



FCC PART 15.247 TEST REPORT

For

ITALCOM GROUP

1728 Coral Way, Coral Gables, Miami, Florida, United States

FCC ID: YPVITALCOMFLY

Report Type: **Product Type:** Original Report Mobile Phone Gardon Zhang **Test Engineer:** Gardon Zhang **Report Number:** RSZ130131001-00C **Report Date:** 2013-03-05 Di Hung Alvin Huang Reviewed By: RF Leader Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building ShiHua Road, FuTian Free Trade Zone **Prepared By:** Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

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

TABLE OF CONTENTS

| GENERAL INFORMATION | 4 |
|---|----------|
| PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) | |
| Objective | 4 |
| RELATED SUBMITTAL(S)/GRANT(S) | |
| TEST METHODOLOGY TEST FACILITY | |
| | |
| SYSTEM TEST CONFIGURATION | |
| DESCRIPTION OF TEST CONFIGURATION | |
| SUPPORT EQUIPMENT LIST AND DETAILS | |
| External I/O Cable | 6 |
| BLOCK DIAGRAM OF TEST SETUP | 6 |
| SUMMARY OF TEST RESULTS | 7 |
| FCC§15.247 (i), §1.1307 (b) (1) &§2.1093 – RF EXPOSURE | |
| APPLICABLE STANDARD | |
| RESULT | |
| FCC §15.203 - ANTENNA REQUIREMENT | |
| APPLICABLE STANDARD | |
| Antenna Connector Construction | |
| FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS | 10 |
| APPLICABLE STANDARD | |
| EUT SETUP | |
| EMI TEST RECEIVER SETUP TEST EQUIPMENT LIST AND DETAILS | 10 11 |
| TEST PROCEDURE | |
| CORRECTED FACTOR & MARGIN CALCULATION | |
| TEST RESULTS SUMMARY | 11 |
| TEST DATA | |
| FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS | |
| APPLICABLE STANDARD | |
| EUT SETUP | |
| EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP TEST PROCEDURE | |
| CORRECTED AMPLITUDE & MARGIN CALCULATION | |
| TEST EQUIPMENT LIST AND DETAILS. | |
| TEST RESULTS SUMMARY | |
| TEST DATA | 15 |
| FCC §15.247(a) (2) – 6 dB BANDWIDTH | 19 |
| APPLICABLE STANDARD | |
| TEST PROCEDURE | |
| TEST EQUIPMENT LIST AND DETAILS TEST DATA | |
| FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER | |
| Applicable Standard | |
| TEST PROCEDURE | |

Report No.: RSZ130131001-00C

Report No.: RSZ130131001-00C

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *ITALCOM GROUP*'s product, model number: *fly* (*FCC ID: YPVITALCOMFLY*) or the "EUT" in this report was a *Mobile Phone*, which was measured approximately: 15.1 cm (L) x 8.2 cm (W) x 1.2 cm (H), rated input voltage: DC 3.7 V Li-ion battery or DC 5V charging from adapter.

Report No.: RSZ130131001-00C

Adapter Information:

Model: fly

Input: 100-240 V, 50/60Hz, 0.15A

Output: DC 5.0V, 0.5A

* All measurement and test data in this report was gathered from production sample serial number: 123456789 (Assigned by the applicant). The EUT supplied by the applicant was received on 2013-01-31.

Objective

This report is prepared on behalf of *ITALCOM GROUP* 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 15.247 DSS, Part 22H/24E PCE and Part 15B JBP submission with FCC ID: YPVITALCOMFLY.

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.

FCC Part 15.247 Page 4 of 31

Test Facility

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

Report No.: RSZ130131001-00C

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 an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

FCC Part 15.247 Page 5 of 31

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineer mode.

EUT Exercise Software

The test software was provided by client, which was embedded in the product.

