

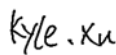

FCC PART 15.247 MEASUREMENT AND TEST REPORT

For

Shenzhen CE and IT Limited

113 Zhenxing Road, Xinxin Building, Tower B, Suite 501, Futian District,
Shenzhen, Guangdong, China

FCC ID: YG5STEALTH-8

| | |
|---|--|
| Report Type: Original Report | Product Type: MID |
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| Report Number: RSZ130513003-00B | |
| Report Date: 2013-05-23 | |
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Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen CE and IT Limited's* product, model number: *Trio Stealth - 8 (FCC ID: YG5STEALTH-8)* or the "EUT" as referred to in this report was a MID, named as *Tablets* by applicant, which was measured approximately: 207.0 mm(L) x 159.0 mm (W) x 10.5 mm (H), rated with input voltage: DC 3.7V Li-ion battery and DC 5V charging from adapter.

Adapter information

Model: AW018WR-0500250UH

Input: 100-240V~ 50/60Hz 0.5A

Output: DC 5.0V 2.5A

** All measurement and test data in this report was gathered from production sample serial number: 1305046 (Assigned by the BACL, Shenzhen). The EUT supplied by the applicant was received on 2013-05-13.*

Objective

This report is prepared on behalf of *Shenzhen CE and IT 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 compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC Part 15B JBP submission with FCC ID: YG5STEALTH-8.

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

Test Facility

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

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b, 802.11g mode, 802.11n-HT20 and 802.11n-HT40 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 | / | / |

EUT for 802.11b, 802.11g and 802.11n-HT20 modes were tested with Channel 1, 6 and 11. 802.11n-HT40 modes were tested with Channel 3, 6 and 9.

For 802.11n40 mode, 7 channels are provided to testing:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 1 | 2422 | 6 | 2447 |
| 2 | 2427 | 7 | 2452 |
| 3 | 2432 | / | / |
| 4 | 2437 | / | / |
| 5 | 2442 | / | / |

EUT was tested with Channel 1, 4 and 7.

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 data rates bandwidths, and modulations.

EUT Exercise Software

WiFi RF test built-in the the EUT.

The test was performed under:

802.11b: Data rate: 1 Mbps. Power level: 42

802.11g: Data rate: 6 Mbps. Power level: 32

802.11n-HT20: Data rate: MCS0. Power level: 30

802.11n-HT40: Data rate: MCS0. Power level: 30

Equipment Modifications

No modification was made to the EUT tested.

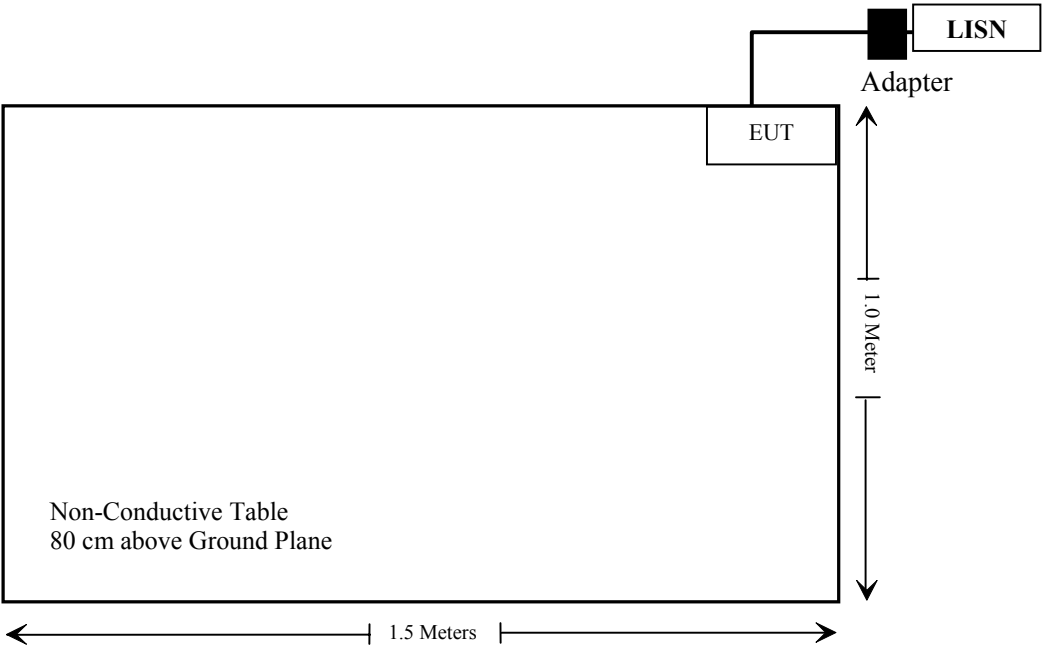
Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| / | / | / | / |

External I/O Cabling List and Details

| Cable Description | Length (m) | From | To |
|-------------------------------------|------------|---------|-----|
| Unshielded Detachable Adapter Cable | 1.45 | Adapter | EUT |

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|--|---|------------|
| §15.247 (i) and §1.1307 (b) (1), §2.1093 | RF Exposure | Compliance |
| §15.203 | Antenna Requirement | Compliance |
| §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 Emission 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 |

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

Standard Applicable

According to FCC §15.247 (i) & §2.1093

Result: Compliant

Please refer to the SAR report, report No.: RSZ130513003-20.

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:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has one integrated antenna arrangement, which was permanently attached and the gain was 2.0 dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

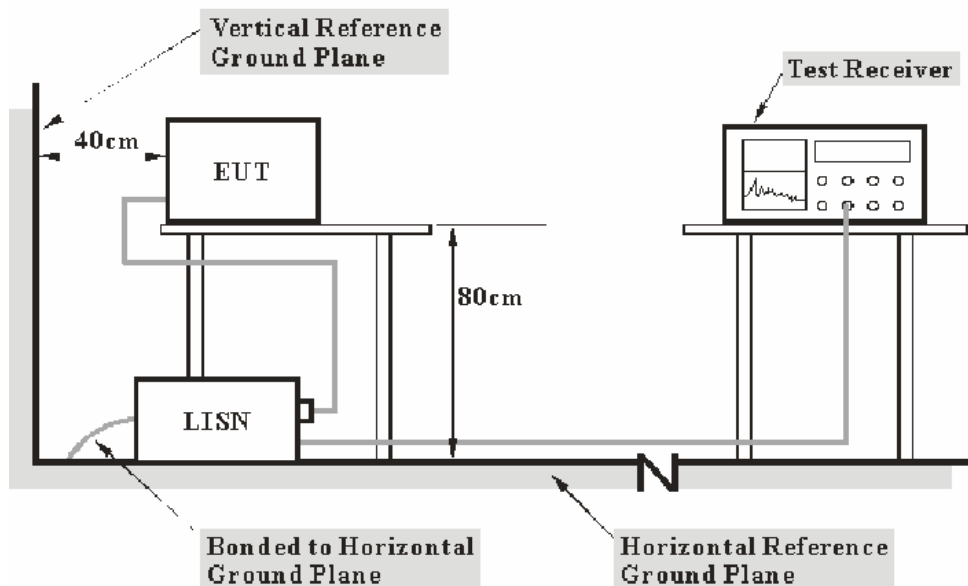
According to FCC§15.207

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 16-4-2, 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 the test data recorded in the report.

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 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 V_{AC}/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

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

Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|----------------------|---------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2012-08-08 | 2013-08-08 |
| Rohde & Schwarz | First L.I.S.N. | ESH2-Z5 | 892107/021 | 2012-08-22 | 2013-08-21 |
| COM-POWER | 2 nd LISN | LI-200 | 12208 | NCR | NCR |
| 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 requirements that 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.

Corrected Factor & Margin Calculation

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

$$\text{Correction Factor} = \text{LISN VDF} + \text{Cable Loss}$$

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

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

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:

7.9 dB at 0.450553 MHz in the Neutral conducted mode

Test Data

Environmental Conditions

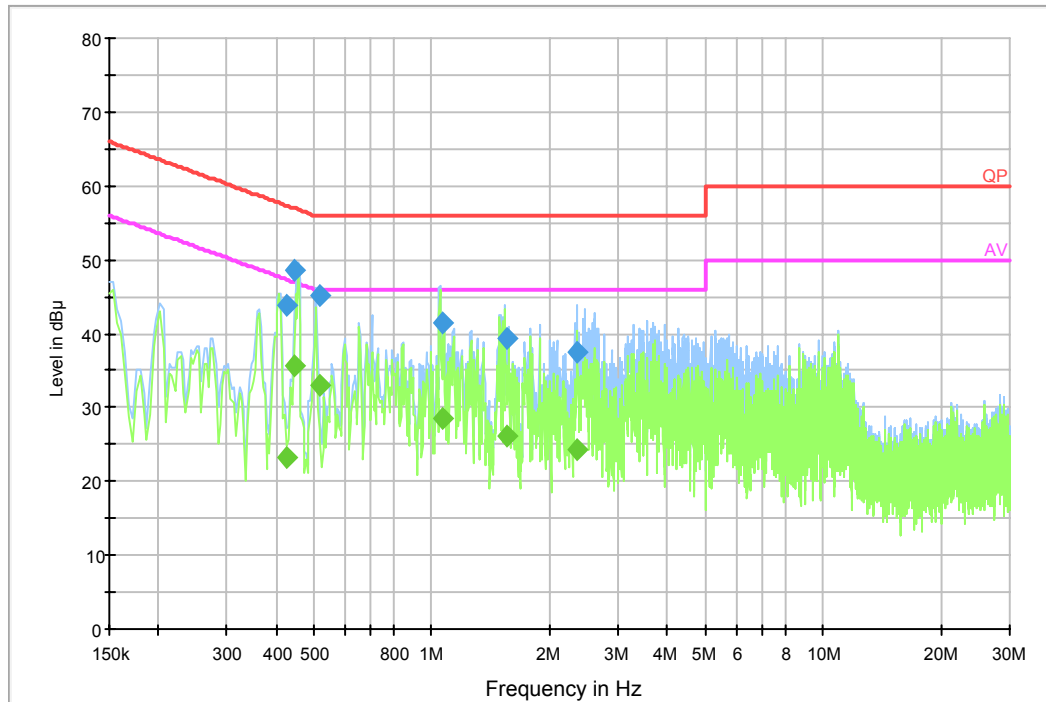
| | |
|---------------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 48% |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Kyle Xu on 2013-05-15.

EUT operation mode: Transmitting & charging

AC 120V / 60Hz - Line

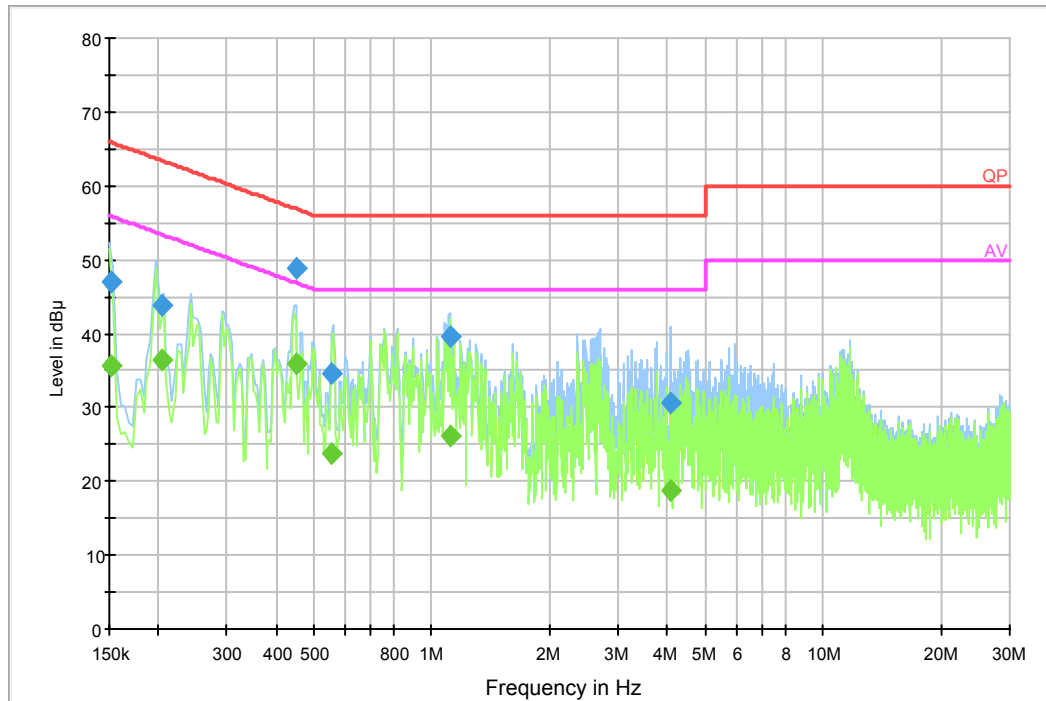
EMI Auto Test L



| Frequency (MHz) | Corrected Amplitude (dBμV) | Corrected Factor (dB) | Limit (dBμV) | Margin (dB) | Remark (PK/ QP/Ave) |
|-----------------|----------------------------|-----------------------|--------------|-------------|---------------------|
| 0.446940 | 48.7 | 0.4 | 56.9 | 8.2 | QP |
| 0.515950 | 45.1 | 0.4 | 56.0 | 10.9 | QP |
| 0.446940 | 35.6 | 0.4 | 46.9 | 11.4 | Ave. |
| 0.515950 | 32.9 | 0.4 | 46.0 | 13.1 | Ave. |
| 0.427132 | 43.9 | 0.4 | 57.3 | 13.4 | QP |
| 1.060757 | 41.5 | 0.4 | 56.0 | 14.5 | QP |
| 1.553454 | 39.5 | 0.4 | 56.0 | 16.5 | QP |
| 1.060757 | 28.6 | 0.4 | 46.0 | 17.4 | Ave. |
| 2.364626 | 37.6 | 0.4 | 56.0 | 18.4 | QP |
| 1.553454 | 26.1 | 0.4 | 46.0 | 19.9 | Ave. |
| 2.364626 | 24.3 | 0.4 | 46.0 | 21.7 | Ave. |
| 0.427132 | 23.3 | 0.4 | 47.3 | 24.0 | Ave. |

Neutral:

EMI Auto Test N



| Frequency (MHz) | Corrected Amplitude (dBμV) | Corrected Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK /QP/Ave.) |
|-----------------|----------------------------|-----------------------|--------------|-------------|------------------------|
| 0.450553 | 48.9 | 0.4 | 56.9 | 7.9 | QP |
| 0.450553 | 35.9 | 0.4 | 46.9 | 11.0 | Ave. |
| 1.112179 | 39.7 | 0.4 | 56.0 | 16.3 | QP |
| 0.203715 | 36.3 | 0.3 | 53.5 | 17.1 | Ave. |
| 0.152295 | 47.1 | 0.3 | 65.9 | 18.8 | QP |
| 0.203715 | 43.9 | 0.3 | 63.5 | 19.5 | QP |
| 1.112179 | 26.2 | 0.4 | 46.0 | 19.8 | Ave. |
| 0.152295 | 35.5 | 0.3 | 55.9 | 20.3 | Ave. |
| 0.551314 | 34.7 | 0.4 | 56.0 | 21.3 | QP |
| 0.551314 | 23.8 | 0.4 | 46.0 | 22.2 | Ave. |
| 4.088818 | 30.6 | 0.4 | 56.0 | 25.4 | QP |
| 4.088818 | 18.8 | 0.4 | 46.0 | 27.2 | Ave. |

Note:

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

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

Applicable Standard

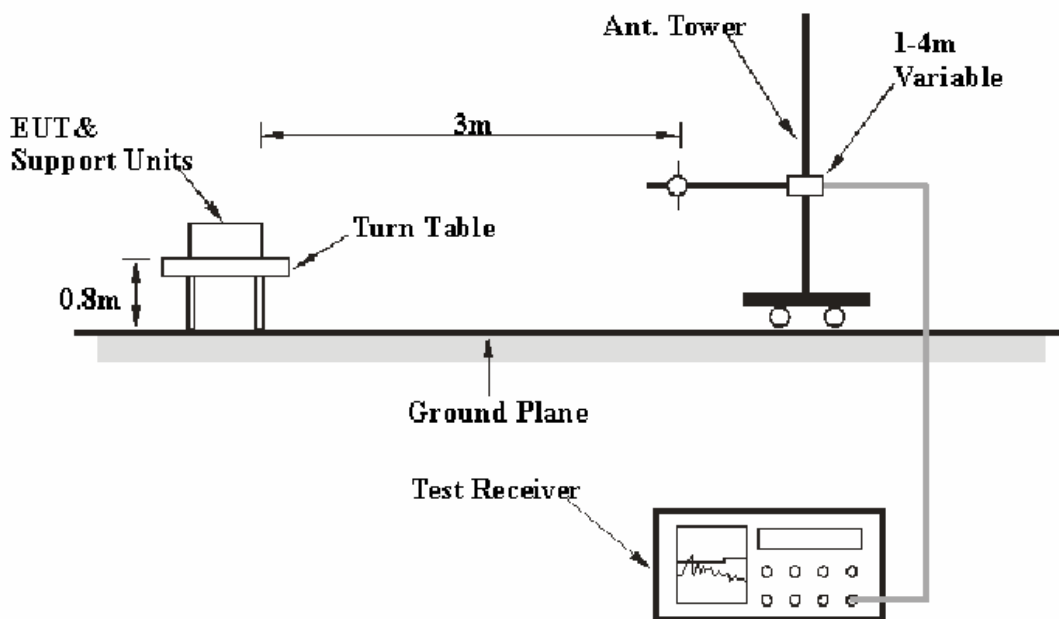
FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

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

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of 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 the test data recorded in the report.

EUT Setup



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

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

| Frequency Range | RBW | Video B/W | IF B/W | Detector |
|-------------------|---------|-----------|---------|----------|
| 30 MHz – 1000 MHz | 100 kHz | 300 kHz | 120 kHz | QP |
| Above 1 GHz | 1MHz | 3 MHz | / | PK |
| | 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 | 101120 | 2012-11-24 | 2013-11-24 |
| Sunol Sciences | Broadband Antenna | JB1 | A040904-2 | 2011-11-28 | 2014-11-27 |
| Super Ultra | 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 |
| 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 requirements that traceable to National Primary Standards and International System of Units (SI).

Test Procedure

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz and peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

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

2.38 dB at 2483.5 MHz in the **Vertical** polarization for 802.11g mode

Test Data

Environmental Conditions

| | |
|---------------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 48% |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Kyle Xu on 2013-05-17.

