

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBBQZ-WTW-P24080648-4

FCC ID: PY324400641

Product: Orbi Router, Orbi Satellite

Brand: NETGEAR

Model No.: RBE371

Series Model: RBE370

Received Date: 2024/10/24

Test Date: 2025/3/4 ~ 2025/4/1

Issued Date: 2025/5/20

Applicant and NETGEAR, Inc.

Manufacturer:

Address: 350 East Plumeria Drive San Jose, CA 95134

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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FCC Registration / 788550 / TW0003

Designation Number:

Approved by: Jeremy Lin , **Date:** 2025/5/20
Jeremy Lin / Project Engineer

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Prepared by : Celine Chou / Senior Specialist

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Release Control Record

| Issue No. | Description | Date Issued |
|------------------------|-------------------|-------------|
| RFBBQZ-WTW-P24080648-4 | Original release. | 2025/5/20 |

1 Certificate

Product: Orbi Router, Orbi Satellite

Brand: NETGEAR

Test Model: RBE371

Series Model: RBE370

Sample Status: Engineering sample

Applicant and Manufacturer: NETGEAR, Inc.

Test Date: 2025/3/4 ~ 2025/4/1

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement procedure: ANSI C63.10-2013

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

2 Summary of Test Results

| Standard / Clause | Test Item | Result | Remark |
|--|---------------------------------|--------|--------------------------------|
| 15.205 /15.209 /15.247(d) 15.407(b)(9) | Unwanted Emissions below 1 GHz | Pass | Meet the requirement of limit. |
| 15.205 /15.209 /15.247(d) 15.407(b) (1/2/3/4(i)/10) 15.407(b)(5)/15.407(b)(10) | Unwanted Emissions above 1 GHz | Pass | Meet the requirement of limit. |
| 15.247(d) | Conducted Out of Band Emissions | Pass | Meet the requirement of limit. |

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:

| Parameter | Specification | Uncertainty (±) |
|--|-----------------|--------------------|
| Radiated Spurious Emissions below 1GHz | 9 kHz ~ 30 MHz | 3.59 dB |
| | 30 MHz ~ 1 GHz | 3.64 dB |
| Radiated Spurious Emissions above 1GHz | 1 GHz ~ 18 GHz | 2.29 dB |
| | 18 GHz ~ 40 GHz | 2.29 dB |
| Conducted Out of Band Emissions | 9 kHz ~ 40 GHz | 2.79 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 | Orbi Router, Orbi Satellite |
| Brand | NETGEAR |
| Test Model | RBE371 |
| Series Model | RBE370 |
| Status of EUT | Engineering sample |
| Power Supply Rating | 12 Vdc from adapter |
| Modulation Type | CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in VHT and ac mode 1024QAM for OFDMA in 11ax mode 4096QAM for OFDMA in 11be mode |
| Modulation Technology | DSSS, OFDM, OFDMA |
| Transfer Rate | 802.11a: up to 54 Mbps 802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 300 Mbps VHT: up to 400 Mbps (For 2.4GHz) 802.11ac: up to 1733.3 Mbps (For 5GHz) 802.11ax: up to 573.5 Mbps (For 2.4GHz) 802.11ax: up to 2401.9 Mbps (For 5GHz) 802.11be: up to 688.2 Mbps (For 2.4GHz) 802.11be: up to 4323.5 Mbps (For 5GHz) |
| Operating Frequency | 2.412 GHz ~ 2.462 GHz 5.18 GHz ~ 5.25 GHz 5.25 GHz ~ 5.32 GHz 5.50 GHz ~ 5.72 GHz 5.745 GHz ~ 5.825 GHz 5.815 GHz ~ 5.885 GHz |
| Number of Channel | 2.4 GHz 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20), 802.11be (EHT20): 11 802.11n (HT40), VHT40, 802.11ax (HE40), 802.11be (EHT40): 7 5 GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20): 25 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40), 802.11be (EHT40): 12 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80): 6 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160): 2 802.11 be (EHT240): 1 5.9 GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20):3 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40), 802.11be (EHT40):2 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80):1 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160):1 |

Note:

1. All models are listed as below.

| Product Description | Model | Difference |
|---------------------|--------|--|
| Orbi Router | RBE371 | DFS mode: Master mode NAND Flash 512 MB 2.5G Ethernet port *1 2.5G Internet port *1 |
| Orbi Satellite | RBE370 | DFS mode: Mesh mode NAND Flash 256 MB 2.5G Ethernet port *1 |

*RBE371 and RBE370 share same PCB/layout/antenna design.

2. Simultaneously transmission condition.

| Condition | Technology | |
|-----------|----------------|------------------------|
| 1 | WLAN (2.4 GHz) | WLAN (5 GHz / 5.9 GHz) |

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

3. 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.

| | |
|-----------------|------------------------|
| Antenna Type | Dipole |
| Connector Type | ipex(MHF) |
| Antenna Gain | Directional Gain (dBi) |
| 2400~2483.5 MHz | 5.95 |
| 5150~5250 MHz | 6.02 |
| 5250~5350 MHz | 6.06 |
| 5470~5725 MHz | 6.09 |
| 5725~5850 MHz | 6.12 |

*The detailed antenna information, please refer to the BV CPS Directional Gain Measurement Report no.: RFBBQZ-WTW-P24080648-5.

| Antenna Type | Connector Type | Frequency Range | Antenna Gain (dBi) | |
|--------------|----------------|-----------------|--------------------|--------|
| | | | Ant. 0 | Ant. 1 |
| Dipole | ipex(MHF) | 5850 ~ 5895 MHz | 4.80 | 4.72 |

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

3.3 Test Mode Applicability and Tested Channel Detail

| | |
|-------------|---|
| Pre-Scan: | 1. For Unwanted Emission (below 1GHz) and AC Power Conducted Emissions items: AC Adapter 1 and AC Adapter 2. Pre-scan these modes and find the worst case as a representative test condition. 2. 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). |
| Worst Case: | 1. AC Adapter 1 and AC Adapter 2 Worst Condition: AC Adapter 2 2. The EUT is designed to be positioned on the Z-Plane only. |

