FCC PART 15.247

TEST REPORT

For

Lorex Technology Inc.

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

FCC ID: UCZC2415

Report Type: Original Report	**Product Type:** Digital FHSS Device (Camera Unit)

Test Engineer:	Simon Wang
Report Number:	RSZ131105004-00
Report Date:	2014-01-23
Reviewed By:	Sula Huang RF Engineer
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Lorex Technology Inc*'s product, model number: *BB2415 (FCC ID: UCZC2415)* or the "EUT" in this report was a *camera unit of digital FHSS device, named as 2.4G baby monitor BB2415 by applicant*, which was measured approximately: 9.3 cm (L) x 8.3 cm (W) x 10.1 cm (H), rated input voltage: DC 6V from Adapter.

Adapter Information: AC ADAPTER
Model: 5E-AD060080-U
Input: 100-240V~50/60H, 0.15A
Output: DC 6V, 0.8A

Note: The series product, model BB2415, LB215 and BB2415AC1, they are named differently due to market purpose, which was explained in the attached product similarity declaration letter, and the model BB2415 was selected for testing,

**All measurement and test data in this report was gathered from production sample serial number: WC01130900001 (Assigned by applicant). The EUT supplied by the applicant was received on 2013-11-05.*

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 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)

Submitted with the monitor unit of a system with FCC ID: UCZM5410, which was granted on 02/04/2013.

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.

Measurement uncertainty with radiated emission is 5.91 dB for 30MHz-1GHz.and 4.92 dB for above 1GHz, 1.95dB for conducted measurement.

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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode which was selected by manufacturer.

EUT Exercise Software

No exercise software was used.

Equipment Modifications

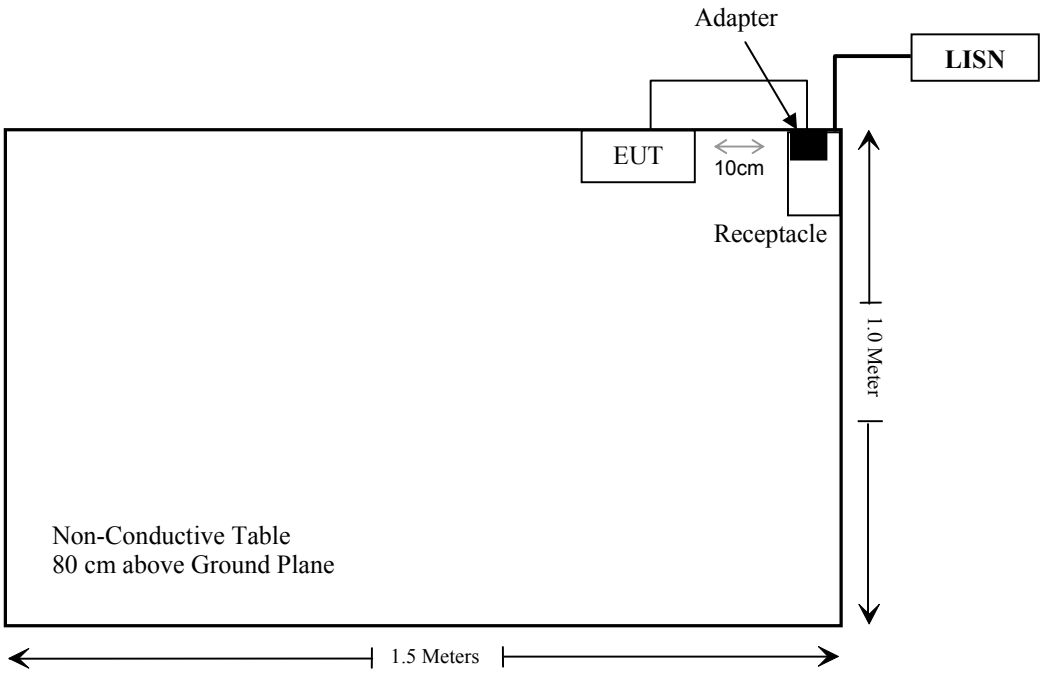
No modification was made to the EUT tested.

External I/O Cable

Cable Description	Length (m)	From/Port	To
DC Power Cable	1.9	EUT	Adapter
AC Power Cable	0.8	Receptacle	LISN

Block Diagram of Test Setup

For Conducted Emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b)(1), §2.1091	Maximum Permissible Exposure (MPE)	Compliance
§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	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel	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), 2.1091 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

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

MPE Calculation

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where:

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)

Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
	(dBi)	(numeric)	(dBm)	(mW)			
2441.250	2.0	1.58	15.06	32.06	20	0.010	1.0

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

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 one integral antenna arrangement and the maximum gain is 2.0 dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207

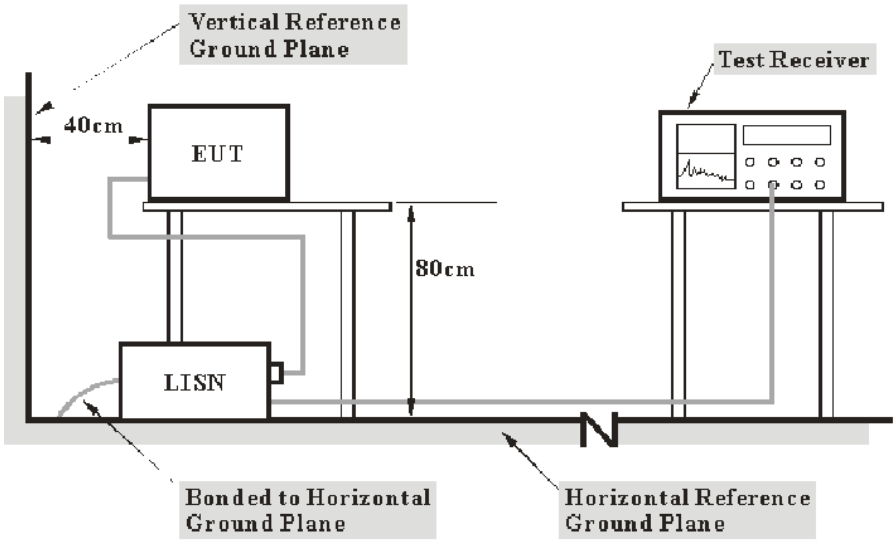
Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between AMN/ISN and receiver, AMN/ISN voltage division factor, AMN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Measurement uncertainty
AC Mains	3.26 dB (k=2, 95% level of confidence)
CAT 3	3.70 dB (k=2, 95% level of confidence)
CAT 5	3.86 dB (k=2, 95% level of confidence)
CAT 6	4.64 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 outlet of 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	100176	2013-06-17	2014-06-17
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2013-05-07	2014-05-07
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2013-08-09	2014-08-09
Rohde & Schwarz	CE Test software	EMC 32	V8.53	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN/ISN VDF + Cable Loss + Transient Limiter Attenuation

