



# EMC TEST REPORT

According to

**47 CFR, Part 15B, CISPR PUB. 22**

Applicant : Suzhou Switek Electronics&Technology Co, Ltd.  
Address : No.86, South WuSong Road, Luzhi Town, Wuzhong  
District, Suzhou City.  
Equipment : Desktop kvm switch  
Model No. : AS-41UA , AS-21UA  
FCC ID : ZQXAS-41UA

## I HEREBY CERTIFY THAT :

The sample was received on Mar. 14, 2019 and the testing was carried out on Apr. 05, 2019 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:

Miro Chueh  
EMC/RF B.U. Manager



# **EMC TEST REPORT**

Issued by:

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The test record, data evaluation & Equipment. Under Test configurations represented herein are true and accurate accounts of the measurements of the samples EMC characteristics under the conditions specified in this report.



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## History of this test report

■ ORIGINAL.

☐ Additional attachment as following record:

| Report No   | Version | Date          | Description   |
|-------------|---------|---------------|---------------|
| SEFD1903091 | Rev 01  | Apr. 08, 2019 | Initial Issue |
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## 1. Summary of Test Procedure and Test Result

### 1.1. Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in ANSI C63.4 – 2014 and the energy emitted by this equipment was passed 47 CFR, Part 15B, CISPR PUB. 22.

The energy emitted by this equipment was passed both Radiated and Conducted Emissions Class B limits.

| Test Item          | Normative References                     | Test Result |
|--------------------|------------------------------------------|-------------|
| Conducted Emission | ANSI C63.4-2014<br>FCC Part 15 Subpart B | PASS        |
| Radiated Emission  | ANSI C63.4-2014<br>FCC Part 15 Subpart B | PASS        |



## 2. Test Configuration of Equipment under Test

### 2.1. Feature of Equipment under Test

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| <b>Product Name:</b> | Desktop kvm switch                                              |
| <b>Model Name:</b>   | AS-41UA , AS-21UA                                               |
| <b>Remark:</b>       | They are similar except for model name and the number of ports. |

Note: Please refer to user manual.



## 2.2. Test Manner

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. Turn on the power of all equipment.
- c. The complete test system included PC, USB Keyboard, USB Mouse, Monitor, Earphone, U disk and EUT for EMI test.
- d. The test mode as follow:

|        |                                                             |             |
|--------|-------------------------------------------------------------|-------------|
| Mode 1 | Full system work signal from PORT1 for AS-41UA with Adapter | (120V/60Hz) |
| Mode 2 | Full system work signal from PORT2 for AS-41UA with Adapter | (120V/60Hz) |
| Mode 3 | Full system work signal from PORT3 for AS-41UA with Adapter | (120V/60Hz) |
| Mode 4 | Full system work signal from PORT4 for AS-41UA with Adapter | (120V/60Hz) |
| Mode 5 | Full system work signal from PORT1 for AS-41UA              | (120V/60Hz) |
| Mode 6 | Full system work signal from PORT2 for AS-41UA              | (120V/60Hz) |
| Mode 7 | Full system work signal from PORT3 for AS-41UA              | (120V/60Hz) |
| Mode 8 | Full system work signal from PORT4 for AS-41UA              | (120V/60Hz) |

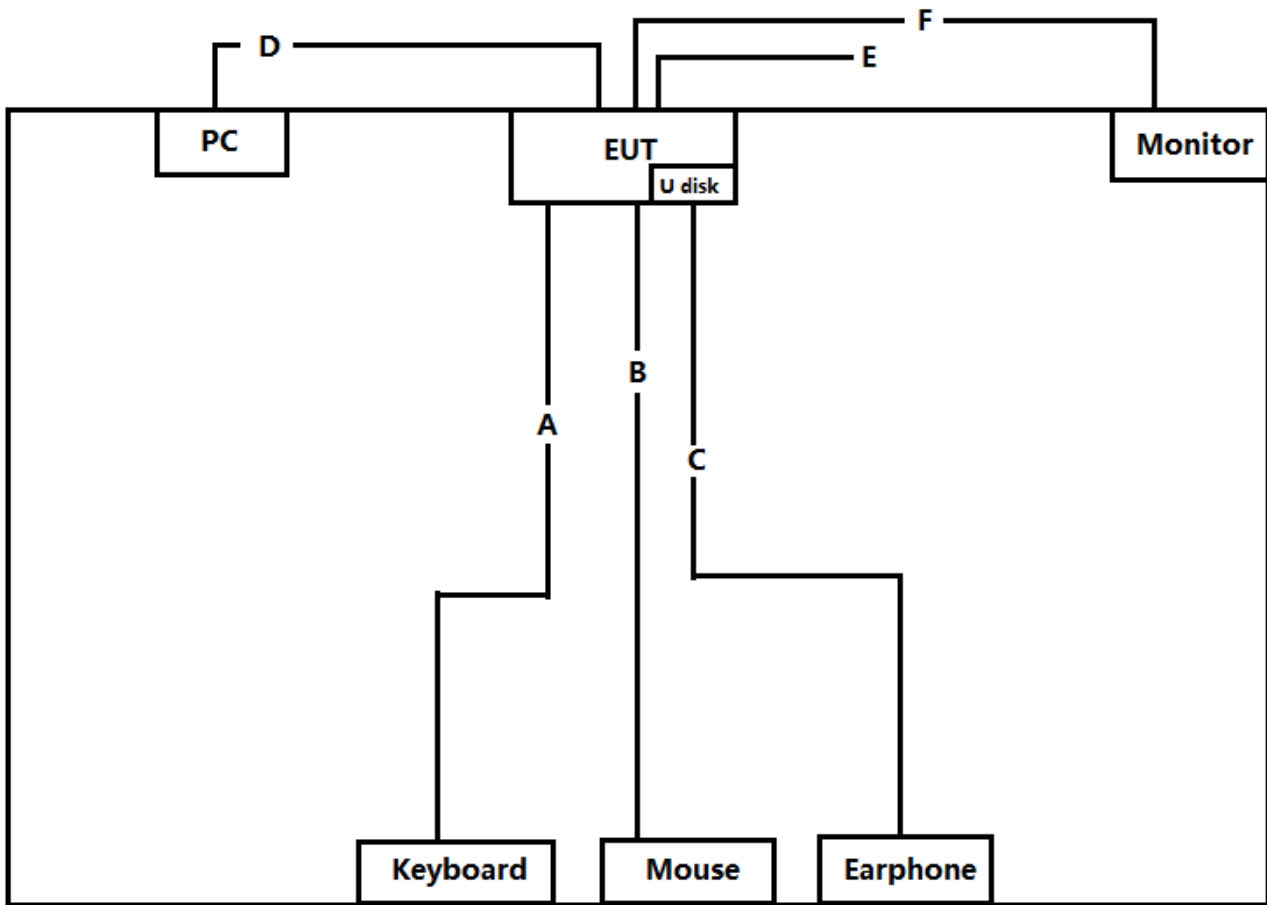
The "Test Mode 5, 6,7,8" were reported as final data.
- e. The maximum operating frequency is above 108MHz, the test frequency range is from 30MHz to 18GHz.

**2.3. Description of Test System**

| No. | Device       | Manufacturer | Model No.                 | Description        |
|-----|--------------|--------------|---------------------------|--------------------|
| 1   | PC           | HP           | HP Compaq Elite 8200 MTPC | Non-Shielded ,1.8m |
| 2   | USB Keyboard | DELL         | SK-8115                   | T3A002             |
| 3   | USB Mouse    | DELL         | G0K02XYK                  | R41108             |
| 4   | Monitor      | Philips      | BDM3275UP                 | N/A                |
| 5   | Earphone     | SALAR        | V18                       | N/A                |
| 6   | U disk       | Kingston     | N/A                       | N/A                |



## 2.4. Connection Diagram of Test System



Use Cable:

| No | Cable       | Quantity | Description        |
|----|-------------|----------|--------------------|
| A  | USB Cable   | 1        | Non-Shielded, 1.5m |
| B  | USB Cable   | 1        | Non-Shielded, 1.8m |
| C  | Audio Cable | 1        | Non-Shielded, 1.5m |
| D  | VGA Cable   | 1        | Non-Shielded, 1.8m |
| E  | VGA Cable   | 3        | Non-Shielded, 1.8m |
| F  | VGA Cable   | 1        | Non-Shielded, 1.8m |



## 2.5. General Information of Test

|                                               |                                                                                                                                                                                 |                                                                                                                                                           |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Test Site | <b>Cerpass Technology (Suzhou) Co.,Ltd</b><br>Address: No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China<br>Tel: +86-512-6917-5888<br>Fax: +86-512-6917-5666 |                                                                                                                                                           |
|                                               | CNAS                                                                                                                                                                            | L5515                                                                                                                                                     |
|                                               | FCC                                                                                                                                                                             | CN1243                                                                                                                                                    |
|                                               | A2LA                                                                                                                                                                            | 4981.01                                                                                                                                                   |
|                                               | IC                                                                                                                                                                              | 7920A-1, 7920A-2                                                                                                                                          |
|                                               | VCCI                                                                                                                                                                            | T-1945 for Telecommunication Test<br>C-2919 for Conducted emission test<br>R-2670 for Radiated emission test<br>G-227 for radiated disturbance above 1GHz |



## 2.6. 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  | Uncertainty  |
|------------------------------|------------|--------------|
| Conducted emissions(LINE)    | 9KHz-30MHz | +/- 0.6847dB |
| Conducted emissions(NEUTRAL) | 9KHz-30MHz | +/- 0.6763dB |

| Measurement                        | Polarity | Frequency          | Uncertainty  |
|------------------------------------|----------|--------------------|--------------|
| Radiated emissions<br>(below 1GHz) | H        | 30MHz ~ 200MHz     | +/- 4.0702dB |
|                                    |          | 200MHz ~1000MHz    | +/- 3.9158dB |
|                                    | V        | 30MHz ~ 200MHz     | +/- 4.0704dB |
|                                    |          | 200MHz ~1000MHz    | +/- 3.9167dB |
| Radiated emissions<br>(above 1GHz) | H        | 1000MHz ~18000MHz  | +/- 3.8864dB |
|                                    |          | 18000MHz ~40000MHz | +/-3.9314dB  |
|                                    | V        | 1000MHz ~18000MHz  | +/- 3.8896dB |
|                                    |          | 18000MHz ~40000MHz | +/- 3.8766dB |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



### 3. Test of Conducted Emission

#### 3.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT 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 as shown in ANSI C63.4-2014. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

##### Conducted Emission Limits:

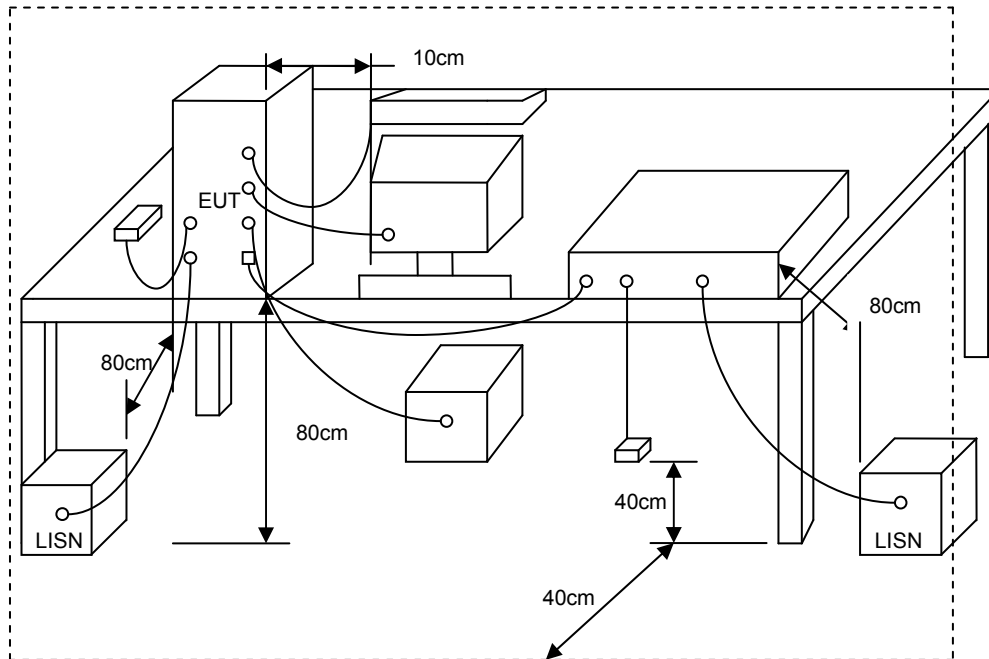
| Frequency<br>(MHz) | Quasi Peak<br>(dB $\mu$ V) | Average<br>(dB $\mu$ V) |
|--------------------|----------------------------|-------------------------|
| 0.15 – 0.5         | 66-56*                     | 56-46*                  |
| 0.5 – 5.0          | 56                         | 46            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

