# FCC Test Report

| | |
|---|---|
| **Report No.:** | RF141016E01B |
| **FCC ID:** | PY315200315 |
| **Test Model:** | D6400 |
| **Received Date:** | June 02, 2015 |
| **Test Date:** | June 08 to Nov. 09, 2015 |
| **Issued Date:** | Nov. 17, 2015 |
| **Applicant:** | NETGEAR, Inc. |
| **Address:** | 350 East Plumeria Drive San Jose, CA 95134 |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory |
| **Lab Address:** | No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C. |
| **Test Lab A:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory |
| **Test Location (1):** | No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C. |
| **Test Location (2):** | No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C. |
| **Test Location (3):** | E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C. |
| **Test Lab B:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories |
| **Test Location:** | No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 33383, Taiwan, R.O.C. |

## Table of Contents

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| RF141016E01B | Original release. | Nov. 17, 2015 |

## 1 Certificate of Conformity

| | |
|---|---|
| **Product:** | AC1600 WiFi VDSL/ADSL Modem Router |
| **Brand:** | NETGEAR |
| **Test Model:** | D6400 |
| **Sample Status:** | ENGINEERING SAMPLE |
| **Applicant:** | NETGEAR, Inc. |
| **Test Date:** | June 08 to Nov. 09, 2015 |
| **Standards:** | 47 CFR FCC Part 15, Subpart C (Section 15.247)<br>ANSI C63.10: 2013 |

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report. This report contains Radiated Emissions & Band Edge Measurement (above 1GHz) test data that were produced under subcontract by Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories.

**Prepared by :** _____ , **Date:** Nov. 17, 2015
Lori Chung / Specialist

**Approved by :** _____ , **Date:** Nov. 17, 2015
May Chen / Manager

## 2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart C (SECTION 15.247) | | | |
|---|---|---|---|
| FCC Clause | Test Item | Result | Remarks |
| 15.207 | AC Power Conducted Emission | Pass | Meet the requirement of limit. Minimum passing margin is -6.01dB at 0.29844MHz. |
| 15.205 / 15.209 / 15.247(d) | Radiated Emissions and Band Edge Measurement | Pass | Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz. |
| 15.247(d) | Antenna Port Emission | Pass | Meet the requirement of limit. |
| 15.247(a)(2) | 6dB bandwidth | Pass | Meet the requirement of limit. |
| 15.247(b) | Conducted power | Pass | Meet the requirement of limit. |
| 15.247(e) | Power Spectral Density | Pass | Meet the requirement of limit. |
| 15.203 | Antenna Requirement | Pass | Antenna connector is I-Pex not a standard connector. |

**NOTE:** The EUT was operating in 2400 ~ 2483.5MHz, 5150~5250MHz and 5725~5850MHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz. For the 5150~5250MHz and 5725~5850MHz RF parameters was recorded in another test report.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Frequency | Expended Uncertainty (k=2) (±) |
|---|---|---|
| Conducted Emissions at mains ports | 150kHz ~ 30MHz | 2.86 dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 5.19 dB |
| Radiated Emissions above 1 GHz | 30MHz ~ 200MHz | 3.59 dB |
| | 200MHz ~1000MHz | 3.60 dB |
| | 1GHz ~ 18GHz | 2.29 dB |
| | 18GHz ~ 40GHz | 2.29 dB |

### 2.2 Modification Record

There were no modifications required for compliance.

## 3 General Information

### 3.1 General Description of EUT

| | |
|---|---|
| Product | AC1600 WiFi VDSL/ADSL Modem Router |
| Brand | NETGEAR |
| Test Model | D6400 |
| Status of EUT | ENGINEERING SAMPLE |
| Power Supply Rating | 12Vdc from power adapter |
| Modulation Type | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM<br>256QAM for OFDM in 11ac mode |
| Modulation Technology | DSSS, OFDM |
| Transfer Rate | 802.11b: up to 11Mbps<br>802.11a: up to 54Mbps<br>802.11n: up to 450Mbps<br>802.11ac: up to 1300Mbps |
| Operating Frequency | **For 15.407**<br>5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz |
| | **For 15.247**<br>2.412 ~ 2.462GHz |
| Number of Channel | **For 15.407**<br>9 for 802.11a, 802.11n (HT20), 802.11ac (VHT20)<br>4 for 802.11n (HT40), 802.11ac (VHT40)<br>2 for 802.11ac (VHT80) |
| | **For 15.247**<br>11 for 802.11b, 802.11g, 802.11n (HT20)<br>7 for 802.11n (HT40) |
| Output Power | **For 15.407**<br>**5.18~5.24 GHz**<br>**CDD Mode:**<br>802.11a: 148.551mW<br>**Beamforming Mode:**<br>802.11ac (VHT20): 163.829mW<br>802.11ac (VHT40): 327.522mW<br>802.11ac (VHT80): 78.925mW<br>**5.745~5.825 GHz**<br>**CDD Mode:**<br>802.11a: 152.554mW<br>**Beamforming Mode:**<br>802.11ac (VHT20): 139.193mW<br>802.11ac (VHT40): 168.809mW<br>802.11ac (VHT80): 98.605mW |
| | **For 15.247**<br>**CDD Mode:**<br>802.11b: 104.713mW<br>802.11g: 183.097mW<br>802.11n (HT20): 180.027mW<br>802.11n (HT40): 66.443mW |
| Antenna Type | Refer to Note |
| Antenna Connector | Refer to Note |
| Accessory Device | Splitter 1 (Model No.: DSL499, P/N: 350-10064-01) x 1<br>Adapter x 1 |
| Data Cable Supplied | RJ11 cable (unshielded, 1.5m) x 1<br>RJ45 cable (shielded, 1.5m) x 1 |

Note:

1. 2.4GHz and 5GHz technology can transmit at same time.
2. The EUT must be supplied with a power adapter and following two different model names could be chosen:

| Adapter | Brand | Model No. | P/N | Spec. |
|---|---|---|---|---|
| Adapter 1 | NETGEAR | 2ABL030F | 332-10756-01 | AC Input: 100-240V 1.0A, 50/60Hz<br>DC Output: 12V, 2.5A<br>DC cable (Unshielded, 1.8m ) |
| Adapter 2 | NETGEAR | ADS-40FPA-12 12030GPCU/GPC | 332-10757-01 | AC Input: 100-240V 1.0A, 50/60Hz<br>DC Output: 12V, 2.5A<br>DC cable (Unshielded, 1.8m ) |
| Note: From the above adapters, the worst radiated emission test item was found in Adapter 2. Therefore only the test data of the mode was recorded in this report. | | | | |

3. The antennas provided to the EUT, please refer to the following table:

| For 2.4GHz Band | | | | | | | |
|---|---|---|---|---|---|---|---|
| PCB Chain No. | Brand | Model | Antenna Gain(dBi) < including cable loss> | Frequency range (GHz ~ GHz) | Antenna Type | Connecter Type | Cable Length (mm) |
| Chain 0 | NETGEAR | 98P91MIPF044 | 2 | 2.4~2.4835 | PCB | I-Pex | 85 |
| Chain 1 | NETGEAR | 98P91MIPF045 | 2 | 2.4~2.4835 | PCB | I-Pex | 150 |
| **For 5GHz Band** | | | | | | | |
| PCB Chain No. | Brand | Model | Antenna Gain(dBi) < including cable loss> | Frequency range (GHz ~ GHz) | Antenna Type | Connecter Type | Cable Length (mm) |
| Chain 0 | NETGEAR | 98P92UIPF061 | 3 | 5.15~5.85 | PCB | I-Pex | 60 |
| Chain 1 | NETGEAR | 98P92UIPF062 | 3 | 5.15~5.85 | PCB | I-Pex | 70 |
| Chain 2 | NETGEAR | 98P92UIPF063 | 3 | 5.15~5.85 | PCB | I-Pex | 80 |

4. The EUT incorporates a MIMO function.

| For 2.4GHz Band | | | |
|---|---|---|---|
| **MODULATION MODE** | **DATA RATE (MCS)** | **TX & RX CONFIGURATION** | |
| **802.11b** | 1 ~ 11Mbps | 1TX (Diversity) | 1RX (Diversity) |
| **802.11g** | 6 ~ 54Mbps | 2TX | 2RX |
| **802.11n (HT20) & 802.11n (HT40)** | MCS 0~7 | 2TX | 2RX |
| | MCS 8~15 | 2TX | 2RX |
| **For 5GHz Band** | | | |
| **802.11a** | 6 ~ 54Mbps | 3TX | 3RX |
| **802.11n (HT20) & 802.11n (HT40)** | MCS 0~7 | 3TX | 3RX |
| | MCS 8~15 | 3TX | 3RX |
| | MCS 16~23 | 3TX | 3RX |
| **802.11ac (VHT20)** | MCS0~8 Nss= 1 | 3TX | 3RX |
| | MCS0~8 Nss= 2 | 3TX | 3RX |
| | MCS0~9 Nss= 3 | 3TX | 3RX |
| **802.11ac (VHT40) & 802.11ac (VHT80)** | MCS0~9 Nss= 1 | 3TX | 3RX |
| | MCS0~9 Nss= 2 | 3TX | 3RX |
| | MCS0~9 Nss= 3 | 3TX | 3RX |
| The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1) | | | |

5. The emission of the simultaneous operation (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
6. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20):

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 1 | 2412MHz | 7 | 2442MHz |
| 2 | 2417MHz | 8 | 2447MHz |
| 3 | 2422MHz | 9 | 2452MHz |
| 4 | 2427MHz | 10 | 2457MHz |
| 5 | 2432MHz | 11 | 2462MHz |
| 6 | 2437MHz | | |

7 channels are provided for 802.11n (HT40):

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 3 | 2422MHz | 7 | 2442MHz |
| 4 | 2427MHz | 8 | 2447MHz |
| 5 | 2432MHz | 9 | 2452MHz |
| 6 | 2437MHz | | |

### 3.2.1 Test Mode Applicability and Tested Channel Detail

| EUT CONFIGURE MODE | APPLICABLE TO | | | | DESCRIPTION |
|---|---|---|---|---|---|
| | RE≥1G | RE<1G | PLC | APCM | |
| 1 | √ | √ | √ | √ | With adapter 2 |
| 2 | - | - | √ | - | With adapter 1 |

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
**PLC:** Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

**NOTE:**
1. "-" means no effect.

**Radiated Emission Test (Above 1GHz):**

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1 |
| CDD Mode | | | | | |
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6 |
| 802.11n (HT20) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 |
| 802.11n (HT40) | 3 to 9 | 3, 6, 9 | OFDM | BPSK | 13.5 |

**Radiated Emission Test (Below 1GHz):**

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

| CDD Mode | | | | | |
|---|---|---|---|---|---|
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
| 802.11g | 1 to 11 | 6 | OFDM | BPSK | 6 |

**Power Line Conducted Emission Test:**

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

| CDD Mode | | | | | |
|---|---|---|---|---|---|
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
| 802.11g | 1 to 11 | 6 | OFDM | BPSK | 6 |

**Antenna Port Conducted Measurement:**

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|
| 802.11b | 1 to 11 | 1, 6, 11 | DSSS | DBPSK | 1 |
| CDD Mode | | | | | |
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
| 802.11g | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6 |
| 802.11n (HT20) | 1 to 11 | 1, 6, 11 | OFDM | BPSK | 6.5 |
| 802.11n (HT40) | 3 to 9 | 3, 6, 9 | OFDM | BPSK | 13.5 |

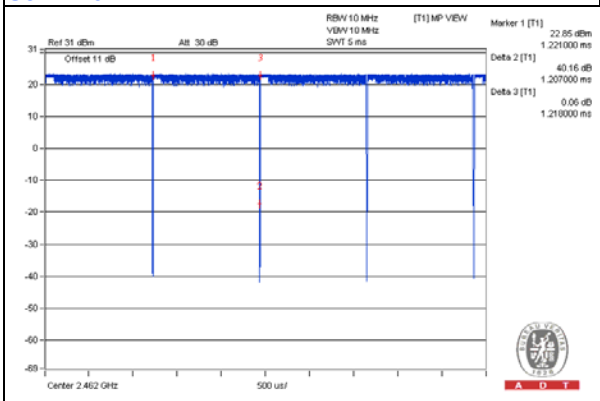
**Test Condition:**

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER | TESTED BY |
|---|---|---|---|
| RE≥1G | 25deg. C, 65%RH | 120Vac, 60Hz | Andy Ho |
| RE<1G | 25deg. C, 64%RH | 120Vac, 60Hz | Jyunchun Lin |
| PLC | 25deg. C, 54%RH | 120Vac, 60Hz | Jyunchun Lin |
| APCM | 25deg. C, 60%RH | 120Vac, 60Hz | Nelson Teng |

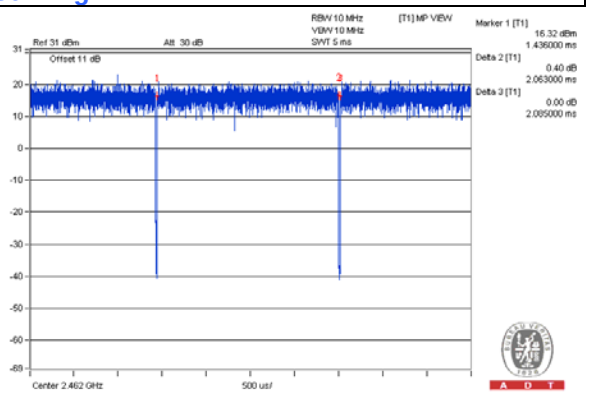
### 3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11b: Duty cycle = 1.207 ms/1.218 ms = 0.991
802.11g: Duty cycle = 2.063 ms/2.085 ms = 0.989
802.11n (HT20): Duty cycle = 1.92 ms/1.941 ms = 0.989
802.11n (HT40): Duty cycle = 0.955 ms/0.971 ms = 0.984

