



# FCC RADIO TEST REPORT

Applicant : TRENDnet, Inc.  
Address : 20675 Manhattan Place, Torrance, CA 90501 U.S.A.  
Equipment : AC2200 Tri-Band PoE+ Indoor Wireless Access Point  
Model No. : TEW-826DAP  
Trade Name : TRENDnet  
FCC ID : XU8TEW826DAP

## I HEREBY CERTIFY THAT :

The sample was received on Jul. 07, 2018 and the testing was carried out on Jul. 20, 2018 at CerpPASS Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of CerpPASS Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao / Assistant Manager

Tested by:

Spree Yei / Engineer

Laboratory Accreditation:

CerpPASS Technology Corporation Test Laboratory





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### History of this test report

| Report No.  | Issue Date    | Description |
|-------------|---------------|-------------|
| TEFU1805300 | Aug. 22, 2018 | Original    |
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## 1. Summary of Test Procedure and Test Results

### 1.1 Applicable Standards

ANSI C63.4:2014

ANSI C63.10:2013

| FCC Rule | Description of Test | Result |
|----------|---------------------|--------|
| 15.203   | CO-LOCATION         | Pass   |

This EUT has been also tested and compiled with the requirement of FCC Part 15, Subpart B, recorded in a separate test report.



## 2. Test Configuration of Equipment under Test

### 2.1 Feature of Equipment and Model Description

|                        |                                                                                                                                                                                                                                                              |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment              | AC2200 Tri-Band PoE+ Indoor Wireless Access Point                                                                                                                                                                                                            |
| Model No.              | TEW-826DAP                                                                                                                                                                                                                                                   |
| Brand Name             | TRENDnet                                                                                                                                                                                                                                                     |
| Product Description    | Please refer to User's Manual.                                                                                                                                                                                                                               |
| Connecting I/O Port(s) | Please refer to User's Manual.                                                                                                                                                                                                                               |
| AC ADAPTER             | Adapter Brand: APD<br>Model No.: WA-24Q12R<br>I/P: AC 100-240V~, 50-60Hz, 0.7A MAX. ; O/P: DC 12V, 2.0A                                                                                                                                                      |
| PoE                    | 48Vdc/0.67A                                                                                                                                                                                                                                                  |
| Memo                   | 1.0R                                                                                                                                                                                                                                                         |
| Frequency Range        | 802.11b/g/n: 2400~2483.5 MHz<br>802.11a/n/ac: 5150~5250 MHz, 5725~5850 MHz                                                                                                                                                                                   |
| Modulation Type        | OFDM, DSSS                                                                                                                                                                                                                                                   |
| Data Rate              | 2.4GHz:<br>802.11b: 1, 2, 5.5, 11Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps<br>802.11n: MCS0 – MCS15, HT20/40, VHT20/40<br>5GHz:<br>802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps<br>802.11n: MCS0 – MCS15, HT20/40<br>802.11ac: MCS0 – MCS9, VHT20/40/80 |
| Antenna Type           | PIFA Antenna                                                                                                                                                                                                                                                 |
| Antenna Gain           | 2.4GHz: ANT A: 4.85 dBi ; ANT B: 4.4 dBi<br>5150MHz-5250MHz: ANT A: 4.18 dBi ; ANT B: 4.81 dBi<br>5725MHz-5850MHz: ANT A: 4.9 dBi ; ANT B: 4.18 dBi                                                                                                          |

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



## 2.2 Test Mode and Test Software

- During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- The complete test system included remote workstation and EUT for RF test. The remote workstation included Notebook.
- An executive program, "QDART:39.1" under WIN 8 was executed to transmit and receive data via WLAN.
- The following test mode was performed for the test:

| Conducted Emissions from the AC mains power ports |                                                                               |
|---------------------------------------------------|-------------------------------------------------------------------------------|
| Test Mode                                         | Operating Description                                                         |
| 1                                                 | 802.11ac VHT20 CH06 + 802.11a CH48 + 802.11ac VHT20 CH165                     |
| Radiation Emissions (30MHz ~ 1GHz)                |                                                                               |
| Test Mode                                         | Operating Description                                                         |
| 1                                                 | 802.11ac VHT20 CH06 + 802.11a CH48 + 802.11ac VHT20 CH165, Power from Adapter |
| 2                                                 | 802.11ac VHT20 CH06 + 802.11a CH48 + 802.11ac VHT20 CH165, Power from PoE     |
| Radiation Emissions (1GHz ~ 40GHz)                |                                                                               |
| Test Mode                                         | Operating Description                                                         |
| 1                                                 | 802.11ac VHT20 CH06 + 802.11a CH48 + 802.11ac VHT20 CH165, Power from Adapter |

## 2.3 Description of Test System

| Device             | Manufacturer | Model No.          | Description                    |
|--------------------|--------------|--------------------|--------------------------------|
| Remote workstation |              |                    |                                |
| Notebook           | DELL         | LatitudeE5450/5450 | Power Cable, Unshielding, 1.8m |



## 2.4 General Information of Test

|                               |                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                              |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site                     | <b>CerpPASS Technology Corporation Test Laboratory</b><br>Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.)<br>Tel:+886-3-3226-888<br>Fax:+886-3-3226-881<br>Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C.<br>Tel: +886-2-2663-8582 |                                                                                                                                                                              |
|                               | FCC                                                                                                                                                                                                                                                                                                             | TW1079, TW1061, TW1439                                                                                                                                                       |
|                               | IC                                                                                                                                                                                                                                                                                                              | 4934E-1, 4934E-2                                                                                                                                                             |
|                               | VCCI                                                                                                                                                                                                                                                                                                            | T-2205 for Telecommunication Test<br>C-4663 for Conducted emission test<br>R-3428, R-4218 for Radiated emission test<br>G-10812, G-10813 for radiated disturbance above 1GHz |
| Frequency Range Investigated: | Conducted: from 150kHz to 30 MHz<br>Radiation: from 30 MHz to 40,000MHz                                                                                                                                                                                                                                         |                                                                                                                                                                              |
| Test Distance:                | The test distance of radiated emission from antenna to EUT is 3 M.                                                                                                                                                                                                                                              |                                                                                                                                                                              |

## 2.5 Measurement Uncertainty

| Measurement Item                         | Uncertainty |
|------------------------------------------|-------------|
| Radiated Spurious Emission(9KHz~30MHz)   | ±5.007dB    |
| Radiated Spurious Emission(30MHz~1GHz)   | ±5.157dB    |
| Radiated Spurious Emission(1GHz~18GHz)   | ±6.383dB    |
| Radiated Spurious Emission(18GHz~40GHz)  | ±6.648dB    |
| Conducted Spurious Emission              | ±1.253dB    |
| 6dB Bandwidth                            | ±6.89%      |
| Power Spectral Density                   | ±0.630dB    |
| 26 dB Occupied Bandwidth                 | ±6.10%      |
| Frequency Stability                      | ±375KHz     |
| Channel Frequencies Separation           | ±6.10%      |
| 20dB Bandwidth                           | ±6.12%      |
| Dwell Time                               | ±1.34%      |
| Peak Output Power(Conducted Power Meter) | ±0.86dB     |
| Temperature                              | ±1.2℃       |
| Humidity                                 | ±2.7%       |
| Channel Move Time                        | ±4.53%      |
| Channel Closing Transmission Time        | ±6.61%      |
| Threshold                                | ±0.631dB    |
| Non occupancy period                     | ±1.17%      |



