FCC PART 15.247

TEST REPORT

For

Alinket Electronic Technology (Shanghai) Co., Ltd.

Room 403, No. 10, Lane 198, Zhangheng Road, Pudong, Shanghai, China

FCC ID: 2AELJ-ALX41X

Report Type:	**Product Type:**
Original Report	Alinket Bluetooth Modular

Test Engineer:	Matt Yao
Report Number:	RKS151130001-00A
Report Date:	2015-12-28
Reviewed By:	Jesse Huang EMC Manager
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) Chenghu Road,Kunshan Development Zone No.248,Kunshan, Jiangsu, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The Alinket Electronic Technology (Shanghai) Co., Ltd.'s product, model number: ALX411 (FCC ID: 2AELJ-ALX41X) or the "EUT" in this report was a Alinket Bluetooth Modular, which was measured approximately: 32 mm (L) x16 mm (W) x 3 mm (H), rated input voltage: DC 3.3 V.

** Note: The product's series model number: ALX41X, ALX41X and ALX411 are the same products, and just have the different model name due to market purposes.ALX41X,the last "X" is representative of 1 to 9. That the use of different software. The difference between software has nothing to do with the RF frequency parameter changes.*

**All measurement and test data in this report was gathered from production sample serial number: 20151013003 (Assigned by the BACL.The EUT supplied by the applicant was received on 2015-10-13)*

Objective

This report is prepared on behalf of Alinket Electronic Technology (Shanghai) Co., Ltd.in accordance with Part 2-Subpart J, Part 15- Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and FCC KDB558074 D01 DTS Meas Guidance v03r03.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement uncertainty with radiated emission is 5.87 dB for 30MHz-1GHz, and 4.84 dB for above 1GHz, 1.85dB for conducted measurement.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the Chenghu Road,Kunshan Development Zone No.248,Kunshan, Jiangsu, China.

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) 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, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. 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 engineer mode.

EUT Exercise Software

Alinket BT tool

Power lever 7

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

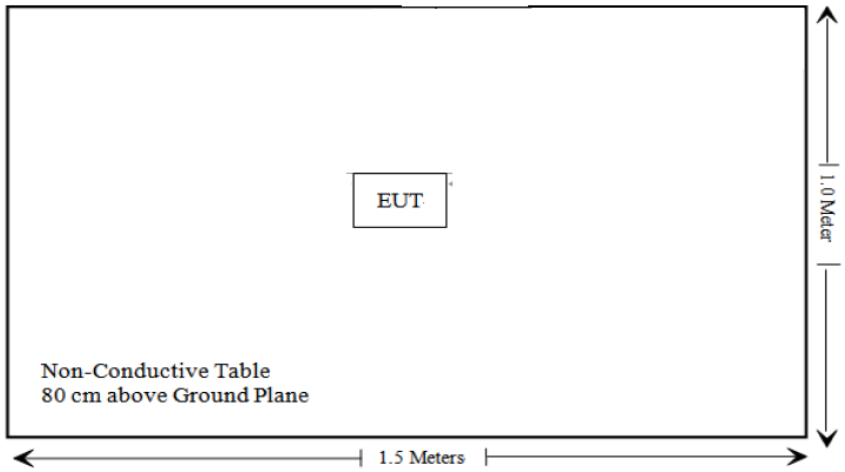
Manufacturer	Description	Model	Serial Number
Lenovo	Notebook	T400	N/A

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	0.9	EUT	PC

Block Diagram of Test Setup

Radiation emission



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC§15.247 (i), §1.1310& §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a),	AC Line Conducted Emissions	Compliance
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

FCC§15.247 (i), §1.1310& §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247(i)and subpart §1.1310, 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);

Measurement Result

Mode	Frequency (MHz)	Antenna Gain		Target Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
BLE	2440	0.5	1.122	-2.0	0.631	20	0.0001	1.0

Note: The target output power: -3 dBm±1dBm,
Please refer to the Technical Specification, which declared by the Manufacturer.

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203 - ANTENNA REQUIREMENT

Applied 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 antenna arrangement for Bluetooth, which the antenna gain is 0.5 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

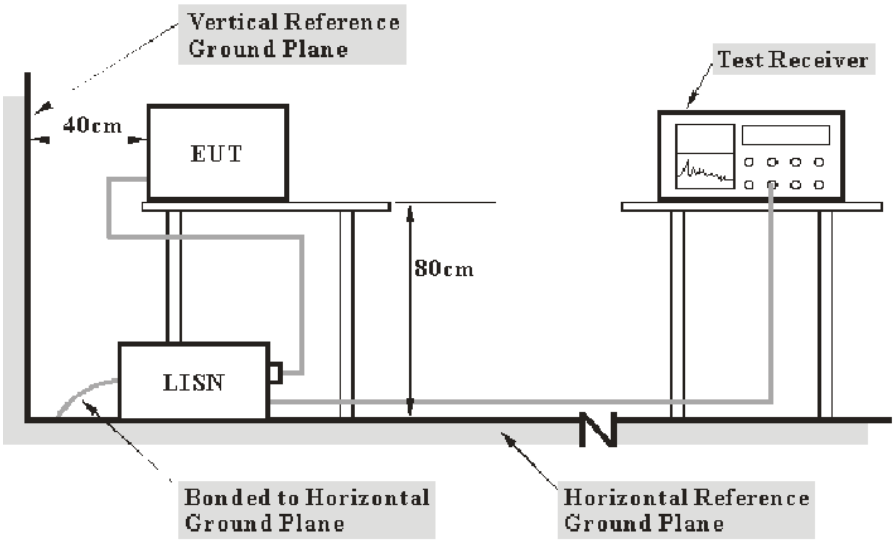
Measurement Uncertainty

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

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

Port	Expanded 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 C63.10-2013 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	934115/007	2015-11-4	2016-11-3
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2015-11-4	2016-11-3
Rohde & Schwarz	LISN	ESH3-Z5	892239/018	2015-6-23	2016-6-22
Rohde & Schwarz	Pulse limiter	ESH3-Z2	879940/0058	2015-6-19	2016-6-18
HP	Current probe	8710-1744	636	2015-6-19	2016-6-18
FCC	ISN	FCC-TLISN-T8-02	20376	2015-6-23	2016-6-22
Rohde & Schwarz	CE Test software	EMC 32	V 09.10.0	--	--

