Lab Code: 200707-0

FCC PART 15.247

TEST REPORT

For

WECCAN INDUSTRIAL LIMITED

30/F, Building C1, Xinghe Century, Caitian South Road, Futian District,
Shenzhen, Guangdong Province, P.R.C

FCC ID: Z3CWECCANBTHELI

Report Type:	**Product Type:**
Original Report	iOS Bluetooth Helicopter

Test Engineer:	Eric Lee
Report Number:	RSZ110921802-00
Report Date:	2011-11-24
Reviewed By:	Alvin Huang EMC Engineer
Test Laboratory:	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 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *WECCAN INDUSTRIAL LIMITED*'s product, model number: *i737 (FCC ID: Z3CWECCANBTHELI)* (the "EUT") in this report was an *iOS Bluetooth Helicopter*, which was measured approximately: 23.0 cm (L) x 11.0 cm (W) x 4.0 cm (H), rated input voltage: DC 3.7 V Battery.

Note: The serials product, model i717, i727, i737, i747, i757, i767, i777, i787 and i797 are electrically identical, and the difference between them please refers to the attached declaration. Model i737was select for fully testing.

** All measurement and test data in this report was gathered from production sample serial number: 1109006 (Assigned by BACL, Shenzhen). The EUT was received on 2011-09-21.*

Objective

This report is prepared on behalf of *WECCAN INDUSTRIAL LIMITED* 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 the compliance of EUT with FCC Part 15, Subpart C section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, 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.

The uncertainty of any RF tests which use conducted method measurement is ±0.96 dB, the uncertainty of any radiation on emissions measurement is ±4.0 dB

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on 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 December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

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 an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (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 an engineering mode, which is provided by manufacturer.

EUT Exercise Software

No Exercise Software

Equipment Modifications

No modification was made to the EUT tested.

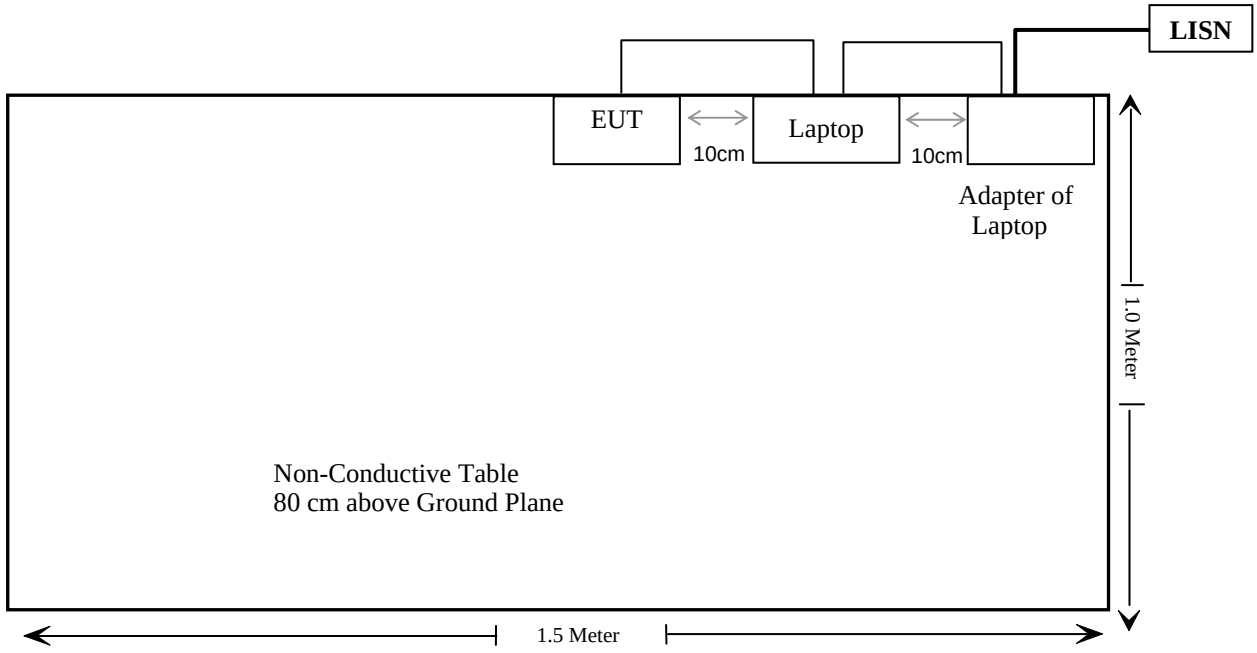
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Laptop	2371	N/A

External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable USB Charging Cable	1.2	EUT	Laptop

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1091	Maximum Permissible Exposure (MPE)	Compliace
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions	Compliance
§15.247 (a)(1)	20 dB Bandwidth	Compliance
§15.247(a)(1)	Channel Separation Test	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance
§15.247(b)(1)	Peak Output Power Measurement	Compliance
§15.247(d)	Band Edges	Compliance

FCC §15.247 (i) & §1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

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 that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
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	*($180/f^2$)	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;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = 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);

Calculated Data:

Frequency (MHz)	**Antenna Gain**		**Conducted Power**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
	(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
2402	0	1	0.54	1.132	20	0.00021	1

Result: Compliance

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

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. 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has a PCB layout antenna, the gain is 0dBi. Please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

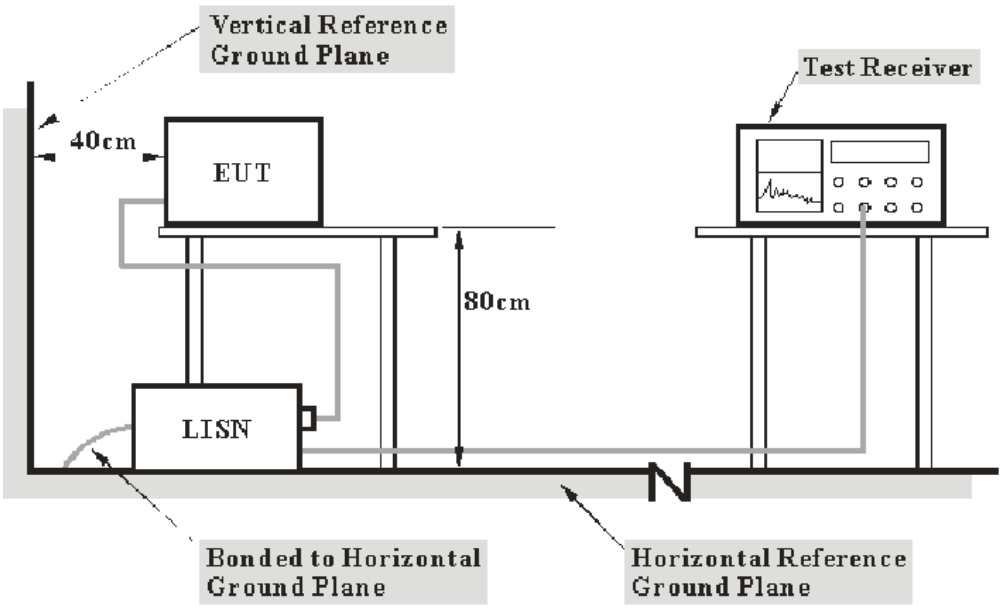
FCC §15.207

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratory Corp. (Shenzhen) is ±2.4 dB(k=2, 95% level of confidence).

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 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 adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2011-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08

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

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

12.14 dB at **0.690 MHz** in the **Neutral** conducted mode

Test Data

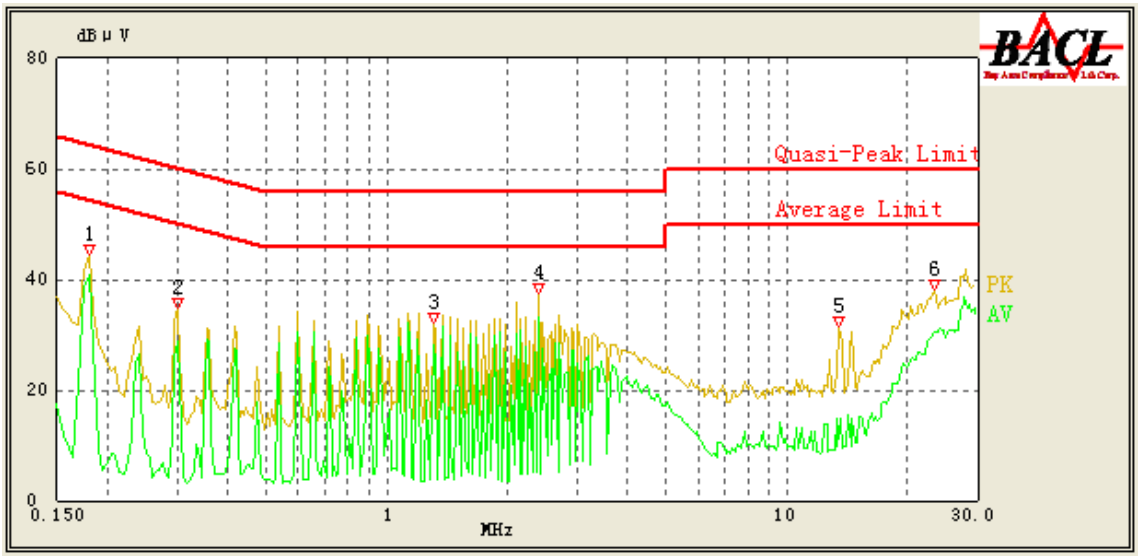
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

