# FCC DoC Test Report

**Report No.:** FC161220E09

**Test Model:** M-R0067

**Received Date:** Dec. 20, 2016

**Test Date:** Dec. 23 to 28, 2016

**Issued Date:** Jan. 04, 2017

**Applicant:** LOGITECH FAR EAST LTD.

**Address:** #2 Creation Rd. 4, Science-Based Ind. Park Hsinchu Taiwan, R.O.C.

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

**Test Location (1):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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## Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| FC161220E09 | Original release. | Jan. 04, 2017 |

## 1 Certificate of Conformity

**Product:** Cordless Mouse

**Brand:** Logitech

**Test Model:** M-R0067

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** LOGITECH FAR EAST LTD.

**Test Date:** Dec. 23 to 28, 2016

**Standards:** 47 CFR FCC Part 15, Subpart B, Class B
ICES-003:2016 Issue 6, 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.

**Prepared by :** Nico Liu , **Date:** Jan. 04, 2017

Nico Liu / Specialist

**Approved by :** , **Date:** Jan. 04, 2017

Ken Lu / Manager

## 2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart B / ICES-003:2016 Issue 6, Class B<br>ANSI C63.4:2014 | | | | |
|---|---|---|---|---|
| FCC Clause | ICES-003 Clause | Test Item | Result/Remarks | Verdict |
| 15.107 | 6.1 | AC Power Line Conducted Emissions | Minimum passing Class B margin is -10.61 dB at 2.82813 MHz | Pass |
| 15.109 | 6.2.1 | Radiated Emissions up to 1 GHz | Minimum passing Class B margin is -5.10 dB at 491.87 MHz | Pass |
| | 6.2.2 | Radiated Emissions above 1 GHz | Minimum passing Class B margin is -14.58 dB at 5640.15 MHz | Pass |

Note: There is no deviation to the applied test methods and requirements covered by the scope of this report.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

| Measurement | Frequency | Expended Uncertainty (k=2) (±) |
|---|---|---|
| Conducted Emissions at mains ports | 150kHz ~ 30MHz | 1.83 dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 3.62 dB |
| Radiated Emissions above 1 GHz | Above 1GHz | 3.34 dB |

### 2.2 Modification Record

There were no modifications required for compliance.

# 3 General Information

## 3.1 Features of EUT

The tests reported herein were performed according to the method specified by LOGITECH FAR EAST LTD., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

## 3.2 General Description of EUT

| | |
|---|---|
| Product | Cordless Mouse |
| Brand | Logitech |
| Test Model | M-R0067 |
| Sample Status | ENGINEERING SAMPLE |
| Operating Software | NA |
| Power Supply Rating | DC 3.7V from battery or DC 5V from USB interface |
| Accessory Device | NA |
| Data Cable Supplied | USB cable x 1 (shielded, 0.7m) |

Note:

1. The EUT may have a lot of colors for marketing requirement.
2. The EUT could be supplied with a battery as the following table:

| No. | Brand | Model No. | Spec. |
|---|---|---|---|
| 1 | SYNERGY SCIENTECH CORP or Logitech | AHB572535PJT or 533-000120 | 3.7Vdc, 500mAh |
| 2 | SPRINGPOWER TECHNOLOGY SHENZHEN CO LTD or Logitech | 652535 or 533-000121 | 3.7Vdc, 500mAh |

3. The EUT was pre-tested under following test modes:

| Pre-test Mode | Power |
|---|---|
| Mode A | Power from battery 1 |
| Mode B | Power from battery 2 |
| **Mode C** | **Power from USB interface** |

From the above modes, the worst spurious emission was found in **Mode C**. Therefore only the test data of the modes were recorded in this report.

4. 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.

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

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

| Test Condition | | | | |
|---|---|---|---|---|
| Radiated emission test | | | | |
| Mode | DC | Power Source | Battery | wireless |
| **A** | **3.7V** | **Battery** | **Battery 1** | **GFSK** |
| B | 3.7V | Battery | Battery 2 | GFSK |
| C | 5V | USB Charge | Battery 1 | GFSK |

Test modes are presented in the report as below.

| Test Condition | | | | |
|---|---|---|---|---|
| Radiated emission / Conducted emission test | | | | |
| Mode | DC | Power Source | Battery | wireless |
| 1 | 3.7V | Battery | Battery 1 | GFSK |
| 2 | 3.7V | Battery | Battery 1 | BT |

### 3.4 Test Program Used and Operation Descriptions

For Conducted emission test

1 Turn on the power of all equipment.
2 The EUT is powered by support unit A (Laptop)
3 Support unit A (Laptop) runs” EMC test.exe” then sends "H" messages to itself.

For Radiated emission test (Mode1)

1 Turn on the power of all equipment.
2 EUT link support unit A (Laptop) with GFSK.
3 Support unit A (Laptop) runs” EMC test.exe” then sends "H" messages to itself.

For Radiated emission test (Mode 2)

1 Turn on the power of all equipment.
2 EUT link support unit A (Laptop) with BT.
3 Support unit A (Laptop) runs” EMC test.exe” then sends "H" messages to itself.

### 3.5 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 2.4 GHz, provided by LOGITECH FAR EAST LTD., for detailed internal source, please refer to the manufacturer's specifications.

### 3.6 Miscellaneous

**Labelling Requirements for Part 15 Devices:**

- Verification

The specific labelling requirements for a device subject to the Verification procedure are contained in Section 15.19(a). These labelling requirements are:

If the device is subject only to Verification, include a label bearing a unique identifier (Section 2.954) and one of three compliance statements specified in Section 15.19(a). If the labeling area for the device is so small, and/or it is not practical to place the compliance statement on the device, then the statement can be placed in the user manual or product packaging (Section 15.19(a)(5)). However, the device must still be labelled with the unique identifier (Verification). Generally, devices smaller than the palm of the hand are considered too small for the compliance statement.

- Certification

If the device is subject to Certification: (1) Section 2.925 contains information on identification of the equipment; (2) include a label bearing an FCC Identifier (FCC ID) (Section 2.926) and (3) include the appropriate compliance statement in Section 15.19(a). If the device is considered too small and therefore it is impractical (smaller than the palm of the hand) to display the compliance statement, then the statement may be placed in the user manual or product packaging. However, the device must still be labelled with the FCC ID. If the device is unquestionably too small for the FCC ID to be readable (smaller than 4-6 points), the FCC ID may be placed in the user manual. However, it must be determined that the device itself is too small – the label area allocated to the FCC ID may not be reduced because of over crowded identification of other product and regulatory information.

An electronic display of the FCC ID (see 9. Electronic Labelling below) may be used for Certification of Section 15.212 modular transmitters and software defined radios (Section 2.944).

- Declaration of Conformity (DoC):

The labelling requirements for a device subject to the DoC procedure are specified in Section 15.19(b). The label should include the FCC logo along with the Trade Name and Model Number, which satisfies the unique identifier requirement of Section 2.1074 if it represents the identical equipment tested for DoC compliance. For personal computers assembled from authorized components, the following additional text must also be included: “Assembled from tested components,” “Complete system not tested.” When the device is so small and/or when it is not practical to place the required additional text on the device, the text may be placed in the user manual or pamphlet supplied to the user. However, the FCC logo, Trade Name, and Model Number must still be displayed on the device (Section 15.19(b)(3)).