#### 3.2. 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.



### 3.3. Typical test Setup





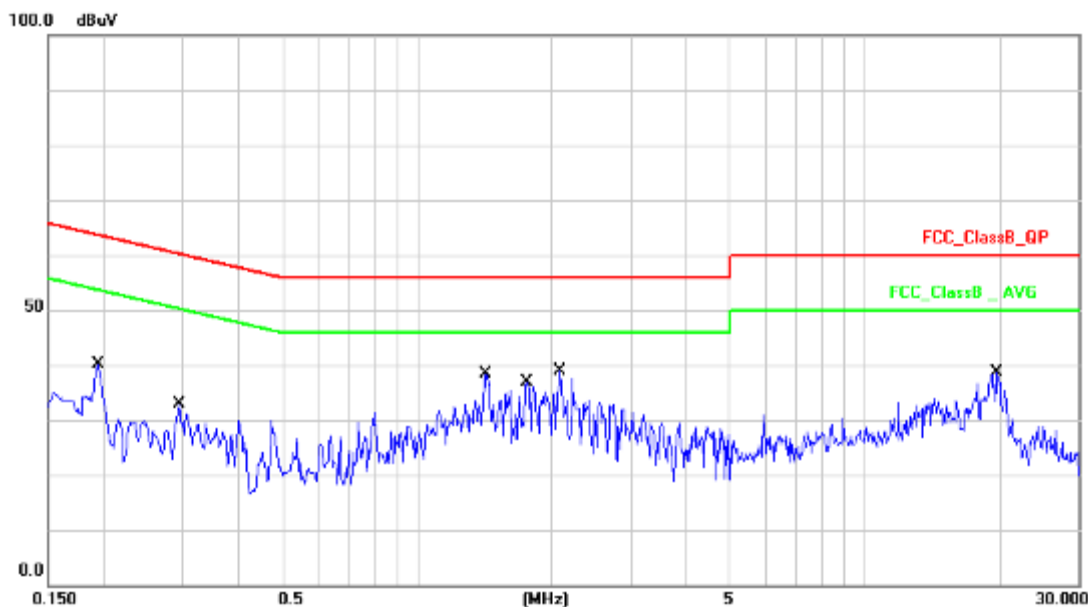
### 3.4. Measurement Equipment

| Instrument/Ancillary        | Manufacturer | Model No.            | Serial No. | Calibration Date | Valid Date. |
|-----------------------------|--------------|----------------------|------------|------------------|-------------|
| Test Receiver               | R&S          | ESCI                 | 100565     | 2018.07.18       | 2019.07.17  |
| AMN                         | R&S          | ESH2-Z5              | 100182     | 2018.08.25       | 2019.08.24  |
| ISN                         | FCC          | FCC-TLISN-T2-02      | 20379      | 2019.03.11       | 2020.03.10  |
| ISN                         | FCC          | FCC-TLISN-T4-02      | 20380      | 2018.06.14       | 2019.06.13  |
| ISN                         | SCHWARZBECK  | T8 CAT6              | 173        | 2018.07.18       | 2019.07.17  |
| ISN                         | TESEQ        | ISN ST08             | 30175      | 2018.08.25       | 2019.08.24  |
| ISN                         | TESEQ        | ISN S751             | 31531      | 2018.08.25       | 2019.08.24  |
| LISN                        | FCC          | FCC-LISN-50-200-2-02 | 112087     | 2018.08.25       | 2019.08.24  |
| LISN                        | SCHWARZBECK  | NSLK 8127            | 8127-920   | 2018.08.25       | 2019.08.24  |
| LISN                        | R&S          | ENV216               | 100325     | 2018.08.25       | 2019.08.24  |
| Current Probe               | R&S          | EZ-17                | 100303     | 2019.03.17       | 2020.03.16  |
| Passive Voltage Probe       | R&S          | ESH2-Z3              | 100026     | 2019.03.17       | 2020.03.16  |
| Pulse Limiter               | R&S          | ESH3-Z2              | 100529     | 2019.03.11       | 2020.03.10  |
| Temperature/ Humidity Meter | Zhicheng     | ZC1-11               | CEP-TH-004 | 2019.03.17       | 2020.03.16  |
| EZ-EMC                      | Fala         | Ver CT3A1            | N/A        | N/A              | N/A         |



### 3.5. Test Result and Data

|                  |                                                                    |            |            |
|------------------|--------------------------------------------------------------------|------------|------------|
| Test Mode :      | Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz) |            |            |
| AC Power :       | AC 120V/60Hz                                                       | Phase :    | LINE       |
| Temperature :    | 25°C                                                               | Humidity : | 52%        |
| Pressure(mbar) : | 1002                                                               | Date:      | 2019/04/03 |

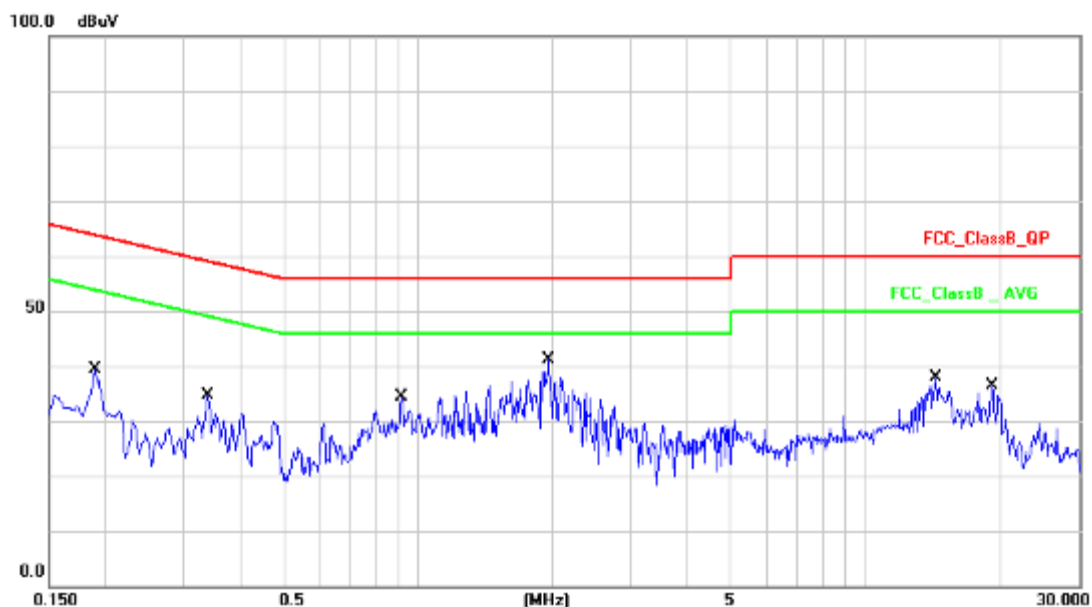


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1944          | 10.13       | 27.38          | 37.51        | 63.84        | -26.33      | QP       |
| 2   | 0.1944          | 10.13       | 23.41          | 33.54        | 53.84        | -20.30      | AVG      |
| 3   | 0.2939          | 10.14       | 12.31          | 22.45        | 60.41        | -37.96      | QP       |
| 4   | 0.2939          | 10.14       | 5.51           | 15.65        | 50.41        | -34.76      | AVG      |
| 5   | 1.4256          | 10.17       | 8.48           | 18.65        | 56.00        | -37.35      | QP       |
| 6   | 1.4256          | 10.17       | 1.50           | 11.67        | 46.00        | -34.33      | AVG      |
| 7   | 1.7529          | 10.18       | 8.96           | 19.14        | 56.00        | -36.86      | QP       |
| 8   | 1.7529          | 10.18       | 1.82           | 12.00        | 46.00        | -34.00      | AVG      |
| 9   | 2.0878          | 10.18       | 10.99          | 21.17        | 56.00        | -34.83      | QP       |
| 10  | 2.0878          | 10.18       | 7.41           | 17.59        | 46.00        | -28.41      | AVG      |
| 11  | 19.7396         | 10.38       | 18.77          | 29.15        | 60.00        | -30.85      | QP       |
| 12  | 19.7396         | 10.38       | 8.47           | 18.85        | 50.00        | -31.15      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



Test Mode : Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz)  
AC Power : AC 120V/60Hz Phase : NEUTRAL  
Temperature : 25°C Humidity : 52%  
Pressure(mbar) : 1002 Date: 2019/04/03

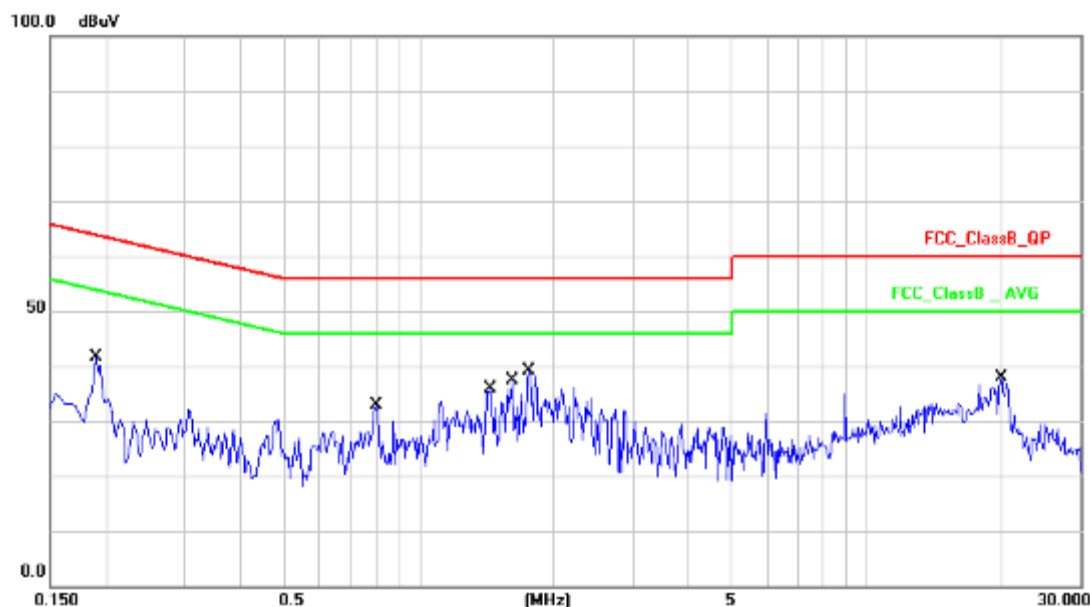


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1893          | 10.13       | 26.36          | 36.49        | 64.06        | -27.57      | QP       |
| 2   | 0.1893          | 10.13       | 22.41          | 32.54        | 54.06        | -21.52      | AVG      |
| 3   | 0.3391          | 10.14       | 12.39          | 22.53        | 59.22        | -36.69      | QP       |
| 4   | 0.3391          | 10.14       | 7.55           | 17.69        | 49.22        | -31.53      | AVG      |
| 5   | 0.9184          | 10.16       | 15.35          | 25.51        | 56.00        | -30.49      | QP       |
| 6   | 0.9184          | 10.16       | 13.92          | 24.08        | 46.00        | -21.92      | AVG      |
| 7   | 1.9489          | 10.18       | 17.63          | 27.81        | 56.00        | -28.19      | QP       |
| 8   | 1.9489          | 10.18       | 9.45           | 19.63        | 46.00        | -26.37      | AVG      |
| 9   | 14.2881         | 10.52       | 10.90          | 21.42        | 60.00        | -38.58      | QP       |
| 10  | 14.2881         | 10.52       | 4.21           | 14.73        | 50.00        | -35.27      | AVG      |
| 11  | 19.1220         | 10.41       | 19.20          | 29.61        | 60.00        | -30.39      | QP       |
| 12  | 19.1220         | 10.41       | 8.09           | 18.50        | 50.00        | -31.50      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |            |            |
|------------------|--------------------------------------------------------------------|------------|------------|
| Test Mode :      | Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz) |            |            |
| AC Power :       | AC 120V/60Hz                                                       | Phase :    | LINE       |
| Temperature :    | 25°C                                                               | Humidity : | 52%        |
| Pressure(mbar) : | 1002                                                               | Date:      | 2019/04/03 |