### 3. Test Equipment and Ancillaries Used for Tests

| Instrument                     | Manufacturer    | Model No.                | Serial No.  | Calibration Date | Valid Date |
|--------------------------------|-----------------|--------------------------|-------------|------------------|------------|
| EMI Receiver                   | R&S             | ESC13                    | 100821      | 2017/09/08       | 2018/09/07 |
| LISN                           | Schwarzbeck     | NSLK 8127                | 8127-568    | 2018/02/26       | 2019/02/25 |
| Pulse Limiter                  | R&S             | ESH3-Z2                  | 101934      | 2018/02/22       | 2019/02/21 |
| Bilog Antenna                  | Schwarzbeck     | VULB9168                 | 275         | 2017/08/31       | 2018/08/30 |
| Active Loop Antenna            | EMCO            | 6507                     | 40855       | 2018/05/22       | 2019/05/21 |
| Horn Antenna                   | EMCO            | 3115                     | 31601       | 2017/09/11       | 2018/09/10 |
| Horn Antenna                   | EMCO            | 3116                     | 31970       | 2018/03/23       | 2019/03/22 |
| Preamplifier                   | EM              | EM330                    | 60658       | 2017/09/08       | 2018/09/07 |
| Preamplifier                   | EMC INSTRUMENTS | EMC051845SE              | 980333      | 2017/09/20       | 2018/09/19 |
| Preamplifier                   | EMC INSTRUMENTS | EMC184045                | 980065      | 2017/11/10       | 2018/11/09 |
| MXG MW Analog Signal Generator | KEYSIGHT        | N5183A                   | MY50142931  | 2018/04/10       | 2019/04/09 |
| Spectrum Analyzer              | R&S             | FSP40                    | 100219      | 2018/07/03       | 2019/07/02 |
| BLUETOOTH TESTER               | R&S             | CBT                      | 101133      | 2018/04/02       | 2019/04/01 |
| Attenuator                     | KEYSIGHT        | 8491B                    | MY39250705  | 2017/09/04       | 2018/09/03 |
| Rotary Attenuator              | Agilent         | 8495B                    | MY42146680  | 2018/03/29       | 2019/03/28 |
| Temp & Humi chamber            | T-MACHINE       | TMJ-9712                 | T-12-040111 | 2017/09/04       | 2018/09/03 |
| Series Power Meter             | Anritsu         | ML2495A                  | 1224005     | 2018/03/23       | 2019/03/22 |
| Power Sensor                   | Anritsu         | MA2411B                  | 1207295     | 2018/03/23       | 2019/03/22 |
| Software                       | Farad           | Ez-EMC                   | ver.ct3a1   | N/A              | N/A        |
| Software                       | AUDIX           | E3                       | V8.2014-8-6 | N/A              | N/A        |
| Software                       | Keysight        | N7607B Signal Studio     | V3.0.0.0    | N/A              | N/A        |
| Software                       | Keysight        | Inservice MonitorUtility | N/A         | N/A              | N/A        |



## 4. Test of AC Power Line Conducted Emission

### 4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.4-2014. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

| Frequency<br>(MHz) | Quasi Peak<br>(dB $\mu$ V) | Average<br>(dB $\mu$ V) |
|--------------------|----------------------------|-------------------------|
| 0.15 – 0.5         | 66-56*                     | 56-46*                  |
| 0.5 – 5.0          | 56                         | 46                      |
| 5.0 – 30.0         | 60                         | 50                      |

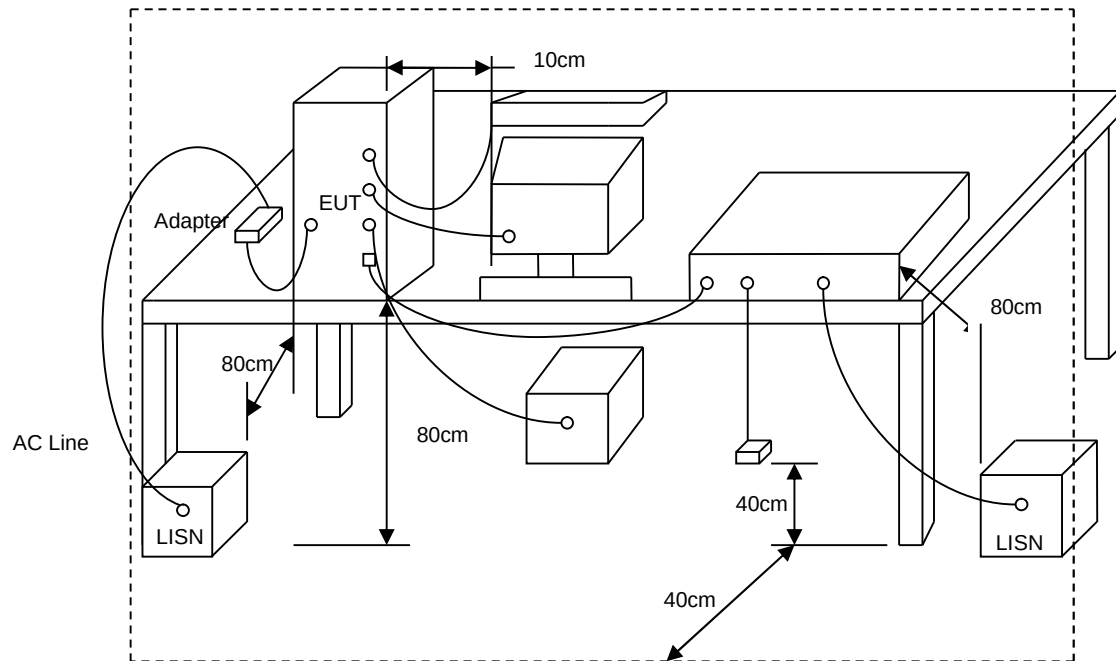
\*Decreases with the logarithm of the frequency.

