Lab Code: 200707-0

FCC PART 15.247
TEST REPORT

For

Lorex Technology Inc.

250 Royal Crest Court, Markham, Ontario, L3R 3S1, Canada

FCC ID: UCZ-WL2004

Report Type: Original Report	**Product Type:** 2.4 GHz Video Baby Monitor (Monitor Unit)

Test Engineer:	Leon Chen
Report Number:	R1DG111209001-00
Report Date:	2012-01-20
Reviewed By:	Merry Zhao 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 *Lorex Technology Inc.*'s product, model number: *WL2004 (FCC ID: UCZ-WL2004)* or the "EUT" in this report was a *2.4 GHz Wireless Color LCD Receiver,* which was measured approximately: 12.4 cm (L) x 7.1 cm (W) x 2.5 cm (H), rated input voltage: DC 3.7 V battery or DC 5V adapter.

Adapter information: SWITCHING ADAPTOR
S01-005-0050-01000
Input: 100-240 V ~ 50/60Hz, 0.15A max
Output: DC 5.0V, 1000mA

** All measurement and test data in this report was gathered from production sample serial number: WB01100400001 (Assigned by applicant). The EUT was received on 2011-12-09.*

Objective

This report is prepared on behalf of *Lorex Technology Inc.* 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 Part 15.247 FHSS submission of camera unit with FCC ID: UCZ-MC2004

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.

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 typical fashion (as normally used by a typical user).

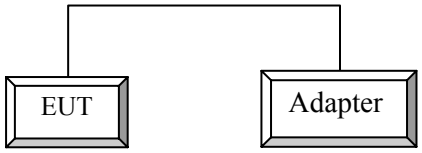
Equipment Modifications

No modification was made to the EUT tested.

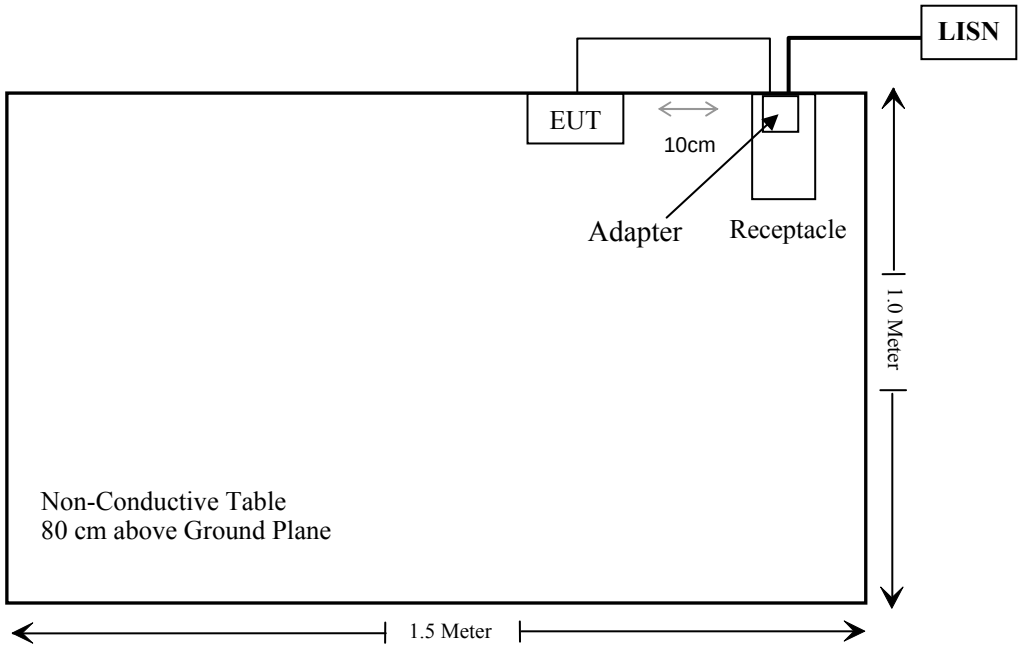
External I/O Cable

Cable Description	Length(m)	From/Port	To
Unshielded Detachable DC Power Cable	1.80	Adapter DC Output	EUT

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	RF Exposure	Compliace
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209 & §15.247(d)	Radiated Emissions	Compliance
§15.247(a)(1)	20 dB Emission 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) & §2.1093 - RF EXPOSURE

Applicable Standard

According to§15.247(e)(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 Mobile Portable RF Exposure v03r03, no SAR required if power is lower than the flowing threshold:

When routine evaluation is required for SAR and the output power is ≤ 60/f(GHz) mW, the test reduction and test exclusion procedures given herein, or in KDB 616217 or KDB 648474, are applicable.

A device may be used in portable exposure conditions with no restrictions on host platforms when either the source-based time-averaged output power is ≤ 60/f(GHz) mW or all measured 1-g SAR are < 0.4 W/kg.10 When SAR evaluation is required, the most conservative exposure conditions for all expected operating configurations must be tested.

Measurement Result

Averaged conducted output power =Peak Power +10log (dutycycle) = 18.60 +10log (0.131) = 9.77 dBm
Antenna Gain = 0 dBi
E.I.R.P. of EUT is 9.77 dBm.
SAR exclusion threshold = 60/f = 60/2.468 = 24.31 mW (13.86 dBm).

The maximum output power (Conducted or E.I.R.P.) of EUT is less than the SAR exclusion threshold. The SAR evaluation can be exempted.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to FCC §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 monopole antenna permanently soleder to main board, the gain was 0 dBi, which fully in accordance to section 15.203, please refer to the EUT photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

