

FCC Test Report

Report No.: RF160630E02A-1

FCC ID: HV4CDS610

Model No.: CDS-610

Received Date: June 30, 2016

Test Date: July 04 to 14, 2016

Issued Date: Aug. 01, 2016

Applicant: Wacom Co., Ltd.

Address: 2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148 Japan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

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Release Control Record

| Issue No. | Description | Date Issued |
|----------------|-------------------|---------------|
| RF160630E02A-1 | Original release. | Aug. 01, 2016 |

1 Certificate of Conformity

Product: Digital Notepad

Brand: Wacom

Model No.: CDS-610

Sample Status: ENGINEERING SAMPLE

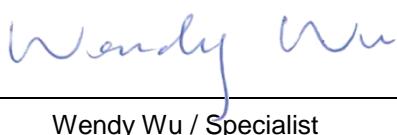
Applicant: Wacom Co., Ltd.

Test Date: July 04 to 14, 2016

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.209)

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 EMC characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Aug. 01, 2016

Wendy Wu / Specialist

**Technical
Acceptance**



Responsible for RF :  , **Date:** Aug. 01, 2016

Hank Chung / Manager

Approved by :  , **Date:** Aug. 01, 2016

May Chen / Manager

2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart C (SECTION 15.209) | | | |
|--|-----------------------------|--------|---|
| FCC Clause | Test Item | Result | Remarks |
| 15.207 | AC Power Conducted Emission | PASS | Meet the requirement of limit. Minimum passing margin is -10.36dB at 0.56016MHz. |
| 15.209 | Radiated Emission Test | PASS | Meet the requirement of limit. Minimum passing margin is -5.5dB at 30.02MHz. |
| 15.203 | Antenna Requirement | PASS | No antenna connector is used. |

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 | Expended Uncertainty (k=2) (±) |
|------------------------------------|----------------|--------------------------------|
| Conducted Emissions at mains ports | 150kHz ~ 30MHz | 1.83 dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 5.43 dB |

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

| | | | |
|---------------------|--|--|--|
| Product | Digital Notepad | | |
| Brand | Wacom | | |
| Model No. | CDS-610 | | |
| Status of EUT | ENGINEERING SAMPLE | | |
| Power Supply Rating | DC 5V from USB interface DC 3.9V from Battery | | |
| Operating Frequency | 562.5 kHz | | |
| Number of Channel | 1 | | |
| Antenna Type | Refer to Note | | |
| Antenna Connector | Refer to Note | | |
| Accessory Device | Pen x 1 (Brand: Wacom, Model: UP-3708) Notebook x 1 | | |
| Cable Supplied | USB to Micro USB cable x 1 (unshielded, 1m) | | |

Note:

1. The EUT has two types which are identical to each other in all aspects except for the following table:

| Product Name | Brand | Model | Type | Difference |
|-----------------|-------|---------|----------|---------------------------|
| Digital Notepad | Wacom | CDS-610 | Slate A5 | With different appearance |
| | | | Folio A5 | |

From the above conditions, **CDS-610** (Slate A5) was selected as representative model for the test and its data was recorded in this report.

2. There are BT-LE and EMR technology used for the EUT.

3. Simultaneously transmission condition.

| Condition | Technology | | |
|-----------|------------|--|-----|
| 1 | BT-LE | | EMR |

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

4. The antennas provided to the EUT, please refer to the following table:

| For BT used | | | | | | |
|--------------|-------|-------|--------------|-------------------|-----------------|------------------------|
| Antenna No | Brand | Model | Antenna Type | Antenna Connector | Gain (dBi) | Frequency (GHz to GHz) |
| 1 | USI | NA | Printed | NA | 3.3 | 2.4~2.4835 |
| For EMR used | | | | | | |
| Antenna No | Brand | Model | Antenna Type | Antenna Connector | Frequency (kHz) | |
| 1 | USI | NA | Loop | NA | 562.5 | |

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

One channel was provided to this EUT:

| Channel | FREQ. (kHz) |
|---------|-------------|
| 1 | 562.5 |

3.2.1 Test Mode Applicability and Tested Channel Detail

| EUT CONFIGURE MODE | APPLICABLE TO | | DESCRIPTION |
|--------------------|---------------|-----|------------------------|
| | RE | PLC | |
| 1 | √ | √ | With adapter |
| 2 | - | √ | With Notebook computer |

Where **RE \geq 1GHz**: Radiated Emission above 1GHz

RE $<$ 1GHz: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

EB: 20dB Bandwidth measurement

DT: Deactivation Time measurement

NOTE: 1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.

