

FCC TEST REPORT

For

SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD.

Pro LED Video light

Model No.: YN508S

Prepared For : SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD.
Address : Building A, Shenfubao modern optics factory, Kengzi Street, Pingshan
District, Shenzhen, China

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Report Number : SZAWW180306004-02
Date of Test : Mar. 06~15, 2018
Date of Report : Mar. 16, 2018

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TEST REPORT

Applicant : SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD.
Manufacturer : Shenzhen Yongnuo photographic equipment Co., Ltd Dalang plant
Product Name : Pro LED Video light
Model No. : YN508S
Trade Mark : YONGNUO
Rating(s) : Input DC 12V, 2A

Test Standard(s) : FCC Part15 Subpart C, Paragraph 15.249

Test Method(s) : ANSI C63.10: 2013

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Mar. 06~15, 2018

Prepared by :



Winkey Wang

(Tested Engineer / Winkey Wang)

Reviewer :

Tangcy. T.

(Project Manager / Tangcy. T)

Approved & Authorized Signer :

Tom Chen

(Manager / Tom Chen)

1. General Information

1.1. Client Information

| | | |
|--------------|---|--|
| Applicant | : | SHENZHEN YONGNUO PHOTOGRAPHIC EQUIPMENT CO., LTD. |
| Address | : | Building A, Shenfubao modern optics factory, Kengzi Street, Pingshan District, Shenzhen, China |
| Manufacturer | : | Shenzhen Yongnuo photographic equipment Co., Ltd Dalang plant |
| Address | : | 4/F, 5/F East Building 2, Donglongxing Technology Park, East Huaning Road, Dalang Street, Longhua District, Shenzhen, Guangdong. P.R. China. |

1.2. Description of Device (EUT)

| | | |
|--|----------------------|---------------------|
| Product Name | : | Pro LED Video light |
| Model No. | : | YN508S |
| Trade Mark | : | YONGNUO |
| Test Power Supply | : | DC 12V via AC/DC |
| Product Description | Operation Frequency: | 2405MHz |
| | Number of Channel: | 1 Channel |
| | Modulation Type: | GFSK |
| | Antenna Type: | PCB Antenna |
| | Antenna Gain(Peak): | 1.05 dBi |
| Remark: 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2) This report is for 2.4GHz module. | | |

1.3. Auxiliary Equipment Used During Test

| | | |
|---------|---|--|
| Adapter | : | Manufacturer: ZTE M/N: STC-A2050I1025-C S/N: 201202102100953 Input: 100-240V~50/60Hz 0.3A Output: DC 12V, 2000mA |
|---------|---|--|

1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Pretest Mode | Description |
|--------------|----------------------------|
| Mode 1 | Keeping TX + Charging mode |
| Mode 2 | CH01 |

| For Conducted Emission | |
|------------------------|----------------------------|
| Final Test Mode | Description |
| Mode 1 | Keeping TX + Charging mode |

| For Radiated Emission | |
|-----------------------|----------------------------|
| Final Test Mode | Description |
| Mode 2 | Keeping TX + Charging mode |
| | CH01 |

Note:

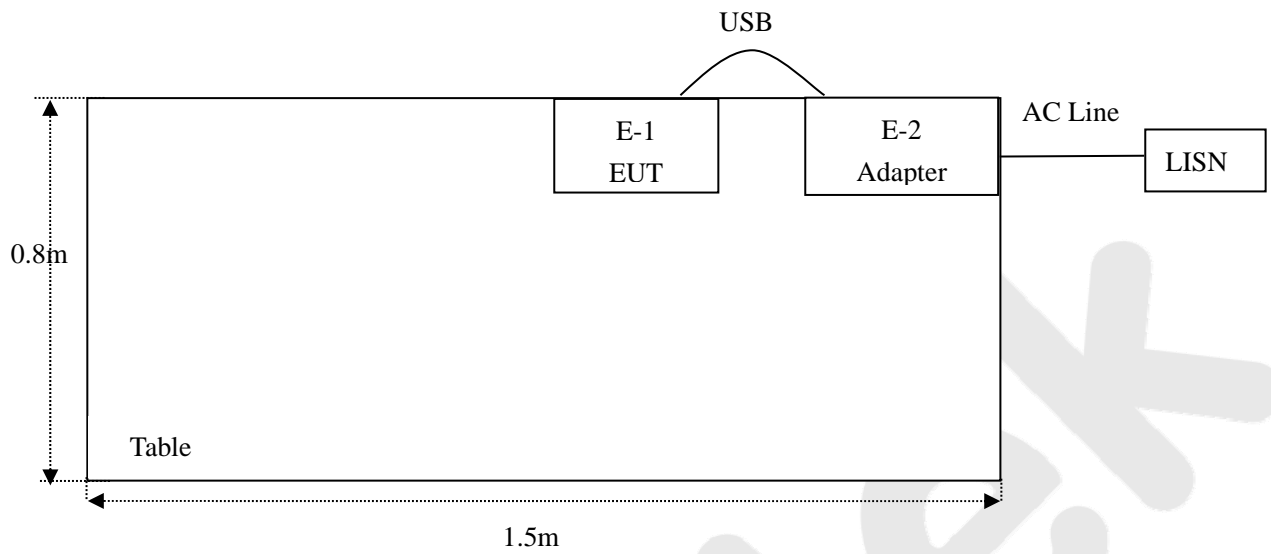
1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.
2. EUT built-in battery-powered, fully-charged battery use of the test battery.

1.5. List of Channels

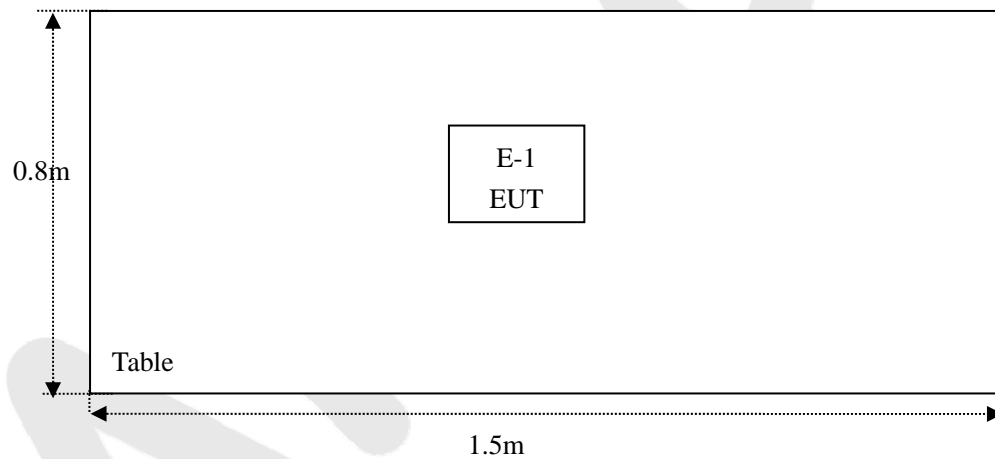
| Channel | Freq. (MHz) |
|---------|----------------|
| 1 | 2405 |