Support Equipment List and Details

N/A

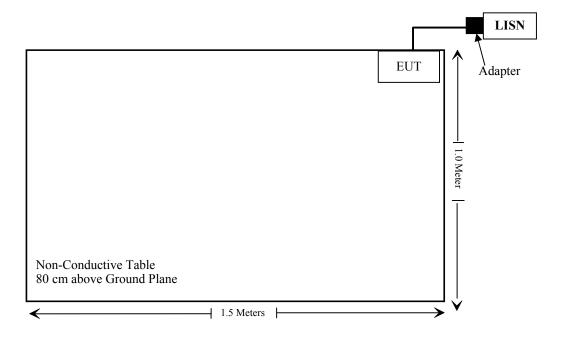
External I/O Cable

| Cable Description | Length (m) | From/Port | То |
|--------------------------------|------------|-----------|---------|
| Shielding Detachable USB Cable | 1.0 | EUT | Adapter |

Report No.: RSZ130131001-00C

Block Diagram of Test Setup

For Conducted Emissions



FCC Part 15.247 Page 6 of 31

SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|---------------------------------------|--|------------|
| §15.247 (i), §1.1307 (b) (1)& §2.1093 | RF Exposure | Compliance |
| §15.203 | Antenna Requirement | Compliance |
| §15.207 (a), | AC Line Conducted Emissions | Compliance |
| §15.247(d) | Spurious Emissions at Antenna Port | Compliance |
| \$15.205, \$15.209, \$15.247(d) | Spurious Emissions | Compliance |
| §15.247 (a)(2) | 6 dB Bandwidth | Compliance |
| §15.247(b)(3) | Maximum Peak Output Power | Compliance |
| §15.247(d) | 100 kHz Bandwidth of Frequency Band Edge | Compliance |
| §15.247(e) | Power Spectral Density | Compliance |

Report No.: RSZ130131001-00C

FCC Part 15.247 Page 7 of 31

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

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Report No.: RSZ130131001-00C

According to KDB 447498 D01 General RF Exposure Guidance v05

Result

According to FCC KDB 447498 D01 General RF Exposure Guidance v05 generic portable criteria

The distance between antenna and test point is 5 mm

The Max output power: 1.75 mW

According to the Appendix A of KDB 447498, the exclusion thresholds for 2450 MHz is 10 mW

Conclusion:

The time-averaged output power is 1.75 mW < the exclusion thresholds 10 mW, so stand-alone SAR evaluation is not required.

The other SAR data, Please refer to the SAR report, report No.: RSZ130131001-20.

FCC Part 15.247 Page 8 of 31

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:

Report No.: RSZ130131001-00C

- 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 an integral antenna arrangement for bluetooth, which was permanently attached, the antenna gain is -10dBi (maximum), fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliant.

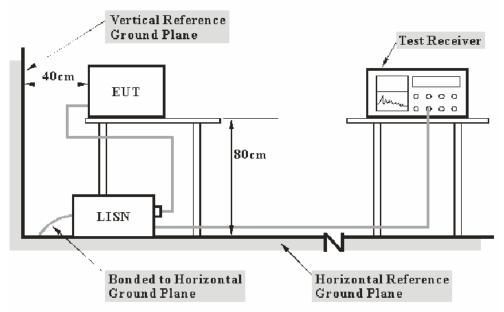
FCC Part 15.247 Page 9 of 31

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



Report No.: RSZ130131001-00C

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 measurement procedure of EUT setup is according with per ANSI C63.4-2009. The related limit was specified in FCC Part 15.207.

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

EMI Test Receiver Setup

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

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

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

FCC Part 15.247 Page 10 of 31

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 | & Schwarz Pulse limiter | | DE25985 | 2012-07-08 | 2013-07-07 |
| BACL | CE Test software | BACL-CE | V1.0 | - | - |

Report No.: RSZ130131001-00C

Test Procedure

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), Cable Loss and Pulse Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss + Pulse Limiter Attenuation

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

Margin = Limit – Corrected Amplitude

Test Results Summary

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

16.71 dB at 0.170 MHz in the Line conducted mode

Test Data

Environmental Conditions

| Temperature: | 25 ℃ |
|--------------------|-----------|
| Relative Humidity: | 55 % |
| ATM Pressure: | 101.0 kPa |

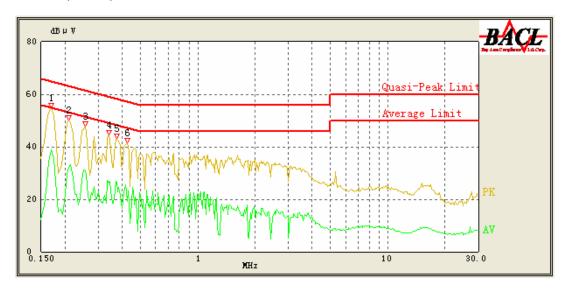
The testing was performed by Gardon Zhang on 2013-03-07.