Part 15 Declaration of Conformity (DoC) Label Examples

Equipment certified as software defined radio may use a means that readily displays the FCC ID on an electronic display screen, instead of labelling the device (Section 2.925 (e)).

Further information may refer to FCC KDB:784748 D01 Labelling Part 15 &18 Guidelines

**Labelling Requirements for ICES-003 Devices:**

- Industry Canada ICES-003 Compliance Label:

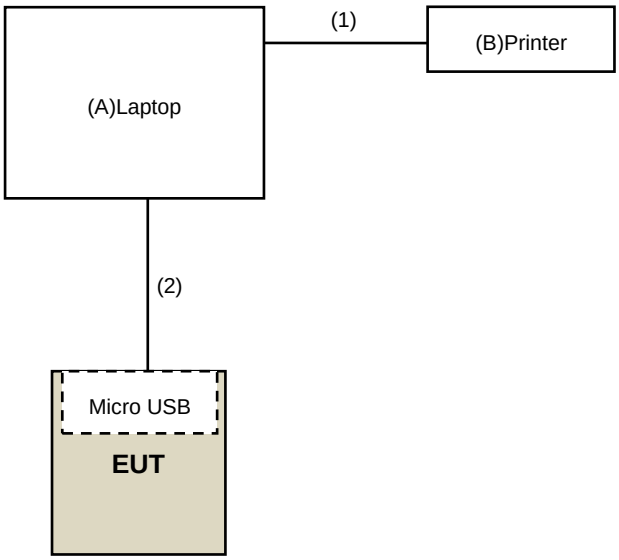
*CAN ICES-3 (*)/NMB-3(*)*

* Insert either “A” or “B” but not both to identify the applicable Class of ITE.

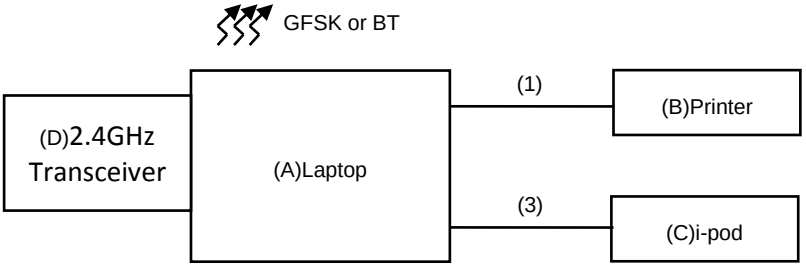
# 4 Configuration and Connections with EUT

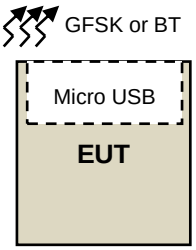
## 4.1 Connection Diagram of EUT and Peripheral Devices

For Conducted emission test



For Radiated emission test



## 4.2 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A. | Laptop | DELL | Latitude E5440 | DX8OP32 | FCC DoC | Provided by Lab |
| B. | Printer | EPSON | LQ-300+II | G88Y074083 | FCC DoC | Provided by Lab |
| C. | i-pod | Apple | MD778TA/A | CC4JMJV2F4T1 | FCC DoC | Provided by Lab |
| D. | 2.4GHz Transceiver | Logitech | C-U0012 | NA | NA | Supplied by client |
| E. | PC | DELL | D15M | NA | NA | Provided by Lab |
| F. | Keyboard | ASUS | AW211 | NA | NA | Provided by Lab |
| G. | Monitor | DELL | U2410F | CNOJ257M728729AG 159L | 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 cable | 1 | 1.8 | Yes | 0 | Provided by Lab |
| 2. | USB cable | 1 | 0.1 | Yes | 0 | Provided by Lab |
| 3. | Miro USB to USB cable | 1 | 0.7 | Yes | 0 | Supplied by client |
| 4. | USB cable | 1 | 1.8 | Yes | 0 | Provided by Lab |
| 5. | VGA cable | 1 | 1.8 | Yes | 2 | Provided by Lab |

Note: The cores are originally attached to the cable.

## 5 Conducted Emissions at Mains Ports

### 5.1 Limits

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

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

### 5.2 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 | Aug. 31, 2016 | Aug. 30, 2017 |
| Line-Impedance Stabilization Network (for Peripheral ) R&S | ENV216 | 100072 | June 13, 2016 | June 12, 2017 |
| RF Cable | 5D-FB | COACAB-002 | Mar. 04, 2016 | Mar. 03, 2017 |
| 10 dB PAD Mini-Circuits | HAT-10+ | CONATT-003 | Sep. 13, 2016 | Sep. 12, 2017 |
| 50 ohms Terminator | N/A | EMC-03 | Sep. 29, 2016 | Sep. 28, 2017 |
| 50 ohms Terminator | N/A | EMC-02 | Sep. 29, 2016 | Sep. 28, 2017 |
| Software BVADT | BVADT_Cond_ V7.3.7.4 | 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:Dec. 28, 2016

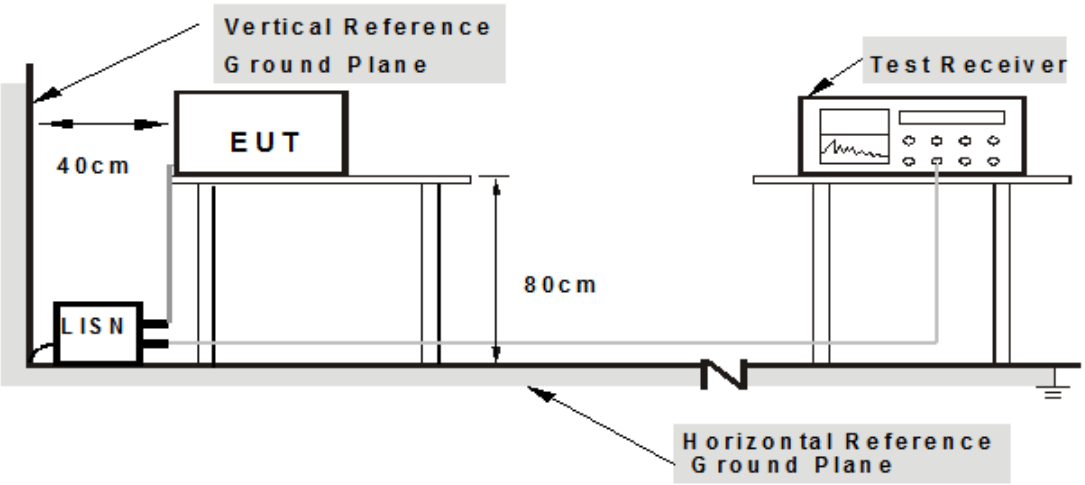
## 5.3 Test Arrangement

a. 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.

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

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

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




Note: 1.Support units were connected to second LISN.

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

## 5.4 Supplementary Information

There is not any deviation from the test standards for the test method.