** The testing was performed by Eric Lee on 2011-10-18.*

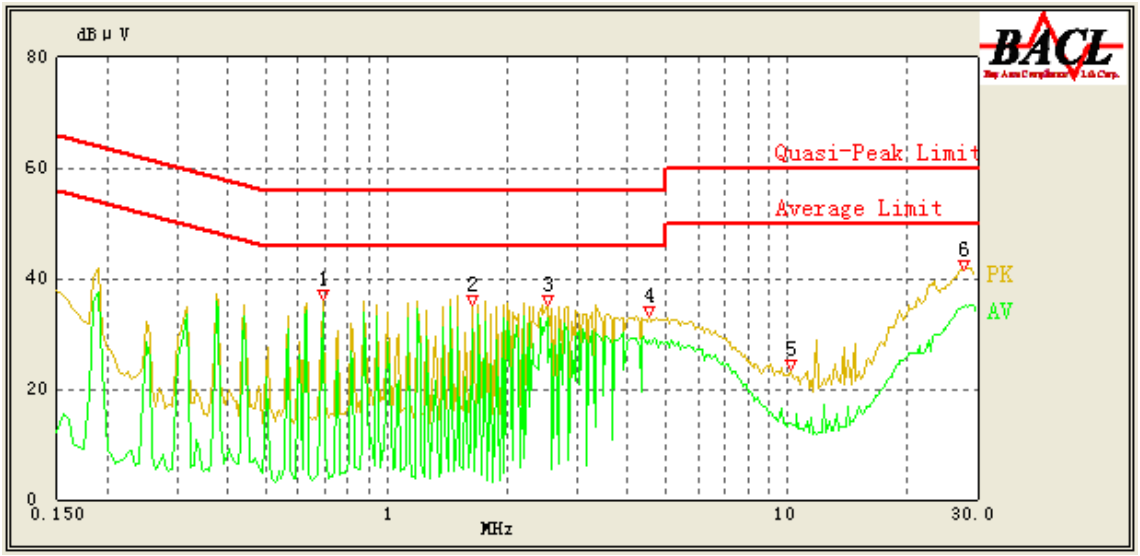
Test Mode: Charging

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
2.405	33.25	10.10	46.00	12.75	Ave.
0.180	40.82	10.10	55.14	14.32	Ave.
1.315	28.20	10.10	46.00	17.80	Ave.
23.190	29.98	10.10	50.00	20.02	Ave.
2.405	35.07	10.10	56.00	20.93	QP
0.300	28.94	10.10	51.71	22.77	Ave.
0.180	42.12	10.10	65.14	23.02	QP
1.315	30.73	10.10	56.00	25.27	QP
23.300	33.11	10.10	60.00	26.89	QP
0.300	30.83	10.10	61.71	30.88	QP
13.400	9.84	10.10	50.00	40.16	Ave.
13.440	19.77	10.10	60.00	40.23	QP

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.690	33.86	10.10	46.00	12.14	Ave.
2.515	32.80	10.10	46.00	13.20	Ave.
27.610	34.99	10.10	50.00	15.01	Ave.
1.635	30.96	10.10	46.00	15.04	Ave.
4.530	28.86	10.10	46.00	17.14	Ave.
27.610	39.24	10.10	60.00	20.76	QP
0.690	34.93	10.10	56.00	21.07	QP
2.515	33.38	10.10	56.00	22.62	QP
1.635	31.62	10.10	56.00	24.38	QP
4.530	29.04	10.10	56.00	26.96	QP
10.145	13.95	10.10	50.00	36.05	Ave.
10.210	19.92	10.10	60.00	40.08	QP

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

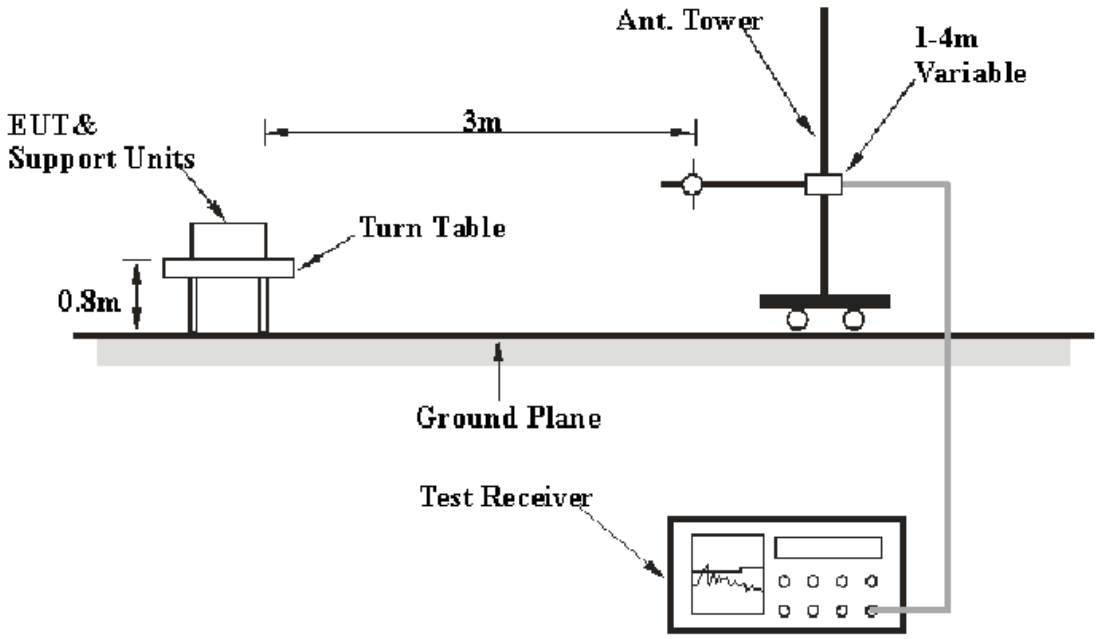
FCC §15.247 (d); §15.209; §15.205;

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(k=2, 95% level of confidence).

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. 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.

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***	***Detector***
30 MHz – 1000 MHz	100 kHz	300 kHz	QP
1000 MHz – 25 GHz	1 MHz	3 MHz	PK
1000 MHz – 25 GHz	1 MHz	10 Hz	Ave.

Test Procedure

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-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2011-08-02	2012-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Mini-Circuits	Amplifier	ZVA-213+	T-E27H	2011-03-08	2012-03-07
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07

*** 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.

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 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, section 15.205, 15.209 and 15.247, with the worst margin reading of:

9.90 dB at **4804 MHz** in the **Horizontal** polarization

Test Data

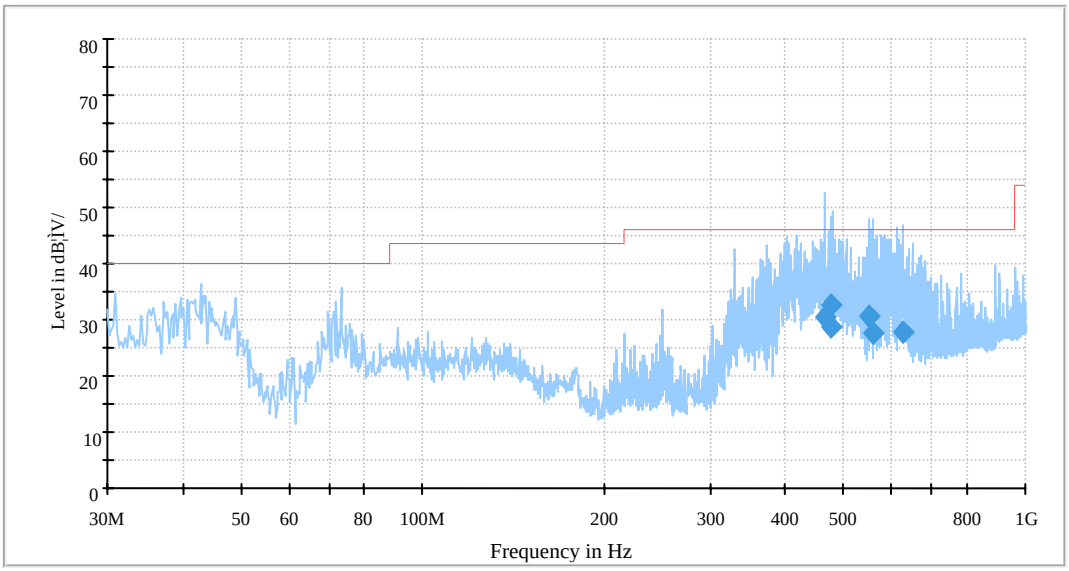
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Eric Lee on 2011-11-22.

Test Mode: Transmitting

Below 1 GHz



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Test Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
477.024500	33.6	103.0	V	271.0	-8.7	46.0	12.4
550.453250	30.9	103.0	V	261.0	-7.5	46.0	15.1
465.222000	30.5	102.0	V	247.0	-8.9	46.0	15.5
477.499500	29.2	124.0	V	280.0	-8.7	46.0	16.8
558.065750	28.9	102.0	V	285.0	-7.3	46.0	17.1
628.841000	27.7	103.0	V	262.0	-5.6	46.0	18.3