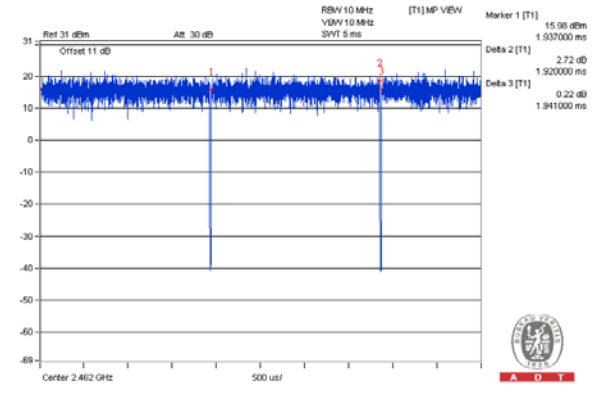
802.11b



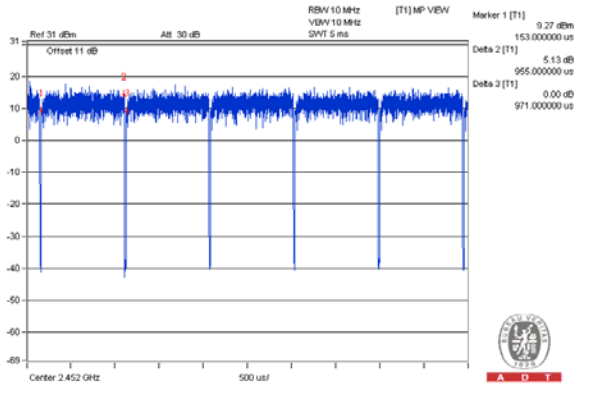

802.11g




802.11n (HT20)




802.11n (HT40)



### 3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

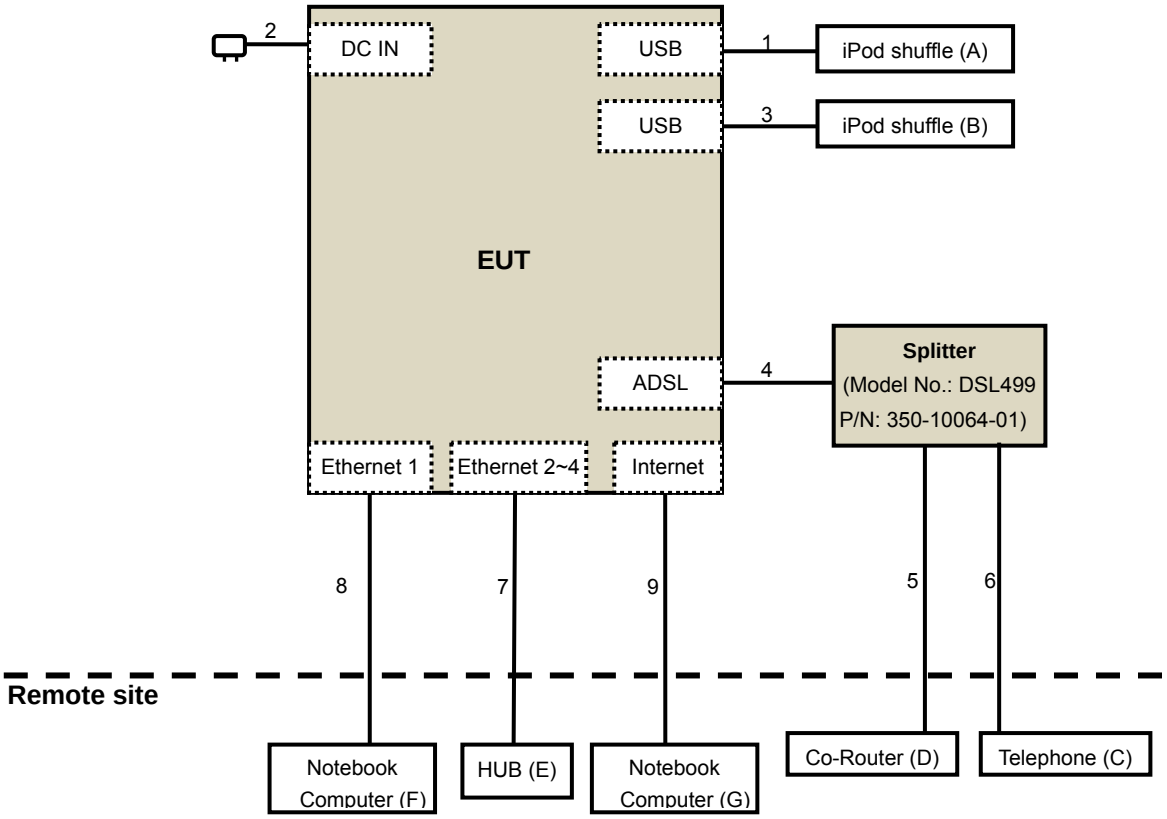
| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A. | iPod shuffle | Apple | MD778TA/A | CC4JMFL0F4T1 | NA | Provided by Lab |
| B. | iPod shuffle | Apple | MD778TA/A | CC4JG3SSF4T1 | NA | Provided by Lab |
| C. | Telephone | WONDER | WD-303 | 7C17KA04011 | NA | Provided by Lab |
| D. | Co-Router | ZyXEL | IES-1000 | S08024701597 | FCC DoC | Provided by Lab |
| E. | HUB | ZyXEL | ES-116P | S060H02000215 | FCC DoC | Provided by Lab |
| F. | Notebook Computer | DELL | E6420 | H62T3R1 | FCC DoC | Provided by Lab |
| G. | Notebook Computer | DELL | E6420 | B92T3R1 | FCC DoC | Provided by Lab |

Note:

1. All power cords of the above support units are non-shielded (1.8m).

| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|---|---|---|---|---|---|---|
| 1. | USB | 1 | 0.1 | No | 0 | Provided by Lab |
| 2. | DC | 1 | 1.8 | No | 0 | Supplied by Client |
| 3. | USB | 1 | 0.1 | No | 0 | Provided by Lab |
| 4. | RJ11 | 1 | 1.5 | No | 0 | Supplied by Client |
| 5. | RJ11 | 1 | 10 | No | 0 | Provided by Lab |
| 6. | RJ11 | 1 | 10 | No | 0 | Provided by Lab |
| 7. | RJ45 | 3 | 10 | No | 0 | Provided by Lab |
| 8. | RJ45 | 1 | 10 | No | 0 | Provided by Lab |
| 9. | RJ45 | 1 | 10 | No | 0 | Provided by Lab |

### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC Part 15, Subpart C (15.247)**
**558074 D01 DTS Meas Guidance v03r03**
**662911 D01 Multiple Transmitter Output v02r01**
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

# 4 Test Types and Results

## 4.1 Radiated Emission and Bandedge Measurement

### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30dB below the highest level of the desired power:

| Frequencies (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 |

**NOTE**:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

For below 1GHz test:

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver<br>Agilent | N9038A | MY54450088 | July 24, 2015 | July 23, 2016 |
| Pre-Amplifier<br>Mini-Circuits | ZFL-1000VH2B | AMP-ZFL-06 | Nov. 12, 2014 | Nov. 11, 2015 |
| Trilog Broadband Antenna<br>SCHWARZBECK | VULB 9168 | 9168-406 | Feb. 03, 2015 | Feb. 02, 2016 |
| RF Cable | 8D | 966-4-1<br>966-4-2<br>966-4-3 | Apr. 03, 2015 | Apr. 02, 2016 |
| Software | ADT_Radiated_V8.7.07 | NA | NA | NA |
| Antenna Tower & Turn Table<br>CT | NA | NA | NA | NA |

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. 4.
4. The FCC Site Registration No. is 292998
5. The CANADA Site Registration No. is 20331-2
6. Tested Date: Nov. 09, 2015

For Other test items:

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver ROHDE & SCHWARZ | ESCI | 100424 | Oct. 12, 2015 | Oct. 11, 2016 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSP40 | 100040 | July 08, 2015 | July 07, 2016 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-155 | Feb. 06, 2015 | Feb. 05, 2016 |
| HORN Antenna SCHWARZBECK | BBHA 9120D | 9120D-1170 | Feb. 05, 2015 | Feb. 04, 2016 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | BBHA9170241 | Feb. 09, 2015 | Feb. 08, 2016 |
| Preamplifier Agilent | 8449B | 3008A01960 | Aug. 09, 2015 | Aug. 08, 2016 |
| Preamplifier Agilent | 8447D | 2944A10631 | Aug. 09, 2015 | Aug. 08, 2016 |
| RF signal cable HUBER+SUHNER | SUCOFLEX 104 | Cable-CH4-02(295012+ 309220) | Aug. 09, 2015 | Aug. 08, 2016 |
| RF signal cable HUBER+SUHNER | SUCOFLEX 104 | Cable-CH4-03(250724) | Aug. 09, 2015 | Aug. 08, 2016 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.4 | NA | NA | NA |
| Antenna Tower inn-co GmbH | MA 4000 | 010303 | NA | NA |
| Antenna Tower Controller BV ADT | AT100 | AT93021703 | NA | NA |
| Turn Table BV ADT | TT100 | TT93021703 | NA | NA |
| Turn Table Controller BV ADT | SC100. | SC93021703 | NA | NA |
| Power Meter Anritsu | ML2495A | 1014008 | Apr. 28, 2015 | Apr. 27, 2016 |
| Power Sensor Anritsu | MA2411B | 0917122 | Apr. 28, 2015 | Apr. 27, 2016 |
| Spectrum Analyzer R&S | FSP40 | 100060 | May 08, 2015 | May 07, 2016 |

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.
6. Tested Date: Nov. 05 to 06, 2015

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**Note:**

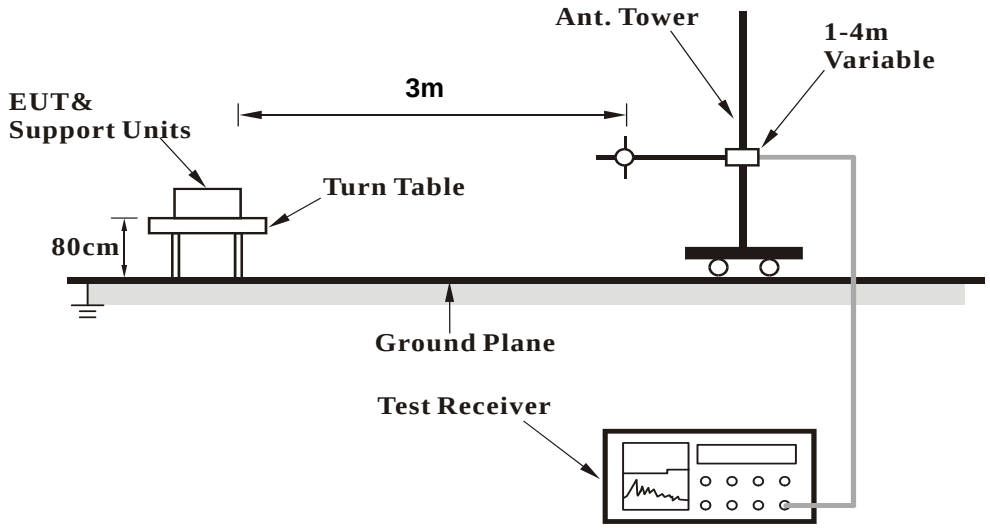
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

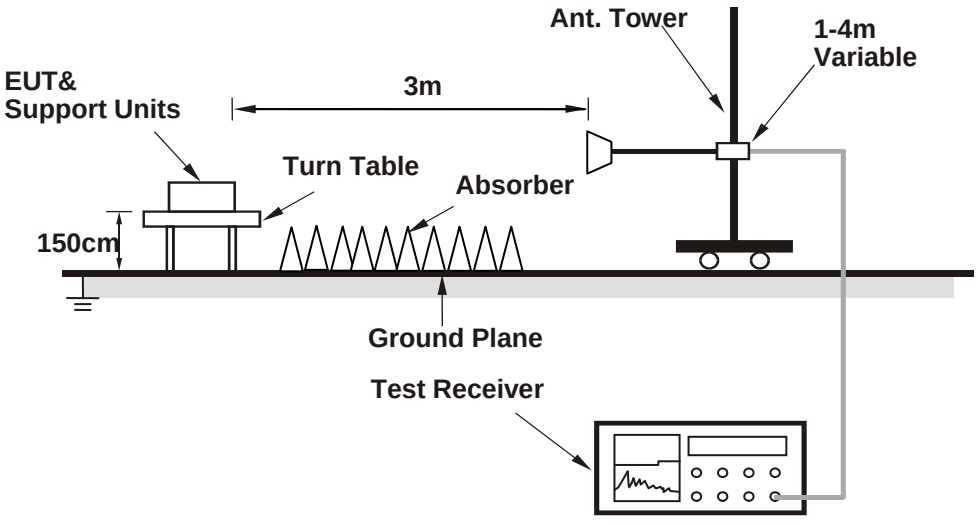
No deviation.

4.1.5 Test Setup

**<Frequency Range below 1GHz>**




**<Frequency Range above 1GHz>**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

1. Connect the EUT with the support units F & G (Notebook Computer) which is placed on remote site.
2. Controlling software (Mtool_2.0.1.0.msi) has been activated to set the EUT on specific status.

