



Engineering Test Report No. 2204008-01

Report Date	February 15, 2023	
Manufacturer Name	Cala Health, Inc	
Manufacturer Address	1800 Gateway Drive, Suite 300 San Mateo, CA 94404	
Product Name Brand/Model No.	SW100	
Date Received	February 8, 2023	
Test Dates	February 8, 2023 to February 15, 2023	
Specifications	FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C Innovation, Science, and Economic Development Canada, ICES-003 Innovation, Science, and Economic Development Canada, RSS-247	
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515	FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107
Signature		
Tested by	Javier Cardenas	
Signature		
Approved by	Raymond J. Klouda, Registered Professional Engineer of Illinois – 44894	
PO Number	PO2821	

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1. Report Revision History

Revision	Date	Description
–	16 MAR 2023	Initial Release of Engineering Test Report No. 2204008-01

2. Introduction

This document presents the results of a series of electromagnetic compatibility (EMC) tests that were performed on one(1) wrist-worn tremor therapy device (hereinafter referred to as the Equipment Under Test (EUT)).

Additionally, this document presents the results of limited spurious emissions measurements performed on the EUT. The EUT is equipped with a pre-certified radio module, FCC ID XPYBMD380, IC ID 8595A-BMD380, operating in the 2400MHz to 2483.5MHz band. The nature of these measurements is to ensure that the radio module and host remain in compliance with the emissions requirements of the FCC and after the integration process.

The EUT was identified as follows:

EUT Identification	
Description	Cala Trio wrist-worn tremor therapy device
Model/Part No.	SW100
Serial No.	SA00211
Number of Interconnection Wires	0
Type of Interconnection Wires	NA
Highest Internal Frequency of the EUT	2480MHz

The EUT listed above was used throughout the test series.

3. Power Input

The EUT was powered by internal batteries.

4. Grounding

The EUT was not connected to ground.

5. Support Equipment

The EUT was submitted for testing along with the following support equipment:

Description	Model #	S/N
Base Charger	BW100	BA00067

6. Interconnect Leads

No interconnect leads were used during the tests.

7. Modifications Made to the EUT

No modifications were made to the EUT during the testing.

8. Modes of Operation

The EMC tests were performed with the EUTs operating in the following test modes described below:

8.1. Normal Operation

This mode was achieved by powering up the device. A session was started using the UI of the device.

8.2. Paired

This mode was achieved by powering up the EUT with the support equipment attached. The support equipment would pair wirelessly via BLE with the EUT.

9. Test Specifications

The tests were performed to selected portions of, and in accordance with the following test specifications:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart B
- Federal Communications Commission "Code of Federal Regulations", Title 47, Chapter I, Subchapter A, Part 15, Subpart C, Section 15.247
- ICES-003, Issue 7, October 15, 2020, "Information Technology Equipment (including Digital Apparatus)"
- RSS-Gen, Issue 5, February 2021, Amendment 2, "General Requirements for Compliance of Radio Apparatus"
- RSS-247, Issue 2, February 2017, "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices"
- 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"
- ANSI C63.10-2013, "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- 996369 D04 Module Integration Guide v02, October 13, 2020

10. Test Plan

No test plan was provided. Instructions were provided by personnel from Cala Health, Inc and used in conjunction with the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B, Innovation, Science, and Economic Development Canada, ICES-003, and ANSI C63.4-2014 specifications.

11. Deviation, Additions to, or Exclusions from Test Specifications

There were no deviations, additions to, or exclusions from the test specifications during this test series.

12. Laboratory Conditions

The following were the laboratory conditions while the EMC tests were performed:

Ambient Parameters	Value
Temperature	20°C
Relative Humidity	24%
Atmospheric Pressure	1004.7mb

13. Summary

The following EMC tests were performed, and the results are shown below:

Test Description	Test Requirements	Test Methods	Equipment Class	EUT S/N	Results
RF Radiated Emissions	FCC 15B 15.109 ISED ICES-003, Section 3.2.2	ANSI C63.4:2014	B	SA00211	Conforms
Module Integration – Emissions	FCC 15C ISED RSS-247	ANSI C63.10:2013	NA	SA00211	Conforms

14. Sample Calculations

For Powerline Conducted Emissions:

The resultant voltage level (VL) is a summation in decibels (dB) of the receiver meter reading (MTR) and the cable loss factor (CF).

$$\text{Formula 1: } VL \text{ (dB}\mu\text{V)} = \text{MTR (dB}\mu\text{V)} + \text{CF (dB)}.$$

For Radiated Emissions:

The resultant field strength (FS) is a summation in decibels (dB) of the receiver meter reading (MTR), the antenna correction factor (AF), and the cable loss factor (CF). If an external preamplifier is used, the total is reduced by its gain (-PA). If a distance correction (DC) is required, it is added to the total.

$$\text{Formula 1: } FS \text{ (dB}\mu\text{V/m)} = \text{MTR (dB}\mu\text{V)} + \text{AF (dB/m)} + \text{CF (dB)} + (-\text{PA (dB)}) + \text{DC (dB)}$$

To convert the Field Strength dB μ V/m term to μ V/m, the dB μ V/m is first divided by 20. The Base 10 AntiLog is taken of this quotient. The result is the Field Strength value in μ V/m terms.

$$\text{Formula 2: } FS \text{ (}\mu\text{V/m)} = \text{AntiLog} [(FS \text{ (dB}\mu\text{V/m)})/20]$$

15. Statement of Conformity

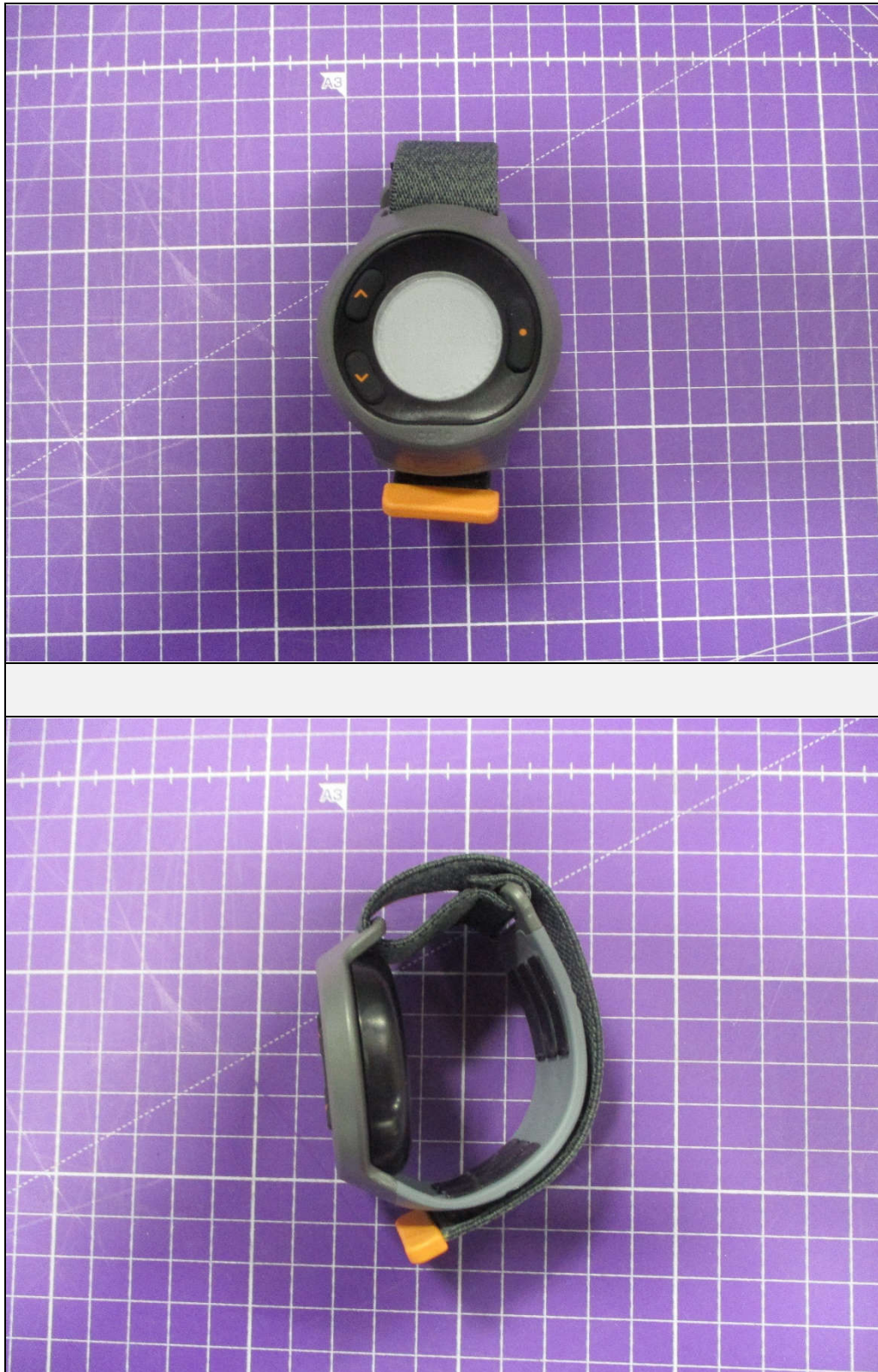
The Cala Health, Inc wrist-worn tremor therapy device, Model No. SW100, Serial No. SA00211, did fully conform to the selected requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B and Innovation, Science, and Economic Development Canada, ICES-003.

Additionally, the Cala Health, Inc wrist-worn tremor therapy device BLE host/radio system, did conform to the spurious emissions requirements of FCC "Code of Federal Regulations" Title 47 Part 15, Subpart C, Section 15.247 and Innovation, Science, and Economic Development Canada, RSS-247.

16. Certification

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the FCC "Code of Federal Regulations" Title 47 Part 15, Subpart B and Innovation, Science, and Economic Development Canada, ICES-003 test specifications. The data presented in this test report pertains to the EUT on the test date specified. Any electrical or mechanical modifications made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.

17. Photographs of EUT





18. Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW14	PREAMPLIFIER	PLANAR	PE2-35-120-5R0-10-12-SFF	PL22671	1-20GHz	9/21/2022	9/21/2023
CDX7	COMPUTER	ELITE	WORKSTATION			N/A	
CDZ3	LAB WORKSTATION	ELITE	LWS-10		WINDOWS 10	CNR	
NTA3	BILOG ANTENNA	TESEQ	6112D	32853	25-1000MHz	11/17/2022	11/17/2024
NWQ1	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS-LINDGREN	3117	66655	1GHZ-18GHZ	5/26/2022	5/26/2024
R29F	3M ANECHOIC CHAMBER NSA	EMC TEST SYSTEMS	3M ANECHOIC		30MHZ-18GHZ	3/25/2022	3/25/2023
RBG2	EMI ANALYZER	ROHDE & SCHWARZ	ESW44	101591	2HZ-44GHZ	3/31/2022	3/31/2023
RBH5	EMI ANALYZER	ROHDE & SCHWARZ	ESW26	103068	2HZ-26GHZ	12/8/2022	12/8/2023
SES0	24VDC POWER SUPPLY	P-TRANS	FS-32024-1M	001	18-27VDC	NOTE 1	
T1N1	10DB 20W ATTENUATOR	NARDA	766-10	---	DC-4GHZ	1/6/2022	1/6/2024
VBV2	CISPR EN FCC ICES RE.EXE	ELITE	CISPR EN FCC ICES RE.EXE	---	---	N/A	
WKA1	SOFTWARE, UNIVERSAL RCV EMI	ELITE	UNIV_RCV_EMI	1	---	I/O	
XPQ4	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000-O/O	1	4.8-20GHZ	9/7/2021	9/7/2023