### 4.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



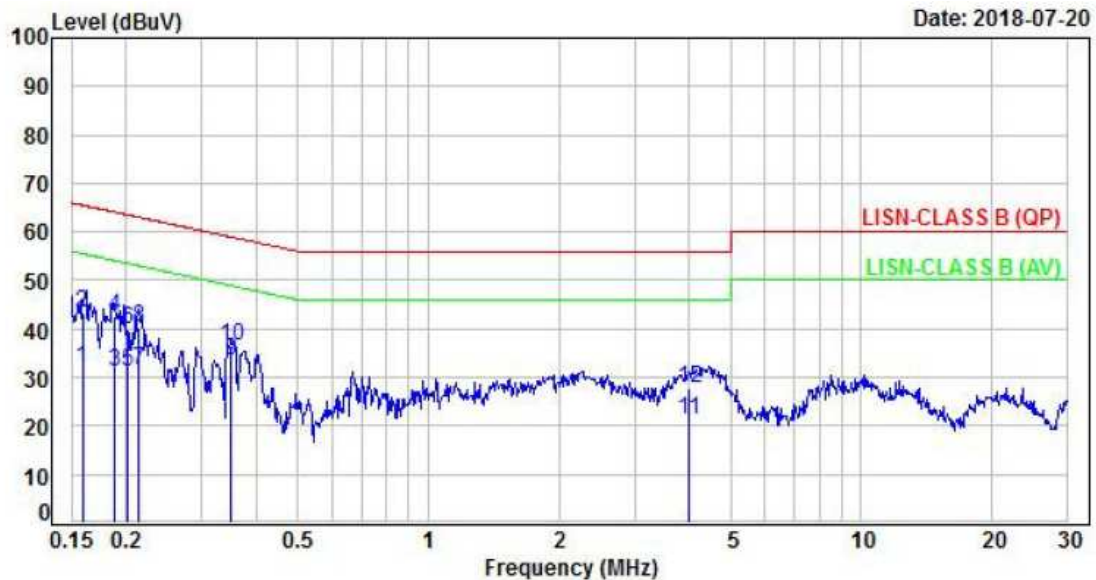
### 4.3 Typical Test Setup





#### 4.4 Test Result and Data

|           |                 |             |         |
|-----------|-----------------|-------------|---------|
| Power     | : AC 120V       | Pol/Phase   | : LINE  |
| Test Mode | : Mode 1        | Temperature | : 20 °C |
| Test Date | : Jul. 20, 2018 | Humidity    | : 40 %  |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|-----|
| 1   | 0.16            | 9.70        | 22.21          | 31.91        | 55.53        | -23.62      | Average  | P   |
| 2   | 0.16            | 9.70        | 33.63          | 43.33        | 65.53        | -22.20      | QP       | P   |
| 3   | 0.19            | 9.69        | 21.43          | 31.12        | 54.10        | -22.98      | Average  | P   |
| 4   | 0.19            | 9.69        | 32.75          | 42.44        | 64.10        | -21.66      | QP       | P   |
| 5   | 0.20            | 9.69        | 21.49          | 31.18        | 53.50        | -22.32      | Average  | P   |
| 6   | 0.20            | 9.69        | 30.27          | 39.96        | 63.50        | -23.54      | QP       | P   |
| 7   | 0.21            | 9.69        | 21.72          | 31.41        | 53.07        | -21.66      | Average  | P   |
| 8   | 0.21            | 9.69        | 30.43          | 40.12        | 63.07        | -22.95      | QP       | P   |
| 9   | 0.35            | 9.70        | 23.69          | 33.39        | 48.97        | -15.58      | Average  | P   |
| 10  | 0.35            | 9.70        | 26.85          | 36.55        | 58.97        | -22.42      | QP       | P   |
| 11  | 3.99            | 9.84        | 11.34          | 21.18        | 46.00        | -24.82      | Average  | P   |
| 12  | 3.99            | 9.84        | 18.06          | 27.90        | 56.00        | -28.10      | QP       | P   |

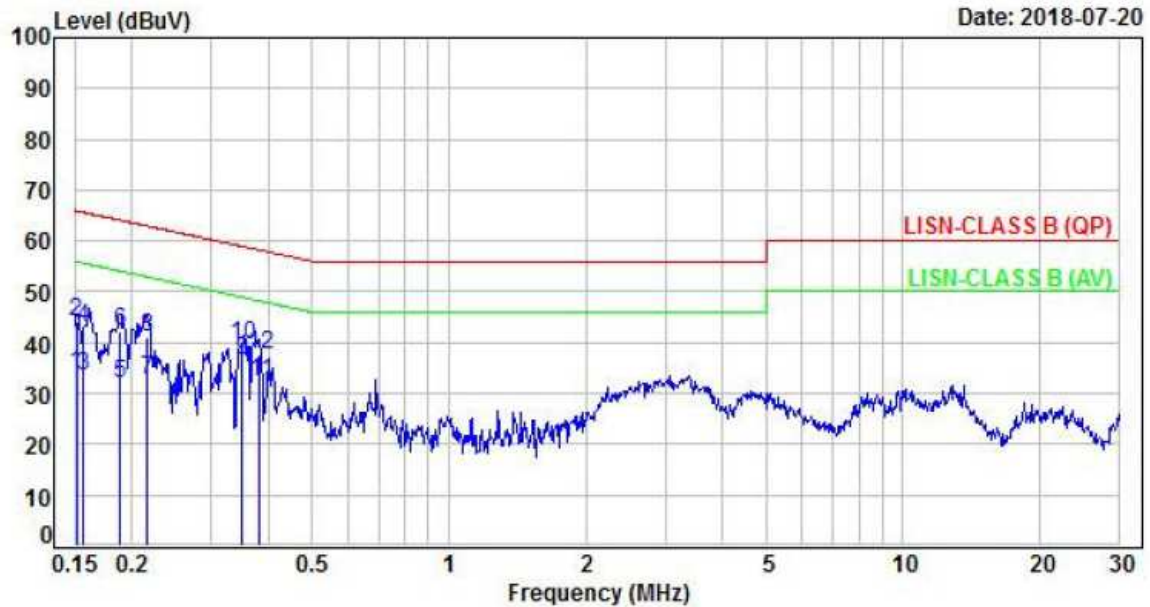
Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator



|           |                 |             |           |
|-----------|-----------------|-------------|-----------|
| Power     | : AC 120V       | Pol/Phase   | : NEUTRAL |
| Test Mode | : Mode 1        | Temperature | : 20 °C   |
| Test Date | : Jul. 20, 2018 | Humidity    | : 40 %    |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|-----|
| 1   | 0.15            | 9.70        | 23.96          | 33.66        | 55.94        | -22.28      | Average  | P   |
| 2   | 0.15            | 9.70        | 34.42          | 44.12        | 65.94        | -21.82      | QP       | P   |
| 3   | 0.16            | 9.70        | 23.77          | 33.47        | 55.63        | -22.16      | Average  | P   |
| 4   | 0.16            | 9.70        | 33.36          | 43.06        | 65.63        | -22.57      | QP       | P   |
| 5   | 0.19            | 9.70        | 22.29          | 31.99        | 54.08        | -22.09      | Average  | P   |
| 6   | 0.19            | 9.70        | 32.55          | 42.25        | 64.08        | -21.83      | QP       | P   |
| 7   | 0.22            | 9.70        | 22.81          | 32.51        | 52.98        | -20.47      | Average  | P   |
| 8   | 0.22            | 9.70        | 31.53          | 41.23        | 62.98        | -21.75      | QP       | P   |
| 9   | 0.35            | 9.70        | 26.77          | 36.47        | 48.96        | -12.49      | Average  | P   |
| 10  | 0.35            | 9.70        | 29.75          | 39.45        | 58.96        | -19.51      | QP       | P   |
| 11  | 0.38            | 9.70        | 22.63          | 32.33        | 48.22        | -15.89      | Average  | P   |
| 12  | 0.38            | 9.70        | 28.11          | 37.81        | 58.22        | -20.41      | QP       | P   |

