

Partial FCC Test Report

Report No.: RFBHDI-WTW-P21120081-1

FCC ID: 2ARXKVHE09-4GL

Test Model: VHE09-4GL, VHH09-4GL

Series Model: VHE09XXXXX (X=A-Z, 0-9, blank or "-")

Received Date: Dec. 24, 2021

Test Date: Jan. 21 ~ Apr. 06, 2022

Issued Date: Apr. 22, 2022

Applicant: Veea Inc

Address: 164 E 83rd Street, New York NY, 10028, USA

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan

**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

| Issue No. | Description | Date Issued |
|------------------------|------------------|---------------|
| RFBHDI-WTW-P21120081-1 | Original Release | Apr. 22, 2022 |

1 Certificate of Conformity

Product: veeahub

Brand: 

Test Model: VHE09-4GL, VHH09-4GL

Series Model: VHE09XXXXX (X=A-Z, 0-9, blank or "-")

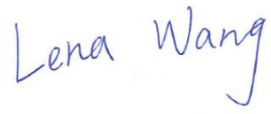
Sample Status: Engineering Sample

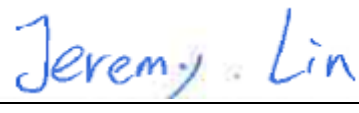
Applicant: Veeva Inc

Test Date: Jan. 21 ~ Apr. 06, 2022

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
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.

Prepared by :  _____, **Date:** Apr. 22, 2022
Lena Wang / Specialist

Approved by :  _____, **Date:** Apr. 22, 2022
Jeremy Lin / Project Engineer

2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart C (Section 15.247) | | | |
|------------------------------------------------|----------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------|
| FCC Clause | Test Item | Result | Remarks |
| 15.207 | AC Power Conducted Emission | Pass | Meet the requirement of limit. Minimum passing margin is -1.06 dB at 0.48600 MHz. |
| 15.205 / 15.209 / 15.247(d) | Radiated Emissions and Band Edge Measurement | Pass | Meet the requirement of limit. Minimum passing margin is -5.31 dB at 450.01 MHz. |
| 15.247(d) | Antenna Port Emission | N/A | Refer to note 1 |
| 15.247(a)(2) | 6dB bandwidth | N/A | Refer to note 1 |
| 15.247(b) | Conducted power | N/A | Refer to note 1 |
| 15.247(e) | Power Spectral Density | N/A | Refer to note 1 |
| 15.203 | Antenna Requirement | Pass | Chip antenna: No antenna connector is used. PIFA antenna: Antenna connector is U.FL not a standard connector. |

Note:

1. This report is a partial report. Therefore, only AC Power Conducted Emission and Radiated Emissions were verified and recorded in this report. Other testing data please refer to the original BV CPS report no.: RF200424C06-6.
2. 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 | Frequency | Expanded Uncertainty (k=2) (±) |
|------------------------------------|--------------------|--------------------------------|
| Conducted Emissions at mains ports | 150 kHz ~ 30 MHz | 2.79 dB |
| Radiated Emissions up to 1 GHz | 9 kHz ~ 30 MHz | 3.04 dB |
| | 30 MHz ~ 200 MHz | 2.93 dB |
| | 200 MHz ~ 1000 MHz | 2.95 dB |
| Radiated Emissions above 1 GHz | 1 GHz ~ 18 GHz | 2.26 dB |
| | 18 GHz ~ 40 GHz | 1.94 dB |

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

| | |
|---------------------|-----------------------------------------------------------------------------------|
| Product | veeaHub |
| Brand |  |
| Test Model | VHE09-4GL, VHH09-4GL |
| Series Model | VHE09XXXXX (X=A-Z, 0-9, blank or "-") |
| Model Difference | Marketing purposes |
| Sample Status | Engineering Sample |
| Nominal Voltage | 48Vdc (Adapter and PoE) |
| Modulation Type | GFSK |
| Transfer Rate | LE 4.0: 1Mbps LE 5.0: 2Mbps |
| Operating Frequency | 2402~2480MHz |
| Number of Channel | 40 |
| Channel Spacing | 2MHz |
| Antenna Type | Chip antenna with 6dBi gain PIFA antenna with 2.2dBi gain |
| Antenna Connector | Chip antenna: NA PIFA antenna: U.FL |
| Accessory Device | Adapter |
| Cable Supplied | NA |

Note:

1. This report is issued as a supplementary report to BV CPS report no. RF200424C06-6. The difference compared with original report is adding model name (VHH09-4GL), updating mainboard and changing WWAN Module (EG25-G MINIPCIE). Therefore, only AC Power Conducted Emission and Radiated Emissions were verified and recorded in this report. AC Power Conducted Emission and Radiated Emission tests according to original report radiated emission worst channel.

2. Model difference as below

| Model | Type | LoRa Module | LTE Module | LED for LTE Status | Power Button | USB 3.0 | Console | SD Slot | Power | PCB Design |
|-----------|---------|-------------------|------------|--------------------|--------------|---------|-----------|---------|----------------------------------|---------------------------------|
| VHE09-4GL | Indoor | RG-1008M (915MHz) | EC25A | Y | Y | Y | Y(RS-232) | Y | 65W DC-48V desktop power adapter | Same design (VHE09/VHE10/VHH10) |
| VHH09-4GL | Outdoor | RG-1008M (915MHz) | EG25G | N | N | N | Y(M.12) | N | Power adapter or PoE | |

3. The EUT uses following adapter and PoE. (Support unit)

| Adapter | |
|--------------|----------------------------------|
| Brand | EDAC Power Electronics Co., Ltd. |
| Model | EA1062SGR-480 |
| Input Power | 100-240Vac ~2.5A, 50-60Hz |
| Output Power | 48Vdc / 1.35A |
| Power Line | 1.2m DC cable with one core |

| PoE | |
|--------------|-----------|
| Model | APOE02-WM |
| Output Power | 48Vdc |

4. The EUT with Chip antenna (with maximum gain) was chosen for the Conducted Output Power Measurement test.
5. WLAN, zigbee, Bluetooth and LoRa technology can transmit at same time.
6. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
7. The EUT contains certified WWAN module with FCC ID: 2ATM8EG25G.

3.2 Description of Test Modes

40 channels are provided to this EUT:

| Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|---------|-------------|---------|-------------|---------|-------------|---------|-------------|
| 0 | 2402 | 10 | 2422 | 20 | 2442 | 30 | 2462 |
| 1 | 2404 | 11 | 2424 | 21 | 2444 | 31 | 2464 |
| 2 | 2406 | 12 | 2426 | 22 | 2446 | 32 | 2466 |
| 3 | 2408 | 13 | 2428 | 23 | 2448 | 33 | 2468 |
| 4 | 2410 | 14 | 2430 | 24 | 2450 | 34 | 2470 |
| 5 | 2412 | 15 | 2432 | 25 | 2452 | 35 | 2472 |
| 6 | 2414 | 16 | 2434 | 26 | 2454 | 36 | 2474 |
| 7 | 2416 | 17 | 2436 | 27 | 2456 | 37 | 2476 |
| 8 | 2418 | 18 | 2438 | 28 | 2458 | 38 | 2478 |
| 9 | 2420 | 19 | 2440 | 29 | 2460 | 39 | 2480 |

3.2.1 Test Mode Applicability and Tested Channel Detail

| EUT Configure Mode | Applicable to | | | Description | |
|--------------------|---------------|-----------|-----|--------------|--------------------|
| | RE \geq 1G | RE $<$ 1G | PLC | Antenna | Power |
| A | √ | √ | √ | Chip Antenna | Power from adapter |
| B | - | √ | √ | | Power from PoE |
| C | √ | √ | √ | PIFA Antenna | Power from adapter |
| D | - | √ | √ | | Power from PoE |

Where RE \geq 1G: Radiated Emission above 1GHz & Bandedge Measurement
 RE $<$ 1G: Radiated Emission below 1 GHz
 PLC: Power Line Conducted Emission

Note: The antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane.

