

**CERTIFICATION TEST REPORT**  
**FOR THE**  
**MODULAR MUSIC DEVICE**  
**MODEL: DAISY PATCH SUBMODULE**

**EN55032:2015/EN55035:2017/A11:2020  
COMPLIANCE**

**DATE OF ISSUE: September 30, 2021**

**REPORT NUMBER: R210930C**

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**ADMINISTRATIVE INFORMATION**

**DATE OF TEST:** September 29, 2021

**PURPOSE OF TEST:** To demonstrate compliance of the EUTs with the requirements for EN55032:2015/EN55035:2017/A11:2020 Standards.

**MANUFACTURER:** ELECTROSMITH, CORP.  
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**REPRESENTATIVE:** Andrew Ikenberry

**TEST LOCATION:** CKC LABS, INC.  
110 North Olinda Place  
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**TEST PERSONNEL:** Stu Yamamoto

**TEST METHOD:** See Specifications, Requirements

**EQUIPMENT UNDER TEST (EUT):** MODEL: DAISY PATCH SUBMODULE

**ADMINISTRATIVE NOTE:** All tests were conducted under the supervision of Doug Tobias, EMC Consultant

### Summary of Results

The Electrosmith, EUT was tested in accordance with EN55032:2015/EN55035:2017/A11:2020.

As received, the above equipment was found to be fully compliant (without modifications) with the limits of EN55032:2015/EN55035:2017/A11:2020. Additionally, it should be noted that the results in this report apply only to the items tested, as identified herein.

### EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT is in a substantial metal enclosure.

### PERIPHERAL DEVICES

| Device                   | Manufacturer      | Model #                     | S/N        |
|--------------------------|-------------------|-----------------------------|------------|
| Power Supply             | Strymon           | Zuma                        | (none)     |
| Guitar Amplifier         | Mesa Engineering  | Mesa Boogie "Subway Rocket" |            |
| Guitar Pedal             | M-Audio           | Expression Pedal            | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Bliss Factory               | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Meris                       | (none)     |
| AC to 15Vdc Power Supply | Mean Well         | GSM60A15                    | EC094S0371 |

**SPECIFICATIONS, REQUIREMENTS**

The following summarizes the specifications, and requirements for EN55032:2015 Radio Frequency Emissions Tests and EN55035:2017 Immunity Tests performed on the EUTs. The Test Levels and Performance Criteria are in accordance with EN55032:2015/EN55035:2017/A11:2020.

| <u>Test</u>                          | <u>Test Requirement</u>   | <u>Specification</u>                 | <u>Requirement</u>                         |
|--------------------------------------|---------------------------|--------------------------------------|--------------------------------------------|
| Conducted Emissions                  | EN55032:2015<br>+A11:2020 | EN55032:2015                         | Limits per Data Sheets                     |
| Radiated Emissions                   | EN55032:2015<br>+A11:2020 | EN55032:2015                         | Limits per Data Sheets                     |
| Harmonic Emissions                   | EN55035:2017<br>+A11:2020 | EN61000-3-2:2006/<br>A1:2009/A2:2009 | Clause 7 of EN61000-3-2                    |
| Flicker Emissions                    | EN55035:2017<br>+A11:2020 | EN61000-3-3:2008                     | Clause 5 of EN61000-3-3                    |
| Electrostatic<br>Discharge           | EN55035:2017<br>+A11:2020 | EN61000-4-2:2009                     | 4 kV contact<br>8 kV air discharge         |
| Radiated Immunity                    | EN55035:2017<br>+A11:2020 | EN61000-4-3:2006/<br>A1:2008/A2:2010 | 3 V/m, 80% modulation                      |
| Electrical Fast<br>Transient Burst   | EN55035:2017<br>+A11:2020 | EN61000-4-4:2012                     | 1 kV (AC)<br>0.5 kV (I/O)                  |
| Surge Immunity                       | EN55035:2017<br>+A11:2020 | EN61000-4-5:2006                     | 2 kV common mode<br>1 kV differential mode |
| Conducted Immunity                   | EN55035:2017<br>+A11:2020 | EN61000-4-6:2009                     | 3 Vrms, 80% modulation                     |
| Magnetic Immunity                    | EN55035:2017<br>+A11:2020 | EN61000-4-8:2010                     | 3A/m                                       |
| Voltage Dips/<br>Short Interruptions | EN55035:2017<br>+A11:2020 | EN61000-4-11:2004                    | As per data sheet                          |

**REPORT OF MEASUREMENTS**

The following Tables report the results recorded during the tests performed on the EUTs.

| <b>Specification</b>                                      | <b>Frequency Range</b> | <b>Compliance Status</b> |
|-----------------------------------------------------------|------------------------|--------------------------|
| EN55032:2015/CISPR 32:2012, Class "A" Conducted Emissions | 0.15 MHz - 30.0 MHz    | <b>PASS</b>              |
| EN55032:2015/CISPR 32:2012, Class "A" Radiated Emissions  | 30.0 MHz - 1000 MHz    | <b>PASS</b>              |
| EN61000-3-2, Harmonic Emissions                           | Clause 7               | <b>PASS</b>              |
| EN61000-3-3, Flicker Emissions                            | Clause 5               | <b>PASS</b>              |

| <b>Specifications</b>                           | <b>Minimum Severity/Criterion Level</b>                                                                    | <b>Severity/Criterion Level Tested</b>                                                                     | <b>Compliance Status</b> |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------|
| EN61000-4-2<br>-ESD Immunity                    | <b>Criterion A</b><br>air discharge up to $\pm 8$ kV<br>contact discharge up to $\pm 4$ kV                 | <b>Criterion A</b><br>air discharge up to $\pm 8$ kV<br>contact discharge up to $\pm 4$ kV                 | <b>PASS</b>              |
| EN61000-4-3<br>-RF Immunity                     | <b>Criterion A</b><br>Radiation field strength of<br>3 V/m from 80 MHz<br>to 1000 MHz<br>(80% AM at 1 kHz) | <b>Criterion A</b><br>Radiation field strength of<br>3 V/m from 80 MHz<br>to 1000 MHz<br>(80% AM at 1 kHz) | <b>PASS</b>              |
| EN61000-4-4<br>-Electrical Fast Transient Burst | <b>Criterion A</b><br>power line pulses of $\pm 1$ kV                                                      | <b>Criterion A</b><br>power line pulses of $\pm 1$ kV                                                      | <b>PASS</b>              |
| EN61000-4-5<br>-Surge                           | <b>Criterion A</b>                                                                                         | <b>Criterion A</b>                                                                                         | <b>PASS</b>              |
| EN61000-4-6<br>-Conducted Immunity              | <b>Criterion A</b>                                                                                         | <b>Criterion A</b>                                                                                         | <b>PASS</b>              |
| EN61000-4-8<br>-Magnetic Immunity               | <b>Criterion A</b>                                                                                         | <b>Criterion A</b>                                                                                         | <b>PASS</b>              |
| EN61000-4-11<br>-Voltage Dips/<br>Interruptions | <b>Criterion A</b><br><b>Criterion A</b><br><b>Criterion C</b>                                             | <b>Criterion A</b><br><b>Criterion A</b><br><b>Criterion C</b>                                             | <b>PASS</b>              |
|                                                 |                                                                                                            |                                                                                                            |                          |

## REPORT OF MEASUREMENTS RADIATED EMISSIONS

The following Tables 1 and 2 report the six highest radiated and conducted emissions levels recorded during the tests performed on the EUT. The data sheets from which these tables were compiled are contained in Appendix B.

| <b>TABLE 1: SIX HIGHEST RADIATED EMISSION LEVELS</b> |                          |                                |                         |              |       |
|------------------------------------------------------|--------------------------|--------------------------------|-------------------------|--------------|-------|
| FREQUENCY<br>MHz                                     | METER<br>READING<br>dBuV | CORRECTED<br>READING<br>dBuV/m | SPEC<br>LIMIT<br>dBuV/m | MARGIN<br>dB | NOTES |
| 48.000                                               | 49.9                     | 38.7                           | 50.0                    | -11.3        | V     |
| 80.000                                               | 48.2                     | 35.3                           | 50.0                    | -14.7        | V     |
| 188.000                                              | 43.4                     | 33.0                           | 50.0                    | -17.0        | V     |
| 188.000                                              | 40.9                     | 30.5                           | 50.0                    | -19.5        | H     |
| 80.000                                               | 41.7                     | 28.8                           | 50.0                    | -21.2        | H     |
| 452.600                                              | 34.6                     | 34.4                           | 57.0                    | -22.6        | V     |

Test Method: CISPR 32: 2012  
Spec Limit: CISPR 32 A  
Test Distance: 3 Meters

NOTES: H= Horizontal Polarization  
V= Vertical Polarization  
N= No Polarization  
D= Dipole Reading  
Q= Quasi Peak Reading  
A= Average Reading

### **Modifications:**

NONE

## REPORT OF MEASUREMENTS CONDUCTED EMISSIONS

**TABLE 2: SIX HIGHEST CONDUCTED EMISSION LEVELS**

| FREQUENCY<br>MHz | METER<br>READING<br>dBuV | CORRECTED<br>READING<br>dBuV/m | SPEC<br>LIMIT<br>dBuV/m | MARGIN<br>dB       |
|------------------|--------------------------|--------------------------------|-------------------------|--------------------|
| 00.384160        | 43.3                     | 49.2                           | 66.0                    | -16.8 - L1(L) lead |
| 11.148000        | 36.2                     | 42.5                           | 60.0                    | -17.5 - L1(L) lead |
| 10.337000        | 35.5                     | 41.9                           | 60.0                    | -18.1 - L1(L) lead |
| 00.384887        | 43.8                     | 49.7                           | 66.0                    | -16.3 - L2(N) lead |
| 11.148000        | 36.0                     | 42.3                           | 60.0                    | -17.7 - L2(N) lead |
| 10.337000        | 35.8                     | 42.2                           | 60.0                    | -17.8 - L2(N) lead |

Test Method:  
Spec Limit:

CISPR 32: 2012  
CISPR 32, CLASS A

NOTES:

Q= Quasi Peak Reading  
A= Average Reading

**Modifications:**

NONE

**TABLE A**  
**LIST OF TEST EQUIPMENT USED**

**SEE TEST DATA SHEETS**

**EUT SET UP**

In general, the equipment under test (EUT) and the peripherals listed were setup in a manner that represented their normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Table 1 for radiated emissions, and Table 2 for conducted emissions. Additionally, a complete description of all the ports and I/O cables is included on the information sheets contained in Appendix A.

