

# FCC TEST REPORT (WLAN 15.407)

**REPORT NO.:** RF140407E07-1

**MODEL NO.:** AW-CM389NF

**FCC ID:** TLZ-CM389NF

**RECEIVED:** Apr. 07, 2014

**TESTED:** Apr. 29 to May 22, 2014

**ISSUED:** July 02, 2014

**APPLICANT:** AzureWave Technologies, Inc.

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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## Table of Contents

|                                                                     |    |
|---------------------------------------------------------------------|----|
| RELEASE CONTROL RECORD .....                                        | 4  |
| 1. CERTIFICATION .....                                              | 5  |
| 2. SUMMARY OF TEST RESULTS .....                                    | 6  |
| 2.1 MEASUREMENT UNCERTAINTY .....                                   | 7  |
| 3. GENERAL INFORMATION .....                                        | 8  |
| 3.1 GENERAL DESCRIPTION OF EUT (WLAN) .....                         | 8  |
| 3.2 DESCRIPTION OF TEST MODES .....                                 | 12 |
| 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL .....       | 13 |
| 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS .....                  | 15 |
| 3.4 DUTY CYCLE OF TEST SIGNAL .....                                 | 16 |
| 3.5 DESCRIPTION OF SUPPORT UNITS .....                              | 20 |
| 3.6 CONFIGURATION OF SYSTEM UNDER TEST .....                        | 21 |
| 4. TEST TYPES AND RESULTS .....                                     | 22 |
| 4.1 CONDUCTED EMISSION MEASUREMENT .....                            | 22 |
| 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT .....                | 22 |
| 4.1.2 TEST INSTRUMENTS .....                                        | 22 |
| 4.1.3 TEST PROCEDURES .....                                         | 23 |
| 4.1.4 DEVIATION FROM TEST STANDARD .....                            | 23 |
| 4.1.5 TEST SETUP .....                                              | 23 |
| 4.1.6 EUT OPERATING CONDITIONS .....                                | 24 |
| 4.1.7 TEST RESULTS .....                                            | 25 |
| 4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT .....                | 27 |
| 4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT .....    | 27 |
| 4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS ..... | 27 |
| 4.2.3 TEST INSTRUMENTS .....                                        | 28 |
| 4.2.4 TEST PROCEDURES .....                                         | 29 |
| 4.2.5 DEVIATION FROM TEST STANDARD .....                            | 29 |
| 4.2.6 TEST SETUP .....                                              | 30 |
| 4.2.7 EUT OPERATING CONDITION .....                                 | 30 |
| 4.2.8 TEST RESULTS .....                                            | 31 |
| 4.3 TRANSMIT POWER MEASUREMENT .....                                | 62 |
| 4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT .....                    | 62 |
| 4.3.2 TEST INSTRUMENTS .....                                        | 63 |
| 4.3.3 TEST PROCEDURE .....                                          | 63 |
| 4.3.4 DEVIATION FROM TEST STANDARD .....                            | 64 |
| 4.3.5 TEST SETUP .....                                              | 64 |
| 4.3.6 EUT OPERATING CONDITIONS .....                                | 64 |
| 4.3.7 TEST RESULTS .....                                            | 65 |



A D T

|       |                                                                                         |    |
|-------|-----------------------------------------------------------------------------------------|----|
| 4.4   | PEAK POWER SPECTRAL DENSITY MEASUREMENT .....                                           | 72 |
| 4.4.1 | LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT.....                                  | 72 |
| 4.4.2 | TEST INSTRUMENTS .....                                                                  | 72 |
| 4.4.3 | TEST PROCEDURES .....                                                                   | 72 |
| 4.4.4 | DEVIATION FROM TEST STANDARD .....                                                      | 72 |
| 4.4.5 | TEST SETUP .....                                                                        | 72 |
| 4.4.6 | EUT OPERATING CONDITIONS .....                                                          | 73 |
| 4.4.7 | TEST RESULTS .....                                                                      | 74 |
| 4.5   | PEAK POWER EXCURSION MEASUREMENT .....                                                  | 78 |
| 4.5.1 | LIMITS OF PEAK POWER EXCURSION MEASUREMENT.....                                         | 78 |
| 4.5.2 | TEST INSTRUMENTS .....                                                                  | 78 |
| 4.5.3 | TEST PROCEDURE .....                                                                    | 78 |
| 4.5.4 | DEVIATION FROM TEST STANDARD .....                                                      | 78 |
| 4.5.5 | TEST SETUP .....                                                                        | 78 |
| 4.5.6 | EUT OPERATING CONDITIONS .....                                                          | 79 |
| 4.5.7 | TEST RESULTS .....                                                                      | 80 |
| 4.6   | FREQUENCY STABILITY .....                                                               | 83 |
| 4.6.1 | LIMITS OF FREQUENCY STABILITY MEASUREMENT .....                                         | 83 |
| 4.6.2 | TEST INSTRUMENTS .....                                                                  | 83 |
| 4.6.3 | TEST PROCEDURE .....                                                                    | 83 |
| 4.6.4 | DEVIATION FROM TEST STANDARD .....                                                      | 84 |
| 4.6.5 | TEST SETUP .....                                                                        | 84 |
| 4.6.6 | EUT OPERATING CONDITION .....                                                           | 84 |
| 4.6.7 | TEST RESULTS .....                                                                      | 85 |
| 5.    | PHOTOGRAPHS OF THE TEST CONFIGURATION.....                                              | 86 |
| 6.    | INFORMATION ON THE TESTING LABORATORIES .....                                           | 87 |
| 7.    | APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB..... | 88 |



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## RELEASE CONTROL RECORD

| ISSUE NO.     | REASON FOR CHANGE | DATE ISSUED   |
|---------------|-------------------|---------------|
| RF140407E07-1 | Original release  | July 02, 2014 |



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## 1. CERTIFICATION

**PRODUCT:** IEEE 802.11 2X2 MIMO a/b/g/n/ac Wireless LAN +  
Bluetooth + NFC NGFF Module

**BRAND NAME:** AzureWave

**MODEL NO.:** AW-CM389NF

**TEST SAMPLE:** ENGINEERING SAMPLE

**APPLICANT:** AzureWave Technologies, Inc.

**TESTED:** Apr. 29 to May 22, 2014

**STANDARDS:** **FCC Part 15, Subpart E (Section 15.407)**  
ANSI C63.10-2009

The above equipment (Model: AW-CM389NF) 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 :** Phoenix Huang , **DATE:** July 02, 2014  
( Phoenix Huang, Specialist )

**APPROVED BY :** May Chen , **DATE:** July 02, 2014  
( May Chen, Manager )

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407) |                             |        |                                                                                 |
|-----------------------------------------------------------|-----------------------------|--------|---------------------------------------------------------------------------------|
| STANDARD SECTION                                          | TEST TYPE                   | RESULT | REMARK                                                                          |
| 15.407(b)(6)                                              | AC Power Conducted Emission | PASS   | Meet the requirement of limit. Minimum passing margin is -13.28dB at 0.45469MHz |
| 15.407(b)(1/2/3)(b)(6)                                    | Spurious Emissions          | PASS   | Meet the requirement of limit. Minimum passing margin is -0.6dB at 5470.00MHz.  |
| 15.407(a)(1/2)                                            | Transmit Power              | PASS   | Meet the requirement of limit.                                                  |
| 15.407(a)(6)                                              | Peak Power Excursion        | PASS   | Meet the requirement of limit.                                                  |
| 15.407(a)(1/2)                                            | Peak Power Spectral Density | PASS   | Meet the requirement of limit.                                                  |
| 15.407(g)                                                 | Frequency Stability         | PASS   | Meet the requirement of limit.                                                  |
| 15.203                                                    | Antenna Requirement         | PASS   | Antenna connector is i-pex(MHF) not a standard connector.                       |

**NOTE:** 1. For WLAN: The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz. For the 2400 ~ 2483.5MHz and 5.725~5.850GHz RF parameters was recorded in another test report.

2. The DFS report was recorded in another test report.

## 2.1 MEASUREMENT UNCERTAINTY

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

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

| Measurement                       | Value   |
|-----------------------------------|---------|
| Conducted emissions               | 2.86 dB |
| Radiated emissions (30MHz-1GHz)   | 5.43 dB |
| Radiated emissions (1GHz -6GHz)   | 3.65 dB |
| Radiated emissions (6GHz -18GHz)  | 3.88 dB |
| Radiated emissions (18GHz -40GHz) | 4.11 dB |

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT (WLAN)

|                              |                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>               | IEEE 802.11 2X2 MIMO a/b/g/n/ac Wireless LAN + Bluetooth + NFC NGFF Module                                                                                                                                                                                             |
| <b>MODEL NO.</b>             | AW-CM389NF                                                                                                                                                                                                                                                             |
| <b>POWER SUPPLY</b>          | 3.3Vdc (from host equipment)                                                                                                                                                                                                                                           |
| <b>MODULATION TYPE</b>       | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM<br>BT-LE (GFSK) for DTS<br>256QAM for OFDM in 11ac mode only                                                                                                                                           |
| <b>MODULATION TECHNOLOGY</b> | DSSS, OFDM, DTS                                                                                                                                                                                                                                                        |
| <b>TRANSFER RATE</b>         | 802.11b: up to 11Mbps<br>802.11a / g: up to 54Mbps<br>802.11n: up to 300Mbps<br>802.11ac: up to 866.7Mbps<br>BT-LE (GFSK): 1Mbps                                                                                                                                       |
| <b>OPERATING FREQUENCY</b>   | <b>For 15.407</b><br><b>5GHz:</b> 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz,<br>5.50 ~ 5.58GHz & 5.66GHz ~ 5.70GHz                                                                                                                                                                |
|                              | <b>For 15.247</b><br><b>2.4GHz:</b> 2.412 ~ 2.462GHz<br><b>5GHz:</b> 5.745 ~ 5.825GHz<br><b>BT-LE(GFSK):</b> 2.402 ~ 2.480GHz                                                                                                                                          |
| <b>NUMBER OF CHANNEL</b>     | <b>For 15.407</b><br>16 for 802.11a, 802.11n (HT20), 802.11ac (VHT20)<br>7 for 802.11n (HT40), 802.11ac (VHT40)<br>3 for 802.11ac (VHT80)                                                                                                                              |
|                              | <b>For 15.247 (2.4GHz)</b><br>11 for 802.11b, 802.11g, 802.11n (HT20)<br>7 for 802.11n (HT40)<br>40 for BT-LE(GFSK)<br><b>For 15.247 (5GHz)</b><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) |



|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MAXIMUM OUTPUT POWER</b> | <b>For 15.407</b><br>802.11a: 74.508mW<br>802.11ac (VHT20): 76.001mW<br>802.11ac (VHT40): 67.59mW<br>802.11ac (VHT80): 16.936mW<br><b>For 15.247 (2.4GHz)</b><br>802.11b: 71.042mW<br>802.11g: 694.376mW<br>802.11n (HT20): 695.976mW<br>802.11n (HT40): 286.123mW<br>BT-LE(GFSK): 7.709mW<br><b>For 15.247 (5GHz)</b><br>802.11a: 372.853mW<br>802.11ac (VHT20): 370.202mW<br>802.11ac (VHT40): 335.013mW<br>802.11ac (VHT80): 541.874mW |
| <b>ANTENNA TYPE</b>         | Please see NOTE                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>DATA CABLE</b>           | NA                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>I/O PORTS</b>            | Refer to user's manual                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>ASSOCIATED DEVICES</b>   | NA                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Note:**

- There are Bluetooth, WLAN and NFC technology used for the EUT.
- WLAN/BT/NFC coexistence mode:

| Condition | Technology               |    |     |
|-----------|--------------------------|----|-----|
| 1         | WLAN(2.4GHz)<br>1Tx only | BT | NFC |
| 2         | WLAN(5GHz)<br>1Tx only   | BT | NFC |

From above coexistence mode, radiated emission of the simultaneous operation has been evaluated and no non-compliance was found.

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

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

| For WLAN / BT used (Set 1 antenna) |                      |                           |                            |                                              |                              |              |                |                   |
|------------------------------------|----------------------|---------------------------|----------------------------|----------------------------------------------|------------------------------|--------------|----------------|-------------------|
| Antenna No.                        | Transmitter Circuit  | Brand                     | Model                      | Antenna Gain(dBi)<br>< including cable loss> | Frequency range (MHz to MHz) | Antenna Type | Connector Type | Cable Length (cm) |
| 1                                  | Chain (0)            | MAG.LAYERS                | MSA-4008-25GC1-A1          | 2.98                                         | 2400~2500                    | PIFA         | i-pex(MHF)     | 15                |
|                                    |                      |                           |                            | 5.16                                         | 4900~5900                    |              |                |                   |
| 2                                  | Chain (1)            | MAG.LAYERS                | MSA-4008-25GC1-A1          | 2.98                                         | 2400~2500                    | PIFA         | i-pex(MHF)     | 15                |
|                                    |                      |                           |                            | 5.16                                         | 4900~5900                    |              |                |                   |
| For WLAN / BT used (Set 2 antenna) |                      |                           |                            |                                              |                              |              |                |                   |
| Antenna No.                        | Transmitter Circuit  | Brand                     | Model                      | Antenna Gain(dBi)<br>< including cable loss> | Frequency range (MHz to MHz) | Antenna Type | Connector Type | Cable Length (cm) |
| 3                                  | Main Antenna Chain 0 | Wistron Neweb Corporation | DC33001KT00 (81EAAL15.G92) | 1.54                                         | 2400~2500                    | PIFA         | i-pex(MHF)     | 36.3              |
|                                    |                      |                           |                            | 1.26                                         | 5150~5850                    |              |                |                   |
| 4                                  | Aux Antenna Chain 1  | Wistron Neweb Corporation | DC33001KT10 (81EAAL15.G75) | 0.63                                         | 2400~2500                    | PIFA         | i-pex(MHF)     | 59.3              |
|                                    |                      |                           |                            | 1.84                                         | 5150~5850                    |              |                |                   |
| For NFC used                       |                      |                           |                            |                                              |                              |              |                |                   |
| Antenna No.                        | Brand                |                           | Model                      | Antenna Gain(dBi)                            | Frequency range (MHz)        | Antenna Type | Connector Type | Cable Length (cm) |
| 5                                  | Marvell              |                           | 30X40X4T_PCB               | 0.5                                          | 13.56                        | PCB          | i-pex(MHF)     | N/A               |

From the above antenna sets, the **set 1** was selected as representative antenna for the test and its data was recorded in this report.

4. The EUT incorporates a MIMO function without Beamforming.

| MODULATION MODE            | DATA RATE (MCS)          | TX & RX CONFIGURATION     |                   |
|----------------------------|--------------------------|---------------------------|-------------------|
| 802.11a                    | 6 ~ 54Mbps               | 1Tx<br>diversity/2TX(CDD) | 1Rx diversity/2RX |
| 802.11b                    | 1 ~ 11Mbps               | 1Tx<br>diversity/2TX(CDD) | 1Rx diversity/2RX |
| 802.11g                    | 6 ~ 54Mbps               | 1Tx<br>diversity/2TX(CDD) | 1Rx diversity/2RX |
| 802.11n (HT20)             | MCS 0~7                  | 1Tx                       | 1Rx diversity     |
|                            | MCS 8~15                 | 2Tx                       | 2Rx               |
| 802.11n (HT40)             | MCS 0~7                  | 1Tx                       | 1Rx diversity     |
|                            | MCS 8~15                 | 2Tx                       | 2Rx               |
| 802.11ac (VHT20)<br>(5GHz) | MCS0~8 (256QAM)<br>Nss=1 | 1Tx                       | 1Rx diversity     |
|                            | MCS0~8 (256QAM)<br>Nss=2 | 2Tx                       | 2Rx               |
| 802.11ac (VHT40)<br>(5GHz) | MCS0~9 (256QAM)<br>Nss=1 | 1Tx                       | 1Rx diversity     |
|                            | MCS0~9 (256QAM)<br>Nss=2 | 2Tx                       | 2Rx               |
| 802.11ac (VHT80)<br>(5GHz) | MCS0~9 (256QAM)<br>Nss=1 | 1Tx                       | 1Rx diversity     |
|                            | MCS0~9 (256QAM)<br>Nss=2 | 2Tx                       | 2Rx               |

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

### 3.2 DESCRIPTION OF TEST MODES

#### Operated in 5150 ~ 5350MHz band:

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

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 36      | 5180 MHz  | 52      | 5260 MHz  |
| 40      | 5200 MHz  | 56      | 5280 MHz  |
| 44      | 5220 MHz  | 60      | 5300 MHz  |
| 48      | 5240 MHz  | 64      | 5320 MHz  |

4 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 38      | 5190 MHz  |
| 46      | 5230 MHz  |
| 54      | 5270 MHz  |
| 62      | 5310 MHz  |

2 channels are provided for 802.11ac (VHT80):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 42      | 5210 MHz  |
| 58      | 5290 MHz  |

#### Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

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

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 100     | 5500 MHz  | 116     | 5580 MHz  |
| 104     | 5520 MHz  | 132     | 5660 MHz  |
| 108     | 5540 MHz  | 136     | 5680 MHz  |
| 112     | 5560 MHz  | 140     | 5700 MHz  |

3 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 102     | 5510 MHz  |
| 110     | 5550 MHz  |
| 134     | 5670 MHz  |

1 channel is provided for 802.11ac (VHT80):

| CHANNEL | FREQUENCY |
|---------|-----------|
| 106     | 5530 MHz  |

### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

| EUT<br>CONFIGURE<br>MODE | APPLICABLE TO |         |         |      | DESCRIPTION |
|--------------------------|---------------|---------|---------|------|-------------|
|                          | PLC           | RE < 1G | RE ≥ 1G | APCM |             |
| -                        | √             | √       | √       | √    | -           |

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

**NOTE: 1. For 5GHz:** The EUT's antenna (PIFA) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

#### **POWER LINE CONDUCTED EMISSION TEST:**

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

| MODE    | AVAILABLE<br>CHANNEL | TESTED<br>CHANNEL | MODULATION<br>TECHNOLOGY | MODULATION<br>TYPE | DATA RATE<br>(Mbps) |
|---------|----------------------|-------------------|--------------------------|--------------------|---------------------|
| 802.11a | 36 to 140            | 116               | OFDM                     | BPSK               | 6                   |

#### **RADIATED EMISSION TEST (BELOW 1 GHz):**

- ☒ 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<br>CHANNEL | TESTED<br>CHANNEL | MODULATION<br>TECHNOLOGY | MODULATION<br>TYPE | DATA RATE<br>(Mbps) |
|---------|----------------------|-------------------|--------------------------|--------------------|---------------------|
| 802.11a | 36 to 140            | 116               | OFDM                     | BPSK               | 6                   |

#### **RADIATED EMISSION TEST (ABOVE 1 GHz):**

- ☒ 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 | MODULATI ON TYPE | DATA RATE (Mbps) |
|------------------|-------------------|--------------------------------------------|-----------------------|------------------|------------------|
| 802.11a          | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 116, 132, 140 | OFDM                  | BPSK             | 6                |
| 802.11ac (VHT20) | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 116, 132, 140 | OFDM                  | BPSK             | 13               |
| 802.11ac (VHT40) | 38 to 134         | 38, 46, 54, 62, 102, 110, 134              | OFDM                  | BPSK             | 27               |
| 802.11ac (VHT80) | 42 to 106         | 42, 58, 106                                | OFDM                  | BPSK             | 58.5             |

