

27. Module Integration – Emissions Test

EUT Information	
Manufacturer	Cala Health, Inc
Product	tremor therapy device charging dock
Model No.	BW100
Serial No.	BA00067
Mode	Tx and Multi-Tx

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).

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

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.

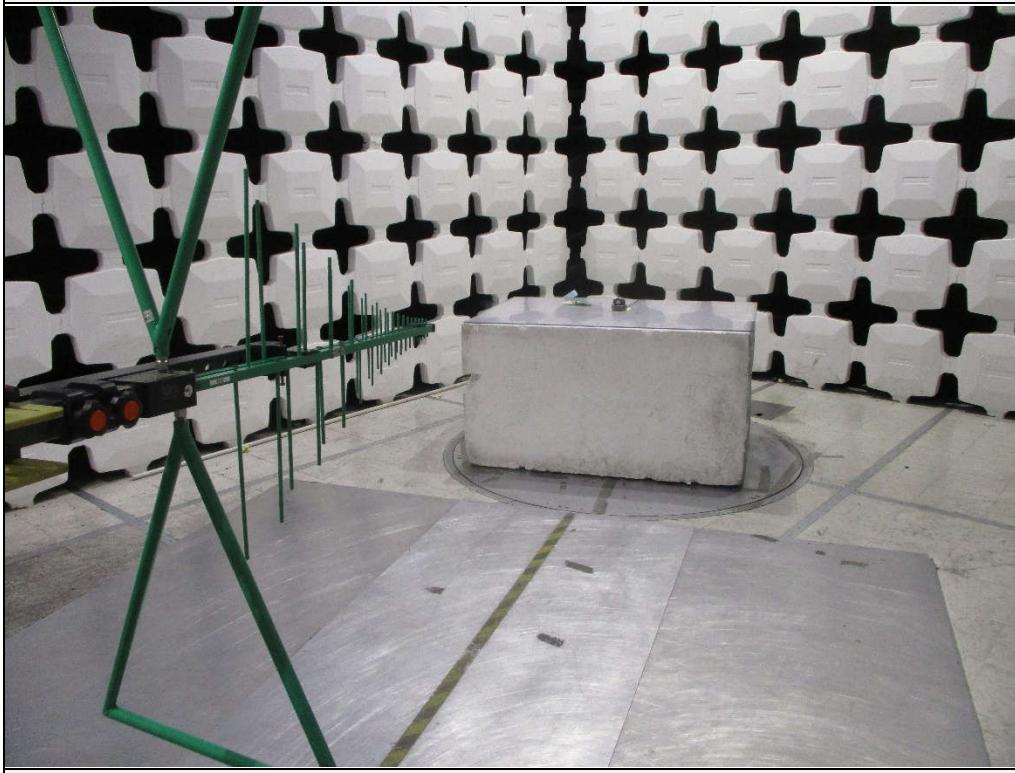
The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure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

The EUT was placed on the non-conductive stand and set to transmit. A bilog antenna (double ridged waveguide antenna for all measurements above 1GHz) was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 6dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle, and high channels.

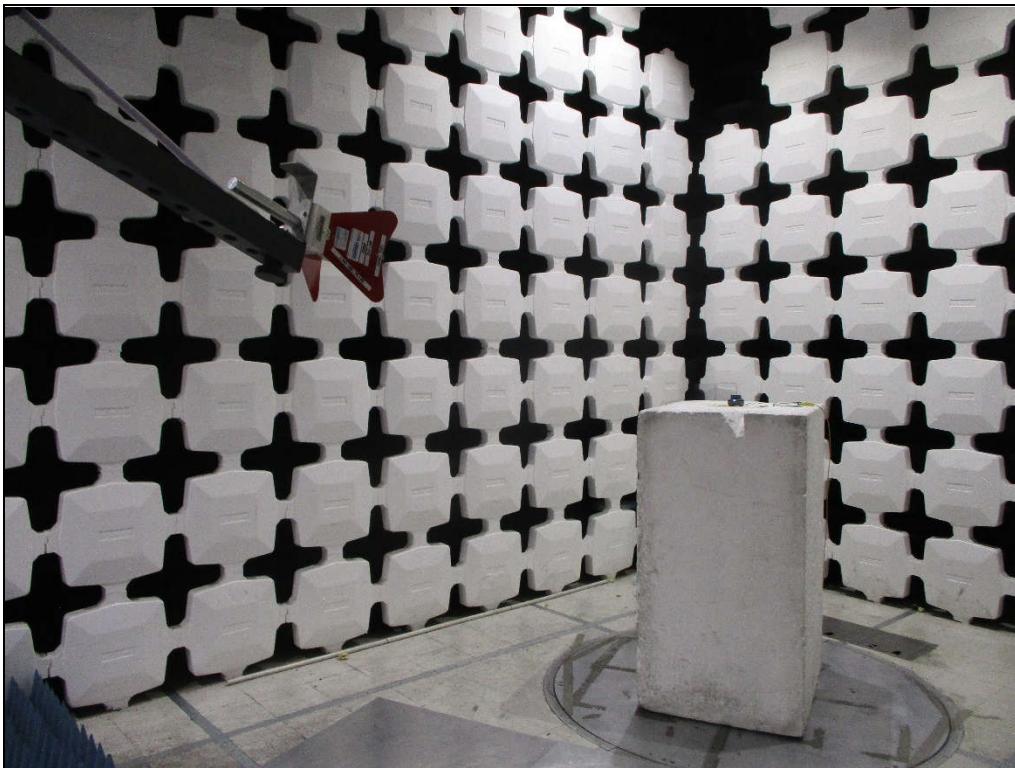
The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a dipole antenna (double ridged waveguide antenna for all measurements above 1GHz) was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss (and antenna gain for all measurements above 1GHz), as required. The peak power output was calculated for low, middle, and high hopping frequencies.



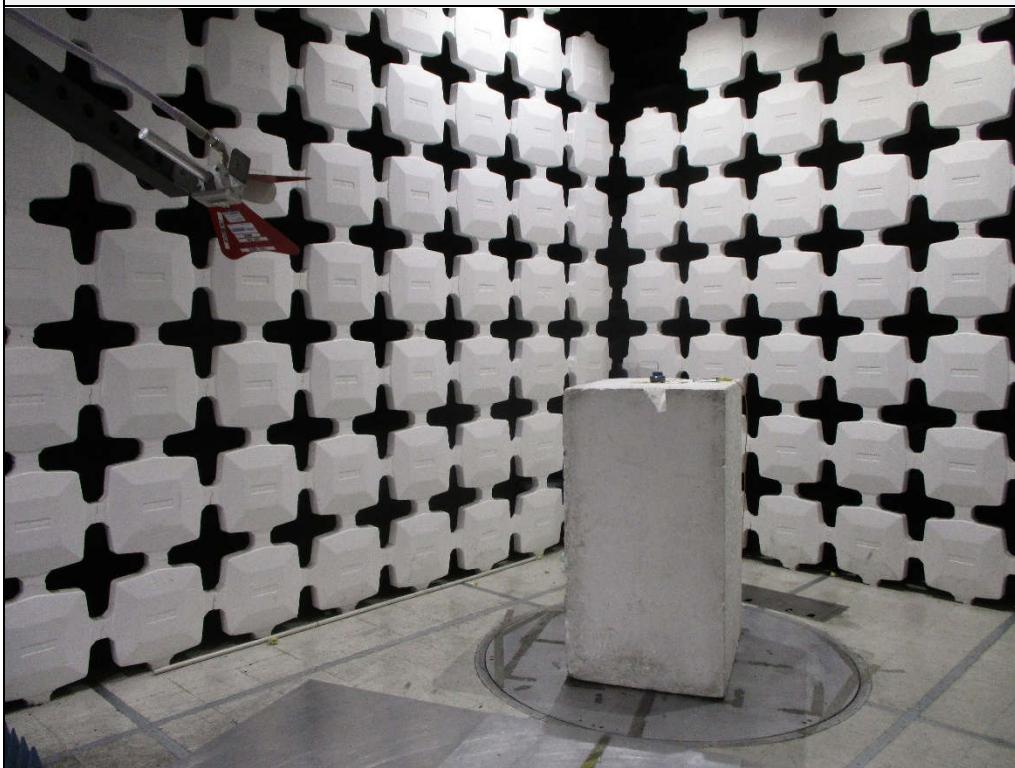
Test Setup for Spurious Emissions: 30MHz to 1GHz, Horizontal Polarization