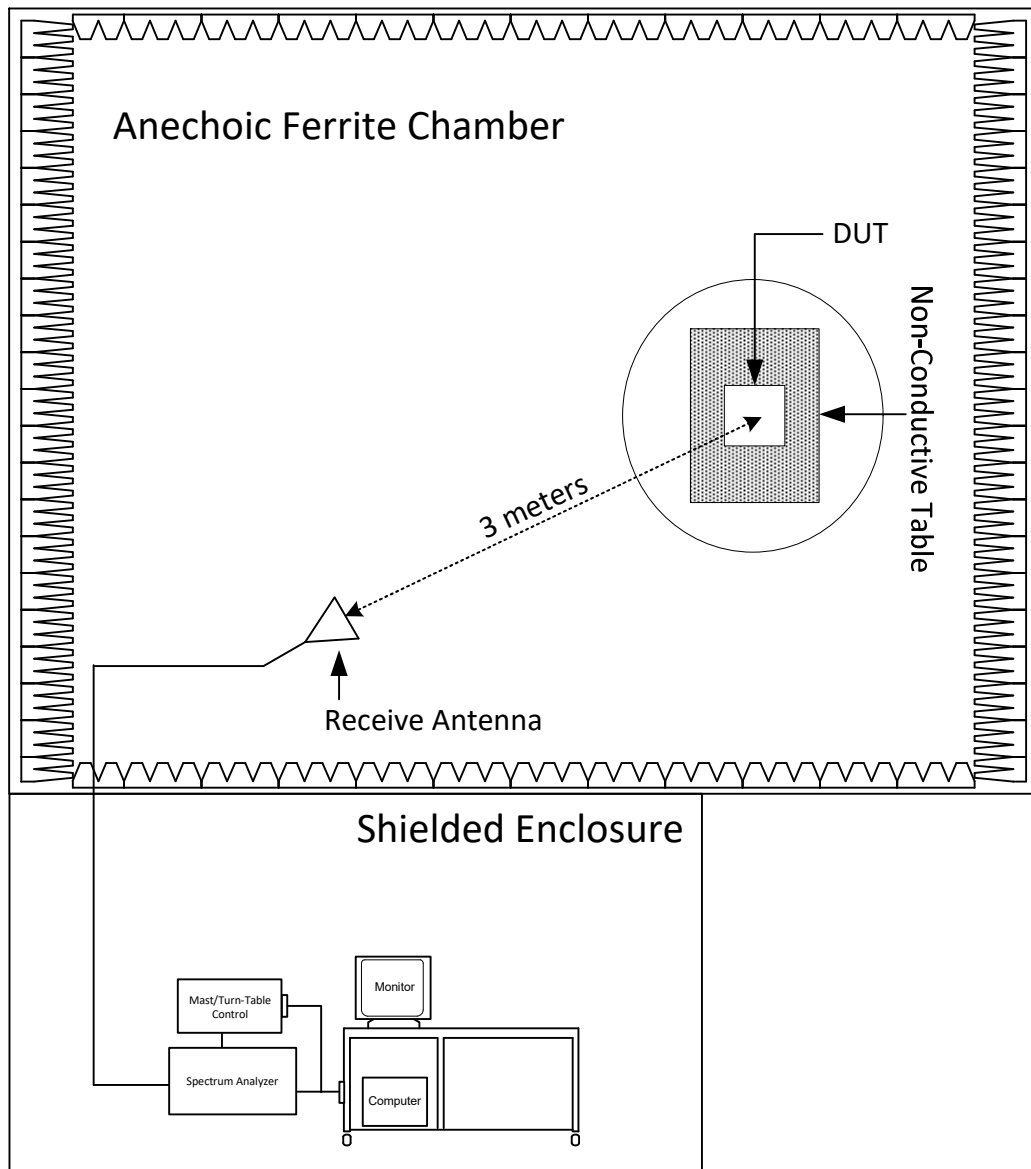
N/A: Not Applicable

I/O: Initial Only

CNR: Calibration Not Required

NOTE 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

19. Block Diagram of Test Setup



Radiated Measurements Test Setup

20. RF Radiated Emissions

EUT Information	
Manufacturer	Cala Health, Inc
Product	wrist-worn tremor therapy device
Model No.	SW100
Serial No.	SA00211
Mode	Normal Operation

Test Site Information	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R29F
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)
Highest Internal Frequency	2.4GHz
Highest Measurement Frequency	13GHz
Notes	The cables were manually maximized during the preliminary emissions sweeps. The cable arrangement which resulted in the worst-case emissions was utilized.

Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1
Radiated disturbance (electric field strength on an open area test site or alternative test site) (6 GHz – 18 GHz)	3.2
Radiated disturbance (electric field strength on an open area test site or alternative test site) (18 GHz – 26.5 GHz)	3.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (26.5 GHz – 40 GHz)	3.4

Requirements
The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the values in the following tables.

FCC Part 15 Class B Radiated Emissions Limits (30MHz to 1GHz)		
Frequency of Emission (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)
30 – 88	100	40
88 – 216	150	43.5
216 – 960	200	46
Above 960	500	54
FCC Part 15 Class B Radiated Emissions Limits (Above 1GHz)		
Frequency of Emission (MHz)	Peak Limit (dB $\mu\text{V/m}$)	Average Limit (dB $\mu\text{V/m}$)
Above 1000	74	54

ICES-003 Class B Radiated Emissions Limits (30MHz to 1GHz)		
Frequency Range (MHz)	Field Strength at 3 meters (dB $\mu\text{V/m}$)	Field Strength at 10 meters (dB $\mu\text{V/m}$)
30 – 88	40	30
88 – 216	43.5	33.1
216 – 230	46	35.6
230 – 960	47	37
960 – 1000	54	43.5
ICES-003 Class B Radiated Emissions Limits (At and Above 1GHz)		
Frequency Range (GHz)	Average (dB $\mu\text{V/m}$)	Peak (dB $\mu\text{V/m}$)
1 – F_M	54	74
F_M = highest measurement frequency		

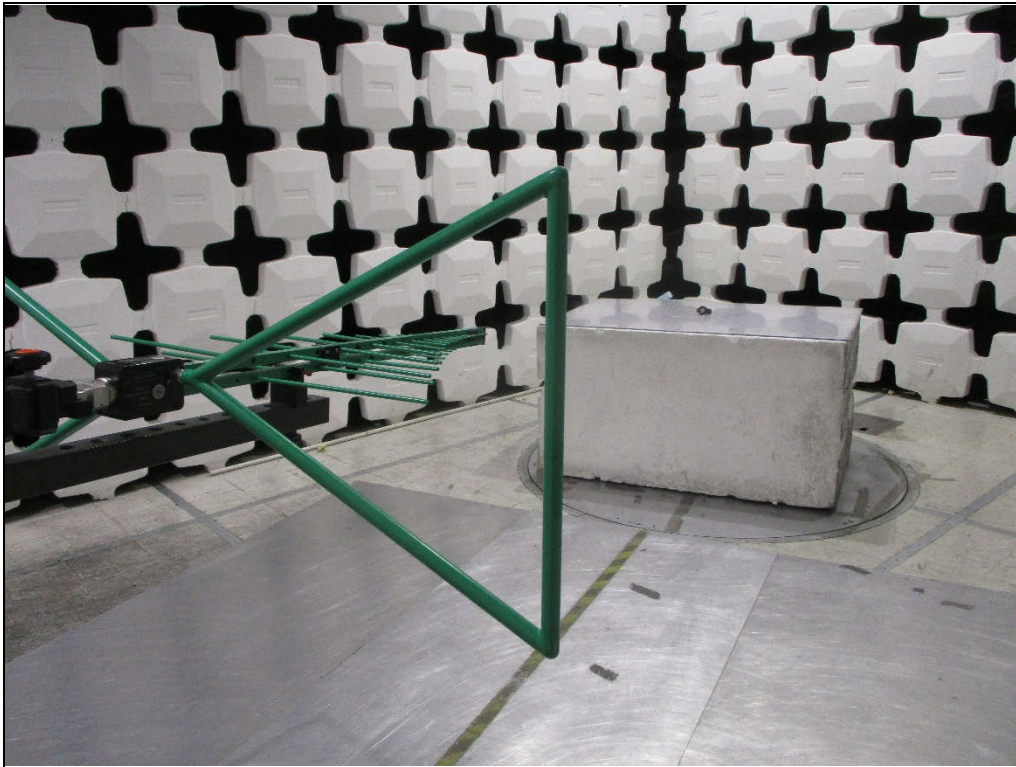
Procedure

Since a quasi-peak detector and an average detector requires long integration times, it is not practical to automatically sweep through the quasi-peak and average levels. Therefore, radiated emissions from the EUT were first scanned using a peak detector and automatically plotted. The frequencies where significant emission levels were noted were then remeasured using the quasi-peak detector or average detector.

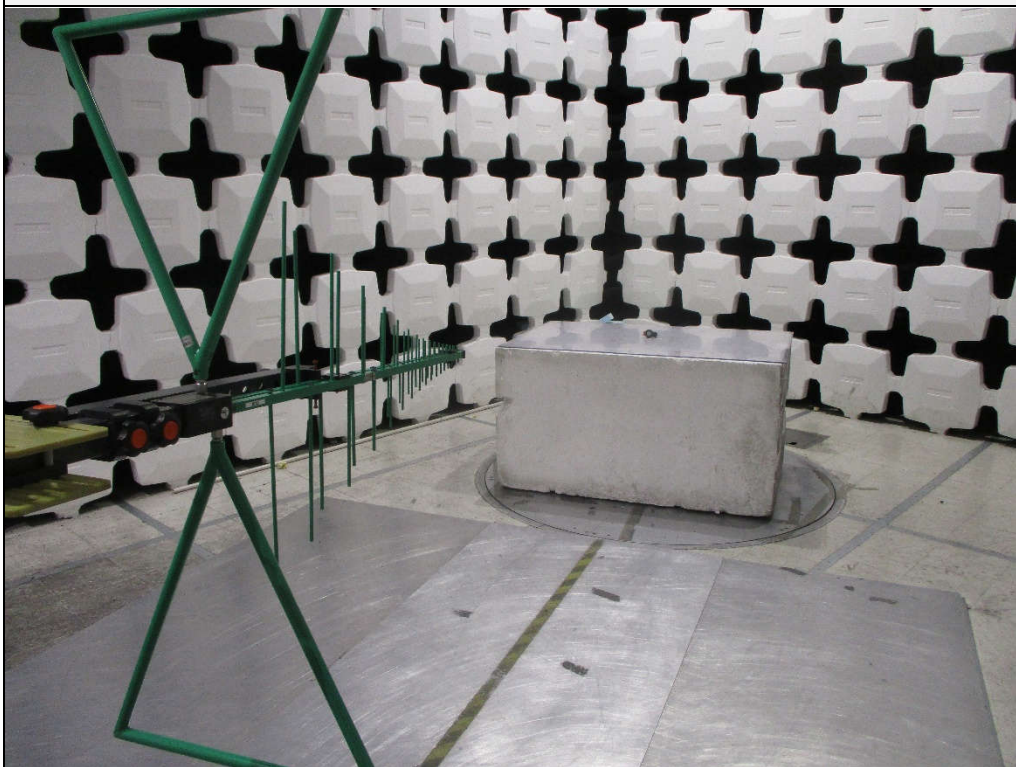
The EUT and all peripheral equipment were placed on an 80cm high non-conductive stand. The broadband measuring antenna was positioned at a 3-meter distance from the EUT. The frequency range from 30MHz to 1GHz was investigated using a peak detector function with the bilog antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The frequency range from 1GHz to 13GHz was investigated using a peak detector function with the double ridged waveguide antenna at several heights, horizontal and vertical polarization, and with several different orientations of the EUT with respect to the antenna. The maximum levels for each antenna polarization were plotted.

Final radiated emissions were performed on all significant broadband and narrowband emissions found in the exploratory sweeps using the following methods:

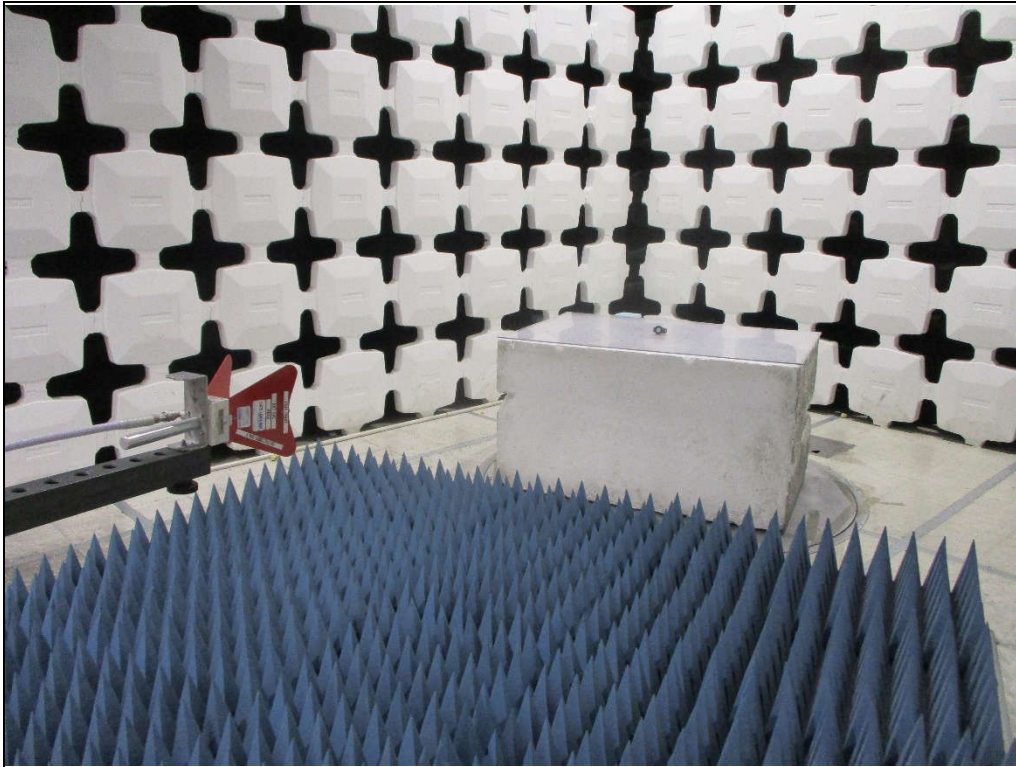
- 1) Measurements from 30MHz to 1GHz were made using a quasi-peak detector and a broadband bilog antenna. Measurements above 1GHz were made using an average detector and a broadband double ridged waveguide antenna.
- 2) To ensure that maximum or worst case, emission levels were measured, the following steps were taken:
 - a) The EUT was rotated so that all sides were exposed to the receiving antenna.
 - b) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - c) The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.
 - d) For hand-held or body-worn devices, the EUT was rotated through three orthogonal axes to determine which orientation produces the highest emission relative to the limit.