4.1.7 Test Results

**Above 1GHz Data (Subcontract Item):**

**802.11b**

| | | | |
|---|---|---|---|
| **CHANNEL** | TX Channel 1 | **DETECTOR FUNCTION** | Peak (PK)<br>Average (AV) |
| **FREQUENCY RANGE** | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 2390.00 | 56.8 PK | 74.0 | -17.2 | 1.54 H | 65 | 59.47 | -2.67 |
| 2 | 2390.00 | 43.4 AV | 54.0 | -10.6 | 1.54 H | 65 | 46.07 | -2.67 |
| 3 | *2412.00 | 106.6 PK | | | 1.54 H | 65 | 109.17 | -2.57 |
| 4 | *2412.00 | 103.9 AV | | | 1.54 H | 65 | 106.47 | -2.57 |
| 5 | 4824.00 | 54.3 PK | 74.0 | -19.7 | 1.86 H | 208 | 50.15 | 4.15 |
| 6 | 4824.00 | 52.5 AV | 54.0 | -1.5 | 1.86 H | 208 | 48.35 | 4.15 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | | |
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 2390.00 | 58.2 PK | 74.0 | -15.8 | 2.11 V | 190 | 60.87 | -2.67 |
| 2 | 2390.00 | 48.0 AV | 54.0 | -6.0 | 2.11 V | 190 | 50.67 | -2.67 |
| 3 | *2412.00 | 106.6 PK | | | 2.11 V | 190 | 109.17 | -2.57 |
| 4 | *2412.00 | 103.9 AV | | | 2.11 V | 190 | 106.47 | -2.57 |
| 5 | 4824.00 | 54.3 PK | 74.0 | -19.7 | 1.81 V | 198 | 50.15 | 4.15 |
| 6 | 4824.00 | 52.2 AV | 54.0 | -1.8 | 1.81 V | 198 | 48.05 | 4.15 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 6 | DETECTOR FUNCTION | Peak (PK) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 52.1 PK | 74.0 | -21.9 | 1.83 H | 62 | 54.77 | -2.67 |
| 2 | 2390.00 | 39.0 AV | 54.0 | -15.0 | 1.83 H | 62 | 41.67 | -2.67 |
| 3 | *2437.00 | 107.4 PK | | | 1.83 H | 62 | 109.88 | -2.48 |
| 4 | *2437.00 | 104.7 AV | | | 1.83 H | 62 | 107.18 | -2.48 |
| 5 | 2483.50 | 57.4 PK | 74.0 | -16.6 | 1.83 H | 62 | 59.70 | -2.30 |
| 6 | 2483.50 | 43.3 AV | 54.0 | -10.7 | 1.83 H | 62 | 45.60 | -2.30 |
| 7 | 4874.00 | 55.9 PK | 74.0 | -18.1 | 2.00 H | 207 | 51.62 | 4.28 |
| 8 | 4874.00 | 53.6 AV | 54.0 | -0.4 | 2.00 H | 207 | 49.32 | 4.28 |
| 9 | 7311.00 | 53.1 PK | 74.0 | -20.9 | 1.83 H | 65 | 42.48 | 10.62 |
| 10 | 7311.00 | 46.7 AV | 54.0 | -7.3 | 1.83 H | 65 | 36.08 | 10.62 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 54.0 PK | 74.0 | -20.0 | 2.18 V | 189 | 56.67 | -2.67 |
| 2 | 2390.00 | 40.2 AV | 54.0 | -13.8 | 2.18 V | 189 | 42.87 | -2.67 |
| 3 | *2437.00 | 107.1 PK | | | 2.18 V | 189 | 109.58 | -2.48 |
| 4 | *2437.00 | 104.4 AV | | | 2.18 V | 189 | 106.88 | -2.48 |
| 5 | 2483.50 | 56.4 PK | 74.0 | -17.6 | 2.18 V | 189 | 58.70 | -2.30 |
| 6 | 2483.50 | 42.5 AV | 54.0 | -11.5 | 2.18 V | 189 | 44.80 | -2.30 |
| 7 | 4874.00 | 53.1 PK | 74.0 | -20.9 | 1.63 V | 199 | 48.82 | 4.28 |
| 8 | 4874.00 | 50.6 AV | 54.0 | -3.4 | 1.63 V | 199 | 46.32 | 4.28 |
| 9 | 7311.00 | 49.5 PK | 74.0 | -24.5 | 1.89 V | 205 | 38.88 | 10.62 |
| 10 | 7311.00 | 38.2 AV | 54.0 | -15.8 | 1.89 V | 205 | 27.58 | 10.62 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 11 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 107.4 PK | | | 1.75 H | 60 | 109.78 | -2.38 |
| 2 | *2462.00 | 104.6 AV | | | 1.75 H | 60 | 106.98 | -2.38 |
| 3 | 2483.50 | 61.3 PK | 74.0 | -12.7 | 1.75 H | 60 | 63.60 | -2.30 |
| 4 | 2483.50 | 52.6 AV | 54.0 | -1.4 | 1.75 H | 60 | 54.90 | -2.30 |
| 5 | 4924.00 | 55.5 PK | 74.0 | -18.5 | 1.95 H | 209 | 51.03 | 4.47 |
| 6 | 4924.00 | 53.7 AV | 54.0 | -0.3 | 1.95 H | 209 | 49.23 | 4.47 |
| 7 | 7386.00 | 51.1 PK | 74.0 | -22.9 | 1.63 H | 70 | 40.25 | 10.85 |
| 8 | 7386.00 | 43.5 AV | 54.0 | -10.5 | 1.63 H | 70 | 32.65 | 10.85 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 107.4 PK | | | 1.70 V | 194 | 109.78 | -2.38 |
| 2 | *2462.00 | 104.6 AV | | | 1.70 V | 194 | 106.98 | -2.38 |
| 3 | 2483.50 | 61.2 PK | 74.0 | -12.8 | 1.70 V | 194 | 63.50 | -2.30 |
| 4 | 2483.50 | 52.0 AV | 54.0 | -2.0 | 1.70 V | 194 | 54.30 | -2.30 |
| 5 | 4924.00 | 53.3 PK | 74.0 | -20.7 | 1.69 V | 206 | 48.83 | 4.47 |
| 6 | 4924.00 | 50.9 AV | 54.0 | -3.1 | 1.69 V | 206 | 46.43 | 4.47 |
| 7 | 7386.00 | 49.1 PK | 74.0 | -24.9 | 1.93 V | 194 | 38.25 | 10.85 |
| 8 | 7386.00 | 38.0 AV | 54.0 | -16.0 | 1.93 V | 194 | 27.15 | 10.85 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

## CDD Mode

### 802.11g

| CHANNEL | TX Channel 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 72.2 PK | 74.0 | -1.8 | 1.80 H | 63 | 74.87 | -2.67 |
| 2 | 2390.00 | 50.0 AV | 54.0 | -4.0 | 1.80 H | 63 | 52.67 | -2.67 |
| 3 | *2412.00 | 110.7 PK | | | 1.80 H | 63 | 113.27 | -2.57 |
| 4 | *2412.00 | 98.5 AV | | | 1.80 H | 63 | 101.07 | -2.57 |
| 5 | 4824.00 | 62.9 PK | 74.0 | -11.1 | 1.63 H | 71 | 58.75 | 4.15 |
| 6 | 4824.00 | 45.9 AV | 54.0 | -8.1 | 1.63 H | 71 | 41.75 | 4.15 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 73.2 PK | 74.0 | -0.8 | 2.31 V | 114 | 75.87 | -2.67 |
| 2 | 2390.00 | 50.1 AV | 54.0 | -3.9 | 2.31 V | 114 | 52.77 | -2.67 |
| 3 | *2412.00 | 112.1 PK | | | 2.31 V | 114 | 114.67 | -2.57 |
| 4 | *2412.00 | 101.0 AV | | | 2.31 V | 114 | 103.57 | -2.57 |
| 5 | 4824.00 | 55.4 PK | 74.0 | -18.6 | 1.47 V | 205 | 51.25 | 4.15 |
| 6 | 4824.00 | 40.2 AV | 54.0 | -13.8 | 1.47 V | 205 | 36.05 | 4.15 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 6 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 64.9 PK | 74.0 | -9.1 | 1.62 H | 62 | 67.57 | -2.67 |
| 2 | 2390.00 | 46.2 AV | 54.0 | -7.8 | 1.62 H | 62 | 48.87 | -2.67 |
| 3 | *2437.00 | 113.5 PK | | | 1.62 H | 62 | 115.98 | -2.48 |
| 4 | *2437.00 | 101.2 AV | | | 1.62 H | 62 | 103.68 | -2.48 |
| 5 | 2483.50 | 70.1 PK | 74.0 | -3.9 | 1.62 H | 62 | 72.40 | -2.30 |
| 6 | 2483.50 | 51.6 AV | 54.0 | -2.4 | 1.62 H | 62 | 53.90 | -2.30 |
| 7 | 4874.00 | 62.5 PK | 74.0 | -11.5 | 1.64 H | 58 | 58.22 | 4.28 |
| 8 | 4874.00 | 45.7 AV | 54.0 | -8.3 | 1.64 H | 58 | 41.42 | 4.28 |
| 9 | 7311.00 | 61.4 PK | 74.0 | -12.6 | 1.64 H | 71 | 50.78 | 10.62 |
| 10 | 7311.00 | 45.2 AV | 54.0 | -8.8 | 1.64 H | 71 | 34.58 | 10.62 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 66.4 PK | 74.0 | -7.6 | 1.56 V | 131 | 69.07 | -2.67 |
| 2 | 2390.00 | 45.6 AV | 54.0 | -8.4 | 1.56 V | 131 | 48.27 | -2.67 |
| 3 | *2437.00 | 115.1 PK | | | 1.56 V | 131 | 117.58 | -2.48 |
| 4 | *2437.00 | 104.0 AV | | | 1.56 V | 131 | 106.48 | -2.48 |
| 5 | 2483.50 | 73.6 PK | 74.0 | -0.4 | 1.56 V | 131 | 75.90 | -2.30 |
| 6 | 2483.50 | 52.5 AV | 54.0 | -1.5 | 1.56 V | 131 | 54.80 | -2.30 |
| 7 | 4874.00 | 55.5 PK | 74.0 | -18.5 | 1.51 V | 196 | 51.22 | 4.28 |
| 8 | 4874.00 | 40.2 AV | 54.0 | -13.8 | 1.51 V | 196 | 35.92 | 4.28 |
| 9 | 7311.00 | 53.3 PK | 74.0 | -20.7 | 1.90 V | 360 | 42.68 | 10.62 |
| 10 | 7311.00 | 38.6 AV | 54.0 | -15.4 | 1.90 V | 360 | 27.98 | 10.62 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 11 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 109.0 PK | | | 1.79 H | 64 | 111.38 | -2.38 |
| 2 | *2462.00 | 97.0 AV | | | 1.79 H | 64 | 99.38 | -2.38 |
| 3 | 2483.50 | 73.5 PK | 74.0 | -0.5 | 1.79 H | 64 | 75.80 | -2.30 |
| 4 | 2483.50 | 51.0 AV | 54.0 | -3.0 | 1.79 H | 64 | 53.30 | -2.30 |
| 5 | 4924.00 | 62.6 PK | 74.0 | -11.4 | 1.66 H | 63 | 58.13 | 4.47 |
| 6 | 4924.00 | 45.7 AV | 54.0 | -8.3 | 1.66 H | 63 | 41.23 | 4.47 |
| 7 | 7386.00 | 61.3 PK | 74.0 | -12.7 | 1.66 H | 69 | 50.45 | 10.85 |
| 8 | 7386.00 | 45.1 AV | 54.0 | -8.9 | 1.66 H | 69 | 34.25 | 10.85 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 112.1 PK | | | 1.85 V | 184 | 114.48 | -2.38 |
| 2 | *2462.00 | 100.7 AV | | | 1.85 V | 184 | 103.08 | -2.38 |
| **3** | **2483.50** | **73.9 PK** | **74.0** | **-0.1** | **1.85 V** | **184** | **76.20** | **-2.30** |
| 4 | 2483.50 | 51.2 AV | 54.0 | -2.8 | 1.85 V | 184 | 53.50 | -2.30 |
| 5 | 4924.00 | 55.3 PK | 74.0 | -18.7 | 1.45 V | 185 | 50.83 | 4.47 |
| 6 | 4924.00 | 39.8 AV | 54.0 | -14.2 | 1.45 V | 185 | 35.33 | 4.47 |
| 7 | 7386.00 | 53.5 PK | 74.0 | -20.5 | 1.90 V | 360 | 42.65 | 10.85 |
| 8 | 7386.00 | 38.7 AV | 54.0 | -15.3 | 1.90 V | 360 | 27.85 | 10.85 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