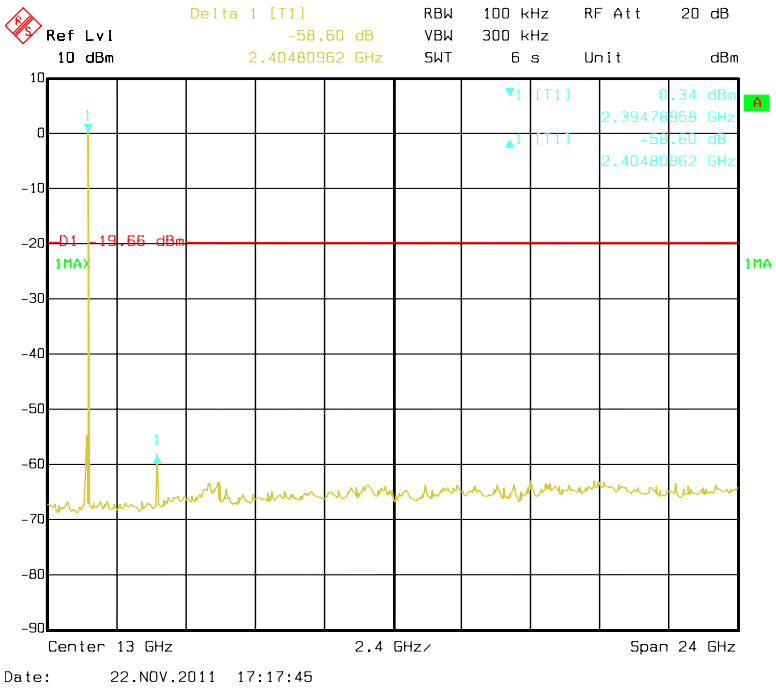
Above 1 GHz

Indicated		Detector (PK/Ave.)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247/15.209/15.205			
Frequency (MHz)	S.A. Reading (dBμV)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2402 MHz)												
4804	30.25	Ave.	270	1.2	H	36.3	4.30	26.75	44.10	54	9.90	Harmonic
4804	28.47	Ave.	95	1.2	V	32.8	4.30	26.75	38.82	54	15.18	harmonic
2387	27.72	Ave.	250	1.1	V	30.1	3.01	27.54	33.29	54	20.71	spurious
2387	27.00	Ave.	250	1.3	H	30.1	3.01	27.54	32.57	54	21.43	spurious
4804	35.45	PK	220	1.2	H	36.3	4.30	26.75	49.30	74	24.70	harmonic
4804	34.84	PK	300	1.3	V	35.0	4.30	26.75	47.39	74	26.61	harmonic
2387	35.93	PK	270	1.1	V	30.1	3.01	27.54	41.50	74	32.50	spurious
2387	34.70	PK	170	1.4	H	30.1	3.01	27.54	40.27	74	33.73	spurious
Middle Channel (2441 MHz)												
4882	26.90	Ave.	21	1.2	V	35.4	4.37	26.75	39.92	54	14.08	harmonic
4882	25.25	Ave.	100	1.3	H	36.6	4.37	26.75	39.47	54	14.53	harmonic
4882	33.63	PK	150	1.2	H	36.6	4.37	26.75	47.85	74	26.15	harmonic
4882	34.10	PK	70	1.3	V	35.4	4.37	26.75	47.12	74	26.88	harmonic
High Channel (2480 MHz)												
4960	24.91	Ave.	110	1.1	H	36.6	4.37	26.75	39.13	54	14.87	harmonic
4960	24.38	Ave.	220	1.2	V	35.4	4.37	26.75	37.40	54	16.60	harmonic
2470	28.27	Ave.	110	1.2	H	31.5	3.13	27.54	35.36	54	18.64	spurious
2470	26.97	Ave.	80	1.2	V	31.5	3.13	27.54	34.06	54	19.94	spurious
4960	34.04	PK	260	1.2	H	36.6	4.37	26.75	48.26	74	25.74	harmonic
4960	33.65	PK	163	1.4	V	35.4	4.37	26.75	46.67	74	27.33	harmonic
2470	39.41	PK	30	1.2	V	31.5	3.13	27.54	46.50	74	27.50	spurious
2470	39.15	PK	215	1.5	H	31.5	3.13	27.54	46.24	74	27.76	spurious

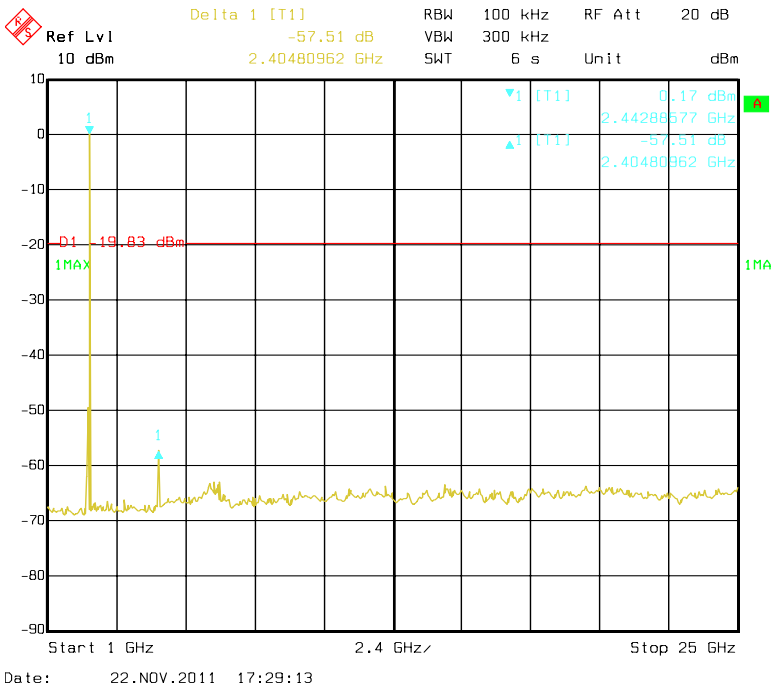
Conducted Emissions:

Please refer to the following plot for pre-scan:

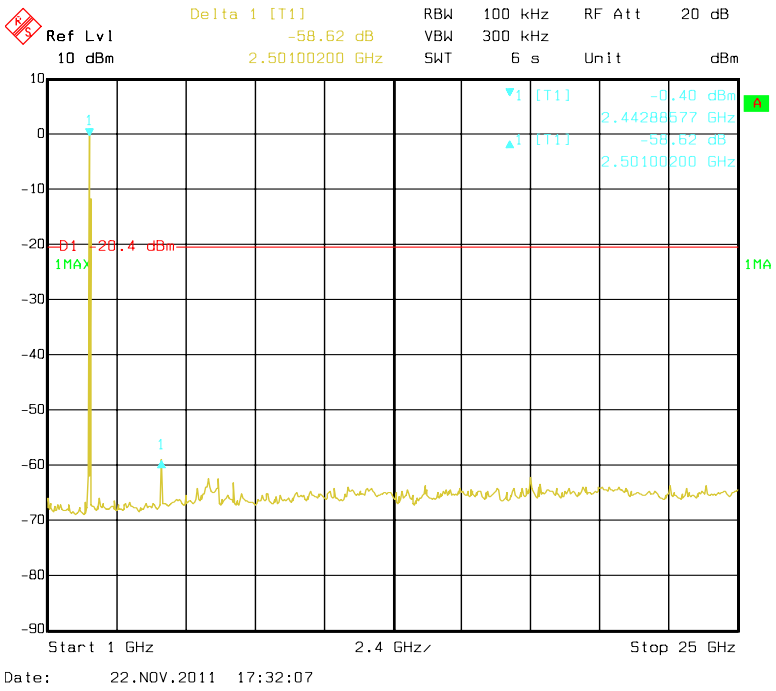
Low Channel



Middle Channel



High Channel



FCC §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	2011-11-11	2012-11-10

*** 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, RBW of spectrum was set at 30 kHz; VBW was set to 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:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

** The testing was performed by Eric Lee on 2011-11-22.*

Test Result: Compliance.

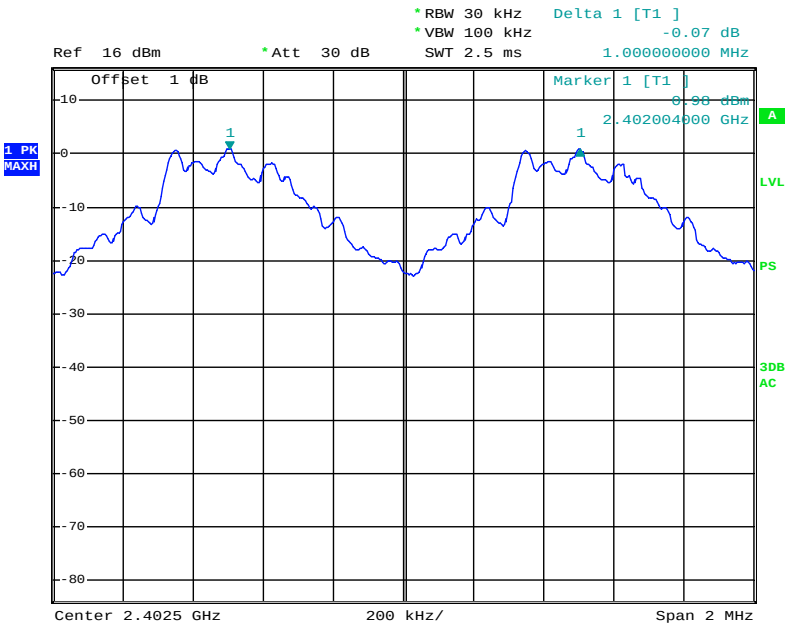
Please refer to following tables and plots

Test Mode: Transmitting

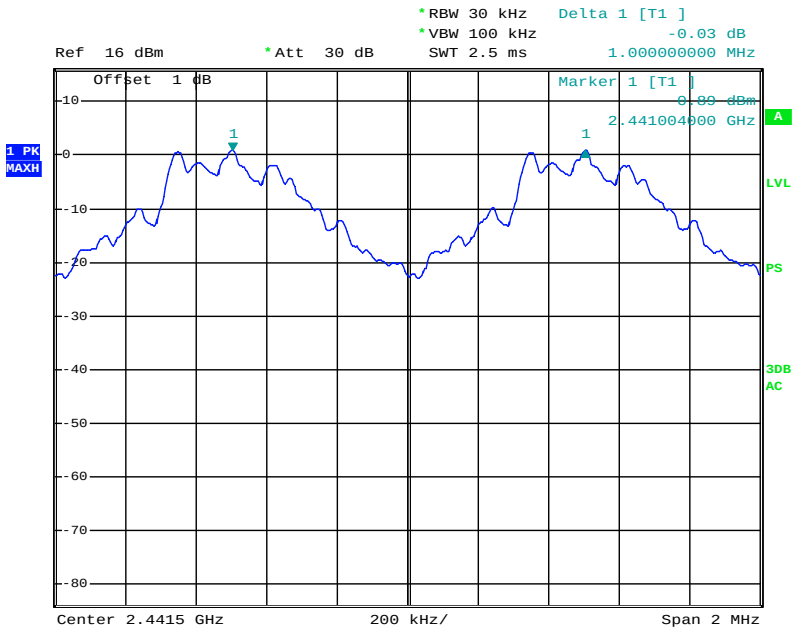
Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	2402	1.000	0.540	Pass
Adjacent	2403			
Middle	2441	1.000	0.540	Pass
Adjacent	2442			
High	2480	1.000	0.540	Pass
Adjacent	2479			

Please refer to the following plots.

Low Channel



Middle Channel



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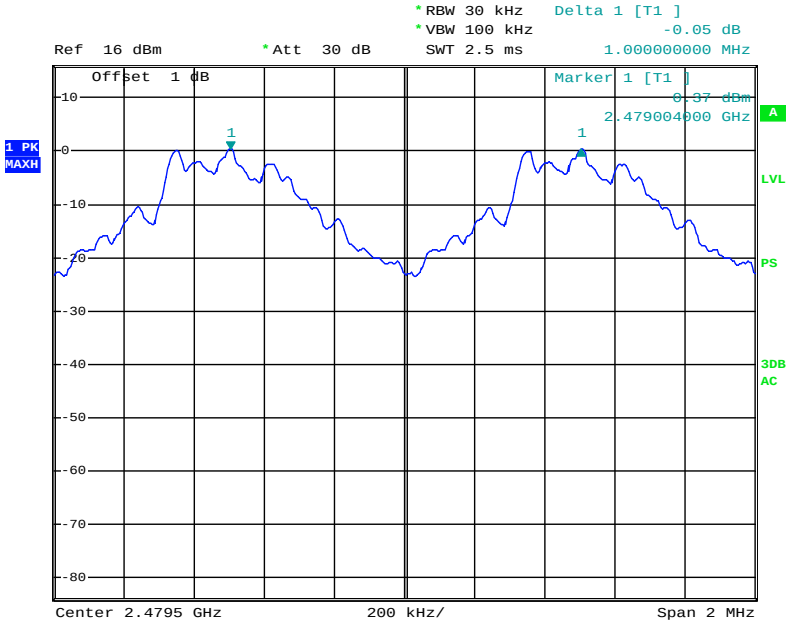
High Channel



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FCC §15.247(a) (1) – 20 dB 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 125 mW.