#### **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 | MODULATI ON TYPE | DATA RATE (Mbps) |
|------------------|-------------------|--------------------------------------------|-----------------------|------------------|------------------|
| 802.11a          | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 116, 132, 140 | OFDM                  | BPSK             | 6                |
| 802.11ac (VHT20) | 36 to 140         | 36, 40, 48, 52, 60, 64, 100, 116, 132, 140 | OFDM                  | BPSK             | 13               |
| 802.11ac (VHT40) | 38 to 134         | 38, 46, 54, 62, 102, 110, 134              | OFDM                  | BPSK             | 27               |
| 802.11ac (VHT80) | 42 to 106         | 42, 58, 106                                | OFDM                  | BPSK             | 58.5             |

#### **TEST CONDITION:**

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER (SYSTEM) | TESTED BY    |
|---------------|--------------------------|----------------------|--------------|
| PLC           | 26deg. C, 67%RH          | 120Vac, 60Hz         | Ping Liu     |
| RE<1G         | 23deg. C, 67%RH          | 120Vac, 60Hz         | Robert Cheng |
| RE≥1G         | 24deg. C, 67%RH          | 120Vac, 60Hz         | Andy Ho      |
| APCM          | 25deg. C, 60%RH          | 120Vac, 60Hz         | Chilin Lee   |

### **3.3 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 E (15.407)**

**789033 D01 General UNII Test Procedures v01r03**

**662911 D01 Multiple Transmitter Output v02r01**

**ANSI C63.10-2009**

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

### 3.4 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is 100 %, duty factor is not required.

802.11a



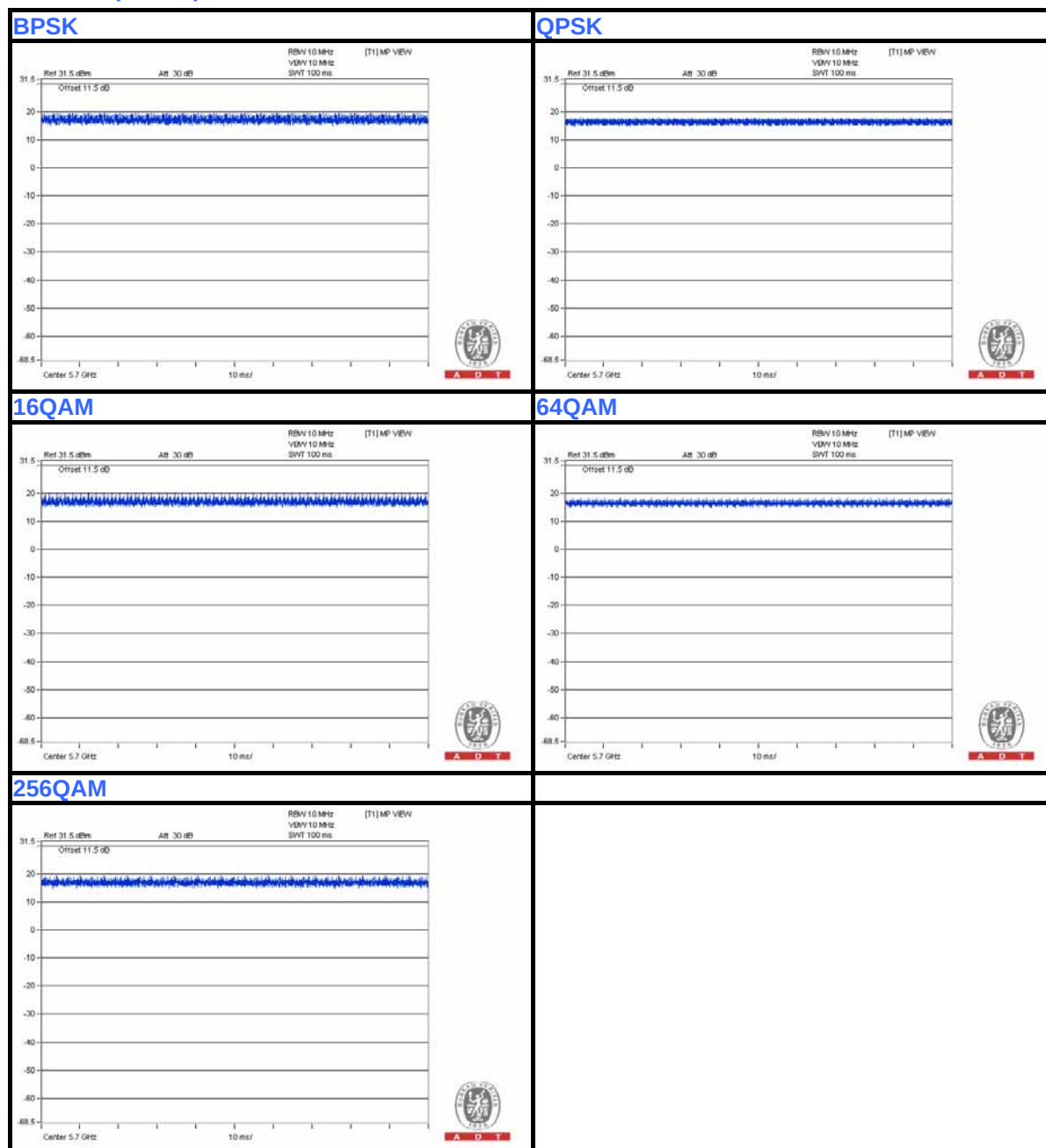




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Duty cycle of test signal is 100 %, duty factor is not required.

### 802.11ac (VHT20)



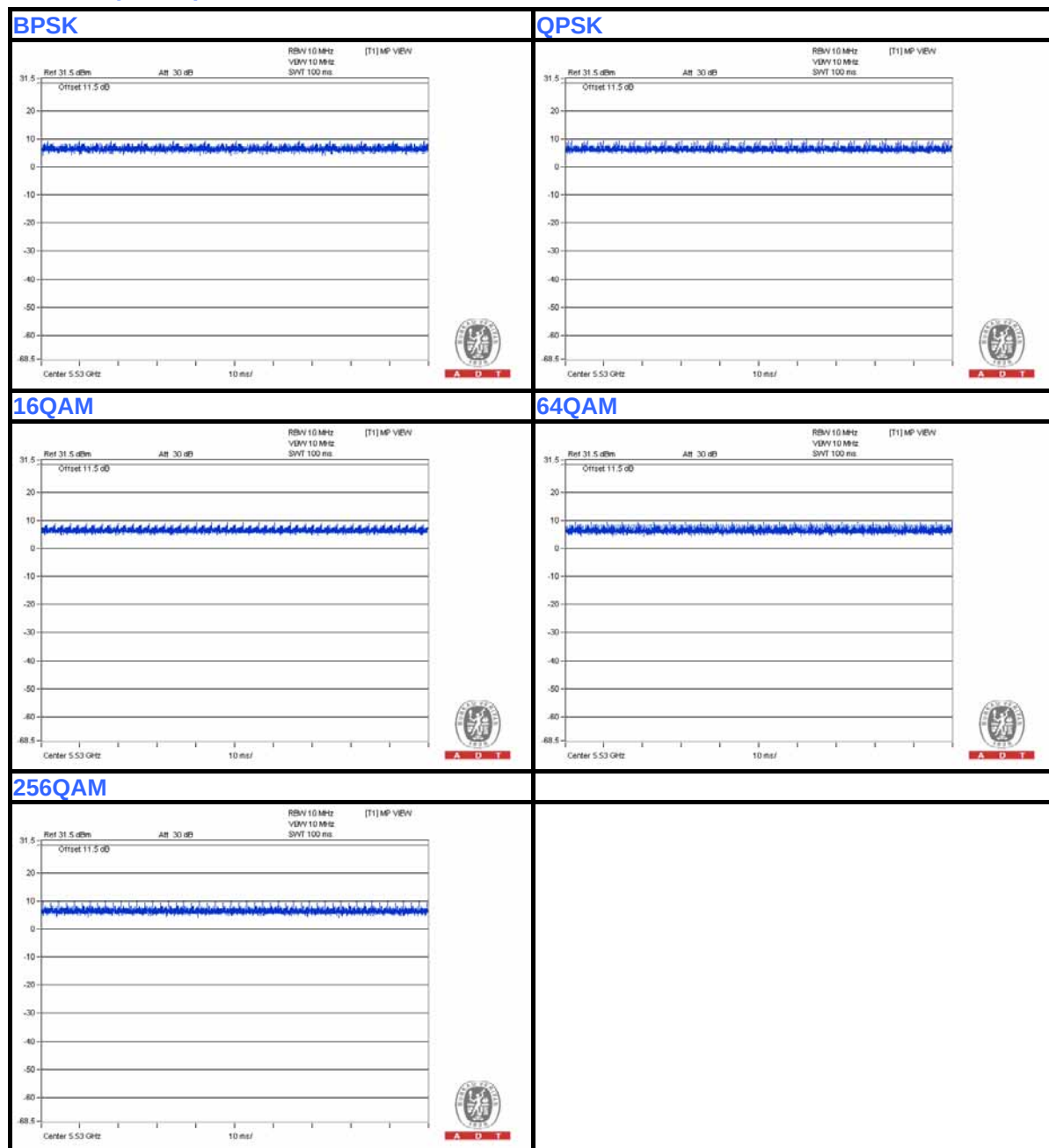
Duty cycle of test signal is 100 %, duty factor is not required.

802.11ac (VHT40)



Duty cycle of test signal is 100 %, duty factor is not required.

### 802.11ac (VHT80)





A D T

### 3.5 DESCRIPTION OF SUPPORT UNITS

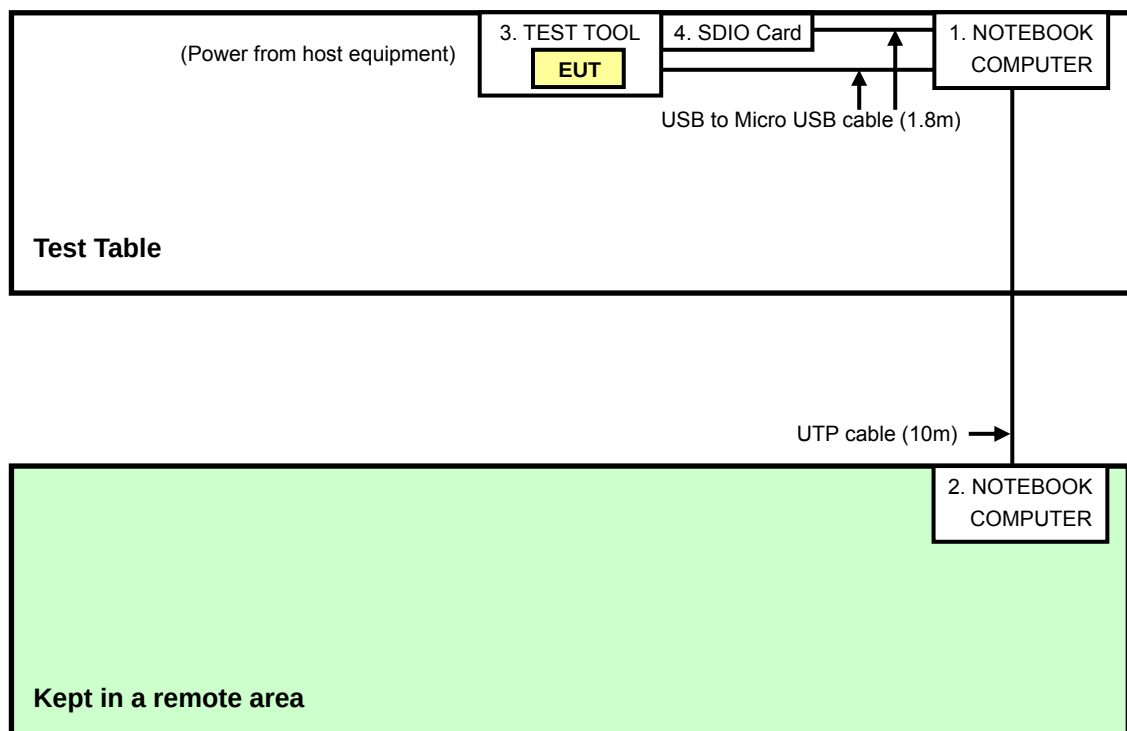
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| No. | Product           | Brand     | Model No. | Serial No. | FCC ID  |
|-----|-------------------|-----------|-----------|------------|---------|
| 1   | NOTEBOOK COMPUTER | ASUS      | NA        | NA         | NA      |
| 2   | NOTEBOOK COMPUTER | DELL      | PP32LA    | GSLB32S    | FCC DoC |
| 3   | TEST TOOL         | AzureWave | NA        | NA         | NA      |
| 4   | SDIO Card         | AzureWave | NA        | NA         | NA      |

| No. | Signal cable description |
|-----|--------------------------|
| 1   | NA                       |
| 2   | UTP Cable, 10m           |
| 3   | NA                       |
| 4   | NA                       |

Note: The power cords of the above support units were unshielded (1.8m).

### 3.6 CONFIGURATION OF SYSTEM UNDER TEST



## 4. TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY OF EMISSION (MHz) | CONDUCTED LIMIT (dB $\mu$ V) |          |
|-----------------------------|------------------------------|----------|
|                             | Quasi-peak                   | Average  |
| 0.15-0.5                    | 66 to 56                     | 56 to 46 |
| 0.5-5                       | 56                           | 46       |
| 5-30                        | 60                           | 50       |

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

#### 4.1.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER                                          | MODEL NO.                   | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---------------------------------------------------------------------|-----------------------------|------------|-----------------|------------------|
| Test Receiver<br>ROHDE & SCHWARZ                                    | ESCS 30                     | 100375     | Apr. 29, 2014   | Apr. 28, 2015    |
| Line-Impedance<br>Stabilization Network<br>(for EUT)<br>SCHWARZBECK | NSLK8127                    | 8127-522   | Sep. 05, 2013   | Sep. 04, 2014    |
| Line-Impedance<br>Stabilization Network<br>(for Peripheral)         | ENV216                      | 100072     | June 06, 2013   | June 05, 2014    |
| RF Cable<br>(JYEBAO)                                                | 5DFB                        | CONCAB-003 | Mar. 07, 2014   | Mar. 06, 2015    |
| 50 ohms Terminator                                                  | 50                          | EMC-03     | Sep. 24, 2013   | Sep. 23, 2014    |
| Software<br>ADT                                                     | BV<br>ADT_Cond_V7.3.7.<br>3 | 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 test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: Apr. 29, 2014

### 4.1.3 TEST PROCEDURES

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.
- The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission level under (Limit – 20dB) was not recorded.

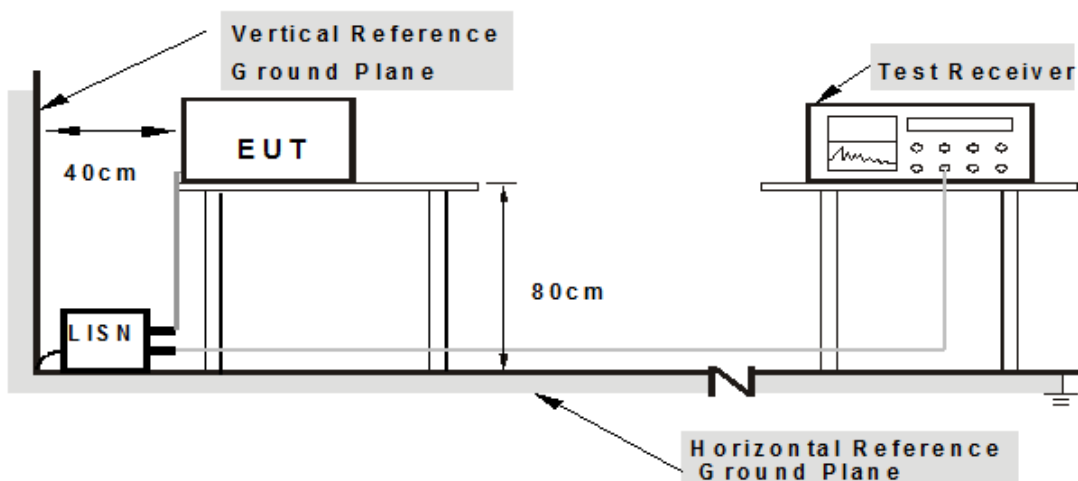
#### NOTE:

- The resolution bandwidth of test receiver is 9kHz for Quasi-peak detection (QP) & Average detection (AV).

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.1.5 TEST SETUP



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

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit 2 (Notebook Computer) which is placed in a remote area.
2. The communication partner run test program  
“DutApiMimoBtFmBrdigeEth.exe[ver.2.0.0.43]” to enable EUT under transmission/receiving condition continuously at specific channel frequency.



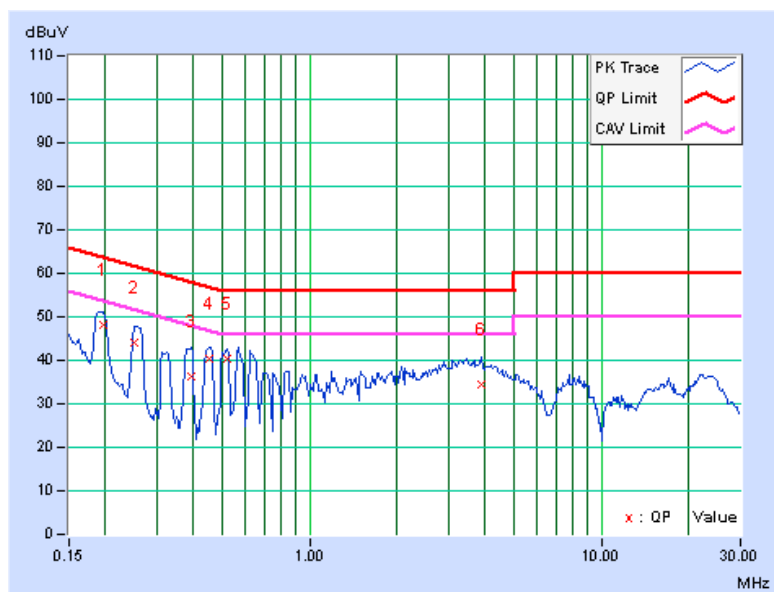
#### 4.1.7 TEST RESULTS

| PHASE | Line (L) | DETECTOR FUNCTION | Quasi-Peak (QP) / Average (AV) |
|-------|----------|-------------------|--------------------------------|
|-------|----------|-------------------|--------------------------------|

| No | Freq.   | Corr.  | Reading Value |       | Emission Level |       | Limit     |       | Margin |        |
|----|---------|--------|---------------|-------|----------------|-------|-----------|-------|--------|--------|
|    | [MHz]   | Factor | [dB (uV)]     |       | [dB (uV)]      |       | [dB (uV)] |       | (dB)   |        |
|    |         | (dB)   | Q.P.          | AV.   | Q.P.           | AV.   | Q.P.      | AV.   | Q.P.   | AV.    |
| 1  | 0.19687 | 0.06   | 48.02         | 38.03 | 48.08          | 38.09 | 63.74     | 53.74 | -15.66 | -15.65 |
| 2  | 0.25156 | 0.06   | 44.01         | 32.74 | 44.07          | 32.80 | 61.71     | 51.71 | -17.63 | -18.90 |
| 3  | 0.39219 | 0.07   | 36.22         | 28.12 | 36.29          | 28.19 | 58.02     | 48.02 | -21.73 | -19.83 |
| 4  | 0.45469 | 0.07   | 40.17         | 33.44 | 40.24          | 33.51 | 56.79     | 46.79 | -16.55 | -13.28 |
| 5  | 0.52500 | 0.07   | 40.18         | 30.89 | 40.25          | 30.96 | 56.00     | 46.00 | -15.75 | -15.04 |
| 6  | 3.86328 | 0.20   | 34.18         | 22.80 | 34.38          | 23.00 | 56.00     | 46.00 | -21.62 | -23.00 |

