



## Test Report

|              |                                                            |
|--------------|------------------------------------------------------------|
| Product Name | Nport Device Server                                        |
| Model No     | NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T |
| FCC ID       | SLE-W2X50A                                                 |

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Applicant | Moxa Inc.                                                                          |
| Address   | Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City,<br>Taipei, Taiwan, R.O.C. |

|                 |                    |
|-----------------|--------------------|
| Date of Receipt | Apr. 13, 2012      |
| Issued Date     | Apr. 24, 2012      |
| Report No.      | 124312R-RFUSP45V01 |
| Report Version  | V1.0               |



The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: Apr. 24, 2012

Report No.: 124312R-RFUSP45V01



|                     |                                                                                 |
|---------------------|---------------------------------------------------------------------------------|
| Product Name        | Nport Device Server                                                             |
| Applicant           | Moxa Inc.                                                                       |
| Address             | Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City, Taipei, Taiwan, R.O.C. |
| Manufacturer        | Moxa Inc.                                                                       |
| Model No.           | NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T                      |
| FCC ID.             | SLE-W2X50A                                                                      |
| EUT Rated Voltage   | AC 110~230V, DC 24V                                                             |
| EUT Test Voltage    | AC 120V/60Hz                                                                    |
| Trade Name          | MOXA                                                                            |
| Applicable Standard | FCC CFR Title 47 Part 15 Subpart E: 2010<br>ANSI C63.4: 2003, FCC KDB-789033    |
| Test Result         | Complied                                                                        |

The Test Results relate only to the samples tested.

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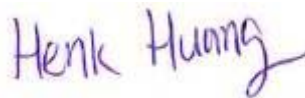
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By :



( Adm. Specialist / Joanne Lin )

Tested By :



(Engineer / Henk Huang )

Approved By :



( Manager / Vincent Lin )

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

|                             |                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Product Name                | Nport Device Server                                                                                                      |
| Trade Name                  | MOXA                                                                                                                     |
| FCC ID.                     | SLE-W2X50A                                                                                                               |
| Model No.                   | NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T                                                               |
| Frequency Range             | 5180-5320MHz, 5500-5700MHz                                                                                               |
| Number of Channels          | 802.11a-20MHz: 19                                                                                                        |
| Data Rate                   | 802.11a: 6 - 54Mbps                                                                                                      |
| Channel Control             | Auto                                                                                                                     |
| Type of Modulation          | 802.11a:OFDM, BPSK, QPSK, 16QAM, 64QAM                                                                                   |
| Antenna type                | Dipole                                                                                                                   |
| Antenna Gain                | Refer to the table "Antenna List"                                                                                        |
| Power Adapter<br>(Optional) | MFR: ENG, M/N: 3A-066WP12<br>Input: AC 100-240V, 50-60Hz, 0.3 A<br>Output: DC 12V, 0.5A<br>Cable Out: Non-Shielded, 1.5m |

#### Antenna List

| No. | Manufacturer | Part No.   | Peak Gain                               |
|-----|--------------|------------|-----------------------------------------|
| 1   | KINSUN       | 6602D03081 | 1.21 dBi in 2.4 GHz<br>1.73 dBi in 5GHz |

Note: The antenna of EUT is conform to FCC 15.203

#### 802.11a Center Working Frequency of Each Channel:

| Channel      | Frequency | Channel      | Frequency | Channel      | Frequency | Channel      | Frequency |
|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
| Channel 36:  | 5180 MHz  | Channel 40:  | 5200 MHz  | Channel 44:  | 5220 MHz  | Channel 48:  | 5240 MHz  |
| Channel 52:  | 5260 MHz  | Channel 56:  | 5280 MHz  | Channel 60:  | 5300 MHz  | Channel 64:  | 5320 MHz  |
| Channel 100: | 5500 MHz  | Channel 104: | 5520 MHz  | Channel 108: | 5540 MHz  | Channel 112: | 5560 MHz  |
| Channel 116: | 5580 MHz  | Channel 120: | 5600 MHz  | Channel 124: | 5620 MHz  | Channel 128: | 5640 MHz  |
| Channel 132: | 5660 MHz  | Channel 136: | 5680 MHz  | Channel 140: | 5700 MHz  |              |           |

#### Note:

1. This device is a Nport Device Server with a built-in WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps, 802.11n-20BW is 13.5Mbps and 802.11n-40BW are 27Mbps)
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
4. The different of the two model is shown as below:

| Model Number                   | Description                  |
|--------------------------------|------------------------------|
| NPort W2250A, NPort W2150A     | Without extreme temperatures |
| NPort W2250A-T, NPort W2150A-T | With extreme temperatures    |

|           |                                     |
|-----------|-------------------------------------|
| Test Mode | Mode 1: Transmitter (802.11a-6Mbps) |
|-----------|-------------------------------------|

### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

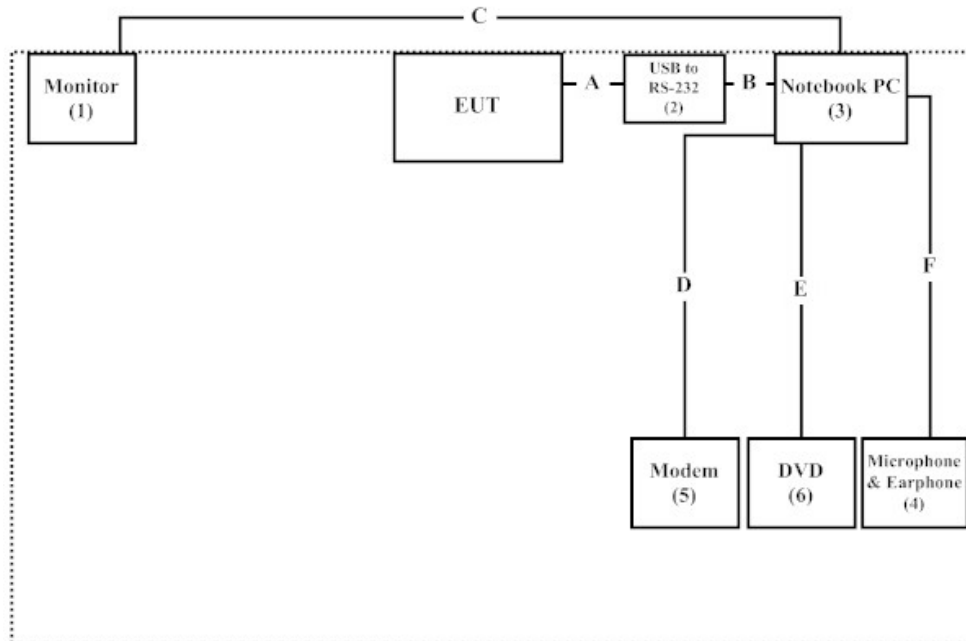
| ITEM    |                       | AC           |             |              |                    |
|---------|-----------------------|--------------|-------------|--------------|--------------------|
| Product |                       | Manufacturer | Model No.   | Serial No.   | Power Cord         |
| 1       | Monitor               | LG           | W2261VT     | 907YHZK07373 | Non-Shielded, 1.8m |
| 2       | USB to RS-232         | MOXA         | Uport 1150I | N/A          | N/A                |
| 3       | Notebook PC           | DELL         | PPT         | N/A          | Non-Shielded, 0.8m |
| 4       | Microphone & Earphone | PCHOME       | N/A         | N/A          | N/A                |
| 5       | Modem                 | ACEEX        | DM-1414     | 0102027558   | N/A                |
| 6       | DVD                   | DELL         | PD01S       | N/A          | N/A                |

| ITEM    |                       | DC           |             |              |                    |
|---------|-----------------------|--------------|-------------|--------------|--------------------|
| Product |                       | Manufacturer | Model No.   | Serial No.   | Power Cord         |
| 1       | Monitor               | LG           | W2261VT     | 907YHZK07373 | Non-Shielded, 1.8m |
| 2       | USB to RS-232         | MOXA         | Uport 1150I | N/A          | N/A                |
| 3       | Notebook PC           | DELL         | PPT         | N/A          | Non-Shielded, 0.8m |
| 4       | Microphone & Earphone | PCHOME       | N/A         | N/A          | N/A                |
| 5       | Modem                 | ACEEX        | DM-1414     | 0102027558   | N/A                |
| 6       | DVD                   | DELL         | PD01S       | N/A          | N/A                |
| 7       | Power Supply          | Agilent      | E3646A      | N/A          | N/A                |

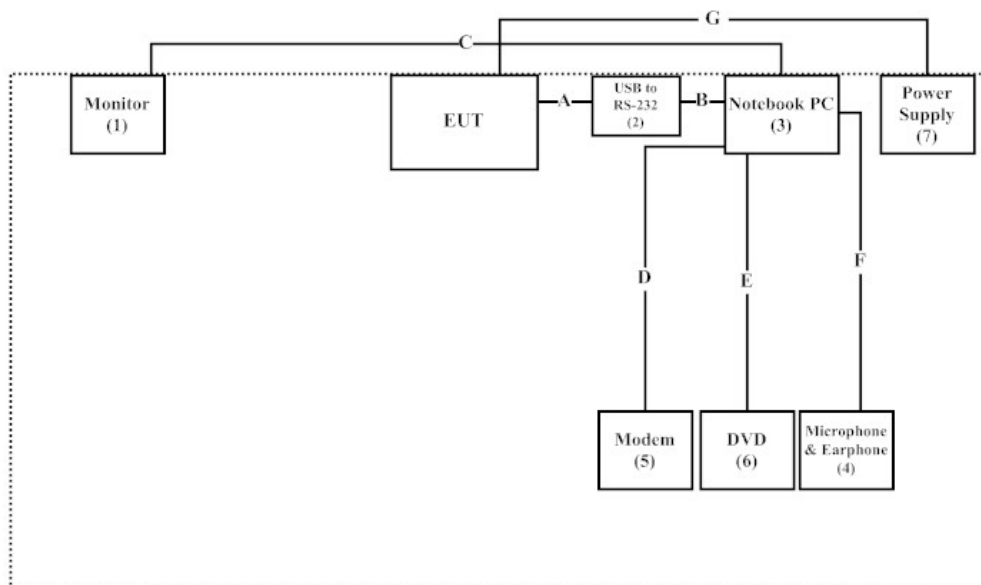
| Signal Cable Type |                             | Signal cable Description                           |
|-------------------|-----------------------------|----------------------------------------------------|
| A                 | RS-232 to Single Cable      | Non-Shielded, 0.7m                                 |
| B                 | USB Cable                   | Non-Shielded, 1m                                   |
| C                 | D-SUB Cable                 | Non-Shielded, 1.8m, with two ferrite cores bonded. |
| D                 | Modem Cable                 | Non-Shielded, 1.5m                                 |
| E                 | DVD Cable                   | Non-Shielded, 0.5m                                 |
| F                 | Microphone & Earphone Cable | Non-Shielded, 1.2m                                 |
| G                 | Power Cable                 | Non-Shielded, 1m                                   |

## 1.4. Configuration of tested System

AC



DC



## 1.5. EUT Exercise Software

- (1) Connect EUT and Notebook via RS-232 Cable
- (2) Execute Telnet program on the Notebook
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press "OK" to start the continuous transmission.
- (5) Setup the EUT as shown in Section 1.4.
- (6) Verify that the EUT works properly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

| Items                      | Required (IEC 68-1) | Actual   |
|----------------------------|---------------------|----------|
| Temperature (°C)           | 15-35               | 20-35    |
| Humidity (%RH)             | 25-75               | 50-65    |
| Barometric pressure (mbar) | 860-1060            | 950-1000 |

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 92195

Accreditation on NVLAP  
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation  
Site Address: No.5-22, Ruishukeng Linkou Dist., New Taipei City  
24451, Taiwan, R.O.C.  
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789  
E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014

## 2. Conducted Emission

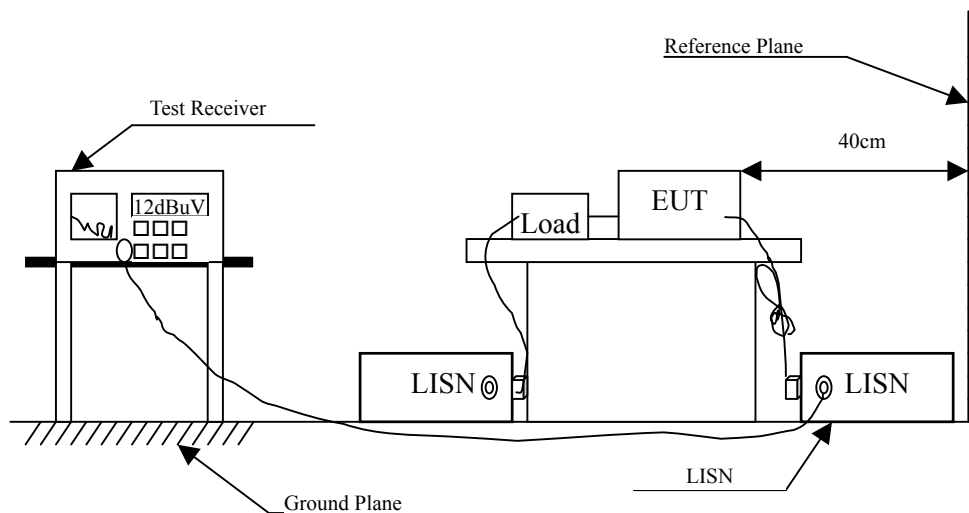
### 2.1. Test Equipment

|   | Equipment                | Manufacturer | Model No. / Serial No. | Last Cal.  | Remark      |
|---|--------------------------|--------------|------------------------|------------|-------------|
| X | Test Receiver            | R & S        | ESCS 30 / 825442/018   | Sep., 2011 |             |
| X | Artificial Mains Network | R & S        | ENV4200 / 848411/10    | Feb., 2012 | Peripherals |
| X | LISN                     | R & S        | ESH3-Z5 / 825562/002   | Feb., 2012 | EUT         |
|   | DC LISN                  | Schwarzbeck  | 8226 / 176             | Mar, 2012  | EUT         |
| X | Pulse Limiter            | R & S        | ESH3-Z2 / 357.8810.52  | Feb., 2012 |             |
| X | DC Power Supply          | Agilent      | E3646A                 | Mar, 2012  |             |
|   | No.1 Shielded Room       |              |                        |            |             |

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

### 2.2. Test Setup



### 2.3. Limits

| FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit |        |       |
|-----------------------------------------------------|--------|-------|
| Frequency<br>MHz                                    | Limits |       |
|                                                     | QP     | AV    |
| 0.15 - 0.50                                         | 66-56  | 56-46 |
| 0.50-5.0                                            | 56     | 46    |
| 5.0 - 30                                            | 60     | 50    |

Remarks : In the above table, the tighter limit applies at the band edges.

### 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

### 2.5. Uncertainty

$\pm 2.26$  dB

## 2.6. Test Result of Conducted Emission

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.228             | 9.840   | 32.770  | 42.610      | -21.161 | 63.771 |
| 0.357             | 9.840   | 37.100  | 46.940      | -13.146 | 60.086 |
| 0.572             | 9.840   | 42.320  | 52.160      | -3.840  | 56.000 |
| 1.146             | 9.850   | 35.610  | 45.460      | -10.540 | 56.000 |
| 3.431             | 9.870   | 32.630  | 42.500      | -13.500 | 56.000 |
| 13.615            | 10.095  | 31.400  | 41.495      | -18.505 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.228             | 9.840   | 25.790  | 35.630      | -18.141 | 53.771 |
| 0.357             | 9.840   | 28.750  | 38.590      | -11.496 | 50.086 |
| 0.572             | 9.840   | 31.510  | 41.350      | -4.650  | 46.000 |
| 1.146             | 9.850   | 24.980  | 34.830      | -11.170 | 46.000 |
| 3.431             | 9.870   | 22.810  | 32.680      | -13.320 | 46.000 |
| 13.615            | 10.095  | 20.930  | 31.025      | -18.975 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.271             | 9.840   | 36.390  | 46.230      | -16.313 | 62.543 |
| 0.564             | 9.840   | 42.520  | 52.360      | -3.640  | 56.000 |
| 0.982             | 9.840   | 36.620  | 46.460      | -9.540  | 56.000 |
| 1.591             | 9.850   | 36.040  | 45.890      | -10.110 | 56.000 |
| 3.240             | 9.870   | 32.670  | 42.540      | -13.460 | 56.000 |
| 12.103            | 10.127  | 32.320  | 42.447      | -17.553 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.271             | 9.840   | 29.560  | 39.400      | -13.143 | 52.543 |
| 0.564             | 9.840   | 33.180  | 43.020      | -2.980  | 46.000 |
| 0.982             | 9.840   | 26.930  | 36.770      | -9.230  | 46.000 |
| 1.591             | 9.850   | 26.430  | 36.280      | -9.720  | 46.000 |
| 3.240             | 9.870   | 23.290  | 33.160      | -12.840 | 46.000 |
| 12.103            | 10.127  | 22.000  | 32.127      | -17.873 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.185             | 9.840   | 34.040  | 43.880      | -21.120 | 65.000 |
| 0.326             | 9.840   | 32.880  | 42.720      | -18.251 | 60.971 |
| 0.502             | 9.840   | 43.680  | 53.520      | -2.480  | 56.000 |
| 0.877             | 9.850   | 36.740  | 46.590      | -9.410  | 56.000 |
| 1.705             | 9.860   | 33.180  | 43.040      | -12.960 | 56.000 |
| 12.736            | 10.079  | 31.100  | 41.179      | -18.821 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.185             | 9.840   | 23.580  | 33.420      | -21.580 | 55.000 |
| 0.326             | 9.840   | 22.380  | 32.220      | -18.751 | 50.971 |
| 0.502             | 9.840   | 34.380  | 44.220      | -1.780  | 46.000 |
| 0.877             | 9.850   | 27.950  | 37.800      | -8.200  | 46.000 |
| 1.705             | 9.860   | 23.600  | 33.460      | -12.540 | 46.000 |
| 12.736            | 10.079  | 20.600  | 30.679      | -19.321 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.267             | 9.840   | 36.040  | 45.880      | -16.777 | 62.657 |
| 0.494             | 9.840   | 45.400  | 55.240      | -0.931  | 56.171 |
| 0.705             | 9.840   | 39.600  | 49.440      | -6.560  | 56.000 |
| 1.599             | 9.850   | 35.490  | 45.340      | -10.660 | 56.000 |
| 3.197             | 9.870   | 32.760  | 42.630      | -13.370 | 56.000 |
| 11.619            | 10.109  | 31.230  | 41.339      | -18.661 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.267             | 9.840   | 28.360  | 38.200      | -14.457 | 52.657 |
| 0.494             | 9.840   | 34.240  | 44.080      | -2.091  | 46.171 |
| 0.705             | 9.840   | 30.150  | 39.990      | -6.010  | 46.000 |
| 1.599             | 9.850   | 26.230  | 36.080      | -9.920  | 46.000 |
| 3.197             | 9.870   | 23.280  | 33.150      | -12.850 | 46.000 |
| 11.619            | 10.109  | 21.030  | 31.139      | -18.861 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.275             | 9.840   | 34.420  | 44.260      | -18.169 | 62.429 |
| 0.505             | 9.840   | 43.640  | 53.480      | -2.520  | 56.000 |
| 0.920             | 9.850   | 35.540  | 45.390      | -10.610 | 56.000 |
| 1.318             | 9.850   | 34.720  | 44.570      | -11.430 | 56.000 |
| 3.744             | 9.870   | 32.730  | 42.600      | -13.400 | 56.000 |
| 13.205            | 10.087  | 32.010  | 42.097      | -17.903 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.275             | 9.840   | 25.220  | 35.060      | -17.369 | 52.429 |
| 0.505             | 9.840   | 33.910  | 43.750      | -2.250  | 46.000 |
| 0.920             | 9.850   | 26.080  | 35.930      | -10.070 | 46.000 |
| 1.318             | 9.850   | 24.910  | 34.760      | -11.240 | 46.000 |
| 3.744             | 9.870   | 22.710  | 32.580      | -13.420 | 46.000 |
| 13.205            | 10.087  | 21.710  | 31.797      | -18.203 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)-AC Power Adapter

