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# FCC / IC RADIO TEST REPORT

| | |
|---|---|
| Applicant's company | **Intel Corporation** |
| Applicant Address | 100 Center Point Circle Suite 200 Columbia, SC 29210 |
| FCC ID | **PD962205ANSU** |
| IC | **1000M-62205ANSU** |
| Manufacturer's company | **Intel Corporation** |
| Manufacturer Address | 2111 NE 25th Avenue, Hillsboro, OR 97124 USA |

| | |
|---|---|
| Product Name | Intel Centrino Advanced-N 6205 |
| Brand Name | Intel |
| Model Name | 62205ANSFF |
| Test Rule Part(s) | 47 CFR FCC Part 15 Subpart C § 15.247<br>RSS 210 Issue 8<br>Industry Canada RSS-Gen Issue 3 |
| Test Freq. Range | 2400 ~ 2483.5MHz / 5725 ~ 5850MHz |
| Received Date | Dec. 01, 2011 |
| Final Test Date | Dec. 26, 2011 |
| Submission Type | Original Equipment |

## Statement

**Test result included is only for the IEEE 802.11n, IEEE 802.11b/g part and IEEE 802.11a (5725 ~ 5850MHz) of the product.**

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2009** and **47 CFR FCC Part 15 Subpart C, RSS 210 Issue 8** and **Industry Canada RSS-Gen Issue 3**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

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# History of This Test Report

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FR&CR1D1211AB | Rev. 01 | Initial issue of report | Jan. 18, 2012 |
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Certificate No.: CB10101011

# 1. CERTIFICATE OF COMPLIANCE

| | | |
|---|---|---|
| Product Name | : | Intel Centrino Advanced-N 6205 |
| Brand Name | : | Intel |
| Model Name | : | 62205ANSFF |
| Applicant | : | Intel Corporation |
| Test Rule Part(s) | : | 47 CFR FCC Part 15 Subpart C § 15.247 |
| | | RSS 210 Issue 8 |
| | | Industry Canada RSS-Gen Issue 3 |

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Dec. 01, 2011 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Jordan Hsiao

Jordan Hsiao
SPORTON INTERNATIONAL INC.

# 2. SUMMARY OF THE TEST RESULT

| Applied Standard: 47 CFR FCC Part 15 Subpart C / RSS 210 Issue 8 / Industry Canada RSS-Gen Issue 3 | | | | | |
|---|---|---|---|---|---|
| Part | FCC Rule Part | RSS Rule Part | Description of Test | Measure Value/ Comments | Result |
| 4.1 | 15.207 | RSS GEN Table 2 | AC Power Line Conducted Emissions | 49.79dBμV @ 0.19758MHz | Complies |
| 4.2 | 15.247(d) | RSS 210 A8.5 | Band Edge Emissions | 50.34dBμV/m @ 2390MHz | Complies |
| 4.3 | 15.247(b)(3) | RSS 210 A8.4 (4) | Output Power | 802.11b: 15.68dBm<br>802.11g: 22.88dBm<br>1TX:<br>MCS0 (20MHz): 16.61 dBm<br>MCS0 (40MHz): 16.65 dBm<br>2TX:<br>MCS0 (20MHz): 16.49 dBm<br>MCS0 (40MHz): 16.68 dBm<br>802.11a: 15.85 dBm<br>1TX:<br>MCS0 (20MHz): 15.77 dBm<br>MCS0 (40MHz): 21.45 dBm<br>2TX:<br>MCS0 (20MHz): 16.36 dBm<br>MCS0 (40MHz): 16.56 dBm | Complies |
| 4.4 | 15.247(e) | RSS 210 A8.2 (2) | Power Spectral Density | -7.41 dBm / 3kHz | Complies |
| 4.5 | 15.247(a)(2) | RSS 210 A8.2 (1) | 6dB Spectrum Bandwidth | 802.11b: 12 MHz<br>802.11g: 15.04 MHz<br>1TX:<br>MCS0 (20MHz): 15.12 MHz<br>MCS0 (40MHz): 35.12 MHz<br>2TX:<br>MCS0 (20MHz): 15.08 MHz<br>MCS0 (40MHz): 35.08 MHz<br>802.11a: 16.36 MHz<br>1TX:<br>MCS0 (20MHz): 16.84 MHz<br>MCS0 (40MHz): 35.20 MHz<br>2TX:<br>MCS0 (20MHz): 15.40 MHz<br>MCS0 (40MHz): 35.12 MHz | Complies |

| Applied Standard: 47 CFR FCC Part 15 Subpart C / RSS 210 Issue 8 / Industry Canada RSS-Gen Issue 3 | | | | | |
|---|---|---|---|---|---|
| 4.5 | - | RSP 100<br>RSS GEN<br>4.4.1 | 99% Bandwidth | 802.11b: 14.92 MHz<br>802.11g: 16.36 MHz<br>1TX:<br>MCS0 (20MHz): 17.56 MHz<br>MCS0 (40MHz): 36 MHz<br>2TX:<br>MCS0 (20MHz): 17.44 MHz<br>MCS0 (40MHz): 35.76 MHz<br>802.11a: 16.48 MHz<br>1TX:<br>MCS0 (20MHz): 17.64 MHz<br>MCS0 (40MHz): 35.92 MHz<br>2TX:<br>MCS0 (20MHz): 17.56 MHz<br>MCS0 (40MHz): 35.84 MHz | Complies |
| 4.6 | 15.247(d) | RSS 210<br>A8.5<br>Table 2, 3 | Radiated Emissions Measurement for Transmitter and Receiver Spurious | 39.30dBμV/m @ 900.09MHz | Complies |
| 4.7 | 15.109 | RSS GEN<br>7.2.3<br>Table 1 | Out of Band Spurious Emissions | - | Complies |
| 4.8 | 15.203 | - | Antenna Requirements | - | Complies |

| Test Items | Uncertainty | Remark |
|---|---|---|
| AC Power Line Conducted Emissions | ±2.3dB | Confidence levels of 95% |
| Maximum Peak Output Power | ±0.8dB | Confidence levels of 95% |
| Power Spectral Density | ±0.5dB | Confidence levels of 95% |
| 6dB Spectrum Bandwidth | $\pm 8.5\times10^{-8}$ | Confidence levels of 95% |
| Radiated Emissions (9kHz~30MHz) | ±0.8dB | Confidence levels of 95% |
| Radiated Emissions (30MHz~1000MHz) | ±1.9dB | Confidence levels of 95% |
| Radiated / Band Edge Emissions (1GHz~18GHz) | ±1.9dB | Confidence levels of 95% |
| Radiated Emissions (18GHz~40GHz) | ±1.9dB | Confidence levels of 95% |
| Temperature | ±0.7°C | Confidence levels of 95% |
| Humidity | ±3.2% | Confidence levels of 95% |
| DC / AC Power Source | ±1.4% | Confidence levels of 95% |

# 3. GENERAL INFORMATION

## 3.1. Product Details

IEEE 802.11n

| Items | Description |
|---|---|
| Product Type | WLAN (1TX, 1RX/ 2TX, 2RX ) |
| Radio Type | Intentional Transceiver |
| Power Type | From Host System |
| Modulation | see the below table for IEEE 802.11n |
| Data Modulation | OFDM (BPSK / QPSK / 16QAM / 64QAM) |
| Data Rate (Mbps) | see the below table for IEEE 802.11n |
| Frequency Range | 2400 ~ 2483.5MHz / 5725 ~ 5850MHz |
| Channel Number | For 2.4GHz Band:<br>11 for 20MHz bandwidth ; 7 for 40MHz bandwidth<br>For 5GHz Band:<br>5 for 20MHz bandwidth ; 2 for 40MHz bandwidth |
| Channel Band Width (99%) | For 2.4GHz Band:<br>1TX: MCS0 (20MHz): 17.56 MHz ; MCS0 (40MHz): 36.00 MHz<br>2TX: MCS0 (20MHz): 17.44 MHz ; MCS0 (40MHz): 35.76 MHz<br>For 5GHz Band:<br>1TX: MCS0 (20MHz): 17.64 MHz ; MCS0 (40MHz): 35.92 MHz<br>2TX: MCS0 (20MHz): 17.56 MHz ; MCS0 (40MHz): 35.84 MHz |
| Peak Output Power | For 2.4GHz Band:<br>1TX: MCS0 (20MHz): 16.61 dBm ; MCS0 (40MHz): 16.65 dBm<br>2TX: MCS0 (20MHz): 16.49 dBm ; MCS0 (40MHz): 16.68 dBm<br>For 5GHz Band:<br>1TX: MCS0 (20MHz): 15.77 dBm ; MCS0 (40MHz): 21.45 dBm<br>2TX: MCS0 (20MHz): 16.36 dBm ; MCS0 (40MHz): 16.56 dBm |
| Carrier Frequencies | Please refer to section 3.4 |
| Antenna | Please refer to section 3.3 |

802.11a/b/g

| Items | Description |
|---|---|
| Product Type | 11b: WLAN (1TX, 1RX)<br>11g: WLAN (1TX, 1RX)<br>11a: WLAN (1TX, 1RX) |
| Radio Type | Intentional Transceiver |
| Power Type | From Host System |
| Modulation | DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g |
| Data Modulation | DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM) |
| Data Rate (Mbps) | DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54) |
| Frequency Range | 2400 ~ 2483.5MHz / 5725 ~ 5850MHz |
| Channel Number | 11b/g: 11 ; 11a: 5 |
| Channel Band Width (99%) | 11b: 14.96 MHz ; 11g: 16.36 MHz ; 11a: 16.52 MHz |
| Peak Output Power | 11b: 15.68 dBm ; 11g: 22.88 dBm ; 11a: 15.85 dBm |
| Carrier Frequencies | Please refer to section 3.4 |
| Antenna | Please refer to section 3.3 |

Antenna & Band width

| Antenna | Single (TX) | | Two (TX) | |
|---|---|---|---|---|
| Band width Mode | 20 MHz | 40 MHz | 20 MHz | 40 MHz |
| IEEE 802.11a | V | X | X | X |
| IEEE 802.11b | V | X | X | X |
| IEEE 802.11g | V | X | X | X |
| IEEE 802.11n | V | V | V | V |

IEEE 802.11n spec

| MCS Index | Nss | Modulation | R | NBPSC | NCBPS | | NDBPS | | Datarate(Mbps) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 800nsGI | | 400nsGI | |
| | | | | | 20MHz | 40MHz | 20MHz | 40MHz | 20MHz | 40MHz | 20MHz | 40MHz |
| 0 | 1 | BPSK | 1/2 | 1 | 52 | 108 | 26 | 54 | 6.5 | 13.5 | 7.200 | 15 |
| 1 | 1 | QPSK | 1/2 | 2 | 104 | 216 | 52 | 108 | 13.0 | 27.0 | 14.400 | 30 |
| 2 | 1 | QPSK | 3/4 | 2 | 104 | 216 | 78 | 162 | 19.5 | 40.5 | 21.700 | 45 |
| 3 | 1 | 16-QAM | 1/2 | 4 | 208 | 432 | 104 | 216 | 26.0 | 54.0 | 28.900 | 60 |
| 4 | 1 | 16-QAM | 3/4 | 4 | 208 | 432 | 156 | 324 | 39.0 | 81.0 | 43.300 | 90 |
| 5 | 1 | 64-QAM | 2/3 | 6 | 312 | 648 | 208 | 432 | 52.0 | 108.0 | 57.800 | 120 |
| 6 | 1 | 64-QAM | 3/4 | 6 | 312 | 648 | 234 | 486 | 58.5 | 121.5 | 65.000 | 135 |
| 7 | 1 | 64-QAM | 5/6 | 6 | 312 | 648 | 260 | 540 | 65.0 | 135.0 | 72.200 | 150 |
| 8 | 2 | BPSK | 1/2 | 1 | 104 | 216 | 52 | 108 | 13.0 | 27.0 | 14.444 | 30 |
| 9 | 2 | QPSK | 1/2 | 2 | 208 | 432 | 104 | 216 | 26.0 | 54.0 | 28.889 | 60 |
| 10 | 2 | QPSK | 3/4 | 2 | 208 | 432 | 156 | 324 | 39.0 | 81.0 | 43.333 | 90 |
| 11 | 2 | 16-QAM | 1/2 | 4 | 416 | 864 | 208 | 432 | 52.0 | 108.0 | 57.778 | 120 |
| 12 | 2 | 16-QAM | 3/4 | 4 | 416 | 864 | 312 | 648 | 78.0 | 162.0 | 86.667 | 180 |
| 13 | 2 | 64-QAM | 2/3 | 6 | 624 | 1296 | 416 | 864 | 104.0 | 216.0 | 115.556 | 240 |
| 14 | 2 | 64-QAM | 3/4 | 6 | 624 | 1296 | 468 | 972 | 117.0 | 243.0 | 130.000 | 270 |
| 15 | 2 | 64-QAM | 5/6 | 6 | 624 | 1296 | 520 | 1080 | 130.0 | 270.0 | 144.444 | 300 |

| Symbol | Explanation |
|---|---|
| NSS | Number of spatial streams |
| R | Code rate |
| NBPSC | Number of coded bits per single carrier |
| NCBPS | Number of coded bits per symbol |
| NDBPS | Number of data bits per symbol |
| GI | guard interval |

## 3.2. Accessories

N/A

## 3.3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 2.4GHz | 5GHz | | |
| | | | | | | 5.15~5.35 GHz | 5.47~5.725 GHz | 5.725~5.850 GHz |
| A | Shanghai Universe Communication Electron Co., Ltd. | N/A | PIFA Antenna | UFL | 3.2 | 3.7 | 4.8 | 5 |
| B | Shanghai Universe Communication Electron Co., Ltd. | N/A | PIFA Antenna | UFL | 3.2 | 3.7 | 4.8 | 5 |

Note: There are two sets of antenna provided to this EUT and all of them can be used as transmitting and receiving antenna

**For IEEE 802.11n mode (2TX/2RX)**

Antenna A and Antenna B could transmit/receive simultaneously.

**For IEEE 802.11n mode (1TX/1RX)**

The EUT supports the antenna with TX/RX diversity function.

**For IEEE 802.11abg mode (1TX/1RX):**

The EUT supports the antenna with TX/RX diversity function.

## 3.4. Table for Carrier Frequencies

**For 2.4GHz Band:**

For IEEE 802.11b/g, use Channel 1~Channel 11.

There are two bandwidth systems for IEEE 802.11n.

For both 20MHz bandwidth systems, use Channel 1~Channel 11.

For both 40MHz bandwidth systems, use Channel 3~Channel 9.

| Frequency Band | Channel No. | Frequency | Channel No. | Frequency |
|---|---|---|---|---|
| 2400~2483.5MHz | 1 | 2412 MHz | 7 | 2442 MHz |
| | 2 | 2417 MHz | 8 | 2447 MHz |
| | 3 | 2422 MHz | 9 | 2452 MHz |
| | 4 | 2427 MHz | 10 | 2457 MHz |
| | 5 | 2432 MHz | 11 | 2462 MHz |
| | 6 | 2437 MHz | - | - |

**For 5GHz Band:**

For IEEE 802.11a, use Channel 149, 153, 157, 161, 165.

There are two bandwidth systems for IEEE 802.11n.

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 151, 159.

| Frequency Band | Channel No. | Frequency |
|---|---|---|
| 5725~5850 MHz Band 4 | 149 | 5745 MHz |
| | 151 | 5755 MHz |
| | 153 | 5765 MHz |
| | 157 | 5785 MHz |
| | 159 | 5795 MHz |
| | 161 | 5805 MHz |
| | 165 | 5825 MHz |

## 3.5. Table for Test Modes

In normal operating modes the card uses power settings stored on EEPROM to set the output power. For a given nominal output power the actual transmit power is reduced as the data rate increases, therefore testing was performed at the lowest data rate in each mode as this data rate to determine compliance with the requirements at the highest power setting.

The following power measurements were made using an average power meter and with the device configured in a continuous transmit mode on Chain A at the various data rates in each mode to verify this:

| Mode | Setting | Date Rate | Power |
|---|---|---|---|
| 802.11b | 23 | 1 | 15.58 |
| | | 2 | 15.56 |
| | | 5.5 | 15.60 |
| | | 11 | 15.53 |
| 802.11g (802.11a) | 26 | 6 | 14.52 |
| | | 9 | 14.45 |
| | | 12 | 14.41 |
| | | 18 | 14.44 |
| | | 24 | 14.25 |
| | | 36 | 14.19 |
| | | 48 | 14.22 |
| | | 54 | 14.18 |
| 802.11n 20MHz | 25 | 6.5 | 13.47 |
| | | 13 | 13.33 |
| | | 19.5 | 13.42 |
| | | 26 | 13.36 |
| | | 39 | 13.31 |
| | | 52 | 13.26 |
| | | 58.5 | 13.24 |
| | | 65 | 13.24 |
| 802.11n 40MHz | 21 | 13.5 | 9.48 |
| | | 27 | 9.47 |
| | | 40.5 | 9.38 |
| | | 54 | 9.19 |
| | | 81 | 9.11 |
| | | 108 | 9.05 |
| | | 121.5 | 9.06 |
| | | 135 | 8.94 |

## 3.6. Table for Testing Locations

| Test Site No. | Site Category | Location | FCC Reg. No. | IC File No. | VCCI Reg. No |
|---|---|---|---|---|---|
| 03CH01-CB | SAC | Hsin Chu | 262045 | IC 4086D | - |
| CO01-CB | Conduction | Hsin Chu | 262045 | IC 4086D | - |
| TH01-CB | OVEN Room | Hsin Chu | - | - | - |

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

## 3.7. Table for the EUT consisted of the following component

| Manufacturer | Model Name | Description | MAC address | FCC ID / IC UPN |
|---|---|---|---|---|
| Intel Corporation | 62205ANSFF | PCIe Half Mini Card 802.11a/b/g/n wireless network | 00:15:00:85:80:1C | PD962205ANSU 1000M-62205ANSU |

## 3.8. Table for Supporting Units

| Support Unit | Brand | Model | FCC ID |
|---|---|---|---|
| PC | DELL | T3400 | N/A |
| LCD Monitor | HP | FW660AA | DoC |
| Mouse | iCooky | AMS0706W | DoC |
| Keyboard | iCooky | SK068 | DoC |

## 3.9. EUT OPERATION

The EUT was installed into a test fixture that exposed all sides of the card. The test fixture interfaced to a laptop computer and dc power supply. The laptop computer was used to configure the EUT to continuously transmit at a specified output power or continuously receive on the channel specified in the test data. For transmit mode measurements the system was configured to operate in each of the available operating modes – 802.11b, 802.11g, 802.11a, 802.11n (20 MHz channel bandwidth) and 802.11n (40MHz channel bandwidth).

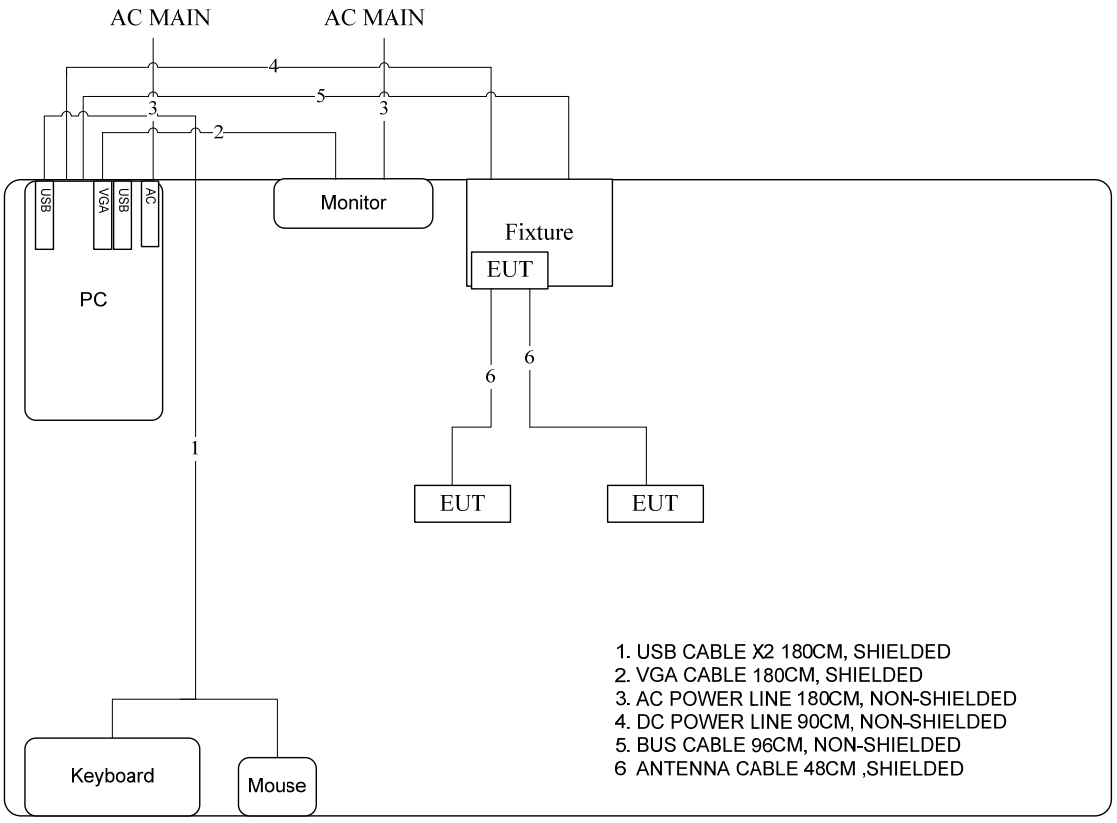
Legacy modes (SISO-only) were evaluated on each chain individually. The 802.11n modes were evaluated operating on each chain separately (SISO) and on both chains simultaneously (MIMO). Spurious measurements, other than band-edge measurements, were only performed on 802.11n modes with both chains transmitting simultaneously. For those tests the output power per chain was set to the higher single-chain power level to cover both SISO and MIMO operation.

The data rates used for all tests were the lowest data rates for each mode – 1Mb/s for 802.11b, 6Mb/s for 802.11a and 802.11g, 6.5MB/s for 802.11n (20MHz), and 13 Mb/s for 802.11n (40MHz). The device operates at its maximum output power at the lowest data rate (this was confirmed through separate measurements – refer to test data for actual measurements).

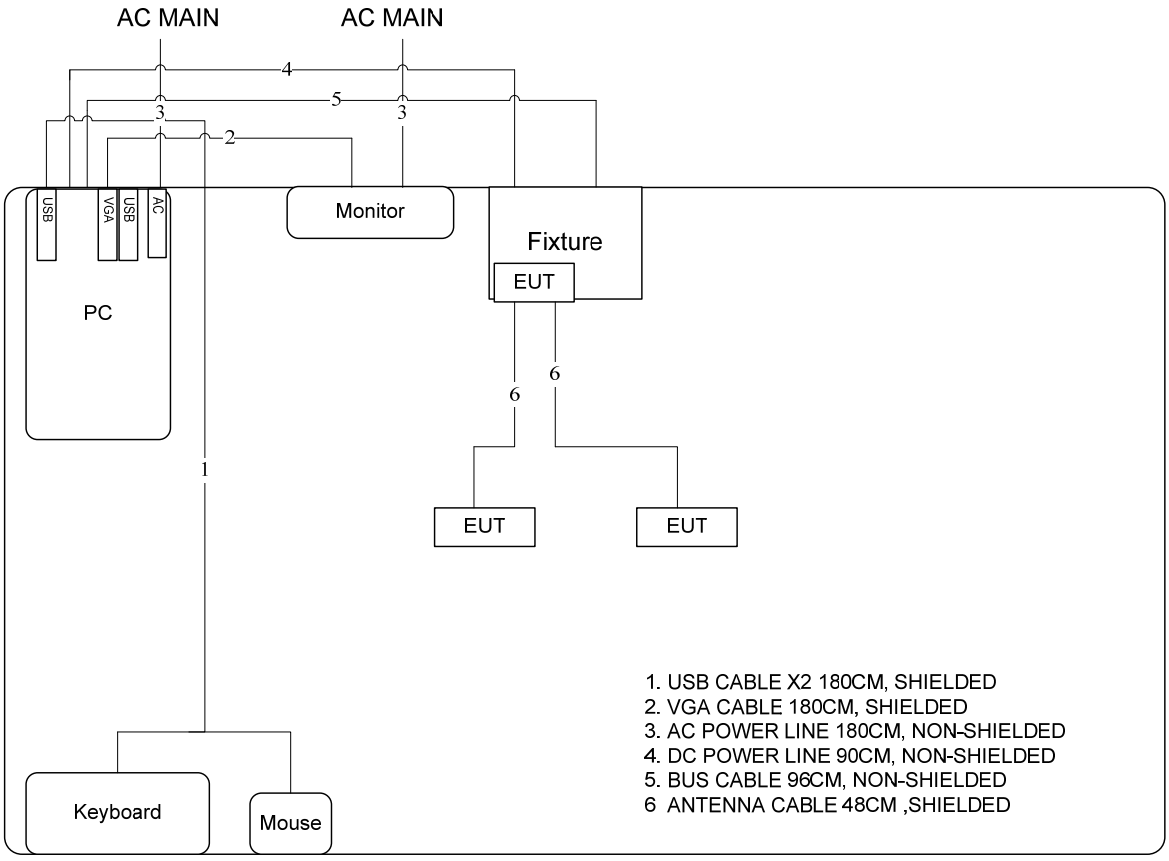
The PC was using the Intel test utility DRTU Version 1.5.2-0308 and the device driver was version 14.0.4.115.

## 3.10. Test Configurations

### 3.10.1. Radiation Emissions Test Configuration



## 3.10.2. AC Power Line Conduction Emissions Test Configuration



# 4. TEST RESULT

## 4.1. AC Power Line Conducted Emissions Measurement

### 4.1.1. Summary of Test Results

MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Test # | Test Performed | Limit | Result | Under Limit (dB) |
|---|---|---|---|---|
| 1 | CE, AC Power,120V/60Hz | FCC 15.207/RSS GEN | Pass | 3.92dB |

### 4.1.2. Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

| Frequency (MHz) | QP Limit (dBuV) | AV Limit (dBuV) |
|---|---|---|
| 0.15~0.5 | 66~56 | 56~46 |
| 0.5~5 | 56 | 46 |
| 5~30 | 60 | 50 |

### 4.1.3. Measuring Instruments and Setting

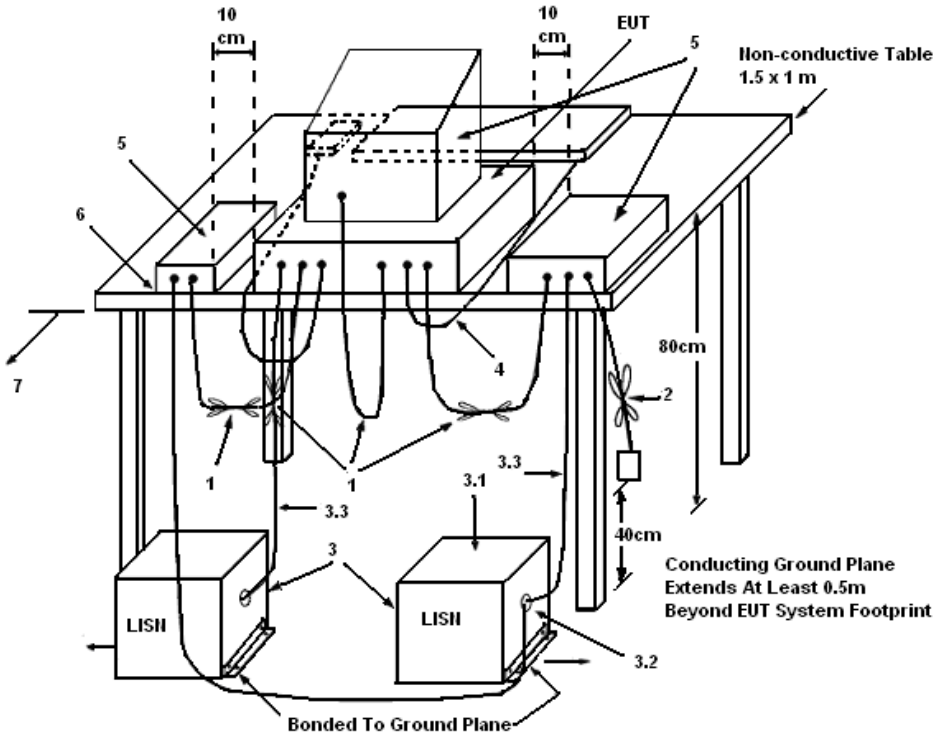
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

| Receiver Parameters | Setting |
|---|---|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 KHz |

### 4.1.4. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

### 4.1.5. Test Setup Layout




LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

### 4.1.6. Test Deviation

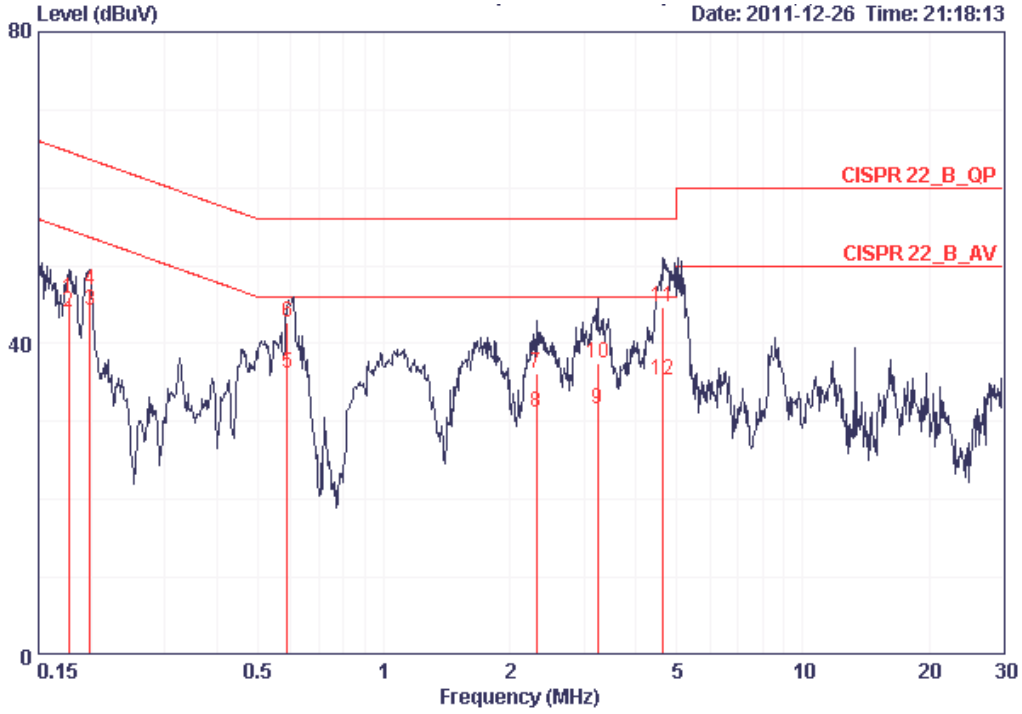
There is no deviation with the original standard.

### 4.1.7. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

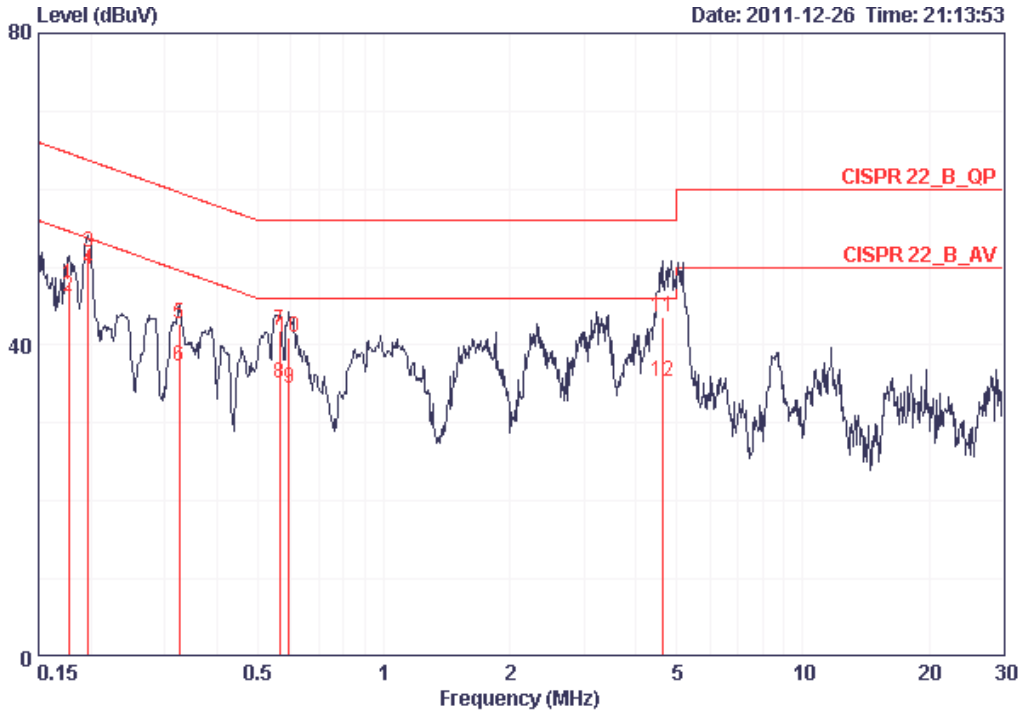
### 4.1.8. Test Results of AC Power Line Conducted Emissions Measurement

| Temperature | 22°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Simon Yang | Phase | Line |
| Configuration | CTX | | |




| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.17678 | 45.75 | -18.89 | 64.64 | 45.49 | 0.06 | 0.20 | QP |
| 2 | 0.17678 | 44.12 | -10.52 | 54.64 | 43.86 | 0.06 | 0.20 | AVERAGE |
| 3 | 0.19863 | 44.27 | -9.40 | 53.67 | 44.02 | 0.05 | 0.20 | AVERAGE |
| 4 | 0.19863 | 46.78 | -16.89 | 63.67 | 46.53 | 0.05 | 0.20 | QP |
| 5 | 0.58925 | 36.21 | -9.79 | 46.00 | 35.98 | 0.03 | 0.20 | AVERAGE |
| 6 | 0.58925 | 42.70 | -13.30 | 56.00 | 42.47 | 0.03 | 0.20 | QP |
| 7 | 2.309 | 36.20 | -19.80 | 56.00 | 35.94 | 0.06 | 0.20 | QP |
| 8 | 2.309 | 31.20 | -14.80 | 46.00 | 30.94 | 0.06 | 0.20 | AVERAGE |
| 9 | 3.241 | 31.59 | -14.41 | 46.00 | 31.25 | 0.08 | 0.25 | AVERAGE |
| 10 | 3.241 | 37.59 | -18.41 | 56.00 | 37.25 | 0.08 | 0.25 | QP |
| 11 | 4.622 | 44.75 | -11.25 | 56.00 | 44.31 | 0.14 | 0.30 | QP |
| 12 | 4.622 | 35.21 | -10.79 | 46.00 | 34.77 | 0.14 | 0.30 | AVERAGE |

| Temperature | 22°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Simon Yang | Phase | Neutral |
| Configuration | CTX | | |




| | Freq | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | dB | |
| 1 | 0.17678 | 47.80 | -16.84 | 64.64 | 47.51 | 0.09 | 0.20 | QP |
| 2 | 0.17678 | 46.32 | -8.32 | 54.64 | 46.03 | 0.09 | 0.20 | AVERAGE |
| 3 | 0.19758 | 51.78 | -11.93 | 63.71 | 51.50 | 0.08 | 0.20 | QP |
| 4 @ | 0.19758 | 49.79 | -3.92 | 53.71 | 49.51 | 0.08 | 0.20 | AVERAGE |
| 5 | 0.32512 | 42.68 | -16.89 | 59.57 | 42.41 | 0.07 | 0.20 | QP |
| 6 | 0.32512 | 37.23 | -12.34 | 49.57 | 36.96 | 0.07 | 0.20 | AVERAGE |
| 7 | 0.56409 | 41.82 | -14.18 | 56.00 | 41.55 | 0.07 | 0.20 | QP |
| 8 | 0.56409 | 35.18 | -10.82 | 46.00 | 34.91 | 0.07 | 0.20 | AVERAGE |
| 9 | 0.59478 | 34.38 | -11.62 | 46.00 | 34.11 | 0.07 | 0.20 | AVERAGE |
| 10 | 0.59478 | 41.00 | -15.00 | 56.00 | 40.73 | 0.07 | 0.20 | QP |
| 11 | 4.622 | 43.56 | -12.44 | 56.00 | 43.08 | 0.18 | 0.30 | QP |
| 12 | 4.622 | 35.42 | -10.58 | 46.00 | 34.94 | 0.18 | 0.30 | AVERAGE |

Note:

Level = Read Level + LISN Factor + Cable Loss

## 4.2. Band Edge Emissions Measurement

### 4.2.1. Summary of Test Results

MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Test # | Mode | Channel | Target Power (dBm) | Measured Power (dBm) | Test Performed | Limit | Result | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 802.11b Chain A | #1 2412 MHz | 15.5 | 15.68 | Restricted Band Edge at 2390 MHz | 15.209 | PASS | -9.00 |
| 10 | 802.11b Chain A | #11 2462 MHz | 15.5 | 15.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -8.54 |
| 1 | 802.11b Chain B | #1 2412 MHz | 15.5 | 15.39 | Restricted Band Edge at 2390 MHz | | PASS | -9.34 |
| 10 | 802.11b Chain B | #11 2462 MHz | 15.5 | 15.3 | Restricted Band Edge at 2483.5 MHz | | PASS | -9.35 |
| 1 | 802.11g Chain A | #1 2412 MHz | 14 | 14.2 | Restricted Band Edge at 2390 MHz | | PASS | -4.48 |
| 2 | 802.11g Chain A | #2 2417 MHz | 16 | 15.97 | Restricted Band Edge at 2390 MHz | | PASS | -6.93 |
| 9 | 802.11g Chain A | #10 2457 MHz | 16.5 | 16.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.52 |
| 10 | 802.11g Chain A | #11 2462 MHz | 14 | 14.14 | Restricted Band Edge at 2483.5 MHz | | PASS | -3.67 |
| 1 | 802.11g Chain B | #1 2412 MHz | 14 | 14.19 | Restricted Band Edge at 2390 MHz | | PASS | -4.68 |
| 2 | 802.11g Chain B | #2 2417 MHz | 16 | 16.1 | Restricted Band Edge at 2390 MHz | | PASS | -6.73 |
| 9 | 802.11g Chain B | #10 2457 MHz | 16.5 | 16.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.28 |
| 10 | 802.11g Chain B | #11 2462 MHz | 14 | 14.18 | Restricted Band Edge at 2483.5 MHz | | PASS | -3.99 |
| 1 | 802.11n 20MHz Chain A | #1 2412 MHz | 13 | 13.15 | Restricted Band Edge at 2390 MHz | 15.209 | PASS | -3.75 |
| 2 | 802.11n 20MHz Chain A | #2 2417 MHz | 16 | 16.11 | Restricted Band Edge at 2390 MHz | | PASS | -6.04 |
| 9 | 802.11n 20MHz Chain A | #10 2457 MHz | 16 | 15.8 | Restricted Band Edge at 2483.5 MHz | | PASS | -6.31 |
| 10 | 802.11n 20MHz Chain A | #11 2462 MHz | 12.5 | 12.62 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.79 |
| 1 | 802.11n 20MHz Chain B | #1 2412 MHz | 13 | 12.95 | Restricted Band Edge at 2390 MHz | | PASS | -4.96 |
| 2 | 802.11n 20MHz Chain B | #2 2417 MHz | 16 | 0 | Restricted Band Edge at 2390 MHz | | PASS | -6.55 |
| 9 | 802.11n 20MHz Chain B | #10 2457 MHz | 16 | 0 | Restricted Band Edge at 2483.5 MHz | | PASS | -6.99 |
| 10 | 802.11n 20MHz Chain B | #11 2462 MHz | 12.5 | 0 | Restricted Band Edge at 2483.5 MHz | | PASS | -5.65 |
| 1 | 802.11n 20MHz Chain A+B | #1 2412 MHz | A: 11<br>B: 11 | A: 11<br>B: 11.2 | Restricted Band Edge at 2390 MHz | | PASS | -8.97 |
| 2 | 802.11n 20MHz Chain A+B | #2 2417 MHz | A: 13<br>B: 13 | A: 13<br>B: 13.2 | Restricted Band Edge at 2390 MHz | | PASS | -8.38 |
| 9 | 802.11n 20MHz Chain A+B | #10 2457 MHz | A: 13<br>B: 13 | A: 13<br>B: 13.2 | Restricted Band Edge at 2483.5 MHz | | PASS | -15.03 |
| 10 | 802.11n 20MHz Chain A+B | #11 2462 MHz | A: 11<br>B: 11 | A: 11.2<br>B: 11.1 | Restricted Band Edge at 2483.5 MHz | | PASS | -8.02 |

| Test # | Mode | Channel | Target Power (dBm) | Measured Power (dBm) | Test Performed | Limit | Result | Margin (dB) |
|---|---|---|---|---|---|---|---|---|
| 1 | 802.11n 40MHz Chain A | #3 2422 MHz | 9 | 9.12 | Restricted Band Edge at 2390 MHz | 15.209 | PASS | -5.35 |
| 2 | 802.11n 40MHz Chain A | #4 2427 MHz | 10.5 | 10.46 | Restricted Band Edge at 2390 MHz | | PASS | -4.52 |
| 3 | 802.11n 40MHz Chain A | #5 2432 MHz | 12.5 | 12.7 | Restricted Band Edge at 2390 MHz | | PASS | -5.05 |
| 4 | 802.11n 40MHz Chain A | #7 2442 MHz | 12.5 | 12.61 | Restricted Band Edge at 2390 MHz | | PASS | -4.62 |
| 5 | 802.11n 40MHz Chain A | #8 2447 MHz | 10.5 | 10.64 | Restricted Band Edge at 2390 MHz | | PASS | -4.73 |
| 6 | 802.11n 40MHz Chain A | #9 2452 MHz | 9.5 | 9.66 | Restricted Band Edge at 2390 MHz | | PASS | -3.70 |
| 1 | 802.11n 40MHz Chain B | #3 2422 MHz | 9 | 9.2 | Restricted Band Edge at 2390 MHz | | PASS | -4.60 |
| 2 | 802.11n 40MHz Chain B | #4 2427 MHz | 10.5 | 10.61 | Restricted Band Edge at 2390 MHz | | PASS | -3.66 |
| 3 | 802.11n 40MHz Chain B | #5 2432 MHz | 12.5 | 12.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.55 |
| 4 | 802.11n 40MHz Chain B | #7 2442 MHz | 12.5 | 12.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.22 |
| 5 | 802.11n 40MHz Chain B | #8 2447 MHz | 11 | 11.02 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.65 |
| 6 | 802.11n 40MHz Chain B | #9 2452 MHz | 9.5 | 9.61 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.73 |
| 1 | 802.11n 40MHz Chain A+B | #3 2422 MHz | A: 8<br>B: 8 | A: 8.2<br>B: 8.18 | Restricted Band Edge at 2390 MHz | | PASS | -3.72 |
| 2 | 802.11n 40MHz Chain A+B | #4 2427 MHz | A: 9.5<br>B: 9.5 | A: 9.54<br>B: 9.51 | Restricted Band Edge at 2390 MHz | | PASS | -12.79 |
| 3 | 802.11n 40MHz Chain A+B | #5 2432 MHz | A: 11.5<br>B: 11.5 | A: 11.7<br>B: 11.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -6.61 |
| 4 | 802.11n 40MHz Chain A+B | #7 2442 MHz | A: 11.5<br>B: 11.5 | A: 12.5<br>B: 11.7 | Restricted Band Edge at 2483.5 MHz | | PASS | -6.23 |
| 5 | 802.11n 40MHz Chain A+B | #8 2447 MHz | A: 9.5<br>B: 9.5 | A: 9.7<br>B: 9.51 | Restricted Band Edge at 2483.5 MHz | | PASS | -6.73 |
| 6 | 802.11n 40MHz Chain A+B | #9 2452 MHz | A: 8.5<br>B: 8.5 | A: 9.7<br>B: 8.67 | Restricted Band Edge at 2483.5 MHz | | PASS | -4.40 |

### 4.2.2. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

### 4.2.3. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

### 4.2.4. Test Deviation

There is no deviation with the original standard.

