



# FCC 47 CFR PART 15 SUBPART C TEST REPORT

For

**Product Name: Mobile Phone**

**Brand Name: HYUNDAI**

**Model No.: D350**

**FCC ID: RQQHLT-D350**

**Test Report Number:**

**C140425R01-RPB**

Issued for

**HYUNDAI CORPORATION**

**140-2, GYE-DONG, JONGNO-GU, SEOUL, 110-793, KOREA**

Issued by

**Compliance Certification Services Inc.**

**Kun shan Laboratory**

**No.10 Weiye Rd., Innovation park, Eco&Tec,  
Development Zone, Kunshan City, Jiangsu, China**

**TEL: 86-512-57355888**

**FAX: 86-512-57370818**



TESTING CERT #2541.01

**Note:** This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by A2LA or any government agencies. The test results in the report only apply to the tested sample.



## REVISION HISTORY

| Rev. | Issue Date   | Report NO.     | Effect Page | Contents |
|------|--------------|----------------|-------------|----------|
| 00   | May 16, 2014 | C140425R01-RPB | ALL         | N/A      |
|      |              |                |             |          |



## TABLE OF CONTENTS

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>TEST RESULT CERTIFICATION .....</b>                         | <b>5</b>  |
| <b>2</b> | <b>EUT DESCRIPTION .....</b>                                   | <b>6</b>  |
| <b>3</b> | <b>TEST METHODOLOGY .....</b>                                  | <b>7</b>  |
|          | 3.1 EUT CONFIGURATION .....                                    | 7         |
|          | 3.2 EXERCISEEUT .....  | 7         |
|          | 3.3 GENERAL TEST PROCEDURES .....                              | 7         |
|          | 3.4 TEST MODE.....   | 8         |
|          | 3.5 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS.....        | 9         |
| <b>4</b> | <b>INSTRUMENT CALIBRATION .....</b>                            | <b>10</b> |
| <b>5</b> | <b>FACILITIES AND ACCREDITATIONS.....</b>                      | <b>10</b> |
|          | 5.1 FACILITIES.....  | 10        |
|          | 5.2 EQUIPMENT.....   | 10        |
|          | 5.3 LABORATORY ACCREDITATIONS AND LISTING .....                | 10        |
|          | 5.4 TABLE OF ACCREDITATIONS .....                              | 11        |
|          | 5.5 LIST OF MEASURING EQUIPMENT .....                          | 12        |
|          | 5.6 SETUP CONFIGURATION .....                                  | 13        |
|          | 5.7 SUPPORT EQUIPMENT .....                                    | 13        |
| <b>6</b> | <b>FCC PART 15.247 REQUIREMENTS .....</b>                      | <b>14</b> |
|          | 6.1 PEAK POWER.....  | 14        |
|          | 6.2 PEAK POWER SPECTRAL DENSITY .....                          | 19        |
|          | 6.3 HOPPING CHANNEL BANDWIDTH .....                            | 20        |
|          | 6.4 HOPPING CHANNEL SEPARATION.....                            | 25        |
|          | 6.5 NUMBER OF HOPPING FREQUENCY .....                          | 28        |
|          | 6.6 TIME OF OCCUPANCY (DWELL TIME) .....                       | 31        |
|          | 6.7 SPURIOUS EMISSION.....                                     | 36        |
|          | 6.8 RADIATED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT ..... | 49        |
|          | 6.9 POWERLINE CONDUCTED EMISSIONS .....                        | 60        |



## SUMMARY OF TEST RESULT

| Report Section | FCC Rule          | Description                                | Limit                                | Result |
|----------------|-------------------|--|--------------------------------------|--------|
| 3.1            | 15.247(a)(1)      | Number of Channels                         | ≥ 15Channels                         | Pass   |
| 3.2            | 15.247(a)(1)      | Hopping Channel Separation                 | ≥2/3 of 20dB BW                      | Pass   |
| 3.3            | 15.247(a)(1)      | Dwell Time of Each Channel                 | ≤0.4sec in 31.6sec period            | Pass   |
| 3.4            | 15.247(a)(1)      | 20dB Bandwidth                             | NA                                   | Pass   |
| 3.2            | 15.247(d)         | Peak Output Power                          | ≤ 1W for 1Mbps<br>≤125mW for 2,3Mbps | Pass   |
| 3.4            | 15.247(d)         | Conducted Band Edges and Spurious Emission | ≤ 20dBc                              | Pass   |
| 3.5            | 15.247(d)         | Radiated Band Edges and Spurious Emission  | 15.209(a) &15.247(d)                 | Pass   |
| 3.6            | 15.207            | AC Conducted Emission                      | 15.207(a)                            | Pass   |
| 3.7            | 15.203 &15.247(b) | Antenna Requirement                        | N/A                                  | Pass   |



## 1 TEST RESULT CERTIFICATION

|                               |  |
|-------------------------------|--|
| <b>Product Name:</b>          | Mobile Phone   |
| <b>Trade Name:</b>            | HYUNDAI  |
| <b>Model Name.:</b>           | D350   |
| <b>Series Model:</b>          | N/A  |
| <b>Applicant Discrepancy:</b> | Initial  |
| <b>Device Category:</b>       | PORTABLE DEVICES   |
| <b>Date of Test:</b>          | April 28, 2014 ~ May 13, 2014  |
| <b>Applicant:</b>             | <b>HYUNDAI CORPORATION</b><br>140-2, GYE-DONG, JONGNO-GU, SEOUL, 110-793, KOREA  |
| <b>Manufacturer:</b>          | <b>WASAM TECHNOLOGY (SHEN ZHEN) CO.,LTD.</b><br>B,F Building, (Hengqiang Industrial Park), Bogang Taifeng Industrial Zone,<br>Shajing Town, Bao'an District, Shenzhen, China |
| <b>Application Type:</b>      | Certification  |

### APPLICABLE STANDARDS

| STANDARD                     | TEST RESULT             |
|------------------------------|-------------------------|
| FCC 47 CFR Part 15 Subpart C | No non-compliance noted |

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

**Approved by:**

**Tested by:**

Jeff.Fang  
RF Manager  
Compliance Certification Services Inc.

Blent.Wang  
Test Engineer  
Compliance Certification Services Inc.



## 2 EUT DESCRIPTION

|   |   |
|---|---|
| <b>Product Name:</b>                    | Mobile Phone  |
| <b>Trade Name:</b>                      | HYUNDAI   |
| <b>Model Name.:</b>                     | D350  |
| <b>Model Discrepancy:</b>               | N/A   |
| <b>Power Adapter<br/>Power Rating :</b> | Power supply and ADP(rating):<br>Model:D205<br>INPUT: 100-300V 50/60Hz 0.15A<br>Output: DC 5V 500mA<br>Battery(rating):<br>Model:D350<br>Capacitance:3.7V 1200mAh |
| <b>Frequency Range :</b>                | Bluetooth:2402 ~ 2480 MHz   |
| <b>Transmit Power :</b>                 | 4.63dBm(2.904mW)  |
| <b>Modulation<br/>Technique :</b>       | FHSS  |
| <b>Transmit Data Rate :</b>             | GFSK(1 Mbps), $\pi/4$ -DQPSK(2 Mbps),8-DPSK(3 Mbps)   |
| <b>Number of Channels :</b>             | 79 Channels   |
| <b>Antenna<br/>Specification :</b>      | PIFA Antenna  |
| <b>Antenna Specification:</b>           | 2.6 dBi   |

### Remark:

1. This submittal(s) (test report) is intended for **FCC ID: RQQHLT-D350** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



## 3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

### 3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### 3.2 EXERCISE EUT

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

### 3.3 GENERAL TEST PROCEDURES

#### Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

#### Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.



## 3.4 TEST Mode

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

| Test Items                    | Mode           | Data Rate | Channel | Antenna |
|-------------------------------|----------------|-----------|---------|---------|
| Peak Output Power             | GFSK           | 1 Mbps    | 0/39/78 | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Hopping Channel Bandwidth     | GFSK           | 1 Mbps    | 0/39/78 | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Hopping Channel Separation    | GFSK           | 1 Mbps    | 38-39   | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Number of Hopping Frequency   | GFSK           | 1 Mbps    | 0-78    | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Dwell Time                    | DH1/DH3/DH5    | 1 Mbps    | 39      | 1       |
|                               | 3DH1/3DH3/3DH5 | 3 Mbps    |         |         |
| Spurious Emission             | GFSK           | 1 Mbps    | 0/39/78 | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Band Edge Emissions           | GFSK           | 1 Mbps    | 0/78    | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| Radiated Emissions Below 1GHz | GFSK           | 1 Mbps    | 78      | 1       |
| Radiated Emissions Above 1GHz | GFSK           | 1 Mbps    | 0/39/78 | 1       |
|                               | 8DPSK          | 3 Mbps    |         |         |
| AC Power Conducted Emissions  | CTX            | -         | -       | -       |

Remark: For radiated test cases below 1 GHz, the worst mode data rate channel 78 of 1Mbps was reported only, because this data rate has the highest RF output power at preliminary tests.





## 3.5 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                           | MHz                   | MHz             | GHz                         |
|-------------------------------|-----------------------|-----------------|-----------------------------|
| 0.0900 - 0.1100               | 16.420 - 16.423       | 399.9 - 410.0   | 4.50 - 5.15                 |
| 0.4950 - 0.505 <sup>(1)</sup> | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46                 |
| 2.1735 - 2.1905               | 16.80425 - 16.80475   | 960.0 - 1240    | 7.25 - 7.75                 |
| 4.1250 - 4.1280               | 25.50 - 25.67         | 1300 - 1427     | 8.025 - 8.500               |
| 4.17725 - 4.17775             | 37.50 - 38.25         | 1435.0 - 1626.5 | 9.0 - 9.2                   |
| 4.20725 - 4.20775             | 73.0 - 74.6           | 1645.5 - 1646.5 | 9.3 - 9.5                   |
| 6.2150 - 6.2180               | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7                 |
| 6.26775 - 6.26825             | 108.00 - 121.94       | 1718.8 - 1722.2 | 13.25 - 13.40               |
| 6.31175 - 6.31225             | 123 - 138             | 2200 - 2300     | 14.47 - 14.50               |
| 8.2910 - 8.2940               | 149.90 - 150.05       | 2310 - 2390     | 15.35 - 16.20               |
| 8.3620 - 8.3660               | 156.52475 - 156.52525 | 2483.5 - 2500.0 | 17.7 - 21.4                 |
| 8.37625 - 8.38675             | 156.7 - 156.9         | 2655 - 2900     | 22.01 - 23.12               |
| 8.41425 - 8.41475             | 162.0125 - 167.1700   | 3260 - 3267     | 23.6 - 24.0                 |
| 12.2900 - 12.2930             | 167.72 - 173.20       | 3332 - 3339     | 31.2 - 31.8                 |
| 12.51975 - 12.52025           | 240 - 285             | 3345 - 3358     | 36.43 - 36.5 <sup>(2)</sup> |
| 12.57675 - 12.57725           | 322.0 - 335.4         | 3600 - 4400     |                             |
| 13.3600 - 13.4100             |                       |                 |                             |

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



## 4 INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards, facilities and accreditations

## 5 FACILITIES AND ACCREDITATIONS

### 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22.

### 5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 5.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.



## 5.4 TABLE OF ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

|               |      |
|---------------|------|
| <b>Taiwan</b> | TAF  |
| <b>USA</b>    | A2LA |

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

|               |                 |
|---------------|-----------------|
| <b>Canada</b> | Industry Canada |
| <b>Japan</b>  | VCCI            |
| <b>Taiwan</b> | BSMI            |
| <b>USA</b>    | FCC             |

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.ccsrf.com>



## 5.5 LIST OF MEASURING EQUIPMENT

| Conducted Emissions Test Site |               |           |               |                 |
|-------------------------------|---------------|-----------|---------------|-----------------|
| Name of Equipment             | Manufacturer  | Model     | Serial Number | Calibration Due |
| Spectrum Analyzer             | RS            | FSU26     | 200789        | 2014-8-19       |
| DETECTOR NEGATIVE             | Agilent       | 8473B     | MY42240176    | 2015-5-11       |
| OSCILLOSCOPE                  | Agilent       | DSO6104A  | MY44002585    | 2015-3-16       |
| Power Sensor                  | Agilent       | E9327A    | US40441788    | 2015-3-17       |
| Power Meter                   | Agilent       | E4416A    | QB41292714    | 2015-3-17       |
| Power SPLITTER                | Mini-Circuits | ZN2PD-9G  | SF078500430   | N.C.R           |
| DC Power Supply               | AGILENT       | E3632A    | MY50340053    | N.C.R           |
| Temp. / Humidity Chamber      | TERCHY        | MHK-120AK | X30109        | 2015-1-22       |
| Test Software                 | EZ-EMC        |           |               |                 |

| 977 Chamber       |              |             |               |                 |
|-------------------|--------------|-------------|---------------|-----------------|
| Name of Equipment | Manufacturer | Model       | Serial Number | Calibration Due |
| Spectrum Analyzer | RS           | FSU26       | 200789        | 2014-8-19       |
| EMI Test Receiver | R&S          | ESPI3       | 101378        | 2015-1-22       |
| Pre-Amplifier     | MINI         | ZFL-1000VH2 | 070306        | 2015-1-22       |
| Pre-Amplifier     | Miteq        | NSP400-NF   | N/A           | N.C.R           |
| Bilog Antenna     | Sunol        | JB1         | A110204-1     | 2015-3-7        |
| Horn-antenna      | SCHWARZBECK  | BBHA9120D   | D:267         | 2015-3-7        |
| Turn Table        | CT           | CT123       | 4165          | N.C.R           |
| Antenna Tower     | CT           | CTERG23     | 3256          | N.C.R           |
| Test Software     | EZ-EMC       |             |               |                 |

| Conducted Emission |              |                         |               |                 |
|--------------------|--------------|-------------------------|---------------|-----------------|
| Name of Equipment  | Manufacturer | Model                   | Serial Number | Calibration Due |
| EMI TEST RECEIVER  | R&S          | ESCI                    | 100781        | 2015-3-16       |
| V (V-LISN)         | Schwarzbeck  | NNLK 8129               | 8129-143      | 2014-8-19       |
| LISN (EUT)         | FCC          | FCC-LISN-50/250-50-2-02 | SN:05012      | 2015-3-16       |
| 10dB Attenuation   | SCHAFFNER    | CFL9206                 | 1710          | N.C.R           |
| Test Software      | EZ-EMC       |                         |               |                 |

**Remark:** Each piece of equipment is scheduled for calibration once a year.



## 5.6 SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

## 5.7 SUPPORT EQUIPMENT

| No. | Device Type | Brand | Model | Series No. | FCC ID |
|-----|-------------|-------|-------|------------|--------|
| 1.  | N/A         | N/A   | N/A   | N/A        | N/A    |

### Remark:

- 1.All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2.Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



## 6 FCC PART 15.247 REQUIREMENTS

### 6.1 PEAK POWER

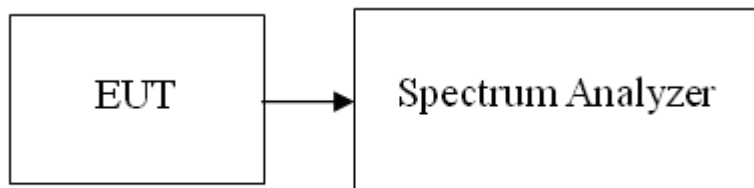
#### Limit

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
2. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
3. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Remark:** Each piece of equipment is scheduled for calibration once a year.

#### Test Configuration



#### Test Procedure

The transmitter output is connected to the spectrum analyzer. Set the RBW = 3MHz , VBW = 3MHz, Detector = Peak, Trace mode = max hold, Sweep = auto couple. Record the max reading.

Repeat the above procedure until the measurements for all frequencies are completed.



## Test Results

No non-compliance noted

## Test RESULTS

### 1M GFSK Modulation mode

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (mW) | Limit (mW) | Result |
|---------|-----------------|--------------------|-------------------|------------|--------|
| Low     | 2402            | 3.19               | 2.084             | 125        | PASS   |
| Mid     | 2441            | 4.42               | 2.767             |            | PASS   |
| High    | 2480            | <b>4.63</b>        | 2.904             |            | PASS   |

### 3M 8-DPSK Modulation mode

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (mW) | Limit (mW) | Result |
|---------|-----------------|--------------------|-------------------|------------|--------|
| Low     | 2402            | 2.58               | 1.811             | 125        | PASS   |
| Mid     | 2441            | 3.76               | 2.377             |            | PASS   |
| High    | 2480            | <b>3.93</b>        | 2.472             |            | PASS   |



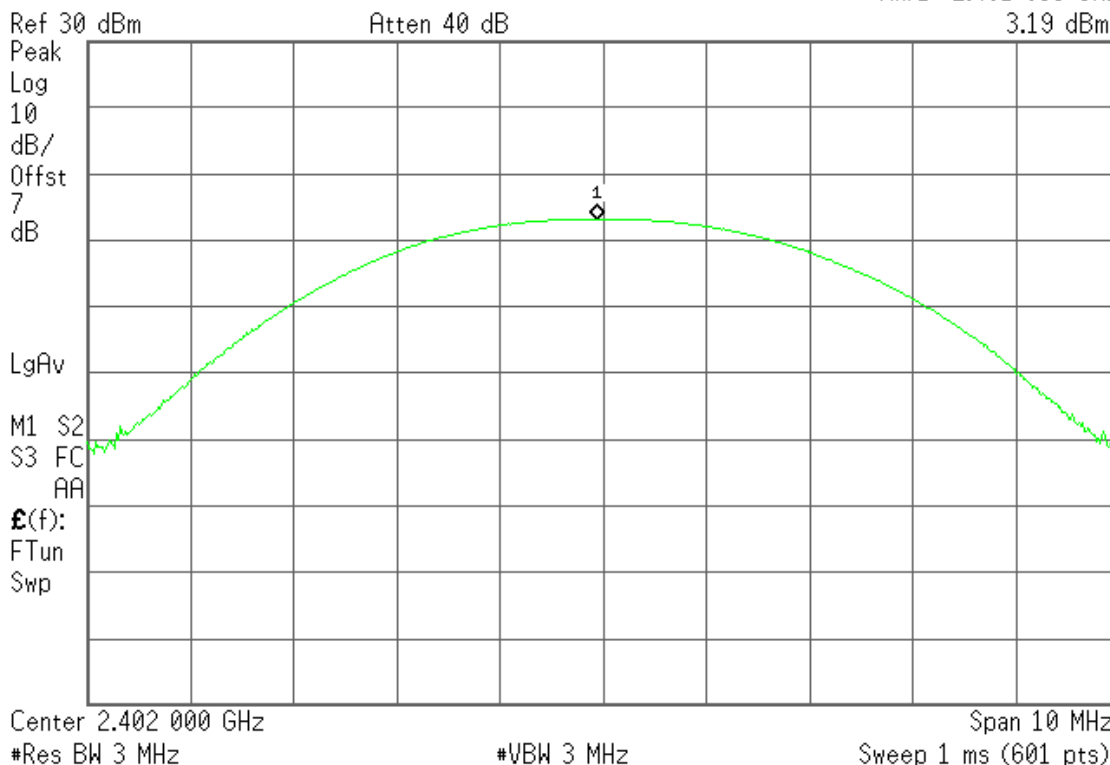
## Test Data 1M

### Ch low

Agilent 14:53:54 Apr 28, 2014

R T

Mkr1 2.401 933 GHz  
3.19 dBm

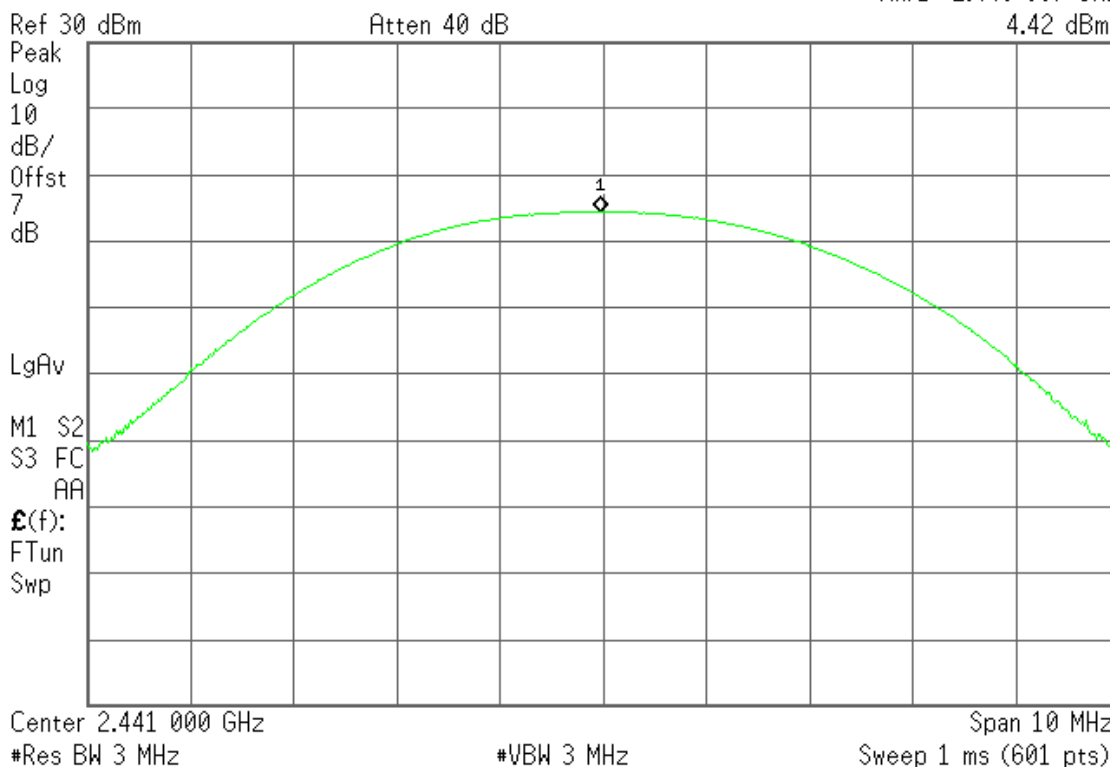


### CH Mid

Agilent 14:54:20 Apr 28, 2014

R T

Mkr1 2.440 967 GHz  
4.42 dBm







## CH High

Agilent 14:54:50 Apr 28, 2014

R T

Mkr1 2.479 900 GHz

4.63 dBm

Ref 30 dBm

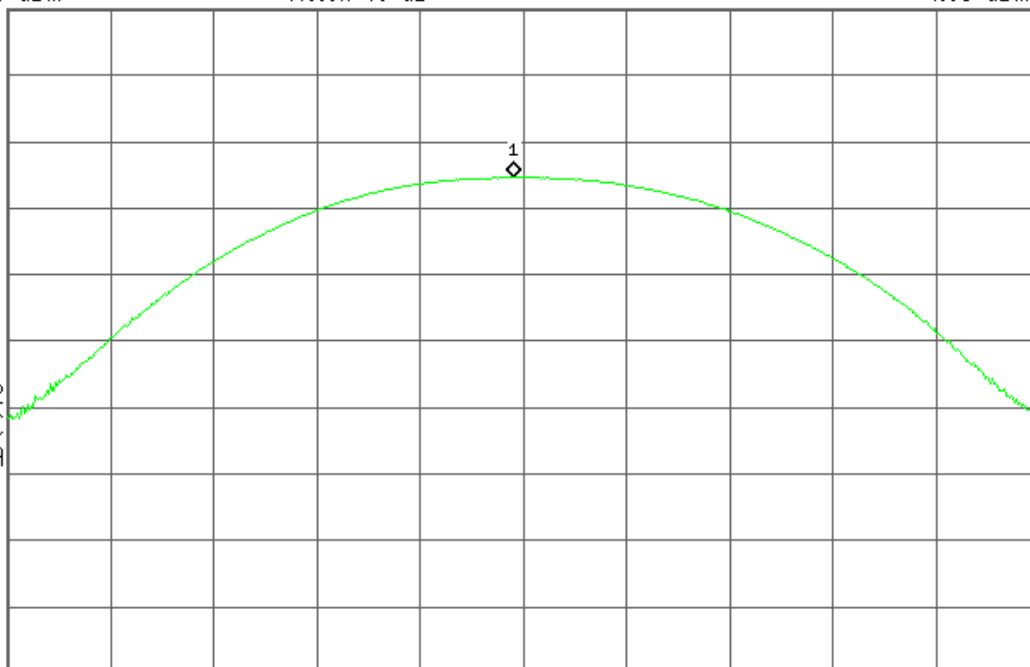
Atten 40 dB

Peak  
Log  
10  
dB/  
Offst  
7  
dB

LgAv

M1 S2  
S3 FC  
AA

$\mathcal{E}(f)$ :  
FTun  
Swp



Center 2.480 000 GHz

#Res BW 3 MHz

#VBW 3 MHz

Span 10 MHz  
Sweep 1 ms (601 pts)

