

Channel	Channel Frequency (MHz)	Power Output		Limit (w)
		(dBm)	(w)	
Low Channel	2402	-7.74	0.000168	1
Mid Channel	2441	-7.42	0.000181	1
High Channel	2480	-11.64	0.0000685	1

Test Result: Pass

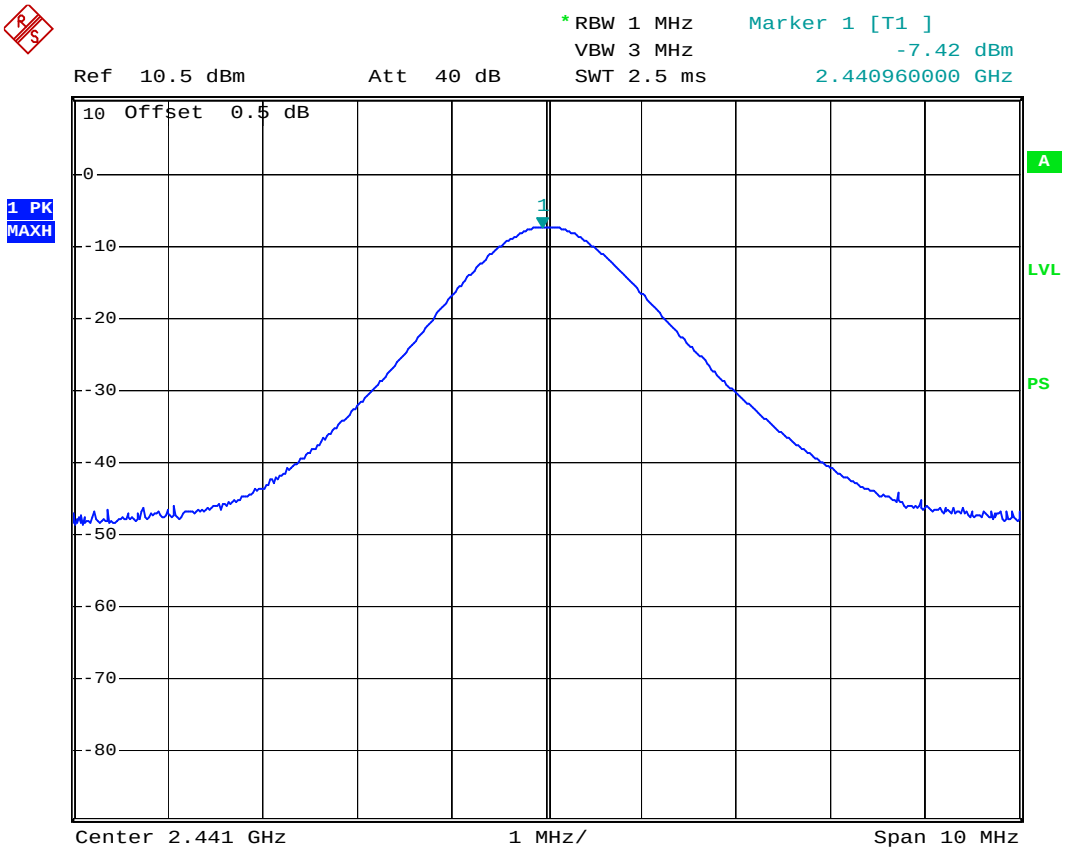
Low channel:



Low channel peak output power

Date: 24.OCT.2006 19:35:48

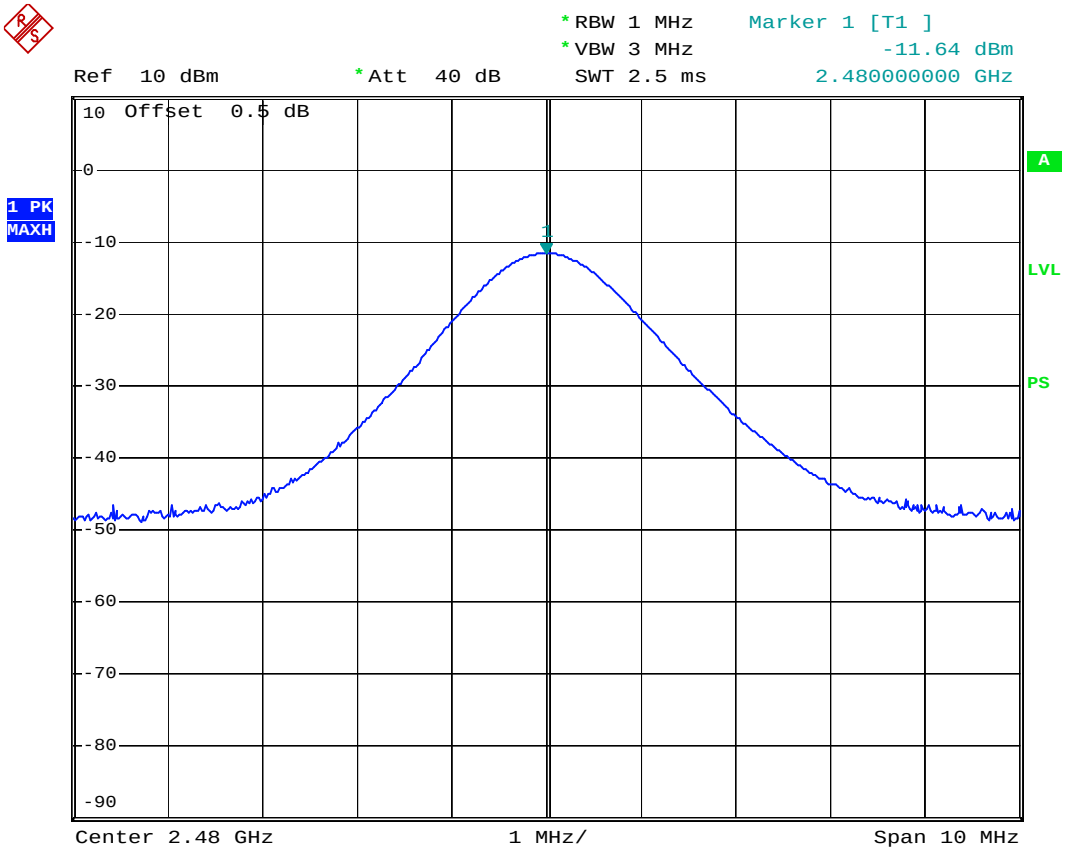
Middle channel



Middle channel peakoutput power

Date: 24.OCT.2006 17:37:52

High channel



High channel peak output power

Date: 24.OCT.2006 18:33:19

§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	2006-8-17	2007-8-17

*** 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 either an internal calibrator or 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. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz and 300KHz respectively with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009mbar

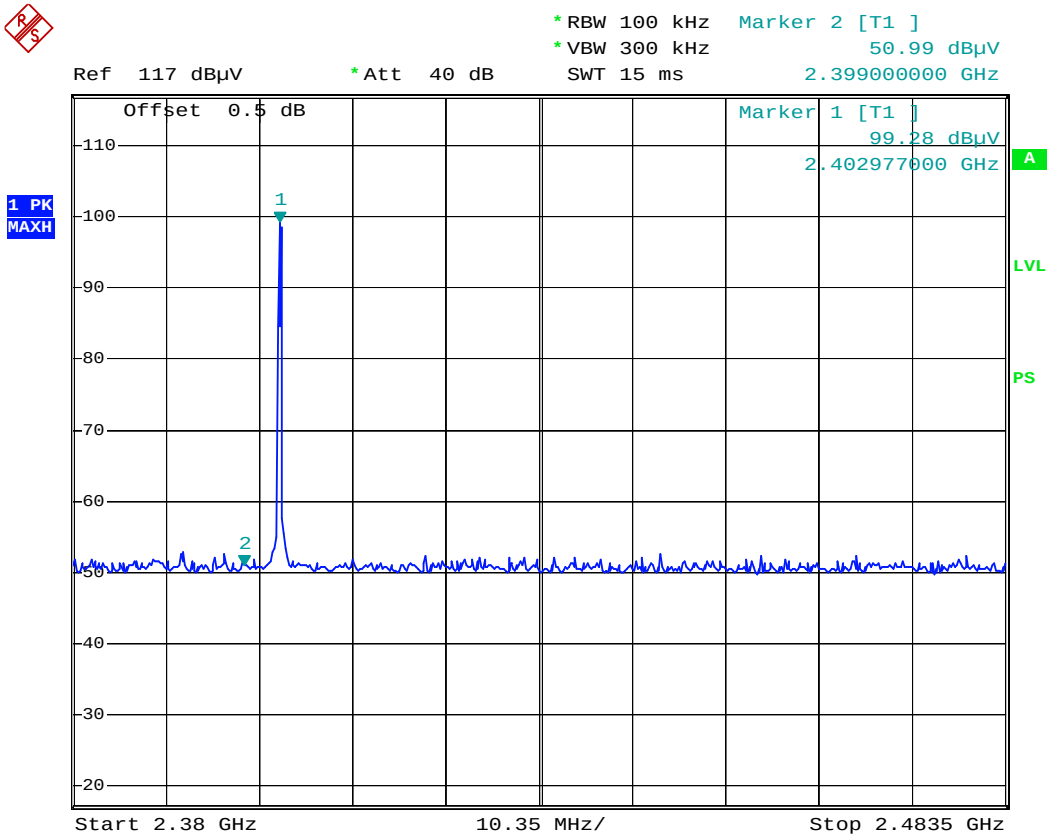
The testing was performed by Merry Zhao on 2006-10-24.

Test Mode: Transmitting

Test Result: Pass (Please refer to the plots)

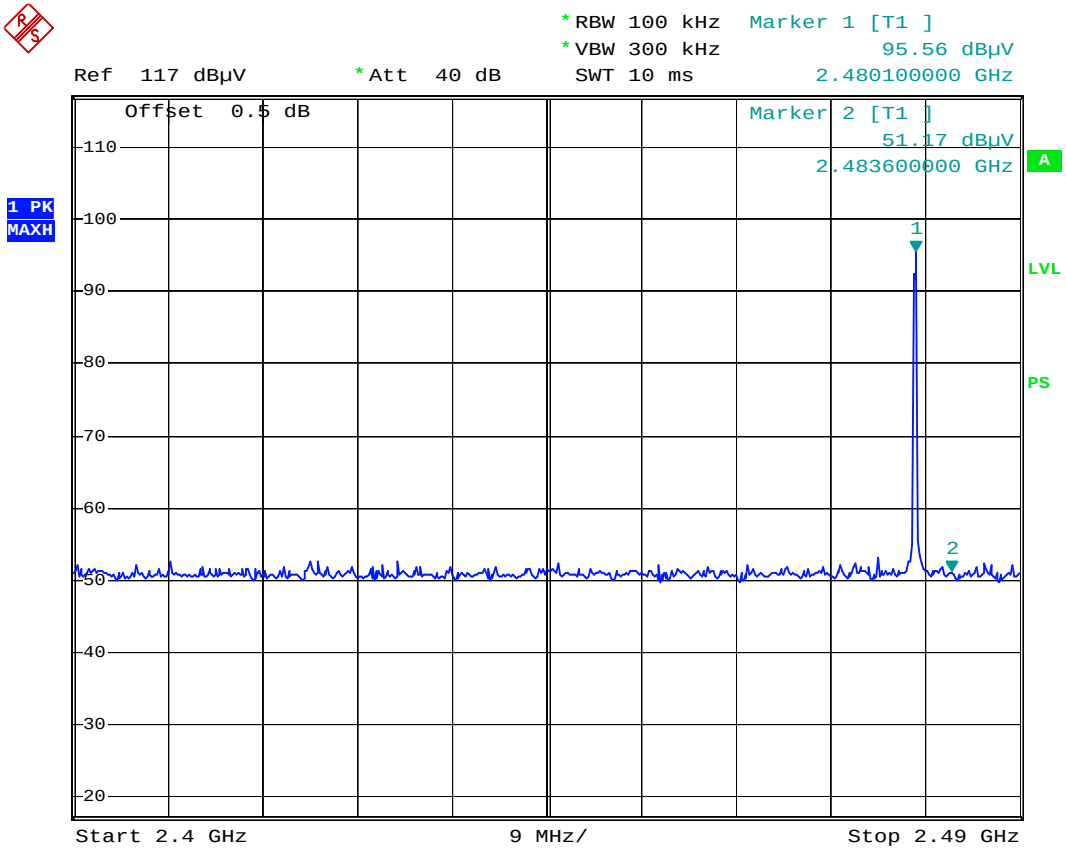
Frequency MHz	Delta of Peak to Edge Point dB	Limit dB
2399.00	48.29	⩾20
2483.60	44.39	⩾20

Left:



Date: 24.OCT.2006 18:54:25

Right:



Date: 24.OCT.2006 18:42:00