

TEST REPORT

CERTIFICATE OF CONFORMITY

Standards: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4-2014

Report No.: FDBGTL-WTW-P22020475 R1

FCC ID: APYHRO00314

Received Date: Feb. 19, 2022

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Issued Date: Jun. 06, 2022

Applicant: SHARP Corporation Mobile Communication BU

Address: 2-13-1 Iida Hachihonmatsu Higashi-hiroshima City, Hiroshima 730-0192, Japan

Manufacturer: Sharp Corporation

Address: 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

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:** 328930 / TW1050

Approved by :



Date: Jun. 06, 2022

Ace Wu / Project Engineer

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Prepared by : Lena Wang / Specialist

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Release Control Record

| Issue No. | Description | Date Issued |
|-------------------------|--------------------|---------------|
| FDBGTL-WTW-P22020475 | Original Release | May 30, 2022 |
| FDBGTL-WTW-P22020475 R1 | Revise section 4.3 | Jun. 06, 2022 |

1 Certification

Product: Smart Phone

Brand: SHARP

FCC ID: APYHRO00314

Sample Status: Engineering Sample

Applicant: SHARP Corporation Mobile Communication BU

Test Date: Apr. 25 ~ May 07, 2022

Standards: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4-2014

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

| FCC Part 15 Clause | Test Item | Result/Remarks | Verdict |
|--------------------|--|---|---------|
| 15.107 | Conducted Emissions from input power ports | Minimum passing Class B margin is -11.02 dB at 3.99744 MHz | Pass |
| 15.109 | Radiated Emissions up to 1 GHz | Minimum passing Class B margin is -6.03 dB at 43.14 MHz | Pass |
| | Radiated Emissions above 1 GHz | Minimum passing Class B margin is -11.70 dB at 22653.60 MHz | Pass |

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 | Frequency | Expanded Uncertainty (k=2) (±) |
|--|----------------|--------------------------------|
| Conducted Emissions from input power ports | 150kHz ~ 30MHz | 2.79 dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 4.14 dB |
| Radiated Emissions above 1 GHz | Above 1GHz | 5.04 dB |

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Description of EUT

| | |
|---------------------|---------------------------------------|
| Product | Smart Phone |
| Brand | SHARP |
| FCC ID | APYHRO00314 |
| Sample Status | Engineering Sample |
| Operating Software | N/A |
| Power Supply Rating | 3.87 Vdc (Battery) 5 Vdc (Adapter) |
| Accessory Device | N/A |
| Data Cable Supplied | N/A |

Note:

1. All sample are listed as below.

| Sample | FCCID | Memory | | RAM | |
|--------|-------------|--------|----|-----|-----|
| A | APYHRO00314 | 1st | I | 1st | I |
| B | | | | 2nd | ii |
| C | | | | 3rd | iii |
| D | | 2nd | II | 1st | I |
| E | | | | 2nd | ii |
| F | | | | 3rd | iii |

*The EUT is on the Sample B, C, D has been Radiated Emission pre-tested, and Sample B was the worst case for final test.

2. The EUT use following support unit.

| Product | Brand | Model | Description |
|-------------------------------|--------------------|---------------|---|
| Adapter | Salom | XN-2QC25 | I/P: 100-240 Vac, 50/60 Hz, 0.2 A O/P: 5 Vdc, 800 mA |
| Battery | N/A | N/A | 3.87V ,Rated 4870mAh (18.9Wh) , Typ. 5000mAh(19.4Wh) |
| Wireless Charge | au | 0102PUA | -- |
| USB Cable For Wireless Charge | Maxell Corporation | WP-PD21WH | 0.9m with 1core, Shielding cable |
| Headset | Ambibio | AB-HI02JS | -- |
| USB To Type C Cable | Luxshare-ICT | L6KU2007-CS-H | 0.95m without 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 5850 MHz provided by SHARP Corporation Mobile Communication BU, for detailed internal source, please refer to the manufacturer's specifications.

3.3 Features of EUT

The tests reported herein were performed according to the method specified by SHARP Corporation Mobile Communication BU, for detailed feature description, please refer to the manufacturer's specifications or user's manual.

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

For conducted emission, EUT has been pre-tested under following test modes, and test mode 6, 27 was the worst case for final test.

| Mode | Sample | Test Condition |
|------|--------|---|
| 1 | B | GSM 850 Link + BT Link + WLAN 2.4G Link + GPS Rx + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 2 | B | WCDMA B2 Link + BT Link + WLAN 5G Link + Front Camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 3 | B | LTE B2 Link + BT Link + WLAN 5G Link + Back Camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 4 | B | LTE B41 Link + BT Link + WLAN 5G Link + Play REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 5 | B | LTE B5 Idle + BT Link + WLAN 5G Link + NFC Link + Headset + USB Cable + NB Link, 120Vac/60Hz |
| 6 | B | LTE B5 Idle + BT Link + WLAN 5G Link + NFC Link + Headset + Qi Wireless Charger, 120Vac/60Hz |
| 7 | B | GSM 850 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 8 | B | GSM 850 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 9 | B | GSM 850 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 10 | B | WCDMA B5 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 11 | B | WCDMA B5 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 12 | B | WCDMA B5 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 13 | B | LTE B5 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 14 | B | LTE B5 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 15 | B | LTE B5 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 16 | B | LTE B12 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 17 | B | LTE B12 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 18 | B | LTE B12 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 19 | B | LTE B13 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 20 | B | LTE B13 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 21 | B | LTE B13 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 22 | B | LTE B17 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 23 | B | LTE B17 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 24 | B | LTE B17 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 25 | B | LTE B5 Idle + BT Link + WLAN 5G Link + NFC Link + Headset + Qi Wireless Charger, 240Vac/60Hz |
| 26 | B | FM 88 + BT Link + WLAN 5G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 27 | B | FM 98 + BT Link + WLAN 5G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 28 | B | FM 108 + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |

For Radiated Emissions up to 1 GHz, EUT has been pre-tested under following test modes, and test mode 3, 28 was the worst case for final test.

For Radiated Emissions above 1 GHz, EUT has been pre-tested under following test modes, and test mode 3 was the worst case for final test.

| Mode | Sample | Test Condition |
|------|--------|---|
| 1 | B | GSM 850 Link + BT Link + WLAN 2.4G Link + GPS Rx + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 2 | B | WCDMA B2 Link + BT Link + WLAN 5G Link + Front Camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 3 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + Back Camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 4 | B | LTE B41 Link + BT Link + WLAN 2.4G Link + Play REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 5 | B | LTE B5 Idle + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + NB Link, 120Vac/60Hz |
| 6 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + NFC Link + Headset + Qi Wireless Charger, 120Vac/60Hz |
| 7 | B | GSM 850 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 8 | B | GSM 850 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 9 | B | GSM 850 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 10 | B | WCDMA B5 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 11 | B | WCDMA B5 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 12 | B | WCDMA B5 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 13 | B | LTE B5 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 14 | B | LTE B5 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 15 | B | LTE B5 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 16 | B | LTE B12 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 17 | B | LTE B12 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 18 | B | LTE B12 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 19 | B | LTE B13 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 20 | B | LTE B13 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 21 | B | LTE B13 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 22 | B | LTE B17 Rx (Low Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 23 | B | LTE B17 Rx (Middle Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 24 | B | LTE B17 Rx (High Channel) + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 25 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + Back camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz (X-Axis) |
| 26 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + Back camera REC + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz (Y-Axis) |
| 27 | B | FM 88 + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 28 | B | FM 98 + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |
| 29 | B | FM 108 + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + Adapter, 120Vac/60Hz |

Test modes are presented in the report as below.

| Mode | Sample | Test Condition |
|--------------------------------|--------|---|
| Conducted Emission | | |
| Mode 6 | B | LTE B5 Idle + BT Link + WLAN 5G Link + NFC Link + Headset + Qi Wireless Charger |
| Mode 27 | B | FM 98 + BT Link + WLAN 5G Link + NFC Link + Headset + USB Cable + Adapter |
| Radiated Emissions up to 1 GHz | | |
| Mode 3 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + Back Camera REC + NFC Link + Headset + USB Cable + Adapter |
| Mode 58 | B | FM 98 + BT Link + WLAN 2.4G Link + NFC Link + Headset + USB Cable + Adapter |
| Radiated Emissions above 1 GHz | | |
| Mode 3 | B | LTE B2 Link + BT Link + WLAN 2.4G Link + Back Camera REC + NFC Link + Headset + USB Cable + Adapter |

3.5 Test Program Used and Operation Descriptions

For Conducted Emission Mode 6

- The EUT was powered by adapter via Qi Wireless Charger.
- The EUT linked with Bluetooth earphone.
- The NFC function was activated.
- The EUT sent audio signal to the Headset.
- The EUT communicated data with the Radio Communication Analyzer and Wireless AP, which acted as communication partners.