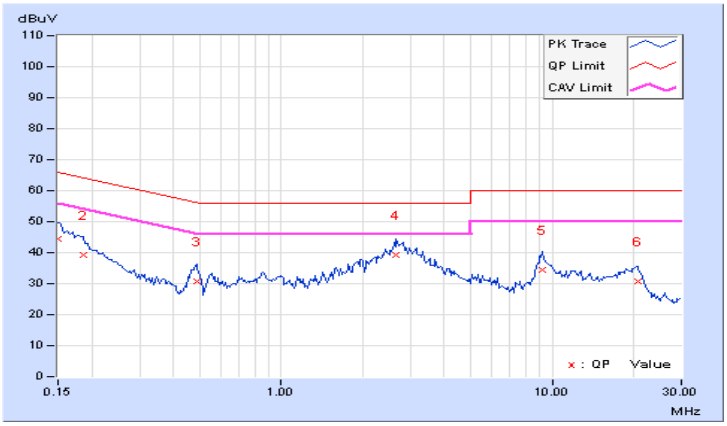
## 5.5 Test Results (Mode 1)

| | | | |
|---|---|---|---|
| **Frequency Range** | 150kHz ~ 30MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9kHz |
| **Input Power (system)** | 120Vac, 60Hz | **Environmental Conditions** | 25℃, 69%RH |
| **Tested by** | Wythe Lin | | |
| **Test Mode** | Mode 1 | | |

| 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 | 0.15000 | 10.14 | 34.16 | 22.24 | 44.30 | 32.38 | 66.00 | 56.00 | -21.70 | -23.62 |
| 2 | 0.18516 | 10.13 | 29.07 | 22.05 | 39.20 | 32.18 | 64.25 | 54.25 | -25.05 | -22.07 |
| 3 | 0.48594 | 10.11 | 20.57 | 17.10 | 30.68 | 27.21 | 56.24 | 46.24 | -25.56 | -19.03 |
| 4 | 2.63672 | 10.27 | 28.88 | 24.89 | 39.15 | 35.16 | 56.00 | 46.00 | -16.85 | -10.84 |
| 5 | 9.26172 | 10.42 | 23.93 | 19.06 | 34.35 | 29.48 | 60.00 | 50.00 | -25.65 | -20.52 |
| 6 | 20.65234 | 10.83 | 19.98 | 15.00 | 30.81 | 25.83 | 60.00 | 50.00 | -29.19 | -24.17 |

**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

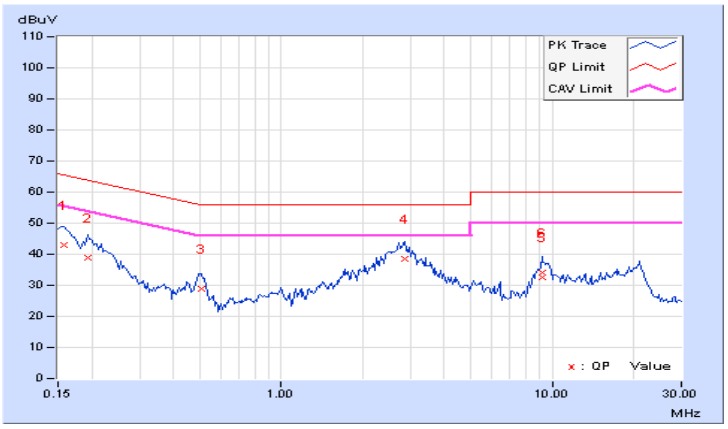


| | | | |
|---|---|---|---|
| **Frequency Range** | 150kHz ~ 30MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9kHz |
| **Input Power (system)** | 120Vac, 60Hz | **Environmental Conditions** | 25℃, 69%RH |
| **Tested by** | Wythe Lin | | |
| **Test Mode** | Mode 1 | | |

| **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 | 0.15781 | 10.17 | 32.87 | 21.38 | 43.04 | 31.55 | 65.58 | 55.58 | -22.54 | -24.03 |
| 2 | 0.19297 | 10.09 | 28.95 | 21.31 | 39.04 | 31.40 | 63.91 | 53.91 | -24.87 | -22.51 |
| 3 | 0.50938 | 10.11 | 18.91 | 14.08 | 29.02 | 24.19 | 56.00 | 46.00 | -26.98 | -21.81 |
| 4 | 2.87500 | 10.23 | 28.11 | 24.02 | 38.34 | 34.25 | 56.00 | 46.00 | -17.66 | -11.75 |
| 5 | 9.19922 | 10.46 | 22.14 | 18.88 | 32.60 | 29.34 | 60.00 | 50.00 | -27.40 | -20.66 |
| 6 | 9.19922 | 10.46 | 23.51 | 18.66 | 33.97 | 29.12 | 60.00 | 50.00 | -26.03 | -20.88 |

**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



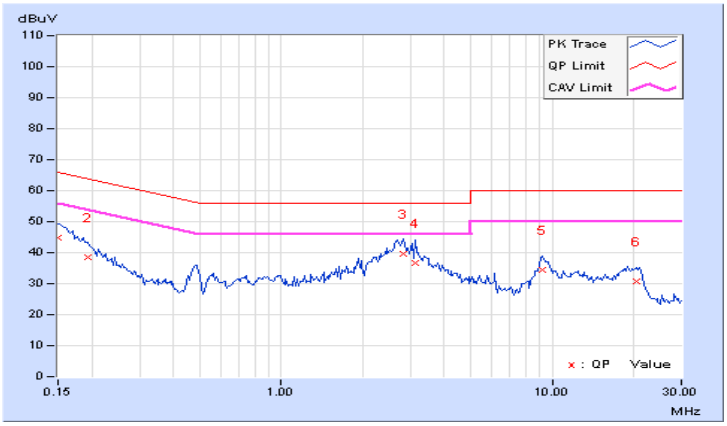
## 5.6 Test Results (Mode 2)

| | | | |
|---|---|---|---|
| **Frequency Range** | 150kHz ~ 30MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9kHz |
| **Input Power (system)** | 120Vac, 60Hz | **Environmental Conditions** | 25℃, 69%RH |
| **Tested by** | Wythe Lin | | |
| **Test Mode** | Mode 2 | | |

| 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 | 0.15000 | 10.14 | 34.81 | 22.26 | 44.95 | 32.40 | 66.00 | 56.00 | -21.05 | -23.60 |
| 2 | 0.19297 | 10.12 | 28.26 | 21.01 | 38.38 | 31.13 | 63.91 | 53.91 | -25.53 | -22.78 |
| **3** | **2.82813** | **10.27** | **29.53** | **25.12** | **39.80** | **35.39** | **56.00** | **46.00** | **-16.20** | **-10.61** |
| 4 | 3.12109 | 10.28 | 26.51 | 21.80 | 36.79 | 32.08 | 56.00 | 46.00 | -19.21 | -13.92 |
| 5 | 9.18750 | 10.41 | 23.98 | 19.11 | 34.39 | 29.52 | 60.00 | 50.00 | -25.61 | -20.48 |
| 6 | 20.48828 | 10.83 | 20.00 | 15.20 | 30.83 | 26.03 | 60.00 | 50.00 | -29.17 | -23.97 |

