

## FCC Test Report (WLAN)

**Report No.:** RF141008E03C

**FCC ID:** PPD-QCNFA435

**Test Model:** QCNFA435

**Received Date:** Jan. 21, 2015

**Test Date:** Mar. 30 to Apr. 28, 2015

**Issued Date:** Apr. 29, 2015

**Applicant:** Qualcomm Atheros, Inc.

**Address:** 1700 Technology Drive, San Jose, CA 95110

**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 Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
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**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
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### Release Control Record

| Issue No.    | Description       | Date Issued   |
|--------------|-------------------|---------------|
| RF141008E03C | Original release. | Apr. 29, 2015 |

## 1 Certificate of Conformity

**Product:** Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card

**Brand:** Qualcomm Atheros

**Test Model:** QCNFA435

**Sample Status:** R&D SAMPLE

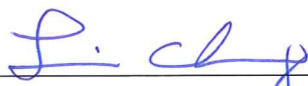
**Applicant:** Qualcomm Atheros, Inc.

**Test Date:** Mar. 30 to Apr. 28, 2015

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
ANSI C63.10:2009

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.

**Prepared by :**

  
Lori Chung / Specialist

**Date:**

Apr. 29, 2015

**Approved by :**

  
May Chen / Manager

**Date:**

Apr. 29, 2015

## 2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart C (SECTION 15.247) |                                              |        |                                                                                   |
|------------------------------------------------|----------------------------------------------|--------|-----------------------------------------------------------------------------------|
| FCC Clause                                     | Test Item                                    | Result | Remarks                                                                           |
| 15.205 /<br>15.209 /<br>15.247(d)              | Radiated Emissions and Band Edge Measurement | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -1.6dB at 2483.50MHz. |
| 15.247(b)                                      | Conducted power                              | PASS   | Meet the requirement of limit.                                                    |
| 15.203                                         | Antenna Requirement                          | PASS   | Antenna connector is IPEX not a standard connector.                               |

- NOTE:** 1. For WLAN: The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz and 5.725~5.850GHz. For the 5.15~5.35GHz, 5.47~5.725GHz RF parameters was recorded in another test report.
2. This report is prepared for FCC Class II change. (Only radiated emissions / conducted power were presented in this 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     | Expanded Uncertainty (k=2) ( $\pm$ ) |
|--------------------------------|---------------|--------------------------------------|
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz  | 5.43 dB                              |
| Radiated Emissions above 1 GHz | 1GHz ~ 6GHz   | 3.72 dB                              |
|                                | 6GHz ~ 18GHz  | 4.00 dB                              |
|                                | 18GHz ~ 40GHz | 4.11 dB                              |

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT (WLAN)

|                       |                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product               | Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card                                                                                                                                                                                                                                                                                                                            |
| Brand                 | Qualcomm Atheros                                                                                                                                                                                                                                                                                                                                                                 |
| Test Model            | QCNFA435                                                                                                                                                                                                                                                                                                                                                                         |
| Status of EUT         | R&D SAMPLE                                                                                                                                                                                                                                                                                                                                                                       |
| Power Supply Rating   | 3.3Vdc form host equipment                                                                                                                                                                                                                                                                                                                                                       |
| Modulation Type       | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM<br>256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz                                                                                                                                                                                                                                                   |
| Modulation Technology | DSSS, OFDM                                                                                                                                                                                                                                                                                                                                                                       |
| Transfer Rate         | 802.11b: up to 11Mbps<br>802.11a/g: up to 54Mbps<br>802.11n : up to 150Mbps<br>802.11ac: up to 433.3Mbps                                                                                                                                                                                                                                                                         |
| Operating Frequency   | For 15.407<br>5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.72GHz<br>For 15.247<br>2.412 ~ 2.462GHz, 5.745 ~ 5.825GHz                                                                                                                                                                                                                                                                 |
| Number of Channel     | For 15.407<br>20 for 802.11a, 802.11n (HT20), 802.11ac (VHT20)<br>10 for 802.11n (HT40), 802.11ac (VHT40)<br>5 for 802.11ac (VHT80)<br>For 15.247 (2.4GHz)<br>11 for 802.11b/g, 802.11n (HT20), VHT20<br>7 for 802.11n (HT40), VHT40<br>For 15.247 (5GHz)<br>5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20)<br>2 for 802.11n (HT40), 802.11ac (VHT40)<br>1 for 802.11ac (VHT80) |
| Output Power          | For 15.407<br>802.11a: 54.954 mW<br>For 15.247 (2.4GHz)<br>VHT20: 297.167mW<br>For 15.247 (5GHz)<br>802.11a: 104.232mW                                                                                                                                                                                                                                                           |
| Antenna Type          | See item 3.2                                                                                                                                                                                                                                                                                                                                                                     |
| Antenna Connector     | See item 3.2                                                                                                                                                                                                                                                                                                                                                                     |
| Accessory Device      | NA                                                                                                                                                                                                                                                                                                                                                                               |
| Data Cable Supplied   | NA                                                                                                                                                                                                                                                                                                                                                                               |

Note:

- This report is prepared for FCC Class II change. The difference compared with the Report No.: RF141008E03 R1 design is as the following:
  - Shielding change. Shielding shape and z-height change.
  - The EUT was applied for limited module approval to limit use with Notebook Computer as below table:

| 15" Notebook Computer |                   |           |
|-----------------------|-------------------|-----------|
| Brand                 | Model             | Remark    |
| ACER                  | Zoro_BH (N15Q1)   | Intel CPU |
| ACER                  | Nami_CZ (N15Q2)   | AMD CPU   |
| 14" Notebook Computer |                   |           |
| Brand                 | Model             | Remark    |
| ACER                  | Robin_BH (N15C1)  | Intel CPU |
| ACER                  | Sanji_CZ (N15C2)  | AMD CPU   |
| 17" Notebook Computer |                   |           |
| Brand                 | Model             | Remark    |
| ACER                  | Franky_CZ (N15W2) | AMD CPU   |
| ACER                  | Brook_BH (N15W1)  | Intel CPU |

Note: From above Notebook Computer, Model: **Zoro\_BH (N15Q1)**, **Robin\_BH (N15C1)** and **Franky\_CZ (N15W2)** was selected as representative model for the test and its data was recorded in this report.

- According to above conditions, only radiated emissions / conducted power need to be performed. And all data was verified to meet the requirements.
- There are Bluetooth technology and WLAN technology used for the EUT.
- The EUT incorporates a 1T1R function.

| 2.4GHz Band      |                 |                       |     |
|------------------|-----------------|-----------------------|-----|
| MODULATION MODE  | DATA RATE (MCS) | TX & RX CONFIGURATION |     |
| 802.11b          | 1 ~ 11Mbps      | 1TX                   | 1RX |
| 802.11g          | 6 ~ 54Mbps      | 1TX                   | 1RX |
| 802.11n (HT20)   | MCS 0~7         | 1TX                   | 1RX |
| 802.11n (HT40)   | MCS 0~7         | 1TX                   | 1RX |
| VHT20            | MCS 0~8, Nss=1  | 1TX                   | 1RX |
| VHT40            | MCS 0~9, Nss=1  | 1TX                   | 1RX |
| 5GHz Band        |                 |                       |     |
| MODULATION MODE  | DATA RATE (MCS) | TX & RX CONFIGURATION |     |
| 802.11a          | 6 ~ 54Mbps      | 1TX                   | 1RX |
| 802.11n (HT20)   | MCS 0~7         | 1TX                   | 1RX |
| 802.11n (HT40)   | MCS 0~7         | 1TX                   | 1RX |
| 802.11ac (VHT20) | MCS 0~8, Nss=1  | 1TX                   | 1RX |
| 802.11ac (VHT40) | MCS 0~9, Nss=1  | 1TX                   | 1RX |
| 802.11ac (VHT80) | MCS 0~9, Nss=1  | 1TX                   | 1RX |

- The EUT was pre-tested under the following modes:

| Test Mode | Data rate |
|-----------|-----------|
| Mode A    | 400ns GI  |
| Mode B    | 800ns GI  |

From the above modes, the worst case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

- WLAN/BT coexistence mode:

- 1x1 WLAN + BT:
  - 5GHz 802.11a/an (or 11ac) transmit concurrent with BT.
  - 2.4GHz: timely shared coexistence.

- The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 Description of Antenna

The antenna gain was declared by client; please refer to the following table:

| Antenna No. | Transmitter Circuit | Brand | Model | Ant. Type | 2.4GHz Gain with cable loss (dBi) | 5GHz Gain with cable loss (dBi) | Connector Type | Cable Length (mm) |
|-------------|---------------------|-------|-------|-----------|-----------------------------------|---------------------------------|----------------|-------------------|
| 1           | Main                | WNC   | N15Q  | PIFA      | 1.45                              | Band 1&2: 0.87                  | IPEX           | 643               |
|             |                     |       |       |           |                                   | Band 3: 2.21                    |                |                   |
|             |                     |       |       |           |                                   | Band 4: 2.64                    |                |                   |
|             | Aux                 | WNC   | N15Q  | PIFA      | 1.24                              | Band 1&2: 0.18                  | IPEX           | 756               |
|             |                     |       |       |           |                                   | Band 3: 0.95                    |                |                   |
|             |                     |       |       |           |                                   | Band 4: 1.38                    |                |                   |
| 2           | Main                | WNC   | N15C  | PIFA      | 0.7                               | Band 1&2: 0.97                  | IPEX           | 626               |
|             |                     |       |       |           |                                   | Band 3: -0.01                   |                |                   |
|             |                     |       |       |           |                                   | Band 4: -0.32                   |                |                   |
|             | Aux                 | WNC   | N15C  | PIFA      | 2.4                               | Band 1&2: -1.21                 | IPEX           | 749               |
|             |                     |       |       |           |                                   | Band 3: -0.84                   |                |                   |
|             |                     |       |       |           |                                   | Band 4: -0.24                   |                |                   |
| 3           | Main                | WNC   | N15W  | PIFA      | 2.2                               | Band 1&2: -0.41                 | IPEX           | 645               |
|             |                     |       |       |           |                                   | Band 3: 0.74                    |                |                   |
|             |                     |       |       |           |                                   | Band 4: -0.05                   |                |                   |
|             | Aux                 | WNC   | N15W  | PIFA      | 1.58                              | Band 1&2: -0.01                 | IPEX           | 720               |
|             |                     |       |       |           |                                   | Band 3: -0.31                   |                |                   |
|             |                     |       |       |           |                                   | Band 4: -0.43                   |                |                   |

- Note: 1. All of antenna can be application for WLAN and Bluetooth.  
2. For 2.4GHz: From the above antennas, Ant. No. 2 (Aux) was selected as representative antennas for the test.  
3. For 5GHz band 1 & 2: From the above antennas, Ant. No. 2 (Main) was selected as representative antennas for the test.  
4. For 5GHz band 3: From the above antennas, Ant. No. 1 (Main) was selected as representative antennas for the test.  
5. For 5GHz band 4: From the above antennas, Ant. No. 1 (Main) was selected as representative antennas for the test.