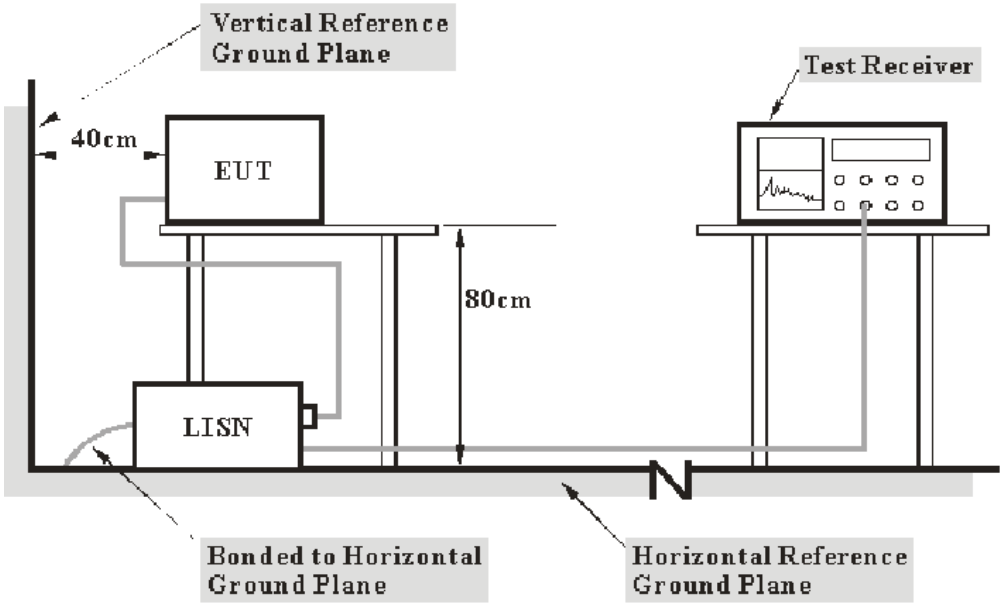
FCC §15.207

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 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

During the conducted emission test, the adapter was connected to the LISN.

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:

14.34 dB at **1.760 MHz** in the **Neutral** conducted mode

Test Data

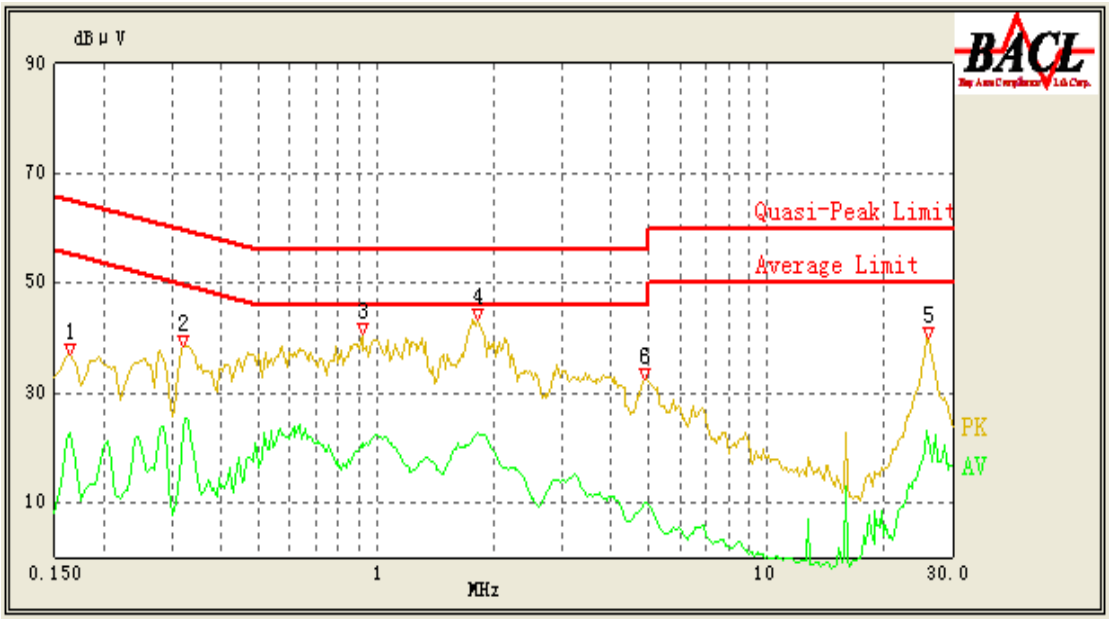
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

The testing was performed by Leon Chen on 2012-01-04

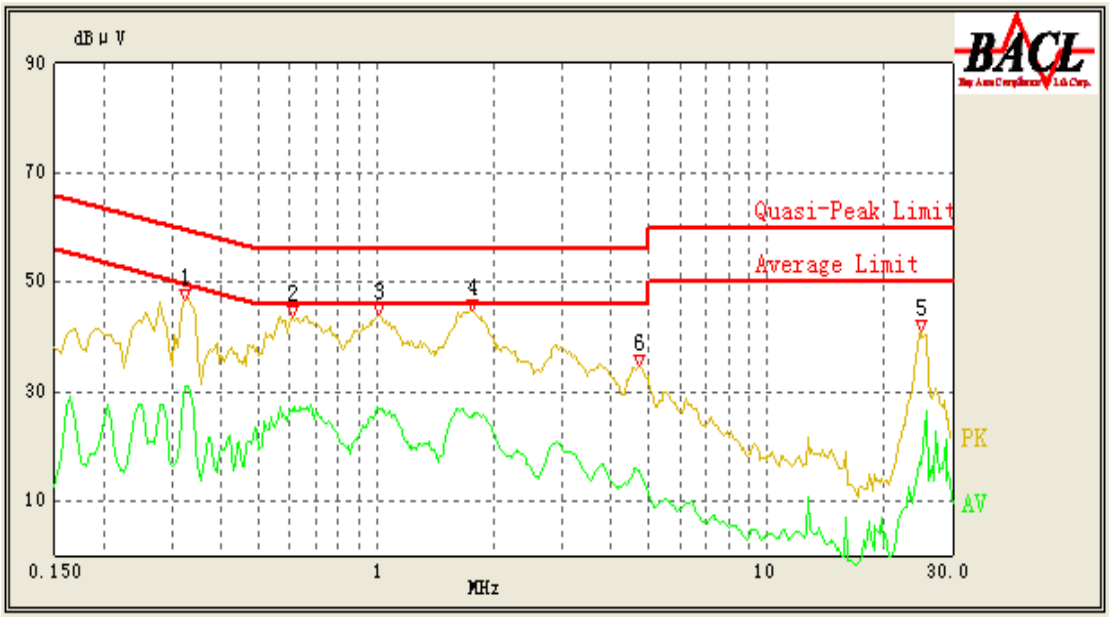
Test Mode: Charging & Transmitting

AC 120 V, 60 Hz, Line:



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
1.815	32.92	0.01	56.00	23.08	QP
1.825	22.62	0.01	46.00	23.38	Ave.
0.920	31.00	0.01	56.00	25.00	QP
0.920	20.63	0.01	46.00	25.37	Ave.
0.320	35.08	0.02	61.14	26.06	QP
0.320	23.34	0.02	51.14	27.80	Ave.
26.055	31.26	0.08	60.00	28.74	QP
26.235	19.83	0.08	50.00	30.17	Ave.
0.165	22.72	0.01	55.57	32.85	Ave.
0.165	31.96	0.01	65.57	33.61	QP
4.885	21.93	0.03	56.00	34.07	QP
4.830	9.65	0.03	46.00	36.35	Ave.