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) 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 VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss

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, the EUT complied with the FCC Part 15.207, the worst margin reading as below:

13.09 dB at **0.170000 MHz** in the **Line** conducted mode

Refer to CISPR16-4-2 and CISPR 16-4-1, the measured level complies 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

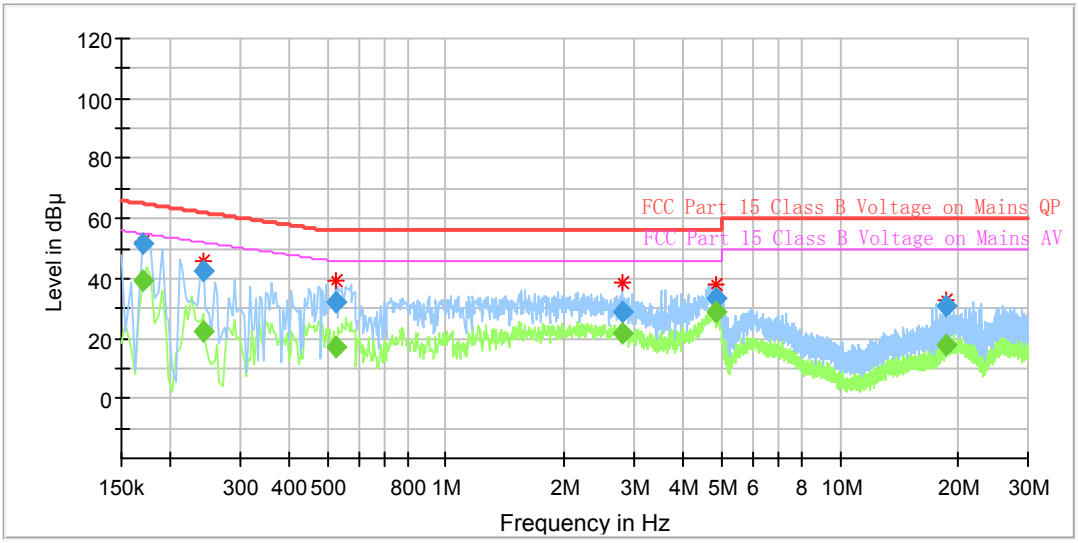
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-11

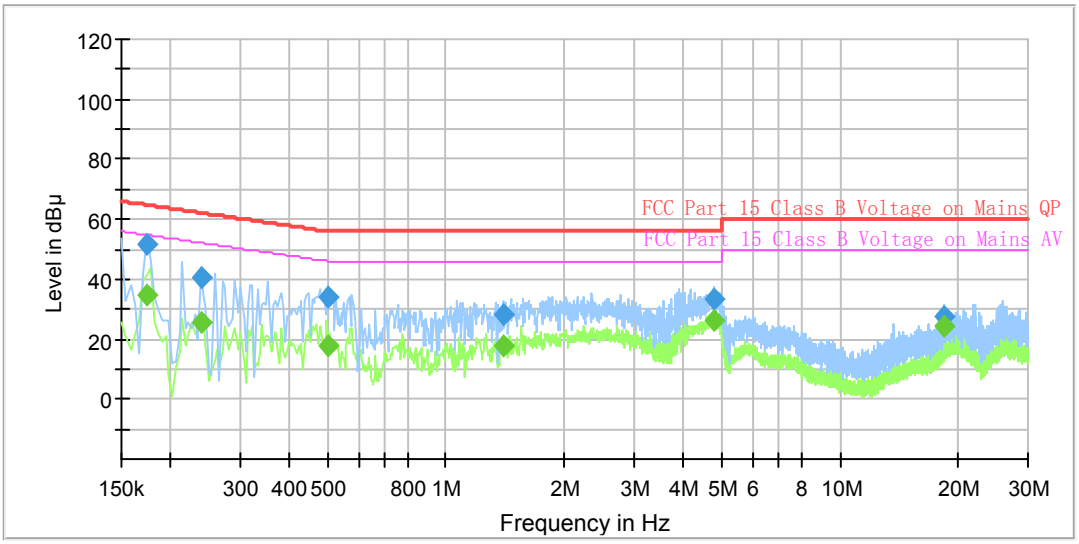
EUT operation mode: Transmitting

AC 120V/60 Hz, Line



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.170000	---	39.38	9.000	L1	11.0	15.58	54.96	Compliance
0.170000	51.87	---	9.000	L1	11.0	13.09	64.96	Compliance
0.242000	---	22.54	9.000	L1	11.0	29.49	52.03	Compliance
0.242000	42.27	---	9.000	L1	11.0	19.76	62.03	Compliance
0.526000	---	17.17	9.000	L1	11.0	28.83	46.00	Compliance
0.526000	32.35	---	9.000	L1	11.0	23.65	56.00	Compliance
2.790000	---	21.71	9.000	L1	11.2	24.29	46.00	Compliance
2.790000	29.16	---	9.000	L1	11.2	26.84	56.00	Compliance
4.850000	---	28.64	9.000	L1	11.3	17.36	46.00	Compliance
4.850000	33.42	---	9.000	L1	11.3	22.58	56.00	Compliance
18.658000	---	17.50	9.000	L1	11.4	32.50	50.00	Compliance
18.658000	30.59	---	9.000	L1	11.4	29.41	60.00	Compliance

AC 120V/60 Hz, Neutral



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.174000	---	34.84	9.000	N	11.0	19.93	54.77	Compliance
0.174000	51.51	---	9.000	N	11.0	13.26	64.77	Compliance
0.238000	---	25.67	9.000	N	11.0	26.50	52.17	Compliance
0.238000	40.40	---	9.000	N	11.0	21.77	62.17	Compliance
0.502000	---	17.81	9.000	N	11.0	28.19	46.00	Compliance
0.502000	33.87	---	9.000	N	11.0	22.13	56.00	Compliance
1.394000	---	17.97	9.000	N	11.1	28.03	46.00	Compliance
1.394000	28.34	---	9.000	N	11.1	27.66	56.00	Compliance
4.794000	---	26.38	9.000	N	11.4	19.62	46.00	Compliance
4.794000	33.58	---	9.000	N	11.4	22.42	56.00	Compliance
18.330000	---	24.34	9.000	N	11.4	25.66	50.00	Compliance
18.330000	27.26	---	9.000	N	11.4	32.74	60.00	Compliance