#### REMARKS:

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

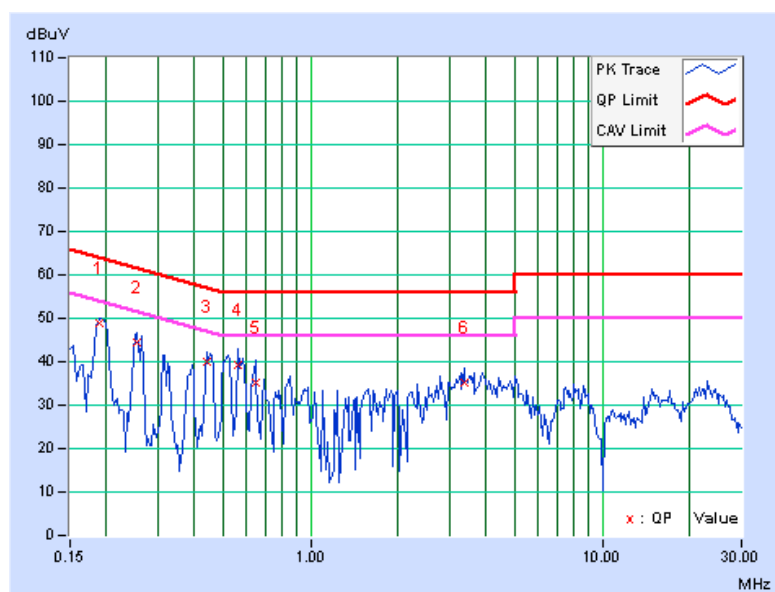


|       |             |                      |                                   |
|-------|-------------|----------------------|-----------------------------------|
| PHASE | Neutral (N) | DETECTOR<br>FUNCTION | Quasi-Peak (QP) /<br>Average (AV) |
|-------|-------------|----------------------|-----------------------------------|

|    | Freq.   | Corr.  | Reading Value |       | Emission Level |       | Limit     |       | Margin |        |
|----|---------|--------|---------------|-------|----------------|-------|-----------|-------|--------|--------|
| No |         | Factor | [dB (uV)]     |       | [dB (uV)]      |       | [dB (uV)] |       | (dB)   |        |
|    | [MHz]   | (dB)   | Q.P.          | AV.   | Q.P.           | AV.   | Q.P.      | AV.   | Q.P.   | AV.    |
| 1  | 0.18906 | 0.06   | 48.94         | 38.89 | 49.00          | 38.95 | 64.08     | 54.08 | -15.08 | -15.13 |
| 2  | 0.25547 | 0.06   | 44.42         | 36.36 | 44.48          | 36.42 | 61.58     | 51.58 | -17.09 | -15.15 |
| 3  | 0.44297 | 0.07   | 39.90         | 32.47 | 39.97          | 32.54 | 57.01     | 47.01 | -17.03 | -14.46 |
| 4  | 0.56406 | 0.08   | 39.23         | 27.52 | 39.31          | 27.60 | 56.00     | 46.00 | -16.69 | -18.40 |
| 5  | 0.65000 | 0.08   | 35.15         | 25.44 | 35.23          | 25.52 | 56.00     | 46.00 | -20.77 | -20.48 |
| 6  | 3.35156 | 0.18   | 34.87         | 24.15 | 35.05          | 24.33 | 56.00     | 46.00 | -20.95 | -21.67 |

#### REMARKS:

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



## 4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

| 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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

| APPLICABLE TO | LIMIT                         |                                          |
|---------------|-------------------------------|------------------------------------------|
| √             | FIELD STRENGTH AT 3m (dBμV/m) |                                          |
|               | PK                            | AV                                       |
|               | 74                            | 54                                       |
|               | EIRP LIMIT (dBm)              | EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m) |
|               | PK                            | PK                                       |
|               | -27                           | 68.3                                     |

**NOTE:**

1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

#### 4.2.3 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER              | MODEL NO.                | SERIAL NO.                          | CALIBRATED DATE | CALIBRATED UNTIL |
|-----------------------------------------|--------------------------|-------------------------------------|-----------------|------------------|
| MXE EMI Receiver<br>Agilent             | N9038A                   | MY51210105                          | Jan. 21, 2014   | Jan. 20, 2015    |
| Pre-Amplifier<br>Mini-Circuits          | ZFL-1000VH2<br>B         | AMP-ZFL-03                          | Nov. 13, 2013   | Nov. 12, 2014    |
| Trilog Broadband Antenna<br>SCHWARZBECK | VULB 9168                | 9168-360                            | Feb. 26, 2014   | Feb. 25, 2015    |
| RF Cable                                | NA                       | CHGCAB_001                          | Oct. 05, 2013   | Oct. 04, 2014    |
| Spectrum Analyzer<br>R&S                | FSV40                    | 100964                              | July 15, 2013   | July 14, 2014    |
| Horn_Antenna<br>AISI                    | AIH.8018                 | 0000320091110                       | Nov. 18, 2013   | Nov. 17, 2014    |
| Pre-Amplifier<br>Agilent                | 8449B                    | 3008A02578                          | June 25, 2013   | June 24, 2014    |
| RF Cable                                | NA                       | RF104-201<br>RF104-203<br>RF104-204 | Dec. 12, 2013   | Dec. 11, 2014    |
| Spectrum Analyzer<br>Agilent            | E4446A                   | MY48250253                          | Aug. 28, 2013   | Aug. 27, 2014    |
| Pre-Amplifier<br>SPACEK LABS            | SLKKa-48-6               | 9K16                                | Nov. 13, 2013   | Nov. 12, 2014    |
| Horn_Antenna<br>SCHWARZBECK             | BBHA 9170                | 9170-424                            | Oct. 08, 2013   | Oct. 07, 2014    |
| 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. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: May 16 to 20, 2014

#### 4.2.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters 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:**

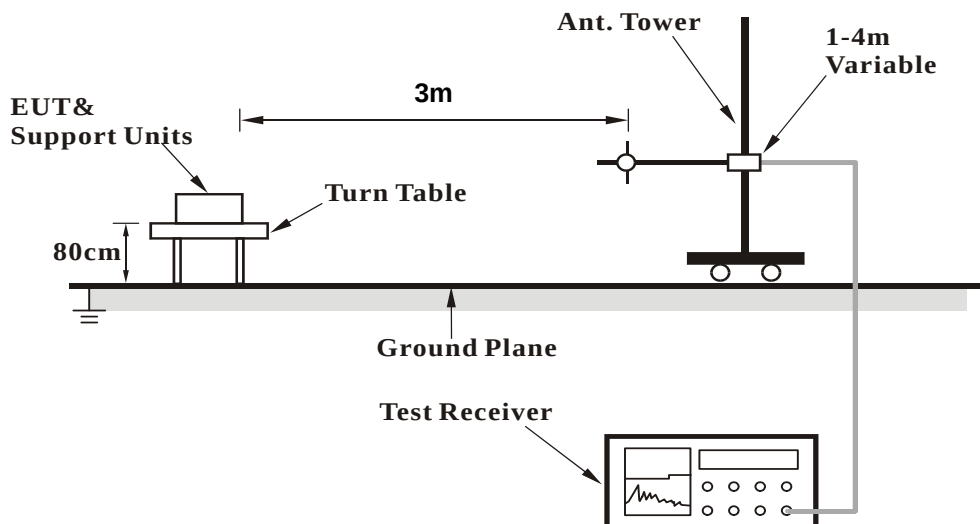
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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.

#### 4.2.5 DEVIATION FROM TEST STANDARD

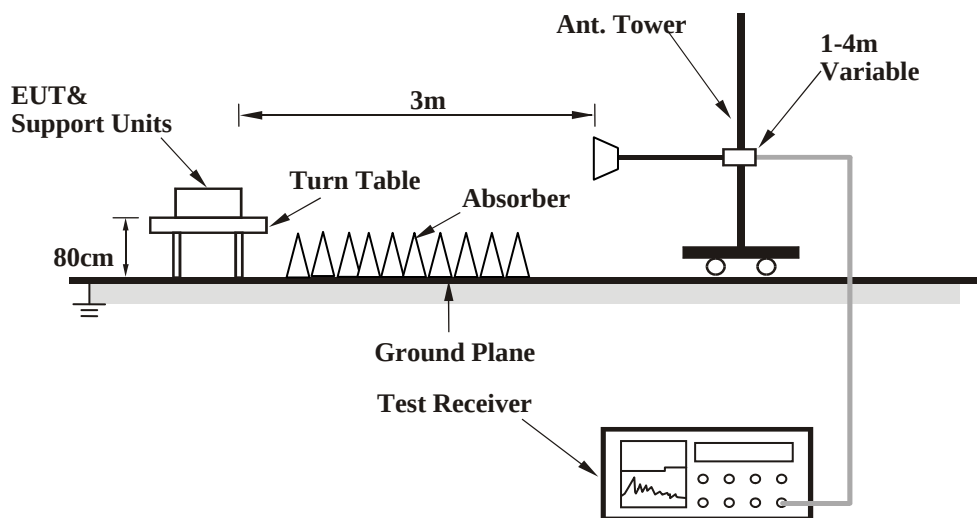
No deviation

#### 4.2.6 TEST SETUP

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



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



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

## 4.2.8 TEST RESULTS

### BELOW 1GHz WORST-CASE DATA

#### 802.11a

|                 |                |                      |                 |
|-----------------|----------------|----------------------|-----------------|
| CHANNEL         | TX Channel 116 | 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                                                   | 47.90          | 35.4 QP                       | 40.0              | -4.6           | 1.11 H                   | 265                        | 48.90                  | -13.48                         |
| 2                                                   | 72.01          | 33.4 QP                       | 40.0              | -6.6           | 1.07 H                   | 234                        | 49.47                  | -16.06                         |
| 3                                                   | 311.92         | 42.2 QP                       | 46.0              | -3.8           | 1.04 H                   | 98                         | 54.21                  | -11.98                         |
| 4                                                   | 359.99         | 38.2 QP                       | 46.0              | -7.8           | 1.11 H                   | 98                         | 49.01                  | -10.80                         |
| 5                                                   | 527.99         | 36.1 QP                       | 46.0              | -9.9           | 1.21 H                   | 268                        | 42.91                  | -6.80                          |
| 6                                                   | 935.98         | 40.1 QP                       | 46.0              | -5.9           | 1.10 H                   | 98                         | 39.25                  | 0.86                           |
| 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                                                   | 60.52          | 34.6 QP                       | 40.0              | -5.4           | 1.10 V                   | 204                        | 48.80                  | -14.19                         |
| 2                                                   | 312.06         | 37.6 QP                       | 46.0              | -8.4           | 1.10 V                   | 279                        | 49.59                  | -11.98                         |
| 3                                                   | 432.02         | 41.5 QP                       | 46.0              | -4.5           | 1.11 V                   | 201                        | 50.12                  | -8.61                          |
| 4                                                   | 527.98         | 39.2 QP                       | 46.0              | -6.8           | 1.34 V                   | 201                        | 46.01                  | -6.80                          |
| 5                                                   | 647.98         | 36.3 QP                       | 46.0              | -9.7           | 1.10 V                   | 67                         | 40.43                  | -4.09                          |
| 6                                                   | 935.98         | 42.7 QP                       | 46.0              | -3.3           | 1.11 V                   | 304                        | 41.85                  | 0.86                           |

#### 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

# ABOVE 1GHz DATA

## 802.11a

|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 36 | 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                                                   | 5150.00        | 68.4 PK                       | 74.0              | -5.6           | 1.32 H                   | 60                         | 60.17                  | 8.23                           |
| 2                                                   | 5150.00        | 51.0 AV                       | 54.0              | -3.0           | 1.32 H                   | 60                         | 42.77                  | 8.23                           |
| 3                                                   | *5180.00       | 110.5 PK                      |                   |                | 1.32 H                   | 60                         | 102.27                 | 8.23                           |
| 4                                                   | *5180.00       | 101.8 AV                      |                   |                | 1.32 H                   | 60                         | 93.57                  | 8.23                           |
| 5                                                   | #10360.00      | 55.0 PK                       | 74.0              | -19.0          | 1.00 H                   | 140                        | 40.12                  | 14.88                          |
| 6                                                   | #10360.00      | 43.7 AV                       | 54.0              | -10.3          | 1.00 H                   | 140                        | 28.82                  | 14.88                          |
| 7                                                   | 15540.00       | 62.4 PK                       | 74.0              | -11.6          | 1.00 H                   | 249                        | 41.55                  | 20.85                          |
| 8                                                   | 15540.00       | 49.6 AV                       | 54.0              | -4.4           | 1.00 H                   | 249                        | 28.75                  | 20.85                          |
| 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                                                   | 5150.00        | 62.8 PK                       | 74.0              | -11.2          | 1.11 V                   | 360                        | 54.57                  | 8.23                           |
| 2                                                   | 5150.00        | 45.7 AV                       | 54.0              | -8.3           | 1.11 V                   | 360                        | 37.47                  | 8.23                           |
| 3                                                   | *5180.00       | 108.0 PK                      |                   |                | 1.11 V                   | 360                        | 99.77                  | 8.23                           |
| 4                                                   | *5180.00       | 98.7 AV                       |                   |                | 1.11 V                   | 360                        | 90.47                  | 8.23                           |
| 5                                                   | #10360.00      | 54.7 PK                       | 74.0              | -19.3          | 1.28 V                   | 94                         | 39.82                  | 14.88                          |
| 6                                                   | #10360.00      | 44.6 AV                       | 54.0              | -9.4           | 1.28 V                   | 94                         | 29.72                  | 14.88                          |
| 7                                                   | 15540.00       | 63.7 PK                       | 74.0              | -10.3          | 1.19 V                   | 326                        | 42.85                  | 20.85                          |
| 8                                                   | 15540.00       | 50.2 AV                       | 54.0              | -3.8           | 1.19 V                   | 326                        | 29.35                  | 20.85                          |

### REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " \* ": Fundamental frequency.
- " # ": The radiated frequency is out of the restricted band.



|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 40 | 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                                                   | *5200.00       | 112.6 PK                      |                   |                | 1.35 H                   | 68                         | 104.36                 | 8.24                           |
| 2                                                   | *5200.00       | 103.8 AV                      |                   |                | 1.35 H                   | 68                         | 95.56                  | 8.24                           |
| 3                                                   | #10400.00      | 53.8 PK                       | 74.0              | -20.2          | 1.00 H                   | 112                        | 38.57                  | 15.23                          |
| 4                                                   | #10400.00      | 40.5 AV                       | 54.0              | -13.5          | 1.00 H                   | 112                        | 25.27                  | 15.23                          |
| 5                                                   | 15600.00       | 61.9 PK                       | 74.0              | -12.1          | 1.04 H                   | 8                          | 41.02                  | 20.88                          |
| 6                                                   | 15600.00       | 51.5 AV                       | 54.0              | -2.5           | 1.04 H                   | 8                          | 30.62                  | 20.88                          |
| 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                                                   | *5200.00       | 109.7 PK                      |                   |                | 1.11 V                   | 357                        | 101.46                 | 8.24                           |
| 2                                                   | *5200.00       | 100.9 AV                      |                   |                | 1.11 V                   | 357                        | 92.66                  | 8.24                           |
| 3                                                   | #10400.00      | 54.5 PK                       | 74.0              | -19.5          | 1.37 V                   | 100                        | 39.27                  | 15.23                          |
| 4                                                   | #10400.00      | 44.4 AV                       | 54.0              | -9.6           | 1.37 V                   | 100                        | 29.17                  | 15.23                          |
| 5                                                   | 15600.00       | 64.9 PK                       | 74.0              | -9.1           | 1.14 V                   | 311                        | 44.02                  | 20.88                          |
| 6                                                   | 15600.00       | 51.9 AV                       | 54.0              | -2.1           | 1.14 V                   | 311                        | 31.02                  | 20.88                          |

#### 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.
6. " # ": The radiated frequency is out of the restricted band.



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|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 48 | 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                                                   | *5240.00       | 111.9 PK                      |                   |                | 1.35 H                   | 86                         | 103.50                 | 8.40                           |
| 2                                                   | *5240.00       | 103.1 AV                      |                   |                | 1.35 H                   | 86                         | 94.70                  | 8.40                           |
| 3                                                   | #10480.00      | 53.6 PK                       | 74.0              | -20.4          | 1.00 H                   | 115                        | 38.39                  | 15.21                          |
| 4                                                   | #10480.00      | 40.6 AV                       | 54.0              | -13.4          | 1.00 H                   | 115                        | 25.39                  | 15.21                          |
| 5                                                   | 15720.00       | 62.8 PK                       | 74.0              | -11.2          | 1.05 H                   | 1                          | 41.93                  | 20.87                          |
| 6                                                   | 15720.00       | 52.0 AV                       | 54.0              | -2.0           | 1.05 H                   | 1                          | 31.13                  | 20.87                          |
| 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                                                   | *5240.00       | 109.1 PK                      |                   |                | 1.11 V                   | 354                        | 100.70                 | 8.40                           |
| 2                                                   | *5240.00       | 99.8 AV                       |                   |                | 1.11 V                   | 354                        | 91.40                  | 8.40                           |
| 3                                                   | #10480.00      | 54.9 PK                       | 74.0              | -19.1          | 1.25 V                   | 82                         | 39.69                  | 15.21                          |
| 4                                                   | #10480.00      | 44.8 AV                       | 54.0              | -9.2           | 1.25 V                   | 82                         | 29.59                  | 15.21                          |
| 5                                                   | 15720.00       | 66.0 PK                       | 74.0              | -8.0           | 1.13 V                   | 307                        | 45.13                  | 20.87                          |
| 6                                                   | 15720.00       | 52.7 AV                       | 54.0              | -1.3           | 1.13 V                   | 307                        | 31.83                  | 20.87                          |

