

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

Test Report No. : E12NR-027
AGR No : A129A-209
Applicant : Remote Solution Co., Ltd.
Address : 92, Chogok-ri, Nam-myun, Kimchon-city, Kyungbuk, 740-871, Korea
Manufacturer : Remote Solution Co., Ltd.
Address : 92, Chogok-ri, Nam-myun, Kimchon-city, Kyungbuk, 740-871, Korea
Type of Equipment : IR&RF Remote
FCC ID. : TX4CRB46A
Model Name : CRB46A
Multiple Model Name : XR5
Serial number : None
Total page of Report : 25 pages (including this page)
Date of Incoming : November 08, 2012
Date of issue : November 14, 2012

SUMMARY

The equipment complies with the regulation; **FCC Part 15 Subpart C Section 15.249.**
 This test report only contains the result of a single test of the sample supplied for the examination.
 It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by: 

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 ONETECH Corp.

Reviewed by: 

 Y. K. Kwon / Exe. Managing Director
 ONETECH Corp.

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Revision History

| Issue Report No. | Issued Date | Revisions | Effect Section |
|------------------|-------------------|-----------------|----------------|
| E12NR-027 | November 14, 2012 | Initial Release | All |
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1. VERIFICATION OF COMPLIANCE

APPLICANT : Remote Solution Co., Ltd.
ADDRESS : 92, Chogok-ri, Nam-myun, Kimchon-city, Kyungbuk, 740-871, Korea
CONTACT PERSON : Mr. Dae-Gyu, Lim / Assistant Research Engineer
TELEPHONE NO : +82-54-420-4500
FCC ID : TX4CRB46A
MODEL NAME : CRB46A
BRAND NAME : N/A
SERIAL NUMBER : N/A
DATE : November 14, 2012

| | |
|--|---|
| EQUIPMENT CLASS | DXX – Low Power Communications Transmitter |
| KIND OF EQUIPMENT | IR&RF Remote |
| THIS REPORT CONCERNS | Original Grant |
| MEASUREMENT PROCEDURES | ANSI C63.4: 2009 |
| TYPE OF EQUIPMENT TESTED | Pre-Production |
| KIND OF EQUIPMENT AUTHORIZATION REQUESTED | Certification |
| EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S) | FCC PART 15 SUBPART C Section 15.249 |
| MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE | No |
| FINAL TEST WAS CONDUCTED ON | 3 m, Semi Anechoic Chamber |

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. TEST SUMMARY

2.1 Test items and results

| SECTION | TEST ITEMS | RESULTS |
|------------|--|----------------------------|
| 15.249 (a) | Field Strength of Emission | Met the Limit / PASS |
| 15.249 (c) | Measurement distance | Met the Requirement / PASS |
| 15.249 (d) | Emissions Radiated Outside of the Specified Frequency Band | Met the Limit / PASS |
| 15.249 (e) | Radiated Emissions above 1 000 MHz | Met the Limit / PASS |
| 15.209 | Radiated Emission Limits, General Requirement | Met the Limit / PASS |
| 15.207 | Conducted Limits | N/A (See Note) |
| 15.203 | Antenna Requirement | Met the Requirement / PASS |

Note: This test is not performed because the EUT is operated by DC battery.

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in section 2.1.

2.5 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4: 2009 at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 301-14, Daessangryung-ri, Chowol-eup, Gwangju-si, Gyeonggi-do, 464-862, Korea. The Onetech Corp. has been accredited as a Conformity Assessment Body (CAB) with designation number KR0013.

3. GENERAL INFORMATION

3.1 Product Description

The Remote Solution Co., Ltd., Model: CRB46A (referred to as the EUT in this report) is an IR&RF Remote. Product specification information described herein was obtained from product data sheet or user’s manual.

| | |
|---|--|
| DEVICE TYPE | Portable Device |
| OPERATING FREQUENCY | 2 405 MHz ~ 2 480 MHz |
| RATED RF OUTPUT POWER | 0 dBm |
| ANTENNA TYPE | Inserted into the main board (Pattern Antenna) |
| MODULATION | O-QPSK |
| Tx DATA SPEED | 250 kbps |
| USED RF CHIP | Maker: GreenPeak, Model Name: GP541 |
| LIST OF EACH OSC. OR CRY. FREQ.(FREQ. >= 1 MHz) | 16 MHz |
| RATED SUPPLY VOLTAGE | DC 3 V from a battery |

3.2 Model Differences

-. The following lists consist of the added model and their differences.

| Model Name | Differences | Tested |
|------------|--|-------------------------------------|
| CRB46A | Basic Model | <input checked="" type="checkbox"/> |
| XR5 | This model is identical to basic model except for model designation only according to buyer’s request. | <input type="checkbox"/> |

Note: 1. Applicant consigns only basic model to test. Therefore this test report just guarantees the units, which have been tested.

2. The Applicant/manufacturer is responsible for the compliance of all variants.

4. EUT MODIFICATIONS

-. None

5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

| DEVICE TYPE | MANUFACTURER | MODEL/PART NUMBER | FCC ID |
|-------------|---------------------------|----------------------|--------|
| Main Board | Remote Solution Co., Ltd. | CRB46A XR5 1BF-1015A | N/A |

5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested: None

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at Low Channel (2 405 MHz), Middle Channel (2 450 MHz), and High Channel (2 480 MHz). To get a maximum emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XY” axis.

5.4 Configuration of Test System

Line Conducted Test : It is not need to test this requirement, because the EUT shall be operated by DC battery.

Radiated Emission Test : Preliminary radiated emissions test were conducted using the procedure in ANSI C63.4: 2009 8.3.1.1 and 13.4.1 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 m open area test site.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5.5 Antenna Requirement

According to section 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.

Antenna Construction:

The antenna of the EUT is a pattern antenna on the main board in the EUT, so no consideration of replacement by the user.

6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Tests, the following operating mode was investigated

| Operation Mode | The Worse operating condition (Please check one only) |
|---|---|
| It is not need to test this requirement, because the power of the EUT is supplied by battery. | |

6.2 General Radiated Emissions Tests

During Preliminary Tests, the following operating modes were investigated

| Operation Mode | The Worse operating condition (Please check one only) |
|----------------|---|
| TX Mode | X |

7. RADIATED EMISSION TEST

7.1 Test set-up

The radiated emissions measurements were on the 3 m, semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

The frequency spectrum from up to 25 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

Test set-up photos are included in appendix I.

7.2 Measurement uncertainty

Radiated emission electric field intensity, 0.15 MHz ~ 30 MHz : ± 2.61 dB

Radiated emission electric field intensity, 30 MHz ~ 300 MHz : ± 4.43 dB

Radiated emission electric field intensity, 300 MHz ~ 1 000 MHz : ± 3.80 dB

Radiated emission electric field intensity, 1 000 MHz ~ 3 000 MHz: ± 4.40 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2. The measurement uncertainty is given with a confidence of 95 % with the coverage factor, $k = 2$.

