

FCC Part 18 Measurement and Test Report

For

Fuse Chicken LLC

2251 Front Street, Suite 200, Cuyahoga Falls, Ohio, 44221 USA

FCC ID: 2ARVW-OSF

| | |
|--------------------------------------|---------------------------------|
| Test Rule(s): | <u>FCC Part 18</u> |
| Product Description: | <u>Universal</u> |
| Tested Model: | <u>OSF</u> |
| Report No.: | <u>STR19018078I-2</u> |
| Sample Receipt Date: | <u>2019-01-08</u> |
| Tested Date: | <u>2019-01-08 to 2019-01-11</u> |
| Issued Date: | <u>2019-01-11</u> |
| Tested By: | <u>Mike Shi / Engineer</u> |
| Reviewed By: | <u>Silin Chen / EMC Manager</u> |
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Fuse Chicken LLC
Address of applicant: 2251 Front Street, Suite 200, Cuyahoga Falls, Ohio,
44221 USA
Manufacturer: Shenzhen Ucool Technology Co., Ltd
Address of manufacturer: 3/f, building A, datang industrial area, datang road,
guanlan street, longhua district, Shenzhen city

| General Description of EUT | |
|--|-----------|
| Product Name: | Universal |
| Trade Name: | / |
| Model No.: | OSF |
| Adding Model(s): | / |
| <i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i> | |

| Technical Characteristics of EUT | |
|--|-------------------------|
| Rated Voltage: | DC9V (Wireless output) |
| Rated Current: | ≤1A (Wireless output) |
| Rated Power: | < 10W (Wireless output) |
| Power Adapter Model: | / |
| Wireless Charger Transmit Frequency Range: | 110~205KHz |

1.2 Test Standards

The tests were performed according to following standards:

FCC Part 18 Subpart C: Industrial, Scientific, and medical medical equipment.

ANSI C63.4-2014:American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

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

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

| Test Mode | Description | Remark | Power Supply Mode |
|-----------|-------------------|----------|------------------------|
| TM1 | Wireless charging | Transmit | DC9V (Wireless output) |

EUT Cable List and Details

| Cable Description | Length (M) | Shielded/Unshielded | With Core/Without Core |
|-------------------|------------|---------------------|------------------------|
| / | / | / | / |

Auxiliary Equipment List and Details

| Description | Manufacturer | Model | Serial Number |
|-------------|--------------|-------|---------------|
| / | / | / | / |

Special Cable List and Details

| Cable Description | Length (M) | Shielded/Unshielded | With Core/Without Core |
|-------------------|------------|---------------------|------------------------|
| / | / | / | / |

1.6 Measurement Uncertainty

| Measurement uncertainty | | |
|-------------------------|------------|--------------------------|
| Parameter | Conditions | Uncertainty |
| Conducted Emissions | Conducted | 9-150kHz ± 3.74 dB |
| | | 0.15-30MHz ± 3.34 dB |
| Radiated Emissions | Radiated | 30-200MHz ± 4.52 dB |
| | | 0.2-1GHz ± 5.56 dB |
| | | 1-6GHz ± 3.84 dB |
| | | 6-18GHz ± 3.92 dB |

1.7 Test Equipment List and Details

| Description | Manufacturer | Model | Serial No. | Cal Date | Due Date |
|-------------------|-----------------|-----------|------------|------------|------------|
| Spectrum Analyzer | Agilent | E4407B | MY41440400 | 2018-05-22 | 2019-05-21 |
| Spectrum Analyzer | Rohde & Schwarz | FSP30 | 836079/035 | 2018-05-22 | 2019-05-21 |
| EMI Test Receiver | Rohde & Schwarz | ESVB | 825471/005 | 2018-05-22 | 2019-05-21 |
| Amplifier | Agilent | 8447F | 3113A06717 | 2018-05-22 | 2019-05-21 |
| Amplifier | C&D | PAP-1G18 | 2002 | 2018-05-22 | 2019-05-21 |
| Broadband Antenna | Schwarz beck | VULB9163 | 9163-333 | 2017-06-08 | 2018-06-07 |
| Horn Antenna | ETS | 3117 | 00086197 | 2017-06-08 | 2018-06-07 |
| Loop Antenna | Schwarz beck | FMZB 1516 | 9773 | 2017-06-08 | 2018-06-07 |
| EMI Test Receiver | Rohde & Schwarz | ESPI | 101611 | 2018-05-22 | 2019-05-21 |
| L.I.S.N | Schwarz beck | NSLK8126 | 8126-224 | 2018-05-22 | 2019-05-21 |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100911 | 2018-05-22 | 2019-05-21 |

2. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT |
|------------------|----------------------------|---------------|
| § 18.307 (b) | Conducted Emission | Compliant |
| § 18.305 (b) | Radiated Emission | Compliant |

3. Conducted Emissions

3.1 Standard Applicable

According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

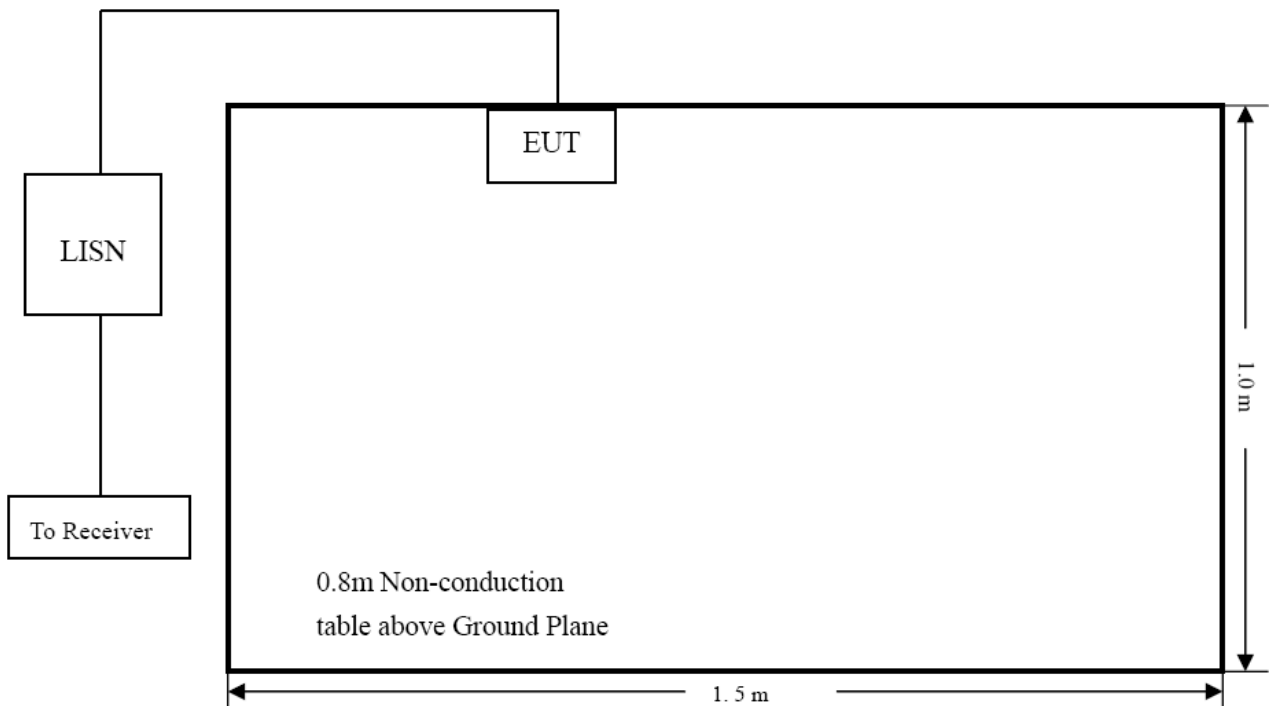
| Frequency (MHz) | Conducted limit (dB μ V) | |
|-----------------|------------------------------|----------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 | 56 to 46 |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

3.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.307 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

| | |
|--------------------|-----------|
| Temperature: | 25° C |
| Relative Humidity: | 54% |
| ATM Pressure: | 1016 mbar |