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 on the test table without connection to measurement instrument. 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

*** 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 Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

** The testing was performed by Eric Lee on 2011-11-22.*

Test Result: Compliance.

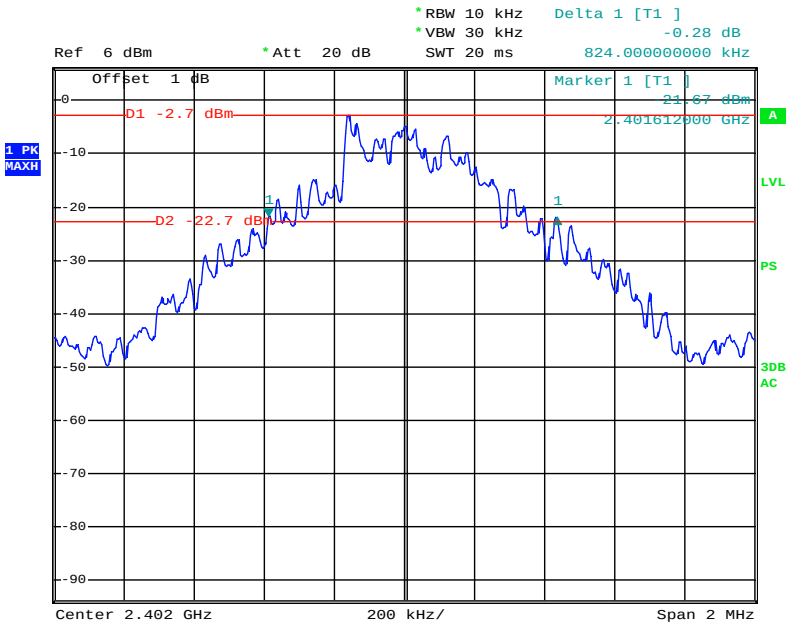
Please refer to following tables and plots

Test Mode: Transmitting

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	0.824
Middle	2441	0.824
High	2480	0.824

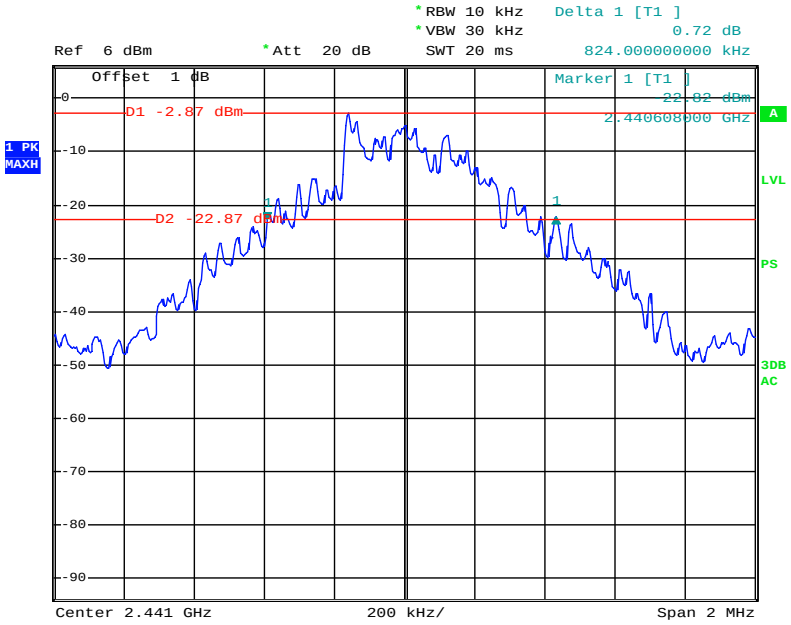
Please refer to the following plots.

Low Channel



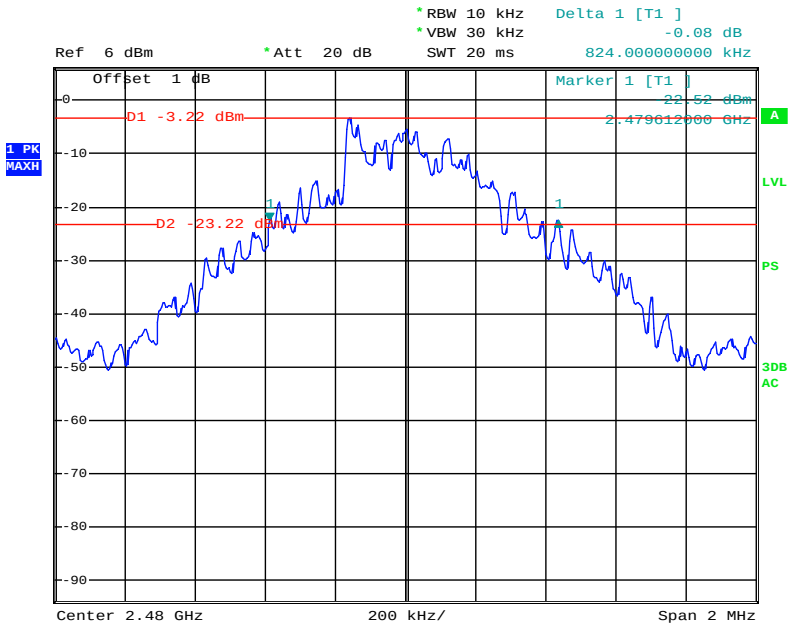
Date: 22.NOV.2011 13:01:36

Middle Channel



Date: 22.NOV.2011 13:03:37

High Channel



Date: 22.NOV.2011 13:04:47

FCC §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 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 hopping mode from first channel to last.

3. By using the Max-Hold function record the Quantity of the channel.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** 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 Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Eric Lee on 2011-10-16.

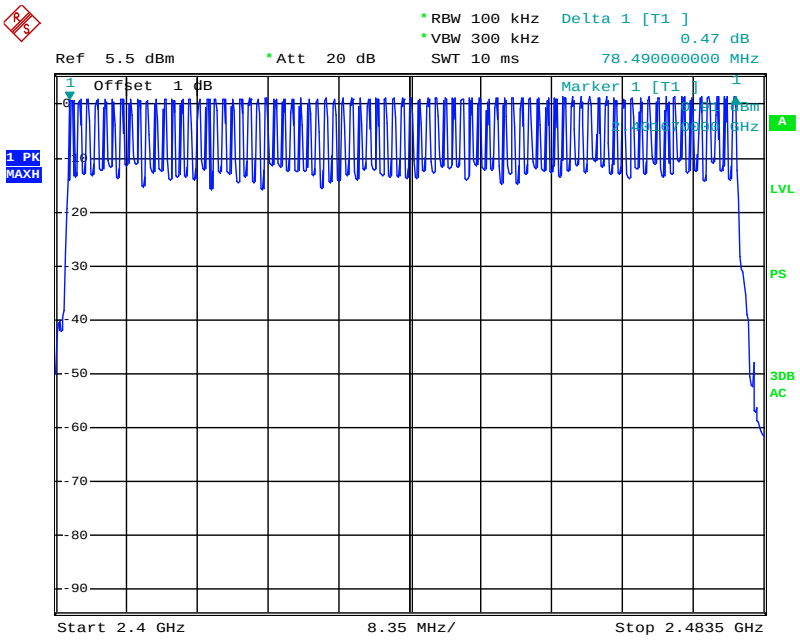
Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.50	79	⩾15

Number of Hopping Channels



Date: 16.OCT.2011 15:38:14

FCC §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 Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 * 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

*** 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 Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

** The testing was performed by Eric Lee on 2011-11-24.*

Test Result: Compliance.

Test Mode: Transmitting

Please refer to following tables and plots

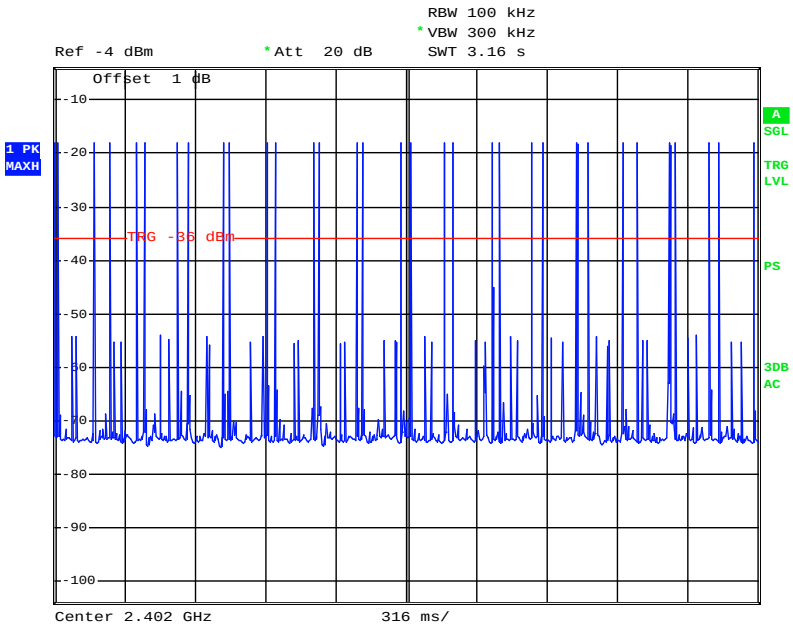
Test Mode: Transmitting

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH 1	Low	0.418	0.134	0.4	Pass
	Middle	0.420	0.134	0.4	Pass
	High	0.414	0.132	0.4	Pass
	Note: DH1:Dwell time = Pulse time*Number of slot per 3.16s*10				
DH 3	Low	1.705	0.273	0.4	Pass
	Middle	1.695	0.271	0.4	Pass
	High	1.685	0.303	0.4	Pass
	Note: DH3:Dwell time = Pulse time*Number of slot per 3.16s*10				
DH 5	Low	2.960	0.355	0.4	Pass
	Middle	2.980	0.358	0.4	Pass
	High	2.940	0.353	0.4	Pass
	*Note: DH5:*Dwell time = Pulse time*Number of slot per 3.16s*10				

Please refer to the following plots.

