

## ***FCC TEST REPORT***

Under  
FCC 15 Subpart C, Paragraph 15.247

Operating in 2400 ~ 2483.5 MHz Band

Prepared For :

### **ILIFE TECHNOLOGY(HK) LIMITED**

3rd Floor, Bld. 3, Lijincheng Industrial Park, The East of Gongye Road, Longhua, Shenzhen  
China.

|                        |
|------------------------|
| <b>FCC ID: OI2D709</b> |
| <b>EUT: Tablet PC</b>  |
| <b>Model: D709</b>     |

|                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------|
| November 7, 2012<br><b>Issue Date:</b>                                                                                         |
| Original Report<br><b>Report Type:</b>                                                                                         |
| <i>Eric Guo</i><br><b>Test Engineer: Eric Guo</b>                                                                              |
| <br><b>Review By: Apollo Liu / Manager</b> |

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## 1. General Information

### 1.1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The KMO Lab does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the KMO Lab.

### 1.2 Testing Laboratory

Sintek Laboratory Co., Ltd.

Site on File with the Federal Communications Commission – United States

Registration Number: 963441

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: 7353A

### 1.3 Details of Applicant

**Name** : ILIFE TECHNOLOGY(HK) LIMITED  
**Address** : 3rd Floor, Bld. 3, Lijincheng Industrial Park, The East of Gongye Road, Longhua, Shenzhen China.  
**Contact** : Chiris Yu  
**Tel** : 86 755 22200901  
**Fax** : N/A

### 1.4 Application Details

Date of Receipt of Application : September 19, 2012  
Date of Receipt of Test Item : October 17, 2012  
Date of Test : October 17, 2012~November 7, 2012

### 1.5 Test Item

Manufacturer : Same Applicant  
Address : Same Applicant  
Trade Name : N/A  
Model No.(Base) : D709  
Model No.(Extension) : N/A  
Description : Tablet PC

### Additional Information

Product Type : WLAN (1TX, 1RX)  
Radio Type : Intentional Transceiver  
Power Type : DC 5V(From Host)  
Modulation : see the below tables  
Data Modulation : IEEE 802.11b: DQPSK, DBPSK, DSSS, and CCK  
IEEE 802.11g: BPSK, QPSK, 16QAM, 64QAM  
IEEE 802.11n: HT20/HT40: OFDM (64QAM, 16QAM, QPSK, BPSK)  
Date Rate (Mbps) : see the below table  
Frequency Range : 2412~2462MHz  
Channel Number : For 2.4GHz Band: 11 for 20MHz bandwidth; 7 for 40MHz bandwidth  
Antenna : Internal

#### Antenna & Band Width

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

### 1.6 Test Standards

FCC 15 Subpart C, Paragraph 15.247

Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

## 2. Technical Test

### 2.1 Summary of Test Results

The EUT has been tested according to the following specifications:

| Standard                                     | Test Type                                           | Result | Notes     |
|----------------------------------------------|-----------------------------------------------------|--------|-----------|
| FCC Part 15, Paragraph 15.203                | Antenna Requirement                                 | PASS   | Complies  |
| FCC Part 15, Paragraph 15.107, 15.207        | Conducted Test                                      | PASS   | Complies  |
| FCC Part 15.205                              | Radiated Emission<br>(Restricted Band Requirements) | PASS   | Complies  |
| FCC Part 15.109, 15.209                      | Radiated Emission<br>(Spurious Emission)            | PASS   | Complies. |
| FCC Part 15 Subpart C Paragraph 15.247(a)(2) | Spectrum Bandwidth<br>(6dB Bandwidth Measurement)   | PASS   | Complies. |
| FCC Part 15 Subpart C Paragraph 15.247(b)(3) | Maximum Peak Power                                  | PASS   | Complies  |
| FCC Part 15 Subpart C Paragraph 15.247(c)    | 100kHz Bandwidth of Frequency<br>Band Edges         | PASS   | Complies  |
| FCC Part 15 Subpart C Paragraph 15.247(d)    | Peak Power Spectral Density                         | PASS   | Complies  |

\* The digital circuit porting of the EUT has been tested and verified to comply with FCC Part 15, Subpart B., Class B Digital Devices and the associated Radio Receiver has also been tested and found to comply with FCC Part 15, Subpart B – Radio Receivers.

### 2.2 Antenna Requirement

#### A. Regulation

FCC section 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

#### B. Result

The antenna type used in this product is internal Antenna and fixed in the EUT and without connector. That no antenna other than furnished by the responsible party shall be used with the device. The EUT as tested meets the criteria of this rule by being antenna being permanently attached and professionally installed. The EUT is compliant with Section 15.203.

## 3. EUT Modifications

No modification by test lab.

## 4. Conducted Power Line Test

### 4.1 Test Equipment

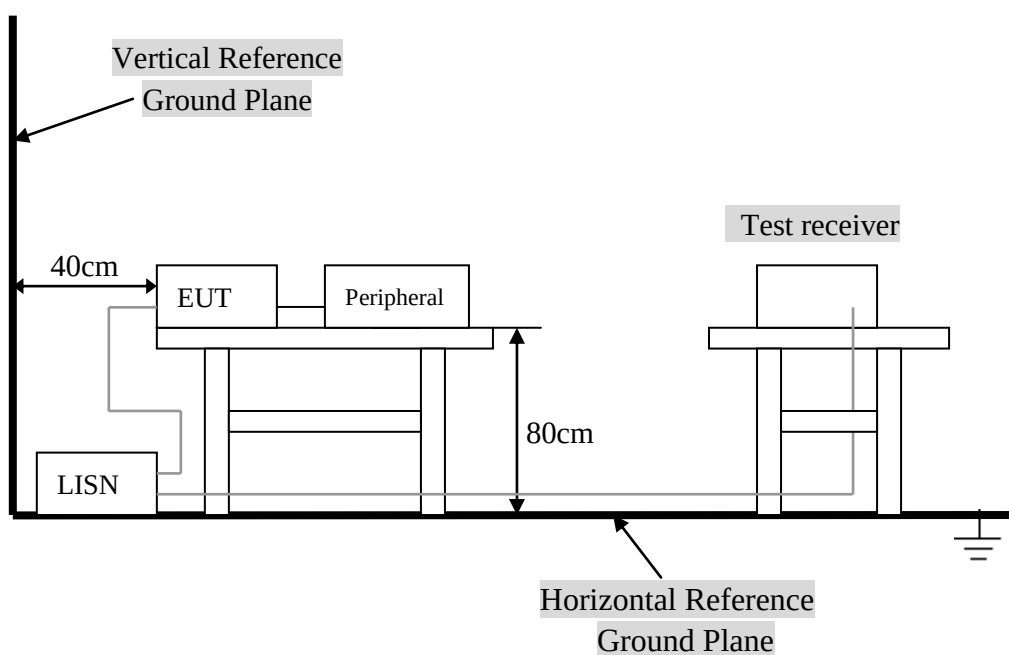
Please refer to Section 10 this report.

### 4.2 Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission., the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2003 on conducted measurement. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

### 4.3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

#### 4.4 Configuration of the EUT

The EUT was configured according to ANSI C63.4-2003. EUT was used DC12V. The operation frequency is from 2400MHz~2483.5MHz. Enable the signal transmitted from the EUT to Notebook PC. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

Note:

- 1) Operating Modes: Each of lowest, middle and highest channel frequencies transmits continuously for emissions measurements. The EUT operates in normal 802.11b/g/n for occupancy duration and frequency separation.
- 2) Special Test Software & Hardware: Special firmware and hardware provided by the Applicant are installed to allow the EUT to operate in 802.11b/g/n or at each channel frequency continuously. For example, the transmitter will be operated at each of lowest, middle and highest frequencies individually continuously during testing.
- 3) Transmitter Test Antenna: The EUT is tested with the antenna fitted in a manner typical of normal intended use as an integral / non-integral antenna equipment as describe with the test results.
- 4) Frequency(ies) Tested: 2412MHz, 2437MHz and 2462MHz were pre-tested, The worst case one, was chosen for conducted emission test.
- 5) Above 1GHz, the 2412MHz, 2437MHz and 2462MHz were tested individually.
- 6) Normal Test Modulation: 802.11b/g/n
- 7) Modulating Signal Source: Internal

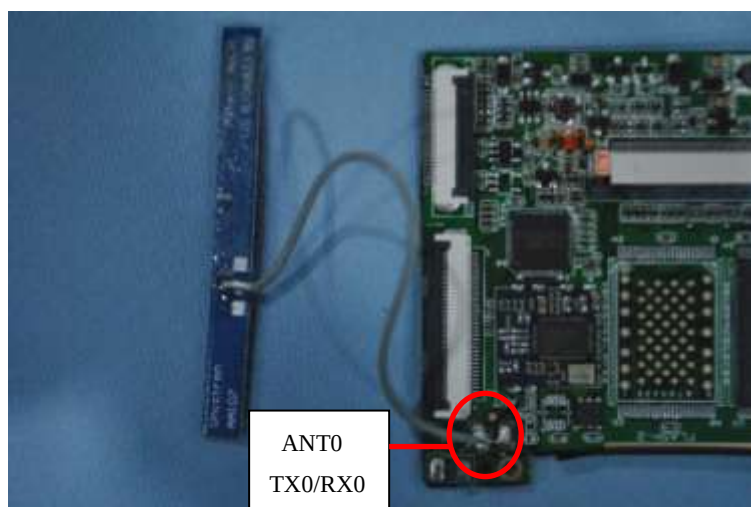
\* Associated Antenna Descriptions: The antenna used in this product is embedded antenna.

#### A. EUT

| Device    | Manufacturer   | Model # | FCC ID  |
|-----------|----------------|---------|---------|
| Tablet PC | Same Applicant | D709    | OI2D709 |

#### Field Antenna For 2.4GHz Band

| Ant. | Brand    | Model Name                          | Antenna Type | Connector | Gain (dBi) | Remark |
|------|----------|-------------------------------------|--------------|-----------|------------|--------|
| 0    | Unictron | WIFI PCB Antenna<br>S2B1BE4A1BO2000 | Internal     | N/A       | 3.00       | TX/RX  |



Note:

The EUT incorporates a WiFi function with 802.11b, 802.11g, and 802.11n. Physically, the EUT provides one completed transmit and receiver. The device was tested in a 802.11b/g/n type operation.

#### Carrier Frequencies For 2.4GHz Band

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

**Test Modes For 2.4GHz Band**

| Test Items                                                                              | Mode        | Data Rate | Channel | Antenna |
|-----------------------------------------------------------------------------------------|-------------|-----------|---------|---------|
| AC Power Line Conducted Emissions                                                       | Normal Link | Auto      | -       | -       |
| Maximum Peak Conducted Output Power<br>Power Spectral Density<br>6dB Spectrum Bandwidth | MCS0/20MHz  | 7.2 Mbps  | 1/6/11  | 0       |
|                                                                                         | MCS0/40MHz  | 15 Mbps   | 3/6/9   | 0       |
|                                                                                         | 11b/BPSK    | 1 Mbps    | 1/6/11  | 0       |
|                                                                                         | 11g/BPSK    | 6 Mbps    | 1/6/11  | 0       |
| Radiated Emissions 9kHz~1GHz                                                            | Normal Link | Auto      | -       | -       |
| Radiated Emissions 1GHz~10 <sup>th</sup> Harmonic                                       | MCS0/20MHz  | 7.2 Mbps  | 1/6/11  | 0       |
|                                                                                         | MCS0/40MHz  | 15 Mbps   | 3/6/9   | 0       |
|                                                                                         | 11b/BPSK    | 1 Mbps    | 1/6/11  | 0       |
|                                                                                         | 11g/BPSK    | 6 Mbps    | 1/6/11  | 0       |
| Band Edge Emissions                                                                     | MCS0/20MHz  | 7.2 Mbps  | 1/11    | 0       |
|                                                                                         | MCS0/40MHz  | 15 Mbps   | 3/9     | 0       |
|                                                                                         | 11b/BPSK    | 1 Mbps    | 1/11    | 0       |
|                                                                                         | 11g/BPSK    | 6 Mbps    | 1/11    | 0       |

Note: Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate show in the table above is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level, The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the find end product.

**B. Internal Devices**

| Device | Manufacturer | Model # | FCC ID |
|--------|--------------|---------|--------|
| N/A    |              |         |        |
|        |              |         |        |
|        |              |         |        |
|        |              |         |        |
|        |              |         |        |
|        |              |         |        |

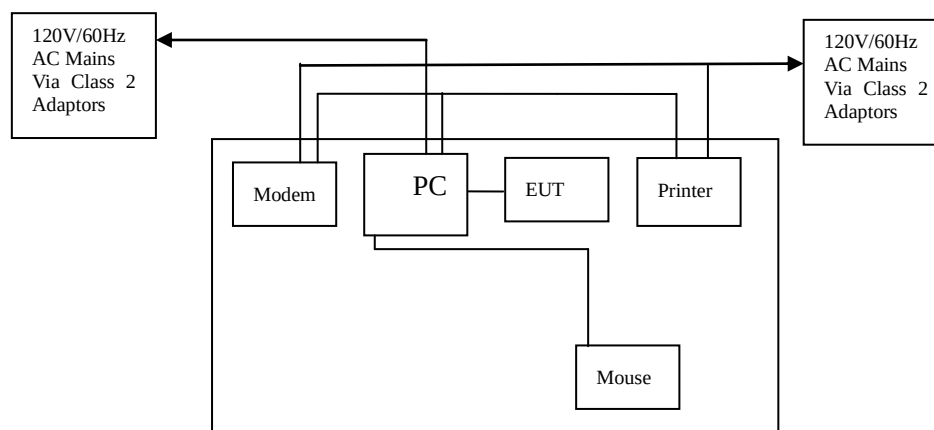
**C. Peripherals**

| Device   | Manufacturer | Model #<br>Serial # | FCC ID/<br>DoC | Cable                                                     |
|----------|--------------|---------------------|----------------|-----------------------------------------------------------|
| Printer  | HP           | HP930C              | DoC            | 1.5m unshielded power cord<br>1.2m unshielded data cable. |
| Modem    | GVC          | N/A                 | DoC            | 1.5m unshielded power cord<br>1.2m unshielded data cable. |
| Notebook | DELL         | PP10L               | DoC            | 1.5m unshielded power cord                                |
| PC       | Dell         | 2400n               | DoC            | 1.5m unshielded power cord                                |

## 4. 5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2003.

- A. Setup the EUT and simulators as shown on follow.
- B. Enable RF signal and confirm EUT active.
- C. Modulate output capacity of EUT up to specification.



## 4. 6 Conducted Power Line Emission Limits

| FCC Part 15 Paragraph 15.207 (dBuV) |               |               |
|-------------------------------------|---------------|---------------|
| Frequency Range (MHz)               | Class A QP/AV | Class B QP/AV |
| 0.15 – 0.5                          | 79/66         | 66-56/56-46   |
| 0.5 – 5.0                           | 73/60         | 56/46         |
| 5.0 – 30                            | 73/60         | 60/50         |

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



#### 4. 7 Conducted Power Line Test Result

|              |                           |               |                      |
|--------------|---------------------------|---------------|----------------------|
| Product      | : Tablet PC               | Test Mode     | : Normal Link / Auto |
| Test Item    | : Conducted Emission Data | Temperature   | : 25 °C              |
| Test Voltage | : DC 5V (From Host)       | Humidity      | : 56%RH              |
| Test Result  | : <b>PASS</b>             | Adapter Model | : N/A                |

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All readings are quasi -peak values with a resolution bandwidth of 9 KHz.