### 3.3 Description of Test Modes

#### For 2.4GHz:

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20) and VHT20:

| 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) and VHT40:

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

#### For 5GHz (5745 ~ 5825MHz):

5 channels are provided for 802.11a, 802.11n (HT20) and 802.11ac (VHT20):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 149     | 5745MHz   | 161     | 5805MHz   |
| 153     | 5765MHz   | 165     | 5825MHz   |
| 157     | 5785MHz   |         |           |

2 channels are provided for 802.11n (HT40) and 802.11ac (VHT40):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 151     | 5755MHz   | 159     | 5795MHz   |

1 channel is provided for 802.11ac (VHT80):

| Channel | Frequency |
|---------|-----------|
| 155     | 5775MHz   |

### 3.3.1 Test Mode Applicability and Tested Channel Detail

#### For 2.4GHz:

| EUT CONFIGURE MODE | APPLICABLE TO |       |      | DESCRIPTION                                    |
|--------------------|---------------|-------|------|------------------------------------------------|
|                    | UE $\geq$ 1G  | UE<1G | APCM |                                                |
| 1                  | √             | √     | -    | with 15" Notebook Computer - Zoro_BH (N15Q1)   |
| 2                  | √             | √     | √    | with 14" Notebook Computer - Robin_BH (N15C1)  |
| 3                  | √             | √     | -    | with 17" Notebook Computer - Franky_CZ (N15W2) |

Where **UE  $\geq$  1G:** Unwanted Emission above 1GHz **UE < 1G:** Unwanted Emission below 1GHz  
**APCM:** Antenna Port Conducted Measurement

#### Unwanted 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 | DATA RATE (Mbps) |
|-------|-------------------|----------------|-----------------------|------------------|
| VHT20 | 1 to 11           | 1, 6, 11       | OFDM                  | 6.5              |

#### Unwanted 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.

| MODE  | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | DATA RATE (Mbps) |
|-------|-------------------|----------------|-----------------------|------------------|
| VHT20 | 1 to 11           | 6              | OFDM                  | 6.5              |

#### Antenna Port Conducted Measurement:

- ☒ 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 | DATA RATE (Mbps) |
|-------|-------------------|----------------|-----------------------|------------------|
| VHT20 | 1 to 11           | 1, 6, 11       | OFDM                  | 6.5              |

#### Test Condition:

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER (SYSTEM) | TESTED BY     |
|---------------|--------------------------|----------------------|---------------|
| UE $\geq$ 1G  | 23deg. C, 68%RH          | 120Vac, 60Hz         | Gary Cheng    |
| UE<1G         | 22deg. C, 64%RH          | 120Vac, 60Hz         | Gary Cheng    |
| APCM          | 25deg. C, 60%RH          | 120Vac, 60Hz         | Anderson Chen |

# For 5GHz:

| EUT CONFIGURE MODE | APPLICABLE TO |       |      | DESCRIPTION                                    |
|--------------------|---------------|-------|------|------------------------------------------------|
|                    | RE≥1G         | RE<1G | APCM |                                                |
| 1                  | √             | √     | √    | with 15" Notebook Computer - Zoro_BH (N15Q1)   |
| 2                  | √             | √     | -    | with 14" Notebook Computer - Robin_BH (N15C1)  |
| 3                  | √             | √     | -    | with 17" Notebook Computer - Franky_CZ (N15W2) |

Where **RE≥1G**: Radiated Emission above 1GHz & Bandedge Measurement  
**RE<1G**: Radiated Emission below 1GHz  
**APCM**: Antenna Port Conducted Measurement

## Unwabted 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 | DATA RATE (Mbps) |
|---------|-------------------|----------------|-----------------------|------------------|
| 802.11a | 149 to 165        | 149, 157, 165  | OFDM                  | 6                |

## Unwabted 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.

| MODE    | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | DATA RATE (Mbps) |
|---------|-------------------|----------------|-----------------------|------------------|
| 802.11a | 149 to 165        | 157            | OFDM                  | 6                |

## Antenna Port Conducted Measurement:

- ☒ 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 | DATA RATE (Mbps) |
|---------|-------------------|----------------|-----------------------|------------------|
| 802.11a | 149 to 165        | 149, 157, 165  | OFDM                  | 6                |

## Test Condition:

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER (SYSTEM) | TESTED BY     |
|---------------|--------------------------|----------------------|---------------|
| UE≥1G         | 23deg. C, 68%RH          | 120Vac, 60Hz         | Gary Cheng    |
| UE<1G         | 22deg. C, 64%RH          | 120Vac, 60Hz         | Gary Cheng    |
| APCM          | 25deg. C, 60%RH          | 120Vac, 60Hz         | Anderson Chen |

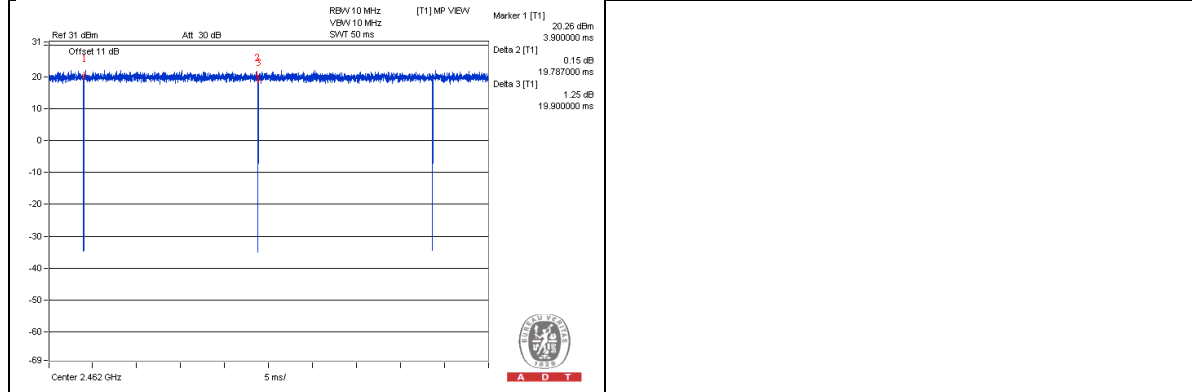
### 3.4 Duty Cycle of Test Signal

#### 2.4GHz Band:

Duty cycle of test signal is  $\geq 98\%$ , duty factor is not required.

**VHT20:** Duty cycle =  $19.787 \text{ ms} / 19.9 \text{ ms} = 0.994$

#### VHT20

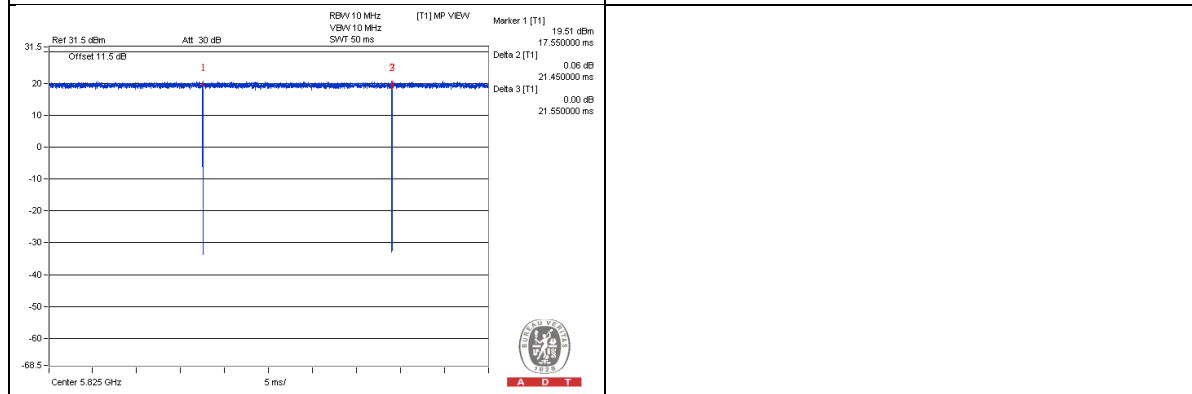


#### 5GHz Band:

Duty cycle of test signal is  $\geq 98\%$ , duty factor is not required.