Note:
1) Corr.=LISN VDF (Voltage Division Factor) + Cable Loss
2) Corrected Amplitude = Reading + Corr.
3) Margin = Limit –Corrected Amplitude

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

Applied Standard

FCC §15.247 (d); §15.209; §15.205;

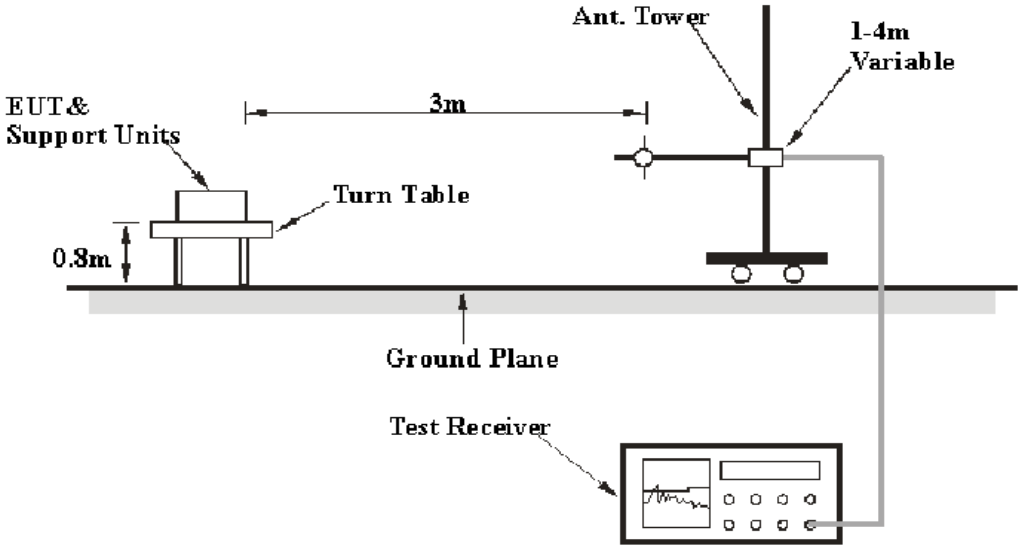
Measurement Uncertainty

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.

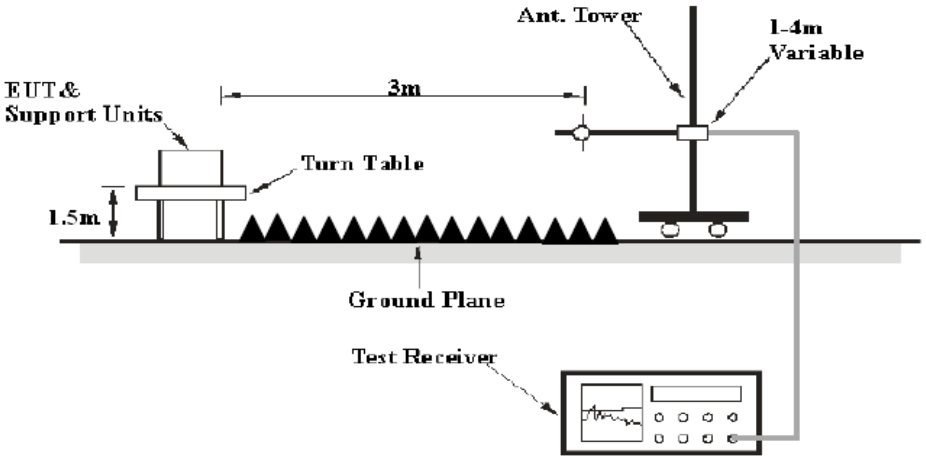
Based on CISPR 16-4-2, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Kunshan) is 5.91 dB for 30MHz-1GHz, and 4.92 dB for above 1GHz. And this uncertainty will not be taken into consideration for the test data recorded in the report.

EUT Setup

Below 1GHz



Above 1GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

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

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz and peak and Average detection modes for frequencies above 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 7dB means the emission is 7dB below the 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
Sonoma Instrunent	Amplifier	330	171377	2015-9-16	2016-9-16
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2015-5-20	2016-5-19
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2015-11-7	2016-11-6
ETS	Horn Antenna	3115	6229	2015-11-7	2016-11-6
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2015-11-4	2016-11-3
Mini	Pre-amplifier	ZVA-183-S+	857001418	2015-9-16	2016-9-16
R&S	Auto test Software	EMC32	V 09.10.0	-	-
ETS-LINDGREN	LINE PROBE	3701	169306	2015-4-10	2016-4-9
EMCO	ACTIVE LOOP	6502	9011-2560	2015-6-23	2016-6-22
ETS-LINDGREN	PASSIVE LOOP	6512	108100	/	/

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

Test Results Summary

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

4.93 dB at **4880 MHz** in the **Horizontal** polarization

Refer to CISPR16-4-2 and CISPR 16-4-1, the measured level complies 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

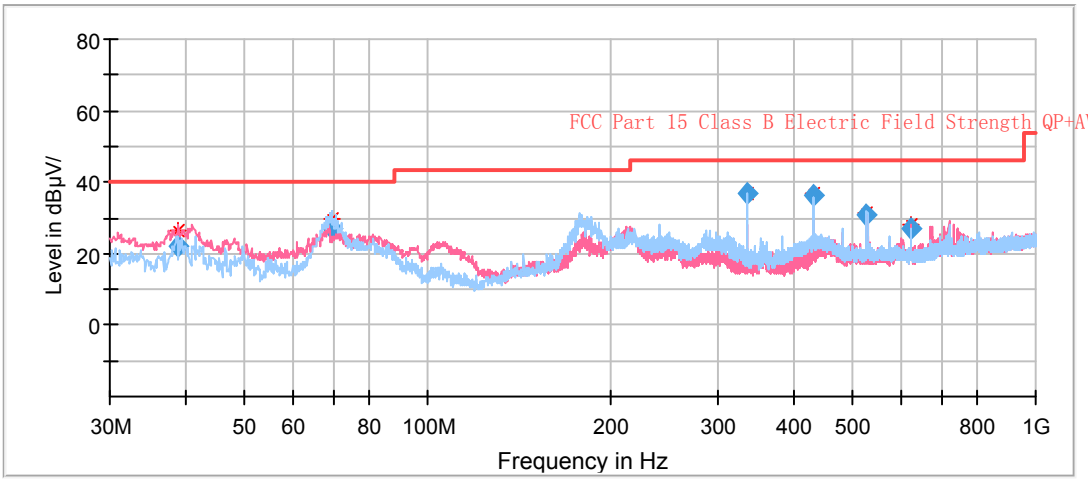
Environmental Conditions

Temperature:	27 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-08

EUT operation mode: Normal operation

30MHz-1GHz:



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 (cm)	Polar (H/V)			Limit (dB µ V/m)	Margin (dB)
38.927400	32.33	QP	80.0	100.0	V	-10.3	22.03	40.00	17.97
69.467800	43.98	QP	37.0	200.0	H	-17.0	26.98	40.00	13.02
335.989650	46.16	QP	40.0	100.0	H	-9.5	36.66	46.00	9.34
432.008850	43.66	QP	50.0	100.0	H	-7.4	36.26	46.00	9.74
527.997750	36.27	QP	351.0	200.0	H	-5.3	30.97	46.00	15.03
624.007350	31.06	QP	100.0	100.0	V	-4.3	26.76	46.00	19.24

EUT operation mode: Transmitting

1GHz-25 GHz

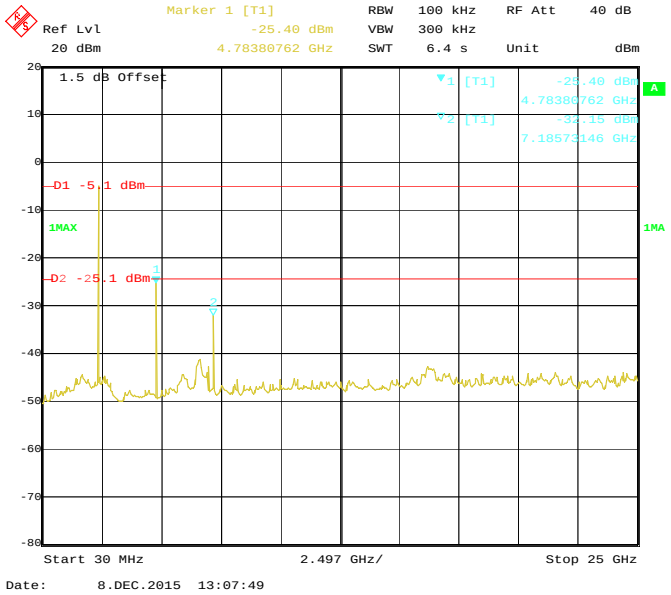
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (cm)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
Low Channel (2402 MHz)									
2402	91.98	PK	170	150	V	3.0	94.98	/	/
2402	80.45	Ave	170	150	V	3.0	83.45	/	/
2402	91.08	PK	220	150	H	3.0	94.08	/	/
2402	79.97	Ave	220	150	H	3.0	82.97	/	/
2354	31.10	Ave	37	150	H	4.1	35.20	54	18.80
2354	39.68	PK	37	150	H	4.1	43.78	74	30.22
2390	24.01	Ave	30	150	V	4.1	28.11	54	25.89
2390	36.70	PK	30	150	V	4.1	40.80	74	33.20
4804	32.85	Ave	24	150	H	13.7	46.55	54	7.45
4804	40.54	PK	24	150	H	13.7	54.24	74	19.76
6675	35.84	PK	180	250	V	18.8	54.64	74	19.36
6675	22.09	Ave	180	250	V	18.8	40.89	54	13.11
7206	35.17	PK	196	150	V	20.5	55.67	74	18.33
7206	25.55	Ave.	196	150	V	20.5	46.05	54	7.95

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 (cm)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
Middle Channel (2440MHz)									
2440	97.29	PK	168	150	V	2.6	99.89	/	/
2440	86.94	Ave	168	150	V	2.6	89.54	/	/
2440	96.38	PK	168	150	H	2.6	98.98	/	/
2440	86.25	Ave	168	150	H	2.6	88.85	/	/
1493	31.66	Ave	156	250	V	0.1	31.76	54	22.24
1493	47.27	PK	156	250	V	0.1	47.37	74	26.63
3456	28.11	Ave	320	150	V	9.8	37.91	54	16.09
3456	38.01	PK	320	150	V	9.8	47.81	74	26.19
4880	40.48	PK	21	150	H	13.9	54.38	74	19.62
4880	35.17	Ave	21	150	H	13.9	49.07	54	4.93
6667	35.34	PK	83	249	H	18.8	54.14	74	19.86
6667	22.06	Ave	83	249	H	18.8	40.86	54	13.14
7320	39.66	PK	266	150	V	20.8	60.46	74	13.54
7320	31.62	Ave.	266	150	V	20.8	52.42	54	1.58