FCC Part 15.247 Page 11 of 31

^{*} 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).

EUT operation mode: Charging & Transmitting

AC 120 V, 60 Hz, Line:

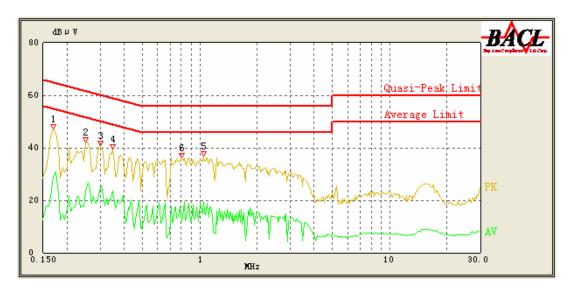


Report No.: RSZ130131001-00C

| Frequency (MHz) | Corrected Amplitude (dBµV) | Correction Factor (dB) | Limit (dBµV) | Margin (dB) | Detector (PK/Ave./QP) |
|--------------------|----------------------------------|------------------------------|-----------------|----------------|--------------------------|
| 0.170 | 38.72 | 10.10 | 55.43 | 16.71 | Ave. |
| 0.170 | 45.07 | 10.10 | 65.43 | 20.36 | QP |
| 0.210 | 42.35 | 10.10 | 64.29 | 21.94 | QP |
| 0.210 | 32.23 | 10.10 | 54.29 | 22.06 | Ave. |
| 0.255 | 30.70 | 10.10 | 53.00 | 22.30 | Ave. |
| 0.375 | 26.59 | 10.10 | 49.57 | 22.98 | Ave. |
| 0.255 | 39.89 | 10.10 | 63.00 | 23.11 | QP |
| 0.375 | 35.94 | 10.10 | 59.57 | 23.63 | QP |
| 0.425 | 34.26 | 10.13 | 58.14 | 23.88 | QP |
| 0.340 | 26.21 | 10.10 | 50.57 | 24.36 | Ave. |
| 0.340 | 36.13 | 10.10 | 60.57 | 24.44 | QP |
| 0.425 | 19.21 | 10.13 | 48.14 | 28.93 | Ave. |

FCC Part 15.247 Page 12 of 31

AC 120V, 60 Hz, Neutral:



Report No.: RSZ130131001-00C

| Frequency (MHz) | Corrected Amplitude (dBµV) | Correction Factor (dB) | Limit (dBµV) | Margin (dB) | Detector (PK/Ave./QP) |
|--------------------|----------------------------------|------------------------------|-----------------|----------------|--------------------------|
| 0.170 | 42.11 | 10.10 | 65.43 | 23.32 | QP |
| 1.050 | 31.51 | 10.20 | 56.00 | 24.49 | QP |
| 0.350 | 34.44 | 10.10 | 60.29 | 25.85 | QP |
| 0.300 | 35.85 | 10.10 | 61.71 | 25.86 | QP |
| 0.805 | 30.12 | 10.20 | 56.00 | 25.88 | QP |
| 0.170 | 29.20 | 10.10 | 55.43 | 26.23 | Ave. |
| 1.050 | 19.41 | 10.20 | 46.00 | 26.59 | Ave. |
| 0.250 | 36.47 | 10.10 | 63.14 | 26.67 | QP |
| 0.350 | 23.46 | 10.10 | 50.29 | 26.83 | Ave. |
| 0.300 | 24.56 | 10.10 | 51.71 | 27.15 | Ave. |
| 0.250 | 23.47 | 10.10 | 53.14 | 29.67 | Ave. |
| 0.805 | 11.95 | 10.20 | 46.00 | 34.05 | Ave. |

Note:

 Corrected Amplitude = Reading + Correction Factor
 Correction Factor = LISN VDF + Cable Loss + Pulse Limiter Attenuation The corrected factor has been input into the transducer of the test software.