**802.11a:** Duty cycle =  $21.45 \text{ ms} / 21.55 \text{ ms} = 0.995$

#### 802.11a



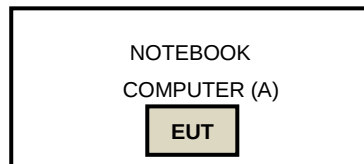
### 3.5 Description of Support Units

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.

| No. | Product           | Brand | Model No.         | Serial No. | FCC ID | Remark             |
|-----|-------------------|-------|-------------------|------------|--------|--------------------|
| A   | NOTEBOOK COMPUTER | Acer  | Zoro_BH (N15Q1)   | NA         | NA     | Supplied by Client |
|     | NOTEBOOK COMPUTER | Acer  | Robin_BH (N15C1)  | NA         | NA     | Supplied by Client |
|     | NOTEBOOK COMPUTER | Acer  | Franky_CZ (N15W2) | NA         | NA     | Supplied by Client |

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

#### 3.5.1 Configuration of System under Test



### 3.6 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 v03r02**  
ANSI C63.10-2009

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

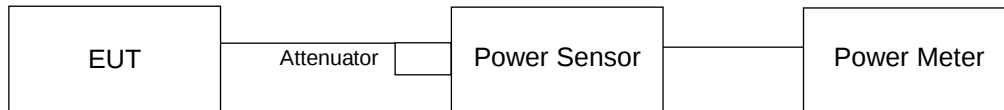
## 4 Test Types and Results (For 2.4GHz Band)

### 4.1 Conducted Output Power Measurement

#### 4.1.1 Limits of Conducted Output Power Measurement

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

#### 4.1.2 Test Setup



#### 4.1.3 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| Power Meter<br>Anritsu     | ML2495A   | 1014008    | Apr. 30, 2014   | Apr. 29, 2015    |
| Power Sensor<br>Anritsu    | MA2411B   | 0917122    | Apr. 30, 2014   | Apr. 29, 2015    |

#### 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. Tested date : Mar. 30, 2015

#### 4.1.4 Test Procedures

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

#### 4.1.5 Deviation from Test Standard

No deviation.

#### 4.1.6 EUT Operating Conditions

The software (QCA Radio Control Toolkit V3.0.33.0) provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

#### 4.1.7 Test Results

##### For Peak Power

###### VHT20

| Channel | Frequency (MHz) | Peak Power (mW) | Peak Power (dBm) | Limit (dBm) | Pass/Fail |
|---------|-----------------|-----------------|------------------|-------------|-----------|
| 1       | 2412            | 167.494         | 22.24            | 30          | Pass      |
| 6       | 2437            | 297.167         | 24.73            | 30          | Pass      |
| 11      | 2462            | 153.815         | 21.87            | 30          | Pass      |

##### For Average Power

###### VHT20

| Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) |
|---------|-----------------|--------------------|---------------------|
| 1       | 2412            | 37.325             | 15.72               |
| 6       | 2437            | 111.944            | 20.49               |
| 11      | 2462            | 40.087             | 16.03               |

## 4.2 Unwanted Emission Measurement (Radiated)

### 4.2.1 Limits of Unwanted Emission 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 20dB 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.

#### 4.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER              | MODEL NO.                | SERIAL NO.                                | CALIBRATED DATE | CALIBRATED UNTIL |
|-----------------------------------------|--------------------------|-------------------------------------------|-----------------|------------------|
| MXE EMI Receiver<br>Agilent             | N9038A                   | MY50010156                                | Aug. 11, 2014   | Aug. 10, 2015    |
| Pre-Amplifier<br>Mini-Circuits          | ZFL-1000VH2<br>B         | AMP-ZFL-04                                | Nov. 12, 2014   | Nov. 11, 2015    |
| Trilog Broadband Antenna<br>SCHWARZBECK | VULB 9168                | 9168-361                                  | Feb. 06, 2015   | Feb. 05, 2016    |
| RF Cable                                | NA                       | CHHCAB_001                                | Oct. 05, 2014   | Oct. 04, 2015    |
| Horn_Antenna<br>AISI                    | AIH.8018                 | 0000220091110                             | Feb. 06, 2015   | Feb. 05, 2016    |
| Pre-Amplifier<br>Agilent                | 8449B                    | 300801923                                 | Oct. 28, 2014   | Oct. 27, 2015    |
| RF Cable                                | NA                       | 131206<br>131213<br>131215<br>SNMY23685/4 | Jan. 16, 2015   | Jan. 15, 2016    |
| Spectrum Analyzer<br>R&S                | FSV40                    | 100964                                    | July 05, 2014   | July 04, 2015    |
| Pre-Amplifier<br>SPACEK LABS            | SLKKa-48-6               | 9K16                                      | Dec. 12, 2014   | Dec. 11, 2015    |
| Horn_Antenna<br>SCHWARZBECK             | BBHA 9170                | 9170-424                                  | Feb. 05, 2015   | Feb. 04, 2016    |
| RF Cable                                | NA                       | 329751/4<br>RF104-204                     | Dec. 11, 2014   | Dec. 10, 2015    |
| Software                                | ADT_Radiated<br>_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. H.
4. The FCC Site Registration No. is 797305.
- 5 The CANADA Site Registration No. is IC 7450H-3.
- 6 Tested Date: Apr. 25 to 27, 2015

#### 4.2.3 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:**

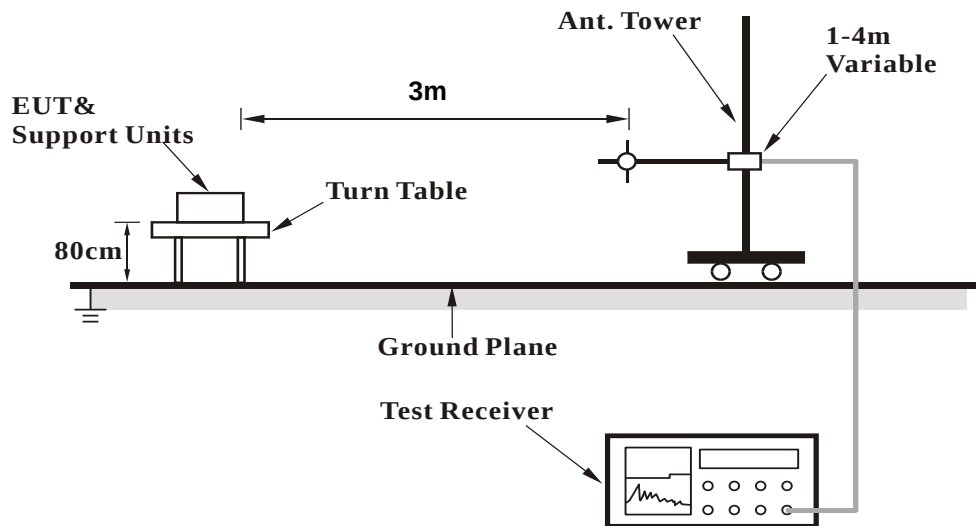
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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 ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 Deviation from Test Standard

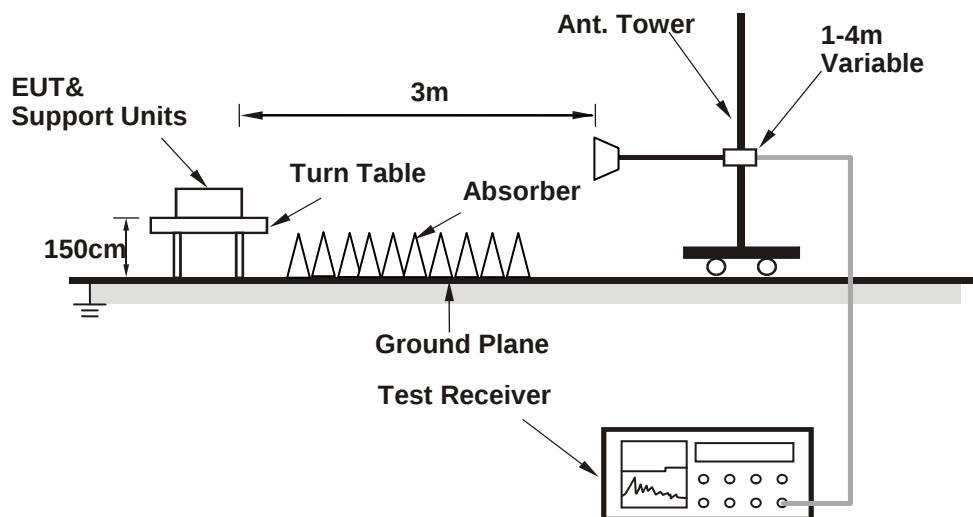
No deviation.

#### 4.2.5 Test Setup

##### <Frequency Range below 1GHz>



##### <Frequency Range above 1GHz>



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

#### 4.2.6 EUT Operating Conditions

1. Connect the EUT with the support unit A (Notebook Computer) which is placed on a testing table.
2. The support unit A (Notebook Computer) runs test program "QCA Radio Control Toolkit V3.0.33.0" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

#### 4.2.7 Test Results (Mode 1)

##### Above 1GHz Data

##### VHT20

|                 |              |                   |              |
|-----------------|--------------|-------------------|--------------|
| CHANNEL         | TX Channel 1 | 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     | 65.4 PK                 | 74.0           | -8.6        | 1.12 H             | 219                  | 71.27            | -5.87                    |
| 2                                                   | 2390.00     | 51.2 AV                 | 54.0           | -2.8        | 1.12 H             | 219                  | 57.07            | -5.87                    |
| 3                                                   | *2412.00    | 113.5 PK                |                |             | 1.12 H             | 219                  | 119.30           | -5.80                    |
| 4                                                   | *2412.00    | 102.4 AV                |                |             | 1.12 H             | 219                  | 108.20           | -5.80                    |
| 5                                                   | 4824.00     | 52.1 PK                 | 74.0           | -21.9       | 1.03 H             | 65                   | 48.68            | 3.42                     |
| 6                                                   | 4824.00     | 39.1 AV                 | 54.0           | -14.9       | 1.03 H             | 65                   | 35.68            | 3.42                     |
| 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     | 61.6 PK                 | 74.0           | -12.4       | 1.31 V             | 355                  | 67.47            | -5.87                    |
| 2                                                   | 2390.00     | 48.8 AV                 | 54.0           | -5.2        | 1.31 V             | 355                  | 54.67            | -5.87                    |
| 3                                                   | *2412.00    | 110.6 PK                |                |             | 1.31 V             | 355                  | 116.40           | -5.80                    |
| 4                                                   | *2412.00    | 100.1 AV                |                |             | 1.31 V             | 355                  | 105.90           | -5.80                    |
| 5                                                   | 4824.00     | 49.4 PK                 | 74.0           | -24.6       | 1.00 V             | 53                   | 45.98            | 3.42                     |
| 6                                                   | 4824.00     | 38.2 AV                 | 54.0           | -15.8       | 1.00 V             | 53                   | 34.78            | 3.42                     |