During radiated emissions testing, the EUT was mounted on a nonconductive rotating table 1 meter above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

I/O cables were connected to the EUT and peripherals in the manner required for normal operation of the system. Excess cabling was bundled in the center in a serpentine fashion using 30-40 centimeter lengths.

During conducted emissions testing the EUT was located 80 centimeters above the conducting ground plane on the same non-conducting table as was used for radiated testing. The metal plane was grounded to the earth through the green wire safety ground. Power to the EUT was provided via 3 meters of shielded power cable from a filter grounded to the metal plane to a LISN. The LISN was also grounded to the plane and attached to the LISN was a 4 ganged grounded outlet whose source was also shielded and 60 centimeters in length. All other objects were kept a minimum of 1 meter away from the EUT during the conducted test.

**TEST INSTRUMENTATION AND ANALYZER SETTINGS**

The test instrumentation and equipment listed in Table A was used to collect both the radiated and conducted emissions data for the EUT. For radiated measurements below 300 MHz, the Bi-conical type antenna listed was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. All antennas were located at a distance of 3 meters from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISN's.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, a reference level of 100 dBuV and a vertical scale size of 10 dB per division was used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBuV, and a vertical scale of 10 dB per division.

## **SPECTRUM ANALYZER DETECTOR FUNCTIONS**

The notes that accompany the measurements contained in Tables 1 and 2 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the “Peak” mode. Whenever a “Quasi-Peak” or “Average” reading is listed as one of the six highest readings, this is indicated as a “Q” or an “A” in Table 1 or Table 2. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the EUT.

### **Peak**

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called “peak hold”, the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### **Quasi-Peak**

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP 85650A Quasi-Peak Adapter for the HP 8566B Spectrum analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

### **Average**

When the frequencies exceed 1 GHz , average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set in the linear mode and scan time is reduced.

## **Test Methods**

The radiated and conducted emissions data of the EUT, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the “Sample Calculations”. The corrected data was then compared to the CISPR 32 emissions limits to determine compliance.,

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

### **Radiated Emissions Testing**

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode (printing “H”s to the CRT and peripherals if applicable) with the I/O cables and line cords facing the antenna. The frequency range of 30 MHz-88 MHz was then scanned with the Bi-conical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks which were at or near the limit were recorded. Next, the frequency range of 100-300 MHz was scanned in the same manner with the Bi-conical antenna, and the peaks recorded. Lastly, a scan of the FM band from 88-110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The Bi-conical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300-1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 - 1000 MHz was again scanned. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, the equipment was again positioned with it’s I/O and power cables facing the antenna, and a thorough scan of all the frequencies using a small frequency span was manually made. The turntable was rotated as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximizes the readings with respect to the table rotation, antenna height and configuration of the peripherals and cables. Maximizing of the cables was achieved by monitoring the spectrum analyzer on a closed circuit television monitor while the EUT cables were being moved and rearranged on the EUT table for maximum emissions. Figures and photographs showing the final worst case configuration of the EUT are contained in Appendix A.

### **Conducted Emissions Testing**

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 1.705 MHz , 1.705 MHz to 3 MHz and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

Tables 1 and 2 show the corrected values of the six highest readings obtained for the EUT.

### **Sample Calculations**

An example of how the basic spectrum analyzer reading is converted using correction factors is given for the six highest emissions readings in Table 1 and 2. For radiated emissions in dBuV/m, the spectrum analyzer reading in dBuV is corrected by using the following formula:

$$\begin{aligned} &\text{Meter reading (dBuV)} \\ &+ \text{Antenna Factor (dB)} \\ &+ \text{Cable Loss (dB)} \\ &- \text{Distance Correction (dB)} \\ &- \text{Pre-amplifier Gain (dB)} \\ &= \text{Corrected Reading (dBuV/m)} \end{aligned}$$

This reading is then compared to the applicable specification limit to determine compliance. For conducted emissions, no corrections factors are needed when 50 uH, LISN's are used.

**EUT SET-UP: Immunity**

In general, the equipment under test (EUT) and the peripherals listed in the EUT description and peripheral devices tables were setup in a manner that represented their normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the Table for Electrostatic Discharge (Direct & Indirect), the Table for Radiated Immunity and the Table for Electrical Fast Transient Burst (EFTB) on the Power Cord & I/O Cable. Additionally, a complete description of all ports and I/O cables is included on the information sheets contained in Appendix A.

During radiated immunity and EFTB testing the EUT was mounted on a nonconductive, table 1 meter above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated Immunity testing of table top devices.

During Electrostatic Discharge testing the EUT was located on a test bench measuring 1 meter high, 1 meter deep, and 2 meters in length. A conductive metal sheet 2 square meters in size was placed on the top of the table. The EUT was then placed on top of the conductive sheet and separated from the sheet by a 1mm thick insulating material. The ground reference plane was electrically bonded by wire braid to the earth reference floor or the ground on the electrical outlet service. The ESD generator (ESD gun) was grounded to the metal ground reference plane on the floor. The ESD generator was located on the ground reference plane.

The AC power line and I/O cables were routed consistent with the typical application. Interface cables were connected to the available I/O ports of the test unit. This configuration was precisely noted in the test report. I/O cables were of the type and length specified in the individual requirements.

If the ITE consisted of several pieces of equipment, and the manufacturer did not provide specifications on their spacing, the interval between different pieces of equipment was about 10 centimeters.

If the length of cable between pieces of equipment was longer than necessary, all excess interconnecting cable was bundled in 30-40 cm. bundles. If the cable could not be bundled in this fashion, it was arranged around the ITE. For more detail on the disposition of the cables during the test, refer to the "Cable Information Sheet" and the photographs contained in Appendix A

**DETERMINATION OF PASS FAIL CRITERION.**

During all immunity tests the EUT, did not deviate or change greater than the permissible variation as indicated in the test report and by consultation with Electrosmith.

**MONITORING OF OPERATING PARAMETERS**

The device was monitored during the tests by means of a visual check whereby the essential parameters were displayed.

**TEST METHODS****Electrostatic Discharge Test.**

Electrostatic Discharges were applied to the EUT, at points and surfaces which are normally accessible to the operator. The voltage levels were increased gradually at a minimum of 1 second intervals until the maximum severity level selected was applied.

Discharges to objects placed or installed near to the EUT, were simulated by applying discharges of the ESD generator to the metal coupling plane. During this test the ESD generator was positioned at least 0.1 meter from the EUT and pointed to the metal coupling plane. At least 10 single shot discharges were applied to the metal coupling plane on each accessible side of the EUT. The EUT was tested in accordance with EN55103-2 and EN61000-4-2 and meets Performance Criterion B.

**Radiated Immunity Test.**

A field of 3V/m was established from 27 MHz to 1000 MHz. This frequency range was modulated with a 1kHz sine wave at 80%. The signal generators provided the modulated frequency at a sweep rate of .0015 decades/second to the RF amplifiers. The RF amplifiers provided the necessary power to the antennas to establish the field levels as monitored by the field probes. The antennas were positioned 3 meters from all four faces of the EUT. The E/H field antenna was used from 27-300 MHz in vertical and horizontal polarizations and the log periodic antenna was used from 300-1000 MHz in both polarizations. The EUT, was tested in accordance with EN55103-2 and EN61000-4-3 and meets Performance Criterion B at a field strength of 3 V/m.

### **Electrical Fast Transient Burst Test**

Test voltages of up to 1kV in (+) and (-) polarities were applied to the A/C power cords. The test voltages were at a 5kHz pulse repetition frequency and were applied for 60 seconds between ground and each EUT terminal and between ground and protective earth. The EUT, was tested in accordance with EN55103-2 and EN61000-4-4 and meets Performance Criterion B.

### **Surge Test**

Test voltages of up to 4kV common mode and 2kV differential mode in (+) and (-) polarities were applied to the EUT power cords. Characteristics of the test voltage were 1.2us rise time and 50us pulse width. These surges were synchronized to the 0, 90 and 270 degree phase angles of the power frequency. The EUT was tested in accordance with EN55103-2 and EN61000-4-5 and meets Performance Criterion B.