## 802.11n (HT20)

| CHANNEL | TX Channel 1 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 70.9 PK | 74.0 | -3.1 | 1.82 H | 77 | 73.57 | -2.67 |
| 2 | 2390.00 | 50.4 AV | 54.0 | -3.6 | 1.82 H | 77 | 53.07 | -2.67 |
| 3 | *2412.00 | 107.9 PK | | | 1.82 H | 77 | 110.47 | -2.57 |
| 4 | *2412.00 | 96.9 AV | | | 1.82 H | 77 | 99.47 | -2.57 |
| 5 | 4824.00 | 62.7 PK | 74.0 | -11.3 | 1.61 H | 55 | 58.55 | 4.15 |
| 6 | 4824.00 | 46.0 AV | 54.0 | -8.0 | 1.61 H | 55 | 41.85 | 4.15 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 73.4 PK | 74.0 | -0.6 | 1.92 V | 187 | 76.07 | -2.67 |
| 2 | 2390.00 | 53.2 AV | 54.0 | -0.8 | 1.92 V | 187 | 55.87 | -2.67 |
| 3 | *2412.00 | 110.5 PK | | | 1.92 V | 187 | 113.07 | -2.57 |
| 4 | *2412.00 | 99.8 AV | | | 1.92 V | 187 | 102.37 | -2.57 |
| 5 | 4824.00 | 55.3 PK | 74.0 | -18.7 | 1.50 V | 176 | 51.15 | 4.15 |
| 6 | 4824.00 | 39.6 AV | 54.0 | -14.4 | 1.50 V | 176 | 35.45 | 4.15 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 6 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 60.7 PK | 74.0 | -13.3 | 1.80 H | 57 | 63.37 | -2.67 |
| 2 | 2390.00 | 43.7 AV | 54.0 | -10.3 | 1.80 H | 57 | 46.37 | -2.67 |
| 3 | *2437.00 | 112.8 PK | | | 1.80 H | 57 | 115.28 | -2.48 |
| 4 | *2437.00 | 101.0 AV | | | 1.80 H | 57 | 103.48 | -2.48 |
| 5 | 2483.50 | 68.5 PK | 74.0 | -5.5 | 1.80 H | 57 | 70.80 | -2.30 |
| 6 | 2483.50 | 50.2 AV | 54.0 | -3.8 | 1.80 H | 57 | 52.50 | -2.30 |
| 7 | 4874.00 | 63.3 PK | 74.0 | -10.7 | 1.70 H | 75 | 59.02 | 4.28 |
| 8 | 4874.00 | 46.2 AV | 54.0 | -7.8 | 1.70 H | 75 | 41.92 | 4.28 |
| 9 | 7311.00 | 61.1 PK | 74.0 | -12.9 | 1.67 H | 68 | 50.48 | 10.62 |
| 10 | 7311.00 | 44.8 AV | 54.0 | -9.2 | 1.67 H | 68 | 34.18 | 10.62 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 63.4 PK | 74.0 | -10.6 | 1.58 V | 126 | 66.07 | -2.67 |
| 2 | 2390.00 | 46.5 AV | 54.0 | -7.5 | 1.58 V | 126 | 49.17 | -2.67 |
| 3 | *2437.00 | 115.1 PK | | | 1.58 V | 126 | 117.58 | -2.48 |
| 4 | *2437.00 | 103.6 AV | | | 1.58 V | 126 | 106.08 | -2.48 |
| 5 | 2483.50 | 71.7 PK | 74.0 | -2.3 | 1.58 V | 126 | 74.00 | -2.30 |
| 6 | 2483.50 | 53.6 AV | 54.0 | -0.4 | 1.58 V | 126 | 55.90 | -2.30 |
| 7 | 4874.00 | 55.5 PK | 74.0 | -18.5 | 1.43 V | 189 | 51.22 | 4.28 |
| 8 | 4874.00 | 40.2 AV | 54.0 | -13.8 | 1.43 V | 189 | 35.92 | 4.28 |
| 9 | 7311.00 | 53.7 PK | 74.0 | -20.3 | 1.88 V | 360 | 43.08 | 10.62 |
| 10 | 7311.00 | 38.8 AV | 54.0 | -15.2 | 1.88 V | 360 | 28.18 | 10.62 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 11 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 108.0 PK | | | 1.83 H | 73 | 110.38 | -2.38 |
| 2 | *2462.00 | 96.2 AV | | | 1.83 H | 73 | 98.58 | -2.38 |
| 3 | 2483.50 | 71.2 PK | 74.0 | -2.8 | 1.83 H | 73 | 73.50 | -2.30 |
| 4 | 2483.50 | 47.6 AV | 54.0 | -6.4 | 1.83 H | 73 | 49.90 | -2.30 |
| 5 | 4924.00 | 62.7 PK | 74.0 | -11.3 | 1.72 H | 69 | 58.23 | 4.47 |
| 6 | 4924.00 | 45.8 AV | 54.0 | -8.2 | 1.72 H | 69 | 41.33 | 4.47 |
| 7 | 7386.00 | 61.3 PK | 74.0 | -12.7 | 1.68 H | 54 | 50.45 | 10.85 |
| 8 | 7386.00 | 45.1 AV | 54.0 | -8.9 | 1.68 H | 54 | 34.25 | 10.85 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2462.00 | 110.7 PK | | | 1.87 V | 193 | 113.08 | -2.38 |
| 2 | *2462.00 | 99.1 AV | | | 1.87 V | 193 | 101.48 | -2.38 |
| **3** | **2483.50** | **73.9 PK** | **74.0** | **-0.1** | **1.87 V** | **193** | **76.20** | **-2.30** |
| 4 | 2483.50 | 50.2 AV | 54.0 | -3.8 | 1.87 V | 193 | 52.50 | -2.30 |
| 5 | 4924.00 | 55.5 PK | 74.0 | -18.5 | 1.45 V | 174 | 51.03 | 4.47 |
| 6 | 4924.00 | 40.0 AV | 54.0 | -14.0 | 1.45 V | 174 | 35.53 | 4.47 |
| 7 | 7386.00 | 53.9 PK | 74.0 | -20.1 | 1.93 V | 360 | 43.05 | 10.85 |
| 8 | 7386.00 | 39.1 AV | 54.0 | -14.9 | 1.93 V | 360 | 28.25 | 10.85 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

## 802.11n (HT40)

| CHANNEL | TX Channel 3 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 67.8 PK | 74.0 | -6.2 | 1.79 H | 56 | 70.47 | -2.67 |
| 2 | 2390.00 | 50.1 AV | 54.0 | -3.9 | 1.79 H | 56 | 52.77 | -2.67 |
| 3 | *2422.00 | 103.3 PK | | | 1.79 H | 56 | 105.84 | -2.54 |
| 4 | *2422.00 | 91.1 AV | | | 1.79 H | 56 | 93.64 | -2.54 |
| 5 | 4844.00 | 62.8 PK | 74.0 | -11.2 | 1.66 H | 53 | 58.60 | 4.20 |
| 6 | 4844.00 | 46.1 AV | 54.0 | -7.9 | 1.66 H | 53 | 41.90 | 4.20 |
| 7 | 7266.00 | 61.6 PK | 74.0 | -12.4 | 1.62 H | 55 | 51.13 | 10.47 |
| 8 | 7266.00 | 45.3 AV | 54.0 | -8.7 | 1.62 H | 55 | 34.83 | 10.47 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 71.1 PK | 74.0 | -2.9 | 1.57 V | 127 | 73.77 | -2.67 |
| 2 | 2390.00 | 53.6 AV | 54.0 | -0.4 | 1.57 V | 127 | 56.27 | -2.67 |
| 3 | *2422.00 | 105.7 PK | | | 1.57 V | 127 | 108.24 | -2.54 |
| 4 | *2422.00 | 93.7 AV | | | 1.57 V | 127 | 96.24 | -2.54 |
| 5 | 4844.00 | 55.3 PK | 74.0 | -18.7 | 1.39 V | 181 | 51.10 | 4.20 |
| 6 | 4844.00 | 39.8 AV | 54.0 | -14.2 | 1.39 V | 181 | 35.60 | 4.20 |
| 7 | 7266.00 | 53.3 PK | 74.0 | -20.7 | 1.87 V | 360 | 42.83 | 10.47 |
| 8 | 7266.00 | 38.6 AV | 54.0 | -15.4 | 1.87 V | 360 | 28.13 | 10.47 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 6 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 63.8 PK | 74.0 | -10.2 | 1.82 H | 61 | 66.47 | -2.67 |
| 2 | 2390.00 | 45.8 AV | 54.0 | -8.2 | 1.82 H | 61 | 48.47 | -2.67 |
| 3 | *2437.00 | 103.8 PK | | | 1.82 H | 61 | 106.28 | -2.48 |
| 4 | *2437.00 | 91.5 AV | | | 1.82 H | 61 | 93.98 | -2.48 |
| 5 | 2483.50 | 70.9 PK | 74.0 | -3.1 | 1.82 H | 61 | 73.20 | -2.30 |
| 6 | 2483.50 | 51.0 AV | 54.0 | -3.0 | 1.82 H | 61 | 53.30 | -2.30 |
| 7 | 4874.00 | 62.4 PK | 74.0 | -11.6 | 1.60 H | 75 | 58.12 | 4.28 |
| 8 | 4874.00 | 45.7 AV | 54.0 | -8.3 | 1.60 H | 75 | 41.42 | 4.28 |
| 9 | 7311.00 | 61.6 PK | 74.0 | -12.4 | 1.71 H | 80 | 50.98 | 10.62 |
| 10 | 7311.00 | 45.6 AV | 54.0 | -8.4 | 1.71 H | 80 | 34.98 | 10.62 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 2390.00 | 66.4 PK | 74.0 | -7.6 | 1.49 V | 128 | 69.07 | -2.67 |
| 2 | 2390.00 | 48.5 AV | 54.0 | -5.5 | 1.49 V | 128 | 51.17 | -2.67 |
| 3 | *2437.00 | 107.0 PK | | | 1.49 V | 128 | 109.48 | -2.48 |
| 4 | *2437.00 | 94.9 AV | | | 1.49 V | 128 | 97.38 | -2.48 |
| 5 | 2483.50 | 73.3 PK | 74.0 | -0.7 | 1.49 V | 128 | 75.60 | -2.30 |
| 6 | 2483.50 | 53.6 AV | 54.0 | -0.4 | 1.49 V | 128 | 55.90 | -2.30 |
| 7 | 4874.00 | 55.5 PK | 74.0 | -18.5 | 1.48 V | 190 | 51.22 | 4.28 |
| 8 | 4874.00 | 40.1 AV | 54.0 | -13.9 | 1.48 V | 190 | 35.82 | 4.28 |
| 9 | 7311.00 | 53.6 PK | 74.0 | -20.4 | 1.93 V | 360 | 42.98 | 10.62 |
| 10 | 7311.00 | 38.7 AV | 54.0 | -15.3 | 1.93 V | 360 | 28.08 | 10.62 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

| CHANNEL | TX Channel 9 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 25GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2452.00 | 102.7 PK | | | 1.85 H | 54 | 105.12 | -2.42 |
| 2 | *2452.00 | 90.4 AV | | | 1.85 H | 54 | 92.82 | -2.42 |
| 3 | 2483.50 | 70.1 PK | 74.0 | -3.9 | 1.85 H | 54 | 72.40 | -2.30 |
| 4 | 2483.50 | 48.8 AV | 54.0 | -5.2 | 1.85 H | 54 | 51.10 | -2.30 |
| 5 | 4904.00 | 62.7 PK | 74.0 | -11.3 | 1.67 H | 66 | 58.34 | 4.36 |
| 6 | 4904.00 | 45.6 AV | 54.0 | -8.4 | 1.67 H | 66 | 41.24 | 4.36 |
| 7 | 7356.00 | 61.1 PK | 74.0 | -12.9 | 1.68 H | 53 | 50.34 | 10.76 |
| 8 | 7356.00 | 44.8 AV | 54.0 | -9.2 | 1.68 H | 53 | 34.04 | 10.76 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *2452.00 | 105.5 PK | | | 1.63 V | 126 | 107.92 | -2.42 |
| 2 | *2452.00 | 93.0 AV | | | 1.63 V | 126 | 95.42 | -2.42 |
| 3 | 2483.50 | 73.6 PK | 74.0 | -0.4 | 1.63 V | 126 | 75.90 | -2.30 |
| 4 | 2483.50 | 52.0 AV | 54.0 | -2.0 | 1.63 V | 126 | 54.30 | -2.30 |
| 5 | 4904.00 | 56.1 PK | 74.0 | -17.9 | 1.42 V | 199 | 51.74 | 4.36 |
| 6 | 4904.00 | 40.6 AV | 54.0 | -13.4 | 1.42 V | 199 | 36.24 | 4.36 |
| 7 | 7356.00 | 53.9 PK | 74.0 | -20.1 | 1.90 V | 360 | 43.14 | 10.76 |
| 8 | 7356.00 | 38.9 AV | 54.0 | -15.1 | 1.90 V | 360 | 28.14 | 10.76 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

**Below 1GHz Data:**

**CDD Mode**

**802.11g**

| | | | |
|---|---|---|---|
| **CHANNEL** | RX Channel 6 | **DETECTOR FUNCTION** | Quasi-Peak (QP) |
| **FREQUENCY RANGE** | Below 1GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 30.10 | 35.4 QP | 40.0 | -4.7 | 1.00 H | 192 | 51.96 | -16.61 |
| 2 | 125.01 | 36.6 QP | 43.5 | -6.9 | 1.50 H | 114 | 53.55 | -16.97 |
| 3 | 250.00 | 42.6 QP | 46.0 | -3.5 | 1.00 H | 99 | 58.67 | -16.12 |
| 4 | 625.00 | 41.5 QP | 46.0 | -4.5 | 1.50 H | 40 | 47.70 | -6.22 |
| 5 | 800.00 | 40.4 QP | 46.0 | -5.6 | 1.00 H | 108 | 43.95 | -3.56 |
| 6 | 875.00 | 39.9 QP | 46.0 | -6.1 | 1.50 H | 174 | 42.40 | -2.48 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | | |
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 36.64 | 36.1 QP | 40.0 | -3.9 | 1.00 V | 95 | 52.42 | -16.28 |
| 2 | 109.03 | 37.6 QP | 43.5 | -5.9 | 1.50 V | 111 | 55.65 | -18.09 |
| 3 | 200.00 | 35.6 QP | 43.5 | -8.0 | 1.00 V | 42 | 53.84 | -18.29 |
| 4 | 250.00 | 39.0 QP | 46.0 | -7.0 | 1.00 V | 118 | 55.12 | -16.12 |
| 5 | 500.00 | 37.7 QP | 46.0 | -8.3 | 1.00 V | 96 | 46.87 | -9.18 |
| 6 | 800.00 | 40.5 QP | 46.0 | -5.6 | 1.50 V | 196 | 44.01 | -3.56 |

**REMARKS:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

| Frequency (MHz) | Conducted Limit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 - 0.5 | 66 - 56 | 56 - 46 |
| 0.50 - 5.0 | 56 | 46 |
| 5.0 - 30.0 | 60 | 50 |

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver R&S | ESCS 30 | 100375 | May 06, 2015 | May 05, 2016 |
| Line-Impedance Stabilization Network (for EUT) SCHWARZBECK | NSLK-8127 | 8127-522 | Sep. 15, 2014 | Sep. 14, 2015 |
| Line-Impedance Stabilization Network (for Peripheral) R&S | ENV216 | 100071 | Nov. 10, 2014 | Nov. 09, 2015 |
| RF Cable | 5D-FB | COCCAB-001 | Mar. 09, 2015 | Mar. 08, 2016 |
| 50 ohms Terminator | N/A | EMC-03 | Sep. 22, 2014 | Sep. 21, 2015 |
| 50 ohms Terminator | N/A | EMC-02 | Sep. 30, 2014 | Sep. 29, 2015 |
| Software BVADT | BVADT_Cond_ V7.3.7.3 | NA | NA | NA |

