# Test Report

| | |
|---|---|
| **Test Report Number** | TUVOTEL001 |
| **Applied Standard(s)** | FCC Part15.247 Subpart C / IC RSS-210 |
| **Date of Issue** | 5th Jan, 2012 |
| **Testing Laboratory**<br>**Address** | TÜV SÜD Ohtama, Ltd. Tokyo Laboratory<br>2-8-20 Kurigi, Asao-ku, Kawasaki-shi, Kanagawa, 215-0033 JAPAN |
| **Test Date(s)** | 14 December, 2011 to 20 December, 2011 |
| **Product Name** | WiFi Module |
| **Model Number** | FZ09396-100 |
| **Serial Number** | - |
| **Applicant (Client)**<br>**Address** | Fujifilm Corporation<br>798 Miyanodai Kaisei-machi, Ashigarakami-gun, Kanagawa, 258-8538 Japan |
| **Manufacturer**<br>**Address** | FUJIFILM IMAGING SYSTEM (SUZHOU)<br>138 CHANG JIANG ROAD,NEW DISTRICT,SUZHOU,CHINA |
| **FCC ID** | W2Z-02000001 |
| **IC ID** | 7736B-02000001 |

## Test Result

The test result for the electromagnetic compatibility tests
as described in the section 1 to 2 and in this page was:

### Pass

**Tested by:** _____ **Approved by:** _____

Kouji Imai
Test Enginner

Seiichi Shiindo
Testing Group Leader

Checked box (☒) indicates that the listed condition, standard or equipment is applicable for this Report.
Blank box (☐) indicates that the listed condition, standard or equipment is not applicable for this Report.
It is not allowed to copy this report, except in full, without written permission of the test laboratory.
Test results of this report refer only to the EUT tested here.

Page

# 1. Summary

## 1.1 Terms and definitions

**AV**
Average

**DoC**
Declaration of Conformity

**EUT**
Equipment Under Test

**PK**
Peak

**QP**
Quasi-peak

## 1.2 Standard(s) and Result

| Applied Standard(s) | Normative Reference(s) | Classification | Result | Note |
|---|---|---|---|---|
| FCC Part15 Subpart C<br>IC | 20dB Bandwidth(FHSS only) | 15.247(a)(1)<br>RSS-210 A8.1(a) | N/A | |
| | 6dB Bandwidth(DHSS only) | 15.247(a)(2)<br>RSS-210 A8.2(a) | Pass | |
| | Carrier Frequency Separation (FHSS only) | 15.247(a)(1)<br>RSS-210 A8.1(b) | N/A | |
| | Number of Hopping Frequencies (FHSS only) | 15.247(a)(1)<br>RSS-210 A8.1(c) | N/A | |
| | Time of Occupancy(Dwell Time) (FHSS only) | 15.247(a)(1)<br>RSS-210 A8.1(d) | N/A | |
| | Maximum Peak Output Power | 15.247(b)(1)(2)FHSS<br>15.247(b)(3)DHSS<br>RSS-210 A8.4(2) | Pass | |
| | Band Edge of Compliance of RF Conducted Emissions | 15.247(d)<br>RSS-210 A8.5 | Pass | |
| | 26dB and 99% Bandwidth | RSS-Gen4.6.1 | Pass | |
| | Restricted Bands of Operation | 15.247(d)<br>RSS-210 2.2 | Pass | |
| | Peak Power Spectral Density (FHSS only) | 15.247(e)<br>RSS-210 A8.2(b) | N/A | |
| | Transmitter spurious emissions (Conducted / Radiated) | 15.207<br>15.209<br>RSS-Gen 7.2.2 | Pass | |
| | Maximum Permissible Exposure | 1.1310<br>Safety code6, 2.2.1 | N/A | |

## 1.3 Deviations from Standard(s)

There was no deviation from the standard.

# 2. Equipment Under Test (EUT)

## 2.1 General Descriptions

Digital camera with 802.11b/g/n transmitter module.

## 2.2 Detailed Descriptions

| | |
|---|---|
| Product Name | WiFi Module |
| Model Number | FZ09396-100 |
| Serial Number | - |
| Power Supply | 5 V DC |
| Dimension | 9.0mm×19.5mm, t= 1.6mm MAX |
| Operating Frequency | 2412 - 2462MHz(Center) |
| Normal Placement | Handy-use |
| Specific Requirements | |
| Condition of the EUT | Trial product on production line |

## 2.3 Operation Mode(s) of the EUT for EMC during the Test(s)

| Operation Mode Name | Description |
|---|---|
| TX mode | |
| 802.11b mode: 1Mbps | DPSK, channel 1, modulation ON |
| 802.11b mode: 1Mbps | DPSK, channel 6, modulation ON |
| 802.11b mode: 1Mbps | DPSK, channel 11, modulation ON |
| 802.11b mode: 11Mbps | CCK, channel 1, modulation ON |
| 802.11b mode: 11Mbps | CCK, channel 6, modulation ON |
| 802.11b mode: 11Mbps | CCK, channel 11, modulation ON |
| 802.11g mode: 6Mbps | OFDM-BPSK, channel 1, modulation ON |
| 802.11g mode: 6Mbps | OFDM-BPSK, channel 6, modulation ON |
| 802.11g mode: 6Mbps | OFDM-BPSK, channel 11, modulation ON |
| 802.11g mode: 54Mbps | 64QAM, channel 1, modulation ON |
| 802.11g mode: 54Mbps | 64QAM, channel 6, modulation ON |
| 802.11g mode: 54Mbps | 64QAM, channel 11, modulation ON |
| 802.11n mode: MCS0 | OFDM-BPSK, channel 1, modulation ON |
| 802.11n mode: MCS0 | OFDM-BPSK, channel 6, modulation ON |
| 802.11n mode: MCS0 | OFDM-BPSK, channel 11, modulation ON |
| 802.11n mode: MCS7 | 64QAM, channel 1, modulation ON |
| 802.11n mode: MCS7 | 64QAM, channel 6, modulation ON |
| 802.11n mode: MCS7 | 64QAM, channel 11, modulation ON |

## 2.4 Peripheral Devices

| Mark | Description | Model Number | Serial Number | FCC ID Code or DoC status | Manufacturer |
|---|---|---|---|---|---|
| 1 | Digital Camera | KDC-BT50U | PPE00013 | DoC | FUJIFILM |
| 2 | Personal Computer | D610 | X6332 | DoC | DELL |

## 2.5 Interconnecting Cables

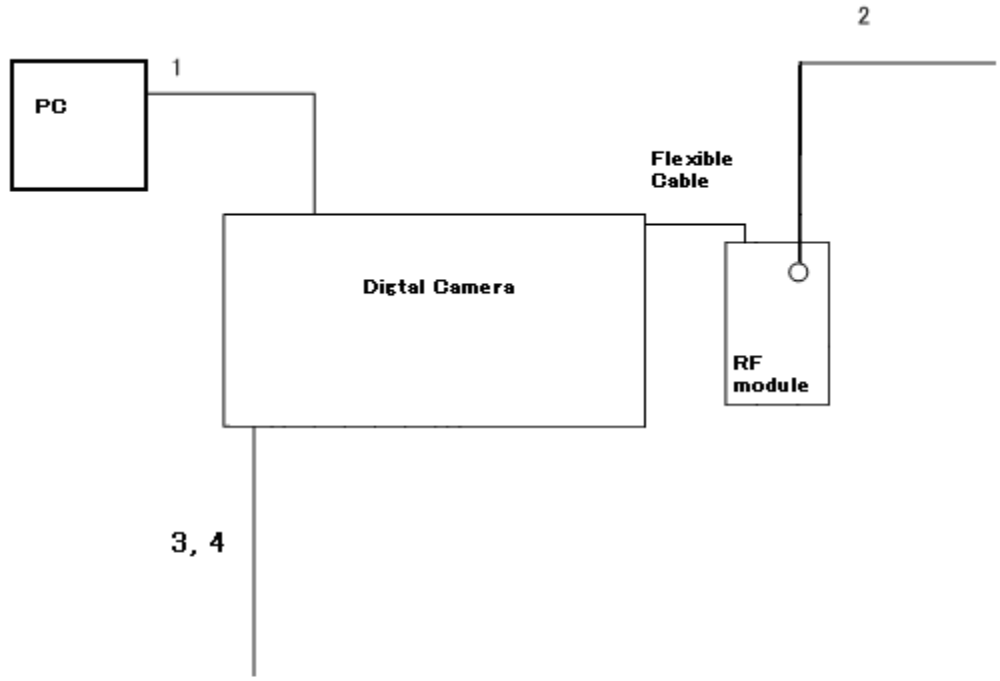
| Mark | Description | Length (m) | Shielded | | Tested Port(s) (Note:1) | |
|---|---|---|---|---|---|---|
| | | | Cable | Connector | Applicable | Interface |
| 1 | USB Cable | 0.52 | Shielded | Shielded | No | I/O signal |
| 2 | Antenna cable | 0.28 | Shielded | Shielded | No | RF Signal |
| 3 | ACC cable | 1.15 | None | None | No | AC Power |
| 4 | Battery cable | 0.20+1.82 | None | None | No | DC Power |

Note1: Tested port(s) required for applicable standard(s).

Remarks: The length described here is the length of the cable typically used in the tests, but different length of the cable may be used in some tests to satisfy the requirements for the test.

## 2.6 System Configuration

Unless otherwise specified in the following sections, the test configuration described here is applied for the tests. The configuration was choice by the applicant.



# 3. Test Data

## 3.1 Test specification

| | |
|---|---|
| Standard | FCC Part15.247 Subpart C / IC RSS-210 |
| Frequency Range | 2402 – 2480 MHz |
| | |
| Test Date | 14th , 15th , 17th December 2011 |
| Test Location | Tokyo Laboratory<br>Anechoic chamber No.1 . Semi-Anechoic chamber No.5 . Shielded room No.2<br>Thermostatic chamber |
| Test Engineer | Koji Imai |
| Temperature | 23.1 °C to 25.9°C |
| Humidity | 26.5 % RH to 33.8 % RH |
| Pressure | 996 hPa to 1019 hPa |
| Power Supply | 5V DC *1 |
| Operation Mode Name | WLAN(IEEE 802.11) Transmitting(Tx) |
| | |
| Tested Temperature | |
| Normal | +25 ℃ |
| High | +55 ℃ *2 |
| Low | -20 ℃ *2 |
| | |
| Tested TX modulation/data rate | |
| DPSK | 1Mbps |
| OFDM-BPSK | 6Mbps |
| CCK | 11Mbps |
| 64QAM | 54Mbps |
| | |
| Tested channel | |
| ch 1 (Low) | 2412MHz |
| ch 6 | 2437MHz *3 |
| ch 11 (High) | 2462MHz |

Remark: *1 : Regardless of input voltage, the constant DC power is supplied to RF module. So the all test were performed with 5VDC only.
*2 : Equivalent isotropic radiated power and Frequency Range only.
*3 : Equivalent isotropic radiated power and Conducted / Radiated Emissions.

## 3.2 99% Bandwidth

### 3.2.1 Test Result

11b 1Mbps

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 13.50 |
| 6 | 2437.0 | 13.45 |
| 11 | 2462.0 | 13.35 |

11b 11Mbps

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 13.35 |
| 6 | 2437.0 | 13.45 |
| 11 | 2462.0 | 13.35 |

11g 6Mbps

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 16.45 |
| 6 | 2437.0 | 16.45 |
| 11 | 2462.0 | 16.45 |

11g 54Mbps

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 16.50 |
| 6 | 2437.0 | 16.45 |
| 11 | 2462.0 | 16.55 |

11n MCS0

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 17.70 |
| 6 | 2437.0 | 17.75 |
| 11 | 2462.0 | 17.70 |

11n MCS7

| Channel | Center Frequency (MHz) | 99% Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 17.70 |
| 6 | 2437.0 | 17.70 |
| 11 | 2462.0 | 17.70 |

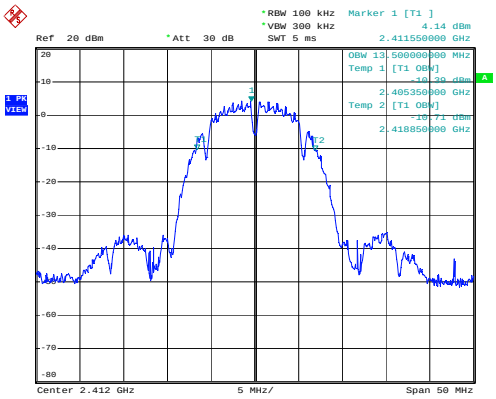
Pass

## 3.2.2 Test Detail

EUT was tested based on FCC 15.247(a)(1) RSS-210A8.1(a) with temporally antenna port.
The bandwidth of frequency is measure by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power 20dB.

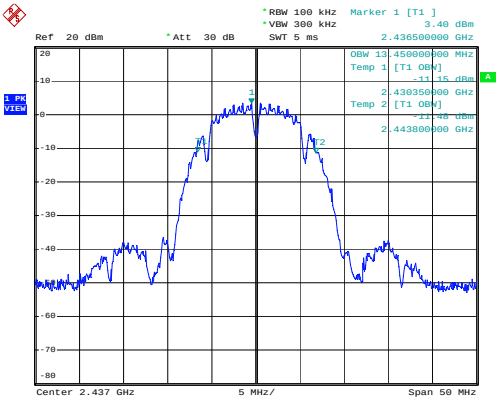
## 3.2.3 Test data

99% bandwith
11b 1Mbps
Lower Channel 2412MHz



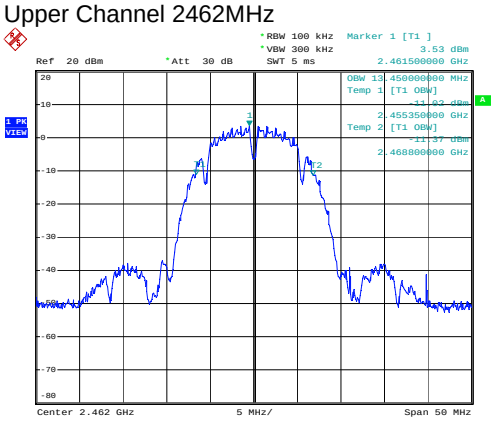

FCC_11b_1M_99_chLOW
Date: 14.DEC.2011 13:41:07

Middle Channel 2437MHz




FCC_11b_1M_99_chMID
Date: 14.DEC.2011 13:43:47

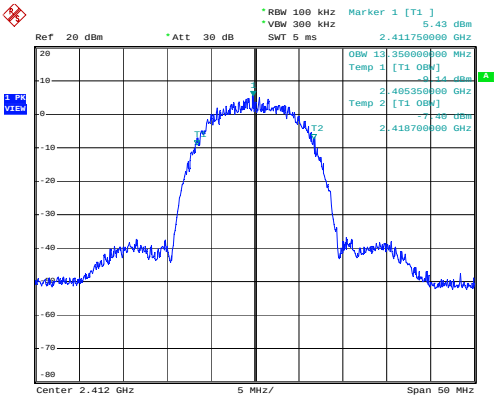
Upper Channel 2462MHz




FCC_11b_1M_99_chHIGH
Date: 14.DEC.2011 13:45:25

11b 11Mbps

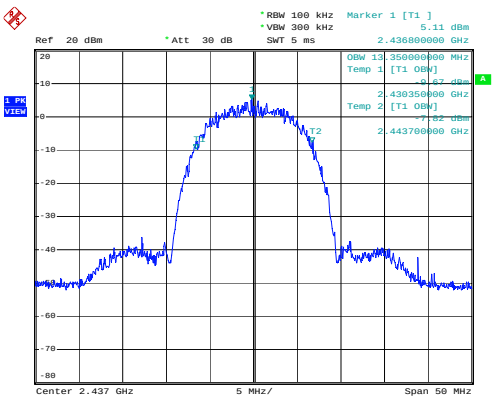
Lower Channel 2412MHz




FCC_11b_11M_99_chLOW

Date: 14.DEC.2011 13:47:15

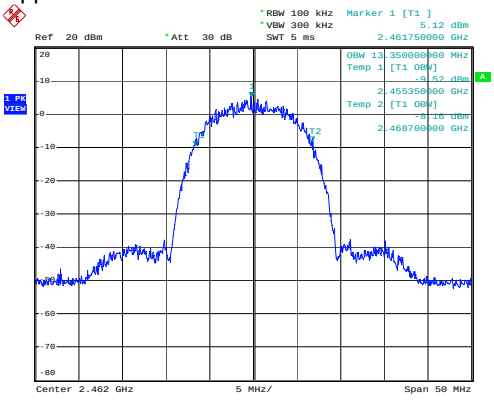
Middle Channel 2437MHz




FCC_11b_11M_99_chMID

Date: 14.DEC.2011 13:48:24

Upper Channel 2462MHz

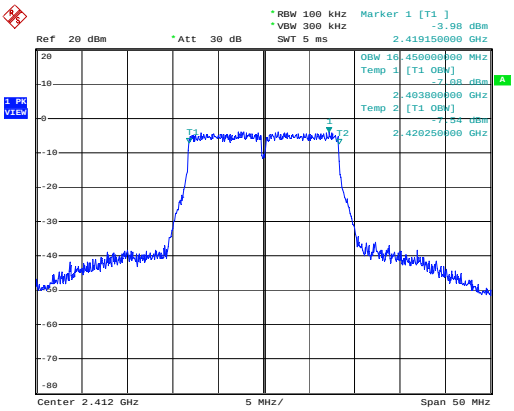



FCC_11b_11M_99_chHIGH

Date: 14.DEC.2011 13:52:15

11g 6Mbps

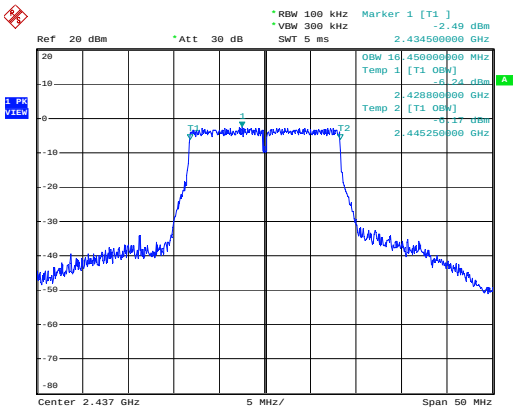
Lower Channel 2412MHz




FCC_11g_6M_99_chLOW

Date: 14.DEC.2011 13:54:10

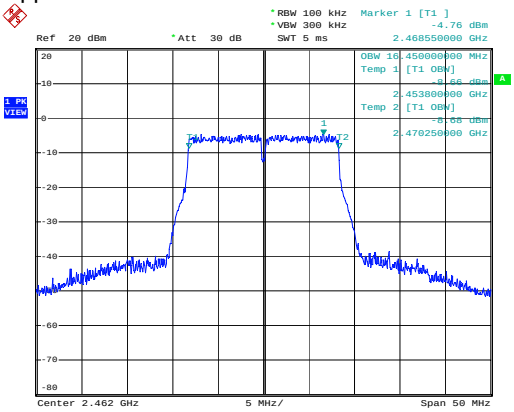
Middle Channel 2437MHz




FCC_11g_6M_99_chMID

Date: 14.DEC.2011 13:56:17

Upper Channel 2462MHz

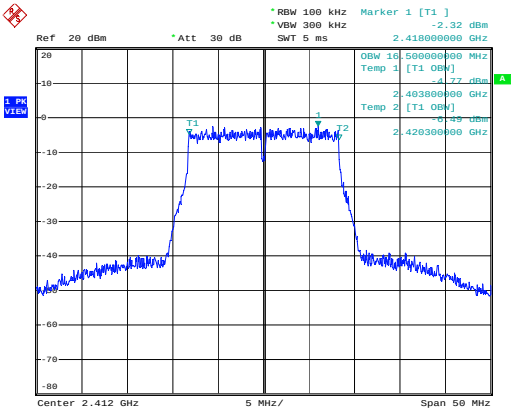



FCC_11g_6M_99_chHIGH

Date: 14.DEC.2011 13:57:51

11g 54Mbps

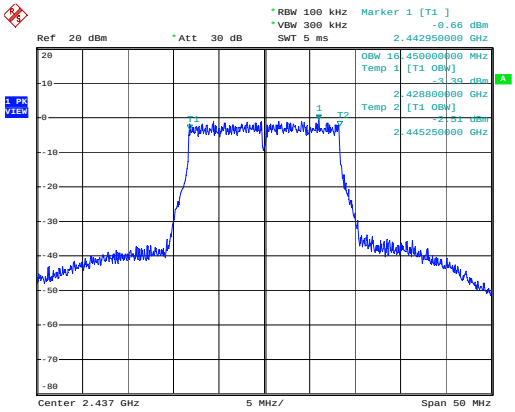
Lower Channel 2412MHz




FCC_11g_54M_99_chLOW

Date: 14.DEC.2011 14:00:00

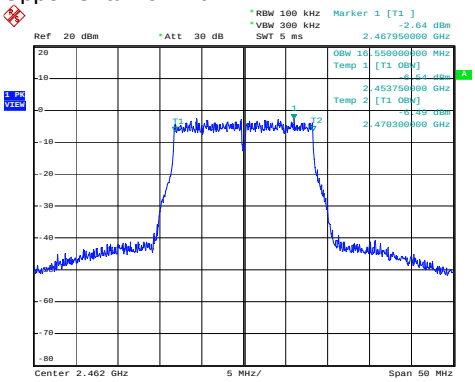
Middle Channel 2437MHz




FCC_11g_54M_99_chMID

Date: 14.DEC.2011 14:01:49

Upper Channel 2462MHz

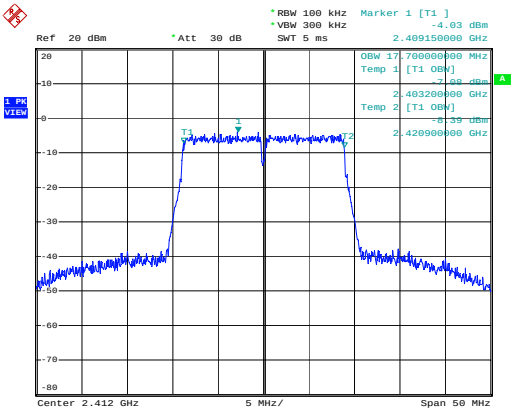



FCC_11g_54M_99_chHIGH

Date: 14.DEC.2011 14:03:20

11n MCS0

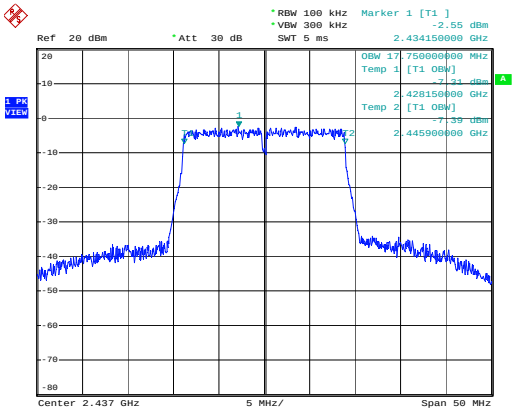
Lower Channel 2412MHz




FCC_11n_MSC0_99_chLOW

Date: 14.DEC.2011 14:05:44

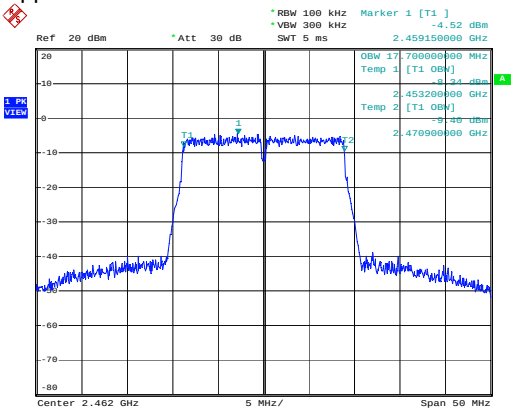
Middle Channel 2437MHz




FCC_11n_MSC0_99_chMID

Date: 14.DEC.2011 14:07:02

Upper Channel 2462MHz

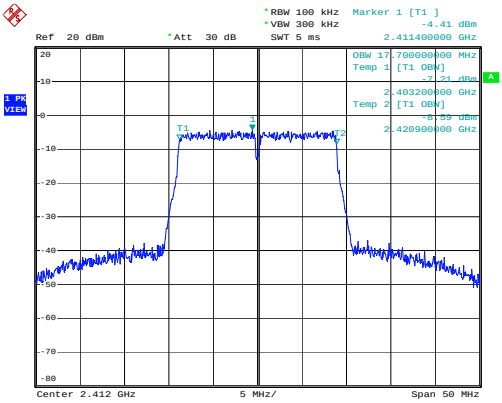



FCC_11n_MSC0_99_chHI

Date: 14.DEC.2011 14:08:21

11n MCS7

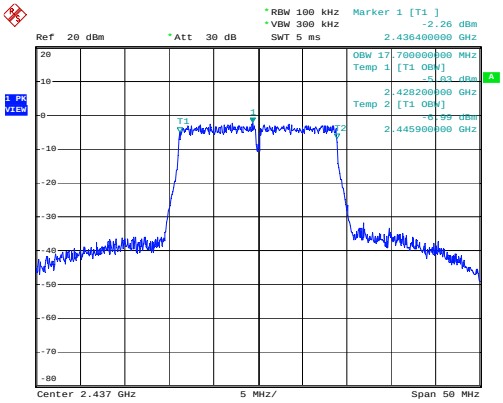
Lower Channel 2412MHz




FCC_11n_MSC7_99_chLOW

Date: 14.DEC.2011 14:09:54

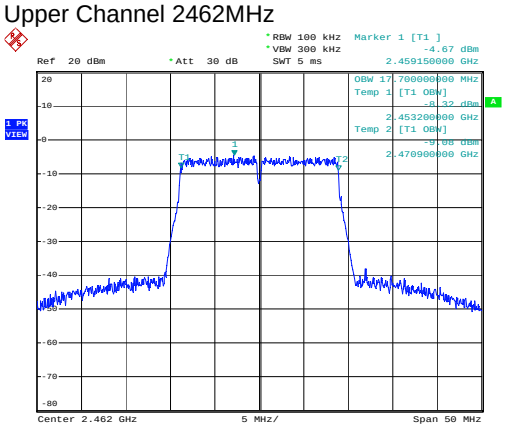
Middle Channel 2437MHz




FCC_11n_MSC7_99_chMID

Date: 14.DEC.2011 14:11:47

Upper Channel 2462MHz




FCC_11n_MSC7_99_chHI

Date: 14.DEC.2011 14:13:10

## 3.3 6dB Bandwidth

| 6dB Bandwith (MHz) | Limit (kHz) |
|---|---|
| 8.85 | >500kHz |

Pass

### 3.3.1 Test Result

802.11b 1Mbps

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 9.900 |
| 6 | 2437.0 | 10.05 |
| 11 | 2462.0 | 9.700 |

802.11b 11Mbps

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 9.35 |
| 6 | 2437.0 | 9.95 |
| 11 | 2462.0 | 8.85 |

802.11g 6Mbps

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 16.65 |
| 6 | 2437.0 | 16.55 |

| | | |
|---|---|---|
| 11 | 2462.0 | 16.55 |

802.11g 54Mbps

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 16.60 |
| 6 | 2437.0 | 16.55 |
| 11 | 2462.0 | 16.55 |

802.11n MCS0

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 17.75 |
| 6 | 2437.0 | 17.80 |
| 11 | 2462.0 | 17.75 |

802.11n MCS7

| Channel | Center Frequency (MHz) | 6dB Bandwidth (MHz) |
|---|---|---|
| 1 | 2412.0 | 17.80 |
| 6 | 2437.0 | 16.80 |
| 11 | 2462.0 | 17.75 |

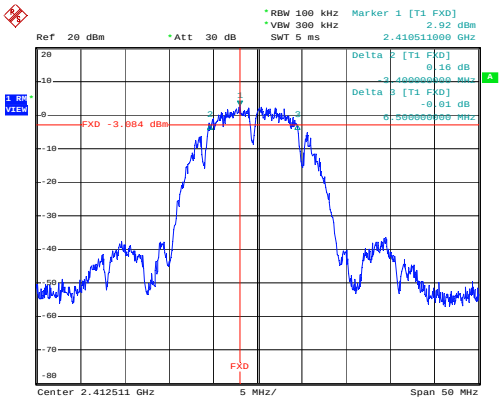
Pass

## 3.3.2 Test Detail

EUT was tested based on FCC 15.247(a)(2) RSS-210A8.2(a) with temporally antenna port.
The RBW is set to 100kHz and the VBW is set to 300kHz. The sweep time is coupled.