##### 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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 59.2 PK                       | 74.0              | -14.8          | 1.13 H                   | 224                        | 65.07                  | -5.87                          |
| 2   | 2390.00        | 46.4 AV                       | 54.0              | -7.6           | 1.13 H                   | 224                        | 52.27                  | -5.87                          |
| 3   | *2437.00       | 119.3 PK                      |                   |                | 1.13 H                   | 224                        | 125.00                 | -5.70                          |
| 4   | *2437.00       | 107.9 AV                      |                   |                | 1.13 H                   | 224                        | 113.60                 | -5.70                          |
| 5   | 2483.50        | 60.6 PK                       | 74.0              | -13.4          | 1.13 H                   | 224                        | 66.09                  | -5.49                          |
| 6   | 2483.50        | 47.9 AV                       | 54.0              | -6.1           | 1.13 H                   | 224                        | 53.39                  | -5.49                          |
| 7   | 4874.00        | 53.1 PK                       | 74.0              | -20.9          | 1.04 H                   | 39                         | 49.70                  | 3.40                           |
| 8   | 4874.00        | 40.0 AV                       | 54.0              | -14.0          | 1.04 H                   | 39                         | 36.60                  | 3.40                           |
| 9   | 7311.00        | 54.1 PK                       | 74.0              | -19.9          | 1.01 H                   | 81                         | 46.34                  | 7.76                           |
| 10  | 7311.00        | 41.8 AV                       | 54.0              | -12.2          | 1.01 H                   | 81                         | 34.04                  | 7.76                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 56.3 PK                       | 74.0              | -17.7          | 1.31 V                   | 358                        | 62.17                  | -5.87                          |
| 2   | 2390.00        | 44.1 AV                       | 54.0              | -9.9           | 1.31 V                   | 358                        | 49.97                  | -5.87                          |
| 3   | *2437.00       | 116.1 PK                      |                   |                | 1.31 V                   | 358                        | 121.80                 | -5.70                          |
| 4   | *2437.00       | 105.5 AV                      |                   |                | 1.31 V                   | 358                        | 111.20                 | -5.70                          |
| 5   | 2483.50        | 59.4 PK                       | 74.0              | -14.6          | 1.31 V                   | 358                        | 64.89                  | -5.49                          |
| 6   | 2483.50        | 45.6 AV                       | 54.0              | -8.4           | 1.31 V                   | 358                        | 51.09                  | -5.49                          |
| 7   | 4874.00        | 50.4 PK                       | 74.0              | -23.6          | 1.05 V                   | 53                         | 47.00                  | 3.40                           |
| 8   | 4874.00        | 39.5 AV                       | 54.0              | -14.5          | 1.05 V                   | 53                         | 36.10                  | 3.40                           |
| 9   | 7311.00        | 56.1 PK                       | 74.0              | -17.9          | 1.05 V                   | 200                        | 48.34                  | 7.76                           |
| 10  | 7311.00        | 43.0 AV                       | 54.0              | -11.0          | 1.05 V                   | 200                        | 35.24                  | 7.76                           |

**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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 114.6 PK                      |                   |                | 1.11 H                   | 220                        | 120.19                 | -5.59                          |
| 2   | *2462.00       | 103.3 AV                      |                   |                | 1.11 H                   | 220                        | 108.89                 | -5.59                          |
| 3   | 2483.50        | 65.8 PK                       | 74.0              | -8.2           | 1.11 H                   | 220                        | 71.29                  | -5.49                          |
| 4   | 2483.50        | 52.4 AV                       | 54.0              | -1.6           | 1.11 H                   | 220                        | 57.89                  | -5.49                          |
| 5   | 4924.00        | 52.2 PK                       | 74.0              | -21.8          | 1.05 H                   | 50                         | 48.81                  | 3.39                           |
| 6   | 4924.00        | 39.0 AV                       | 54.0              | -15.0          | 1.05 H                   | 50                         | 35.61                  | 3.39                           |
| 7   | 7386.00        | 53.8 PK                       | 74.0              | -20.2          | 1.07 H                   | 90                         | 45.75                  | 8.05                           |
| 8   | 7386.00        | 41.6 AV                       | 54.0              | -12.4          | 1.07 H                   | 90                         | 33.55                  | 8.05                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 112.6 PK                      |                   |                | 1.29 V                   | 360                        | 118.19                 | -5.59                          |
| 2   | *2462.00       | 101.2 AV                      |                   |                | 1.29 V                   | 360                        | 106.79                 | -5.59                          |
| 3   | 2483.50        | 64.8 PK                       | 74.0              | -9.2           | 1.29 V                   | 360                        | 70.29                  | -5.49                          |
| 4   | 2483.50        | 50.2 AV                       | 54.0              | -3.8           | 1.29 V                   | 360                        | 55.69                  | -5.49                          |
| 5   | 4924.00        | 49.8 PK                       | 74.0              | -24.2          | 1.02 V                   | 46                         | 46.41                  | 3.39                           |
| 6   | 4924.00        | 38.4 AV                       | 54.0              | -15.6          | 1.02 V                   | 46                         | 35.01                  | 3.39                           |
| 7   | 7386.00        | 56.1 PK                       | 74.0              | -17.9          | 1.01 V                   | 191                        | 48.05                  | 8.05                           |
| 8   | 7386.00        | 43.0 AV                       | 54.0              | -11.0          | 1.01 V                   | 191                        | 34.95                  | 8.05                           |

**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

### VHT20

|                        |              |                              |                 |
|------------------------|--------------|------------------------------|-----------------|
| <b>CHANNEL</b>         | TX Channel 6 | <b>DETECTOR<br/>FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | Below 1GHz   |                              |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 67.20          | 14.1 QP                       | 40.0              | -25.9          | 1.50 H                   | 297                        | 29.15                  | -15.02                         |
| 2                                                   | 194.61         | 19.3 QP                       | 43.5              | -24.2          | 1.50 H                   | 93                         | 35.15                  | -15.87                         |
| 3                                                   | 319.93         | 22.1 QP                       | 46.0              | -23.9          | 1.00 H                   | 66                         | 33.16                  | -11.09                         |
| 4                                                   | 454.08         | 22.6 QP                       | 46.0              | -23.4          | 2.00 H                   | 0                          | 30.71                  | -8.09                          |
| 5                                                   | 519.51         | 24.1 QP                       | 46.0              | -21.9          | 1.50 H                   | 48                         | 30.85                  | -6.74                          |
| 6                                                   | 956.98         | 30.9 QP                       | 46.0              | -15.1          | 1.50 H                   | 360                        | 29.70                  | 1.16                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 77.14          | 26.2 QP                       | 40.0              | -13.8          | 1.00 V                   | 102                        | 43.30                  | -17.10                         |
| 2                                                   | 194.61         | 35.6 QP                       | 43.5              | -7.9           | 1.00 V                   | 29                         | 51.45                  | -15.87                         |
| 3                                                   | 199.31         | 37.2 QP                       | 43.5              | -6.3           | 1.50 V                   | 360                        | 53.23                  | -15.99                         |
| 4                                                   | 214.20         | 35.1 QP                       | 43.5              | -8.4           | 1.50 V                   | 360                        | 51.16                  | -16.05                         |
| 5                                                   | 832.82         | 38.2 QP                       | 46.0              | -7.9           | 1.50 V                   | 360                        | 39.04                  | -0.89                          |
| 6                                                   | 956.98         | 32.6 QP                       | 46.0              | -13.4          | 2.00 V                   | 156                        | 31.43                  | 1.16                           |

#### 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

#### 4.2.8 Test Results (Mode 2)

##### Above 1GHz Data

##### VHT20

|                 |              |                   |              |
|-----------------|--------------|-------------------|--------------|
| CHANNEL         | TX Channel 1 | 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     | 59.7 PK                 | 74.0           | -14.3       | 1.12 H             | 131                  | 65.57            | -5.87                    |
| 2                                                   | 2390.00     | 48.1 AV                 | 54.0           | -5.9        | 1.12 H             | 131                  | 53.97            | -5.87                    |
| 3                                                   | *2412.00    | 107.8 PK                |                |             | 1.05 H             | 131                  | 113.60           | -5.80                    |
| 4                                                   | *2412.00    | 98.6 AV                 |                |             | 1.05 H             | 131                  | 104.40           | -5.80                    |
| 5                                                   | 4824.00     | 52.9 PK                 | 74.0           | -21.1       | 1.14 H             | 40                   | 49.48            | 3.42                     |
| 6                                                   | 4824.00     | 39.8 AV                 | 54.0           | -14.2       | 1.14 H             | 40                   | 36.38            | 3.42                     |
| 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     | 59.9 PK                 | 74.0           | -14.1       | 1.00 V             | 241                  | 65.77            | -5.87                    |
| 2                                                   | 2390.00     | 47.5 AV                 | 54.0           | -6.5        | 1.00 V             | 241                  | 53.37            | -5.87                    |
| 3                                                   | *2412.00    | 108.6 PK                |                |             | 1.33 V             | 242                  | 114.40           | -5.80                    |
| 4                                                   | *2412.00    | 99.5 AV                 |                |             | 1.33 V             | 242                  | 105.30           | -5.80                    |
| 5                                                   | 4824.00     | 52.9 PK                 | 74.0           | -21.1       | 1.40 V             | 168                  | 49.48            | 3.42                     |
| 6                                                   | 4824.00     | 40.1 AV                 | 54.0           | -13.9       | 1.40 V             | 168                  | 36.68            | 3.42                     |