#### 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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 52 | 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                                                   | *5260.00       | 111.8 PK                      |                   |                | 1.35 H                   | 78                         | 103.34                 | 8.46                           |
| 2                                                   | *5260.00       | 103.4 AV                      |                   |                | 1.35 H                   | 78                         | 94.94                  | 8.46                           |
| 3                                                   | #10520.00      | 52.8 PK                       | 74.0              | -21.2          | 1.01 H                   | 106                        | 37.54                  | 15.26                          |
| 4                                                   | #10520.00      | 39.9 AV                       | 54.0              | -14.1          | 1.01 H                   | 106                        | 24.64                  | 15.26                          |
| 5                                                   | 15780.00       | 61.1 PK                       | 74.0              | -12.9          | 1.03 H                   | 22                         | 40.35                  | 20.75                          |
| 6                                                   | 15780.00       | 50.8 AV                       | 54.0              | -3.2           | 1.03 H                   | 22                         | 30.05                  | 20.75                          |
| 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                                                   | *5260.00       | 109.1 PK                      |                   |                | 1.15 V                   | 344                        | 100.64                 | 8.46                           |
| 2                                                   | *5260.00       | 100.0 AV                      |                   |                | 1.15 V                   | 344                        | 91.54                  | 8.46                           |
| 3                                                   | #10520.00      | 54.6 PK                       | 74.0              | -19.4          | 1.28 V                   | 96                         | 39.34                  | 15.26                          |
| 4                                                   | #10520.00      | 44.4 AV                       | 54.0              | -9.6           | 1.28 V                   | 96                         | 29.14                  | 15.26                          |
| 5                                                   | 15780.00       | 65.6 PK                       | 74.0              | -8.4           | 1.17 V                   | 308                        | 44.85                  | 20.75                          |
| 6                                                   | 15780.00       | 52.3 AV                       | 54.0              | -1.7           | 1.17 V                   | 308                        | 31.55                  | 20.75                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 60 | 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                                                   | *5300.00       | 110.5 PK                      |                   |                | 1.00 H                   | 27                         | 101.88                 | 8.62                           |
| 2                                                   | *5300.00       | 101.6 AV                      |                   |                | 1.00 H                   | 27                         | 92.98                  | 8.62                           |
| 3                                                   | 10600.00       | 54.1 PK                       | 74.0              | -19.9          | 1.00 H                   | 113                        | 38.57                  | 15.53                          |
| 4                                                   | 10600.00       | 41.1 AV                       | 54.0              | -12.9          | 1.00 H                   | 113                        | 25.57                  | 15.53                          |
| 5                                                   | 15900.00       | 62.8 PK                       | 74.0              | -11.2          | 1.04 H                   | 0                          | 41.50                  | 21.30                          |
| 6                                                   | 15900.00       | 52.1 AV                       | 54.0              | -1.9           | 1.04 H                   | 0                          | 30.80                  | 21.30                          |
| 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                                                   | *5300.00       | 107.2 PK                      |                   |                | 1.14 V                   | 342                        | 98.58                  | 8.62                           |
| 2                                                   | *5300.00       | 98.2 AV                       |                   |                | 1.14 V                   | 342                        | 89.58                  | 8.62                           |
| 3                                                   | 10600.00       | 54.4 PK                       | 74.0              | -19.6          | 1.30 V                   | 95                         | 38.87                  | 15.53                          |
| 4                                                   | 10600.00       | 44.1 AV                       | 54.0              | -9.9           | 1.30 V                   | 95                         | 28.57                  | 15.53                          |
| 5                                                   | 15900.00       | 65.8 PK                       | 74.0              | -8.2           | 1.14 V                   | 310                        | 44.50                  | 21.30                          |
| 6                                                   | 15900.00       | 52.5 AV                       | 54.0              | -1.5           | 1.14 V                   | 310                        | 31.20                  | 21.30                          |

**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.



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|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 64 | 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   | *5320.00       | 110.9 PK                      |                   |                | 1.56 H                   | 114                        | 102.21                 | 8.69                           |
| 2   | *5320.00       | 102.0 AV                      |                   |                | 1.56 H                   | 114                        | 93.31                  | 8.69                           |
| 3   | 5350.00        | 69.5 PK                       | 74.0              | -4.5           | 1.56 H                   | 114                        | 60.70                  | 8.80                           |
| 4   | 5350.00        | 52.2 AV                       | 54.0              | -1.8           | 1.56 H                   | 114                        | 43.40                  | 8.80                           |
| 5   | 10640.00       | 52.9 PK                       | 74.0              | -21.1          | 1.08 H                   | 125                        | 37.36                  | 15.54                          |
| 6   | 10640.00       | 40.1 AV                       | 54.0              | -13.9          | 1.08 H                   | 125                        | 24.56                  | 15.54                          |
| 7   | 15960.00       | 62.0 PK                       | 74.0              | -12.0          | 1.01 H                   | 1                          | 41.18                  | 20.82                          |
| 8   | 15960.00       | 51.3 AV                       | 54.0              | -2.7           | 1.01 H                   | 1                          | 30.48                  | 20.82                          |

**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   | *5320.00       | 107.4 PK                      |                   |                | 1.14 V                   | 339                        | 98.71                  | 8.69                           |
| 2   | *5320.00       | 98.2 AV                       |                   |                | 1.14 V                   | 339                        | 89.51                  | 8.69                           |
| 3   | 5350.00        | 62.9 PK                       | 74.0              | -11.1          | 1.14 V                   | 339                        | 54.10                  | 8.80                           |
| 4   | 5350.00        | 45.7 AV                       | 54.0              | -8.3           | 1.14 V                   | 339                        | 36.90                  | 8.80                           |
| 5   | 10640.00       | 54.8 PK                       | 74.0              | -19.2          | 1.34 V                   | 106                        | 39.26                  | 15.54                          |
| 6   | 10640.00       | 44.4 AV                       | 54.0              | -9.6           | 1.34 V                   | 106                        | 28.86                  | 15.54                          |
| 7   | 15960.00       | 65.1 PK                       | 74.0              | -8.9           | 1.14 V                   | 317                        | 44.28                  | 20.82                          |
| 8   | 15960.00       | 52.1 AV                       | 54.0              | -1.9           | 1.14 V                   | 317                        | 31.28                  | 20.82                          |

**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.



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|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 100 | 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   | 5460.00        | 66.4 PK                       | 74.0              | -7.6           | 1.52 H                   | 114                        | 57.21                  | 9.19                           |
| 2   | 5460.00        | 48.5 AV                       | 54.0              | -5.5           | 1.52 H                   | 114                        | 39.31                  | 9.19                           |
| 3   | #5470.00       | 70.8 PK                       | 74.0              | -3.2           | 1.52 H                   | 114                        | 61.58                  | 9.22                           |
| 4   | #5470.00       | 53.4 AV                       | 54.0              | -0.6           | 1.52 H                   | 114                        | 44.18                  | 9.22                           |
| 5   | *5500.00       | 111.5 PK                      |                   |                | 1.52 H                   | 114                        | 102.17                 | 9.33                           |
| 6   | *5500.00       | 103.0 AV                      |                   |                | 1.52 H                   | 114                        | 93.67                  | 9.33                           |
| 7   | 11000.00       | 53.1 PK                       | 74.0              | -20.9          | 1.04 H                   | 112                        | 36.15                  | 16.95                          |
| 8   | 11000.00       | 40.2 AV                       | 54.0              | -13.8          | 1.04 H                   | 112                        | 23.25                  | 16.95                          |
| 9   | #16500.00      | 61.8 PK                       | 74.0              | -12.2          | 1.03 H                   | 10                         | 38.76                  | 23.04                          |
| 10  | #16500.00      | 51.3 AV                       | 54.0              | -2.7           | 1.03 H                   | 10                         | 28.26                  | 23.04                          |

#### 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   | 5460.00        | 61.4 PK                       | 74.0              | -12.6          | 1.06 V                   | 354                        | 52.21                  | 9.19                           |
| 2   | 5460.00        | 44.2 AV                       | 54.0              | -9.8           | 1.06 V                   | 354                        | 35.01                  | 9.19                           |
| 3   | #5470.00       | 62.8 PK                       | 74.0              | -11.2          | 1.06 V                   | 354                        | 53.58                  | 9.22                           |
| 4   | #5470.00       | 45.7 AV                       | 54.0              | -8.3           | 1.06 V                   | 354                        | 36.48                  | 9.22                           |
| 5   | *5500.00       | 108.5 PK                      |                   |                | 1.06 V                   | 354                        | 99.17                  | 9.33                           |
| 6   | *5500.00       | 99.5 AV                       |                   |                | 1.06 V                   | 354                        | 90.17                  | 9.33                           |
| 7   | 11000.00       | 54.4 PK                       | 74.0              | -19.6          | 1.30 V                   | 101                        | 37.45                  | 16.95                          |
| 8   | 11000.00       | 44.1 AV                       | 54.0              | -9.9           | 1.30 V                   | 101                        | 27.15                  | 16.95                          |
| 9   | #16500.00      | 64.8 PK                       | 74.0              | -9.2           | 1.13 V                   | 305                        | 41.76                  | 23.04                          |
| 10  | #16500.00      | 51.9 AV                       | 54.0              | -2.1           | 1.13 V                   | 305                        | 28.86                  | 23.04                          |

#### 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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 116 | 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                                                   | *5580.00       | 113.3 PK                      |                   |                | 1.49 H                   | 112                        | 103.83                 | 9.47                           |
| 2                                                   | *5580.00       | 104.3 AV                      |                   |                | 1.49 H                   | 112                        | 94.83                  | 9.47                           |
| 3                                                   | 11160.00       | 53.5 PK                       | 74.0              | -20.5          | 1.02 H                   | 100                        | 37.29                  | 16.21                          |
| 4                                                   | 11160.00       | 40.4 AV                       | 54.0              | -13.6          | 1.02 H                   | 100                        | 24.19                  | 16.21                          |
| 5                                                   | #16740.00      | 62.7 PK                       | 74.0              | -11.3          | 1.09 H                   | 1                          | 39.02                  | 23.68                          |
| 6                                                   | #16740.00      | 51.9 AV                       | 54.0              | -2.1           | 1.09 H                   | 1                          | 28.22                  | 23.68                          |
| 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                                                   | *5580.00       | 109.0 PK                      |                   |                | 1.11 V                   | 360                        | 99.53                  | 9.47                           |
| 2                                                   | *5580.00       | 99.6 AV                       |                   |                | 1.11 V                   | 360                        | 90.13                  | 9.47                           |
| 3                                                   | 11160.00       | 54.6 PK                       | 74.0              | -19.4          | 1.37 V                   | 122                        | 38.39                  | 16.21                          |
| 4                                                   | 11160.00       | 43.9 AV                       | 54.0              | -10.1          | 1.37 V                   | 122                        | 27.69                  | 16.21                          |
| 5                                                   | #16740.00      | 64.7 PK                       | 74.0              | -9.3           | 1.19 V                   | 325                        | 41.02                  | 23.68                          |
| 6                                                   | #16740.00      | 52.4 AV                       | 54.0              | -1.6           | 1.19 V                   | 325                        | 28.72                  | 23.68                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 132 | 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                                                   | *5660.00       | 112.3 PK                      |                   |                | 1.49 H                   | 112                        | 102.57                 | 9.73                           |
| 2                                                   | *5660.00       | 103.3 AV                      |                   |                | 1.49 H                   | 112                        | 93.57                  | 9.73                           |
| 3                                                   | 11320.00       | 53.4 PK                       | 74.0              | -20.6          | 1.02 H                   | 128                        | 36.48                  | 16.92                          |
| 4                                                   | 11320.00       | 40.3 AV                       | 54.0              | -13.7          | 1.02 H                   | 128                        | 23.38                  | 16.92                          |
| 5                                                   | #16980.00      | 62.1 PK                       | 74.0              | -11.9          | 1.05 H                   | 9                          | 37.90                  | 24.20                          |
| 6                                                   | #16980.00      | 51.6 AV                       | 54.0              | -2.4           | 1.05 H                   | 9                          | 27.40                  | 24.20                          |
| 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                                                   | *5660.00       | 109.8 PK                      |                   |                | 1.17 V                   | 360                        | 100.07                 | 9.73                           |
| 2                                                   | *5660.00       | 100.3 AV                      |                   |                | 1.17 V                   | 360                        | 90.57                  | 9.73                           |
| 3                                                   | 11320.00       | 54.5 PK                       | 74.0              | -19.5          | 1.37 V                   | 91                         | 37.58                  | 16.92                          |
| 4                                                   | 11320.00       | 44.2 AV                       | 54.0              | -9.8           | 1.37 V                   | 91                         | 27.28                  | 16.92                          |
| 5                                                   | #16980.00      | 65.1 PK                       | 74.0              | -8.9           | 1.18 V                   | 332                        | 40.90                  | 24.20                          |
| 6                                                   | #16980.00      | 52.5 AV                       | 54.0              | -1.5           | 1.18 V                   | 332                        | 28.30                  | 24.20                          |

#### 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.
6. " # ": The radiated frequency is out of the restricted band.





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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 140 | 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   | *5700.00       | 109.8 PK                      |                   |                | 1.75 H                   | 117                        | 99.92                  | 9.88                           |
| 2   | *5700.00       | 101.0 AV                      |                   |                | 1.75 H                   | 117                        | 91.12                  | 9.88                           |
| 3   | #5725.00       | 66.2 PK                       | 74.0              | -7.8           | 1.75 H                   | 117                        | 56.29                  | 9.91                           |
| 4   | #5725.00       | 50.5 AV                       | 54.0              | -3.5           | 1.75 H                   | 117                        | 40.59                  | 9.91                           |
| 5   | 11400.00       | 52.8 PK                       | 74.0              | -21.2          | 1.00 H                   | 134                        | 36.05                  | 16.75                          |
| 6   | 11400.00       | 40.0 AV                       | 54.0              | -14.0          | 1.00 H                   | 134                        | 23.25                  | 16.75                          |
| 7   | #17100.00      | 61.2 PK                       | 74.0              | -12.8          | 1.06 H                   | 1                          | 36.14                  | 25.06                          |
| 8   | #17100.00      | 50.8 AV                       | 54.0              | -3.2           | 1.06 H                   | 1                          | 25.74                  | 25.06                          |

**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   | *5700.00       | 106.4 PK                      |                   |                | 1.17 V                   | 345                        | 96.52                  | 9.88                           |
| 2   | *5700.00       | 97.6 AV                       |                   |                | 1.17 V                   | 345                        | 87.72                  | 9.88                           |
| 3   | #5725.00       | 61.5 PK                       | 74.0              | -12.5          | 1.17 V                   | 345                        | 51.59                  | 9.91                           |
| 4   | #5725.00       | 44.1 AV                       | 54.0              | -9.9           | 1.17 V                   | 345                        | 34.19                  | 9.91                           |
| 5   | 11400.00       | 55.3 PK                       | 74.0              | -18.7          | 1.31 V                   | 92                         | 38.55                  | 16.75                          |
| 6   | 11400.00       | 44.6 AV                       | 54.0              | -9.4           | 1.31 V                   | 92                         | 27.85                  | 16.75                          |
| 7   | #17100.00      | 64.9 PK                       | 74.0              | -9.1           | 1.19 V                   | 321                        | 39.84                  | 25.06                          |
| 8   | #17100.00      | 51.6 AV                       | 54.0              | -2.4           | 1.19 V                   | 321                        | 26.54                  | 25.06                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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## 802.11ac (VHT20)

|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 36 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz  |                      | Average (AV) |

## ANTENNA POLARITY &amp; 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   | 5150.00        | 72.8 PK                       | 74.0              | -1.2           | 1.03 H                   | 127                        | 64.57                  | 8.23                           |
| 2   | 5150.00        | 53.1 AV                       | 54.0              | -0.9           | 1.03 H                   | 127                        | 44.87                  | 8.23                           |
| 3   | *5180.00       | 108.4 PK                      |                   |                | 1.03 H                   | 127                        | 100.17                 | 8.23                           |
| 4   | *5180.00       | 99.8 AV                       |                   |                | 1.03 H                   | 127                        | 91.57                  | 8.23                           |
| 5   | #10360.00      | 52.9 PK                       | 74.0              | -21.1          | 1.03 H                   | 116                        | 38.02                  | 14.88                          |
| 6   | #10360.00      | 40.1 AV                       | 54.0              | -13.9          | 1.03 H                   | 116                        | 25.22                  | 14.88                          |
| 7   | 15540.00       | 61.2 PK                       | 74.0              | -12.8          | 1.09 H                   | 12                         | 40.35                  | 20.85                          |
| 8   | 15540.00       | 50.3 AV                       | 54.0              | -3.7           | 1.09 H                   | 12                         | 29.45                  | 20.85                          |

## ANTENNA POLARITY &amp; 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   | 5150.00        | 61.1 PK                       | 74.0              | -12.9          | 1.17 V                   | 341                        | 52.87                  | 8.23                           |
| 2   | 5150.00        | 44.2 AV                       | 54.0              | -9.8           | 1.17 V                   | 341                        | 35.97                  | 8.23                           |
| 3   | *5180.00       | 105.1 PK                      |                   |                | 1.17 V                   | 341                        | 96.87                  | 8.23                           |
| 4   | *5180.00       | 96.4 AV                       |                   |                | 1.17 V                   | 341                        | 88.17                  | 8.23                           |
| 5   | #10360.00      | 55.0 PK                       | 74.0              | -19.0          | 1.35 V                   | 76                         | 40.12                  | 14.88                          |
| 6   | #10360.00      | 44.2 AV                       | 54.0              | -9.8           | 1.35 V                   | 76                         | 29.32                  | 14.88                          |
| 7   | 15540.00       | 63.9 PK                       | 74.0              | -10.1          | 1.23 V                   | 320                        | 43.05                  | 20.85                          |
| 8   | 15540.00       | 50.8 AV                       | 54.0              | -3.2           | 1.23 V                   | 320                        | 29.95                  | 20.85                          |

## REMARKS:

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



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 40 | 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                                                   | *5200.00       | 107.6 PK                      |                   |                | 1.07 H                   | 117                        | 99.36                  | 8.24                           |
| 2                                                   | *5200.00       | 99.1 AV                       |                   |                | 1.07 H                   | 117                        | 90.86                  | 8.24                           |
| 3                                                   | #10400.00      | 53.2 PK                       | 74.0              | -20.8          | 1.02 H                   | 128                        | 37.97                  | 15.23                          |
| 4                                                   | #10400.00      | 40.3 AV                       | 54.0              | -13.7          | 1.02 H                   | 128                        | 25.07                  | 15.23                          |
| 5                                                   | 15600.00       | 61.5 PK                       | 74.0              | -12.5          | 1.10 H                   | 18                         | 40.62                  | 20.88                          |
| 6                                                   | 15600.00       | 50.4 AV                       | 54.0              | -3.6           | 1.10 H                   | 18                         | 29.52                  | 20.88                          |
| 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                                                   | *5200.00       | 104.2 PK                      |                   |                | 1.14 V                   | 340                        | 95.96                  | 8.24                           |
| 2                                                   | *5200.00       | 95.8 AV                       |                   |                | 1.14 V                   | 340                        | 87.56                  | 8.24                           |
| 3                                                   | #10400.00      | 55.1 PK                       | 74.0              | -18.9          | 1.40 V                   | 83                         | 39.87                  | 15.23                          |
| 4                                                   | #10400.00      | 44.1 AV                       | 54.0              | -9.9           | 1.40 V                   | 83                         | 28.87                  | 15.23                          |
| 5                                                   | 15600.00       | 64.3 PK                       | 74.0              | -9.7           | 1.21 V                   | 327                        | 43.42                  | 20.88                          |
| 6                                                   | 15600.00       | 50.8 AV                       | 54.0              | -3.2           | 1.21 V                   | 327                        | 29.92                  | 20.88                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 48 | 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   | *5240.00       | 108.1 PK                      |                   |                | 1.00 H                   | 115                        | 99.70                  | 8.40                           |
| 2   | *5240.00       | 99.4 AV                       |                   |                | 1.00 H                   | 115                        | 91.00                  | 8.40                           |
| 3   | #10480.00      | 54.0 PK                       | 74.0              | -20.0          | 1.00 H                   | 143                        | 38.79                  | 15.21                          |
| 4   | #10480.00      | 40.7 AV                       | 54.0              | -13.3          | 1.00 H                   | 143                        | 25.49                  | 15.21                          |
| 5   | 15720.00       | 61.4 PK                       | 74.0              | -12.6          | 1.02 H                   | 0                          | 40.53                  | 20.87                          |
| 6   | 15720.00       | 50.2 AV                       | 54.0              | -3.8           | 1.02 H                   | 0                          | 29.33                  | 20.87                          |

