NVLAP LAB CODE 200707-0

FCC PART 15.247

MEASUREMENT AND TEST REPORT

For

Power 7 Technology Corp.

2F, No. 176, Jian-Yi Road, Chung-Ho City, Taipei, Hsien, Taiwan

FCC ID: TQN0901JC100

Report Type:	**Product Type:**
Original Report	Jensen Bluetooth / FM Transmitter

Test Engineer:	Alvin Huang
Report Number:	RSZ09010802-15.247
Report Date:	2009-03-04
Reviewed By:	Green Xu EMC Manager
Prepared By:	Bay Area Compliance Laboratories Corp. **(Shenzhen)** 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Shenzhen).This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, NIST, or any agency of the Federal Government.
* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "*".

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Power 7 Technology Corp.'s* product, *FCC ID: TQN0901JC100* model: *JC100* or the "EUT" as referred to in this report is a *Jensen Bluetooth / FM Transmitter* which measures approximately 8.5 cm L x 8.5 cm W x 14.6 cm H, rated input voltage: DC 12V/24V power supply.

Technical Specification:

FM Transmitter		
1	Operating Frequency Band	88.1~107.9 MHz
2	Channel Step	100KHz
3	Output power	48dBμV@3m
4	Antenna	Wire
5	Antenna Gain	0dBi

Bluetooth		
1	Bluetooth specification	V2.
2	Operating Frequency Band	2.4 - 2.4835 GHz
3	Output power class 2	Class 2
4	Modulation	GFSK
5	Crystal	26 MHz
6	Transmitter Power	4dBm max
7	Antenna	PCB Layout
8	Antenna Gain	0dBi
9	Bluetooth function range	10m Max.

** All measurement and test data in this report was gathered from production sample serial number: 0901018 (Assigned by BACL, Shenzhen). The EUT was received on 2009-01-08.*

Objective

This Type approval report is prepared on behalf of *Power 7 Technology Corp. 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, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC ID: TQN0901JC100, Part15.239 submission of FM Transmitter.

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 Laboratories 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 Laboratories 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, China.

Test site at Bay Area Compliance Laboratories 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 Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

NVLAP LAB CODE 200707-0

The current scope of accreditations can be found at
http://ts.nist.gov/Standards/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

No modification was made to the unit tested.

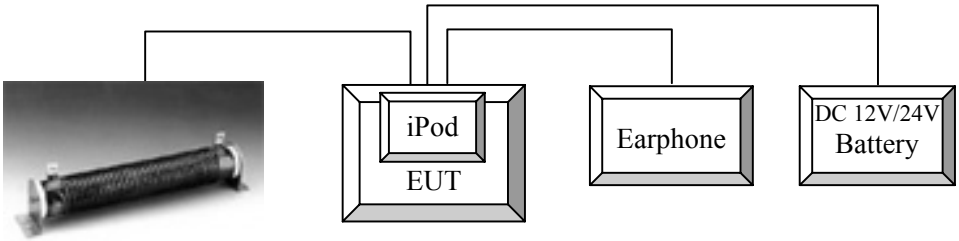
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
/	Load	50W8RJ	/	N/A
Ipod	Ipod	A1136	4J550056TXL	N/A

External I/O Cable

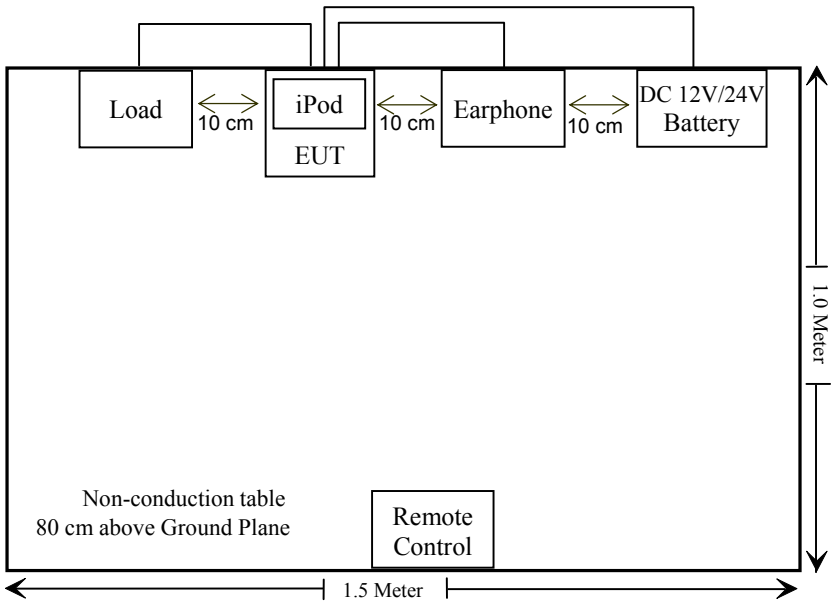
Cable Description	Length (m)	From Port	To
Unshielded Detachable DC Cable	0.5	EUT	Carkit
Unshielded Detachable DC Cable with a core	0.5	EUT	Load

Configuration of Test Setup



Remote Controller

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b)(1)	RF Radiation exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	Conducted Emissions	N/A
§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	Compliant

CFR47 §15.247 (i) & §1.1307 (b) (1) - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Standard Applicable

According to subpart 15.247 (i) and subpart 1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

(A) Limits for General Population/Uncontrolled Exposures				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f2)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Result:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$
S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Maximum peak output power at antenna input terminal: -1.74 (dBm)
Maximum peak output power at antenna input terminal: 0.67 (mW)
Prediction distance: >20 (cm)
Predication frequency: 2480 (MHz)
Antenna Gain (typical): 0 (dBi)
Antenna Gain (typical): 1 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.0001 (mW/cm^2)
MPE limit for General Population/Uncontrolled exposure at prediction frequency: 1 (mW/cm^2)

$0.0001(mW/cm^2) < 1 (mW/cm^2)$

Conclusion: MPE complies at 20 cm distance.

CFR47 §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to CFr47 § 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. 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Antenna Connector Construction

The EUT has a printed antenna on PCB. The maximum gain is 0 dBi; please refer to the internal photos.

Result: Compliance.

CFR47 §15.205, §15.209, §15.247 - RADIATED EMISSIONS

Applicable Standard

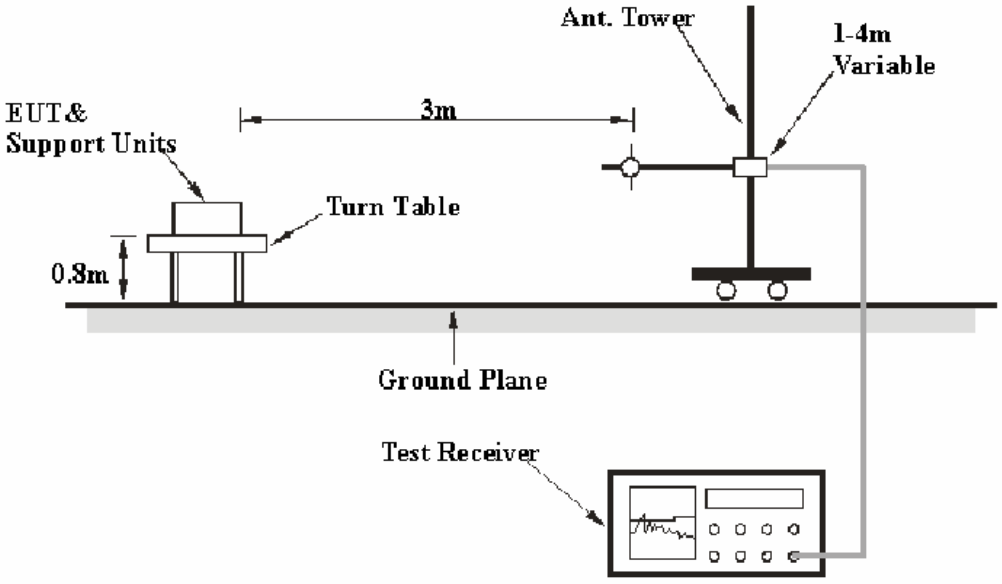
CFR47 §15.205; §15.209; §15.247 (d);

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 Laboratories Corp. (Shenzhen) is ±4.0 dB.