- Temperature : 26 °C
- Humidity : 53 % RH

##### Running Mode

| FCC Part 15 Paragraph 15.207 |                 |       |              |              |       |             |        |
|------------------------------|-----------------|-------|--------------|--------------|-------|-------------|--------|
| Frequency (MHz)              | Emission (dBuV) |       | LINE/NEUTRAL | Limit (dBuV) |       | Margin (dB) |        |
|                              | QP              | AV    |              | QP           | AV    | QP          | AV     |
| 0.154                        | 58.18           | 43.22 | Line         | 65.78        | 55.78 | -7.60       | -12.56 |
| 0.154                        | 55.36           | 41.38 | Neutral      | 65.78        | 55.78 | -10.42      | -14.40 |
| 0.174                        | 52.78           | 37.79 | Line         | 64.77        | 54.77 | -11.99      | -16.98 |
| 0.158                        | 54.07           | 40.87 | Neutral      | 65.57        | 55.57 | -11.50      | -14.70 |
| 0.182                        | 52.09           | 38.57 | Line         | 64.39        | 54.39 | -12.30      | -15.82 |
| 0.198                        | 48.78           | 36.46 | Neutral      | 63.69        | 53.69 | -14.91      | -17.23 |

##### Charging Mode

| FCC Part 15 Paragraph 15.207 |                 |       |              |              |       |             |        |
|------------------------------|-----------------|-------|--------------|--------------|-------|-------------|--------|
| Frequency (MHz)              | Emission (dBuV) |       | LINE/NEUTRAL | Limit (dBuV) |       | Margin (dB) |        |
|                              | QP              | AV    |              | QP           | AV    | QP          | AV     |
| 0.154                        | 58.89           | 43.01 | Line         | 65.78        | 55.78 | -6.89       | -12.77 |
| 0.154                        | 57.48           | 42.32 | Neutral      | 65.78        | 55.78 | -8.30       | -13.46 |
| 0.198                        | 52.74           | 38.02 | Line         | 63.69        | 53.69 | -10.95      | -15.67 |
| 0.158                        | 55.96           | 38.57 | Neutral      | 65.57        | 55.57 | -9.61       | -17.00 |
| 0.206                        | 51.49           | 36.98 | Line         | 63.37        | 53.37 | -11.88      | -16.39 |
| 0.182                        | 52.57           | 38.61 | Neutral      | 64.39        | 54.39 | -11.82      | -15.78 |

##### Data Transfer Mode

| FCC Part 15 Paragraph 15.207 |                 |       |              |              |       |             |        |
|------------------------------|-----------------|-------|--------------|--------------|-------|-------------|--------|
| Frequency (MHz)              | Emission (dBuV) |       | LINE/NEUTRAL | Limit (dBuV) |       | Margin (dB) |        |
|                              | QP              | AV    |              | QP           | AV    | QP          | AV     |
| 0.166                        | 50.03           | 35.28 | Line         | 65.16        | 55.16 | -15.13      | -19.88 |
| 0.154                        | 52.32           | 38.69 | Neutral      | 65.78        | 55.78 | -13.46      | -17.09 |
| 0.178                        | 51.12           | 37.89 | Line         | 64.58        | 54.58 | -13.46      | -16.69 |
| 0.158                        | 49.68           | 35.51 | Neutral      | 65.57        | 55.57 | -15.89      | -20.06 |
| 0.182                        | 51.02           | 37.38 | Line         | 64.39        | 54.39 | -13.37      | -17.01 |
| 0.198                        | 46.03           | 35.28 | Neutral      | 63.69        | 53.69 | -17.66      | -18.41 |

Note: NF = No Significant Peak was Found.

##### Note:

- 1.Uncertainty in conducted emission measured is <+/- 2dB.
- 2.The emission levels of other frequencies were very low against the limit.
- 3.All Reading Levels are Quasi-Peak and Average value.
- 4.Emission = Meter Reading + Factor; Factor = Insertion Loss + Cable Loss.
- 5.Margin Value = Emission Level - Limit Value.

Conducted Emission

EN55022

EUT: Tablet PC

M/N: D709

Manufacturer: Same Applicant

Operating Condition: Transmitter

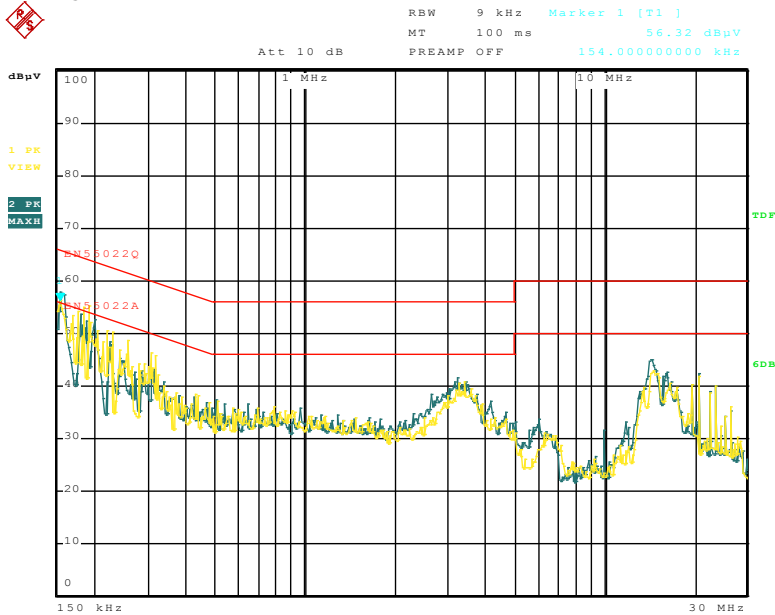
Test Site: Normal

Operator: Eric

Test Specification: LINE&NEUTRAL

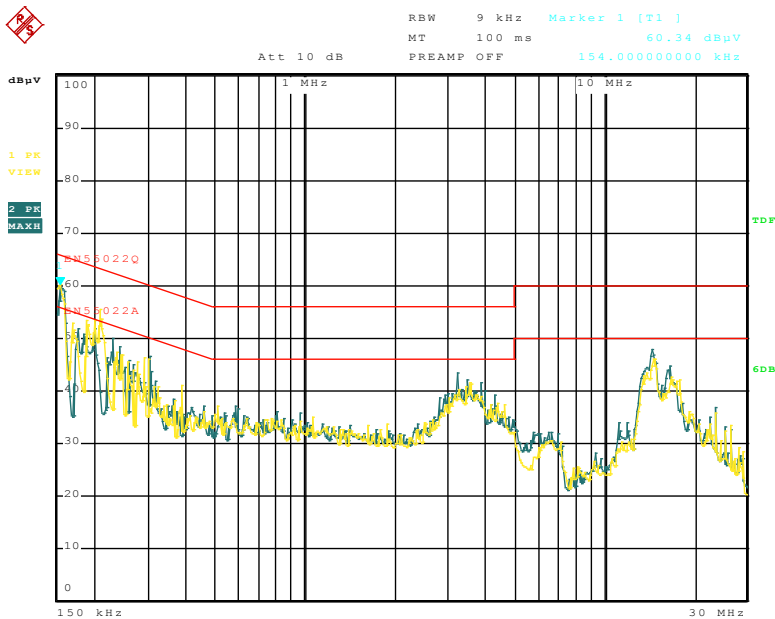
Comment:

Running Mode



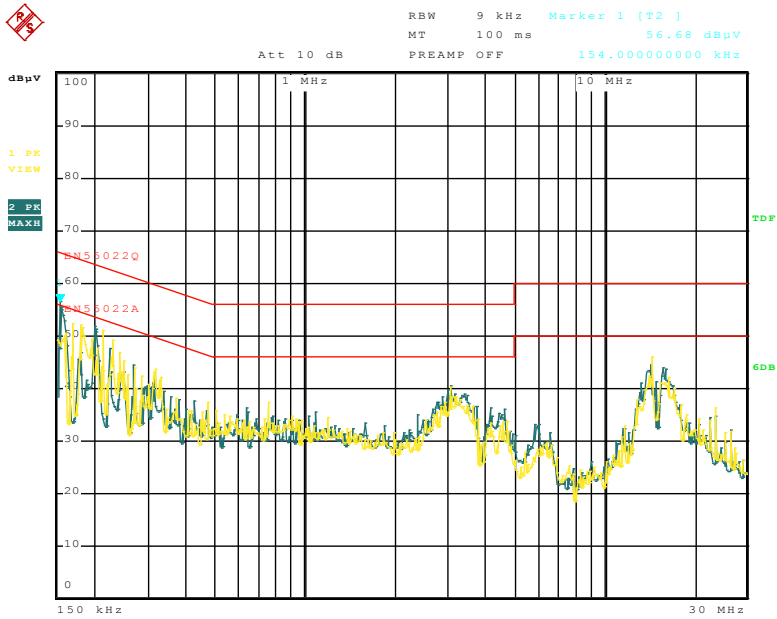
Date: 18.OCT.2012 16:45:54

Charging Mode:



Date: 7.NOV.2012 13:51:15

Data Transfer Mode:



Date: 7.NOV.2012 14:02:29

## 5. FCC Part 15.247 Requirements for 802.11b/g/n Systems

### 5.1 Test Equipment

Please refer to Section 10 this report.

### 5.2 Test Procedure

Refer to FCC 15.247(a)(2), ANSI C63.4: 2003

#### 6 dB Bandwidth:

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### Peak Power:

1. Set the RBW  $\geq$  DTS bandwidth.
2. Set VBW  $\geq 3 \times$  RBW.
3. Set span  $\geq$  RBW.
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.

#### Band Edges Measurement:

- a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
- b. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100kHz bandwidth from band edge.
- c. The band edges was measured and recorded.

#### Peak Power Spectral Density:

- a. The testing follows Measurement Procedure 5.3.1 (Peak PSD) of FCC KDB Publication No.558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.
- b. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
- c. Record the measurement data derived from the spectrum analyzer.
- d. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW)=100kHz. Video bandwidth(VBW)  $\geq 300$ KHz. In order to make an accurate measurement, set the span to 5-30% greater than Emission Bandwidth(EBW).
- e. Detector = peak, Sweep time = auto couple, Trace mode = max hold. Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
- f. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{kHz}/100\text{kHz}) = -15.2\text{dB}$ .

### 5.3 Test Setup



### 5.4 Configuration of the EUT

Same as section 4.4 of this report

### 5.5 EUT Operating Condition

Same as section 4.5 of this report.

### 5.6 Limit

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

## 5. 7 Test Result

### A. 6 dB Bandwidth

Product : Tablet PC  
 Test Item : 6 dB BW  
 Test Voltage : DC 5V  
 Test Result : **PASS**

Test Mode : IEEE 802.11b/g/Draft n  
 Temperature : 25 °C  
 Humidity : 56%RH

#### IEEE 802.11b

| Channel | Frequency (MHz) | Bandwidth (MHz) | FCC Limit (kHz) | Result      |
|---------|-----------------|-----------------|-----------------|-------------|
| Low     | 2412            | 10.24           | >500 kHz        | <b>PASS</b> |
| Mid     | 2437            | 10.20           |                 | <b>PASS</b> |
| High    | 2462            | 10.24           |                 | <b>PASS</b> |

#### IEEE 802.11g

| Channel | Frequency (MHz) | Bandwidth (MHz) | FCC Limit (kHz) | Result      |
|---------|-----------------|-----------------|-----------------|-------------|
| Low     | 2412            | 16.64           | >500 kHz        | <b>PASS</b> |
| Mid     | 2437            | 16.56           |                 | <b>PASS</b> |
| High    | 2462            | 16.64           |                 | <b>PASS</b> |

#### Draft n MCS0 20MHz Ant.0

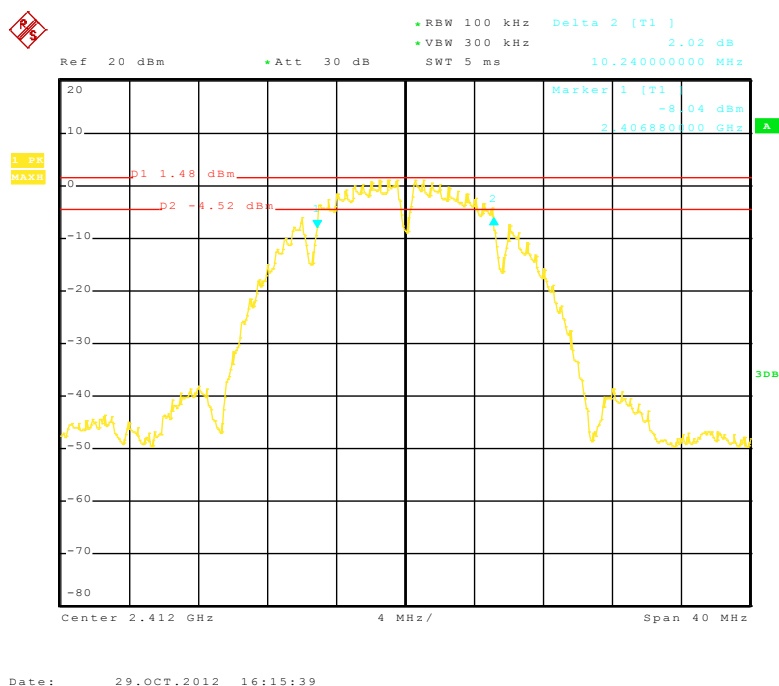
| Channel | Frequency (MHz) | Bandwidth (MHz) | FCC Limit (kHz) | Result      |
|---------|-----------------|-----------------|-----------------|-------------|
| Low     | 2412            | 17.68           | >500 kHz        | <b>PASS</b> |
| Mid     | 2437            | 17.92           |                 | <b>PASS</b> |
| High    | 2462            | 17.92           |                 | <b>PASS</b> |

#### Draft n MCS0 40MHz Ant.0

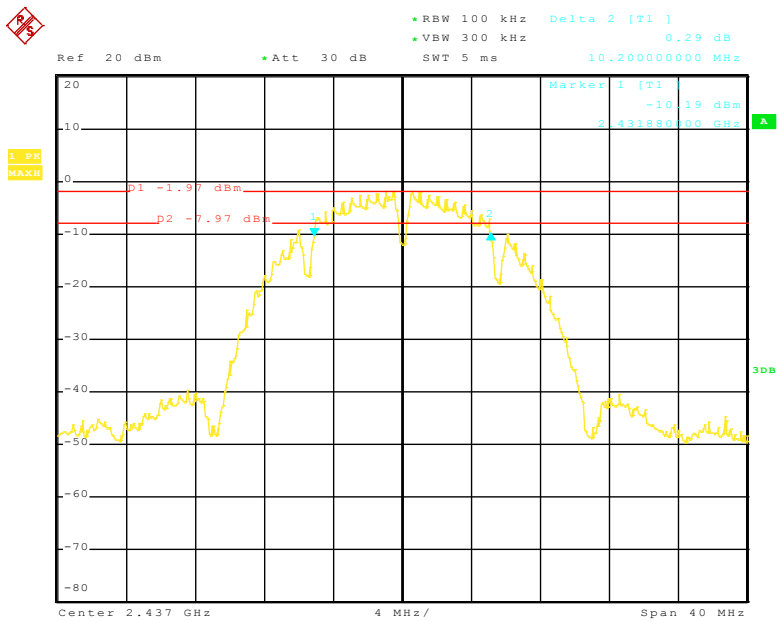
| Channel | Frequency (MHz) | Bandwidth (MHz) | FCC Limit (kHz) | Result      |
|---------|-----------------|-----------------|-----------------|-------------|
| Low     | 2422            | 36.32           | >500 kHz        | <b>PASS</b> |
| Mid     | 2437            | 36.64           |                 | <b>PASS</b> |
| High    | 2452            | 36.80           |                 | <b>PASS</b> |