**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   | *5240.00       | 104.8 PK                      |                   |                | 1.13 V                   | 347                        | 96.40                  | 8.40                           |
| 2   | *5240.00       | 95.8 AV                       |                   |                | 1.13 V                   | 347                        | 87.40                  | 8.40                           |
| 3   | #10480.00      | 54.8 PK                       | 74.0              | -19.2          | 1.39 V                   | 94                         | 39.59                  | 15.21                          |
| 4   | #10480.00      | 43.6 AV                       | 54.0              | -10.4          | 1.39 V                   | 94                         | 28.39                  | 15.21                          |
| 5   | 15720.00       | 64.0 PK                       | 74.0              | -10.0          | 1.15 V                   | 326                        | 43.13                  | 20.87                          |
| 6   | 15720.00       | 50.7 AV                       | 54.0              | -3.3           | 1.15 V                   | 326                        | 29.83                  | 20.87                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 52 | 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                                                   | *5260.00       | 112.1 PK                      |                   |                | 1.32 H                   | 121                        | 103.64                 | 8.46                           |
| 2                                                   | *5260.00       | 102.6 AV                      |                   |                | 1.32 H                   | 121                        | 94.14                  | 8.46                           |
| 3                                                   | #10520.00      | 52.9 PK                       | 74.0              | -21.1          | 1.06 H                   | 135                        | 37.64                  | 15.26                          |
| 4                                                   | #10520.00      | 40.1 AV                       | 54.0              | -13.9          | 1.06 H                   | 135                        | 24.84                  | 15.26                          |
| 5                                                   | 15780.00       | 62.2 PK                       | 74.0              | -11.8          | 1.03 H                   | 0                          | 41.45                  | 20.75                          |
| 6                                                   | 15780.00       | 50.6 AV                       | 54.0              | -3.4           | 1.03 H                   | 0                          | 29.85                  | 20.75                          |
| 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                                                   | *5260.00       | 108.9 PK                      |                   |                | 1.13 V                   | 345                        | 100.44                 | 8.46                           |
| 2                                                   | *5260.00       | 99.4 AV                       |                   |                | 1.13 V                   | 345                        | 90.94                  | 8.46                           |
| 3                                                   | #10520.00      | 54.5 PK                       | 74.0              | -19.5          | 1.33 V                   | 105                        | 39.24                  | 15.26                          |
| 4                                                   | #10520.00      | 43.3 AV                       | 54.0              | -10.7          | 1.33 V                   | 105                        | 28.04                  | 15.26                          |
| 5                                                   | 15780.00       | 64.3 PK                       | 74.0              | -9.7           | 1.10 V                   | 327                        | 43.55                  | 20.75                          |
| 6                                                   | 15780.00       | 51.7 AV                       | 54.0              | -2.3           | 1.10 V                   | 327                        | 30.95                  | 20.75                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 60 | 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                                                   | *5300.00       | 112.2 PK                      |                   |                | 1.31 H                   | 125                        | 103.58                 | 8.62                           |
| 2                                                   | *5300.00       | 102.9 AV                      |                   |                | 1.31 H                   | 125                        | 94.28                  | 8.62                           |
| 3                                                   | 10600.00       | 53.7 PK                       | 74.0              | -20.3          | 1.07 H                   | 143                        | 38.17                  | 15.53                          |
| 4                                                   | 10600.00       | 40.4 AV                       | 54.0              | -13.6          | 1.07 H                   | 143                        | 24.87                  | 15.53                          |
| 5                                                   | 15900.00       | 62.1 PK                       | 74.0              | -11.9          | 1.01 H                   | 11                         | 40.80                  | 21.30                          |
| 6                                                   | 15900.00       | 50.9 AV                       | 54.0              | -3.1           | 1.01 H                   | 11                         | 29.60                  | 21.30                          |
| 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                                                   | *5300.00       | 108.6 PK                      |                   |                | 1.06 V                   | 359                        | 99.98                  | 8.62                           |
| 2                                                   | *5300.00       | 99.4 AV                       |                   |                | 1.06 V                   | 359                        | 90.78                  | 8.62                           |
| 3                                                   | 10600.00       | 54.1 PK                       | 74.0              | -19.9          | 1.32 V                   | 93                         | 38.57                  | 15.53                          |
| 4                                                   | 10600.00       | 43.1 AV                       | 54.0              | -10.9          | 1.32 V                   | 93                         | 27.57                  | 15.53                          |
| 5                                                   | 15900.00       | 64.9 PK                       | 74.0              | -9.1           | 1.16 V                   | 334                        | 43.60                  | 21.30                          |
| 6                                                   | 15900.00       | 52.2 AV                       | 54.0              | -1.8           | 1.16 V                   | 334                        | 30.90                  | 21.30                          |

**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.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 64 | 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   | *5320.00       | 111.0 PK                      |                   |                | 1.30 H                   | 123                        | 102.31                 | 8.69                           |
| 2   | *5320.00       | 101.7 AV                      |                   |                | 1.30 H                   | 123                        | 93.01                  | 8.69                           |
| 3   | 5350.00        | 73.0 PK                       | 74.0              | -1.0           | 1.30 H                   | 123                        | 64.20                  | 8.80                           |
| 4   | 5350.00        | 52.5 AV                       | 54.0              | -1.5           | 1.30 H                   | 123                        | 43.70                  | 8.80                           |
| 5   | 10640.00       | 53.9 PK                       | 74.0              | -20.1          | 1.00 H                   | 126                        | 38.36                  | 15.54                          |
| 6   | 10640.00       | 40.7 AV                       | 54.0              | -13.3          | 1.00 H                   | 126                        | 25.16                  | 15.54                          |
| 7   | 15960.00       | 61.7 PK                       | 74.0              | -12.3          | 1.02 H                   | 0                          | 40.88                  | 20.82                          |
| 8   | 15960.00       | 49.8 AV                       | 54.0              | -4.2           | 1.02 H                   | 0                          | 28.98                  | 20.82                          |

**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   | *5320.00       | 107.9 PK                      |                   |                | 1.05 V                   | 349                        | 99.21                  | 8.69                           |
| 2   | *5320.00       | 98.2 AV                       |                   |                | 1.05 V                   | 349                        | 89.51                  | 8.69                           |
| 3   | 5350.00        | 61.7 PK                       | 74.0              | -12.3          | 1.05 V                   | 349                        | 52.90                  | 8.80                           |
| 4   | 5350.00        | 44.7 AV                       | 54.0              | -9.3           | 1.05 V                   | 349                        | 35.90                  | 8.80                           |
| 5   | 10640.00       | 54.5 PK                       | 74.0              | -19.5          | 1.36 V                   | 98                         | 38.96                  | 15.54                          |
| 6   | 10640.00       | 43.6 AV                       | 54.0              | -10.4          | 1.36 V                   | 98                         | 28.06                  | 15.54                          |
| 7   | 15960.00       | 63.6 PK                       | 74.0              | -10.4          | 1.15 V                   | 327                        | 42.78                  | 20.82                          |
| 8   | 15960.00       | 50.8 AV                       | 54.0              | -3.2           | 1.15 V                   | 327                        | 29.98                  | 20.82                          |

**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.



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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 100 | 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   | 5460.00        | 61.5 PK                       | 74.0              | -12.5          | 1.52 H                   | 118                        | 52.31                  | 9.19                           |
| 2   | 5460.00        | 44.8 AV                       | 54.0              | -9.2           | 1.52 H                   | 118                        | 35.61                  | 9.19                           |
| 3   | #5470.00       | 70.3 PK                       | 74.0              | -3.7           | 1.52 H                   | 118                        | 61.08                  | 9.22                           |
| 4   | #5470.00       | 52.7 AV                       | 54.0              | -1.3           | 1.52 H                   | 118                        | 43.48                  | 9.22                           |
| 5   | *5500.00       | 111.3 PK                      |                   |                | 1.52 H                   | 118                        | 101.97                 | 9.33                           |
| 6   | *5500.00       | 101.3 AV                      |                   |                | 1.52 H                   | 118                        | 91.97                  | 9.33                           |
| 7   | 11000.00       | 53.2 PK                       | 74.0              | -20.8          | 1.01 H                   | 128                        | 36.25                  | 16.95                          |
| 8   | 11000.00       | 39.9 AV                       | 54.0              | -14.1          | 1.01 H                   | 128                        | 22.95                  | 16.95                          |
| 9   | #16500.00      | 61.5 PK                       | 74.0              | -12.5          | 1.00 H                   | 18                         | 38.46                  | 23.04                          |
| 10  | #16500.00      | 49.6 AV                       | 54.0              | -4.4           | 1.00 H                   | 18                         | 26.56                  | 23.04                          |

**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   | 5460.00        | 61.6 PK                       | 74.0              | -12.4          | 1.05 V                   | 34                         | 52.41                  | 9.19                           |
| 2   | 5460.00        | 44.7 AV                       | 54.0              | -9.3           | 1.05 V                   | 34                         | 35.51                  | 9.19                           |
| 3   | #5470.00       | 62.7 PK                       | 74.0              | -11.3          | 1.05 V                   | 347                        | 53.48                  | 9.22                           |
| 4   | #5470.00       | 45.6 AV                       | 54.0              | -8.4           | 1.05 V                   | 347                        | 36.38                  | 9.22                           |
| 5   | *5500.00       | 108.1 PK                      |                   |                | 1.05 V                   | 347                        | 98.77                  | 9.33                           |
| 6   | *5500.00       | 98.1 AV                       |                   |                | 1.05 V                   | 347                        | 88.77                  | 9.33                           |
| 7   | 11000.00       | 54.4 PK                       | 74.0              | -19.6          | 1.30 V                   | 116                        | 37.45                  | 16.95                          |
| 8   | 11000.00       | 43.1 AV                       | 54.0              | -10.9          | 1.30 V                   | 116                        | 26.15                  | 16.95                          |
| 9   | #16500.00      | 63.4 PK                       | 74.0              | -10.6          | 1.08 V                   | 341                        | 40.36                  | 23.04                          |
| 10  | #16500.00      | 50.7 AV                       | 54.0              | -3.3           | 1.08 V                   | 341                        | 27.66                  | 23.04                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.





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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 116 | 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                                                   | *5580.00       | 111.5 PK                      |                   |                | 1.31 H                   | 138                        | 102.03                 | 9.47                           |
| 2                                                   | *5580.00       | 102.5 AV                      |                   |                | 1.31 H                   | 138                        | 93.03                  | 9.47                           |
| 3                                                   | 11160.00       | 52.9 PK                       | 74.0              | -21.1          | 1.12 H                   | 134                        | 36.69                  | 16.21                          |
| 4                                                   | 11160.00       | 39.8 AV                       | 54.0              | -14.2          | 1.12 H                   | 134                        | 23.59                  | 16.21                          |
| 5                                                   | #16740.00      | 61.9 PK                       | 74.0              | -12.1          | 1.06 H                   | 0                          | 38.22                  | 23.68                          |
| 6                                                   | #16740.00      | 50.3 AV                       | 54.0              | -3.7           | 1.06 H                   | 0                          | 26.62                  | 23.68                          |
| 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                                                   | *5580.00       | 108.1 PK                      |                   |                | 1.05 V                   | 346                        | 98.63                  | 9.47                           |
| 2                                                   | *5580.00       | 99.1 AV                       |                   |                | 1.05 V                   | 346                        | 89.63                  | 9.47                           |
| 3                                                   | 11160.00       | 54.7 PK                       | 74.0              | -19.3          | 1.29 V                   | 91                         | 38.49                  | 16.21                          |
| 4                                                   | 11160.00       | 43.5 AV                       | 54.0              | -10.5          | 1.29 V                   | 91                         | 27.29                  | 16.21                          |
| 5                                                   | #16740.00      | 64.4 PK                       | 74.0              | -9.6           | 1.04 V                   | 324                        | 40.72                  | 23.68                          |
| 6                                                   | #16740.00      | 51.4 AV                       | 54.0              | -2.6           | 1.04 V                   | 324                        | 27.72                  | 23.68                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 132 | 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   | *5660.00       | 112.4 PK                      |                   |                | 1.33 H                   | 108                        | 102.67                 | 9.73                           |
| 2   | *5660.00       | 102.9 AV                      |                   |                | 1.33 H                   | 108                        | 93.17                  | 9.73                           |
| 3   | 11320.00       | 52.4 PK                       | 74.0              | -21.6          | 1.04 H                   | 123                        | 35.48                  | 16.92                          |
| 4   | 11320.00       | 39.8 AV                       | 54.0              | -14.2          | 1.04 H                   | 123                        | 22.88                  | 16.92                          |
| 5   | #16980.00      | 62.2 PK                       | 74.0              | -11.8          | 1.01 H                   | 0                          | 38.00                  | 24.20                          |
| 6   | #16980.00      | 50.6 AV                       | 54.0              | -3.4           | 1.01 H                   | 0                          | 26.40                  | 24.20                          |

**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   | *5660.00       | 109.2 PK                      |                   |                | 1.05 V                   | 350                        | 99.47                  | 9.73                           |
| 2   | *5660.00       | 100.1 AV                      |                   |                | 1.05 V                   | 350                        | 90.37                  | 9.73                           |
| 3   | 11320.00       | 54.7 PK                       | 74.0              | -19.3          | 1.28 V                   | 107                        | 37.78                  | 16.92                          |
| 4   | 11320.00       | 43.5 AV                       | 54.0              | -10.5          | 1.28 V                   | 107                        | 26.58                  | 16.92                          |
| 5   | #16980.00      | 64.0 PK                       | 74.0              | -10.0          | 1.05 V                   | 323                        | 39.80                  | 24.20                          |
| 6   | #16980.00      | 51.7 AV                       | 54.0              | -2.3           | 1.05 V                   | 323                        | 27.50                  | 24.20                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 140 | 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   | *5700.00       | 109.3 PK                      |                   |                | 1.47 H                   | 119                        | 99.42                  | 9.88                           |
| 2   | *5700.00       | 100.2 AV                      |                   |                | 1.47 H                   | 119                        | 90.32                  | 9.88                           |
| 3   | #5725.00       | 71.5 PK                       | 74.0              | -2.5           | 1.47 H                   | 119                        | 61.59                  | 9.91                           |
| 4   | #5725.00       | 51.8 AV                       | 54.0              | -2.2           | 1.47 H                   | 119                        | 41.89                  | 9.91                           |
| 5   | 11400.00       | 52.8 PK                       | 74.0              | -21.2          | 1.00 H                   | 127                        | 36.05                  | 16.75                          |
| 6   | 11400.00       | 39.6 AV                       | 54.0              | -14.4          | 1.00 H                   | 127                        | 22.85                  | 16.75                          |
| 7   | #17100.00      | 60.8 PK                       | 74.0              | -13.2          | 1.05 H                   | 25                         | 35.74                  | 25.06                          |
| 8   | #17100.00      | 49.2 AV                       | 54.0              | -4.8           | 1.05 H                   | 25                         | 24.14                  | 25.06                          |

**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   | *5700.00       | 105.7 PK                      |                   |                | 1.12 V                   | 339                        | 95.82                  | 9.88                           |
| 2   | *5700.00       | 96.8 AV                       |                   |                | 1.12 V                   | 339                        | 86.92                  | 9.88                           |
| 3   | #5725.00       | 61.3 PK                       | 74.0              | -12.7          | 1.12 V                   | 339                        | 51.39                  | 9.91                           |
| 4   | #5725.00       | 43.9 AV                       | 54.0              | -10.1          | 1.12 V                   | 339                        | 33.99                  | 9.91                           |
| 5   | 11400.00       | 55.2 PK                       | 74.0              | -18.8          | 1.30 V                   | 110                        | 38.45                  | 16.75                          |
| 6   | 11400.00       | 43.8 AV                       | 54.0              | -10.2          | 1.30 V                   | 110                        | 27.05                  | 16.75                          |
| 7   | #17100.00      | 64.0 PK                       | 74.0              | -10.0          | 1.04 V                   | 329                        | 38.94                  | 25.06                          |
| 8   | #17100.00      | 50.8 AV                       | 54.0              | -3.2           | 1.04 V                   | 329                        | 25.74                  | 25.06                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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# 802.11ac (VHT40)

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|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 38 | 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                                                   | 5150.00        | 66.3 PK                       | 74.0              | -7.7           | 1.63 H                   | 83                         | 58.07                  | 8.23                           |
| 2                                                   | 5150.00        | 52.7 AV                       | 54.0              | -1.3           | 1.63 H                   | 83                         | 44.47                  | 8.23                           |
| 3                                                   | *5190.00       | 103.0 PK                      |                   |                | 1.63 H                   | 83                         | 94.76                  | 8.24                           |
| 4                                                   | *5190.00       | 92.9 AV                       |                   |                | 1.63 H                   | 83                         | 84.66                  | 8.24                           |
| 5                                                   | #10380.00      | 54.2 PK                       | 74.0              | -19.8          | 1.04 H                   | 124                        | 39.14                  | 15.06                          |
| 6                                                   | #10380.00      | 43.1 AV                       | 54.0              | -10.9          | 1.04 H                   | 124                        | 28.04                  | 15.06                          |
| 7                                                   | 15570.00       | 62.7 PK                       | 74.0              | -11.3          | 1.02 H                   | 241                        | 41.84                  | 20.86                          |
| 8                                                   | 15570.00       | 49.9 AV                       | 54.0              | -4.1           | 1.02 H                   | 241                        | 29.04                  | 20.86                          |
| 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                                                   | 5150.00        | 61.8 PK                       | 74.0              | -12.2          | 1.09 V                   | 339                        | 53.57                  | 8.23                           |
| 2                                                   | 5150.00        | 44.6 AV                       | 54.0              | -9.4           | 1.09 V                   | 339                        | 36.37                  | 8.23                           |
| 3                                                   | *5190.00       | 99.7 PK                       |                   |                | 1.09 V                   | 339                        | 91.46                  | 8.24                           |
| 4                                                   | *5190.00       | 89.5 AV                       |                   |                | 1.09 V                   | 339                        | 81.26                  | 8.24                           |
| 5                                                   | #10380.00      | 54.8 PK                       | 74.0              | -19.2          | 1.33 V                   | 107                        | 39.74                  | 15.06                          |
| 6                                                   | #10380.00      | 43.6 AV                       | 54.0              | -10.4          | 1.33 V                   | 107                        | 28.54                  | 15.06                          |
| 7                                                   | 15570.00       | 63.2 PK                       | 74.0              | -10.8          | 1.04 V                   | 316                        | 42.34                  | 20.86                          |
| 8                                                   | 15570.00       | 50.1 AV                       | 54.0              | -3.9           | 1.04 V                   | 316                        | 29.24                  | 20.86                          |