## Test Data 3M

### Ch low

Agilent 14:53:23 Apr 28, 2014

R T

Mkr1 2.402 083 GHz

2.58 dBm

Ref 30 dBm

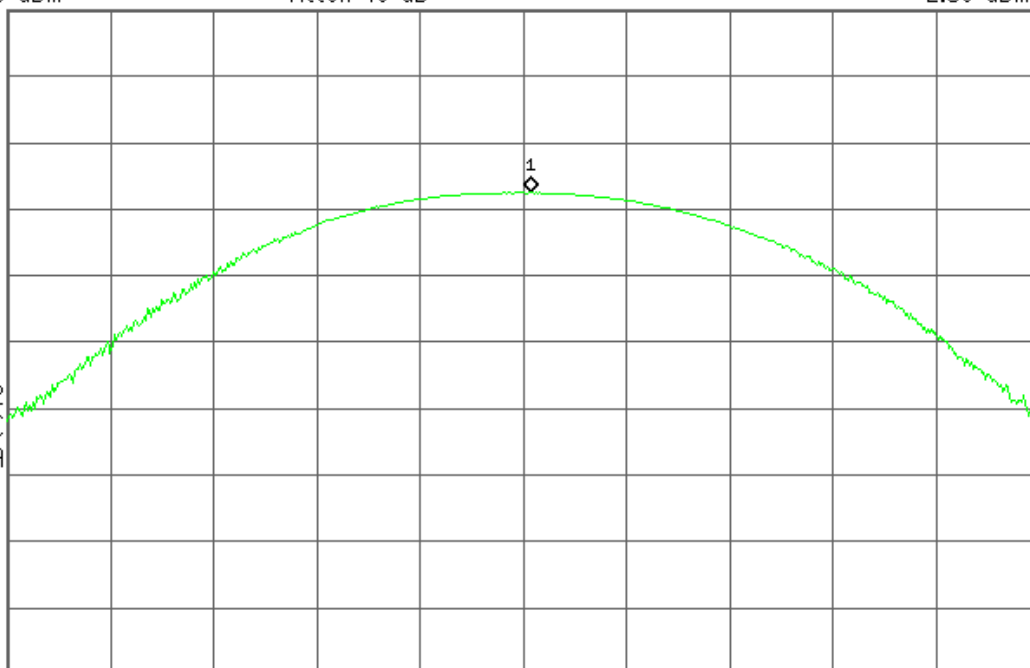
Atten 40 dB

Peak  
Log  
10  
dB/  
Offst  
7  
dB

LgAv

M1 S2  
S3 FC  
AA

$\mathcal{E}(f)$ :  
FTun  
Swp



Center 2.402 000 GHz

#Res BW 3 MHz

#VBW 3 MHz

Span 10 MHz  
Sweep 1 ms (601 pts)

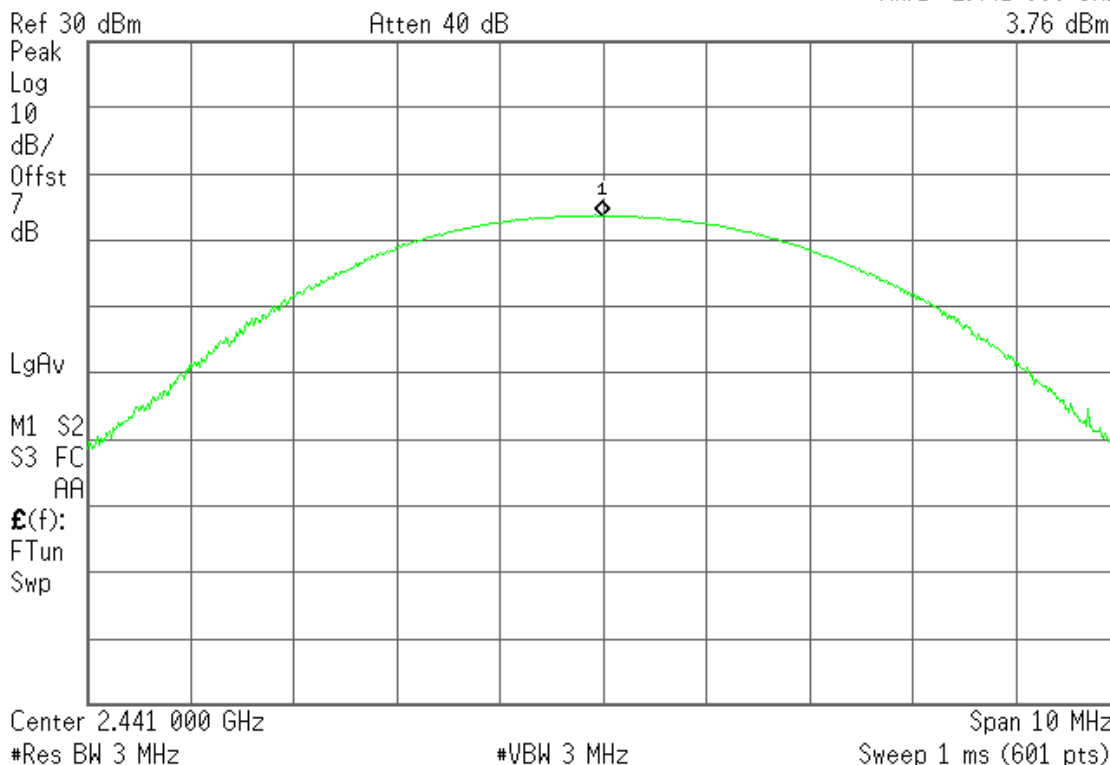


## Ch mid

Agilent 14:52:52 Apr 28, 2014

R T

Mkr1 2.441 000 GHz  
3.76 dBm

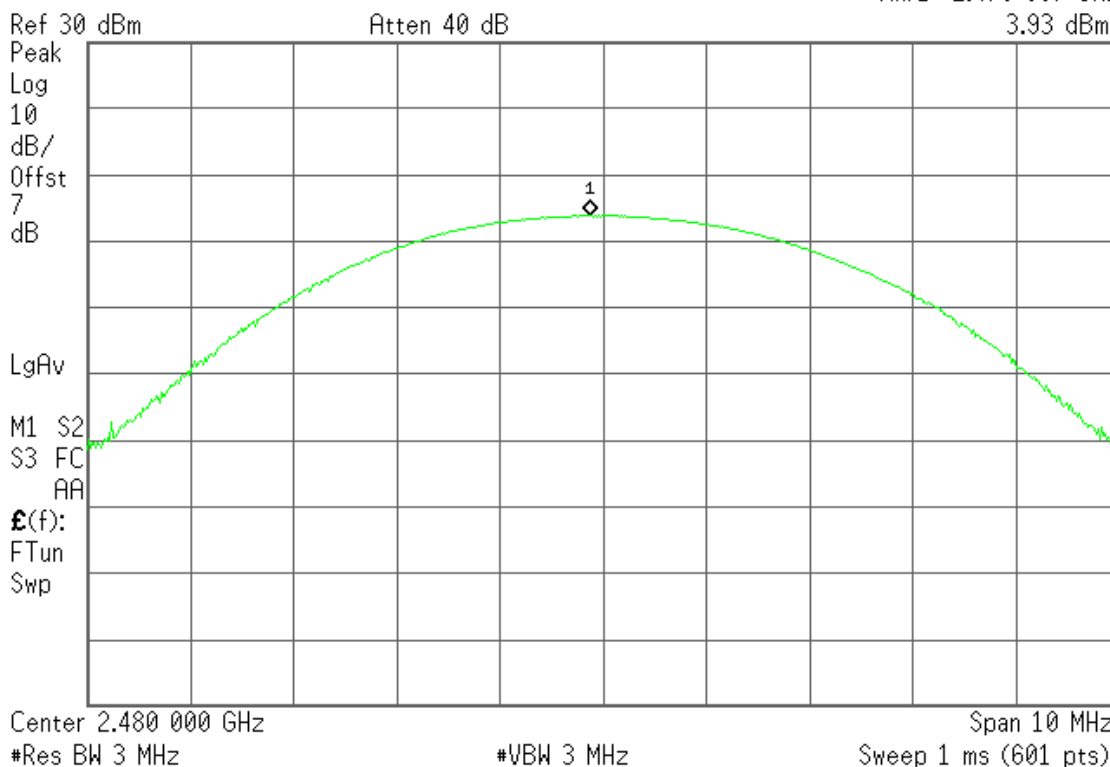


## Ch High

Agilent 14:51:15 Apr 28, 2014

R T

Mkr1 2.479 867 GHz  
3.93 dBm



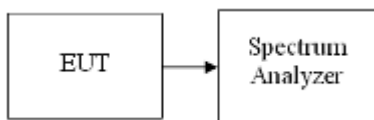


## 6.2 PEAK POWER SPECTRAL DENSITY

### Limit

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

### Test Configuration



### Test Procedure

1. Place the EUT on the table 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 the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

### Test Results

NA (this test item is not required for FHSS modulation technical)

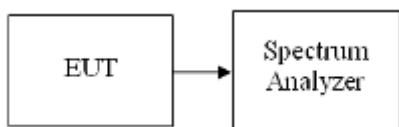


## 6.3 HOPPING CHANNEL BANDWIDTH

### Limit

According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### Test Configuration



### Test Procedure

1. Place the EUT on the table 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 the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 30kHz, VBW = 300kHz, Span = 2MHz, Sweep = auto.
4. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.



## Test Results of Bandwidth

*No non-compliance noted*

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 1 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

| Channel | Frequency (MHz) | Bandwidth (B) (MHz) |
|---------|-----------------|---------------------|
| 00      | 2402            | 0.901               |
| 39      | 2441            | 0.898               |
| 78      | 2480            | 0.900               |

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 3 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

| Channel | Frequency (MHz) | Bandwidth (B) (MHz) |
|---------|-----------------|---------------------|
| 00      | 2402            | 1.157               |
| 39      | 2441            | 1.157               |
| 78      | 2480            | 1.160               |

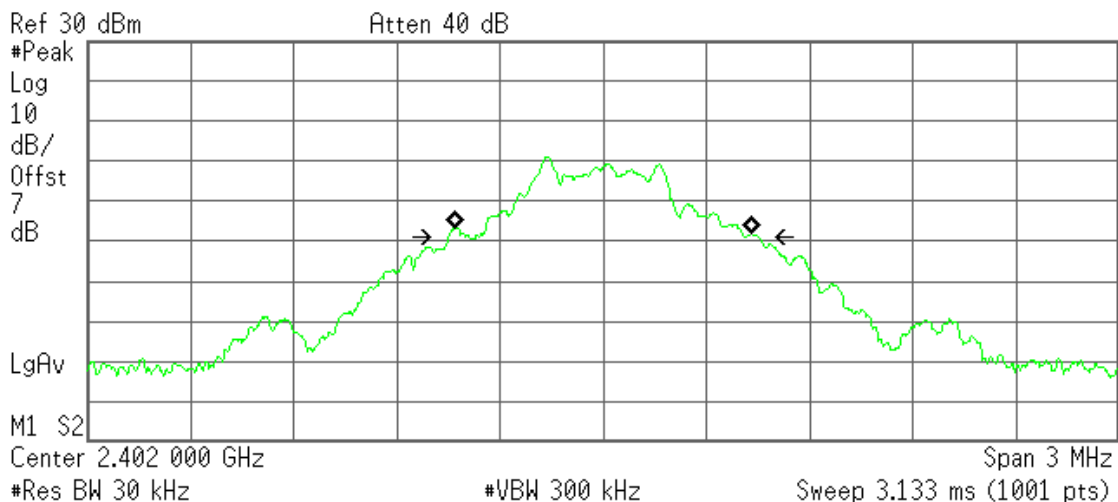


## Test Plot

### 1M Channel 00

\* Agilent 12:41:30 Apr 28, 2014

R T



**Occupied Bandwidth**  
858.4056 kHz

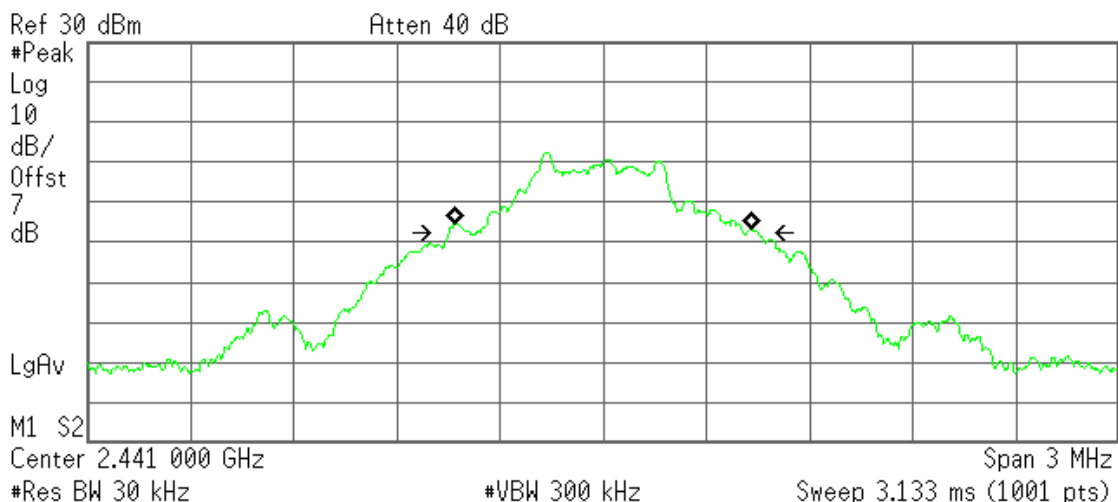
**Occ BW % Pwr** 99.00 %  
**x dB** -20.00 dB

**Transmit Freq Error** -1.188 kHz  
**x dB Bandwidth** 900.565 kHz

### 1M Channel 39

\* Agilent 12:41:04 Apr 28, 2014

R T



**Occupied Bandwidth**  
859.5058 kHz

**Occ BW % Pwr** 99.00 %  
**x dB** -20.00 dB

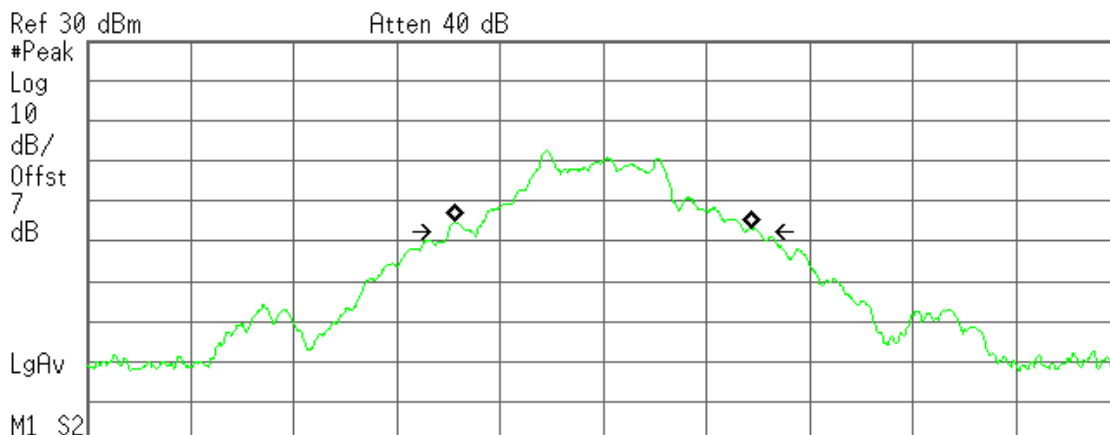
**Transmit Freq Error** -1.627 kHz  
**x dB Bandwidth** 897.696 kHz



## 1M Channel 78

\* Agilent 12:40:34 Apr 28, 2014

R T



Center 2.480 000 GHz Span 3 MHz  
#Res BW 30 kHz #VBW 300 kHz Sweep 3.133 ms (1001 pts)

**Occupied Bandwidth**  
**861.3608 kHz**

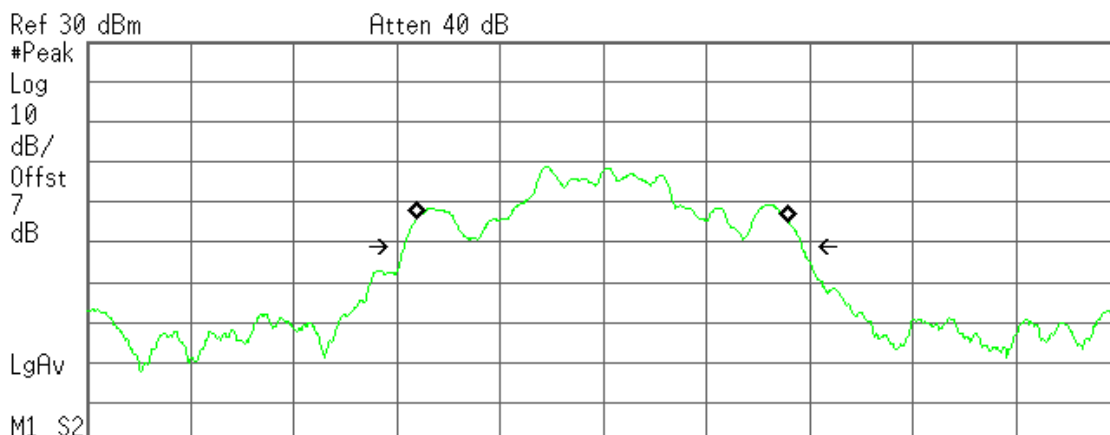
**Occ BW % Pwr** 99.00 %  
**x dB** -20.00 dB

**Transmit Freq Error** -1.926 kHz  
**x dB Bandwidth** 900.135 kHz

## 3M Channel 00

\* Agilent 12:38:36 Apr 28, 2014

R T



Center 2.402 000 GHz Span 3 MHz  
#Res BW 30 kHz #VBW 300 kHz Sweep 3.133 ms (1001 pts)

**Occupied Bandwidth**  
**1.0816 MHz**

**Occ BW % Pwr** 99.00 %  
**x dB** -20.00 dB

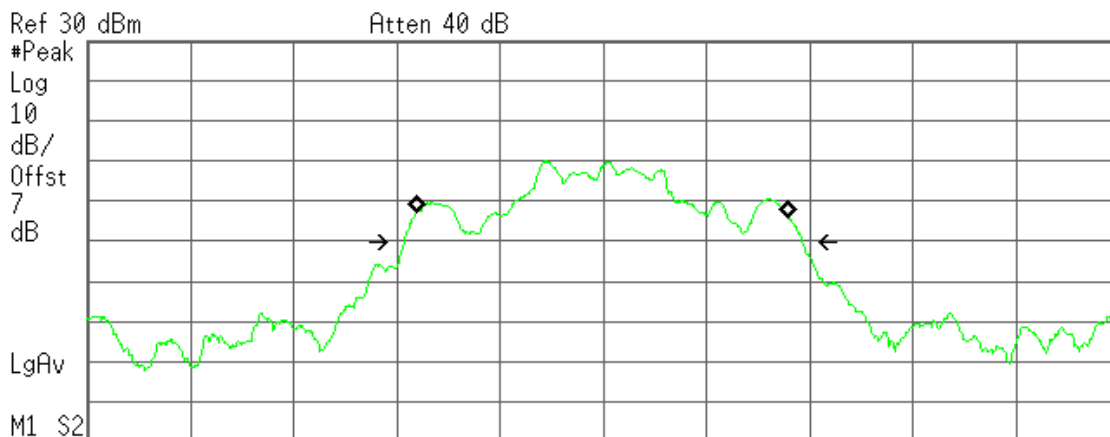
**Transmit Freq Error** -2.441 kHz  
**x dB Bandwidth** 1.157 MHz



### 3M Channel 39

\* Agilent 12:39:28 Apr 28, 2014

R T



Center 2.441 000 GHz Span 3 MHz  
#Res BW 30 kHz #VBW 300 kHz Sweep 3.133 ms (1001 pts)

Occupied Bandwidth  
1.0800 MHz

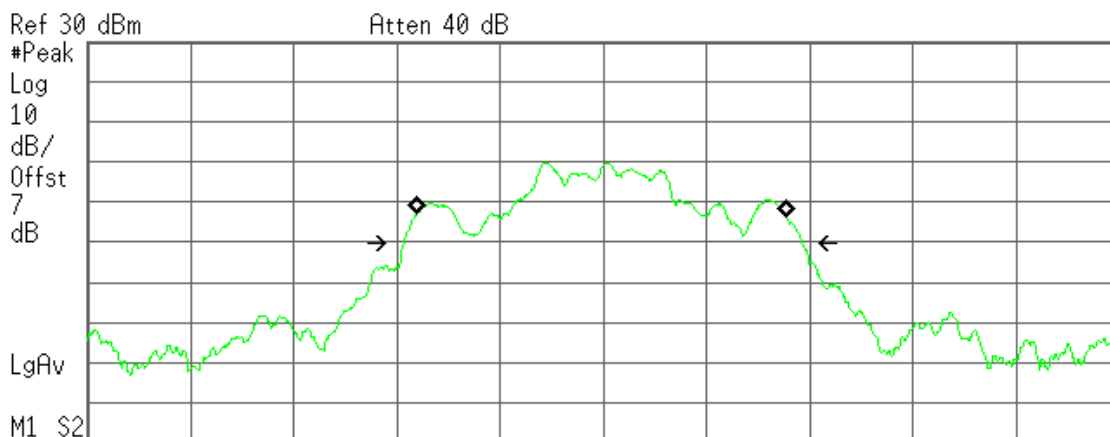
Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -3.166 kHz  
x dB Bandwidth 1.157 MHz

### 3M Channel 78

\* Agilent 12:39:59 Apr 28, 2014

R T



Center 2.480 000 GHz Span 3 MHz  
#Res BW 30 kHz #VBW 300 kHz Sweep 3.133 ms (1001 pts)

Occupied Bandwidth  
1.0768 MHz

Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -3.918 kHz  
x dB Bandwidth 1.160 MHz



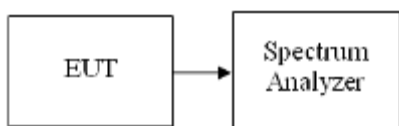


## 6.4 HOPPING CHANNEL SEPARATION

### LIMIT

According to §15.247(a)(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### Test Configuration



### TEST PROCEDURE

1. Place the EUT on the table 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 the spectrum analyzer.
3. Set center frequency of spectrum analyzer = middle of hopping channel.
4. Set the spectrum analyzer as RBW = 30kHz, VBW = 100kHz, Span = 3MHz, Sweep = auto.
5. Max hold, mark 2 peaks of hopping channel and record the 2 peaks frequency.



## TEST RESULTS

No non-compliance noted

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 1 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

| Channel | Frequency | Separation | (2/3 of 20dB BW) | Result |
|---------|-----------|------------|------------------|--------|
|         | (MHz)     | (MHz)      | Limits (MHz)     |        |
| 38~39   | 2440~2441 | 1.002      | 0.601            | Pass   |

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 3 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

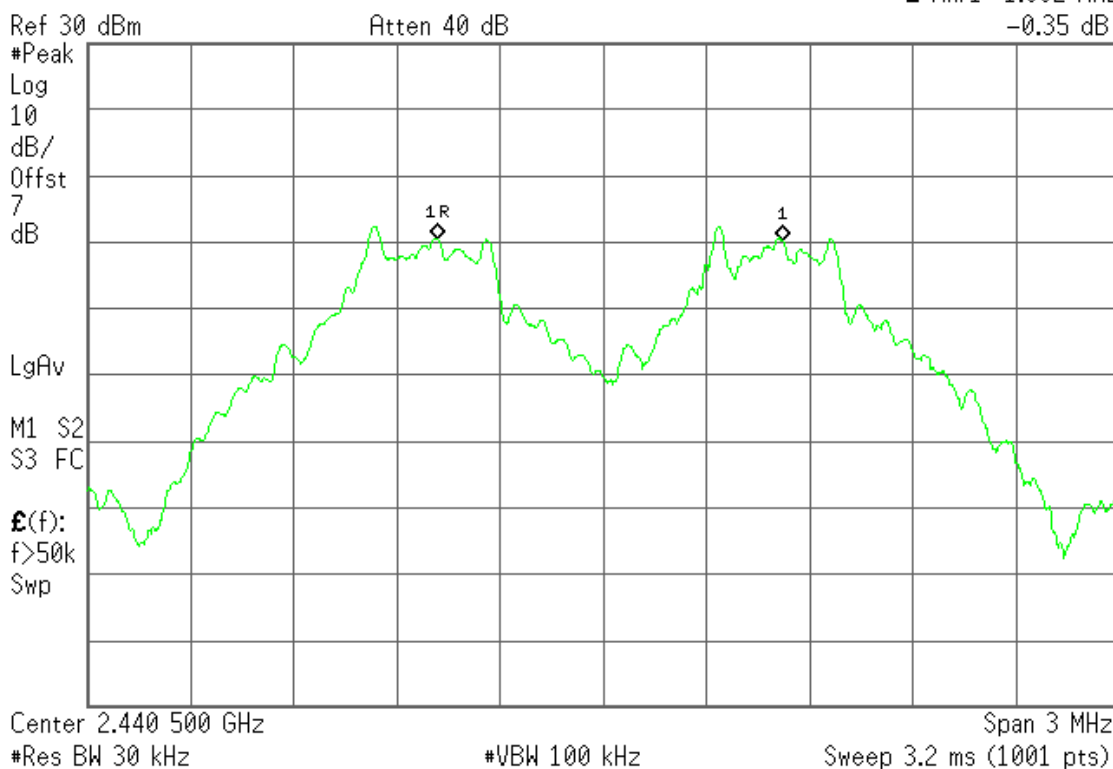
| Channel | Frequency | Separation | (2/3 of 20dB BW) | Result |
|---------|-----------|------------|------------------|--------|
|         | (MHz)     | (MHz)      | Limits (MHz)     |        |
| 38~39   | 2440~2441 | 1.002      | 0.773            | Pass   |

### 1M Channel Separation Plot on Channel 38-39

Agilent 12:46:44 Apr 28, 2014

R T

▲ Mkr1 1.002 MHz  
-0.35 dB



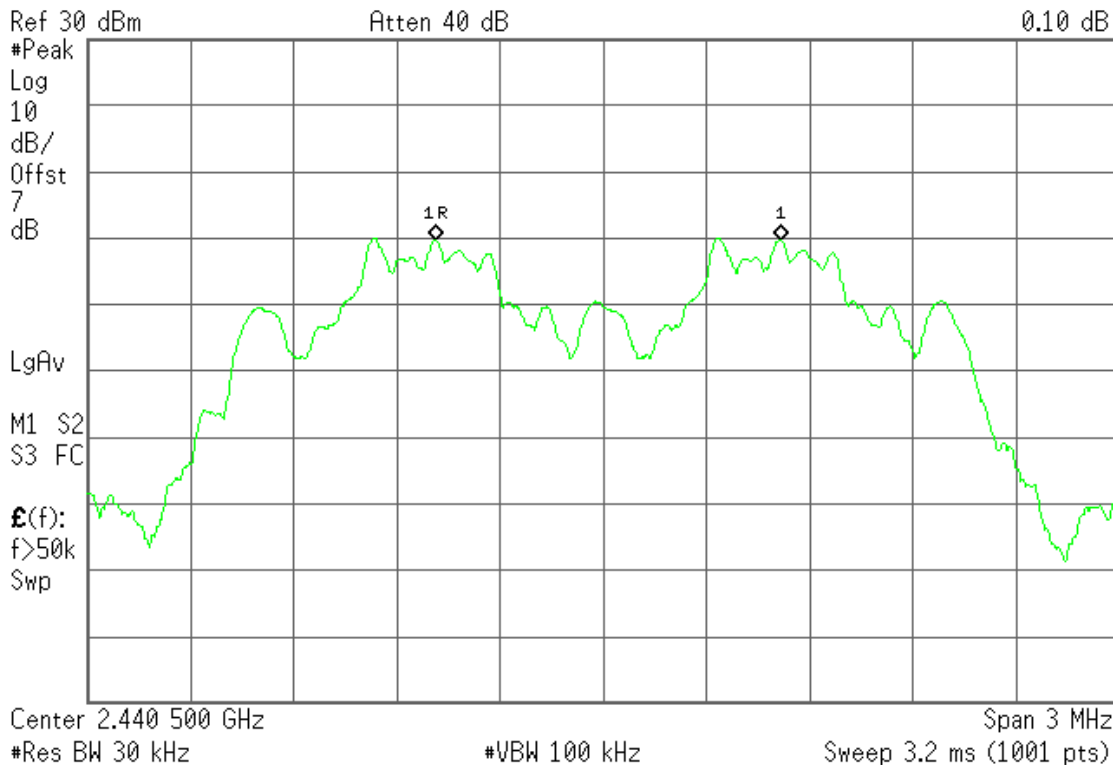


## 3M Channel Separation Plot on Channel 38-39

Agilent 12:49:23 Apr 28, 2014

R T

▲ Mkr1 1.002 MHz  
0.10 dB



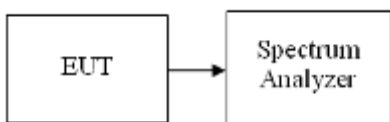


## 6.5 NUMBER OF HOPPING FREQUENCY

### LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

### Test Configuration



### TEST PROCEDURE

1. Place the EUT on the table 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 the spectrum analyzer.
3. Set spectrum analyzer Start=2400MHz, Stop = 2441MHz, Sweep = auto and Start=2441MHz, Stop = 2483.5MHz, Sweep = auto.
4. Set the spectrum analyzer as RBW, VBW=1MHz.
5. Max hold, view and count how many channel in the band.

### TEST RESULTS

*No non-compliance noted*

### Test Data

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 1 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

| Result (No. of CH) | Limit (No. of CH) | Result |
|--------------------|-------------------|--------|
| 79                 | >15               | PASS   |

|                 |        |            |                |
|-----------------|--------|------------|----------------|
| Operation Mode: | 3 Mbps | Test Date: | April 28, 2014 |
| Temperature:    | 24°C   | Tested by: | Blent.Wang     |

| Result (No. of CH) | Limit (No. of CH) | Result |
|--------------------|-------------------|--------|
| 79                 | >15               | PASS   |

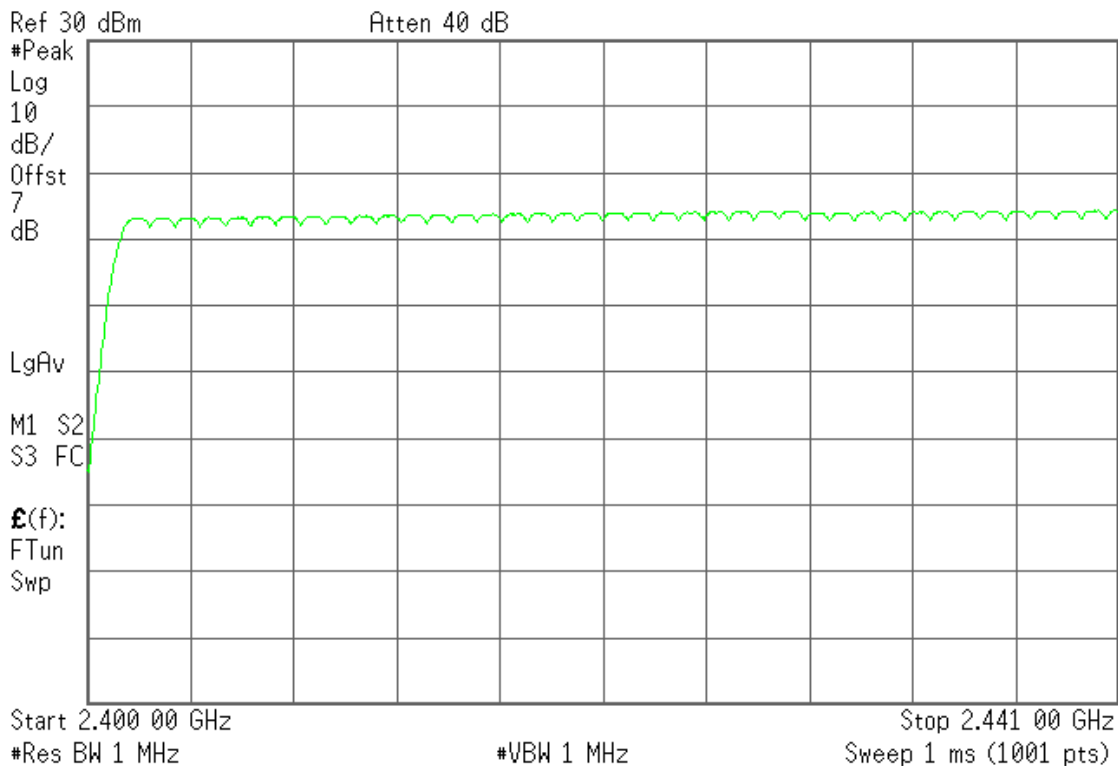


## Test Plot:1M

### Channel Number 2.4 GHz – 2.441 GHz

Agilent 13:01:39 Apr 28, 2014

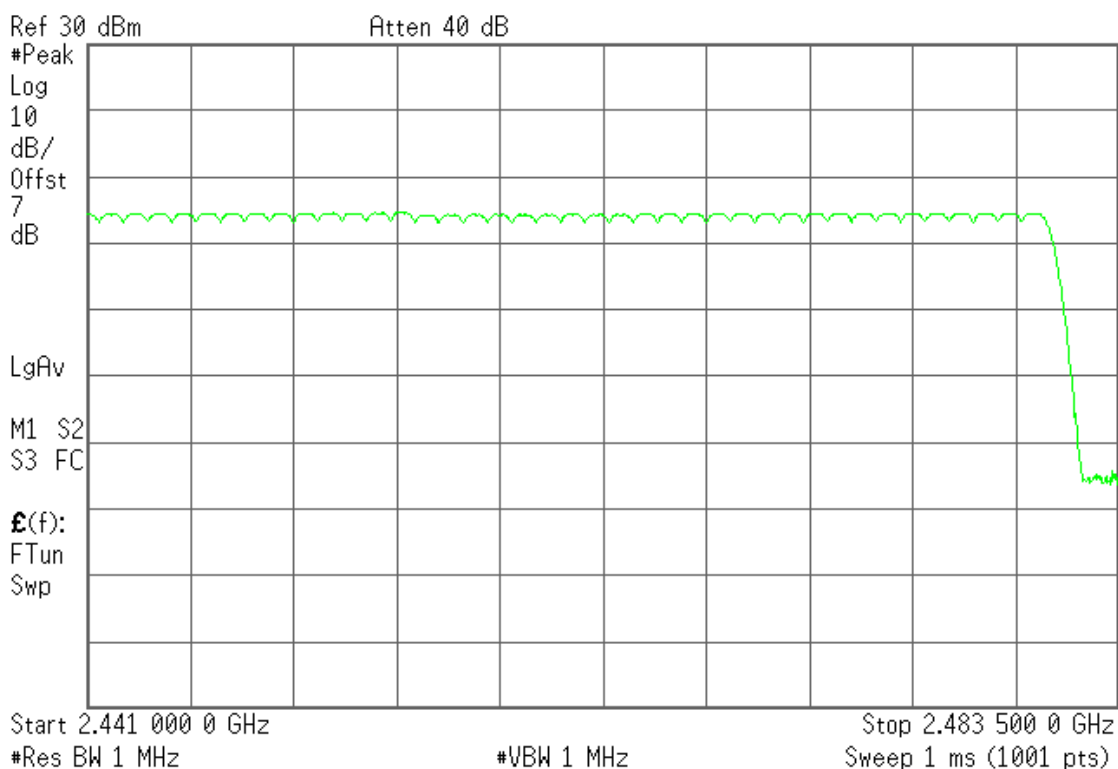
R T



### Channel Number 2.441 GHz – 2.4835 GHz

Agilent 12:58:55 Apr 28, 2014

R T



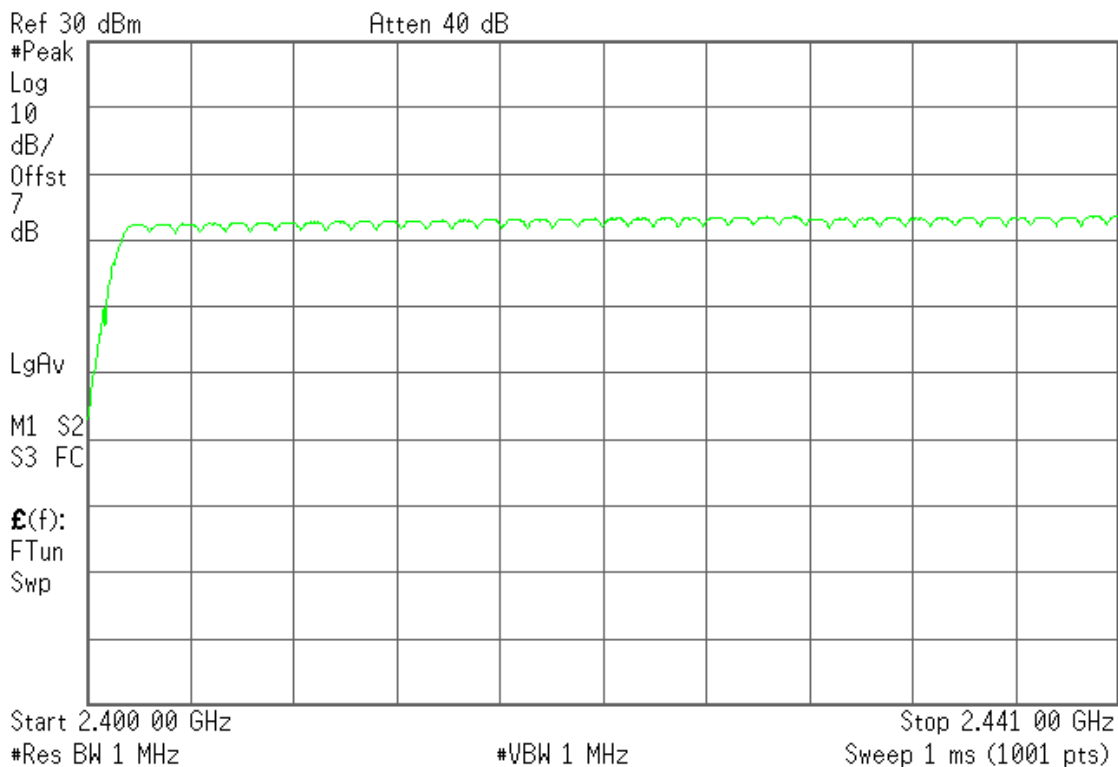


## Test Plot:3M

### Channel Number 2.4 GHz – 2.4415 GHz

Agilent 12:53:22 Apr 28, 2014

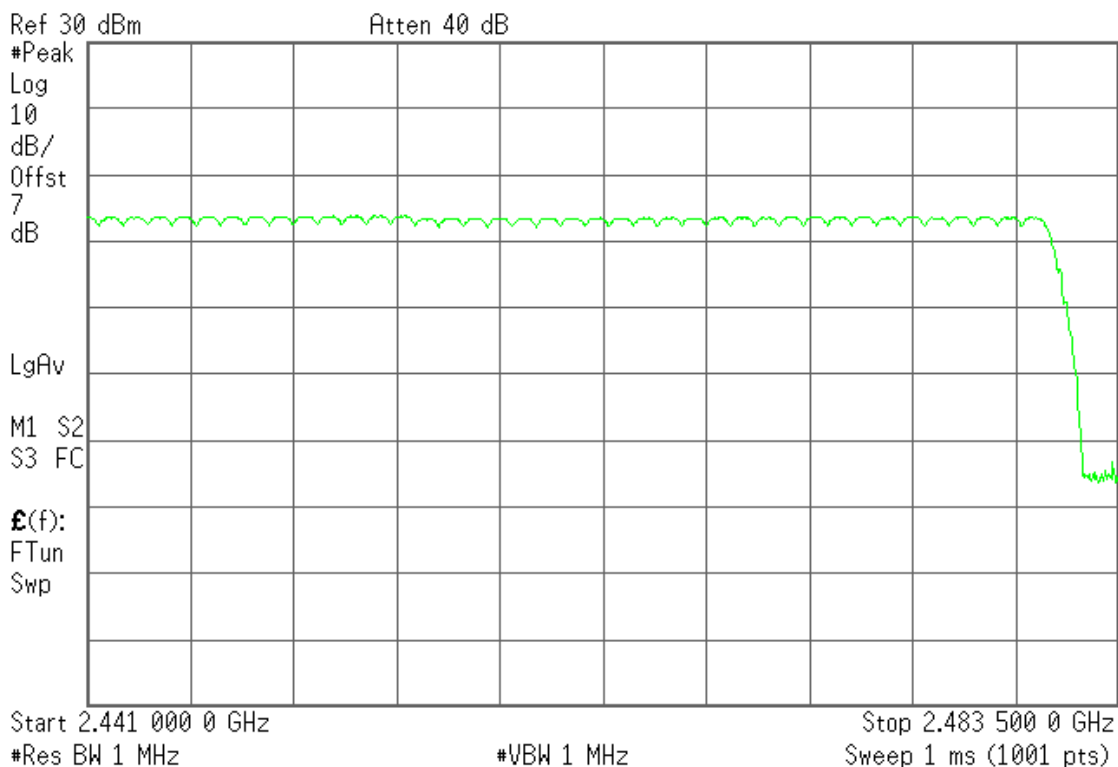
R T



### Channel Number 2.4415 GHz – 2.4835 GHz

Agilent 12:56:05 Apr 28, 2014

R T



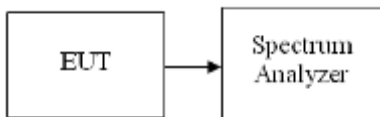


## 6.6 TIME OF OCCUPANCY (DWELL TIME)

### LIMIT

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

### Test Configuration



### TEST PROCEDURE

1. Place the EUT on the table 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 the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.
5. Repeat above procedures until all frequency measured were complete.

### TEST RESULTS

*No non-compliance noted*

#### Test Data

1M

DH 1

$$0.362 * (1600/2)/79 * 31.6 = 115.84(\text{ms})$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 0.362           | 115.84              | 31.60           | 400        | PASS   |

DH 3

$$1.625 * (1600/4)/79 * 31.6 = 260.00 (\text{ms})$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 1.625           | 260.00              | 31.60           | 400        | PASS   |

DH 5

$$2.867 * (1600/6)/79 * 31.6 = 305.81 (\text{ms})$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 2.867           | 305.81              | 31.60           | 400        | PASS   |

3M



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

DH 1

$$0.383 * (1600/2)/79 * 31.6 = 122.56 \text{ (ms)}$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 0.383           | 122.56              | 31.60           | 400        | PASS   |

DH 3

$$1.625 * (1600/4)/79 * 31.6 = 260.00 \text{ (ms)}$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 1.625           | 260.00              | 31.60           | 400        | PASS   |

DH 5

$$2.867 * (1600/6)/79 * 31.6 = 305.81 \text{ (ms)}$$

| Pulse Time (ms) | Total of Dwell (ms) | Period Time (s) | Limit (ms) | Result |
|-----------------|---------------------|-----------------|------------|--------|
| 2.867           | 305.81              | 31.60           | 400        | PASS   |



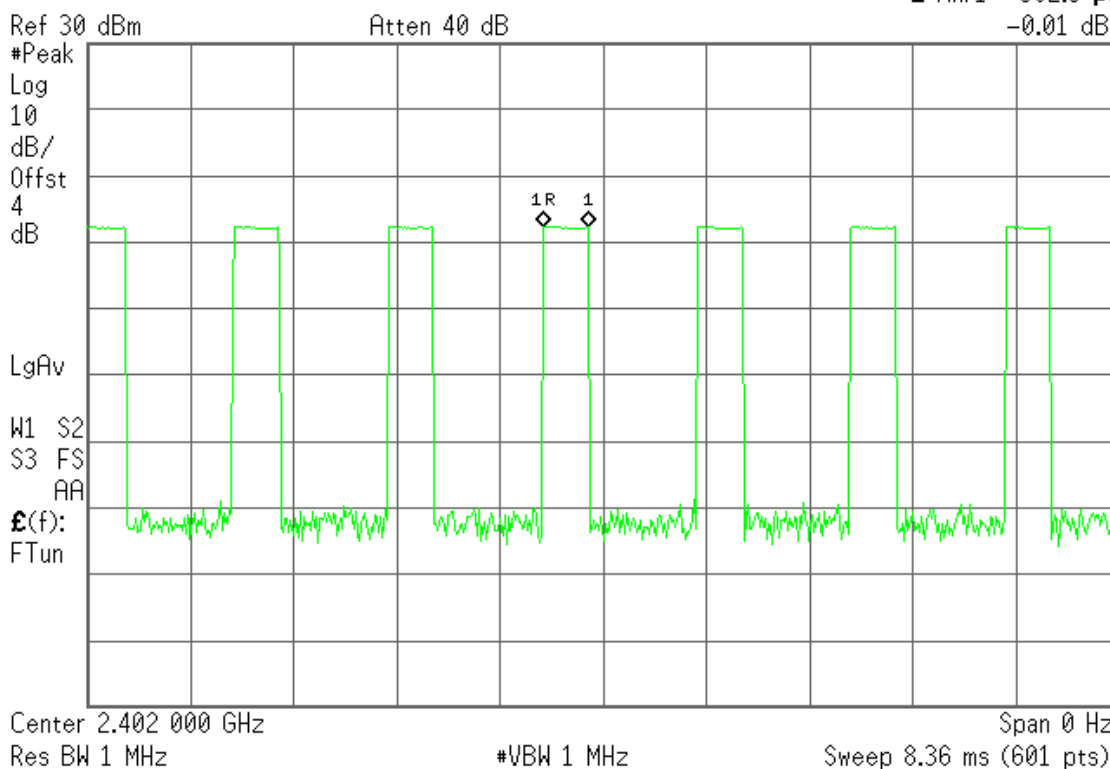


## 1M-DH1

Agilent 17:45:58 Apr 28, 2014

R T

Mkr1 362.3  $\mu$ s  
-0.01 dB

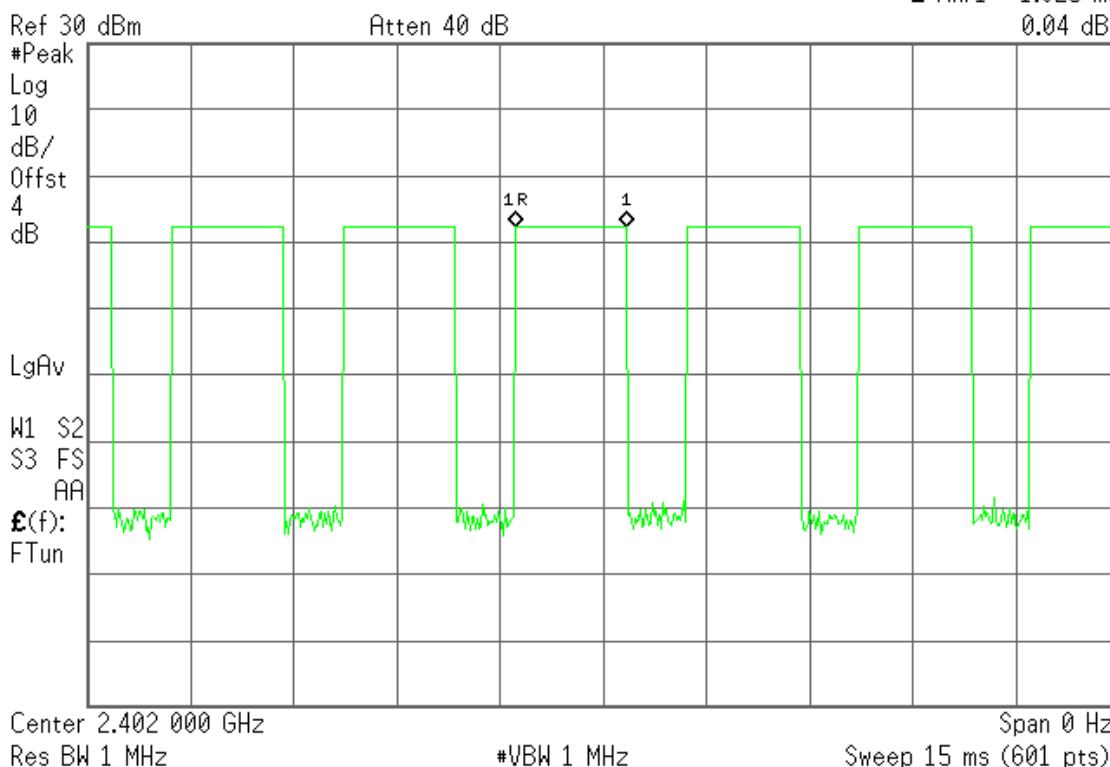


## 1M-DH3

Agilent 17:47:46 Apr 28, 2014

R T

Mkr1 1.625 ms  
0.04 dB



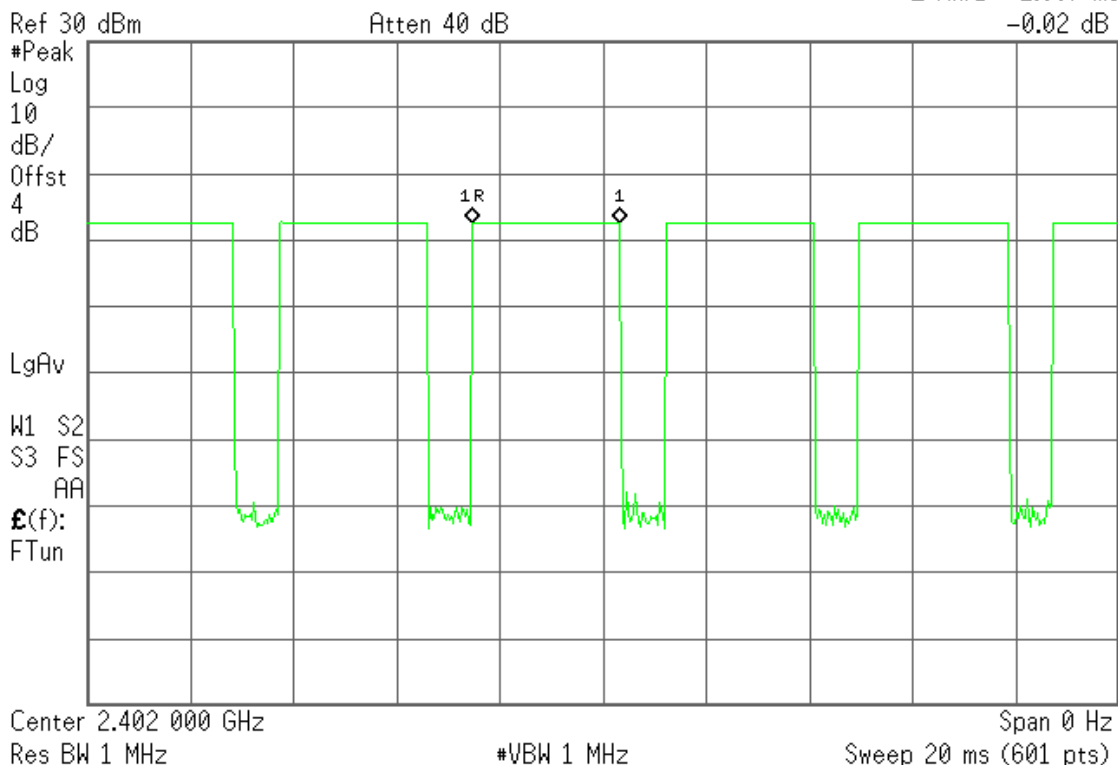


## 1M-DH5

Agilent 17:49:52 Apr 28, 2014

R T

▲ Mkr1 2.867 ms  
-0.02 dB

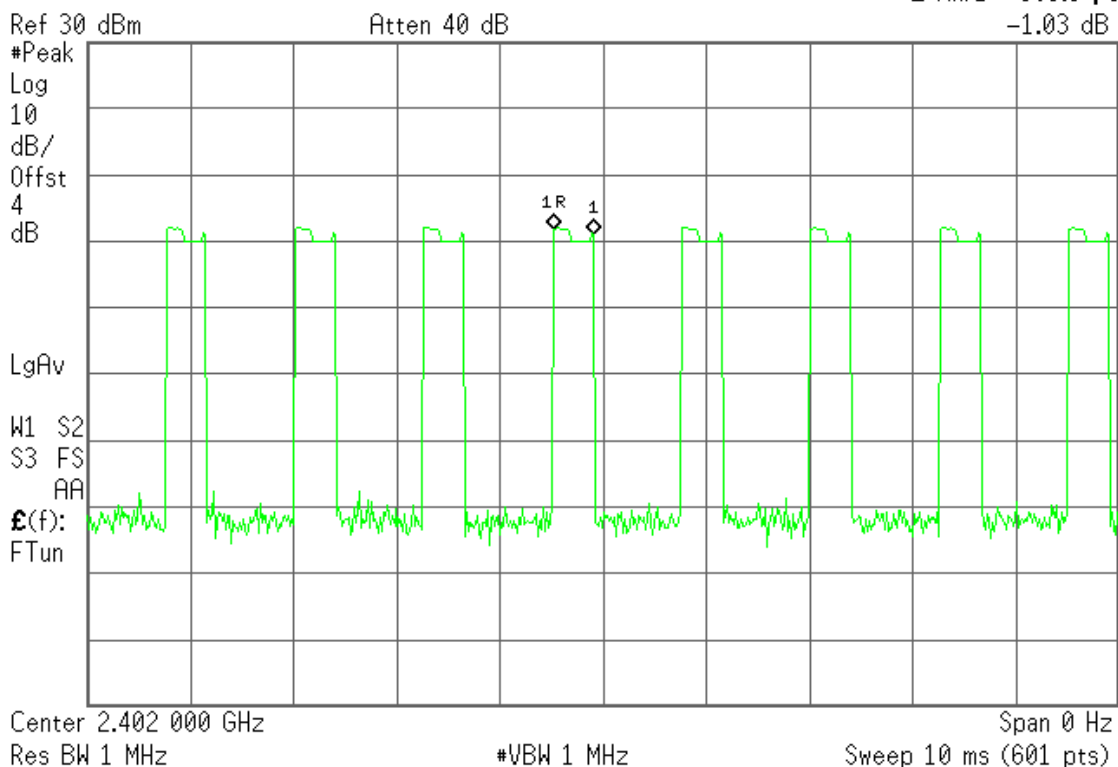


## 3M-DH1

Agilent 17:51:10 Apr 28, 2014

R T

▲ Mkr1 383.3 μs  
-1.03 dB



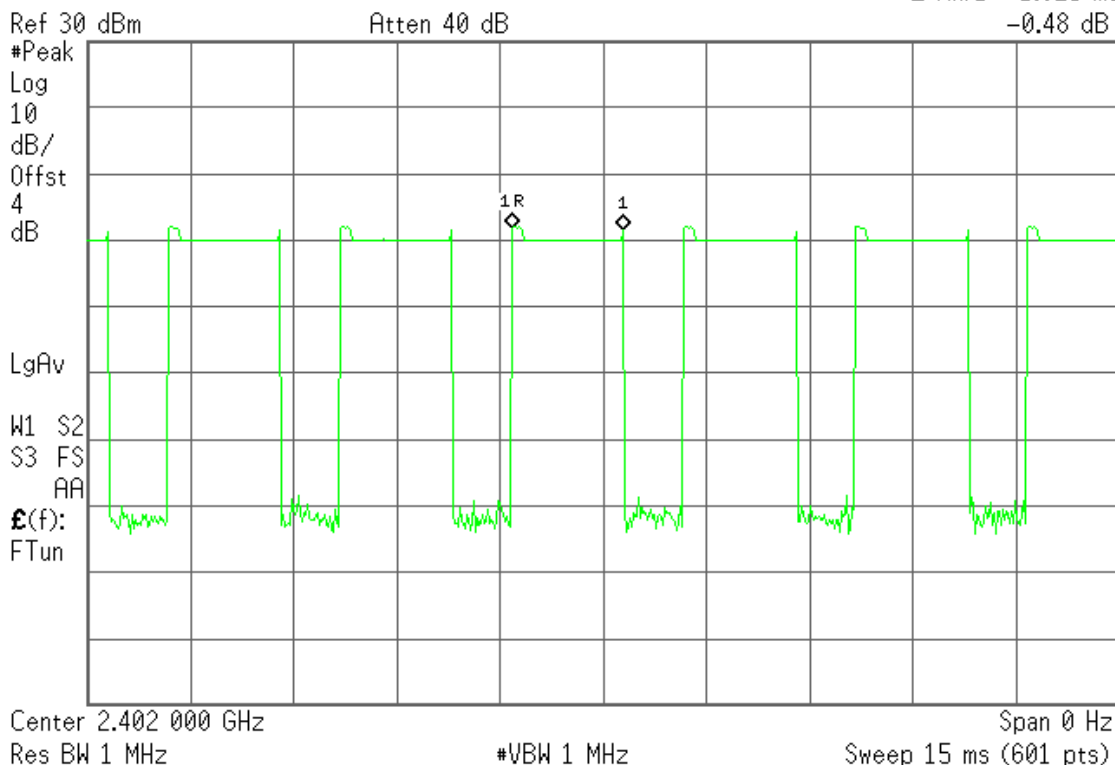


### 3M-DH3

Agilent 17:52:23 Apr 28, 2014

R T

Mkr1 1.625 ms  
-0.48 dB

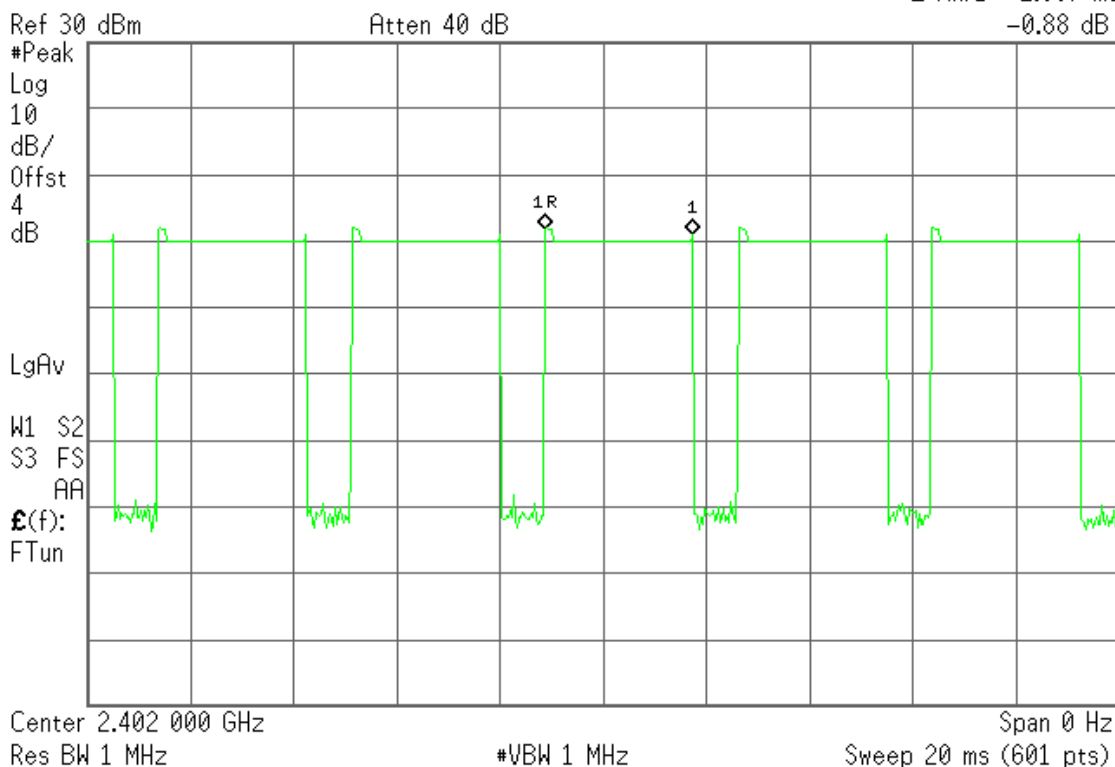


### 3M-DH5

Agilent 17:53:31 Apr 28, 2014

R T

Mkr1 2.867 ms  
-0.88 dB





## 6.7 SPURIOUS EMISSION

### Conducted Measurement

#### LIMIT

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

#### Test Configuration



#### TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 300 KHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

#### TEST RESULTS

*No non-compliance noted*



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

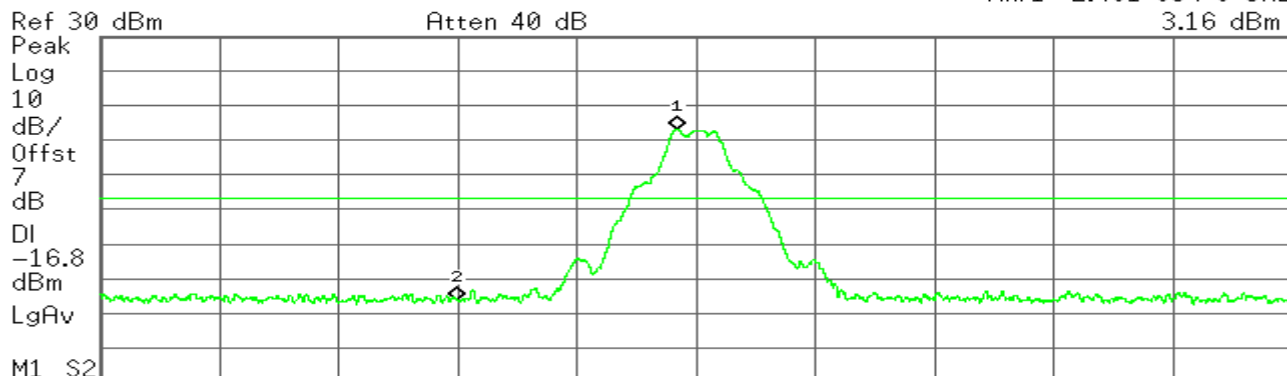
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 1 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 00      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

Mkr1 2.401 834 6 GHz  
3.16 dBm



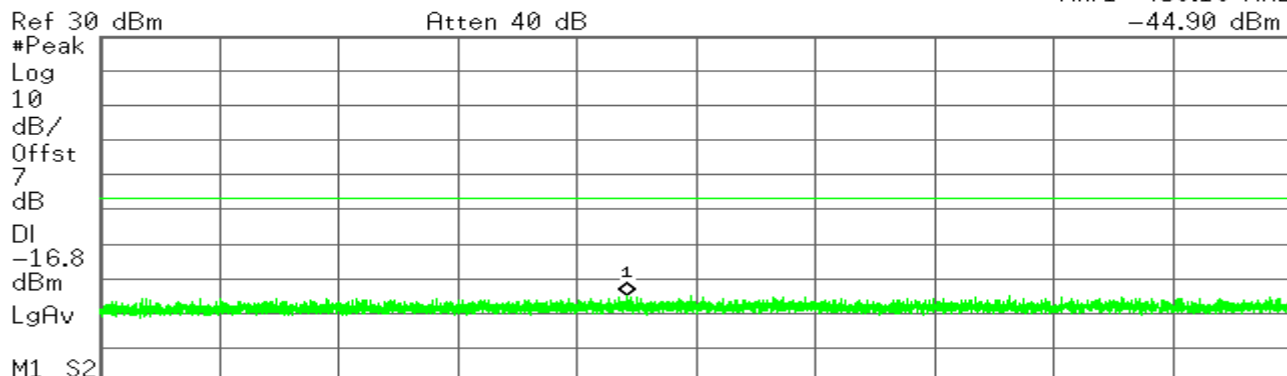
Center 2.402 000 GHz Span 10 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts)

| Marker | Trace | Type | X Axis          | Amplitude  |
|--------|-------|------|-----------------|------------|
| 1      | (1)   | Freq | 2.401 834 6 GHz | 3.16 dBm   |
| 2      | (1)   | Freq | 2.400 000 0 GHz | -46.00 dBm |

Agilent

R T

Mkr1 459.16 MHz  
-44.90 dBm



Start 30.00 MHz Stop 1.000 00 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 92.83 ms (8192 pts)

| Marker | Trace | Type | X Axis     | Amplitude  |
|--------|-------|------|------------|------------|
| 1      | (1)   | Freq | 459.16 MHz | -44.90 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

R T

Mkr1 6.926 0 GHz  
-38.49 dBm

Ref 30 dBm

Atten 40 dB

#Peak

Log

10

dB/

Offst

7

dB

DI

-16.8

dBm

LgAv

M1 S2

Start 1.000 0 GHz<sup>^</sup>

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)



Agilent

R T

Mkr1 24.552 6 GHz  
-33.26 dBm

Ref 30 dBm

Atten 40 dB

#Peak

Log

10

dB/

Offst

7

dB

DI

-16.8

dBm

LgAv

M1 S2

Start 13.000 0 GHz<sup>^</sup>

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)





# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

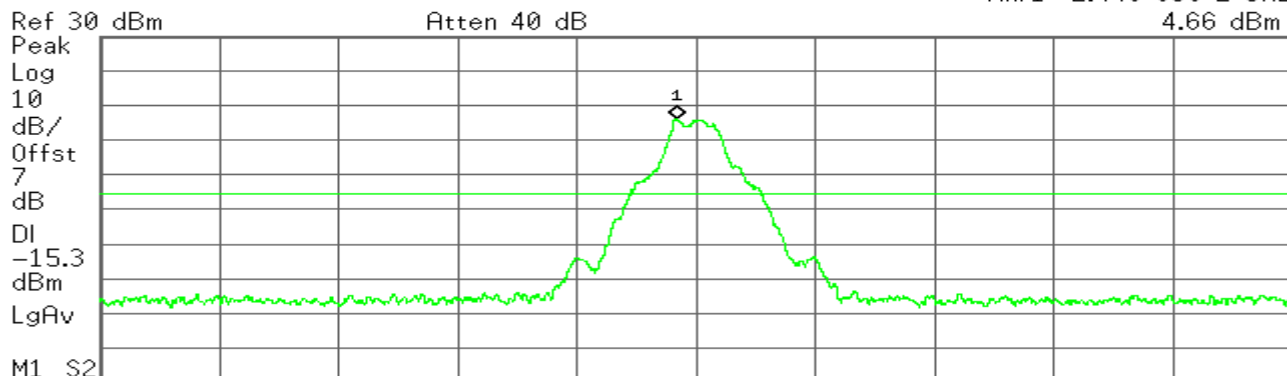
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 1 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 39      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

Mkr1 2.440 838 2 GHz  
4.66 dBm



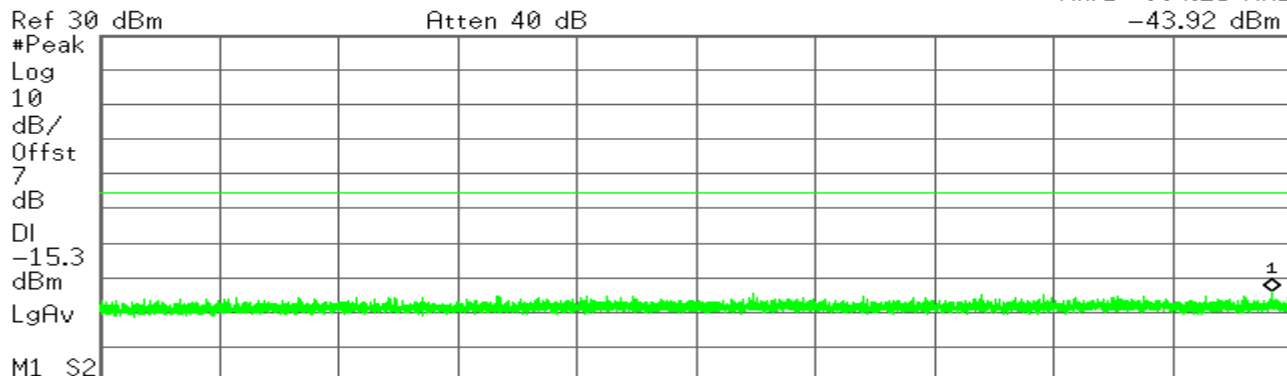
M1 S2  
 Start 2.436 000 0 GHz Stop 2.446 000 0 GHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts)

| Marker | Trace | Type | X Axis          | Amplitude |
|--------|-------|------|-----------------|-----------|
| 1      | (1)   | Freq | 2.440 838 2 GHz | 4.66 dBm  |

Agilent

R T

Mkr1 984.25 MHz  
-43.92 dBm



M1 S2  
 Start 30.00 MHz Stop 1.000 00 GHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 92.83 ms (8192 pts)

| Marker | Trace | Type | X Axis     | Amplitude  |
|--------|-------|------|------------|------------|
| 1      | (1)   | Freq | 984.25 MHz | -43.92 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

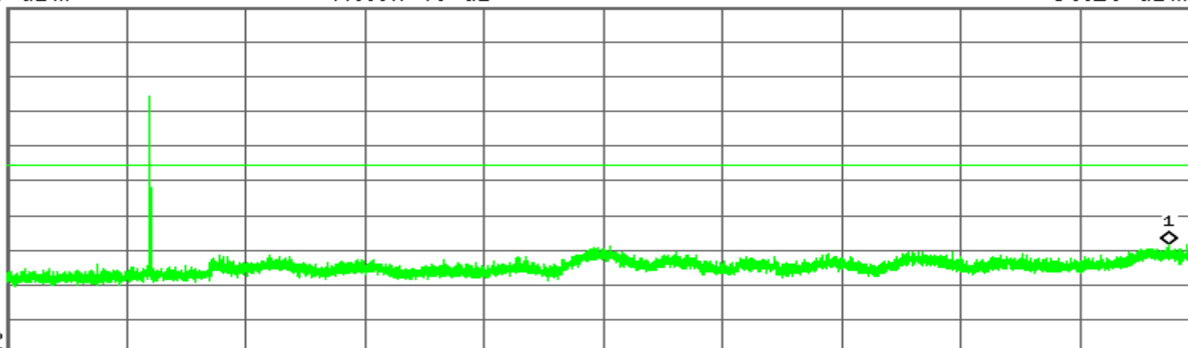
R T

Mkr1 12.692 3 GHz  
-38.28 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-15.3  
dBm  
LgAv



M1 S2

Start 1.000 0 GHz

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 12.692 3 GHz | -38.28 dBm |

Agilent

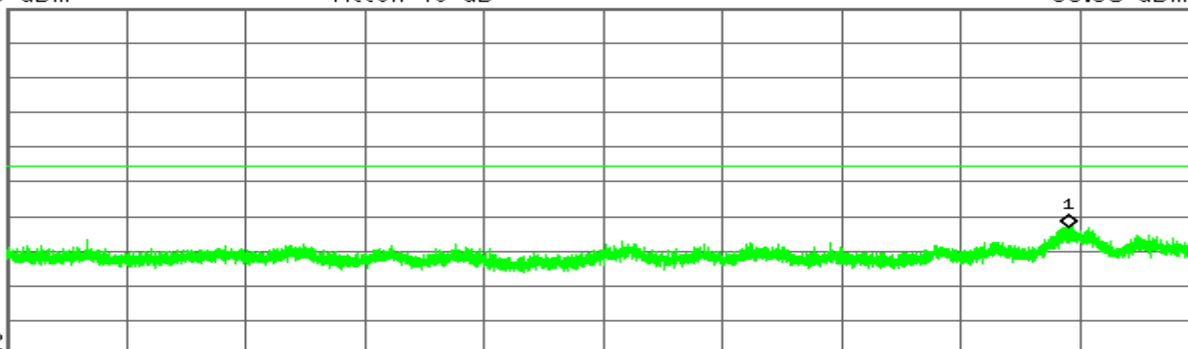
R T

Mkr1 24.570 0 GHz  
-33.35 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-15.3  
dBm  
LgAv



M1 S2

Start 13.000 0 GHz

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 24.570 0 GHz | -33.35 dBm |





# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

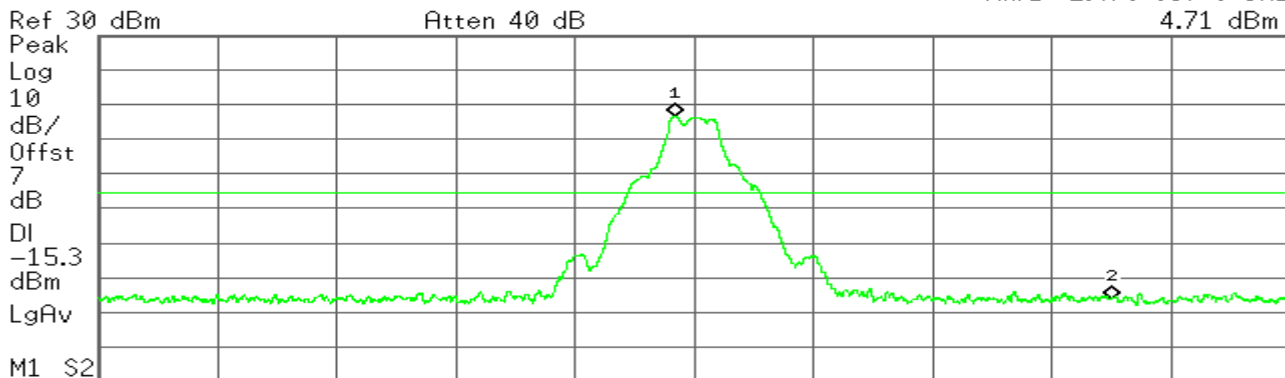
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 1 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 78      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

Mkr1 2.479 837 0 GHz  
4.71 dBm



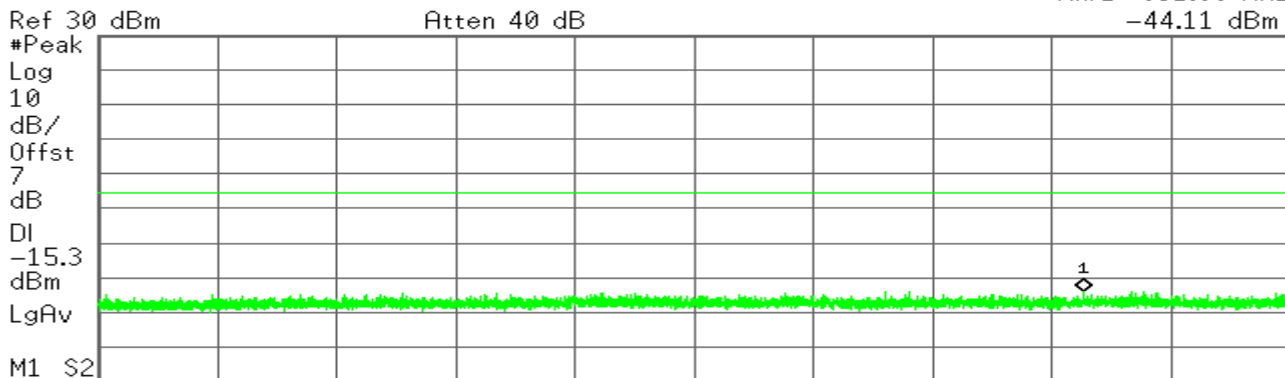
Center 2.480 000 0 GHz Span 10 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts)

| Marker | Trace | Type | X Axis          | Amplitude  |
|--------|-------|------|-----------------|------------|
| 1      | (1)   | Freq | 2.479 837 0 GHz | 4.71 dBm   |
| 2      | (1)   | Freq | 2.483 500 0 GHz | -46.29 dBm |

Agilent

R T

Mkr1 831.96 MHz  
-44.11 dBm



Start 30.00 MHz Stop 1.000 00 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 92.83 ms (8192 pts)

| Marker | Trace | Type | X Axis     | Amplitude  |
|--------|-------|------|------------|------------|
| 1      | (1)   | Freq | 831.96 MHz | -44.11 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

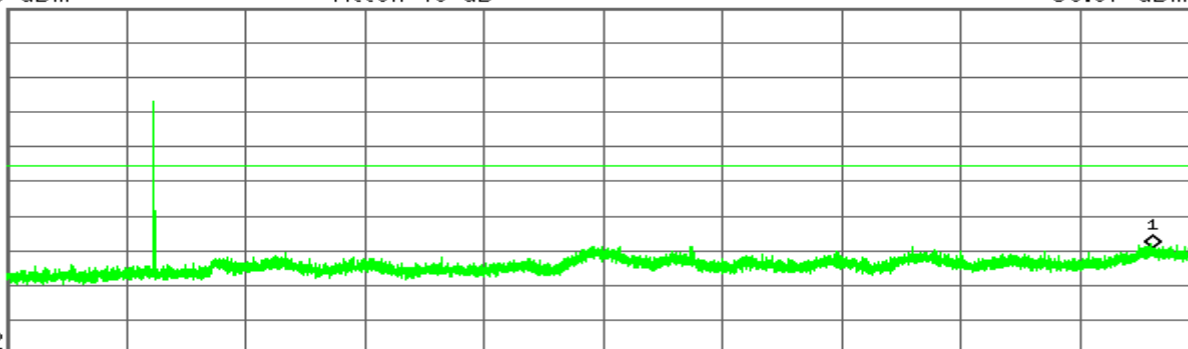
R T

Mkr1 12.526 8 GHz  
-39.07 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-15.3  
dBm  
LgAv



M1 S2

Start 1.000 0 GHz

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 12.526 8 GHz | -39.07 dBm |

Agilent

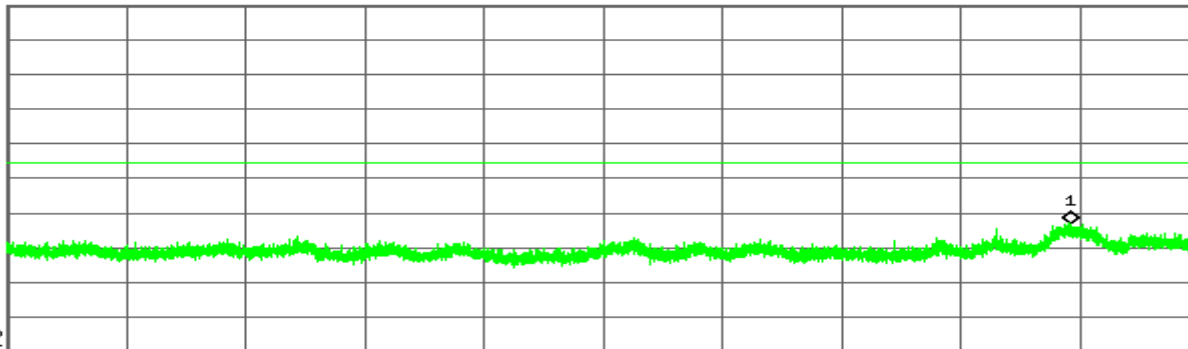
R T

Mkr1 24.595 4 GHz  
-33.39 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-15.3  
dBm  
LgAv



M1 S2

Start 13.000 0 GHz

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 24.595 4 GHz | -33.39 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

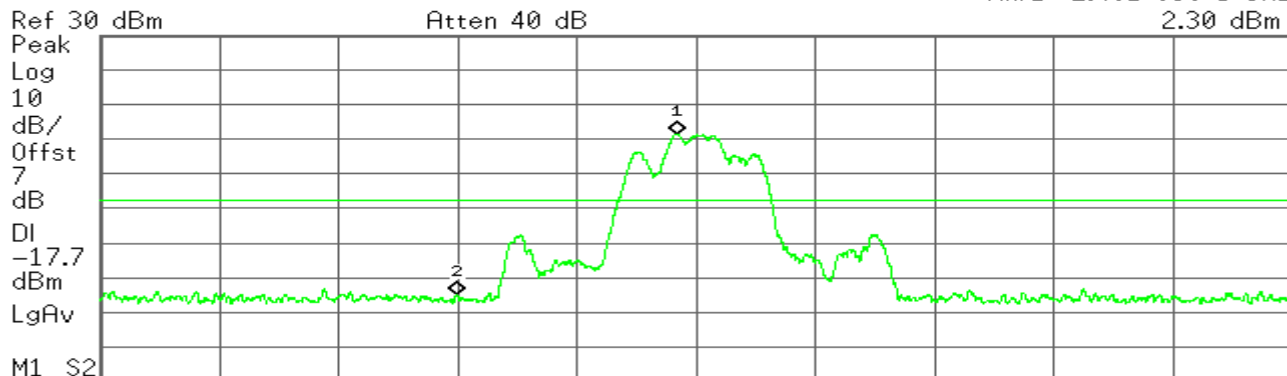
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 3 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 00      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

Mkr1 2.401 839 5 GHz  
2.30 dBm



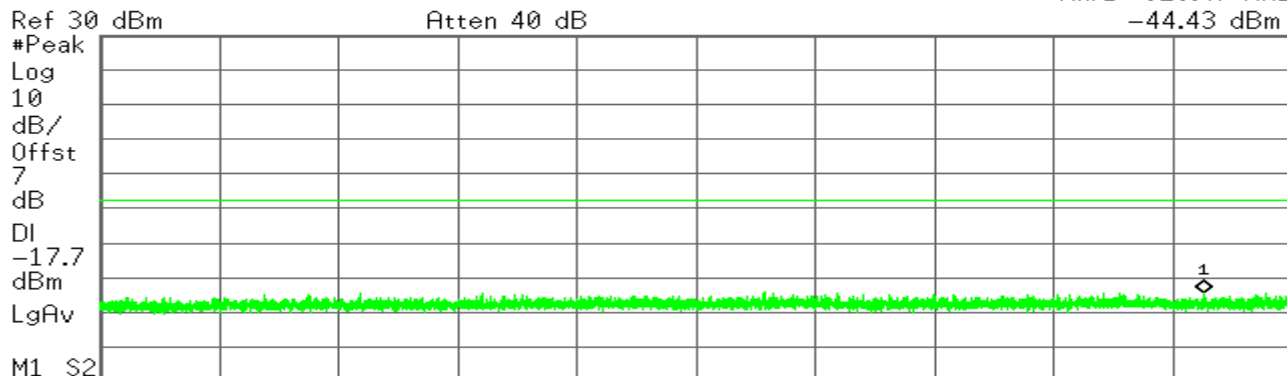
M1 S2  
 Center 2.402 000 0 GHz Span 10 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts)

| Marker | Trace | Type | X Axis          | Amplitude  |
|--------|-------|------|-----------------|------------|
| 1      | (1)   | Freq | 2.401 839 5 GHz | 2.30 dBm   |
| 2      | (1)   | Freq | 2.400 000 0 GHz | -45.10 dBm |

Agilent

R T

Mkr1 928.47 MHz  
-44.43 dBm



M1 S2  
 Start 30.00 MHz Stop 1.000 00 GHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 92.83 ms (8192 pts)

| Marker | Trace | Type | X Axis     | Amplitude  |
|--------|-------|------|------------|------------|
| 1      | (1)   | Freq | 928.47 MHz | -44.43 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

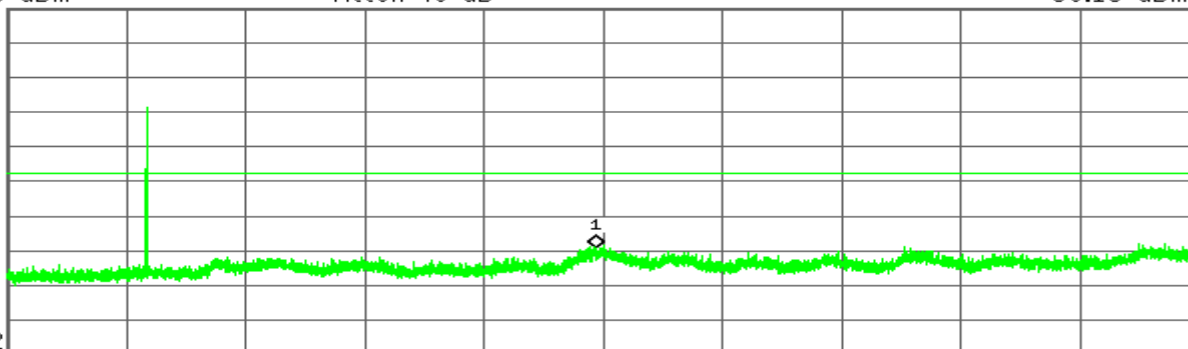
R T

Mkr1 6.933 3 GHz  
-39.13 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-17.7  
dBm  
LgAv



M1 S2

Start 1.000 0 GHz

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)

| Marker | Trace | Type | X Axis      | Amplitude  |
|--------|-------|------|-------------|------------|
| 1      | (1)   | Freq | 6.933 3 GHz | -39.13 dBm |

Agilent

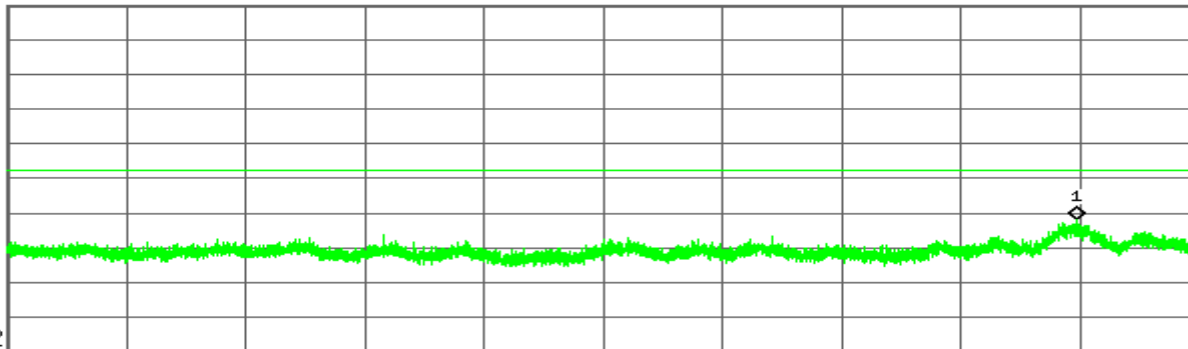
R T

Mkr1 24.660 5 GHz  
-32.05 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-17.7  
dBm  
LgAv



M1 S2

Start 13.000 0 GHz

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 24.660 5 GHz | -32.05 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

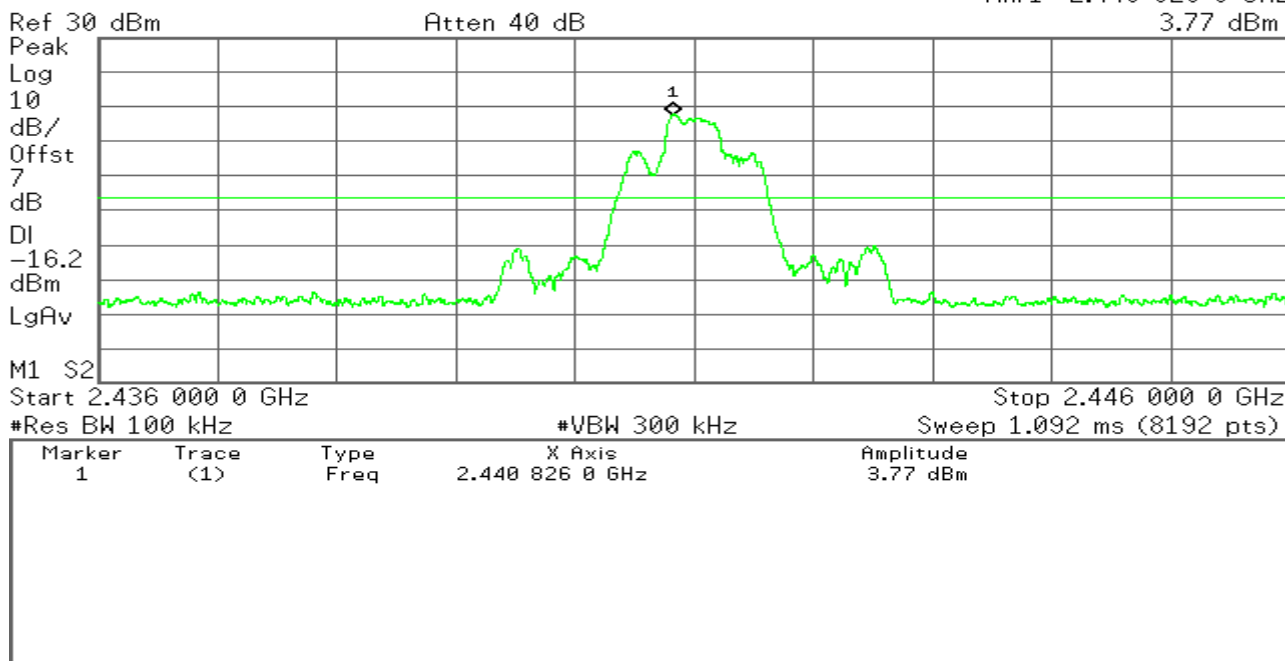
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 3 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 39      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

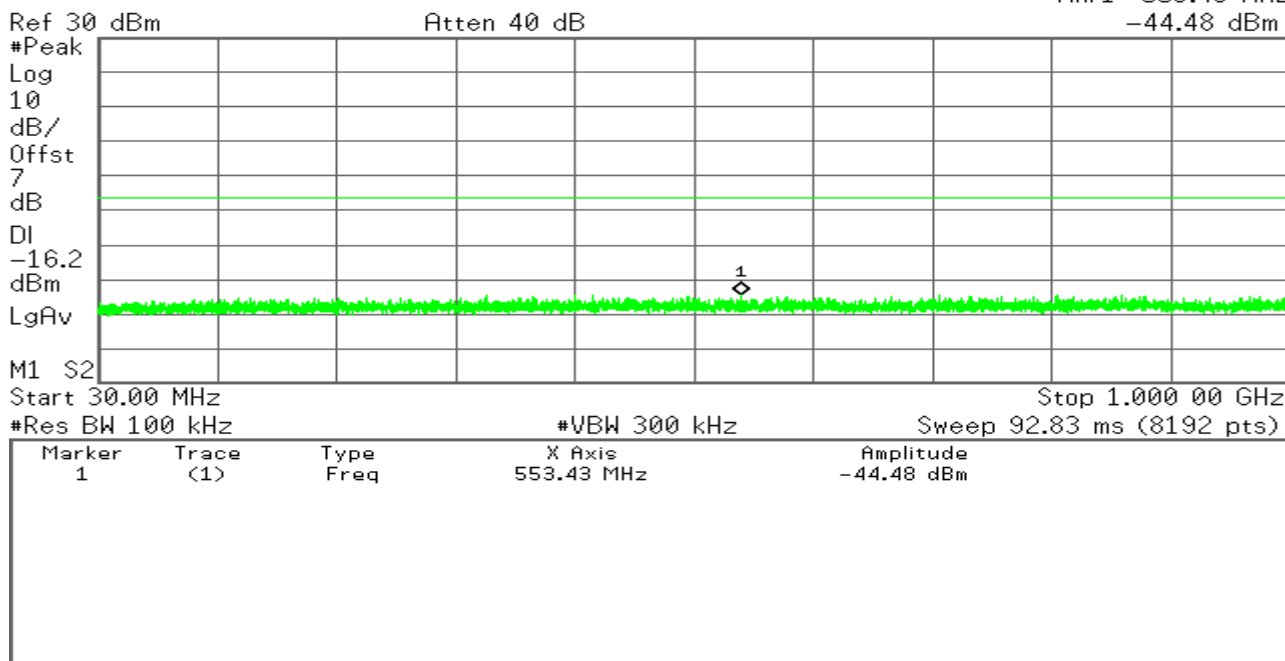
Mkr1 2.440 826 0 GHz  
3.77 dBm



Agilent

R T

Mkr1 553.43 MHz  
-44.48 dBm





# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

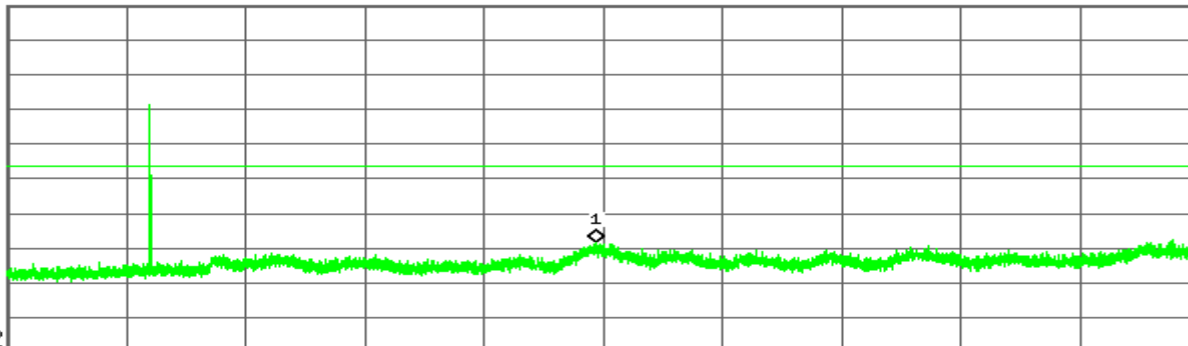
R T

Mkr1 6.921 6 GHz  
-38.46 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-16.2  
dBm  
LgAv



M1 S2

Start 1.000 0 GHz

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)

| Marker | Trace | Type | X Axis      | Amplitude  |
|--------|-------|------|-------------|------------|
| 1      | (1)   | Freq | 6.921 6 GHz | -38.46 dBm |

Agilent

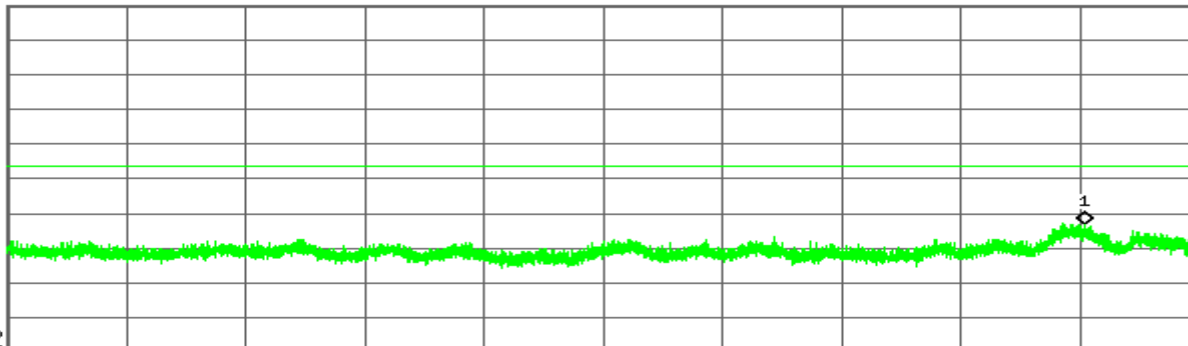
R T

Mkr1 24.754 1 GHz  
-33.33 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-16.2  
dBm  
LgAv



M1 S2

Start 13.000 0 GHz

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 24.754 1 GHz | -33.33 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

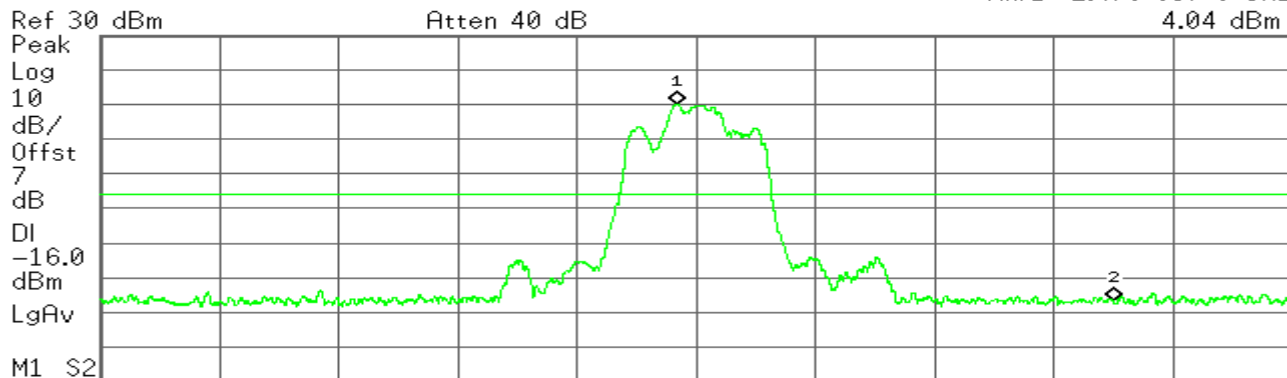
Date of Issue :May 16, 2014

|                 |         |              |              |
|-----------------|---------|--------------|--------------|
| Operation Mode: | 3 Mbps  | Test Date:   | May 10, 2014 |
| Test Channel:   | 78      | Tested by:   | Blent.Wang   |
| Humidity:       | 52 % RH | Temperature: | 24°C         |

Agilent

R T

Mkr1 2.479 837 0 GHz  
4.04 dBm



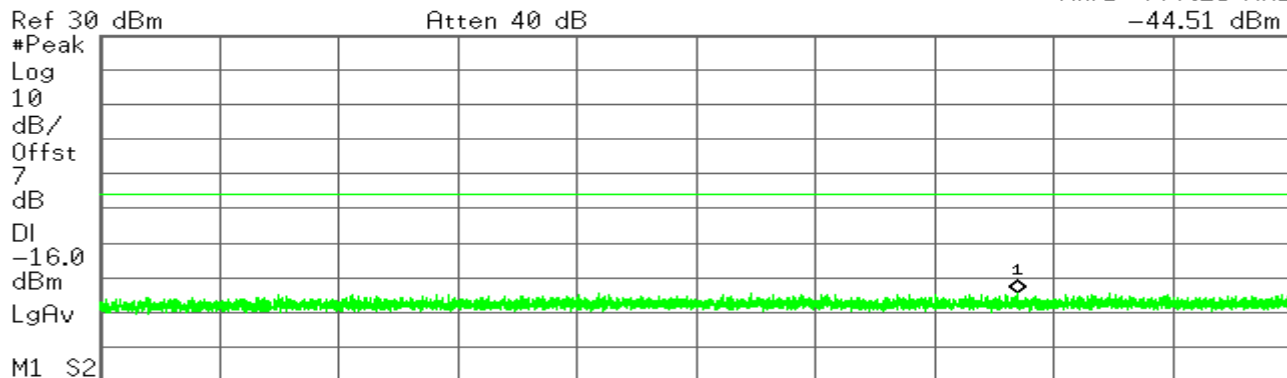
Center 2.480 000 0 GHz Span 10 MHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts)

| Marker | Trace | Type | X Axis          | Amplitude  |
|--------|-------|------|-----------------|------------|
| 1      | (1)   | Freq | 2.479 837 0 GHz | 4.04 dBm   |
| 2      | (1)   | Freq | 2.483 500 0 GHz | -46.80 dBm |

Agilent

R T

Mkr1 777.25 MHz  
-44.51 dBm



Start 30.00 MHz Stop 1.000 00 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 92.83 ms (8192 pts)

| Marker | Trace | Type | X Axis     | Amplitude  |
|--------|-------|------|------------|------------|
| 1      | (1)   | Freq | 777.25 MHz | -44.51 dBm |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Agilent

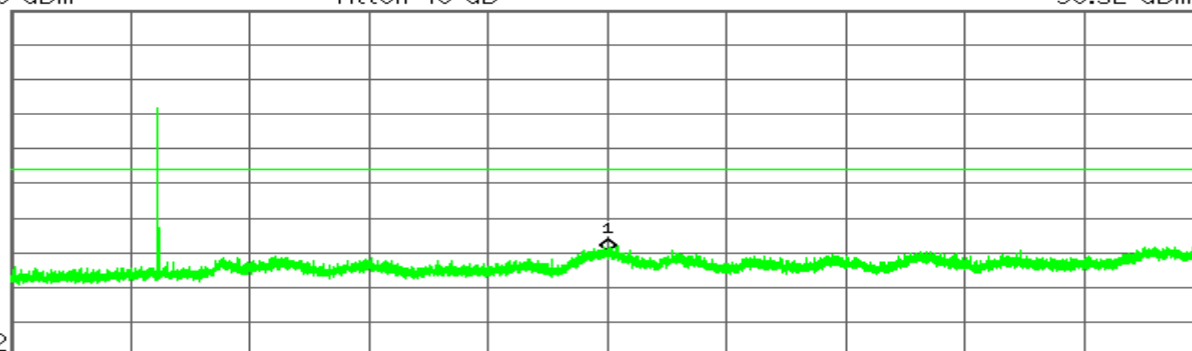
R T

Mkr1 7.012 5 GHz  
-39.52 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-16.0  
dBm  
LgAv



M1 S2

Start 1.000 0 GHz

Stop 13.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.147 s (8192 pts)

| Marker | Trace | Type | X Axis      | Amplitude  |
|--------|-------|------|-------------|------------|
| 1      | (1)   | Freq | 7.012 5 GHz | -39.52 dBm |

Agilent

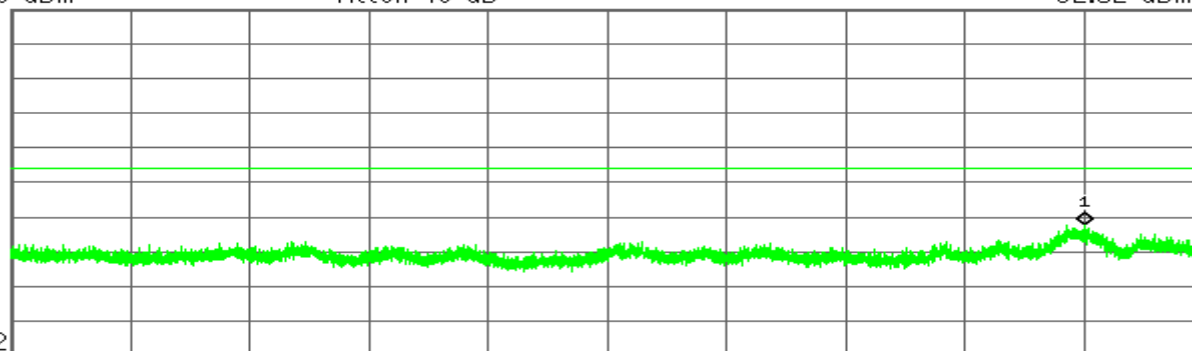
R T

Mkr1 24.716 0 GHz  
-32.52 dBm

Ref 30 dBm

Atten 40 dB

#Peak  
Log  
10  
dB/  
Offst  
7  
dB  
DI  
-16.0  
dBm  
LgAv



M1 S2

Start 13.000 0 GHz

Stop 26.000 0 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 1.243 s (8192 pts)

| Marker | Trace | Type | X Axis       | Amplitude  |
|--------|-------|------|--------------|------------|
| 1      | (1)   | Freq | 24.716 0 GHz | -32.52 dBm |





## 6.8 Radiated Band Edge and Spurious Emission Measurement

### LIMIT

1. Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field Strength (mV/m) | Measurement Distance (m) |
|-----------------|-----------------------|--------------------------|
| 30-88           | 100*                  | 3                        |
| 88-216          | 150*                  | 3                        |
| 216-960         | 200*                  | 3                        |
| Above 960       | 500                   | 3                        |

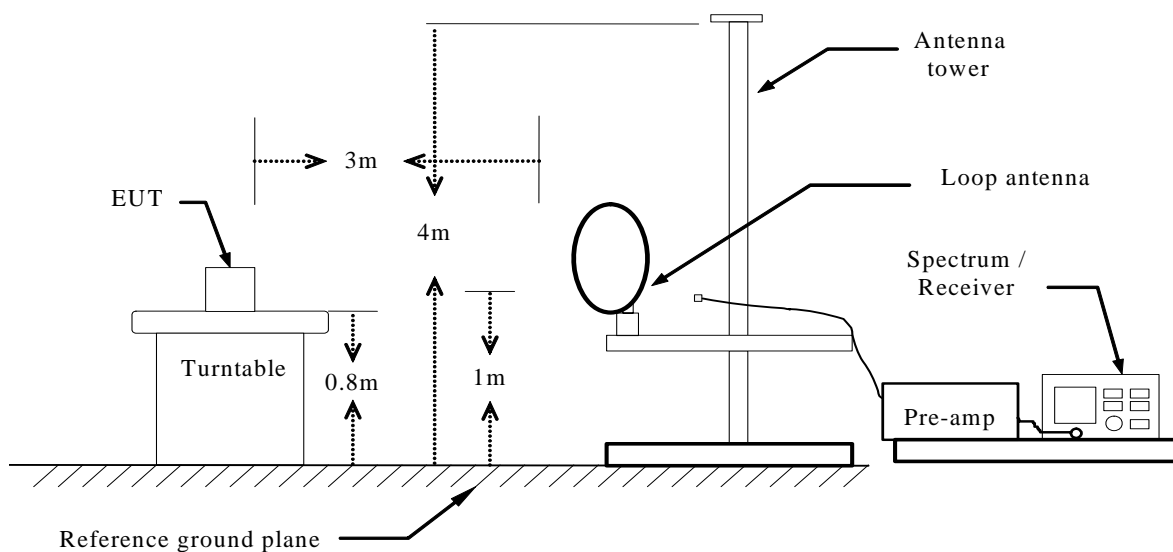
**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

2. In the above emission table, the tighter limit applies at the band edges.

| Frequency (Hz) | Field Strength ( $\mu\text{V/m}$ at 3-meter) | Field Strength (dB $\mu\text{V/m}$ at 3-meter) |
|----------------|--|--|
| 30-88          | 100  | 40   |
| 88-216         | 150  | 43.5   |
| 216-960        | 200  | 46   |
| Above 960      | 500  | 54   |

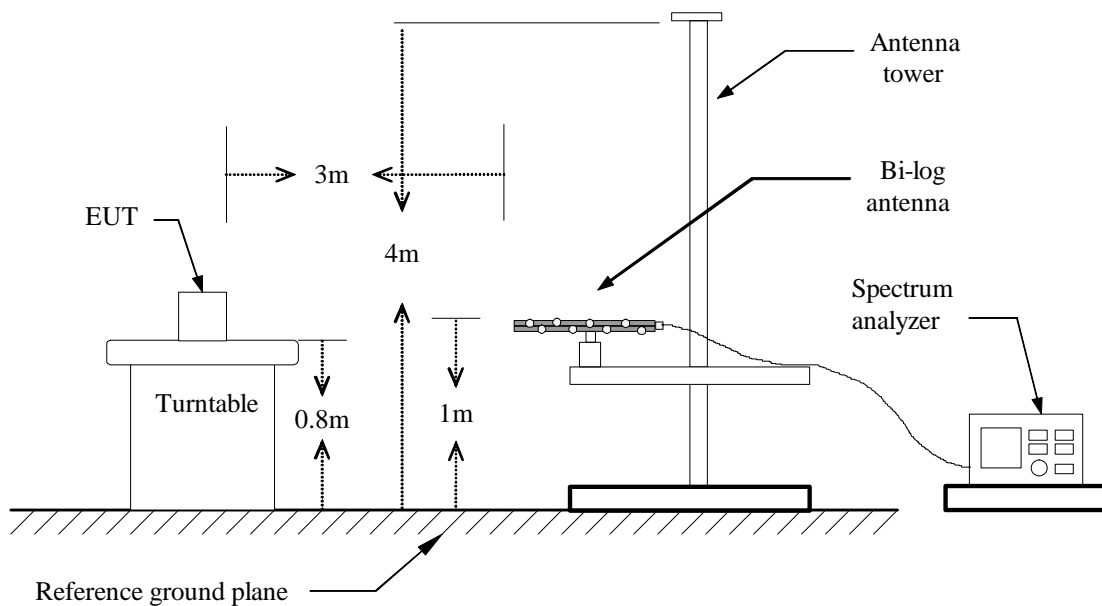
### Test Configuration

#### Below 30MHz

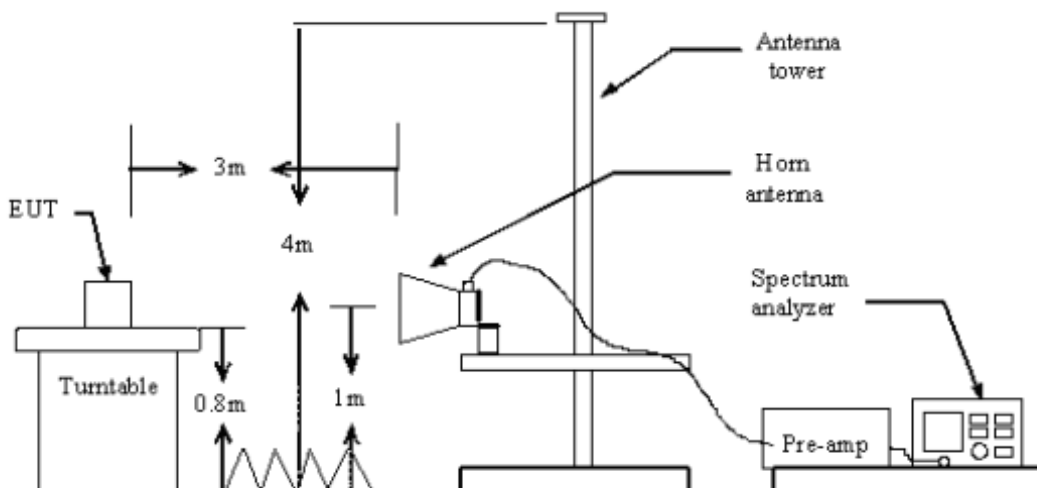




## Below 1 GHz



## Above 1 GHz





## **TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

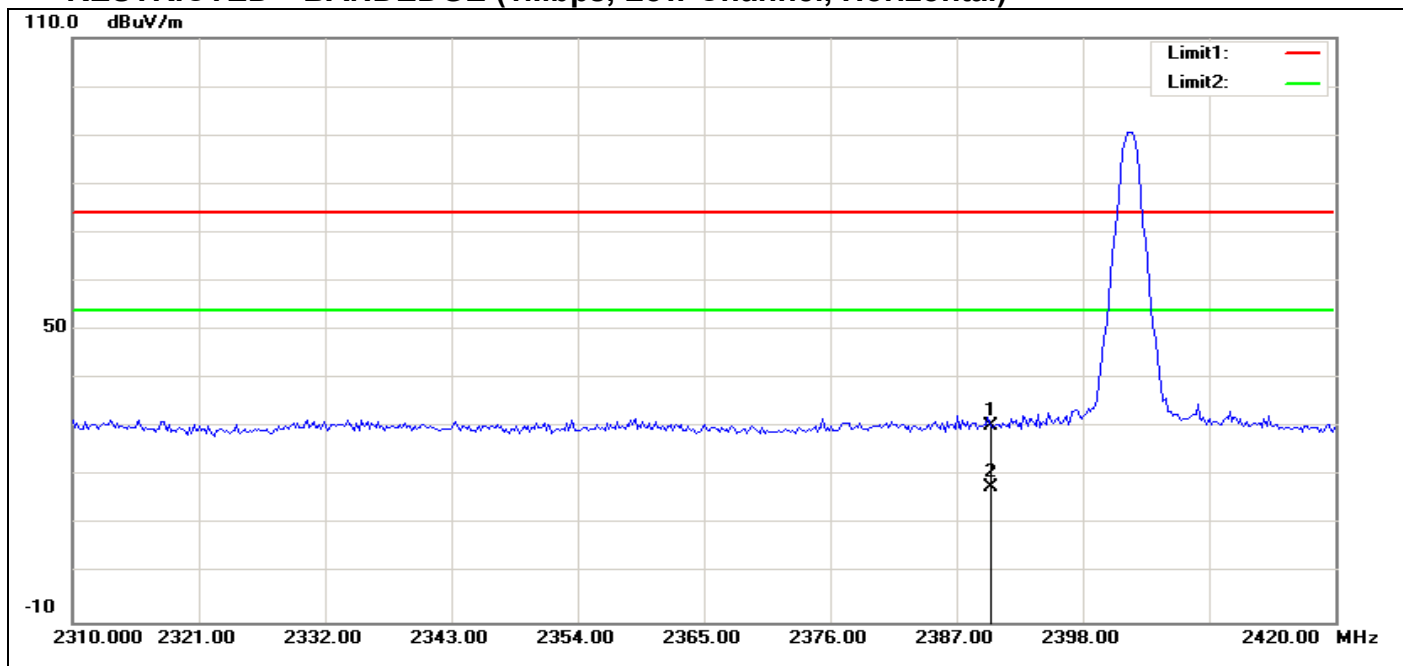
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.

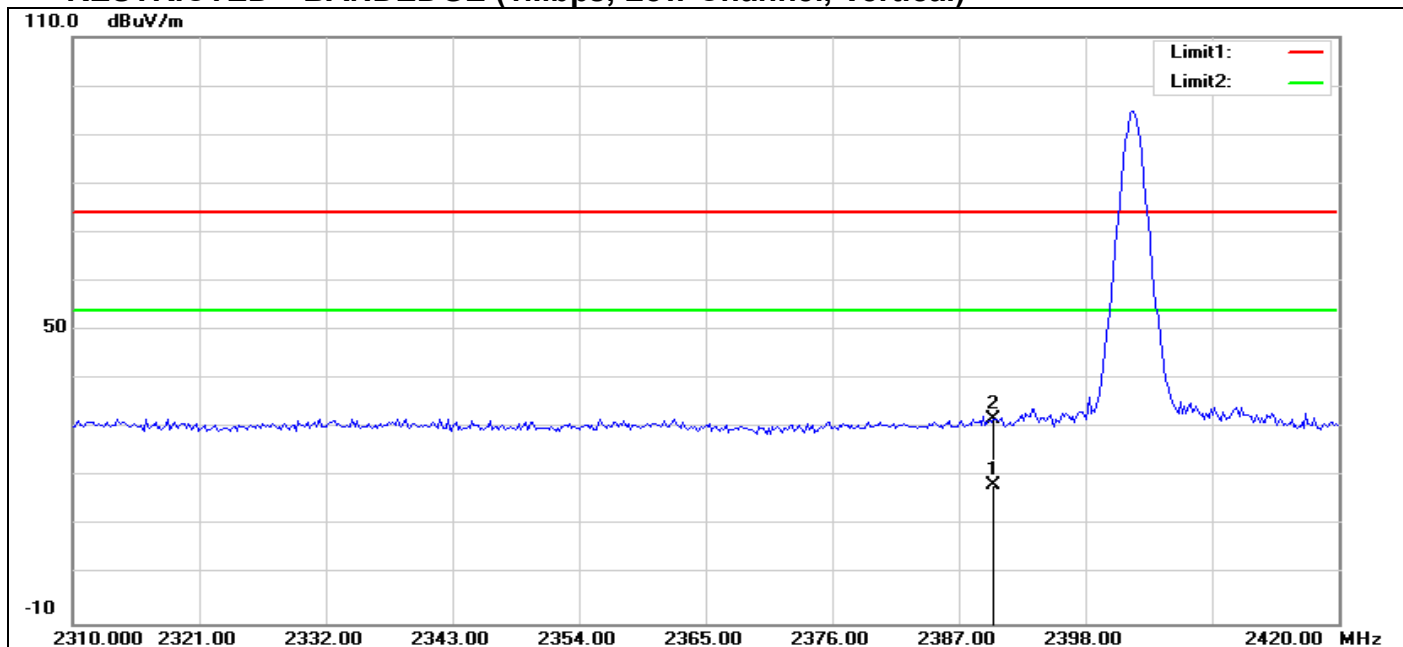


## RESTRICTED BANDEDGE (1Mbps, Low Channel, Horizontal)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2390.000        | 44.49          | -14.28               | 30.21           | 74.00          | -43.79      | 100         | 354           | peak   |
| 2   | 2390.000        | 32.15          | -14.29               | 17.86           | 54.00          | -36.14      | 100         | 352           | AVG    |

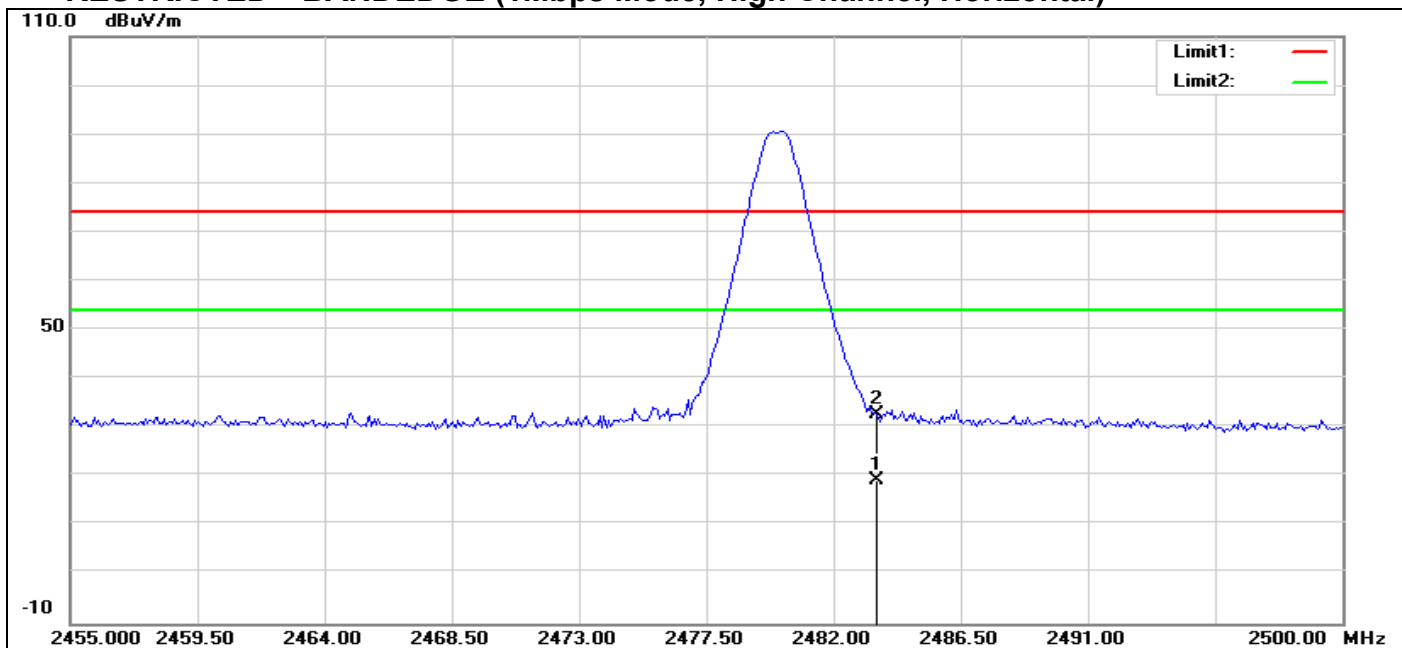
## RESTRICTED BANDEDGE (1Mbps, Low Channel, Vertical)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2390.000        | 32.57          | -14.28               | 18.29           | 54.00          | -35.71      | 100         | 116           | AVG    |
| 2   | 2390.000        | 46.17          | -14.28               | 31.89           | 74.00          | -42.11      | 100         | 116           | peak   |

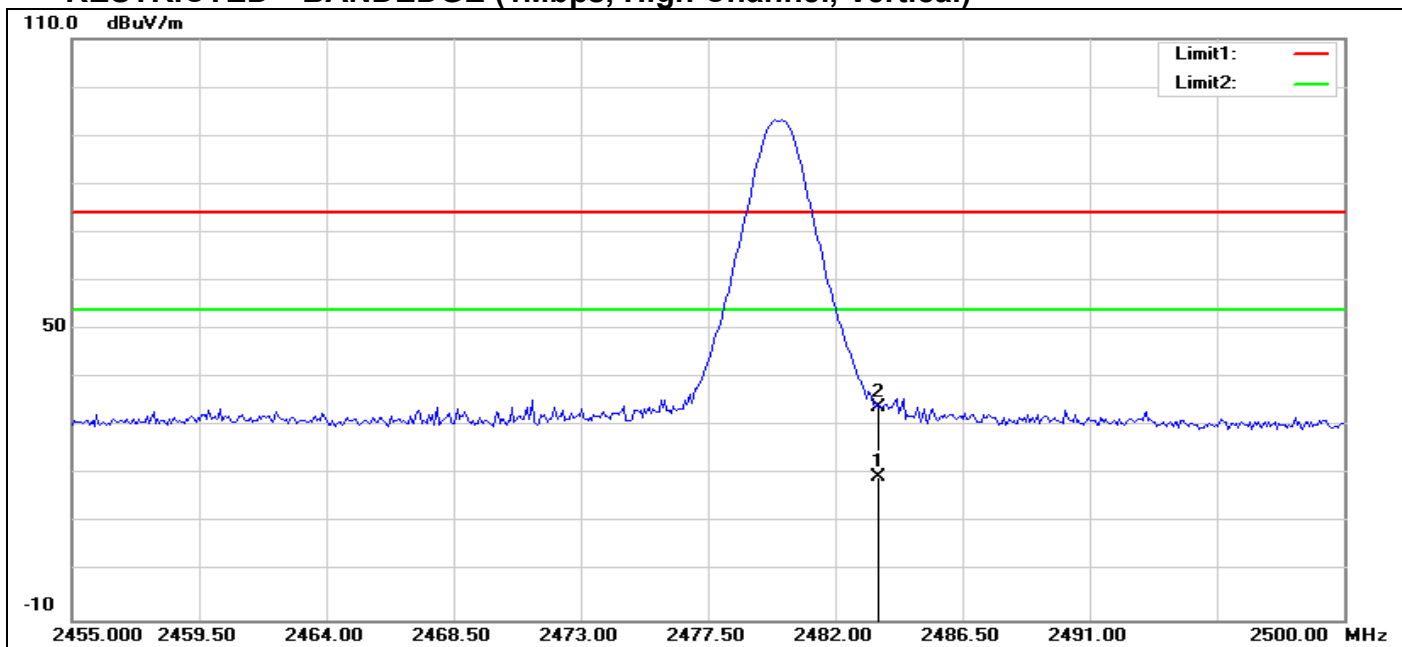


## RESTRICTED BANDEDGE (1Mbps Mode, High Channel, Horizontal)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2483.500        | 32.86          | -13.65               | 19.21           | 54.00          | -34.79      | 100         | 200           | AVG    |
| 2   | 2483.500        | 46.43          | -13.65               | 32.78           | 74.00          | -41.22      | 100         | 200           | peak   |

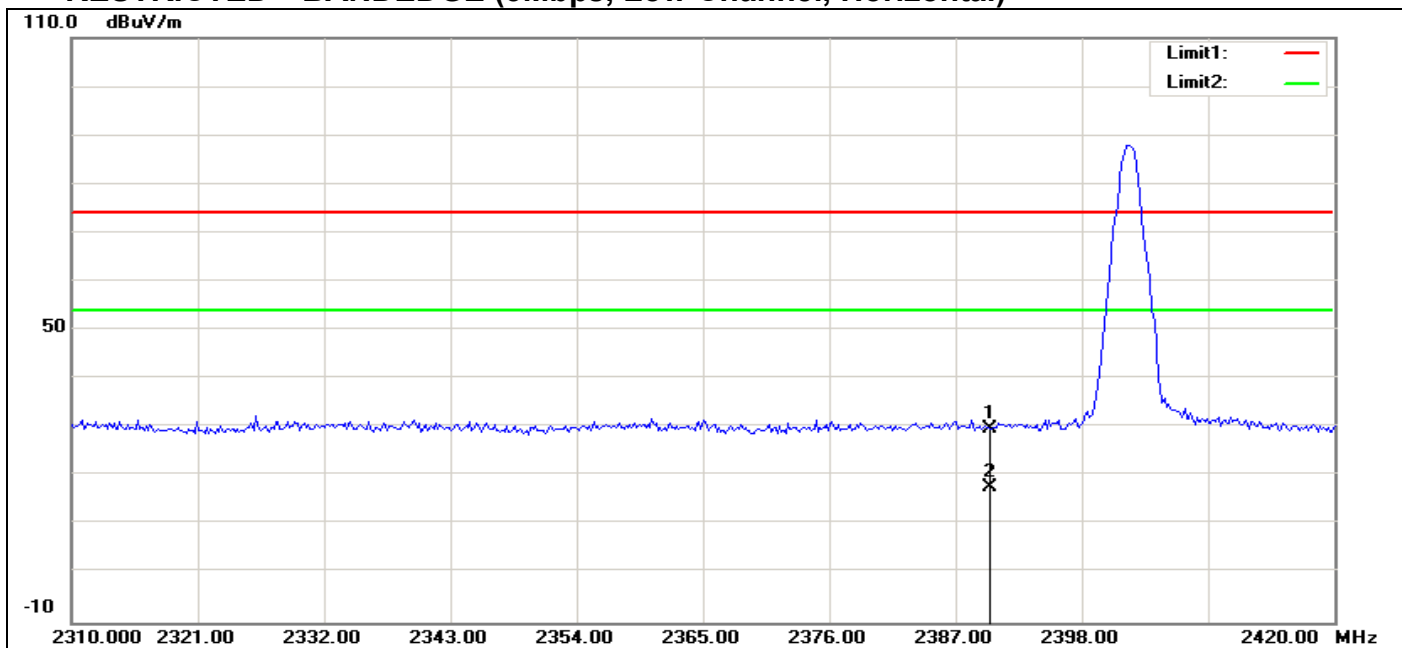
## RESTRICTED BANDEDGE (1Mbps, High Channel, Vertical)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2483.500        | 33.14          | -13.65               | 19.49           | 54.00          | -34.51      | 100         | 275           | AVG    |
| 2   | 2483.500        | 47.51          | -13.65               | 33.86           | 74.00          | -40.14      | 100         | 275           | peak   |

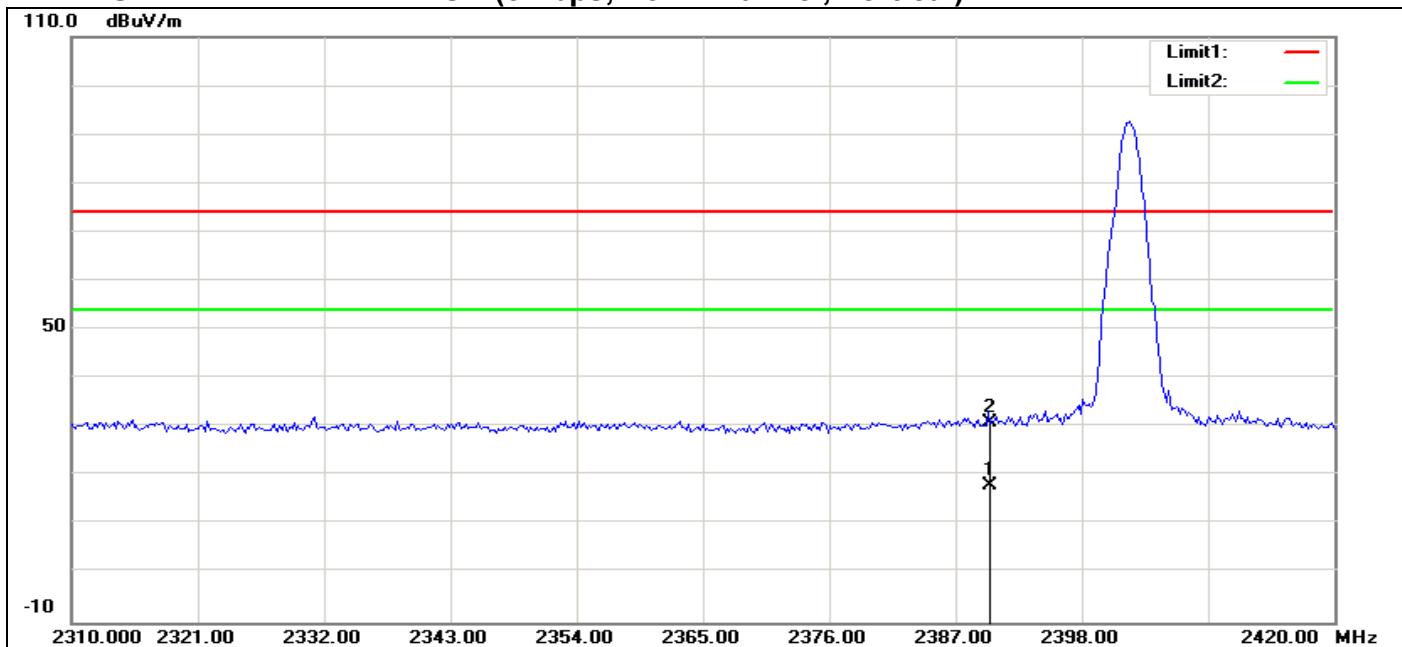


## RESTRICTED BANDEDGE (3Mbps, Low Channel, Horizontal)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2390.000        | 44.13          | -14.28               | 29.85           | 74.00          | -44.15      | 100         | 270           | peak   |
| 2   | 2390.000        | 32.01          | -14.29               | 17.72           | 54.00          | -36.28      | 100         | 270           | AVG    |

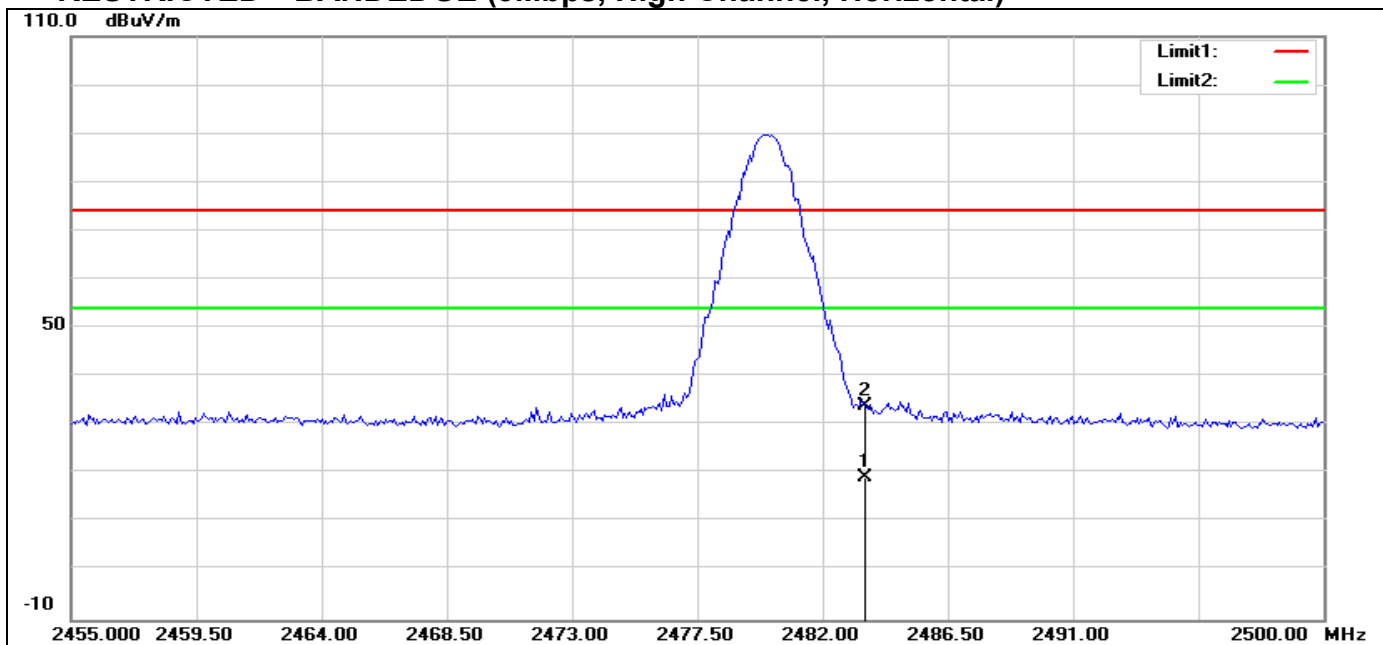
## RESTRICTED BANDEDGE (3Mbps, Low Channel, Vertical)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2390.000        | 32.42          | -14.28               | 18.14           | 54.00          | -35.86      | 100         | 277           | AVG    |
| 2   | 2390.000        | 45.27          | -14.28               | 30.99           | 74.00          | -43.01      | 100         | 277           | peak   |

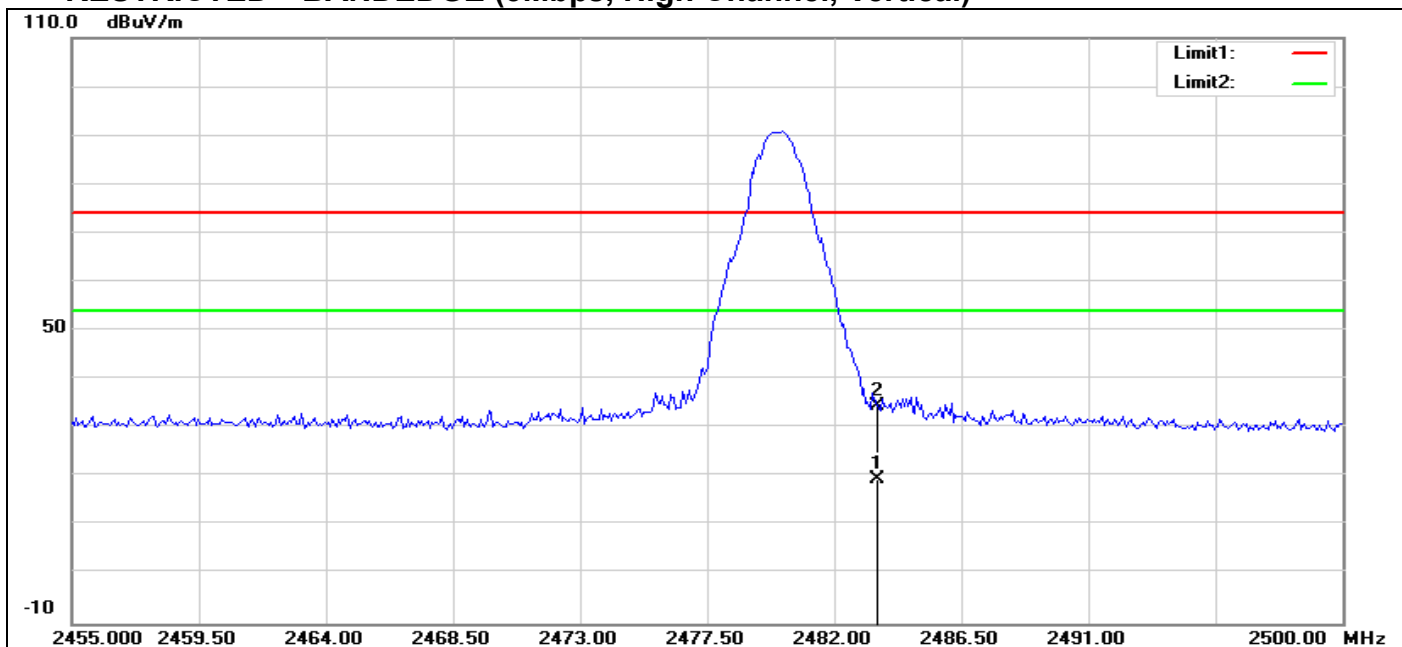


## RESTRICTED BANDEDGE (3Mbps, High Channel, Horizontal)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2483.500        | 32.96          | -13.65               | 19.31           | 54.00          | -34.69      | 100         | 307           | AVG    |
| 2   | 2483.500        | 47.63          | -13.65               | 33.98           | 74.00          | -40.02      | 100         | 307           | peak   |

## RESTRICTED BANDEDGE (3Mbps, High Channel, Vertical)



| No. | Frequency (MHz) | Reading (dBuV) | Correct Factor(dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Degree (deg.) | Remark |
|-----|-----------------|----------------|----------------------|-----------------|----------------|-------------|-------------|---------------|--------|
| 1   | 2483.500        | 33.17          | -13.65               | 19.52           | 54.00          | -34.48      | 100         | 267           | AVG    |
| 2   | 2483.500        | 48.11          | -13.65               | 34.46           | 74.00          | -39.54      | 100         | 267           | peak   |



## TEST RESULT OF RADIATED EMISSION

### 30MHz-1GHz

Operation Mode: 1 Mbps

Test Date: May 7, 2014

Test Channel: CH78

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

### Horizontal

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|----------------|------------------|--------|
| 1   | 33.8800            | 22.29             | 15.70                   | 37.99              | 40.00             | -2.01          | 200            | 333              | peak   |
| 2   | 122.1500           | 23.56             | 15.30                   | 38.86              | 43.50             | -4.64          | 200            | 100              | peak   |
| 3   | 152.2200           | 20.25             | 13.52                   | 33.77              | 43.50             | -9.73          | 100            | 238              | peak   |
| 4   | 207.5100           | 22.54             | 13.18                   | 35.72              | 43.50             | -7.78          | 100            | 82               | peak   |
| 5   | 312.2700           | 26.99             | 14.98                   | 41.97              | 46.00             | -4.03          | 100            | 220              | peak   |
| 6   | 935.9800           | 13.11             | 25.30                   | 38.41              | 46.00             | -7.59          | 200            | 123              | peak   |

### Vertical

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|--------------------|-------------------|-------------------------|--------------------|-------------------|----------------|----------------|------------------|--------|
| 1   | 32.9100            | 21.18             | 15.70                   | 36.88              | 40.00             | -3.12          | 176            | 0                | peak   |
| 2   | 55.2200            | 23.79             | 8.28                    | 32.07              | 40.00             | -7.93          | 100            | 359              | peak   |
| 3   | 88.2000            | 19.74             | 9.38                    | 29.12              | 43.50             | -14.38         | 100            | 132              | peak   |
| 4   | 118.2700           | 21.87             | 14.82                   | 36.69              | 43.50             | -6.81          | 100            | 288              | peak   |
| 5   | 286.0800           | 19.10             | 15.14                   | 34.24              | 46.00             | -11.76         | 200            | 0                | peak   |
| 6   | 946.6500           | 14.49             | 25.66                   | 40.15              | 46.00             | -5.85          | 100            | 159              | peak   |

### Notes:

1. Measurements above show only up to maximum emissions noted, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
2. Radiated emissions measured in frequency range from 9 KHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.





# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

**Above 1 GHz****Operation Mode:** 1 Mbps**Test Date:** May 7, 2014**Test Channel:** CH00**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4814.103        | V               | 43.63          | -8.00                    | 35.63           | 74.00          | -38.37      | PEAK   |
| 7211.538        | V               | 41.79          | -0.59                    | 41.20           | 74.00          | -32.80      | PEAK   |
| 4814.103        | H               | 43.34          | -8.00                    | 35.34           | 74.00          | -38.66      | PEAK   |
| 7211.538        | H               | 41.76          | -0.59                    | 41.17           | 74.00          | -32.83      | PEAK   |

**Operation Mode:** 1 Mbps**Test Date:** May 7, 2014**Test Channel:** CH39**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4868.590        | V               | 68.10          | -7.72                    | 60.38           | 74.00          | -13.62      | PEAK   |
| 7320.513        | V               | 53.28          | -0.83                    | 52.45           | 74.00          | -21.55      | PEAK   |
| 4868.590        | H               | 61.92          | -7.72                    | 54.20           | 74.00          | -19.80      | PEAK   |
| 7320.513        | H               | 60.90          | -0.83                    | 60.07           | 74.00          | -13.93      | PEAK   |

**Operation Mode:** 1 Mbps**Test Date:** May 7, 2014**Test Channel:** CH78**Tested by:** Blent.Wang**Temperature:** 25°C**Polarity:** Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4977.564        | V               | 43.61          | -7.59                    | 36.02           | 74.00          | -37.98      | PEAK   |
| 7456.731        | V               | 41.84          | -0.44                    | 41.40           | 74.00          | -32.60      | PEAK   |
| 4950.320        | H               | 44.04          | -7.58                    | 36.46           | 74.00          | -37.54      | PEAK   |
| 7456.731        | H               | 41.49          | -0.44                    | 41.05           | 74.00          | -32.95      | PEAK   |



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

Operation Mode: 3 Mbps

Test Date: May 7, 2014

Test Channel: CH00

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4814.103        | V               | 41.60          | -8.00                    | 33.60           | 74.00          | -40.40      | PEAK   |
| 7238.782        | V               | 42.78          | -0.68                    | 42.10           | 74.00          | -31.90      | PEAK   |
| 4814.103        | H               | 41.98          | -8.00                    | 33.98           | 74.00          | -40.02      | PEAK   |
| 7211.538        | H               | 42.49          | -0.59                    | 41.90           | 74.00          | -32.10      | PEAK   |

Operation Mode: 3 Mbps

Test Date: May 7, 2014

Test Channel: CH39

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4868.590        | V               | 60.57          | -7.72                    | 52.85           | 74.00          | -21.15      | PEAK   |
| 7320.513        | V               | 54.06          | -0.83                    | 53.23           | 74.00          | -20.77      | PEAK   |
| 4868.590        | H               | 58.03          | -7.72                    | 50.31           | 74.00          | -23.69      | PEAK   |
| 7320.513        | H               | 61.66          | -0.83                    | 60.83           | 74.00          | -13.17      | PEAK   |

Operation Mode: 3 Mbps

Test Date: May 7, 2014

Test Channel: CH78

Tested by: Blent.Wang

Temperature: 25°C

Polarity: Ver. / Hor.

| Frequency (MHz) | Ant. Pol. (H/V) | Reading (dBuV) | Correction Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----------------|-----------------|----------------|--------------------------|-----------------|----------------|-------------|--------|
| 4950.320        | V               | 42.43          | -7.58                    | 34.85           | 74.00          | -39.15      | PEAK   |
| 7483.974        | V               | 42.16          | -0.34                    | 41.82           | 74.00          | -32.18      | PEAK   |
| 4977.564        | H               | 43.60          | -7.59                    | 36.01           | 74.00          | -37.99      | PEAK   |
| 7429.487        | H               | 41.72          | -0.55                    | 41.17           | 74.00          | -32.83      | PEAK   |



**Remark:**

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
3. *Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.*
4. *Spectrum setting:*
  - a. *Peak Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 1MHz, Sweep time = Auto.*
  - b. *AV Setting 1GHz to 10th harmonics of fundamental, RBW = 1MHz, VBW = 10Hz, Sweep time = Auto.*



## 6.9 POWERLINE CONDUCTED EMISSIONS

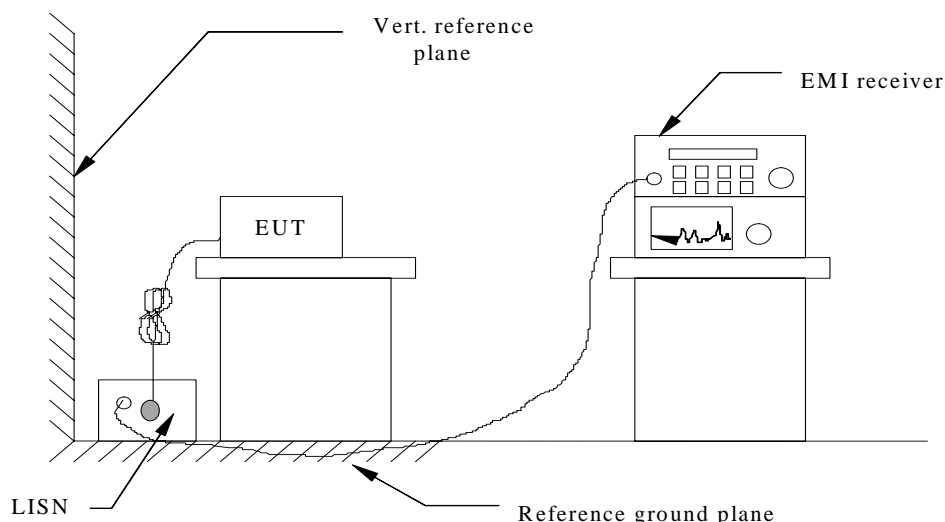
### LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

| Frequency Range (MHz) | Limits (dB $\mu$ V) |          |
|-----------------------|---------------------|----------|
|                       | Quasi-peak          | Average  |
| 0.15 to 0.50          | 66 to 56            | 56 to 46 |
| 0.50 to 5             | 56                  | 46       |
| 5 to 30               | 60                  | 50       |

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

### Test Configuration



See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

### TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



# Compliance Certification Services Inc.

Report No: C140425R01-RPB

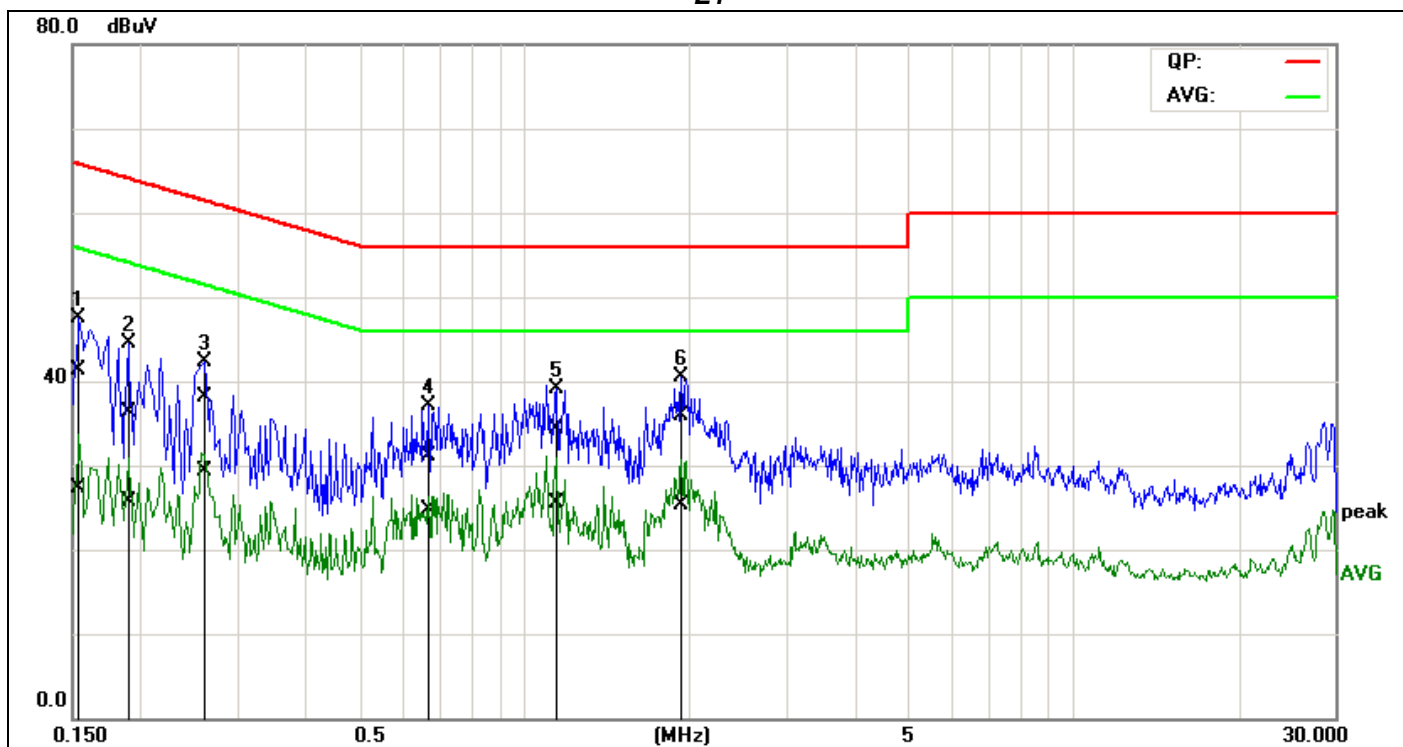
FCC ID: RQQHLT-D350

Date of Issue :May 16, 2014

## Test Data

|                              |                           |
|------------------------------|---------------------------|
| <b>Model:</b> D350           | <b>Humidity:</b> 51% RH   |
| <b>Temperature:</b> 23°C     | <b>Test Results:</b> Pass |
| <b>Tested by:</b> Blent.Wang |                           |

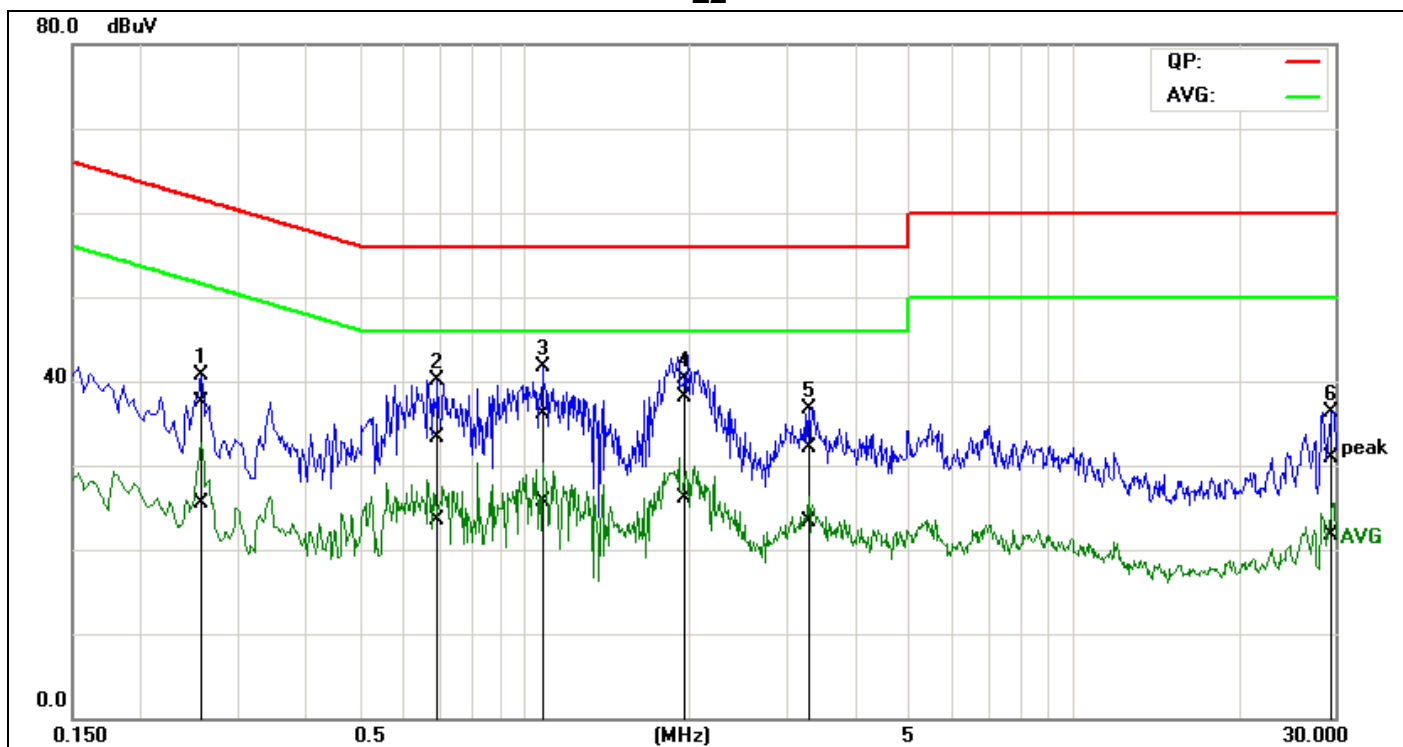
### L1



| No. | Frequency (MHz) | QuasiPeak reading (dBuV) | Average reading (dBuV) | Correction factor (dB) | QuasiPeak result (dBuV) | Average result (dBuV) | QuasiPeak limit (dBuV) | Average limit (dBuV) | QuasiPeak margin (dB) | Average margin (dB) | Remark |
|-----|-----------------|--------------------------|------------------------|------------------------|-------------------------|-----------------------|------------------------|----------------------|-----------------------|---------------------|--------|
| 1   | 0.1536          | 21.59                    | 7.53                   | 19.79                  | 41.38                   | 27.32                 | 65.80                  | 55.80                | -24.42                | -28.48              | Pass   |
| 2*  | 0.1863          | 16.72                    | 5.96                   | 19.66                  | 36.38                   | 25.62                 | 64.20                  | 54.20                | -27.82                | -28.58              | Pass   |
| 3   | 0.2616          | 18.41                    | 9.73                   | 19.65                  | 38.06                   | 29.38                 | 61.38                  | 51.38                | -23.32                | -22.00              | Pass   |
| 4   | 0.6734          | 11.29                    | 4.97                   | 19.83                  | 31.12                   | 24.80                 | 56.00                  | 46.00                | -24.88                | -21.20              | Pass   |
| 5   | 1.1338          | 14.44                    | 5.70                   | 19.85                  | 34.29                   | 25.55                 | 56.00                  | 46.00                | -21.71                | -20.45              | Pass   |
| 6   | 1.9201          | 15.99                    | 5.41                   | 19.92                  | 35.91                   | 25.33                 | 56.00                  | 46.00                | -20.09                | -20.67              | Pass   |



## L2



| No. | Frequency (MHz) | QuasiPeak reading (dBuV) | Average reading (dBuV) | Correction factor (dB) | QuasiPeak result (dBuV) | Average result (dBuV) | QuasiPeak limit (dBuV) | Average limit (dBuV) | QuasiPeak margin (dB) | Average margin (dB) | Remark |
|-----|-----------------|--------------------------|------------------------|------------------------|-------------------------|-----------------------|------------------------|----------------------|-----------------------|---------------------|--------|
| 1   | 0.2589          | 17.78                    | 5.82                   | 19.68                  | 37.46                   | 25.50                 | 61.47                  | 51.47                | -24.01                | -25.97              | Pass   |
| 2   | 0.6925          | 13.56                    | 3.73                   | 19.84                  | 33.40                   | 23.57                 | 56.00                  | 46.00                | -22.60                | -22.43              | Pass   |
| 3*  | 1.0782          | 16.23                    | 5.83                   | 19.83                  | 36.06                   | 25.66                 | 56.00                  | 46.00                | -19.94                | -20.34              | Pass   |
| 4   | 1.9444          | 18.21                    | 6.15                   | 19.96                  | 38.17                   | 26.11                 | 56.00                  | 46.00                | -17.83                | -19.89              | Pass   |
| 5   | 3.2924          | 12.02                    | 3.16                   | 20.11                  | 32.13                   | 23.27                 | 56.00                  | 46.00                | -23.87                | -22.73              | Pass   |
| 6   | 29.6373         | 9.42                     | 0.29                   | 21.41                  | 30.83                   | 21.70                 | 60.00                  | 50.00                | -29.17                | -28.30              | Pass   |

### Remark:

- 1.The measuring frequencies range between 0.15 MHz and 30 MHz.
- 2.The emissions measured in the frequency range between 0.15 MHz and 30MHz were made with an instrument using Quasi-peak detector and Average detector.
- 3.“—” denotes the emission level was or more than 2dB below the Average limit, and no re-check was made.
- 4.The IF bandwidth of SPA between 0.15MHz and 30MHz was 10KHz. The IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9kHz.

**END OF REPORT**