





TEST REPORT

For

Electronics Technology (Dongguan) Company Limited

No.161, Xin Min Road, Tong Luo Wei Industrial Zone, Jin Xia, Chang An Town, Dong Guan, Guang Dong, China

FCC ID: ZL9M72T2

Report Type: **Product Type:** Original Report MID Jimmy xiao **Test Engineer:** Jimmy Xiao **Report Number:** RSZ110518001-00B **Report Date:** 2011-08-29 Merry Zhao meny. Than **Reviewed By:** EMC Engineer Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone **Test Laboratory:** Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk "★" (Rev.2)

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *ELECTRONICS TECHNOLOGY (DONG GUAN) COMPANY LIMITED*'s product, model number: *M72T2 (FCC ID: ZL9M72T2)* ("EUT") in this report is a *MID*, which was measured approximately: 19.75 cm (L) x 14.2 cm (W) x 0.85 cm (H), rated input voltage: DC 5V adapter or 3.7V battery.

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Adapter information: Model: ZDA050150US

Input: AC 100-240V, 50/60Hz, 0.35 A

Output: DC 5.0 V, 1500 mA

Note: The series product, model M72T2, M72C2 and M72J2 are electrically identical, the are just different in model names and appearance due to marketing purposes, and we select M72T2 for fully testing, which was explained in the attached declaration letter.

* All measurement and test data in this report was gathered from production sample serial number: 1105093 (Assigned by applicant). The EUT was received on 2011-05-18.

Objective

This report is prepared on behalf of *ELECTRONICS TECHNOLOGY* (*DONG GUAN*) *COMPANY LIMITED* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine the compliance of the EUT 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 Class B submission with FCC ID: ZL9M72T2

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

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

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

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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.

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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

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SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b and 802.11g mode, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

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EUT was tested with Channel 1, 6 and 11.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all date rates bandwidths, and modulations.

EUT Exercise Software

The test was performed under QualDiag.exe which was provided by the manufacturer:

802.11b: TX Power level 16, data rate: 1 Mbps. 802.11g: TX Power level 10, data rate: 6 Mbps.

Equipment Modifications

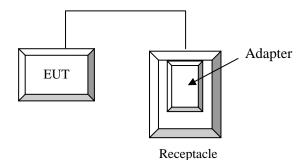
No modification was made to the EUT tested.

External I/O Cable

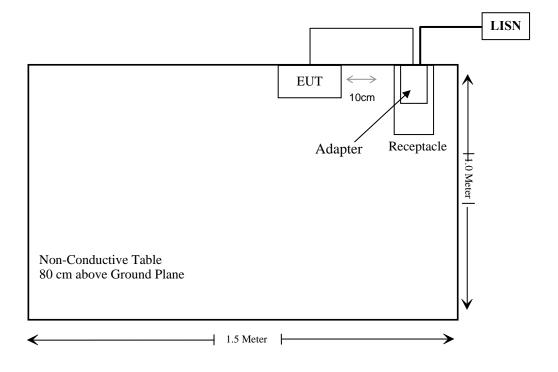
Cable Description	Length (m)	From Port	То
Unshielded Detachable DC Power Cable with a Core	1.8	Adapter	EUT

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Configuration of Test Setup



Block Diagram of Test Setup



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SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	RF Exposure Information	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

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Note: * Please refer to the SAR report RSZ110518001-20

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FCC §15.247 (i) & §2.1093 - RF EXPOSURE INFORMATION

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Applicable Standard

According to FCC §15.247 (i) & §2.1093

Test Result

Compliance*: Please refer to the SAR report RSZ110518001-20

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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 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:

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- 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.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT used internal fixed antennas, which complied with 15.203, the maximum gain is 0 dBi, please refer to the internal photos.

Result: Compliance.

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FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207

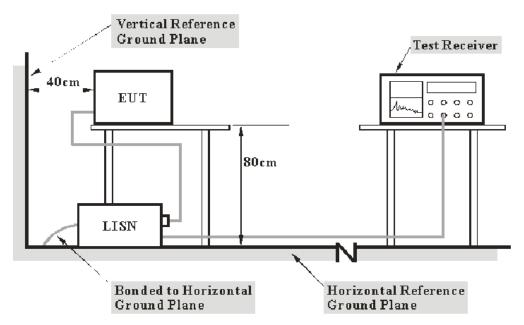
Measurement Uncertainty

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

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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 spacing between the peripherals was 10 cm.

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

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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:

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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	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:

13.48 dB at 1.655 MHz in the Line conducted mode

Test Data

Environmental Conditions

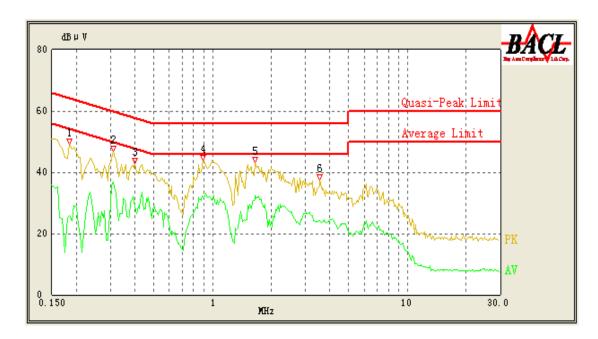
Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Jimmy Xiao on 2011-07-06.