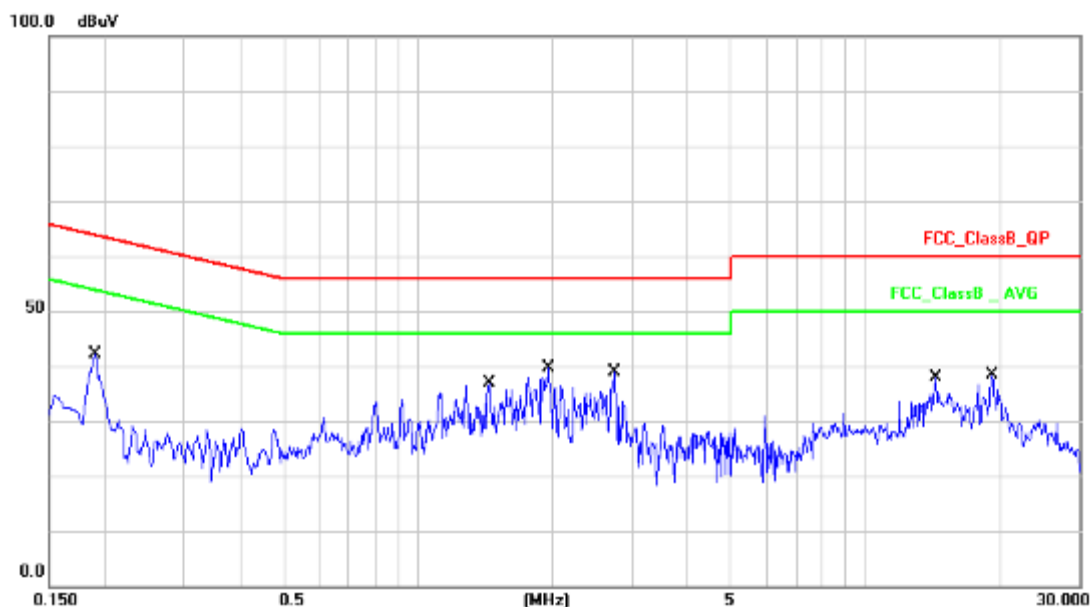


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1901          | 10.13       | 27.67          | 37.80        | 64.03        | -26.23      | QP       |
| 2   | 0.1901          | 10.13       | 23.72          | 33.85        | 54.03        | -20.18      | AVG      |
| 3   | 0.8002          | 10.16       | 9.50           | 19.66        | 56.00        | -36.34      | QP       |
| 4   | 0.8002          | 10.16       | 5.49           | 15.65        | 46.00        | -30.35      | AVG      |
| 5   | 1.4408          | 10.17       | 13.64          | 23.81        | 56.00        | -32.19      | QP       |
| 6   | 1.4408          | 10.17       | 10.46          | 20.63        | 46.00        | -25.37      | AVG      |
| 7   | 1.6189          | 10.18       | 17.30          | 27.48        | 56.00        | -28.52      | QP       |
| 8   | 1.6189          | 10.18       | 10.62          | 20.80        | 46.00        | -25.20      | AVG      |
| 9   | 1.7621          | 10.18       | 12.15          | 22.33        | 56.00        | -33.67      | QP       |
| 10  | 1.7621          | 10.18       | 2.26           | 12.44        | 46.00        | -33.56      | AVG      |
| 11  | 19.9498         | 10.37       | 17.06          | 27.43        | 60.00        | -32.57      | QP       |
| 12  | 19.9498         | 10.37       | 8.08           | 18.45        | 50.00        | -31.55      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



Test Mode : Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz)  
AC Power : AC 120V/60Hz Phase : NEUTRAL  
Temperature : 25°C Humidity : 52%  
Pressure(mbar) : 1002 Date: 2019/04/03

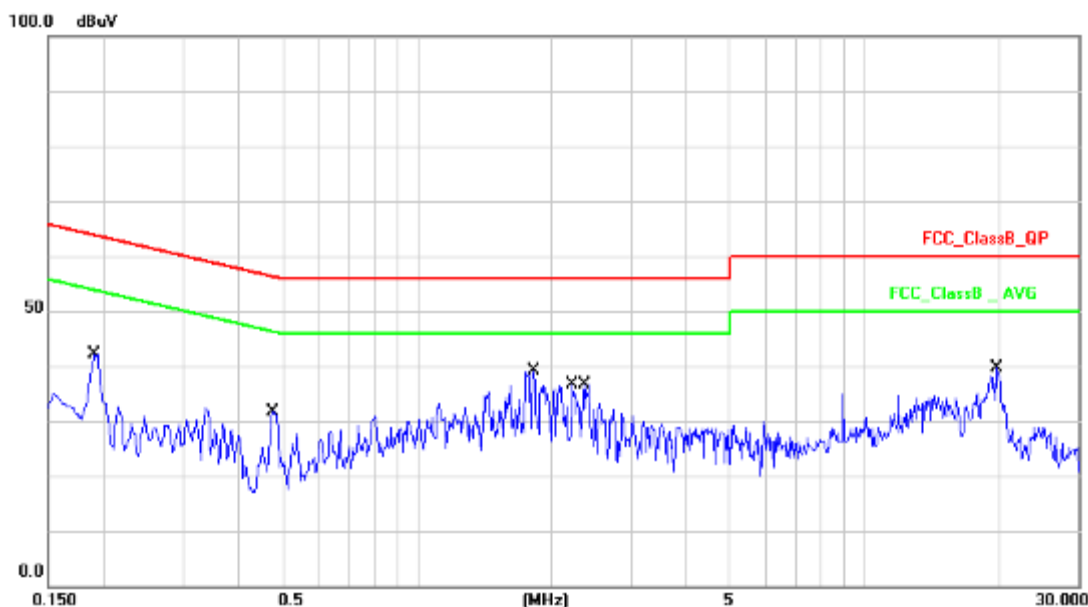


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1901          | 10.13       | 27.68          | 37.81        | 64.03        | -26.22      | QP       |
| 2   | 0.1901          | 10.13       | 23.72          | 33.85        | 54.03        | -20.18      | AVG      |
| 3   | 1.4408          | 10.17       | 13.55          | 23.72        | 56.00        | -32.28      | QP       |
| 4   | 1.4408          | 10.17       | 10.38          | 20.55        | 46.00        | -25.45      | AVG      |
| 5   | 1.9489          | 10.18       | 17.91          | 28.09        | 56.00        | -27.91      | QP       |
| 6   | 1.9489          | 10.18       | 9.47           | 19.65        | 46.00        | -26.35      | AVG      |
| 7   | 2.7501          | 10.20       | 16.22          | 26.42        | 56.00        | -29.58      | QP       |
| 8   | 2.7501          | 10.20       | 10.27          | 20.47        | 46.00        | -25.53      | AVG      |
| 9   | 14.2881         | 10.52       | 10.81          | 21.33        | 60.00        | -38.67      | QP       |
| 10  | 14.2881         | 10.52       | 4.20           | 14.72        | 50.00        | -35.28      | AVG      |
| 11  | 19.1219         | 10.41       | 19.44          | 29.85        | 60.00        | -30.15      | QP       |
| 12  | 19.1219         | 10.41       | 8.19           | 18.60        | 50.00        | -31.40      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |            |            |
|------------------|--------------------------------------------------------------------|------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |            |            |
| AC Power :       | AC 120V/60Hz                                                       | Phase :    | LINE       |
| Temperature :    | 25°C                                                               | Humidity : | 52%        |
| Pressure(mbar) : | 1002                                                               | Date:      | 2019/04/03 |

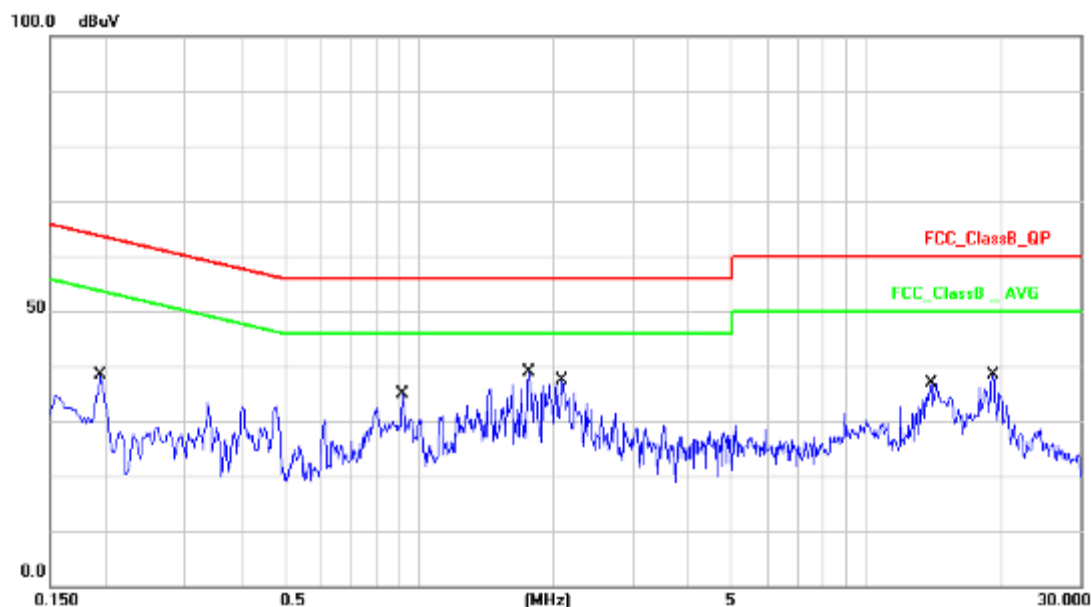


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1901          | 10.13       | 27.66          | 37.79        | 64.03        | -26.24      | QP       |
| 2   | 0.1901          | 10.13       | 23.69          | 33.82        | 54.03        | -20.21      | AVG      |
| 3   | 0.4761          | 10.16       | 4.92           | 15.08        | 56.41        | -41.33      | QP       |
| 4   | 0.4761          | 10.16       | -0.13          | 10.03        | 46.41        | -36.38      | AVG      |
| 5   | 1.8189          | 10.18       | 18.68          | 28.86        | 56.00        | -27.14      | QP       |
| 6   | 1.8189          | 10.18       | 15.48          | 25.66        | 46.00        | -20.34      | AVG      |
| 7   | 2.2248          | 10.18       | 7.42           | 17.60        | 56.00        | -38.40      | QP       |
| 8   | 2.2248          | 10.18       | 2.53           | 12.71        | 46.00        | -33.29      | AVG      |
| 9   | 2.3584          | 10.20       | 4.74           | 14.94        | 56.00        | -41.06      | QP       |
| 10  | 2.3584          | 10.20       | -1.10          | 9.10         | 46.00        | -36.90      | AVG      |
| 11  | 19.7394         | 10.38       | 18.57          | 28.95        | 60.00        | -31.05      | QP       |
| 12  | 19.7394         | 10.38       | 7.82           | 18.20        | 50.00        | -31.80      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |            |            |
|------------------|--------------------------------------------------------------------|------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |            |            |
| AC Power :       | AC 120V/60Hz                                                       | Phase :    | NEUTRAL    |
| Temperature :    | 25°C                                                               | Humidity : | 52%        |
| Pressure(mbar) : | 1002                                                               | Date:      | 2019/04/03 |

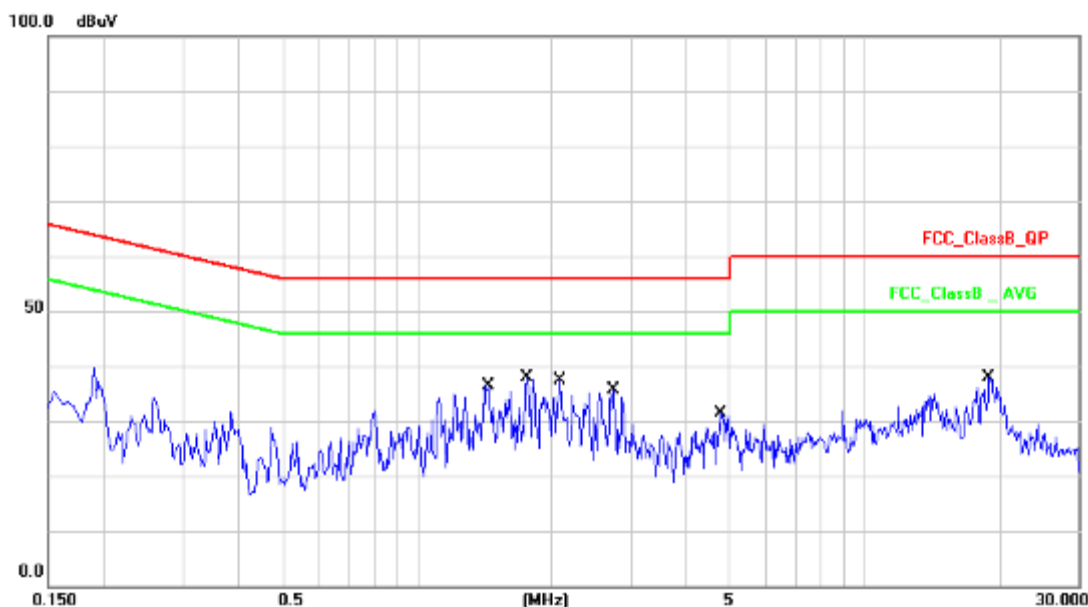


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1932          | 10.13       | 28.56          | 38.69        | 63.89        | -25.20      | QP       |
| 2   | 0.1932          | 10.13       | 24.57          | 34.70        | 53.89        | -19.19      | AVG      |
| 3   | 0.9183          | 10.16       | 15.43          | 25.59        | 56.00        | -30.41      | QP       |
| 4   | 0.9183          | 10.16       | 14.02          | 24.18        | 46.00        | -21.82      | AVG      |
| 5   | 1.7527          | 10.18       | 9.09           | 19.27        | 56.00        | -36.73      | QP       |
| 6   | 1.7527          | 10.18       | 1.91           | 12.09        | 46.00        | -33.91      | AVG      |
| 7   | 2.0878          | 10.18       | 10.84          | 21.02        | 56.00        | -34.98      | QP       |
| 8   | 2.0878          | 10.18       | 7.23           | 17.41        | 46.00        | -28.59      | AVG      |
| 9   | 13.9146         | 10.50       | 11.29          | 21.79        | 60.00        | -38.21      | QP       |
| 10  | 13.9146         | 10.50       | 4.35           | 14.85        | 50.00        | -35.15      | AVG      |
| 11  | 19.1219         | 10.41       | 19.36          | 29.77        | 60.00        | -30.23      | QP       |
| 12  | 19.1219         | 10.41       | 8.28           | 18.69        | 50.00        | -31.31      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |            |            |
|------------------|--------------------------------------------------------------------|------------|------------|
| Test Mode :      | Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz) |            |            |
| AC Power :       | AC 120V/60Hz                                                       | Phase :    | LINE       |
| Temperature :    | 25°C                                                               | Humidity : | 52%        |
| Pressure(mbar) : | 1002                                                               | Date:      | 2019/04/03 |