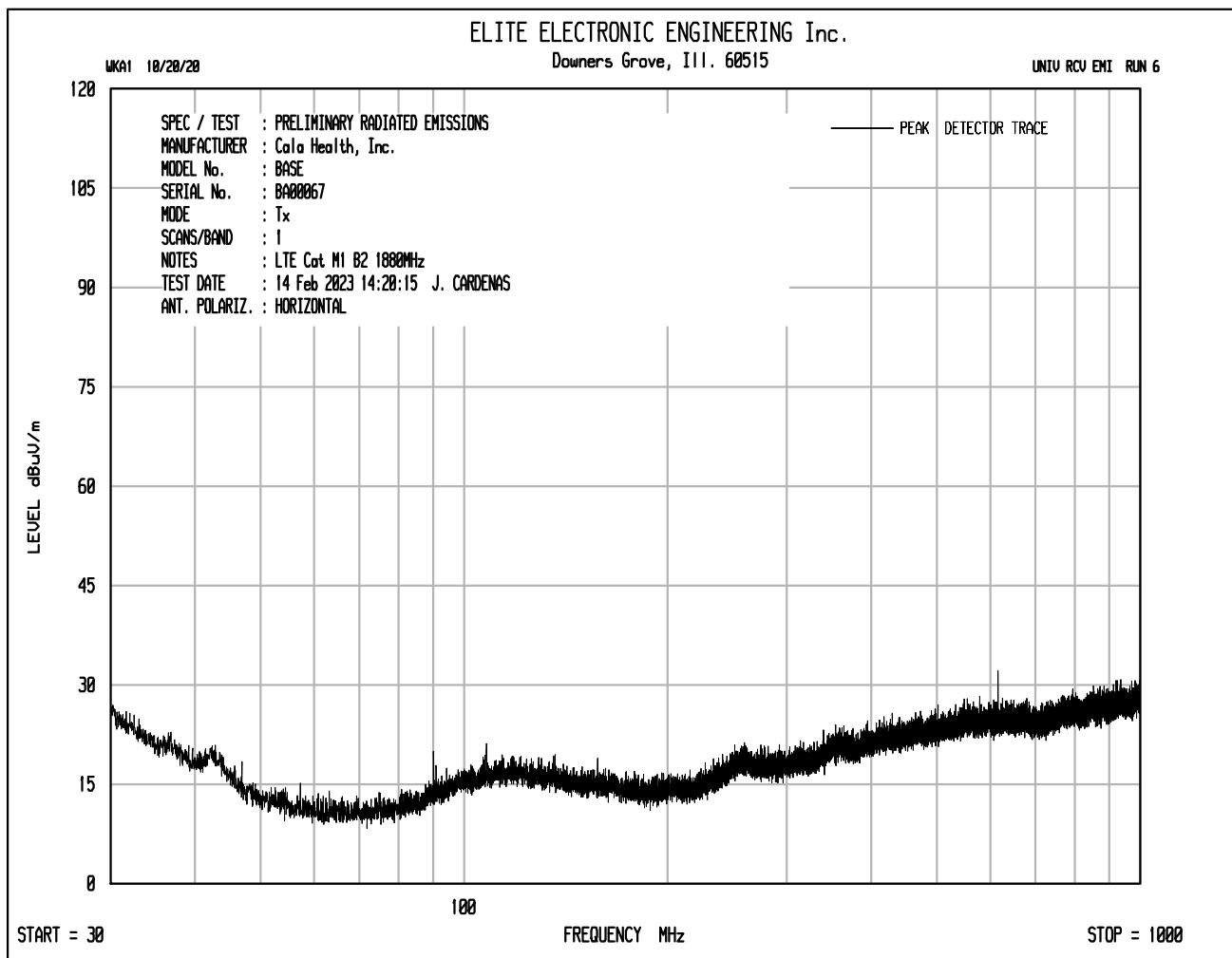
Test Setup for Spurious Emissions: 30MHz to 1GHz, Vertical Polarization

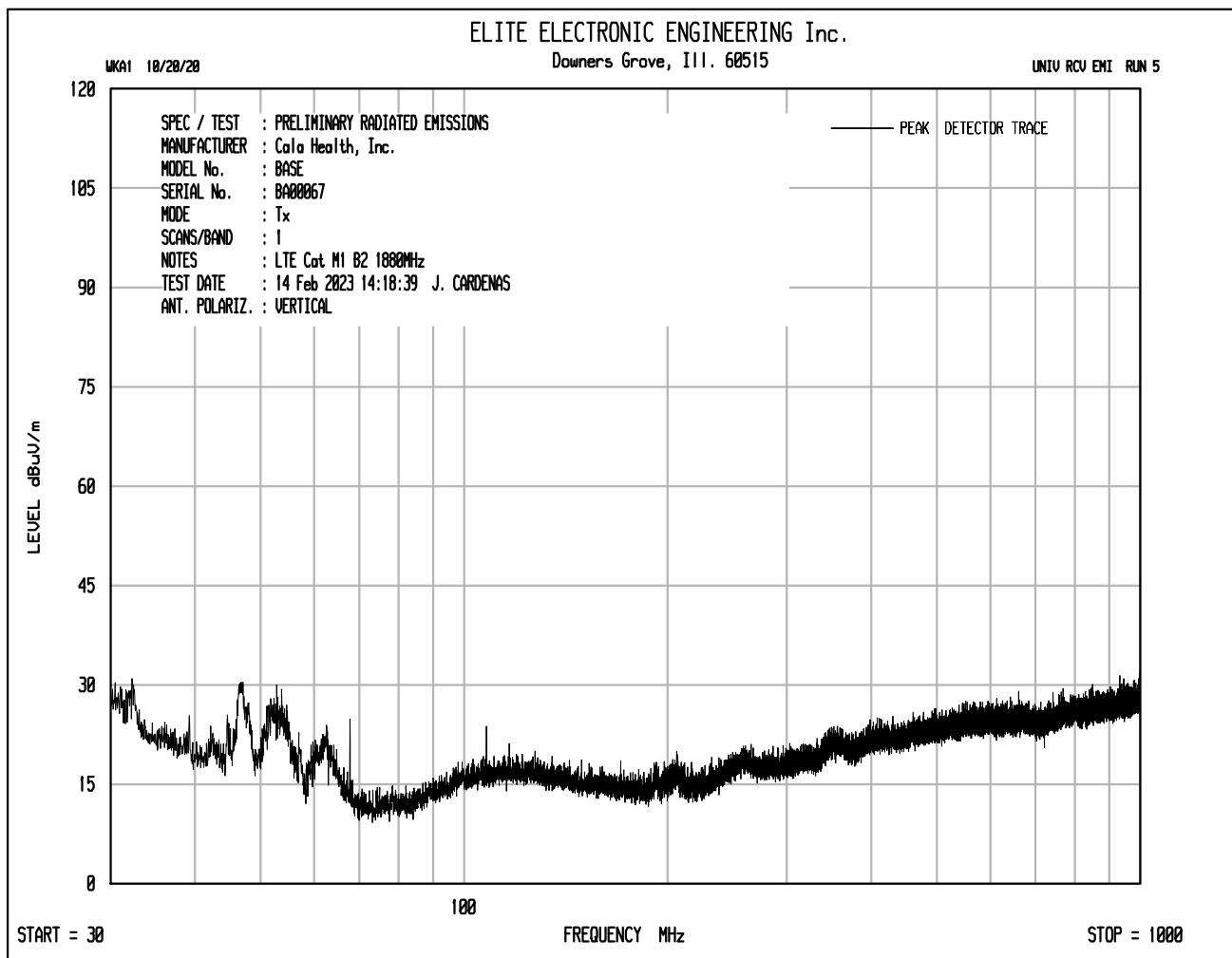


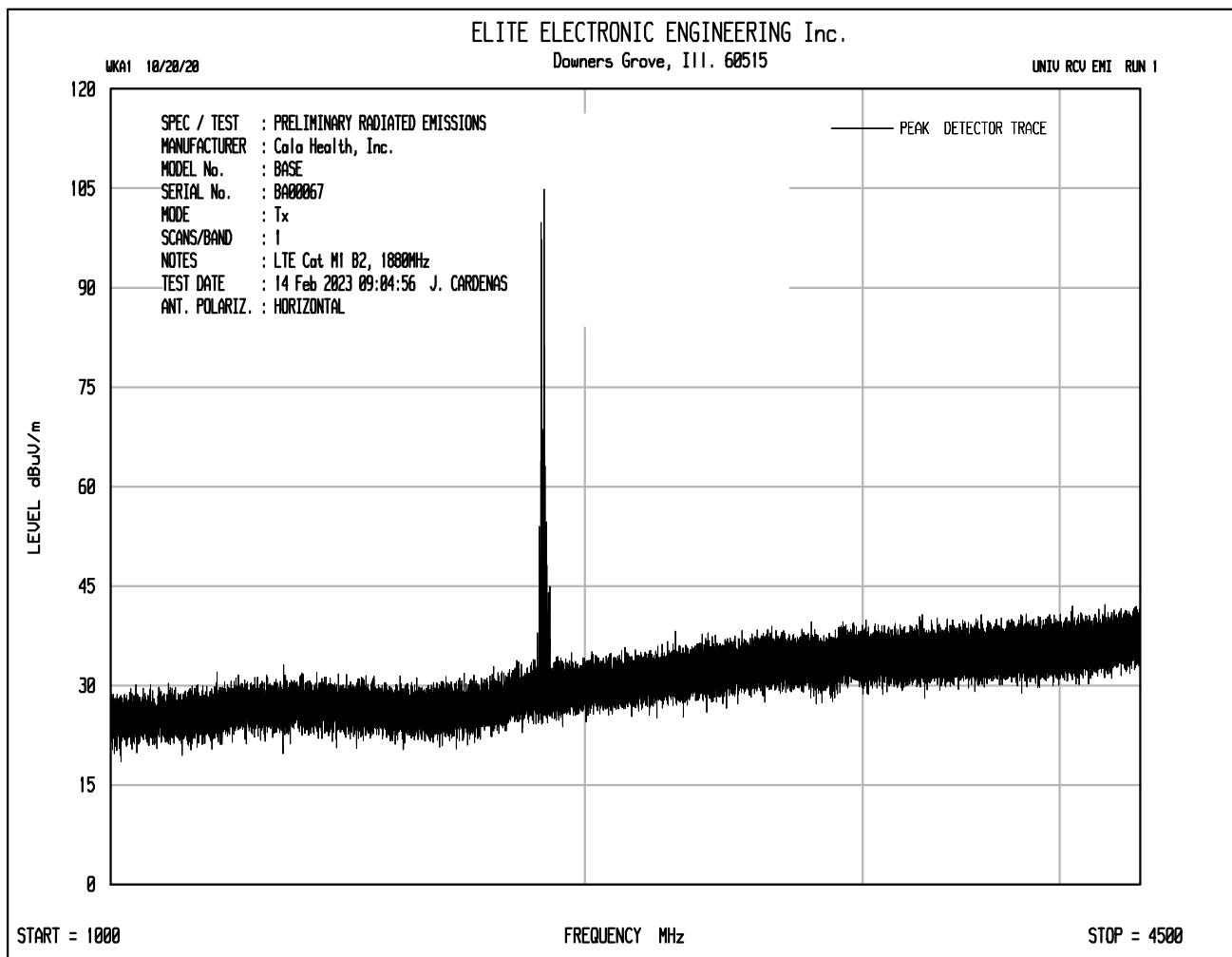
Test Setup for Spurious Emissions: Above 1GHz, Horizontal Polarization