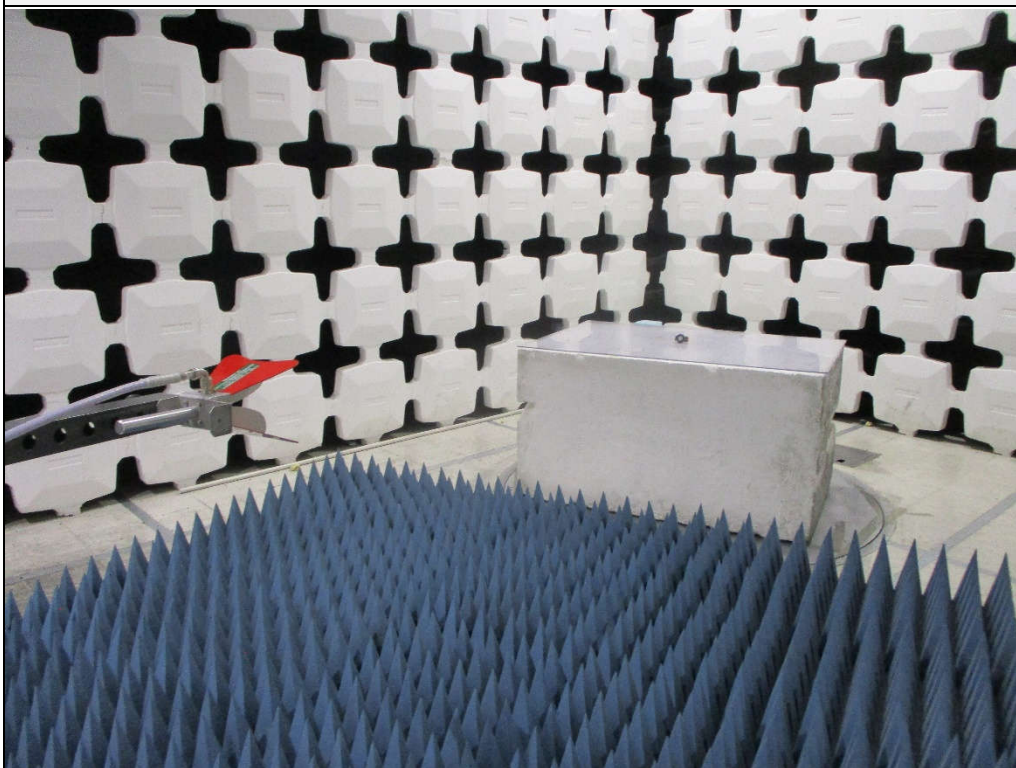
Test Setup for Radiated Emissions: 30MHz to 1GHz, Horizontal Polarization



Test Setup for Radiated Emissions: 30MHz to 1GHz, Vertical Polarization



Test Setup for Radiated Emissions: Above 1GHz, Horizontal Polarization



Test Setup for Radiated Emissions: Above 1GHz, Vertical Polarization

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

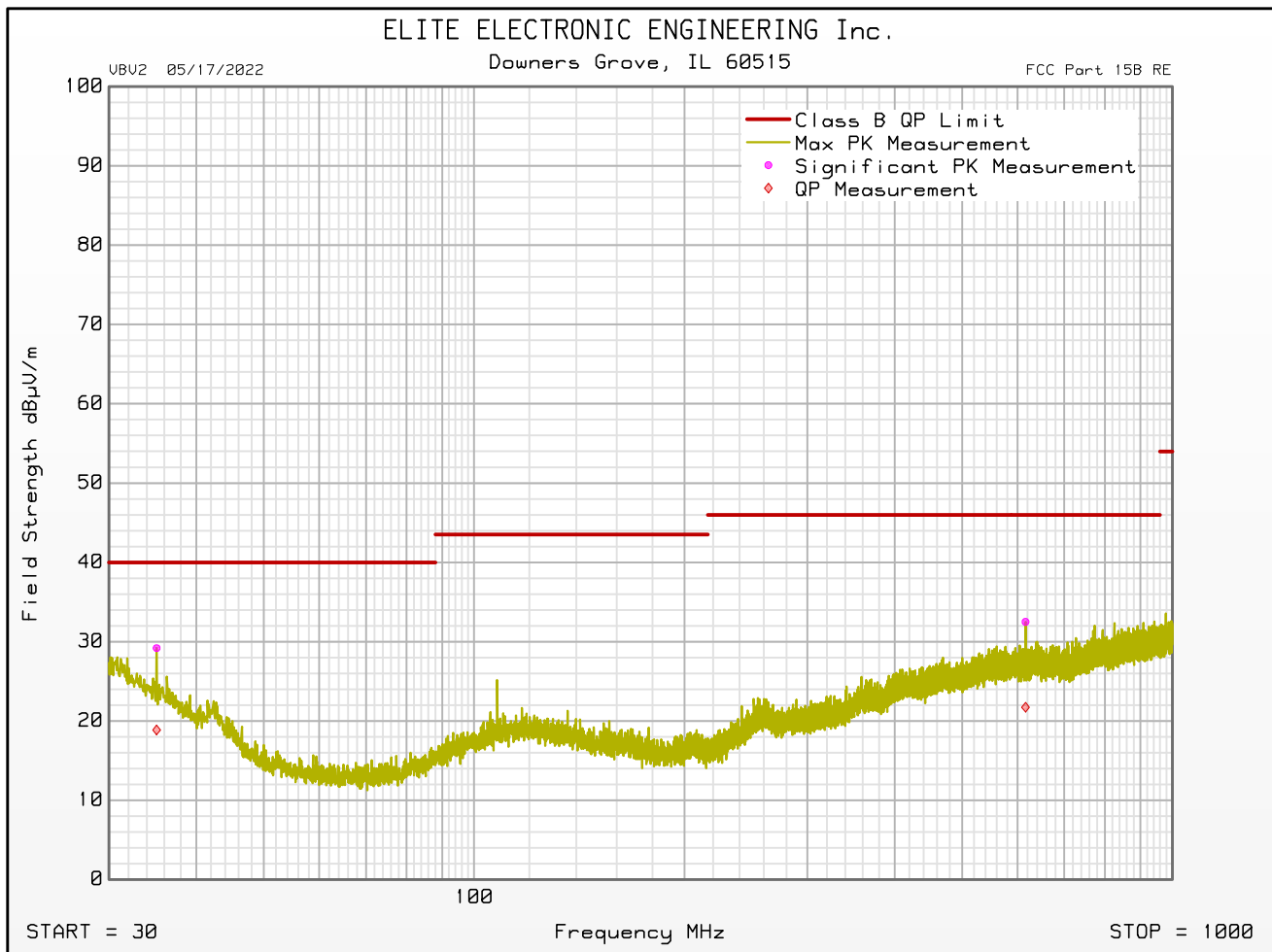
Manufacturer : Cala Health, Inc
 Model : SW100
 Serial Number : SA00211
 DUT Mode : Normal Operation
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : None
 Test Engineer : J. Cardenas
 Test Date : Feb 15, 2023 07:09:26 AM

Freq MHz	Peak Mtr Rdg dBuV	QP Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	QP Total dBuV/m	QP Limit dBuV/m	QP Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive QP Level
35.100	7.3	-3.1	21.6	0.0	0.4	0.0	29.2	18.9	40.0	-21.1	Horizontal	120	180	
86.640	3.0	-4.4	14.1	0.0	0.4	0.0	17.5	10.1	40.0	-29.9	Vertical	340	0	
107.920	8.4	4.9	17.8	0.0	0.4	0.0	26.6	23.1	43.5	-20.4	Vertical	120	135	
205.360	4.7	-3.8	15.6	0.0	0.8	0.0	21.0	12.6	43.5	-31.0	Vertical	340	90	
545.700	4.2	-3.8	24.5	0.0	1.1	0.0	29.8	21.8	46.0	-24.2	Vertical	340	0	
615.960	6.7	-4.0	24.6	0.0	1.2	0.0	32.5	21.7	46.0	-24.3	Horizontal	340	180	
956.580	4.2	-3.7	27.0	0.0	1.5	0.0	32.7	24.8	46.0	-21.2	Vertical	200	0	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

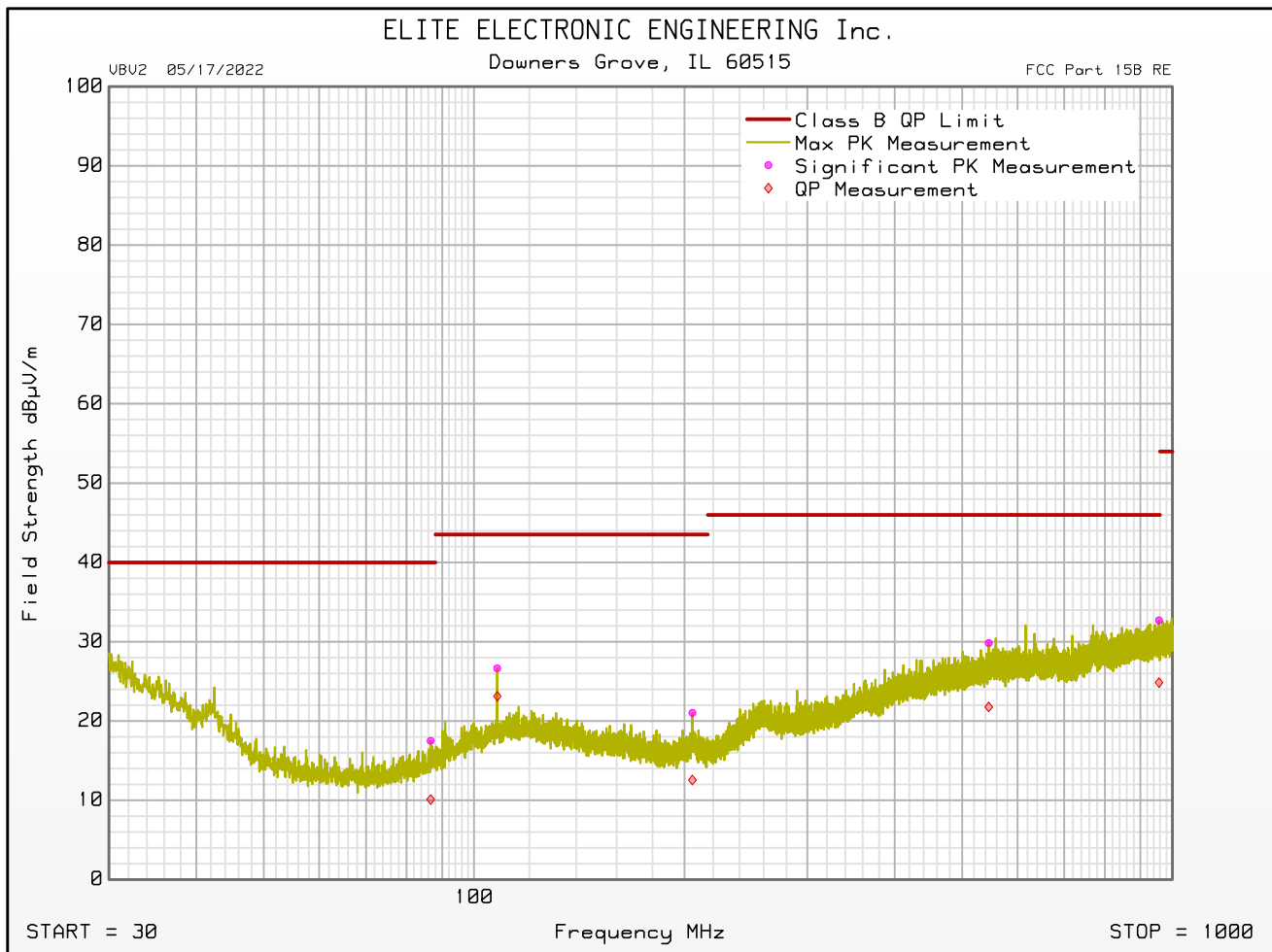
Manufacturer : Cala Health, Inc
 Model : SW100
 Serial Number : SA00211
 DUT Mode : Normal Operation
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : None
 Test Engineer : J. Cardenas
 Test Date : Feb 15, 2023 07:09:26 AM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

Manufacturer : Cala Health, Inc
 Model : SW100
 Serial Number : SA00211
 DUT Mode : Normal Operation
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 120 kHz
 Prelim Dwell Time (s) : 0.0001
 Notes : None
 Test Engineer : J. Cardenas
 Test Date : Feb 15, 2023 07:09:26 AM





FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

Manufacturer : Cala Health, Inc
Model : SW100
Serial Number : SA00211
DUT Mode : Normal Operation
Turntable Step Angle (°) : 45
Mast Positions (cm) : 120, 200, 340
Scan Type : Stepped Scan
Test RBW : 1 MHz
Prelim Dwell Time (s) : 0.0001
Notes : None
Test Engineer : J. Cardenas
Test Date : Feb 14, 2023 12:16:23 PM