1.6. Description of Test Setup

CE



RE



1.7. Test Equipment List

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|--|----------------------------|----------------|---------------|---------------|---------------|
| 1. | L.I.S.N. Artificial Mains Network | Rohde & Schwarz | ENV216 | 100055 | Nov.17, 2017 | 1 Year |
| 2. | EMI Test Receiver | Rohde & Schwarz | ESCI | 100627 | Nov.17, 2017 | 1 Year |
| 3. | RF Switching Unit | Compliance Direction | RSU-M2 | 38303 | Nov.17, 2017 | 1 Year |
| 4. | Spectrum Analysis | Agilent | E4407B | US39390582 | Nov.17, 2017 | 1 Year |
| 5. | Spectrum Analysis | Agilent | N9038A | MY53227295 | Nov.17, 2017 | 1 Year |
| 6. | Preamplifier | SKET Electronic | BK1G18G30 D | KD17503 | Nov.17, 2017 | 1 Year |
| 7. | EMI Test Receiver | Rohde & Schwarz | ESPI | 101604 | Nov.17, 2017 | 1 Year |
| 8. | Double Ridged Horn Antenna | Instruments corporation | GTH-0118 | 351600 | Nov.20, 2017 | 1 Year |
| 9. | Bilog Broadband Antenna | Schwarzbeck | VULB9163 | VULB 9163-289 | Nov. 20, 2017 | 1 Year |
| 10. | Loop Antenna | Schwarzbeck | HFH2-Z2 | 100047 | Nov.17, 2017 | 1 Year |
| 11. | Horn Antenna | Schwarzbeck | BBHA9170 | 9170-375 | Nov.17, 2017 | 1 Year |
| 12. | Pre-amplifier | SONOMA | 310N | 186860 | Nov.17, 2017 | 1 Year |
| 13. | EMI Test Software EZ-EMC | SHURPLE | N/A | N/A | N/A | N/A |
| 14. | RF Test Control System | YIHENG | YH3000 | 2017430 | Nov.18, 2017 | 1 Year |
| 15. | Power Sensor | DAER | RPR3006W | 15I00041SN045 | Nov.17, 2017 | 1 Year |
| 16. | Power Sensor | DAER | RPR3006W | 15I00041SN046 | Nov.17, 2017 | 1 Year |
| 17. | MXA Spectrum Analysis | Agilent | N9020A | MY51170037 | Nov.18, 2017 | 1 Year |
| 18. | MXG RF Vector Signal Generator | Agilent | N5182A | MY48180656 | Nov.18, 2017 | 1 Year |
| 19. | Signal Generator | Agilent | E4421B | MY41000743 | Nov.18, 2017 | 1 Year |
| 20. | DC Power Supply | LW | TPR-6410D | 349315 | Nov.01, 2017 | 1 Year |
| 21. | Constant Temperature Humidity Chamber | Sertep | ZJ-HWHS80 B | ZJ-17042804 | Nov.01, 2017 | 1 Year |

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

1.8. Measurement Uncertainty

| | | |
|------------------------|---|--------------------------|
| Radiation Uncertainty | : | Ur = 4.1 dB (Horizontal) |
| | | Ur = 4.3 dB (Vertical) |
| | | |
| Conduction Uncertainty | : | Uc = 3.4dB |

1.9. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.:184111

ShenzhenAnbotekComplianceLaboratoryLimited,EMCLaboratoryhasbeenregisteredandfullydescribedinareportfiled withthe(FCC)FederalCommunicationsCommission.TheacceptanceletterfromtheFCCismaintainedinourfiles.Registr ation No. 184111,July31,2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

Test Location

All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited.
at 1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District,
Shenzhen, Guangdong, China.518102

2. Summary of Test Results

| Standard Section | Test Item | Result |
|---|---------------------|--------|
| 15.203 | Antenna Requirement | PASS |
| 15.207 | Conducted Emission | PASS |
| 15.249 | Radiated Emission | PASS |
| 15.215(c) | 20dB Bandwidth | PASS |
| 15.249(c) | Band Edge | PASS |
| Remark: “N/A” is an abbreviation for Not Applicable. | | |

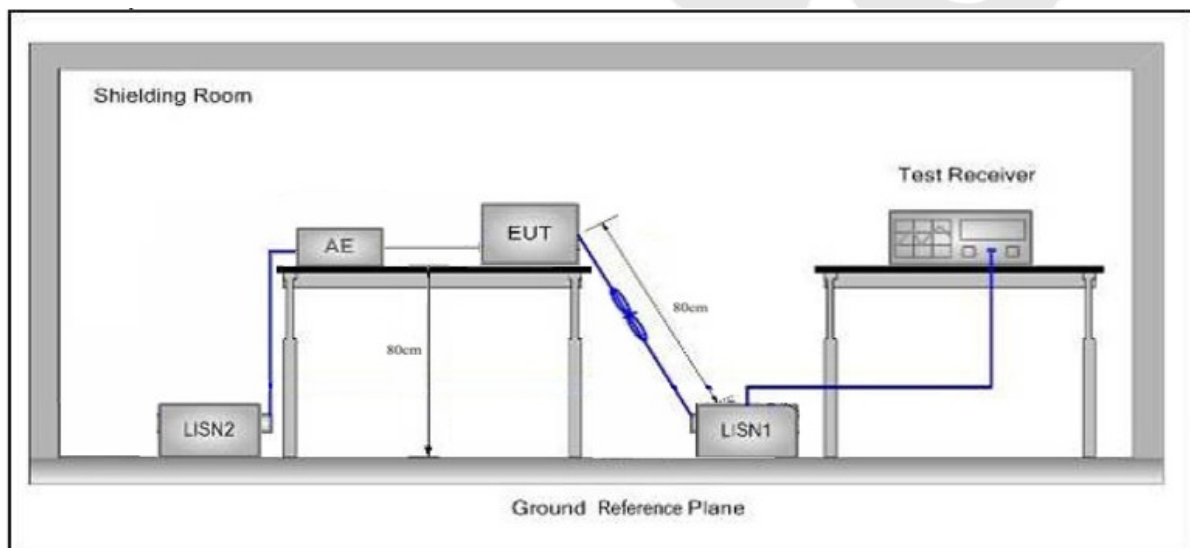
3. Conducted Emission Test

3.1. Test Standard and Limit

| Test Standard | FCC Part15 Section 15.207 | | |
|---------------|---------------------------|--------------------------------|---------------|
| Test Limit | Frequency | Maximum RF Line Voltage (dBuV) | |
| | | Quasi-peak Level | Average Level |
| | 150kHz~500kHz | 66 ~ 56 * | 56 ~ 46 * |
| | 500kHz~5MHz | 56 | 46 |
| | 5MHz~30MHz | 60 | 50 |

Remark: (1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequency.

