

Report No:



ISO/IEC17025Accredited Lab.

FCC 1407048

File reference No:2014-07-11Applicant:Shenzhen Harmony Technology Co., Ltd.

Product: Tablet PC

Model No: PLT9606G

Trademark: PROSCAN

Test Standards: FCC Part 15.247

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4, FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: July 11, 2014

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

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### **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

### CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

### FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

### IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

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### 1.0 General Details

| 1.1 | Test Lab Details     |   |
|-----|----------------------|---|
|     | Name :               | SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD                                 |
|     | Address:             | 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, |
|     |                      | Shenzhen, CHINA.  |
|     | Telephone:           | (755) 83448688  |
|     | Fax:                 | (755) 83442996  |
|     | Site on File with th | ne Federal Communications Commission – United Sates                             |
|     | Registration Numb    | per: 899988   |
|     | For 3m & 10 m OA     | ATS   |
|     | Site Listed with In- | dustry Canada of Ottawa, Canada   |
|     | Registration Numb    | ber: IC: 5205A-02   |
|     | For 3m & 10 m OA     | ATS   |
| 1.2 | Applicant Details    |   |
|     | Applicant:           | Shenzhen Harmony Technology Co., Ltd.   |
|     | Address:             | Block 2, Jiayuan Industrial Zone, Heping Community high-tech park, No 2 Fuyuan  |
|     |                      | Road, Fuyong, Bao'an, Shenzhen, China   |
|     | Telephone:           |   |
|     | Fax:                 |   |
|     |                      |   |
| 1.3 | Description of EU    | Г   |
|     | Product:             | Tablet PC   |
|     | Manufacturer:        | Shenzhen Harmony Technology Co., Ltd.   |
|     | Address:             | Block 2, Jiayuan Industrial Zone, Heping Community high-tech park,              |
|     |                      | No 2 Fuyuan Road, Fuyong, Bao'an, Shenzhen, China                               |
|     | Brand Name:          | PROSCAN   |
|     | Model Number:        | PLT9606G  |
|     | Additional Model     | Number: N/A   |
|     | Type of Modulatio    | n IEEE 802.11b : DSSS (CCK, QPSK, DBPSK)  |
|     |                      | IEEE 802.11g/n (HT20, HT40) : OFDM(64QAM, 16QAM, QPSK, BPSK)                    |
|     | Frequency range      | IEEE 802.11b/g/n (HT20) : 2412-2462MHz;   |
|     |                      | IEEE 802.11n (HT40) : 2422-2452MHz  |
|     | Channel Spacing      | 5MHz for IEEE 802.11b/g/n(HT20/HT40)  |
|     | Air Data Rate        | IEEE 802.11b : 11, 5.5, 2, 1 Mbps   |
|     |                      | IEEE 802.11g : 54, 48,36, 24, 18, 12, 9, 6 Mbps                                 |
|     |                      | IEEE 802.11n HT20: 65.0, 58.5, 52.0, 39.0,26.0,19.5,13.0,6.5 Mbps               |
|     |                      | IEEE 802.11n HT40 : 135.0, 121.5 ,108,81, 54, 40.5, 27.0,13.5 Mbps              |
|     | Frequency Selection  | on By software  |
|     | Channel Number       | IEEE 802.11b/g/n (HT20) : 11 Channels; IEEE 802.11n (HT40): 7 Channels          |

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| Antenna:             | Integral Antenna with maximum gain 1.56dBi         |
|----------------------|--|
| Rated Input Voltage: | DC5V   |
| Power Supply:        | Input: AC100-240V 50/60Hz 0.3A; Output: DC 5.0V 2A |

- 1.4 Submitted Sample: 2 Samples
- 1.5 Test Duration 2014-06-06 to 2014-06-24
- 1.6 Test Uncertainty Conducted Emissions Uncertainty =3.6dB Radiated Emissions Uncertainty =4.7dB
- 1.7 Test Engineer

Terry lang

The sample tested by

Print Name: Terry Tang

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| 2.0                    | Test Equipments |            |                       |              |            |  |  |
|------------------------|-----------------|------------|-----------------------|--------------|------------|--|--|
| Instrument Type        | Manufacturer    | Model      | Serial No.            | Date of Cal. | Due Date   |  |  |
| ESPI Test Receiver     | ROHDE&SCHWARZ   | ESPI 3     | 100379                | 2013-08-23   | 2014-08-22 |  |  |
| TWO<br>Line-V-NETW     | ROHDE&SCHWARZ   | EZH3-Z5    | 100294                | 2013-08-23   | 2014-08-22 |  |  |
| TWO<br>Line-V-NETW     | ROHDE&SCHWARZ   | EZH3-Z5    | 100253                | 2013-08-23   | 2014-08-22 |  |  |
| Ultra Broadband<br>ANT | ROHDE&SCHWARZ   | HL562      | 100157                | 2013-08-25   | 2014-08-24 |  |  |
| ESDV Test Receiver     | ROHDE&SCHWARZ   | ESDV       | 100008                | 2013-08-23   | 2014-08-22 |  |  |
| Impuls-Begrenzer       | ROHDE&SCHWARZ   | ESH3-Z2    | 100281                | 2013-08-24   | 2014-08-23 |  |  |
| System Controller      | СТ              | SC100      | -                     |              |            |  |  |
| Printer                | EPSON           | PHOTO EX3  | CFNH234850            |              |            |  |  |
| Computer               | IBM             | 8434       | 1S8434KCE99BLXL<br>O* | -            | -          |  |  |
| Loop Antenna           | EMCO            | 6502       | 00042960              | 2013-08-23   | 2014-08-22 |  |  |
| ESPI Test Receiver     | ROHDE&SCHWARZ   | ESI26      | 838786/013            | 2013-08-23   | 2014-08-22 |  |  |
| 3m OATS                |                 |            | N/A                   | 2013-08-22   | 2014-08-21 |  |  |
| Horn Antenna           | SCHWARZBECK     | BBHA 9170  | BBHA9170265           | 2013-08-24   | 2014-08-23 |  |  |
| Horn Antenna           | SCHWARZBECK     | BBHA 9120D | 9120D-631             | 2013-08-24   | 2014-08-23 |  |  |
| Power meter            | Anritsu         | ML2487A    | 6K00003613            | 2013-08-24   | 2014-08-23 |  |  |
| Power sensor           | Anritsu         | MA2491A    | 32263                 | 2013-08-24   | 2014-08-23 |  |  |
| Bilog Antenna          | Schwarebeck     | VULB9163   | 9163/340              | 2013-08-21   | 2014-08-20 |  |  |
| LISN                   | AFJ             | LS16C      | 10010947251           | 2013-08-21   | 2014-08-20 |  |  |
| LISN (Three Phase)     | Schwarebeck     | NSLK 8126  | 8126453               | 2013-08-23   | 2014-08-22 |  |  |
| 9*6*6 Anechoic         |                 |            | N/A                   | 2013-08-22   | 2014-08-21 |  |  |
| EMI Test Receiver      | RS              | ESCS30     | 100139                | 2013-08-23   | 2014-08-22 |  |  |
| RF Cable               | Timeway         | TW213      | N/A                   | 2013-08-22   | 2014-08-21 |  |  |