### **Conducted Immunity Test**

A 10 Vrms level was established from 150kHz to 80 MHz. This frequency range was modulated with 1kHz sine wave at 80%. The signal generators provided the modulated frequency at a sweep rate of 0.0015 decades/second to the RF Amplifiers. The RF amplifiers provided the necessary power to the injection probe to establish the 10 volt level as monitored by the CDN. The injection probe was positioned 0.3 meters from the rear of the EUT. The injection probe was around all cables of the EUT. The EUT was tested in accordance with EN55103-2 and meets Performance Criterion A at 3 Vrms.

### **Magnetic Immunity Test**

A magnetic field of 3 A/m was set up using a programmable 50 Hz source and a one meter square wire attached to a square frame. This frame with its associated magnetic field was then passed over the EUT in each of the orthographic planes. The EUT was tested in accordance with EN55103-2 and EN61000-4-8 and meets Performance Criterion A.

### **Voltage Dips and Interrupts Test**

Power to the EUT was supplied by a programmable power supply. This power supply produced the following voltage dips and interrupts: a 30% reduction in voltage for 10 ms, a 60% reduction in voltage for 100 ms, and a greater than 95% reduction in voltage for 5 seconds. The EUT was tested in accordance with EN55103-2 and EN61000-4-11 and meets Performance Criterion B for 30% reduction, Criterion C for a 60% reduction and Criterion C for a >95% reduction in voltage.

**APPENDIX A**  
**INFORMATION ABOUT THE EQUIPMENT UNDER TEST**

### **INFORMATION ABOUT THE EQUIPMENT UNDER TEST**

The equipment under test and support equipment are located together on the tabletop. The connections are as follows: Daisy Patch Submodule connected to Bliss Factory Pedal via 1/8" 3' shielded T.S. to 1/4" phono jack cable. Bliss Factory Pedal connected to Meris Pedal via 1/4" phono jack audio cable shielded 12". Meris Pedal connected to Expression Pedal. Meris Pedal has loopback MIDI cable shielded 6'. Meris Pedal connected to Mesa Engineering Mesa Boogie. Pedals connected to Strymon power supply. Daisy Patch Submodule has four 1/8" 8" shielded T.S. phono jack cables connected. Daisy Patch Submodule connected to AC to 15Vdc external power supply. System internal clock loop to analog output source. Voltage to the Mean Well AC to DC adapter, amplifier, and Strymon is 120Vac 60Hz.

### **REQUIRED EUT CHANGES TO COMPLY:**

NONE

**CABLE INFORMATION**

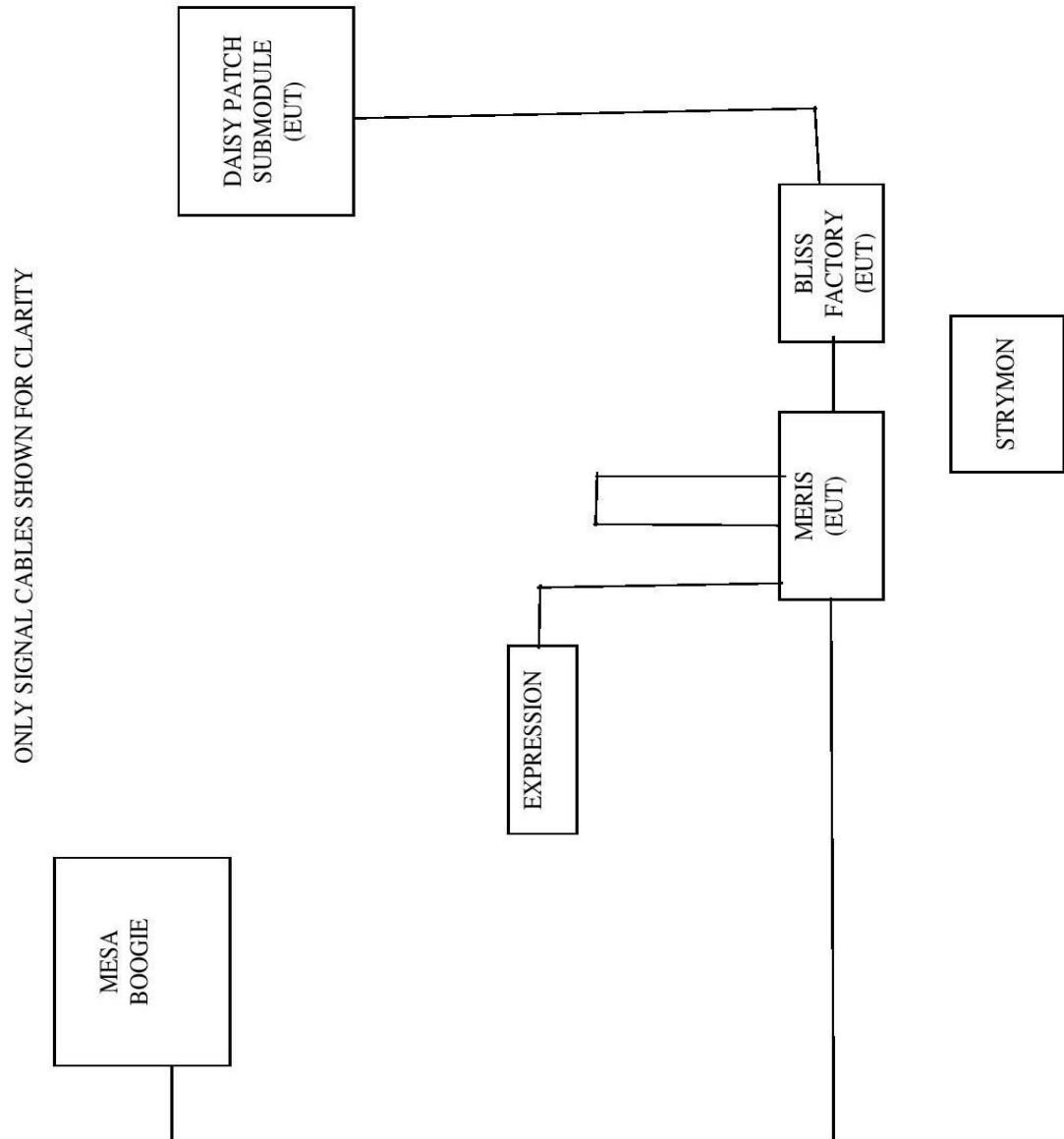
Power Cords:

- 1) Unit: MESA BOOGIE  
MFG: Generic  
Shielded (Y/N): N  
Length: 6 ft.
- 2) Unit: STRYMON POWER SUPPLY  
MFG: Generic  
Shielded (Y/N): N  
Length: 6 ft.
- 3) Unit: MEAN WELL POWER SUPPLY  
MFG: Generic  
Shielded (Y/N): N  
Length: 6 ft.

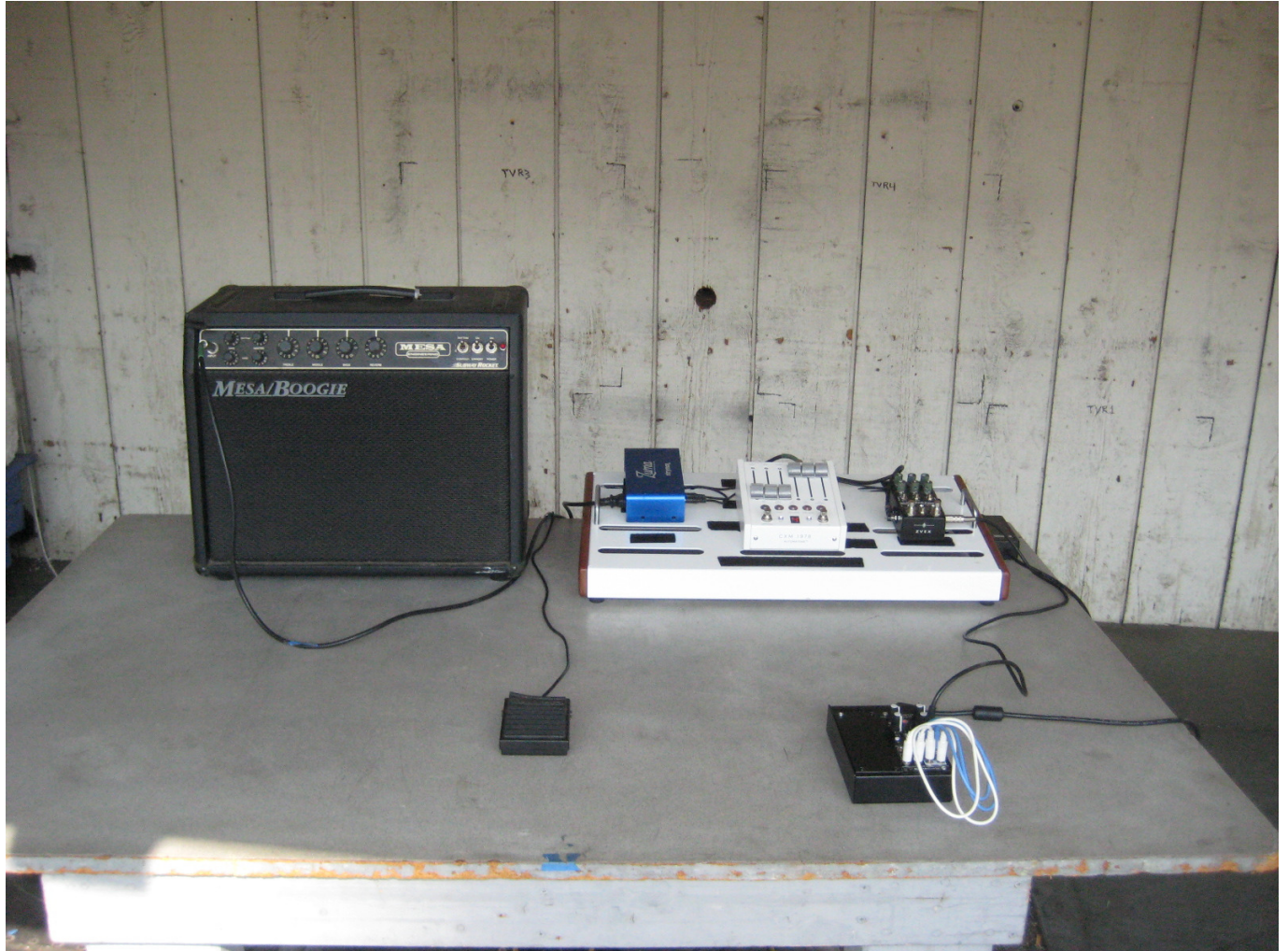
I/O Cables – External Connections:

- 1) MERIS to BLISS FACTORY (1/4" TS phonojack)  
Shielded (Y/N): Y  
MFG: Generic  
Length: 12 in
- 2) MERIS to MESA BOOGIE (1/4"TS phonojack)  
Shielded (Y/N): Y  
MFG: Generic  
Length: 6 ft
- 3) MERIS to EXPRESSION (1/4" TS phonojack)  
Shielded (Y/N): Y  
MFG: Generic  
Length: 12 in
- 4) BLISS FACTORY to DAISY PATCH SUBMODULE (EUT)  
(1/8" T.S. to 1/4"TS phonojack)  
Shielded (Y/N): Y  
MFG: Generic  
Length: 3 ft
- 5) MERIS to MERIS LOOPBACK (MIDI)  
Shielded (Y/N): Y  
MFG: Generic  
Length: 6 ft

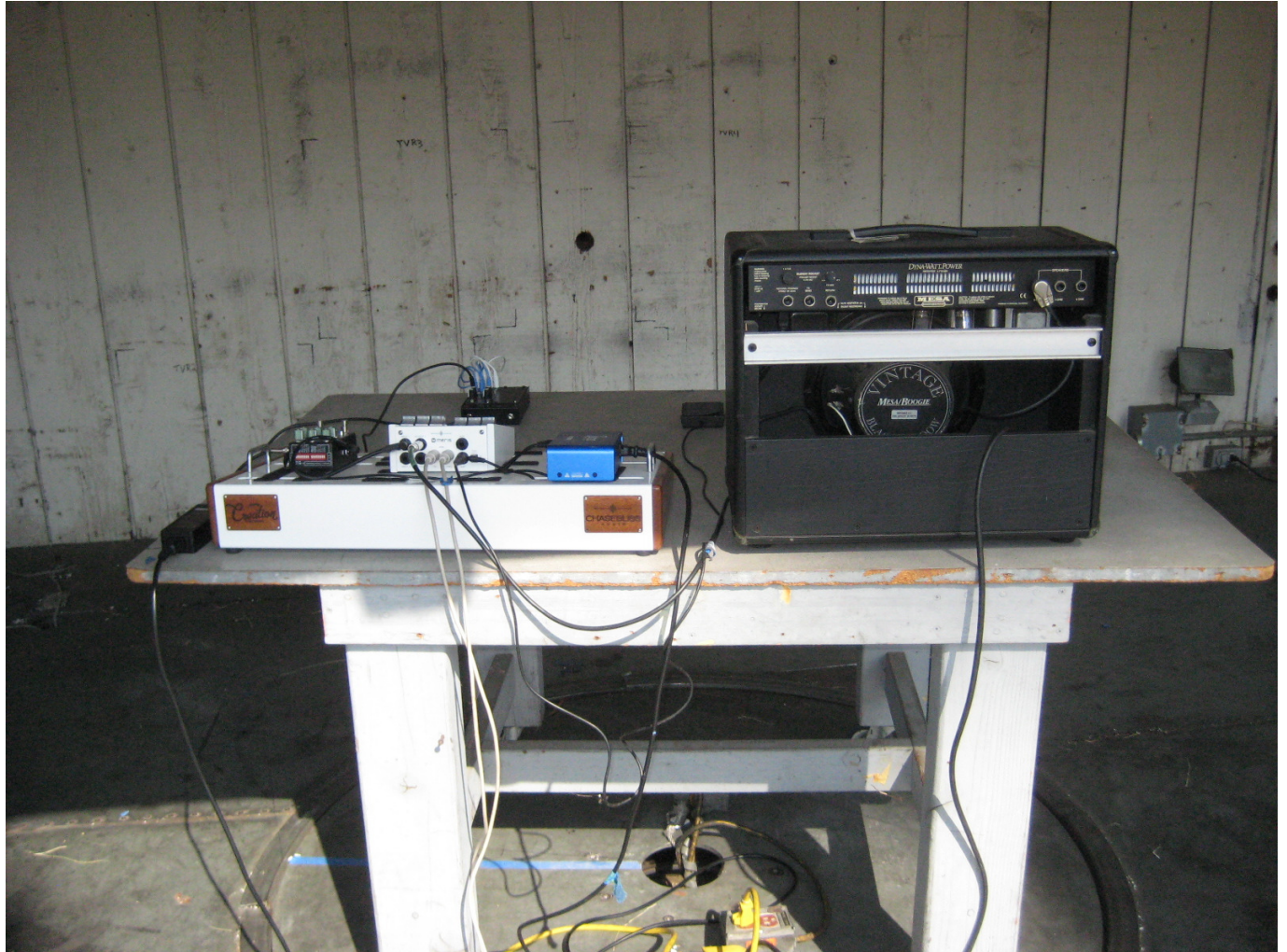
**CABLE CONNECTION DIAGRAM**



**PHOTOGRAPH SHOWING RADIATED EMISSIONS TEST (FRONT)**



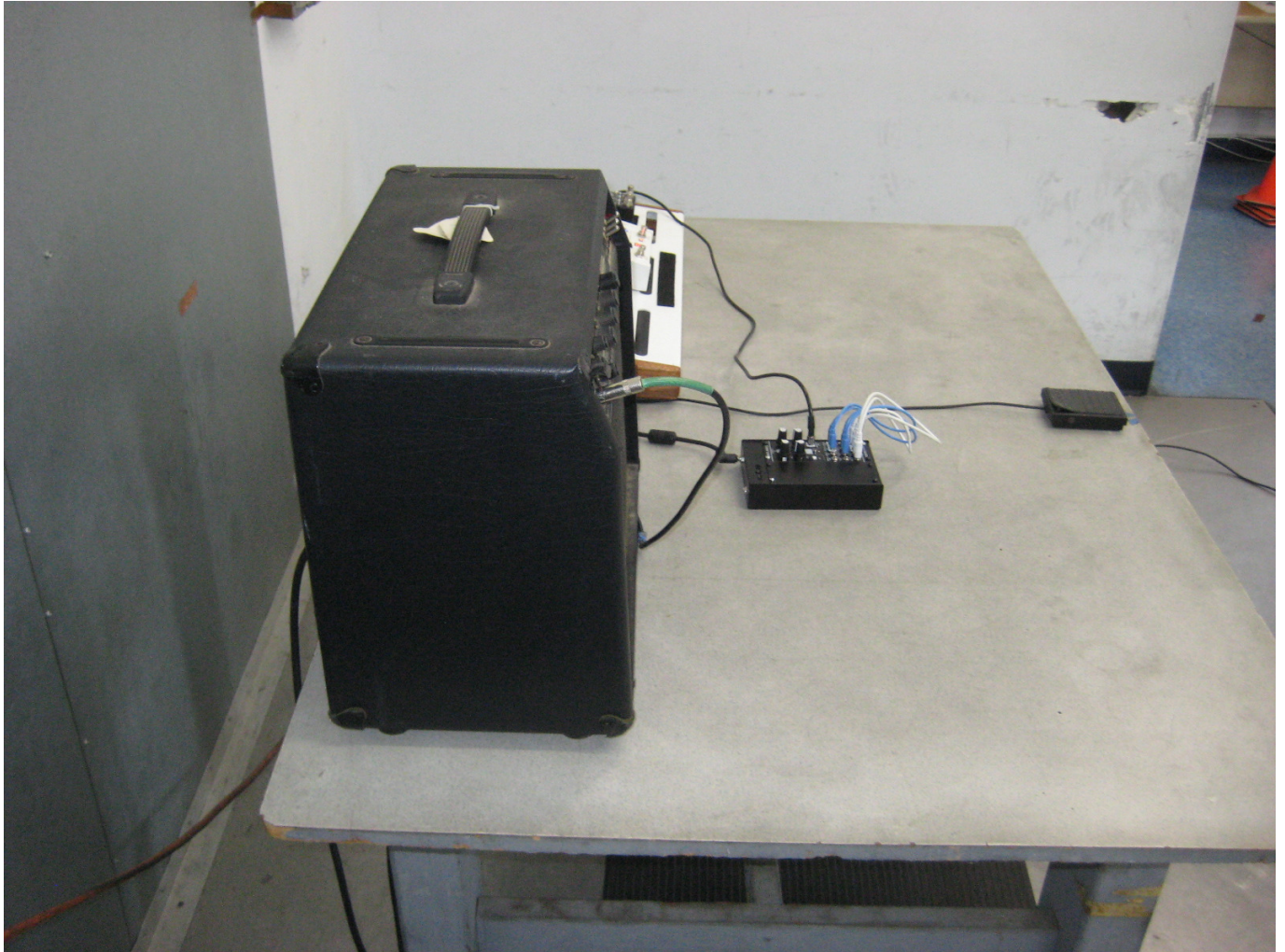
**PHOTOGRAPH SHOWING RADIATED EMISSIONS TEST (REAR)**