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

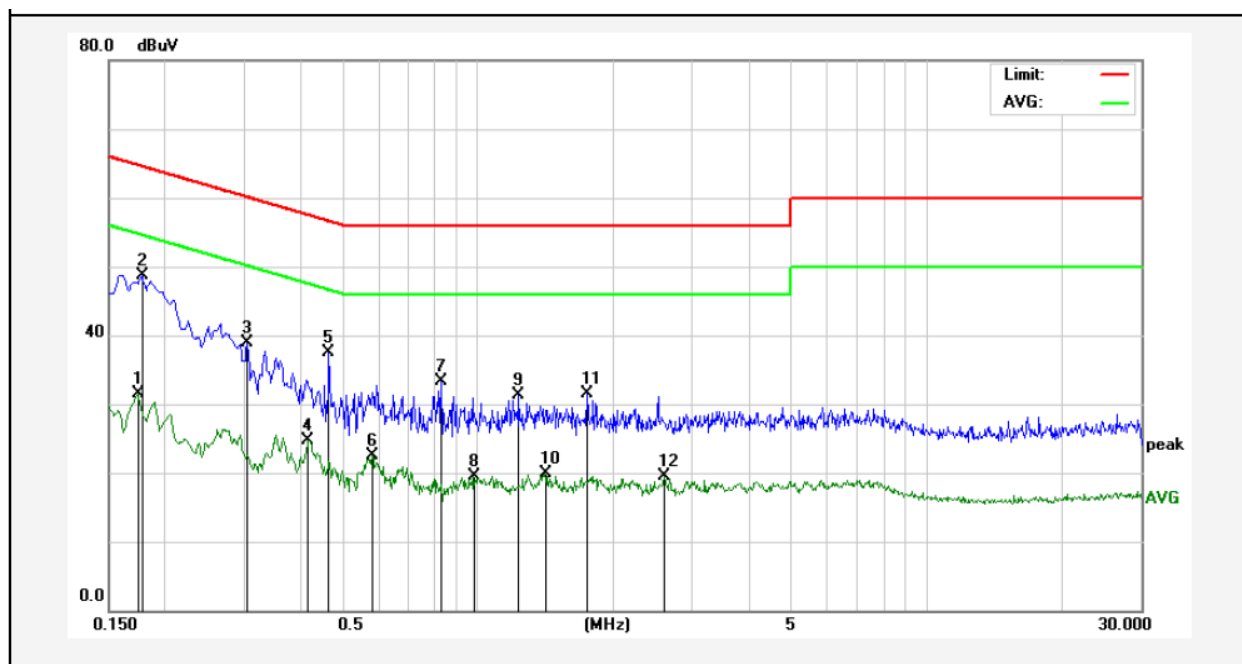
PASS

The EUT should be compliance to the limit of Class B

Only the worst case data was showed in the report, please to see the following pages

Test Results (30~1000MHz)

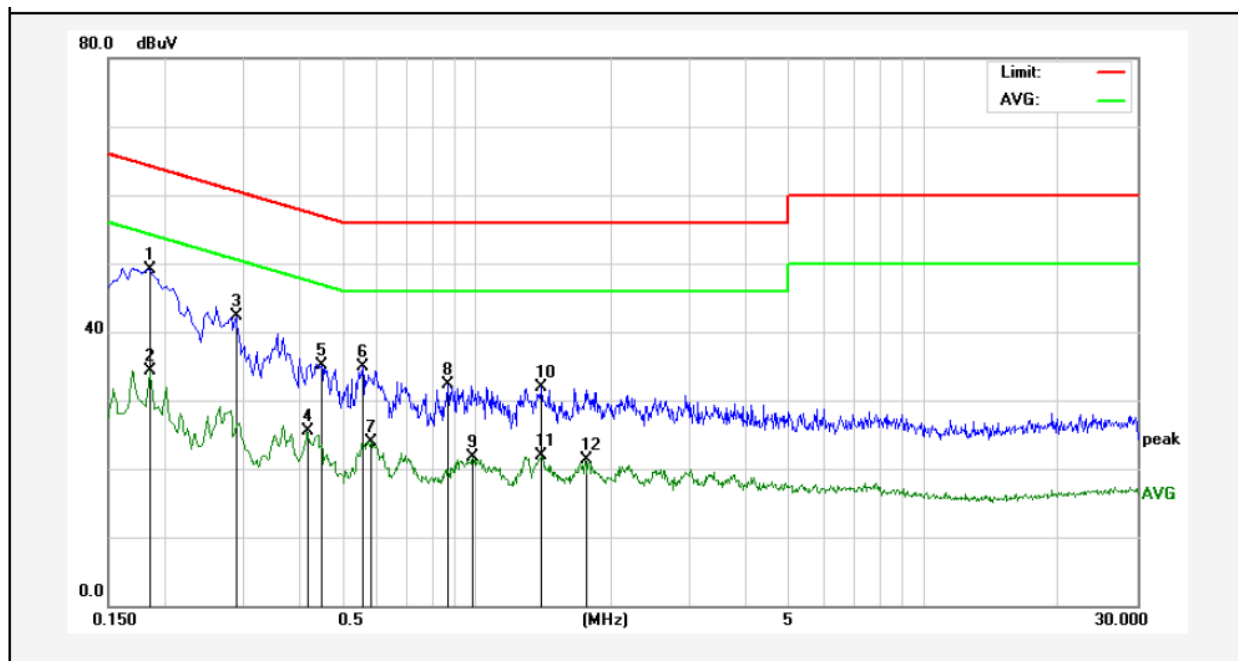
Test Site: 1# Shielded Room
Operating Condition: Keeping TX + Charging mode
Test Specification: DC 12V via AD/DC
Comment: Live Line
Tem.:25.4℃ Hum.:54%



| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Over Limit (dB) | Detector | Remark |
|-----|-------------|----------------|-------------|---------------|------------|-----------------|----------|--------|
| 1 | 0.1740 | 11.69 | 19.90 | 31.59 | 54.76 | -23.17 | AVG | |
| 2 | 0.1780 | 28.75 | 19.90 | 48.65 | 64.57 | -15.92 | QP | |
| 3 | 0.3060 | 19.06 | 19.89 | 38.95 | 60.08 | -21.13 | QP | |
| 4 | 0.4180 | 4.84 | 19.94 | 24.78 | 47.49 | -22.71 | AVG | |
| 5 | 0.4660 | 17.51 | 19.96 | 37.47 | 56.58 | -19.11 | QP | |
| 6 | 0.5820 | 2.45 | 20.00 | 22.45 | 46.00 | -23.55 | AVG | |
| 7 | 0.8300 | 13.26 | 20.07 | 33.33 | 56.00 | -22.67 | QP | |
| 8 | 0.9780 | -0.54 | 20.11 | 19.57 | 46.00 | -26.43 | AVG | |
| 9 | 1.2300 | 11.10 | 20.12 | 31.22 | 56.00 | -24.78 | QP | |
| 10 | 1.4100 | -0.24 | 20.13 | 19.89 | 46.00 | -26.11 | AVG | |
| 11 | 1.7500 | 11.36 | 20.13 | 31.49 | 56.00 | -24.51 | QP | |
| 12 | 2.6060 | -0.68 | 20.15 | 19.47 | 46.00 | -26.53 | AVG | |