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### **3. DESCRIPTION OF TEST MODES**

### IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

| Channel | Frequency (MHz) |
|---------|-----------------|
| Low     | 2412            |
| Middle  | 2437            |
| High    | 2462            |

IEEE 802.11b mode: 1Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 6Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: 6.5Mbps data rate (worst case) were chosen for full testing

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

### IEEE 802.11n (HT40) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

| Channel | Frequency (MHz) |
|---------|-----------------|
| Low     | 2422            |
| Middle  | 2437            |
| High    | 2452            |

IEEE 802.11n (HT40) mode: 13.5Mbps data rate (worst case) were chosen for full testing

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

# Note: The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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#### 3.0 **Technical Details**

#### 3.1 Summary of test results

| Standard  | Test Type   | Result | Notes    |
|---|---|--------|----------|
| FCC Part 15, Paragraph 15.107<br>& 15.207             | Conducted Emission Test   | PASS   | Complies |
| FCC Part 15 Subpart C<br>Paragraph 15.247(a)(2) Limit | Spectrum bandwidth of a<br>Orthogonal Frequency<br>Division Multiplex System<br>Limit: 6dB<br>bandwidth>500kHz  | PASS   | Complies |
| FCC Part 15, Paragraph<br>15.247(b)                   | Maximum peak output<br>power<br>Limit: max. 30dBm   | PASS   | Complies |
| FCC Part 15, Paragraph<br>15.109,15.205 & 15.209      | Transmitter Radiated<br>Emission<br>Limit: Table 15.209   | PASS   | Complies |
| FCC Part 15, Paragraph<br>15.247(e)                   | Power Spectral Density<br>Limit: max. 8dBm  | PASS   | Complies |
| FCC Part 15, Paragraph<br>15.247(d)                   | Out of Band Emission and<br>Restricted Band<br>Radiation<br>Limit: 20dB less than<br>peak value of fundamental<br>frequency<br>Restricted band limit: | PASS   | Complies |

#### 3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

#### **EUT Modification** 4.0

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

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adopt any other remedies which may be appropriate.

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### 5. Power Line Conducted Emission Test



EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 500hm/50uH as specified by section 5.1 of ANSI C63.4-2003.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

| ٨  | EUT |
|----|-----|
| A. | LUI |

| Device    | Manufacturer                             | Model    | FCC ID        |
|-----------|--|----------|---------------|
| Tablet PC | Shenzhen Harmony Technology<br>Co., Ltd. | PLT9606G | 2ACJAPLT9606G |

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### B. Internal Device

| Device | Managhart    | Madal | ECC    |
|--------|--------------|-------|--------|
| Device | Manufacturer | Model | FCC    |
|        |              |       | ID/DOC |
| N/A    |              |       |        |

### C. Peripherals

| Device | Manufacturer | Model | FCC ID/DOC | Cable |
|--------|--------------|-------|------------|-------|
|        |              |       |            |       |

### 5.4 EUT Operating Condition

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

### 5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107

| Frequency         | Class A Limits (dB µ V) |               | Class B Limits (dB µ V) |               |
|-------------------|-------------------------|---------------|-------------------------|---------------|
| (MHz)             | Quasi-peak Level        | Average Level | Quasi-peak Level        | Average Level |
| $0.15 \sim 0.50$  | 79.0                    | 66.0          | 66.0~56.0*              | 56.0~46.0*    |
| $0.50~\sim~5.00$  | 73.0                    | 60.0          | 56.0                    | 46.0          |
| $5.00 \sim 30.00$ | 73.0                    | 60.0          | 60.0                    | 50.0          |

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

### 5.6 Test Results

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

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Conducted Emission on Live Terminal (150kHz to 30MHz) A: **EUT Operating Environment** Atmospheric Pressure: 101 KPa Temperature: 26°C Humidity: 65%RH EUT set Condition: Keep WIFI Transmitting **Equipment Level: Class B Results: PASS** Please refer to following diagram for individual 80.0 dBuV Limit: AVG: AVG 0.0 0.150 0.5 (MHz) 5 30.000

|   | No. | Mk. | Freq.  | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Over   |          |
|---|-----|-----|--------|------------------|-------------------|------------------|-------|--------|----------|
| - |     |     | MHz    | dBuV             | dB                | dBuV             | dBuV  | dB     | Detector |
| - | 1   | *   | 0.2007 | 37.38            | 10.30             | 47.68            | 63.58 | -15.90 | QP       |
| - | 2   |     | 0.2007 | 25.75            | 10.30             | 36.05            | 53.58 | -17.53 | AVG      |
| - | 3   |     | 0.3200 | 31.84            | 10.62             | 42.46            | 59.70 | -17.24 | QP       |
| - | 4   |     | 0.3200 | 20.37            | 10.62             | 30.99            | 49.70 | -18.71 | AVG      |
|   | 5   |     | 0.5940 | 25.97            | 10.68             | 36.65            | 56.00 | -19.35 | QP       |
|   | 6   |     | 0.5940 | 13.44            | 10.68             | 24.12            | 46.00 | -21.88 | AVG      |
|   | 7   |     | 0.6700 | 25.49            | 10.84             | 36.33            | 56.00 | -19.67 | QP       |
| - | 8   |     | 0.6700 | 17.61            | 10.84             | 28.45            | 46.00 | -17.55 | AVG      |
|   | 9   |     | 0.9380 | 25.02            | 10.87             | 35.89            | 56.00 | -20.11 | QP       |
| - | 10  |     | 0.9380 | 17.56            | 10.87             | 28.43            | 46.00 | -17.57 | AVG      |
| - | 11  |     | 4.0780 | 25.10            | 10.63             | 35.73            | 56.00 | -20.27 | QP       |
|   | 12  |     | 4.0780 | 18.75            | 10.63             | 29.38            | 46.00 | -16.62 | AVG      |

