



FCC PART 15.247 MEASUREMENT AND TEST REPORT

For

Shenzhen Contel Electronics Technology Co., Ltd.

3/F, R2-A, High-tech Industrial Park, Nanshan District, Shenzhen, China

FCC ID: YAPTAB840

Report Type: Product Type:

Original Report 8" Tablet

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Report Number: RSZ121224006-00A

Report Date: 2013-02-20

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^{*} This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "*\pm"

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The Shenzhen Contel Electronics Technology Co., Ltd.'s product, model number: TAB-840 (FCC ID: YAPTAB840) or the "EUT" as referred to in this report was a 8" Tablet, which was measured approximately: 20.0 cm (L) x 15.5 cm (W) x 1.0 cm (H), rated with input voltage: 3.7V rechargeable Li-ion battery or DC 5.0V adapter for charging.

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Adapter Information: Model: SW-050200A;

Input: 100-240V~50/60Hz 0.68A Max.

Output: 5.0V 2000mA

*Note: The serial products model *TAB-840* and *TAB-840G*, they are electrically identical, only different in model *No.*. Model *TAB-840* was selected for full testing, which was explained for details in the attached declaration letter.

* All measurement and test data in this report was gathered from production sample serial number: 1212142 (Assigned by BACL, Shenzhen). The EUT was received on 2012-12-24.

Objective

This Type approval report is prepared on behalf of *Shenzhen Contel Electronics Technology 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)

FCC Part 15B JBP and Part 15.247 DSS submissions with FCC ID: YAPTAB840.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, 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.

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Test Facility

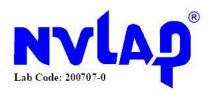
The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, Shihua Road, Futian Free Trade Zone Shenzhen, Guangdong, China.

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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 C63.4-2003.

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 a National Institute of Standards and Technology (NIST) accredited laboratory, under the 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, 802.11g mode and 802.11n-HT20, 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 for 802.11b, 802.11g and 802.11n-HT20 modes were tested with Channel 1, 6 and 11.

EUT Exercise Software

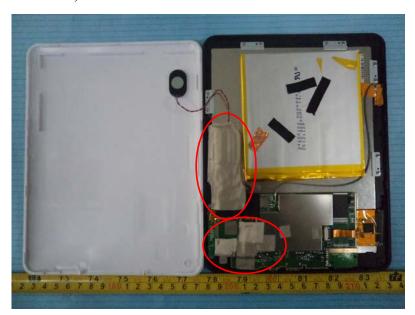
RF Test Tool built-in the EUT The test was performed under: 802.11b: Data rate: 1 Mbps. 802.11g: Data rate: 6 Mbps.

802.11n-HT20: Data rate: 6.5 Mbps.

Equipment Modifications

Modification was made to the EUT by the supplier, details as below:

1. Around the display connector and the camera connector were shielded with conductive fabric. (As shown in the picture below)



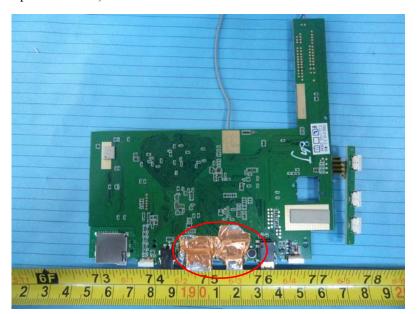
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2. Both the display cable and the camera cable were shielded with conductive fabric. (As shown in the picture below)



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3. The filter circuit of HDMI port and USB port were shielded with copper foil. (As shown in the picture below)



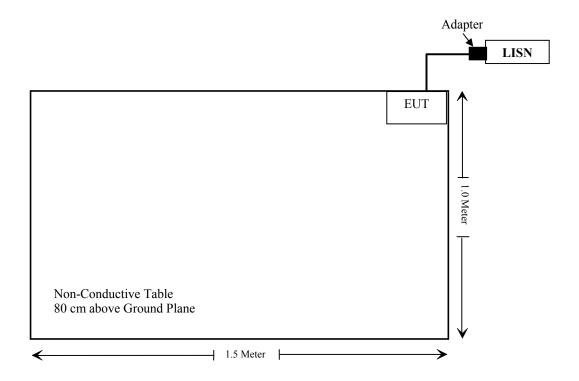
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External I/O Cabling List and Details

Cable Description	Length (m)	From	То
Un-shielding Detachable DC Power Cable	1.2	EUT	Adapter

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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	Compliance
§15.203	Antenna Requirement Complian	
§15.207 (a),	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 Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

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§15.247 (i) and §1.1307 (b) (1), §2.1093 – RF EXPOSURE

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Standard Applicable

According to FCC §15.247 (i) & §2.1093

Result: Compliant

Please refer to the SAR report, report No.: RSZ121224006-20.

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FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

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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 6 dBi 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 has an integrated antenna arrangement, which was permanently attached and the gain was 1.0 dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliance.

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FCC §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

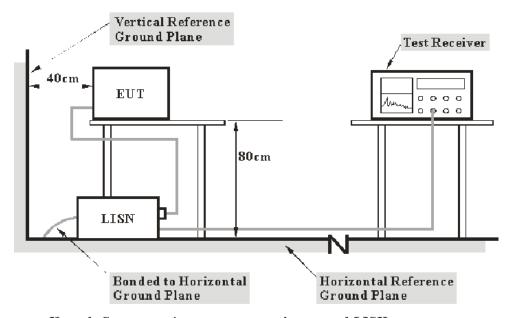
Measurement Uncertainty

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

Based on CISPR 16-4-4, 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), and the uncertainty will not be taken into consideration for all the test data recorded in the report.

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EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMIN) 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 C63.4-2003 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:

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

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Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2012-11-24	2013-11-23
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2012-08-22	2013-08-21
Rohde & Schwarz	Attenuator	ESH3Z2	DE25985	2012-07-08	2013-07-07
BACL	CE Test software	BACL-CE	V1.0	-	-

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

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 Results Summary

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

14.02 dB at 0.565 MHz in the Neutral conductor mode

Test Data

Environmental Conditions

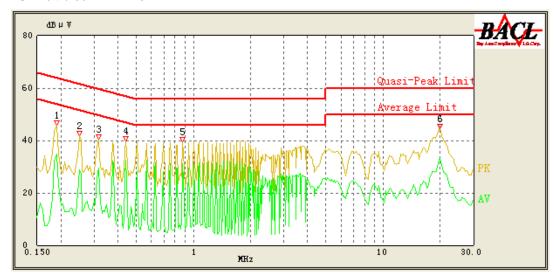
Temperature:	25 ° C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Henry Ding on 2013-01-16.

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Test Mode: Transmitting

AC 120V / 60Hz - Line

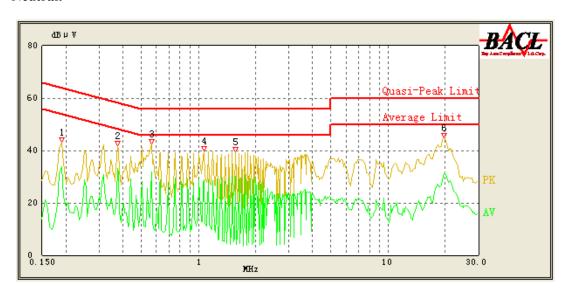


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Conducted Emissions			FCC Part 15.20	77	
Frequency (MHz)	Corrected Result (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/QP/Ave.)
0.880	31.09	10.19	46.00	14.91	Ave.
0.440	32.44	10.25	47.71	15.27	Ave.
19.980	33.11	12.56	50.00	16.89	Ave.
19.980	41.51	12.56	60.00	18.49	QP
0.880	37.40	10.19	56.00	18.60	QP
0.440	38.06	10.25	57.71	19.65	QP
0.190	34.96	10.24	54.86	19.90	Ave.
0.190	43.95	10.24	64.86	20.91	QP
0.315	29.48	10.25	51.29	21.81	Ave.
0.315	38.58	10.25	61.29	22.71	QP
0.250	40.19	10.25	63.14	22.95	QP
0.250	28.85	10.25	53.14	24.29	Ave.