7.3 Test equipment used

| Model Number | Manufacturer | Description | Serial Number | Last Cal. (Interval) |
|---------------|-------------------|--------------------------|---------------|----------------------|
| □ - ESCI | Rohde & Schwarz | EMI Test Receiver | 101012 | Feb. 06, 2012 (1Y) |
| ■ - ESU | Rohde & Schwarz | EMI Test Receiver | 100261 | Sep. 11, 2012 (1Y) |
| □ - 8564E | HP | Spectrum Analyzer | 3650A00756 | Apr. 04, 2012 (1Y) |
| □ - FSP | Rohde & Schwarz | Spectrum Analyzer | 100017 | Mar 12, 2012(1Y) |
| ■ - 310N | Sonoma Instrument | AMPLIFIER | 312544 | Oct. 11, 2012(1Y) |
| ■ - FSV30 | Rohde & Schwarz | Signal Analyzer | 101372 | May 31, 2012(1Y) |
| ■ - SCU-18 | Rohde & Schwarz | PRE-AMPLIFIER | 10041 | Dec. 15, 2011 (1Y) |
| ■ - MA240 | HD GmbH | Antenna Master | N/A | N/A |
| ■ - HD100 | HD GmbH | Position Controller | N/A | N/A |
| ■ - DS420S | HD GmbH | Turn Table | N/A | N/A |
| ■ - HFH2-Z2 | Rohde & Schwarz | Loop Antenna | 889 285 / 26 | Nov. 08, 2010(2Y) |
| ■ - VULB9163 | Schwarzbeck | TRILOG Broadband Antenna | VULB9163-255 | Apr. 24, 2012(2Y) |
| ■ - BBHA9120D | Schwarzbeck | Horn Antenna | BBHA9120D294 | Jun. 17, 2011 (2Y) |
| ■ - BBHA9170 | Schwarzbeck | Horn Antenna | BBHA9170178 | Jun. 17, 2011 (2Y) |

All test equipment used is calibrated on a regular basis.

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EMC-003 (Rev.2)

HEAD OFFICE : 301-14 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

EMC Testing Div. : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289, FAX: 82-31-766-2904)

7.4 Final Result of Measurement

7.4.1 Field Strength of the Fundamental Frequency

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 38 % R.H. Temperature: 20 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)
 Result : PASSED

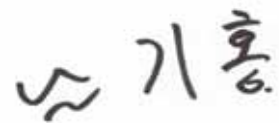
EUT : IR&RF Remote Date: November 13, 2012
 Operating Condition : TX mode
 Distance : 3 m

| Channel | Radiated Emissions | | | Ant Pol. | Correction Factors | | | Total Amplitude (dBµV/m) | FCC Limit | |
|---------|---------------------|------------------|-------------|----------|--------------------|------------|--------------|--------------------------|----------------|-------------|
| | Carrier Freq. (MHz) | Amplitude (dBµV) | Detect Mode | | Antenna (dB/m) | Cable (dB) | Pre-Amp (dB) | | Limit (dBµV/m) | Margin (dB) |
| Low | 2 405.00 | 101.00 | Peak | H | 27.15 | 5.02 | 43.10 | 90.07 | 113.98 | 23.91 |
| | | 97.50 | Average | H | | | | 86.57 | 93.98 | 7.41 |
| | | 99.43 | Peak | V | | | | 88.50 | 113.98 | 25.48 |
| | | 93.50 | Average | V | | | | 82.57 | 93.98 | 11.41 |
| Middle | 2 450.00 | 100.80 | Peak | H | 27.22 | 5.04 | 43.10 | 89.96 | 113.98 | 24.02 |
| | | 97.00 | Average | H | | | | 86.16 | 93.98 | 7.82 |
| | | 99.00 | Peak | V | | | | 88.16 | 113.98 | 25.82 |
| | | 93.10 | Average | V | | | | 82.26 | 93.98 | 11.72 |
| High | 2 480.00 | 99.80 | Peak | H | 27.28 | 5.06 | 43.10 | 89.04 | 113.98 | 24.94 |
| | | 96.50 | Average | H | | | | 85.74 | 93.98 | 8.24 |
| | | 98.40 | Peak | V | | | | 87.64 | 113.98 | 26.34 |
| | | 92.83 | Average | V | | | | 82.07 | 93.98 | 11.91 |

*Remark: To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes, but the worst plane data were recorded in the report.

$$\text{Margin (dB)} = \text{Limit (dBuV/m)} - \text{Total (dBuV/m)}$$

$$\text{Total} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Pre-amplifier gain.}$$



Tested by: Ki-Hong, Nam / Senior Engineer

7.4.2 Emissions Radiated Outside of the Specified Frequency Bands

7.4.2.1 Test Data for Harmonic

Humidity Level : 38 % R.H. Temperature: 20 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)
 Result : PASSED

EUT : IR&RF Remote Date: November 13, 2012
 Operating Condition : TX mode
 Distance : 3 m

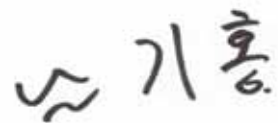
| Channel | Frequency (MHz) | Reading (dBμV) | Detector Mode | Ant. Pol. (H/V) | Ant. Factor | Cable Loss | Pre-Amp (dB) | Total (dBμV/m) | Limits (dBμV/m) | Margin (dB) |
|--|-----------------|----------------|---------------|-----------------|-------------|------------|--------------|----------------|-----------------|-------------|
| Low | 4 810.00* | 58.20 | Peak | H | 31.14 | 6.90 | 42.80 | 53.44 | 73.98 | 20.54 |
| | | 51.50 | Average | H | | | | 46.74 | 53.98 | 7.24 |
| | | 55.50 | Peak | V | | | | 50.74 | 73.98 | 23.24 |
| | | 46.25 | Average | V | | | | 41.49 | 53.98 | 12.49 |
| Other frequencies were not found up to 25 GHz. | | | | | | | | | | |
| Middle | 4 900.00* | 55.83 | Peak | H | 31.22 | 6.93 | 42.80 | 51.18 | 73.98 | 22.80 |
| | | 50.00 | Average | H | | | | 45.35 | 53.98 | 8.63 |
| | | 53.00 | Peak | V | | | | 48.35 | 73.98 | 25.63 |
| | | 40.83 | Average | V | | | | 36.18 | 53.98 | 17.80 |
| Other frequencies were not found up to 25 GHz. | | | | | | | | | | |
| High | 4 960.00* | 54.50 | Peak | H | 31.30 | 6.97 | 42.80 | 49.97 | 73.98 | 24.01 |
| | | 48.50 | Average | H | | | | 43.97 | 53.98 | 10.01 |
| | | 52.50 | Peak | V | | | | 47.97 | 73.98 | 26.01 |
| | | 40.12 | Average | V | | | | 35.59 | 53.98 | 18.39 |
| Other frequencies were not found up to 25 GHz. | | | | | | | | | | |

Tabulated test data for Restricted Band

Remark: "H": Horizontal, "V": Vertical, "*" Frequency fall in restricted band

$$\text{Margin (dB)} = \text{Limit (dBuV/m)} - \text{Total (dBuV/m)}$$

$$\text{Total} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Pre-amplifier gain.}$$



Tested by: Ki-Hong, Nam / Senior Engineer

7.4.2.2 Test Data for Frequency range: 30 MHz ~ 1 000 MHz

Humidity Level : 38 % R.H. Temperature: 20 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