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Conducted Emission on Neutral Terminal (150kHz to 30MHz) **B**: **EUT Operating Environment** Atmospheric Pressure: 101 kPa Temperature: 26°C Humidity: 65%RH EUT set Condition: Keep WIFI Transmitting **Equipment Level: Class B Results: Pass** Please refer to following diagram for individual 80.0 dBuV Limit: AVG: 0.0 0.150 0.5 (MHz) 5 30.000

| No. | Mk. | Freq.  | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Over   |          |
|-----|-----|--------|------------------|-------------------|------------------|-------|--------|----------|
|     |     | MHz    | dBuV             | dB                | dBuV             | dBuV  | dB     | Detector |
| 1   |     | 0.2007 | 35.96            | 10.30             | 46.26            | 63.58 | -17.32 | QP       |
| 2   |     | 0.2007 | 25.23            | 10.30             | 35.53            | 53.58 | -18.05 | AVG      |
| 3   |     | 0.3234 | 32.75            | 10.61             | 43.36            | 59.62 | -16.26 | QP       |
| 4   |     | 0.3234 | 21.89            | 10.61             | 32.50            | 49.62 | -17.12 | AVG      |
| 5   |     | 0.4700 | 28.13            | 10.43             | 38.56            | 56.51 | -17.95 | QP       |
| 6   |     | 0.4700 | 21.05            | 10.43             | 31.48            | 46.51 | -15.03 | AVG      |
| 7   |     | 0.6700 | 26.42            | 10.84             | 37.26            | 56.00 | -18.74 | QP       |
| 8   | *   | 0.6700 | 21.58            | 10.84             | 32.42            | 46.00 | -13.58 | AVG      |
| 9   |     | 1.2059 | 25.15            | 10.74             | 35.89            | 56.00 | -20.11 | QP       |
| 10  |     | 1.2059 | 17.30            | 10.74             | 28.04            | 46.00 | -17.96 | AVG      |
| 11  |     | 4.1540 | 23.28            | 10.63             | 33.91            | 56.00 | -22.09 | QP       |
| 12  |     | 4.1540 | 14.43            | 10.63             | 25.06            | 46.00 | -20.94 | AVG      |

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#### 6 Radiated Emission Test

### 6.1 Test Method and test Procedure:

- The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (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 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (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) The antenna polarization : Vertical polarization and Horizontal polarization.



- 6.2 Configuration of The EUT Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  - Same as section 5.4 of this report.

The report refers only to the sample tested and does not apply to the bulk.

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### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

| Frequencies | in restricted | band are co | mplied to | limit on | Paragraph | 15.209 a | and 15.109 |
|-------------|---------------|-------------|-----------|----------|-----------|----------|------------|
|             |               |             | -         |          | 01        |          |            |

| Frequency Range (MHz) | Distance (m) | Field strength (dB $\mu$ V/m) |
|-----------------------|--------------|-------------------------------|
| 30-88                 | 3            | 40.0                          |
| 88-216                | 3            | 43.5                          |
| 216-960               | 3            | 46.0                          |
| Above 960             | 3            | 54.0                          |

Note: 1. RF Voltage  $(dBuV) = 20 \log RF$  Voltage (uV)

2. In the Above Table, the higher limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

5. For radiated emission from 9kHz to 30MHz, the measurements were greater than 20dB below the limit

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### Test result General Radiated Emission Data and Harmonics Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep WIFI Transmitting





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Remark: All of the Tx modes have been investigated, and only worst mode is presented in this report.

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Above 1GHz to 25GHz:

| Operation Mode:    | 802.11b TX (2412MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz           | Temperature : | 28°C          |
| Test Result:       | PASS                 | Humidity :    | 65 %          |
| Measured Distance: | 3m                   | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Limit 3m(dBuV/m) |        | Over(dB) |  |
|-------|----------|----------------------|-------|------------------|----|------------------|--------|----------|--|
| (MHz) | H/V      | РК                   | AV    | PK               | AV | РК               | AV     |          |  |
| 4824  | V        | 59.97                | 35.93 | 74               | 54 | -14.03           | -18.07 |          |  |
| 7236  | V        | 57.67                | 39.14 | 74               | 54 | -16.33           | -14.86 |          |  |
| 9648  | V        | 55.38                | 37.35 | 74               | 54 | -18.62           | -16.65 |          |  |
| 4824  | Н        | 58.22                | 38.63 | 74               | 54 | -15.78           | -15.37 |          |  |
| 7236  | Н        | 58.93                | 35.25 | 74               | 54 | -15.07           | -18.75 |          |  |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

**Note:** (1) All Readings are Peak Value and AV.

- (2) Emission Level= Reading Level + Probe Factor + Cable Loss.
- (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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| Operation Mode:    | 802.11b TX(2437MHz) | Test Date :   | June 20, 2014 |
|--------------------|---------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz          | Temperature : | 28°C          |
| Test Result:       | PASS                | Humidity :    | 65 %          |
| Measured Distance: | 3m                  | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Over   | (dB)   |
|-------|----------|----------------------|-------|------------------|----|--------|--------|
| (MHz) | H/V      | РК                   | AV    | РК               | AV | РК     | AV     |
| 4874  | V        | 58.97                | 39.62 | 74               | 54 | -15.03 | -14.38 |
| 7311  | V        | 58.00                | 39.45 | 74               | 54 | -16.00 | -14.55 |
| 9748  | V        | 58.52                | 39.53 | 74               | 54 | -15.48 | -14.47 |
| 4874  | Н        | 58.22                | 39.46 | 74               | 54 | -15.78 | -14.54 |
| 7311  | Н        | 57.42                | 36.95 | 74               | 54 | -16.58 | -17.05 |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

**Note:** (1) All Readings are Peak Value and AV.

- (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
  - (3) Data of measurement within this frequency range shown "--" in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11b TX (2462MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz           | Temperature : | 28°C          |
| Test Result:       | PASS                 | Humidity :    | 65 %          |
| Measured Distance: | 3m                   | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission Level(dBuV) |       | Limit 3m(dBuV/m) |    | Over(dB) |        |
|-------|----------|----------------------|-------|------------------|----|----------|--------|
| (MHz) | H/V      | РК                   | AV    | РК               | AV | РК       | AV     |
| 4924  | V        | 57.17                | 36.91 | 74               | 54 | -16.83   | -17.09 |
| 7386  | V        | 58.81                | 39.76 | 74               | 54 | -15.19   | -14.24 |
| 4924  | Н        | 59.92                | 37.14 | 74               | 54 | -14.08   | -16.86 |
| 7386  | Н        | 57.04                | 37.23 | 74               | 54 | -16.96   | -16.77 |

#### No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.

- **Note:** (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level + Probe Factor + Cable Loss.
    - (3) Data of measurement within this frequency range shown "--" in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11g TX (2412MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz           | Temperature : | 28°C          |
| Test Result:       | PASS                 | Humidity :    | 65 %          |
| Measured Distance: | 3m                   | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission 1 | Level(dBuV) | Limit 3m | (dBuV/m) | Over  | (dB)  |
|-------|----------|------------|-------------|----------|----------|-------|-------|
| (MHz) | H/V      | РК         | AV          | РК       | AV       | РК    | AV    |
| 4824  | V        | 64.6       | 47.3        | 74       | 54       | -9.4  | -6.7  |
| 7236  | V        | 67.4       | 42.1        | 74       | 54       | -6.6  | -11.9 |
| 9648  | V        | 66.2       | 45.6        | 74       | 54       | -7.8  | -8.4  |
| 4824  | Н        | 63.5       | 42.8        | 74       | 54       | -10.5 | -11.2 |
| 7236  | Н        | 62.0       | 45.6        | 74       | 54       | -12.0 | -8.4  |
| 9648  | Н        | 65.3       | 38.2        | 74       | 54       | -8.7  | -15.8 |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