2. "-"means no effect.

Radiated 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.

| TESTED CHANNEL | FREQUENCY |
|----------------|-----------|
| 1 | 562.5 kHz |

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.

| TESTED CHANNEL | FREQUENCY |
|----------------|-----------|
| 1 | 562.5 kHz |

TEST CONDITION:

| Applicable To | Environmental Conditions | Input Power | Tested By | Test Location | SITE REGISTRATION |
|---------------|--------------------------|--------------|-------------|---------------|--|
| RE | 25deg. C, 72%RH | 120Vac, 60Hz | Andy Ho | 2 | FCC No.: 797305 CANADA No.: 7450H-3 |
| PLC | 23deg. C, 60%RH | 120Vac, 60Hz | Arthur Yang | 2 | FCC No.: 797305 CANADA No.: 7450H-3 |

3.3 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. | USB Adapter | ASUS | EXA1205UA | NA | NA | Provided by Lab |
| B. | Notebook Computer | DELL | E6440 | H7LYQ32 | FCC DoC | Provided by Lab |

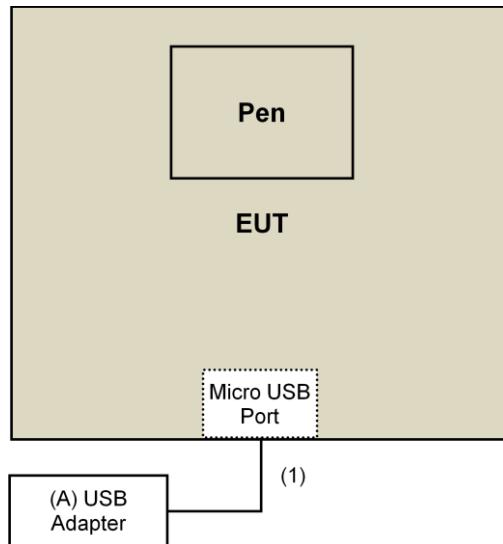
Note:

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

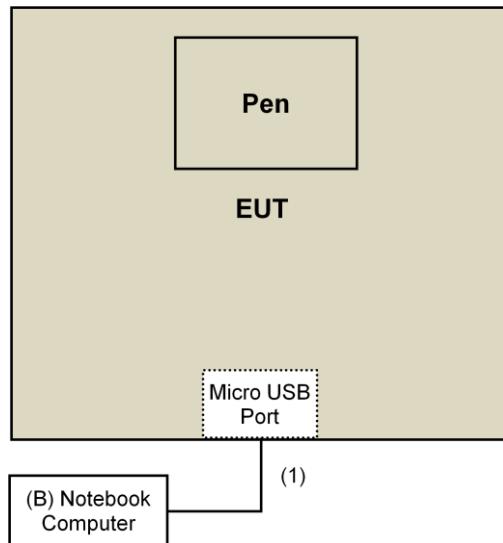
| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|------------------------|------|------------|--------------------|--------------|--------------------|
| 1. | USB to Micro USB cable | 1 | 1 | No | 0 | Supplied by client |

3.3.1 Configuration of System under Test

Adapter Mode:



Notebook Computer Mode:



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.209)

ANSI C63.10- 2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC).
The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

| 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. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|--------------------------|--------------------------------------|-----------------|------------------|
| Test Receiver Agilent | N9038A | MY51210202 | Dec. 16, 2015 | Dec. 15, 2016 |
| Pre-Amplifier ^(*) EMCI | EMC001340 | 980142 | Jan. 20, 2016 | Jan. 19, 2018 |
| Loop Antenna(*) Electro-Metrics | EM-6879 | 264 | Dec. 16, 2014 | Dec. 15, 2016 |
| RF Cable | NA | LOOPCAB-001 LOOPCAB-002 | Jan. 18, 2016 | Jan. 17, 2017 |
| Pre-Amplifier Mini-Circuits | ZFL-1000VH2 B | AMP-ZFL-04 | Nov. 11, 2015 | Nov. 10, 2016 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-361 | Jan. 07, 2016 | Jan. 06, 2017 |
| RF Cable | 8D-FB | CHHCAB-001- 1 CHHCAB-001- 2 | Oct. 04, 2015 | Oct. 03, 2016 |
| | RF-141 | CHHCAB-004 | Oct. 04, 2015 | Oct. 03, 2016 |
| Software | ADT_Radiated _V8.7.07 | NA | NA | NA |
| Antenna Tower & Turn Table CT | CM100 | NA | NA | NA |