**Note:**

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: June 08, 2015

4.2.3 Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

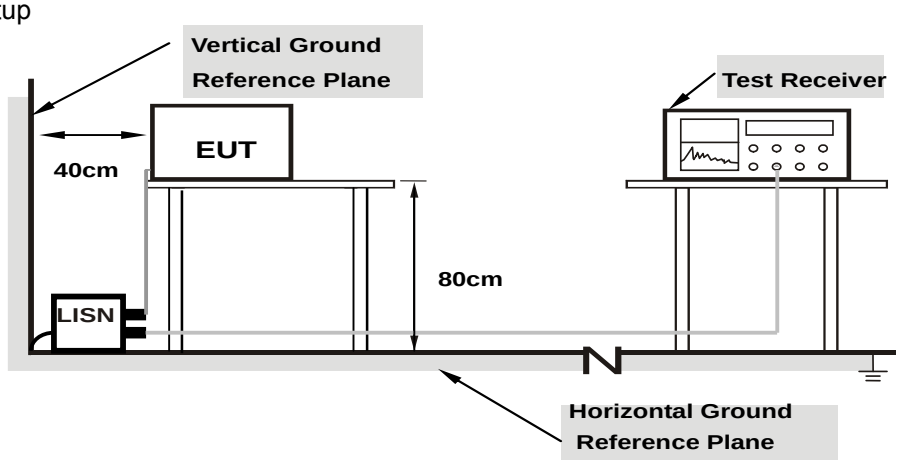
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup




**Note: 1.Support units were connected to second LISN.**

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results (Mode 1)

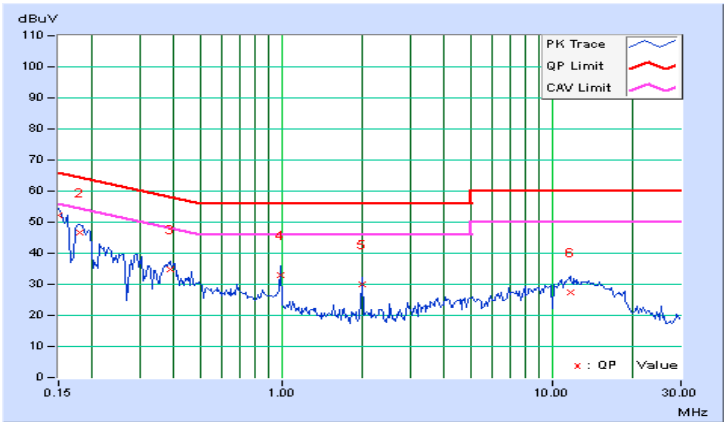
**CDD Mode**

| Phase | Line (L) | Detector Function | Quasi-Peak (QP) / Average (AV) |
|---|---|---|---|

| Phase Of Power : Line (L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15000 | 0.14 | 52.12 | 41.93 | 52.26 | 42.07 | 66.00 | 56.00 | -13.74 | -13.93 |
| 2 | 0.18028 | 0.15 | 46.61 | 37.25 | 46.76 | 37.40 | 64.47 | 54.47 | -17.72 | -17.08 |
| 3 | 0.38828 | 0.17 | 34.61 | 29.14 | 34.78 | 29.31 | 58.10 | 48.10 | -23.32 | -18.79 |
| 4 | 0.99378 | 0.20 | 32.58 | 31.48 | 32.78 | 31.68 | 56.00 | 46.00 | -23.22 | -14.32 |
| 5 | 1.98406 | 0.26 | 29.72 | 28.51 | 29.98 | 28.77 | 56.00 | 46.00 | -26.02 | -17.23 |
| 6 | 11.70313 | 0.80 | 26.71 | 21.53 | 27.51 | 22.33 | 60.00 | 50.00 | -32.49 | -27.67 |

**Remarks:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

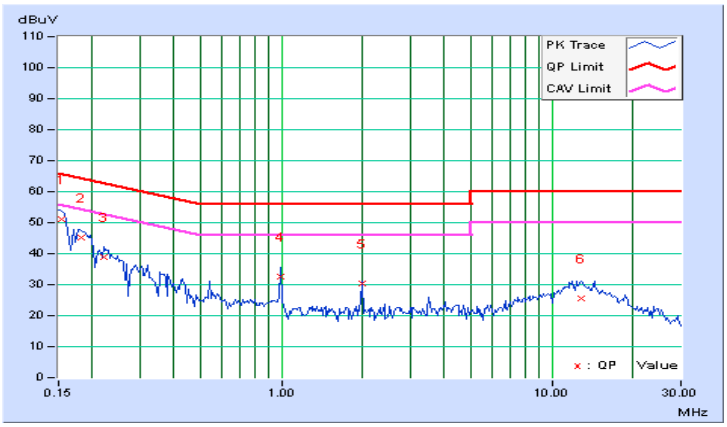


| Phase | Neutral (N) | Detector Function | Quasi-Peak (QP) / Average (AV) |
|---|---|---|---|

| Phase Of Power : Neutral (N) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15391 | 0.14 | 50.86 | 36.69 | 51.00 | 36.83 | 65.79 | 55.79 | -14.79 | -18.96 |
| 2 | 0.18125 | 0.15 | 44.98 | 34.49 | 45.13 | 34.64 | 64.43 | 54.43 | -19.30 | -19.79 |
| 3 | 0.22031 | 0.15 | 38.80 | 27.66 | 38.95 | 27.81 | 62.81 | 52.81 | -23.85 | -24.99 |
| 4 | 0.99316 | 0.24 | 32.38 | 31.60 | 32.62 | 31.84 | 56.00 | 46.00 | -23.38 | -14.16 |
| 5 | 1.98641 | 0.30 | 30.17 | 27.69 | 30.47 | 27.99 | 56.00 | 46.00 | -25.53 | -18.01 |
| 6 | 12.79688 | 0.91 | 24.83 | 19.93 | 25.74 | 20.84 | 60.00 | 50.00 | -34.26 | -29.16 |

**Remarks:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.2.8 Test Results (Mode 2)

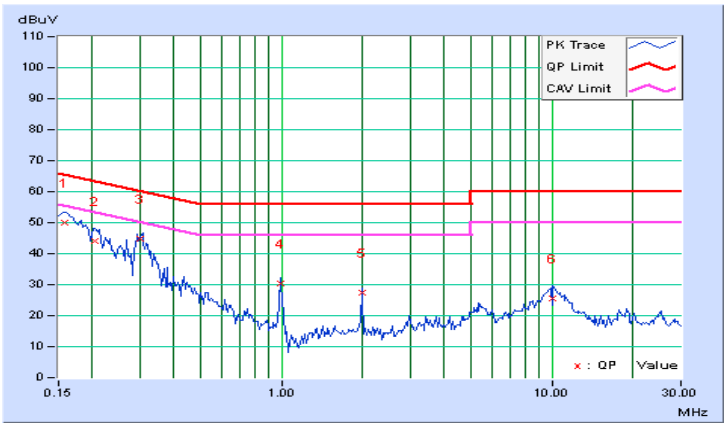
**CDD Mode**

| Phase | Line (L) | Detector Function | Quasi-Peak (QP) / Average (AV) |
|---|---|---|---|

| Phase Of Power : Line (L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15781 | 0.14 | 50.03 | 41.02 | 50.17 | 41.16 | 65.58 | 55.58 | -15.41 | -14.42 |
| 2 | 0.20469 | 0.15 | 44.05 | 36.05 | 44.20 | 36.20 | 63.42 | 53.42 | -19.22 | -17.22 |
| 3 | 0.30125 | 0.16 | 44.83 | 41.39 | 44.99 | 41.55 | 60.21 | 50.21 | -15.22 | -8.66 |
| 4 | 0.99087 | 0.20 | 30.05 | 30.04 | 30.25 | 30.24 | 56.00 | 46.00 | -25.75 | -15.76 |
| 5 | 1.97981 | 0.26 | 27.11 | 26.19 | 27.37 | 26.45 | 56.00 | 46.00 | -28.63 | -19.55 |
| 6 | 10.05469 | 0.74 | 24.67 | 20.81 | 25.41 | 21.55 | 60.00 | 50.00 | -34.59 | -28.45 |

**Remarks:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

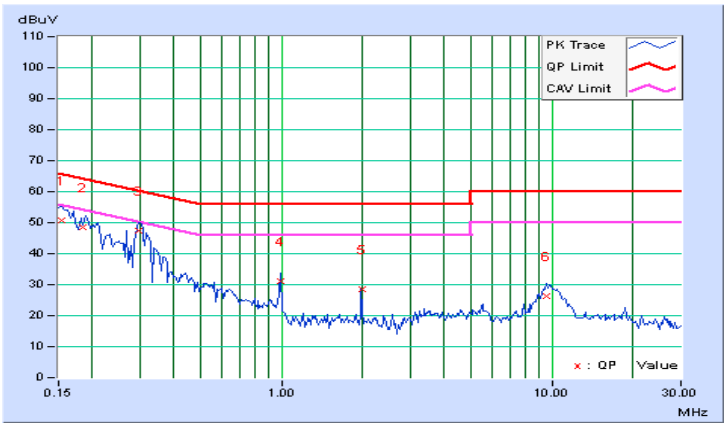


| Phase | Neutral (N) | Detector Function | Quasi-Peak (QP) / Average (AV) |
|---|---|---|---|

| Phase Of Power : Neutral (N) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15391 | 0.14 | 50.56 | 39.62 | 50.70 | 39.76 | 65.79 | 55.79 | -15.09 | -16.03 |
| 2 | 0.18419 | 0.15 | 48.25 | 38.80 | 48.40 | 38.95 | 64.29 | 54.29 | -15.90 | -15.35 |
| **3** | **0.29844** | **0.17** | **47.37** | **44.11** | **47.54** | **44.28** | **60.29** | **50.29** | **-12.75** | **-6.01** |
| 4 | 0.99025 | 0.24 | 30.90 | 30.06 | 31.14 | 30.30 | 56.00 | 46.00 | -24.86 | -15.70 |
| 5 | 1.97791 | 0.30 | 28.09 | 26.15 | 28.39 | 26.45 | 56.00 | 46.00 | -27.61 | -19.55 |
| 6 | 9.58984 | 0.76 | 25.59 | 21.33 | 26.35 | 22.09 | 60.00 | 50.00 | -33.65 | -27.91 |

**Remarks:**

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

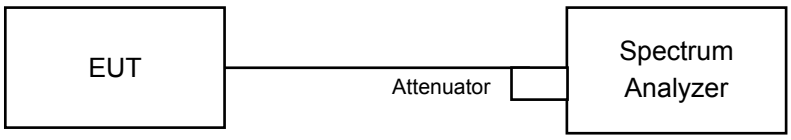


## 4.3 6dB Bandwidth Measurement

### 4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

### 4.3.2 Test Setup




### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

### 4.3.5 Deviation fromTest Standard

No deviation.

### 4.3.6 EUT Operating Conditions

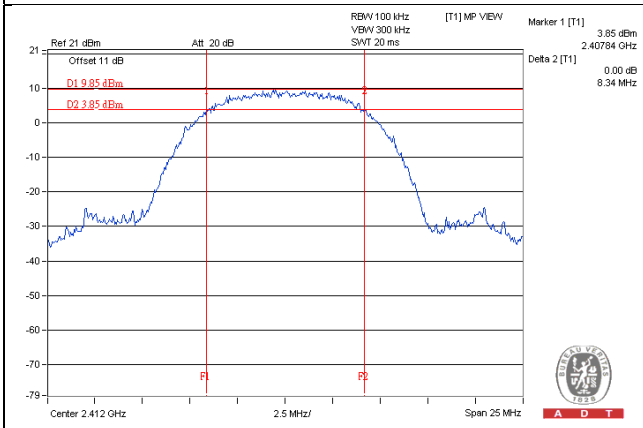
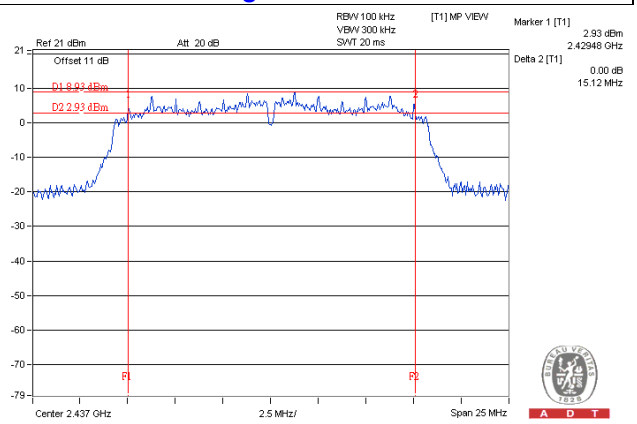
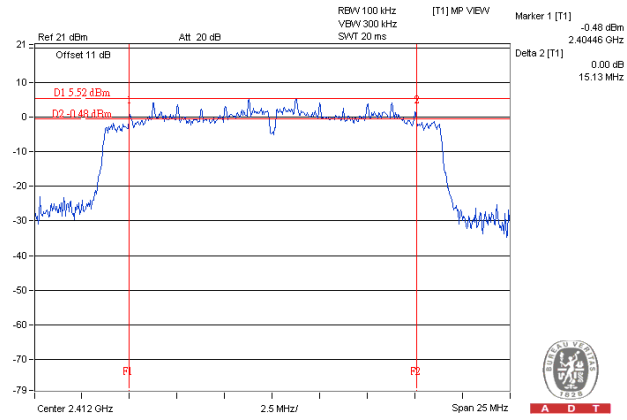
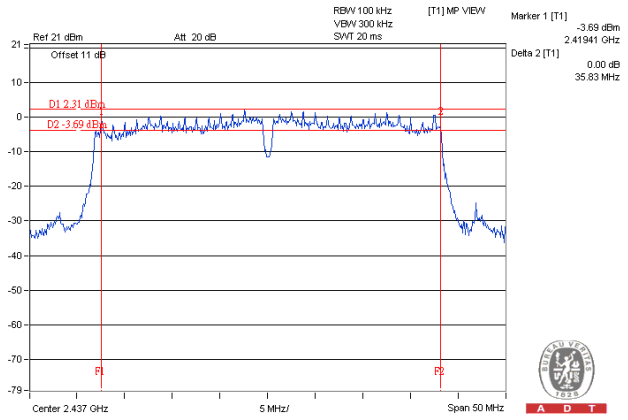
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|
| **802.11b** | | | | |
| 1 | 2412 | 8.34 | 0.5 | Pass |
| 6 | 2437 | 8.59 | 0.5 | Pass |
| 11 | 2462 | 8.38 | 0.5 | Pass |

**CDD Mode**

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | | |
| **802.11g** | | | | | |
| 1 | 2412 | 15.15 | 15.13 | 0.5 | Pass |
| 6 | 2437 | 15.12 | 15.15 | 0.5 | Pass |
| 11 | 2462 | 15.16 | 15.14 | 0.5 | Pass |
| **802.11n (HT20)** | | | | | |
| 1 | 2412 | 15.13 | 15.74 | 0.5 | Pass |
| 6 | 2437 | 15.15 | 15.71 | 0.5 | Pass |
| 11 | 2462 | 15.17 | 15.72 | 0.5 | Pass |
| **802.11n (HT40)** | | | | | |
| 3 | 2422 | 36.14 | 36.42 | 0.5 | Pass |
| 6 | 2437 | 35.86 | 35.83 | 0.5 | Pass |
| 9 | 2452 | 35.88 | 36.36 | 0.5 | Pass |

| Spectrum Plot of Worst Value | |
|---|---|
| **802.11b – CH 1** | **802.11g – Chain 0: CH 6** |
|  |  |
| **802.11n (HT20) – Chain 0: CH 1** | **802.11n (HT40) – Chain 1: CH 6** |
|  |  |

## 4.4 Conducted Output Power Measurement

### 4.4.1 Limits of Conducted Output Power Measurement

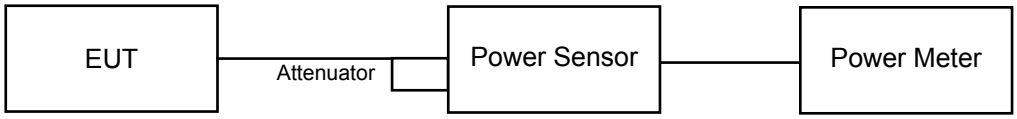
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

### 4.4.2 Test Setup




### 4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.4.4 Test Procedures

An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor. Record the power level.