**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

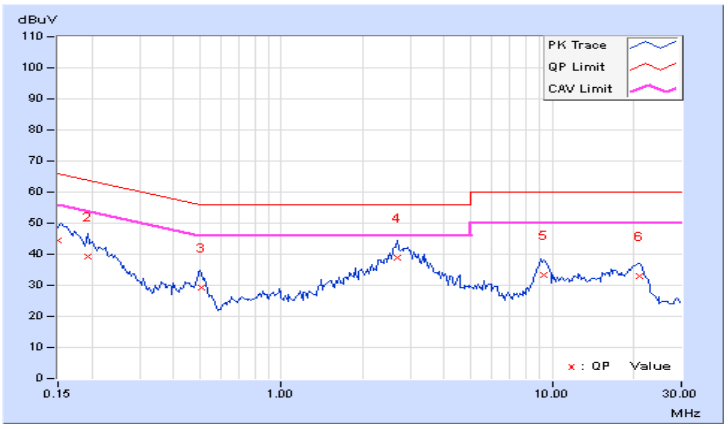


| | | | |
|---|---|---|---|
| **Frequency Range** | 150kHz ~ 30MHz | **Detector Function & Resolution Bandwidth** | Quasi-Peak (QP) / Average (AV), 9kHz |
| **Input Power (system)** | 120Vac, 60Hz | **Environmental Conditions** | 25℃, 69%RH |
| **Tested by** | Wythe Lin | | |
| **Test Mode** | Mode 2 | | |

| **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 | 10.19 | 34.26 | 22.20 | 44.45 | 32.39 | 66.00 | 56.00 | -21.55 | -23.61 |
| 2 | 0.19297 | 10.09 | 29.27 | 21.67 | 39.36 | 31.76 | 63.91 | 53.91 | -24.55 | -22.15 |
| 3 | 0.50938 | 10.11 | 19.01 | 13.89 | 29.12 | 24.00 | 56.00 | 46.00 | -26.88 | -22.00 |
| 4 | 2.67188 | 10.21 | 28.82 | 24.81 | 39.03 | 35.02 | 56.00 | 46.00 | -16.97 | -10.98 |
| 5 | 9.35156 | 10.46 | 23.00 | 18.46 | 33.46 | 28.92 | 60.00 | 50.00 | -26.54 | -21.08 |
| 6 | 20.90625 | 10.87 | 21.91 | 17.57 | 32.78 | 28.44 | 60.00 | 50.00 | -27.22 | -21.56 |

**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 Radiated Emissions up to 1 GHz

### 6.1 Limits

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

| Radiated Emissions Limits at 10 meters (dBμV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B / ICES-003, Class A | FCC 15B / ICES-003, 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 (dBμV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B / ICES-003, Class A | FCC 15B / ICES-003, 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.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. QP detector shall be applied if not specified.

## 6.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver Agilent | N9038A | MY50010125 | Apr. 16, 2016 | Apr. 15, 2017 |
| | N9038A | MY50010132 | June 28, 2016 | June 27, 2017 |
| Pre-Amplifier Sonoma | 310N | 352925 | Aug. 29, 2016 | Aug. 28, 2017 |
| | 310N | 352926 | Aug. 29, 2016 | Aug. 28, 2017 |
| Trilog Broadband Antenna SCHWARZBECK | VULB 9168 | 9168-359 | Jan. 05, 2016 | Jan. 04, 2017 |
| | VULB 9168 | 9168-358 | Jan. 05, 2016 | Jan. 04, 2017 |
| Fixed attenuator Mini-Circuits | UNAT-5+ | CHF-001 | Sep. 9, 2016 | Sep. 08, 2017 |
| | UNAT-5+ | CHF-002 | Sep. 9, 2016 | Sep. 08, 2017 |
| RF Cable | 8D-FB | CHFCAB-001-1<br>CHFCAB-001-3<br>CHFCAB-001-4 | Sep. 22, 2016 | Sep. 21, 2017 |
| | | CHFCAB-002-1<br>CHFCAB-002-3<br>CHFCAB-002-4 | Sep. 22, 2016 | Sep. 21, 2017 |
| Software BVADT | ADT_Radiated_V 8.7.08 | NA | NA | NA |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |

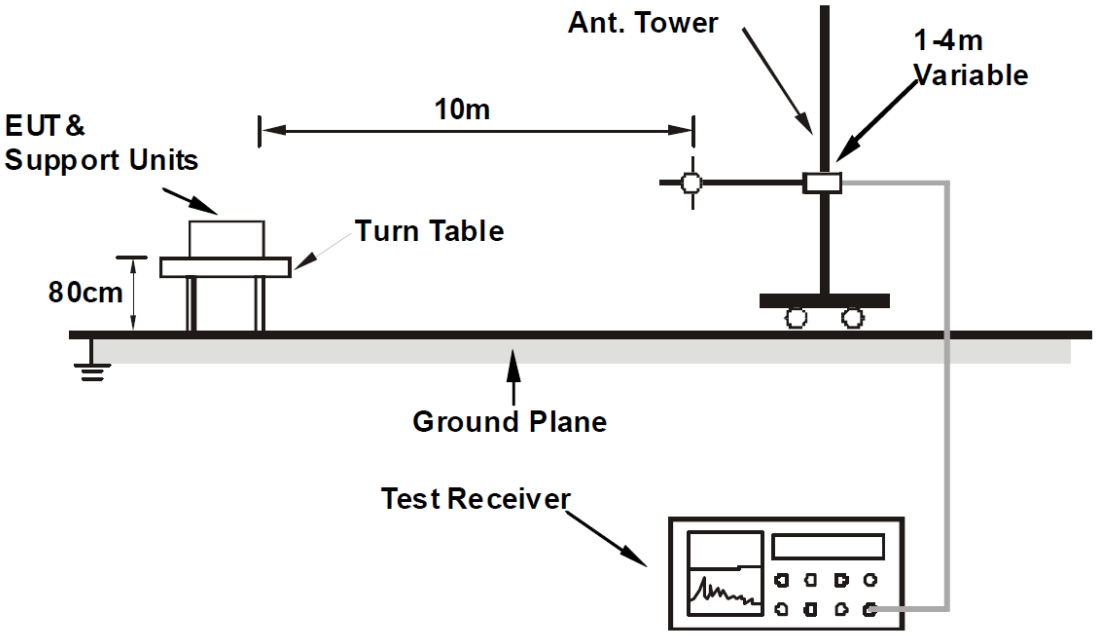
**Note:**

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 10m Chamber No. F.
3. The FCC Site Registration No. is 928149.
4. The VCCI Site Registration No. is R-3252
5. The CANADA Site Registration No. is IC 7450H-1.
6. Tested Date:Dec. 23, 2016

## 6.3 Test Arrangement

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is up to 1 GHz.

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




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

## 6.4 Supplementary Information

There is not any deviation from the test standards for the test method.