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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: June 05 to 06, 2016

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. The height of antenna is 1 meter above the ground.
- c. Both open and close axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE: 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200Hz at frequency below 150kHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency 150kHz~ 30MHz.

For Radiated emission 30~1000MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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.

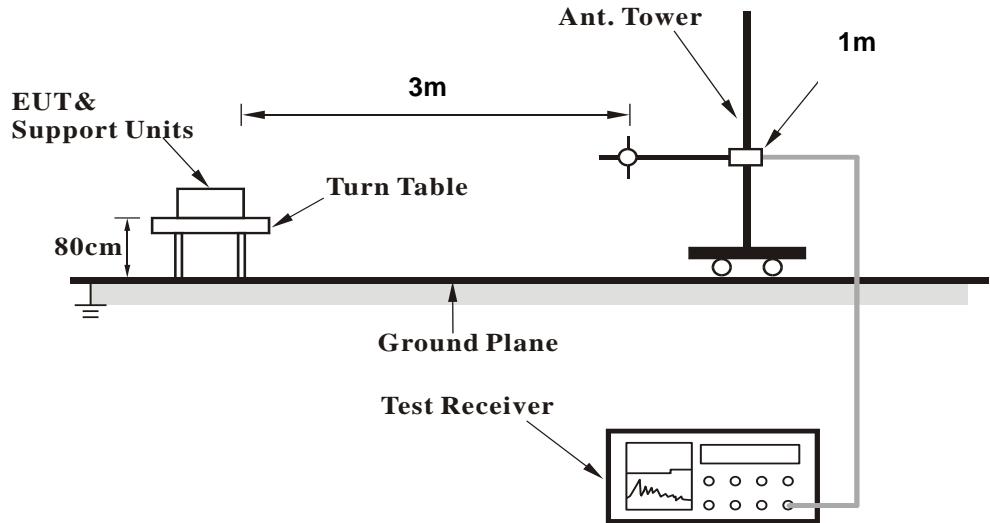
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency 30MHz ~ 1GHz.

4.1.4 Deviation from Test Standard

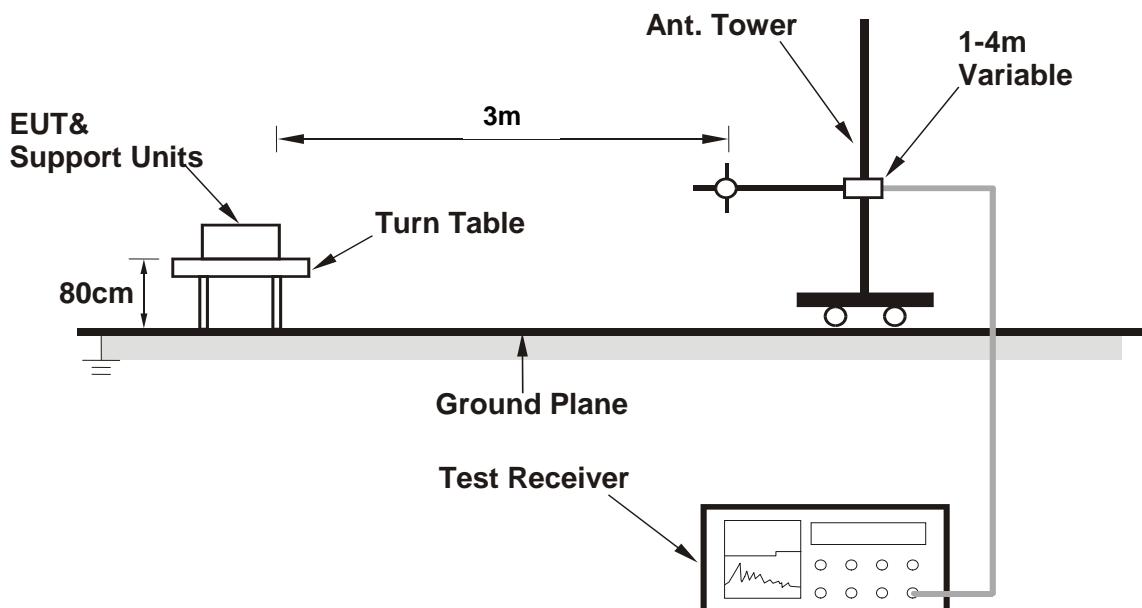
No deviation.