### 4.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 4.2.6. Marker Delta Measurements

Three sets of marker deltas are measured using the following settings: RB=VB=100kHz;
RB=1MHz,VB=1MHz; RB=1MHz, VB=10Hz.
Marker deltas are made conducted (analyzer connected to EUT rf port via 10dB pad) for single chain operation and radiated (at a
distance of ~ 50cm) for MIMO modes.
The fundamental field strength is always measured at a 3m test distance.

## 4.2.7. Test Result of Band Edge and Fundamental Emissions

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11b, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 15.5 | 15.68 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2411.199 | 102.09 | V | - | - | Peak | 323 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2410.237 | 98.31 | V | - | - | Avg | 323 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2412.961 | 105.73 | H | - | - | Peak | 37 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2411.199 | 101.63 | H | - | - | Avg | 37 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.09 | 105.73 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 98.31 | 101.63 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 51.28 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 54.45 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.35 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 50.24 | dB | |
| Delta Marker - 1MHz/10Hz | 56.63 | dB | |
| Calculated Band-Edge Measurement(Peak) | 55.49 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.67 | 54.45 | - | 74 | -19.55 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2389.35 | 45.00 | - | 54 | -9.00 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11b, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 15.5 | 15.7 | 23.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2461.039 | 102.96 | V | - | - | Peak | 197 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2461.199 | 98.73 | V | - | - | Avg | 197 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2462.961 | 106.49 | H | - | - | Peak | 6 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2461.199 | 102.47 | H | - | - | Avg | 6 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.96 | 106.49 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 98.73 | 102.47 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 51.42 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 55.07 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.05 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 47.77 | dB | |
| Delta Marker - 1MHz/10Hz | 57.01 | dB | |
| Calculated Band-Edge Measurement(Peak) | 58.72 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.46 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.14 | 55.07 | - | 74 | -18.93 | 2484.14 | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 45.46 | - | 54 | -8.54 | 2483.5 | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11b, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 15.5 | 15.39 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2411.039 | 99.86 | V | - | - | Peak | 140 | 137 | RB:1MHz;VB:3MHz;Detector:PK |
| 2410.237 | 95.60 | V | - | - | Avg | 140 | 137 | RB:1MHz;VB:10Hz;Detector:PK |
| 2411.039 | 105.63 | H | - | - | Peak | 327 | 101 | RB:1MHz;VB:3MHz;Detector:PK |
| 2411.199 | 101.34 | H | - | - | Avg | 327 | 101 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 99.86 | 105.60 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 95.60 | 101.34 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 49.35 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 56.253 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.9921 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 51.42 | dB | |
| Delta Marker - 1MHz/10Hz | 56.68 | dB | |
| Calculated Band-Edge Measurement(Peak) | 54.183 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 44.6621 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.84 | 54.18 | - | 74 | -19.82 | 2389.84 | - | - | Delta Marker - 100kHz/100KHz |
| 2389.36 | 44.66 | - | 54 | -9.34 | 2389.36 | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11b, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 15.5 | 15.3 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2462.96 | 98.36 | V | - | - | Peak | 138 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2463.76 | 94.02 | V | - | - | Avg | 138 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2462.96 | 105.52 | H | - | - | Peak | 322 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2461.19 | 101.14 | H | - | - | Avg | 322 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 98.36 | 105.52 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 94.02 | 101.14 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 50.02 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 55.5084 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.1201 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 51.19 | dB | |
| Delta Marker - 1MHz/10Hz | 56.49 | dB | |
| Calculated Band-Edge Measurement(Peak) | 54.3384 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 44.6501 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.82 | 54.34 | - | 74 | -19.66 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 44.65 | - | 54 | -9.35 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11g, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 14 | 14.2 | 26 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2407.99 | 104.07 | V | - | - | Peak | 324 | 101 | RB:1MHz;VB:3MHz;Detector:PK |
| 2408.79 | 94.14 | V | - | - | Avg | 324 | 101 | RB:1MHz;VB:10Hz;Detector:PK |
| 2408.15 | 107.01 | H | - | - | Peak | 39 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2410.71 | 97.04 | H | - | - | Avg | 39 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 104.07 | 107.01 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 94.14 | 97.04 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 46.66 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.35 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.38 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 40.72 | dB | |
| Delta Marker - 1MHz/10Hz | 47.52 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.29 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.52 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.83 | 60.35 | - | 74 | -13.65 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.52 | - | 54 | -4.48 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-2 2417MHz - 802.11g, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16 | 15.97 | 28.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2412.51 | 104.01 | V | - | - | Peak | 323 | 101 | RB:1MHz;VB:3MHz;Detector:PK |
| 2412.35 | 94.57 | V | - | - | Avg | 323 | 101 | RB:1MHz;VB:10Hz;Detector:PK |
| 2414.91 | 108.76 | H | - | - | Peak | 37 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2413.63 | 98.68 | H | - | - | Avg | 37 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 104.01 | 108.76 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 94.57 | 98.68 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 47.88 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.88 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.8 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 46.4 | dB | |
| Delta Marker - 1MHz/10Hz | 51.61 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.36 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.07 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.51 | 60.88 | - | 74 | -13.12 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 47.07 | - | 54 | -6.93 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #9 EUT on Channel-10 2457MHz - 802.11g, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16.5 | 16.7 | 29.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2460.04 | 105.56 | V | - | - | Peak | 197 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.84 | 96.2 | V | - | - | Avg | 197 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2460.20 | 110.15 | H | - | - | Peak | 5 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.52 | 99.78 | H | - | - | Avg | 5 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 105.56 | 110.15 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 96.2 | 99.78 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 48.42 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.73 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.36 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 43.44 | dB | |
| Delta Marker - 1MHz/10Hz | 50.3 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.71 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.48 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.3 | 61.73 | - | 74 | -12.27 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.48 | - | 54 | -4.52 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11g, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 14 | 14.14 | 26.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2461.19 | 103.42 | V | - | - | Peak | 197 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.71 | 93.51 | V | - | - | Avg | 197 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2464.72 | 107.31 | H | - | - | Peak | 5 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.71 | 97.31 | H | - | - | Avg | 5 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 103.42 | 107.31 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 93.51 | 97.31 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 45.61 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.7 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.7 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 40.53 | dB | |
| Delta Marker - 1MHz/10Hz | 46.98 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.78 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.33 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.83 | 61.70 | - | 74 | -12.30 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 50.33 | - | 54 | -3.67 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11g, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 14 | 14.19 | 26.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2408.15 | 101.83 | V | - | - | Peak | 8 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2407.83 | 91.92 | V | - | - | Avg | 8 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2408.31 | 106.33 | H | - | - | Peak | 327 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2410.71 | 96.56 | H | - | - | Avg | 327 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 101.83 | 106.33 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 91.92 | 96.56 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 45.32 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.0186 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.24111 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 40 | dB | |
| Delta Marker - 1MHz/10Hz | 47.24 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.33 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.32 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2390 | 61.02 | - | 74 | -12.98 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.32 | - | 54 | -4.68 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-2 2417MHz - 802.11g, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16 | 16.1 | 29 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2413.95 | 102.43 | V | - | - | Peak | 139 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2412.35 | 92.52 | V | - | - | Avg | 139 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2421.16 | 108.44 | H | - | - | Peak | 326 | 103 | RB:1MHz;VB:3MHz;Detector:PK |
| 2421.00 | 98.64 | H | - | - | Avg | 326 | 103 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.43 | 108.44 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 92.52 | 98.64 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 48.64 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.8079 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.00 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 45.82 | dB | |
| Delta Marker - 1MHz/10Hz | 51.37 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.62 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.27 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.68 | 59.81 | - | 74 | -14.19 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 47.27 | - | 54 | -6.73 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #9 EUT on Channel-10 2457MHz - 802.11g, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16.5 | 16.7 | 29.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2452.83 | 103.68 | V | - | - | Peak | 96 | 107 | RB:1MHz;VB:3MHz;Detector:PK |
| 2452.35 | 94.19 | V | - | - | Avg | 96 | 107 | RB:1MHz;VB:10Hz;Detector:PK |
| 2460.84 | 109.05 | H | - | - | Peak | 323 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.36 | 99.00 | H | - | - | Avg | 323 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 103.68 | 109.05 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 94.19 | 99.00 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 47.46 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.59 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.54 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 41.91 | dB | |
| Delta Marker - 1MHz/10Hz | 49.28 | dB | |
| Calculated Band-Edge Measurement(Peak) | 67.14 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.72 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.94 | 61.60 | - | 74 | -12.40 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.72 | - | 54 | -4.28 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11g, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 14 | 14.18 | 26.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2465.04 | 99.79 | V | - | - | Peak | 139 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2465.68 | 89.81 | V | - | - | Avg | 139 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2465.04 | 106.75 | H | - | - | Peak | 322 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2463.28 | 96.79 | H | - | - | Avg | 322 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 99.79 | 106.75 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 89.81 | 96.79 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 45.93 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.82 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.86 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 39.61 | dB | |
| Delta Marker - 1MHz/10Hz | 46.79 | dB | |
| Calculated Band-Edge Measurement(Peak) | 67.14 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.00 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.66 | 60.82 | - | 74 | -13.18 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 50.01 | - | 54 | -3.99 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11n 20MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 13 | 13.15 | 25 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2408.31 | 102.84 | V | - | - | Peak | 325 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2408.95 | 92.80 | V | - | - | Avg | 325 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2408.31 | 105.92 | H | - | - | Peak | 38 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2409.11 | 95.70 | H | - | - | Avg | 38 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.84 | 105.92 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 92.80 | 95.70 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 44.9 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.02 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.8 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.93 | dB | |
| Delta Marker - 1MHz/10Hz | 45.45 | dB | |
| Calculated Band-Edge Measurement(Peak) | 68.99 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.25 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2390 | 61.02 | - | 74 | -12.98 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 50.25 | - | 54 | -3.75 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-2 2417MHz - 802.11n 20MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16 | 16.11 | 29 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2413.31 | 108.59 | V | - | - | Peak | 37 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2413.79 | 98.44 | V | - | - | Avg | 37 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2421.16 | 104.91 | H | - | - | Peak | 209 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2420.04 | 94.58 | H | - | - | Avg | 209 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 108.59 | 104.91 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 98.44 | 94.58 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 49.6 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 58.99 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.84 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 47.86 | dB | |
| Delta Marker - 1MHz/10Hz | 50.48 | dB | |
| Calculated Band-Edge Measurement(Peak) | 60.73 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.96 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.19 | 58.99 | - | 74 | -15.01 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 47.96 | - | 54 | -6.04 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #9 EUT on Channel-10 2457MHz - 802.11n 20MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16 | 15.8 | 29 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2461.00 | 104.91 | V | - | - | Peak | 197 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.04 | 94.97 | V | - | - | Avg | 197 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2460.36 | 108.78 | H | - | - | Peak | 7 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.04 | 98.53 | H | - | - | Avg | 7 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 104.91 | 108.78 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 94.97 | 98.53 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 50 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 58.78 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.53 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 42.19 | dB | |
| Delta Marker - 1MHz/10Hz | 50.84 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.59 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.69 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.82 | 58.78 | - | 74 | -15.22 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 47.70 | - | 54 | -6.31 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11n 20MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 12.5 | 12.62 | 25 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2463.76 | 101.51 | V | - | - | Peak | 200 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2465.20 | 91.09 | V | - | - | Avg | 200 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2463.76 | 105.14 | H | - | - | Peak | 8 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.55 | 95.06 | H | - | - | Avg | 8 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 101.51 | 105.14 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 91.09 | 95.06 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 44.2 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.94 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.86 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 39.77 | dB | |
| Delta Marker - 1MHz/10Hz | 45.86 | dB | |
| Calculated Band-Edge Measurement(Peak) | 65.37 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.20 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.98 | 60.94 | - | 74 | -13.06 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.20 | - | 54 | -4.80 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11n 20MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 13 | 12.95 | 25 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2407.19 | 100.68 | V | - | - | Peak | 9 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2408.79 | 90.36 | V | - | - | Avg | 9 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2409.11 | 105.19 | H | - | - | Peak | 327 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2409.27 | 94.82 | H | - | - | Avg | 327 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 100.68 | 105.19 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 90.36 | 94.82 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 45.45 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.74 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.37 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.34 | dB | |
| Delta Marker - 1MHz/10Hz | 45.79 | dB | |
| Calculated Band-Edge Measurement(Peak) | 68.85 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.03 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2390 | 59.75 | - | 74 | -14.25 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.03 | - | 54 | -4.97 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-2 2417MHz - 802.11n 20MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16 | 16.06 | 29 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2413.15 | 101.48 | V | - | - | Peak | 7 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2412.83 | 91.40 | V | - | - | Avg | 7 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2420.20 | 108.01 | H | - | - | Peak | 324 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2420.04 | 98.23 | H | - | - | Avg | 324 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 101.48 | 108.01 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 91.40 | 98.23 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 48.86 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.15 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.37 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 42.05 | dB | |
| Delta Marker - 1MHz/10Hz | 50.79 | dB | |
| Calculated Band-Edge Measurement(Peak) | 65.96 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.44 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.68 | 59.16 | - | 74 | -14.84 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 47.44 | - | 54 | -6.56 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #9 EUT on Channel-10 2457MHz - 802.11n 20MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16 | 15.99 | 29 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2453.95 | 103.38 | V | - | - | Peak | 95 | 112 | RB:1MHz;VB:3MHz;Detector:PK |
| 2453.79 | 93.23 | V | - | - | Avg | 95 | 112 | RB:1MHz;VB:10Hz;Detector:PK |
| 2461.48 | 107.58 | H | - | - | Peak | 324 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2460.04 | 97.58 | H | - | - | Avg | 324 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 103.38 | 107.58 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 93.23 | 97.58 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 47.53 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.05 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.05 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 41.24 | dB | |
| Delta Marker - 1MHz/10Hz | 50.58 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.34 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.00 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.98 | 60.05 | - | 74 | -13.95 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 47.01 | - | 54 | -6.99 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz- 802.11n 20MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 12.5 | 12.42 | 24.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2465.36 | 98.10 | V | - | - | Peak | 138 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2465.04 | 88.00 | V | - | - | Avg | 138 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2465.20 | 104.83 | H | - | - | Peak | 324 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2465.04 | 94.45 | H | - | - | Avg | 324 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 98.10 | 104.83 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 88.00 | 94.45 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 45.06 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.77 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.39 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 39.45 | dB | |
| Delta Marker - 1MHz/10Hz | 46.1 | dB | |
| Calculated Band-Edge Measurement(Peak) | 65.38 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.35 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.98 | 59.77 | - | 74 | -14.23 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 48.35 | - | 54 | -5.65 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-3 2422MHz - 802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 9 | 9.12 | 21 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2409.82 | 93.30 | V | - | - | Peak | 209 | 141 | RB:1MHz;VB:3MHz;Detector:PK |
| 2409.82 | 83.64 | V | - | - | Avg | 209 | 141 | RB:1MHz;VB:10Hz;Detector:PK |
| 2418.15 | 97.80 | H | - | - | Peak | 32 | 102 | RB:1MHz;VB:3MHz;Detector:PK |
| 2410.14 | 87.15 | H | - | - | Avg | 32 | 102 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 93.30 | 97.80 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.64 | 87.15 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 37.53 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.27 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.62 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 34.98 | dB | |
| Delta Marker - 1MHz/10Hz | 38.5 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.82 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.65 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2388.71 | 60.27 | - | 74 | -13.73 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 48.65 | - | 54 | -5.35 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-4 2427MHz - 802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 10.5 | 10.46 | 22.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2419.30 | 94.61 | V | - | - | Peak | 207 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2414.50 | 83.93 | V | - | - | Avg | 207 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2423.15 | 99.47 | H | - | - | Peak | 31 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2422.51 | 88.61 | H | - | - | Avg | 31 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 94.61 | 99.47 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.93 | 88.61 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 37.61 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.86 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.00 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.38 | dB | |
| Delta Marker - 1MHz/10Hz | 39.14 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.09 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.47 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.35 | 61.86 | - | 74 | -12.14 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.48 | - | 54 | -4.52 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #3 EUT on Channel-5 2432MHz -802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 12.5 | 12.7 | 24.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2419.82 | 95.60 | V | - | - | Peak | 209 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2419.82 | 85.75 | V | - | - | Avg | 209 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2424.30 | 101.79 | H | - | - | Peak | 33 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2419.50 | 90.99 | H | - | - | Avg | 33 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 95.60 | 101.79 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.75 | 90.99 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 40.41 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.38 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.58 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 40.19 | dB | |
| Delta Marker - 1MHz/10Hz | 42.05 | dB | |
| Calculated Band-Edge Measurement(Peak) | 61.60 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.94 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2390 | 61.39 | - | 74 | -12.61 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 48.95 | - | 54 | -5.05 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #4 EUT on Channel-7 2442MHz -802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 12.5 | 12.61 | 24.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2445.52 | 95.65 | V | - | - | Peak | 144 | 102 | RB:1MHz;VB:3MHz;Detector:PK |
| 2444.88 | 85.83 | V | - | - | Avg | 144 | 102 | RB:1MHz;VB:10Hz;Detector:PK |
| 2449.37 | 100.52 | H | - | - | Peak | 37 | 104 | RB:1MHz;VB:3MHz;Detector:PK |
| 2450.97 | 90.31 | H | - | - | Avg | 37 | 104 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 95.65 | 100.52 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.83 | 90.31 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 39.36 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.16 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.95 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 38.37 | dB | |
| Delta Marker - 1MHz/10Hz | 40.94 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.15 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.37 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.5 | 61.17 | - | 74 | -12.83 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.38 | - | 54 | -4.62 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #5 EUT on Channel-8 2447MHz - 802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 10.5 | 10.64 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2444.75 | 92.77 | V | - | - | Peak | 211 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2445.07 | 82.74 | V | - | - | Avg | 211 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2459.50 | 98.94 | H | - | - | Peak | 36 | 102 | RB:1MHz;VB:3MHz;Detector:PK |
| 2459.50 | 88.94 | H | - | - | Avg | 36 | 102 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 92.77 | 98.94 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 82.74 | 88.94 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 39.28 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.66 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.66 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 37.45 | dB | |
| Delta Marker - 1MHz/10Hz | 39.67 | dB | |
| Calculated Band-Edge Measurement(Peak) | 61.49 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.27 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.78 | 59.67 | - | 74 | -14.33 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.27 | - | 54 | -4.73 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #6 EUT on Channel-9 2452MHz - 802.11n 40MHz, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 9.5 | 9.66 | 22 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2444.94 | 92.50 | V | - | - | Peak | 210 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2444.94 | 81.69 | V | - | - | Avg | 210 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2463.53 | 98.72 | H | - | - | Peak | 38 | 103 | RB:1MHz;VB:3MHz;Detector:PK |
| 2463.85 | 88.44 | H | - | - | Avg | 38 | 103 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 92.50 | 98.72 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 81.69 | 88.44 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 35.85 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 62.87 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 52.59 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 34.87 | dB | |
| Delta Marker - 1MHz/10Hz | 38.15 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.85 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.29 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.5 | 62.87 | - | 74 | -11.13 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 50.30 | - | 54 | -3.70 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-3 2422MHz - 802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 9 | 9.2 | 21 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2409.17 | 93.18 | V | - | - | Peak | 8 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2409.50 | 82.98 | V | - | - | Avg | 8 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2424.56 | 98.37 | H | - | - | Peak | 325 | 103 | RB:1MHz;VB:3MHz;Detector:PK |
| 2420.07 | 87.94 | H | - | - | Avg | 325 | 103 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 93.18 | 98.37 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 82.98 | 87.94 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 36.97 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.40 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.97 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 35.27 | dB | |
| Delta Marker - 1MHz/10Hz | 38.55 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.10 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.39 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.67 | 61.40 | - | 74 | -12.60 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.40 | - | 54 | -4.60 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #2 EUT on Channel-4 2427MHz - 802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 10.5 | 10.61 | 22.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2425.71 | 93.52 | V | - | - | Peak | 31 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2425.07 | 83.33 | V | - | - | Avg | 31 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2423.15 | 99.78 | H | - | - | Peak | 326 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2424.43 | 89.55 | H | - | - | Avg | 326 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 93.52 | 99.78 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.33 | 89.55 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 37.96 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.82 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.59 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.52 | dB | |
| Delta Marker - 1MHz/10Hz | 39.22 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.26 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.33 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.67 | 61.83 | - | 74 | -12.17 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 50.34 | - | 54 | -3.66 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #3 EUT on Channel-5 2432MHz -802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 12.5 | 12.7 | 24.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2424.62 | 95.58 | V | - | - | Peak | 8 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2423.66 | 85.21 | V | - | - | Avg | 8 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2424.62 | 102.46 | H | - | - | Peak | 324 | 104 | RB:1MHz;VB:3MHz;Detector:PK |
| 2420.14 | 91.32 | H | - | - | Avg | 324 | 104 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 95.58 | 102.46 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.21 | 91.32 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 41.68 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.78 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.64 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 39.46 | dB | |
| Delta Marker - 1MHz/10Hz | 41.88 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.00 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.44 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.04 | 60.78 | - | 74 | -13.22 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 49.45 | - | 54 | -4.55 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #4 EUT on Channel-7 2442MHz -802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 12.5 | 12.7 | 24.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2435.91 | 98.13 | V | - | - | Peak | 72 | 115 | RB:1MHz;VB:3MHz;Detector:PK |
| 2433.34 | 87.43 | V | - | - | Avg | 72 | 115 | RB:1MHz;VB:10Hz;Detector:PK |
| 2429.82 | 100.85 | H | - | - | Peak | 323 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2429.82 | 90.59 | H | - | - | Avg | 323 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 98.13 | 100.85 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 87.43 | 90.59 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 40.21 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.64 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.38 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 38.81 | dB | |
| Delta Marker - 1MHz/10Hz | 40.81 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.04 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.78 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.14 | 60.65 | - | 74 | -13.35 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.78 | - | 54 | -4.22 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #5 EUT on Channel-8 2447MHz - 802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 11 | 11.02 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2450.20 | 95.37 | V | - | - | Peak | 94 | 111 | RB:1MHz;VB:3MHz;Detector:PK |
| 2449.24 | 85.44 | V | - | - | Avg | 94 | 111 | RB:1MHz;VB:10Hz;Detector:PK |
| 2459.17 | 98.82 | H | - | - | Peak | 321 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2459.82 | 88.80 | H | - | - | Avg | 321 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 95.37 | 98.82 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.44 | 88.80 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 36.77 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 62.05 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 52.03 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.82 | dB | |
| Delta Marker - 1MHz/10Hz | 39.45 | dB | |
| Calculated Band-Edge Measurement(Peak) | 62.00 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.35 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2485.42 | 62.00 | - | 74 | -12.00 | Peak | - | - | Delta Marker - 1MHz/3MHz |
| 2483.5 | 49.35 | - | 54 | -4.65 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #6 EUT on Channel-9 2452MHz - 802.11n 40MHz, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 9.5 | 9.61 | 21.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2444.62 | 94.56 | V | - | - | Peak | 97 | 110 | RB:1MHz;VB:3MHz;Detector:PK |
| 2449.43 | 83.90 | V | - | - | Avg | 97 | 110 | RB:1MHz;VB:10Hz;Detector:PK |
| 2463.53 | 97.96 | H | - | - | Peak | 323 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2464.50 | 87.88 | H | - | - | Avg | 323 | 100 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 94.56 | 97.96 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.90 | 87.88 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 36.56 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.40 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.32 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 36.62 | dB | |
| Delta Marker - 1MHz/10Hz | 38.62 | dB | |
| Calculated Band-Edge Measurement(Peak) | 61.34 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.26 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2485.1 | 61.34 | - | 74 | -12.66 | Peak | - | - | Delta Marker - 1MHz/3MHz |
| 2483.5 | 49.27 | - | 54 | -4.73 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| Date of Test: | Dec. 14, 2011 |
|---|---|
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11n 20MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 11 | 11 | 14.01 | 10.98 | 11.2 | 14.10 | 25 | 25.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2408.79 | 100.41 | V | - | - | Peak | 7 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2408.47 | 89.133 | V | - | - | Avg | 7 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2409.11 | 106.18 | H | - | - | Peak | 325 | 111 | RB:1MHz;VB:3MHz;Detector:PK |
| 2408.31 | 93.69 | H | - | - | Avg | 325 | 111 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 100.41 | 106.18 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 89.13 | 93.69 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 48.66 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 57.52 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.03 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 45.42 | dB | |
| Delta Marker - 1MHz/10Hz | 45.98 | dB | |
| Calculated Band-Edge Measurement(Peak) | 60.76 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.71 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.2 | 57.53 | - | 74 | -16.47 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2389.2 | 45.03 | - | 54 | -8.97 | Avg | - | - | Delta Marker - 100kHz/100KHz |

Test #2 EUT on Channel-2 2417MHz - 802.11n 20MHz, ChainA+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 13 | 13 | 16.01 | 12.95 | 13.2 | 16.09 | 27.5 | 28 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2412.51 | 102.29 | V | - | - | Peak | 6 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2412.35 | 90.25 | V | - | - | Avg | 6 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2420.20 | 107.70 | H | - | - | Peak | 326 | 106 | RB:1MHz;VB:3MHz;Detector:PK |
| 2421.16 | 96.13 | H | - | - | Avg | 326 | 106 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.29 | 107.70 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 90.25 | 96.13 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 50.47 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 57.23 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.66 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 53.07 | dB | |
| Delta Marker - 1MHz/10Hz | 50.52 | dB | |
| Calculated Band-Edge Measurement(Peak) | 54.63 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.61 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.84 | 54.64 | - | 74 | -19.36 | Peak | - | - | Delta Marker - 1MHz/3MHz |
| 2390 | 45.62 | - | 54 | -8.38 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #9 EUT on Channel-10 2457MHz - 802.11n 20MHz, ChainA+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 13 | 13 | 16.01 | 12.99 | 13.2 | 16.11 | 28 | 28 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2455.71 | 102.53 | V | - | - | Peak | 144 | 101 | RB:1MHz;VB:3MHz;Detector:PK |
| 2453.31 | 89.87 | V | - | - | Avg | 144 | 101 | RB:1MHz;VB:10Hz;Detector:PK |
| 2461.64 | 108.07 | H | - | - | Peak | 322 | 103 | RB:1MHz;VB:3MHz;Detector:PK |
| 2461.16 | 95.46 | H | - | - | Avg | 322 | 103 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 102.53 | 108.07 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 89.87 | 95.46 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 50.2 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 57.87 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.26 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 52.24 | dB | |
| Delta Marker - 1MHz/10Hz | 56.5 | dB | |
| Calculated Band-Edge Measurement(Peak) | 55.83 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 38.96 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.82 | 55.83 | - | 74 | -18.17 | Peak | - | - | Delta Marker - 1MHz/3MHz |
| 2483.5 | 38.97 | - | 54 | -15.03 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #10 EUT on Channel-11 2462MHz - 802.11n 20MHz, ChainA+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 11 | 11 | 14.01 | 11.17 | 11.08 | 14.14 | 26 | 25.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2459.11 | 101.33 | V | - | - | Peak | 120 | 108 | RB:1MHz;VB:3MHz;Detector:PK |
| 2463.44 | 89.07 | V | - | - | Avg | 120 | 108 | RB:1MHz;VB:10Hz;Detector:PK |
| 2460.87 | 105.89 | H | - | - | Peak | 322 | 102 | RB:1MHz;VB:3MHz;Detector:PK |
| 2466.00 | 93.50 | H | - | - | Avg | 322 | 102 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 101.33 | 105.89 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 89.07 | 93.50 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 47.53 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 58.36 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 45.97 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 45.78 | dB | |
| Delta Marker - 1MHz/10Hz | 45.55 | dB | |
| Calculated Band-Edge Measurement(Peak) | 60.11 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.95 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.3 | 58.37 | - | 74 | -15.63 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2484.3 | 45.98 | - | 54 | -8.02 | Avg | - | - | Delta Marker - 1MHz/10Hz |

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-3 2422MHz - 802.11n 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 8 | 8 | 11.01 | 8.2 | 8.18 | 11.20 | 22.5 | 22.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2409.17 | 94.00 | V | - | - | Peak | 6 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2409.50 | 82.42 | V | - | - | Avg | 6 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2427.44 | 99.76 | H | - | - | Peak | 326 | 107 | RB:1MHz;VB:3MHz;Detector:PK |
| 2424.24 | 87.38 | H | - | - | Avg | 326 | 107 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 94.00 | 99.76 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 82.42 | 87.38 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 37.11 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 62.65 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.27 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 34.78 | dB | |
| Delta Marker - 1MHz/10Hz | 37.10 | dB | |
| Calculated Band-Edge Measurement(Peak) | 64.98 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.28 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2389.36 | 62.65 | - | 74 | -11.35 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2389.36 | 50.28 | - | 54 | -3.72 | Avg | - | - | Delta Marker - 100kHz/100KHz |

Test #2 EUT on Channel-4 2427MHz - 802.11n 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 9.5 | 9.5 | 12.51 | 9.54 | 9.51 | 12.54 | 23.5 | 23.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2423.47 | 96.27 | V | - | - | Peak | 348 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2424.11 | 83.26 | V | - | - | Avg | 348 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2423.79 | 101.9 | H | - | - | Peak | 326 | 108 | RB:1MHz;VB:3MHz;Detector:PK |
| 2424.11 | 88.24 | H | - | - | Avg | 326 | 108 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 96.27 | 101.90 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.26 | 88.24 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 40.69 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.21 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.55 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 35.36 | dB | |
| Delta Marker - 1MHz/10Hz | 59.56 | dB | |
| Calculated Band-Edge Measurement(Peak) | 66.54 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 28.68 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2390 | 61.21 | - | 74 | -12.79 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2390 | 28.69 | - | 54 | -25.31 | Avg | - | - | Delta Marker - 1MHz/10Hz |

Test #3 EUT on Channel-5 2432MHz - 802.11n 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 11.5 | 11.5 | 14.51 | 11.7 | 11.7 | 14.71 | 26 | 26 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2425.26 | 97.75 | V | - | - | Peak | 347 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2423.02 | 85.23 | V | - | - | Avg | 347 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2424.62 | 104.4 | H | - | - | Peak | 326 | 107 | RB:1MHz;VB:3MHz;Detector:PK |
| 2423.34 | 90.62 | H | - | - | Avg | 326 | 107 | RB:1MHz;VB:10Hz;Detector:PK |

2390 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 97.75 | 104.40 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.23 | 90.62 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 43.24 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 61.16 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.38 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 42.55 | dB | |
| Delta Marker - 1MHz/10Hz | 40.59 | dB | |
| Calculated Band-Edge Measurement(Peak) | 61.85 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.03 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2388.08 | 61.17 | - | 74 | -12.83 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2388.08 | 47.39 | - | 54 | -6.61 | Avg | - | - | Delta Marker - 100kHz/100KHz |

Test #4 EUT on Channel-7 2442MHz - 802.11n 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 11.5 | 11.5 | 14.51 | 12.46 | 11.7 | 15.11 | 27 | 26 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2447.76 | 98.75 | V | - | - | Peak | 144 | 100 | RB:1MHz;VB:3MHz;Detector:PK |
| 2444.88 | 85.60 | V | - | - | Avg | 144 | 100 | RB:1MHz;VB:10Hz;Detector:PK |
| 2438.47 | 103.92 | H | - | - | Peak | 349 | 107 | RB:1MHz;VB:3MHz;Detector:PK |
| 2445.20 | 90.81 | H | - | - | Avg | 349 | 107 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 98.75 | 103.92 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 85.60 | 90.81 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 43.05 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 60.87 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.76 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 40.84 | dB | |
| Delta Marker - 1MHz/10Hz | 39.68 | dB | |
| Calculated Band-Edge Measurement(Peak) | 63.08 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 51.13 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2483.5 | 60.87 | - | 74 | -13.13 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 47.77 | - | 54 | -6.23 | Avg | - | - | Delta Marker - 100kHz/100KHz |

Test #5 EUT on Channel-8 2447MHz - 802.11n 40MHz, ChainA+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 9.5 | 9.5 | 12.51 | 9.7 | 9.51 | 12.62 | 24 | 23.5 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2445.07 | 95.70 | V | - | - | Peak | 142 | 102 | RB:1MHz;VB:3MHz;Detector:PK |
| 2445.07 | 83.48 | V | - | - | Avg | 142 | 102 | RB:1MHz;VB:10Hz;Detector:PK |
| 2439.30 | 99.90 | H | - | - | Peak | 330 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2434.50 | 87.66 | H | - | - | Avg | 330 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 95.70 | 99.90 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.48 | 87.66 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 40.4 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 59.50 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 47.26 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 38.17 | dB | |
| Delta Marker - 1MHz/10Hz | 39.39 | dB | |
| Calculated Band-Edge Measurement(Peak) | 61.73 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 48.27 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.46 | 59.50 | - | 74 | -14.50 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2484.46 | 47.27 | - | 54 | -6.73 | Avg | - | - | Delta Marker - 100kHz/100KHz |

Test #6 EUT on Channel-9 2452MHz - 802.11n 40MHz, ChainA+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 8.5 | 8.5 | 11.51 | 9.7 | 8.67 | 12.23 | 24 | 23 |

Fundamental Signal Field Strength

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2447.19 | 96.85 | V | - | - | Peak | 143 | 104 | RB:1MHz;VB:3MHz;Detector:PK |
| 2445.26 | 83.43 | V | - | - | Avg | 143 | 104 | RB:1MHz;VB:10Hz;Detector:PK |
| 2461.61 | 99.78 | H | - | - | Peak | 323 | 105 | RB:1MHz;VB:3MHz;Detector:PK |
| 2464.17 | 87.21 | H | - | - | Avg | 323 | 105 | RB:1MHz;VB:10Hz;Detector:PK |

2483.5 MHz Band Edge Signal Radiated Field Strength - Marker Delta

| | V | H | |
|---|---|---|---|
| Fundamental emission level at 3m-(Peak) | 96.85 | 99.78 | Peak Measurement (RB/VB=1MHz/3MHz) |
| Fundamental emission level at 3m-(Avg) | 83.43 | 87.21 | Average Measurement (RB/VB=1MHz/10Hz) |
| Delta Marker - 100kHz/100KHz | 36.22 | dB | <-this can only be used if band edge signal is highest within 2MHz of band edge |
| Calculated Band-Edge Measurement(Peak) | 63.56 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 50.99 | dBuV/m | |
| Delta Marker - 1MHz/3MHz | 34.58 | dB | |
| Delta Marker - 1MHz/10Hz | 37.62 | dB | |
| Calculated Band-Edge Measurement(Peak) | 65.20 | dBuV/m | |
| Calculated Band-Edge Measurement(Avg) | 49.59 | dBuV/m | |

| Frequency | Level | Test Polar | 15.209 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 2484.78 | 63.56 | - | 74 | -10.44 | Peak | - | - | Delta Marker - 100kHz/100KHz |
| 2483.5 | 49.60 | - | 54 | -4.40 | Avg | - | - | Delta Marker - 1MHz/10Hz |

## 4.3. Output Power Measurement

### 4.3.1. Summary of Test Result

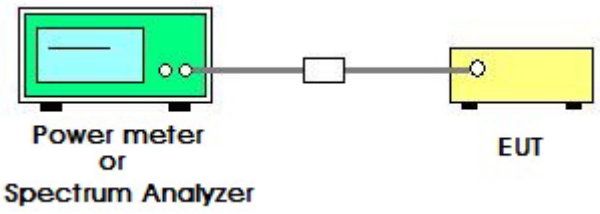
MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Pwr setting | Ref. Avg Pwr (dBm) | Test Performed | Limit | Pass / Fail | Result (dBm) |
|---|---|---|---|---|---|
| - | 15.69 | 802.11b Output Power | 15.247(b) | Pass | 15.42 |
| - | 16.68 | 802.11g Output Power | 15.247(b) | Pass | 22.49 |
| - | 16.63 | 802.11n 20MHz Output Power (1TX) | 15.247(b) | Pass | 16.61 |
| - | 16.08 | 802.11n 20MHz Output Power (2TX) | 15.247(b) | Pass | 16.49 |
| - | 16.69 | 802.11n 40MHz Output Power (1TX) | 15.247(b) | Pass | 16.65 |
| - | 16.35 | 802.11n 40MHz Output Power (2TX) | 15.247(b) | Pass | 16.68 |
| - | 16.14 | 802.11a Output Power | 15.247(b) | Pass | 15.68 |
| - | 16.20 | 802.11an 20MHz Output Power (1TX) | 15.247(b) | Pass | 15.77 |
| - | 16.64 | 802.11an 20MHz Output Power (2TX) | 15.247(b) | Pass | 16.36 |
| - | 16.20 | 802.11an 40MHz Output Power (1TX) | 15.247(b) | Pass | 21.45 |
| - | 16.56 | 802.11an 40MHz Output Power (2TX) | 15.247(b) | Pass | 22.97 |

### 4.3.2. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

### 4.3.3. Test Setup Layout




### 4.3.4. Test Deviation

There is no deviation with the original standard.

### 4.3.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 4.3.6. Test Result of Peak Output Power

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11n |
| Test Date | Dec. 20, 2011~Dec. 26, 2011 | | |

| 802.11n HT20 1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note4) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11n HT20 Mode, Chain A | | | | | | | | | |
| 25 | 2412 | 12.97 | 19.82 | 13.15 | 20.65 | 3.2 | 16.17 | 0.04 | Pass |
| 29.5 | 2437 | 16.6 | 45.71 | 16.63 | 46.03 | 3.2 | 19.8 | 0.09 | Pass |
| 25 | 2462 | 12.56 | 18.03 | 12.62 | 18.28 | 3.2 | 15.76 | 0.03 | Pass |
| 802.11n HT20 Mode, Chain B | | | | | | | | | |
| 25 | 2412 | 12.88 | 19.41 | 12.94 | 19.68 | 3.2 | 16.08 | 0.04 | Pass |
| 29 | 2437 | 16.61 | 45.81 | 16.58 | 45.50 | 3.2 | 19.81 | 0.09 | Pass |
| 24.5 | 2462 | 12.35 | 17.18 | 12.42 | 17.46 | 3.2 | 15.55 | 0.03 | Pass |

| | |
|---|---|
| Note 1 | Power setting - the software power setting used during testing, included for reference only. |
| Note 2 | Power measured using a peak power meter. |
| Note 3 | Power measured using average power meter and is included for reference only. |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. |

| 802.11n HT40 1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note4) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11n HT40 Mode, Chain A | | | | | | | | | |
| 21 | 2422 | 9.01 | 7.96 | 9.12 | 8.17 | 3.2 | 12.21 | 0.01 | Pass |
| 29.5 | 2437 | 16.65 | 46.24 | 16.69 | 46.67 | 3.2 | 19.85 | 0.09 | Pass |
| 22 | 2452 | 9.25 | 8.41 | 9.66 | 9.25 | 3.2 | 12.45 | 0.01 | Pass |
| 802.11n HT40 Mode, Chain B | | | | | | | | | |
| 21 | 2422 | 8.89 | 7.74 | 9.2 | 8.32 | 3.2 | 12.09 | 0.01 | Pass |
| 29 | 2437 | 16.56 | 45.29 | 16.68 | 46.56 | 3.2 | 19.76 | 0.09 | Pass |
| 21.5 | 2452 | 9.27 | 8.45 | 9.61 | 9.14 | 3.2 | 12.47 | 0.01 | pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

| 802.11n HT20 2TX | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | | | | | | | |
| Transmitted signal on chain is coherent? No | | | | | | | | | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Output Power (dBm) (Note4) | | Total Power | Average Power (dBm) (Note2) | | Total Power | Limit | | Antenna Gain(dBi) (Note3) | | EIRP | | Result |
| Chain A | Chain B | | Chain A | Chain B | dBm | Chain A | Chain B | dBm | dBm | W | Chain A | Chain B | dBm | W | |
| 25 | 25.5 | 2412 | 11.05 | 11.18 | 14.13 | 10.98 | 11.2 | 14.10 | 30 | 1 | 3.2 | | 17.33 | 0.05 | Pass |
| 29 | 28 | 2437 | 13.53 | 13.42 | 16.49 | 13.18 | 12.95 | 16.08 | 30 | 1 | 3.2 | | 19.69 | 0.09 | Pass |
| 26 | 25.5 | 2462 | 11.14 | 10.78 | 13.97 | 11.17 | 11.08 | 14.14 | 30 | 1 | 3.2 | | 17.17 | 0.05 | Pass |

| | |
|---|---|
| Note 1 | Power setting - test utility setting, for reference only |
| Note 2 | Average output power per chain measured with an average power meter, for reference only |
| Note 3 | As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain. |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz for n40 (option #2, method 1 in KDB 558074, equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit is -30dBc. |

| 802.11n HT40 2TX | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | | | | | | | |
| Transmitted signal on chain is coherent ? No | | | | | | | | | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Output Power (dBm) (Note4) | | Total Power | Average Power (dBm) (Note2) | | Total Power | Limit | | Antenna Gain (dBi) (Note3) | | EIRP | | Result |
| Chain A | Chain B | | Chain A | Chain B | dBm | Chain A | Chain B | dBm | dBm | W | Chain A | Chain B | dBm | W | |
| 22.5 | 22.5 | 2422 | 7.88 | 7.96 | 10.93 | 8.2 | 8.18 | 11.20 | 30 | 1 | 3.2 | | 14.13 | 0.02 | Pass |
| 29 | 28 | 2437 | 13.69 | 13.65 | 16.68 | 13.25 | 13.42 | 16.35 | 30 | 1 | 3.2 | | 19.88 | 0.09 | Pass |
| 24 | 23 | 2452 | 9.54 | 8.38 | 12.01 | 9.7 | 8.67 | 12.23 | 30 | 1 | 3.2 | | 15.21 | 0.03 | Pass |

| | |
|---|---|
| Note 1 | Power setting - test utility setting, for reference only |
| Note 2 | Average output power per chain measured with an average power meter, for reference only |
| Note 3 | As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain. |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz for n40 (option #2, method 1 in KDB 558074, equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit is -30dBc. |

| 802.11an HT20 1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note4) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11an HT20 Mode, Chain A | | | | | | | | | |
| 25 | 5745 | 15.33 | 34.12 | 15.57 | 36.06 | 5 | 20.33 | 0.10 | Pass |
| 25.5 | 5785 | 15.31 | 33.96 | 15.5 | 35.48 | 5 | 20.31 | 0.10 | Pass |
| 26 | 5825 | 15.4 | 34.67 | 15.64 | 36.64 | 5 | 20.4 | 0.10 | Pass |
| 802.11an HT20 Mode, Chain B | | | | | | | | | |
| 26.5 | 5745 | 15.77 | 37.76 | 16.2 | 41.69 | 5 | 20.77 | 0.11 | Pass |
| 27.5 | 5785 | 15.56 | 35.97 | 16.01 | 39.90 | 5 | 20.56 | 0.11 | Pass |
| 28 | 5825 | 15.6 | 36.31 | 16.09 | 40.64 | 5 | 20.6 | 0.11 | Pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

| 802.11an HT40 1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain(dBi) | EIRP | | Result |
| | | dBm (Note2) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11an HT40 Mode, Chain A | | | | | | | | | |
| 26 | 5755 | 20.68 | 116.95 | 15.44 | 34.99 | 5 | 20.44 | 0.11 | Pass |
| 26.5 | 5795 | 20.82 | 120.78 | 15.47 | 35.24 | 5 | 20.47 | 0.11 | Pass |
| 802.11an HT40 Mode, Chain B | | | | | | | | | |
| 28 | 5755 | 21.45 | 139.64 | 16.2 | 41.69 | 5 | 21.2 | 0.13 | Pass |
| 29 | 5795 | 20.82 | 120.78 | 16.06 | 40.36 | 5 | 21.06 | 0.12 | Pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

| 802.11an HT20 2TX | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | | | | | | | |
| Transmitted signal on chain is coherent? No | | | | | | | | | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Output Power (dBm) (Note4) | | Total Power | Average Power (dBm) (Note2) | | Total Power | Limit | | Antenna Gain (dBi) (Note3) | | EIRP | | Result |
| Chain A | Chain B | | Chain A | Chain B | dBm | Chain A | Chain B | dBm | dBm | W | Chain A | Chain B | dBm | W | |
| 26.5 | 27 | 5745 | 13.41 | 13.23 | 16.33 | 13.64 | 13.39 | 16.53 | 30 | 1 | 5 | | 21.33 | 0.13 | Pass |
| 27.5 | 28.5 | 5785 | 13.37 | 13.14 | 16.27 | 13.66 | 13.6 | 16.64 | 30 | 1 | 5 | | 21.27 | 0.13 | Pass |
| 28 | 29 | 5825 | 13.56 | 13.13 | 16.36 | 13.56 | 13.55 | 16.57 | 30 | 1 | 5 | | 21.36 | 0.13 | Pass |

| | |
|---|---|
| Note 1 | Power setting - test utility setting, for reference only |
| Note 2 | Average output power per chain measured with an average power meter, for reference only |
| Note 3 | As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divide by the sum of the power on each chain. |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 100 MHz for n40 (option #2, method 1 in KDB 558074, equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit is -30dBc. |

| 802.11an HT40 2TX | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | | | | | | | |
| Transmitted signal on chain is coherent ? No | | | | | | | | | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Output Power (dBm) (Note5) | | Total Power | Average Power (dBm) (Note2) | | Total Power | Limit | | Antenna Gain (dBi) (Note3) | | EIRP | | Result |
| Chain A | Chain B | | Chain A | Chain B | dBm | Chain A | Chain B | dBm | dBm | W | Chain A | Chain B | dBm | W | |
| 28 | 28.5 | 5755 | 20.01 | 19.9 | 22.97 | 13.6 | 13.38 | 16.50 | 30 | 1 | 5 | | 21.50 | 0.14 | Pass |
| 28.5 | 30 | 5795 | 19.95 | 19.5 | 22.74 | 13.48 | 13.62 | 16.56 | 30 | 1 | 5 | | 21.56 | 0.14 | Pass |

| | |
|---|---|
| Note 1 | Power setting - test utility setting, for reference only |
| Note 2 | Average output power per chain measured with an average power meter, for reference only |
| Note 3 | As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals<br>the eirp divide by the sum of the power on each chain. |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power<br>averaging on (transmitted signal was continuous) and power integration over 100 MHz for n40 (option #2, method 1 in KDB<br>558074, equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit is -30dBc. |
| Note 5 | Power measured using a peak power meter. |