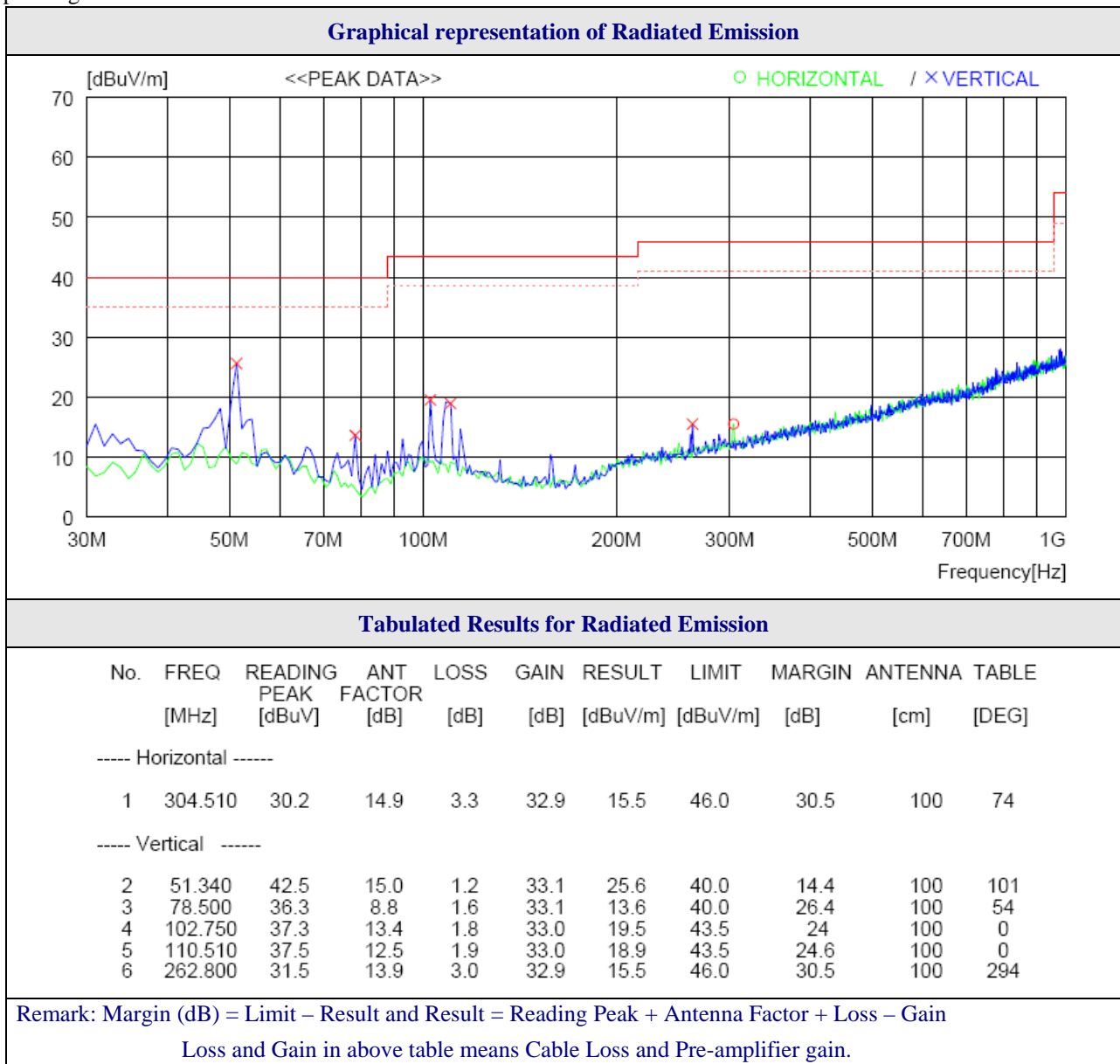
Result : PASSED

EUT : IR&RF Remote

Date: November 13, 2012

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

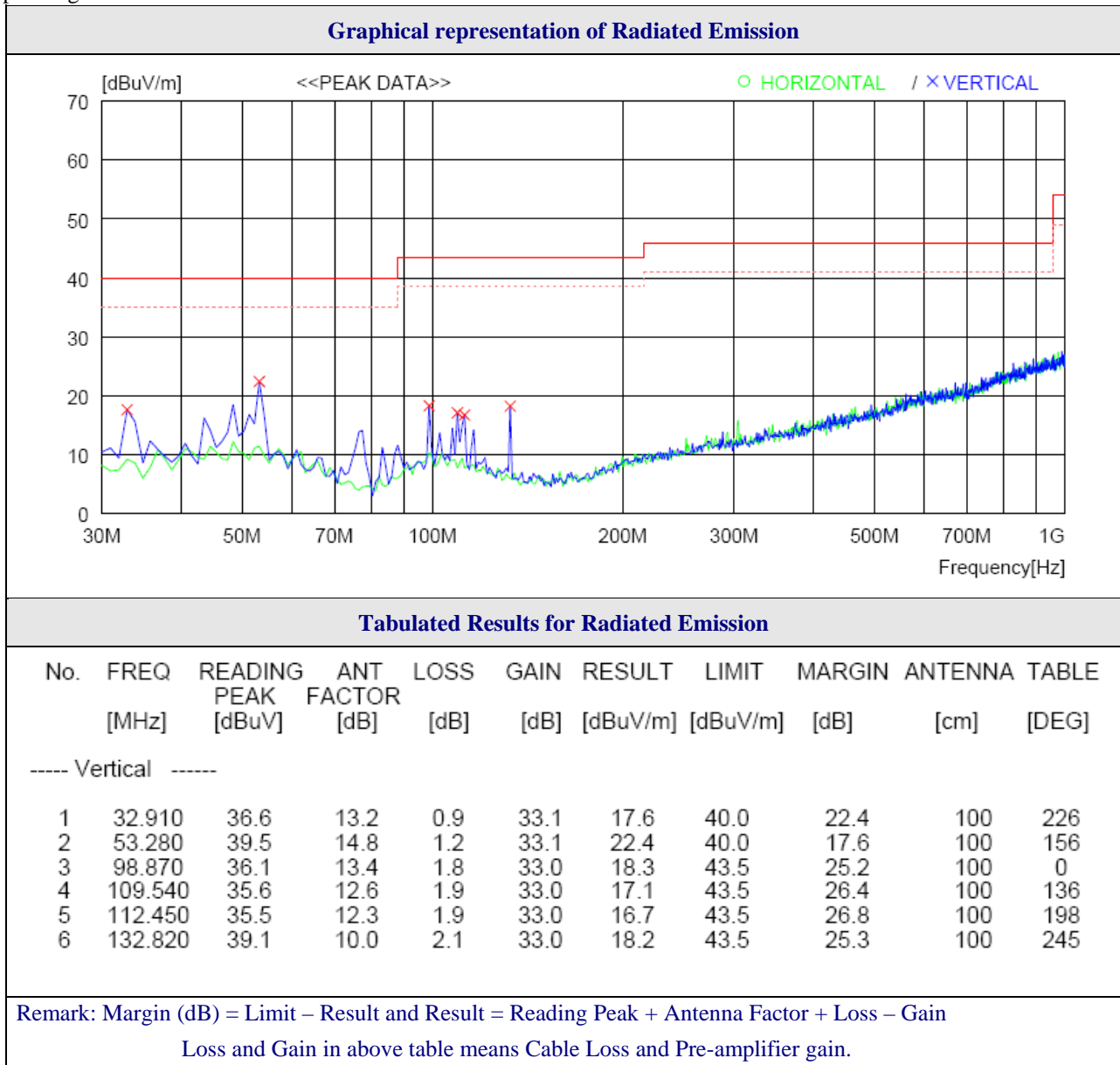
Operating condition : Low Channel



Ki-Hong

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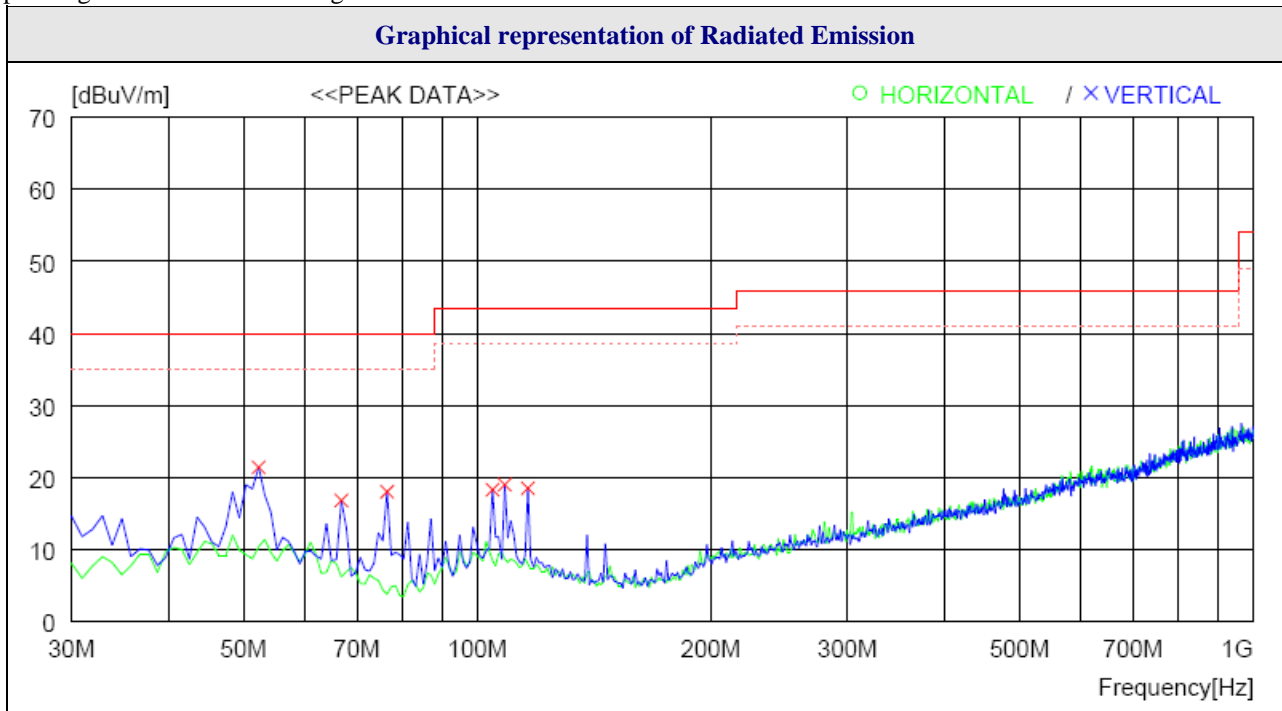
Operating condition : Middle Channel



Ki-Hong

Tested by: Ki-Hong, Nam / Senior Engineer

Operating condition : High Channel



Tabulated Results for Radiated Emission

| No. | FREQ [MHz] | READING PEAK [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|----------------------|------------|---------------------|-----------------|-----------|-----------|-----------------|----------------|-------------|--------------|-------------|
| ----- Vertical ----- | | | | | | | | | | |
| 1 | 52.310 | 38.4 | 14.9 | 1.2 | 33.1 | 21.4 | 40.0 | 18.6 | 100 | 0 |
| 2 | 66.860 | 37.0 | 11.4 | 1.4 | 33.0 | 16.8 | 40.0 | 23.2 | 100 | 190 |
| 3 | 76.560 | 40.5 | 9.1 | 1.5 | 33.1 | 18.0 | 40.0 | 22 | 100 | 0 |
| 4 | 104.690 | 36.4 | 13.1 | 1.8 | 33.0 | 18.3 | 43.5 | 25.2 | 100 | 0 |
| 5 | 108.570 | 37.4 | 12.7 | 1.9 | 33.0 | 19.0 | 43.5 | 24.5 | 100 | 0 |
| 6 | 116.330 | 37.7 | 11.9 | 1.9 | 33.0 | 18.5 | 43.5 | 25 | 100 | 19 |

Remark: Margin (dB) = Limit – Result and Result = Reading Peak + Antenna Factor + Loss – Gain

Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

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7.4.2.3 Test Data for Below 30 MHz

Humidity Level : 38 % R.H. Temperature: 20 °C
 Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
 Frequency range : 9 kHz ~ 30 MHz
 Measurement distance : 3 m
 Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)
 Result : PASSED

EUT : IR&RF Remote Date: November 13, 2012
 Detector : CISPR Quasi-Peak (Resolution Bandwidth: 9 kHz)

| Frequency (MHz) | Reading (dB μ V) | Ant. Pol. (H/V) | Ant. Height (m) | Angle (°) | Ant. Factor (dB/m) | Cable Loss | Emission Level(dB μ V/m) | Limits (dB μ V/m) | Margin (dB) |
|---|----------------------|-----------------|-----------------|-----------|--------------------|------------|------------------------------|-----------------------|-------------|
| It was not observed any emissions from the EUT. | | | | | | | | | |

Ki-Hong

