

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBBQZ-WTW-P22060724-2

FCC ID: PY322100561

Product: AX1600 WiFi Router

Brand: NETGEAR

Model No.: RAX5

Received Date: 2022/7/7

Test Date: 2022/8/2 ~ 2022/9/30

Issued Date: 2022/10/06

Applicant and Manufacturer: NETGEAR, INC

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003

Designation Number:

Approved by: Jeremy Lin, **Date:** 2022/10/06
Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist



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Release Control Record

| Issue No. | Description | Date Issued |
|------------------------|-------------------|-------------|
| RFBBQZ-WTW-P22060724-2 | Original release. | 2022/10/06 |

1 Certificate

Product: AX1600 WiFi Router

Brand: NETGEAR

Test Model: RAX5

Sample Status: Engineering sample

**Applicant and
Manufacturer:** NETGEAR, INC.

Test Date: 2022/8/2 ~ 2022/9/29

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

**Measurement
procedure:** ANSI C63.10-2013

KDB 291074 D02 EMC Measurement v01

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

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 RF characteristics under the conditions specified in this report.

2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart E (Section 15.407) | | | |
|--|--|--------|---|
| Clause | Test Item | Result | Remark |
| 15.407(a)(3) | RF Output Power | Pass | Meet the requirement of limit. |
| 15.407(a)(3) | Power Spectral Density | Pass | Meet the requirement of limit. |
| 15.407(b)(9) | AC Power Conducted Emissions | Pass | Minimum passing margin is -11.59 dB at 0.46200 MHz |
| 15.407(b)(9) | Unwanted Emissions below 1 GHz | Pass | Minimum passing margin is -8.9 dB at 303.54 MHz |
| 15.407(b) (5) 15.407(b) (8) | Unwanted Emissions above 1 GHz | Pass | Minimum passing margin is -0.2 dB at 5648.32 MHz |
| 15.407(e) | 6 dB Bandwidth | Pass | Meet the requirement of limit. (U-NII-3 Band only) |
| 15.407(g) | Frequency Stability | Pass | Meet the requirement of limit. |
| 15.403 | Operational restrictions U-NII 4 devices | - | Declaration by applicant. |
| 15.203 | Antenna Requirement | Pass | Antenna connector is IPEX not a standard connector. |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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 | Specification | Expanded Uncertainty (k=2) (±) |
|--------------------------------|-----------------|-----------------------------------|
| AC Power Conducted Emissions | 9 kHz ~ 30 MHz | 2.79 dB |
| Unwanted Emissions below 1 GHz | 9 kHz ~ 30 MHz | 3.59 dB |
| | 30 MHz ~ 1 GHz | 3.64 dB |
| Unwanted Emissions above 1 GHz | 1 GHz ~ 18 GHz | 2.29 dB |
| | 18 GHz ~ 40 GHz | 2.29 dB |

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

| | |
|-----------------------|---|
| Product | AX1600 WiFi Router |
| Brand | NETGEAR |
| Test Model | RAX5 |
| Status of EUT | Engineering sample |
| Power Supply Rating | 12 Vdc (adapter) |
| Modulation Type | 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode |
| Modulation Technology | OFDM, OFDMA |
| Transfer Rate | 802.11a: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps |
| Operating Frequency | 5.835 GHz ~ 5.885 GHz |
| Number of Channel | 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 3 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 |
| Output Power | CDD Mode: EIRP: 763.836 mW (28.83 dBm) Beamforming Mode: EIRP: 1116.863 mW (30.48 dBm) |
| EUT Category | Indoor access point |

Note:

1. The EUT uses following accessories.

| AC Adapter 1 | | | |
|--------------------------------------|--|--------------|---|
| Brand | Model | Part Number | Specification |
| Honor | ADS-18FQ-12 12018EPCU-L, ADS-18FQ-12 12018EPC-L | 332-11523-02 | AC Input: 100-120V, ~60Hz Max, 0.7A DC Output: 12Vdc, 1.5A DC Output Cable: 1.8M / 0core |
| AC Adapter 2 | | | |
| Brand | Model | Part Number | Specification |
| Channel Well Technology Co., Ltd. | 2AAJ018F 1 | 332-11572-01 | AC Input: 100-120V ~50/60Hz, 0.6A DC Output: 12Vdc, 1.5A, 18.0W DC Output Cable: 1.8M / 0core |
| RJ-45 | | | |
| Specification | | | |
| Signal Line : 1.95M | | | |

2. The EUT supports Full RU only.

3. There are WLAN (2.4 GHz), WLAN (5 GHz) and WLAN (5.9 GHz) technology used for the EUT.

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 Antenna Description of EUT

1. The antenna information is listed as below.

| ANT. No. | Type | Connector | Frequency Range | Ant 0 (dBi) | Ant 1 (dBi) | Directional Gain (dBi) |
|----------|------|-----------|-----------------|-------------|-------------|------------------------|
| 2.4 | PIFA | IPEX | 2400~2483.5MHz | 1.44 | 1.47 | 4.47 |
| 5G | PIFA | IPEX | 5150~5250MHz | 1.84 | 1.57 | 4.72 |
| | | | 5725~5850MHz | 2.61 | 2.60 | 5.62 |
| 5.9G | PIFA | IPEX | 5850~5895MHz | 2.53 | 2.60 | 5.58 |

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

| 5 GHz Band | | |
|------------------|-----------------------|-----|
| Modulation Mode | TX & RX Configuration | |
| 802.11a | 2TX | 2RX |
| 802.11n (HT20) | 2TX | 2RX |
| 802.11n (HT40) | 2TX | 2RX |
| 802.11ac (VHT20) | 2TX | 2RX |
| 802.11ac (VHT40) | 2TX | 2RX |
| 802.11ac (VHT80) | 2TX | 2RX |
| 802.11ax (HE20) | 2TX | 2RX |
| 802.11ax (HE40) | 2TX | 2RX |
| 802.11ax (HE80) | 2TX | 2RX |

Note:

- All of modulation mode support beamforming function except 802.11a modulation mode.
- The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
- The modulation and bandwidth are similar for 802.11n mode for 20 MHz / 40 MHz, 802.11ac mode for 20 MHz / 40 MHz / 80 MHz and 802.11ax mode for 20 MHz / 40 MHz / 80 MHz, therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5845 ~ 5885 MHz

3 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|
| *169 | 5845 MHz | 173 | 5865 MHz | 177 | 5885 MHz |

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| *167 | 5835 MHz | 175 | 5875 MHz |

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

| Channel | Frequency |
|---------|-----------|
| *171 | 5855 MHz |

Note: * U-NII-3 & -4 span channels.

3.4 Test Mode Applicability and Tested Channel Detail

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

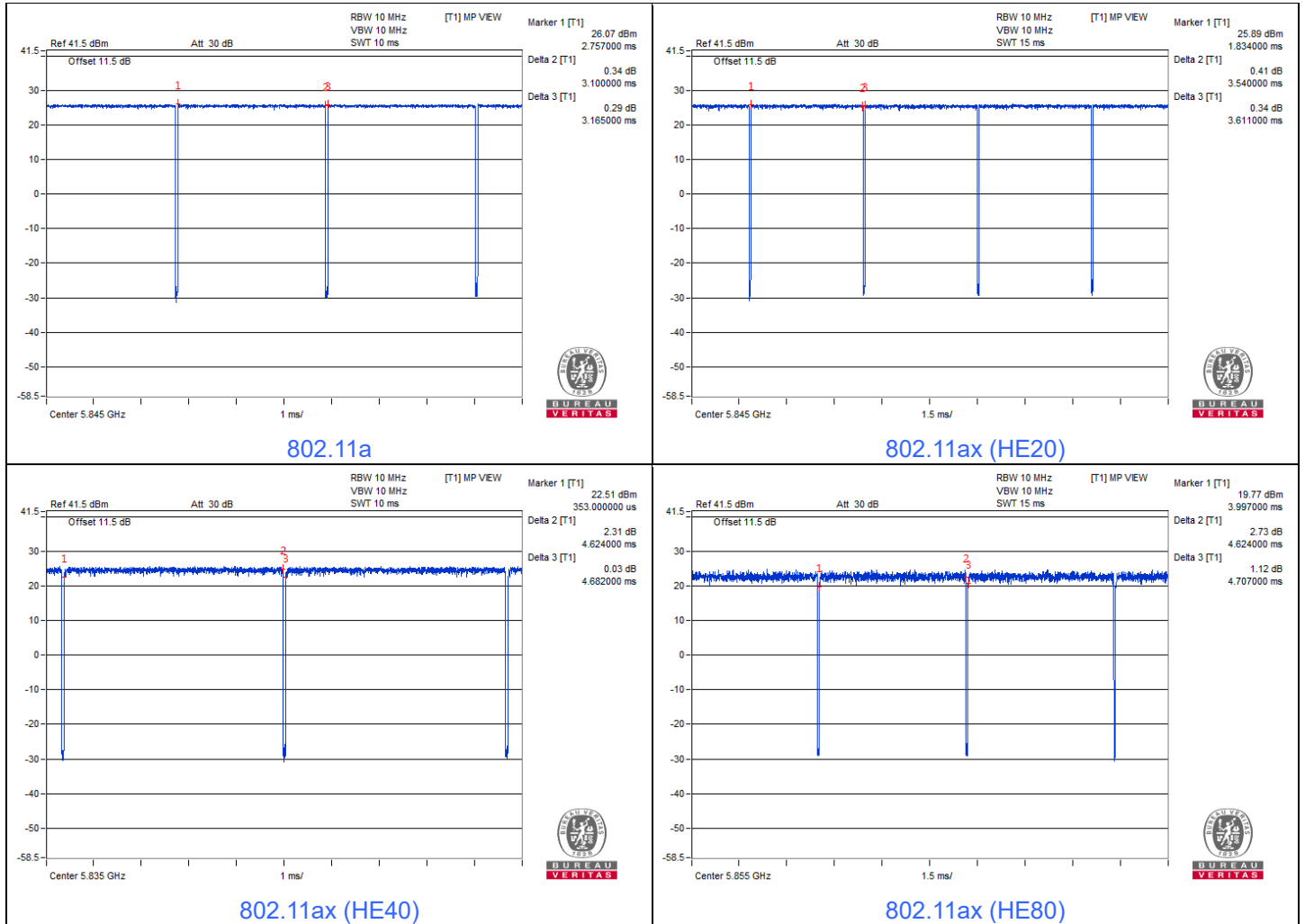
| Test Item | EUT Configure Mode | Mode | Signal Mode | Tested Channel | Modulation | Data Rate Parameter |
|--|--------------------|----------------------|-------------------|----------------|------------|---------------------|
| RF Output Power / Power Spectral Density | A | 802.11a | CDD | 169, 173, 177 | BPSK | 6Mb/s |
| | | 802.11ax (HE20) | CDD & Beamforming | 169, 173, 177 | BPSK | MCS0 |
| | | 802.11ax (HE40) | CDD & Beamforming | 167, 175 | BPSK | MCS0 |
| | | 802.11ax (HE80) | CDD & Beamforming | 171 | BPSK | MCS0 |
| 6 dB Bandwidth | A | 802.11a | CDD | 169, 173, 177 | BPSK | 6Mb/s |
| | | 802.11ax (HE20) | CDD & Beamforming | 169, 173, 177 | BPSK | MCS0 |
| | | 802.11ax (HE40) | CDD & Beamforming | 167, 175 | BPSK | MCS0 |
| | | 802.11ax (HE80) | CDD & Beamforming | 171 | BPSK | MCS0 |
| Frequency Stability | A | 802.11a | CDD | 177 | - | - |
| AC Power Conducted Emissions | A, B | 802.11ax (HE40) | Beamforming | 167 | BPSK | MCS0 |
| Unwanted Emissions below 1 GHz | A, B | 802.11ax (HE40) | Beamforming | 167 | BPSK | MCS0 |
| Unwanted Emissions above 1 GHz | A | 802.11a | CDD | 169, 173, 177 | BPSK | 6Mb/s |
| | | 802.11ax (HE20) | Beamforming | 169, 173, 177 | BPSK | MCS0 |
| | | 802.11ax (HE40) | Beamforming | 167, 175 | BPSK | MCS0 |
| | | 802.11ax (HE80) | Beamforming | 171 | BPSK | MCS0 |
| EUT Configure Mode: | A | Powered by adapter 1 | | | | |
| | B | Powered by adapter 2 | | | | |

Note: The EUT is designed to be positioned on the z-plane only.

3.5 Duty Cycle of Test Signal

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

- 802.11a:** Duty cycle = $3.100 \text{ ms} / 3.165 \text{ ms} \times 100\% = 98.0\%$
- 802.11ax (HE20):** Duty cycle = $3.54 \text{ ms} / 3.611 \text{ ms} \times 100\% = 98.0\%$
- 802.11ax (HE40):** Duty cycle = $4.624 \text{ ms} / 4.682 \text{ ms} \times 100\% = 98.8\%$
- 802.11ax (HE80):** Duty cycle = $4.624 \text{ ms} / 4.707 \text{ ms} \times 100\% = 98.2\%$

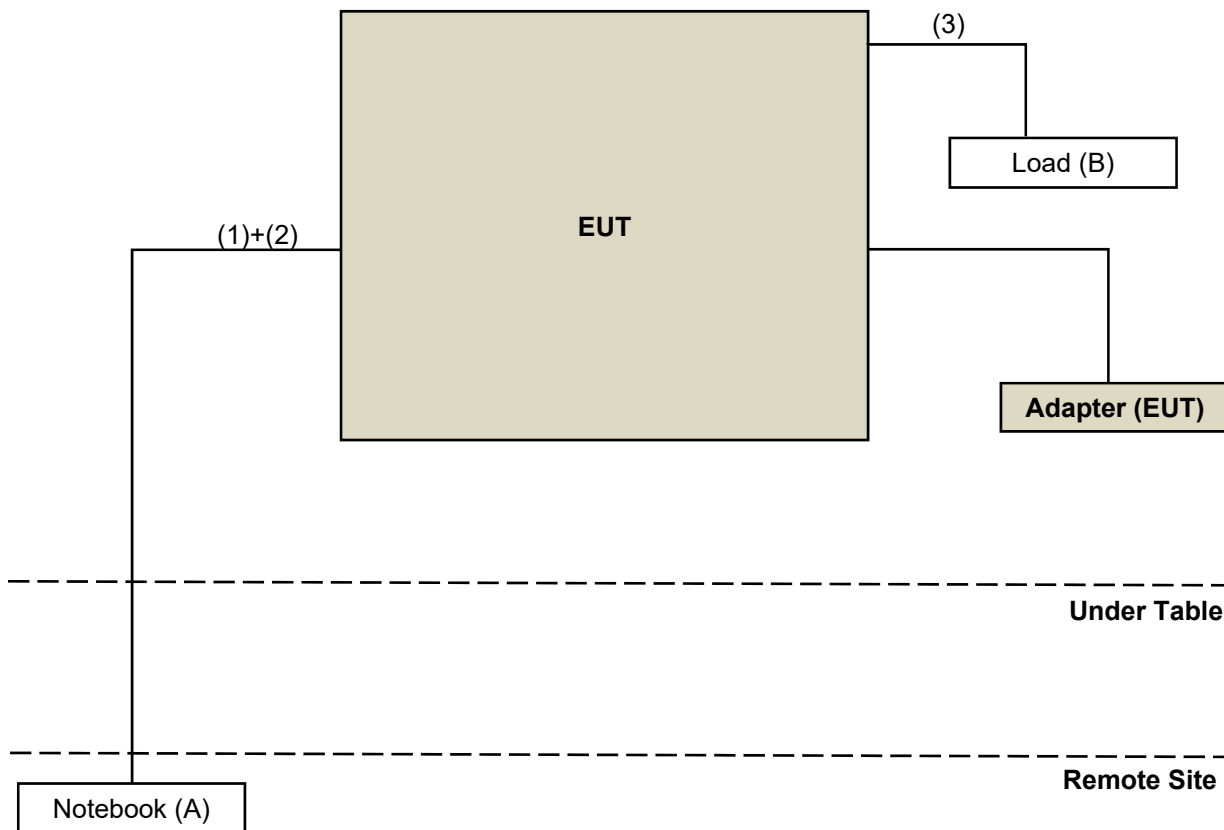


3.6 Test Program Used and Operation Descriptions

Controlling software MT7915 QA 0.0.2.33 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Test Mode A, B



3.8 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|----------|-------|-----------|------------|--------|-----------------|
| A | Notebook | DELL | E5430 | 2RL3YW1 | N/A | Provided by Lab |
| B | Load | N/A | N/A | N/A | N/A | Provided by Lab |

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|--------------------|------|------------|--------------------|--------------|------------------|
| 1 | RJ-45 Cable | 1 | 10 | N/A | 0 | Provided by Lab |
| 2 | RJ-45 Cable | 1 | 1.95 | N/A | 0 | Accessory of EUT |
| 3 | RJ-45 Cable | 4 | 1.5 | N/A | 0 | Provided by Lab |

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|-----------------------------|----------------------------------|------------|--------------------|---------------------|
| Software BV | ADT_RF Test Software V6.6.5.4 | N/A | N/A | N/A |
| Spectrum Analyzer R&S | FSV40 | 100979 | 2022/3/25 | 2023/3/24 |

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/29 ~ 2022/9/30

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Frequency Stability

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|--|----------------------------------|------------|--------------------|---------------------|
| AC Power Source ExTech | CFW-105 | E000603 | N/A | N/A |
| Digital Multimeter Fluke | 87-III | 70360742 | 2022/6/23 | 2023/6/22 |
| Software BV | ADT_RF Test Software V6.6.5.4 | N/A | N/A | N/A |
| Spectrum Analyzer R&S | FSV40 | 100979 | 2022/3/25 | 2023/3/24 |
| Temperature & Humidity Chamber TERCHY | HRM-120RF | 931022 | 2022/1/3 | 2023/1/2 |

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/29

4.5 AC Power Conducted Emissions

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|-------------------------|----------------|--------------------|---------------------|
| DC-LISN SCHWARZBECK MESS- ELETRONIK | NNBM 8126G | 8126G-069 | 2021/11/10 | 2022/11/9 |
| LISN R&S | ESH3-Z5 | 100220 | 2021/11/25 | 2022/11/24 |
| LISN ROHDE & SCHWARZ | ENV216 | 101826 | 2022/3/14 | 2023/3/13 |
| RF Coaxial Cable WOKEN | 5D-FB | Cable-cond1-01 | 2022/1/15 | 2023/1/14 |
| Software BVADT | BVADT_Cond_ V7.3.7.4 | N/A | N/A | N/A |
| Test Receiver Rohde&Schwarz | ESCI | 100613 | 2021/12/3 | 2022/12/2 |
| V-LISN Schwarzbeck | NNBL 8226-2 | 8226-142 | 2022/8/31 | 2023/8/30 |

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2022/9/7 ~ 2022/9/27

4.6 Unwanted Emissions below 1 GHz

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---------------------------------|------------------------------|---------------|--------------------|---------------------|
| Antenna Tower inn-co GmbH | MA 4000 | 010303 | N/A | N/A |
| Bi_Log Antenna Schwarbeck | VULB9168 | 9168-155 | 2021/11/1 | 2022/10/31 |
| Loop Antenna EMCI | EM-6879 | 269 | 2022/9/19 | 2023/9/18 |
| Loop Antenna TESEQ | HLA 6121 | 45745 | 2022/7/27 | 2023/7/26 |
| Pre-amplifier EMCI | EMC001340 | 980201 | 2022/9/23 | 2023/9/22 |
| Pre_Amplifier Agilent | 8447D | 2944A10631 | 2022/5/14 | 2023/5/13 |
| RF Coaxial Cable EMCI | 5D-NM-BM | 140903+140902 | 2022/1/15 | 2023/1/14 |
| | EMC102-KM-KM-600 | 150928 | 2022/7/9 | 2023/7/8 |
| | EMC102-KM-KM-3000 | 150929 | 2022/7/9 | 2023/7/8 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.5 | N/A | N/A | N/A |
| Spectrum Analyzer R&S | FSW43 | 101582 | 2022/4/13 | 2023/4/12 |
| Test Receiver R&S | ESCI | 100424 | 2021/12/30 | 2022/12/29 |
| Turn Table BV ADT | TT100 | TT93021705 | N/A | N/A |
| Turn Table Controller BV ADT | SC100 | SC93021705 | N/A | N/A |

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2022/9/27

4.7 Unwanted Emissions above 1 GHz

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---------------------------------------|-----------------------------------|---------------------------------|--------------------|---------------------|
| Antenna Tower inn-co GmbH | MA 4000 | 010303 | N/A | N/A |
| Boresight antenna tower fixture BV | BAF-02 | 5 | N/A | N/A |
| Horn Antenna Schwarzbeck | BBHA 9170 | BBHA9170241 | 2021/10/26 | 2022/10/25 |
| Pre-Amplifier EMCI | EMC 184045 | 980116 | 2021/10/5 | 2022/10/4 |
| Pre_Amplifier KEYSIGHT | 83017A | MY53270295 | 2022/5/14 | 2023/5/13 |
| RF cable HUBER+SUHNER | Sucoflex 104 | MY 13380+295012/04 | 2022/5/14 | 2023/5/13 |
| RF Coaxial Cable HUBER+SUHNER | SUCOFLEX 104 | Cable-CH4-03(250724) | 2022/5/14 | 2023/5/13 |
| | | CABLE-CH9-(250795/4) | 2022/1/15 | 2023/1/14 |
| RF Coaxial Cable HUBER+SUHNER&EMCI | SUCOFLEX 104& EMC104-SM-SM8000 | CABLE-CH9-02 (248780+171006) | 2022/1/15 | 2023/1/14 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.5 | N/A | N/A | N/A |
| Spectrum Analyzer R&S | FSW43 | 101582 | 2022/4/13 | 2023/4/12 |
| Test Receiver R&S | ESCI | 100424 | 2021/12/30 | 2022/12/29 |
| Turn Table BV ADT | TT100 | TT93021705 | N/A | N/A |
| Turn Table Controller BV ADT | SC100 | SC93021705 | N/A | N/A |

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2022/8/2 ~ 2022/9/7

5 Limits of Test Items

5.1 RF Output Power

| Device Category | Limit (Max Average Power) |
|---------------------|------------------------------|
| Indoor access point | EIRP 36 dBm |
| Subordinate device | EIRP 36 dBm |
| Client device | EIRP 30 dBm |

Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.

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

5.2 Power Spectral Density

| Device Category | Limit |
|---------------------|-----------------|
| Indoor access point | EIRP 20 dBm/MHz |
| Subordinate device | EIRP 20 dBm/MHz |
| Client device | EIRP 14 dBm/MHz |

Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Frequency Stability

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

5.5 AC Power Conducted Emissions

| 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 |

Notes:

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

5.6 Unwanted Emissions below 1 GHz

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 |

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.7 Unwanted Emissions above 1 GHz

- (i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of -7 dBm/MHz at or above 5.925 GHz.
- (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz.
- (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

Note:

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

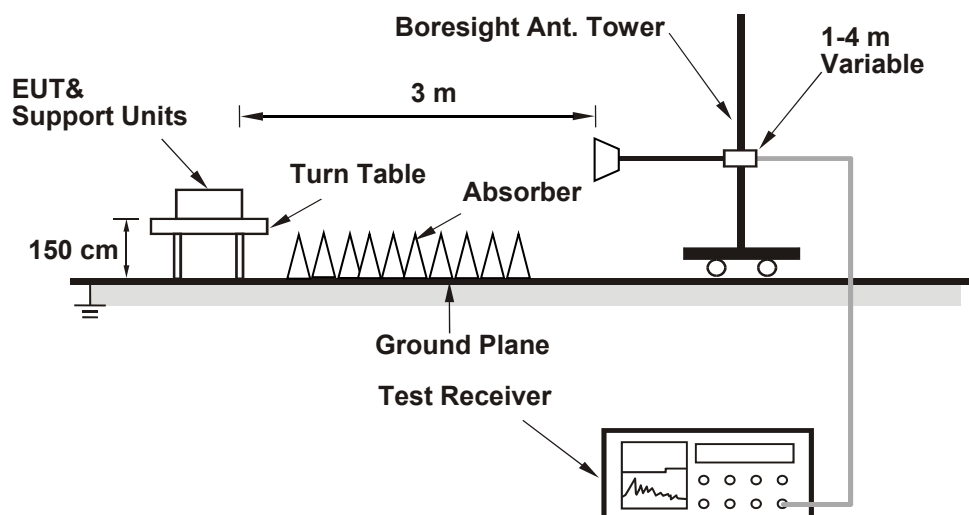
$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where } P \text{ is the eirp (Watts).}$$

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

Radiated Measurement Method



6.1.2 Test Procedure

Radiated Measurement Method

- The EUT was placed on the top of a rotating table 1.5 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.
- Follow ANSI C63.10 section 12.7.3, $EIRP \text{ Value (dBm)} = \text{Field Strength Value (dBuV / m)} + \text{Correction Factor @ 3 m}$.
- $\text{Correction Factor (dB) @ 3 m} = 20\log(D) - 104.77$; where D is the measurement distance @3 m = -95.23 dB

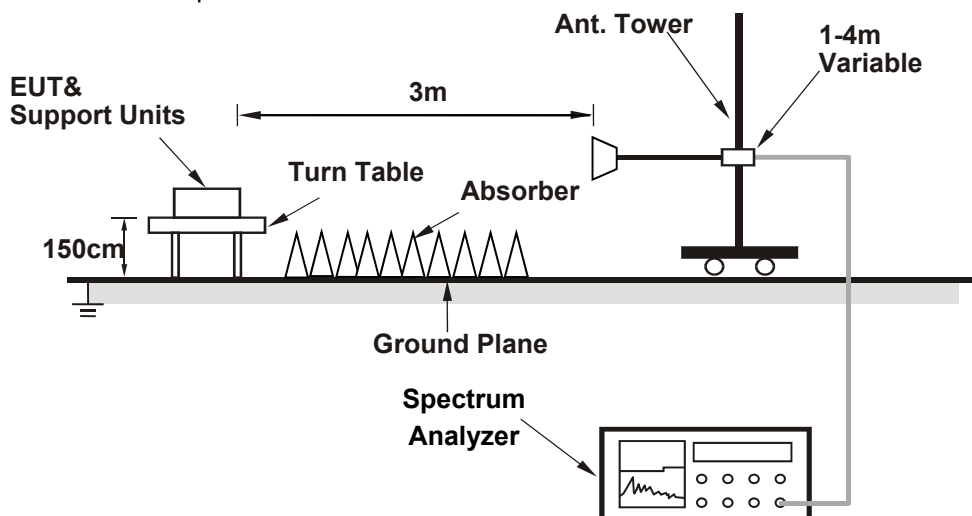
Spectrum analyzer setting as below:

Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Record the max value

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.
- Follow ANSI 63.10 and KDB 412172 D01 v01r01, $EIRP \text{ Value (dBm)} = \text{Field Strength Value (dB}\mu\text{V/m)} + \text{Correction Factor @ 3m}$.
- $\text{Correction Factor (dB) @ 3m} = 20\log(D) - 104.77$; where D is the measurement distance @3m=-95.23dB

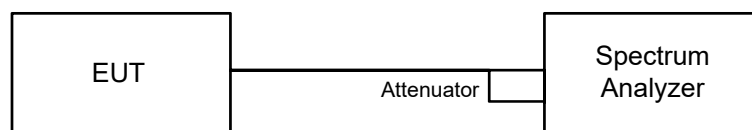
Note: Spectrum analyzer setting as below:

Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Record the max value

6.3 6 dB Bandwidth

6.3.1 Test Setup

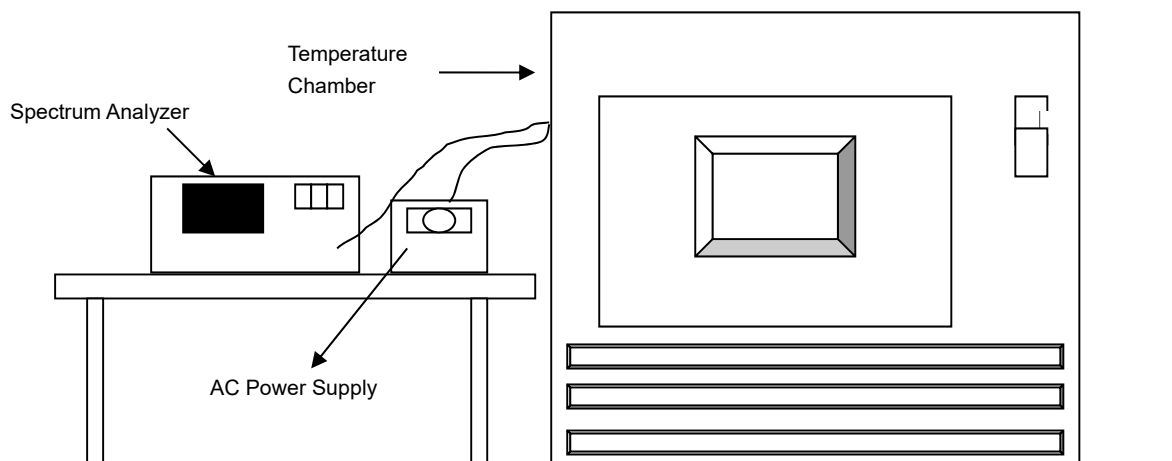


6.3.2 Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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.

6.4 Frequency Stability

6.4.1 Test Setup

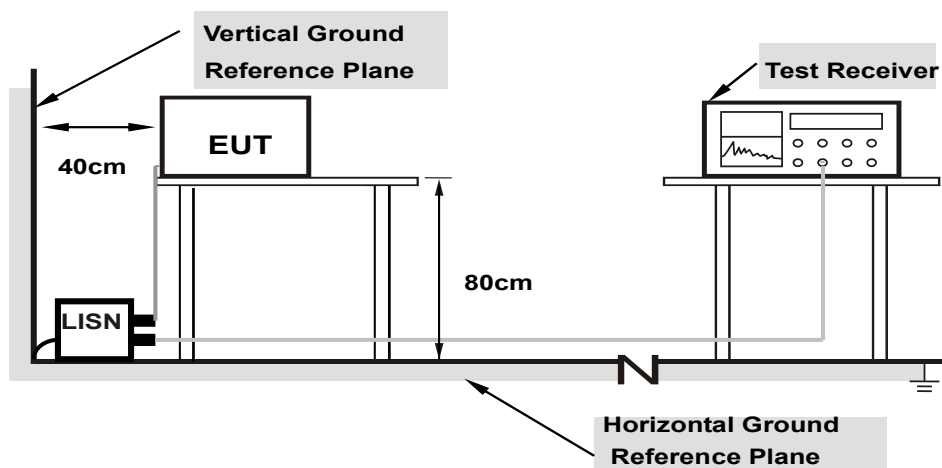


6.4.2 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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.

6.5 AC Power Conducted Emissions

6.5.1 Test Setup



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

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

6.5.2 Test Procedure

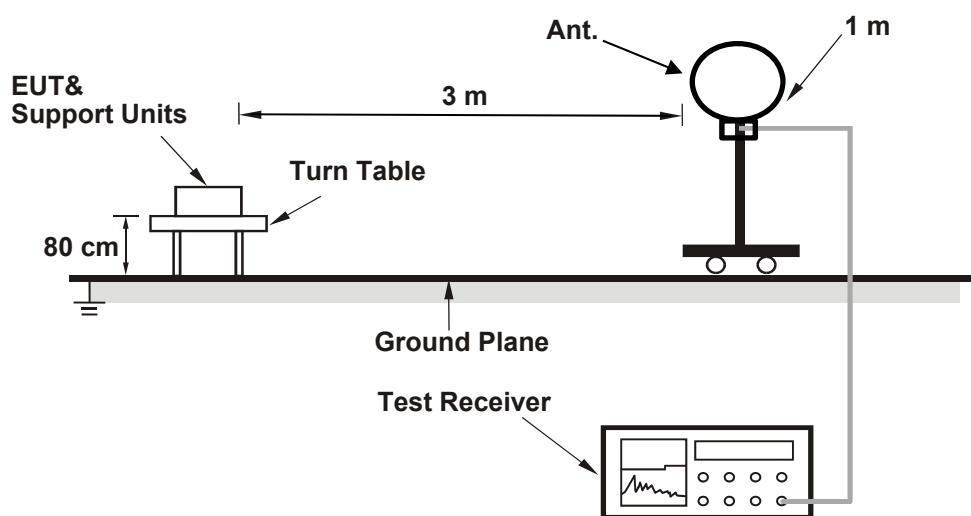
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

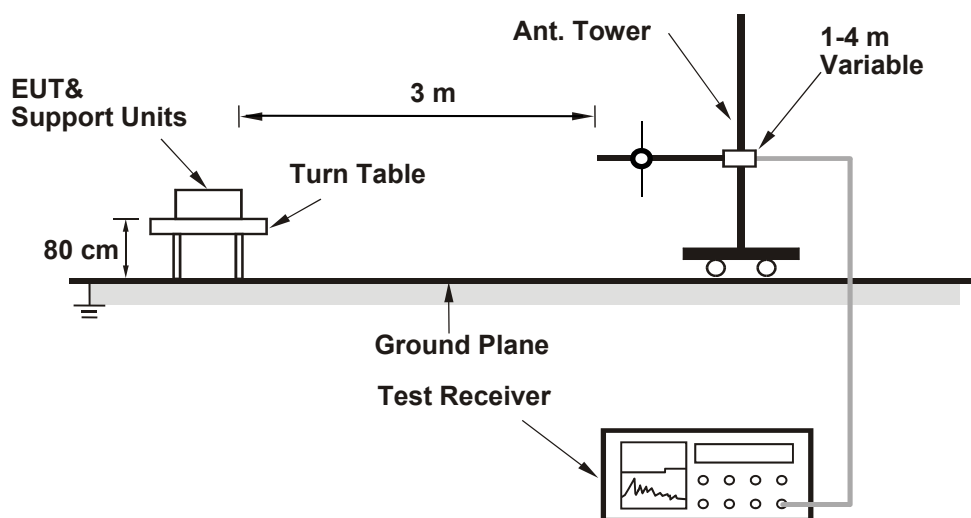
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

For Radiated emission below 30 MHz

- 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

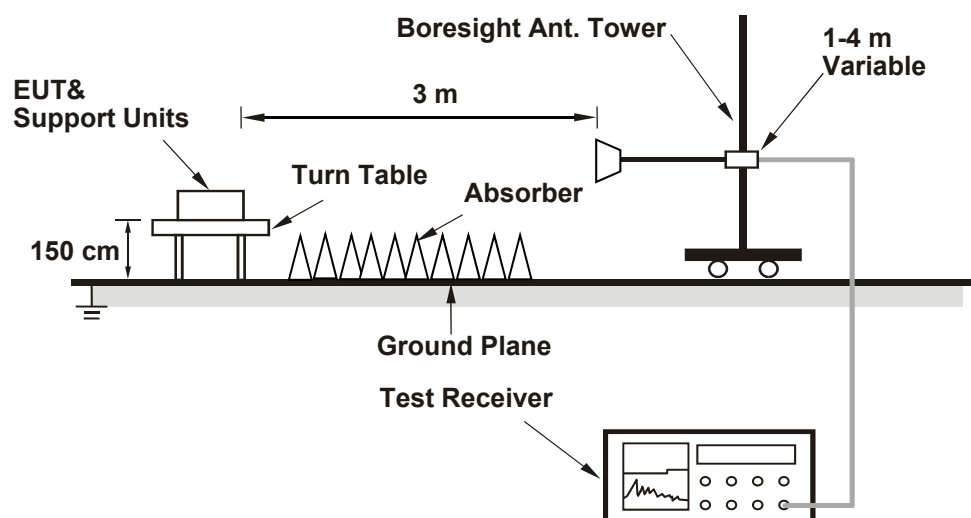
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to peak and average detects 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.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- For band edge measurement, the integration method is used, the resolution bandwidth of test spectrum analyzer is 100 kHz and the video bandwidth is 300 kHz. Please refer to the following for other instrument settings.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

| | | | | | |
|--------------|----------------|---------------------------|--------------|------------|-----------|
| Input Power: | 120 Vac, 60 Hz | Environmental Conditions: | 25°C, 60% RH | Tested By: | Wayne Lin |
|--------------|----------------|---------------------------|--------------|------------|-----------|

802.11a CDD

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 169 | 5845 | 123.87 | -95.23 | 731.139 | 28.64 | 36 | Pass |
| 173 | 5865 | 123.91 | -95.23 | 737.904 | 28.68 | 36 | Pass |
| 177 | 5885 | 123.86 | -95.23 | 729.458 | 28.63 | 36 | Pass |

802.11ax (HE20) CDD

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 169 | 5845 | 123.51 | -95.23 | 672.977 | 28.28 | 36 | Pass |
| 173 | 5865 | 123.35 | -95.23 | 648.634 | 28.12 | 36 | Pass |
| 177 | 5885 | 123.81 | -95.23 | 721.107 | 28.58 | 36 | Pass |

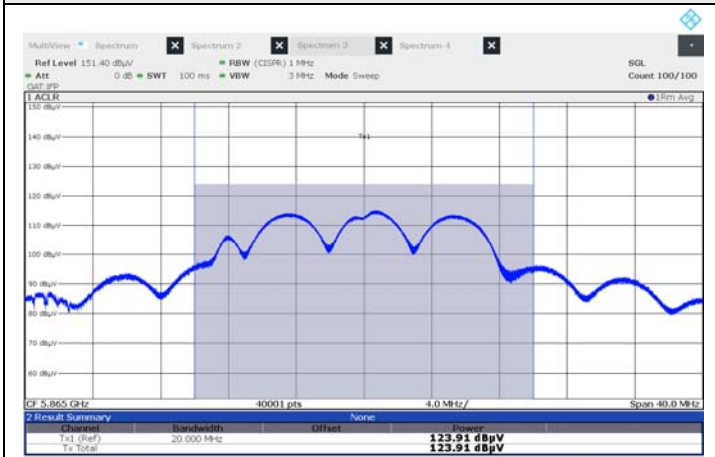
802.11ax (HE40) CDD

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 167 | 5835 | 124.06 | -95.23 | 763.836 | 28.83 | 36 | Pass |
| 175 | 5875 | 123.38 | -95.23 | 653.131 | 28.15 | 36 | Pass |

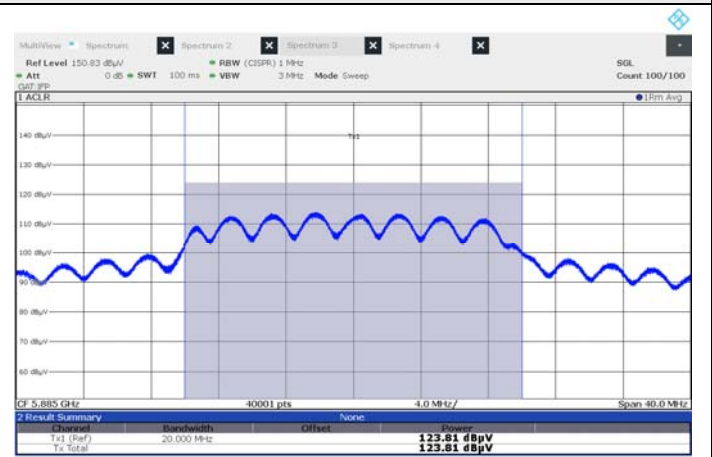
802.11ax (HE80) CDD

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 171 | 5855 | 122.86 | -95.23 | 579.429 | 27.63 | 36 | Pass |

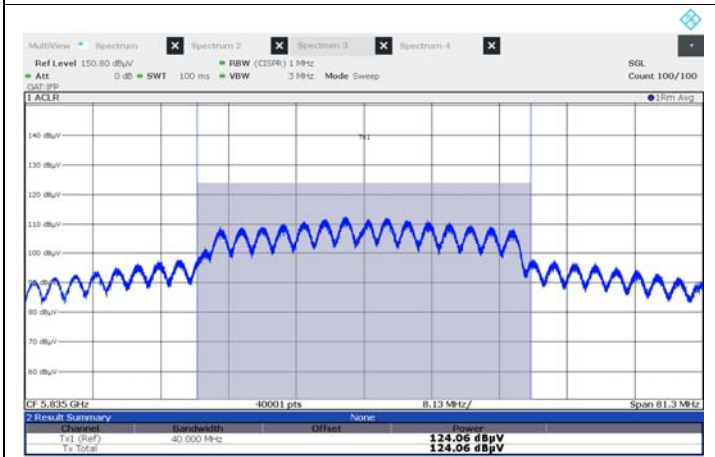
Spectrum Plot of Maximum Value



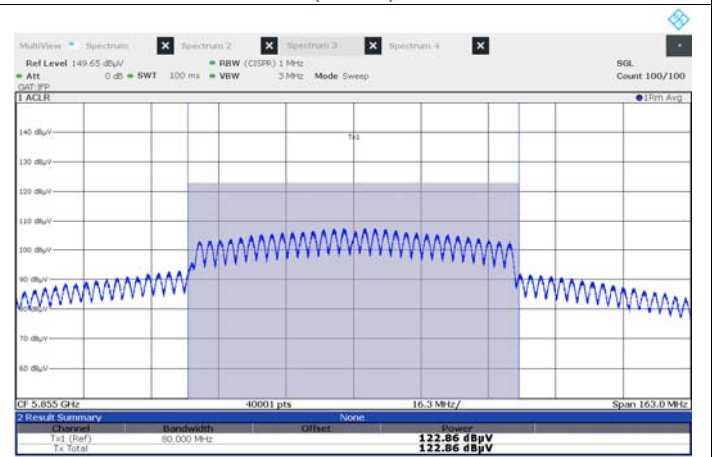
802.11a / CH 173



802.11ax (HE20) / CH 177



802.11ax (HE40) / CH 167



802.11ax (HE80) / CH 171

802.11ax (HE20) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 169 | 5845 | 125.71 | -95.23 | 1116.863 | 30.48 | 36 | Pass |
| 173 | 5865 | 125.66 | -95.23 | 1104.079 | 30.43 | 36 | Pass |
| 177 | 5885 | 125.65 | -95.23 | 1101.539 | 30.42 | 36 | Pass |

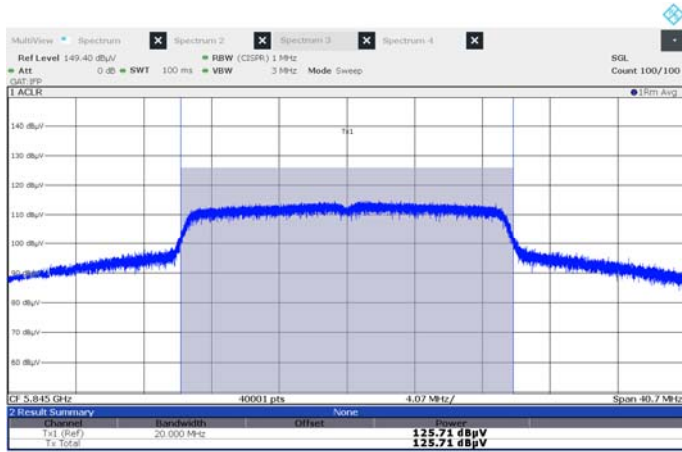
802.11ax (HE40) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 167 | 5835 | 125.49 | -95.23 | 1061.696 | 30.26 | 36 | Pass |
| 175 | 5875 | 125.43 | -95.23 | 1047.129 | 30.20 | 36 | Pass |

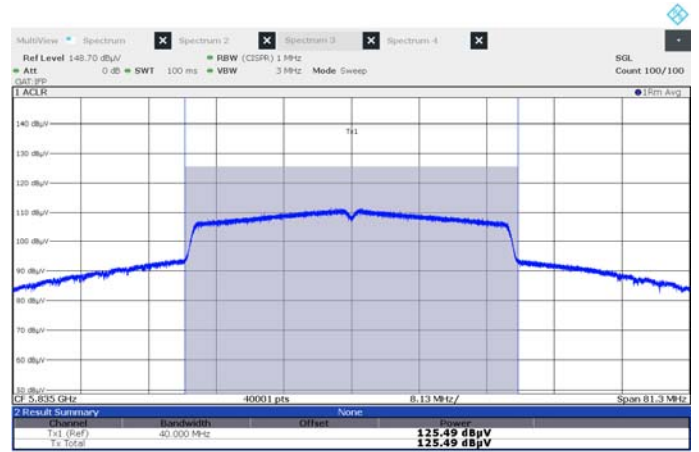
802.11ax (HE80) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP (mW) | EIRP (dBm) | EIRP Limit (dBm) | Test Result |
|-------|-------------------|-------------------------|------------------------|-----------|------------|------------------|-------------|
| 171 | 5855 | 124.64 | -95.23 | 872.971 | 29.41 | 36 | Pass |

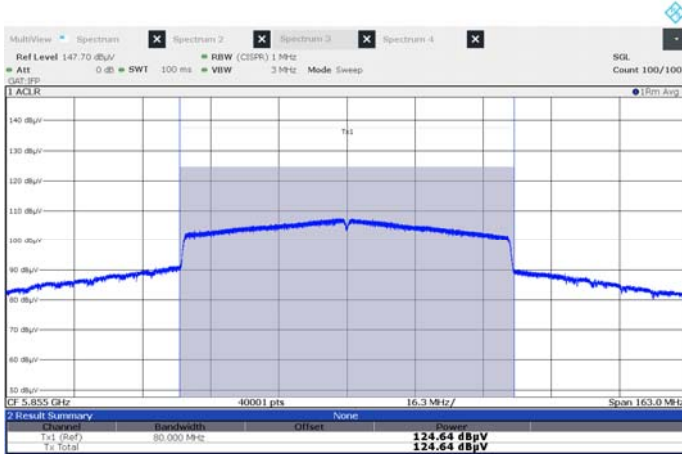
Spectrum Plot of Maximum Value



802.11ax (HE20) / CH 169



802.11ax (HE40) / CH 167



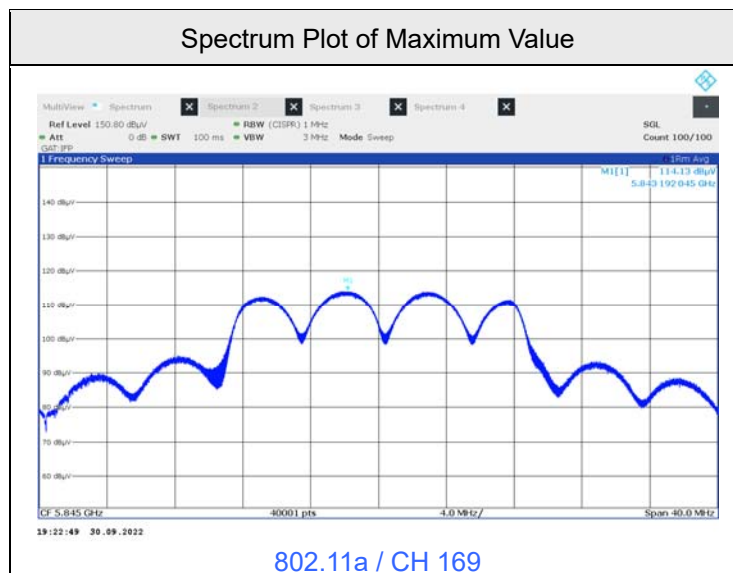
802.11ax (HE80) / CH 171

7.2 Power Spectral Density

| | | | | | |
|--------------|----------------|---------------------------|--------------|------------|-----------|
| Input Power: | 120 Vac, 60 Hz | Environmental Conditions: | 25°C, 60% RH | Tested By: | Wayne Lin |
|--------------|----------------|---------------------------|--------------|------------|-----------|

802.11a CDD

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP PSD (dBm/MHz) | EIRP PSD Limit (dBm/MHz) | Test Result |
|-------|-------------------|-------------------------|------------------------|--------------------|--------------------------|-------------|
| 169 | 5845 | 114.13 | -95.23 | 18.90 | 20 | Pass |
| 173 | 5865 | 113.89 | -95.23 | 18.66 | 20 | Pass |
| 177 | 5885 | 113.95 | -95.23 | 18.72 | 20 | Pass |



802.11ax (HE20) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP PSD (dBm/MHz) | EIRP PSD Limit (dBm/MHz) | Test Result |
|-------|-------------------|-------------------------|------------------------|--------------------|--------------------------|-------------|
| 169 | 5845 | 113.66 | -95.23 | 18.43 | 20 | Pass |
| 173 | 5865 | 113.56 | -95.23 | 18.33 | 20 | Pass |
| 177 | 5885 | 113.21 | -95.23 | 17.98 | 20 | Pass |

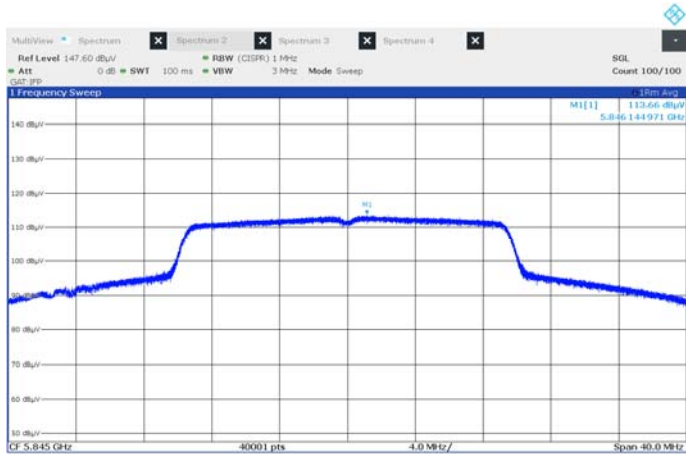
802.11ax (HE40) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP PSD (dBm/MHz) | EIRP PSD Limit (dBm/MHz) | Test Result |
|-------|-------------------|-------------------------|------------------------|--------------------|--------------------------|-------------|
| 167 | 5835 | 112.25 | -95.23 | 17.02 | 20 | Pass |
| 175 | 5875 | 111.25 | -95.23 | 16.02 | 20 | Pass |

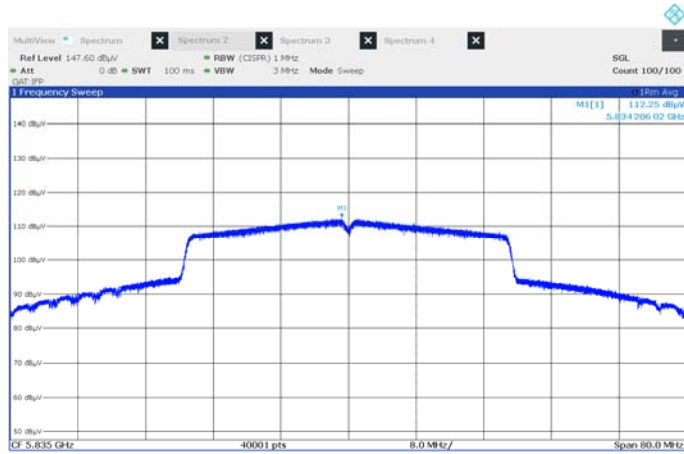
802.11ax (HE80) Beamforming

| Chan. | Chan. Freq. (MHz) | Field Strength (dBuV/m) | Correction Factor (dB) | EIRP PSD (dBm/MHz) | EIRP PSD Limit (dBm/MHz) | Test Result |
|-------|-------------------|-------------------------|------------------------|--------------------|--------------------------|-------------|
| 171 | 5855 | 109.59 | -95.23 | 14.36 | 20 | Pass |

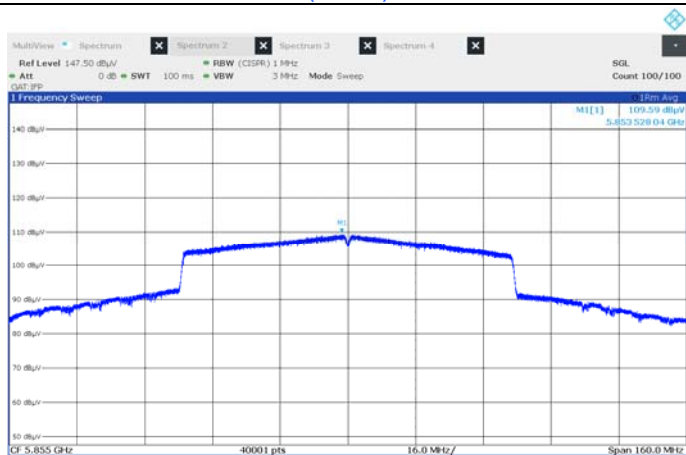
Spectrum Plot of Maximum Value



802.11ax (HE20) / CH 169



802.11ax (HE40) / CH 167



802.11ax (HE80) / CH 171

7.3 6 dB Bandwidth

| | | | | | |
|--------------|----------------|---------------------------|--------------|------------|-----------|
| Input Power: | 120 Vac, 60 Hz | Environmental Conditions: | 25°C, 60% RH | Tested By: | Wayne Lin |
|--------------|----------------|---------------------------|--------------|------------|-----------|

802.11a

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Minimum Limit (MHz) | Test Result |
|---------|-----------------|---------------------|---------|---------------------|-------------|
| | | Chain 0 | Chain 1 | | |
| 169 | 5845 | 16.36 | 16.31 | 0.5 | Pass |
| 173 | 5865 | 15.95 | 16.35 | 0.5 | Pass |
| 177 | 5885 | 16.35 | 16.36 | 0.5 | Pass |

802.11ax (HE20)

| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Minimum Limit (MHz) | Test Result |
|---------|-----------------|---------------------|---------|---------------------|-------------|
| | | Chain 0 | Chain 1 | | |
| 169 | 5845 | 18.70 | 18.21 | 0.5 | Pass |
| 173 | 5865 | 18.62 | 18.87 | 0.5 | Pass |
| 177 | 5885 | 18.30 | 18.21 | 0.5 | Pass |

802.11ax (HE40)

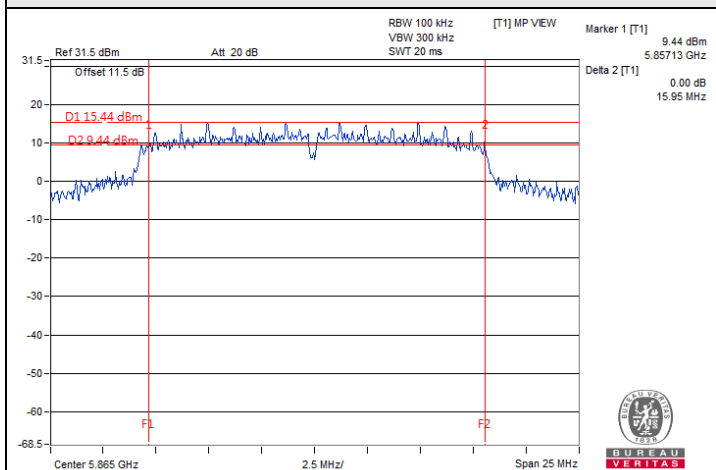
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Minimum Limit (MHz) | Test Result |
|---------|-----------------|---------------------|---------|---------------------|-------------|
| | | Chain 0 | Chain 1 | | |
| 167 | 5835 | 32.55 | 33.32 | 0.5 | Pass |
| 175 | 5875 | 32.67 | 33.93 | 0.5 | Pass |

802.11ax (HE80)

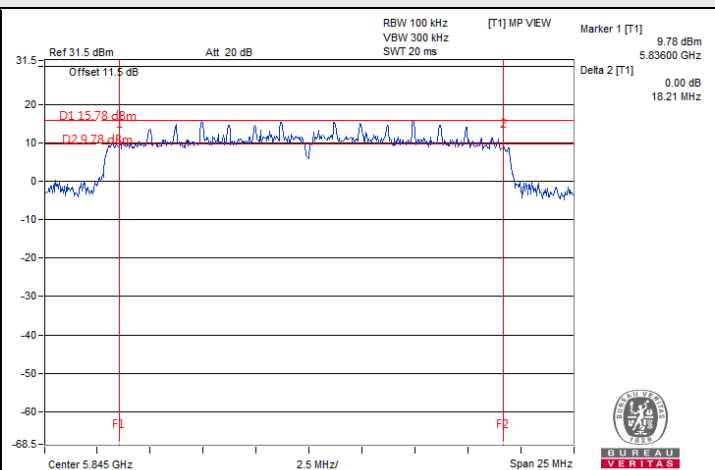
| Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Minimum Limit (MHz) | Test Result |
|---------|-----------------|---------------------|---------|---------------------|-------------|
| | | Chain 0 | Chain 1 | | |
| 171 | 5855 | 72.63 | 72.68 | 0.5 | Pass |



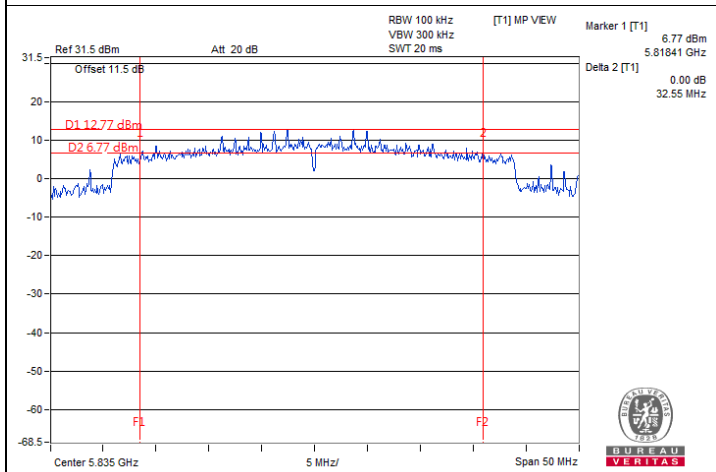
Spectrum Plot of Minimum Value



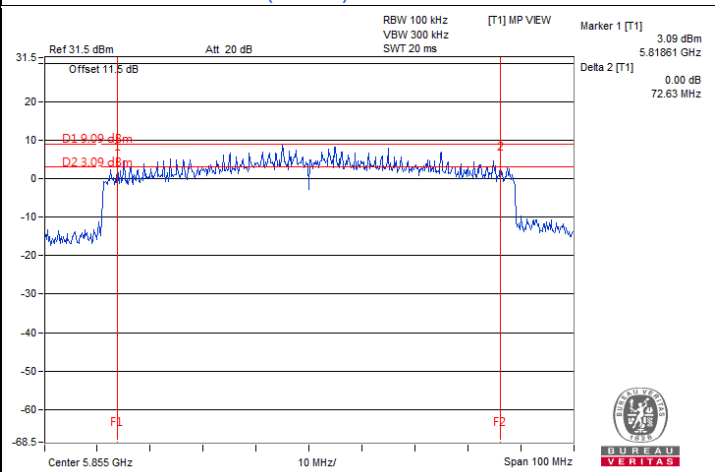
802.11a / Chain0 : CH 173



802.11ax (HE20) / Chain1 : CH 169



802.11ax (HE40) / Chain0 : CH 167



802.11ax (HE80) / Chain0 : CH 171

7.4 Frequency Stability

| | | | | | |
|--------------|----------------|---------------------------|--------------|------------|-----------|
| Input Power: | 120 Vac, 60 Hz | Environmental Conditions: | 25°C, 60% RH | Tested By: | Wayne Lin |
|--------------|----------------|---------------------------|--------------|------------|-----------|

802.11a

| Frequency Stability Versus Temp. | | | | | | | | | |
|----------------------------------|--------------------|--------------------------|-------------|--------------------------|-------------|--------------------------|-------------|--------------------------|-------------|
| Operating Frequency: 5885 MHz | | | | | | | | | |
| TEMP. (°C) | Power Supply (Vac) | 0 Minute | | 2 Minutes | | 5 Minutes | | 10 Minutes | |
| | | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result |
| 40 | 120 | 5885.0094 | Pass | 5885.0093 | Pass | 5885.0081 | Pass | 5885.0067 | Pass |
| 30 | 120 | 5885.0192 | Pass | 5885.0204 | Pass | 5885.0216 | Pass | 5885.0239 | Pass |
| 20 | 120 | 5885.0104 | Pass | 5885.0108 | Pass | 5885.0098 | Pass | 5885.0112 | Pass |
| 10 | 120 | 5884.9889 | Pass | 5884.9932 | Pass | 5884.9916 | Pass | 5884.9894 | Pass |
| 0 | 120 | 5885.0303 | Pass | 5885.0273 | Pass | 5885.029 | Pass | 5885.0283 | Pass |

| Frequency Stability Versus Voltage | | | | | | | | | |
|------------------------------------|--------------------|--------------------------|-------------|--------------------------|-------------|--------------------------|-------------|--------------------------|-------------|
| Operating Frequency: 5885 MHz | | | | | | | | | |
| TEMP. (°C) | Power Supply (Vac) | 0 Minute | | 2 Minutes | | 5 Minutes | | 10 Minutes | |
| | | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result | Measured Frequency (MHz) | Test Result |
| 20 | 138 | 5885.0147 | Pass | 5885.0172 | Pass | 5885.0172 | Pass | 5885.0179 | Pass |
| | 120 | 5885.0104 | Pass | 5885.0108 | Pass | 5885.0098 | Pass | 5885.0112 | Pass |
| | 102 | 5885.0165 | Pass | 5885.0168 | Pass | 5885.0126 | Pass | 5885.0151 | Pass |

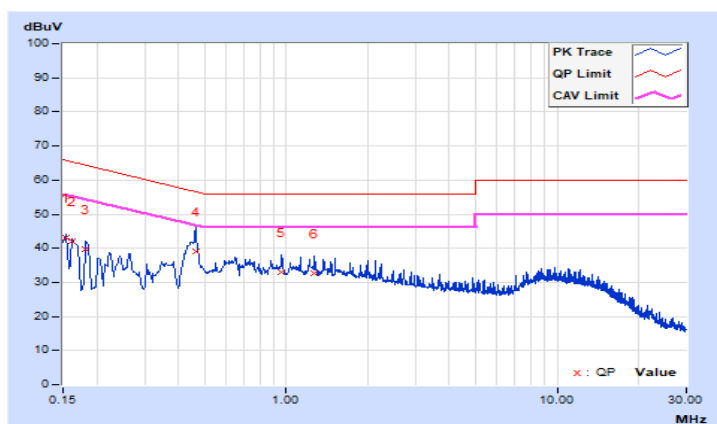
7.5 AC Power Conducted Emissions

| | | | |
|-----------------|--------------------|--|---------------------------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 150 kHz ~ 30 MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23°C, 66% RH |
| Tested By | Titan HSU | Test Mode | A |

| 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 | 0.15400 | 9.68 | 33.34 | 21.26 | 43.02 | 30.94 | 65.78 | 55.78 | -22.76 | -24.84 |
| 2 | 0.16190 | 9.69 | 32.37 | 20.63 | 42.06 | 30.32 | 65.37 | 55.37 | -23.31 | -25.05 |
| 3 | 0.18200 | 9.71 | 29.97 | 18.44 | 39.68 | 28.15 | 64.39 | 54.39 | -24.71 | -26.24 |
| 4 | 0.46200 | 9.80 | 29.31 | 25.27 | 39.11 | 35.07 | 56.66 | 46.66 | -17.55 | -11.59 |
| 5 | 0.96200 | 9.84 | 23.03 | 19.85 | 32.87 | 29.69 | 56.00 | 46.00 | -23.13 | -16.31 |
| 6 | 1.27400 | 9.86 | 22.81 | 19.59 | 32.67 | 29.45 | 56.00 | 46.00 | -23.33 | -16.55 |

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

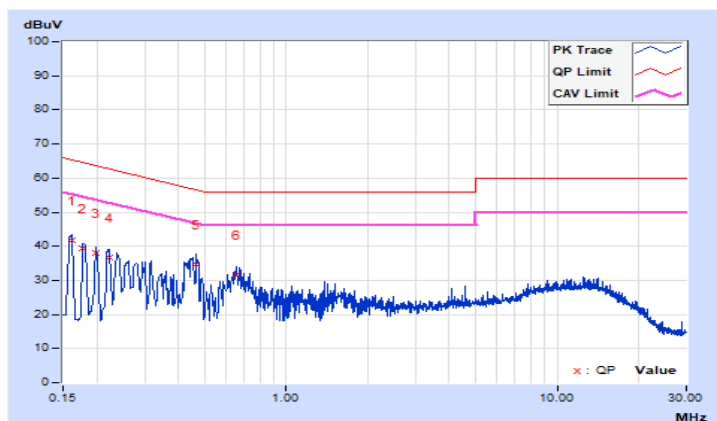


| | | | |
|------------------------|--------------------|---|---------------------------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 150 kHz ~ 30 MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23°C, 66% RH |
| Tested By | Titan HSU | Test Mode | A |

| 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 | 0.16190 | 9.69 | 32.11 | 17.32 | 41.80 | 27.01 | 65.37 | 55.37 | -23.57 | -28.36 |
| 2 | 0.17800 | 9.70 | 29.56 | 15.71 | 39.26 | 25.41 | 64.58 | 54.58 | -25.32 | -29.17 |
| 3 | 0.19800 | 9.72 | 28.16 | 14.11 | 37.88 | 23.83 | 63.69 | 53.69 | -25.81 | -29.86 |
| 4 | 0.22152 | 9.73 | 26.98 | 13.51 | 36.71 | 23.24 | 62.76 | 52.76 | -26.05 | -29.52 |
| 5 | 0.46600 | 9.82 | 24.96 | 16.56 | 34.78 | 26.38 | 56.58 | 46.58 | -21.80 | -20.20 |
| 6 | 0.65800 | 9.83 | 21.72 | 15.89 | 31.55 | 25.72 | 56.00 | 46.00 | -24.45 | -20.28 |

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

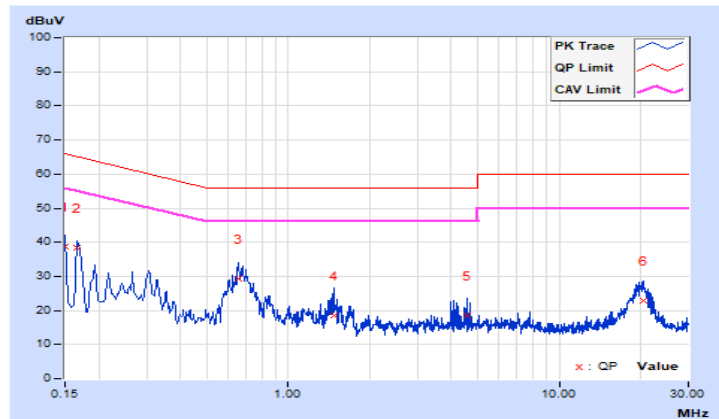


| | | | |
|------------------------|--------------------|---|---------------------------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 150 kHz ~ 30 MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23°C, 66% RH |
| Tested By | Titan HSU | Test Mode | B |

| 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 | 9.68 | 29.12 | 16.74 | 38.80 | 26.42 | 66.00 | 56.00 | -27.20 | -29.58 |
| 2 | 0.16600 | 9.69 | 28.55 | 11.18 | 38.24 | 20.87 | 65.16 | 55.16 | -26.92 | -34.29 |
| 3 | 0.65800 | 9.82 | 19.37 | 13.88 | 29.19 | 23.70 | 56.00 | 46.00 | -26.81 | -22.30 |
| 4 | 1.47400 | 9.87 | 8.64 | 2.54 | 18.51 | 12.41 | 56.00 | 46.00 | -37.49 | -33.59 |
| 5 | 4.57400 | 9.96 | 8.40 | 2.13 | 18.36 | 12.09 | 56.00 | 46.00 | -37.64 | -33.91 |
| 6 | 20.46600 | 10.16 | 12.57 | 5.65 | 22.73 | 15.81 | 60.00 | 50.00 | -37.27 | -34.19 |

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

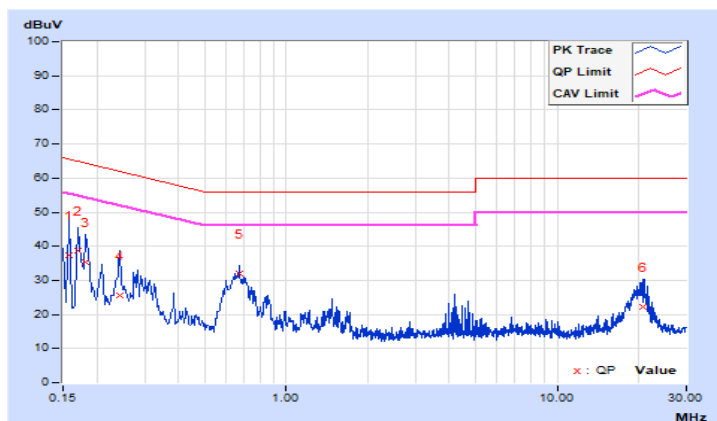


| | | | |
|------------------------|--------------------|---|---------------------------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 150 kHz ~ 30 MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23°C, 66% RH |
| Tested By | Titan HSU | Test Mode | B |

| 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 | 0.15800 | 9.69 | 27.55 | 9.96 | 37.24 | 19.65 | 65.57 | 55.57 | -28.33 | -35.92 |
| 2 | 0.17000 | 9.70 | 29.03 | 11.29 | 38.73 | 20.99 | 64.96 | 54.96 | -26.23 | -33.97 |
| 3 | 0.18200 | 9.71 | 25.65 | 9.23 | 35.36 | 18.94 | 64.39 | 54.39 | -29.03 | -35.45 |
| 4 | 0.24200 | 9.74 | 15.90 | 9.45 | 25.64 | 19.19 | 62.03 | 52.03 | -36.39 | -32.84 |
| 5 | 0.66987 | 9.83 | 22.17 | 14.93 | 32.00 | 24.76 | 56.00 | 46.00 | -24.00 | -21.24 |
| 6 | 20.70200 | 10.20 | 12.04 | 5.42 | 22.24 | 15.62 | 60.00 | 50.00 | -37.76 | -34.38 |

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



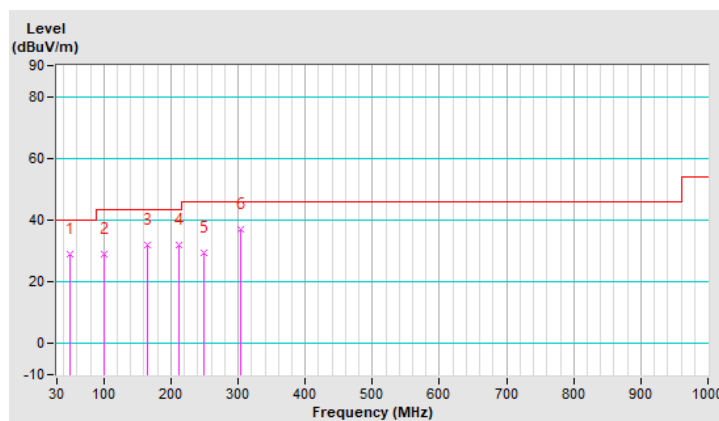
7.6 Unwanted Emissions below 1 GHz

| | | | |
|------------------------|--------------------|--|-------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 9 kHz ~ 1 GHz | Detector Function & Bandwidth | (QP) RB = 120kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 21°C, 68% RH |
| Tested By | Luis Lee | Test Mode | A |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|--|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 49.40 | 28.9 QP | 40.0 | -11.1 | 1.01 H | 152 | 37.7 | -8.8 |
| 2 | 99.84 | 29.1 QP | 43.5 | -14.4 | 1.01 H | 148 | 42.4 | -13.3 |
| 3 | 165.80 | 31.9 QP | 43.5 | -11.6 | 1.01 H | 152 | 40.6 | -8.7 |
| 4 | 212.36 | 32.0 QP | 43.5 | -11.5 | 1.01 H | 152 | 43.2 | -11.2 |
| 5 | 249.22 | 29.4 QP | 46.0 | -16.6 | 1.01 H | 130 | 38.5 | -9.1 |
| 6 | 303.54 | 37.1 QP | 46.0 | -8.9 | 1.01 H | 276 | 44.4 | -7.3 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

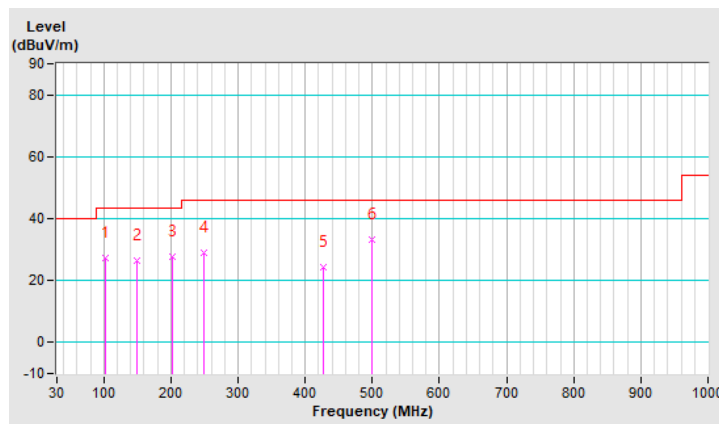


| | | | |
|------------------------|--------------------|--|-------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 9 kHz ~ 1 GHz | Detector Function & Bandwidth | (QP) RB = 120kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 21°C, 68% RH |
| Tested By | Luis Lee | Test Mode | A |

| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
|--|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 101.78 | 27.2 QP | 43.5 | -16.3 | 1.00 V | 221 | 40.2 | -13.0 |
| 2 | 148.34 | 26.3 QP | 43.5 | -17.2 | 1.49 V | 159 | 35.0 | -8.7 |
| 3 | 202.66 | 27.9 QP | 43.5 | -15.6 | 1.49 V | 127 | 39.3 | -11.4 |
| 4 | 249.22 | 29.1 QP | 46.0 | -16.9 | 1.00 V | 111 | 38.2 | -9.1 |
| 5 | 427.70 | 24.5 QP | 46.0 | -21.5 | 1.49 V | 246 | 29.7 | -5.2 |
| 6 | 499.48 | 33.2 QP | 46.0 | -12.8 | 1.49 V | 133 | 37.4 | -4.2 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

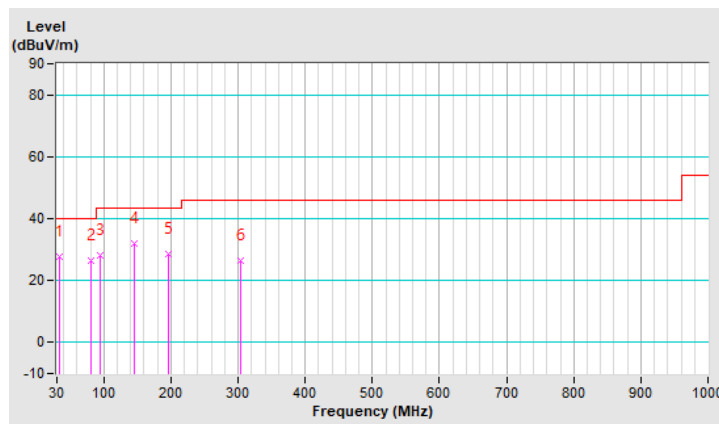


| | | | |
|------------------------|--------------------|--|-------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 9 kHz ~ 1 GHz | Detector Function & Bandwidth | (QP) RB = 120kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 21°C, 68% RH |
| Tested By | Luis Lee | Test Mode | B |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|--|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 33.88 | 27.9 QP | 40.0 | -12.1 | 1.49 H | 351 | 38.0 | -10.1 |
| 2 | 80.44 | 26.3 QP | 40.0 | -13.7 | 1.00 H | 6 | 39.4 | -13.1 |
| 3 | 94.02 | 28.0 QP | 43.5 | -15.5 | 1.00 H | 351 | 42.1 | -14.1 |
| 4 | 144.46 | 31.8 QP | 43.5 | -11.7 | 1.00 H | 136 | 40.6 | -8.8 |
| 5 | 196.84 | 28.5 QP | 43.5 | -15.0 | 1.00 H | 349 | 39.9 | -11.4 |
| 6 | 303.54 | 26.3 QP | 46.0 | -19.7 | 1.00 H | 351 | 33.6 | -7.3 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

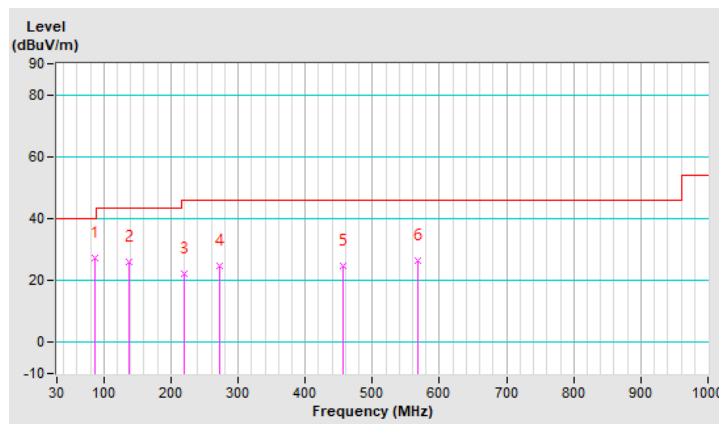


| | | | |
|------------------------|--------------------|--|-------------------|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 9 kHz ~ 1 GHz | Detector Function & Bandwidth | (QP) RB = 120kHz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 21°C, 68% RH |
| Tested By | Luis Lee | Test Mode | B |

| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
|--|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 86.26 | 27.4 QP | 40.0 | -12.6 | 1.01 V | 16 | 41.6 | -14.2 |
| 2 | 136.70 | 25.9 QP | 43.5 | -17.6 | 1.50 V | 162 | 35.2 | -9.3 |
| 3 | 220.12 | 22.2 QP | 46.0 | -23.8 | 1.50 V | 164 | 33.3 | -11.1 |
| 4 | 272.50 | 24.6 QP | 46.0 | -21.4 | 1.50 V | 133 | 32.8 | -8.2 |
| 5 | 456.80 | 24.7 QP | 46.0 | -21.3 | 1.50 V | 22 | 29.3 | -4.6 |
| 6 | 567.38 | 26.6 QP | 46.0 | -19.4 | 1.50 V | 124 | 29.6 | -3.0 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.7 Unwanted Emissions above 1 GHz

| | | | |
|------------------------|----------------|--|--|
| RF Mode | TX 802.11a | Channel | CH 169 : 5845 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5845.00 | 122.8 PK | | | 1.83 H | 284 | 78.8 | 44.0 |
| 2 | *5845.00 | 112.3 AV | | | 1.83 H | 284 | 68.3 | 44.0 |
| 3 | #5921.93 | 73.1 PK | 90.4 | -17.3 | 1.83 H | 284 | 59.3 | 13.8 |
| 4 | #5926.20 | 74.0 PK | 88.2 | -14.2 | 1.83 H | 284 | 60.2 | 13.8 |
| 5 | 11690.00 | 66.7 PK | 74.0 | -7.3 | 1.45 H | 281 | 43.6 | 23.1 |
| 6 | 11690.00 | 52.7 AV | 54.0 | -1.3 | 1.45 H | 281 | 29.6 | 23.1 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5845.00 | 121.8 PK | | | 1.98 V | 269 | 77.8 | 44.0 |
| 2 | *5845.00 | 111.3 AV | | | 1.98 V | 269 | 67.3 | 44.0 |
| 3 | #5904.82 | 74.0 PK | 103.0 | -29.0 | 1.98 V | 269 | 60.3 | 13.7 |
| 4 | #5934.27 | 67.9 PK | 88.2 | -20.3 | 1.98 V | 269 | 54.1 | 13.8 |
| 5 | 11690.00 | 65.8 PK | 74.0 | -8.2 | 1.80 V | 158 | 42.7 | 23.1 |
| 6 | 11690.00 | 52.4 AV | 54.0 | -1.6 | 1.80 V | 158 | 29.3 | 23.1 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.



| | | | |
|------------------------|----------------|--|--|
| RF Mode | TX 802.11a | Channel | CH 173 : 5865 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5865.00 | 123.4 PK | | | 1.80 H | 283 | 79.4 | 44.0 |
| 2 | *5865.00 | 112.0 AV | | | 1.80 H | 283 | 68.0 | 44.0 |
| 3 | #5924.30 | 80.1 PK | 88.7 | -8.6 | 1.80 H | 283 | 66.3 | 13.8 |
| 4 | #5928.57 | 77.4 PK | 88.2 | -10.8 | 1.80 H | 283 | 63.6 | 13.8 |
| 5 | 11730.00 | 66.4 PK | 74.0 | -7.6 | 1.58 H | 280 | 43.5 | 22.9 |
| 6 | 11730.00 | 52.3 AV | 54.0 | -1.7 | 1.58 H | 280 | 29.4 | 22.9 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5865.00 | 121.9 PK | | | 1.83 V | 281 | 77.9 | 44.0 |
| 2 | *5865.00 | 111.4 AV | | | 1.83 V | 281 | 67.4 | 44.0 |
| 3 | #5901.98 | 85.6 PK | 105.1 | -19.5 | 1.83 V | 281 | 71.9 | 13.7 |
| 4 | #5931.43 | 72.3 PK | 88.2 | -15.9 | 1.83 V | 281 | 58.5 | 13.8 |
| 5 | 11730.00 | 65.7 PK | 74.0 | -8.3 | 1.82 V | 155 | 42.8 | 22.9 |
| 6 | 11730.00 | 52.1 AV | 54.0 | -1.9 | 1.82 V | 155 | 29.2 | 22.9 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



| | | | |
|------------------------|----------------|--|--|
| RF Mode | TX 802.11a | Channel | CH 177 : 5885 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5624.10 | 60.1 PK | 68.2 | -8.1 | 1.77 H | 281 | 47.5 | 12.6 |
| 2 | *5885.00 | 122.4 PK | | | 1.77 H | 281 | 78.3 | 44.1 |
| 3 | *5885.00 | 112.2 AV | | | 1.77 H | 281 | 68.1 | 44.1 |
| 4 | #5917.18 | 92.3 PK | 113.9 | -21.6 | 1.77 H | 281 | 78.6 | 13.7 |
| 5 | #5921.93 | 74.3 AV | 90.4 | -16.1 | 1.77 H | 281 | 60.5 | 13.8 |
| 6 | #5926.68 | 86.1 PK | 108.2 | -22.1 | 1.77 H | 281 | 72.3 | 13.8 |
| 7 | #5926.68 | 73.3 AV | 88.2 | -14.9 | 1.77 H | 281 | 59.5 | 13.8 |
| 8 | 11770.00 | 66.1 PK | 74.0 | -7.9 | 1.51 H | 280 | 43.5 | 22.6 |
| 9 | 11770.00 | 52.2 AV | 54.0 | -1.8 | 1.51 H | 280 | 29.6 | 22.6 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5635.02 | 60.5 PK | 68.2 | -7.7 | 1.84 V | 280 | 47.8 | 12.7 |
| 2 | *5885.00 | 121.7 PK | | | 1.84 V | 280 | 77.6 | 44.1 |
| 3 | *5885.00 | 111.3 AV | | | 1.84 V | 280 | 67.2 | 44.1 |
| 4 | #5900.55 | 88.9 AV | 106.1 | -17.2 | 1.84 V | 280 | 75.2 | 13.7 |
| 5 | #5901.98 | 101.0 PK | 125.1 | -24.1 | 1.84 V | 280 | 87.3 | 13.7 |
| 6 | #5925.25 | 70.9 AV | 88.2 | -17.3 | 1.84 V | 280 | 57.1 | 13.8 |
| 7 | #5927.15 | 83.4 PK | 108.2 | -24.8 | 1.84 V | 280 | 69.6 | 13.8 |
| 8 | 11770.00 | 65.5 PK | 74.0 | -8.5 | 1.85 V | 155 | 42.9 | 22.6 |
| 9 | 11770.00 | 52.0 AV | 54.0 | -2.0 | 1.85 V | 155 | 29.4 | 22.6 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE20) | Channel | CH 169 : 5845 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5845.00 | 122.0 PK | | | 1.77 H | 276 | 78.0 | 44.0 |
| 2 | *5845.00 | 110.6 AV | | | 1.77 H | 276 | 66.6 | 44.0 |
| 3 | #5902.93 | 86.3 PK | 104.4 | -18.1 | 1.77 H | 276 | 72.6 | 13.7 |
| 4 | #5925.25 | 77.9 PK | 88.2 | -10.3 | 1.77 H | 276 | 64.1 | 13.8 |
| 5 | 11690.00 | 66.7 PK | 74.0 | -7.3 | 1.73 H | 286 | 43.6 | 23.1 |
| 6 | 11690.00 | 53.0 AV | 54.0 | -1.0 | 1.73 H | 286 | 29.9 | 23.1 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5845.00 | 121.7 PK | | | 1.72 V | 274 | 77.7 | 44.0 |
| 2 | *5845.00 | 110.2 AV | | | 1.72 V | 274 | 66.2 | 44.0 |
| 3 | #5921.45 | 76.9 PK | 90.8 | -13.9 | 1.72 V | 274 | 63.1 | 13.8 |
| 4 | #5933.80 | 72.1 PK | 88.2 | -16.1 | 1.72 V | 274 | 58.3 | 13.8 |
| 5 | 11690.00 | 66.1 PK | 74.0 | -7.9 | 1.75 V | 156 | 43.0 | 23.1 |
| 6 | 11690.00 | 52.5 AV | 54.0 | -1.5 | 1.75 V | 156 | 29.4 | 23.1 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE20) | Channel | CH 173 : 5865 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5865.00 | 122.1 PK | | | 1.84 H | 282 | 78.1 | 44.0 |
| 2 | *5865.00 | 109.8 AV | | | 1.84 H | 282 | 65.8 | 44.0 |
| 3 | #5911.00 | 91.0 PK | 98.5 | -7.5 | 1.84 H | 282 | 77.3 | 13.7 |
| 4 | #5933.32 | 81.7 PK | 88.2 | -6.5 | 1.84 H | 282 | 67.9 | 13.8 |
| 5 | 11730.00 | 67.0 PK | 74.0 | -7.0 | 1.35 H | 282 | 44.1 | 22.9 |
| 6 | 11730.00 | 52.8 AV | 54.0 | -1.2 | 1.35 H | 282 | 29.9 | 22.9 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | *5865.00 | 121.5 PK | | | 1.76 V | 275 | 77.5 | 44.0 |
| 2 | *5865.00 | 109.6 AV | | | 1.76 V | 275 | 65.6 | 44.0 |
| 3 | #5905.30 | 84.7 PK | 102.6 | -17.9 | 1.76 V | 275 | 71.0 | 13.7 |
| 4 | #5935.23 | 75.0 PK | 88.2 | -13.2 | 1.76 V | 275 | 61.2 | 13.8 |
| 5 | 11730.00 | 65.9 PK | 74.0 | -8.1 | 1.77 V | 162 | 43.0 | 22.9 |
| 6 | 11730.00 | 52.4 AV | 54.0 | -1.6 | 1.77 V | 162 | 29.5 | 22.9 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE20) | Channel | CH 177 : 5885 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5641.20 | 61.4 PK | 68.2 | -6.8 | 1.73 H | 280 | 48.7 | 12.7 |
| 2 | *5885.00 | 122.4 PK | | | 1.73 H | 280 | 78.3 | 44.1 |
| 3 | *5885.00 | 111.0 AV | | | 1.73 H | 280 | 66.9 | 44.1 |
| 4 | #5920.50 | 95.1 PK | 111.5 | -16.4 | 1.73 H | 280 | 81.3 | 13.8 |
| 5 | #5922.87 | 75.9 AV | 89.8 | -13.9 | 1.73 H | 280 | 62.1 | 13.8 |
| 6 | #5925.73 | 90.5 PK | 108.2 | -17.7 | 1.73 H | 280 | 76.7 | 13.8 |
| 7 | #5928.10 | 73.6 AV | 88.2 | -14.6 | 1.73 H | 280 | 59.8 | 13.8 |
| 8 | 11770.00 | 66.1 PK | 74.0 | -7.9 | 1.98 H | 297 | 43.5 | 22.6 |
| 9 | 11770.00 | 52.4 AV | 54.0 | -1.6 | 1.98 H | 297 | 29.8 | 22.6 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5641.68 | 60.2 PK | 68.2 | -8.0 | 1.81 V | 278 | 47.5 | 12.7 |
| 2 | *5885.00 | 121.5 PK | | | 1.81 V | 278 | 77.4 | 44.1 |
| 3 | *5885.00 | 109.8 AV | | | 1.81 V | 278 | 65.7 | 44.1 |
| 4 | #5900.55 | 93.8 AV | 106.1 | -12.3 | 1.81 V | 278 | 80.1 | 13.7 |
| 5 | #5910.52 | 99.5 PK | 118.8 | -19.3 | 1.81 V | 278 | 85.8 | 13.7 |
| 6 | #5925.73 | 89.9 PK | 108.2 | -18.3 | 1.81 V | 278 | 76.1 | 13.8 |
| 7 | #5925.73 | 71.4 AV | 88.2 | -16.8 | 1.81 V | 278 | 57.6 | 13.8 |
| 8 | 11770.00 | 65.5 PK | 74.0 | -8.5 | 1.82 V | 155 | 42.9 | 22.6 |
| 9 | 11770.00 | 52.1 AV | 54.0 | -1.9 | 1.82 V | 155 | 29.5 | 22.6 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 167 : 5835 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5635.50 | 67.6 PK | 68.2 | -0.6 | 1.89 H | 279 | 54.9 | 12.7 |
| 2 | *5835.00 | 120.3 PK | | | 1.89 H | 279 | 76.3 | 44.0 |
| 3 | *5835.00 | 108.8 AV | | | 1.89 H | 279 | 64.8 | 44.0 |
| 4 | #5913.37 | 86.1 PK | 96.7 | -10.6 | 1.89 H | 279 | 72.4 | 13.7 |
| 5 | #5930.95 | 83.4 PK | 88.2 | -4.8 | 1.89 H | 279 | 69.6 | 13.8 |
| 6 | 11670.00 | 67.1 PK | 74.0 | -6.9 | 1.55 H | 288 | 43.9 | 23.2 |
| 7 | 11670.00 | 51.7 AV | 54.0 | -2.3 | 1.55 H | 288 | 28.5 | 23.2 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5649.27 | 64.2 PK | 68.2 | -4.0 | 1.74 V | 280 | 51.5 | 12.7 |
| 2 | *5835.00 | 120.0 PK | | | 1.74 V | 280 | 76.0 | 44.0 |
| 3 | *5835.00 | 108.5 AV | | | 1.74 V | 280 | 64.5 | 44.0 |
| 4 | #5902.93 | 86.6 PK | 104.4 | -17.8 | 1.74 V | 280 | 72.9 | 13.7 |
| 5 | #5927.15 | 80.0 PK | 88.2 | -8.2 | 1.74 V | 280 | 66.2 | 13.8 |
| 6 | 11670.00 | 66.3 PK | 74.0 | -7.7 | 1.77 V | 162 | 43.1 | 23.2 |
| 7 | 11670.00 | 51.6 AV | 54.0 | -2.4 | 1.77 V | 162 | 28.4 | 23.2 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE40) | Channel | CH 175 : 5875 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5633.12 | 64.4 PK | 68.2 | -3.8 | 1.90 H | 268 | 51.7 | 12.7 |
| 2 | *5875.00 | 120.6 PK | | | 1.90 H | 268 | 76.6 | 44.0 |
| 3 | *5875.00 | 108.7 AV | | | 1.90 H | 268 | 64.7 | 44.0 |
| 4 | #5912.43 | 99.2 PK | 117.4 | -18.2 | 1.90 H | 268 | 85.5 | 13.7 |
| 5 | #5920.02 | 84.7 AV | 91.8 | -7.1 | 1.90 H | 268 | 70.9 | 13.8 |
| 6 | #5925.25 | 94.0 PK | 108.2 | -14.2 | 1.90 H | 268 | 80.2 | 13.8 |
| 7 | #5930.00 | 82.7 AV | 88.2 | -5.5 | 1.90 H | 268 | 68.9 | 13.8 |
| 8 | 11750.00 | 66.9 PK | 74.0 | -7.1 | 1.85 H | 266 | 44.2 | 22.7 |
| 9 | 11750.00 | 51.5 AV | 54.0 | -2.5 | 1.85 H | 266 | 28.8 | 22.7 |

Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5646.90 | 62.5 PK | 68.2 | -5.7 | 1.82 V | 278 | 49.8 | 12.7 |
| 2 | *5875.00 | 120.0 PK | | | 1.82 V | 278 | 76.0 | 44.0 |
| 3 | *5875.00 | 108.3 AV | | | 1.82 V | 278 | 64.3 | 44.0 |
| 4 | #5906.73 | 90.4 AV | 101.6 | -11.2 | 1.82 V | 278 | 76.7 | 13.7 |
| 5 | #5916.70 | 97.5 PK | 114.3 | -16.8 | 1.82 V | 278 | 83.8 | 13.7 |
| 6 | #5926.68 | 91.5 PK | 108.2 | -16.7 | 1.82 V | 278 | 77.7 | 13.8 |
| 7 | #5926.68 | 80.1 AV | 88.2 | -8.1 | 1.82 V | 278 | 66.3 | 13.8 |
| 8 | 11750.00 | 65.9 PK | 74.0 | -8.1 | 1.76 V | 153 | 43.2 | 22.7 |
| 9 | 11750.00 | 51.2 AV | 54.0 | -2.8 | 1.76 V | 153 | 28.5 | 22.7 |

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



| | | | |
|------------------------|--------------------|--|--|
| RF Mode | TX 802.11ax (HE80) | Channel | CH 171 : 5855 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | (PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 25°C, 69% RH |
| Tested By | Noah Chang | | |

Antenna Polarity & Test Distance : Horizontal at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5648.32 | 68.0 PK | 68.2 | -0.2 | 1.91 H | 271 | 55.3 | 12.7 |
| 2 | *5855.00 | 116.9 PK | | | 1.91 H | 271 | 72.9 | 44.0 |
| 3 | *5855.00 | 104.7 AV | | | 1.91 H | 271 | 60.7 | 44.0 |
| 4 | #5920.02 | 83.2 AV | 91.8 | -8.6 | 1.91 H | 271 | 69.4 | 13.8 |
| 5 | #5920.50 | 92.3 PK | 111.5 | -19.2 | 1.91 H | 271 | 78.5 | 13.8 |
| 6 | #5928.10 | 82.1 AV | 88.2 | -6.1 | 1.91 H | 271 | 68.3 | 13.8 |
| 7 | #5930.00 | 89.3 PK | 108.2 | -18.9 | 1.91 H | 271 | 75.5 | 13.8 |
| 8 | 11710.00 | 67.2 PK | 74.0 | -6.8 | 1.51 H | 288 | 44.3 | 22.9 |
| 9 | 11710.00 | 51.6 AV | 54.0 | -2.4 | 1.51 H | 288 | 28.7 | 22.9 |

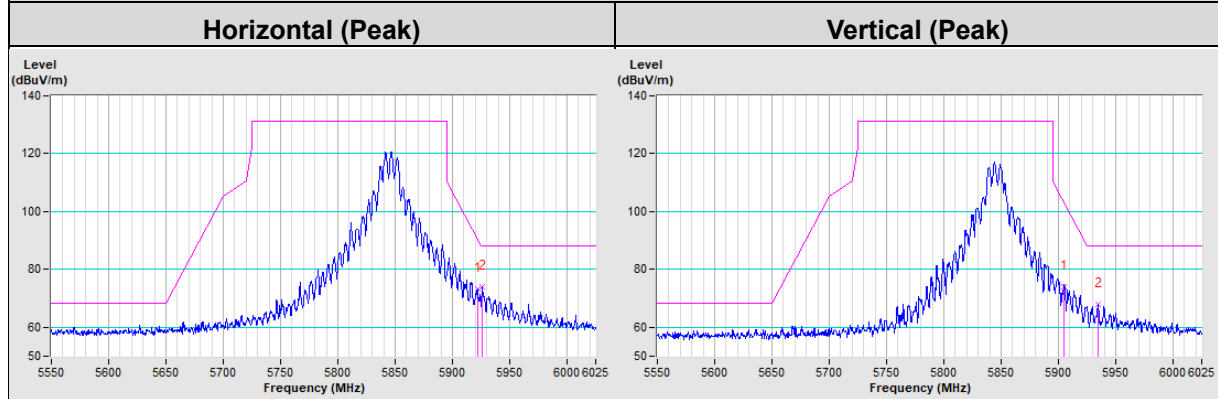
Antenna Polarity & Test Distance : Vertical at 3 m

| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
|----|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 1 | #5645.95 | 64.9 PK | 68.2 | -3.3 | 1.87 V | 278 | 52.2 | 12.7 |
| 2 | *5855.00 | 116.2 PK | | | 1.87 V | 278 | 72.2 | 44.0 |
| 3 | *5855.00 | 104.2 AV | | | 1.87 V | 278 | 60.2 | 44.0 |
| 4 | #5903.87 | 83.2 AV | 103.7 | -20.5 | 1.87 V | 278 | 69.5 | 13.7 |
| 5 | #5904.35 | 93.2 PK | 123.3 | -30.1 | 1.87 V | 278 | 79.5 | 13.7 |
| 6 | #5929.05 | 79.6 AV | 88.2 | -8.6 | 1.87 V | 278 | 65.8 | 13.8 |
| 7 | #5931.90 | 90.3 PK | 108.2 | -17.9 | 1.87 V | 278 | 76.5 | 13.8 |
| 8 | 11710.00 | 66.0 PK | 74.0 | -8.0 | 1.84 V | 159 | 43.1 | 22.9 |
| 9 | 11710.00 | 51.4 AV | 54.0 | -2.6 | 1.84 V | 159 | 28.5 | 22.9 |

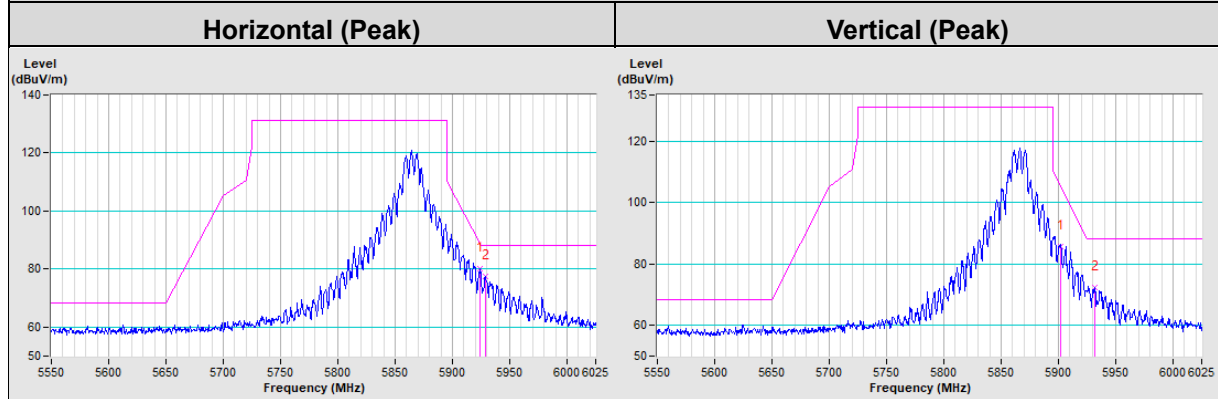
Remarks:

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

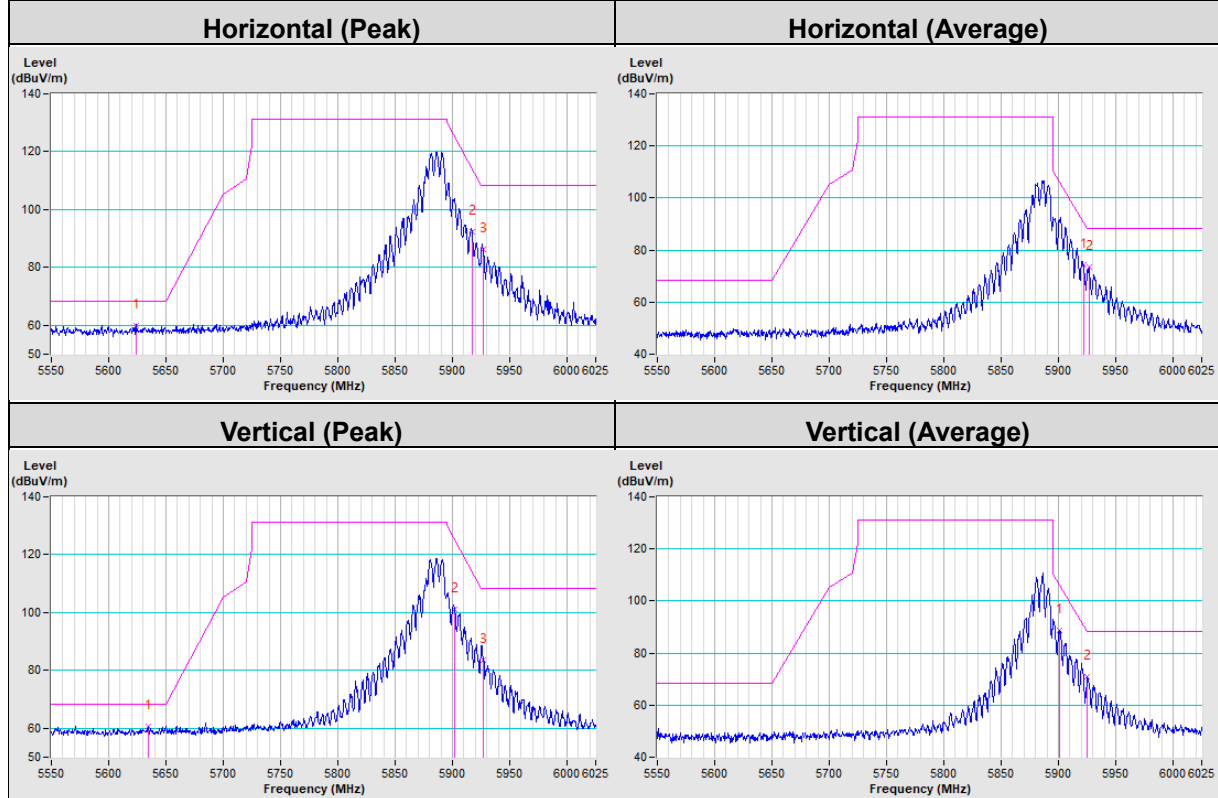
802.11a Channel 169



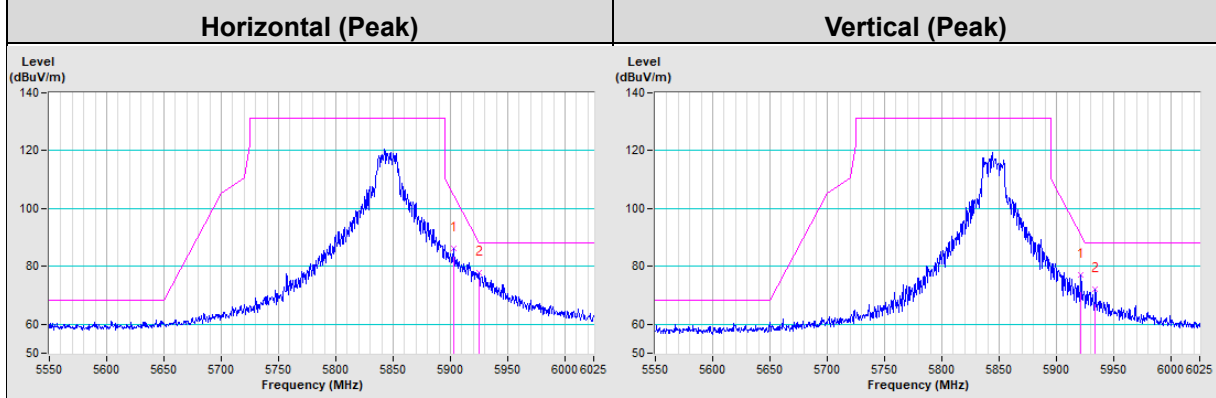
802.11a Channel 173



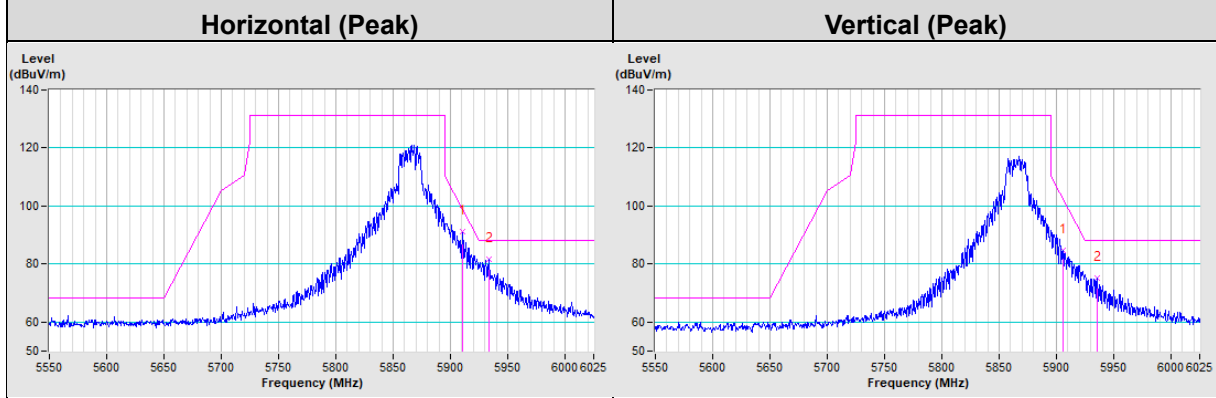
802.11a Channel 177



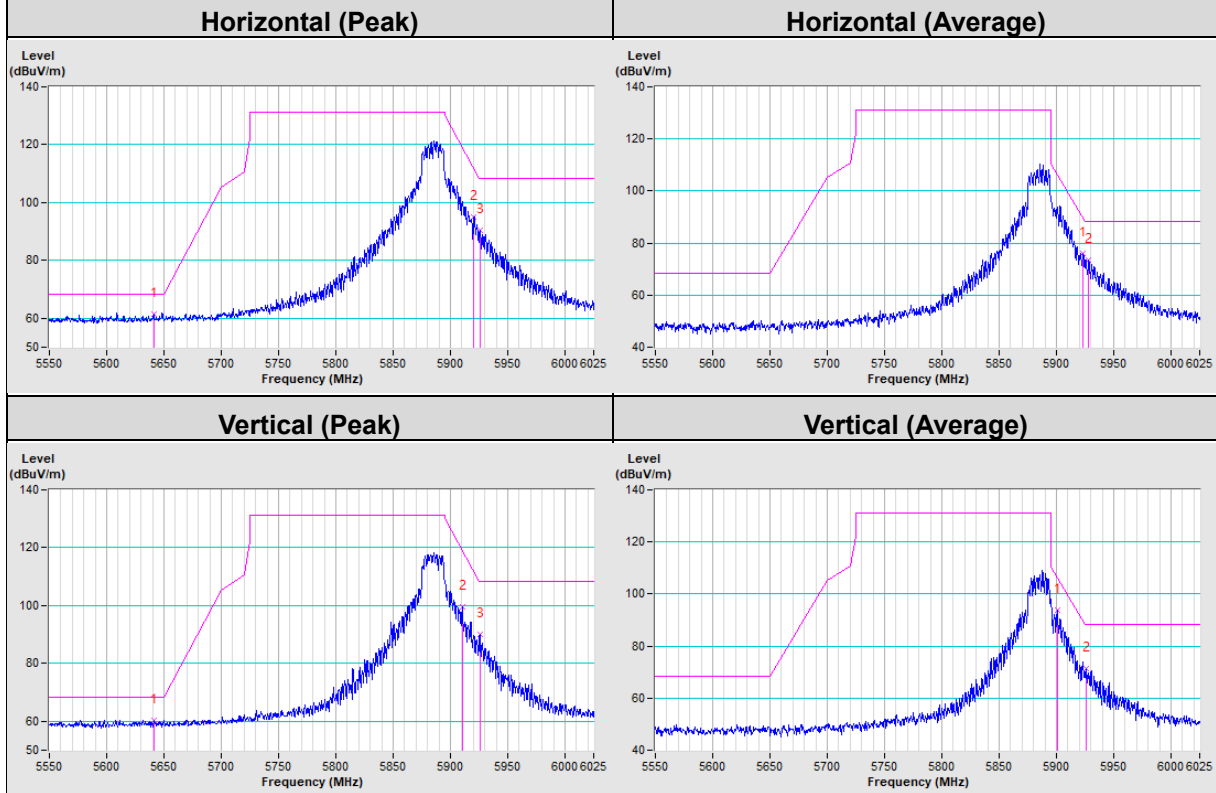
802.11ax (HE20) Channel 169



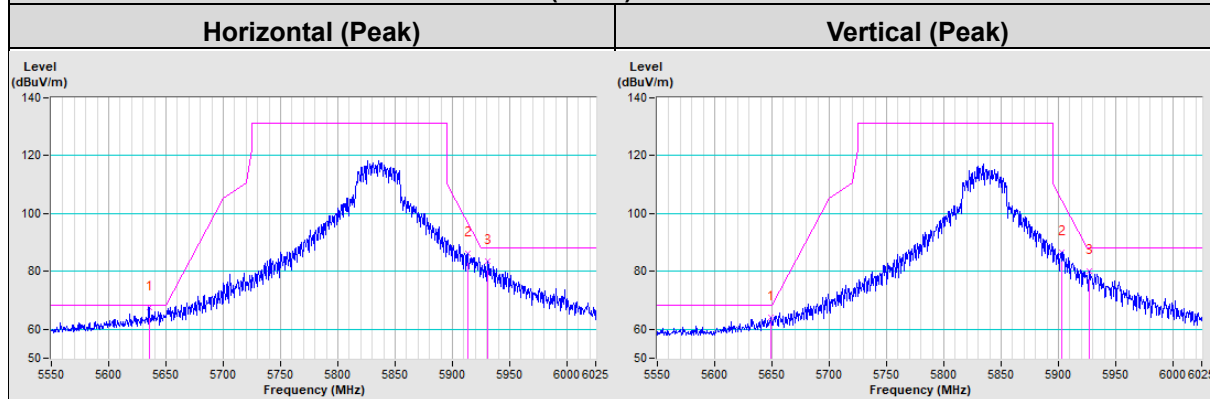
802.11ax (HE20) Channel 173



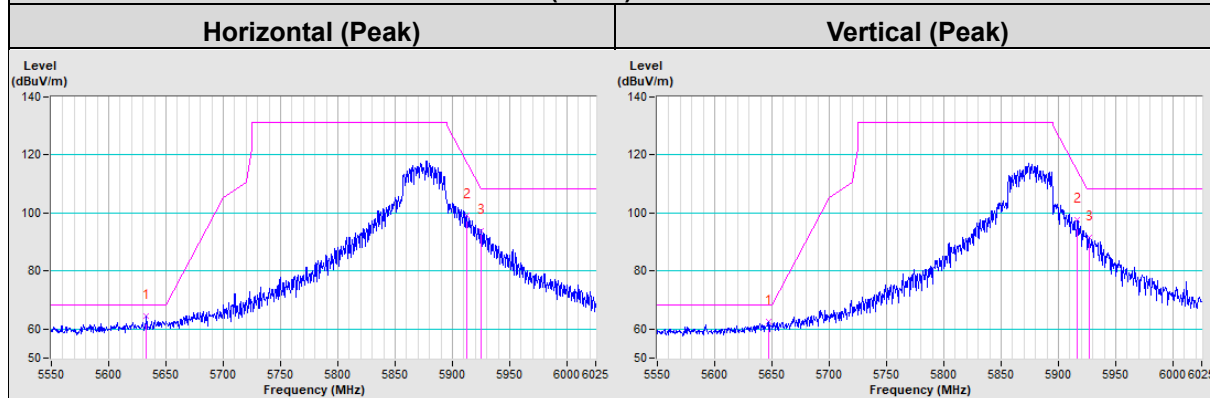
802.11ax (HE20) Channel 177

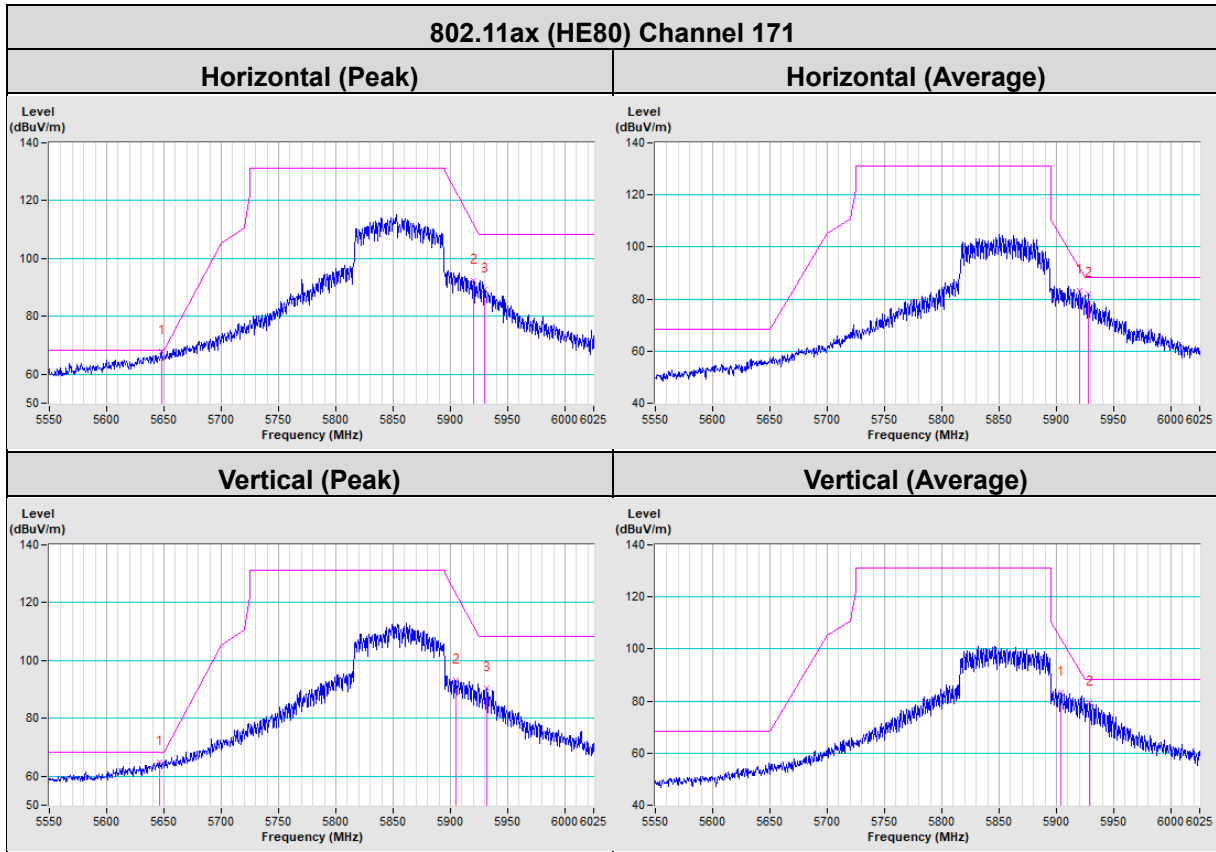


802.11ax (HE40) Channel 167



802.11ax (HE40) Channel 175





8 Operational Restrictions for 5.85-5.895GHz U-NII Devices

For Indoor Access Point operates in the 5.850-5.895 GHz band, is supplied power from a wired connection, has an integrated antenna, is not battery powered, and does not have a weatherized enclosure. Indoor access point devices must bear the following statement in a conspicuous location on the device and in the user's manual: FCC regulations restrict operation of this device to indoor use only.

Device is a Indoor access point, all restrictions are meet the §15.403 requirements. Please refer to the Attestation letter exhibit supplied within this application.

9 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)



10 Information of 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Fax: 886-2-26051924

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Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

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

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