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11 a/b/g |
| Test Date | Dec. 20, 2011~Dec. 26, 2011 | | |

| 802.11b-1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note4) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11b Mode, Chain A | | | | | | | | | |
| 23 | 2412 | 15.42 | 34.83 | 15.68 | 36.98 | 3.2 | 18.62 | 0.07 | Pass |
| 23.5 | 2437 | 15.5 | 35.48 | 15.69 | 37.07 | 3.2 | 18.7 | 0.07 | Pass |
| 23.5 | 2462 | 15.68 | 36.98 | 15.7 | 37.15 | 3.2 | 18.88 | 0.07 | Pass |
| 802.11b Mode, Chain B | | | | | | | | | |
| 23 | 2412 | 15.23 | 33.34 | 15.39 | 34.59 | 3.2 | 18.43 | 0.06 | Pass |
| 23 | 2437 | 15.47 | 35.24 | 15.44 | 34.99 | 3.2 | 18.67 | 0.07 | Pass |
| 23 | 2462 | 15.19 | 33.04 | 15.3 | 33.88 | 3.2 | 18.39 | 0.06 | Pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

| 802.11g-1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note2) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11g Mode, Chain A | | | | | | | | | |
| 26 | 2412 | 21 | 125.89 | 14.2 | 26.30 | 3.2 | 17.4 | 0.05 | Pass |
| 29.5 | 2437 | 22.88 | 194.09 | 16.68 | 46.56 | 3.2 | 19.88 | 0.09 | Pass |
| 26.5 | 2462 | 21.32 | 135.52 | 14.14 | 25.94 | 3.2 | 17.34 | 0.05 | Pass |
| 802.11g Mode, Chain B | | | | | | | | | |
| 26.5 | 2412 | 21.3 | 134.90 | 14.19 | 26.24 | 3.2 | 17.39 | 0.05 | Pass |
| 29 | 2437 | 22.49 | 177.42 | 16.51 | 44.77 | 3.2 | 19.71 | 0.09 | Pass |
| 26.5 | 2462 | 21.23 | 132.74 | 14.18 | 26.18 | 3.2 | 17.38 | 0.05 | Pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

| 802.11a-1TX | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Output Power | | | | | | | | | |
| Power Setting (Note1) | Frequency (MHz) | Output Power | | Average Power | | Antenna Gain (dBi) | EIRP | | Result |
| | | dBm (Note4) | mW | dBm (Note3) | mW | | dBm | W | |
| 802.11a Mode, Chain A | | | | | | | | | |
| 24.5 | 5745 | 15.5 | 35.48 | 15.33 | 34.12 | 5 | 20.5 | 0.11 | Pass |
| 25 | 5785 | 15.55 | 35.89 | 15.38 | 34.51 | 5 | 20.55 | 0.11 | Pass |
| 25.5 | 5825 | 15.36 | 34.36 | 15.46 | 35.16 | 5 | 20.36 | 0.10 | Pass |
| 802.11a Mode, Chain B | | | | | | | | | |
| 26.5 | 5745 | 15.85 | 38.46 | 16.14 | 41.11 | 5 | 20.85 | 0.12 | Pass |
| 27.5 | 5785 | 15.68 | 36.98 | 16 | 39.81 | 5 | 20.68 | 0.11 | Pass |
| 28 | 5825 | 15.53 | 35.73 | 16.08 | 40.55 | 5 | 20.53 | 0.11 | Pass |
| | | | | | | | | | |
| Note 1 | Power setting - the software power setting used during testing, included for reference only. | | | | | | | | |
| Note 2 | Power measured using a peak power meter. | | | | | | | | |
| Note 3 | Power measured using average power meter and is included for reference only. | | | | | | | | |
| Note 4 | Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was continuous) and power integration over 40 MHz (option #2, method 1 in KDB 558074,equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc. | | | | | | | | |

## 4.4. Power Spectral Density Measurement

### 4.4.1. Summary of Test Result

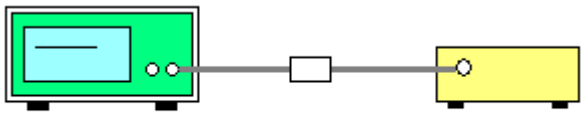
MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Pwr setting | Ref. Avg Pwr (dBm) | Test Performed | Limit | Pass / Fail | Result (dBm/3kHz) |
|---|---|---|---|---|---|
| - | 15.68 | 802.11b Power spectral Density | 15.247(d) | Pass | -8.88 |
| - | 16.51 | 802.11g Power spectral Density | 15.247(d) | Pass | -8.49 |
| - | 16.63 | 802.11n 20MHz Power spectral Density (1TX) | 15.247(d) | Pass | -7.89 |
| - | 19.43 | 802.11n 40MHz Power spectral Density (1TX) | 15.247(d) | Pass | -10.57 |
| - | 16.08 | 802.11n 20MHz Power spectral Density (2TX) | 15.247(d) | Pass | -7.41 |
| - | 16.35 | 802.11n 40MHz Power spectral Density (2TX) | 15.247(d) | Pass | -10.09 |
| - | 16.00 | 802.11a Power spectral Density | 15.247(d) | Pass | -10.30 |
| - | 16.20 | 802.11an 20MHz Power spectral (1TX) | 15.247(d) | Pass | -9.03 |
| - | 16.06 | 802.11an 40MHz Power spectral (1TX) | 15.247(d) | Pass | -11.19 |
| - | 16.64 | 802.11an 20MHz Power spectral (2TX) | 15.247(d) | Pass | -8.37 |
| - | 16.56 | 802.11an 40MHz Power spectral (2TX) | 15.247(d) | Pass | -10.24 |

### 4.4.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

### 4.4.3. Test Setup Layout




### 4.4.4. Test Deviation

There is no deviation with the original standard.

### 4.4.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

## 4.4.6. Test Result of Power Spectral Density

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11n |
| Test Date | Dec. 20, 2011~Dec, 26, 2011 | | |

| 802.11n-HT20-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD dBm/3KHz (Note1) | Limit dBm/3KHz | Result |
| 802.11n HT20 Mode, Chain A | | | | |
| 25 | 2412 | -12.55 | 8 | Pass |
| 29.5 | 2437 | -7.89 | 8 | Pass |
| 25 | 2462 | -12.34 | 8 | Pass |
| 802.11n HT20 Mode, Chain B | | | | |
| 25 | 2412 | -12.48 | 8 | Pass |
| 29 | 2437 | -8.59 | 8 | Pass |
| 24.5 | 2462 | -12.18 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

| 802.11n-HT40-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD | Limit | Result |
| | | dBm/3KHz (Note1) | dBm/3KHz | |
| 802.11n HT40 Mode, Chain A | | | | |
| 21 | 2422 | -19.75 | 8 | Pass |
| 29.5 | 2437 | -10.57 | 8 | Pass |
| 22 | 2452 | -17.9 | 8 | Pass |
| 802.11n HT40 Mode, Chain B | | | | |
| 21 | 2422 | -19.28 | 8 | Pass |
| 29 | 2437 | -12.46 | 8 | Pass |
| 21.5 | 2452 | -18.35 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

| 802.11n-HT20-2TX | | | | | | | |
|---|---|---|---|---|---|---|---|
| Power spectral Density | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | PSD dBm/3KHz (Note1) | | Total PSD | Limit | Result |
| Chain A | Chain B | | Chain A | Chain B | (dBm/3KHz) | dBm/3KHz | |
| 25 | 25.5 | 2412 | -12.8 | -11.46 | -9.07 | 8 | Pass |
| 29 | 28 | 2437 | -9.92 | -10.98 | -7.41 | 8 | Pass |
| 26 | 25.5 | 2462 | -12.14 | -13.75 | -9.86 | 8 | Pass |
| | | | | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | | | | |

| 802.11n-HT40-2TX | | | | | | | |
|---|---|---|---|---|---|---|---|
| Power spectral Density | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | PSD dBm/3KHz (Note1) | | Total PSD | Limit | Result |
| Chain A | Chain B | | Chain A | Chain B | (dBm/3KHz) | dBm/3KHz | |
| 22.5 | 22.5 | 2422 | -17.89 | -18.82 | -15.32 | 8 | Pass |
| 29 | 28 | 2437 | -12.93 | -13.28 | -10.09 | 8 | Pass |
| 24 | 23 | 2452 | -18.1 | -20.72 | -16.21 | 8 | Pass |
| | | | | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | | | | |

| 802.11an-HT20-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD | Limit | Result |
| | | dBm/3KHz (Note1) | dBm/3KHz | |
| 802.11an HT20 Mode, Chain A | | | | |
| 25 | 5745 | -12.78 | 8 | Pass |
| 25.5 | 5785 | -11.31 | 8 | Pass |
| 26 | 5825 | -11.17 | 8 | Pass |
| 802.11an HT20 Mode, Chain B | | | | |
| 26.5 | 5745 | -9.03 | 8 | Pass |
| 27.5 | 5785 | -9.15 | 8 | Pass |
| 28 | 5825 | -10.08 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

| 802.11an-HT40-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD | Limit | Result |
| | | dBm/3KHz (Note1) | dBm/3KHz | |
| 802.11an HT40 Mode, Chain A | | | | |
| 26 | 5755 | -13.75 | 8 | Pass |
| 26.5 | 5795 | -14.12 | 8 | Pass |
| 802.11an HT40 Mode, Chain B | | | | |
| 28 | 5755 | -11.85 | 8 | Pass |
| 29 | 5795 | -11.19 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

| 802.11an-HT20-2TX | | | | | | | |
|---|---|---|---|---|---|---|---|
| Power spectral Density | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | PSD dBm/3KHz (Note1) | | Total PSD | Limit | Result |
| Chain A | Chain B | | Chain A | Chain B | (dBm/3KHz) | dBm/3KHz | |
| 26.5 | 27 | 5745 | -11.89 | -10.93 | -8.37 | 8 | Pass |
| 27.5 | 28.5 | 5785 | -12.4 | -12.16 | -9.27 | 8 | Pass |
| 28 | 29 | 5825 | -12.9 | -12.5 | -9.69 | 8 | Pass |
| | | | | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | | | | |

| 802.11an-HT40-2TX | | | | | | | |
|---|---|---|---|---|---|---|---|
| Power spectral Density | | | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | PSD dBm/3KHz (Note1) | | Total PSD | Limit | Result |
| Chain A | Chain B | | Chain A | Chain B | (dBm/3KHz) | dBm/3KHz | |
| 28.5 | 28.5 | 5755 | -13.37 | -13.18 | -10.26 | 8 | Pass |
| 28.5 | 30 | 5795 | -13.12 | -13.39 | -10.24 | 8 | Pass |
| | | | | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | | | | |

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11a/b/g |
| Test Date | Dec. 21, 2011~Dec. 26, 2011 | | |

| 802.11b-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD dBm/3KHz (Note1) | Limit dBm/3KHz | Result |
| 802.11b Mode, Chain A | | | | |
| 23 | 2412 | -9.33 | 8 | Pass |
| 23.5 | 2437 | -10.18 | 8 | Pass |
| 23.5 | 2462 | -8.88 | 8 | Pass |
| 802.11b Mode, Chain B | | | | |
| 23 | 2412 | -9.76 | 8 | Pass |
| 23 | 2437 | -10.73 | 8 | Pass |
| 23 | 2462 | -11.08 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

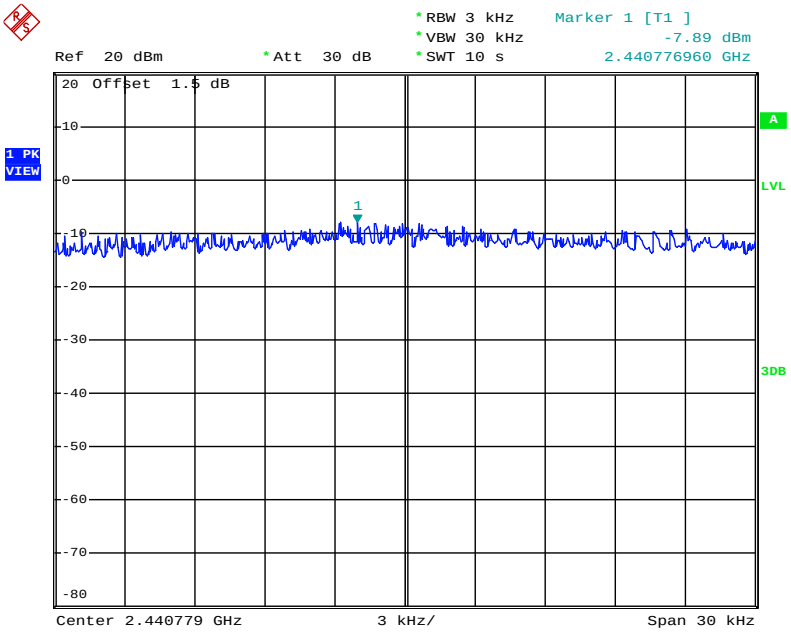
| 802.11g-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD dBm/3KHz (Note1) | Limit dBm/3KHz | Result |
| 802.11g Mode, Chain A | | | | |
| 26 | 2412 | -10.29 | 8 | Pass |
| 29.5 | 2437 | -9.44 | 8 | Pass |
| 26.5 | 2462 | -13.55 | 8 | Pass |
| 802.11g Mode, Chain B | | | | |
| 26.5 | 2412 | -8.76 | 8 | Pass |
| 29 | 2437 | -8.49 | 8 | Pass |
| 26.5 | 2462 | -11.02 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

| 802.11a-1TX | | | | |
|---|---|---|---|---|
| Power spectral Density | | | | |
| Power Setting | Frequency (MHz) | PSD dBm/3KHz (Note1) | Limit dBm/3KHz | Result |
| 802.11a Mode, Chain A | | | | |
| 24.5 | 5745 | -12.59 | 8 | Pass |
| 25 | 5785 | -11.95 | 8 | Pass |
| 25.5 | 5825 | -10.76 | 8 | Pass |
| 802.11a Mode, Chain B | | | | |
| 26.5 | 5745 | -10.3 | 8 | Pass |
| 27.5 | 5785 | -10.68 | 8 | Pass |
| 28 | 5825 | -11.19 | 8 | Pass |
| | | | | |
| Note 1 | Power spectral density measured using RB=3 kHz, VB=30kHz, analyzer with peak detector and with a sweep time set to ensure a dwell time of at least 10 second per 3kHz. The measurement is made at the frequency of PPSD determined from preliminary scans using RB=3kHz using multiple sweeps at a faster rate over the 6dB bandwidth of the signal. | | | |

Note: All the test values were listed in the report.

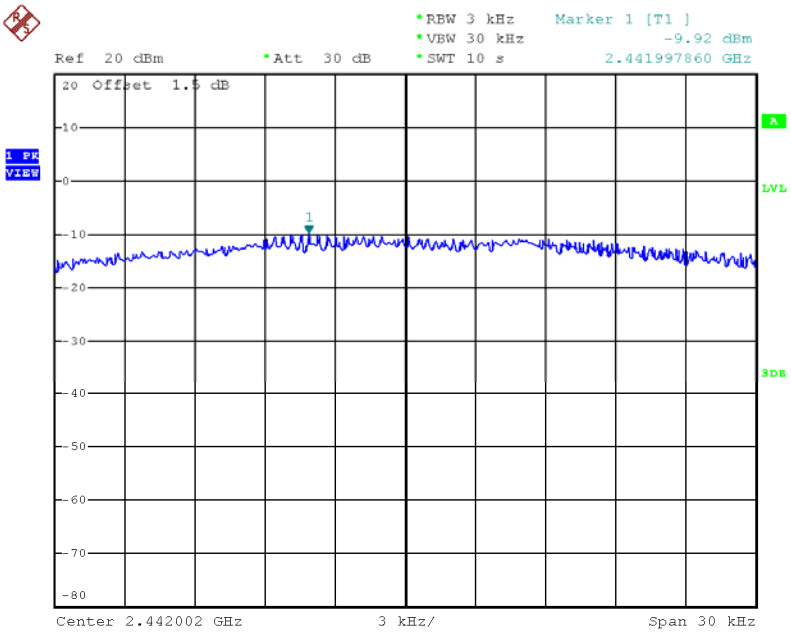
For plots, only the channel with maximum results was shown.

## Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain A / 2437 MHz



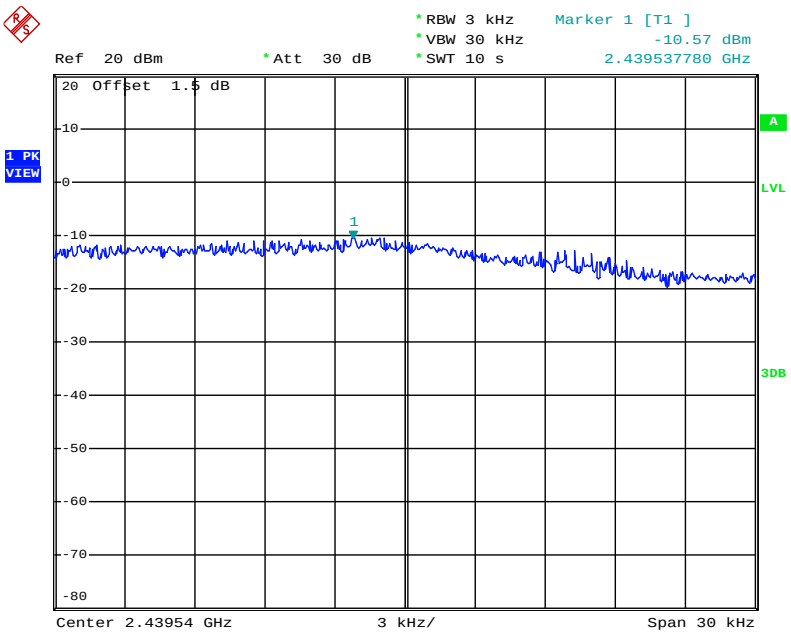

Date: 17.DEC.2011 12:22:57

## Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain A+B / 2437 MHz



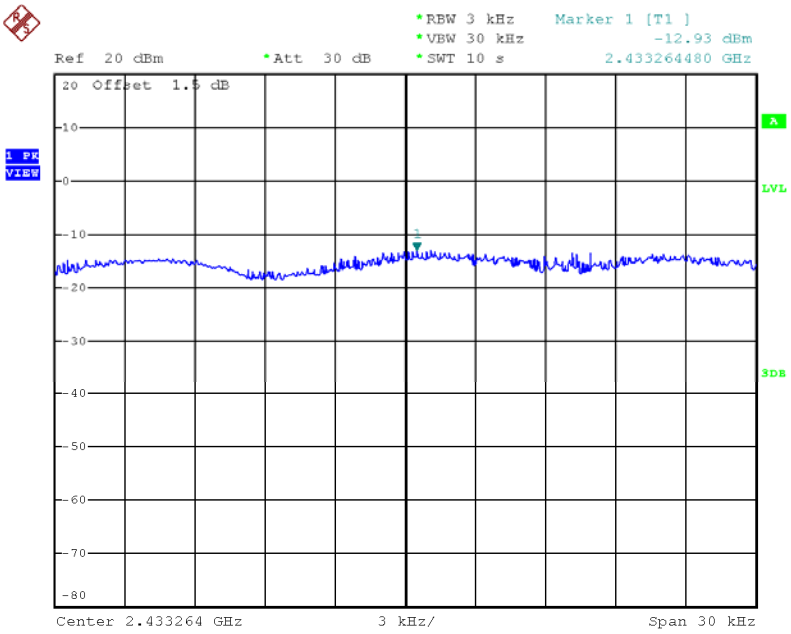

Date: 22.DEC.2011 18:38:57

## Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain A / 2437 MHz



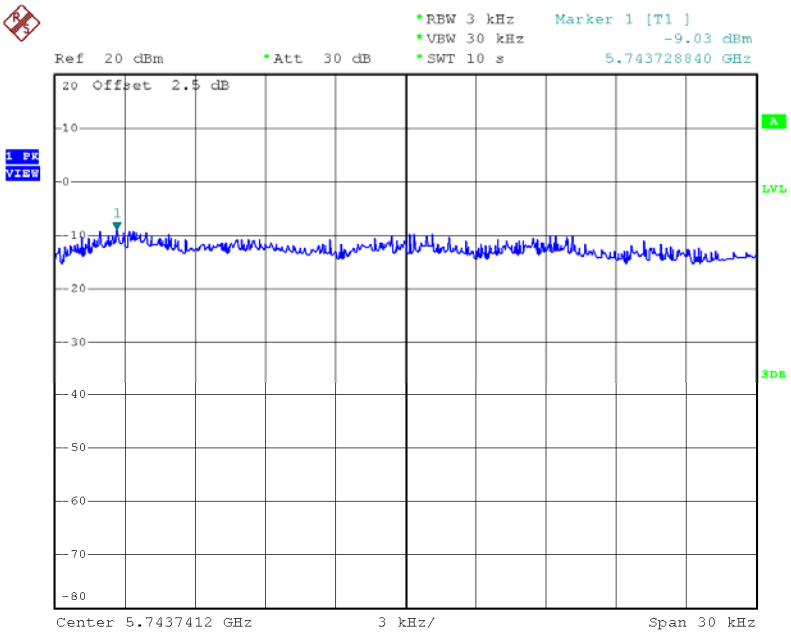

Date: 17.DEC.2011 12:26:56

## Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain A+B / 2437 MHz



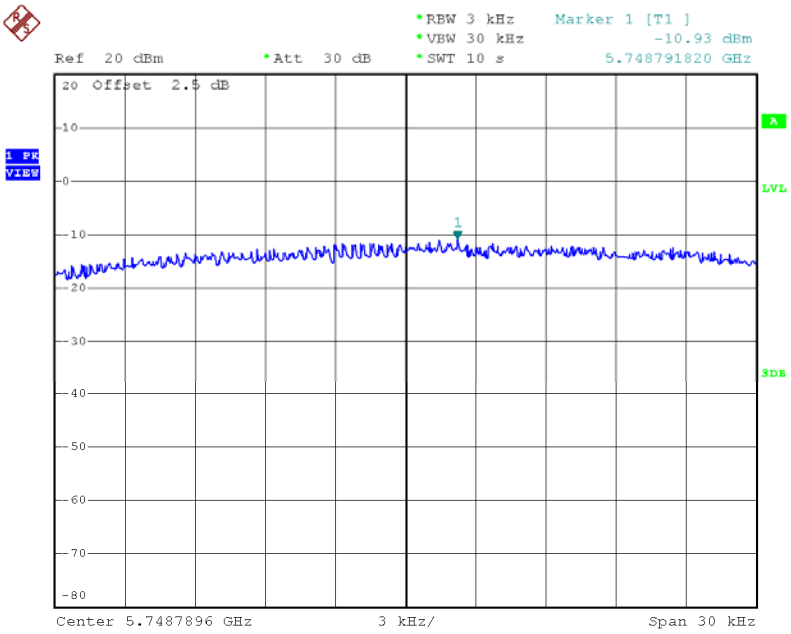

Date: 22.DEC.2011 18:34:29

## Power Density Plot on Configuration IEEE 802.11an MCS0 20MHz / Chain B / 5745MHz



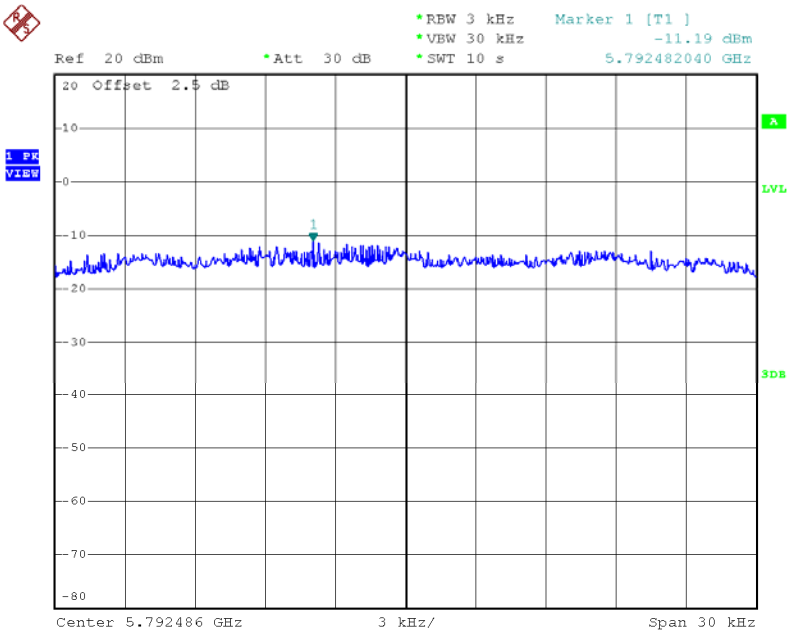

Date: 23.DEC.2011 16:12:41

## Power Density Plot on Configuration IEEE 802.11an MCS0 20MHz / Chain A+B / 5745 MHz



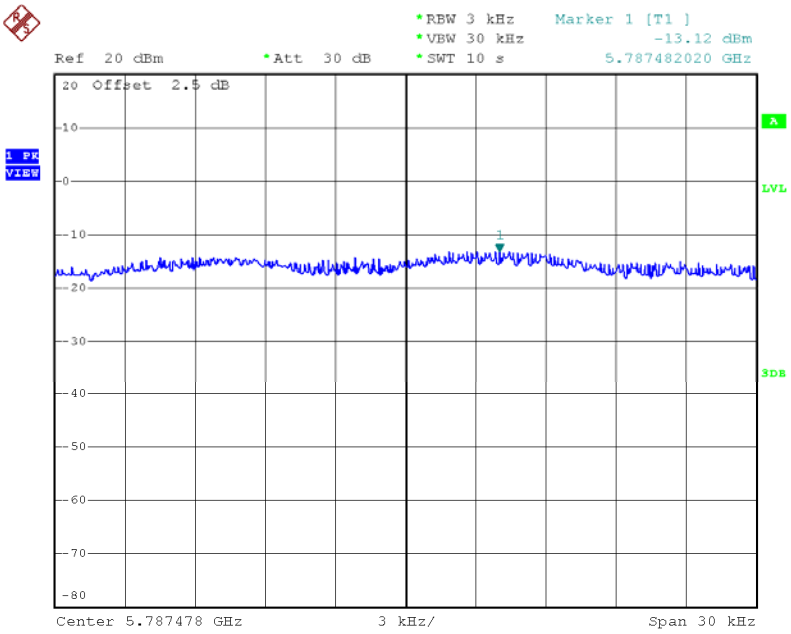

Date: 23.DEC.2011 16:25:32

## Power Density Plot on Configuration IEEE 802.11an MCS0 40MHz / Chain A / 5795 MHz



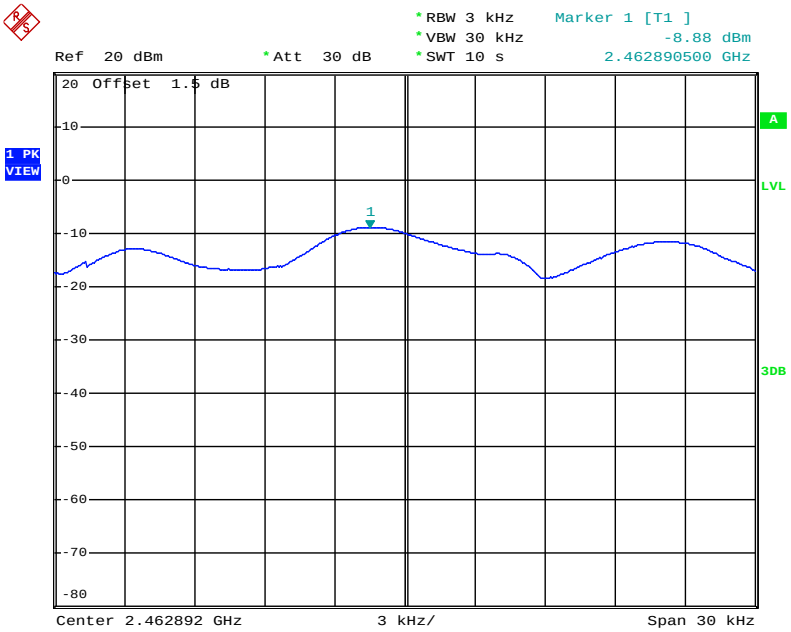

Date: 23.DEC.2011 16:10:07

## Power Density Plot on Configuration IEEE 802.11an MCS0 40MHz / Chain A+B / 5795 MHz



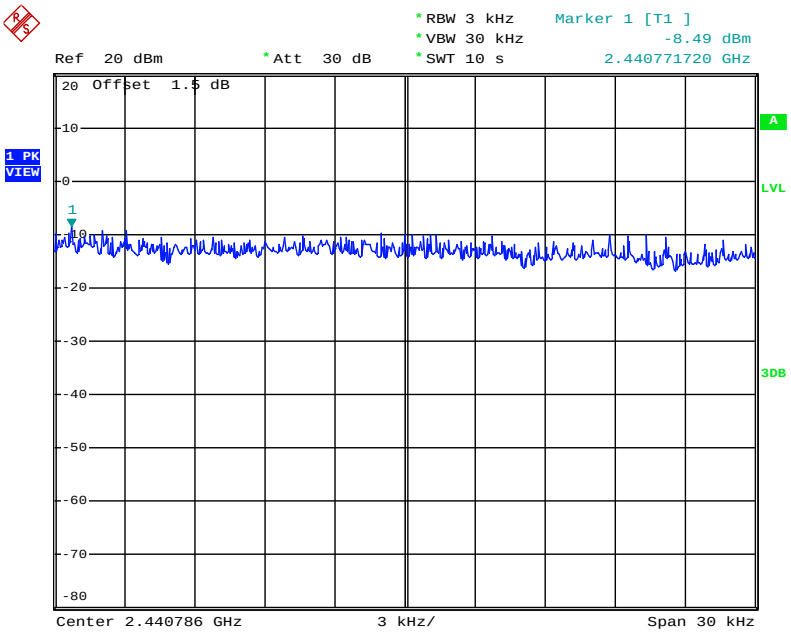

Date: 23.DEC.2011 16:33:08

## Power Density Plot on Configuration IEEE 802.11b / Chain A / 2462 MHz



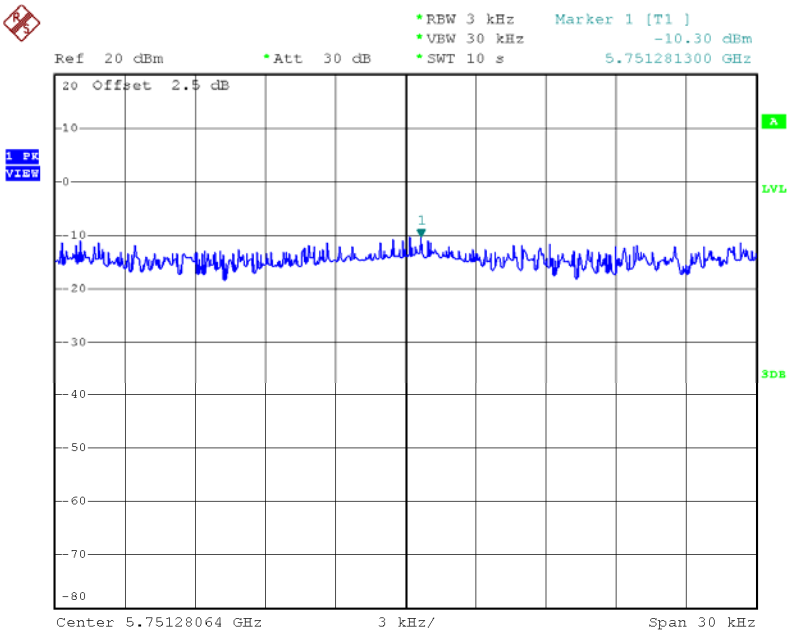

Date: 17.DEC.2011 13:47:52

## Power Density Plot on Configuration IEEE 802.11g / Chain B / 2437 MHz




Date: 17.DEC.2011 12:59:01

## Power Density Plot on Configuration IEEE 802.11a / Chain B / 5745 MHz




Date: 23.DEC.2011 16:19:07

## 4.5. 6dB Spectrum Bandwidth Measurement

### 4.5.1. Summary of Test Result

MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Pwr setting | Ref. Avg Pwr (dBm) | Test Performed | Limit | Pass / Fail | Result (MHz) |
|---|---|---|---|---|---|
| - | 15.44 | 802.11b Minimum 6dB Bandwidth | 15.247(a) | Pass | 12.00 |
| - | 15.44 | 802.11b 99% Bandwidth | RSS GEN | - | 14.92 |
| - | 14.14 | 802.11g Minimum 6dB Bandwidth | 15.247(a) | Pass | 15.04 |
| - | 16.51 | 802.11g 99% Bandwidth | RSS GEN | - | 16.36 |
| - | 12.56 | 802.11n 20MHz Minimum 6dB (1TX) | 15.247(a) | Pass | 15.12 |
| - | 16.61 | 802.11n 20MHz 99% Bandwidth (1TX) | RSS GEN | - | 17.56 |
| - | 9.25 | 802.11n 40MHz Minimum 6dB (1TX) | 15.247(a) | Pass | 35.12 |
| - | 16.65 | 802.11n 40MHz 99% Bandwidth (1TX) | RSS GEN | - | 36 |
| - | 16.08 | 802.11n 20MHz Minimum 6dB (2TX) | 15.247(a) | Pass | 15.08 |
| - | 14.10 | 802.11n 20MHz 99% Bandwidth (2TX) | RSS GEN | - | 17.44 |
| - | 16.35 | 802.11n 40MHz Minimum 6dB (2TX) | 15.247(a) | Pass | 35.08 |
| - | 16.35 | 802.11n 40MHz 99% Bandwidth (2TX) | RSS GEN | - | 35.76 |
| - | 15.38 | 802.11a Minimum 6dB Bandwidth | 15.247(a) | Pass | 16.36 |
| - | 16.08 | 802.11a 99% Bandwidth | RSS GEN | - | 16.52 |
| - | 16.68 | 802.11an 20MHz Minimum 6dB(1TX) | 15.247(a) | Pass | 17.32 |
| - | 16.59 | 802.11an 20MHz 99% Bandwidth(1TX) | RSS GEN | - | 17.64 |
| - | 15.47 | 802.11an 40MHz Minimum 6dB(1TX) | 15.247(a) | Pass | 35.20 |
| - | 15.47 | 802.11an 40MHz 99% Bandwidth(1TX) | RSS GEN | - | 35.92 |
| - | 16.64 | 802.11an 20MHz Minimum 6dB(2TX) | 15.247(a) | Pass | 15.40 |
| - | 16.64 | 802.11an 20MHz 99% Bandwidth(2TX) | RSS GEN | - | 17.56 |
| - | 22.74 | 802.11an 40MHz Minimum 6dB(2TX) | 15.247(a) | Pass | 35.12 |
| - | 22.74 | 802.11an 40MHz 99% Bandwidth(2TX) | RSS GEN | - | 35.84 |

### 4.5.2. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

### 4.5.3. Test Deviation

There is no deviation with the original standard.

### 4.5.4. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 4.5.5. Test Result of 6dB Spectrum Bandwidth

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11n |
| Test Date | Dec. 21, 2011~Dec. 26, 2011 | | |

| 802.11n-HT20-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11n HT20 Mode, Chain A | | | | |
| 25 | 2412 | 100 | 15.08 | 17.52 |
| 29.5 | 2437 | 100 | 13.88 | 17.52 |
| 25 | 2462 | 100 | 15.12 | 17.56 |
| 802.11n HT20 Mode, Chain B | | | | |
| - | 2412 | 100 | - | - |
| 29 | 2437 | 100 | 15.08 | 17.56 |
| - | 2462 | 100 | - | - |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the **narrowest** 6dB bandwidth. | | | |

| 802.11n-HT40-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11n HT40 Mode, Chain A | | | | |
| 21 | 2422 | 100 | 30.72 | 35.92 |
| 29.5 | 2437 | 100 | 32.56 | 36 |
| 22 | 2452 | 100 | 35.12 | 35.92 |
| 802.11n HT40 Mode, Chain B | | | | |
| 21 | 2422 | 100 | - | - |
| 29 | 2437 | 100 | 35.04 | 35.92 |
| 21.5 | 2452 | 100 | - | - |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the narrowest 6dB bandwidth. | | | |

| 802.11n-HT20-2TX | | | | | |
|---|---|---|---|---|---|
| Signal Bandwidth | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| Chain A | Chain B | | | 6dB | 99% |
| 25 | 25.5 | 2412 | 100 | 15.04 | 17.44 |
| 29 | 28 | 2437 | 100 | 15.08 | 17.4 |
| 26 | 25.5 | 2462 | 100 | 13.72 | 17.44 |
| Note 1 | | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB | | | |

| 802.11n-HT40-2TX | | | | | |
|---|---|---|---|---|---|
| Signal Bandwidth | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| Chain A | Chain B | | | 6dB | 99% |
| 22.5 | 22.5 | 2422 | 100 | 33.76 | 35.76 |
| 29 | 28 | 2437 | 100 | 35.08 | 35.76 |
| 24 | 23 | 2452 | 100 | 28.88 | 35.76 |
| Note 1 | | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB | | | |

| 802.11an-HT20-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11an HT20 Mode, Chain A | | | | |
| 25 | 5745 | 100 | - | - |
| 25.5 | 5785 | 100 | 17.32 | 17.64 |
| 26 | 5825 | 100 | - | - |
| 802.11an HT20 Mode, Chain B | | | | |
| 26.5 | 5745 | 100 | 16.8 | 17.64 |
| 27.5 | 5785 | 100 | 16.84 | 17.64 |
| 28 | 5825 | 100 | 16.84 | 17.64 |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the narrowest 6dB bandwidth. | | | |

| 802.11an-HT40-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11an HT40 Mode, Chain A | | | | |
| 26 | 5755 | 100 | - | - |
| 26.5 | 5795 | 100 | 35.2 | 35.92 |
| 802.11an HT40 Mode, Chain B | | | | |
| 28 | 5755 | 100 | 35.04 | 35.92 |
| 29 | 5795 | 100 | 35.12 | 35.92 |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the narrowest 6dB bandwidth. | | | |

| 802.11an-HT20-2TX | | | | | |
|---|---|---|---|---|---|
| Signal Bandwidth | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| Chain A | Chain B | | | 6dB | 99% |
| 26.5 | 27 | 5745 | 100 | 15.4 | 17.52 |
| 27.5 | 28.5 | 5785 | 100 | 15.4 | 17.56 |
| 28 | 29 | 5825 | 100 | 15.4 | 17.52 |
| Note 1 | | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB | | | |

| 802.11an-HT40-2TX | | | | | |
|---|---|---|---|---|---|
| Signal Bandwidth | | | | | |
| Power Setting (Note1) | | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| Chain A | Chain B | | | 6dB | 99% |
| 28.5 | 28.5 | 5755 | 100 | 35.12 | 35.76 |
| 28.5 | 30 | 5795 | 100 | 35.12 | 35.84 |
| Note 1 | | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB | | | |

| Temperature | 23°C | Humidity | 61% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | IEEE 802.11a/b/g |
| Test Date | Dec. 21, 2011~Dec. 26, 2011 | | |

| 802.11b-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11b Mode, Chain A | | | | |
| 23 | 2412 | 100 | 10.08 | 14.96 |
| 23.5 | 2437 | 100 | 10.08 | 14.92 |
| 23.5 | 2462 | 100 | 10.16 | 14.88 |
| 802.11b Mode, Chain B | | | | |
| - | 2412 | 100 | - | - |
| 23 | 2437 | 100 | 12 | 14.92 |
| - | 2462 | 100 | - | - |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the **narrowest** 6dB bandwidth. | | | |

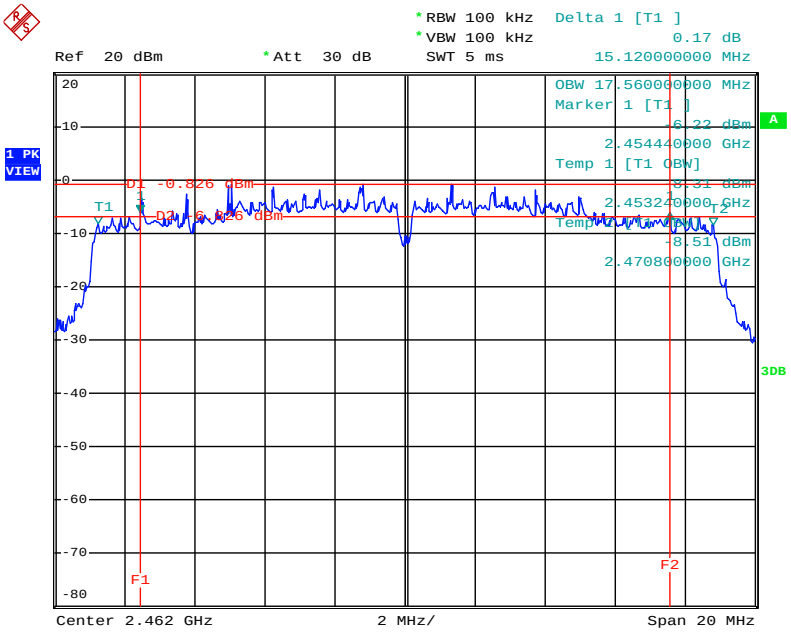
| 802.11g-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11g Mode, Chain A | | | | |
| 26 | 2412 | 100 | 14.16 | 16.32 |
| 29.5 | 2437 | 100 | 14.36 | 16.32 |
| 26.5 | 2462 | 100 | 15.04 | 16.32 |
| 802.11g Mode, Chain B | | | | |
| - | 2412 | 100 | - | - |
| 29 | 2437 | 100 | 14.4 | 16.36 |
| - | 2462 | 100 | - | - |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the narrowest 6dB bandwidth. | | | |

| 802.11a-1TX | | | | |
|---|---|---|---|---|
| Signal Bandwidth | | | | |
| Power Setting | Frequency (MHz) | Resolution Bandwidth (KHz) | Bandwidth (MHz) | |
| | | | 6dB | 99% |
| 802.11a Mode, Chain A | | | | |
| 24.5 | 5745 | 100 | - | - |
| 25 | 5785 | 100 | 16.36 | 16.48 |
| 25.5 | 5825 | 100 | - | - |
| 802.11a Mode, Chain B | | | | |
| 26.5 | 5745 | 100 | 16.28 | 16.44 |
| 27.5 | 5785 | 100 | 16.32 | 16.52 |
| 28 | 5825 | 100 | 16.04 | 16.52 |
| | | | | |
| Note 1 | 99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB (taken from power measurement plots) | | | |
| Note 2 | 6dB bandwidth measured on the center channel for each chain and then on the top and bottom channels for the chain with the narrowest 6dB bandwidth. | | | |

Note: All the test values were listed in the report.