Tested by: Ki-Hong, Nam / Senior Engineer

7.4.2.4 Test Data above 1 GHz except for harmonic

- Test Date : November 13, 2012
- Humidity Level : 38 % R.H.
- Temperature : 20 °C
- Resolution bandwidth : 1 MHz for Peak and Average Mode
- Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode
- Frequency range : 1 GHz ~ 25 GHz
- Measurement distance : 3 m
- Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)
- Result : PASSED

| Frequency (MHz) | Reading (dBμV) | Ant. Pol. (H/V) | Ant. Height (m) | Angle (°) | Ant. Factor (dB/m) | Cable Loss | Emission Level(dBμV/m) | Limits (dBμV/m) | Margin (dB) |
|---|----------------|-----------------|-----------------|-----------|--------------------|------------|------------------------|-----------------|-------------|
| It was not observed any emissions from the EUT. | | | | | | | | | |

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Tested by: Ki-Hong, Nam / Senior Engineer

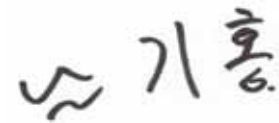
7.4.2.5 Band Edge

- . Test Date : November 13, 2012
- . Resolution bandwidth : 1 MHz for Peak and Average Mode
- . Video bandwidth : 1 MHz for Peak Mode, 10 Hz for Average Mode
- . Measurement distance : 3 m
- . Operating Condition : Low / High Channel
- . Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)
- . Result : PASSED

| Frequency (MHz) | Reading (dBμV) | Detector Mode | Ant. Pol. (H/V) | Ant. Factor | Cable Loss | Pre-Amp (dB) | Total (dBμV/m) | Limits (dBμV/m) | Margin (dB) |
|-----------------------------------|----------------|---------------|-----------------|-------------|------------|--------------|----------------|-----------------|-------------|
| Test Data for Low Channel | | | | | | | | | |
| 2 400.00 | 60.88 | Peak | H | 27.05 | 3.14 | 43.10 | 47.97 | 74.00 | 26.03 |
| 2 400.00 | 50.55 | Average | H | | | | 37.64 | 54.00 | 16.36 |
| 2 400.00 | 58.78 | Peak | V | | | | 45.87 | 74.00 | 28.13 |
| 2 400.00 | 48.78 | Average | V | | | | 35.87 | 54.00 | -18.13 |
| Test Data for High Channel | | | | | | | | | |
| 2 483.50 | 64.64 | Peak | H | 27.31 | 3.17 | 43.10 | 52.02 | 74.00 | 21.98 |
| 2 483.50 | 53.33 | Average | H | | | | 40.71 | 54.00 | 13.29 |
| 2 483.50 | 62.02 | Peak | V | | | | 49.40 | 74.00 | 24.60 |
| 2 483.50 | 50.55 | Average | V | | | | 37.93 | 54.00 | 16.07 |