##### 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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 54.7 PK                       | 74.0              | -19.3          | 1.00 H                   | 132                        | 60.57                  | -5.87                          |
| 2   | 2390.00        | 43.1 AV                       | 54.0              | -10.9          | 1.00 H                   | 132                        | 48.97                  | -5.87                          |
| 3   | *2437.00       | 113.3 PK                      |                   |                | 1.00 H                   | 128                        | 119.00                 | -5.70                          |
| 4   | *2437.00       | 103.7 AV                      |                   |                | 1.00 H                   | 128                        | 109.40                 | -5.70                          |
| 5   | 2483.50        | 56.7 PK                       | 74.0              | -17.3          | 1.00 H                   | 131                        | 62.19                  | -5.49                          |
| 6   | 2483.50        | 44.9 AV                       | 54.0              | -9.1           | 1.00 H                   | 131                        | 50.39                  | -5.49                          |
| 7   | 4874.00        | 53.3 PK                       | 74.0              | -20.7          | 1.16 H                   | 49                         | 49.90                  | 3.40                           |
| 8   | 4874.00        | 40.2 AV                       | 54.0              | -13.8          | 1.16 H                   | 49                         | 36.80                  | 3.40                           |
| 9   | 7311.00        | 54.9 PK                       | 74.0              | -19.1          | 1.00 H                   | 95                         | 47.14                  | 7.76                           |
| 10  | 7311.00        | 42.9 AV                       | 54.0              | -11.1          | 1.00 H                   | 95                         | 35.14                  | 7.76                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 55.2 PK                       | 74.0              | -18.8          | 1.85 V                   | 177                        | 61.07                  | -5.87                          |
| 2   | 2390.00        | 43.5 AV                       | 54.0              | -10.5          | 1.85 V                   | 177                        | 49.37                  | -5.87                          |
| 3   | *2437.00       | 114.5 PK                      |                   |                | 1.71 V                   | 176                        | 120.20                 | -5.70                          |
| 4   | *2437.00       | 104.9 AV                      |                   |                | 1.71 V                   | 176                        | 110.60                 | -5.70                          |
| 5   | 2483.50        | 56.3 PK                       | 74.0              | -17.7          | 1.66 V                   | 170                        | 61.79                  | -5.49                          |
| 6   | 2483.50        | 44.7 AV                       | 54.0              | -9.3           | 1.66 V                   | 170                        | 50.19                  | -5.49                          |
| 7   | 4874.00        | 52.7 PK                       | 74.0              | -21.3          | 1.45 V                   | 170                        | 49.30                  | 3.40                           |
| 8   | 4874.00        | 39.7 AV                       | 54.0              | -14.3          | 1.45 V                   | 170                        | 36.30                  | 3.40                           |
| 9   | 7311.00        | 59.2 PK                       | 74.0              | -14.8          | 1.00 V                   | 239                        | 51.44                  | 7.76                           |
| 10  | 7311.00        | 45.9 AV                       | 54.0              | -8.1           | 1.00 V                   | 239                        | 38.14                  | 7.76                           |

**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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 109.7 PK                      |                   |                | 1.04 H                   | 133                        | 115.29                 | -5.59                          |
| 2   | *2462.00       | 99.9 AV                       |                   |                | 1.04 H                   | 133                        | 105.49                 | -5.59                          |
| 3   | 2483.50        | 60.1 PK                       | 74.0              | -13.9          | 1.00 H                   | 131                        | 65.59                  | -5.49                          |
| 4   | 2483.50        | 48.1 AV                       | 54.0              | -5.9           | 1.00 H                   | 131                        | 53.59                  | -5.49                          |
| 5   | 4924.00        | 53.1 PK                       | 74.0              | -20.9          | 1.15 H                   | 47                         | 49.71                  | 3.39                           |
| 6   | 4924.00        | 40.1 AV                       | 54.0              | -13.9          | 1.15 H                   | 47                         | 36.71                  | 3.39                           |
| 7   | 7386.00        | 54.6 PK                       | 74.0              | -19.4          | 1.06 H                   | 82                         | 46.55                  | 8.05                           |
| 8   | 7386.00        | 42.5 AV                       | 54.0              | -11.5          | 1.06 H                   | 82                         | 34.45                  | 8.05                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 109.1 PK                      |                   |                | 1.73 V                   | 173                        | 114.69                 | -5.59                          |
| 2   | *2462.00       | 100.0 AV                      |                   |                | 1.73 V                   | 173                        | 105.59                 | -5.59                          |
| 3   | 2483.50        | 60.9 PK                       | 74.0              | -13.1          | 1.64 V                   | 171                        | 66.39                  | -5.49                          |
| 4   | 2483.50        | 48.2 AV                       | 54.0              | -5.8           | 1.64 V                   | 171                        | 53.69                  | -5.49                          |
| 5   | 4924.00        | 53.2 PK                       | 74.0              | -20.8          | 1.47 V                   | 178                        | 49.81                  | 3.39                           |
| 6   | 4924.00        | 40.0 AV                       | 54.0              | -14.0          | 1.47 V                   | 178                        | 36.61                  | 3.39                           |
| 7   | 7386.00        | 59.3 PK                       | 74.0              | -14.7          | 1.05 V                   | 224                        | 51.25                  | 8.05                           |
| 8   | 7386.00        | 45.9 AV                       | 54.0              | -8.1           | 1.05 V                   | 224                        | 37.85                  | 8.05                           |

**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

### VHT20

|                        |              |                              |                 |
|------------------------|--------------|------------------------------|-----------------|
| <b>CHANNEL</b>         | TX Channel 6 | <b>DETECTOR<br/>FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | Below 1GHz   |                              |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 66.47          | 21.9 QP                       | 40.0              | -18.1          | 2.00 H                   | 317                        | 36.70                  | -14.79                         |
| 2                                                   | 216.00         | 28.7 QP                       | 43.5              | -14.8          | 1.00 H                   | 255                        | 44.76                  | -16.09                         |
| 3                                                   | 359.99         | 31.3 QP                       | 46.0              | -14.7          | 1.00 H                   | 341                        | 41.75                  | -10.44                         |
| 4                                                   | 480.03         | 25.7 QP                       | 46.0              | -20.3          | 2.00 H                   | 320                        | 33.33                  | -7.63                          |
| 5                                                   | 558.26         | 25.4 QP                       | 46.0              | -20.6          | 1.00 H                   | 1                          | 31.59                  | -6.18                          |
| 6                                                   | 797.80         | 31.2 QP                       | 46.0              | -14.8          | 2.00 H                   | 99                         | 32.77                  | -1.55                          |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 49.11          | 31.4 QP                       | 40.0              | -8.6           | 1.00 V                   | 278                        | 44.65                  | -13.25                         |
| 2                                                   | 248.78         | 25.8 QP                       | 46.0              | -20.2          | 2.00 V                   | 360                        | 39.73                  | -13.89                         |
| 3                                                   | 353.79         | 26.1 QP                       | 46.0              | -19.9          | 1.50 V                   | 177                        | 36.73                  | -10.67                         |
| 4                                                   | 480.03         | 25.6 QP                       | 46.0              | -20.4          | 1.00 V                   | 360                        | 33.27                  | -7.63                          |
| 5                                                   | 786.36         | 30.4 QP                       | 46.0              | -15.7          | 1.50 V                   | 360                        | 31.79                  | -1.44                          |
| 6                                                   | 956.98         | 34.1 QP                       | 46.0              | -11.9          | 2.00 V                   | 260                        | 32.97                  | 1.16                           |

#### 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

#### 4.2.9 Test Results (Mode 3)

##### Above 1GHz Data

##### VHT20

|                 |              |                   |              |
|-----------------|--------------|-------------------|--------------|
| CHANNEL         | TX Channel 1 | 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     | 60.3 PK                 | 74.0           | -13.7       | 1.00 H             | 338                  | 66.17            | -5.87                    |
| 2                                                   | 2390.00     | 47.4 AV                 | 54.0           | -6.6        | 1.00 H             | 338                  | 53.27            | -5.87                    |
| 3                                                   | *2412.00    | 110.2 PK                |                |             | 1.00 H             | 338                  | 116.00           | -5.80                    |
| 4                                                   | *2412.00    | 99.1 AV                 |                |             | 1.00 H             | 338                  | 104.90           | -5.80                    |
| 5                                                   | 4824.00     | 53.4 PK                 | 74.0           | -20.6       | 1.18 H             | 46                   | 49.98            | 3.42                     |
| 6                                                   | 4824.00     | 39.7 AV                 | 54.0           | -14.3       | 1.18 H             | 46                   | 36.28            | 3.42                     |
| 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     | 58.3 PK                 | 74.0           | -15.7       | 1.00 V             | 33                   | 64.17            | -5.87                    |
| 2                                                   | 2390.00     | 46.2 AV                 | 54.0           | -7.8        | 1.00 V             | 33                   | 52.07            | -5.87                    |
| 3                                                   | *2412.00    | 109.3 PK                |                |             | 1.00 V             | 33                   | 115.10           | -5.80                    |
| 4                                                   | *2412.00    | 98.6 AV                 |                |             | 1.00 V             | 33                   | 104.40           | -5.80                    |
| 5                                                   | 4824.00     | 52.0 PK                 | 74.0           | -22.0       | 1.44 V             | 166                  | 48.58            | 3.42                     |
| 6                                                   | 4824.00     | 39.0 AV                 | 54.0           | -15.0       | 1.44 V             | 166                  | 35.58            | 3.42                     |