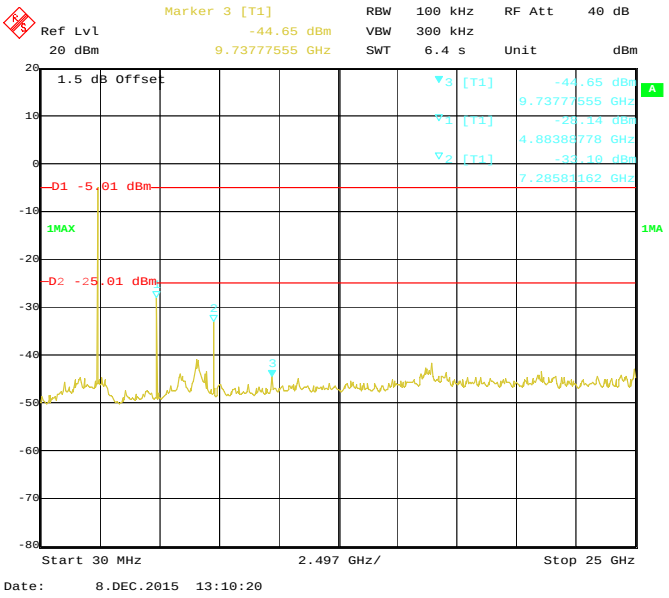
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (cm)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
High Channel (2480 MHz)									
2480	91.77	PK	36	100	V	3.2	94.97	/	/
2480	81.37	Ave	36	100	V	3.2	84.57	/	/
2480	90.57	PK	36	100	H	3.2	93.77	/	/
2480	80.36	Ave	36	100	H	3.2	83.56	/	/
2484	45.33	PK	67	249	H	4.2	49.53	74	24.47
2484	37.26	Ave	67	249	H	4.2	41.46	54	12.54
2532	39.24	PK	64	249	H	4.4	43.64	74	30.36
2532	31.24	Ave	64	249	H	4.4	35.64	54	18.36
4960	33.38	Ave	36	150	H	14.1	47.48	54	6.52
4960	41.46	PK	36	150	H	14.1	55.56	74	18.44
6591	34.74	PK	60	250	V	18.6	53.34	74	20.66
6591	21.27	Ave	60	250	V	18.6	39.87	54	14.13
7440	36.05	PK	208	150	V	21.2	57.25	74	16.75
7440	23.98	Ave	208	150	V	21.2	45.18	54	8.82

Conducted Spurious Emissions at Antenna Port

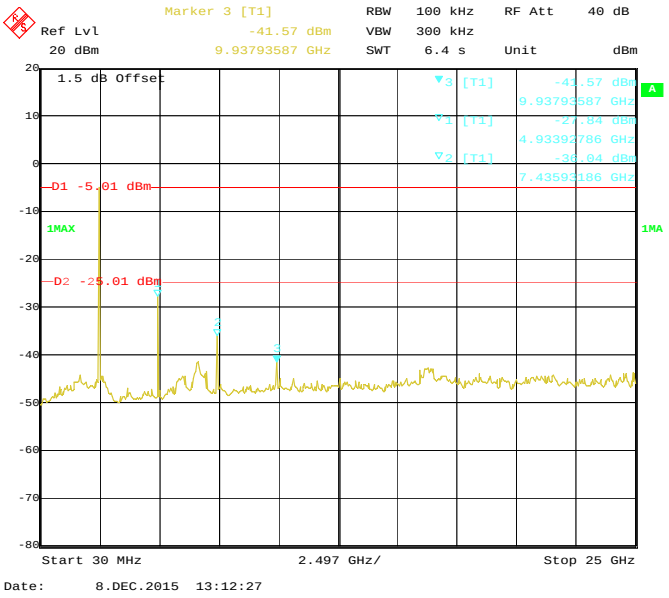
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

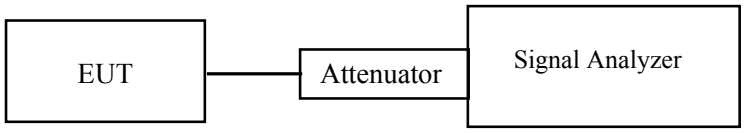
Applied Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r03

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 6 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	100048	2015-11-4	2016-11-3

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

Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-08.

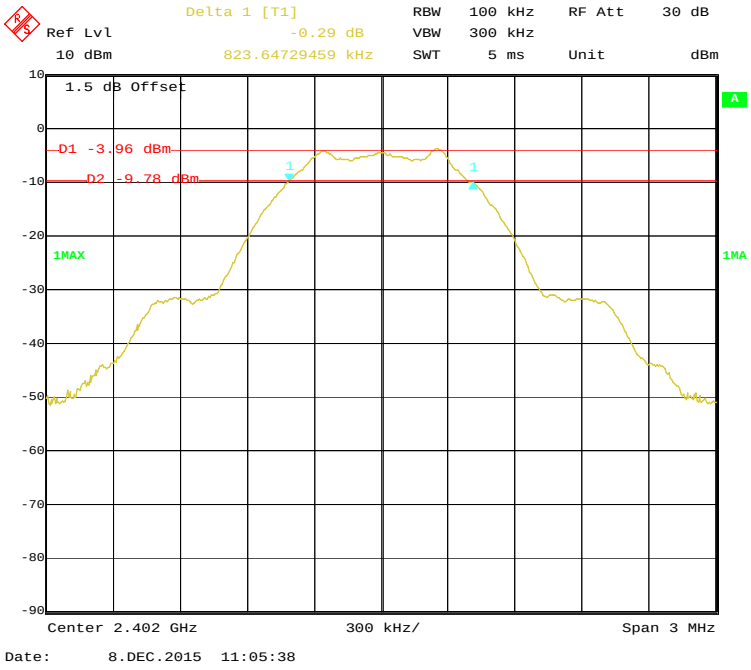
EUT operation mode: Transmitting

Test Result: Compliance

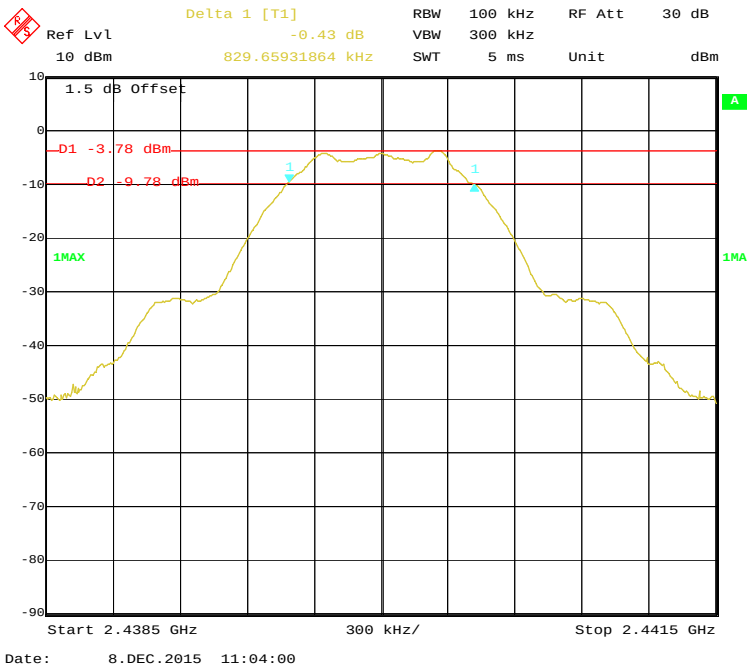
Please refer to the following tables and plots.