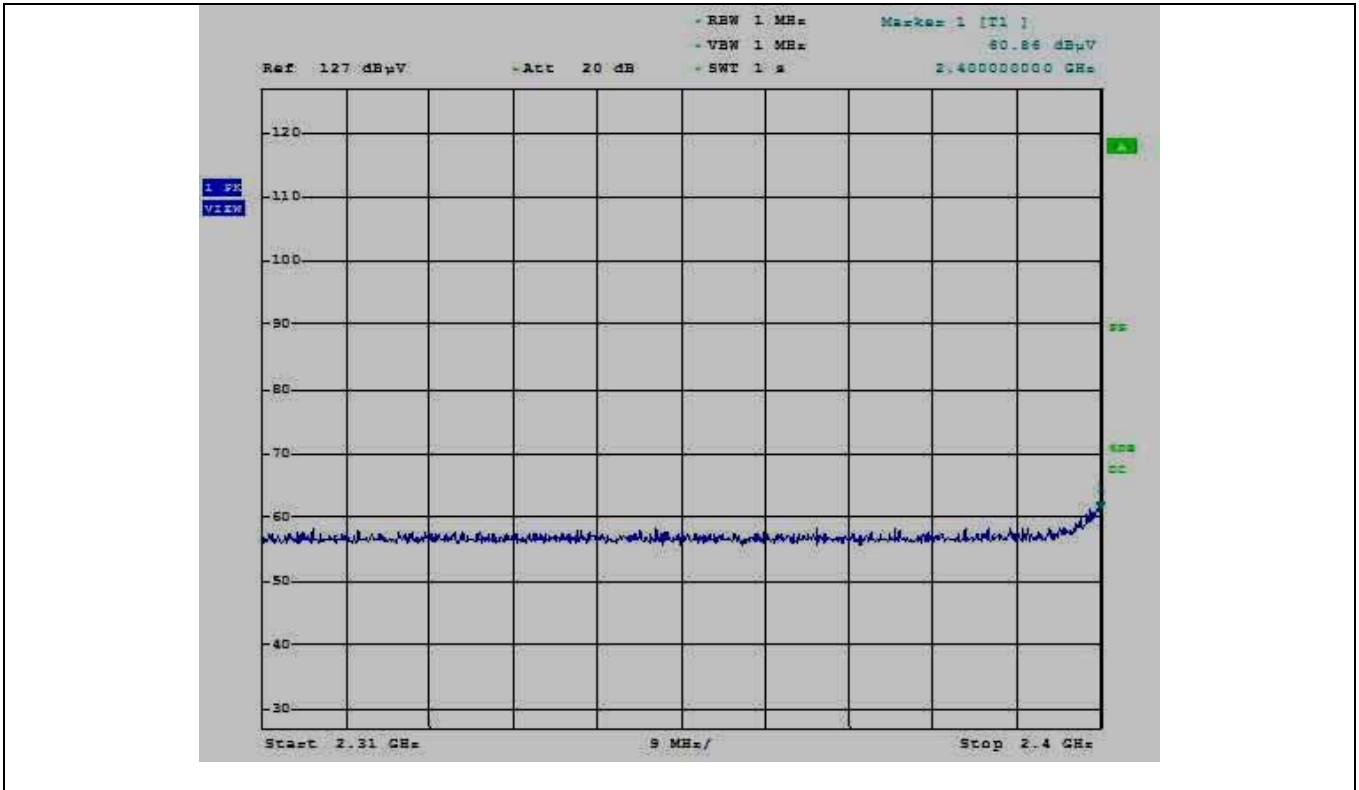
Remark. Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

Total = Reading + Antenna Factor + Cable Loss – Pre-amplifier gain.



Tested by: Ki-Hong, Nam / Senior Engineer

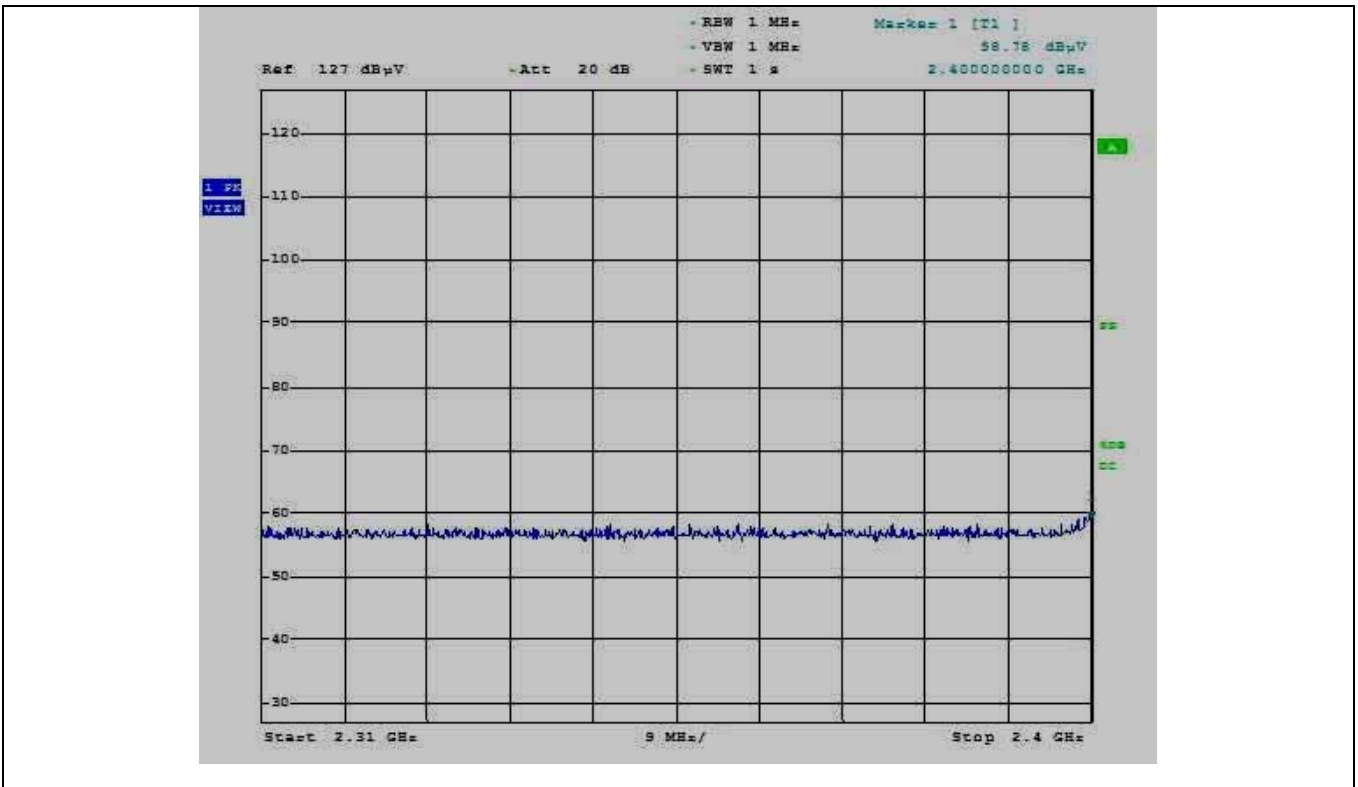
Plotted Data for band edge



Low Channel – Horizontal (Peak)