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Neutral:



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Conducted Emissions			FCC Part 15.20) 7	
Frequency (MHz)	Corrected Result (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/QP/Ave.)
0.565	31.98	10.23	46.00	14.02	Ave.
1.570	30.33	10.19	46.00	15.67	Ave.
0.375	33.17	10.25	49.57	16.40	Ave.
1.070	28.76	10.17	46.00	17.24	Ave.
1.570	37.19	10.19	56.00	18.81	QP
19.665	40.84	12.48	60.00	19.16	QP
19.790	30.83	12.51	50.00	19.17	Ave.
0.565	36.34	10.23	56.00	19.66	QP
1.070	36.06	10.17	56.00	19.94	QP
0.375	38.47	10.25	59.57	21.10	QP
0.190	33.75	10.24	54.86	21.11	Ave.
0.190	41.25	10.24	64.86	23.61	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;

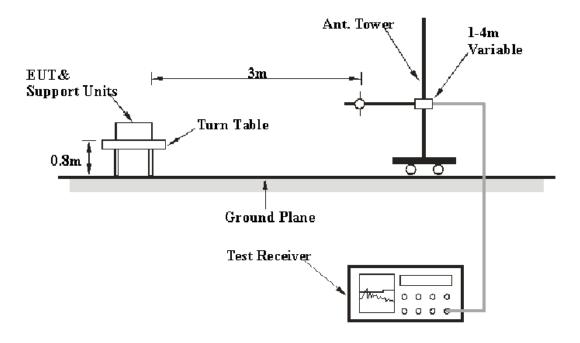
Measurement Uncertainty

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 CISPR 16-4-4, 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), and the uncertainty will not be taken into consideration for all 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 C63.4-2003. 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.

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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:

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Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
Above I GHZ	1MHz	10 Hz	/	Ave.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2012-11-24	2013-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2012-08-08	2013-08-07
Sunol Sciences	Broadband Antenna	ЈВ1	A040904-2	2011-11-28	2014-11-27
Mini-Circuits	Amplifier	ZVA-213+	N/A	2012-11-24	2013-11-23
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23
Agilent	Spectrum Analyzer	8564E	3943A01781	2012-05-17	2013-05-17
the electro- Mechanics Co.	Horn Antenna	3116	9510-2270	2010-10-14	2013-10-13

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

Test Procedure

For the radiated emissions 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 and peak and Average detection modes for frequencies above 1 GHz.

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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:

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Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

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

2.87 dB at 4924 MHz in the Horizontal polarization for mode 802.11b

Test Data

Environmental Conditions

Temperature:	24 ° C
Relative Humidity:	55 %
ATM Pressure:	100.0 kPa

The testing was performed by Henry Ding on 2013-01-15.

Test Mode: Transmitting

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30 MHz-25 GHz 802.11b mode:

Frequency	Re	eceiver	Turntable	Rx An	tenna		Corrected	15.24	FCC Par 17/15.205	
(MHz)	Reading (dBµV)	Detector (PK/QP/Ave.)	Degree	Height (m)	Polar (H/V)	Factor (dB)	Amplitude (dBµV/m)	Limit (dBµV/m)	Margin	Comment
	. ,	,		Low Char	nel (2412	MHz)				
2412	93.06	PK	96	1.20	Н	6.13	99.19	N/A	N/A	Fund.
2412	88.76	Ave.	96	1.20	Н	6.13	94.89	N/A	N/A	Fund.
2412	97.19	PK	32	1.20	V	6.13	103.32	N/A	N/A	Fund.
2412	92.95	Ave.	32	1.20	V	6.13	99.08	N/A	N/A	Fund.
4824	33.86	Ave.	52	1.30	Н	12.40	46.26	54.00	7.74	Harmonic
780	42.6	QP	79	1.1	Н	-5.20	37.40	46.00	8.60	Spurious
121.85	45.7	QP	312	1.1	V	-13.50	32.20	43.50	11.3	Spurious
2483.5	34.85	Ave.	69	1.20	V	6.81	41.66	54.00	12.34	Spurious
2389.7	35.29	Ave.	33	1.30	Н	6.13	41.42	54.00	12.58	Spurious
2334.4	33.29	Ave.	16	1.20	V	5.48	38.77	54.00	15.23	Spurious
9648	17.44	Ave.	114	1.10	V	19.29	36.73	54.00	17.27	Harmonic
7236	18.57	Ave.	256	1.20	Н	16.62	35.19	54.00	18.81	Harmonic
2389.7	46.87	PK	33	1.30	Н	6.13	53.00	74.00	21.00	Spurious
4824	40.24	PK	52	1.30	Н	12.40	52.64	74.00	21.36	Harmonic
9648	32.96	PK	114	1.10	V	19.29	52.25	74.00	21.75	Harmonic
2483.5	45.25	PK	69	1.20	V	6.81	52.06	74.00	21.94	Spurious
7236	33.65	PK	256	1.20	Н	16.62	50.27	74.00	23.73	Harmonic
2334.4	43.25	PK	16	1.20	V	5.48	48.73	74.00	25.27	Spurious
]	Middle Cha	annel (243	7 MHz)				
2437	93.22	PK	112	1.30	Н	6.13	99.35	N/A	N/A	Fund.
2437	88.26	Ave.	112	1.30	Н	6.13	94.39	N/A	N/A	Fund.
2437	97.85	PK	36	1.20	V	6.13	103.98	N/A	N/A	Fund.
2437	92.21	Ave.	36	1.20	V	6.13	98.34	N/A	N/A	Fund.
780	42.9	QP	79	1.1	Н	-5.20	37.70	46.00	8.30	Spurious
4874	32.22	Ave.	55	1.30	Н	12.46	44.68	54.00	9.32	Harmonic
121.85	45.8	QP	312	1.1	V	-13.50	32.30	43.50	11.20	Spurious
2385.5	32.87	Ave.	15	1.10	Н	6.13	39.00	54.00	15.00	Spurious
9748	18.82	Ave.	63	1.20	V	19.40	38.22	54.00	15.78	Harmonic
2344.8	32.21	Ave.	69	1.20	V	5.48	37.69	54.00	16.31	Spurious
2490.8	30.02	Ave.	28	1.20	V	6.81	36.83	54.00	17.17	Spurious
7311	18.85	Ave.	15	1.20	Н	16.49	35.34	54.00	18.66	Harmonic
9748	33.69	PK	63	1.20	V	19.40	53.09	74.00	20.91	Harmonic
4874	39.65	PK	55	1.30	H	12.46	52.11	74.00	21.89	Harmonic
7311	33.65	PK	15	1.20	H	16.49	50.14	74.00	23.86	Harmonic
2385.5	43.96	PK	15	1.10	H	6.13	50.09	74.00	23.91	Spurious
2344.8	43.25	PK	69	1.20	V	5.48	48.73	74.00	25.27	Spurious
2490.8	41.15	PK	28	1.20	V	6.81	47.96	74.00	26.04	Spurious
2462	01 22	PK	55	High Char	nnel (2462 H	7.21	98.54	N/A	N/A	Eund
2462	91.33		55	1.20	Н		98.54	N/A N/A	N/A N/A	Fund. Fund.
2462	86.35 96.27	Ave. PK	96	1.20	V	7.21	103.08	N/A N/A	N/A N/A	Fund. Fund.
2462			96		V	6.81		N/A N/A	N/A N/A	Fund. Fund.
4924	91.87 38.63	Ave.	105	1.30	H	6.81 12.50	98.68 51.13	54.00	2.87	Harmonic
780	42.8	Ave. QP	79	1.30	Н	-5.20	37.60	46.00	8.40	Spurious
121.85	42.8	OP	312	1.1	V	-3.20	32.60	43.50	10.90	Spurious
2491.5		_	96	1.10	V	6.81	40.68	54.00	13.32	
2491.3	33.87	Ave.	96	1.10	V	0.81	40.68	34.00	13.52	Spurious