Channel	Channel Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (kHz)
Low	2402	0.824	≥500
Middle	2440	0.830	≥500
High	2480	0.818	≥500

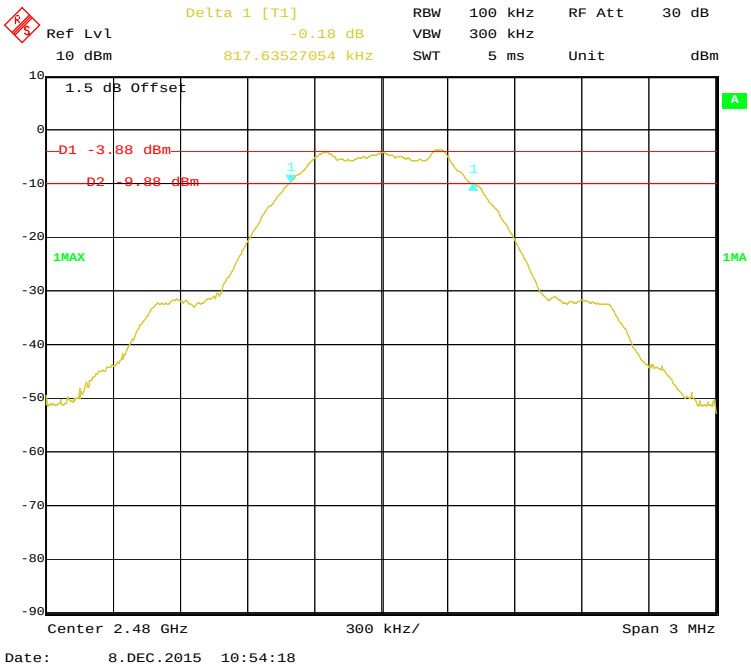
Low Channel



Middle Channel



High Channel



FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

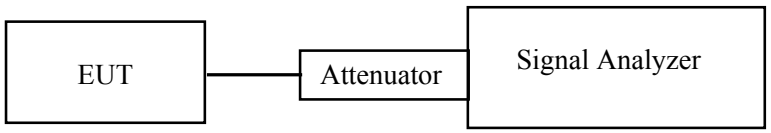
Applicable Standard

According to §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r03

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to a test equipment.
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	100048	2015-11-4	2016-11-3

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

Test Data

Environmental Conditions

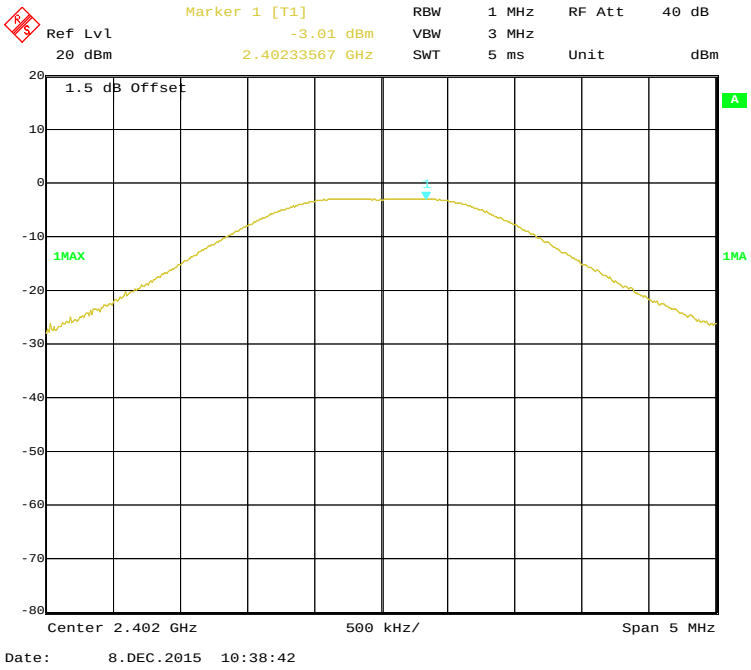
Temperature:	26 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-08

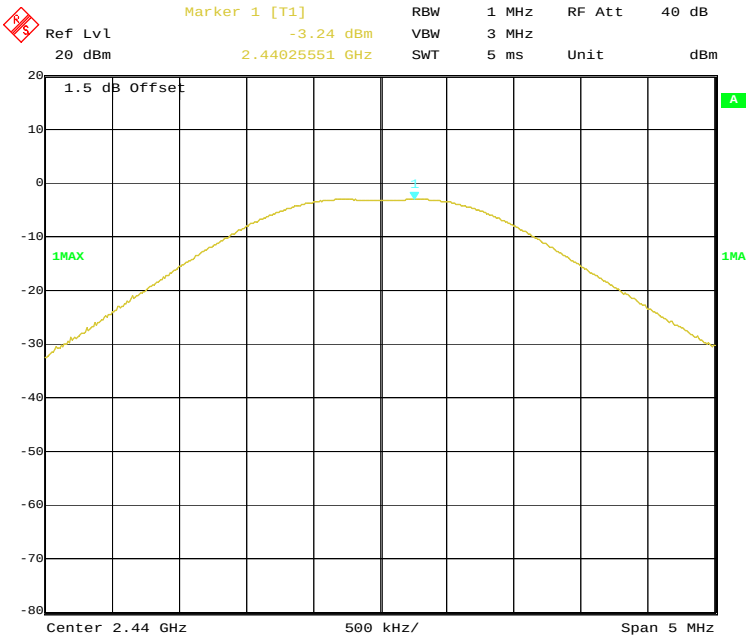
EUT operation mode: Transmitting

Channel	Frequency (MHz)	Max Peak Output Power (dBm)	Limit (dBm)	Result
Low	2402	-3.01	30	Pass
Middle	2440	-3.24	30	Pass
High	2480	-3.19	30	Pass