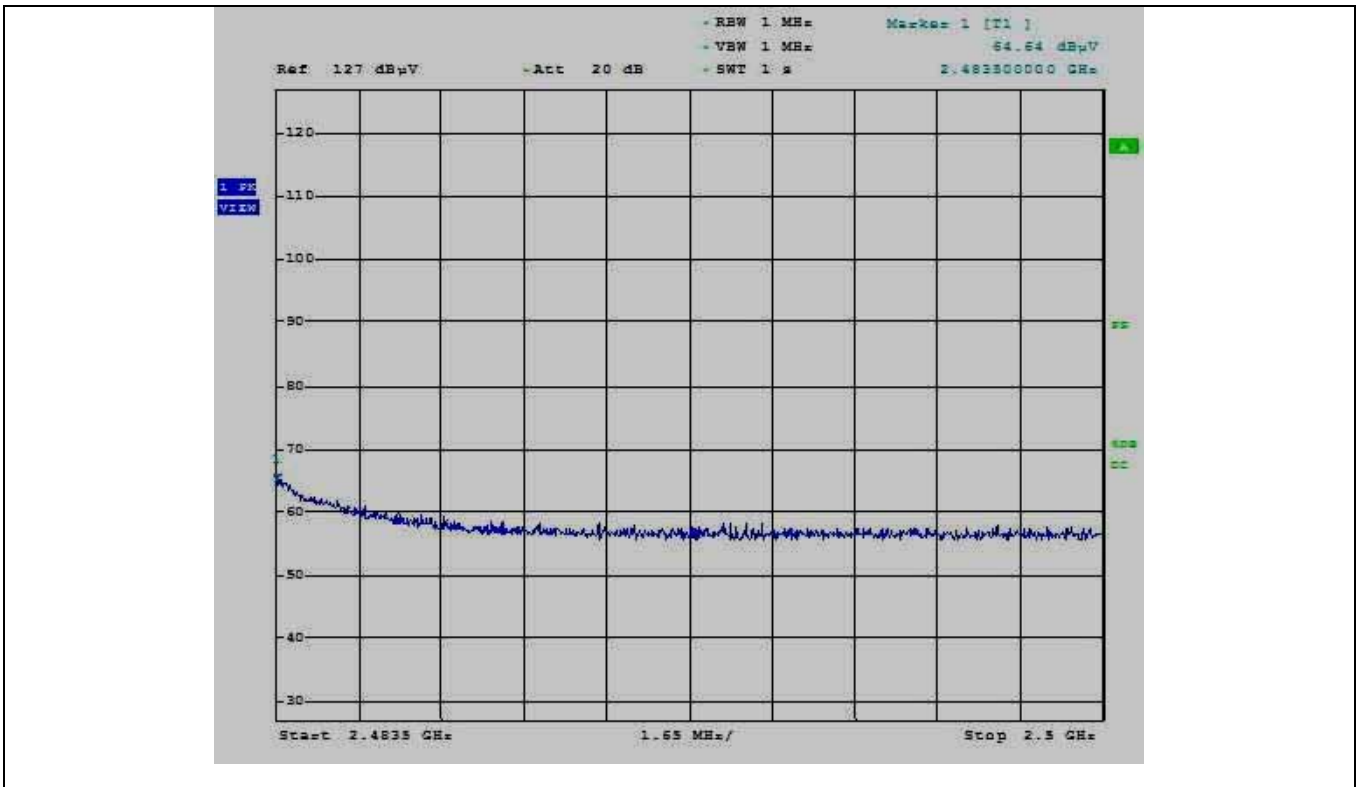
Low Channel – Horizontal (Average)



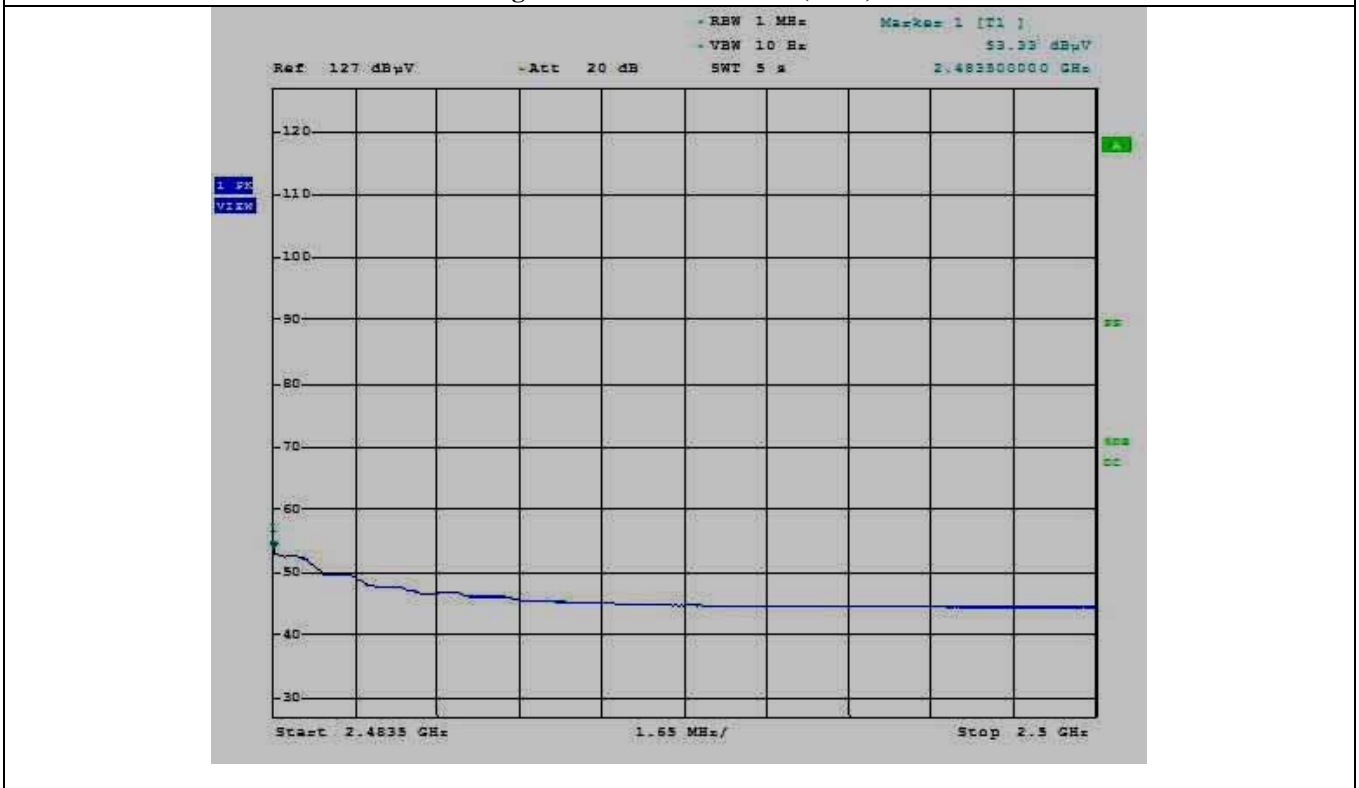
Low Channel – Vertical (Peak)



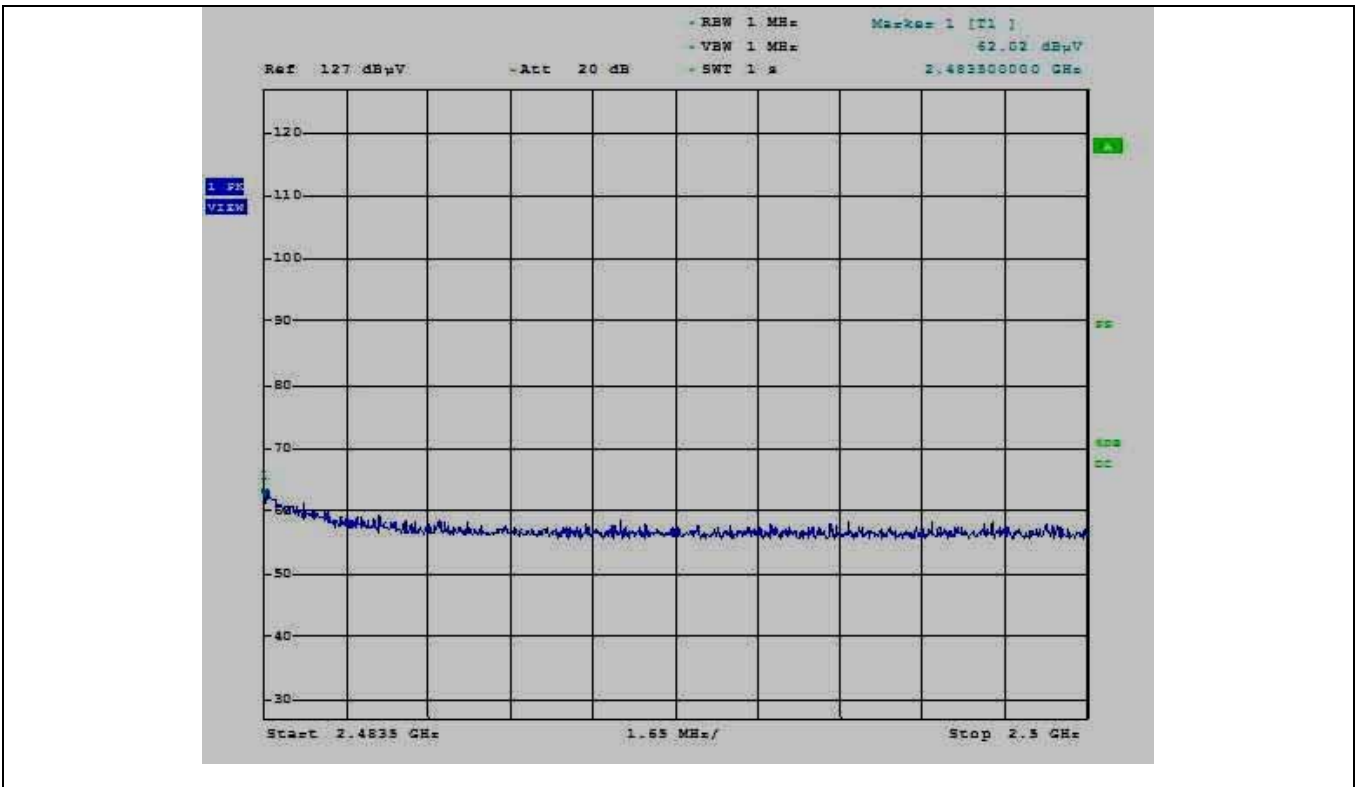
Low Channel – Vertical (Average)