3) Margin = Limit – Corrected Amplitude

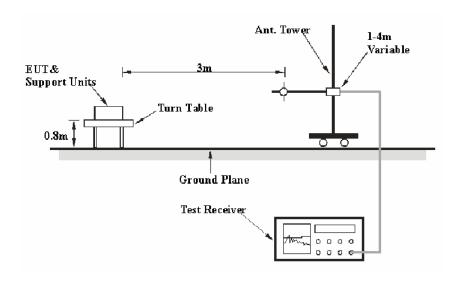
FCC Part 15.247 Page 13 of 31

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

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

EUT Setup



Report No.: RSZ130131001-00C

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.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

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

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

Test Procedure

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

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

FCC Part 15.247 Page 14 of 31

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:

Report No.: RSZ130131001-00C

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

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

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-------------------------------|-------------------|----------|------------------|---------------------|-------------------------|
| 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 | 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 NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

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

21.13 dB at 9608.0 MHz in the Horizontal polarization

Test Data

Environmental Conditions

| Temperature: | 25 ℃ |
|--------------------|-----------|
| Relative Humidity: | 56 % |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Gardon Zhang on 2013-03-04.

EUT operation mode: Transmitting

FCC Part 15.247 Page 15 of 31

30 MHz-25 GHz

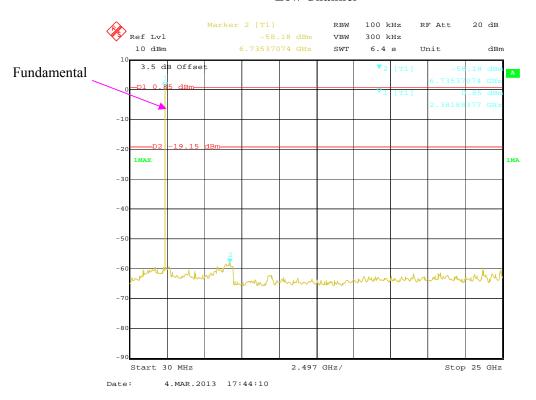
| Frequency | Re | eceiver | Turn | Rx Ar | ntenna | | Corrected | | C Part 7/205/209 |
|-----------------------|----------------|--------------------------|-----------------|------------|----------------|-------------|-----------------------|-------------------|---------------------|
| (MHz) | Reading (dBµV) | Detector (PK/QP/Ave.) | table Degree | Height (m) | Polar (H/V) | Factor (dB) | Amplitude (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
| Low Channel(2402 MHz) | | | | | | | | | |
| 2402.0 | 74.05 | PK | 35 | 1.1 | Н | 6.13 | 80.18 | / | / |
| 2402.0 | 53.59 | Ave. | 35 | 1.1 | Н | 6.13 | 59.72 | / | / |
| 2402.0 | 67.63 | PK | 112 | 1.3 | V | 6.13 | 73.76 | / | / |
| 2402.0 | 49.33 | Ave. | 112 | 1.3 | V | 6.13 | 55.46 | / | / |
| 9608.0 | 33.59 | PK | 93 | 1.0 | Н | 19.28 | 52.87 | 74 | 21.13 |
| 7206.0 | 32.11 | PK | 108 | 1.5 | V | 17.06 | 49.17 | 74 | 24.83 |
| 4804.0 | 33.49 | PK | 26 | 1.1 | Н | 12.40 | 45.89 | 74 | 28.11 |
| 2491.3 | 34.28 | PK | 58 | 1.4 | Н | 7.21 | 41.49 | 74 | 32.51 |
| 2322.4 | 35.26 | PK | 33 | 1.2 | Н | 5.48 | 40.74 | 74 | 33.26 |
| 2368.2 | 34.95 | PK | 71 | 1.3 | V | 5.48 | 40.43 | 74 | 33.57 |
| | | | Middle (| Channel | (2440 N | IHz) | | | |
| 2440.0 | 71.77 | PK | 58 | 1.4 | Н | 7.21 | 78.98 | / | / |
| 2440.0 | 51.76 | Ave. | 58 | 1.4 | Н | 7.21 | 58.97 | / | / |
| 2440.0 | 66.25 | PK | 101 | 1.3 | V | 7.21 | 73.46 | / | / |
| 2440.0 | 48.71 | Ave. | 101 | 1.3 | V | 7.21 | 55.92 | / | / |
| 9760.0 | 32.19 | PK | 76 | 1.3 | Н | 19.28 | 51.47 | 74 | 22.53 |
| 7320.0 | 32.88 | PK | 39 | 1.1 | V | 17.06 | 49.94 | 74 | 24.06 |
| 4880.0 | 35.72 | PK | 72 | 1.2 | Н | 12.46 | 48.18 | 74 | 25.82 |
| 2492.8 | 35.75 | PK | 33 | 1.0 | V | 7.21 | 42.96 | 74 | 31.04 |
| 2375.4 | 34.89 | PK | 151 | 1.4 | Н | 6.13 | 41.02 | 74 | 32.98 |
| 2331.1 | 35.09 | PK | 32 | 1.1 | V | 5.48 | 40.57 | 74 | 33.43 |
| | | | High C | hannel(2 | 2480 M | Hz) | | | |
| 2480.0 | 70.5 | PK | 31 | 1.4 | Н | 7.21 | 77.71 | / | / |
| 2480.0 | 51.19 | Ave. | 31 | 1.4 | Н | 7.21 | 58.40 | / | / |
| 2480.0 | 65.13 | PK | 112 | 1.3 | V | 7.21 | 72.34 | / | / |
| 2480.0 | 47.77 | Ave. | 112 | 1.3 | V | 7.21 | 54.98 | / | / |
| 9920.0 | 33.17 | PK | 72 | 1.2 | Н | 19.38 | 52.55 | 74 | 21.45 |
| 7440.0 | 34.71 | PK | 105 | 1.3 | Н | 15.90 | 50.61 | 74 | 23.39 |
| 4960.0 | 34.17 | PK | 91 | 1.1 | Н | 12.50 | 46.67 | 74 | 27.33 |
| 2493.5 | 35.26 | PK | 26 | 1.5 | Н | 7.21 | 42.47 | 74 | 31.53 |
| 2486.7 | 34.02 | PK | 82 | 1.1 | V | 7.21 | 41.23 | 74 | 32.77 |
| 2366.2 | 35.71 | PK | 73 | 1.2 | V | 5.48 | 41.19 | 74 | 32.81 |