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

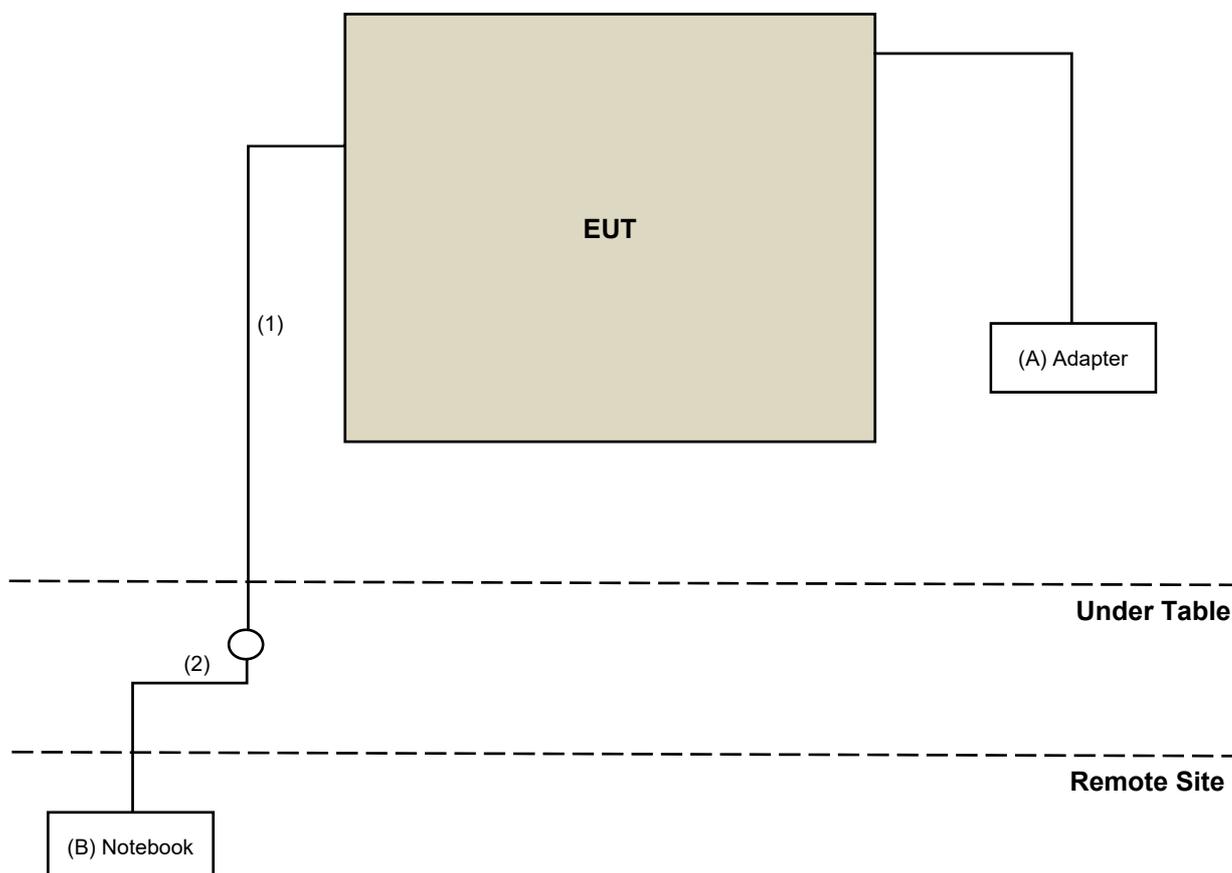
| Test Item | EUT Configure Mode | Combination | Mode | Tested Channel |
|---------------------------------|--------------------|---|------------------|----------------|
| Unwanted Emissions below 1 GHz | A, B | 1 | 802.11b | 6 |
| | | | 802.11be (EHT80) | 171 |
| Unwanted Emissions above 1 GHz | B | 1 | 802.11b | 6 |
| | | | 802.11be (EHT80) | 171 |
| Conducted Out of Band Emissions | B | 1 | 802.11b | 6 |
| | | | 802.11be (EHT80) | 171 |
| EUT Configure Mode: | A | EUT (Model: RBE370) powered by AC Adapter 2 | | |
| | B | EUT (Model: RBE371) powered by AC Adapter 2 | | |