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 limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, with the worst margin reading of:

14.1 dB at **24.002000 MHz** in the **Line** conducted mode

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

in BACL., $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

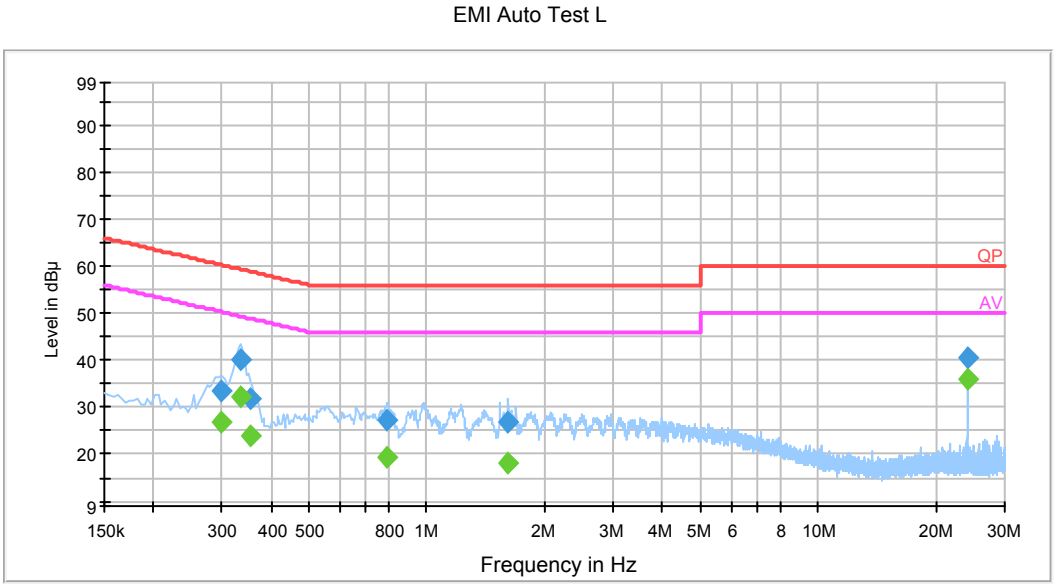
Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	54 %
ATM Pressure:	100.1 kPa

The testing was performed by Simon Wang on 2013-11-14.

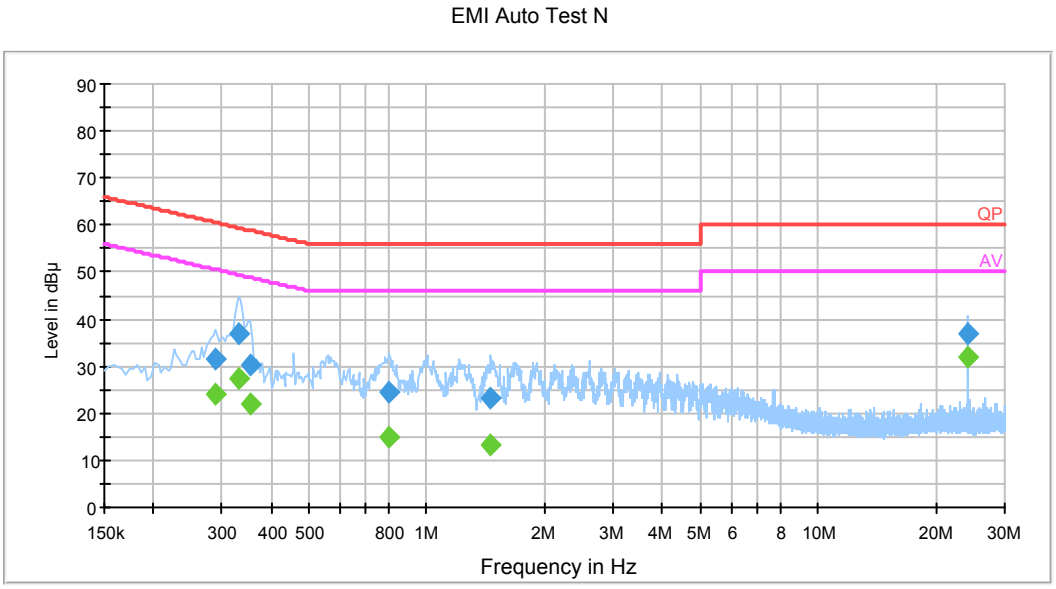
Test Mode: Transmitting

AC 120 V, 60 Hz, Line:



Frequency (MHz)	Corrected Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Remark (PK/QP/Ave)
0.298000	33.6	19.5	60.3	26.7	QP
0.298000	27.0	19.5	50.3	23.3	Ave.
0.334000	40.1	19.5	59.4	19.3	QP
0.334000	32.2	19.5	49.4	17.2	Ave.
0.354000	31.6	19.5	58.9	27.3	QP
0.354000	24.1	19.5	48.9	24.8	Ave.
0.794000	27.1	19.5	56.0	28.9	QP
0.794000	19.3	19.5	46.0	26.7	Ave.
1.618000	26.9	19.5	56.0	29.1	QP
1.618000	18.0	19.5	46.0	28.0	Ave.
24.002000	40.3	20.2	60.0	19.7	QP
24.002000	35.9	20.2	50.0	14.1	Ave.

AC 120V, 60 Hz, Neutral:



Frequency (MHz)	Corrected Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Remark (PK/QP/Ave)
0.290000	31.4	19.5	60.5	29.1	QP
0.330000	37.1	19.5	59.5	22.4	QP
0.354000	30.1	19.5	58.9	28.8	QP
0.802000	24.6	19.5	56.0	31.4	QP
1.458000	23.4	19.5	56.0	32.6	QP
24.002000	37.1	20.3	60.0	22.9	QP
0.290000	24.0	19.5	50.5	26.5	Ave.
0.330000	27.3	19.5	49.5	22.2	Ave.
0.354000	21.8	19.5	48.9	27.1	Ave.
0.802000	15.1	19.5	46.0	30.9	Ave.
1.458000	13.1	19.5	46.0	32.9	Ave.
24.002000	32.1	20.3	50.0	17.9	Ave.