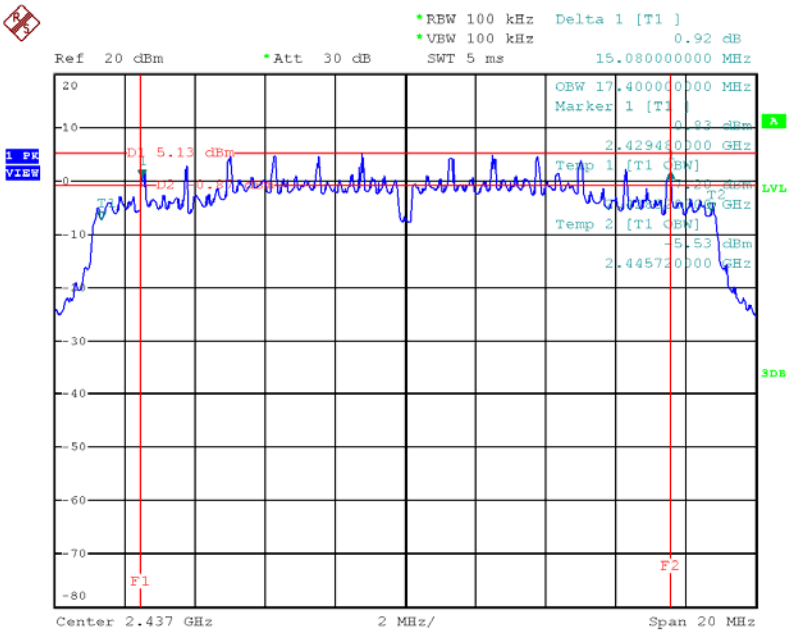
For plots, only the channel with maximum results was shown.

## 6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain A / 2462 MHz



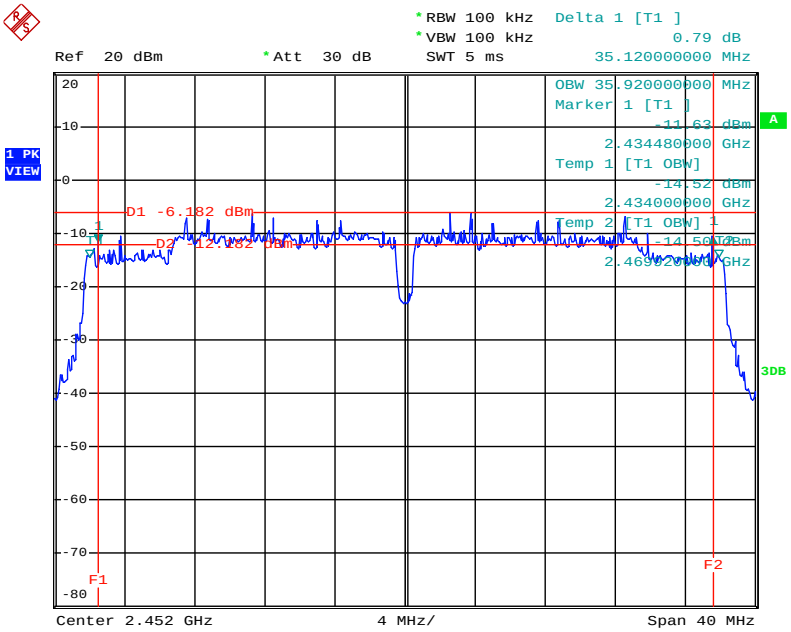

Date: 17.DEC.2011 15:06:28

## 6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain A + Chain B / 2437 MHz



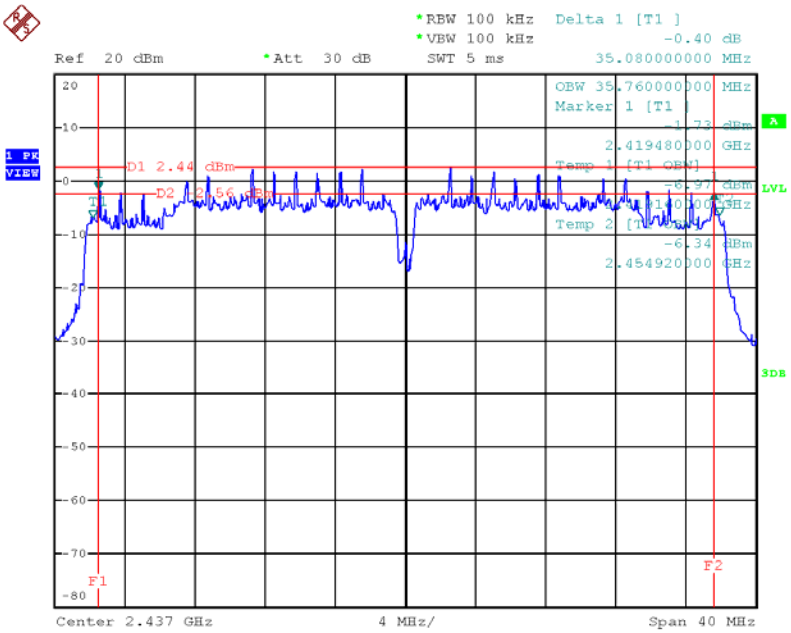

Date: 22.DEC.2011 18:45:24

## 6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain A / 2452 MHz



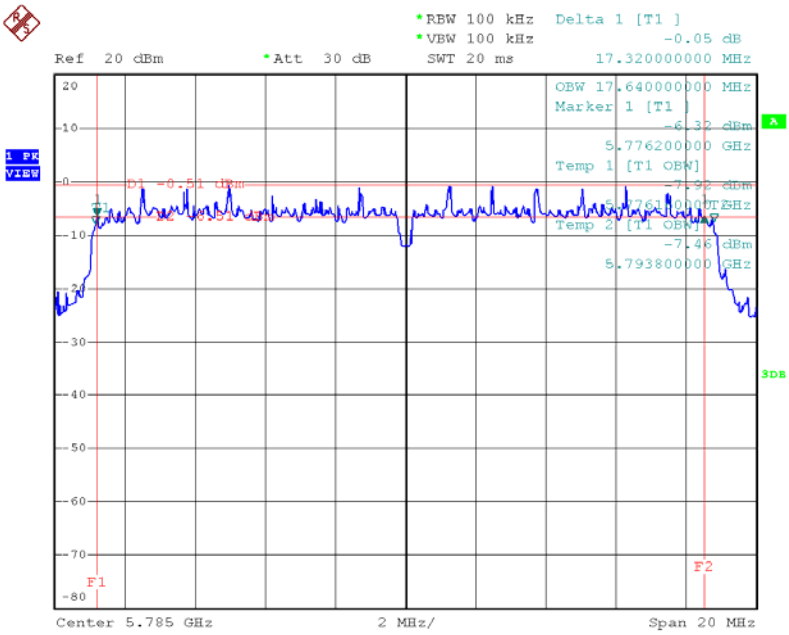

Date: 17.DEC.2011 15:13:07

## 6 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain A + Chain B / 2437 MHz



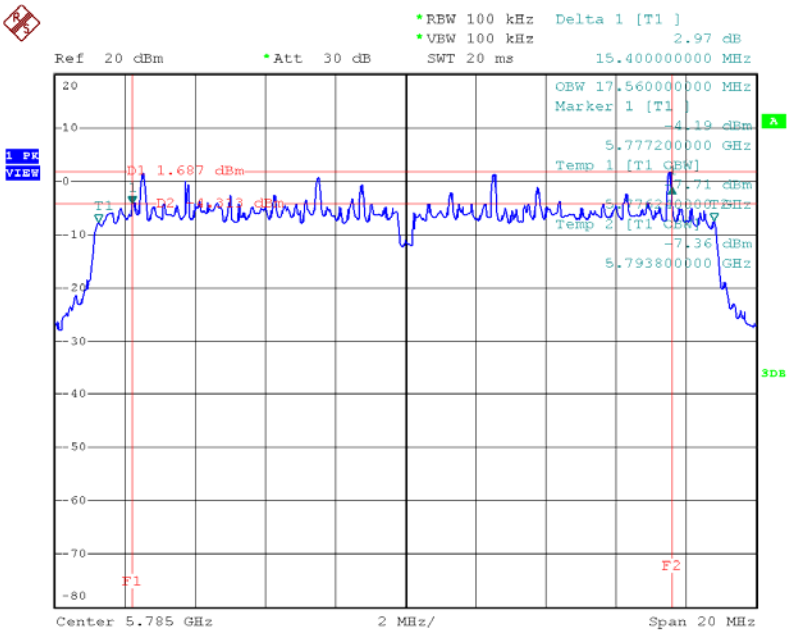

Date: 22.DEC.2011 18:46:49

## 6 dB Bandwidth Plot on Configuration IEEE 802.11an MCS0 20MHz / Chain A / 5785 MHz



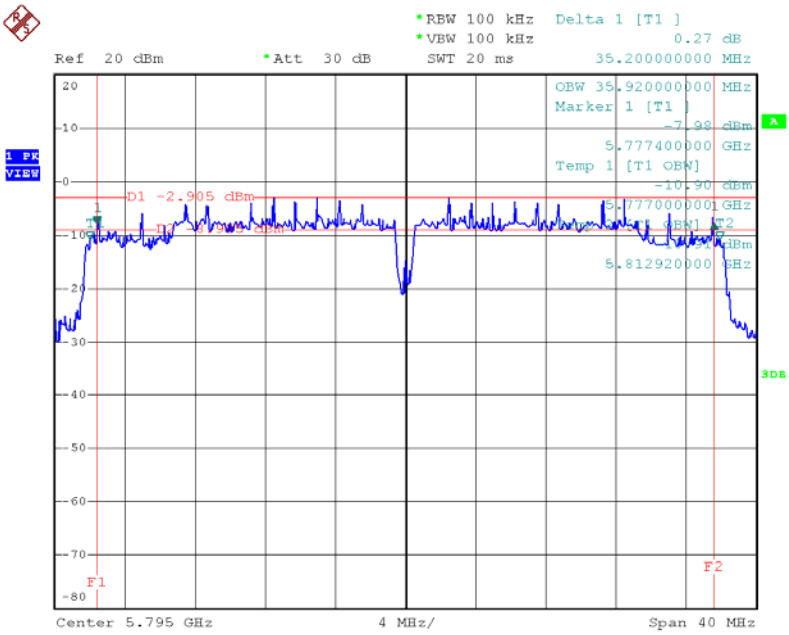

Date: 23.DEC.2011 19:16:40

## 6 dB Bandwidth Plot on Configuration IEEE 802.11an MCS0 20MHz / Chain A + Chain B / 5785 MHz



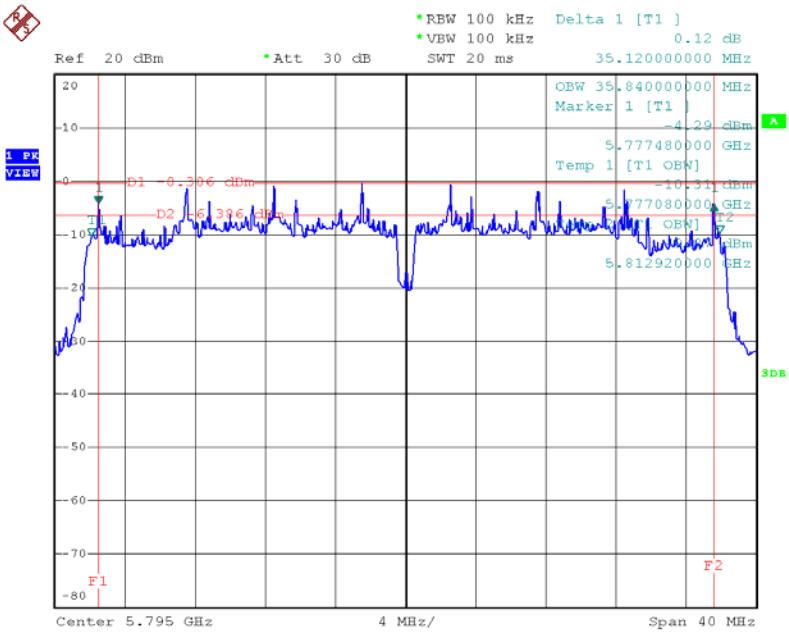

Date: 23.DEC.2011 19:01:06

## 6 dB Bandwidth Plot on Configuration IEEE 802.11an MCS0 40MHz / Chain A / 5795 MHz



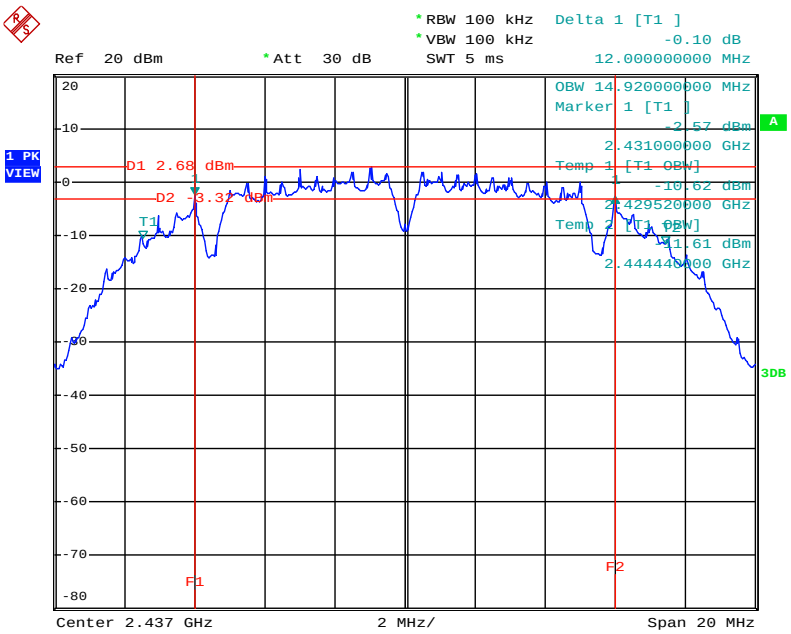

Date: 23.DEC.2011 19:07:39

## 6 dB Bandwidth Plot on Configuration IEEE 802.11an MCS0 40MHz / Chain A+ Chain B / 5795MHz



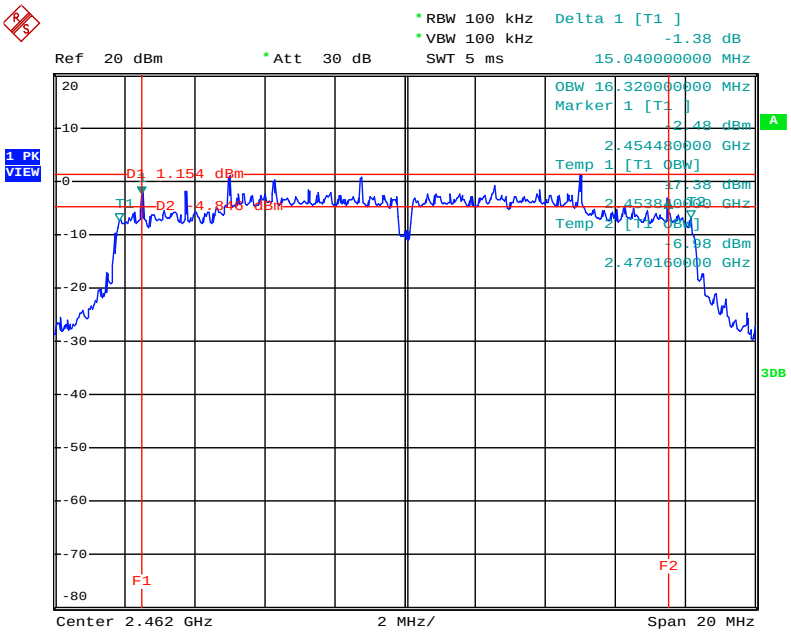

Date: 23.DEC.2011 19:05:12

## 6 dB Bandwidth Plot on Configuration IEEE 802.11b / Chain B / 2437 MHz



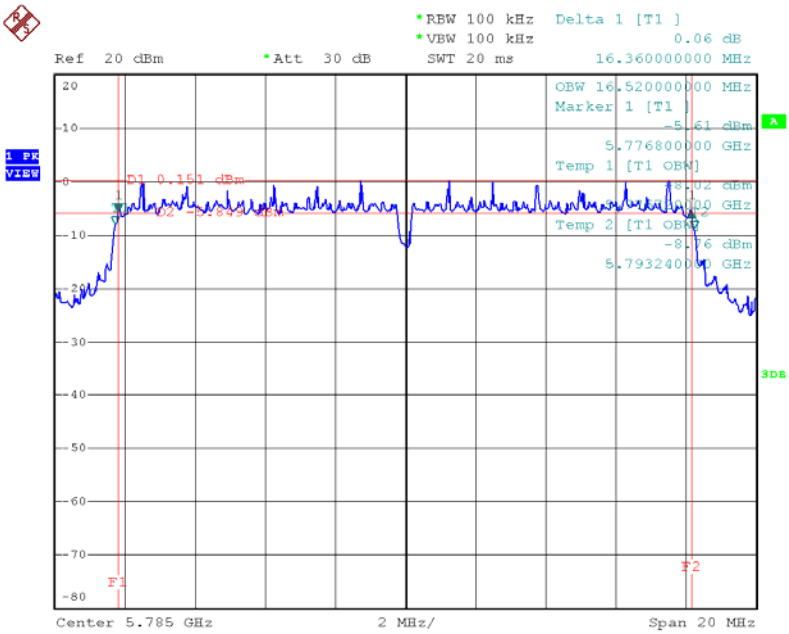

Date: 17.DEC.2011 12:56:48

## 6 dB Bandwidth Plot on Configuration IEEE 802.11g / Chain A / 2462 MHz




Date: 17.DEC.2011 15:05:17

## 6 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain A / 5785 MHz




Date: 23.DEC.2011 19:18:28

## 4.6. Radiated Emissions Measurement for Transmitter and Receiver Spurious

### 4.6.1. Summary of Test Result

MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Test # | Mode | Channel | Target Power (dBm) | Measured Power (dBm) | Test Performed | Limit | Result |
|---|---|---|---|---|---|---|---|
| 1 | 802.11b Chain A | #1 2412 MHz | 15.5 | 15.65 | Radiated Emissions, 1 - 26 GHz | FCC 15.209, 15.247 | 40.51dBμV/m, -13.49dB |
| | | #6 2437 MHz | 15.5 | 15.69 | | | 38.69dBμV/m, -15.31dB |
| | | #11 2462 MHz | 15.5 | 15.45 | | | 39.23dBμV/m, -14.77dB |
| 2 | 802.11b Chain B | #1 2412 MHz | 15.5 | 15.65 | Radiated Emissions, 1 - 26 GHz | FCC 15.209, 15.247 | 39.89dBμV/m, -14.11dB |
| | | #6 2437 MHz | 15.5 | 15.44 | | | 36.77dBμV/m, -17.23dB |
| | | #11 2462 MHz | 15.5 | 15.45 | | | 40.67dBμV/m, -13.33dB |
| Center channel in 802.11g and n modes (OFDM) to determine the worst case. For n modes we are testing with both chains operating simultaneously at the maximum single chain power to cover both single- and dual-chain operation. | | | | | | | |
| 3 | 802.11g Chain A/B | #6 2437 MHz | 16.5 | 16.68 | Radiated Emissions, 1 - 26 GHz | FCC 15.209, 15.247 | 31.34dBμV/m, -22.66dB |
| | | #6 2437 MHz | 16.5 | 16.51 | | | 31.27dBμV/m, -22.73dB |
| Switched to sample MAC Address: 00:15:00:85:80:1C due to broken RF connector on original sample. | | | | | | | |
| 4 | n20 / n40 Chain A/B | #6 2437MHz | A:16.5 B: 16.5 | 16.44 16.4 | Radiated Emissions, 1 - 26 GHz | FCC 15.209, 15.247 | 31.25dBμV/m, -22.75dB |
| | | #6 2437MHz | A:16.5 B: 16.5 | 16.56 16.52 | | | 31.30dBμV/m, -22.70dB |
| Top and bottom channels in worst case OFDM mode: | | | | | | | |
| 5 | Receive Chain A, Chain B and Chain A+B | #6 2437 MHz | - | - | Radiated Emissions, 1 - 26 GHz | FCC 15.209, 15.247 | 43.07dBμV/m, -10.93dB |
| | | #6 2437 MHz | - | - | | | 43.71dBμV/m, -10.29dB |
| | | #6 2437 MHz | - | - | | | 43.33dBμV/m, -10.67dB |
| First set of measurements - center channel in each band to determine which mode has the highest emissions. SISO modes evaluated at the same per chain power as the highest single chain power to cover both MIMO & SISO operation. | | | | | | | |

| Test # | Mode | Channel | Target Power (dBm) | Measured Power (dBm) | Test Performed | Limit | Result |
|---|---|---|---|---|---|---|---|
| 1 | an40 Chain A+B | #159 5795 MHz | A: 16.5 B: 16.5 | A: 16.51 B: 16.67 | Radiated Emissions, 1 - 40 GHz | FCC 15.209, 15.247 | 33.96dBμV/m, -20.04dB |
| 2 | an20 Chain A+B | #157 5785 MHz | A: 16.5 B: 16.5 | A: 16.44 B: 16.55 | | | 35.06dBμV/m, -18.94dB |
| 3 | 802.11a Chain A | #157 5785 MHz | 16.5 | 16.54 | | | 33.96dBμV/m, -20.04dB |
| | 802.11a Chain B | #157 5785 MHz | 16.5 | 16.49 | | | 33.53dBμV/m, -20.47dB |
| Final measurements - top and bottom channels in each band tin the worst case mode for each band. | | | | | | | |
| 4 | an20 Chain A+B | 149 5745 MHz | A: 16.5 B: 16.5 | A: 16.69 B: 16.7 | Radiated Emissions, 1 - 40 GHz | FCC 15.209, 15.247 | 39.40dBμV/m, -14.60dB |
| | | 165 5825 MHz | A: 16.5 B: 16.5 | A: 16.55 B: 16.67 | | | 38.87dBμV/m, -15.13dB |
| 5 | Receive Chain A, Chain B and Chain A+B | 157 5795 MHz | - | - | Radiated Emissions, 1 - 18 GHz | RSS 210 | 43.44dBμV/m, -10.56dB |
| | | 157 5795 MHz | - | - | | | 43.40dBμV/m, -10.60dB |
| | | 157 5795 MHz | - | - | | | 43.88dBμV/m, -10.12dB |
| Note - the target and measured power are average powers (measured with average power sensor) and are used for reference purposes only. Power is set using "GAIN CONTROL" mode in the DRTU tool. | | | | | | | |

MAC Address: 00:15:00:85:80:1C DRTU Tool Version: 1.5.2-0308 Driver version: 14.0.4.115

| Test# | Test Performed | Limit | Result | Under Limit (dB) |
|---|---|---|---|---|
| 1 | Radiated Emissions 30 - 1000 MHz | FCC 15.209 / RSS 210 | Pass | 6.70dB |

### 4.6.2. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

### 4.6.3. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RB / VB (Emission in restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for peak |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

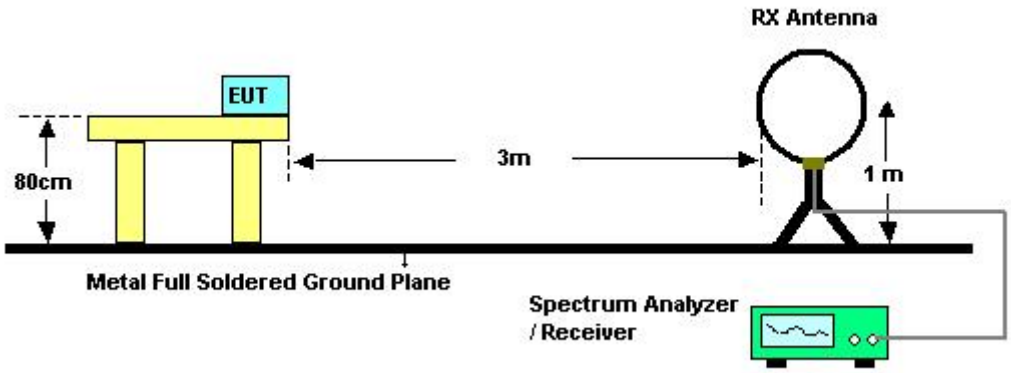
### 4.6.4. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.

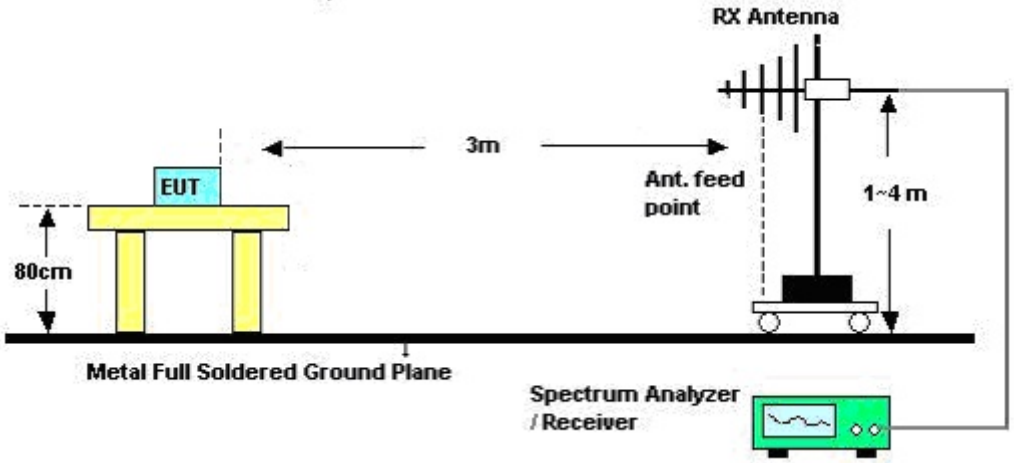
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

### 4.6.5. Test Setup Layout

For radiated emissions below 1GHz




For radiated emissions above 1GHz




### 4.6.6. Test Deviation

There is no deviation with the original standard.

### 4.6.7. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 4.6.8. Results of Radiated Emissions (9kHz~30MHz)

| Temperature | 22°C | Humidity | 63% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | CTX |
| Test Date | Dec. 16, 2011 | | |

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Limit Line (dBuV) | Remark |
|---|---|---|---|---|
| - | - | - | - | See Note |

Note:

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

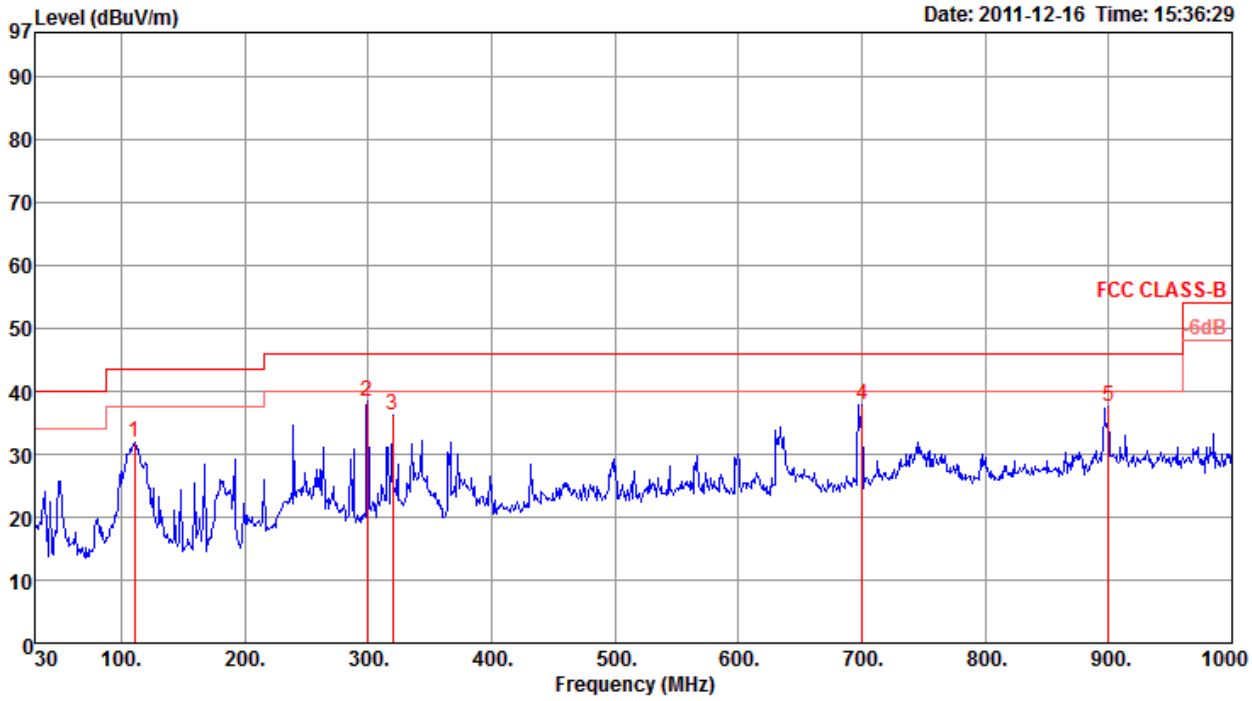
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

## 4.6.9. Results of Radiated Emissions (30MHz~1GHz)

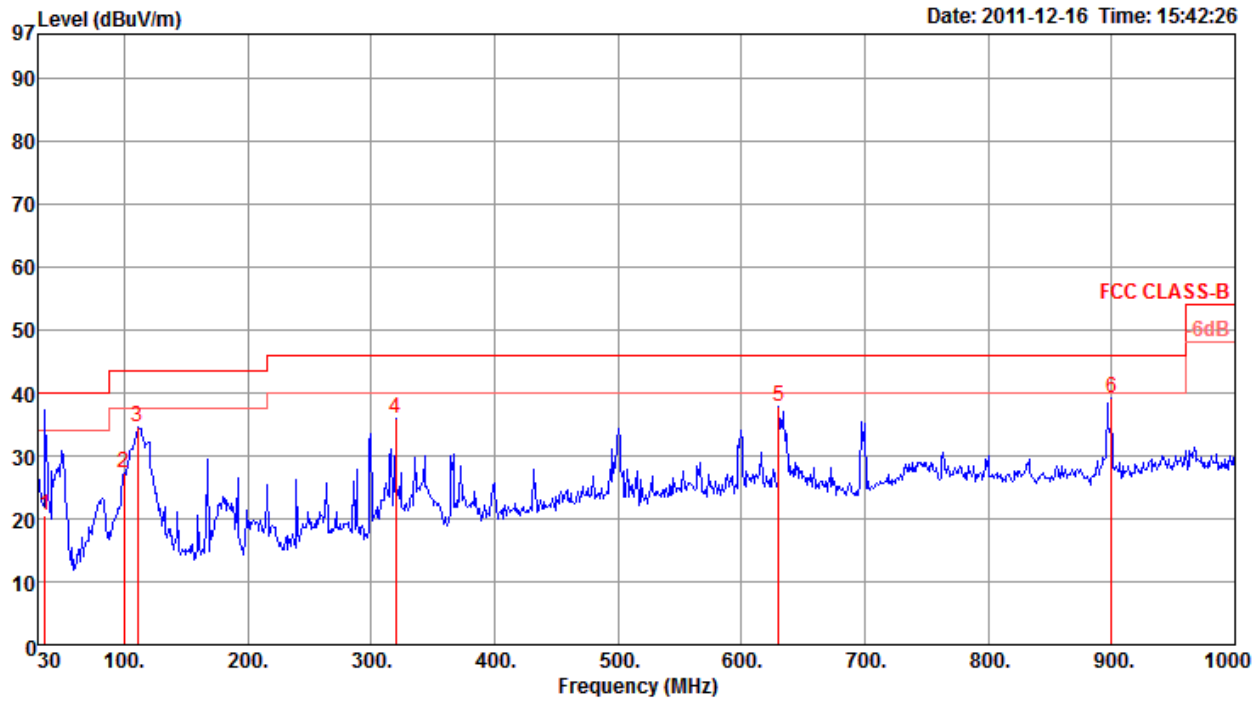
| Temperature | 22°C | Humidity | 63% |
|---|---|---|---|
| Test Engineer | Denis Su | Configurations | CTX |

*Horizontal*




| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Preamp Factor | Antenna Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB | dB/m | deg | cm | | |
| 1 | 110.51 | 31.76 | 43.50 | -11.74 | 45.34 | 1.57 | 27.55 | 12.40 | 0 | 400 | Peak | HORIZONTAL |
| 2 p | 299.66 | 38.41 | 46.00 | -7.59 | 49.22 | 2.51 | 26.90 | 13.58 | 0 | 400 | Peak | HORIZONTAL |
| 3 | 320.03 | 36.24 | 46.00 | -9.76 | 46.29 | 2.63 | 27.03 | 14.35 | 0 | 400 | Peak | HORIZONTAL |
| 4 | 700.27 | 37.80 | 46.00 | -8.20 | 41.67 | 4.16 | 27.99 | 19.96 | 0 | 400 | Peak | HORIZONTAL |
| 5 | 900.09 | 37.66 | 46.00 | -8.34 | 39.43 | 4.60 | 27.40 | 21.03 | 0 | 400 | Peak | HORIZONTAL |

*Vertical*




| | Freq | Level | Limit Line | Over Limit | Read Level | Cable Loss | Preamp Factor | Antenna Factor | T/Pos | A/Pos | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | dB | dB/m | deg | cm | | |
| 1 q | 35.85 | 20.51 | 40.00 | -19.49 | 32.50 | 0.93 | 27.80 | 14.88 | 126 | 100 | QP | VERTICAL |
| 2 | 99.84 | 27.31 | 43.50 | -16.19 | 42.53 | 1.50 | 27.60 | 10.88 | 0 | 100 | Peak | VERTICAL |
| 3 | 110.51 | 34.49 | 43.50 | -9.01 | 48.07 | 1.57 | 27.55 | 12.40 | 0 | 100 | Peak | VERTICAL |
| 4 | 320.03 | 36.02 | 46.00 | -9.98 | 46.07 | 2.63 | 27.03 | 14.35 | 0 | 100 | Peak | VERTICAL |
| 5 | 630.43 | 37.74 | 46.00 | -8.26 | 42.30 | 3.83 | 28.07 | 19.68 | 0 | 100 | Peak | VERTICAL |
| 6 p | 900.09 | 39.30 | 46.00 | -6.70 | 41.07 | 4.60 | 27.40 | 21.03 | 0 | 100 | Peak | VERTICAL |

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

## 4.6.10. Results for Radiated Emissions (1GHz~10th Harmonic)

Radiated Spurious Emissions - 802.11b, Chain A (Worse Case)

| | |
|---|---|
| Date of Test: | Dec. 15, 2011 |
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11b, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 15.5 | 15.65 | 23.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4824.001 | 46.87 | V | 74 | -27.13 | Peak | 169 | 113 | RB/VB:1MHz/3MHz |
| 4823.958 | 40.51 | V | 54 | -13.49 | Avg | 169 | 113 | RB/VB:1MHz/10Hz |
| 4824.032 | 45.29 | H | 74 | -28.71 | Peak | 76 | 100 | RB/VB:1MHz/3MHz |
| 4823.944 | 36.86 | H | 54 | -17.14 | Avg | 76 | 100 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-6 2437MHz- 802.11b, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 15.5 | 15.69 | 23.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4874.082 | 45.74 | V | 74 | -28.26 | Peak | 166 | 100 | RB/VB:1MHz/3MHz |
| 4873.958 | 38.69 | V | 54 | -15.31 | Avg | 166 | 100 | RB/VB:1MHz/10Hz |
| 4873.721 | 44.07 | H | 74 | -29.93 | Peak | 53 | 100 | RB/VB:1MHz/3MHz |
| 4873.971 | 35.19 | H | 54 | -18.81 | Avg | 53 | 100 | RB/VB:1MHz/10Hz |
| 7310.215 | 45.06 | V | 74 | -28.94 | Peak | 153 | 100 | RB/VB:1MHz/3MHz |
| 7311.096 | 32.34 | V | 54 | -21.66 | Avg | 153 | 100 | RB/VB:1MHz/10Hz |
| 7311.914 | 45.46 | H | 74 | -28.54 | Peak | 266 | 100 | RB/VB:1MHz/3MHz |
| 7310.744 | 32.31 | H | 54 | -21.69 | Avg | 266 | 100 | RB/VB:1MHz/10Hz |

Test #3 EUT on Channel-11 2462MHz- 802.11b, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 15.5 | 15.45 | 23.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4924.075 | 45.92 | V | 74 | -28.08 | Peak | 162 | 109 | RB/VB:1MHz/3MHz |
| 4924 | 39.20 | V | 54 | -14.80 | Avg | 162 | 109 | RB/VB:1MHz/10Hz |
| 4923.873 | 46.06 | H | 74 | -27.94 | Peak | 121 | 100 | RB/VB:1MHz/3MHz |
| 4923.985 | 39.23 | H | 54 | -14.77 | Avg | 121 | 100 | RB/VB:1MHz/10Hz |
| 7386.5 | 45.24 | V | 74 | -28.76 | Peak | 265 | 100 | RB/VB:1MHz/3MHz |
| 7385.997 | 32.51 | V | 54 | -21.49 | Avg | 265 | 100 | RB/VB:1MHz/10Hz |
| 7385.876 | 44.97 | H | 74 | -29.03 | Peak | 82 | 100 | RB/VB:1MHz/3MHz |
| 7386.42 | 32.57 | H | 54 | -21.43 | Avg | 82 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11b, Chain B (Worse Case)

| | |
|---|---|
| Date of Test: | Dec. 15, 2011 |
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-1 2412MHz - 802.11b, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 15.5 | 15.65 | 23 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4824.104 | 52.93 | V | 74 | -21.07 | Peak | 160 | 100 | RB/VB:1MHz/3MHz |
| 4824 | 38.44 | V | 54 | -15.56 | Avg | 160 | 100 | RB/VB:1MHz/10Hz |
| 4823.779 | 52.90 | H | 74 | -21.10 | Peak | 339 | 100 | RB/VB:1MHz/3MHz |
| 4823.851 | 39.89 | H | 54 | -14.11 | Avg | 339 | 100 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-6 2437MHz- 802.11b, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 15.5 | 15.44 | 23 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4873.83 | 45.48 | V | 74 | -28.52 | Peak | 157 | 100 | RB/VB:1MHz/3MHz |
| 4873.971 | 36.77 | V | 54 | **-17.23** | Avg | 157 | 100 | RB/VB:1MHz/10Hz |
| 4873.965 | 44.68 | H | 74 | -29.32 | Peak | 112 | 140 | RB/VB:1MHz/3MHz |
| 4874.001 | 35.25 | H | 54 | **-18.75** | Avg | 112 | 140 | RB/VB:1MHz/10Hz |
| 7312.539 | 45.04 | V | 74 | -28.96 | Peak | 267 | 100 | RB/VB:1MHz/3MHz |
| 7312.122 | 32.24 | V | 54 | -21.76 | Avg | 267 | 100 | RB/VB:1MHz/10Hz |
| 7308.652 | 45.79 | H | 74 | -28.21 | Peak | 154 | 100 | RB/VB:1MHz/3MHz |
| 7312.707 | 32.31 | H | 54 | -21.69 | Avg | 154 | 100 | RB/VB:1MHz/10Hz |

Test #3 EUT on Channel-11 2462MHz- 802.11b, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 15.5 | 15.45 | 23 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4923.955 | 46.36 | V | 74 | -27.64 | Peak | 203 | 105 | RB/VB:1MHz/3MHz |
| 4923.944 | 40.67 | V | 54 | -13.33 | Avg | 203 | 105 | RB/VB:1MHz/10Hz |
| 4923.91 | 46.25 | H | 74 | -27.75 | Peak | 111 | 176 | RB/VB:1MHz/3MHz |
| 4923.971 | 38.94 | H | 54 | -15.06 | Avg | 111 | 176 | RB/VB:1MHz/10Hz |
| 7387.362 | 45.52 | V | 74 | -28.48 | Peak | 104 | 100 | RB/VB:1MHz/3MHz |
| 7385.624 | 32.50 | V | 54 | -21.50 | Avg | 104 | 100 | RB/VB:1MHz/10Hz |
| 7384.974 | 44.87 | H | 74 | -29.13 | Peak | 206 | 100 | RB/VB:1MHz/3MHz |
| 7386.296 | 32.49 | H | 54 | -21.51 | Avg | 206 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11g, Chain A

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-6 2437MHz- 802.11g, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16.5 | 16.68 | 29.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4874.36 | 41.20 | V | 74 | -32.80 | Peak | 135 | 100 | RB/VB:1MHz/3MHz |
| 4873.972 | 28.48 | V | 54 | -25.52 | Avg | 135 | 100 | RB/VB:1MHz/10Hz |
| 4873.576 | 41.07 | H | 74 | -32.93 | Peak | 227 | 100 | RB/VB:1MHz/3MHz |
| 4874.1 | 27.60 | H | 54 | -26.40 | Avg | 227 | 100 | RB/VB:1MHz/10Hz |
| 7310.51 | 45.44 | V | 74 | -28.56 | Peak | 200 | 100 | RB/VB:1MHz/3MHz |
| 7311.386 | 31.34 | V | 54 | -22.66 | Avg | 200 | 100 | RB/VB:1MHz/10Hz |
| 7311.398 | 45.27 | H | 74 | -28.73 | Peak | 321 | 100 | RB/VB:1MHz/3MHz |
| 7311.358 | 31.31 | H | 54 | -22.69 | Avg | 321 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11g, Chain B

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-6 2437MHz- 802.11g, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16.5 | 16.51 | 29 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4873.56 | 44.27 | V | 74 | -29.73 | Peak | 273 | 100 | RB/VB:1MHz/3MHz |
| 4874.042 | 30.34 | V | 54 | -23.66 | Avg | 273 | 100 | RB/VB:1MHz/10Hz |
| 4873.542 | 41.81 | H | 74 | -32.19 | Peak | 94 | 100 | RB/VB:1MHz/3MHz |
| 4874.03 | 27.58 | H | 54 | -26.42 | Avg | 94 | 100 | RB/VB:1MHz/10Hz |
| 7310.906 | 45.18 | V | 74 | -28.82 | Peak | 139 | 100 | RB/VB:1MHz/3MHz |
| 7311.272 | 31.25 | V | 54 | -22.75 | Avg | 139 | 100 | RB/VB:1MHz/10Hz |
| 7311.358 | 45.62 | H | 74 | -28.38 | Peak | 46 | 100 | RB/VB:1MHz/3MHz |
| 7311.314 | 31.27 | H | 54 | -22.73 | Avg | 46 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11n 20MHz, Chain A+B

| | |
|---|---|
| Date of Test: | 2011/12/14 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-6 2437MHz-802.11n 20MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.44 | 16.4 | 19.43 | 32.5 | 31.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4874.044 | 46.64 | V | 74 | -27.36 | Peak | 263 | 100 | RB/VB:1MHz/3MHz |
| 4874.486 | 30.31 | V | 54 | -23.69 | Avg | 263 | 100 | RB/VB:1MHz/10Hz |
| 4874.022 | 45.00 | H | 74 | -29.00 | Peak | 116 | 100 | RB/VB:1MHz/3MHz |
| 4874.472 | 29.63 | H | 54 | -24.37 | Avg | 116 | 100 | RB/VB:1MHz/10Hz |
| 7311.086 | 45.04 | V | 74 | -28.96 | Peak | 244 | 100 | RB/VB:1MHz/3MHz |
| 7311.414 | 31.24 | V | 54 | -22.76 | Avg | 244 | 100 | RB/VB:1MHz/10Hz |
| 7311.01 | 44.90 | H | 74 | -29.10 | Peak | 166 | 100 | RB/VB:1MHz/3MHz |
| 7311.3 | 31.25 | H | 54 | -22.75 | Avg | 166 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11n 40MHz, Chain A+B

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-6 2437MHz-802.11n 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.56 | 16.52 | 19.55 | 32.5 | 31.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 4873.924 | 44.50 | V | 74 | -29.50 | Peak | 273 | 100 | RB/VB:1MHz/3MHz |
| 4874.916 | 28.13 | V | 54 | -25.87 | Avg | 273 | 100 | RB/VB:1MHz/10Hz |
| 7311.52 | 45.89 | V | 74 | -28.11 | Peak | 316 | 100 | RB/VB:1MHz/3MHz |
| 7311.48 | 31.29 | V | 54 | -22.71 | Avg | 316 | 100 | RB/VB:1MHz/10Hz |
| 4874.936 | 41.59 | H | 74 | -32.41 | Peak | 110 | 100 | RB/VB:1MHz/3MHz |
| 4874.984 | 27.10 | H | 54 | -26.90 | Avg | 110 | 100 | RB/VB:1MHz/10Hz |
| 7311.804 | 45.47 | H | 74 | -28.53 | Peak | 213 | 100 | RB/VB:1MHz/3MHz |
| 7311.476 | 31.30 | H | 54 | -22.70 | Avg | 213 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11a, Chain A

| | |
|---|---|
| Date of Test: | 2011/12/14 |
| Test Engineer: | Robert |

Test #2 EUT on Channel-157 5785MHz- 802.11a, Chain A

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain A | 16.5 | 16.54 | 26 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11570.12 | 47.05 | V | 74 | -26.95 | Peak | 108 | 100 | RB/VB:1MHz/3MHz |
| 11569.96 | 33.96 | V | 54 | -20.04 | Avg | 108 | 100 | RB/VB:1MHz/10Hz |
| 11570.09 | 47.54 | H | 74 | -26.46 | Peak | 291 | 100 | RB/VB:1MHz/3MHz |
| 11570 | 33.55 | H | 54 | -20.45 | Avg | 291 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11a, Chain B