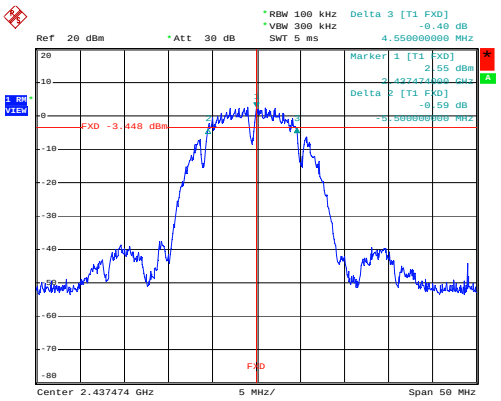
## 3.3.3 Test data

6dB bandwith
11b 1Mbps
Lower Channel 2412MHz



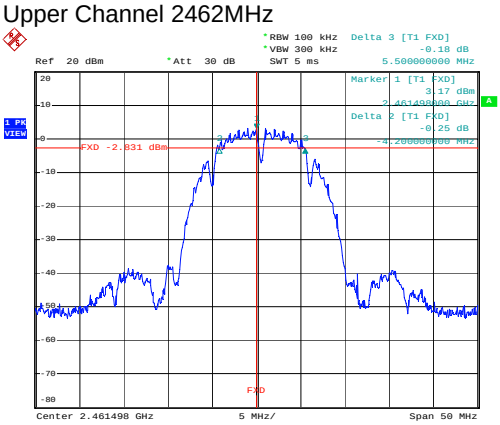

FCC_6dB_chLOW
Date: 14.DEC.2011 10:07:59

Middle Channel 2437MHz




FCC_6dB_chMID
Date: 14.DEC.2011 10:22:14

Upper Channel 2462MHz

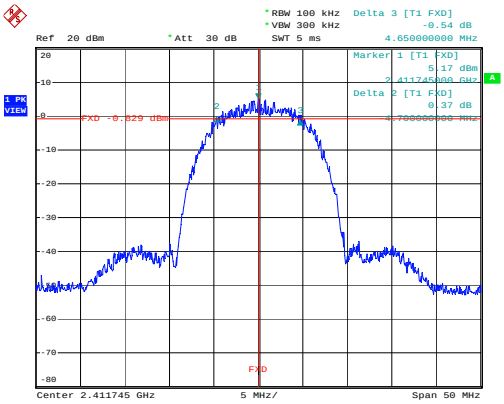



FCC_11b_1M_6dB_chHIGH

Date: 14.DEC.2011 10:40:13

11b 11Mbps

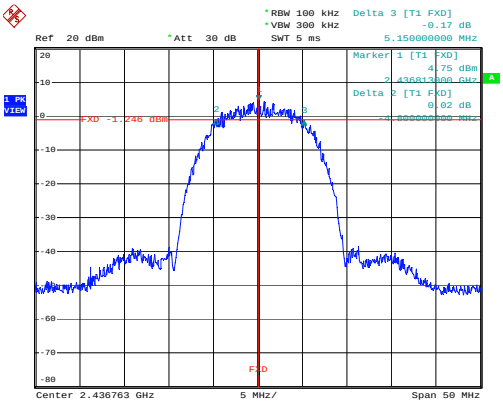
Lower Channel 2412MHz




FCC_11b_11M_6dB_chLOW

Date: 14.DEC.2011 10:35:50

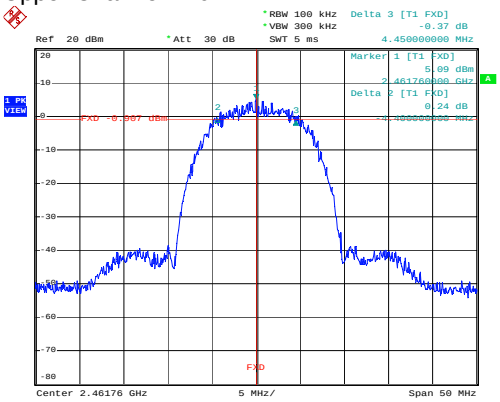
Middle Channel 2437MHz




FCC_11b_11M_6dB_chMID

Date: 14.DEC.2011 10:48:17

Upper Channel 2462MHz

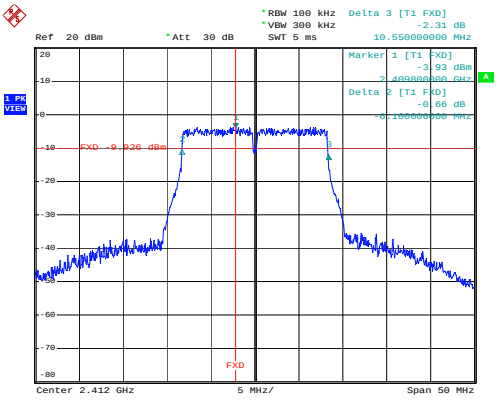



FCC_11b_11M_6dB_chHI

Date: 14.DEC.2011 10:51:50

11g 6Mbps

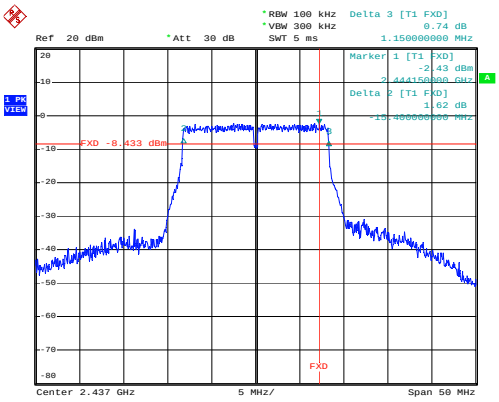
Lower Channel 2412MHz




FCC_11g_6M_6dB_chLOW

Date: 14.DEC.2011 10:55:43

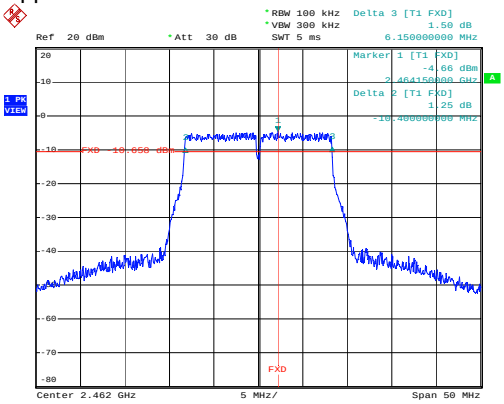
Middle Channel 2437MHz




FCC_11g_6M_6dB_chMID

Date: 14.DEC.2011 10:58:05

Upper Channel 2462MHz

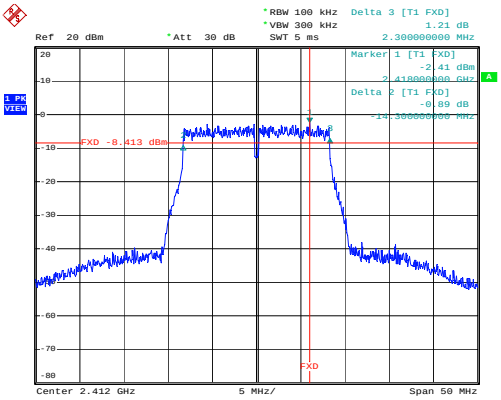



FCC_11g_6M_6dB_chHI

Date: 14.DEC.2011 10:59:49

11g 54Mbps

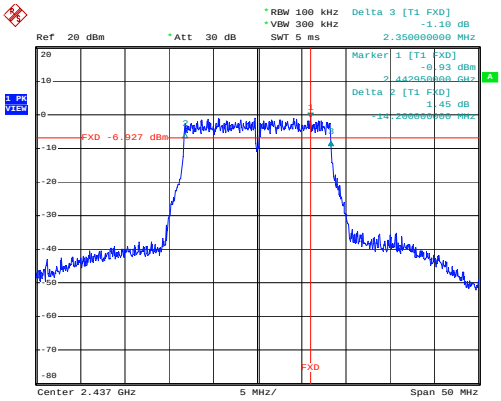
Lower Channel 2412MHz




FCC_11g_54M_6dB_chLOW

Date: 14.DEC.2011 11:01:59

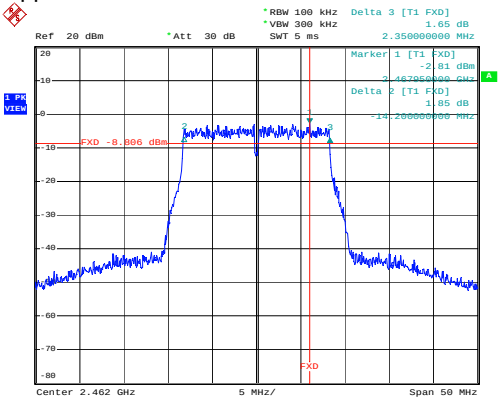
Middle Channel 2437MHz




FCC_11g_54M_6dB_chMID

Date: 14.DEC.2011 11:03:41

Upper Channel 2462MHz

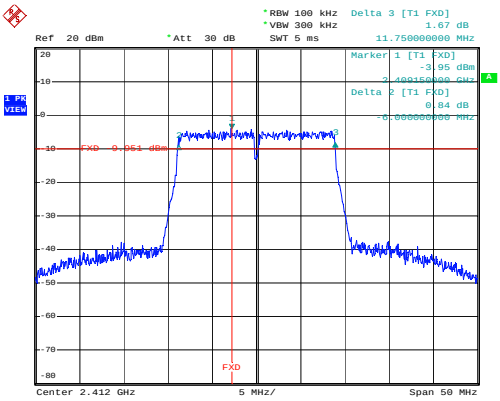



FCC_11g_54M_6dB_chHI

Date: 14.DEC.2011 11:06:55

11n MCS0

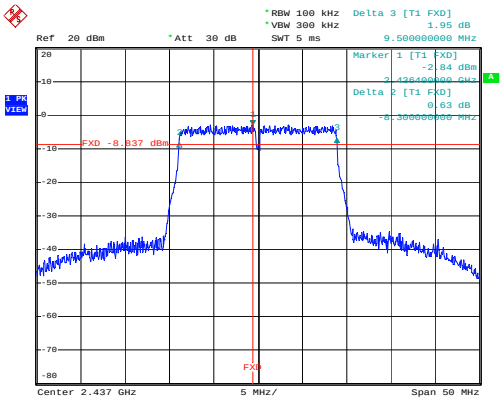
Lower Channel 2412MHz




FCC_11n_MSC0_6dB_chLO

Date: 14.DEC.2011 11:10:01

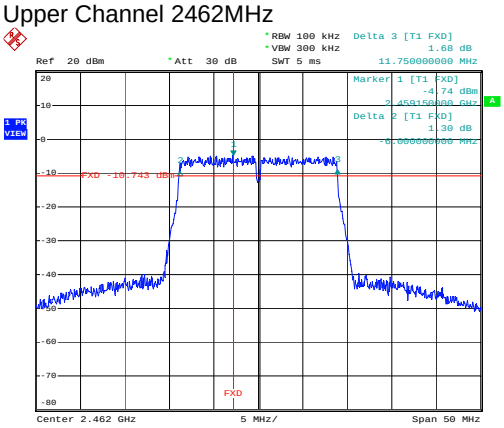
Middle Channel 2437MHz




FCC_11n_MSC0_6dB_chMI

Date: 14.DEC.2011 11:11:56

Upper Channel 2462MHz

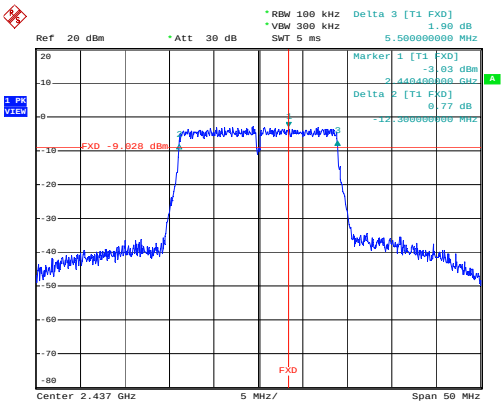



FCC_11n_MSC0_6dB_chHI

Date: 14.DEC.2011 11:13:58

11n MCS7

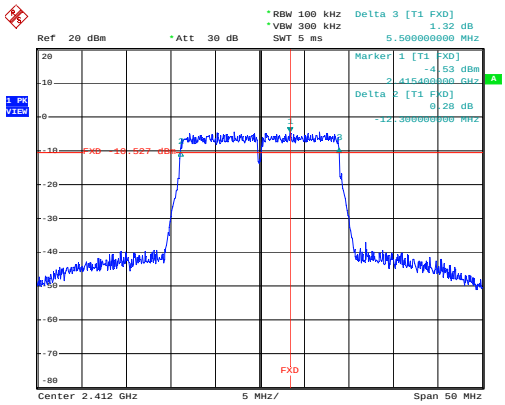
Lower Channel 2412MHz




FCC_11n_MSC7_6dB_chMI

Date: 14.DEC.2011 11:17:56

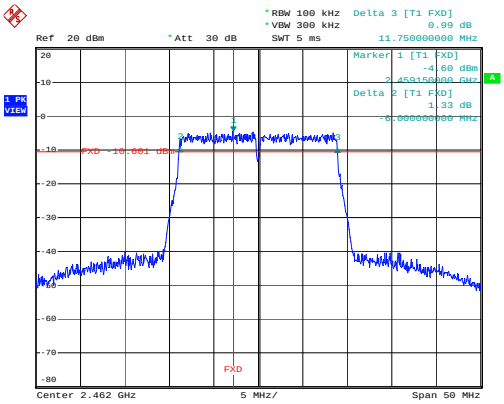
Middle Channel 2437MHz




FCC_11n_MSC7_6dB_chLO

Date: 14.DEC.2011 11:15:46

Upper Channel 2462MHz




FCC_11n_MSC7_6dB_chHI

Date: 14.DEC.2011 11:20:20

## 3.4 Maximum Peak Output Power

| Maximum Peak Output Power (dBm) | Limit (dBm) |
|---|---|
| 22.16 | ≦30dBm |

Pass

### 3.4.1 Test Result

802.11b 1Mbps

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2413.5001875 | 19.47 | 30dBm | 10.53 |
| Mid | 2438.5054890 | 19.29 | 30dBm | 10.71 |
| High | 2463.5056086 | 19.08 | 30dBm | 10.92 |

802.11b 11Mbps

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2413.3596239 | 22.16 | 30dBm | 7.84 |
| Mid | 2438.3570137 | 21.58 | 30dBm | 8.42 |
| High | 2463.3662082 | 21.27 | 30dBm | 8.73 |

802.11g 6Mbps

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2413.6357969 | 19.28 | 30dBm | 10.72 |
| Mid | 2438.6546420 | 20.78 | 30dBm | 9.22 |
| High | 2463.6265444 | 19.06 | 30dBm | 10.94 |

802.11g 54Mbps

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2413.8622444 | 19.74 | 30dBm | 10.26 |
| Mid | 2439.9513052 | 21.26 | 30dBm | 8.74 |
| High | 2463.7786825 | 20.08 | 30dBm | 9.92 |

802.11n MCS0

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2415.1883256 | 19.71 | 30dBm | 10.29 |
| Mid | 2440.2573010 | 21.27 | 30dBm | 8.73 |
| High | 2465.2131867 | 19.22 | 30dBm | 10.78 |

802.11n MCS7

| Channel | Frequency (MHz) | Peak power (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2415.4755936 | 20.06 | 30dBm | 9.94 |
| Mid | 2440.3447244 | 20.78 | 30dBm | 9.22 |
| High | 2465.2170814 | 19.23 | 30dBm | 10.77 |

### 3.4.2 Test Detail

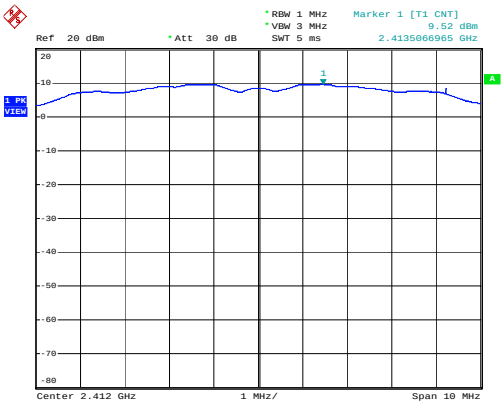
EUT was tested based on FCC 15.247(b)(1)(2)FHSS 15.247(b)(3)DHSS RSS-210 A8.4(2) with temporally antenna port. The bandwidth of the RF frequency is measured with the spectrum analyzer using 1MHz RBW and 3MHz VBW.