**Note:** (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss.

(3) Data of measurement within this frequency range shown " -- " in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11g TX (2437MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz           | Temperature : | 28°C          |
| Test Result:       | PASS                 | Humidity :    | 65 %          |
| Measured Distance: | 3m                   | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission | Level(dBuV) | Limit 3m( | dBuV/m) | Over  | (dB)  |
|-------|----------|----------|-------------|-----------|---------|-------|-------|
| (MHz) | H/V      | РК       | AV          | РК        | AV      | РК    | AV    |
| 4874  | V        | 65.6     | 38.8        | 74        | 54      | -8.4  | -15.2 |
| 7311  | V        | 62.0     | 42.8        | 74        | 54      | -12.0 | -11.2 |
| 9748  | V        | 62.9     | 47.8        | 74        | 54      | -11.1 | -6.2  |
| 4874  | Н        | 64.0     | 44.7        | 74        | 54      | -10.0 | -9.3  |
| 7311  | Н        | 63.4     | 43.6        | 74        | 54      | -10.6 | -10.4 |
| 9748  | Н        | 63.5     | 39.4        | 74        | 54      | -10.5 | -14.6 |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

Note: (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss.

(3) Data of measurement within this frequency range shown "--" in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11g TX (2462MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz           | Temperature : | 28°C          |
| Test Result:       | PASS                 | Humidity :    | 65 %          |
| Measured Distance: | 3m                   | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission | Emission Level(dBuV) |    | Limit 3m(dBuV/m) |       | r(dB) |
|-------|----------|----------|----------------------|----|------------------|-------|-------|
| (MHz) | H/V      | РК       | AV                   | РК | AV               | РК    | AV    |
| 4924  | V        | 61.6     | 38.1                 | 74 | 54               | -12.4 | -15.9 |
| 7386  | V        | 67.1     | 46.6                 | 74 | 54               | -6.9  | -7.4  |
| 9848  | V        | 66.7     | 42.6                 | 74 | 54               | -7.3  | -11.4 |
| 4924  | Н        | 65.1     | 45.9                 | 74 | 54               | -8.9  | -8.1  |
| 7386  | Н        | 62.0     | 39.6                 | 74 | 54               | -12.0 | -14.4 |
| 9848  | Н        | 62.9     | 41.9                 | 74 | 54               | -11.1 | -12.1 |

#### No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.

**Note:** (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss.

(3) Data of measurement within this frequency range shown "--" in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11n HT-20 TX (2412MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28°C          |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission I | Emission Level(dBuV) Limit 3m(dBuV |    | (dBuV/m) | Over  | (dB) |
|-------|----------|------------|------------------------------------|----|----------|-------|------|
| (MHz) | H/V      | РК         | AV                                 | РК | AV       | РК    | AV   |
| 4824  | V        | 64.0       | 44.6                               | 74 | 54       | -10.0 | -9.4 |
| 7236  | V        | 61.3       | 45.4                               | 74 | 54       | -12.7 | -8.6 |
| 4824  | Н        | 61.3       | 45.4                               | 74 | 54       | -12.7 | -8.6 |
| 7236  | Н        | 58.6       | 44.4                               | 74 | 54       | -15.4 | -9.6 |

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

Note: (1) All Readings are Peak Value and AV.

- (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
- (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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| Operation Mode:    | 802.11n HT-20 TX (2437MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28°C          |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission | sion Level(dBuV) L |    | Limit 3m(dBuV/m) |       | Over(dB) |  |
|-------|----------|----------|--------------------|----|------------------|-------|----------|--|
| (MHz) | H/V      | РК       | AV                 | РК | AV               | РК    | AV       |  |
| 4874  | V        | 62.3     | 42.5               | 74 | 54               | -11.7 | -11.5    |  |
| 7311  | V        | 67.1     | 44.7               | 74 | 54               | -6.9  | -9.3     |  |
| 4874  | Н        | 63.9     | 42.4               | 74 | 54               | -10.1 | -11.6    |  |
| 7311  | Н        | 60.5     | 39.3               | 74 | 54               | -13.5 | -14.7    |  |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

- **Note:** (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
    - (3) Data of measurement within this frequency range shown "--" in the table above means the

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| Operation Mode:    | 802.11n HT-20 TX (2462MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28℃           |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Ant.Pol. Emission Level(dBuV) Limit 3m(dBuV/m) |      | Over(dB) |    |       |       |
|-------|----------|--|------|----------|----|-------|-------|
| (MHz) | H/V      | РК   | AV   | РК       | AV | РК    | AV    |
| 4924  | V        | 64.3   | 43.2 | 74       | 54 | -9.7  | -10.8 |
| 7386  | V        | 67.6   | 38.3 | 74       | 54 | -6.4  | -15.7 |
| 4924  | Н        | 60.9   | 44.9 | 74       | 54 | -13.1 | -9.1  |
| 7386  | Н        | 59.7   | 40.0 | 74       | 54 | -14.3 | -14.0 |

#### No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.

**Note:** (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level + Probe Factor + Cable Loss.

(3) Data of measurement within this frequency range shown "--" in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11n HT-40 TX (2422MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28°C          |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission Level(dBuV) |      | Limit 3m(dBuV/m) |    | Over  | (dB)  |
|-------|----------|----------------------|------|------------------|----|-------|-------|
| (MHz) | H/V      | РК                   | AV   | РК               | AV | РК    | AV    |
| 4844  | V        | 62.2                 | 39.0 | 74               | 54 | -11.8 | -15.0 |
| 7266  | V        | 61.8                 | 42.3 | 74               | 54 | -12.2 | -11.7 |
| 4844  | Н        | 67.8                 | 47.2 | 74               | 54 | -6.2  | -6.8  |
| 7266  | Н        | 67.8                 | 42.6 | 74               | 54 | -6.2  | -11.4 |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

- **Note:** (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
  - (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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| Operation Mode:    | 802.11n HT-40 TX (2437MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28°C          |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission | Emission Level(dBuV) Limit 3m(dBuV/m) |    | Over(dB) |       |       |
|-------|----------|----------|---------------------------------------|----|----------|-------|-------|
| (MHz) | H/V      | РК       | AV                                    | РК | AV       | РК    | AV    |
| 4874  | V        | 63.7     | 44.7                                  | 74 | 54       | -10.3 | -9.3  |
| 7311  | V        | 64.1     | 38.1                                  | 74 | 54       | -9.9  | -15.9 |
| 4874  | Н        | 64.2     | 44.4                                  | 74 | 54       | -9.8  | -9.6  |
| 7311  | Н        | 67.0     | 38.6                                  | 74 | 54       | -7.0  | -15.4 |