**PHOTOGRAPH SHOWING CONDUCTED EMISSIONS TEST (FRONT)**



**PHOTOGRAPH SHOWING CONDUCTED EMISSIONS TEST (REAR)**



**APPENDIX B**  
**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories Inc • 110 N Olinda Pl • Brea CA 92823 • 7149936112  
 Customer: **Electrosmith, Corp.**  
 Specification: **CISPR 32 Radiated Emissions Class A (3m)**  
 Work Order #: **106044** Date: 9/29/2021  
 Test Type: **Maximized Emissions** Time: 14:44:50  
 Tested By: S. Yamamoto Sequence#: 1  
 Software: EMITest 5.03.20

**Equipment Tested:**

| Device               | Manufacturer        | Model #               | S/N    |
|----------------------|---------------------|-----------------------|--------|
| Modular Music Device | Electrosmith, Corp. | Daisy Patch Submodule | (none) |

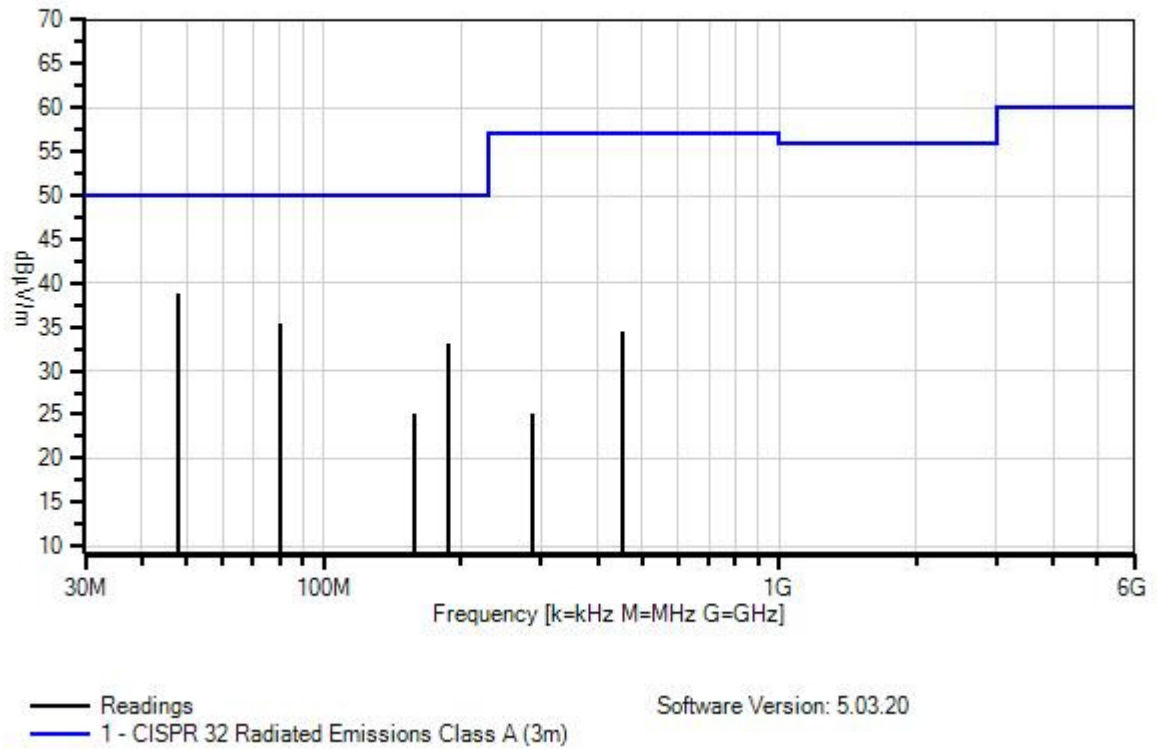
**Support Equipment:**

| Device                   | Manufacturer      | Model #                     | S/N        |
|--------------------------|-------------------|-----------------------------|------------|
| Power Supply             | Strymon           | Zuma                        | (none)     |
| Guitar Amplifier         | Mesa Engineering  | Mesa Boogie "Subway Rocket" |            |
| Guitar Pedal             | M-Audio           | Expression Pedal            | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Bliss Factory               | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Meris                       | (none)     |
| AC to 15Vdc Power Supply | Mean Well         | GSM60A15                    | EC094S0371 |

**Test Conditions / Notes:**

The equipment under test and support equipment are located together on the tabletop. The connections are as follows: Daisy Patch Submodule connected to Bliss Factory Pedal via 1/8" 3' shielded T.S. to 1/4" phono jack cable. Bliss Factory Pedal connected to Meris Pedal via 1/4" phono jack audio cable shielded 12". Meris Pedal connected to Expression Pedal. Meris Pedal has loopback MIDI cable shielded 6'. Meris Pedal connected to Mesa Engineering Mesa Boogie. Pedals connected to Strymon power supply. Daisy Patch Submodule has four 1/8" 8" shielded T.S. phono jack cables connected. Daisy Patch Submodule connected to AC to 15Vdc external power supply. System internal clock loop to analog output source. Voltage to the Mean Well AC to DC adapter, amplifier, and Strymon is 120Vac 60Hz. Temperature: 23C, Humidity: 52%, Pressure: 99kPa. Site A. RBW=120kHz VBW=1.2MHz

Electrosmith Corp. (Qubit Electronix) WO#: 106044 Sequence#: 1 Date: 9/29/2021  
 CISPR 32 Radiated Emissions Class A (3m) Test Distance: 3 Meters Horiz

**Test Equipment:**

| ID | Asset #/Serial # | Description | Model | Calibration Date | Cal Due Date |
|----|------------------|-------------|-------|------------------|--------------|
|----|------------------|-------------|-------|------------------|--------------|

**Measurement Data:**

Reading listed by order taken.

Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T5<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----------|----------|---------------|----------------|----------------|--------------|--------------|
| 1 | 48.000M     | 49.9         | +0.1     | -28.1    | +1.2     | +6.1     | +0.0     | +0.0          | 38.7           | 50.0           | -11.3        | Vert         |
|   |             |              | +9.5     |          |          |          |          |               |                |                |              |              |
| 2 | 80.000M     | 48.2         | +0.1     | -28.1    | +1.5     | +6.1     | +0.0     | +0.0          | 35.3           | 50.0           | -14.7        | Vert         |
|   |             |              | +7.5     |          |          |          |          |               |                |                |              |              |
| 3 | 188.000M    | 43.4         | +0.2     | -28.0    | +2.4     | +6.1     | +0.0     | +0.0          | 33.0           | 50.0           | -17.0        | Vert         |
|   |             |              | +8.9     |          |          |          |          |               |                |                |              |              |
| 4 | 188.000M    | 40.9         | +0.2     | -28.0    | +2.4     | +6.1     | +0.0     | +0.0          | 30.5           | 50.0           | -19.5        | Horiz        |
|   |             |              | +8.9     |          |          |          |          |               |                |                |              |              |
| 5 | 80.000M     | 41.7         | +0.1     | -28.1    | +1.5     | +6.1     | +0.0     | +0.0          | 28.8           | 50.0           | -21.2        | Horiz        |
|   |             |              | +7.5     |          |          |          |          |               |                |                |              |              |
| 6 | 452.600M    | 34.6         | +0.3     | -27.8    | +3.9     | +6.2     | +0.0     | +0.0          | 34.4           | 57.0           | -22.6        | Vert         |
|   |             |              | +17.2    |          |          |          |          |               |                |                |              |              |
| 7 | 159.000M    | 34.0         | +0.2     | -28.0    | +2.2     | +6.1     | +0.0     | +0.0          | 25.2           | 50.0           | -24.8        | Horiz        |
|   |             |              | +10.7    |          |          |          |          |               |                |                |              |              |
| 8 | 48.000M     | 35.6         | +0.1     | -28.1    | +1.2     | +6.1     | +0.0     | +0.0          | 24.4           | 50.0           | -25.6        | Horiz        |
|   |             |              | +9.5     |          |          |          |          |               |                |                |              |              |

REPORT NO. R210930C

|    |          |      |               |       |      |      |      |      |      |       |       |
|----|----------|------|---------------|-------|------|------|------|------|------|-------|-------|
| 9  | 159.000M | 32.2 | +0.2<br>+10.7 | -28.0 | +2.2 | +6.1 | +0.0 | 23.4 | 50.0 | -26.6 | Vert  |
| 10 | 452.600M | 29.6 | +0.3<br>+17.2 | -27.8 | +3.9 | +6.2 | +0.0 | 29.4 | 57.0 | -27.6 | Horiz |
| 11 | 287.800M | 30.6 | +0.2<br>+13.1 | -27.9 | +3.0 | +6.1 | +0.0 | 25.1 | 57.0 | -31.9 | Horiz |
| 12 | 287.800M | 28.4 | +0.2<br>+13.1 | -27.9 | +3.0 | +6.1 | +0.0 | 22.9 | 57.0 | -34.1 | Vert  |

Test Location: CKC Laboratories Inc • 110 N Olinda Pl • Brea CA 92823 • 7149936112  
 Customer: **Electrosmith, Corp.**  
 Specification: **CISPR 32 AC Mains Class A - Average**  
 Work Order #: **106044**  
 Test Type: **Conducted Emissions**  
 Tested By: S. Yamamoto  
 Software: EMITest 5.03.20