### 3.4.3 Test data

Maximum Peak Output Power

11b 1Mbps

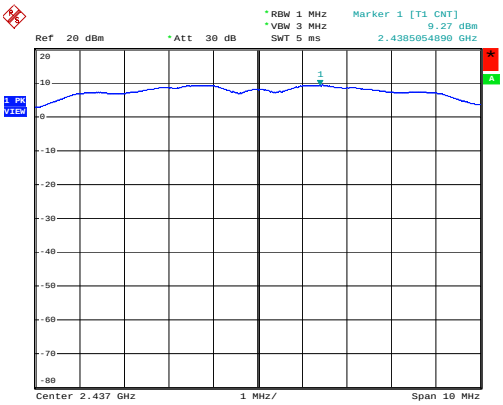
Lower Channel 2412MHz




FCC_11b_1M_MPK_chLOW

Date: 14.DEC.2011 11:33:34

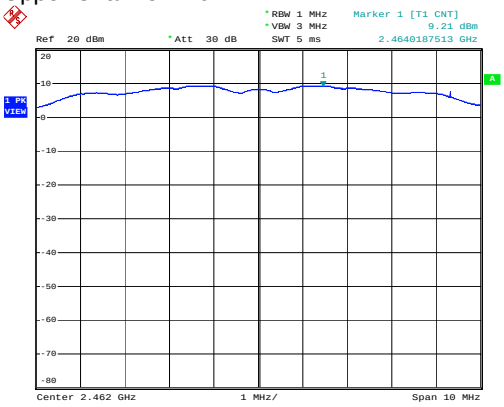
Middle Channel 2437MHz




FCC_11b_1M_MPK_chMID

Date: 14.DEC.2011 11:36:22

Upper Channel 2462MHz

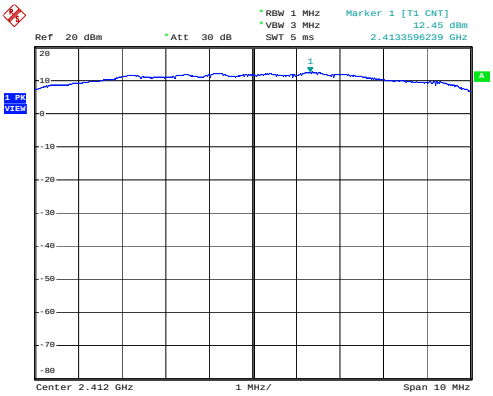



FCC_11b_1M_MPK_chHIGH

Date: 14.DEC.2011 11:43:52

11b 11Mbps

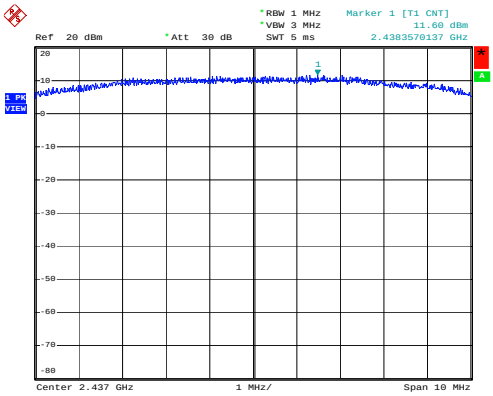
Lower Channel 2412MHz




FCC_11b_11M_MPK_chLO2

Date: 14.DEC.2011 11:49:40

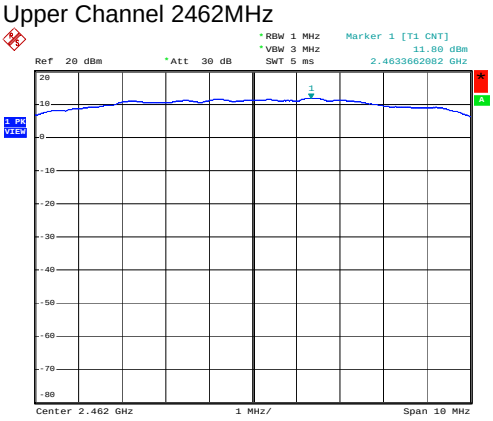
Middle Channel 2437MHz




FCC_11b_11M_MPK_chHI

Date: 14.DEC.2011 11:52:31

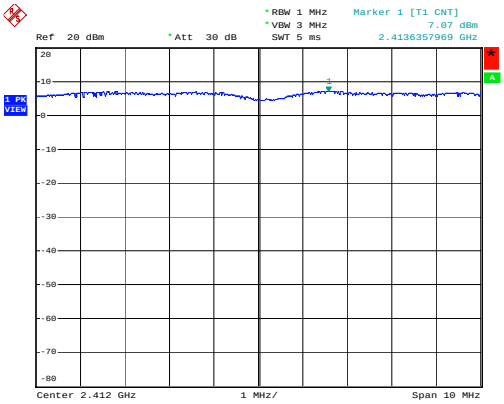
Upper Channel 2462MHz




FCC_11b_11M_MPK_chHI
Date: 14.DEC.2011 11:57:23

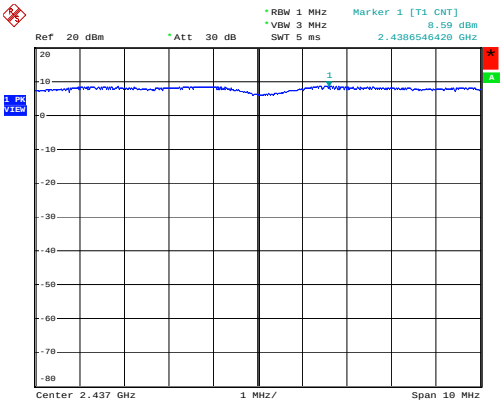
11g 6Mbps

Lower Channel 2412MHz



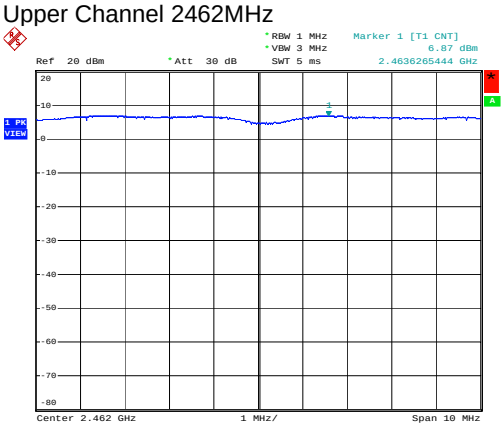

FCC_11g_6M_MPK_chLOW
Date: 14.DEC.2011 13:05:27

Middle Channel 2437MHz




FCC_11g_6M_MPK_chMID
Date: 14.DEC.2011 13:09:12

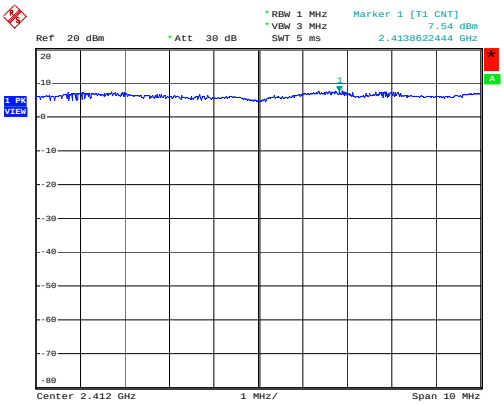
Upper Channel 2462MHz




FCC_11g_6M_MPK_chHI
Date: 14.DEC.2011 13:13:25

11g 54Mbps

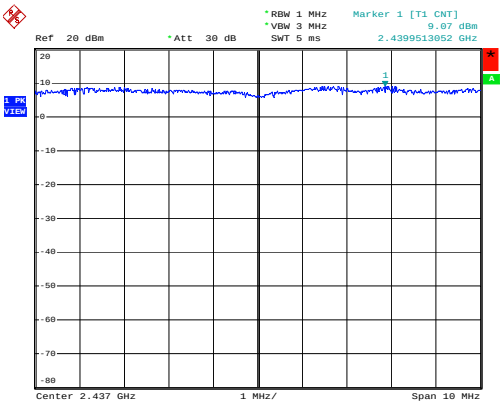
Lower Channel 2412MHz




FCC_11g_54M_MPK_chLOW

Date: 14.DEC.2011 13:15:53

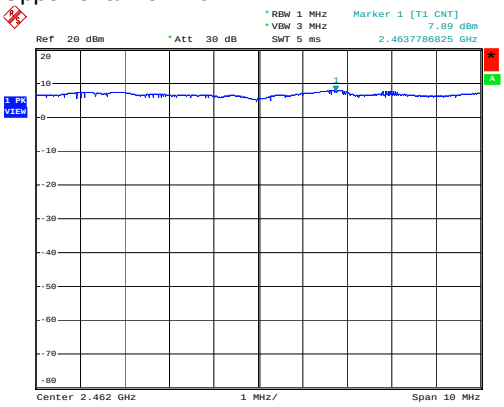
Middle Channel 2437MHz




FCC_11g_54M_MPK_chMID

Date: 14.DEC.2011 13:17:44

Upper Channel 2462MHz

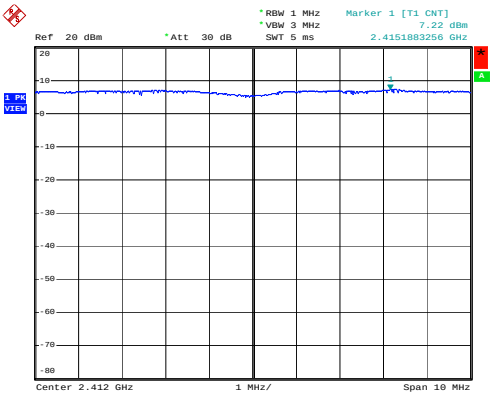



FCC_11g_54M_MPK_chHI

Date: 14.DEC.2011 13:20:51

11n MCS0

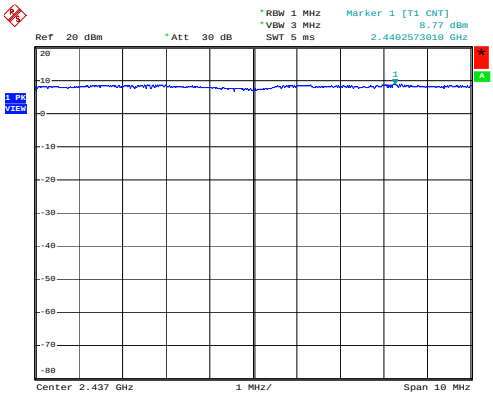
Lower Channel 2412MHz




FCC_11n_MSC0_MPK_chLO

Date: 14.DEC.2011 13:23:10

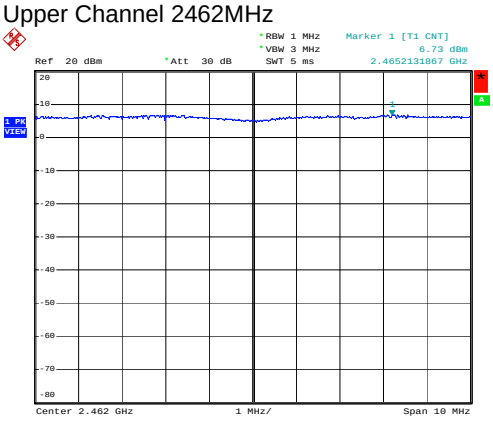
Middle Channel 2437MHz




FCC_11n_MSC0_MPK_chMI

Date: 14.DEC.2011 13:25:19

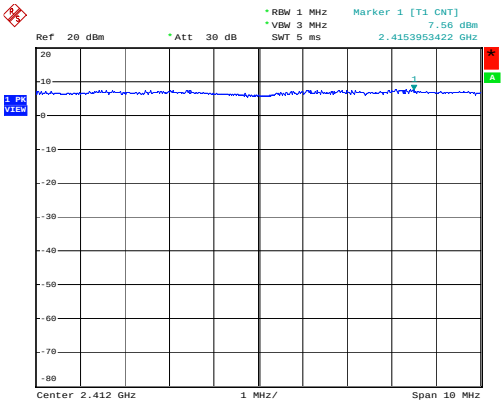
Upper Channel 2462MHz




FCC_11n_MSC0_MPK_chHI
Date: 14.DEC.2011 13:27:33

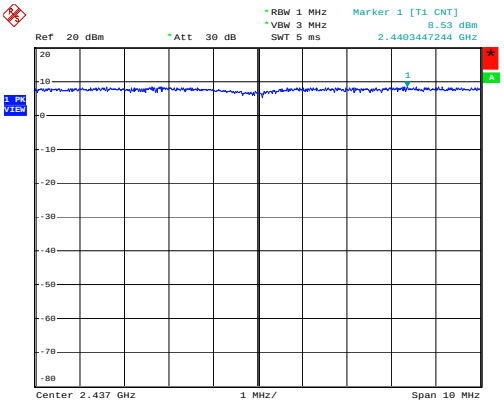
11n MCS7

Lower Channel 2412MHz



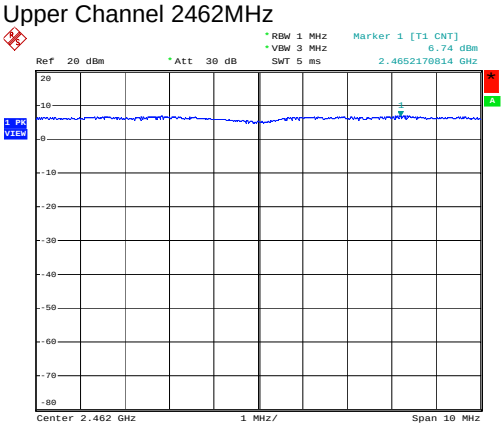

FCC_11n_MSC7_MPK_chLO
Date: 14.DEC.2011 13:30:21

Middle Channel 2437MHz




FCC_11n_MSC7_MPK_chMI
Date: 14.DEC.2011 13:32:02

Upper Channel 2462MHz




FCC_11n_MSC7_MPK_chHI
Date: 14.DEC.2011 13:35:00

## 3.5 Band Edge of Operation

| Band Edge of Operation | Limit |
|---|---|
| 34.16 dBc | >20dBc |

Pass

### 3.5.1 Test Result

802.11b 1Mbps

| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 40.28 | 20dBc | 20.28 |
| High | 2462 | 41.72 | 20dBc | 21.72 |

802.11b 11Mbps

| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 43.22 | 20dBc | 23.22 |
| High | 2462 | 42.71 | 20dBc | 22.71 |

802.11g 6Mbps

| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 34.51 | 20dBc | 14.51 |
| High | 2462 | 34.80 | 20dBc | 14.80 |

802.11g 54Mbps

| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 37.85 | 20dBc | 17.85 |
| High | 2462 | 38.36 | 20dBc | 18.36 |

802.11n MCS0

| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 35.06 | 20dBc | 15.06 |
| High | 2462 | 35.81 | 20dBc | 15.81 |

802.11n MCS7

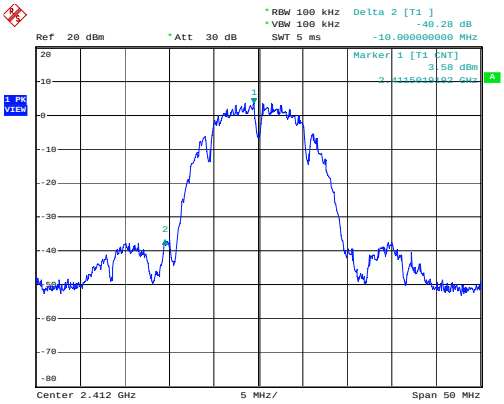
| Channel | Frequency (MHz) | Deference (dB) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | 34.16 | 20dBc | 14.16 |
| High | 2462 | 35.99 | 20dBc | 15.99 |

## 3.5.2 Test Detail

EUT was tested based on FCC 15.247(d) RSS-210 A8.5 with temporally antenna port. The spectrum analyzer is set to RBW=100kHz, VBW=100kHz, Detector function=Peak.

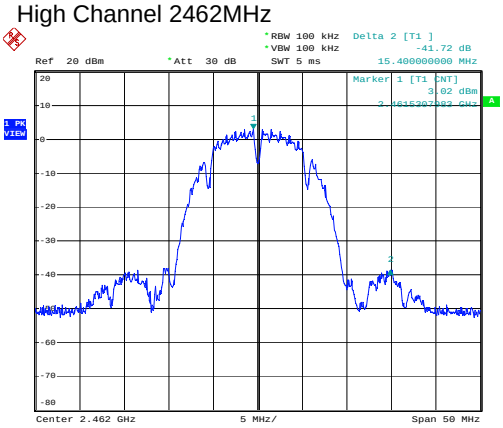
## 3.5.3 Test data

Band Edge of Operation
11b 1Mbps
Lower Channel 2412MHz



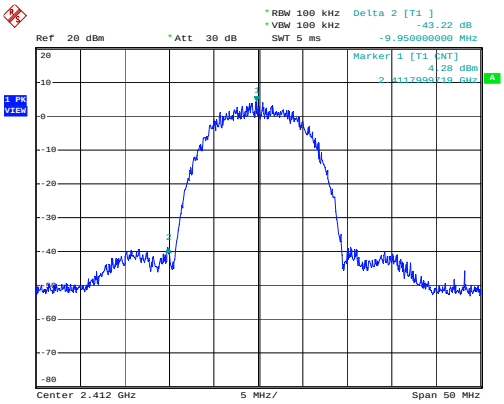

FCC_11b_1M_BE_chLOW
Date: 14.DEC.2011 14:23:45

High Channel 2462MHz



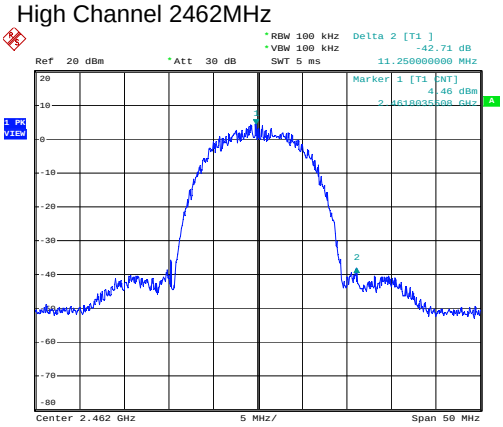

FCC_11b_1M_BE_chHIGH
Date: 14.DEC.2011 14:26:12

11b 11Mbps
Lower Channel 2412MHz




FCC_11b_11M_BE_chLOW
Date: 14.DEC.2011 14:27:34

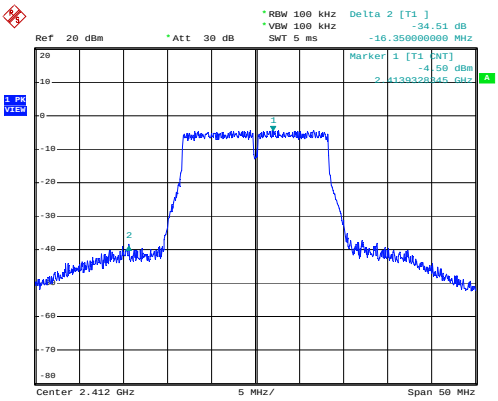
High Channel 2462MHz




FCC_11b_11M_BE_chHIGH
Date: 14.DEC.2011 14:29:10

11g 6Mbps

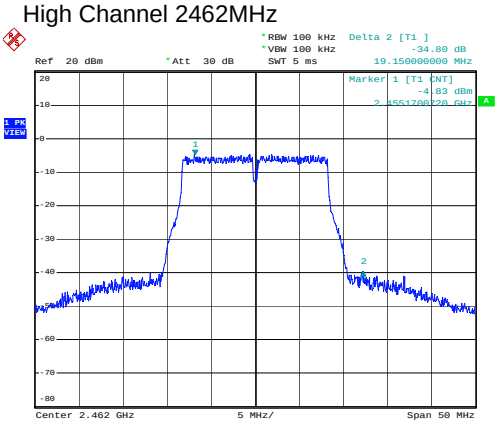
Lower Channel 2412MHz




FCC_11g_6M_BE_chLOW

Date: 14.DEC.2011 14:31:00

High Channel 2462MHz

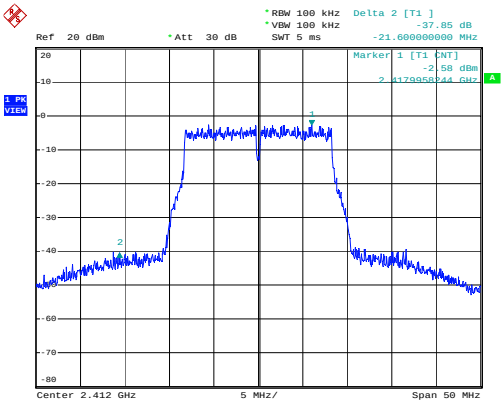



FCC_11g_6M_BE_chHIGH

Date: 14.DEC.2011 14:32:29

11g 54Mbps

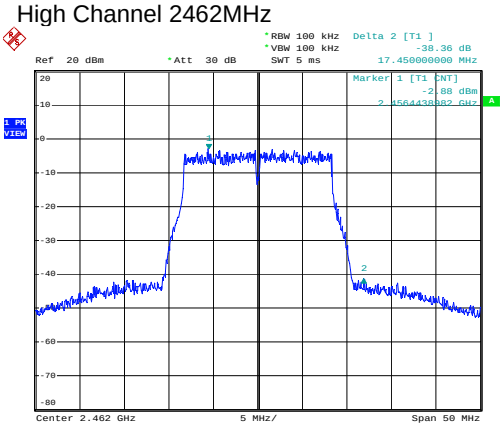
Lower Channel 2412MHz




FCC_11g_54M_BE_chLOW

Date: 14.DEC.2011 14:34:34

High Channel 2462MHz

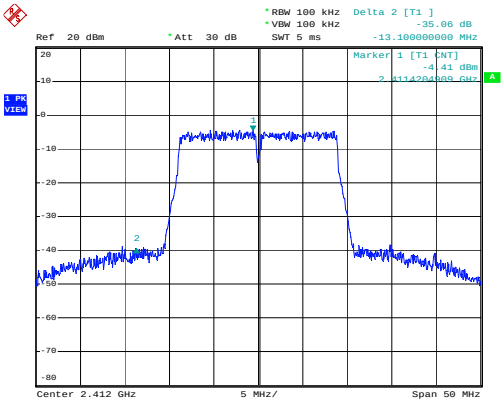



FCC_11g_54M_BE_chHIGH

Date: 14.DEC.2011 14:35:59

11n MCS0

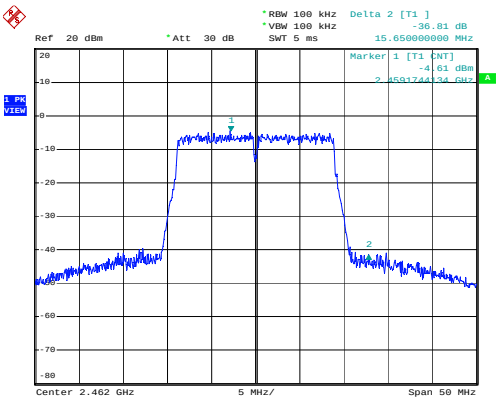
Lower Channel 2412MHz




FCC_11n_MSC0_BE_chLOW

Date: 14.DEC.2011 14:37:48

High Channel 2462MHz

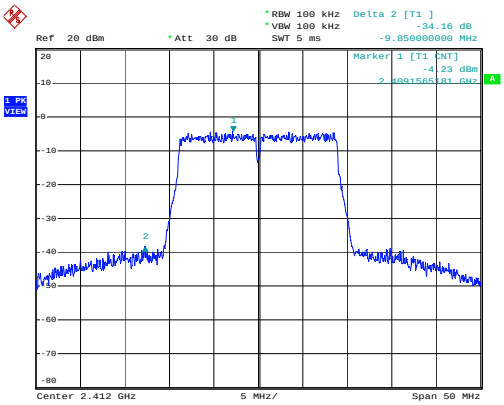



FCC_11n_MSC0_BE_chHI

Date: 14.DEC.2011 14:39:45

11n MCS7

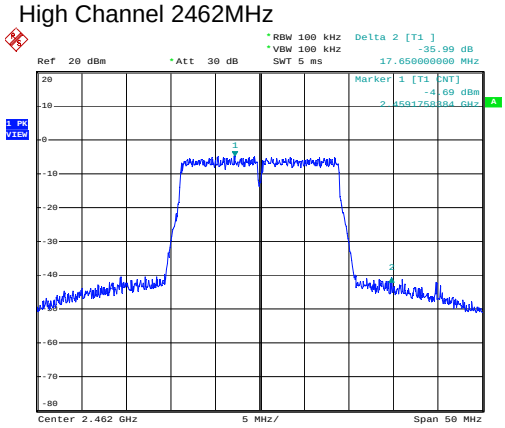
Lower Channel 2412MHz




FCC_11n_MSC7_BE_chLOW

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

High Channel 2462MHz




FCC_11n_MSC7_BE_chHI

Date: 14.DEC.2011 14:42:45

## 3.6 Radiated emission in Restricted Bands

### 3.6.1 Test Result

Pass

### 3.6.2 Test Detail

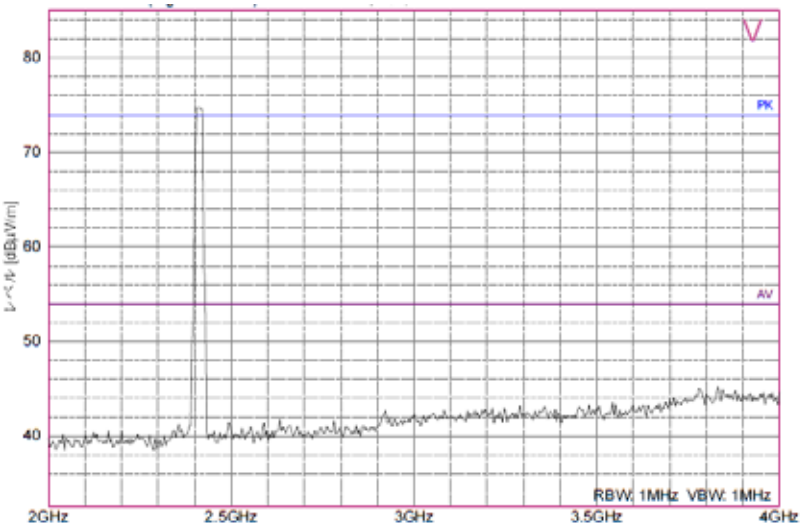
EUT was tested based on FCC 15.205(a) with Radiated emissions. The spectrum analyzer is set to RBW=1MHz, VBW=1MHz, Detector function=Peak, RBW=1MHz VBW=10Hz Detector function=Average.

### 3.6.3 Test data

11b 11Mbps Lower Channel 2412MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

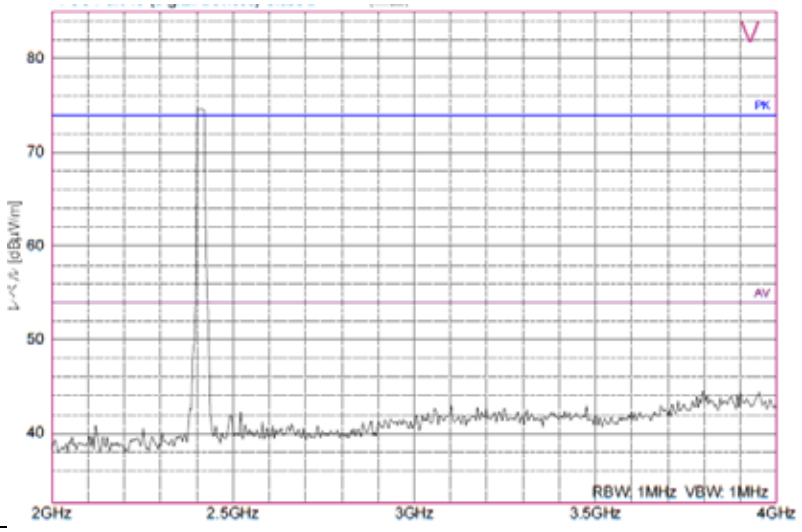
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2390.00 | 51.6 | -2.4 | 49.2 | 1.0 | 85 | 74.0 | 24.8 | PK |
| 2390.00 | 39.0 | -2.4 | 36.6 | 1.0 | 85 | 54.0 | 17.4 | AV |




11g 54Mbps Lower Channel 2412MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

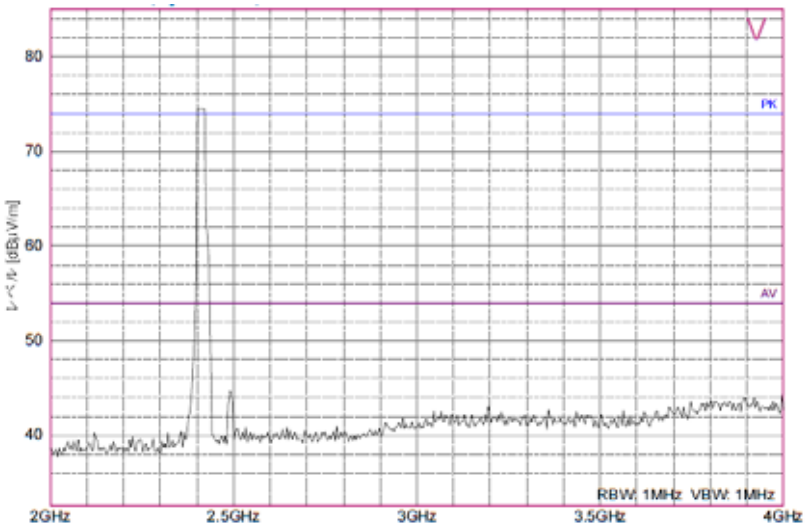
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2390.00 | 51.3 | -2.4 | 48.9 | 1.0 | 295 | 74.0 | 25.1 | PK |
| 2390.00 | 38.2 | -2.4 | 35.8 | 1.0 | 295 | 54.0 | 18.2 | AV |



11n MCS7 Lower Channel 2412MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

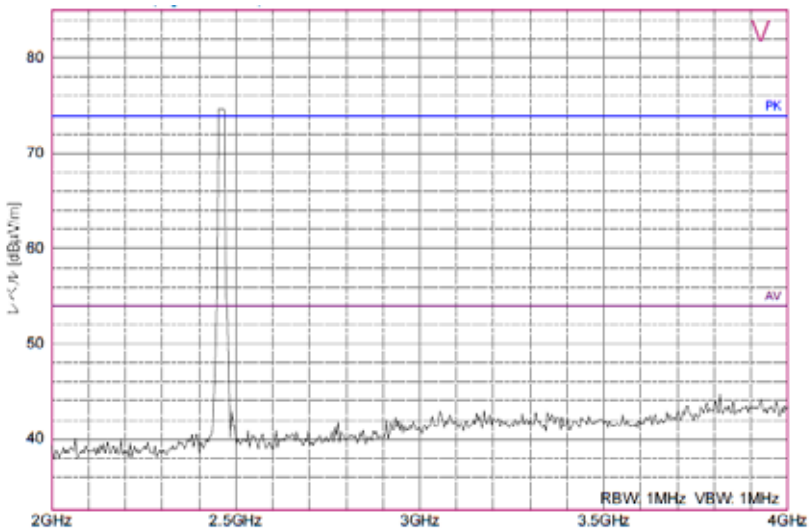
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2390.00 | 51.9 | -2.4 | 49.5 | 1.0 | 204 | 74.0 | 24.5 | PK |
| 2390.00 | 36.6 | -2.4 | 34.2 | 1.0 | 204 | 54.0 | 19.8 | AV |




11b 11Mbps High Channel 2462MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

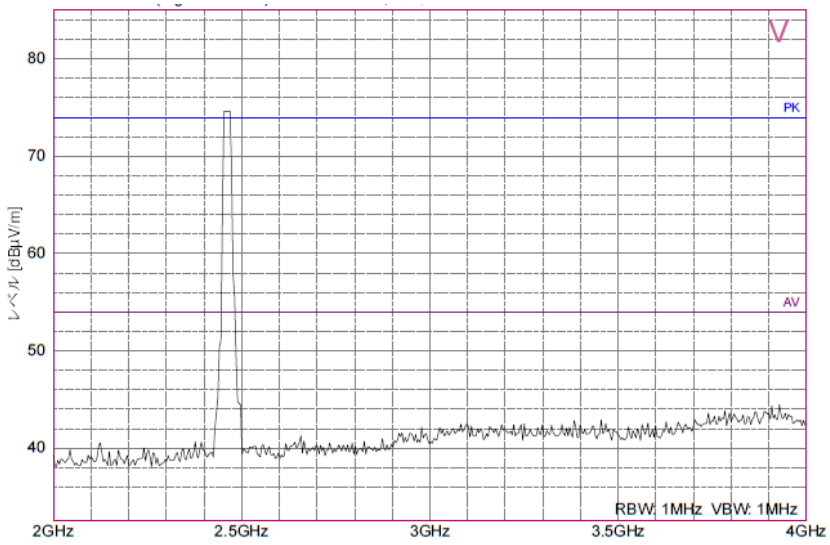
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2483.50 | 49.1 | -2.4 | 46.7 | 1.0 | 201 | 74.0 | 27.3 | PK |
| 2483.50 | 36.4 | -2.4 | 34.0 | 1.0 | 201 | 54.0 | 20.0 | AV |



11g 54Mbps High Channel 2462MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2483.50 | 53.1 | -2.4 | 50.7 | 1.0 | 256 | 74.0 | 23.3 | PK |
| 2483.50 | 38.7 | -2.4 | 36.3 | 1.0 | 256 | 54.0 | 17.7 | AV |




11n MCS7 High Channel 2462MHz

Radiated Electric-Field (3m) —Vertical (worst Pol.)

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 2483.50 | 50.2 | -2.4 | 47.8 | 1.0 | 6 | 74.0 | 26.2 | PK |
| 2483.50 | 36.4 | -2.4 | 34.0 | 1.0 | 6 | 54.0 | 20.0 | AV |

## 3.7 Power Spectral Density

| Power Spectral Density | Limit |
|---|---|
| -8.96dBm | 8dBm |

Pass

### 3.7.1 Test Result

802.11b 11Mbps

| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | -8.96 | 8dBm | 16.96 |
| Middle | 2437 | -9.51 | 8dBm | 17.51 |
| High | 2462 | -9.62 | 8dBm | 17.62 |

802.11g 54Mbps

| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | -16.46 | 8dBm | 24.46 |
| Middle | 2437 | -14.93 | 8dBm | 22.93 |
| High | 2462 | -16.80 | 8dBm | 24.80 |

802.11n MCS7

| Channel | Frequency (MHz) | Power Spectral Density (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|
| Low | 2412 | -17.45 | 8dBm | 25.45 |
| Middle | 2437 | -13.46 | 8dBm | 21.46 |
| High | 2462 | -17.75 | 8dBm | 25.75 |

### 3.7.2 Test Detail

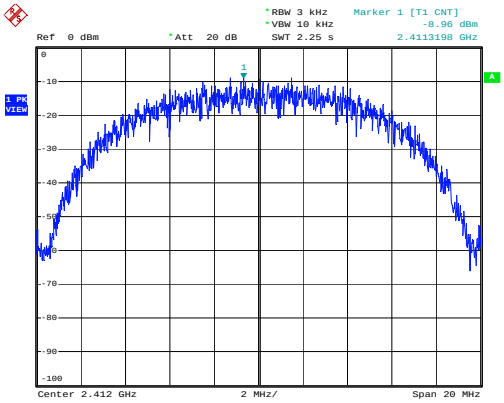
EUT was tested based on FCC 15.247(e) RSS-210 A8.2(b) with temporally antenna port. The spectrum analyzer is set to RBW=3kHz, VBW=10kHz, Detector function=Peak.