EUT operation mode: Transmitting

30 MHz-25 GHz**802.11b mode:**

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBµV/m) | FCC Part 15.247/15.205/15.209 | |
|---------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBµV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBµV/m) | Margin (dB) |
| Low Channel (2412 MHz) | | | | | | | | | |
| 2412.0 | 100.59 | PK | 32 | 1.2 | H | 6.13 | 106.72 | / | / |
| 2412.0 | 95.60 | Ave. | 32 | 1.2 | H | 6.13 | 101.73 | / | / |
| 2412.0 | 97.73 | PK | 11 | 1.3 | V | 6.13 | 103.86 | / | / |
| 2412.0 | 92.07 | Ave. | 11 | 1.3 | V | 6.13 | 98.20 | / | / |
| 2340.1 | 38.77 | Ave. | 174 | 1.1 | H | 5.48 | 44.25 | 54 | 9.75 |
| 2388.3 | 37.77 | Ave. | 65 | 1.2 | V | 6.13 | 43.90 | 54 | 10.10 |
| 2340.1 | 56.69 | PK | 174 | 1.1 | H | 5.48 | 62.17 | 74 | 11.83 |
| 7236.0 | 24.14 | Ave. | 71 | 1.4 | H | 16.62 | 40.76 | 54 | 13.24 |
| 2490.2 | 32.22 | Ave. | 202 | 1.0 | V | 7.21 | 39.43 | 54 | 14.57 |
| 9648.0 | 20.03 | Ave. | 93 | 1.3 | V | 19.29 | 39.32 | 54 | 14.68 |
| 4824.0 | 25.38 | Ave. | 135 | 1.3 | H | 12.40 | 37.78 | 54 | 16.22 |
| 2388.3 | 51.36 | PK | 65 | 1.2 | V | 6.13 | 57.49 | 74 | 16.51 |
| 166.4 | 42.38 | QP | 35 | 1.2 | V | -15.40 | 26.98 | 43.5 | 16.52 |
| 9648.0 | 35.77 | PK | 93 | 1.3 | V | 19.29 | 55.06 | 74 | 18.94 |
| 7236.0 | 35.62 | PK | 71 | 1.4 | H | 16.62 | 52.24 | 74 | 21.76 |
| 2490.2 | 43.68 | PK | 202 | 1.0 | V | 7.21 | 50.89 | 74 | 23.11 |
| 4824.0 | 36.51 | PK | 135 | 1.3 | H | 12.40 | 48.91 | 74 | 25.09 |
| Middle Channel (2437 MHz) | | | | | | | | | |
| 2437.0 | 100.42 | PK | 68 | 1.3 | H | 7.21 | 107.63 | / | / |
| 2437.0 | 95.01 | Ave. | 68 | 1.3 | H | 7.21 | 102.22 | / | / |
| 2437.0 | 97.54 | PK | 110 | 1.2 | V | 7.21 | 104.75 | / | / |
| 2437.0 | 91.83 | Ave. | 110 | 1.2 | V | 7.21 | 99.04 | / | / |
| 2340.4 | 38.65 | Ave. | 32 | 1.1 | V | 5.48 | 44.13 | 54 | 9.87 |
| 2340.4 | 53.42 | PK | 32 | 1.1 | V | 5.48 | 58.90 | 74 | 15.10 |
| 9748.0 | 19.32 | Ave. | 71 | 1.1 | H | 19.40 | 38.72 | 54 | 15.28 |
| 7311.0 | 22.01 | Ave. | 84 | 1.2 | H | 16.49 | 38.50 | 54 | 15.50 |
| 166.4 | 42.11 | QP | 19 | 1.1 | V | -15.40 | 26.71 | 43.5 | 16.79 |
| 4874.0 | 23.68 | Ave. | 230 | 1.3 | H | 12.46 | 36.14 | 54 | 17.86 |
| 7311.0 | 35.88 | PK | 84 | 1.2 | H | 16.49 | 52.37 | 74 | 21.63 |
| 9748.0 | 32.69 | PK | 71 | 1.1 | H | 19.40 | 52.09 | 74 | 21.91 |
| 2379.6 | 25.44 | Ave. | 54 | 1.5 | H | 6.13 | 31.57 | 54 | 22.43 |
| 4874.0 | 38.74 | PK | 230 | 1.3 | H | 12.46 | 51.20 | 74 | 22.80 |
| 2484.6 | 23.56 | Ave. | 113 | 1.1 | H | 7.21 | 30.77 | 54 | 23.23 |
| 2379.6 | 44.54 | PK | 54 | 1.5 | H | 6.13 | 50.67 | 74 | 23.33 |
| 2484.6 | 41.13 | PK | 113 | 1.1 | H | 7.21 | 48.34 | 74 | 25.66 |

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| High Channel(2462 MHz) | | | | | | | | | |
| 2462.0 | 100.03 | PK | 11 | 1.2 | H | 7.21 | 107.24 | / | / |
| 2462.0 | 95.11 | Ave. | 11 | 1.2 | H | 7.21 | 102.32 | / | / |
| 2462.0 | 97.45 | PK | 36 | 1.1 | V | 7.21 | 104.66 | / | / |
| 2462.0 | 91.72 | Ave. | 36 | 1.1 | V | 7.21 | 98.93 | / | / |
| 2339.9 | 38.02 | Ave. | 102 | 1.6 | H | 5.48 | 43.50 | 54 | 10.50 |
| 9848.0 | 20.06 | Ave. | 110 | 1.1 | H | 19.39 | 39.45 | 54 | 14.55 |
| 2386.5 | 32.77 | Ave. | 93 | 1.2 | H | 6.13 | 38.90 | 54 | 15.10 |
| 7386.0 | 22.67 | Ave. | 93 | 1.5 | H | 15.91 | 38.58 | 54 | 15.42 |
| 166.4 | 43.06 | QP | 11 | 1.5 | V | -15.40 | 27.66 | 43.5 | 15.84 |
| 4924.0 | 25.13 | Ave. | 82 | 1.3 | H | 12.50 | 37.63 | 54 | 16.37 |
| 2339.9 | 52.13 | PK | 102 | 1.6 | H | 5.48 | 57.61 | 74 | 16.39 |
| 2490.1 | 26.54 | Ave. | 74 | 1.0 | V | 7.21 | 33.75 | 54 | 20.25 |
| 9848.0 | 33.81 | PK | 110 | 1.1 | H | 19.39 | 53.20 | 74 | 20.80 |
| 2386.5 | 46.45 | PK | 93 | 1.2 | H | 6.13 | 52.58 | 74 | 21.42 |
| 7386.0 | 35.09 | PK | 93 | 1.5 | H | 15.91 | 51.00 | 74 | 23.00 |
| 4924.0 | 36.88 | PK | 82 | 1.3 | H | 12.50 | 49.38 | 74 | 24.62 |
| 2490.1 | 36.29 | PK | 74 | 1.0 | V | 7.21 | 43.50 | 74 | 30.50 |

802.11g mode:

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|---------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| Low Channel (2412 MHz) | | | | | | | | | |
| 2412.0 | 95.39 | PK | 69 | 1.2 | H | 6.13 | 101.52 | / | / |
| 2412.0 | 83.22 | Ave. | 69 | 1.2 | H | 6.13 | 89.35 | / | / |
| 2412.0 | 91.63 | PK | 113 | 1.1 | V | 6.13 | 97.76 | / | / |
| 2412.0 | 78.01 | Ave. | 113 | 1.1 | V | 6.13 | 84.14 | / | / |
| 2390.0 | 38.05 | Ave. | 15 | 1.3 | H | 6.13 | 44.18 | 54 | 9.82 |
| 2390.0 | 55.02 | PK | 15 | 1.3 | H | 6.13 | 61.15 | 74 | 12.85 |
| 166.4 | 43.12 | QP | 69 | 1.8 | V | -15.40 | 27.72 | 43.5 | 15.78 |
| 9648.0 | 17.01 | Ave. | 15 | 1.4 | V | 19.29 | 36.30 | 54 | 17.70 |
| 4824.0 | 23.01 | Ave. | 321 | 1.4 | H | 12.40 | 35.41 | 54 | 18.59 |
| 7236.0 | 18.25 | Ave. | 65 | 1.2 | H | 16.62 | 34.87 | 54 | 19.13 |
| 2491.3 | 27.16 | Ave. | 88 | 1.3 | V | 6.81 | 33.97 | 54 | 20.03 |
| 2331.5 | 27.16 | Ave. | 85 | 1.3 | V | 5.48 | 32.64 | 54 | 21.36 |
| 9648.0 | 32.11 | PK | 15 | 1.4 | V | 19.29 | 51.40 | 74 | 22.60 |
| 7236.0 | 33.26 | PK | 65 | 1.2 | H | 16.62 | 49.88 | 74 | 24.12 |
| 4824.0 | 37.12 | PK | 321 | 1.4 | H | 12.40 | 49.52 | 74 | 24.48 |
| 2491.3 | 39.62 | PK | 88 | 1.3 | V | 6.81 | 46.43 | 74 | 27.57 |
| 2331.5 | 39.66 | PK | 85 | 1.3 | V | 5.48 | 45.14 | 74 | 28.86 |
| Middle Channel (2437 MHz) | | | | | | | | | |
| 2437.0 | 95.55 | PK | 69 | 1.2 | H | 7.21 | 102.76 | / | / |
| 2437.0 | 83.57 | Ave. | 69 | 1.2 | H | 7.21 | 90.78 | / | / |
| 2437.0 | 91.41 | PK | 110 | 1.1 | V | 7.21 | 98.62 | / | / |
| 2437.0 | 79.63 | Ave. | 110 | 1.1 | V | 7.21 | 86.84 | / | / |
| 166.4 | 43.19 | QP | 66 | 1.0 | V | -15.40 | 27.79 | 43.5 | 15.71 |
| 9748.0 | 17.74 | Ave. | 15 | 1.4 | V | 19.40 | 37.14 | 54 | 16.86 |
| 7311.0 | 18.87 | Ave. | 14 | 1.3 | H | 16.49 | 35.36 | 54 | 18.64 |
| 4874.0 | 22.28 | Ave. | 92 | 1.4 | H | 12.46 | 34.74 | 54 | 19.26 |
| 2331.1 | 28.85 | Ave. | 33 | 1.2 | V | 5.48 | 34.33 | 54 | 19.67 |
| 2382.7 | 28.03 | Ave. | 92 | 1.0 | H | 6.13 | 34.16 | 54 | 19.84 |
| 2492.4 | 27.16 | Ave. | 35 | 1.3 | V | 6.81 | 33.97 | 54 | 20.03 |
| 9748.0 | 32.67 | PK | 15 | 1.4 | V | 19.40 | 52.07 | 74 | 21.93 |
| 7311.0 | 33.29 | PK | 14 | 1.3 | H | 16.49 | 49.78 | 74 | 24.22 |
| 4874.0 | 36.69 | PK | 92 | 1.4 | H | 12.46 | 49.15 | 74 | 24.85 |
| 2331.1 | 41.12 | PK | 33 | 1.2 | V | 5.48 | 46.60 | 74 | 27.40 |
| 2492.4 | 39.65 | PK | 35 | 1.3 | V | 6.81 | 46.46 | 74 | 27.54 |
| 2382.7 | 40.15 | PK | 92 | 1.0 | H | 6.13 | 46.28 | 74 | 27.72 |

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| High Channel(2462 MHz) | | | | | | | | | |
| 2462.0 | 95.33 | PK | 61 | 1.1 | H | 7.21 | 102.54 | / | / |
| 2462.0 | 83.29 | Ave. | 61 | 1.1 | H | 7.21 | 90.50 | / | / |
| 2462.0 | 91.16 | PK | 35 | 1.2 | V | 7.21 | 98.37 | / | / |
| 2462.0 | 79.32 | Ave. | 35 | 1.2 | V | 7.21 | 86.53 | / | / |
| 2483.5 | 44.81 | Ave. | 74 | 1.1 | V | 6.81 | 51.62 | 54 | 2.38 |
| 2483.5 | 64.36 | PK | 74 | 1.1 | V | 6.81 | 71.17 | 74 | 2.83 |
| 166.4 | 43.01 | QP | 229 | 1.6 | V | -15.40 | 27.61 | 43.5 | 15.89 |
| 9848.0 | 17.43 | Ave. | 321 | 1.4 | V | 19.39 | 36.82 | 54 | 17.18 |
| 4924.0 | 23.04 | Ave. | 77 | 1.4 | H | 12.50 | 35.54 | 54 | 18.46 |
| 7386.0 | 18.85 | Ave. | 156 | 1.3 | H | 15.91 | 34.76 | 54 | 19.24 |
| 2383.1 | 28.26 | Ave. | 95 | 1.3 | H | 6.13 | 34.39 | 54 | 19.61 |
| 2335.2 | 27.85 | Ave. | 158 | 1.1 | V | 5.48 | 33.33 | 54 | 20.67 |
| 9848.0 | 32.26 | PK | 321 | 1.4 | V | 19.39 | 51.65 | 74 | 22.35 |
| 4924.0 | 37.12 | PK | 77 | 1.4 | H | 12.50 | 49.62 | 74 | 24.38 |
| 7386.0 | 33.29 | PK | 156 | 1.3 | H | 15.91 | 49.20 | 74 | 24.80 |
| 2383.1 | 40.01 | PK | 95 | 1.3 | H | 6.13 | 46.14 | 74 | 27.86 |
| 2335.2 | 39.69 | PK | 158 | 1.1 | V | 5.48 | 45.17 | 74 | 28.83 |

802.11n-HT20 mode:

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|---------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| Low Channel (2412 MHz) | | | | | | | | | |
| 2412.0 | 92.20 | PK | 35 | 1.1 | H | 6.13 | 98.33 | / | / |
| 2412.0 | 76.93 | Ave. | 35 | 1.1 | H | 6.13 | 83.06 | / | / |
| 2412.0 | 88.69 | PK | 112 | 1.0 | V | 6.13 | 94.82 | / | / |
| 2412.0 | 74.58 | Ave. | 112 | 1.0 | V | 6.13 | 80.71 | / | / |
| 9648.0 | 20.09 | Ave. | 73 | 1.2 | H | 19.29 | 39.38 | 54 | 14.62 |
| 7236.0 | 22.71 | Ave. | 85 | 1.3 | V | 16.62 | 39.33 | 54 | 14.67 |
| 166.4 | 42.87 | QP | 109 | 1.4 | V | -15.40 | 27.47 | 43.5 | 16.03 |
| 4824.0 | 24.56 | Ave. | 101 | 1.1 | H | 12.40 | 36.96 | 54 | 17.04 |
| 7236.0 | 35.44 | PK | 85 | 1.3 | V | 16.62 | 52.06 | 74 | 21.94 |
| 9648.0 | 32.16 | PK | 73 | 1.2 | H | 19.29 | 51.45 | 74 | 22.55 |
| 4824.0 | 38.71 | PK | 101 | 1.1 | H | 12.40 | 51.11 | 74 | 22.89 |
| 2382.3 | 23.74 | Ave. | 71 | 1.3 | H | 6.13 | 29.87 | 54 | 24.13 |
| 2494.5 | 22.35 | Ave. | 32 | 1.2 | H | 7.21 | 29.56 | 54 | 24.44 |
| 2331.4 | 20.88 | Ave. | 36 | 1.1 | V | 5.48 | 26.36 | 54 | 27.64 |
| 2494.5 | 35.71 | PK | 32 | 1.2 | H | 7.21 | 42.92 | 74 | 31.08 |
| 2382.3 | 35.93 | PK | 71 | 1.3 | H | 6.13 | 42.06 | 74 | 31.94 |
| 2331.4 | 32.81 | PK | 36 | 1.1 | V | 5.48 | 38.29 | 74 | 35.71 |
| Middle Channel (2437 MHz) | | | | | | | | | |
| 2437.0 | 92.56 | PK | 69 | 1.1 | H | 7.21 | 99.77 | / | / |
| 2437.0 | 77.39 | Ave. | 69 | 1.1 | H | 7.21 | 84.60 | / | / |
| 2437.0 | 88.88 | PK | 77 | 1.3 | V | 7.21 | 96.09 | / | / |
| 2437.0 | 75.93 | Ave. | 77 | 1.3 | V | 7.21 | 83.14 | / | / |
| 7311.0 | 25.73 | Ave. | 36 | 1.1 | H | 16.49 | 42.22 | 54 | 11.78 |
| 9748.0 | 19.65 | Ave. | 21 | 1.3 | V | 19.40 | 39.05 | 54 | 14.95 |
| 166.4 | 42.81 | QP | 99 | 1.7 | V | -15.40 | 27.41 | 43.5 | 16.09 |
| 4874.0 | 22.74 | Ave. | 112 | 1.5 | H | 12.46 | 35.20 | 54 | 18.80 |
| 7311.0 | 38.65 | PK | 36 | 1.1 | H | 16.49 | 55.14 | 74 | 18.86 |
| 9748.0 | 33.71 | PK | 21 | 1.3 | V | 19.40 | 53.11 | 74 | 20.89 |
| 4874.0 | 38.95 | PK | 112 | 1.5 | H | 12.46 | 51.41 | 74 | 22.59 |
| 2364.1 | 24.22 | Ave. | 68 | 1.1 | V | 5.48 | 29.70 | 54 | 24.30 |
| 2317.8 | 24.11 | Ave. | 352 | 1.2 | H | 5.48 | 29.59 | 54 | 24.41 |
| 2487.6 | 21.58 | Ave. | 74 | 1.3 | H | 7.21 | 28.79 | 54 | 25.21 |
| 2317.8 | 38.16 | PK | 352 | 1.2 | H | 5.48 | 43.64 | 74 | 30.36 |
| 2487.6 | 35.71 | PK | 74 | 1.3 | H | 7.21 | 42.92 | 74 | 31.08 |
| 2364.1 | 37.11 | PK | 68 | 1.1 | V | 5.48 | 42.59 | 74 | 31.41 |

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| High Channel(2462 MHz) | | | | | | | | | |
| 2462.0 | 91.11 | PK | 69 | 1.2 | H | 7.21 | 98.32 | / | / |
| 2462.0 | 76.17 | Ave. | 69 | 1.2 | H | 7.21 | 83.38 | / | / |
| 2462.0 | 87.82 | PK | 77 | 1.1 | V | 7.21 | 95.03 | / | / |
| 2462.0 | 73.45 | Ave. | 77 | 1.1 | V | 7.21 | 80.66 | / | / |
| 4924.0 | 25.36 | Ave. | 36 | 1.2 | H | 12.50 | 37.86 | 54 | 16.14 |
| 166.4 | 42.72 | QP | 30 | 1.8 | V | -15.40 | 27.32 | 43.5 | 16.18 |
| 7386.0 | 21.88 | Ave. | 96 | 1.1 | H | 15.91 | 37.79 | 54 | 16.21 |
| 9848.0 | 17.92 | Ave. | 101 | 1.3 | H | 19.39 | 37.31 | 54 | 16.69 |
| 7386.0 | 36.71 | PK | 96 | 1.1 | H | 15.91 | 52.62 | 74 | 21.38 |
| 9848.0 | 32.69 | PK | 101 | 1.3 | H | 19.39 | 52.08 | 74 | 21.92 |
| 2344.6 | 24.71 | Ave. | 11 | 1.3 | H | 5.48 | 30.19 | 54 | 23.81 |
| 2482.2 | 21.05 | Ave. | 68 | 1.2 | H | 7.21 | 28.26 | 54 | 25.74 |
| 2486.6 | 20.98 | Ave. | 111 | 1.1 | V | 7.21 | 28.19 | 54 | 25.81 |
| 4924.0 | 33.71 | PK | 36 | 1.2 | H | 12.50 | 46.21 | 74 | 27.79 |
| 2482.2 | 35.77 | PK | 68 | 1.2 | H | 7.21 | 42.98 | 74 | 31.02 |
| 2486.6 | 34.93 | PK | 111 | 1.1 | V | 7.21 | 42.14 | 74 | 31.86 |
| 2344.6 | 32.83 | PK | 11 | 1.3 | H | 5.48 | 38.31 | 74 | 35.69 |

802.11n-HT40 mode:

| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|---------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| Low Channel (2422 MHz) | | | | | | | | | |
| 2422.0 | 84.31 | PK | 119 | 1.2 | H | 6.13 | 90.44 | / | / |
| 2422.0 | 67.86 | Ave. | 119 | 1.2 | H | 6.13 | 73.99 | / | / |
| 2422.0 | 82.72 | PK | 85 | 1.1 | V | 6.13 | 88.85 | / | / |
| 2422.0 | 66.03 | Ave. | 85 | 1.1 | V | 6.13 | 72.16 | / | / |
| 7266.0 | 23.06 | Ave. | 21 | 1.7 | V | 16.62 | 39.68 | 54 | 14.32 |
| 9688.0 | 19.03 | Ave. | 36 | 1.6 | H | 19.29 | 38.32 | 54 | 15.68 |
| 166.4 | 42.85 | QP | 99 | 1.6 | V | -15.40 | 27.45 | 43.5 | 16.05 |
| 4844.0 | 23.56 | Ave. | 123 | 1.6 | H | 12.46 | 36.02 | 54 | 17.98 |
| 7266.0 | 38.11 | PK | 21 | 1.7 | V | 16.62 | 54.73 | 74 | 19.27 |
| 9688.0 | 31.65 | PK | 36 | 1.6 | H | 19.29 | 50.94 | 74 | 23.06 |
| 2336.5 | 24.63 | Ave. | 32 | 1.0 | H | 5.48 | 30.11 | 54 | 23.89 |
| 4844.0 | 36.72 | PK | 123 | 1.6 | H | 12.46 | 49.18 | 74 | 24.82 |
| 2492.5 | 20.83 | AV | 33 | 1.3 | H | 7.21 | 28.04 | 54 | 25.96 |
| 2353.7 | 21.08 | Ave. | 101 | 1.4 | V | 5.48 | 26.56 | 54 | 27.44 |
| 2492.5 | 39.12 | PK | 33 | 1.3 | H | 7.21 | 46.33 | 74 | 27.67 |
| 2336.5 | 35.71 | PK | 32 | 1.0 | H | 5.48 | 41.19 | 74 | 32.81 |
| 2353.7 | 33.72 | PK | 101 | 1.4 | V | 5.48 | 39.2 | 74 | 34.80 |
| Middle Channel (2437 MHz) | | | | | | | | | |
| 2437.0 | 85.63 | PK | 33 | 1.2 | H | 7.21 | 92.84 | / | / |
| 2437.0 | 68.84 | Ave. | 33 | 1.2 | H | 7.21 | 76.05 | / | / |
| 2437.0 | 83.71 | PK | 85 | 1.3 | V | 7.21 | 90.92 | / | / |
| 2437.0 | 67.02 | Ave. | 85 | 1.3 | V | 7.21 | 74.23 | / | / |
| 9748.0 | 19.06 | Ave. | 11 | 1.2 | H | 19.29 | 38.35 | 54 | 15.65 |
| 166.4 | 42.69 | QP | 93 | 1.1 | V | -15.40 | 27.29 | 43.5 | 16.21 |
| 7311.0 | 21.06 | Ave. | 36 | 1.0 | H | 16.49 | 37.55 | 54 | 16.45 |
| 4874.0 | 24.19 | Ave. | 77 | 1.3 | H | 12.46 | 36.65 | 54 | 17.35 |
| 7311.0 | 39.22 | PK | 36 | 1.0 | H | 16.49 | 55.71 | 74 | 18.29 |
| 2492.2 | 24.61 | Ave. | 36 | 1.4 | H | 7.21 | 31.82 | 54 | 22.18 |
| 9748.0 | 32.36 | PK | 11 | 1.2 | H | 19.29 | 51.65 | 74 | 22.35 |
| 2485.6 | 24.11 | Ave. | 101 | 1.1 | H | 7.21 | 31.32 | 54 | 22.68 |
| 2355.2 | 24.65 | Ave. | 32 | 1.2 | H | 5.48 | 30.13 | 54 | 23.87 |
| 4874.0 | 36.55 | PK | 77 | 1.3 | H | 12.46 | 49.01 | 74 | 24.99 |
| 2492.2 | 36.87 | PK | 36 | 1.4 | H | 7.21 | 44.08 | 74 | 29.92 |
| 2485.6 | 36.25 | PK | 101 | 1.1 | H | 7.21 | 43.46 | 74 | 30.54 |
| 2351.2 | 36.72 | PK | 32 | 1.2 | H | 5.48 | 42.20 | 74 | 31.80 |