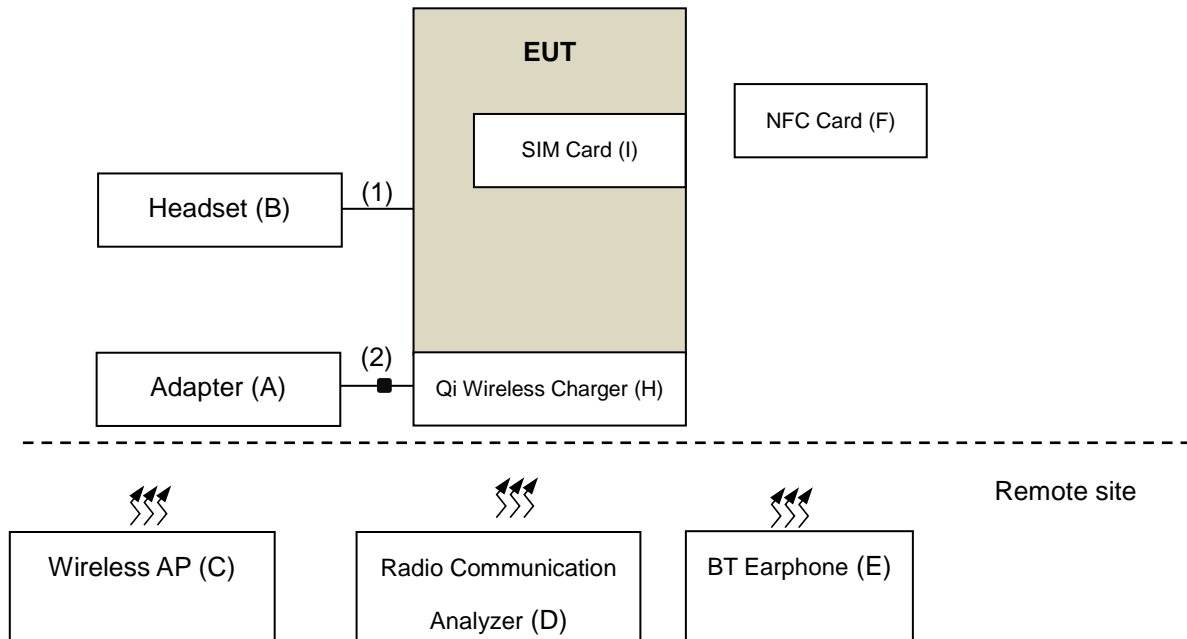
For Radiated Emission up to 1 GHz Mode 3 & Radiated Emissions above 1 GHz Mode3

- The EUT was powered by adapter
- The EUT linked with Bluetooth earphone.
- The EUT sent audio signal to the Headset.
- The NFC function was activated.
- The EUT communicated data with the Radio Communication Analyzer and Wireless AP, which acted as communication partners.

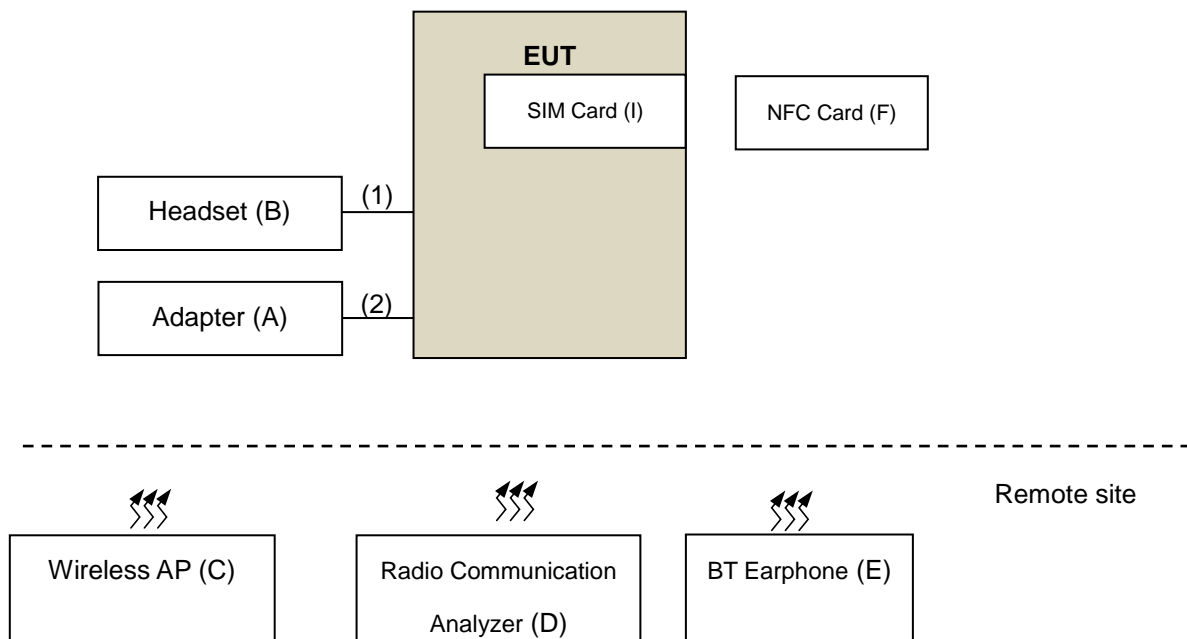
For Conducted Emission Mode 18 & Radiated Emission up to 1 GHz Mode 19

- The EUT was powered by adapter.
- The EUT linked with Bluetooth earphone.
- The EUT sent audio signal to the Headset.
- The NFC function was activated.
- The EUT communicated data with the Pattern Generator and Wireless AP, which acted as communication partners.

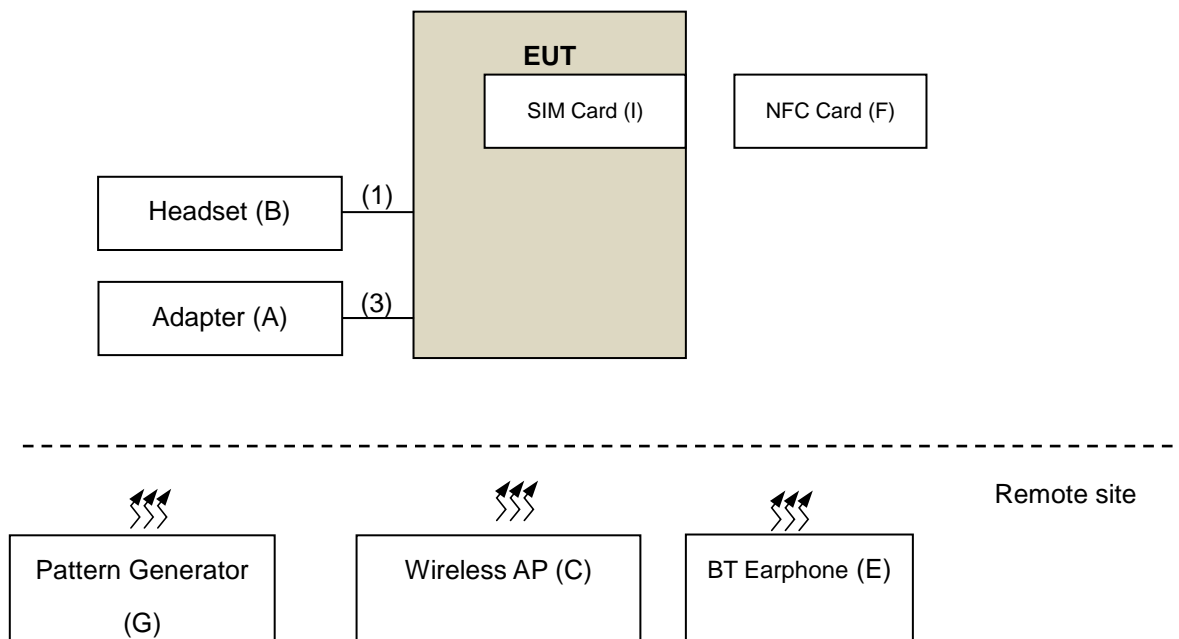
3.6 Connection Diagram of EUT and Peripheral Devices For Conducted Emission Mode 6



For Radiated Emission up to 1 GHz Mode 3 & Radiated Emissions above 1 GHz Mode3



For Conducted Emission Mode 27 & Radiated Emission up to 1 GHz Mode28



3.7 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|--|---------|-------------|---------------|--------|--------------------|
| A. | Adapter | Salom | XN-2QC25 | N/A | N/A | Provided by client |
| B. | Headset | Ambibio | AB-HI02JS | N/A | N/A | Provided by client |
| C. | D-LINK DIR-826L 11a/n USB 1000M Router | D-LINK | DIR826L | QBQ91C9000416 | N/A | -- |
| D. | Radio Communication Analyzer | Anritsu | MT8820C | 6201010284 | N/A | -- |
| E. | BLUETOOTH EARPHONE | ELECOM | LBT-MPHS400 | N/A | N/A | -- |
| F. | NFC Card | SONY | N/A | N/A | N/A | -- |
| G. | PATTERN GENERATOR | FLUKE | 54200 | 856031 | N/A | -- |
| H. | Qi Wireless Charge | au | 0102PUA | 129556 | N/A | Provided by client |
| I. | SIM Card | R&S | N/A | N/A | N/A | -- |

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items C ~ E, H acted as communication partners to transfer data.