Report No.: RSZ130131001-00C

Note: For spurious emission, average measurement was not performed, because peak level went lower than the average limit.

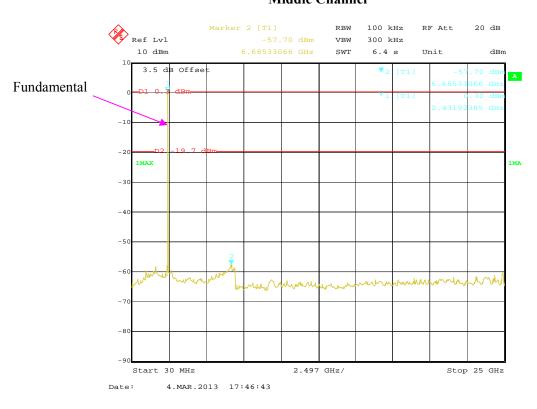
FCC Part 15.247 Page 16 of 31

Conducted Spurious Emissions at Antenna Port: Low Channel



Middle Channel

Report No.: RSZ130131001-00C



FCC Part 15.247 Page 17 of 31

Start 30 MHz

Date:

4.MAR.2013 17:48:52

High Channel

2.497 GHz/

Report No.: RSZ130131001-00C

Stop 25 GHz



FCC Part 15.247 Page 18 of 31

FCC §15.247(a) (2) - 6 dB BANDWIDTH

Applicable Standard

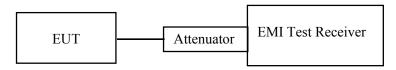
Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Report No.: RSZ130131001-00C

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 Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|---------------------|-------------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2012-08-08 | 2013-08-07 |

^{*} 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 Data

Environmental Conditions

| Temperature: | 25 ℃ | |
|--------------------|-----------|--|
| Relative Humidity: | 56 % | |
| ATM Pressure: | 100.0 kPa | |

The testing was performed by Gardon Zhang on 2013-03-04.

EUT operation mode: Transmitting

Test Result: Compliance

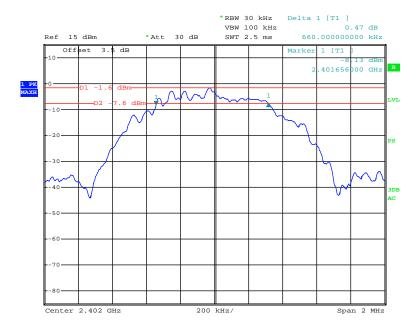
FCC Part 15.247 Page 19 of 31

Please refer to the following tables and plots.