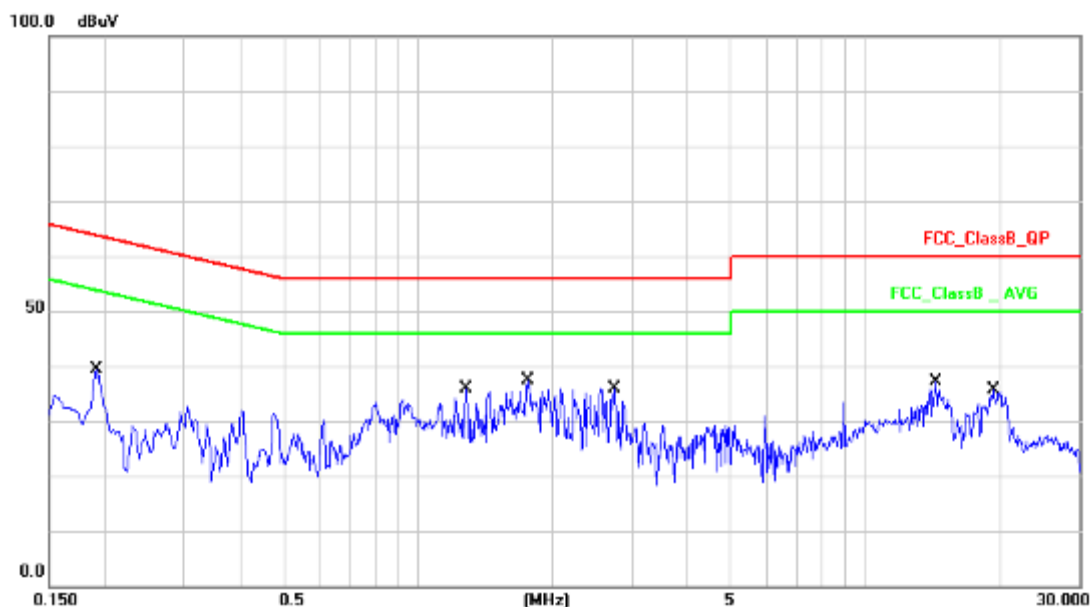


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 1.4408          | 10.17       | 13.64          | 23.81        | 56.00        | -32.19      | QP       |
| 2   | 1.4408          | 10.17       | 10.37          | 20.54        | 46.00        | -25.46      | AVG      |
| 3   | 1.7526          | 10.18       | 9.24           | 19.42        | 56.00        | -36.58      | QP       |
| 4   | 1.7526          | 10.18       | 1.98           | 12.16        | 46.00        | -33.84      | AVG      |
| 5   | 2.0878          | 10.18       | 10.78          | 20.96        | 56.00        | -35.04      | QP       |
| 6   | 2.0878          | 10.18       | 7.16           | 17.34        | 46.00        | -28.66      | AVG      |
| 7   | 2.7355          | 10.20       | 10.33          | 20.53        | 56.00        | -35.47      | QP       |
| 8   | 2.7355          | 10.20       | 6.81           | 17.01        | 46.00        | -28.99      | AVG      |
| 9   | 4.7713          | 10.26       | 5.88           | 16.14        | 56.00        | -39.86      | QP       |
| 10  | 4.7713          | 10.26       | 1.67           | 11.93        | 46.00        | -34.07      | AVG      |
| 11  | 18.9204         | 10.42       | 14.57          | 24.99        | 60.00        | -35.01      | QP       |
| 12  | 18.9204         | 10.42       | 5.37           | 15.79        | 50.00        | -34.21      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



Test Mode : Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz)  
AC Power : AC 120V/60Hz Phase : NEUTRAL  
Temperature : 25°C Humidity : 52%  
Pressure(mbar) : 1002 Date: 2019/04/03



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1912          | 10.13       | 28.65          | 38.78        | 63.98        | -25.20      | QP       |
| 2   | 0.1912          | 10.13       | 24.62          | 34.75        | 53.98        | -19.23      | AVG      |
| 3   | 1.2755          | 10.17       | 10.30          | 20.47        | 56.00        | -35.53      | QP       |
| 4   | 1.2755          | 10.17       | 1.71           | 11.88        | 46.00        | -34.12      | AVG      |
| 5   | 1.7526          | 10.18       | 9.44           | 19.62        | 56.00        | -36.38      | QP       |
| 6   | 1.7526          | 10.18       | 2.02           | 12.20        | 46.00        | -33.80      | AVG      |
| 7   | 2.7501          | 10.20       | 14.87          | 25.07        | 56.00        | -30.93      | QP       |
| 8   | 2.7501          | 10.20       | 10.87          | 21.07        | 46.00        | -24.93      | AVG      |
| 9   | 14.3640         | 10.53       | 9.71           | 20.24        | 60.00        | -39.76      | QP       |
| 10  | 14.3640         | 10.53       | 3.25           | 13.78        | 50.00        | -36.22      | AVG      |
| 11  | 19.2236         | 10.40       | 18.12          | 28.52        | 60.00        | -31.48      | QP       |
| 12  | 19.2236         | 10.40       | 7.72           | 18.12        | 50.00        | -31.88      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor

Test engineer: Vane Xta



## 4. Test of Radiated Emission

### 4.1. Test Limit

#### Below 1GHz (for digital device)

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

| FREQUENCY (MHz) | dBuV/m (At 10m) |         |
|-----------------|-----------------|---------|
|                 | Class A         | Class B |
| 30 ~ 230        | 40              | 30      |
| 230 ~ 1000      | 47              | 37      |

Limit tables for non-digital device:

#### Class A Radiated Emission limit at 10m (for others)

| Frequency (MHz) | Field Strength Limit (uV/m)Q.P. | Field Strength Limit (dBuV/m)Q.P. |
|-----------------|---------------------------------|-----------------------------------|
| 30 - 88         | 90                              | 39                                |
| 88 - 216        | 150                             | 43.5                              |
| 216 – 960       | 210                             | 46.4                              |
| Above 960       | 300                             | 49.5                              |

#### Class B Radiated Emission limit at 3m (for others)

| Frequency (MHz) | Field Strength Limit (uV/m)Q.P. | Field Strength Limit (dBuV/m)Q.P. |
|-----------------|---------------------------------|-----------------------------------|
| 30 - 88         | 100                             | 40                                |
| 88 - 216        | 150                             | 43.5                              |
| 216 – 960       | 200                             | 46                                |
| Above 960       | 500                             | 54                                |

#### Above 1GHz(for all device)

| Frequency (MHz) | Class A (dBuV/m) (At 10m) |      | Class B (dBuV/m) (At 3m) |      |
|-----------------|---------------------------|------|--------------------------|------|
|                 | Average                   | Peak | Average                  | Peak |
| Above 1000      | 49.5                      | 69.5 | 54                       | 74   |

**NOTE:** (1) The lower limit shall apply at the transition frequencies.  
(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).  
(3) The measurement above 1GHz is at close-in distances 3m, and determine the limit L2 corresponding to the close-in distance d2 by applying the following relation:  $L2 = L1 (d1/d2)$ , where L1 is the specified limit in microvolts per metre (uV/m) at the distance d1 (10m), L2 is the new limit for distance d2 (3m).  
So the new Class A limit above 1GHz at 3m is as following table:



| Frequency<br>(MHZ) | Class A (dBuV/m) (At 3m) |      |
|--------------------|--------------------------|------|
|                    | Average                  | Peak |
| Above 1000         | 60                       | 80   |

According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

| Highest frequency generated or used in the device or on which the device operates or tunes<br>(MHz) | Upper frequency of measurement range<br>(MHz)                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Below 1.75                                                                                          | 30                                                                                |
| 1.75-108                                                                                            | 1000                                                                              |
| 108-500                                                                                             | 2000                                                                              |
| 500-1000                                                                                            | 5000                                                                              |
| Above 1000                                                                                          | 5 <sup>th</sup> harmonic of the highest frequency or 40GHz,<br>whichever is lower |

## 4.2. Test Procedures

### Procedure of Preliminary Test

- The EUT was set up as per the test configuration to simulate typical usage per the user's manual. The EUT was placed on a Turn table top 0.8 meter above ground.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC 120VAC/60Hz power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Set the spectrum analyzer/ Receiver in the following setting as:  
Below 1GHz:  
RBW=120KHz / VBW=300KHz / Sweep=AUTO  
Above 1GHz:



Peak: RBW=1MHz, VBW=3MHz / Sweep=AUTO  
Average: RBW=1MHz / VBW=1.6Hz / Sweep=AUTO

- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

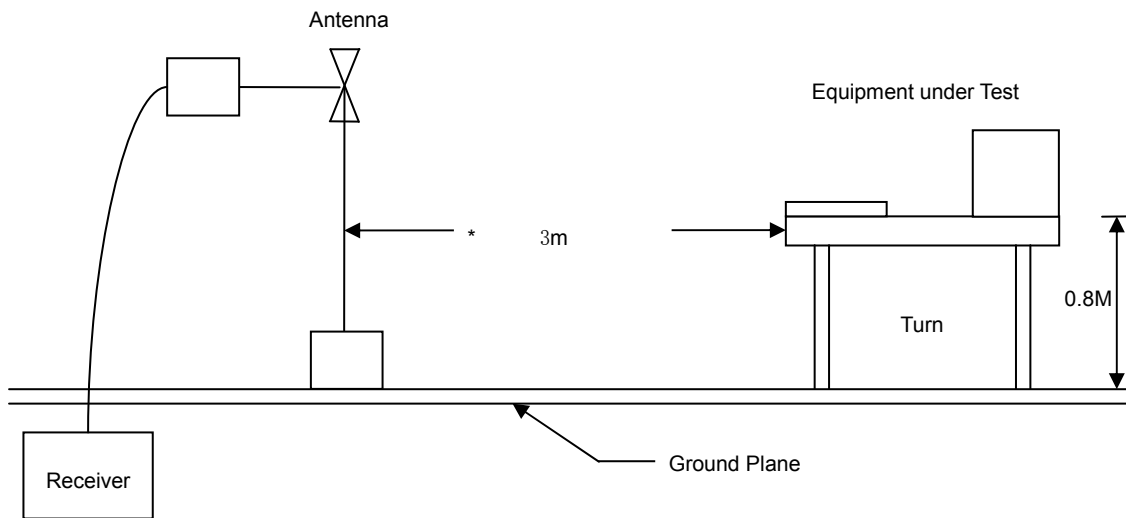
### **Procedure of Final Test**

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. Below 1GHz the Q.P. reading and above 1GHz the Peak and Average reading are presented.
- The test data of the worst-case condition(s) was recorded.