Date: 9/29/2021  
 Time: 3:22:14 PM  
 Sequence#: 4  
 120V 60Hz

**Equipment Tested:**

| Device               | Manufacturer        | Model #               | S/N    |
|----------------------|---------------------|-----------------------|--------|
| Modular Music Device | Electrosmith, Corp. | Daisy Patch Submodule | (none) |

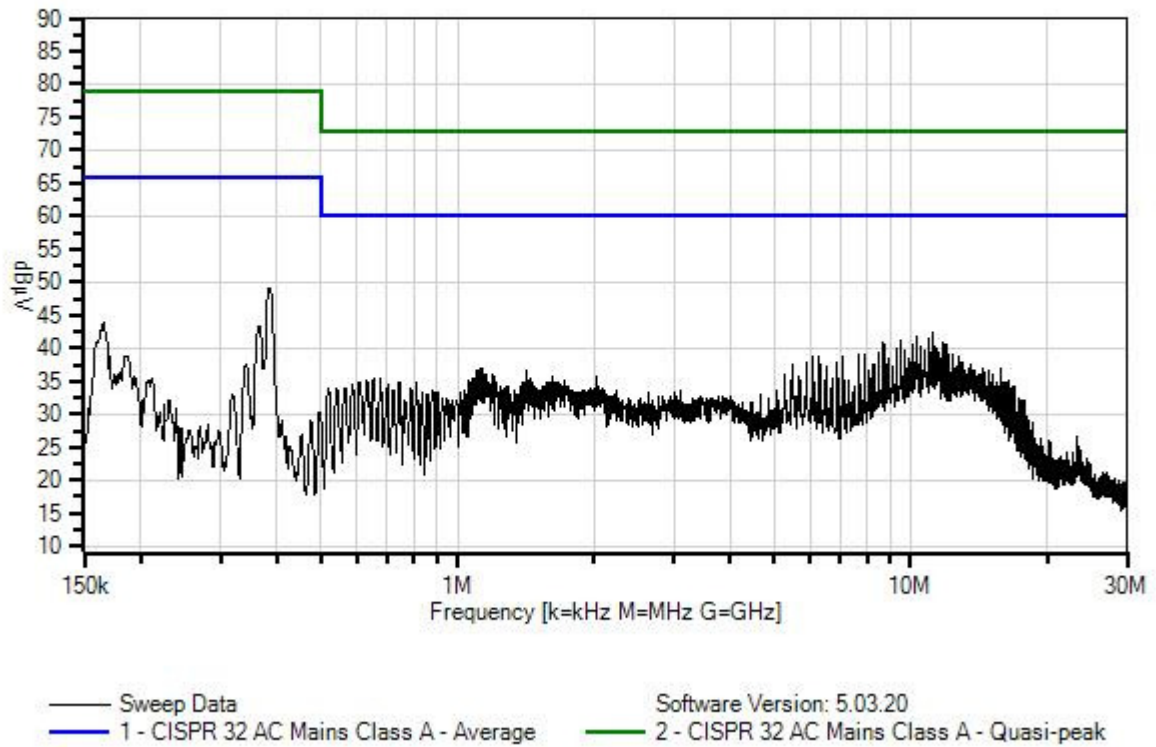
**Support Equipment:**

| Device                   | Manufacturer      | Model #                     | S/N        |
|--------------------------|-------------------|-----------------------------|------------|
| Power Supply             | Strymon           | Zuma                        | (none)     |
| Guitar Amplifier         | Mesa Engineering  | Mesa Boogie "Subway Rocket" |            |
| Guitar Pedal             | M-Audio           | Expression Pedal            | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Bliss Factory               | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Meris                       | (none)     |
| AC to 15Vdc Power Supply | Mean Well         | GSM60A15                    | EC094S0371 |

**Test Conditions / Notes:**

The equipment under test and support equipment are located together on the tabletop. The connections are as follows: Daisy Patch Submodule connected to Bliss Factory Pedal via 1/8" 3' shielded T.S. to 1/4" phono jack cable. Bliss Factory Pedal connected to Meris Pedal via 1/4" phono jack audio cable shielded 12". Meris Pedal connected to Expression Pedal. Meris Pedal has loopback MIDI cable shielded 6'. Meris Pedal connected to Mesa Engineering Mesa Boogie. Pedals connected to Strymon power supply. Daisy Patch Submodule has four 1/8" 8" shielded T.S. phono jack cables connected. Daisy Patch Submodule connected to AC to 15Vdc external power supply. System internal clock loop to analog output source. Voltage to the Mean Well AC to DC adapter, amplifier, and Strymon is 120Vac 60Hz. Temperature: 23C, Humidity: 52%, Pressure: 99kPa. Site A. RBW=9kHz VBW=30kHz

Electrosmith Corp. (Qubit Electronix) WO#: 106044 Sequence#: 4 Date: 9/29/2021  
 CISPR 32 AC Mains Class A - Average Test Lead: 120V 60Hz Line

**Test Equipment:**

| ID | Asset #/Serial # | Description | Model | Calibration Date | Cal Due Date |
|----|------------------|-------------|-------|------------------|--------------|
|----|------------------|-------------|-------|------------------|--------------|

**Measurement Data:**

Reading listed by order taken.

Test Lead: Line

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----------|---------------|--------------|--------------|--------------|--------------|
| 1 | 384.160k    | 43.3         | +0.2     | +0.0     | +5.7     | +0.0     | +0.0          | 49.2         | 66.0         | -16.8        | Line         |
| 2 | 11.148M     | 36.2         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 42.5         | 60.0         | -17.5        | Line         |
| 3 | 10.337M     | 35.5         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 41.9         | 60.0         | -18.1        | Line         |
| 4 | 10.950M     | 35.2         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 41.5         | 60.0         | -18.5        | Line         |
| 5 | 9.526M      | 34.7         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 41.1         | 60.0         | -18.9        | Line         |
| 6 | 8.716M      | 34.7         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 41.0         | 60.0         | -19.0        | Line         |
| 7 | 11.779M     | 34.5         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 40.8         | 60.0         | -19.2        | Line         |
| 8 | 10.130M     | 34.3         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 40.7         | 60.0         | -19.3        | Line         |

|    |          |      |      |      |      |      |      |      |      |       |      |
|----|----------|------|------|------|------|------|------|------|------|-------|------|
| 9  | 11.959M  | 34.2 | +0.2 | +0.3 | +5.7 | +0.2 | +0.0 | 40.6 | 60.0 | -19.4 | Line |
| 10 | 10.517M  | 34.1 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.4 | 60.0 | -19.6 | Line |
| 11 | 11.355M  | 34.1 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.4 | 60.0 | -19.6 | Line |
| 12 | 9.328M   | 33.6 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 40.0 | 60.0 | -20.0 | Line |
| 13 | 9.734M   | 33.5 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 39.9 | 60.0 | -20.1 | Line |
| 14 | 10.761M  | 33.3 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 39.6 | 60.0 | -20.4 | Line |
| 15 | 11.571M  | 33.3 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 39.6 | 60.0 | -20.4 | Line |
| 16 | 8.517M   | 33.1 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 39.4 | 60.0 | -20.6 | Line |
| 17 | 7.697M   | 32.9 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 39.1 | 60.0 | -20.9 | Line |
| 18 | 7.905M   | 32.9 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 39.1 | 60.0 | -20.9 | Line |
| 19 | 12.166M  | 32.7 | +0.2 | +0.3 | +5.7 | +0.2 | +0.0 | 39.1 | 60.0 | -20.9 | Line |
| 20 | 6.283M   | 32.8 | +0.1 | +0.2 | +5.7 | +0.1 | +0.0 | 38.9 | 60.0 | -21.1 | Line |
| 21 | 6.085M   | 32.8 | +0.1 | +0.2 | +5.7 | +0.1 | +0.0 | 38.9 | 60.0 | -21.1 | Line |
| 22 | 12.770M  | 32.4 | +0.2 | +0.3 | +5.8 | +0.2 | +0.0 | 38.9 | 60.0 | -21.1 | Line |
| 23 | 12.382M  | 32.4 | +0.2 | +0.3 | +5.8 | +0.2 | +0.0 | 38.9 | 60.0 | -21.1 | Line |
| 24 | 7.094M   | 32.6 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 38.8 | 60.0 | -21.2 | Line |
| 25 | 8.914M   | 32.3 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 38.6 | 60.0 | -21.4 | Line |
| 26 | 9.914M   | 32.2 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 38.6 | 60.0 | -21.4 | Line |
| 27 | 9.950M   | 32.0 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 38.4 | 60.0 | -21.6 | Line |
| 28 | 12.977M  | 31.6 | +0.2 | +0.3 | +5.8 | +0.2 | +0.0 | 38.1 | 60.0 | -21.9 | Line |
| 29 | 165.271k | 37.8 | +0.4 | +0.0 | +5.7 | +0.0 | +0.0 | 43.9 | 66.0 | -22.1 | Line |
| 30 | 6.896M   | 31.7 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 37.9 | 60.0 | -22.1 | Line |

Test Location: CKC Laboratories Inc • 110 N Olinda Pl • Brea CA 92823 • 7149936112  
 Customer: **Electrosmith, Corp.**  
 Specification: **CISPR 32 AC Mains Class A - Average**  
 Work Order #: **106044**  
 Test Type: **Conducted Emissions**  
 Tested By: S. Yamamoto  
 Software: EMITest 5.03.20