Radiated Emission Test (Above 1GHz):

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

| EUT Configure Mode | Available Channel | Tested Channel | Modulation Technology | Data Rate (Mbps) |
|--------------------|-------------------|----------------|-----------------------|------------------|
| A, C | 0 to 39 | 39 | GFSK | 1 |

Radiated Emission Test (Below 1 GHz):

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

| EUT Configure Mode | Available Channel | Tested Channel | Modulation Type | Data Rate (Mbps) |
|--------------------|-------------------|----------------|-----------------|------------------|
| A, B, C, D | 0 to 39 | 39 | GFSK | 1 |

Power Line Conducted Emission Test:

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

| EUT Configure Mode | Available Channel | Tested Channel | Modulation Technology | Data Rate (Mbps) |
|--------------------|-------------------|----------------|-----------------------|------------------|
| A, B, C, D | 0 to 39 | 39 | GFSK | 1 |

Test Condition:

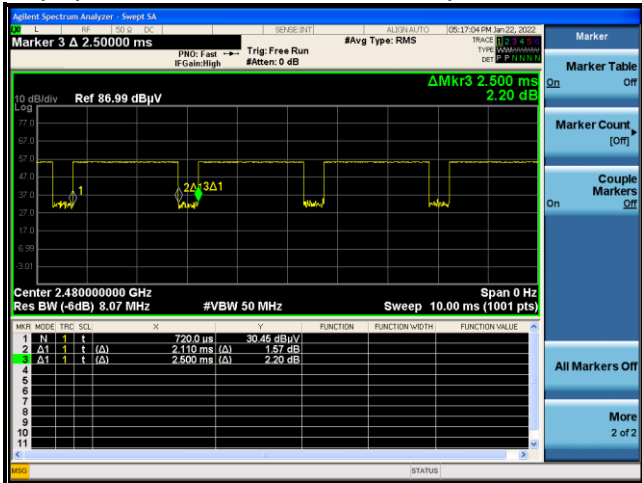
| Applicable to | Environmental Conditions | Input Power | Tested by |
|---------------|--------------------------|--------------------------|--------------|
| RE \geq 1G | 21 deg. C, 73 % RH | 120 Vac, 60 Hz | Vincent Chen |
| RE $<$ 1G | 23 deg. C, 65 % RH | 120 Vac, 60 Hz | Vincent Chen |
| PLC | 25 deg. C, 75 % RH | 120 Vac, 60 Hz 48 Vdc | Vincent Chen |

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor shall be considered.

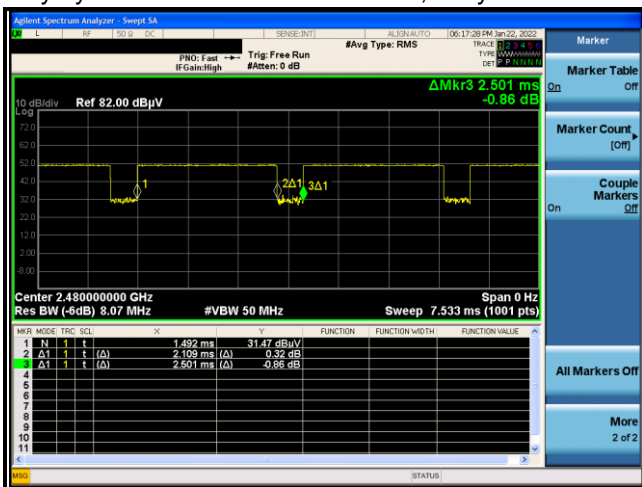
For Chip Antenna

Duty cycle = $0.211/0.250 = 0.844$, Duty factor = $10 * \log(1/0.844) = 0.737$



For PIFA Antenna

Duty cycle = $0.2109/0.2501 = 0.843$, Duty factor = $10 * \log(1/0.843) = 0.742$



3.4 Description of Support Units

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

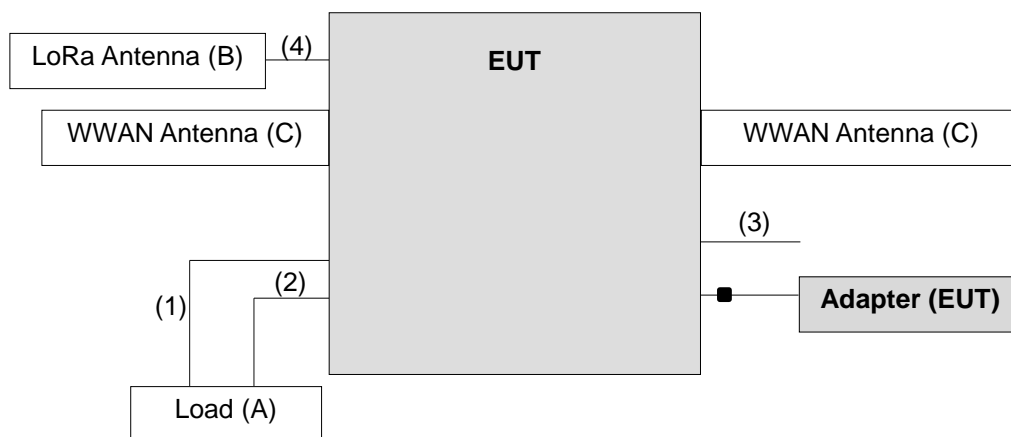
| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|--------------|-------|----------------|---------------|--------|--------------------------|
| A. | Load | NA | NA | NA | NA | - |
| B. | LoRa Antenna | PCTEL | MFB9155NF | NA | NA | Provided by manufacturer |
| C. | WWAN Antenna | 2J | 2J2124W -C315N | NA | NA | Provided by manufacturer |
| D. | PoE | NA | TL-POE16S | 4215031002252 | NA | - |

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

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|--------------------|------|------------|--------------------|--------------|-------------|
| 1. | LAN cable | 1 | 0.4 | N | 0 | RJ45, Cat5e |
| 2. | LAN cable | 1 | 0.4 | N | 0 | RJ45, Cat5e |
| 3. | RS232 cable | 1 | 0.4 | Y | 0 | - |
| 4. | Coaxial cable | 1 | 1.5 | Y | 0 | - |

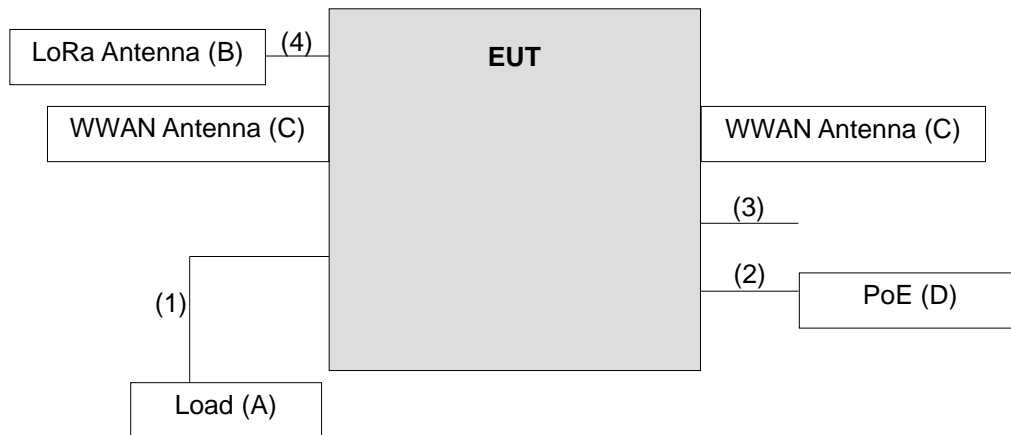
3.4.1 Configuration of System under Test

Adapter Mode



Remote site

PoE Mode



Remote site

3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test standard:

FCC Part 15, Subpart C (15.247)

ANSI C63.10-2013

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

References Test Guidance:

KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009 ~ 0.490 | 2400/F(kHz) | 300 |
| 0.490 ~ 1.705 | 24000/F(kHz) | 30 |
| 1.705 ~ 30.0 | 30 | 30 |
| 30 ~ 88 | 100 | 3 |
| 88 ~ 216 | 150 | 3 |
| 216 ~ 960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|------------------------------------------------|-------------------|---------------------------|---------------|---------------|
| Spectrum Analyzer Agilent | N9010A | MY52220207 | Jan. 06, 2022 | Jan. 05, 2023 |
| Test Receiver Agilent | N9038A | MY51210203 | Sep. 22, 2021 | Sep. 21, 2022 |
| Spectrum Analyzer ROHDE & SCHWARZ | FSU43 | 101261 | Apr. 12, 2021 | Apr. 11, 2022 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | BBHA9170243 | Nov. 14, 2021 | Nov. 13, 2022 |
| HORN Antenna SCHWARZBECK | BBHA 9120D | 9120D-969 | Nov. 14, 2021 | Nov. 13, 2022 |
| BILOG Antenna SCHWARZBECK | VULB 9168 | 9168-472 | Oct. 28, 2021 | Oct. 27, 2022 |
| Preamplifier EMCI | EMC 012645 | 980115 | Oct. 05, 2021 | Oct. 04, 2022 |
| Preamplifier EMCI | EMC 330H | 980112 | Oct. 05, 2021 | Oct. 04, 2022 |
| RF Coaxial Cable EMCI | EMC104-SM-SM-8000 | 171005 | Oct. 05, 2021 | Oct. 04, 2022 |
| RF Coaxial Cable HUBER+SUHNNER | SUCOFLEX 104 | EMC104-SM-SM-1000(140807) | Oct. 05, 2021 | Oct. 04, 2022 |
| RF Coaxial Cable WOKEN | 8D-FB | Cable-Ch10-01 | Oct. 05, 2021 | Oct. 04, 2022 |
| Boresight Antenna Fixture | FBA-01 | FBA-SIP01 | NA | NA |
| Software BV ADT | E3 6.120103 | NA | NA | NA |
| Antenna Tower MF | MFA-440H | NA | NA | NA |
| Turn Table MF | MFT-201SS | NA | NA | NA |
| Antenna Tower & Turn Table Controller MF | MF-7802 | NA | NA | NA |

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

4.1.3 Test Procedures

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

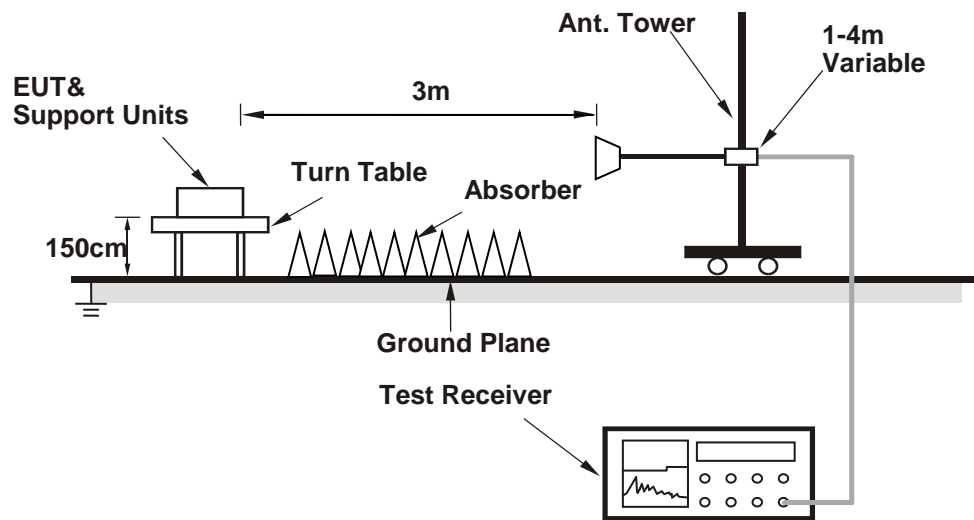
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or $3 \times RBW$ (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz. (LE 1M: RBW = 1 MHz, VBW = 5.1 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

No deviation.

4.1.5 Test Setup

For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

- a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

BT LE 4.0

Mode A

| | | | |
|------------------------|--------------|--------------------------|---------------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 1GHz ~ 25GHz | Detector Function | Peak (PK) Average (AV) |

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 | *2480.00 | 91.44 PK | | | 2.49 H | 283 | 60.58 | 30.86 |
| 2 | *2480.00 | 90.36 AV | | | 2.49 H | 283 | 59.50 | 30.86 |
| 3 | 2483.50 | 65.96 PK | 74.00 | -8.04 | 2.49 H | 283 | 35.09 | 30.87 |
| 4 | 2483.50 | 47.93 AV | 54.00 | -6.07 | 2.49 H | 283 | 17.06 | 30.87 |
| 5 | 4960.00 | 42.55 PK | 74.00 | -31.45 | 1.07 H | 214 | 58.34 | -15.79 |
| 6 | 4960.00 | 32.33 AV | 54.00 | -21.67 | 1.07 H | 214 | 48.12 | -15.79 |

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 | *2480.00 | 86.12 PK | | | 2.20 V | 247 | 55.26 | 30.86 |
| 2 | *2480.00 | 84.95 AV | | | 2.20 V | 247 | 54.09 | 30.86 |
| 3 | 2483.50 | 61.75 PK | 74.00 | -12.25 | 2.20 V | 247 | 30.88 | 30.87 |
| 4 | 2483.50 | 46.53 AV | 54.00 | -7.47 | 2.20 V | 247 | 15.66 | 30.87 |
| 5 | 4960.00 | 41.50 PK | 74.00 | -32.50 | 2.32 V | 307 | 57.29 | -15.79 |
| 6 | 4960.00 | 31.44 AV | 54.00 | -22.56 | 2.32 V | 307 | 47.23 | -15.79 |

Remarks:

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

Mode D

| | | | |
|------------------------|--------------|--------------------------|---------------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 1GHz ~ 25GHz | Detector Function | Peak (PK) Average (AV) |

| 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 | *2480.00 | 87.28 PK | | | 2.85 H | 42 | 56.42 | 30.86 |
| 2 | *2480.00 | 86.06 AV | | | 2.85 H | 42 | 55.20 | 30.86 |
| 3 | 2483.50 | 62.32 PK | 74.00 | -11.68 | 2.11 H | 42 | 31.45 | 30.87 |
| 4 | 2483.50 | 46.64 AV | 54.00 | -7.36 | 2.11 H | 42 | 15.77 | 30.87 |
| 5 | 4960.00 | 42.45 PK | 74.00 | -31.55 | 1.39 H | 327 | 58.24 | -15.79 |
| 6 | 4960.00 | 32.44 AV | 54.00 | -21.56 | 1.39 H | 327 | 48.23 | -15.79 |

| 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 | *2480.00 | 86.36 PK | | | 1.95 V | 253 | 55.50 | 30.86 |
| 2 | *2480.00 | 85.18 AV | | | 1.95 V | 253 | 54.32 | 30.86 |
| 3 | 2483.50 | 61.21 PK | 74.00 | -12.79 | 2.03 V | 254 | 30.34 | 30.87 |
| 4 | 2483.50 | 46.48 AV | 54.00 | -7.52 | 2.03 V | 254 | 15.61 | 30.87 |
| 5 | 4960.00 | 41.44 PK | 74.00 | -32.56 | 1.78 V | 332 | 57.23 | -15.79 |
| 6 | 4960.00 | 31.40 AV | 54.00 | -22.60 | 1.78 V | 332 | 47.19 | -15.79 |

Remarks:

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

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

30 MHz ~ 1 GHz Worst-Case Data:

<LE 4.0>

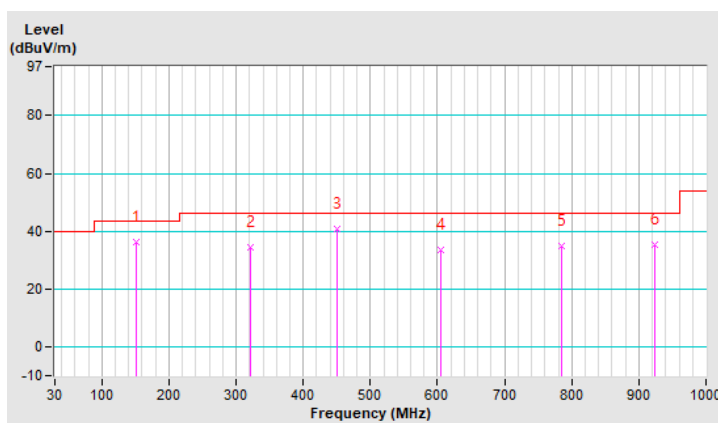
Mode A

| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 150.28 | 36.19 QP | 43.50 | -7.31 | 1.34 H | 194 | 48.33 | -12.14 |
| 2 | 321.00 | 34.39 QP | 46.00 | -11.61 | 2.25 H | 235 | 45.56 | -11.17 |
| 3 | 450.01 | 40.69 QP | 46.00 | -5.31 | 1.78 H | 242 | 48.08 | -7.39 |
| 4 | 604.24 | 33.38 QP | 46.00 | -12.62 | 2.63 H | 174 | 36.83 | -3.45 |
| 5 | 784.66 | 34.84 QP | 46.00 | -11.16 | 1.15 H | 154 | 34.81 | 0.03 |
| 6 | 923.37 | 35.46 QP | 46.00 | -10.54 | 2.23 H | 41 | 33.27 | 2.19 |

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

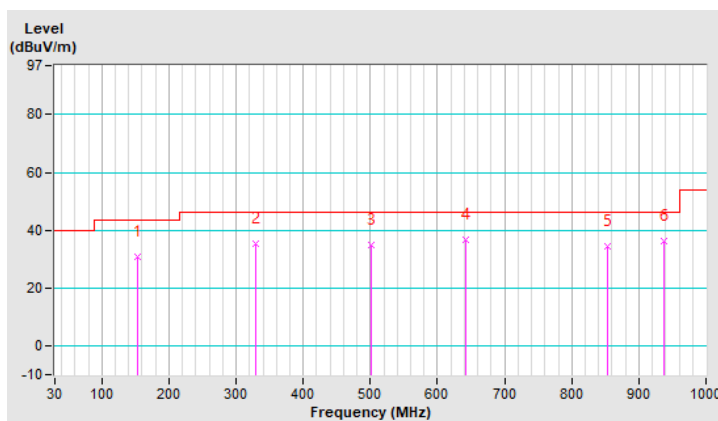


| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 153.19 | 30.67 QP | 43.50 | -12.83 | 1.74 V | 147 | 42.92 | -12.25 |
| 2 | 329.73 | 35.56 QP | 46.00 | -10.44 | 2.32 V | 90 | 46.44 | -10.88 |
| 3 | 500.45 | 34.72 QP | 46.00 | -11.28 | 1.67 V | 83 | 40.80 | -6.08 |
| 4 | 643.04 | 36.61 QP | 46.00 | -9.39 | 2.20 V | 31 | 39.19 | -2.58 |
| 5 | 853.53 | 34.57 QP | 46.00 | -11.43 | 1.34 V | 4 | 33.50 | 1.07 |
| 6 | 937.92 | 36.12 QP | 46.00 | -9.88 | 1.97 V | 222 | 33.73 | 2.39 |

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 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



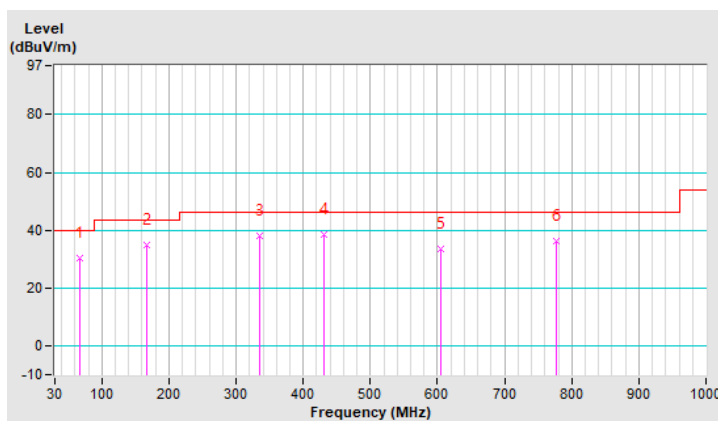
Mode B

| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 66.86 | 30.20 QP | 40.00 | -9.80 | 1.53 H | 257 | 44.45 | -14.25 |
| 2 | 167.74 | 34.73 QP | 43.50 | -8.77 | 2.38 H | 245 | 47.65 | -12.92 |
| 3 | 335.55 | 38.10 QP | 46.00 | -7.90 | 2.14 H | 297 | 48.78 | -10.68 |
| 4 | 431.58 | 38.52 QP | 46.00 | -7.48 | 2.50 H | 281 | 46.53 | -8.01 |
| 5 | 604.24 | 33.38 QP | 46.00 | -12.62 | 2.77 H | 174 | 36.83 | -3.45 |
| 6 | 776.90 | 36.34 QP | 46.00 | -9.66 | 3.02 H | 165 | 36.39 | -0.05 |

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

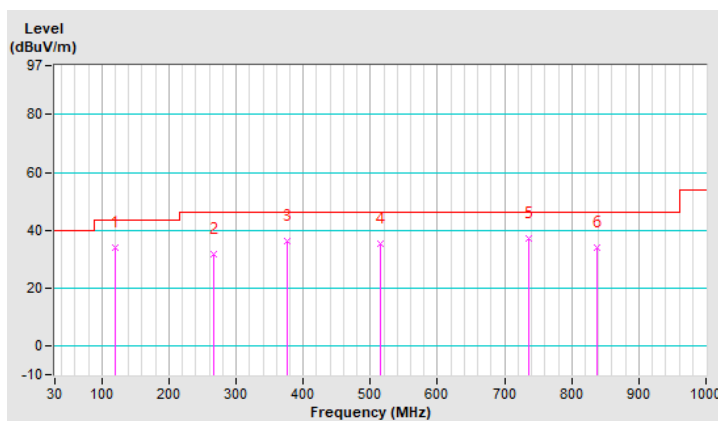


| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 120.21 | 34.07 QP | 43.50 | -9.43 | 3.04 V | 113 | 48.41 | -14.34 |
| 2 | 266.68 | 31.72 QP | 46.00 | -14.28 | 2.66 V | 349 | 45.43 | -13.71 |
| 3 | 375.32 | 36.03 QP | 46.00 | -9.97 | 1.92 V | 96 | 45.70 | -9.67 |
| 4 | 515.97 | 35.43 QP | 46.00 | -10.57 | 2.40 V | 223 | 41.25 | -5.82 |
| 5 | 736.16 | 37.18 QP | 46.00 | -8.82 | 1.52 V | 279 | 38.17 | -0.99 |
| 6 | 838.01 | 34.09 QP | 46.00 | -11.91 | 2.86 V | 171 | 32.97 | 1.12 |

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 of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



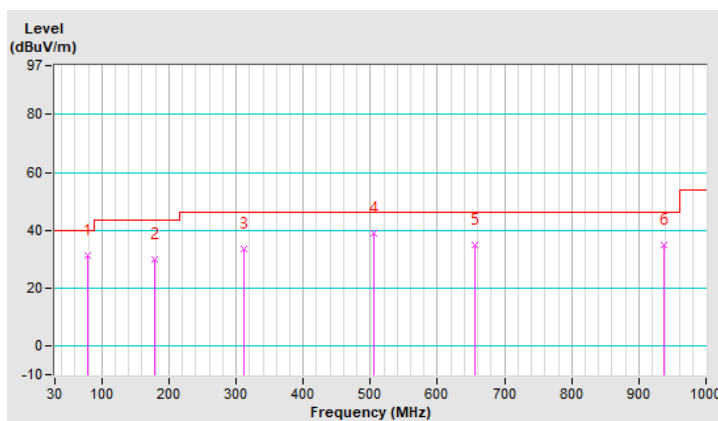
Mode C

| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 79.47 | 31.48 QP | 40.00 | -8.52 | 1.65 H | 231 | 48.92 | -17.44 |
| 2 | 179.38 | 29.93 QP | 43.50 | -13.57 | 1.87 H | 265 | 44.10 | -14.17 |
| 3 | 311.30 | 33.41 QP | 46.00 | -12.59 | 2.25 H | 337 | 44.95 | -11.54 |
| 4 | 505.30 | 38.96 QP | 46.00 | -7.04 | 1.06 H | 122 | 44.95 | -5.99 |
| 5 | 655.65 | 34.96 QP | 46.00 | -11.04 | 1.11 H | 26 | 37.49 | -2.53 |
| 6 | 937.92 | 35.02 QP | 46.00 | -10.98 | 1.05 H | 283 | 32.63 | 2.39 |