#### All emissions not reported were more than 20dB below the specified limit or in the noise floor.

- **Note:** (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss.
    - (3) Data of measurement within this frequency range shown " -- " in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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| Operation Mode:    | 802.11n HT-40 TX (2452MHz) | Test Date :   | June 20, 2014 |
|--------------------|----------------------------|---------------|---------------|
| Frequency Range:   | Above 1GHz                 | Temperature : | 28°C          |
| Test Result:       | PASS                       | Humidity :    | 65 %          |
| Measured Distance: | 3m                         | Test By:      | LHZ           |

| Freq. | Ant.Pol. | Emission | Emission Level(dBuV) Limit 3m(dBuV/m) |    | Over(dB) |       |       |
|-------|----------|----------|---------------------------------------|----|----------|-------|-------|
| (MHz) | H/V      | РК       | AV                                    | РК | AV       | РК    | AV    |
| 4904  | V        | 67.2     | 47.0                                  | 74 | 54       | -6.8  | -7.0  |
| 7356  | V        | 59.5     | 42.2                                  | 74 | 54       | -14.5 | -11.8 |
| 4904  | Н        | 59.1     | 40.5                                  | 74 | 54       | -14.9 | -13.5 |
| 7356  | Н        | 66.7     | 46.9                                  | 74 | 54       | -7.3  | -7.1  |

### No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.

**Note:** (1) All Readings are Peak Value and AV.

(2) Emission Level= Reading Level + Probe Factor + Cable Loss.

(3) Data of measurement within this frequency range shown " -- " in the table above means the

reading of emissions are attenuated more than 20dB below the permissible limits or the

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#### Antenna port conducted spurious emissions

802.11b:

### Low channel



Sweep points = 20001

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Middle channel



Sweep points = 20001



Sweep points = 20001

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### High channel

NH
NH
Marker 2 [11]

VEW 3 MHz
-42.87 dBm

Ref
32 dBm
\*Att 25 dB
SWT 140 ms
5.538461538 GHz

Image: State 1 GHz
Marker 1 [11]
1.18 dBm
2.46153 462 GHz
Marker 1 [11]

Image: State 1 GHz
Offset 2 dB
Image: State 1 GHz
Marker 1 [11]
Image: State 1 GHz
<tht

Sweep points = 20001

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#### 802.11g:

### Low channel



#### Sweep points = 20001



Sweep points = 20001

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### Middle channel



Sweep points = 20001



Sweep points = 20001

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### **High channel**



Sweep points = 20001



Sweep points = 20001

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#### 802.11n HT20:

### Low channel



Sweep points = 20001



Sweep points = 20001

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### Middle channel



Sweep points = 20001



Sweep points = 20001

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High channel



Sweep points = 20001



Sweep points = 20001

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#### 802.11n HT40:

# Low channel



Sweep points = 20001



Sweep points = 20001

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# Middle channel



Sweep points = 20001



Sweep points = 20001

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High channel



Sweep points = 20001



Sweep points = 20001

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7.0 6dB Bandwidth Measurement7.1 Test Setup



# 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

# 7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW)  $\geq$  3 x 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.

# 7.4 Test Result

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### 6dB Occupied Bandwidth

| EUT      |       | Ta                    | ablet PC                           |                | Model          |            | PLTS              | 9606G      |  |
|----------|-------|-----------------------|------------------------------------|----------------|----------------|------------|-------------------|------------|--|
| Mode     |       | 8                     | 302.11b                            |                | Input Vol      | age DC3    |                   | 3.7V       |  |
| Temperat | ure   | 24                    | 4 deg. C,                          |                | Humidity       | y 56%      |                   | 6 RH       |  |
| Channel  | Chann | el Frequency<br>(MHz) | Data<br>Transfer<br>Rate<br>(Mbps) | 6 dB Ba<br>(kl | ndwidth<br>Hz) | Minir<br>( | num Limit<br>MHz) | Pass/ Fail |  |
| 1        |       | 2412                  | 1                                  | 100            | 00.0           |            | 0.5               | Pass       |  |
| 6        |       | 2437                  | 1                                  | 101            | 28.2           | 0.5        |                   | Pass       |  |
| 11       |       | 2462                  | 1                                  | 101            | 28.2           |            | 0.5               | Pass       |  |

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#### 3. 802.11b at 1Mbps of CH11



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### 6dB Occupied Bandwidth

| EUT         |       | Ta                    | ablet PC                           |   | Mod        | lel                    | PI  | .T9606G    |
|-------------|-------|-----------------------|------------------------------------|---|------------|------------------------|-----|------------|
| Mode        |       | 8                     | 302.11g                            |   | Input Volt | tage                   | Γ   | DC3.7V     |
| Temperature |       | 24 deg. C,            |                                    |   | Humidity   | lity 5                 |     | 6% RH      |
| Channel     | Chann | el Frequency<br>(MHz) | Data<br>Transfer<br>Rate<br>(Mbps) | Data<br>ransfer 6 dB Bandwid<br>Rate (kHz)<br>Mbps) |            | Minimum Limit<br>(MHz) |     | Pass/ Fail |
| 1           |       | 2412                  | 6                                  | 165   | 38.5       |                        | 0.5 | Pass       |
| 6           |       | 2437                  | 6                                  | 164   | 74.4       |                        | 0.5 | Pass       |
| 11          |       | 2462                  | 6                                  | 165   | 38.5       |                        | 0.5 | Pass       |

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LVL

3DB

#### **Test Plots:** 1. 802.11g at 6Mbps of CH01 Ŵ \*RBW 100 kHz Delta l [Tl ] \* VBW 300 kHz -0.34 dB SWT 15 ms 32 dBm \* Att 25 dB 16.538461538 MHz Ref 30-OFF 1 (T1) \_\_\_\_ -20.09 dBm 403730769 GHz A 2 [T1 ] -13.09 dBm 1 PK VIEW .419564103 GHz -10 who have shahad dealing half affer the 20 30 under and more and the mounder 50 Center 2.412 GHz 4 MHz/ Span 40 MHz 2. 802.11g at 6Mbps of CH06



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3. 802.11g at 6Mbps of CH11



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### 6dB Occupied Bandwidth

| EUT      |       | Т                     | ablet PC                           |                | Mod            | el         | PLTS              | 9606G      |
|----------|-------|-----------------------|------------------------------------|----------------|----------------|------------|-------------------|------------|
| Mode     |       | 802                   | .11n HT20                          |                | Input Vol      | tage       | DC                | 3.7V       |
| Temperat | ure   | 24                    | 4 deg. C,                          |                | Humidity       | y 56%      |                   | 6 RH       |
| Channel  | Chann | el Frequency<br>(MHz) | Data<br>Transfer<br>Rate<br>(Mbps) | 6 dB Ba<br>(kl | ndwidth<br>Hz) | Minir<br>( | num Limit<br>MHz) | Pass/ Fail |
| 1        |       | 2412                  | 6.5                                | 176            | 92.3           |            | 0.5               | Pass       |
| 6        |       | 2437                  | 6.5                                | 176            | 92.3           |            | 0.5               | Pass       |
| 11       |       | 2462                  | 6.5                                | 176            | 92.3           |            | 0.5               | Pass       |

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# Test Plots: 1. 802.11n at HT20 of CH01