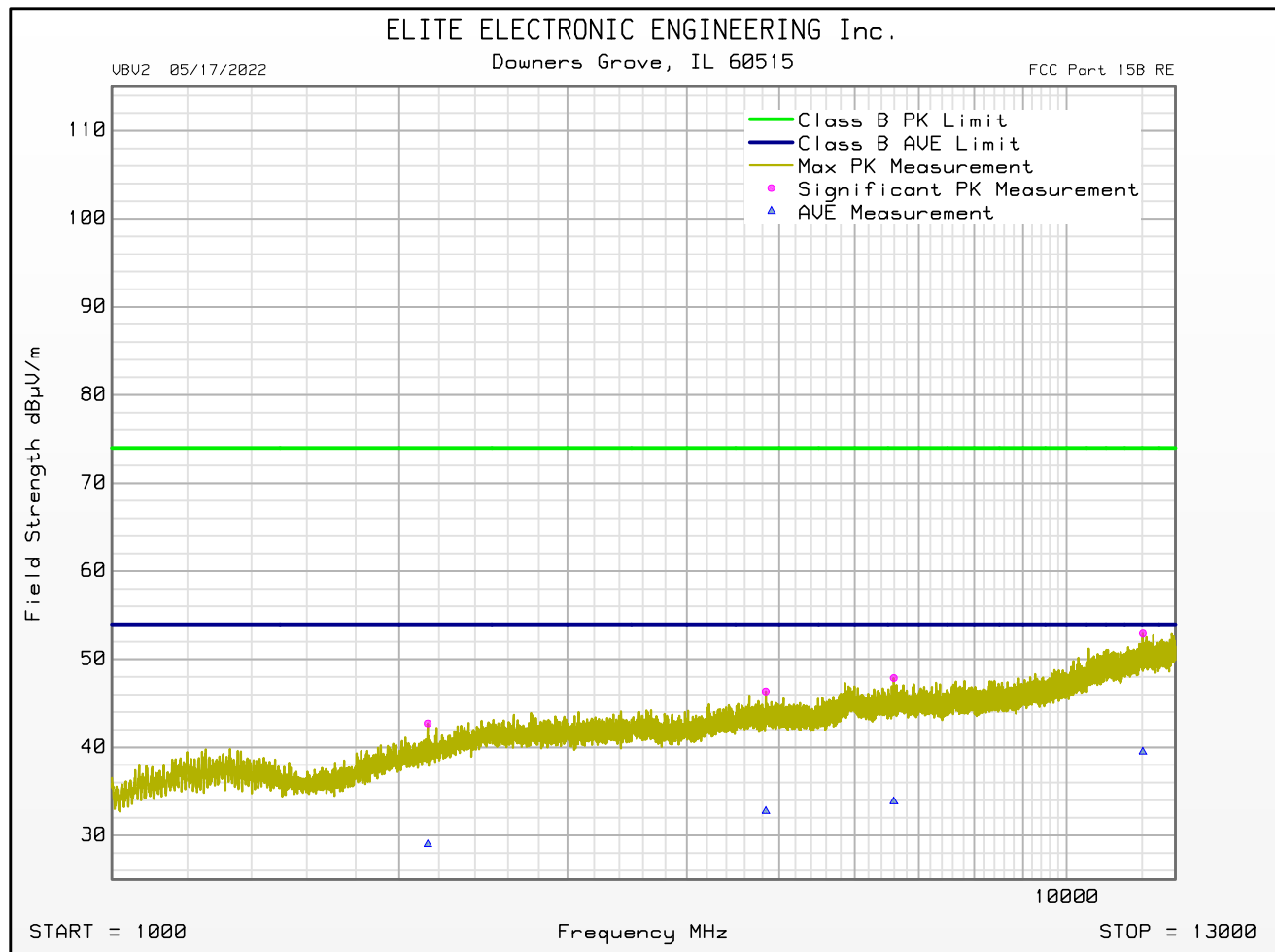
Freq MHz	Peak Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Peak Total dBuV/m	Peak Limit dBuV/m	Peak Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Peak Level
1188.500	50.3	29.4	-40.9	1.7	0.0	40.6	74.0	-33.4	Vertical	340	180	
2141.500	49.0	31.2	-39.8	2.4	0.0	42.7	74.0	-31.3	Horizontal	120	45	
2404.000	49.7	32.6	-40.2	2.6	0.0	44.7	74.0	-29.3	Vertical	120	315	
4839.500	47.5	34.7	-39.6	3.7	0.0	46.4	74.0	-27.6	Horizontal	120	180	
6590.500	47.2	35.8	-39.6	4.4	0.0	47.9	74.0	-26.1	Horizontal	200	270	
12014.500	46.8	39.0	-39.0	6.1	0.0	52.9	74.0	-21.1	Horizontal	120	45	

Freq MHz	Average Mtr Rdg dBuV	Ant Fac dB/m	Amp Fac dB	Cbl Fac dB	Dist Corr dB	Average Total dBuV/m	Average Limit dBuV/m	Average Lim Mrg dB	Ant Pol	Mast Ht cm	Azim °	Excessive Average Level
1188.500	37.1	29.4	-40.9	1.7	0.0	27.4	54.0	-26.6	Vertical	340	180	
2141.500	35.2	31.2	-39.8	2.4	0.0	29.0	54.0	-25.0	Horizontal	120	45	
2404.000	34.7	32.6	-40.2	2.6	0.0	29.7	54.0	-24.3	Vertical	120	315	
4839.500	33.9	34.7	-39.6	3.7	0.0	32.7	54.0	-21.2	Horizontal	120	180	
6590.500	33.2	35.8	-39.6	4.4	0.0	33.8	54.0	-20.1	Horizontal	200	270	
12014.500	33.4	39.0	-39.0	6.1	0.0	39.5	54.0	-14.5	Horizontal	120	45	

FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

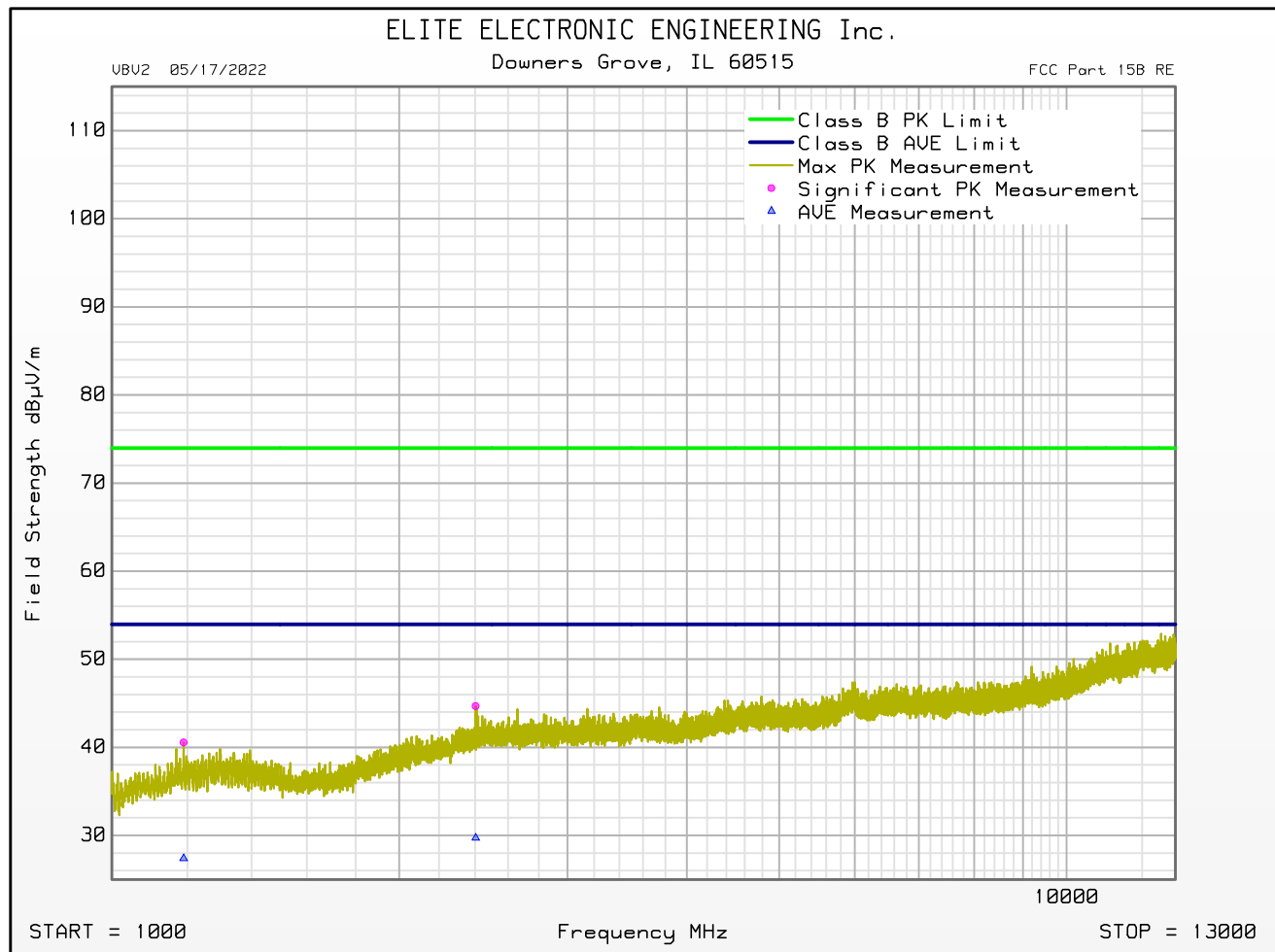
Manufacturer : Cala Health, Inc
 Model : SW100
 Serial Number : SA00211
 DUT Mode : Normal Operation
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Horizontal
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : None
 Test Engineer : J. Cardenas
 Test Date : Feb 14, 2023 12:16:23 PM



FCC Part 15B Class B Radiated RF Emissions Test

SW ID/Rev: VBV2 05/17/2022

Manufacturer : Cala Health, Inc
 Model : SW100
 Serial Number : SA00211
 DUT Mode : Normal Operation
 Turntable Step Angle (°): 45
 Mast Positions (cm) : 120, 200, 340
 Antenna Polarization : Vertical
 Scan Type : Stepped Scan
 Test RBW : 1 MHz
 Prelim Dwell Time (s) : 0.0001
 Notes : None
 Test Engineer : J. Cardenas
 Test Date : Feb 14, 2023 12:16:23 PM



21. Module Integration – Emissions Test

EUT Information	
Manufacturer	Cala Health, Inc
Product	wrist-worn tremor therapy device
Model No.	SW100
Serial No.	SA00211
Mode	Paired

Test Site Information	
Setup Format	Tabletop
Height of Support	NA
Type of Test Site	Semi-Anechoic Chamber
Test Site Used	R29F
Type of Antennas Used	Below 1GHz: Bilog (or equivalent) Above 1GHz: Double-ridged waveguide (or equivalent)
Notes	The cables were manually maximized during the preliminary emissions sweeps. The cable arrangement which resulted in the worst-case emissions was utilized.

Measurement Uncertainty	
Measurement Type	Expanded Measurement Uncertainty
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1000 MHz)	4.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (1 GHz – 6 GHz)	3.1
Radiated disturbance (electric field strength on an open area test site or alternative test site) (6 GHz – 18 GHz)	3.2
Radiated disturbance (electric field strength on an open area test site or alternative test site) (18 GHz – 26.5 GHz)	3.3
Radiated disturbance (electric field strength on an open area test site or alternative test site) (26.5 GHz – 40 GHz)	3.4

Requirements

Per 996369 D04 Module Integration Guide v01:

Testing of the host product with all the transmitters installed is recommended, to verify that the host product meets all the applicable FCC rules. The radio spectrum is to be investigated with all the transmitters in the final host product functioning to determine that no emissions exceed the highest limit permitted for any one individual transmitter as required by Section 2.947(f).

The testing shall also check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. No emissions exceed the highest limit permitted for any one individual transmitter as required by Section 2.947(f).

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Procedures

Radiated measurements were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles and anechoic absorber material is installed over the ferrite tiles. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3-meter distance from the EUT. The entire frequency range from 30MHz to 18GHz was investigated using a peak detector function.

The final open field emission tests were then manually performed over the frequency range of 30MHz to 18GHz.