##### 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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 54.7 PK                       | 74.0              | -19.3          | 1.00 H                   | 340                        | 60.57                  | -5.87                          |
| 2   | 2390.00        | 43.2 AV                       | 54.0              | -10.8          | 1.00 H                   | 340                        | 49.07                  | -5.87                          |
| 3   | *2437.00       | 113.8 PK                      |                   |                | 1.00 H                   | 340                        | 119.50                 | -5.70                          |
| 4   | *2437.00       | 103.1 AV                      |                   |                | 1.00 H                   | 340                        | 108.80                 | -5.70                          |
| 5   | 2483.50        | 55.6 PK                       | 74.0              | -18.4          | 1.00 H                   | 340                        | 61.09                  | -5.49                          |
| 6   | 2483.50        | 43.1 AV                       | 54.0              | -10.9          | 1.00 H                   | 340                        | 48.59                  | -5.49                          |
| 7   | 4874.00        | 53.3 PK                       | 74.0              | -20.7          | 1.16 H                   | 49                         | 49.90                  | 3.40                           |
| 8   | 4874.00        | 40.2 AV                       | 54.0              | -13.8          | 1.16 H                   | 49                         | 36.80                  | 3.40                           |
| 9   | 7311.00        | 53.4 PK                       | 74.0              | -20.6          | 1.00 H                   | 95                         | 45.64                  | 7.76                           |
| 10  | 7311.00        | 41.3 AV                       | 54.0              | -12.7          | 1.00 H                   | 95                         | 33.54                  | 7.76                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | 2390.00        | 44.2 PK                       | 74.0              | -29.8          | 1.00 V                   | 30                         | 50.07                  | -5.87                          |
| 2   | 2390.00        | 42.4 AV                       | 54.0              | -11.6          | 1.00 V                   | 30                         | 48.27                  | -5.87                          |
| 3   | *2437.00       | 104.5 PK                      |                   |                | 1.00 V                   | 30                         | 110.20                 | -5.70                          |
| 4   | *2437.00       | 102.6 AV                      |                   |                | 1.00 V                   | 30                         | 108.30                 | -5.70                          |
| 5   | 2483.50        | 56.2 PK                       | 74.0              | -17.8          | 1.00 V                   | 30                         | 61.69                  | -5.49                          |
| 6   | 2483.50        | 42.2 AV                       | 54.0              | -11.8          | 1.00 V                   | 30                         | 47.69                  | -5.49                          |
| 7   | 4874.00        | 52.5 PK                       | 74.0              | -21.5          | 1.42 V                   | 158                        | 49.10                  | 3.40                           |
| 8   | 4874.00        | 39.5 AV                       | 54.0              | -14.5          | 1.42 V                   | 158                        | 36.10                  | 3.40                           |
| 9   | 7311.00        | 56.1 PK                       | 74.0              | -17.9          | 1.00 V                   | 239                        | 48.34                  | 7.76                           |
| 10  | 7311.00        | 43.0 AV                       | 54.0              | -11.0          | 1.00 V                   | 239                        | 35.24                  | 7.76                           |

**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.

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

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 109.9 PK                      |                   |                | 1.00 H                   | 337                        | 115.49                 | -5.59                          |
| 2   | *2462.00       | 99.2 AV                       |                   |                | 1.00 H                   | 337                        | 104.79                 | -5.59                          |
| 3   | 2483.50        | 60.6 PK                       | 74.0              | -13.4          | 1.00 H                   | 337                        | 66.09                  | -5.49                          |
| 4   | 2483.50        | 48.0 AV                       | 54.0              | -6.0           | 1.00 H                   | 337                        | 53.49                  | -5.49                          |
| 5   | 4924.00        | 53.4 PK                       | 74.0              | -20.6          | 1.21 H                   | 39                         | 50.01                  | 3.39                           |
| 6   | 4924.00        | 40.0 AV                       | 54.0              | -14.0          | 1.21 H                   | 39                         | 36.61                  | 3.39                           |
| 7   | 7386.00        | 52.7 PK                       | 74.0              | -21.3          | 1.00 H                   | 90                         | 44.65                  | 8.05                           |
| 8   | 7386.00        | 40.9 AV                       | 54.0              | -13.1          | 1.00 H                   | 90                         | 32.85                  | 8.05                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *2462.00       | 109.0 PK                      |                   |                | 1.00 V                   | 33                         | 114.59                 | -5.59                          |
| 2   | *2462.00       | 98.2 AV                       |                   |                | 1.00 V                   | 33                         | 103.79                 | -5.59                          |
| 3   | 2483.50        | 60.2 PK                       | 74.0              | -13.8          | 1.00 V                   | 33                         | 65.69                  | -5.49                          |
| 4   | 2483.50        | 47.3 AV                       | 54.0              | -6.7           | 1.00 V                   | 33                         | 52.79                  | -5.49                          |
| 5   | 4924.00        | 52.2 PK                       | 74.0              | -21.8          | 1.45 V                   | 164                        | 48.81                  | 3.39                           |
| 6   | 4924.00        | 39.1 AV                       | 54.0              | -14.9          | 1.45 V                   | 164                        | 35.71                  | 3.39                           |
| 7   | 7386.00        | 55.4 PK                       | 74.0              | -18.6          | 1.02 V                   | 246                        | 47.35                  | 8.05                           |
| 8   | 7386.00        | 42.1 AV                       | 54.0              | -11.9          | 1.02 V                   | 246                        | 34.05                  | 8.05                           |

**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

### VHT20

|                 |              |                      |                 |
|-----------------|--------------|----------------------|-----------------|
| CHANNEL         | TX Channel 6 | DETECTOR<br>FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | Below 1GHz   |                      |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 238.65         | 30.7 QP                       | 46.0              | -15.3          | 1.00 H                   | 272                        | 44.86                  | -14.12                         |
| 2                                                   | 399.96         | 29.6 QP                       | 46.0              | -16.5          | 1.00 H                   | 180                        | 39.17                  | -9.62                          |
| 3                                                   | 499.87         | 29.3 QP                       | 46.0              | -16.7          | 2.00 H                   | 360                        | 36.50                  | -7.16                          |
| 4                                                   | 600.02         | 28.2 QP                       | 46.0              | -17.8          | 1.50 H                   | 360                        | 32.90                  | -4.69                          |
| 5                                                   | 798.48         | 31.5 QP                       | 46.0              | -14.5          | 1.00 H                   | 360                        | 33.02                  | -1.54                          |
| 6                                                   | 897.71         | 28.9 QP                       | 46.0              | -17.1          | 1.00 H                   | 360                        | 28.82                  | 0.12                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 48.67          | 32.8 QP                       | 40.0              | -7.2           | 1.00 V                   | 125                        | 46.00                  | -13.23                         |
| 2                                                   | 285.64         | 29.0 QP                       | 46.0              | -17.0          | 2.00 V                   | 47                         | 41.42                  | -12.44                         |
| 3                                                   | 398.26         | 33.6 QP                       | 46.0              | -12.4          | 1.00 V                   | 1                          | 43.30                  | -9.68                          |
| 4                                                   | 598.71         | 29.9 QP                       | 46.0              | -16.1          | 1.00 V                   | 1                          | 34.63                  | -4.74                          |
| 5                                                   | 799.16         | 33.3 QP                       | 46.0              | -12.7          | 1.50 V                   | 360                        | 34.81                  | -1.51                          |
| 6                                                   | 956.98         | 32.4 QP                       | 46.0              | -13.6          | 1.50 V                   | 288                        | 31.26                  | 1.16                           |

#### 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

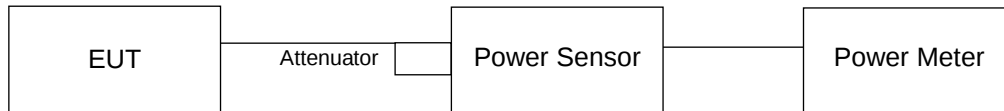
## 5 Test Types and Results (For 5GHz Band)

### 5.1 Conducted Output Power Measurement

#### 5.1.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 5725 –5850 MHz bands: 1 Watt (30dBm)

#### 5.1.2 Test Setup



#### 5.1.3 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| Power Meter<br>Anritsu     | ML2495A   | 1014008    | Apr. 30, 2014   | Apr. 29, 2015    |
| Power Sensor<br>Anritsu    | MA2411B   | 0917122    | Apr. 30, 2014   | Apr. 29, 2015    |

#### 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. Tested date : Mar. 30, 2015

#### 5.1.4 Test Procedures

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

#### 5.1.5 Deviation from Test Standard

No deviation.

#### 5.1.6 EUT Operating Conditions

Same as Item 4.1.6

### 5.1.7 Test Results

#### For Peak Power

##### 802.11a

| Channel | Frequency (MHz) | Peak Power (mW) | Peak Power (dBm) | Limit (dBm) | Pass/Fail |
|---------|-----------------|-----------------|------------------|-------------|-----------|
| 149     | 5745            | 99.312          | 19.97            | 30          | Pass      |
| 157     | 5785            | 104.232         | 20.18            | 30          | Pass      |
| 165     | 5825            | 80.168          | 19.04            | 30          | Pass      |

#### For Average Power

##### 802.11a

| Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) |
|---------|-----------------|--------------------|---------------------|
| 149     | 5745            | 50.234             | 17.01               |
| 157     | 5785            | 57.544             | 17.60               |
| 165     | 5825            | 48.753             | 16.88               |

## 5.2 Unwanted Emission Measurement (Radiated)

### 5.2.1 Limits of Unwanted Emission 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 20dB 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.