Note:
1) Correction Factor = LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
The corrected factor has been input into the transducer of the test software.
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude

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

Applicable Standard

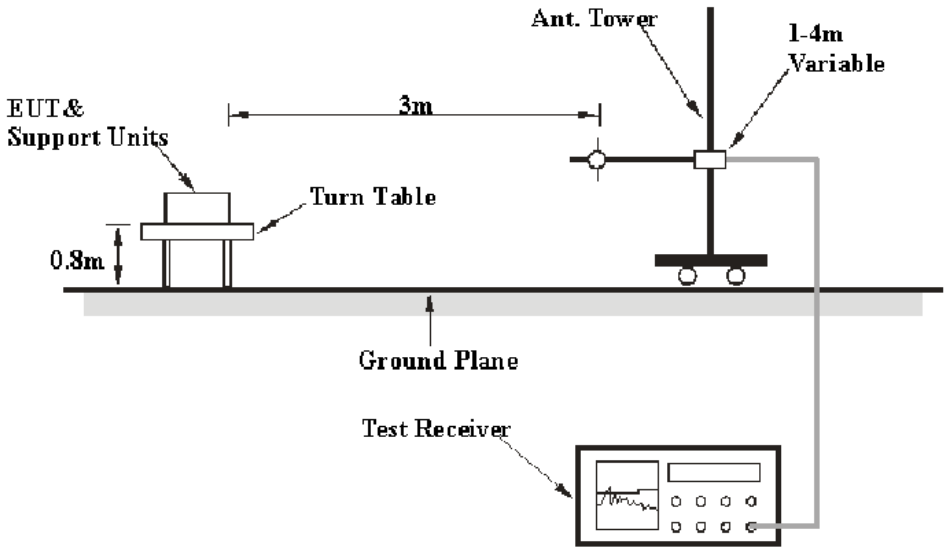
FCC §15.247 (d); §15.209; §15.205;

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 CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.91 dB for 30MHz-1GHz and 4.92 dB for above 1GHz. And the uncertainty will not be taken into consideration for the test data recorded in the report

EUT Setup



The radiated emission tests were performed in the 3 meters 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.

The adapter was connected to a 120 VAC/60 Hz power source.

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	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1 MHz	10 Hz	/	Ave.

Test Procedure

For the radiated emissions test, the adapter was connected to the outlet of the LISN.

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2013-09-30	2014-09-30
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-09-17	2014-09-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2013-04-03	2014-04-03
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
BIZI	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23
the electro-Mechanics Co.	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
R&S	Auto test Software	EMC32	V8.53	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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, with the worst margin reading of:

13.24 dB at **132.56 MHz** in the **Horizontal** polarization

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

in BACL., $U_{(Lm)}$ is less than + U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	54 %
ATM Pressure:	100.1 kPa

The testing was performed by Simon Wang on 2013-11-14.

EUT operation mode: Transmitting

30 MHz -25 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2410.875 MHz)									
132.56	43.86	QP	98	1.2	H	-13.6	30.26	43.5	13.24
2410.875	90.35	PK	195	1.2	H	6.13	96.48	/	/
2410.875	86.5	Ave.	195	1.2	H	6.13	92.63	/	/
2410.875	101.81	PK	346	1.1	V	6.13	107.94	/	/
2410.875	98.3	Ave.	346	1.1	V	6.13	104.43	/	/
2216.7	35.21	PK	112	1.3	V	4.40	39.61	74	34.39
2216.7	21.17	Ave.	112	1.3	V	4.40	25.57	54	28.43
2333.5	36.02	PK	147	1.2	V	5.48	41.50	74	32.50
2333.5	21.35	Ave.	147	1.2	V	5.48	26.83	54	27.17
2490.2	36.42	PK	248	1.2	H	7.21	43.63	74	30.37
2490.2	22.24	Ave.	248	1.2	H	7.21	29.45	54	24.55
4821.75	38.17	PK	11	1.1	H	12.40	50.57	74	23.43
4821.75	23.56	Ave.	11	1.1	H	12.40	35.96	54	18.04
7232.625	35.22	PK	195	1.2	V	16.62	51.84	74	22.16
7232.625	20.19	Ave.	195	1.2	V	16.62	36.81	54	17.19
Middle Channel (2441.25 MHz)									
132.56	43.65	QP	75	1.3	H	-13.6	30.05	43.5	13.45
2441.25	93.69	PK	54	1.2	H	7.21	100.90	/	/
2441.25	89.71	Ave.	54	1.2	H	7.21	96.92	/	/
2441.25	104.39	PK	306	1.2	V	7.21	111.60	/	/
2441.25	100.84	Ave.	306	1.2	V	7.21	108.05	/	/
2261.4	37.20	PK	312	1.3	V	4.99	42.19	74	31.81
2261.4	22.83	Ave.	312	1.3	V	4.99	27.82	54	26.18
2332.6	37.73	PK	328	1.2	V	5.48	43.21	74	30.79
2332.6	21.51	Ave.	328	1.2	V	5.48	26.99	54	27.01
2489.2	38.05	PK	279	1.1	H	7.21	45.26	74	28.74
2489.2	22.63	Ave.	279	1.1	H	7.21	29.84	54	24.16
4882.5	38.54	PK	212	1.3	V	12.46	51.00	74	23.00
4882.5	24.44	Ave.	212	1.3	V	12.46	36.90	54	17.10
7323.75	37.18	PK	20	1.2	V	16.49	53.67	74	20.33
7323.75	20.31	Ave.	20	1.2	V	16.49	36.80	54	17.20

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2471.625 MHz)									
132.56	43.73	QP	16	1.1	H	-13.6	30.13	43.5	13.37
2471.625	89.73	PK	179	1.3	H	7.21	96.94	/	/
2471.625	85.71	Ave.	179	1.3	H	7.21	92.92	/	/
2471.625	98.64	PK	171	1.2	V	7.21	105.85	/	/
2471.625	95.11	Ave.	171	1.2	V	7.21	102.32	/	/
2263.8	34.07	PK	93	1.1	H	4.99	39.06	74	34.94
2263.8	20.84	Ave.	93	1.1	H	4.99	25.83	54	28.17
2351.7	34.99	PK	11	1.1	H	5.48	40.47	74	33.53
2351.7	20.80	Ave.	11	1.1	H	5.48	26.28	54	27.72
2494.1	35.64	PK	347	1.1	V	7.21	42.85	74	31.15
2494.1	20.43	Ave.	347	1.1	V	7.21	27.64	54	26.36
4943.25	36.17	PK	265	1.3	V	12.50	48.67	74	25.33
4943.25	23.01	Ave.	265	1.3	V	12.50	35.51	54	18.49
7414.875	33.76	PK	38	1.1	V	15.90	49.66	74	24.34
7414.875	19.56	Ave.	38	1.1	V	15.90	35.46	54	18.54

Note:

1) Corrected Factor=Antenna factor (RX) + cable loss – amplifier factor
2) Corrected Amplitude = Corrected Factor + Reading
3) Margin = Limit - Corrected Amplitude

FCC §15.247(a) (1)-CHANNEL SEPARATION

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 Procedure

1. Set the EUT in Operating mode, RBW was set at 100 kHz,VBW≥ 3RBW maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another trace
3. Measure the channel separation.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

** The testing was performed by Simon Wang on 2013-11-13.*

Test Result: Compliance.