Test Results (30~1000MHz)

Test Site: 1# Shielded Room
Operating Condition: Keeping TX + Charging mode
Test Specification: DC 12V via AD/DC
Comment: Neutral Line
Tem.:25.4℃ Hum.:54%



| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Over Limit (dB) | Detector | Remark |
|-----|-------------|----------------|-------------|---------------|------------|-----------------|----------|--------|
| 1 | 0.1860 | 29.23 | 19.90 | 49.13 | 64.21 | -15.08 | QP | |
| 2 | 0.1860 | 14.37 | 19.90 | 34.27 | 54.21 | -19.94 | AVG | |
| 3 | 0.2900 | 22.33 | 19.89 | 42.22 | 60.52 | -18.30 | QP | |
| 4 | 0.4180 | 5.49 | 19.94 | 25.43 | 47.49 | -22.06 | AVG | |
| 5 | 0.4500 | 15.22 | 19.96 | 35.18 | 56.87 | -21.69 | QP | |
| 6 | 0.5580 | 15.00 | 20.00 | 35.00 | 56.00 | -21.00 | QP | |
| 7 | 0.5820 | 3.94 | 20.00 | 23.94 | 46.00 | -22.06 | AVG | |
| 8 | 0.8660 | 12.24 | 20.08 | 32.32 | 56.00 | -23.68 | QP | |
| 9 | 0.9820 | 1.61 | 20.12 | 21.73 | 46.00 | -24.27 | AVG | |
| 10 | 1.4020 | 11.84 | 20.13 | 31.97 | 56.00 | -24.03 | QP | |
| 11 | 1.4020 | 1.81 | 20.13 | 21.94 | 46.00 | -24.06 | AVG | |
| 12 | 1.7460 | 1.17 | 20.13 | 21.30 | 46.00 | -24.70 | AVG | |

4. Radiated Emission and Band Edge

4.1. Test Standard and Limit

| Test Standard | FCC Part15 C Section 15.209 and 15.205 | | | | |
|---------------|--|----------------------------------|----------------|------------|--------------------------|
| Test Limit | Frequency (MHz) | Field strength (microvolt/meter) | Limit (dBuV/m) | Remark | Measurement distance (m) |
| | 0.009MHz~0.490MHz | 2400/F(kHz) | - | - | 300 |
| | 0.490MHz-1.705MHz | 24000/F(kHz) | - | - | 30 |
| | 1.705MHz-30MHz | 30 | - | - | 30 |
| | 30MHz~88MHz | 100 | 40.0 | Quasi-peak | 3 |
| | 88MHz~216MHz | 150 | 43.5 | Quasi-peak | 3 |
| | 216MHz~960MHz | 200 | 46.0 | Quasi-peak | 3 |
| | 960MHz~1000MHz | 500 | 54.0 | Quasi-peak | 3 |
| | Above 1000MHz | 500 | 54.0 | Average | 3 |
| | | - | 74.0 | Peak | 3 |

Remark:

(1)The lower limit shall apply at the transition frequency.

(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

| Test Standard | FCC Part15 C Section 15.249 | | | | | |
|---------------|-----------------------------|--|--|----------------|---------|--------------------------|
| Test Limit | Frequency (MHz) | Field Strength of fundamental ((millivolts /meter) | Field Strength of Harmonics (microvolts/meter) | Limit (dBuV/m) | Remark | Measurement distance (m) |
| | 2400~2483.5 | 50 | - | 114.0 | Peak | 3 |
| | 2400~2483.5 | 50 | - | 94.0 | Average | 3 |
| | 2400~2483.5 | - | 500 | 74.0 | Peak | 3 |
| | 2400~2483.5 | - | 500 | 54.0 | Average | 3 |

Remark:

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

4.2. Test Setup

Figure 1. Below 30MHz

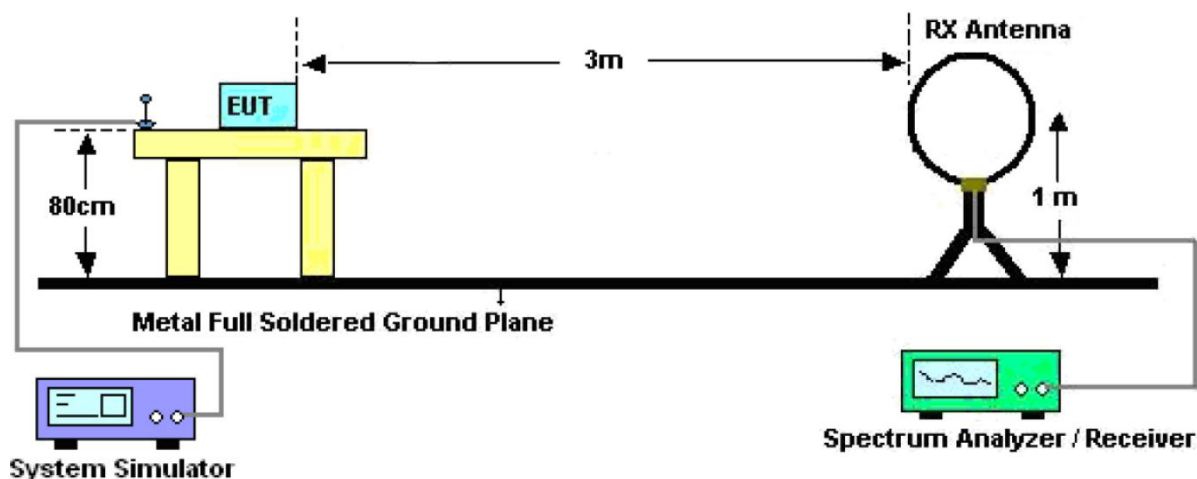


Figure 2. 30MHz to 1GHz

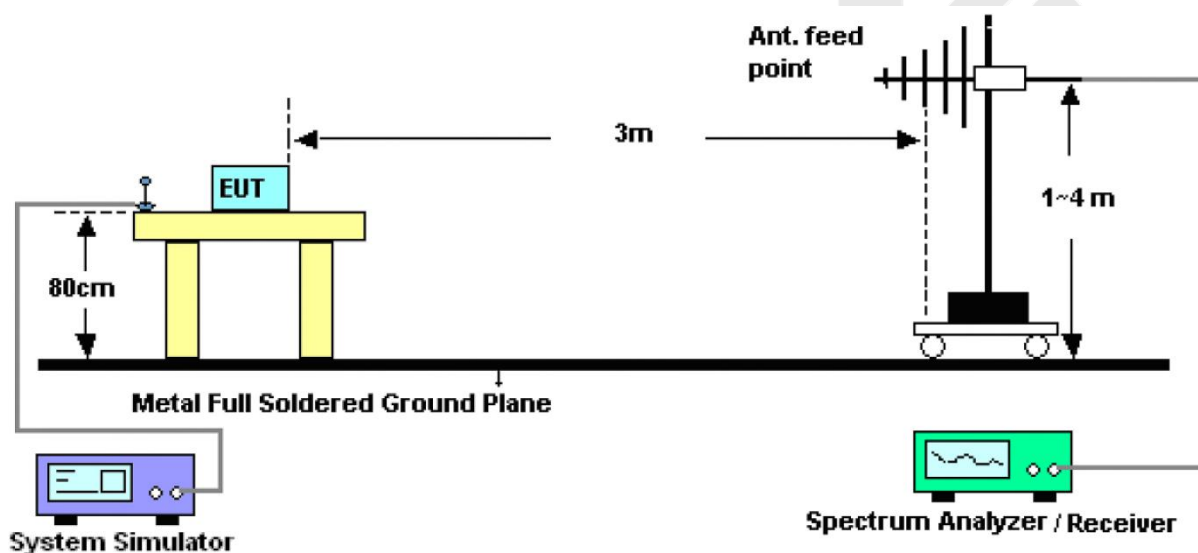
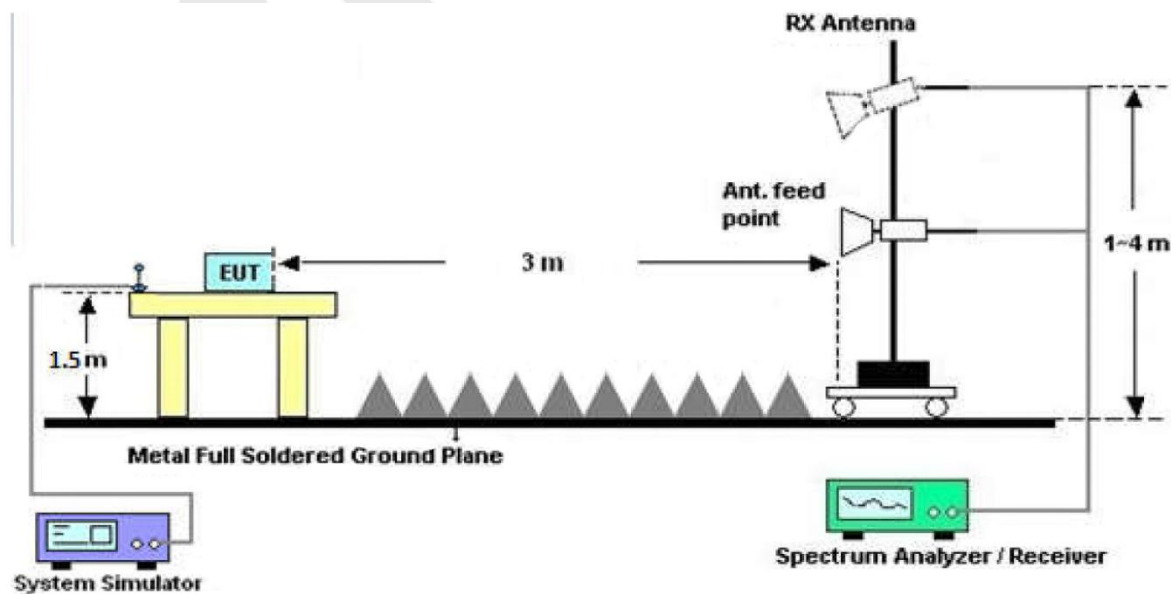


Figure 3. Above 1 GHz



4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

.

For above 1GHz,Set the spectrum analyzer as:

RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.

RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

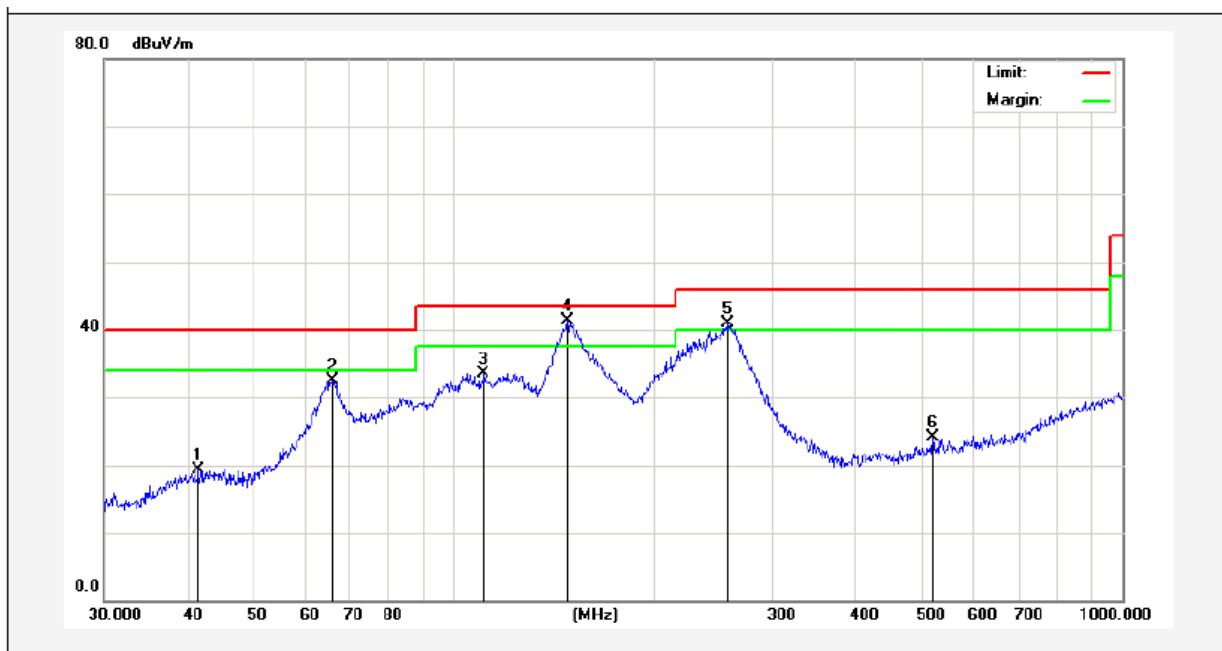
PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Test Results (30~1000MHz)