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|---------------------|------|------------|--------------------|--------------|--------------------|
| 1. | Audio Cable | 1 | 1.1 | N | 0 | Provided by client |
| 2. | USB Cable | 1 | 0.9 | Y | 1 | Provided by client |
| 3. | USB To Type C Cable | 1 | 0.95 | Y | 0 | Provided by client |

Note: The core(s) is(are) originally attached to the cable(s)

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 & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---|--------------------------|----------------|---------------|---------------|
| Test Receiver ROHDE & SCHWARZ | ESCI | 100613 | Dec. 03, 2021 | Dec. 02, 2022 |
| RF signal cable Woken | 5D-FB | Cable-cond1-01 | Jan. 15, 2022 | Jan. 14, 2023 |
| LISN ROHDE & SCHWARZ (EUT) | ENV216 | 101826 | Mar. 14, 2022 | Mar. 13, 2023 |
| LISN ROHDE & SCHWARZ (Peripheral) | ESH3-Z5 | 100311 | Sep. 07, 2021 | Sep. 06, 2022 |
| Software ADT | BV ADT_Cond_ V7.3.7.4 | NA | NA | NA |

- Note: 1. The test was performed in HwaYa Shielded Room 1 (Conduction 1).
 2. The VCCI Site Registration No. is C-12040.
 3. Test Date: 2022/5/7

4.2 Radiated Emissions up to 1 GHz

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---------------------------------------|---------------------------------------|-------------------------------------|---------------|---------------|
| MXA Signal Analyzer KEYSIGHT | N9020B | MY60110440 | Dec. 09, 2021 | Dec. 08, 2022 |
| Broadband Horn Antenna Schwarzbeck | BBHA 9120 D | 209 | Nov. 14, 2021 | Nov. 13, 2022 |
| Pre_Amplifier Agilent | 8449B | 3008A02465 | Mar. 19, 2022 | Mar. 18, 2023 |
| BandPass Filter MICRO-TRONICS | BRM17690-01 | 002 | Sep. 04, 2021 | Sep. 03, 2022 |
| BandPass Filter MICRO-TRONICS | BRM50716-01 | G010 | Sep. 04, 2021 | Sep. 03, 2022 |
| RF Coaxial Cable HUBER+SUHNER&EMCI | SUCOFLEX 104&EMC104-SM-SM- 8000 | Cable-CH3- 03(309224+17090 7) | Jul. 24, 2021 | Jul. 23, 2022 |
| Attenuator Mini-Circuits | BW-N4W5+ | PAD-CH3-03 | Jul. 24, 2021 | Jul. 23, 2022 |
| Fix tool for Boresight antenna | BAF-01 | 2 | NA | NA |
| Software BVADT | ADT_Radiated_V8.7.0 8 | NA | NA | NA |
| Antenna Tower BVADT | AT100 | NA | NA | NA |
| Turn Table BVADT | TT100 | NA | NA | NA |
| Controller BVADT | SC100 | NA | NA | NA |

- Note:
1. The test was performed in HwaYa Chamber 3 (966 Chamber 2).
 2. The VCCI Site Registration No. is R-20132.
 3. Test Date: 2022/4/25

4.3 Radiated Emissions above 1 GHz

| Description & Manufacturer | Model No. | Serial No. | Cal. Date | Cal. Due |
|---------------------------------------|---------------------------------------|-------------------------------------|---------------|---------------|
| MXA Signal Analyzer KEYSIGHT | N9020B | MY60110440 | Dec. 09, 2021 | Dec. 08, 2022 |
| Broadband Horn Antenna Schwarzbeck | BBHA 9120 D | 209 | Nov. 14, 2021 | Nov. 13, 2022 |
| Pre_Amplifier Agilent | 8449B | 3008A02465 | Mar. 19, 2022 | Mar. 18, 2023 |
| BandPass Filter MICRO-TRONICS | BRM17690-01 | 002 | Sep. 04, 2021 | Sep. 03, 2022 |
| BandPass Filter MICRO-TRONICS | BRM50716-01 | G010 | Sep. 04, 2021 | Sep. 03, 2022 |
| RF Coaxial Cable HUBER+SUHNER&EMCI | SUCOFLEX 104&EMC104-SM-SM- 8000 | Cable-CH3- 03(309224+17090 7) | Jul. 24, 2021 | Jul. 23, 2022 |
| Attenuator Mini-Circuits | BW-N4W5+ | PAD-CH3-03 | Jul. 24, 2021 | Jul. 23, 2022 |
| Fix tool for Boresight antenna | BAF-01 | 2 | NA | NA |
| Software BVADT | ADT_Radiated_V8.7.0 8 | NA | NA | NA |
| Antenna Tower BVADT | AT100 | NA | NA | NA |
| Turn Table BVADT | TT100 | NA | NA | NA |
| Controller BVADT | SC100 | NA | NA | NA |

- Note:
1. The test was performed in HwaYa Chamber 3 (966 Chamber 2).
 2. The VCCI Site Registration No. is G-20126.
 3. Test Date: 2022/4/25

5 Limits of Emission

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 |
| 0.5 - 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

| Radiated Emissions Limits at 10 meters (dB μ V/m) | | | | |
|---|-----------------------|-----------------------|-------------------|-------------------|
| Frequencies (MHz) | FCC Part 15B, Class A | FCC Part 15B, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 30-88 | 39 | 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 (dB μ V/m) | | | | |
|--|-----------------------|-----------------------|-------------------|-------------------|
| Frequencies (MHz) | FCC Part 15B, Class A | FCC Part 15B, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 30-88 | 49.5 | 40 | 50.5 | 40.5 |
| 88-216 | 54 | 43.5 | | |
| 216-230 | 56.9 | 46 | | |
| 230-960 | | | 57.5 | 47.5 |
| 960-1000 | 60 | 54 | | |

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 (dB μ V/m) | | |
|--|---------------------|---------------------|
| Frequency range | Class A | Class B |
| Above 1GHz | Avg: 60 Peak: 80 | Avg: 54 Peak: 74 |

Notes:

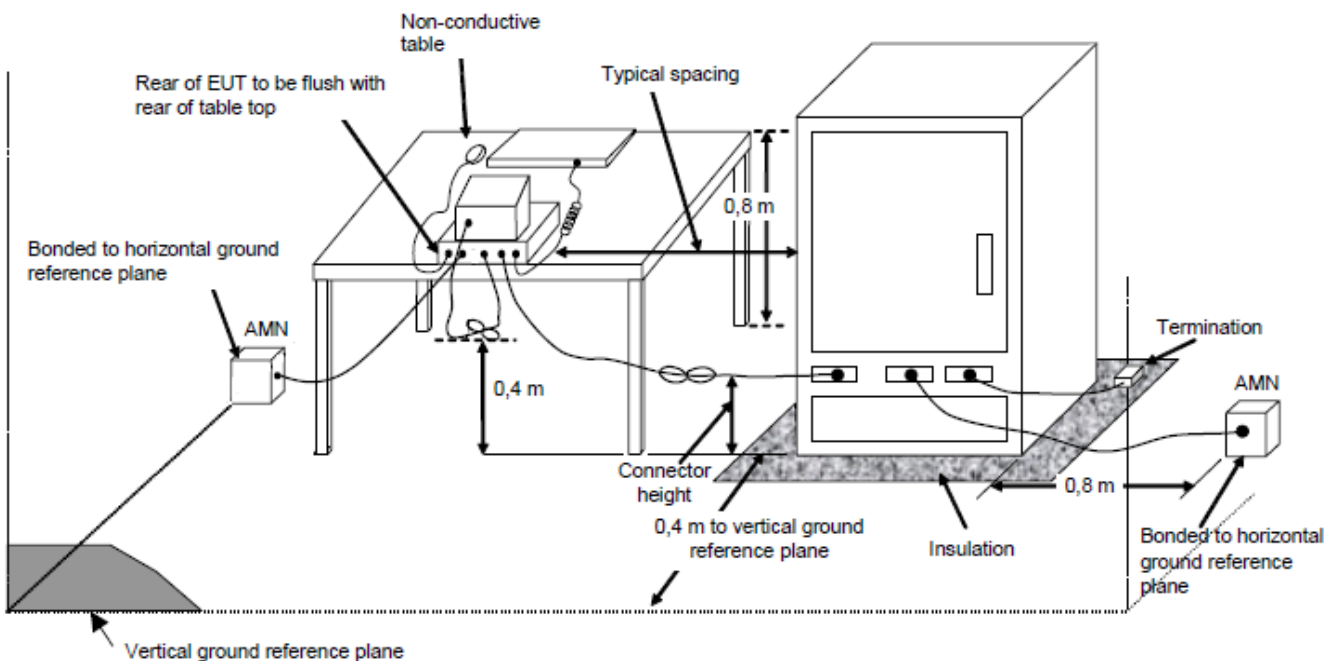
1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far field of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

6 Test Arrangement

6.1 Conducted Emissions from Power Ports

- For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the 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.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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.