## 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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 46 | 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                                                   | *5230.00       | 106.4 PK                      |                   |                | 1.57 H                   | 100                        | 98.04                  | 8.36                           |
| 2                                                   | *5230.00       | 96.1 AV                       |                   |                | 1.57 H                   | 100                        | 87.74                  | 8.36                           |
| 3                                                   | #10460.00      | 54.0 PK                       | 74.0              | -20.0          | 1.00 H                   | 134                        | 38.79                  | 15.21                          |
| 4                                                   | #10460.00      | 40.4 AV                       | 54.0              | -13.6          | 1.00 H                   | 134                        | 25.19                  | 15.21                          |
| 5                                                   | 15690.00       | 61.5 PK                       | 74.0              | -12.5          | 1.00 H                   | 33                         | 40.59                  | 20.91                          |
| 6                                                   | 15690.00       | 49.4 AV                       | 54.0              | -4.6           | 1.00 H                   | 33                         | 28.49                  | 20.91                          |
| 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                                                   | *5230.00       | 103.1 PK                      |                   |                | 1.07 V                   | 342                        | 94.74                  | 8.36                           |
| 2                                                   | *5230.00       | 93.0 AV                       |                   |                | 1.07 V                   | 342                        | 84.64                  | 8.36                           |
| 3                                                   | #10460.00      | 54.9 PK                       | 74.0              | -19.1          | 1.35 V                   | 117                        | 39.69                  | 15.21                          |
| 4                                                   | #10460.00      | 43.4 AV                       | 54.0              | -10.6          | 1.35 V                   | 117                        | 28.19                  | 15.21                          |
| 5                                                   | 15690.00       | 64.0 PK                       | 74.0              | -10.0          | 1.05 V                   | 331                        | 43.09                  | 20.91                          |
| 6                                                   | 15690.00       | 50.8 AV                       | 54.0              | -3.2           | 1.05 V                   | 331                        | 29.89                  | 20.91                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 54 | 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                                                   | *5270.00       | 107.7 PK                      |                   |                | 1.63 H                   | 86                         | 99.20                  | 8.50                           |
| 2                                                   | *5270.00       | 97.2 AV                       |                   |                | 1.63 H                   | 86                         | 88.70                  | 8.50                           |
| 3                                                   | #10540.00      | 54.2 PK                       | 74.0              | -19.8          | 1.00 H                   | 133                        | 38.87                  | 15.33                          |
| 4                                                   | #10540.00      | 43.1 AV                       | 54.0              | -10.9          | 1.00 H                   | 133                        | 27.77                  | 15.33                          |
| 5                                                   | 15810.00       | 62.9 PK                       | 74.0              | -11.1          | 1.00 H                   | 234                        | 42.14                  | 20.76                          |
| 6                                                   | 15810.00       | 50.1 AV                       | 54.0              | -3.9           | 1.00 H                   | 234                        | 29.34                  | 20.76                          |
| 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                                                   | *5270.00       | 104.1 PK                      |                   |                | 1.05 V                   | 341                        | 95.60                  | 8.50                           |
| 2                                                   | *5270.00       | 93.8 AV                       |                   |                | 1.05 V                   | 341                        | 85.30                  | 8.50                           |
| 3                                                   | #10540.00      | 54.8 PK                       | 74.0              | -19.2          | 1.27 V                   | 113                        | 39.47                  | 15.33                          |
| 4                                                   | #10540.00      | 43.6 AV                       | 54.0              | -10.4          | 1.27 V                   | 113                        | 28.27                  | 15.33                          |
| 5                                                   | 15810.00       | 64.6 PK                       | 74.0              | -9.4           | 1.05 V                   | 314                        | 43.84                  | 20.76                          |
| 6                                                   | 15810.00       | 51.2 AV                       | 54.0              | -2.8           | 1.05 V                   | 314                        | 30.44                  | 20.76                          |

#### 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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 62 | 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   | *5310.00       | 103.5 PK                      |                   |                | 1.63 H                   | 84                         | 94.85                  | 8.65                           |
| 2   | *5310.00       | 93.3 AV                       |                   |                | 1.63 H                   | 84                         | 84.65                  | 8.65                           |
| 3   | 5350.00        | 68.6 PK                       | 74.0              | -5.4           | 1.63 H                   | 84                         | 59.80                  | 8.80                           |
| 4   | 5350.00        | 53.1 AV                       | 54.0              | -0.9           | 1.63 H                   | 84                         | 44.30                  | 8.80                           |
| 5   | 10620.00       | 54.6 PK                       | 74.0              | -19.4          | 1.07 H                   | 133                        | 39.07                  | 15.53                          |
| 6   | 10620.00       | 43.3 AV                       | 54.0              | -10.7          | 1.07 H                   | 133                        | 27.77                  | 15.53                          |
| 7   | 15930.00       | 62.1 PK                       | 74.0              | -11.9          | 1.00 H                   | 253                        | 41.03                  | 21.07                          |
| 8   | 15930.00       | 49.4 AV                       | 54.0              | -4.6           | 1.00 H                   | 253                        | 28.33                  | 21.07                          |

**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   | *5310.00       | 100.2 PK                      |                   |                | 1.02 V                   | 343                        | 91.55                  | 8.65                           |
| 2   | *5310.00       | 90.1 AV                       |                   |                | 1.02 V                   | 343                        | 81.45                  | 8.65                           |
| 3   | 5350.00        | 61.8 PK                       | 74.0              | -12.2          | 1.02 V                   | 343                        | 53.00                  | 8.80                           |
| 4   | 5350.00        | 44.5 AV                       | 54.0              | -9.5           | 1.02 V                   | 343                        | 35.70                  | 8.80                           |
| 5   | 10620.00       | 55.0 PK                       | 74.0              | -19.0          | 1.34 V                   | 113                        | 39.47                  | 15.53                          |
| 6   | 10620.00       | 43.6 AV                       | 54.0              | -10.4          | 1.34 V                   | 113                        | 28.07                  | 15.53                          |
| 7   | 15930.00       | 63.7 PK                       | 74.0              | -10.3          | 1.09 V                   | 334                        | 42.63                  | 21.07                          |
| 8   | 15930.00       | 50.4 AV                       | 54.0              | -3.6           | 1.09 V                   | 334                        | 29.33                  | 21.07                          |

**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.



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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 102 | 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   | 5460.00        | 60.0 PK                       | 74.0              | -14.0          | 1.21 H                   | 134                        | 50.81                  | 9.19                           |
| 2   | 5460.00        | 47.2 AV                       | 54.0              | -6.8           | 1.21 H                   | 134                        | 38.01                  | 9.19                           |
| 3   | #5470.00       | 65.9 PK                       | 74.0              | -8.1           | 1.21 H                   | 134                        | 56.68                  | 9.22                           |
| 4   | #5470.00       | 52.9 AV                       | 54.0              | -1.1           | 1.21 H                   | 134                        | 43.68                  | 9.22                           |
| 5   | *5510.00       | 102.9 PK                      |                   |                | 1.21 H                   | 134                        | 93.55                  | 9.35                           |
| 6   | *5510.00       | 92.6 AV                       |                   |                | 1.21 H                   | 134                        | 83.25                  | 9.35                           |
| 7   | 11020.00       | 53.4 PK                       | 74.0              | -20.6          | 1.00 H                   | 115                        | 36.59                  | 16.81                          |
| 8   | 11020.00       | 40.2 AV                       | 54.0              | -13.8          | 1.00 H                   | 115                        | 23.39                  | 16.81                          |
| 9   | #16530.00      | 62.1 PK                       | 74.0              | -11.9          | 1.00 H                   | 5                          | 38.94                  | 23.16                          |
| 10  | #16530.00      | 49.9 AV                       | 54.0              | -4.1           | 1.00 H                   | 5                          | 26.74                  | 23.16                          |

**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   | 5460.00        | 61.0 PK                       | 74.0              | -13.0          | 1.05 V                   | 347                        | 51.81                  | 9.19                           |
| 2   | 5460.00        | 44.1 AV                       | 54.0              | -9.9           | 1.05 V                   | 347                        | 34.91                  | 9.19                           |
| 3   | #5470.00       | 62.6 PK                       | 74.0              | -11.4          | 1.05 V                   | 347                        | 53.38                  | 9.22                           |
| 4   | #5470.00       | 45.8 AV                       | 54.0              | -8.2           | 1.05 V                   | 347                        | 36.58                  | 9.22                           |
| 5   | *5510.00       | 99.2 PK                       |                   |                | 1.05 V                   | 347                        | 89.85                  | 9.35                           |
| 6   | *5510.00       | 89.1 AV                       |                   |                | 1.05 V                   | 347                        | 79.75                  | 9.35                           |
| 7   | 11020.00       | 54.6 PK                       | 74.0              | -19.4          | 1.28 V                   | 96                         | 37.79                  | 16.81                          |
| 8   | 11020.00       | 43.6 AV                       | 54.0              | -10.4          | 1.28 V                   | 96                         | 26.79                  | 16.81                          |
| 9   | #16530.00      | 63.3 PK                       | 74.0              | -10.7          | 1.01 V                   | 319                        | 40.14                  | 23.16                          |
| 10  | #16530.00      | 50.0 AV                       | 54.0              | -4.0           | 1.01 V                   | 319                        | 26.84                  | 23.16                          |

**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. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.





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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 110 | 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                                                   | *5550.00       | 110.4 PK                      |                   |                | 1.45 H                   | 120                        | 100.98                 | 9.42                           |
| 2                                                   | *5550.00       | 99.5 AV                       |                   |                | 1.45 H                   | 120                        | 90.08                  | 9.42                           |
| 3                                                   | 11100.00       | 53.7 PK                       | 74.0              | -20.3          | 1.05 H                   | 126                        | 37.38                  | 16.32                          |
| 4                                                   | 11100.00       | 42.7 AV                       | 54.0              | -11.3          | 1.05 H                   | 126                        | 26.38                  | 16.32                          |
| 5                                                   | #16650.00      | 62.4 PK                       | 74.0              | -11.6          | 1.01 H                   | 239                        | 38.95                  | 23.45                          |
| 6                                                   | #16650.00      | 49.9 AV                       | 54.0              | -4.1           | 1.01 H                   | 239                        | 26.45                  | 23.45                          |
| 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                                                   | *5550.00       | 107.2 PK                      |                   |                | 1.05 V                   | 342                        | 97.78                  | 9.42                           |
| 2                                                   | *5550.00       | 96.2 AV                       |                   |                | 1.05 V                   | 342                        | 86.78                  | 9.42                           |
| 3                                                   | 11100.00       | 55.8 PK                       | 74.0              | -18.2          | 1.28 V                   | 97                         | 39.48                  | 16.32                          |
| 4                                                   | 11100.00       | 44.2 AV                       | 54.0              | -9.8           | 1.28 V                   | 97                         | 27.88                  | 16.32                          |
| 5                                                   | #16650.00      | 64.1 PK                       | 74.0              | -9.9           | 1.00 V                   | 331                        | 40.65                  | 23.45                          |
| 6                                                   | #16650.00      | 50.8 AV                       | 54.0              | -3.2           | 1.00 V                   | 331                        | 27.35                  | 23.45                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 134 | 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   | *5670.00       | 108.2 PK                      |                   |                | 1.46 H                   | 121                        | 98.43                  | 9.77                           |
| 2   | *5670.00       | 97.8 AV                       |                   |                | 1.46 H                   | 121                        | 88.03                  | 9.77                           |
| 3   | #5725.00       | 67.9 PK                       | 74.0              | -6.1           | 1.46 H                   | 121                        | 57.99                  | 9.91                           |
| 4   | #5725.00       | 52.7 AV                       | 54.0              | -1.3           | 1.46 H                   | 121                        | 42.79                  | 9.91                           |
| 5   | 11340.00       | 54.3 PK                       | 74.0              | -19.7          | 1.00 H                   | 130                        | 37.42                  | 16.88                          |
| 6   | 11340.00       | 43.1 AV                       | 54.0              | -10.9          | 1.00 H                   | 130                        | 26.22                  | 16.88                          |
| 7   | #17010.00      | 62.4 PK                       | 74.0              | -11.6          | 1.05 H                   | 249                        | 38.15                  | 24.25                          |
| 8   | #17010.00      | 49.8 AV                       | 54.0              | -4.2           | 1.05 H                   | 249                        | 25.55                  | 24.25                          |

**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   | *5670.00       | 105.1 PK                      |                   |                | 1.09 V                   | 341                        | 95.33                  | 9.77                           |
| 2   | *5670.00       | 94.7 AV                       |                   |                | 1.09 V                   | 341                        | 84.93                  | 9.77                           |
| 3   | #5725.00       | 61.4 PK                       | 74.0              | -12.6          | 1.09 V                   | 341                        | 51.49                  | 9.91                           |
| 4   | #5725.00       | 43.9 AV                       | 54.0              | -10.1          | 1.09 V                   | 341                        | 33.99                  | 9.91                           |
| 5   | 11340.00       | 54.6 PK                       | 74.0              | -19.4          | 1.30 V                   | 103                        | 37.72                  | 16.88                          |
| 6   | 11340.00       | 43.4 AV                       | 54.0              | -10.6          | 1.30 V                   | 103                        | 26.52                  | 16.88                          |
| 7   | #17010.00      | 63.1 PK                       | 74.0              | -10.9          | 1.02 V                   | 328                        | 38.85                  | 24.25                          |
| 8   | #17010.00      | 50.1 AV                       | 54.0              | -3.9           | 1.02 V                   | 328                        | 25.85                  | 24.25                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



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## 802.11ac (VHT80)

|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 42 | 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                                                   | 5150.00        | 70.1 PK                       | 74.0              | -3.9           | 1.38 H                   | 87                         | 61.87                  | 8.23                           |
| 2                                                   | 5150.00        | 53.0 AV                       | 54.0              | -1.0           | 1.38 H                   | 87                         | 44.77                  | 8.23                           |
| 3                                                   | *5210.00       | 99.4 PK                       |                   |                | 1.38 H                   | 87                         | 91.13                  | 8.27                           |
| 4                                                   | *5210.00       | 90.0 AV                       |                   |                | 1.38 H                   | 87                         | 81.73                  | 8.27                           |
| 5                                                   | #10420.00      | 54.9 PK                       | 74.0              | -19.1          | 1.05 H                   | 115                        | 39.69                  | 15.21                          |
| 6                                                   | #10420.00      | 43.5 AV                       | 54.0              | -10.5          | 1.05 H                   | 115                        | 28.29                  | 15.21                          |
| 7                                                   | 15630.00       | 62.5 PK                       | 74.0              | -11.5          | 1.00 H                   | 254                        | 41.61                  | 20.89                          |
| 8                                                   | 15630.00       | 49.4 AV                       | 54.0              | -4.6           | 1.00 H                   | 254                        | 28.51                  | 20.89                          |
| 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                                                   | 5150.00        | 61.5 PK                       | 74.0              | -12.5          | 1.05 V                   | 340                        | 53.27                  | 8.23                           |
| 2                                                   | 5150.00        | 44.2 AV                       | 54.0              | -9.8           | 1.05 V                   | 340                        | 35.97                  | 8.23                           |
| 3                                                   | *5210.00       | 96.1 PK                       |                   |                | 1.05 V                   | 340                        | 87.83                  | 8.27                           |
| 4                                                   | *5210.00       | 86.7 AV                       |                   |                | 1.05 V                   | 340                        | 78.43                  | 8.27                           |
| 5                                                   | #10420.00      | 54.3 PK                       | 74.0              | -19.7          | 1.28 V                   | 118                        | 39.09                  | 15.21                          |
| 6                                                   | #10420.00      | 43.0 AV                       | 54.0              | -11.0          | 1.28 V                   | 118                        | 27.79                  | 15.21                          |
| 7                                                   | 15630.00       | 62.9 PK                       | 74.0              | -11.1          | 1.06 V                   | 313                        | 42.01                  | 20.89                          |
| 8                                                   | 15630.00       | 49.9 AV                       | 54.0              | -4.1           | 1.06 V                   | 313                        | 29.01                  | 20.89                          |

## 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.
6. " # ": The radiated frequency is out of the restricted band.



A D T

|                 |               |                      |              |
|-----------------|---------------|----------------------|--------------|
| CHANNEL         | TX Channel 58 | 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   | 5150.00        | 51.7 PK                       | 74.0              | -22.3          | 1.34 H                   | 85                         | 43.47                  | 8.23                           |
| 2   | 5150.00        | 40.7 AV                       | 54.0              | -13.3          | 1.34 H                   | 85                         | 32.47                  | 8.23                           |
| 3   | *5290.00       | 98.9 PK                       |                   |                | 1.34 H                   | 85                         | 90.31                  | 8.59                           |
| 4   | *5290.00       | 90.1 AV                       |                   |                | 1.34 H                   | 85                         | 81.51                  | 8.59                           |
| 5   | 5361.10        | 67.1 PK                       | 74.0              | -6.9           | 1.34 H                   | 85                         | 58.26                  | 8.84                           |
| 6   | 5361.10        | 53.1 AV                       | 54.0              | -0.9           | 1.34 H                   | 85                         | 44.26                  | 8.84                           |
| 7   | #10580.00      | 53.1 PK                       | 74.0              | -20.9          | 1.00 H                   | 129                        | 37.64                  | 15.46                          |
| 8   | #10580.00      | 39.6 AV                       | 54.0              | -14.4          | 1.00 H                   | 129                        | 24.14                  | 15.46                          |
| 9   | 15870.00       | 61.2 PK                       | 74.0              | -12.8          | 1.00 H                   | 8                          | 40.09                  | 21.11                          |
| 10  | 15870.00       | 49.6 AV                       | 54.0              | -4.4           | 1.00 H                   | 8                          | 28.49                  | 21.11                          |

**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   | 5150.00        | 62.5 PK                       | 74.0              | -11.5          | 1.10 V                   | 335                        | 54.27                  | 8.23                           |
| 2   | 5150.00        | 45.5 AV                       | 54.0              | -8.5           | 1.10 V                   | 335                        | 37.27                  | 8.23                           |
| 3   | *5290.00       | 96.0 PK                       |                   |                | 1.10 V                   | 335                        | 87.41                  | 8.59                           |
| 4   | *5290.00       | 86.7 AV                       |                   |                | 1.10 V                   | 335                        | 78.11                  | 8.59                           |
| 5   | 5361.10        | 61.3 PK                       | 74.0              | -12.7          | 1.10 V                   | 335                        | 52.46                  | 8.84                           |
| 6   | 5361.10        | 43.9 AV                       | 54.0              | -10.1          | 1.10 V                   | 335                        | 35.06                  | 8.84                           |
| 7   | #10580.00      | 54.6 PK                       | 74.0              | -19.4          | 1.36 V                   | 95                         | 39.14                  | 15.46                          |
| 8   | #10580.00      | 43.7 AV                       | 54.0              | -10.3          | 1.36 V                   | 95                         | 28.24                  | 15.46                          |
| 9   | 15870.00       | 63.2 PK                       | 74.0              | -10.8          | 1.07 V                   | 338                        | 42.09                  | 21.11                          |
| 10  | 15870.00       | 49.9 AV                       | 54.0              | -4.1           | 1.07 V                   | 338                        | 28.79                  | 21.11                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.



A D T

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 106 | 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   | 5350.00        | 67.0 PK                       | 74.0              | -7.0           | 1.26 H                   | 123                        | 58.20                  | 8.80                           |
| 2   | 5350.00        | 52.4 AV                       | 54.0              | -1.6           | 1.26 H                   | 123                        | 43.60                  | 8.80                           |
| 3   | #5470.00       | 70.3 PK                       | 74.0              | -3.7           | 1.26 H                   | 123                        | 61.08                  | 9.22                           |
| 4   | #5470.00       | 52.5 AV                       | 54.0              | -1.5           | 1.26 H                   | 123                        | 43.28                  | 9.22                           |
| 5   | *5530.00       | 99.7 PK                       |                   |                | 1.26 H                   | 123                        | 90.31                  | 9.39                           |
| 6   | *5530.00       | 90.5 AV                       |                   |                | 1.26 H                   | 123                        | 81.11                  | 9.39                           |
| 7   | 11060.00       | 53.0 PK                       | 74.0              | -21.0          | 1.00 H                   | 132                        | 36.43                  | 16.57                          |
| 8   | 11060.00       | 39.7 AV                       | 54.0              | -14.3          | 1.00 H                   | 132                        | 23.13                  | 16.57                          |
| 9   | #16590.00      | 61.6 PK                       | 74.0              | -12.4          | 1.00 H                   | 28                         | 38.19                  | 23.41                          |
| 10  | #16590.00      | 49.7 AV                       | 54.0              | -4.3           | 1.00 H                   | 28                         | 26.29                  | 23.41                          |

**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   | 5350.00        | 61.1 PK                       | 74.0              | -12.9          | 1.07 V                   | 343                        | 52.30                  | 8.80                           |
| 2   | 5350.00        | 44.0 AV                       | 54.0              | -10.0          | 1.07 V                   | 343                        | 35.20                  | 8.80                           |
| 3   | #5470.00       | 62.1 PK                       | 74.0              | -11.9          | 1.07 V                   | 343                        | 52.88                  | 9.22                           |
| 4   | #5470.00       | 45.2 AV                       | 54.0              | -8.8           | 1.07 V                   | 343                        | 35.98                  | 9.22                           |
| 5   | *5530.00       | 96.4 PK                       |                   |                | 1.07 V                   | 343                        | 87.01                  | 9.39                           |
| 6   | *5530.00       | 86.7 AV                       |                   |                | 1.07 V                   | 343                        | 77.31                  | 9.39                           |
| 7   | 11060.00       | 54.9 PK                       | 74.0              | -19.1          | 1.33 V                   | 117                        | 38.33                  | 16.57                          |
| 8   | 11060.00       | 43.6 AV                       | 54.0              | -10.4          | 1.33 V                   | 117                        | 27.03                  | 16.57                          |
| 9   | #16590.00      | 63.6 PK                       | 74.0              | -10.4          | 1.04 V                   | 341                        | 40.19                  | 23.41                          |
| 10  | #16590.00      | 50.4 AV                       | 54.0              | -3.6           | 1.04 V                   | 341                        | 26.99                  | 23.41                          |

**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.
6. " # ": The radiated frequency is out of the restricted band.

### 4.3 TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

| Frequency Band   | Limit                                         |
|------------------|-----------------------------------------------|
| 5.15 – 5.25GHz   | The lesser of 50mW (17dBm) or 4dBm + 10logB   |
| 5.25 – 5.35GHz   | The lesser of 250mW (24dBm) or 11dBm + 10logB |
| 5.47 – 5.725GHz  | The lesser of 250mW (24dBm) or 11dBm + 10logB |
| 5.725 – 5.825GHz | The lesser of 1W (30dBm) or 17dBm + 10logB    |

**Note:** Where B is the 26dB emission bandwidth in MHz.

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

Array Gain = 0 dB (i.e., no array gain) for  $NANT \leq 4$ ;

Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any NANT;

Array Gain =  $5 \log(NANT/NSS)$  dB or 3 dB, whichever is less for 20-MHz channel widths with  $NANT \geq 5$ .