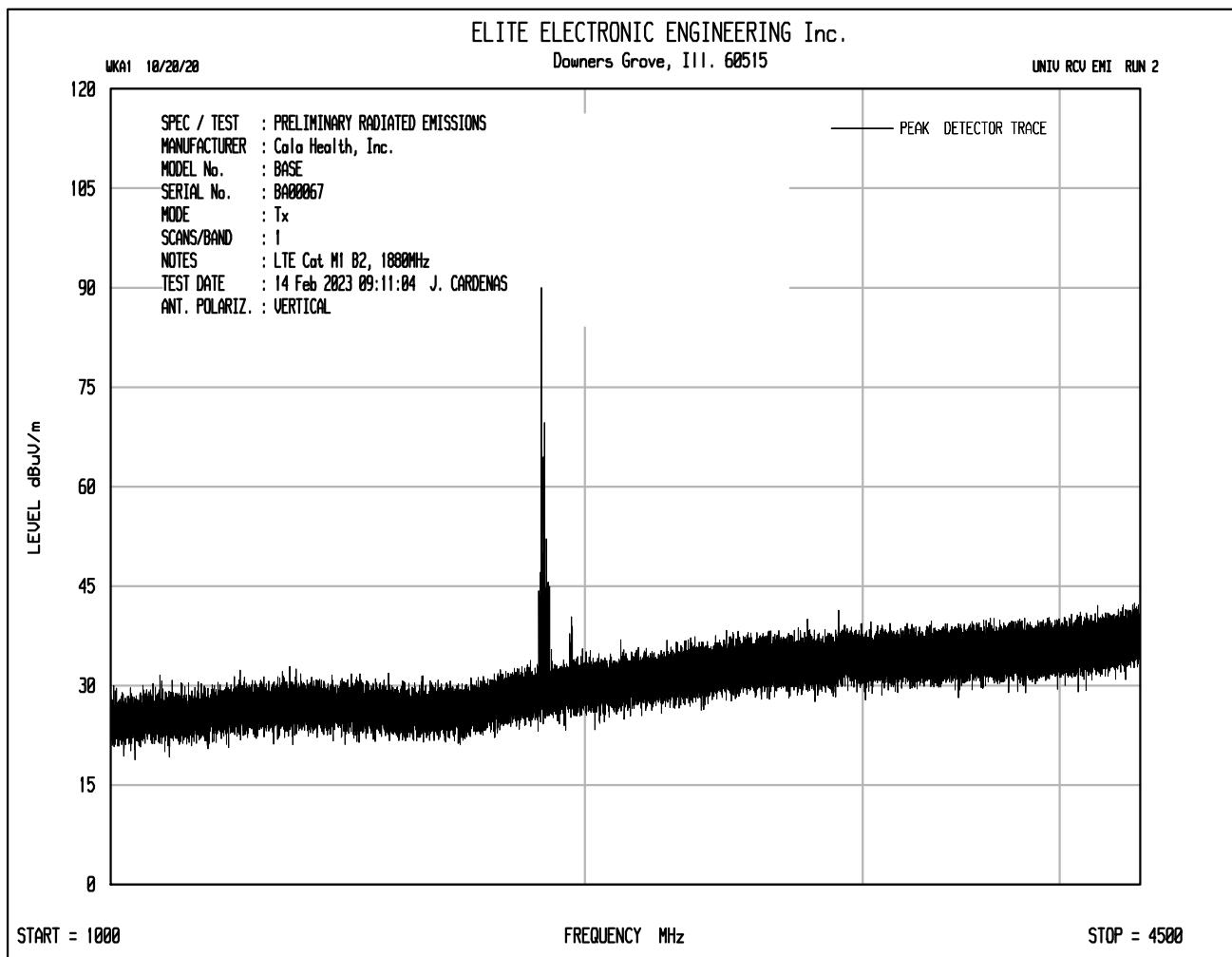


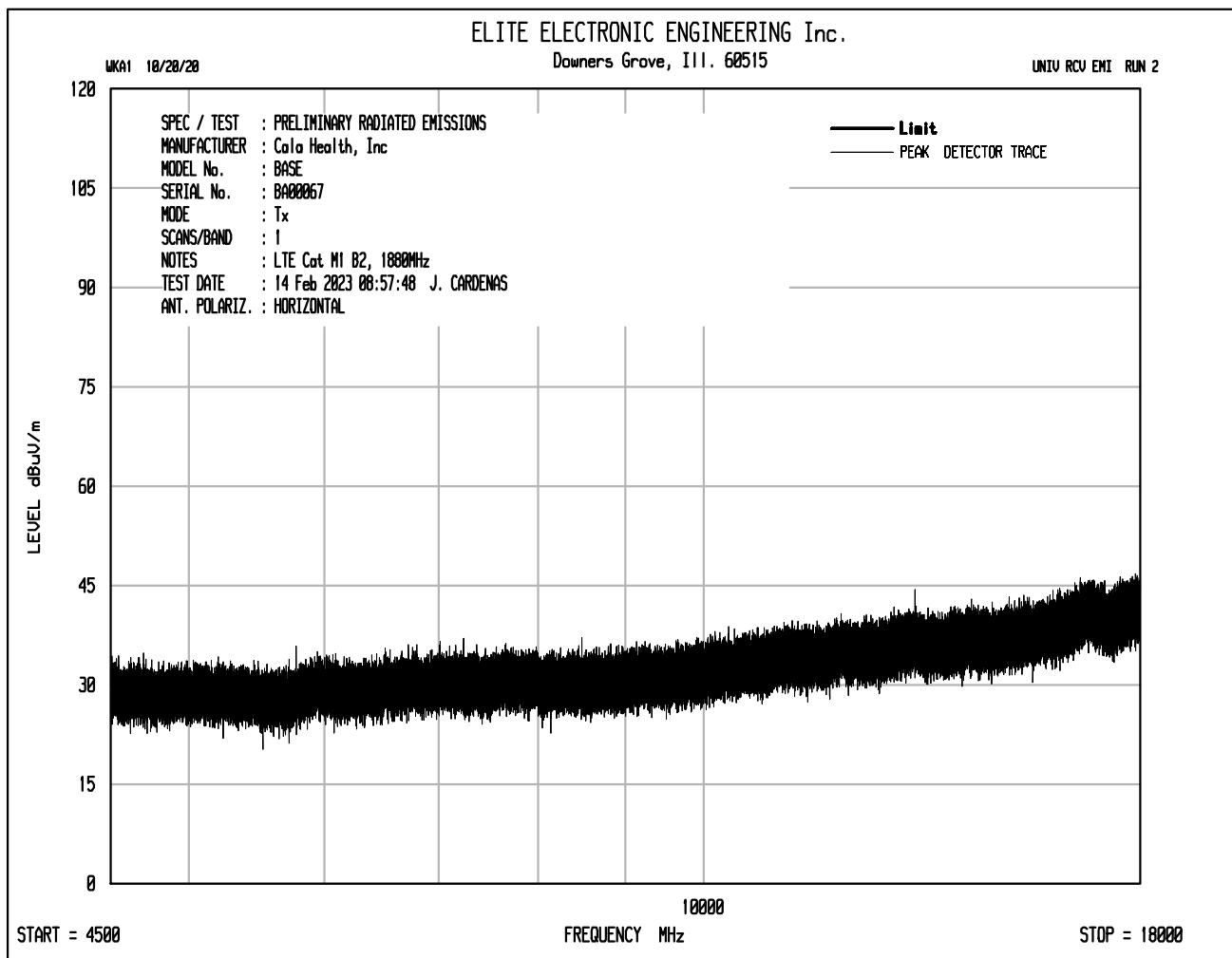
Test Setup for Spurious Emissions: Above 1GHz, Vertical Polarization

