Electromagnetic Compatibility Test Report

Prepared in accordance with

FCC Part 15 Subpart B:2019, ICES-003 Issue 6

On

BLUtag Version 8

Prepared for:

Satellite Tracking of People
5353 W Sam Houston Parkway N, Suite 190
Houston, TX 77041-5186
USA

Prepared by:

TUV Rheinland of North America, Inc.
1279 Quarry Lane, Ste. A
Pleasanton, CA 94566 U.S.A.

Revisions

Revision No.	Date	Reason for Change	Author
0	11/11/2019	Original Document	D. Foster

Note: Latest revision report will replace all previous reports.

ATTESTATION OF TEST RESULTS

Client:	Satellite Tracking of People 5353 W Sam Houston Parkway N, Suite 190 Houston, TX 77041-5186 USA	Mark Kirincic Tel: 281-658-7242 E-Mail: mkirincic@stopllc.com	
Model Name:	BLUtag Version 8	**Serial Number:**	PG22000037
Model Numbers:	BLUtag Version 8	**Date(s) Tested:**	October 30, 2019
Test Location:	TUV Rheinland of North America 1279 Quarry Lane, Ste. A Pleasanton, CA 94566 U.S.A. Tel. (925) 249-9123		
Test Specifications:	Emissions:	FCC Part 15 Subpart B:2019, ICES-003 Issue 6	
	Immunity:	N/A	
Test Result:	**The above product was found to be Compliant to the above test standard(s)**		

Prepared by: Donn Foster	**Reviewed by:** Richard Decker
November 11, 2019 **Date** **Name** **Signature**	November 12, 2019 **Date** **Name** **Signature**
Other aspects:	**None**

PLEASANTON

US1131	**Testing Cert #3331.02**	**INDUSTRY CANADA 2932M-1**	**1097 (A-0326)**

TABLE of CONTENTS

1 General Information

1.1 Scope

This report is intended to document the status of conformance with the listed standards based on the results of testing performed on October 30 and November 8, 2019 for Satellite Tracking of People Co. on the BLUtag V8. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT (Equipment Under Test) in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report.

1.3 Summary of Test Results	
Applicant	Satellite Tracking of People 5353 W Sam Houston Parkway N, Suite 190 Houston, TX 77041-5186 USA
Contact	Mark Kirincic
Tel.	Tel: 281-658-7242
E-mail	E-Mail: mkirincic@stopllc.com
Description	Satellite tracking ankle bracelet
Model Name	BLUtag V8
Model Number	BLUtag V8
Serial Number	PG22000037
Input Power	3.7VDC
Test Date(s)	October 30, 2019

Standards	Description	Severity Level or Limit	Criteria	Test Result
CFR47 part 15 B, ICES-003 Product Family Standard Emissions	Unintentional radiator	See called out basic standards below	See Below	Complies
FCC Part 15 Subpart B:2019, ICES-003 Issue 6	Radiated Emissions	30M-18 GHZ	Limit	Complies
FCC Part 15 Subpart B:2019, ICES-003 Issue 6	Conducted Emissions	150kHz-30 MHz	Limit	Complies

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct. Fremont, CA, 94538 are recognized by the Commission for performing testing services for the general public on a fee basis. These laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (Pleasanton Registration No. US1131, Fremont Registration No. US1131). The laboratory Scopes of Accreditation include Title 47 CFR Parts 15, 18 and 90. The accreditations are updated every three years.

2.1.2 A2LA

TUV Rheinland of North America EMC test facilities are accredited by the American Association for Laboratory Accreditation (A2LA). The laboratories have been assessed and accredited by A2LA in accordance with ISO Standard 17025:2017 (Testing Certificate #3331.02). The Scope of Laboratory Accreditation includes emission and immunity testing. The accreditations are updated annually.

2.1.3 Industry Canada

Industry Canada Industrie Canada

The Pleasanton 5-meter Semi-Anechoic Chamber, Registration No. 2932M-1, has been accepted by Industry Canada to perform testing to 3 and 5 meters based on the test procedures described in ANSI C63.4-2014. The Fremont 10-meter Semi-Anechoic Chamber, Registration No. 2932D-1, has been accepted by Industry Canada to perform testing to 3 and 10 meters based on the test procedures described in ANSI C63.4-2014.

2.1.4 Japan – VCCI

The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) is a group that consists of Information Technology Equipment (ITE) manufacturers and EMC test laboratories. The purpose of the Council is to take voluntary control measures against electromagnetic interference from Information Technology Equipment, and thereby contribute to the development of a socially beneficial and responsible state of affairs in the realm of Information Technology Equipment in Japan. TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct. Fremont, CA, 94538, have been assessed and approved in accordance with the Regulations for Voluntary Control Measures.

VCCI Registration No. for Pleasanton: A-0326

VCCI Registration No. for Fremont: A-0327

2.2 Test Facilities and EMC Software

Test facilities are located at 1279 Quarry Lane, Ste. A, Pleasanton, California 94566, U.S.A. and 5015 Brandin Ct, Fremont, CA 94538.

2.2.1 Emission Test Facility

The Semi-Anechoic Chambers and AC Line Conducted measurement facilities used to collect radiated and conducted emissions data have been constructed in accordance with ANSI C63.7:1992. The Fremont 10 meter semi-anechoic chamber has been measured in accordance with and verified to comply with the theoretical volumetric normalized site attenuation of ANSI C63.4:2009 and SVSWR requirements of CISPR 16-1-4 Consol. Ed. 3.0 (2010-04), at test distances of 3 and 10 meters. This site has been described in reports dated November 1st, 2006, submitted to the FCC, and accepted by letter dated November 28, 2006. The site is listed with the FCC and accredited by A2LA (Testing Certificate #3331.02). The Pleasanton 5 meter semi-anechoic chamber has been verified to comply with the theoretical volumetric normalized site attenuation of ANSI C63.4:2009 and SVSWR requirements of CISPR 16-1-4 Consol. Ed. 3.0 (2010-04) at a test distance of 3 meters. This site has been described in reports dated November 1st, 2006, submitted to the FCC, and accepted by letter dated November 28, 2006. The site is listed with the FCC and accredited by A2LA (Testing Certificate #3331.02).

2.2.2 Immunity Test Facility

ESD, EFT, Surge, PQF: These tests are performed in an environmentally controlled room with a 3.7 m x 3.7 m x 3.175 mm thick aluminum floor connected to PE ground. For ESD testing, tabletop equipment is placed on an insulated mat with a surface resistivity of 10^9 Ohms/square on a 1.6 m x 0.8 m x 0.8 m high non-conductive table with a 3.175 mm aluminum top (Horizontal Coupling Plane). The HCP is connected to the main ground plane via a low impedance ground strap through two 470 kΩ resistors. The Vertical Coupling Plane consists of an aluminum plate 50 cm x 50 cm x 3.175 mm thick. The VCP is connected to the main ground plane via a low impedance ground strap through two 470 kΩ resistors. For each of the other tests, the HCP is removed.

