# FCC Test Report (15.407)

**Report No.:** RF150305E02-1

**FCC ID:** KA2WA192A1

**Test Model:** DWA-192

**Received Date:** Mar. 05, 2015

**Test Date:** Mar. 31 to May 08, 2015

**Issued Date:** May 27, 2015

**Applicant:** D-Link corporation

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

**Lab Address:** No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| RF150305E02-1 | Original release. | May 27, 2015 |

## 1 Certificate of Conformity

**Product:** AC1900 Wi-Fi USB 3.0 Adapter

**Brand:** D-Link

**Test Model:** DWA-192

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link corporation

**Test Date:** Mar. 31 to May 08, 2015

**Standard:** 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2009

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** _____, **Date:** May 27, 2015
Midoli Peng / Specialist

**Approved by :** _____, **Date:** May 27, 2015
May Chen / Manager

## 2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart E (SECTION 15.407 Under New Rule) | | | |
|---|---|---|---|
| FCC Clause | Test Item | Result | Remarks |
| 15.407(b)(6) | AC Power Conducted Emissions | PASS | Meet the requirement of limit. Minimum passing margin is -10.40dB at 0.20859MHz. |
| 15.407(b) (1/2/3/4/6) | Radiated Emissions & Band Edge Measurement | PASS | Meet the requirement of limit. Minimum passing margin is -0.1dB at 5150.00MHz, 5725.00MHz, 5715.00MHz, 5860.00MHz, 5350.00MHz, 5470.00MHz. |
| 15.407(a) (1/2/3) | Max Average Transmit Power | PASS | Meet the requirement of limit. |
| 15.407(a) (1/2/3) | Peak Power Spectral Density | PASS | Meet the requirement of limit. |
| 15.407(e) | 6dB bandwidth | PASS | Meet the requirement of limit. (U-NII-3 Band only) |
| 15.407(g) | Frequency Stability | PASS | Meet the requirement of limit. |
| 15.203 | Antenna Requirement | PASS | Antenna connector is i-PEX not a standard connector. |

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

| Measurement | Frequency | Expended Uncertainty (k=2) (±) |
|---|---|---|
| Conducted Emissions at mains ports | 150kHz ~ 30MHz | 2.86 dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 5.43 dB |
| Radiated Emissions above 1 GHz | 1GHz ~ 6GHz | 3.72 dB |
| | 6GHz ~ 18GHz | 4.00 dB |
| | 18GHz ~ 40GHz | 4.11 dB |

### 2.2 Modification Record

There were no modifications required for compliance.

# 3 General Information

## 3.1 General Description of EUT

| | |
|---|---|
| Product | AC1900 Wi-Fi USB 3.0 Adapter |
| Brand | D-Link |
| Test Model | DWA-192 |
| Status of EUT | ENGINEERING SAMPLE |
| Power Supply Rating | DC 5V from host equipment |
| Modulation Type | CCK, DQPSK, DBPSK for DSSS<br>64QAM, 16QAM, QPSK, BPSK for OFDM<br>256QAM for OFDM in 11ac mode |
| Modulation Technology | DSSS, OFDM |
| Transfer Rate | 802.11b: up to 11Mbps<br>802.11a/g: up to 54Mbps<br>802.11n : up to 450Mbps<br>802.11ac: up to 1300Mbps |
| Operating Frequency | For 15.407<br>5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.70GHz, 5.745 ~ 5.825GHz |
| | For 15.247<br>2.412 ~ 2.462GHz |
| Number of Channel | For 15.407<br>24 for 802.11a, 802.11n (HT20), 802.11ac (VHT20)<br>11 for 802.11n (HT40), 802.11ac (VHT40)<br>5 for 802.11ac (VHT80) |
| | For 15.247<br>11 for 802.11b/g, 802.11n (HT20)<br>7 for 802.11n (HT40) |
| Output Power | For 15.407<br>802.11a: 97.275mW<br>802.11ac (VHT20): 139.785mW<br>802.11ac (VHT40): 120.528mW<br>802.11ac (VHT80): 32.242mW |
| | For 15.247<br>802.11b: 102.802mW<br>802.11g: 100.693mW<br>802.11n (HT20): 38.208mW<br>802.11n (HT40): 35.276mW |
| Antenna Type | Please see Note |
| Antenna Connector | Please see Note |
| Accessory Device | NA |
| Data Cable Supplied | USB data cable(1.35m, unshielded) |

Note:

1. 2.4GHz and 5GHz technology can't transmit at same time.
2. The antennas provided to the EUT, please refer to the following table:

| Transmitter Circuit | Brand | Model | Gain (dBi) | Frequency range (MHz to MHz) | Cable Length (mm) | Antenna Type | Connecter Type |
|---|---|---|---|---|---|---|---|
| Ant. 1 Chain (0) | HL TECHNOLOGY GROUP LIMITED | 290-20179 | 4.03 | 2400~2500 | 150 | PCB | i-PEX |
| | | | 2.18 | 5150~5350 | | | |
| | | | 2.11 | 5470~5850 | | | |
| Ant. 2 Chain (1) | HL TECHNOLOGY GROUP LIMITED | 290-20178 | 2.13 | 2400~2500 | 150 | PCB | i-PEX |
| | | | 2.05 | 5150~5350 | | | |
| | | | 2.65 | 5470~5850 | | | |
| Ant. 3 Chain (2) | HL TECHNOLOGY GROUP LIMITED | ANT_UM814A01 | 2.45 | 2400~2500 | NA | PCB | NA |
| | | | 4.03 | 5150~5350 | | | |
| | | | 4.45 | 5470~5850 | | | |
| Ant. 4 Chain (3) | HL TECHNOLOGY GROUP LIMITED | ANT_UM814A02 | 2.26 | 2400~2500 | NA | PCB | NA |
| | | | 2.53 | 5150~5350 | | | |
| | | | 4.19 | 5470~5850 | | | |

NOTE: 1. Ant. 1(Chain 0), Ant. 2(Chain 1) & Ant. 4(Chain 3) – With TX & RX function
2. Ant. 3(Chain 2) – With RX function
3. From the above antennas, Ant. 1(Chain 0) was selected as representative antenna for the 802.11b/g test and its data was recorded in this report.
4. From the above antennas, Ant. 4(Chain 3) was selected as representative antenna for the 802.11a test and its data was recorded in this report.

3. The EUT incorporates a MIMO function, with beamforming for 5GHz.

| 2.4GHz Band | | | |
|---|---|---|---|
| **MODULATION MODE** | **DATA RATE (MCS)** | **TX & RX CONFIGURATION** | |
| **802.11b** | 1 ~ 11Mbps | 1TX (diversity) | 4RX |
| **802.11g** | 6 ~ 54Mbps | 1TX (diversity) | 4RX |
| **802.11n (HT20)** | MCS 0~7 | 1TX (diversity) | 4RX |
| | MCS 8~15 | 2TX (diversity) | 4RX |
| | MCS 16~23 | 3TX | 4RX |
| **802.11n (HT40)** | MCS 0~7 | 1TX (diversity) | 4RX |
| | MCS 8~15 | 2TX (diversity) | 4RX |
| | MCS 16~23 | 3TX | 4RX |
| **5GHz Band** | | | |
| **MODULATION MODE** | **DATA RATE (MCS)** | **TX & RX CONFIGURATION** | |
| **802.11a** | 6 ~ 54Mbps | 1TX (diversity) | 4RX |
| **802.11n (HT20)** | MCS 0~7 | 1TX (diversity) | 4RX |
| | MCS 8~15 | 2TX (diversity) | 4RX |
| | MCS 16~23 | 3TX | 4RX |
| **802.11n (HT40)** | MCS 0~7 | 1TX (diversity) | 4RX |
| | MCS 8~15 | 2TX (diversity) | 4RX |
| | MCS 16~23 | 3TX | 4RX |
| **802.11ac (VHT20)** | MCS 0~8, Nss=1 | 1TX (diversity) | 4RX |
| | MCS 0~8, Nss=2 | 2TX (diversity) | 4RX |
| | MCS 0~9, Nss=3 | 3TX | 4RX |
| **802.11ac (VHT40)** | MCS 0~9, Nss=1 | 1TX (diversity) | 4RX |
| | MCS 0~9, Nss=2 | 2TX (diversity) | 4RX |
| | MCS 0~9, Nss=3 | 3TX | 4RX |
| **802.11ac (VHT80)** | MCS 0~9, Nss=1 | 1TX (diversity) | 4RX |
| | MCS 0~9, Nss=2 | 2TX (diversity) | 4RX |
| | MCS 0~9, Nss=3 | 3TX | 4RX |

Note: 1. For 2.4GHz: The device operate with three spatial stream (Nss = 3) with different data, and three signals are not correlated.
2. 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)

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

## 3.2 Description of Test Modes

**FOR 5180 ~ 5240MHz**

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 36 | 5180 MHz | 44 | 5220 MHz |
| 40 | 5200 MHz | 48 | 5240 MHz |

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 38 | 5190 MHz | 46 | 5230 MHz |

1 channel is provided for 802.11ac (VHT80):

| Channel | Frequency |
|---|---|
| 42 | 5210MHz |

**FOR 5260 ~ 5320MHz**

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 52 | 5260 MHz | 60 | 5300 MHz |
| 56 | 5280 MHz | 64 | 5320 MHz |

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 54 | 5270 MHz | 62 | 5310 MHz |

1 channel is provided for 802.11ac (VHT80):

| Channel | Frequency |
|---|---|
| 58 | 5290MHz |

**FOR 5500 ~ 5700MHz**

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 100 | 5500 MHz | 124 | 5620 MHz |
| 104 | 5520 MHz | 128 | 5640 MHz |
| 108 | 5540 MHz | 132 | 5660 MHz |
| 112 | 5560 MHz | 136 | 5680 MHz |
| 116 | 5580 MHz | 140 | 5700 MHz |
| 120 | 5600 MHz | | |

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

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 102 | 5510 MHz | 126 | 5630 MHz |
| 110 | 5550 MHz | 134 | 5670 MHz |
| 118 | 5590 MHz | | |

2 channels are provided for 802.11ac (VHT80):

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 106 | 5530MHz | 122 | 5610 MHz |

**FOR 5745 ~ 5825MHz:**

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

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

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

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

1 channel is provided for 802.11ac (VHT80):

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

### 3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

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

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

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

| MODE | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|---|
| 802.11a | 5180-5240 | 36 to 48 | 36, 40, 48 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 36 to 48 | 36, 40, 48 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 38 to 46 | 38, 46 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 42 | 42 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5260-5320 | 52 to 64 | 52, 60, 64 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 52 to 64 | 52, 60, 64 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 54 to 62 | 54, 62 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 58 | 58 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5500-5700 | 100 to 140 | 100, 120, 140 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 100 to 140 | 100, 120, 140 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 102 to 134 | 102, 118, 134 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 106 to 122 | 106, 122 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5745-5825 | 149 to 165 | 149, 157, 165 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 149 to 165 | 149, 157, 165 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 151 to 159 | 151, 159 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 155 | 155 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |

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

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

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

| MODE | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|---|
| 802.11ac (VHT20) | 5180-5240 | 36 to 48 | 157 | OFDM | BPSK | 19.5<br>MCS0 / Nss 3 |
| | 5260-5320 | 52 to 64 | | | | |
| | 5500-5700 | 100 to 140 | | | | |
| | 5745-5825 | 149 to 165 | | | | |

**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 | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|---|
| 802.11ac (VHT20) | 5180-5240 | 36 to 48 | 157 | OFDM | BPSK | 19.5<br>MCS0 / Nss 3 |
| | 5260-5320 | 52 to 64 | | | | |
| | 5500-5700 | 100 to 140 | | | | |
| | 5745-5825 | 149 to 165 | | | | |

## Antenna Port Conducted Measurement:

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

| MODE | FREQ. BAND (MHz) | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION TECHNOLOGY | MODULATION TYPE | DATA RATE (Mbps) |
|---|---|---|---|---|---|---|
| 802.11a | 5180-5240 | 36 to 48 | 36, 40, 48 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 36 to 48 | 36, 40, 48 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 38 to 46 | 38, 46 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 42 | 42 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5260-5320 | 52 to 64 | 52, 60, 64 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 52 to 64 | 52, 60, 64 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 54 to 62 | 54, 62 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 58 | 58 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5500-5700 | 100 to 140 | 100, 120, 140 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 100 to 140 | 100, 120, 140 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 102 to 134 | 102, 118, 134 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 106 to 122 | 106, 122 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |
| 802.11a | 5745-5825 | 149 to 165 | 149, 157, 165 | OFDM | BPSK | 6 |
| 802.11ac (VHT20) | | 149 to 165 | 149, 157, 165 | OFDM | BPSK | 19.5 MCS0 / Nss 3 |
| 802.11ac (VHT40) | | 151 to 159 | 151, 159 | OFDM | BPSK | 40.5 MCS0 / Nss 3 |
| 802.11ac (VHT80) | | 155 | 155 | OFDM | BPSK | 87.8 MCS0 / Nss 3 |

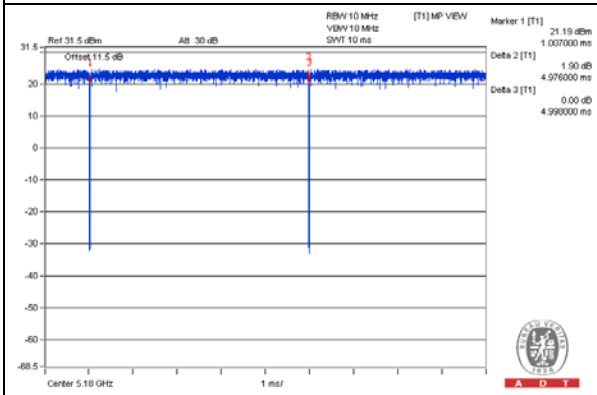
## Test Condition:

| APPLICABLE TO | ENVIRONMENTAL CONDITIONS | INPUT POWER (SYSTEM) | TESTED BY |
|---|---|---|---|
| RE≥1G | 24deg. C, 69%RH<br>21deg. C, 70%RH<br>21deg. C, 65%RH | 120Vac, 60Hz | Weiwei Lo<br>Tim Ho |
| RE<1G | 23deg. C, 66%RH | 120Vac, 60Hz | Robert Cheng |
| PLC | 25deg. C, 63%RH | 120Vac, 60Hz | Timmy Hu |
| APCM | 25deg. C, 60%RH | 120Vac, 60Hz | Anderson Chen |

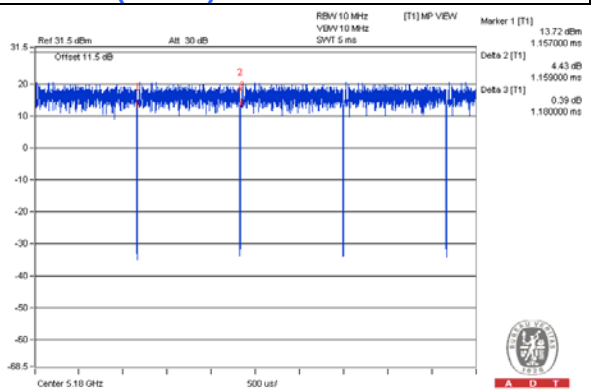
## 3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11a: Duty cycle = 4.976 ms/4.998 ms = 0.996
802.11ac (VHT20): Duty cycle = 1.159 ms/1.18 ms = 0.982
802.11ac (VHT40): Duty cycle = 3.21 ms/3.233 ms = 0.993
802.11ac (VHT80): Duty cycle = 1.511 ms/1.526 ms = 0.99

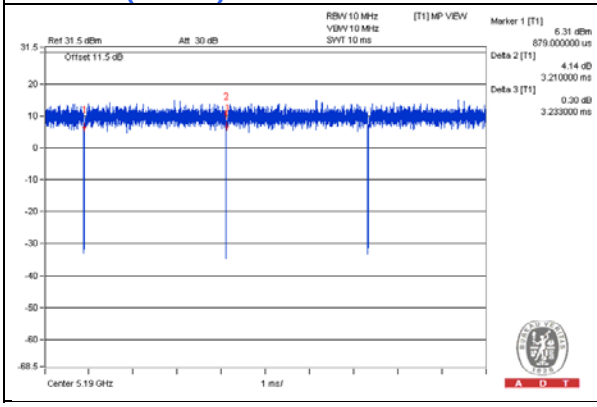
802.11a



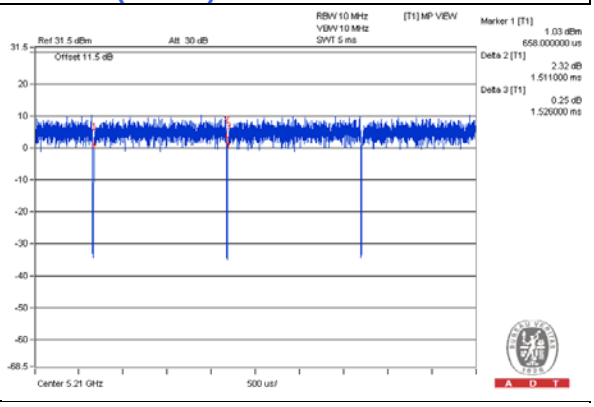

802.11ac (VHT20)




802.11ac (VHT40)




802.11ac (VHT80)



## 3.4 Description of Support Units

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

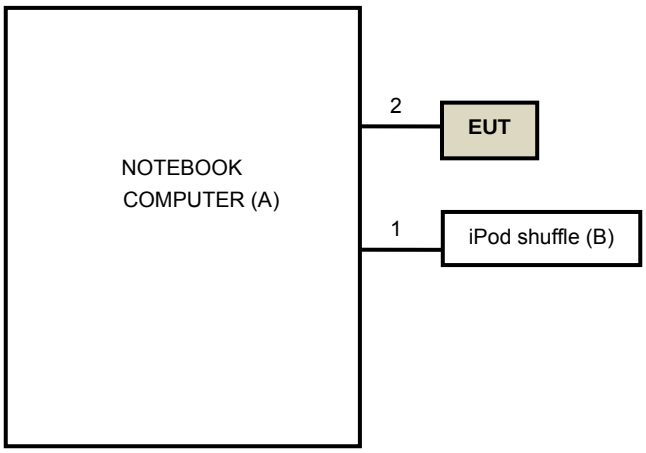
| No. | Product | Brand | Model No. | Serial No. | FCC ID | Remark |
|---|---|---|---|---|---|---|
| A | NOTEBOOK COMPUTER | DELL | E6420 | 482T3R1 | FCC DoC | Provided by Lab |
| B | iPod shuffle | Apple | MC749TA/A | CC4DN25WDFDM | NA | Provided by Lab |

**NOTE:**

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

| No. | Cable | Qty. | Length (m) | Shielded (Yes/ No) | Cores (Number) | Remark |
|---|---|---|---|---|---|---|
| 1 | USB | 1 | 0.1 | Yes | 0 | Provided by Lab |
| 2 | USB | 1 | 1.35 | Yes | 0 | Supplied by Client |

### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standard

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 D02 General UNII Test Procedure New Rules v01**
**662911 D01 Multiple Transmitter Output v02r01**
ANSI C63.10-2009

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

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

## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

| 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.