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Bay Area Compliance Laboratories Corp. (Shenzhen)

Bay Ar	ea Complia	ance Laborator		Report No.: RSZ121224006-00A						
2387.2	33.94	Ave.	56	1.10	Н	6.13	40.07	54.00	13.93	Spurious
2335.2	32.25	Ave.	36	1.20	V	5.48	37.73	54.00	16.27	Spurious
9848	17.52	Ave.	66	1.30	V	19.39	36.91	54.00	17.09	Harmonic
4924	42.87	PK	105	1.30	Н	12.50	55.37	74.00	18.63	Harmonic
7386	18.89	Ave.	22	1.20	Н	15.91	34.80	54.00	19.20	Harmonic
9848	32.66	PK	66	1.30	V	19.39	52.05	74.00	21.95	Harmonic
2491.5	44.96	PK	96	1.10	V	6.81	51.77	74.00	22.23	Spurious
2387.2	44.85	PK	56	1.10	Н	6.13	50.98	74.00	23.02	Spurious
7386	33.87	PK	22	1.20	Н	15.91	49.78	74.00	24.22	Harmonic
2335.2	43.91	PK	36	1.20	V	5.48	49.39	74.00	24.61	Spurious

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802.11g mode:

									FCC Pa	rt
Frequency	Re	ceiver	Turntable	Rx An	tenna		Corrected	15.24	7/15.205	
(MHz)	Reading	Detector	Degree	Height	Polar	Factor (dB)	Amplitude			Comment
	(dBµV)	(PK/QP/Ave.)		(m)	(H/V)	(uD)	(dBµV/m)	(dBµV/m)	(dB)	Comment
					nel (2412	MHz)				
2412	90.25	PK	22	1.30	Н	6.13	96.38	N/A	N/A	Fund.
2412	77.54	Ave.	22	1.30	Н	6.13	83.67	N/A	N/A	Fund.
2412	94.15	PK	16	1.20	V	6.13	100.28	N/A	N/A	Fund.
2412	81.69	Ave.	16	1.20	V	6.13	87.82	N/A	N/A	Fund.
2389.2	40.22	Ave.	152	1.10	Н	6.13	46.35	54.00	7.65	Spurious
780	42.70	QP	79	1.10	Н	-5.20	37.50	46.00	8.50	Spurious
2483.8	37.26	Ave.	44	1.20	V	6.81	44.07	54.00	9.93	Spurious
2335.8	37.74	Ave.	55	1.30	V	5.48	43.22	54.00	10.78	Spurious
2389.2	56.87	PK	152	1.10	Н	6.13	63.00	74.00	11.00	Spurious
121.85	45.70	QP	312	1.10	V	-13.5	32.20	43.50	11.30	Spurious
4824	27.89	Ave.	6	1.20	Н	12.40	40.29	54.00	13.71	Harmonic
2335.8	53.25	PK	55	1.30	V	5.48	58.73	74.00	15.27	Spurious
9648	17.04	Ave.	26	1.10	V	19.29	36.33	54.00	17.67	Harmonic
2483.8	48.29	PK	44	1.20	V	6.81	55.10	74.00	18.90	Spurious
7236	18.25	Ave.	33	1.10	Н	16.62	34.87	54.00	19.13	Harmonic
4824	40.88	PK	6	1.20	Н	12.40	53.28	74.00	20.72	Harmonic
9648	32.26	PK	26	1.10	V	19.29	51.55	74.00	22.45	Harmonic
7236	33.95	PK	33	1.10	Н	16.62	50.57	74.00	23.43	Harmonic
				Middle Cha			, ,			
2437	90.25	PK	15	1.20	Н	6.13	96.38	N/A	N/A	Fund.
2437	77.36	Ave.	15	1.20	Н	6.13	83.49	N/A	N/A	Fund.
2437	95.28	PK	26	1.20	V	6.13	101.41	N/A	N/A	Fund.
2437	82.27	Ave.	26	1.20	V	6.13	88.40	N/A	N/A	Fund.
780	42.50	QP	79	1.10	Н	-5.20	37.30	46.00	8.70	Spurious
121.85	45.90	QP	312	1.10	V	-13.50	32.40	43.50	11.10	Spurious
4874	26.56	Ave.	33	1.30	Н	12.46	39.02	54.00	14.98	Harmonic
2490.8	32.02	Ave.	42	1.20	V	6.81	38.83	54.00	15.17	Spurious
9748	18.87	Ave.	15	1.20	V	19.40	38.27	54.00	15.73	Harmonic
2385.2	31.15	Ave.	22	1.10	Н	6.13	37.28	54.00	16.72	Spurious
2342.8	31.25	Ave.	52	1.30	V	5.48	36.73	54.00	17.27	Spurious
7311	18.25	Ave.	262	1.10	Н	16.49	34.74	54.00	19.26	Harmonic
2490.8	47.66	PK	42	1.20	V	6.81	54.47	74.00	19.53	Spurious
2385.2	47.33	PK	22	1.10	Н	6.13	53.46	74.00	20.54	Spurious
2342.8	47.45	PK	52	1.30	V	5.48	52.93	74.00	21.07	Spurious
9748	33.32	PK	15	1.20	V	19.40	52.72	74.00	21.28	Harmonic
4874	39.65	PK	33	1.30	Н	12.46	52.11	74.00	21.89	Harmonic
7311	33.65	PK	262	1.10	Н	16.49	50.14	74.00	23.86	Harmonic
2462	01.02	DYZ	1.		nnel (2462		00.22	3.7.4	3.7/4	ъ.
2462	91.02	PK	11	1.30	H	7.21	98.23	N/A	N/A	Fund.
2462	78.85	Ave.	11	1.30	H	7.21	86.06	N/A	N/A	Fund.
2462	94.44	PK	125	1.10	V	6.81	101.25	N/A	N/A	Fund.
2462	81.25	Ave.	125	1.10	V	6.81	88.06	N/A	N/A	Fund.
2488.8	39.61	Ave.	55	1.20	V	6.81	46.42	54.00	7.58	Spurious
780	42.60	QP	79	1.10	H	-5.20	37.40	46.00	8.60	Spurious
121.85	46.00	QP	312	1.10	V	-13.50	32.50	43.50	11.0	Spurious
2488.8	55.29	PK	55	1.20	V	6.81	62.10	74.00	11.90	Spurious
4924	27.02	Ave.	62	1.00	Н	12.50	39.52	54.00	14.48	Harmonic

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Bay Area Compliance Laboratories Corp. (Shenzhen)

Bay A	rea Compli	ance Laborator		Report No.: RSZ121224006-00A						
2335.2	32.96	Ave.	351	1.20	V	5.48	38.44	54.00	15.56	Spurious
9848	18.02	Ave.	96	1.10	V	19.39	37.41	54.00	16.59	Harmonic
2381.5	31.26	Ave.	26	1.10	Н	6.13	37.39	54.00	16.61	Spurious
2335.2	48.85	PK	351	1.30	V	5.48	54.33	74.00	19.67	Spurious
2381.5	47.52	PK	26	1.20	Н	6.13	53.65	74.00	20.35	Spurious
7386	17.52	Ave.	44	1.10	Н	15.91	33.43	54.00	20.57	Harmonic
9848	33.96	PK	96	1.10	V	19.39	53.35	74.00	20.65	Harmonic
4924	40.11	PK	62	1.00	Н	12.50	52.61	74.00	21.39	Harmonic
7386	32.65	PK	44	1.10	Н	15.91	48.56	74.00	25.44	Harmonic