RF Field Immunity testing is performed in a 3m semi-anechoic chamber with absorber added to floor.

RF Conducted and Magnetic Field Immunity testing is performed on a 4.9 m x 3.7 m x 3.175 mm thick aluminum ground plane which is connected to one end of the anechoic chamber.

All test areas allow a minimum distance of 1 meter from the EUT to walls or conducting objects.

2.2.3 EMC Software - Fremont

Manufacturer	Name	Version	Test Type
EMISoft	Vasona	5.0	Radiated & Conducted Emissions
ETS-Lindgren	TILE	4.2.A	Radiated Emissions > 1 GHz
ETS-Lindgren	TILE	V.3.4.K.22	Radiated & Conducted Immunity
Haefely	WinFEAT	1.6.3	Surge
Thermo Electron - Keytek	CEWare32	3.0	EFT/Surge/Voltage Dips & Interrupt
Voltech	IEC61000-3	1.15.07RC	Harmonic & Flicker

2.2.4 EMC Software - Pleasanton

Manufacturer	Name	Version	Test Type
ETS-Lindgren	TILE	3.4.K.14 @ 4.0.A.5	Radiated & Conducted Emissions
EMISoft	Vasona	5.0	Radiated & Conducted Emissions
Agilent	Agilent MXE	A.11.02	Radiated & Conducted Emissions
ETS-Lindgren	TILE	3.4.K.14	Radiated & Conducted Immunity
Thermo Electron - Keytek	CEWare32	4.00	EFT/Surge/Voltage Dips & Interrupt
Voltech	IEC61000-3	1.21.07RC2	Harmonic & Flicker

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per ISO Guide To The Expression Of Uncertainty In Measurement, 1st Edition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities, equal to the positive square root of a sum of terms, the terms being the variances or co-variances of these other quantities weighted according to how the measurement result varies with changes in these quantities. The term standard uncertainty is the result of a measurement expressed as a standard deviation.

The Expanded Uncertainty defines an interval about the result of a measurement that may be expected to encompass a large fraction of the distribution of values that could reasonably be attributed to the measurand. The fraction may be viewed as the coverage probability or level of confidence of the interval.

2.3.1 Sample Calculation – radiated & conducted emissions

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dBµV/m) = RAW - AMP + CBL + ACF

Where: RAW = Measured level before correction (dBµV)

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated Emissions (dBuV/m)

25 dBuV/m + 17.5 dB – 20 dB + 1.0 dB = 23.5 dBuV/m

2.3.2 Measurement Uncertainty Emissions

Per CISPR 16-4-2	**U_{lab}**	**U_{cispr}**
Radiated Disturbance @ 10 meters		
30 – 1,000 MHz	2.25 dB	4.51 dB
Radiated Disturbance @ 3 meters		
30 – 1,000 MHz	2.26 dB	4.52 dB
1 – 6 GHz	2.12 dB	4.25 dB
6 – 18 GHz	2.47 dB	4.93 dB
Conducted Disturbance @ Mains Terminals		
150 kHz – 30 MHz	1.09 dB	2.18 dB
Disturbance Power		

Voltech PM6000A

The estimated combined standard uncertainty for harmonic current and flicker measurements is ± 5.0%.	Per CISPR 16-4-2

2.3.3 Measurement Uncertainty Immunity

The estimated expanded uncertainty for ESD immunity measurements is ± 8.2%.	Per IEC 61000-4-2
The estimated expanded uncertainty for radiated immunity measurements is ± 4.10 dB.	Per IEC 61000-4-3
The estimated expanded uncertainty for EFT fast transient immunity measurements is ± 5.84%.	Per IEC 61000-4-4
The estimated expanded uncertainty for surge immunity measurements is ± 5.84 %.	Per IEC 61000-4-4
The estimated expanded uncertainty for conducted immunity measurements with CDN is ± 3.66 dB	Per IEC 61000-4-6
The estimated expanded uncertainty for power frequency magnetic field immunity is ± 11.6%.	Per IEC 61000-4-8
The estimated expanded uncertainty for voltage variation and interruption measurements is ± 3.48%.	Per IEC 61000-4-11

The expanded uncertainty at a level of 95% confidence is obtained by multiplying the combined standard uncertainty by a coverage factor of 2. Compliance criteria are not based on measurement uncertainty.

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard 17025:2005. Equipment calibration records are kept on file at the test facility.

2.5 Measurement Equipment Used

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal mm/dd/yy	Next Cal mm/dd/yy	Test
Bilog Antenna	Sunol Sciences	JB3	A102606	11/20/2017	11/20/2019	RE
Amplifier	Sonoma Instruments	310	165516	01/23/2019	01/23/2020	RE
Spectrum Analyzer	Agilent	N9038A	MY51210195	01/22/2019	01/22/2020	RE
Rigid Horn antenna	Emco	3115	9602-4676	05/03/19	05/03/2020	RE
LISN	Compower	LI215	12111	01\15\2019	01\15\2020	CE
Spectrum Analyzer	Rohde & Schwarz	ESI	1088.7490	01/22/2019	01/22/2020	RE,CE
Preamplifier	Miteq	TTA1800-30-HG	2020728	01/15/2019	01/15/2020	RE

Note: CE=Conducted Emissions, CI=Conducted Immunity, DP=Disturbance Power, EFT=Electrical Fast Transients, ESD=Electrostatic Discharge, FLI=Flicker, HAR=Harmonics, MF=Magnetic Field Immunity, NCR=No Calibration Required, RE=Radiated Emissions, RI=Radiated Immunity, SI=Surge Immunity, VDSI=Voltage Dips and Short Interruptions

3 Product Information

3.1 Product Description

See Section 5.4.

3.2 Equipment Modifications

None

3.3 Test Plan

The EUT product information, test configuration, mode of operation, test types, test procedures, test levels, pass/failure criteria, in this report were carried out per the product test plan located in Appendix A of this report.

4 Emissions

4.1 Radiated Emissions

This test measures the electromagnetic levels of spurious signals generated by the EUT that radiated from the EUT and may affect the performance of other nearby electronic equipment.

4.1.1 Overview of Test

Results	**Complies** (as tested per this report)			**Test Date(s)**		October 30, 2019	
Standard	FCC Part 15 Subpart B:2019, ICES-003 Issue 6						
Model Number	BLUtag V8			**Serial #**		PG2200037	
Configuration	See test plan for details.						
Test Setup	Tested in the 5-meter chamber, placed on turntable: see test plan for details.						
EUT Powered By	3.7VDC the charger was used as a convenience for lengthy testing						
Environmental Conditions		**Temp**	21° C	**Humidity**	37%	**Pressure**	1009 mbar
Frequency Range	30-18000 MHz						
Perf. Criteria	Class B			**Perf. Verification**		Readings Under Limit	
Mod. to EUT	None			**Test Performed By**		Donn Foster	

4.1.2 Test Procedure

Radiated emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

The frequency range from 30-18000 MHz was investigated for radiated emissions.