Note: Level = Reading + Factor

Margin = Level – Limit

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss+ Attenuator

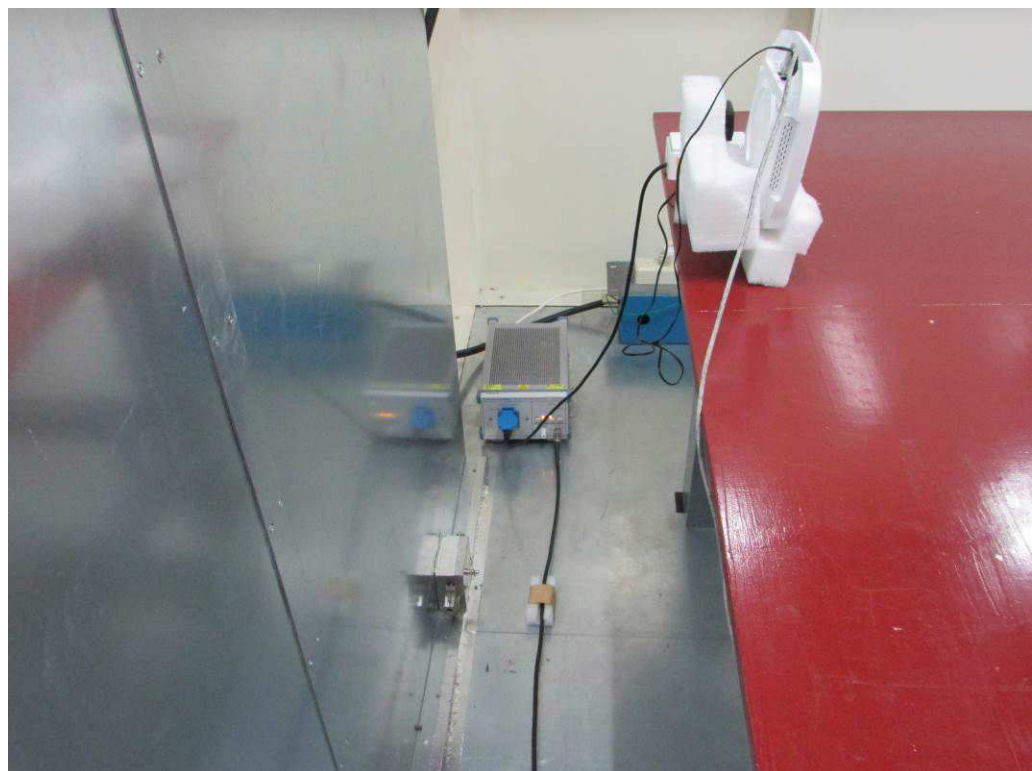


#### 4.5 Test Photographs

Front View



Rear View





## 5. Test of Spurious Emission (Radiated)

### 5.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

| Frequency (MHz) | Field Strength (microvolt/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                             |

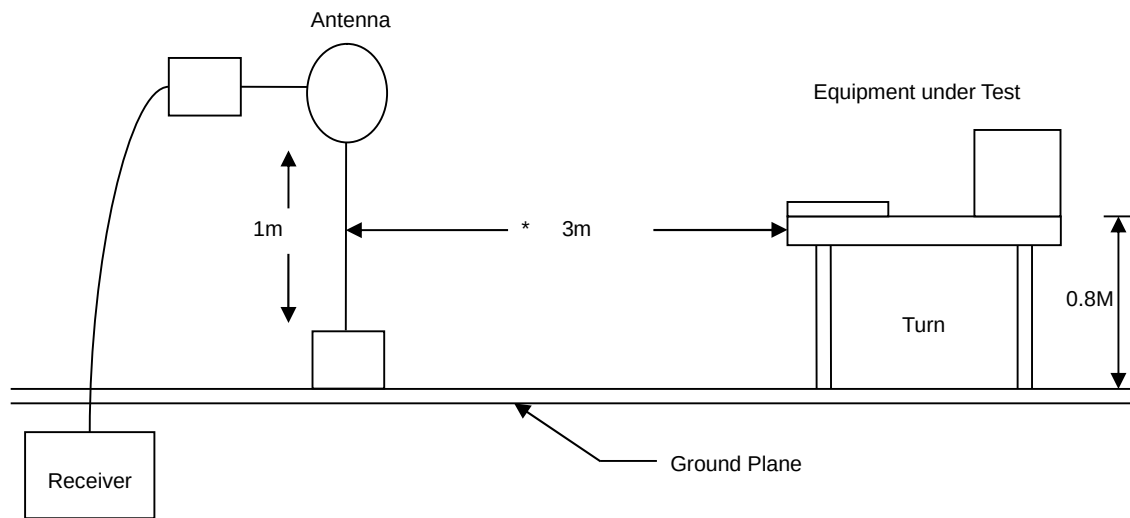
### 5.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- "Cone of radiation" has been considered to be 3dB bandwidth of the measurement antenna.