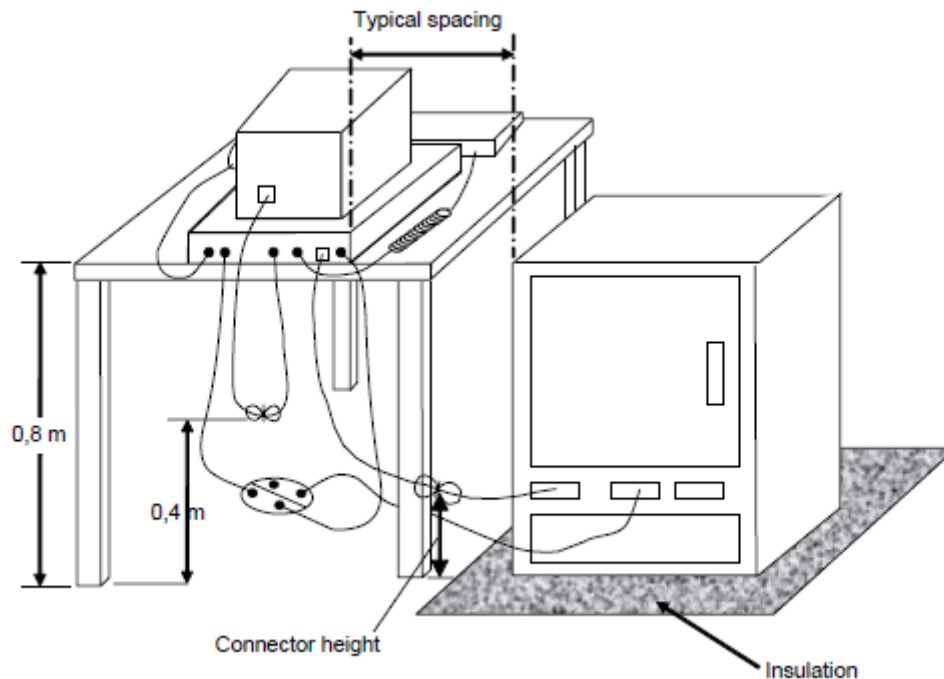


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

6.2 Radiated Emissions up to 1 GHz

- For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the 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.
- The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to 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.

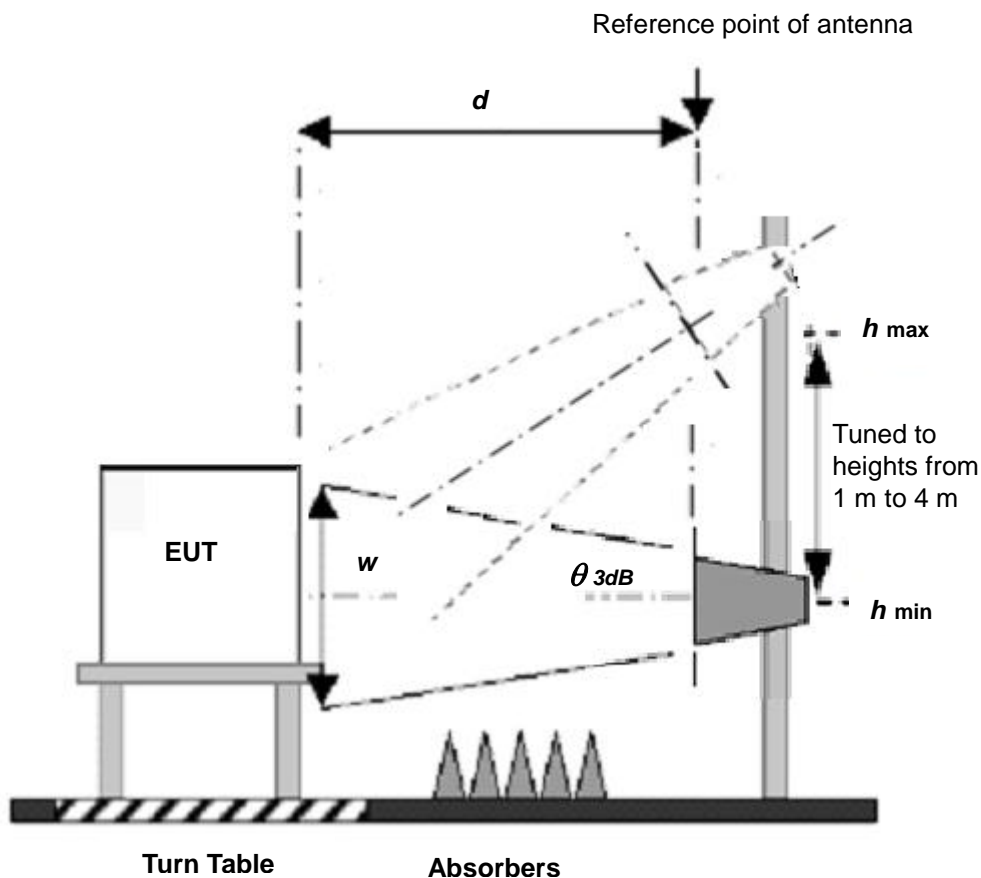


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

6.3 Radiated Emissions above 1 GHz

- For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the 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.
- 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.
- 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.
- 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.
- 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 Emission

7.1 Conducted Emissions from Power Ports

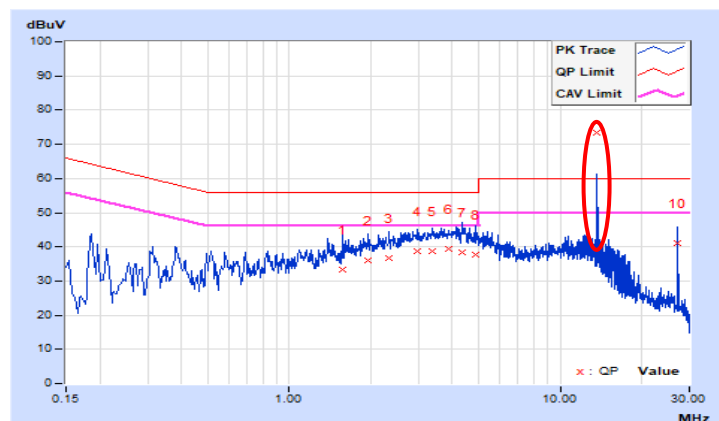
Mode 6

| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 1.57715 | 9.87 | 23.61 | 15.76 | 33.48 | 25.63 | 56.00 | 46.00 | -22.52 | -20.37 |
| 2 | 1.95642 | 9.90 | 26.26 | 17.86 | 36.16 | 27.76 | 56.00 | 46.00 | -19.84 | -18.24 |
| 3 | 2.34742 | 9.91 | 26.63 | 19.08 | 36.54 | 28.99 | 56.00 | 46.00 | -19.46 | -17.01 |
| 4 | 2.97302 | 9.92 | 28.74 | 20.83 | 38.66 | 30.75 | 56.00 | 46.00 | -17.34 | -15.25 |
| 5 | 3.38748 | 9.93 | 28.87 | 21.10 | 38.80 | 31.03 | 56.00 | 46.00 | -17.20 | -14.97 |
| 6 | 3.86450 | 9.95 | 29.50 | 21.48 | 39.45 | 31.43 | 56.00 | 46.00 | -16.55 | -14.57 |
| 7 | 4.36107 | 9.96 | 28.27 | 20.34 | 38.23 | 30.30 | 56.00 | 46.00 | -17.77 | -15.70 |
| 8 | 4.84982 | 9.97 | 27.60 | 19.15 | 37.57 | 29.12 | 56.00 | 46.00 | -18.43 | -16.88 |
| 9 | 13.56000 | 10.10 | 63.14 | 44.04 | 73.24 | 54.14 | -- | -- | -- | -- |
| 10 | 27.12000 | 10.19 | 30.98 | 20.88 | 41.17 | 31.07 | 60.00 | 50.00 | -18.83 | -18.93 |

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
6. No. 9 is NFC signal inductive with measurement system. Please see test result for EUT with a suitable dummy load.