3.5 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

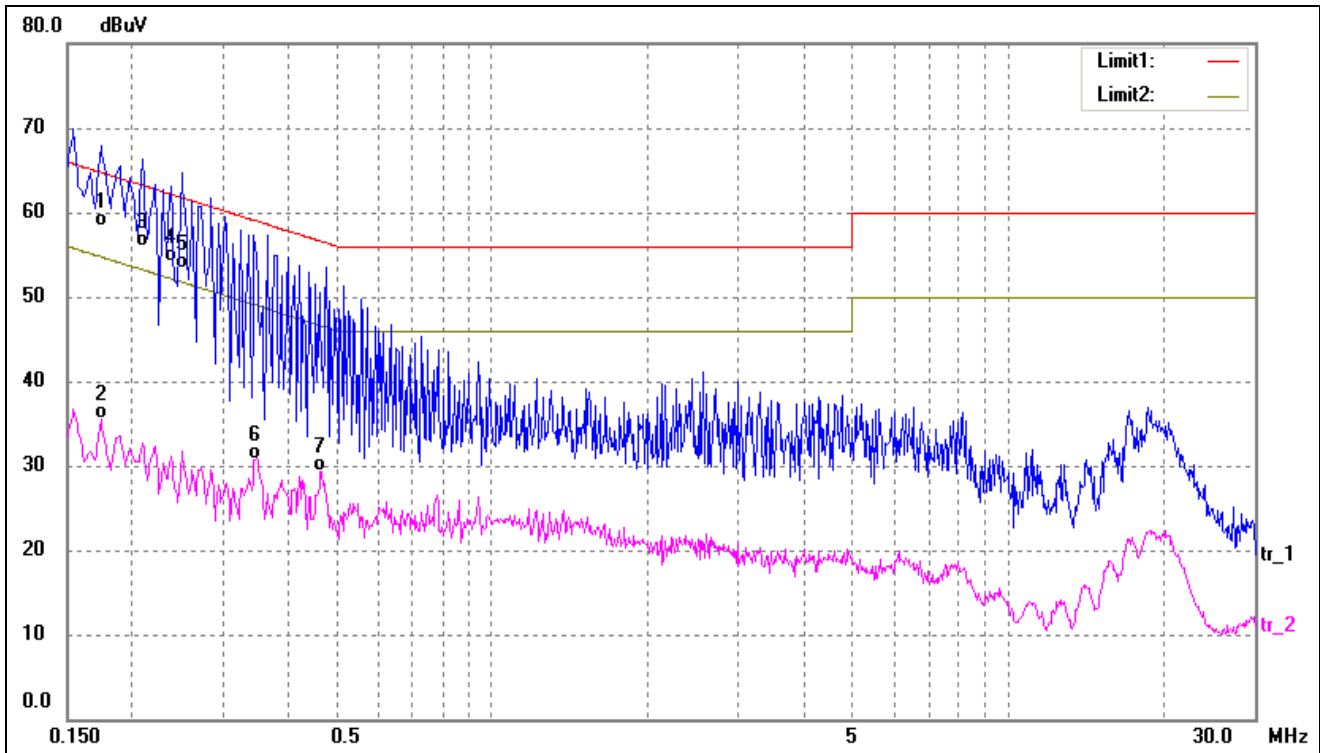
Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

3.6 Summary of Test Results/Plots

According to the data in this section, the EUT complied with the FCC Part 18C Conducted margin for Any non-ISM frequency device, with the *worst* margin reading of:

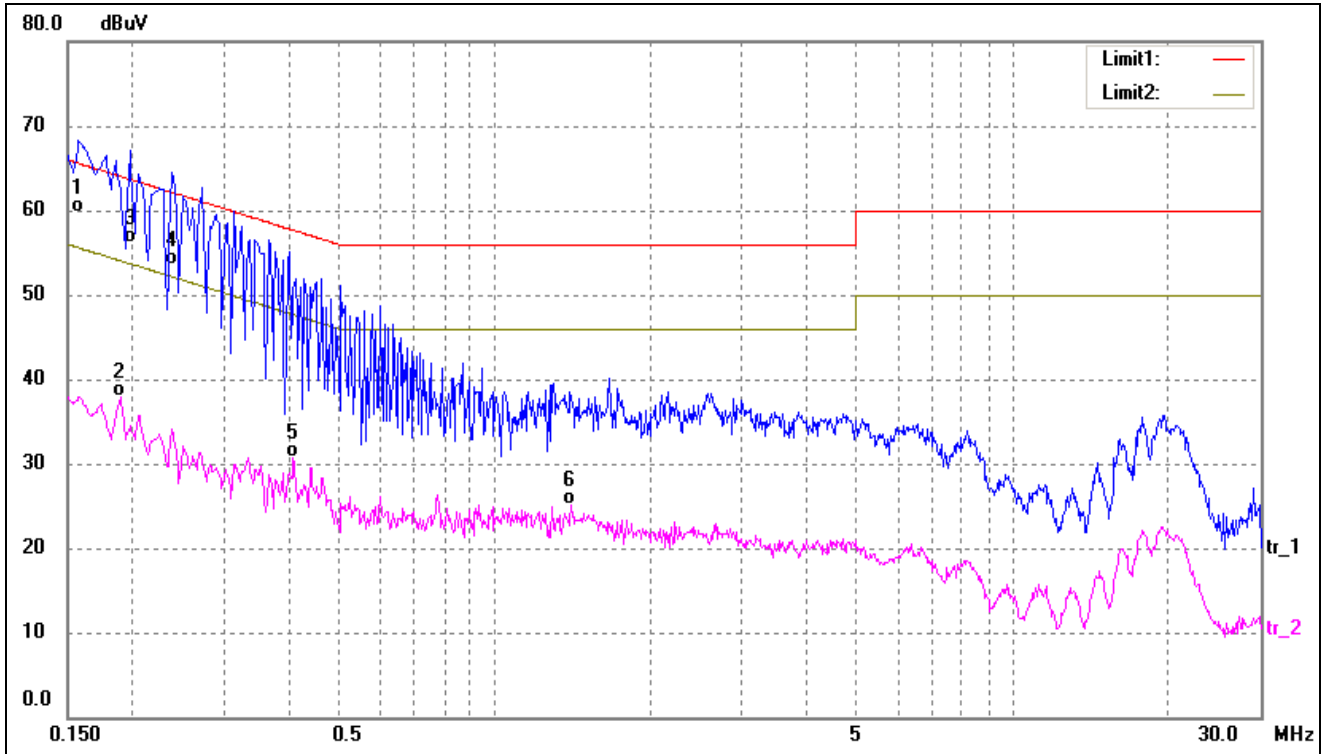
-5.93 dB at 0.1580 MHz in the Neutral, QP detector, TM1 detector, 0.15-30MHz

| | | | |
|------------|-----|-----------|------|
| Test mode: | TM1 | Polarity: | Line |
|------------|-----|-----------|------|



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|----------------|---------------|--------------|-------------|----------|
| 1* | 0.1740 | 48.23 | 10.11 | 58.34 | 64.77 | -6.43 | QP |
| 2 | 0.1740 | 25.42 | 10.11 | 35.53 | 54.77 | -19.24 | AVG |
| 3 | 0.2100 | 45.72 | 10.13 | 55.85 | 63.21 | -7.36 | QP |
| 4 | 0.2380 | 43.88 | 10.15 | 54.03 | 62.17 | -8.14 | QP |
| 5 | 0.2500 | 43.21 | 10.16 | 53.37 | 61.76 | -8.39 | QP |
| 6 | 0.3500 | 20.59 | 10.21 | 30.80 | 48.96 | -18.16 | AVG |
| 7 | 0.4660 | 18.97 | 10.28 | 29.25 | 46.58 | -17.33 | AVG |

| | | | |
|------------|-----|-----------|---------|
| Test mode: | TM1 | Polarity: | Neutral |
|------------|-----|-----------|---------|



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|----------------|---------------|--------------|-------------|----------|
| 1* | 0.1580 | 49.54 | 10.10 | 59.64 | 65.57 | -5.93 | QP |
| 2 | 0.1900 | 27.86 | 10.12 | 37.98 | 54.04 | -16.06 | AVG |
| 3 | 0.1980 | 45.96 | 10.12 | 56.08 | 63.69 | -7.61 | QP |
| 4 | 0.2380 | 43.34 | 10.15 | 53.49 | 62.17 | -8.68 | QP |
| 5 | 0.4100 | 20.51 | 10.25 | 30.76 | 47.65 | -16.89 | AVG |
| 6 | 1.4060 | 14.50 | 10.55 | 25.05 | 46.00 | -20.95 | AVG |