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

| **APPLICABLE TO** | **LIMIT** | |
|---|---|---|
| 789033 D02 General UNII Test Procedure New Rules v01 | FIELD STRENGTH AT 3m | |
| | PK:74 (dBμV/m) | AV:54 (dBμV/m) |
| **APPLICABLE TO** | **EIRP LIMIT** | **EQUIVALENT FIELD STRENGTH AT 3m** |
| 15.407(b)(1) | PK:-27 (dBm/MHz) | PK:68.2(dBμV/m) |
| 15.407(b)(2) | | |
| 15.407(b)(3) | | |
| 15.407(b)(4) | PK:-27 (dBm/MHz) *1<br>PK:-17 (dBm/MHz) *2 | PK: 68.2(dBμV/m) *1<br>PK:78.2 (dBμV/m) *2 |

**NOTE:** *1 beyond 10MHz of the band edge *2 within 10 MHz of band edge

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

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

4.1.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| MXE EMI Receiver Agilent | N9038A | MY50010156 | Aug. 11, 2014 | Aug. 10, 2015 |
| Pre-Amplifier Mini-Circuits | ZFL-1000VH2 B | AMP-ZFL-04 | Nov. 12, 2014 | Nov. 11, 2015 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-361 | Feb. 06, 2015 | Feb. 05, 2016 |
| RF Cable | NA | CHHCAB_001 | Oct. 05, 2014 | Oct. 04, 2015 |
| Horn_Antenna AISI | AIH.8018 | 0000220091110 | Feb. 06, 2015 | Feb. 05, 2016 |
| Pre-Amplifier Agilent | 8449B | 300801923 | Oct. 28, 2014 | Oct. 27, 2015 |
| RF Cable | NA | 131206<br>131213<br>131215<br>SNMY23685/4 | Jan. 16, 2015 | Jan. 15, 2016 |
| Spectrum Analyzer R&S | FSV40 | 100964 | July 05, 2014 | July 04, 2015 |
| Pre-Amplifier SPACEK LABS | SLKKa-48-6 | 9K16 | Dec. 12, 2014 | Dec. 11, 2015 |
| Horn_Antenna SCHWARZBECK | BBHA 9170 | 9170-424 | Feb. 05, 2015 | Feb. 04, 2016 |
| RF Cable | NA | 329751/4<br>RF104-204 | Dec. 11, 2014 | Dec. 10, 2015 |
| Software | ADT_Radiated _V8.7.07 | NA | NA | NA |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |
| Power Meter Anritsu | ML2495A | 0824006 | May 22, 2014 | May 21, 2015 |
| Power Sensor Anritsu | MA2411B | 0738172 | May 22, 2014 | May 21, 2015 |
| SPECTRUM ANALYZER R&S | FSV 40 | 100964 | July 05, 2014 | July 04, 2015 |
| True RMS Multimeter FLUKE | 87III | 73680266 | Nov. 07, 2014 | Nov. 06, 2015 |
| Temperature & Humidity Chamber GIANTFORCE | GTH-150-40-S P-AR | MAA0812-008 | Jan. 12, 2015 | Jan. 11, 2016 |

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: Apr. 30 to May 08, 2015

4.1.3 Test Procedure

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:**

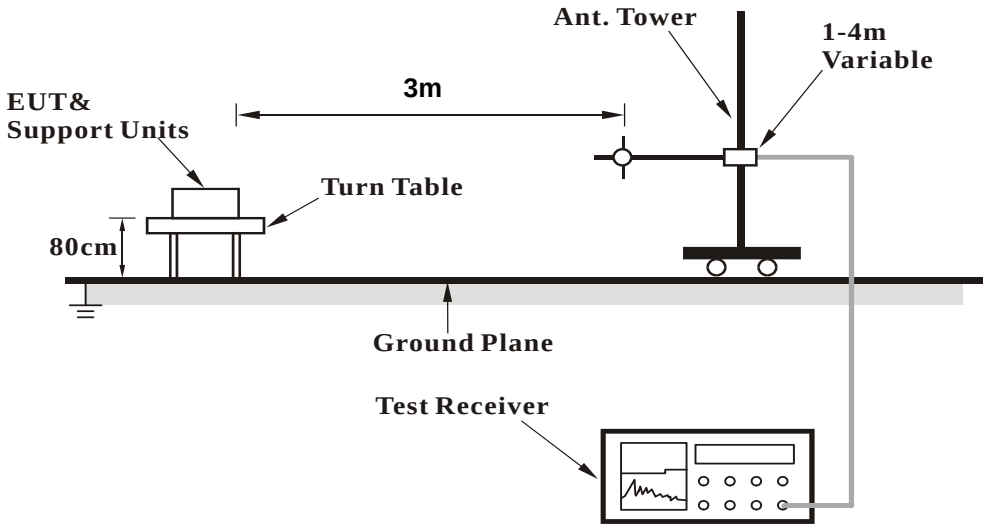
1. For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the ground at 3 meter chamber room for test
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
5. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
6. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

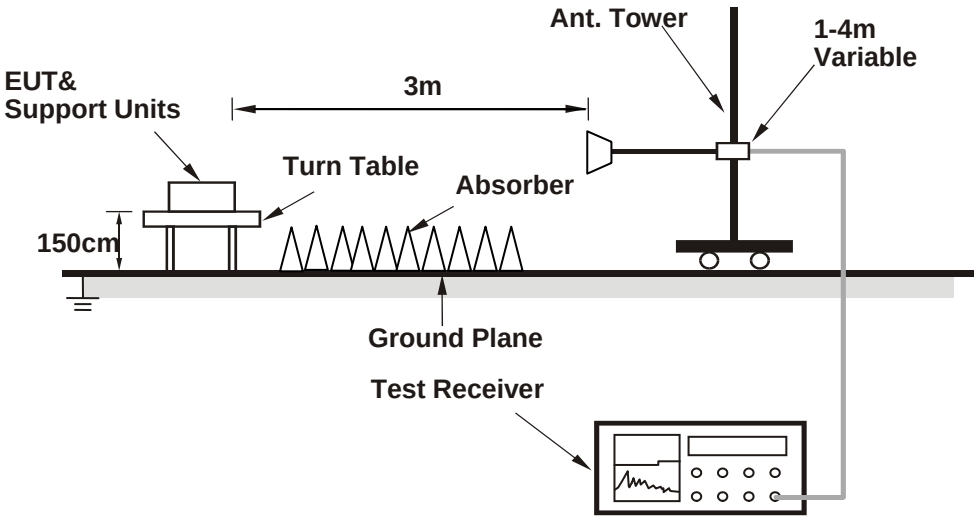
No deviation.

4.1.5 Test Setup

**<Frequency Range below 1GHz>**




**<Frequency Range above 1GHz>**




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

4.1.6 EUT Operating Condition

1. Connect the EUT with the support unit A (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “REALTEK 11ac 8814AU USB WLAN NIC Massproduction Kit” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results

**ABOVE 1GHz DATA**

**802.11a**

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 5150.00 | 69.0 PK | 74.0 | -5.0 | 1.31 H | 260 | 65.16 | 3.84 |
| 2 | 5150.00 | 53.6 AV | 54.0 | -0.4 | 1.31 H | 260 | 49.76 | 3.84 |
| 3 | *5180.00 | 113.0 PK | | | 1.31 H | 260 | 109.08 | 3.92 |
| 4 | *5180.00 | 102.3 AV | | | 1.31 H | 260 | 98.38 | 3.92 |
| 5 | #10360.00 | 55.6 PK | 74.0 | -18.4 | 1.12 H | 317 | 46.17 | 9.43 |
| 6 | #10360.00 | 42.9 AV | 54.0 | -11.1 | 1.12 H | 317 | 33.47 | 9.43 |
| 7 | 15540.00 | 59.5 PK | 74.0 | -14.5 | 1.08 H | 350 | 45.47 | 14.03 |
| 8 | 15540.00 | 46.1 AV | 54.0 | -7.9 | 1.08 H | 350 | 32.07 | 14.03 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | | |
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 5150.00 | 58.8 PK | 74.0 | -15.2 | 1.67 V | 360 | 54.96 | 3.84 |
| 2 | 5150.00 | 49.3 AV | 54.0 | -4.7 | 1.67 V | 360 | 45.46 | 3.84 |
| 3 | *5180.00 | 109.2 PK | | | 1.78 V | 360 | 105.28 | 3.92 |
| 4 | *5180.00 | 98.1 AV | | | 1.78 V | 360 | 94.18 | 3.92 |
| 5 | #10360.00 | 56.2 PK | 74.0 | -17.8 | 1.29 V | 220 | 46.77 | 9.43 |
| 6 | #10360.00 | 43.8 AV | 54.0 | -10.2 | 1.29 V | 220 | 34.37 | 9.43 |
| 7 | 15540.00 | 60.0 PK | 74.0 | -14.0 | 1.07 V | 108 | 45.97 | 14.03 |
| 8 | 15540.00 | 47.6 AV | 54.0 | -6.4 | 1.07 V | 108 | 33.57 | 14.03 |

**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.

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 65.8 PK | 74.0 | -8.2 | 1.24 H | 264 | 61.96 | 3.84 |
| 2 | 5150.00 | 53.6 AV | 54.0 | -0.4 | 1.24 H | 264 | 49.76 | 3.84 |
| 3 | *5200.00 | 116.0 PK | | | 1.24 H | 264 | 112.04 | 3.96 |
| 4 | *5200.00 | 105.7 AV | | | 1.24 H | 264 | 101.74 | 3.96 |
| 5 | #10400.00 | 55.7 PK | 74.0 | -18.3 | 1.02 H | 342 | 46.25 | 9.45 |
| 6 | #10400.00 | 43.0 AV | 54.0 | -11.0 | 1.02 H | 342 | 33.55 | 9.45 |
| 7 | 15600.00 | 61.5 PK | 74.0 | -12.5 | 1.63 H | 227 | 47.32 | 14.18 |
| 8 | 15600.00 | 49.7 AV | 54.0 | -4.3 | 1.63 H | 227 | 35.52 | 14.18 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 59.3 PK | 74.0 | -14.7 | 1.82 V | 349 | 55.46 | 3.84 |
| 2 | 5150.00 | 49.6 AV | 54.0 | -4.4 | 1.82 V | 349 | 45.76 | 3.84 |
| 3 | *5200.00 | 112.0 PK | | | 1.83 V | 360 | 108.04 | 3.96 |
| 4 | *5200.00 | 101.6 AV | | | 1.83 V | 360 | 97.64 | 3.96 |
| 5 | #10400.00 | 54.8 PK | 74.0 | -19.2 | 1.30 V | 218 | 45.35 | 9.45 |
| 6 | #10400.00 | 42.9 AV | 54.0 | -11.1 | 1.30 V | 218 | 33.45 | 9.45 |
| 7 | 15600.00 | 62.2 PK | 74.0 | -11.8 | 1.00 V | 101 | 48.02 | 14.18 |
| 8 | 15600.00 | 49.8 AV | 54.0 | -4.2 | 1.00 V | 101 | 35.62 | 14.18 |

**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.

| CHANNEL | TX Channel 48 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5240.00 | 117.4 PK | | | 1.26 H | 268 | 113.45 | 3.95 |
| 2 | *5240.00 | 106.8 AV | | | 1.26 H | 268 | 102.85 | 3.95 |
| 3 | #10480.00 | 57.3 PK | 74.0 | -16.7 | 2.05 H | 127 | 47.63 | 9.67 |
| 4 | #10480.00 | 46.2 AV | 54.0 | -7.8 | 2.05 H | 127 | 36.53 | 9.67 |
| 5 | 15720.00 | 63.6 PK | 74.0 | -10.4 | 1.63 H | 229 | 49.71 | 13.89 |
| 6 | 15720.00 | 50.7 AV | 54.0 | -3.3 | 1.63 H | 229 | 36.81 | 13.89 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5240.00 | 113.2 PK | | | 1.79 V | 360 | 109.25 | 3.95 |
| 2 | *5240.00 | 102.8 AV | | | 1.79 V | 360 | 98.85 | 3.95 |
| 3 | #10480.00 | 57.0 PK | 74.0 | -17.0 | 2.17 V | 228 | 47.33 | 9.67 |
| 4 | #10480.00 | 46.2 AV | 54.0 | -7.8 | 2.17 V | 228 | 36.53 | 9.67 |
| 5 | 15720.00 | 63.7 PK | 74.0 | -10.3 | 1.18 V | 243 | 49.81 | 13.89 |
| 6 | 15720.00 | 51.3 AV | 54.0 | -2.7 | 1.18 V | 243 | 37.41 | 13.89 |

**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.

| CHANNEL | TX Channel 52 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5260.00 | 115.3 PK | | | 1.23 H | 267 | 111.35 | 3.95 |
| 2 | *5260.00 | 104.2 AV | | | 1.23 H | 267 | 100.25 | 3.95 |
| 3 | #10520.00 | 57.6 PK | 74.0 | -16.4 | 2.07 H | 122 | 47.82 | 9.78 |
| 4 | #10520.00 | 46.5 AV | 54.0 | -7.5 | 2.07 H | 122 | 36.72 | 9.78 |
| 5 | 15780.00 | 63.5 PK | 74.0 | -10.5 | 1.57 H | 243 | 49.57 | 13.93 |
| 6 | 15780.00 | 50.6 AV | 54.0 | -3.4 | 1.57 H | 243 | 36.67 | 13.93 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5260.00 | 110.2 PK | | | 1.76 V | 341 | 106.25 | 3.95 |
| 2 | *5260.00 | 99.5 AV | | | 1.76 V | 341 | 95.55 | 3.95 |
| 3 | #10520.00 | 57.8 PK | 74.0 | -16.2 | 2.16 V | 204 | 48.02 | 9.78 |
| 4 | #10520.00 | 46.6 AV | 54.0 | -7.4 | 2.16 V | 204 | 36.82 | 9.78 |
| 5 | 15780.00 | 64.3 PK | 74.0 | -9.7 | 1.22 V | 247 | 50.37 | 13.93 |
| 6 | 15780.00 | 51.5 AV | 54.0 | -2.5 | 1.22 V | 247 | 37.57 | 13.93 |

**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.

| CHANNEL | TX Channel 60 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5300.00 | 114.8 PK | | | 1.46 H | 263 | 110.86 | 3.94 |
| 2 | *5300.00 | 104.2 AV | | | 1.46 H | 263 | 100.26 | 3.94 |
| 3 | 5350.00 | 64.7 PK | 74.0 | -9.3 | 1.46 H | 263 | 60.63 | 4.07 |
| 4 | 5350.00 | 50.2 AV | 54.0 | -3.8 | 1.46 H | 263 | 46.13 | 4.07 |
| 5 | 10600.00 | 57.0 PK | 74.0 | -17.0 | 2.06 H | 128 | 46.93 | 10.07 |
| 6 | 10600.00 | 46.1 AV | 54.0 | -7.9 | 2.06 H | 128 | 36.03 | 10.07 |
| 7 | 15900.00 | 64.1 PK | 74.0 | -9.9 | 1.62 H | 231 | 49.88 | 14.22 |
| 8 | 15900.00 | 51.0 AV | 54.0 | -3.0 | 1.62 H | 231 | 36.78 | 14.22 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5300.00 | 110.5 PK | | | 1.81 V | 352 | 106.56 | 3.94 |
| 2 | *5300.00 | 99.8 AV | | | 1.81 V | 352 | 95.86 | 3.94 |
| 3 | 5350.00 | 64.8 PK | 74.0 | -9.2 | 1.81 V | 352 | 60.73 | 4.07 |
| 4 | 5350.00 | 48.4 AV | 54.0 | -5.6 | 1.81 V | 352 | 44.33 | 4.07 |
| 5 | 10600.00 | 57.2 PK | 74.0 | -16.8 | 2.21 V | 218 | 47.13 | 10.07 |
| 6 | 10600.00 | 46.2 AV | 54.0 | -7.8 | 2.21 V | 218 | 36.13 | 10.07 |
| 7 | 15900.00 | 63.8 PK | 74.0 | -10.2 | 1.22 V | 231 | 49.58 | 14.22 |
| 8 | 15900.00 | 51.2 AV | 54.0 | -2.8 | 1.22 V | 231 | 36.98 | 14.22 |

**REMARKS:**

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

| CHANNEL | TX Channel 64 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5320.00 | 112.9 PK | | | 1.33 H | 267 | 108.91 | 3.99 |
| 2 | *5320.00 | 102.1 AV | | | 1.33 H | 267 | 98.11 | 3.99 |
| 3 | 5350.00 | 70.0 PK | 74.0 | -4.0 | 1.30 H | 271 | 65.93 | 4.07 |
| 4 | 5350.00 | 53.6 AV | 54.0 | -0.4 | 1.30 H | 271 | 49.53 | 4.07 |
| 5 | 10640.00 | 56.0 PK | 74.0 | -18.0 | 1.04 H | 312 | 45.99 | 10.01 |
| 6 | 10640.00 | 43.5 AV | 54.0 | -10.5 | 1.04 H | 312 | 33.49 | 10.01 |
| 7 | 15960.00 | 59.6 PK | 74.0 | -14.4 | 1.01 H | 351 | 45.45 | 14.15 |
| 8 | 15960.00 | 46.3 AV | 54.0 | -7.7 | 1.01 H | 351 | 32.15 | 14.15 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5320.00 | 108.1 PK | | | 1.87 V | 353 | 104.11 | 3.99 |
| 2 | *5320.00 | 98.2 AV | | | 1.87 V | 353 | 94.21 | 3.99 |
| 3 | 5350.00 | 58.4 PK | 74.0 | -15.6 | 1.72 V | 336 | 54.33 | 4.07 |
| 4 | 5350.00 | 49.1 AV | 54.0 | -4.9 | 1.72 V | 336 | 45.03 | 4.07 |
| 5 | 10640.00 | 55.3 PK | 74.0 | -18.7 | 1.32 V | 222 | 45.29 | 10.01 |
| 6 | 10640.00 | 43.2 AV | 54.0 | -10.8 | 1.32 V | 222 | 33.19 | 10.01 |
| 7 | 15960.00 | 61.0 PK | 74.0 | -13.0 | 1.05 V | 114 | 46.85 | 14.15 |
| 8 | 15960.00 | 48.3 AV | 54.0 | -5.7 | 1.05 V | 114 | 34.15 | 14.15 |

**REMARKS:**

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

| CHANNEL | TX Channel 100 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 71.0 PK | 74.0 | -3.0 | 1.12 H | 264 | 66.83 | 4.17 |
| 2 | #5470.00 | 53.8 AV | 54.0 | -0.2 | 1.12 H | 264 | 49.63 | 4.17 |
| 3 | *5500.00 | 110.6 PK | | | 1.15 H | 265 | 106.44 | 4.16 |
| 4 | *5500.00 | 100.4 AV | | | 1.15 H | 265 | 96.24 | 4.16 |
| 5 | 11000.00 | 56.1 PK | 74.0 | -17.9 | 1.03 H | 330 | 45.87 | 10.23 |
| 6 | 11000.00 | 43.3 AV | 54.0 | -10.7 | 1.03 H | 330 | 33.07 | 10.23 |
| 7 | #16500.00 | 59.6 PK | 74.0 | -14.4 | 1.02 H | 331 | 43.40 | 16.20 |
| 8 | #16500.00 | 46.0 AV | 54.0 | -8.0 | 1.02 H | 331 | 29.80 | 16.20 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 59.1 PK | 74.0 | -14.9 | 1.80 V | 326 | 54.93 | 4.17 |
| 2 | #5470.00 | 49.4 AV | 54.0 | -4.6 | 1.80 V | 326 | 45.23 | 4.17 |
| 3 | *5500.00 | 106.5 PK | | | 1.83 V | 357 | 102.34 | 4.16 |
| 4 | *5500.00 | 96.1 AV | | | 1.83 V | 357 | 91.94 | 4.16 |
| 5 | 11000.00 | 55.3 PK | 74.0 | -18.7 | 1.31 V | 203 | 45.07 | 10.23 |
| 6 | 11000.00 | 43.0 AV | 54.0 | -11.0 | 1.31 V | 203 | 32.77 | 10.23 |
| 7 | #16500.00 | 60.3 PK | 74.0 | -13.7 | 1.04 V | 106 | 44.10 | 16.20 |
| 8 | #16500.00 | 48.1 AV | 54.0 | -5.9 | 1.04 V | 106 | 31.90 | 16.20 |