### 2. 802.11n at HT20 of CH06



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#### 3. 802.11n at HT20 of CH11



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### 6dB Occupied Bandwidth

| EUT      |       | Ta                    | ablet PC                           |                | Mod            | lel        | PLTS              | 9606G      |
|----------|-------|-----------------------|------------------------------------|----------------|----------------|------------|-------------------|------------|
| Mode     |       | 802                   | .11n HT40                          |                | Input Volt     | tage       | DC                | 3.7V       |
| Temperat | ure   | 24                    | 4 deg. C,                          |                | Humidity       | 56%        |                   | 6 RH       |
| Channel  | Chann | el Frequency<br>(MHz) | Data<br>Transfer<br>Rate<br>(Mbps) | 6 dB Ba<br>(kl | ndwidth<br>Hz) | Minir<br>( | num Limit<br>MHz) | Pass/ Fail |
| 1        |       | 2422                  | 13.5                               | 361            | 53.8           |            | 0.5               | Pass       |
| 4        |       | 2437                  | 13.5                               | 361            | 53.8           |            | 0.5               | Pass       |
| 7        |       | 2452                  | 13.5                               | 359            | 61.5           |            | 0.5               | Pass       |

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#### 1. 802.11n at HT40 of CH1



#### 2. 802.11n at HT40 of CH4



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8. Maximum Peak Output Power

8.1 Test Setup



# 8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

## **8.3 Test Procedure**

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

# Note: the peak power was measured

The report refers only to the sample tested and does not apply to the bulk.

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### **8.4Test Results**

| EUT         |                            | Tablet     | : PC                       | М             | odel                 |                    | PLT9606G   |  |
|-------------|----------------------------|------------|----------------------------|---------------|----------------------|--------------------|------------|--|
| Mode        |                            | 802.11b    |                            | Input Voltage |                      |                    | DC3.7V     |  |
| Temperature |                            | 24 deg. C, |                            | Humidity      |                      |                    | 56% RH     |  |
| Channel     | Channel Frequency<br>(MHz) |            | Peak Power Output<br>(dBm) |               | Peak P<br>Lin<br>(dB | Power<br>nit<br>m) | Pass/ Fail |  |
| 1           | 2412                       |            | 7.44                       |               | 30                   |                    | Pass       |  |
| 6           | 6 2437                     |            | 7.92                       |               | 30                   |                    | Pass       |  |
| 11          |                            | 2462       | 7.78                       |               | 30                   | )                  | Pass       |  |

Note: 1. At finial test to get the worst-case emission at 1Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

| EUT         |        | Tablet PC                |                            | М             | odel                 |                    | PLT9606G   |  |
|-------------|--------|--------------------------|----------------------------|---------------|----------------------|--------------------|------------|--|
| Mode        |        | 802.11g                  |                            | Input Voltage |                      |                    | DC3.7V     |  |
| Temperature |        | 24 deg                   | 24 deg. C,                 |               | Humidity             |                    | 56% RH     |  |
| Channel     | Cha    | annel Frequency<br>(MHz) | Peak Power Output<br>(dBm) |               | Peak P<br>Lin<br>(dB | Power<br>nit<br>m) | Pass/ Fail |  |
| 1           | 2412   |                          | 6.71                       |               | 30                   |                    | Pass       |  |
| 6           | 6 2437 |                          | 7.37                       |               | 30                   |                    | Pass       |  |
| 11          |        | 2462                     | 7.1                        | 5             | 30                   | )                  | Pass       |  |

Note: 1. At finial test to get the worst-case emission at 6Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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| EUT      |                                | Tablet     | t PC                       | М        | odel                 |                    | PLT9606G   |
|----------|--------------------------------|------------|----------------------------|----------|----------------------|--------------------|------------|
| Mode     |                                | 802.11n (  | (HT20)                     | Input    | Voltage              |                    | DC3.7V     |
| Temperat | ure                            | 24 deg. C, |                            | Humidity |                      | 56% RH             |            |
| Channel  | nannel Channel Frequency (MHz) |            | Peak Power Output<br>(dBm) |          | Peak P<br>Lin<br>(dB | Power<br>nit<br>m) | Pass/ Fail |
| 1        | 2412                           |            | 6.66                       |          | 30                   |                    | Pass       |
| 6        | 6 2437                         |            | 7.2                        | 3        | 30                   | )                  | Pass       |
| 11       |                                | 2462       | 7.2                        | 2        | 30                   | )                  | Pass       |

Note: 1. At finial test to get the worst-case emission at 6.5Mbps of 11n HT20 for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

| EUT      |                           | Tablet PC     |                            | М             | odel                 |                    | PLT9606G   |  |
|----------|---------------------------|---------------|----------------------------|---------------|----------------------|--------------------|------------|--|
| Mode     |                           | 802.11n (H40) |                            | Input Voltage |                      | DC3.7V             |            |  |
| Temperat | ure                       | 24 deg        | 24 deg. C,                 |               | Humidity             |                    | 56% RH     |  |
| Channel  | Channel Frequenc<br>(MHz) |               | Peak Power Output<br>(dBm) |               | Peak P<br>Lin<br>(dB | Power<br>nit<br>m) | Pass/ Fail |  |
| 1        | 2422                      |               | 5.85                       |               | 30                   |                    | Pass       |  |
| 4        | 4 2437                    |               | 6.0                        | 2             | 30                   | )                  | Pass       |  |
| 7        |                           | 2452          | 6.2                        | 0             | 30                   | )                  | Pass       |  |

Note: 1. At finial test to get the worst-case emission at 13.5Mbps of 11n HT40 for CH01, CH04 and CH07

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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# 9. Power Spectral Density Measurement

9.1 Test Setup



# 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

# 9.3 Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.

- 2. Set the RBW = 3 kHz.
- 3. Set the VBW =10 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be  $\leq 8$  dBm.

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## 9.4Test Result

| EUT         |      | Tablet                   | PC                          | М             | odel           |               | PLT9606G   |  |
|-------------|------|--------------------------|-----------------------------|---------------|----------------|---------------|------------|--|
| Mode        |      | 802.11b 1Mbps            |                             | Input Voltage |                | DC3.7V        |            |  |
| Temperature |      | 24 deg. C,               |                             | Humidity      |                |               | 56% RH     |  |
| Channel     | Cha  | annel Frequency<br>(MHz) | Final RF Po<br>Level in (dI | ower<br>Bm)   | Maximur<br>(dB | n Limit<br>m) | Pass/ Fail |  |
|             |      |                          | 1Mbps                       |               |                |               |            |  |
| 1           | 2412 |                          | -17.85                      |               | 8              |               | Pass       |  |
| 6 2437      |      | -19.33                   |                             | 8             |                | Pass          |            |  |
| 11          |      | 2462                     | -19.79                      |               | 8              |               | Pass       |  |

| EUT         |        | Tablet PC       |              | М             | odel          |      | PLT9606G   |  |
|-------------|--------|-----------------|--------------|---------------|---------------|------|------------|--|
| Mode        |        | 802.11g 6Mbps   |              | Input Voltage |               |      | DC3.7V     |  |
| Temperature |        | 24 deg          | 24 deg. C,   |               | Humidity      |      | 56% RH     |  |
| Channel     | Cha    | annel Frequency | Final RF Po  | wer           | Maximum Limit |      | Pass/ Fail |  |
|             |        | (MHz)           | Level in (dl | 3m)           | (dB           | m)   |            |  |
|             |        |                 |              |               |               |      |            |  |
|             |        |                 | 6Mbps        |               |               |      |            |  |
| 1           | 1 2412 |                 | -26.68       |               | 8             |      | Pass       |  |
| 6 2437      |        | -26.23          |              | 8             |               | Pass |            |  |
| 11          |        | 2462            | -27.48       |               | 8             |      | Pass       |  |