### 4.4.5 Deviation from Test Standard

No deviation.

### 4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

| Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Limit (dBm) | Pass/Fail |
|---|---|---|---|---|---|
| **802.11b** | | | | | |
| 1 | 2412 | 67.298 | 18.28 | 30 | Pass |
| 6 | 2437 | 95.28 | 19.79 | 30 | Pass |
| 11 | 2462 | 104.713 | 20.20 | 30 | Pass |

**CDD Mode**

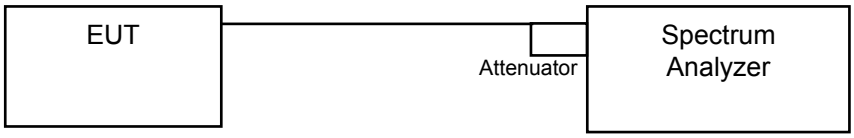
| Channel | Frequency (MHz) | Average Power (dBm) | | Total Power (mW) | Total Power (dBm) | Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | | | | |
| **802.11g** | | | | | | | |
| 1 | 2412 | 16.76 | 16.41 | 91.176 | 19.60 | 30 | Pass |
| 6 | 2437 | 19.50 | 19.73 | 183.097 | 22.63 | 30 | Pass |
| 11 | 2462 | 14.75 | 14.69 | 59.298 | 17.73 | 30 | Pass |
| **802.11n (HT20)** | | | | | | | |
| 1 | 2412 | 15.79 | 15.70 | 75.085 | 18.76 | 30 | Pass |
| 6 | 2437 | 19.27 | 19.80 | 180.027 | 22.55 | 30 | Pass |
| 11 | 2462 | 14.35 | 14.64 | 56.334 | 17.51 | 30 | Pass |
| **802.11n (HT40)** | | | | | | | |
| 3 | 2422 | 14.02 | 14.43 | 52.968 | 17.24 | 30 | Pass |
| 6 | 2437 | 15.02 | 15.40 | 66.443 | 18.22 | 30 | Pass |
| 9 | 2452 | 13.42 | 14.05 | 47.389 | 16.76 | 30 | Pass |

## 4.5 Power Spectral Density Measurement

### 4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

### 4.5.2 Test Setup




### 4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.5.4 Test Procedure

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level.

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

Same as Item 4.3.6

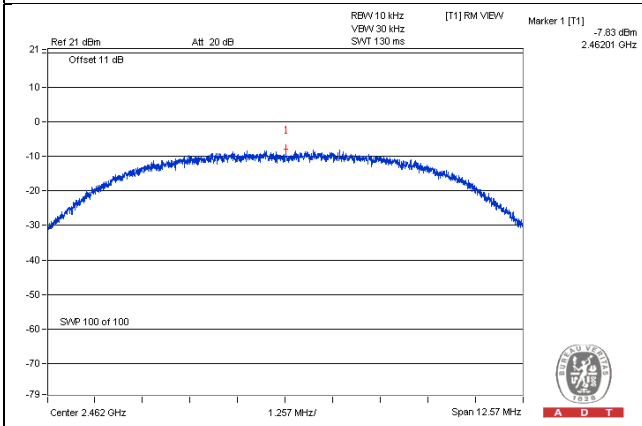
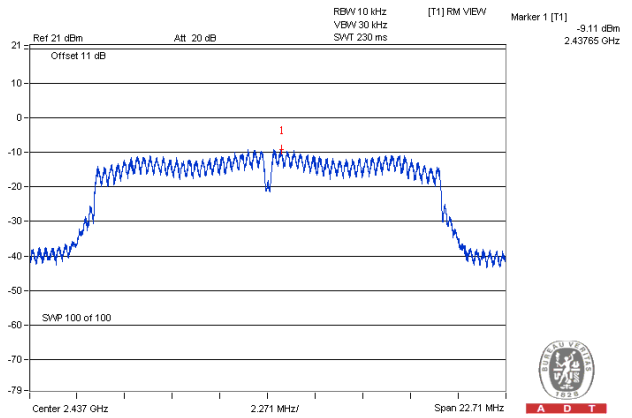
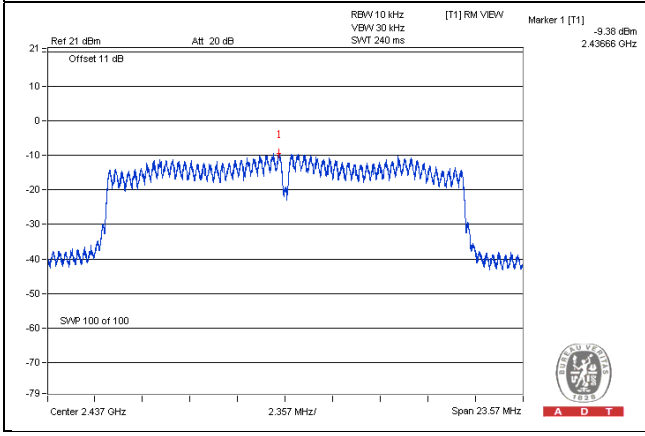
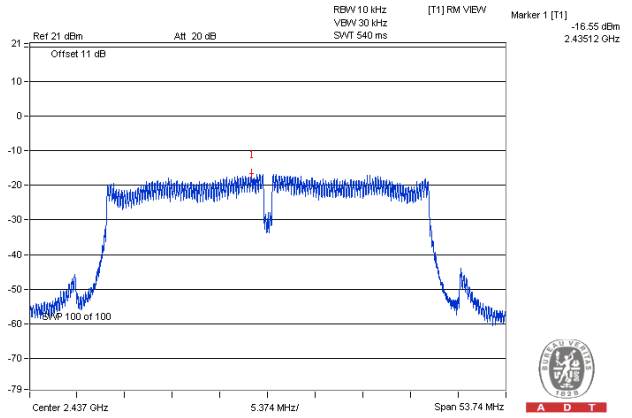
4.5.7 Test Results

| 802.11b | | | | |
|---|---|---|---|---|
| Channel | Freq. (MHz) | PSD (dBm) | Limit (dBm) | Pass /Fail |
| 1 | 2412 | -10.08 | 8 | Pass |
| 6 | 2437 | -9.28 | 8 | Pass |
| 11 | 2462 | -7.83 | 8 | Pass |

**CDD Mode**

| TX chain | Channel | Freq. (MHz) | PSD (dBm) | 10 log (N=2) dB | Total PSD (dBm) | Limit (dBm) | Pass /Fail |
|---|---|---|---|---|---|---|---|
| **802.11g** | | | | | | | |
| 0 | 1 | 2412 | -13.09 | 3.01 | -10.08 | 8 | Pass |
| | 6 | 2437 | -9.56 | 3.01 | -6.55 | 8 | Pass |
| | 11 | 2462 | -14.46 | 3.01 | -11.45 | 8 | Pass |
| 1 | 1 | 2412 | -12.26 | 3.01 | -9.25 | 8 | Pass |
| | 6 | 2437 | -9.11 | 3.01 | -6.10 | 8 | Pass |
| | 11 | 2462 | -13.90 | 3.01 | -10.89 | 8 | Pass |
| **802.11n (HT20)** | | | | | | | |
| 0 | 1 | 2412 | -13.91 | 3.01 | -10.90 | 8 | Pass |
| | 6 | 2437 | -10.08 | 3.01 | -7.07 | 8 | Pass |
| | 11 | 2462 | -14.59 | 3.01 | -11.58 | 8 | Pass |
| 1 | 1 | 2412 | -13.40 | 3.01 | -10.39 | 8 | Pass |
| | 6 | 2437 | -9.38 | 3.01 | -6.37 | 8 | Pass |
| | 11 | 2462 | -14.59 | 3.01 | -11.58 | 8 | Pass |
| **802.11n (HT40)** | | | | | | | |
| 0 | 3 | 2422 | -17.46 | 3.01 | -14.45 | 8 | Pass |
| | 6 | 2437 | -16.81 | 3.01 | -13.80 | 8 | Pass |
| | 9 | 2452 | -18.76 | 3.01 | -15.75 | 8 | Pass |
| 1 | 3 | 2422 | -17.01 | 3.01 | -14.00 | 8 | Pass |
| | 6 | 2437 | -16.55 | 3.01 | -13.54 | 8 | Pass |
| | 9 | 2452 | -17.88 | 3.01 | -14.87 | 8 | Pass |

Note: 1. Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the power density limit shall not be reduced.

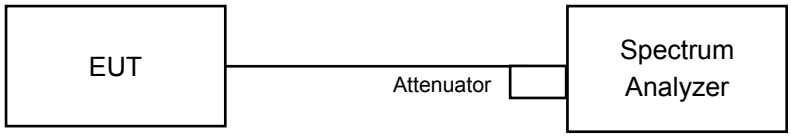
| Spectrum Plot of Worst Value | |
|---|---|
| **802.11b – CH 11** | **802.11g– Chain 1: CH 6** |
|  |  |
| **802.11n (HT20) – Chain 1: CH 6** | **802.11n (HT40) – Chain 1: CH 6** |
|  |  |

## 4.6 Conducted Out of Band Emission Measurement

### 4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 4.6.2 Test Setup




### 4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.6.4 Test Procedure

**MEASUREMENT PROCEDURE REF**

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

**MEASUREMENT PROCEDURE OOBE**

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Condition

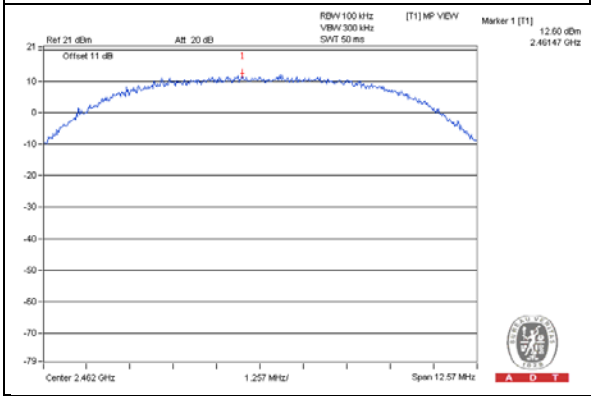
Same as Item 4.3.6

### 4.6.7 Test Results

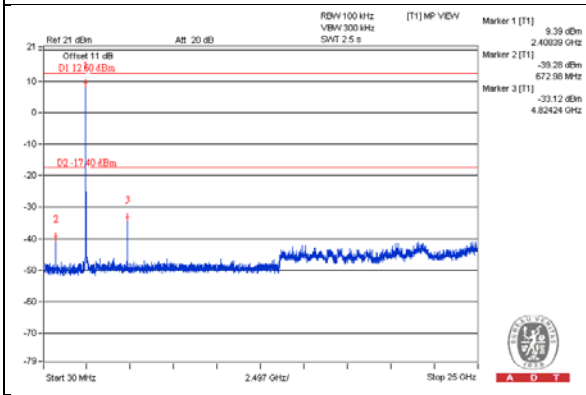
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