**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.

| CHANNEL | TX Channel 120 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5600.00 | 110.9 PK | | | 1.36 H | 267 | 106.39 | 4.51 |
| 2 | *5600.00 | 100.2 AV | | | 1.36 H | 267 | 95.69 | 4.51 |
| 3 | 11200.00 | 56.9 PK | 74.0 | -17.1 | 2.08 H | 131 | 46.77 | 10.13 |
| 4 | 11200.00 | 45.8 AV | 54.0 | -8.2 | 2.08 H | 131 | 35.67 | 10.13 |
| 5 | #16800.00 | 64.4 PK | 74.0 | -9.6 | 1.67 H | 230 | 46.98 | 17.42 |
| 6 | #16800.00 | 51.3 AV | 54.0 | -2.7 | 1.67 H | 230 | 33.88 | 17.42 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5600.00 | 106.5 PK | | | 1.79 V | 360 | 101.99 | 4.51 |
| 2 | *5600.00 | 96.1 AV | | | 1.79 V | 360 | 91.59 | 4.51 |
| 3 | 11200.00 | 57.0 PK | 74.0 | -17.0 | 2.25 V | 217 | 46.87 | 10.13 |
| 4 | 11200.00 | 46.2 AV | 54.0 | -7.8 | 2.25 V | 217 | 36.07 | 10.13 |
| 5 | #16800.00 | 64.1 PK | 74.0 | -9.9 | 1.22 V | 215 | 46.68 | 17.42 |
| 6 | #16800.00 | 51.5 AV | 54.0 | -2.5 | 1.22 V | 215 | 34.08 | 17.42 |

**REMARKS:**

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

| CHANNEL | TX Channel 140 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5700.00 | 108.6 PK | | | 1.30 H | 267 | 104.11 | 4.49 |
| 2 | *5700.00 | 98.3 AV | | | 1.30 H | 267 | 93.81 | 4.49 |
| 3 | #5725.00 | 69.2 PK | 74.0 | -4.8 | 1.45 H | 267 | 64.70 | 4.50 |
| 4 | #5725.00 | 53.2 AV | 54.0 | -0.8 | 1.45 H | 267 | 48.70 | 4.50 |
| 5 | 11400.00 | 56.1 PK | 74.0 | -17.9 | 1.05 H | 335 | 46.13 | 9.97 |
| 6 | 11400.00 | 43.5 AV | 54.0 | -10.5 | 1.05 H | 335 | 33.53 | 9.97 |
| 7 | #17100.00 | 59.2 PK | 74.0 | -14.8 | 1.06 H | 353 | 41.48 | 17.72 |
| 8 | #17100.00 | 45.9 AV | 54.0 | -8.1 | 1.06 H | 353 | 28.18 | 17.72 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5700.00 | 104.3 PK | | | 1.66 V | 321 | 99.81 | 4.49 |
| 2 | *5700.00 | 94.1 AV | | | 1.66 V | 321 | 89.61 | 4.49 |
| 3 | #5725.00 | 59.0 PK | 74.0 | -15.0 | 1.81 V | 339 | 54.50 | 4.50 |
| 4 | #5725.00 | 49.1 AV | 54.0 | -4.9 | 1.81 V | 339 | 44.60 | 4.50 |
| 5 | 11400.00 | 55.5 PK | 74.0 | -18.5 | 1.32 V | 196 | 45.53 | 9.97 |
| 6 | 11400.00 | 43.5 AV | 54.0 | -10.5 | 1.32 V | 196 | 33.53 | 9.97 |
| 7 | #17100.00 | 60.2 PK | 74.0 | -13.8 | 1.01 V | 123 | 42.48 | 17.72 |
| 8 | #17100.00 | 47.6 AV | 54.0 | -6.4 | 1.01 V | 123 | 29.88 | 17.72 |

**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.

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 63.8 PK | 74.0 | -10.2 | 1.46 H | 268 | 59.32 | 4.48 |
| 2 | #5715.00 | 48.3 AV | 54.0 | -5.7 | 1.46 H | 268 | 43.82 | 4.48 |
| 3 | #5725.00 | 77.3 PK | 78.2 | -0.9 | 1.50 H | 267 | 72.80 | 4.50 |
| 4 | *5745.00 | 107.5 PK | | | 1.44 H | 268 | 103.01 | 4.49 |
| 5 | *5745.00 | 96.6 AV | | | 1.44 H | 268 | 92.11 | 4.49 |
| 6 | 11490.00 | 55.8 PK | 74.0 | -18.2 | 1.08 H | 334 | 45.76 | 10.04 |
| 7 | 11490.00 | 42.8 AV | 54.0 | -11.2 | 1.08 H | 334 | 32.76 | 10.04 |
| 8 | #17235.00 | 61.7 PK | 74.0 | -12.3 | 1.69 H | 225 | 43.14 | 18.56 |
| 9 | #17235.00 | 50.2 AV | 54.0 | -3.8 | 1.69 H | 225 | 31.64 | 18.56 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 60.3 PK | 74.0 | -13.7 | 1.76 V | 348 | 55.82 | 4.48 |
| 2 | #5715.00 | 45.9 AV | 54.0 | -8.1 | 1.76 V | 348 | 41.42 | 4.48 |
| 3 | #5725.00 | 74.2 PK | 78.2 | -4.0 | 1.76 V | 348 | 69.70 | 4.50 |
| 4 | *5745.00 | 103.7 PK | | | 1.76 V | 348 | 99.21 | 4.49 |
| 5 | *5745.00 | 92.4 AV | | | 1.76 V | 348 | 87.91 | 4.49 |
| 6 | 11490.00 | 55.2 PK | 74.0 | -18.8 | 1.26 V | 209 | 45.16 | 10.04 |
| 7 | 11490.00 | 43.3 AV | 54.0 | -10.7 | 1.26 V | 209 | 33.26 | 10.04 |
| 8 | #17235.00 | 62.5 PK | 74.0 | -11.5 | 1.00 V | 115 | 43.94 | 18.56 |
| 9 | #17235.00 | 50.2 AV | 54.0 | -3.8 | 1.00 V | 115 | 31.64 | 18.56 |

**REMARKS:**

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

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5785.00 | 113.2 PK | | | 1.83 H | 347 | 108.70 | 4.50 |
| 2 | *5785.00 | 102.9 AV | | | 1.83 H | 347 | 98.40 | 4.50 |
| 3 | 11570.00 | 57.3 PK | 74.0 | -16.7 | 2.02 H | 130 | 47.22 | 10.08 |
| 4 | 11570.00 | 46.3 AV | 54.0 | -7.7 | 2.02 H | 130 | 36.22 | 10.08 |
| 5 | #17355.00 | 63.3 PK | 74.0 | -10.7 | 1.57 H | 243 | 44.40 | 18.90 |
| 6 | #17355.00 | 50.3 AV | 54.0 | -3.7 | 1.57 H | 243 | 31.40 | 18.90 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5785.00 | 109.3 PK | | | 2.11 V | 232 | 104.80 | 4.50 |
| 2 | *5785.00 | 99.4 AV | | | 2.11 V | 232 | 94.90 | 4.50 |
| 3 | 11570.00 | 60.2 PK | 74.0 | -13.8 | 2.40 V | 176 | 50.12 | 10.08 |
| 4 | 11570.00 | 53.2 AV | 54.0 | -0.8 | 2.40 V | 176 | 43.12 | 10.08 |
| 5 | #17355.00 | 63.7 PK | 74.0 | -10.3 | 1.18 V | 239 | 44.80 | 18.90 |
| 6 | #17355.00 | 51.2 AV | 54.0 | -2.8 | 1.18 V | 239 | 32.30 | 18.90 |

**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.

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5825.00 | 113.0 PK | | | 1.88 H | 346 | 108.47 | 4.53 |
| 2 | *5825.00 | 102.9 AV | | | 1.88 H | 346 | 98.37 | 4.53 |
| 3 | #5850.00 | 73.2 PK | 78.2 | -5.0 | 1.88 H | 346 | 68.63 | 4.57 |
| 4 | #5860.00 | 61.9 PK | 74.0 | -12.1 | 1.88 H | 346 | 57.31 | 4.59 |
| 5 | #5860.00 | 49.2 AV | 54.0 | -4.8 | 1.88 H | 346 | 44.61 | 4.59 |
| 6 | 11650.00 | 61.0 PK | 74.0 | -13.0 | 1.74 H | 274 | 51.03 | 9.97 |
| 7 | 11650.00 | 49.0 AV | 54.0 | -5.0 | 1.74 H | 274 | 39.03 | 9.97 |
| 8 | #17475.00 | 63.2 PK | 74.0 | -10.8 | 1.56 H | 246 | 44.09 | 19.11 |
| 9 | #17475.00 | 50.5 AV | 54.0 | -3.5 | 1.56 H | 246 | 31.39 | 19.11 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5825.00 | 108.7 PK | | | 1.74 V | 295 | 104.17 | 4.53 |
| 2 | *5825.00 | 98.9 AV | | | 1.74 V | 295 | 94.37 | 4.53 |
| 3 | #5850.00 | 70.2 PK | 78.2 | -8.0 | 1.74 V | 295 | 65.63 | 4.57 |
| 4 | #5860.00 | 58.3 PK | 74.0 | -15.7 | 1.74 V | 295 | 53.71 | 4.59 |
| 5 | #5860.00 | 47.6 AV | 54.0 | -6.4 | 1.74 V | 295 | 43.01 | 4.59 |
| 6 | 11650.00 | 62.9 PK | 74.0 | -11.1 | 1.97 V | 170 | 52.93 | 9.97 |
| 7 | 11650.00 | 53.4 AV | 54.0 | -0.6 | 1.97 V | 170 | 43.43 | 9.97 |
| 8 | #17475.00 | 63.8 PK | 74.0 | -10.2 | 1.20 V | 235 | 44.69 | 19.11 |
| 9 | #17475.00 | 51.4 AV | 54.0 | -2.6 | 1.20 V | 235 | 32.29 | 19.11 |

**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.

## 802.11ac (VHT20)

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 65.1 PK | 74.0 | -8.9 | 1.19 H | 260 | 58.50 | 6.60 |
| 2 | 5150.00 | 53.2 AV | 54.0 | -0.8 | 1.19 H | 260 | 46.60 | 6.60 |
| 3 | *5180.00 | 114.1 PK | | | 1.19 H | 260 | 107.31 | 6.79 |
| 4 | *5180.00 | 107.3 AV | | | 1.19 H | 260 | 100.51 | 6.79 |
| 5 | #10360.00 | 58.9 PK | 74.0 | -15.1 | 1.73 H | 98 | 45.04 | 13.86 |
| 6 | #10360.00 | 49.4 AV | 54.0 | -4.6 | 1.73 H | 98 | 35.54 | 13.86 |
| 7 | 15540.00 | 64.9 PK | 74.0 | -9.1 | 1.22 H | 151 | 45.75 | 19.15 |
| 8 | 15540.00 | 51.6 AV | 54.0 | -2.4 | 1.22 H | 151 | 32.45 | 19.15 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 62.1 PK | 74.0 | -11.9 | 1.42 V | 173 | 55.50 | 6.60 |
| 2 | 5150.00 | 52.7 AV | 54.0 | -1.3 | 1.42 V | 173 | 46.10 | 6.60 |
| 3 | *5180.00 | 113.6 PK | | | 1.42 V | 173 | 106.81 | 6.79 |
| 4 | *5180.00 | 105.3 AV | | | 1.42 V | 173 | 98.51 | 6.79 |
| 5 | #10360.00 | 57.8 PK | 74.0 | -16.2 | 1.36 V | 205 | 43.94 | 13.86 |
| 6 | #10360.00 | 48.8 AV | 54.0 | -5.2 | 1.36 V | 205 | 34.94 | 13.86 |
| 7 | 15540.00 | 64.3 PK | 74.0 | -9.7 | 1.44 V | 307 | 45.15 | 19.15 |
| 8 | 15540.00 | 51.5 AV | 54.0 | -2.5 | 1.44 V | 307 | 32.35 | 19.15 |

**REMARKS:**

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

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 62.9 PK | 74.0 | -11.1 | 1.51 H | 206 | 56.30 | 6.60 |
| **2** | **5150.00** | **53.9 AV** | **54.0** | **-0.1** | **1.51 H** | **206** | **47.30** | **6.60** |
| 3 | *5200.00 | 117.1 PK | | | 1.42 H | 261 | 110.20 | 6.90 |
| 4 | *5200.00 | 110.2 AV | | | 1.42 H | 261 | 103.30 | 6.90 |
| 5 | #10400.00 | 58.8 PK | 74.0 | -15.2 | 1.67 H | 104 | 44.92 | 13.88 |
| 6 | #10400.00 | 49.5 AV | 54.0 | -4.5 | 1.67 H | 104 | 35.62 | 13.88 |
| 7 | 15600.00 | 65.5 PK | 74.0 | -8.5 | 1.27 H | 137 | 46.85 | 18.65 |
| 8 | 15600.00 | 52.5 AV | 54.0 | -1.5 | 1.27 H | 137 | 33.85 | 18.65 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 61.4 PK | 74.0 | -12.6 | 1.50 V | 203 | 54.80 | 6.60 |
| 2 | 5150.00 | 52.6 AV | 54.0 | -1.4 | 1.50 V | 203 | 46.00 | 6.60 |
| 3 | *5200.00 | 117.4 PK | | | 1.50 V | 203 | 110.50 | 6.90 |
| 4 | *5200.00 | 109.4 AV | | | 1.50 V | 203 | 102.50 | 6.90 |
| 5 | #10400.00 | 58.4 PK | 74.0 | -15.6 | 1.33 V | 201 | 44.52 | 13.88 |
| 6 | #10400.00 | 49.6 AV | 54.0 | -4.4 | 1.33 V | 201 | 35.72 | 13.88 |
| 7 | 15600.00 | 64.8 PK | 74.0 | -9.2 | 1.37 V | 302 | 46.15 | 18.65 |
| 8 | 15600.00 | 52.3 AV | 54.0 | -1.7 | 1.37 V | 302 | 33.65 | 18.65 |

**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.

| CHANNEL | TX Channel 48 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5240.00 | 118.5 PK | | | 1.30 H | 260 | 111.54 | 6.96 |
| 2 | *5240.00 | 109.4 AV | | | 1.30 H | 260 | 102.44 | 6.96 |
| 3 | #10480.00 | 59.2 PK | 74.0 | -14.8 | 1.72 H | 103 | 45.54 | 13.66 |
| 4 | #10480.00 | 49.6 AV | 54.0 | -4.4 | 1.72 H | 103 | 35.94 | 13.66 |
| 5 | 15720.00 | 65.1 PK | 74.0 | -8.9 | 1.21 H | 149 | 45.92 | 19.18 |
| 6 | 15720.00 | 52.0 AV | 54.0 | -2.0 | 1.21 H | 149 | 32.82 | 19.18 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5240.00 | 118.2 PK | | | 1.56 V | 185 | 111.24 | 6.96 |
| 2 | *5240.00 | 107.6 AV | | | 1.56 V | 185 | 100.64 | 6.96 |
| 3 | #10480.00 | 58.3 PK | 74.0 | -15.7 | 1.34 V | 209 | 44.64 | 13.66 |
| 4 | #10480.00 | 49.3 AV | 54.0 | -4.7 | 1.34 V | 209 | 35.64 | 13.66 |
| 5 | 15720.00 | 64.5 PK | 74.0 | -9.5 | 1.42 V | 302 | 45.32 | 19.18 |
| 6 | 15720.00 | 51.8 AV | 54.0 | -2.2 | 1.42 V | 302 | 32.62 | 19.18 |

**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.

| CHANNEL | TX Channel 52 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5260.00 | 121.4 PK | | | 1.43 H | 259 | 114.42 | 6.98 |
| 2 | *5260.00 | 112.1 AV | | | 1.43 H | 259 | 105.12 | 6.98 |
| 3 | #10520.00 | 58.5 PK | 74.0 | -15.5 | 1.69 H | 117 | 45.00 | 13.50 |
| 4 | #10520.00 | 49.2 AV | 54.0 | -4.8 | 1.69 H | 117 | 35.70 | 13.50 |
| 5 | 15780.00 | 64.9 PK | 74.0 | -9.1 | 1.21 H | 144 | 45.48 | 19.42 |
| 6 | 15780.00 | 51.7 AV | 54.0 | -2.3 | 1.21 H | 144 | 32.28 | 19.42 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5260.00 | 120.3 PK | | | 1.57 V | 190 | 113.32 | 6.98 |
| 2 | *5260.00 | 109.6 AV | | | 1.57 V | 190 | 102.62 | 6.98 |
| 3 | #10520.00 | 58.4 PK | 74.0 | -15.6 | 1.32 V | 208 | 44.90 | 13.50 |
| 4 | #10520.00 | 49.5 AV | 54.0 | -4.5 | 1.32 V | 208 | 36.00 | 13.50 |
| 5 | 15780.00 | 64.2 PK | 74.0 | -9.8 | 1.45 V | 309 | 44.78 | 19.42 |
| 6 | 15780.00 | 51.4 AV | 54.0 | -2.6 | 1.45 V | 309 | 31.98 | 19.42 |

**REMARKS:**

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

| CHANNEL | TX Channel 60 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5300.00 | 118.8 PK | | | 1.39 H | 260 | 111.76 | 7.04 |
| 2 | *5300.00 | 110.3 AV | | | 1.39 H | 260 | 103.26 | 7.04 |
| 3 | 10600.00 | 59.5 PK | 74.0 | -14.5 | 1.67 H | 95 | 46.35 | 13.15 |
| 4 | 10600.00 | 50.0 AV | 54.0 | -4.0 | 1.67 H | 95 | 36.85 | 13.15 |
| 5 | 15900.00 | 65.5 PK | 74.0 | -8.5 | 1.16 H | 137 | 46.59 | 18.91 |
| 6 | 15900.00 | 52.3 AV | 54.0 | -1.7 | 1.16 H | 137 | 33.39 | 18.91 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5300.00 | 117.3 PK | | | 1.53 V | 197 | 110.26 | 7.04 |
| 2 | *5300.00 | 108.2 AV | | | 1.53 V | 197 | 101.16 | 7.04 |
| 3 | 10600.00 | 58.8 PK | 74.0 | -15.2 | 1.34 V | 218 | 45.65 | 13.15 |
| 4 | 10600.00 | 49.7 AV | 54.0 | -4.3 | 1.34 V | 218 | 36.55 | 13.15 |
| 5 | 15900.00 | 64.5 PK | 74.0 | -9.5 | 1.36 V | 311 | 45.59 | 18.91 |
| 6 | 15900.00 | 51.7 AV | 54.0 | -2.3 | 1.36 V | 311 | 32.79 | 18.91 |

**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.

| CHANNEL | TX Channel 64 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5320.00 | 115.4 PK | | | 1.39 H | 262 | 108.30 | 7.10 |
| 2 | *5320.00 | 107.2 AV | | | 1.39 H | 262 | 100.10 | 7.10 |
| 3 | 5350.00 | 65.0 PK | 74.0 | -9.0 | 1.39 H | 262 | 57.82 | 7.18 |
| 4 | 5350.00 | 52.6 AV | 54.0 | -1.4 | 1.39 H | 262 | 45.42 | 7.18 |
| 5 | 10640.00 | 59.9 PK | 74.0 | -14.1 | 1.78 H | 98 | 46.50 | 13.40 |
| 6 | 10640.00 | 50.1 AV | 54.0 | -3.9 | 1.78 H | 98 | 36.70 | 13.40 |
| 7 | 15960.00 | 65.3 PK | 74.0 | -8.7 | 1.19 H | 137 | 46.64 | 18.66 |
| 8 | 15960.00 | 52.2 AV | 54.0 | -1.8 | 1.19 H | 137 | 33.54 | 18.66 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5320.00 | 113.4 PK | | | 1.38 V | 171 | 106.30 | 7.10 |
| 2 | *5320.00 | 104.9 AV | | | 1.38 V | 171 | 97.80 | 7.10 |
| 3 | 5350.00 | 64.2 PK | 74.0 | -9.8 | 1.38 V | 171 | 57.02 | 7.18 |
| 4 | 5350.00 | 51.3 AV | 54.0 | -2.7 | 1.38 V | 171 | 44.12 | 7.18 |
| 5 | 10640.00 | 57.7 PK | 74.0 | -16.3 | 1.31 V | 198 | 44.30 | 13.40 |
| 6 | 10640.00 | 49.0 AV | 54.0 | -5.0 | 1.31 V | 198 | 35.60 | 13.40 |
| 7 | 15960.00 | 64.8 PK | 74.0 | -9.2 | 1.44 V | 294 | 46.14 | 18.66 |
| 8 | 15960.00 | 52.1 AV | 54.0 | -1.9 | 1.44 V | 294 | 33.44 | 18.66 |