Test Mode: Transmitting

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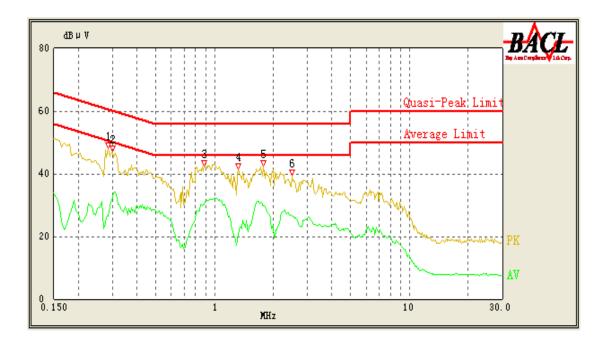
120 V, 60 Hz, Line:



Conducted Emissions FCC Part 15.207					
Frequency (MHz)	Corrected Result (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/QP/Ave.)
1.655	32.52	10.13	46.00	13.48	Ave.
0.885	32.20	10.11	46.00	13.80	Ave.
0.310	36.93	10.10	51.43	14.50	Ave.
0.895	38.35	10.11	56.00	17.65	QP
1.655	38.25	10.13	56.00	17.75	QP
0.310	41.88	10.10	61.43	19.55	QP
0.400	29.13	10.10	48.86	19.73	Ave.
0.400	37.60	10.10	58.86	21.26	QP
3.590	23.97	10.17	46.00	22.03	Ave.
0.185	42.57	10.10	65.00	22.43	QP
3.560	28.30	10.17	56.00	27.70	QP
0.185	25.93	10.10	55.00	29.07	Ave.

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120V, 60 Hz, Neutral:



Conducted Emissions FCC Part 15.207					
Frequency (MHz)	Corrected Result (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/QP/Ave.)
0.885	30.25	10.11	46.00	15.75	Ave.
1.790	30.00	10.13	46.00	16.00	Ave.
0.300	32.51	10.10	51.71	19.20	Ave.
2.495	26.45	10.14	46.00	19.55	Ave.
0.885	35.58	10.11	56.00	20.42	QP
1.790	34.09	10.13	56.00	21.91	QP
0.300	38.06	10.10	61.71	23.65	QP
0.285	37.29	10.10	62.14	24.85	QP
1.325	31.00	10.12	56.00	25.00	QP
1.325	20.86	10.12	46.00	25.14	Ave.
0.285	26.48	10.10	52.14	25.66	Ave.
2.510	29.31	10.14	56.00	26.69	QP

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

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

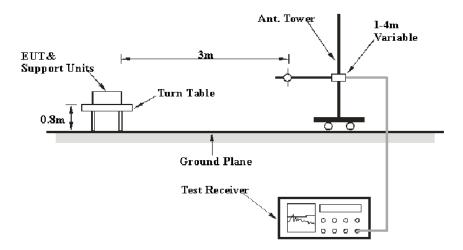
All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

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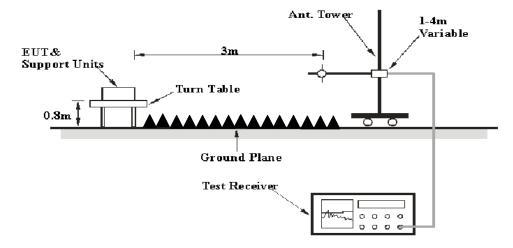
Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is +4.0 dB(k=2, 95% level of confidence).

EUT Setup

Below 1GHz:



Above 1GHz:



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The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.247 limits.

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

The spacing between the peripherals was 10 cm.

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	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 AC floor outlet.

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, 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

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Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447D	2944A09795	2010-08-02	2011-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Mini-circuits	Amplifier	ZVA-213+	T-E27H	2011-03-08	2012-03-07
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04
HP	Spectrum Analyzer	8593A	51475684	2011-07-08	2012-07-07
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-07-08	2012-07-07

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Test Results Summary

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

6.68 dB at **4824.00 MHz** in the **Horizontal** polarization (802.11b mode)

Test Data

Environmental Conditions

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

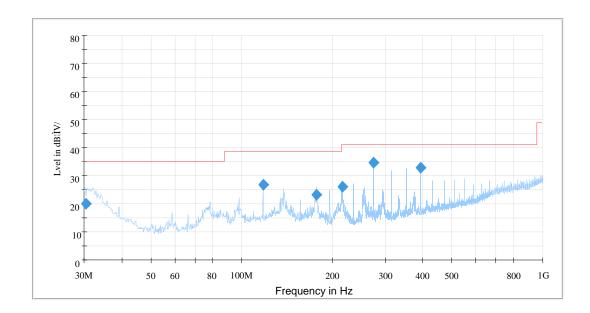
The testing was performed by Jimmy Xiao on 2011-07-13.