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.267             | 9.840   | 35.940  | 45.780      | -16.877 | 62.657 |
| 0.513             | 9.840   | 44.070  | 53.910      | -2.090  | 56.000 |
| 1.005             | 9.840   | 38.610  | 48.450      | -7.550  | 56.000 |
| 2.560             | 9.860   | 33.150  | 43.010      | -12.990 | 56.000 |
| 5.916             | 9.919   | 28.670  | 38.589      | -21.411 | 60.000 |
| 11.130            | 10.090  | 34.420  | 44.510      | -15.490 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.267             | 9.840   | 28.410  | 38.250      | -14.407 | 52.657 |
| 0.513             | 9.840   | 34.660  | 44.500      | -1.500  | 46.000 |
| 1.005             | 9.840   | 29.060  | 38.900      | -7.100  | 46.000 |
| 2.560             | 9.860   | 23.750  | 33.610      | -12.390 | 46.000 |
| 5.916             | 9.919   | 19.710  | 29.629      | -20.371 | 50.000 |
| 11.130            | 10.090  | 27.150  | 37.240      | -12.760 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.478             | 9.840   | 23.450  | 33.290      | -23.339 | 56.629 |
| 0.709             | 9.843   | 17.680  | 27.523      | -28.477 | 56.000 |
| 2.591             | 9.860   | 24.880  | 34.740      | -21.260 | 56.000 |
| 7.896             | 9.956   | 23.430  | 33.386      | -26.614 | 60.000 |
| 16.212            | 10.130  | 17.950  | 28.080      | -31.920 | 60.000 |
| 23.900            | 10.150  | 27.230  | 37.380      | -22.620 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.478             | 9.840   | 14.600  | 24.440      | -22.189 | 46.629 |
| 0.709             | 9.843   | 8.990   | 18.833      | -27.167 | 46.000 |
| 2.591             | 9.860   | 24.650  | 34.510      | -11.490 | 46.000 |
| 7.896             | 9.956   | 15.080  | 25.036      | -24.964 | 50.000 |
| 16.212            | 10.130  | 6.990   | 17.120      | -32.880 | 50.000 |
| 23.900            | 10.150  | 25.120  | 35.270      | -14.730 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.150             | 9.843   | 26.490  | 36.333      | -29.667 | 66.000 |
| 0.224             | 9.840   | 21.070  | 30.910      | -32.976 | 63.886 |
| 0.435             | 9.840   | 26.990  | 36.830      | -21.027 | 57.857 |
| 2.591             | 9.860   | 23.580  | 33.440      | -22.560 | 56.000 |
| 10.724            | 10.082  | 19.720  | 29.802      | -30.198 | 60.000 |
| 23.896            | 10.330  | 28.760  | 39.090      | -20.910 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.150             | 9.843   | 2.890   | 12.733      | -43.267 | 56.000 |
| 0.224             | 9.840   | 20.990  | 30.830      | -23.056 | 53.886 |
| 0.435             | 9.840   | 17.850  | 27.690      | -20.167 | 47.857 |
| 2.591             | 9.860   | 23.430  | 33.290      | -12.710 | 46.000 |
| 10.724            | 10.082  | 4.360   | 14.442      | -35.558 | 50.000 |
| 23.896            | 10.330  | 24.970  | 35.300      | -14.700 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.150             | 9.843   | 26.590  | 36.433      | -29.567 | 66.000 |
| 0.478             | 9.840   | 23.130  | 32.970      | -23.659 | 56.629 |
| 0.670             | 9.840   | 12.180  | 22.020      | -33.980 | 56.000 |
| 2.595             | 9.860   | 23.620  | 33.480      | -22.520 | 56.000 |
| 7.537             | 9.948   | 22.430  | 32.378      | -27.622 | 60.000 |
| 23.900            | 10.150  | 27.230  | 37.380      | -22.620 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.150             | 9.843   | 3.030   | 12.873      | -43.127 | 56.000 |
| 0.478             | 9.840   | 14.330  | 24.170      | -22.459 | 46.629 |
| 0.670             | 9.840   | 4.390   | 14.230      | -31.770 | 46.000 |
| 2.595             | 9.860   | 21.760  | 31.620      | -14.380 | 46.000 |
| 7.537             | 9.948   | 16.640  | 26.588      | -23.412 | 50.000 |
| 23.900            | 10.150  | 25.120  | 35.270      | -14.730 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 2</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.162             | 9.840   | 23.850  | 33.690      | -31.967 | 65.657 |
| 0.224             | 9.840   | 21.030  | 30.870      | -33.016 | 63.886 |
| 0.494             | 9.840   | 22.910  | 32.750      | -23.421 | 56.171 |
| 0.701             | 9.840   | 21.720  | 31.560      | -24.440 | 56.000 |
| 2.591             | 9.860   | 23.480  | 33.340      | -22.660 | 56.000 |
| 8.732             | 10.015  | 24.140  | 34.155      | -25.845 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.162             | 9.840   | 0.610   | 10.450      | -45.207 | 55.657 |
| 0.224             | 9.840   | 20.990  | 30.830      | -23.056 | 53.886 |
| 0.494             | 9.840   | 12.830  | 22.670      | -23.501 | 46.171 |
| 0.701             | 9.840   | 9.830   | 19.670      | -26.330 | 46.000 |
| 2.591             | 9.860   | 22.730  | 32.590      | -13.410 | 46.000 |
| 8.732             | 10.015  | 9.370   | 19.385      | -30.615 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.166             | 9.840   | 23.230  | 33.070      | -32.473 | 65.543 |
| 0.224             | 9.840   | 20.460  | 30.300      | -33.586 | 63.886 |
| 0.435             | 9.840   | 26.250  | 36.090      | -21.767 | 57.857 |
| 2.591             | 9.860   | 24.880  | 34.740      | -21.260 | 56.000 |
| 8.486             | 9.979   | 21.410  | 31.389      | -28.611 | 60.000 |
| 23.896            | 10.150  | 27.540  | 37.690      | -22.310 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.166             | 9.840   | 0.610   | 10.450      | -45.093 | 55.543 |
| 0.224             | 9.840   | 20.310  | 30.150      | -23.736 | 53.886 |
| 0.435             | 9.840   | 16.960  | 26.800      | -21.057 | 47.857 |
| 2.591             | 9.860   | 24.570  | 34.430      | -11.570 | 46.000 |
| 8.486             | 9.979   | 7.270   | 17.249      | -32.751 | 50.000 |
| 23.896            | 10.150  | 25.500  | 35.650      | -14.350 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Nport Device Server  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)-DC Power Supply

| Frequency         | Correct | Reading | Measurement | Margin  | Limit  |
|-------------------|---------|---------|-------------|---------|--------|
| MHz               | Factor  | Level   | Level       |         |        |
|                   | dB      | dBuV    | dBuV        | dB      | dBuV   |
| <b>LINE 1</b>     |         |         |             |         |        |
| <b>Quasi-Peak</b> |         |         |             |         |        |
| 0.177             | 9.840   | 20.440  | 30.280      | -34.949 | 65.229 |
| 0.455             | 9.840   | 27.870  | 37.710      | -19.576 | 57.286 |
| 2.591             | 9.860   | 23.580  | 33.440      | -22.560 | 56.000 |
| 8.400             | 10.008  | 21.120  | 31.128      | -28.872 | 60.000 |
| 16.365            | 10.240  | 16.800  | 27.040      | -32.960 | 60.000 |
| 23.900            | 10.330  | 28.350  | 38.680      | -21.320 | 60.000 |
| <b>Average</b>    |         |         |             |         |        |
| 0.177             | 9.840   | -1.240  | 8.600       | -46.629 | 55.229 |
| 0.455             | 9.840   | 18.120  | 27.960      | -19.326 | 47.286 |
| 2.591             | 9.860   | 23.330  | 33.190      | -12.810 | 46.000 |
| 8.400             | 10.008  | 8.070   | 18.078      | -31.922 | 50.000 |
| 16.365            | 10.240  | 5.760   | 16.000      | -34.000 | 50.000 |
| 23.900            | 10.330  | 24.470  | 34.800      | -15.200 | 50.000 |

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Peak Transmit Power

#### 3.1. Test Equipment

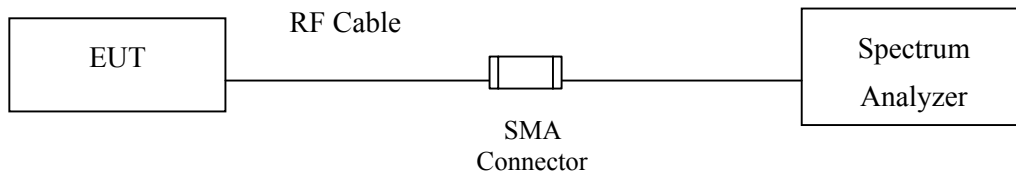
|   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|---|-------------------|--------------|----------------------|------------|
| X | Power Meter       | Anritsu      | ML2495A/6K00003357   | May, 2011  |
| X | Power Sensor      | Anritsu      | MA2411B/0738448      | Jun, 2011  |
| X | Spectrum Analyzer | Agilent      | N9010A / MY48030495  | Apr., 2012 |

Note:

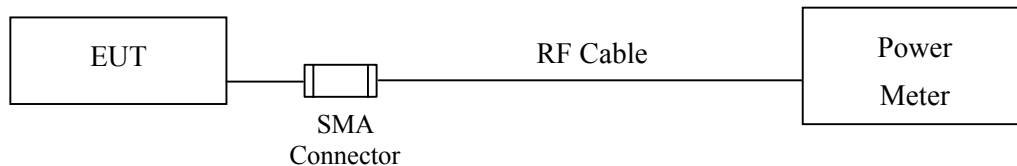
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

#### 3.2. Test Setup

##### 26dBc Occupied Bandwidth



##### Conduction Power Measurement



### 3.3. Limits

- (1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or  $4 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W or  $17 \text{ dBm} + 10\log B$ , where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

### 3.4. Test Procedur

As an alternative to FCC KDB-789033, the EUT peak power was measured with a peak power meter employing a video bandwidth greater than 6dB BW of the emission under test. Peak output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

### 3.5. Uncertainty

$\pm 1.27 \text{ dB}$

### 3.6. Test Result of Peak Transmit Power

Product : Nport Device Server  
 Test Item : Peak Transmit Power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

| Cable loss=1dB |                 | Peak Power Output       |       |       |       |       |       |       |       |                |
|----------------|-----------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|----------------|
| Channel No.    | Frequency (MHz) | Data Rate (Mbps)        |       |       |       |       |       |       |       | Required Limit |
|                |                 | 6                       | 9     | 12    | 18    | 24    | 36    | 48    | 54    |                |
|                |                 | Measurement Level (dBm) |       |       |       |       |       |       |       |                |
| 36             | 5180            | 14.54                   | --    | --    | --    | --    | --    | --    | --    | <17dBm         |
| 44             | 5220            | 14.66                   | 14.63 | 14.61 | 14.59 | 14.56 | 14.55 | 14.54 | 14.51 | <17dBm         |
| 48             | 5240            | 14.98                   | --    | --    | --    | --    | --    | --    | --    | <17dBm         |
| 52             | 5260            | 14.95                   | 14.22 | 14.21 | 14.2  | 14.19 | 14.18 | 14.16 | 14.15 | <24dBm         |
| 60             | 5300            | 14.25                   | --    | --    | --    | --    | --    | --    | --    | <24dBm         |
| 64             | 5320            | 14.35                   | --    | --    | --    | --    | --    | --    | --    | <24dBm         |
| 100            | 5500            | 13.38                   | --    | --    | --    | --    | --    | --    | --    | <24dBm         |
| 120            | 5600            | 13.12                   | 13.08 | 13.02 | 12.97 | 12.91 | 12.84 | 12.79 | 12.74 | <24dBm         |
| 140            | 5700            | 12.97                   | --    | --    | --    | --    | --    | --    | --    | <24dBm         |

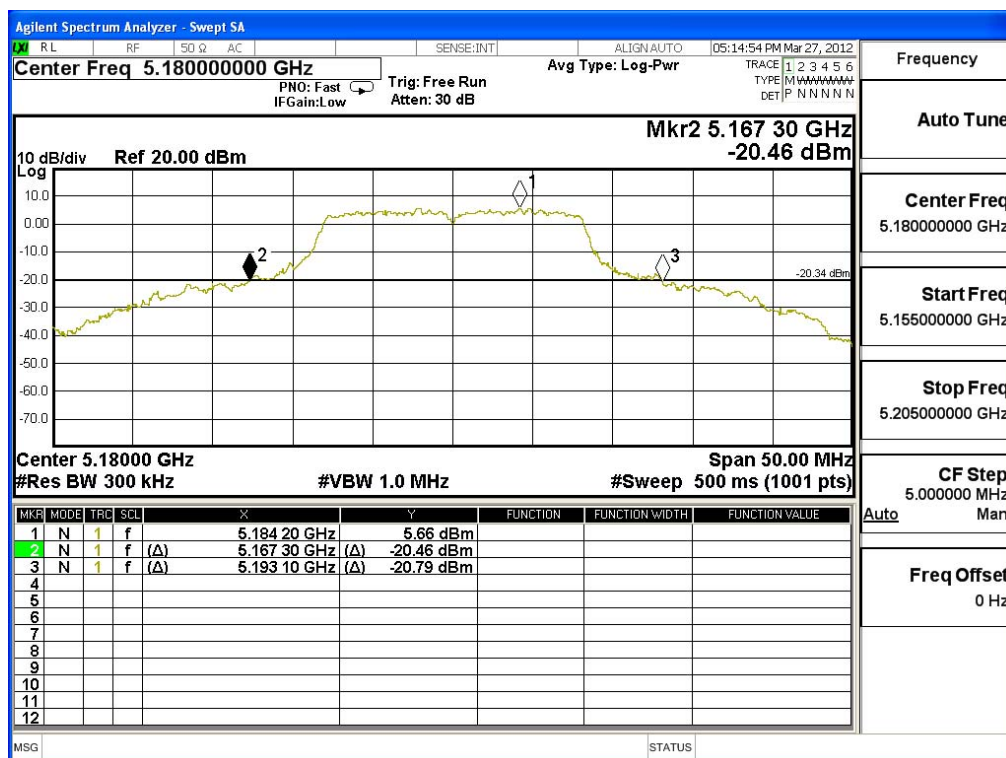
Note: Peak Power Output Value =Reading value on peak power meter + cable loss

**Peak Transmit Power Measurement:**

| Channel No | Frequency Range (MHz) | 26dB Bandwidth (MHz) | Output Power (dBm) | Output Power Limit |               | Result |
|------------|-----------------------|----------------------|--------------------|--------------------|---------------|--------|
|            |                       |                      |                    | (dBm)              | dBm+10log(BW) |        |
| 36         | 5180                  | 25.8                 | 14.54              | 17                 | 18.12         | Pass   |