**REMARKS:**

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

| CHANNEL | TX Channel 100 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 69.7 PK | 74.0 | -4.3 | 1.43 H | 262 | 62.27 | 7.43 |
| 2 | #5470.00 | 53.7 AV | 54.0 | -0.3 | 1.43 H | 262 | 46.27 | 7.43 |
| 3 | *5500.00 | 115.2 PK | | | 1.43 H | 262 | 107.73 | 7.47 |
| 4 | *5500.00 | 106.6 AV | | | 1.43 H | 262 | 99.13 | 7.47 |
| 5 | 11000.00 | 59.2 PK | 74.0 | -14.8 | 1.67 H | 106 | 45.08 | 14.12 |
| 6 | 11000.00 | 49.7 AV | 54.0 | -4.3 | 1.67 H | 106 | 35.58 | 14.12 |
| 7 | #16500.00 | 65.1 PK | 74.0 | -8.9 | 1.25 H | 137 | 43.91 | 21.19 |
| 8 | #16500.00 | 52.2 AV | 54.0 | -1.8 | 1.25 H | 137 | 31.01 | 21.19 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 68.4 PK | 74.0 | -5.6 | 1.32 V | 255 | 60.97 | 7.43 |
| 2 | #5470.00 | 52.1 AV | 54.0 | -1.9 | 1.32 V | 255 | 44.67 | 7.43 |
| 3 | *5500.00 | 114.6 PK | | | 1.32 V | 255 | 107.13 | 7.47 |
| 4 | *5500.00 | 103.9 AV | | | 1.32 V | 255 | 96.43 | 7.47 |
| 5 | 11000.00 | 58.6 PK | 74.0 | -15.4 | 1.29 V | 224 | 44.48 | 14.12 |
| 6 | 11000.00 | 49.3 AV | 54.0 | -4.7 | 1.29 V | 224 | 35.18 | 14.12 |
| 7 | #16500.00 | 64.9 PK | 74.0 | -9.1 | 1.46 V | 316 | 43.71 | 21.19 |
| 8 | #16500.00 | 52.1 AV | 54.0 | -1.9 | 1.46 V | 316 | 30.91 | 21.19 |

**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.

| CHANNEL | TX Channel 120 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 69.8 PK | 74.0 | -4.2 | 1.38 H | 254 | 62.37 | 7.43 |
| 2 | #5470.00 | 53.8 AV | 54.0 | -0.2 | 1.38 H | 254 | 46.37 | 7.43 |
| 3 | *5600.00 | 114.1 PK | | | 1.38 H | 254 | 106.64 | 7.46 |
| 4 | *5600.00 | 105.4 AV | | | 1.38 H | 254 | 97.94 | 7.46 |
| 5 | 11200.00 | 58.9 PK | 74.0 | -15.1 | 1.69 H | 96 | 44.69 | 14.21 |
| 6 | 11200.00 | 49.5 AV | 54.0 | -4.5 | 1.69 H | 96 | 35.29 | 14.21 |
| 7 | #16800.00 | 64.8 PK | 74.0 | -9.2 | 1.26 H | 157 | 42.75 | 22.05 |
| 8 | #16800.00 | 51.9 AV | 54.0 | -2.1 | 1.26 H | 157 | 29.85 | 22.05 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 68.4 PK | 74.0 | -5.6 | 1.32 V | 215 | 60.97 | 7.43 |
| 2 | #5470.00 | 52.1 AV | 54.0 | -1.9 | 1.32 V | 215 | 44.67 | 7.43 |
| 3 | *5600.00 | 112.3 PK | | | 1.32 V | 215 | 104.84 | 7.46 |
| 4 | *5600.00 | 102.9 AV | | | 1.32 V | 215 | 95.44 | 7.46 |
| 5 | 11200.00 | 58.8 PK | 74.0 | -15.2 | 1.36 V | 224 | 44.59 | 14.21 |
| 6 | 11200.00 | 49.7 AV | 54.0 | -4.3 | 1.36 V | 224 | 35.49 | 14.21 |
| 7 | #16800.00 | 64.5 PK | 74.0 | -9.5 | 1.48 V | 297 | 42.45 | 22.05 |
| 8 | #16800.00 | 51.9 AV | 54.0 | -2.1 | 1.48 V | 297 | 29.85 | 22.05 |

**REMARKS:**

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

| CHANNEL | TX Channel 140 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5700.00 | 110.3 PK | | | 1.31 H | 264 | 102.40 | 7.90 |
| 2 | *5700.00 | 101.6 AV | | | 1.31 H | 264 | 93.70 | 7.90 |
| 3 | #5725.00 | 71.9 PK | 74.0 | -2.1 | 1.31 H | 264 | 63.96 | 7.94 |
| **4** | **#5725.00** | **53.9 AV** | **54.0** | **-0.1** | **1.31 H** | **264** | **45.96** | **7.94** |
| 5 | 11400.00 | 59.2 PK | 74.0 | -14.8 | 1.76 H | 95 | 44.75 | 14.45 |
| 6 | 11400.00 | 49.4 AV | 54.0 | -4.6 | 1.76 H | 95 | 34.95 | 14.45 |
| 7 | #17100.00 | 65.5 PK | 74.0 | -8.5 | 1.25 H | 148 | 42.65 | 22.85 |
| 8 | #17100.00 | 52.4 AV | 54.0 | -1.6 | 1.25 H | 148 | 29.55 | 22.85 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5700.00 | 108.9 PK | | | 1.32 V | 231 | 101.00 | 7.90 |
| 2 | *5700.00 | 98.7 AV | | | 1.32 V | 231 | 90.80 | 7.90 |
| 3 | #5725.00 | 70.6 PK | 74.0 | -3.4 | 1.32 V | 231 | 62.66 | 7.94 |
| 4 | #5725.00 | 52.6 AV | 54.0 | -1.4 | 1.32 V | 231 | 44.66 | 7.94 |
| 5 | 11400.00 | 58.1 PK | 74.0 | -15.9 | 1.30 V | 216 | 43.65 | 14.45 |
| 6 | 11400.00 | 49.0 AV | 54.0 | -5.0 | 1.30 V | 216 | 34.55 | 14.45 |
| 7 | #17100.00 | 64.1 PK | 74.0 | -9.9 | 1.36 V | 291 | 41.25 | 22.85 |
| 8 | #17100.00 | 51.3 AV | 54.0 | -2.7 | 1.36 V | 291 | 28.45 | 22.85 |

**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.

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 63.8 PK | 74.0 | -10.2 | 1.41 H | 262 | 59.32 | 4.48 |
| **2** | **#5715.00** | **53.9 AV** | **54.0** | **-0.1** | **1.41 H** | **262** | **49.42** | **4.48** |
| **3** | **#5725.00** | **78.1 PK** | **78.2** | **-0.1** | **1.41 H** | **262** | **73.60** | **4.50** |
| 4 | *5745.00 | 107.7 PK | | | 1.41 H | 262 | 103.21 | 4.49 |
| 5 | *5745.00 | 99.4 AV | | | 1.41 H | 262 | 94.91 | 4.49 |
| 6 | 11490.00 | 58.6 PK | 74.0 | -15.4 | 1.74 H | 96 | 48.56 | 10.04 |
| 7 | 11490.00 | 48.9 AV | 54.0 | -5.1 | 1.74 H | 96 | 38.86 | 10.04 |
| 8 | #17235.00 | 66.1 PK | 74.0 | -7.9 | 1.21 H | 152 | 47.54 | 18.56 |
| 9 | #17235.00 | 52.8 AV | 54.0 | -1.2 | 1.21 H | 152 | 34.24 | 18.56 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 62.4 PK | 74.0 | -11.6 | 1.47 V | 254 | 57.92 | 4.48 |
| 2 | #5715.00 | 52.6 AV | 54.0 | -1.4 | 1.47 V | 254 | 48.12 | 4.48 |
| 3 | #5725.00 | 65.6 PK | 78.2 | -12.6 | 1.47 V | 254 | 61.10 | 4.50 |
| 4 | *5745.00 | 106.6 PK | | | 1.47 V | 254 | 102.11 | 4.49 |
| 5 | *5745.00 | 97.7 AV | | | 1.47 V | 254 | 93.21 | 4.49 |
| 6 | 11490.00 | 58.0 PK | 74.0 | -16.0 | 1.25 V | 212 | 47.96 | 10.04 |
| 7 | 11490.00 | 49.1 AV | 54.0 | -4.9 | 1.25 V | 212 | 39.06 | 10.04 |
| 8 | #17235.00 | 63.9 PK | 74.0 | -10.1 | 1.41 V | 290 | 45.34 | 18.56 |
| 9 | #17235.00 | 51.0 AV | 54.0 | -3.0 | 1.41 V | 290 | 32.44 | 18.56 |

**REMARKS:**

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

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 68.0 PK | 74.0 | -6.0 | 1.46 H | 265 | 63.52 | 4.48 |
| 2 | #5715.00 | 53.5 AV | 54.0 | -0.5 | 1.46 H | 265 | 49.02 | 4.48 |
| 3 | #5725.00 | 73.2 PK | 78.2 | -5.0 | 1.46 H | 265 | 68.70 | 4.50 |
| 4 | *5785.00 | 113.6 PK | | | 1.46 H | 265 | 109.10 | 4.50 |
| 5 | *5785.00 | 104.5 AV | | | 1.46 H | 265 | 100.00 | 4.50 |
| 6 | #5850.00 | 63.8 PK | 78.2 | -14.4 | 1.46 H | 265 | 59.23 | 4.57 |
| 7 | #5860.00 | 58.9 PK | 74.0 | -15.1 | 1.46 H | 265 | 54.31 | 4.59 |
| 8 | #5860.00 | 49.1 AV | 54.0 | -4.9 | 1.46 H | 265 | 44.51 | 4.59 |
| 9 | 11570.00 | 58.4 PK | 74.0 | -15.6 | 1.68 H | 110 | 48.32 | 10.08 |
| 10 | 11570.00 | 49.2 AV | 54.0 | -4.8 | 1.68 H | 110 | 39.12 | 10.08 |
| 11 | #17355.00 | 64.9 PK | 74.0 | -9.1 | 1.23 H | 153 | 46.00 | 18.90 |
| 12 | #17355.00 | 51.9 AV | 54.0 | -2.1 | 1.23 H | 153 | 33.00 | 18.90 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 66.5 PK | 74.0 | -7.5 | 1.46 V | 254 | 62.02 | 4.48 |
| 2 | #5715.00 | 52.4 AV | 54.0 | -1.6 | 1.46 V | 254 | 47.92 | 4.48 |
| 3 | #5725.00 | 61.4 PK | 78.2 | -16.8 | 1.46 V | 254 | 56.90 | 4.50 |
| 4 | *5785.00 | 110.6 PK | | | 1.46 V | 254 | 106.10 | 4.50 |
| 5 | *5785.00 | 101.4 AV | | | 1.46 V | 254 | 96.90 | 4.50 |
| 6 | #5850.00 | 54.2 PK | 78.2 | -24.0 | 1.46 V | 254 | 49.63 | 4.57 |
| 7 | #5860.00 | 57.7 PK | 74.0 | -16.3 | 1.46 V | 254 | 53.11 | 4.59 |
| 8 | #5860.00 | 47.6 AV | 54.0 | -6.4 | 1.46 V | 254 | 43.01 | 4.59 |
| 9 | 11570.00 | 58.8 PK | 74.0 | -15.2 | 1.39 V | 239 | 48.72 | 10.08 |
| 10 | 11570.00 | 49.8 AV | 54.0 | -4.2 | 1.39 V | 239 | 39.72 | 10.08 |
| 11 | #17355.00 | 64.3 PK | 74.0 | -9.7 | 1.50 V | 306 | 45.40 | 18.90 |
| 12 | #17355.00 | 51.6 AV | 54.0 | -2.4 | 1.50 V | 306 | 32.70 | 18.90 |

**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.

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5825.00 | 109.7 PK | | | 1.46 H | 261 | 105.17 | 4.53 |
| 2 | *5825.00 | 102.0 AV | | | 1.46 H | 261 | 97.47 | 4.53 |
| 3 | #5850.00 | 76.2 PK | 78.2 | -2.0 | 1.46 H | 261 | 71.63 | 4.57 |
| 4 | #5860.00 | 66.0 PK | 74.0 | -8.0 | 1.46 H | 261 | 61.41 | 4.59 |
| **5** | **#5860.00** | **53.9 AV** | **54.0** | **-0.1** | **1.46 H** | **261** | **49.31** | **4.59** |
| 6 | 11650.00 | 59.3 PK | 74.0 | -14.7 | 1.78 H | 88 | 49.33 | 9.97 |
| 7 | 11650.00 | 49.5 AV | 54.0 | -4.5 | 1.78 H | 88 | 39.53 | 9.97 |
| 8 | #17475.00 | 65.7 PK | 74.0 | -8.3 | 1.29 H | 140 | 46.59 | 19.11 |
| 9 | #17475.00 | 52.4 AV | 54.0 | -1.6 | 1.29 H | 140 | 33.29 | 19.11 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5825.00 | 106.5 PK | | | 1.45 V | 250 | 101.97 | 4.53 |
| 2 | *5825.00 | 99.5 AV | | | 1.45 V | 250 | 94.97 | 4.53 |
| 3 | #5850.00 | 57.4 PK | 78.2 | -20.8 | 1.45 V | 250 | 52.83 | 4.57 |
| 4 | #5860.00 | 65.3 PK | 74.0 | -8.7 | 1.45 V | 250 | 60.71 | 4.59 |
| 5 | #5860.00 | 52.1 AV | 54.0 | -1.9 | 1.45 V | 250 | 47.51 | 4.59 |
| 6 | 11650.00 | 58.4 PK | 74.0 | -15.6 | 1.29 V | 232 | 48.43 | 9.97 |
| 7 | 11650.00 | 49.0 AV | 54.0 | -5.0 | 1.29 V | 232 | 39.03 | 9.97 |
| 8 | #17475.00 | 63.8 PK | 74.0 | -10.2 | 1.38 V | 293 | 44.69 | 19.11 |
| 9 | #17475.00 | 51.1 AV | 54.0 | -2.9 | 1.38 V | 293 | 31.99 | 19.11 |

**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.

## 802.11ac (VHT40)

| CHANNEL | TX Channel 38 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 69.1 PK | 74.0 | -4.9 | 1.23 H | 264 | 62.50 | 6.60 |
| **2** | **5150.00** | **53.9 AV** | **54.0** | **-0.1** | **1.23 H** | **264** | **47.30** | **6.60** |
| 3 | *5190.00 | 104.9 PK | | | 1.23 H | 264 | 98.06 | 6.84 |
| 4 | *5190.00 | 98.4 AV | | | 1.23 H | 264 | 91.56 | 6.84 |
| 5 | #10380.00 | 59.2 PK | 74.0 | -14.8 | 1.74 H | 93 | 45.33 | 13.87 |
| 6 | #10380.00 | 49.7 AV | 54.0 | -4.3 | 1.74 H | 93 | 35.83 | 13.87 |
| 7 | 15570.00 | 65.3 PK | 74.0 | -8.7 | 1.23 H | 149 | 46.40 | 18.90 |
| 8 | 15570.00 | 52.2 AV | 54.0 | -1.8 | 1.23 H | 149 | 33.30 | 18.90 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 68.4 PK | 74.0 | -5.6 | 1.35 V | 215 | 61.80 | 6.60 |
| 2 | 5150.00 | 52.7 AV | 54.0 | -1.3 | 1.35 V | 215 | 46.10 | 6.60 |
| 3 | *5190.00 | 103.3 PK | | | 1.35 V | 215 | 96.46 | 6.84 |
| 4 | *5190.00 | 95.2 AV | | | 1.35 V | 215 | 88.36 | 6.84 |
| 5 | #10380.00 | 58.5 PK | 74.0 | -15.5 | 1.36 V | 222 | 44.63 | 13.87 |
| 6 | #10380.00 | 49.8 AV | 54.0 | -4.2 | 1.36 V | 222 | 35.93 | 13.87 |
| 7 | 15570.00 | 64.8 PK | 74.0 | -9.2 | 1.48 V | 287 | 45.90 | 18.90 |
| 8 | 15570.00 | 52.0 AV | 54.0 | -2.0 | 1.48 V | 287 | 33.10 | 18.90 |

**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.

| CHANNEL | TX Channel 46 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 58.4 PK | 74.0 | -15.6 | 1.50 H | 264 | 51.80 | 6.60 |
| 2 | 5150.00 | 52.5 AV | 54.0 | -1.5 | 1.50 H | 264 | 45.90 | 6.60 |
| 3 | *5230.00 | 113.4 PK | | | 1.50 H | 264 | 106.45 | 6.95 |
| 4 | *5230.00 | 108.5 AV | | | 1.50 H | 264 | 101.55 | 6.95 |
| 5 | 5350.00 | 54.3 PK | 74.0 | -19.7 | 1.50 H | 264 | 47.12 | 7.18 |
| 6 | 5350.00 | 45.7 AV | 54.0 | -8.3 | 1.50 H | 264 | 38.52 | 7.18 |
| 7 | #10460.00 | 58.8 PK | 74.0 | -15.2 | 1.68 H | 105 | 45.09 | 13.71 |
| 8 | #10460.00 | 49.4 AV | 54.0 | -4.6 | 1.68 H | 105 | 35.69 | 13.71 |
| 9 | 15690.00 | 65.3 PK | 74.0 | -8.7 | 1.27 H | 139 | 46.24 | 19.06 |
| 10 | 15690.00 | 52.4 AV | 54.0 | -1.6 | 1.27 H | 139 | 33.34 | 19.06 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 57.3 PK | 74.0 | -16.7 | 1.47 V | 171 | 50.70 | 6.60 |
| 2 | 5150.00 | 51.6 AV | 54.0 | -2.4 | 1.47 V | 171 | 45.00 | 6.60 |
| 3 | *5230.00 | 111.9 PK | | | 1.47 V | 171 | 104.95 | 6.95 |
| 4 | *5230.00 | 105.3 AV | | | 1.47 V | 171 | 98.35 | 6.95 |
| 5 | 5350.00 | 53.5 PK | 74.0 | -20.5 | 1.47 V | 171 | 46.32 | 7.18 |
| 6 | 5350.00 | 44.6 AV | 54.0 | -9.4 | 1.47 V | 171 | 37.42 | 7.18 |
| 7 | #10460.00 | 58.2 PK | 74.0 | -15.8 | 1.31 V | 210 | 44.49 | 13.71 |
| 8 | #10460.00 | 49.0 AV | 54.0 | -5.0 | 1.31 V | 210 | 35.29 | 13.71 |
| 9 | 15690.00 | 64.8 PK | 74.0 | -9.2 | 1.40 V | 313 | 45.74 | 19.06 |
| 10 | 15690.00 | 51.9 AV | 54.0 | -2.1 | 1.40 V | 313 | 32.84 | 19.06 |