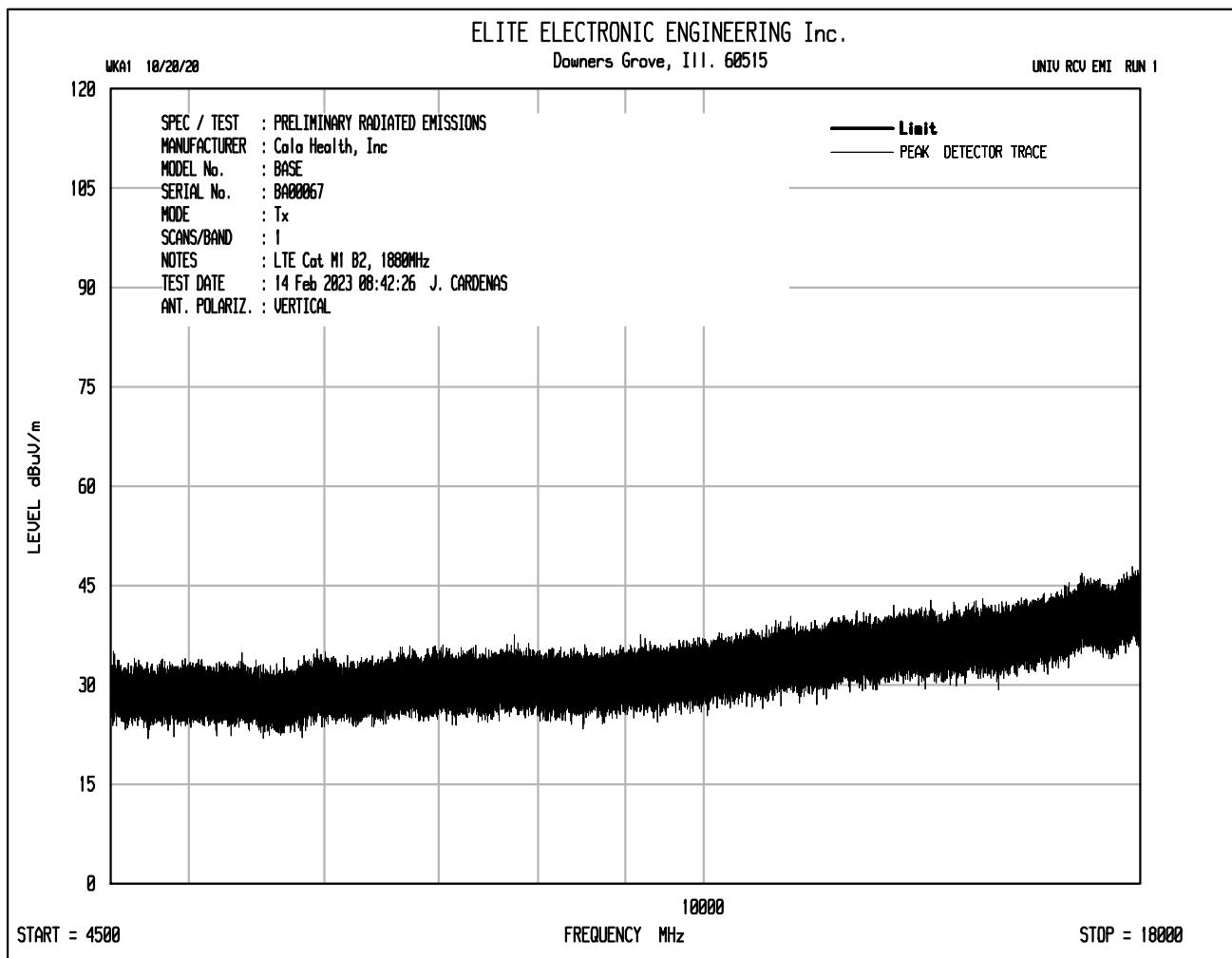


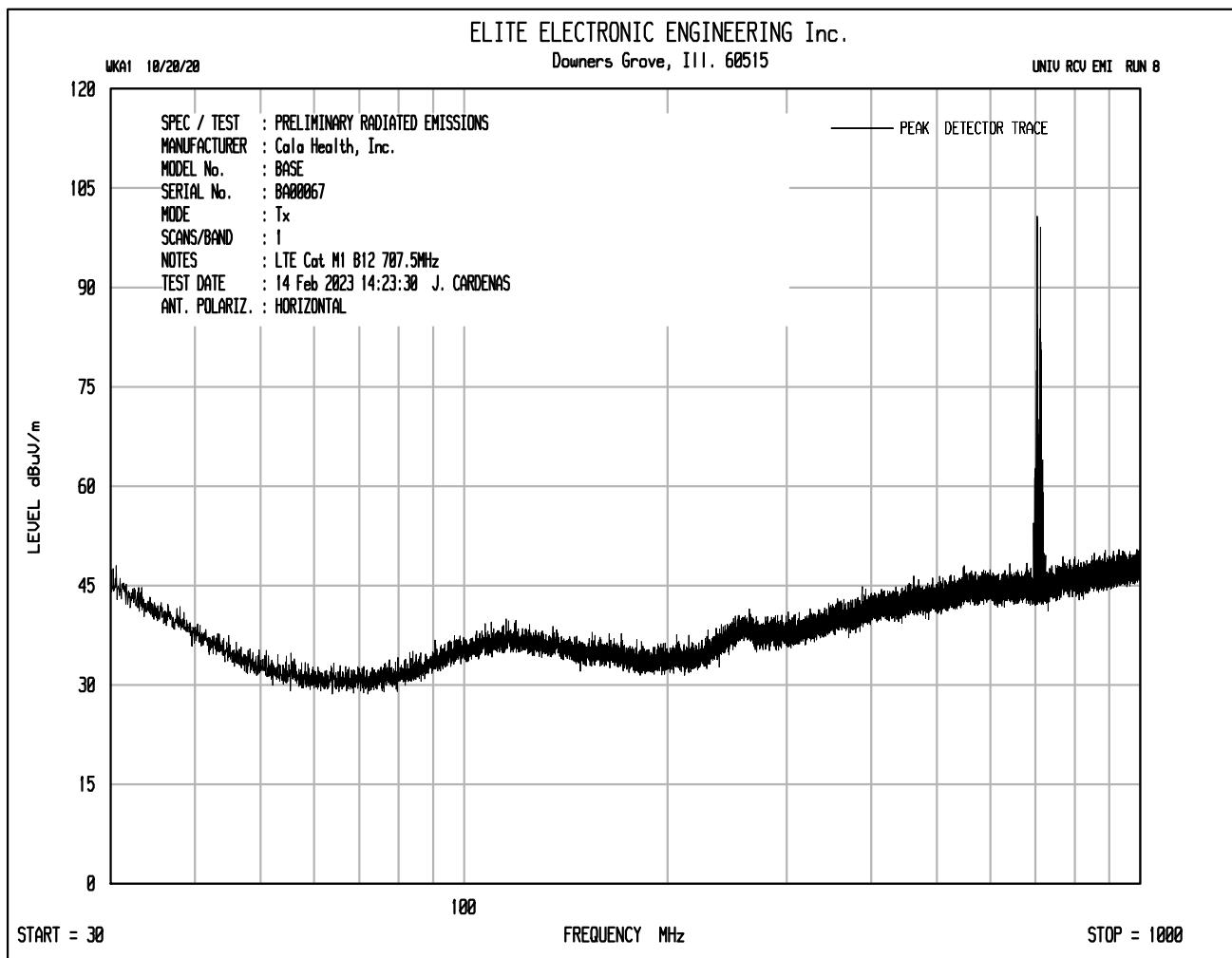


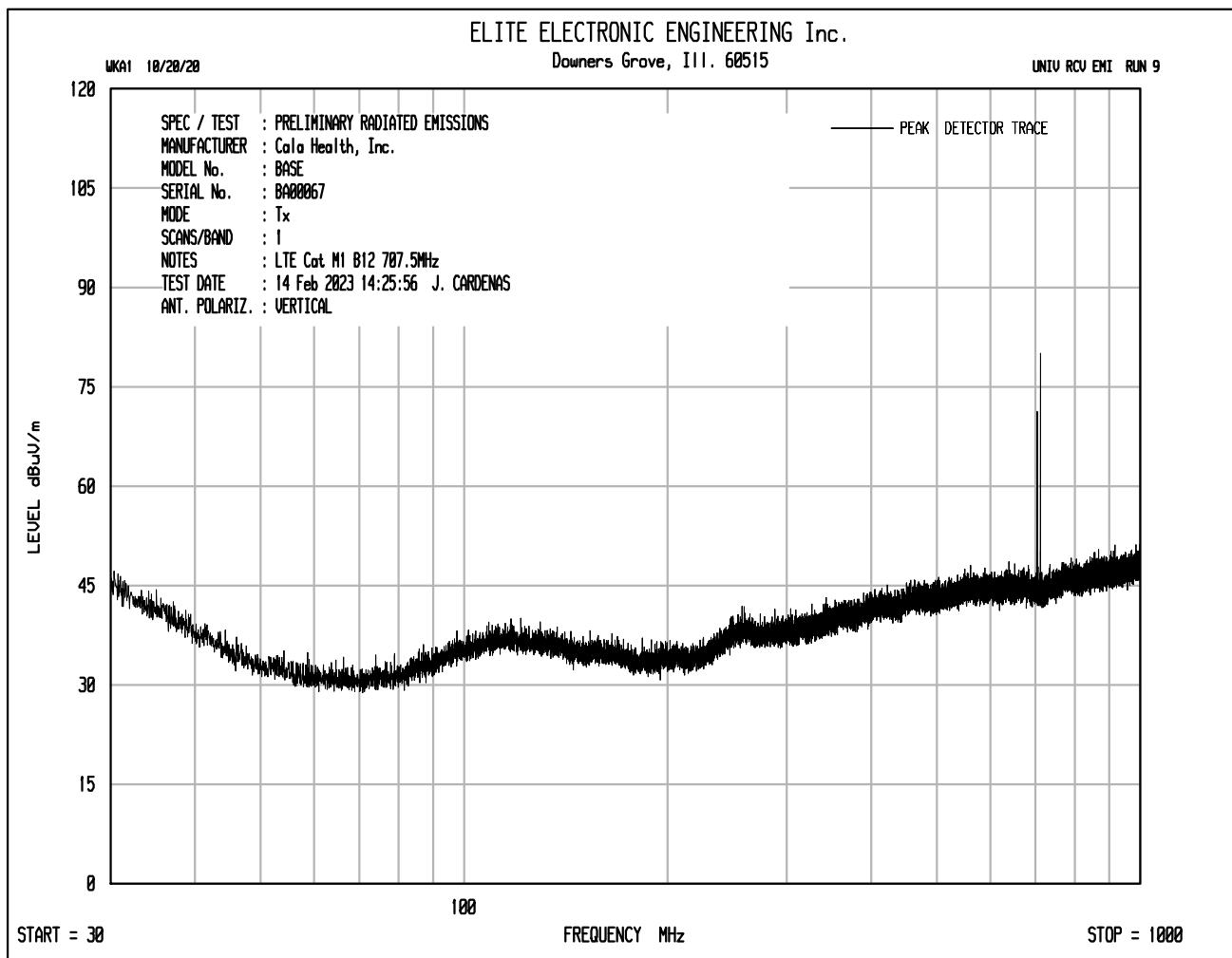


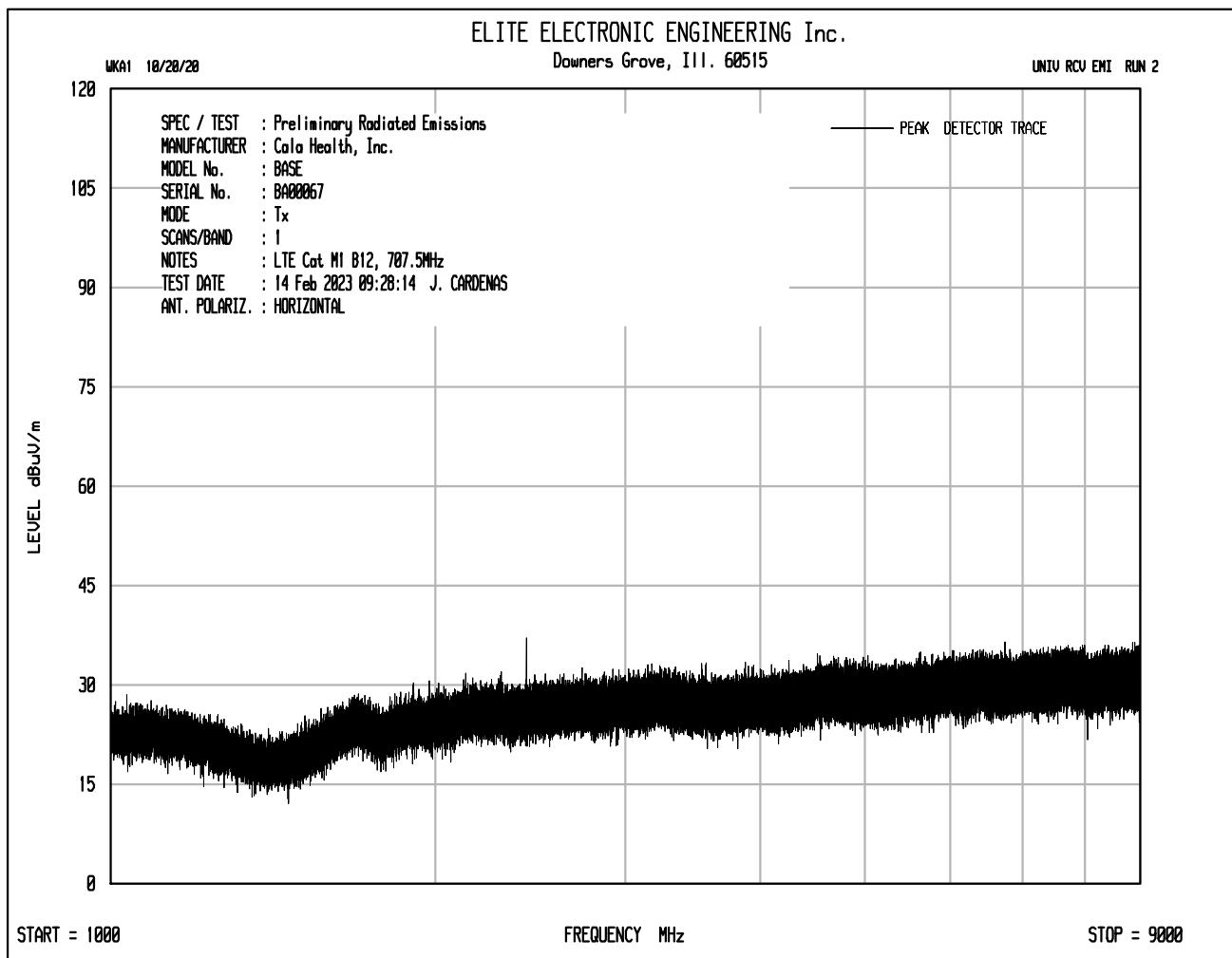