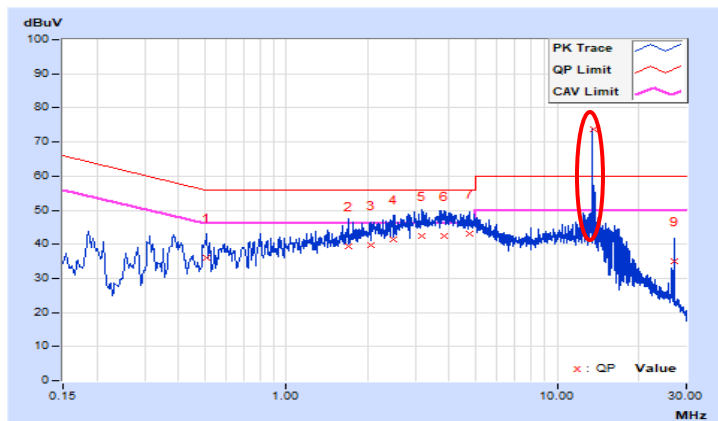


| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 0.50581 | 9.82 | 26.34 | 15.94 | 36.16 | 25.76 | 56.00 | 46.00 | -19.84 | -20.24 |
| 2 | 1.69836 | 9.90 | 29.54 | 19.45 | 39.44 | 29.35 | 56.00 | 46.00 | -16.56 | -16.65 |
| 3 | 2.05808 | 9.92 | 29.69 | 20.36 | 39.61 | 30.28 | 56.00 | 46.00 | -16.39 | -15.72 |
| 4 | 2.47254 | 9.93 | 31.54 | 22.29 | 41.47 | 32.22 | 56.00 | 46.00 | -14.53 | -13.78 |
| 5 | 3.16461 | 9.95 | 32.44 | 23.32 | 42.39 | 33.27 | 56.00 | 46.00 | -13.61 | -12.73 |
| 6 | 3.81367 | 9.97 | 32.45 | 23.43 | 42.42 | 33.40 | 56.00 | 46.00 | -13.58 | -12.60 |
| 7 | 4.73643 | 9.98 | 33.03 | 22.63 | 43.01 | 32.61 | 56.00 | 46.00 | -12.99 | -13.39 |
| 8 | 13.56000 | 10.11 | 63.70 | 44.33 | 73.81 | 54.44 | -- | -- | -- | -- |
| 9 | 27.12000 | 10.20 | 24.71 | 4.10 | 34.91 | 14.30 | 60.00 | 50.00 | -25.09 | -35.70 |

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
6. No. 8 is NFC signal inductive with measurement system. Please see test result for EUT with a suitable dummy load.



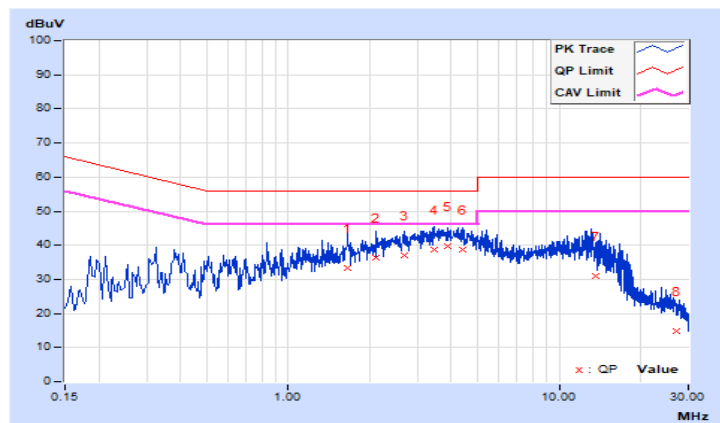
Test with Suitable Dummy Load

| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 1.65926 | 9.88 | 23.59 | 16.24 | 33.47 | 26.12 | 56.00 | 46.00 | -22.53 | -19.88 |
| 2 | 2.11673 | 9.90 | 26.45 | 18.68 | 36.35 | 28.58 | 56.00 | 46.00 | -19.65 | -17.42 |
| 3 | 2.67195 | 9.92 | 27.18 | 19.27 | 37.10 | 29.19 | 56.00 | 46.00 | -18.90 | -16.81 |
| 4 | 3.44613 | 9.94 | 28.88 | 21.78 | 38.82 | 31.72 | 56.00 | 46.00 | -17.18 | -14.28 |
| 5 | 3.89969 | 9.95 | 29.85 | 21.53 | 39.80 | 31.48 | 56.00 | 46.00 | -16.20 | -14.52 |
| 6 | 4.42754 | 9.96 | 28.85 | 19.90 | 38.81 | 29.86 | 56.00 | 46.00 | -17.19 | -16.14 |
| 7 | 13.56000 | 10.10 | 20.79 | 14.29 | 30.89 | 24.39 | 60.00 | 50.00 | -29.11 | -25.61 |
| 8 | 27.12000 | 10.19 | 4.76 | 0.05 | 14.95 | 10.24 | 60.00 | 50.00 | -45.05 | -39.76 |

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



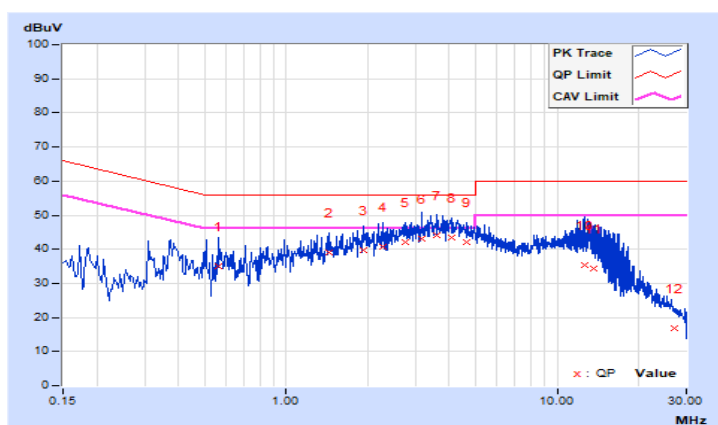


| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 0.56446 | 9.82 | 25.06 | 14.53 | 34.88 | 24.35 | 56.00 | 46.00 | -21.12 | -21.65 |
| 2 | 1.44812 | 9.89 | 29.15 | 17.86 | 39.04 | 27.75 | 56.00 | 46.00 | -16.96 | -18.25 |
| 3 | 1.92514 | 9.92 | 29.94 | 20.74 | 39.86 | 30.66 | 56.00 | 46.00 | -16.14 | -15.34 |
| 4 | 2.26140 | 9.93 | 30.74 | 21.14 | 40.67 | 31.07 | 56.00 | 46.00 | -15.33 | -14.93 |
| 5 | 2.75015 | 9.94 | 31.98 | 23.57 | 41.92 | 33.51 | 56.00 | 46.00 | -14.08 | -12.49 |
| 6 | 3.16461 | 9.95 | 33.18 | 24.02 | 43.13 | 33.97 | 56.00 | 46.00 | -12.87 | -12.03 |
| 7 | 3.60253 | 9.96 | 34.05 | 24.36 | 44.01 | 34.32 | 56.00 | 46.00 | -11.99 | -11.68 |
| 8 | 4.05609 | 9.97 | 33.63 | 23.99 | 43.60 | 33.96 | 56.00 | 46.00 | -12.40 | -12.04 |
| 9 | 4.62695 | 9.98 | 32.05 | 22.53 | 42.03 | 32.51 | 56.00 | 46.00 | -13.97 | -13.49 |
| 10 | 12.65809 | 10.10 | 25.37 | 15.59 | 35.47 | 25.69 | 60.00 | 50.00 | -24.53 | -24.31 |
| 11 | 13.56000 | 10.11 | 24.15 | 16.00 | 34.26 | 26.11 | 60.00 | 50.00 | -25.74 | -23.89 |
| 12 | 27.12000 | 10.20 | 6.51 | 0.03 | 16.71 | 10.23 | 60.00 | 50.00 | -43.29 | -39.77 |

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



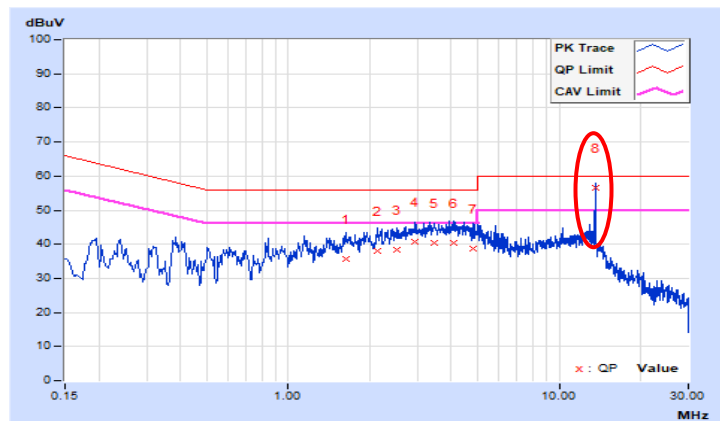
Mode27

| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 1.63189 | 9.88 | 25.71 | 18.05 | 35.59 | 27.93 | 56.00 | 46.00 | -20.41 | -18.07 |
| 2 | 2.13237 | 9.90 | 27.98 | 19.92 | 37.88 | 29.82 | 56.00 | 46.00 | -18.12 | -16.18 |
| 3 | 2.51164 | 9.91 | 28.38 | 21.12 | 38.29 | 31.03 | 56.00 | 46.00 | -17.71 | -14.97 |
| 4 | 2.94956 | 9.92 | 30.72 | 21.86 | 40.64 | 31.78 | 56.00 | 46.00 | -15.36 | -14.22 |
| 5 | 3.43831 | 9.94 | 30.43 | 22.29 | 40.37 | 32.23 | 56.00 | 46.00 | -15.63 | -13.77 |
| 6 | 4.10288 | 9.95 | 30.33 | 21.58 | 40.28 | 31.53 | 56.00 | 46.00 | -15.72 | -14.47 |
| 7 | 4.83027 | 9.97 | 28.82 | 20.15 | 38.79 | 30.12 | 56.00 | 46.00 | -17.21 | -15.88 |
| 8 | 13.56000 | 10.10 | 46.62 | 42.26 | 56.72 | 52.36 | -- | -- | -- | -- |

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
6. No. 8 is NFC signal inductive with measurement system. Please see test result for EUT with a suitable dummy load.