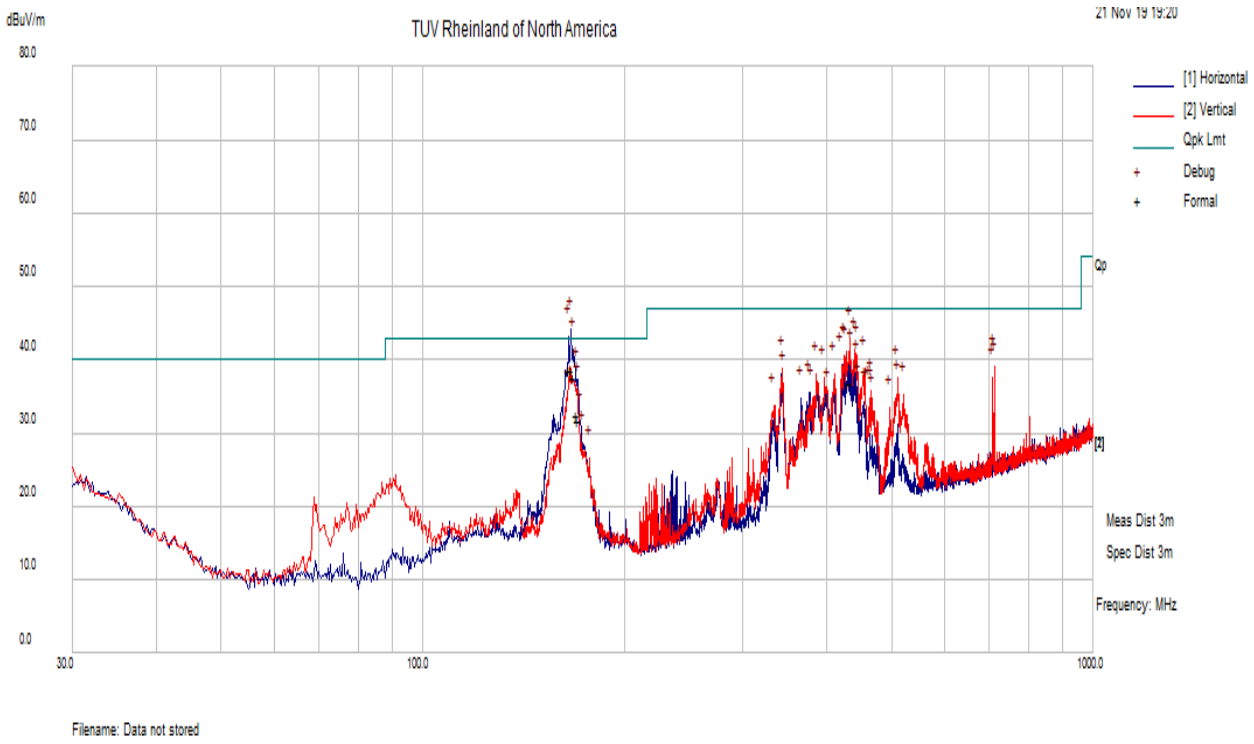
4.1.3 Deviations

There were no deviations from the test methodology listed in the test plan for the radiated emission test.

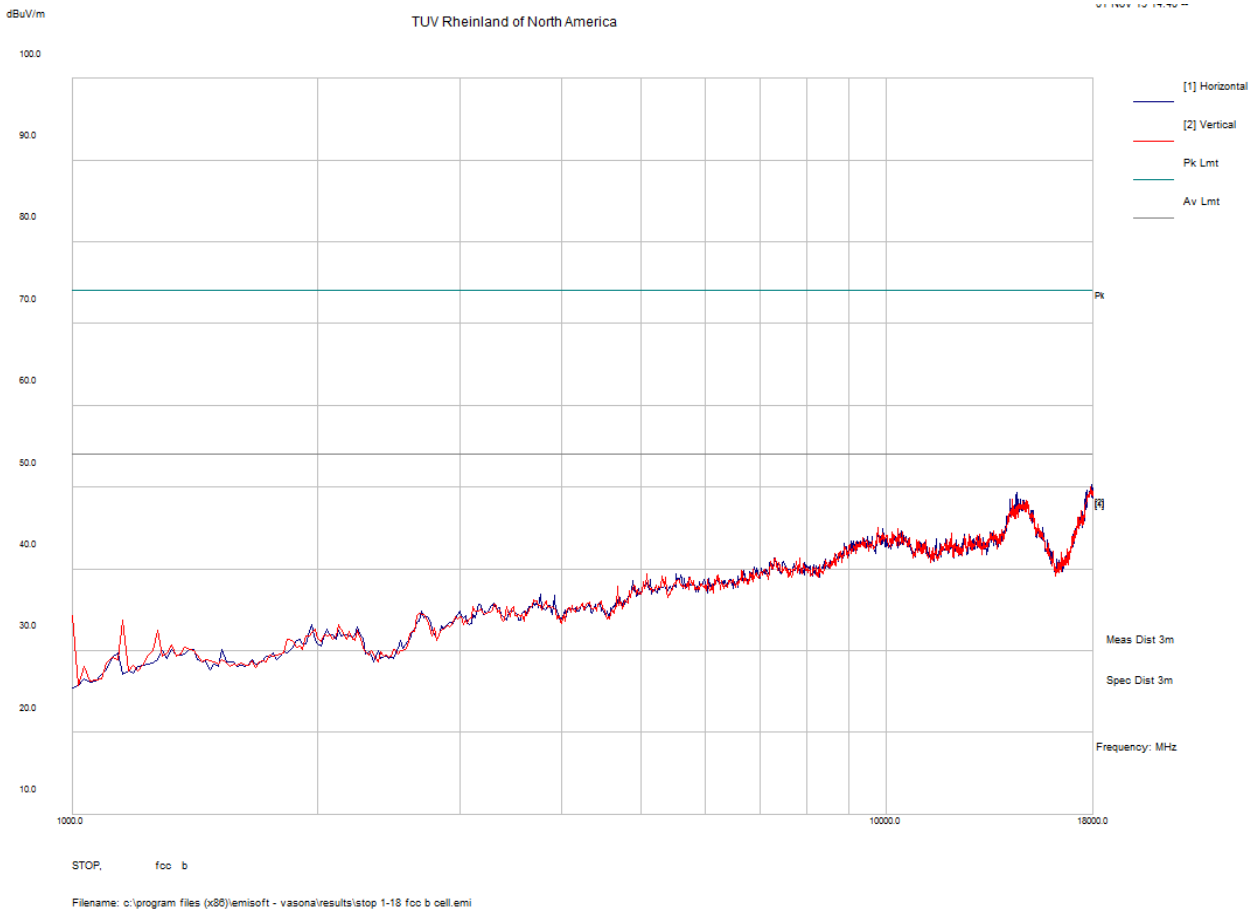
4.1.4 Final Test

All final radiated emissions measurements were below the specification limits.