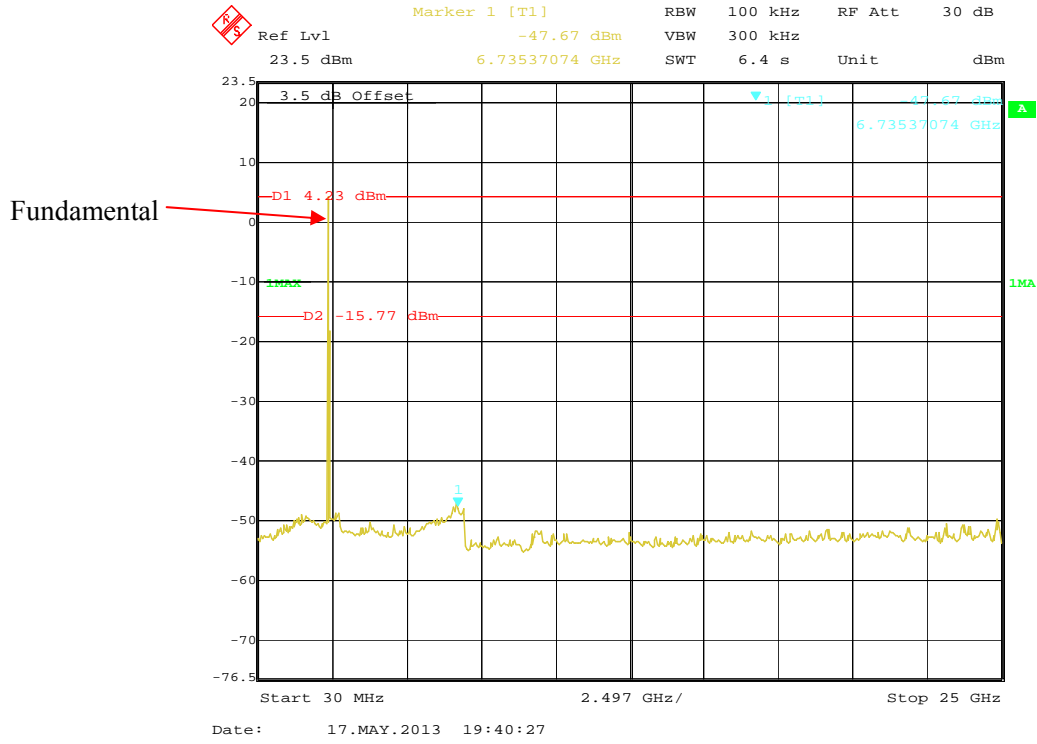
| Frequency (MHz) | Receiver | | Turntable Degree | Rx Antenna | | Corrected Factor (dB) | Corrected Amplitude (dBμV/m) | FCC Part 15.247/15.205/15.209 | |
|------------------------|-------------------|--------------------------|---------------------|---------------|----------------|-----------------------------|------------------------------------|----------------------------------|----------------|
| | Reading (dBμV) | Detector (PK/QP/Ave.) | | Height (m) | Polar (H/V) | | | Limit (dBμV/m) | Margin (dB) |
| High Channel(2452 MHz) | | | | | | | | | |
| 2452.0 | 85.09 | PK | 68 | 1.2 | H | 7.21 | 92.30 | / | / |
| 2452.0 | 68.47 | Ave. | 68 | 1.2 | H | 7.21 | 75.68 | / | / |
| 2452.0 | 82.16 | PK | 116 | 1.1 | V | 7.21 | 89.37 | / | / |
| 2452.0 | 66.74 | Ave. | 116 | 1.1 | V | 7.21 | 73.95 | / | / |
| 9808.0 | 20.36 | Ave. | 77 | 1.1 | V | 19.29 | 39.65 | 54 | 14.35 |
| 7356.0 | 22.07 | Ave. | 161 | 1.5 | H | 15.91 | 37.98 | 54 | 16.02 |
| 166.4 | 42.58 | QP | 293 | 1.4 | V | -15.40 | 27.18 | 43.5 | 16.32 |
| 4904.0 | 24.19 | Ave. | 87 | 1.3 | V | 12.46 | 36.65 | 54 | 17.35 |
| 7356.0 | 37.11 | PK | 161 | 1.5 | H | 15.91 | 53.02 | 74 | 20.98 |
| 9808.0 | 31.98 | PK | 77 | 1.1 | V | 19.29 | 51.27 | 74 | 22.73 |
| 4904.0 | 38.67 | PK | 87 | 1.3 | V | 12.46 | 51.13 | 74 | 22.87 |
| 2314.2 | 25.07 | Ave. | 32 | 1.3 | H | 5.48 | 30.55 | 54 | 23.45 |
| 2491.2 | 21.82 | Ave. | 113 | 1.1 | V | 7.21 | 29.03 | 54 | 24.97 |
| 2485.3 | 20.93 | Ave. | 22 | 1.5 | H | 7.21 | 28.14 | 54 | 25.86 |
| 2314.2 | 38.66 | PK | 32 | 1.3 | H | 5.48 | 44.14 | 74 | 29.86 |
| 2485.3 | 36.16 | PK | 22 | 1.5 | H | 7.21 | 43.37 | 74 | 30.63 |
| 2491.2 | 36.13 | PK | 113 | 1.1 | V | 7.21 | 43.34 | 74 | 30.66 |

Note:

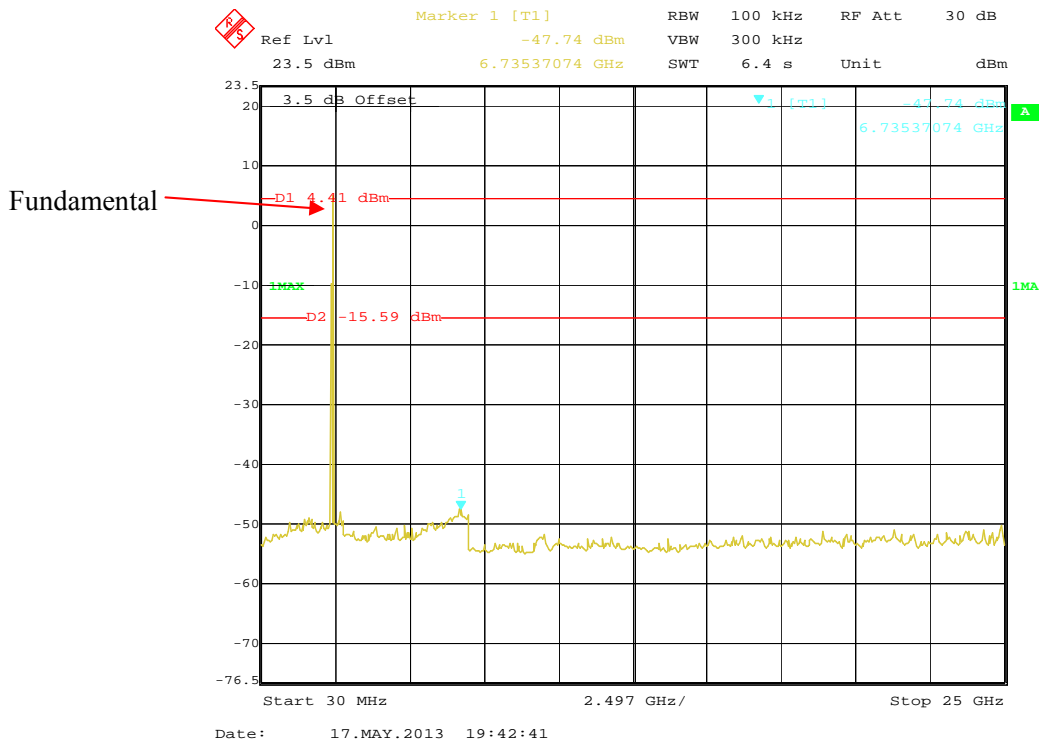
- 1) Corrected Amplitude = Corrected Factor + Reading
- 2) Corrected Factor=Antenna factor (RX) + Cable loss – Amplifier factor
- 3) Margin = Limit - Corrected Amplitude

Conducted Spurious Emissions at Antenna Port:

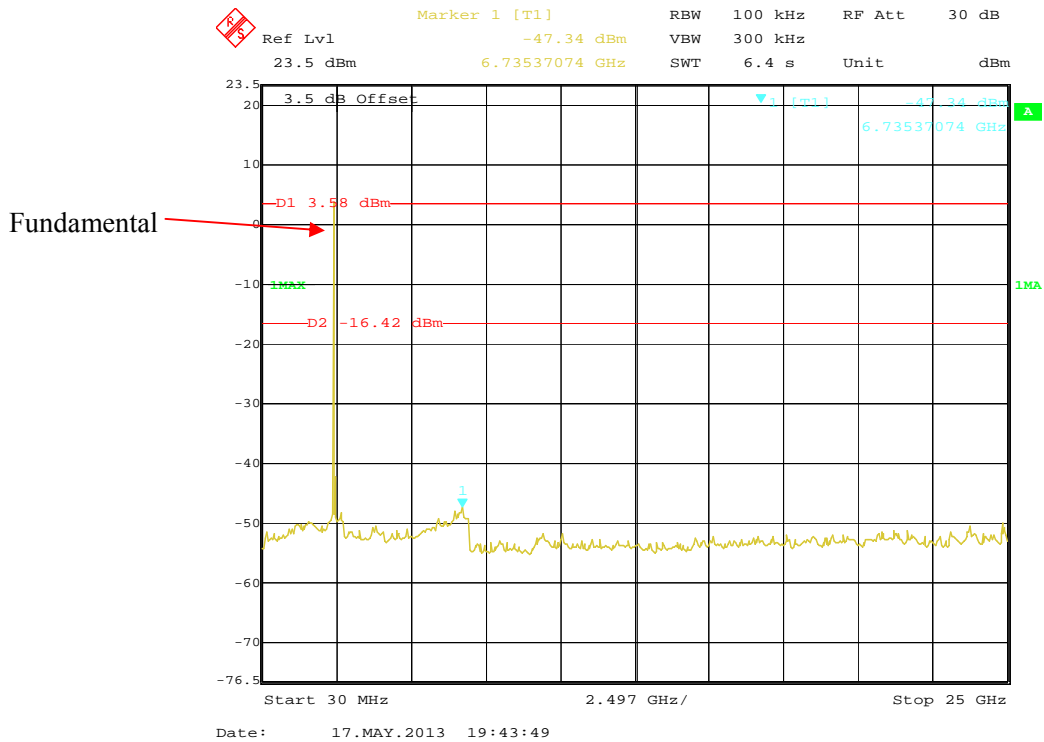
802.11b Low Channel



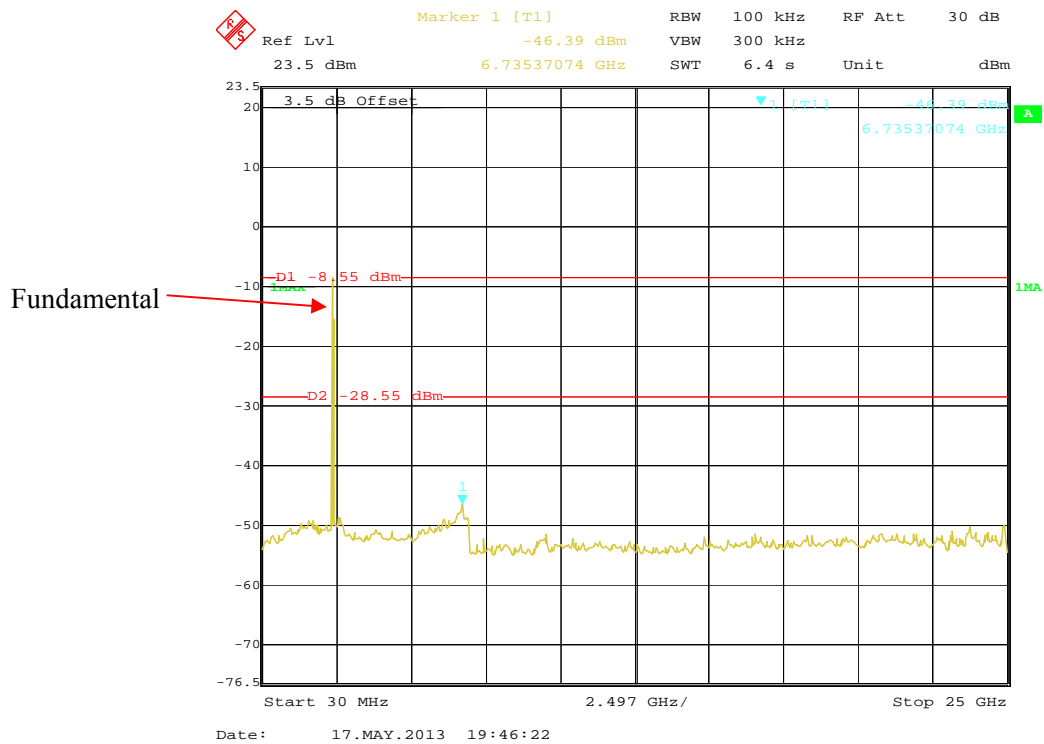
802.11b Middle Channel



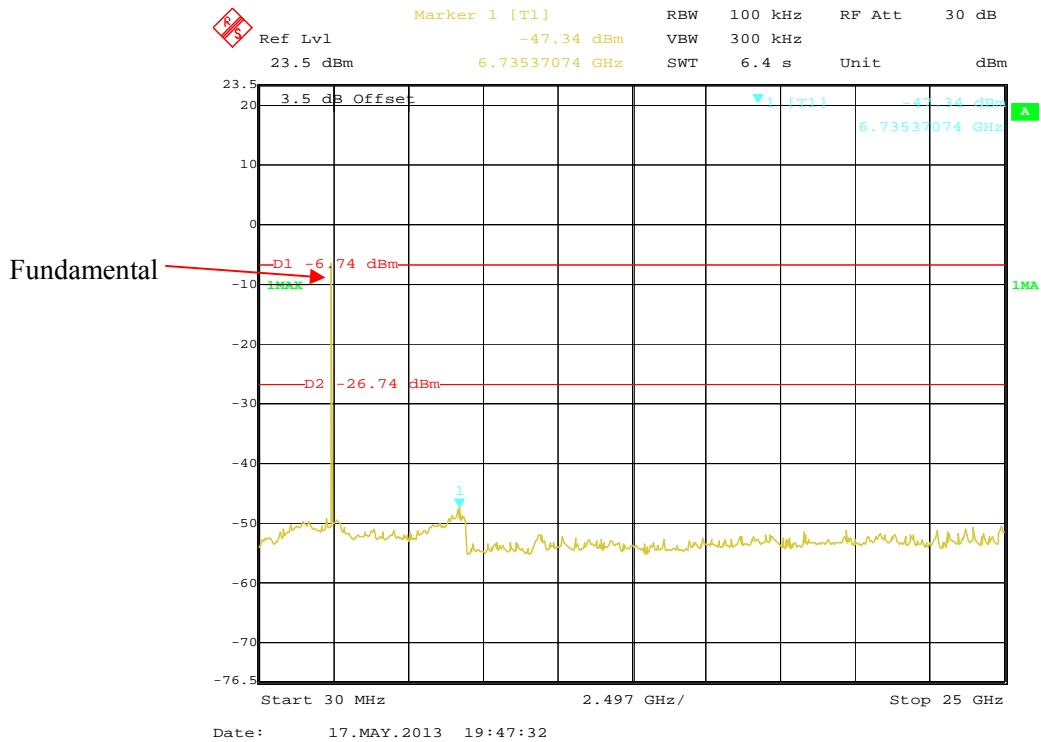
802.11b High Channel



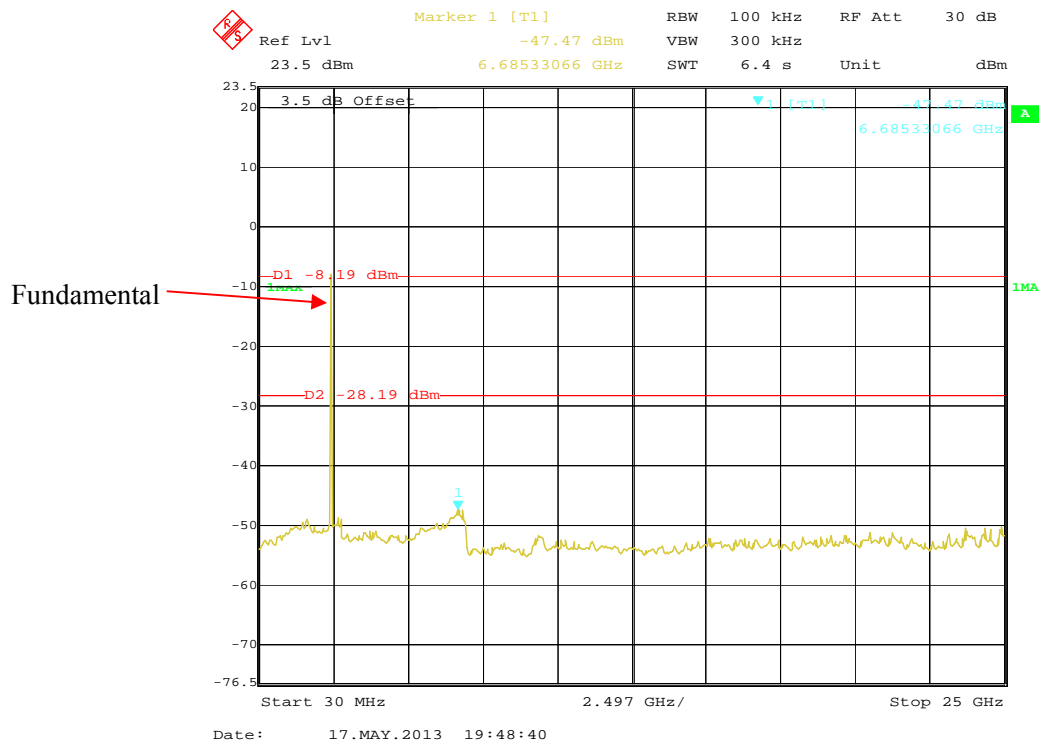
802.11g Low Channel



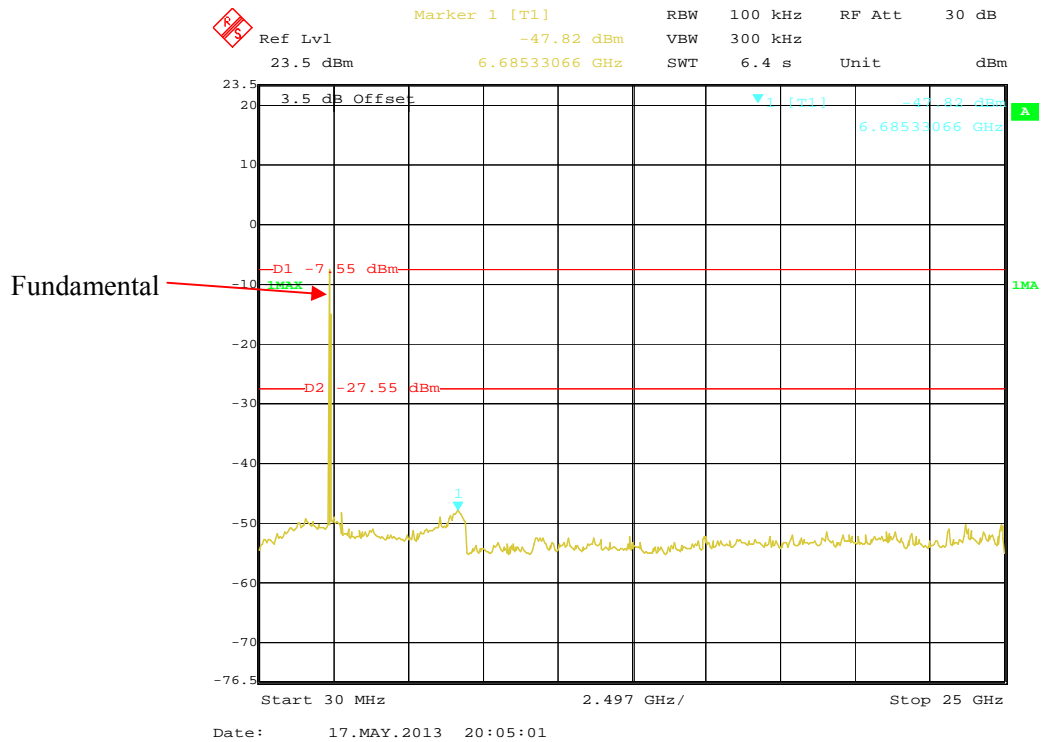
802.11g Middle Channel



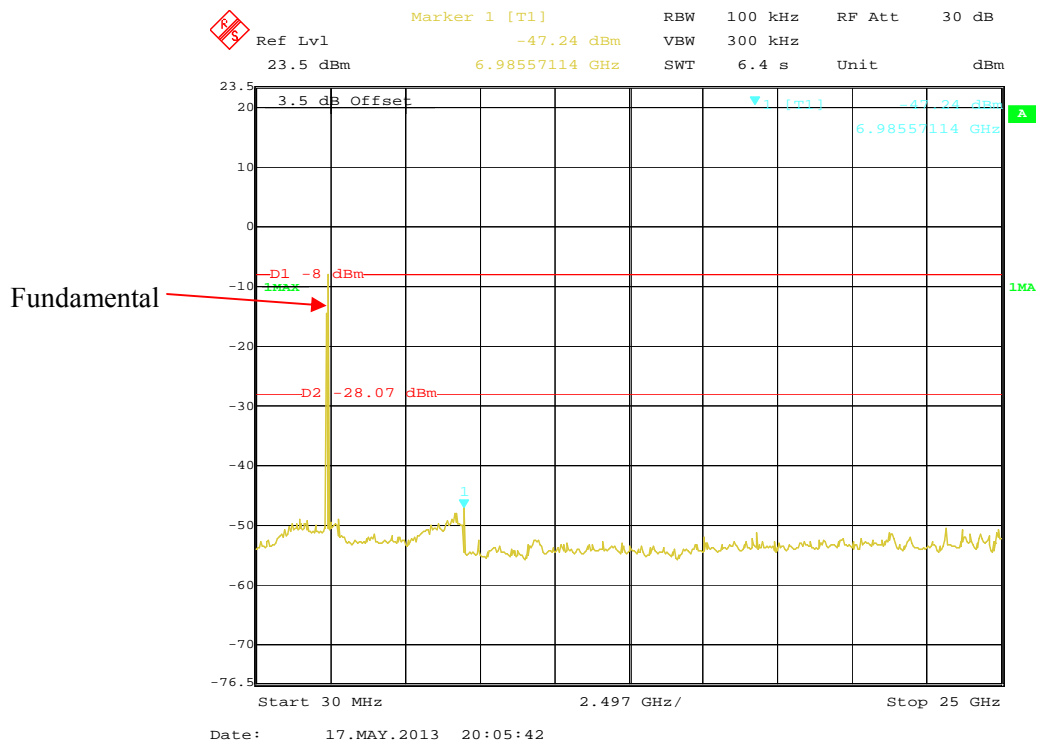
802.11g High Channel



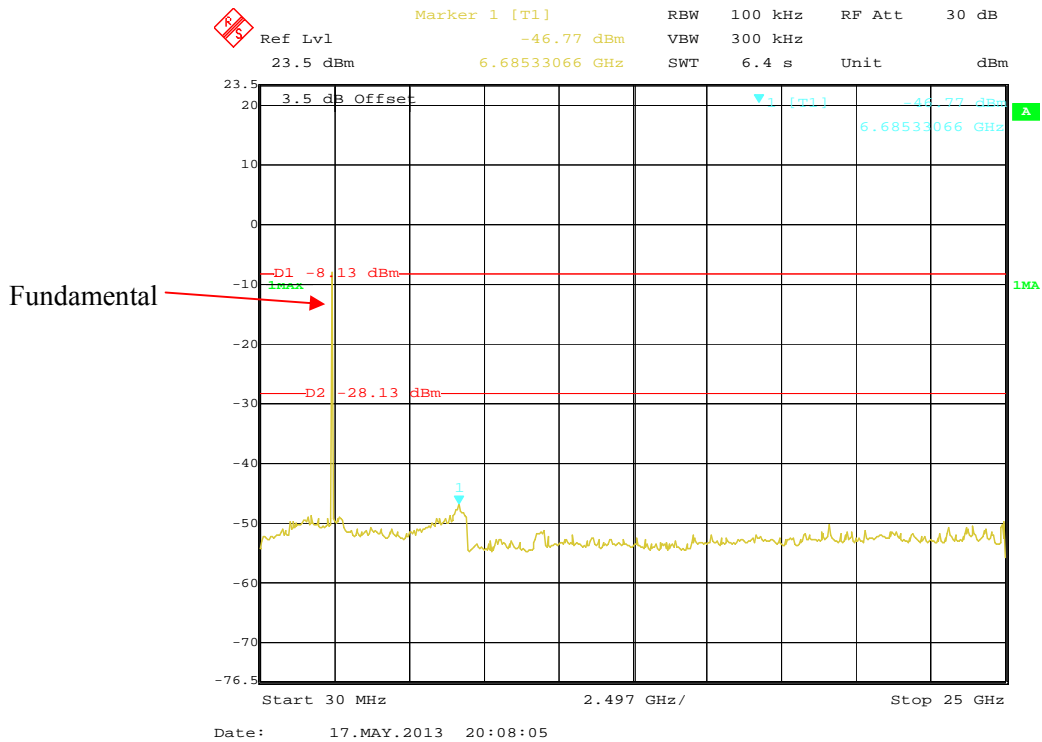
802.11n-HT20 Low Channel



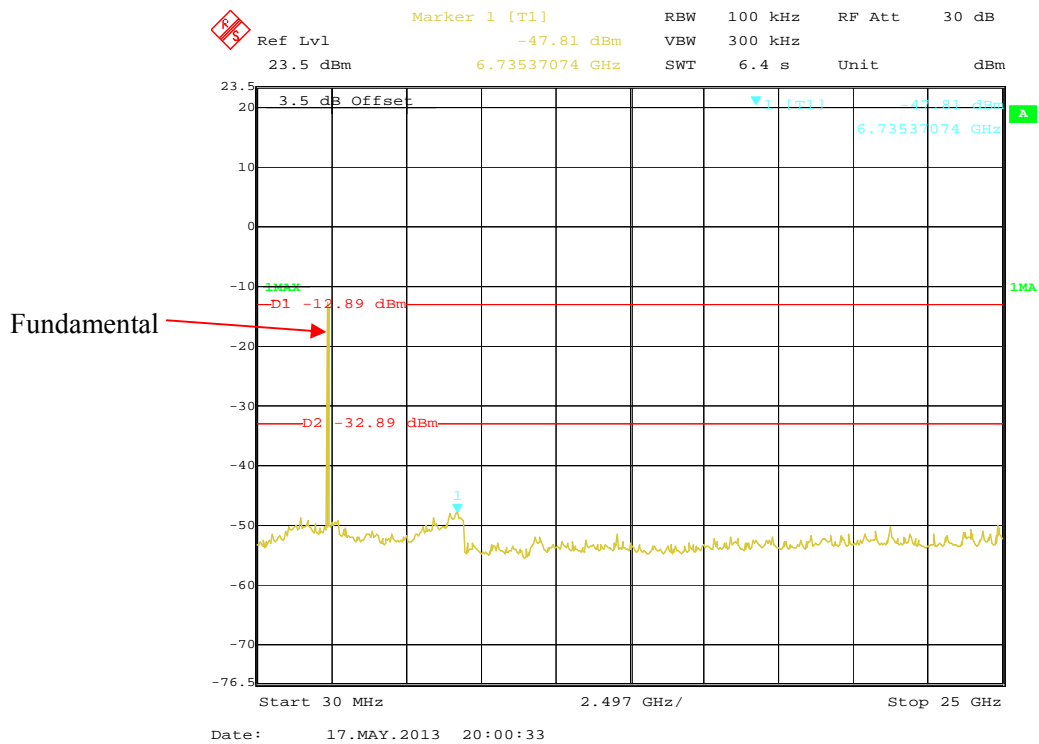
802.11n-HT20 Middle Channel



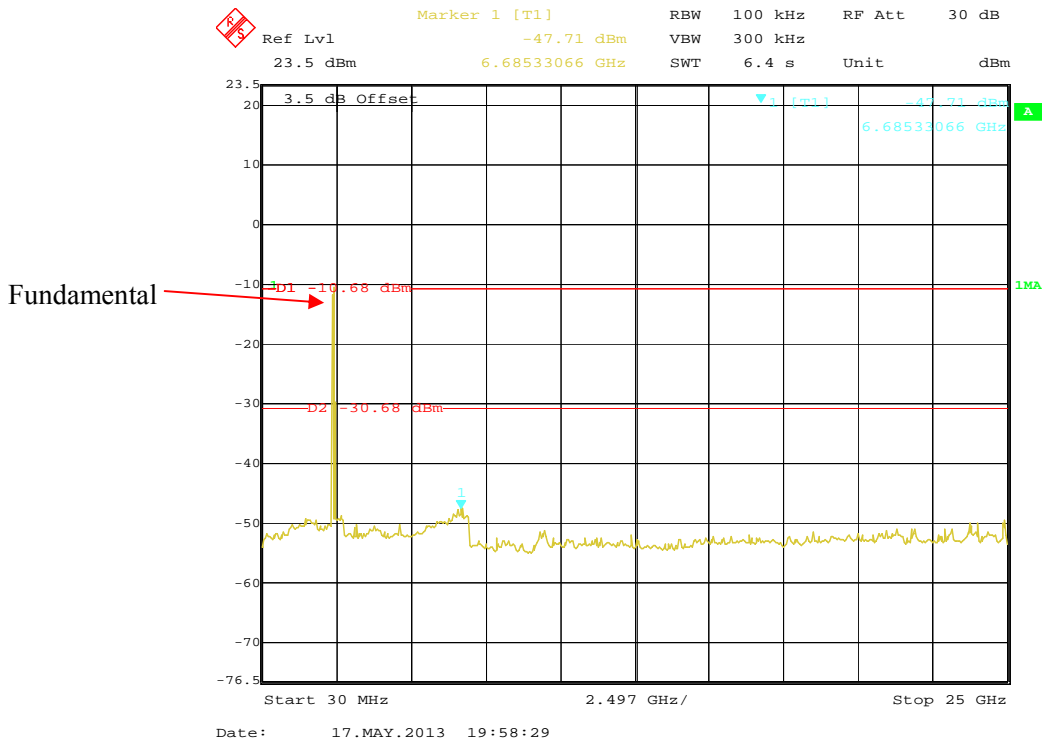
802.11n-HT20 High Channel



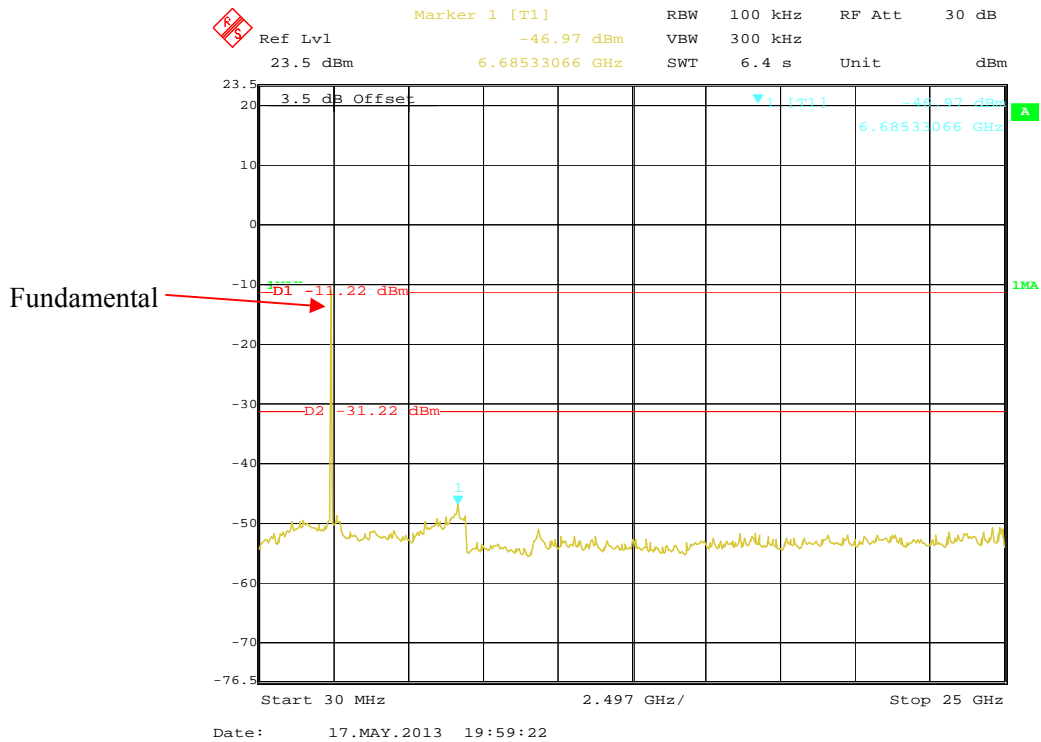
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



802.11n-HT40 High Channel



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

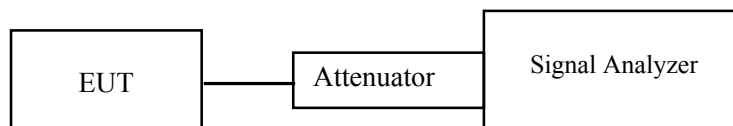
Applicable Standard

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.

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r01

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-----------------|--------|---------------|------------------|----------------------|
| Rohde & Schwarz | Signal Analyzer | FSIQ26 | 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 requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

| | |
|--------------------|-----------------|
| Temperature: | 24~25℃ |
| Relative Humidity: | 48~50% |
| ATM Pressure: | 100.0~100.1 kPa |

The testing was performed by Kyle Xu on 2013-05-15 and 2013-05-16.

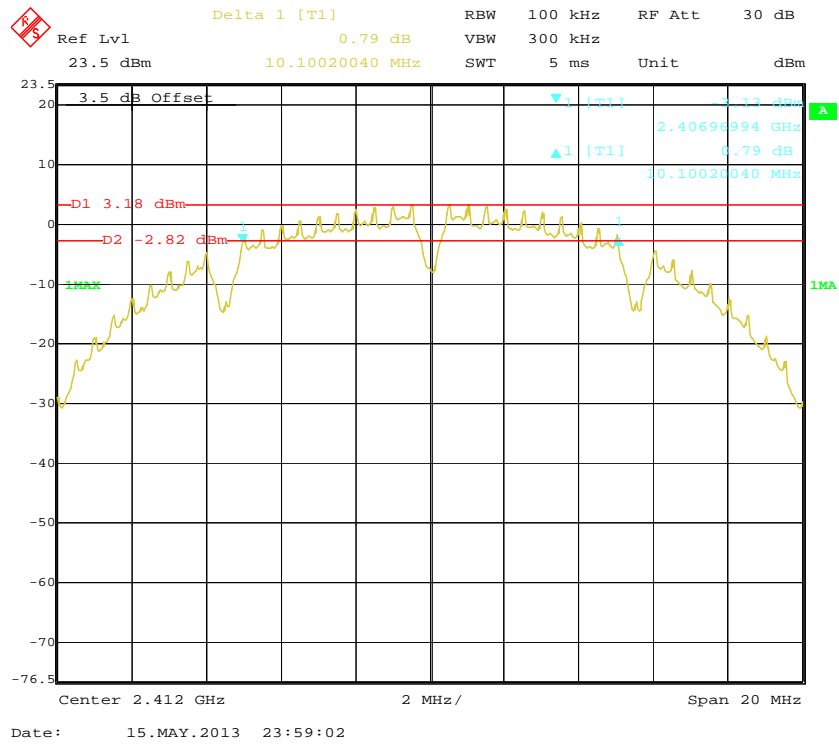
EUT operation mode: Transmitting

Test Result: Pass.

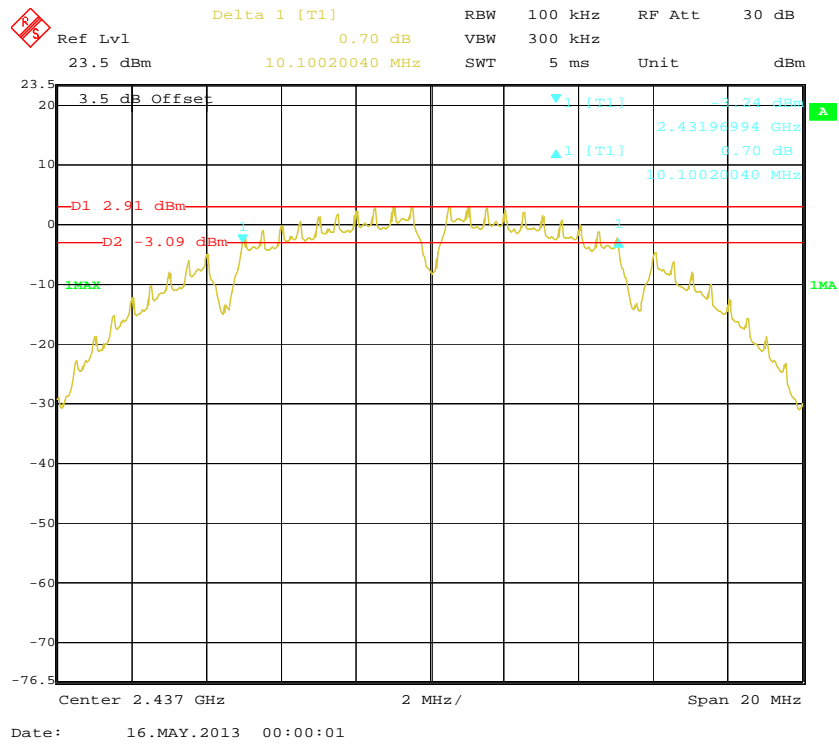
Please refer to the following tables and plots.

| Channel | Frequency (MHz) | Data Rate (Mbps) | 6dB Emission bandwidth (MHz) | Limit (kHz) | Result |
|--------------------------|-----------------|------------------|------------------------------|-------------|--------|
| 802.11b mode | | | | | |
| Low | 2412 | 1 | 10.10 | ≥ 500 | Pass |
| Middle | 2437 | 1 | 10.10 | ≥ 500 | Pass |
| High | 2462 | 1 | 10.10 | ≥ 500 | Pass |
| 802.11g mode | | | | | |
| Low | 2412 | 6 | 16.48 | ≥ 500 | Pass |
| Middle | 2437 | 6 | 16.48 | ≥ 500 | Pass |
| High | 2462 | 6 | 16.48 | ≥ 500 | Pass |
| 802.11n-HT20 mode | | | | | |
| Low | 2412 | MCS0 | 17.68 | ≥ 500 | Pass |
| Middle | 2437 | MCS0 | 17.68 | ≥ 500 | Pass |
| High | 2462 | MCS0 | 17.68 | ≥ 500 | Pass |
| 802.11n-HT40 mode | | | | | |
| Low | 2422 | MCS0 | 36.07 | ≥ 500 | Pass |
| Middle | 2437 | MCS0 | 36.07 | ≥ 500 | Pass |
| High | 2452 | MCS0 | 36.07 | ≥ 500 | Pass |