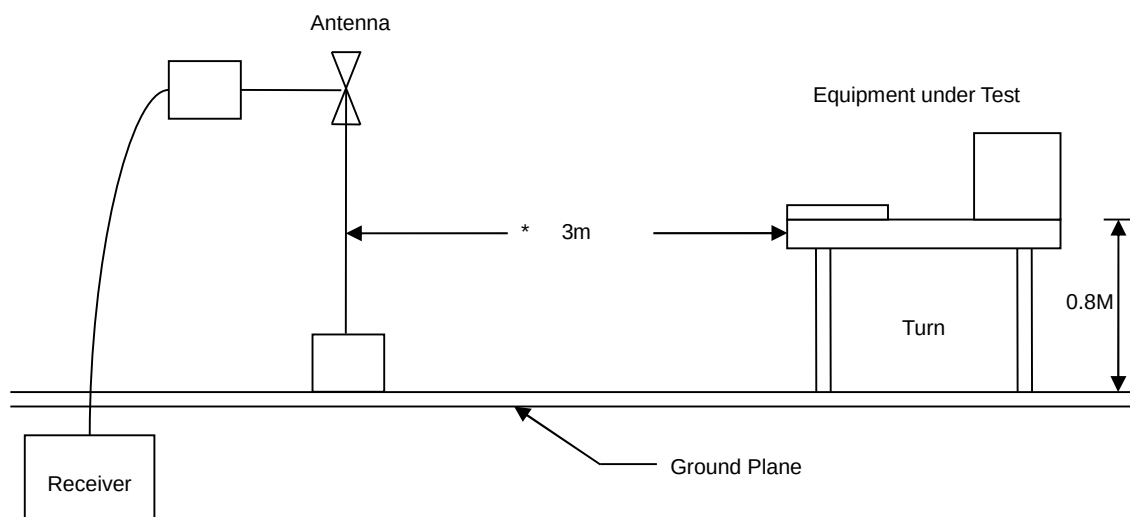


### 5.3 Typical Test Setup

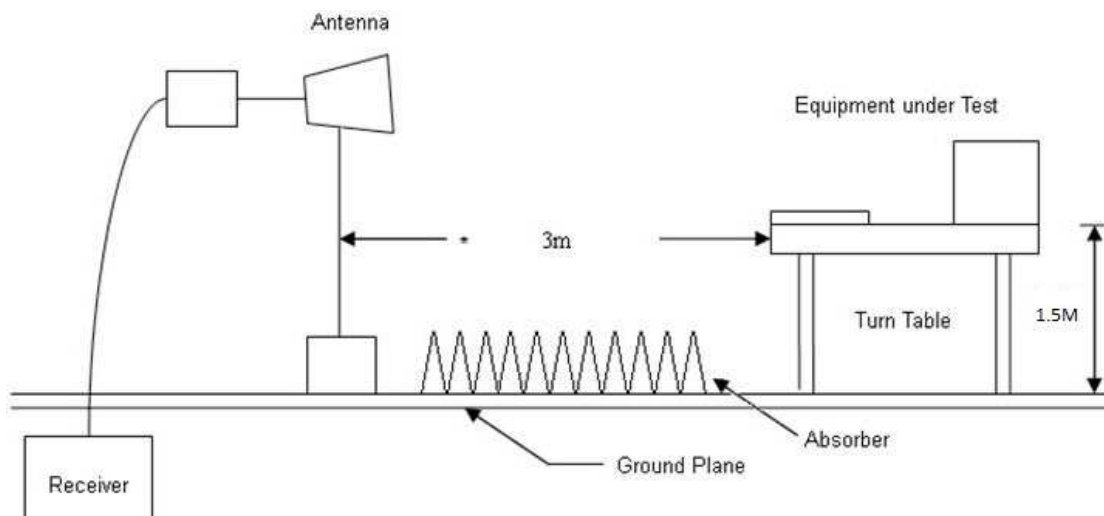
Below 30MHz test setup



30MHz- 1GHz Test Setup



Above 1GHz Test Setup



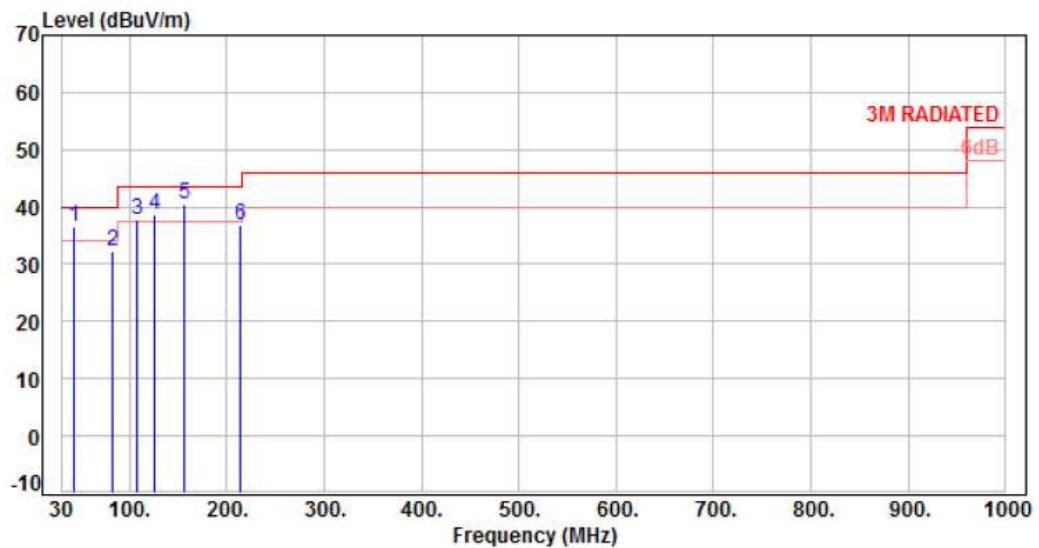


#### 5.4 Test Result and Data (9kHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

#### 5.5 Test Result and Data (30MHz ~ 1GHz)

|           |                 |             |            |
|-----------|-----------------|-------------|------------|
| Power     | : AC 120V       | Pol/Phase   | : VERTICAL |
| Test Mode | : Mode 1        | Temperature | : 23 °C    |
| Test Date | : Jul. 07, 2018 | Humidity    | : 61 %     |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 42.61           | -10.93      | 47.60          | 36.67          | 40.00          | -3.33       | QP       | 100         | 171           | P   |
| 2   | 83.35           | -15.71      | 47.96          | 32.25          | 40.00          | -7.75       | QP       | 100         | 34            | P   |
| 3   | 108.57          | -14.45      | 52.13          | 37.68          | 43.50          | -5.82       | Peak     | 400         | 0             | P   |
| 4   | 125.06          | -12.88      | 51.66          | 38.78          | 43.50          | -4.72       | Peak     | 400         | 0             | P   |
| 5   | 156.10          | -10.93      | 51.40          | 40.47          | 43.50          | -3.03       | QP       | 100         | 354           | P   |
| 6   | 213.33          | -12.91      | 49.73          | 36.82          | 43.50          | -6.68       | Peak     | 400         | 0             | P   |

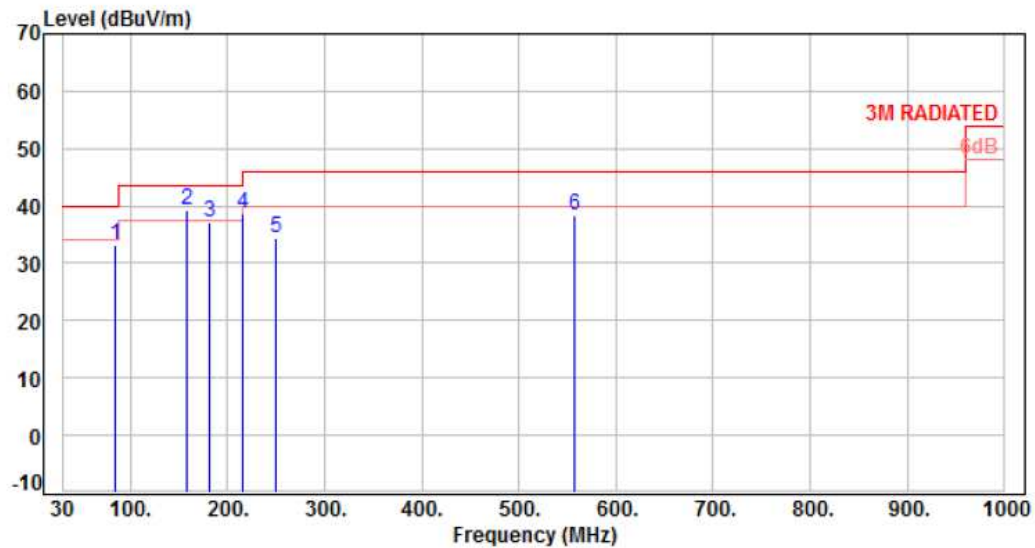
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