4.1.5 Plots



Radiated Emissions 30-1000 MHz.



Radiated Emissions 1-18 GHz.

Radiated Emissions 30-1000 MHz.

Frequency	Raw dBu\	Cable Los	AF dB	Level dBu	Measuren	Pol	Hgt cm	Azt Deg	Limit dBu'	Margin dB	Pass /Fail
166.6516	51.33	3.17	-15.96	38.55	Quasi Ma	H	244	86	43	-4.45	Pass
165.3044	51.42	3.17	-15.89	38.7	Quasi Ma	H	180	110	43	-4.3	Pass
167.9631	50.6	3.17	-16.09	37.69	Quasi Ma	H	237	278	43	-5.31	Pass
169.5447	45.7	3.19	-16.24	32.64	Quasi Ma	H	272	122	43	-10.36	Pass
433.9091	43.96	3.95	-11.11	36.8	Quasi Ma	V	159	201	47	-10.2	Pass
170.5881	44.93	3.18	-16.29	31.82	Quasi Ma	H	200	116	43	-11.18	Pass

Radiated Emissions 1-18 GHz.

Frequency	Raw dBu\	Cable Los	AF dB	Level dBu	Measuren	Pol	Hgt cm	Azt Deg	Limit dBu'	Margin dB	Pass /Fail
17897.8	53.98	4.12	-7.87	50.23	Peak [Scar	H	200	0	54	-3.77	Pass
14508.02	58.79	3.54	-12.99	49.35	Peak [Scar	H	100	0	54	-4.65	Pass
1000	67.28	0.34	-33.33	34.29	Peak [Scar	V	200	0	54	-19.71	Pass
1153.307	66.14	0.45	-32.83	33.76	Peak [Scar	V	200	0	54	-20.24	Pass