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| EUT      |      | Tablet PC            |                | М             | odel   | PLT9606G |            |  |
|----------|------|----------------------|----------------|---------------|--------|----------|------------|--|
| Mode     |      | 802.11n HT20 6.5Mbps |                | Input Voltage |        |          | DC3.7V     |  |
| Temperat | ure  | 24 deg. C,           |                | Humidity      |        |          | 56% RH     |  |
| Channal  | Cha  | annel Frequency      | Final RF Po    | ower          | Maximu | n Limit  | Pass/ Fail |  |
| Chaimer  |      | (MHz)                | Level in (dBm) |               | (dB    | m)       |            |  |
|          |      |                      |                |               |        |          |            |  |
|          |      |                      | 6.5Mbp         | S             |        |          |            |  |
| 1        | 2412 |                      | -27.47         |               | 8      |          | Pass       |  |
| 6 2437   |      | -27.08               |                | 8             |        | Pass     |            |  |
| 11       |      | 2462                 | -26.57         |               | 8      |          | Pass       |  |

| EUT         |     | Tablet                | PC             | М             | odel          |      | PLT9606G   |  |
|-------------|-----|-----------------------|----------------|---------------|---------------|------|------------|--|
| Mode        |     | 802.11n HT40 13.5Mbps |                | Input Voltage |               |      | DC3.7V     |  |
| Temperature |     | 24 deg                | 24 deg. C,     |               | Humidity      |      | 56% RH     |  |
| Channel     | Cha | annel Frequency       | Final RF Po    | ower          | Maximum Limit |      | Pass/ Fail |  |
| Chainier    |     | (MHz)                 | Level in (dBm) |               | (dB           | m)   |            |  |
|             |     |                       |                |               |               |      |            |  |
|             |     |                       | 13.5Mbp        | DS            |               |      |            |  |
| 1           |     | 2422                  | -30.92         |               | 8             |      | Pass       |  |
| 4 2437      |     | -30.64                |                | 8             |               | Pass |            |  |
| 7           |     | 2452                  | -30.68         |               | 8             |      | Pass       |  |

Remark: All of the modes have been investigated, and only worst mode is presented in this report.

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### 9.5 Photo of Power Spectral Density Measurement

1.802.11b at 1Mbps of CH01







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#### 3. 802.11b at 1Mbps of CH11



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Start 2.392 GHz

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4 MHz/

Stop 2.432 GHz







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7.802.11n HT20 at 6.5Mbps of CH01



## 8. 802.11n HT20 at 6.5Mbps of CH06



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## 9. 802.11n HT20 at 6.5Mbps of CH11



#### 10.802.11n HT40 at 13.5Mbps of CH01



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### 11. 802.11n HT40 at 13.5Mbps of CH04





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10 Out of Band Measurement

**10.1 Test Setup for band edge** 



# The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

# 10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

# **10.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.( Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector)

For bandage test, the spectrum set as follows: RBW=100, VBW=100 kHz. A conducted measurement used

# **10.4 Test Result**

Please see next pages

Note: This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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#### **Radiated measurement:**

### 802.11b

| Indicat               | ted                             |                   | Table                      |                | nna                      | Correction Factor     |                          |                           | FCC Part 15.247   |                |       |
|-----------------------|---------------------------------|-------------------|----------------------------|----------------|--------------------------|-----------------------|--------------------------|---------------------------|-------------------|----------------|-------|
| Frequency<br>(MHz)    | Receiver<br>Reading<br>(dBµV/m) | result<br>(PK/AV) | Angle Height<br>Degree (m) | Polar<br>(H/V) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Pre-Amp.<br>Gain<br>(dB) | Cord.<br>Amp.<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) |       |
| Low Channel (2412MHz) |                                 |                   |                            |                |                          |                       |                          |                           |                   |                |       |
| 2390                  | 44.42                           | AV                | 260                        | 2              | V                        | 30.3                  | 4.1                      | 33.1                      | 45.72             | 54             | 8.28  |
| 2390                  | 45.27                           | AV                | 280                        | 1              | Н                        | 30.3                  | 4.1                      | 33.1                      | 46.57             | 54             | 7.43  |
| 2390                  | 61.91                           | РК                | 160                        | 1              | V                        | 30.3                  | 4.1                      | 33.1                      | 63.21             | 74             | 10.79 |
| 2390                  | 65.89                           | РК                | 350                        | 1              | Н                        | 30.3                  | 4.1                      | 33.1                      | 67.19             | 74             | 6.81  |
|                       | High Channel (2462MHz)          |                   |                            |                |                          |                       |                          |                           |                   |                |       |
| 2483.5                | 37.72                           | AV                | 120                        | 2              | V                        | 31                    | 4.4                      | 32.7                      | 40.42             | 54             | 13.58 |
| 2483.5                | 41.42                           | AV                | 110                        | 2              | Н                        | 31                    | 4.4                      | 32.7                      | 44.12             | 54             | 9.88  |
| 2483.5                | 59.13                           | РК                | 210                        | 1              | V                        | 31                    | 4.4                      | 32.7                      | 61.83             | 74             | 12.17 |
| 2483.5                | 61.48                           | РК                | 170                        | 1.5            | Н                        | 31                    | 4.4                      | 32.7                      | 64.18             | 74             | 9.82  |