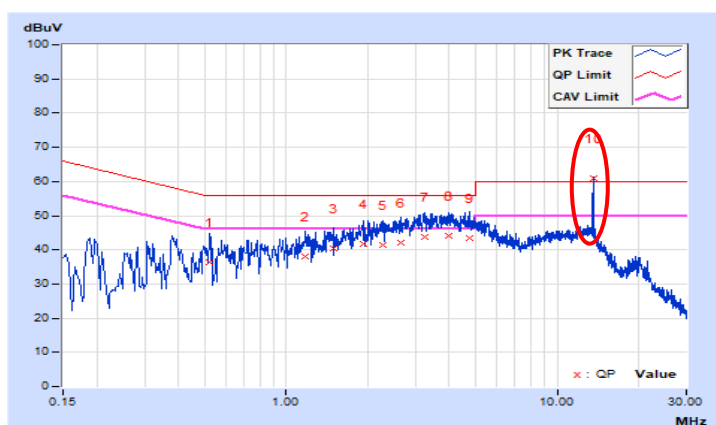


| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 0.52145 | 9.82 | 26.58 | 12.80 | 36.40 | 22.62 | 56.00 | 46.00 | -19.60 | -23.38 |
| 2 | 1.17833 | 9.87 | 28.07 | 17.04 | 37.94 | 26.91 | 56.00 | 46.00 | -18.06 | -19.09 |
| 3 | 1.48722 | 9.89 | 30.64 | 19.61 | 40.53 | 29.50 | 56.00 | 46.00 | -15.47 | -16.50 |
| 4 | 1.92123 | 9.92 | 31.74 | 22.22 | 41.66 | 32.14 | 56.00 | 46.00 | -14.34 | -13.86 |
| 5 | 2.26140 | 9.93 | 31.64 | 22.29 | 41.57 | 32.22 | 56.00 | 46.00 | -14.43 | -13.78 |
| 6 | 2.63676 | 9.94 | 32.29 | 23.40 | 42.23 | 33.34 | 56.00 | 46.00 | -13.77 | -12.66 |
| 7 | 3.25845 | 9.95 | 33.69 | 25.01 | 43.64 | 34.96 | 56.00 | 46.00 | -12.36 | -11.04 |
| 8 | 3.99744 | 9.97 | 34.30 | 25.01 | 44.27 | 34.98 | 56.00 | 46.00 | -11.73 | -11.02 |
| 9 | 4.76771 | 9.98 | 33.30 | 23.08 | 43.28 | 33.06 | 56.00 | 46.00 | -12.72 | -12.94 |
| 10 | 13.56000 | 10.11 | 50.75 | 43.76 | 60.86 | 53.87 | -- | -- | -- | -- |

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
6. No. 10 is NFC signal inductive with measurement system. Please see test result for EUT with a suitable dummy load.



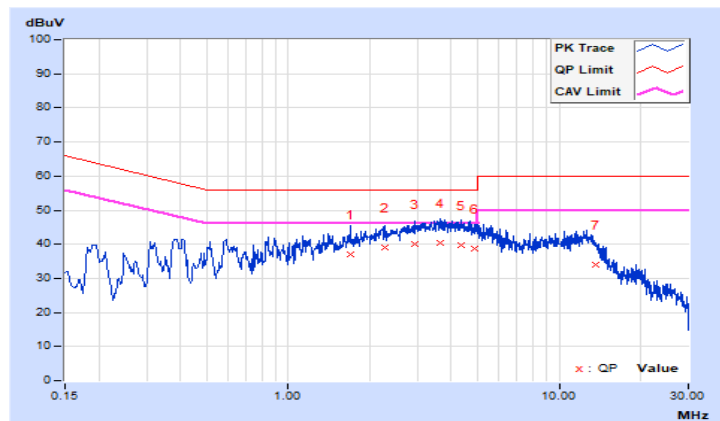
Test with Suitable Dummy Load

| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 1.70227 | 9.88 | 27.17 | 18.51 | 37.05 | 28.39 | 56.00 | 46.00 | -18.95 | -17.61 |
| 2 | 2.26531 | 9.91 | 29.21 | 19.67 | 39.12 | 29.58 | 56.00 | 46.00 | -16.88 | -16.42 |
| 3 | 2.93392 | 9.92 | 30.11 | 21.83 | 40.03 | 31.75 | 56.00 | 46.00 | -15.97 | -14.25 |
| 4 | 3.65727 | 9.94 | 30.31 | 22.37 | 40.25 | 32.31 | 56.00 | 46.00 | -15.75 | -13.69 |
| 5 | 4.36107 | 9.96 | 29.71 | 21.33 | 39.67 | 31.29 | 56.00 | 46.00 | -16.33 | -14.71 |
| 6 | 4.84591 | 9.97 | 28.89 | 20.13 | 38.86 | 30.10 | 56.00 | 46.00 | -17.14 | -15.90 |
| 7 | 13.56000 | 10.10 | 23.87 | 14.54 | 33.97 | 24.64 | 60.00 | 50.00 | -26.03 | -25.36 |

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

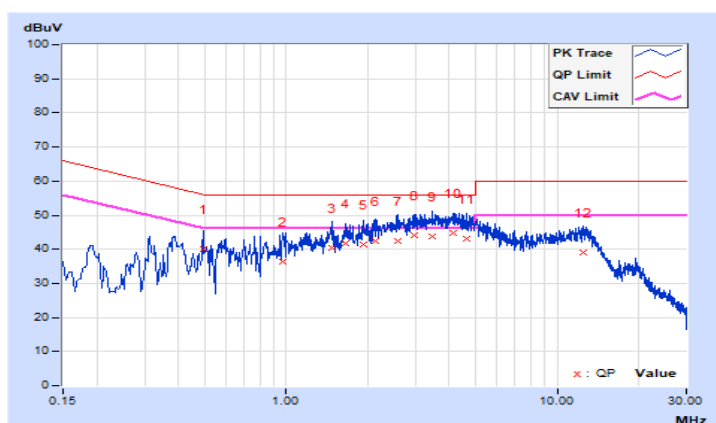


| | | | |
|------------------------|----------------|---|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power | 120Vac, 60Hz | Environmental Conditions | 22 °C, 71% RH |
| Tested by | Kai Chu | | |

| 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 | 0.49408 | 9.82 | 30.13 | 15.74 | 39.95 | 25.56 | 56.10 | 46.10 | -16.15 | -20.54 |
| 2 | 0.97340 | 9.86 | 26.42 | 14.31 | 36.28 | 24.17 | 56.00 | 46.00 | -19.72 | -21.83 |
| 3 | 1.48331 | 9.89 | 30.40 | 19.61 | 40.29 | 29.50 | 56.00 | 46.00 | -15.71 | -16.50 |
| 4 | 1.66317 | 9.90 | 31.84 | 21.08 | 41.74 | 30.98 | 56.00 | 46.00 | -14.26 | -15.02 |
| 5 | 1.92905 | 9.92 | 31.60 | 22.10 | 41.52 | 32.02 | 56.00 | 46.00 | -14.48 | -13.98 |
| 6 | 2.14801 | 9.92 | 32.46 | 22.60 | 42.38 | 32.52 | 56.00 | 46.00 | -13.62 | -13.48 |
| 7 | 2.58202 | 9.93 | 32.44 | 23.11 | 42.37 | 33.04 | 56.00 | 46.00 | -13.63 | -12.96 |
| 8 | 2.98866 | 9.94 | 34.17 | 24.86 | 44.11 | 34.80 | 56.00 | 46.00 | -11.89 | -11.20 |
| 9 | 3.46959 | 9.96 | 33.89 | 25.09 | 43.85 | 35.05 | 56.00 | 46.00 | -12.15 | -10.95 |
| 10 | 4.14993 | 9.97 | 34.94 | 24.85 | 44.91 | 34.82 | 56.00 | 46.00 | -11.09 | -11.18 |
| 11 | 4.65432 | 9.98 | 33.26 | 23.52 | 43.24 | 33.50 | 56.00 | 46.00 | -12.76 | -12.50 |
| 12 | 12.54861 | 10.10 | 28.86 | 17.92 | 38.96 | 28.02 | 60.00 | 50.00 | -21.04 | -21.98 |