3.4 Test Program Used and Operation Descriptions

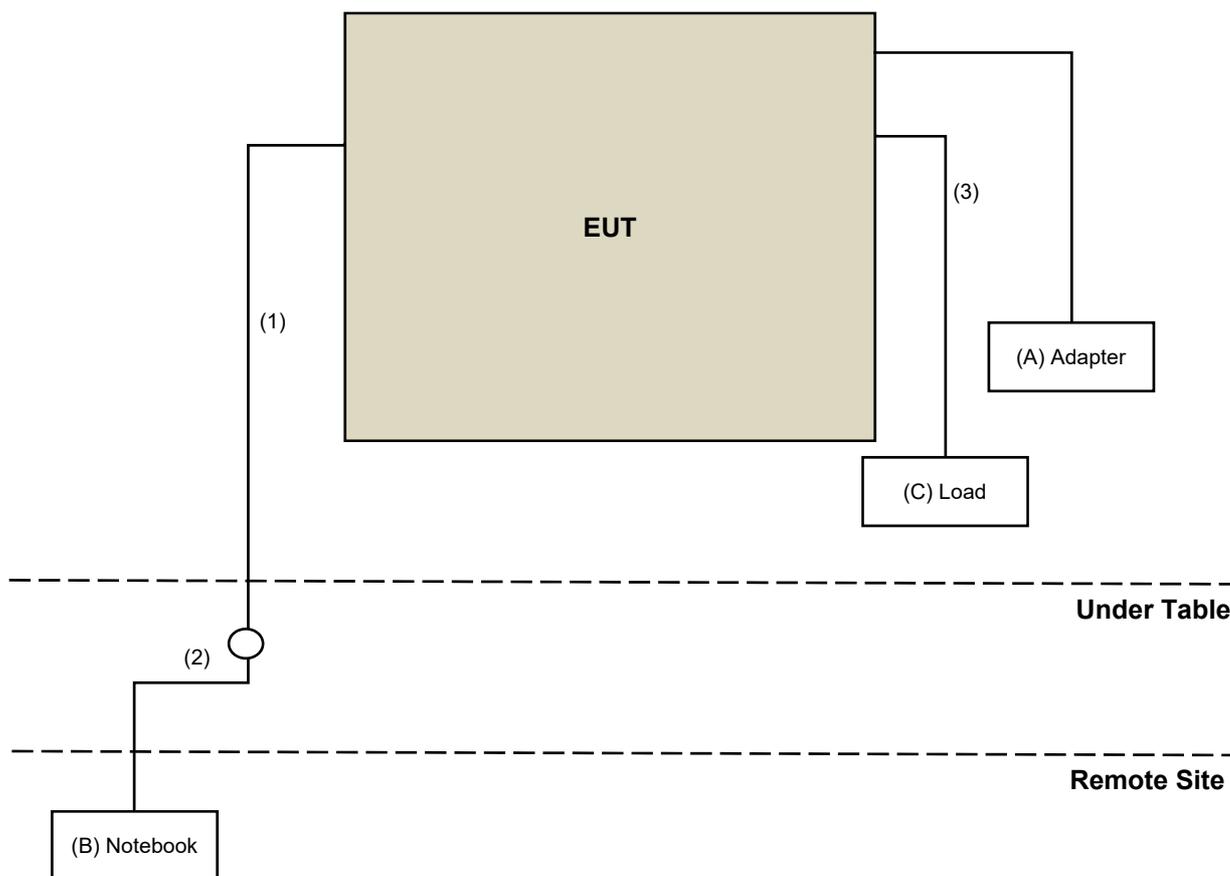
Controlling software QSPR Version 5.0-00202 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.5 Connection Diagram of EUT and Peripheral Devices

Test Mode A



Test Mode B



3.6 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|----------|---------|-----------|------------|--------|-----------------------|
| A | Adapter | NETGEAR | 2AAJ018FC | N/A | N/A | Supplied by applicant |
| B | Notebook | DELL | E5430 | 2RL3YW1 | N/A | Provided by Lab |
| C | 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 | 1.97 | N | 0 | Supplied by applicant |
| 2 | RJ-45 Cable | 1 | 10 | N | 0 | Provided by Lab |
| 3 | RJ-45 Cable | 1 | 1.5 | N | 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 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 Schwarzbeck | VULB 9168 | 9168-155 | 2024/10/14 | 2025/10/13 |
| EMI Test Receiver R&S | ESR3 | 102782 | 2024/12/10 | 2025/12/9 |
| Loop Antenna TESEQ | HLA 6121 | 45745 | 2024/8/21 | 2025/8/20 |
| Preamplifier Agilent | 8447D | 2944A10631 | 2024/5/1 | 2025/4/30 |
| Preamplifier EMCI | EMC001340 | 980201 | 2024/9/24 | 2025/9/23 |
| RF Coaxial Cable Woken | 8D-FB | Cable-CH4-01 | 2024/7/6 | 2025/7/5 |
| Signal & Spectrum Analyzer R&S | FSW43 | 101582 | 2024/4/12 | 2025/4/11 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.5 | N/A | N/A | N/A |
| 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: 2025/3/4

4.2 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 |
| EMI Test Receiver R&S | ESR3 | 102782 | 2024/12/10 | 2025/12/9 |
| Horn Antenna Schwarzbeck | BBHA 9120D | 9120D-408 | 2024/11/10 | 2025/11/9 |
| | BBHA 9170 | 9170-480 | 2024/11/10 | 2025/11/9 |
| | | BBHA9170241 | 2024/10/18 | 2025/10/17 |
| | | BBHA9170243 | 2024/11/10 | 2025/11/9 |
| Preamplifier EMCI | EMC 184045 | 980116 | 2024/9/24 | 2025/9/23 |
| Preamplifier Keysight | 83017A | MY53270295 | 2024/5/1 | 2025/4/30 |
| RF Coaxial Cable EMCI | EMC102-KM-KM-600 | 150928 | 2024/7/6 | 2025/7/5 |
| | EMC102-KM-KM-3000 | 150929 | 2024/7/6 | 2025/7/5 |
| RF Coaxial Cable HUBER+SUHNER | SUCOFLEX 104 | Cable-CH4-03(250724) | 2024/5/1 | 2025/4/30 |
| | | MY 13380+295012/04 | 2024/5/1 | 2025/4/30 |
| Signal & Spectrum Analyzer R&S | FSW43 | 101582 | 2024/4/12 | 2025/4/11 |
| Software BV ADT | ADT_Radiated_ V7.6.15.9.5 | N/A | N/A | N/A |
| 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: 2025/4/1

4.3 Conducted Out of Band Emissions

| Description Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|-----------------------------------|----------------------------------|------------|--------------------|---------------------|
| Signal & Spectrum Analyzer R&S | FSV3044 | 101504 | 2024/6/18 | 2025/6/17 |
| Software BV | ADT_RF Test Software V7.6.5.4 | N/A | N/A | N/A |

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/4/1

5 Limits of Test Items

5.1 Unwanted Emissions below 1 GHz

For FCC 15.247:

| 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).

For FCC 15.407:

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).

5.2 Unwanted Emissions above 1 GHz

For FCC 15.247:

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 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).
3. For frequencies above 1000 MHz, 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 20 dB under any condition of modulation.