4.1.5 Test Setup

<Frequency Range 9 kHz ~ 30 MHz >



<Frequency Range 30-1000MHz >



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

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

| | | | |
|------------------------|----------------|------------------------------|-----------------|
| CHANNEL | Channel 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 9 kHz ~ 30 MHz | | |

| ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3 M | | | | | | | | |
|---|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 0.5625 | 37.4 QP | 72.6 | -35.2 | 1.00 | 328 | 33.3 | 4.1 |
| 2 | 3.2345 | 24.1 QP | 69.5 | -45.4 | 1.00 | 214 | 26.9 | -2.8 |
| 3 | 15.5578 | 38.1 QP | 69.5 | -31.4 | 1.00 | 107 | 41.7 | -3.6 |
| 4 | 21.6655 | 39.7 QP | 69.5 | -29.8 | 1.00 | 352 | 43.9 | -4.2 |
| 5 | 23.1306 | 45.8 QP | 69.5 | -23.7 | 1.00 | 230 | 49.5 | -3.7 |
| 6 | 23.9628 | 46.7 QP | 69.5 | -22.8 | 1.00 | 198 | 50.3 | -3.6 |
| 7 | 26.9994 | 47.1 QP | 69.5 | -22.4 | 1.00 | 225 | 49.9 | -2.8 |
| ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA CLOSE AT 3 M | | | | | | | | |
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
| 1 | 0.5625 | 33.4 QP | 72.6 | -39.2 | 1.00 | 244 | 29.3 | 4.1 |
| 2 | 1.3134 | 28.9 QP | 65.2 | -36.3 | 1.00 | 360 | 28.6 | 0.3 |
| 3 | 23.1306 | 37.6 QP | 69.5 | -31.9 | 1.00 | 34 | 41.3 | -3.7 |
| 4 | 24.0018 | 38.2 QP | 69.5 | -31.3 | 1.00 | 154 | 41.8 | -3.6 |
| 5 | 26.9994 | 39.3 QP | 69.5 | -30.2 | 1.00 | 193 | 42.1 | -2.8 |
| 6 | 29.2037 | 36.3 QP | 69.5 | -33.2 | 1.00 | 315 | 38.8 | -2.5 |

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
5. Above limits have been translated by the formula

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 24000/562.5\text{kHz} &= 42.6 \text{ uV/m} & 30\text{m} \\
 &= 32.6 \text{ dBuV/m} & 30\text{m} \\
 &= 32.6 \text{ dBuV/m} + 20\log(30/3)^2 & 3\text{m} \\
 &= 72.6 \text{ dBuV/m} & 3\text{m}
 \end{aligned}$$

| | | | |
|------------------------|--------------|------------------------------|-----------------|
| CHANNEL | Channel 1 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz | | |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1 | 168.01 | 28.5 QP | 43.5 | -15.0 | 1.50 H | 121 | 36.7 | -8.2 |
| 2 | 184.01 | 27.8 QP | 43.5 | -15.7 | 1.50 H | 86 | 37.6 | -9.8 |
| 3 | 232.00 | 29.5 QP | 46.0 | -16.5 | 1.00 H | 69 | 39.3 | -9.8 |
| 4 | 264.01 | 27.7 QP | 46.0 | -18.3 | 1.00 H | 69 | 35.9 | -8.2 |
| 5 | 330.00 | 26.6 QP | 46.0 | -19.4 | 2.00 H | 129 | 32.1 | -5.5 |
| 6 | 729.49 | 33.4 QP | 46.0 | -12.6 | 1.00 H | 280 | 30.6 | 2.8 |