**26dBc Occupied Bandwidth:**

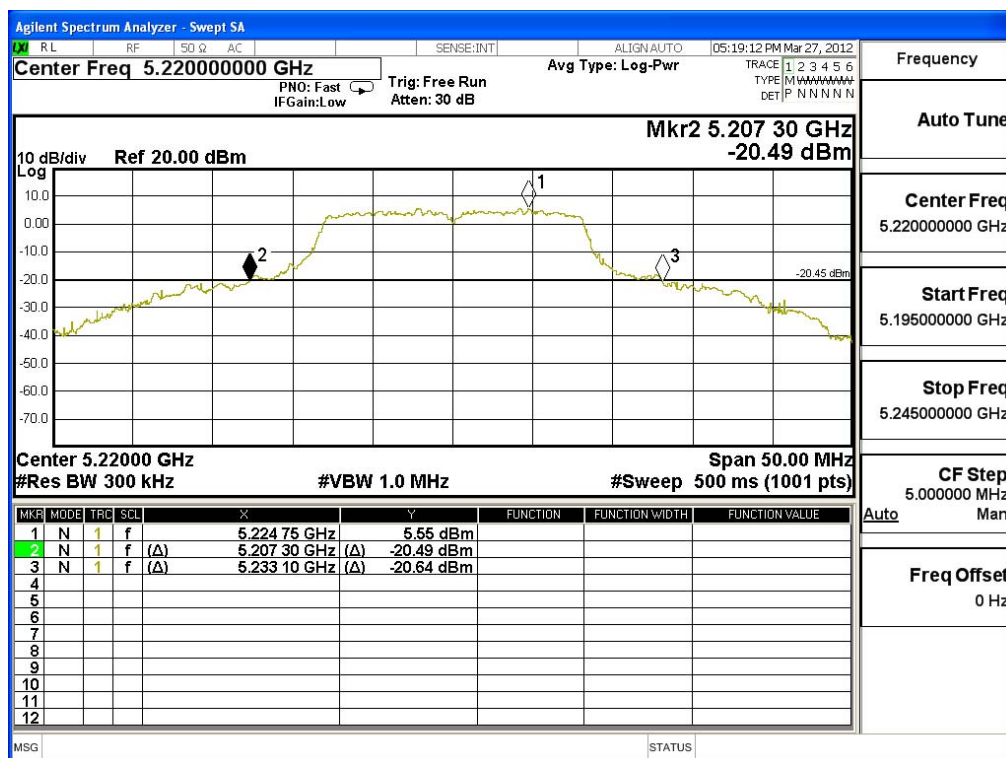
**Channel 36**



**Peak Transmit Power Measurement:**

| Channel No | Frequency Range<br>(MHz) | 26dB Bandwidth<br>(MHz) | Output Power<br>(dBm) | Output Power Limit |               | Result |
|------------|--------------------------|-------------------------|-----------------------|--------------------|---------------|--------|
|            |                          |                         |                       | (dBm)              | dBm+10log(BW) |        |
| 44         | 5220                     | 25.8                    | 14.66                 | 17                 | 18.12         | Pass   |

**26dBc Occupied Bandwidth:  
Channel 40**

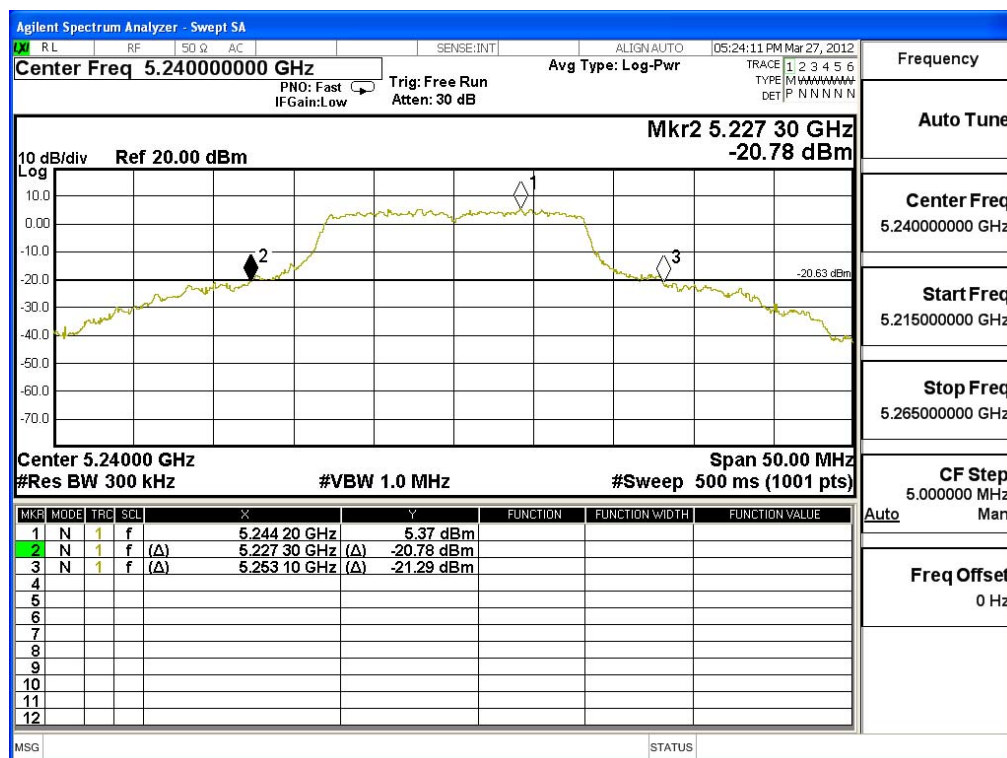


**Peak Transmit Power Measurement:**

| Channel No | Frequency Range (MHz) | 26dB Bandwidth (MHz) | Output Power (dBm) | Output Power Limit |               | Result |
|------------|-----------------------|----------------------|--------------------|--------------------|---------------|--------|
|            |                       |                      |                    | (dBm)              | dBm+10log(BW) |        |
| 48         | 5240                  | 25.8                 | 14.98              | 17                 | 18.12         | Pass   |

**26dBc Occupied Bandwidth:**

**Channel 48**

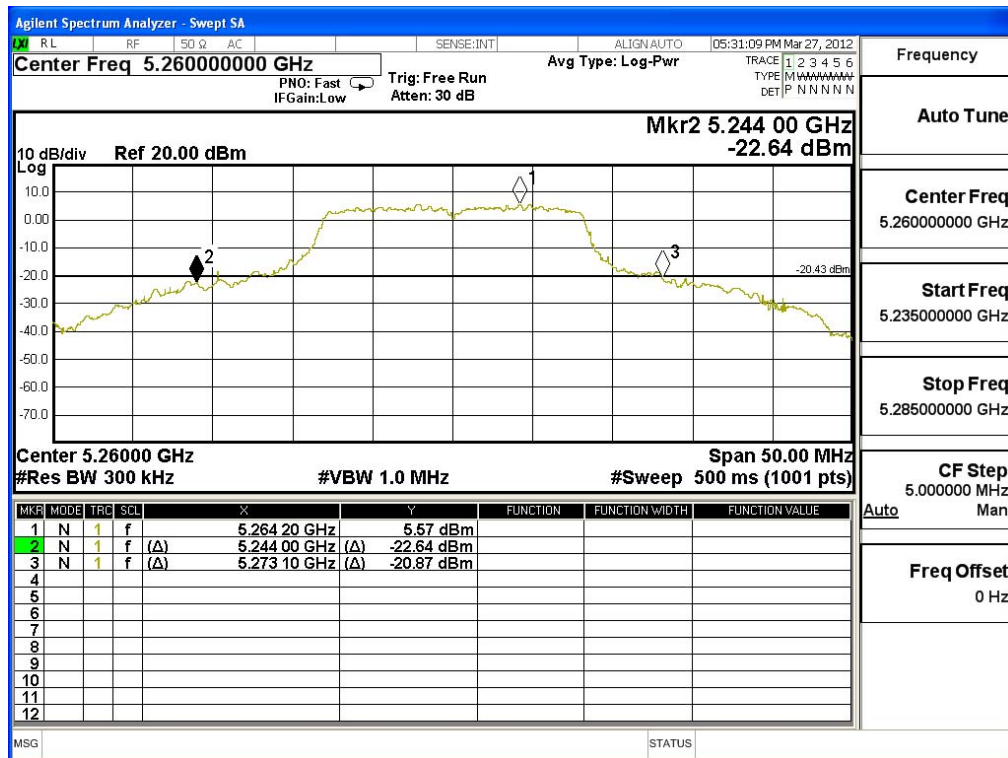


**Peak Transmit Power Measurement:**

| Channel No | Frequency Range<br>(MHz) | 26dB Bandwidth<br>(MHz) | Output Power<br>(dBm) | Output Power Limit |               | Result |
|------------|--------------------------|-------------------------|-----------------------|--------------------|---------------|--------|
|            |                          |                         |                       | (dBm)              | dBm+10log(BW) |        |
| 52         | 5260                     | 29.1                    | 14.95                 | 24                 | 25.64         | Pass   |

**26dBc Occupied Bandwidth:**

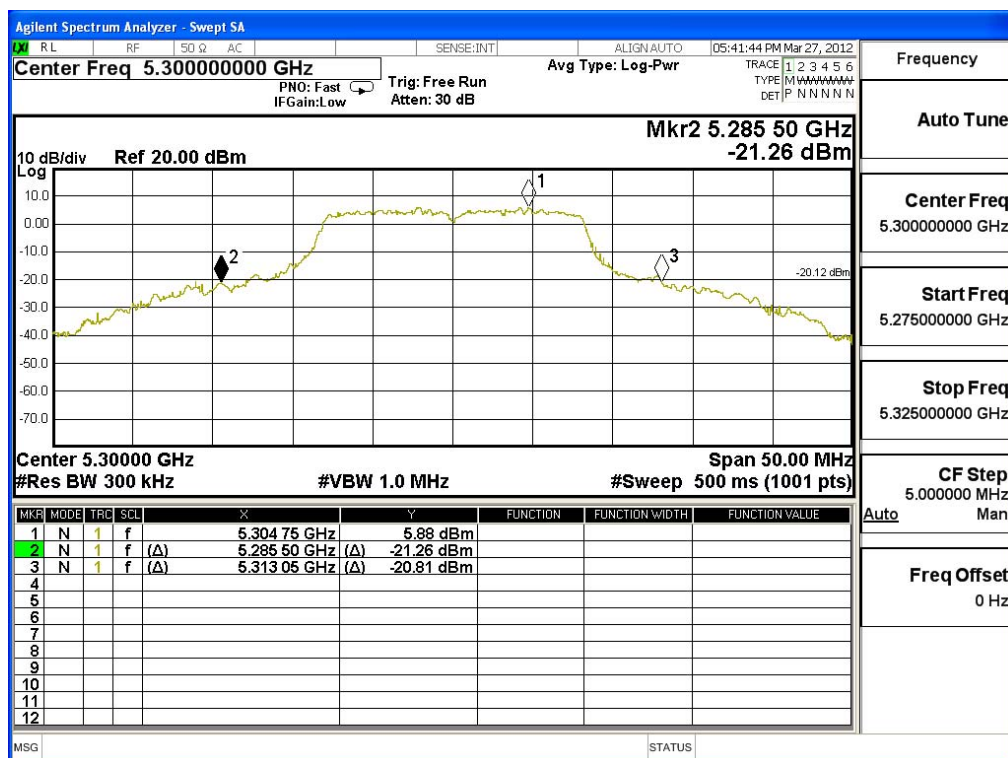
**Channel 52**



**Peak Transmit Power Measurement:**

| Channel No | Frequency Range (MHz) | 26dB Bandwidth (MHz) | Output Power (dBm) | Output Power Limit |               | Result |
|------------|-----------------------|----------------------|--------------------|--------------------|---------------|--------|
|            |                       |                      |                    | (dBm)              | dBm+10log(BW) |        |
| 60         | 5300                  | 27.55                | 14.25              | 24                 | 25.40         | Pass   |

**26dBc Occupied Bandwidth:  
Channel 60**

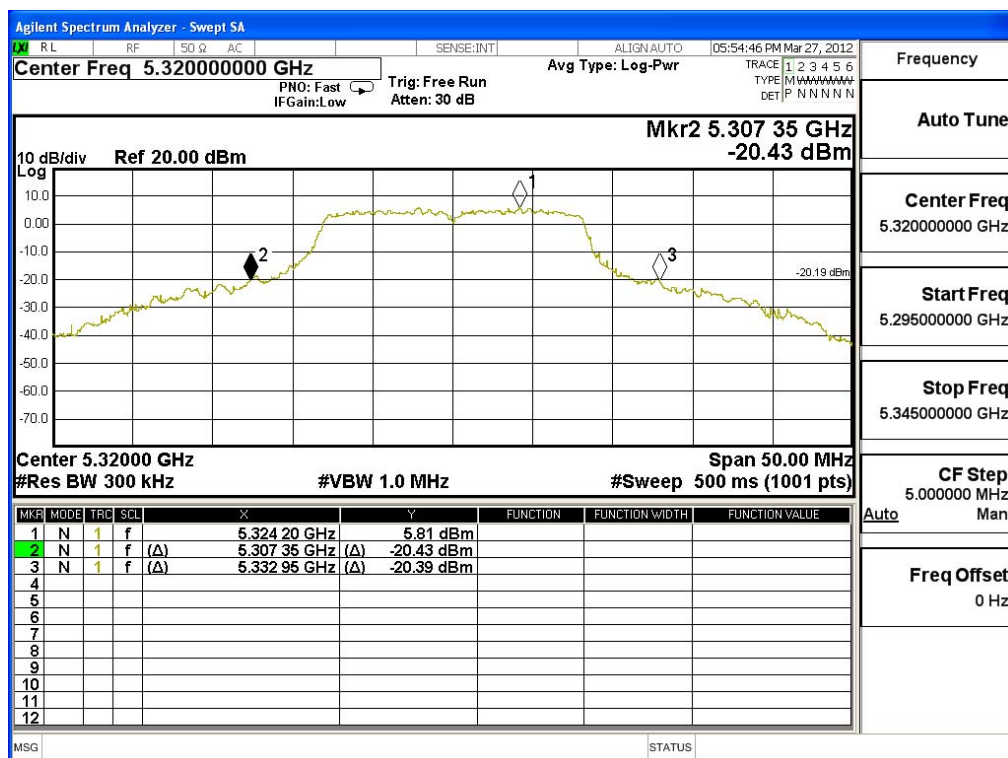


**Peak Transmit Power Measurement:**

| Channel No | Frequency Range (MHz) | 26dB Bandwidth (MHz) | Output Power (dBm) | Output Power Limit |               | Result |
|------------|-----------------------|----------------------|--------------------|--------------------|---------------|--------|
|            |                       |                      |                    | (dBm)              | dBm+10log(BW) |        |
| 64         | 5320                  | 25.6                 | 14.35              | 24                 | 25.08         | Pass   |

**26dBc Occupied Bandwidth:**

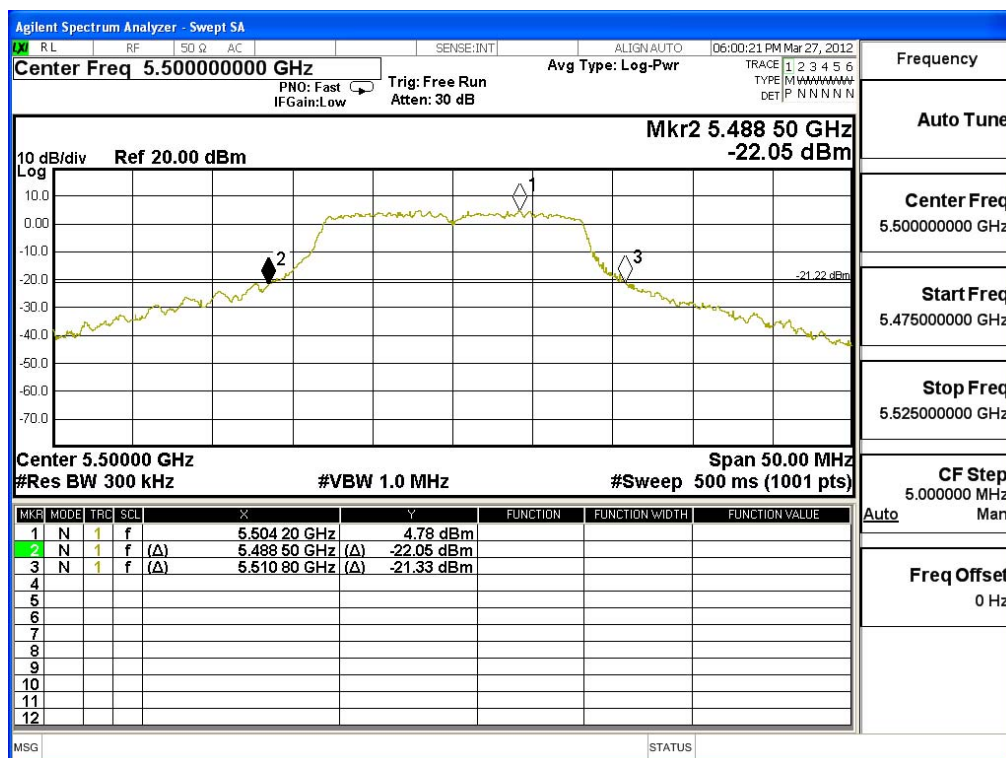
**Channel 64**



**Peak Transmit Power Measurement:**

| Channel No | Frequency Range<br>(MHz) | 26dB Bandwidth<br>(MHz) | Output Power<br>(dBm) | Output Power Limit |               | Result |
|------------|--------------------------|-------------------------|-----------------------|--------------------|---------------|--------|
|            |                          |                         |                       | (dBm)              | dBm+10log(BW) |        |
| 100        | 5500                     | 22.3                    | 13.38                 | 24                 | 24.48         | Pass   |

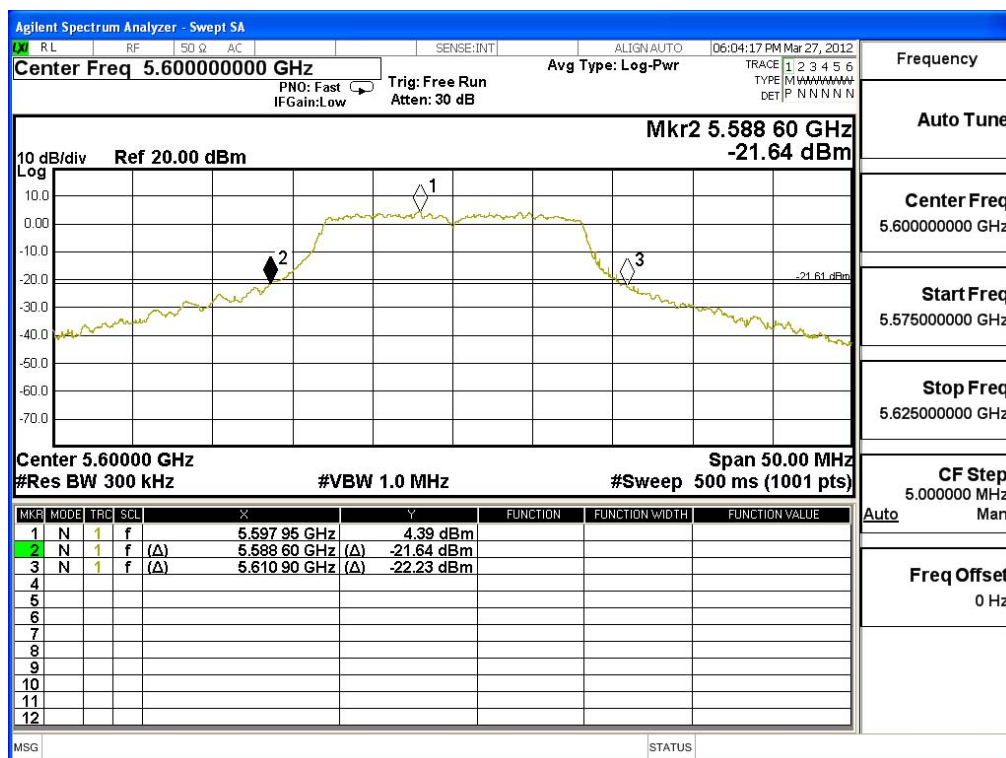
**26dBc Occupied Bandwidth:  
Channel 100**