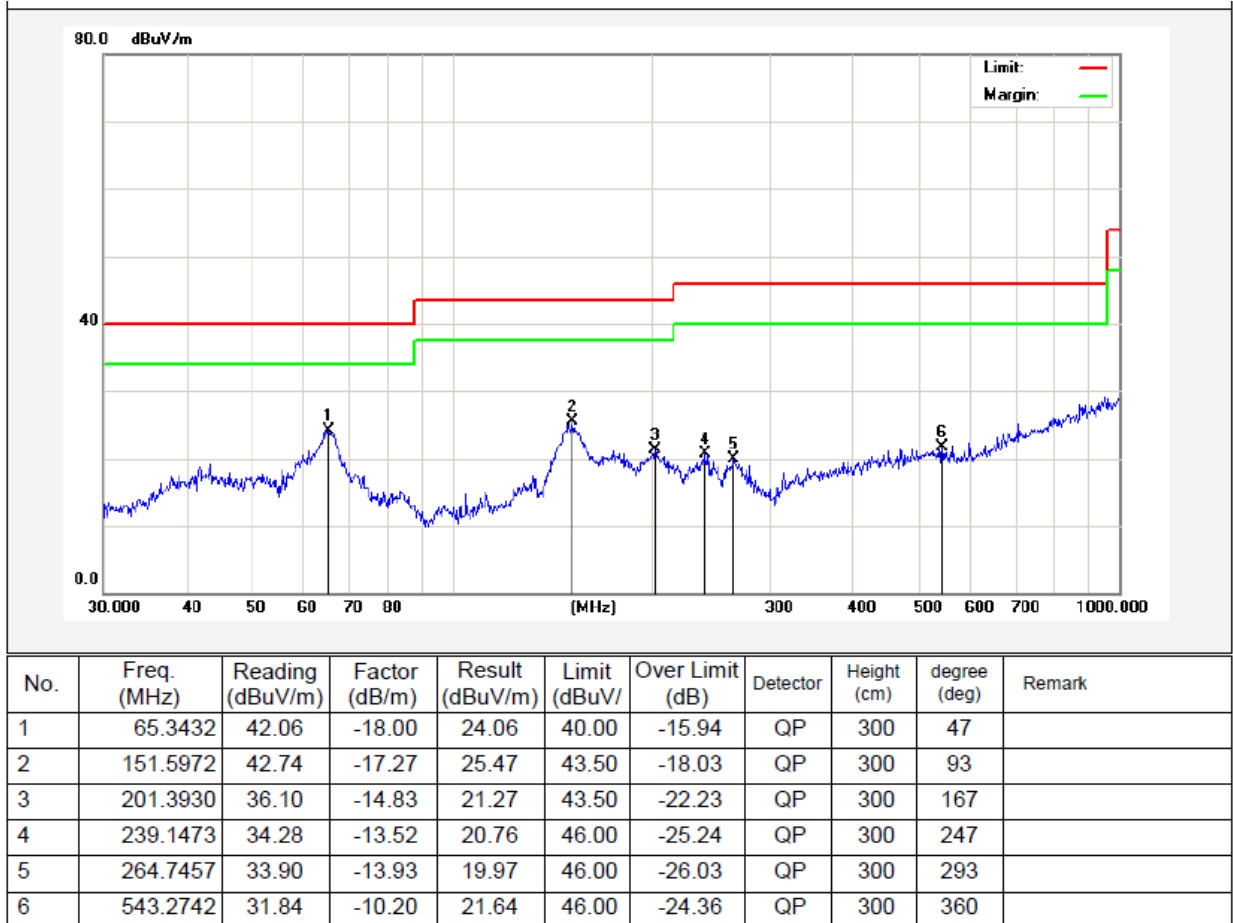
Job No.: SZAWW180306004 Temp.(°C)/Hum.(%RH): 24.3°C/55%RH
Standard: FCC PART 15C Power Source: DC 12V
Test Mode: TX Mode Lowest CH Polarization: Horizontal



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/) | Over Limit (dB) | Detector | Height (cm) | degree (deg) | Remark |
|-----|-------------|------------------|---------------|-----------------|---------------|-----------------|----------|-------------|--------------|--------|
| 1 | 41.5670 | 34.03 | -14.67 | 19.36 | 40.00 | -20.64 | QP | 300 | 71 | |
| 2 | 66.0342 | 51.78 | -19.28 | 32.50 | 40.00 | -7.50 | QP | 300 | 93 | |
| 3 | 110.9571 | 54.27 | -20.69 | 33.58 | 43.50 | -9.92 | QP | 300 | 147 | |
| 4 | 147.9214 | 62.63 | -21.37 | 41.26 | 43.50 | -2.24 | QP | 300 | 169 | |
| 5 | 257.4222 | 59.31 | -18.46 | 40.85 | 46.00 | -5.15 | QP | 300 | 246 | |
| 6 | 520.8881 | 35.20 | -11.01 | 24.19 | 46.00 | -21.81 | QP | 300 | 360 | |

Test Results (30~1000MHz)

Job No.: SZAWW180306004 Temp.(°C)/Hum.(%RH): 24.3°C/55%RH
Standard: FCC PART 15C Power Source: DC 12V
Test Mode: TX Mode Lowest CH Polarization: Vertical



Test Results (1GHz-25GHz)

| Test Mode: CH01 | | | | | | | | | |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|----------------|-----------------|------|----------|
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Pol. | Detector |
| 2405.0000 | 94.52 | 31.21 | 2.17 | 35.30 | 92.60 | 114.00 | -21.40 | V | Peak |
| 2405.0000 | 89.65 | 31.21 | 2.17 | 35.30 | 87.73 | 94.00 | -6.27 | V | AVG |
| 4810.0000 | 58.20 | 34.01 | 2.56 | 34.71 | 60.06 | 74.00 | -13.94 | V | Peak |
| 4810.0000 | 45.69 | 34.01 | 2.56 | 34.71 | 47.55 | 54.00 | -6.45 | V | AVG |
| 7215.0000 | 44.01 | 36.16 | 2.98 | 35.15 | 48.00 | 74.00 | -26.00 | V | Peak |
| 7215.0000 | 38.95 | 36.16 | 2.98 | 35.15 | 42.94 | 54.00 | -11.06 | V | AVG |
| 9620.0000 | * | | | | | | | | |
| 12025.0000 | * | | | | | | | | |
| 14430.0000 | * | | | | | | | | |
| 16835.0000 | * | | | | | | | | |
| 2405.0000 | 93.47 | 31.21 | 2.17 | 35.30 | 91.55 | 114.00 | -22.45 | H | Peak |
| 2405.0000 | 84.28 | 31.21 | 2.17 | 35.30 | 82.36 | 94.00 | -11.64 | H | AVG |
| 4810.0000 | 47.21 | 34.01 | 2.56 | 34.71 | 49.07 | 74.00 | -24.93 | H | Peak |
| 4810.0000 | 44.95 | 34.01 | 2.56 | 34.71 | 46.81 | 54.00 | -7.19 | H | AVG |
| 7215.0000 | 42.21 | 36.16 | 2.98 | 35.15 | 46.20 | 74.00 | -27.80 | H | Peak |
| 7215.0000 | 35.21 | 36.16 | 2.98 | 35.15 | 39.20 | 54.00 | -14.80 | H | AVG |
| 9620.0000 | * | | | | | | | | |
| 12025.0000 | * | | | | | | | | |
| 14430.0000 | * | | | | | | | | |
| 16835.0000 | * | | | | | | | | |