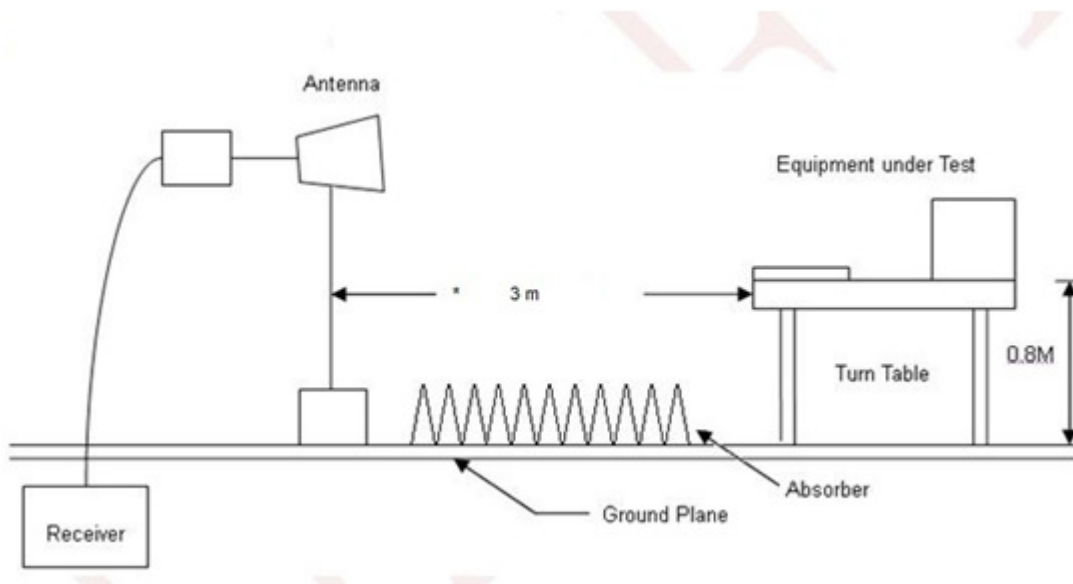


### 4.3. Typical test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup



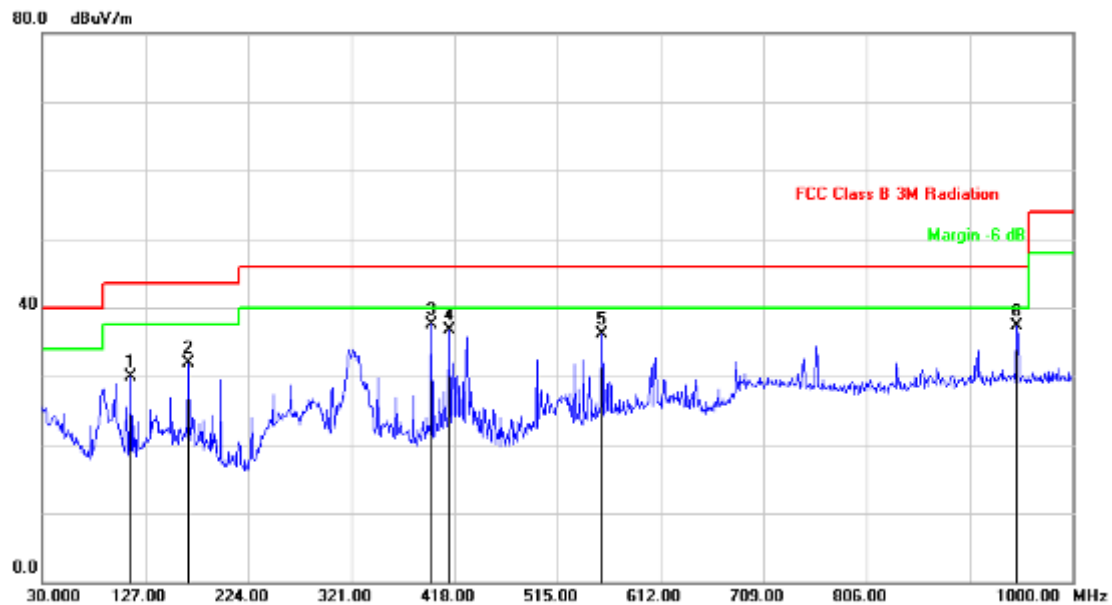
**4.4. Measurement Equipment**

| Instrument/Ancillary        | Manufacturer  | Model No.       | Serial No. | Calibration Date | Valid Date. |
|-----------------------------|---------------|-----------------|------------|------------------|-------------|
| EMI Test Receiver           | R&S           | ESC17           | 100968     | 2018.08.25       | 2019.08.24  |
| Preamplifier                | EMCI          | EMCI030-00-3230 | SN016723   | 2019.03.11       | 2020.03.10  |
| Preamplifier                | Agilent       | 8449B           | 3008A02342 | 2019.03.11       | 2020.03.10  |
| Bilog Antenna               | Sunol Science | JB1             | A072414-2  | 2018.07.20       | 2019.07.19  |
| Broad-Band Horn Antenna     | Schwarzbeck   | BBHA9120D       | 9120D-618  | 2018.04.21       | 2019.04.20  |
| Spectrum Analyzer           | R&S           | FSP40           | 100324     | 2018.08.23       | 2019.08.22  |
| Temperature/ Humidity Meter | Zhicheng      | ZC1-11          | CEP-TH-001 | 2019.03.17       | 2020.03.16  |
| EZ-EMC                      | Fala          | Ver CT3A1       | N/A        | N/A              | N/A         |



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

|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

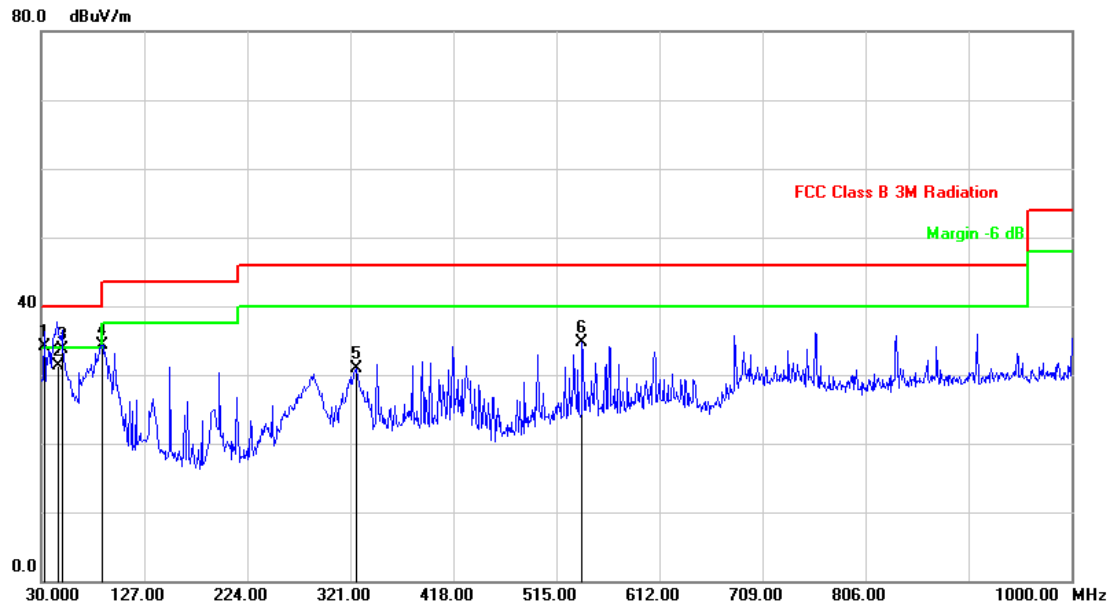


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 113.4200        | -12.81        | 42.78          | 29.97          | 43.50          | -13.53      | peak | 100         | 0             |
| 2   | 167.7400        | -12.55        | 44.41          | 31.86          | 43.50          | -11.64      | peak | 100         | 0             |
| 3   | 396.6600        | -5.95         | 43.55          | 37.60          | 46.00          | -8.40       | peak | 200         | 325           |
| 4   | 413.1500        | -4.12         | 40.77          | 36.65          | 46.00          | -9.35       | peak | 200         | 111           |
| 5   | 556.7100        | -3.42         | 39.49          | 36.07          | 46.00          | -9.93       | peak | 100         | 33            |
| 6   | 947.6200        | 2.53          | 34.70          | 37.23          | 46.00          | -8.77       | peak | 100         | 45            |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

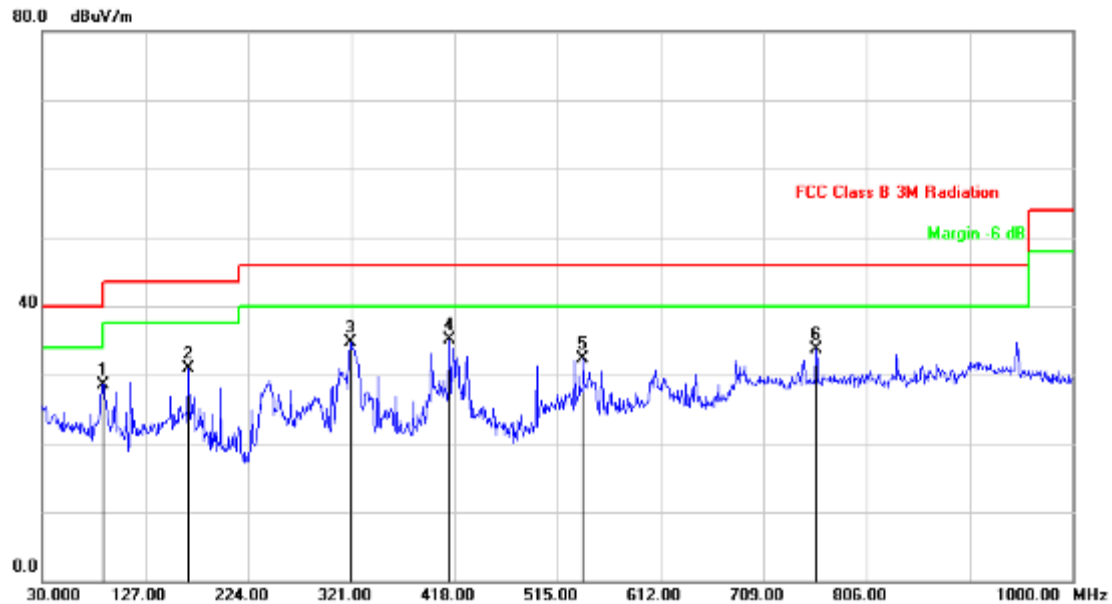


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 33.0099         | -3.61         | 37.77          | 34.16          | 40.00          | -5.84       | QP   | 200         | 173           |
| 2   | 45.5900         | -8.89         | 40.28          | 31.39          | 40.00          | -8.61       | QP   | 200         | 209           |
| 3   | 49.5000         | -10.74        | 44.40          | 33.66          | 40.00          | -6.34       | QP   | 200         | 192           |
| 4   | 87.2300         | -15.45        | 49.72          | 34.27          | 40.00          | -5.73       | peak | 200         | 194           |
| 5   | 326.8199        | -6.36         | 37.25          | 30.89          | 46.00          | -15.11      | peak | 200         | 266           |
| 6   | 539.2500        | -4.04         | 38.71          | 34.67          | 46.00          | -11.33      | peak | 200         | 301           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

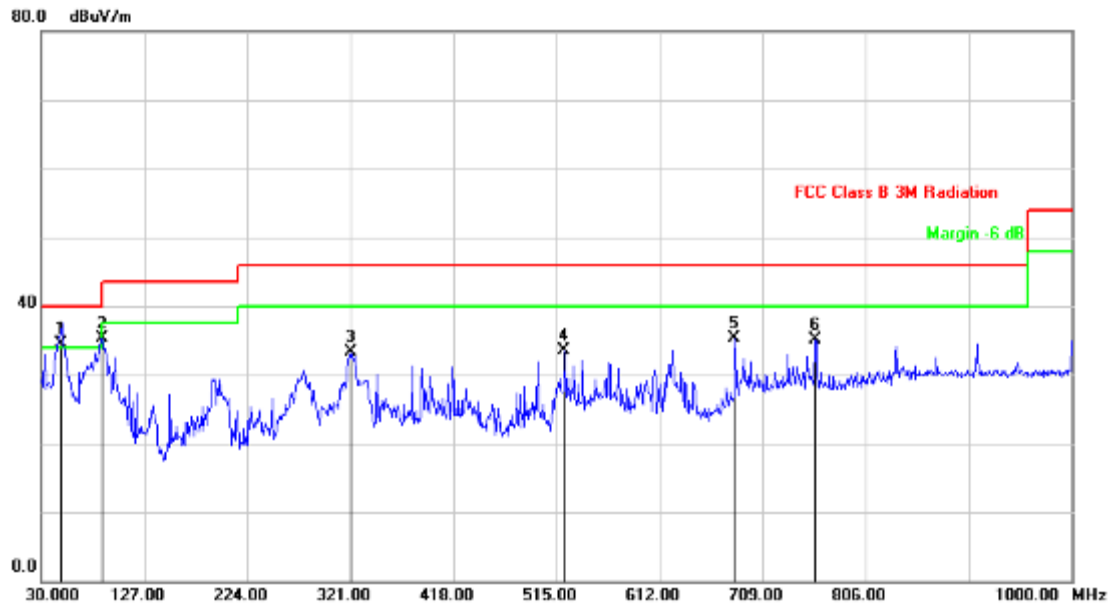


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 87.2300         | -15.45        | 43.98          | 28.53          | 40.00          | -11.47      | peak | 100         | 167           |
| 2   | 167.7400        | -12.55        | 43.41          | 30.86          | 43.50          | -12.64      | peak | 200         | 305           |
| 3   | 320.0298        | -6.24         | 41.00          | 34.76          | 46.00          | -11.24      | peak | 200         | 156           |
| 4   | 413.1499        | -4.12         | 39.27          | 35.15          | 46.00          | -10.85      | peak | 200         | 229           |
| 5   | 539.2500        | -4.04         | 36.38          | 32.34          | 46.00          | -13.66      | peak | 200         | 38            |
| 6   | 758.4699        | 1.17          | 32.56          | 33.73          | 46.00          | -12.27      | peak | 200         | 255           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