#### IEEE 802.11b

#### 6dB Bandwidth (CH Low)

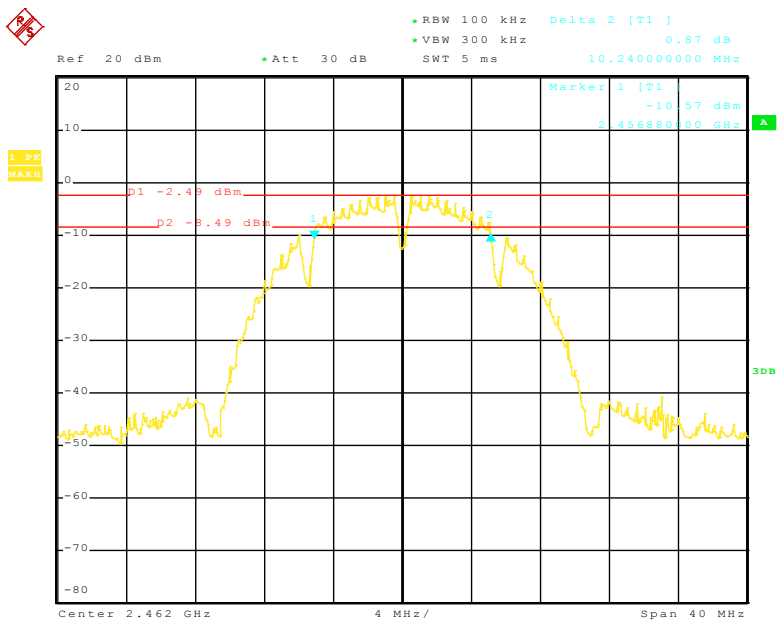


6dB Bandwidth (CH Mid)



Date: 29.OCT.2012 16:22:36

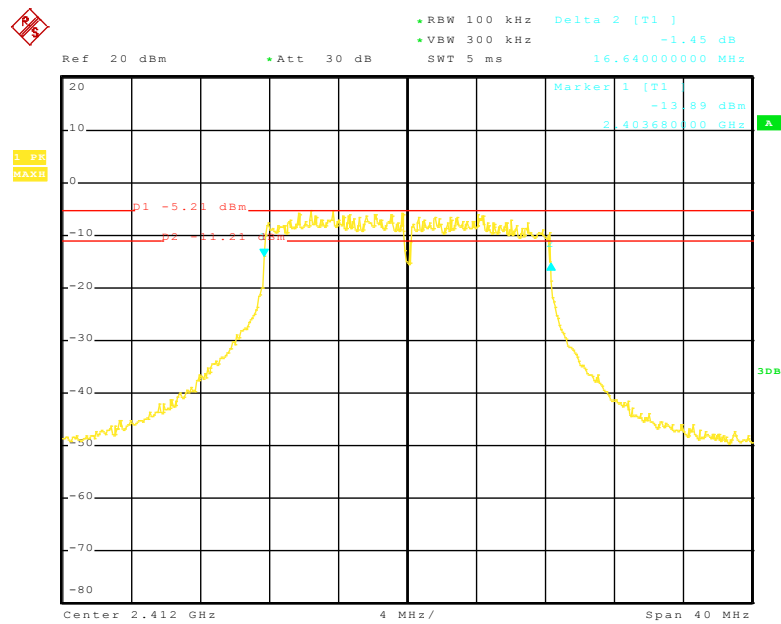
6dB Bandwidth (CH High)



Date: 29.OCT.2012 16:24:27

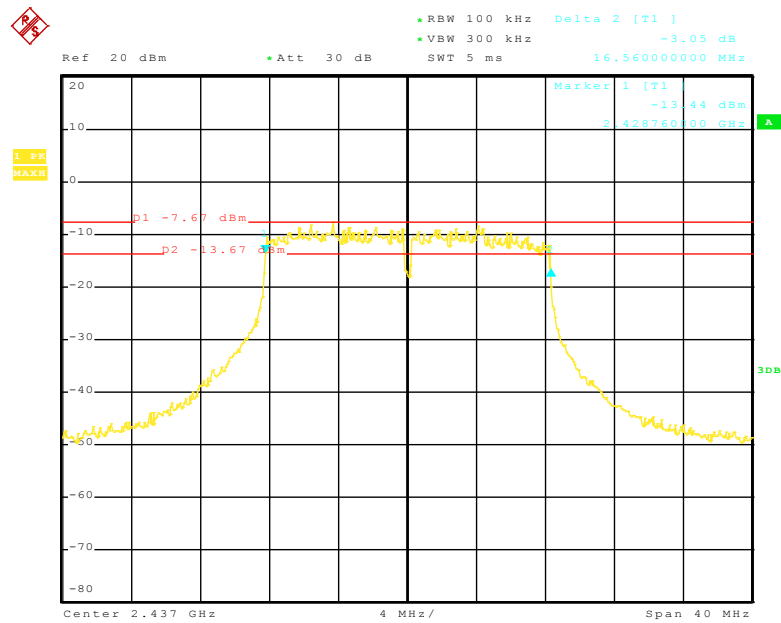
IEEE 802.11g

6dB Bandwidth (CH Low)



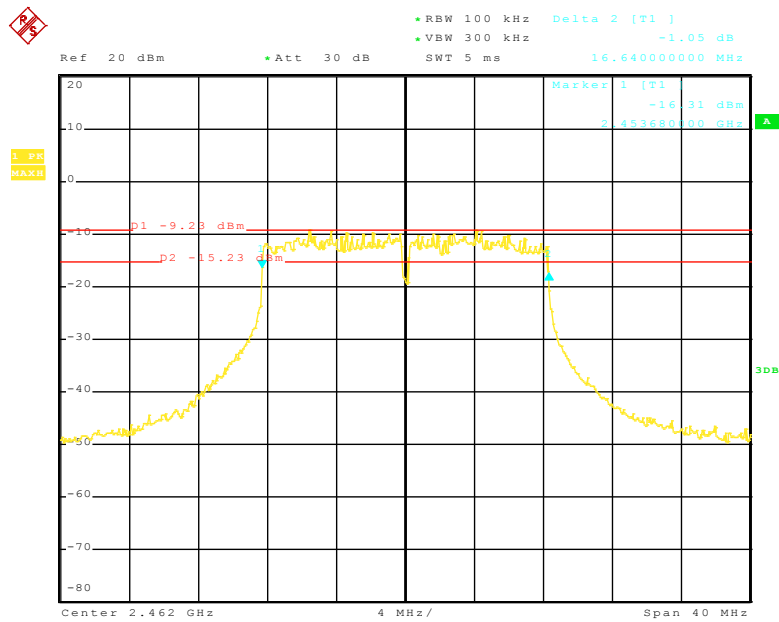
Date: 29.OCT.2012 16:26:11

6dB Bandwidth (CH Mid)



Date: 29.OCT.2012 16:27:35

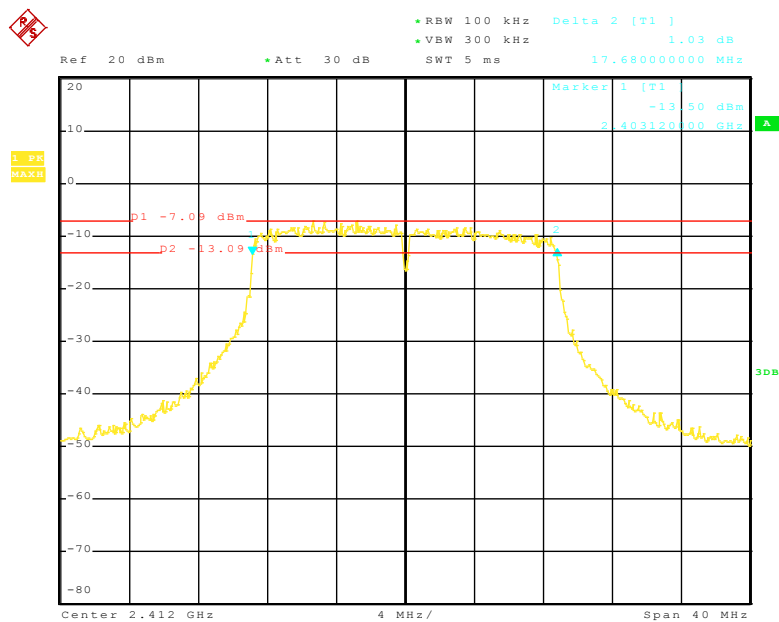
6dB Bandwidth (CH High)



Date: 29.OCT.2012 16:29:00

Draft n MCS0 20MHz Ant.0

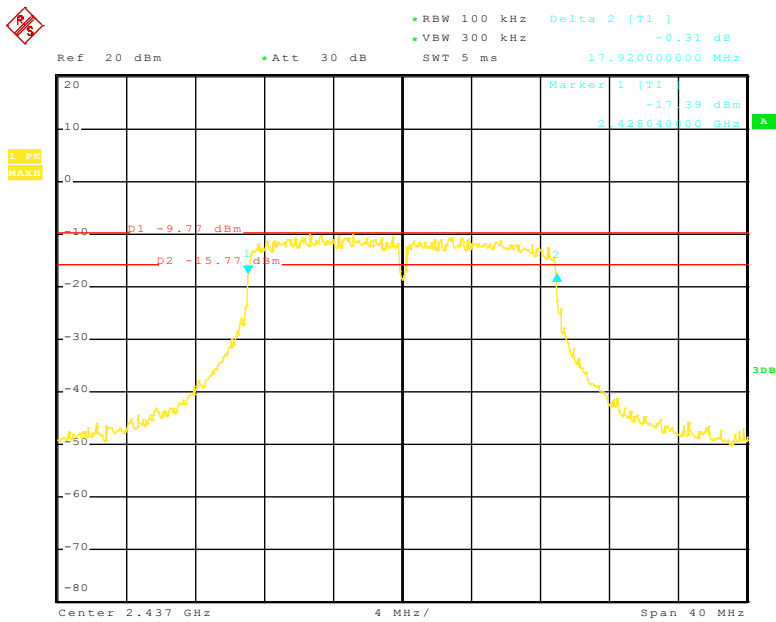
6dB Bandwidth (CH Low)



Date: 29.OCT.2012 16:30:16

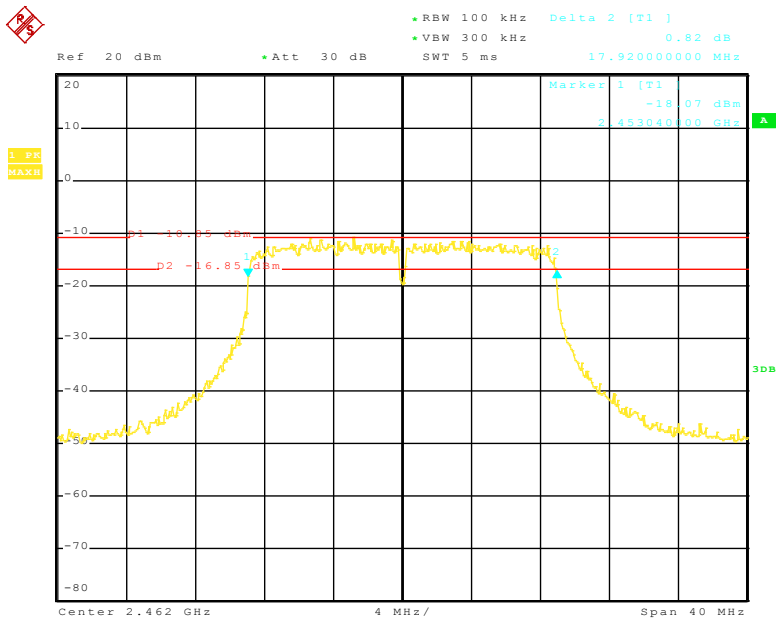


6dB Bandwidth (CH Mid)



Date: 29.OCT.2012 16:31:14

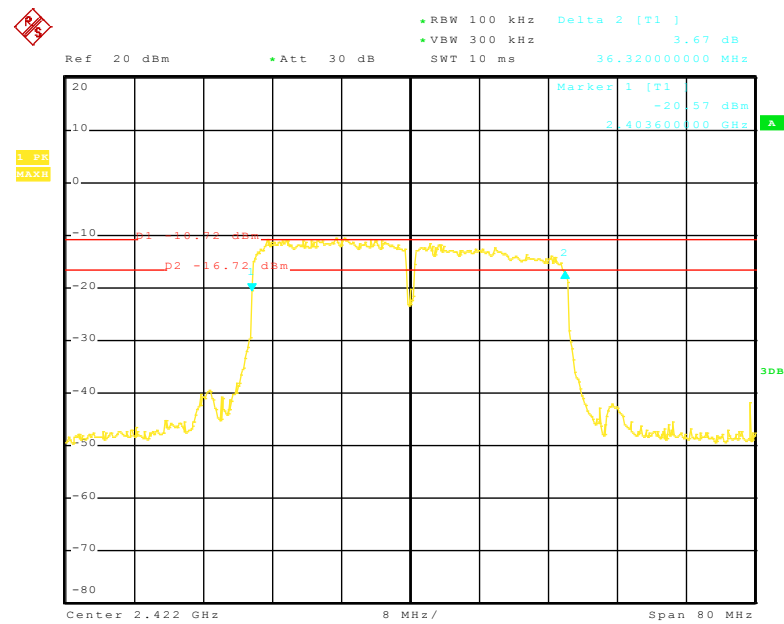
6dB Bandwidth (CH High)



Date: 29.OCT.2012 16:32:12

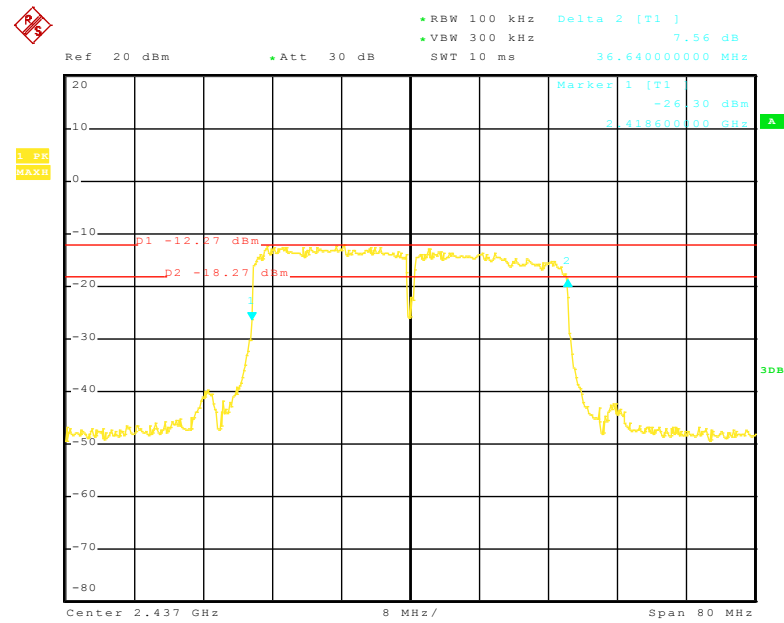
Draft n MCS0 40MHz Ant.0

6dB Bandwidth (CH Low)