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

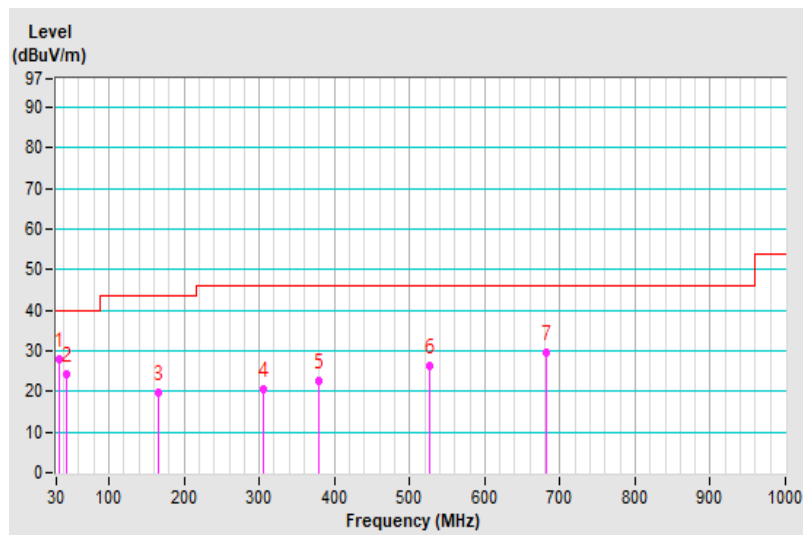
Mode 3

| | | | |
|------------------------|--------------|---|-------------------------|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP), 120kHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Horizontal at 3m | | | | | | | | |
|---|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 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 | 34.71 | 27.98 QP | 40.00 | -12.02 | 1.00 H | 39 | 38.39 | -10.41 |
| 2 | 43.10 | 24.16 QP | 40.00 | -15.84 | 3.50 H | 70 | 33.64 | -9.48 |
| 3 | 166.53 | 19.58 QP | 43.50 | -23.92 | 4.00 H | 326 | 28.35 | -8.77 |
| 4 | 305.54 | 20.59 QP | 46.00 | -25.41 | 2.50 H | 354 | 27.70 | -7.11 |
| 5 | 379.99 | 22.67 QP | 46.00 | -23.33 | 2.50 H | 1 | 27.99 | -5.32 |
| 6 | 526.18 | 26.22 QP | 46.00 | -19.78 | 3.50 H | 274 | 28.21 | -1.99 |
| 7 | 680.90 | 29.73 QP | 46.00 | -16.27 | 3.50 H | 340 | 27.88 | 1.85 |

Remarks:

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

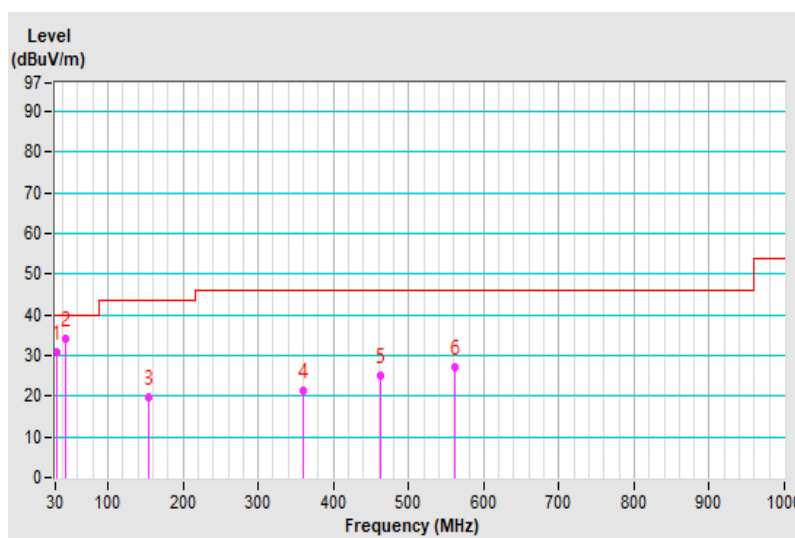


| | | | |
|------------------------|--------------|---|-------------------------|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP), 120kHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Vertical at 3m | | | | | | | | |
|---|-----------------|-------------------------|----------------|--------------|--------------------|----------------------|------------------|--------------------------|
| 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 | 31.55 | 30.91 QP | 40.00 | -9.09 | 1.00 V | 310 | 41.78 | -10.87 |
| 2 | 43.14 | 33.97 QP | 40.00 | -6.03 | 1.00 V | 49 | 43.45 | -9.48 |
| 3 | 153.20 | 19.59 QP | 43.50 | -23.91 | 1.50 V | 9 | 28.25 | -8.66 |
| 4 | 360.69 | 21.48 QP | 46.00 | -24.52 | 4.00 V | 74 | 27.30 | -5.82 |
| 5 | 461.91 | 25.02 QP | 46.00 | -20.98 | 2.00 V | 360 | 28.05 | -3.03 |
| 6 | 562.46 | 27.13 QP | 46.00 | -18.87 | 2.50 V | 277 | 28.11 | -0.98 |

Remarks:

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



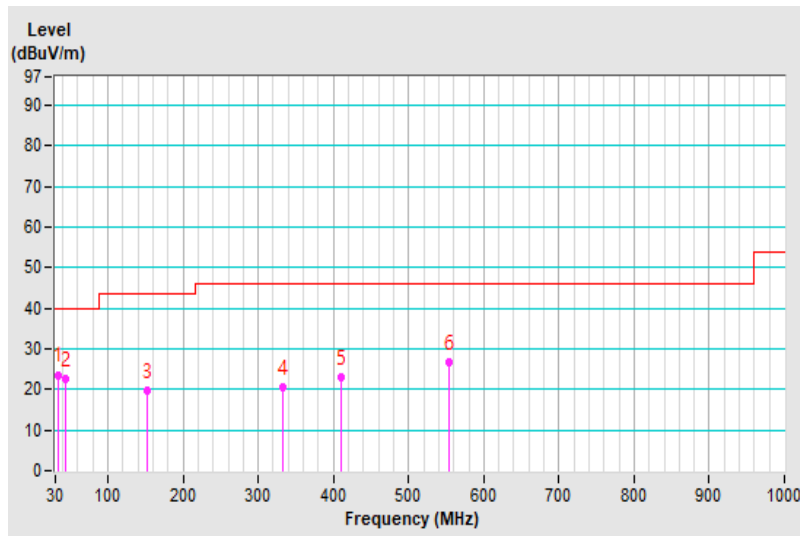
Mode 28

| | | | |
|------------------------|--------------|---|-------------------------|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP), 120kHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Horizontal at 3m | | | | | | | | |
|---|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| No | Frequency (MHz) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 33.64 | 23.63 QP | 40.00 | -16.37 | 1.50 H | 139 | 34.25 | -10.62 |
| 2 | 44.02 | 22.63 QP | 40.00 | -17.37 | 4.00 H | 95 | 32.11 | -9.48 |
| 3 | 151.94 | 19.58 QP | 43.50 | -23.92 | 3.00 H | 360 | 28.20 | -8.62 |
| 4 | 333.19 | 20.49 QP | 46.00 | -25.51 | 2.50 H | 270 | 26.92 | -6.43 |
| 5 | 409.58 | 22.86 QP | 46.00 | -23.14 | 1.00 H | 164 | 27.45 | -4.59 |
| 6 | 553.92 | 26.73 QP | 46.00 | -19.27 | 3.00 H | 327 | 27.98 | -1.25 |

Remarks:

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

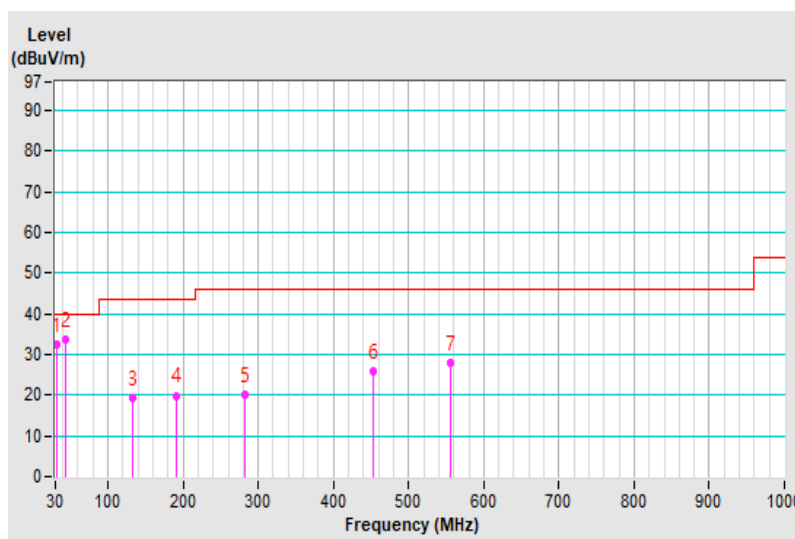


| | | | |
|------------------------|--------------|---|-------------------------|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP), 120kHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Vertical at 3m | | | | | | | | |
|---|-----------------|-------------------------|----------------|-------------|--------------------|----------------------|------------------|--------------------------|
| 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 | 31.55 | 32.36 QP | 40.00 | -7.64 | 1.00 V | 134 | 43.23 | -10.87 |
| 2 | 43.73 | 33.57 QP | 40.00 | -6.43 | 1.00 V | 302 | 43.05 | -9.48 |
| 3 | 132.78 | 19.40 QP | 43.50 | -24.10 | 1.00 V | 197 | 29.17 | -9.77 |
| 4 | 191.85 | 19.90 QP | 43.50 | -23.60 | 1.00 V | 124 | 31.21 | -11.31 |
| 5 | 283.09 | 20.01 QP | 46.00 | -25.99 | 3.00 V | 116 | 27.66 | -7.65 |
| 6 | 453.52 | 25.99 QP | 46.00 | -20.01 | 3.00 V | 71 | 29.08 | -3.09 |
| 7 | 555.48 | 27.94 QP | 46.00 | -18.06 | 2.50 V | 310 | 29.12 | -1.18 |