## 3.7.3 Test data

Power Spectral Density

11b 11Mbps

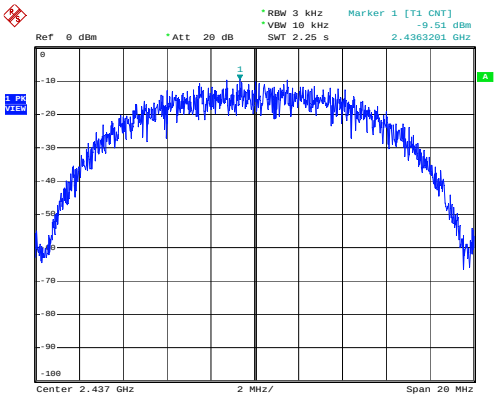
Lower Channel 2412MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 10:19:51

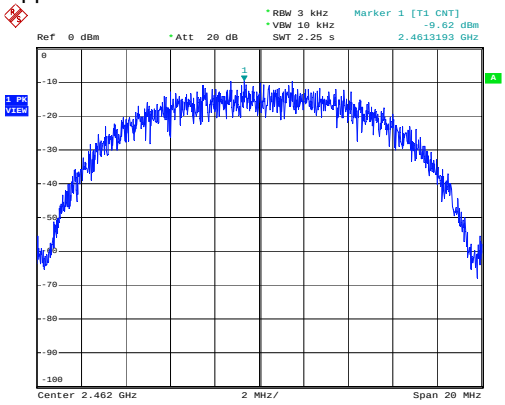
Middle Channel 2437MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 10:27:24

Upper Channel 2462MHz

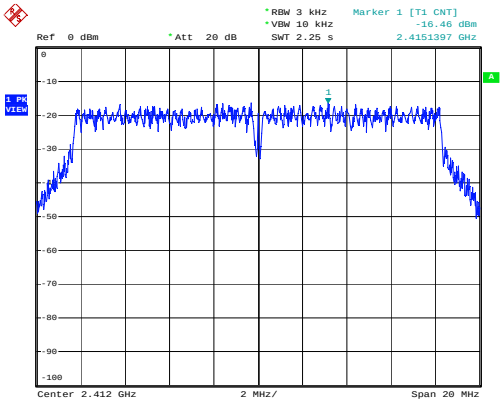



11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 10:37:58

11g 54Mbps

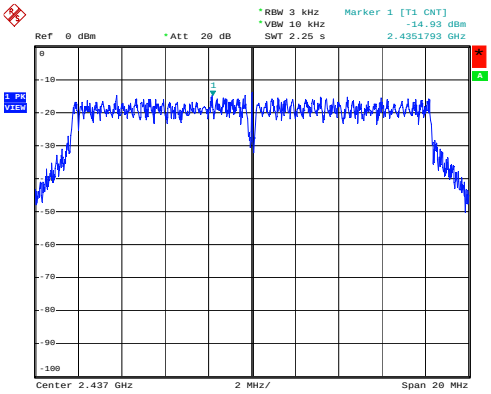
Lower Channel 2412MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 10:43:52

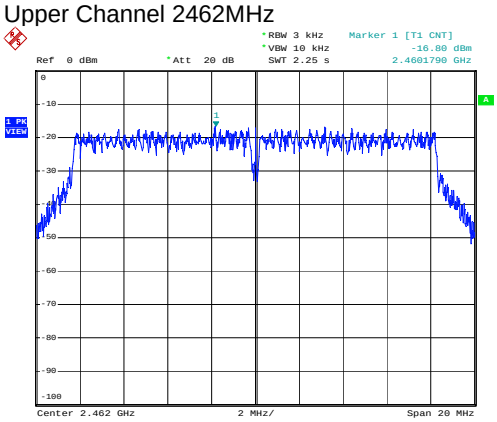
Middle Channel 2437MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 10:50:10

Upper Channel 2462MHz

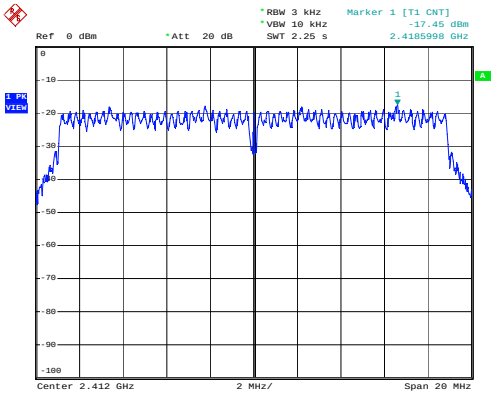



11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 11:01:09

11n MCS7

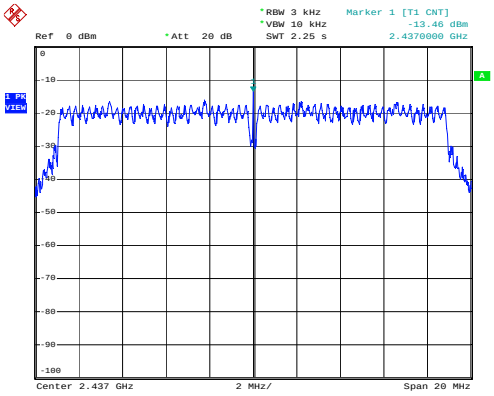
Lower Channel 2412MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 11:05:20

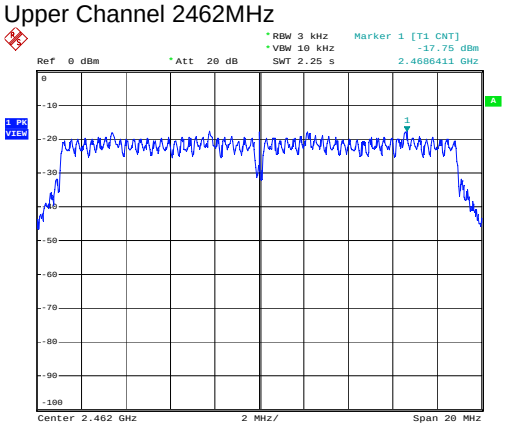
Middle Channel 2437MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 11:10:16

Upper Channel 2462MHz




11N_20M_SPU_ch13_B33

Date: 18.JAN.2012 11:17:27

## 3.8 Spurious emission at Antenna port

Please refer the Test Data.

Pass

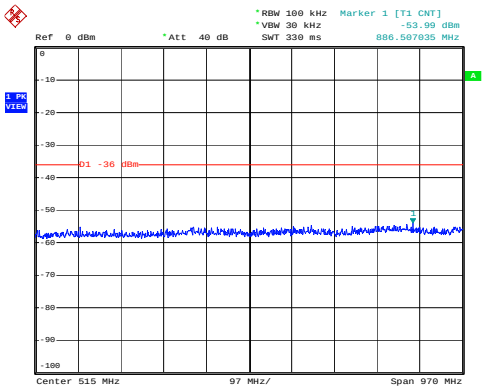
### 3.8.1 Test Detail

EUT was tested based on FCC 15.207 RSS-210 A8.2(b) with temporally antenna port.
Set the Spectrum analyzer on MAX-Hold Mode, and then keep the EUT in transmitting mode. Record all the signals from each channel until each one has been recorded.