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^{*} **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 Mode: Transmitting

1) Below 1 GHz (worse case):



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
274.914500	34.8	100.0	Н	84.0	-12.9	46.0	11.2
392.722750	33.0	100.0	Н	317.0	-10.1	46.0	13.0
117.815750	26.9	284.0	Н	273.0	-12.6	43.5	16.6
215.998750	25.9	157.0	Н	124.0	-14.1	43.5	17.6
30.425081	20.0	124.0	V	58.0	-5.7	40.0	20.0
176.786250	23.2	173.0	Н	111.0	-15.2	43.5	20.3

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2) Above 1 GHz:

802.11b Mode:

Indica	ated		Table	Test An	tenna	Corr	ection F	actor	FC	CC Part 15.	247/15.2	09
Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/Ave.)	Angle Degree	Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
	Low Channel (2412 MHz)											
4824.00	33.47	Ave.	220	1.3	Н	36.3	4.3	26.75	47.32	54	6.68	harmonic
4824.00	31.26	Ave.	180	1.5	V	33.6	4.3	26.75	42.41	54	11.59	harmonic
4824.00	48.22	PK	220	1.3	Н	36.3	4.3	26.75	62.07	74	11.93	harmonic
4824.00	44.01	PK	180	1.5	V	33.6	4.3	26.75	55.16	74	18.84	harmonic
1350.14	30.25	Ave.	330	1.8	Н	25.6	2.14	26.56	31.43	54	22.57	spurious
1350.14	29.87	Ave.	170	1.1	V	25.6	2.14	26.56	31.05	54	22.95	spurious
1350.14	44.56	PK	330	1.8	Н	25.6	2.14	26.56	45.74	74	28.26	spurious
1350.14	40.54	PK	170	1.1	V	25.6	2.14	26.56	41.72	74	32.28	spurious
	Middle Channel (2437 MHz)											
4874.00	32.79	Ave.	320	1.5	Н	36.3	4.32	26.75	46.66	54	7.34	harmonic
4874.00	31.05	Ave.	170	1.9	V	33.6	4.32	26.75	42.22	54	11.78	harmonic
4874.00	47.65	PK	320	1.5	Н	36.3	4.32	26.75	61.52	74	12.48	harmonic
4874.00	43.26	PK	170	1.9	V	33.6	4.32	26.75	54.43	74	19.57	harmonic
1350.14	32.47	Ave.	160	1.2	Н	25.6	2.14	26.56	33.65	54	20.35	spurious
1350.14	30.14	Ave.	330	2.1	V	25.6	2.14	26.56	31.32	54	22.68	spurious
1350.14	44.26	PK	160	1.2	Н	25.6	2.14	26.56	45.44	74	28.56	spurious
1350.14	41.26	PK	330	2.1	V	25.6	2.14	26.56	42.44	74	31.56	spurious
				Hi	gh Cha	nnel (24	62 MHz	z)				
4924.00	32.05	Ave.	160	1.3	Н	36.3	4.4	26.75	46.0	54	8.0	harmonic
4924.00	31.75	Ave.	180	1.2	V	33.6	4.4	26.75	43.0	54	11.0	harmonic
4924.00	47.41	PK	160	1.3	Н	36.3	4.4	26.75	61.36	74	12.64	harmonic
1350.14	33.26	Ave.	210	1.9	Н	25.6	2.14	26.56	34.44	54	19.56	spurious
4924.00	42.38	PK	180	1.2	V	33.6	4.4	26.75	53.63	74	20.37	harmonic
1350.14	29.89	Ave.	250	1.7	V	25.6	2.14	26.56	31.07	54	22.93	spurious
1350.14	46.38	PK	210	1.9	Н	25.6	2.14	26.56	47.56	74	26.44	spurious
1350.14	40.72	PK	250	1.7	V	25.6	2.14	26.56	41.9	74	32.1	spurious

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Radiated spurious emission in restricted band

Freq.	S.A.	Detector	Direction	Te	est Ante	nna	Cable	Pre-	Cord.	FCC Part 15	.247/205/209
(MHz)	Reading (dBµV)	(PK/Ave.)	Degree	Height (m)	Polar (H/V)	Factor (dB/m)	Loss (dB)	Amp. (dB)	Amp. (dBμV/m)	Limit (dBµV/m)	Margin (dB)
2495.2	31.89	Ave.	200	1.7	Н	30.6	3.14	26.88	38.75	54	15.25
2495.2	30.47	Ave.	190	1.3	V	30.6	3.14	26.88	37.33	54	16.67
2323.6	30.29	Ave.	260	1.5	V	30.5	2.98	26.85	36.92	54	17.08
2323.6	28.45	Ave.	190	2.2	Н	30.5	2.98	26.85	35.08	54	18.92
2495.2	42.68	PK	200	1.7	Н	30.6	3.14	26.88	49.54	74	24.46
2323.6	41.26	PK	260	1.5	V	30.5	2.98	26.85	47.89	74	26.11
2495.2	39.87	PK	190	1.3	V	30.6	3.14	26.88	46.73	74	27.27
2323.6	39.56	PK	190	2.2	Н	30.5	2.98	26.85	46.19	74	27.81

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802.11g Mode:

Indi	cated		Table	Test An	itenna	Corr	ection I	Factor	F	CC Part 15.	247/15.2	09
Frequency (MHz)	S.A. Reading (dBµV)	Detector (PK/Ave)	Angle Degree	Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre- Amp. (dB)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
				L	ow Cha	nnel (24	12 MHz	z)				
4824.00	30.45	Ave.	170	1.1	Н	36.3	4.3	26.75	44.3	54	9.70	harmonic
4824.00	28.46	Ave.	140	1.7	V	33.6	4.3	26.75	39.61	54	14.39	harmonic
4824.00	42.22	PK	170	1.1	Н	36.3	4.3	26.75	56.07	74	17.93	harmonic
1350.14	34.26	Ave.	210	2.1	Н	25.6	2.14	26.56	35.44	54	18.56	spurious
1350.14	30.28	Ave.	230	1.4	V	25.6	2.14	26.56	31.46	54	22.54	spurious
4824.00	37.43	PK	140	1.7	V	33.6	4.3	26.75	48.58	74	25.42	harmonic
1350.14	46.46	PK	210	2.1	Н	25.6	2.14	26.56	47.64	74	26.36	spurious
1350.14	41.01	PK	230	1.4	V	25.6	2.14	26.56	42.19	74	31.81	spurious
	Middle Channel (2437 MHz)											
4874.00	31.14	Ave.	180	1.5	Н	36.3	4.32	26.75	45.01	54	8.99	harmonic
4874.00	29.68	Ave.	140	2.1	V	33.6	4.32	26.75	40.85	54	13.15	harmonic
4874.00	43.25	PK	180	1.5	Н	36.3	4.32	26.75	57.12	74	16.88	harmonic
1350.14	35.14	Ave.	230	1.1	Н	25.6	2.14	26.56	36.32	54	17.68	spurious
1350.14	29.79	Ave.	150	2.1	V	25.6	2.14	26.56	30.97	54	23.03	spurious
4874.00	38.43	PK	140	2.1	V	33.6	4.32	26.75	49.6	74	24.4	harmonic
1350.14	45.68	PK	230	1.1	Н	25.6	2.14	26.56	46.86	74	27.14	spurious
1350.14	40.78	PK	150	2.1	V	25.6	2.14	26.56	41.96	74	32.04	spurious
				H	igh Cha	annel (24	62 MH:	z)				
4924.00	31.01	Ave.	110	1.2	Н	36.3	4.4	26.75	44.96	54	9.04	harmonic
4924.00	28.14	Ave.	260	2.1	V	33.6	4.4	26.75	39.39	54	14.61	harmonic
4924.00	42.68	PK	110	1.2	Н	36.3	4.4	26.75	56.63	74	17.37	harmonic
1350.14	33.78	Ave.	310	1.4	Н	25.6	2.14	26.56	34.96	54	19.04	spurious
1350.14	30.75	Ave.	280	1.6	V	25.6	2.14	26.56	31.93	54	22.07	spurious
4924.00	38.08	PK	260	2.1	V	33.6	4.4	26.75	49.33	74	24.67	harmonic
1350.14	46.37	PK	310	1.4	Н	25.6	2.14	26.56	47.55	74	26.45	spurious
1350.14	41.26	PK	280	1.6	V	25.6	2.14	26.56	42.44	74	31.56	spurious

Report No.: RSZ110518001-00B

Radiated spurious emission in restricted band

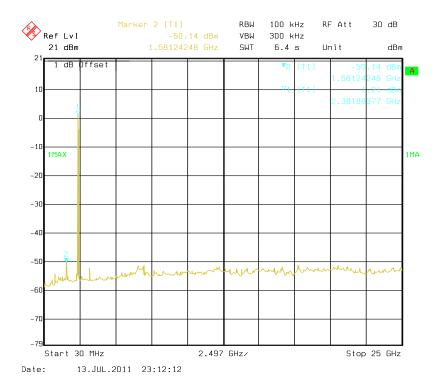
Freq.	S.A.	Detector	Direction	Те	Test Antenna		Cable	Pre-		FCC Part 15.247/205/209	
(MHz)	Reading (dBµV)	PK/Ave	Degree	Height (m)	Polar (H/V)	Factor (dB/m)	Loss (dB)	Amp. (dB)	Amp. (dBμV/m)	Limit (dBµV/m)	Margin (dB)
2498.2	33.42	Ave.	180	1.9	V	30.6	3.14	26.88	40.28	54	13.72
2498.2	32.15	Ave.	330	2.1	Н	30.6	3.14	26.88	39.01	54	14.99
2327.4	29.25	Ave.	210	1.6	Н	30.5	2.98	26.85	35.88	54	18.12
2327.4	28.75	Ave.	310	1.1	V	30.5	2.98	26.85	35.38	54	18.62
2498.2	43.26	PK	330	2.1	Н	30.6	3.14	26.88	50.12	74	23.88
2498.2	42.75	PK	180	1.9	V	30.6	3.14	26.88	49.61	74	24.39
2327.4	41.21	PK	210	1.6	Н	30.5	2.98	26.85	47.84	74	26.16
2327.4	39.28	PK	310	1.1	V	30.5	2.98	26.85	45.91	74	28.09

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Antenna Port Conducted Spurious Emissions:

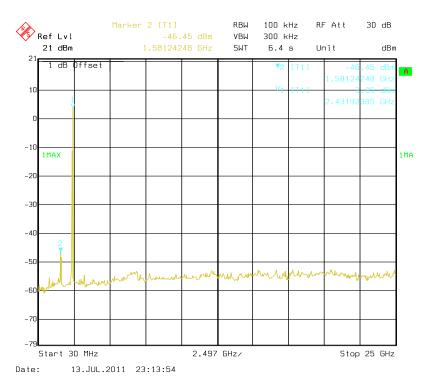
Channel	Frequency (MHz)	Data Rate (Mbps)	Delta Value (dBc)	Limit (dBc)	Result
		8	301.11 b		
Low	1581.2	1	51.35	20	Pass
Middle	1581.2	1	50.30	20	pass
High	1581.2	1	47.49	20	pass
		8	301.11 g		
Low	3182.5	6	50.80	20	Pass
Middle	1581.2	6	49.46	20	pass
High	1631.3	6	50.21	20	pass