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

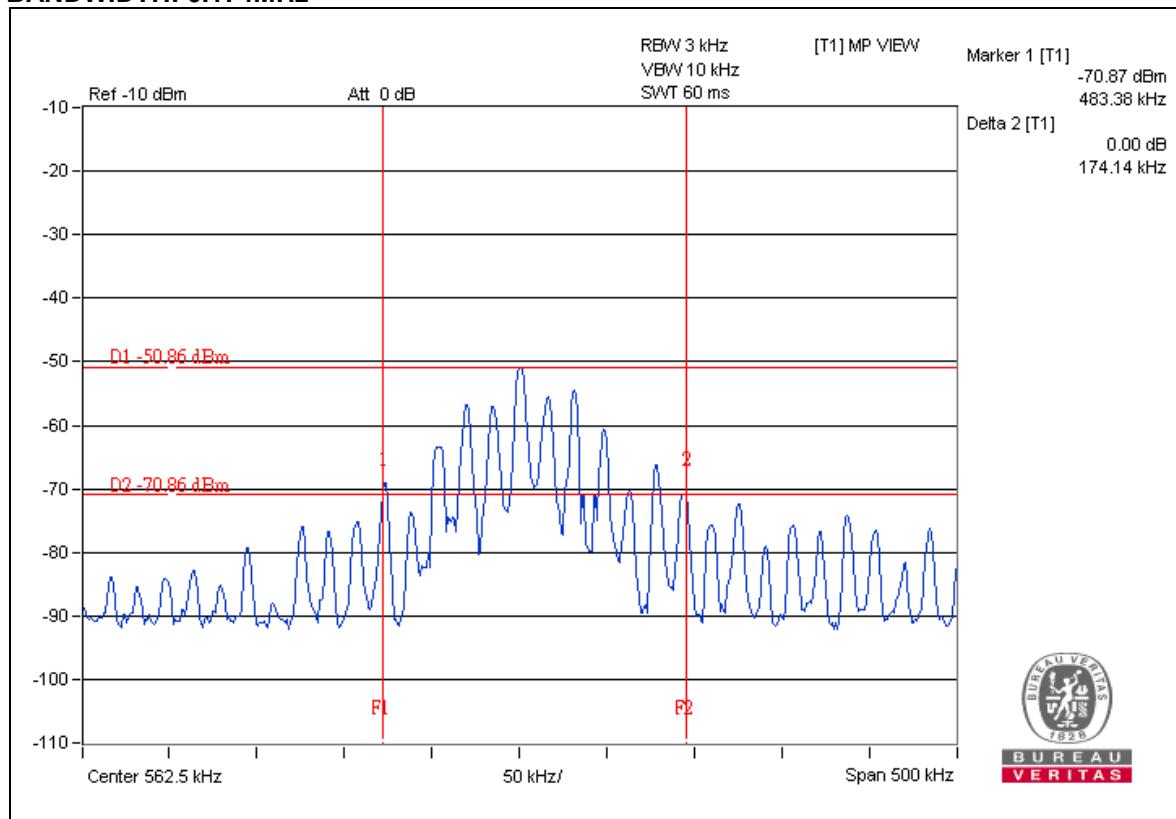
| NO. | FREQ. (MHz) | EMISSION LEVEL (dBuV/m) | LIMIT (dBuV/m) | MARGIN (dB) | ANTENNA HEIGHT (m) | TABLE ANGLE (Degree) | RAW VALUE (dBuV) | CORRECTION FACTOR (dB/m) |
|-----|----------------|-------------------------------|-------------------|----------------|--------------------------|----------------------------|------------------------|--------------------------------|
| 1 | 30.02 | 34.5 QP | 40.0 | -5.5 | 1.50 V | 128 | 43.8 | -9.3 |
| 2 | 88.20 | 26.0 QP | 43.5 | -17.5 | 1.50 V | 150 | 39.9 | -13.9 |
| 3 | 184.01 | 30.5 QP | 43.5 | -13.0 | 1.00 V | 104 | 40.3 | -9.8 |
| 4 | 330.00 | 31.8 QP | 46.0 | -14.2 | 1.00 V | 185 | 37.3 | -5.5 |
| 5 | 585.47 | 25.9 QP | 46.0 | -20.1 | 1.00 V | 276 | 25.7 | 0.2 |
| 6 | 939.35 | 31.8 QP | 46.0 | -14.2 | 1.00 V | 0 | 25.1 | 6.7 |

REMARKS:

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

4.1.8 Test Results (Spectrum Bandwidth)

BANDWIDTH: 0.174MHz



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.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|-------------------------|------------|-----------------|------------------|
| Test Receiver R&S | ESCS 30 | 100375 | May 09, 2016 | May 08, 2017 |
| Line-Impedance Stabilization Network (for EUT) SCHWARZBECK | NSLK-8127 | 8127-522 | Sep. 01, 2015 | Aug. 31, 2016 |
| Line-Impedance Stabilization Network (for Peripheral) R&S | ENV216 | 100072 | June 13, 2016 | June 12, 2017 |
| RF Cable | 5D-FB | COCCAB-001 | Mar. 08, 2016 | Mar. 07, 2017 |
| 10 dB PAD Mini-Circuits | HAT-10+ | CONATT-003 | Sep. 14, 2015 | Sep. 13, 2016 |
| 50 ohms Terminator | N/A | EMC-03 | Sep. 23, 2015 | Sep. 22, 2016 |
| 50 ohms Terminator | N/A | EMC-02 | Oct. 01, 2015 | Sep. 30, 2016 |
| Software BVADT | BVADT_Cond_ V7.3.7.3 | NA | NA | NA |

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: July 11, 2016

4.2.3 Test Procedures

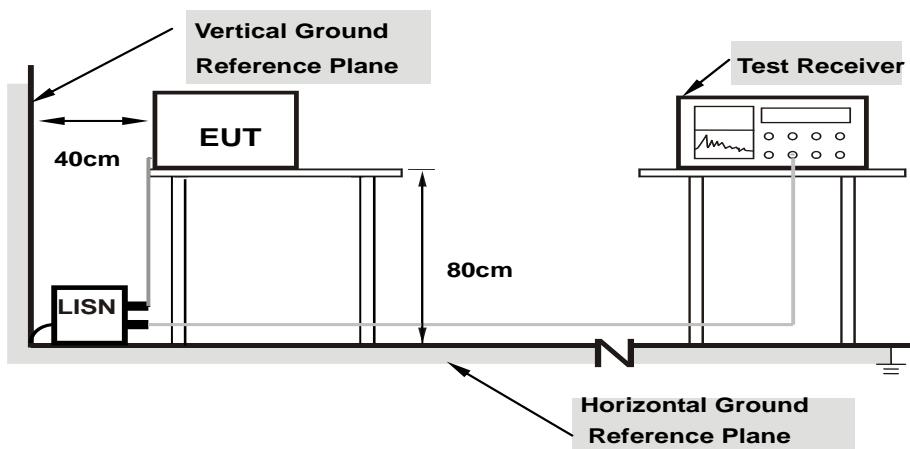
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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 4.1.6.

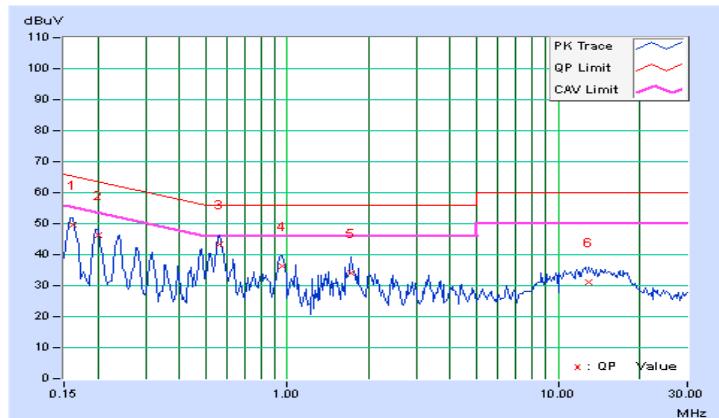
4.2.7 Test Results (Mode 1)

| Phase | Line (L) | Detector Function | | Quasi-Peak (QP) / Average (AV) | |
|-------|----------|-------------------|--|--------------------------------|--|
|-------|----------|-------------------|--|--------------------------------|--|