Date: 9/29/2021  
 Time: 3:25:05 PM  
 Sequence#: 5  
 120V 60Hz

**Equipment Tested:**

| Device               | Manufacturer        | Model #               | S/N    |
|----------------------|---------------------|-----------------------|--------|
| Modular Music Device | Electrosmith, Corp. | Daisy Patch Submodule | (none) |

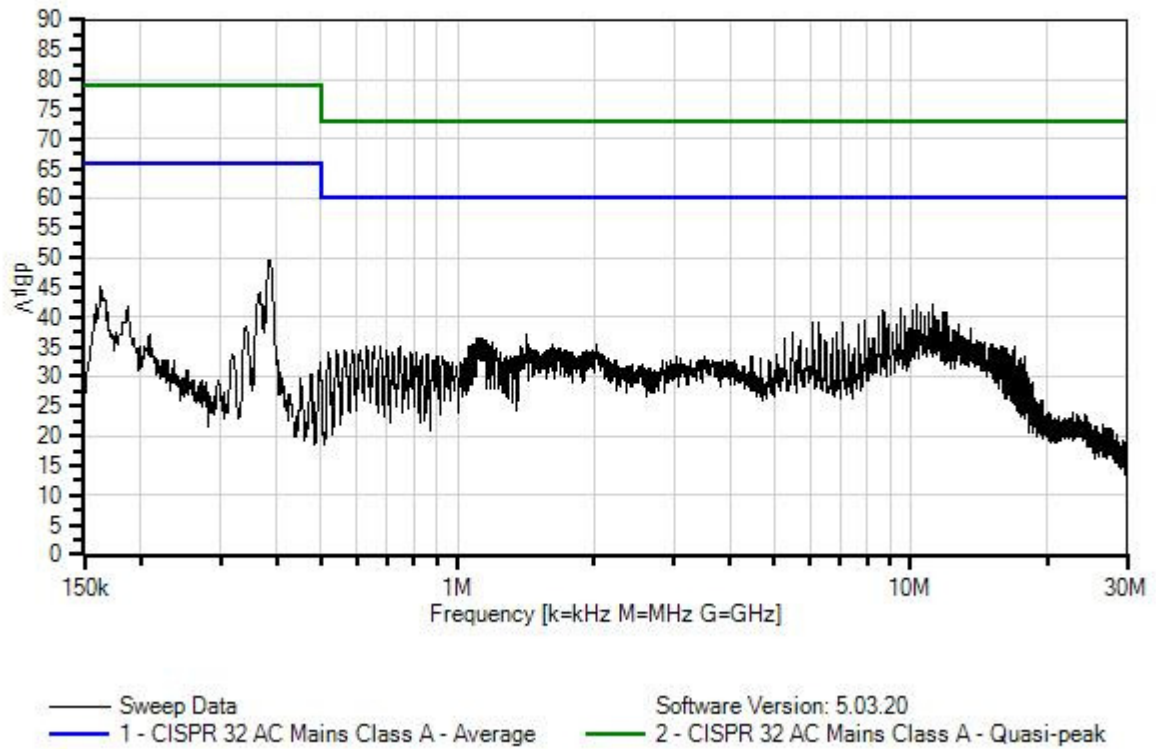
**Support Equipment:**

| Device                   | Manufacturer      | Model #                     | S/N        |
|--------------------------|-------------------|-----------------------------|------------|
| Power Supply             | Strymon           | Zuma                        | (none)     |
| Guitar Amplifier         | Mesa Engineering  | Mesa Boogie "Subway Rocket" |            |
| Guitar Pedal             | M-Audio           | Expression Pedal            | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Bliss Factory               | (none)     |
| Guitar Pedal             | Chase Bliss Audio | Meris                       | (none)     |
| AC to 15Vdc Power Supply | Mean Well         | GSM60A15                    | EC094S0371 |

**Test Conditions / Notes:**

The equipment under test and support equipment are located together on the tabletop. The connections are as follows: Daisy Patch Submodule connected to Bliss Factory Pedal via 1/8" 3' shielded T.S. to 1/4" phono jack cable. Bliss Factory Pedal connected to Meris Pedal via 1/4" phono jack audio cable shielded 12". Meris Pedal connected to Expression Pedal. Meris Pedal has loopback MIDI cable shielded 6'. Meris Pedal connected to Mesa Engineering Mesa Boogie. Pedals connected to Strymon power supply. Daisy Patch Submodule has four 1/8" 8" shielded T.S. phono jack cables connected. Daisy Patch Submodule connected to AC to 15Vdc external power supply. System internal clock loop to analog output source. Voltage to the Mean Well AC to DC adapter, amplifier, and Strymon is 120Vac 60Hz. Temperature: 23C, Humidity: 52%, Pressure: 99kPa. Site A. RBW=9kHz VBW=30kHz

Electrosmith Corp. (Qubit Electronix) WO#: 106044 Sequence#: 5 Date: 9/29/2021  
 CISPR 32 AC Mains Class A - Average Test Lead: 120V 60Hz Neutral

**Test Equipment:**

| ID | Asset #/Serial # | Description | Model | Calibration Date | Cal Due Date |
|----|------------------|-------------|-------|------------------|--------------|
|----|------------------|-------------|-------|------------------|--------------|

**Measurement Data:**

Reading listed by order taken.

Test Lead: Neutral

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----------|---------------|--------------|--------------|--------------|--------------|
| 1 | 384.887k    | 43.8         | +0.2     | +0.0     | +5.7     | +0.0     | +0.0          | 49.7         | 66.0         | -16.3        | Neutr        |
| 2 | 11.148M     | 36.0         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 42.3         | 60.0         | -17.7        | Neutr        |
| 3 | 10.337M     | 35.8         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 42.2         | 60.0         | -17.8        | Neutr        |
| 4 | 9.526M      | 35.3         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 41.7         | 60.0         | -18.3        | Neutr        |
| 5 | 8.716M      | 35.1         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 41.4         | 60.0         | -18.6        | Neutr        |
| 6 | 10.130M     | 34.7         | +0.1     | +0.3     | +5.7     | +0.3     | +0.0          | 41.1         | 60.0         | -18.9        | Neutr        |
| 7 | 11.959M     | 34.6         | +0.2     | +0.3     | +5.7     | +0.2     | +0.0          | 41.0         | 60.0         | -19.0        | Neutr        |
| 8 | 10.544M     | 34.6         | +0.1     | +0.3     | +5.7     | +0.2     | +0.0          | 40.9         | 60.0         | -19.1        | Neutr        |

|    |          |      |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|------|-------|-------|
| 9  | 11.761M  | 34.6 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.9 | 60.0 | -19.1 | Neutr |
| 10 | 10.941M  | 34.4 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.7 | 60.0 | -19.3 | Neutr |
| 11 | 10.319M  | 33.9 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 40.3 | 60.0 | -19.7 | Neutr |
| 12 | 9.734M   | 33.8 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 40.2 | 60.0 | -19.8 | Neutr |
| 13 | 11.346M  | 33.9 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.2 | 60.0 | -19.8 | Neutr |
| 14 | 8.517M   | 33.8 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.1 | 60.0 | -19.9 | Neutr |
| 15 | 10.725M  | 33.8 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 40.1 | 60.0 | -19.9 | Neutr |
| 16 | 11.571M  | 33.4 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 39.7 | 60.0 | -20.3 | Neutr |
| 17 | 7.905M   | 33.4 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 39.6 | 60.0 | -20.4 | Neutr |
| 18 | 10.761M  | 33.1 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 39.4 | 60.0 | -20.6 | Neutr |
| 19 | 163.089k | 39.2 | +0.4 | +0.0 | +5.7 | +0.0 | +0.0 | 45.3 | 66.0 | -20.7 | Neutr |
| 20 | 6.283M   | 33.1 | +0.1 | +0.2 | +5.7 | +0.1 | +0.0 | 39.2 | 60.0 | -20.8 | Neutr |
| 21 | 7.094M   | 33.1 | +0.1 | +0.2 | +5.7 | +0.1 | +0.0 | 39.2 | 60.0 | -20.8 | Neutr |
| 22 | 6.076M   | 33.0 | +0.1 | +0.2 | +5.7 | +0.1 | +0.0 | 39.1 | 60.0 | -20.9 | Neutr |
| 23 | 7.707M   | 32.7 | +0.1 | +0.2 | +5.7 | +0.2 | +0.0 | 38.9 | 60.0 | -21.1 | Neutr |
| 24 | 9.319M   | 32.4 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 38.8 | 60.0 | -21.2 | Neutr |
| 25 | 12.770M  | 32.2 | +0.2 | +0.3 | +5.8 | +0.3 | +0.0 | 38.8 | 60.0 | -21.2 | Neutr |
| 26 | 8.914M   | 32.4 | +0.1 | +0.3 | +5.7 | +0.2 | +0.0 | 38.7 | 60.0 | -21.3 | Neutr |
| 27 | 12.166M  | 32.1 | +0.2 | +0.3 | +5.7 | +0.2 | +0.0 | 38.5 | 60.0 | -21.5 | Neutr |
| 28 | 365.980k | 38.2 | +0.2 | +0.0 | +5.8 | +0.0 | +0.0 | 44.2 | 66.0 | -21.8 | Neutr |
| 29 | 9.950M   | 31.8 | +0.1 | +0.3 | +5.7 | +0.3 | +0.0 | 38.2 | 60.0 | -21.8 | Neutr |
| 30 | 13.580M  | 31.4 | +0.2 | +0.3 | +5.8 | +0.3 | +0.0 | 38.0 | 60.0 | -22.0 | Neutr |