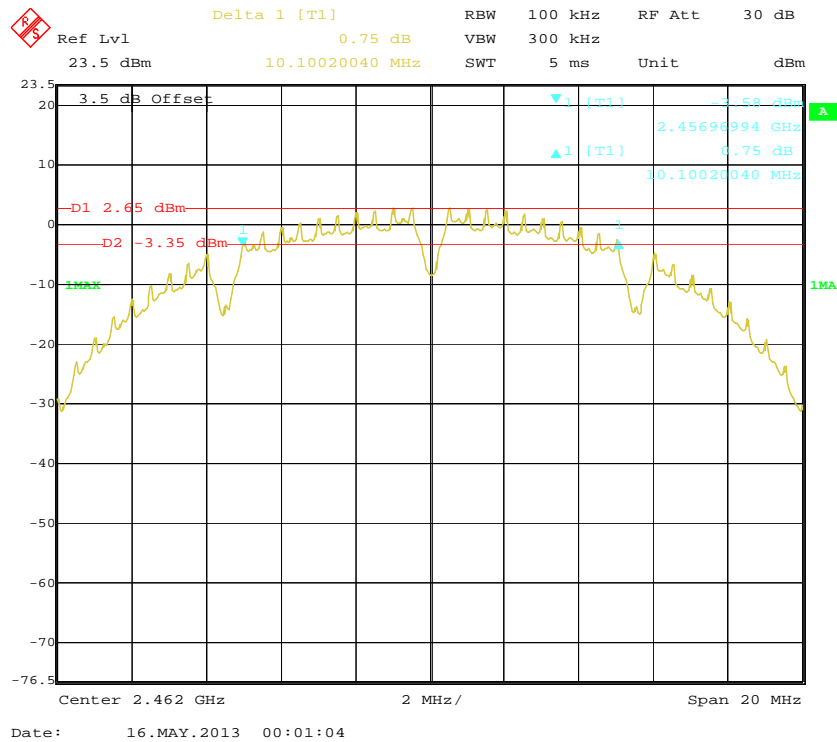
802.11b Low Channel



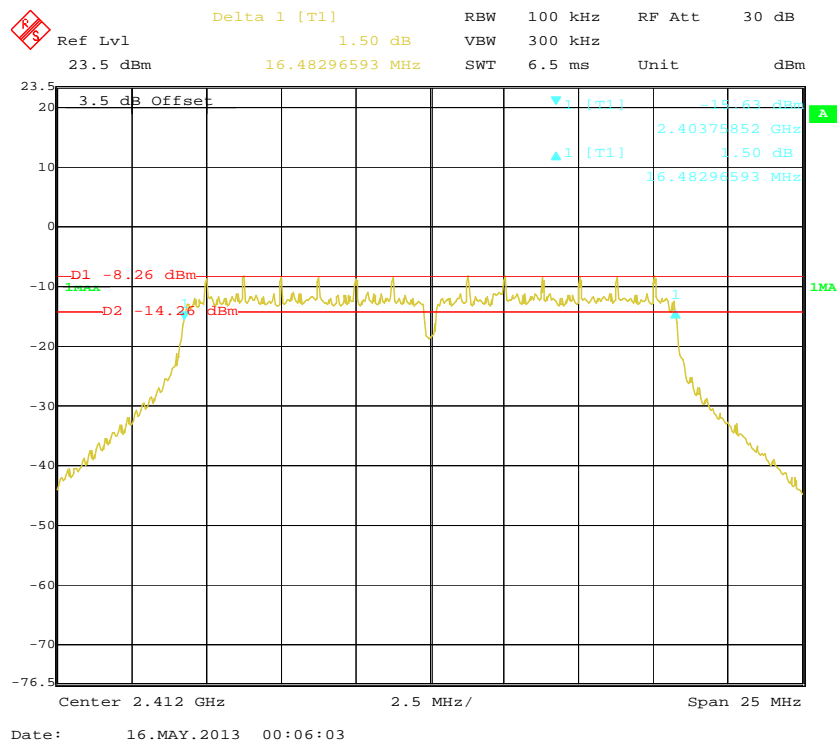
802.11b Middle Channel



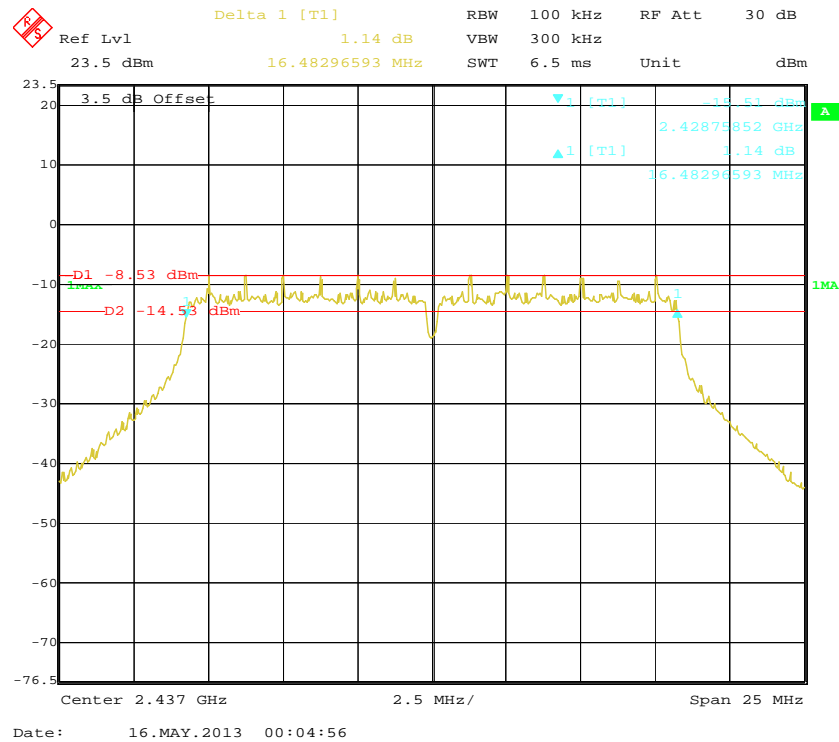
802.11b High Channel



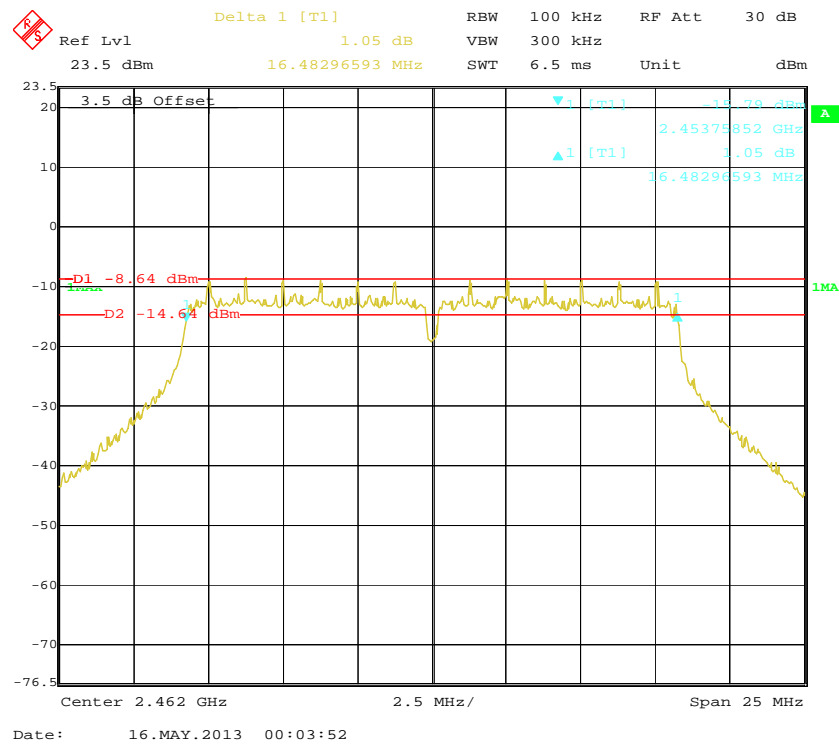
802.11g Low Channel



802.11g Middle Channel



802.11g High Channel



Ref Lvl 23.5 dBm Delta 1 [T1] -0.02 dB RBW 100 kHz VBW 300 kHz RF Att 30 dB Unit dBm 3.5 dB Offset

23.5
20
10
0
-10
-20
-30
-40
-50
-60
-70
-76.5

3.5 dB Offset

D1 -9.11 dBm
D2 -15.11 dBm

1 [T1] -15.61 dBm
2.40319238 GHz
-0.02 dB
17.67535070 MHz

Center 2.412 GHz 3 MHz/ Span 30 MHz

Date: 15.MAY.2013 23:47:34

Delta 1 [T1]

Ref Lvl 23.5 dBm

2.53 dB

17.67535070 MHz

RBW 100 kHz

VBW 300 kHz

RF Att 30 dB

SWT 7.5 ms

Unit dBm

3.5 dB Offset

D1 -9.21 dBm

D2 -15.21 dBm

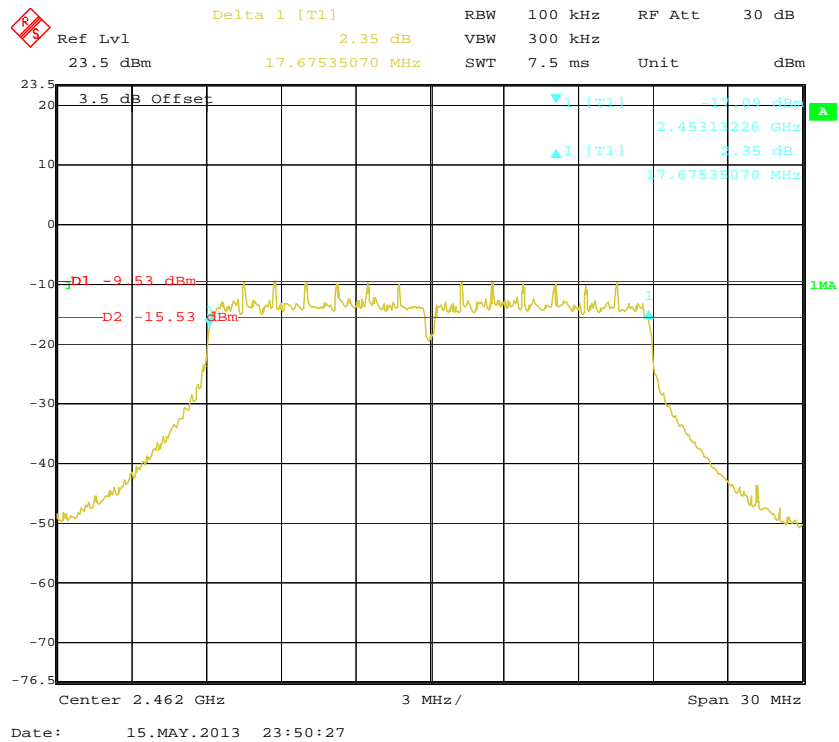
Center 2.437 GHz

3 MHz/

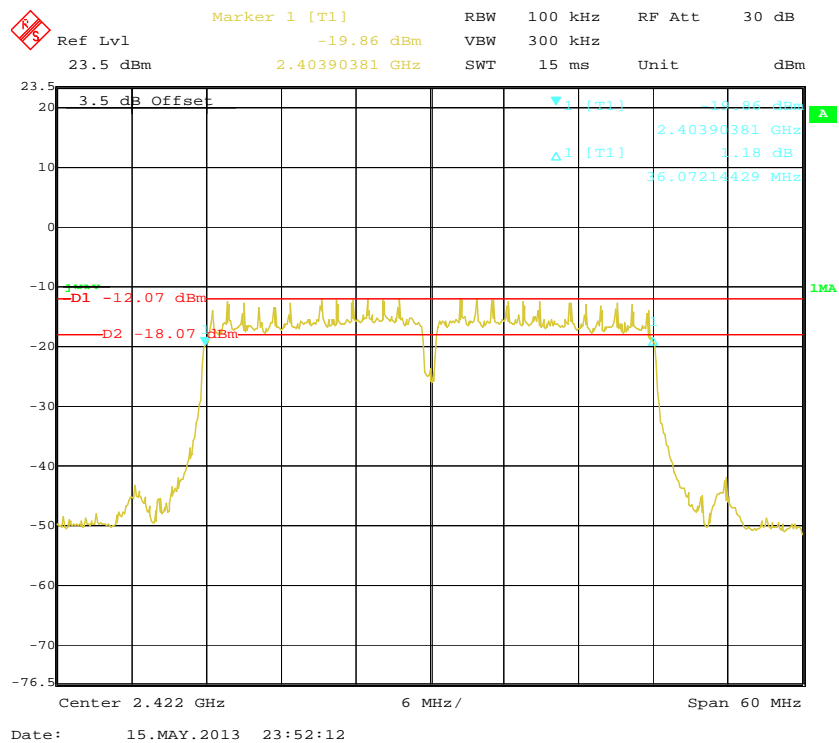
Span 30 MHz

Date: 15.MAY.2013 23:49:04

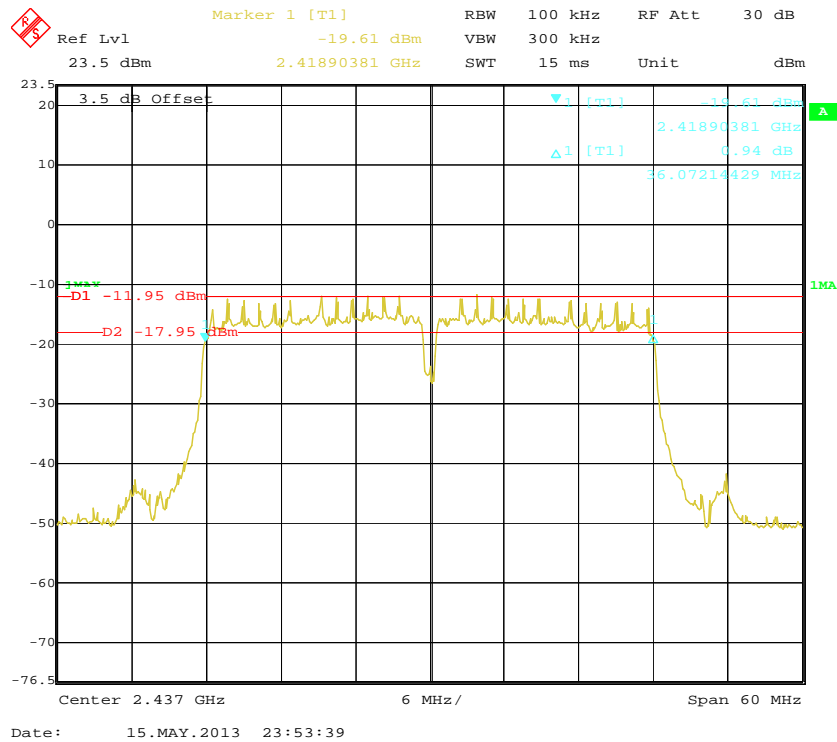
802.11n-HT20 High Channel



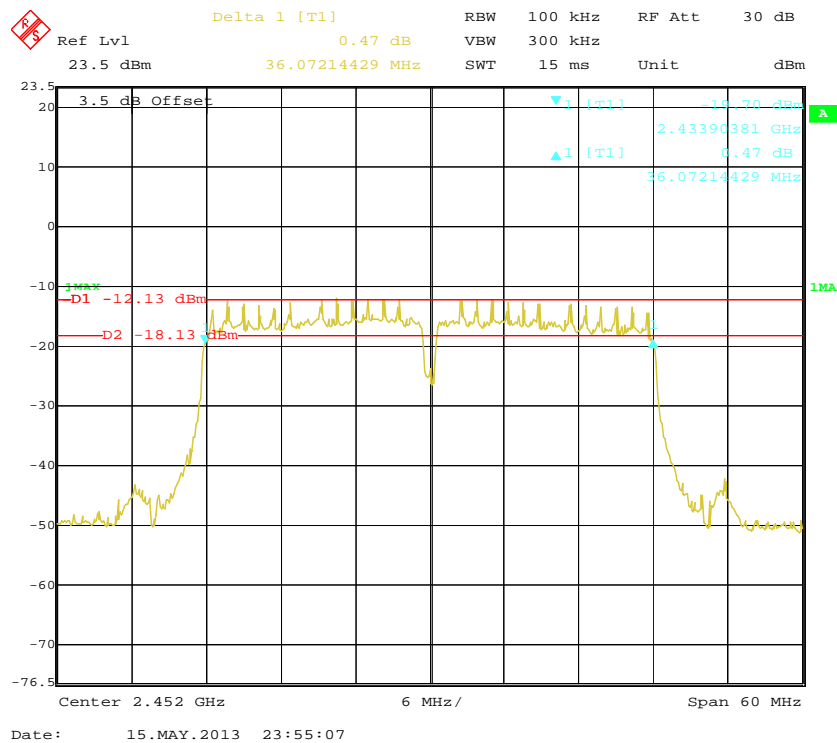
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



802.11n-HT40 High Channel



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

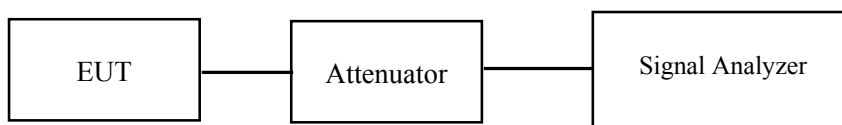
Applicable Standard

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

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r01

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI Test Receiver.
3. Add a correction factor to the display.



Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-----------------|--------|---------------|------------------|----------------------|
| Rohde & Schwarz | Signal Analyzer | FSIQ26 | 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 requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

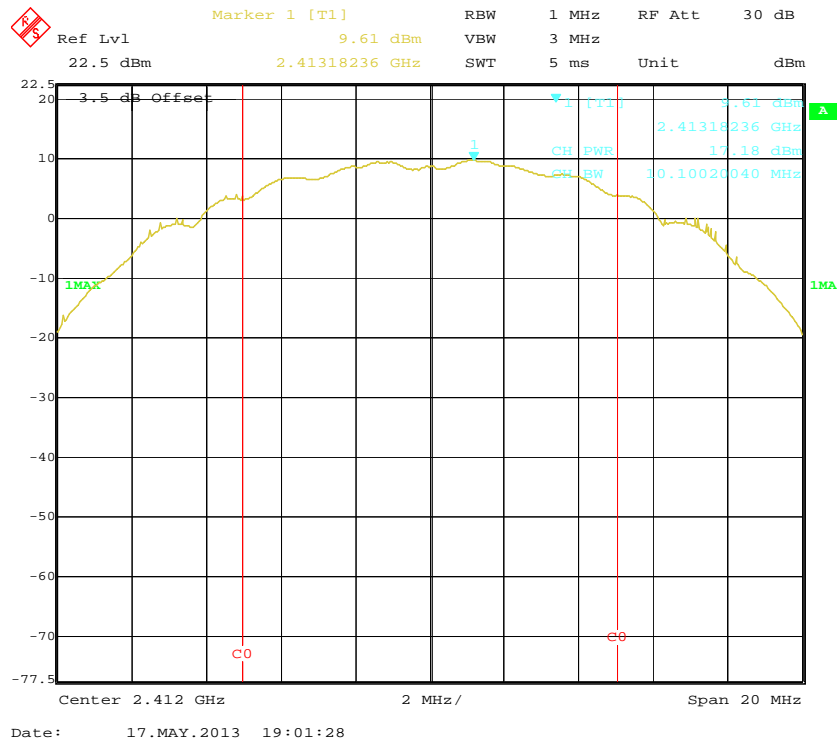
| | |
|--------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 48% |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Kyle Xu on 2013-05-17.

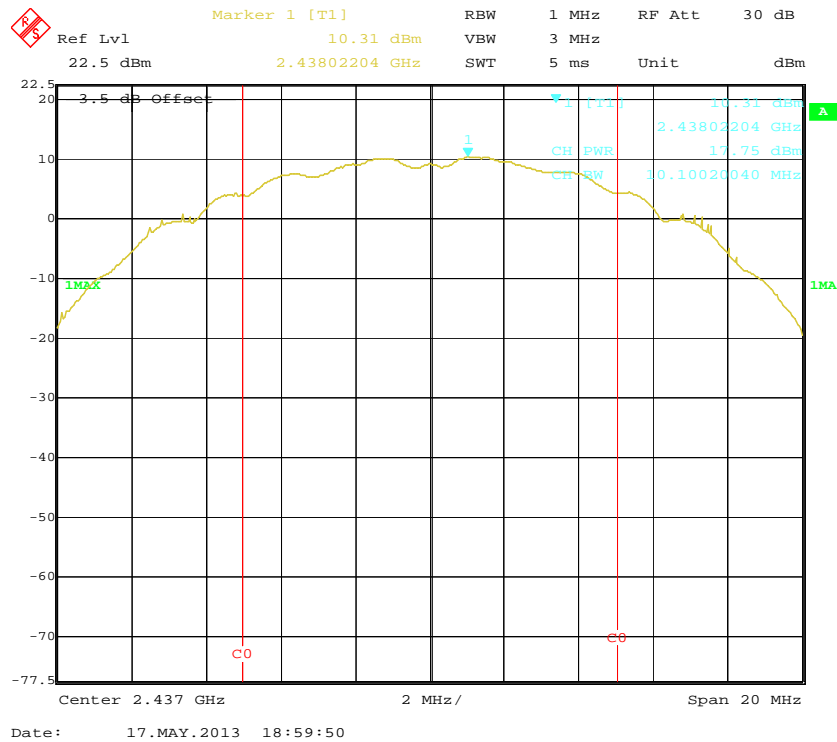
EUT operation mode: Transmitting

| Channel | Frequency (MHz) | Data Rate (Mbps) | Conducted Output Power (dBm) | Limit (dBm) | Result |
|--------------------------|-----------------|------------------|------------------------------|-------------|--------|
| 802.11b mode | | | | | |
| Low | 2412 | 1 | 17.18 | 30 | Pass |
| Middle | 2437 | 1 | 17.75 | 30 | Pass |
| High | 2462 | 1 | 17.41 | 30 | Pass |
| 802.11g mode | | | | | |
| Low | 2412 | 6 | 13.04 | 30 | Pass |
| Middle | 2437 | 6 | 13.11 | 30 | Pass |
| High | 2462 | 6 | 13.00 | 30 | Pass |
| 802.11n-HT20 mode | | | | | |
| Low | 2412 | MCS0 | 12.26 | 30 | Pass |
| Middle | 2437 | MCS0 | 12.30 | 30 | Pass |
| High | 2462 | MCS0 | 11.95 | 30 | Pass |
| 802.11n-HT40 mode | | | | | |
| Low | 2422 | MCS0 | 12.01 | 30 | Pass |
| Middle | 2437 | MCS0 | 12.00 | 30 | Pass |
| High | 2452 | MCS0 | 11.88 | 30 | Pass |