### 3.8.2 Test data

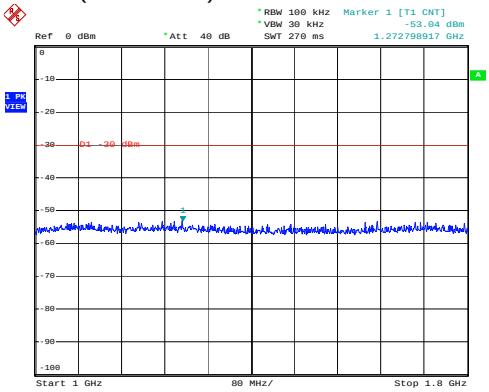
11b 11Mbps

Band1(30M-1GHz) 2412MHz



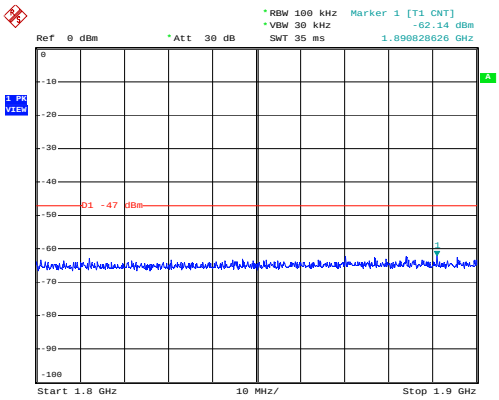

EN_11b_1M_SPU_B1
Date: 14.DEC.2011 16:15:00

Band2(1G-1.8GHz) 2412MHz



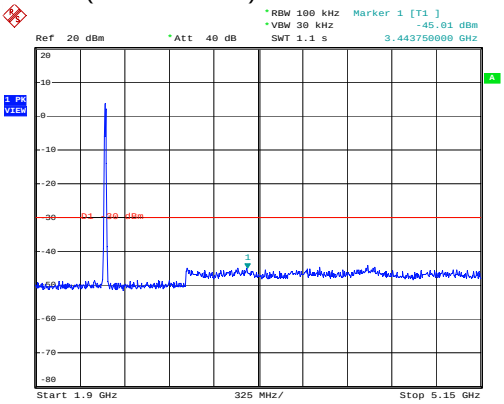

EN_11b_1M_SPU_B2
Date: 14.DEC.2011 16:18:17

Band3(1.8G-1.9GHz) 2412MHz



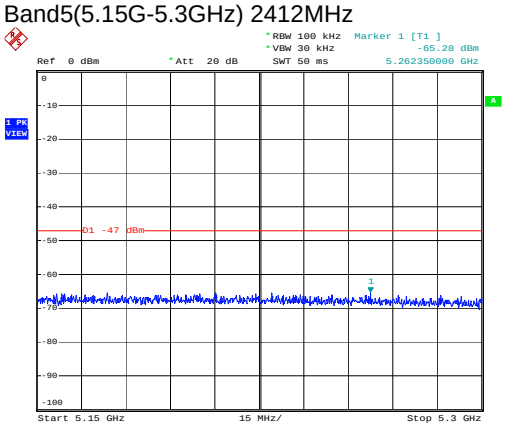

EN_11b_1M_SPU_B3
Date: 14.DEC.2011 16:19:22

Band4(1.9G-5.15GHz) 2412MHz



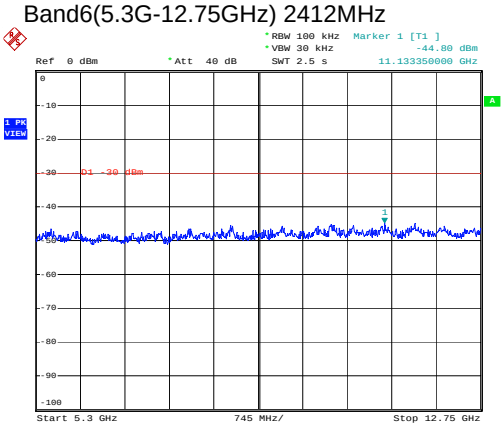

EN_11b_1M_SPU_B4
Date: 14.DEC.2011 16:21:21

Band5(5.15G-5.3GHz) 2412MHz




EN_11b_1M_SPU_B5
Date: 14.DEC.2011 16:22:17

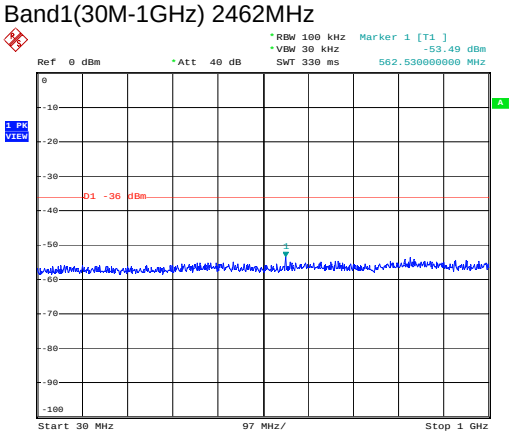
Band6(5.3G-12.75GHz) 2412MHz




EN_11b_1M_SPU_B6
Date: 14.DEC.2011 16:23:11

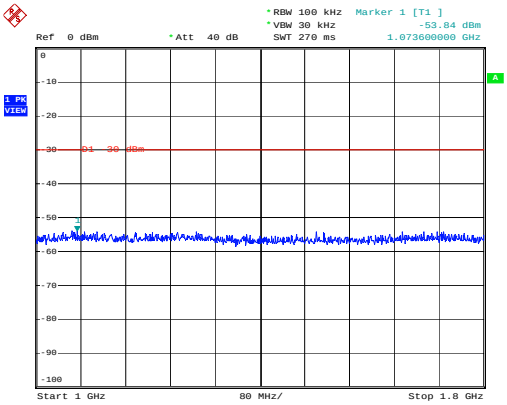
11b 11Mbps

Band1(30M-1GHz) 2462MHz



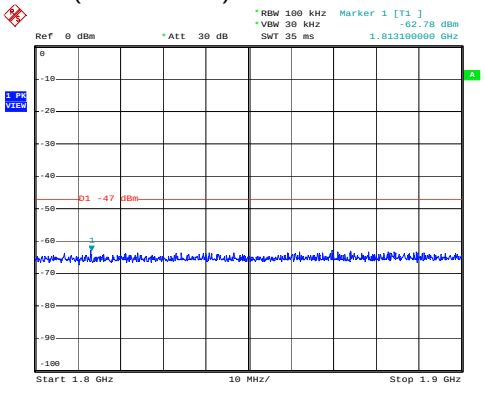

EN_11b_11M_SPU_C13_B1
Date: 14.DEC.2011 16:28:49

Band2(1G-1.8GHz) 2462MHz



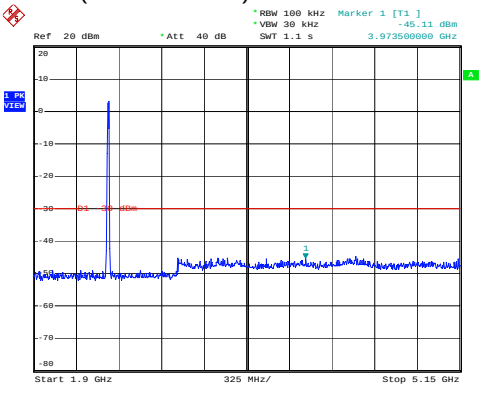

EN_11b_11M_SPU_C13_B2
Date: 14.DEC.2011 16:29:36

Band3(1.8G-1.9GHz) 2462MHz



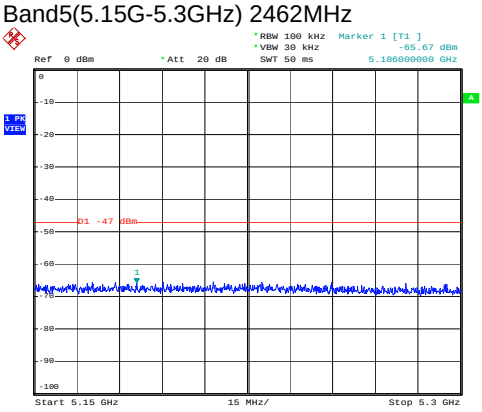

EN_11b_11M_SPU_C13_B3
Date: 14.DEC.2011 16:30:28

Band4(1.9G-5.15GHz) 2462MHz



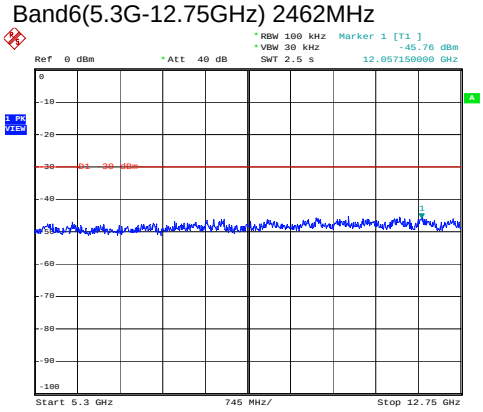

EN_11b_11M_SPU_C13_B4
Date: 14.DEC.2011 16:31:27

Band5(5.15G-5.3GHz) 2462MHz




EN_11b_11M_SPU_C13_B5
Date: 14.DEC.2011 16:32:21

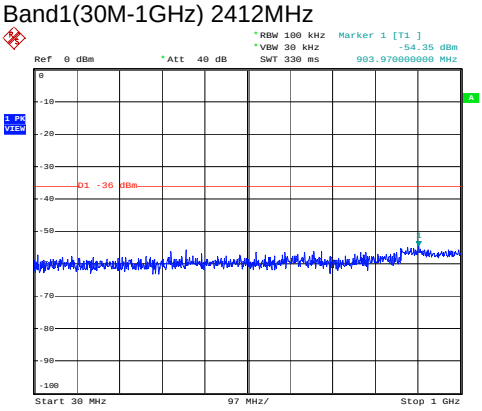
Band6(5.3G-12.75GHz) 2462MHz




EN_11b_11M_SPU_C13_B6
Date: 14.DEC.2011 16:33:13

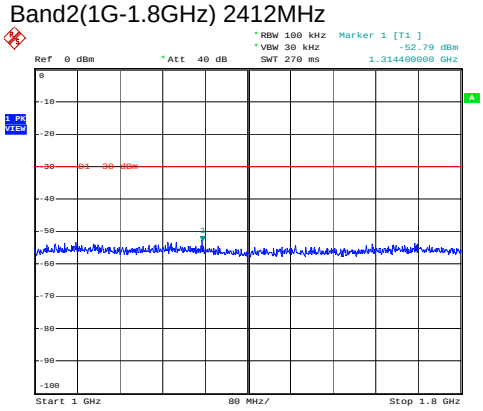
11g 54Mbps

Band1(30M-1GHz) 2412MHz



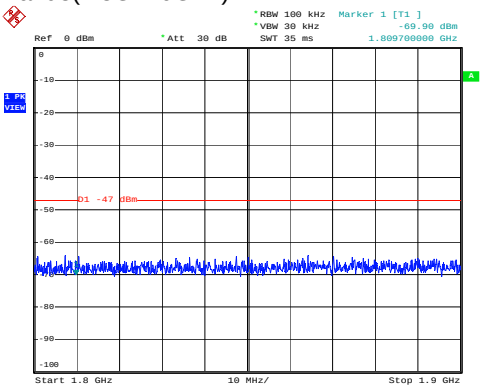

EN_11g_54M_SPU_C1_B1
Date: 14.DEC.2011 16:35:17

Band2(1G-1.8GHz) 2412MHz



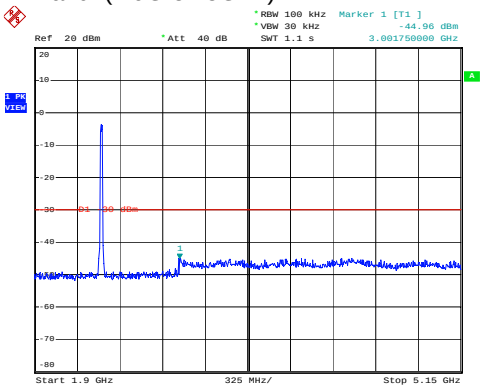

EN_11g_54M_SPU_C1_B2
Date: 14.DEC.2011 16:36:05

Band3(1.8G-1.9GHz) 2412MHz



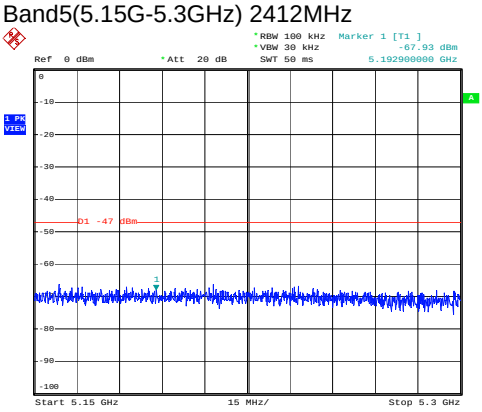

EN_11g_54M_SPU_C1_B3
Date: 14.DEC.2011 16:37:00

Band4(1.9G-5.15GHz) 2412MHz



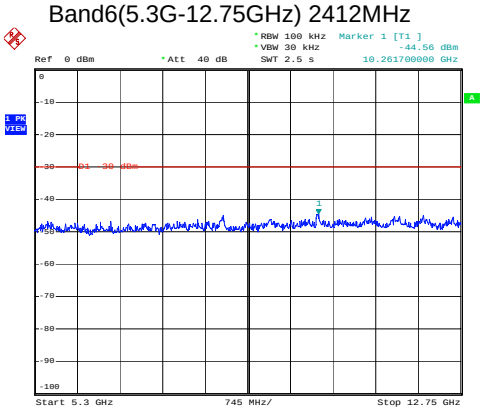

EN_11g_54M_SPU_C1_B4
Date: 14.DEC.2011 16:38:41

Band5(5.15G-5.3GHz) 2412MHz




EN_11g_54M_SPU_C1_B5
Date: 14.DEC.2011 16:39:45

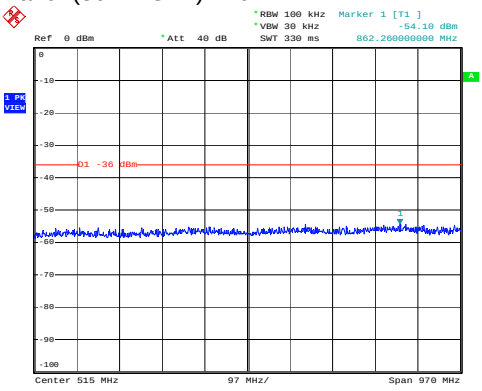
Band6(5.3G-12.75GHz) 2412MHz




EN_11g_54M_SPU_C1_B6
Date: 14.DEC.2011 16:40:52

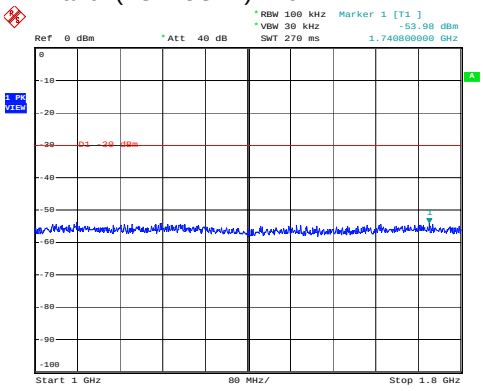
11g 54Mbps

Band1(30M-1GHz) 2462MHz



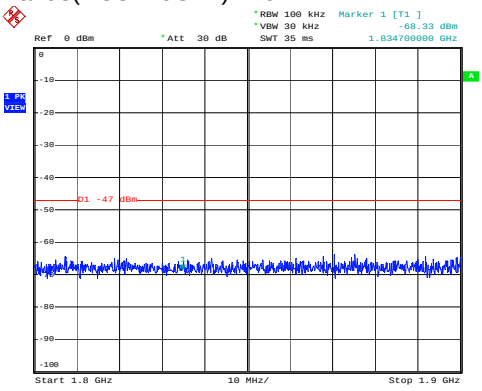

EN_11g_54M_SPU_C13_B1
Date: 14.DEC.2011 16:45:06

Band2(1G-1.8GHz) 2462MHz



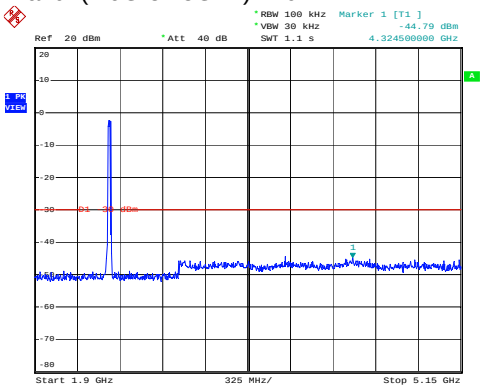

EN_11g_54M_SPU_C13_B2
Date: 14.DEC.2011 16:45:55

Band3(1.8G-1.9GHz) 2462MHz



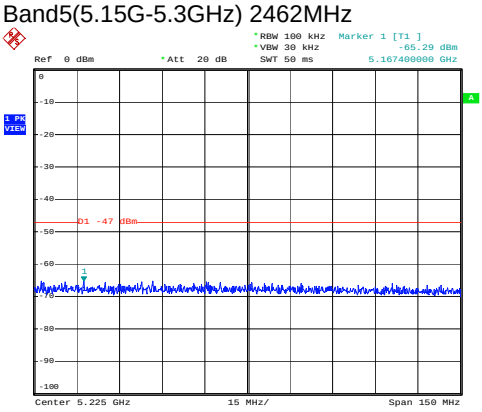

EN_11g_54M_SPU_C13_B3
Date: 14.DEC.2011 16:46:55

Band4(1.9G-5.15GHz) 2462MHz



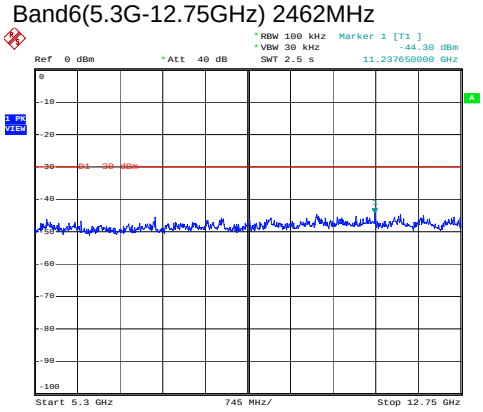

EN_11g_54M_SPU_C13_B4
Date: 14.DEC.2011 16:47:49

Band5(5.15G-5.3GHz) 2462MHz




EN_11g_54M_SPU_C13_B5
Date: 14.DEC.2011 16:49:04

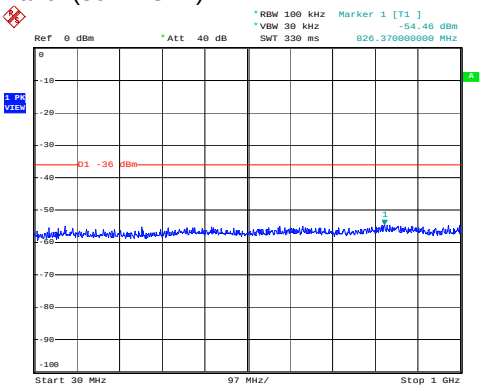
Band6(5.3G-12.75GHz) 2462MHz




EN_11g_54M_SPU_C13_B6
Date: 14.DEC.2011 16:50:00

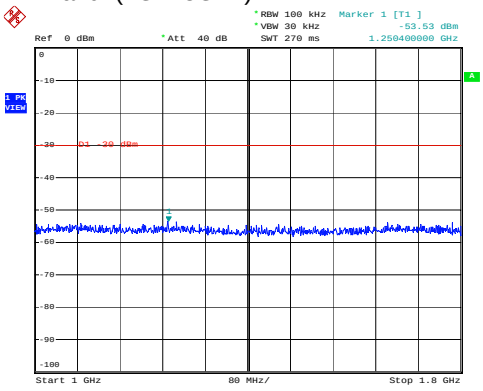
11n MSC7

Band1(30M-1GHz) 2412MHz



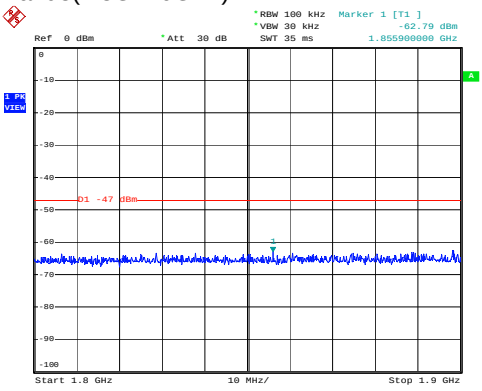

EN_11n_MS7_SPU_C1_B1
Date: 14.DEC.2011 16:51:57

Band2(1G-1.8GHz) 2412MHz



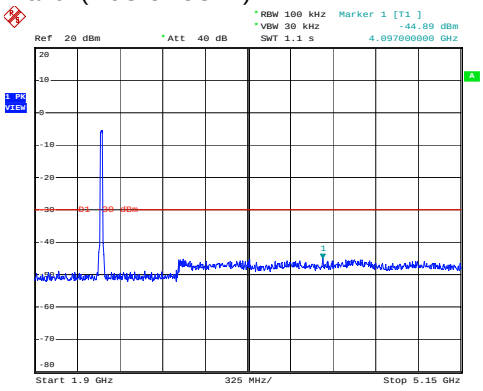

EN_11n_MS7_SPU_C1_B2
Date: 14.DEC.2011 16:52:40

Band3(1.8G-1.9GHz) 2412MHz



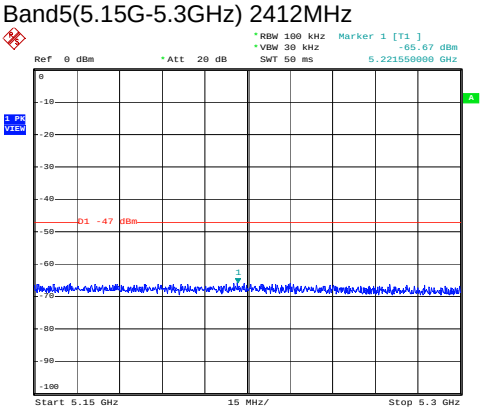

EN_11n_MS7_SPU_C1_B3
Date: 14.DEC.2011 16:53:21

Band4(1.9G-5.15GHz) 2412MHz



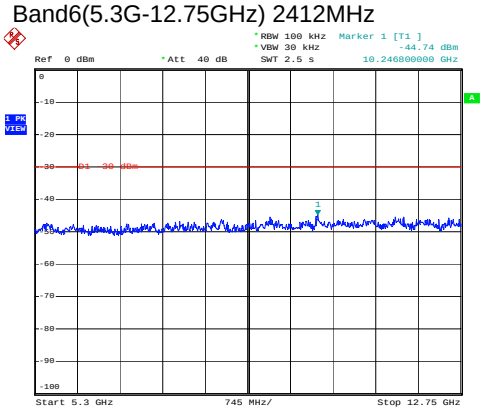

EN_11n_MS7_SPU_C1_B4
Date: 14.DEC.2011 16:54:18

Band5(5.15G-5.3GHz) 2412MHz




EN_11n_MS7_SPU_C1_B5
Date: 14.DEC.2011 16:55:17

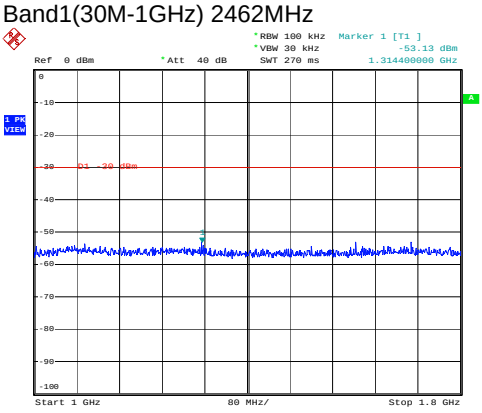
Band6(5.3G-12.75GHz) 2412MHz




EN_11n_MS7_SPU_C1_B6
Date: 14.DEC.2011 16:56:01

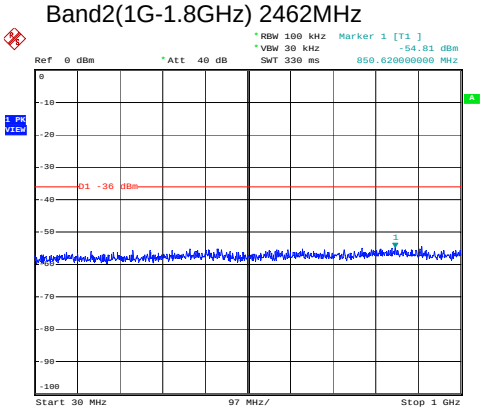
11n MSC7

Band1(30M-1GHz) 2462MHz



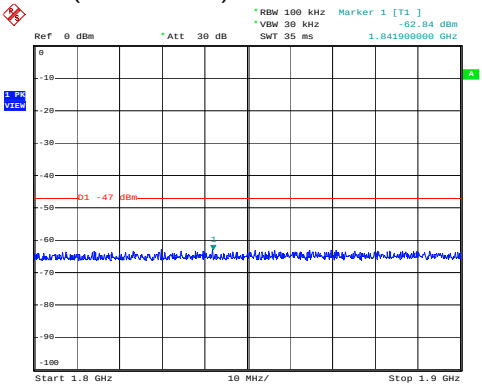

EN_11n_MS7_SPU_C13_B2
Date: 14.DEC.2011 16:59:29

Band2(1G-1.8GHz) 2462MHz



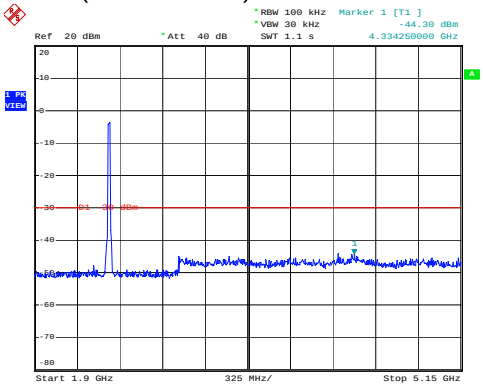

EN_11n_MS7_SPU_C13_B1
Date: 14.DEC.2011 16:58:49

Band3(1.8G-1.9GHz) 2462MHz



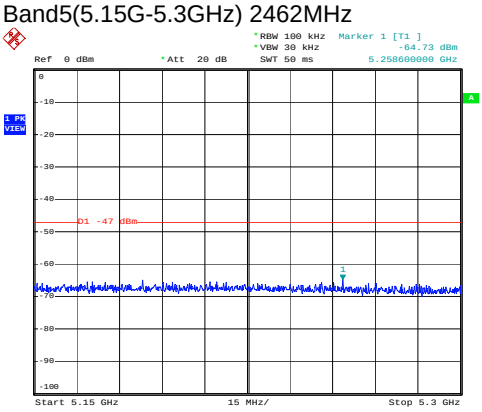

EN_11n_MS7_SPU_C13_B3
Date: 14.DEC.2011 17:00:23

Band4(1.9G-5.15GHz) 2462MHz



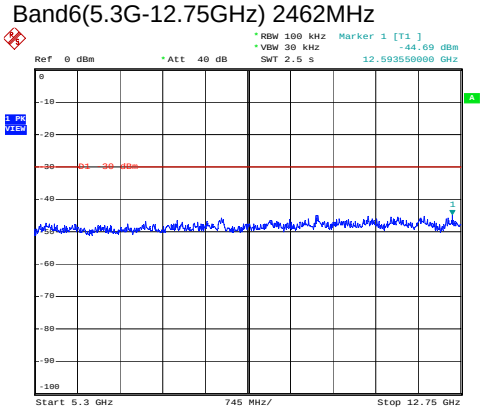

EN_11n_MS7_SPU_C13_B4
Date: 14.DEC.2011 17:01:37

Band5(5.15G-5.3GHz) 2462MHz



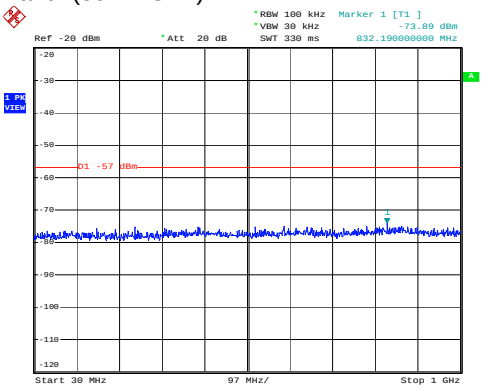

EN_11n_MS7_SPU_C13_B5
Date: 14.DEC.2011 17:02:25

Band6(5.3G-12.75GHz) 2462MHz



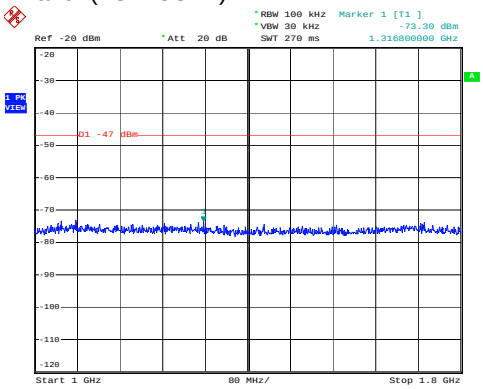

EN_11n_MS7_SPU_C13_B6
Date: 14.DEC.2011 17:03:13

Standby
Band1(30M-1GHz)



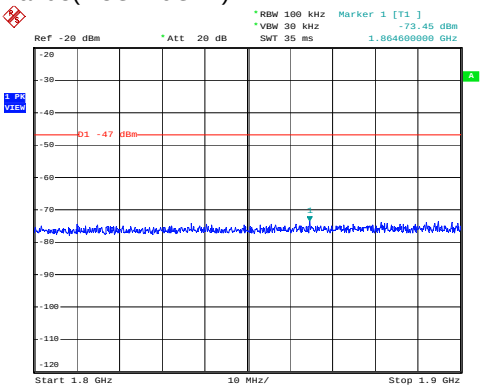

EN_STANBY_SPU_B1
Date: 14.DEC.2011 17:14:12

Band2(1G-1.8GHz)



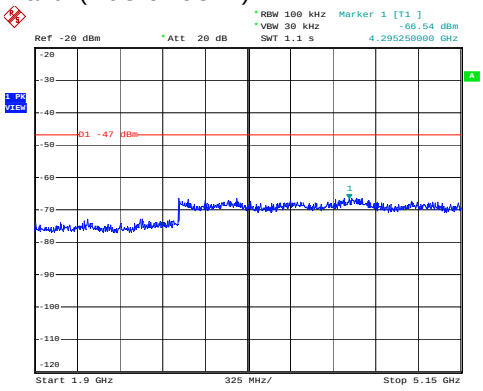

EN_STANBY_SPU_B2
Date: 14.DEC.2011 17:14:58

Band3(1.8G-1.9GHz)



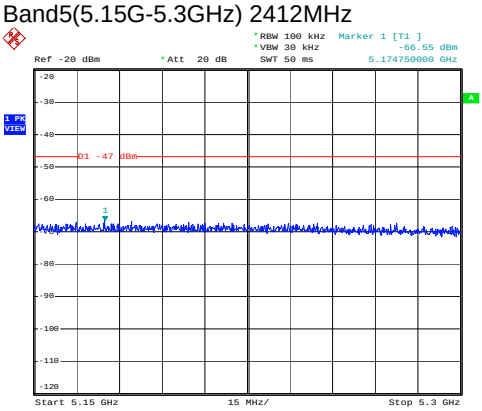

EN_STANBY_SPU_B3
Date: 14.DEC.2011 17:15:43

Band4(1.9G-5.15GHz)



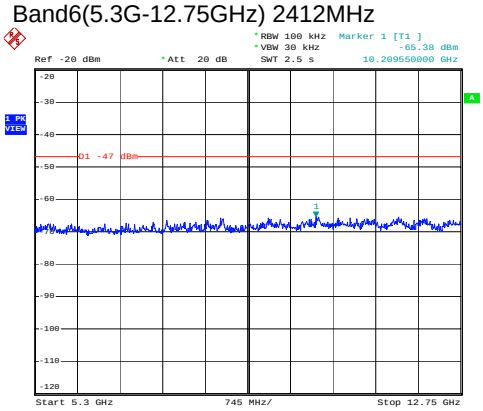

EN_STANBY_SPU_B4
Date: 14.DEC.2011 17:16:19

Band5(5.15G-5.3GHz) 2412MHz




EN_STANBY_SPU_B5
Date: 14.DEC.2011 17:16:50

Band6(5.3G-12.75GHz) 2412MHz




EN_STANBY_SPU_B6
Date: 14.DEC.2011 17:17:23

## 3.9 Radiated emission

### 3.9.1 Test Result

Pass

### 3.9.2 Test Detail

EUT was tested based on FCC 15.209 RSS-210 A8.2(b) with temporally antenna port.
See Annex B.

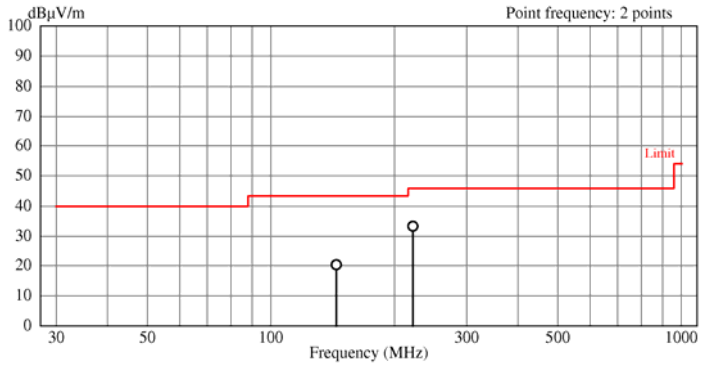
### 3.9.3 Test data

Measurement Data below 1000MHz (3m)

11b 11Mbps Lower Channel 2412MHz

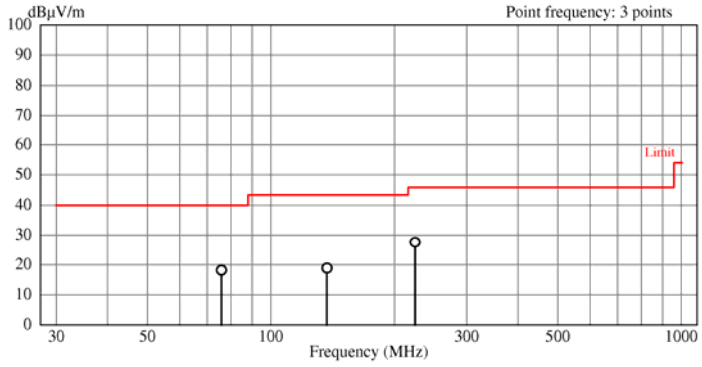
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 144.33 | 26.0 | -5.7 | 20.3 | 2.2 | 85 | 43.5 | 23.2 |
| 221.80 | 41.0 | -7.6 | 33.4 | 2.6 | 350 | 46.0 | 12.6 |




Radiated Electric-Field (3m) — Vertical

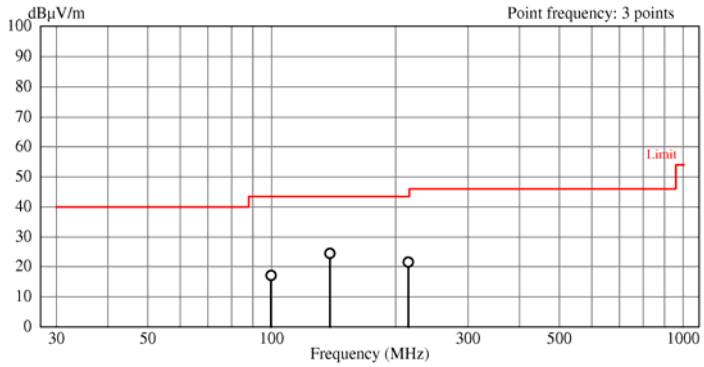
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 75.79 | 27.0 | -8.8 | 18.2 | 1.0 | 232 | 40.0 | 21.8 |
| 137.00 | 25.0 | -6.1 | 18.9 | 1.0 | 86 | 43.5 | 24.6 |
| 224.56 | 35.0 | -7.4 | 27.6 | 1.0 | 339 | 46.0 | 18.4 |




11b 11Mbps Middle Channel 2437MHz

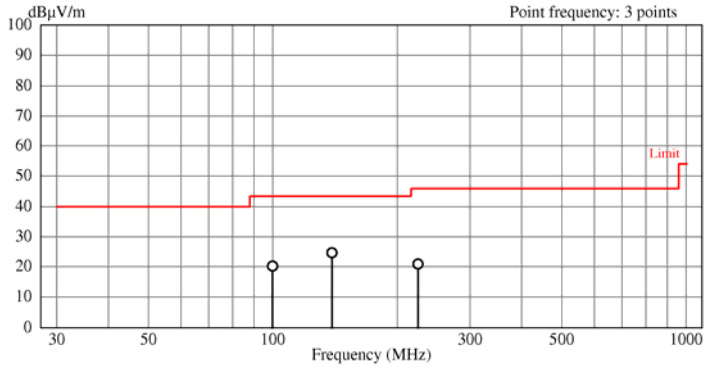
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 99.68 | 27.5 | -10.4 | 17.1 | 1.9 | 198 | 43.5 | 26.4 |
| 138.50 | 30.4 | -6.0 | 24.4 | 1.9 | 224 | 43.5 | 19.1 |
| 214.75 | 29.7 | -8.2 | 21.5 | 1.7 | 324 | 43.5 | 22.0 |




Radiated Electric-Field (3m) — Vertical

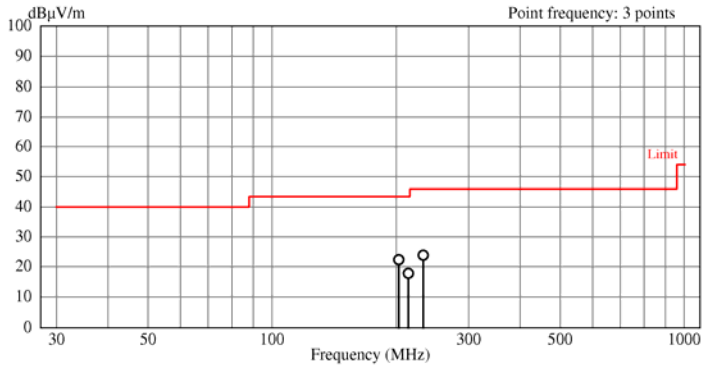
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 99.85 | 30.6 | -10.4 | 20.2 | 1.3 | 150 | 43.5 | 23.3 |
| 138.99 | 30.6 | -6.0 | 24.6 | 1.0 | 19 | 43.5 | 18.9 |
| 224.53 | 28.3 | -7.4 | 20.9 | 1.0 | 337 | 46.0 | 25.1 |



11b 11Mbps High Channel 2462MHz

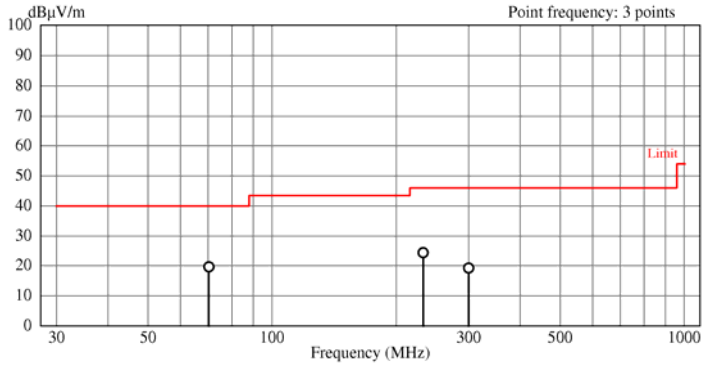
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 203.01 | 30.7 | -8.4 | 22.3 | 2.5 | 326 | 43.5 | 21.2 |
| 214.22 | 26.0 | -8.2 | 17.8 | 2.2 | 300 | 43.5 | 25.7 |
| 232.71 | 30.5 | -6.7 | 23.8 | 1.7 | 162 | 46.0 | 22.2 |




Radiated Electric-Field (3m) — Vertical

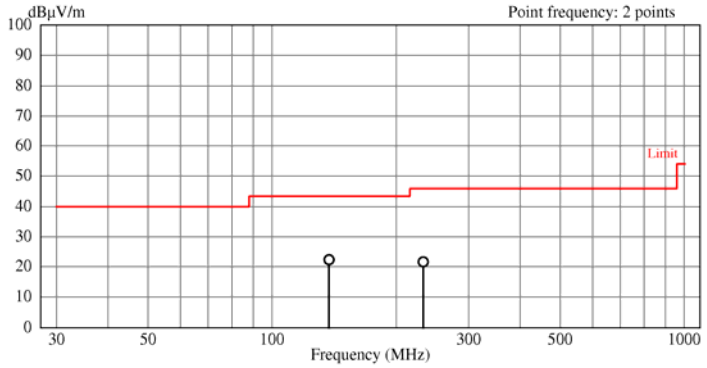
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 70.27 | 27.1 | -7.5 | 19.6 | 1.0 | 345 | 40.0 | 20.4 |
| 232.60 | 31.0 | -6.7 | 24.3 | 1.0 | 324 | 46.0 | 21.7 |
| 299.97 | 23.3 | -4.1 | 19.2 | 1.0 | 343 | 46.0 | 26.8 |



11g 54Mbps Lower Channel 2412MHz

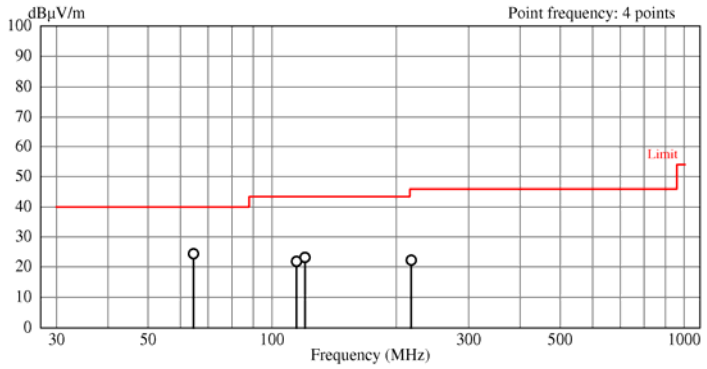
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 137.50 | 28.4 | -6.1 | 22.3 | 2.3 | 153 | 43.5 | 21.2 |
| 232.73 | 28.3 | -6.7 | 21.6 | 1.8 | 253 | 46.0 | 24.4 |




Radiated Electric-Field (3m) — Vertical

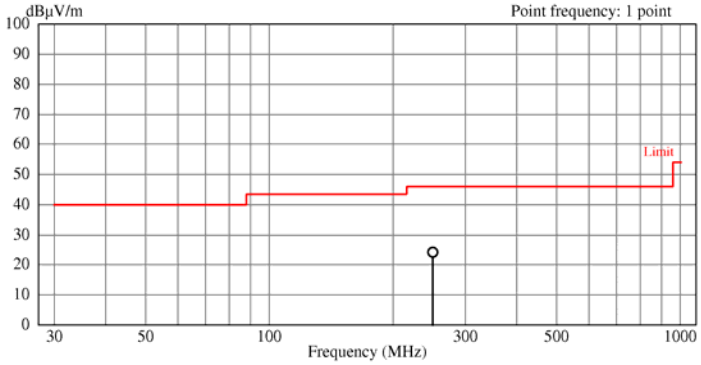
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 64.48 | 31.2 | -6.9 | 24.3 | 1.0 | 3 | 40.0 | 15.7 |
| 114.67 | 30.2 | -8.4 | 21.8 | 1.0 | 353 | 43.5 | 21.7 |
| 120.22 | 30.9 | -7.8 | 23.1 | 1.0 | 343 | 43.5 | 20.4 |
| 217.69 | 30.2 | -8.0 | 22.2 | 1.0 | 8 | 46.0 | 23.8 |



11b 54Mbps Middle Channel 2437MHz

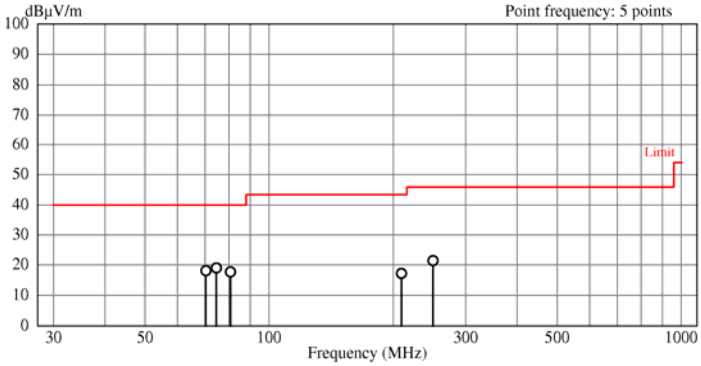
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 250.01 | 30.1 | -6.0 | 24.1 | 1.0 | 343 | 46.0 | 21.9 |




Radiated Electric-Field (3m) — Vertical

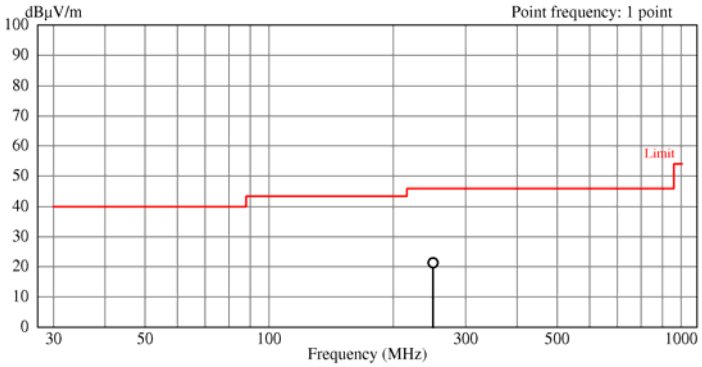
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 70.28 | 25.6 | -7.5 | 18.1 | 1.1 | 8 | 40.0 | 21.9 |
| 74.50 | 27.4 | -8.4 | 19.0 | 1.0 | 26 | 40.0 | 21.0 |
| 80.61 | 27.7 | -10.0 | 17.7 | 1.0 | 25 | 40.0 | 22.3 |
| 209.54 | 25.7 | -8.5 | 17.2 | 1.0 | 25 | 43.5 | 26.3 |
| 250.01 | 27.4 | -6.0 | 21.4 | 1.0 | 253 | 46.0 | 24.6 |



11b 54Mbps High Channel 2462MHz

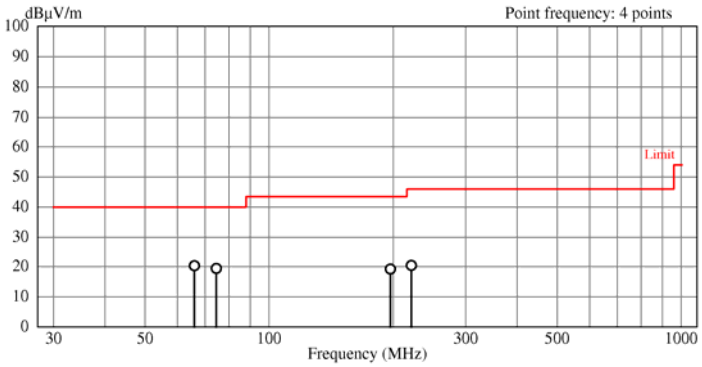
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 250.04 | 27.3 | -6.0 | 21.3 | 1.0 | 219 | 46.0 | 24.7 |




Radiated Electric-Field (3m) — Vertical

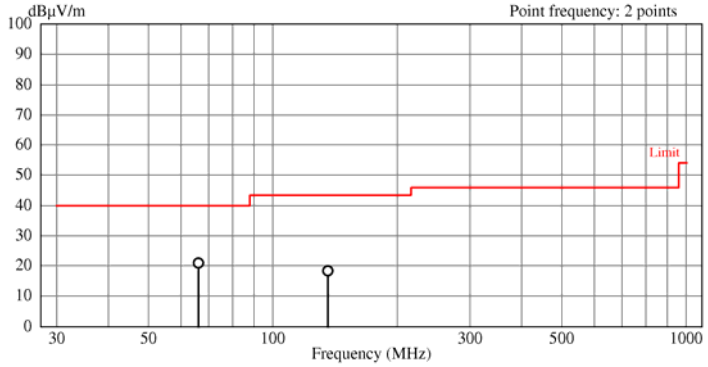
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 65.90 | 27.3 | -7.0 | 20.3 | 1.0 | 47 | 40.0 | 19.7 |
| 74.49 | 27.8 | -8.4 | 19.4 | 1.0 | 23 | 40.0 | 20.6 |
| 196.98 | 27.5 | -8.3 | 19.2 | 1.0 | 138 | 43.5 | 24.3 |
| 221.46 | 28.1 | -7.7 | 20.4 | 1.0 | 351 | 46.0 | 25.6 |