**EN61000-3-2  
HARMONICS CURRENTS  
And  
EN61000-3-3  
FLICKER TESTING**

| <b>Test</b>                         | <b>Result</b> | <b>EUT condition</b> |
|-------------------------------------|---------------|----------------------|
| Fluctuating Harmonics #1            | Pass          |                      |
| Fluctuating Harmonics #2            | Pass          |                      |
| Fluctuating Harmonics Repeatability | Pass          |                      |
| Flicker                             | Pass          | Normal Steady State  |

**EN55103-2 (2009)**

EN61000-4-3

Radiated Immunity at 3V/m with 80% 1kHz AM

| Frequency Range<br>MHz | Test<br>Distance | Front<br>V/H | Back<br>V/H | Left Side<br>V/H | Right Side<br>V/H | Performance<br>Criterion |
|------------------------|------------------|--------------|-------------|------------------|-------------------|--------------------------|
| 80-1000                | 3                | NA           | Pass        | NA               | NA                | A                        |

**EN55103-2 (2009)**

EN61000-4-6

Conducted Immunity at 3Vrms with 80% 1kHz AM

| Cable Tested  | Frequency Range | Pass/fail | Performance Criterion |
|---------------|-----------------|-----------|-----------------------|
| AC Power Line | .15-80MHz       | Pass      | A                     |
| Signal Lines  | .15-80MHz       | Pass      | A                     |
|               |                 |           |                       |

## KeyTek CEWare Sequence List Report

Sequence File: C:\KEYTEK\_CEWARE32

LIST REPEATS: 1

MODELS: DAISY PATCH SUBMODULE

| SEQUENCE | TYPE      | REPEATS | SEQUENCE DESCRIPTION           |
|----------|-----------|---------|--------------------------------|
| ESD      | Standard  | 10      | Air 8 kV                       |
|          | Pause/Msg | Voltage | Tip Type Mode Rep. Rate Pulses |
|          |           | -8000V  | Air Normal 1 pps 10            |
|          |           | 8000V   | Air Normal 1 pps 10            |

| SEQUENCE | TYPE      | REPEATS | SEQUENCE DESCRIPTION           |
|----------|-----------|---------|--------------------------------|
| ESD      | Standard  | 10      | Contact 4 kV                   |
|          | Pause/Msg | Voltage | Tip Type Mode Rep. Rate Pulses |
|          |           | -4000V  | Contact Normal 1 pps 10        |
|          |           | 4000V   | Contact Normal 1 pps 10        |

| SEQUENCE | TYPE      | REPEATS   | SEQUENCE DESCRIPTION       |
|----------|-----------|-----------|----------------------------|
| EFT      | Standard  | 1         | Class2                     |
|          | Pause/Msg | Frequency | Voltage Output:LC Duration |
|          |           | 5.0 kHz   | -1000V MAINS:L1 60 sec.    |
|          |           | 5.0 kHz   | 1000V MAINS:L1 60 sec.     |
|          |           | 5.0 kHz   | -1000V MAINS:L2 60 sec.    |
|          |           | 5.0 kHz   | 1000V MAINS:L2 60 sec.     |
|          |           | 5.0 kHz   | -1000V MAINS:PE 60 sec.    |
|          |           | 5.0 kHz   | 1000V MAINS:PE 60 sec.     |

| SEQUENCE   | TYPE      | REPEATS  | SEQUENCE DESCRIPTION                          |
|------------|-----------|----------|-----------------------------------------------|
| Srg 1.2/50 | Standard  | 1        | Class 3 Full                                  |
|            | Pause/Msg | Waveform | Voltage Output:LC Phs Ref Phs Ang Tests Delay |
|            |           | 12 Ohm   | -500V MAINS:L1/PE L1 0 deg. 5 60 sec.         |
|            |           | 12 Ohm   | -500V MAINS:L1/PE L1 90 deg. 5 60 sec.        |
|            |           | 12 Ohm   | -500V MAINS:L1/PE L1 270 deg. 5 60 sec.       |
|            |           | 12 Ohm   | 500V MAINS:L1/PE L1 0 deg. 5 60 sec.          |
|            |           | 12 Ohm   | 500V MAINS:L1/PE L1 90 deg. 5 60 sec.         |
|            |           | 12 Ohm   | 500V MAINS:L1/PE L1 270 deg. 5 60 sec.        |
|            |           | 12 Ohm   | -500V MAINS:L2/PE L1 0 deg. 5 60 sec.         |
|            |           | 12 Ohm   | -500V MAINS:L2/PE L1 90 deg. 5 60 sec.        |
|            |           | 12 Ohm   | -500V MAINS:L2/PE L1 270 deg. 5 60 sec.       |
|            |           | 12 Ohm   | 500V MAINS:L2/PE L1 0 deg. 5 60 sec.          |
|            |           | 12 Ohm   | 500V MAINS:L2/PE L1 90 deg. 5 60 sec.         |
|            |           | 12 Ohm   | 500V MAINS:L2/PE L1 270 deg. 5 60 sec.        |
|            |           | 2 Ohm    | -250V MAINS:L1/L2 L1 0 deg. 5 60 sec.         |
|            |           | 2 Ohm    | -250V MAINS:L1/L2 L1 90 deg. 5 60 sec.        |
|            |           | 2 Ohm    | -250V MAINS:L1/L2 L1 270 deg. 5 60 sec.       |
|            |           | 2 Ohm    | 250V MAINS:L1/L2 L1 0 deg. 5 60 sec.          |

## KeyTek CEWare Sequence List Report

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|        |        |             |    |          |   |         |
|--------|--------|-------------|----|----------|---|---------|
| 2 Ohm  | 250V   | MAINS:L1/L2 | L1 | 90 deg.  | 5 | 60 sec. |
| 2 Ohm  | 250V   | MAINS:L1/L2 | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L1/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L1/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L1/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L1/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L1/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L1/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L2/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L2/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | -1000V | MAINS:L2/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L2/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L2/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | 1000V  | MAINS:L2/PE | L1 | 270 deg. | 5 | 60 sec. |
| 2 Ohm  | -500V  | MAINS:L1/L2 | L1 | 0 deg.   | 5 | 60 sec. |
| 2 Ohm  | -500V  | MAINS:L1/L2 | L1 | 90 deg.  | 5 | 60 sec. |
| 2 Ohm  | -500V  | MAINS:L1/L2 | L1 | 270 deg. | 5 | 60 sec. |
| 2 Ohm  | 500V   | MAINS:L1/L2 | L1 | 0 deg.   | 5 | 60 sec. |
| 2 Ohm  | 500V   | MAINS:L1/L2 | L1 | 90 deg.  | 5 | 60 sec. |
| 2 Ohm  | 500V   | MAINS:L1/L2 | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L1/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L1/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L1/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L1/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L1/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L1/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L2/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L2/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | -2000V | MAINS:L2/PE | L1 | 270 deg. | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L2/PE | L1 | 0 deg.   | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L2/PE | L1 | 90 deg.  | 5 | 60 sec. |
| 12 Ohm | 2000V  | MAINS:L2/PE | L1 | 270 deg. | 5 | 60 sec. |
| 2 Ohm  | -1000V | MAINS:L1/L2 | L1 | 0 deg.   | 5 | 60 sec. |
| 2 Ohm  | -1000V | MAINS:L1/L2 | L1 | 90 deg.  | 5 | 60 sec. |
| 2 Ohm  | -1000V | MAINS:L1/L2 | L1 | 270 deg. | 5 | 60 sec. |
| 2 Ohm  | 1000V  | MAINS:L1/L2 | L1 | 0 deg.   | 5 | 60 sec. |
| 2 Ohm  | 1000V  | MAINS:L1/L2 | L1 | 90 deg.  | 5 | 60 sec. |
| 2 Ohm  | 1000V  | MAINS:L1/L2 | L1 | 270 deg. | 5 | 60 sec. |

| SEQUENCE  | TYPE         | REPEATS    | SEQUENCE DESCRIPTION |
|-----------|--------------|------------|----------------------|
| HPower    | User Defined | 1          | User Defined         |
| Pause/Msg | Coil Factor  | Field Str. | Line                 |
|           | 0.87         | 3.00 A/m   | 50 Hz                |
|           |              |            | Duration             |
|           |              |            | 30 sec.              |

| SEQUENCE  | TYPE       | REPEATS | SEQUENCE DESCRIPTION |
|-----------|------------|---------|----------------------|
| PQF       | Standard   | 1       | Combination          |
| Pause/Msg | Test Level | Phs Ang | Dur. Value           |
|           | 70% Dip    | 0 deg.  | 0.01                 |
|           |            |         | Duration             |
|           |            |         | sec                  |
|           |            |         | Tests                |
|           |            |         | 3                    |
|           |            |         | Delay                |
|           |            |         | 10 sec.              |

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## KeyTek CEWare Sequence List Report

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|          |     |      |     |   |         |
|----------|-----|------|-----|---|---------|
| 70% Dip  | 180 | 0.01 | sec | 3 | 10 sec. |
| 40% Dip  | 0   | 0.10 | sec | 3 | 10 sec. |
| 0% Short | 0   | 5.00 | sec | 3 | 10 sec. |
| 0% Open  | 0   | 5.00 | sec | 3 | 10 sec. |