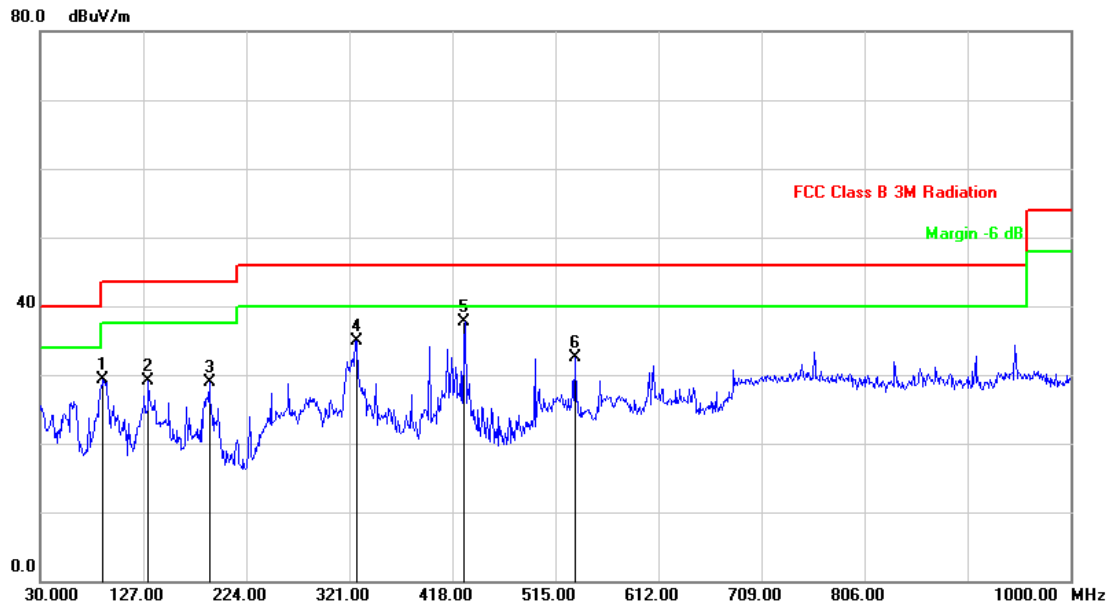


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 49.3998         | -10.70        | 45.21          | 34.51          | 40.00          | -5.49       | QP   | 100         | 29            |
| 2   | 87.2300         | -15.45        | 50.72          | 35.27          | 40.00          | -4.73       | peak | 100         | 168           |
| 3   | 321.9700        | -6.27         | 39.49          | 33.22          | 46.00          | -12.78      | peak | 100         | 244           |
| 4   | 522.7599        | -4.38         | 37.96          | 33.58          | 46.00          | -12.42      | peak | 100         | 230           |
| 5   | 682.8096        | -0.49         | 35.72          | 35.23          | 46.00          | -10.77      | peak | 100         | 172           |
| 6   | 758.4699        | 1.17          | 33.89          | 35.06          | 46.00          | -10.94      | peak | 100         | 350           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

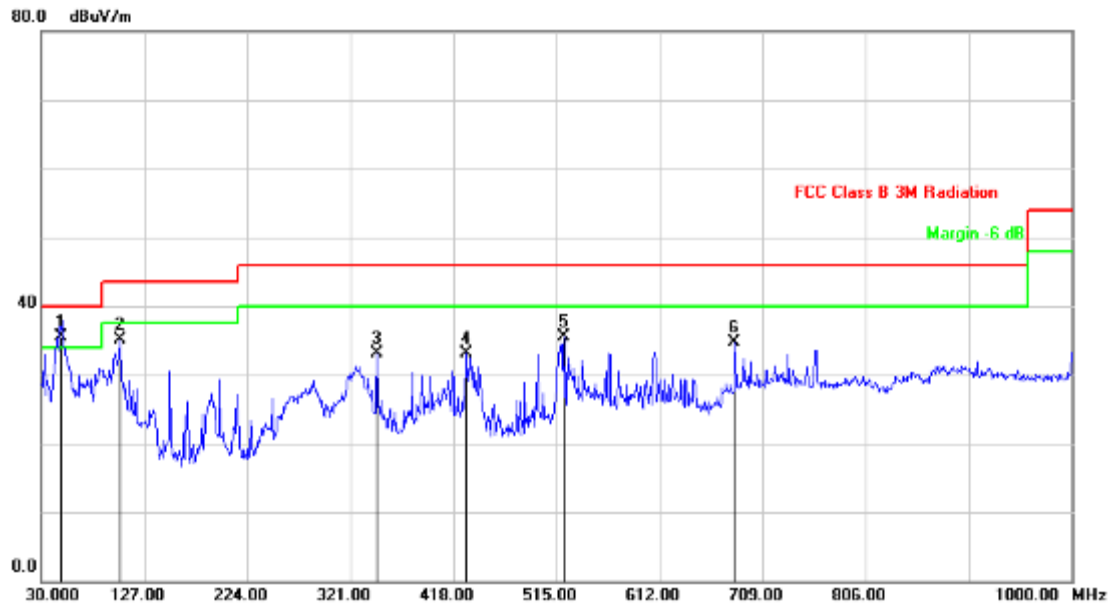


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 89.1700         | -15.29        | 44.69          | 29.40          | 43.50          | -14.10      | peak | 100         | 273           |
| 2   | 131.8497        | -12.83        | 42.01          | 29.18          | 43.50          | -14.32      | peak | 200         | 190           |
| 3   | 189.0800        | -12.56        | 41.42          | 28.86          | 43.50          | -14.64      | peak | 100         | 82            |
| 4   | 327.7900        | -6.37         | 41.29          | 34.92          | 46.00          | -11.08      | peak | 200         | 112           |
| 5   | 429.6399        | -4.30         | 41.96          | 37.66          | 46.00          | -8.34       | peak | 200         | 59            |
| 6   | 533.4298        | -4.16         | 36.65          | 32.49          | 46.00          | -13.51      | peak | 200         | 308           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

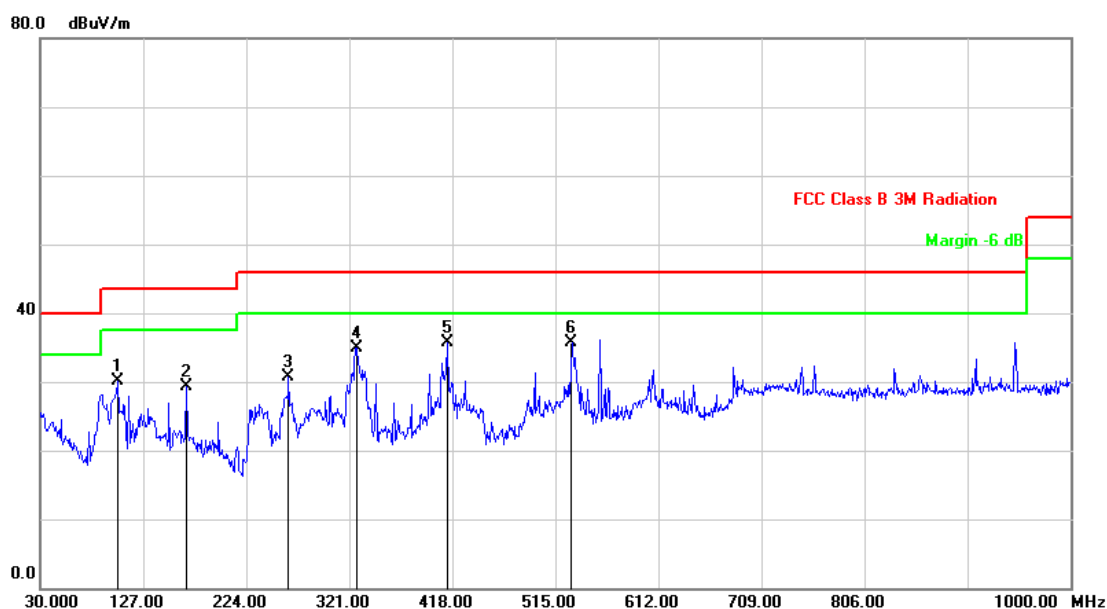


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 49.3998         | -10.70        | 46.20          | 35.50          | 40.00          | -4.50       | QP   | 100         | 199           |
| 2   | 104.6898        | -12.80        | 47.95          | 35.15          | 43.50          | -8.35       | peak | 100         | 274           |
| 3   | 346.2200        | -6.66         | 39.71          | 33.05          | 46.00          | -12.95      | peak | 100         | 320           |
| 4   | 430.6100        | -4.41         | 37.42          | 33.01          | 46.00          | -12.99      | peak | 100         | 145           |
| 5   | 522.7599        | -4.38         | 39.96          | 35.58          | 46.00          | -10.42      | peak | 200         | 97            |
| 6   | 682.8096        | -0.49         | 35.22          | 34.73          | 46.00          | -11.27      | peak | 100         | 216           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

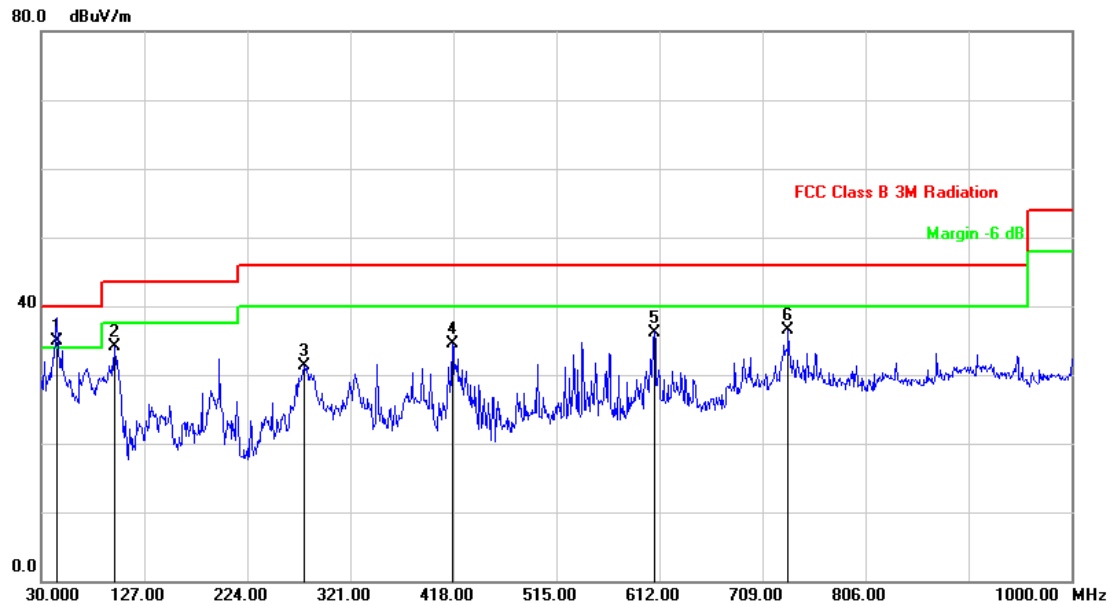


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 102.7500        | -12.79        | 42.81          | 30.02          | 43.50          | -13.48      | peak | 200         | 218           |
| 2   | 167.7400        | -12.55        | 41.91          | 29.36          | 43.50          | -14.14      | peak | 200         | 302           |
| 3   | 263.7699        | -9.93         | 40.69          | 30.76          | 46.00          | -15.24      | peak | 100         | 154           |
| 4   | 327.7900        | -6.37         | 41.29          | 34.92          | 46.00          | -11.08      | peak | 200         | 49            |
| 5   | 413.1499        | -4.12         | 39.77          | 35.65          | 46.00          | -10.35      | peak | 100         | 166           |
| 6   | 530.5198        | -4.22         | 40.02          | 35.80          | 46.00          | -10.20      | peak | 200         | 266           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |



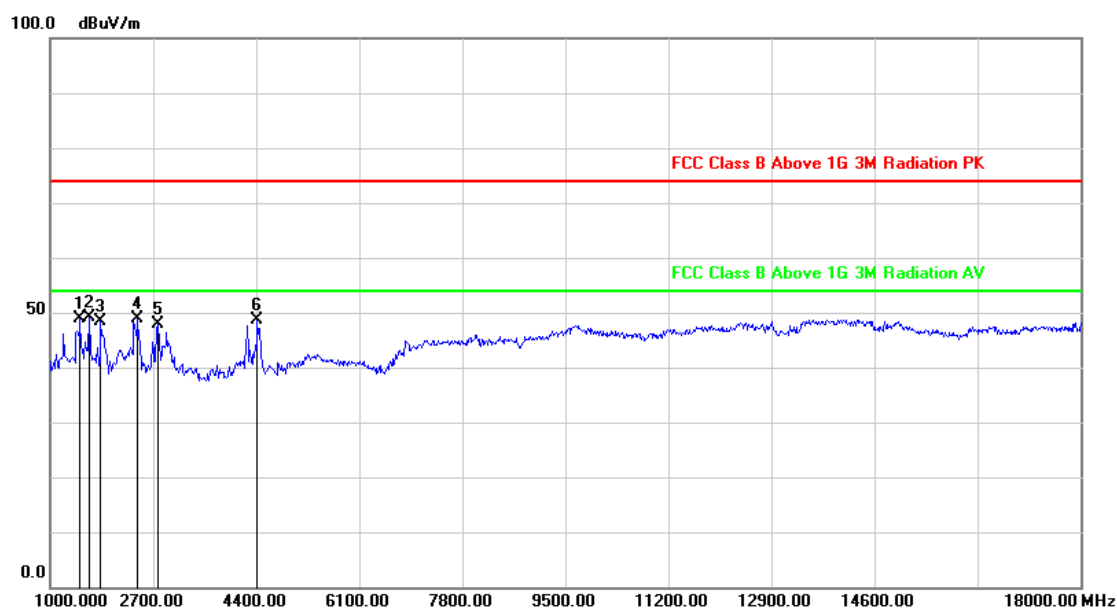
| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 44.5499         | -8.40         | 43.28          | 34.88          | 40.00          | -5.12       | QP   | 100         | 128           |
| 2   | 98.8700         | -13.06        | 47.15          | 34.09          | 43.50          | -9.41       | peak | 100         | 117           |
| 3   | 277.3500        | -9.14         | 40.36          | 31.22          | 46.00          | -14.78      | peak | 100         | 213           |
| 4   | 417.0298        | -3.65         | 38.23          | 34.58          | 46.00          | -11.42      | peak | 100         | 300           |
| 5   | 607.1499        | -1.73         | 37.93          | 36.20          | 46.00          | -9.80       | peak | 100         | 187           |
| 6   | 733.2500        | 1.55          | 34.91          | 36.46          | 46.00          | -9.54       | peak | 100         | 94            |

Note: Measurement Level = Reading Level + Correct Factor



#### 4.6. Test Result and Data (1GHz ~18GHz)

|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

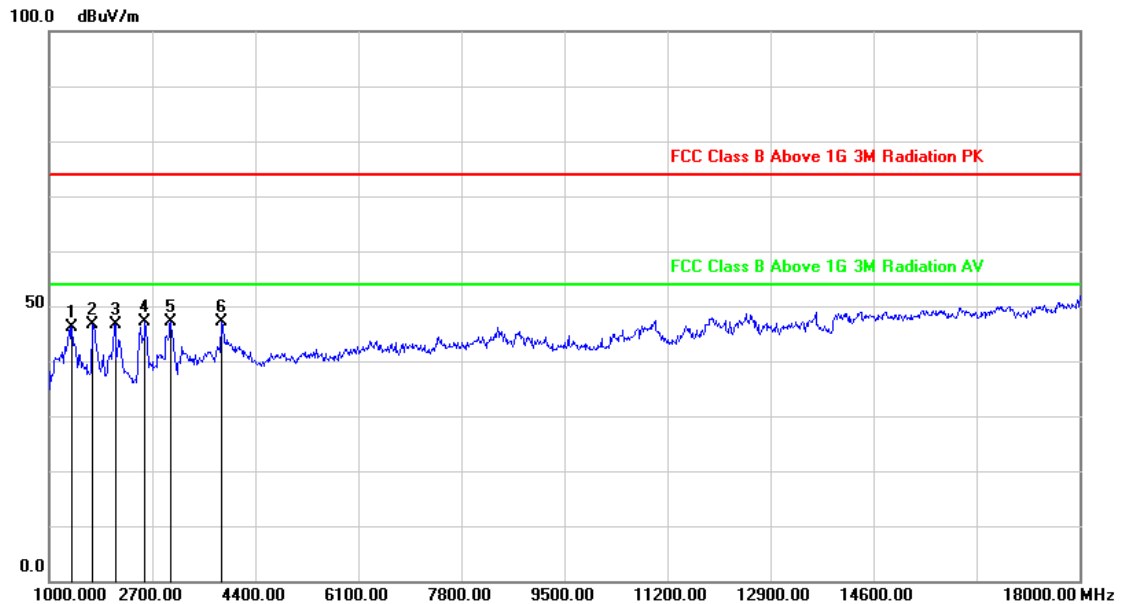


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1493.000        | -5.83         | 54.62          | 48.79          | 74.00          | -25.21      | peak | 200         | 187           |
| 2   | 1646.000        | -5.17         | 54.35          | 49.18          | 74.00          | -24.82      | peak | 200         | 309           |
| 3   | 1833.000        | -4.39         | 52.83          | 48.44          | 74.00          | -25.56      | peak | 200         | 128           |
| 4   | 2445.000        | -2.04         | 50.87          | 48.83          | 74.00          | -25.17      | peak | 200         | 155           |
| 5   | 2785.000        | -1.48         | 49.33          | 47.85          | 74.00          | -26.15      | peak | 200         | 219           |
| 6   | 4417.000        | 2.81          | 45.74          | 48.55          | 74.00          | -25.45      | peak | 200         | 49            |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 5: Full system work signal from PORT1 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

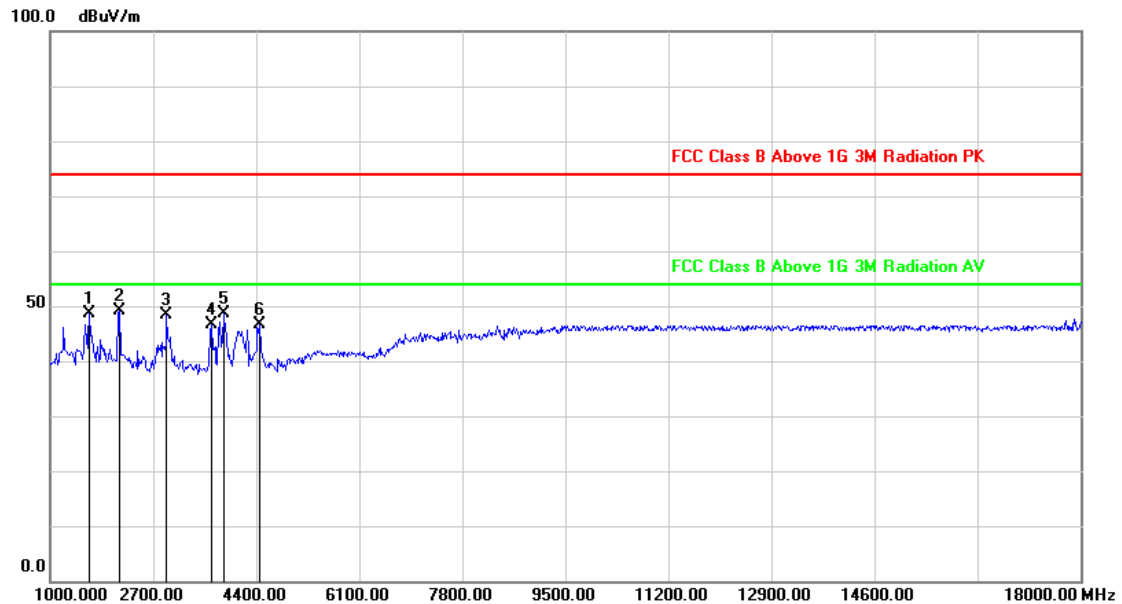


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1374.000        | -6.78         | 52.98          | 46.20          | 74.00          | -27.80      | peak | 100         | 276           |
| 2   | 1714.000        | -4.88         | 51.40          | 46.52          | 74.00          | -27.48      | peak | 100         | 269           |
| 3   | 2088.000        | -3.37         | 49.90          | 46.53          | 74.00          | -27.47      | peak | 100         | 15            |
| 4   | 2581.000        | -1.73         | 48.81          | 47.08          | 74.00          | -26.92      | peak | 200         | 300           |
| 5   | 3006.000        | -1.19         | 48.25          | 47.06          | 74.00          | -26.94      | peak | 100         | 162           |
| 6   | 3839.000        | 2.84          | 44.18          | 47.02          | 74.00          | -26.98      | peak | 100         | 48            |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

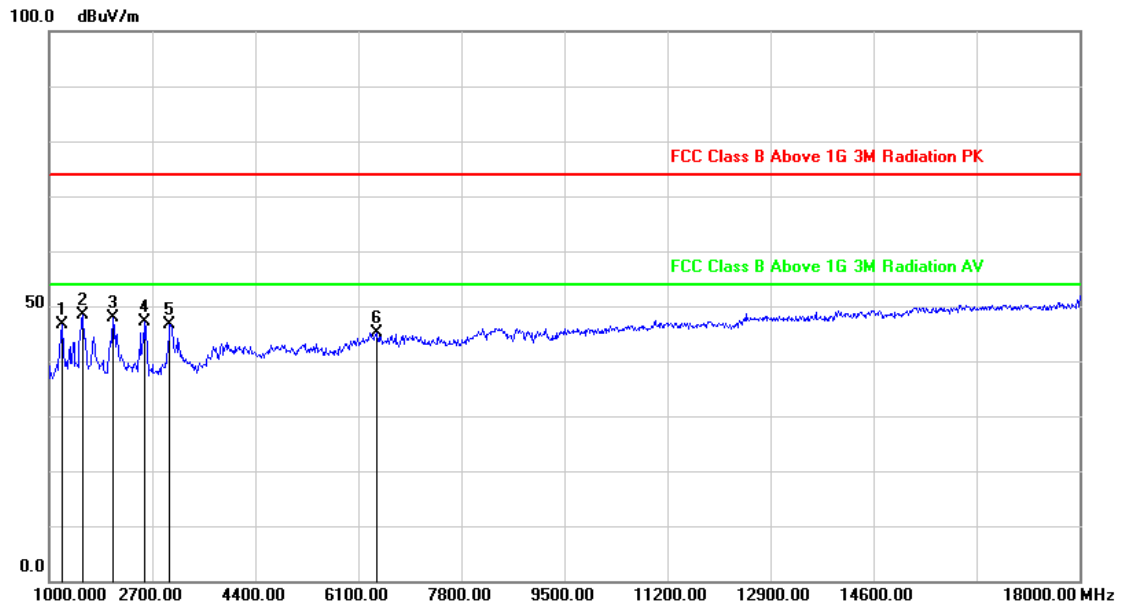


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1646.000        | -5.17         | 53.85          | 48.68          | 74.00          | -25.32      | peak | 200         | 264           |
| 2   | 2139.000        | -3.18         | 52.35          | 49.17          | 74.00          | -24.83      | peak | 100         | 189           |
| 3   | 2921.000        | -1.32         | 49.81          | 48.49          | 74.00          | -25.51      | peak | 200         | 302           |
| 4   | 3669.000        | 2.20          | 44.39          | 46.59          | 74.00          | -27.41      | peak | 200         | 33            |
| 5   | 3856.000        | 2.91          | 45.68          | 48.59          | 74.00          | -25.41      | peak | 200         | 166           |
| 6   | 4451.000        | 2.76          | 43.78          | 46.54          | 74.00          | -27.46      | peak | 200         | 48            |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 6: Full system work signal from PORT2 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