For FCC 15.407 transmitters operating in the 5.150-5.850 GHz band:

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) |
|-------------------|-----------------------------------|-------------------------------|
| 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).
3. For frequencies above 1000 MHz, 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 20 dB 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 v02r01 | Field Strength at 3 m | |
| | PK: 74 (dBμV/m) | AV: 54 (dBμV/m) |

| Applicable To | EIRP Limit | Equivalent Field Strength at 3 m |
|-----------------|---|---|
| 15.407(b)(1) | PK: -27 (dBm/MHz) | PK: 68.2 (dBμV/m) * |
| 15.407(b)(2) | PK: -27 (dBm/MHz) | PK: 68.2 (dBμV/m) * |
| 15.407(b)(3) | PK: -27 (dBm/MHz) | PK: 68.2 (dBμV/m) * |
| 15.407(b)(4)(i) | PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4} | PK: 68.2 (dBμV/m) ^{*1} PK: 105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK: 122.2 (dBμV/m) ^{*4} |

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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

For transmitters operating in the 5.850-5.925 GHz band:

- (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:

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

5.3 Conducted Out of Band Emissions

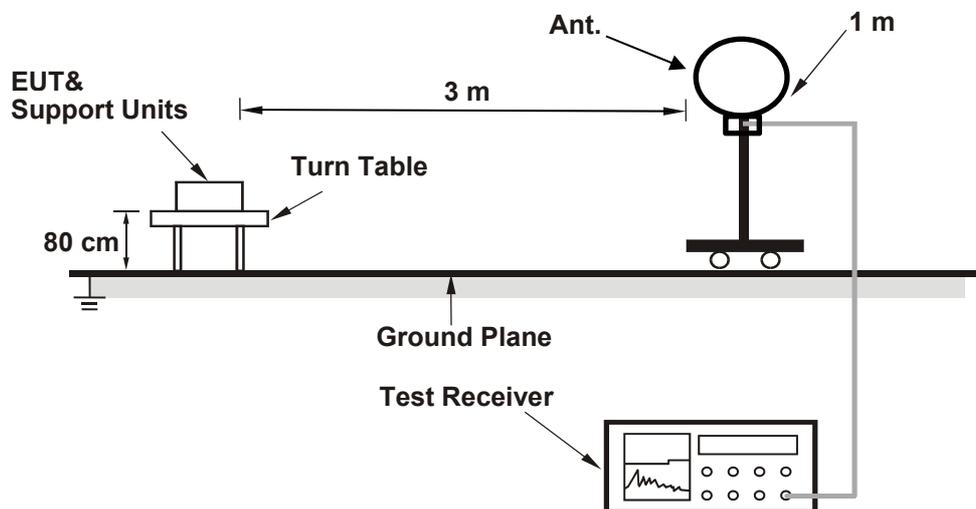
Below 30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

6 Test Arrangements

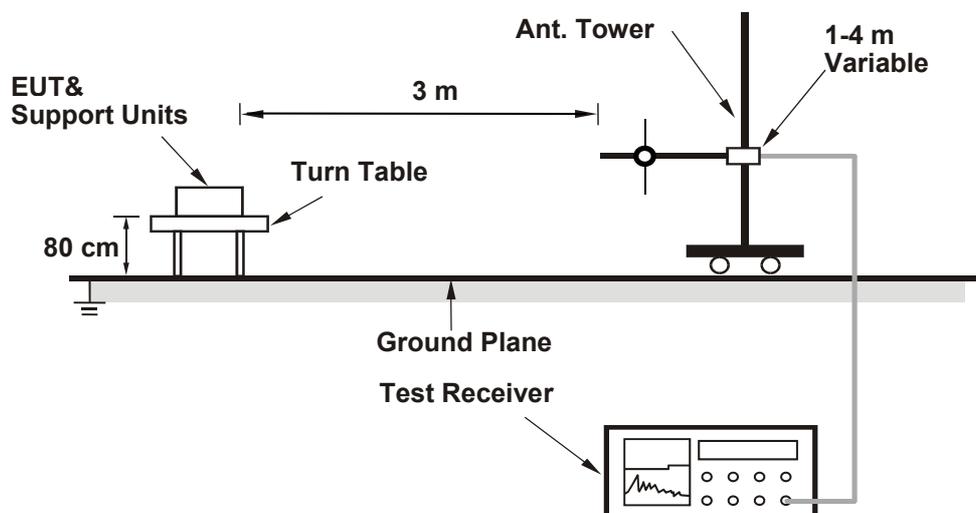
6.1 Unwanted Emissions below 1 GHz

6.1.1 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).

6.1.2 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

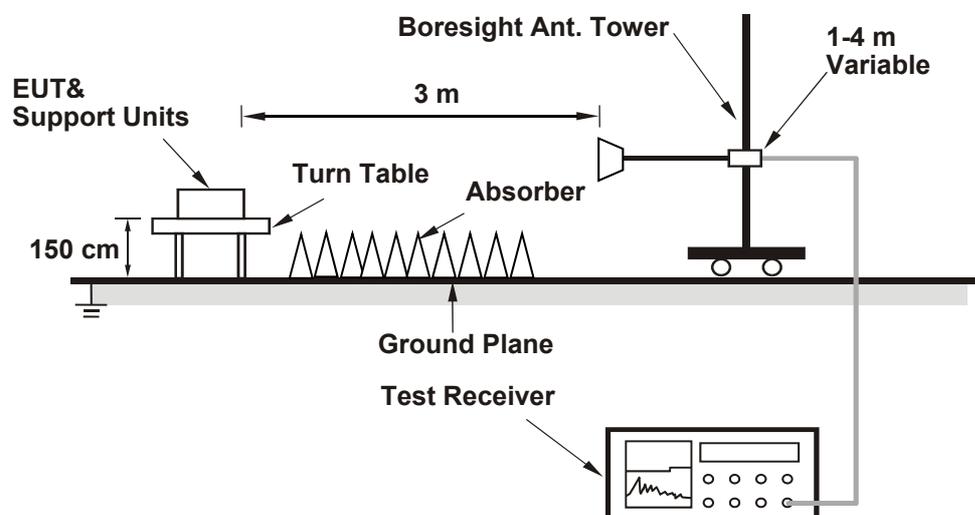
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the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

6.2 Unwanted Emissions above 1 GHz

6.2.1 Test Setup



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

6.2.2 Test Procedure

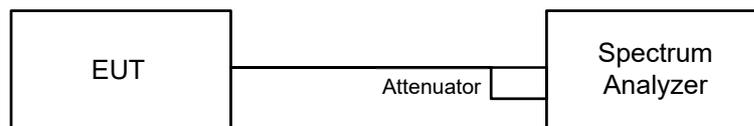
- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top 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.
- 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.
- All modes of operation were investigated and the worst-case emissions are reported.