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-157 5785MHz- 802.11a, Chain B

| Antenna Port | Target (dBm) | Power Settings Measured (dBm) | Software Setting |
|---|---|---|---|
| Chain B | 16.5 | 16.49 | 27 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11569.96 | 47.11 | V | 74 | -26.89 | Peak | 295 | 100 | RB/VB:1MHz/3MHz |
| 11569.93 | 33.53 | V | 54 | -20.47 | Avg | 295 | 100 | RB/VB:1MHz/10Hz |
| 11569.51 | 47.65 | H | 74 | -26.35 | Peak | 106 | 100 | RB/VB:1MHz/3MHz |
| 11569.84 | 33.45 | H | 54 | -20.55 | Avg | 106 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11an 20MHz, Chain A+B (Worse Case)

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #1 EUT on Channel-149 5745MHz - 802.11an 20MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.69 | 16.7 | 19.71 | 32 | 33 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11490.02 | 54.62 | V | 74 | -19.38 | Peak | 263 | 157 | RB/VB:1MHz/3MHz |
| 11489.5 | 39.40 | V | 54 | -14.60 | Avg | 263 | 157 | RB/VB:1MHz/10Hz |
| 11490.29 | 48.05 | H | 74 | -25.95 | Peak | 230 | 100 | RB/VB:1MHz/3MHz |
| 11489.53 | 34.12 | H | 54 | -19.88 | Avg | 230 | 100 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-157 5785MHz-802.11an 20MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.44 | 16.55 | 19.51 | 32.5 | 33.5 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11570.04 | 51.24 | V | 74 | -22.76 | Peak | 160 | 100 | RB/VB:1MHz/3MHz |
| 11569.52 | 35.06 | V | 54 | **-18.94** | Avg | 160 | 100 | RB/VB:1MHz/10Hz |
| 11570.06 | 47.20 | H | 74 | -26.80 | Peak | 222 | 100 | RB/VB:1MHz/3MHz |
| 11569.79 | 33.49 | H | 54 | -20.51 | Avg | 222 | 100 | RB/VB:1MHz/10Hz |

Test #3 EUT on Channel-165 5825MHz- 802.11an 20MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.55 | 16.67 | 19.62 | 33 | 34 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11650.14 | 56.30 | V | 74 | -17.70 | Peak | 147 | 156 | RB/VB:1MHz/3MHz |
| 11650.5 | 38.87 | V | 54 | -15.13 | Avg | 147 | 156 | RB/VB:1MHz/10Hz |
| 11649.92 | 49.04 | H | 74 | -24.96 | Peak | 205 | 100 | RB/VB:1MHz/3MHz |
| 11650.3 | 34.89 | H | 54 | -19.11 | Avg | 205 | 100 | RB/VB:1MHz/10Hz |

Radiated Spurious Emissions - 802.11an 40MHz, Chain A+B

| | |
|---|---|
| Date of Test: | Dec. 14, 2011 |
| Test Engineer: | Robert Chang |

Test #2 EUT on Channel-159 5795MHz-802.11an 40MHz, Chain A+B

| | Target (dBm) | | | Power Settings Measured (dBm) | | | Software Setting | |
|---|---|---|---|---|---|---|---|---|
| Chain | A | B | Total | A | B | Total | | |
| | 16.5 | 16.5 | 19.51 | 16.51 | 16.67 | 19.60 | 33.5 | 35 |

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 11589.78 | 48.33 | V | 74 | -25.67 | Peak | 99 | 100 | RB/VB:1MHz/3MHz |
| 11569.96 | 33.96 | V | 54 | -20.04 | Avg | 99 | 100 | RB/VB:1MHz/10Hz |
| 11570.09 | 47.54 | H | 74 | -26.46 | Peak | 282 | 100 | RB/VB:1MHz/3MHz |
| 11590.39 | 33.58 | H | 54 | -20.42 | Avg | 282 | 100 | RB/VB:1MHz/10Hz |

Radiated Receiver Spurious Emissions - 802.11a

| | |
|---|---|
| Date of Test: | Dec. 16, 2011 |
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-6 2437MHz - Chain A

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1166.751 | 48.31 | V | 74 | -25.69 | Peak | 267 | 100 | RB/VB:1MHz/3MHz |
| 1166.832 | 43.07 | V | 54 | -10.93 | Avg | 267 | 100 | RB/VB:1MHz/10Hz |
| 1166.835 | 39.44 | H | 74 | -34.56 | Peak | 208 | 102 | RB/VB:1MHz/3MHz |
| 1166.835 | 30.96 | H | 54 | -23.04 | Avg | 208 | 102 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-6 2437MHz- Chain B

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1167.258 | 50.57 | V | 74 | -23.43 | Peak | 271 | 100 | RB/VB:1MHz/3MHz |
| 1166.832 | 43.71 | V | 54 | -10.29 | Avg | 271 | 100 | RB/VB:1MHz/10Hz |
| 1166.925 | 40.29 | H | 74 | -33.71 | Peak | 177 | 109 | RB/VB:1MHz/3MHz |
| 1166.823 | 32.81 | H | 54 | -21.19 | Avg | 177 | 109 | RB/VB:1MHz/10Hz |

Test #2 EUT onChannel-6 2437MHz - Chain A+B

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1166.963 | 52.76 | V | 74 | -21.24 | Peak | 264 | 100 | RB/VB:1MHz/3MHz |
| 1166.835 | 43.33 | V | 54 | -10.67 | Avg | 264 | 100 | RB/VB:1MHz/10Hz |
| 1166.699 | 43.53 | H | 74 | -30.47 | Peak | 146 | 122 | RB/VB:1MHz/3MHz |
| 1166.832 | 34.76 | H | 54 | -19.24 | Avg | 146 | 122 | RB/VB:1MHz/10Hz |

Radiated Receiver Spurious Emissions - 802.11a

| | |
|---|---|
| Date of Test: | Dec. 16, 2011 |
| Test Engineer: | Denis Su |

Test #1 EUT on Channel-159 5795MHz - Chain A

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1166.606 | 50.50 | V | 74 | -23.50 | Peak | 262 | 100 | RB/VB:1MHz/3MHz |
| 1166.832 | 43.44 | V | 54 | -10.56 | Avg | 262 | 100 | RB/VB:1MHz/10Hz |
| 1167.003 | 42.65 | H | 74 | -31.35 | Peak | 290 | 108 | RB/VB:1MHz/3MHz |
| 1166.829 | 32.29 | H | 54 | -21.71 | Avg | 290 | 108 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-159 5795MHz - Chain B

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1167 | 49.63 | V | 74 | -24.37 | Peak | 274 | 101 | RB/VB:1MHz/3MHz |
| 1166.835 | 43.40 | V | 54 | -10.60 | Avg | 274 | 101 | RB/VB:1MHz/10Hz |
| 1166.412 | 40.46 | H | 74 | -33.54 | Peak | 337 | 100 | RB/VB:1MHz/3MHz |
| 1166.829 | 30.90 | H | 54 | -23.10 | Avg | 337 | 100 | RB/VB:1MHz/10Hz |

Test #2 EUT on Channel-159 5795MHz - Chain A+B

| Frequency | Level | Test Polar | 15.209/15.247 | | Detector | Azimuth | Height | Comments |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV/m | V/H | Limit | Margin | PK/AV | degrees | meters | |
| 1166.696 | 51.01 | V | 74 | -22.99 | Peak | 267 | 100 | RB/VB:1MHz/3MHz |
| 1166.829 | 43.88 | V | 54 | -10.12 | Avg | 267 | 100 | RB/VB:1MHz/10Hz |
| 1166.651 | 44.78 | H | 74 | -29.22 | Peak | 149 | 125 | RB/VB:1MHz/3MHz |
| 1166.832 | 33.85 | H | 54 | -20.15 | Avg | 149 | 125 | RB/VB:1MHz/10Hz |

## 4.7. Out of Band Spurious Emissions

| Mode | Chain | Frequency (MHz) | Limit | Pass / Fail |
|---|---|---|---|---|
| 802.11n 20MHz | A | 2412 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2462 | -30dBc | Pass |
| | B | 2412 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2462 | -30dBc | Pass |
| 802.11n 40MHz | A | 2422 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2452 | -30dBc | Pass |
| | B | 2422 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2452 | -30dBc | Pass |
| Note: Used -30dBc as limit for spurious. As powers were measured using a peak power meter the limit actually required is -20dBc. The peak power was measured to remain consistent with the legacy mode power measurements where the device did not meet the -30dBc | | | | |

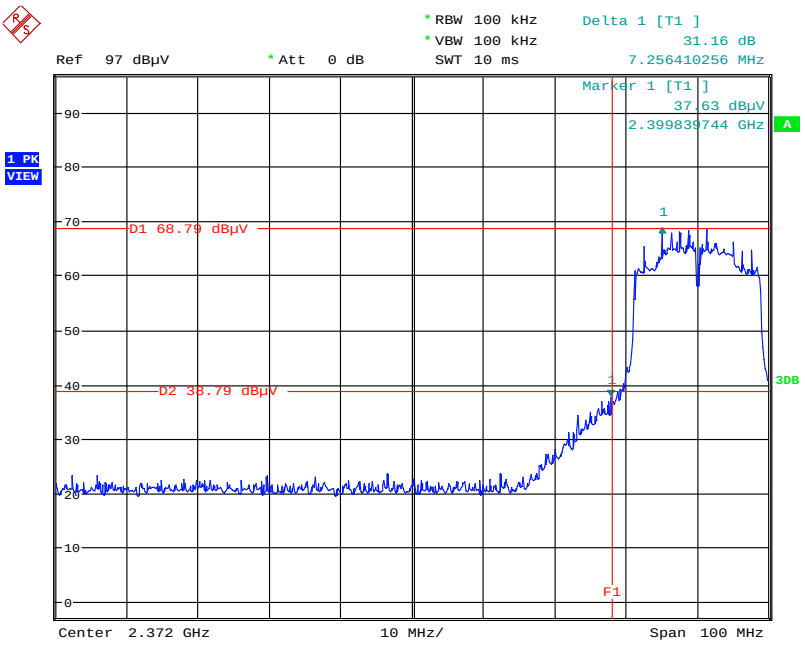
| Mode | Chain | Frequency (MHz) | Limit | Pass / Fail |
|---|---|---|---|---|
| 802.11an 20MHz | A | 5745 | -30dBc | Pass |
| | | 5785 | -30dBc | Pass |
| | | 5825 | -30dBc | Pass |
| | B | 5745 | -30dBc | Pass |
| | | 5785 | -30dBc | Pass |
| | | 5825 | -30dBc | Pass |
| 802.11an 40MHz | A | 5755 | -20dBc | Pass |
| | | 5795 | -20dBc | Pass |
| | B | 5755 | -20dBc | Pass |
| | | 5795 | -20dBc | Pass |
| Note : -20dBc limit used for n40MHz mode because this mode does not meet the -30dBc requirement at the 5725MHz band edge when operating on the lowest channel. Power measurements made for n40MHz mode were made using a peak power meter. | | | | |

| Mode | Chain | Frequency (MHz) | Limit | Pass / Fail |
|---|---|---|---|---|
| 802.11b | A | 2412 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2462 | -30dBc | Pass |
| | B | 2412 | -30dBc | Pass |
| | | 2437 | -30dBc | Pass |
| | | 2462 | -30dBc | Pass |
| 802.11g | A | 2412 | -20dBc | Pass |
| | | 2437 | -20dBc | Pass |
| | | 2462 | -20dBc | Pass |
| | B | 2412 | -20dBc | Pass |
| | | 2437 | -20dBc | Pass |
| | | 2462 | -20dBc | Pass |

| Mode | Chain | Frequency (MHz) | Limit | Pass / Fail |
|---|---|---|---|---|
| 802.11a | A | 5745 | -30dBc | Pass |
| | | 5785 | -30dBc | Pass |
| | | 5825 | -30dBc | Pass |
| | B | 5745 | -30dBc | Pass |
| | | 5785 | -30dBc | Pass |
| | | 5825 | -30dBc | Pass |

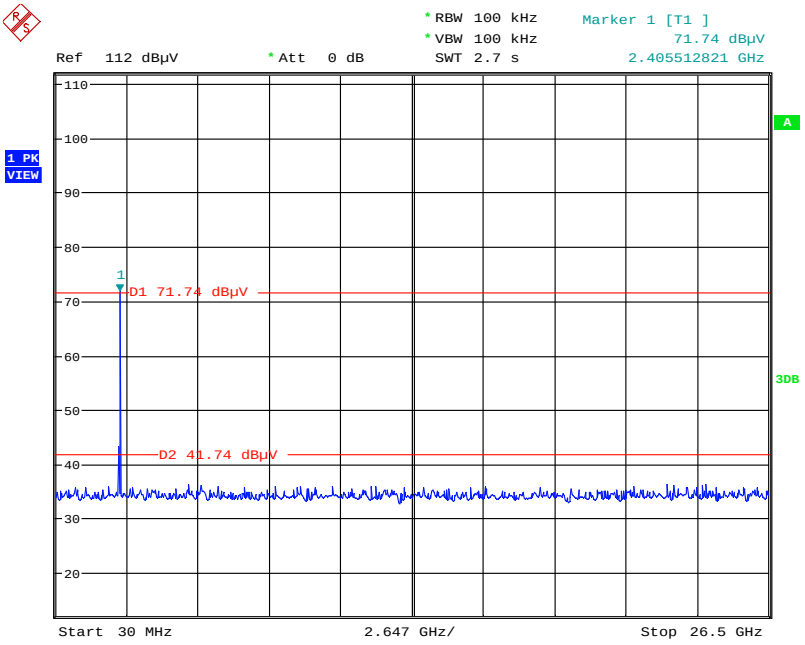
## 4.7.1. Test result of Out of Band Spurious Emissions