4.2 Photos

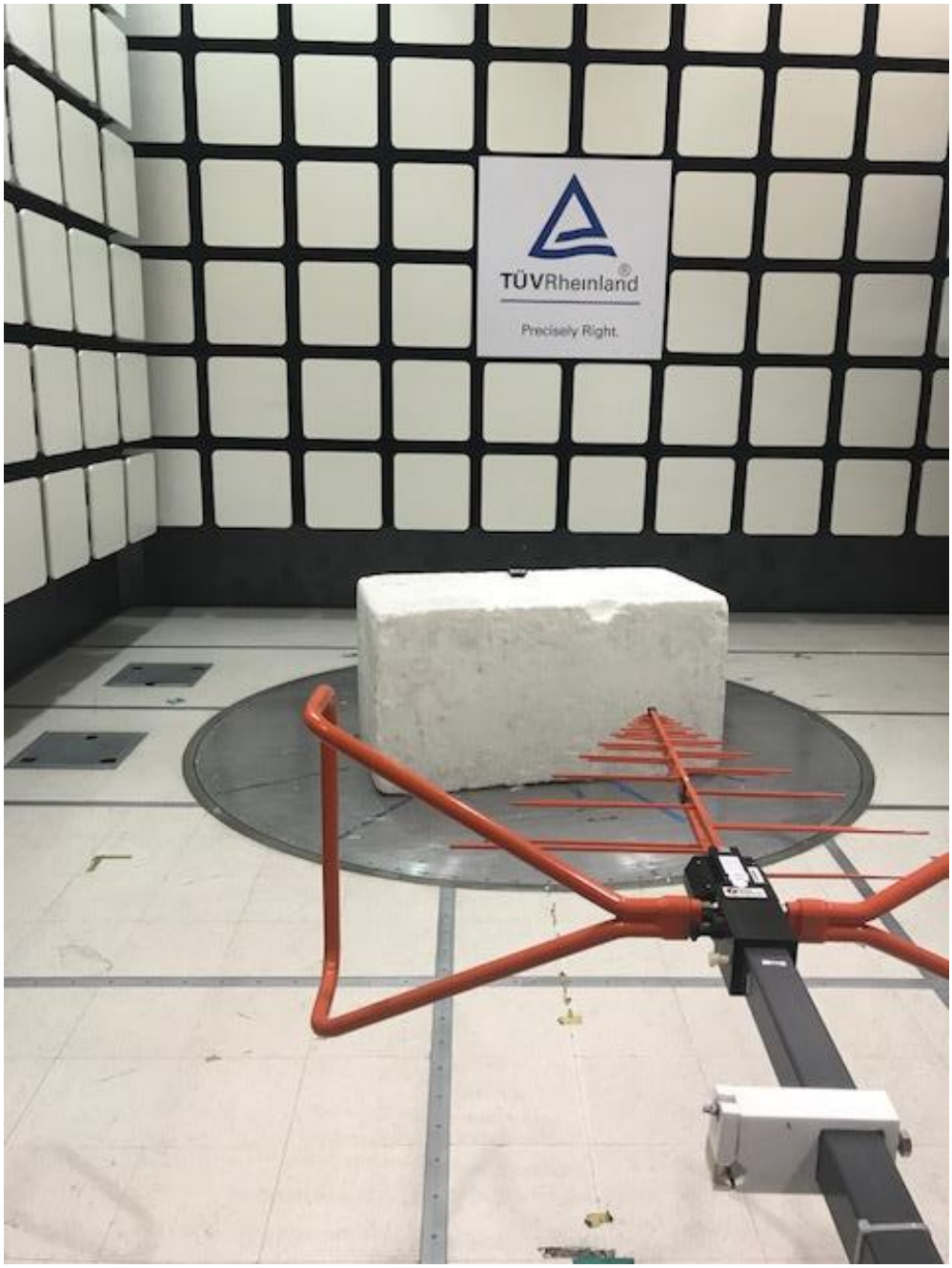
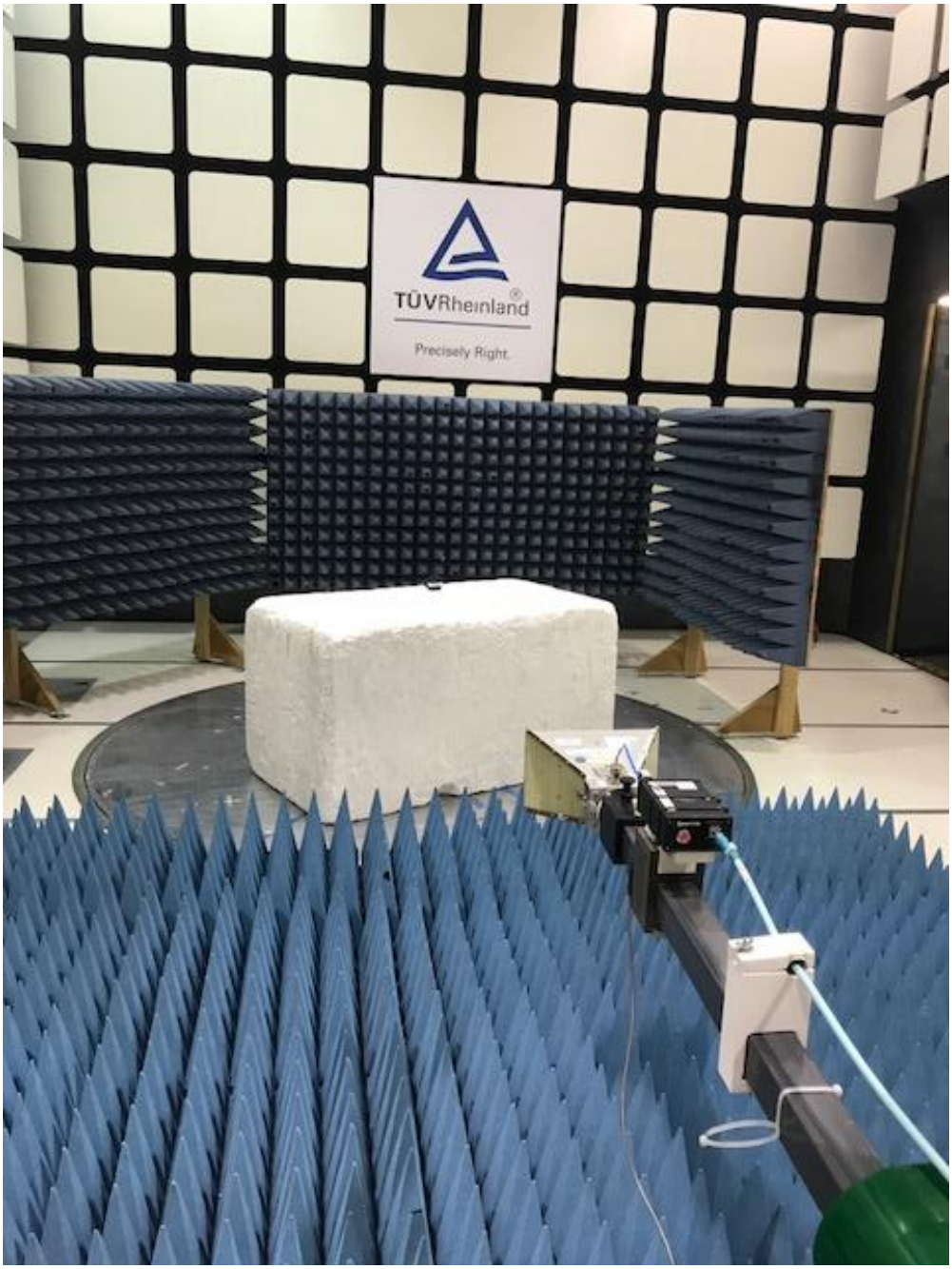
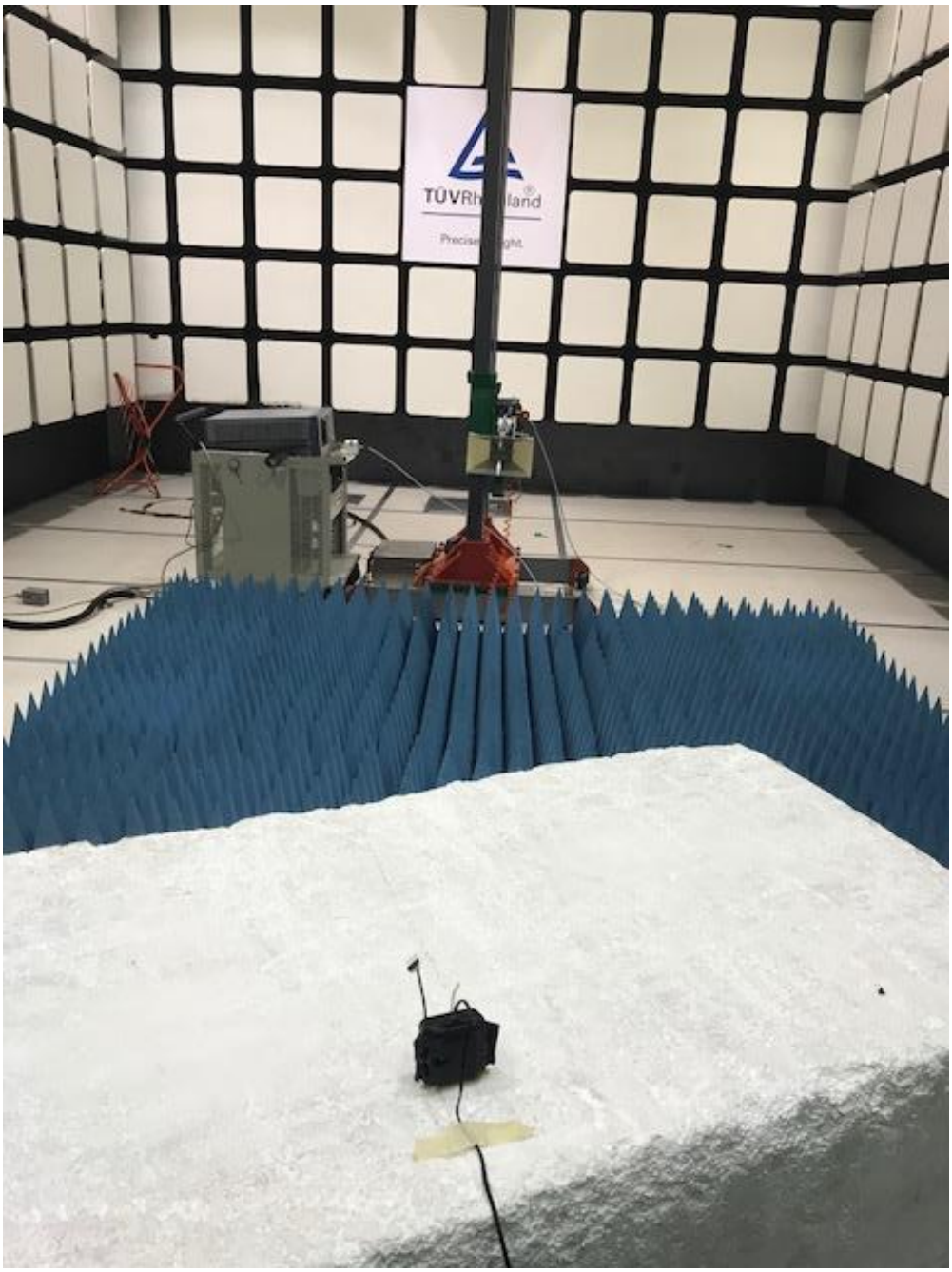


Figure 1 - Radiated Emissions Setup 30 - 1000 MHz - Front

Radiated Emissions Setup 30 to 1000 MHz rear



Radiated Emissions Setup 1-18 GHz front



Radiated Emissions Setup 1 to 18 GHz rear

4.3 Conducted Emissions

This test measures the electromagnetic levels of spurious signals generated by the EUT on the AC power line that may affect the performance of other nearby electronic equipment.