## 802.11b

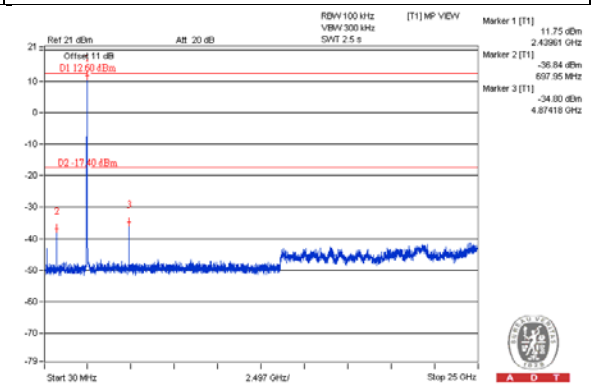
### Maximum REF



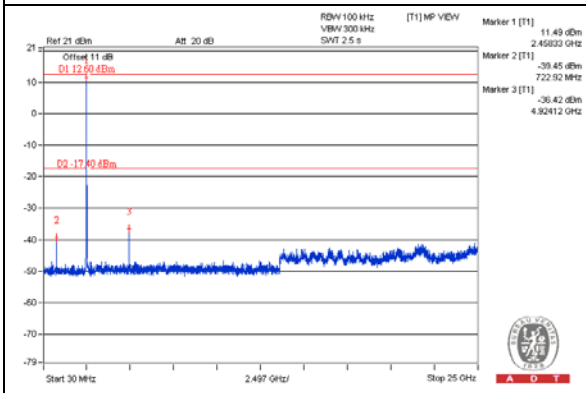

### CH 1



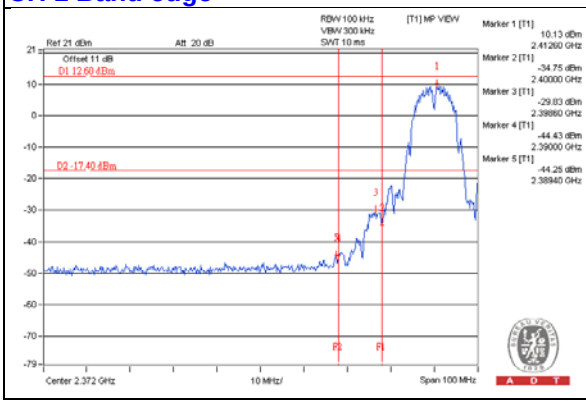

### CH 6



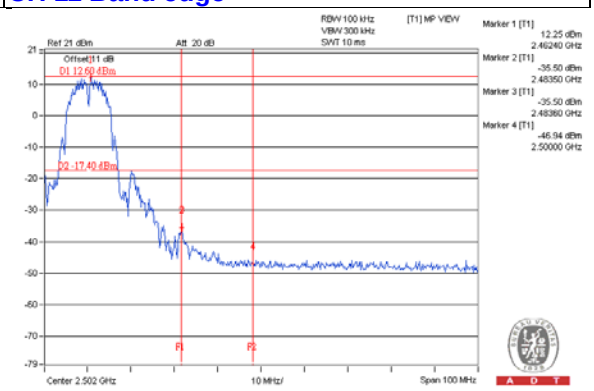

### CH 11




### CH 1 Band edge



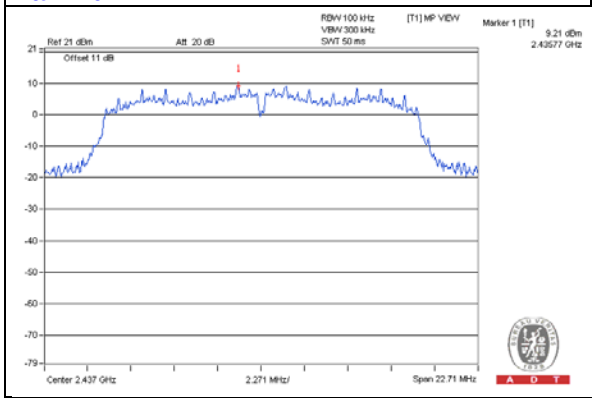

### CH 11 Band edge



## CDD Mode

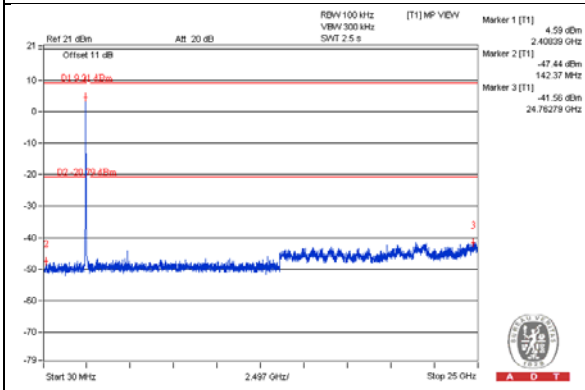
### 802.11g

**Maximum REF**

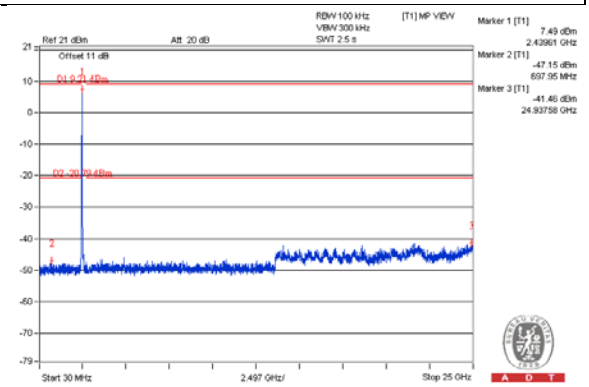



**Chain 0**

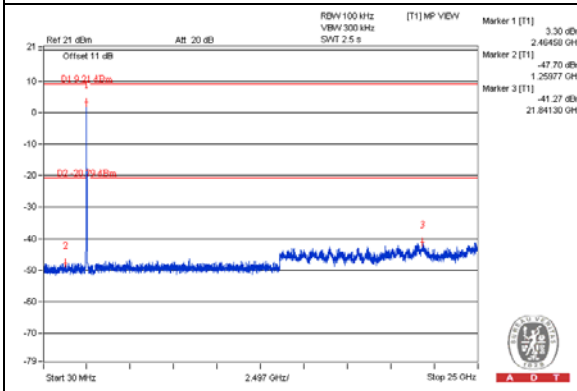
**CH 1**



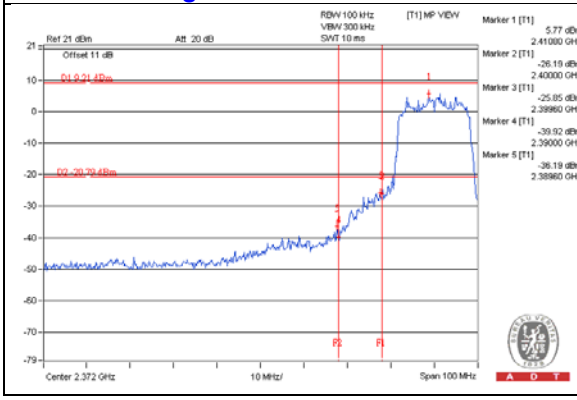

**CH 6**



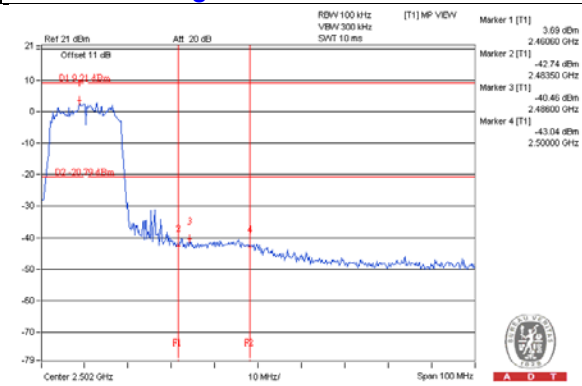

**CH 11**




**CH 1 Band edge**

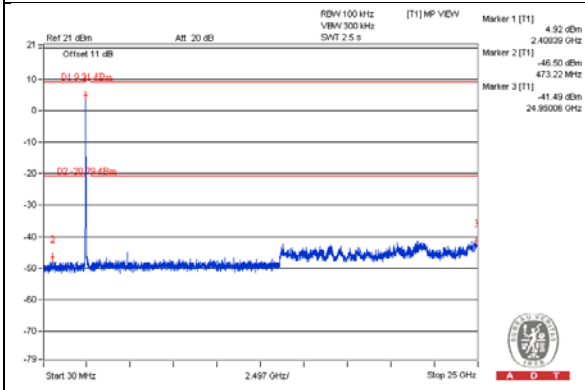



**CH 11 Band edge**

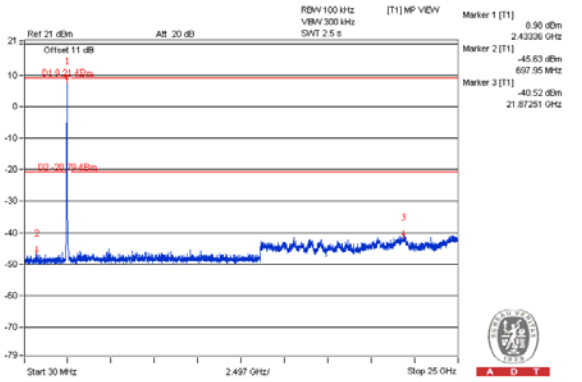


## Chain 1

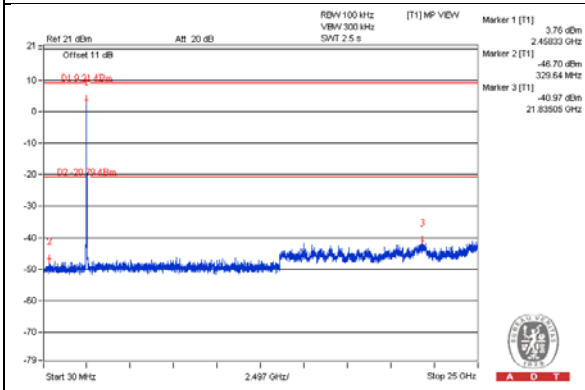
### CH 1



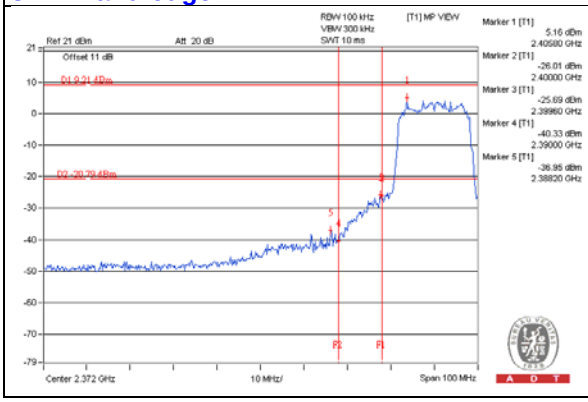

### CH 6



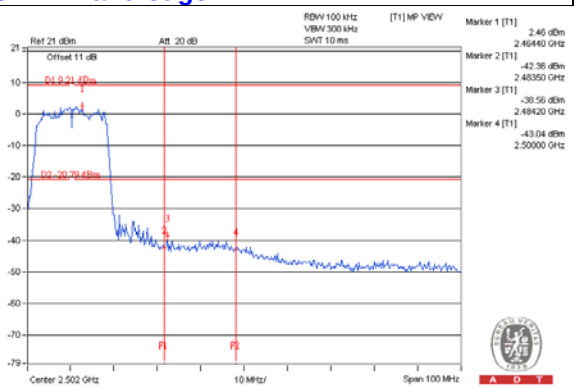

### CH 11




### CH 1 Band edge

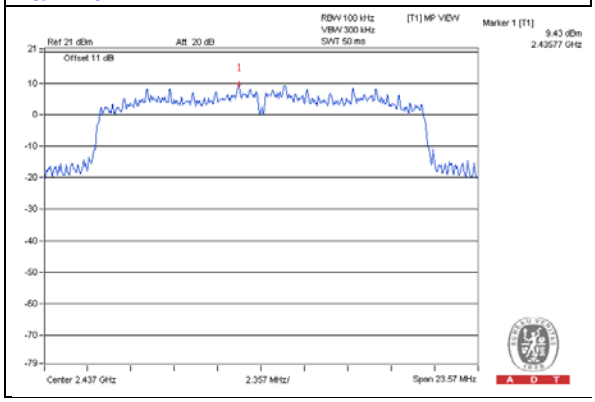



### CH 11 Band edge



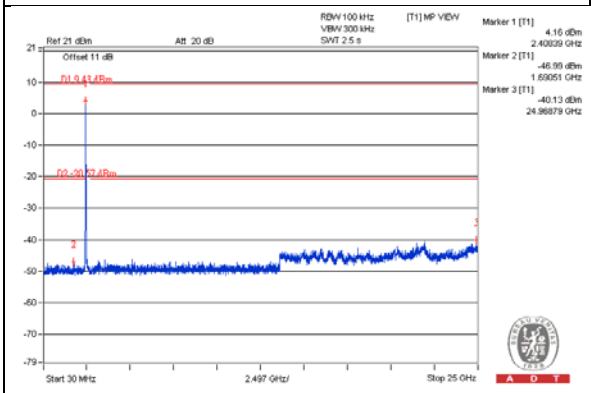
## 802.11n (HT20)