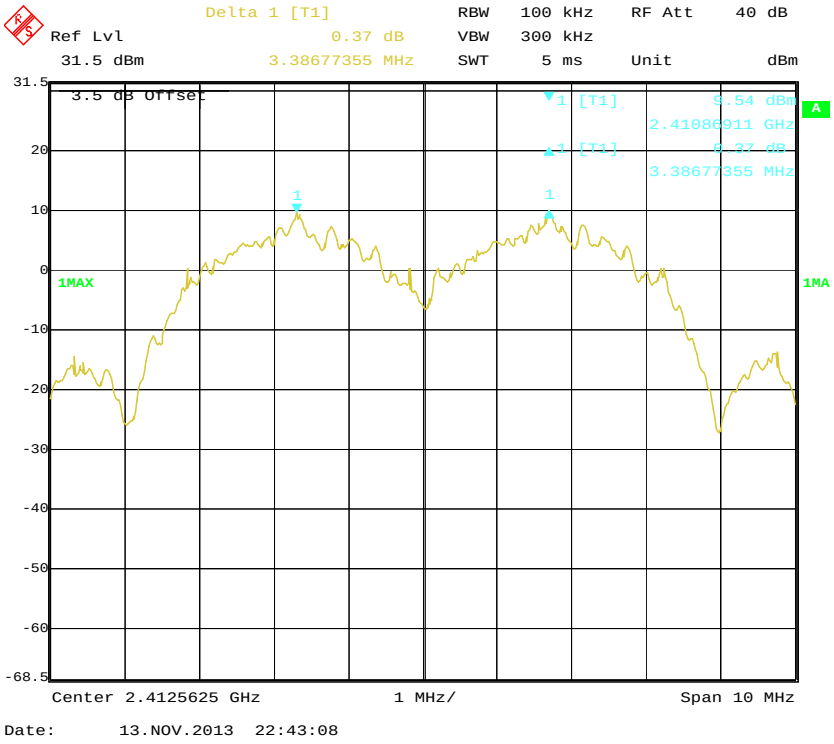
Please refer to following tables and plots

Test Mode: Transmitting

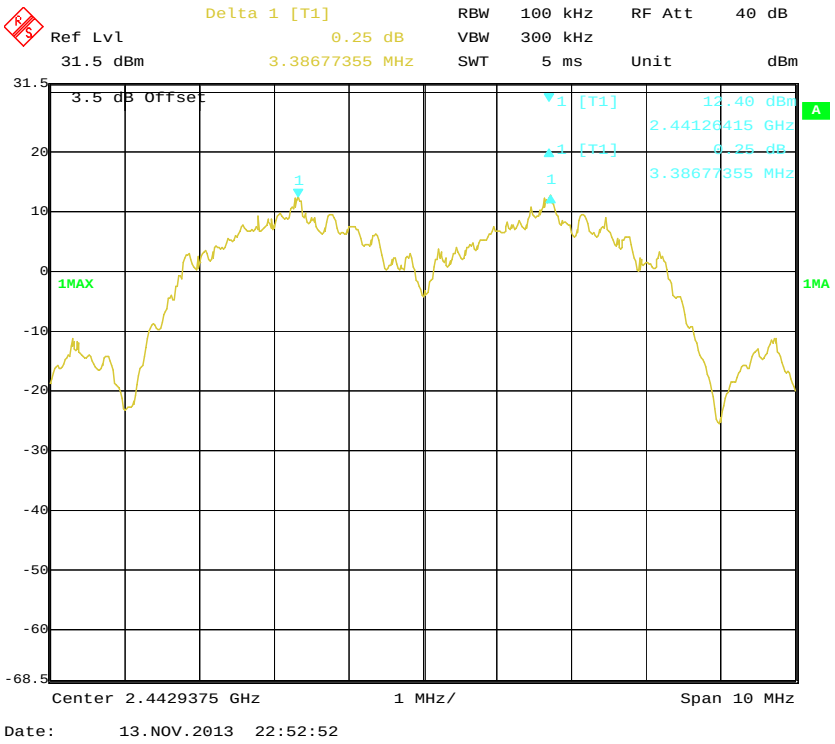
Channel	Channel Frequency (MHz)	Channel Separation (MHz)	⩾Limit (MHz)	Result
Low	2410.875	3.387	2.445	Pass
Adjacent	2414.250			
Middle	2441.250	3.387	2.431	
Adjacent	2444.625			
High	2471.625	3.367	2.391	
Adjacent	2468.250			

Note: the limit =2/3 of 20 dB bandwidth

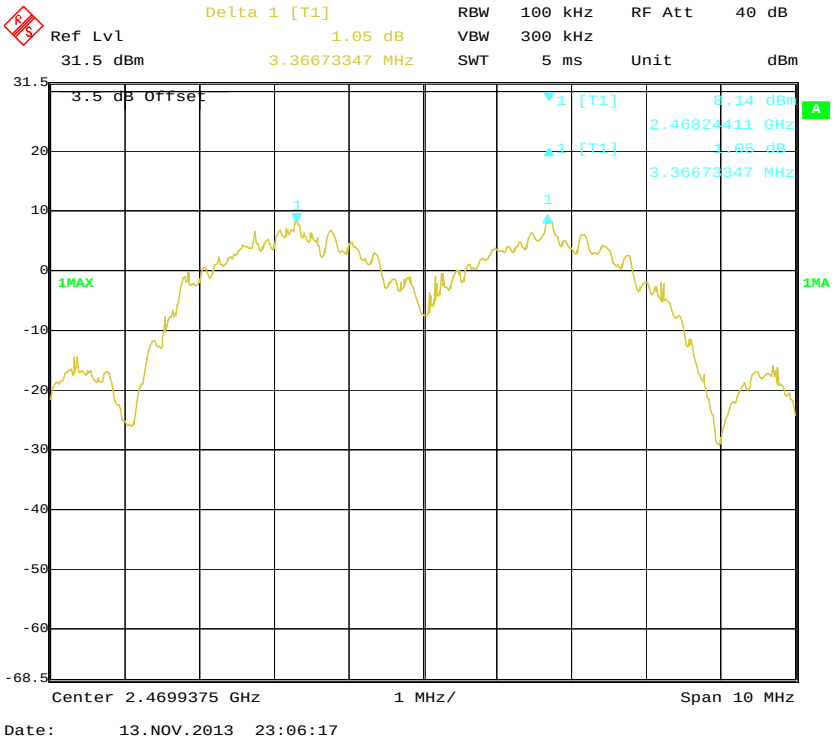
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (1) – 20 dB EMISSION BANDWIDTH