EUT Setup



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

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

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
HP	Amplifier	HP8447D	2944A09795	2008-11-15	2009-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2008-11-07	2009-11-06
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2008-03-11	2009-03-11
HP	Amplifier	8449B	3008A00277	2008-09-29	2009-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2008-05-09	2009-05-09

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

Test Procedure

For the radiated emissions test, the adapter was connected to the AC floor outlet.

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz and peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Factor + 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 = Limit - Corrected Amplitude

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:

Communication Mode (Below 1 GHz):

DC 12V: **11.8 dB** at **215.764000 MHz** in the **Horizontal** polarization
DC 24V: **14.0 dB** at **143.977100 MHz** in the **Horizontal** polarization

Transmitting Mode (Above 1 GHz):

5.6 dB at **1602.06 MHz** in the **Vertical** polarization **(Low Channel)**
5.97 dB at **1626.69 MHz** in the **Vertical** polarization **(Middle Channel)**
3.38 dB at **1652.68 MHz** in the **Vertical** polarization **(High Channel)**

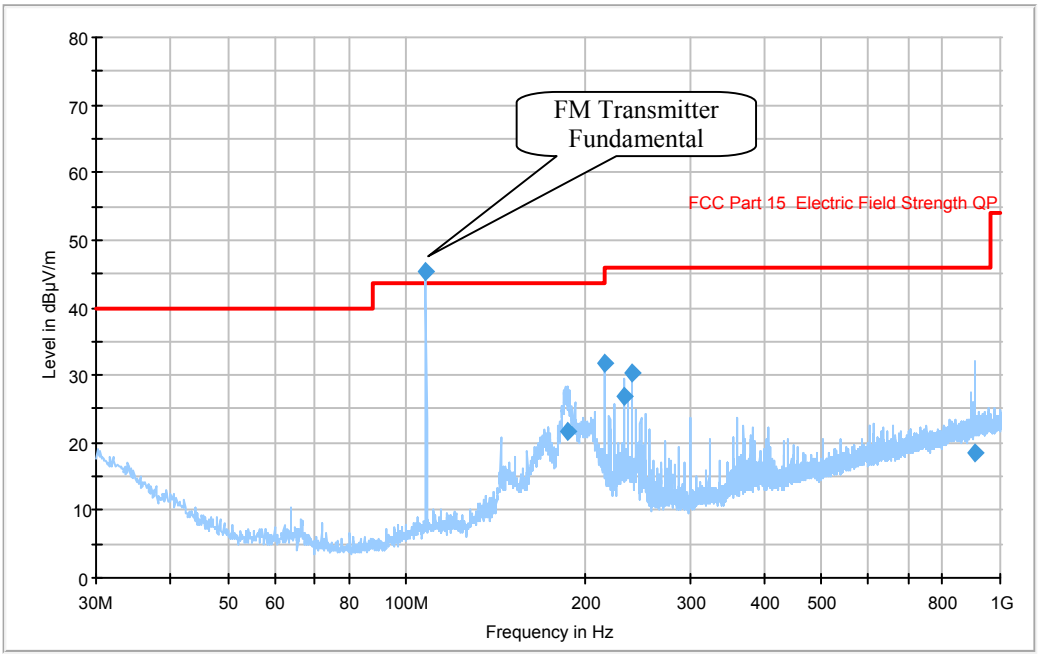
Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

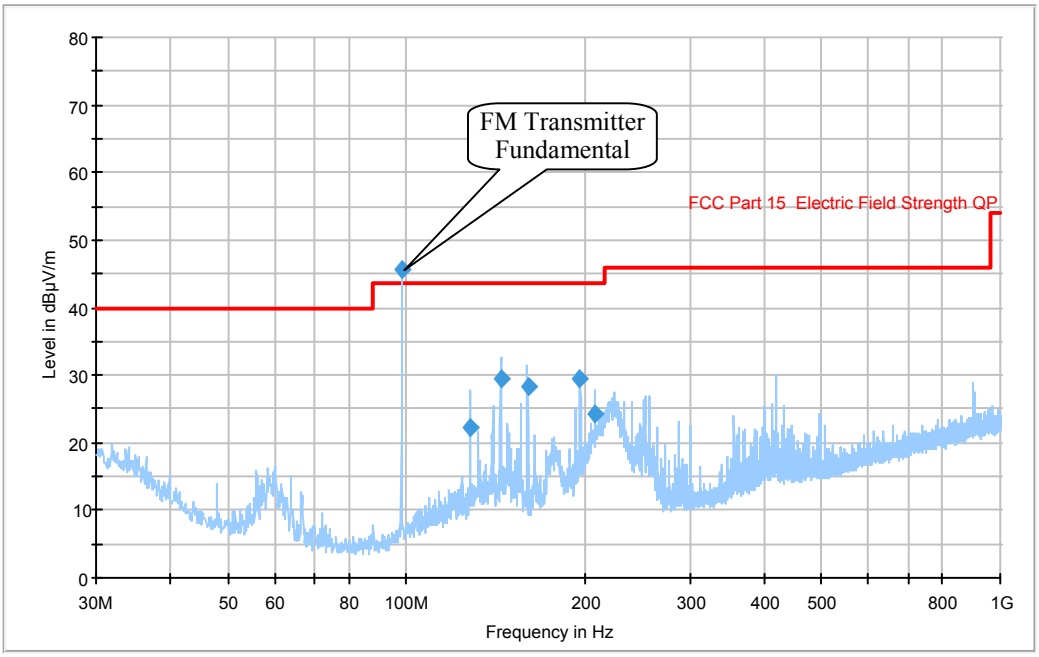
** The testing was performed by Alvin Huang on 2009-02-18.*

Test Mode: Communication (DC 12V)



Frequency (MHz)	Corrected Amp. (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
215.764000	31.7	162.0	H	336.0	-17.3	43.5	11.8
240.013475	30.3	123.0	H	152.0	-16.1	46.0	15.7
232.001000	26.7	104.0	H	6.0	-16.5	46.0	19.3
186.370375	21.6	156.0	H	0.0	-17.8	43.5	21.9
905.895650	18.5	313.0	V	338.0	-3.6	46.0	27.5

Test Mode: Communication (DC 24V)



Frequency (MHz)	Corrected Amp. (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
143.977100	29.5	201.0	H	190.0	-18.6	43.5	14.0
196.121425	29.5	183.0	H	0.0	-17.3	43.5	14.0
160.018550	28.4	249.0	H	191.0	-18.1	43.5	15.1
207.994200	24.3	197.0	H	323.0	-17.3	43.5	19.2
128.023475	22.3	106.0	V	352.0	-18.7	43.5	21.2