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

## 4.3.2 TEST INSTRUMENTS

### FOR POWER OUTPUT MEASUREMENT

| 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 : May 22, 2014

### FOR 26dB OCCUPIED BANDWIDTH

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| SPECTRUM ANALYZER<br>R&S   | FSV 40    | 100964     | July 15, 2013   | July 14, 2014    |

#### 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 : May 22, 2014

## 4.3.3 TEST PROCEDURE

### FOR POWER OUTPUT MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

### FOR 26dB OCCUPIED BANDWIDTH

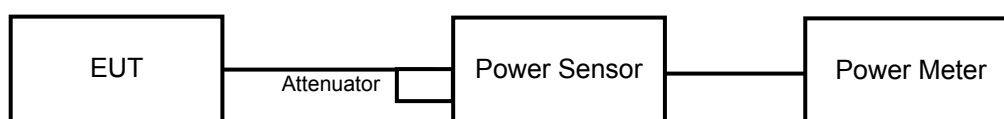
1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### 4.3.4 DEVIATION FROM TEST STANDARD

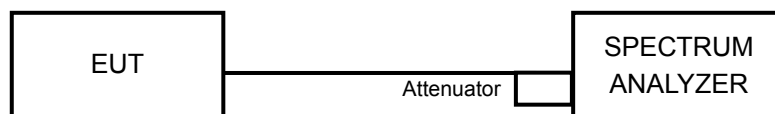
No deviation

#### 4.3.5 TEST SETUP

##### FOR POWER OUTPUT MEASUREMENT



##### FOR 26dB OCCUPIED BANDWIDTH



#### 4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



### 4.3.7 TEST RESULTS

#### 802.11a

| CHAN. | CHAN. FREQ. (MHz) | AVERAGE POWER (dBm) |         | TOTAL POWER (mW) | TOTAL POWER (dBm) | POWER LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|---------------------|---------|------------------|-------------------|-------------------|-------------|
|       |                   | CHAIN 0             | CHAIN 1 |                  |                   |                   |             |
| 36    | 5180              | 11.41               | 11.92   | 29.396           | 14.68             | 16.96             | PASS        |
| 40    | 5200              | 11.20               | 11.66   | 27.838           | 14.45             | 16.99             | PASS        |
| 48    | 5240              | 11.35               | 11.81   | 28.817           | 14.60             | 16.95             | PASS        |
| 52    | 5260              | 15.50               | 15.41   | 70.235           | 18.47             | 23.98             | PASS        |
| 60    | 5300              | 15.13               | 15.20   | 65.697           | 18.18             | 24.00             | PASS        |
| 64    | 5320              | 14.28               | 14.31   | 53.769           | 17.31             | 24.00             | PASS        |
| 100   | 5500              | 14.31               | 15.37   | 61.412           | 17.88             | 23.97             | PASS        |
| 116   | 5580              | 15.38               | 16.02   | 74.508           | 18.72             | 24.00             | PASS        |
| 132   | 5660              | 15.11               | 15.39   | 67.028           | 18.26             | 24.00             | PASS        |
| 140   | 5700              | 13.17               | 13.45   | 42.88            | 16.32             | 24.00             | PASS        |

#### 26dB OCCUPIED BANDWIDTH:

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc BANDWIDTH (MHz) |         |
|---------|-------------------------|-----------------------|---------|
|         |                         | CHAIN 0               | CHAIN 1 |
| 36      | 5180                    | 19.91                 | 19.81   |
| 40      | 5200                    | 20.20                 | 19.91   |
| 48      | 5240                    | 20.05                 | 19.73   |
| 52      | 5260                    | 26.66                 | 19.88   |
| 60      | 5300                    | 25.73                 | 22.11   |
| 64      | 5320                    | 20.59                 | 20.01   |
| 100     | 5500                    | 19.97                 | 19.85   |
| 116     | 5580                    | 22.83                 | 20.37   |
| 132     | 5660                    | 31.95                 | 19.96   |
| 140     | 5700                    | 20.16                 | 20.23   |

**Note:** For output power limitation is determined based on 26dBc bandwidth.

| Power Limit = 4dBm + 10logB < UNII Band 1>    |            |             |                                  |
|-----------------------------------------------|------------|-------------|----------------------------------|
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 36                                            | 5180       | 19.81       | 16.96 < 17                       |
| 40                                            | 5200       | 19.91       | 16.99 < 17                       |
| 48                                            | 5240       | 19.73       | 16.95 < 17                       |
| Power Limit = 11dBm + 10logB < UNII Band 2~3> |            |             |                                  |
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 52                                            | 5260       | 19.88       | 23.98 < 24                       |
| 60                                            | 5300       | 22.11       | 24.44 > 24                       |
| 64                                            | 5320       | 20.01       | 24.01 > 24                       |
| 100                                           | 5500       | 19.85       | 23.97 < 24                       |
| 116                                           | 5580       | 20.37       | 24.08 > 24                       |
| 132                                           | 5660       | 19.96       | 24 = 24                          |
| 140                                           | 5700       | 20.16       | 24.04 > 24                       |

### 802.11ac (VHT20)

| CHAN. | CHAN. FREQ. (MHz) | AVERAGE POWER (dBm) |         | TOTAL POWER (mW) | TOTAL POWER (dBm) | POWER LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|---------------------|---------|------------------|-------------------|-------------------|-------------|
|       |                   | CHAIN 0             | CHAIN 1 |                  |                   |                   |             |
| 36    | 5180              | 12.07               | 12.77   | 35.029           | 15.44             | 17                | PASS        |
| 40    | 5200              | 13.45               | 13.77   | 45.954           | 16.62             | 17                | PASS        |
| 48    | 5240              | 13.26               | 13.89   | 45.675           | 16.60             | 17                | PASS        |
| 52    | 5260              | 15.23               | 15.60   | 69.651           | 18.43             | 24                | PASS        |
| 60    | 5300              | 15.32               | 15.39   | 68.635           | 18.37             | 24                | PASS        |
| 64    | 5320              | 13.27               | 13.51   | 43.671           | 16.40             | 24                | PASS        |
| 100   | 5500              | 13.43               | 13.35   | 43.656           | 16.40             | 24                | PASS        |
| 116   | 5580              | 15.45               | 16.12   | 76.001           | 18.81             | 24                | PASS        |
| 132   | 5660              | 15.19               | 15.62   | 69.512           | 18.42             | 24                | PASS        |
| 140   | 5700              | 11.51               | 11.83   | 29.399           | 14.68             | 24                | PASS        |

### 26dB OCCUPIED BANDWIDTH:

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc BANDWIDTH (MHz) |         |
|---------|-------------------------|-----------------------|---------|
|         |                         | CHAIN 0               | CHAIN 1 |
| 36      | 5180                    | 20.39                 | 20.34   |
| 40      | 5200                    | 20.49                 | 20.33   |
| 48      | 5240                    | 22.83                 | 20.29   |
| 52      | 5260                    | 27.34                 | 20.40   |
| 60      | 5300                    | 31.81                 | 28.74   |
| 64      | 5320                    | 20.74                 | 20.39   |
| 100     | 5500                    | 20.39                 | 20.14   |
| 116     | 5580                    | 29.20                 | 23.39   |
| 132     | 5660                    | 31.93                 | 21.44   |
| 140     | 5700                    | 20.41                 | 20.30   |

**Note:** For output power limitation is determined based on 26dBc bandwidth.

| Power Limit = 4dBm + 10logB < UNII Band 1>    |            |             |                                  |
|-----------------------------------------------|------------|-------------|----------------------------------|
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 36                                            | 5180       | 20.34       | 17.08 > 17                       |
| 40                                            | 5200       | 20.33       | 17.08 > 17                       |
| 48                                            | 5240       | 20.29       | 17.07 > 17                       |
| Power Limit = 11dBm + 10logB < UNII Band 2~3> |            |             |                                  |
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 52                                            | 5260       | 20.40       | 24.09 > 24                       |
| 60                                            | 5300       | 28.74       | 25.58 > 24                       |
| 64                                            | 5320       | 20.39       | 24.09 > 24                       |
| 100                                           | 5500       | 20.14       | 24.04 > 24                       |
| 116                                           | 5580       | 23.39       | 24.69 > 24                       |
| 132                                           | 5660       | 21.44       | 24.31 > 24                       |
| 140                                           | 5700       | 20.30       | 24.07 > 24                       |

### 802.11ac (VHT40)

| CHAN. | CHAN. FREQ. (MHz) | AVERAGE POWER (dBm) |         | TOTAL POWER (mW) | TOTAL POWER (dBm) | POWER LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|---------------------|---------|------------------|-------------------|-------------------|-------------|
|       |                   | CHAIN 0             | CHAIN 1 |                  |                   |                   |             |
| 38    | 5190              | 7.01                | 7.95    | 11.26            | 10.52             | 17                | PASS        |
| 46    | 5230              | 12.73               | 13.54   | 41.344           | 16.16             | 17                | PASS        |
| 54    | 5270              | 14.67               | 14.90   | 60.212           | 17.80             | 24                | PASS        |
| 62    | 5310              | 11.83               | 12.17   | 31.723           | 15.01             | 24                | PASS        |
| 102   | 5510              | 9.91                | 9.88    | 19.522           | 12.91             | 24                | PASS        |
| 110   | 5550              | 15.11               | 15.46   | 67.59            | 18.30             | 24                | PASS        |
| 134   | 5670              | 13.10               | 13.13   | 40.976           | 16.13             | 24                | PASS        |

### 26dB OCCUPIED BANDWIDTH:

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc BANDWIDTH (MHz) |         |
|---------|-------------------------|-----------------------|---------|
|         |                         | CHAIN 0               | CHAIN 1 |
| 38      | 5190                    | 41.75                 | 41.56   |
| 46      | 5230                    | 42.47                 | 42.24   |
| 54      | 5270                    | 42.32                 | 48.43   |
| 62      | 5310                    | 50.88                 | 41.56   |
| 102     | 5510                    | 41.80                 | 41.49   |
| 110     | 5550                    | 55.48                 | 58.62   |
| 134     | 5670                    | 41.97                 | 41.72   |

**Note:** For output power limitation is determined based on 26dBc bandwidth.

| Power Limit = 4dBm + 10logB < UNII Band 1>    |            |             |                                  |
|-----------------------------------------------|------------|-------------|----------------------------------|
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 38                                            | 5190       | 41.56       | 20.18 > 17                       |
| 46                                            | 5230       | 42.24       | 20.25 > 17                       |
| Power Limit = 11dBm + 10logB < UNII Band 2~3> |            |             |                                  |
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 54                                            | 5270       | 42.32       | 27.26 > 24                       |
| 62                                            | 5310       | 41.56       | 27.18 > 24                       |
| 102                                           | 5510       | 41.49       | 27.17 > 24                       |
| 110                                           | 5550       | 55.48       | 28.44 > 24                       |
| 134                                           | 5670       | 41.72       | 27.2 > 24                        |

### 802.11ac (VHT80)

| CHAN. | CHAN. FREQ. (MHz) | AVERAGE POWER (dBm) |         | TOTAL POWER (mW) | TOTAL POWER (dBm) | POWER LIMIT (dBm) | PASS / FAIL |
|-------|-------------------|---------------------|---------|------------------|-------------------|-------------------|-------------|
|       |                   | CHAIN 0             | CHAIN 1 |                  |                   |                   |             |
| 42    | 5210              | 7.68                | 8.81    | 13.464           | 11.29             | 17                | PASS        |
| 58    | 5290              | 8.71                | 9.78    | 16.936           | 12.29             | 24                | PASS        |
| 106   | 5530              | 8.72                | 9.39    | 16.137           | 12.08             | 24                | PASS        |

### 26dB OCCUPIED BANDWIDTH:

| CHANNEL | CHANNEL FREQUENCY (MHz) | 26dBc BANDWIDTH (MHz) |         |
|---------|-------------------------|-----------------------|---------|
|         |                         | CHAIN 0               | CHAIN 1 |
| 42      | 5210                    | 82.12                 | 81.99   |
| 58      | 5290                    | 82.06                 | 81.95   |
| 106     | 5530                    | 82.17                 | 81.92   |

**Note: For output power limitation is determined based on 26dBc bandwidth.**

| Power Limit = 4dBm + 10logB < UNII Band 1>    |            |             |                                  |
|-----------------------------------------------|------------|-------------|----------------------------------|
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 42                                            | 5210       | 81.99       | 23.13 > 17                       |
| Power Limit = 11dBm + 10logB < UNII Band 2~3> |            |             |                                  |
| Channel Number                                | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 58                                            | 5290       | 81.95       | 30.13 > 24                       |
| 106                                           | 5530       | 81.92       | 30.13 > 24                       |

#### 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

##### 4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

| FREQUENCY BAND   | LIMIT |
|------------------|-------|
| 5.15 ~ 5.25GHz   | 4dBm  |
| 5.25 ~ 5.35GHz   | 11dBm |
| 5.47 ~ 5.725GHz  | 11dBm |
| 5.725 ~ 5.825GHz | 17dBm |

##### 4.4.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| SPECTRUM ANALYZER R&S      | FSV 40    | 100964     | July 15, 2013   | July 14, 2014    |

**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 : May 22, 2014

##### 4.4.3 TEST PROCEDURES

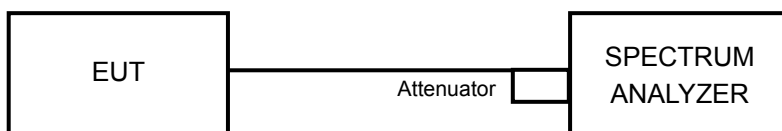
Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to "free run".
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

##### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

##### 4.4.5 TEST SETUP





#### 4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6

## 4.4.7 TEST RESULTS

### 802.11a

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | PSD (dBm) |         | TOTAL<br>POWER<br>DENSITY<br>(dBm) | MAX. LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|-----------|---------|------------------------------------|---------------------|-----------|
|         |                               | CHAIN 0   | CHAIN 1 |                                    |                     |           |
| 36      | 5180                          | -2.33     | -3.44   | 0.16                               | 1.83                | PASS      |
| 40      | 5200                          | -3.94     | -1.44   | 0.50                               | 1.83                | PASS      |
| 48      | 5240                          | -2.63     | -1.33   | 1.08                               | 1.83                | PASS      |
| 52      | 5260                          | 1.09      | 2.37    | 4.79                               | 8.83                | PASS      |
| 60      | 5300                          | 0.91      | 1.47    | 4.21                               | 8.83                | PASS      |
| 64      | 5320                          | -0.08     | 1.19    | 3.61                               | 8.83                | PASS      |
| 100     | 5500                          | 0.03      | -0.34   | 2.86                               | 8.83                | PASS      |
| 116     | 5580                          | 3.72      | 1.80    | 5.88                               | 8.83                | PASS      |
| 132     | 5660                          | 2.34      | 0.42    | 4.50                               | 8.83                | PASS      |
| 140     | 5700                          | -0.53     | -0.90   | 2.30                               | 8.83                | PASS      |

- NOTE:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. **5150~5250MHz:** Directional gain =  $5.16\text{dBi} + 10\log(2) = 8.17\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $4-(8.17-6) = 1.83\text{dBm}$ .
- 5250~5350MHz, 5470~5725MHz:** Directional gain =  $5.16\text{dBi} + 10\log(2) = 8.17\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $11-(8.17-6) = 8.83\text{dBm}$ .

