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Report No.: SZEMO10070422701

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# **FCC REPORT**

**Application No:** SZEMO100704227RF

**Applicant:** ALBAHITH TECHNOLOGIES (Known as Younivate)

Product Name: Fleet Management System

Operation Frequency: 2405MHz to 2475MHz

FCC ID: YLNY5010-A

Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2008

**Date of Receipt:** 2010-07-07

**Date of Test:** 2010-07-13 to 2010-08-18

**Date of Issue:** 2010-09-15

Test Result : PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Jack Zhang

Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK.. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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# 3 Test Summary

| Test Item                        | Section in CFR 47 | Result |
|----------------------------------|-------------------|--------|
| Antenna requirement              | 15.203/15.247 (c) | Passed |
| AC Power Line Conducted Emission | 15.207            | N/A    |
| Conducted Peak Output Power      | 15.247 (b)(3)     | Passed |
| 6dB Occupied Bandwidth           | 15.247 (a)(2)     | Passed |
| Power Spectral Density           | 15.247 (e)        | Passed |
| Radiated Emission                | 15.205/15.209     | Passed |
| Band Edge                        | 15.247(d)         | Passed |

Remark: Passed: The EUT complies with the essential requirements in the standard.

Failed: The EUT does not comply with the essential requirements in the standard.



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# 4 General Information

# 4.1 Client Information

| Applicant:               | ALBAHITH TECHNOLOGIES (Known as Younivate)                               |  |
|--------------------------|--|--|
| Address of Applicant:    | dress of Applicant: 165, King Abdullah Second Street Amman, 11953 Jordan |  |
| Manufacturer:            | Manufacturer: ALBAHITH TECHNOLOGIES (Known as Younivate)                 |  |
|                          | ALBAHITH is the ODM/OEM  |  |
| Address of Manufacturer: | 165, King Abdullah Second Street Amman, 11953 Jordan                     |  |
| Factory:                 | We normally subcontract with EMSs. Currently we use the following        |  |
|                          | EMS:(we may use some other EMS in diffcountry)                           |  |
| Address of Factory:      | 1-4 Floor, B Building, Shan Li Lang Village Ind, Buji Town               |  |
|                          | Shenzhen 518112, People's Republic of China.                             |  |

# 4.2 General Description of E.U.T.

| Product Name:                      | Fleet Management System                |
|------------------------------------|--|
| Trade mark:                        | Younivate                              |
| Model No.:                         | Y5010-A                                |
| Operation Frequency:               | 2405MHz~2475MHz                        |
| Channel numbers:                   | 14                                     |
| Channel separation:                | 5MHz                                   |
| Modulation type:<br>(IEEE 802.11b) | Direct Sequence Spread Spectrum (DSSS) |
| Antenna Type:                      | Integral                               |
| Antenna gain:                      | 3.3dBi                                 |
| Power supply:                      | Type: DC 12V                           |

|         | Operation Frequency of each channel |      |                |  |  |  |
|---------|-------------------------------------|------|----------------|--|--|--|
| Channel | Channel Frequency Channel Frequency |      | Frequency      |  |  |  |
| CH00    | 2405.050±50KHz                      | CH08 | 2445.050±50KHz |  |  |  |
| CH01    | 2410.050±50KHz                      | CH09 | 2450.050±50KHz |  |  |  |
| CH02    | 2415.050±50KHz                      | CH10 | 2455.050±50KHz |  |  |  |
| CH03    | 2420.050±50KHz                      | CH11 | 2460.050±50KHz |  |  |  |
| CH04    | 2425.050±50KHz                      | CH12 | 2465.050±50KHz |  |  |  |
| CH05    | 2430.050±50KHz                      | CH13 | 2470.050±50KHz |  |  |  |
| CH06    | 2435.050±50KHz                      | CH14 | 2475.050±50KHz |  |  |  |
| CH07    | 2440.050±50KHz                      |      |                |  |  |  |



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#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel             | Frequency |
|---------------------|-----------|
| The lowest channel  | 2405MHz   |
| The middle channel  | 2440MHz   |
| The Highest channel | 2475MHz   |

#### 4.3 Test environment and mode

| Test Environment:     |  |  |  |  |
|-----------------------|--|--|--|--|
| Temperature:          | 24.0 °C  |  |  |  |
| Humidity:             | 52 % RH  |  |  |  |
| Atmospheric Pressure: | 1008 mbar  |  |  |  |
| Test mode:            |  |  |  |  |
| Tx mode:              | Keep the EUT in transmitting mode with modulation. |  |  |  |



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# 4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### VCC

The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.

Date of Registration: September 29, 2008. Valid until September 28, 2011.

#### • FCC – Registration No.: 556682

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 556682, June 27, 2008.

#### • Industry Canada (IC)

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

## 4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

# 4.6 Other Information Requested by the Customer

None.



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## 4.7 Test Instruments list