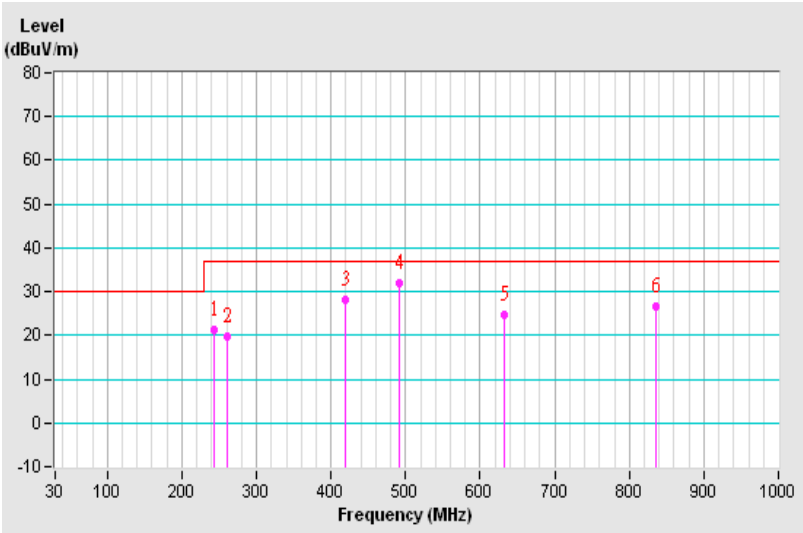
## 6.5 Test Results (Mode 1)

| | | | |
|---|---|---|---|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Bandwidth | Quasi-Peak (QP), 120kHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 23℃, 64%RH |
| Tested by | Wythe Lin | | |
| Test Mode | Mode 2 | | |

| Antenna Polarity & Test Distance : Horizontal at 10 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 | 243.33 | 21.38 QP | 37.00 | -15.62 | 3.00 H | 102 | 34.93 | -13.55 |
| 2 | 260.84 | 19.59 QP | 37.00 | -17.41 | 2.00 H | 247 | 32.55 | -12.96 |
| 3 | 419.92 | 28.02 QP | 37.00 | -8.98 | 3.00 H | 349 | 36.24 | -8.22 |
| **4** | **491.87** | **31.90 QP** | **37.00** | **-5.10** | **2.00 H** | **17** | **38.59** | **-6.69** |
| 5 | 632.47 | 24.56 QP | 37.00 | -12.44 | 2.00 H | 14 | 28.10 | -3.54 |
| 6 | 835.05 | 26.60 QP | 37.00 | -10.40 | 3.00 H | 181 | 26.60 | 0.00 |

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

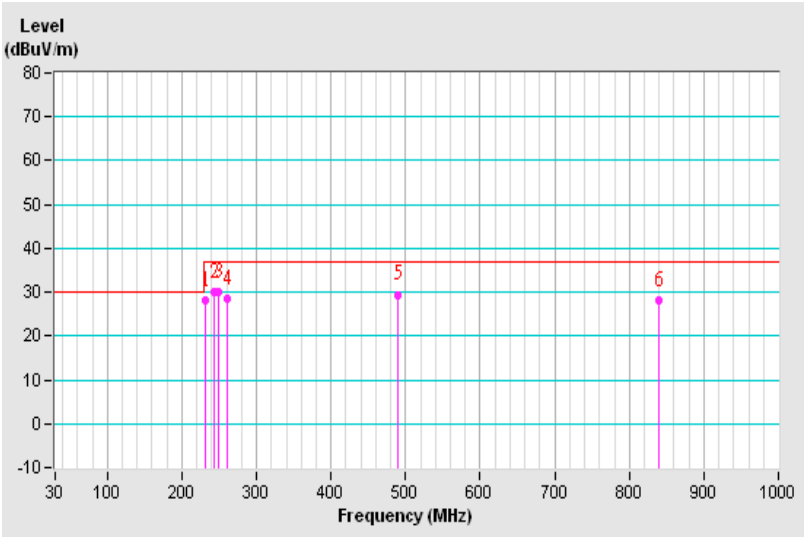


| | | | |
|---|---|---|---|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Bandwidth | Quasi-Peak (QP), 120kHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 23℃, 64%RH |
| Tested by | Wythe Lin | | |
| Test Mode | Mode 2 | | |

| Antenna Polarity & Test Distance : Vertical at 10 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 | 231.44 | 28.17 QP | 37.00 | -8.83 | 1.00 V | 348 | 42.77 | -14.60 |
| 2 | 243.16 | 29.88 QP | 37.00 | -7.12 | 1.00 V | 171 | 43.50 | -13.62 |
| 3 | 249.22 | 30.17 QP | 37.00 | -6.83 | 1.00 V | 219 | 43.58 | -13.41 |
| 4 | 260.86 | 28.49 QP | 37.00 | -8.51 | 1.00 V | 171 | 41.45 | -12.96 |
| 5 | 489.88 | 29.45 QP | 37.00 | -7.55 | 1.00 V | 257 | 35.96 | -6.51 |
| 6 | 839.76 | 28.02 QP | 37.00 | -8.98 | 2.00 V | 167 | 27.62 | 0.40 |

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



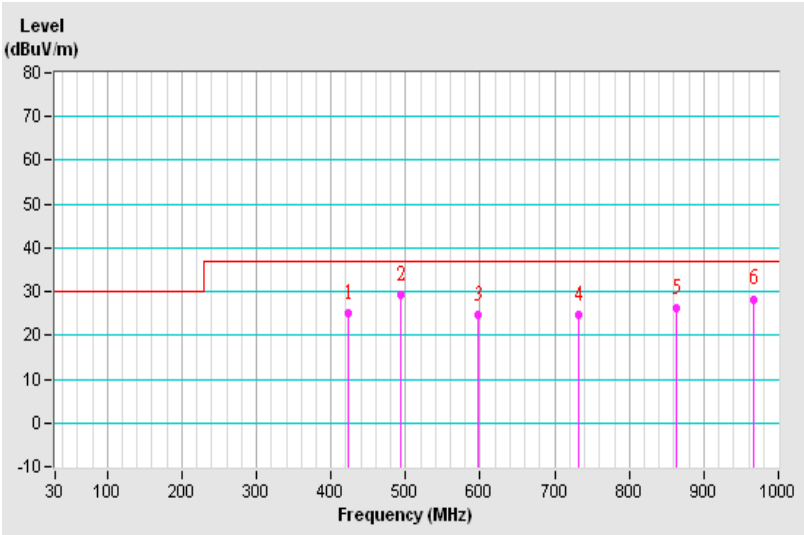
## 6.6 Test Results (Mode 2)

| | | | |
|---|---|---|---|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Bandwidth | Quasi-Peak (QP), 120kHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 69%RH |
| Tested by | Scott Chen | | |
| Test Mode | Mode 1 | | |

| Antenna Polarity & Test Distance : Horizontal at 10 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 | 422.20 | 24.99 QP | 37.00 | -12.01 | 2.00 H | 14 | 33.08 | -8.09 |
| 2 | 492.54 | 29.36 QP | 37.00 | -7.64 | 2.00 H | 305 | 36.04 | -6.68 |
| 3 | 597.47 | 24.61 QP | 37.00 | -12.39 | 2.00 H | 70 | 28.69 | -4.08 |
| 4 | 732.40 | 24.82 QP | 37.00 | -12.18 | 2.00 H | 196 | 26.78 | -1.96 |
| 5 | 863.08 | 26.10 QP | 37.00 | -10.90 | 3.00 H | 91 | 25.61 | 0.49 |
| 6 | 966.05 | 28.32 QP | 37.00 | -8.68 | 2.00 H | 126 | 25.64 | 2.68 |