|           |                 |             |              |
|-----------|-----------------|-------------|--------------|
| Power     | : AC 120V       | Pol/Phase   | : HORIZONTAL |
| Test Mode | : Mode 1        | Temperature | : 23 °C      |
| Test Date | : Jul. 07, 2018 | Humidity    | : 61 %       |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 84.32           | -15.85      | 48.95          | 33.10          | 40.00          | -6.90       | Peak     | 100         | 0             | P   |
| 2   | 158.04          | -10.88      | 50.10          | 39.22          | 43.50          | -4.28       | QP       | 152         | 133           | P   |
| 3   | 182.29          | -12.29      | 49.57          | 37.28          | 43.50          | -6.22       | Peak     | 100         | 0             | P   |
| 4   | 216.24          | -12.90      | 51.56          | 38.66          | 46.00          | -7.34       | Peak     | 100         | 0             | P   |
| 5   | 250.19          | -11.64      | 46.00          | 34.36          | 46.00          | -11.64      | Peak     | 100         | 0             | P   |
| 6   | 557.68          | -3.88       | 42.22          | 38.34          | 46.00          | -7.66       | Peak     | 100         | 0             | P   |

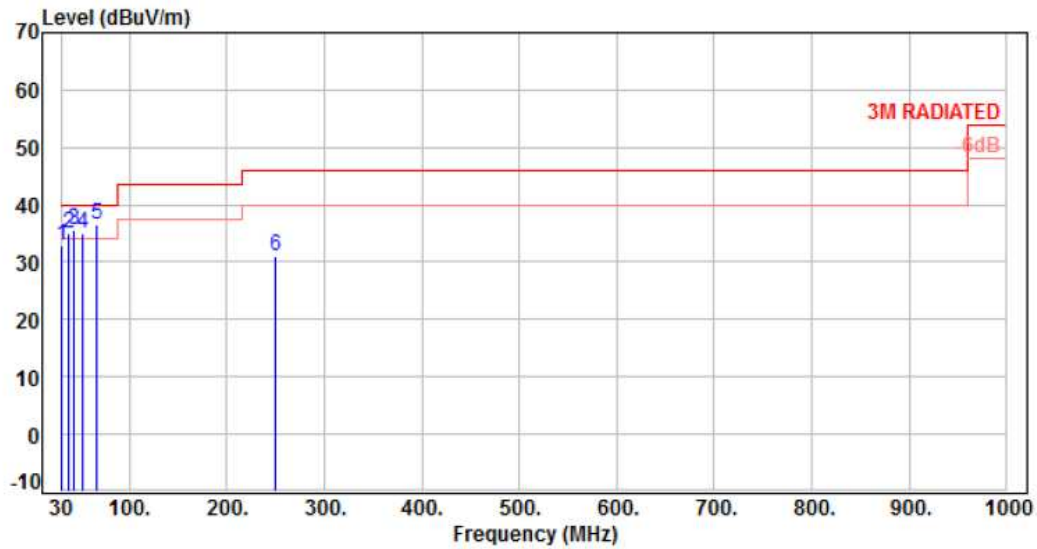
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



|           |   |               |             |   |          |
|-----------|---|---------------|-------------|---|----------|
| Power     | : | PoE           | Pol/Phase   | : | VERTICAL |
| Test Mode | : | Mode 2        | Temperature | : | 23 °C    |
| Test Date | : | Jul. 07, 2018 | Humidity    | : | 61 %     |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 30.05           | -11.65      | 44.58          | 32.93          | 40.00          | -7.07       | QP       | 100         | 326           | P   |
| 2   | 36.88           | -11.44      | 46.52          | 35.08          | 40.00          | -4.92       | QP       | 100         | 301           | P   |
| 3   | 43.52           | -10.87      | 46.44          | 35.57          | 40.00          | -4.43       | QP       | 100         | 294           | P   |
| 4   | 51.47           | -10.70      | 45.63          | 34.93          | 40.00          | -5.07       | QP       | 100         | 341           | P   |
| 5   | 66.22           | -12.26      | 48.91          | 36.65          | 40.00          | -3.35       | Peak     | 400         | 0             | P   |
| 6   | 250.19          | -11.64      | 42.63          | 30.99          | 46.00          | -15.01      | Peak     | 400         | 0             | P   |

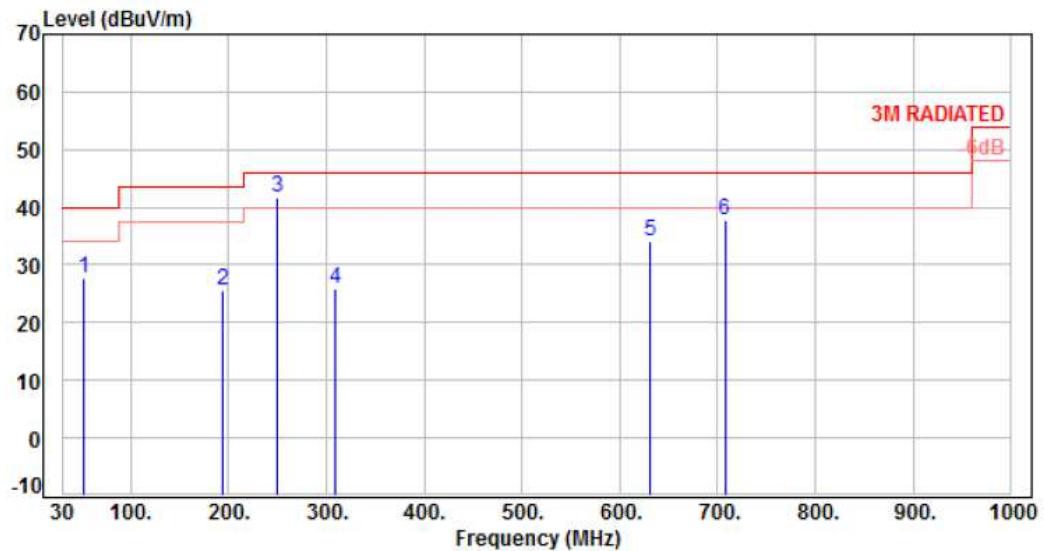
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



|           |                 |             |              |
|-----------|-----------------|-------------|--------------|
| Power     | : PoE           | Pol/Phase   | : HORIZONTAL |
| Test Mode | : Mode 2        | Temperature | : 23 °C      |
| Test Date | : Jul. 07, 2018 | Humidity    | : 61 %       |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 51.44           | -10.70      | 38.52          | 27.82          | 40.00          | -12.18      | Peak     | 100         | 0             | P   |
| 2   | 194.33          | -12.96      | 38.67          | 25.71          | 43.50          | -17.79      | Peak     | 100         | 0             | P   |
| 3   | 250.50          | -11.63      | 53.49          | 41.86          | 46.00          | -4.14       | Peak     | 100         | 0             | P   |
| 4   | 308.64          | -9.64       | 35.49          | 25.85          | 46.00          | -20.15      | Peak     | 100         | 0             | P   |
| 5   | 631.55          | -2.40       | 36.56          | 34.16          | 46.00          | -11.84      | Peak     | 100         | 0             | P   |
| 6   | 707.42          | -1.17       | 38.95          | 37.78          | 46.00          | -8.22       | Peak     | 100         | 0             | P   |