6.3 Conducted Out of Band Emissions

6.3.1 Test Setup



6.3.2 Test Procedure

MEASUREMENT PROCEDURE REF

- a. Set the RBW = 100 kHz.
- b. Set the VBW \geq 300 kHz.
- c. Detector = peak.
- d. Sweep time = auto couple.
- e. Trace mode = max hold.
- f. Allow trace to fully stabilize.
- g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

- a. Set RBW = 100 kHz.
- b. Set VBW \geq 300 kHz.
- c. Detector = peak.
- d. Sweep = auto couple.
- e. Trace Mode = max hold.
- f. Allow trace to fully stabilize.
- g. Use the peak marker function to determine the maximum amplitude level.

7 Test Results of Test Item

7.1 Unwanted Emissions below 1 GHz

Test Mode A

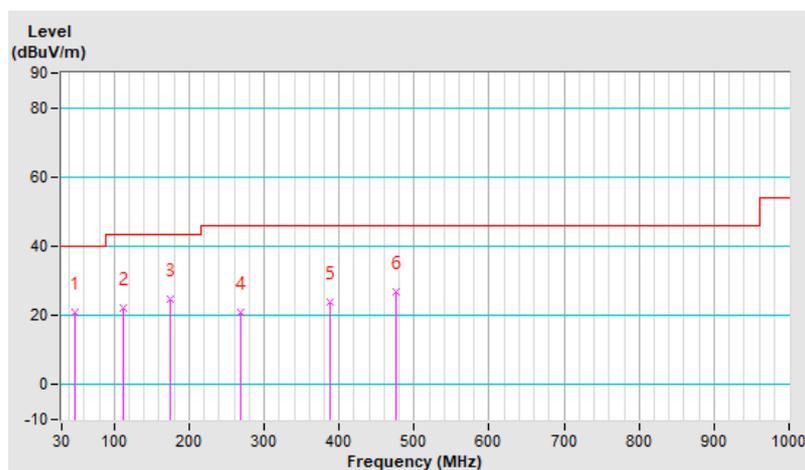
| | | | |
|------------------------|----------------|--|-------------------------------|
| Combination | 1 | | |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 69 % RH |
| Tested By | Luis Lee | | |

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 | 47.46 | 21.1 QP | 40.0 | -18.9 | 1.49 H | 99 | 30.1 | -9.0 |
| 2 | 112.45 | 22.3 QP | 43.5 | -21.2 | 1.49 H | 134 | 34.0 | -11.7 |
| 3 | 174.53 | 24.6 QP | 43.5 | -18.9 | 1.49 H | 258 | 34.0 | -9.4 |
| 4 | 267.65 | 20.9 QP | 46.0 | -25.1 | 1.49 H | 16 | 29.2 | -8.3 |
| 5 | 386.96 | 23.7 QP | 46.0 | -22.3 | 1.49 H | 352 | 29.5 | -5.8 |
| 6 | 475.23 | 26.9 QP | 46.0 | -19.1 | 1.49 H | 334 | 30.9 | -4.0 |

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

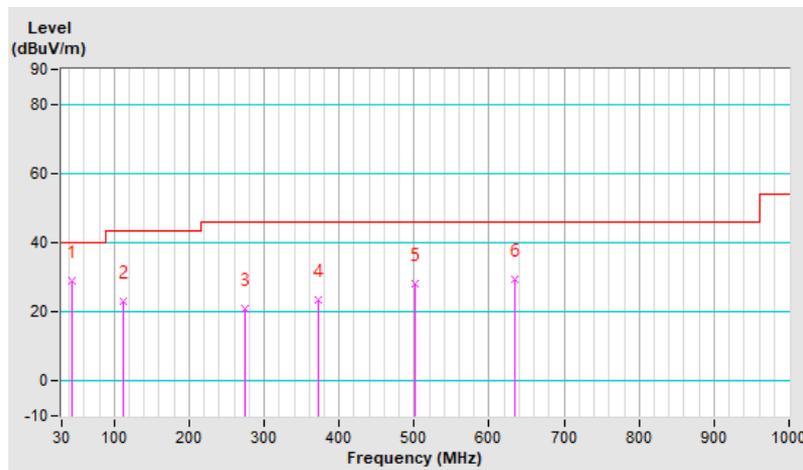


| | | | |
|------------------------|----------------|--|-------------------------------|
| Combination | 1 | | |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 69 % RH |
| Tested By | Luis Lee | | |

| 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 | 43.58 | 29.1 QP | 40.0 | -10.9 | 1.01 V | 2 | 38.3 | -9.2 |
| 2 | 112.45 | 23.0 QP | 43.5 | -20.5 | 1.01 V | 16 | 34.7 | -11.7 |
| 3 | 275.41 | 21.1 QP | 46.0 | -24.9 | 1.01 V | 24 | 29.0 | -7.9 |
| 4 | 372.41 | 23.4 QP | 46.0 | -22.6 | 1.01 V | 295 | 29.4 | -6.0 |
| 5 | 501.42 | 28.1 QP | 46.0 | -17.9 | 1.01 V | 102 | 31.7 | -3.6 |
| 6 | 634.31 | 29.5 QP | 46.0 | -16.5 | 1.50 V | 6 | 29.9 | -0.4 |

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



Test Mode B

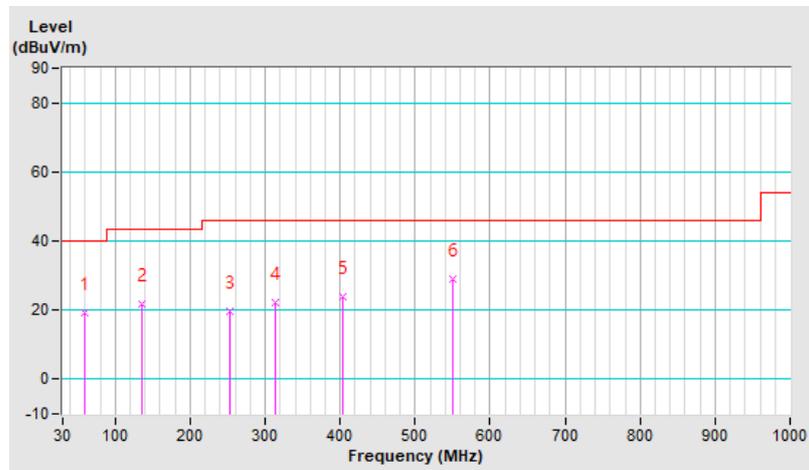
| | | | |
|------------------------|----------------|--|-------------------------------|
| Combination | 1 | | |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 69 % RH |
| Tested By | Luis Lee | | |

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 | 60.07 | 19.3 QP | 40.0 | -20.7 | 1.00 H | 42 | 28.9 | -9.6 |
| 2 | 135.73 | 21.9 QP | 43.5 | -21.6 | 1.00 H | 108 | 31.3 | -9.4 |
| 3 | 253.1 | 19.5 QP | 46.0 | -26.5 | 1.50 H | 105 | 28.6 | -9.1 |
| 4 | 314.21 | 22.2 QP | 46.0 | -23.8 | 1.00 H | 135 | 29.0 | -6.8 |
| 5 | 404.42 | 23.8 QP | 46.0 | -22.2 | 1.00 H | 241 | 29.4 | -5.6 |
| 6 | 549.92 | 28.9 QP | 46.0 | -17.1 | 1.50 H | 165 | 31.6 | -2.7 |

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

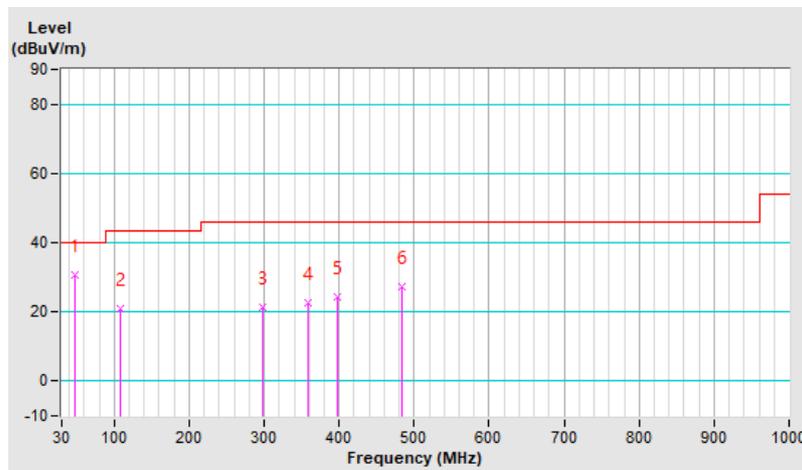


| | | | |
|------------------------|----------------|--|-------------------------------|
| Combination | 1 | | |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | QP: RB=120kHz, DET=Quasi-Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 69 % RH |
| Tested By | Luis Lee | | |

| 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 | 48.43 | 30.8 QP | 40.0 | -9.2 | 1.00 V | 5 | 39.6 | -8.8 |
| 2 | 107.6 | 20.9 QP | 43.5 | -22.6 | 1.00 V | 290 | 33.1 | -12.2 |
| 3 | 298.69 | 21.5 QP | 46.0 | -24.5 | 1.00 V | 152 | 28.8 | -7.3 |
| 4 | 358.83 | 22.8 QP | 46.0 | -23.2 | 1.49 V | 16 | 29.2 | -6.4 |
| 5 | 397.63 | 24.2 QP | 46.0 | -21.8 | 1.49 V | 16 | 29.8 | -5.6 |
| 6 | 483.96 | 27.3 QP | 46.0 | -18.7 | 1.49 V | 300 | 31.2 | -3.9 |

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.2 Unwanted Emissions above 1 GHz

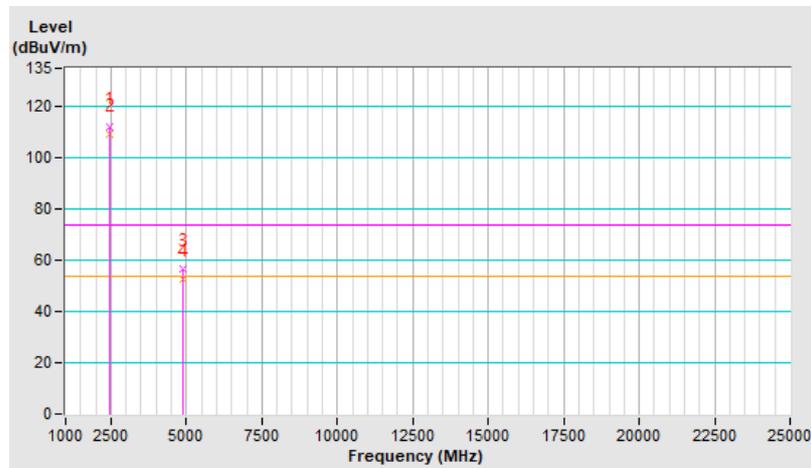
FCC 15.247

| | | | |
|------------------------|----------------|--|--|
| Combination | 1 | | |
| Frequency Range | 1 GHz ~ 25 GHz | Detector Function & Bandwidth | PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 66 % RH |
| Tested By | Luis Lee | | |

| 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 | *2437 | 111.9 PK | | | 2.54 H | 244 | 77.0 | 34.9 |
| 2 | *2437 | 109.2 AV | | | 2.54 H | 244 | 74.3 | 34.9 |
| 3 | 4874 | 56.8 PK | 74.0 | -17.2 | 3.53 H | 126 | 43.4 | 13.4 |
| 4 | 4874 | 52.7 AV | 54.0 | -1.3 | 3.53 H | 126 | 39.3 | 13.4 |

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.

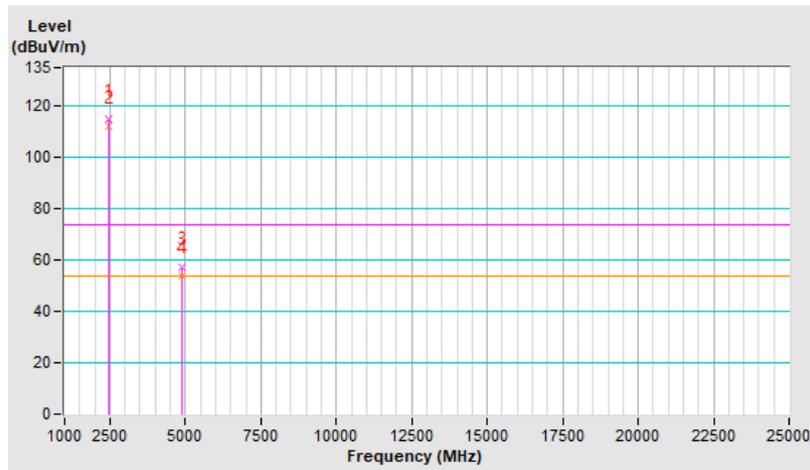


| | | | |
|------------------------|----------------|--|--|
| Combination | 1 | | |
| Frequency Range | 1 GHz ~ 25 GHz | Detector Function & Bandwidth | PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 66 % RH |
| Tested By | Luis Lee | | |

| 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 | *2437 | 114.7 PK | | | 3.20 V | 294 | 79.8 | 34.9 |
| 2 | *2437 | 112.4 AV | | | 3.20 V | 294 | 77.5 | 34.9 |
| 3 | 4874 | 57.4 PK | 74.0 | -16.6 | 3.63 V | 135 | 44.0 | 13.4 |
| 4 | 4874 | 53.6 AV | 54.0 | -0.4 | 3.63 V | 135 | 40.2 | 13.4 |

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.



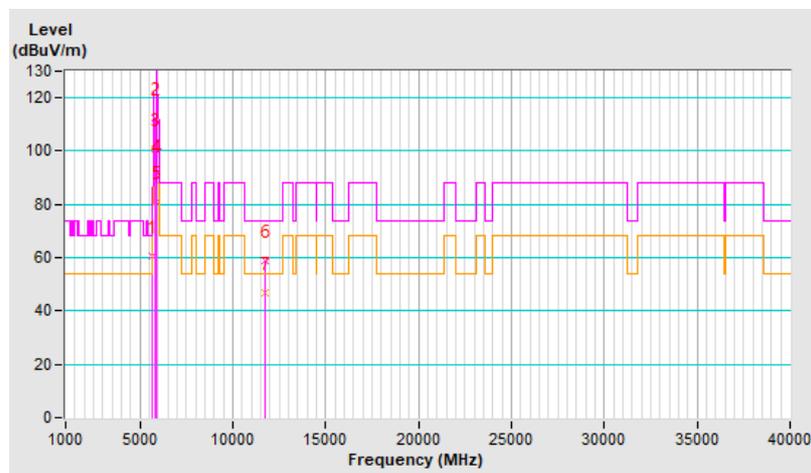
FCC 15.407

| | | | |
|------------------------|----------------|--|--|
| Combination | 1 | | |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 66 % RH |
| Tested By | Luis Lee | | |

| 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 | #5650 | 60.5 PK | 68.2 | -7.7 | 1.42 H | 245 | 47.0 | 13.5 |
| 2 | *5855 | 112.1 PK | | | 1.42 H | 245 | 67.4 | 44.7 |
| 3 | *5855 | 101.0 AV | | | 1.42 H | 245 | 56.3 | 44.7 |
| 4 | #5895 | 90.7 PK | 110.2 | -19.5 | 1.42 H | 246 | 76.7 | 14.0 |
| 5 | #5925 | 80.7 PK | 88.2 | -7.5 | 1.42 H | 246 | 66.6 | 14.1 |
| 6 | 11710 | 59.0 PK | 74.0 | -15.0 | 3.11 H | 187 | 36.8 | 22.2 |
| 7 | 11710 | 46.9 AV | 54.0 | -7.1 | 3.11 H | 187 | 24.7 | 22.2 |

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.

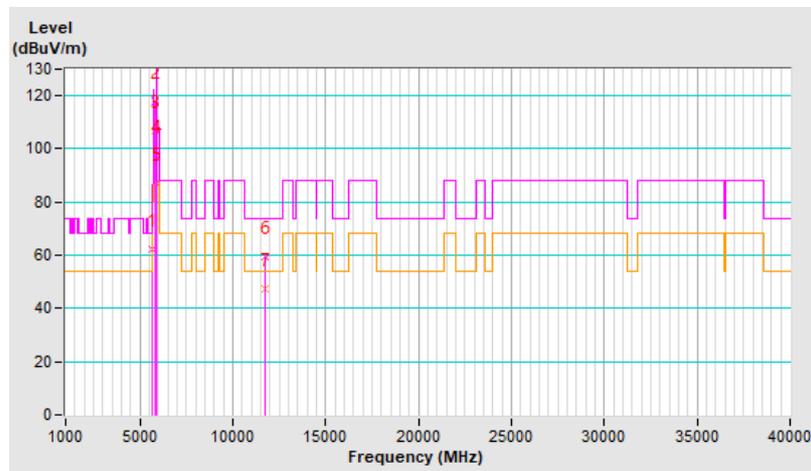


| | | | |
|------------------------|----------------|--|--|
| Combination | 1 | | |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak |
| Input Power | 120 Vac, 60 Hz | Environmental Conditions | 23 °C, 66 % RH |
| Tested By | Luis Lee | | |

| 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 | #5650 | 62.0 PK | 68.2 | -6.2 | 1.20 V | 342 | 48.5 | 13.5 |
| 2 | *5855 | 118.1 PK | | | 1.20 V | 342 | 73.4 | 44.7 |
| 3 | *5855 | 107.1 AV | | | 1.20 V | 342 | 62.4 | 44.7 |
| 4 | #5895 | 97.6 PK | 110.2 | -12.6 | 1.20 V | 342 | 83.6 | 14.0 |
| 5 | #5925 | 87.3 PK | 88.2 | -0.9 | 1.20 V | 342 | 73.2 | 14.1 |
| 6 | 11710 | 59.3 PK | 74.0 | -14.7 | 2.26 V | 177 | 37.1 | 22.2 |
| 7 | 11710 | 47.1 AV | 54.0 | -6.9 | 2.26 V | 177 | 24.9 | 22.2 |

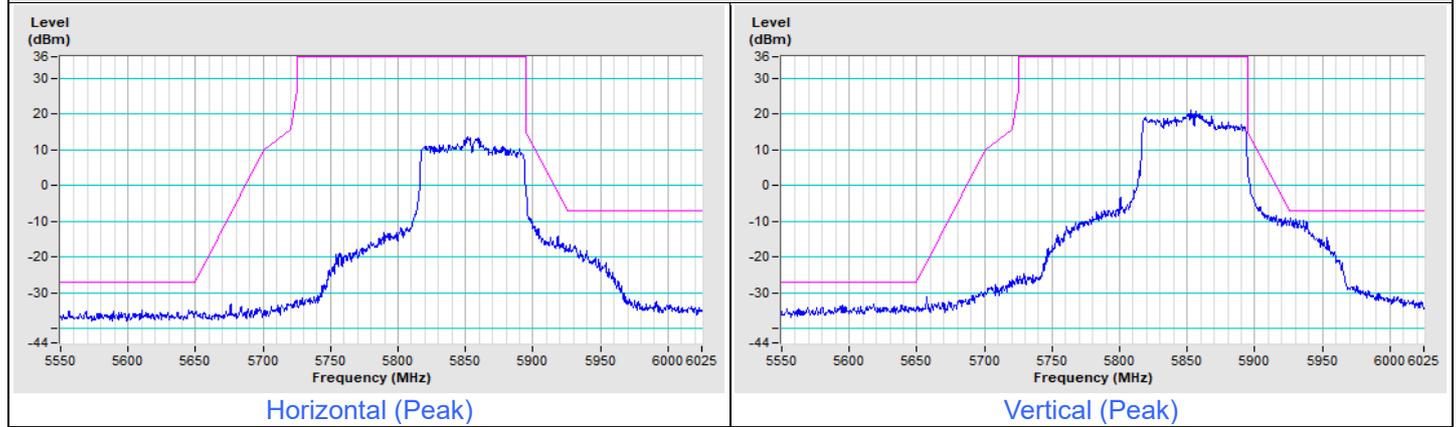
Remarks:

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.



Plot of Band Edge

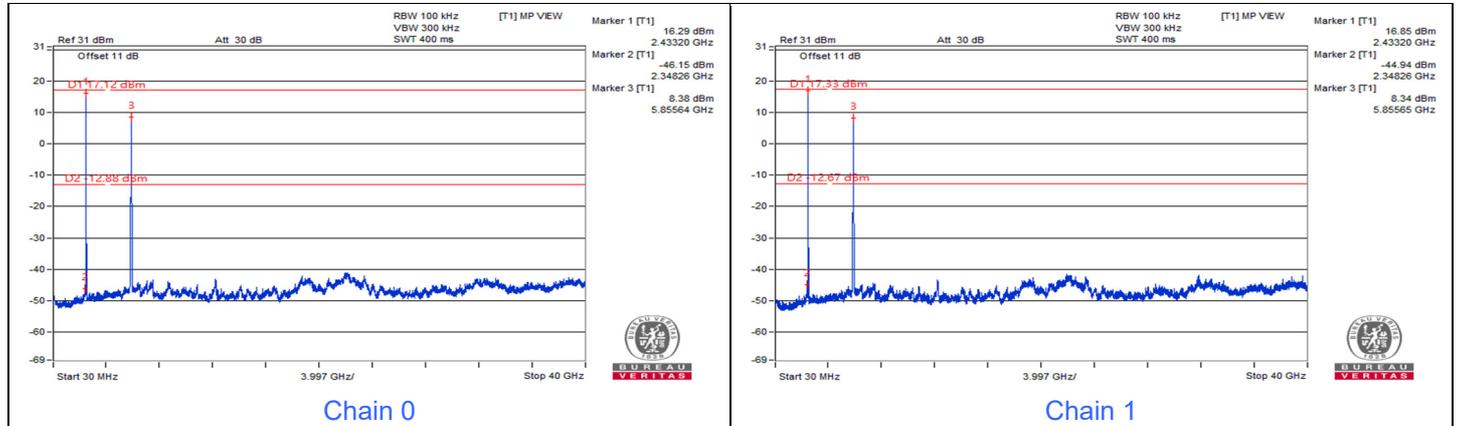
Combination 1



7.3 Conducted Out of Band Emissions

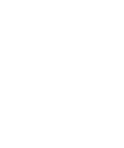
| | | | | | |
|--------------|----------------|---------------------------|--------------|------------|-----------|
| Input Power: | 120 Vac, 60 Hz | Environmental Conditions: | 25°C, 65% RH | Tested By: | Chris Lin |
|--------------|----------------|---------------------------|--------------|------------|-----------|

Combination 1



8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)



9 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

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

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.

--- END ---