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802.11n-HT20 mode:

Frequency	Re	ceiver	Turntable Rx Antenna (Corrected	FCC Part 15.247/15.205/15.209		
(MHz)	Reading	Detector	Degree	Height	Polar	Factor (dB)	Amplitude (dBµV/m)	Limit	Margin	
	(dBµV)	(PK/QP/Ave.)		(m)	(H/V)		(u Dμ v /III)	(dBµV/m)		Comment
				Low Char	nnel (2412	MHz)				
2412	89.63	PK	152	1.30	Н	6.13	95.76	N/A	N/A	Fund.
2412	77.15	Ave.	152	1.30	Н	6.13	83.28	N/A	N/A	Fund.
2412	91.12	PK	11	1.20	V	6.13	97.25	N/A	N/A	Fund.
2412	78.29	Ave.	11	1.20	V	6.13	84.42	N/A	N/A	Fund.
780	42.5	QP	79	1.1	Н	-5.20	37.30	46.00	8.70	Spurious
2389.3	37.25	Ave.	123	1.10	Н	6.13	43.38	54.00	10.62	Spurious
121.85	45.9	QP	312	1.1	V	-13.50	32.40	43.50	11.10	Spurious
2483.4	34.44	Ave.	99	1.20	V	6.81	41.25	54.00	12.75	Spurious
2332.6	34.11	Ave.	12	1.30	V	5.48	39.59	54.00	14.41	Spurious
2389.3	53.29	PK	123	1.10	Н	6.13	59.42	74.00	14.58	Spurious
4824	25.15	Ave.	223	1.20	Н	12.40	37.55	54.00	16.45	Harmonic
9648	18.21	Ave.	41	1.20	V	19.29	37.50	54.00	16.50	Harmonic
2483.4	50.17	PK	99	1.20	V	6.81	56.98	74.00	17.02	Spurious
2332.6	50.26	PK	12	1.30	V	5.48	55.74	74.00	18.26	Spurious
7236	18.26	Ave.	25	1.20	Н	16.62	34.88	54.00	19.12	Harmonic
9648	32.88	PK	41	1.20	V	19.29	52.17	74.00	21.83	Harmonic
4824	38.25	PK	223	1.20	Н	12.40	50.65	74.00	23.35	Harmonic
7236	33.65	PK	25	1.20	Н	16.62	50.27	74.00	23.73	Harmonic
-				Middle Cha					1	
2437	89.63	PK	96	1.00	Н	6.13	95.76	N/A	N/A	Fund.
2437	77.15	Ave.	96	1.00	Н	6.13	83.28	N/A	N/A	Fund.
2437	91.01	PK	26	1.20	V	6.13	97.14	N/A	N/A	Fund.
2437	78.85	Ave.	26	1.20	V	6.13	84.98	N/A	N/A	Fund.
780	42.9	QP	79	1.1	Н	-5.20	37.70	46.00	8.30	Spurious
121.85	46	QP	312	1.1	V	-13.50	32.50	43.50	11.00	Spurious
2490.8	34.46	Ave.	58	1.20	V	6.81	41.27	54.00	12.73	Spurious
2387.6	33.29	Ave.	36	1.30	Н	6.13	39.42	54.00	14.58	Spurious
2343	33.65	Ave.	62	1.30	V	5.48	39.13	54.00	14.87	Spurious
4874	26.65	Ave.	33	1.30	Н	12.46	39.11	54.00	14.89	Harmonic
2490.8	50.28	PK	58	1.20	V	6.81	57.09	74.00	16.91	Spurious
9748	17.15	Ave.	254	1.10	V	19.40	36.55	54.00	17.45	Harmonic
2387.6	50.14	PK	36	1.30	Н	6.13	56.27	74.00	17.73	Spurious
7311	18.89	Ave.	15	1.10	Н	16.49	35.38	54.00	18.62	Harmonic
2343	49.63	PK	62	1.30	V	5.48	55.11	74.00	18.89	Spurious
9748	32.96	PK	254	1.10	V	19.40	52.36	74.00	21.64	Harmonic
4874	39.63	PK	33	1.30	Н	12.46	52.09	74.00	21.91	Harmonic
7311	33.69	PK	15	1.10	H	16.49	50.18	74.00	23.82	Harmonic
2462	90.62	PK	22		nnel (2462		06.94	NI/A	NI/A	Eund
2462	89.63		33	1.30	Н	7.21	96.84 85.06	N/A	N/A N/A	Fund.
2462 2462	77.85 91.15	Ave. PK	23	1.30	H V	7.21 6.81	97.96	N/A N/A		Fund.
			23		V		85.14		N/A	Fund.
2462 780	78.33 43	Ave. QP	79	1.20		6.81	37.80	N/A	N/A 8.20	Fund.
2491.7	37.88	`	26	1.1	H V	-5.20 6.81	44.69	46.00 54.00	9.31	Spurious Spurious
121.85	46.1	Ave. QP	312	1.20	V	-13.50	32.60	43.50	10.90	•
2382.2	34.29	Ave.	251	1.1	H	6.13	40.42	54.00	13.58	Spurious Spurious

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Bay Area Compliance Laboratories Corp. (Shenzh
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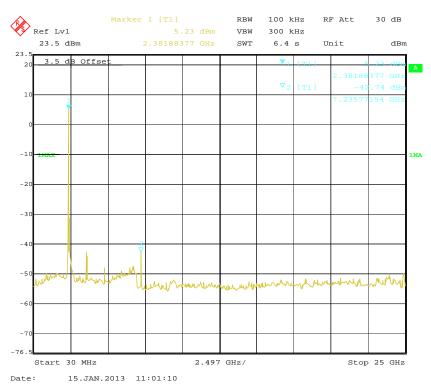
Bay A	rea Compli	ance Laborator		Report No.: RSZ121224006-00A						
2491.7	53.29	PK	26	1.20	V	6.81	60.10	74.00	13.90	Spurious
4924	26.15	Ave.	66	1.00	Н	12.50	38.65	54.00	15.35	Harmonic
2335.6	32.15	Ave.	55	1.30	V	5.48	37.63	54.00	16.37	Spurious
9848	17.33	Ave.	14	1.00	V	19.39	36.72	54.00	17.28	Harmonic
2382.2	50.11	PK	251	1.30	Н	6.13	56.24	74.00	17.76	Spurious
7386	18.89	Ave.	15	1.10	Н	15.91	34.80	54.00	19.20	Harmonic
2335.6	48.52	PK	55	1.30	V	5.48	54.00	74.00	20.00	Spurious
9848	32.57	PK	14	1.00	V	19.39	51.96	74.00	22.04	Harmonic
4924	39.37	PK	66	1.00	Н	12.50	51.87	74.00	22.13	Harmonic
7386	33.96	PK	15	1.10	Н	15.91	49.87	74.00	24.13	Harmonic

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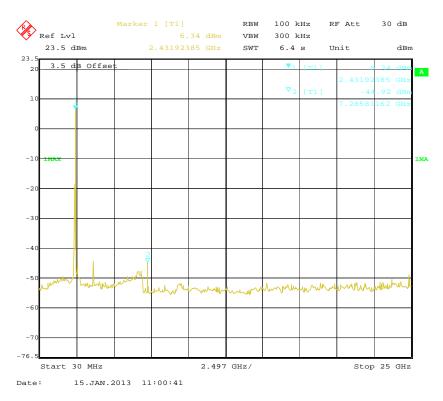
Antenna Port Conducted Spurious Emissions:

802.11b Low Channel

Report No.: RSZ121224006-00A



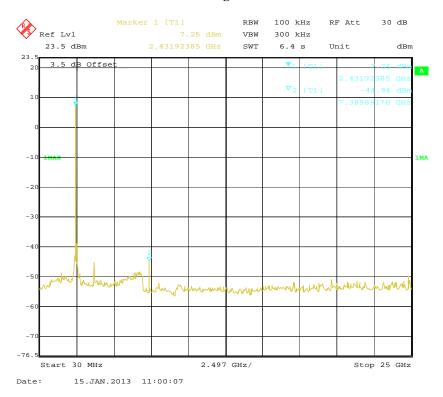
802.11b Middle Channel



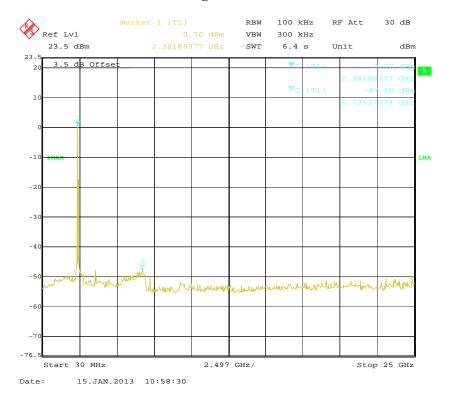
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802.11b High Channel

Report No.: RSZ121224006-00A



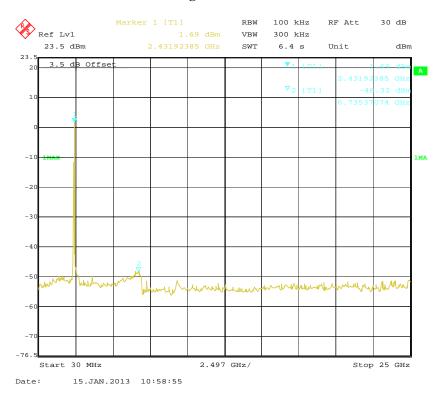
802.11g Low Channel



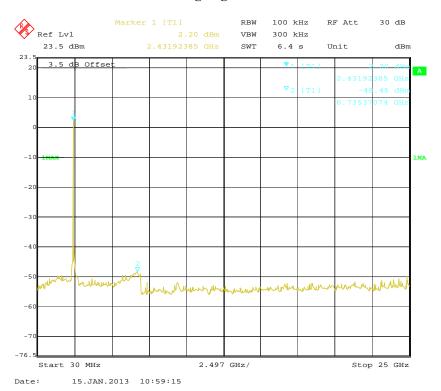
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802.11g Middle Channel

Report No.: RSZ121224006-00A



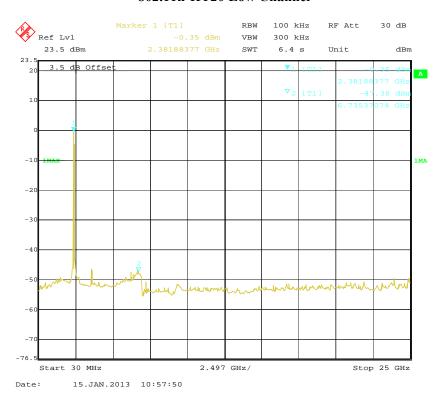
802.11g High Channel



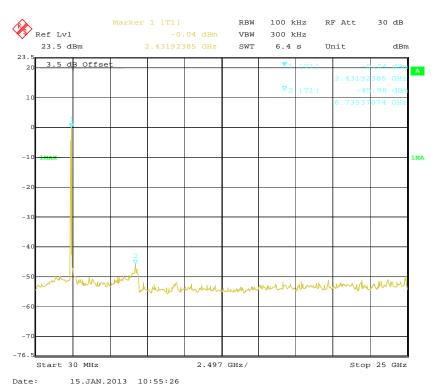
FCC Part 15.247 Page 27 of 54

802.11n-HT20 Low Channel

Report No.: RSZ121224006-00A



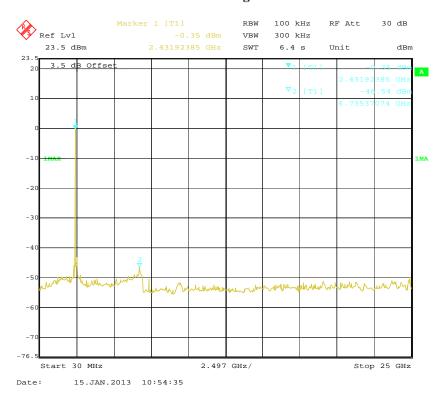
802.11n-HT20 Middle Channel



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802.11n-HT20 High Channel

Report No.: RSZ121224006-00A



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

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.: RSZ121224006-00A

Test Equipment List and Details

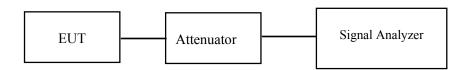
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

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

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v02

- 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 Data

Environmental Conditions

Temperature:	20 °C			
Relative Humidity:	56%			
ATM Pressure:	100.0kPa			

The testing was performed by Henry Ding on 2013-01-14.

Test Mode: Transmitting

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Test Result: Pass.

Please refer to the following tables and plots.

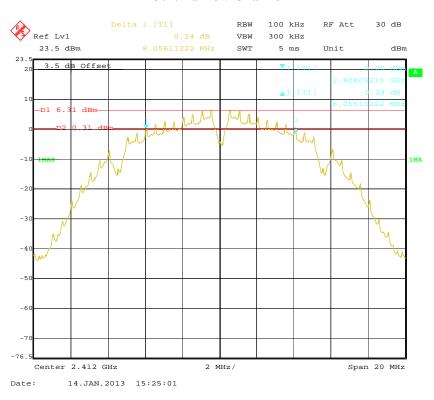
Channel	Frequency (MHz)	Data Rate (Mbps)	6dB bandwidth (MHz)	Limit (kHz)	Result				
		802.1	11b mode						
Low	2412	1	8.06	≥500	Pass				
Middle	2437	1	8.06	≥500	Pass				
High	2462	1	8.06	≥500	Pass				
802.11g mode									
Low	2412	6	15.23	≥500	Pass				
Middle	2437	6	15.23	≥500	Pass				
High	2462	6	15.23	≥500	Pass				
		802.11n	-HT20 mode						
Low	2412	6.5	16.18	≥500	Pass				
Middle	2437	6.5	16.18	≥500	Pass				
High	2462	6.5	16.18	≥500	Pass				

Report No.: RSZ121224006-00A

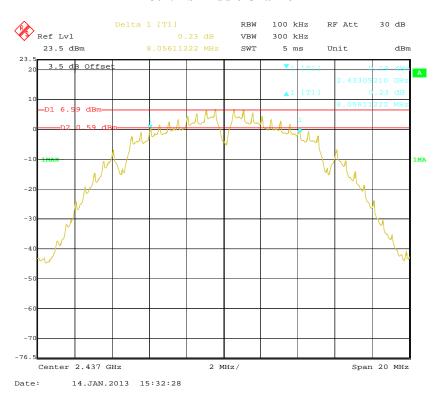
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802.11b Low Channel