AC 120V, 60 Hz, Neutral:



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
1.760	41.66	0.01	56.00	14.34	QP
1.020	39.54	0.01	56.00	16.46	QP
0.610	39.22	0.01	56.00	16.78	QP
0.325	43.98	0.02	61.00	17.02	QP
1.000	27.29	0.01	46.00	18.71	Ave.
0.610	26.58	0.01	46.00	19.42	Ave.
0.325	30.80	0.02	51.00	20.20	Ave.
1.755	25.49	0.01	46.00	20.51	Ave.
4.705	30.07	0.03	56.00	25.93	QP
4.735	15.55	0.03	46.00	30.45	Ave.
24.900	17.34	0.08	50.00	32.66	Ave.
24.915	26.09	0.08	60.00	33.91	QP

FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

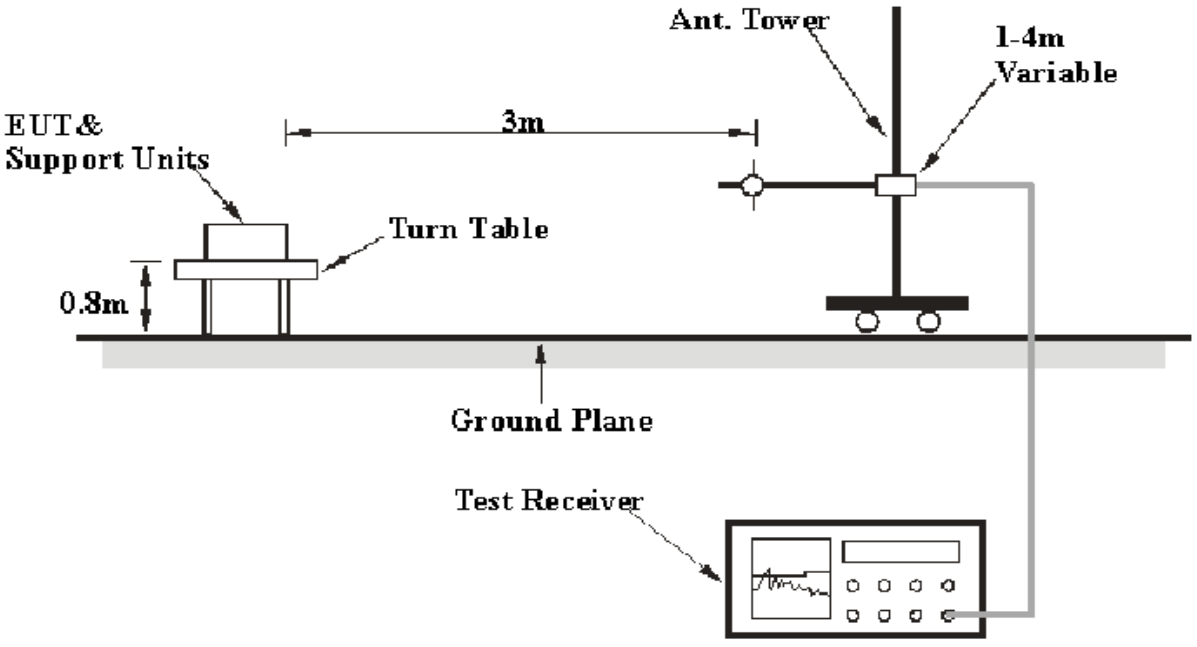
FCC §15.205; §15.209; §15.247(d)

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

EUT Setup



The radiated emission tests were performed in the 3 meters, 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

During the radiated emission test, the adapter was connected to the outlet of the floor.

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

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 7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit - Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Pre-amplifier	HP8447D	2944A09795	2011-08-02	2012-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Mini-Circuits	Pre-amplifier	ZVA-213+	T-E27H	2011-03-08	2012-03-08
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.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, and section 15.205, 15.209 and 15.247, with the worst margin reading of:

2.11 dB at **7404 MHz** in the **Horizontal** polarization

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	100 kPa

** The testing was performed by Leon Chen on 2011-12-15.*

Test mode: Transmitting

1) Below 1 GHz:

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Polarity (H/V)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
976.72	40.7	V	6.09	54	13.30
109.54	29.36	H	-6.8	43.5	14.14
109.54	28.86	V	-6.8	43.5	14.64
976.72	32.68	H	6.09	54	21.32