4.3.1 Overview of Test

Results	**Complies** (as tested per this report)			**Test Date(s)**	November 8, 2019		
Standard	FCC Part 15 Subpart B:2019, ICES-003 Issue 6						
Model Number	BLUtag V8						
Configuration	See test plan for details.						
Test Setup	Tested in Lab 5, EUT placed on table: see test plan for details.						
EUT Powered By	3.7VDC the charger was used as a convenience for lengthy testing						
Environmental Conditions		**Temp**	22º C	**Humidity**	37%	**Pressure**	1006 mbar
Frequency Range	.150-30MHz						
Perf. Criteria	Class B		**Perf. Verification**		Readings Under Limit for L1 & Neutral		
Mod. to EUT	None		**Test Performed By**		Donn Foster		

4.3.2 Test Procedure

Conducted emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

The frequency range from .150-30MHz was investigated for conducted emissions.

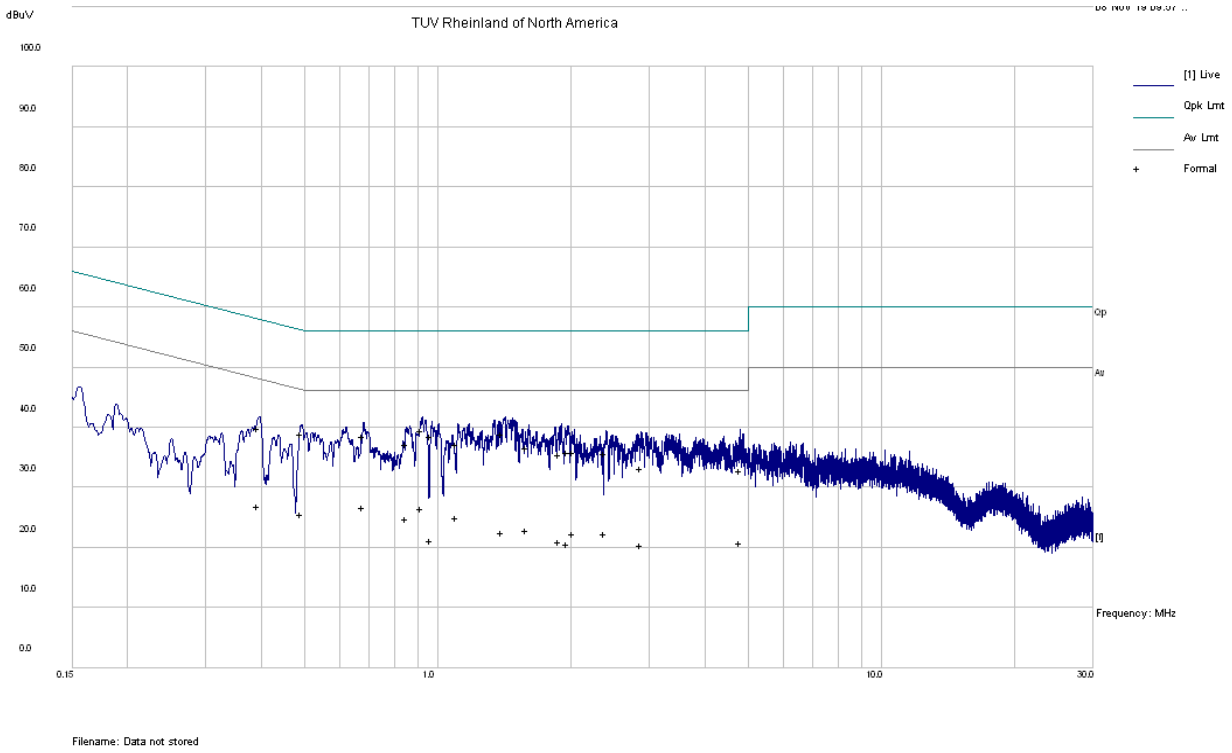
Conducted Emissions measurements were performed in the shielded room using procedures specified in the test plan and standard.

4.3.3 Deviations

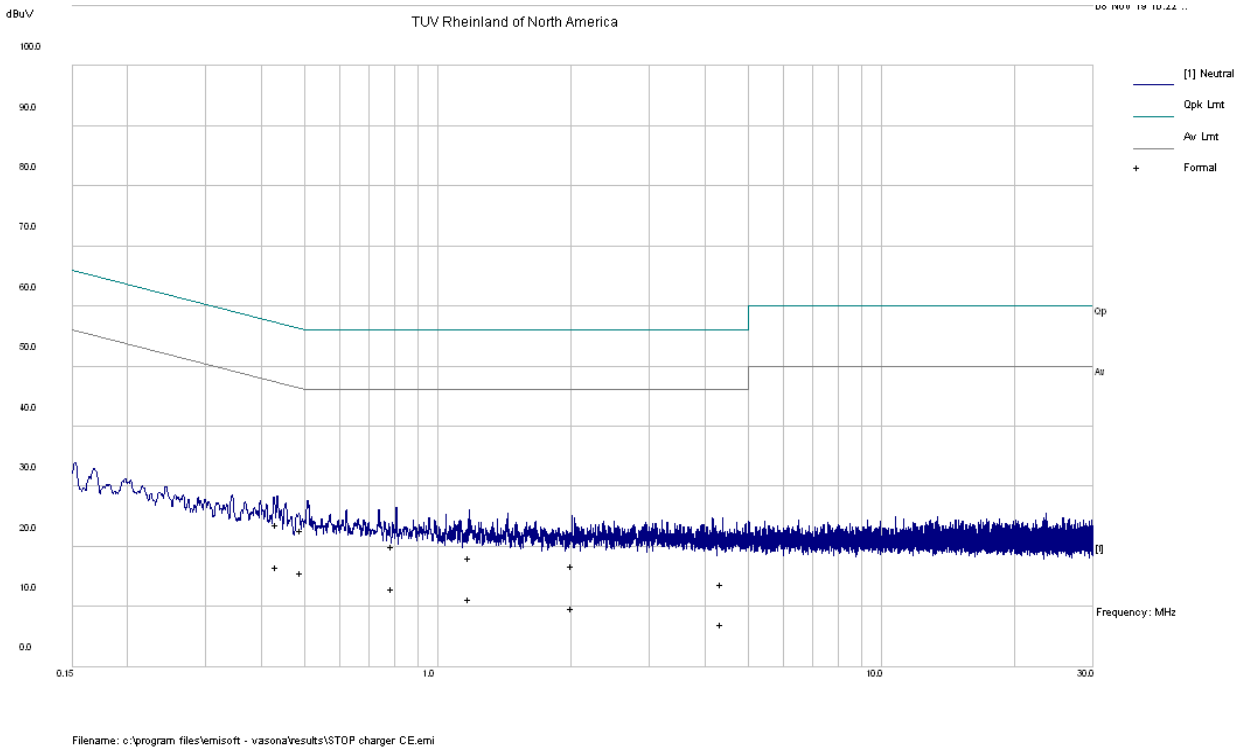
There were no deviations from the test methodology listed in the test plan for the conducted emission test.