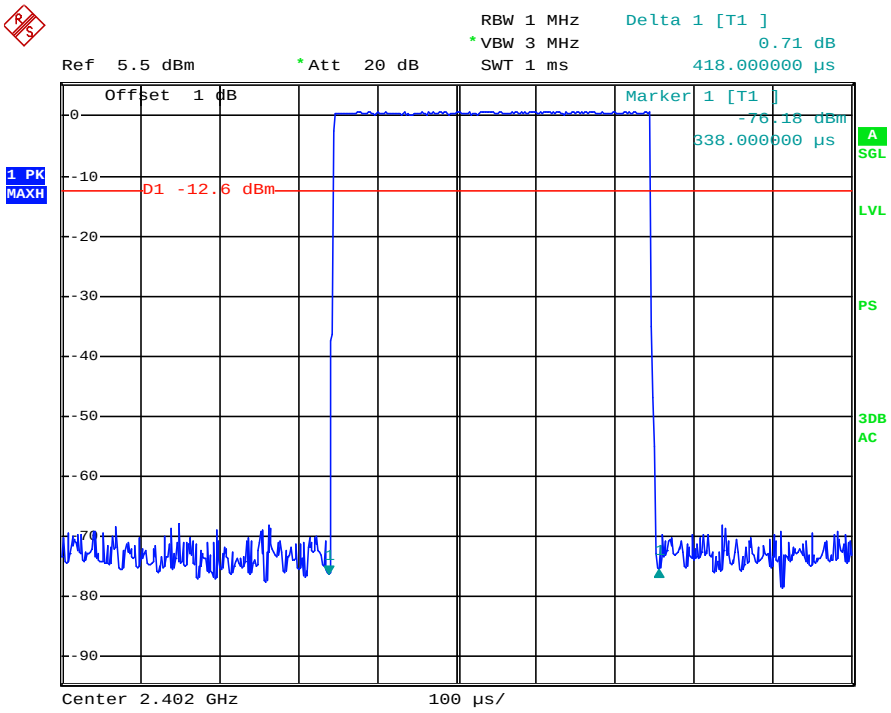
Low Channel for DH1:

Number of slot per 3.16s



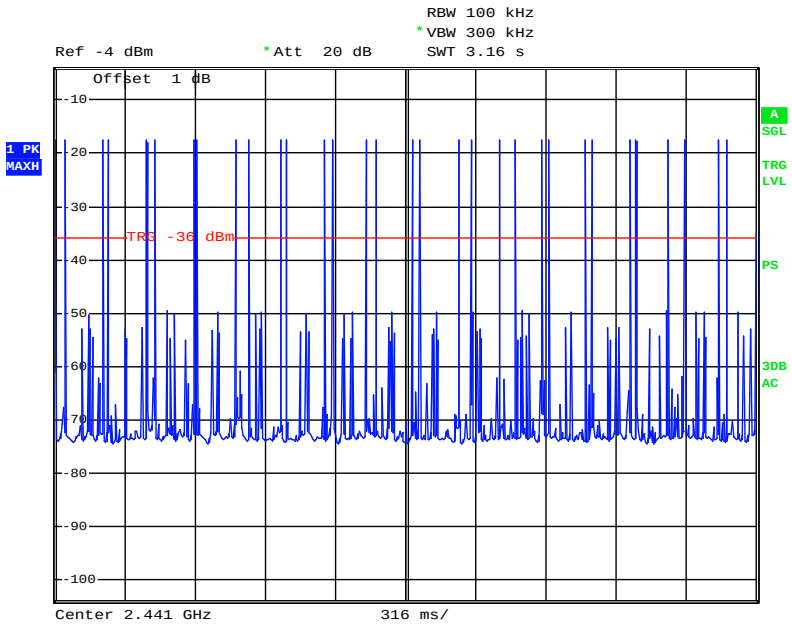
Date: 24.NOV.2011 13:32:36

Pulse time



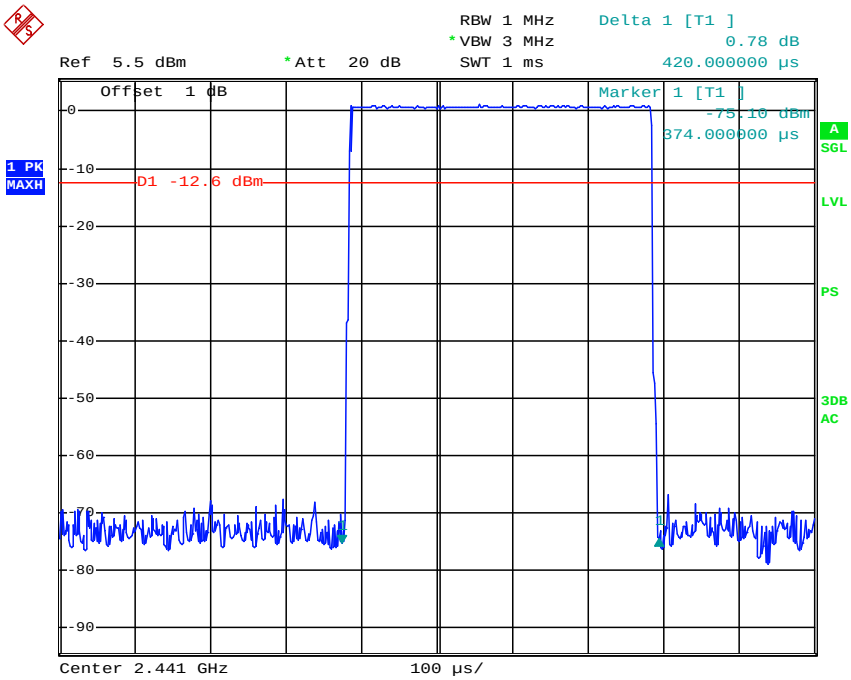
Middle Channel for DH1

Number of slot per 3.16s



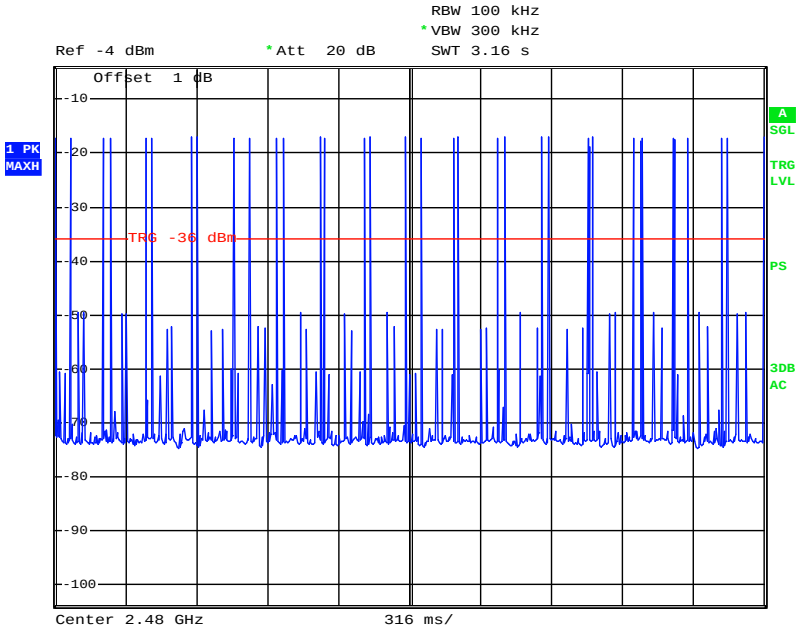
Date: 24.NOV.2011 13:32:54

Pulse time



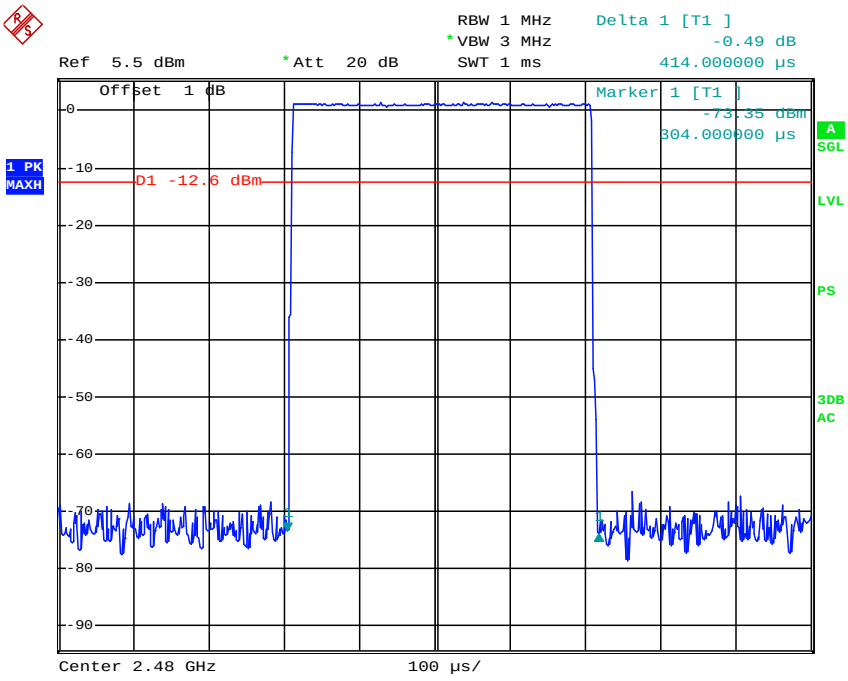
High Channel for DH1

Number of slot per 3.16s



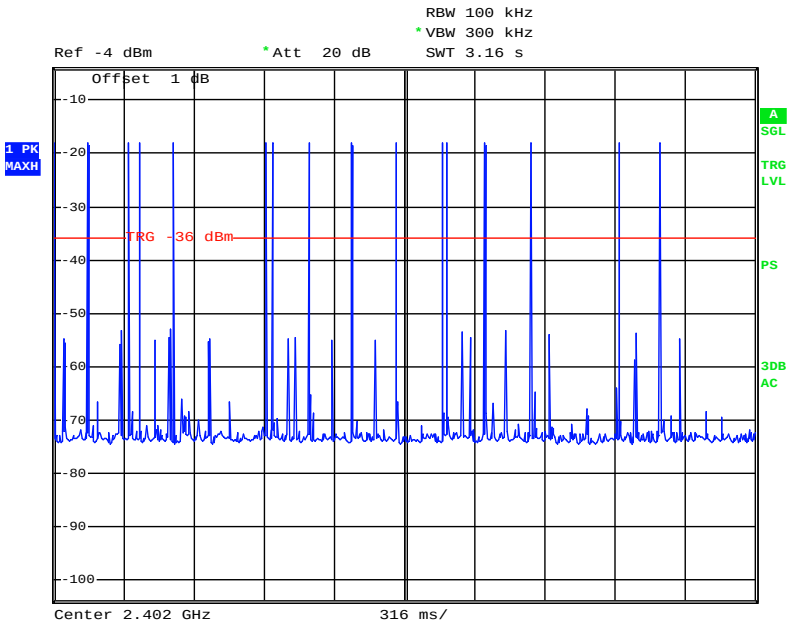
Date: 24.NOV.2011 13:33:13

Pulse time



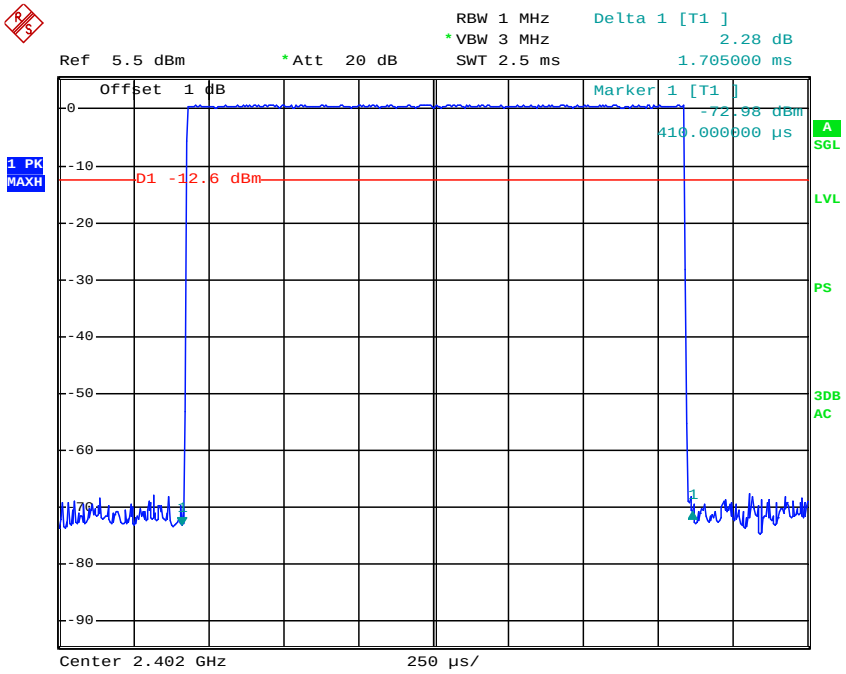
Low Channel for DH3

Number of slot per 3.16s



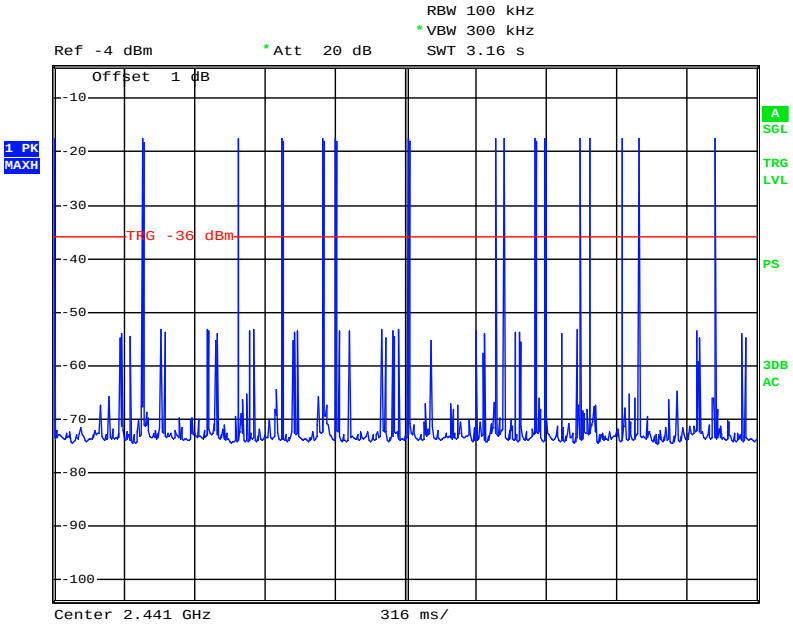
Date: 24.NOV.2011 13:37:02

Pulse time



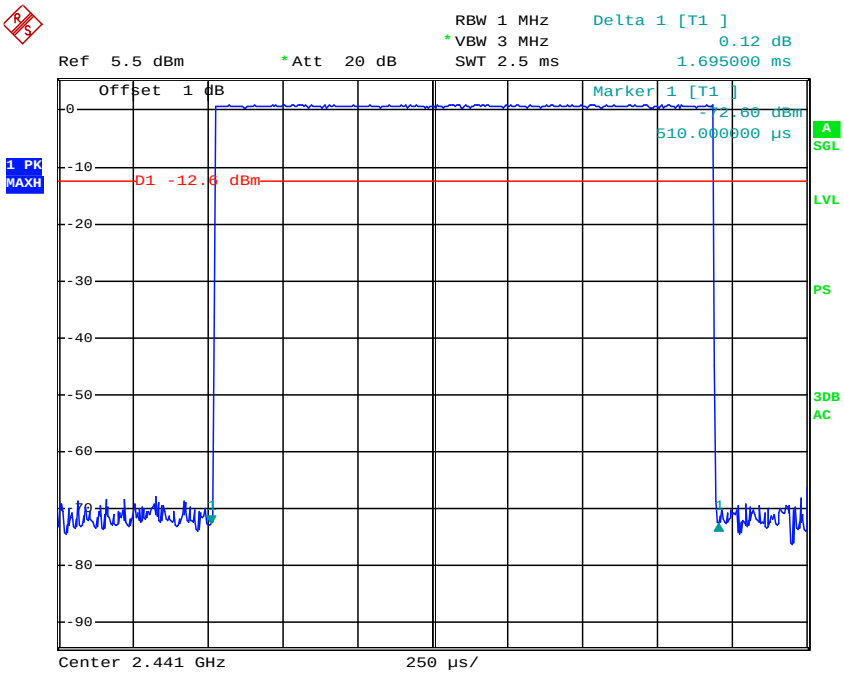
Middle Channel for DH3

Number of slot per 3.16s



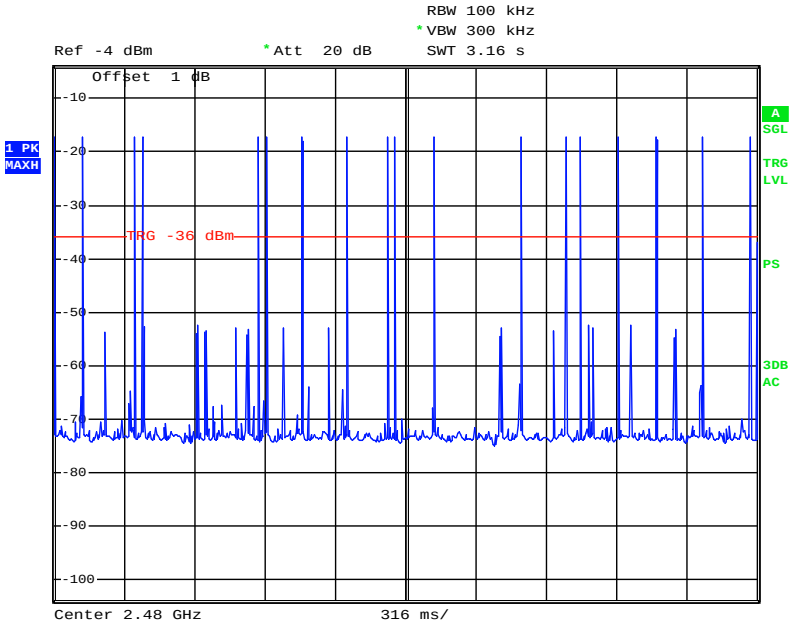