Test Mode: Transmitting

Freq. (MHz)	S.A. Reading (dBμV)	Detector PK/QP/AV	Table Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Corr. Amp. (dBμV/m)	FCC Part 15.247/209		
				Height (m)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)	Remarks
Low Channel (2402 MHz)												
1602.06	49.38	AV	360	1.2	V	27.8	5.62	34.4	48.4	54	5.6	spurious
1602.06	46.62	AV	120	1.4	H	27.5	5.62	34.4	45.34	54	8.66	spurious
4804	32.67	AV	240	1.7	H	36.3	7.56	33.7	42.83	54	11.17	harmonic
4804	33.8	AV	265	1.2	V	35	7.56	33.7	42.66	54	11.34	harmonic
4804	45.68	PK	240	1.7	H	36.3	7.56	33.7	55.84	74	18.16	harmonic
4804	46.11	PK	265	1.2	V	35	7.56	33.7	54.97	74	19.03	harmonic
1602.06	53.92	PK	360	1.3	V	27.8	5.62	34.4	52.94	74	21.06	spurious
1602.06	52.37	PK	120	1.3	H	27.5	5.62	34.4	51.09	74	22.91	spurious
Middle Channel (2441 MHz)												
1626.69	49.01	AV	175	1.1	V	27.8	5.62	34.4	48.03	54	5.97	spurious
1626.69	46.95	AV	136	1.6	H	27.5	5.62	34.4	45.67	54	8.33	spurious
4882	32.86	AV	0	1.5	H	36.3	7.56	33.7	43.02	54	10.98	harmonic
4882	34.01	AV	0	1.2	V	35	7.56	33.7	42.87	54	11.13	harmonic
4882	45.72	PK	0	1.5	H	36.3	7.56	33.7	55.88	74	18.12	harmonic
4882	46.64	PK	0	1.2	V	35	7.56	33.7	55.5	74	18.5	harmonic
1626.69	53.08	PK	175	1.1	V	27.8	5.62	34.4	52.1	74	21.9	spurious
1626.69	53.16	PK	136	1.6	H	27.5	5.62	34.4	51.88	74	22.12	spurious
High Channel (2480 MHz)												
1652.68	51.60	AV	193	1.1	V	27.8	5.62	34.4	50.62	54	3.38	spurious
1652.68	45.89	AV	164	2.0	H	27.5	5.62	34.4	44.61	54	9.39	spurious
4960	35.05	AV	180	1.2	V	35.2	7.70	33.7	44.25	54	9.75	harmonic
4960	32.68	AV	360	1.7	H	36.4	7.70	33.7	43.08	54	10.92	harmonic
4960	48.46	PK	180	1.2	V	35.2	7.70	33.7	57.66	74	16.34	harmonic
4960	45.26	PK	360	1.7	H	36.4	7.70	33.7	55.66	74	18.34	harmonic
1652.68	55.29	PK	193	1.1	V	27.8	5.62	34.4	54.31	74	19.69	spurious
1652.68	50.87	PK	164	2.0	H	27.5	5.62	34.4	49.59	74	24.41	spurious

Spurious emission in Restricted Band:

Freq. (MHz)	S.A. Reading (dBμV)	Detector PK/QP/AV	Table Direction Degree	Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Corr. Amp. (dBμV/m)	FCC Part 15.247/209	
				Height (m)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Out Side of Left Band (2310 – 2390 MHz)											
2368.3	34.13	AV	360	1.6	H	30.9	7.6	33.9	38.73	54	15.27
2375.4	33.16	AV	0	1.1	V	30.3	7.6	33.9	37.16	54	16.84
2368.3	47.36	PK	360	1.6	H	30.9	7.6	33.9	51.96	74	22.04
2375.4	46.02	PK	0	1.1	V	30.3	7.6	33.9	50.02	74	23.98
Out Side of Right Band (2483.5 – 2500 MHz)											
2485.5	36.03	AV	108	1.2	V	30.3	8	33.9	40.43	54	13.57
2485.5	34.88	AV	360	1.9	H	30.9	8	33.9	39.88	54	14.12
2485.5	50.00	PK	108	1.2	V	30.3	8	33.9	54.4	74	19.6
2485.5	48.63	PK	360	1.9	H	30.9	8	33.9	53.63	74	20.37

CFR47 §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	100035	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Alvin Huang on 2009-02-20.*

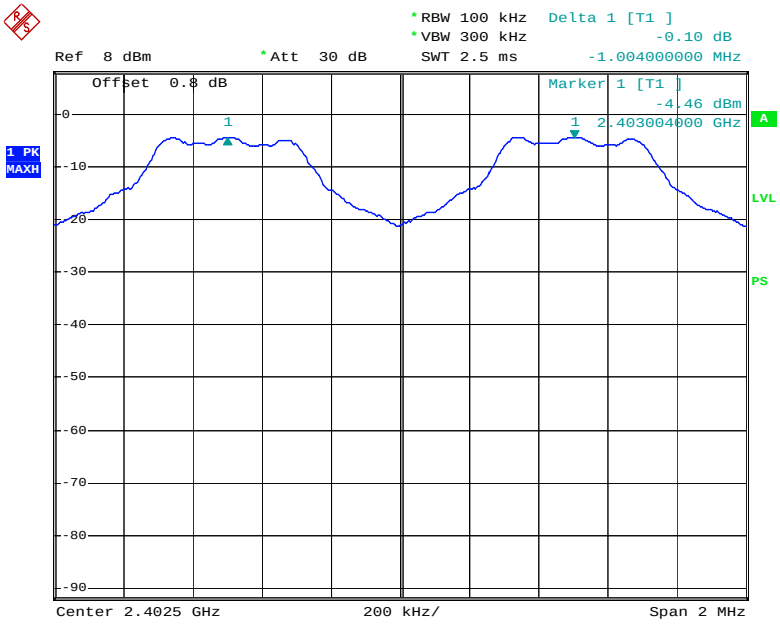
Test Result: Compliant.

Please refer to following tables and plots

Test Mode: Transmitting

Channel	Channel Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low Channel	2402	1.004	0.557	Pass
Adjacent Channel	2403			
Mid Channel	2441	1.008	0.560	Pass
Adjacent Channel	2440			
High Channel	2480	1.000	0.560	Pass
Adjacent Channel	2479			