**Peak Transmit Power Measurement:**

| Channel No | Frequency Range (MHz) | 26dB Bandwidth (MHz) | Output Power (dBm) | Output Power Limit |               | Result |
|------------|-----------------------|----------------------|--------------------|--------------------|---------------|--------|
|            |                       |                      |                    | (dBm)              | dBm+10log(BW) |        |
| 120        | 5600                  | 22.3                 | 13.12              | 24                 | 24.48         | Pass   |

**26dBc Occupied Bandwidth:  
Channel 120**

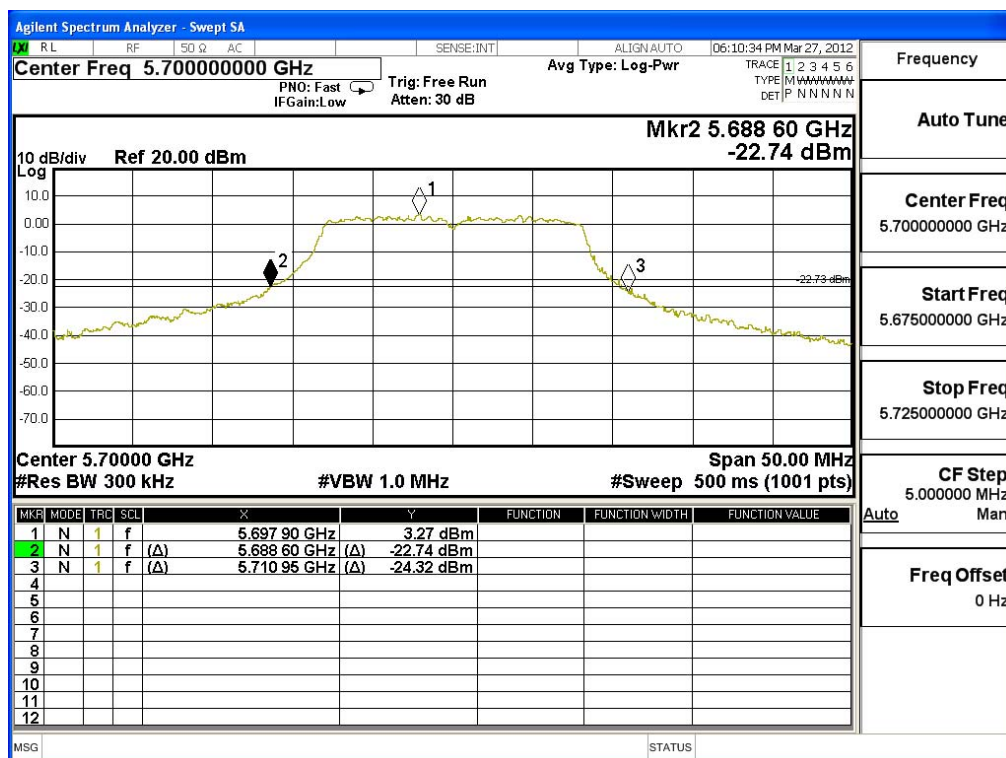


**Peak Transmit Power Measurement:**

| Channel No | Frequency Range<br>(MHz) | 26dB Bandwidth<br>(MHz) | Output Power<br>(dBm) | Output Power Limit |               | Result |
|------------|--------------------------|-------------------------|-----------------------|--------------------|---------------|--------|
|            |                          |                         |                       | (dBm)              | dBm+10log(BW) |        |
| 140        | 5700                     | 22.35                   | 12.97                 | 24                 | 24.49         | Pass   |

**26dBc Occupied Bandwidth:**

**Channel 140**



## 4. Peak Power Spectral Density

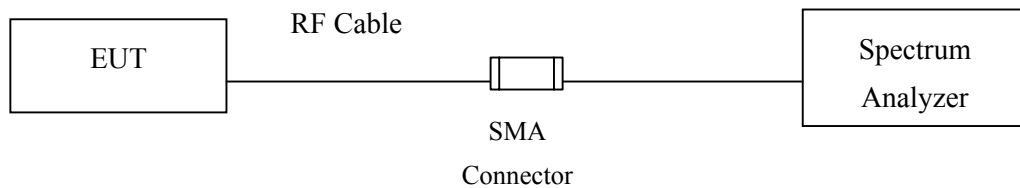
### 4.1. Test Equipment

|   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|---|-------------------|--------------|----------------------|------------|
|   | Spectrum Analyzer | R&S          | FSP40 / 100170       | Jun, 2011  |
|   | Spectrum Analyzer | Agilent      | E4407B / US39440758  | Jun, 2011  |
| X | Spectrum Analyzer | Agilent      | N9010A / MY48030495  | Apr., 2012 |

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 4.2. Test Setup



### 4.3. Limits

- (4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

#### **4.4. Test Procedure**

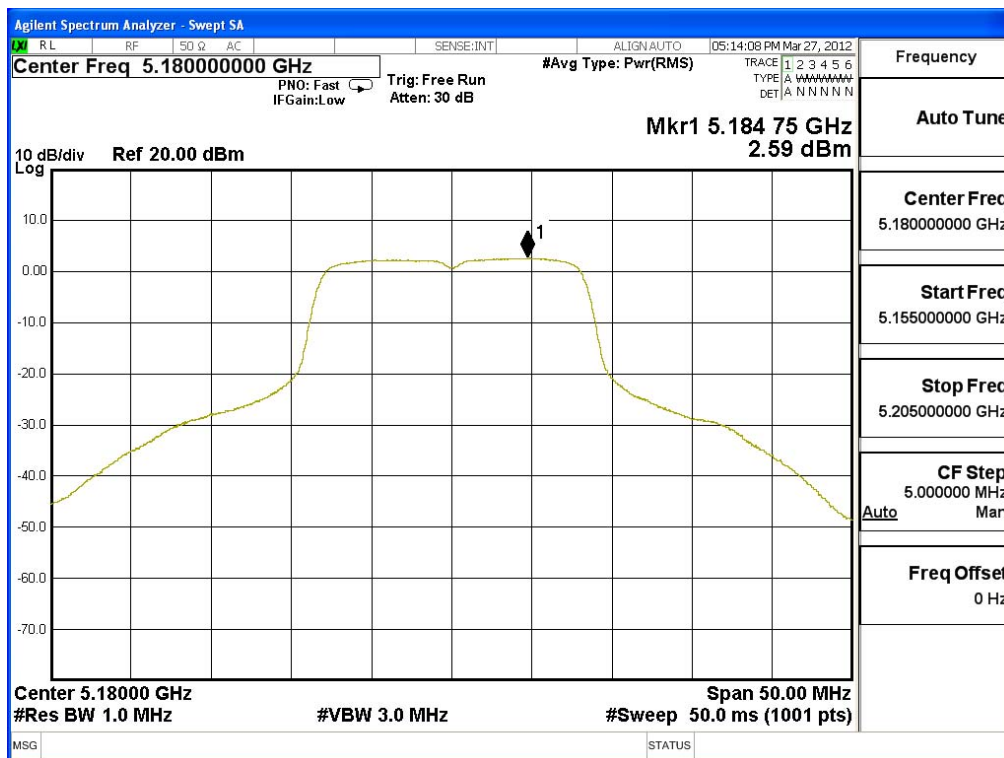
The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

#### **4.5. Uncertainty**

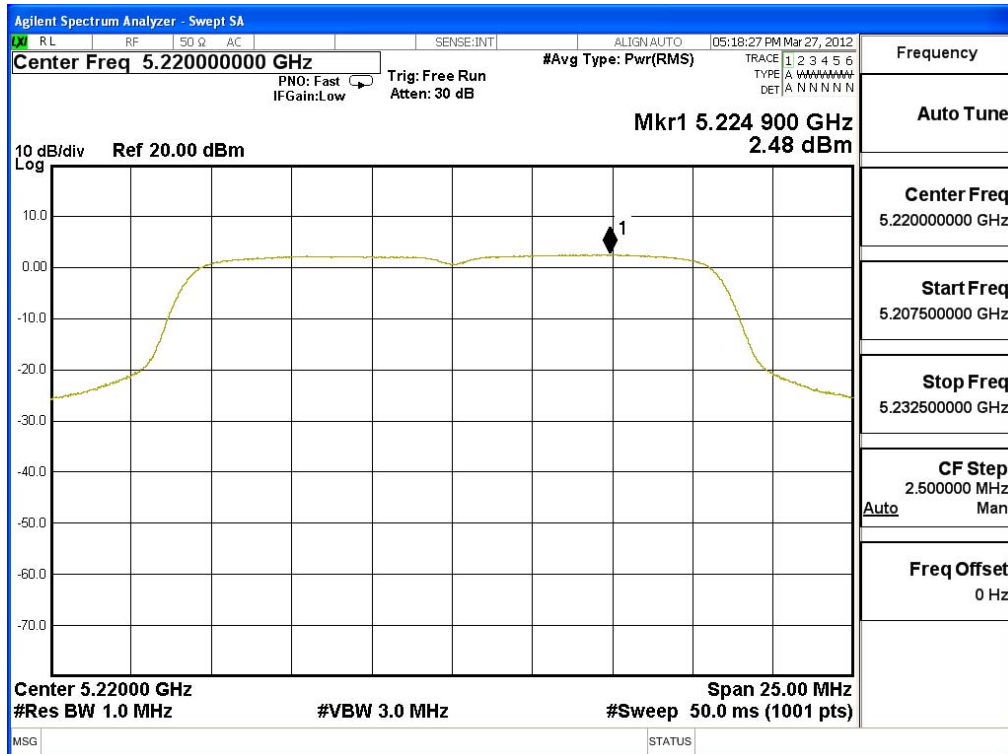
$\pm 1.27$  dB

|           |   |                                     |
|-----------|---|-------------------------------------|
| Product   | : | Nport Device Server                 |
| Test Item | : | Peak Power Spectral Density         |
| Test Site | : | No.3 OATS                           |
| Test Mode | : | Mode 1: Transmitter (802.11a-6Mbps) |

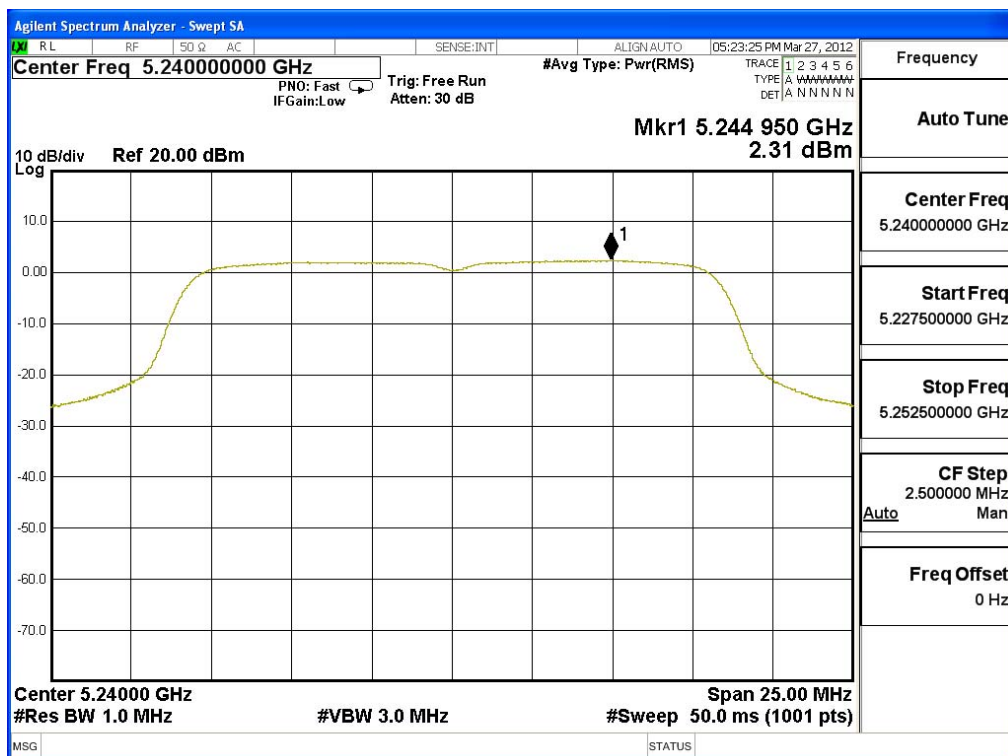
| Channel No. | Frequency<br>(MHz) | Measurement Level<br>(dBm) | Required Limit<br>(dBm) | Result |
|-------------|--------------------|----------------------------|-------------------------|--------|
| 36          | 5180               | 2.590                      | <4                      | Pass   |
| 44          | 5220               | 2.480                      | <4                      | Pass   |
| 48          | 5240               | 2.310                      | <4                      | Pass   |
| 52          | 5260               | 2.420                      | <11                     | Pass   |
| 60          | 5300               | 2.290                      | <11                     | Pass   |
| 64          | 5320               | 2.590                      | <11                     | Pass   |
| 100         | 5500               | 1.470                      | <11                     | Pass   |
| 120         | 5600               | 1.200                      | <11                     | Pass   |
| 140         | 5700               | 0.130                      | <11                     | Pass   |



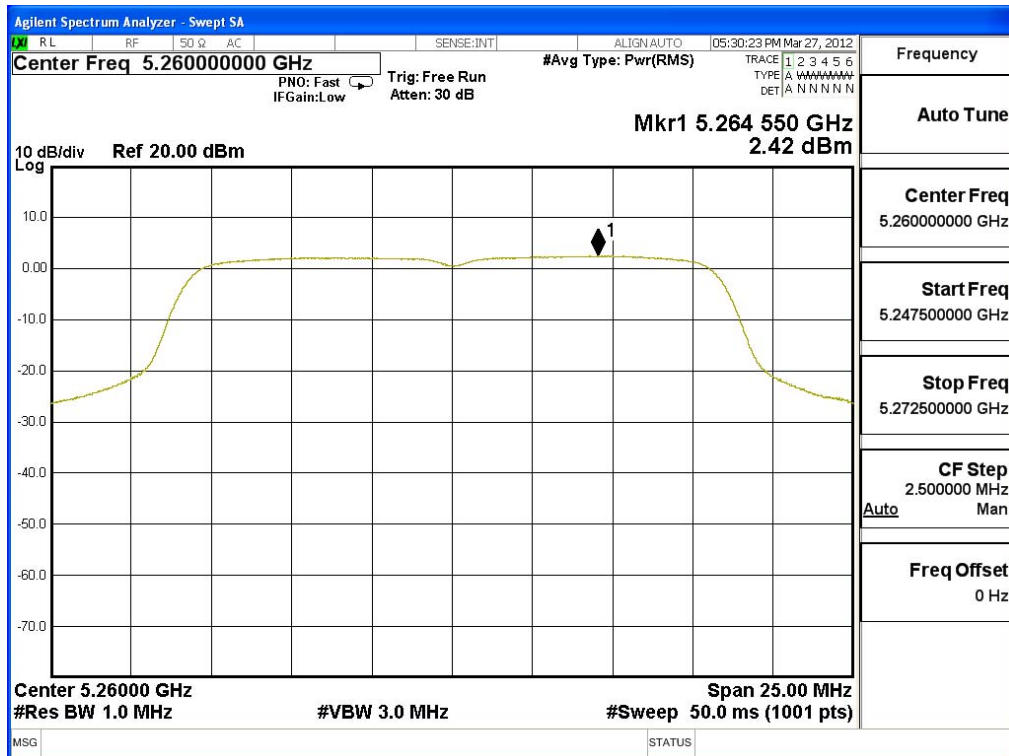
### Channel 44:



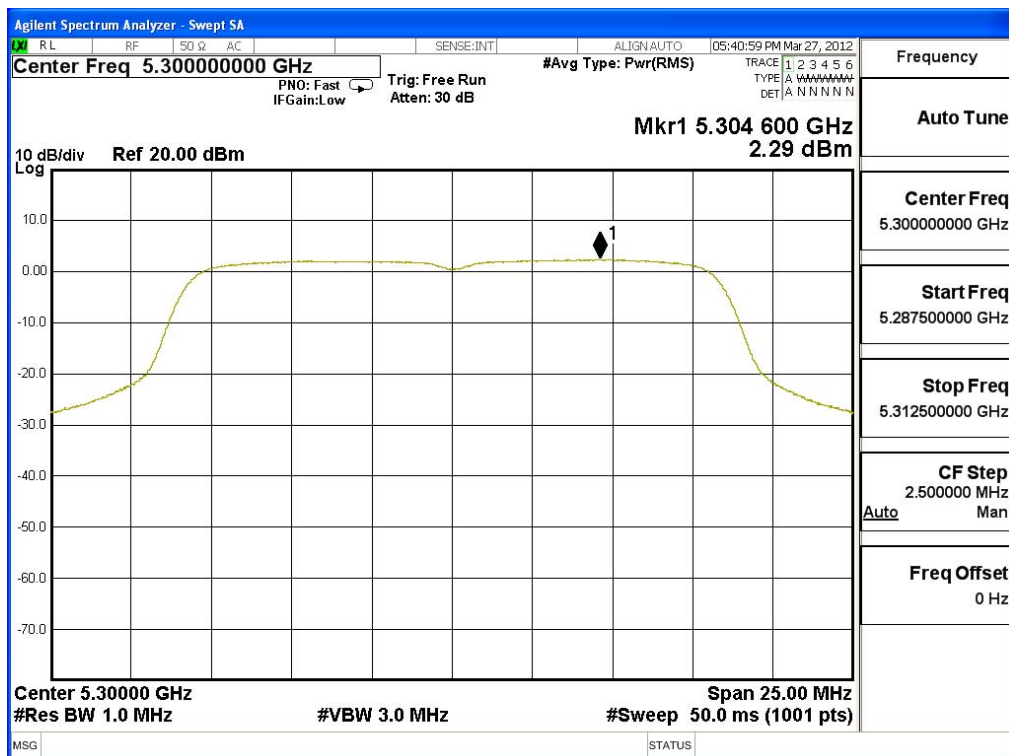
### Channel 48:



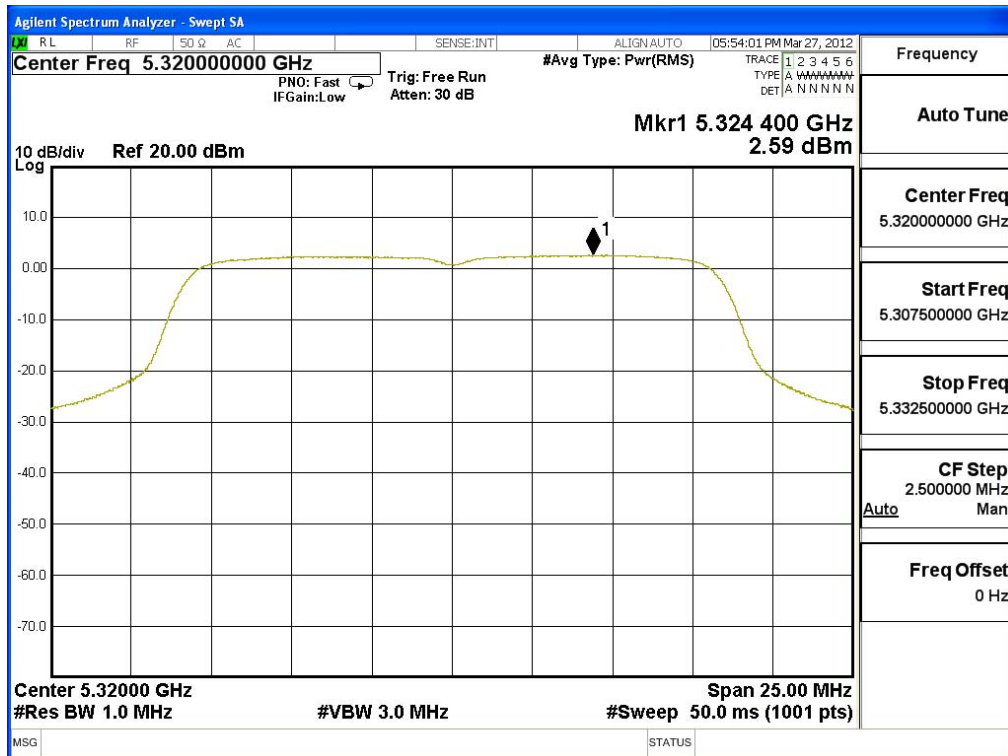
### Channel 52:



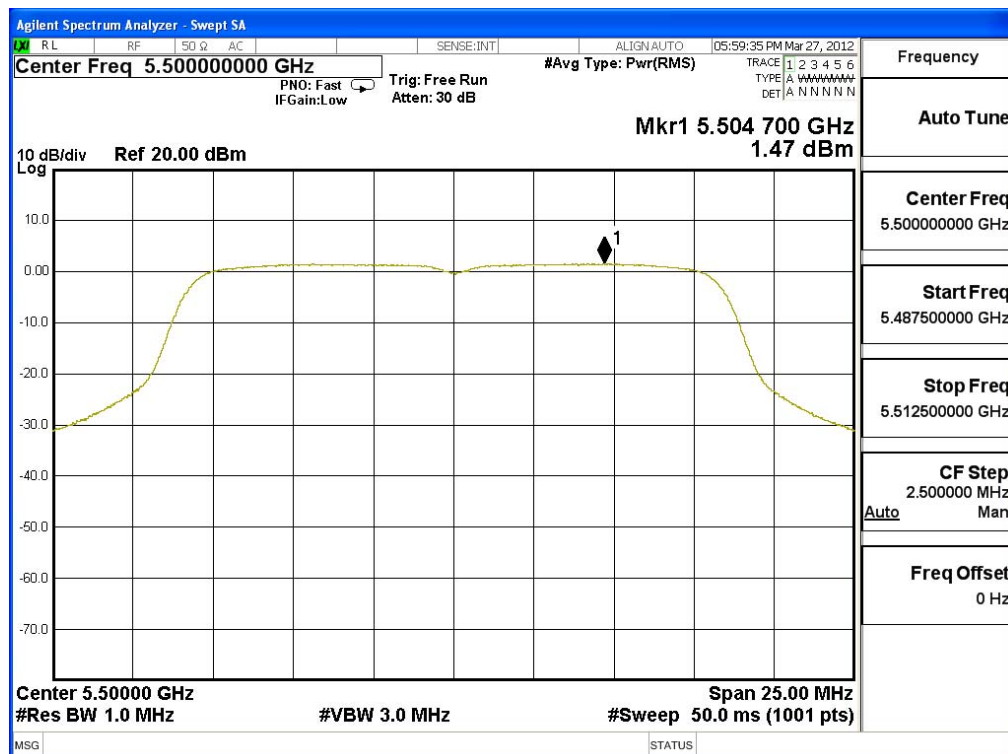
### Channel 60:



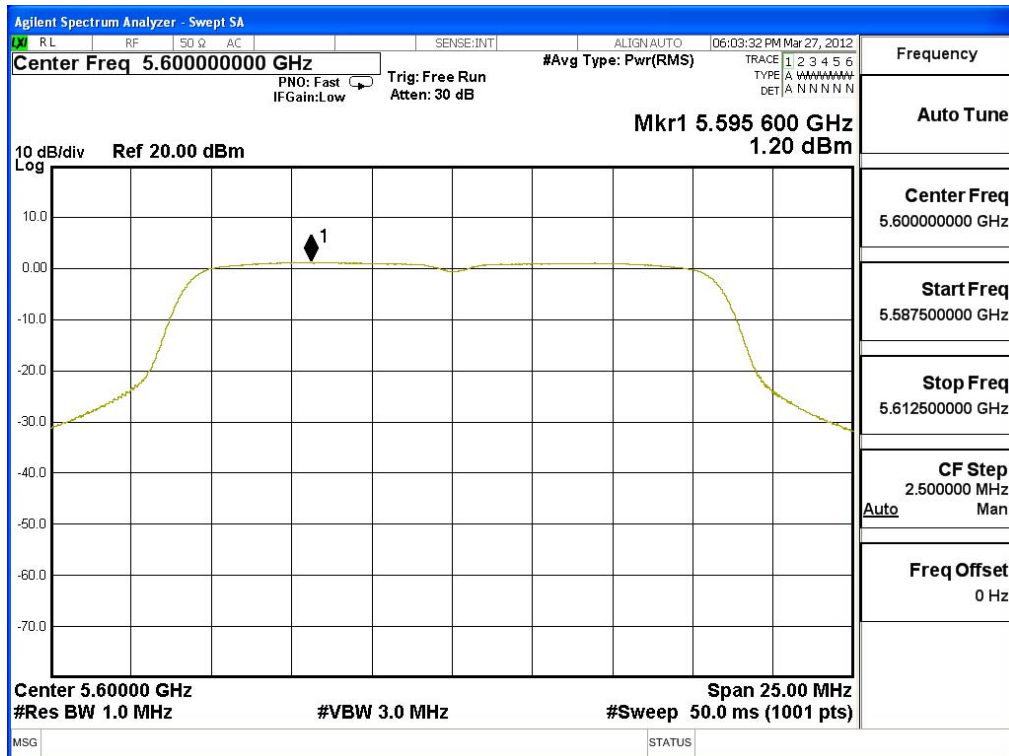
### Channel 64:



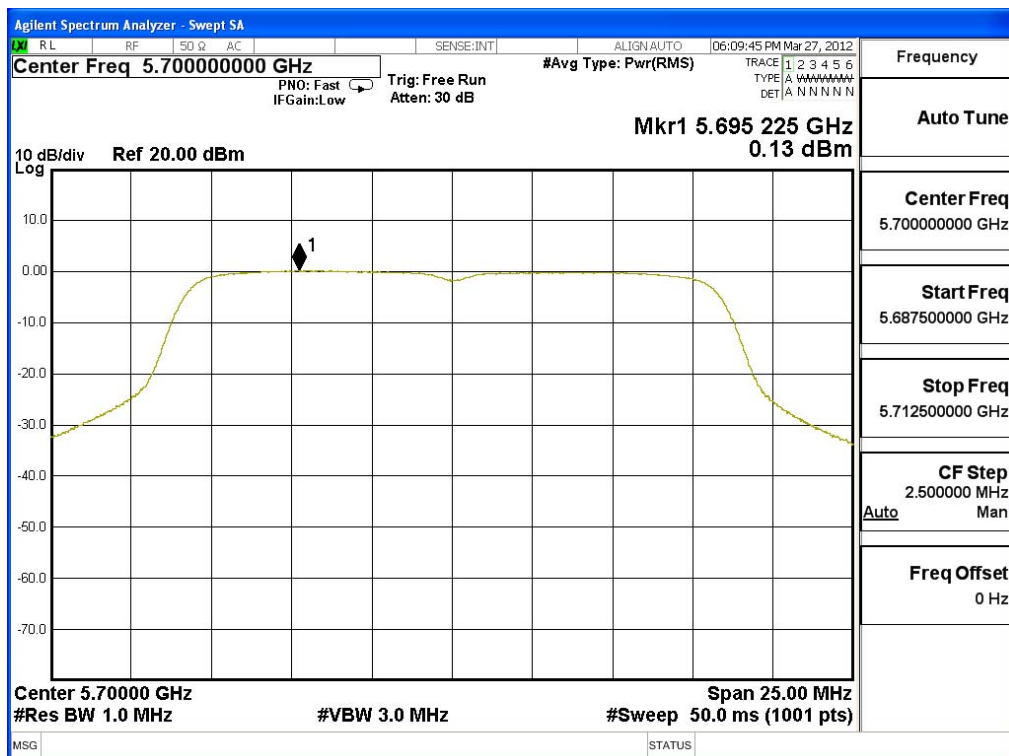
### Channel 100:



### Channel 120:



### Channel 140:



## 5. Peak Excursion

### 5.1. Test Equipment

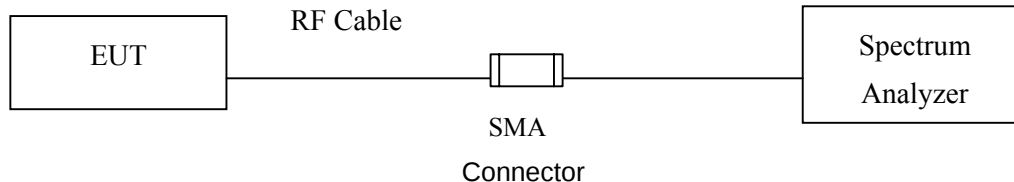
|   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|---|-------------------|--------------|----------------------|------------|
|   | Spectrum Analyzer | R&S          | FSP40 / 100170       | Jun, 2011  |
|   | Spectrum Analyzer | Agilent      | E4407B / US39440758  | Jun, 2011  |
| X | Spectrum Analyzer | Agilent      | N9010A / MY48030495  | Apr., 2012 |

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 5.2. Test Setup

#### Conduction Power Measurement



### 5.3. Limits

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

#### **5.4. Test Procedure**

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

#### **5.5. Uncertainty**

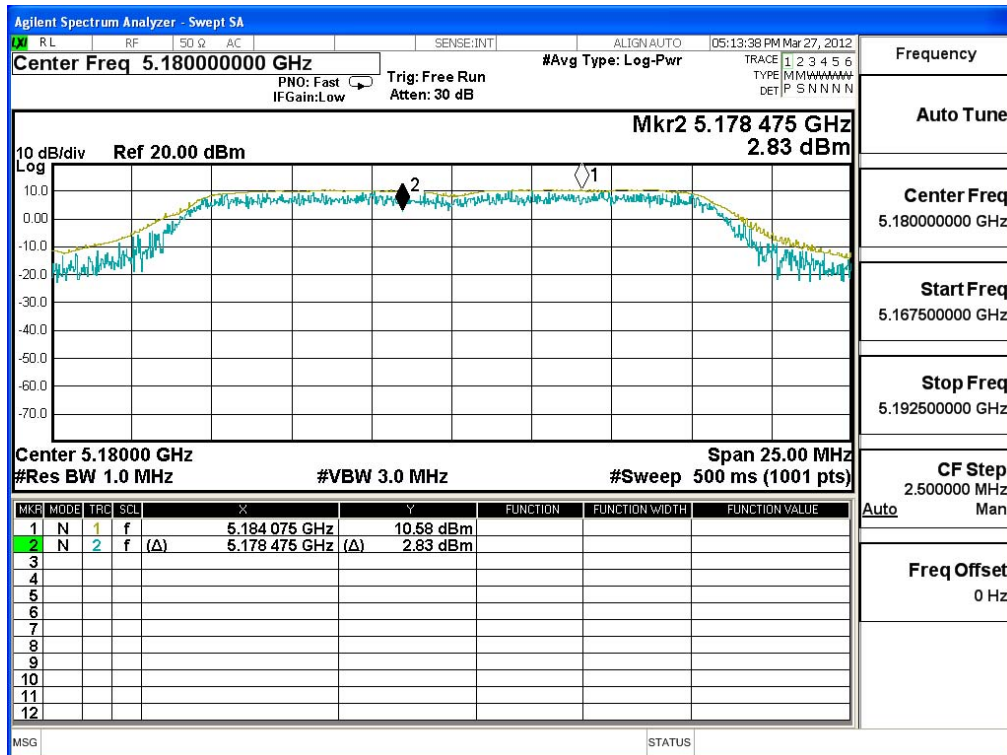
$\pm 1.27$  dB

## 5.6. Test Result of Peak Excursion

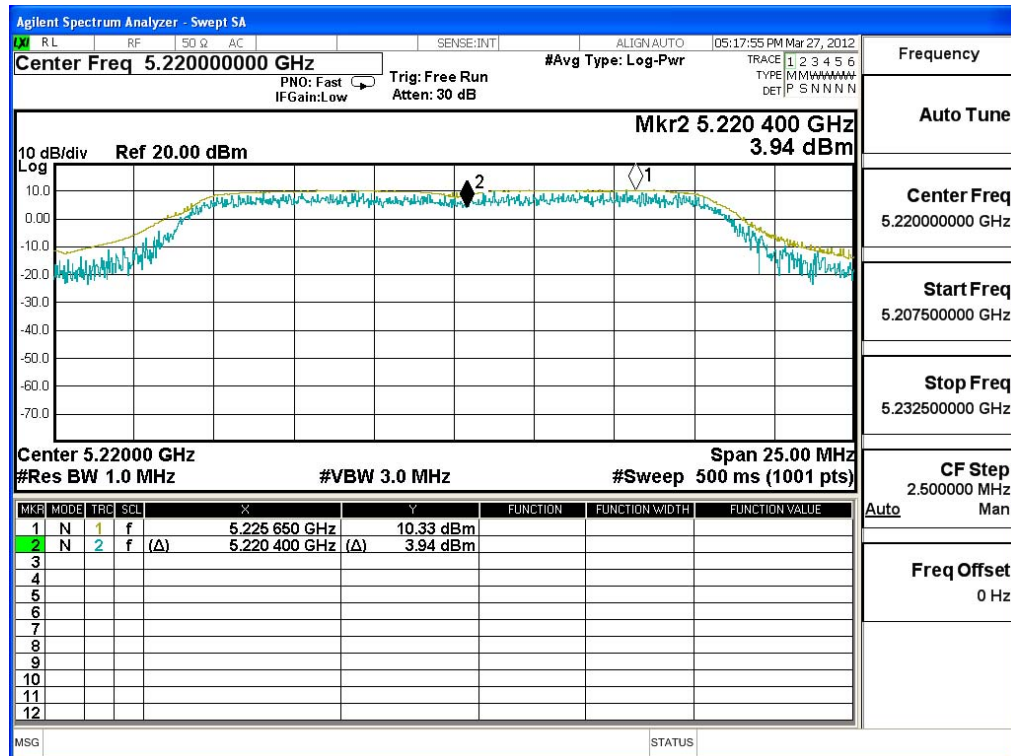
Product : Nport Device Server  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

| Channel No. | Frequency (MHz) | Measurement Level (dB) | Required Limit (dB) | Result |
|-------------|-----------------|------------------------|---------------------|--------|
| 36          | 5180            | 7.750                  | <13                 | Pass   |
| 44          | 5220            | 6.390                  | <13                 | Pass   |
| 48          | 5240            | 7.310                  | <13                 | Pass   |
| 52          | 5260            | 7.210                  | <13                 | Pass   |
| 60          | 5300            | 7.400                  | <13                 | Pass   |
| 64          | 5320            | 7.090                  | <13                 | Pass   |
| 100         | 5500            | 7.120                  | <13                 | Pass   |
| 120         | 5600            | 6.780                  | <13                 | Pass   |
| 140         | 5700            | 8.410                  | <13                 | Pass   |