2) Above 1 GHz

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/QP/Ave)	Ant. Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	FCC Part 15.247/205/209		
								Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2404 MHz)										
2404	72.15	PK	H	29.1	3.9	0	105.15	/	/	Fund.
2404	59.68	Ave.	H	29.1	3.9	0	92.68	/	/	Fund.
2404	76.45	PK	V	29.1	3.9	0	109.45	/	/	Fund.
2404	63.77	Ave.	V	29.1	3.9	0	96.77	/	/	Fund.
7212	13.52	Ave.	H	37.7	7.6	7	51.82	54	2.18*	harmonic
7212	13.06	Ave.	V	37.7	7.6	7	51.36	54	2.64*	harmonic
4808	20.57	Ave.	H	32.1	5.8	7.4	51.07	54	2.93*	harmonic
4808	19.63	Ave.	V	32.1	5.8	7.4	50.13	54	3.87*	harmonic
2390	36.21	PK	H	29.1	3.9	0	69.21	74	4.79	spurious
4808	38.69	PK	H	32.1	5.8	7.4	69.19	74	4.81	harmonic
2389.5	35.65	PK	H	29.1	3.9	0	68.65	74	5.35	spurious
7212	30.21	PK	H	37.7	7.6	7	68.51	74	5.49	harmonic
4808	37.62	PK	V	32.1	5.8	7.4	68.12	74	5.88	harmonic
2389.5	14.96	Ave.	H	29.1	3.9	0	47.96	54	6.04	spurious
7212	29.32	PK	V	37.7	7.6	7	67.62	74	6.38	harmonic
2390	13.48	Ave.	H	29.1	3.9	0	46.48	54	7.52	spurious
Middle Channel (2436 MHz)										
2436	73.15	PK	H	29.1	3.9	0	106.15	/	/	Fund.
2436	60.18	Ave.	H	29.1	3.9	0	93.18	/	/	Fund.
2436	75.79	PK	V	29.1	3.9	0	108.79	/	/	Fund.
2436	62.88	Ave.	V	29.1	3.9	0	95.88	/	/	Fund.
7308	13.11	Ave.	V	37.9	7.6	7.2	51.41	54	2.59*	harmonic
7308	12.98	Ave.	H	37.9	7.6	7.2	51.28	54	2.72*	harmonic
4872	19.35	Ave.	H	32.2	5.8	7.3	50.05	54	3.95*	harmonic
4872	19.07	Ave.	V	32.2	5.8	7.3	49.77	54	4.23	harmonic
7308	31.02	PK	H	37.9	7.6	7.2	69.32	74	4.68	harmonic
7308	30.56	PK	V	37.9	7.6	7.2	68.86	74	5.14	harmonic
4872	37.63	PK	H	32.2	5.8	7.3	68.33	74	5.67	harmonic
4872	36.52	PK	V	32.2	5.8	7.3	67.22	74	6.78	harmonic
High Channel (2468 MHz)										
2468	73.95	PK	H	29.7	3.9	0	107.55	/	/	Fund.
2468	60.99	Ave.	H	29.7	3.9	0	94.59	/	/	Fund.
2468	76.65	PK	V	29.7	3.9	0	110.25	/	/	Fund.
2468	63.17	Ave.	V	29.7	3.9	0	96.77	/	/	Fund.
7404	13.09	Ave.	H	38.5	7.6	7.3	51.89	54	2.11*	harmonic
2483.5	18.28	Ave.	V	29.7	3.9	0	51.88	54	2.12*	spurious
7404	12.99	Ave.	V	38.5	7.6	7.3	51.79	54	2.21*	harmonic
4936	20.03	Ave.	H	32.5	5.8	7.2	51.13	54	2.87*	harmonic
4936	19.2	Ave.	V	32.5	5.8	7.2	50.3	54	3.70*	harmonic
7404	31.3	PK	V	38.5	7.6	7.3	70.1	74	3.90*	harmonic
2483.6	35.97	PK	V	29.7	3.9	0	69.57	74	4.43	spurious
7404	30.23	PK	H	38.5	7.6	7.3	69.03	74	4.97	harmonic
2483.6	15.41	Ave.	V	29.7	3.9	0	49.01	54	4.99	spurious
2483.5	34.98	PK	V	29.7	3.9	0	68.58	74	5.42	spurious
4936	37.25	PK	H	32.5	5.8	7.2	68.35	74	5.65	harmonic
4936	36.98	PK	V	32.5	5.8	7.2	68.08	74	5.92	harmonic

*Within measurement uncertainty!

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 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test 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 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:	50 %
ATM Pressure:	100 kPa

** The testing was performed by Leon Chen on 2012-01-04.*

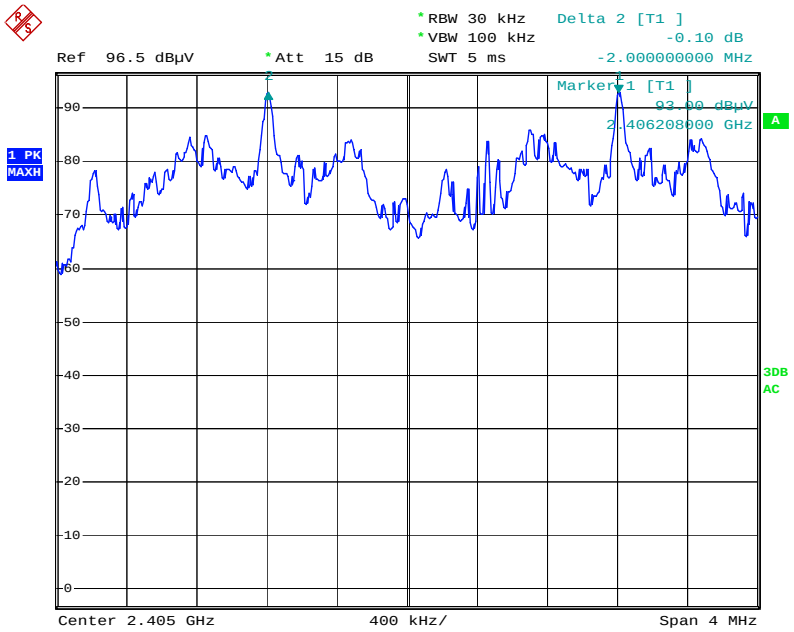
Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	2404	2.000	1.51	Pass
Adjacent	2406			
Middle	2436	2.000	1.51	Pass
Adjacent	2438			
High	2468	2.000	1.51	Pass
Adjacent	2466			

Low Channel



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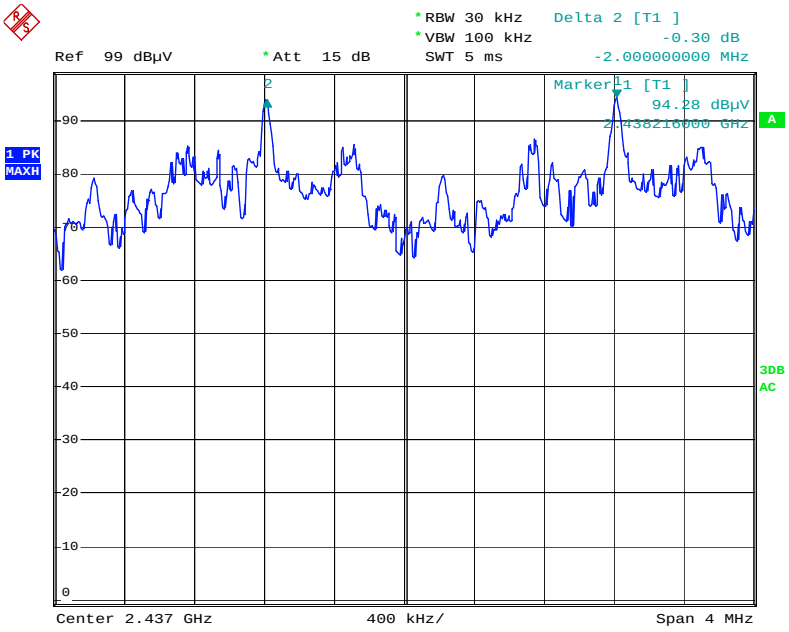
Middle Channel