### 5.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER              | MODEL NO.                | SERIAL NO.                                | CALIBRATED DATE | CALIBRATED UNTIL |
|-----------------------------------------|--------------------------|-------------------------------------------|-----------------|------------------|
| MXE EMI Receiver<br>Agilent             | N9038A                   | MY50010156                                | Aug. 11, 2014   | Aug. 10, 2015    |
| Pre-Amplifier<br>Mini-Circuits          | ZFL-1000VH2<br>B         | AMP-ZFL-04                                | Nov. 12, 2014   | Nov. 11, 2015    |
| Trilog Broadband Antenna<br>SCHWARZBECK | VULB 9168                | 9168-361                                  | Feb. 06, 2015   | Feb. 05, 2016    |
| RF Cable                                | NA                       | CHHCAB_001                                | Oct. 05, 2014   | Oct. 04, 2015    |
| Horn_Antenna<br>AISI                    | AIH.8018                 | 0000220091110                             | Feb. 06, 2015   | Feb. 05, 2016    |
| Pre-Amplifier<br>Agilent                | 8449B                    | 300801923                                 | Oct. 28, 2014   | Oct. 27, 2015    |
| RF Cable                                | NA                       | 131206<br>131213<br>131215<br>SNMY23685/4 | Jan. 16, 2015   | Jan. 15, 2016    |
| Spectrum Analyzer<br>R&S                | FSV40                    | 100964                                    | July 05, 2014   | July 04, 2015    |
| Pre-Amplifier<br>SPACEK LABS            | SLKKa-48-6               | 9K16                                      | Dec. 12, 2014   | Dec. 11, 2015    |
| Horn_Antenna<br>SCHWARZBECK             | BBHA 9170                | 9170-424                                  | Feb. 05, 2015   | Feb. 04, 2016    |
| RF Cable                                | NA                       | 329751/4<br>RF104-204                     | Dec. 11, 2014   | Dec. 10, 2015    |
| Software                                | ADT_Radiated<br>_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. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: Apr. 25 to 28, 2015

### **5.2.3 Test Procedures**

Same as item 4.2.3

### **5.2.4 Deviation from Test Standard**

No deviation.

### **5.2.5 Test Setup**

Same as item 4.2.5

### **5.2.6 EUT Operating Conditions**

Same as item 4.2.6

## 5.2.7 Test Results (Mode 1)

### Above 1GHz Data

#### 802.11a

|                        |                |                          |              |
|------------------------|----------------|--------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 149 | <b>DETECTOR FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                          | 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                                                   | *5745.00    | 109.2 PK                |                |             | 1.04 H             | 235                  | 104.71           | 4.49                     |
| 2                                                   | *5745.00    | 99.2 AV                 |                |             | 1.04 H             | 235                  | 94.71            | 4.49                     |
| 3                                                   | 11490.00    | 56.9 PK                 | 74.0           | -17.1       | 1.02 H             | 97                   | 46.86            | 10.04                    |
| 4                                                   | 11490.00    | 45.1 AV                 | 54.0           | -8.9        | 1.02 H             | 97                   | 35.06            | 10.04                    |
| 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                                                   | *5745.00    | 107.9 PK                |                |             | 1.47 V             | 285                  | 103.41           | 4.49                     |
| 2                                                   | *5745.00    | 97.8 AV                 |                |             | 1.47 V             | 285                  | 93.31            | 4.49                     |
| 3                                                   | 11490.00    | 56.4 PK                 | 74.0           | -17.6       | 1.09 V             | 70                   | 46.36            | 10.04                    |
| 4                                                   | 11490.00    | 44.5 AV                 | 54.0           | -9.5        | 1.09 V             | 70                   | 34.46            | 10.04                    |

#### 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.

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 110.4 PK                      |                   |                | 1.00 H                   | 248                        | 105.90                 | 4.50                           |
| 2   | *5785.00       | 100.2 AV                      |                   |                | 1.00 H                   | 248                        | 95.70                  | 4.50                           |
| 3   | 11570.00       | 57.0 PK                       | 74.0              | -17.0          | 1.03 H                   | 89                         | 46.92                  | 10.08                          |
| 4   | 11570.00       | 44.7 AV                       | 54.0              | -9.3           | 1.03 H                   | 89                         | 34.62                  | 10.08                          |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 107.8 PK                      |                   |                | 1.45 V                   | 274                        | 103.30                 | 4.50                           |
| 2   | *5785.00       | 98.1 AV                       |                   |                | 1.45 V                   | 274                        | 93.60                  | 4.50                           |
| 3   | 11570.00       | 58.5 PK                       | 74.0              | -15.5          | 1.61 V                   | 178                        | 48.42                  | 10.08                          |
| 4   | 11570.00       | 47.4 AV                       | 54.0              | -6.6           | 1.61 V                   | 178                        | 37.32                  | 10.08                          |

**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.

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 165 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 109.5 PK                      |                   |                | 1.07 H                   | 232                        | 104.97                 | 4.53                           |
| 2   | *5825.00       | 100.1 AV                      |                   |                | 1.07 H                   | 232                        | 95.57                  | 4.53                           |
| 3   | 11650.00       | 57.9 PK                       | 74.0              | -16.1          | 1.11 H                   | 96                         | 47.93                  | 9.97                           |
| 4   | 11650.00       | 46.2 AV                       | 54.0              | -7.8           | 1.11 H                   | 96                         | 36.23                  | 9.97                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 106.0 PK                      |                   |                | 1.48 V                   | 283                        | 101.47                 | 4.53                           |
| 2   | *5825.00       | 97.6 AV                       |                   |                | 1.48 V                   | 283                        | 93.07                  | 4.53                           |
| 3   | 11650.00       | 57.9 PK                       | 74.0              | -16.1          | 1.67 V                   | 145                        | 47.93                  | 9.97                           |
| 4   | 11650.00       | 46.1 AV                       | 54.0              | -7.9           | 1.67 V                   | 145                        | 36.13                  | 9.97                           |

**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

### 802.11a

|                        |                |                              |                 |
|------------------------|----------------|------------------------------|-----------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | Below 1GHz     |                              |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 67.22          | 14.1 QP                       | 40.0              | -25.9          | 1.10 H                   | 286                        | 29.12                  | -15.02                         |
| 2                                                   | 194.60         | 19.3 QP                       | 43.5              | -24.2          | 1.10 H                   | 90                         | 35.19                  | -15.87                         |
| 3                                                   | 319.90         | 22.0 QP                       | 46.0              | -24.0          | 1.10 H                   | 76                         | 33.09                  | -11.09                         |
| 4                                                   | 454.08         | 22.6 QP                       | 46.0              | -23.4          | 1.50 H                   | 10                         | 30.69                  | -8.09                          |
| 5                                                   | 519.50         | 24.1 QP                       | 46.0              | -21.9          | 1.10 H                   | 38                         | 30.83                  | -6.73                          |
| 6                                                   | 956.92         | 30.8 QP                       | 46.0              | -15.2          | 1.10 H                   | 300                        | 29.65                  | 1.16                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 77.21          | 26.2 QP                       | 40.0              | -13.8          | 1.10 V                   | 100                        | 43.31                  | -17.12                         |
| 2                                                   | 194.60         | 35.5 QP                       | 43.5              | -8.0           | 1.15 V                   | 39                         | 51.37                  | -15.87                         |
| 3                                                   | 199.30         | 37.2 QP                       | 43.5              | -6.3           | 1.28 V                   | 318                        | 53.19                  | -15.99                         |
| 4                                                   | 214.20         | 35.0 QP                       | 43.5              | -8.5           | 1.39 V                   | 328                        | 51.07                  | -16.05                         |
| 5                                                   | 832.80         | 38.1 QP                       | 46.0              | -7.9           | 1.29 V                   | 310                        | 38.99                  | -0.89                          |
| 6                                                   | 956.90         | 32.3 QP                       | 46.0              | -13.7          | 1.90 V                   | 106                        | 31.12                  | 1.16                           |

#### 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

## 5.2.8 Test Results (Mode 2)

### Above 1GHz Data

#### 802.11a

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 149 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | *5745.00       | 107.9 PK                      |                   |                | 1.14 H                   | 304                        | 103.41                 | 4.49                           |
| 2                                                   | *5745.00       | 98.9 AV                       |                   |                | 1.14 H                   | 304                        | 94.41                  | 4.49                           |
| 3                                                   | 11490.00       | 58.6 PK                       | 74.0              | -15.4          | 1.07 H                   | 152                        | 48.56                  | 10.04                          |
| 4                                                   | 11490.00       | 46.5 AV                       | 54.0              | -7.5           | 1.07 H                   | 152                        | 36.46                  | 10.04                          |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | *5745.00       | 106.8 PK                      |                   |                | 1.63 V                   | 276                        | 102.31                 | 4.49                           |
| 2                                                   | *5745.00       | 98.0 AV                       |                   |                | 1.63 V                   | 276                        | 93.51                  | 4.49                           |
| 3                                                   | 11490.00       | 59.7 PK                       | 74.0              | -14.3          | 2.01 V                   | 157                        | 49.66                  | 10.04                          |
| 4                                                   | 11490.00       | 48.1 AV                       | 54.0              | -5.9           | 2.01 V                   | 157                        | 38.06                  | 10.04                          |

#### 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.

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 107.6 PK                      |                   |                | 1.08 H                   | 313                        | 103.10                 | 4.50                           |
| 2   | *5785.00       | 98.7 AV                       |                   |                | 1.08 H                   | 313                        | 94.20                  | 4.50                           |
| 3   | 11570.00       | 58.5 PK                       | 74.0              | -15.5          | 1.00 H                   | 142                        | 48.42                  | 10.08                          |
| 4   | 11570.00       | 46.6 AV                       | 54.0              | -7.4           | 1.00 H                   | 142                        | 36.52                  | 10.08                          |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 106.7 PK                      |                   |                | 1.65 V                   | 275                        | 102.20                 | 4.50                           |
| 2   | *5785.00       | 98.1 AV                       |                   |                | 1.65 V                   | 275                        | 93.60                  | 4.50                           |
| 3   | 11570.00       | 59.4 PK                       | 74.0              | -14.6          | 2.02 V                   | 142                        | 49.32                  | 10.08                          |
| 4   | 11570.00       | 47.9 AV                       | 54.0              | -6.1           | 2.02 V                   | 142                        | 37.82                  | 10.08                          |