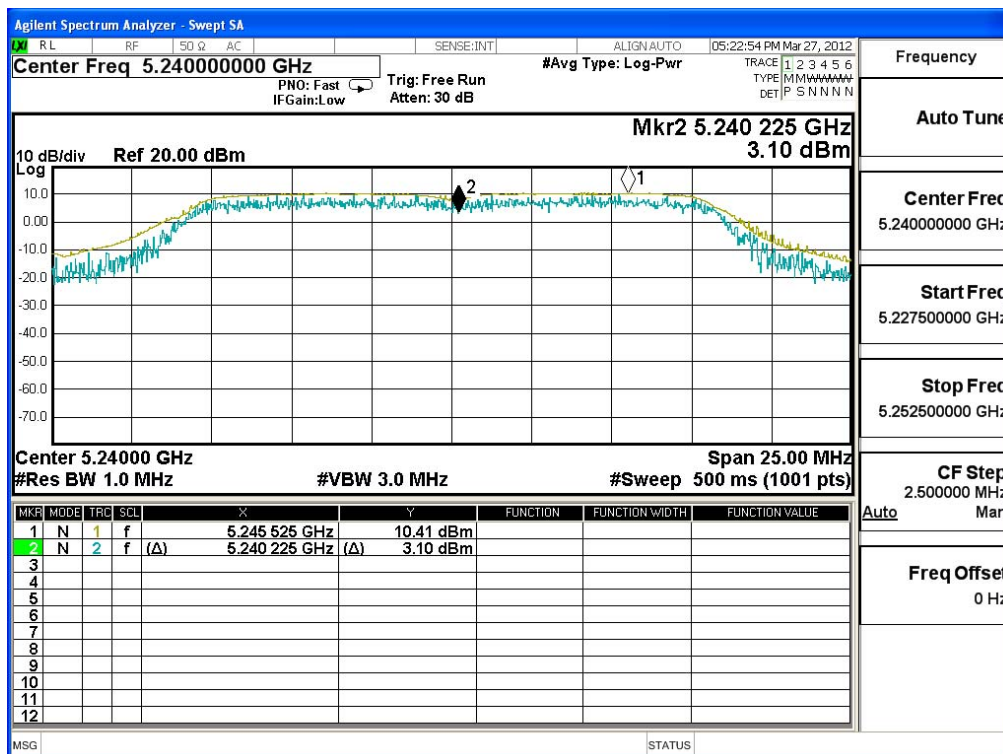
### Channel 36:



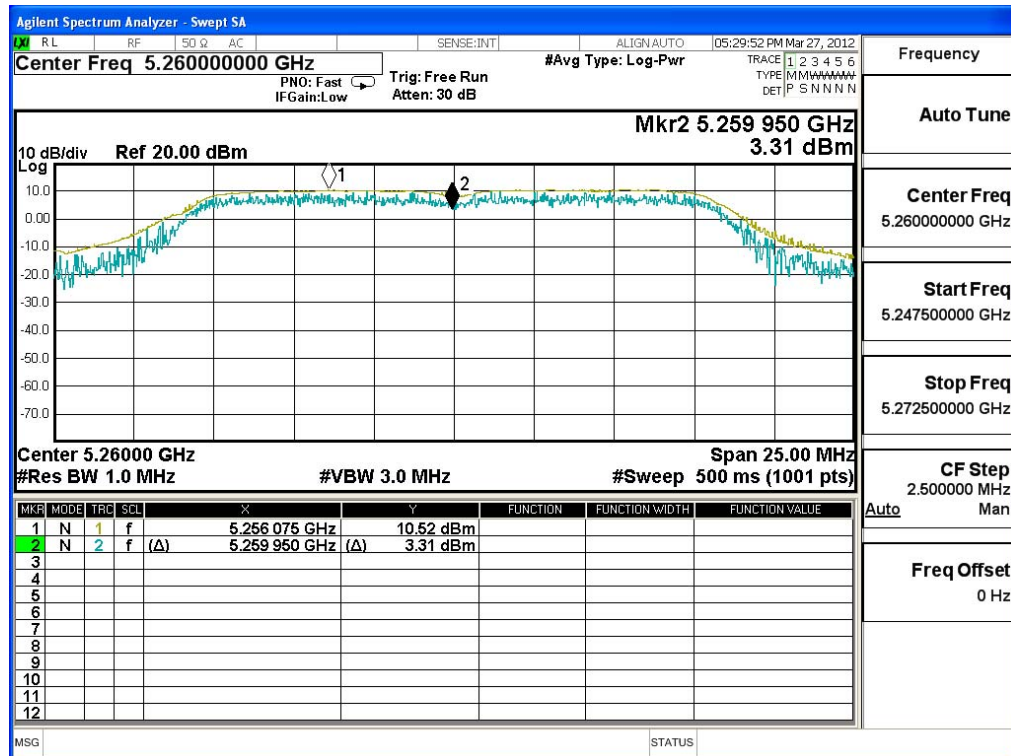
### Channel 44:



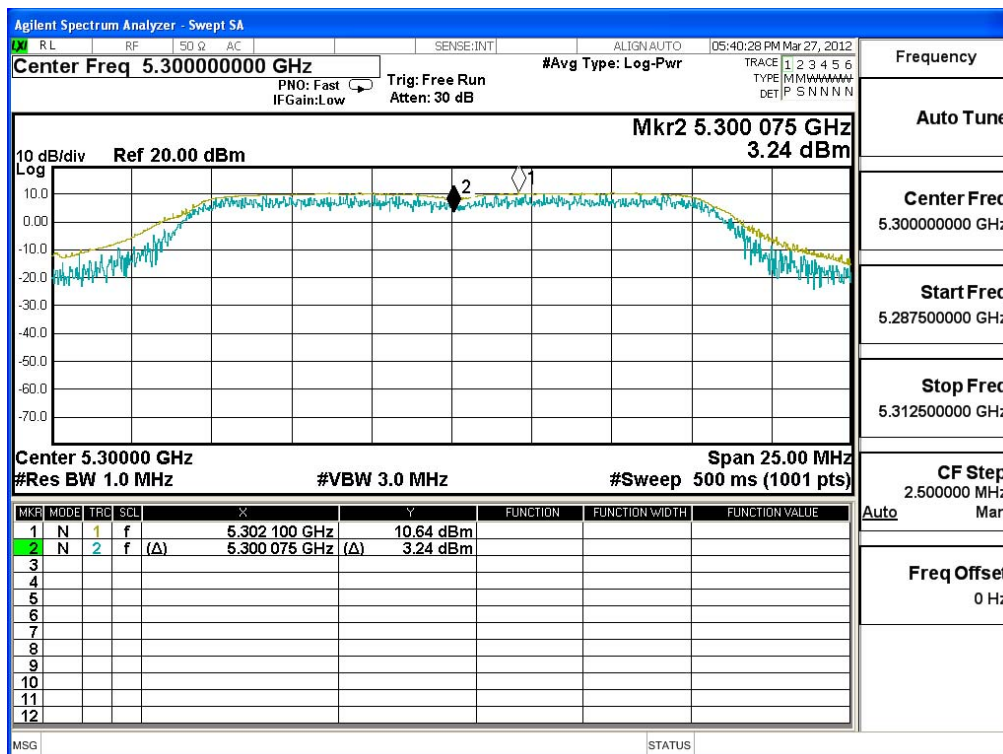
### Channel 48:



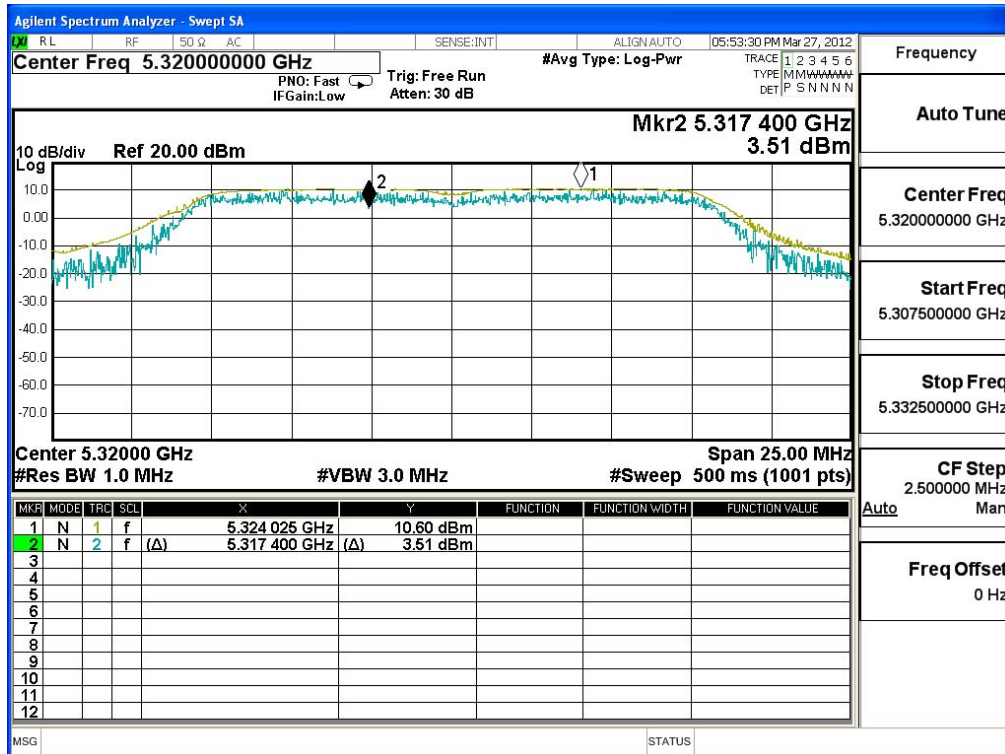
### Channel 52:



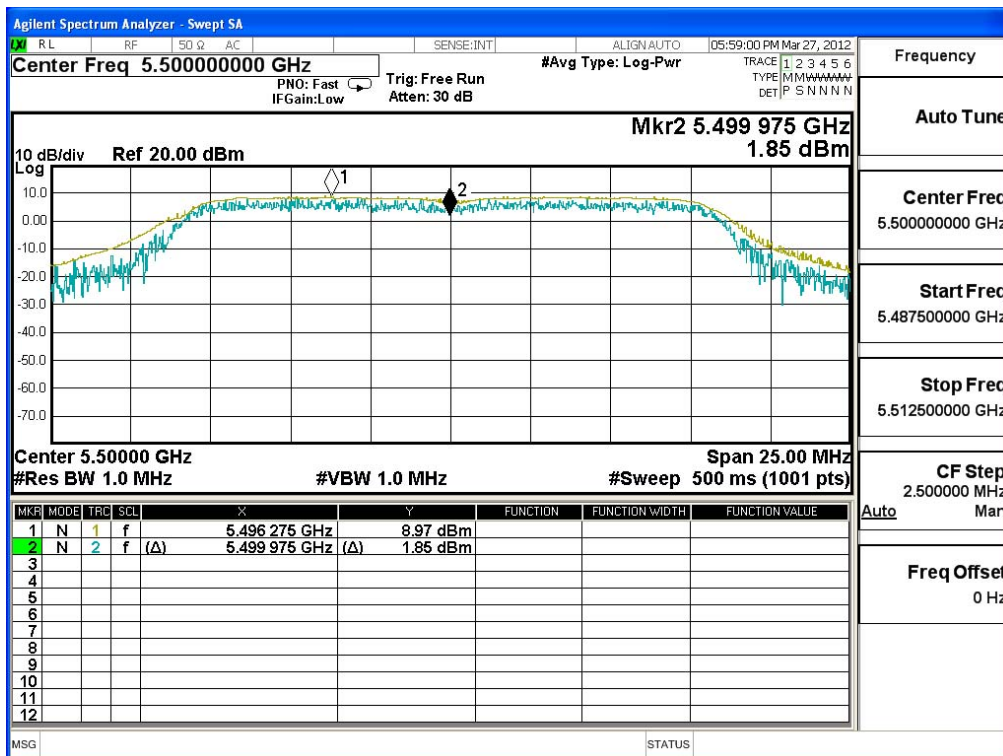
### Channel 60:



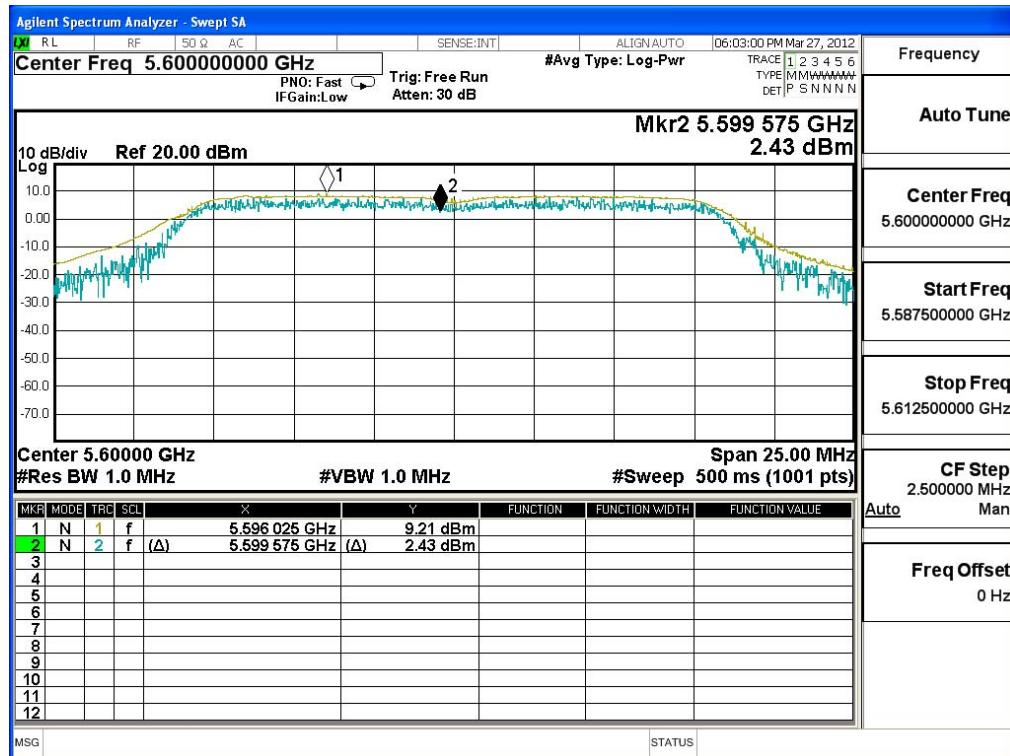
### Channel 64:



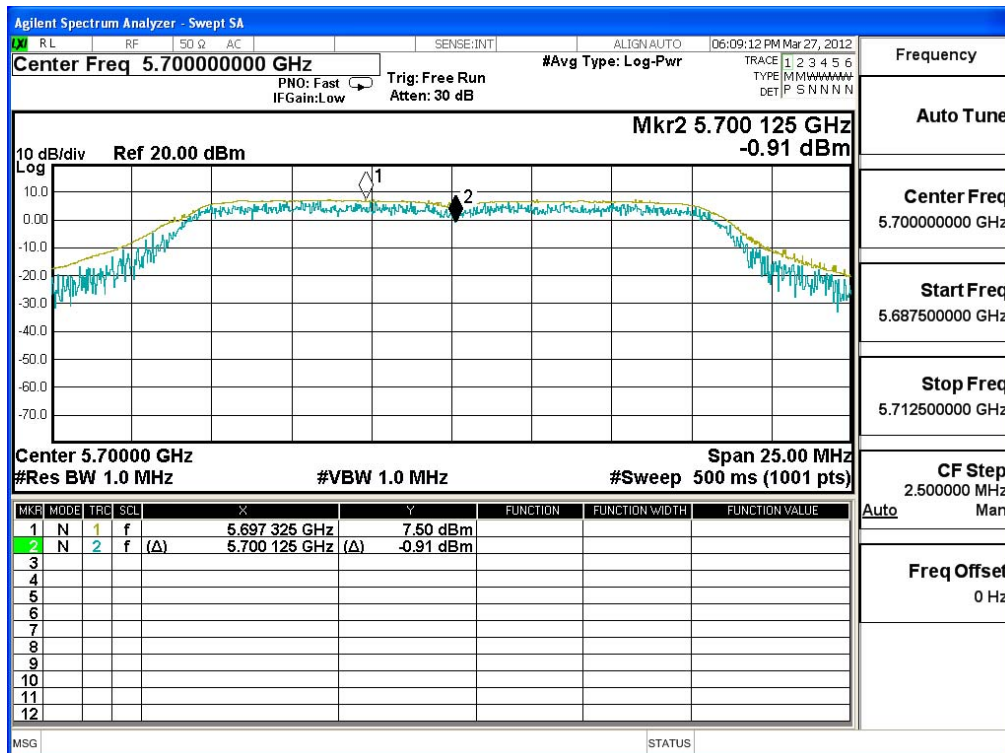
### Channel 100:



### Channel 120:



### Channel 140:



## 6. Radiated Emission

### 6.1. Test Equipment

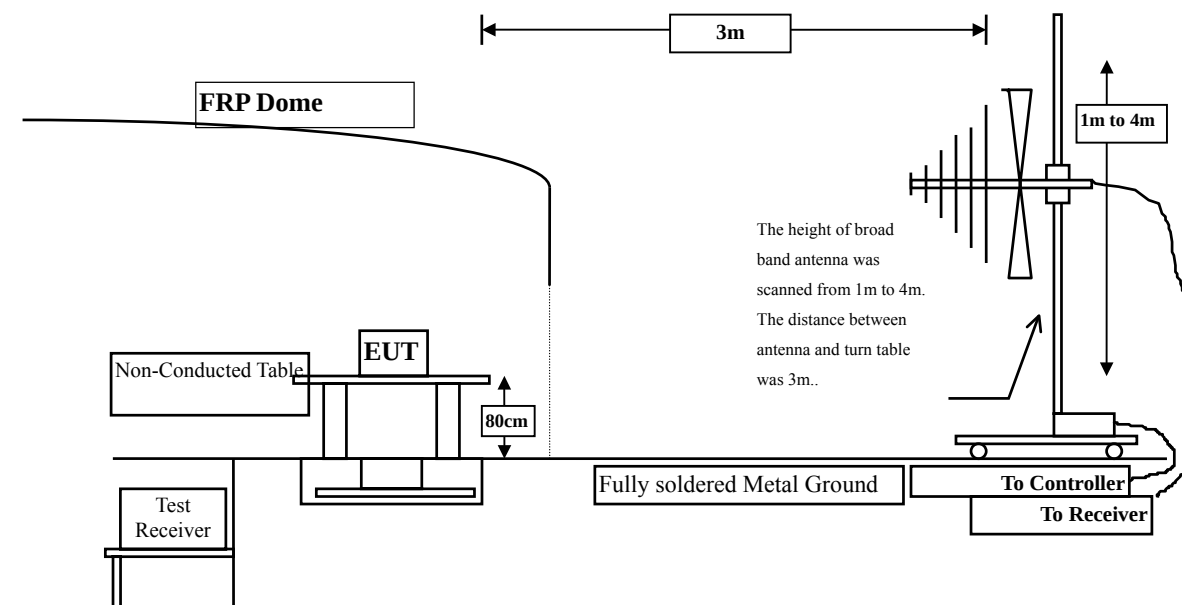
The following test equipments are used during the radiated emission test:

| Test Site |   | Equipment         | Manufacturer    | Model No./Serial No.           | Last Cal.  |
|-----------|---|-------------------|-----------------|--------------------------------|------------|
| Site # 3  | X | Bilog Antenna     | Schaffner Chase | CBL6112B/2673                  | Sep., 2011 |
|           | X | Horn Antenna      | Schwarzbeck     | BBHA9120D/D305                 | Sep., 2011 |
|           | X | Horn Antenna      | Schwarzbeck     | BBHA9170/208                   | Jul., 2011 |
|           | X | Pre-Amplifier     | QTK             | QTK-AMP-03 / 0003              | May, 2011  |
|           | X | Pre-Amplifier     | QTK             | AP-180C / CHM_0906076          | Sep., 2011 |
|           | X | Pre-Amplifier     | MITEQ           | AMF-4D-180400-45-6P/<br>925975 | Mar, 2012  |
|           | X | Spectrum Analyzer | Agilent         | E4407B / US39440758            | May, 2011  |
|           | X | Test Receiver     | R & S           | ESCS 30/ 825442/018            | Sep., 2011 |
|           | X | Coaxial Cable     | QuieTek         | QTK-CABLE/ CAB5                | Feb., 2012 |
|           | X | Controller        | QuieTek         | QTK-CONTROLLER/ CTRL3          | N/A        |
|           | X | Coaxial Switch    | Anritsu         | MP59B/6200265729               | N/A        |

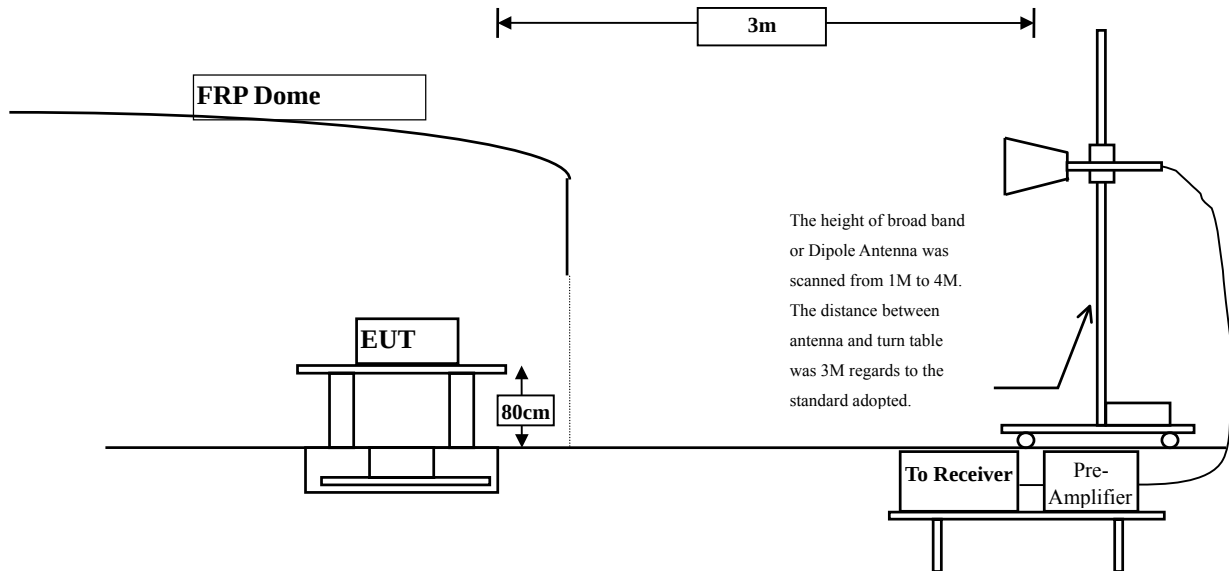
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with "X" are used to measure the final test results.

### 6.2. Test Setup

Radiated Emission Below 1GHz



## Radiated Emission Above 1GHz



### 6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

| FCC Part 15 Subpart C Paragraph 15.209(a) Limits |          |           |
|--------------------------------------------------|----------|-----------|
| Frequency MHz                                    | uV/m @3m | dBuV/m@3m |
| 30-88                                            | 100      | 40        |
| 88-216                                           | 150      | 43.5      |
| 216-960                                          | 200      | 46        |
| Above 960                                        | 500      | 54        |

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

#### 6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

#### 6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

## 6.6. Test Result of Radiated Emission

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz)

| Frequency<br>MHz             | Correct<br>Factor<br>dB | Reading<br>Level<br>dBuV | Measurement<br>Level<br>dBuV/m | Margin<br>dB | Limit<br>dBuV/m |
|------------------------------|-------------------------|--------------------------|--------------------------------|--------------|-----------------|
| <b>Horizontal</b>            |                         |                          |                                |              |                 |
| <b>Peak Detector:</b>        |                         |                          |                                |              |                 |
| 10360.000                    | 12.930                  | 36.370                   | 49.300                         | -24.700      | 74.000          |
| 15540.000                    | *                       | *                        | *                              | *            | 74.000          |
| 20720.000                    | *                       | *                        | *                              | *            | 74.000          |
| 25900.000                    | *                       | *                        | *                              | *            | 74.000          |
| 31080.000                    | *                       | *                        | *                              | *            | 74.000          |
| 36260.000                    | *                       | *                        | *                              | *            | 74.000          |
| <b>Average<br/>Detector:</b> |                         |                          |                                |              |                 |
| 10360.000                    | *                       | *                        | *                              | *            | 74.000          |
| 15540.000                    | *                       | *                        | *                              | *            | 54.000          |
| 20720.000                    | *                       | *                        | *                              | *            | 54.000          |
| 25900.000                    | *                       | *                        | *                              | *            | 54.000          |
| 31080.000                    | *                       | *                        | *                              | *            | 54.000          |
| 36260.000                    | *                       | *                        | *                              | *            | 54.000          |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10360.000             | 13.724  | 37.060  | 50.784      | -23.216 | 74.000 |
| 15540.000             | *       | *       | *           | *       | 74.000 |
| 20720.000             | *       | *       | *           | *       | 74.000 |
| 25900.000             | *       | *       | *           | *       | 74.000 |
| 31080.000             | *       | *       | *           | *       | 74.000 |
| 36260.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10360.000             | *       | *       | *           | *       | 54.000 |
| 15540.000             | *       | *       | *           | *       | 54.000 |
| 20720.000             | *       | *       | *           | *       | 54.000 |
| 25900.000             | *       | *       | *           | *       | 54.000 |
| 31080.000             | *       | *       | *           | *       | 54.000 |
| 36260.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10440.000             | 13.322  | 37.040  | 50.362      | -23.638 | 74.000 |
| 15600.000             | *       | *       | *           | *       | 74.000 |
| 20800.000             | *       | *       | *           | *       | 74.000 |
| 26000.000             | *       | *       | *           | *       | 74.000 |
| 31200.000             | *       | *       | *           | *       | 74.000 |
| 36400.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10440.000             | *       | *       | *           | *       | 54.000 |
| 15600.000             | *       | *       | *           | *       | 54.000 |
| 20800.000             | *       | *       | *           | *       | 54.000 |
| 26000.000             | *       | *       | *           | *       | 54.000 |
| 31200.000             | *       | *       | *           | *       | 54.000 |
| 36400.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10440.000             | 14.245  | 36.580  | 50.825      | -23.175 | 74.000 |
| 15600.000             | *       | *       | *           | *       | 74.000 |
| 20800.000             | *       | *       | *           | *       | 74.000 |
| 26000.000             | *       | *       | *           | *       | 74.000 |
| 31200.000             | *       | *       | *           | *       | 74.000 |
| 36400.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10440.000             | *       | *       | *           | *       | 54.000 |
| 15600.000             | *       | *       | *           | *       | 54.000 |
| 20800.000             | *       | *       | *           | *       | 54.000 |
| 26000.000             | *       | *       | *           | *       | 54.000 |
| 31200.000             | *       | *       | *           | *       | 54.000 |
| 36400.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5240MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10480.000             | 13.693  | 36.430  | 50.124      | -23.876 | 74.000 |
| 15720.000             | *       | *       | *           | *       | 74.000 |
| 20960.000             | *       | *       | *           | *       | 74.000 |
| 26200.000             | *       | *       | *           | *       | 74.000 |
| 31440000              | *       | *       | *           | *       | 74.000 |
| 36680.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10480.000             | *       | *       | *           | *       | 54.000 |
| 15720.000             | *       | *       | *           | *       | 54.000 |
| 20960.000             | *       | *       | *           | *       | 54.000 |
| 26200.000             | *       | *       | *           | *       | 54.000 |
| 31440000              | *       | *       | *           | *       | 54.000 |
| 36680.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5240MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10480.000             | 14.620  | 38.270  | 52.891      | -21.109 | 74.000 |
| 15720.000             | *       | *       | *           | *       | 74.000 |
| 20960.000             | *       | *       | *           | *       | 74.000 |
| 26200.000             | *       | *       | *           | *       | 74.000 |
| 31440000              | *       | *       | *           | *       | 74.000 |
| 36680.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10480.000             | *       | *       | *           | *       | 54.000 |
| 15720.000             | *       | *       | *           | *       | 54.000 |
| 20960.000             | *       | *       | *           | *       | 54.000 |
| 26200.000             | *       | *       | *           | *       | 54.000 |
| 31440000              | *       | *       | *           | *       | 54.000 |
| 36680.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5260MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10520.000             | 14.015  | 36.220  | 50.235      | -23.765 | 74.000 |
| 15780.000             | *       | *       | *           | *       | 74.000 |
| 21040.000             | *       | *       | *           | *       | 74.000 |
| 26300.000             | *       | *       | *           | *       | 74.000 |
| 31560.000             | *       | *       | *           | *       | 74.000 |
| 36820.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10520.000             | *       | *       | *           | *       | 54.000 |
| 15780.000             | *       | *       | *           | *       | 54.000 |
| 21040.000             | *       | *       | *           | *       | 54.000 |
| 26300.000             | *       | *       | *           | *       | 54.000 |
| 31560.000             | *       | *       | *           | *       | 54.000 |
| 36820.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5260MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10520.000             | 14.818  | 35.750  | 50.568      | -23.432 | 74.000 |
| 15780.000             | *       | *       | *           | *       | 74.000 |
| 21040.000             | *       | *       | *           | *       | 74.000 |
| 26300.000             | *       | *       | *           | *       | 74.000 |
| 31560.000             | *       | *       | *           | *       | 74.000 |
| 36820.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10520.000             | *       | *       | *           | *       |        |
| 15780.000             | *       | *       | *           | *       | 54.000 |
| 21040.000             | *       | *       | *           | *       | 54.000 |
| 26300.000             | *       | *       | *           | *       | 54.000 |
| 31560.000             | *       | *       | *           | *       | 54.000 |
| 36820.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10600.000             | 14.550  | 36.010  | 50.559      | -23.441 | 74.000 |
| 15900.000             | *       | *       | *           | *       | 74.000 |
| 21200.000             | *       | *       | *           | *       | 74.000 |
| 26500.000             | *       | *       | *           | *       | 74.000 |
| 31800.000             | *       | *       | *           | *       | 74.000 |
| 37100.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10600.000             | *       | *       | *           | *       | 54.000 |
| 15900.000             | *       | *       | *           | *       | 54.000 |
| 21200.000             | *       | *       | *           | *       | 54.000 |
| 26500.000             | *       | *       | *           | *       | 54.000 |
| 31800.000             | *       | *       | *           | *       | 54.000 |
| 37100.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
Test Item : Harmonic Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10600.000             | 14.881  | 35.430  | 50.311      | -23.689 | 74.000 |
| 15900.000             | *       | *       | *           | *       | 74.000 |
| 21200.000             | *       | *       | *           | *       | 74.000 |
| 26500.000             | *       | *       | *           | *       | 74.000 |
| 31800.000             | *       | *       | *           | *       | 74.000 |
| 37100.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10600.000             | *       | *       | *           | *       | 54.000 |
| 15900.000             | *       | *       | *           | *       | 54.000 |
| 21200.000             | *       | *       | *           | *       | 54.000 |
| 26500.000             | *       | *       | *           | *       | 54.000 |
| 31800.000             | *       | *       | *           | *       | 54.000 |
| 37100.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5320MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10640.000             | 14.690  | 36.490  | 51.180      | -22.820 | 74.000 |
| 15960.000             | *       | *       | *           | *       | 74.000 |
| 21280.000             | *       | *       | *           | *       | 74.000 |
| 26600.000             | *       | *       | *           | *       | 74.000 |
| 31920.000             | *       | *       | *           | *       | 74.000 |
| 37240.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10640.000             | *       | *       | *           | *       | 54.000 |
| 15960.000             | *       | *       | *           | *       | 54.000 |
| 21280.000             | *       | *       | *           | *       | 54.000 |
| 26600.000             | *       | *       | *           | *       | 54.000 |
| 31920.000             | *       | *       | *           | *       | 54.000 |
| 37240.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5320MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 10640.000             | 15.083  | 36.000  | 51.083      | -22.917 | 74.000 |
| 15960.000             | *       | *       | *           | *       | 74.000 |
| 21280.000             | *       | *       | *           | *       | 74.000 |
| 26600.000             | *       | *       | *           | *       | 74.000 |
| 31920.000             | *       | *       | *           | *       | 74.000 |
| 37240.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 10640.000             | *       | *       | *           | *       | 54.000 |
| 15960.000             | *       | *       | *           | *       | 54.000 |
| 21280.000             | *       | *       | *           | *       | 54.000 |
| 26600.000             | *       | *       | *           | *       | 54.000 |
| 31920.000             | *       | *       | *           | *       | 54.000 |
| 37240.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5500MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>     |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 11000.000             | 16.399  | 35.400  | 51.799      | -22.201 | 74.000 |
| 16500.000             | *       | *       | *           | *       | 74.000 |
| 22000.000             | *       | *       | *           | *       | 74.000 |
| 27500.000             | *       | *       | *           | *       | 74.000 |
| 33000.000             | *       | *       | *           | *       | 74.000 |
| 38500.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 11000.000             | *       | *       | *           | *       | 54.000 |
| 16500.000             | *       | *       | *           | *       | 54.000 |
| 22000.000             | *       | *       | *           | *       | 54.000 |
| 27500.000             | *       | *       | *           | *       | 54.000 |
| 33000.000             | *       | *       | *           | *       | 54.000 |
| 38500.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5500MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 11000.000             | 17.132  | 35.910  | 53.042      | -20.958 | 74.000 |
| 16500.000             | *       | *       | *           | *       | 74.000 |
| 22000.000             | *       | *       | *           | *       | 74.000 |
| 27500.000             | *       | *       | *           | *       | 74.000 |
| 33000.000             | *       | *       | *           | *       | 74.000 |
| 38500.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 11000.000             | *       | *       | *           | *       | 54.000 |
| 16500.000             | *       | *       | *           | *       | 54.000 |
| 22000.000             | *       | *       | *           | *       | 54.000 |
| 27500.000             | *       | *       | *           | *       | 54.000 |
| 33000.000             | *       | *       | *           | *       | 54.000 |
| 38500.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)

| Frequency<br>MHz             | Correct<br>Factor<br>dB | Reading<br>Level<br>dBuV | Measurement<br>Level<br>dBuV/m | Margin<br>dB | Limit<br>dBuV/m |
|------------------------------|-------------------------|--------------------------|--------------------------------|--------------|-----------------|
| <b>Horizontal</b>            |                         |                          |                                |              |                 |
| <b>Peak Detector:</b>        |                         |                          |                                |              |                 |
| 11200.000                    | 16.656                  | 34.980                   | 51.636                         | -22.364      | 74.000          |
| 16800.000                    | *                       | *                        | *                              | *            | 74.000          |
| 22400.000                    | *                       | *                        | *                              | *            | 74.000          |
| 28000.000                    | *                       | *                        | *                              | *            | 74.000          |
| 33600.000                    | *                       | *                        | *                              | *            | 74.000          |
| 39200.000                    | *                       | *                        | *                              | *            | 74.000          |
| <b>Average<br/>Detector:</b> |                         |                          |                                |              |                 |
| 11200.000                    | *                       | *                        | *                              | *            | 54.000          |
| 16800.000                    | *                       | *                        | *                              | *            | 54.000          |
| 22400.000                    | *                       | *                        | *                              | *            | 54.000          |
| 28000.000                    | *                       | *                        | *                              | *            | 54.000          |
| 33600.000                    | *                       | *                        | *                              | *            | 54.000          |
| 39200.000                    | *                       | *                        | *                              | *            | 54.000          |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 11200.000             | 17.726  | 35.450  | 53.176      | -20.824 | 74.000 |
| 16800.000             | *       | *       | *           | *       | 74.000 |
| 22400.000             | *       | *       | *           | *       | 74.000 |
| 28000.000             | *       | *       | *           | *       | 74.000 |
| 33600.000             | *       | *       | *           | *       | 74.000 |
| 39200.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 11200.000             | *       | *       | *           | *       | 54.000 |
| 16800.000             | *       | *       | *           | *       | 54.000 |
| 22400.000             | *       | *       | *           | *       | 54.000 |
| 28000.000             | *       | *       | *           | *       | 54.000 |
| 33600.000             | *       | *       | *           | *       | 54.000 |
| 39200.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5700MHz)