Note:

1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Radiated Band Edge:

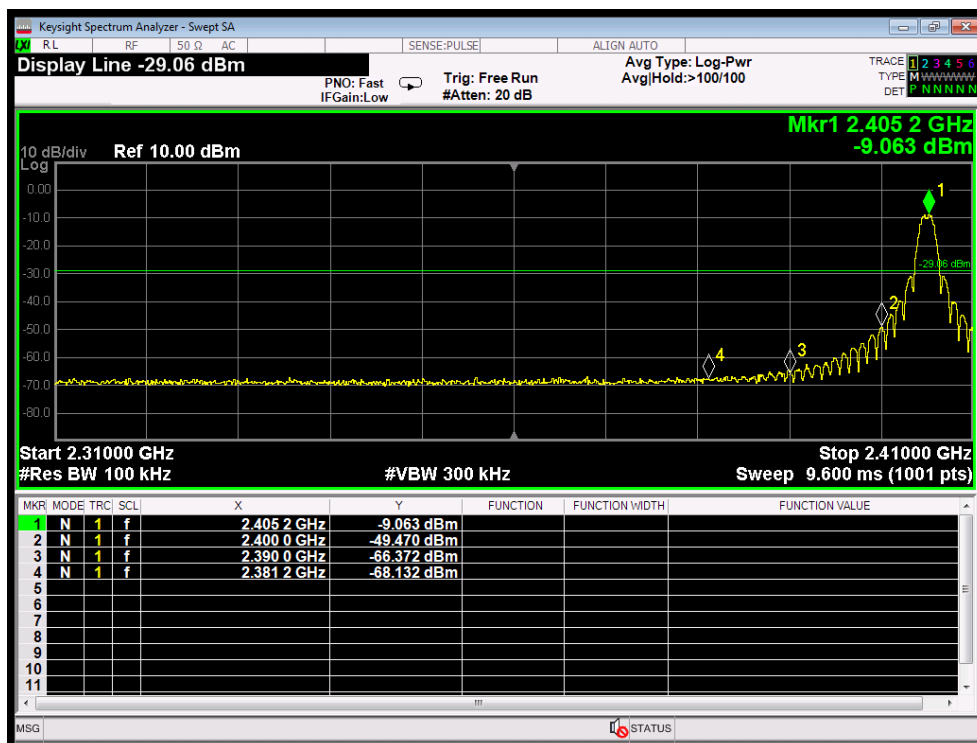
| Test Mode: | | | | | Test channel: CH 01 | | | |
|--------------------|----------------------|-----------------------------|--------------------|--------------------------|---------------------|-------------------|--------------------|------|
| Peak Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Pol. |
| 2390.00 | 55.21 | 29.15 | 3.41 | 34.01 | 53.76 | 74.00 | -20.24 | V |
| 2400.00 | 60.10 | 29.16 | 3.43 | 34.01 | 58.68 | 74.00 | -15.32 | V |
| 2390.00 | 54.20 | 29.15 | 3.41 | 34.01 | 52.75 | 74.00 | -21.25 | H |
| 2400.00 | 63.12 | 29.16 | 3.43 | 34.01 | 61.70 | 74.00 | -12.30 | H |
| Average Value | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor | Level (dBuV/m) | Limit (dBuV/m) | Over Limit (dB) | Pol. |
| | | | | (dB) | | | | |
| 2390.00 | 41.63 | 29.15 | 3.41 | 34.01 | 40.18 | 54.00 | -13.82 | V |
| 2400.00 | 45.21 | 29.16 | 3.43 | 34.01 | 43.79 | 54.00 | -10.21 | V |
| 2390.00 | 41.22 | 29.15 | 3.41 | 34.01 | 39.77 | 54.00 | -14.23 | H |
| 2400.00 | 44.96 | 29.16 | 3.43 | 34.01 | 43.54 | 54.00 | -10.46 | H |

Remark:

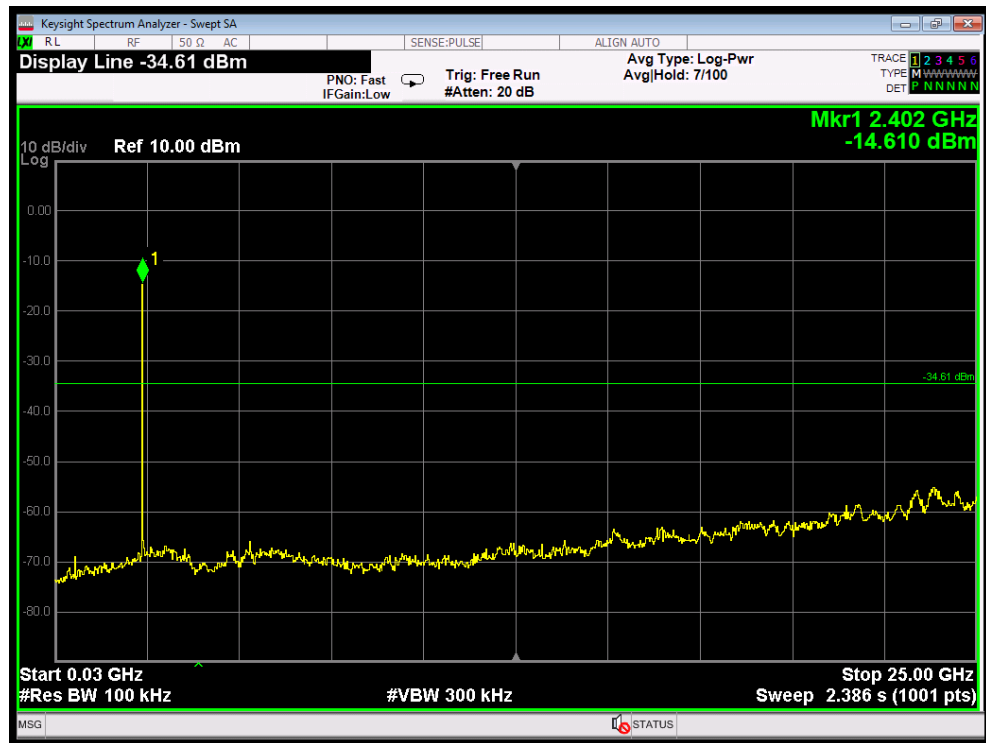
1. Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