Remarks:

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

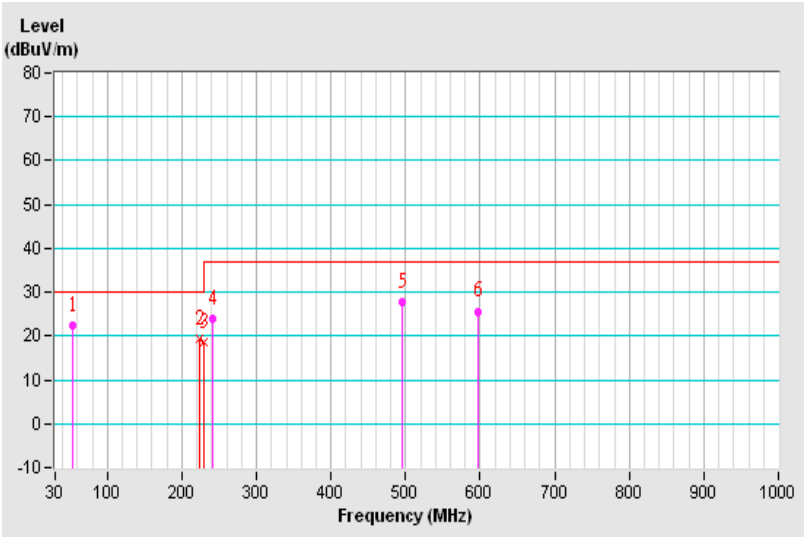


| | | | |
|---|---|---|---|
| Frequency Range | 30MHz ~ 1GHz | Detector Function & Bandwidth | Quasi-Peak (QP), 120kHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 69%RH |
| Tested by | Scott Chen | | |
| Test Mode | Mode 1 | | |

| Antenna Polarity & Test Distance : Vertical at 10 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 | 53.18 | 22.26 QP | 30.00 | -7.74 | 1.00 V | 215 | 34.99 | -12.73 |
| 2 | 224.07 | 19.21 QP | 30.00 | -10.79 | 1.00 V | 104 | 34.77 | -15.56 |
| 3 | 229.99 | 18.58 QP | 30.00 | -11.42 | 1.00 V | 336 | 33.40 | -14.82 |
| 4 | 241.53 | 23.97 QP | 37.00 | -13.03 | 1.00 V | 53 | 37.66 | -13.69 |
| 5 | 494.48 | 27.76 QP | 37.00 | -9.24 | 1.00 V | 272 | 34.18 | -6.42 |
| 6 | 597.50 | 25.63 QP | 37.00 | -11.37 | 1.00 V | 103 | 29.66 | -4.03 |

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 Radiated Emissions above 1 GHz

### 7.1 Limits

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

| Radiated Emissions Limits at 10 meters (dBµV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B / ICES-003, Class A | FCC 15B / ICES-003, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 1000-3000 | Avg: 49.5<br>Peak: 69.5 | Avg: 43.5<br>Peak: 63.5 | Not defined | Not defined |
| Above 3000 | | | Not defined | Not defined |

| Radiated Emissions Limits at 3 meters (dBµV/m) | | | | |
|---|---|---|---|---|
| Frequencies (MHz) | FCC 15B / ICES-003, Class A | FCC 15B / ICES-003, Class B | CISPR 22, Class A | CISPR 22, Class B |
| 1000-3000 | Avg: 60<br>Peak: 80 | Avg: 54<br>Peak: 74 | Avg: 56<br>Peak: 76 | Avg: 50<br>Peak: 70 |
| Above 3000 | | | Avg: 60<br>Peak: 80 | Avg: 54<br>Peak: 74 |

Notes:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), 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.

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 |

## 7.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED DATE | CALIBRATED UNTIL |
|---|---|---|---|---|
| Test Receiver Agilent | N9038A | MY50010125 | Apr. 16, 2016 | Apr. 15, 2017 |
| Pre-Amplifier Agilent | 8449B | 3008A01975 | Feb. 27, 2016 | Feb. 26, 2017 |
| Horn Antenna SCHWARZBECK | BBHA 9120D | D123 | Jan. 18, 2016 | Jan. 17, 2017 |
| RF Cable | SUCOFLEX104 | RF-104-209<br>RF-104-110 | Dec. 09, 2016 | Dec. 08, 2017 |
| RF Cable | 104 RF cable | 131221 | Dec. 09, 2016 | Dec.08, 2017 |
| Software BVADT | ADT_Radiated_ V8.7.08 | NA | NA | NA |
| Antenna Tower & Turn Table CT | NA | NA | NA | NA |

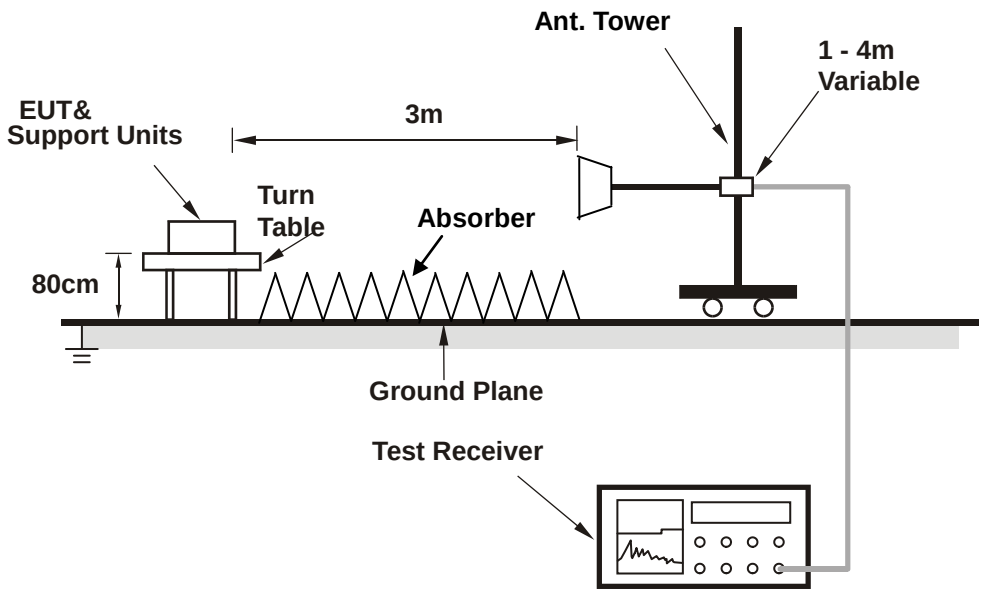
**Note:**

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 10m Chamber No. F.
3. The VCCI Site Registration No. is G-136.
4 Tested Date:Dec. 23, 2016

## 7.3 Test Arrangement

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited 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 can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The spectrum analyzer system was set to peak and average detect 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.