1) For all harmonics not in the restricted bands, the following procedure was used:

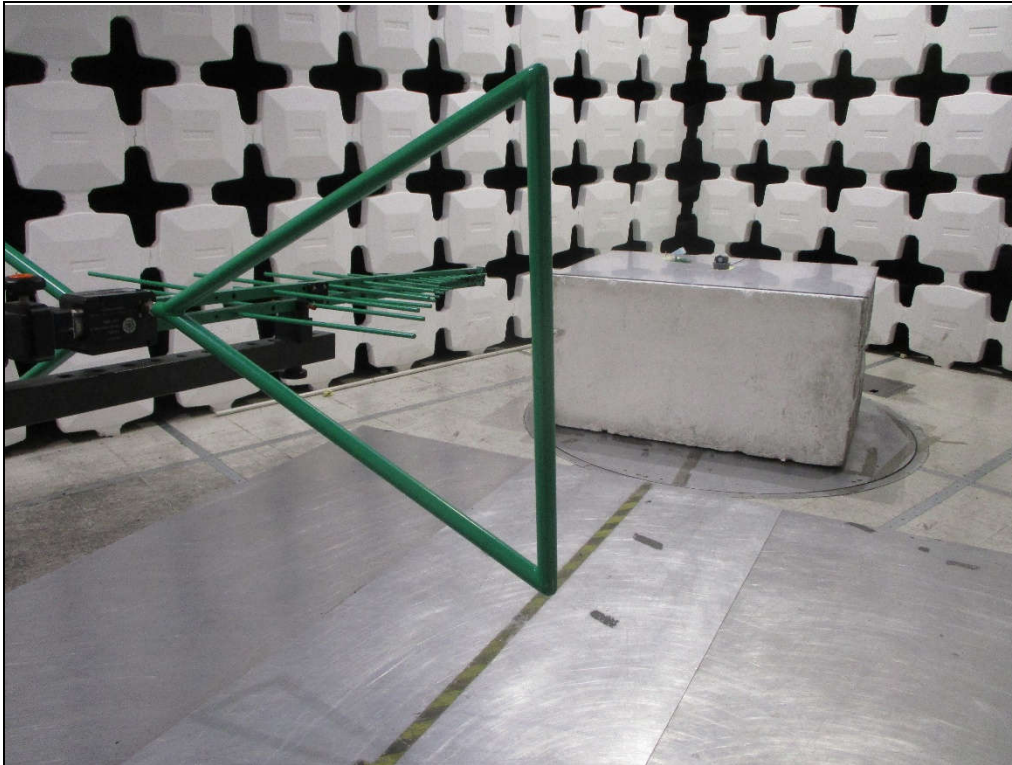
- a) The field strength of the fundamental was measured using a double ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. The EUT was centered on the turntable. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
- b) The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3-meter distance from the EUT. The EUT was placed on a non-conductive stand. The EUT was centered on the turntable. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
- c) To ensure that maximum or worst case emission levels at the fundamental and harmonics were measured, the following steps were taken when measuring the fundamental emissions and the spurious emissions:
 - i. The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - ii. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii. The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv. In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded for the EUT.
- d) All harmonics not in the restricted bands must be at least 20dB below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.

2) For all emissions in the restricted bands, the following procedure was used:

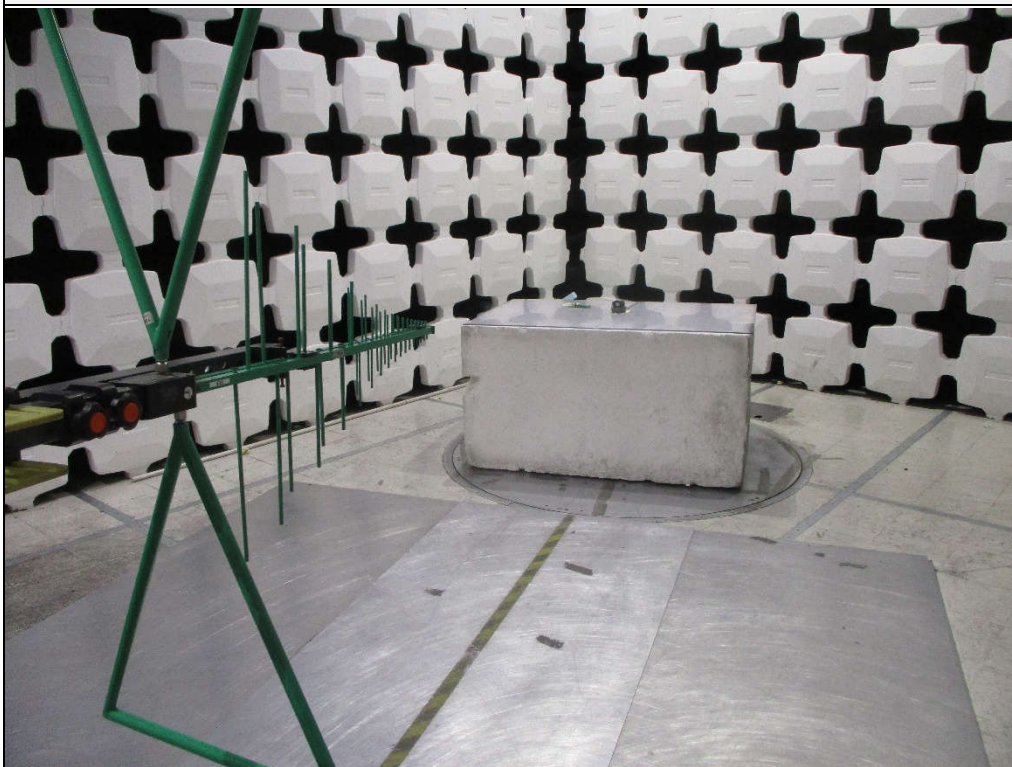
- a) The field strengths of all emissions below 1GHz were measured using a bi-log antenna. The bilog antenna was positioned at a 3 meter distance from the EUT. The EUT was placed on an 80cm high non-conductive stand. A peak detector with a resolution bandwidth of 100kHz was used on the spectrum analyzer.
- b) The field strengths of all emissions above 1GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from

the EUT. The EUT was placed on a 1.5 meter high non-conductive stand. A peak detector with a resolution bandwidth of 1MHz was used on the spectrum analyzer.

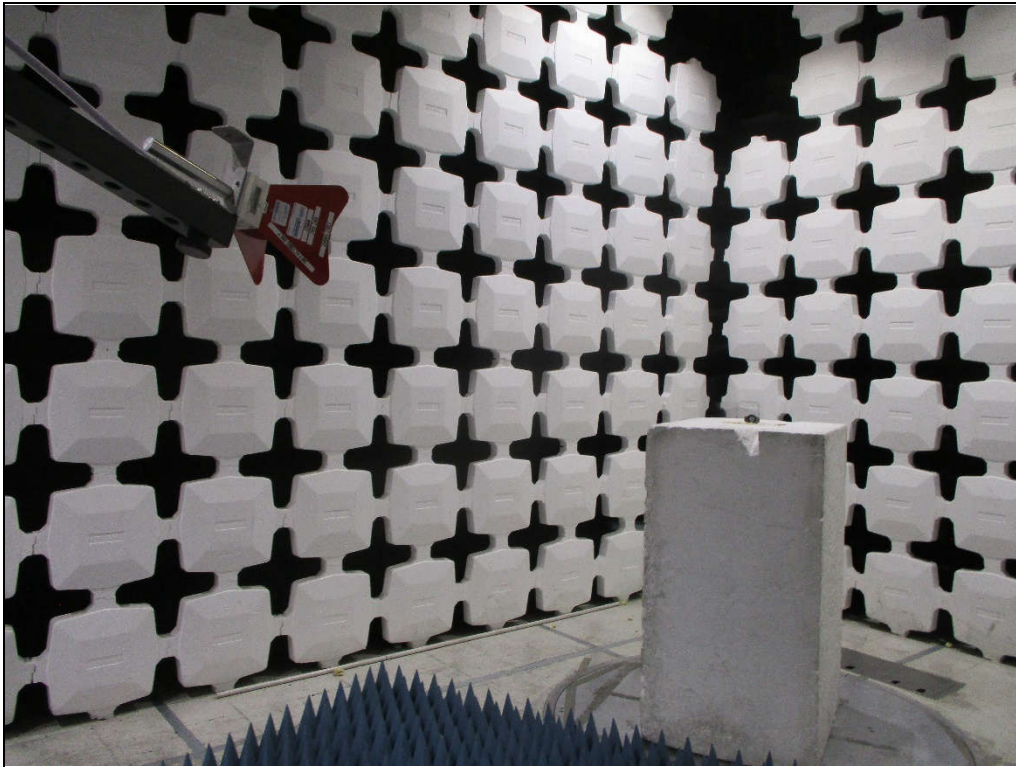
- c) To ensure that maximum (or worst case) emission levels were measured, the following steps were taken when taking all measurements:
 - i. The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - ii. Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii. The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv. In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead, the EUT was rotated through all axis to ensure the maximum readings were recorded.
- d) For all radiated emissions measurements below 1GHz, if the peak reading is below the limits listed in §15.209(a), no further measurements are required. If, however, the peak readings exceed the limits listed in 15.209(a), then the emissions are remeasured using a quasi-peak detector.
- e) For all radiated emissions measurements above 1GHz, the peak readings must comply with the §15.35(b) limits. §15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1GHz must be no greater than 20dB above the limits specified in §15.209(a).
- f) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector and an average reading was taken.



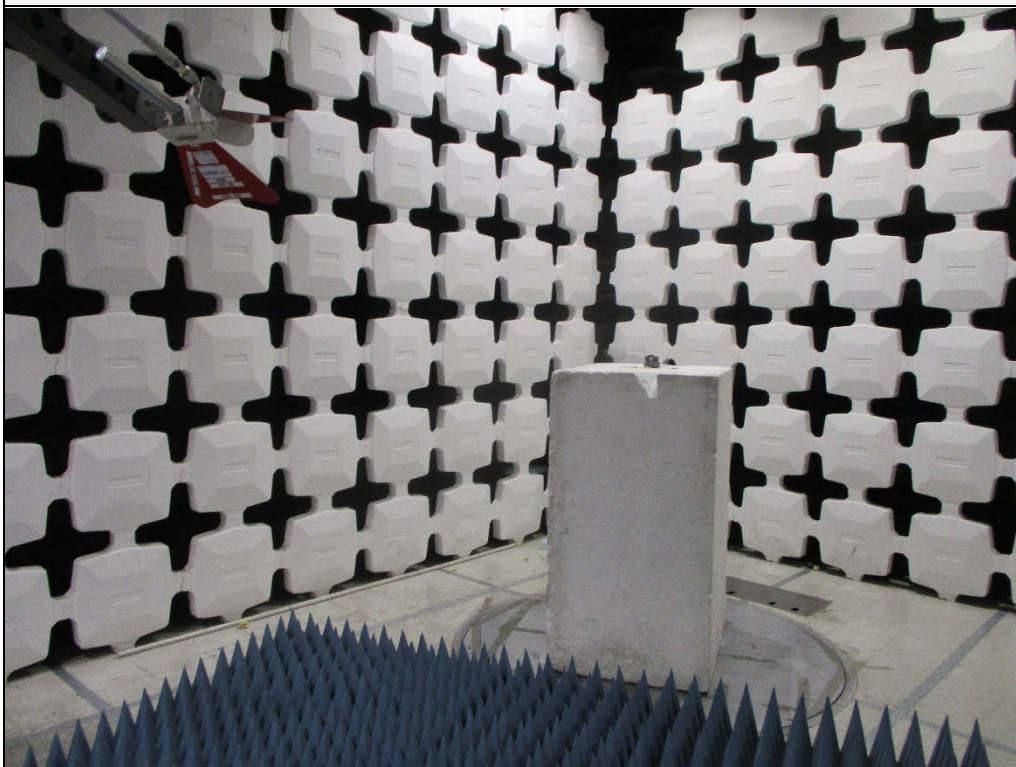
Test Setup for Spurious Emissions: 30MHz to 1GHz, Horizontal Polarization



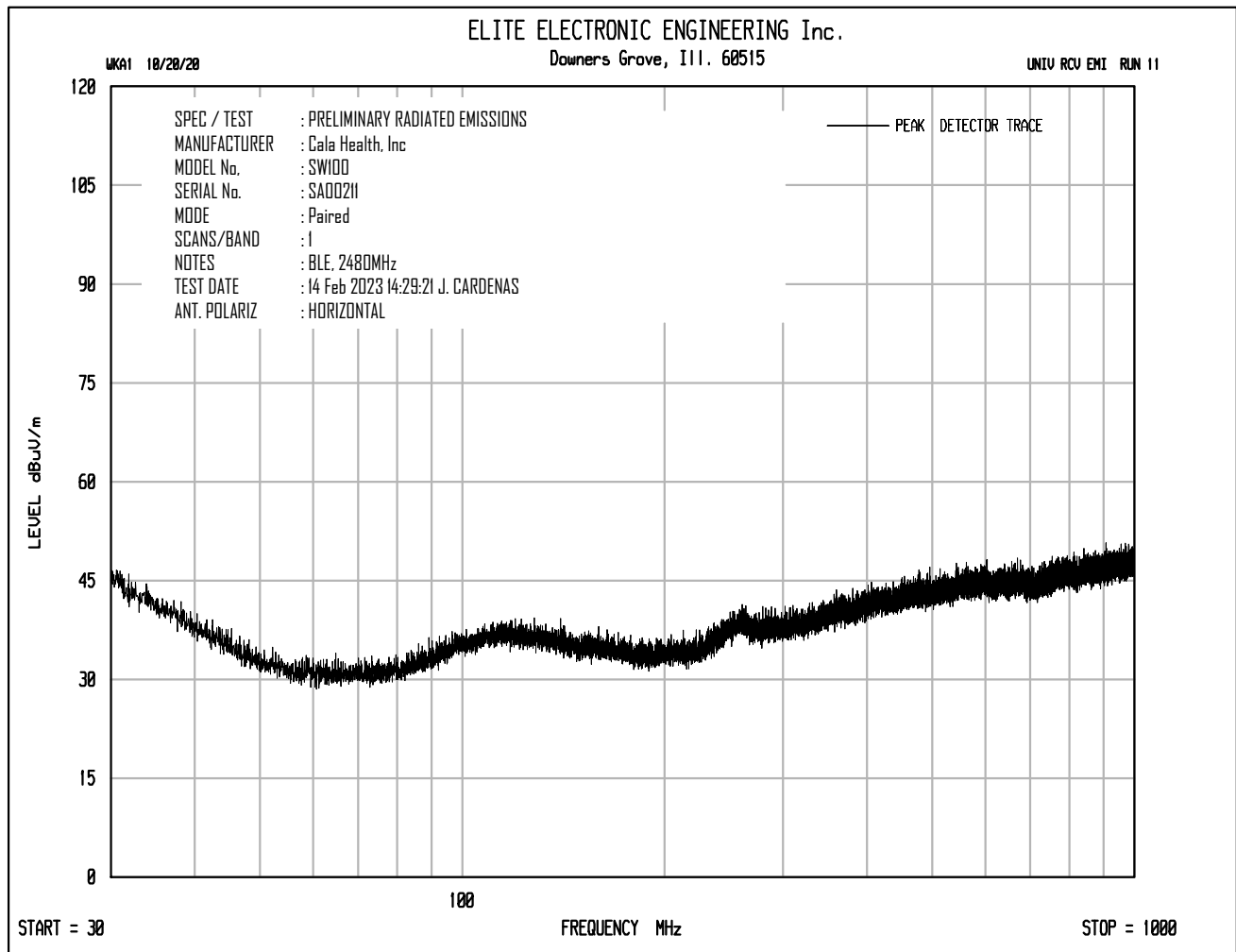
Test Setup for Spurious Emissions: 30MHz to 1GHz, Vertical Polarization