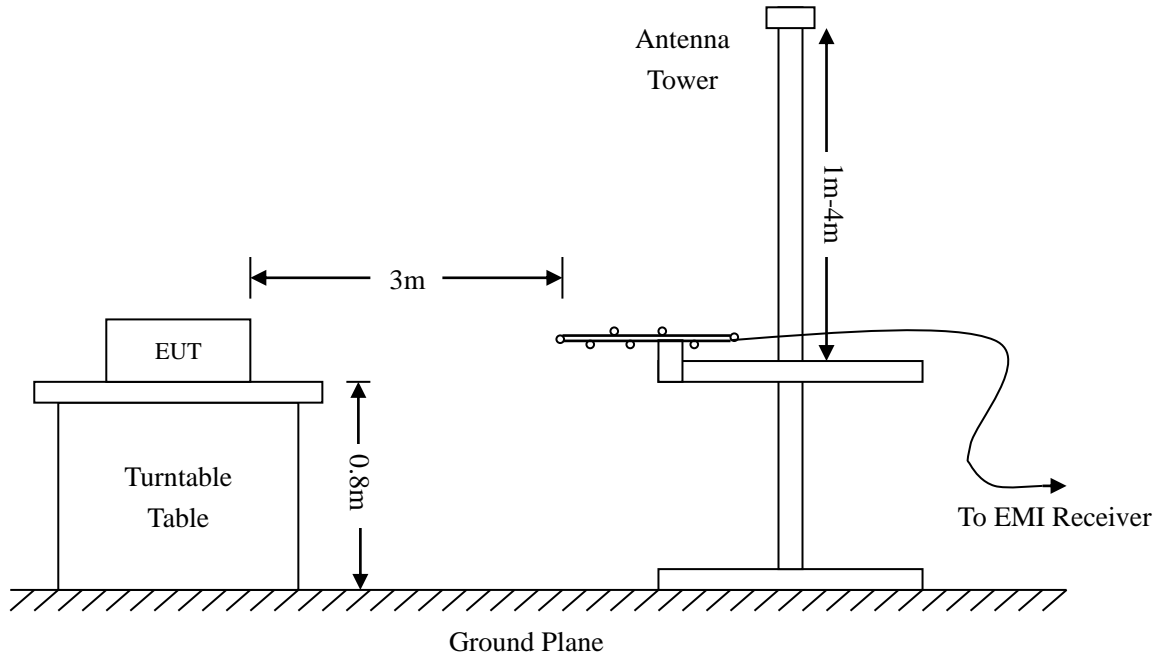
4. Radiated Emissions

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



4.2 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of $-6\text{dB}\mu\text{V}$ means the emission is $6\text{dB}\mu\text{V}$ below the maximum limit for Any non-ISM frequency device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 18.305 Limit}$$

4.4 Environmental Conditions

| | |
|--------------------|-----------|
| Temperature: | 23 °C |
| Relative Humidity: | 55 % |
| ATM Pressure: | 1011 mbar |