Report No.: RSZ121224006-00A



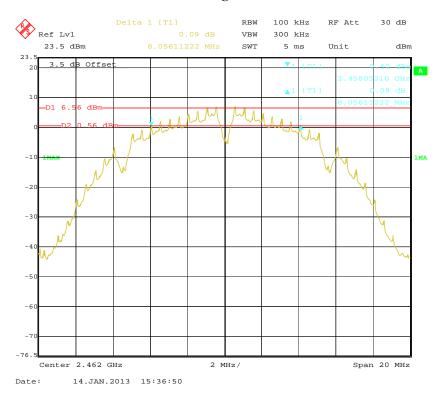
802.11b Middle Channel



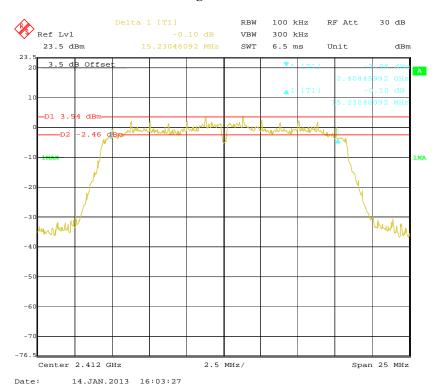
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802.11b High Channel

Report No.: RSZ121224006-00A



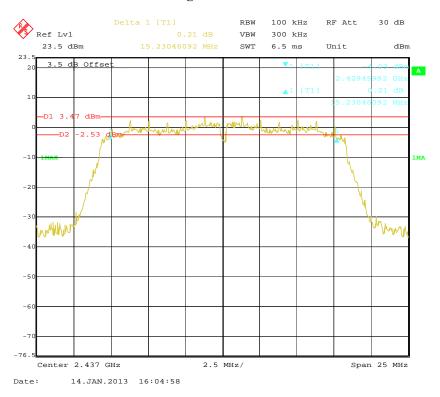
802.11g Low Channel



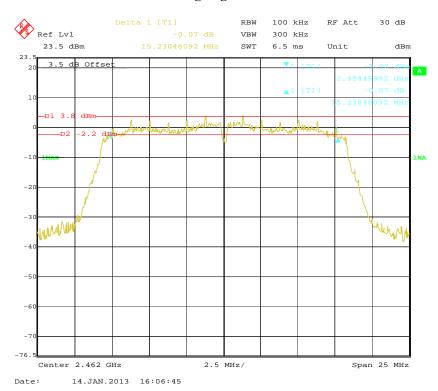
FCC Part 15.247 Page 33 of 54

802.11g Middle Channel

Report No.: RSZ121224006-00A



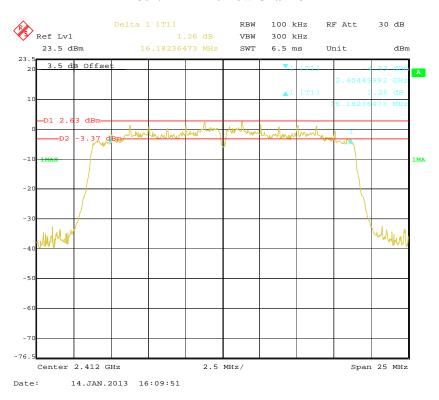
802.11g High Channel



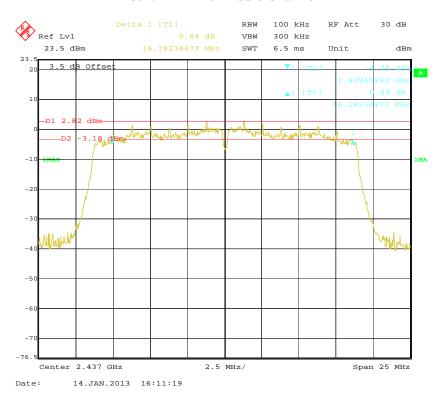
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802.11n-HT20 Low Channel

Report No.: RSZ121224006-00A



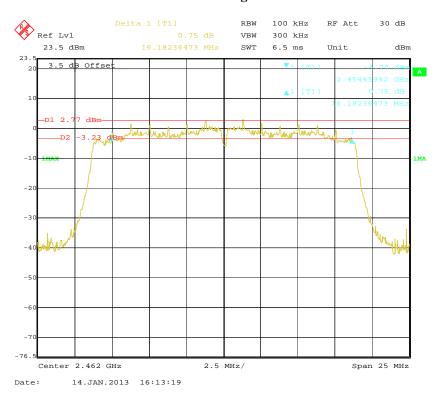
802.11n-HT20 Middle Channel



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802.11n-HT20 High Channel

Report No.: RSZ121224006-00A



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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.

Report No.: RSZ121224006-00A

Test Equipment List and Details

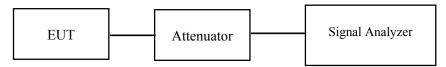
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

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

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v02

- 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 Data

Environmental Conditions

Temperature:	24 ° C
Relative Humidity:	55 %
ATM Pressure:	100.0 kPa

The testing was performed by Henry Ding on 2013-01-15.

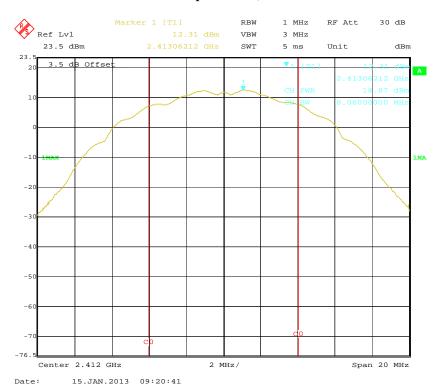
Test Mode: Transmitting

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Channel	Frequency (MHz)	Data Rate (Mbps)	Output Power (dBm)	Limit (dBm)	Result	
	802.11b mode					
Low	2412	1	18.87	30	Pass	
Middle	2437	1	18.92	30	Pass	
High	2462	1	18.97	30	Pass	
	802.11g mode					
Low	2412	6	21.84	30	Pass	
Middle	2437	6	22.19	30	Pass	
High	2462	6	22.23	30	Pass	
802.11n-HT20 mode						
Low	2412	6.5	21.41	30	Pass	
Middle	2437	6.5	21.83	30	Pass	
High	2462	6.5	21.52	30	Pass	

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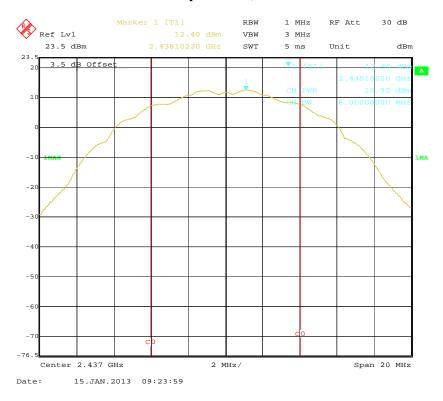
802.11b RF Output Power, Low Channel



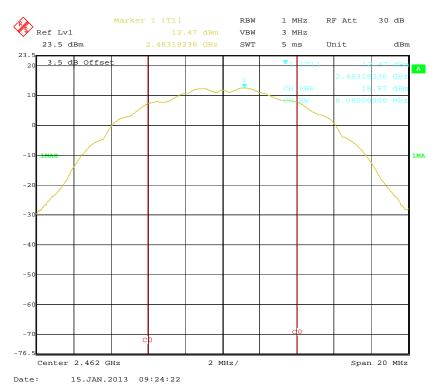
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802.11b RF Output Power, Middle Channel

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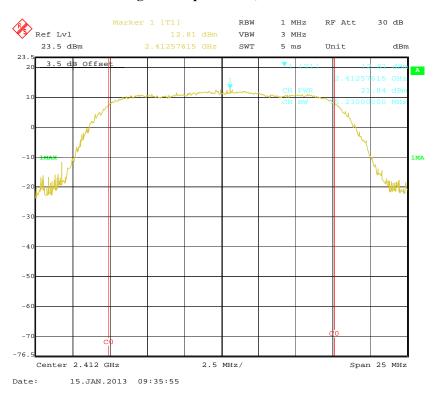
802.11b RF Output Power, High Channel