### Plots for low channel, 802.11n 20MHz mode Chains A, power setting(s) = 24.5, 2412 MHz



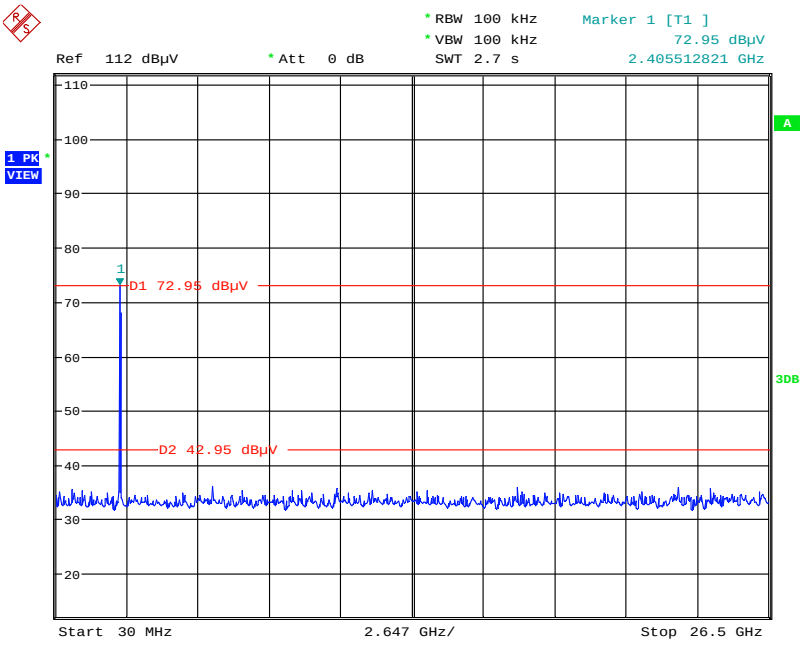

Date: 13.DEC.2011 15:52:42

### Plots for low channel, 802.11n 20MHz mode Chains A, power setting(s) = 24.5, 2412 MHz



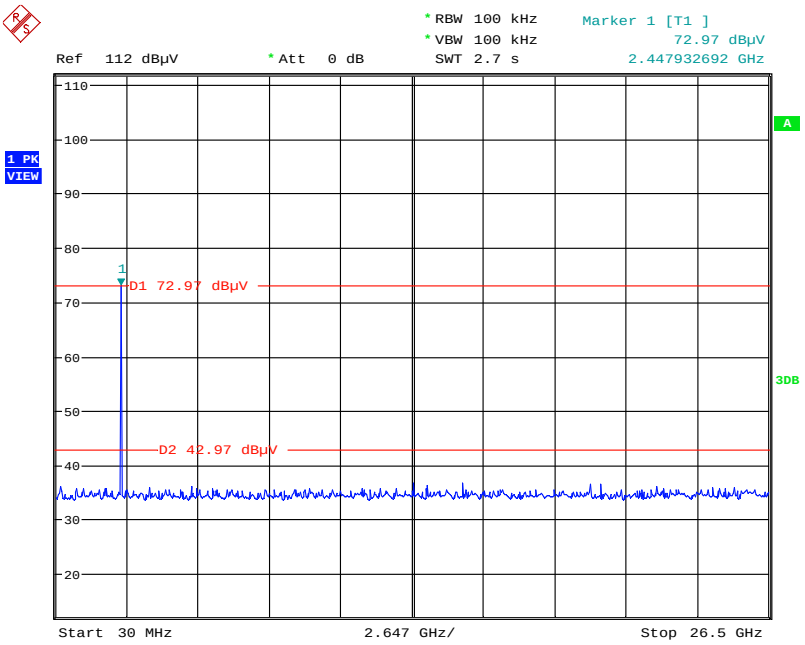

Date: 14.DEC.2011 14:11:38

## Plots for center channel, 802.11n 20MHz mode Chains A, power setting(s) = 29.5, 2437 MHz



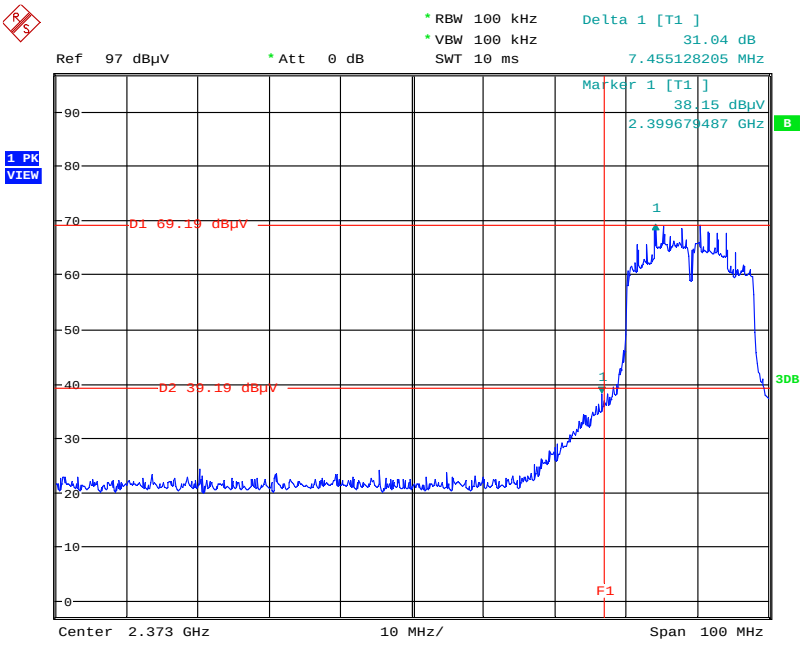

Date: 14.DEC.2011 14:12:28

## Plots for high channel, 802.11n 20MHz mode Chains A, power setting(s) = 25, 2462 MHz



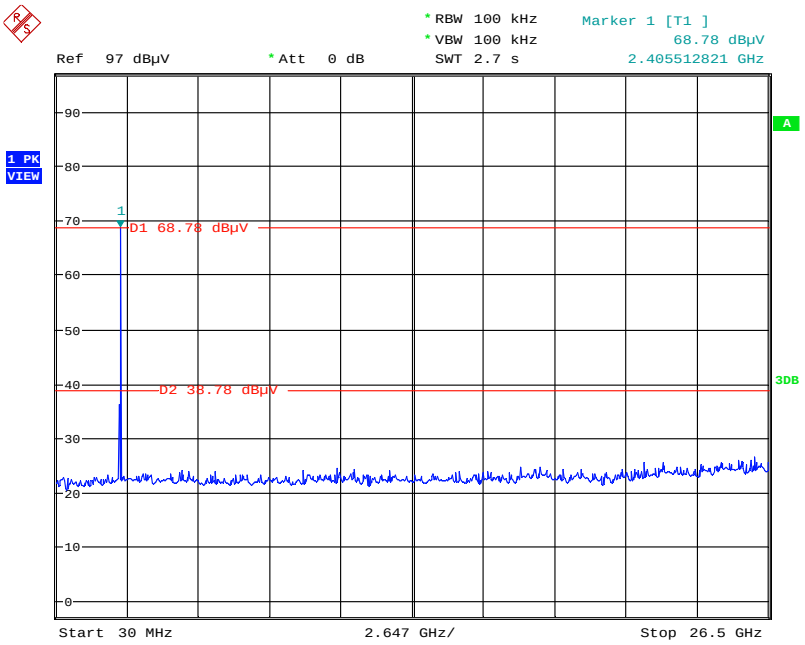

Date: 14.DEC.2011 14:15:04

## Plots for low channel, 802.11n 20MHz mode Chains B, power setting(s) = 25, 2412 MHz



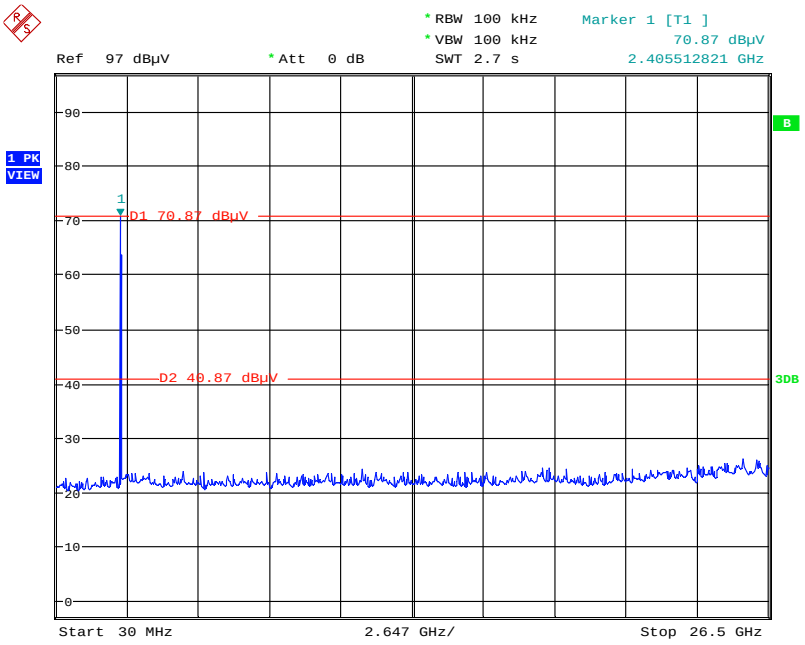

Date: 13.DEC.2011 14:17:51

## Plots for low channel, 802.11n 20MHz mode Chains B, power setting(s) = 25, 2412 MHz



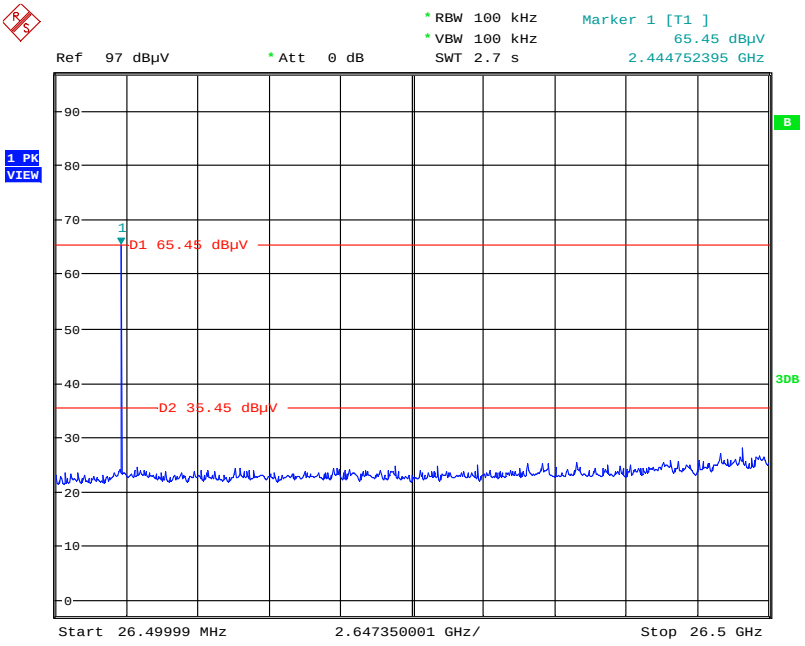

Date: 13.DEC.2011 15:16:06

## Plots for center channel, 802.11n 20MHz mode Chains B, power setting(s) = 29, 2437 MHz



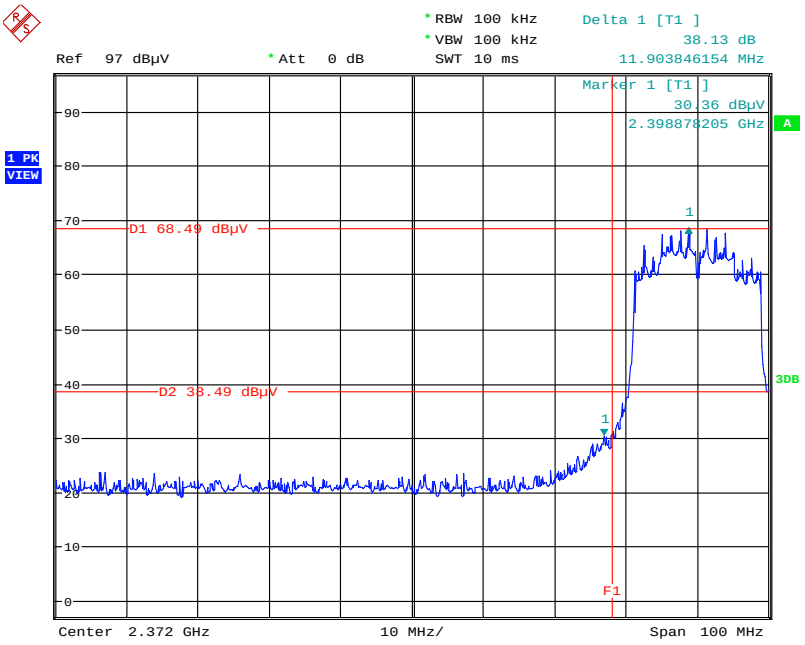

Date: 14.DEC.2011 14:41:39

## Plots for high channel, 802.11n 20MHz mode Chains B, power setting(s) = 24.5, 2462 MHz



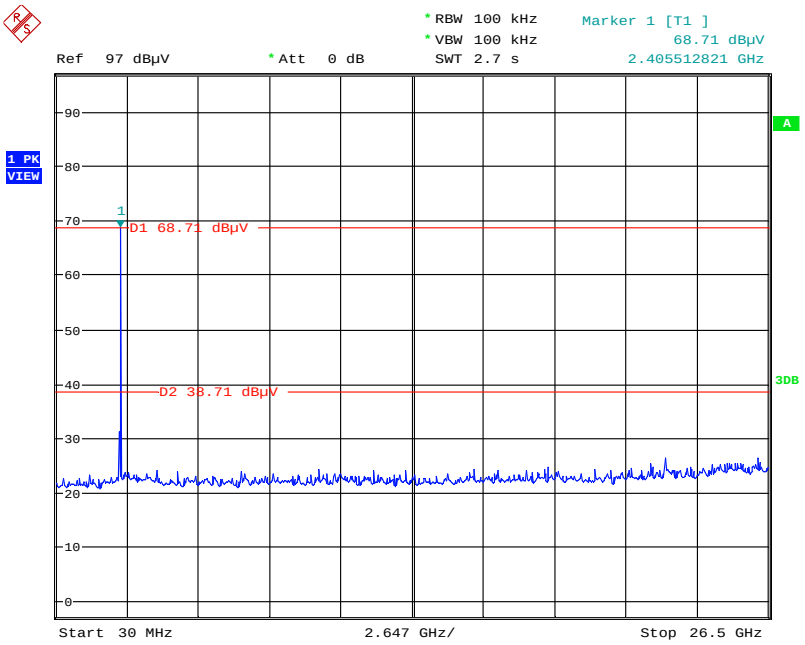

Date: 13.DEC.2011 15:13:46

## Plots for low channel, 802.11n 20MHz mode Chains A and B, power setting(s) = 25/ 25.5, 2412 MHz



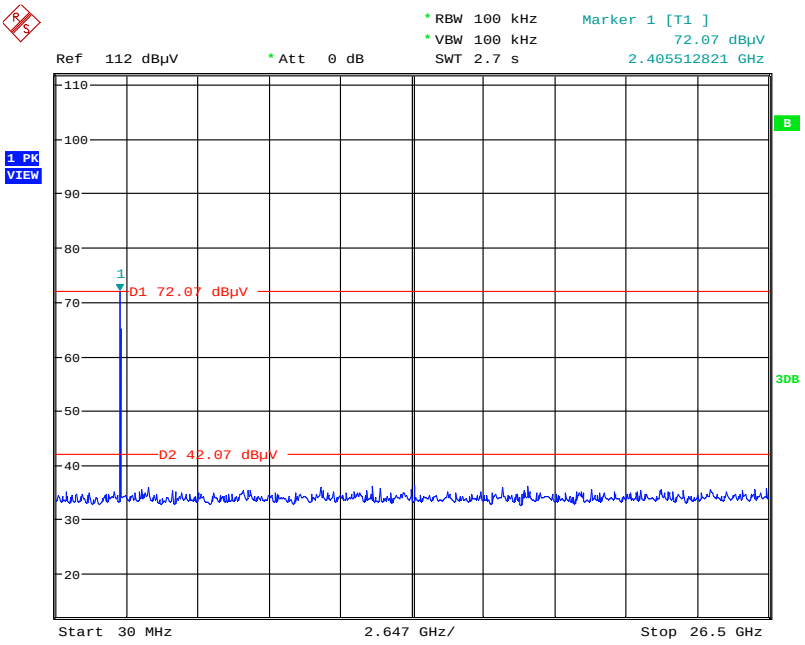

Date: 13.DEC.2011 16:43:23

## Plots for low channel, 802.11n 20MHz mode Chains A and B, power setting(s) = 25/ 25.5, 2412 MHz



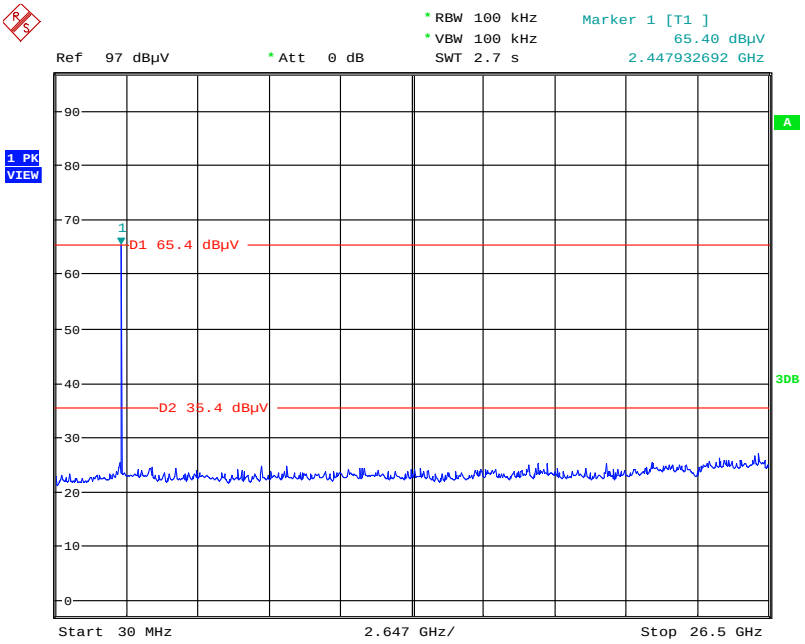

Date: 13.DEC.2011 16:44:34

## Plots for center channel, 802.11n 20MHz mode Chains A and B, power setting(s) = 29/28, 2437 MHz



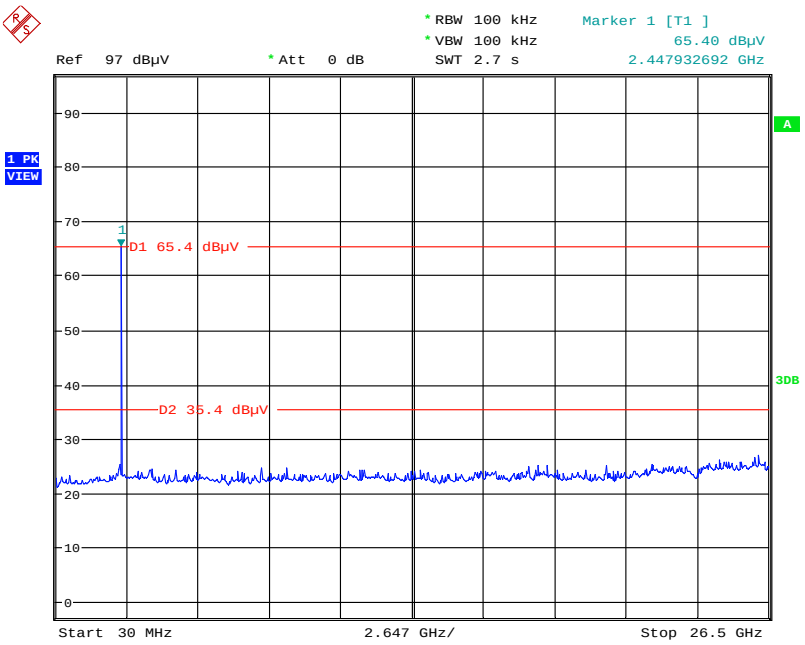

Date: 14.DEC.2011 15:03:43

## Plots for high channel, 802.11n 20MHz mode Chains A and B, power setting(s) = 26/25.5, 2462 MHz



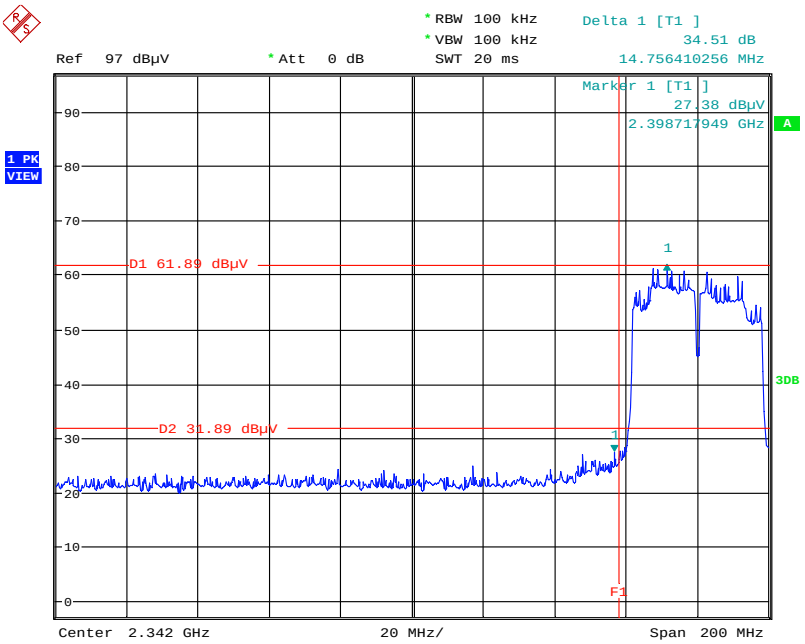

Date: 13.DEC.2011 16:51:21

## Plots for high channel, 802.11n 20MHz mode Chains A and B, power setting(s) = 26/25.5, 2462 MHz



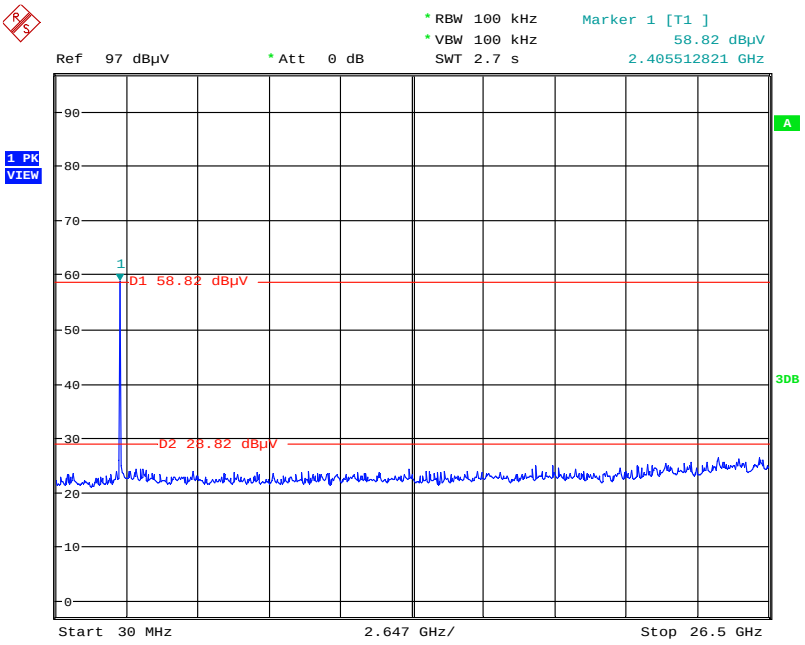

Date: 13.DEC.2011 16:51:21

## Plots for low channel, 802.11n 40MHz mode Chains A, power setting(s) = 21, 2422 MHz



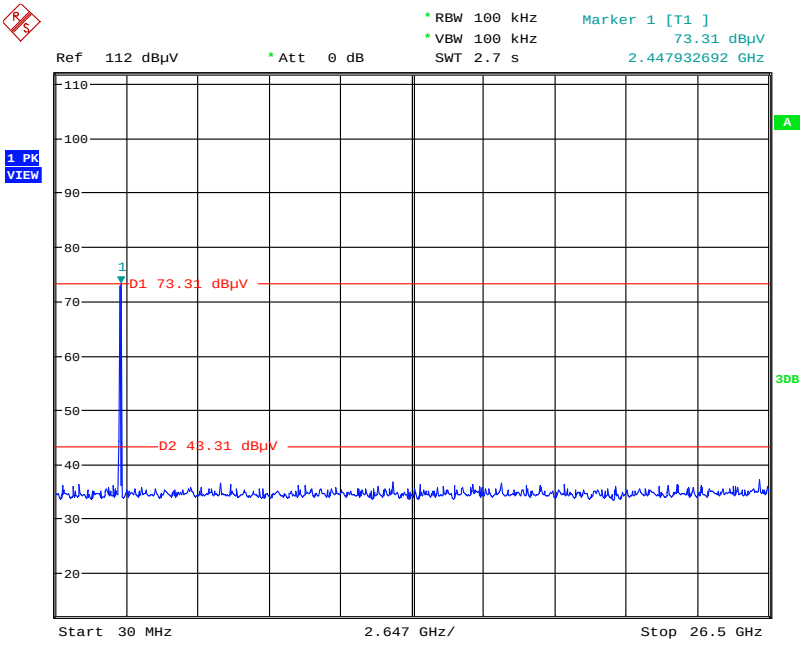

Date: 13.DEC.2011 16:01:34

## Plots for low channel, 802.11n 40MHz mode Chains A, power setting(s) = 21, 2422 MHz



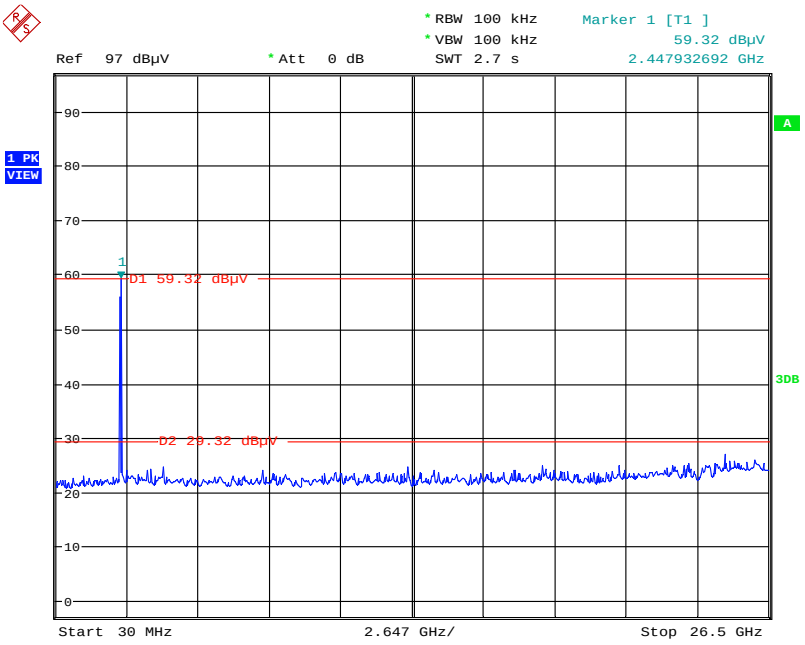

Date: 13.DEC.2011 16:02:55

## Plots for center channel, 802.11n 40MHz mode Chains A, power setting(s) = 29.5, 2437 MHz



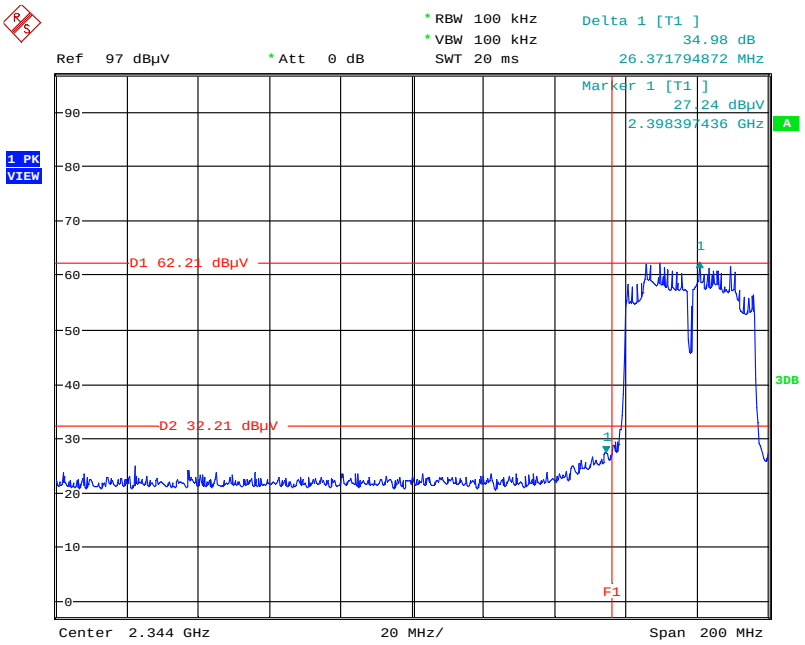

Date: 14.DEC.2011 14:19:49

## Plots for high channel, 802.11n 40MHz mode Chains A, power setting(s) = 22, 2452 MHz



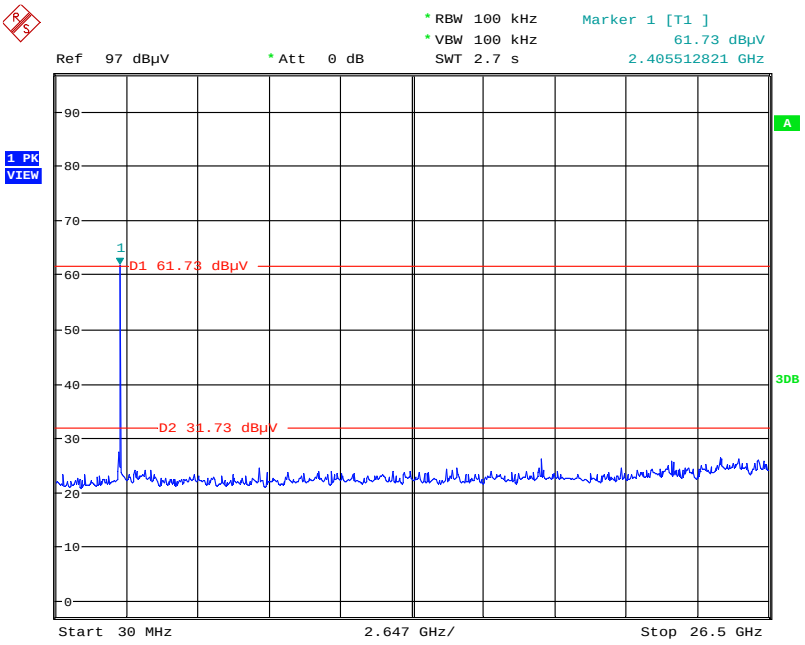

Date: 13.DEC.2011 16:06:31

## Plots for low channel, 802.11n 40MHz mode Chains B, power setting(s) = 21, 2422 MHz



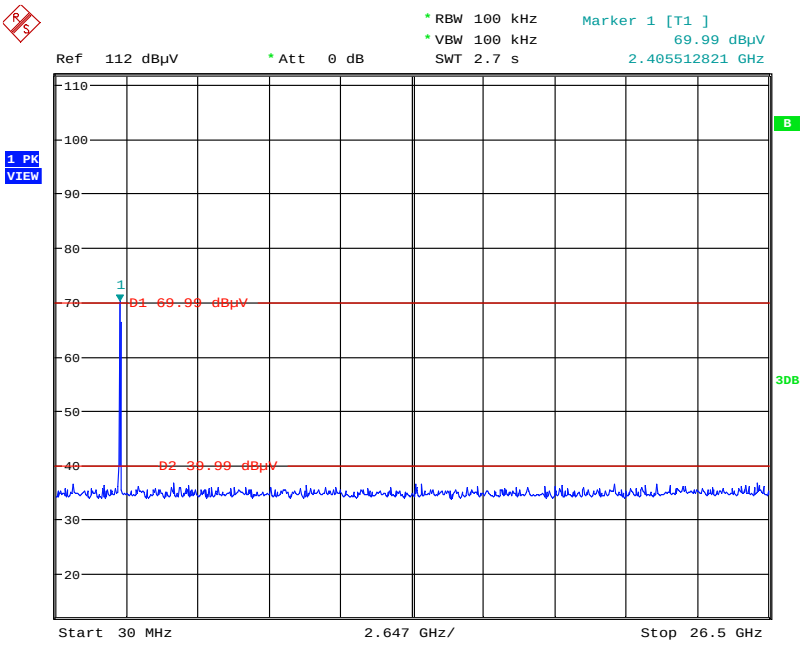

Date: 13.DEC.2011 15:31:19

## Plots for low channel, 802.11n 40MHz mode Chains B, power setting(s) = 21, 2422 MHz



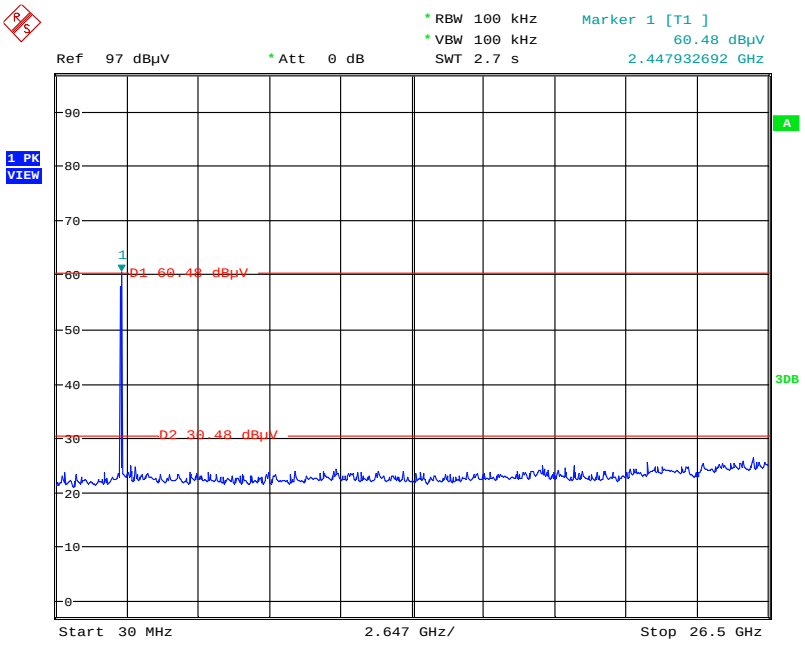

Date: 13.DEC.2011 15:36:57

## Plots for center channel, 802.11n 40MHz mode Chains B, power setting(s) = 29, 2437 MHz



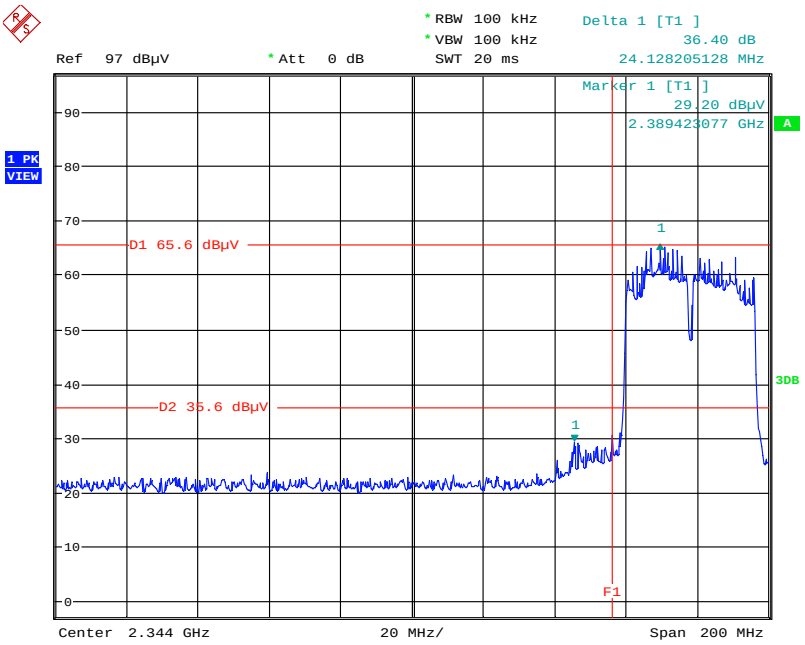

Date: 14.DEC.2011 14:51:14

## Plots for high channel, 802.11n 40MHz mode Chains B, power setting(s) = 21.5, 2452 MHz



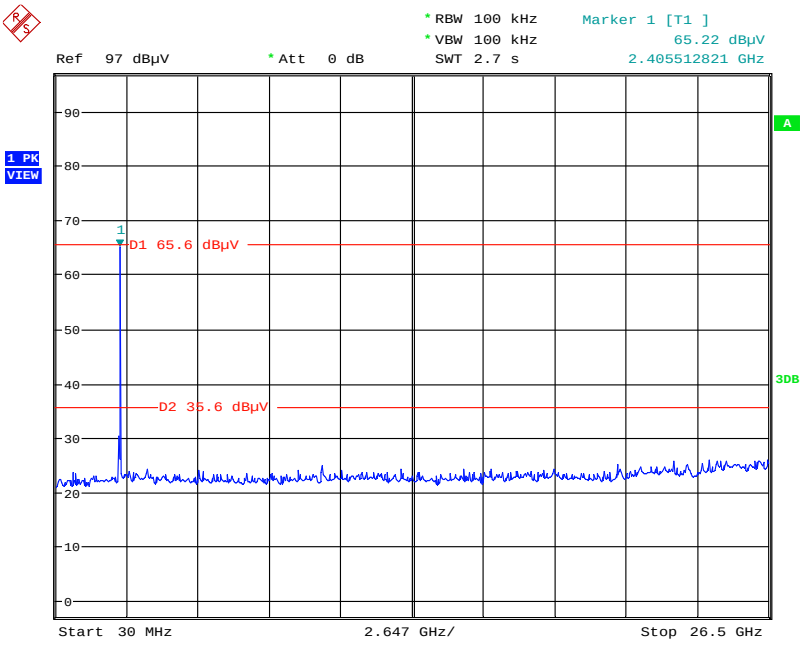

Date: 13.DEC.2011 15:35:16

## Plots for low channel, 802.11n 40MHz mode Chains A and B, power setting(s) = 22.5/22.5, 2422 MHz



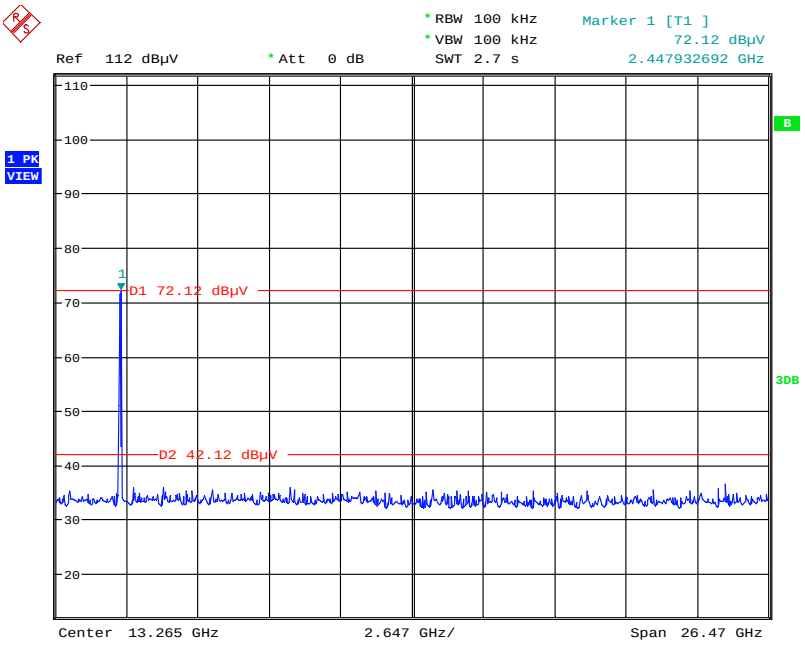

Date: 13.DEC.2011 16:54:38

## Plots for low channel, 802.11n 40MHz mode Chains A and B, power setting(s) = 22.5/22.5, 2422 MHz



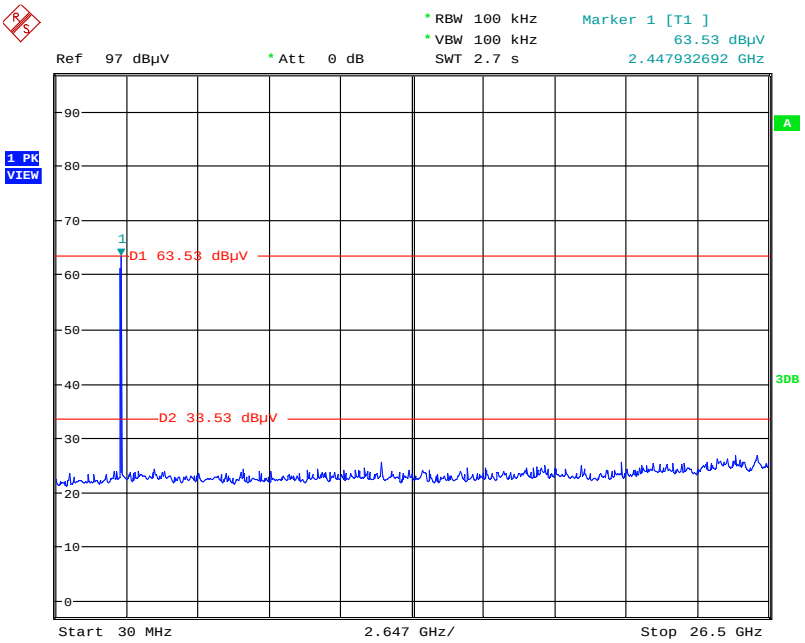

Date: 13.DEC.2011 16:55:49

## Plots for center channel, 802.11n 40MHz mode Chains A and B, power setting(s) = 29/28, 2437 MHz



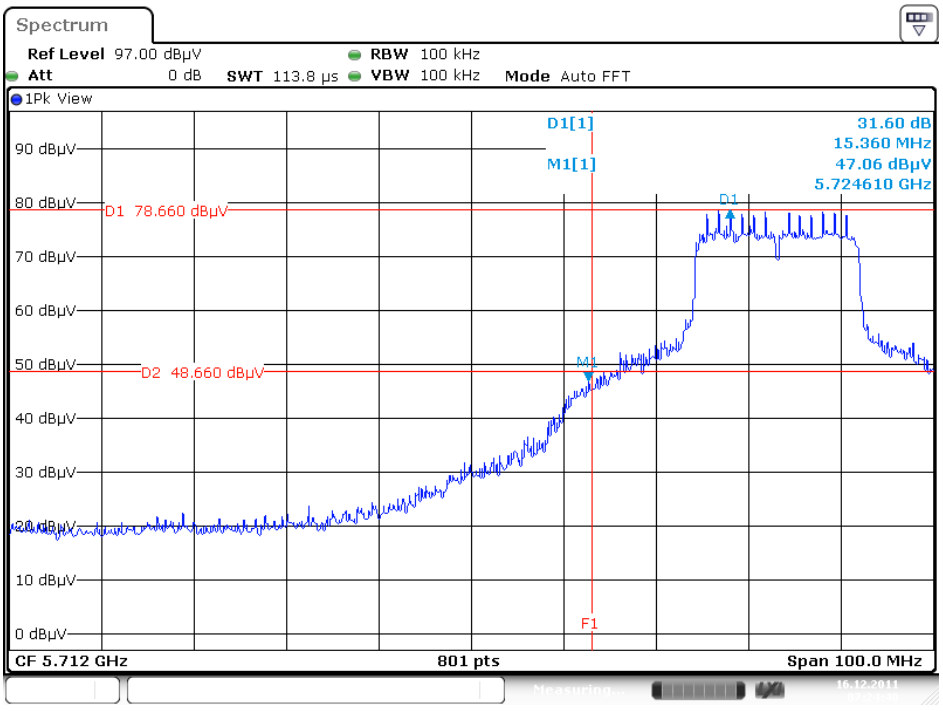

Date: 14.DEC.2011 15:06:42

## Plots for higher channel, 802.11n 40MHz mode Chains A and B, power setting(s) = 24/23, 2452 MHz



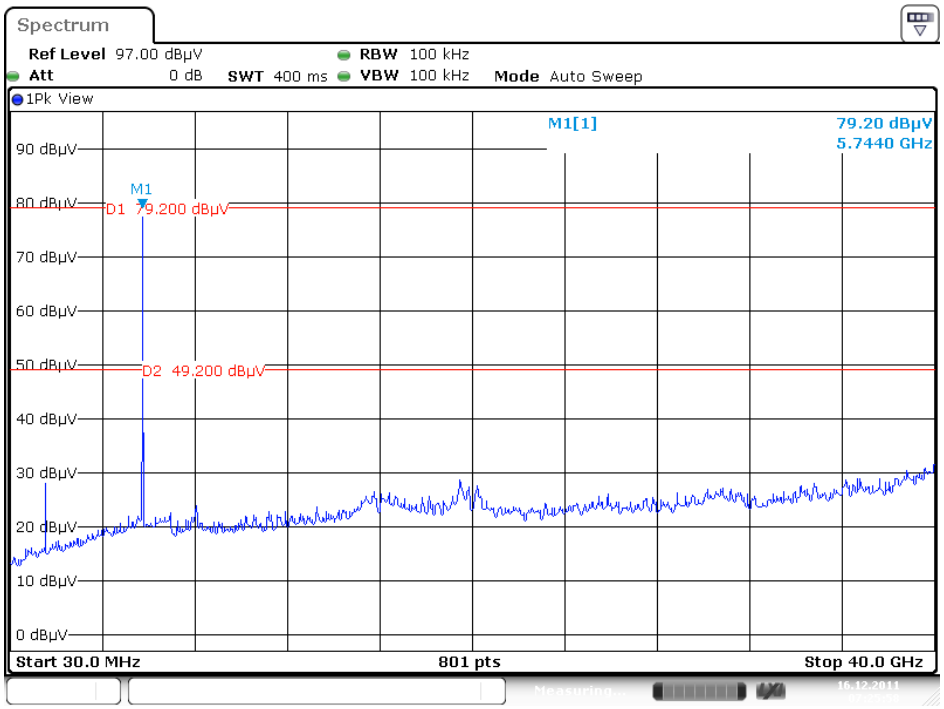

Date: 13.DEC.2011 17:00:31

## Plots for low channel, 802.11an 20MHz mode Chains A, power setting(s) = 25, 5745 MHz



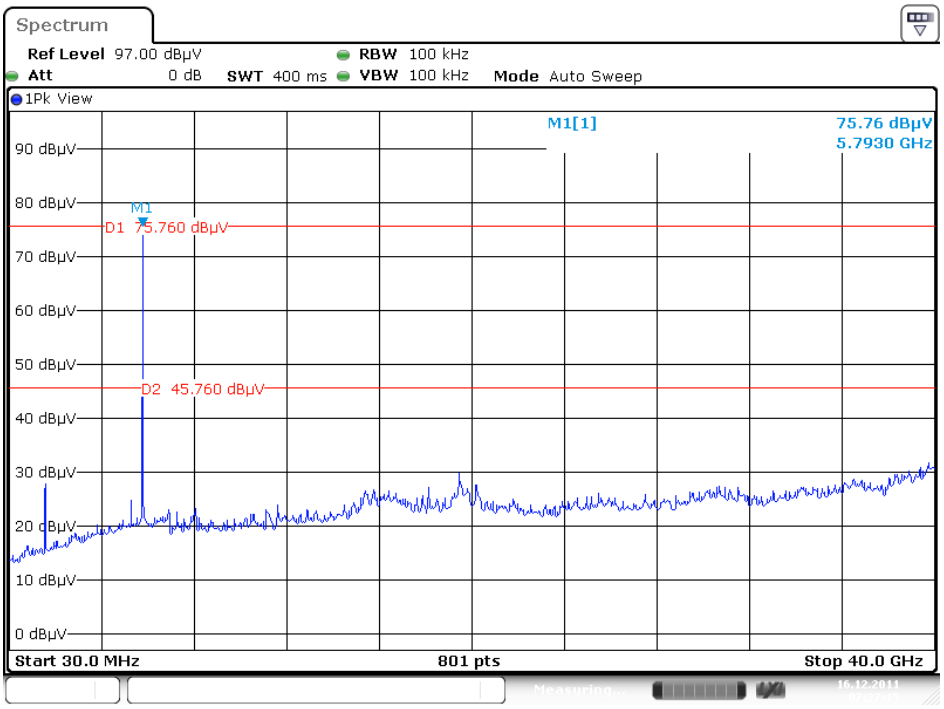

Date: 16.DEC.2011 07:24:41

**Plots for low channel, 802.11an 20MHz mode Chains A, power setting(s) = 25, 5745 MHz**



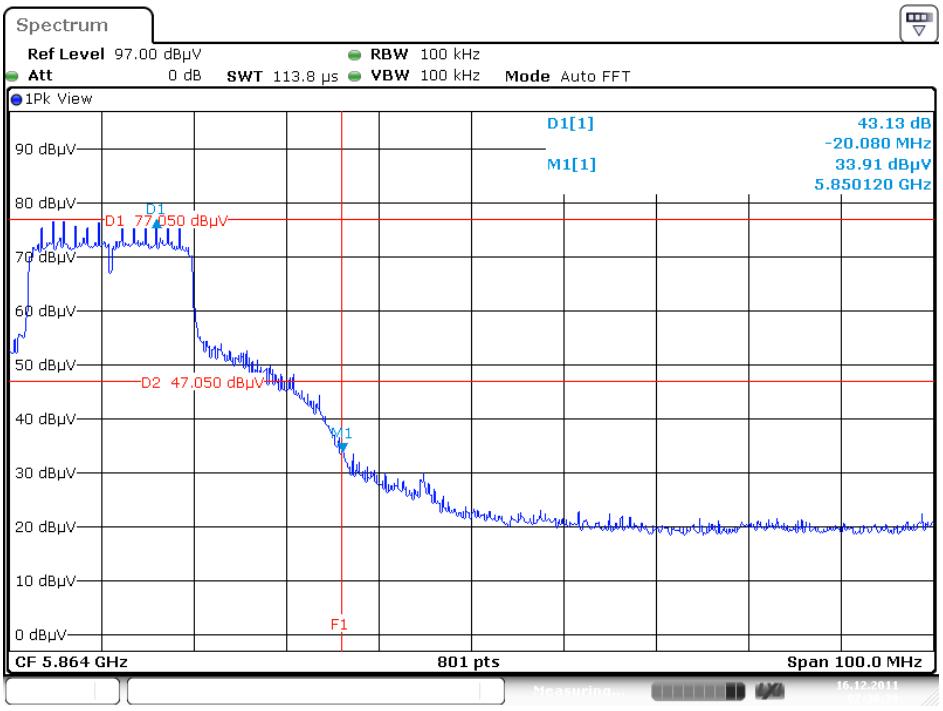

Date: 16.DEC.2011 07:25:58

**Plots for center channel, 802.11an 20MHz mode Chains A, power setting(s) = 25.5, 5785 MHz**



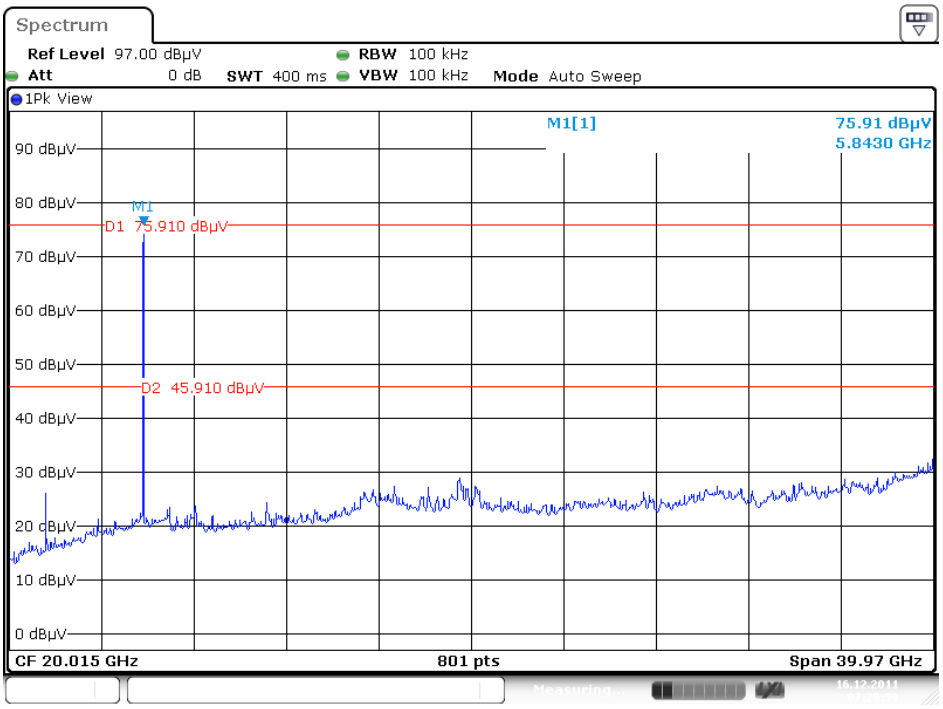

Date: 16.DEC.2011 07:27:15

## Plots for high channel, 802.11an 20MHz mode Chains A, power setting(s) = 26, 5825 MHz



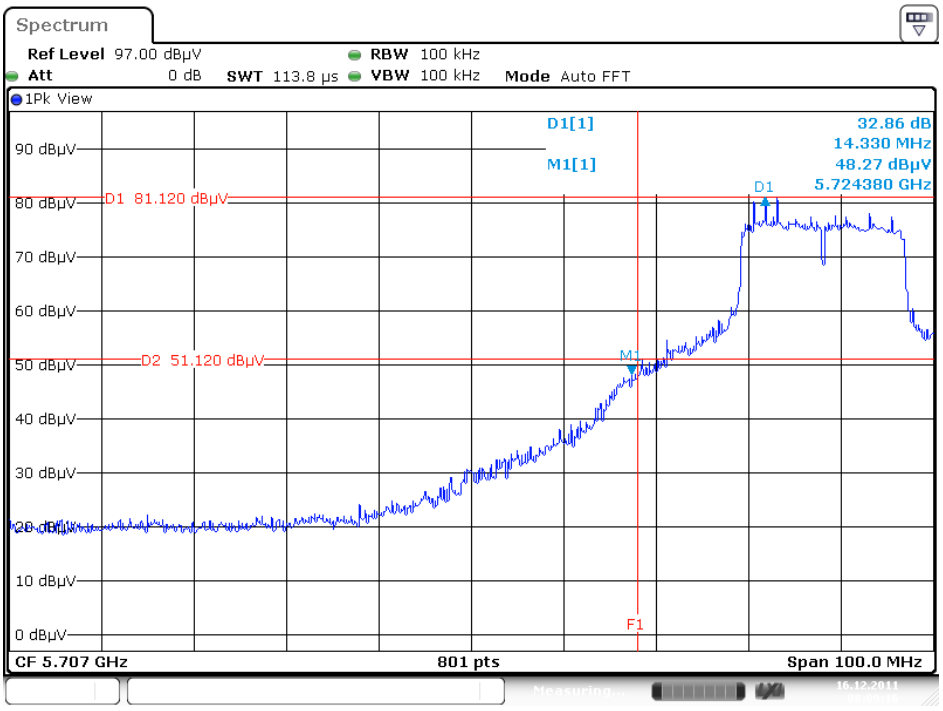

Date: 16.DEC.2011 07:36:30

## Plots for high channel, 802.11an 20MHz mode Chains A, power setting(s) = 26, 5825 MHz



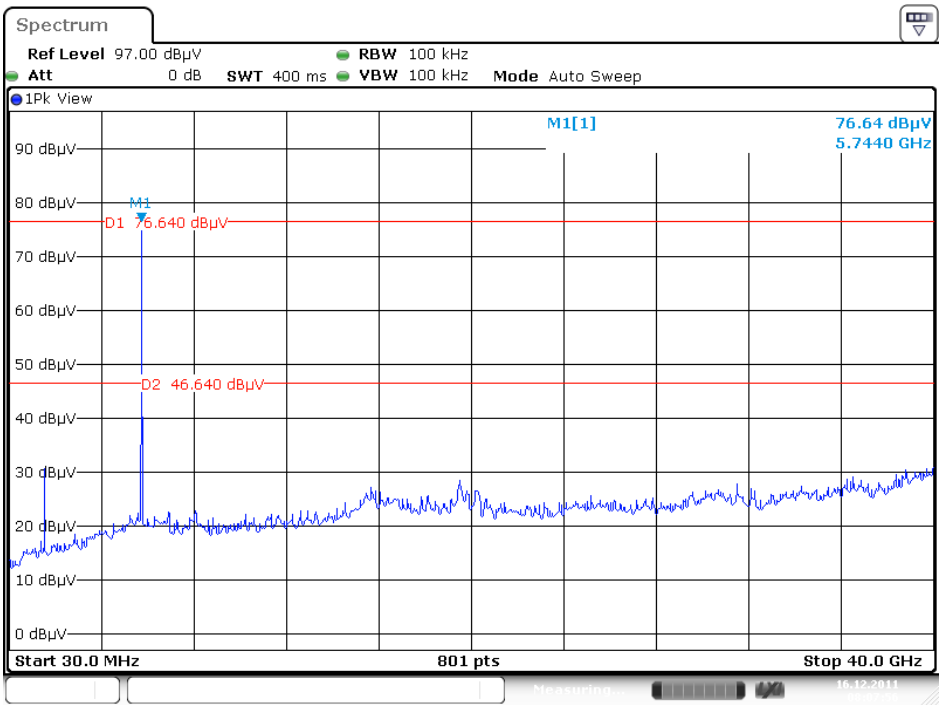

Date: 16.DEC.2011 07:29:00

**Plots for low channel, 802.11an 20MHz mode Chains B, power setting(s) = 26.5, 5745 MHz**



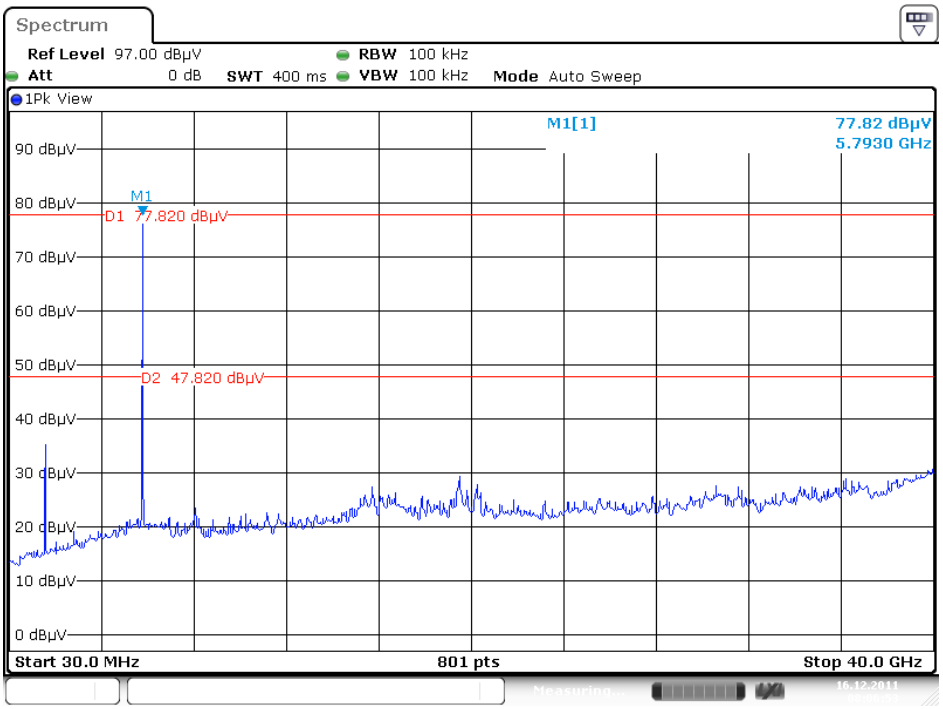

Date: 16.DEC.2011 08:09:17

**Plots for low channel, 802.11an 20MHz mode Chains B, power setting(s) = 26.5, 5745 MHz**



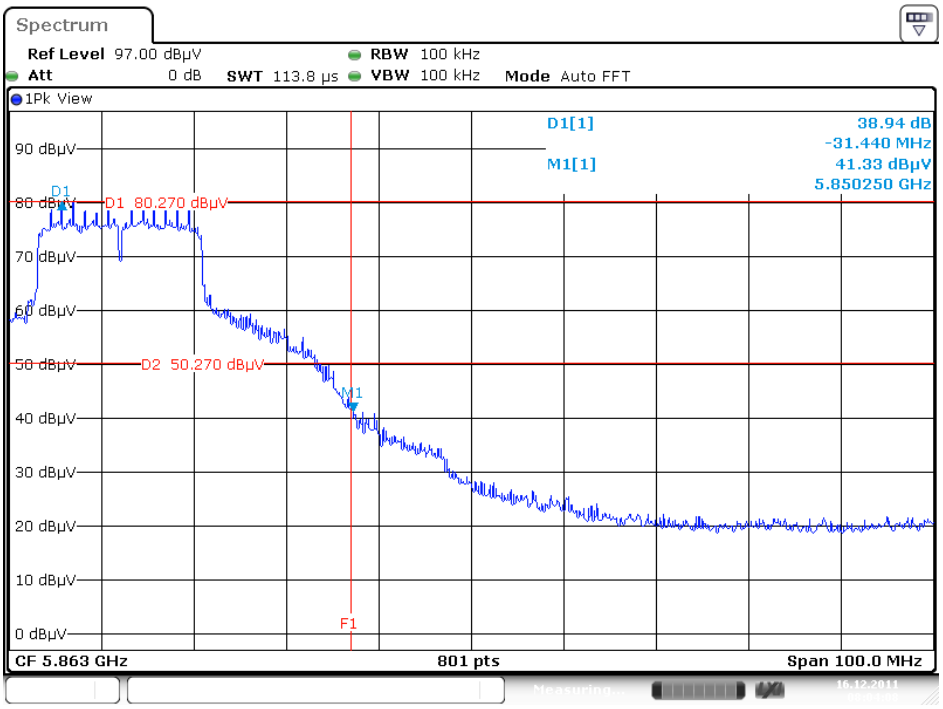

Date: 16.DEC.2011 08:07:56

**Plots for center channel, 802.11an 20MHz mode Chains B, power setting(s) = 27.5, 5785 MHz**



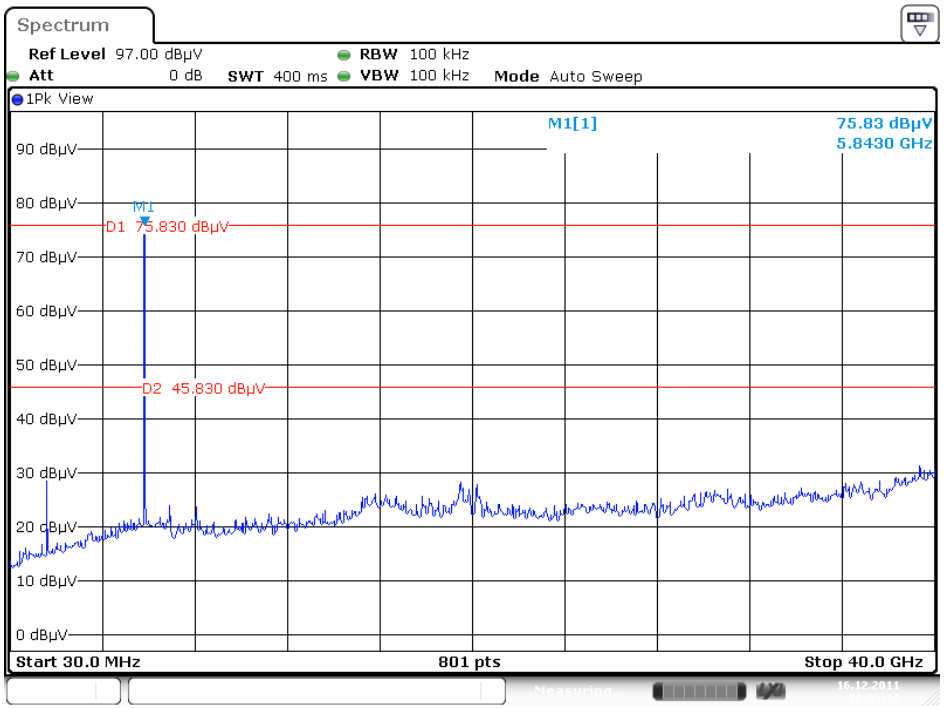

Date: 16.DEC.2011 08:06:53

**Plots for high channel, 802.11an 20MHz mode Chains B, power setting(s) = 28, 5825 MHz**



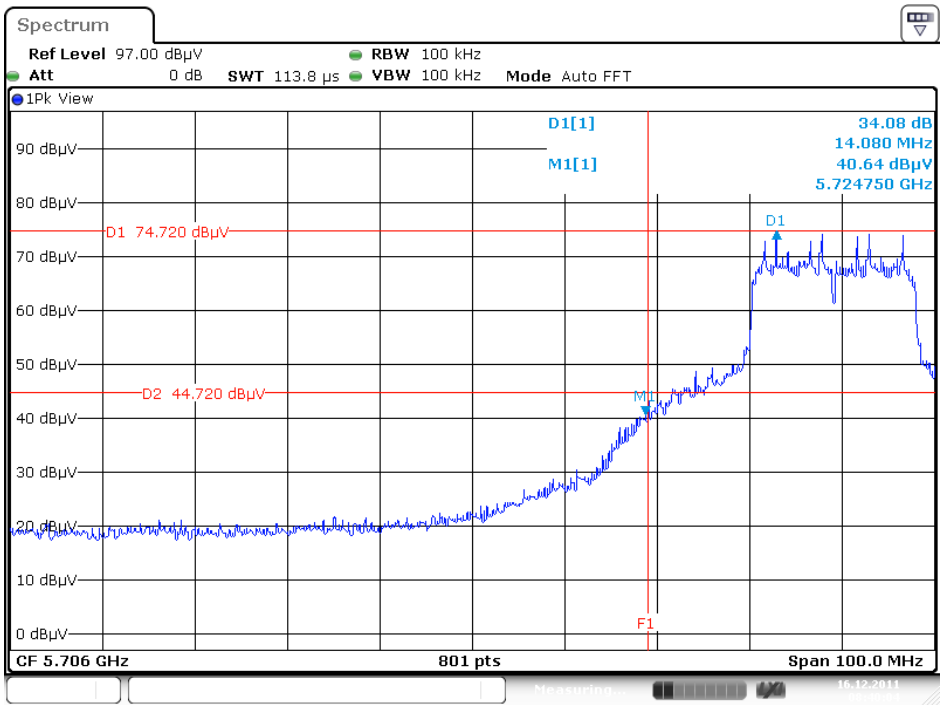

Date: 16.DEC.2011 08:04:08

## Plots for high channel, 802.11an 20MHz mode Chains B, power setting(s) = 28, 5825 MHz



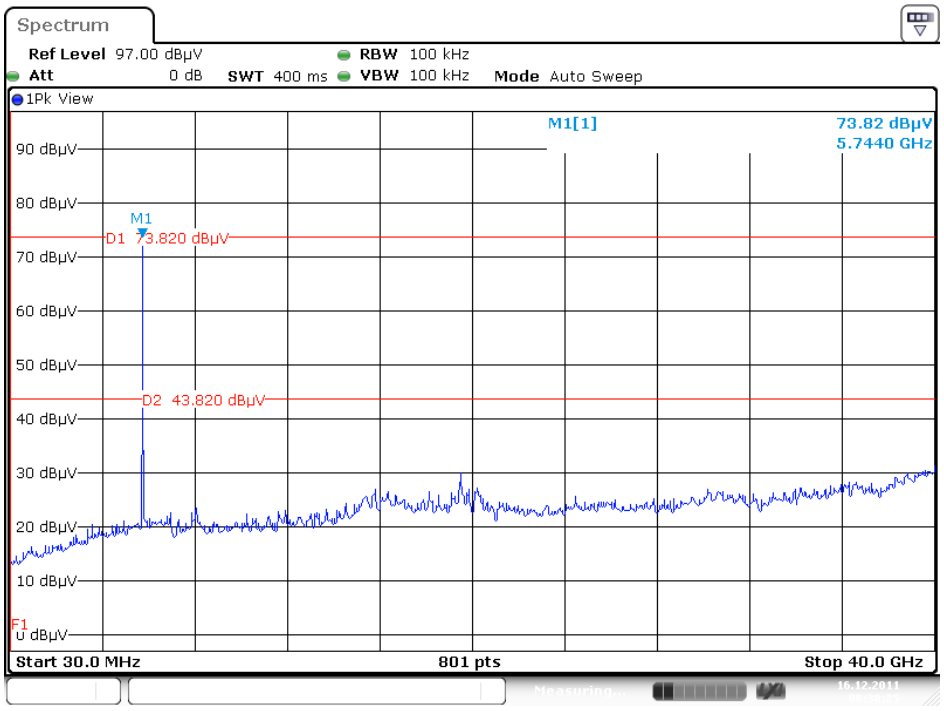

Date: 16.DEC.2011 08:05:39

## Plots for low channel, 802.11an 20MHz mode Chains A and B, power setting(s) = 26.5/27, 5745 MHz



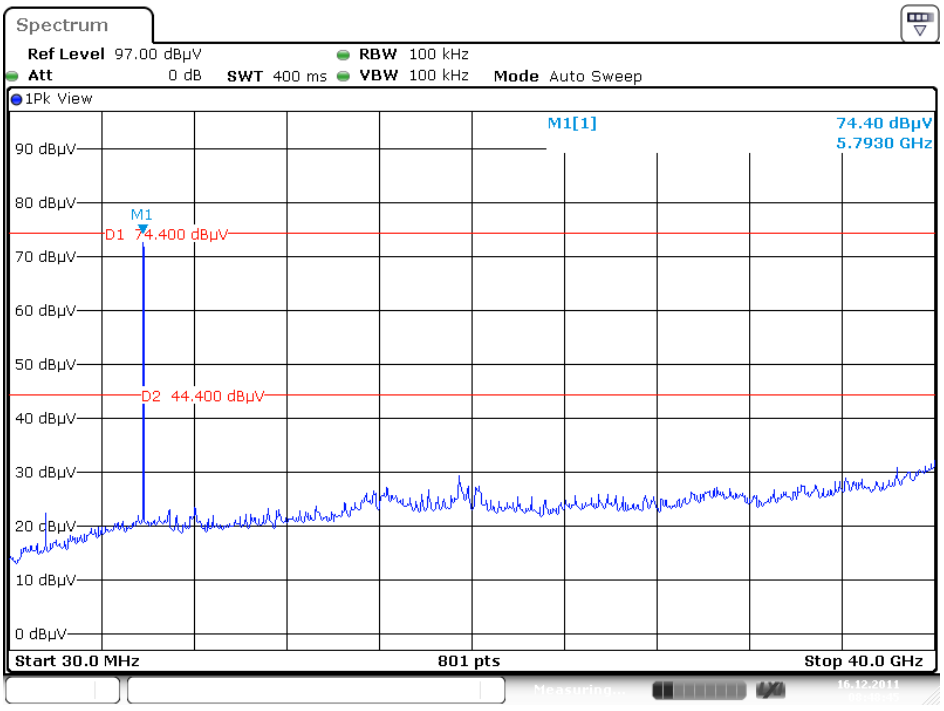

Date: 16.DEC.2011 08:40:04

**Plots for low channel, 802.11an 20MHz mode Chains A and B, power setting(s) = 26.5/27, 5745 MHz**



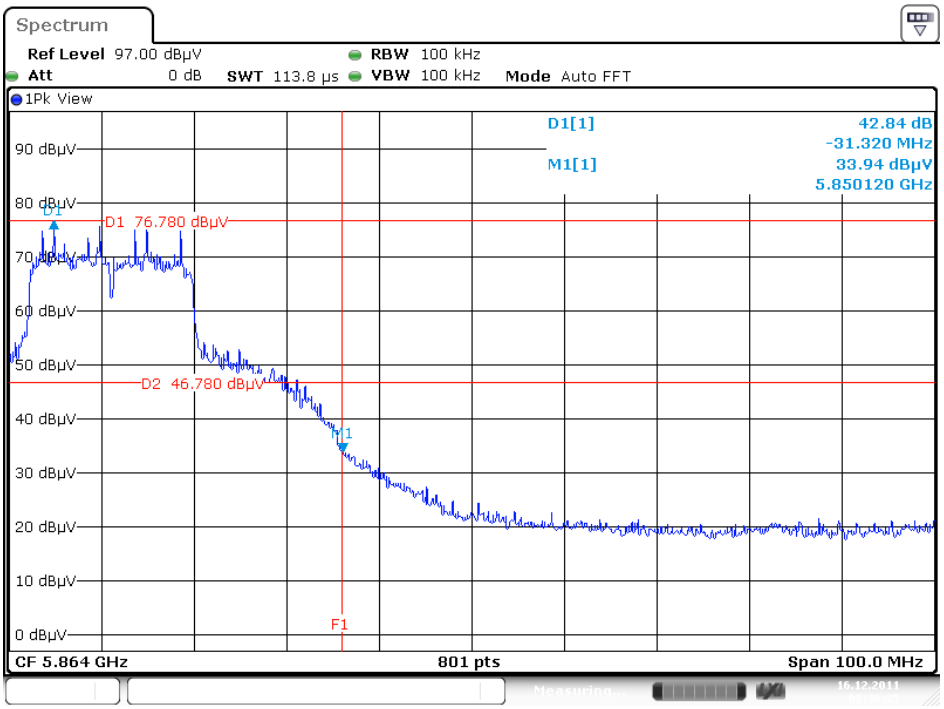

Date: 16.DEC.2011 08:38:26

**Plots for center channel, 802.11an 20MHz mode Chains A and B, power setting(s) = 27.5/28, 5745 MHz**



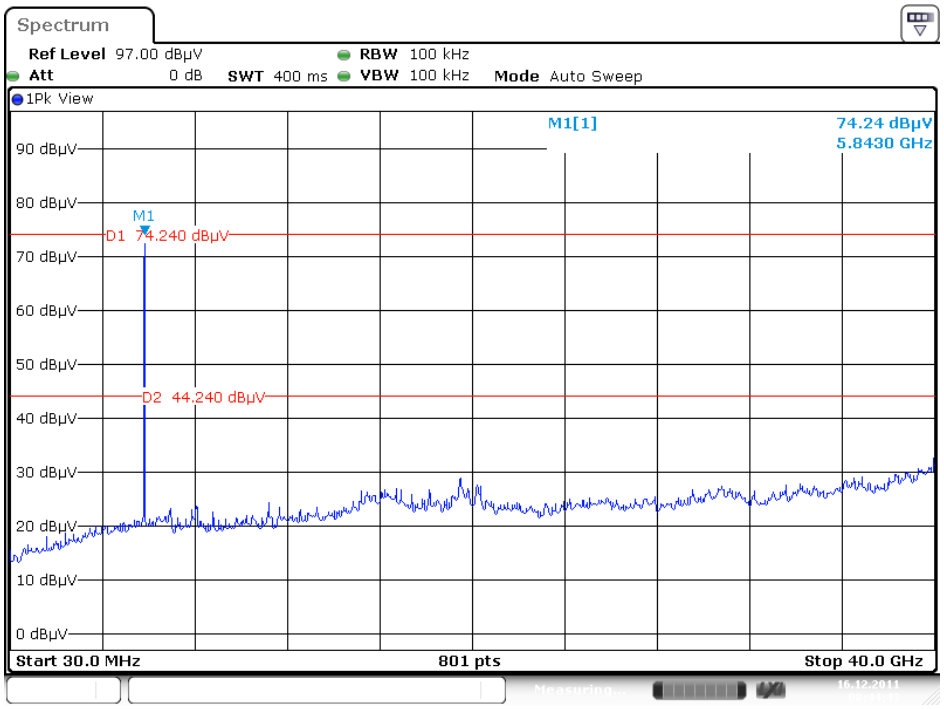

Date: 16.DEC.2011 08:48:45