Note: Level=Reading+Factor

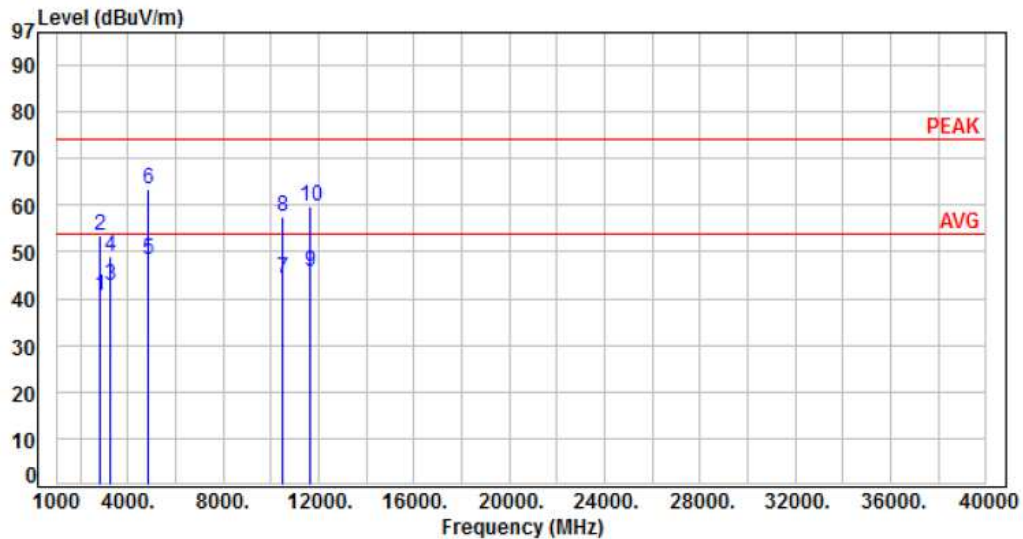
Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



## 5.6 Test Result and Data (1GHz ~ 40GHz)

|           |                 |             |            |
|-----------|-----------------|-------------|------------|
| Power     | : AC 120V       | Pol/Phase   | : VERTICAL |
| Test Mode | : Mode 1        | Temperature | : 23 °C    |
| Test Date | : Jul. 07, 2018 | Humidity    | : 61 %     |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 2802.00         | -14.24      | 54.70          | 40.46          | 54.00          | -13.54      | Average  | 105         | 331           | P   |
| 2   | 2802.00         | -14.24      | 67.75          | 53.51          | 74.00          | -20.49      | Peak     | 105         | 331           | P   |
| 3   | 3250.00         | -12.65      | 55.60          | 42.95          | 54.00          | -11.05      | Average  | 100         | 340           | P   |
| 4   | 3250.00         | -12.65      | 61.60          | 48.95          | 74.00          | -25.05      | Peak     | 100         | 340           | P   |
| 5   | 4874.00         | -8.65       | 57.00          | 48.35          | 54.00          | -5.65       | Average  | 100         | 66            | P   |
| 6   | 4874.00         | -8.65       | 72.14          | 63.49          | 74.00          | -10.51      | Peak     | 100         | 66            | P   |
| 7   | 10480.00        | -0.78       | 45.21          | 44.43          | 54.00          | -9.57       | Average  | 100         | 116           | P   |
| 8   | 10480.00        | -0.78       | 58.29          | 57.51          | 74.00          | -16.49      | Peak     | 100         | 116           | P   |
| 9   | 11650.00        | 0.91        | 45.01          | 45.92          | 54.00          | -8.08       | Average  | 100         | 155           | P   |
| 10  | 11650.00        | 0.91        | 58.66          | 59.57          | 74.00          | -14.43      | Peak     | 100         | 155           | P   |

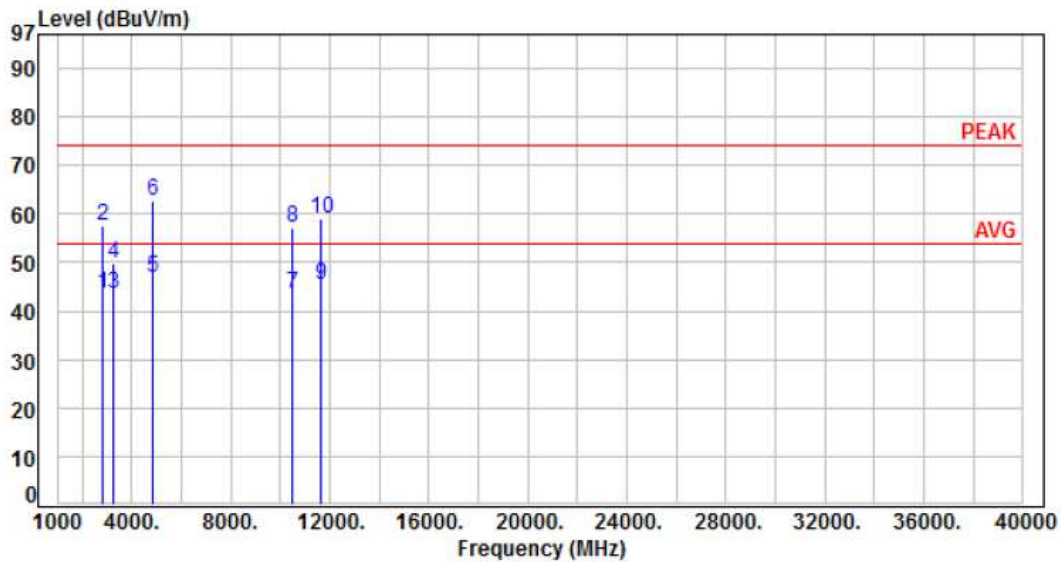
Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