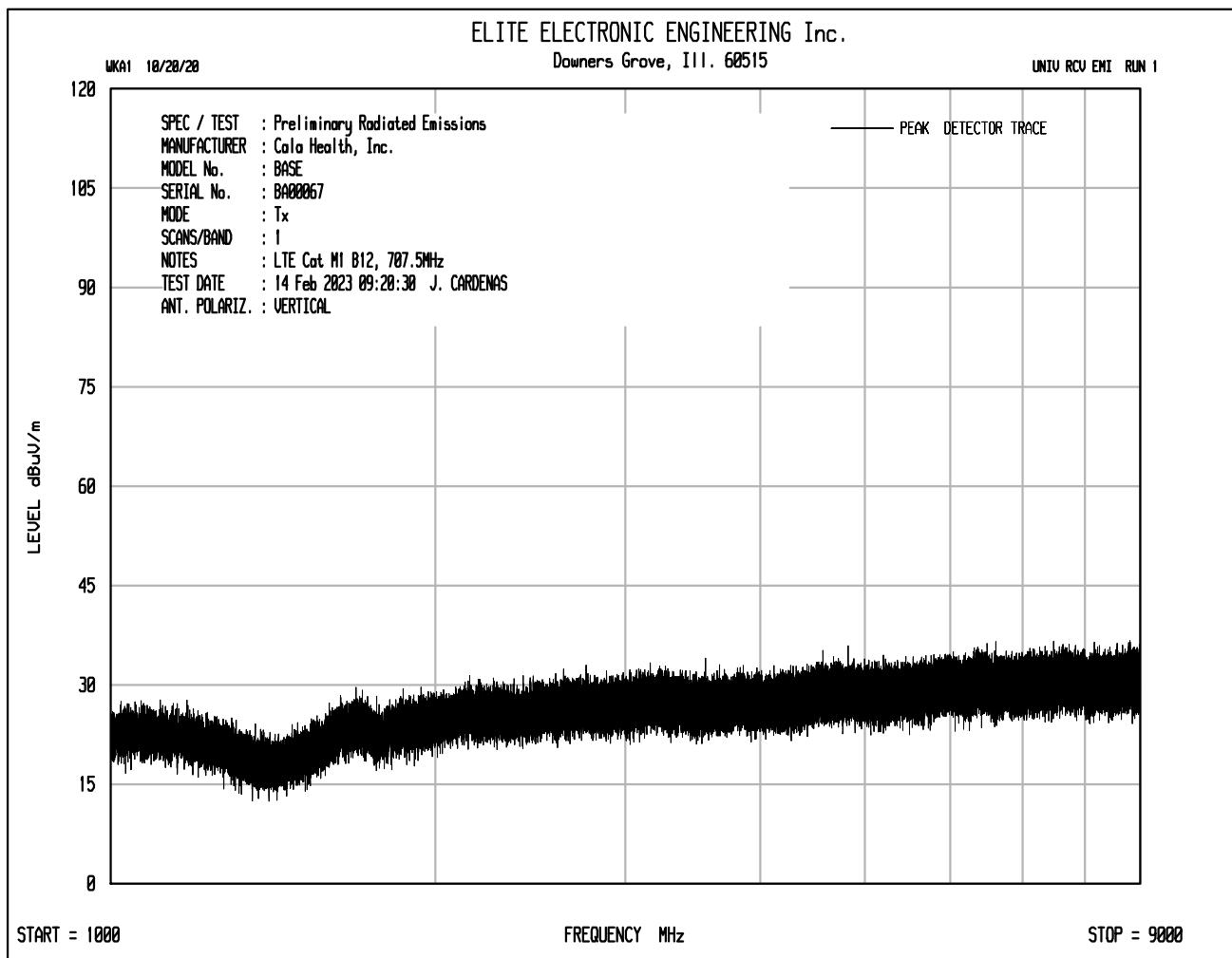










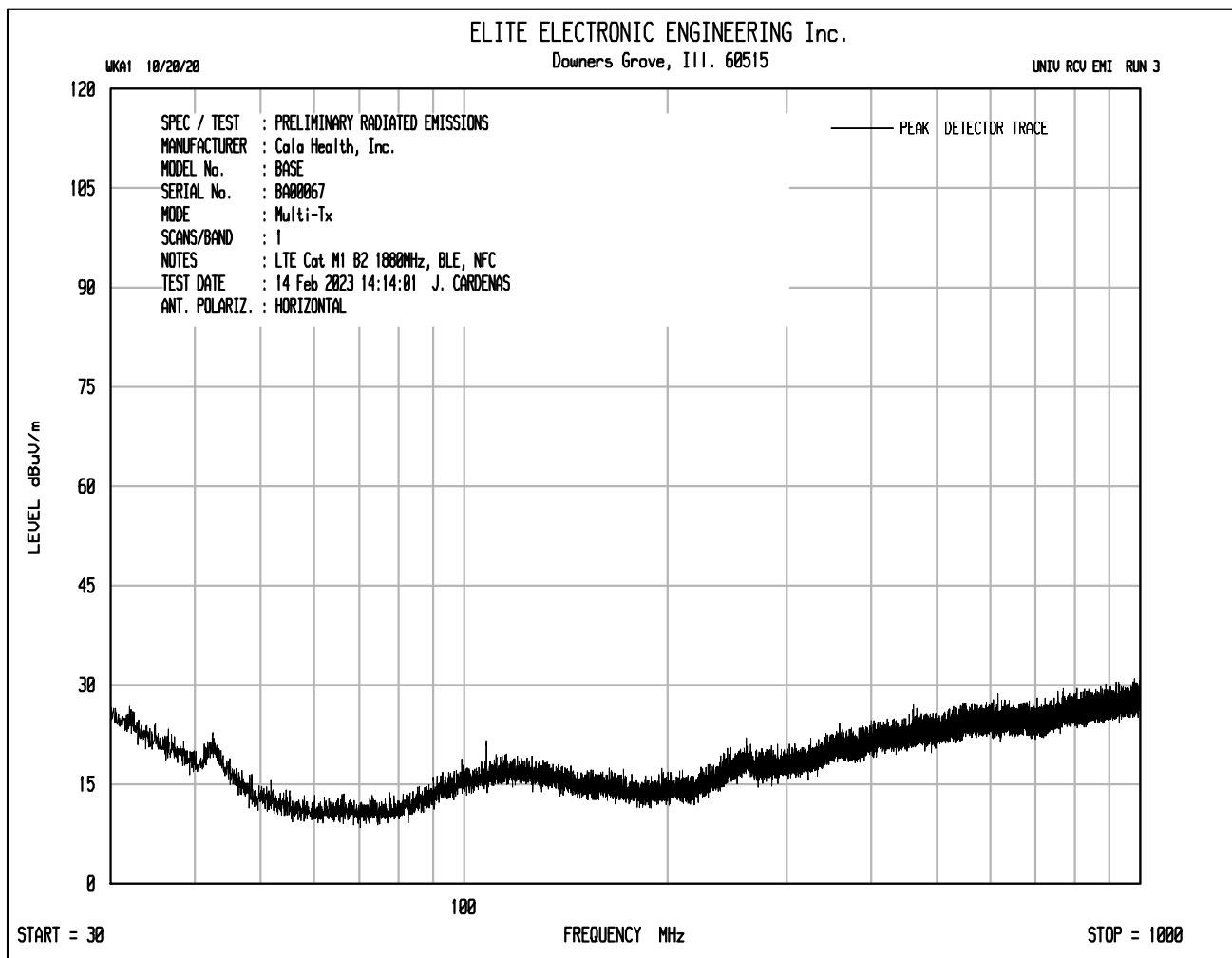


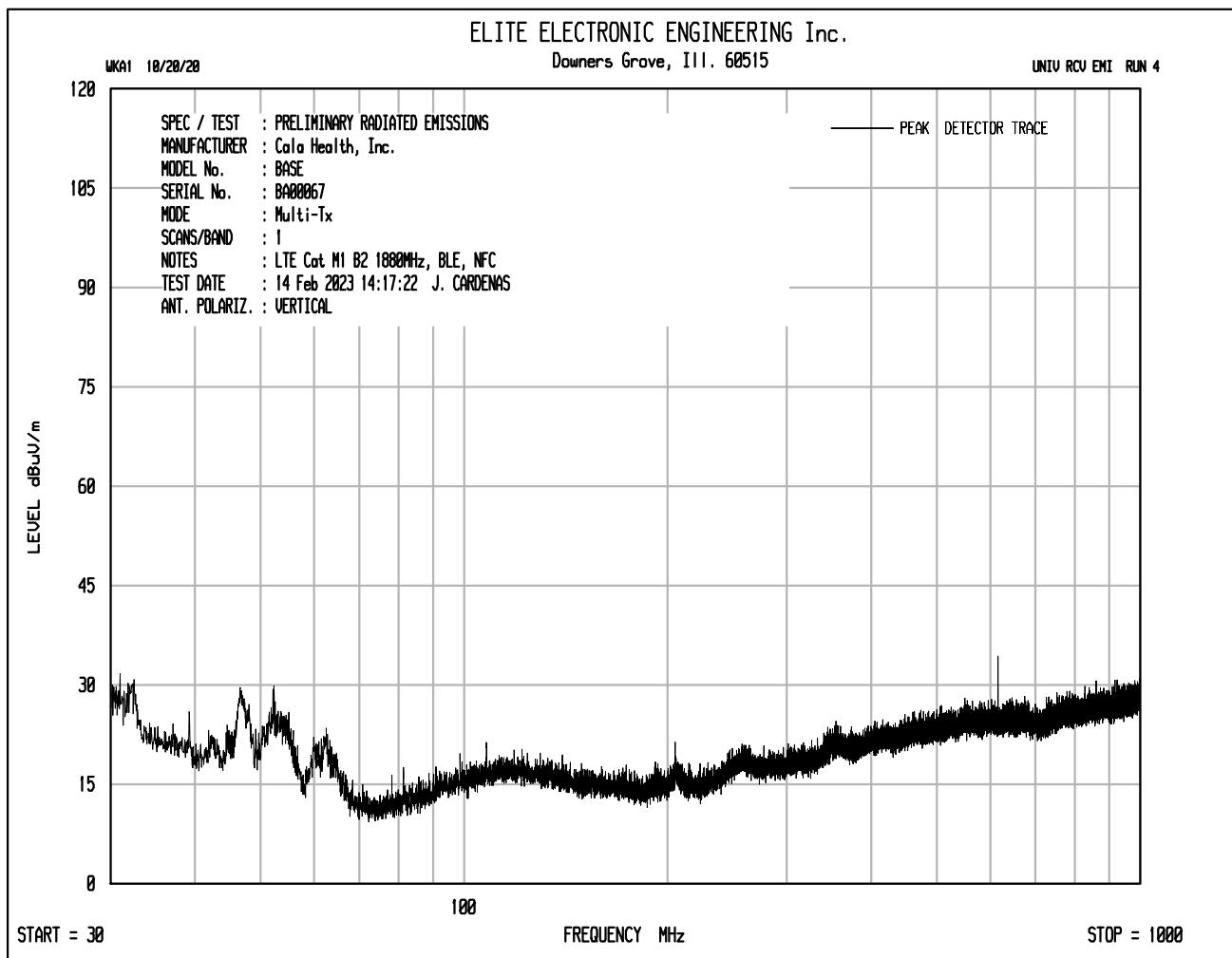
Test Details									
Manufacturer	Cala Health, Inc								
Model No.	BW100								
Serial No.	BA00067								
Test	Host Product Testing – Case Spurious Emissions								
Mode	Tx								
Frequency Tested	1880MHz								
Notes	LTE Cat M1 Band 2								