802.11b Low Channel

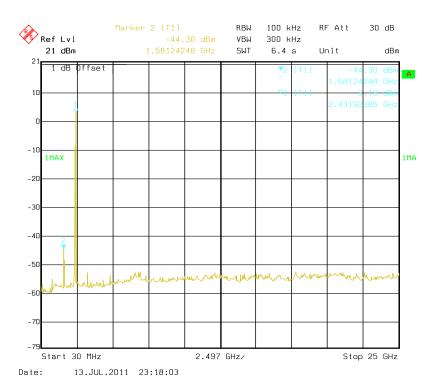


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802.11b Middle Channel

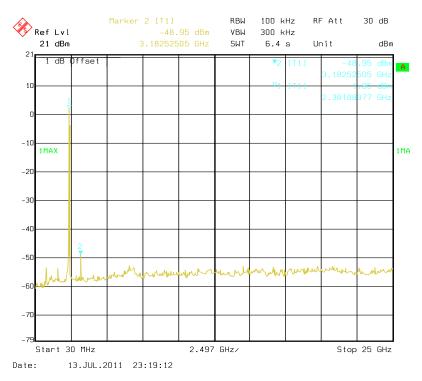


802.11b High Channel

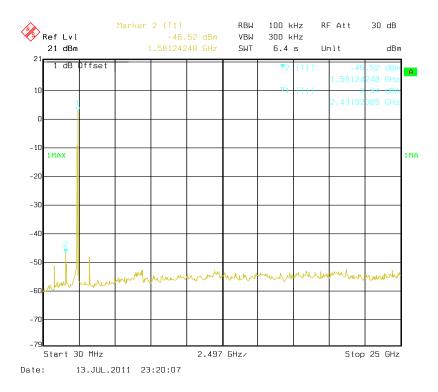


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802.11g Low Channel

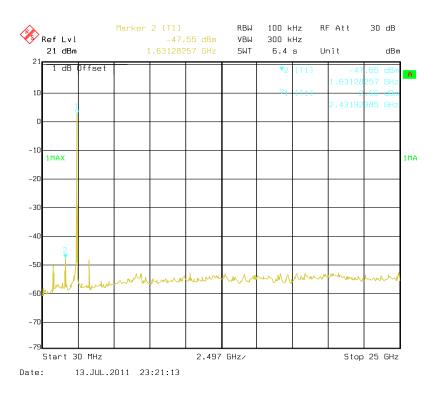


802.11g Middle Channel



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802.11g High Channel



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FCC $\S15.247(a)$ (2) – 6 dB EMISSION BANDWIDTH

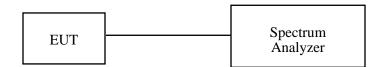
Applicable Standard

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.

Report No.: RSZ110518001-00B

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 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	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

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

Test Data

Environmental Conditions

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

The testing was performed by Jimmy Xiao on 2011-06-28.

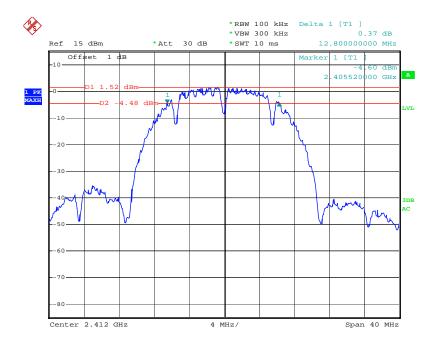
Test Result: Pass.

Please refer to the following tables and plots.

FCC Part 15.247 Page 25 of 47

Channel	Frequency (MHz)	Data Rate (Mbps)	6 dB Bandwidth (MHz)	Limit (kHz)	Result
		8	02.11 b		
Low	2412	1	12.80	500	Pass
Middle	2437	1	12.88	500	Pass
High	2462	1	12.88	500	Pass
		8	02.11 g		
Low	2412	6	16.64	500	Pass
Middle	2437	6	16.64	500	Pass
High	2462	6	16.64	500	Pass

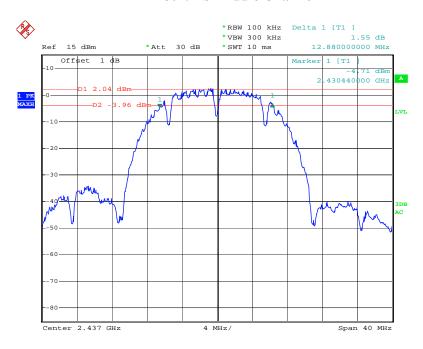
802.11b Low Channel



Date: 28.JUN.2011 23:32:33

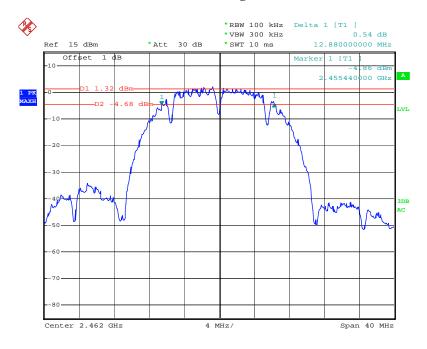
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802.11b Middle Channel



Date: 28.JUN.2011 23:54:45

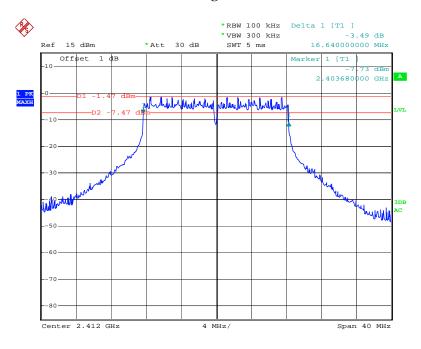
802.11b High Channel



Date: 28.JUN.2011 23:58:42

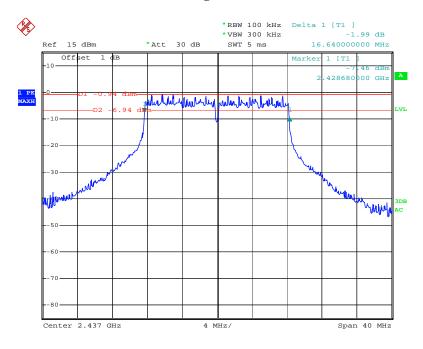
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802.11g Low Channel



Date: 28.JUN.2011 23:05:51

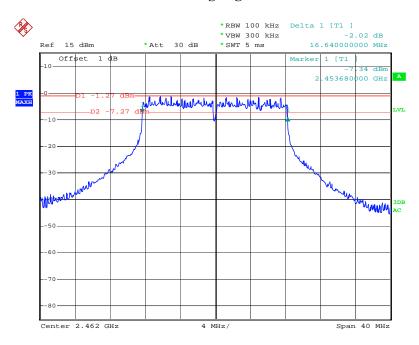
802.11g Middle Channel



Date: 28.JUN.2011 23:03:12

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802.11g High Channel



Date: 28.JUN.2011 22:07:49

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

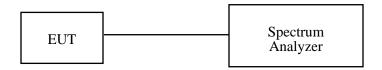
Applicable Standard

According to FCC §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.

Report No.: RSZ110518001-00B

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	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

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

Test Data

Environmental Conditions

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

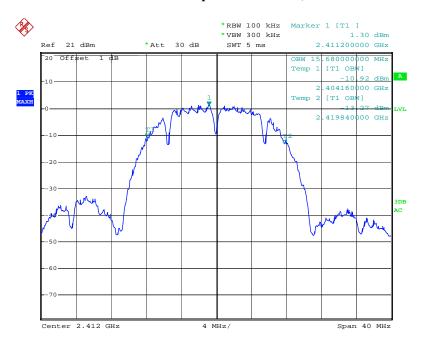
The testing was performed by Jimmy Xiao from 2011-06-20 to 2011-06-28.

Test Mode: Transmitting

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Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Output Power (dBm)	Limit (dBm)	Result	
802.11b						
Low	2412	1	13.22	30	pass	
Middle	2437	1	13.87	30	pass	
High	2462	1	14.01	30	pass	
802.11g						
Low	2412	6	11.66	30	pass	
Middle	2437	6	12.30	30	pass	
High	2462	6	11.34	30	pass	

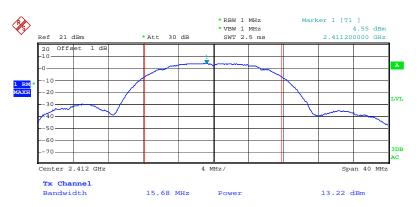
802.11b 99% Occupied Bandwidth, Low Channel



Date: 20.JUN.2011 22:30:41

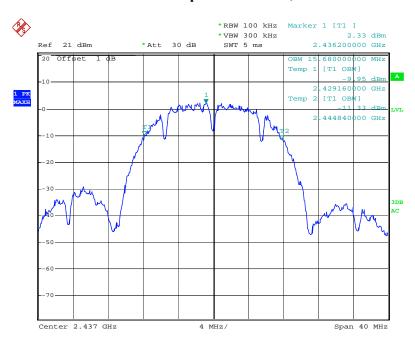
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802.11b RF Output Power, Low Channel



Date: 20.JUN.2011 22:33:47

802.11b 99% Occupied Bandwidth, Middle Channel



Date: 20.JUN.2011 22:35:15

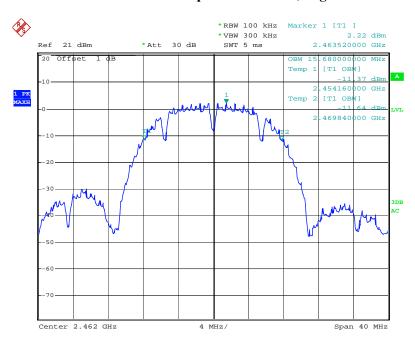
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802.11b RF Output Power, Middle Channel



Date: 20.JUN.2011 22:45:07

802.11b 99% Occupied Bandwidth, High Channel



Date: 20.JUN.2011 22:46:32

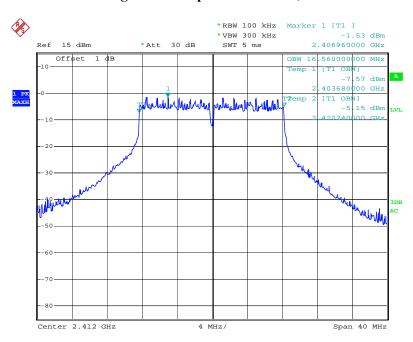
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802.11b RF Output Power, High Channel



Date: 20.JUN.2011 22:47:20

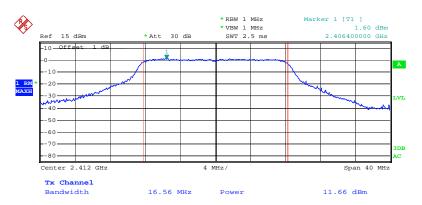
802.11g 99% Occupied Bandwidth, Low Channel



Date: 28.JUN.2011 23:12:09

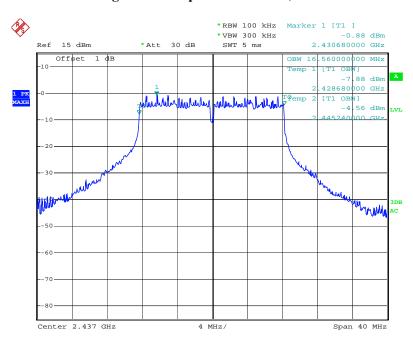
FCC Part 15.247 Page 34 of 47

802.11g RF Output Power, Low Channel



Date: 28.JUN.2011 23:12:51

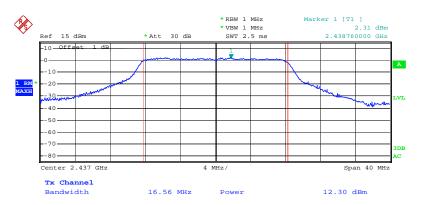
802.11g 99% Occupied Bandwidth, Middle Channel



Date: 28.JUN.2011 22:59:22

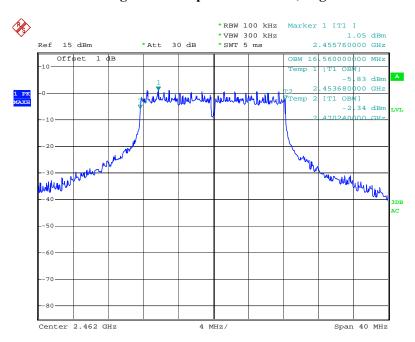
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802.11g RF Output Power, Middle Channel



Date: 28.JUN.2011 23:00:16

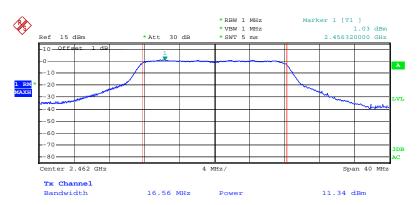
802.11g 99% Occupied Bandwidth, High Channel



Date: 28.JUN.2011 21:56:35

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802.11g RF Output Power, High Channel



Date: 28.JUN.2011 22:00:32

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

Report No.: RSZ110518001-00B

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. 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	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10

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

Test Data

Environmental Conditions

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

The testing was performed by Jimmy Xiao on 2011-06-28

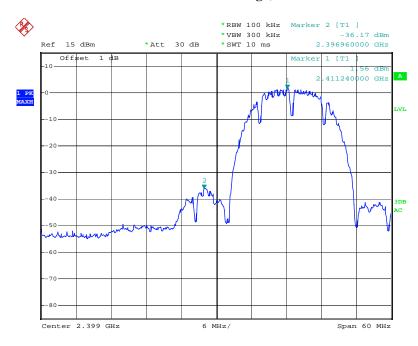
Test Result: Compliance

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Channel	Frequency (MHz)	Delta Peak to Band Emission (dBc)	Limit (dBc)	Result	
802.11b					
Low	2396.96	37.73	20	Pass	
High	2487.20	49.72	20	Pass	
802.11g					
Low	2398.76	31.93	20	Pass	
High	2483.84	45.78	20	Pass	

Please refer to following plots.

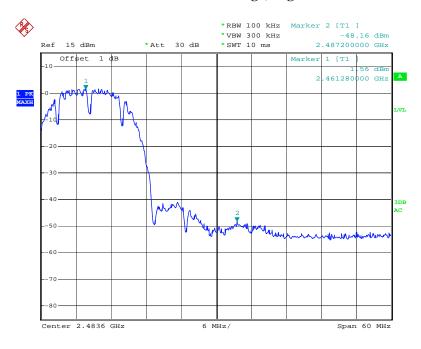
802.11b: Band Edge, Left Side



Date: 28.JUN.2011 23:28:50

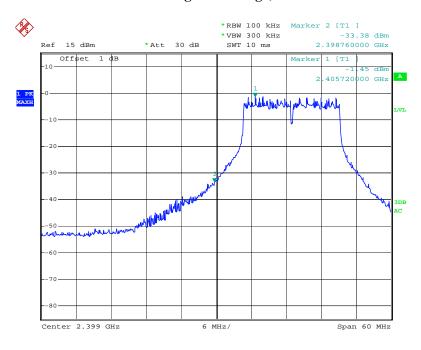
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802.11b: Band Edge, Right Side



Date: 28.JUN.2011 23:59:45

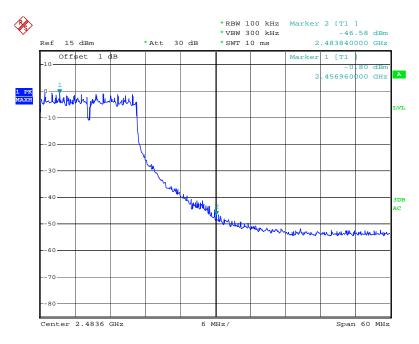
802.11g: Band Edge, Left Side



Date: 28.JUN.2011 23:10:46

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802.11g: Band Edge, Right Side



Date: 28.JUN.2011 23:24:44

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FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable 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.