| Channel | Channel Frequency (MHz) | 6 dB Bandwidth (kHz) | Limit (kHz) |
|---------|-------------------------------|-------------------------|----------------|
| Low | 2402 | 660 | ≥500 |
| Middle | 2440 | 660 | ≥500 |
| High | 2480 | 660 | ≥500 |

Report No.: RSZ130131001-00C

Low Channel

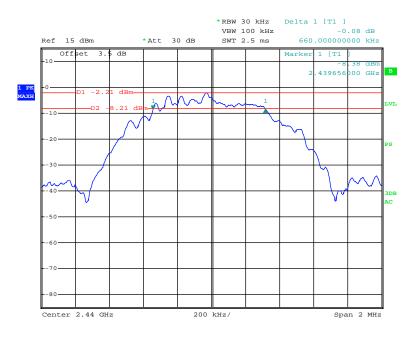


Date: 4.MAR.2013 15:02:16

FCC Part 15.247 Page 20 of 31

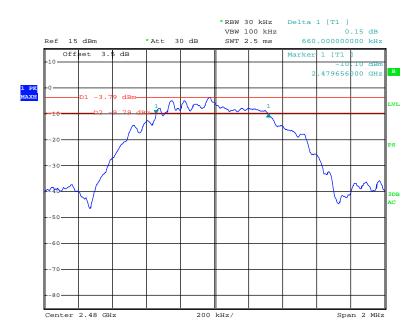
Middle Channel

Report No.: RSZ130131001-00C



Date: 4.MAR.2013 14:59:06

High Channel



Date: 4.MAR.2013 15:00:31

FCC Part 15.247 Page 21 of 31

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

Applicable Standard

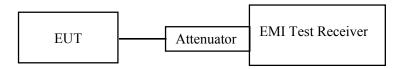
According to §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted 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.: RSZ130131001-00C

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 Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|---------------------|-------------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2012-08-08 | 2013-08-07 |

^{*} 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 Data

Environmental Conditions

| Temperature: | 25 ℃ | |
|--------------------|-----------|--|
| Relative Humidity: | 56 % | |
| ATM Pressure: | 100.0 kPa | |

The testing was performed by Gardon Zhang on 2013-01-08.

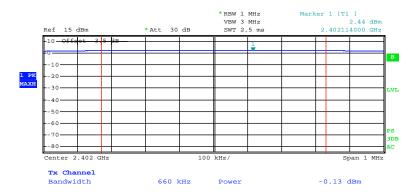
EUT operation mode: Transmitting

FCC Part 15.247 Page 22 of 31

| Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) | Result |
|---------|--------------------|--------------------|----------------|--------|
| Low | 2402 | 2.44 | 30 | Pass |
| Middle | 2440 | 1.82 | 30 | Pass |
| High | 2480 | 0.20 | 30 | Pass |

Report No.: RSZ130131001-00C

RF Output Power, Low Channel

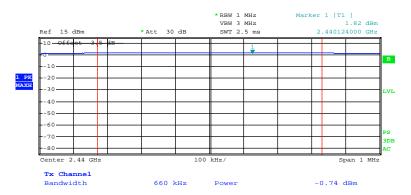


Date: 4.MAR.2013 15:10:52

FCC Part 15.247 Page 23 of 31

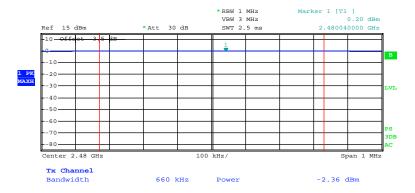
RF Output Power, Middle Channel

Report No.: RSZ130131001-00C



Date: 4.MAR.2013 15:13:31

RF Output Power, High Channel



Date: 4.MAR.2013 15:15:08

FCC Part 15.247 Page 24 of 31

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

Report No.: RSZ130131001-00C

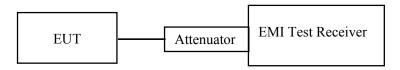
Applicable Standard

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 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 Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|------------------|---------------------|-------------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2012-08-08 | 2013-08-07 |

^{*} 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).

FCC Part 15.247 Page 25 of 31

Test Data

Environmental Conditions

| Temperature: | 25 ℃ |
|--------------------|-----------|
| Relative Humidity: | 56 % |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Gardon Zhang on 2013-03-04.

EUT operation mode: Transmitting

Test Result: Compliance.

Please refer to following table and plots.