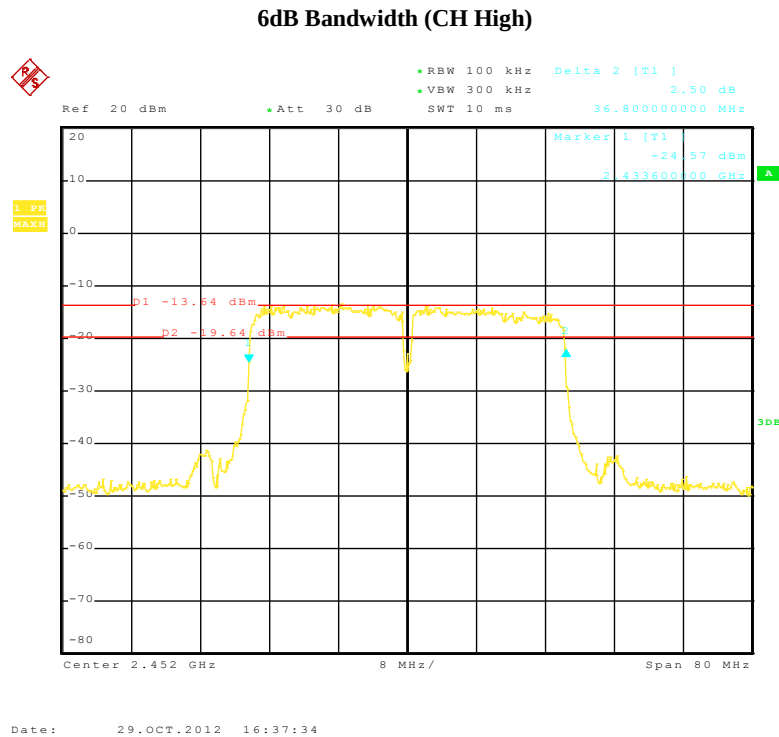


Date: 29.OCT.2012 16:34:00

6dB Bandwidth (CH Mid)



Date: 29.OCT.2012 16:36:13



**B. Peak Power**

Product : Tablet PC  
 Test Item : Peak Power  
 Test Voltage : DC 5V  
 Test Result : **PASS**

Test Mode : IEEE 802.11b/g/Draft n  
 Temperature : 25 °C  
 Humidity : 56%RH

**IEEE 802.11b**

| Channel | Frequency (MHz) | Output Power (dBm) | FCC Limit (W/dBm) | Result      |
|---------|-----------------|--------------------|-------------------|-------------|
| Low     | 2412            | -2.31              | 1.00/30.00        | <b>PASS</b> |
| Mid     | 2437            | -4.37              |                   | <b>PASS</b> |
| High    | 2462            | -2.86              |                   | <b>PASS</b> |

**IEEE 802.11g**

| Channel | Frequency (MHz) | Output Power (dBm) | FCC Limit (W/dBm) | Result      |
|---------|-----------------|--------------------|-------------------|-------------|
| Low     | 2412            | -5.15              | 1.00/30.00        | <b>PASS</b> |
| Mid     | 2437            | -5.54              |                   | <b>PASS</b> |
| High    | 2462            | -3.88              |                   | <b>PASS</b> |

**Draft n MCS0 20MHz Ant.0**

| Channel | Frequency (MHz) | Output Power (dBm) | FCC Limit (W/dBm) | Result      |
|---------|-----------------|--------------------|-------------------|-------------|
| Low     | 2412            | -3.12              | 1.00/30.00        | <b>PASS</b> |
| Mid     | 2437            | -3.94              |                   | <b>PASS</b> |
| High    | 2462            | -4.18              |                   | <b>PASS</b> |

**Draft n MCS0 40MHz Ant.0**

| Channel | Frequency (MHz) | Output Power (dBm) | FCC Limit (W/dBm) | Result      |
|---------|-----------------|--------------------|-------------------|-------------|
| Low     | 2422            | -6.92              | 1.00/30.00        | <b>PASS</b> |
| Mid     | 2437            | -7.11              |                   | <b>PASS</b> |
| High    | 2452            | -7.57              |                   | <b>PASS</b> |

## C. Band Edges Measurement

|              |                          |             |                    |
|--------------|--------------------------|-------------|--------------------|
| Product      | : Tablet PC              | Test Mode   | : IEEE 802.11b/g/n |
| Test Item    | : Band Edges Measurement | Temperature | : 25 °C            |
| Test Voltage | : DC 5V                  | Humidity    | : 56%RH            |
| Test Result  | : PASS                   |             |                    |

### IEEE 802.11b-low

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2350.040       | 55.80             | 46.57   | HORZ            | 74              | 54      | -18.20         | -7.43 |
| 2384.280       | 56.98             | 46.85   | VERT            | 74              | 54      | -17.02         | -7.15 |
| 2390.460       | 56.80             | 46.94   | HORZ            | 74              | 54      | -17.20         | -7.06 |
| 2390.640       | 57.33             | 46.99   | VERT            | 74              | 54      | -16.67         | -7.01 |

### IEEE 802.11b-High

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2483.540       | 56.98             | 46.73   | HORZ            | 74              | 54      | -17.02         | -7.27 |
| 2484.460       | 55.98             | 46.70   | VERT            | 74              | 54      | -18.02         | -7.30 |
| 2485.520       | 56.94             | 46.94   | HORZ            | 74              | 54      | -17.06         | -7.06 |
| 2486.640       | 55.57             | 47.05   | VERT            | 74              | 54      | -18.43         | -6.95 |

### IEEE 802.11g-Low

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2352.140       | 57.82             | 47.01   | HORZ            | 74              | 54      | -16.18         | -6.99 |
| 2385.260       | 57.63             | 46.99   | VERT            | 74              | 54      | -16.37         | -7.01 |
| 2390.780       | 58.56             | 47.23   | HORZ            | 74              | 54      | -15.44         | -6.77 |
| 2390.840       | 58.56             | 47.23   | VERT            | 74              | 54      | -15.44         | -6.77 |

### IEEE 802.11g-High

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2483.640       | 55.77             | 46.96   | HORZ            | 74              | 54      | -18.23         | -7.04 |
| 2483.720       | 55.77             | 46.96   | VERT            | 74              | 54      | -18.23         | -7.04 |
| 2485.420       | 54.95             | 47.20   | HORZ            | 74              | 54      | -19.05         | -6.80 |
| 2486.560       | 54.66             | 47.51   | VERT            | 74              | 54      | -19.34         | -6.49 |

### IEEE 802.11n MCS0 20MHz Ant.0-Low

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2351.040       | 56.32             | 46.59   | HORZ            | 74              | 54      | -17.68         | -7.41 |
| 2385.260       | 56.84             | 46.94   | VERT            | 74              | 54      | -17.16         | -7.06 |
| 2390.540       | 56.72             | 47.57   | HORZ            | 74              | 54      | -17.28         | -6.43 |
| 2390.720       | 57.41             | 47.70   | VERT            | 74              | 54      | -16.59         | -6.30 |

### IEEE 802.11n MCS0 20MHz Ant.0-High

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2484.840       | 57.70             | 47.23   | HORZ            | 74              | 54      | -16.30         | -6.77 |
| 2485.144       | 58.26             | 47.28   | VERT            | 74              | 54      | -15.74         | -6.72 |
| 2485.420       | 57.37             | 47.09   | HORZ            | 74              | 54      | -16.63         | -6.91 |
| 2487.140       | 57.46             | 47.05   | VERT            | 74              | 54      | -16.54         | -6.95 |

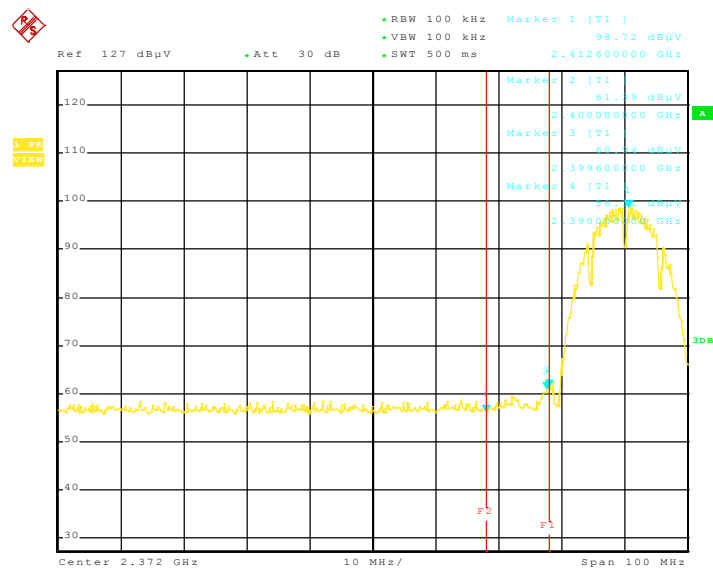
## IEEE 802.11n MCS0 40MHz Ant.0-Low

| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2351.340       | 57.05             | 47.13   | HORZ            | 74              | 54      | -16.95         | -6.87 |
| 2384.120       | 57.75             | 47.84   | VERT            | 74              | 54      | -16.25         | -6.16 |
| 2390.440       | 57.98             | 48.55   | HORZ            | 74              | 54      | -16.02         | -5.45 |
| 2390.540       | 57.98             | 48.55   | VERT            | 74              | 54      | -16.02         | -5.45 |

## IEEE 802.11n MCS0 40MHz Ant.0-High

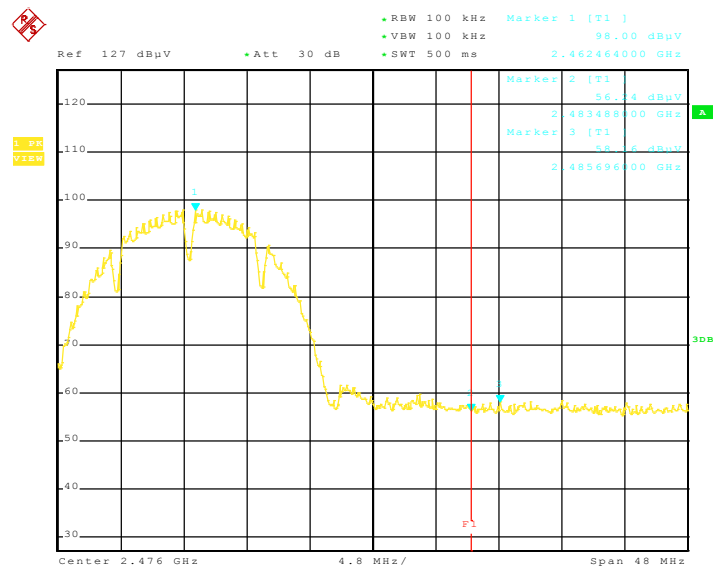
| Freq.<br>(MHz) | Emission (dBuV/m) |         | HORIZ /<br>VERT | Limits (dBuV/m) |         | Margin<br>(dB) |       |
|----------------|-------------------|---------|-----------------|-----------------|---------|----------------|-------|
|                | Peak              | Average |                 | Peak            | Average |                |       |
| 2483.640       | 57.19             | 48.09   | HORZ            | 74              | 54      | -16.81         | -5.91 |
| 2484.420       | 58.23             | 48.13   | VERT            | 74              | 54      | -15.77         | -5.87 |
| 2485.260       | 57.74             | 48.24   | HORZ            | 74              | 54      | -16.26         | -5.76 |
| 2485.640       | 57.74             | 48.24   | VERT            | 74              | 54      | -16.26         | -5.76 |