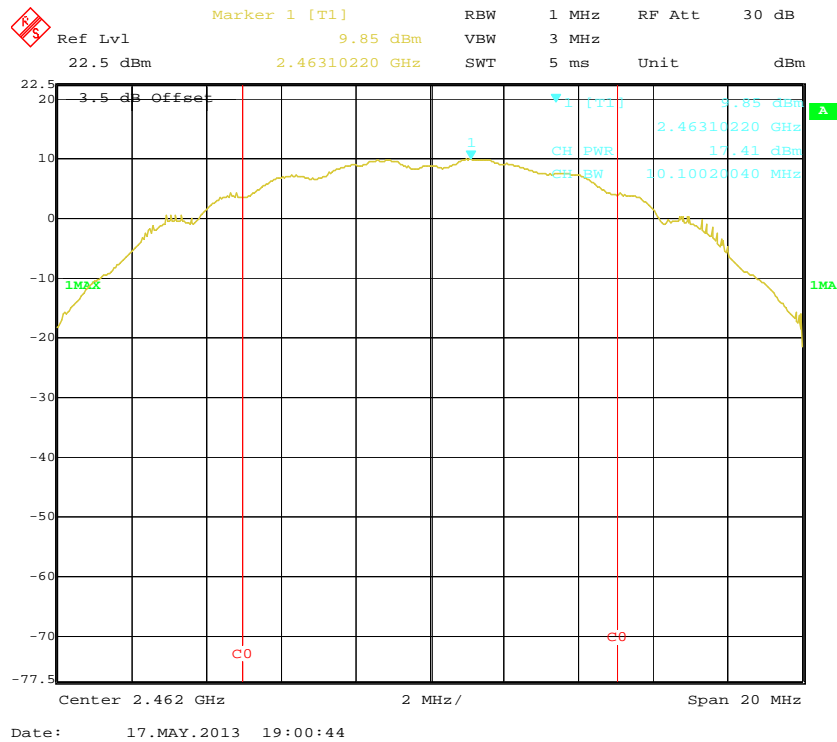
802.11b RF Output Power, Low Channel



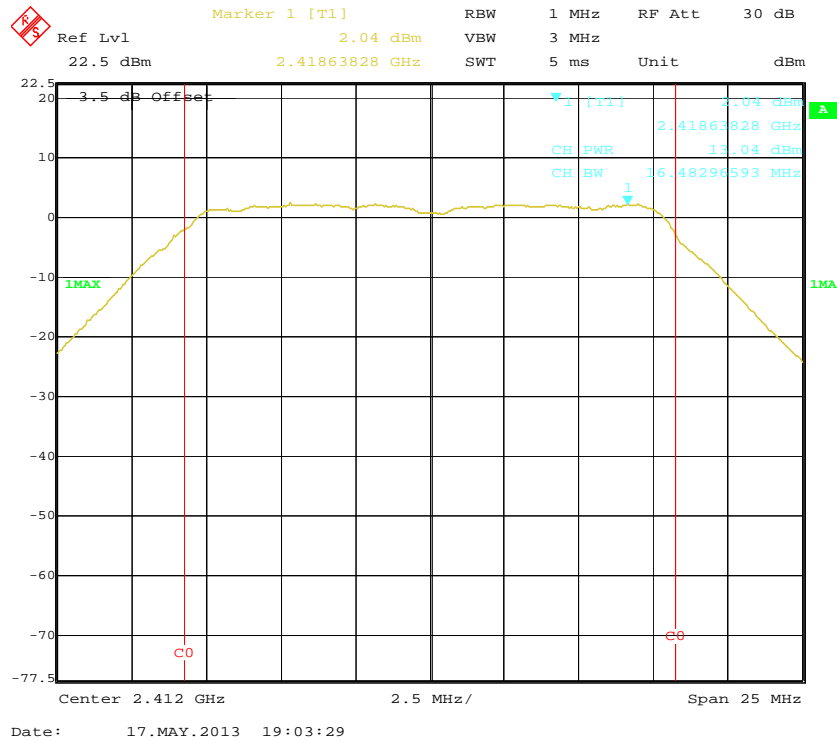
802.11b RF Output Power, Middle Channel



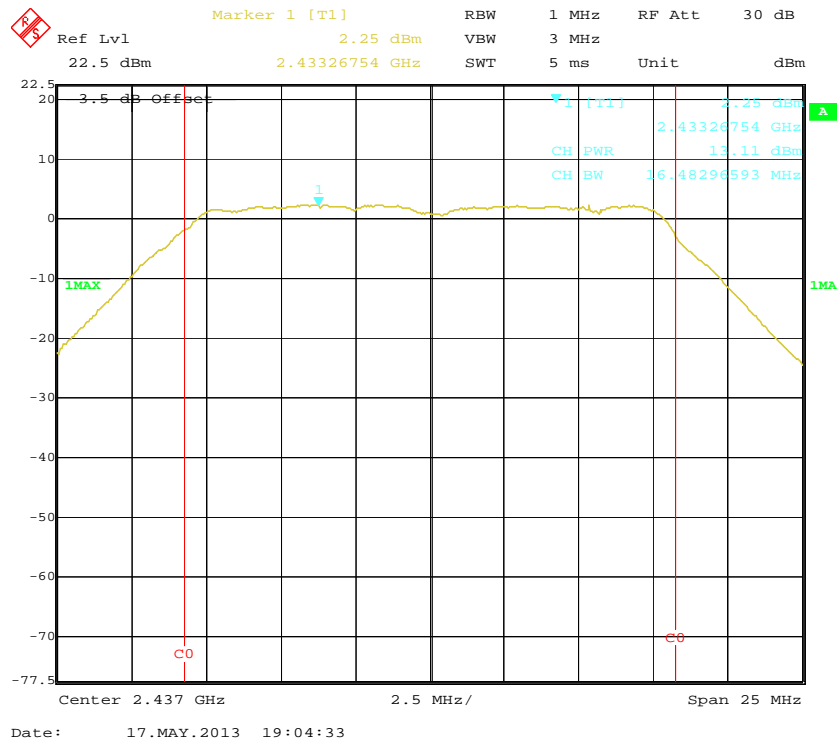
802.11b RF Output Power, High Channel



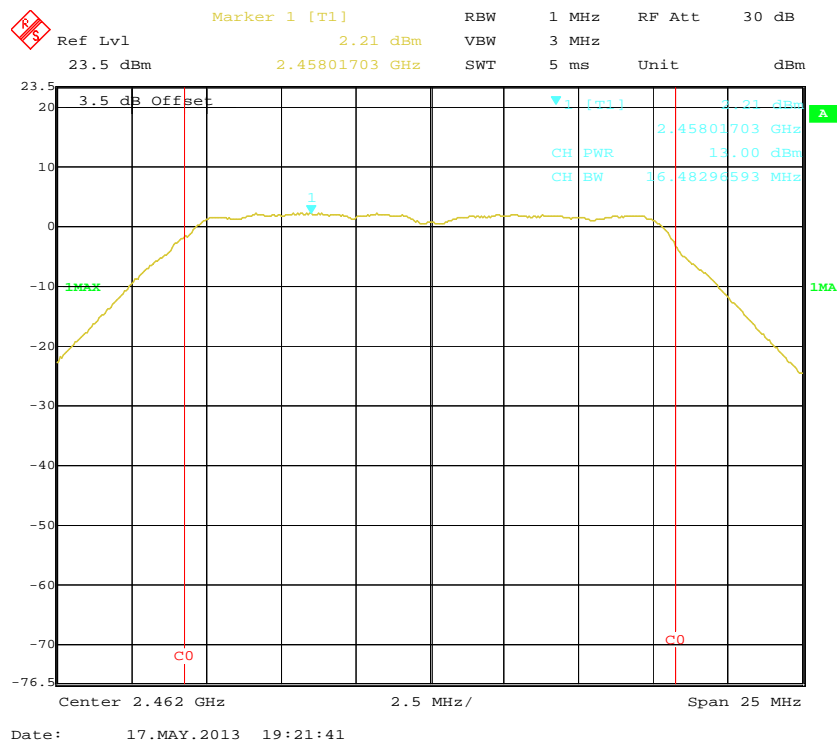
802.11g RF Output Power, Low Channel



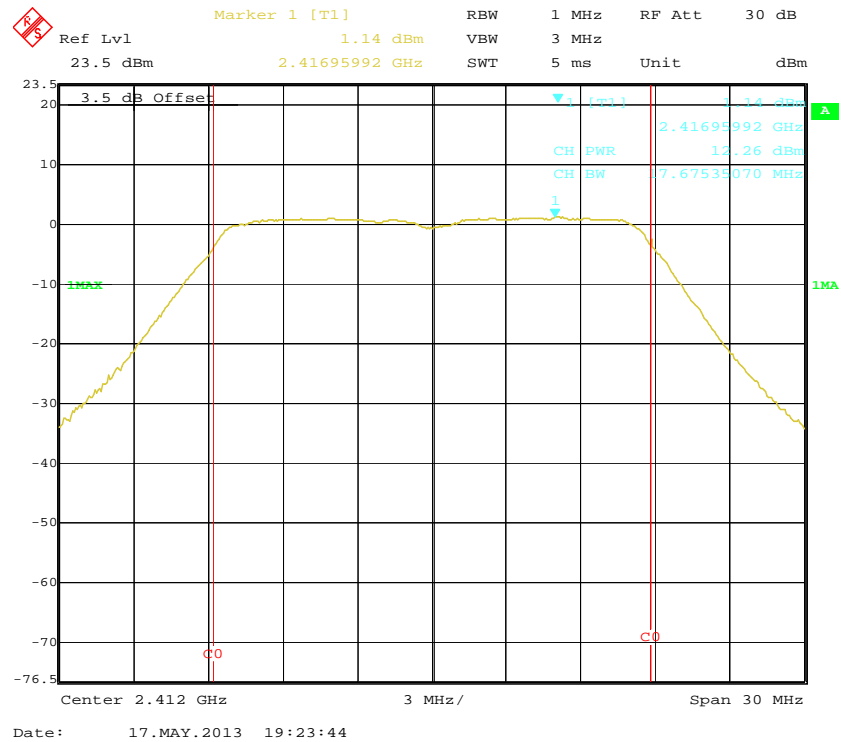
802.11g RF Output Power, Middle Channel



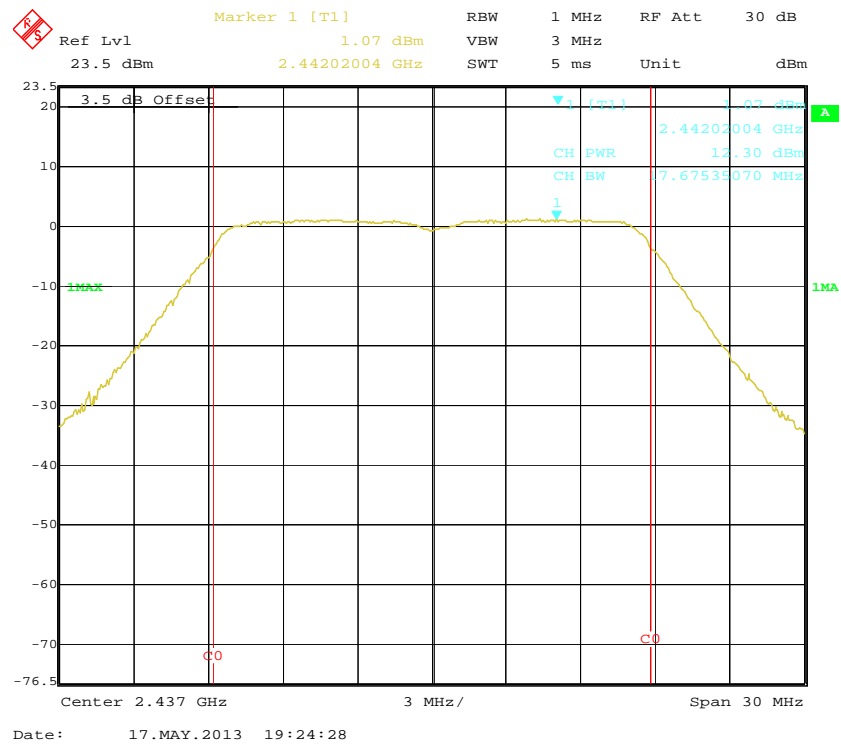
802.11g RF Output Power, High Channel



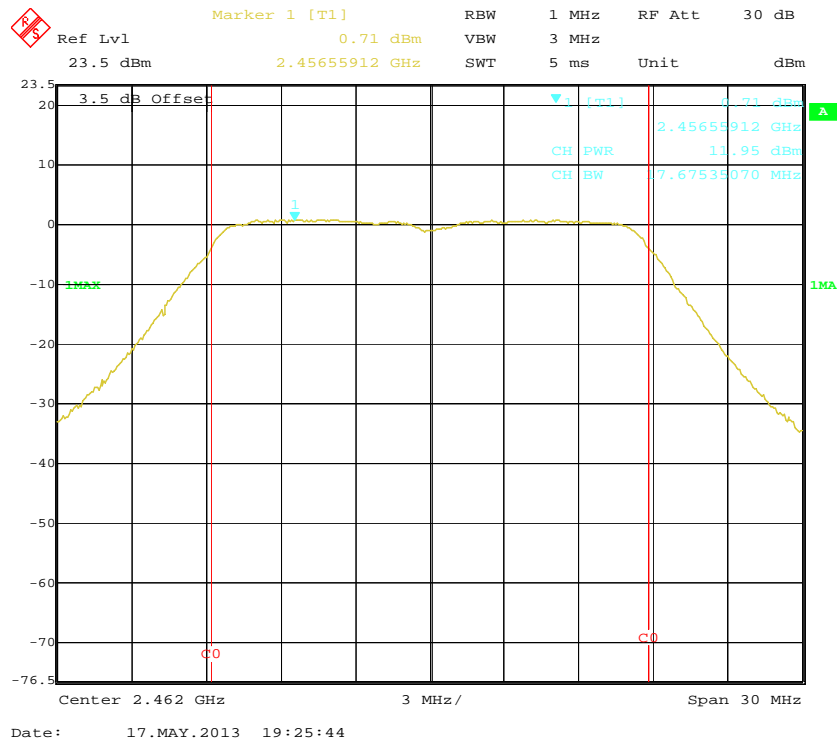
802.11n-HT20 RF Output Power, Low Channel



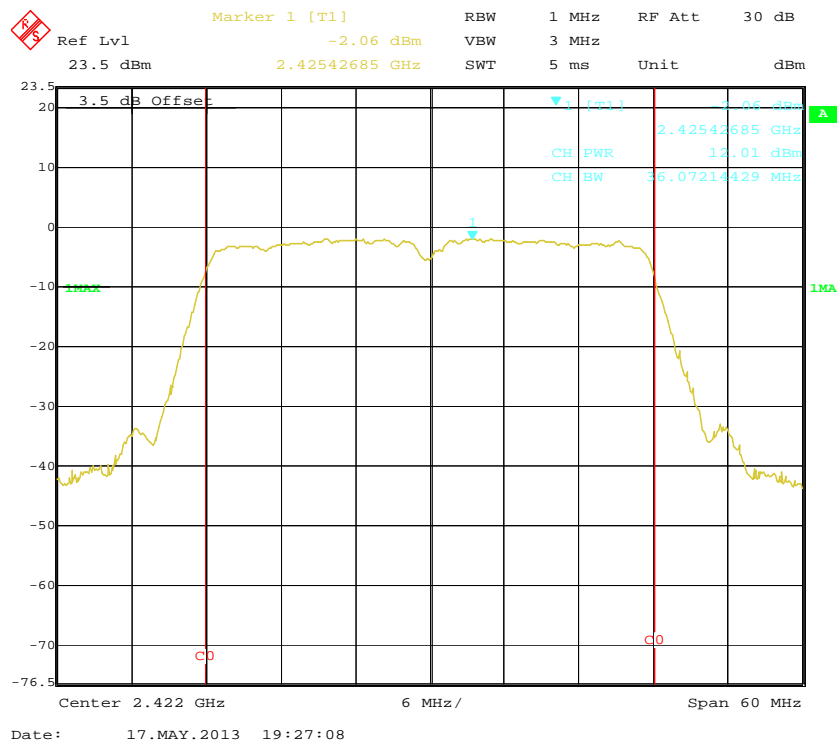
802.11n-HT20 RF Output Power, Middle Channel



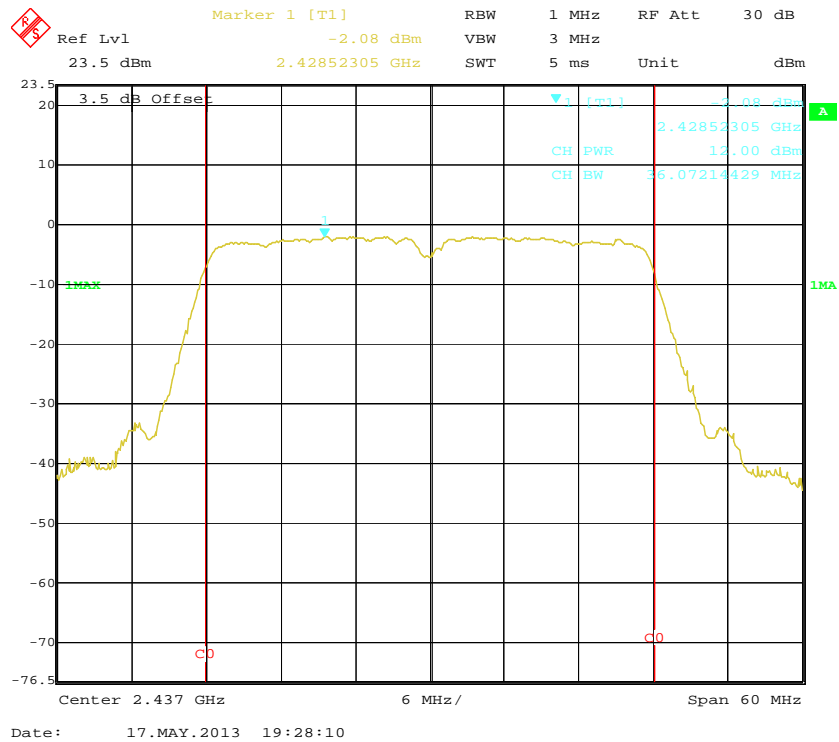
802.11n-HT20 RF Output Power, High Channel



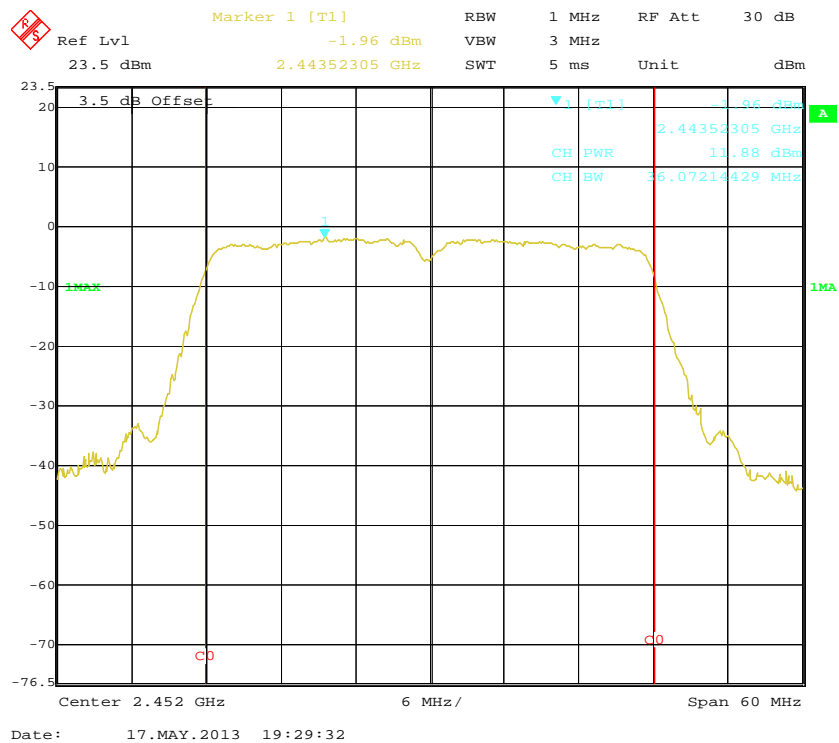
802.11n-HT40 RF Output Power, Low Channel



802.11n-HT20 RF Output Power, Middle Channel



802.11n-HT40 RF Output Power, High Channel



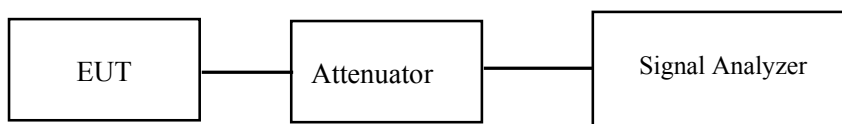
FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE**Applicable Standard**

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

According to KDB 558074 D01 DTS Meas Guidance v03r01

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

**Test Equipment List and Details**

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-----------------|--------|---------------|------------------|----------------------|
| Rohde & Schwarz | Signal Analyzer | FSIQ26 | 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 requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

| | |
|---------------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 48% |
| ATM Pressure: | 100.0 kPa |

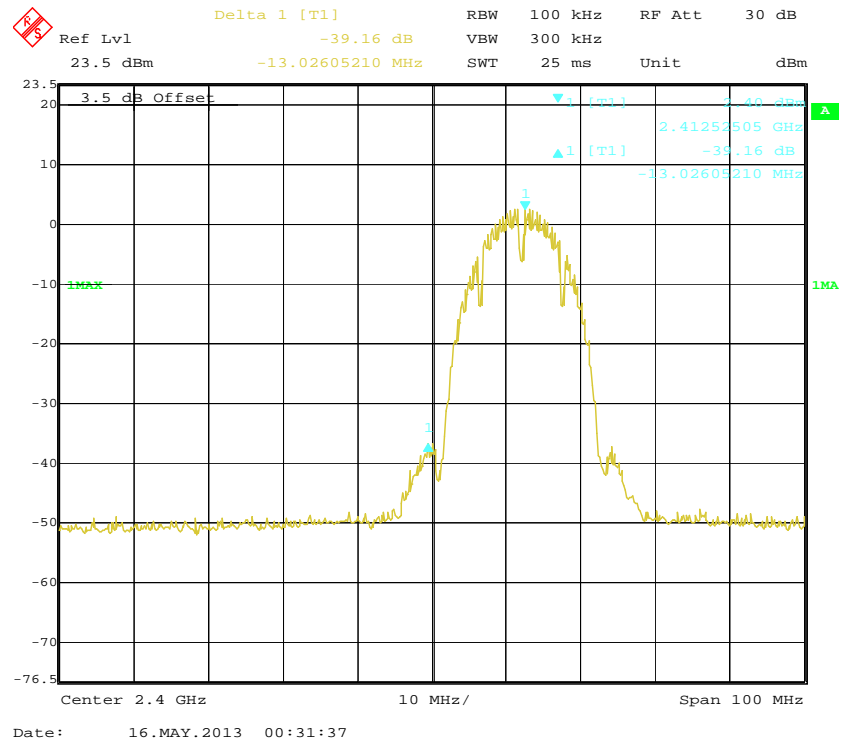
The testing was performed by Kyle Xu on 2013-05-16.