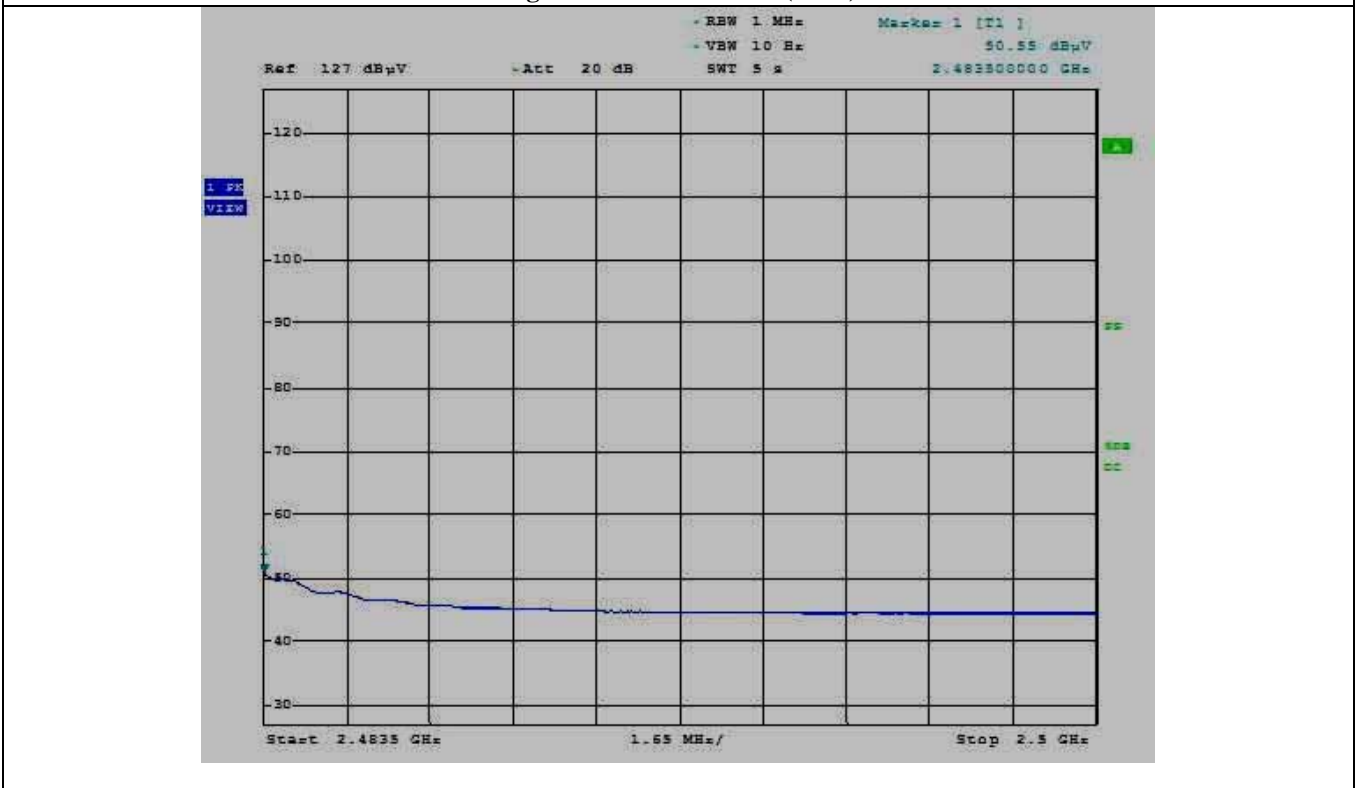
High Channel – Horizontal (Peak)



High Channel – Horizontal (Average)



High Channel – Vertical (Peak)



High Channel – Vertical (Average)

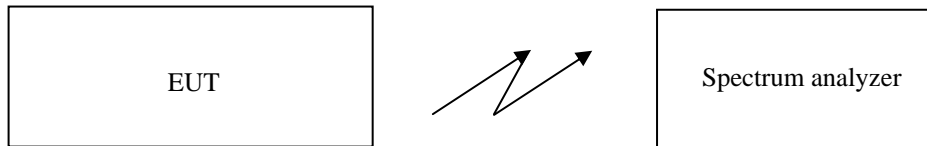
8. 20 dB BANDWIDTH

8.1 Operating environment

Temperature : 25 °C
 Relative humidity : 54 % R.H.

8.2 Test set-up

The output signal of EUT was received by the spectrum analyzer. The resolution bandwidth is set to 10 kHz, and peak detection was used. The 20 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 20 dB.



8.3 Test equipment used

| Model Number | Manufacturer | Description | Serial Number | Last Cal. (Interval) |
|--------------|--------------|-------------------|---------------|----------------------|
| ■ - FSV30 | R/S | Spectrum Analyzer | 101372 | May 31, 2012 (1Y) |

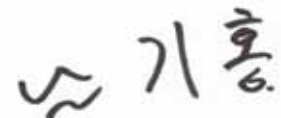
8.4 Test data for Bandwidth

- Test Date : November 09, 2012
 - Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.215(c)