IEEE 802.11b Channel: Low



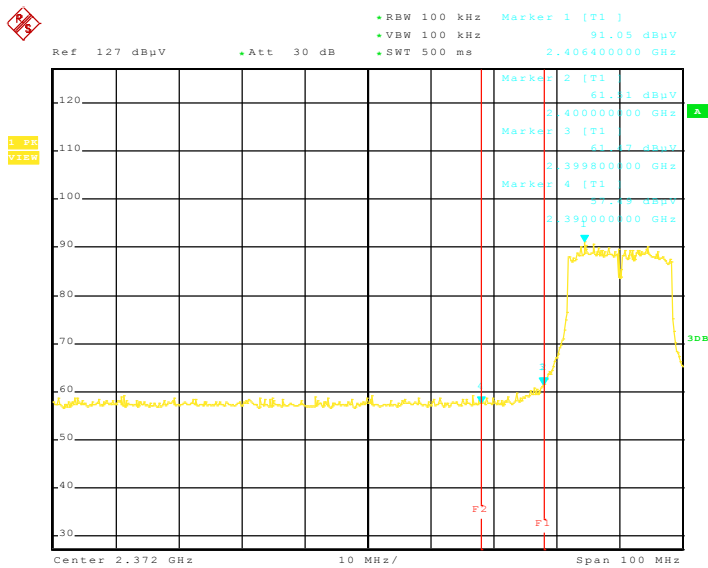
Date: 22.OCT.2012 16:56:39

IEEE 802.11b Channel: High



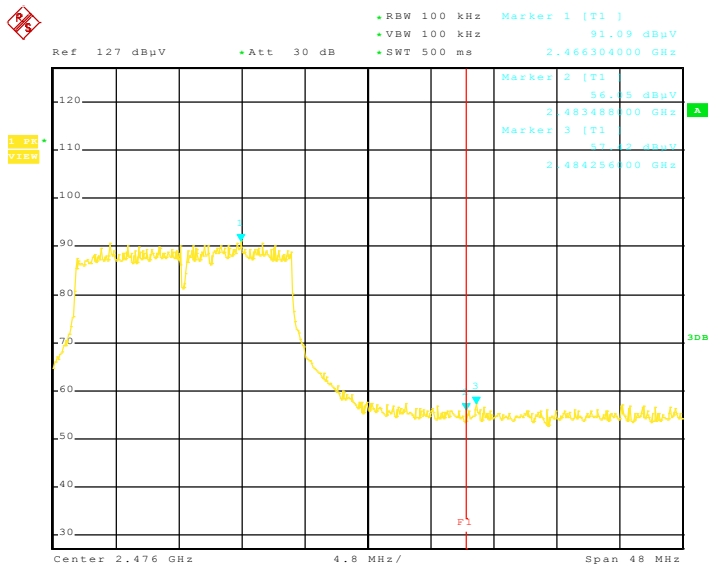
Date: 22.OCT.2012 17:11:53

IEEE 802.11g Channel: Low



Date: 22.OCT.2012 17:22:16

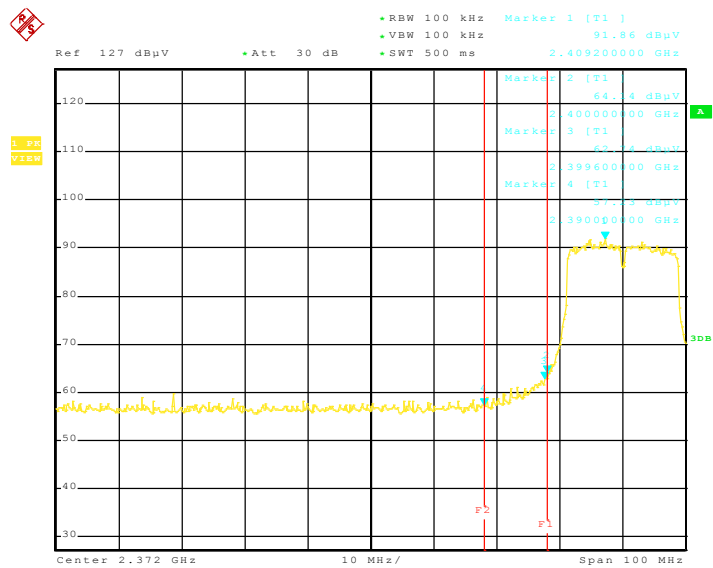
IEEE 802.11g Channel: High



Date: 22.OCT.2012 17:45:04

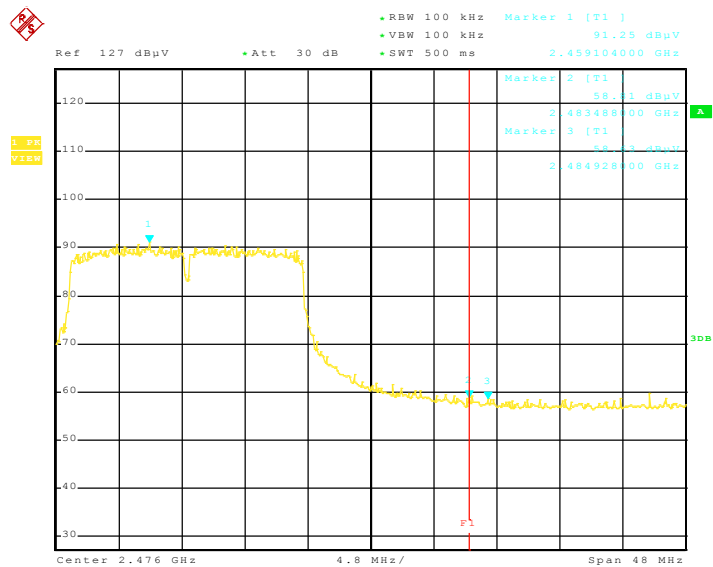


IEEE 802.11n MCS0 20MHz Ant.0  
Channel: Low



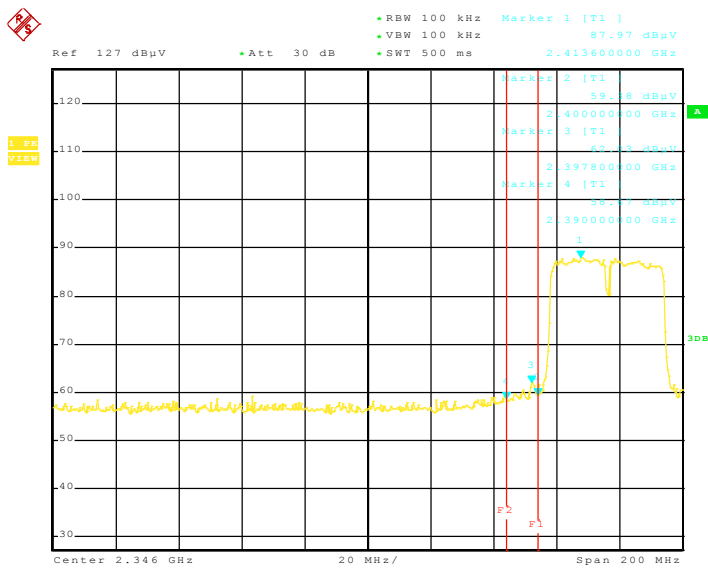
Date: 23.OCT.2012 10:44:23

IEEE 802.11n MCS0 20MHz Ant.0  
Channel: High



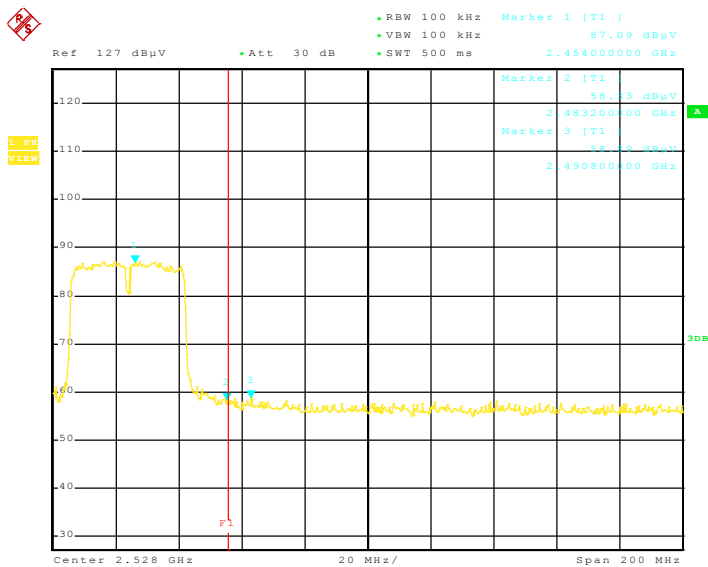
Date: 23.OCT.2012 10:58:08

IEEE 802.11n MCS0 40MHz Ant.0  
Channel: Low



Date: 23.OCT.2012 11:38:40

IEEE 802.11n MCS040MHz Ant.0  
Channel: High



Date: 23.OCT.2012 13:45:22

**D. Peak Power Spectral Density**

Product : Tablet PC  
 Test Item : Peak Power Spectral Density  
 Test Voltage : DC 5V  
 Test Result : **PASS**

Test Mode : IEEE 802.11b/g/Draft n  
 Temperature : 25 °C  
 Humidity : 56%RH

**IEEE 802.11b**

| Channel | Frequency (MHz) | 100kHz PPSP (dBm) | BWCF Factor 100kHz to 3kHz | FCC Limit (dBm) | Result      |
|---------|-----------------|-------------------|----------------------------|-----------------|-------------|
| Low     | 2412            | -0.44             | -15.23                     | 8.00            | <b>PASS</b> |
| Mid     | 2437            | -1.37             | -15.23                     |                 | <b>PASS</b> |
| High    | 2462            | -2.18             | -15.23                     |                 | <b>PASS</b> |

**IEEE 802.11g**

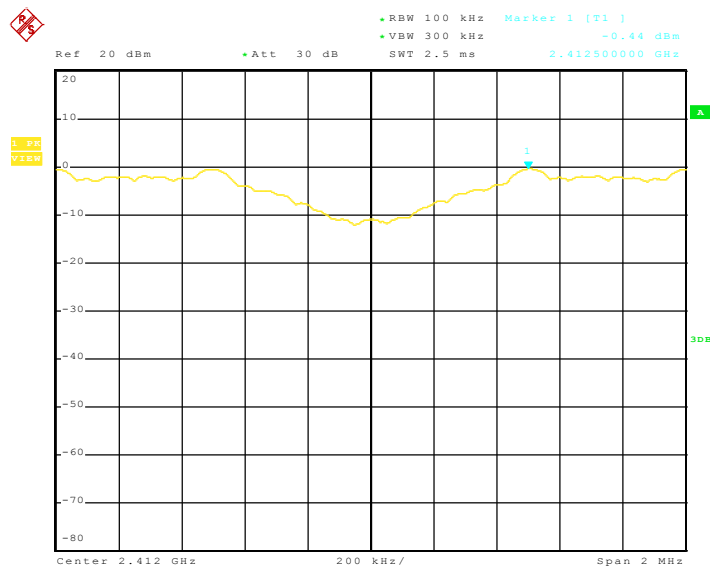
| Channel | Frequency (MHz) | 100kHz PPSP (dBm) | BWCF Factor 100kHz to 3kHz | FCC Limit (dBm) | Result      |
|---------|-----------------|-------------------|----------------------------|-----------------|-------------|
| Low     | 2412            | -16.73            | -15.23                     | 8.00            | <b>PASS</b> |
| Mid     | 2437            | -17.61            | -15.23                     |                 | <b>PASS</b> |
| High    | 2462            | -16.97            | -15.23                     |                 | <b>PASS</b> |

**Draft n MCS0 20MHz Ant.0**

| Channel | Frequency (MHz) | 100kHz PPSP (dBm) | BWCF Factor 100kHz to 3kHz | FCC Limit (dBm) | Result      |
|---------|-----------------|-------------------|----------------------------|-----------------|-------------|
| Low     | 2412            | -7.85             | -15.23                     | 8.00            | <b>PASS</b> |
| Mid     | 2437            | -8.96             | -15.23                     |                 | <b>PASS</b> |
| High    | 2462            | -9.57             | -15.23                     |                 | <b>PASS</b> |

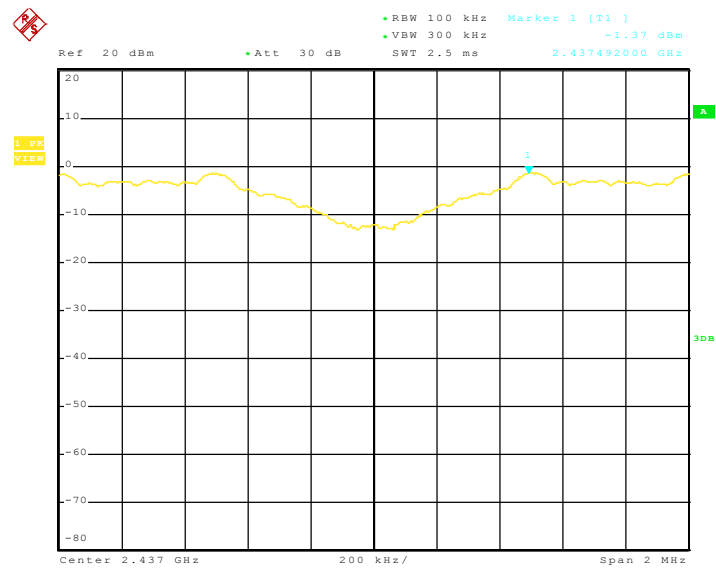
**Draft n MCS0 40MHz Ant.0**

| Channel | Frequency (MHz) | 100kHz PPSP (dBm) | BWCF Factor 100kHz to 3kHz | FCC Limit (dBm) | Result      |
|---------|-----------------|-------------------|----------------------------|-----------------|-------------|
| Low     | 2422            | -21.85            | -15.23                     | 8.00            | <b>PASS</b> |
| Mid     | 2437            | -22.81            | -15.23                     |                 | <b>PASS</b> |
| High    | 2452            | -23.32            | -15.23                     |                 | <b>PASS</b> |