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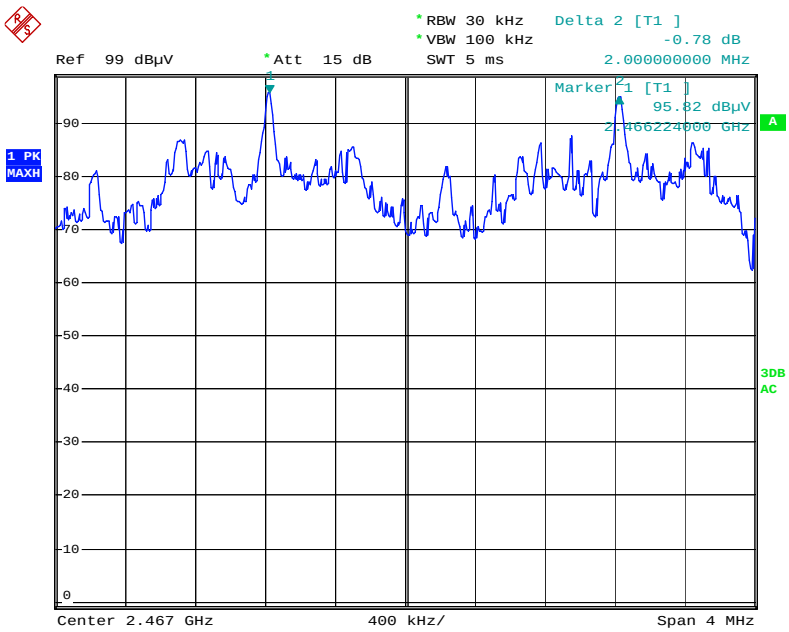
High Channel



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FCC §15.247(a) (1) – 20 dB EMISSION 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 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 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:	50 %
ATM Pressure:	100 kPa

** The testing was performed by Leon Chen on 2012-01-04.*

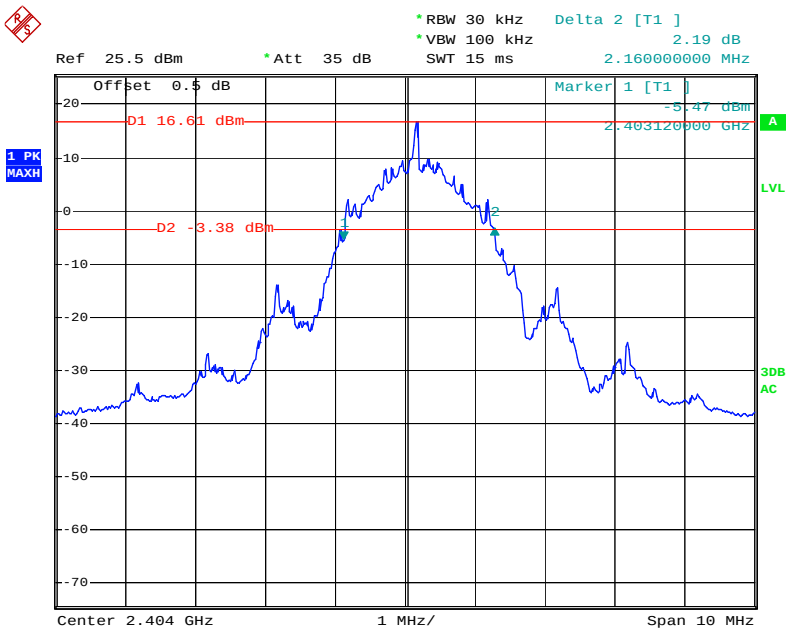
Test Result: Compliance.

Please refer to following tables and plots

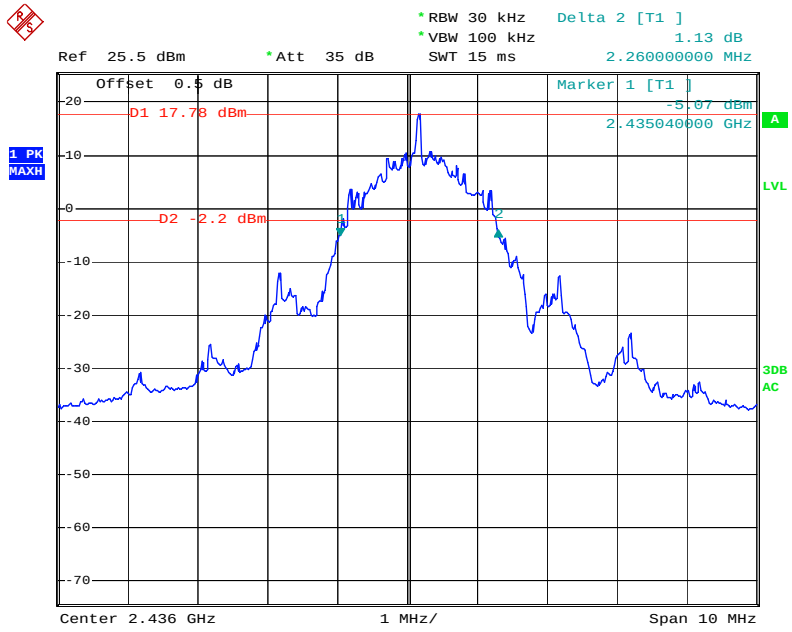
Test Mode: Transmitting

Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)
Low	2404	2.16
Middle	2436	2.26
High	2468	2.18