Conducted band edge

Left



Conducted Emission Method

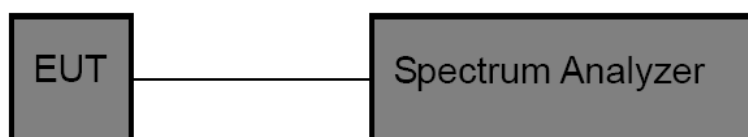


5. 20dB Bandwidth Test

5.1. Test Standard and Limit

| | |
|---------------|-----------------------------|
| Test Standard | FCC Part15 C Section 15.249 |
|---------------|-----------------------------|

5.2. Test Setup



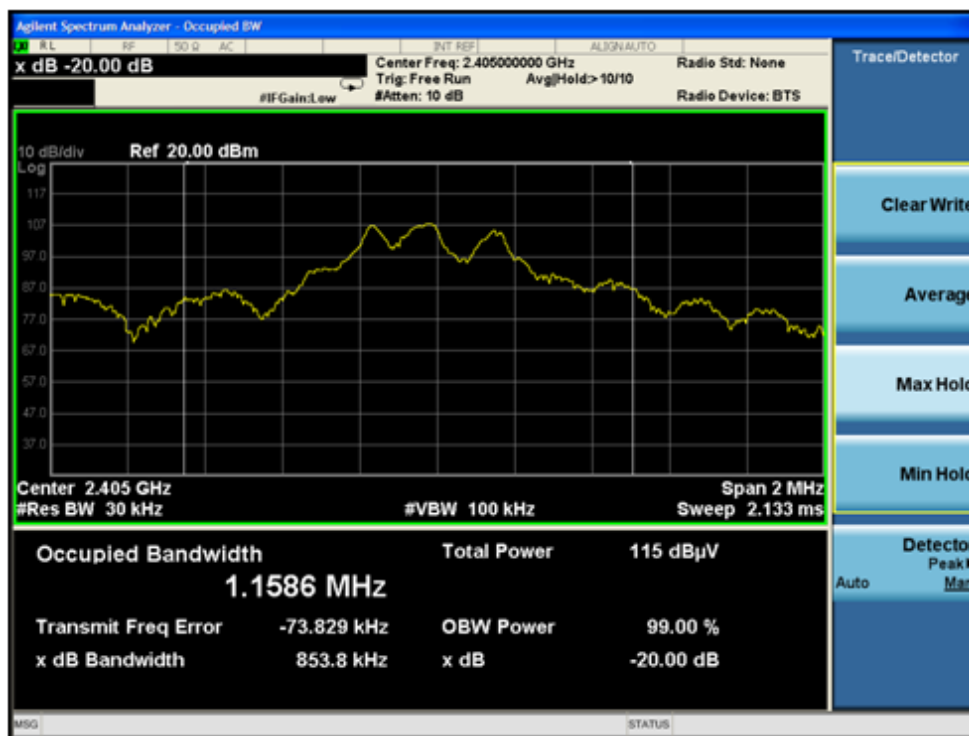
5.3. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:
 $RBW = 30\text{kHz}$, $VBW \geq 3 \times RBW = 100\text{kHz}$,
 Detector= Average
 Trace mode= Max hold.
 Sweep- auto couple.
4. Mark the peak frequency and -20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

5.4. Test Data

| | | | |
|--------------|------------------|-------------|-----------|
| Test Item | : 20dB Bandwidth | Test Mode | : TX Mode |
| Test Voltage | : DC 12V | Temperature | : 24°C |
| Test Result | : PASS | Humidity | : 55%RH |

| Frequency (MHz) | Bandwidth (kHz) | Result |
|-----------------|-----------------|--------|
| 2405MHZ | 853.8 | PASS |



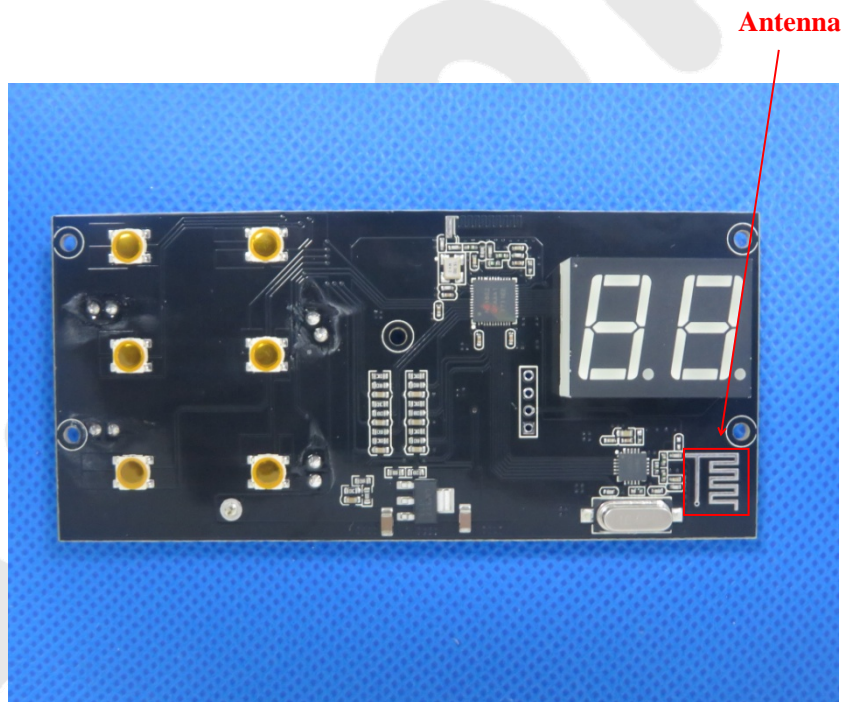
6. Antenna Requirement

6.1. Test Standard and Requirement

| | |
|---------------|---|
| Test Standard | FCC Part15 Section 15.203 |
| Requirement | <p>1) 15.203 requirement:</p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p> |

6.2. Antenna Connected Construction

The antenna is a PCB Antenna which permanently attached, and the best case gain of the antenna is 1.05 dBi. It complies with the standard requirement.



APPENDIX I -- TEST SETUP PHOTOGRAPH

Please see the test report of SZAWW180306004-01

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APPENDIX II -- EXTERNAL PHOTOGRAPH

Please see the test report of SZAWW180306004-01

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APPENDIX III -- INTERNAL PHOTOGRAPH

Please see the test report of SZAWW180306004-01

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----- End of Report-----