**Plots for high channel, 802.11an 20MHz mode Chains A and B, power setting(s) = 28/29, 5825 MHz**



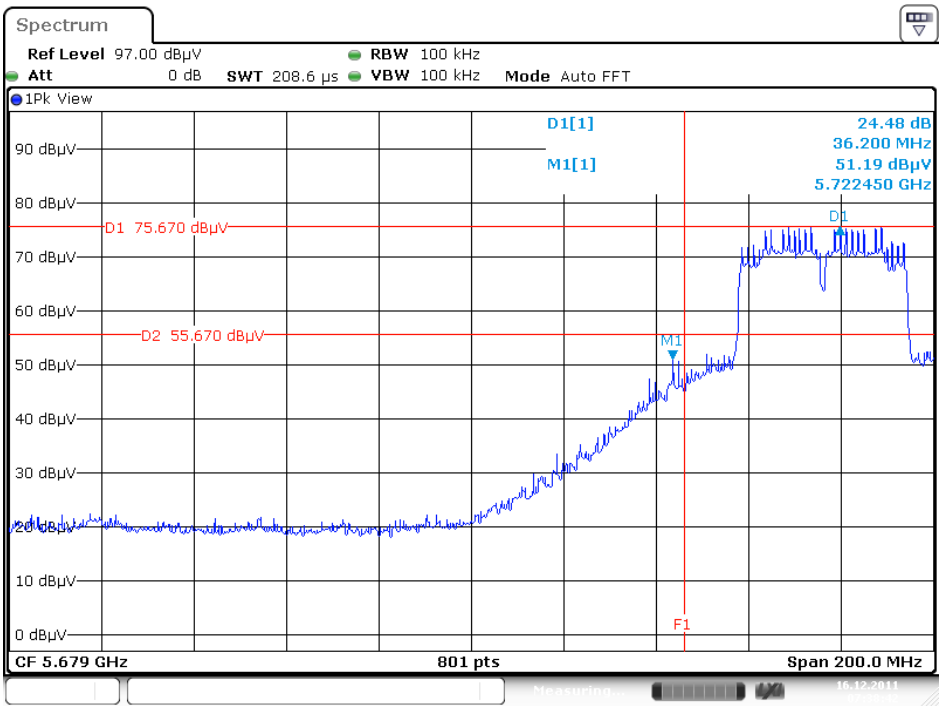

Date: 16.DEC.2011 08:46:25

**Plots for high channel, 802.11an 20MHz mode Chains A and B, power setting(s) = 28/29, 5825 MHz**



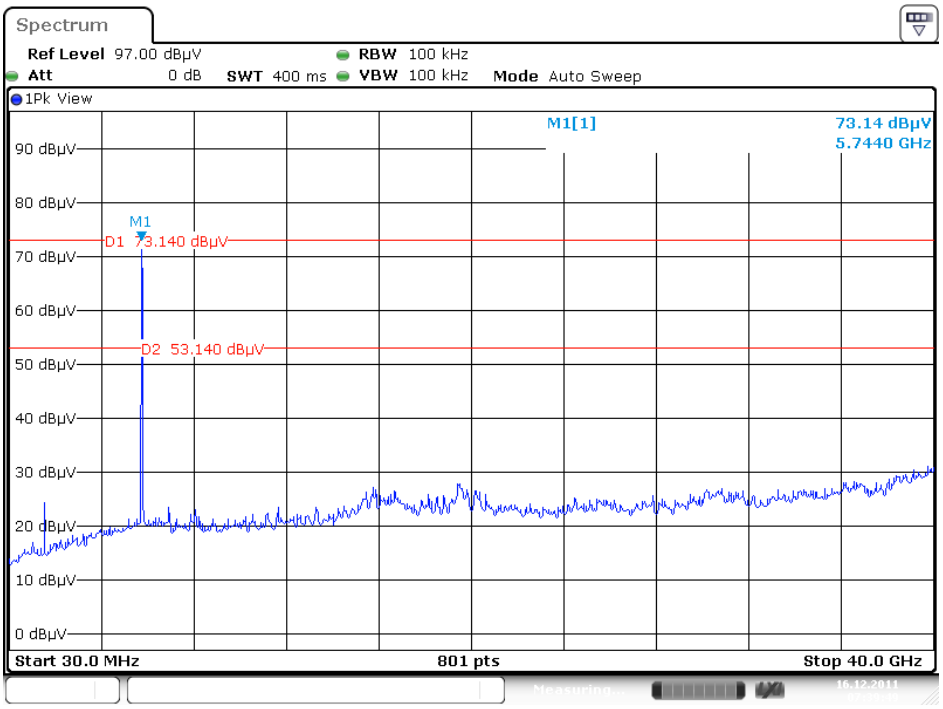

Date: 16.DEC.2011 08:44:43

## Plots for low channel, 802.11an 40MHz mode Chains A, power setting(s) = 25, 5755 MHz



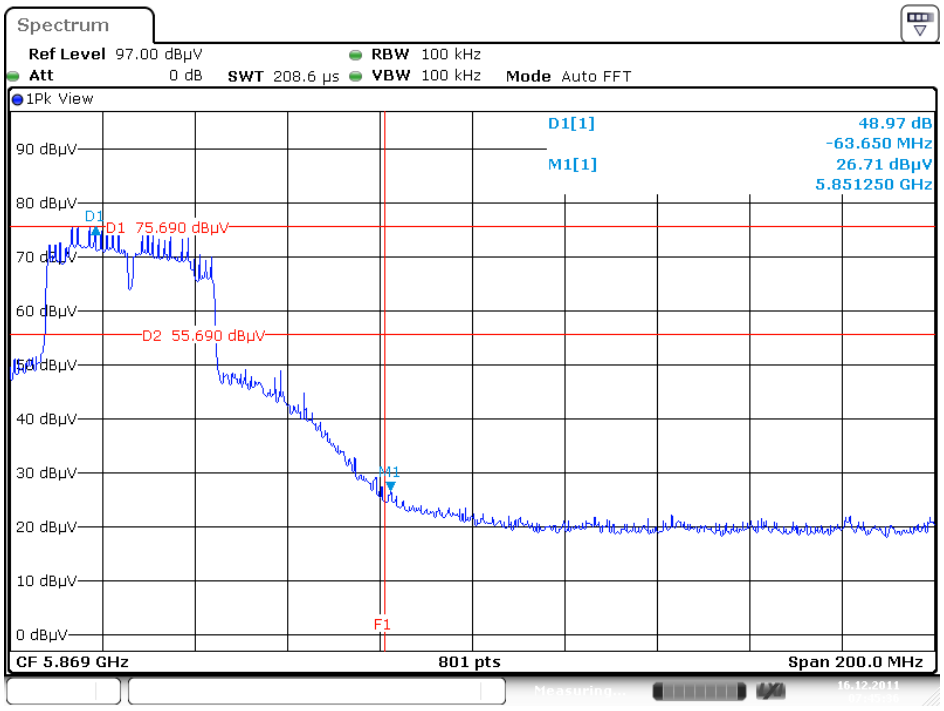

Date: 16.DEC.2011 07:38:43

## Plots for low channel, 802.11an 40MHz mode Chains A, power setting(s) = 26, 5755 MHz



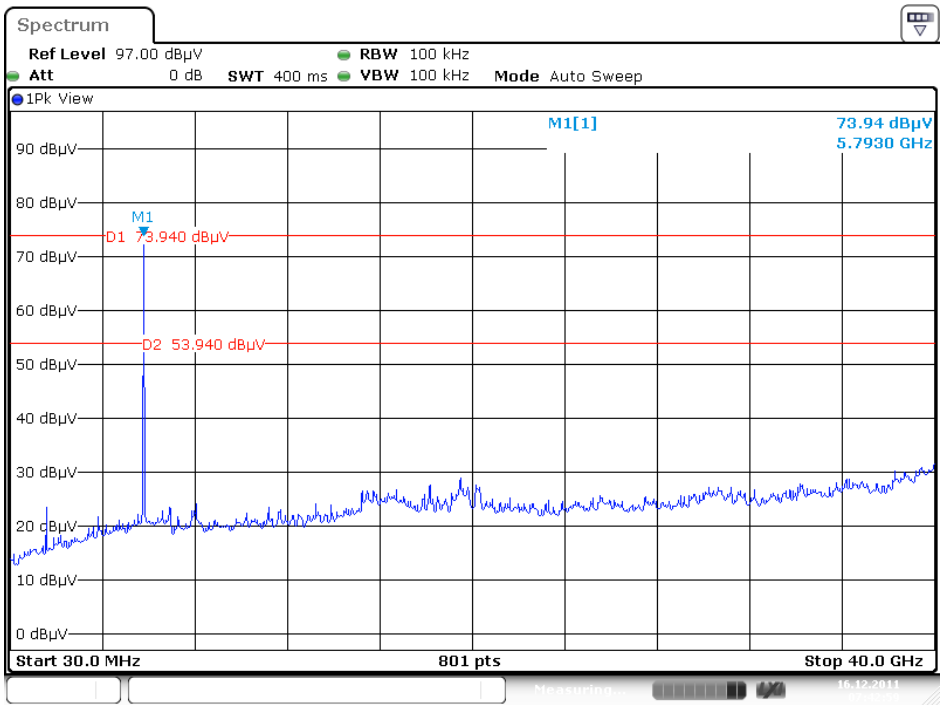

Date: 16.DEC.2011 07:39:49

**Plots for high channel, 802.11an 40MHz mode Chains A, power setting(s) = 26.5, 5795 MHz**



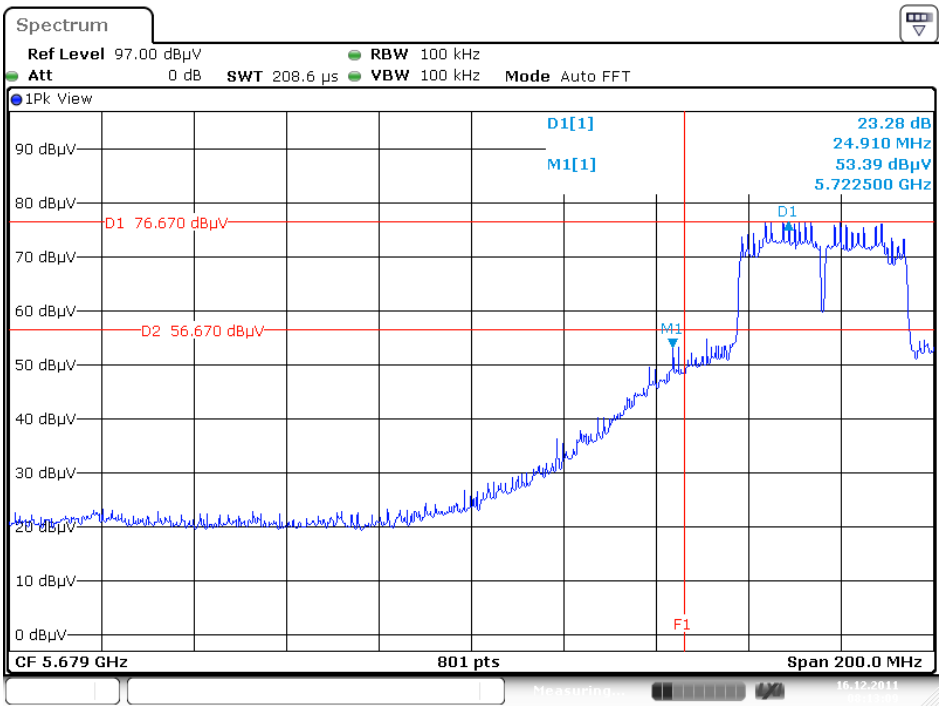

Date: 16.DEC.2011 07:45:36

**Plots for high channel, 802.11an 40MHz mode Chains A, power setting(s) = 26.5, 5795 MHz**



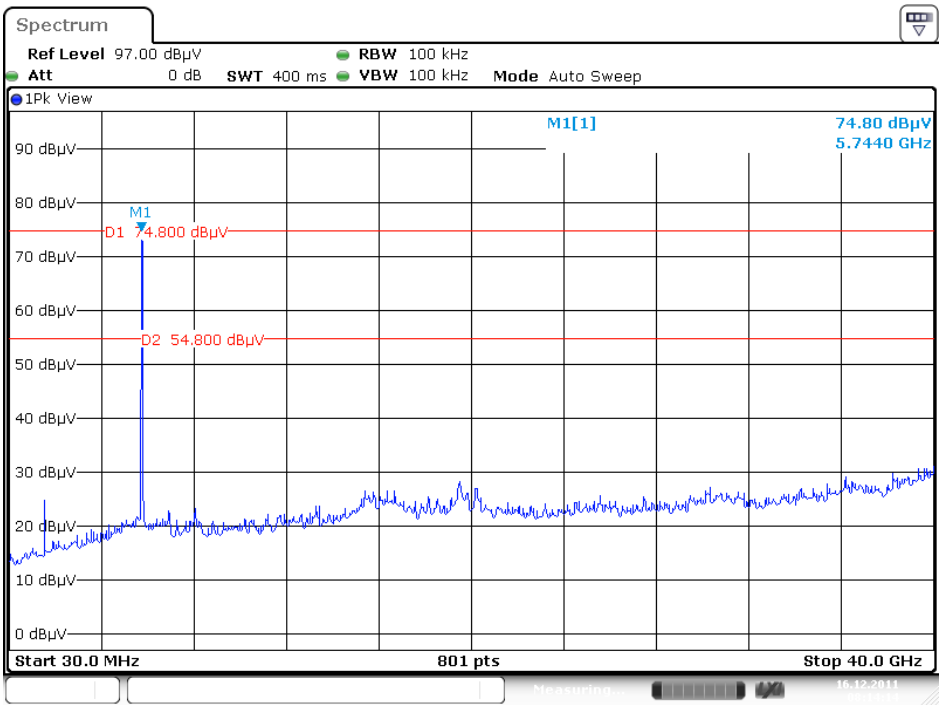

Date: 16.DEC.2011 07:43:00

## Plots for low channel, 802.11an 40MHz mode Chains B, power setting(s) = 28, 5755 MHz



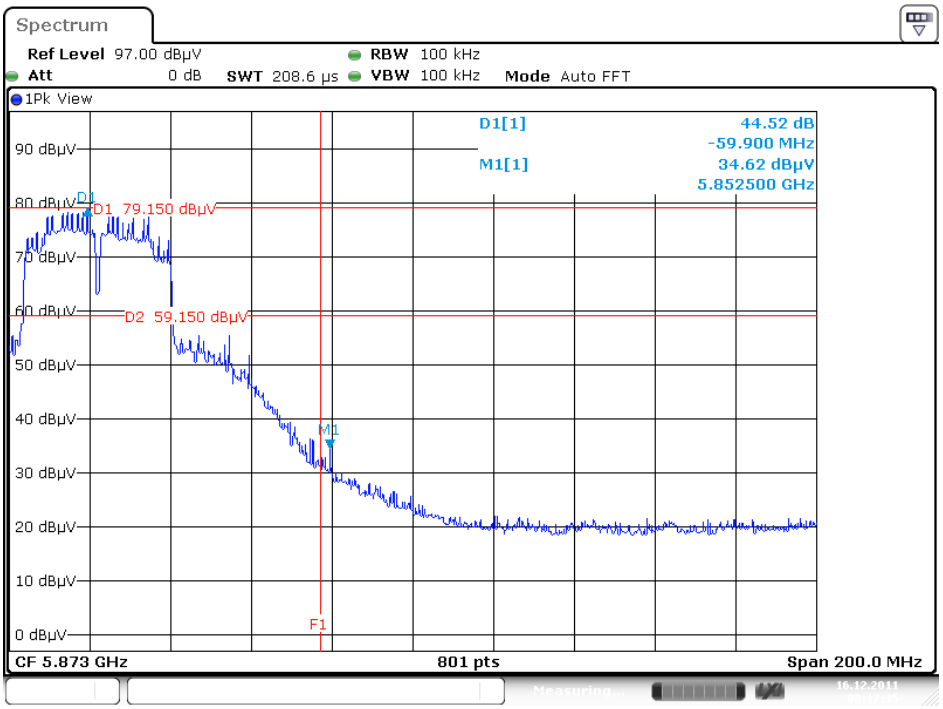

Date: 16.DEC.2011 08:13:10

## Plots for low channel, 802.11an 40MHz mode Chains B, power setting(s) = 28, 5755 MHz



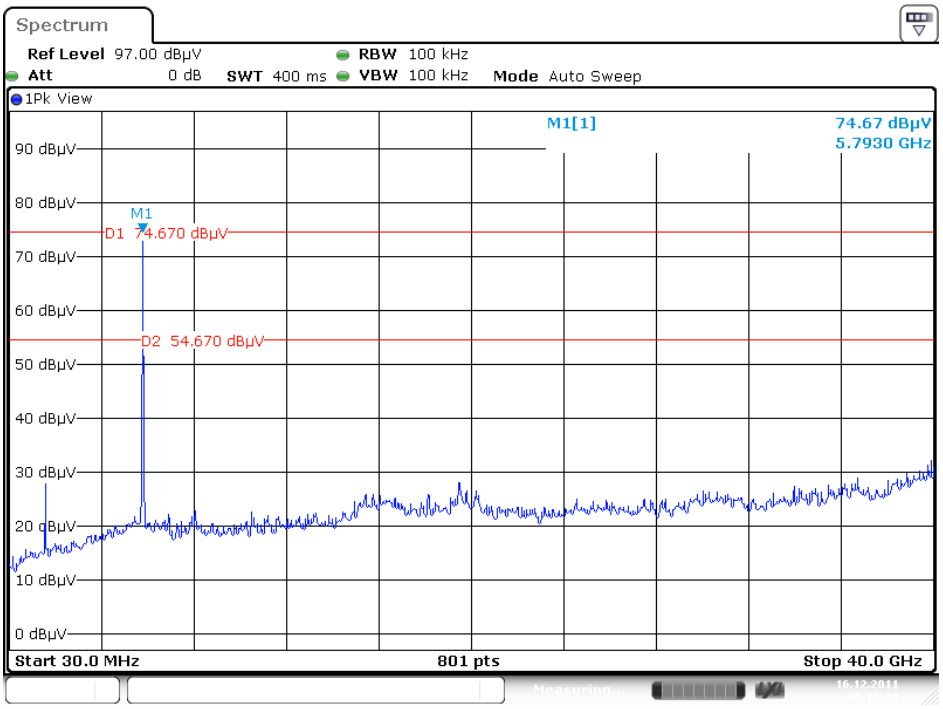

Date: 16.DEC.2011 08:14:15

## Plots for high channel, 802.11an 40MHz mode Chains B, power setting(s) = 29, 5795 MHz



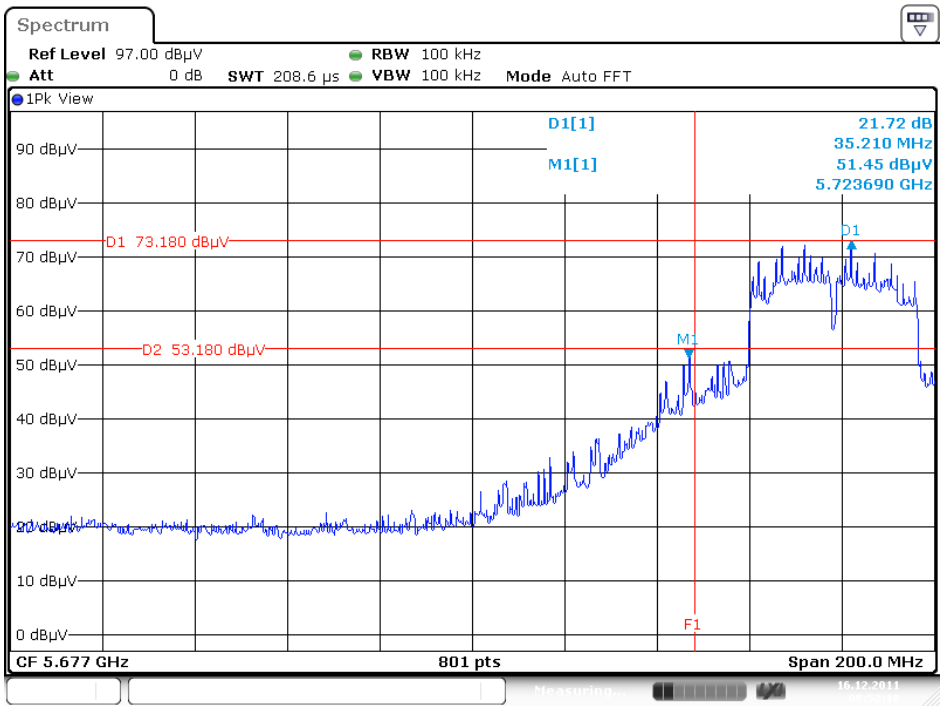

Date: 16.DEC.2011 08:17:36

## Plots for high channel, 802.11an 40MHz mode Chains B, power setting(s) = 29, 5795 MHz



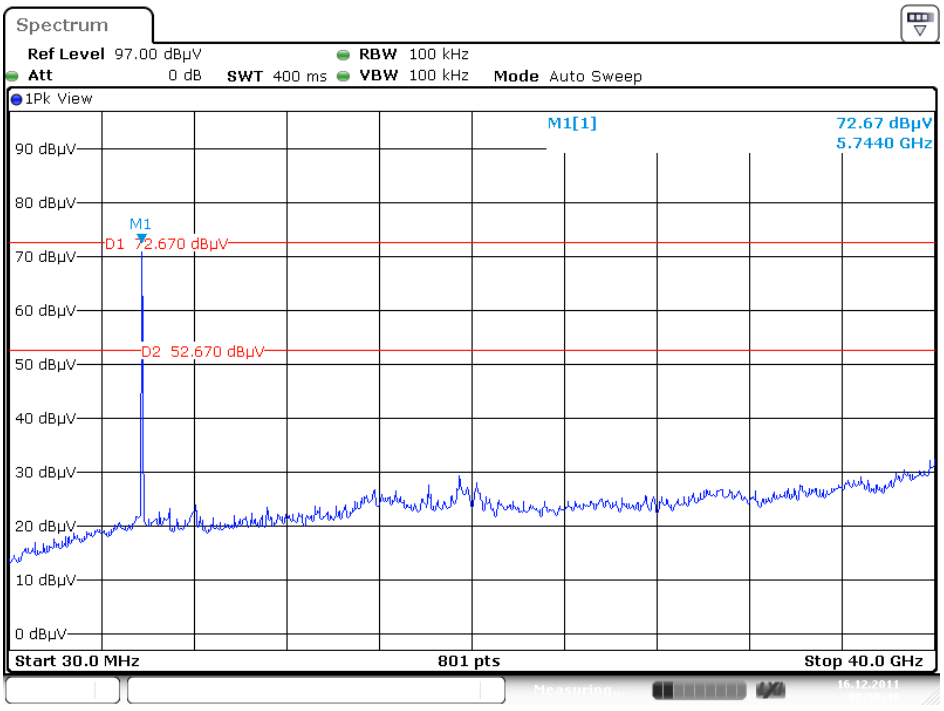

Date: 16.DEC.2011 08:15:39

**Plots for low channel, 802.11an 40MHz mode Chains A and B, power setting(s) = 28/28.5, 5755 MHz**



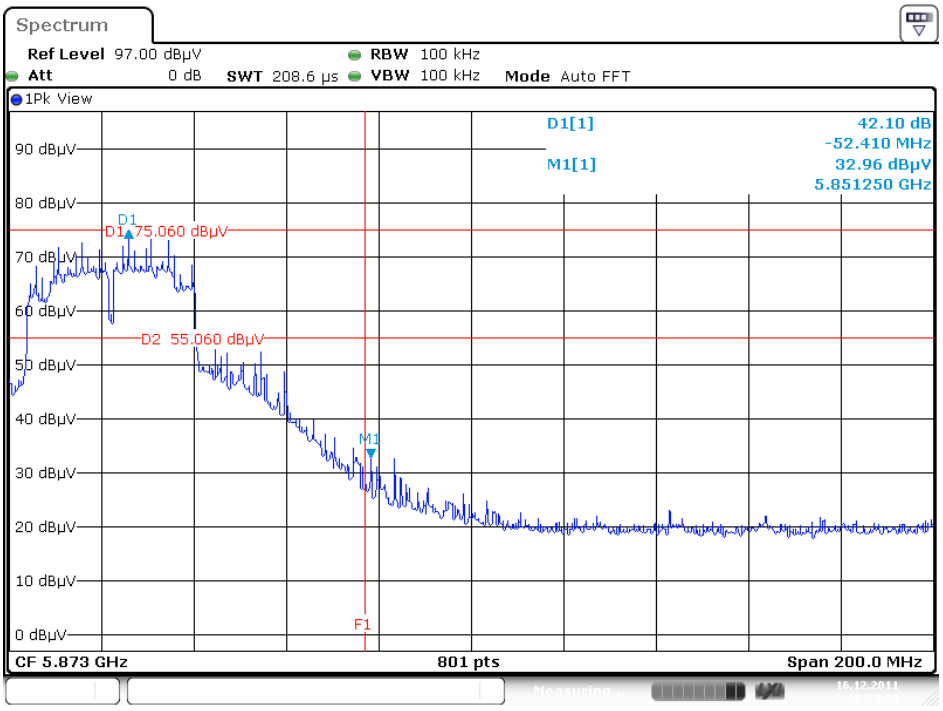

Date: 16.DEC.2011 08:52:19

**Plots for low channel, 802.11an 40MHz mode Chains A and B, power setting(s) = 28/28.5, 5755 MHz**



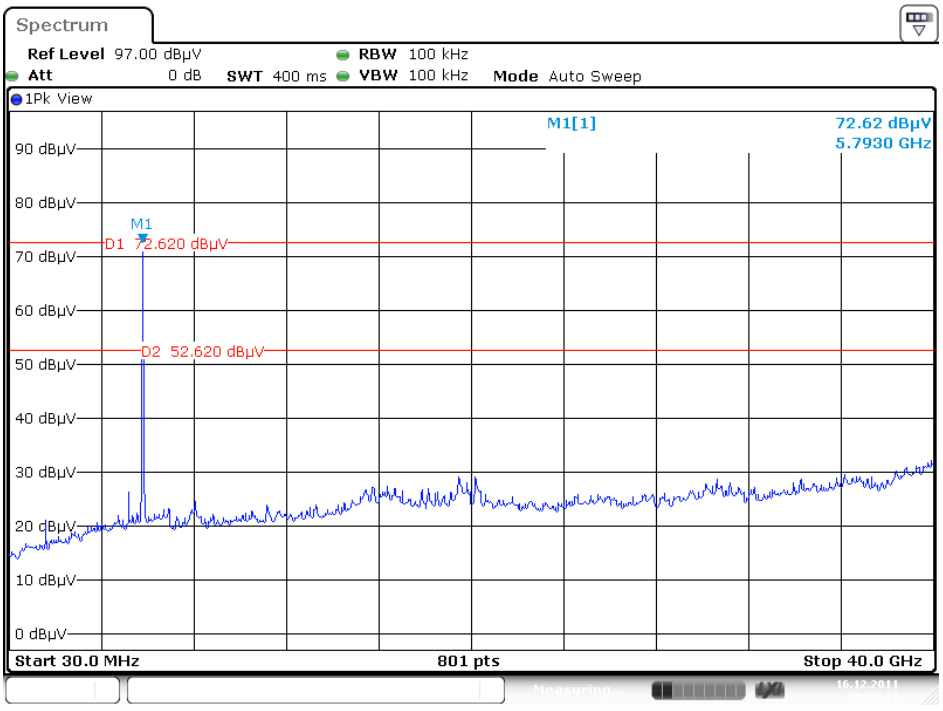

Date: 16.DEC.2011 08:50:49

**Plots for high channel, 802.11an 40MHz mode Chains A and B, power setting(s) = 28.5/30, 5795 MHz**



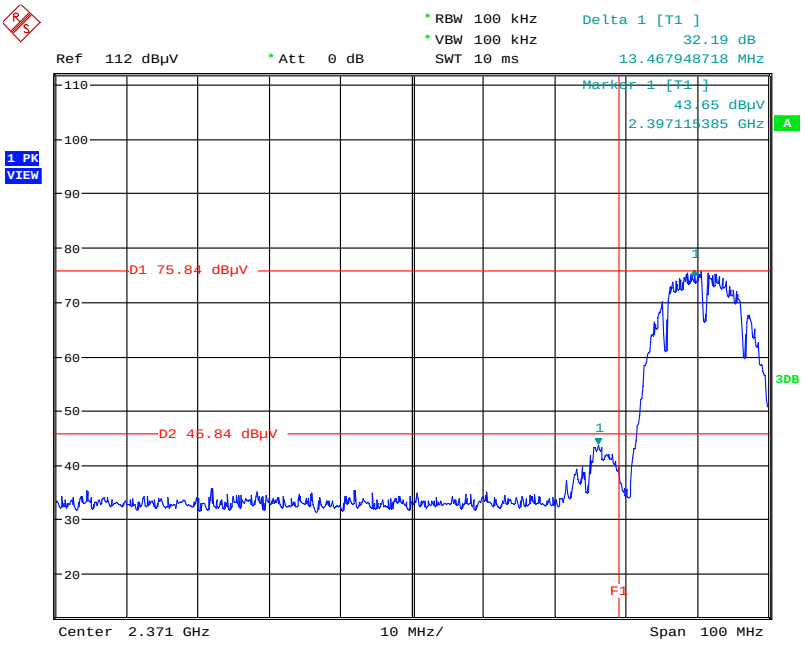

Date: 16.DEC.2011 08:54:35

**Plots for high channel, 802.11an 40MHz mode Chains A and B, power setting(s) = 28.5/30, 5795 MHz**



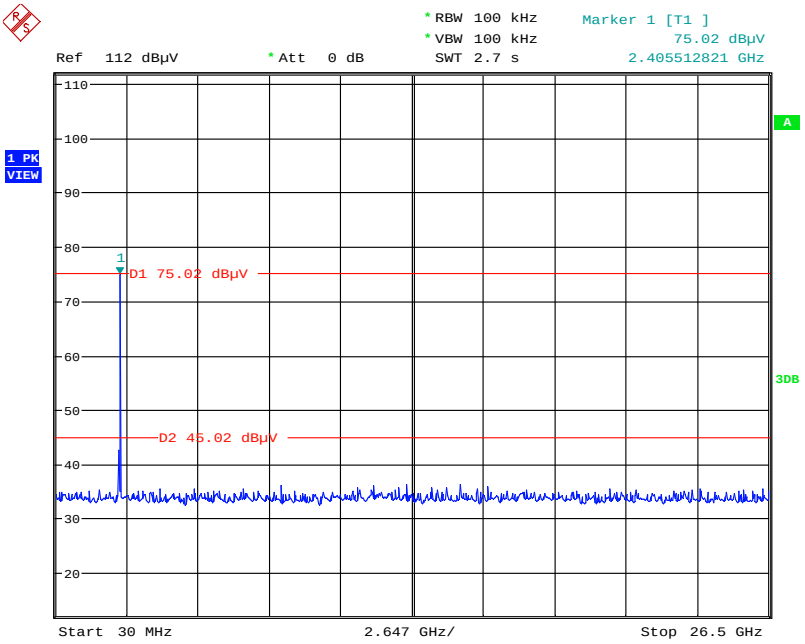

Date: 16.DEC.2011 09:05:18

## Plots for low channel, 802.11b mode Chains A, power setting(s) = 23, 2412 MHz



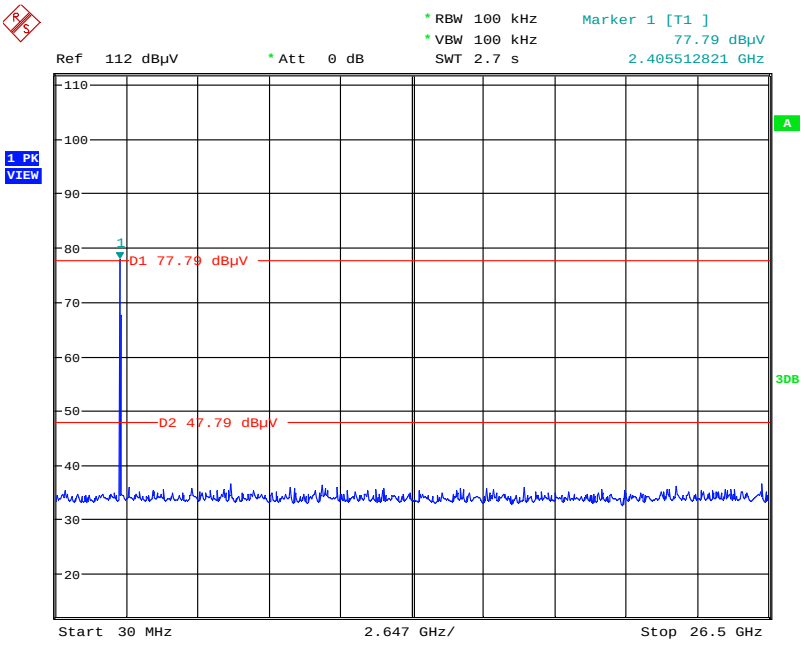

Date: 14.DEC.2011 13:54:26

## Plots for low channel, 802.11b mode Chains A, power setting(s) = 23, 2412 MHz



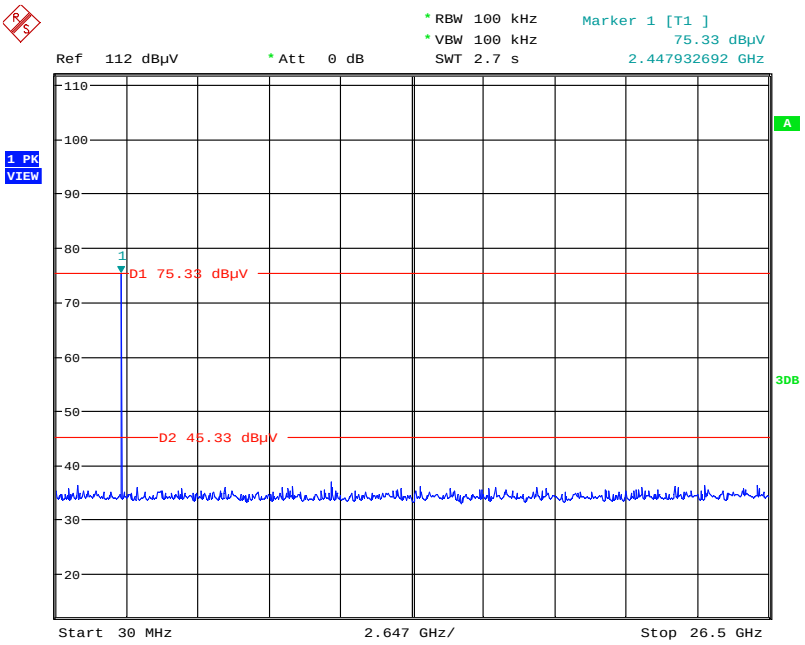

Date: 14.DEC.2011 13:55:05

## Plots for center channel, 802.11b mode Chains A, power setting(s) = 23.5, 2437 MHz



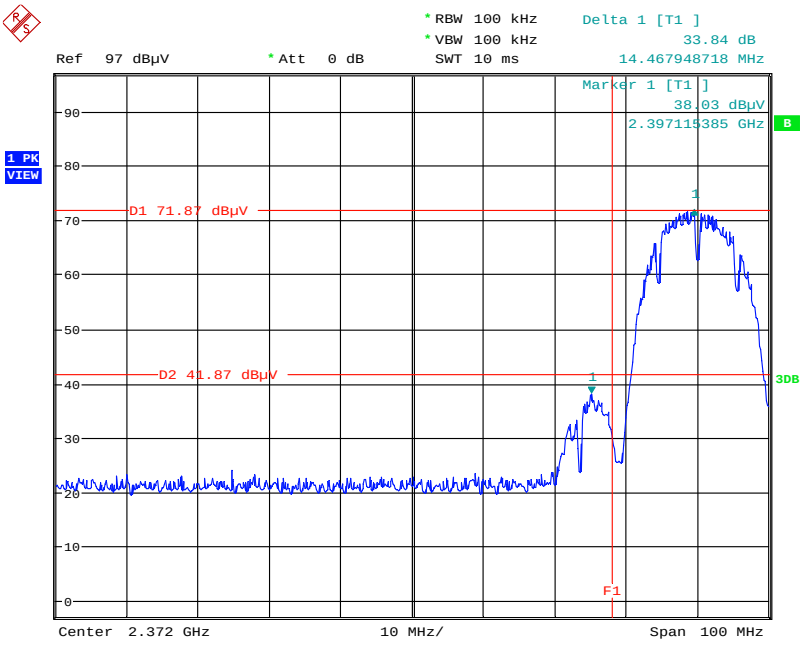

Date: 14.DEC.2011 13:56:13

## Plots for high channel, 802.11b mode Chains A, power setting(s) = 23.5, 2462 MHz



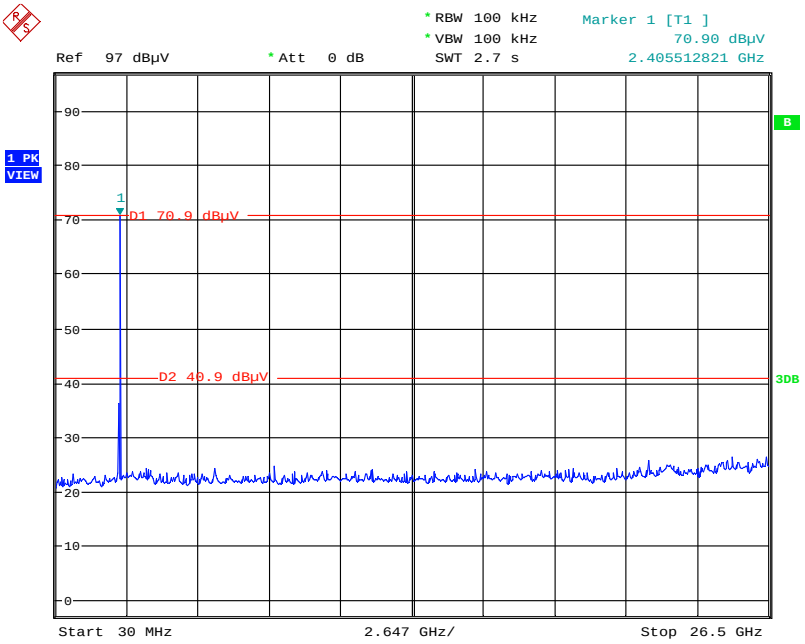

Date: 14.DEC.2011 13:57:19

## Plots for low channel, 802.11b mode Chains B, power setting(s) = 23, 2412 MHz



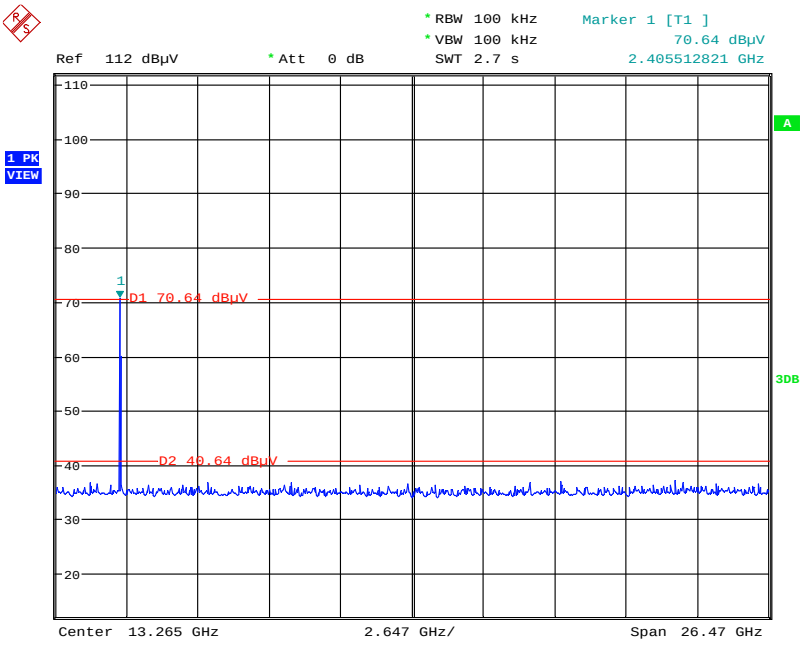

Date: 13.DEC.2011 14:07:47

## Plots for low channel, 802.11b mode Chains B, power setting(s) = 23, 2412 MHz



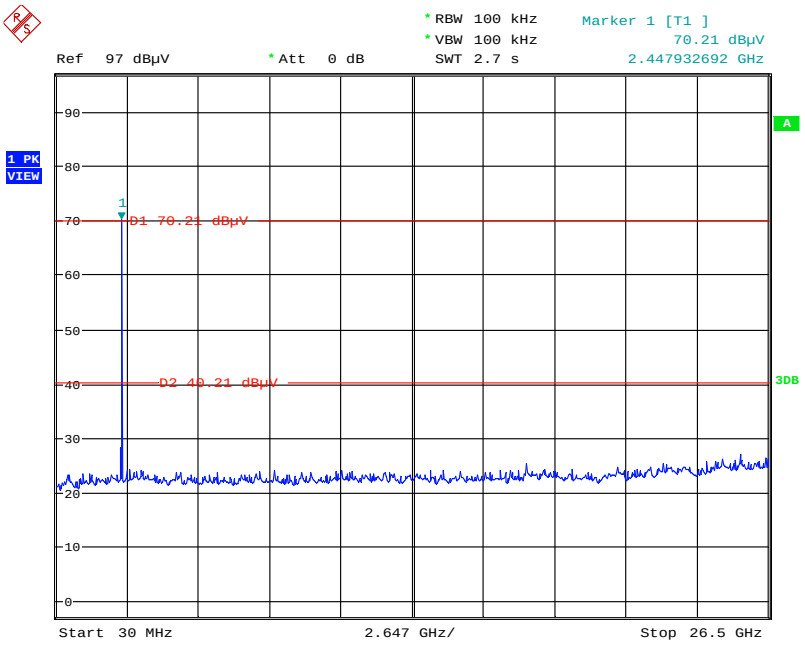

Date: 13.DEC.2011 14:55:20

## Plots for center channel, 802.11b mode Chains B, power setting(s) = 23, 2437 MHz



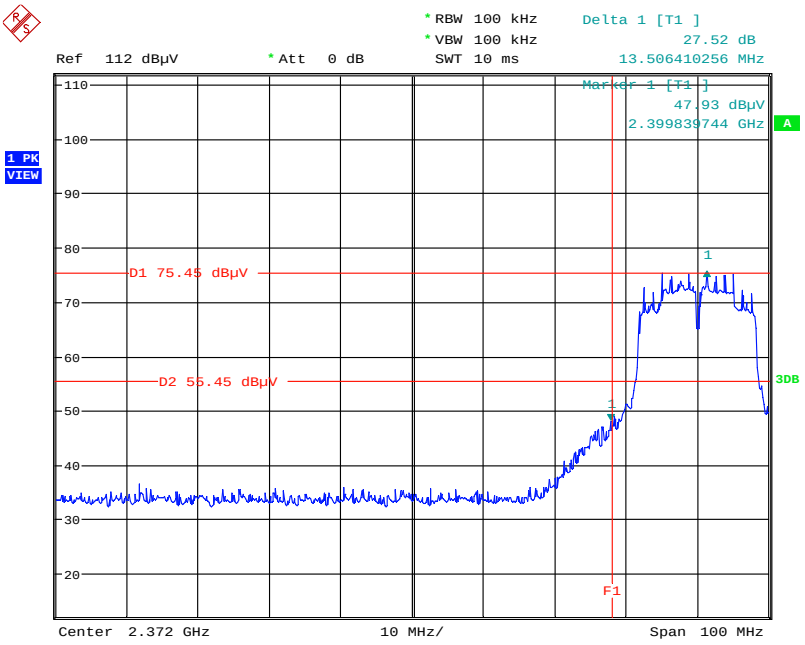

Date: 14.DEC.2011 14:26:27

## Plots for high channel, 802.11b mode Chains B, power setting(s) = 23, 2462 MHz



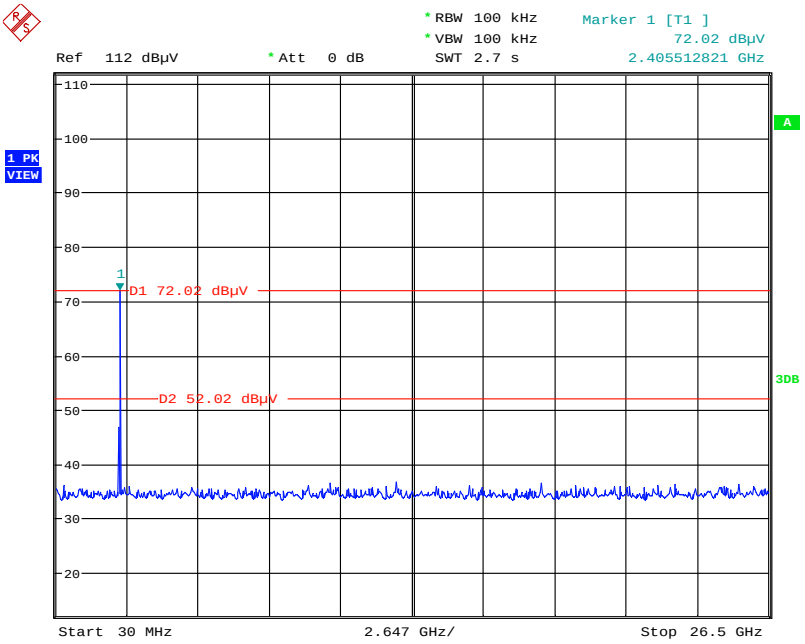

Date: 13.DEC.2011 14:51:28

## Plots for low channel, 802.11g mode Chains A, power setting(s) = 26, 2412 MHz



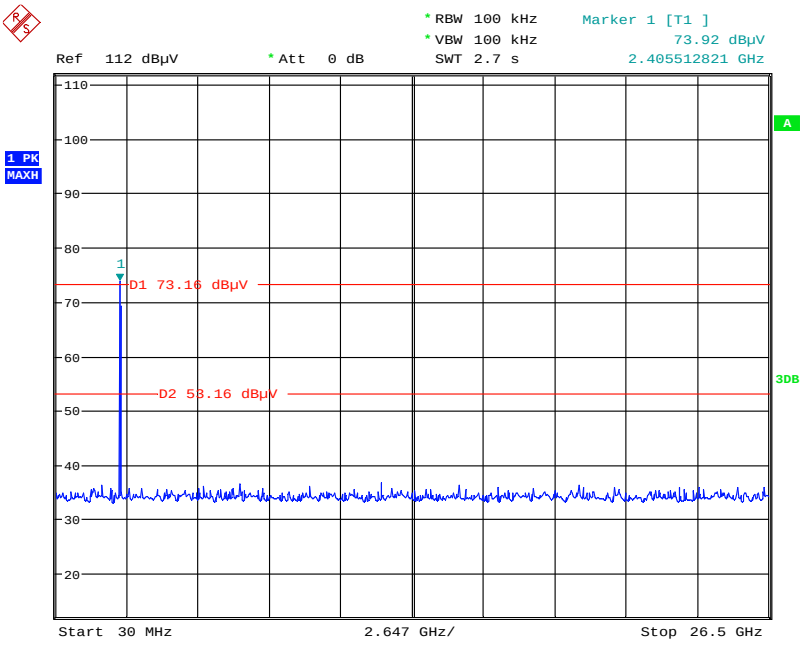

Date: 14.DEC.2011 14:01:14

## Plots for low channel, 802.11a mode Chains A, power setting(s) = 26, 2412 MHz



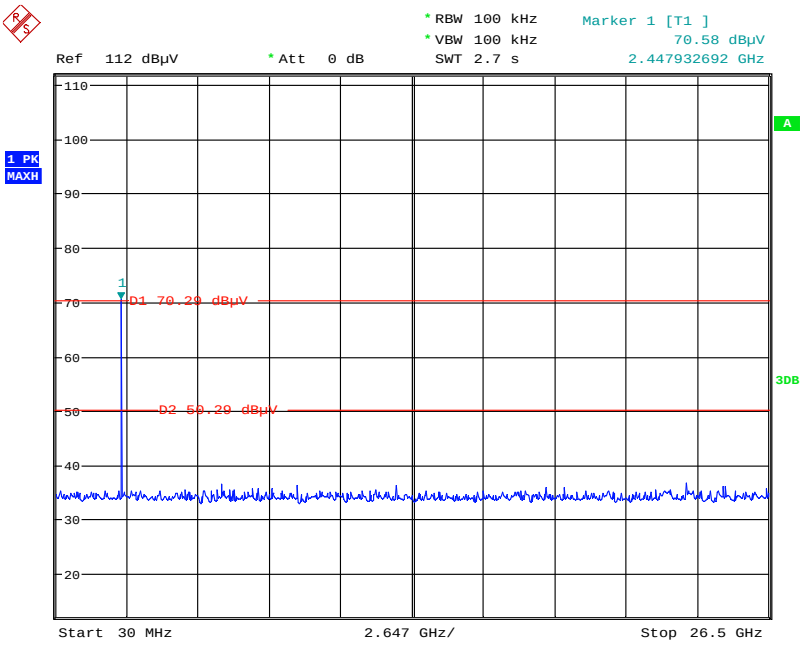

Date: 14.DEC.2011 14:02:18

## Plots for center channel, 802.11g mode Chains A, power setting(s) = 29.5, 2437 MHz



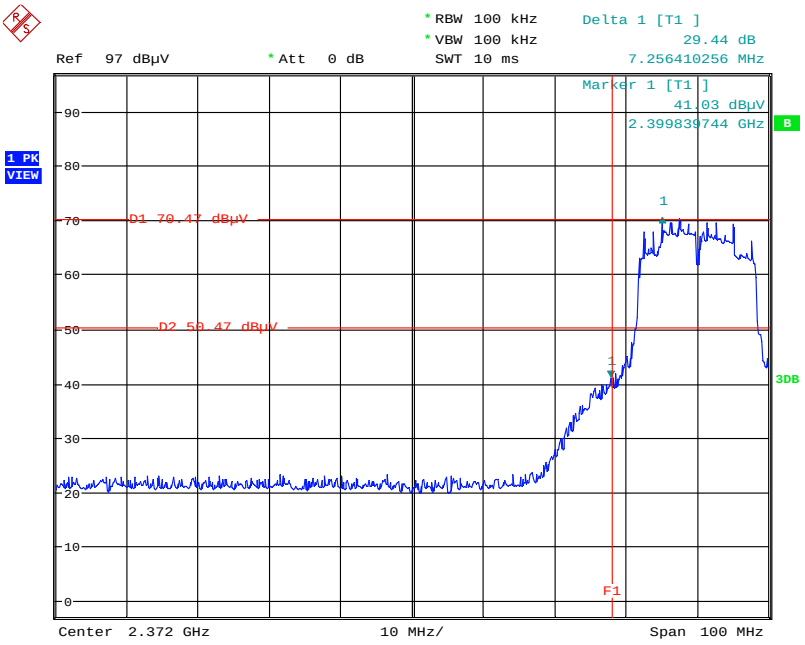

Date: 14.DEC.2011 14:03:16

## Plots for high channel, 802.11g mode Chains A, power setting(s) = 26.5, 2462 MHz



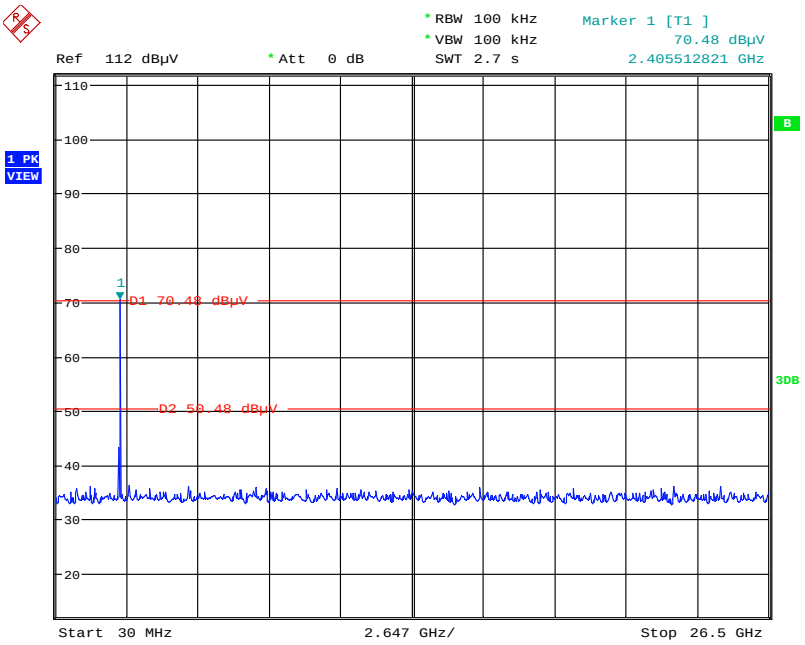

Date: 14.DEC.2011 14:04:27

## Plots for low channel, 802.11g mode Chains B, power setting(s) = 26.5, 2412 MHz



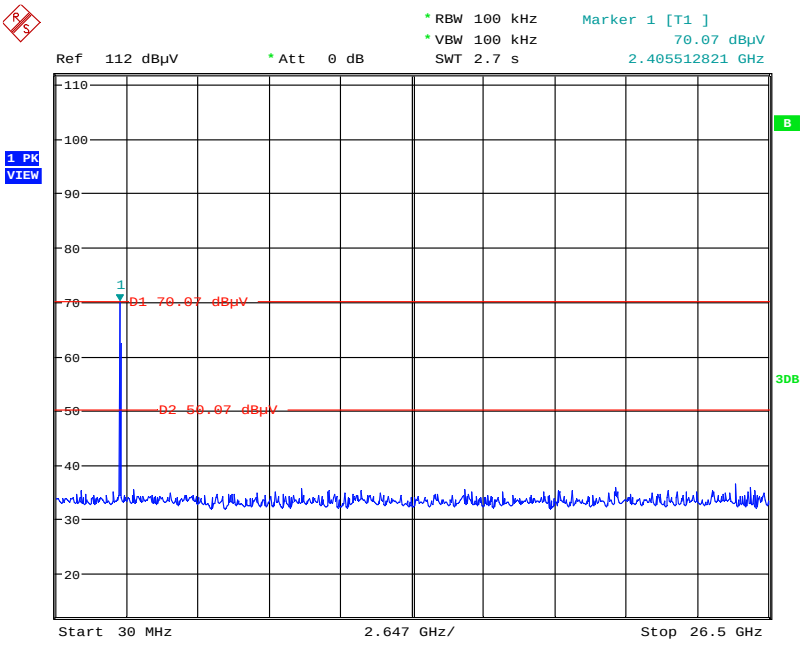

Date: 13.DEC.2011 14:04:46

## Plots for low channel, 802.11a mode Chains B, power setting(s) = 26.5, 2412 MHz



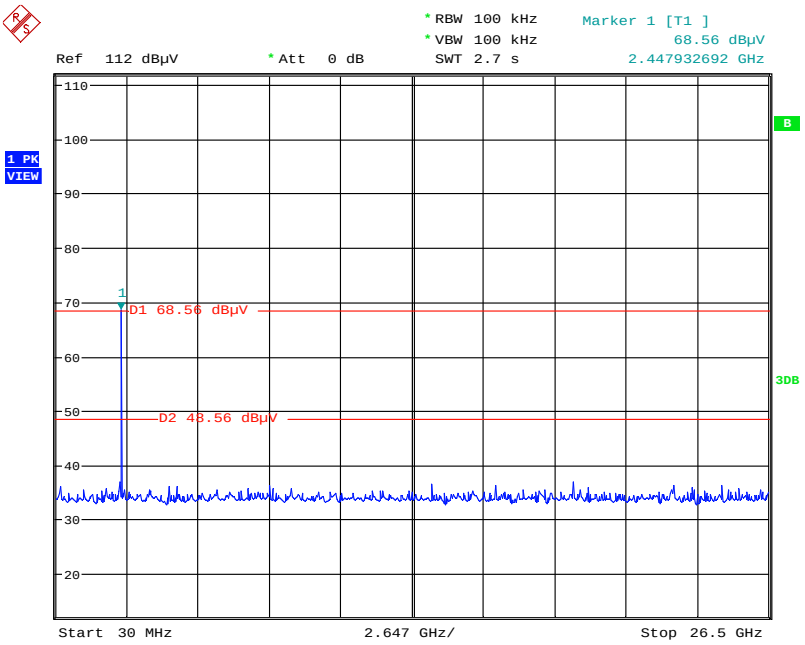

Date: 14.DEC.2011 14:56:54

## Plots for center channel, 802.11g mode Chains B, power setting(s) = 29, 2437 MHz



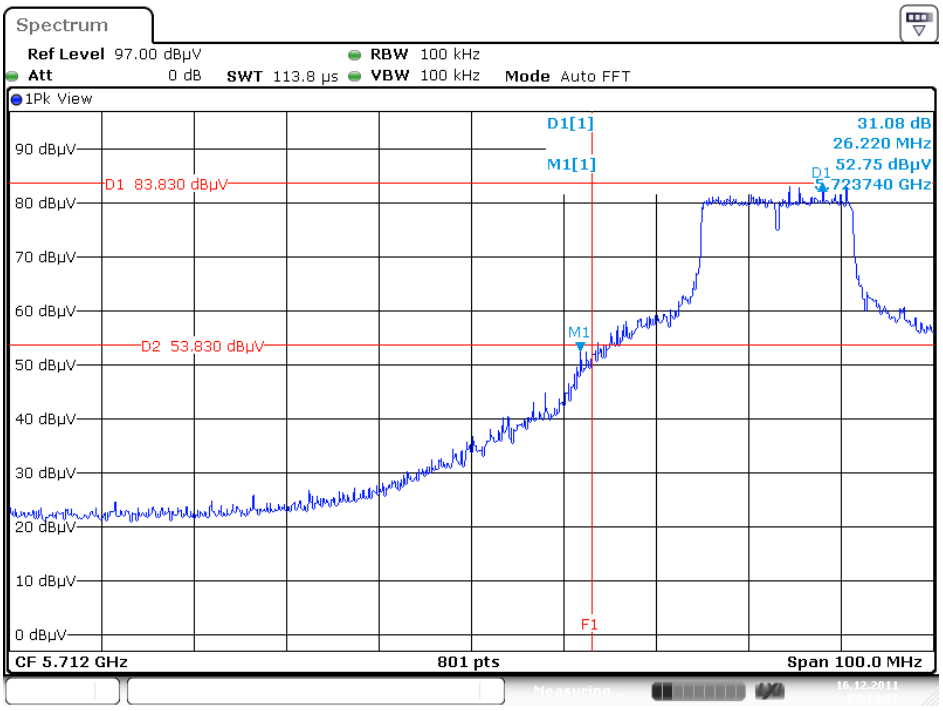

Date: 14.DEC.2011 15:02:41

## Plots for high channel, 802.11g mode Chains B, power setting(s) = 26.5, 2462 MHz



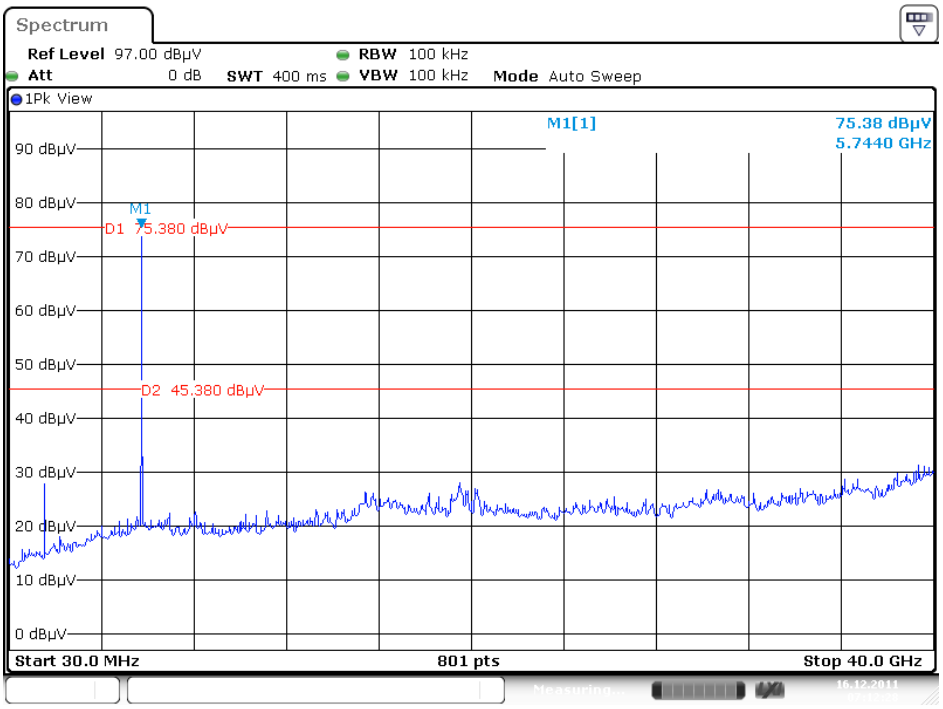

Date: 14.DEC.2011 15:02:06

## Plots for lower channel, 802.11a mode Chains A, power setting(s) = 24.5, 5745MHz



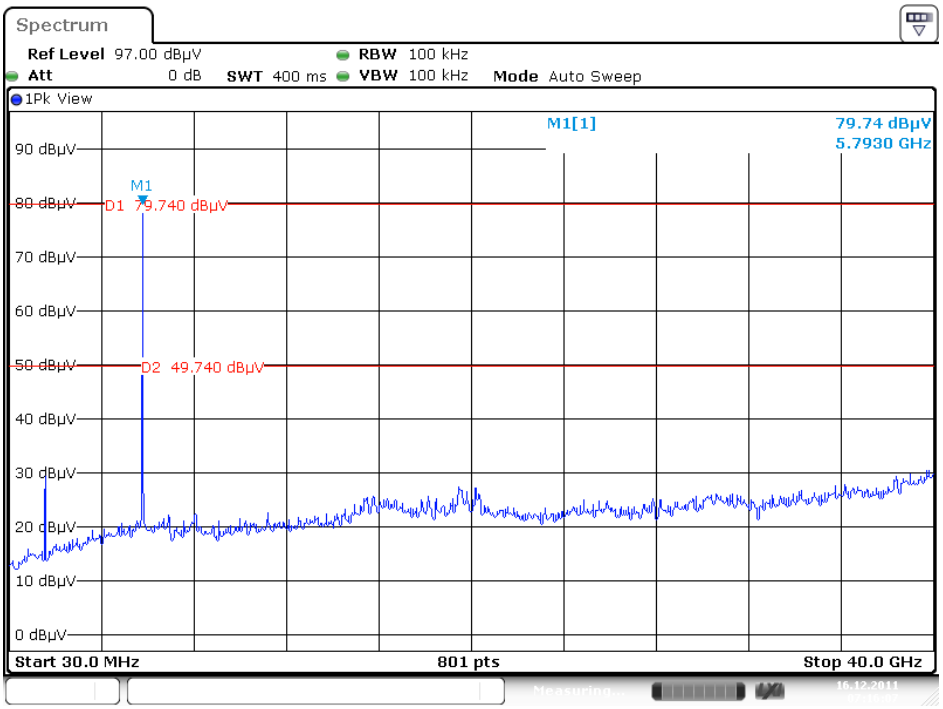

Date: 16.DEC.2011 07:14:37

## Plots for lower channel, 802.11a mode Chains A, power setting(s) = 24.5, 5745MHz



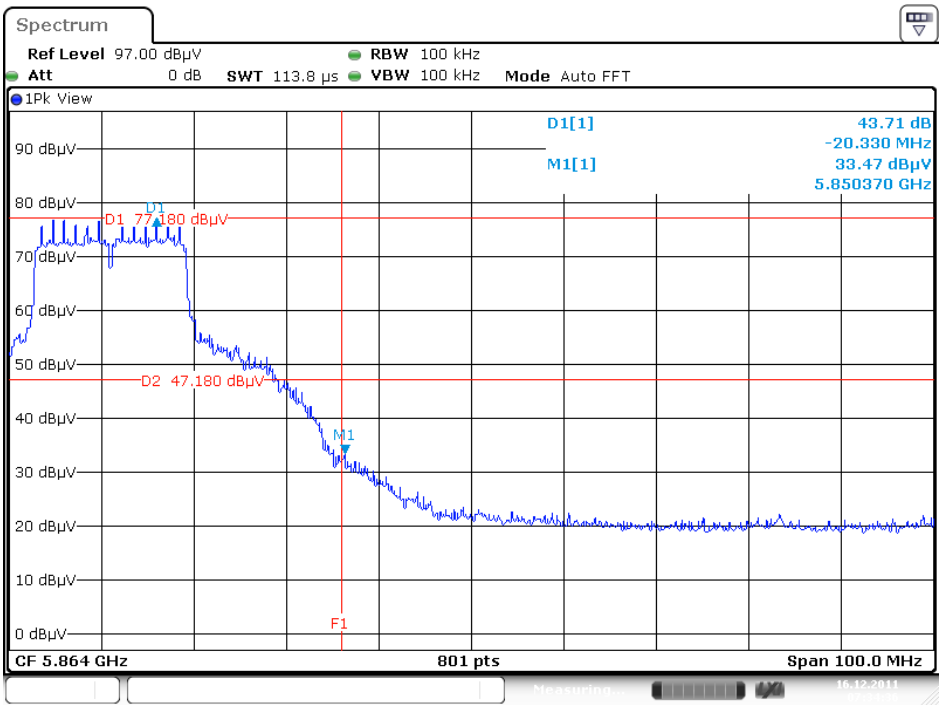

Date: 16.DEC.2011 07:12:28

## Plots for center channel, 802.11a mode Chains A, power setting(s) = 25, 5785MHz



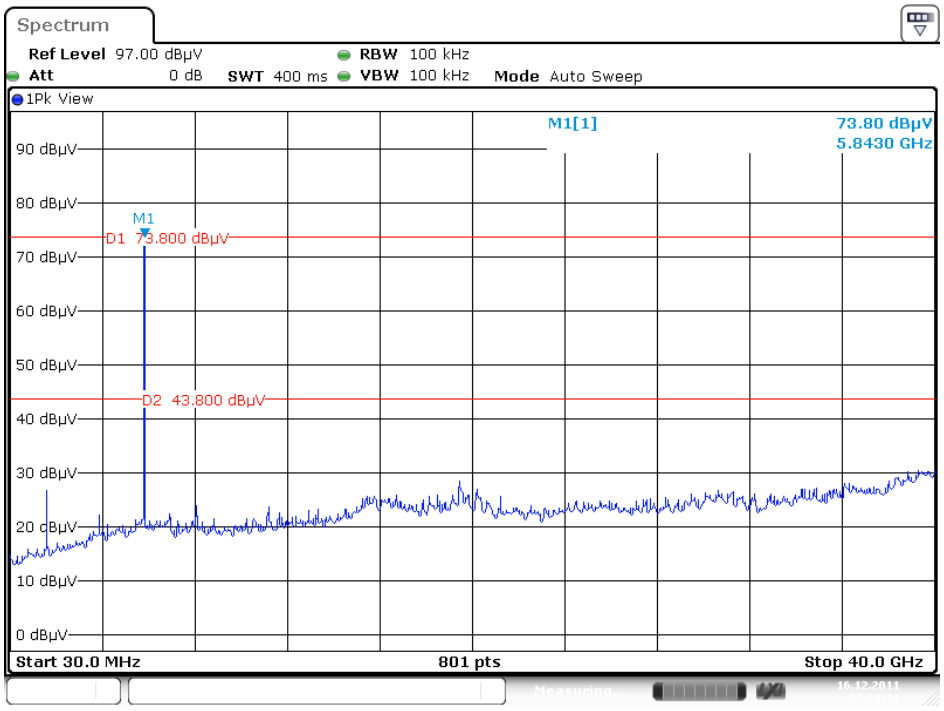

Date: 16.DEC.2011 07:16:07

## Plots for high channel, 802.11a mode Chains A, power setting(s) = 25.5, 5825MHz



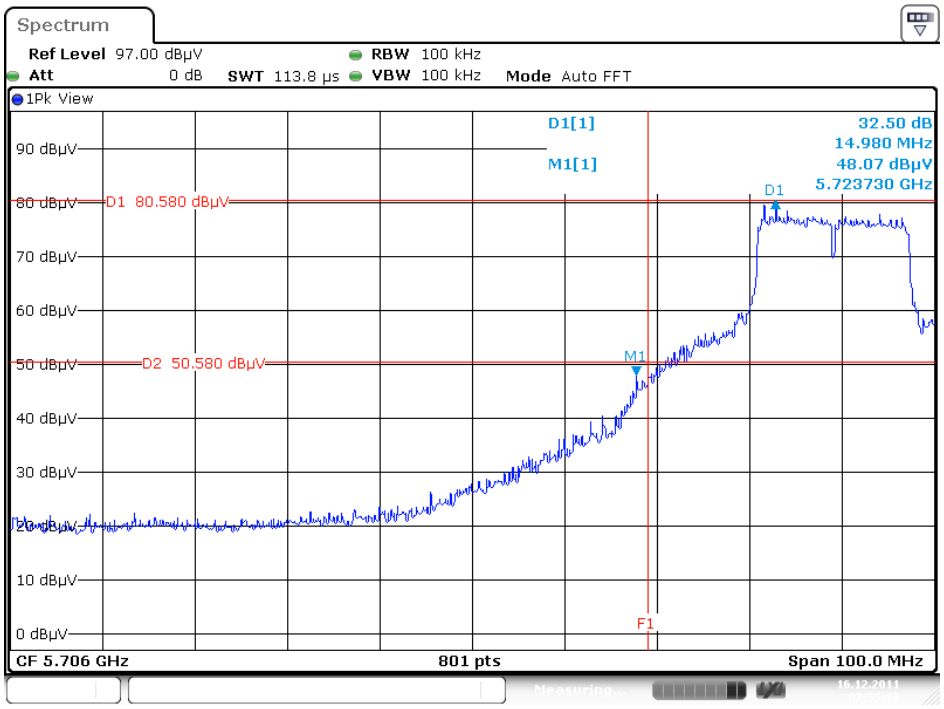

Date: 16.DEC.2011 07:34:37

## Plots for high channel, 802.11a mode Chains A, power setting(s) = 25.5, 5825MHz



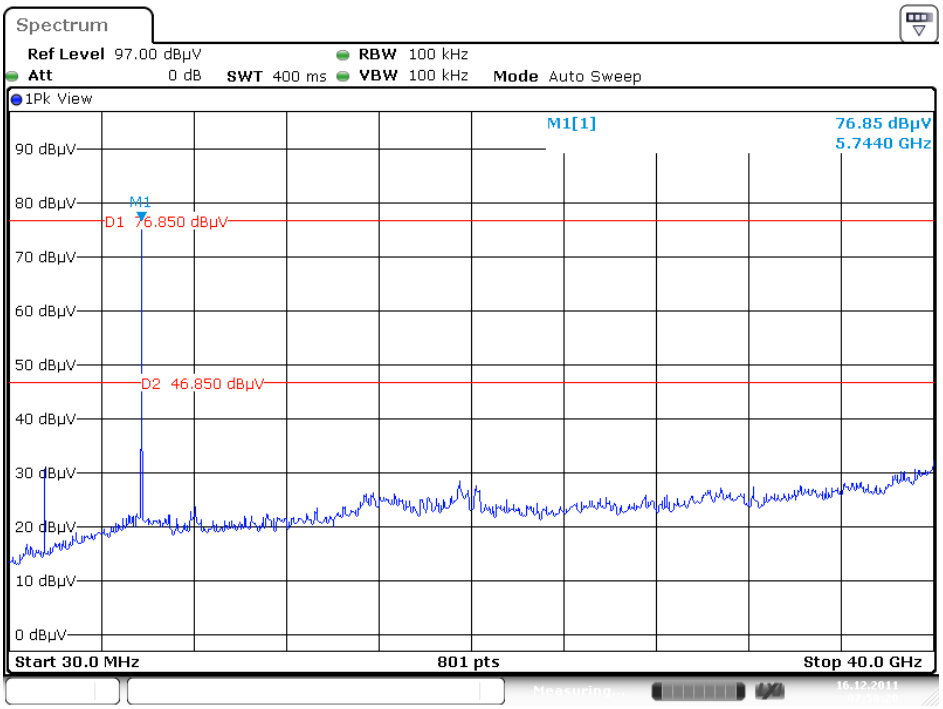

Date: 16.DEC.2011 07:21:31

## Plots for lower channel, 802.11a mode Chains B, power setting(s) = 24.5, 5745MHz



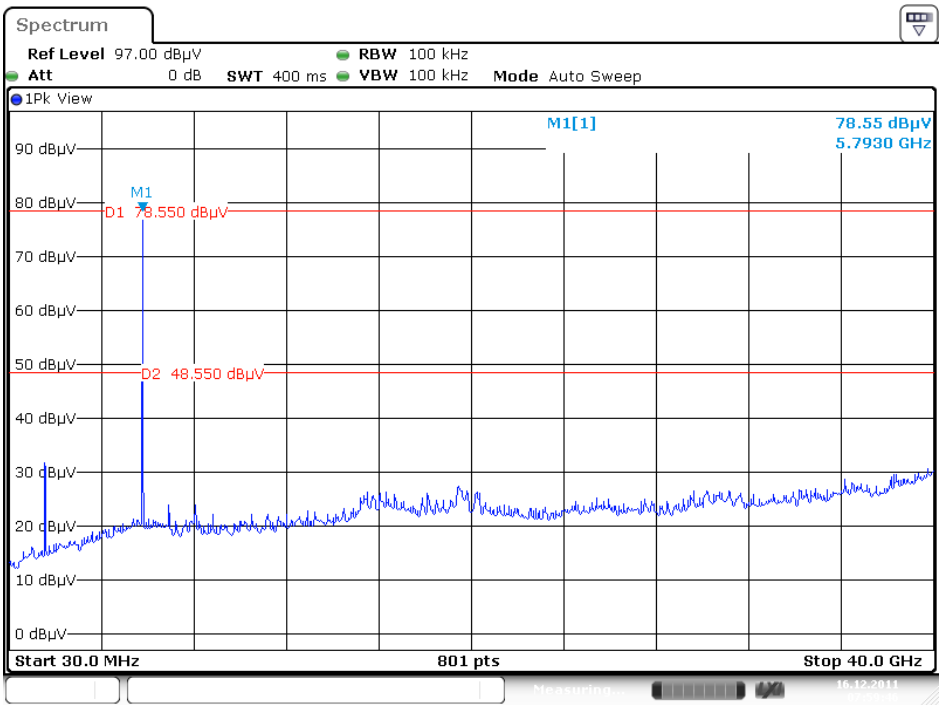

Date: 16.DEC.2011 07:55:17

## Plots for lower channel, 802.11a mode Chains B, power setting(s) = 24.5, 5745MHz



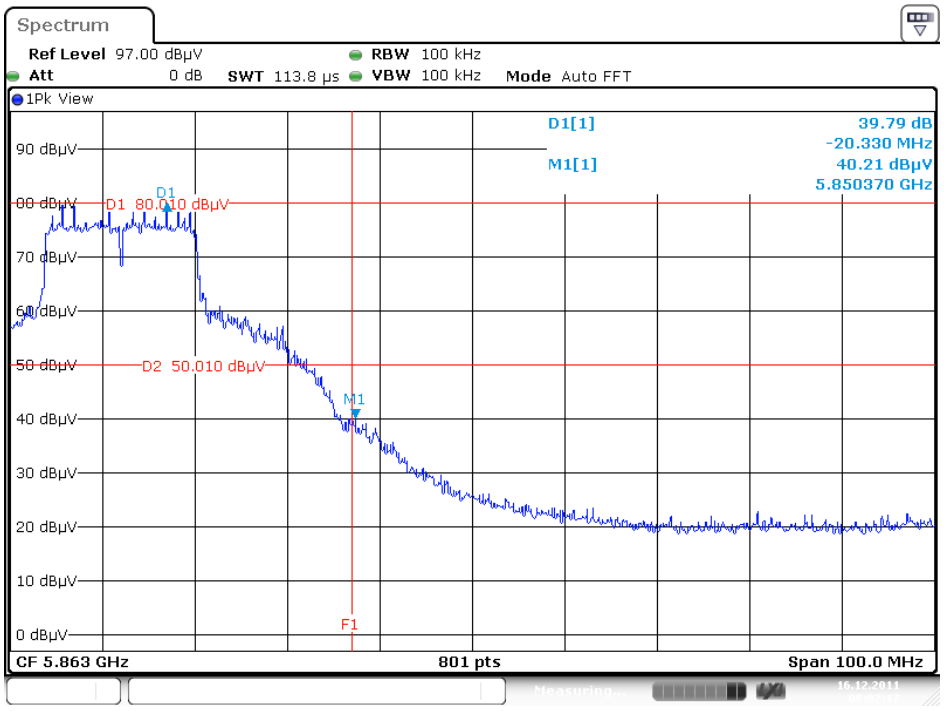

Date: 16.DEC.2011 07:58:21

## Plots for center channel, 802.11a mode Chains B, power setting(s) = 25, 5785MHz



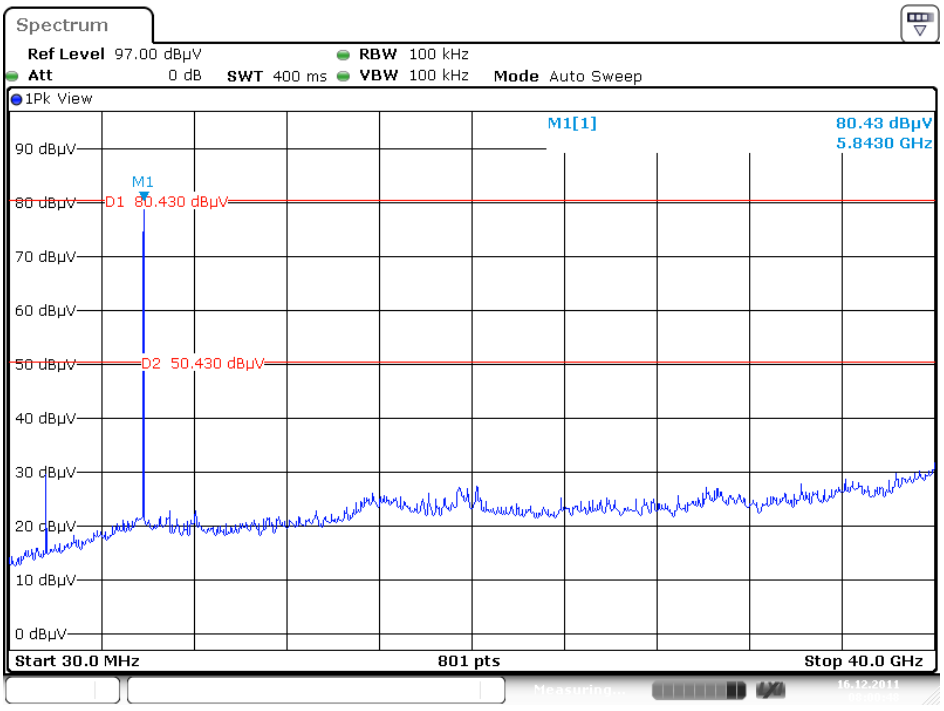

Date: 16.DEC.2011 07:59:46

## Plots for high channel, 802.11a mode Chains B, power setting(s) = 25.5, 5825MHz




Date: 16.DEC.2011 08:02:18

## Plots for high channel, 802.11a mode Chains B, power setting(s) = 25.5, 5825MHz




Date: 16.DEC.2011 08:00:49