**IEEE 802.11b Channel: Low**

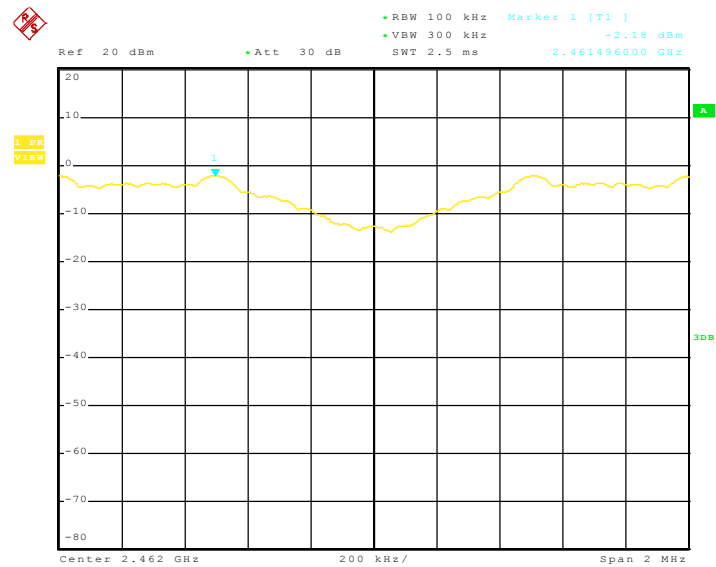
Date: 31.OCT.2012 16:45:27

IEEE 802.11b Channel: Mid



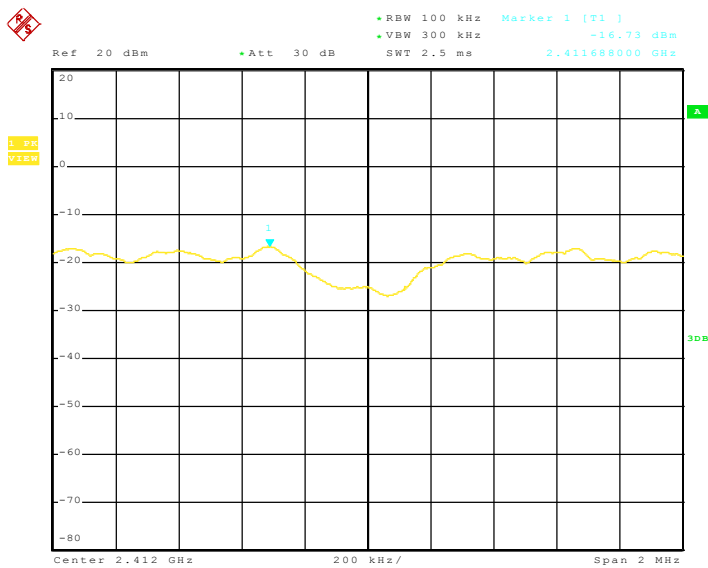
Date: 31.OCT.2012 16:46:13

IEEE 802.11b Channel: High



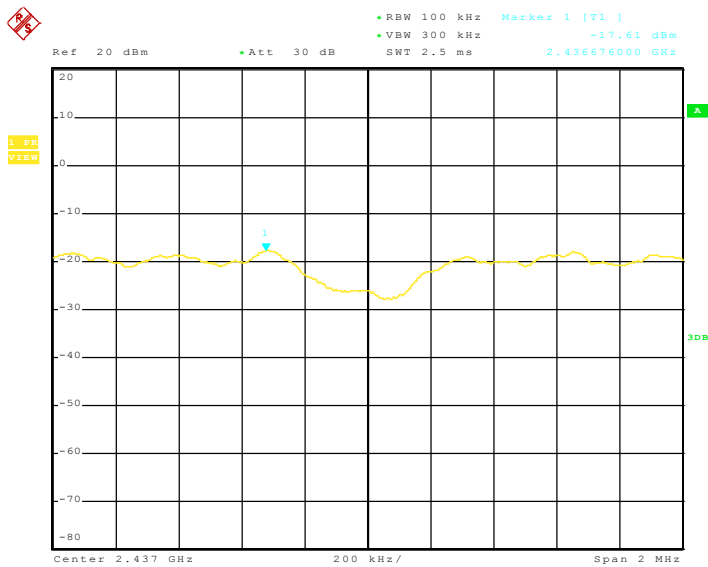
Date: 31.OCT.2012 16:47:05

IEEE 802.11g Channel: Low



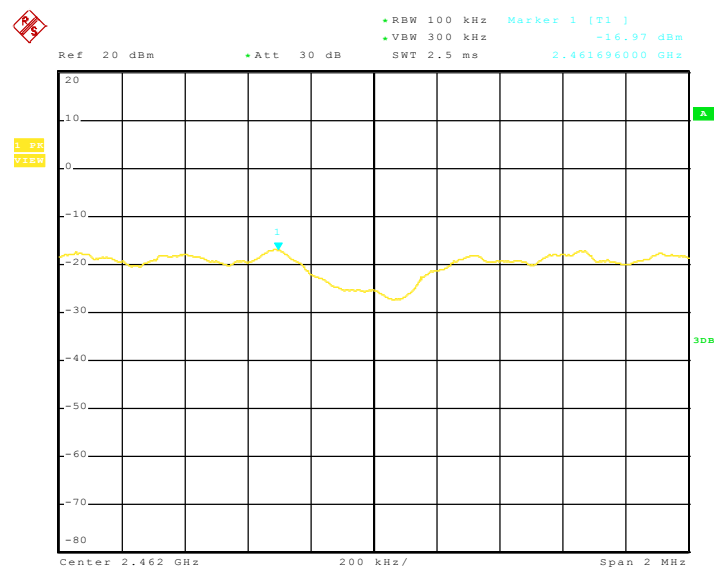
Date: 31.OCT.2012 16:35:07

IEEE 802.11g Channel: Mid



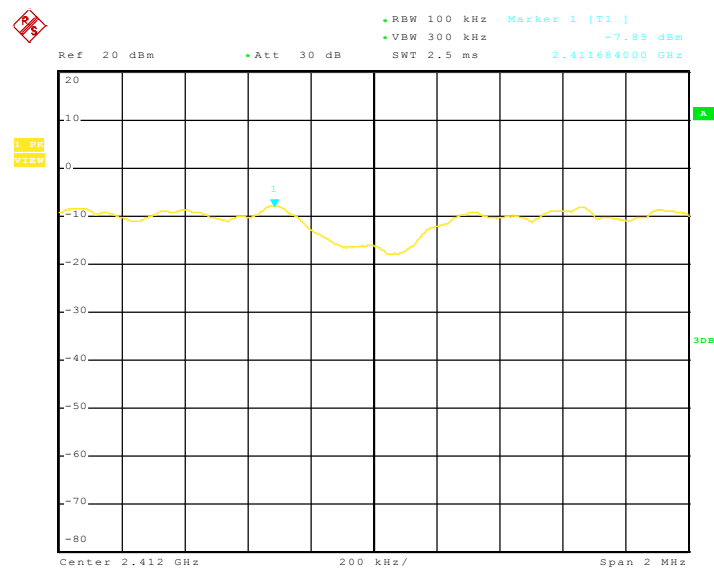
Date: 31.OCT.2012 16:36:46

IEEE 802.11g Channel: High



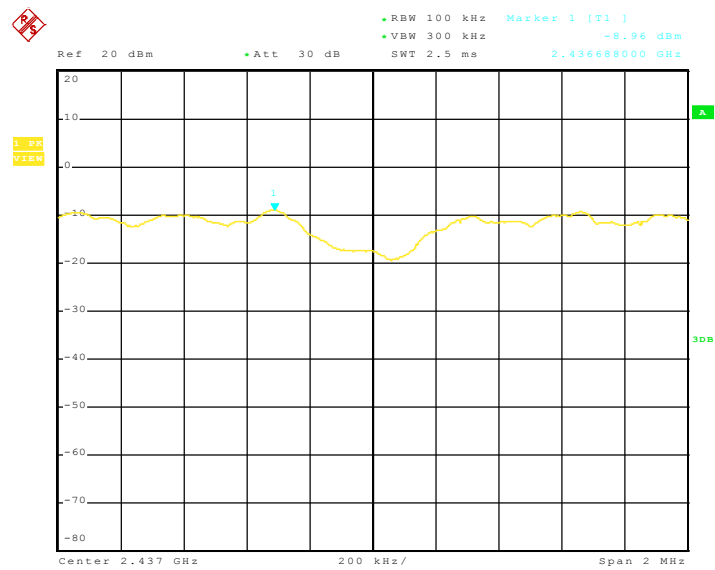
Date: 31.OCT.2012    16:37:26

Draft n MCS0 20MHz Ant.0/2412MHZ  
(Channel: Low)



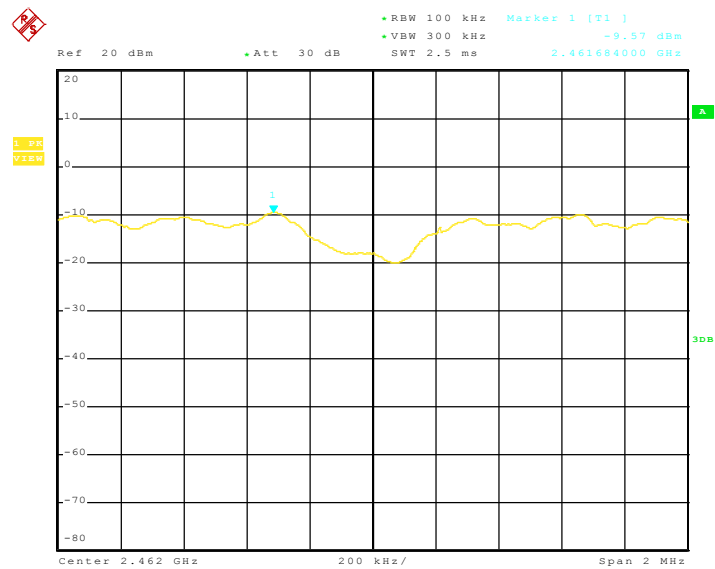
Date: 31.OCT.2012    16:38:23

Draft n MCS0 20MHz Ant.0/2437MHZ  
(Channel: Mid)



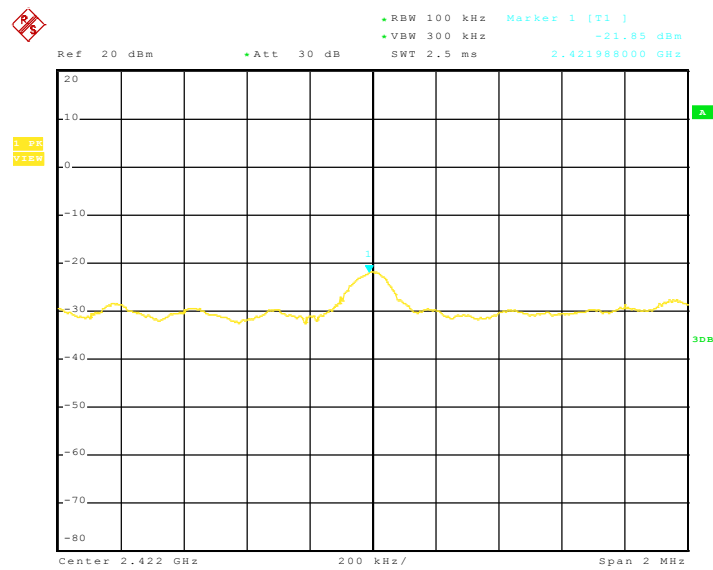
Date: 31.OCT.2012 16:39:03

Draft n MCS0 20MHz Ant.0/2462MHZ  
(Channel: High)



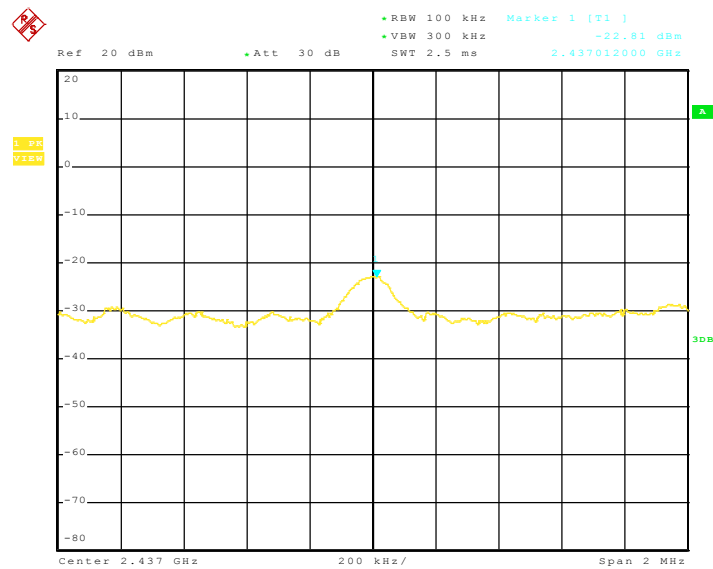
Date: 31.OCT.2012 16:39:43

Draft n MCS0 40MHz Ant.0/2422MHZ  
(Channel: Low)



Date: 31.OCT.2012 16:40:46

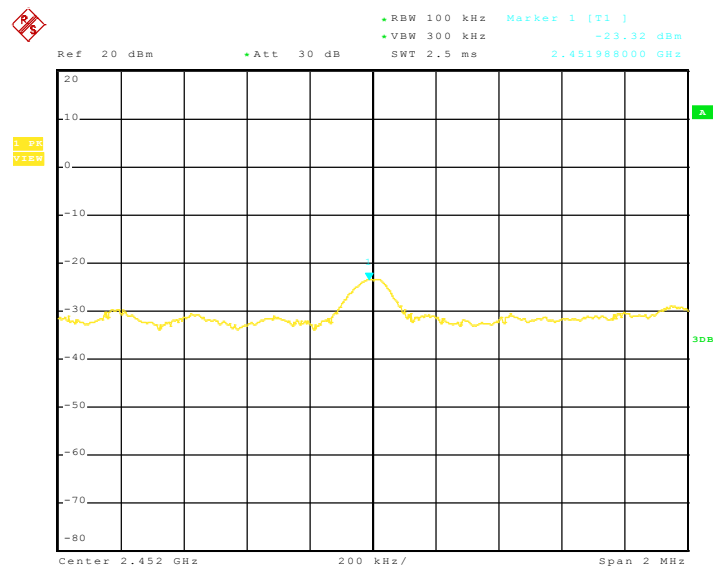
Draft n MCS0 40MHz Ant.0/2437MHZ  
(Channel: Mid)



Date: 31.OCT.2012 16:41:21



Draft n MCS0 40MHz Ant.0/2452MHZ  
(Channel: High)



Date: 31.OCT.2012 16:42:05

## 6. Transmitter Spurious Radiated Emission at 3 Meters

### 6.1 Test Equipment

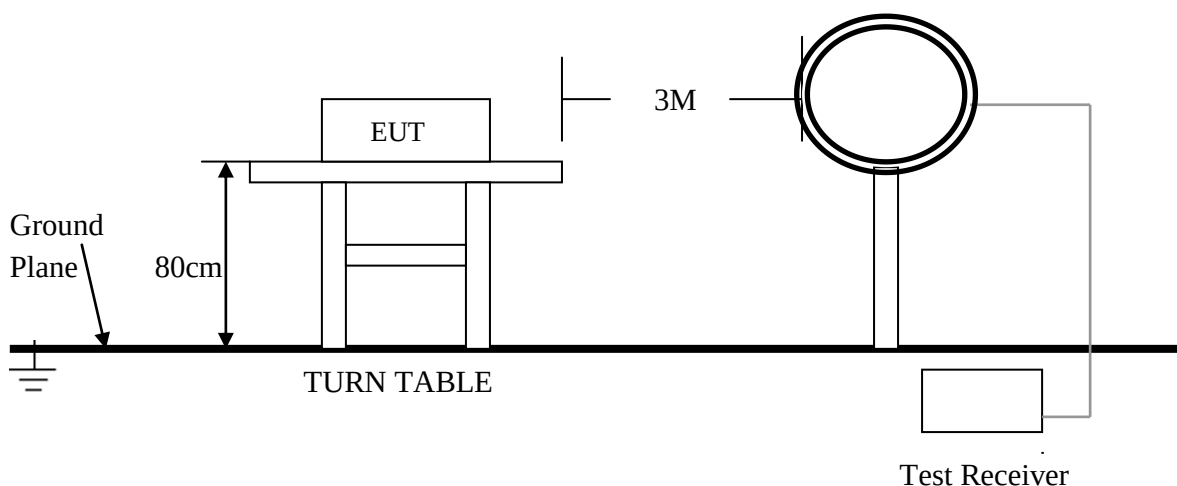
Please refer to Section 10 this report.

### 6.2 Test Procedure

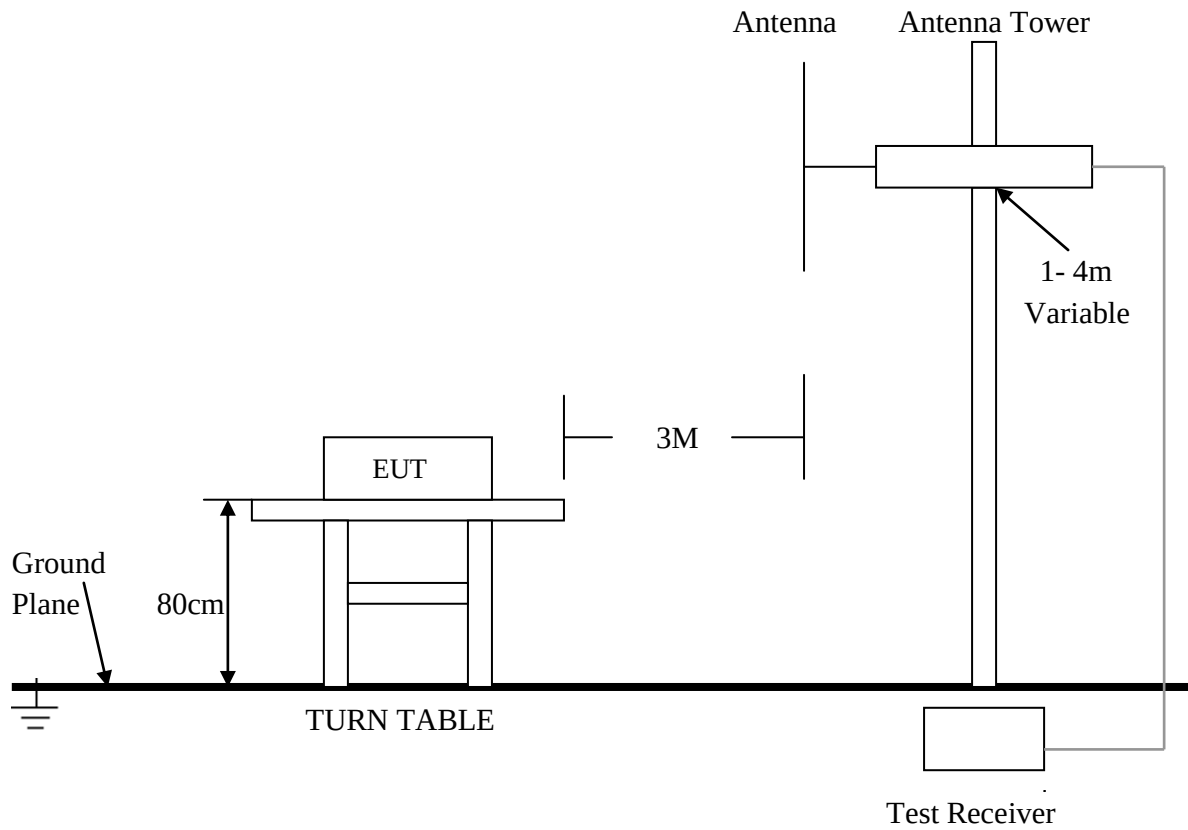
1. The EUT was tested according to ANSI C63.4 - 2003.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
3. The frequency spectrum from 9 kHz to 25 GHz was investigated. All readings from 9 kHz to 150 kHz are quasi-peak values with a resolution bandwidth of 200 Hz. All readings from 150 kHz to 30 MHz are quasi-peak values with a resolution bandwidth of 9 KHz. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. The Receiving antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency. Emissions below 30MHz were measured with a loop antenna while emission above 30MHz were measured using a broadband E-field antenna.
5. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4 - 2003.