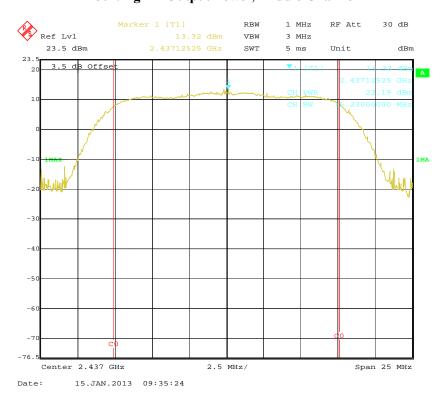
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802.11g RF Output Power, Low Channel

Report No.: RSZ121224006-00A



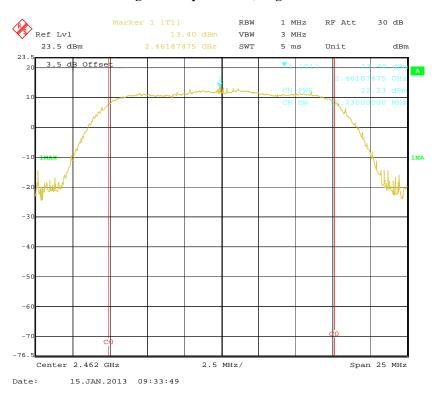
802.11g RF Output Power, Middle Channel



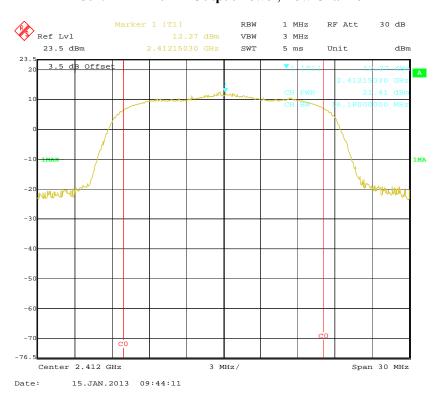
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802.11g RF Output Power, High Channel

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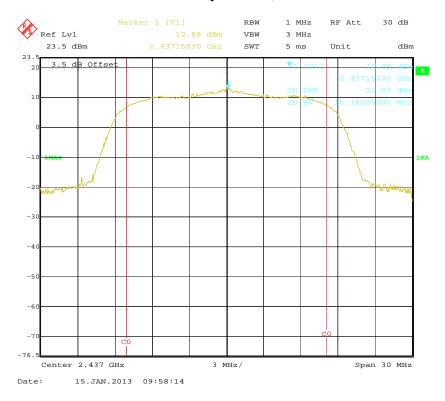
802.11n-HT20 RF Output Power, Low Channel



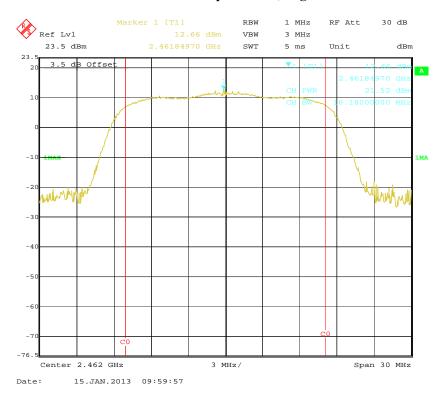
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802.11n-HT20 RF Output Power, Middle Channel

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802.11n-HT20 RF Output Power, High Channel



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

Report No.: RSZ121224006-00A

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 Equipment List and Details

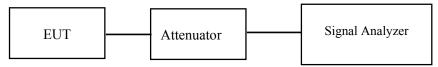
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

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

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v02

- 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 Data

Environmental Conditions

Temperature:	20 ° C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Henry Ding on 2013-01-15.

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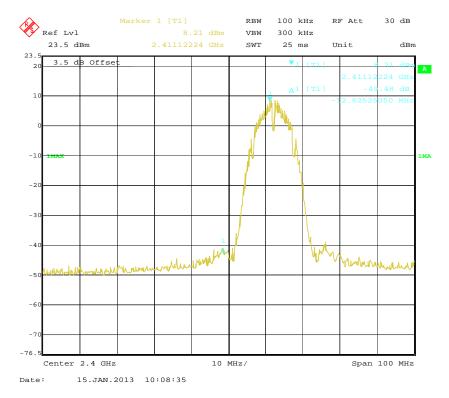
Test Mode: Transmitting

Test Result: Compliance. Please refer to following table and plots.

Frequency Band	Delta Peak to band emission (dBc)	Delta Limit (dBc)	Result			
	802.11b mode					
Left-band	49.48	20	Pass			
Right-band	52.83	20	Pass			
	802.11g mode					
Left-band	38.12	20	Pass			
Right-band	47.79	20	Pass			
802.11n-HT20 mode						
Left-band	37.97	20	Pass			
Right-band	47.11	20	Pass			

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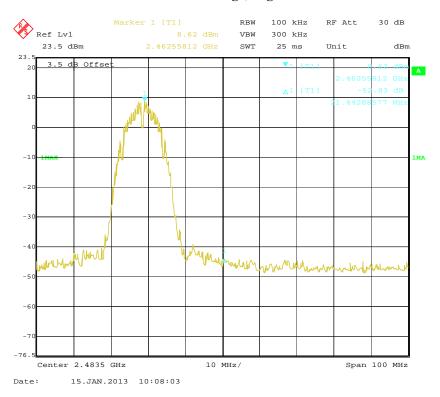
802.11b Band Edge, Left Side



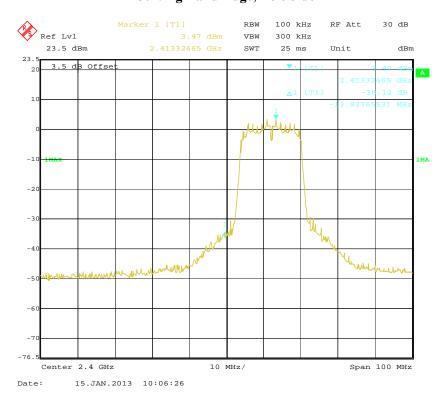
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802.11b Band Edge, Right Side

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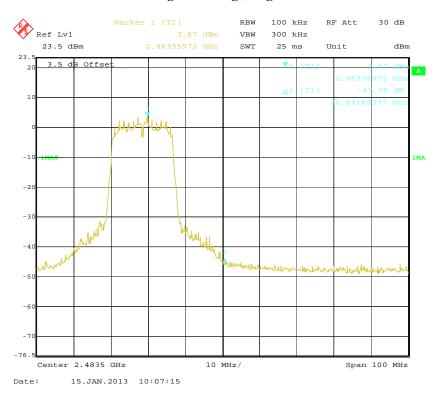
802.11g Band Edge, Left Side



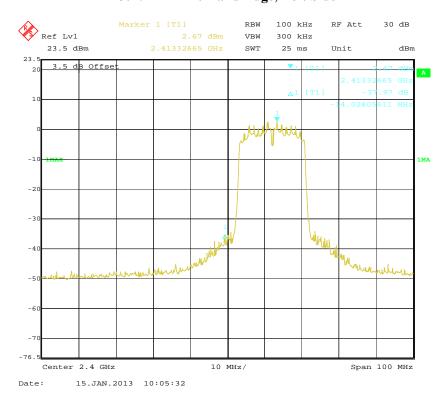
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802.11g Band Edge, Right Side

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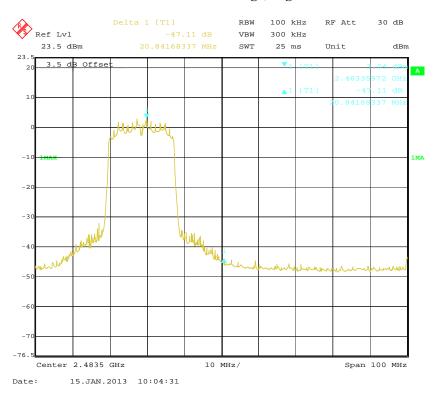
802.11n-HT20 Band Edge, Left Side



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802.11n-HT20 Band Edge, Right Side

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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.: RSZ121224006-00A

Test Equipment List and Details

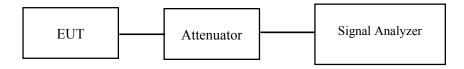
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

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

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v02 Clause 9.1 Option 1

- 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 \geq 3 kHz.
- 4. Set the VBW \geq 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 Data

Environmental Conditions

Temperature:	21 ° C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Henry Ding on 2013-01-17.