## 4.8. Antenna Requirements

### 4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### 4.8.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

# 5. LIST OF MEASURING EQUIPMENTS

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|---|---|---|---|---|---|---|
| EMI Test Receiver | R&S | ESCS 30 | 100377 | 9kHz ~ 2.75GHz | Sep. 14, 2011 | Conduction (CO01-CB) |
| LISN | F.C.C. | FCC-LISN-50-16-2 | 04083 | 150kHz ~ 100MHz | Oct. 28, 2011 | Conduction (CO01-CB) |
| V- LISN | Schwarzbeck | NSLK 8127 | 8127-478 | 9K ~ 30MHz | Nov. 16, 2011 | Conduction (CO01-CB) |
| PULSE LIMITER | R&S | ESH3-Z2 | 100430 | 9K~30MHz | Jan. 04, 2011 | Conduction (CO01-CB) |
| COND Cable | - | Cable | - | 0.15MHz~30MHz | Dec. 04, 2011 | Conduction (CO01-CB) |
| BILOG ANTENNA | Schaffner | CBL6112D | 22021 | 20MHz ~ 2GHz | Oct. 29, 2011 | Radiation (03CH01-CB) |
| Horn Antenna | EMCO | 3115 | 00075790 | 750MHz~18GHz | Nov. 22, 2011 | Radiation (03CH01-CB) |
| Horn Antenna | SCHWARZBEAK | BBHA 9170 | BBHA9170252 | 15GHz ~ 40GHz | Nov. 22, 2011 | Radiation (03CH01-CB) |
| Pre-Amplifier | Agilent | 8447D | 2944A10991 | 0.1MHz ~ 1.3GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| Pre-Amplifier | Agilent | 8449B | 3008A02310 | 1GHz ~ 26.5GHz | Nov. 23, 2011 | Radiation (03CH01-CB) |
| Pre-Amplifier | WM | TF-130N-R1 | 923365 | 26.5GHz ~ 40GHz | Jul. 29, 2011 | Radiation (03CH01-CB) |
| Spectrum analyzer | R&S | FSP40 | 100056 | 9KHz~40GHz | Nov. 03, 2011 | Radiation (03CH01-CB) |
| EMI Test Receiver | R&S | ESCS 30 | 100355 | 9KHz ~ 2.75GHz | Mar. 22, 2011 | Radiation (03CH01-CB) |
| Loop Antenna | Teseq | HLA 6120 | 24155 | 9 kHz - 30 MHz | Sep. 09, 2010* | Radiation (03CH01-CB) |
| Turn Table | INN CO | CO 2000 | N/A | 0 ~ 360 degree | N/A | Radiation (03CH01-CB) |
| Antenna Mast | INN CO | CO2000 | N/A | 1 m - 4 m | N/A | Radiation (03CH01-CB) |
| RF Cable-low | Woken | Low Cable-1 | N/A | 30 MHz - 1 GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| RF Cable-high | Woken | High Cable-1 | N/A | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| RF Cable-high | Woken | High Cable-2 | N/A | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| RF Cable-high | Woken | High Cable-3 | N/A | 1 GHz - 40 GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| RF Cable-high | Woken | High Cable-4 | N/A | 1 GHz - 40 GHz | Nov. 17, 2011 | Radiation (03CH01-CB) |
| Spectrum analyzer | R&S | FSV30 | 101026 | 9KHz~30GHz | Jul. 27, 2011 | Conducted (TH01-CB) |
| Temp. and Humidity Chamber | Ten Billion | TTH-D3SP | TBN-931011 | -30~100 degree | May 20, 2011 | Conducted (TH01-CB) |
| Thermo-Hygro Meter | N/A | HC 520 | #1 | 15~70 degree | Nov. 02, 2011 | Conducted (TH01-CB) |
| RF Power Divider | HP | 11636A | 00306 | 2GHz ~ 18GHz | N/A | Conducted (TH01-CB) |

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Remark |
|---|---|---|---|---|---|---|
| RF Power Splitter | Anaren | 44100 | 1839 | 2GHz ~ 18GHz | N/A | Conducted (TH01-CB) |
| RF Power Splitter | Anaren | 42100 | 17930 | 2GHz ~ 18GHz | N/A | Conducted (TH01-CB) |
| EPM-P Series Power Metter | Agilent | E4416A | GB41291199 | 50MHz – 18GHz | Sep. 09, 2011 | Conducted (TH01-CB) |
| Peak an Avg Power Sensor | Agilent | E9327A | US40442088 | 50MHz – 18GHz | Sep. 09, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-7 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-8 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-9 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-10 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-11 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-12 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| RF Cable-high | Woken | High Cable-13 | - | 1 GHz – 26.5 GHz | Nov. 17, 2011 | Conducted (TH01-CB) |
| Power Sensor | Anritsu | MA2411B | 0917223 | 300MHz~40GHz | Nov. 01, 2011 | Conducted (TH01-CB) |
| Power Meter | Anritsu | ML2495A | 1035008 | 300MHz~40GHz | Nov. 01, 2011 | Conducted (TH01-CB) |

Note: Calibration Interval of instruments listed above is one year.

Note: "*" Calibration Interval of instruments listed above is two years.

# 6. TEST LOCATION

| | | | |
|---|---|---|---|
| SHIJR | ADD | : | 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. |
| | TEL | : | 886-2-2696-2468 |
| | FAX | : | 886-2-2696-2255 |
| HWA YA | ADD | : | No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. |
| | TEL | : | 886-3-327-3456 |
| | FAX | : | 886-3-318-0055 |
| LINKOU | ADD | : | No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C |
| | TEL | : | 886-2-2601-1640 |
| | FAX | : | 886-2-2601-1695 |
| DUNGHU | ADD | : | No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. |
| | TEL | : | 886-2-2631-4739 |
| | FAX | : | 886-2-2631-9740 |
| JUNGHE | ADD | : | 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. |
| | TEL | : | 886-2-8227-2020 |
| | FAX | : | 886-2-8227-2626 |
| NEIHU | ADD | : | 4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C. |
| | TEL | : | 886-2-2794-8886 |
| | FAX | : | 886-2-2794-9777 |
| JHUBEI | ADD | : | No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. |
| | TEL | : | 886-3-656-9065 |
| | FAX | : | 886-3-656-9085 |

# 7. TAF CERTIFICATE OF ACCREDITATION

Certificate No.：L1190-110702

財團法人全國認證基金會
Taiwan Accreditation Foundation

## Certificate of Accreditation

This is to certify that

**Sporton International Inc.**
**EMC & Wireless Communications Laboratory**
No.52, Hwa Ya 1st Road, Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

**is accredited in respect of laboratory**

| | | |
|---|---|---|
| **Accreditation Criteria** | ： | ISO/IEC 17025:2005 |
| **Accreditation Number** | ： | 1190 |
| **Originally Accredited** | ： | December 15, 2003 |
| **Effective Period** | ： | January 10, 2010 to January 09, 2013 |
| **Accredited Scope** | ： | Testing Field, see described in the Appendix |
| **Specific Accreditation Program** | ： | Accreditation Program for Designated Testing Laboratory for Commodities Inspection<br>Accreditation Program for Telecommunication Equipment Testing Laboratory<br>Accreditation Program for BSMI Mutual Recognition Arrangment with Foreign Authorities |

Jay-San Chen
President, Taiwan Accreditation Foundation
Date：July 02, 2011

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The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix