# TEST REPORT

## CERTIFICATE OF CONFORMITY

| | |
|---|---|
| **Standard:** | **47 CFR FCC Part 15, Subpart B, Class A**<br>**ANSI C63.4–2014**<br>**ANSI C63.4a–2017** |
| **Report No.:** | FDBDBO-WTW-P25040665 |
| **Product:** | VTS-1200GU |
| **Brand:** | Vecow |
| **Model No.:** | VTS-1000 Series |
| **Series Model:** | VTS-1XXXXXXXXXXXXXX (“X” can be 0-9, A-Z or blank for marketing purpose) |
| **Received Date:** | 2025/4/29 |
| **Test Date:** | 2025/5/2 ~ 2025/5/5 |
| **Issued Date:** | 2025/5/20 |
| **Applicant:** | Vecow Co., Ltd. |
| **Address:** | 3F, No. 10, Jiankang Rd., Zhonghe Dist., New Taipei City 23586, Taiwan |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch<br>Lin Kou Laboratories |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan |
| **Test Location:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan |
| **FCC Registration / Designation Number:** | 418586 / TW1078 |

**Approved by:** Jim Hsiang , **Date:** 2025/5/20

Jim Hsiang / Associate Technical Manager

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Prepared by : Annie Chang / Senior Specialist

# Table of Contents

## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| FDBDBO-WTW-P25040665 | Original release. | 2025/5/20 |

# 1 Certificate

| | |
|---|---|
| **Product:** | VTS-1200GU |
| **Brand:** | Vecow |
| **Test Model:** | VTS-1000 Series |
| **Series Model:** | VTS-1XXXXXXXXXXXXXXX (“X” can be 0-9, A-Z or blank for marketing purpose) |
| **Sample Status:** | Engineering sample |
| **Applicant:** | Vecow Co., Ltd. |
| **Test Date:** | 2025/5/2 ~ 2025/5/5 |
| **Standard:** | 47 CFR FCC Part 15, Subpart B, Class A<br>ANSI C63.4–2014<br>ANSI C63.4a–2017 |

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

## 2 Summary of Test Results

The test items that the EUT need to perform in accordance with its interfaces, evaluated functions, are as follows:

| Standard / Clause | Test Item | Result | Remark |
|---|---|---|---|
| FCC Part 15.107 | Conducted Emissions from Power Ports | Pass | Minimum passing Class A margin is -29.32 dB at 9.25011 MHz |
| FCC Part 15.109 | Radiated Emissions up to 1 GHz | Pass | Minimum passing Class A margin is -4.33 dB at 39.64 MHz |
| FCC Part 15.109 | Radiated Emissions above 1 GHz | Pass | Minimum passing Class A margin is -20.82 dB at 7289.02 MHz |

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) (±) | Maximum allowable uncertainty (±) |
|---|---|---|---|
| Conducted Emissions from Power Ports | 9 kHz ~ 30 MHz | 2.9 dB | 3.4 dB ($U_{cispr}$) |
| Radiated Emissions up to 1 GHz | 30 MHz ~ 1 GHz | 5.72 dB | 6.3 dB ($U_{cispr}$) |
| Radiated Emissions above 1 GHz | 1 GHz ~ 6 GHz | 4.86 dB | 5.2 dB ($U_{cispr}$) |
| | 6 GHz ~ 18 GHz | 4.72 dB | 5.5 dB ($U_{cispr}$) |

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 Description of EUT

| | |
|---|---|
| Product | VTS-1200GU |
| Brand | Vecow |
| Test Model | VTS-1000 Series |
| Series Model | VTS-1XXXXXXXXXXXXXX (“X” can be 0-9, A-Z or blank for marketing purpose) |
| Model Difference | Marketing Differentiation |
| Sample Status | Engineering sample |
| Power Supply Rating | Refer to note as below |

Note:

The EUT uses following accessories.

| Item | Brand | Model | Specification |
|---|---|---|---|
| AC Adapter | LITEON | PA-1121-24 | AC Input : 100-240V, 2.0A, 50-60Hz<br>DC Output : 24.0V, 5.0A, 120W<br>Shielded AC 3 pin cable (1.8m)<br>Shielded DC cable (2.5m, with one core) |

## 3.2 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 1.5 GHz, provided by Vecow Co., Ltd., for detailed internal source, please refer to the manufacturer's specifications.

## 3.3 Features of EUT

1. The tests reported herein were performed according to the method specified by Vecow Co., Ltd., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

   Please refer to appendix of the report if the applicant has provided additional descriptions of the EUT.

2. The EUT was configured with the following key components:

| Item | Description |
|---|---|
| CPU | CPU Quad-core Arm Cortex-A53 MPCore™ up to 1.5 GHz |

## 3.4 Operating Modes of EUT and Determination of Worst Case Operating Mode

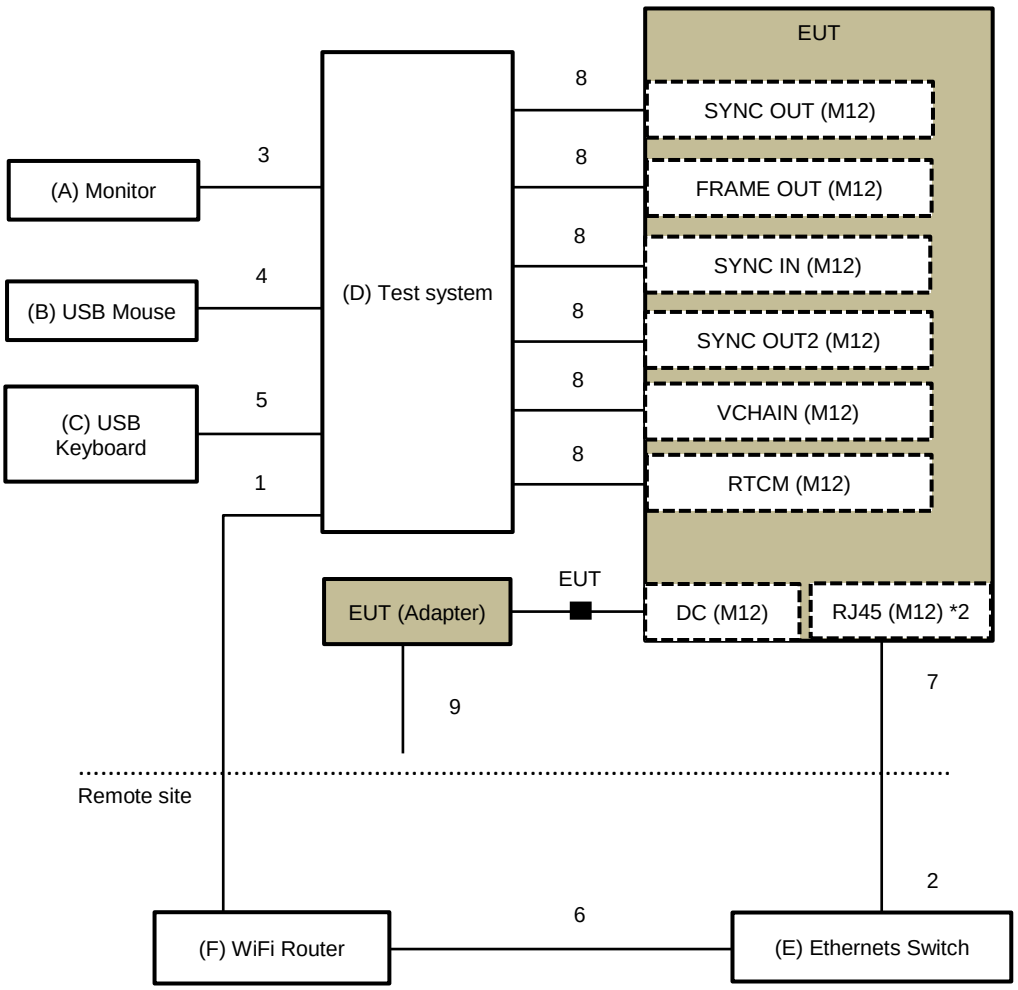
Test modes are presented in the report as below.

| Test Condition | |
|---|---|
| Mode | Conducted Emissions from Power Ports |
| A | Full system + Input Power(120 Vac, 60 Hz) |
| B | Full system + Input Power(240 Vac, 60 Hz) |
| Mode | Radiated Emissions up to 1 GHz |
| A | Full system + Input Power(120 Vac, 60 Hz) |
| Mode | Radiated Emissions above 1 GHz |
| A | Full system + Input Power(120 Vac, 60 Hz) |

### 3.5 Test Program Used and Operation Descriptions

a. Turned on the power of all equipment.
b. Test system sent ( H ) message to Monitor, and then displayed on its screen.
c. Test system sent and received messages to/ from EUT via Router.
d. Test system sent and received messages to/ from EUT via signal cable.

### 3.6 Connection Diagram of EUT and Peripheral Devices



### 3.7 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A | Monitor | DELL | U2410 | CN082WXD728720 CC0KVL | DoC | Provided by Lab |
| B | USB Mouse | DELL | MOCZUL | CN-049TWY-PRC00-77B-0083 | N/A | Provided by Lab |
| C | USB Keyboard | Dell | KB216t | CN-0W33XP-LO300-7CL-191E | N/A | Provided by Lab |
| D | Test system | Raspberry Pi | 27W USB-C Power Suuply US | N/A | N/A | Supplied by applicant |
| | | u-blox | EVB-C099-F9P | N/A | N/A | Supplied by applicant |
| | | Vecow | SPC-5600 | N/A | N/A | Supplied by applicant |
| | | Transcend | Transcend hub | N/A | N/A | Supplied by applicant |
| E | Ethernets Switch | NETGEAR | GS308P | 4F21955800796 | DoC | Provided by Lab |
| F | WiFi Router | netis | WF2780 | N/A | DoC | Supplied by applicant |

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|---|---|---|---|---|---|---|
| 1 | Cat. 5e | 2 | 10 | N | 0 | Provided by Lab |
| 2 | Cat. 5e | 2 | 10 | Y | 0 | Provided by Lab |
| 3 | DP | 1 | 1.8 | Y | 0 | Provided by Lab |
| 4 | USB | 1 | 1.8 | Y | 0 | Provided by Lab |
| 5 | USB | 1 | 1.8 | Y | 0 | Provided by Lab |
| 6 | Cat. 5e | 1 | 3 | N | 0 | Provided by Lab |
| 7 | Cat. 6a | 2 | 2 | Y | 0 | Supplied by applicant |
| 8 | Signal | 6 | 1.8 | Y | 0 | Supplied by applicant |
| 9 | Power | 1 | 1.8 | Y | 0 | Supplied by applicant |

# 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 Conducted Emissions from Power Ports

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| 50 ohm terminal resistance<br>LYNICS | 0900510 | E1-011284 | 2024/9/16 | 2025/9/15 |
| | | E1-011285 | 2024/9/25 | 2025/9/24 |
| EMI Test Receiver<br>R&S | ESR3 | 102412 | 2024/12/26 | 2025/12/25 |
| | | 102414 | 2024/12/11 | 2025/12/10 |
| Fixed Attenuator<br>STI | STI02-2200-10 | NO.4 | 2024/8/30 | 2025/8/29 |
| High Voltage Probe<br>Schwarzbeck | TK9420 | 00982 | 2024/12/6 | 2025/12/5 |
| LISN<br>R&S | ENV216 | 101196 | 2024/5/22 | 2025/5/21 |
| LISN<br>Schwarzbeck | NNLK 8121 | 8121-731 | 2024/6/12 | 2025/6/11 |
| | | 8121-808 | 2025/4/23 | 2026/4/22 |
| | NNLK 8129 | 8129229 | 2024/10/14 | 2025/10/13 |
| | NSLK 8128 | 8128-244 | 2024/11/11 | 2025/11/10 |
| Passive Voltage Probe<br>R&S | ESH2-Z3 | 100073 | 2024/5/16 | 2025/5/15 |
| RF Coaxial Cable<br>PEWC | 5D-FB | Cable-CO5-01 | 2025/1/17 | 2026/1/16 |
| Software<br>BVADT | Cond_V7.4.1.0 | N/A | N/A | N/A |

Notes:

1. The test was performed in Linkou Conduction 5.
2. The VCCI Site Registration No. C-11093.
3. Tested Date: 2025/5/5

## 4.2 Radiated Emissions up to 1 GHz

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| Bi_Log Antenna<br>Schwarzbeck | VULB 9168 | 9168-717 | 2024/10/9 | 2025/10/8 |
| Coupling / Decoupling Network<br>Schwarzbeck | CDNE-M2 | 00097 | 2024/5/28 | 2025/5/27 |
| | CDNE-M3 | 00091 | 2025/3/20 | 2026/3/19 |
| Fixed Attenuator<br>Mini-Circuits | UNAT-5+ | PAD-CH7-01 | 2025/1/15 | 2026/1/14 |
| MXE EMI Receiver<br>Agilent | N9038A | MY50010135 | 2024/9/11 | 2025/9/10 |
| Preamplifier<br>HP | 8447D | 2944A08118 | 2025/2/5 | 2026/2/4 |
| RF Coaxial Cable<br>Pacific | 8D-FB | Cable-CH7-01 | 2024/12/31 | 2025/12/30 |
| Software<br>BVADT | Radiated_V8.8.09 | N/A | N/A | N/A |
| Turn Table & Tower<br>Max Full. | MF7802 | MF780208103 | N/A | N/A |

Notes:

1. The test was performed in Linkou 966 Chamber 2 (CH 7) ,The test site validated date: 2024/6/1 (NSA)
2. The VCCI Site Registration No. R-20008.
3. Tested Date: 2025/5/2

### 4.3 Radiated Emissions above 1 GHz

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| Fix tool for Boresight antenna tower<br>BV | BAF-01 | 4 | N/A | N/A |
| Fixed Attenuator<br>Mini-Circuits | BW-K3-2W44+ | PAD-CH7-03 | 2024/7/5 | 2025/7/4 |
| | BW-N4W5+ | PAD-CH7-02 | 2024/7/5 | 2025/7/4 |
| Horn Antenna<br>EMCO | 3115 | 9312-4192 | 2024/11/10 | 2025/11/9 |
| Horn Antenna<br>ETS-Lindgren | 3117-PA | 00215857 | 2024/11/10 | 2025/11/9 |
| Horn Antenna<br>Schwarzbeck | BBHA 9170 | BBHA9170190 | 2024/11/10 | 2025/11/9 |
| MXA Signal Analyzer<br>Keysight | N9020B | MY60110438 | 2024/12/5 | 2025/12/4 |
| | | MY60112260 | 2024/5/29 | 2025/5/28 |
| Notch Filter<br>Micro-Tronics | BRC50703-01 | 010 | 2024/5/24 | 2025/5/23 |
| | BRM17690 | 005 | 2024/5/24 | 2025/5/23 |
| Preamplifier<br>EMCI | EMC0126545 | 980076 | 2025/2/14 | 2026/2/13 |
| | EMC184045B | 980175 | 2024/8/25 | 2025/8/24 |
| | | 980235 | 2025/2/14 | 2026/2/13 |
| RF Coaxial Cable<br>EMEC | EM102-KMKM | 01 | 2024/7/5 | 2025/7/4 |
| RF Coaxial Cable<br>HUBER+SUHNER | SF-102 | Cable-CH7(3m)-02 | 2024/7/5 | 2025/7/4 |
| Software<br>BVADT | Radiated_V8.8.09 | N/A | N/A | N/A |
| Turn Table & Tower<br>Max Full | MF7802 | MF780208103 | N/A | N/A |

Notes:

1. The test was performed in Linkou 966 Chamber 2 (CH 7).
2. The VCCI Site Registration No. G-10039.
3. Tested Date: 2025/5/2

# 5 Limits of Test Items

## 5.1 Conducted Emissions from Power Ports

| Frequency (MHz) | Class A (dBuV) | | Class B (dBuV) | |
|---|---|---|---|---|
| | Quasi-peak | Average | Quasi-peak | Average |
| 0.15 - 0.5 | 79 | 66 | 66 - 56 | 56 - 46 |
| 0.50 - 5.0 | 73 | 60 | 56 | 46 |
| 5.0 - 30.0 | 73 | 60 | 60 | 50 |

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

## 5.2 Radiated Emissions up to 1 GHz

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

| Radiated Emissions Limits at 10 meters (dBμV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B, Class A | FCC 15B, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 30-88 | 39.1 | 29.5 | 40 | 30 |
| 88-216 | 43.5 | 33.1 | | |
| 216-230 | 46.4 | 35.6 | | |
| 230-960 | | | 47 | 37 |
| 960-1000 | 49.5 | 43.5 | | |

| Radiated Emissions Limits at 3 meters (dBμV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B, Class A | FCC 15B, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 30-88 | 49.5 | 40.0 | 50.5 | 40.5 |
| 88-216 | 54.0 | 43.5 | | |
| 216-230 | 56.9 | 46.0 | | |
| 230-960 | | | 57.5 | 47.5 |
| 960-1000 | 60.0 | 54.0 | | |

Notes: 1. The lower limit shall apply at the transition frequencies.

## 5.3 Radiated Emissions above 1 GHz

Frequency Range (For unintentional radiators)

| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz) |
|---|---|
| Below 1.705 | 30 |
| 1.705-108 | 1000 |
| 108-500 | 2000 |
| 500-1000 | 5000 |
| Above 1000 | 5th harmonic of the highest frequency or 40GHz, whichever is lower |

| Radiated Emissions Limits at 3 meters (dBμV/m) | | |
|---|---|---|
| Frequency range | Class A | Class B |
| Above 1GHz | Avg: 60<br>Peak: 80 | Avg: 54<br>Peak: 74 |

Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far field of the ITE or digital apparatus under test.

# 6 Test Arrangements

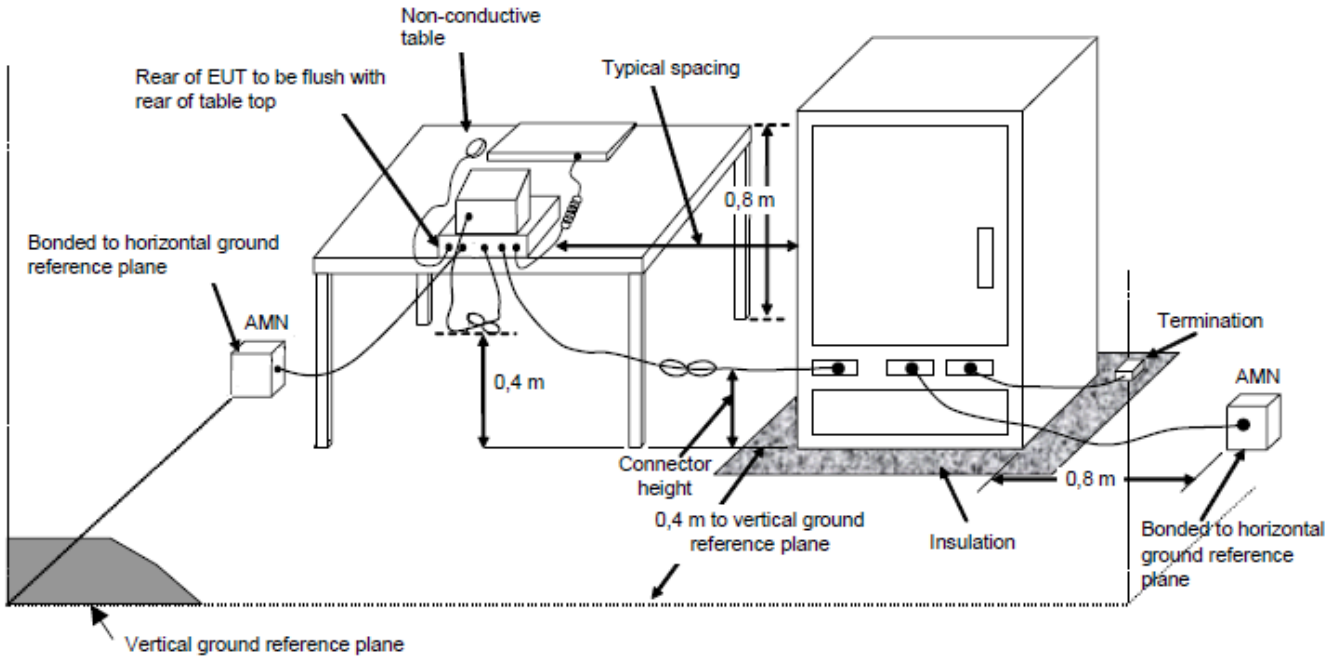
## 6.1 Conducted Emissions from Power Ports

a. For the table-top EUT is placed on a 0.8 meter insulation table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The EUT is 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 are connected to the power mains through another LISN. They provide coupling impedance for the measuring instrument.

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

c. The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

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

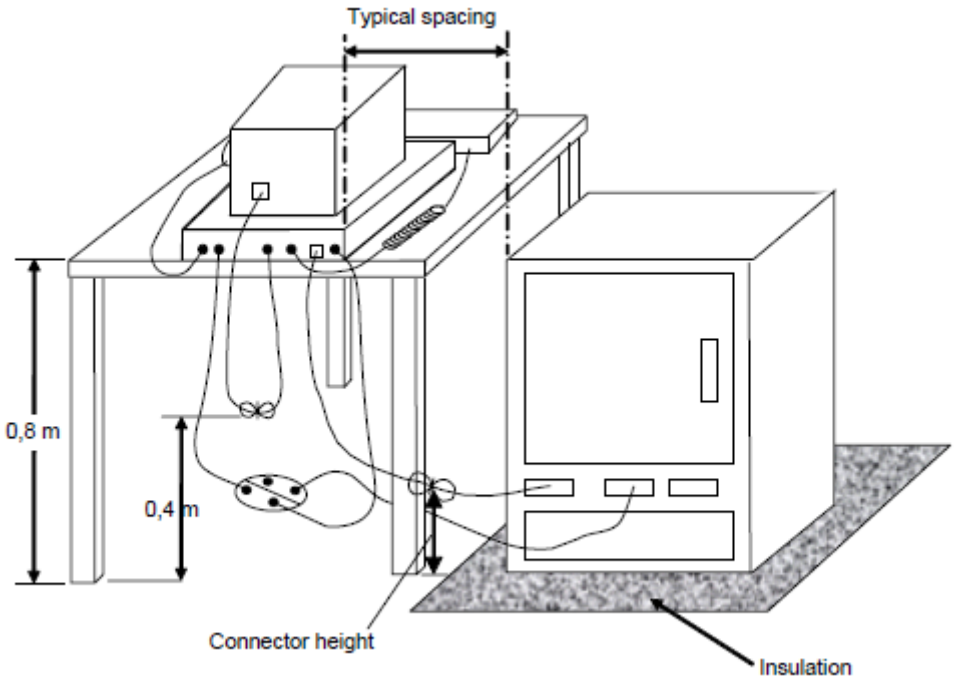



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

## 6.2 Radiated Emissions up to 1 GHz

a. For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The rotating table is rotated 360 degrees to determine the position of the highest radiation. If the equipment requires a dedicated ground connection, this shall be provided and bonded to the RGP.
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 antenna is a broadband antenna, and its height 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 up to 1 GHz.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency up to 1GHz.

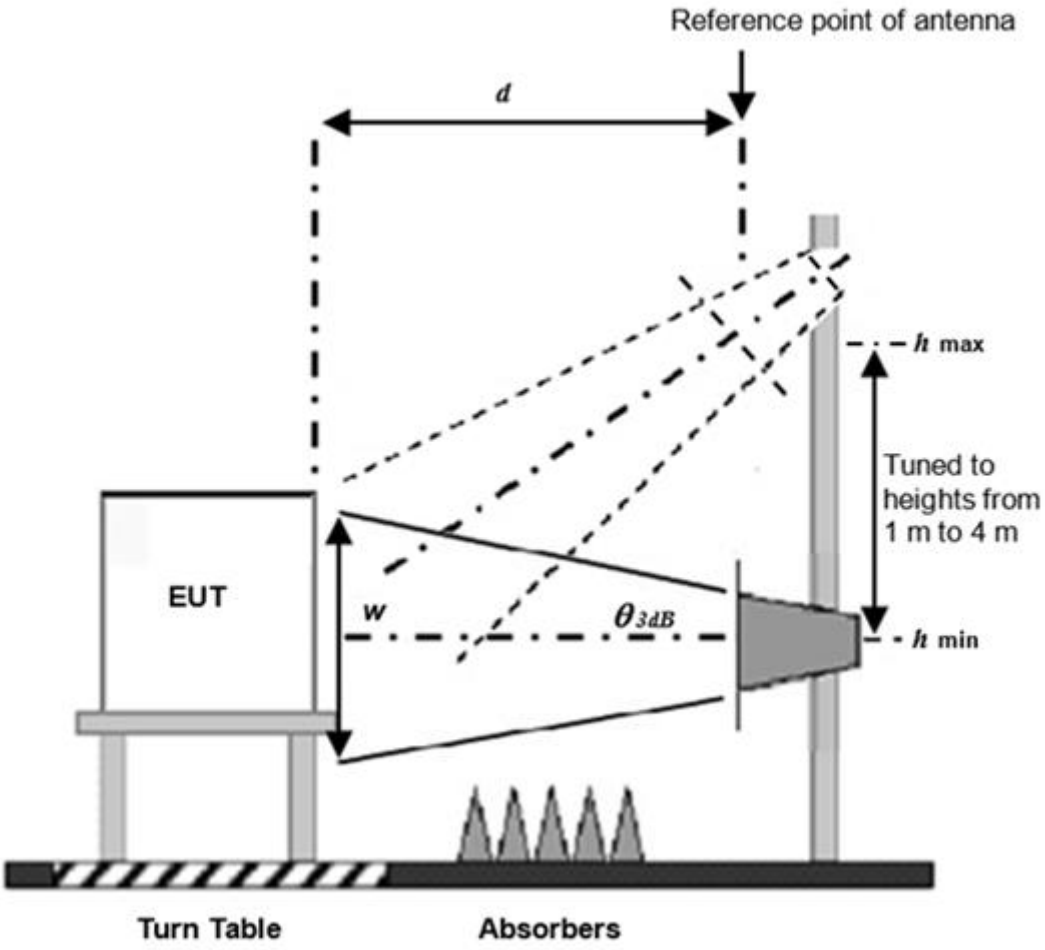



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

### 6.3 Radiated Emissions above 1 GHz

a. For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The rotating table is rotated 360 degrees to determine the position of the highest radiation. If the equipment requires a dedicated ground connection, this shall be provided and bonded to the RGP.
b. The EUT was set *d* = 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 can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The spectrum analyzer system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

Note: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection (PK) at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.




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

# 7 Test Results of Test Item

## 7.1 Conducted Emissions from Power Ports

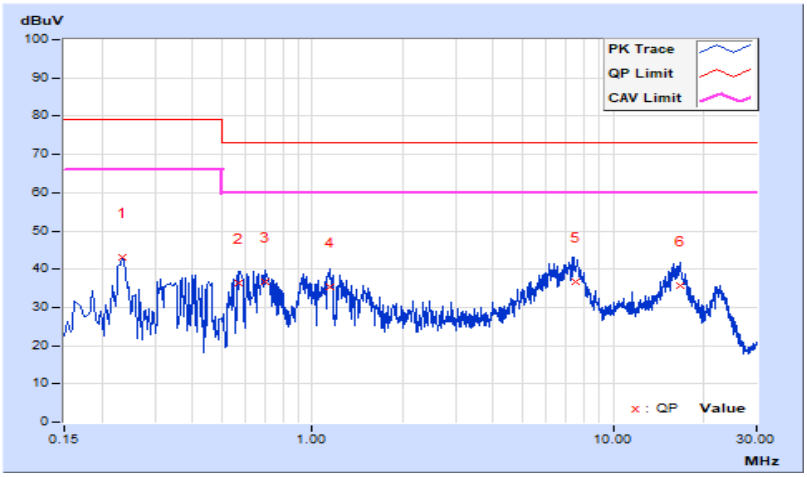
**Mode A**

| | | | |
|---|---|---|---|
| **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** | 27 °C, 79 % RH, 999 mbar |
| **Tested by** | Kenny Chang | | |

| 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 | 0.23408 | 9.96 | 32.99 | 24.97 | 42.95 | 34.93 | 79.00 | 66.00 | -36.05 | -31.07 |
| 2 | 0.57042 | 9.97 | 26.46 | 8.73 | 36.43 | 18.70 | 73.00 | 60.00 | -36.57 | -41.30 |
| 3 | 0.70219 | 9.99 | 26.56 | 16.04 | 36.55 | 26.03 | 73.00 | 60.00 | -36.45 | -33.97 |
| 4 | 1.14211 | 10.01 | 25.21 | 12.00 | 35.22 | 22.01 | 73.00 | 60.00 | -37.78 | -37.99 |
| 5 | 7.50229 | 10.19 | 26.51 | 17.90 | 36.70 | 28.09 | 73.00 | 60.00 | -36.30 | -31.91 |
| 6 | 16.72231 | 10.39 | 25.38 | 16.11 | 35.77 | 26.50 | 73.00 | 60.00 | -37.23 | -33.50 |

**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

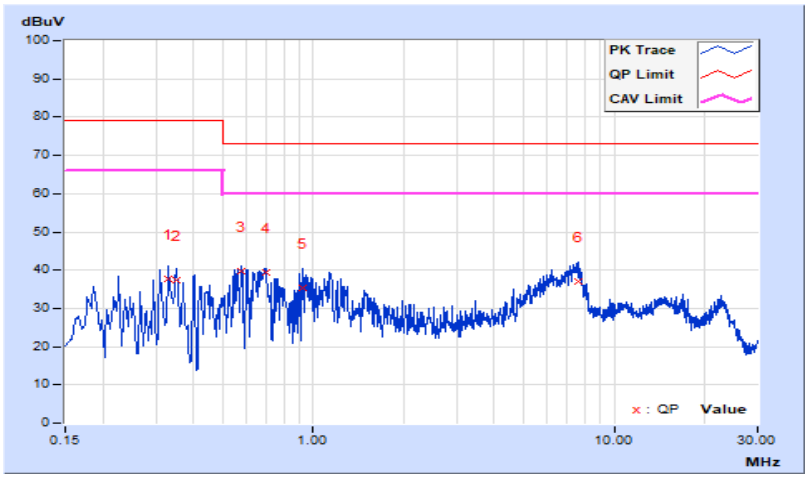


| | | | |
|---|---|---|---|
| **Frequency Range** | 150 kHz ~ 30 MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9 kHz |
| **Input Power** | 120 Vac, 60 Hz | **Environmental Conditions** | 27 °C, 79 % RH, 998.9 mbar |
| **Tested by** | Kenny Chang | | |

| **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 | 0.33025 | 9.96 | 27.72 | 14.97 | 37.68 | 24.93 | 79.00 | 66.00 | -41.32 | -41.07 |
| 2 | 0.35014 | 9.97 | 27.48 | 15.74 | 37.45 | 25.71 | 79.00 | 66.00 | -41.55 | -40.29 |
| 3 | 0.57798 | 9.98 | 29.81 | 20.63 | 39.79 | 30.61 | 73.00 | 60.00 | -33.21 | -29.39 |
| 4 | 0.69409 | 9.99 | 29.52 | 20.53 | 39.51 | 30.52 | 73.00 | 60.00 | -33.49 | -29.48 |
| 5 | 0.92217 | 10.00 | 25.44 | 12.52 | 35.44 | 22.52 | 73.00 | 60.00 | -37.56 | -37.48 |
| 6 | 7.57027 | 10.19 | 26.73 | 17.08 | 36.92 | 27.27 | 73.00 | 60.00 | -36.08 | -32.73 |

**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



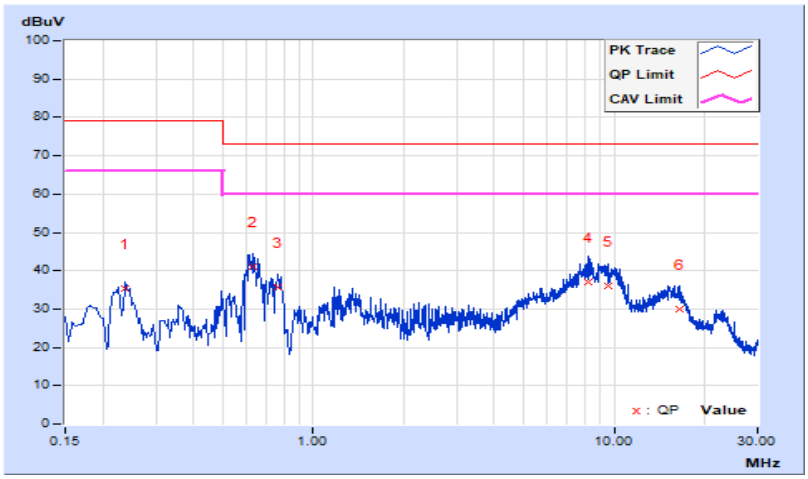
## Mode B

| | | | |
|---|---|---|---|
| **Frequency Range** | 150 kHz ~ 30 MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9 kHz |
| **Input Power** | 240 Vac, 60 Hz | **Environmental Conditions** | 27 °C, 79 % RH, 998.6 mbar |
| **Tested by** | Kenny Chang | | |

| 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 | 0.23808 | 9.96 | 25.55 | 19.46 | 35.51 | 29.42 | 79.00 | 66.00 | -43.49 | -36.58 |
| 2 | 0.63007 | 9.98 | 31.07 | 11.15 | 41.05 | 21.13 | 73.00 | 60.00 | -31.95 | -38.87 |
| 3 | 0.75811 | 9.99 | 25.84 | 12.66 | 35.83 | 22.65 | 73.00 | 60.00 | -37.17 | -37.35 |
| 4 | 8.19026 | 10.20 | 26.71 | 19.23 | 36.91 | 29.43 | 73.00 | 60.00 | -36.09 | -30.57 |
| 5 | 9.61818 | 10.24 | 25.81 | 18.36 | 36.05 | 28.60 | 73.00 | 60.00 | -36.95 | -31.40 |
| 6 | 16.41029 | 10.38 | 19.72 | 13.68 | 30.10 | 24.06 | 73.00 | 60.00 | -42.90 | -35.94 |

**Remarks:**

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

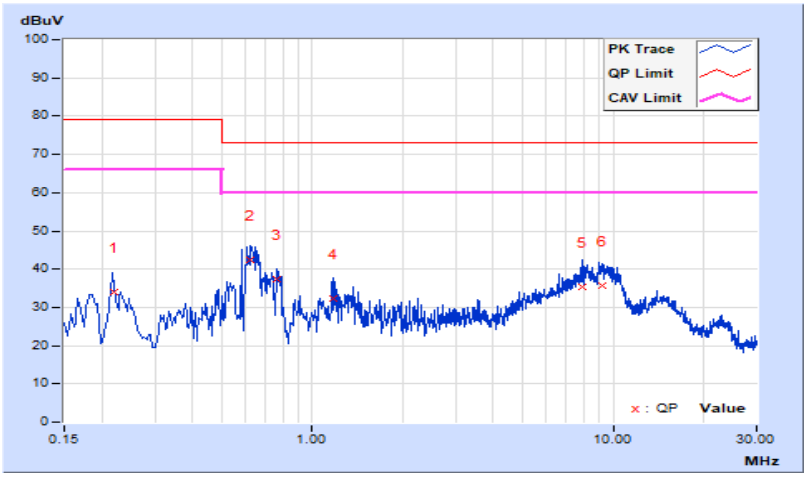


| | | | |
|---|---|---|---|
| **Frequency Range** | 150 kHz ~ 30 MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9 kHz |
| **Input Power** | 240 Vac, 60 Hz | **Environmental Conditions** | 27 °C, 79 % RH, 998.7 mbar |
| **Tested by** | Kenny Chang | | |

| **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 | 0.21827 | 9.95 | 23.89 | 17.76 | 33.84 | 27.71 | 79.00 | 66.00 | -45.16 | -38.29 |
| 2 | 0.62223 | 9.98 | 32.48 | 12.68 | 42.46 | 22.66 | 73.00 | 60.00 | -30.54 | -37.34 |
| 3 | 0.76222 | 9.99 | 27.33 | 14.00 | 37.32 | 23.99 | 73.00 | 60.00 | -35.68 | -36.01 |
| 4 | 1.17407 | 10.02 | 22.24 | 9.91 | 32.26 | 19.93 | 73.00 | 60.00 | -40.74 | -40.07 |
| 5 | 7.89407 | 10.20 | 25.06 | 17.49 | 35.26 | 27.69 | 73.00 | 60.00 | -37.74 | -32.31 |
| **6** | **9.25011** | **10.23** | **25.56** | **20.45** | **35.79** | **30.68** | **73.00** | **60.00** | **-37.21** | **-29.32** |

**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



## 7.2 Radiated Emissions up to 1 GHz

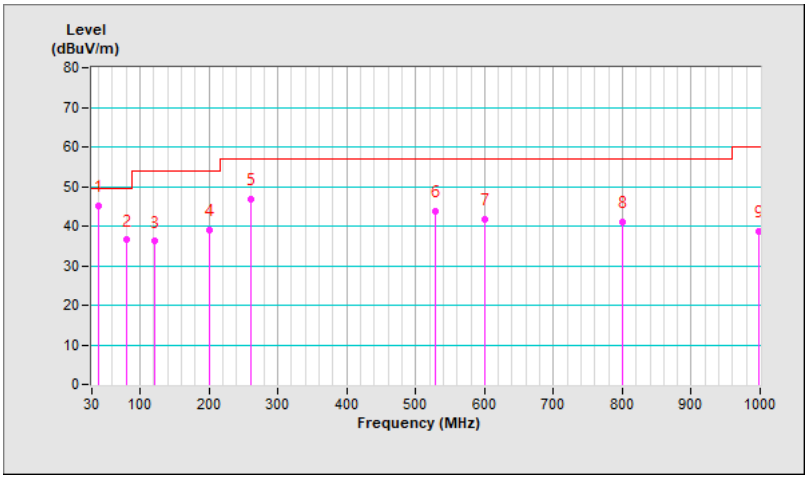
### Mode A

| | | | |
|---|---|---|---|
| **Frequency Range** | 30 MHz ~ 1 GHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP), 120 kHz |
| **Input Power** | 120 Vac, 60 Hz | **Environmental Conditions** | 26 °C, 71 % RH, 1001.8 mbar |
| **Tested By** | Desmond Chen | | |

| 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** | **39.64** | **45.17 QP** | **49.50** | **-4.33** | **2.49 H** | **122** | **54.58** | **-9.41** |
| 2 | 81.05 | 36.48 QP | 49.50 | -13.02 | 3.89 H | 230 | 50.37 | -13.89 |
| 3 | 120.57 | 36.16 QP | 54.00 | -17.84 | 3.61 H | 60 | 46.81 | -10.65 |
| 4 | 199.81 | 38.96 QP | 54.00 | -15.04 | 2.52 H | 254 | 50.48 | -11.52 |
| 5 | 261.73 | 46.89 QP | 56.90 | -10.01 | 3.86 H | 10 | 55.50 | -8.61 |
| 6 | 529.06 | 43.67 QP | 56.90 | -13.23 | 2.95 H | 34 | 46.62 | -2.95 |
| 7 | 600.00 | 41.72 QP | 56.90 | -15.18 | 3.62 H | 188 | 42.83 | -1.11 |
| 8 | 800.02 | 41.04 QP | 56.90 | -15.86 | 2.22 H | 195 | 38.82 | 2.22 |
| 9 | 999.00 | 38.75 QP | 60.00 | -21.25 | 2.15 H | 232 | 33.63 | 5.12 |

**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.

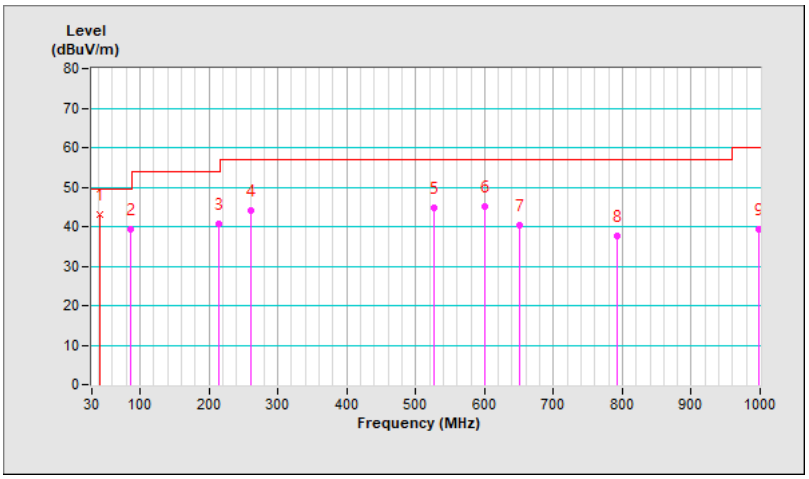


| | | | |
|---|---|---|---|
| **Frequency Range** | 30 MHz ~ 1 GHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP), 120 kHz |
| **Input Power** | 120 Vac, 60 Hz | **Environmental Conditions** | 26 °C, 71 % RH, 1001.9 mbar |
| **Tested By** | Desmond Chen | | |

| 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 | 40.99 | 42.99 QP | 49.50 | -6.51 | 2.29 V | 42 | 52.21 | -9.22 |
| 2 | 86.32 | 39.49 QP | 49.50 | -10.01 | 1.46 V | 97 | 54.10 | -14.61 |
| 3 | 214.17 | 40.72 QP | 54.00 | -13.28 | 1.34 V | 245 | 52.06 | -11.34 |
| 4 | 261.64 | 44.17 QP | 56.90 | -12.73 | 2.86 V | 65 | 52.80 | -8.63 |
| 5 | 526.70 | 44.87 QP | 56.90 | -12.03 | 2.98 V | 224 | 47.85 | -2.98 |
| 6 | 600.00 | 45.08 QP | 56.90 | -11.82 | 1.11 V | 186 | 46.19 | -1.11 |
| 7 | 649.99 | 40.41 QP | 56.90 | -16.49 | 1.39 V | 76 | 40.72 | -0.31 |
| 8 | 791.81 | 37.67 QP | 56.90 | -19.23 | 1.97 V | 298 | 35.77 | 1.90 |
| 9 | 999.00 | 39.38 QP | 60.00 | -20.62 | 2.51 V | 176 | 34.26 | 5.12 |

**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.



## 7.3 Radiated Emissions above 1 GHz

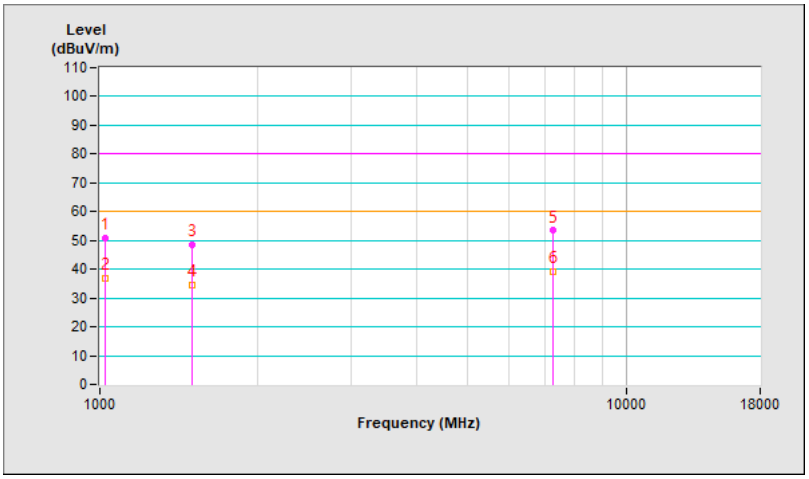
### Mode A

| | | | |
|---|---|---|---|
| **Frequency Range** | 1 GHz ~ 7.5 GHz | **Detector Function & Resolution Bandwidth** | Peak (PK) / Average (AV), 1 MHz |
| **Input Power** | 120 Vac, 60 Hz | **Environmental Conditions** | 26 °C, 71 % RH, 1000.8 mbar |
| **Tested By** | Peter Lin | | |

| 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 | 1026.32 | 50.93 PK | 80.00 | -29.07 | 2.08 H | 147 | 56.90 | -5.97 |
| 2 | 1026.32 | 36.97 AV | 60.00 | -23.03 | 2.08 H | 147 | 42.94 | -5.97 |
| 3 | 1499.91 | 48.61 PK | 80.00 | -31.39 | 1.96 H | 19 | 51.80 | -3.19 |
| 4 | 1499.91 | 34.47 AV | 60.00 | -25.53 | 1.96 H | 19 | 37.66 | -3.19 |
| 5 | 7282.18 | 53.40 PK | 80.00 | -26.60 | 1.19 H | 360 | 43.72 | 9.68 |
| 6 | 7282.18 | 39.17 AV | 60.00 | -20.83 | 1.19 H | 360 | 29.49 | 9.68 |

**Remarks:**

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

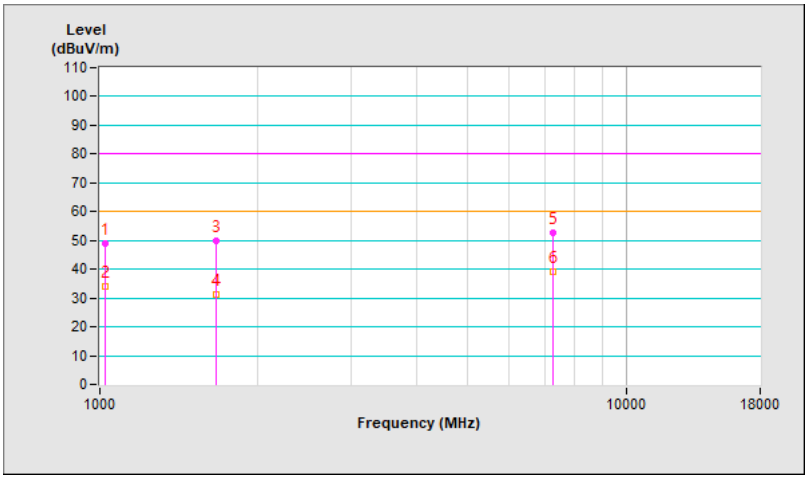


| | | | |
|---|---|---|---|
| **Frequency Range** | 1 GHz ~ 7.5 GHz | **Detector Function & Resolution Bandwidth** | Peak (PK) / Average (AV), 1 MHz |
| **Input Power** | 120 Vac, 60 Hz | **Environmental Conditions** | 26 °C, 71 % RH, 1000.9 mbar |
| **Tested By** | Peter Lin | | |

| 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 | 1023.79 | 49.00 PK | 80.00 | -31.00 | 1.05 V | 232 | 55.00 | -6.00 |
| 2 | 1023.79 | 34.07 AV | 60.00 | -25.93 | 1.05 V | 232 | 40.07 | -6.00 |
| 3 | 1664.86 | 49.95 PK | 80.00 | -30.05 | 1.53 V | 170 | 52.54 | -2.59 |
| 4 | 1664.86 | 31.34 AV | 60.00 | -28.66 | 1.53 V | 170 | 33.93 | -2.59 |
| 5 | 7289.02 | 52.82 PK | 80.00 | -27.18 | 1.89 V | 178 | 43.12 | 9.70 |
| **6** | **7289.02** | **39.18 AV** | **60.00** | **-20.82** | **1.89 V** | **178** | **29.48** | **9.70** |

**Remarks:**

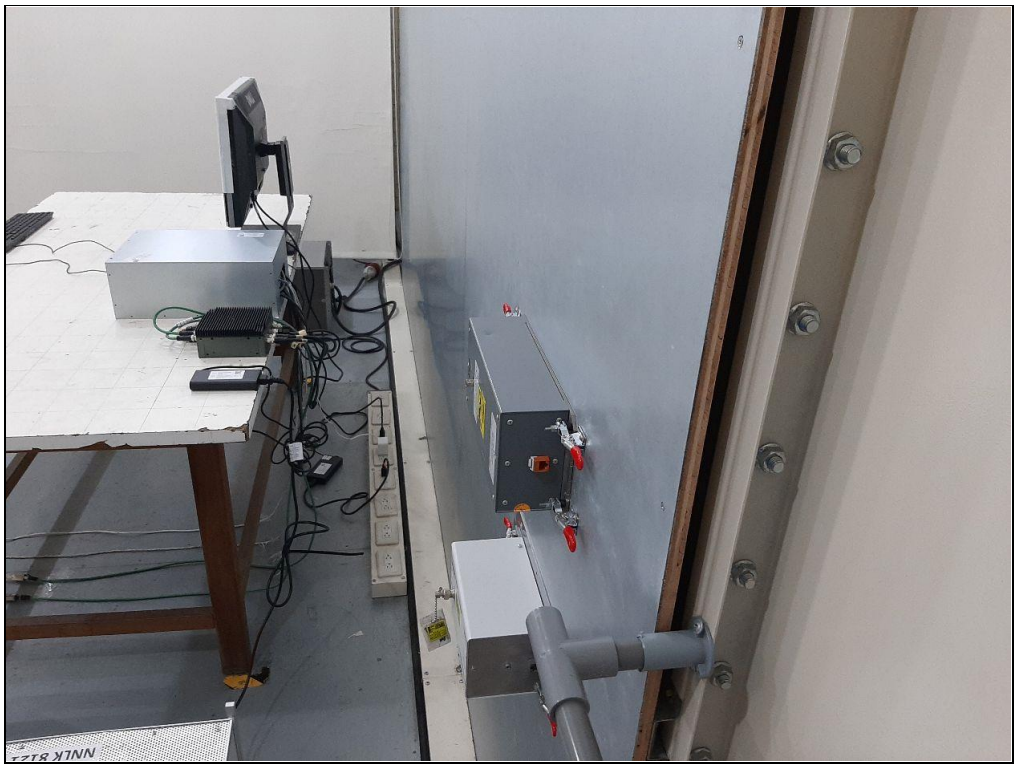
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
   – Pre-Amplifier Factor (dB)
3. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.



# 8 Pictures of Test Arrangements

## 8.1 Conducted Emissions from Power Ports

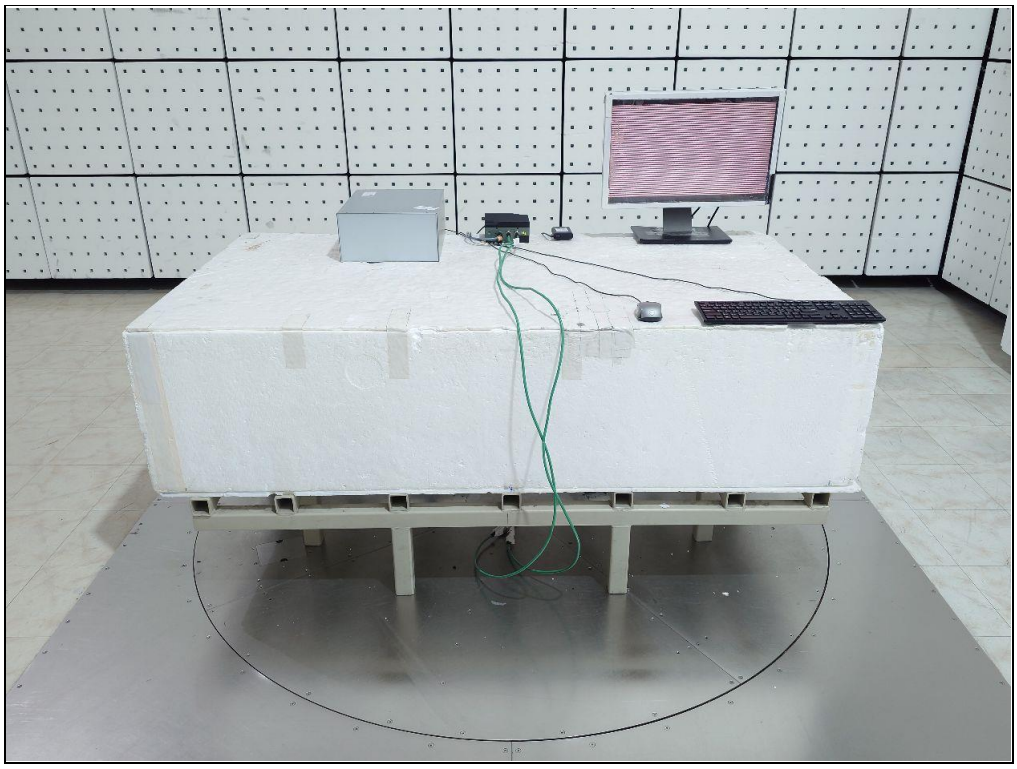
**Mode A**

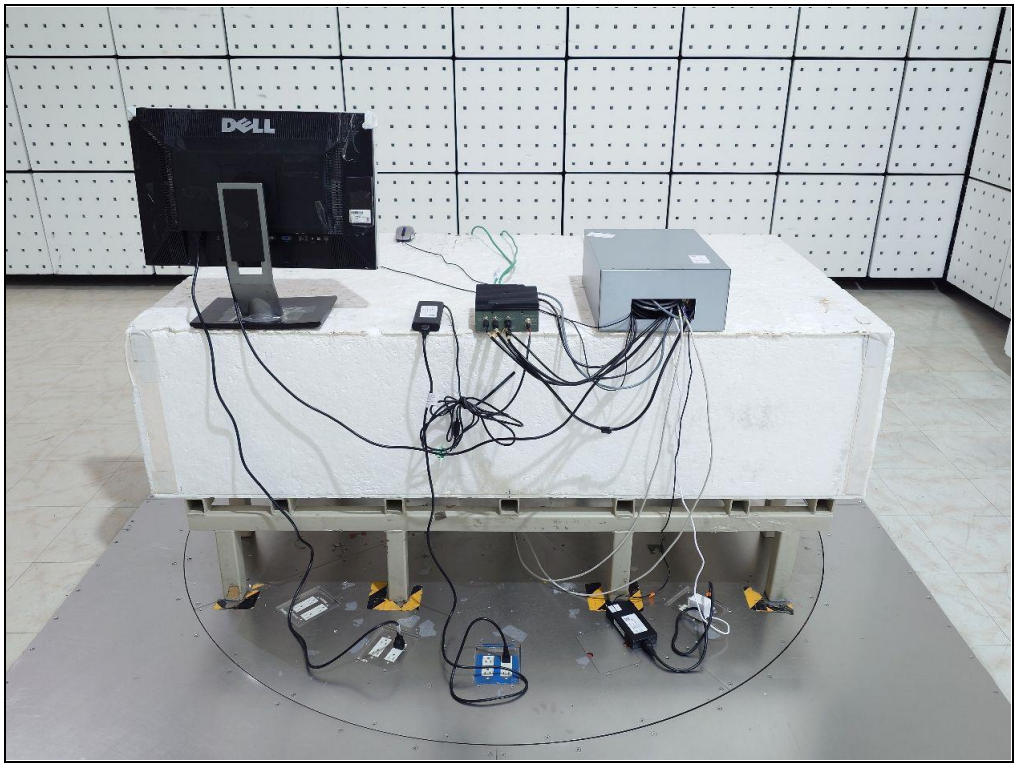


## Mode B

## 8.2 Radiated Emissions up to 1 GHz

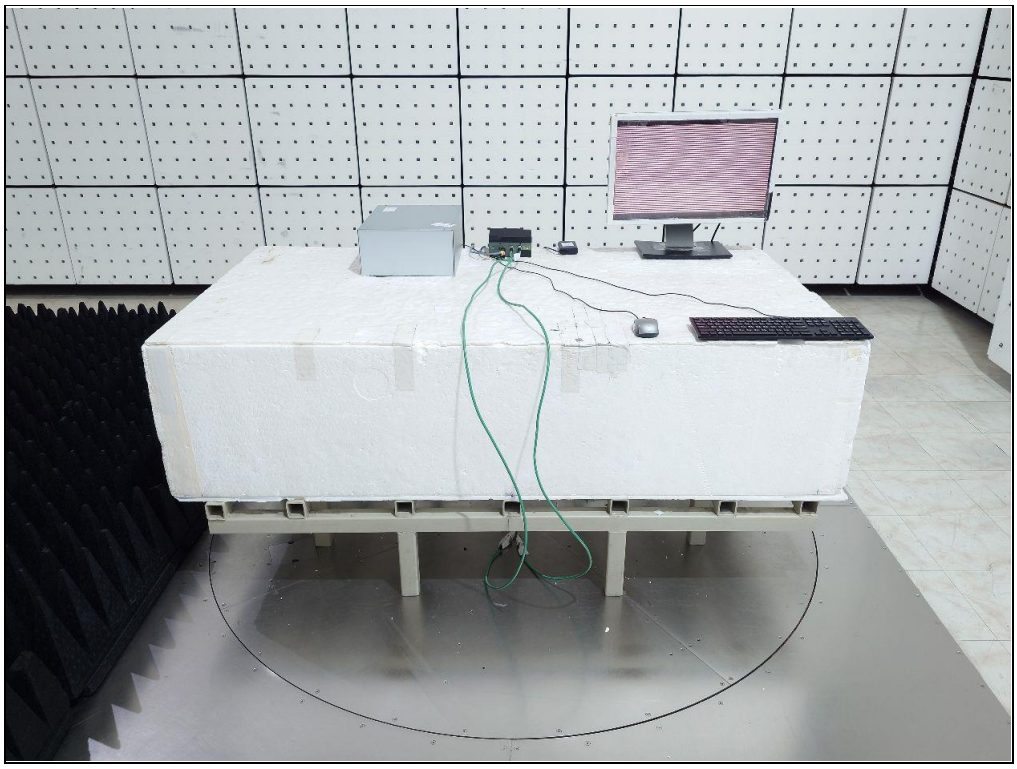
### Mode A

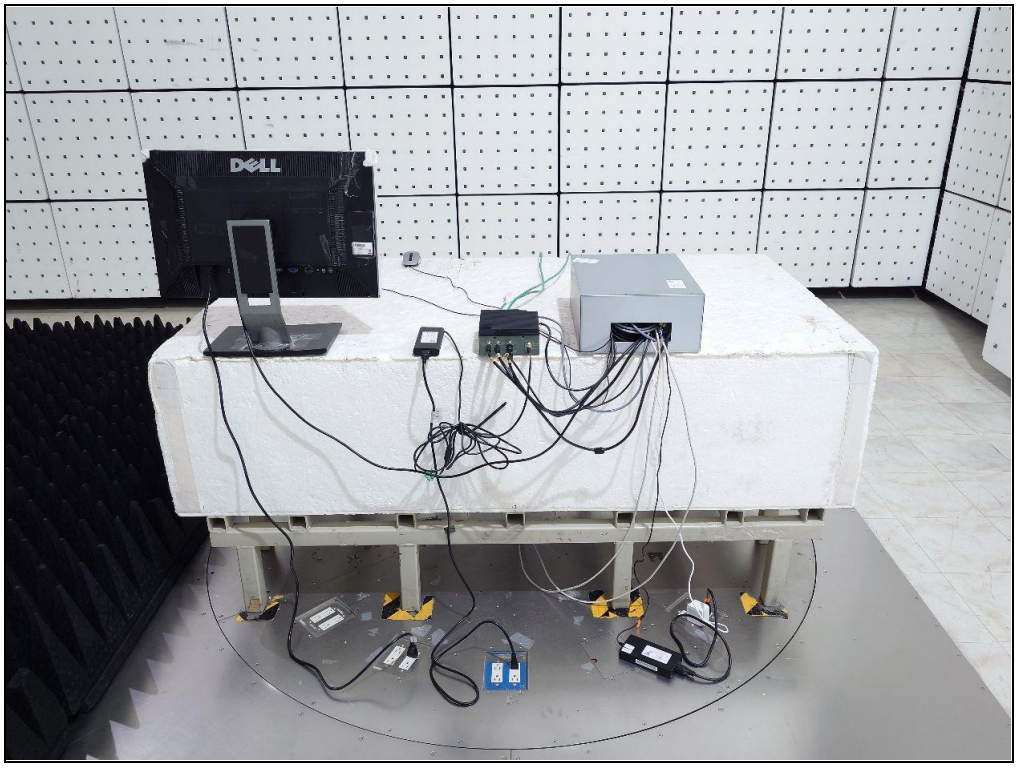




## 8.3 Radiated Emissions above 1 GHz

### Mode A





# 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.

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

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