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 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	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

** The testing was performed by Simon Wang on 2013-11-13.*

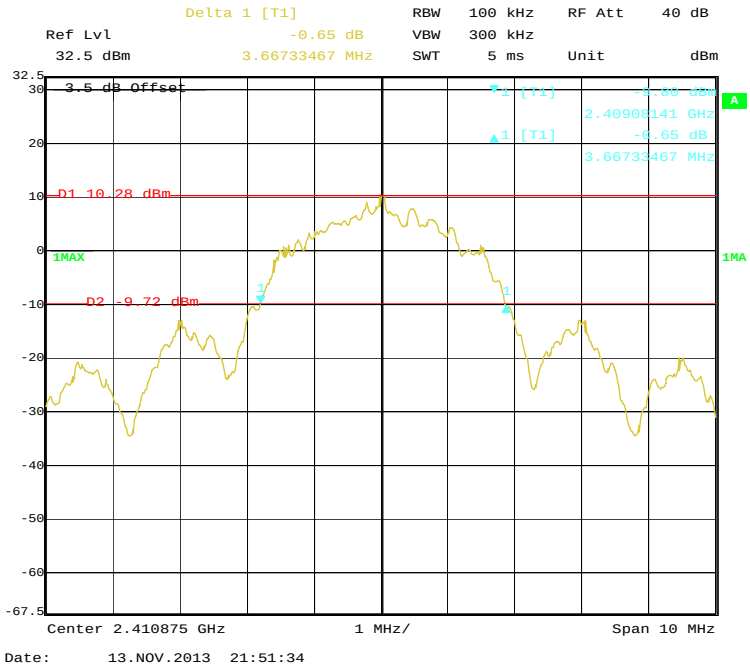
Test Result: Compliance.

Please refer to following tables and plots

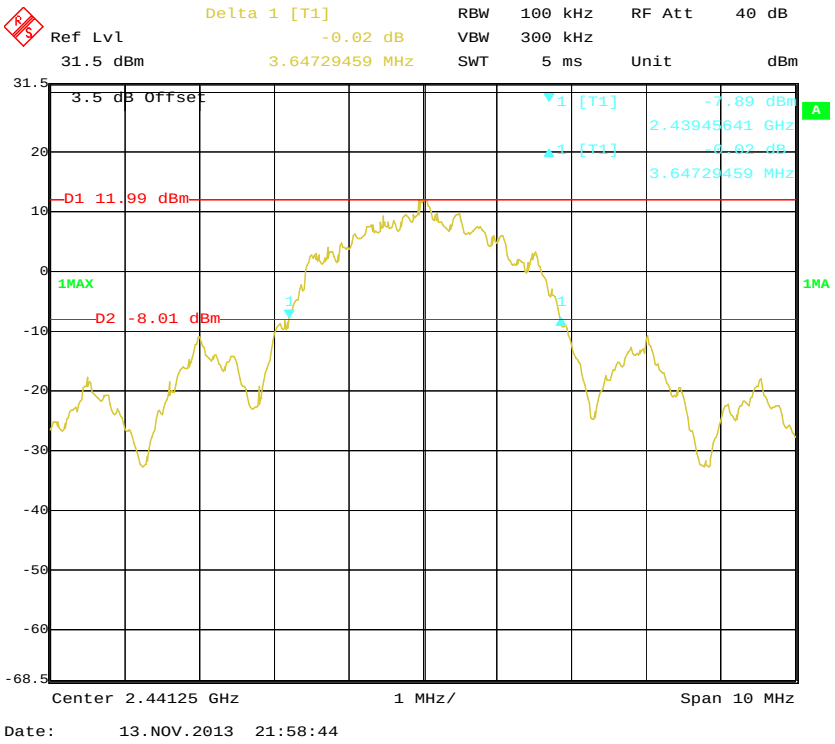
Test Mode: Transmitting

Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)
Low	2410.875	3.667
Middle	2441.250	3.647
High	2471.625	3.587

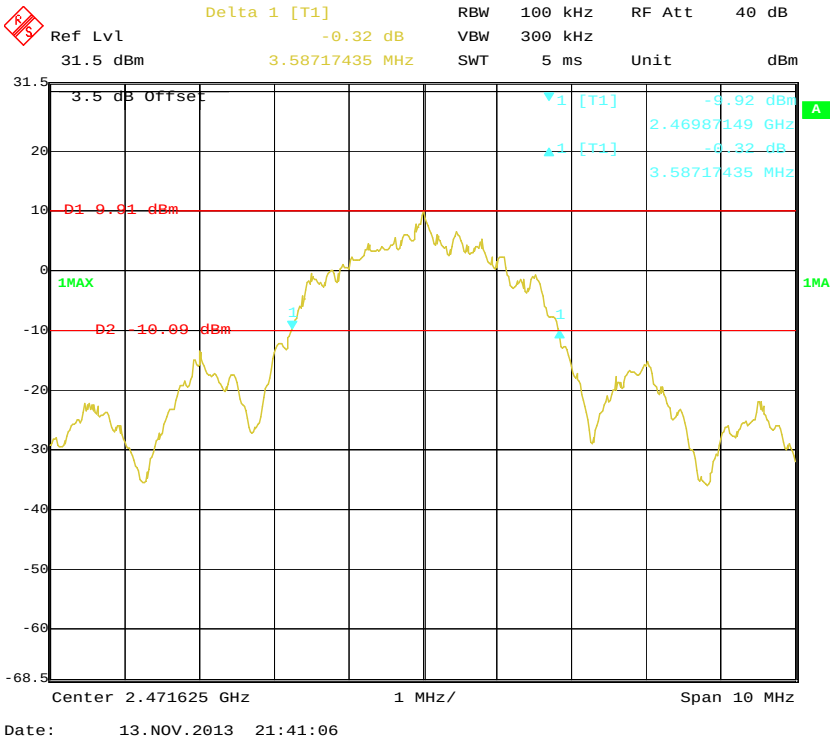
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (1) (iii)-QUANTITY OF HOPPING CHANNEL

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	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

The testing was performed by Simon Wang on 2013-11-13.