4.3.4 Final Test

All final conducted emissions measurements were below the specification limits.



Conducted Emissions .150-30 MHz. 110VAC line



Conducted Emissions .150-30 MHz. 110VAC neutral

Conducted Emissions .150-30 MHz. 110VAC line

Frequency	Raw dBu\	Cable	Los	Factors d	Level dBu	Measurem	Line	Limit dBu\	Margin dE	Pass /Fail
0.394236	29.88	9.97		0.04	39.89	Quasi Pea	Live	57.97	-18.08	Pass
0.394236	16.99	9.97		0.04	27.01	Average	Live	47.97	-20.97	Pass
0.493103	28.83	9.98		0.04	38.85	Quasi Pea	Live	56.12	-17.26	Pass
0.493103	15.59	9.98		0.04	25.61	Average	Live	46.12	-20.51	Pass
0.678036	28.48	9.98		0.04	38.5	Quasi Pea	Live	56	-17.5	Pass
0.678036	16.65	9.98		0.04	26.67	Average	Live	46	-19.34	Pass
0.850873	27.22	9.99		0.04	37.25	Quasi Pea	Live	56	-18.75	Pass
0.850873	14.77	9.99		0.04	24.8	Average	Live	46	-21.2	Pass
0.919496	29.53	9.99		0.04	39.56	Quasi Pea	Live	56	-16.44	Pass
0.919496	16.56	9.99		0.04	26.59	Average	Live	46	-19.41	Pass
0.964364	28.51	9.99		0.04	38.54	Quasi Pea	Live	56	-17.46	Pass
0.964364	11.2	9.99		0.04	21.23	Average	Live	46	-24.77	Pass

Conducted Emissions .150-30 MHz. 110VAC neutral

Frequency	Raw dBu\	Cable	Los	Factors d	Level dBu	Measurem	Line	Limit dBu\	Margin dE	Pass /Fail
0.491704	12.69	9.98		0.04	22.71	Quasi Pea	Neutral	56.14	-33.43	Pass
0.434543	13.75	9.97		0.04	23.76	Quasi Pea	Neutral	57.17	-33.41	Pass
0.791481	9.93	9.99		0.04	19.96	Quasi Pea	Neutral	56	-36.04	Pass
1.181179	8.12	9.99		0.04	18.15	Quasi Pea	Neutral	56	-37.85	Pass
2.014936	6.78	10.01		0.04	16.83	Quasi Pea	Neutral	56	-39.17	Pass
4.373818	3.72	10.05		0.04	13.81	Quasi Pea	Neutral	56	-42.19	Pass
0.491704	5.69	9.98		0.04	15.71	Average	Neutral	46.14	-30.43	Pass
0.434543	6.53	9.97		0.04	16.54	Average	Neutral	47.17	-30.63	Pass
0.791481	2.89	9.99		0.04	12.92	Average	Neutral	46	-33.08	Pass
1.181179	1.24	9.99		0.04	11.28	Average	Neutral	46	-34.72	Pass
2.014936	-0.3	10.01		0.04	9.75	Average	Neutral	46	-36.25	Pass
4.373818	-3.1	10.05		0.04	6.99	Average	Neutral	46	-39.01	Pass

4.4 Photos

Conducted Emissions side

Conducted Emissions front

Appendix A

5 Test Plan

This test report is intended to follow this test plan outlined here in unless otherwise stated in this here report. The following test plan will give details on product information, standards to be used, test set ups and refer to TUV test procedures. The test procedures will give the steps to be taken when performing the stated test. The product information below came via client, product manual, product itself and or the internet.

5.1 General Information

Client	Satellite Tracking of People
Address	5353 W Sam Houston Parkway N, Suite 190
	Houston, TX 77041-5186
Contact Person	Mark Kirincic
Telephone	281-658-7242
e-mail	mkirincic@stopllc.com

5.2 EUT Designation

Model Name	BLUtag V8
Model Number(s)	BLUtag V8

5.3 Test configurations

The ankle bracelet will be powered with the battery charger and placed on the test table

5.3.1 Equipment Under Test (EUT) Description

The EUT is an ankle bracelet tracking and reporting system.

Table 1: EUT Specifications

EUT Specifications	
Dimensions	11x4x4.5 cm
Input Voltage	3.7VDC the charger was used as a convenience for lengthy testing
Environment	Indoor/Outdoor
Product Marketing Name (PMN)	BLUtag Version 8
Hardware Version Identification Number (HVIN)	8
Firmware Version Identification Number (FVIN)	

5.4 Testing to be preformed

Test Type	Required	Notes
Radiated Emissions	Yes	See Section 4.1
Conducted Emissions	Yes	See Section 4.3

5.5 Product Specifications

Model Number	BLUtag V8
Product Name	BLUtag V8

Configuration	Description
Mode 1	The BLUtag is running with the LTE modem in operational mode

Notes	

5.6 Product Environments

☒	**Domestic/Residential**	☐	**Hospital**
☒	**Light Industrial/Commercial**	☐	**Small Clinic**
☐	**Industrial**	☐	**Doctor's office**
☐	**Telecommunications Center**	☐	**Other than Telecommunications Center**
☐	**Other**		

*Check all that apply

5.7 Applicable Documents

Standards	Description
FCC Part 15 Subpart B:2019, ICES-003 Issue 6	Unintentional Radiator

5.8 EUT Electrical Power Information

Name	# of Phases	Type	Input Voltage		AC Voltage Frequency	Current Max.	Power
			Min	Max			
Ankle Bracelet Tracking system	1 ☐ 3 ☐ None ☒	AC ☐ DC ☐ Host ☐ Batteries ☒	3.7	3.7	Hz to Hz	2200Ah	14Wh
Notes							