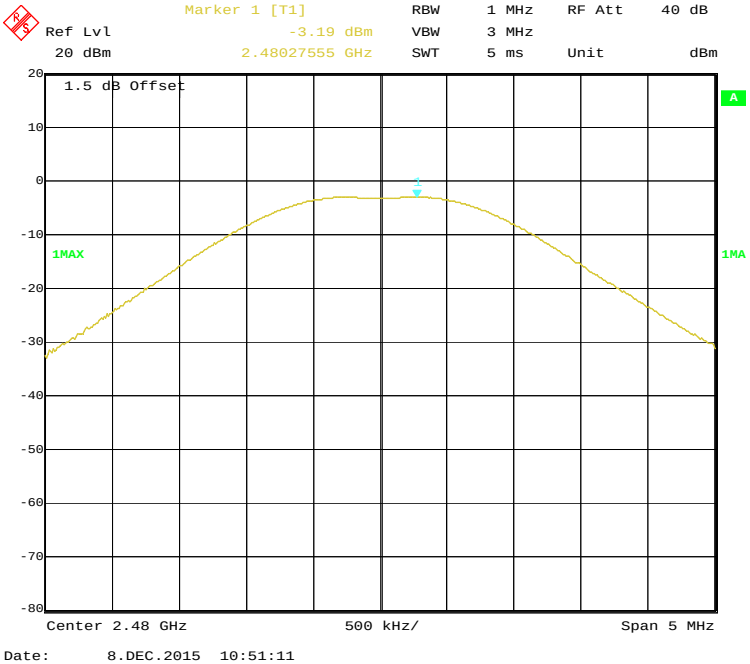
RF Output Power, Low Channel



RF Output Power, Middle Channel



RF Output Power, High Channel



FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

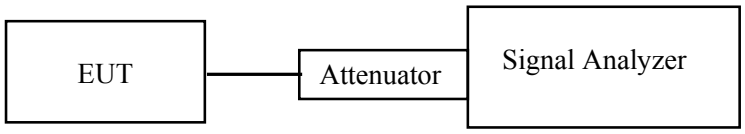
Applied Standard

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

According to KDB 558074 D01 DTS Meas Guidance v03r03

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer 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	Signal Analyzer	FSIQ26	100048	2015-11-4	2016-11-3

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

Test Data

Environmental Conditions

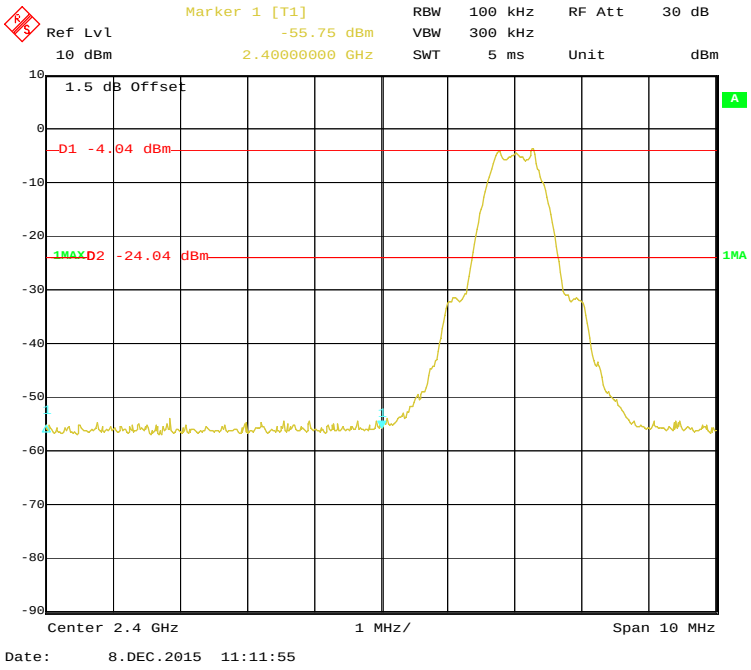
Temperature:	26 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-08.

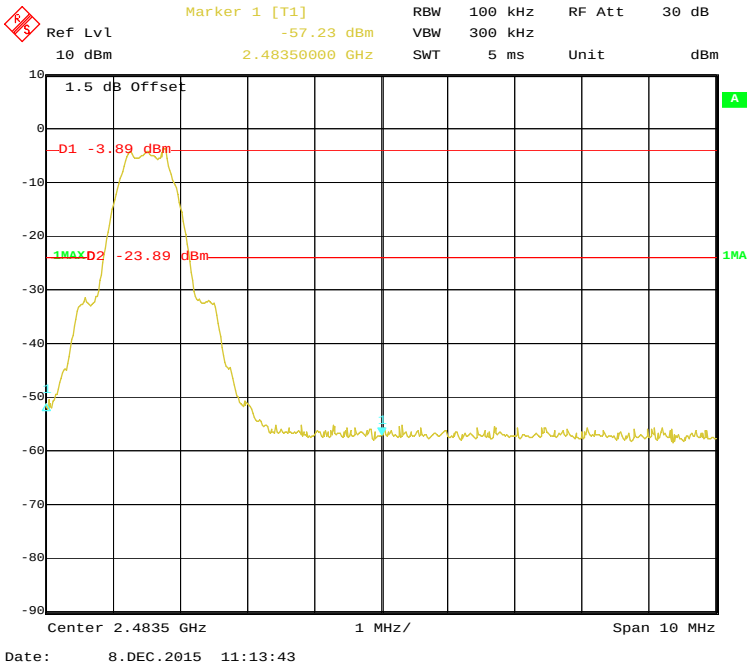
EUT operation mode: Transmitting

Test Result: Compliance. Please refer to following plots.

Band Edge, Left Side



Band Edge, Right Side



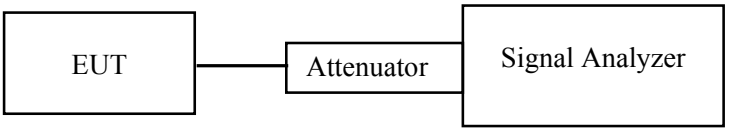
FCC §15.247(e) - POWER SPECTRAL DENSITY

Applied Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r03
1. Set analy center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.
10. If measurement value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2015-11-4	2016-11-3

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

Test Data

Environmental Conditions

Temperature:	26 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2015-12-08.