**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.

| CHANNEL | TX Channel 54 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 54.4 PK | 74.0 | -19.6 | 1.28 H | 263 | 47.80 | 6.60 |
| 2 | 5150.00 | 46.0 AV | 54.0 | -8.0 | 1.28 H | 263 | 39.40 | 6.60 |
| 3 | *5270.00 | 110.7 PK | | | 1.28 H | 263 | 103.71 | 6.99 |
| 4 | *5270.00 | 105.0 AV | | | 1.28 H | 263 | 98.01 | 6.99 |
| 5 | 5350.00 | 59.7 PK | 74.0 | -14.3 | 1.28 H | 263 | 52.52 | 7.18 |
| 6 | 5350.00 | 53.1 AV | 54.0 | -0.9 | 1.28 H | 263 | 45.92 | 7.18 |
| 7 | #10540.00 | 59.4 PK | 74.0 | -14.6 | 1.73 H | 88 | 45.98 | 13.42 |
| 8 | #10540.00 | 49.9 AV | 54.0 | -4.1 | 1.73 H | 88 | 36.48 | 13.42 |
| 9 | 15810.00 | 65.4 PK | 74.0 | -8.6 | 1.17 H | 140 | 45.96 | 19.44 |
| 10 | 15810.00 | 52.2 AV | 54.0 | -1.8 | 1.17 H | 140 | 32.76 | 19.44 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 53.3 PK | 74.0 | -20.7 | 1.47 V | 214 | 46.70 | 6.60 |
| 2 | 5150.00 | 45.2 AV | 54.0 | -8.8 | 1.47 V | 214 | 38.60 | 6.60 |
| 3 | *5270.00 | 109.9 PK | | | 1.47 V | 214 | 102.91 | 6.99 |
| 4 | *5270.00 | 102.1 AV | | | 1.47 V | 214 | 95.11 | 6.99 |
| 5 | 5350.00 | 58.3 PK | 74.0 | -15.7 | 1.47 V | 214 | 51.12 | 7.18 |
| 6 | 5350.00 | 51.9 AV | 54.0 | -2.1 | 1.47 V | 214 | 44.72 | 7.18 |
| 7 | #10540.00 | 58.9 PK | 74.0 | -15.1 | 1.37 V | 221 | 45.48 | 13.42 |
| 8 | #10540.00 | 49.8 AV | 54.0 | -4.2 | 1.37 V | 221 | 36.38 | 13.42 |
| 9 | 15810.00 | 64.5 PK | 74.0 | -9.5 | 1.44 V | 294 | 45.06 | 19.44 |
| 10 | 15810.00 | 52.1 AV | 54.0 | -1.9 | 1.44 V | 294 | 32.66 | 19.44 |

**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.

| CHANNEL | TX Channel 62 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5310.00 | 108.2 PK | | | 1.38 H | 248 | 101.13 | 7.07 |
| 2 | *5310.00 | 100.9 AV | | | 1.38 H | 248 | 93.83 | 7.07 |
| **3** | **5350.00** | **73.9 PK** | **74.0** | **-0.1** | **1.38 H** | **248** | **66.72** | **7.18** |
| 4 | 5350.00 | 53.8 AV | 54.0 | -0.2 | 1.38 H | 248 | 46.62 | 7.18 |
| 5 | 10620.00 | 59.1 PK | 74.0 | -14.9 | 1.67 H | 98 | 45.84 | 13.26 |
| 6 | 10620.00 | 49.2 AV | 54.0 | -4.8 | 1.67 H | 98 | 35.94 | 13.26 |
| 7 | 15930.00 | 65.0 PK | 74.0 | -9.0 | 1.26 H | 150 | 46.22 | 18.78 |
| 8 | 15930.00 | 52.0 AV | 54.0 | -2.0 | 1.26 H | 150 | 33.22 | 18.78 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5310.00 | 107.6 PK | | | 1.34 V | 254 | 100.53 | 7.07 |
| 2 | *5310.00 | 97.7 AV | | | 1.34 V | 254 | 90.63 | 7.07 |
| 3 | 5350.00 | 72.4 PK | 74.0 | -1.6 | 1.34 V | 254 | 65.22 | 7.18 |
| 4 | 5350.00 | 52.2 AV | 54.0 | -1.8 | 1.34 V | 254 | 45.02 | 7.18 |
| 5 | 10620.00 | 58.8 PK | 74.0 | -15.2 | 1.39 V | 220 | 45.54 | 13.26 |
| 6 | 10620.00 | 49.6 AV | 54.0 | -4.4 | 1.39 V | 220 | 36.34 | 13.26 |
| 7 | 15930.00 | 65.0 PK | 74.0 | -9.0 | 1.38 V | 313 | 46.22 | 18.78 |
| 8 | 15930.00 | 52.1 AV | 54.0 | -1.9 | 1.38 V | 313 | 33.32 | 18.78 |

**REMARKS:**

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

| CHANNEL | TX Channel 102 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 63.6 PK | 74.0 | -10.4 | 1.38 H | 247 | 56.17 | 7.43 |
| **2** | **#5470.00** | **53.9 AV** | **54.0** | **-0.1** | **1.38 H** | **247** | **46.47** | **7.43** |
| 3 | *5510.00 | 103.6 PK | | | 1.38 H | 247 | 96.13 | 7.47 |
| 4 | *5510.00 | 96.2 AV | | | 1.38 H | 247 | 88.73 | 7.47 |
| 5 | 11020.00 | 59.5 PK | 74.0 | -14.5 | 1.76 H | 104 | 45.34 | 14.16 |
| 6 | 11020.00 | 50.0 AV | 54.0 | -4.0 | 1.76 H | 104 | 35.84 | 14.16 |
| 7 | #16530.00 | 65.3 PK | 74.0 | -8.7 | 1.19 H | 140 | 43.88 | 21.42 |
| 8 | #16530.00 | 51.9 AV | 54.0 | -2.1 | 1.19 H | 140 | 30.48 | 21.42 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 62.4 PK | 74.0 | -11.6 | 1.37 V | 241 | 54.97 | 7.43 |
| 2 | #5470.00 | 52.6 AV | 54.0 | -1.4 | 1.37 V | 241 | 45.17 | 7.43 |
| 3 | *5510.00 | 102.4 PK | | | 1.37 V | 241 | 94.93 | 7.47 |
| 4 | *5510.00 | 93.4 AV | | | 1.37 V | 241 | 85.93 | 7.47 |
| 5 | 11020.00 | 58.1 PK | 74.0 | -15.9 | 1.35 V | 198 | 43.94 | 14.16 |
| 6 | 11020.00 | 49.4 AV | 54.0 | -4.6 | 1.35 V | 198 | 35.24 | 14.16 |
| 7 | #16530.00 | 64.8 PK | 74.0 | -9.2 | 1.42 V | 317 | 43.38 | 21.42 |
| 8 | #16530.00 | 52.2 AV | 54.0 | -1.8 | 1.42 V | 317 | 30.78 | 21.42 |

**REMARKS:**

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

| CHANNEL | TX Channel 118 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 63.7 PK | 74.0 | -10.3 | 1.35 H | 244 | 56.27 | 7.43 |
| 2 | #5470.00 | 53.8 AV | 54.0 | -0.2 | 1.35 H | 244 | 46.37 | 7.43 |
| 3 | *5590.00 | 103.2 PK | | | 1.35 H | 244 | 95.74 | 7.46 |
| 4 | *5590.00 | 96.1 AV | | | 1.35 H | 244 | 88.64 | 7.46 |
| 5 | 11180.00 | 58.7 PK | 74.0 | -15.3 | 1.68 H | 89 | 44.48 | 14.22 |
| 6 | 11180.00 | 49.2 AV | 54.0 | -4.8 | 1.68 H | 89 | 34.98 | 14.22 |
| 7 | #16770.00 | 65.3 PK | 74.0 | -8.7 | 1.25 H | 160 | 43.29 | 22.01 |
| 8 | #16770.00 | 52.4 AV | 54.0 | -1.6 | 1.25 H | 160 | 30.39 | 22.01 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 62.5 PK | 74.0 | -11.5 | 1.36 V | 245 | 55.07 | 7.43 |
| 2 | #5470.00 | 52.4 AV | 54.0 | -1.6 | 1.36 V | 245 | 44.97 | 7.43 |
| 3 | *5590.00 | 102.7 PK | | | 1.36 V | 245 | 95.24 | 7.46 |
| 4 | *5590.00 | 93.3 AV | | | 1.36 V | 245 | 85.84 | 7.46 |
| 5 | 11180.00 | 58.8 PK | 74.0 | -15.2 | 1.36 V | 216 | 44.58 | 14.22 |
| 6 | 11180.00 | 49.7 AV | 54.0 | -4.3 | 1.36 V | 216 | 35.48 | 14.22 |
| 7 | #16770.00 | 64.3 PK | 74.0 | -9.7 | 1.36 V | 298 | 42.29 | 22.01 |
| 8 | #16770.00 | 51.5 AV | 54.0 | -2.5 | 1.36 V | 298 | 29.49 | 22.01 |

**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.

| CHANNEL | TX Channel 134 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5670.00 | 106.2 PK | | | 1.58 H | 282 | 98.43 | 7.77 |
| 2 | *5670.00 | 99.1 AV | | | 1.58 H | 282 | 91.33 | 7.77 |
| 3 | #5725.00 | 67.8 PK | 74.0 | -6.2 | 1.58 H | 282 | 59.86 | 7.94 |
| 4 | #5725.00 | 53.8 AV | 54.0 | -0.2 | 1.58 H | 282 | 45.86 | 7.94 |
| 5 | 11340.00 | 59.8 PK | 74.0 | -14.2 | 1.77 H | 108 | 45.61 | 14.19 |
| 6 | 11340.00 | 50.0 AV | 54.0 | -4.0 | 1.77 H | 108 | 35.81 | 14.19 |
| 7 | #17010.00 | 65.5 PK | 74.0 | -8.5 | 1.23 H | 140 | 42.33 | 23.17 |
| 8 | #17010.00 | 52.4 AV | 54.0 | -1.6 | 1.23 H | 140 | 29.23 | 23.17 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5670.00 | 105.7 PK | | | 1.45 V | 222 | 97.93 | 7.77 |
| 2 | *5670.00 | 96.2 AV | | | 1.45 V | 222 | 88.43 | 7.77 |
| 3 | #5725.00 | 66.4 PK | 74.0 | -7.6 | 1.45 V | 222 | 58.46 | 7.94 |
| 4 | #5725.00 | 52.1 AV | 54.0 | -1.9 | 1.45 V | 222 | 44.16 | 7.94 |
| 5 | 11340.00 | 57.8 PK | 74.0 | -16.2 | 1.36 V | 217 | 43.61 | 14.19 |
| 6 | 11340.00 | 49.0 AV | 54.0 | -5.0 | 1.36 V | 217 | 34.81 | 14.19 |
| 7 | #17010.00 | 65.1 PK | 74.0 | -8.9 | 1.37 V | 289 | 41.93 | 23.17 |
| 8 | #17010.00 | 52.1 AV | 54.0 | -1.9 | 1.37 V | 289 | 28.93 | 23.17 |

**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.

| CHANNEL | TX Channel 151 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 71.8 PK | 74.0 | -2.2 | 1.37 H | 259 | 67.32 | 4.48 |
| **2** | **#5715.00** | **53.9 AV** | **54.0** | **-0.1** | **1.37 H** | **259** | **49.42** | **4.48** |
| 3 | #5725.00 | 77.9 PK | 78.2 | -0.3 | 1.37 H | 259 | 73.40 | 4.50 |
| 4 | *5755.00 | 104.3 PK | | | 1.37 H | 259 | 99.81 | 4.49 |
| 5 | *5755.00 | 94.8 AV | | | 1.37 H | 259 | 90.31 | 4.49 |
| 6 | 11510.00 | 59.6 PK | 74.0 | -14.4 | 1.78 H | 111 | 49.55 | 10.05 |
| 7 | 11510.00 | 49.9 AV | 54.0 | -4.1 | 1.78 H | 111 | 39.85 | 10.05 |
| 8 | #17265.00 | 65.2 PK | 74.0 | -8.8 | 1.21 H | 147 | 46.56 | 18.64 |
| 9 | #17265.00 | 52.0 AV | 54.0 | -2.0 | 1.21 H | 147 | 33.36 | 18.64 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 69.4 PK | 74.0 | -4.6 | 1.46 V | 360 | 64.92 | 4.48 |
| 2 | #5715.00 | 51.6 AV | 54.0 | -2.4 | 1.46 V | 360 | 47.12 | 4.48 |
| 3 | #5725.00 | 67.5 PK | 78.2 | -10.7 | 1.46 V | 360 | 63.00 | 4.50 |
| 4 | *5755.00 | 101.4 PK | | | 1.46 V | 360 | 96.91 | 4.49 |
| 5 | *5755.00 | 91.2 AV | | | 1.46 V | 360 | 86.71 | 4.49 |
| 6 | 11510.00 | 58.2 PK | 74.0 | -15.8 | 1.39 V | 195 | 48.15 | 10.05 |
| 7 | 11510.00 | 49.6 AV | 54.0 | -4.4 | 1.39 V | 195 | 39.55 | 10.05 |
| 8 | #17265.00 | 64.7 PK | 74.0 | -9.3 | 1.44 V | 303 | 46.06 | 18.64 |
| 9 | #17265.00 | 52.1 AV | 54.0 | -1.9 | 1.44 V | 303 | 33.46 | 18.64 |

**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.

| CHANNEL | TX Channel 159 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5795.00 | 108.0 PK | | | 1.51 H | 262 | 103.49 | 4.51 |
| 2 | *5795.00 | 98.8 AV | | | 1.51 H | 262 | 94.29 | 4.51 |
| 3 | #5850.00 | 74.8 PK | 78.2 | -3.4 | 1.51 H | 262 | 70.23 | 4.57 |
| 4 | #5860.00 | 68.8 PK | 74.0 | -5.2 | 1.51 H | 262 | 64.21 | 4.59 |
| 5 | #5860.00 | 53.8 AV | 54.0 | -0.2 | 1.51 H | 262 | 49.21 | 4.59 |
| 6 | 11590.00 | 60.2 PK | 74.0 | -13.8 | 1.73 H | 112 | 50.11 | 10.09 |
| 7 | 11590.00 | 50.3 AV | 54.0 | -3.7 | 1.73 H | 112 | 40.21 | 10.09 |
| 8 | #17385.00 | 65.9 PK | 74.0 | -8.1 | 1.29 H | 135 | 46.90 | 19.00 |
| 9 | #17385.00 | 52.6 AV | 54.0 | -1.4 | 1.29 H | 135 | 33.60 | 19.00 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5795.00 | 105.3 PK | | | 1.52 V | 360 | 100.79 | 4.51 |
| 2 | *5795.00 | 95.2 AV | | | 1.52 V | 360 | 90.69 | 4.51 |
| 3 | #5850.00 | 64.6 PK | 78.2 | -13.6 | 1.52 V | 360 | 60.03 | 4.57 |
| 4 | #5860.00 | 66.8 PK | 74.0 | -7.2 | 1.52 V | 360 | 62.21 | 4.59 |
| 5 | #5860.00 | 52.1 AV | 54.0 | -1.9 | 1.52 V | 360 | 47.51 | 4.59 |
| 6 | 11590.00 | 57.7 PK | 74.0 | -16.3 | 1.30 V | 215 | 47.61 | 10.09 |
| 7 | 11590.00 | 48.9 AV | 54.0 | -5.1 | 1.30 V | 215 | 38.81 | 10.09 |
| 8 | #17385.00 | 64.9 PK | 74.0 | -9.1 | 1.34 V | 278 | 45.90 | 19.00 |
| 9 | #17385.00 | 51.7 AV | 54.0 | -2.3 | 1.34 V | 278 | 32.70 | 19.00 |

**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.

## 802.11ac (VHT80)

| CHANNEL | TX Channel 42 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 66.2 PK | 74.0 | -7.8 | 1.71 H | 19 | 59.60 | 6.60 |
| 2 | 5150.00 | 53.5 AV | 54.0 | -0.5 | 1.71 H | 19 | 46.90 | 6.60 |
| 3 | *5210.00 | 100.4 PK | | | 1.64 H | 47 | 93.49 | 6.91 |
| 4 | *5210.00 | 90.3 AV | | | 1.64 H | 47 | 83.39 | 6.91 |
| 5 | #10420.00 | 59.0 PK | 74.0 | -15.0 | 1.70 H | 90 | 45.19 | 13.81 |
| 6 | #10420.00 | 49.2 AV | 54.0 | -4.8 | 1.70 H | 90 | 35.39 | 13.81 |
| 7 | 15630.00 | 65.2 PK | 74.0 | -8.8 | 1.25 H | 151 | 46.41 | 18.79 |
| 8 | 15630.00 | 52.3 AV | 54.0 | -1.7 | 1.25 H | 151 | 33.51 | 18.79 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 5150.00 | 65.3 PK | 74.0 | -8.7 | 1.30 V | 155 | 58.70 | 6.60 |
| 2 | 5150.00 | 52.4 AV | 54.0 | -1.6 | 1.30 V | 155 | 45.80 | 6.60 |
| 3 | *5210.00 | 98.2 PK | | | 1.30 V | 155 | 91.29 | 6.91 |
| 4 | *5210.00 | 86.9 AV | | | 1.30 V | 155 | 79.99 | 6.91 |
| 5 | #10420.00 | 58.6 PK | 74.0 | -15.4 | 1.28 V | 193 | 44.79 | 13.81 |
| 6 | #10420.00 | 49.3 AV | 54.0 | -4.7 | 1.28 V | 193 | 35.49 | 13.81 |
| 7 | 15630.00 | 64.2 PK | 74.0 | -9.8 | 1.42 V | 311 | 45.41 | 18.79 |
| 8 | 15630.00 | 51.3 AV | 54.0 | -2.7 | 1.42 V | 311 | 32.51 | 18.79 |

**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.

| CHANNEL | TX Channel 58 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5290.00 | 102.6 PK | | | 1.96 H | 46 | 95.57 | 7.03 |
| 2 | *5290.00 | 92.9 AV | | | 1.96 H | 46 | 85.87 | 7.03 |
| 3 | 5350.00 | 67.3 PK | 74.0 | -6.7 | 1.85 H | 15 | 60.12 | 7.18 |
| **4** | **5350.00** | **53.9 AV** | **54.0** | **-0.1** | **1.85 H** | **15** | **46.72** | **7.18** |
| 5 | #10580.00 | 59.7 PK | 74.0 | -14.3 | 1.67 H | 91 | 46.46 | 13.24 |
| 6 | #10580.00 | 49.9 AV | 54.0 | -4.1 | 1.67 H | 91 | 36.66 | 13.24 |
| 7 | 15870.00 | 65.0 PK | 74.0 | -9.0 | 1.19 H | 137 | 45.91 | 19.09 |
| 8 | 15870.00 | 52.0 AV | 54.0 | -2.0 | 1.19 H | 137 | 32.91 | 19.09 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5290.00 | 100.3 PK | | | 1.52 V | 222 | 93.27 | 7.03 |
| 2 | *5290.00 | 89.8 AV | | | 1.52 V | 222 | 82.77 | 7.03 |
| 3 | 5350.00 | 66.4 PK | 74.0 | -7.6 | 1.52 V | 222 | 59.22 | 7.18 |
| 4 | 5350.00 | 52.1 AV | 54.0 | -1.9 | 1.52 V | 222 | 44.92 | 7.18 |
| 5 | #10580.00 | 58.9 PK | 74.0 | -15.1 | 1.34 V | 222 | 45.66 | 13.24 |
| 6 | #10580.00 | 49.7 AV | 54.0 | -4.3 | 1.34 V | 222 | 36.46 | 13.24 |
| 7 | 15870.00 | 64.3 PK | 74.0 | -9.7 | 1.45 V | 317 | 45.21 | 19.09 |
| 8 | 15870.00 | 51.7 AV | 54.0 | -2.3 | 1.45 V | 317 | 32.61 | 19.09 |