Report No.: RSZ110518001-00B

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 was set 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. Adjust the center frequency of SA on any frequency be measured and set SA to 1.5MHz span mode. And then, set RBW and VBW of spectrum analyzer to proper value. (DTS)
- 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	2010-11-11	2011-11-10
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2011-07-08	2012-07-07

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

Test Data

Environmental Conditions

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

The testing was performed by Jimmy Xiao on 2011-06-18 and 2011-08-23.

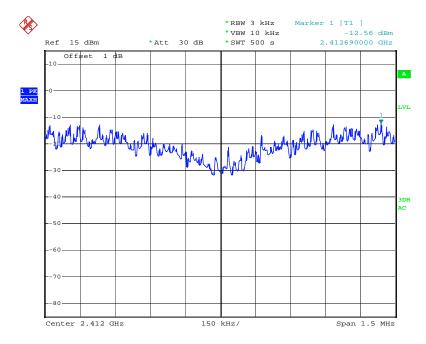
Test Mode: Transmitting

Test Result: Pass

FCC Part 15.247 Page 42 of 47

Channel	Frequency (MHz)	Data Rate (Mbps)	Peak Power Spectral Density (dBm)	Limit (dBm)	Result
802.11 b					
Low	2412	1	-12.56	8	pass
Middle	2437	1	-11.52	8	pass
High	2462	1	-14.01	8	pass
802.11 g					
Low	2412	6	-16.19	8	pass
Middle	2437	6	-16.39	8	pass
High	2462	6	-17.21	8	pass

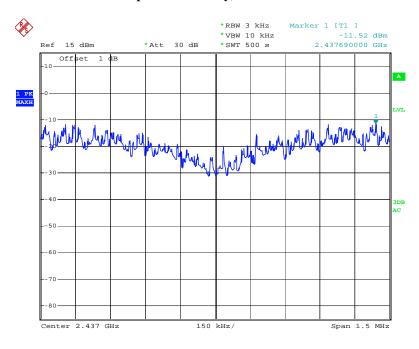
Power Spectral Density, 802.11b Low Channel



Date: 28.JUN.2011 23:42:16

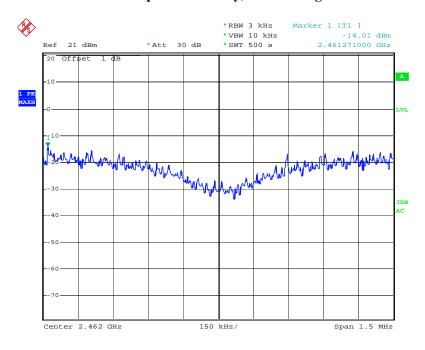
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Power Spectral Density, 802.11b Middle Channel



Date: 28.JUN.2011 23:52:07

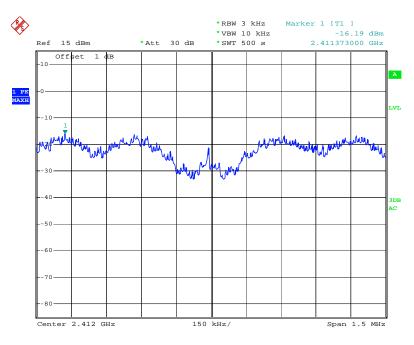
Power Spectral Density, 802.11b High Channel



Date: 20.JUN.2011 23:14:24

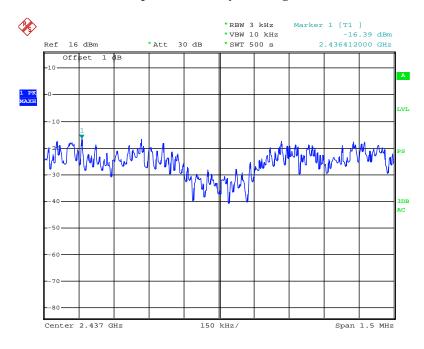
FCC Part 15.247 Page 44 of 47

Power Spectral Density, 802.11g Low Channel



Date: 28.JUN.2011 23:22:59

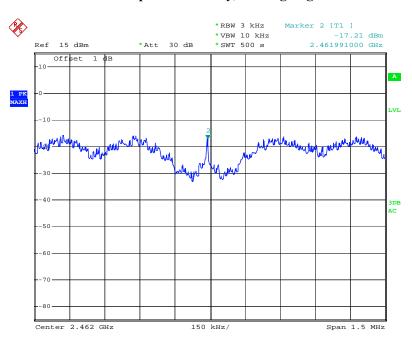
Power Spectral Density, 802.11g Middle Channel



Date: 23.AUG.2011 00:08:18

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Power Spectral Density, 802.11g High Channel



Date: 28.JUN.2011 22:22:20

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PRODUCT SIMILARITY DECLARATION LETTER

ELECTRONICS TECHNOLOGY (DONG GUAN) COMPANY LIMITED

No.161, Xin Min Road, Tong Luo Wei Industrial Zone, Jin Xia, Chang An Town, Dong Guan City, Guang Dong Province. China

Report No.: RSZ110518001-00B

Tel: 0755-86335557 Fax: 0755-86335566

Date: 2011-07-01

Product Similarity Declaration

To Whom It May Concern,

We, <u>ELECTRONICS TECHNOLOGY</u> (<u>DONG GUAN</u>) <u>COMPANY LIMITED</u> hereby declare that our MID, Model Number: M72C2, M72J2 are electrically identical with the M72T2 that was certified by BACL. They are just different in appearance and model names, due to marketing purposes.

Please contact me if you have any question.

Signature:

Xiaona liu

Quality Manager

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

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