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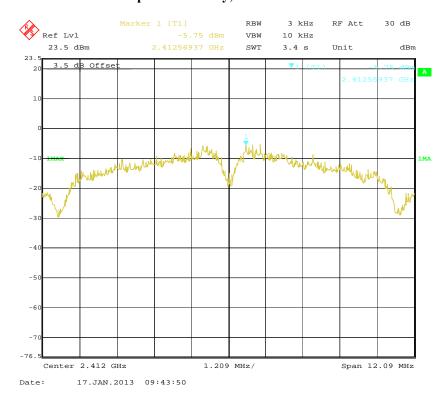
Test Mode: Transmitting

Test Result: Pass

Channel	Frequency (MHz)	Data Rate (Mbps)	Power spectral density (dBm/3 kHz)	Limit (dBm)			
	802.11b mode						
Low	2412	1	-5.75	8			
Middle	2437	1	-6.18	8			
High	2462	1	-5.40	8			
	802.11g mode						
Low	2412	6	-10.94	8			
Middle	2437	6	-10.80	8			
High	2462	6	-11.44	8			
	802.11n-HT20 mode						
Low	2412	6.5	-12.08	8			
Middle	2437	6.5	-11.31	8			
High	2462	6.5	-11.47	8			

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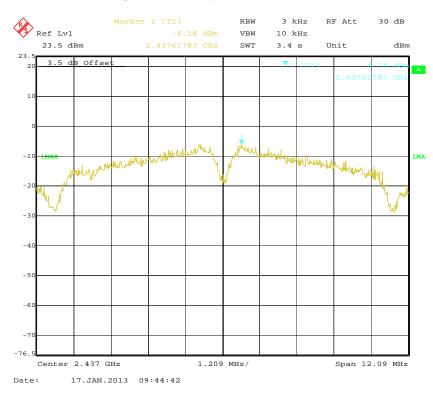
Power Spectral Density, 802.11b Low Channel



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Power Spectral Density, 802.11b Middle Channel

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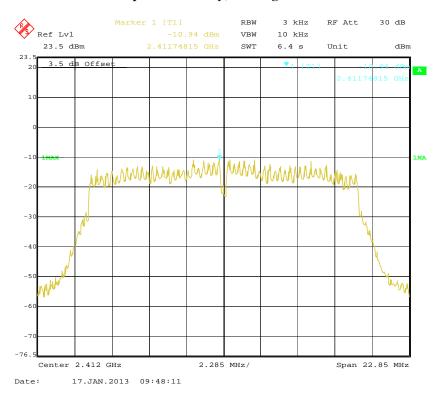
Power Spectral Density, 802.11b High Channel



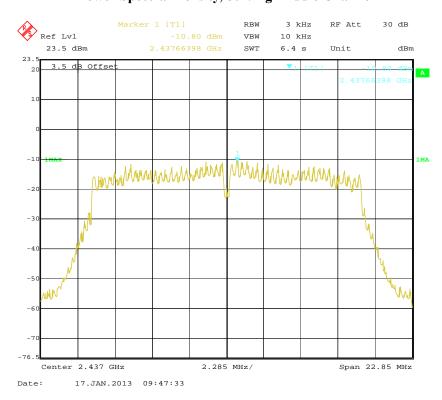
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Power Spectral Density, 802.11g Low Channel

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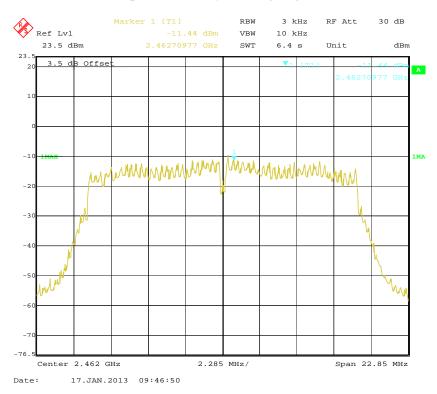
Power Spectral Density, 802.11g Middle Channel



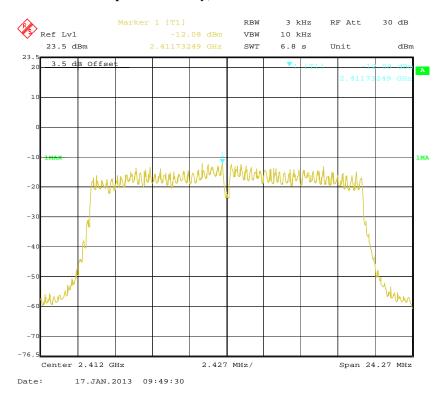
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Power Spectral Density, 802.11g High Channel

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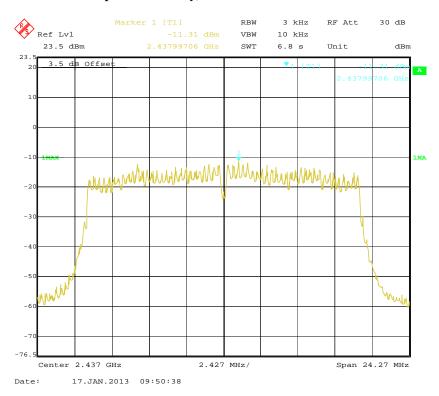
Power Spectral Density, 802.11n-HT20 Low Channel



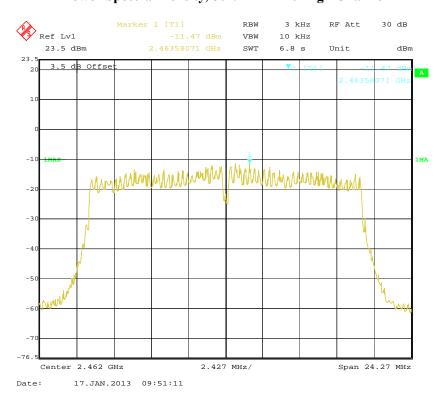
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Power Spectral Density, 802.11n-HT20 Middle Channel

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Power Spectral Density, 802.11n-HT20 High Channel



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PRODUCT SIMILARITY DECLARATION LETTER



Report No.: RSZ121224006-00A

Shenzhen Contel Electronics Technology Co., Ltd.

3/F, R2-A, High-tech Industrial Park, Nanshan District, Shenzhen, China Tel:+86 755-26512894-203 Fax:+86 755-86141279

2013-1-9

Product Similarity Declaration

To Whom It May Concern,

We, Shenzhen Contel Electronics Technology Co., Ltd. hereby declare that our 8" Tablet, Model Number: TAB-840G is electrically identical with the TAB-840 that was certified by BACL. They are only different in model number due to marketing purposes.

Please contact me if you have any question.

Signature:

Tracy You

R&D Centre Supervisor

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

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