EUT operation mode: Transmitting

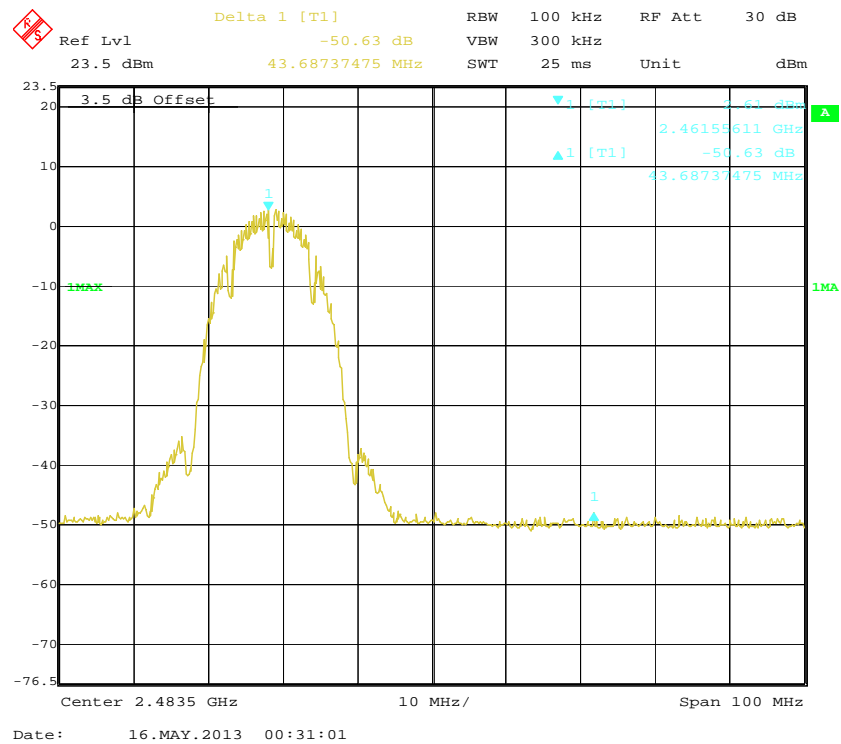
Test Result: *Compliance.* Please refer to following table and plots.

| Frequency Band | Delta Peak to band emission (dBc) | >Delta Limit (dBc) | Result |
|--------------------------|-----------------------------------|--------------------|--------|
| 802.11b mode | | | |
| Left Band | 39.16 | 20 | Pass |
| Right Band | 50.63 | 20 | Pass |
| 802.11g mode | | | |
| Left Band | 32.61 | 20 | Pass |
| Right Band | 39.45 | 20 | Pass |
| 802.11n-HT20 mode | | | |
| Left Band | 33.47 | 20 | Pass |
| Right Band | 38.36 | 20 | Pass |
| 802.11n-HT40 mode | | | |
| Left Band | 30.84 | 20 | Pass |
| Right Band | 36.40 | 20 | Pass |

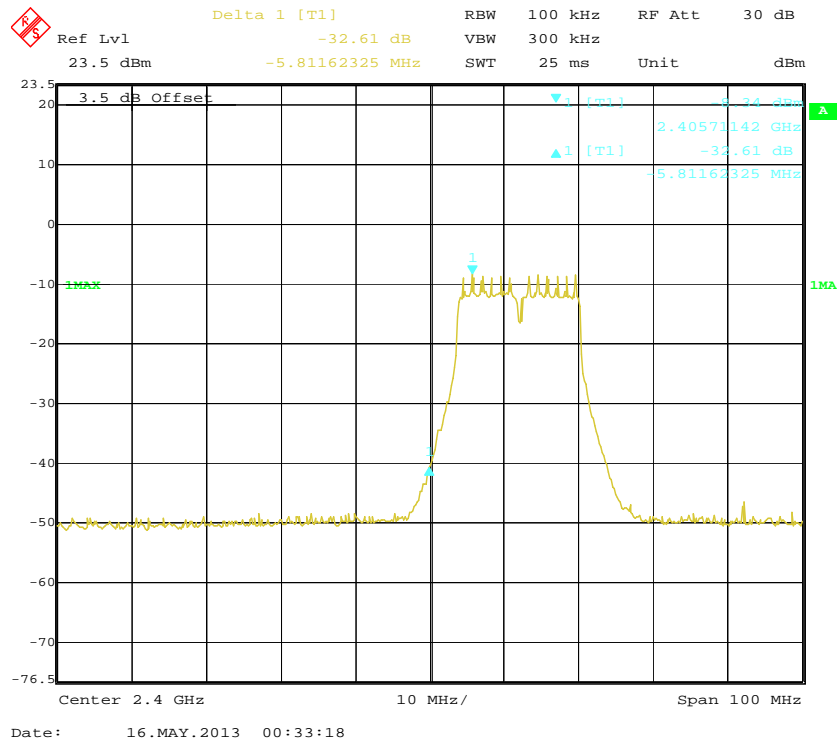
802.11b Band Edge, Left Side



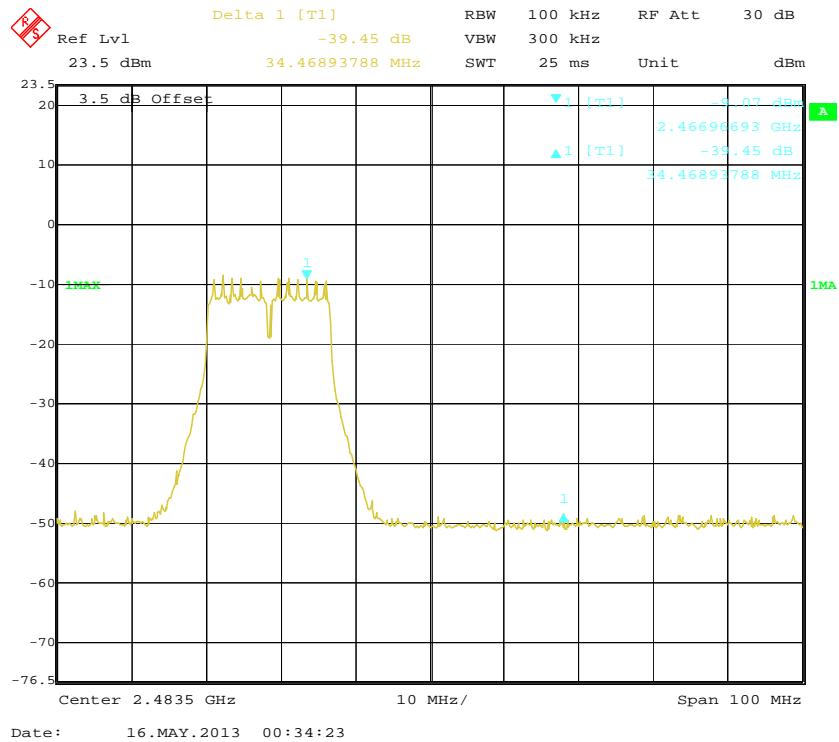
802.11b Band Edge, Right Side



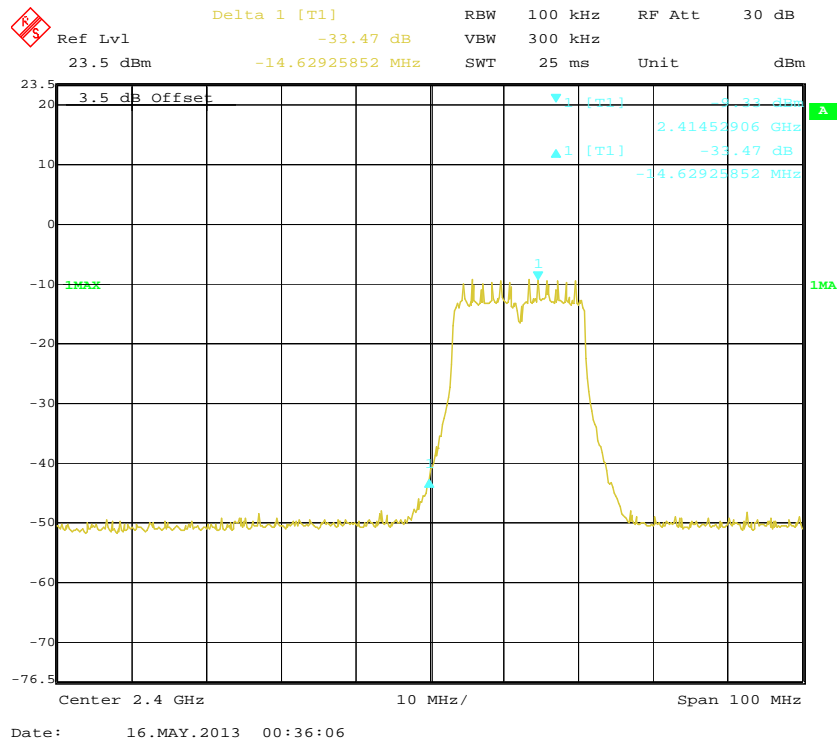
802.11g Band Edge, Left Side



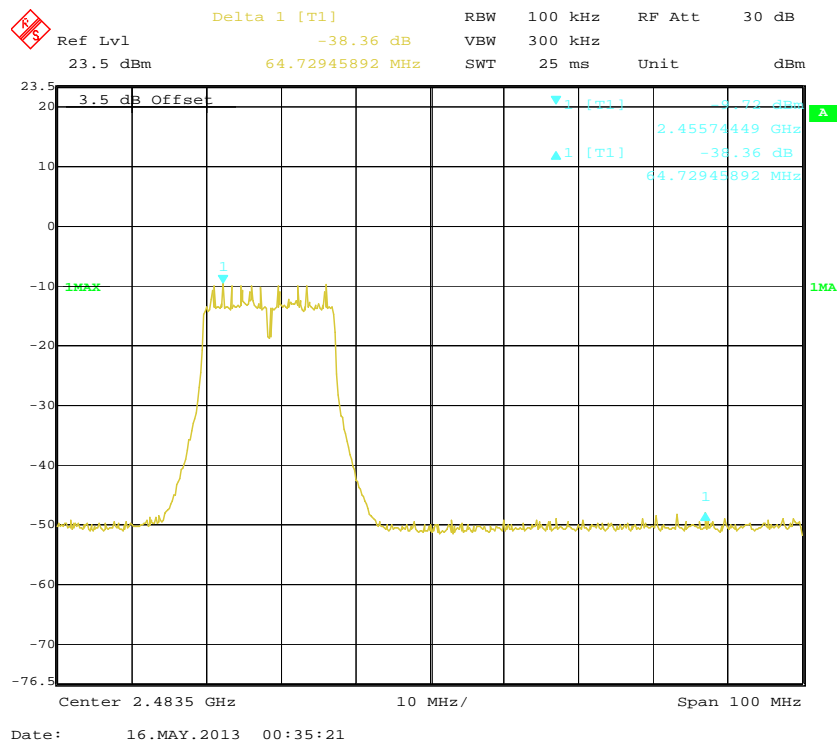
802.11g Band Edge, Right Side



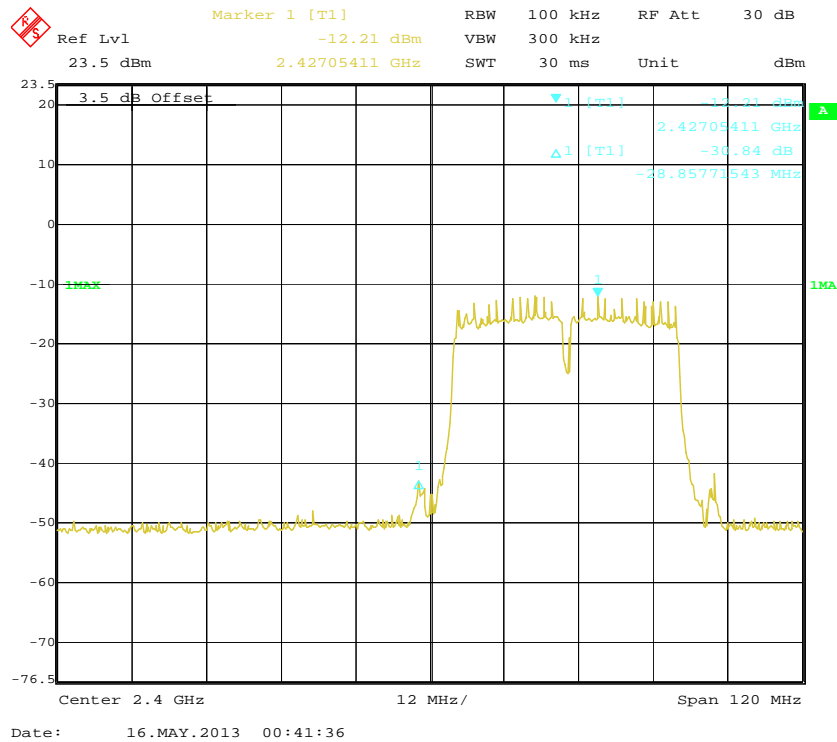
802.11n-HT20 Band Edge, Left Side



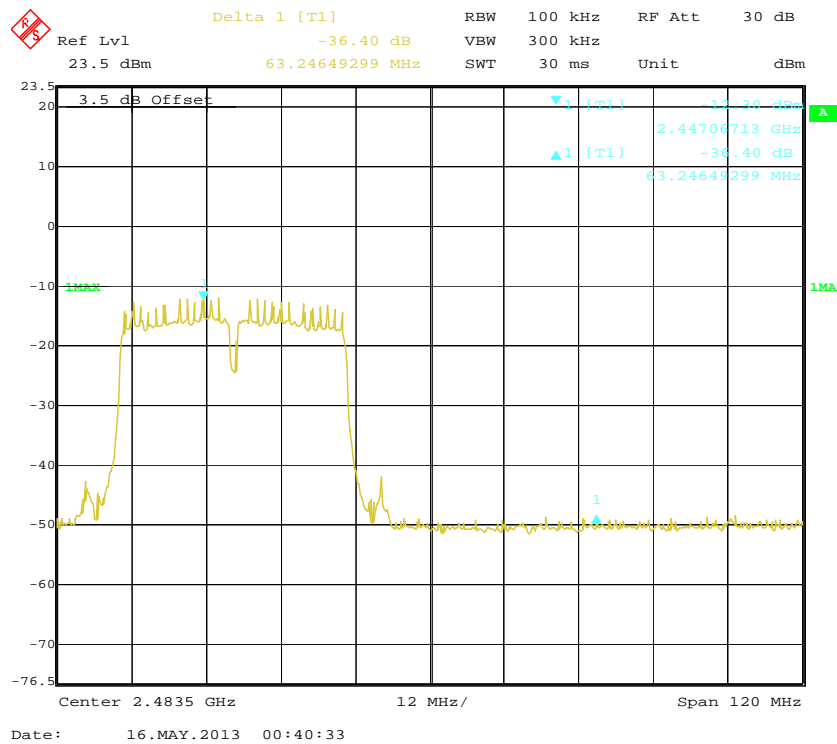
802.11n-HT20 Band Edge, Right Side



802.11n-HT40 Band Edge, Left Side



802.11n-HT40 Band Edge, Right Side



FCC §15.247(e) - POWER SPECTRAL DENSITY

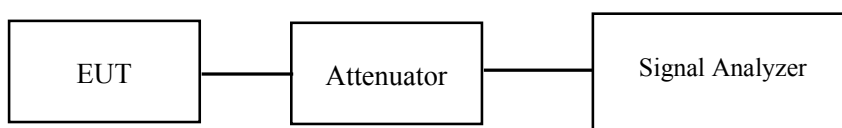
Applicable Standard

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.

Test Procedure

According to KDB 558074 D01 DTS Meas Guidance v03r01

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



Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-----------------|--------|---------------|------------------|----------------------|
| Rohde & Schwarz | Signal Analyzer | FSIQ26 | 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 requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

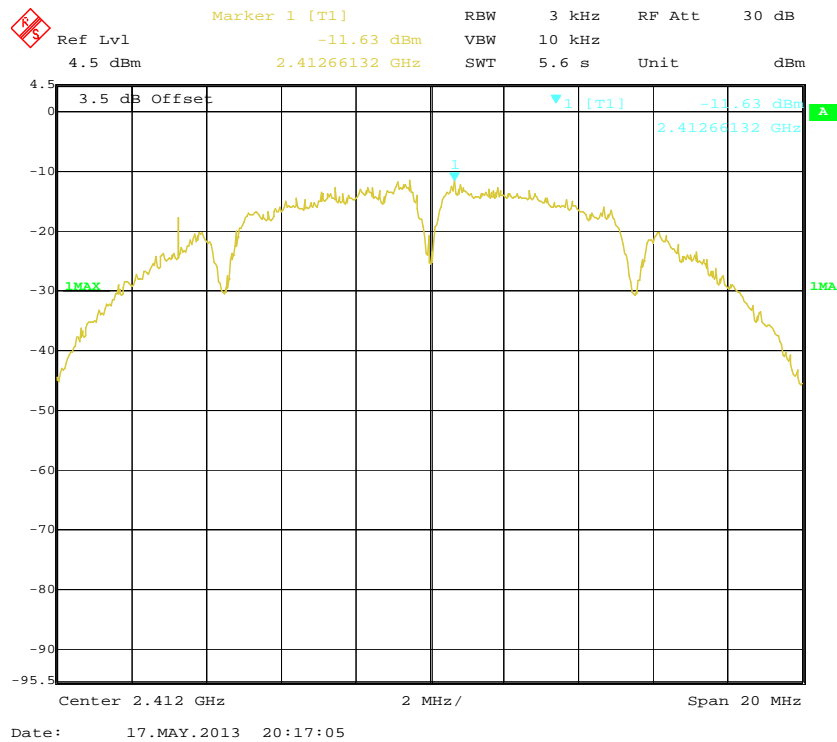
| | |
|--------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 48% |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Kyle Xu on 2013-05-17.