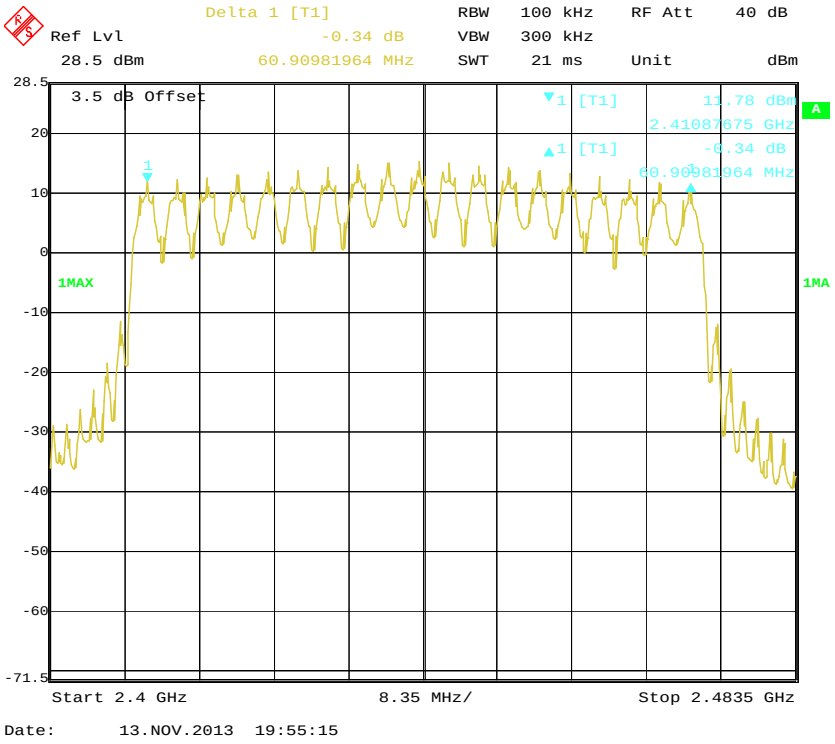
Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.50	19	≥15

Number of Hopping Channels



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 (ms) * hope rate/2/ number of hopping channels * hopping No.*0.4 s

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

The testing was performed by Simon Wang on 2013-11-13.

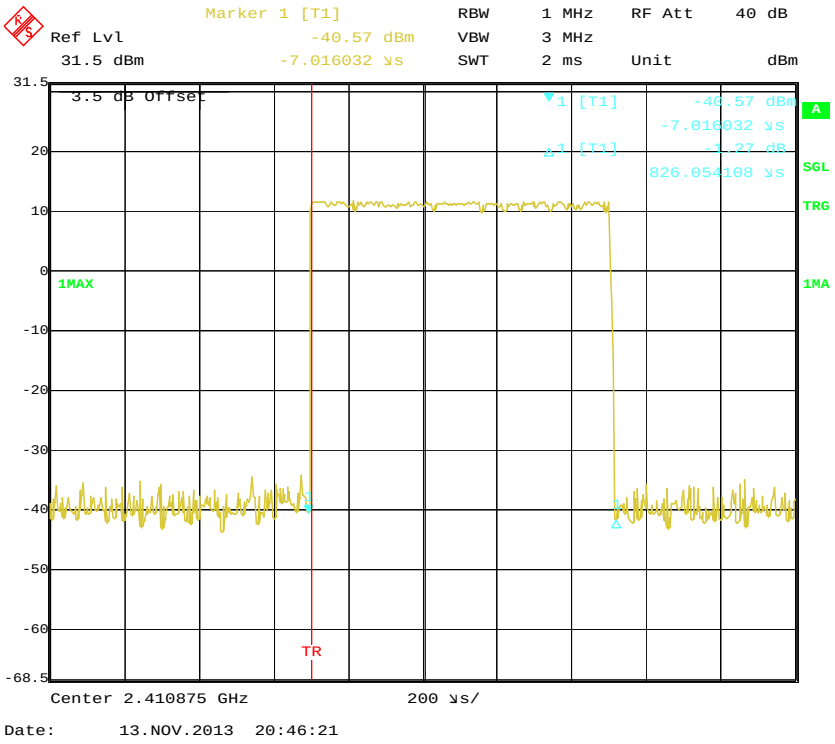
Test Result: Compliance.

Please refer to following tables and plots

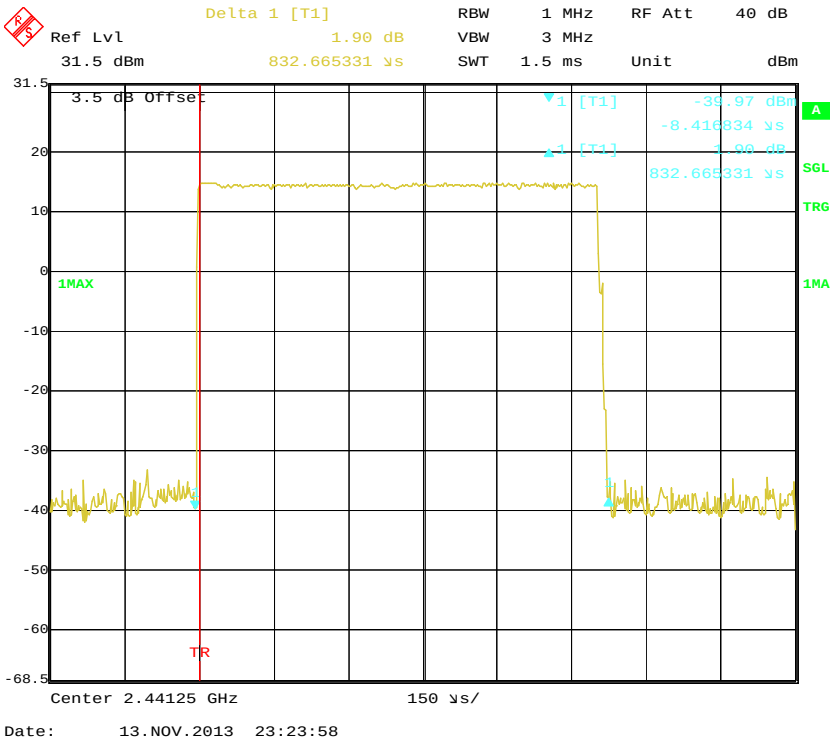
Test Mode: Transmitting

Channel	Pulse Width (ms)	Dwell Time (S)	Limit (S)	Result
Low	0.826	0.121	0.4	Pass
Middle	0.833	0.122	0.4	Pass
High	0.834	0.123	0.4	Pass
Note: Dwell time= Pulse time(735/2/19)*0.4*19*				