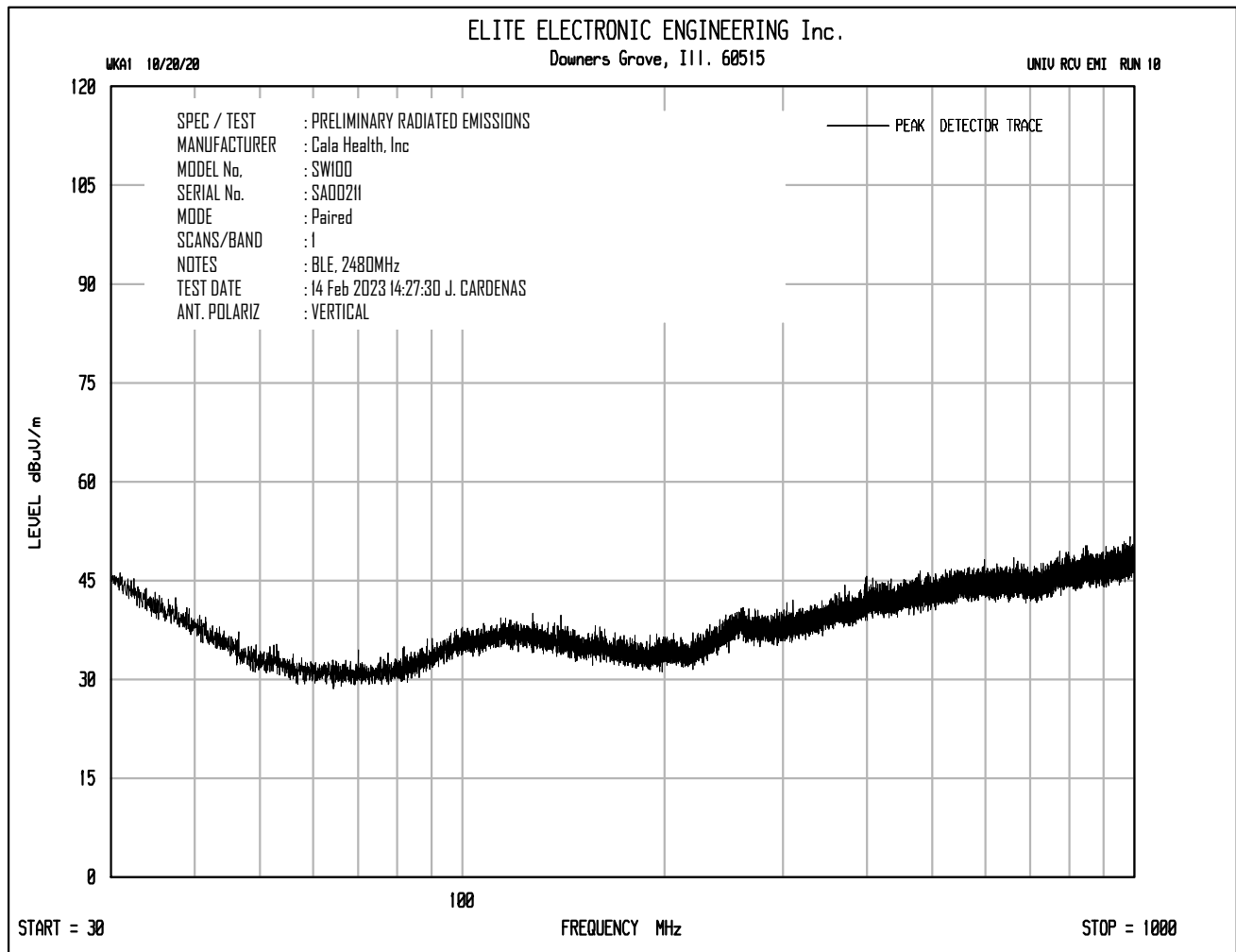


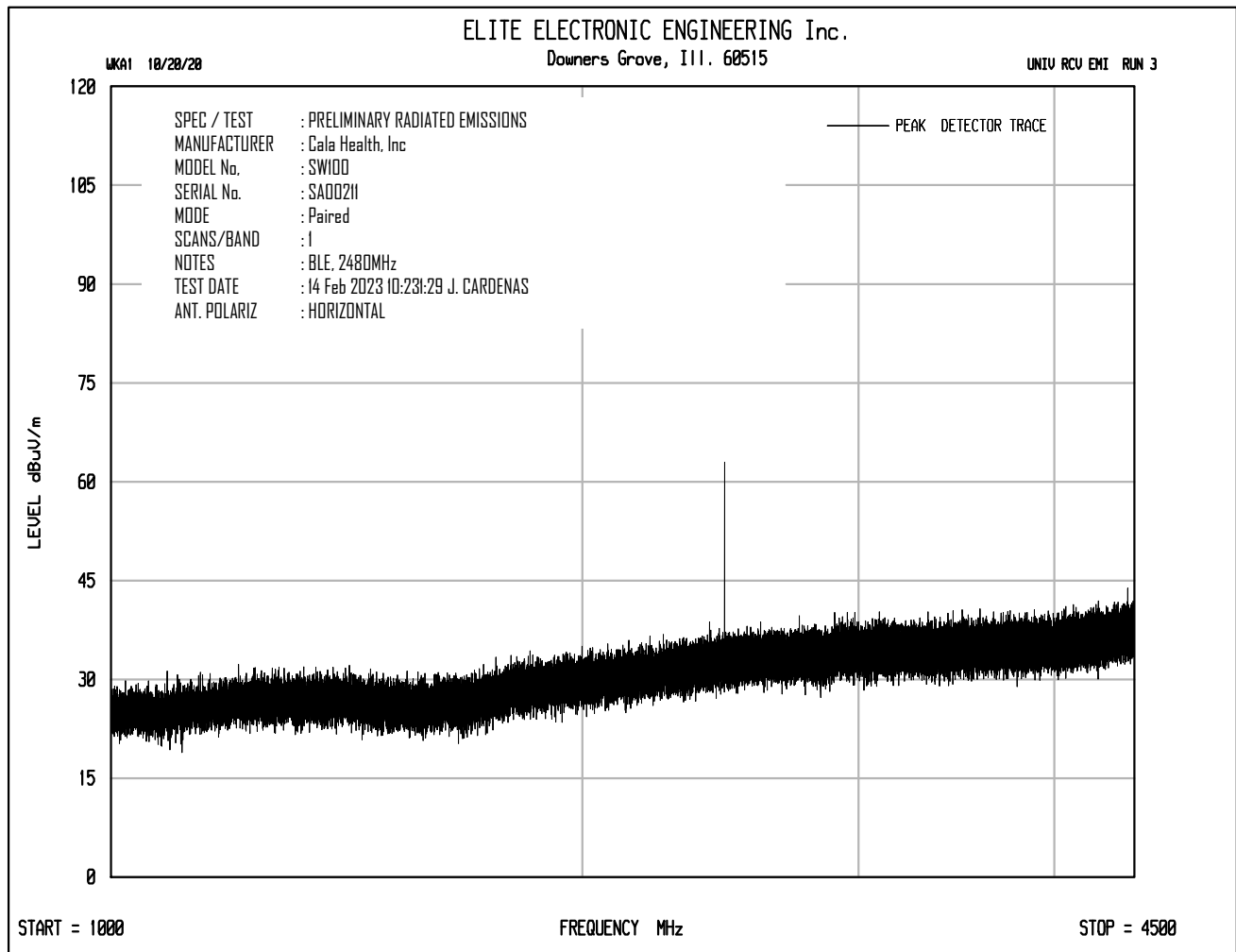
Test Setup for Spurious Emissions: Above 1GHz, Horizontal Polarization