5.9 EUT Clock/Oscillator Frequencies

Reference Designation	Speed (MHz)	Type
Synergy Processsor	32.7	Ocillator

5.10 Radiated Emissions, Upper Frequency

☐	**Less than 108 MHz**	**Scan to 1 GHz**
☐	**Less than 500 MHz**	**Scan to 2 GHz**
☐	**Less than 1000 MHz**	**Scan to 5 GHz**
☒	**Greater than 1000 MHz**	**Scan to 5th Harmonic or 40 GHz (whichever is lower)**

5.11 Electrical Support Equipment

Reference Designation	Manufacturer	Model	Serial Number
Laptop	Lenovo	Thinkpad	None listed
Battery Charger	Stonetronics	DSA-13FFC-05-FUS	None listed (p/n T66345T}

5.12 Non - Electrical Support Equipment

Reference Designation	Manufacturer	Model	Serial Number or Description (e.g., Type of Gas or Liquid)
None			

5.13 EUT Equipment/Cabling Information

EUT Port	Connected To	Cable Type		
		Length (Meters)	Shielded Yes / No	Bead Yes / No
Battery charger port	BLUtag charger port	1	☐	☐
			☐	☐

Note: The EUT is battery powered the charger is only used for refreshing the battery

5.14 EUT Test Program

STOP BLUtag 8 approvals application v0.4

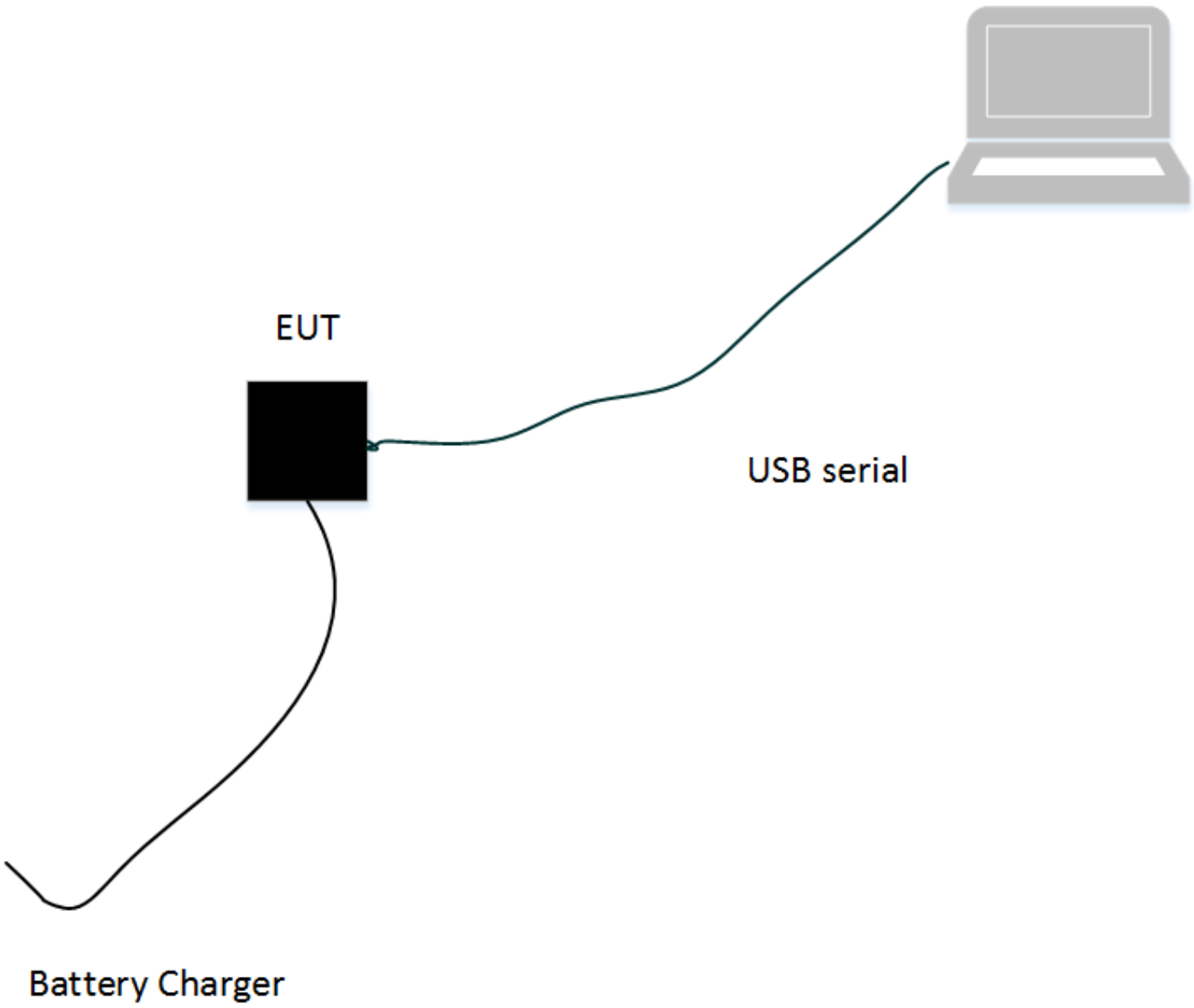
5.15 Mode of operation

The server is running a test routine that will send traffic and monitor the stream for errors.

5.16 Monitoring the EUT During Testing

n/a

5.16.1 Block Diagram



5.17 Emissions

5.17.1.1 Final Radiated Emissions Test Setup

Standard	FCC Part 15 Subpart B:2019, ICES-003 Issue 6			**Procedure**	ANSI C63.4
Limit	Class B	**Emissions Verification**		Emissions Under Limit	
Scan #1	Final Scan 30 – 1000 MHz	**Antenna Distance**	3m	**Detector**	Quasi Peak
Scan #2	Final Scan 1 – 18 GHz	**Antenna Distance**	3m	**Detector**	Average
Configuration	See Section 5.3				
Notes	Powered by 3.7VDC the charger was used as a convenience for lengthy testing				
	The unit will have the LTE modem powered on.				

5.17.1.2 Final Conducted Emissions Test Setup

Standard	FCC Part 15 Subpart B:2019, ICES-003 Issue 6			**Procedure**	ANSI C63.4
Limit	Class B	**Emissions Verification**		Emissions Under Limit	
Scan #1	Final Scan .150-30MHz 110VAC	**Antenna Distance**	n/a	**Detector**	Average Quasi Peak
Configuration	See Section 5.3				
Notes	Powered by 3.7VDC the charger was used as a convenience for lengthy testing and will be tested in charging mode.				

END OF REPORT