# 802.11g

| Indicated              |                                 | Table             |                   | Antenna       |                | Correction Factor        |                       |                          | FCC Part 15.247           |                   |                |
|------------------------|---------------------------------|-------------------|-------------------|---------------|----------------|--------------------------|-----------------------|--------------------------|---------------------------|-------------------|----------------|
| Frequency<br>(MHz)     | Receiver<br>Reading<br>(dBµV/m) | result<br>(PK/AV) | Angle H<br>Degree | Height<br>(m) | Polar<br>(H/V) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Pre-Amp.<br>Gain<br>(dB) | Cord.<br>Amp.<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) |
| Low Channel (2412MHz)  |                                 |                   |                   |               |                |                          |                       |                          |                           |                   |                |
| 2390                   | 38.42                           | AV                | 280               | 1             | V              | 30.3                     | 4.1                   | 33.1                     | 39.72                     | 54                | 14.28          |
| 2390                   | 41.79                           | AV                | 100               | 2             | Н              | 30.3                     | 4.1                   | 33.1                     | 43.09                     | 54                | 10.91          |
| 2390                   | 60.40                           | РК                | 210               | 2             | V              | 30.3                     | 4.1                   | 33.1                     | 61.70                     | 74                | 12.30          |
| 2390                   | 64.77                           | РК                | 170               | 1.5           | Н              | 30.3                     | 4.1                   | 33.1                     | 66.07                     | 74                | 7.93           |
| High Channel (2462MHz) |                                 |                   |                   |               |                |                          |                       |                          |                           |                   |                |
| 2483.5                 | 38.17                           | AV                | 350               | 1             | V              | 31                       | 4.4                   | 32.7                     | 40.87                     | 54                | 13.13          |
| 2483.5                 | 38.31                           | AV                | 130               | 1             | Н              | 31                       | 4.4                   | 32.7                     | 41.01                     | 54                | 12.99          |
| 2483.5                 | 60.69                           | РК                | 330               | 1             | V              | 31                       | 4.4                   | 32.7                     | 63.39                     | 74                | 10.61          |
| 2483.5                 | 62.69                           | РК                | 200               | 1.5           | Н              | 31                       | 4.4                   | 32.7                     | 65.39                     | 74                | 8.61           |

Note: The BAND EDGE RESTRICTED BANDS emission is too low at least 20dB to the Fundamental.

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### 802.11n HT-20

| Indicated             |                                 |                   | Table                      | Antenna        |                          | Correction Factor     |                          |                           | FCC Part 15.247   |                |       |
|-----------------------|---------------------------------|-------------------|----------------------------|----------------|--------------------------|-----------------------|--------------------------|---------------------------|-------------------|----------------|-------|
| Frequency<br>(MHz)    | Receiver<br>Reading<br>(dBµV/m) | result<br>(PK/AV) | Angle Height<br>Degree (m) | Polar<br>(H/V) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Pre-Amp.<br>Gain<br>(dB) | Cord.<br>Amp.<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) |       |
| Low Channel (2412MHz) |                                 |                   |                            |                |                          |                       |                          |                           |                   |                |       |
| 2390                  | 40.16                           | AV                | 240                        | 1              | V                        | 30.3                  | 4.1                      | 33.1                      | 41.46             | 54             | 12.54 |
| 2390                  | 40.66                           | AV                | 180                        | 2              | Н                        | 30.3                  | 4.1                      | 33.1                      | 41.96             | 54             | 12.04 |
| 2390                  | 58.39                           | РК                | 330                        | 1              | V                        | 30.3                  | 4.1                      | 33.1                      | 59.69             | 74             | 14.31 |
| 2390                  | 61.25                           | РК                | 120                        | 2              | Н                        | 30.3                  | 4.1                      | 33.1                      | 62.55             | 74             | 11.45 |
|                       | High Channel (2462MHz)          |                   |                            |                |                          |                       |                          |                           |                   |                |       |
| 2483.5                | 37.45                           | AV                | 200                        | 2              | V                        | 31                    | 4.4                      | 32.7                      | 40.15             | 54             | 13.85 |
| 2483.5                | 38.32                           | AV                | 240                        | 2              | Н                        | 31                    | 4.4                      | 32.7                      | 41.02             | 54             | 12.98 |
| 2483.5                | 64.35                           | РК                | 300                        | 1.5            | V                        | 31                    | 4.4                      | 32.7                      | 67.05             | 74             | 6.95  |
| 2483.5                | 57.32                           | РК                | 260                        | 2              | Н                        | 31                    | 4.4                      | 32.7                      | 60.02             | 74             | 13.98 |

802.11n HT-40

| Indicated             |                                 |                   | Table                        | Antenna       |                | Correction Factor        |                       |                          | FCC Part 15.247           |                   |                |
|-----------------------|---------------------------------|-------------------|------------------------------|---------------|----------------|--------------------------|-----------------------|--------------------------|---------------------------|-------------------|----------------|
| Frequency<br>(MHz)    | Receiver<br>Reading<br>(dBµV/m) | result<br>(PK/AV) | Angle <sub>H</sub><br>Degree | Height<br>(m) | Polar<br>(H/V) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Pre-Amp.<br>Gain<br>(dB) | Cord.<br>Amp.<br>(dBµV/m) | Limit<br>(dBµV/m) | Margin<br>(dB) |
| Low Channel (2422MHz) |                                 |                   |                              |               |                |                          |                       |                          |                           |                   |                |
| 2390                  | 40.59                           | AV                | 130                          | 1.5           | V              | 30.3                     | 4.1                   | 33.1                     | 41.89                     | 54                | 12.11          |
| 2390                  | 45.50                           | AV                | 190                          | 2             | Н              | 30.3                     | 4.1                   | 33.1                     | 46.80                     | 54                | 7.20           |
| 2390                  | 58.87                           | РК                | 300                          | 1.5           | V              | 30.3                     | 4.1                   | 33.1                     | 60.17                     | 74                | 13.83          |
| 2390                  | 62.94                           | РК                | 330                          | 1.5           | Н              | 30.3                     | 4.1                   | 33.1                     | 64.24                     | 74                | 9.76           |
|                       |                                 |                   |                              | High          | Channe         | el (24521                | MHz)                  |                          |                           |                   |                |
| 2483.5                | 42.66                           | AV                | 340                          | 1             | V              | 31                       | 4.4                   | 32.7                     | 45.36                     | 54                | 8.64           |
| 2483.5                | 43.45                           | AV                | 340                          | 1             | Н              | 31                       | 4.4                   | 32.7                     | 46.15                     | 54                | 7.85           |
| 2483.5                | 56.24                           | РК                | 210                          | 1             | V              | 31                       | 4.4                   | 32.7                     | 58.94                     | 74                | 15.06          |
| 2483.5                | 60.57                           | РК                | 220                          | 2             | Н              | 31                       | 4.4                   | 32.7                     | 63.27                     | 74                | 10.73          |

Note: The BAND EDGE RESTRICTED BANDS emission is too low at least 20dB to the Fundamental.

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#### **Conducted measurement:**

#### 802.11b:



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### 802.11g:

#### Low channel



Center 2.5 GHz 10 MHz/

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#### 802.11n HT20:

Low channel



#### High channel



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### 802.11n HT40:

Low channel



#### High channel



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# 11.0 Antenna Requirement

# 11.1 Standard Applicable

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

# 11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of the antennas is 1.56dBi.

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#### 12.0 Photo of testing

Conducted Emission Test Setup:



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Radiated Emission Test Setup:



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# PHOTOGRAPHS OF EUT

Appearance photograph of EUT



Appearance photograph of EUT



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## Appearance photograph of EUT



### Appearance photograph of EUT



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# Appearance photograph of EUT



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# Internal photograph of EUT



Internal photograph of EUT



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