| No | Freq. | Corr. | Reading Value | | Emission Level | | Limit | | Margin | | |
|----------|----------------|--------------|---------------|--------------|----------------|--------------|--------------|--------------|---------------|---------------|--------|
| | | Factor | [dB (uV)] | | [dB (uV)] | | [dB (uV)] | | (dB) | | |
| | | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.16172 | | 10.43 | 39.13 | 33.69 | 49.56 | 44.12 | 65.38 | 55.38 | -15.82 | -11.26 |
| 2 | 0.20078 | | 10.40 | 36.05 | 31.68 | 46.45 | 42.08 | 63.58 | 53.58 | -17.13 | -11.50 |
| 3 | 0.56016 | 10.42 | 32.83 | 25.22 | 43.25 | 35.64 | 56.00 | 46.00 | -12.75 | -10.36 | |
| 4 | 0.95859 | | 10.38 | 25.74 | 17.42 | 36.12 | 27.80 | 56.00 | 46.00 | -19.88 | -18.20 |
| 5 | 1.72656 | | 10.42 | 23.48 | 15.62 | 33.90 | 26.04 | 56.00 | 46.00 | -22.10 | -19.96 |
| 6 | 12.94141 | | 11.11 | 19.89 | 12.83 | 31.00 | 23.94 | 60.00 | 50.00 | -29.00 | -26.06 |

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.

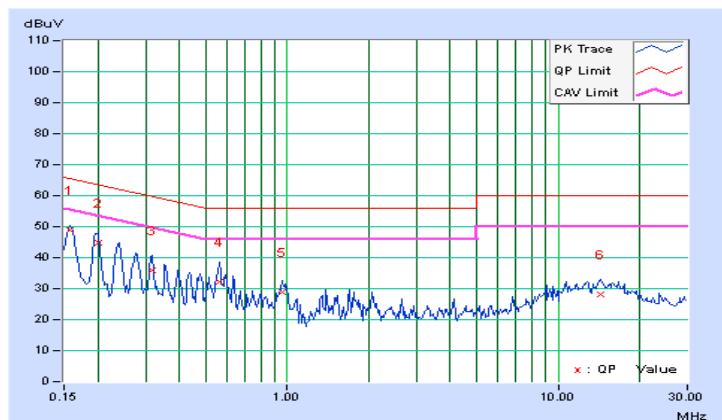


| Phase | Neutral (N) | | Detector Function | | Quasi-Peak (QP) / Average (AV) | |
|-------|-------------|--|-------------------|--|--------------------------------|--|
|-------|-------------|--|-------------------|--|--------------------------------|--|

| No | Freq. [MHz] | Corr. | Reading Value | | Emission Level | | Limit | | Margin | |
|----|----------------|--------|---------------|-------|----------------|-------|-----------|-------|--------|--------|
| | | Factor | [dB (uV)] | | [dB (uV)] | | [dB (uV)] | | (dB) | |
| | | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.15781 | 10.45 | 38.51 | 26.98 | 48.96 | 37.43 | 65.58 | 55.58 | -16.62 | -18.15 |
| 2 | 0.20078 | 10.45 | 34.52 | 24.11 | 44.97 | 34.56 | 63.58 | 53.58 | -18.61 | -19.02 |
| 3 | 0.31797 | 10.47 | 25.31 | 17.04 | 35.78 | 27.51 | 59.76 | 49.76 | -23.98 | -22.25 |
| 4 | 0.56406 | 10.47 | 21.58 | 13.93 | 32.05 | 24.40 | 56.00 | 46.00 | -23.95 | -21.60 |
| 5 | 0.95469 | 10.43 | 18.57 | 9.97 | 29.00 | 20.40 | 56.00 | 46.00 | -27.00 | -25.60 |
| 6 | 14.27734 | 11.21 | 16.84 | 8.83 | 28.05 | 20.04 | 60.00 | 50.00 | -31.95 | -29.96 |

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.