Low Channel

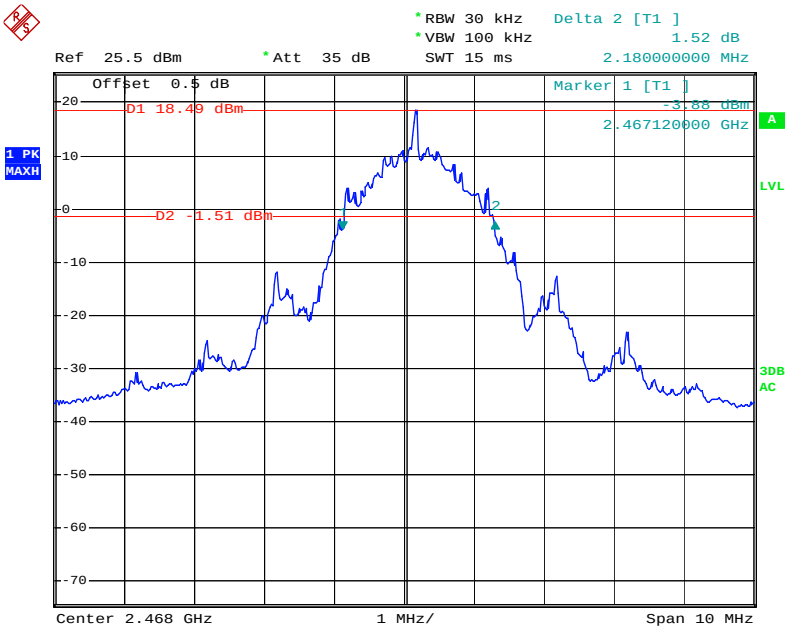


Middle Channel



Date: 4.JAN.2012 15:07:34

High Channel



Date: 4.JAN.2012 15:09:53

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	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:	50 %
ATM Pressure:	100 kPa

The testing was performed by Leon Chen on 2012-01-04.

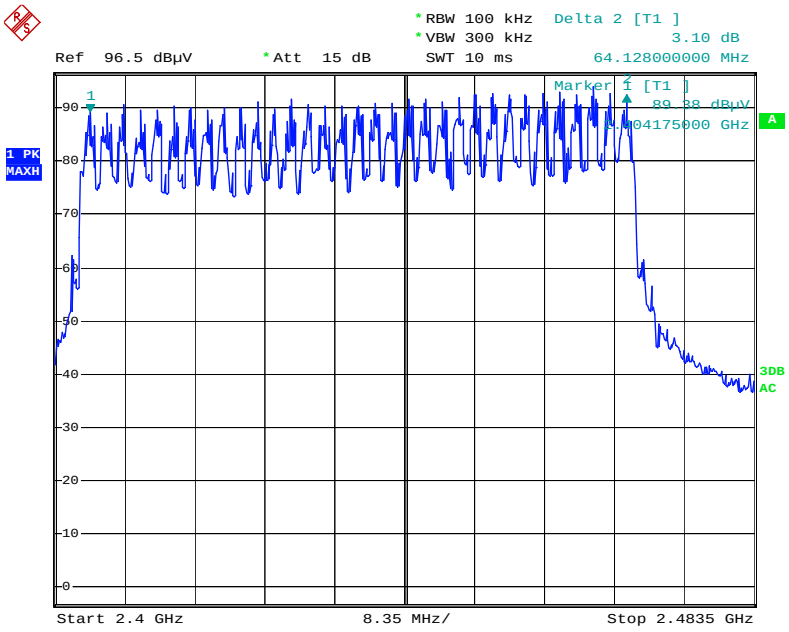
Test Result: Compliance.

Please refer to following table and plots

Test Mode: Transmitting

Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)
2404-2468	33	≥ 15

Number of Hopping Channels



Date: 4.JAN.2012 16:05:45

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 X channel no. (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.

Dwell time = Pulse time*hope rate/number of hopping channels*16S
Hop rate=62/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:	50 %
ATM Pressure:	100 kPa

** The testing was performed by Leon Chen on 2012-01-04.*

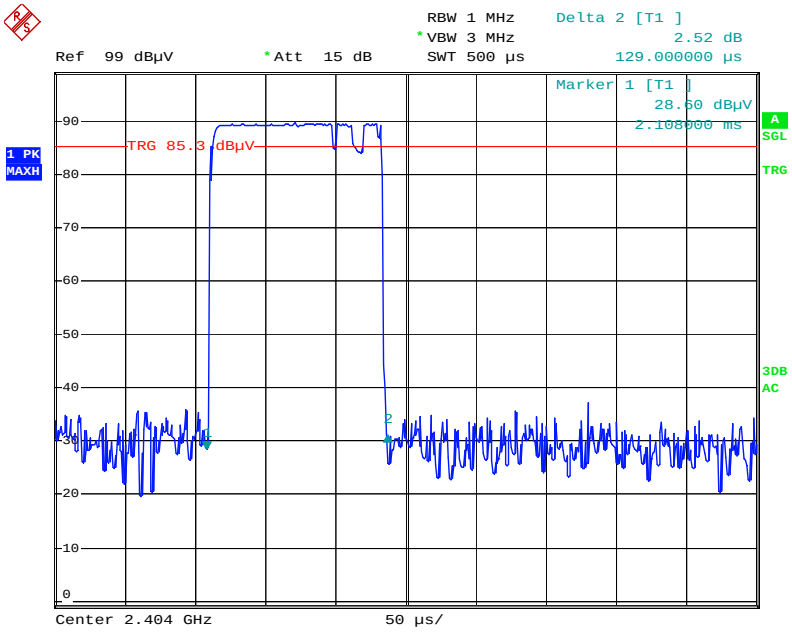
Test Result: Compliance.

Please refer to following table and plots

Test Mode: Transmitting

Channel	Pulse Width (ms)	Dwell Time (S)	Limit (S)	Result
Low	0.12	0.048	0.4	Pass
Middle	0.13	0.052	0.4	Pass
High	0.131	0.0524	0.4	Pass
Note: refer to specification files, the hopping rate is 1000/s, So Dwell time = (Pulse time/1000)*(1000//33)*33*0.4S				