11n MCS7 Lower Channel 2412MHz

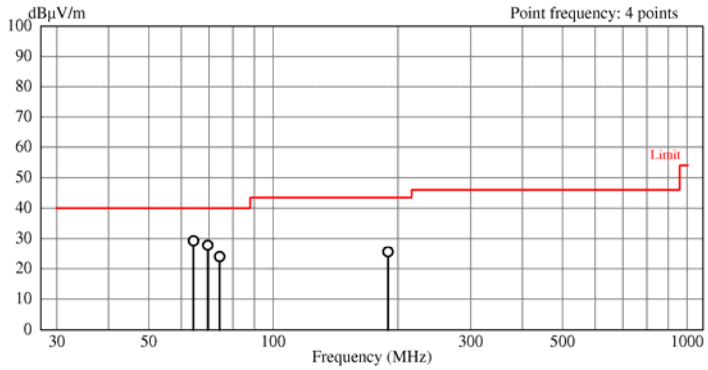
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 66.07 | 28.0 | -7.1 | 20.9 | 1.0 | 104 | 40.0 | 19.1 |
| 135.85 | 24.5 | -6.2 | 18.3 | 1.0 | 214 | 43.5 | 25.2 |




Radiated Electric-Field (3m) — Vertical

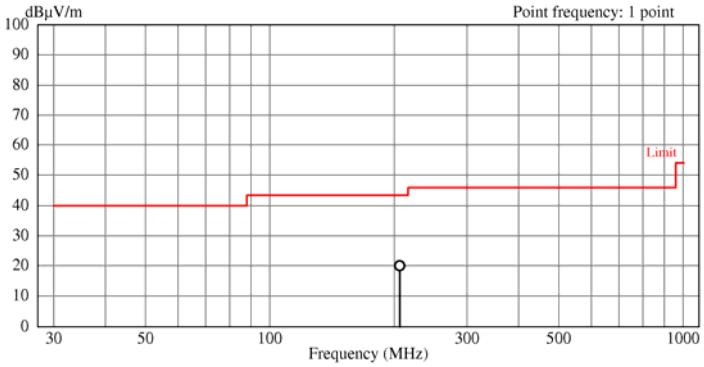
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 64.18 | 36.2 | -6.9 | 29.3 | 1.0 | 97 | 40.0 | 10.7 |
| 69.48 | 35.2 | -7.4 | 27.8 | 1.0 | 121 | 40.0 | 12.2 |
| 74.24 | 32.4 | -8.4 | 24.0 | 1.0 | 114 | 40.0 | 16.0 |
| 189.37 | 33.3 | -7.7 | 25.6 | 1.0 | 95 | 43.5 | 17.9 |



11n MCS7 Middle Channel 2437MHz

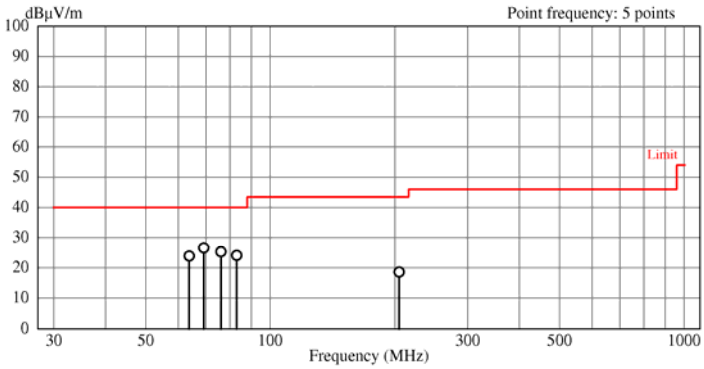
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 206.15 | 28.5 | -8.5 | 20.0 | 1.0 | 256 | 43.5 | 23.5 |




Radiated Electric-Field (3m) — Vertical

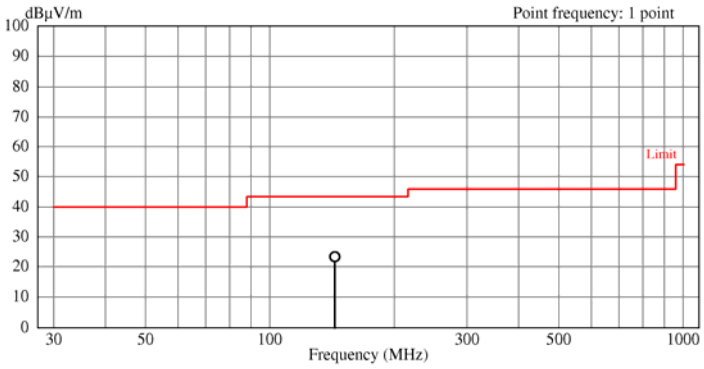
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 63.73 | 30.7 | -6.8 | 23.9 | 1.0 | 87 | 40.0 | 16.1 |
| 69.09 | 34.0 | -7.4 | 26.6 | 1.0 | 95 | 40.0 | 13.4 |
| 76.02 | 34.2 | -8.9 | 25.3 | 1.0 | 39 | 40.0 | 14.7 |
| 83.00 | 34.6 | -10.5 | 24.1 | 1.0 | 32 | 40.0 | 15.9 |
| 204.92 | 27.1 | -8.5 | 18.6 | 1.0 | 112 | 43.5 | 24.9 |



11n MCS7 High Channel 2462MHz

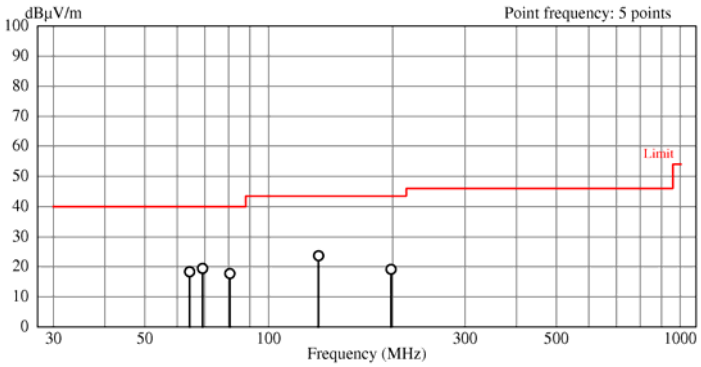
Radiated Electric-Field (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 143.63 | 29.0 | -5.7 | 23.3 | 1.0 | 95 | 43.5 | 20.2 |




Radiated Electric-Field (3m) — Vertical

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB/m) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 64.27 | 25.2 | -6.9 | 18.3 | 1.0 | 344 | 40.0 | 21.7 |
| 69.09 | 26.8 | -7.4 | 19.4 | 1.0 | 352 | 40.0 | 20.6 |
| 80.50 | 27.7 | -10.0 | 17.7 | 1.0 | 340 | 40.0 | 22.3 |
| 132.23 | 30.2 | -6.6 | 23.6 | 1.0 | 55 | 43.5 | 19.9 |
| 198.35 | 27.5 | -8.4 | 19.1 | 1.0 | 76 | 43.5 | 24.4 |



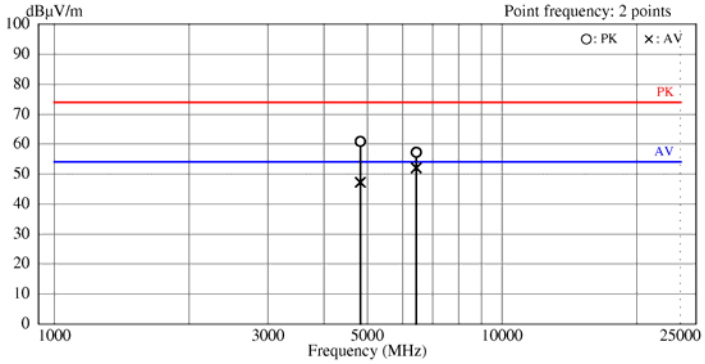

No radiated emissions from the EUT were found at a level greater than 20dB below limit within frequency range from 9 kHz to30 MHz.

Measurement Data above 1000MHz (3m)

11b 11Mbps Lower Channel 2412MHz

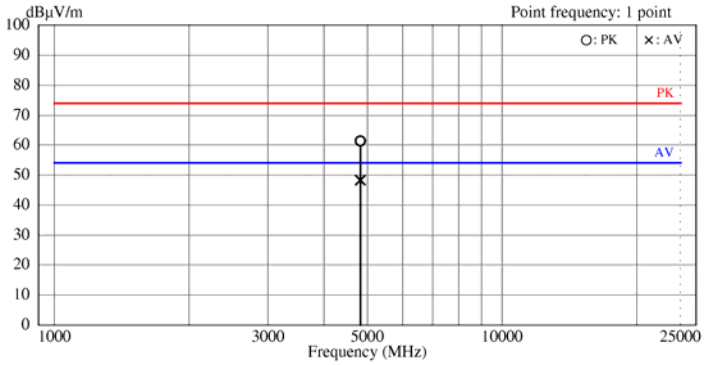
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4824.15 | 54.2 | 6.6 | 60.8 | 1.0 | 13 | 74.0 | 13.2 | PK |
| 4824.15 | 40.6 | 6.6 | 47.2 | 1.0 | 13 | 54.0 | 6.8 | AV |
| 6433.31 | 46.8 | 10.4 | 57.2 | 1.0 | 317 | 74.0 | 16.8 | PK |
| 6433.31 | 41.6 | 10.4 | 52.0 | 1.0 | 317 | 54.0 | 2.0 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

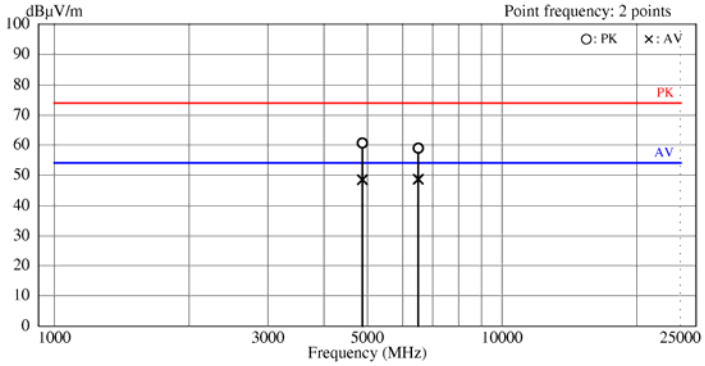
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4824.07 | 54.7 | 6.6 | 61.3 | 1.0 | 20 | 74.0 | 12.7 | PK |
| 4824.07 | 41.7 | 6.6 | 48.3 | 1.0 | 20 | 54.0 | 5.7 | AV |



11b 11Mbps Middle Channel 2437MHz

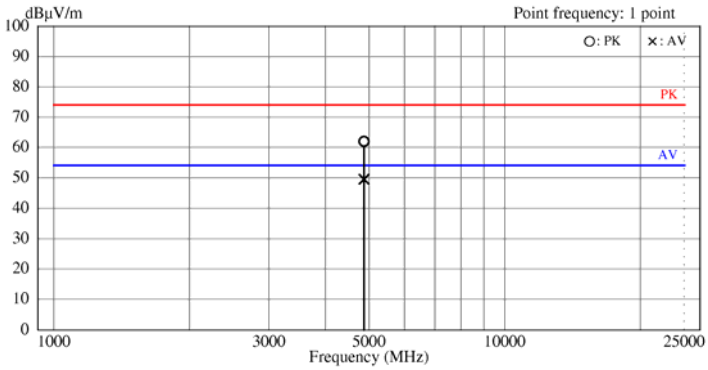
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4874.31 | 54.0 | 6.6 | 60.6 | 1.0 | 19 | 74.0 | 13.4 | PK |
| 4874.31 | 41.8 | 6.6 | 48.4 | 1.0 | 19 | 54.0 | 5.6 | AV |
| 6498.71 | 48.2 | 10.7 | 58.9 | 1.0 | 16 | 74.0 | 15.1 | PK |
| 6498.71 | 37.9 | 10.7 | 48.6 | 1.0 | 16 | 54.0 | 5.4 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

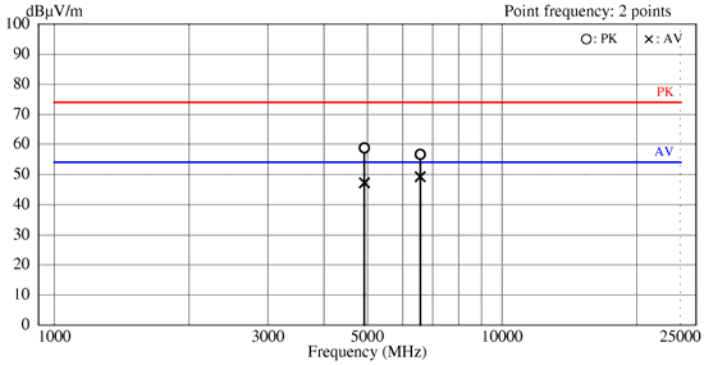
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4874.31 | 55.3 | 6.6 | 61.9 | 1.0 | 19 | 74.0 | 12.1 | PK |
| 4874.31 | 42.9 | 6.6 | 49.5 | 1.0 | 19 | 54.0 | 4.5 | AV |



11b 11Mbps High Channel 2462MHz

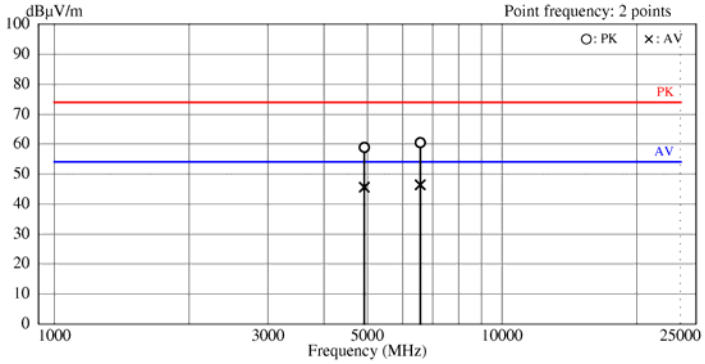
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4924.40 | 51.8 | 6.9 | 58.7 | 1.0 | 201 | 74.0 | 15.3 | PK |
| 4924.40 | 40.3 | 6.9 | 47.2 | 1.0 | 201 | 54.0 | 6.8 | AV |
| 6565.78 | 45.6 | 11.0 | 56.6 | 1.0 | 331 | 74.0 | 17.4 | PK |
| 6565.78 | 38.2 | 11.0 | 49.2 | 1.0 | 331 | 54.0 | 4.8 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

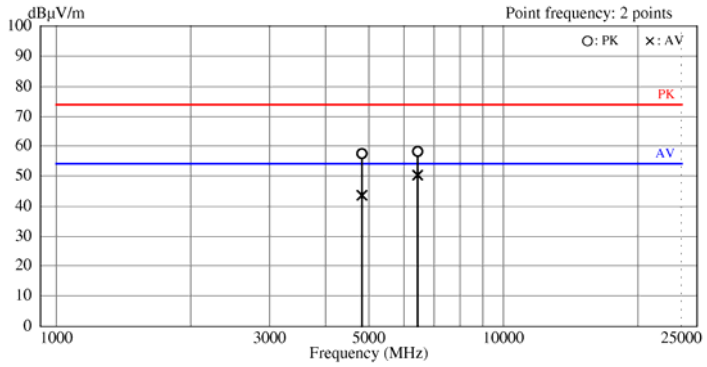
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4924.40 | 51.9 | 6.9 | 58.8 | 1.0 | 16 | 74.0 | 15.2 | PK |
| 4924.40 | 38.7 | 6.9 | 45.6 | 1.0 | 16 | 54.0 | 8.4 | AV |
| 6565.78 | 49.4 | 11.0 | 60.4 | 1.0 | 342 | 74.0 | 13.6 | PK |
| 6565.78 | 35.4 | 11.0 | 46.4 | 1.0 | 342 | 54.0 | 7.6 | AV |



11g 54Mbps Lower Channel 2412MHz

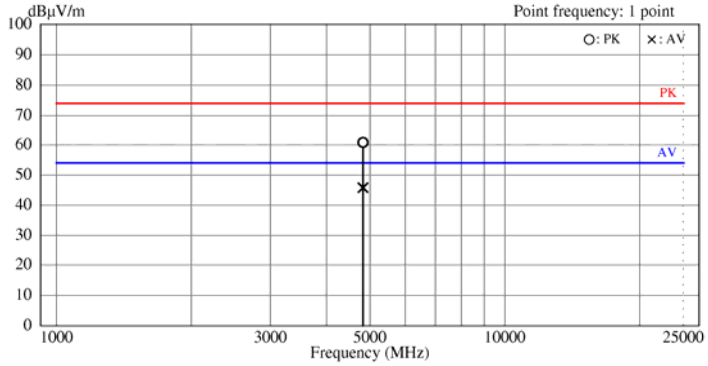
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4826.40 | 50.8 | 6.6 | 57.4 | 1.0 | 295 | 74.0 | 16.6 | PK |
| 4826.40 | 37.1 | 6.6 | 43.7 | 1.0 | 295 | 54.0 | 10.3 | AV |
| 6432.31 | 47.7 | 10.4 | 58.1 | 1.0 | 1 | 74.0 | 15.9 | PK |
| 6432.31 | 39.8 | 10.4 | 50.2 | 1.0 | 1 | 54.0 | 3.8 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

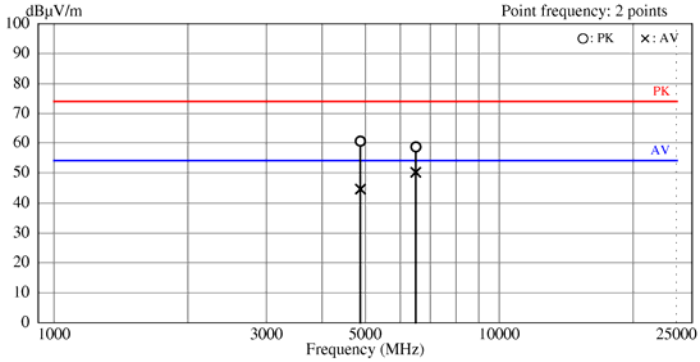
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4827.54 | 54.2 | 6.6 | 60.8 | 1.0 | 17 | 74.0 | 13.2 | PK |
| 4827.54 | 39.2 | 6.6 | 45.8 | 1.0 | 17 | 54.0 | 8.2 | AV |



11g 54Mbps Middle Channel 2437MHz

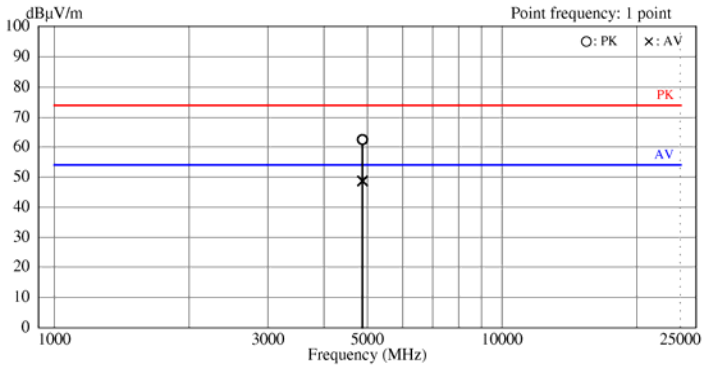
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4877.55 | 53.9 | 6.6 | 60.5 | 1.0 | 286 | 74.0 | 13.5 | PK |
| 4877.55 | 38.1 | 6.6 | 44.7 | 1.0 | 286 | 54.0 | 9.3 | AV |
| 6499.06 | 47.9 | 10.7 | 58.6 | 1.0 | 313 | 74.0 | 15.4 | PK |
| 6499.06 | 39.4 | 10.7 | 50.1 | 1.0 | 313 | 54.0 | 3.9 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

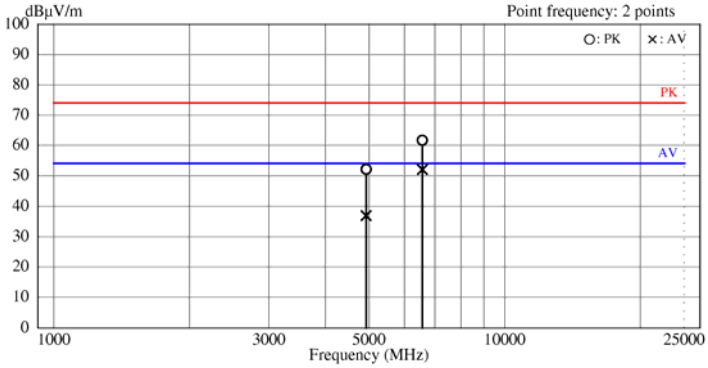
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4877.57 | 55.8 | 6.6 | 62.4 | 1.0 | 19 | 74.0 | 11.6 | PK |
| 4877.57 | 42.1 | 6.6 | 48.7 | 1.0 | 19 | 54.0 | 5.3 | AV |



11g 54Mbps High Channel 2462MHz

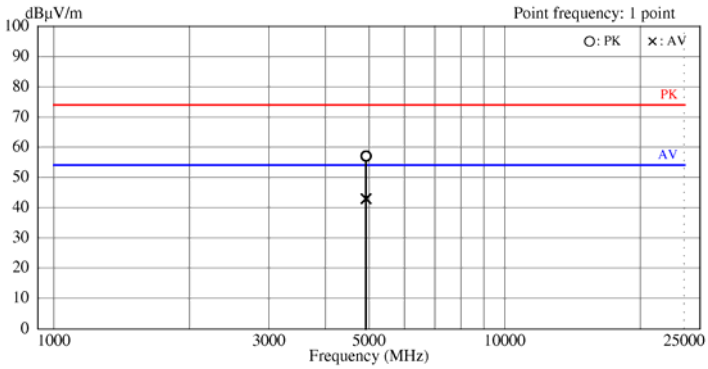
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4929.70 | 45.1 | 7.0 | 52.1 | 1.0 | 256 | 74.0 | 21.9 | PK |
| 4929.70 | 29.9 | 7.0 | 36.9 | 1.0 | 256 | 54.0 | 17.1 | AV |
| 6565.80 | 50.6 | 11.0 | 61.6 | 1.0 | 311 | 74.0 | 12.4 | PK |
| 6565.80 | 41.0 | 11.0 | 52.0 | 1.0 | 317 | 54.0 | 2.0 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

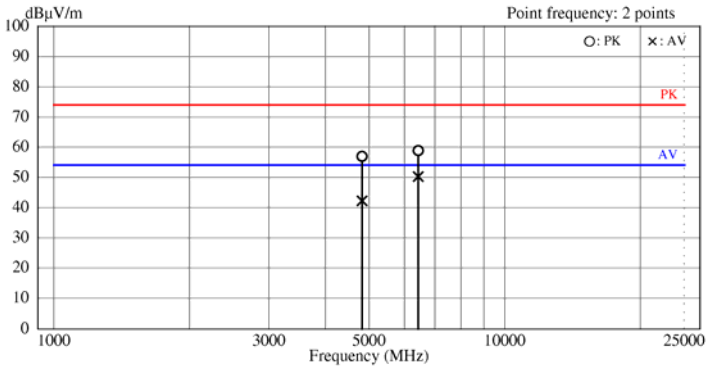
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4926.94 | 50.1 | 6.9 | 57.0 | 1.0 | 283 | 74.0 | 17.0 | PK |
| 4926.94 | 36.0 | 6.9 | 42.9 | 1.0 | 283 | 54.0 | 11.1 | AV |



11n MCS7 Lower Channel 2412MHz

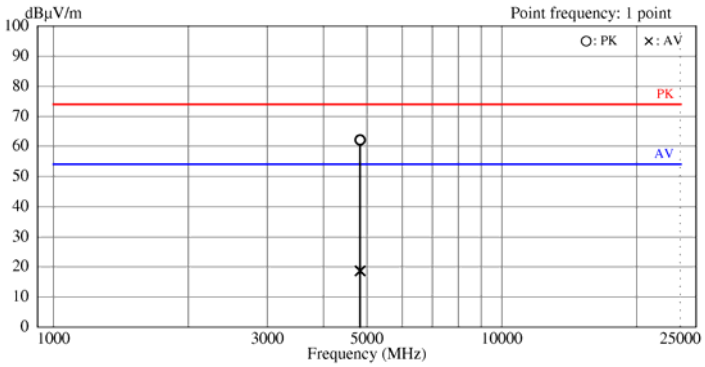
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4826.34 | 50.3 | 6.6 | 56.9 | 1.0 | 204 | 74.0 | 17.1 | PK |
| 4826.34 | 35.6 | 6.6 | 42.2 | 1.0 | 204 | 54.0 | 11.8 | AV |
| 6432.36 | 48.4 | 10.4 | 58.8 | 1.0 | 19 | 74.0 | 15.2 | PK |
| 6432.36 | 39.8 | 10.4 | 50.2 | 1.0 | 19 | 54.0 | 3.8 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

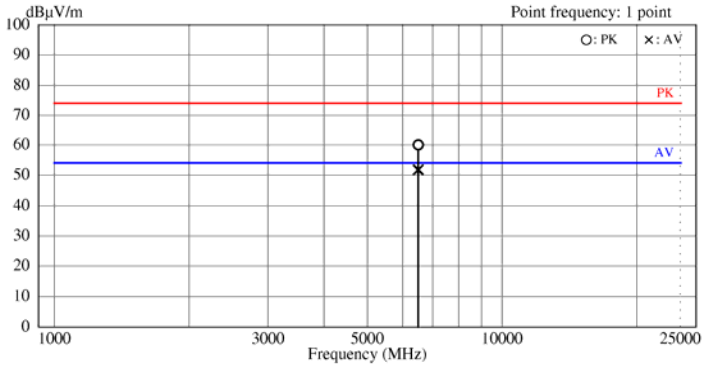
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4830.66 | 55.4 | 6.6 | 62.0 | 1.0 | 18 | 74.0 | 12.0 | PK |
| 4830.66 | 12.0 | 6.6 | 18.6 | 1.0 | 18 | 54.0 | 35.4 | AV |



11n MCS7 Middle Channel 2437MHz

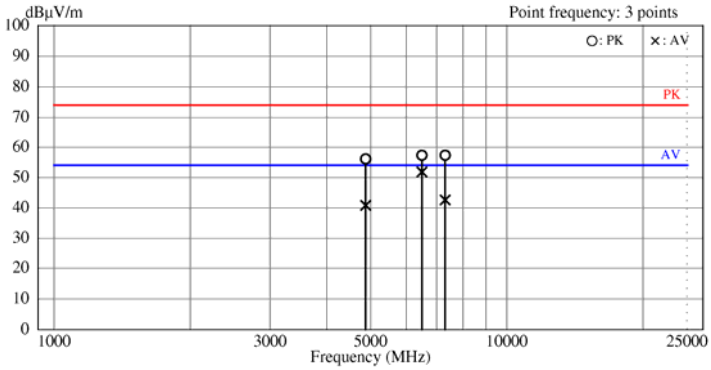
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 6498.83 | 49.3 | 10.7 | 60.0 | 1.0 | 351 | 74.0 | 14.0 | PK |
| 6498.83 | 41.0 | 10.7 | 51.7 | 1.0 | 351 | 54.0 | 2.3 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