**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.

| CHANNEL | TX Channel 106 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 70.3 PK | 74.0 | -3.7 | 1.55 H | 23 | 62.87 | 7.43 |
| 2 | #5470.00 | 53.8 AV | 54.0 | -0.2 | 1.55 H | 23 | 46.37 | 7.43 |
| 3 | *5530.00 | 104.5 PK | | | 2.04 H | 37 | 97.04 | 7.46 |
| 4 | *5530.00 | 94.6 AV | | | 2.04 H | 37 | 87.14 | 7.46 |
| 5 | 11060.00 | 59.1 PK | 74.0 | -14.9 | 1.73 H | 95 | 44.90 | 14.20 |
| 6 | 11060.00 | 49.2 AV | 54.0 | -4.8 | 1.73 H | 95 | 35.00 | 14.20 |
| 7 | #16590.00 | 65.0 PK | 74.0 | -9.0 | 1.25 H | 152 | 43.12 | 21.88 |
| 8 | #16590.00 | 51.8 AV | 54.0 | -2.2 | 1.25 H | 152 | 29.92 | 21.88 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5470.00 | 69.4 PK | 74.0 | -4.6 | 1.38 V | 211 | 61.97 | 7.43 |
| 2 | #5470.00 | 51.9 AV | 54.0 | -2.1 | 1.38 V | 211 | 44.47 | 7.43 |
| 3 | *5530.00 | 103.6 PK | | | 1.38 V | 211 | 96.14 | 7.46 |
| 4 | *5530.00 | 91.4 AV | | | 1.38 V | 211 | 83.94 | 7.46 |
| 5 | 11060.00 | 58.5 PK | 74.0 | -15.5 | 1.28 V | 203 | 44.30 | 14.20 |
| 6 | 11060.00 | 49.3 AV | 54.0 | -4.7 | 1.28 V | 203 | 35.10 | 14.20 |
| 7 | #16590.00 | 64.7 PK | 74.0 | -9.3 | 1.47 V | 299 | 42.82 | 21.88 |
| 8 | #16590.00 | 51.8 AV | 54.0 | -2.2 | 1.47 V | 299 | 29.92 | 21.88 |

**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.

| CHANNEL | TX Channel 122 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5610.00 | 106.4 PK | | | 1.53 H | 198 | 98.90 | 7.50 |
| 2 | *5610.00 | 97.3 AV | | | 1.53 H | 198 | 89.80 | 7.50 |
| 3 | #5725.00 | 68.2 PK | 74.0 | -5.8 | 1.79 H | 21 | 60.26 | 7.94 |
| 4 | #5725.00 | 53.8 AV | 54.0 | -0.2 | 1.79 H | 21 | 45.86 | 7.94 |
| 5 | 11220.00 | 59.2 PK | 74.0 | -14.8 | 1.75 H | 92 | 45.03 | 14.17 |
| 6 | 11220.00 | 49.4 AV | 54.0 | -4.6 | 1.75 H | 92 | 35.23 | 14.17 |
| 7 | #16830.00 | 64.5 PK | 74.0 | -9.5 | 1.20 H | 152 | 42.40 | 22.10 |
| 8 | #16830.00 | 51.7 AV | 54.0 | -2.3 | 1.20 H | 152 | 29.60 | 22.10 |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | *5610.00 | 104.9 PK | | | 1.35 V | 222 | 97.40 | 7.50 |
| 2 | *5610.00 | 94.3 AV | | | 1.35 V | 222 | 86.80 | 7.50 |
| 3 | #5725.00 | 67.3 PK | 74.0 | -6.7 | 1.35 V | 222 | 59.36 | 7.94 |
| 4 | #5725.00 | 52.4 AV | 54.0 | -1.6 | 1.35 V | 222 | 44.46 | 7.94 |
| 5 | 11220.00 | 59.0 PK | 74.0 | -15.0 | 1.37 V | 217 | 44.83 | 14.17 |
| 6 | 11220.00 | 49.8 AV | 54.0 | -4.2 | 1.37 V | 217 | 35.63 | 14.17 |
| 7 | #16830.00 | 64.4 PK | 74.0 | -9.6 | 1.39 V | 296 | 42.30 | 22.10 |
| 8 | #16830.00 | 51.8 AV | 54.0 | -2.2 | 1.39 V | 296 | 29.70 | 22.10 |

**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.

| CHANNEL | TX Channel 155 | DETECTOR FUNCTION | Peak (PK)<br>Average (AV) |
|---|---|---|---|
| FREQUENCY RANGE | 1GHz ~ 40GHz | | |

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 71.1 PK | 74.0 | -2.9 | 1.38 H | 263 | 66.62 | 4.48 |
| **2** | **#5715.00** | **53.9 AV** | **54.0** | **-0.1** | **1.38 H** | **263** | **49.42** | **4.48** |
| 3 | #5725.00 | 73.2 PK | 78.2 | -5.0 | 1.38 H | 263 | 68.70 | 4.50 |
| 4 | *5775.00 | 101.2 PK | | | 1.38 H | 263 | 96.71 | 4.49 |
| 5 | *5775.00 | 95.4 AV | | | 1.38 H | 263 | 90.91 | 4.49 |
| 6 | #5850.00 | 67.7 PK | 78.2 | -10.5 | 1.38 H | 263 | 63.13 | 4.57 |
| 7 | #5860.00 | 56.8 PK | 74.0 | -17.2 | 1.38 H | 263 | 52.21 | 4.59 |
| 8 | #5860.00 | 46.7 AV | 54.0 | -7.3 | 1.38 H | 263 | 42.11 | 4.59 |
| 9 | 11550.00 | 59.3 PK | 74.0 | -14.7 | 1.73 H | 109 | 49.23 | 10.07 |
| 10 | 11550.00 | 49.6 AV | 54.0 | -4.4 | 1.73 H | 109 | 39.53 | 10.07 |
| 11 | #17325.00 | 65.5 PK | 74.0 | -8.5 | 1.26 H | 164 | 46.68 | 18.82 |
| 12 | #17325.00 | 52.3 AV | 54.0 | -1.7 | 1.26 H | 164 | 33.48 | 18.82 |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | #5715.00 | 69.4 PK | 74.0 | -4.6 | 1.50 V | 360 | 64.92 | 4.48 |
| 2 | #5715.00 | 51.6 AV | 54.0 | -2.4 | 1.50 V | 360 | 47.12 | 4.48 |
| 3 | #5725.00 | 63.2 PK | 78.2 | -15.0 | 1.50 V | 360 | 58.70 | 4.50 |
| 4 | *5775.00 | 97.8 PK | | | 1.50 V | 360 | 93.31 | 4.49 |
| 5 | *5775.00 | 92.4 AV | | | 1.50 V | 360 | 87.91 | 4.49 |
| 6 | #5850.00 | 57.6 PK | 78.2 | -20.6 | 1.50 V | 360 | 53.03 | 4.57 |
| 7 | #5860.00 | 55.2 PK | 74.0 | -18.8 | 1.50 V | 360 | 50.61 | 4.59 |
| 8 | #5860.00 | 44.3 AV | 54.0 | -9.7 | 1.50 V | 360 | 39.71 | 4.59 |
| 9 | 11550.00 | 58.8 PK | 74.0 | -15.2 | 1.26 V | 187 | 48.73 | 10.07 |
| 10 | 11550.00 | 49.6 AV | 54.0 | -4.4 | 1.26 V | 187 | 39.53 | 10.07 |
| 11 | #17325.00 | 64.9 PK | 74.0 | -9.1 | 1.50 V | 313 | 46.08 | 18.82 |
| 12 | #17325.00 | 51.8 AV | 54.0 | -2.2 | 1.50 V | 313 | 32.98 | 18.82 |

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

## BELOW 1GHz WORST-CASE DATA

### 802.11ac (VHT20)

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

| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 232.39 | 41.1 QP | 46.0 | -4.9 | 1.00 H | 313 | 55.92 | -14.86 |
| 2 | 248.44 | 40.7 QP | 46.0 | -5.3 | 1.00 H | 286 | 54.59 | -13.90 |
| 3 | 265.52 | 42.7 QP | 46.0 | -3.3 | 1.00 H | 83 | 56.04 | -13.34 |
| 4 | 283.80 | 42.8 QP | 46.0 | -3.2 | 1.00 H | 77 | 55.35 | -12.51 |
| 5 | 288.99 | 40.1 QP | 46.0 | -5.9 | 1.00 H | 77 | 52.42 | -12.35 |
| 6 | 796.59 | 40.4 QP | 46.0 | -5.6 | 1.00 H | 131 | 41.93 | -1.51 |
| **ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M** | | | | | | | | |
| **NO.** | **FREQ. (MHz)** | **EMISSION LEVEL (dBuV/m)** | **LIMIT (dBuV/m)** | **MARGIN (dB)** | **ANTENNA HEIGHT (m)** | **TABLE ANGLE (Degree)** | **RAW VALUE (dBuV)** | **CORRECTION FACTOR (dB/m)** |
| 1 | 67.88 | 34.9 QP | 40.0 | -5.1 | 1.00 V | 59 | 50.16 | -15.22 |
| 2 | 165.99 | 37.7 QP | 43.5 | -5.8 | 1.00 V | 80 | 50.96 | -13.23 |
| 3 | 232.54 | 36.1 QP | 46.0 | -9.9 | 1.00 V | 54 | 50.95 | -14.84 |
| 4 | 266.87 | 38.5 QP | 46.0 | -7.5 | 1.00 V | 113 | 51.80 | -13.28 |
| 5 | 280.31 | 35.5 QP | 46.0 | -10.5 | 1.00 V | 109 | 48.14 | -12.60 |
| 6 | 796.64 | 37.9 QP | 46.0 | -8.1 | 1.00 V | 299 | 39.43 | -1.52 |

**REMARKS:**

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

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

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

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

### 4.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver ROHDE & SCHWARZ | ESCS 30 | 847124/029 | Oct. 22, 2014 | Oct. 21, 2015 |
| Line-Impedance Stabilization Network (for EUT) SCHWARZBECK | NSLK-8127 | 8127-522 | Sep. 15, 2014 | Sep. 14, 2015 |
| Line-Impedance Stabilization Network (for Peripheral) ROHDE & SCHWARZ | ENV216 | 100071 | Nov. 10, 2014 | Nov. 09, 2015 |
| RF Cable (JYEBAO) | 5D-FB | COCCAB-001 | Mar. 09, 2015 | Mar. 08, 2016 |
| 50 ohms Terminator | N/A | EMC-03 | Sep. 22, 2014 | Sep. 21, 2015 |
| 50 ohms Terminator | N/A | EMC-02 | Sep. 30, 2014 | Sep. 29, 2015 |
| Software ADT | BV ADT_Cond_V7.3.7.3 | 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: Mar. 31, 2015

4.2.3 Test Procedure

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

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

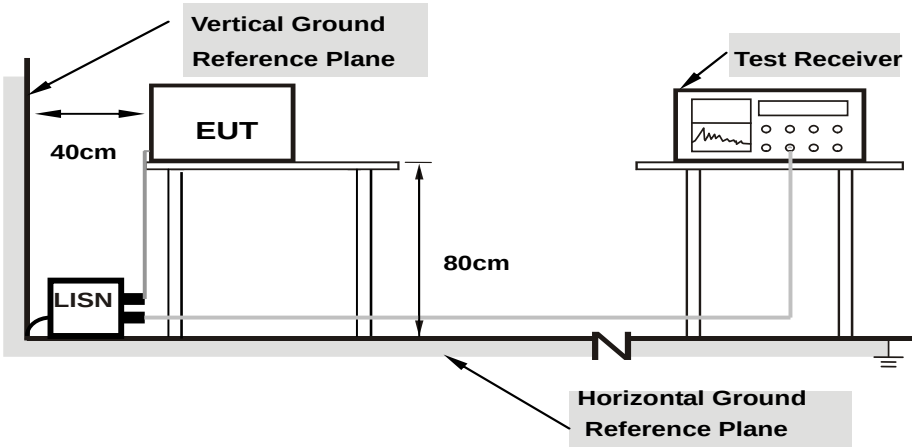
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup




**Note: 1.Support units were connected to second LISN.**
**2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes**

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

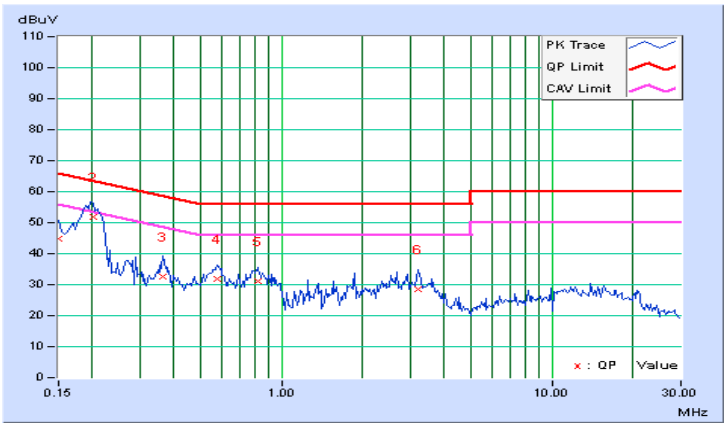
4.2.7 Test Results

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

| Phase Of Power : Line (L) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15000 | 0.08 | 44.78 | 29.42 | 44.86 | 29.50 | 66.00 | 56.00 | -21.14 | -26.50 |
| 2 | 0.20078 | 0.09 | 51.58 | 34.26 | 51.67 | 34.35 | 63.58 | 53.58 | -11.91 | -19.23 |
| 3 | 0.36484 | 0.10 | 32.50 | 17.84 | 32.60 | 17.94 | 58.62 | 48.62 | -26.02 | -30.68 |
| 4 | 0.57578 | 0.11 | 31.58 | 23.18 | 31.69 | 23.29 | 56.00 | 46.00 | -24.31 | -22.71 |
| 5 | 0.81406 | 0.12 | 31.02 | 22.10 | 31.14 | 22.22 | 56.00 | 46.00 | -24.86 | -23.78 |
| 6 | 3.21875 | 0.20 | 28.38 | 22.86 | 28.58 | 23.06 | 56.00 | 46.00 | -27.42 | -22.94 |

**Remarks:**

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

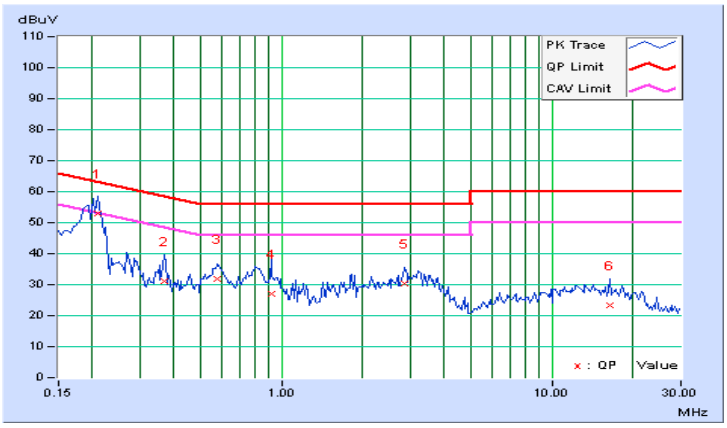


| Phase | Neutral (N) | Detector Function | Quasi-Peak (QP) / Average (AV) |
|---|---|---|---|

| Phase Of Power : Neutral (N) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | | Emission Level (dBuV) | | Limit (dBuV) | | Margin (dB) | |
| | | | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| **1** | **0.20859** | **0.08** | **52.78** | **34.54** | **52.86** | **34.62** | **63.26** | **53.26** | **-10.40** | **-18.64** |
| 2 | 0.36875 | 0.10 | 30.92 | 16.46 | 31.02 | 16.56 | 58.53 | 48.53 | -27.51 | -31.97 |
| 3 | 0.57969 | 0.11 | 31.76 | 22.84 | 31.87 | 22.95 | 56.00 | 46.00 | -24.13 | -23.05 |
| 4 | 0.91953 | 0.13 | 27.02 | 18.66 | 27.15 | 18.79 | 56.00 | 46.00 | -28.85 | -27.21 |
| 5 | 2.86328 | 0.20 | 30.04 | 23.10 | 30.24 | 23.30 | 56.00 | 46.00 | -25.76 | -22.70 |
| 6 | 16.41797 | 0.64 | 22.58 | 17.06 | 23.22 | 17.70 | 60.00 | 50.00 | -36.78 | -32.30 |

**Remarks:**

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



## 4.3 Transmit Power Measurment

### 4.3.1 Limits of Transmit Power Measurement

| Operation Band | EUT Category | | LIMIT |
|---|---|---|---|
| U-NII-1 | - | Outdoor Access Point | 1 Watt (30 dBm)<br>(Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon) |
| | - | Fixed point-to-point Access Point | 1 Watt (30 dBm) |
| | - | Indoor Access Point | 1 Watt (30 dBm) |
| | √ | Mobile and Portable client device | 250mW (24 dBm) |
| U-NII-2A | √ | | 250mW (24 dBm) or 11 dBm+10 log B* |
| U-NII-2C | √ | | 250mW (24 dBm) or 11 dBm+10 log B* |
| U-NII-3 | √ | | 1 Watt (30 dBm) |

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

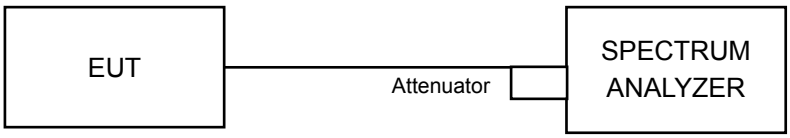
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any $N_{ANT}$;
Array Gain = 5 log($N_{ANT}/N_{SS}$) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log($N_{ANT}/N_{SS}$) dB.

### 4.3.2 Test Setup

**FOR POWER OUTPUT MEASUREMENT**

**FOR 26dB OCCUPIED BANDWIDTH**



### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.3.4 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%.

### 4.3.5 Deviation from Test Standard

No deviation.

### 4.3.6 EUT Operating Condition

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

4.3.7 Test Result

**802.11a**

**POWER OUTPUT**

| Chan. | Chan. Freq. (MHz) | Maximum Conducted Power (mW) | Maximum Conducted Power (dBm) | Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|
| Chain 0 | | | | | |
| 36 | 5180 | 38.637 | 15.87 | 24 | Pass |
| 40 | 5200 | 37.757 | 15.77 | 24 | Pass |
| 48 | 5240 | 37.239 | 15.71 | 24 | Pass |
| 52 | 5260 | 40.272 | 16.05 | 24 | Pass |
| 60 | 5300 | 42.462 | 16.28 | 24 | Pass |
| 64 | 5320 | 41.976 | 16.23 | 24 | Pass |
| 100 | 5500 | 43.152 | 16.35 | 24 | Pass |
| 120 | 5600 | 43.351 | 16.37 | 24 | Pass |
| 140 | 5700 | 41.4 | 16.17 | 24 | Pass |
| 149 | 5745 | 44.875 | 16.52 | 30 | Pass |
| 157 | 5785 | 46.559 | 16.68 | 30 | Pass |
| 165 | 5825 | 45.92 | 16.62 | 30 | Pass |
| Chain 1 | | | | | |
| 36 | 5180 | 54.45 | 17.36 | 24 | Pass |
| 40 | 5200 | 54.954 | 17.40 | 24 | Pass |
| 48 | 5240 | 54.954 | 17.40 | 24 | Pass |
| 52 | 5260 | 57.28 | 17.58 | 24 | Pass |
| 60 | 5300 | 59.156 | 17.72 | 24 | Pass |
| 64 | 5320 | 57.81 | 17.62 | 24 | Pass |
| 100 | 5500 | 47.753 | 16.79 | 24 | Pass |
| 120 | 5600 | 48.306 | 16.84 | 24 | Pass |
| 140 | 5700 | 48.641 | 16.87 | 24 | Pass |
| 149 | 5745 | 51.404 | 17.11 | 30 | Pass |
| 157 | 5785 | 51.88 | 17.15 | 30 | Pass |
| 165 | 5825 | 50.699 | 17.05 | 30 | Pass |

## 802.11a

## POWER OUTPUT

| Chan. | Chan. Freq. (MHz) | Maximum Conducted Power (mW) | Maximum Conducted Power (dBm) | Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|
| Chain 3 | | | | | |
| 36 | 5180 | 69.663 | 18.43 | 24 | Pass |
| 40 | 5200 | 88.512 | 19.47 | 24 | Pass |
| 48 | 5240 | 86.696 | 19.38 | 24 | Pass |
| 52 | 5260 | 92.045 | 19.64 | 24 | Pass |
| 60 | 5300 | 97.275 | 19.88 | 24 | Pass |
| 64 | 5320 | 94.406 | 19.75 | 24 | Pass |
| 100 | 5500 | 79.983 | 19.03 | 24 | Pass |
| 120 | 5600 | 80.724 | 19.07 | 24 | Pass |
| 140 | 5700 | 66.988 | 18.26 | 24 | Pass |
| 149 | 5745 | 60.954 | 17.85 | 30 | Pass |
| 157 | 5785 | 92.045 | 19.64 | 30 | Pass |
| 165 | 5825 | 89.536 | 19.52 | 30 | Pass |