**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 165 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 106.9 PK                      |                   |                | 1.07 H                   | 315                        | 102.37                 | 4.53                           |
| 2   | *5825.00       | 97.9 AV                       |                   |                | 1.07 H                   | 315                        | 93.37                  | 4.53                           |
| 3   | 11650.00       | 58.6 PK                       | 74.0              | -15.4          | 1.03 H                   | 131                        | 48.63                  | 9.97                           |
| 4   | 11650.00       | 46.9 AV                       | 54.0              | -7.1           | 1.03 H                   | 131                        | 36.93                  | 9.97                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 106.1 PK                      |                   |                | 1.62 V                   | 273                        | 101.57                 | 4.53                           |
| 2   | *5825.00       | 97.6 AV                       |                   |                | 1.62 V                   | 273                        | 93.07                  | 4.53                           |
| 3   | 11650.00       | 59.0 PK                       | 74.0              | -15.0          | 2.05 V                   | 157                        | 49.03                  | 9.97                           |
| 4   | 11650.00       | 47.7 AV                       | 54.0              | -6.3           | 2.05 V                   | 157                        | 37.73                  | 9.97                           |

**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

### 802.11a

|                        |                |                              |                 |
|------------------------|----------------|------------------------------|-----------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | Below 1GHz     |                              |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 66.42          | 21.8 QP                       | 40.0              | -18.2          | 1.80 H                   | 307                        | 36.56                  | -14.78                         |
| 2                                                   | 215.97         | 28.6 QP                       | 43.5              | -14.9          | 1.40 H                   | 245                        | 44.69                  | -16.09                         |
| 3                                                   | 359.98         | 31.3 QP                       | 46.0              | -14.7          | 1.10 H                   | 340                        | 41.74                  | -10.44                         |
| 4                                                   | 480.03         | 25.7 QP                       | 46.0              | -20.3          | 1.80 H                   | 310                        | 33.35                  | -7.63                          |
| 5                                                   | 558.21         | 25.4 QP                       | 46.0              | -20.6          | 1.10 H                   | 10                         | 31.56                  | -6.18                          |
| 6                                                   | 797.80         | 31.2 QP                       | 46.0              | -14.8          | 1.80 H                   | 199                        | 32.74                  | -1.54                          |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 49.10          | 31.4 QP                       | 40.0              | -8.6           | 1.10 V                   | 270                        | 44.63                  | -13.25                         |
| 2                                                   | 248.78         | 25.8 QP                       | 46.0              | -20.2          | 1.50 V                   | 300                        | 39.69                  | -13.89                         |
| 3                                                   | 353.78         | 26.0 QP                       | 46.0              | -20.0          | 1.10 V                   | 157                        | 36.67                  | -10.67                         |
| 4                                                   | 480.03         | 25.6 QP                       | 46.0              | -20.4          | 1.10 V                   | 310                        | 33.23                  | -7.63                          |
| 5                                                   | 786.35         | 30.3 QP                       | 46.0              | -15.7          | 1.50 V                   | 320                        | 31.74                  | -1.44                          |
| 6                                                   | 956.93         | 34.1 QP                       | 46.0              | -11.9          | 1.80 V                   | 210                        | 32.95                  | 1.16                           |

#### 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

### 5.2.9 Test Results (Mode 3)

#### Above 1GHz Data

#### 802.11a

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 149 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | *5745.00       | 110.0 PK                      |                   |                | 1.12 H                   | 216                        | 105.51                 | 4.49                           |
| 2                                                   | *5745.00       | 99.5 AV                       |                   |                | 1.12 H                   | 216                        | 95.01                  | 4.49                           |
| 3                                                   | 11490.00       | 56.0 PK                       | 74.0              | -18.0          | 1.07 H                   | 82                         | 45.96                  | 10.04                          |
| 4                                                   | 11490.00       | 44.4 AV                       | 54.0              | -9.6           | 1.07 H                   | 82                         | 34.36                  | 10.04                          |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | *5745.00       | 104.2 PK                      |                   |                | 1.02 V                   | 285                        | 99.71                  | 4.49                           |
| 2                                                   | *5745.00       | 96.1 AV                       |                   |                | 1.02 V                   | 285                        | 91.61                  | 4.49                           |
| 3                                                   | 11490.00       | 57.4 PK                       | 74.0              | -16.6          | 1.76 V                   | 167                        | 47.36                  | 10.04                          |
| 4                                                   | 11490.00       | 46.7 AV                       | 54.0              | -7.3           | 1.76 V                   | 167                        | 36.66                  | 10.04                          |

#### 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.

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 157 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 108.2 PK                      |                   |                | 1.10 H                   | 217                        | 103.70                 | 4.50                           |
| 2   | *5785.00       | 99.3 AV                       |                   |                | 1.10 H                   | 217                        | 94.80                  | 4.50                           |
| 3   | 11570.00       | 56.7 PK                       | 74.0              | -17.3          | 1.01 H                   | 95                         | 46.62                  | 10.08                          |
| 4   | 11570.00       | 44.7 AV                       | 54.0              | -9.3           | 1.01 H                   | 95                         | 34.62                  | 10.08                          |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5785.00       | 104.8 PK                      |                   |                | 1.06 V                   | 292                        | 100.30                 | 4.50                           |
| 2   | *5785.00       | 96.3 AV                       |                   |                | 1.06 V                   | 292                        | 91.80                  | 4.50                           |
| 3   | 11570.00       | 57.4 PK                       | 74.0              | -16.6          | 1.64 V                   | 160                        | 47.32                  | 10.08                          |
| 4   | 11570.00       | 46.2 AV                       | 54.0              | -7.8           | 1.64 V                   | 160                        | 36.12                  | 10.08                          |

**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.

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 165 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 108.3 PK                      |                   |                | 1.06 H                   | 231                        | 103.77                 | 4.53                           |
| 2   | *5825.00       | 99.3 AV                       |                   |                | 1.06 H                   | 231                        | 94.77                  | 4.53                           |
| 3   | 11650.00       | 57.3 PK                       | 74.0              | -16.7          | 1.05 H                   | 84                         | 47.33                  | 9.97                           |
| 4   | 11650.00       | 45.1 AV                       | 54.0              | -8.9           | 1.05 H                   | 84                         | 35.13                  | 9.97                           |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| NO. | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1   | *5825.00       | 104.6 PK                      |                   |                | 1.11 V                   | 283                        | 100.07                 | 4.53                           |
| 2   | *5825.00       | 96.0 AV                       |                   |                | 1.11 V                   | 283                        | 91.47                  | 4.53                           |
| 3   | 11650.00       | 57.3 PK                       | 74.0              | -16.7          | 1.64 V                   | 146                        | 47.33                  | 9.97                           |
| 4   | 11650.00       | 45.8 AV                       | 54.0              | -8.2           | 1.64 V                   | 146                        | 35.83                  | 9.97                           |

**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

## 802.11a

|                 |                |                      |                 |
|-----------------|----------------|----------------------|-----------------|
| CHANNEL         | TX Channel 157 | DETECTOR<br>FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | Below 1GHz     |                      |                 |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |                |                               |                   |                |                          |                            |                        |                                |
|-----------------------------------------------------|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 238.60         | 30.7 QP                       | 46.0              | -15.3          | 1.10 H                   | 270                        | 44.83                  | -14.12                         |
| 2                                                   | 399.90         | 29.5 QP                       | 46.0              | -16.5          | 1.10 H                   | 158                        | 39.12                  | -9.62                          |
| 3                                                   | 499.87         | 29.3 QP                       | 46.0              | -16.7          | 1.80 H                   | 310                        | 36.46                  | -7.16                          |
| 4                                                   | 600.11         | 28.2 QP                       | 46.0              | -17.8          | 1.40 H                   | 310                        | 32.89                  | -4.69                          |
| 5                                                   | 798.48         | 31.5 QP                       | 46.0              | -14.5          | 1.10 H                   | 300                        | 33.04                  | -1.54                          |
| 6                                                   | 897.70         | 28.9 QP                       | 46.0              | -17.1          | 1.10 H                   | 330                        | 28.78                  | 0.12                           |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M   |                |                               |                   |                |                          |                            |                        |                                |
| NO.                                                 | FREQ.<br>(MHz) | EMISSION<br>LEVEL<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN<br>(dB) | ANTENNA<br>HEIGHT<br>(m) | TABLE<br>ANGLE<br>(Degree) | RAW<br>VALUE<br>(dBuV) | CORRECTION<br>FACTOR<br>(dB/m) |
| 1                                                   | 48.67          | 32.7 QP                       | 40.0              | -7.3           | 1.10 V                   | 132                        | 45.95                  | -13.23                         |
| 2                                                   | 285.60         | 28.9 QP                       | 46.0              | -17.1          | 1.80 V                   | 52                         | 41.34                  | -12.44                         |
| 3                                                   | 398.22         | 33.6 QP                       | 46.0              | -12.4          | 1.10 V                   | 11                         | 43.28                  | -9.68                          |
| 4                                                   | 598.70         | 29.9 QP                       | 46.0              | -16.1          | 1.10 V                   | 11                         | 34.66                  | -4.74                          |
| 5                                                   | 799.16         | 33.4 QP                       | 46.0              | -12.6          | 1.10 V                   | 310                        | 34.93                  | -1.51                          |
| 6                                                   | 956.97         | 32.4 QP                       | 46.0              | -13.6          | 1.10 V                   | 218                        | 31.22                  | 1.16                           |

### 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

## 6 Pictures of Test Arrangements

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

## 7 Appendix A – 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:

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

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