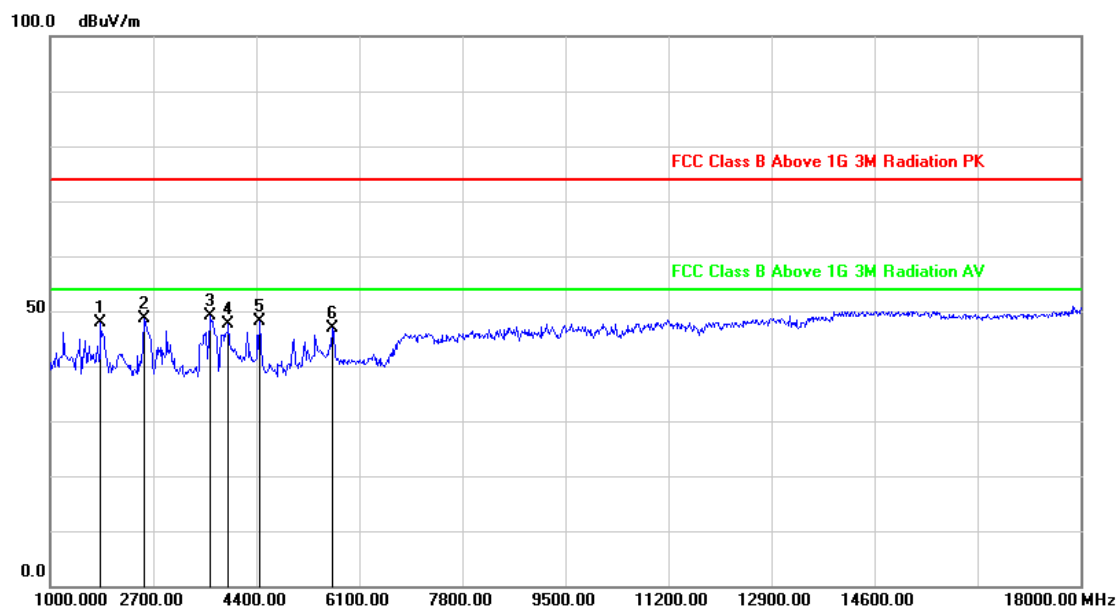


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1221.000        | -8.00         | 54.59          | 46.59          | 74.00          | -27.41      | peak | 100         | 302           |
| 2   | 1544.000        | -5.59         | 54.04          | 48.45          | 74.00          | -25.55      | peak | 100         | 188           |
| 3   | 2054.000        | -3.50         | 51.26          | 47.76          | 74.00          | -26.24      | peak | 200         | 162           |
| 4   | 2581.000        | -1.73         | 48.81          | 47.08          | 74.00          | -26.92      | peak | 200         | 179           |
| 5   | 2989.000        | -1.23         | 47.85          | 46.62          | 74.00          | -27.38      | peak | 100         | 48            |
| 6   | 6406.000        | 6.38          | 38.82          | 45.20          | 74.00          | -28.80      | peak | 100         | 24            |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

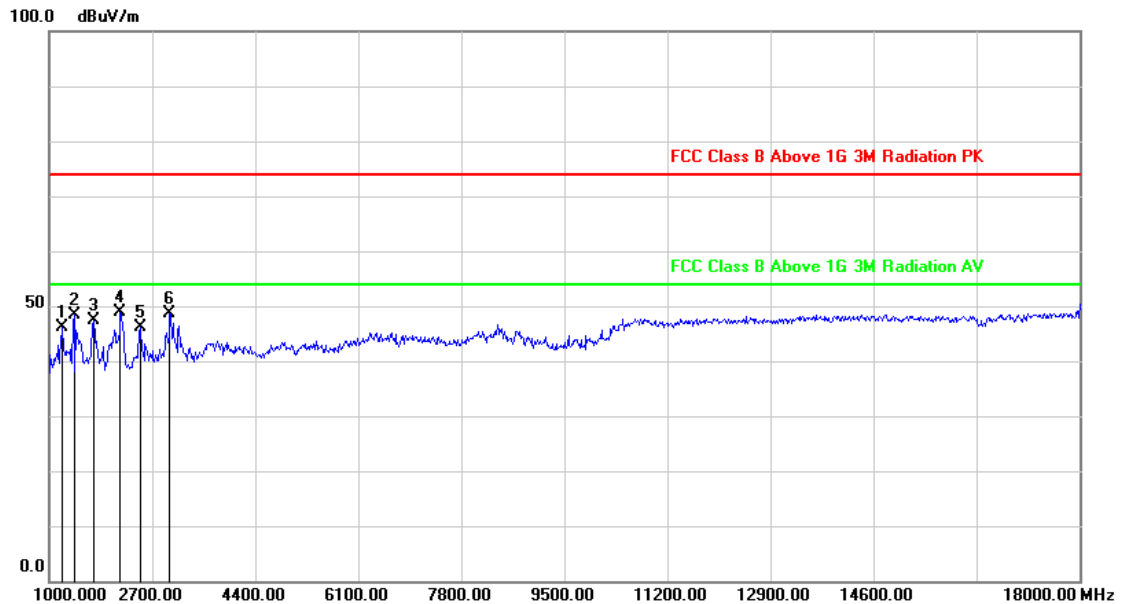


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1833.000        | -4.39         | 52.33          | 47.94          | 74.00          | -26.06      | peak | 200         | 49            |
| 2   | 2547.000        | -1.77         | 50.32          | 48.55          | 74.00          | -25.45      | peak | 100         | 288           |
| 3   | 3635.000        | 2.07          | 47.10          | 49.17          | 74.00          | -24.83      | peak | 200         | 301           |
| 4   | 3941.000        | 3.23          | 44.43          | 47.66          | 74.00          | -26.34      | peak | 200         | 244           |
| 5   | 4451.000        | 2.76          | 45.28          | 48.04          | 74.00          | -25.96      | peak | 200         | 219           |
| 6   | 5658.000        | 5.27          | 41.53          | 46.80          | 74.00          | -27.20      | peak | 200         | 163           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 7: Full system work signal from PORT3 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

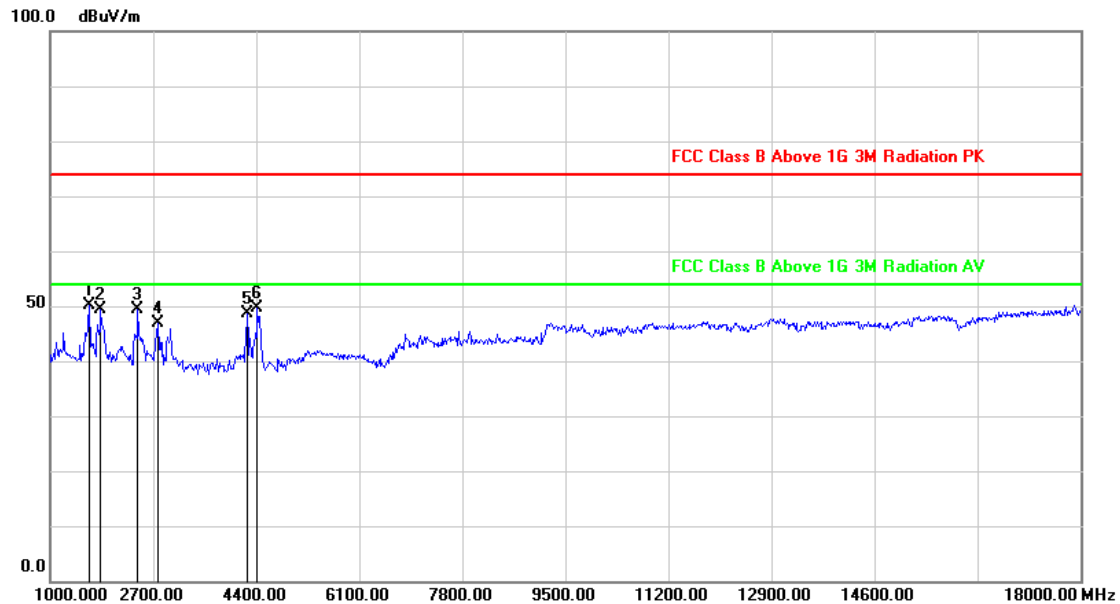


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1221.000        | -8.00         | 54.09          | 46.09          | 74.00          | -27.91      | peak | 100         | 154           |
| 2   | 1408.000        | -6.51         | 54.89          | 48.38          | 74.00          | -25.62      | peak | 100         | 59            |
| 3   | 1731.000        | -4.81         | 52.30          | 47.49          | 74.00          | -26.51      | peak | 100         | 177           |
| 4   | 2173.000        | -3.05         | 51.84          | 48.79          | 74.00          | -25.21      | peak | 100         | 168           |
| 5   | 2513.000        | -1.81         | 47.86          | 46.05          | 74.00          | -27.95      | peak | 100         | 289           |
| 6   | 2989.000        | -1.23         | 49.85          | 48.62          | 74.00          | -25.38      | peak | 100         | 302           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Horizontal |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |

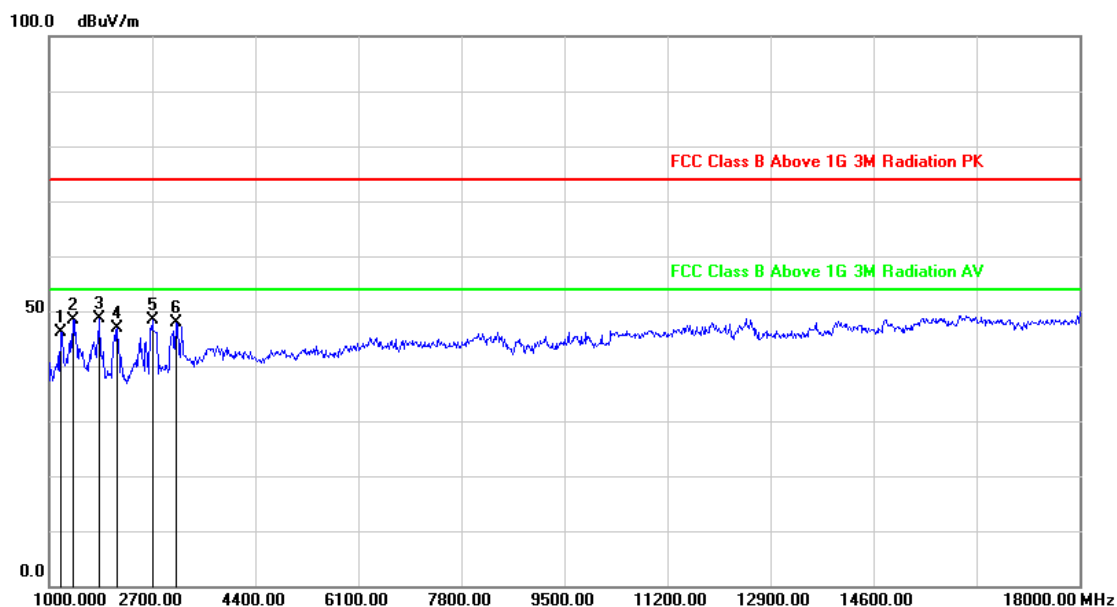


| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1646.000        | -5.17         | 55.35          | 50.18          | 74.00          | -23.82      | peak | 200         | 93            |
| 2   | 1833.000        | -4.39         | 53.83          | 49.44          | 74.00          | -24.56      | peak | 200         | 158           |
| 3   | 2445.000        | -2.04         | 51.37          | 49.33          | 74.00          | -24.67      | peak | 200         | 187           |
| 4   | 2785.000        | -1.48         | 48.33          | 46.85          | 74.00          | -27.15      | peak | 100         | 60            |
| 5   | 4247.000        | 3.07          | 45.64          | 48.71          | 74.00          | -25.29      | peak | 100         | 328           |
| 6   | 4417.000        | 2.81          | 46.74          | 49.55          | 74.00          | -24.45      | peak | 200         | 299           |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                                                    |                    |            |
|------------------|--------------------------------------------------------------------|--------------------|------------|
| Test Mode :      | Mode 8: Full system work signal from PORT4 for AS-41UA (120V/60Hz) |                    |            |
| AC Power :       | AC 120V/60HZ                                                       | Ant. Polarization: | Vertical   |
| Temp :           | 25°C                                                               | Humidity :         | 52° C      |
| Pressure(mbar) : | 1002                                                               | Date:              | 2019/04/03 |



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (deg) |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|
| 1   | 1187.000        | -8.27         | 54.50          | 46.23          | 74.00          | -27.77      | peak | 100         | 329           |
| 2   | 1391.000        | -6.64         | 55.09          | 48.45          | 74.00          | -25.55      | peak | 200         | 155           |
| 3   | 1833.000        | -4.39         | 53.05          | 48.66          | 74.00          | -25.34      | peak | 100         | 176           |
| 4   | 2122.000        | -3.24         | 50.21          | 46.97          | 74.00          | -27.03      | peak | 200         | 302           |
| 5   | 2700.000        | -1.59         | 49.86          | 48.27          | 74.00          | -25.73      | peak | 100         | 84            |
| 6   | 3091.000        | -0.72         | 48.53          | 47.81          | 74.00          | -26.19      | peak | 100         | 99            |

Note: Measurement Level = Reading Level + Correct Factor

Vane Xta

Test engineer:\_\_\_\_\_