Date: 24.NOV.2011 13:35:56

Pulse time



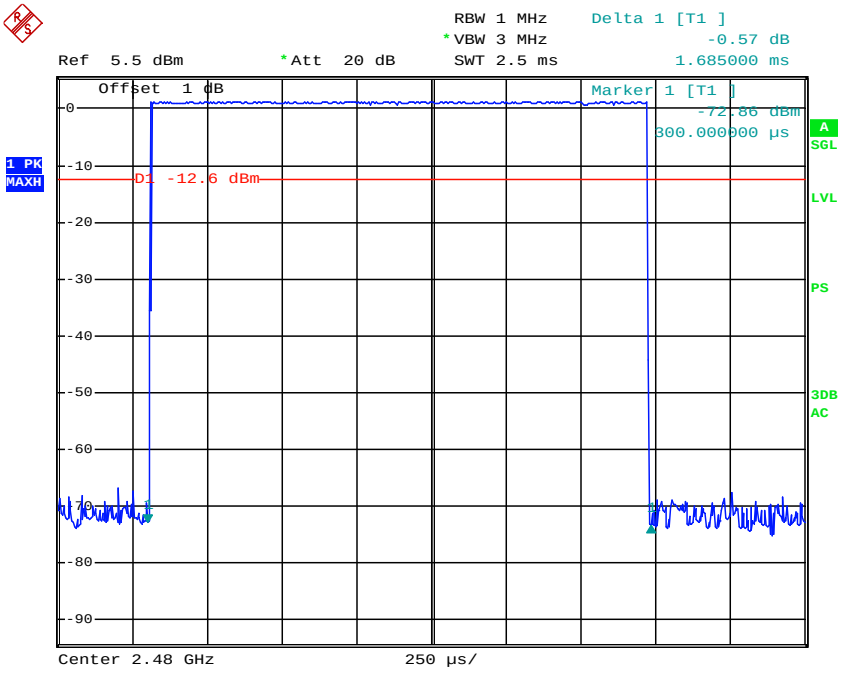
High Channel for DH3

Number of slot per 3.16s



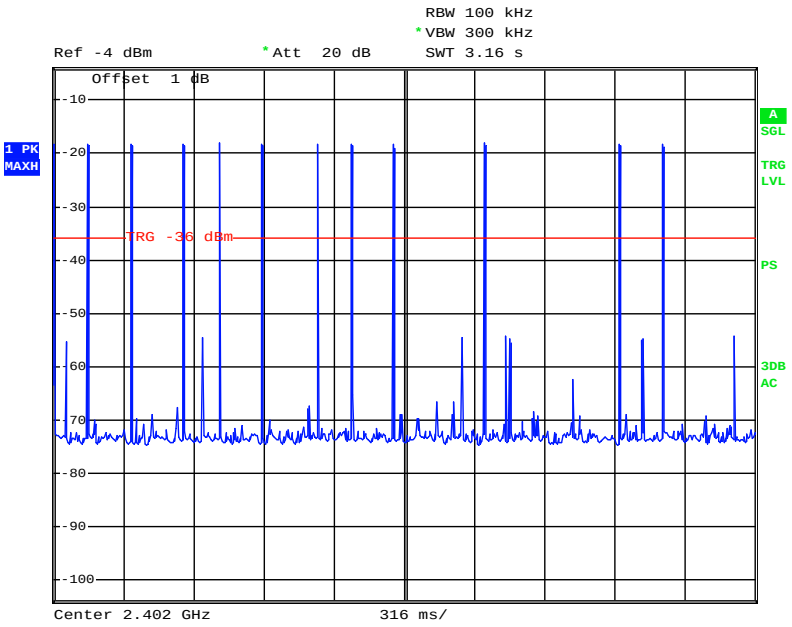
Date: 24.NOV.2011 13:35:10

Pulse time



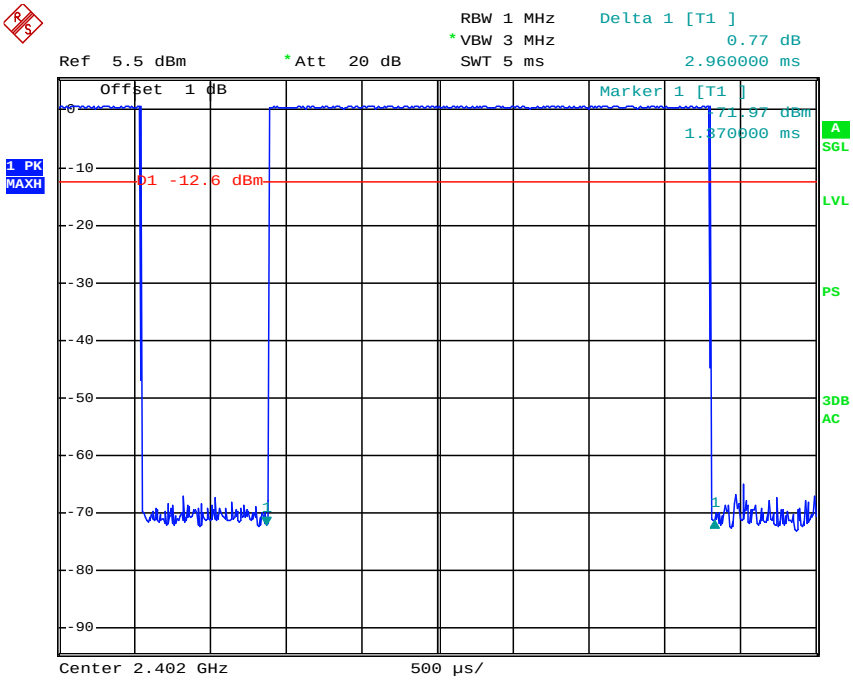
Low Channel for DH5

Number of slot per 3.16s



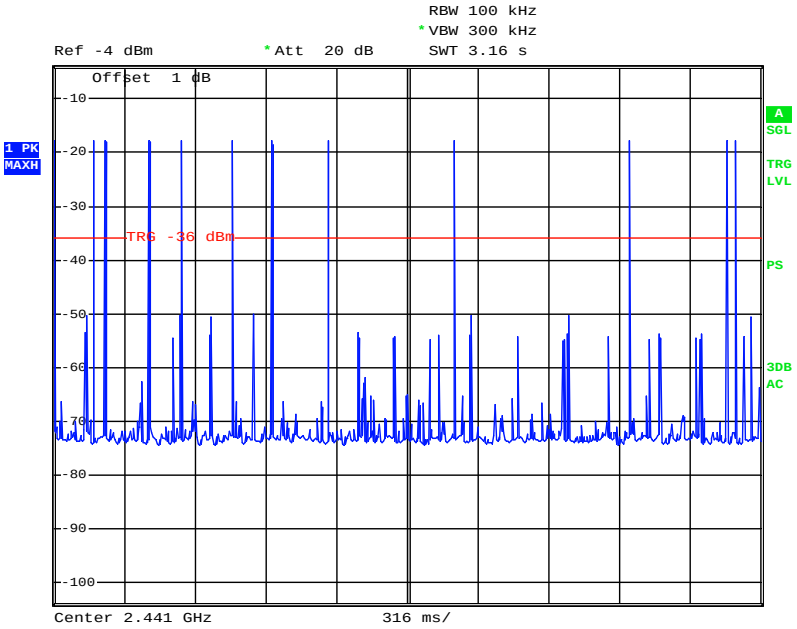
Date: 24.NOV.2011 13:37:56

Pulse time



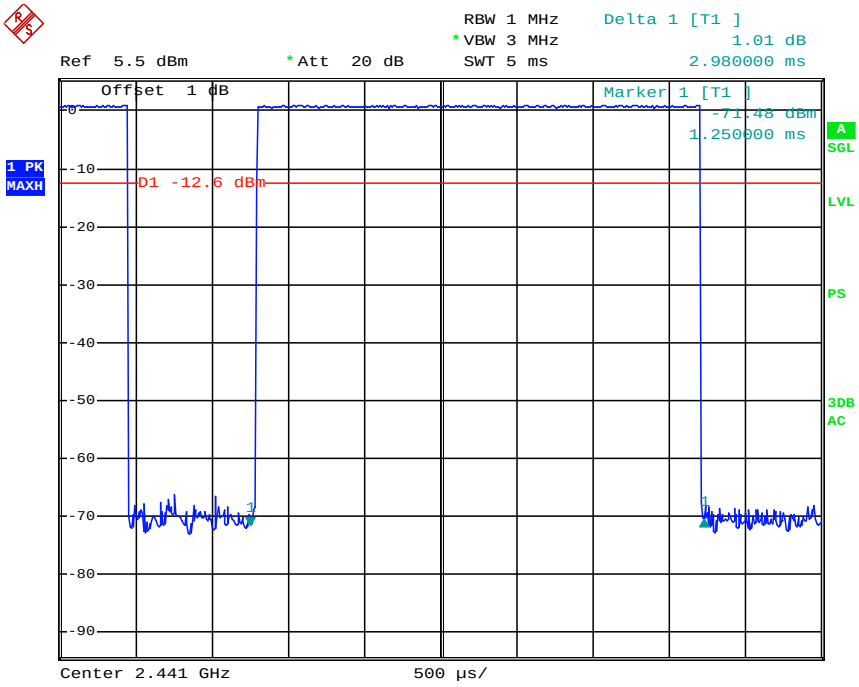
Middle Channel for DH5

Number of slot per 3.16s



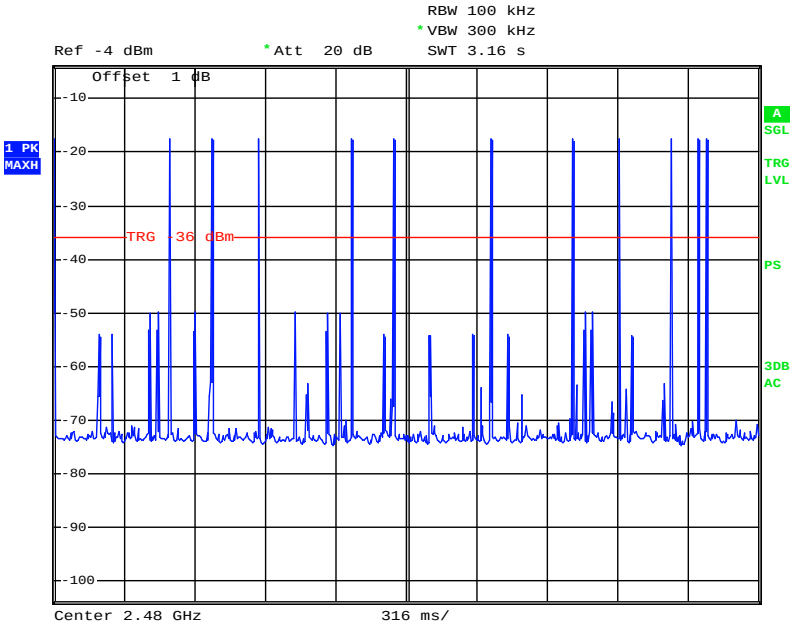
Date: 24.NOV.2011 13:39:21

Pulse time



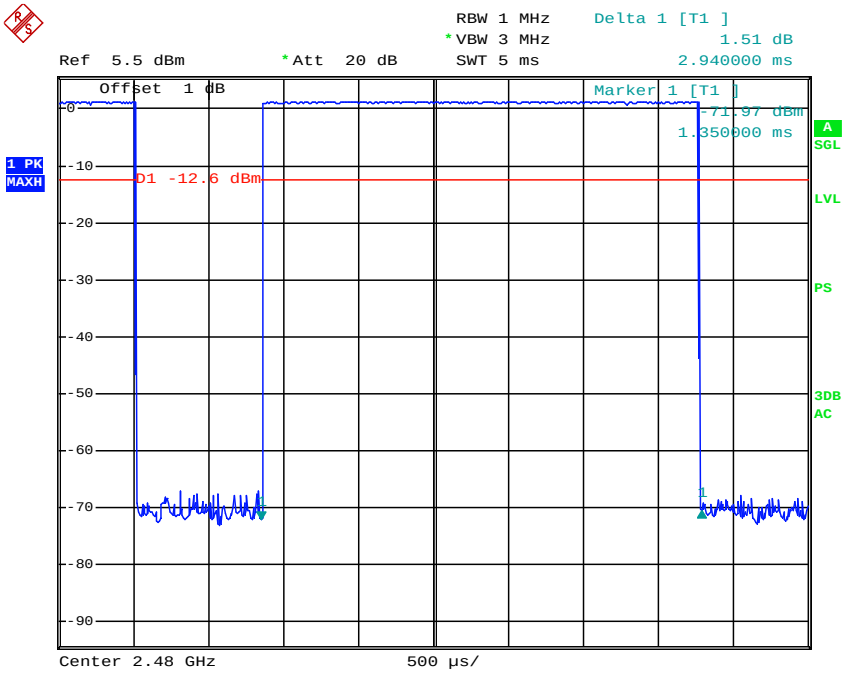
High Channel for DH5

Number of slot per 3.16s



Date: 24.NOV.2011 13:41:45

Pulse time



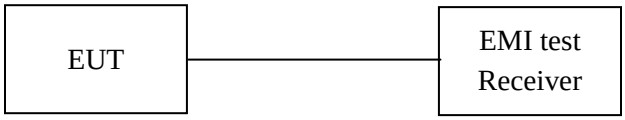
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