### Maximum REF

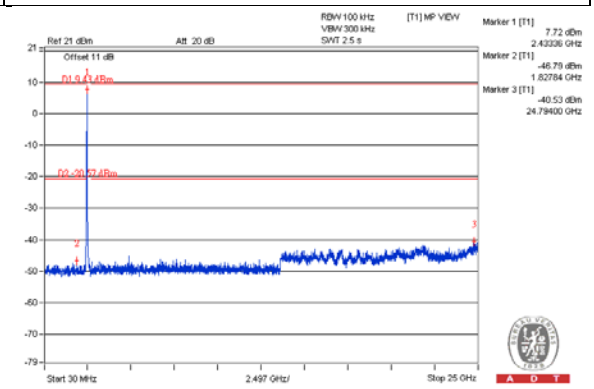



### Chain 0

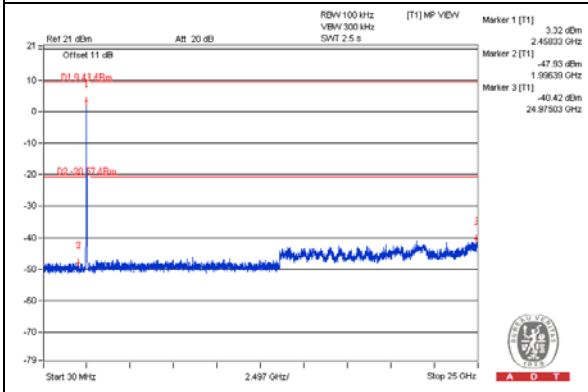
#### CH 1



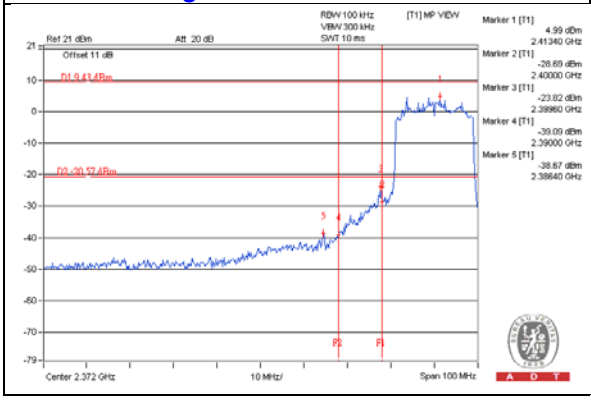

#### CH 6



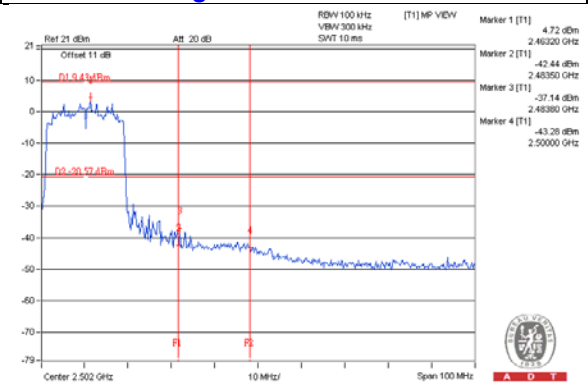

#### CH 11




#### CH 1 Band edge

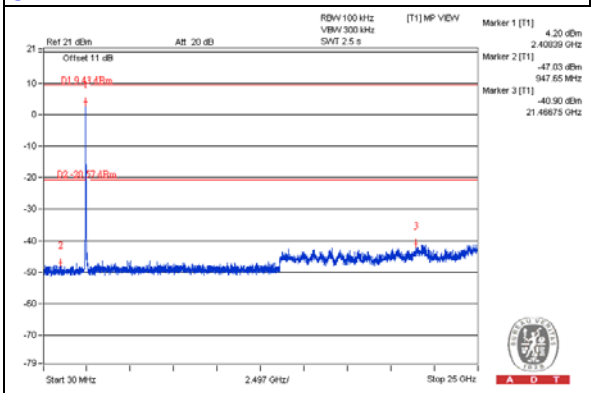



#### CH 11 Band edge

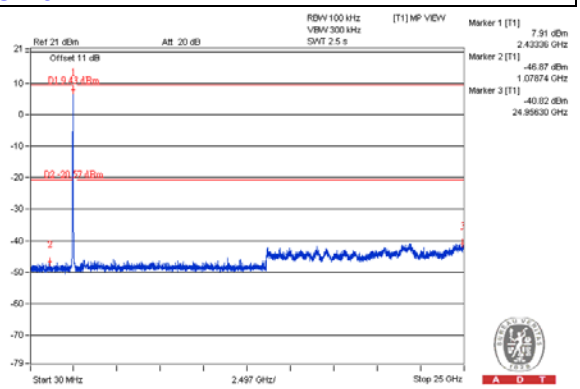


## Chain 1

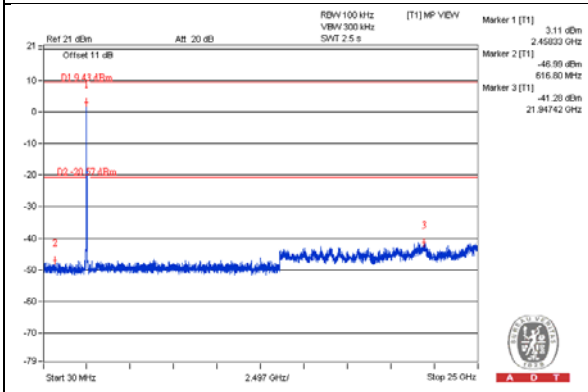
### CH 1



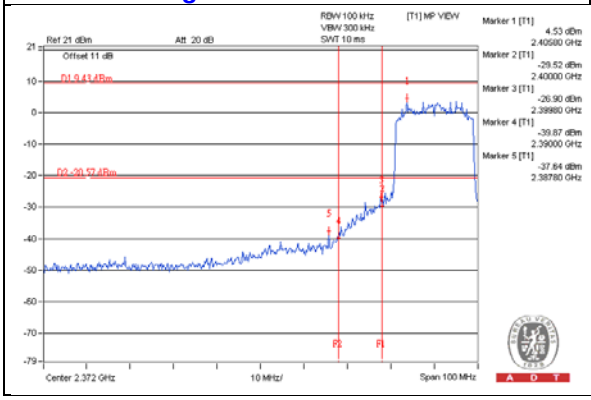

### CH 6



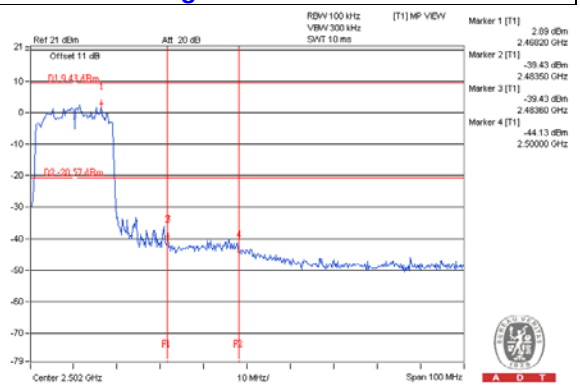

### CH 11




### CH 1 Band edge

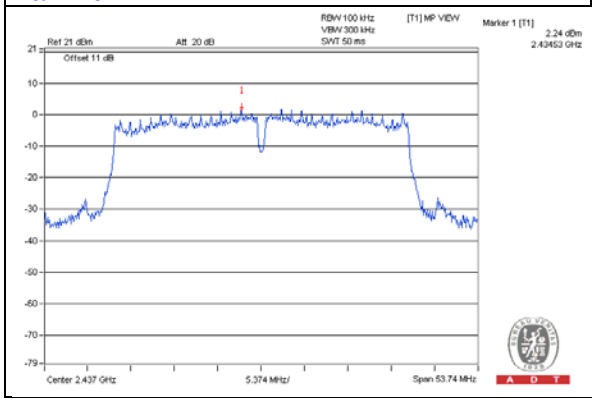



### CH 11 Band edge



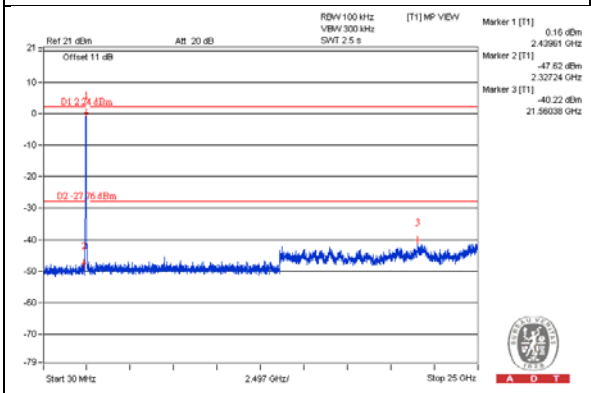
## 802.11n (HT40)

### Maximum REF

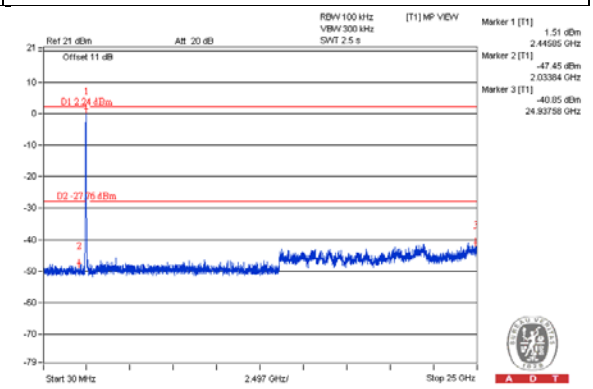



### Chain 0

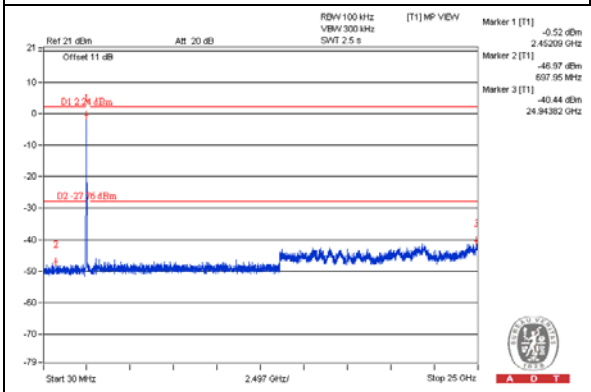
#### CH 3



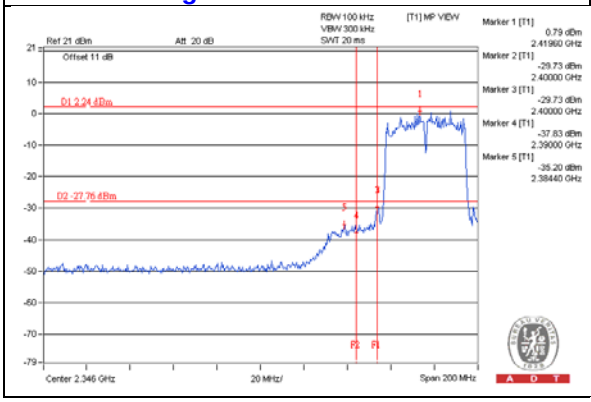

#### CH 6



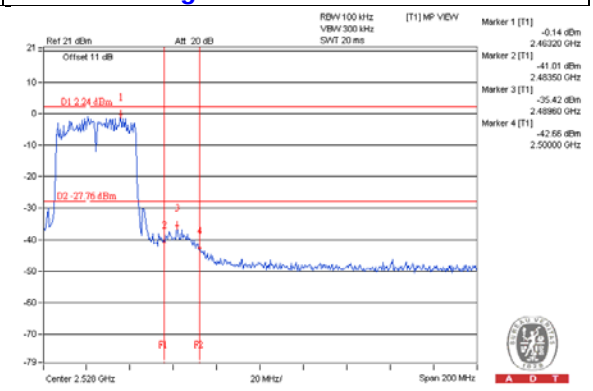

#### CH 9




#### CH 3 Band edge

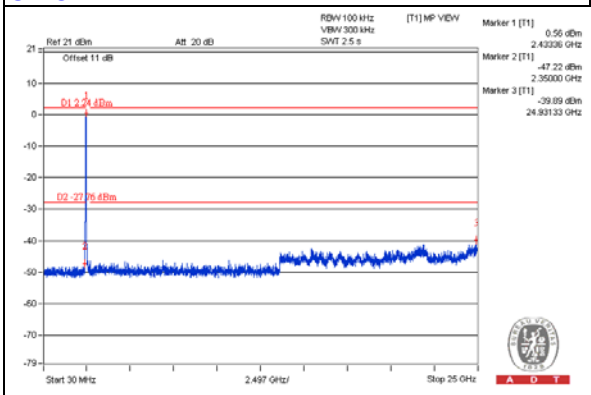



#### CH 9 Band edge

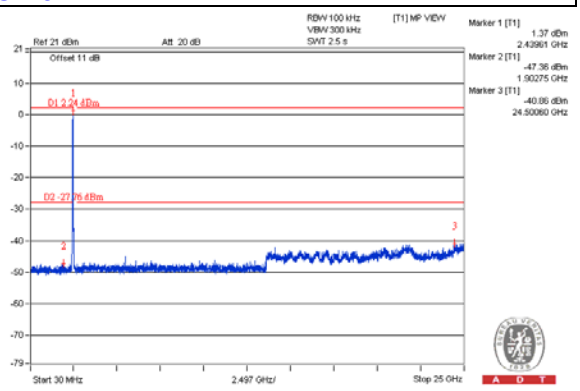


## Chain 1

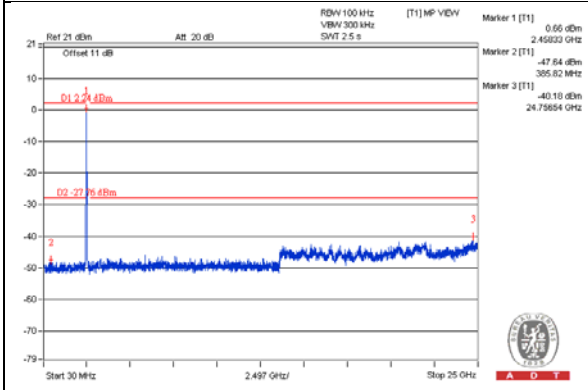
### CH 3



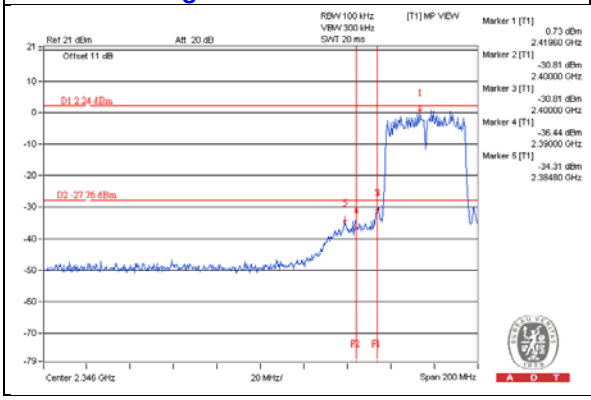

### CH 6



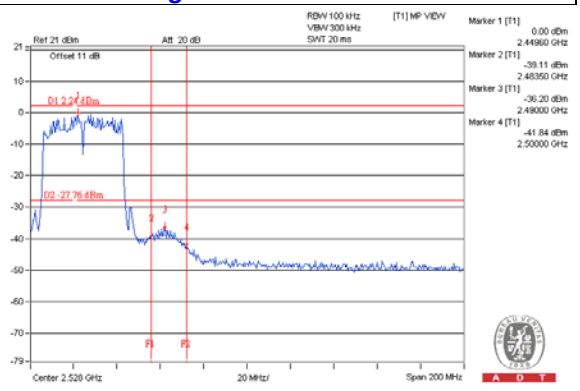

### CH 9




### CH 3 Band edge




### CH 9 Band edge



## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

**Appendix – Information on the Testing Laboratories**

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:


**Linko EMC/RF Lab**
Tel: 886-2-26052180
Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**
Tel: 886-3-5935343
Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety Lab**
Tel: 886-3-3183232
Fax: 886-3-3270892

**Email:** service.adt@tw.bureauveritas.com
**Web Site:** www.bureauveritas-adt.com


The address and road map of all our labs can be found in our web site also.

**--- END ---**