### 6.3 Test Setup

For Frequencies below 30 MHz



For the actual test configuration , please refer to the related items – Photos of Testing

**For Frequencies above 30 MHz**

For the actual test configuration , please refer to the related items – Photos of Testing

**6. 4 Configuration of the EUT**

Same as section 4.4 of this report

**6. 5 EUT Operating Condition**

Same as section 4.5 of this report.

## 6.6 Limit

In any 100 KHz bandwidth outside the operating frequency band, the radio frequency power that is produced by modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either at least 20 dB below that in any 100 KHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in section 15.209(a), which lesser attenuation.

All other emissions inside restricted bands specified in section 15.205(a) shall not exceed the general radiated emission limits specified in section 15.209(a)

### Note:

Applies to harmonics/spurious emissions that fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

47 CFR § 15.237(c): The emission limits as specified above are based on measurement instrument employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.

FCC CFR 47, Part 15, Subpart C, Para. 15.205(a) – Restricted Frequency Bands

| MHz                            | MHz                 | MHz           | GHz              |
|--------------------------------|---------------------|---------------|------------------|
| 0.090–0.110 .....              | 16.42–16.423        | 399.9–410     | 4.5–5.15         |
| <sup>1</sup> 0.495–0.505 ..... | 16.69475–16.69525   | 608–614       | 5.35–5.46        |
| 2.1735–2.1905 .....            | 16.80425–16.80475   | 960–1240      | 7.25–7.75        |
| 4.125–4.128 .....              | 25.5–25.67          | 1300–1427     | 8.025–8.5        |
| 4.17725–4.17775 .....          | 37.5–38.25          | 1435–1626.5   | 9.0–9.2          |
| 4.20725–4.20775 .....          | 73–74.6             | 1645.5–1646.5 | 9.3–9.5          |
| 6.215–6.218 .....              | 74.8–75.2           | 1660–1710     | 10.6–12.7        |
| 6.26775–6.26825 .....          | 108–121.94          | 1718.8–1722.2 | 13.25–13.4       |
| 6.31175–6.31225 .....          | 123–138             | 2200–2300     | 14.47–14.5       |
| 8.291–8.294 .....              | 149.9–150.05        | 2310–2390     | 15.35–16.2       |
| 8.362–8.366 .....              | 156.52475–156.52525 | 2483.5–2500   | 17.7–21.4        |
| 8.37625–8.38675 .....          | 156.7–156.9         | 2655–2900     | 22.01–23.12      |
| 8.41425–8.41475 .....          | 162.0125–167.17     | 3260–3267     | 23.6–24.0        |
| 12.29–12.293 .....             | 167.72–173.2        | 3332–3339     | 31.2–31.8        |
| 12.51975–12.52025 .....        | 240–285             | 3345.8–3358   | 36.43–36.5       |
| 12.57675–12.57725 .....        | 322–335.4           | 3600–4400     | ( <sup>2</sup> ) |
| 13.36–13.41.                   |                     |               |                  |

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

<sup>2</sup> Above 38.6

FCC 47 CFR, Part 15.209(a) – Field Strength Limits within Restricted Frequency Bands

| Frequency (MHz)   | Field strength (microvolts/meter) | Measurement distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009–0.490 ..... | 2400/F(kHz)                       | 300                           |
| 0.490–1.705 ..... | 24000/F(kHz)                      | 30                            |
| 1.705–30.0 .....  | 30                                | 30                            |
| 30–88 .....       | 100**                             | 3                             |
| 88–216 .....      | 150**                             | 3                             |
| 216–960 .....     | 200**                             | 3                             |
| Above 960 .....   | 500                               | 3                             |

## 6. 7 Test Result

|              |                               |             |                         |
|--------------|-------------------------------|-------------|-------------------------|
| Product      | : Tablet PC                   | Test Mode   | : IEEE 802.11b/g/Draftn |
| Test Item    | : Spurious Radiated Emissions | Temperature | : 25 °C                 |
| Test Voltage | : DC 5V                       | Humidity    | : 56%RH                 |
| Test Result  | : <b>PASS</b>                 |             |                         |

### IEEE 802.11b Channel: Low

| Freq. (MHz) | Emission (dBuV/m)<br>Peak Detector | HORIZ / VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|------------------------------------|--------------|-----------------------------------|-------------|
| 4824.00     | 49.51                              | HORZ         | 74.0 / 54.0                       | -24.49      |
| 4824.00     | 48.11                              | VERT         | 74.0 / 54.0                       | -25.89      |
| 7236.00     | 48.94                              | HORZ         | 74.0 / 54.0                       | -25.06      |
| 7236.08     | 47.68                              | VERT         | 74.0 / 54.0                       | -26.32      |
| 9648.02     | 49.86                              | HORZ         | 74.0 / 54.0                       | -24.14      |
| 9648.10     | 48.14                              | VERT         | 74.0 / 54.0                       | -25.86      |
| 24120.04    | -                                  | HORZ         | 74.0 / 54.0                       | -           |
| 24120.20    | -                                  | VERT         | 74.0 / 54.0                       | -           |

### IEEE 802.11b Channel: Mid

| Freq. (MHz) | Emission (dBuV/m)<br>Peak Detector | HORIZ / VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|------------------------------------|--------------|-----------------------------------|-------------|
| 4874.00     | 48.81                              | HORZ         | 74.0 / 54.0                       | -25.19      |
| 4874.00     | 47.23                              | VERT         | 74.0 / 54.0                       | -26.77      |
| 7311.00     | 48.95                              | HORZ         | 74.0 / 54.0                       | -25.05      |
| 7311.02     | 47.65                              | VERT         | 74.0 / 54.0                       | -26.35      |
| 9748.10     | 49.67                              | HORZ         | 74.0 / 54.0                       | -24.33      |
| 9748.00     | 48.11                              | VERT         | 74.0 / 54.0                       | -25.89      |
| 24370.10    | -                                  | HORZ         | 74.0 / 54.0                       | -           |
| 24370.00    | -                                  | VERT         | 74.0 / 54.0                       | -           |

### IEEE 802.11b Channel: High

| Freq. (MHz) | Emission (dBuV/m)<br>Peak Detector | HORIZ / VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|------------------------------------|--------------|-----------------------------------|-------------|
| 4924.00     | 48.68                              | HORZ         | 74.0 / 54.0                       | -25.32      |
| 4924.00     | 48.05                              | VERT         | 74.0 / 54.0                       | -25.95      |
| 7386.12     | 48.73                              | HORZ         | 74.0 / 54.0                       | -25.27      |
| 7368.00     | 48.15                              | VERT         | 74.0 / 54.0                       | -25.85      |
| 9848.00     | 48.86                              | HORZ         | 74.0 / 54.0                       | -25.14      |
| 9848.00     | 47.15                              | VERT         | 74.0 / 54.0                       | -26.85      |
| 24620.11    | -                                  | HORZ         | 74.0 / 54.0                       | -           |
| 24620.00    | -                                  | VERT         | 74.0 / 54.0                       | -           |

- Note:**
- (1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
  - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
  - (3) Receiver setting (Peak Detector) : RBW=1MHz; VBW=1MHz; Span=100MHz
  - (4) Receiver setting (AVG Detector): RBW=1MHz; VBW=30Hz; Span=20MHz
  - (5) The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.
  - (6) Where an emission level is indicated by a -, levels had a margin greater than 20 dB when compared to the limit.

**IEEE 802.11g Channel: Low**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|---------------------------|-----------------|-----------------------------------|-------------|
| 4824.00     | 48.36                     | HORZ            | 74.0 / 54.0                       | -25.64      |
| 4824.00     | 47.25                     | VERT            | 74.0 / 54.0                       | -26.75      |
| 7236.00     | 48.67                     | HORZ            | 74.0 / 54.0                       | -25.33      |
| 7236.08     | 47.24                     | VERT            | 74.0 / 54.0                       | -26.76      |
| 9648.02     | 49.68                     | HORZ            | 74.0 / 54.0                       | -24.32      |
| 9648.10     | 47.24                     | VERT            | 74.0 / 54.0                       | -26.76      |
| 24120.04    | -                         | HORZ            | 74.0 / 54.0                       | -           |
| 24120.20    | -                         | VERT            | 74.0 / 54.0                       | -           |

**IEEE 802.11g Channel: Mid**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|---------------------------|-----------------|-----------------------------------|-------------|
| 4874.00     | 48.54                     | HORZ            | 74.0 / 54.0                       | -25.46      |
| 4874.00     | 47.25                     | VERT            | 74.0 / 54.0                       | -26.75      |
| 7311.00     | 48.76                     | HORZ            | 74.0 / 54.0                       | -25.24      |
| 7311.02     | 47.23                     | VERT            | 74.0 / 54.0                       | -26.77      |
| 9748.10     | 49.88                     | HORZ            | 74.0 / 54.0                       | -24.12      |
| 9748.00     | 48.03                     | VERT            | 74.0 / 54.0                       | -25.97      |
| 24370.10    | -                         | HORZ            | 74.0 / 54.0                       | -           |
| 24370.00    | -                         | VERT            | 74.0 / 54.0                       | -           |

**IEEE 802.11g Channel: High**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|---------------------------|-----------------|-----------------------------------|-------------|
| 4924.00     | 48.96                     | HORZ            | 74.0 / 54.0                       | -25.04      |
| 4924.00     | 48.13                     | VERT            | 74.0 / 54.0                       | -25.87      |
| 7386.12     | 48.72                     | HORZ            | 74.0 / 54.0                       | -25.28      |
| 7368.00     | 48.04                     | VERT            | 74.0 / 54.0                       | -25.96      |
| 9848.00     | 49.61                     | HORZ            | 74.0 / 54.0                       | -24.39      |
| 9848.00     | 48.06                     | VERT            | 74.0 / 54.0                       | -25.94      |
| 24620.11    | -                         | HORZ            | 74.0 / 54.0                       | -           |
| 24620.00    | -                         | VERT            | 74.0 / 54.0                       | -           |

- Note:**
- (1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
  - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
  - (3) Receiver setting (Peak Detector) : RBW=1MHz; VBW=1MHz; Span=100MHz
  - (4) Receiver setting (AVG Detector): RBW=1MHz; VBW=30Hz; Span=20MHz
  - (5) The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.
  - (6) Where an emission level is indicated by a -, levels had a margin greater than 20 dB when compared to the limit.

**Draft n MCS0 20MHz Ant.0 Channel: Low**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak /Av | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|-------------------------------|-----------------|-----------------------------------|-------------|
| 4824.00     | 49.96                         | HORZ            | 74.0 / 54.0                       | -24.04      |
| 4824.00     | 49.23                         | VERT            | 74.0 / 54.0                       | -24.77      |
| 7236.00     | 49.85                         | HORZ            | 74.0 / 54.0                       | -24.15      |
| 7236.08     | 48.91                         | VERT            | 74.0 / 54.0                       | -25.09      |
| 9648.02     | 49.24                         | HORZ            | 74.0 / 54.0                       | -24.76      |
| 9648.10     | 48.15                         | VERT            | 74.0 / 54.0                       | -25.85      |
| 24120.04    | -                             | HORZ            | 74.0 / 54.0                       | -           |
| 24120.20    | -                             | VERT            | 74.0 / 54.0                       | -           |

**Draft n MCS0 20MHz Ant.0 Channel: Mid**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|---------------------------|-----------------|-----------------------------------|-------------|
| 4874.00     | 49.65                     | HORZ            | 74.0 / 54.0                       | -24.35      |
| 4874.00     | 48.32                     | VERT            | 74.0 / 54.0                       | -25.68      |
| 7311.00     | 49.76                     | HORZ            | 74.0 / 54.0                       | -24.24      |
| 7311.02     | 48.52                     | VERT            | 74.0 / 54.0                       | -25.48      |
| 9748.10     | 49.57                     | HORZ            | 74.0 / 54.0                       | -24.43      |
| 9748.00     | 48.66                     | VERT            | 74.0 / 54.0                       | -25.34      |
| 24370.10    | -                         | HORZ            | 74.0 / 54.0                       | -           |
| 24370.00    | -                         | VERT            | 74.0 / 54.0                       | -           |

**Draft n MCS0 20MHz Ant.0 Channel: High**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak /Av | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|-------------------------------|-----------------|-----------------------------------|-------------|
| 4924.00     | 49.18                         | HORZ            | 74.0 / 54.0                       | -24.82      |
| 4924.00     | 47.56                         | VERT            | 74.0 / 54.0                       | -26.44      |
| 7386.12     | 49.32                         | HORZ            | 74.0 / 54.0                       | -24.68      |
| 7368.00     | 48.14                         | VERT            | 74.0 / 54.0                       | -25.86      |
| 9848.00     | 50.16                         | HORZ            | 74.0 / 54.0                       | -23.84      |
| 9848.00     | 49.67                         | VERT            | 74.0 / 54.0                       | -24.33      |
| 24620.11    | -                             | HORZ            | 74.0 / 54.0                       | -           |
| 24620.00    | -                             | VERT            | 74.0 / 54.0                       | -           |

- Note:**
- (1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
  - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
  - (3) Receiver setting (Peak Detector) : RBW=1MHz; VBW=1MHz; Span=100MHz
  - (4) Receiver setting (AVG Detector): RBW=1MHz; VBW=30Hz; Span=20MHz
  - (5) The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.
  - (6) Where an emission level is indicated by a -, levels had a margin greater than 20 dB when compared to the limit.