|           |                 |             |              |
|-----------|-----------------|-------------|--------------|
| Power     | : AC 120V       | Pol/Phase   | : HORIZONTAL |
| Test Mode | : Mode 1        | Temperature | : 23 °C      |
| Test Date | : Jul. 07, 2018 | Humidity    | : 61 %       |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|-----|-----------------|-------------|----------------|----------------|----------------|-------------|----------|-------------|---------------|-----|
| 1   | 2802.00         | -14.24      | 57.90          | 43.66          | 54.00          | -10.34      | Average  | 103         | 292           | P   |
| 2   | 2802.00         | -14.24      | 71.77          | 57.53          | 74.00          | -16.47      | Peak     | 103         | 292           | P   |
| 3   | 3250.00         | -12.65      | 56.30          | 43.65          | 54.00          | -10.35      | Average  | 156         | 114           | P   |
| 4   | 3250.00         | -12.65      | 62.32          | 49.67          | 74.00          | -24.33      | Peak     | 156         | 114           | P   |
| 5   | 4874.00         | -8.65       | 55.65          | 47.00          | 54.00          | -7.00       | Average  | 112         | 335           | P   |
| 6   | 4874.00         | -8.65       | 71.53          | 62.88          | 74.00          | -11.12      | Peak     | 112         | 335           | P   |
| 7   | 10480.00        | -0.78       | 44.29          | 43.51          | 54.00          | -10.49      | Average  | 133         | 228           | P   |
| 8   | 10480.00        | -0.78       | 57.87          | 57.09          | 74.00          | -16.91      | Peak     | 133         | 228           | P   |
| 9   | 11650.00        | 0.91        | 44.50          | 45.41          | 54.00          | -8.59       | Average  | 108         | 263           | P   |
| 10  | 11650.00        | 0.91        | 58.20          | 59.11          | 74.00          | -14.89      | Peak     | 108         | 263           | P   |

Note: Level=Reading+Factor

Margin=Level-Limit

Factor=Antenna Factor + cable loss - Amplifier Factor



## 5.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                 | MHz                   | MHz             | GHz             |
|---------------------|-----------------------|-----------------|-----------------|
| 0.09000 – 0.11000   | 16.42000 – 16.42300   | 399.9 – 410.0   | 4.500 – 5.250   |
| 0.49500 – 0.505**   | 16.69475 – 16.69525   | 608.0 – 614.0   | 5.350 – 5.460   |
| 2.17350 – 2.19050   | 16.80425 – 16.80475   | 960.0 – 1240.0  | 7.250 – 7.750   |
| 4.12500 – 4.12800   | 25.50000 – 25.67000   | 1300.0 – 1427.0 | 8.025 – 8.500   |
| 4.17725 – 4.17775   | 37.50000 – 38.25000   | 1435.0 – 1626.5 | 9.000 – 9.200   |
| 4.20725 – 4.20775   | 73.00000 – 74.60000   | 1645.5 – 1646.5 | 9.300 – 9.500   |
| 6.21500 – 6.21800   | 74.80000 – 75.20000   | 1660.0 – 1710.0 | 10.600 – 12.700 |
| 6.26775 – 6.26825   | 108.00000 – 121.94000 | 1718.8 – 1722.2 | 13.250 – 13.400 |
| 6.31175 – 6.31225   | 123.00000 – 138.00000 | 2200.0 – 2300.0 | 14.470 – 14.500 |
| 8.29100 – 8.29400   | 149.90000 – 150.05000 | 2310.0 – 2390.0 | 15.350 – 16.200 |
| 8.36200 – 8.36600   | 156.52475 – 156.52525 | 2483.5 – 2500.0 | 17.700 – 21.400 |
| 8.37625 – 8.38675   | 156.70000 – 156.90000 | 2655.0 – 2900.0 | 22.010 – 23.120 |
| 8.41425 – 8.41475   | 162.01250 – 167.17000 | 3260.0 – 3267.0 | 23.600 – 24.000 |
| 12.29000 – 12.29300 | 167.72000 – 173.20000 | 3332.0 – 3339.0 | 31.200 – 31.800 |
| 12.51975 – 12.52025 | 240.00000 – 285.00000 | 3345.8 – 3358.0 | 36.430 – 36.500 |
| 12.57675 – 12.57725 | 322.00000 – 335.40000 | 3600.0 – 4400.0 | Above 38.6      |
| 13.36000 – 13.41000 |                       |                 |                 |

\*\* : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz



## 5.8 Test Photographs (30MHz ~ 1GHz)

Power from Adapter

Front View



Rear View



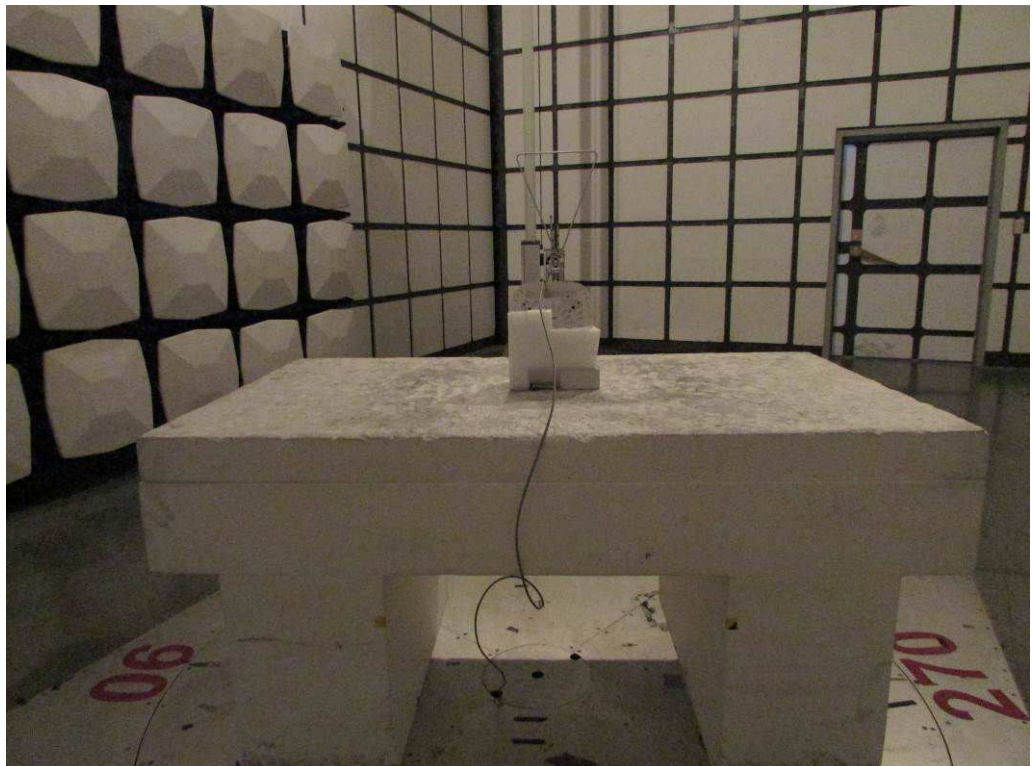


Power from PoE

Front View



Rear View





## 5.9 Test Photographs (1GHz ~ 40GHz)

Front View



Rear View