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 Procedure

1. Place the EUT on a bench and set 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** 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 Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

** The testing was performed by Eric Lee on 2011-10-16.*

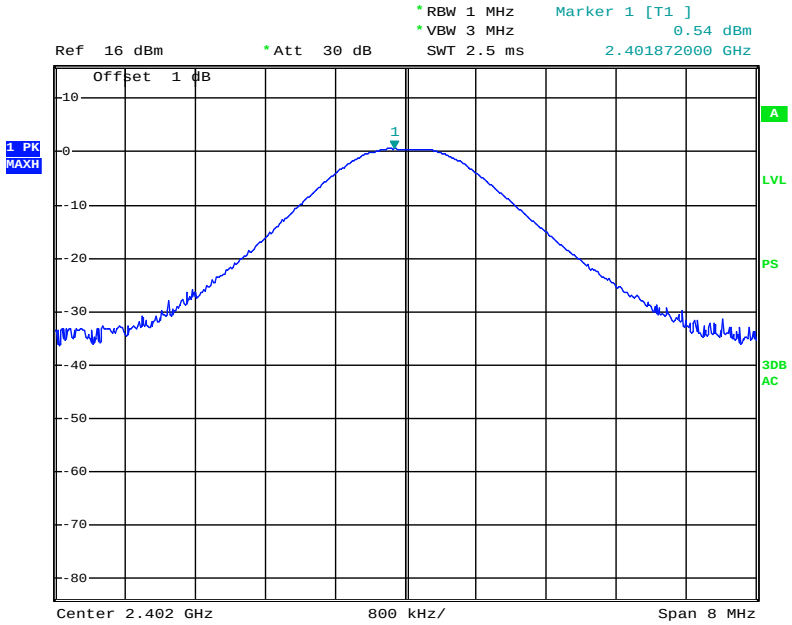
Test Result: Compliance.

Test Mode: Transmitting

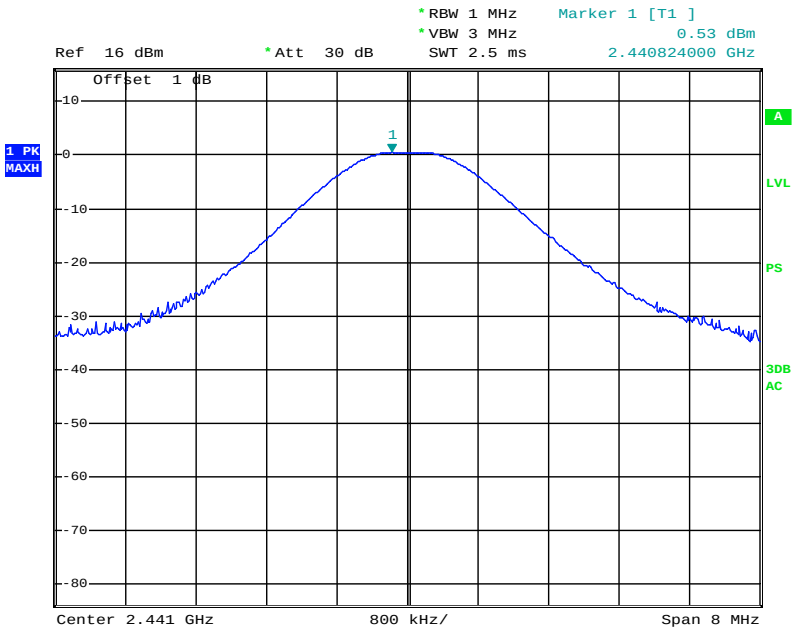
channel	Channel frequency (MHz)	Reading output power (dBm)	Output Power (mW)	Limit (mW)
Low channel	2402	0.54	1.132	125
Middle channel	2441	0.53	1.129	125
High channel	2480	0.47	1.114	125

Note: The data above was tested in conducted mode.

Low Channel

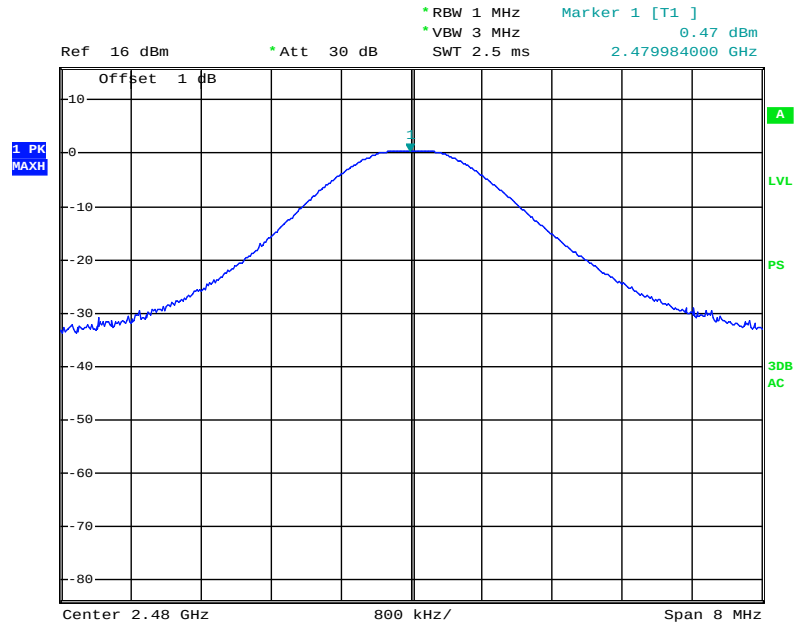


Middle Channel



Date: 16.OCT.2011 17:27:57

High Chanel



Date: 16.OCT.2011 17:27:05

FCC §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 Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz,VBW to 300 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

*** 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 Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

**The testing was performed by Eric Lee on 2011-10-16.*

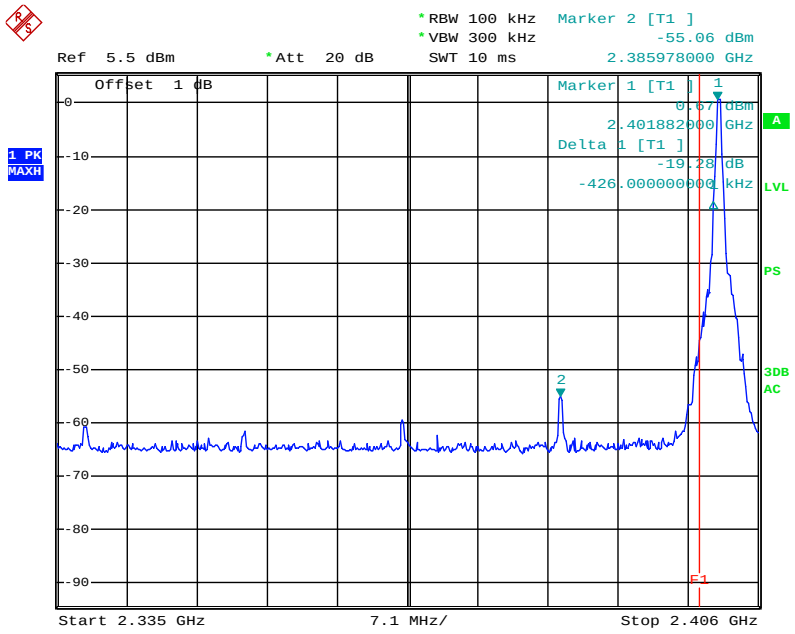
Test Result: Compliant

Please refer to the following table and plots.

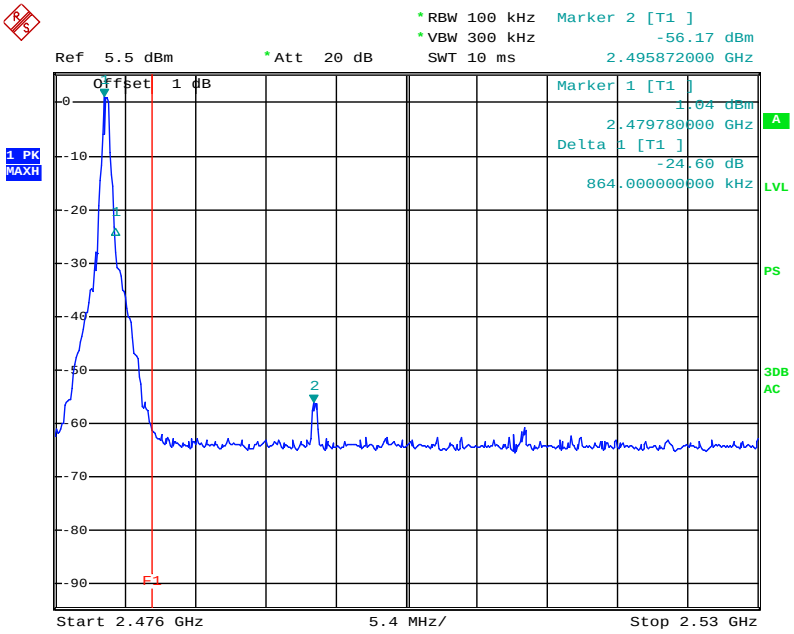
Test Mode: Transmitting

Frequency (MHz)	Delta Peak to Band Emission (dBc)	Delta Limit (dBc)
2385.978	55.73	20
2495.872	57.21	20

Band Edge: Left Side



Band Edge: Right Side



Date: 18.OCT.2011 13:20:49

PRODUCT SIMILARITY DECLARATION LETTER

WECCAN INDUSTRIAL LIMITED
30/F, Building C1, Xinghe Century, Caitian South Road, Futian District, Shenzhen, Guangdong Province, P.R.C
Tel: +86 755 82555835 Fax: +86 755 82716760

Product Similarity Declaration

To Whom It May Concern,

We WECCAN INDUSTRIAL LIMITED, Hereby declare that our iOS Bluetooth Helicopter Model Number i717,i727, i747,i757,i767,i777,i787,i797 Electrically identical with the Model Number i737 that was certified by BACL. The differences between i717,i727, i747,i757,i767,i777,i787,i797 and i737are their appearance Color and model Number due to marketing purpose.

Please contact me if you have any question.

Signature: Amanda Gu

Print Name : Amanda Gu

Title : Vice President
Date: 2011-11-04

END OF REPORT ***