The test arrangement is in accordance with ANSI 63.4:2014. For the actual test configuration, please refer to the related item – Photographs of the Test Configuration

## 7.4 Supplementary Information

There is not any deviation from the test standards for the test method.

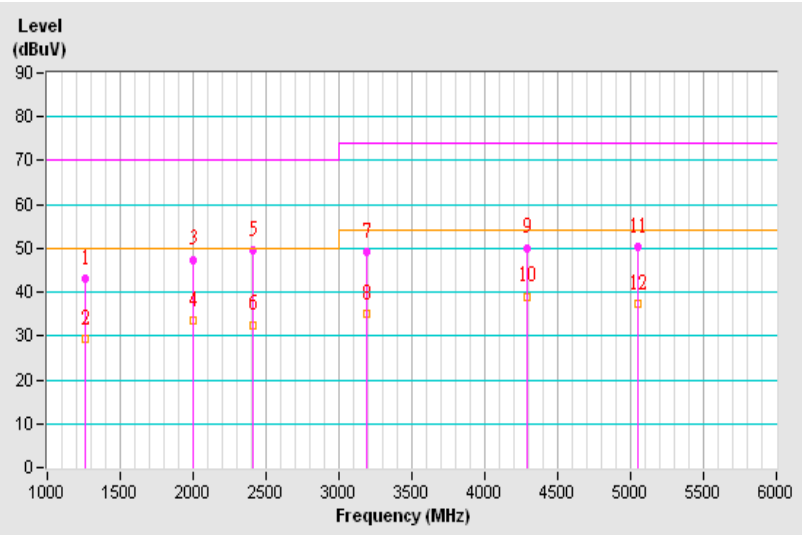
## 7.5 Test Results (Mode 1)

| | | | |
|---|---|---|---|
| Frequency Range | 1GHz ~ 6GHz | Detector Function & Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 68%RH |
| Tested by | Jason Huang | | |
| Test Mode | Mode 1 | | |

| 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 | 1259.25 | 42.92 PK | 70.00 | -27.08 | 1.00 H | 322 | 41.99 | 0.93 |
| 2 | 1259.25 | 29.30 AV | 50.00 | -20.70 | 1.00 H | 322 | 28.37 | 0.93 |
| 3 | 1996.50 | 47.47 PK | 70.00 | -22.53 | 1.00 H | 192 | 41.59 | 5.88 |
| 4 | 1996.50 | 33.66 AV | 50.00 | -16.34 | 1.00 H | 192 | 27.78 | 5.88 |
| 5 | 2405.00 | 49.45 PK | 70.00 | -20.55 | 1.00 H | 41 | 42.24 | 7.21 |
| 6 | 2405.00 | 32.58 AV | 50.00 | -17.42 | 1.00 H | 41 | 25.37 | 7.21 |
| 7 | 3194.50 | 49.02 PK | 74.00 | -24.98 | 1.00 H | 288 | 39.11 | 9.91 |
| 8 | 3194.50 | 35.01 AV | 54.00 | -18.99 | 1.00 H | 288 | 25.10 | 9.91 |
| 9 | 4288.00 | 50.14 PK | 74.00 | -23.86 | 1.00 H | 196 | 37.49 | 12.65 |
| 10 | 4288.00 | 39.07 AV | 54.00 | -14.93 | 1.00 H | 196 | 26.42 | 12.65 |
| 11 | 5046.25 | 50.41 PK | 74.00 | -23.59 | 1.00 H | 342 | 36.17 | 14.24 |
| 12 | 5046.25 | 37.22 AV | 54.00 | -16.78 | 1.00 H | 342 | 22.98 | 14.24 |

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

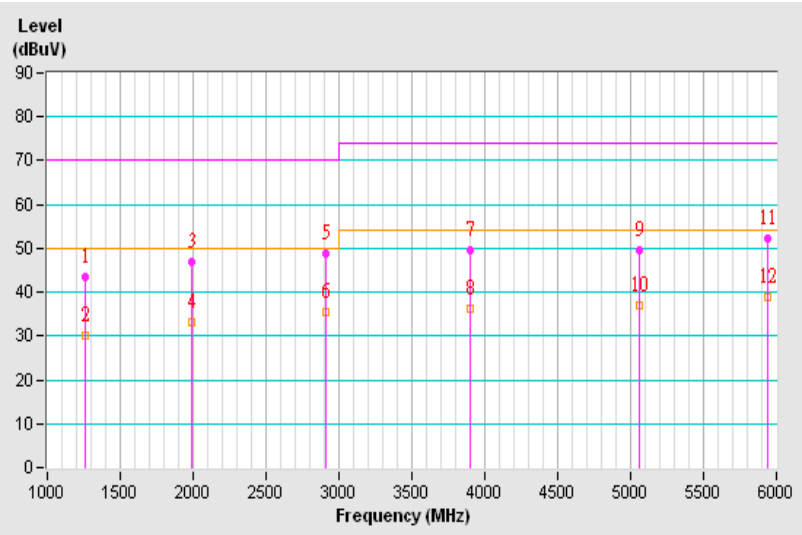


| | | | |
|---|---|---|---|
| Frequency Range | 1GHz ~ 6GHz | Detector Function & Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 68%RH |
| Tested by | Jason Huang | | |
| Test Mode | Mode 1 | | |

| 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 | 1261.37 | 43.34 PK | 70.00 | -26.66 | 1.00 V | 318 | 42.38 | 0.96 |
| 2 | 1261.37 | 30.11 AV | 50.00 | -19.89 | 1.00 V | 318 | 29.15 | 0.96 |
| 3 | 1991.00 | 46.82 PK | 70.00 | -23.18 | 1.00 V | 225 | 40.97 | 5.85 |
| 4 | 1991.00 | 33.17 AV | 50.00 | -16.83 | 1.00 V | 225 | 27.32 | 5.85 |
| 5 | 2909.62 | 48.84 PK | 70.00 | -21.16 | 1.00 V | 56 | 38.89 | 9.95 |
| **6** | **2909.62** | **35.48 AV** | **50.00** | **-14.52** | **1.00 V** | **56** | **25.53** | **9.95** |
| 7 | 3897.12 | 49.64 PK | 74.00 | -24.36 | 1.00 V | 238 | 37.11 | 12.53 |
| 8 | 3897.12 | 36.34 AV | 54.00 | -17.66 | 1.00 V | 238 | 23.81 | 12.53 |
| 9 | 5063.75 | 49.64 PK | 74.00 | -24.36 | 1.00 V | 205 | 35.31 | 14.33 |
| 10 | 5063.75 | 37.10 AV | 54.00 | -16.90 | 1.00 V | 205 | 22.77 | 14.33 |
| 11 | 5944.25 | 52.35 PK | 74.00 | -21.65 | 1.00 V | 131 | 36.20 | 16.15 |
| 12 | 5944.25 | 38.87 AV | 54.00 | -15.13 | 1.00 V | 131 | 22.72 | 16.15 |