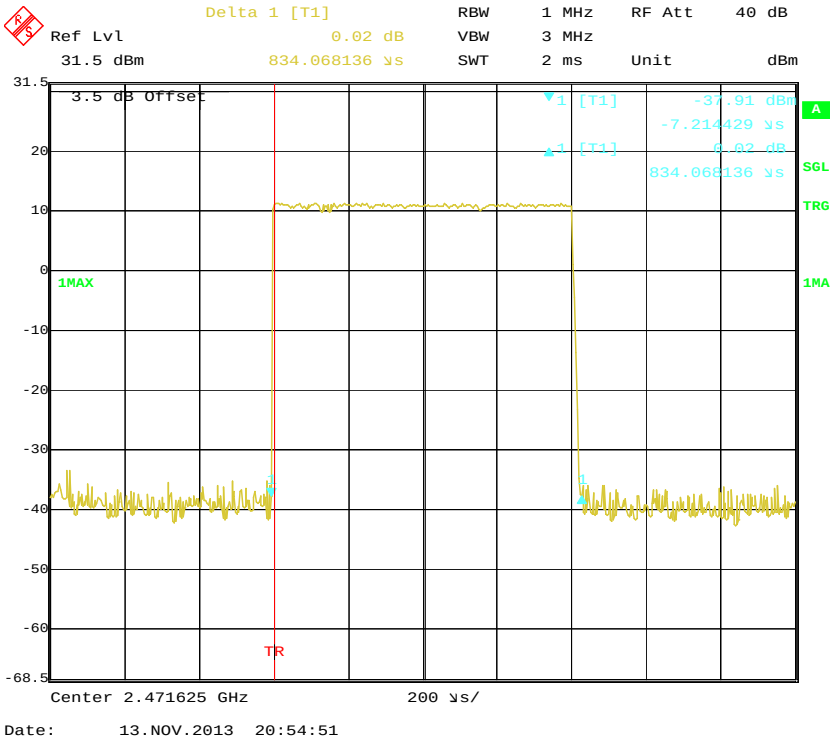
Low Channel



Middle Channel



High Channel



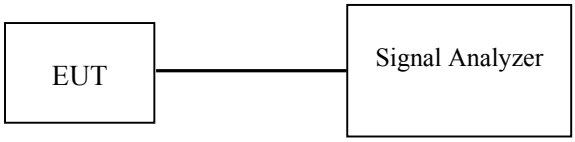
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

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 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

** The testing was performed by Simon Wang on 2013-11-13.*

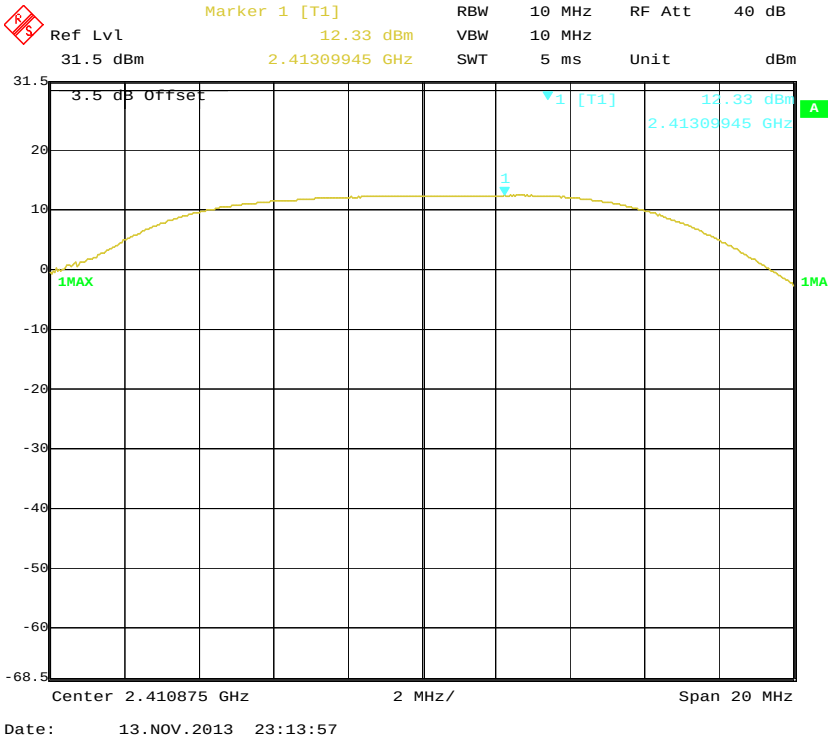
Test Result: Compliance.

Test Mode: Transmitting

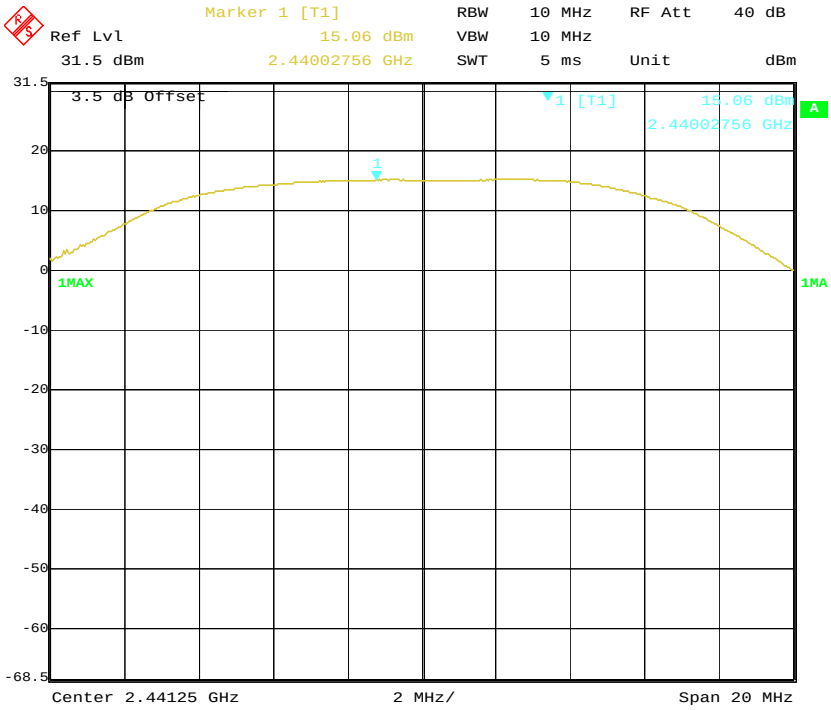
Please refer to following tables and plots

Channel	Channel frequency (MHz)	Conducted Peak output power (dBm)	Conducted Power output (mW)	Limit (mW)
Low	2410.875	12.33	17.10	125
Middle	2441.250	15.06	32.06	125
High	2471.625	11.61	14.49	125