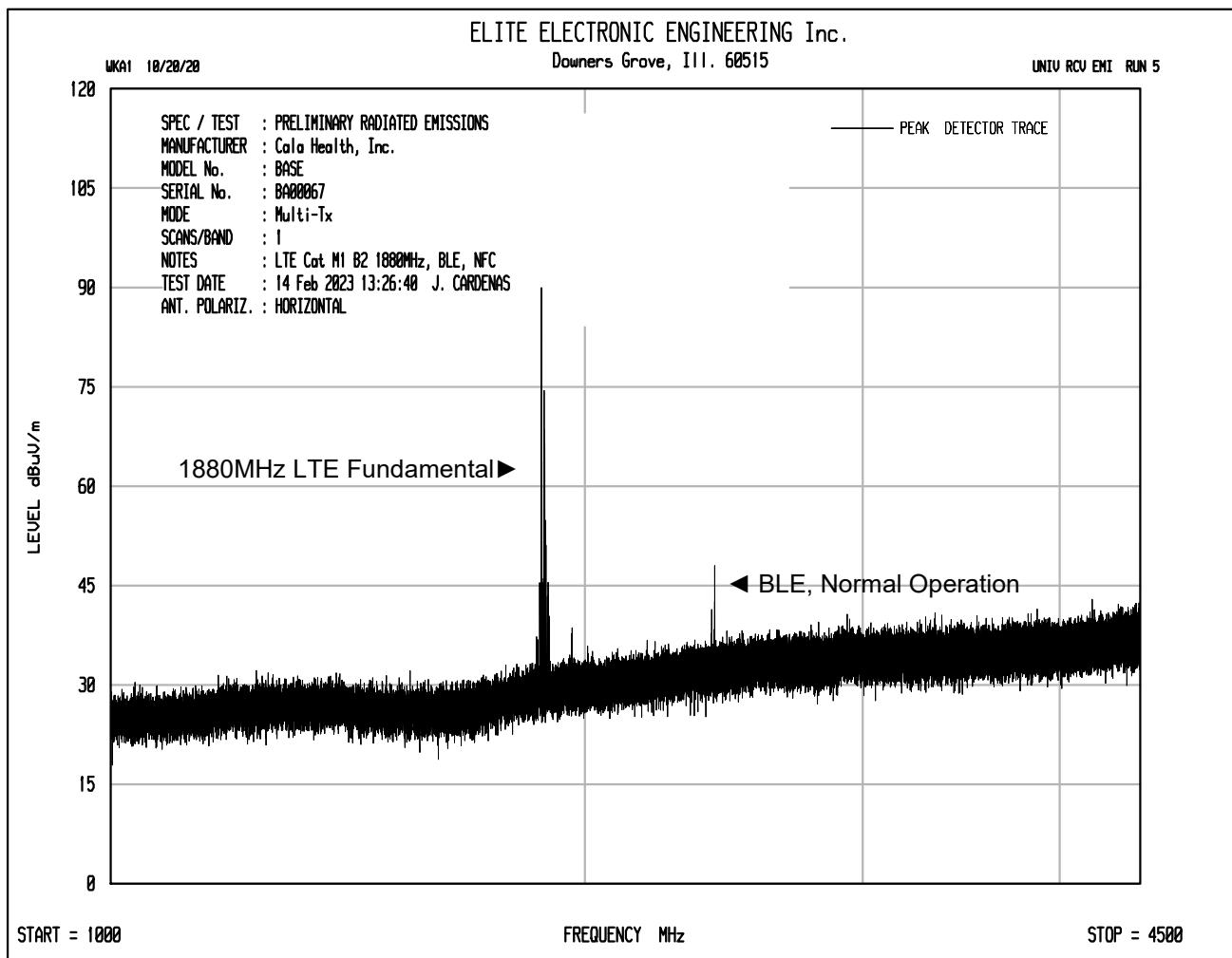
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	Calculated Sig. Gen. Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	ERP (dBm)	Attenuation Below Output Power (dB)	Minimum Attenuation (dB)
3760.00	H	23.6	*	-39.4	4.9	4.3	-38.9	63.9	38.0
3760.00	V	23.0	*	-38.8	4.9	4.3	-38.3	63.3	38.0
5640.00	H	48.5	*	-49.9	5.7	5.3	-49.5	74.5	38.0
5640.00	V	48.2	*	-50.4	5.7	5.3	-50.0	75.0	38.0
7520.00	H	47.9	*	-48.4	7.8	6.3	-46.8	71.8	38.0
7520.00	V	47.3	*	-49.5	7.8	6.3	-47.9	72.9	38.0
9400.00	H	48.3	*	-46.3	8.4	6.7	-44.6	69.6	38.0
9400.00	V	47.9	*	-46.9	8.4	6.7	-45.2	70.2	38.0
11280.00	H	47.0	*	-44.3	8.8	7.7	-43.2	68.2	38.0
11280.00	V	46.6	*	-45.6	8.8	7.7	-44.5	69.5	38.0

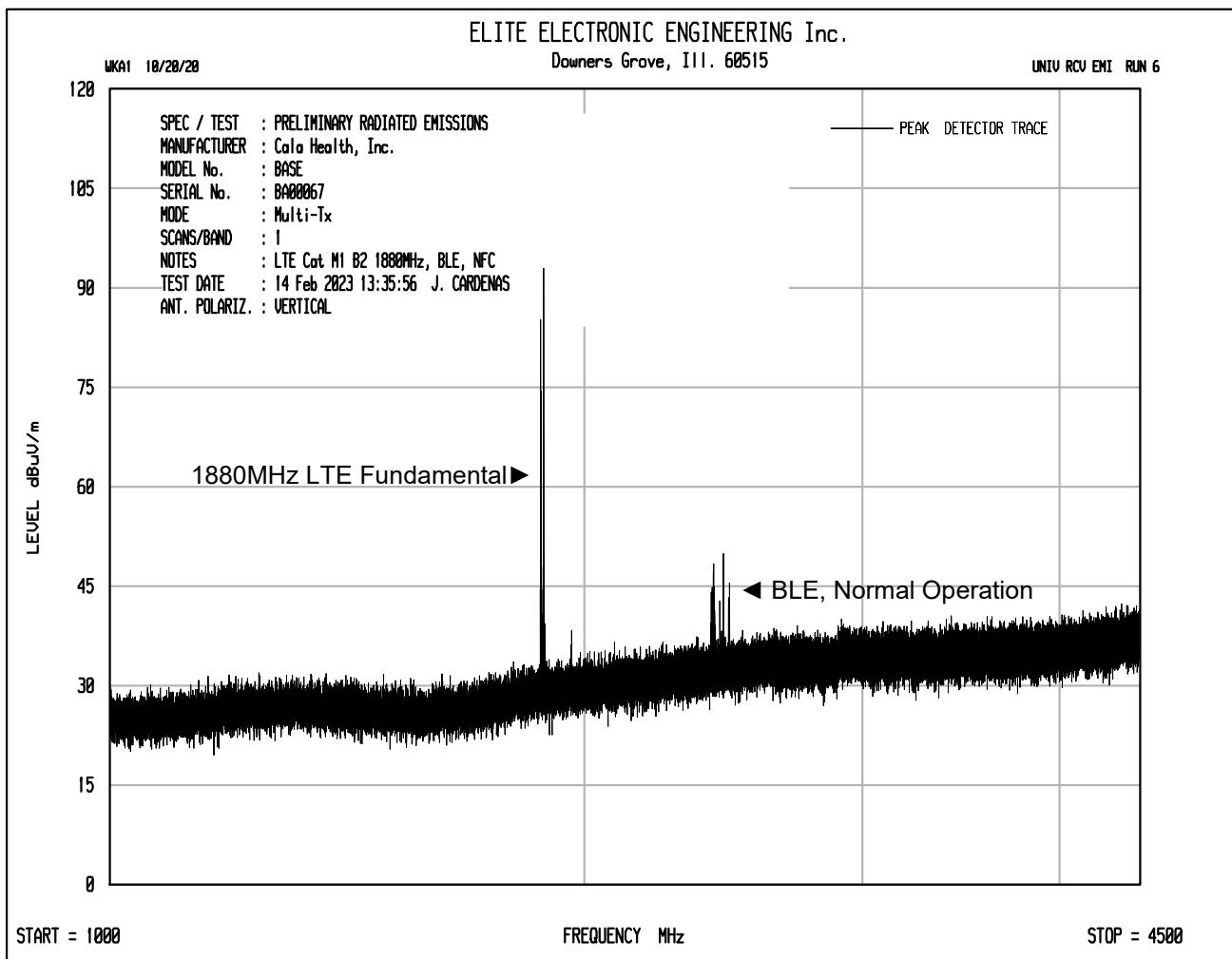
Test Details									
Manufacturer	Cala Health, Inc								
Model No.	BW100								
Serial No.	BA00067								
Test	Host Product Testing – Case Spurious Emissions								
Mode	Tx								
Frequency Tested	707.5MHz								
Notes	LTE Cat M1 Band 12								