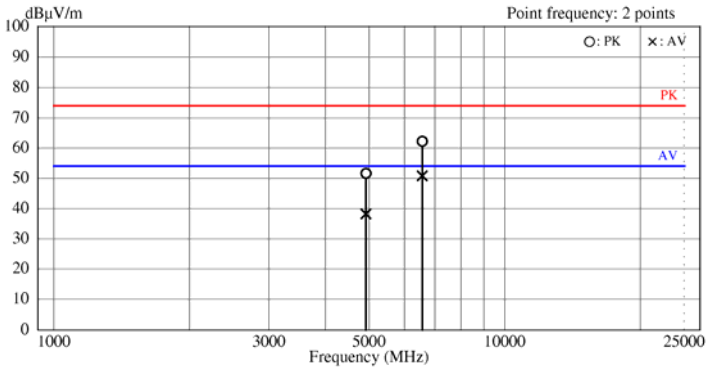
| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4877.75 | 49.5 | 6.6 | 56.1 | 1.0 | 32 | 74.0 | 17.9 | PK |
| 4877.75 | 34.2 | 6.6 | 40.8 | 1.0 | 32 | 54.0 | 13.2 | AV |
| 6492.99 | 46.6 | 10.7 | 57.3 | 1.0 | 330 | 74.0 | 16.7 | PK |
| 6492.99 | 41.1 | 10.7 | 51.8 | 1.0 | 330 | 54.0 | 2.2 | AV |
| 7309.43 | 44.2 | 13.1 | 57.3 | 1.0 | 273 | 74.0 | 16.7 | PK |
| 7309.43 | 29.5 | 13.1 | 42.6 | 1.0 | 273 | 54.0 | 11.4 | AV |



11n MCS7 High Channel 2462MHz

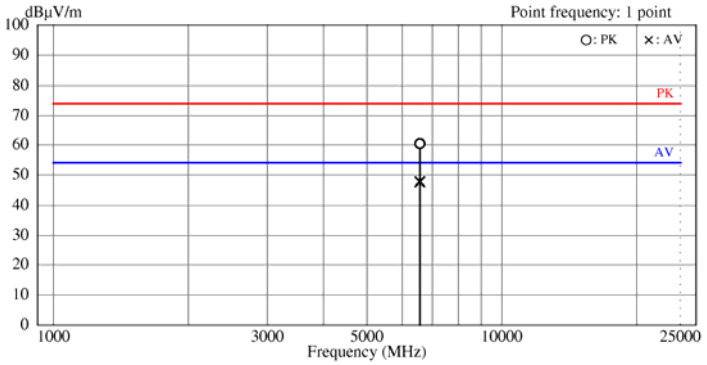
Radiated Electric-Field over 1GHz (3m) — Horizontal

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 4925.85 | 44.7 | 6.9 | 51.6 | 1.0 | 6 | 74.0 | 22.4 | PK |
| 4925.85 | 31.3 | 6.9 | 38.2 | 1.0 | 6 | 54.0 | 15.8 | AV |
| 6565.38 | 51.2 | 11.0 | 62.2 | 1.0 | 356 | 74.0 | 11.8 | PK |
| 6565.38 | 39.8 | 11.0 | 50.8 | 1.0 | 2 | 54.0 | 3.2 | AV |




Radiated Electric-Field over 1GHz (3m) — Vertical

| Frequency (MHz) | Reading (dBµV) | Correction factor (dB) | Noise level (dBµV/m) | Antenna height (m) | Turn table angle (°) | Limit (dBµV/m) | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|
| 6565.27 | 49.4 | 11.0 | 60.4 | 1.0 | 7 | 74.0 | 13.6 | PK |
| 6565.27 | 36.7 | 11.0 | 47.7 | 1.0 | 7 | 54.0 | 6.3 | AV |



## 3.10 Conducted emission

### 3.10.1 Test Result

Pass

### 3.10.2 Test Detail

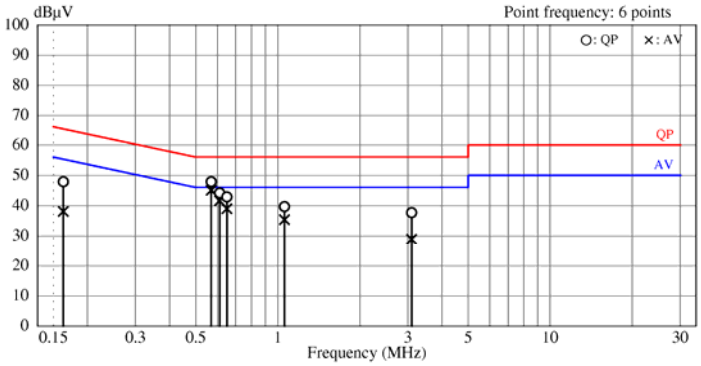
EUT was tested based on FCC 15.207 RSS-210 A8.2(b) with temporally antenna port.
See Annex B.

### 3.10.3 Test data

11b 11Mbps Lower Channel 2412MHz

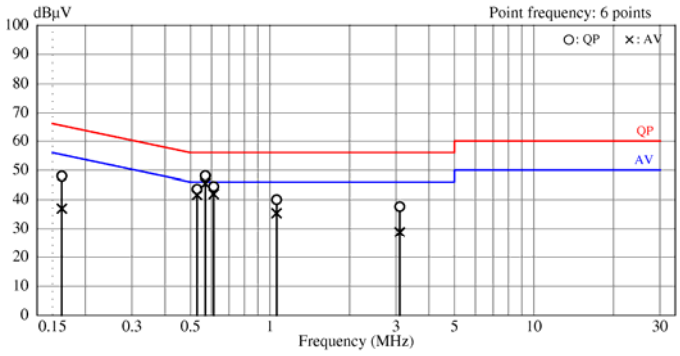
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1631 | 37.8 | 28.0 | 10.1 | 47.9 | 38.1 | 65.3 | 55.3 | 17.4 | 17.2 |
| 0.5691 | 37.9 | 35.1 | 10.0 | 47.9 | 45.1 | 56.0 | 46.0 | 8.1 | 0.9 |
| 0.6112 | 34.2 | 31.6 | 10.0 | 44.2 | 41.6 | 56.0 | 46.0 | 11.8 | 4.4 |
| 0.6500 | 32.9 | 29.0 | 10.0 | 42.9 | 39.0 | 56.0 | 46.0 | 13.1 | 7.0 |
| 1.0572 | 29.8 | 25.5 | 9.9 | 39.7 | 35.4 | 56.0 | 46.0 | 16.3 | 10.6 |
| 3.0977 | 27.9 | 19.1 | 9.8 | 37.7 | 28.9 | 56.0 | 46.0 | 18.3 | 17.1 |




Conducted Emission (Mains) — VB

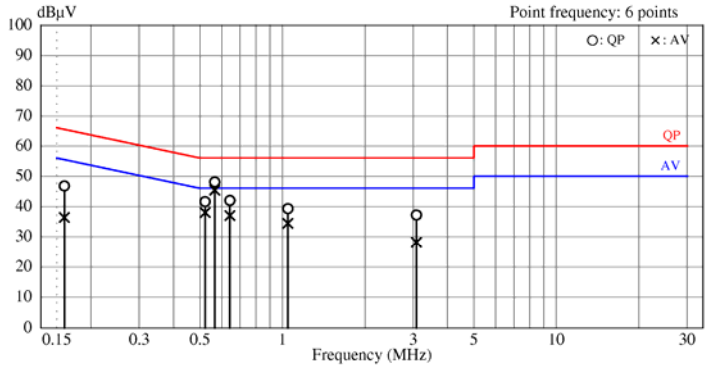
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1627 | 38.0 | 26.9 | 10.0 | 48.0 | 36.9 | 65.3 | 55.3 | 17.3 | 18.4 |
| 0.5296 | 33.6 | 31.6 | 10.0 | 43.6 | 41.6 | 56.0 | 46.0 | 12.4 | 4.4 |
| 0.5688 | 38.1 | 35.5 | 10.0 | 48.1 | 45.5 | 56.0 | 46.0 | 7.9 | 0.5 |
| 0.6118 | 34.5 | 31.9 | 10.0 | 44.5 | 41.9 | 56.0 | 46.0 | 11.5 | 4.1 |
| 1.0592 | 30.1 | 25.4 | 9.9 | 40.0 | 35.3 | 56.0 | 46.0 | 16.0 | 10.7 |
| 3.1019 | 27.8 | 18.9 | 9.8 | 37.6 | 28.7 | 56.0 | 46.0 | 18.4 | 17.3 |



11b 11Mbps Middle Channel 2437MHz

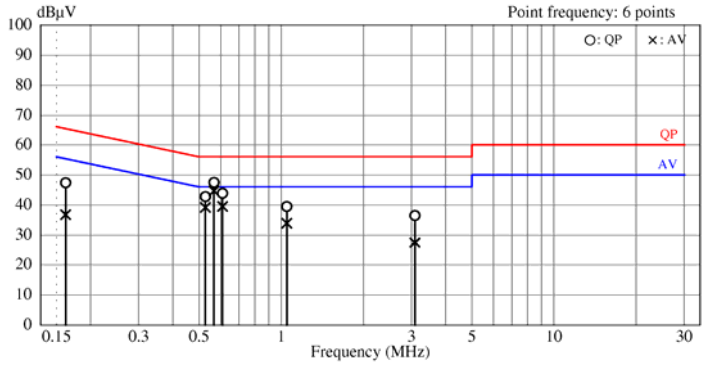
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1598 | 36.8 | 26.4 | 10.0 | 46.8 | 36.4 | 65.5 | 55.5 | 18.7 | 19.1 |
| 0.5217 | 31.6 | 28.0 | 10.0 | 41.6 | 38.0 | 56.0 | 46.0 | 14.4 | 8.0 |
| 0.5657 | 38.1 | 35.4 | 10.0 | 48.1 | 45.4 | 56.0 | 46.0 | 7.9 | 0.6 |
| 0.6428 | 32.0 | 27.0 | 10.0 | 42.0 | 37.0 | 56.0 | 46.0 | 14.0 | 9.0 |
| 1.0468 | 29.4 | 24.5 | 9.9 | 39.3 | 34.4 | 56.0 | 46.0 | 16.7 | 11.6 |
| 3.0840 | 27.4 | 18.3 | 9.8 | 37.2 | 28.1 | 56.0 | 46.0 | 18.8 | 17.9 |




Conducted Emission (Mains) — VB

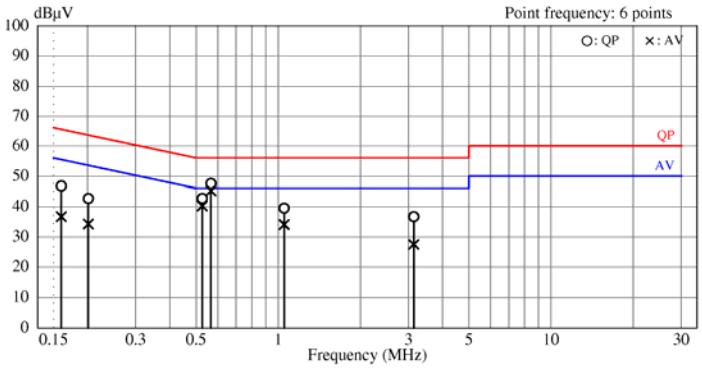
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1620 | 37.4 | 26.8 | 10.0 | 47.4 | 36.8 | 65.4 | 55.4 | 18.0 | 18.6 |
| 0.5270 | 32.8 | 29.2 | 10.0 | 42.8 | 39.2 | 56.0 | 46.0 | 13.2 | 6.8 |
| 0.5667 | 37.5 | 34.7 | 10.0 | 47.5 | 44.7 | 56.0 | 46.0 | 8.5 | 1.3 |
| 0.6090 | 33.9 | 29.5 | 10.0 | 43.9 | 39.5 | 56.0 | 46.0 | 12.1 | 6.5 |
| 1.0476 | 29.6 | 24.0 | 9.9 | 39.5 | 33.9 | 56.0 | 46.0 | 16.5 | 12.1 |
| 3.0905 | 26.7 | 17.6 | 9.8 | 36.5 | 27.4 | 56.0 | 46.0 | 19.5 | 18.6 |



11b 11Mbps High Channel 2462MHz

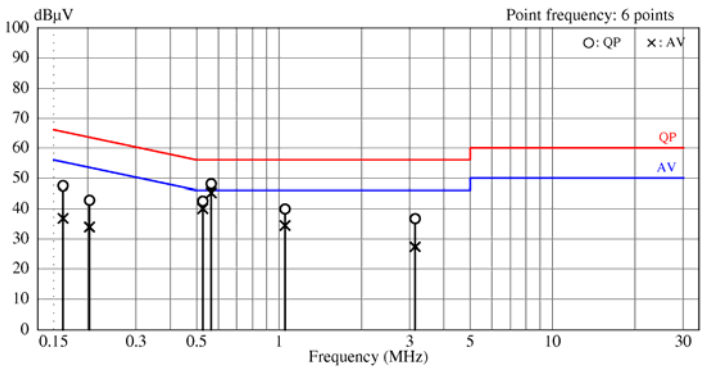
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1601 | 36.8 | 26.7 | 10.0 | 46.8 | 36.7 | 65.5 | 55.5 | 18.7 | 18.8 |
| 0.2012 | 32.8 | 24.4 | 9.9 | 42.7 | 34.3 | 63.6 | 53.6 | 20.9 | 19.3 |
| 0.5263 | 32.7 | 30.2 | 10.0 | 42.7 | 40.2 | 56.0 | 46.0 | 13.3 | 5.8 |
| 0.5666 | 37.6 | 35.2 | 10.0 | 47.6 | 45.2 | 56.0 | 46.0 | 8.4 | 0.8 |
| 1.0506 | 29.6 | 24.2 | 9.9 | 39.5 | 34.1 | 56.0 | 46.0 | 16.5 | 11.9 |
| 3.1404 | 26.9 | 17.6 | 9.8 | 36.7 | 27.4 | 56.0 | 46.0 | 19.3 | 18.6 |




Conducted Emission (Mains) — VB

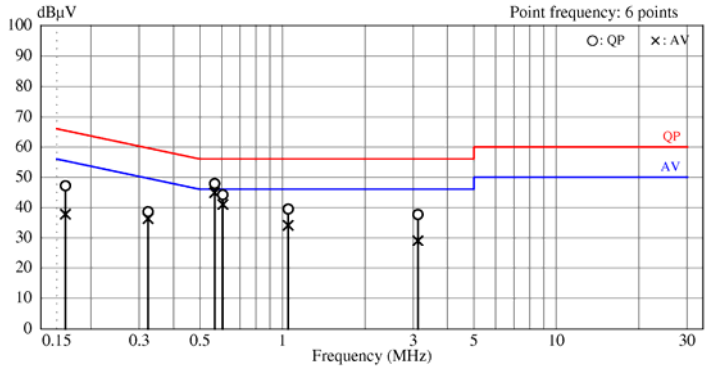
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1622 | 37.5 | 26.8 | 10.0 | 47.5 | 36.8 | 65.4 | 55.4 | 17.9 | 18.6 |
| 0.2028 | 32.9 | 24.0 | 9.9 | 42.8 | 33.9 | 63.5 | 53.5 | 20.7 | 19.6 |
| 0.5262 | 32.5 | 30.0 | 10.0 | 42.5 | 40.0 | 56.0 | 46.0 | 13.5 | 6.0 |
| 0.5648 | 38.1 | 35.2 | 10.0 | 48.1 | 45.2 | 56.0 | 46.0 | 7.9 | 0.8 |
| 1.0514 | 30.0 | 24.5 | 9.9 | 39.9 | 34.4 | 56.0 | 46.0 | 16.1 | 11.6 |
| 3.1441 | 26.9 | 17.5 | 9.8 | 36.7 | 27.3 | 56.0 | 46.0 | 19.3 | 18.7 |



11g 54Mbps Lower Channel 2412MHz

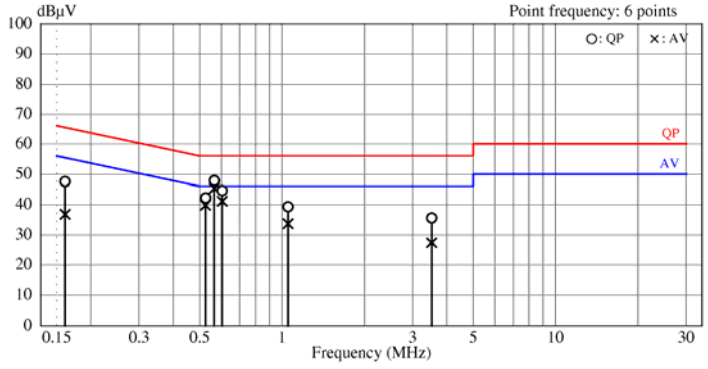
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1613 | 37.2 | 27.8 | 10.0 | 47.2 | 37.8 | 65.4 | 55.4 | 18.2 | 17.6 |
| 0.3231 | 28.6 | 26.3 | 10.0 | 38.6 | 36.3 | 59.6 | 49.6 | 21.0 | 13.3 |
| 0.5654 | 37.9 | 34.9 | 10.0 | 47.9 | 44.9 | 56.0 | 46.0 | 8.1 | 1.1 |
| 0.6056 | 34.2 | 31.0 | 10.0 | 44.2 | 41.0 | 56.0 | 46.0 | 11.8 | 5.0 |
| 1.0498 | 29.6 | 24.2 | 9.9 | 39.5 | 34.1 | 56.0 | 46.0 | 16.5 | 11.9 |
| 3.1222 | 27.9 | 19.2 | 9.8 | 37.7 | 29.0 | 56.0 | 46.0 | 18.3 | 17.0 |




Conducted Emission (Mains) — VB

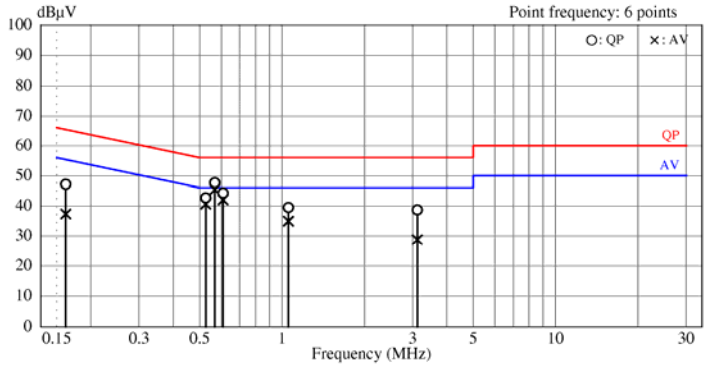
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1609 | 37.6 | 26.8 | 10.0 | 47.6 | 36.8 | 65.4 | 55.4 | 17.8 | 18.6 |
| 0.5255 | 32.2 | 29.8 | 10.0 | 42.2 | 39.8 | 56.0 | 46.0 | 13.8 | 6.2 |
| 0.5652 | 37.9 | 35.3 | 10.0 | 47.9 | 45.3 | 56.0 | 46.0 | 8.1 | 0.7 |
| 0.6041 | 34.6 | 31.1 | 10.0 | 44.6 | 41.1 | 56.0 | 46.0 | 11.4 | 4.9 |
| 1.0514 | 29.4 | 23.8 | 9.9 | 39.3 | 33.7 | 56.0 | 46.0 | 16.7 | 12.3 |
| 3.5233 | 25.8 | 17.5 | 9.8 | 35.6 | 27.3 | 56.0 | 46.0 | 20.4 | 18.7 |



11b 54Mbps Middle Channel 2437MHz

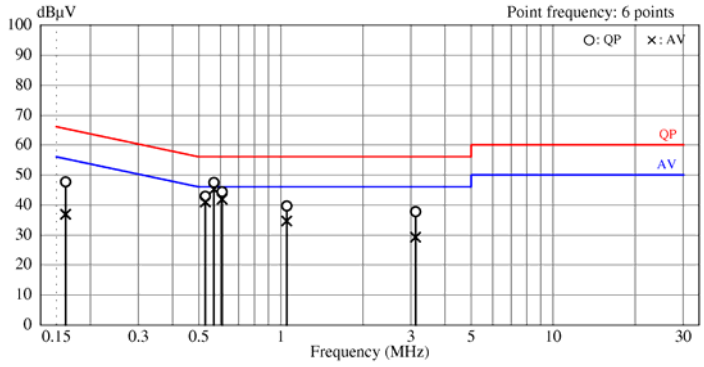
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1618 | 37.2 | 27.3 | 10.0 | 47.2 | 37.3 | 65.4 | 55.4 | 18.2 | 18.1 |
| 0.5258 | 32.7 | 30.6 | 10.0 | 42.7 | 40.6 | 56.0 | 46.0 | 13.3 | 5.4 |
| 0.5675 | 37.7 | 35.4 | 10.0 | 47.7 | 45.4 | 56.0 | 46.0 | 8.3 | 0.6 |
| 0.6087 | 34.3 | 32.0 | 10.0 | 44.3 | 42.0 | 56.0 | 46.0 | 11.7 | 4.0 |
| 1.0547 | 29.6 | 25.0 | 9.9 | 39.5 | 34.9 | 56.0 | 46.0 | 16.5 | 11.1 |
| 3.1218 | 28.9 | 18.9 | 9.8 | 38.7 | 28.7 | 56.0 | 46.0 | 17.3 | 17.3 |




Conducted Emission (Mains) — VB

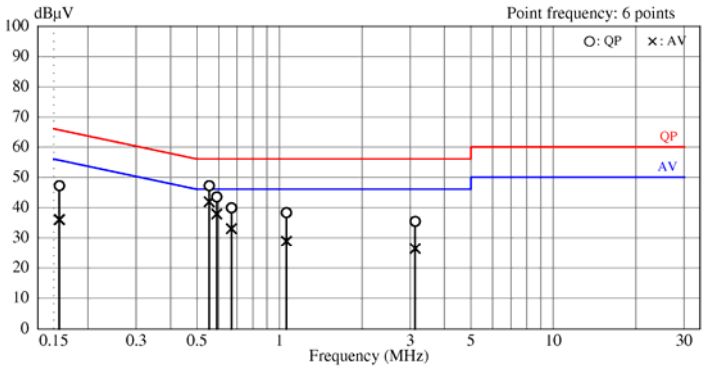
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1621 | 37.7 | 26.9 | 10.0 | 47.7 | 36.9 | 65.4 | 55.4 | 17.7 | 18.5 |
| 0.5279 | 32.9 | 31.0 | 10.0 | 42.9 | 41.0 | 56.0 | 46.0 | 13.1 | 5.0 |
| 0.5678 | 37.5 | 35.2 | 10.0 | 47.5 | 45.2 | 56.0 | 46.0 | 8.5 | 0.8 |
| 0.6084 | 34.4 | 31.9 | 10.0 | 44.4 | 41.9 | 56.0 | 46.0 | 11.6 | 4.1 |
| 1.0512 | 29.8 | 24.8 | 9.9 | 39.7 | 34.7 | 56.0 | 46.0 | 16.3 | 11.3 |
| 3.1238 | 28.0 | 19.5 | 9.8 | 37.8 | 29.3 | 56.0 | 46.0 | 18.2 | 16.7 |



11b 54Mbps High Channel 2462MHz

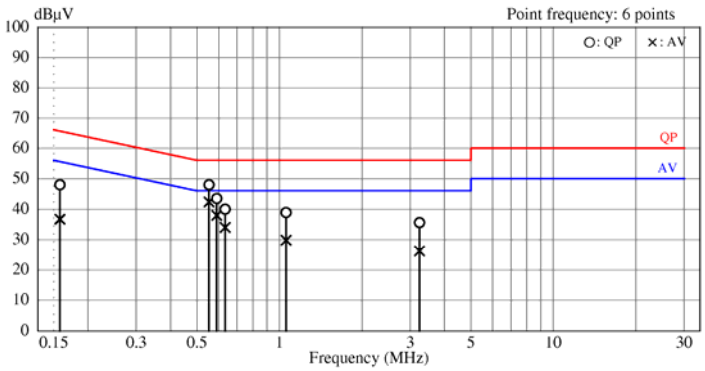
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1572 | 37.2 | 26.0 | 10.0 | 47.2 | 36.0 | 65.6 | 55.6 | 18.4 | 19.6 |
| 0.5542 | 37.2 | 31.9 | 10.0 | 47.2 | 41.9 | 56.0 | 46.0 | 8.8 | 4.1 |
| 0.5901 | 33.5 | 27.8 | 10.0 | 43.5 | 37.8 | 56.0 | 46.0 | 12.5 | 8.2 |
| 0.6682 | 29.9 | 23.0 | 10.0 | 39.9 | 33.0 | 56.0 | 46.0 | 16.1 | 13.0 |
| 1.0603 | 28.4 | 18.9 | 9.9 | 38.3 | 28.8 | 56.0 | 46.0 | 17.7 | 17.2 |
| 3.1298 | 25.6 | 16.6 | 9.8 | 35.4 | 26.4 | 56.0 | 46.0 | 20.6 | 19.6 |




Conducted Emission (Mains) — VB

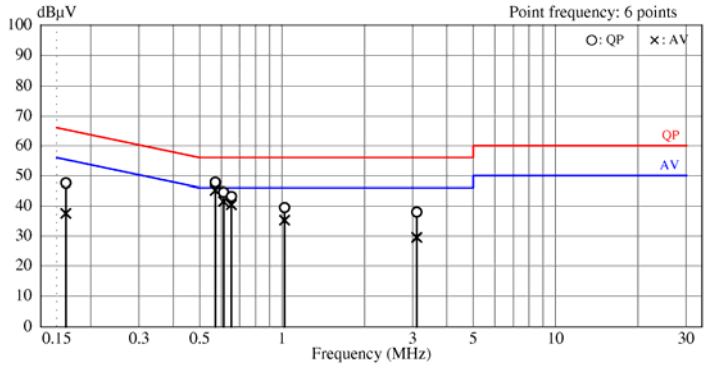
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1579 | 38.0 | 26.7 | 10.0 | 48.0 | 36.7 | 65.6 | 55.6 | 17.6 | 18.9 |
| 0.5531 | 38.0 | 32.4 | 10.0 | 48.0 | 42.4 | 56.0 | 46.0 | 8.0 | 3.6 |
| 0.5900 | 33.5 | 27.9 | 10.0 | 43.5 | 37.9 | 56.0 | 46.0 | 12.5 | 8.1 |
| 0.6331 | 30.0 | 24.0 | 10.0 | 40.0 | 34.0 | 56.0 | 46.0 | 16.0 | 12.0 |
| 1.0569 | 29.0 | 19.9 | 9.9 | 38.9 | 29.8 | 56.0 | 46.0 | 17.1 | 16.2 |
| 3.2451 | 25.8 | 16.4 | 9.8 | 35.6 | 26.2 | 56.0 | 46.0 | 20.4 | 19.8 |