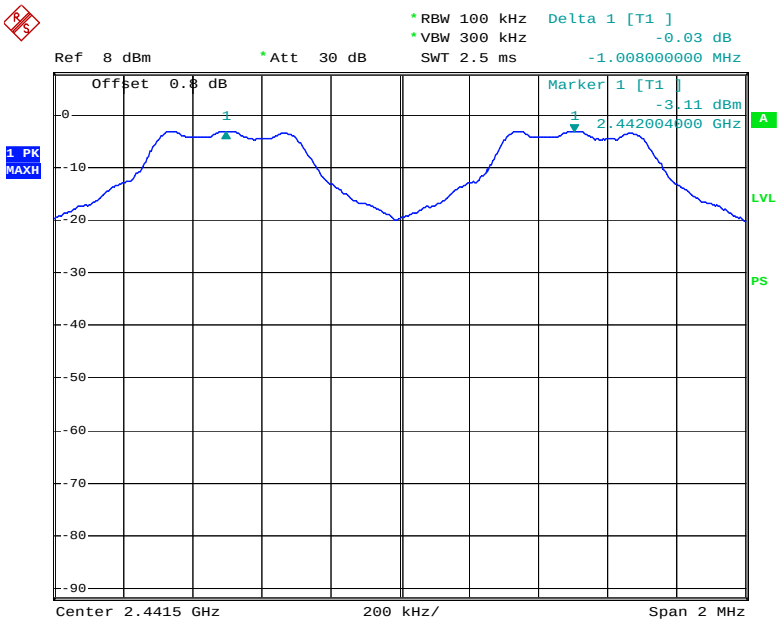
Low Channel



channel separation-low channel

Date: 20.FEB.2009 20:56:32

Middle Channel



channel separation-middle channel

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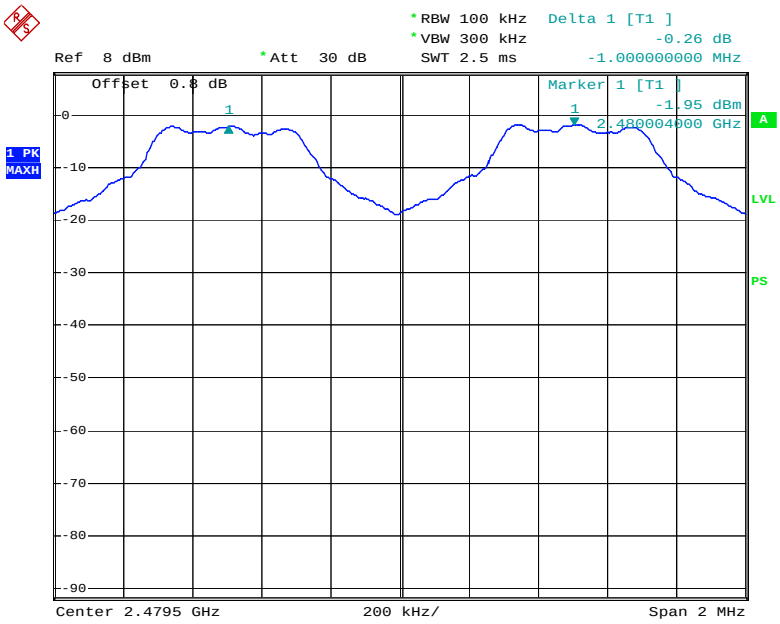
High Channel



channel separation-high channel

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CFR47 §15.247(a) (1) – 20dB BANDWIDTH TESTING

Applicable Standard

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 125mW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Alvin Huang on 2009-02-20.*

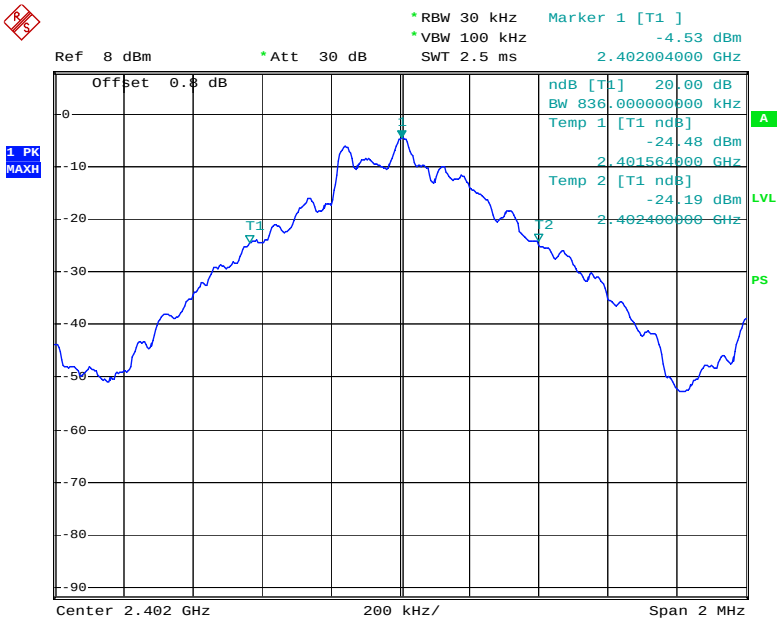
Test Result: Compliant.

Please refer to following tables and plots

Test Mode: Transmitting

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2402	0.836
Middle	2441	0.840
High	2480	0.840

Low Channel



20db bandwidht-low channel

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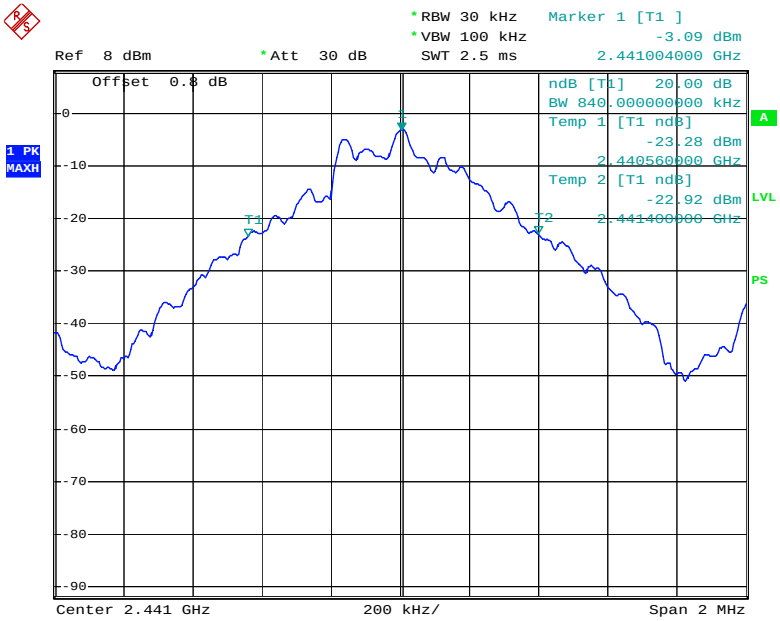
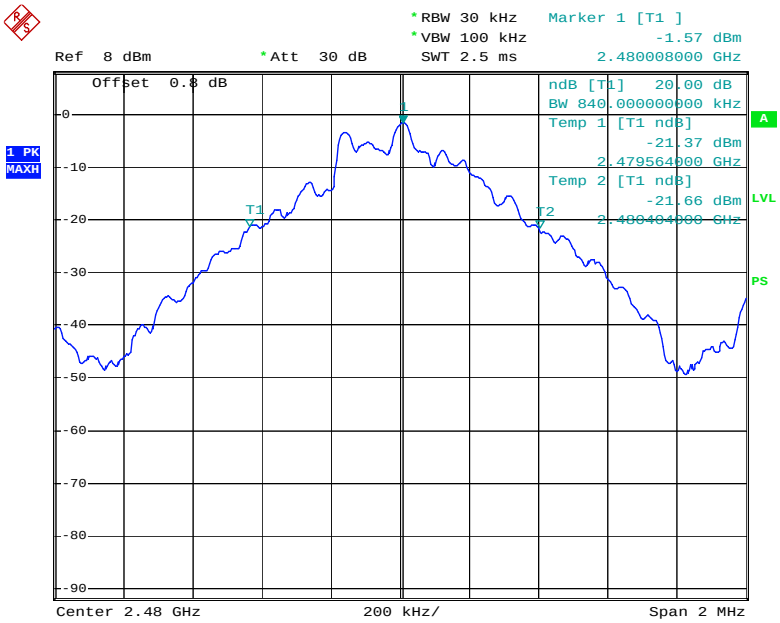
Middle Channel



20db bandwidht-middle channel

Date: 20.FEB.2009 20:50:51

High Channel



20db bandwidht-high channel

Date: 20.FEB.2009 20:53:03

CFR47 §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	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

The testing was performed by Alvin Huang on 2009-02-20.

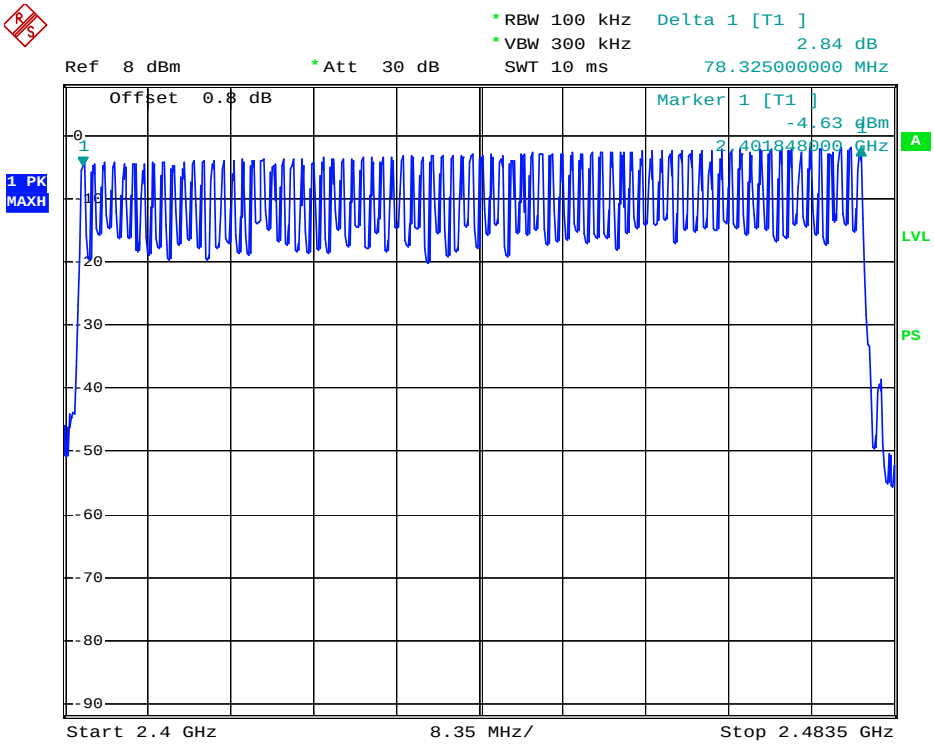
Test Result: Compliant.

Please refer to following tables and plots

Test Mode: Transmitting

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

Number of Hopping Channels



hopping channel

Date: 20.FEB.2009 21:03:51

CFR47 §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	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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 get from single sweep. In addition, the time of single pulses was tested.

Dwell Time= time slot length * hope rate/ number of hopping channels * 31.6s
Hop rate=1600/s

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Alvin Huang on 2009-02-20.*

Test Result: Compliant.

Please refer to following tables and plots

DH 1

Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
Low	0.490	0.157	0.4	Pass
Middle	0.470	0.151	0.4	Pass
High	0.470	0.151	0.4	Pass

Note: Dwell time= Pulse time*(1600/2/79)*31.6S

DH 3

Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
Low	1.740	0.279	0.4	Pass
Middle	1.740	0.279	0.4	Pass
High	1.740	0.279	0.4	Pass

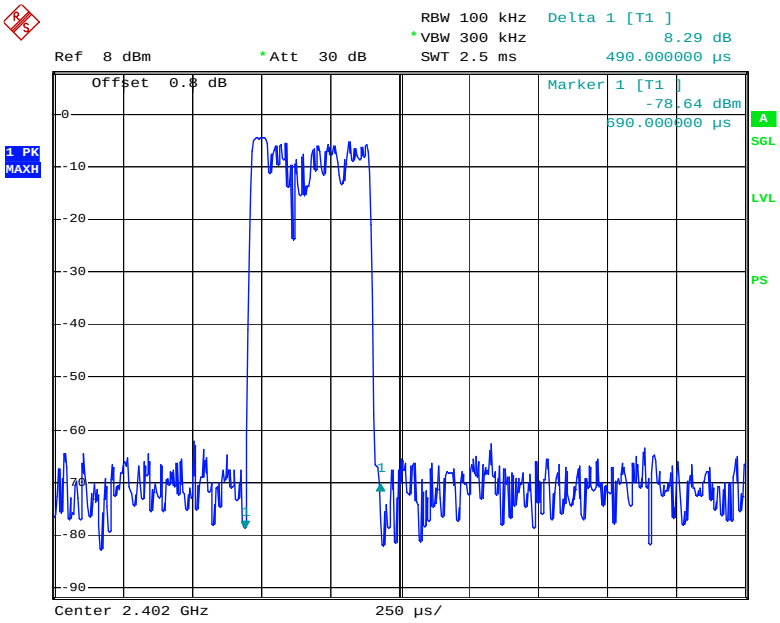
Note: Dwell time= Pulse time*(1600/4/79)*31.6S

DH 5

Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
Low	3.020	0.323	0.4	Pass
Middle	3.040	0.325	0.4	Pass
High	3.000	0.320	0.4	Pass

Note: Dwell time= Pulse time*(1600/6/79)*31.6S

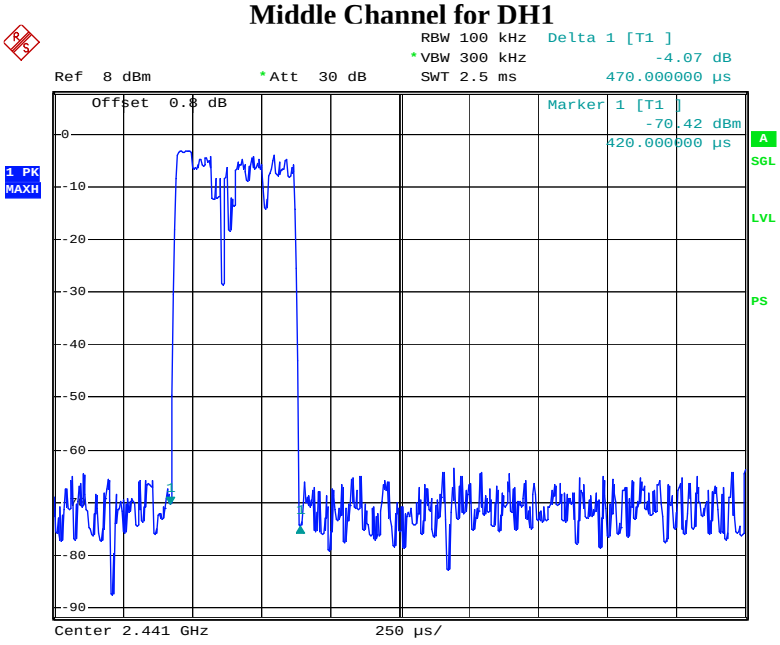
Low Channel for DH1



DH1-Low channel

Date: 20.FEB.2009 21:06:24

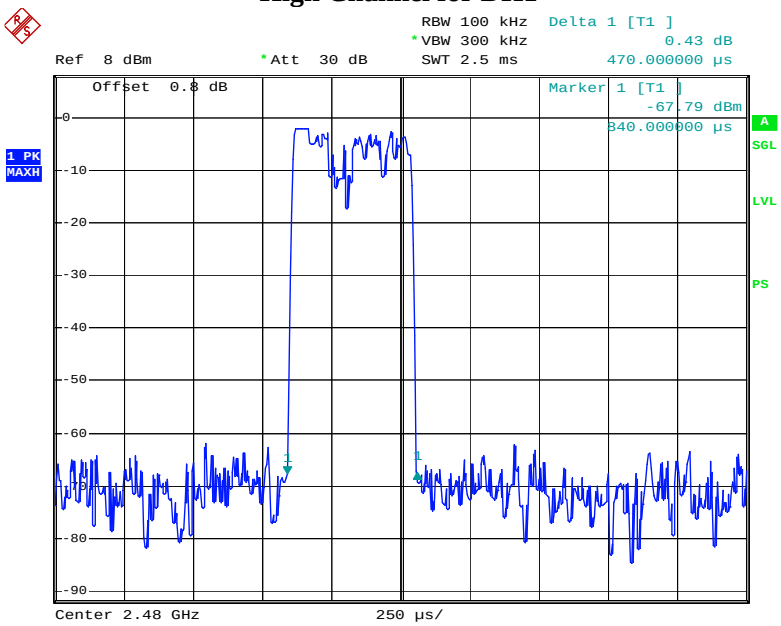
Middle Channel for DH1



DH1-Middle channel

Date: 20.FEB.2009 21:08:09

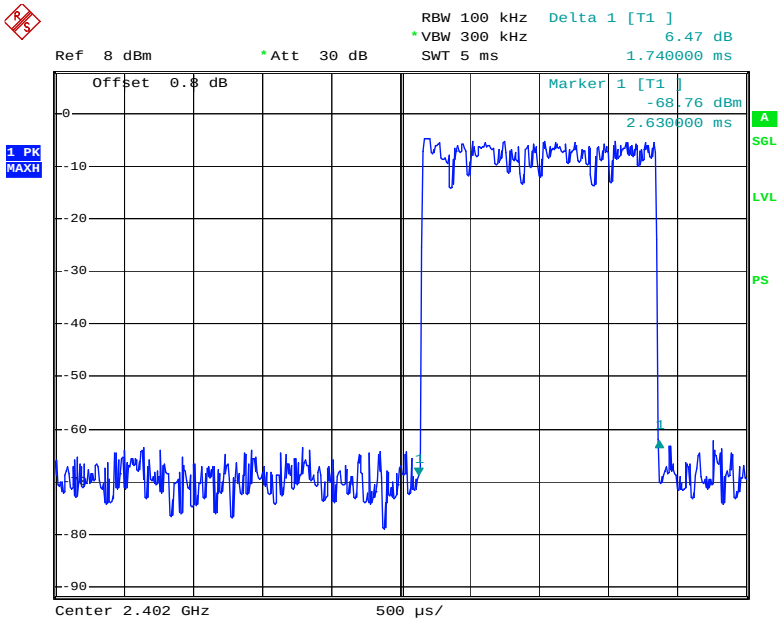
High Channel for DH1



DH1-High channel

Date: 20.FEB.2009 21:08:58

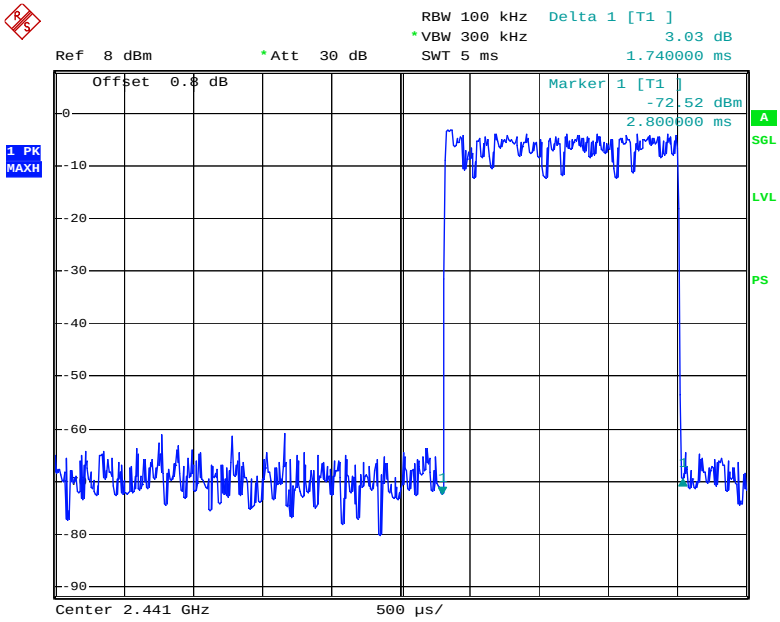
Low Channel for DH3



DH3-low channel

Date: 20.FEB.2009 21:12:04

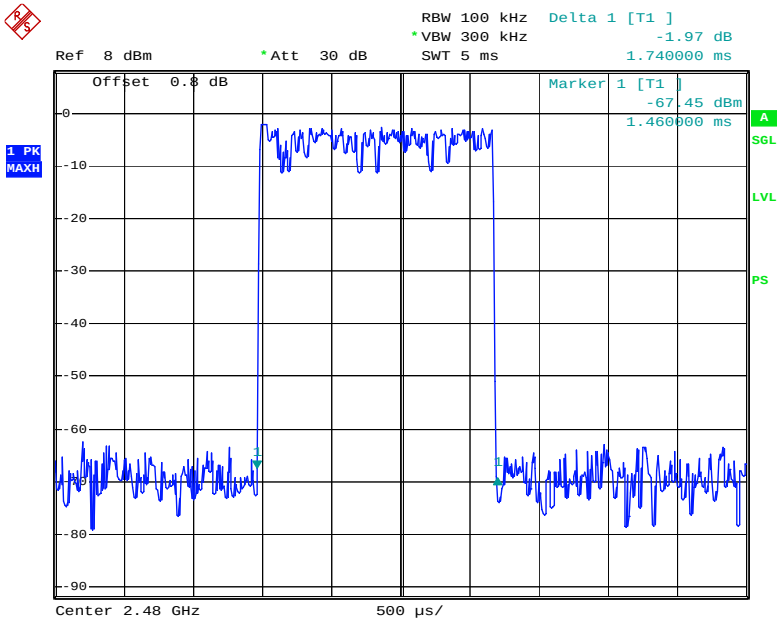
Middle Channel for DH3



DH3-middle channel

Date: 20.FEB.2009 21:11:15

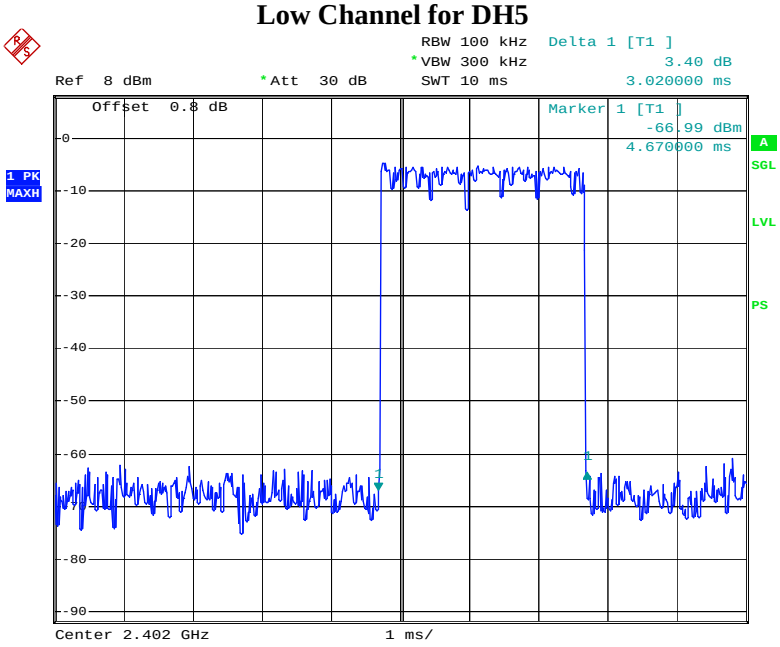
High Channel for DH3



DH3-High channel

Date: 20.FEB.2009 21:10:17

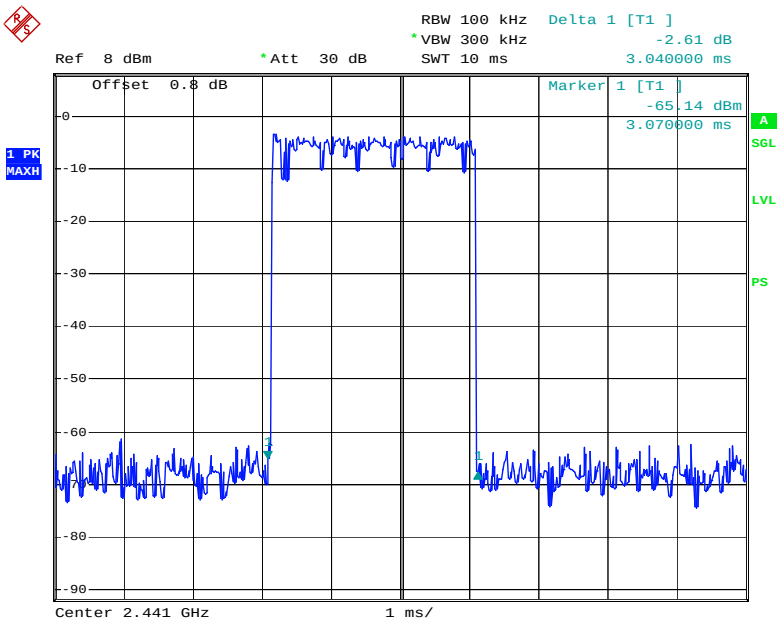
Low Channel for DH5



DH5-low channel

Date: 20.FEB.2009 21:14:10

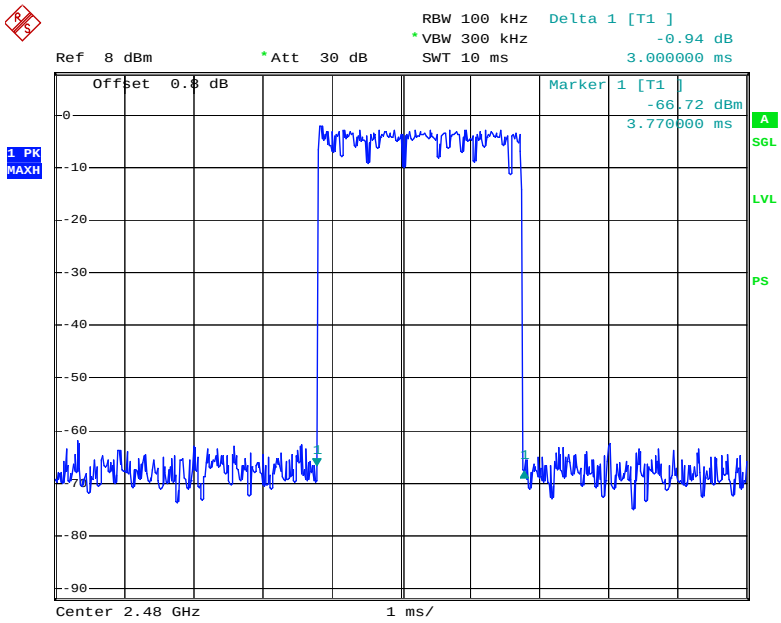
Middle Channel for DH5



DH5-middle channel

Date: 20.FEB.2009 21:15:52

High Channel for DH5



DH5-high channel

Date: 20.FEB.2009 21:17:00

CFR47 §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.

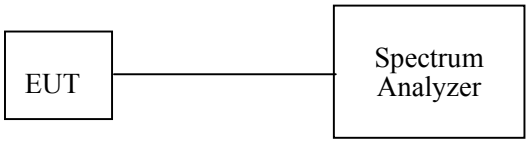
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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 an EMI Test Receiver.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

** The testing was performed by Alvin Huang on 2009-02-20.*

Test Result: Compliant.

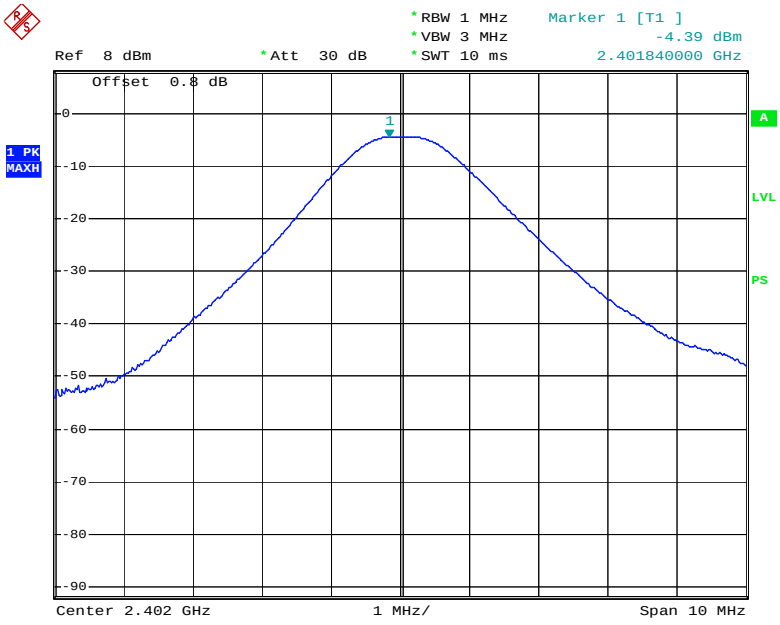
Please refer to following tables and plots

Test Mode: Transmitting

Channel	Channel Frequency (MHz)	Reading Power (dBm)	Power Output (mw)	Limit (mw)
Low	2402	-4.39	0.36	125
Mid	2441	-2.95	0.51	125
High	2480	-1.74	0.67	125

Note: *Typical Antenna Gain = 0 dBi*

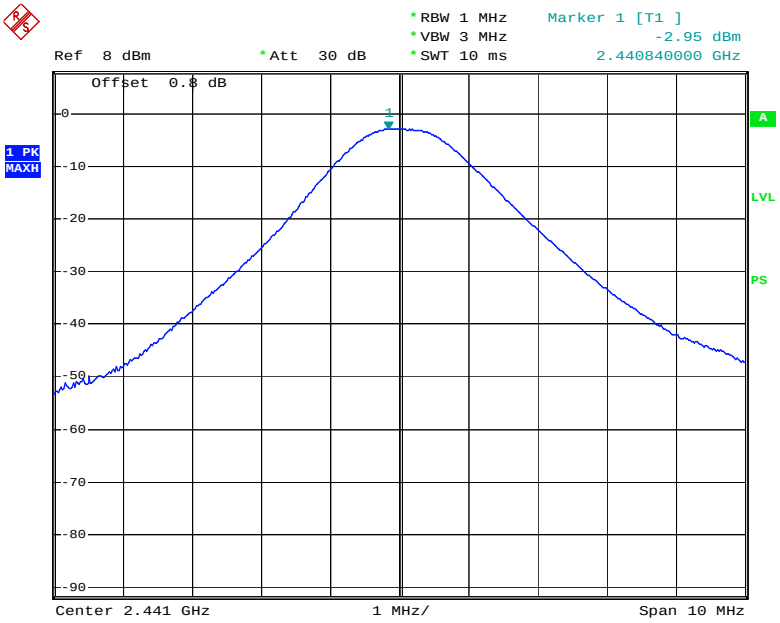
Low Channel



output power-low channel

Date: 20.FEB.2009 21:27:05

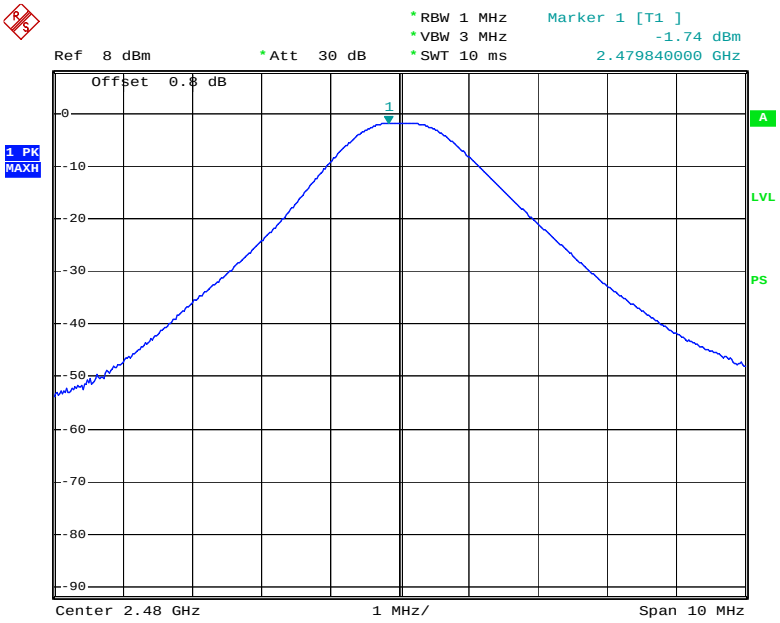
Middle Channel



output power-middle channel

Date: 20.FEB.2009 21:26:25

High Channel



output power-high channel

Date: 20.FEB.2009 21:24:19

CFR47 §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	2008-11-07	2009-11-06

*** Statement of Traceability:** Bay Area Compliance Laboratories 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. For conducted measurements the transmitter shall be connected to the measuring equipment.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz 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:	27 °C
Relative Humidity:	56 %
ATM Pressure:	100.9 kPa

**The testing was performed by Alvin Huang on 2009-02-20.*

Test Result: Compliant

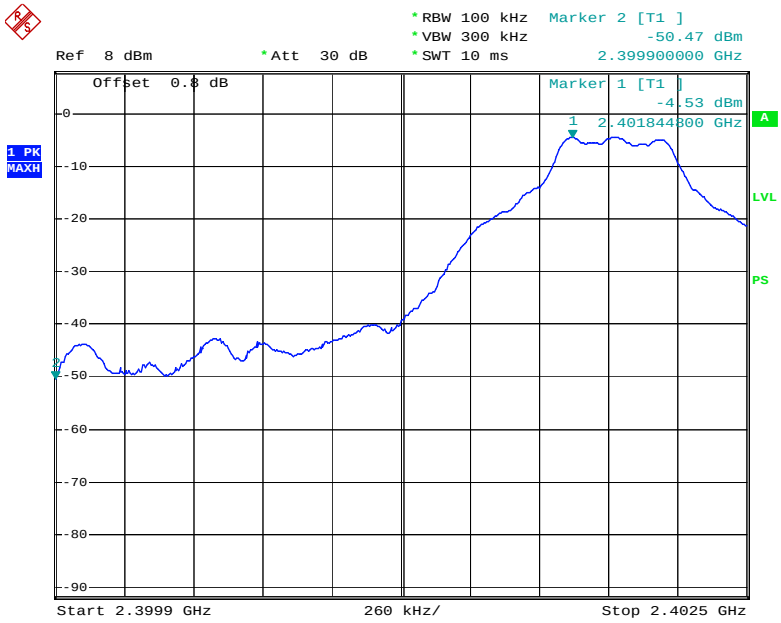
Please refer to the following table and plots.

Test Mode: Transmitting

Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)
2399.9	45.94	20
2483.6	52.25	20

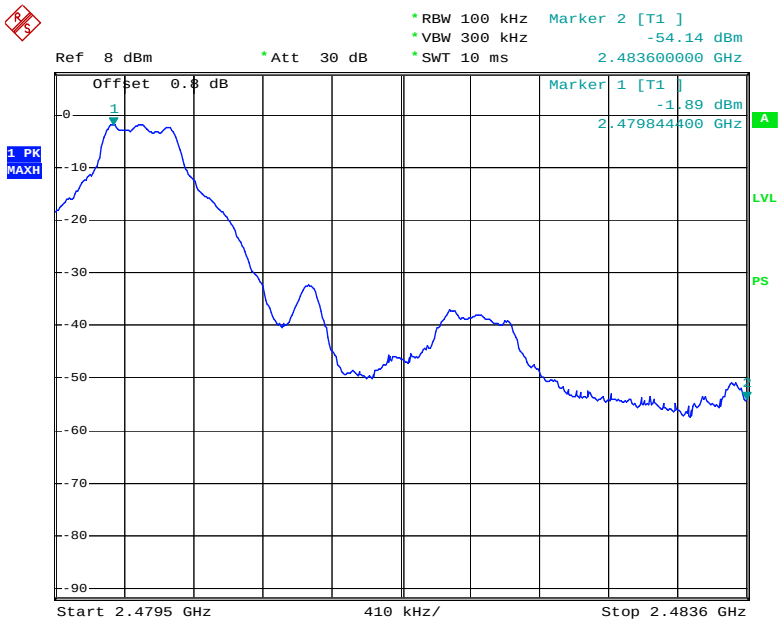
Note: The point fall into the stricted band was tested in FCC 15.209, please refer to the restrict band testing.

Band Edge Left Side



band edge-left
Date: 20.FEB.2009 21:21:09

Band Edge Right Side



band edge-right

Date: 20.FEB.2009 21:22:51

******* END OF REPORT *******