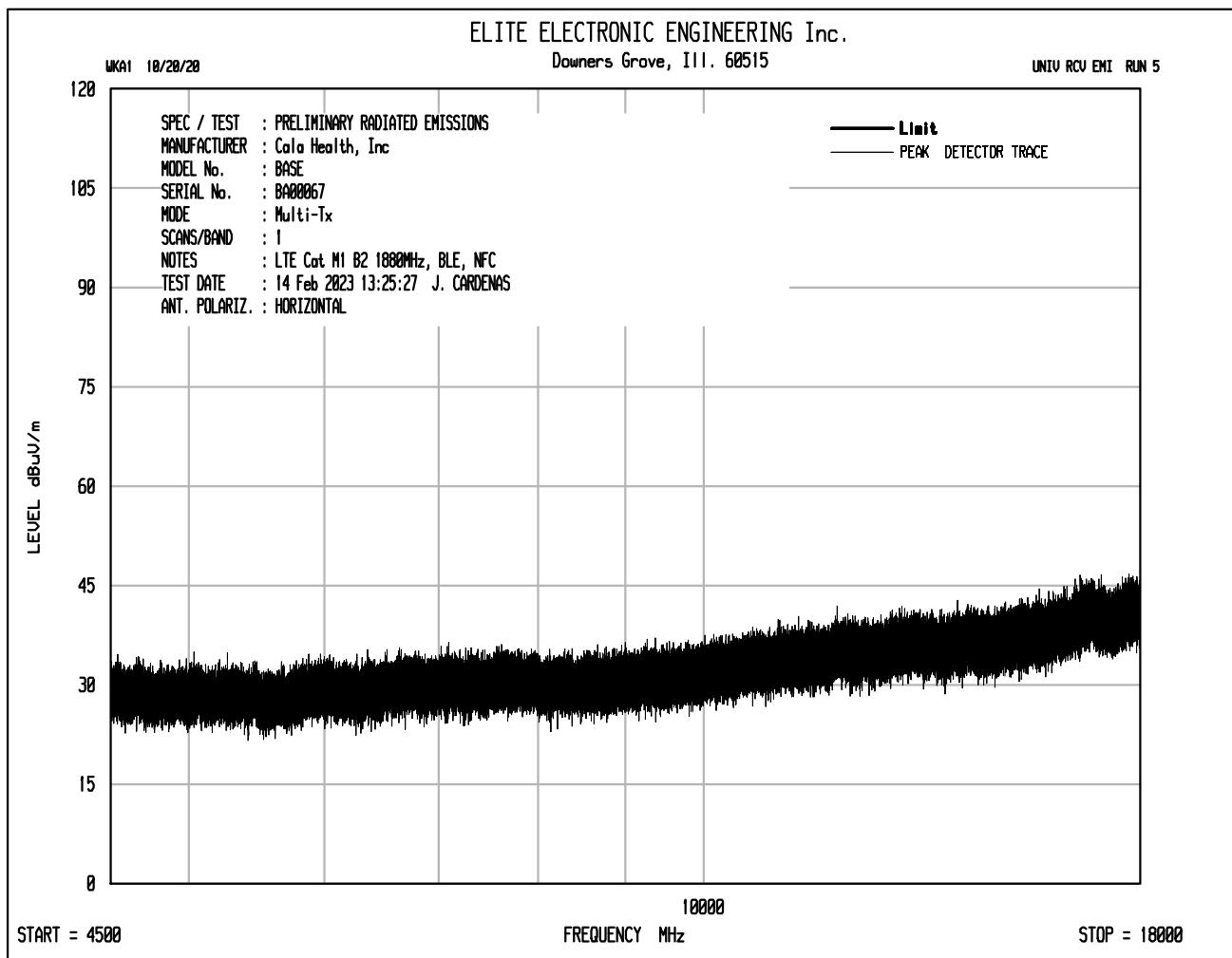
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	Calculated Sig. Gen. Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	ERP (dBm)	Attenuation Below Output Power (dB)	Minimum Attenuation (dB)
1415.00	H	46.3	*	-62.5	1.7	2.6	-63.4	88.4	38.0
1415.00	V	45.8	*	-61.0	1.7	2.6	-61.9	86.9	38.0
2122.50	H	50.4	*	-53.1	1.9	3.2	-54.3	79.3	38.0
2122.50	V	51.2	*	-51.4	1.9	3.2	-52.6	77.6	38.0
2830.00	H	49.1	*	-56.7	4.2	3.8	-56.3	81.3	38.0
2830.00	V	49.1	*	-54.9	4.2	3.8	-54.5	79.5	38.0
3537.50	H	48.3	*	-55.3	5.2	4.2	-54.3	79.3	38.0
3537.50	V	48.7	*	-53.5	5.2	4.2	-52.6	77.6	38.0
4245.00	H	48.1	*	-52.9	5.4	4.6	-52.1	77.1	38.0
4245.00	V	48.6	*	-51.5	5.4	4.6	-50.7	75.7	38.0

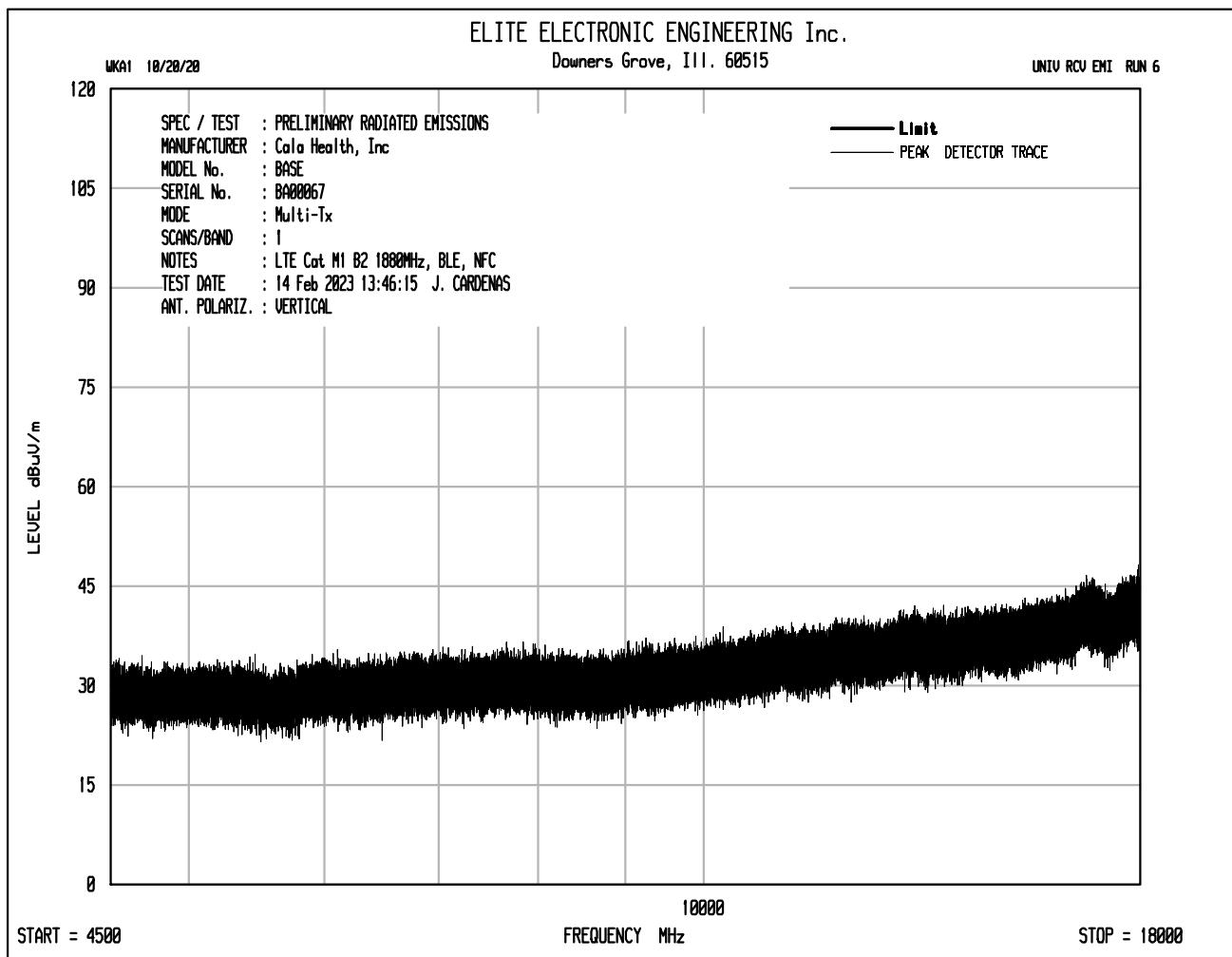












No emissions as a result of intermixing of signals were observed.

29. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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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):*****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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<u>Test Technology:</u>	<u>Test Method(s)^{1:}</u>
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:***European Radio Test Standards*****Test Method(s)¹:**

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

FAA AC 150/5345-10H

FAA AC 150/5345-43J

FAA AC 150/5345-44K

DC Voltage / Current

(1mV to 15-kV) / (1µA to 10A)

FAA AC 150/5345-46E

FAA AC 150/5345-47C

Power Factor / Efficiency / Crest Factor

(Power to 30kW)

FAA EB 67D

Resistance

(1mΩ to 4000MΩ)

Surge

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

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.



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.