| RE i | RE in Chamber                     |                                    |                             |                  |                       |                           |
|------|-----------------------------------|------------------------------------|-----------------------------|------------------|-----------------------|---------------------------|
| Item | Test Equipment                    | Manufacturer                       | Model No.                   | Inventory<br>No. | Cal.Date (yyyy-mm-dd) | Cal.Due date (yyyy-mm-dd) |
| 1    | 3m Semi-Anechoic<br>Chamber       | ETS-LINDGREN                       | N/A                         | SEL0017          | 2010-06-17            | 2011-06-17                |
| 2    | EMI Test Receiver                 | Rohde & Schwarz                    | ESIB26                      | SEL0023          | 2009-11-05            | 2010-11-05                |
| 3    | EMI Test software                 | AUDIX                              | E3                          | SEL0050          | N/A                   | N/A                       |
| 4    | Coaxial cable                     | SGS                                | N/A                         | SEL0028          | 2008-06-18            | 2011-06-18                |
| 5    | BiConiLog Antenna<br>(26-3000MHz) | ETS-LINDGREN                       | 3142C                       | SEL0015          | 2009-11-05            | 2010-11-05                |
| 6    | Double-ridged horn (1-18GHz)      | ETS-LINDGREN                       | 3117                        | SEL0006          | 2009-11-10            | 2010-11-10                |
| 7    | Horn Antenna<br>(18-26GHz)        | ETS-LINDGREN                       | 3160                        | SEL0076          | 2009-11-10            | 2010-11-10                |
| 8    | Pre-amplifier (0.1-1300MHz)       | Agilent<br>Technologies            | 8447D                       | SEL0053          | 2010-06-02            | 2011-06-02                |
| 9    | Pre-Amplifier (0.1-26.5GHz)       | Compliance Directions Systems Inc. | PAP-0126                    | SEL0168          | 2009-12-18            | 2010-12-18                |
| 10   | Pre-amplifier<br>(18-26GHz)       | Rohde & Schwarz                    | AFS33-18002<br>650-30-8P-44 | SEL0080          | 2010-06-04            | 2011-06-04                |
| 11   | Band filter                       | Amindeon                           | 82346                       | SEL0094          | 2010-06-02            | 2011-06-02                |

| Con  | Conducted Emission |                  |           |                  |                          |                           |  |
|------|--------------------|------------------|-----------|------------------|--------------------------|---------------------------|--|
| Item | Test Equipment     | Manufacturer     | Model No. | Inventory<br>No. | Cal.Date<br>(yyyy-mm-dd) | Cal.Due date (yyyy-mm-dd) |  |
| 1    | Shielding Room     | ZhongYu Electron | GB-88     | SEL0042          | N/A                      | N/A                       |  |
| 2    | LISN               | ETS-LINDGREN     | 3816/2    | SEL0021          | 2010-06-02               | 2011-06-02                |  |
| 3    | Two-Line V-Network | Rohde & Schwarz  | ENV216    | SEL0152          | 2009-10-22               | 2010-10-22                |  |
| 4    | EMI Test Receiver  | Rohde & Schwarz  | ESCI      | SEL0022          | 2010-06-02               | 2011-06-02                |  |
| 5    | Coaxial Cable      | SGS              | N/A       | SEL0024          | 2008-06-18               | 2011-06-18                |  |



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| RF c | RF conducted      |                 |           |                  |                       |                           |
|------|-------------------|-----------------|-----------|------------------|-----------------------|---------------------------|
| Item | Test Equipment    | Manufacturer    | Model No. | Inventory<br>No. | Cal.Date (yyyy-mm-dd) | Cal.Due date (yyyy-mm-dd) |
| 1    | Spectrum Analyzer | Rohde & Schwarz | FSP 30    | SEL0154          | 2009-10-22            | 2010-10-22                |
| 2    | Coaxial cable     | SGS             | N/A       | SEL0028          | 2008-06-18            | 2011-06-18                |



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# 5 Test results and Measurement Data

# 5.1 Antenna requirement:

**Standard requirement:** FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### E.U.T Antenna:

This document describes a PCB antenna design that can be used with all 2.4 GHz transceivers and transmitters from Texas Instruments. Maximum gain is measured

to be +3.3 dB and overall size requirements for this antenna are 25.7 x 7.5 mm. Thus, this is a compact, low cost and high performance antenna.





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# 5.2 Conducted Peak Output Power

| Test Requirement: | FCC Part15 C Section 15.247 (b)(3)   |  |  |
|-------------------|--|--|--|
| Test Method:      | ANSI C63.4:2003 and KDB558074  |  |  |
| Limit:            | 30dBm  |  |  |
| Test setup:       | Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane  Remark:                         |  |  |
| Test Instruments: | Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.  Refer to section 4.7 for details |  |  |
| Test results:     | Passed   |  |  |

## **Measurement Data**

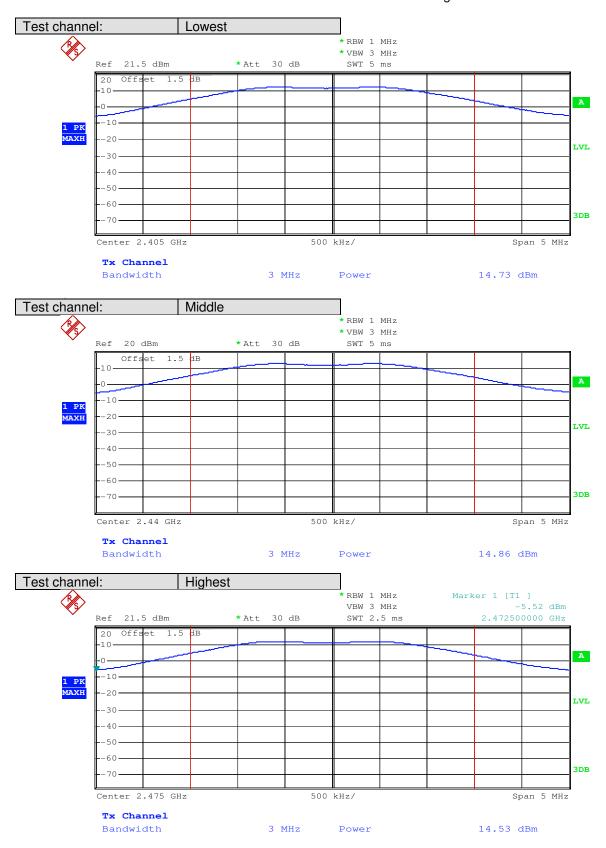
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
|--------------|-------------------------|-------------|--------|
| Lowest       | 14.73                   | 30.00       | Pass   |
| Middle       | 14.86                   | 30.00       | Pass   |
| Highest      | 14.53                   | 30.00       | Pass   |

## Test plot as follows:



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# 5.3 6dB Occupy Bandwidth

| Test Requirement: | FCC Part15 C Section 15.247 (a)(2)                                    |
|-------------------|---|
| Test Method:      | ANSI C63.4:2003 and KDB558074   |
| Limit:            | >500KHz   |
| Test setup:       | Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane |
| Test Instruments: | Refer to section 4.7 for details                                      |
| Test results:     | Passed  |

#### **Measurement Data**

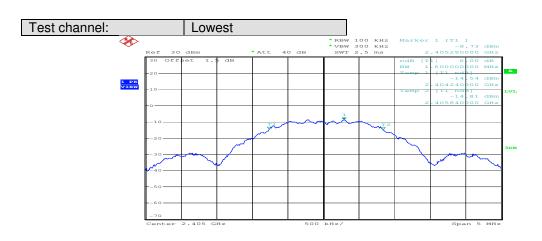
| Test channel | 6dB Occupy Bandwidth (kHz) | Limit (kHz) | Result |
|--------------|----------------------------|-------------|--------|
| Lowest       | 1600                       | >500        | Pass   |
| Middle       | 1610                       | >500        | Pass   |
| Highest      | 1600                       | >500        | Pass   |

#### Test plot as follows:



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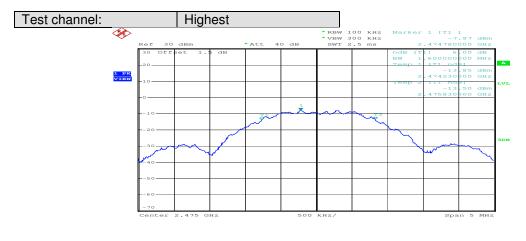
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Date: 17.AUG.2010 15:26:37



Date: 17.AUG.2010 16:09:22



Date: 17.AUG.2010 18:06:44



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# **Power Spectral Density**

| Test Requirement: | FCC Part15 C Section 15.247 (e)  |  |  |  |  |
|-------------------|--|--|--|--|--|
| Test Method:      | ANSI C63.4:2003 and KDB558074  |  |  |  |  |
| Limit:            | <8dBm  |  |  |  |  |
| Test setup:       | Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane  Remark: |  |  |  |  |
|                   | Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.           |  |  |  |  |
| Test Instruments: | Refer to section 4.7 for details   |  |  |  |  |
| Test results:     | Passed   |  |  |  |  |

#### **Measurement Data**

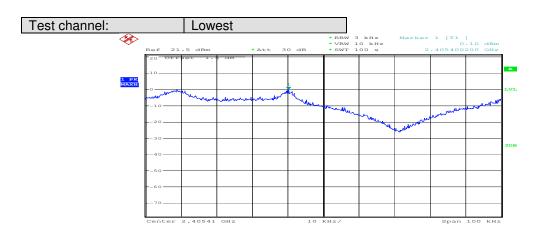
| Test channel | Power Spectral Density (dBm) | Limit (dBm) | Result |
|--------------|------------------------------|-------------|--------|
| Lowest       | 0.10                         | <8.00       | Pass   |
| Middle       | -0.59                        | <8.00       | Pass   |
| Highest      | -0.34                        | <8.00       | Pass   |

## Test plot as follows:



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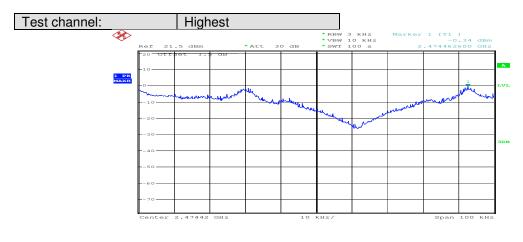
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Date: 14.SEP.2010 16:19:25



Date: 14.SEP.2010 16:39:57



Date: 14.SEP.2010 16:35:09



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# 5.4 Band Edge

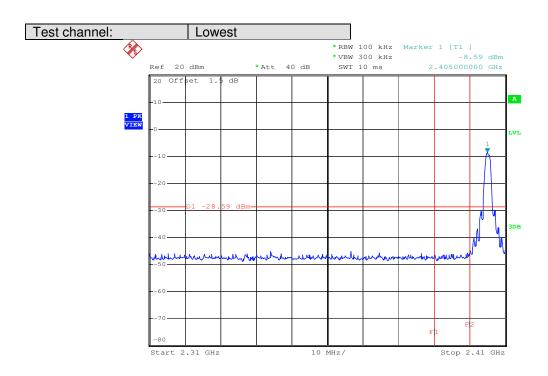
| Test Requirement: | FCC Part15 C Section 15.247 (d)   |  |  |  |  |  |
|-------------------|---|--|--|--|--|--|
| Test Method:      | ANSI C63.4:2003 and KDB558074   |  |  |  |  |  |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator 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. |  |  |  |  |  |
| Test setup:       | Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane  Remark:  |  |  |  |  |  |
|                   | Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.  |  |  |  |  |  |
| Test Instruments: | Refer to section 4.7 for details  |  |  |  |  |  |
| Test results:     | Passed  |  |  |  |  |  |

#### Test plot as follows:

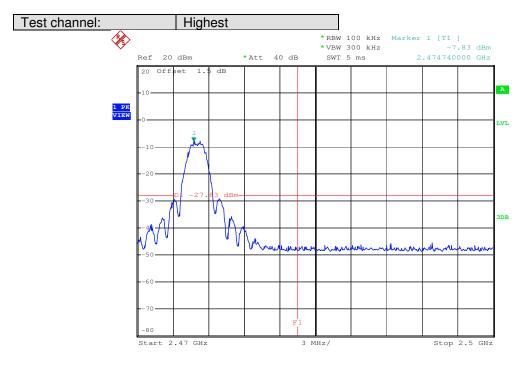


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Date: 17.AUG.2010 15:38:09



Date: 17.AUG.2010 18:08:54



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# 5.5 RF Antenna Conducted spurious emissions

| Test Requirement: | FCC Part15 C Section 15.247 (d)   |  |  |  |  |  |  |
|-------------------|---|--|--|--|--|--|--|
| Test Method:      | ANSI C63.4:2003 and KDB558074   |  |  |  |  |  |  |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. |  |  |  |  |  |  |
| Test setup:       | Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane  Remark:  Offset the High-Frequency cable loss 1.5dB in the spectrum analyzer.  |  |  |  |  |  |  |
| Test Instruments: | Refer to section 4.7 for details  |  |  |  |  |  |  |
| Test results:     | Passed  |  |  |  |  |  |  |

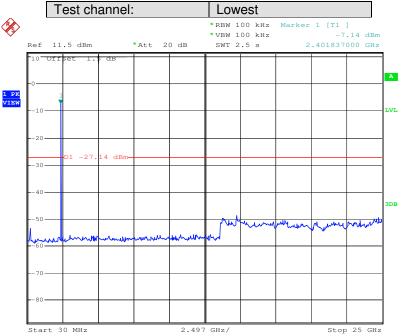
<sup>&</sup>quot;This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> and conditions.htm</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/terms">www.sgs.com/terms</a> e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



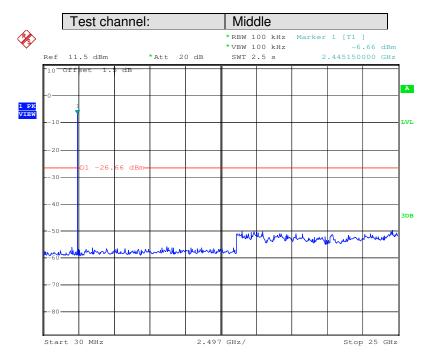
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## Test plot as follows:



Date: 6.AUG.2010 10:31:29

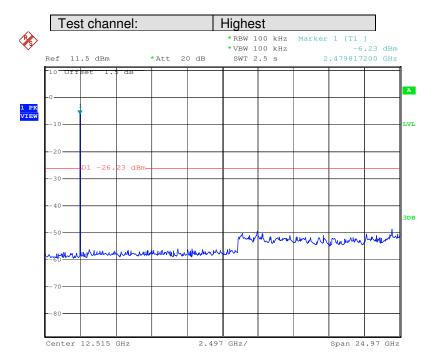


Date: 6.AUG.2010 10:57:45



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Date: 6.AUG.2010 12:14:33



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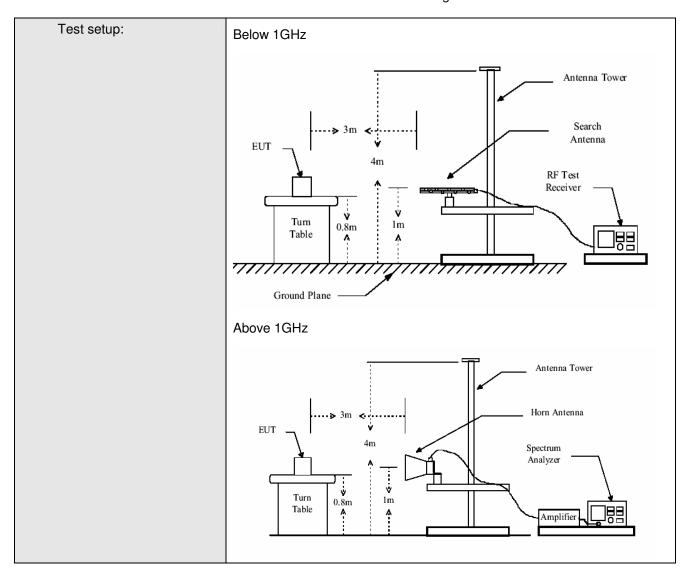
## 5.6 Radiated Emission

| Test Requirement:     | FCC Part15 C Section 15.209 and 15.205  |                               |                                  |                            |   |  |  |  |
|-----------------------|---|-------------------------------|----------------------------------|----------------------------|---|--|--|--|
| Test Method:          | ANSI C63.4: 2003  |                               |                                  |                            |   |  |  |  |
| Test Frequency Range: | 30MHz to 25GHz  |                               |                                  |                            |   |  |  |  |
| Test site:            | Measurement D   | )istance: 3m (                | (Semi-Anecho                     | ic Chambei                 | r)  |  |  |  |
| Receiver setup:       |   | ,                             |                                  |                            |   |  |  |  |
| ·                     | Frequency   | Detector                      | RBW                              | VBW                        | Remark  |  |  |  |
|                       | 30MHz-1GHz  | Quasi-peak                    | 100KHz                           | 300KHz                     | Quasi-peak Value  |  |  |  |
|                       | Above 1GHz  | Peak                          | 1MHz                             | 3MHz                       | Peak Value  |  |  |  |
|                       | Above Tariz   | Peak                          | 1MHz                             | 10Hz                       | Average Value   |  |  |  |
| Limit:                | _   |                               |                                  |                            |   |  |  |  |
|                       | Freque  |                               | Limit (dBuV                      | /m @3m)                    | Remark  |  |  |  |
|                       | 30MHz-8   |                               | 40.0                             |                            | Quasi-peak Value  |  |  |  |
|                       | 88MHz-2   |                               | 43.                              |                            | Quasi-peak Value  |  |  |  |
|                       | 216MHz-9  |                               | 46.0                             |                            | Quasi-peak Value  |  |  |  |
|                       | 960MHz-   | 1GHz                          | 54.0                             |                            | Quasi-peak Value  |  |  |  |
|                       | Above 1   | GHz                           | 54.0                             |                            | Average Value   |  |  |  |
|                       | 7.0010  | <u> </u>                      | 74.0                             |                            | Peak Value  |  |  |  |
| Test Procedure:       | above ground. <sup>-</sup><br>position of the n   | The turn table<br>naximum emi | can rotate 36<br>ission level. T | 60 degrees t<br>he antenna | e which is 0.8meter<br>to determine the<br>can move up and<br>aximum emission |  |  |  |
|                       | Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement. |                               |                                  |                            |   |  |  |  |
| Test Instruments:     | Refer to section  | 4.7 for detail                | s                                |                            |   |  |  |  |
| Test mode:            | Tx mode   |                               |                                  |                            |   |  |  |  |
| Test results:         | Passed  |                               |                                  | -                          |   |  |  |  |



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#### Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor



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#### 5.6.1 Radiated emission below 1GHz

| Frequency (MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Read<br>Level<br>(dBuV) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | polarization |
|-----------------|-----------------------|-----------------------------|--------------------------|-------------------------|-------------------|------------------------|-----------------------|--------------|
| 31.940          | 0.60                  | 14.43                       | 27.55                    | 37.74                   | 25.22             | 40.00                  | -14.78                | Vertical     |
| 44.550          | 0.70                  | 9.61                        | 27.51                    | 39.95                   | 22.75             | 40.00                  | -17.25                | Vertical     |
| 55.220          | 0.80                  | 7.56                        | 27.48                    | 41.15                   | 22.03             | 40.00                  | -17.97                | Vertical     |
| 78.500          | 1.05                  | 7.59                        | 27.43                    | 39.37                   | 20.58             | 40.00                  | -19.42                | Vertical     |
| 157.070         | 1.33                  | 9.42                        | 27.03                    | 34.31                   | 18.03             | 43.50                  | -25.47                | Vertical     |
| 917.550         | 3.62                  | 23.27                       | 26.44                    | 26.34                   | 26.79             | 46.00                  | -19.21                | Vertical     |
| 31.940          | 0.60                  | 14.31                       | 27.55                    | 37.94                   | 25.30             | 40.00                  | -14.70                | Horizontal   |
| 39.700          | 0.60                  | 11.87                       | 27.52                    | 38.61                   | 23.56             | 40.00                  | -16.44                | Horizontal   |
| 66.860          | 0.80                  | 6.99                        | 27.45                    | 40.91                   | 21.25             | 40.00                  | -18.75                | Horizontal   |
| 75.590          | 0.97                  | 7.37                        | 27.44                    | 39.22                   | 20.12             | 40.00                  | -19.88                | Horizontal   |
| 157.070         | 1.33                  | 9.42                        | 27.03                    | 33.34                   | 17.06             | 43.50                  | -26.44                | Horizontal   |
| 995.150         | 3.70                  | 24.26                       | 26.13                    | 26.88                   | 28.71             | 54.00                  | -25.29                | Horizontal   |



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#### 5.6.2 Transmitter emission above 1GHz

| Test channe        | el: Low               | rest .                      | Remark                   | (:                      | Peak              |                        |                       |              |
|--------------------|-----------------------|-----------------------------|--------------------------|-------------------------|-------------------|------------------------|-----------------------|--------------|
| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Read<br>Level<br>(dBuV) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | polarization |
| 4876               | 10.36                 | 34.02                       | 39.89                    | 42.40                   | 46.89             | 74.00                  | -17.11                | Vertical     |
| 7324               | 12.91                 | 36.10                       | 40.40                    | 41.25                   | 49.86             | 74.00                  | -14.14                | Vertical     |
| 9772               | 13.99                 | 37.12                       | 38.01                    | 46.08                   | 59.18             | 74.00                  | -14.82                | Vertical     |
| 12203              | 17.95                 | 38.93                       | 39.30                    | 44.62                   | 62.20             | 74.00                  | -11.80                | Vertical     |
| 14634              | 17.38                 | 39.60                       | 45.83                    | 48.75                   | 59.90             | 74.00                  | -14.10                | Vertical     |
| 4808               | 9.36                  | 34.04                       | 41.53                    | 53.09                   | 54.96             | 74.00                  | -19.04                | Horizontal   |
| 7222               | 13.30                 | 36.29                       | 40.88                    | 47.69                   | 56.40             | 74.00                  | -17.60                | Horizontal   |
| 9619               | 13.39                 | 36.99                       | 37.56                    | 44.98                   | 57.80             | 74.00                  | -16.20                | Horizontal   |
| 12033              | 16.77                 | 38.82                       | 39.13                    | 45.51                   | 61.97             | 74.00                  | -12.03                | Horizontal   |
| 14447              | 17.43                 | 39.45                       | 45.11                    | 42.88                   | 54.65             | 74.00                  | -19.35                | Horizontal   |

| Test channe        | l: Low                | est est                      | Remark                   | <b>(</b> :                 | Average                       |                   |               |              |
|--------------------|-----------------------|------------------------------|--------------------------|----------------------------|-------------------------------|-------------------|---------------|--------------|
| Frequency<br>(MHz) | Cable<br>loss<br>(dB) | Antenna<br>factors<br>(dB/m) | Preamp<br>factor<br>(dB) | Reading<br>Level<br>(dBµV) | Emission<br>Level<br>(dBµV/m) | Limit<br>(dBμV/m) | Over<br>limit | polarization |
| 4876               | 10.36                 | 34.02                        | 39.89                    | 38.54                      | 43.03                         | 54.00             | -10.97        | Vertical     |
| 7324               | 12.91                 | 36.10                        | 40.40                    | 36.59                      | 45.20                         | 54.00             | -8.80         | Vertical     |
| 9772               | 13.99                 | 37.12                        | 38.01                    | 33.59                      | 46.69                         | 54.00             | -7.31         | Vertical     |
| 12203              | 17.95                 | 38.93                        | 39.30                    | 28.47                      | 46.05                         | 54.00             | -7.95         | Vertical     |
| 14634              | 17.38                 | 39.60                        | 45.83                    | 34.58                      | 45.73                         | 54.00             | -8.27         | Vertical     |
| 4808               | 9.36                  | 34.04                        | 41.53                    | 39.64                      | 41.51                         | 54.00             | -12.49        | Horizontal   |
| 7222               | 13.30                 | 36.29                        | 40.88                    | 36.11                      | 44.82                         | 54.00             | -9.18         | Horizontal   |
| 9619               | 13.39                 | 36.99                        | 37.56                    | 30.65                      | 43.47                         | 54.00             | -10.53        | Horizontal   |
| 12033              | 16.77                 | 38.82                        | 39.13                    | 31.58                      | 48.04                         | 54.00             | -5.96         | Horizontal   |
| 14447              | 17.43                 | 39.45                        | 45.11                    | 32.20                      | 43.97                         | 54.00             | -10.03        | Horizontal   |



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| Test channe        | el: Mid               | dle                         | Remark                   | (:                      | Peak              |                        |                       |              |
|--------------------|-----------------------|-----------------------------|--------------------------|-------------------------|-------------------|------------------------|-----------------------|--------------|
| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Read<br>Level<br>(dBuV) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | polarization |
| 4944               | 10.51                 | 34.01                       | 40.96                    | 43.47                   | 47.03             | 74.00                  | -16.97                | Vertical     |
| 7426               | 12.72                 | 35.91                       | 40.01                    | 40.50                   | 49.12             | 74.00                  | -14.88                | Vertical     |
| 9908               | 14.21                 | 37.21                       | 37.85                    | 44.31                   | 57.88             | 74.00                  | -16.12                | Vertical     |
| 12373              | 17.63                 | 39.01                       | 39.45                    | 45.42                   | 62.61             | 74.00                  | -11.39                | Vertical     |
| 14855              | 16.69                 | 39.80                       | 46.61                    | 48.68                   | 58.56             | 74.00                  | -15.44                | Vertical     |
| 4876               | 10.36                 | 34.02                       | 39.89                    | 52.02                   | 56.51             | 74.00                  | -17.49                | Horizontal   |
| 7324               | 12.91                 | 36.10                       | 40.40                    | 51.60                   | 60.21             | 74.00                  | -13.79                | Horizontal   |
| 9755               | 13.89                 | 37.10                       | 37.94                    | 47.85                   | 60.90             | 74.00                  | -13.10                | Horizontal   |
| 12203              | 17.95                 | 38.93                       | 39.30                    | 44.96                   | 62.54             | 74.00                  | -11.46                | Horizontal   |
| 14634              | 17.38                 | 39.60                       | 45.83                    | 47.00                   | 58.15             | 74.00                  | -15.85                | Horizontal   |

| Test channe        | l: Mide               | dle                          | Remark                   | (:                         | Average                       |                   |               |              |
|--------------------|-----------------------|------------------------------|--------------------------|----------------------------|-------------------------------|-------------------|---------------|--------------|
| Frequency<br>(MHz) | Cable<br>loss<br>(dB) | Antenna<br>factors<br>(dB/m) | Preamp<br>factor<br>(dB) | Reading<br>Level<br>(dBµV) | Emission<br>Level<br>(dBµV/m) | Limit<br>(dBμV/m) | Over<br>limit | polarization |
| 4944               | 10.51                 | 34.01                        | 40.96                    | 40.57                      | 44.13                         | 54.00             | -9.87         | Vertical     |
| 7426               | 12.72                 | 35.91                        | 40.01                    | 36.57                      | 45.19                         | 54.00             | -8.81         | Vertical     |
| 9908               | 14.21                 | 37.21                        | 37.85                    | 31.54                      | 45.11                         | 54.00             | -8.89         | Vertical     |
| 12373              | 17.63                 | 39.01                        | 39.45                    | 27.58                      | 44.77                         | 54.00             | -9.23         | Vertical     |
| 14855              | 16.69                 | 39.80                        | 46.61                    | 32.38                      | 42.26                         | 54.00             | -11.74        | Vertical     |
| 4876               | 10.36                 | 34.02                        | 39.89                    | 40.11                      | 44.60                         | 54.00             | -9.40         | Horizontal   |
| 7324               | 12.91                 | 36.10                        | 40.40                    | 37.32                      | 45.93                         | 54.00             | -8.07         | Horizontal   |
| 9755               | 13.89                 | 37.10                        | 37.94                    | 32.59                      | 45.64                         | 54.00             | -8.36         | Horizontal   |
| 12203              | 17.95                 | 38.93                        | 39.30                    | 27.58                      | 45.16                         | 54.00             | -8.84         | Horizontal   |
| 14634              | 17.38                 | 39.60                        | 45.83                    | 32.58                      | 43.73                         | 54.00             | -10.27        | Horizontal   |



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| Test channel: Highest |                       | Remark:                     |                          | Peak                    |                   |                        |                       |              |
|-----------------------|-----------------------|-----------------------------|--------------------------|-------------------------|-------------------|------------------------|-----------------------|--------------|
| Frequency<br>(MHz)    | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Preamp<br>Factor<br>(dB) | Read<br>Level<br>(dBuV) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | polarization |
| 4944                  | 10.51                 | 34.01                       | 40.96                    | 42.63                   | 46.19             | 74.00                  | -17.81                | Vertical     |
| 7426                  | 12.72                 | 35.91                       | 40.01                    | 42.06                   | 50.68             | 74.00                  | -13.32                | Vertical     |
| 9908                  | 14.21                 | 37.21                       | 37.85                    | 46.63                   | 60.20             | 74.00                  | -13.80                | Vertical     |
| 12373                 | 17.63                 | 39.01                       | 39.45                    | 45.99                   | 63.18             | 74.00                  | -10.82                | Vertical     |
| 14855                 | 16.69                 | 39.80                       | 46.61                    | 48.04                   | 57.92             | 74.00                  | -16.08                | Vertical     |
| 4944                  | 10.51                 | 34.01                       | 40.96                    | 53.47                   | 57.03             | 74.00                  | -16.97                | Horizontal   |
| 7426                  | 12.72                 | 35.91                       | 40.01                    | 50.50                   | 59.12             | 74.00                  | -14.88                | Horizontal   |
| 9908                  | 14.21                 | 37.21                       | 37.85                    | 44.31                   | 57.88             | 74.00                  | -16.12                | Horizontal   |
| 12373                 | 17.63                 | 39.01                       | 39.45                    | 45.42                   | 62.61             | 74.00                  | -11.39                | Horizontal   |
| 14855                 | 16.69                 | 39.80                       | 46.61                    | 48.68                   | 58.56             | 74.00                  | -15.44                | Horizontal   |

| Test channel: Highest |                       | nest                         | Remark:                  |                            | Average                       |                   |               |              |
|-----------------------|-----------------------|------------------------------|--------------------------|----------------------------|-------------------------------|-------------------|---------------|--------------|
| Frequency<br>(MHz)    | Cable<br>loss<br>(dB) | Antenna<br>factors<br>(dB/m) | Preamp<br>factor<br>(dB) | Reading<br>Level<br>(dBµV) | Emission<br>Level<br>(dBµV/m) | Limit<br>(dBμV/m) | Over<br>limit | polarization |
| 4944                  | 10.51                 | 34.01                        | 40.96                    | 39.01                      | 42.57                         | 54.00             | -11.43        | Vertical     |
| 7426                  | 12.72                 | 35.91                        | 40.01                    | 37.26                      | 45.88                         | 54.00             | -8.12         | Vertical     |
| 9908                  | 14.21                 | 37.21                        | 37.85                    | 32.58                      | 46.15                         | 54.00             | -7.85         | Vertical     |
| 12373                 | 17.63                 | 39.01                        | 39.45                    | 30.60                      | 47.79                         | 54.00             | -6.21         | Vertical     |
| 14855                 | 16.69                 | 39.80                        | 46.61                    | 34.60                      | 44.48                         | 54.00             | -9.52         | Vertical     |
| 4944                  | 10.51                 | 34.01                        | 40.96                    | 40.57                      | 44.13                         | 54.00             | -9.87         | Horizontal   |
| 7426                  | 12.72                 | 35.91                        | 40.01                    | 36.57                      | 45.19                         | 54.00             | -8.81         | Horizontal   |
| 9908                  | 14.21                 | 37.21                        | 37.85                    | 31.54                      | 45.11                         | 54.00             | -8.89         | Horizontal   |
| 12373                 | 17.63                 | 39.01                        | 39.45                    | 27.58                      | 44.77                         | 54.00             | -9.23         | Horizontal   |
| 14855                 | 16.69                 | 39.80                        | 46.61                    | 32.38                      | 42.26                         | 54.00             | -11.74        | Horizontal   |

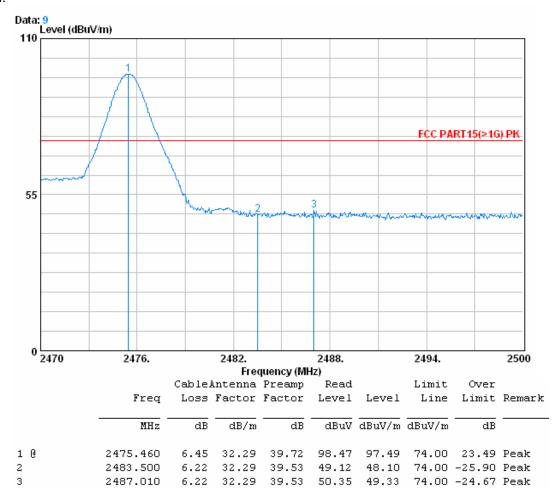


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# 5.6.3 Band edge (Radiated Emission)

#### Vertical:



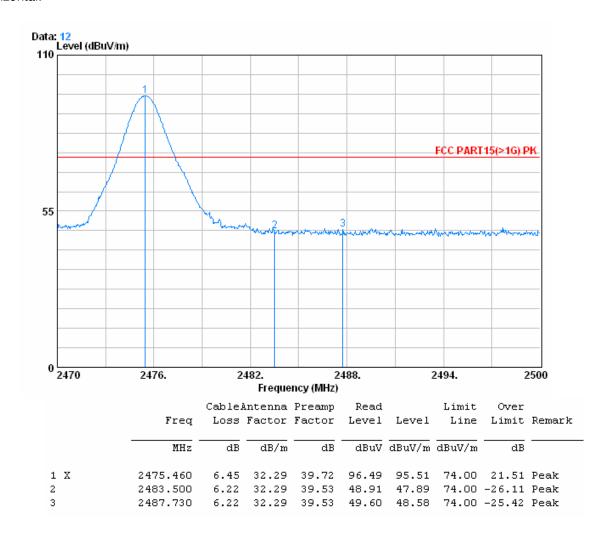
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#### Horizontal:



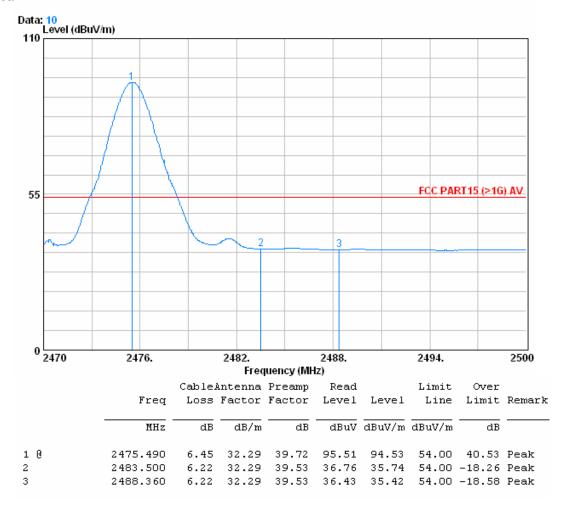
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#### Vertical:



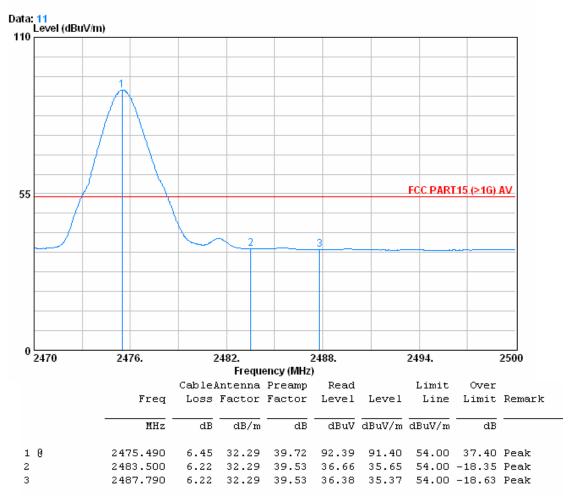
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#### Horizontal:



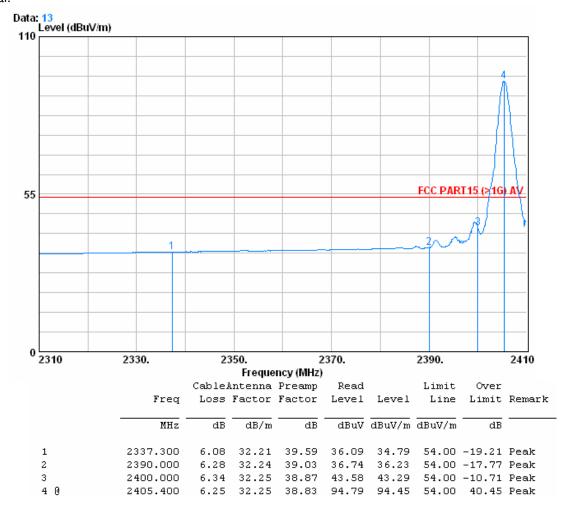
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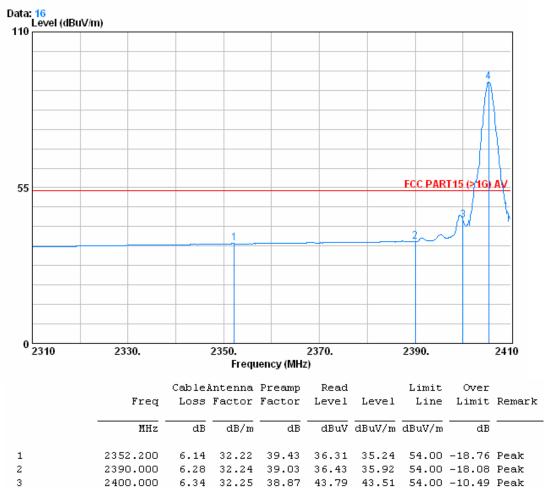
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38.83 92.66 92.33 54.00 38.33 Peak

#### Horizontal:

4 @

2405.400



32.25

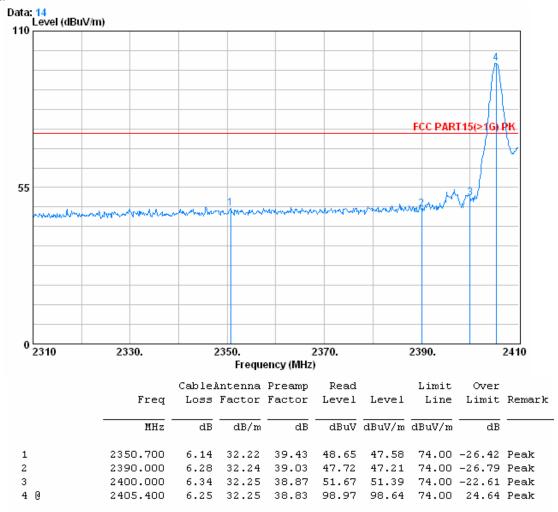
6.25



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#### Vertical:



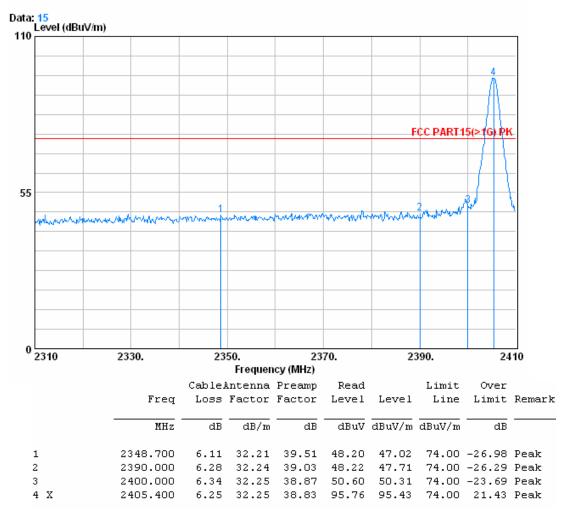
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