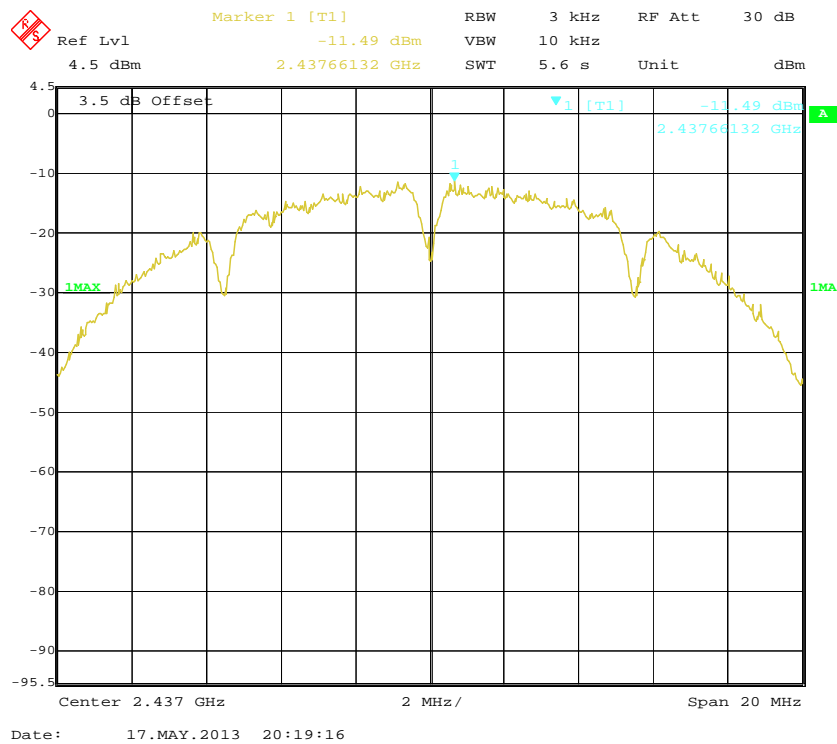
*EUT operation mode: Transmitting***Test Result:** Pass

| Channel | Frequency (MHz) | Data Rate (Mbps) | Power spectral density (dBm/3 kHz) | ≤Limit (dBm) |
|--------------------------|-----------------|------------------|------------------------------------|--------------|
| 802.11b mode | | | | |
| Low | 2412 | 1 | -11.63 | 8 |
| Middle | 2437 | 1 | -11.49 | 8 |
| High | 2462 | 1 | -12.12 | 8 |
| 802.11g mode | | | | |
| Low | 2412 | 6 | -22.55 | 8 |
| Middle | 2437 | 6 | -22.66 | 8 |
| High | 2462 | 6 | -23.88 | 8 |
| 802.11n-HT20 mode | | | | |
| Low | 2412 | MCS0 | -23.15 | 8 |
| Middle | 2437 | MCS0 | -23.19 | 8 |
| High | 2462 | MCS0 | -23.84 | 8 |
| 802.11n-HT40 mode | | | | |
| Low | 2422 | MCS0 | -25.69 | 8 |
| Middle | 2437 | MCS0 | -25.40 | 8 |
| High | 2452 | MCS0 | -25.84 | 8 |

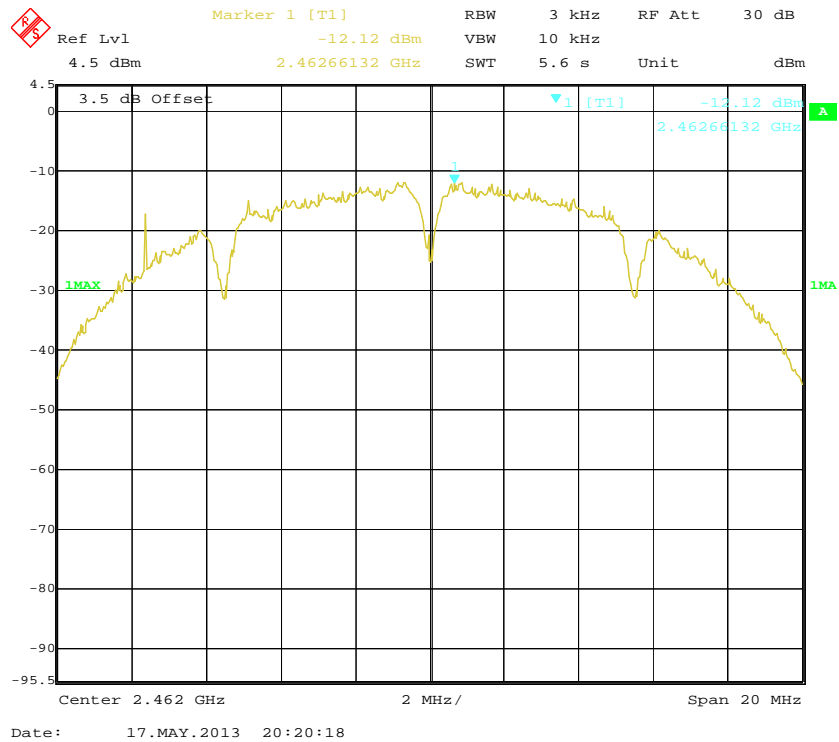
Power Spectral Density, 802.11b Low Channel



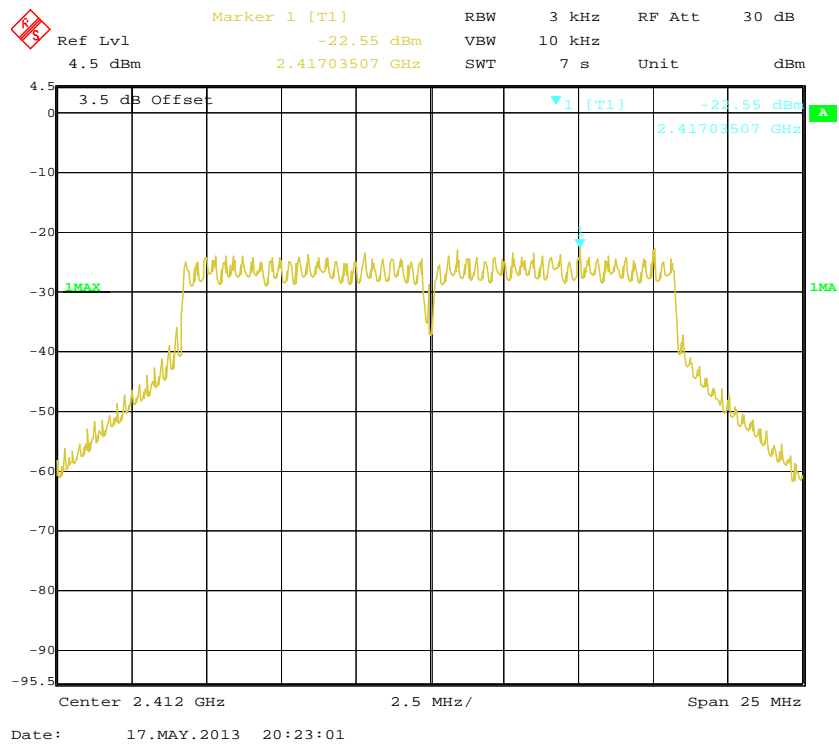
Power Spectral Density, 802.11b Middle Channel



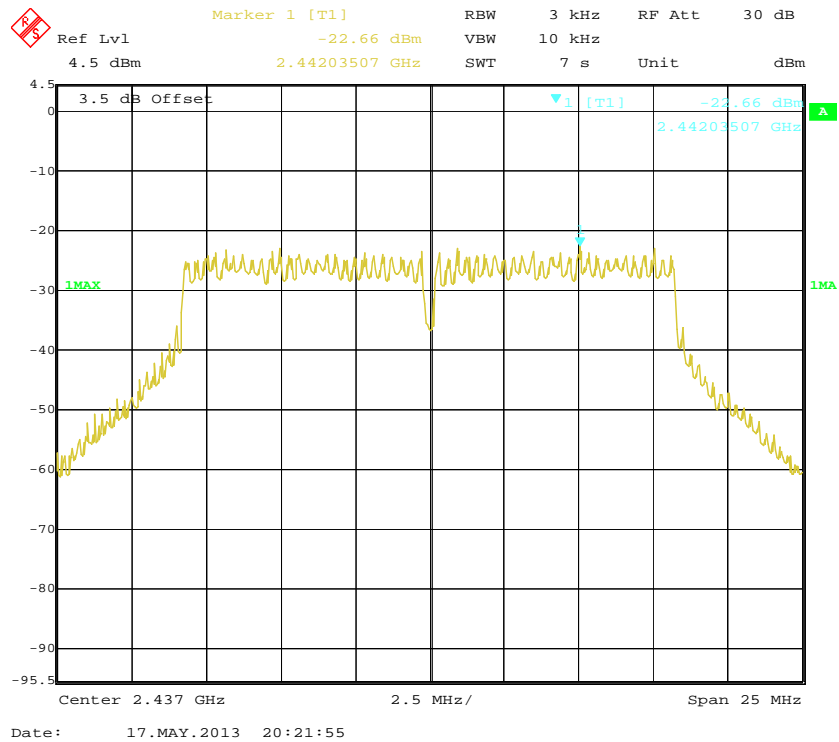
Power Spectral Density, 802.11b High Channel



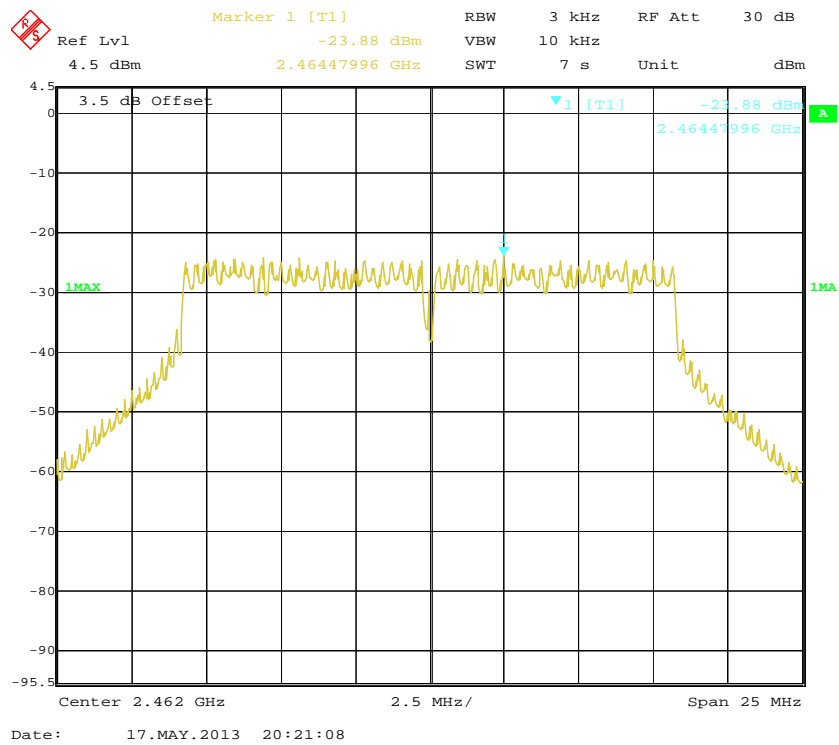
Power Spectral Density, 802.11g Low Channel



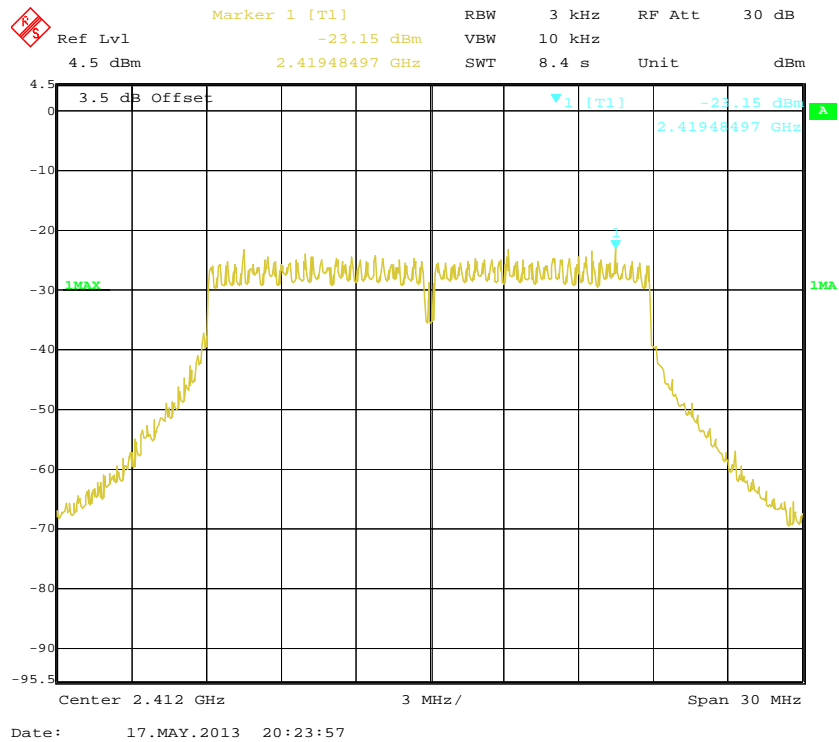
Power Spectral Density, 802.11g Middle Channel



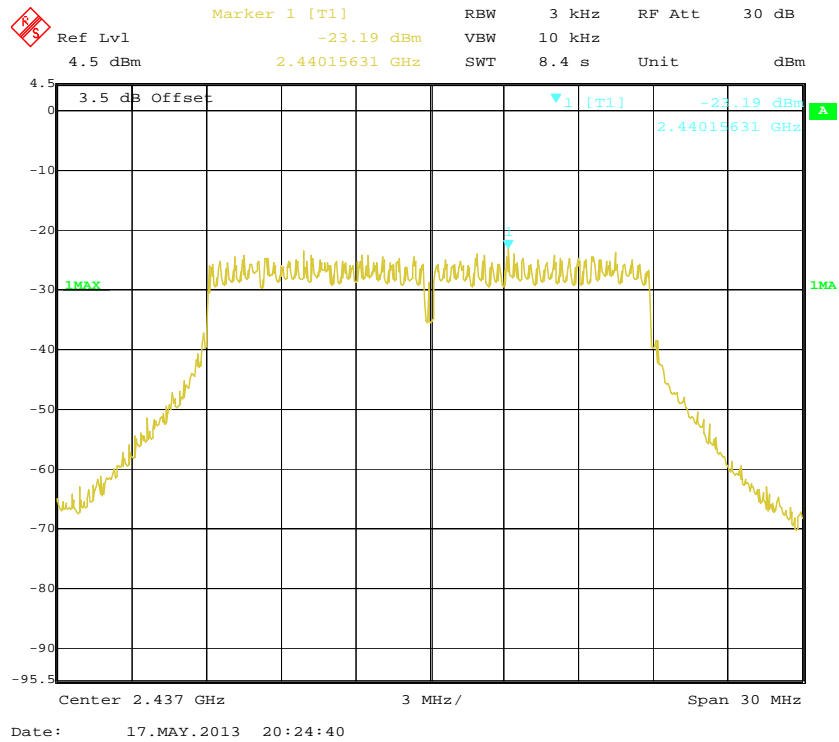
Power Spectral Density, 802.11g High Channel

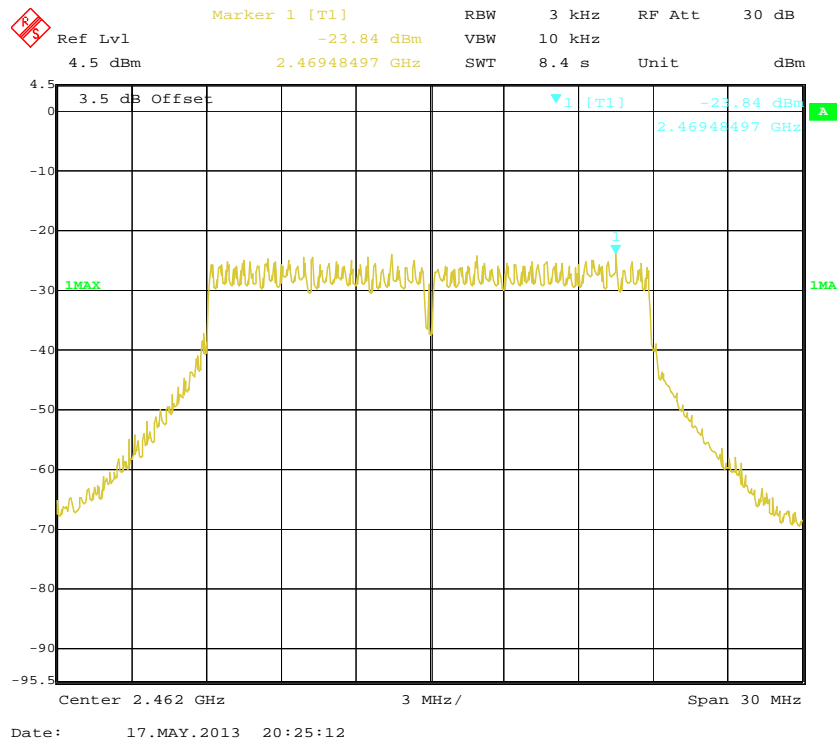
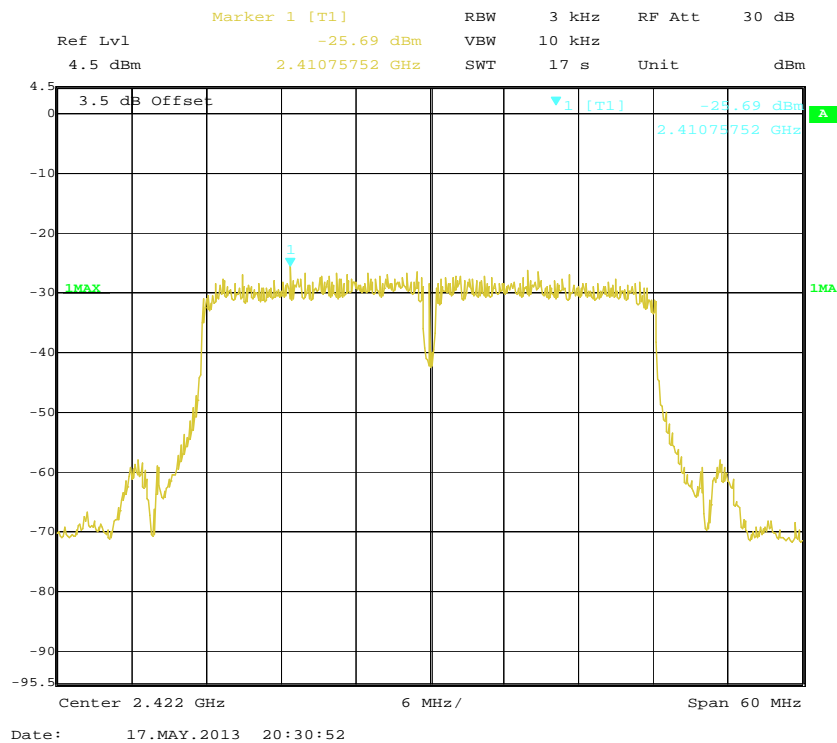


Power Spectral Density, 802.11n-HT20 Low Channel

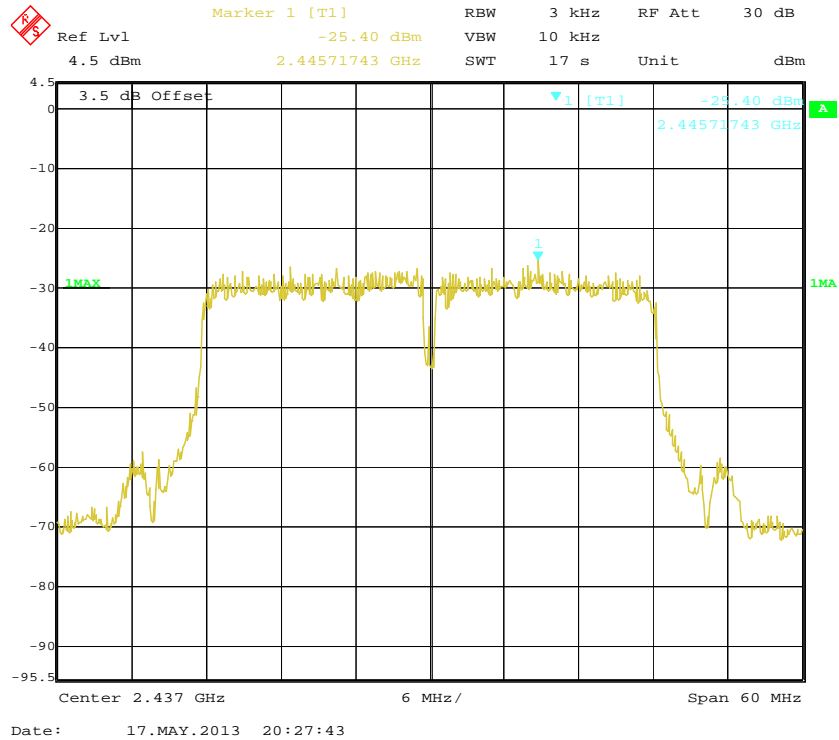


Power Spectral Density, 802.11n-HT20 Middle Channel

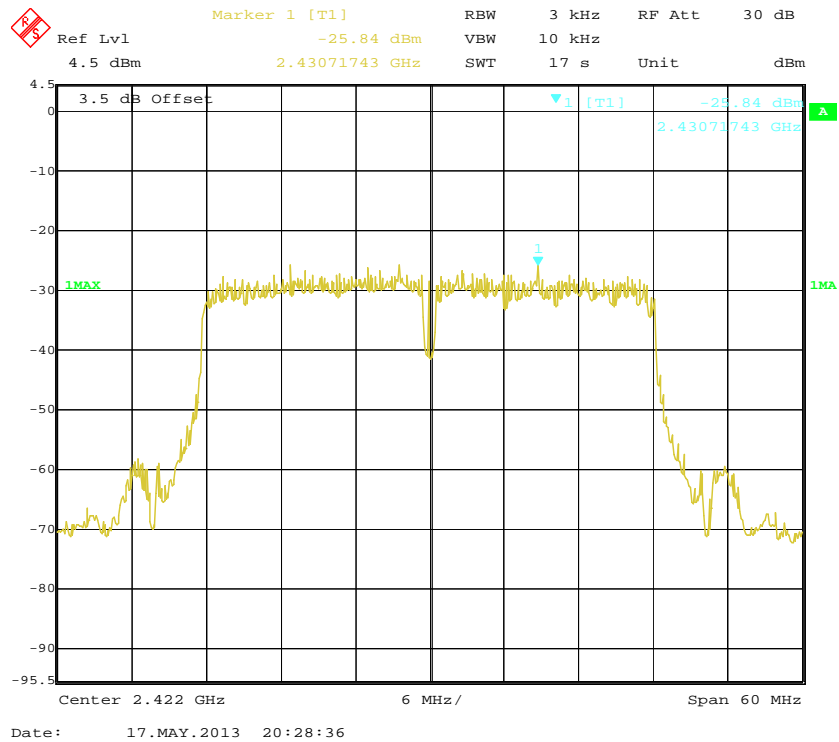


Power Spectral Density, 802.11n-HT20 High Channel**Power Spectral Density, 802.11n-HT40 Low Channel**

Power Spectral Density, 802.11n-HT40 Middle Channel



Power Spectral Density, 802.11n-HT40 High Channel



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