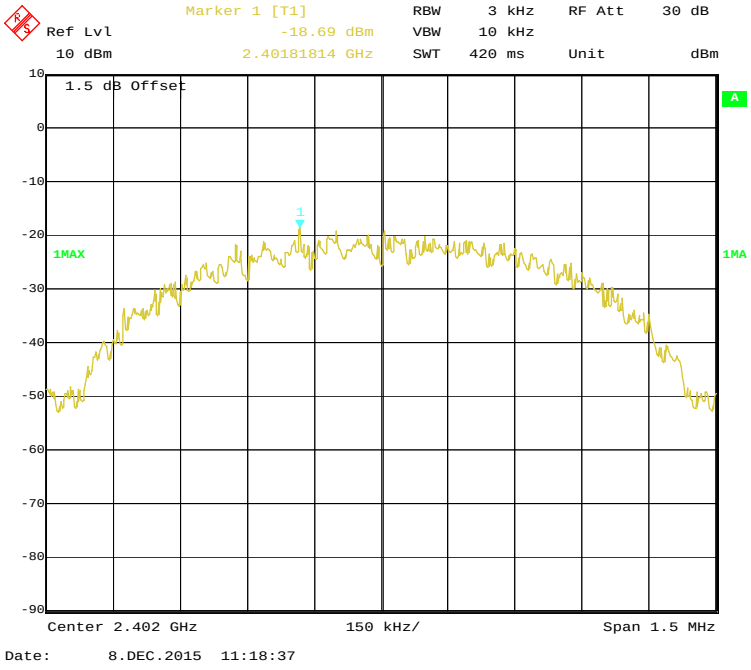
EUT operation mode: Transmitting

Test Result: Pass.

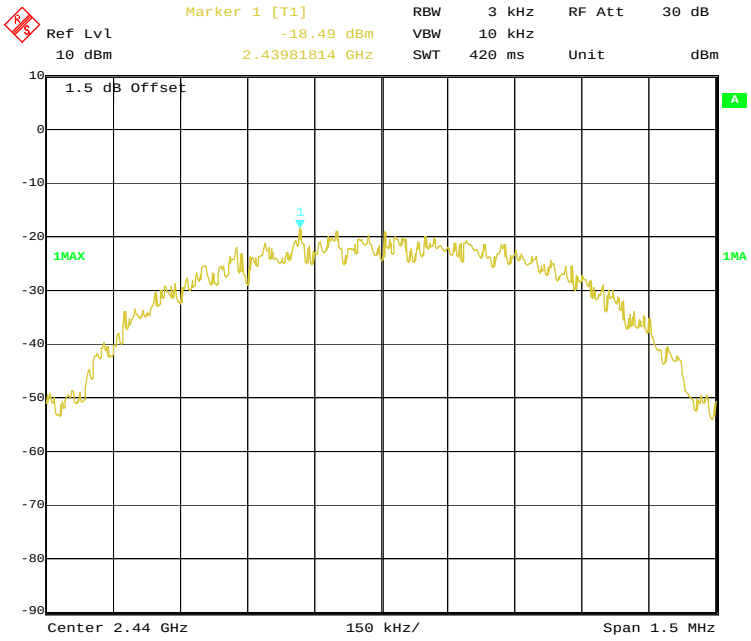
Please refer to following table and plots.

Channel	Frequency (MHz)	Power spectral density (dBm/3kHz)	Limit (dBm/3kHz)
Low	2402	-18.69	≤8
Middle	2440	-18.49	≤8
High	2480	-18.38	≤8

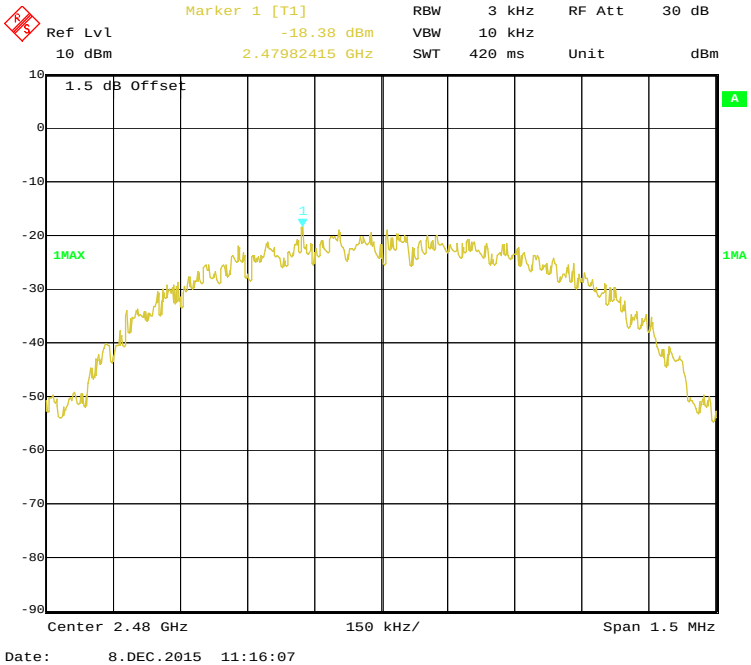
Low Channel



Middle Channel



High Channel



DECLARATION LETTER

Alinket Electronic Technology (Shanghai) Co. Ltd
Add:Floor 4 No.10 Lane 198, Zhangheng Rd, Pudong, Shanghai
Tel：021-61048128

DECLARATION

Date:2015-12-30
To:
Bay Area Compliance Laboratories Corp. (Kunshan)
No.248 Chenghu Road, Kunshan, China

Dear Sir or Madam:

We, Alinket Electronic Technology (Shanghai) Co. Ltd hereby declare that product name: Alinket Bluetooth Modular, model: ALX411 has been tested by BACL.

ALX41X and ALX411 are the same products, and just have the different model name due to market purposes.

ALX41X,the last "X" is representative of 1 to 9. That the use of different software. The difference between software ha nothing to do with the RF frequency parameter changes.

Please contact me if there is need for any additional clarification or information.

Best Regards,

Signature: Tan Lintao

Tan Lintao
CEO

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