Remarks:

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



7.3 Radiated Emissions above 1 GHz

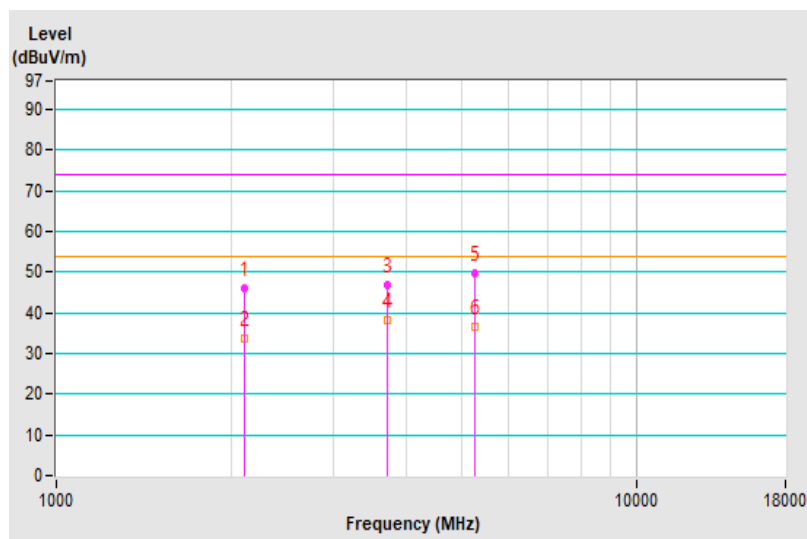
Mode 3

| | | | |
|------------------------|--------------|---|--------------------------------|
| Frequency Range | 1GHz ~ 18GHz | Detector Function & Resolution Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| 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 | 2105.62 | 45.89 PK | 74.00 | -28.11 | 1.00 H | 185 | 43.74 | 2.15 |
| 2 | 2105.62 | 33.50 AV | 54.00 | -20.50 | 1.00 H | 185 | 31.35 | 2.15 |
| 3 | 3703.95 | 46.96 PK | 74.00 | -27.04 | 1.25 H | 266 | 42.49 | 4.47 |
| 4 | 3703.95 | 38.20 AV | 54.00 | -15.80 | 1.25 H | 266 | 33.73 | 4.47 |
| 5 | 5248.96 | 49.85 PK | 74.00 | -24.15 | 1.12 H | 299 | 41.15 | 8.70 |
| 6 | 5248.96 | 36.40 AV | 54.00 | -17.60 | 1.12 H | 299 | 27.70 | 8.70 |

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. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

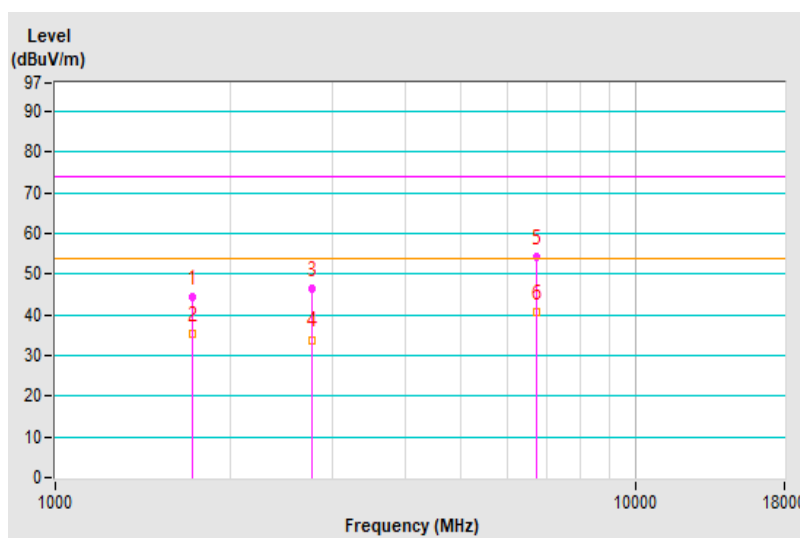


| | | | |
|------------------------|--------------|---|--------------------------------|
| Frequency Range | 1GHz ~ 18GHz | Detector Function & Resolution Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| 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 | 1725.23 | 44.37 PK | 74.00 | -29.63 | 1.20 V | 266 | 45.18 | -0.81 |
| 2 | 1725.23 | 35.20 AV | 54.00 | -18.80 | 1.20 V | 266 | 36.01 | -0.81 |
| 3 | 2771.65 | 46.43 PK | 74.00 | -27.57 | 1.68 V | 266 | 44.16 | 2.27 |
| 4 | 2771.65 | 33.90 AV | 54.00 | -20.10 | 1.68 V | 266 | 31.63 | 2.27 |
| 5 | 6740.25 | 54.16 PK | 74.00 | -19.84 | 1.16 V | 288 | 41.62 | 12.54 |
| 6 | 6740.25 | 40.60 AV | 54.00 | -13.40 | 1.16 V | 288 | 28.06 | 12.54 |

Remarks:

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



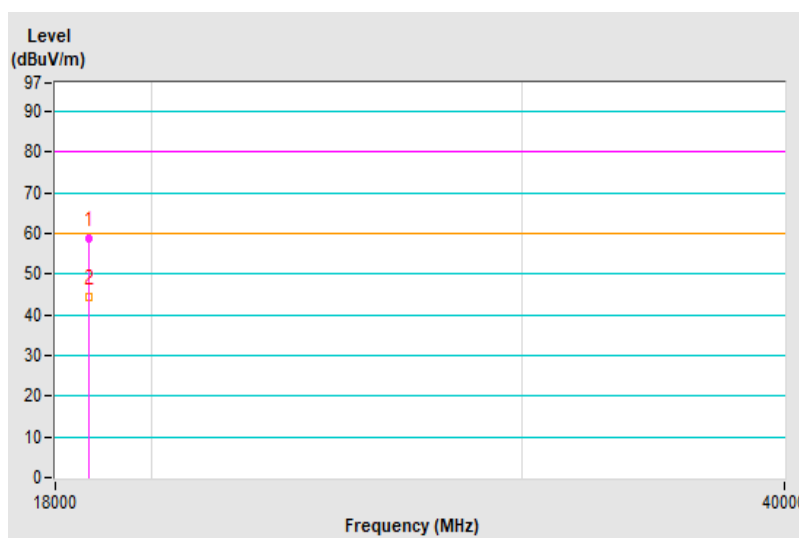


| | | | |
|------------------------|---------------|---|--------------------------------|
| Frequency Range | 18GHz ~ 30GHz | Detector Function & Resolution Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Horizontal at 1.5 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 | 18665.30 | 58.90 PK | 80.00 | -21.10 | 1.01 H | 339 | 66.01 | -7.11 |
| 2 | 18665.30 | 44.30 AV | 60.00 | -15.70 | 1.01 H | 339 | 51.41 | -7.11 |

Remarks:

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

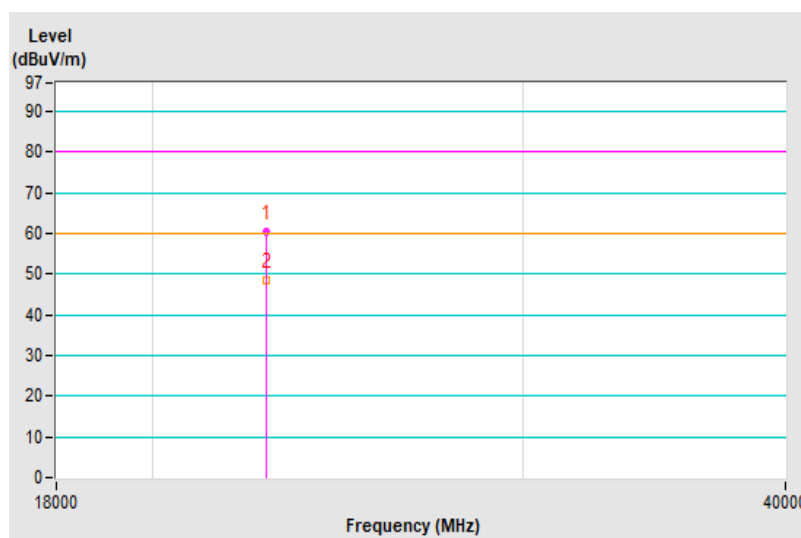


| | | | |
|------------------------|---------------|---|--------------------------------|
| Frequency Range | 18GHz ~ 30GHz | Detector Function & Resolution Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Tested By | Daniel Lin | Environmental Conditions | 20 °C, 63% RH |

| Antenna Polarity & Test Distance : Vertical at 1.5 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 | 22653.60 | 60.50 PK | 80.00 | -19.50 | 1.25 V | 122 | 62.45 | -1.95 |
| 2 | 22653.60 | 48.30 AV | 60.00 | -11.70 | 1.25 V | 122 | 50.25 | -1.95 |

Remarks:

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



8 Pictures of Test Arrangements

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

9 Information of the Testing Laboratories

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