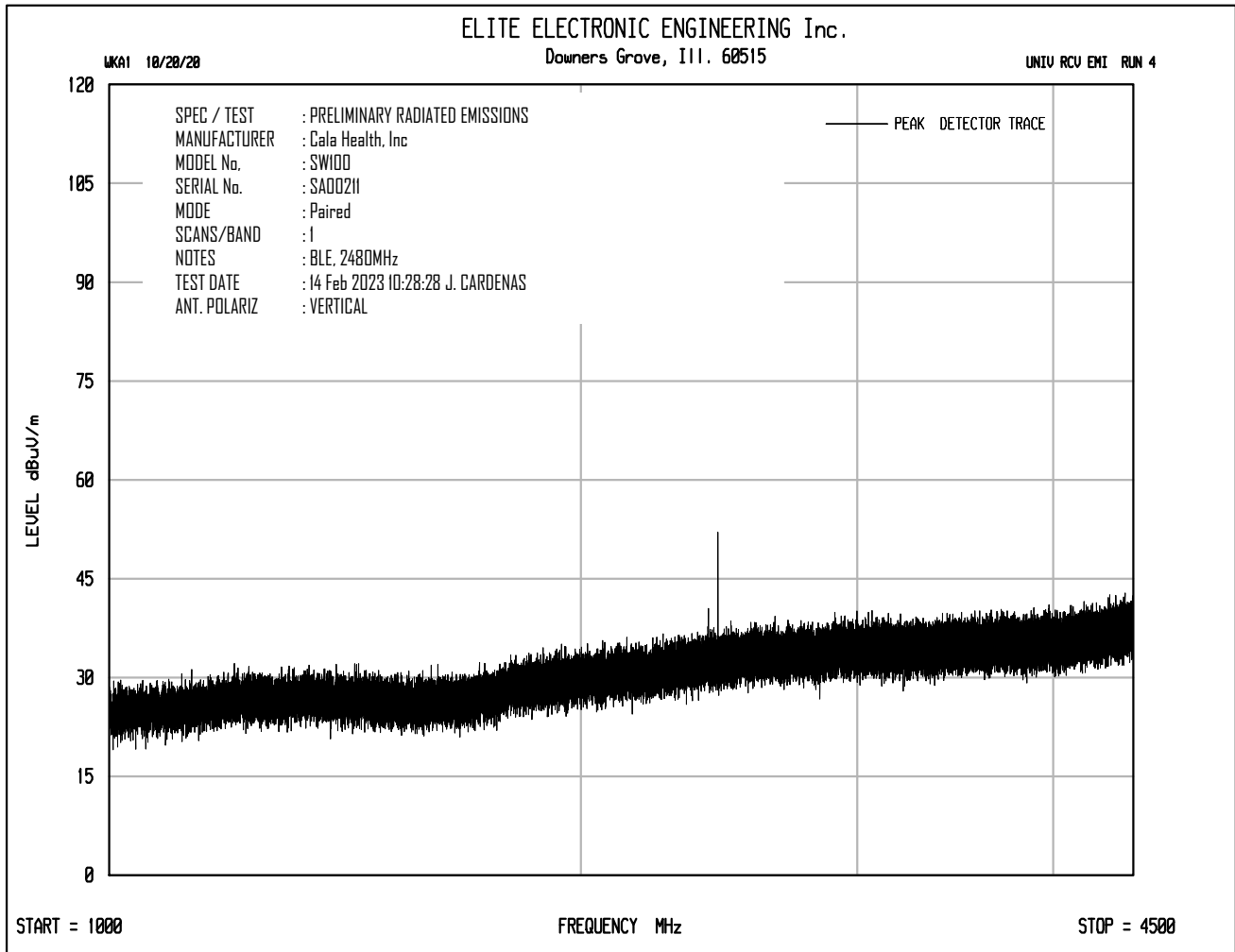


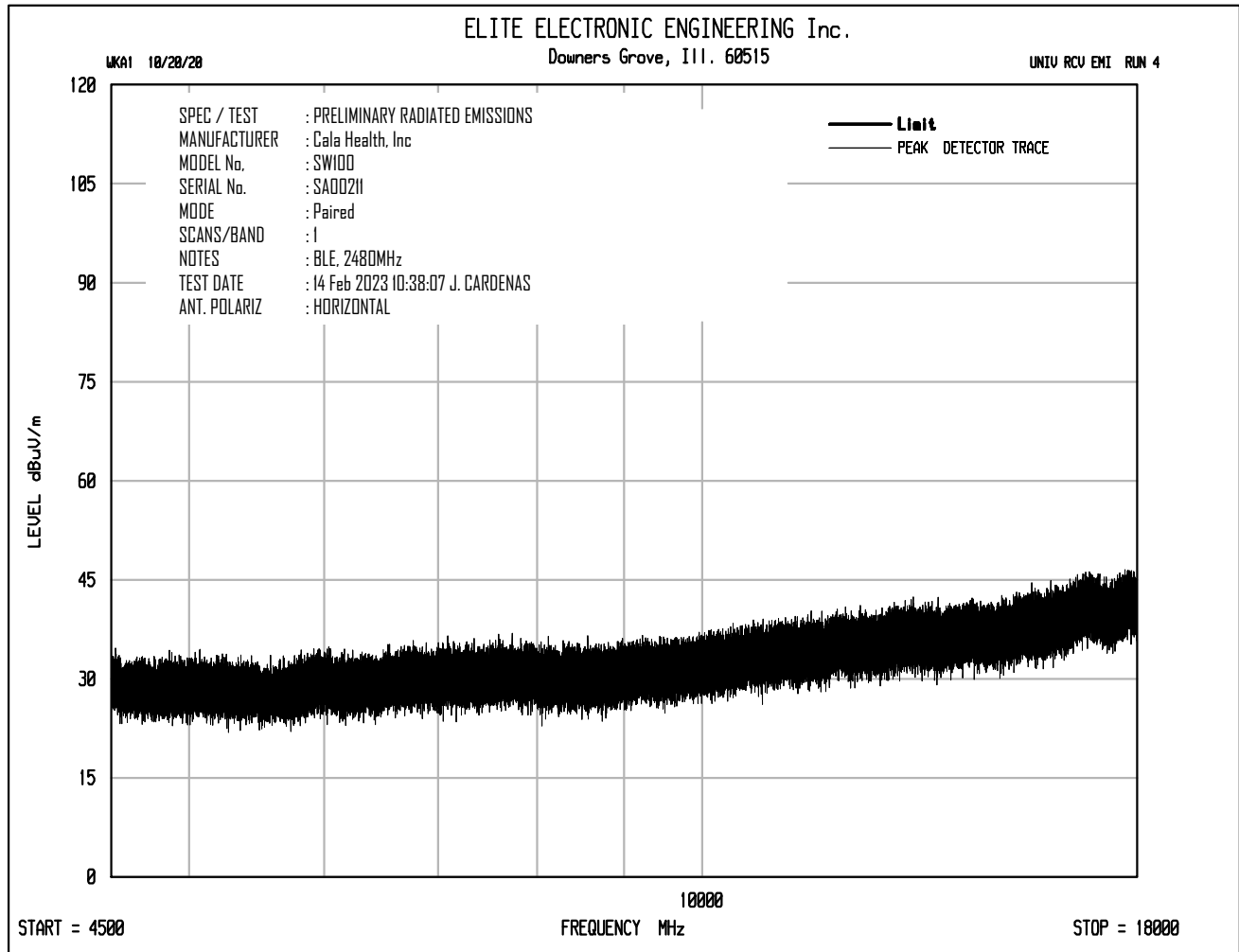
Test Setup for Spurious Emissions: Above 1GHz, Vertical Polarization

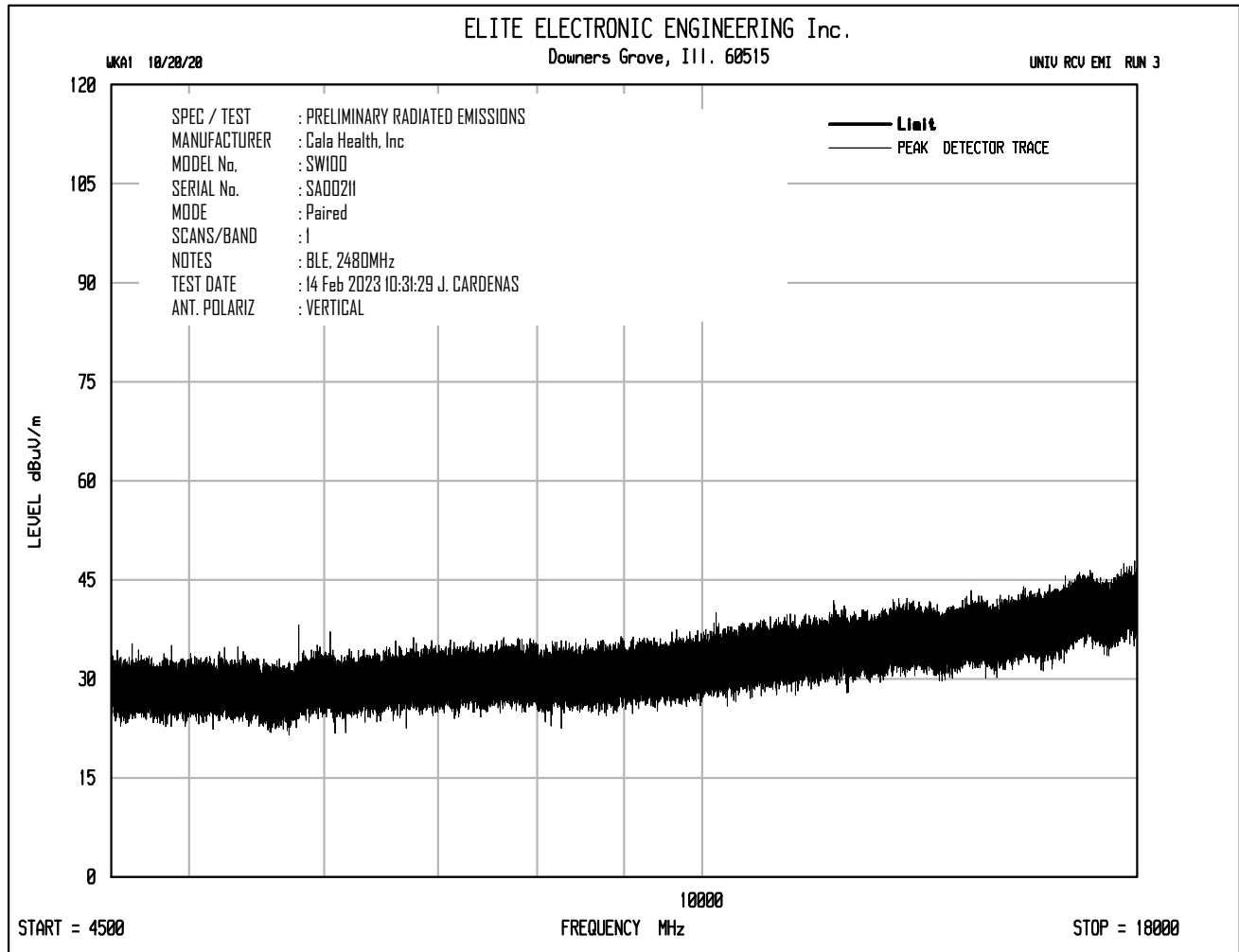












Test Details	
Manufacturer	Cala Health, Inc
Model No.	SW100
Serial No.	SA00211
Test	Host Product Testing – Case Spurious Emissions
Mode	Paired
Frequency Tested	2480MHz
Notes	None

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4960.00	H	48.2	*	3.7	34.4	-39.6	46.7	215.8	5000.0	-27.3
	V	49.3	*	3.7	34.4	-39.6	47.8	246.7	5000.0	-26.1
7440.00	H	49.8		4.7	35.7	-39.6	50.7	343.6	5000.0	-23.3
	V	48.0		4.7	35.7	-39.6	48.9	278.0	5000.0	-25.1
12400.00	H	46.1	*	6.1	38.9	-38.8	52.3	410.5	5000.0	-21.7
	V	46.5	*	6.1	38.9	-38.8	52.7	431.9	5000.0	-21.3

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4960.00	H	37.38	*	3.7	34.4	-39.6	0.0	35.9	62.3	500.0	-18.1
	V	36.90	*	3.7	34.4	-39.6	0.0	35.4	59.0	500.0	-18.6
7440.00	H	42.35		4.7	35.7	-39.6	0.0	43.3	145.4	500.0	-10.7
	V	41.81		4.7	35.7	-39.6	0.0	42.7	136.6	500.0	-11.3
12400.00	H	35.52	*	6.1	38.9	-38.8	0.0	41.7	121.9	500.0	-12.3
	V	35.58	*	6.1	38.9	-38.8	0.0	41.8	122.7	500.0	-12.2

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2480.00	H	41.19		2.7	32.9	-40.2	36.6	67.4	NA	NA
	V	39.07		2.7	32.9	-40.2	34.5	52.8	NA	NA
9920.00	H	35.73	*	5.3	37.1	-39.2	38.8	87.5	500.0	-15.1
	V	36.44	*	5.3	37.1	-39.2	39.6	95.0	500.0	-14.4

22. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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Email: blugo@elitetest.com
Richard King (FCC/Commercial Team Leader) Phone: 630 495 9770 ext. 123
Email: reking@elitetest.com
Website: www.elitetest.com

ELECTRICAL

Valid To: June 30, 2023

Certificate Number: 1786.01

In recognition of the successful completion of the A2LA Accreditation Program evaluation process, accreditation is granted to this laboratory to perform the following automotive electromagnetic compatibility and other electrical tests:

Test Technology:**Test Method(s) ¹:*****Transient Immunity***

ISO 7637-2 (including emissions); ISO 7637-3;
ISO 16750-2:2012, Sections 4.6.3 and 4.6.4;
CS-11979, Section 6.4; CS.00054, Section 5.9;
EMC-CS-2009.1 (CI220); FMC1278 (CI220, CI221, CI222);
GMW 3097, Section 3.5; SAE J1113-11; SAE J1113-12;
ECE Regulation 10.06 Annex 10

Electrostatic Discharge (ESD)

ISO 10605 (2001, 2008);
CS-11979 Section 7.0; CS.00054, Section 5.10;
EMC-CS-2009.1 (CI 280); FMC1278 (CI280); SAE J1113-13;
GMW 3097 Section 3.6

Conducted Emissions

CISPR 25 (2002, 2008), Sections 6.2 and 6.3;
CISPR 25 (2016), Sections 6.3 and 6.4;
CS-11979, Section 5.1; CS.00054, Sections 5.6.1 and 5.6.2;
GMW 3097, Section 3.3.2;
EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421)

Radiated Emissions Anechoic

CISPR 25 (2002, 2008), Section 6.4;
CISPR 25 (2016), Section 6.5;
CS-11979, Section 5.3; CS.00054, Section 5.6.3;
GMW 3097, Section 3.3.1;
EMC-CS-2009.1 (RE 310); FMC1278 (RE310);

(A2LA Cert. No. 1786.01) Revised 08/08/2022



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5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

Test Technology:
Test Method(s) ¹:
Vehicle Radiated Emissions

CISPR 12; CISPR 36; ICES-002;
ECE Regulation 10.06 Annex 5

Bulk Current Injection (BCI)

ISO 11452-4; CS-11979, Section 6.1; CS.00054, Section 5.8.1;
GMW 3097, Section 3.4.1; SAE J1113-4;
EMC-CS-2009.1 (RI112); FMC1278 (RI112);
ECE Regulation 10.06 Annex 9

**Radiated Immunity Anechoic
(Including Radar Pulse)**

ISO 11452-2; ISO 11452-5;
CS-11979, Section 6.2; CS.00054, Section 5.8.2;
GMW 3097, Section 3.4.2;
EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21;
ECE Regulation 10.06 Annex 9

Radiated Immunity Magnetic Field

ISO 11452-8

Radiated Immunity Reverb

ISO/IEC 61000-4-21; GMW 3097, Section 3.4.3;
EMC-CS-2009.1 (RI114); FMC1278 (RI114);
ISO 11452-11

**Radiated Immunity
(Portable Transmitters)**

ISO 11452-9;
EMC-CS-2009.1 (RI115); FMC1278 (RI115)

Vehicle Radiated Immunity (ALSE)

ISO 11451-2; ECE Regulation 10.06 Annex 6

**Vehicle Product Specific EMC
Standards**

EN 14982; EN ISO 13309; ISO 13766; EN 50498;
EC Regulation No. 2015/208; EN 55012

Electrical Loads

ISO 16750-2

Emissions

Radiated and Conducted
(3m Semi-anechoic chamber,
up to 40 GHz)