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 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

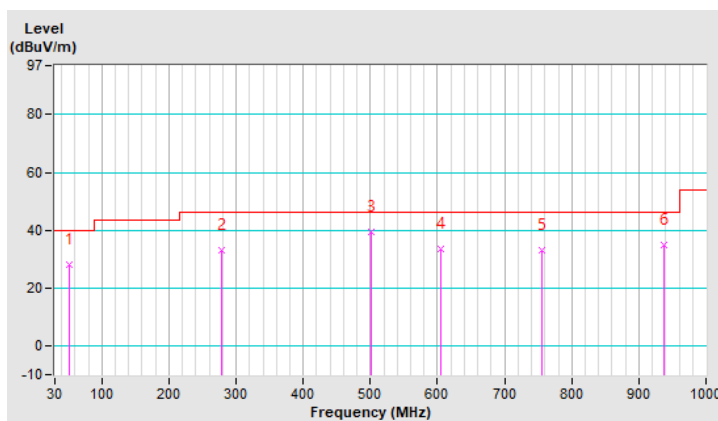


| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 51.34 | 28.11 QP | 40.00 | -11.89 | 3.14 V | 305 | 40.72 | -12.61 |
| 2 | 278.32 | 33.24 QP | 46.00 | -12.76 | 2.27 V | 34 | 46.40 | -13.16 |
| 3 | 500.45 | 39.40 QP | 46.00 | -6.60 | 1.89 V | 111 | 45.48 | -6.08 |
| 4 | 605.21 | 33.54 QP | 46.00 | -12.46 | 2.64 V | 236 | 36.95 | -3.41 |
| 5 | 755.56 | 33.04 QP | 46.00 | -12.96 | 1.03 V | 228 | 33.53 | -0.49 |
| 6 | 937.92 | 35.02 QP | 46.00 | -10.98 | 2.22 V | 283 | 32.63 | 2.39 |

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 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



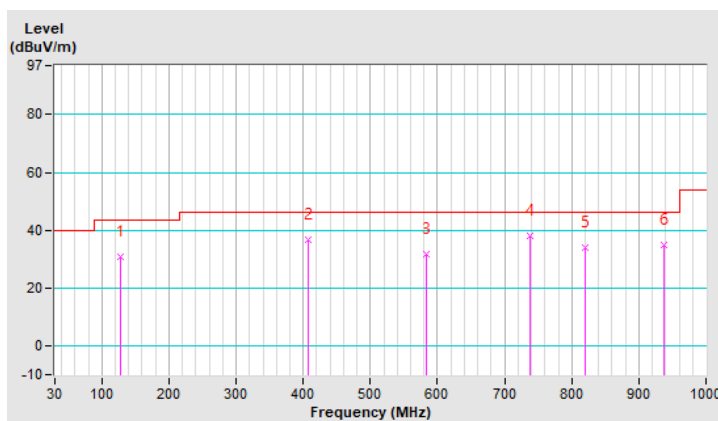
Mode D

| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 127.00 | 30.91 QP | 43.50 | -12.59 | 1.74 H | 243 | 44.71 | -13.80 |
| 2 | 407.33 | 36.81 QP | 46.00 | -9.19 | 2.52 H | 286 | 45.89 | -9.08 |
| 3 | 582.90 | 31.76 QP | 46.00 | -14.24 | 1.87 H | 275 | 35.88 | -4.12 |
| 4 | 738.10 | 38.27 QP | 46.00 | -7.73 | 3.32 H | 268 | 39.21 | -0.94 |
| 5 | 819.58 | 34.03 QP | 46.00 | -11.97 | 1.52 H | 81 | 33.21 | 0.82 |
| 6 | 937.92 | 35.02 QP | 46.00 | -10.98 | 3.02 H | 283 | 32.63 | 2.39 |

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 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

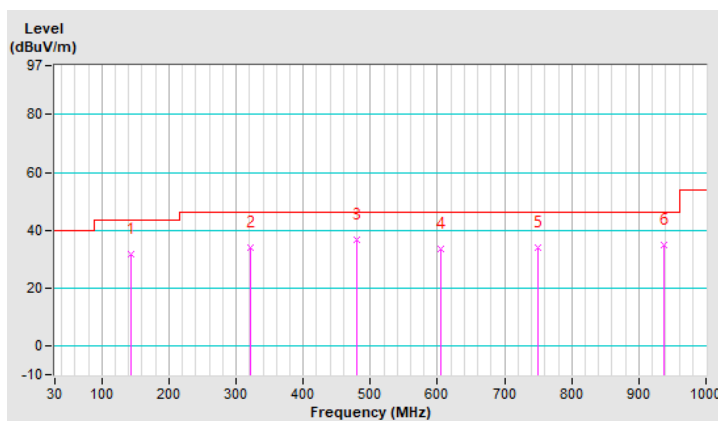


| | | | |
|------------------------|--------------|--------------------------|------------------|
| RF Mode | TX BT-LE 1M | Channel | CH 39 : 2480 MHz |
| Frequency Range | 30MHz ~ 1GHz | Detector Function | Quasi-Peak (QP) |

| 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 | 143.49 | 31.59 QP | 43.50 | -11.91 | 3.12 V | 310 | 43.93 | -12.34 |
| 2 | 321.00 | 33.76 QP | 46.00 | -12.24 | 1.41 V | 236 | 44.93 | -11.17 |
| 3 | 480.08 | 36.86 QP | 46.00 | -9.14 | 1.17 V | 342 | 43.68 | -6.82 |
| 4 | 605.21 | 33.54 QP | 46.00 | -12.46 | 2.62 V | 236 | 36.95 | -3.41 |
| 5 | 749.74 | 33.86 QP | 46.00 | -12.14 | 3.25 V | 313 | 34.36 | -0.50 |
| 6 | 937.92 | 35.02 QP | 46.00 | -10.98 | 1.08 V | 283 | 32.63 | 2.39 |

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 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---------------------------------------------|--------------------------|----------------|---------------|---------------|
| Test Receiver ROHDE & SCHWARZ | ESR3 | 102783 | Dec. 20, 2021 | Dec. 19, 2022 |
| RF signal cable (with 10dB PAD) Woken | 5D-FB | Cable-cond2-01 | Sep. 04, 2021 | Sep. 03, 2022 |
| LISN/AMN ROHDE & SCHWARZ (EUT) | ESH2-Z5 | 100100 | Feb. 17, 2022 | Feb. 16, 2023 |
| LISN/AMN ROHDE & SCHWARZ (Peripheral) | ESH3-Z5 | 100312 | Sep. 17, 2021 | Sep. 16, 2022 |
| Software ADT | BV ADT_Cond_ V7.3.7.4 | NA | NA | NA |

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 2 (Conduction 2).
 3. The VCCI Site Registration No. is C-12047.

4.2.3 Test Procedures

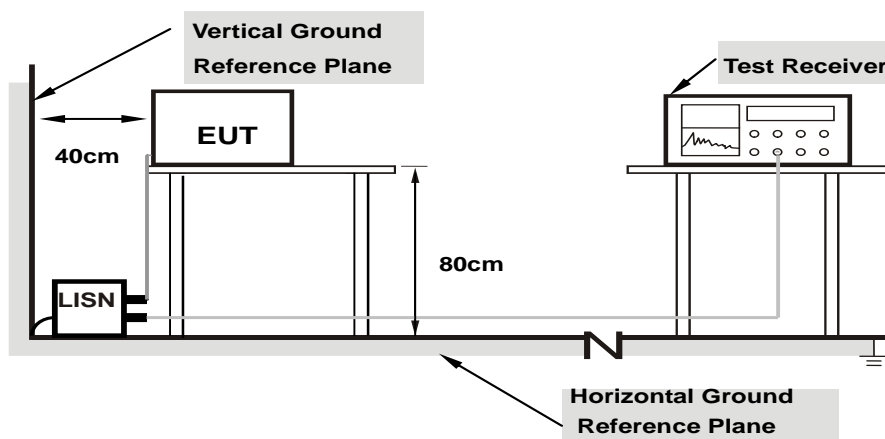
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 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).

4.2.6 EUT Operating Conditions

Same as item 4.1.6.

4.2.7 Test Results

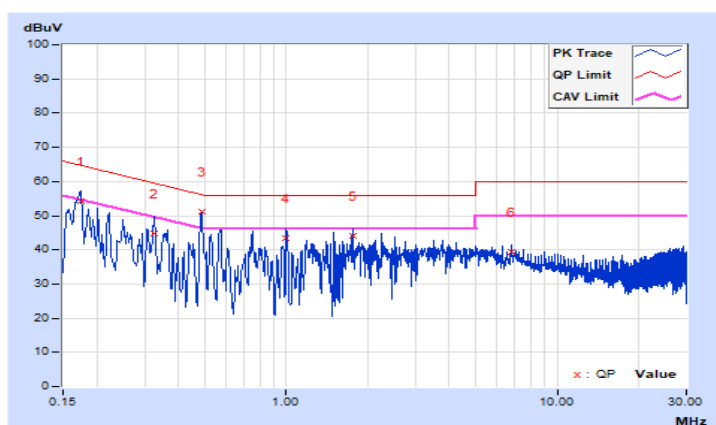
Mode A

| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/3/28 |

| 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 | 0.17400 | 10.14 | 44.09 | 31.44 | 54.23 | 41.58 | 64.77 | 54.77 | -10.54 | -13.19 |
| 2 | 0.32600 | 10.21 | 34.47 | 26.48 | 44.68 | 36.69 | 59.55 | 49.55 | -14.87 | -12.86 |
| 3 | 0.48600 | 10.25 | 40.99 | 34.93 | 51.24 | 45.18 | 56.24 | 46.24 | -5.00 | -1.06 |
| 4 | 1.00200 | 10.30 | 33.03 | 31.87 | 43.33 | 42.17 | 56.00 | 46.00 | -12.67 | -3.83 |
| 5 | 1.75400 | 10.35 | 33.61 | 30.00 | 43.96 | 40.35 | 56.00 | 46.00 | -12.04 | -5.65 |
| 6 | 6.77000 | 10.43 | 28.80 | 23.83 | 39.23 | 34.26 | 60.00 | 50.00 | -20.77 | -15.74 |

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

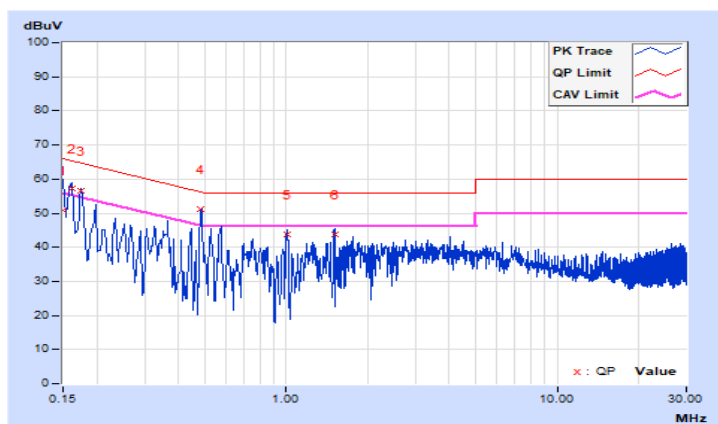


| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/3/28 |

| 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 | 0.15000 | 10.14 | 40.56 | 22.04 | 50.70 | 32.18 | 66.00 | 56.00 | -15.30 | -23.82 |
| 2 | 0.16148 | 10.15 | 47.17 | 31.00 | 57.32 | 41.15 | 65.39 | 55.39 | -8.07 | -14.24 |
| 3 | 0.17400 | 10.16 | 46.26 | 36.62 | 56.42 | 46.78 | 64.77 | 54.77 | -8.35 | -7.99 |
| 4 | 0.48572 | 10.27 | 40.83 | 34.84 | 51.10 | 45.11 | 56.24 | 46.24 | -5.14 | -1.13 |
| 5 | 1.00600 | 10.31 | 33.31 | 29.44 | 43.62 | 39.75 | 56.00 | 46.00 | -12.38 | -6.25 |
| 6 | 1.50600 | 10.34 | 33.29 | 28.83 | 43.63 | 39.17 | 56.00 | 46.00 | -12.37 | -6.83 |

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



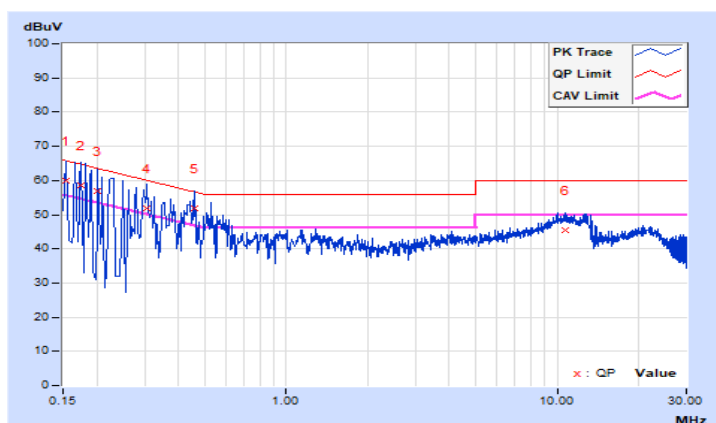
Mode B

| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 48Vdc | Environmental Conditions | 25 °C, 75% RH |
| Tested by | Vincent Chen | Test Date | 2022/3/28 |

| 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 | 10.13 | 49.64 | 28.52 | 59.77 | 38.65 | 65.78 | 55.78 | -6.01 | -17.13 |
| 2 | 0.17400 | 10.13 | 48.36 | 19.36 | 58.49 | 29.49 | 64.77 | 54.77 | -6.28 | -25.28 |
| 3 | 0.20200 | 10.14 | 46.85 | 18.57 | 56.99 | 28.71 | 63.53 | 53.53 | -6.54 | -24.82 |
| 4 | 0.30600 | 10.15 | 41.58 | 30.90 | 51.73 | 41.05 | 60.08 | 50.08 | -8.35 | -9.03 |
| 5 | 0.45800 | 10.16 | 41.69 | 28.56 | 51.85 | 38.72 | 56.73 | 46.73 | -4.88 | -8.01 |
| 6 | 10.78200 | 10.30 | 35.20 | 28.81 | 45.50 | 39.11 | 60.00 | 50.00 | -14.50 | -10.89 |

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

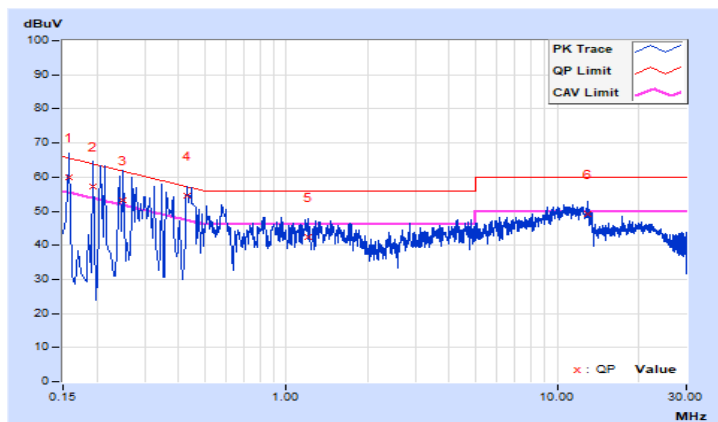


| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 48Vdc | Environmental Conditions | 25 °C, 75% RH |
| Tested by | Vincent Chen | Test Date | 2022/3/28 |

| 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 | 10.14 | 49.67 | 24.07 | 59.81 | 34.21 | 65.57 | 55.57 | -5.76 | -21.36 |
| 2 | 0.19400 | 10.15 | 47.01 | 19.41 | 57.16 | 29.56 | 63.86 | 53.86 | -6.70 | -24.30 |
| 3 | 0.25000 | 10.16 | 43.18 | 20.18 | 53.34 | 30.34 | 61.76 | 51.76 | -8.42 | -21.42 |
| 4 | 0.43000 | 10.17 | 44.22 | 32.36 | 54.39 | 42.53 | 57.25 | 47.25 | -2.86 | -4.72 |
| 5 | 1.20600 | 10.21 | 32.24 | 19.90 | 42.45 | 30.11 | 56.00 | 46.00 | -13.55 | -15.89 |
| 6 | 13.04200 | 10.40 | 38.89 | 34.36 | 49.29 | 44.76 | 60.00 | 50.00 | -10.71 | -5.24 |

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



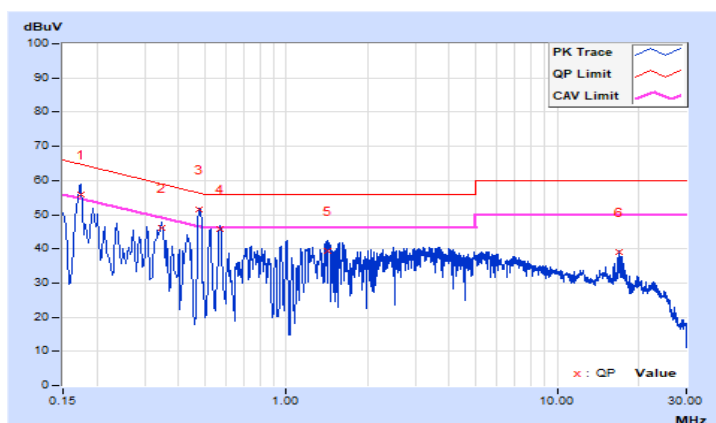
Mode C

| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/4/6 |

| 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 | 0.17384 | 10.14 | 45.87 | 37.63 | 56.01 | 47.77 | 64.77 | 54.77 | -8.76 | -7.00 |
| 2 | 0.34577 | 10.22 | 35.85 | 30.81 | 46.07 | 41.03 | 59.06 | 49.06 | -12.99 | -8.03 |
| 3 | 0.47684 | 10.25 | 41.33 | 34.96 | 51.58 | 45.21 | 56.39 | 46.39 | -4.81 | -1.18 |
| 4 | 0.57000 | 10.26 | 35.62 | 33.62 | 45.88 | 43.88 | 56.00 | 46.00 | -10.12 | -2.12 |
| 5 | 1.43000 | 10.33 | 29.17 | 21.99 | 39.50 | 32.32 | 56.00 | 46.00 | -16.50 | -13.68 |
| 6 | 16.88600 | 10.55 | 28.58 | 26.51 | 39.13 | 37.06 | 60.00 | 50.00 | -20.87 | -12.94 |

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

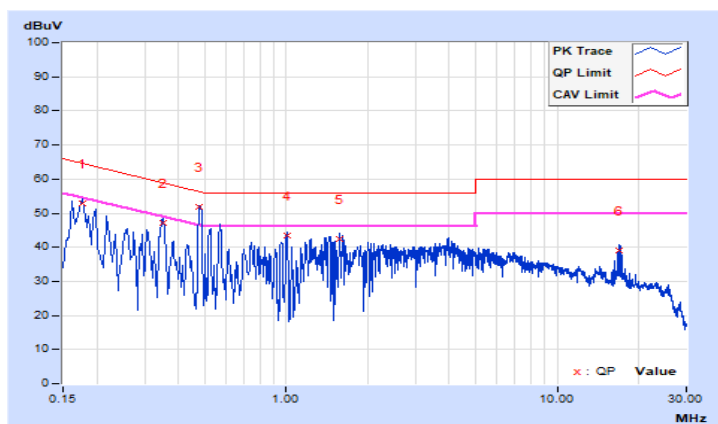


| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/4/6 |

| 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 | 0.17754 | 10.17 | 42.66 | 34.33 | 52.83 | 44.50 | 64.60 | 54.60 | -11.77 | -10.10 |
| 2 | 0.35000 | 10.24 | 37.03 | 33.45 | 47.27 | 43.69 | 58.96 | 48.96 | -11.69 | -5.27 |
| 3 | 0.47800 | 10.27 | 41.47 | 34.05 | 51.74 | 44.32 | 56.37 | 46.37 | -4.63 | -2.05 |
| 4 | 1.00600 | 10.31 | 33.18 | 28.36 | 43.49 | 38.67 | 56.00 | 46.00 | -12.51 | -7.33 |
| 5 | 1.56600 | 10.34 | 32.10 | 24.31 | 42.44 | 34.65 | 56.00 | 46.00 | -13.56 | -11.35 |
| 6 | 16.88600 | 10.67 | 28.34 | 26.36 | 39.01 | 37.03 | 60.00 | 50.00 | -20.99 | -12.97 |

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



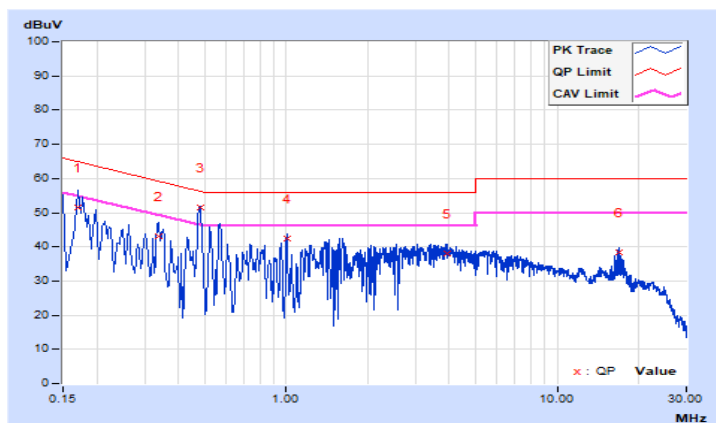
Mode D

| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 48Vdc | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/4/6 |

| 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 | 0.17000 | 10.14 | 41.54 | 32.80 | 51.68 | 42.94 | 64.96 | 54.96 | -13.28 | -12.02 |
| 2 | 0.33800 | 10.22 | 32.95 | 21.07 | 43.17 | 31.29 | 59.25 | 49.25 | -16.08 | -17.96 |
| 3 | 0.48063 | 10.25 | 41.26 | 34.75 | 51.51 | 45.00 | 56.33 | 46.33 | -4.82 | -1.33 |
| 4 | 1.00600 | 10.30 | 32.16 | 27.15 | 42.46 | 37.45 | 56.00 | 46.00 | -13.54 | -8.55 |
| 5 | 3.90600 | 10.40 | 27.62 | 17.38 | 38.02 | 27.78 | 56.00 | 46.00 | -17.98 | -18.22 |
| 6 | 16.88600 | 10.55 | 27.93 | 25.66 | 38.48 | 36.21 | 60.00 | 50.00 | -21.52 | -13.79 |

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

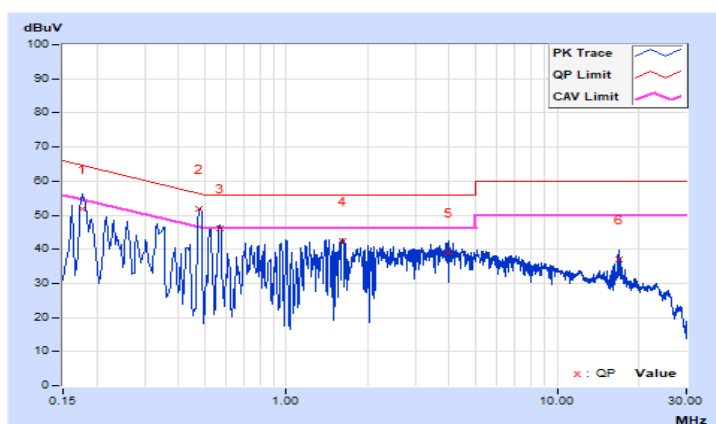


| | | | |
|------------------------|----------------|-----------------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 48Vdc | Environmental Conditions | 23 °C, 72% RH |
| Tested by | Vincent Chen | Test Date | 2022/4/6 |

| 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 | 0.17800 | 10.17 | 41.52 | 33.59 | 51.69 | 43.76 | 64.58 | 54.58 | -12.89 | -10.82 |
| 2 | 0.47684 | 10.27 | 41.43 | 34.00 | 51.70 | 44.27 | 56.39 | 46.39 | -4.69 | -2.12 |
| 3 | 0.56591 | 10.27 | 35.94 | 34.05 | 46.21 | 44.32 | 56.00 | 46.00 | -9.79 | -1.68 |
| 4 | 1.61400 | 10.34 | 32.11 | 26.37 | 42.45 | 36.71 | 56.00 | 46.00 | -13.55 | -9.29 |
| 5 | 3.95400 | 10.40 | 28.54 | 16.16 | 38.94 | 26.56 | 56.00 | 46.00 | -17.06 | -19.44 |
| 6 | 16.89000 | 10.67 | 26.43 | 23.99 | 37.10 | 34.66 | 60.00 | 50.00 | -22.90 | -15.34 |

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

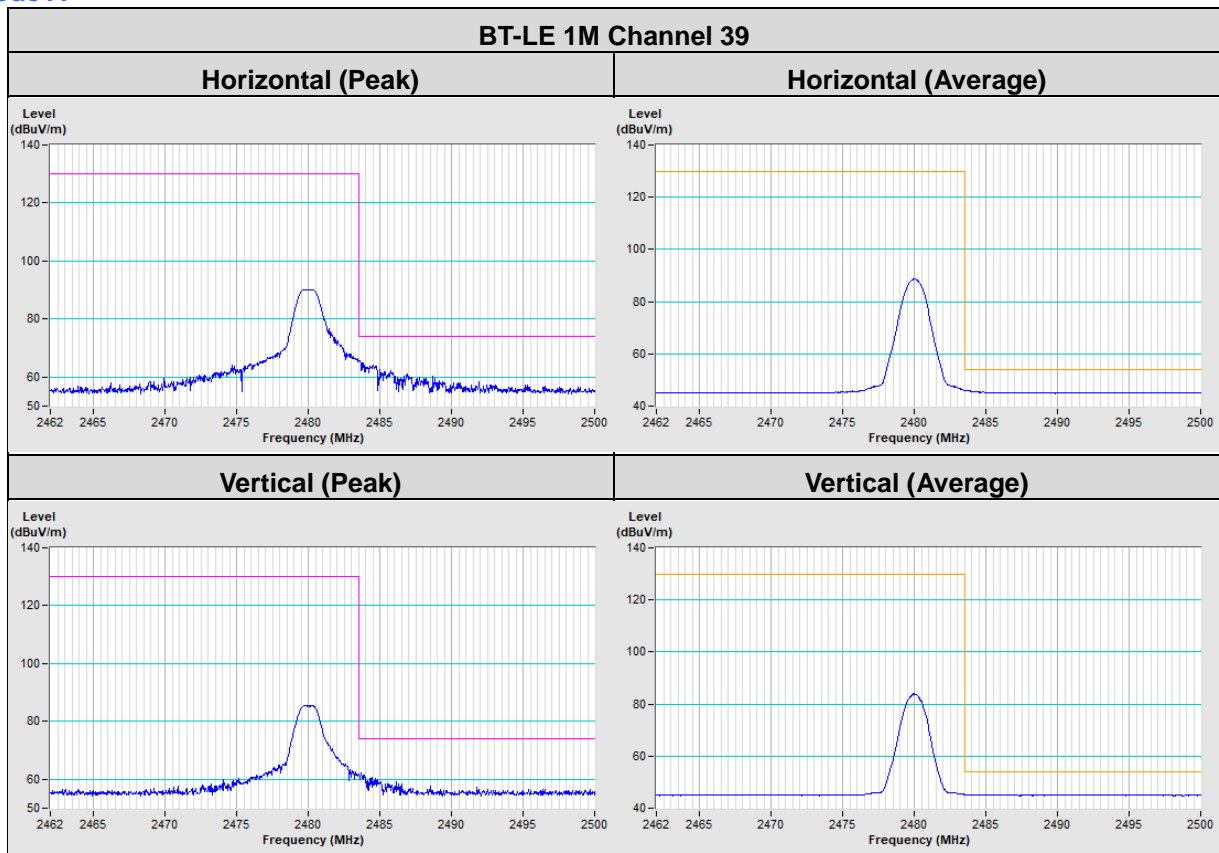


5 Pictures of Test Arrangements

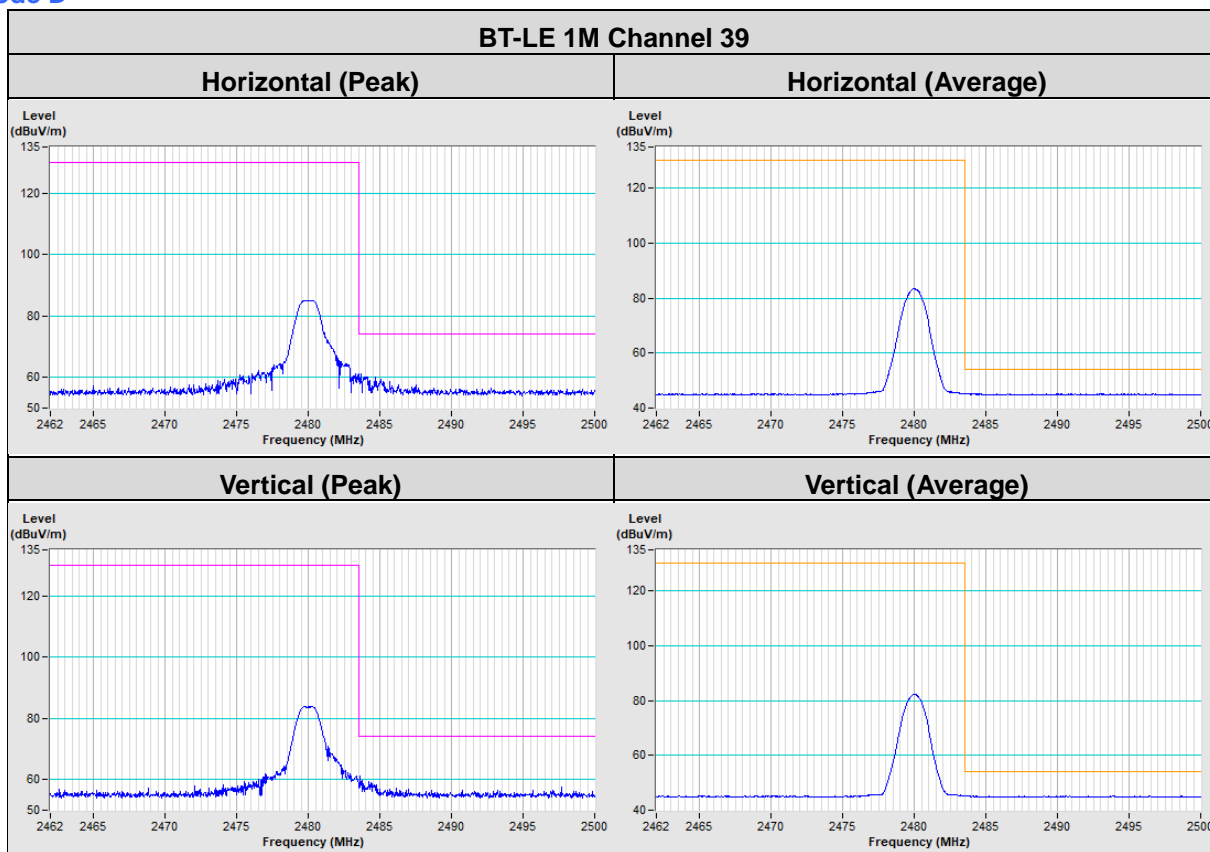
Please refer to the attached file (Test Setup Photo).

Annex A- Band Edge Measurement

<LE 4.0>
Mode A



Mode D



Appendix – 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 and approved according to ISO/IEC 17025.

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

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

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@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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