### 802.11ac (VHT20)

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | PSD (dBm) |         | TOTAL<br>POWER<br>DENSITY<br>(dBm) | MAX. LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|-----------|---------|------------------------------------|---------------------|-----------|
|         |                               | CHAIN 0   | CHAIN 1 |                                    |                     |           |
| 36      | 5180                          | -2.85     | -1.93   | 0.64                               | 4                   | PASS      |
| 40      | 5200                          | -1.58     | -0.42   | 2.05                               | 4                   | PASS      |
| 48      | 5240                          | -1.06     | -0.43   | 2.28                               | 4                   | PASS      |
| 52      | 5260                          | 0.75      | 1.48    | 4.14                               | 11                  | PASS      |
| 60      | 5300                          | 0.93      | 1.84    | 4.42                               | 11                  | PASS      |
| 64      | 5320                          | -0.90     | -0.21   | 2.47                               | 11                  | PASS      |
| 100     | 5500                          | -1.14     | -0.90   | 1.99                               | 11                  | PASS      |
| 116     | 5580                          | 1.49      | 1.50    | 4.51                               | 11                  | PASS      |
| 132     | 5660                          | 0.89      | 0.98    | 3.95                               | 11                  | PASS      |
| 140     | 5700                          | -1.96     | -2.40   | 0.84                               | 11                  | PASS      |

**NOTE:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

### 802.11ac (VHT40)

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | PSD (dBm) |         | TOTAL<br>POWER<br>DENSITY<br>(dBm) | MAX. LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|-----------|---------|------------------------------------|---------------------|-----------|
|         |                               | CHAIN 0   | CHAIN 1 |                                    |                     |           |
| 38      | 5190                          | -9.50     | -8.71   | -6.08                              | 4                   | PASS      |
| 46      | 5230                          | -3.56     | -4.00   | -0.76                              | 4                   | PASS      |
| 54      | 5270                          | -4.17     | -2.22   | -0.08                              | 11                  | PASS      |
| 62      | 5310                          | -6.66     | -4.55   | -2.47                              | 11                  | PASS      |
| 102     | 5510                          | -8.46     | -8.15   | -5.29                              | 11                  | PASS      |
| 110     | 5550                          | -1.43     | -2.44   | 1.10                               | 11                  | PASS      |
| 134     | 5670                          | -5.47     | -3.60   | -1.42                              | 11                  | PASS      |

**NOTE:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.



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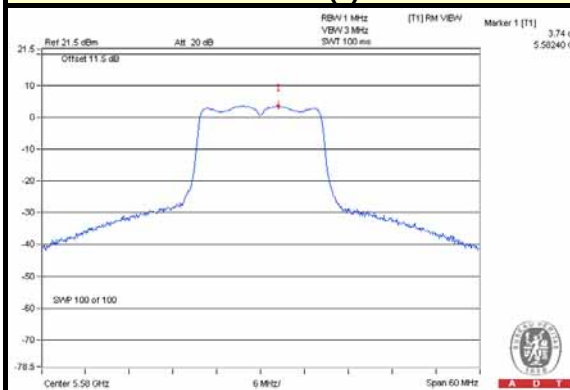
#### 802.11ac (VHT80)

| CHANNEL | CHANNEL<br>FREQUENCY<br>(MHz) | PSD (dBm) |         | TOTAL<br>POWER<br>DENSITY<br>(dBm) | MAX. LIMIT<br>(dBm) | PASS/FAIL |
|---------|-------------------------------|-----------|---------|------------------------------------|---------------------|-----------|
|         |                               | CHAIN 0   | CHAIN 1 |                                    |                     |           |
| 42      | 5210                          | -12.66    | -12.20  | -9.41                              | 4                   | PASS      |
| 58      | 5290                          | -12.19    | -10.50  | -8.25                              | 11                  | PASS      |
| 106     | 5530                          | -13.34    | -11.67  | -9.42                              | 11                  | PASS      |

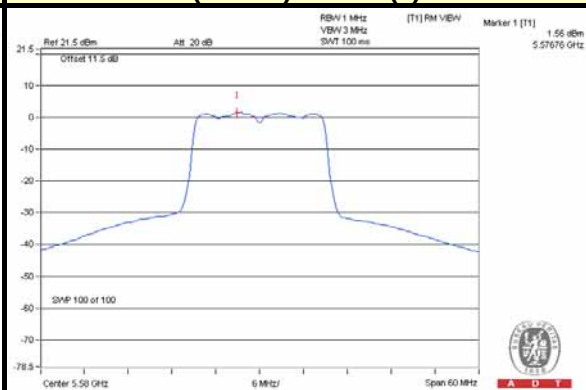
**NOTE:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

# SPECTRUM PLOT OF WORST VALUE

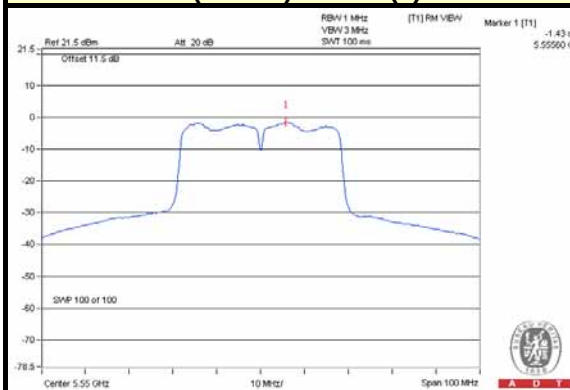
802.11a / Chain(0) : CH116



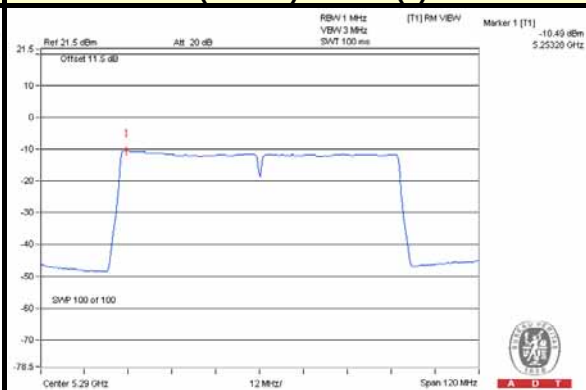
802.11ac (VHT20) / Chain(1) : CH116



802.11ac (VHT40) / Chain(0) : CH110



802.11ac (VHT80) / Chain(1) : CH58



## 4.5 PEAK POWER EXCURSION MEASUREMENT

### 4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

### 4.5.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------|-----------|------------|-----------------|------------------|
| SPECTRUM ANALYZER R&S      | FSV 40    | 100964     | July 15, 2013   | July 14, 2014    |

**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 : May 22, 2014

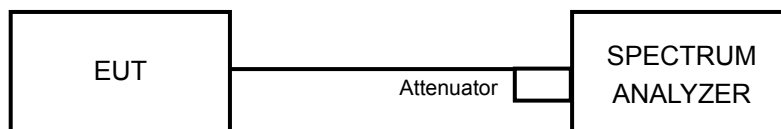
### 4.5.3 TEST PROCEDURE

1. Set RBW = 1 MHz, VBW  $\geq$  3 MHz, Detector = peak.
2. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak search function to find the peak of the spectrum.
4. Measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

### 4.5.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.5.5 TEST SETUP



#### 4.5.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

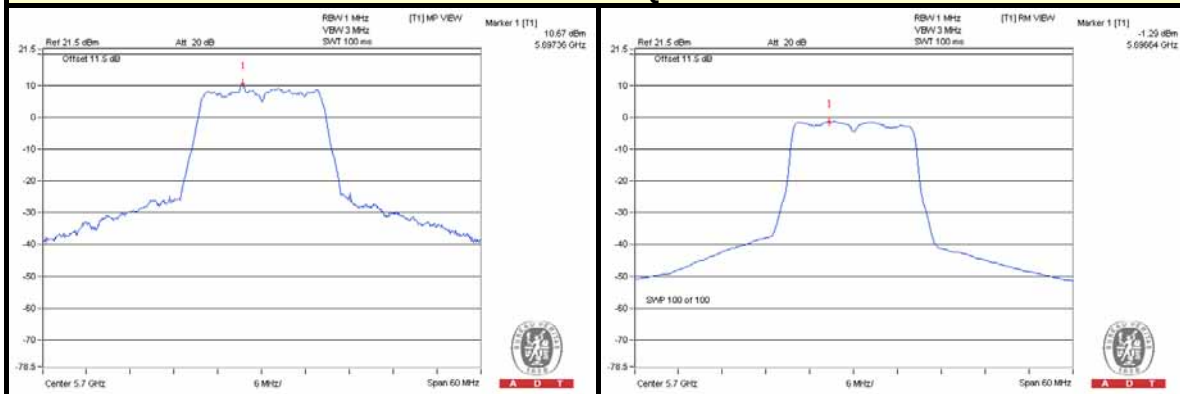
## 4.5.7 TEST RESULTS

| MODULATION MODE  | MODULATION TYPE | CHANNEL FREQUENCY (MHz) | PEAK VALUE (dBm) | PPSD (dBm) | PEAK EXCURSION (dB) | LIMIT (dB) | PASS/ FAIL |
|------------------|-----------------|-------------------------|------------------|------------|---------------------|------------|------------|
| 802.11a          | BPSK            | 5700                    | 9.83             | -0.53      | 10.36               | 13         | PASS       |
|                  | QPSK            |                         | 9.7              | -1.53      | 11.23               | 13         | PASS       |
|                  | 16QAM           |                         | 9.5              | -1.11      | 10.61               | 13         | PASS       |
|                  | 64QAM           |                         | 10.67            | -1.29      | 11.96               | 13         | PASS       |
| 802.11ac (VHT20) | BPSK            | 5700                    | 7.57             | -1.96      | 9.53                | 13         | PASS       |
|                  | QPSK            |                         | 7.87             | -3.75      | 11.62               | 13         | PASS       |
|                  | 16QAM           |                         | 7.69             | -3.5       | 11.19               | 13         | PASS       |
|                  | 64QAM           |                         | 8                | -3.24      | 11.24               | 13         | PASS       |
|                  | 256QAM          |                         | 7.86             | -3.61      | 11.47               | 13         | PASS       |
| 802.11ac (VHT40) | BPSK            | 5670                    | 6.1              | -4.5       | 10.6                | 13         | PASS       |
|                  | QPSK            |                         | 6.23             | -4.78      | 11.01               | 13         | PASS       |
|                  | 16QAM           |                         | 6.14             | -4.72      | 10.86               | 13         | PASS       |
|                  | 64QAM           |                         | 6.96             | -4.61      | 11.57               | 13         | PASS       |
|                  | 256QAM          |                         | 7.05             | -4.81      | 11.86               | 13         | PASS       |
| 802.11ac (VHT80) | BPSK            | 5530                    | -2.2             | -13.21     | 11.01               | 13         | PASS       |
|                  | QPSK            |                         | -2.12            | -13.44     | 11.32               | 13         | PASS       |
|                  | 16QAM           |                         | -1.29            | -13.44     | 12.15               | 13         | PASS       |
|                  | 64QAM           |                         | -1.04            | -13.15     | 12.11               | 13         | PASS       |
|                  | 256QAM          |                         | -2.06            | -13.7      | 11.64               | 13         | PASS       |

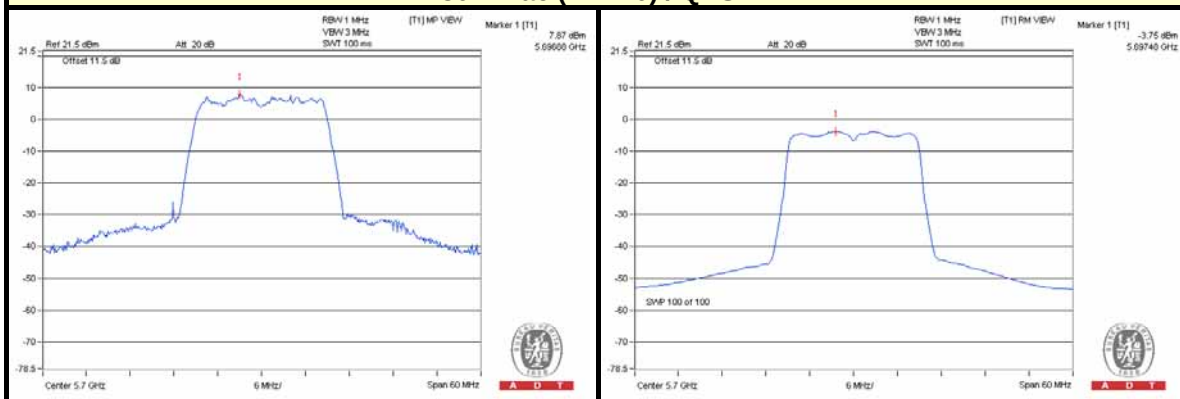


# SPECTRUM PLOT OF WORST VALUE

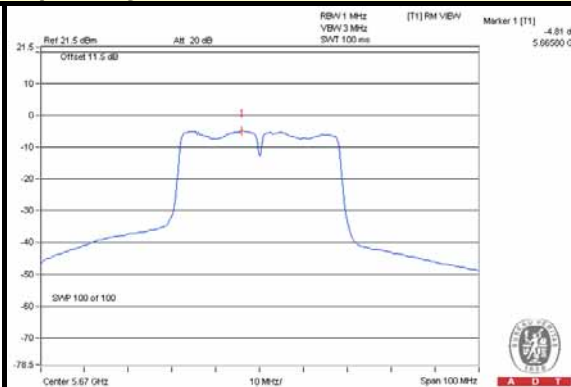
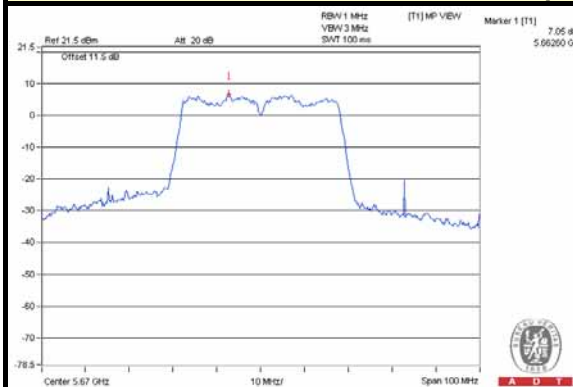
## 802.11a / 64QAM



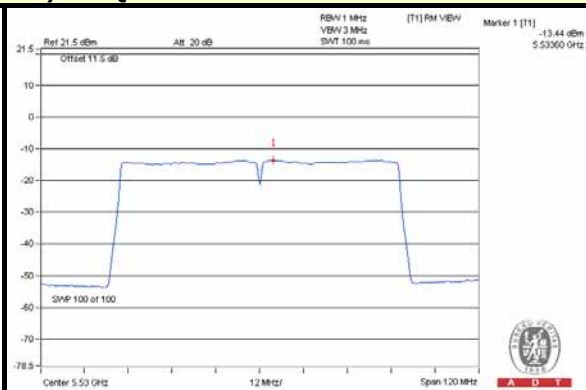
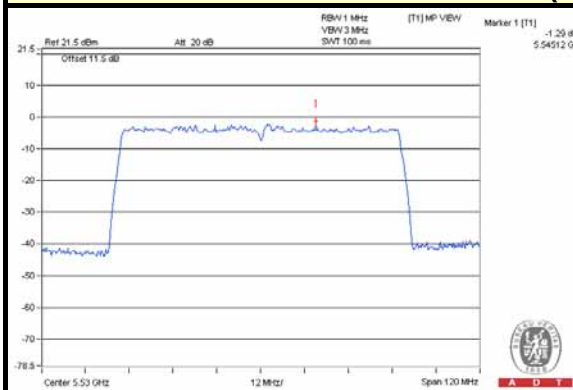
## 802.11ac (VHT20) / QPSK



### 802.11ac (VHT40) / 256QAM



### 802.11ac (VHT80) / 16QAM



## 4.6 FREQUENCY STABILITY

### 4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

### 4.6.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER                   | MODEL NO.        | SERIAL NO.  | CALIBRATED DATE | CALIBRATED UNTIL |
|----------------------------------------------|------------------|-------------|-----------------|------------------|
| SPECTRUM ANALYZER<br>R&S                     | FSV 40           | 100964      | July 15, 2013   | July 14, 2014    |
| Temperature & Humidity Chamber<br>GIANTFORCE | GTH-150-40-SP-AR | MAA0812-008 | Jan. 13, 2014   | Jan. 12, 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 : May 22, 2014

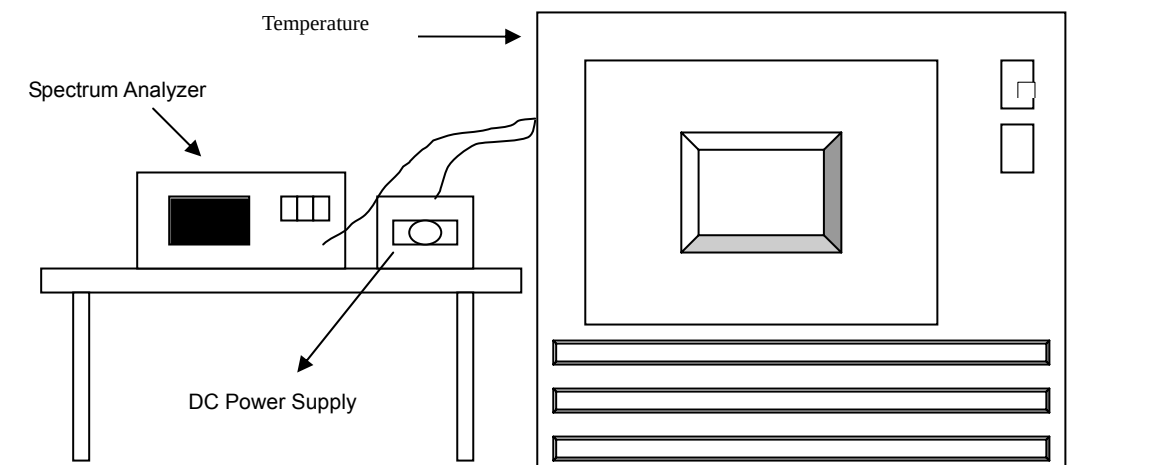
### 4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

#### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.6.5 TEST SETUP



#### 4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

#### 4.6.7 TEST RESULTS

| FREQUENCY STABILITY VERSUS TEMP. |                          |                       |                    |                       |                    |                       |                    |                       |                    |
|----------------------------------|--------------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
| OPERATING FREQUENCY: 5320MHz     |                          |                       |                    |                       |                    |                       |                    |                       |                    |
| TEMP.<br>(°C)                    | POWER<br>SUPPLY<br>(Vdc) | 0 MINUTE              |                    | 2 MINUTE              |                    | 5 MINUTE              |                    | 10 MINUTE             |                    |
|                                  |                          | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift |
|                                  |                          | (MHz)                 | %                  | (MHz)                 | %                  | (MHz)                 | %                  | (MHz)                 | %                  |
| 50                               | 3.3                      | 5320.011              | 0.00021            | 5320.0157             | 0.00030            | 5320.0118             | 0.00022            | 5320.0126             | 0.00024            |
| 40                               | 3.3                      | 5320.0238             | 0.00045            | 5320.0246             | 0.00046            | 5320.0281             | 0.00053            | 5320.0262             | 0.00049            |
| 30                               | 3.3                      | 5320.0235             | 0.00044            | 5320.0277             | 0.00052            | 5320.0249             | 0.00047            | 5320.0263             | 0.00049            |
| 20                               | 3.3                      | 5319.9935             | -0.00012           | 5319.9935             | -0.00012           | 5319.9923             | -0.00014           | 5319.9913             | -0.00016           |
| 10                               | 3.3                      | 5319.9818             | -0.00034           | 5319.9833             | -0.00031           | 5319.9812             | -0.00035           | 5319.9839             | -0.00030           |
| 0                                | 3.3                      | 5319.98               | -0.00038           | 5319.9764             | -0.00044           | 5319.9792             | -0.00039           | 5319.9783             | -0.00041           |
| -10                              | 3.3                      | 5320.0149             | 0.00028            | 5320.0176             | 0.00033            | 5320.0164             | 0.00031            | 5320.017              | 0.00032            |
| -20                              | 3.3                      | 5319.991              | -0.00017           | 5319.9906             | -0.00018           | 5319.994              | -0.00011           | 5319.9954             | -0.00009           |
| -30                              | 3.3                      | 5319.9947             | -0.00010           | 5319.9966             | -0.00006           | 5319.9985             | -0.00003           | 5319.9949             | -0.00010           |

| FREQUENCY STABILITY VERSUS VOLTAGE |                          |                       |                    |                       |                    |                       |                    |                       |                    |
|------------------------------------|--------------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
| OPERATING FREQUENCY: 5320MHz       |                          |                       |                    |                       |                    |                       |                    |                       |                    |
| TEMP.<br>(°C)                      | POWER<br>SUPPLY<br>(Vdc) | 0 MINUTE              |                    | 2 MINUTE              |                    | 5 MINUTE              |                    | 10 MINUTE             |                    |
|                                    |                          | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift | Measured<br>Frequency | Frequency<br>Drift |
|                                    |                          | (MHz)                 | %                  | (MHz)                 | %                  | (MHz)                 | %                  | (MHz)                 | %                  |
| 20                                 | 3.795                    | 5319.9926             | -0.00014           | 5319.9925             | -0.00014           | 5319.9925             | -0.00014           | 5319.9914             | -0.00016           |
|                                    | 3.3                      | 5319.9935             | -0.00012           | 5319.9935             | -0.00012           | 5319.9923             | -0.00014           | 5319.9913             | -0.00016           |
|                                    | 2.805                    | 5319.9934             | -0.00012           | 5319.9938             | -0.00012           | 5319.9925             | -0.00014           | 5319.9918             | -0.00015           |

## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## 6. INFORMATION ON THE TESTING LABORATORIES

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

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

**Linko EMC/RF Lab:**

Tel: 886-2-26052180

Fax: 886-2-26052943

**Hsin Chu EMC/RF Lab:**

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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



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## **7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No modifications were made to the EUT by the lab during the test.

**--- END ---**