47 CFR, FCC Part 15 B (using ANSI C63.4:2014);
47 CFR, FCC Part 18 (using FCC MP-5:1986);
ICES-001; ICES-003; ICES-005;
IEC/CISPR 11, Ed. 4.1 (2004-06); AS/NZS CISPR 11 (2004);
IEC/CISPR 11 Ed 5 (2009-05) + A1 (2010);
KN 11 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008);
CISPR 11; EN 55011; KS C 9811; CNS 13803 (1997, 2003);
CISPR 14-1; EN 55014-1; AS/NZS CISPR 14.1;
CISPR 16-2-1 (2008); CISPR 16-2-1; KS C 9814-1; KN 14-1;
IEC/CISPR 22 (1997);
EN 55022 (1998) + A1(2000);
EN 55022 (1998) + A1(2000) + A2(2003); EN 55022 (2006);
IEC/CISPR 22 (2008-09); AS/NZS CISPR 22 (2004);
AS/NZS CISPR 22, 3rd Edition (2006); KN 22 (up to 6 GHz);
CNS 13438 (up to 6 GHz); VCCI V-3 (up to 6 GHz);
CISPR 32; EN 55032; KS C 9832; KN 32;
ECE Regulation 10.06 Annex 7 (Broadband)
ECE Regulation 10.06 Annex 8 (Narrowband)
ECE Regulation 10.06 Annex 14 (Conducted)

Test Technology:
Test Method(s) ¹:
Emissions (cont'd)

Cellular Radiated Spurious Emissions

ETSI TS 151 010-1 GSM; 3GPP TS 51.010-1, Sec 12;
ETSI TS 134 124 UMTS; 3GPP TS 34.124;
ETSI TS 136 124 LTE; E-UTRA; 3GPP TS 36.124

Current Harmonics

IEC 61000-3-2; EN 61000-3-2; KN 61000-3-2;
KS C 9610-3-2; ECE Regulation 10.06 Annex 11

Flicker and Fluctuations

IEC 61000-3-3; EN 61000-3-3; KN 61000-3-3;
KS C 9610-3-3; ECE Regulation 10.06 Annex 12

Immunity

Electrostatic Discharge

IEC 61000-4-2, Ed. 1.2 (2001);
IEC 61000-4-2 (1995) + A1(1998) + A2(2000);
EN 61000-4-2 (1995); EN 61000-4-2 (2009-05);
KN 61000-4-2 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2;
KS C 9610-4-2; IEEE C37.90.3 2001

Radiated Immunity

IEC 61000-4-3 (1995) + A1(1998) + A2(2000);
IEC 61000-4-3, Ed. 3.0 (2006-02);
IEC 61000-4-3, Ed. 3.2 (2010);
KN 61000-4-3 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3;
KS C 9610-4-3; IEEE C37.90.2 2004

Electrical Fast Transient/Burst

IEC 61000-4-4, Ed. 2.0 (2004-07);
IEC 61000-4-4, Ed. 2.1 (2011);
IEC 61000-4-4 (1995) + A1(2000) + A2(2001);
KN 61000-4-4 (2008-5);
RRL Notice No. 2008-5 (May 20, 2008);
IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4;
KS C 9610-4-4; ECE Regulation 10.06 Annex 15

Surge

IEC 61000-4-5 (1995) + A1(2000);
IEC 61000-4-5, Ed 1.1 (2005-11);
EN 61000-4-5 (1995) + A1(2001);
KN 61000-4-5 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5;
KS C 9610-4-5;
IEEE C37.90.1 2012; IEEE STD C62.41.2 2002;
ECE Regulation 10.06 Annex 16

Test Technology:
Test Method(s) ¹:
Immunity (cont'd)

Conducted Immunity

IEC 61000-4-6 (1996) + A1(2000);
IEC 61000-4-6, Ed 2.0 (2006-05);
IEC 61000-4-6 Ed. 3.0 (2008);
KN 61000-4-6 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
EN 61000-4-6 (1996) + A1(2001); IEC 61000-4-6;
EN 61000-4-6; KN 61000-4-6; KS C 9610-4-6

Power Frequency Magnetic Field
Immunity (*Down to 3 A/m*)

IEC 61000-4-8 (1993) + A1(2000); IEC 61000-4-8 (2009);
EN 61000-4-8 (1994) + A1(2000);
KN 61000-4-8 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-8; EN 61000-4-8; KN 61000-4-8; KS C 9610-4-8

Voltage Dips, Short Interrupts, and Line
Voltage Variations

IEC 61000-4-11, Ed. 2 (2004-03);
KN 61000-4-11 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11;
KS C 9610-4-11

Ring Wave

IEC 61000-4-12, Ed. 2 (2006-09);
EN 61000-4-12:2006;
IEC 61000-4-12; EN 61000-4-12; KN 61000-4-12;
IEEE STD C62.41.2 2002

Generic and Product Specific EMC
Standards

IEC/EN 61000-6-1; AS/NZS 61000-6-1; KN 61000-6-1;
KS C 9610-6-1; IEC/EN 61000-6-2; AS/NZS 61000-6-2;
KN 61000-6-2; KS C 9610-6-2; IEC/EN 61000-6-3;
AS/NZS 61000-6-3; KN 61000-6-3; KS C 9610-6-3;
IEC/EN 61000-6-4; AS/NZS 61000-6-4; KN 61000-6-4;
KS C 9610-6-4; EN 50130-4; EN 61326-1; EN 50121-3-2;
EN 12895; EN 50270; EN 50491-1; EN 50491-2; EN 50491-3;
EN 55015; EN 60730-1; EN 60945; IEC 60533;
EN 61326-2-6; EN 61800-3; IEC/CISPR 14-2; EN 55014-2;
AS/NZS CISPR 14.2; KN 14-2; KS C 9814-2;
IEC/CISPR 24; AS/NZS CISPR 24; EN 55024; KN 24;
IEC/CISPR 35; AS/NZS CISPR 35; EN 55035; KN 35;
KS C 9835; IEC 60601-1-2; JIS T0601-1-2

TxRx EMC Requirements

EN 301 489-1; EN 301 489-3; EN 301 489-9;
EN 301 489-17; EN 301 489-19; EN 301 489-20

Test Technology:
Test Method(s) ¹:
European Radio Test Standards

ETSI EN 300 086-1; ETSI EN 300 086-2;
ETSI EN 300 113-1; ETSI EN 300 113-2;
ETSI EN 300 220-1; ETSI EN 300 220-2;
ETSI EN 300 220-3-1; ETSI EN 300 220-3-2;
ETSI EN 300 330-1; ETSI EN 300 330-2;
ETSI EN 300 440-1; ETSI EN 300 440-2;
ETSI EN 300 422-1; ETSI EN 300 422-2;
ETSI EN 300 328; ETSI EN 301 893;
ETSI EN 301 511; ETSI EN 301 908-1;
ETSI EN 908-2; ETSI EN 908-13;
ETSI EN 303 413; ETSI EN 302 502;
EN 303 340; EN 303 345-2; EN 303 345-3; EN 303 345-4

Canadian Radio Tests

RSS-102 (RF Exposure Evaluation ^{MEAS});
RSS-102 (Nerve Stimulation ^{MEAS}) (5Hz to 400kHz);
SPR-002; RSS-111; RSS-112; RSS-117; RSS-119; RSS-123;
RSS-125; RSS-127; RSS-130; RSS-131; RSS-132; RSS-133;
RSS-134; RSS-135; RSS-137; RSS-139; RSS-140; RSS-141;
RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192;
RSS-194; RSS-195; RSS-196; RSS-197; RSS-199; RSS-210;
RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222;
RSS-236; RSS-238; RSS-243; RSS-244; RSS-247; RSS-248;
RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-GEN

Mexico Radio Tests

IFT-008-2015; NOM-208-SCFI-2016

Japan Radio Tests

Radio Law No. 131, Ordinance of MPT No. 37, 1981,
MIC Notification No. 88:2004, Table No. 22-11;
ARIB STD-T66, Regulation 18

Taiwan Radio Tests

LP-0002 (July 15, 2020)

Australia/New Zealand Radio Tests

AS/NZS 4268; Radiocommunications (Short Range Devices)
Standard (2014)

Hong Kong Radio Tests

HKCA 1039 Issue 6; HKCA 1042; HKCA 1033 Issue 7;
HKCA 1061; HKCA 1008; HKCA 1043; HKCA 1057;
HKCA 1073

Korean Radio Test Standards

KN 301 489-1; KN 301 489-3; KN 301 489-9;
KN 301 489-17; KN 301 489-52; KS X 3124; KS X 3125;
KS X 3130; KS X 3126; KS X 3129

Vietnam Radio Test Standards

QCVN 47:2015/BTTTT; QCVN 54:2020/BTTTT;
QCVN 55:2011/BTTTT; QCVN 65:2013/BTTTT;
QCVN 73:2013/BTTTT; QCVN 74:2020/BTTTT;
QCVN 112:2017/BTTTT; QCVN 117:2020/BTTTT

Vietnam EMC Test Standards

QCVN 18:2014/BTTTT; QCVN 86:2019/BTTTT;
QCVN 96:2015/BTTTT; QCVN 118:2018/BTTTT

Test Technology:

Unlicensed Radio Frequency Devices
(3 Meter Semi-Anechoic Room)

Licensed Radio Service Equipment

OTA (Over the Air) Performance

GSM, GPRS, EGPRS
UMTS (W-CDMA)
LTE including CAT M1
A-GPS for UMTS/GSM
LTS A-GPS, A-GLONASS,
SIB8/SIB16
Large Device/Laptop/Tablet Testing
Integrated Device Testing
WiFi 802.11 a/b/g/n/a

Electrical Measurements and Simulation

AC Voltage / Current

(1mV to 5kV) 60 Hz
(0.1V to 250V) up to 500 MHz
(1μA to 150A) 60 Hz

DC Voltage / Current

(1mV to 15-kV) / (1μA to 10A)

Power Factor / Efficiency / Crest Factor

(Power to 30kW)

Resistance

(1mΩ to 4000MΩ)

Surge

(Up to 10 kV / 5 kA) (Combination
Wave and Ring Wave)

Test Method(s) ¹:

47 CFR FCC Part 15C, 15D, 15E, 15F, 15G, 15H
(using ANSI C63.10:2013, ANSI C63.17:2013 and
FCC KDB 905462 D02 (v02))

47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87,
90, 95, 96, 97, 101 (using ANSI/TIA-603-E,
TIA-102.CAAA-E, ANSI C63.26:2015)

CTIA Test Plan for Wireless Device Over-the-Air
Performance (Method for Measurement for Radiated Power
and Receiver Performance) V3.8.2;
CTIA Test Plan for RF Performance Evaluation of WiFi
Mobile Converged Devices V2.1.0

FAA AC 150/5345-10H

FAA AC 150/5345-43J

FAA AC 150/5345-44K

FAA AC 150/5345-46E

FAA AC 150/5345-47C

FAA EB 67D

On the following products and materials:

Telecommunications Terminal Equipment (TTE), Radio Equipment, Network Equipment, Information Technology Equipment (ITE), Automotive Electronic Equipment, Automotive Hybrid Electronic Devices, Maritime Navigation and Radio Communication Equipment and Systems, Vehicles, Boats and Internal Combustion Engine Driven Devices, Automotive, Aviation, and General Lighting Products, Medical Electrical Equipment, Motors, Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment, Household Appliances, Electric Tools, Low-voltage Switchgear and Control gear, Programmable Controllers, Electrical Equipment for Measurement, Control and Laboratory Use, Base Materials, Power and Data Transmission Cables and Connectors

¹ When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories.

Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1²

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>Unintentional Radiators</u> Part 15B	ANSI C63.4:2014	40000
<u>Industrial, Scientific, and Medical Equipment</u> Part 18	FCC MP-5 (February 1986)	40000
<u>Intentional Radiators</u> Part 15C	ANSI C63.10:2013	40000
<u>Unlicensed Personal Communication Systems Devices</u> Part 15D	ANSI C63.17:2013	40000
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000
<u>U-NII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000
<u>UWB Intentional Radiators</u> Part 15F	ANSI C63.10:2013	40000
<u>BPL Intentional Radiators</u> Part 15G	ANSI C63.10:2013	40000
<u>White Space Device Intentional Radiators</u> Part 15H	ANSI C63.10:2013	40000
<u>Commercial Mobile Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (cellular), 24, 25 (below 3 GHz), and 27	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>General Mobile Radio Services (FCC Licensed Radio Service Equipment)</u> Parts 22 (non-cellular), 90 (below 3 GHz), 95, 97, and 101 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Citizens Broadband Radio Services (FCC Licensed Radio Service Equipment)</u> Part 96	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000

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Testing Activities Performed in Support of FCC Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1²

Rule Subpart/Technology	Test Method	Maximum Frequency (MHz)
<u>Maritime and Aviation Radio Services</u> Parts 80 and 87	ANSI/TIA-603-E; ANSI C63.26:2015	40000
<u>Microwave and Millimeter Bands Radio Services</u> Parts 25, 30, 74, 90 (above 3 GHz), 97 (above 3 GHz), and 101	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Broadcast Radio Services</u> Parts 73 and 74 (below 3 GHz)	ANSI/TIA-603-E; TIA-102.CAAA-E; ANSI C63.26:2015	40000
<u>Signal Boosters</u> Part 20 (Wideband Consumer Signal Boosters, Provider-specific signal boosters, and Industrial Signal Boosters) Section 90.219	ANSI C63.26:2015	40000

² Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (<https://apps.fcc.gov/oetcf/eas/>) for a listing of FCC approved laboratories.



Accredited Laboratory

A2LA has accredited

ELITE ELECTRONIC ENGINEERING INC.

Downers Grove, IL

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 19th day of May 2021.

A handwritten signature in blue ink.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1786.01
Valid to June 30, 2023

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.