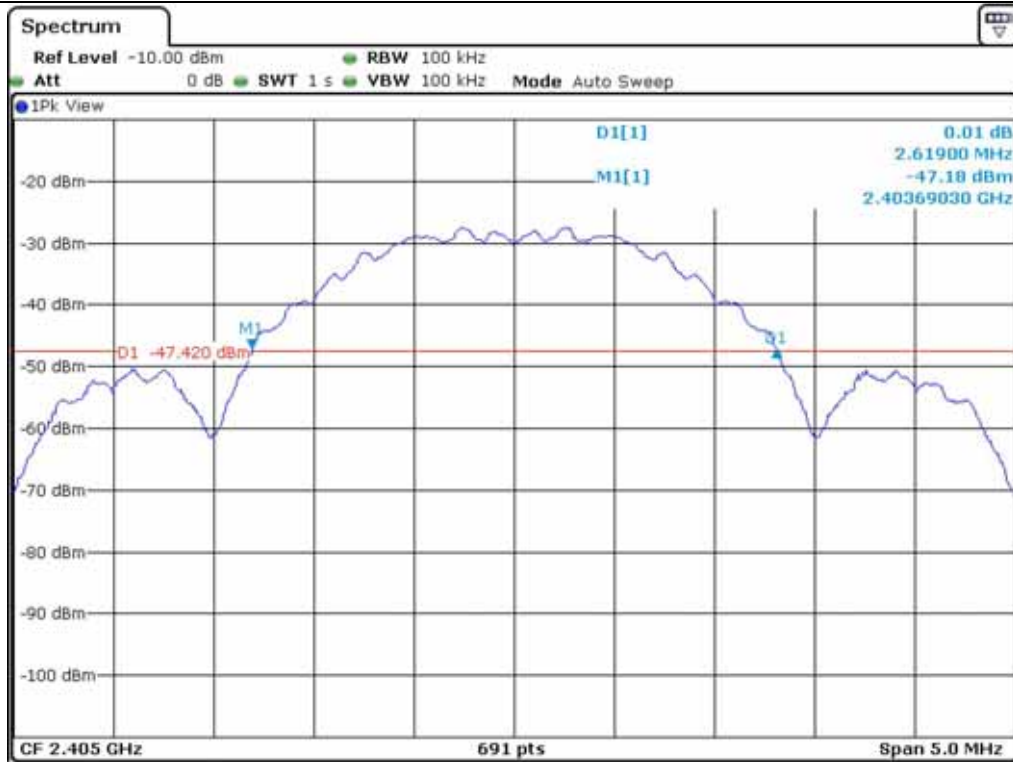
| Channel | Operating Freq. (MHz) | 20 dB Bandwidth (kHz) | Result |
|---------|-----------------------|-----------------------|----------------------------|
| Low | 2 405.00 | 2 619.0 | Met the requirement / PASS |
| Middle | 2 450.00 | 2 612.1 | |
| High | 2 480.00 | 2 626.0 | |

Remark: See next page for 20 dB Bandwidth test data.

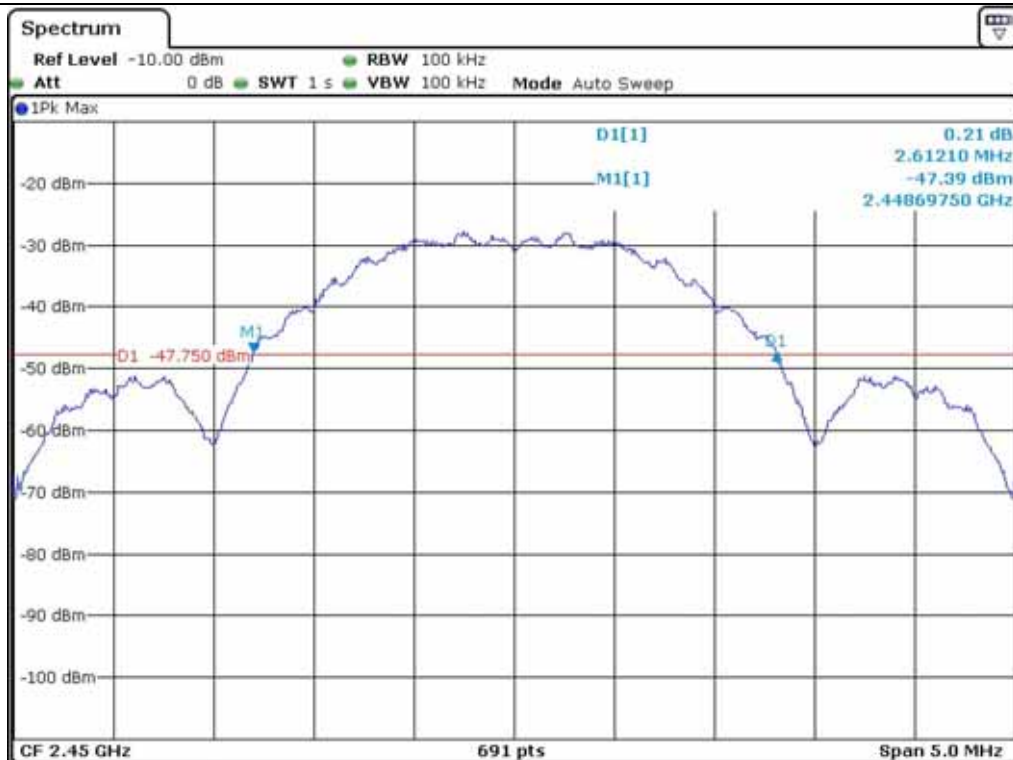
The 20 dB bandwidth is within the assigned frequency band from 2 400 MHz to 2 483.5 MHz.



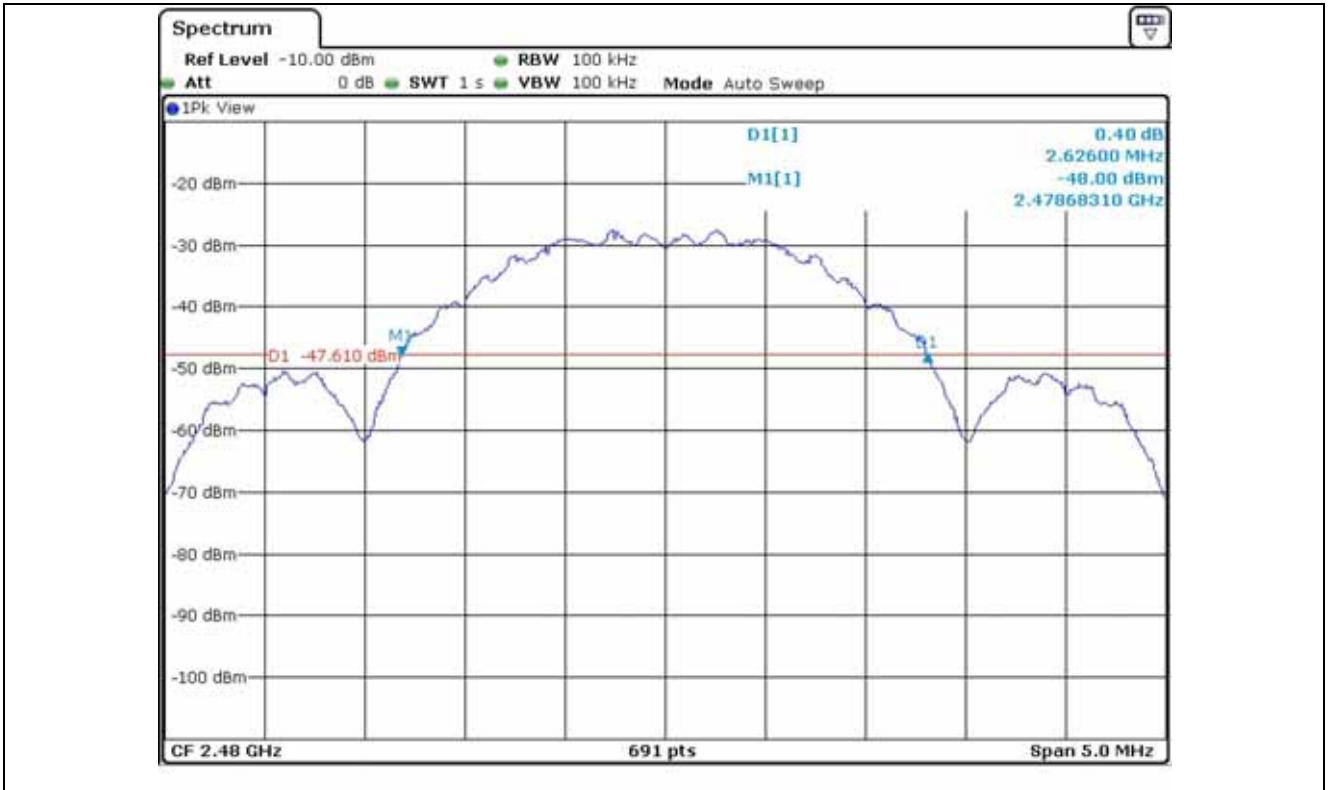
Tested by: Ki-Hong, Nam / Senior Engineer



Low Channel



Middle Channel



High Channel