**Draft n MCS0 40MHz Ant.0 Channel: Low**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak /Av | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|-------------------------------|-----------------|-----------------------------------|-------------|
| 4844.00     | 49.78                         | HORZ            | 74.0 / 54.0                       | -24.22      |
| 4844.00     | 48.04                         | VERT            | 74.0 / 54.0                       | -25.96      |
| 7266.00     | 49.39                         | HORZ            | 74.0 / 54.0                       | -24.61      |
| 7266.08     | 48.18                         | VERT            | 74.0 / 54.0                       | -25.82      |
| 9688.02     | 49.83                         | HORZ            | 74.0 / 54.0                       | -24.17      |
| 9688.10     | 49.16                         | VERT            | 74.0 / 54.0                       | -24.84      |
| 24220.04    | -                             | HORZ            | 74.0 / 54.0                       | -           |
| 24220.20    | -                             | VERT            | 74.0 / 54.0                       | -           |

**Draft n MCS0 40MHz Ant.0 Channel: Mid**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|---------------------------|-----------------|-----------------------------------|-------------|
| 4874.00     | 49.25                     | HORZ            | 74.0 / 54.0                       | -24.75      |
| 4874.00     | 48.17                     | VERT            | 74.0 / 54.0                       | -25.83      |
| 7311.00     | 49.63                     | HORZ            | 74.0 / 54.0                       | -24.37      |
| 7311.02     | 48.55                     | VERT            | 74.0 / 54.0                       | -25.45      |
| 9748.10     | 50.22                     | HORZ            | 74.0 / 54.0                       | -23.78      |
| 9748.00     | 49.81                     | VERT            | 74.0 / 54.0                       | -24.19      |
| 24370.10    | -                         | HORZ            | 74.0 / 54.0                       | -           |
| 24370.00    | -                         | VERT            | 74.0 / 54.0                       | -           |

**Draft n MCS0 40MHz Ant.0 Channel: High**

| Freq. (MHz) | Emission (dBuV/m)<br>Peak /Av | HORIZ /<br>VERT | Limits (dBuV/m)<br>Peak / Average | Margin (dB) |
|-------------|-------------------------------|-----------------|-----------------------------------|-------------|
| 4904.00     | 49.76                         | HORZ            | 74.0 / 54.0                       | -24.24      |
| 4904.00     | 48.12                         | VERT            | 74.0 / 54.0                       | -25.88      |
| 7356.12     | 49.56                         | HORZ            | 74.0 / 54.0                       | -24.44      |
| 7356.00     | 48.64                         | VERT            | 74.0 / 54.0                       | -25.36      |
| 9808.00     | 50.32                         | HORZ            | 74.0 / 54.0                       | -23.68      |
| 9808.00     | 49.64                         | VERT            | 74.0 / 54.0                       | -24.36      |
| 24520.11    | -                             | HORZ            | 74.0 / 54.0                       | -           |
| 24520.00    | -                             | VERT            | 74.0 / 54.0                       | -           |

- Note:**
- (1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
  - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
  - (3) Receiver setting (Peak Detector) : RBW=1MHz; VBW=1MHz; Span=100MHz
  - (4) Receiver setting (AVG Detector): RBW=1MHz; VBW=30Hz; Span=20MHz
  - (5) The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.
  - (6) Where an emission level is indicated by a -, levels had a margin greater than 20 dB when compared to the limit.



**General Radiated Emission Data**

|              |                                      |             |                  |
|--------------|--------------------------------------|-------------|------------------|
| Product      | : Tablet PC                          | Test Mode   | : 802.11b_CH Mid |
| Test Item    | : Fundamental Radiated Emission Data | Temperature | : 25 °C          |
| Test Voltage | : DC 5V                              | Humidity    | : 56%RH          |
| Test Result  | : <b>PASS</b>                        | Model       | :                |

**For Frequency Below 30MHz**

| Freq.<br>(MHz) | Emission (dBuV/m)<br>QP Detector | HORIZ /<br>VERT | Limits<br>(dBuV/m) | Margin<br>(dB) |
|----------------|----------------------------------|-----------------|--------------------|----------------|
| N/A            | N/A                              | N/A             | N/A                | N/A            |
|                |                                  |                 |                    |                |
|                |                                  |                 |                    |                |
|                |                                  |                 |                    |                |
|                |                                  |                 |                    |                |
|                |                                  |                 |                    |                |

- Note:**
- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
  - (2) “N/A” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that’s already beyond the background noise floor.
  - (3) Emission Level = Reading Level + Probe Factor + Cable Loss.

**For Frequency Above 30MHz**

| Freq.<br>(MHz) | Emission (dBuV/m)<br>QP Detector | HORIZ /<br>VERT | Limits<br>(dBuV/m) | Margin<br>(dB) |
|----------------|----------------------------------|-----------------|--------------------|----------------|
| 166.600        | 35.75                            | HORZ            | 43.5               | -7.75          |
| 166.080        | 30.39                            | VERT            | 43.5               | -13.11         |
| 265.600        | 27.92                            | HORZ            | 46.0               | -18.08         |
| 399.120        | 27.58                            | VERT            | 46.0               | -18.42         |
| 432.000        | 40.28                            | HORZ            | 46.0               | -5.72          |
| 882.720        | 37.48                            | VERT            | 46.0               | -8.52          |

- Note:**
- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
  - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.

## 7. RF Exposure Requirements

### 7.1 Test Equipment

Please refer to Section 10 this report.

### 7.2 Limit

According to FCC 15.247(e)(i) and FCC 1.1307(b)(1), Systems operating under provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commissions guidelines.

According to KDB 447498(2)(a)(i)

| Frequency Range    |                     | Maximum measured transmitter power frequency(MHz) | 60/f SAR Limitation (mW) |
|--------------------|---------------------|---------------------------------------------------|--------------------------|
| Low Frequency(MHz) | High Frequency(MHz) |                                                   |                          |
| 2412               | 2462                | 2412                                              | 24.88                    |

### 7.3 Test Result

Product : Tablet PC  
 Test Item : RF Exposure  
 Test Voltage : DC 5V  
 Test Result : **PASS**

Test Mode : IEEE 802.11b/g/n  
 Temperature : 25 °C  
 Humidity : 56%RH

| RF Exposure Requirements                                                                                                         | Compliance with FCC Rules                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EIRP=P <sub>x</sub> G<br><br>Where:<br>P=Power input to antenna<br>G=Power gain of the antenna relative to an isotropic radiator | Maximum output power at antenna input terminal:<br>-2.31 dBm = 0.59 mW (802.11b/g, 2412MHz)<br>-3.12 dBm = 0.49 mW (Draft n, 2412MHz)<br>Prediction distance: <2.5 cm<br>Antenna gain : 3.0 dBi<br>Limit 60/f is 24.88 mw for 2412MHz<br><br>802.11b/g: 1.18 mW<br>Draft n : 0.98 mW<br>The max. output power E.I.R.P < 24.88mW<br>Conclusion: No SAR is required. |

## 8. Photos of Testing

### 8. 1 EUT Test Photographs

Conducted emission test view



Radiated emission test view





## 8. 2 EUT Detailed Photographs

EUT top view



EUT bottom view



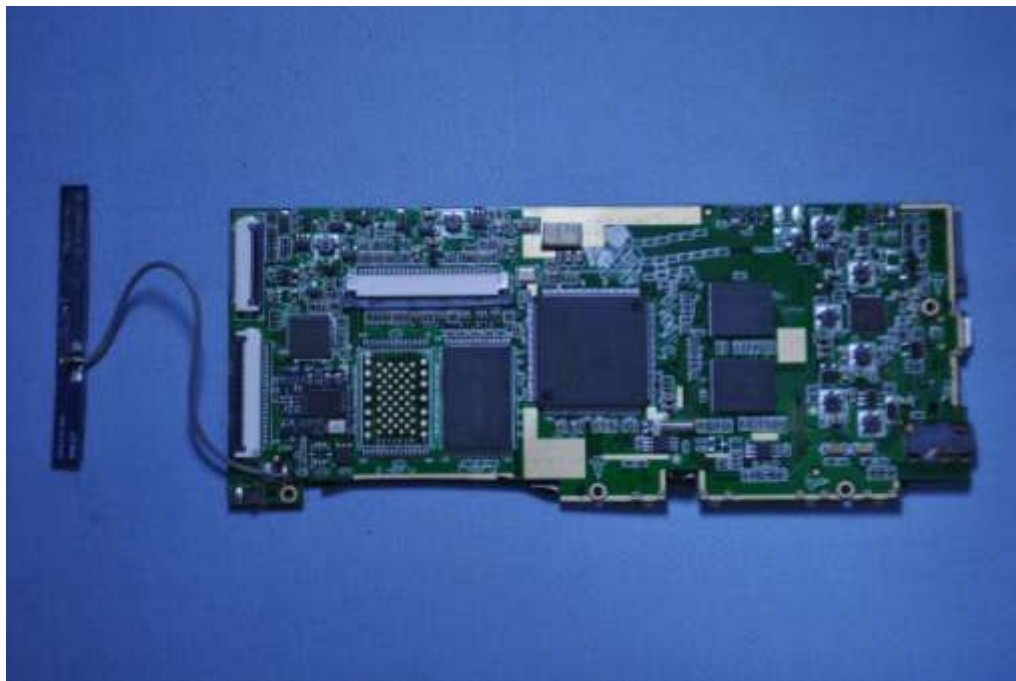




EUT inside whole view



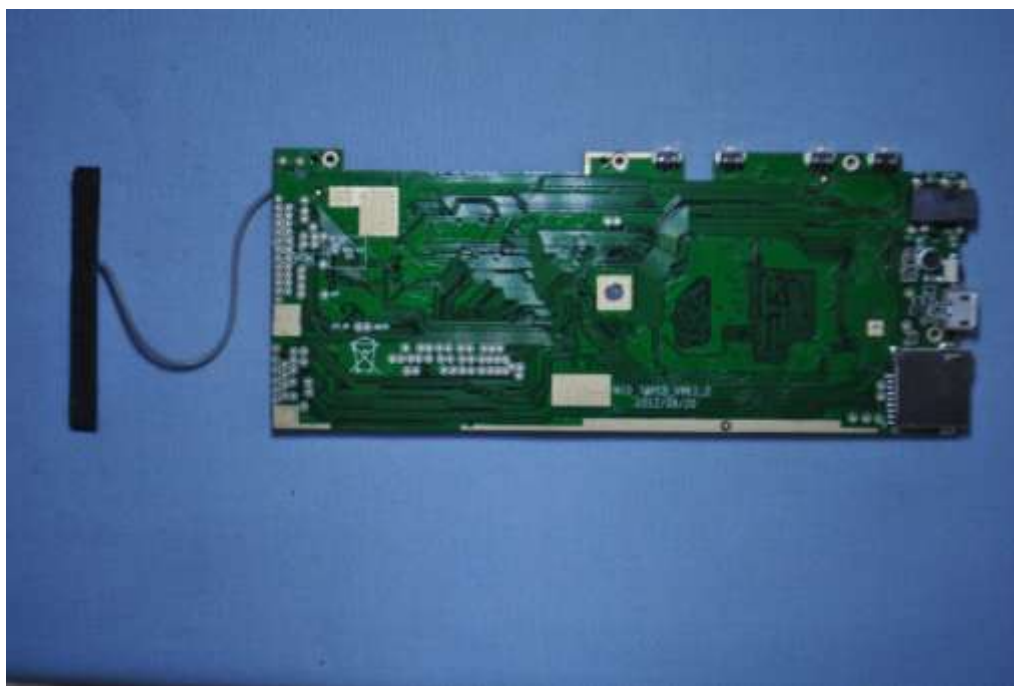
Main &amp; RF board component side







Main & RF board solder side





## 9. FCC ID Label

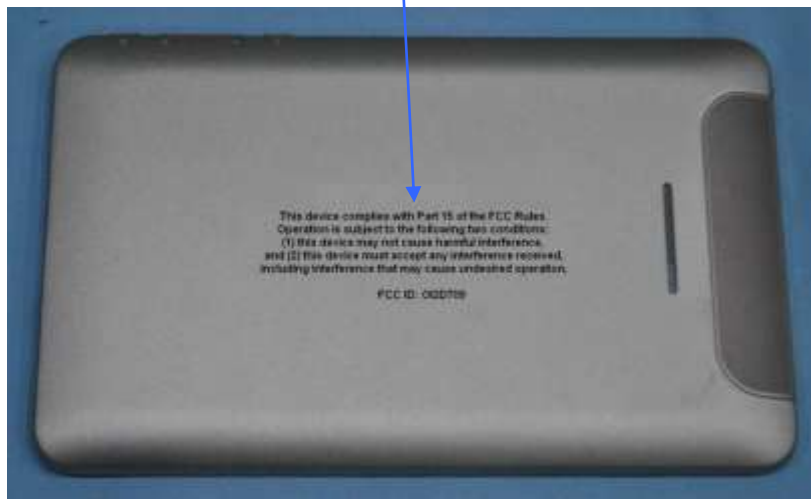
FCC ID: OI2D709

**This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

### Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location



## 10. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

| Equipment/<br>Facilities           | Manufacturer    | Model #        | Serial No.      | Due Date      |
|------------------------------------|-----------------|----------------|-----------------|---------------|
| Turntable                          | SinTek          | N/A            | N/A             | NCR           |
| Antenna Tower                      | SinTek          | N/A            | N/A             | NCR           |
| OATS                               | SinTek          | N/A            | N/A             | Sep.28, 2013  |
| Bilog Antenna                      | SCHAFFNER       | CBL6111C       | 2775            | June 12, 2013 |
| Pre-Amplifier                      | HP              | 8449B          | 3008B00965      | June 12, 2013 |
| Horn Antenna                       | EMCO            | 3115           | 9602-4659       | June 12, 2013 |
| Horn Antenna                       | Rohde & Schwarz | AT4560         | SB3435/03       | May 4, 2013   |
| EMI Test Receiver                  | Rohde & Schwarz | ESPI7          | 100013          | June 01, 2013 |
| Spectrum Analyzer                  | Rohde & Schwarz | FSP40          | 100273          | May 27, 2013  |
| Signal Generator                   | FLUKE           | PM5418+Y/C     | LO747012        | May 27, 2013  |
| Loop Antenna                       | Rohde & Schwarz | HFH2-Z2        | 872096/16       | Jan. 30, 2013 |
| Trilog-Super Broadband<br>Antenna  | SCHWARZBECK     | VULB9161       | 9161-4079       | Sep.18, 2013  |
| Trilog-Super Broadband<br>Antenna  | SCHWARZBECK     | VULB9161       | 9161-4080       | Sep.18, 2013  |
| Broad-Band Horn Antenna            | SCHWARZBECK     | BBHA 9120D     | 9120D-564       | Sep.18, 2013  |
| Broad-Band Horn Antenna            | SCHWARZBECK     | BBHA 9120D     | 9120D-565       | Sep.18, 2013  |
| AMN                                | Rohde & Schwarz | ESH3-Z5        | 100197          | May 27, 2013  |
| Pulse Limiter                      | SCHWARZBECK     | VTSD 9561-F    | 9604            | Nov.29, 2012  |
| ISN                                | SCHWARZBECK     | NTFM 8158 CAT3 | CAT 3 8158-0010 | Nov.19, 2012  |
| ISN                                | SCHWARZBECK     | NTFM 8158 CAT5 | CAT 5 8158-0009 | Nov.19, 2012  |
| ISN                                | SCHWARZBECK     | NTFM 8158 CAT6 | CAT 6 8158-0012 | Nov.19, 2012  |
| KMO Shielded Room                  | KMO             | KMO-001        | N/A             | N/A           |
| Coaxial Cable with<br>N-Connectors | SCHWARZBECK     | AK9515H        | 95549           | Sep.18, 2013  |
| SOHO Telephone Switching<br>System | IKE             | 2000-108C      | N/A             | NCR           |
| 3m Anechoic Chamber                | KMO             | KMO-3AC        | KMO-3AC-1       | May 29, 2013  |
| Temperature<br>Chamber             | TABAI           | PSL-4CTW       | N/A             | Feb.10, 2013  |