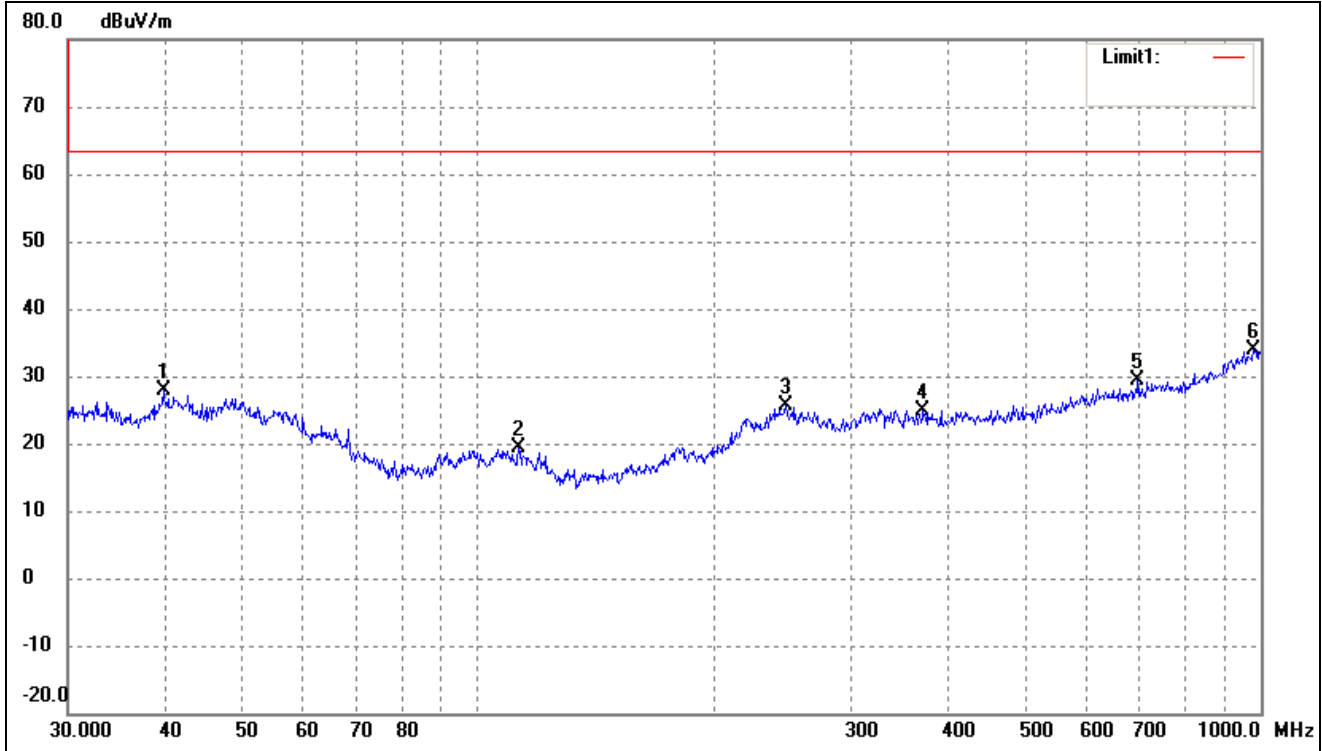
4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 18.305 rule, and had the worst margin of:

-29.27 dB at 996.4996 MHz in the Vertical polarization, 3Meters

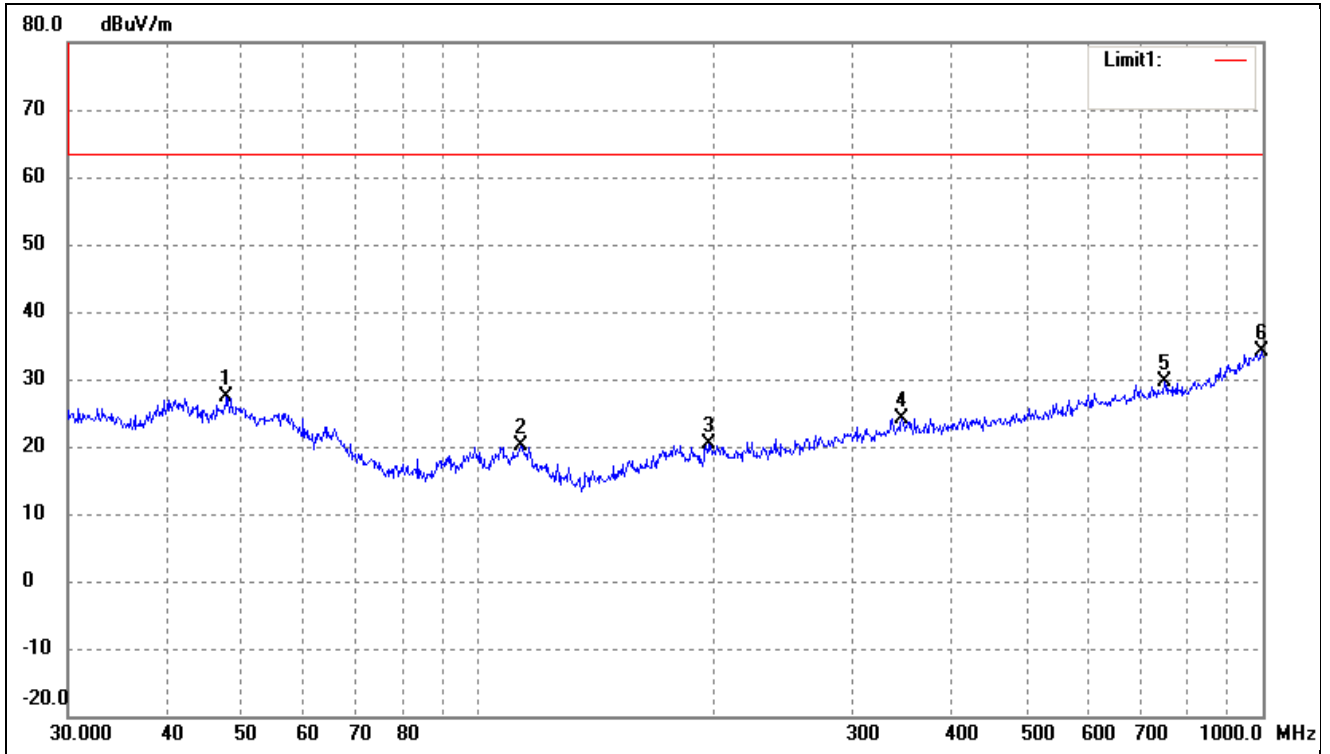
Plot of Radiated Emissions Test Data (Below 1GHz)

| | | | |
|------------|-----|-----------|------------|
| Test mode: | TM1 | Polarity: | Horizontal |
|------------|-----|-----------|------------|



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree () | Height (cm) | Remark |
|-----|-----------------|------------------|----------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1 | 39.7147 | 36.55 | -8.58 | 27.97 | 63.50 | -35.53 | 313 | 100 | peak |
| 2 | 112.9196 | 34.39 | -14.93 | 19.46 | 63.50 | -44.04 | 94 | 100 | peak |
| 3 | 247.6819 | 36.79 | -11.25 | 25.54 | 63.50 | -37.96 | 203 | 100 | peak |
| 4 | 370.7023 | 33.24 | -8.29 | 24.95 | 63.50 | -38.55 | 120 | 100 | peak |
| 5 | 696.8567 | 32.14 | -2.66 | 29.48 | 63.50 | -34.02 | 288 | 100 | peak |
| 6 | 979.1804 | 30.08 | 3.69 | 33.77 | 63.50 | -29.73 | 180 | 100 | peak |