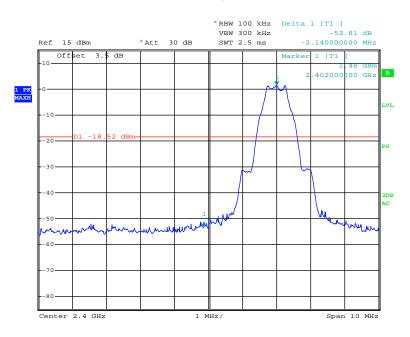
| Frequency Band | Delta Peak to band emission (dBc) | ≽Limit (dBc) | Result |
|----------------|---|-----------------|--------|
| Left-band | 52.81 | 20 | Pass |
| Right-band | 52.52 | 20 | Pass |

Report No.: RSZ130131001-00C

FCC Part 15.247 Page 26 of 31

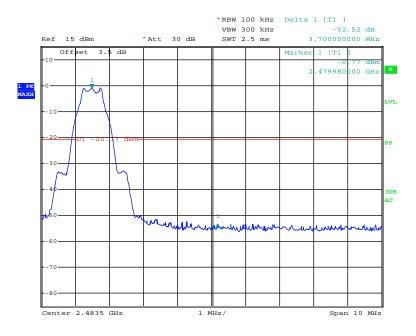
Band Edge, Left Side

Report No.: RSZ130131001-00C



Date: 4.MAR.2013 15:20:35

Band Edge, Right Side



Date: 4.MAR.2013 15:23:23

FCC Part 15.247 Page 27 of 31

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

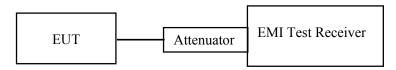
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of 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.: RSZ130131001-00C

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 Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|------------------|---------------------|-------------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2012-08-08 | 2013-08-07 |

^{*} 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 Data

Environmental Conditions

| Temperature: | 25 ℃ |
|--------------------|-----------|
| Relative Humidity: | 56 % |
| ATM Pressure: | 100.0 kPa |

The testing was performed by Gardon Zhang on 2013-03-04.

FCC Part 15.247 Page 28 of 31

EUT operation mode: Transmitting

Test Result: Pass

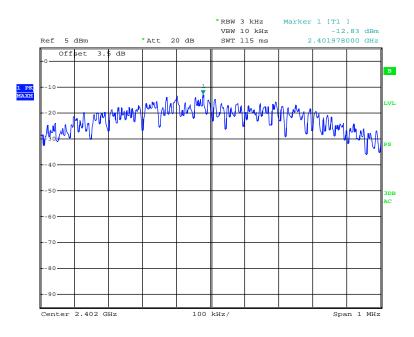
| Channel | Frequency (MHz) | Power spectral density (dBm) | Limit (dBm) |
|---------|--------------------|------------------------------|----------------|
| Low | 2402 | -12.83 | 8 |
| Middle | 2440 | -13.35 | 8 |
| High | 2480 | -15.18 | 8 |

Report No.: RSZ130131001-00C

FCC Part 15.247 Page 29 of 31

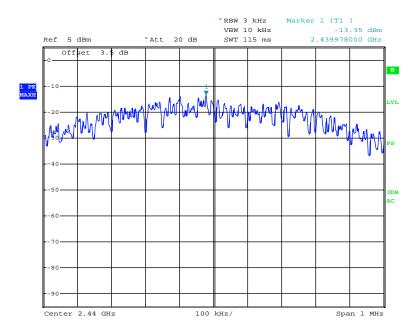
Low Channel

Report No.: RSZ130131001-00C



Date: 4.MAR.2013 15:29:09

Middle Channel

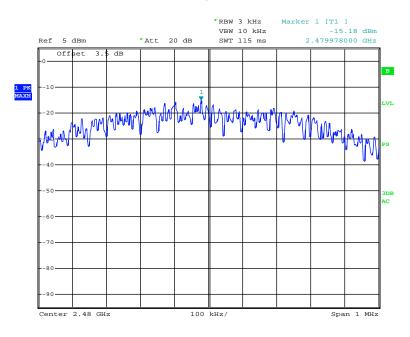


Date: 4.MAR.2013 15:30:28

FCC Part 15.247 Page 30 of 31

High Channel

Report No.: RSZ130131001-00C



Date: 4.MAR.2013 15:31:22

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

FCC Part 15.247 Page 31 of 31