11n MCS7 Lower Channel 2412MHz

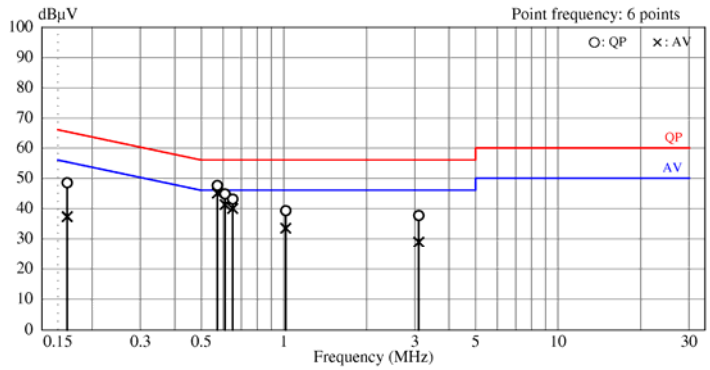
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1620 | 37.6 | 27.5 | 10.0 | 47.6 | 37.5 | 65.4 | 55.4 | 17.8 | 17.9 |
| 0.5698 | 37.8 | 35.2 | 10.0 | 47.8 | 45.2 | 56.0 | 46.0 | 8.2 | 0.8 |
| 0.6110 | 34.6 | 31.5 | 10.0 | 44.6 | 41.5 | 56.0 | 46.0 | 11.4 | 4.5 |
| 0.6529 | 33.2 | 30.4 | 10.0 | 43.2 | 40.4 | 56.0 | 46.0 | 12.8 | 5.6 |
| 1.0212 | 29.6 | 25.4 | 9.9 | 39.5 | 35.3 | 56.0 | 46.0 | 16.5 | 10.7 |
| 3.1069 | 28.2 | 19.7 | 9.8 | 38.0 | 29.5 | 56.0 | 46.0 | 18.0 | 16.5 |




Conducted Emission (Mains) — VB

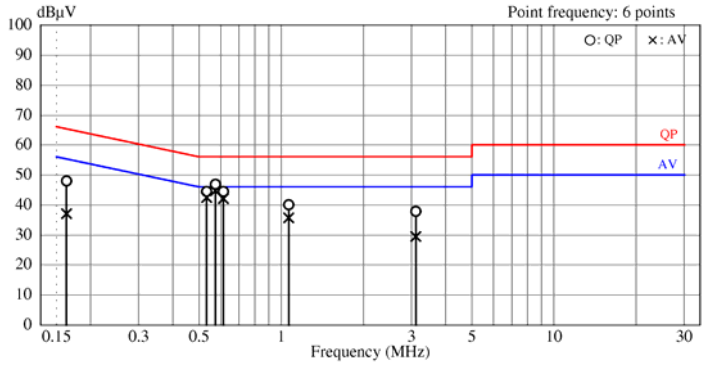
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1622 | 38.5 | 27.3 | 10.0 | 48.5 | 37.3 | 65.4 | 55.4 | 16.9 | 18.1 |
| 0.5721 | 37.6 | 35.1 | 10.0 | 47.6 | 45.1 | 56.0 | 46.0 | 8.4 | 0.9 |
| 0.6100 | 34.8 | 31.3 | 10.0 | 44.8 | 41.3 | 56.0 | 46.0 | 11.2 | 4.7 |
| 0.6510 | 33.1 | 30.0 | 10.0 | 43.1 | 40.0 | 56.0 | 46.0 | 12.9 | 6.0 |
| 1.0162 | 29.4 | 23.6 | 9.9 | 39.3 | 33.5 | 56.0 | 46.0 | 16.7 | 12.5 |
| 3.1037 | 27.9 | 19.1 | 9.8 | 37.7 | 28.9 | 56.0 | 46.0 | 18.3 | 17.1 |



11n MCS7 Middle Channel 2437MHz

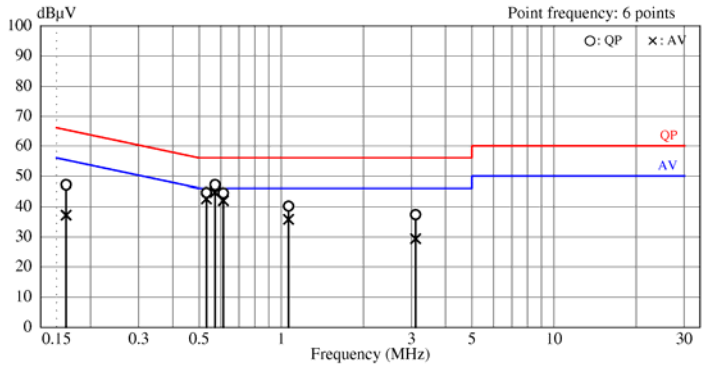
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1632 | 37.9 | 27.0 | 10.1 | 48.0 | 37.1 | 65.3 | 55.3 | 17.3 | 18.2 |
| 0.5326 | 34.5 | 32.5 | 10.0 | 44.5 | 42.5 | 56.0 | 46.0 | 11.5 | 3.5 |
| 0.5736 | 36.9 | 34.7 | 10.0 | 46.9 | 44.7 | 56.0 | 46.0 | 9.1 | 1.3 |
| 0.6135 | 34.5 | 32.1 | 10.0 | 44.5 | 42.1 | 56.0 | 46.0 | 11.5 | 3.9 |
| 1.0647 | 30.2 | 25.8 | 9.9 | 40.1 | 35.7 | 56.0 | 46.0 | 15.9 | 10.3 |
| 3.1134 | 28.1 | 19.7 | 9.8 | 37.9 | 29.5 | 56.0 | 46.0 | 18.1 | 16.5 |




Conducted Emission (Mains) — VB

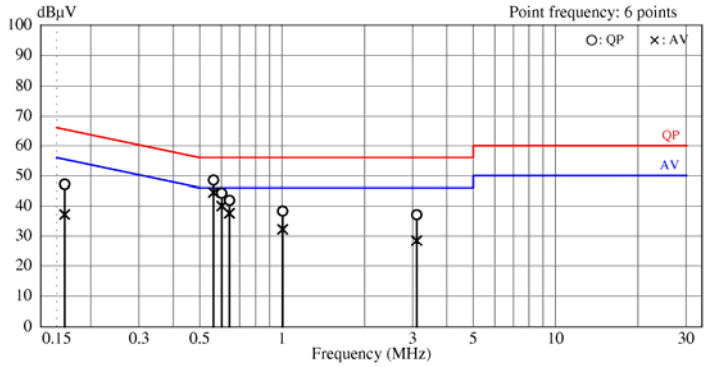
| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1626 | 37.2 | 27.2 | 10.0 | 47.2 | 37.2 | 65.3 | 55.3 | 18.1 | 18.1 |
| 0.5315 | 34.6 | 32.6 | 10.0 | 44.6 | 42.6 | 56.0 | 46.0 | 11.4 | 3.4 |
| 0.5719 | 37.2 | 34.7 | 10.0 | 47.2 | 44.7 | 56.0 | 46.0 | 8.8 | 1.3 |
| 0.6130 | 34.5 | 32.0 | 10.0 | 44.5 | 42.0 | 56.0 | 46.0 | 11.5 | 4.0 |
| 1.0633 | 30.3 | 25.9 | 9.9 | 40.2 | 35.8 | 56.0 | 46.0 | 15.8 | 10.2 |
| 3.1081 | 27.6 | 19.6 | 9.8 | 37.4 | 29.4 | 56.0 | 46.0 | 18.6 | 16.6 |



11n MCS7 High Channel 2462MHz

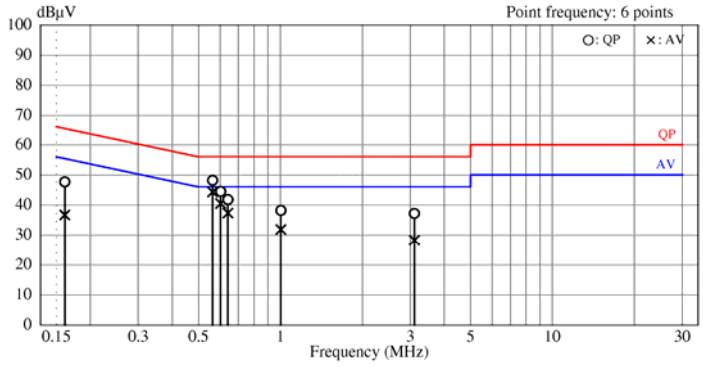
Conducted Emission (Mains) — VA

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1604 | 37.2 | 27.2 | 10.0 | 47.2 | 37.2 | 65.4 | 55.4 | 18.2 | 18.2 |
| 0.5614 | 38.5 | 34.5 | 10.0 | 48.5 | 44.5 | 56.0 | 46.0 | 7.5 | 1.5 |
| 0.6013 | 34.3 | 30.0 | 10.0 | 44.3 | 40.0 | 56.0 | 46.0 | 11.7 | 6.0 |
| 0.6425 | 31.9 | 27.6 | 10.0 | 41.9 | 37.6 | 56.0 | 46.0 | 14.1 | 8.4 |
| 1.0048 | 28.4 | 22.3 | 9.9 | 38.3 | 32.2 | 56.0 | 46.0 | 17.7 | 13.8 |
| 3.1061 | 27.3 | 18.6 | 9.8 | 37.1 | 28.4 | 56.0 | 46.0 | 18.9 | 17.6 |



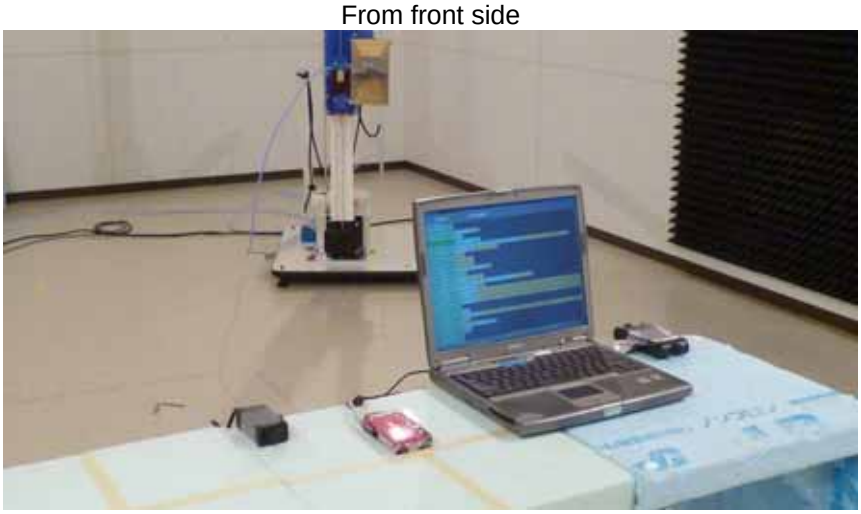

Conducted Emission (Mains) — VB

| Frequency (MHz) | Reading (dBµV) | | Correction factor (dB) | Noise level (dBµV) | | Limit (dBµV) | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|
| | QP | AV | | QP | AV | QP | AV | QP | AV |
| 0.1611 | 37.7 | 26.7 | 10.0 | 47.7 | 36.7 | 65.4 | 55.4 | 17.7 | 18.7 |
| 0.5630 | 38.2 | 34.3 | 10.0 | 48.2 | 44.3 | 56.0 | 46.0 | 7.8 | 1.7 |
| 0.6028 | 34.5 | 30.5 | 10.0 | 44.5 | 40.5 | 56.0 | 46.0 | 11.5 | 5.5 |
| 0.6410 | 31.8 | 27.3 | 10.0 | 41.8 | 37.3 | 56.0 | 46.0 | 14.2 | 8.7 |
| 1.0035 | 28.3 | 21.9 | 9.9 | 38.2 | 31.8 | 56.0 | 46.0 | 17.8 | 14.2 |
| 3.1071 | 27.4 | 18.4 | 9.8 | 37.2 | 28.2 | 56.0 | 46.0 | 18.8 | 17.8 |

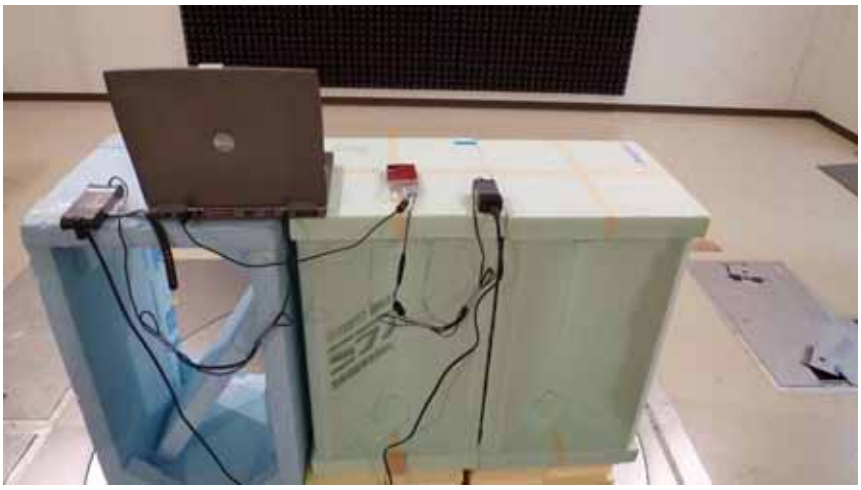


# 4. Test Setup Photographs

From front side



From back side



# 5. Test facility

## 5.1 Test Instruments

### 5.1.1 Conducted Emissions

| | Product Name | Manufacturer | Model Number | Serial Number | Calibration Date | Due Date |
|---|---|---|---|---|---|---|
| C01-204 | Spectrum Analyzer | Rohde&Schwarz | FSA | 860161/016,881748/023,883175/019 | 2011/3/4 | 2012/3/31 |
| C02-203 | Spectrum Analyzer | Hewlett Packard | 8566B | 3014A06779 | 2011/3/4 | 2012/3/31 |
| C02-512 | Spectrum Analyzer | ADVANTEST | U3751 | 161000132 | 2011/3/4 | 2012/3/31 |
| | Spectrum Analyzer | Rohde&Schwarz | FSEB | 849015/035 | 2011/3/4 | 2012/3/31 |
| EM3-22-008 | Receiver | Rohde&Schwarz | ESIB7 | 100211 | 2011/7/27 | 2012/7/31 |
| EM3-22-009 | Receiver | Rohde&Schwarz | ESI26 | 100035 | 2011/8/7 | 2012/8/31 |
| EM3-22-010 | Receiver | Rohde&Schwarz | ESS | 830737/008 | 2011/10/18 | 2012/10/31 |
| EM3-22-074 | Receiver | Rohde&Schwarz | ESU26 | 100218 | 2011/6/29 | 2012/6/30 |
| EM3-24-113 | LISN | Rohde&Schwarz | ESH2-Z5 | 892602/020 | 2011/8/18 | 2012/8/31 |
| EM3-24-114 | LISN | Rohde&Schwarz | ESH2-Z5 | 892602/021 | 2011/8/18 | 2012/8/31 |
| C01-325 | LISN | Rohde&Schwarz | ENV216 | 100168 | 2011/8/18 | 2012/8/31 |
| C01-326 | LISN | Rohde&Schwarz | ENV216 | 100169 | 2011/8/18 | 2012/8/31 |
| C02-534 | 8-Wire ISN | TESEQ | ISN T8 | 24318 | 2011/7/26 | 2012/7/31 |
| EM3-24-268 | 8-Wire ISN (Cat6) | TESEQ | ISN T8-Cat6 | 28762 | 2011/10/18 | 2012/10/31 |
| EM3-24-259 | Attenuator | TUV SUD Ohtama | ATT10dB-PULSE_LIMIT | 1 | 2011/4/6 | 2012/4/30 |
| EM3-24-260 | Attenuator | TUV SUD Ohtama | ATT10dB-PULSE_LIMIT | 2 | 2011/4/6 | 2012/4/30 |
| C01-501 | RF Switch System | Anritsu | MP59B (#1 RF Switch System) | M19189 | 2011/3/23 | 2012/3/31 |
| C01-659 | RF Switch System | TUV SUD Ohtama | #5 RF Switch System | - | 2011/3/17 | 2012/3/31 |
| C01-658 | RF Switch System | TUV SUD Ohtama | #3 RF Switch System | - | 2011/3/17 | 2012/3/31 |
| | Soft Ware | TUV SUD Ohtama | emission measurement program | toemc02-1.3d | N/A | N/A |

### 5.1.2 Radiated Electric-Field Emissions

| | Product Name | Manufacturer | Model Number | Serial Number | Calibration Date | Due Date |
|---|---|---|---|---|---|---|
| EM3-22-003 | Spectrum Analyzer | Rohde&Schwarz | FSA | 860161/016,881748/023,883175/019 | 2011/3/4 | 2012/3/31 |
| C02-203 | Spectrum Analyzer | Hewlett Packard | 8566B | 3014A06779 | 2011/3/4 | 2012/3/31 |
| C02-512 | Spectrum Analyzer | ADVANTEST | U3751 | 161000132 | 2011/3/4 | 2012/3/31 |
| EM1-22-009 | Spectrum Analyzer | Hewlett Packard | 8565E | 3337A00140 | 2011/1/18 | 2012/1/31 |
| EM3-22-008 | Receiver | Rohde&Schwarz | ESIB7 | 100211 | 2011/7/27 | 2012/7/31 |
| EM3-22-009 | Receiver | Rohde&Schwarz | ESI26 | 100035 | 2011/8/7 | 2012/8/31 |
| EM3-22-010 | Receiver | Rohde&Schwarz | ESS | 830737/008 | 2011/10/18 | 2012/10/31 |
| EM3-22-074 | Receiver | Rohde&Schwarz | ESU26 | 100218 | 2011/6/29 | 2012/6/30 |
| EM3-24-143 | Pre-Amplifier | Hewlett Packard | 8447D | 2944A07182 | 2011/3/23 | 2012/3/31 |
| | Pre-Amplifier | Hewlett Packard | 8447D | 2727A05948 | 2011/3/17 | 2012/3/31 |
| C01-020 | Pre-Amplifier | Hewlett Packard | 8449B | 3008A0079 | 2011/6/8 | 2012/6/30 |
| C01-282 | Attenuator | Suhner | 6806.17.B | 1 | 2011/3/23 | 2012/3/31 |
| C01-283 | Attenuator | Suhner | 6806.17.B | 2 | 2011/3/17 | 2012/3/31 |
| EM3-10-017 | Horn Antenna | ETS LINDGREN | 3115 | 6554 | 2011/11/7 | 2012/11/30 |
| C02-430 | Loop Antenna | Rohde&Schwarz | HFH2-Z2 | 892665/023 | 2011/1/13 | 2012/1/31 |
| C02-217 | Biconical Antenna | Schwarzbeck | BBA9106 | 91032291 | 2011/7/23 | 2012/7/31 |
| C02-221 | Logperiodec Antenna | Schwarzbeck | UHALP9107 | 1614 | 2011/7/23 | 2012/7/31 |
| EM3-10-021 | Trilog Antenna | Schwarzbeck | VULB9160 | 9160-3189 | 2011/8/4 | 2012/8/31 |
| EM3-10-110 | Horn Antenna | Toyo | HAP18-26 | 100025 | 2011/8/16 | 2012/8/31 |
| EM3-10-111 | Horn Antenna | Toyo | HAP26-40 | 23973QH | 2011/7/13 | 2012/7/31 |
| C01-501 | RF Switch System | Anritsu | MP59B (#1 RF Switch System) | M19189 | 2011/3/23 | 2012/3/31 |
| C01-659 | RF Switch System | TUV SUD Ohtama | #5 RF Switch System | - | 2011/3/17 | 2012/3/31 |
| | Soft Ware | TUV SUD Ohtama | emission measurement program | toemc02-1.3d | N/A | N/A |

## 5.2 Test equipment

| Dimension | Material | Measurement |
|---|---|---|
| 1.5m (W) X 0.8m (H) X 1.0m (D) | Wood | Conducted Emissions |
| 1.25m(W)X0.8m(H)X0.4m(D) | styrene form | Radiated Electric-Field Emissions |

## 5.3 Normalized Site Attenuation

| Site Name | Laboratory | Calibration Date | Due Date |
|---|---|---|---|
| Semi-Anechoic camber No.1 | Tokyo Laboratory | 2011/11/24 | 2012/11/30 |
| Semi-Anechoic camber No.5 | Tokyo Laboratory | 2011/11/25 | 2012/11/30 |

# Annex A (Miscellaneous Information)

## A.1 Test Locations

Unless otherwise described in this report, the tests were carried out at the following locations:

TÜV SÜD Ohtama, Ltd., Tokyo Laboratory
2-8-20 Kurigi, Asao-ku Kawasaki-shi, Kanagawa, Japan
TEL: +81-44-980-2090
FAX: +81-44-980-2052

VLAC Lab Code: 018-1
VCCI Registration No.:

| | |
|---|---|
| No.1 Semi-Anechoic chamber | R-2333, G-13, C-3262, T-1521 |
| No.2 Shielded room | C-3263, T-1522 |
| No.3 Shielded room | C-3264, T-1523 |
| No.5 Semi-Anechoic chamber | R-2334, C-2546, T-1524 |

# Annex B (Description of Test Method)

Unless otherwise described in this report, tests are carried out using the methods which are described in the applied standards and summarized in this section.

Specifically for 47 CFR 15 Subpart B, section 6 of ANSI C63.4-2003 is to be used for EUT arrangements and operations, and section 8 of the standard is to be used for radiated emissions measurement procedures.

## B.1 Conducted Emissions (AC Main and Other Terminals)

Table-top EUT is placed on a wooden table so that one side (rear or bottom) of the EUT is separated 0.4 m from the reference plane (metallic wall or ground plane), and floor-standing EUT is placed on the ground plane.
Mains to the EUT is supplied through a LISN, and mains to non-EUT components, if any, are supplied through yet another LISN(s).
If LISN is not applicable, mains would be supplied directly and a voltage probe would be used instead for the measurement.
For each current-carrying conductors or terminals to be measured, a spectrum analyzer is used to pre-scan the emissions.
For each of the significant emissions detected, the maximum signal level is read using a measuring receiver having CISPR 16 quasi-peak (QP) and average (AV) detector function and 9 kHz nominal bandwidth.
Then, appropriate correction factor —consists of transducer (LISN or voltage probe) factor and transmission loss (due to the attenuator, filter and/or transient suppressor, if any, and the cable) in the system— is applied to the receiver reading to calculate the corresponding emission level.
*For example, if reading on the receiver is 33.0 dBµV, the transducer factor is 0.5 dB, and transmission loss (attenuation) in the coaxial cable and the attenuator is 10.5 dB, the emission level is calculated as:*
*33.0 dBµV + 0.5 dB + 10.5 dB = 44.0 dBµV.*
Finally, the calculated emission level is compared with the upper limit specified in the standard.
Actual measurement will be carried out according to the appropriate edition of CISPR 16-2-1, CISPR 22, and ANSI
C63.4 and/or other standards whichever applicable.
Specifically for 47 CFR 15 Subpart B, section 6 of ANSI C63.4-2003 is to be used for EUT arrangements and operations, and section 8 of the standard is to be used for radiated emissions measurement procedures.

## B.2 Radiated Electric-Field Emissions (30 MHz to 1000MHz)

EUT is placed on a turn-table in a test site, on a table (styrene form) 0.8 m height or on the floor unless otherwise specified in the standard.
Receiving antenna ---usually biconical, log-periodic or biconical/log-periodic hybrid---is positioned at the specified distance from the EUT.
For each polarization (horizontal and vertical), a spectrum analyzer is used to pre-scan the emissions while rotating the turn-table.
For each of the significant electromagnetic field detected, the test personnel discriminates EUT's emissions from the ambient noises.
For each of the significant emissions, maximum level of the emission is searched while rotating the turn-table and varying the antenna height between 1 m and 4 m, and the maximum signal level is read using a measuring receiver having CISPR 16 quasi-peak (QP) detector function and 120 kHz nominal bandwidth.
Then, appropriate correction factor —consists of antenna factor, amplifier gain and transmission loss (due to the attenuator and the cable loss) in the system— is applied to the receiver reading to calculate the corresponding field strength.
*For example, if reading on the receiver is 33.0 dBµV, the antenna factor is 9.4 dB (1/m), the amplifier gain is 25.6 dB, and transmission loss (attenuation) in the coaxial cable and the attenuator is 6.5 dB, the field strength is calculated as: 33.0 dBµV + 9.4 dB (1/m) - 25.6 dB + 6.5 dB = 23.3 dBµV/m.*
Finally, the calculated field strength is compared with the upper limit specified in the standard.
Actual measurement will be carried out according to the appropriate edition of CISPR 16-2-3, CISPR 22, and ANSI
C63.4 and/or other standards whichever applicable.
Specifically for 47 CFR 15 Subpart B, section 6 of ANSI C63.4-2003 is to be used for EUT arrangements and operations, and section 8 of the standard is to be used for radiated emissions measurement procedures.

## B.3 Radiated Electric-Field Emissions above 1000MHz

EUT is placed on a turn-table in a test site, on a table (styrene foam) 0.8 m height or on the floor unless otherwise specified in the standard.
Receiving antenna ---usually double ridge waveguide horn or standard horn--- is positioned at the specified distance from the EUT.
For each polarization (horizontal and vertical), a spectrum analyzer is used to pre-scan the emissions while rotating the turn-table.
For each of the significant electromagnetic field detected, the test personnel discriminates EUT's emissions from the ambient noises.
For each of the significant emissions, maximum level of the emission is searched while rotating the turn-table and varying the antenna height if it is required, and the maximum signal level is read using a spectrum analyzer or a measuring receiver having peak detector function and 1 MHz nominal bandwidth, unless otherwise specified in the standard. To obtain average readings with spectrum analyzers, video averaging (usually with VBW = 10 Hz) may be used.
As specified in the applicable standard, the antenna height would be (1) varied between 1 m and 4 m, or (2) varied so that the whole height of the EUT is covered by the main lobe of the receiving antenna, or (3) fixed to the approximate radiation center of the EUT.
Then, appropriate correction factor ---consists of antenna factor, amplifier gain and transmission loss (due to the attenuator and the cable loss) in the system--- is applied to the spectrum analyzer/receiver reading to calculate the corresponding field strength, and the result is compared with the upper limit specified in the standard.
Actual measurement will be carried out according to the appropriate edition of CISPR 16-2-3, CISPR 22, ANSI C63.4 and/or other standards whichever applicable.
Specifically for 47 CFR 15 Subpart B, section 6 of ANSI C63.4-2003 is to be used for EUT arrangements and operations, and section 8 of the standard is to be used for radiated emissions measurement procedures.

## B.4 Radiated Magnetic-Field Emissions

EUT is placed on a turn-table in a test site, on a (styrene foam) table 0.8 m height or on the floor unless otherwise specified in the standard.
Receiving antenna ---loop antenna (active or passive) --- is positioned at the specified distance from the EUT.
A spectrum analyzer is used to pre-scan the emissions while rotating the turn-table.
For each of the significant electromagnetic field detected, the test personnel discriminates EUT's emissions from the ambient noises.
For each of the significant emissions, maximum level of the emission is searched while rotating the turn-table and rotating the receiving antenna about its center, and the maximum signal level is read using a measuring receiver having CISPR 16 quasi-peak (QP) detector function and 120 kHz nominal bandwidth.
Then, appropriate correction factor ---consists of antenna factor, and transmission loss (cable loss) in the system--- is applied to the receiver reading to calculate the corresponding field strength, and the result is compared with the upper limit specified in the standard.
In general, it is assumed that magnetic field strength can be converted to electric field strength by applying the free space impedance of approximately 377 ohms, and vice versa.
Actual measurement will be carried out according to the appropriate edition of CISPR 16-2-3, ANSI C63.4 and/or other standards whichever applicable.