| Frequency<br>MHz             | Correct<br>Factor<br>dB | Reading<br>Level<br>dBuV | Measurement<br>Level<br>dBuV/m | Margin<br>dB | Limit<br>dBuV/m |
|------------------------------|-------------------------|--------------------------|--------------------------------|--------------|-----------------|
| <b>Horizontal</b>            |                         |                          |                                |              |                 |
| <b>Peak Detector:</b>        |                         |                          |                                |              |                 |
| 11400.000                    | 16.530                  | 34.970                   | 51.501                         | -22.499      | 74.000          |
| 17100.000                    | *                       | *                        | *                              | *            | 74.000          |
| 22800.000                    | *                       | *                        | *                              | *            | 74.000          |
| 28500.000                    | *                       | *                        | *                              | *            | 74.000          |
| 34200.000                    | *                       | *                        | *                              | *            | 74.000          |
| 39900.000                    | *                       | *                        | *                              | *            | 74.000          |
| <b>Average<br/>Detector:</b> |                         |                          |                                |              |                 |
| 11400.000                    | *                       | *                        | *                              | *            | 54.000          |
| 17100.000                    | *                       | *                        | *                              | *            | 54.000          |
| 22800.000                    | *                       | *                        | *                              | *            | 54.000          |
| 28500.000                    | *                       | *                        | *                              | *            | 54.000          |
| 34200.000                    | *                       | *                        | *                              | *            | 54.000          |
| 39900.000                    | *                       | *                        | *                              | *            | 54.000          |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5700MHz)

| Frequency             | Correct | Reading | Measurement | Margin  | Limit  |
|-----------------------|---------|---------|-------------|---------|--------|
| MHz                   | Factor  | Level   | Level       |         |        |
|                       | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Vertical</b>       |         |         |             |         |        |
| <b>Peak Detector:</b> |         |         |             |         |        |
| 11400.000             | 17.138  | 34.940  | 52.078      | -21.922 | 74.000 |
| 17100.000             | *       | *       | *           | *       | 74.000 |
| 22800.000             | *       | *       | *           | *       | 74.000 |
| 28500.000             | *       | *       | *           | *       | 74.000 |
| 34200.000             | *       | *       | *           | *       | 74.000 |
| 39900.000             | *       | *       | *           | *       | 74.000 |
| <b>Average</b>        |         |         |             |         |        |
| <b>Detector:</b>      |         |         |             |         |        |
| 11400.000             | *       | *       | *           | *       | 54.000 |
| 17100.000             | *       | *       | *           | *       | 54.000 |
| 22800.000             | *       | *       | *           | *       | 54.000 |
| 28500.000             | *       | *       | *           | *       | 54.000 |
| 34200.000             | *       | *       | *           | *       | 54.000 |
| 39900.000             | *       | *       | *           | *       | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-AC Power Adapter

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
| MHz                  | Factor  | Level   | Level       |         |        |
|                      | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 142.520              | -10.427 | 46.267  | 35.840      | -7.660  | 43.500 |
| 299.660              | -3.585  | 42.781  | 39.196      | -6.804  | 46.000 |
| 431.580              | -2.099  | 37.842  | 35.743      | -10.257 | 46.000 |
| 577.080              | 3.169   | 36.514  | 39.683      | -6.317  | 46.000 |
| 786.600              | 4.712   | 31.352  | 36.064      | -9.936  | 46.000 |
| 998.060              | 8.386   | 34.484  | 42.870      | -11.130 | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 74.620               | -5.082  | 41.559  | 36.477      | -3.523  | 40.000 |
| 146.400              | -6.248  | 41.989  | 35.741      | -7.759  | 43.500 |
| 288.020              | -8.189  | 42.332  | 34.143      | -11.857 | 46.000 |
| 501.420              | -0.795  | 38.135  | 37.340      | -8.660  | 46.000 |
| 689.600              | 2.538   | 32.264  | 34.802      | -11.198 | 46.000 |
| 932.100              | 6.152   | 30.257  | 36.409      | -9.591  | 46.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-AC Power Adapter

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
|                      | Factor  | Level   | Level       |         |        |
| MHz                  | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 144.460              | -10.377 | 47.289  | 36.912      | -6.588  | 43.500 |
| 348.160              | -2.268  | 41.514  | 39.246      | -6.754  | 46.000 |
| 491.720              | -0.523  | 34.915  | 34.391      | -11.609 | 46.000 |
| 648.860              | 2.038   | 31.242  | 33.280      | -12.720 | 46.000 |
| 786.600              | 4.712   | 30.198  | 34.910      | -11.090 | 46.000 |
| 984.480              | 7.679   | 26.845  | 34.524      | -19.476 | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 53.280               | -6.022  | 41.840  | 35.818      | -4.182  | 40.000 |
| 198.780              | -8.221  | 44.132  | 35.911      | -7.589  | 43.500 |
| 383.080              | -2.184  | 32.983  | 30.799      | -15.201 | 46.000 |
| 501.420              | -0.795  | 38.224  | 37.429      | -8.571  | 46.000 |
| 683.780              | 1.968   | 32.023  | 33.991      | -12.009 | 46.000 |
| 821.520              | 3.381   | 32.568  | 35.949      | -10.051 | 46.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5500MHz)-AC Power Adapter

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
| MHz                  | Factor  | Level   | Level       |         |        |
|                      | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 198.780              | -10.661 | 45.069  | 34.408      | -9.092  | 43.500 |
| 348.160              | -2.268  | 41.997  | 39.729      | -6.271  | 46.000 |
| 460.680              | 1.589   | 33.825  | 35.414      | -10.586 | 46.000 |
| 610.060              | 4.101   | 34.966  | 39.067      | -6.933  | 46.000 |
| 743.920              | 3.326   | 33.152  | 36.478      | -9.522  | 46.000 |
| 988.360              | 7.110   | 28.028  | 35.138      | -18.862 | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 113.420              | -1.849  | 33.207  | 31.358      | -12.142 | 43.500 |
| 276.380              | -8.653  | 42.672  | 34.019      | -11.981 | 46.000 |
| 532.460              | -0.563  | 37.758  | 37.195      | -8.805  | 46.000 |
| 687.660              | 2.444   | 32.859  | 35.303      | -10.697 | 46.000 |
| 821.520              | 3.381   | 32.414  | 35.795      | -10.205 | 46.000 |
| 953.440              | 6.637   | 27.783  | 34.420      | -11.580 | 46.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)-DC Power Supply

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
| MHz                  | Factor  | Level   | Level       |         |        |
|                      | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 198.780              | -10.661 | 46.792  | 36.131      | -7.369  | 43.500 |
| 369.500              | -1.098  | 38.894  | 37.796      | -8.204  | 46.000 |
| 460.680              | 1.589   | 39.056  | 40.645      | -5.355  | 46.000 |
| 604.240              | 4.770   | 38.360  | 43.130      | -2.870  | 46.000 |
| 821.520              | 5.961   | 33.963  | 39.924      | -6.076  | 46.000 |
| 996.120              | 7.669   | 37.739  | 45.408      | -8.592  | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 144.460              | -6.257  | 42.140  | 35.883      | -7.617  | 43.500 |
| 270.560              | -9.247  | 52.119  | 42.872      | -3.128  | 46.000 |
| 350.100              | -3.822  | 38.301  | 34.479      | -11.521 | 46.000 |
| 516.940              | -0.876  | 35.180  | 34.304      | -11.696 | 46.000 |
| 709.000              | 0.058   | 35.937  | 35.995      | -10.005 | 46.000 |
| 967.020              | 8.071   | 32.882  | 40.953      | -13.047 | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)-DC Power Supply

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
| MHz                  | Factor  | Level   | Level       |         |        |
|                      | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 198.780              | -10.661 | 47.259  | 36.598      | -6.902  | 43.500 |
| 383.080              | -1.164  | 40.361  | 39.197      | -6.803  | 46.000 |
| 532.460              | 1.957   | 40.756  | 42.713      | -3.287  | 46.000 |
| 685.720              | 2.959   | 35.281  | 38.239      | -7.761  | 46.000 |
| 821.520              | 5.961   | 33.274  | 39.235      | -6.765  | 46.000 |
| 998.060              | 8.386   | 35.408  | 43.794      | -10.206 | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 138.640              | -5.795  | 38.258  | 32.463      | -11.037 | 43.500 |
| 291.900              | -8.004  | 45.875  | 37.870      | -8.130  | 46.000 |
| 350.100              | -3.822  | 40.419  | 36.597      | -9.403  | 46.000 |
| 544.100              | -0.688  | 35.709  | 35.021      | -10.979 | 46.000 |
| 753.620              | 3.187   | 31.331  | 34.518      | -11.482 | 46.000 |
| 998.060              | 4.176   | 37.362  | 41.538      | -12.462 | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Nport Device Server  
 Test Item : General Radiated Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5500MHz)-DC Power Supply

| Frequency            | Correct | Reading | Measurement | Margin  | Limit  |
|----------------------|---------|---------|-------------|---------|--------|
| MHz                  | Factor  | Level   | Level       |         |        |
|                      | dB      | dBuV    | dBuV/m      | dB      | dBuV/m |
| <b>Horizontal</b>    |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 154.160              | -10.091 | 47.939  | 37.848      | -5.652  | 43.500 |
| 383.080              | -1.164  | 41.220  | 40.056      | -5.944  | 46.000 |
| 470.380              | 1.226   | 38.600  | 39.826      | -6.174  | 46.000 |
| 681.840              | 2.844   | 34.513  | 37.357      | -8.643  | 46.000 |
| 821.520              | 5.961   | 32.932  | 38.893      | -7.107  | 46.000 |
| 996.120              | 7.669   | 35.962  | 43.631      | -10.369 | 54.000 |
| <b>Vertical</b>      |         |         |             |         |        |
| <b>Peak Detector</b> |         |         |             |         |        |
| 109.540              | -0.418  | 39.216  | 38.798      | -4.702  | 43.500 |
| 222.060              | -8.789  | 45.320  | 36.531      | -9.469  | 46.000 |
| 377.260              | -1.765  | 40.351  | 38.586      | -7.414  | 46.000 |
| 532.460              | -0.563  | 35.177  | 34.614      | -11.386 | 46.000 |
| 687.660              | 2.444   | 35.467  | 37.911      | -8.089  | 46.000 |
| 967.020              | 8.071   | 30.856  | 38.927      | -15.073 | 54.000 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 7. Band Edge

### 7.1. Test Equipment

#### RF Conducted Measurement

The following test equipments are used during the band edge tests:

|   | Equipment         | Manufacturer | Model No./Serial No. | Last Cal.  |
|---|-------------------|--------------|----------------------|------------|
|   | Spectrum Analyzer | R&S          | FSP40 / 100170       | Jun, 2011  |
|   | Spectrum Analyzer | Agilent      | E4407B / US39440758  | Jun, 2011  |
| X | Spectrum Analyzer | Agilent      | N9010A / MY48030495  | Apr., 2012 |

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

#### RF Radiated Measurement:

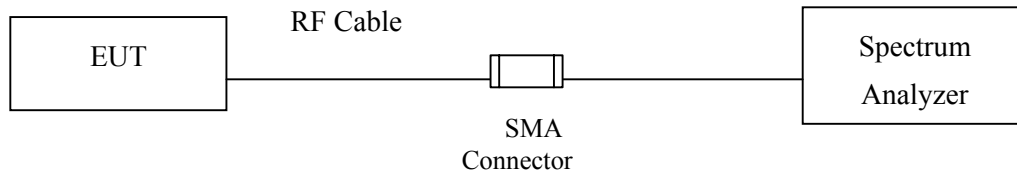
The following test equipments are used during the band edge tests:

| Test Site  |   | Equipment         | Manufacturer    | Model No./Serial No.       | Last Cal.  |
|------------|---|-------------------|-----------------|----------------------------|------------|
| ☒ Site # 3 |   | Bilog Antenna     | Schaffner Chase | CBL6112B/2673              | Sep., 2011 |
|            | X | Horn Antenna      | Schwarzbeck     | BBHA9120D/D305             | Sep., 2011 |
|            |   | Horn Antenna      | Schwarzbeck     | BBHA9170/208               | Jul., 2011 |
|            |   | Pre-Amplifier     | QTK             | QTK-AMP-03 / 0003          | May, 2011  |
|            | X | Pre-Amplifier     | QTK             | AP-180C / CHM_0906076      | Sep., 2011 |
|            |   | Pre-Amplifier     | MITEQ           | AMF-4D-180400-45-6P/925975 | Mar, 2012  |
|            | X | Spectrum Analyzer | Agilent         | E4407B / US39440758        | May, 2011  |
|            |   | Test Receiver     | R & S           | ESCS 30/ 825442/018        | Sep., 2011 |
|            | X | Coaxial Cable     | QuieTek         | QTK-CABLE/ CAB5            | Feb., 2012 |
|            | X | Controller        | QuieTek         | QTK-CONTROLLER/ CTRL3      | N/A        |
|            | X | Coaxial Switch    | Anritsu         | MP59B/6200265729           | N/A        |

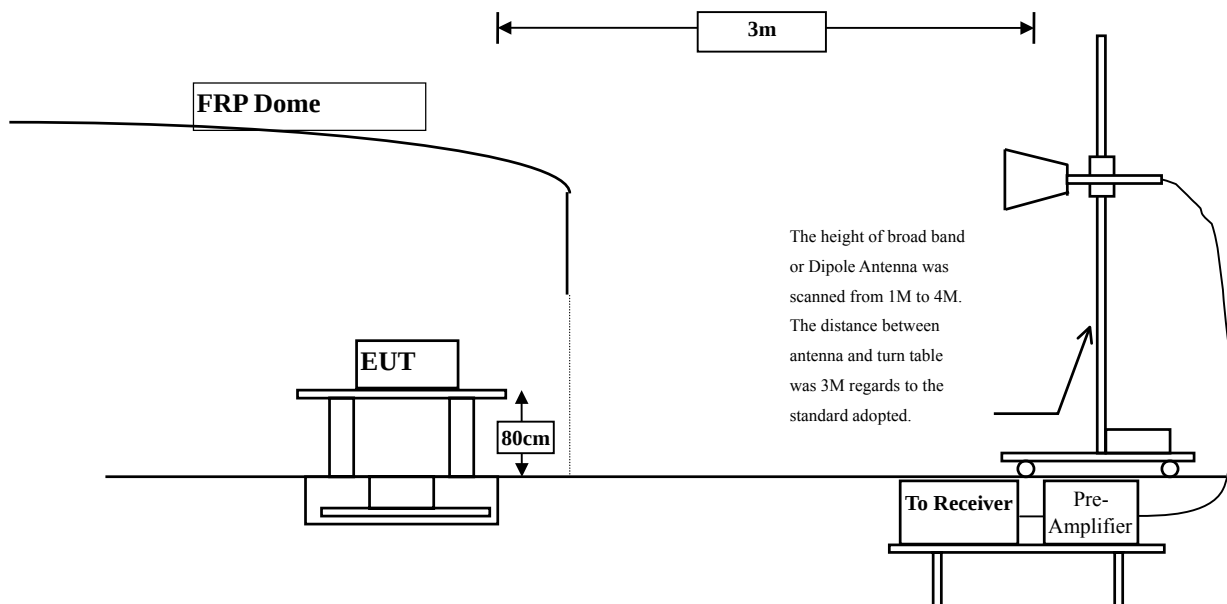
- Note:
1. All instruments are calibrated every one year.
  2. The test instruments marked by "X" are used to measure the final test results.

## 7.2. Test Setup

### RF Conducted Measurement



### RF Radiated Measurement:



### 7.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

| FCC Part 15 Subpart C Paragraph 15.209 Limits |          |           |
|-----------------------------------------------|----------|-----------|
| Frequency<br>MHz                              | uV/m @3m | dBuV/m@3m |
| 30-88                                         | 100      | 40        |
| 88-216                                        | 150      | 43.5      |
| 216-960                                       | 200      | 46        |
| Above 960                                     | 500      | 54        |

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### 7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

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.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

### 7.5. Uncertainty

- ± 3.8 dB below 1GHz
- ± 3.9 dB above 1GHz

## 7.6. Test Result of Band Edge

Product : Nport Device Server  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)-Channel 36

### Fundamental Filed Strength

| Antenna Pole | Frequency [MHz] | Reading Level [dBuV] | Correction Factor [dB/m] | Emission Level [dBuV/m] | Detector |
|--------------|-----------------|----------------------|--------------------------|-------------------------|----------|
| Horizontal   | 5180            | 34.966               | 54.31                    | 89.276                  | Peak     |
| Horizontal   | 5180            | 34.966               | 44.05                    | 79.016                  | Average  |
| Vertical     | 5180            | 37.073               | 65.41                    | 102.484                 | Peak     |
| Vertical     | 5180            | 37.073               | 54.83                    | 91.904                  | Average  |

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

### Band Edge Test Data

| Antenna Pole | Test Frequency (MHz) | Fundamental (dBuV/m) | $\Delta$ (dB) | Band Edge Field Strength (dBuV/m) | Requiqment Limit (dBuV/m) | Detector |
|--------------|----------------------|----------------------|---------------|-----------------------------------|---------------------------|----------|
| Horizontal   | 5149.4               | 89.276               | 43.867        | 45.409                            | 74.000                    | Peak     |
| Horizontal   | 5150                 | 79.016               | 51.977        | 27.039                            | 54.000                    | Average  |
| Vertical     | 5149.4               | 102.484              | 43.867        | 58.617                            | 74.000                    | Peak     |
| Vertical     | 5150                 | 91.904               | 51.977        | 39.927                            | 54.000                    | Average  |

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F -  $\Delta$

F = Fundamental field Strength (Peak or Average)

$\Delta$  = Conducted Band Edge Delta (Peak or Average)