## 26dB OCCUPIED BANDWIDTH

| Channel | Frequency (MHz) | 26dBc Bandwidth (MHz) |
|---|---|---|
| 36 | 5180 | 31.94 |
| 40 | 5200 | 44.26 |
| 48 | 5240 | 44.03 |
| 52 | 5260 | 44.20 |
| 60 | 5300 | 45.37 |
| 64 | 5320 | 40.54 |
| 100 | 5500 | 43.36 |
| 120 | 5600 | 45.48 |
| 140 | 5700 | 43.84 |

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

| Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C > | | | |
|---|---|---|---|
| Channel Number | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 52 | 5260 | 44.20 | 27.45 > 24 |
| 60 | 5300 | 45.37 | 27.56 > 24 |
| 64 | 5320 | 40.54 | 27.07 > 24 |
| 100 | 5500 | 43.36 | 27.37 > 24 |
| 120 | 5600 | 45.48 | 27.57 > 24 |
| 140 | 5700 | 43.84 | 27.41 > 24 |

## 802.11ac (VHT20)

## POWER OUTPUT

| Chan. | Chan. Freq. (MHz) | Maximum Conducted Power (dBm) | | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | | |
| 36 | 5180 | 15.90 | 16.07 | 16.01 | 119.265 | 20.77 | 22.97 | Pass |
| 40 | 5200 | 15.37 | 16.21 | 15.78 | 114.062 | 20.57 | 22.97 | Pass |
| 48 | 5240 | 15.47 | 15.66 | 16.23 | 114.026 | 20.57 | 22.97 | Pass |
| 52 | 5260 | 14.41 | 12.62 | 12.49 | 63.629 | 18.04 | 22.97 | Pass |
| 60 | 5300 | 14.74 | 15.01 | 11.05 | 74.216 | 18.70 | 22.97 | Pass |
| 64 | 5320 | 14.62 | 15.15 | 10.12 | 71.987 | 18.57 | 22.97 | Pass |
| 100 | 5500 | 13.43 | 15.34 | 7.70 | 62.115 | 17.93 | 22.20 | Pass |
| 120 | 5600 | 13.10 | 13.02 | 10.89 | 52.736 | 17.22 | 22.20 | Pass |
| 140 | 5700 | 10.51 | 9.11 | 6.53 | 23.891 | 13.78 | 22.20 | Pass |
| 149 | 5745 | 7.93 | 8.14 | 8.64 | 20.036 | 13.02 | 28.20 | Pass |
| 157 | 5785 | 16.71 | 16.66 | 16.68 | 139.785 | 21.45 | 28.20 | Pass |
| 165 | 5825 | 14.60 | 14.21 | 15.87 | 93.84 | 19.72 | 28.20 | Pass |

**NOTE:** 1. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power limit shall be reduced to “24-(7.03-6)”.

2. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “24-(7.80-6)”.

3. 5725~5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “30-(7.80-6)”.

## 26dB OCCUPIED BANDWIDTH

| Channel | Frequency (MHz) | 26dBc Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 |
| 36 | 5180 | 23.20 | 28.44 | 28.17 |
| 40 | 5200 | 24.82 | 27.28 | 24.81 |
| 48 | 5240 | 24.56 | 24.99 | 33.14 |
| 52 | 5260 | 23.18 | 22.67 | 22.80 |
| 60 | 5300 | 23.22 | 22.99 | 22.81 |
| 64 | 5320 | 23.18 | 23.16 | 22.83 |
| 100 | 5500 | 23.28 | 23.09 | 22.84 |
| 120 | 5600 | 23.19 | 23.11 | 22.67 |
| 140 | 5700 | 23.29 | 23.16 | 22.95 |

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

| Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C > | | | |
|---|---|---|---|
| Channel Number | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 52 | 5260 | 22.67 | 24.55 > 24 |
| 60 | 5300 | 22.81 | 24.58 > 24 |
| 64 | 5320 | 22.83 | 24.58 > 24 |
| 100 | 5500 | 22.84 | 24.58 > 24 |
| 120 | 5600 | 22.67 | 24.55 > 24 |
| 140 | 5700 | 22.95 | 24.6 > 24 |

## 802.11ac (VHT40)

## POWER OUTPUT

| Chan. | Chan. Freq. (MHz) | Maximum Conducted Power (dBm) | | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | | |
| 38 | 5190 | 11.40 | 11.30 | 10.90 | 39.597 | 15.98 | 22.97 | Pass |
| 46 | 5230 | 15.70 | 15.71 | 15.73 | 111.804 | 20.48 | 22.97 | Pass |
| 54 | 5270 | 13.65 | 12.12 | 13.32 | 60.945 | 17.85 | 22.97 | Pass |
| 62 | 5310 | 14.51 | 14.94 | 13.50 | 81.825 | 19.13 | 22.97 | Pass |
| 102 | 5510 | 14.75 | 13.25 | 12.36 | 68.208 | 18.34 | 22.20 | Pass |
| 118 | 5590 | 14.02 | 13.71 | 12.25 | 65.519 | 18.16 | 22.20 | Pass |
| 134 | 5670 | 12.28 | 11.87 | 14.55 | 60.796 | 17.84 | 22.20 | Pass |
| 151 | 5755 | 10.17 | 10.09 | 12.90 | 40.106 | 16.03 | 28.20 | Pass |
| 159 | 5795 | 16.21 | 15.82 | 16.08 | 120.528 | 20.81 | 28.20 | Pass |

**NOTE:** 1. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power limit shall be reduced to “24-(7.03-6)”.

2. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “24-(7.80-6)”.

3. 5725~5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “30-(7.80-6)”.

## 26dB OCCUPIED BANDWIDTH

| Channel | Frequency (MHz) | 26dBc Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 |
| 38 | 5190 | 45.85 | 45.36 | 44.62 |
| 46 | 5230 | 64.25 | 47.69 | 44.95 |
| 54 | 5270 | 46.15 | 45.15 | 44.74 |
| 62 | 5310 | 54.39 | 44.94 | 44.74 |
| 102 | 5510 | 45.63 | 45.17 | 44.81 |
| 118 | 5590 | 45.43 | 45.26 | 44.88 |
| 134 | 5670 | 45.25 | 45.33 | 44.91 |

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

| Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C > | | | |
|---|---|---|---|
| Channel Number | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 54 | 5270 | 44.74 | 27.5 > 24 |
| 62 | 5310 | 44.74 | 27.5 > 24 |
| 102 | 5510 | 44.81 | 27.51 > 24 |
| 110 | 5550 | 44.88 | 27.52 > 24 |
| 134 | 5670 | 44.91 | 27.52 > 24 |

## 802.11ac (VHT80)

### POWER OUTPUT

| Chan. | Chan. Freq. (MHz) | Maximum Conducted Power (dBm) | | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | | |
| 42 | 5210 | 9.58 | 8.84 | 9.63 | 25.917 | 14.14 | 22.97 | Pass |
| 58 | 5290 | 10.50 | 5.81 | 9.68 | 24.321 | 13.86 | 22.97 | Pass |
| 106 | 5530 | 8.57 | 8.26 | 5.98 | 17.856 | 12.52 | 22.20 | Pass |
| 122 | 5610 | 9.05 | 11.88 | 9.44 | 32.242 | 15.08 | 22.20 | Pass |
| 155 | 5775 | 7.87 | 6.94 | 6.18 | 15.217 | 11.82 | 28.20 | Pass |

**NOTE:** 1. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power limit shall be reduced to “24-(7.03-6)”.

2. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “24-(7.80-6)”.

3. 5725~5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power limit shall be reduced to “30-(7.80-6)”.

### 26dB OCCUPIED BANDWIDTH

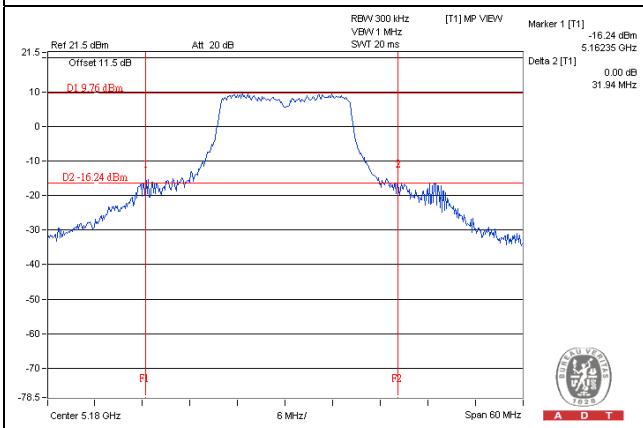
| Channel | Frequency (MHz) | 26dBc Bandwidth (MHz) | | |
|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 |
| 42 | 5210 | 83.01 | 82.33 | 83.14 |
| 58 | 5290 | 83.07 | 82.67 | 83.36 |
| 106 | 5530 | 83.01 | 82.28 | 83.29 |
| 122 | 5610 | 82.67 | 82.90 | 83.38 |

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

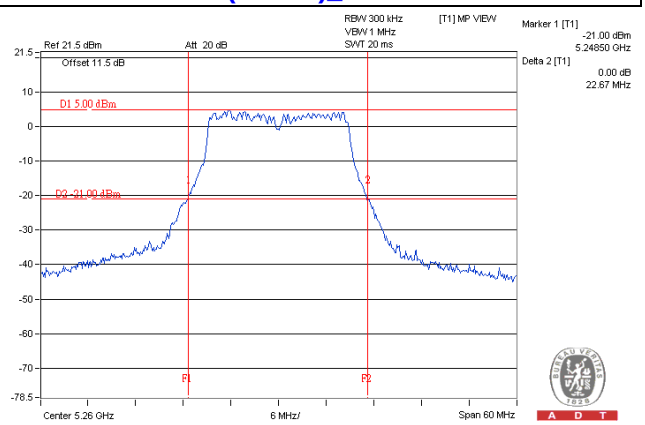
| Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C > | | | |
|---|---|---|---|
| Channel Number | Freq.(MHz) | Min. B(MHz) | Determined Conducted Limit (dBm) |
| 58 | 5290 | 82.67 | 30.17 > 24 |
| 106 | 5530 | 82.28 | 30.15 > 24 |
| 122 | 5610 | 82.67 | 30.17 > 24 |

## Spectrum Plot of Worst Value

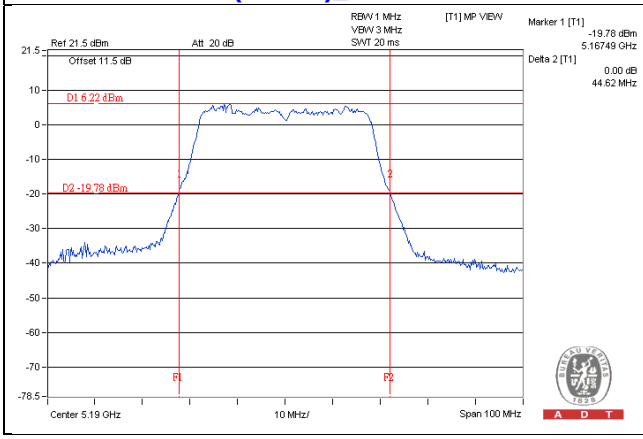
### 802.11a / CH36



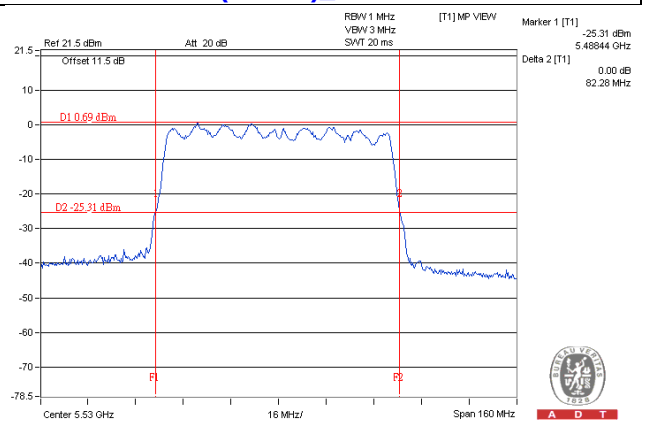

### 802.11ac (VHT20)_Chain 1 / CH52




### 802.11ac (VHT40)_Chain 3 / CH38




### 802.11ac (VHT80)_Chain 1 / CH106

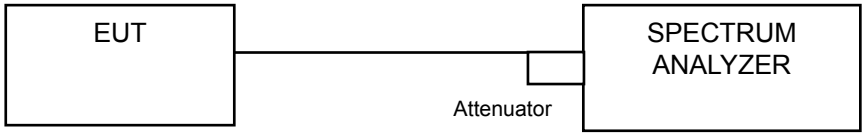


## 4.4 Peak Power Spectral Density Measurement

### 4.4.1 Limits of Peak Power Spectral Density Measurement

| Operation Band | EUT Category | | LIMIT |
|---|---|---|---|
| U-NII-1 | --- | Outdoor Access Point | 17dBm/ MHz |
| | --- | Fixed point-to-point Access Point | |
| | --- | Indoor Access Point | |
| | √ | Mobile and Portable client device | 11dBm/ MHz |
| U-NII-2A | √ | | 11dBm/ MHz |
| U-NII-2C | √ | | 11dBm/ MHz |
| U-NII-3 | √ | | 30dBm/ 500kHz |

### 4.4.2 Test Setup




### 4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.4.4 Test Procedure

**For U-NII-1, U-NII-2A, U-NII-2C band:**

Using method SA-1

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 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

**For U-NII-3 band:**

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)
5) Sweep time = auto, trigger set to “free run”.
6) Trace average at least 100 traces in power averaging mode.
7) Record the max value

### 4.4.5 Deviation from Test Standard

No deviation.

### 4.4.6 EUT Operating Condition

Same as Item 4.3.6.

4.4.7 Test Results

**For U-NII-1, U-NII-2A, U-NII-2C Band**

**802.11a**

| Chan. | Chan. Freq. (MHz) | PSD (dBm) | Max. Limit (dBm) | Pass / Fail |
|---|---|---|---|---|
| 36 | 5180 | 5.48 | 11 | Pass |
| 40 | 5200 | 9.46 | 11 | Pass |
| 48 | 5240 | 10.02 | 11 | Pass |
| 52 | 5260 | 10.19 | 11 | Pass |
| 60 | 5300 | 10.55 | 11 | Pass |
| 64 | 5320 | 8.14 | 11 | Pass |
| 100 | 5500 | 8.21 | 11 | Pass |
| 120 | 5600 | 9.28 | 11 | Pass |
| 140 | 5700 | 8.34 | 11 | Pass |

**802.11ac (VHT20)**

| Chan. | Chan. Freq. (MHz) | PSD (dBm) | | | Total Power Density (dBm) | Max. Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | |
| 36 | 5180 | 2.28 | 5.06 | 4.91 | 9.03 | 9.97 | Pass |
| 40 | 5200 | 4.44 | 5.03 | 4.54 | 9.45 | 9.97 | Pass |
| 48 | 5240 | 4.07 | 4.54 | 5.42 | 9.48 | 9.97 | Pass |
| 52 | 5260 | 1.50 | -0.52 | -0.58 | 5.02 | 9.97 | Pass |
| 60 | 5300 | 0.85 | 2.88 | -1.22 | 5.92 | 9.97 | Pass |
| 64 | 5320 | 0.94 | 2.38 | -3.19 | 5.38 | 9.97 | Pass |
| 100 | 5500 | 0.32 | 1.91 | -5.21 | 4.67 | 9.20 | Pass |
| 120 | 5600 | -0.13 | -1.11 | -2.33 | 3.67 | 9.20 | Pass |
| 140 | 5700 | -2.85 | -3.68 | -5.97 | 0.79 | 9.20 | Pass |

**NOTE:** 1. Method 1 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. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power density limit shall be reduced to 11-(7.03-6) = 9.97dBm.

3. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 11-(7.80-6) = 9.2dBm.

### 802.11ac (VHT40)

| Chan. | Chan. Freq. (MHz) | PSD (dBm) | | | Total Power Density (dBm) | Max. Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | |
| 38 | 5190 | -5.85 | -4.83 | -5.77 | -0.69 | 9.97 | Pass |
| 46 | 5230 | 0.19 | 0.71 | 1.36 | 5.55 | 9.97 | Pass |
| 54 | 5270 | -2.21 | -4.07 | -2.86 | 1.79 | 9.97 | Pass |
| 62 | 5310 | -2.17 | -2.60 | -4.10 | 1.89 | 9.97 | Pass |
| 102 | 5510 | -1.71 | -2.73 | -3.75 | 2.12 | 9.20 | Pass |
| 118 | 5550 | -2.30 | -2.83 | -3.00 | 2.07 | 9.20 | Pass |
| 134 | 5670 | -3.75 | -4.79 | -0.84 | 1.98 | 9.20 | Pass |

**NOTE:** 1. Method 1 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. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power density limit shall be reduced to 11-(7.03-6) = 9.97dBm.

3. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 11-(7.80-6) = 9.2dBm.

### 802.11ac (VHT80)

| Chan. | Chan. Freq. (MHz) | PSD (dBm) | | | Total Power Density (dBm) | Max. Limit (dBm) | Pass / Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | | |
| 42 | 5210 | -7.83 | -9.59 | -9.63 | -4.16 | 9.97 | Pass |
| 58 | 5290 | -6.82 | -12.83 | -10.97 | -4.68 | 9.97 | Pass |
| 106 | 5530 | -9.74 | -10.47 | -8.33 | -4.65 | 9.20 | Pass |
| 122 | 5610 | -8.49 | -7.21 | -11.95 | -4.03 | 9.20 | Pass |

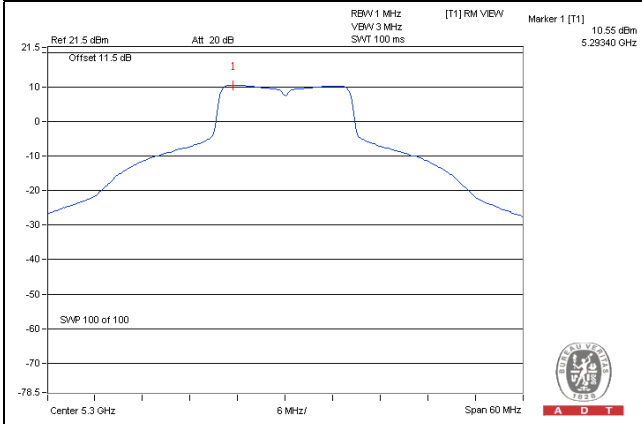
**NOTE:** 1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. 5150~5350MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.03dBi > 6dBi , so the power density limit shall be reduced to 11-(7.03-6) = 9.97dBm.

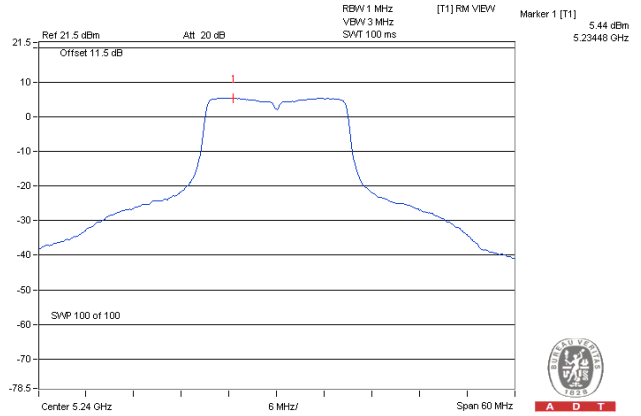
3. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 11-(7.80-6) = 9.2dBm.

## Spectrum Plot of Worst Value

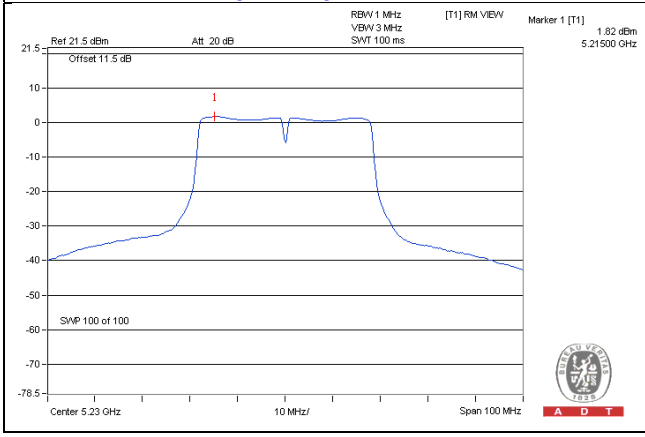
### 802.11a / CH60



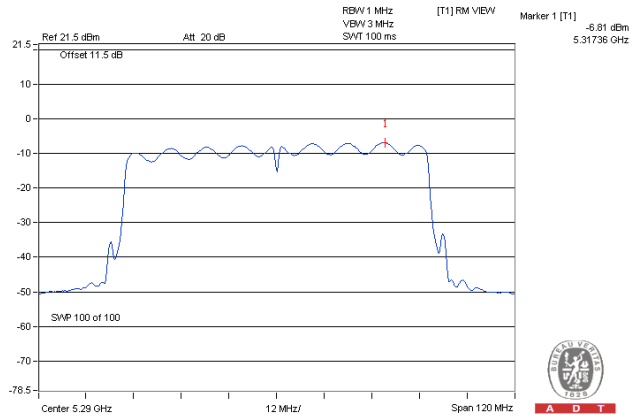

### 802.11ac (VHT20)_Chain 3 / CH48




### 802.11ac (VHT40)_Chain 3 / CH46




### 802.11ac (VHT80)_Chain 0 / CH58



## For U-NII-3 Band

### 802.11a

| Chan. | Chan. Freq. (MHz) | PSD | | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Pass /Fail |
|---|---|---|---|---|---|---|
| | | (dBm/300kHz) | (dBm/500kHz) | | | |
| 149 | 5745 | -3.57 | -1.35 | -1.35 | 30 | Pass |
| 157 | 5785 | -1.10 | 1.12 | 1.12 | 30 | Pass |
| 165 | 5825 | -1.28 | 0.94 | 0.94 | 30 | Pass |

### 802.11ac (VHT20)

| TX chain | Channel | Freq. (MHz) | PSD | | 10 log (N=3) dB | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Pass /Fail |
|---|---|---|---|---|---|---|---|---|
| | | | (dBm/300kHz) | (dBm/500kHz) | | | | |
| 0 | 149 | 5745 | -14.28 | -12.06 | 4.77 | -7.29 | 28.2 | Pass |
| | 157 | 5785 | -2.66 | -0.44 | 4.77 | 4.33 | 28.2 | Pass |
| | 165 | 5825 | -6.81 | -4.59 | 4.77 | 0.18 | 28.2 | Pass |
| 1 | 149 | 5745 | -13.02 | -10.80 | 4.77 | -6.03 | 28.2 | Pass |
| | 157 | 5785 | -2.49 | -0.27 | 4.77 | 4.50 | 28.2 | Pass |
| | 165 | 5825 | -6.51 | -4.29 | 4.77 | 0.48 | 28.2 | Pass |
| 3 | 149 | 5745 | -13.24 | -11.02 | 4.77 | -6.25 | 28.2 | Pass |
| | 157 | 5785 | -2.61 | -0.39 | 4.77 | 4.38 | 28.2 | Pass |
| | 165 | 5825 | -6.72 | -4.50 | 4.77 | 0.27 | 28.2 | Pass |

**NOTE:** 1. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 30-(7.80-6) = 28.2dBm.

### 802.11ac (VHT40)

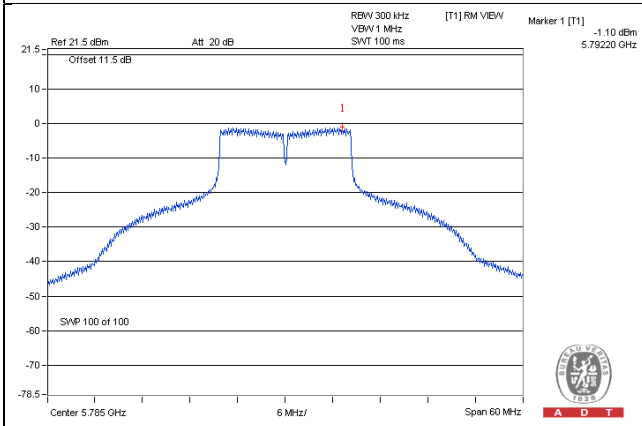
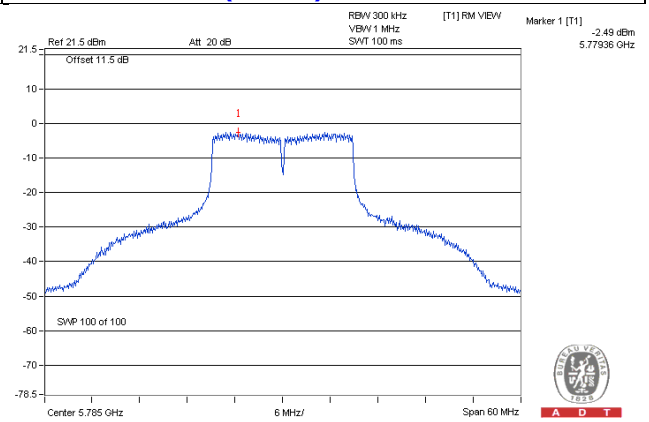
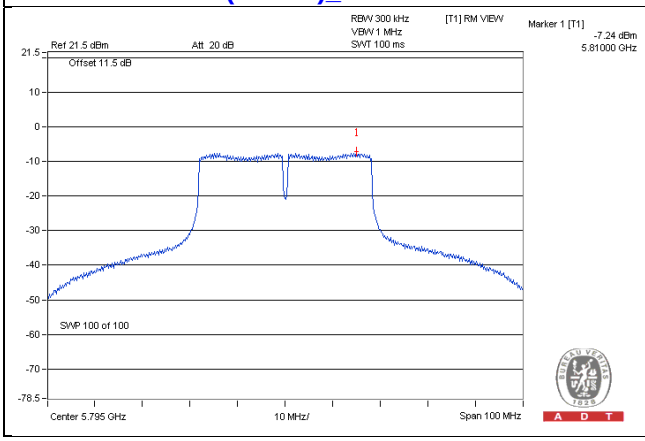
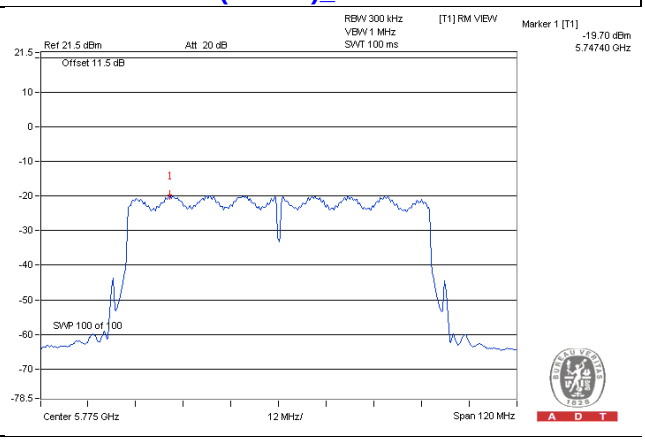
| TX chain | Channel | Freq. (MHz) | PSD | | 10 log (N=3) dB | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Pass /Fail |
|---|---|---|---|---|---|---|---|---|
| | | | (dBm/300kHz) | (dBm/500kHz) | | | | |
| 0 | 151 | 5755 | -14.72 | -12.50 | 4.77 | -7.73 | 28.2 | Pass |
| | 159 | 5795 | -9.45 | -7.23 | 4.77 | -2.46 | 28.2 | Pass |
| 1 | 151 | 5755 | -14.92 | -12.70 | 4.77 | -7.93 | 28.2 | Pass |
| | 159 | 5795 | -9.36 | -7.14 | 4.77 | -2.37 | 28.2 | Pass |
| 3 | 151 | 5755 | -12.36 | -10.14 | 4.77 | -5.37 | 28.2 | Pass |
| | 159 | 5795 | -7.24 | -5.02 | 4.77 | -0.25 | 28.2 | Pass |

**NOTE:** 1. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 30-(7.80-6) = 28.2dBm.

### 802.11ac (VHT80)

| TX chain | Channel | Freq. (MHz) | PSD | | 10 log (N=3) dB | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Pass /Fail |
|---|---|---|---|---|---|---|---|---|
| | | | (dBm/300kHz) | (dBm/500kHz) | | | | |
| 0 | 155 | 5775 | -20.00 | -17.78 | 4.77 | -13.01 | 28.2 | Pass |
| 1 | 155 | 5775 | -19.70 | -17.48 | 4.77 | -12.71 | 28.2 | Pass |
| 3 | 155 | 5775 | -20.68 | -18.46 | 4.77 | -13.69 | 28.2 | Pass |

**NOTE:** 1. 5470~5725MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 3] = 7.80dBi > 6dBi , so the power density limit shall be reduced to 30-(7.80-6) = 28.2dBm.

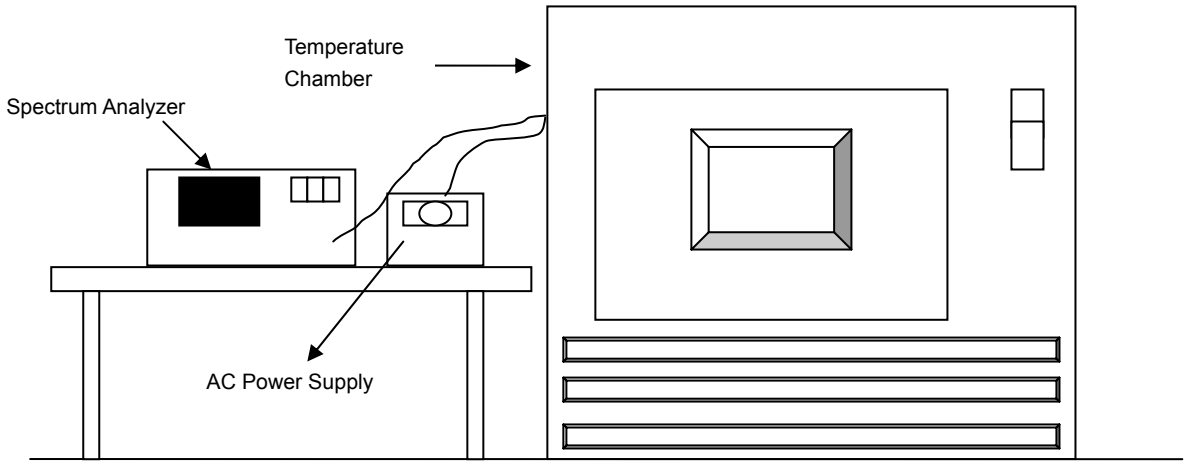
| Spectrum Plot of Worst Value | |
|---|---|
| **802.11a / CH157** | **802.11ac (VHT20)_Chain 1 / CH157** |
|  |  |
| **802.11ac (VHT40)_Chain 3 / CH159** | **802.11ac (VHT80)_Chain 1 / CH155** |
|  |  |

## 4.5 Frequency Stability Measurement

### 4.5.1 Limits of Frequency Stability Measurement

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

### 4.5.2 Test Setup




### 4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.5.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. 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.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. 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.
.

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

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

### 4.5.7 Test Results

| FREQUEMCY STABILITY VERSUS TEMP. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| OPERATING FREQUENCY: 5180MHz | | | | | | | | | |
| TEMP. (℃) | POWER SUPPLY (Vac) | 0 MINUTE | | 2 MINUTE | | 5 MINUTE | | 10 MINUTE | |
| | | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) |
| 50 | 120 | 5179.9948 | -0.00010 | 5179.9964 | -0.00007 | 5179.9955 | -0.00009 | 5179.9956 | -0.00008 |
| 40 | 120 | 5180.0154 | 0.00030 | 5180.0162 | 0.00031 | 5180.012 | 0.00023 | 5180.014 | 0.00027 |
| 30 | 120 | 5180.0131 | 0.00025 | 5180.0126 | 0.00024 | 5180.0148 | 0.00029 | 5180.0119 | 0.00023 |
| 20 | 120 | 5179.979 | -0.00041 | 5179.9765 | -0.00045 | 5179.9777 | -0.00043 | 5179.9792 | -0.00040 |
| 10 | 120 | 5179.9985 | -0.00003 | 5179.9988 | -0.00002 | 5179.9992 | -0.00002 | 5179.9974 | -0.00005 |
| 0 | 120 | 5179.997 | -0.00006 | 5179.9961 | -0.00008 | 5179.9992 | -0.00002 | 5179.9989 | -0.00002 |
| -10 | 120 | 5180.0216 | 0.00042 | 5180.025 | 0.00048 | 5180.0227 | 0.00044 | 5180.0219 | 0.00042 |
| -20 | 120 | 5180.003 | 0.00006 | 5180.003 | 0.00006 | 5180.0056 | 0.00011 | 5180.0027 | 0.00005 |
| -30 | 120 | 5180.0031 | 0.00006 | 5180.0016 | 0.00003 | 5180.0023 | 0.00004 | 5180.0052 | 0.00010 |

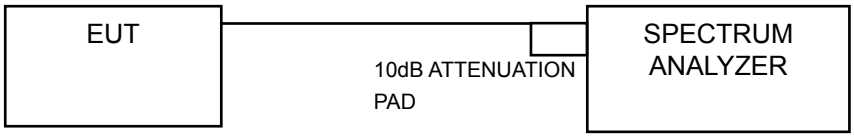
| FREQUEMCY STABILITY VERSUS VOLTAGE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| OPERATING FREQUENCY: 5180MHz | | | | | | | | | |
| TEMP. (℃) | POWER SUPPLY (Vac) | 0 MINUTE | | 2 MINUTE | | 5 MINUTE | | 10 MINUTE | |
| | | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) | Measured Frequency (MHz) | Frequency Drift (%) |
| 20 | 138 | 5179.9787 | -0.00041 | 5179.9762 | -0.00046 | 5179.9785 | -0.00042 | 5179.9783 | -0.00042 |
| | 120 | 5179.979 | -0.00041 | 5179.9765 | -0.00045 | 5179.9777 | -0.00043 | 5179.9792 | -0.00040 |
| | 102 | 5179.9782 | -0.00042 | 5179.9768 | -0.00045 | 5179.9769 | -0.00045 | 5179.9798 | -0.00039 |

## 4.6 6dB Bandwidth Measurment

### 4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

### 4.6.2 Test Setup




### 4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.6.4 Test Procedure

**MEASUREMENT PROCEDURE REF**

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

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Condition

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

4.6.7 Test Results

**802.11a**

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|
| 149 | 5745 | 16.40 | 0.5 | PASS |
| 157 | 5785 | 16.41 | 0.5 | PASS |
| 165 | 5825 | 16.43 | 0.5 | PASS |

**802.11ac (VHT20)**

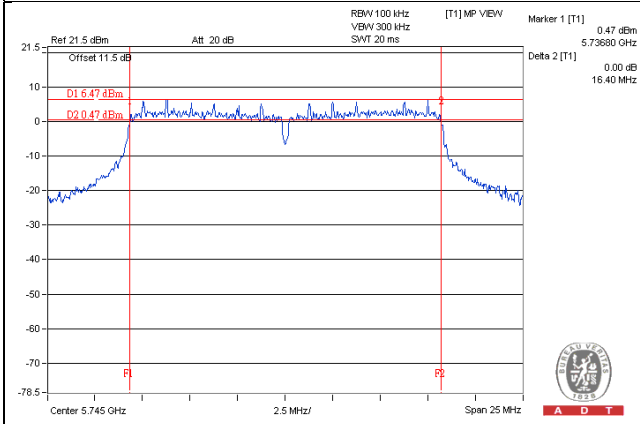
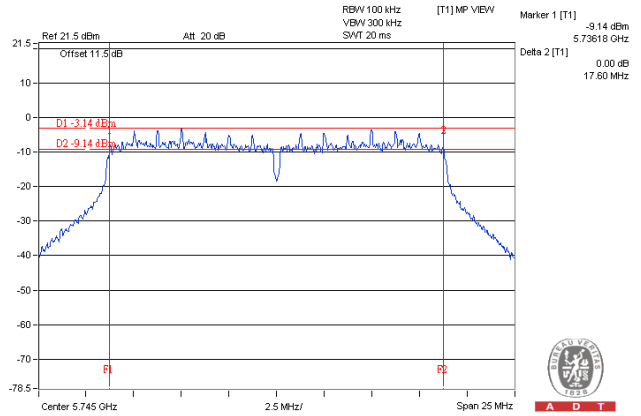
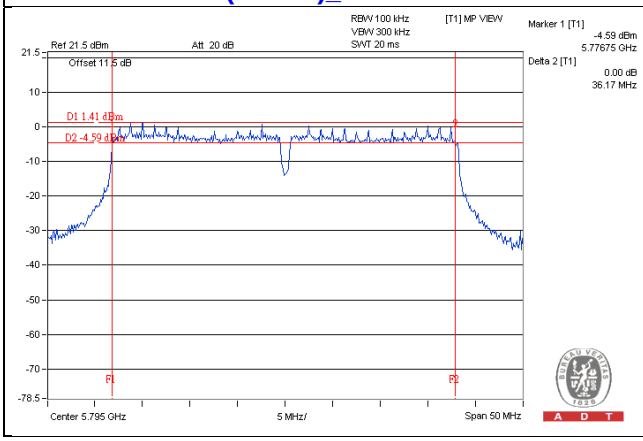
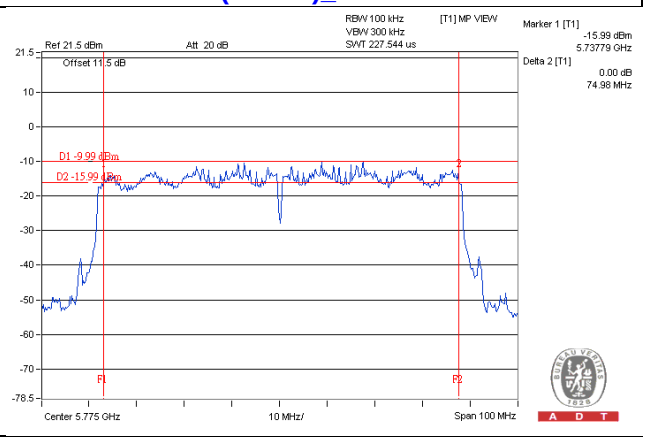
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | |
| 149 | 5745 | 17.60 | 17.65 | 17.62 | 0.5 | Pass |
| 157 | 5785 | 17.87 | 17.87 | 17.87 | 0.5 | Pass |
| 165 | 5825 | 17.66 | 17.68 | 17.63 | 0.5 | Pass |

**802.11ac (VHT40)**

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | |
| 151 | 5755 | 36.47 | 36.49 | 36.49 | 0.5 | Pass |
| 159 | 5795 | 36.17 | 36.50 | 36.43 | 0.5 | Pass |

**802.11ac (VHT80)**

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | | Minimum Limit (MHz) | Pass / Fail |
|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | Chain 3 | | |
| 155 | 5775 | 75.38 | 76.05 | 74.98 | 0.5 | Pass |

| Spectrum Plot of Worst Value | |
|---|---|
| **802.11a / CH149** | **802.11ac (VHT20)_Chain 0 / CH149** |
|  |  |
| **802.11ac (VHT40)_Chain 0 / CH159** | **802.11ac (VHT80)_Chain 3 / CH155** |
|  |  |

## 5 Pictures of Test Arrangements

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

## Appendix – Information on the Testing Laboratories

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

If you have any comments, please feel free to contact us at the following: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**Email:** service.adt@tw.bureauveritas.com
**Web Site:** www.bureauveritas-adt.com


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

**--- END ---**