Low Channel



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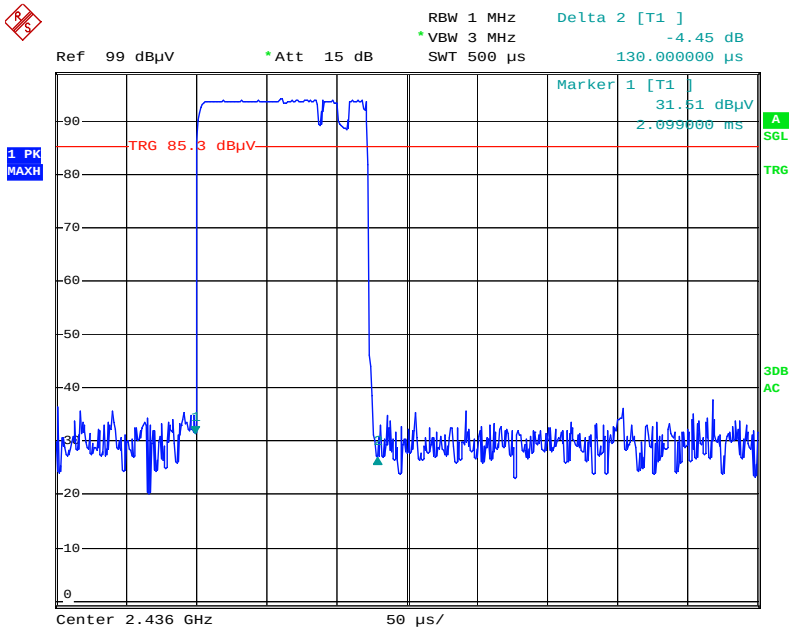
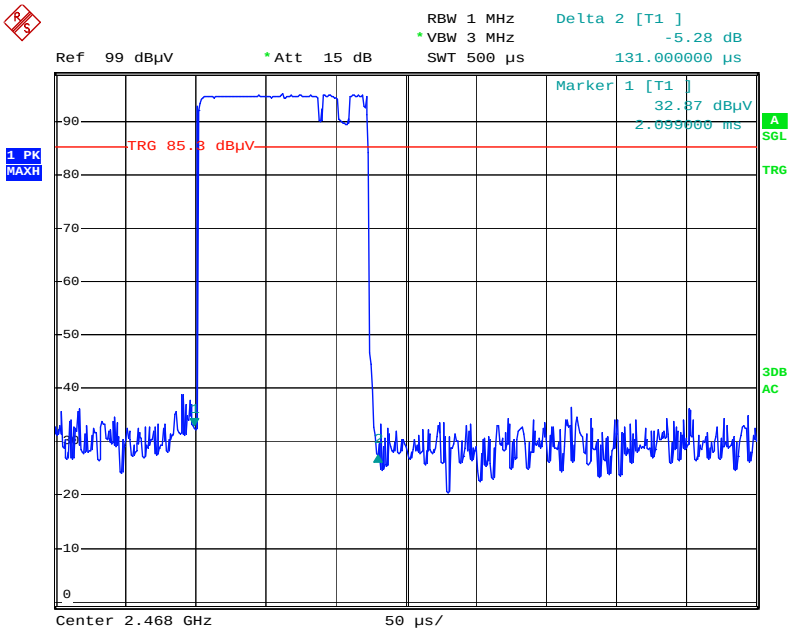
Middle Channel



Date: 4.JAN.2012 16:21:58

High Channel



Date: 4.JAN.2012 16:22:52

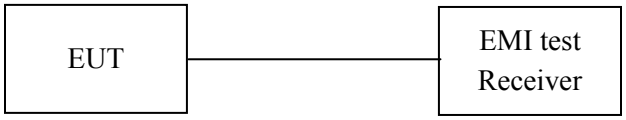
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to FCC §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. And 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	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:	50 %
ATM Pressure:	100 kPa

** The testing was performed by Leon Chen on 2012-01-04.*

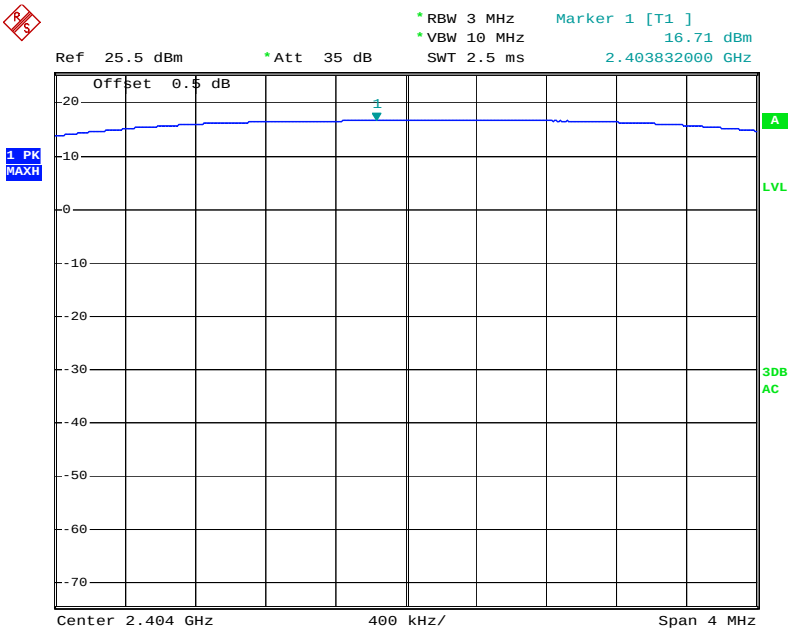
Test Result: Compliance.

Please refer to following table and plots

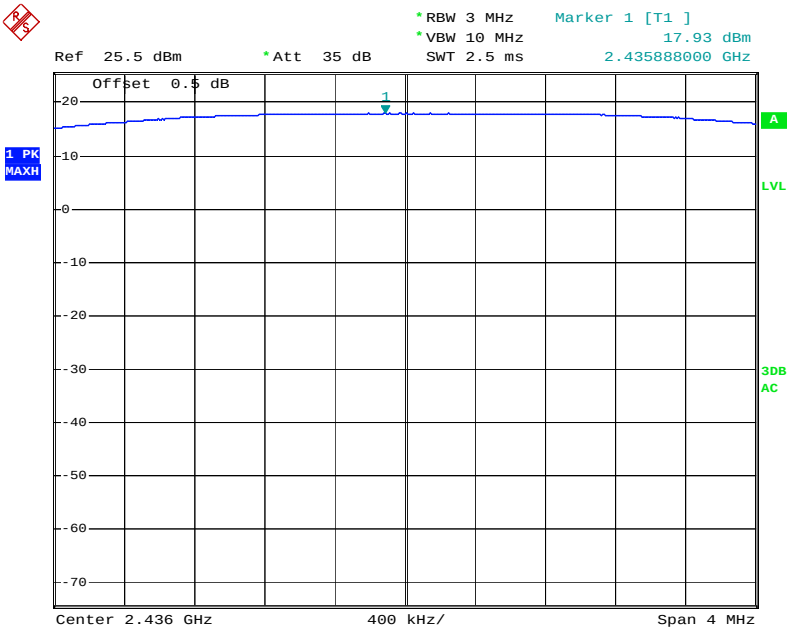
Test Mode: Transmitting

Channel	Frequency (MHz)	Conducted Output Power		Limit (mW)
		(dBm)	(mW)	
Low	2404	16.71	46.88	1000
Middle	2436	17.93	62.09	1000
High	2468	18.60	72.44	1000