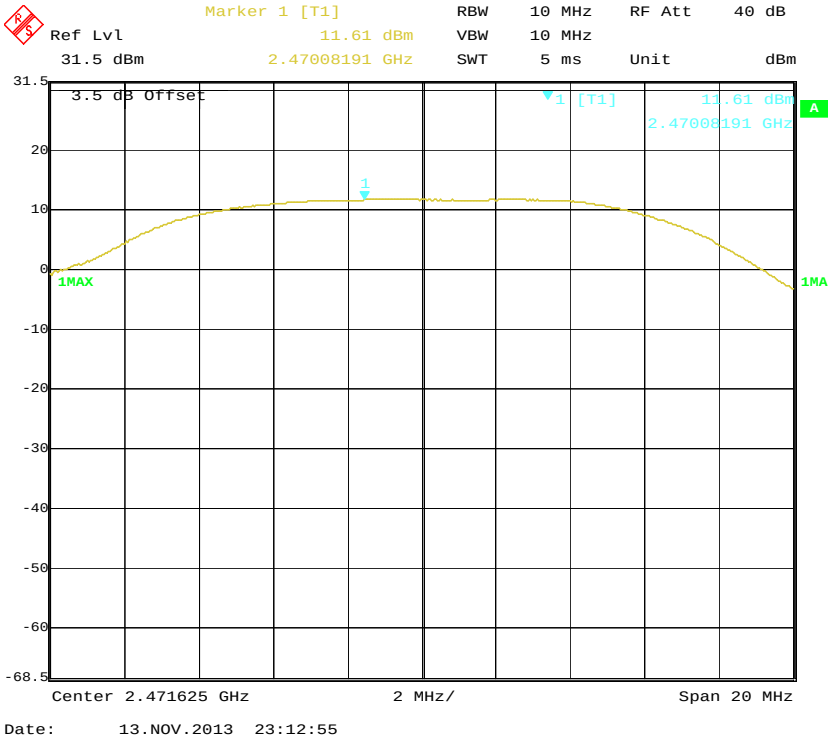
Low Channel



Middle Channel



High Channel



FCC §15.247(d) - BAND EDGES

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. Position the EUT without connection to measurement instrument. Put it on the rotated table and turn on the EUT and make it operate in operating 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. 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.
4. 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	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

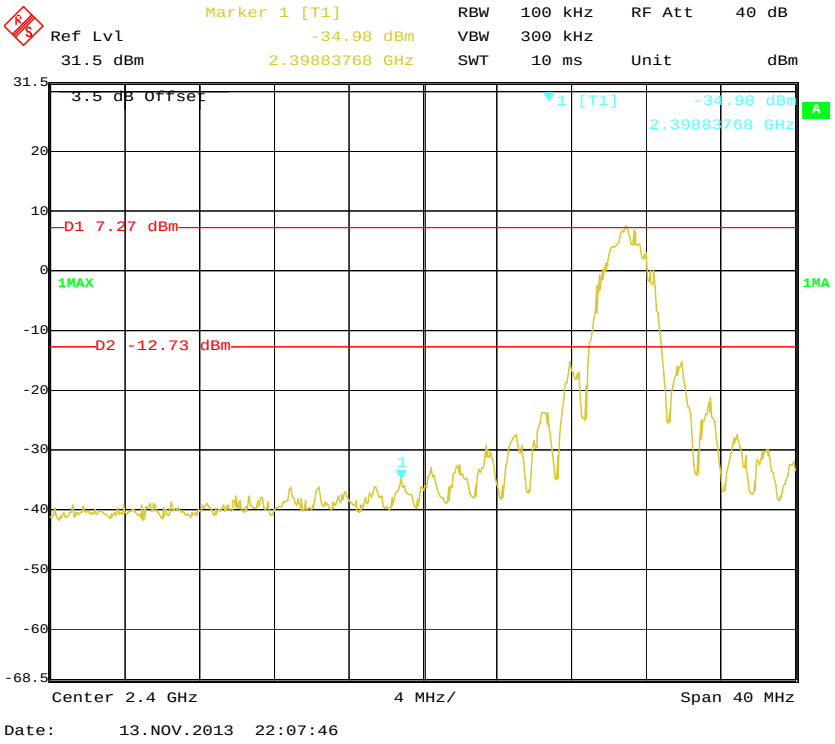
**The testing was performed by Simon Wang on 2013-11-13.*

Test Result: Compliance.

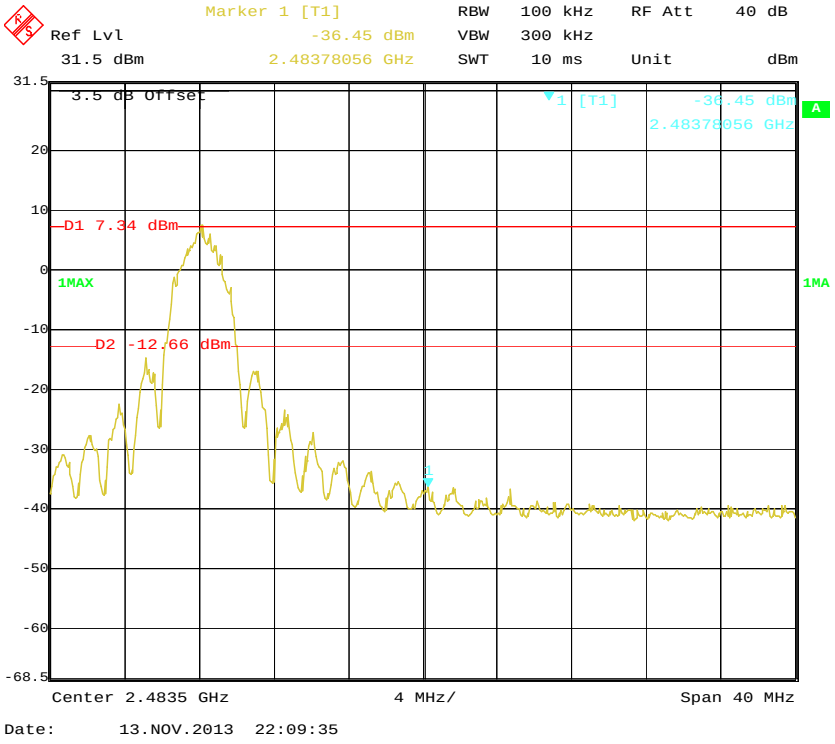
Test Mode: Transmitting

Please refer to follow plots:

Band Edge: Left Side



Band Edge: Right Side



PRODUCT SIMILARITY DECLARATION LETTER

Lorex Technology Inc
250 Royal Crest Court Markham, Ontario L3R 3S1 Canada
Tel: 905 946 8589 Fax: 905 947 0138

2014-1-23

Product Similarity Declaration Letter

To Whom It May Concern,

We, Lorex Technology Inc. hereby declare that our product 2.4G baby monitor BB2415, the model BB2415, LB215 and BB2415AC1 are electrically identical, they have the same PCB layout and schematic, the only difference is the combination of the baby unit and parent unit for the purpose of market.
The details as below:

Model Number	Description
BB2415	1 baby unit+ 1 parent unit
LB215	1 baby unit+ 1 parent unit with difference packaging
BB2415AC1	1 baby unit

Model BB2415was tested by BACL.

Please contact me if you have any question.

Signature:

Niles Kanapathipillai
Director Quality Assurance

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