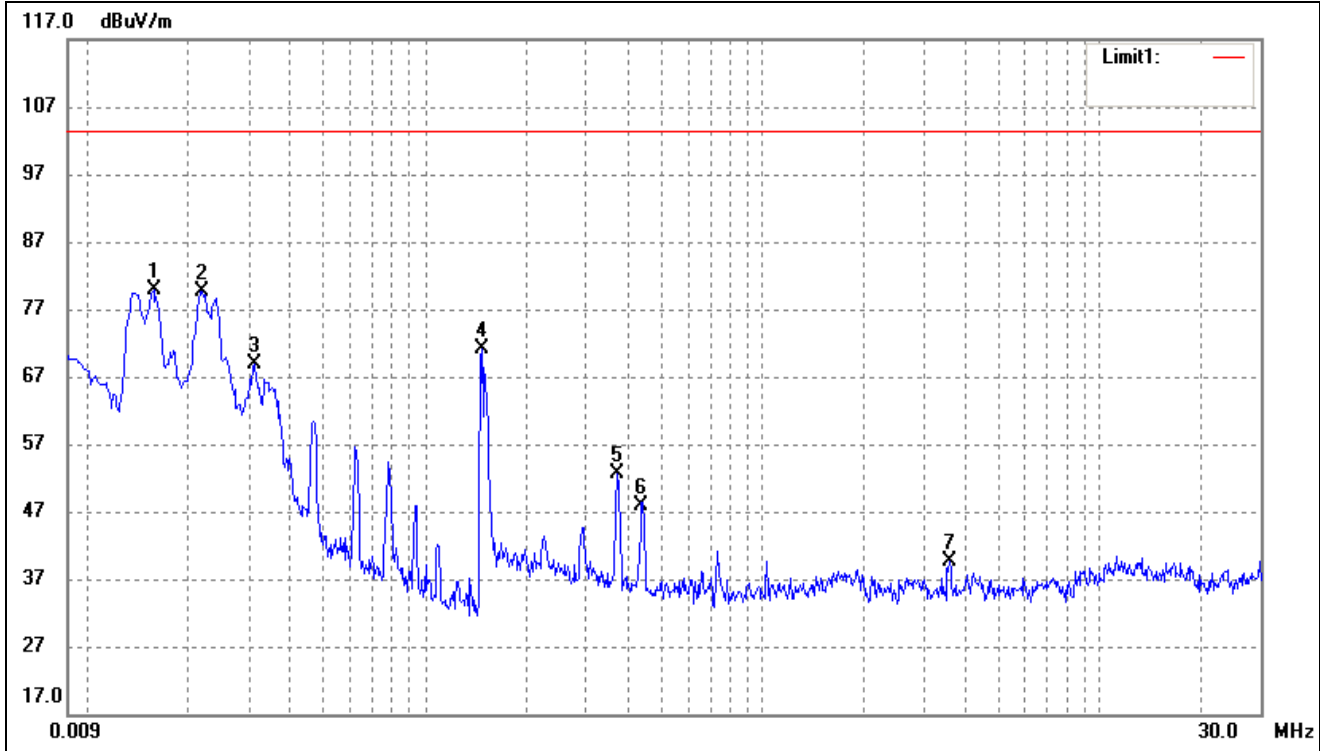
| | | | |
|------------|-----|-----------|----------|
| Test mode: | TM1 | Polarity: | Vertical |
|------------|-----|-----------|----------|



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree () | Height (cm) | Remark |
|-----|-----------------|------------------|----------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1 | 47.8260 | 35.52 | -8.16 | 27.36 | 63.50 | -36.14 | 336 | 100 | peak |
| 2 | 113.3163 | 35.08 | -15.01 | 20.07 | 63.50 | -43.43 | 161 | 100 | peak |
| 3 | 196.5098 | 33.77 | -13.45 | 20.32 | 63.50 | -43.18 | 72 | 100 | peak |
| 4 | 346.8092 | 32.08 | -7.99 | 24.09 | 63.50 | -39.41 | 255 | 100 | peak |
| 5 | 750.1083 | 31.29 | -1.75 | 29.54 | 63.50 | -33.96 | 203 | 100 | peak |
| 6 | 996.4996 | 30.25 | 3.98 | 34.23 | 63.50 | -29.27 | 346 | 100 | peak |

Plot of Radiated Emissions Test Data (9k-30M)

| | | | |
|------------|-----|-----------|------------|
| Test mode: | TM1 | Polarity: | Horizontal |
|------------|-----|-----------|------------|



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree () | Height (cm) | Remark |
|-----|-----------------|------------------|----------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1 | 0.0158 | 86.33 | -6.51 | 79.82 | 103.50 | -23.68 | 255 | 100 | peak |
| 2 | 0.0218 | 86.77 | -7.17 | 79.60 | 103.50 | -23.90 | 91 | 100 | peak |
| 3 | 0.0316 | 75.98 | -7.09 | 68.89 | 103.50 | -34.61 | 324 | 100 | peak |
| 4 | 0.1471 | 76.53 | -5.38 | 71.15 | 103.50 | -32.35 | 109 | 100 | peak |
| 5 | 0.3712 | 60.23 | -7.57 | 52.66 | 103.50 | -50.84 | 309 | 100 | peak |
| 6 | 0.4397 | 56.16 | -8.20 | 47.96 | 103.50 | -55.54 | 301 | 100 | peak |
| 7 | 3.5654 | 50.02 | -10.38 | 39.64 | 103.50 | -63.86 | 313 | 100 | peak |

***** END OF REPORT *****