Low Channel



Middle Channel



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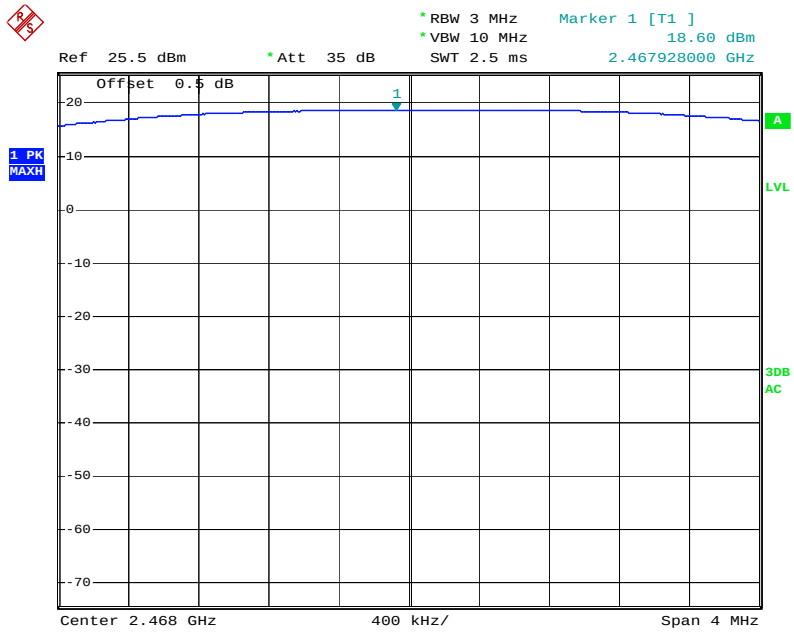
High Chanel



Date: 4.JAN.2012 15:11:24

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 of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge, for Radiated emissions restricted band RBW=1 MHz, VBW=3 MHz.
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	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:	50 %
ATM Pressure:	100 kPa

**The testing was performed by Leon Chen on 2012-01-04.*

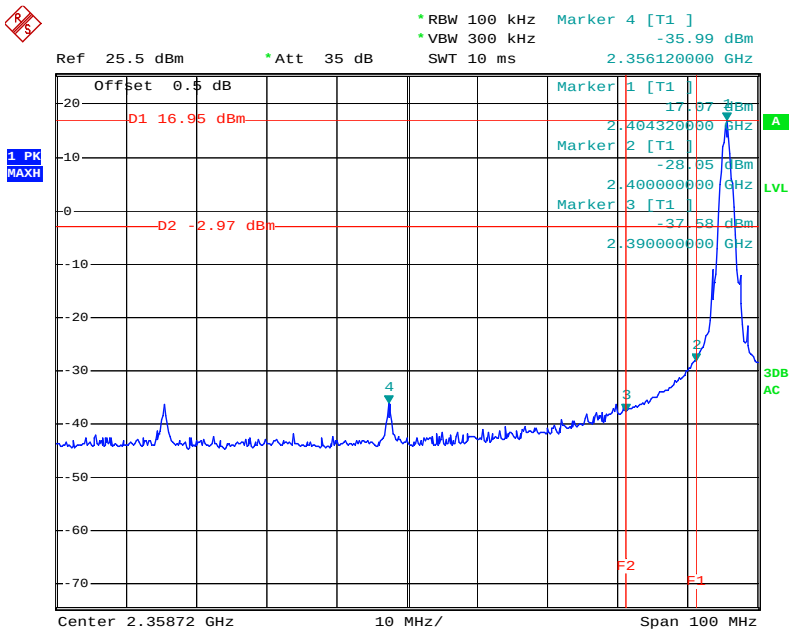
Test Result: Compliance

Please refer to the following table and plots.

Test Mode: Transmitting

Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)
2356.120	53.06	20
2516.200	52.03	20

Band Edge: Left Side



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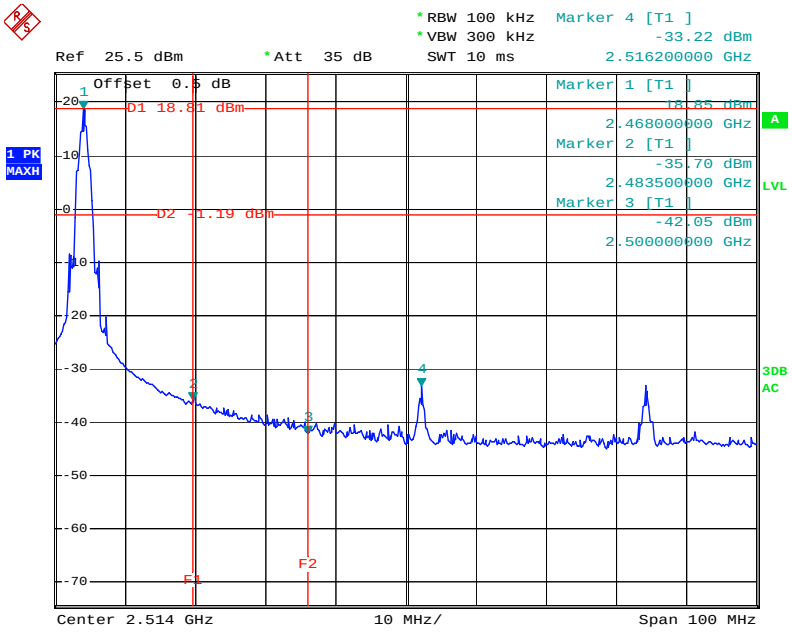
Band Edge: Right Side



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