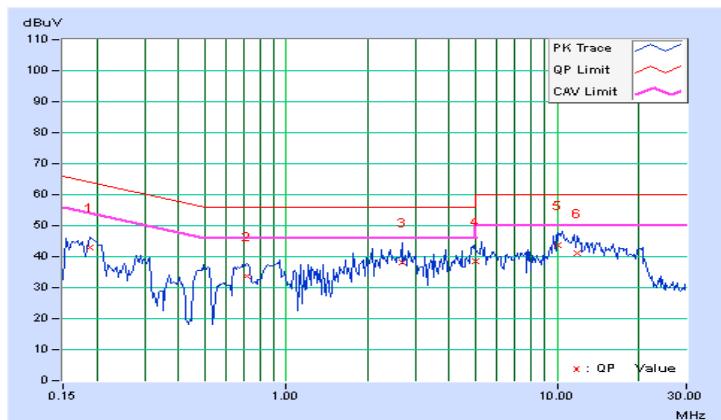


4.2.8 Test Results (Mode 2)

| Phase | | Line (L) | | Detector Function | | Quasi-Peak (QP) / Average (AV) | | | | |
|-------|----------|----------|---------------|-------------------|-------|--------------------------------|-------|--------|--------|--------|
| No | Freq. | Corr. | Reading Value | Emission Level | | Limit | | Margin | | |
| | | Factor | [dB (uV)] | [dB (uV)] | | [dB (uV)] | | (dB) | | |
| | | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | |
| 1 | 0.18906 | 10.29 | 32.58 | 19.14 | 42.87 | 29.43 | 64.08 | 54.08 | -21.21 | -24.65 |
| 2 | 0.72031 | 10.26 | 23.41 | 7.63 | 33.67 | 17.89 | 56.00 | 46.00 | -22.33 | -28.11 |
| 3 | 2.67188 | 10.32 | 27.94 | 14.16 | 38.26 | 24.48 | 56.00 | 46.00 | -17.74 | -21.52 |
| 4 | 5.00000 | 10.45 | 27.98 | 16.64 | 38.43 | 27.09 | 56.00 | 46.00 | -17.57 | -18.91 |
| 5 | 10.10547 | 10.55 | 33.27 | 23.81 | 43.82 | 34.36 | 60.00 | 50.00 | -16.18 | -15.64 |
| 6 | 11.87891 | 10.63 | 30.42 | 21.95 | 41.05 | 32.58 | 60.00 | 50.00 | -18.95 | -17.42 |

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.

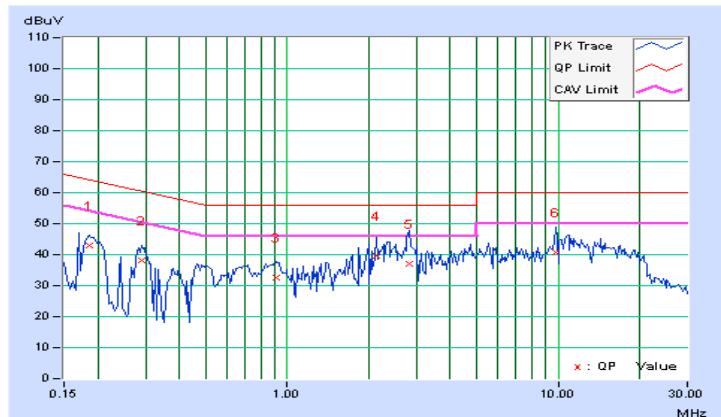


| Phase | Neutral (N) | | Detector Function | | Quasi-Peak (QP) / Average (AV) | |
|-------|-------------|--|-------------------|--|--------------------------------|--|
|-------|-------------|--|-------------------|--|--------------------------------|--|

| No | Freq. [MHz] | Corr. | Reading Value | | Emission Level | | Limit | | Margin | |
|----|----------------|--------|---------------|-------|----------------|-------|-----------|-------|--------|--------|
| | | Factor | [dB (uV)] | | [dB (uV)] | | [dB (uV)] | | (dB) | |
| | | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.18516 | 10.27 | 32.87 | 18.98 | 43.14 | 29.25 | 64.25 | 54.25 | -21.11 | -25.00 |
| 2 | 0.29063 | 10.27 | 27.83 | 18.79 | 38.10 | 29.06 | 60.51 | 50.51 | -22.41 | -21.45 |
| 3 | 0.90781 | 10.23 | 22.36 | 8.55 | 32.59 | 18.78 | 56.00 | 46.00 | -23.41 | -27.22 |
| 4 | 2.13281 | 10.27 | 29.52 | 17.32 | 39.79 | 27.59 | 56.00 | 46.00 | -16.21 | -18.41 |
| 5 | 2.83594 | 10.34 | 26.56 | 15.36 | 36.90 | 25.70 | 56.00 | 46.00 | -19.10 | -20.30 |
| 6 | 9.76172 | 10.55 | 30.37 | 22.75 | 40.92 | 33.30 | 60.00 | 50.00 | -19.08 | -16.70 |

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.



5 Pictures of Test Arrangements

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

Appendix – Information on 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:

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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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