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



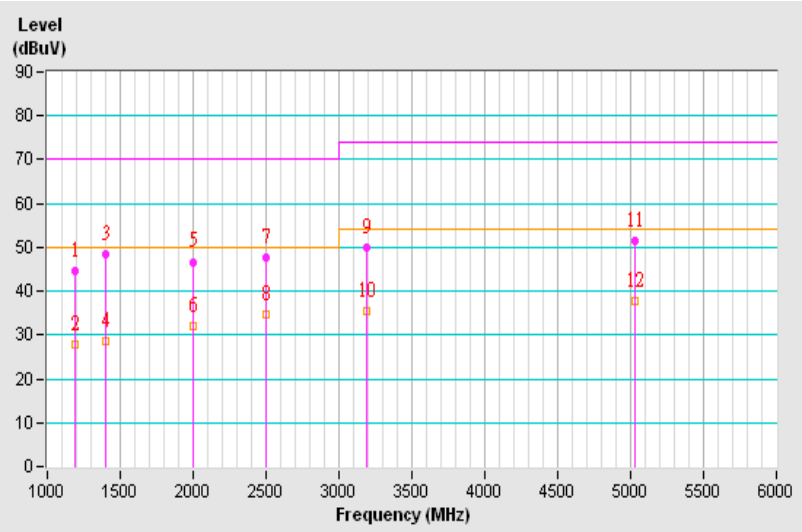
## 7.6 Test Results (Mode 2)

| | | | |
|---|---|---|---|
| Frequency Range | 1GHz ~ 6GHz | Detector Function & Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 69%RH |
| Tested by | Scott Chen | | |
| Test Mode | Mode 2 | | |

| 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 | 1194.37 | 44.70 PK | 70.00 | -25.30 | 1.00 H | 327 | 44.21 | 0.49 |
| 2 | 1194.37 | 27.73 AV | 50.00 | -22.27 | 1.00 H | 327 | 27.24 | 0.49 |
| 3 | 1396.37 | 48.38 PK | 70.00 | -21.62 | 1.00 H | 263 | 46.41 | 1.97 |
| 4 | 1396.37 | 28.68 AV | 50.00 | -21.32 | 1.00 H | 263 | 26.71 | 1.97 |
| 5 | 1999.00 | 46.70 PK | 70.00 | -23.30 | 1.00 H | 310 | 40.78 | 5.92 |
| 6 | 1999.00 | 31.97 AV | 50.00 | -18.03 | 1.00 H | 310 | 26.05 | 5.92 |
| 7 | 2503.37 | 47.60 PK | 70.00 | -22.40 | 1.00 H | 41 | 40.07 | 7.53 |
| 8 | 2503.37 | 34.53 AV | 50.00 | -15.47 | 1.00 H | 41 | 27.00 | 7.53 |
| 9 | 3190.12 | 49.88 PK | 74.00 | -24.12 | 1.00 H | 310 | 40.01 | 9.87 |
| 10 | 3190.12 | 35.43 AV | 54.00 | -18.57 | 1.00 H | 310 | 25.56 | 9.87 |
| 11 | 5033.12 | 51.42 PK | 74.00 | -22.58 | 1.00 H | 229 | 37.25 | 14.17 |
| 12 | 5033.12 | 37.57 AV | 54.00 | -16.43 | 1.00 H | 229 | 23.40 | 14.17 |

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

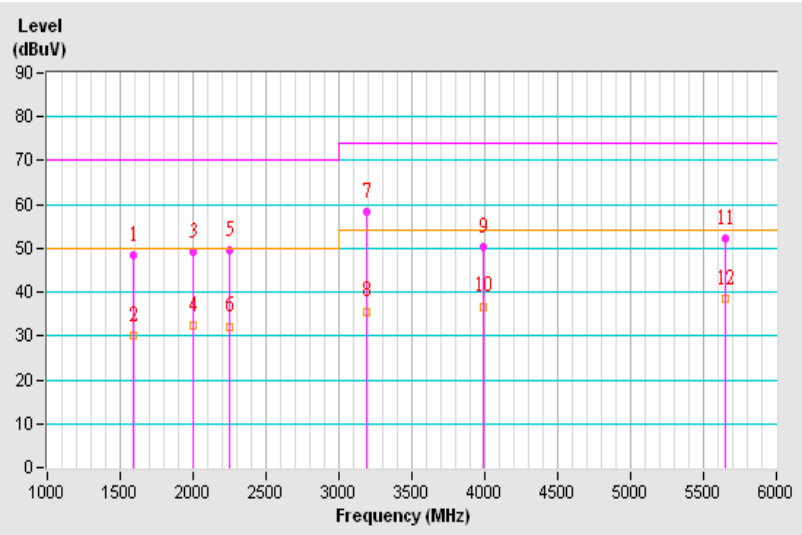


| | | | |
|---|---|---|---|
| Frequency Range | 1GHz ~ 6GHz | Detector Function & Bandwidth | Peak (PK) / Average (AV), 1MHz |
| Input Power | DC 3.7V from battery | Environmental Conditions | 25℃, 69%RH |
| Tested by | Scott Chen | | |
| Test Mode | Mode 2 | | |

| 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 | 1593.00 | 48.45 PK | 70.00 | -21.55 | 1.00 V | 171 | 45.20 | 3.25 |
| 2 | 1593.00 | 30.22 AV | 50.00 | -19.78 | 1.00 V | 171 | 26.97 | 3.25 |
| 3 | 1995.87 | 49.01 PK | 70.00 | -20.99 | 1.00 V | 22 | 43.13 | 5.88 |
| 4 | 1995.87 | 32.34 AV | 50.00 | -17.66 | 1.00 V | 22 | 26.46 | 5.88 |
| 5 | 2245.62 | 49.44 PK | 70.00 | -20.56 | 1.00 V | 155 | 41.13 | 8.31 |
| 6 | 2245.62 | 32.19 AV | 50.00 | -17.81 | 1.00 V | 155 | 23.88 | 8.31 |
| 7 | 3192.75 | 58.47 PK | 74.00 | -15.53 | 1.00 V | 178 | 48.58 | 9.89 |
| 8 | 3192.75 | 35.64 AV | 54.00 | -18.36 | 1.00 V | 178 | 25.75 | 9.89 |
| 9 | 3988.00 | 50.15 PK | 74.00 | -23.85 | 1.00 V | 17 | 36.91 | 13.24 |
| 10 | 3988.00 | 36.76 AV | 54.00 | -17.24 | 1.00 V | 17 | 23.52 | 13.24 |
| 11 | 5645.00 | 52.33 PK | 74.00 | -21.67 | 1.00 V | 128 | 36.89 | 15.44 |
| 12 | 5645.00 | 38.38 AV | 54.00 | -15.62 | 1.00 V | 128 | 22.94 | 15.44 |

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



## 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:


**Linko EMC/RF Lab**
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The address and road map of all our labs can be found in our web site also.

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