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DATE: 6 October 2020

I.T.L. (PRODUCT TESTING) LTD.

FCC/IC Radio Test Report

for

Pointer Telocation

Equipment under test:

Asset Tracking Device

LV500,
CelloTrack Solar LTE C1 NA,

*See customer declaration starting on page 10

Tested by: _____
M. Zohar

Approved by: _____
D. Shidlowsky

ISRAEL TESTING LABORATORIES
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Measurement/Technical Report for
Pointer Telocation

Asset Tracking Device

LV500,
CelloTrack Solar LTE C1 NA

FCC ID: 2AG69CTSO
IC: 9975A-CTSO

This report concerns:	Original Grant: Class I Change: Class II Change: X
Equipment type:	FCC: (DTS) Digital Transmission System IC: Spread Spectrum Digital Device (2400-2483.5 MHz)
Limits used:	47CFR15 Section 15.247 RSS 247, Issue 2, February 2017, Section 5 RSS-Gen, Issue 5, April 2018

Measurement procedure used is KDB 558074 D01 v05r03 and ANSI C63.10:2013 and RSS Gen, Issue 5

Application for Certification
prepared by:
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E-mail rpinchuck@itlglobal.org

Applicant for this device:
(different from "prepared by")
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Rosh Haain
Israel
Tel: +972 73 2622320
E-mail: Igorr@pointer.com

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1. General Information

1.1 *Administrative Information*

Manufacturer:	Pointer Telocation
Manufacturer's Address:	14 Hamelacha, PO Box 11473 Rosh Haain, Israel Tel: +972 73 2622320
Manufacturer's Representative:	Igor Rogov
Equipment Under Test (E.U.T):	Asset Tracking Device
Equipment PMN:	LV500 (*See customer declaration starting on page 10)
Equipment Part No.:	Not designated
Equipment HVIN:	6001
Date of Receipt of E.U.T:	July 16, 2020
Start of Test:	July 16, 2020
End of Test:	July 19, 2020
Test Laboratory Location:	I.T.L (Product Testing) Ltd. 1 Batsheva St., Lod ISRAEL 7120101
Test Specifications:	FCC Part 15, Subpart C RSS 247, Issue 2, February 2017, Section 5 RSS-Gen, Issue 5 + A1, March 2019

1.2 *List of Accreditations*

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation No. IL1005.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. Department of Innovation, Science and Economic Development (ISED) Canada, CAB identifier: IL1002.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 *Product Description*

The CelloTrack Solar is a standalone dual-powered 'deploy and forget' unit for asset tracking and freight visibility, requiring no external power connection. Solar-powered, the CelloTrack Solar comes with long-lasting primary batteries that ensure extended years of maintenance-free reliable performance; in addition, its wireless sensor connectivity provides measurements of the various environmental conditions (temperature, humidity, shock, etc.) of your cargo.
The CelloTrack Solar, with its highly rugged durable enclosure sized to perfectly fit the grooves and ceilings of containers, is an ideal solution for containers, trailers or assets in remote locations and harsh conditions, where no other recharging facilities exist.

Working voltage(nominal)	3.6VDC
Mode of operation	Transceiver
Modulations	GFSK
Assigned Frequency Range	2400.0-2483.5MHz
Operating Frequency Range	2402.0-2480.0MHz
Transmit power(conducted)	~4.0dBm
Antenna Gain	+2.0dBi
Modulation BW	2MHz
Bit rate (Mbit/s)	1, 2, 3

1.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in KDB 558074 D01 v05r03 and ANSI C63.10: 2013, RSS Gen, Issue 5.
Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 *Test Facility*

Emissions tests were performed at I.T.L.'s testing facility in Lod, Israel. I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation Number is IL1005.

1.6 *Measurement Uncertainty*

Conducted Emission
Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4)

0.15 – 30 MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 3.44 dB

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site:

30-1000MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 4.96 dB

1 GHz to 6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.19 dB

>6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.51 dB

2. System Test Configuration

2.1 *Justification*

1. The E.U.T. was originally FCC certified on 11/11/2019 under FCC ID: 2AG69CTSO and IC certified on 11/12/2019 under IC: 9975A-CTSO.
2. Currently, changes were made to the original E.U.T. which will now be known by two names, the LV500 and CelloTrack Solar LTE C1 NA. See customer's declaration of changes starting on page 10.
3. A C2PC is requested based on those changes. The following tests were performed: maximum conducted output power, occupied bandwidth and spurious radiated emissions.
4. The E.U.T. met the requirements of a C2PC.
5. The E.U.T contains an IEEE 802.15.1 transceiver.
6. The unit was evaluated while transmitting at the low channel (2402MHz), the mid channel (2440MHz) and the high channel (2480MHz).
7. Conducted emission method was performed with the EUT connected to a spectrum analyzer via 30dB attenuator.
8. Final radiated emission test for spurious emission for the new model was performed after exploratory emission testing that was performed in 3 orthogonal polarities to determine the "worst case" radiation.
9. According to the following results, the worst case axis was the Y axis for all channels.

Orientation	Frequency (MHz)	2nd Harmonic (dBuV/m)	3rd Harmonic (dBuV/m)
X axis	2402.0	45.9(N.L)	46.7(N.L)
	2440.0	44.0(N.L)	45.9(N.L)
	2480.0	45.1(N.L)	46.2(N.L)
Y axis	2402.0	46.0(N.L)	46.7(N.L)
	2440.0	44.4(N.L)	46.0(N.L)
	2480.0	45.8(N.L)	47.0(N.L)
Z axis	2402.0	44.1(N.L)	44.8(N.L)
	2440.0	44.0(N.L)	45.7(N.L)
	2480.0	43.9(N.L)	46.1(N.L)

Figure 1. Screening Results

2.2 *EUT Exercise Software*

No special exercise software was used.

2.3 *Special Accessories*

No special accessories was used.

2.4 *Equipment Modifications*

No modifications were necessary in order to achieve compliance.

2.5 *Configuration of Tested System*

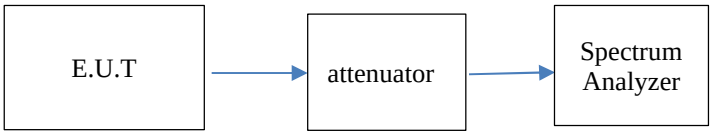

Figure 2. Configuration of Tested System Conducted

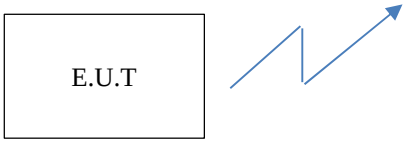

Figure 3. Configuration of Tested System Radiated

POINTER
by PowerFleet

C2PC Declaration of Change

The E.U.T. was originally FCC certified on 11/11/2019 under FCC ID: 2AG69CTSO and ISED certified on 11/12/2019 under IC: 9975A-CTSO.

2. Currently, the following C2PC changes were made to the E.U.T.;
a. USB changed to top entry;
b. L25 replaced with L26 (same value different dimensions);
c. SIM holder changed to Nano sim and location change;
d. Tamper switch moved on board;
e. Connectors changed to Cvilux family;
f. D1 LED removed;
g. Changed BLE location with its antenna while keeping the layout and antenna.
h. Mechanical enclosure modification in order to improve product water sealing

The new device will have two marketing names "CelloTrack Solar" and "LV500". They are identical other than in name.

Original EUT

C2PC EUT

POINTER
by PowerFleet

Original EUT

C2PC EUT

Original EUT C2PC EUT

Original EUT C2PC EUT

Igor Rogov
Igor Rogov, VP Engineering,
Pointer Telocation

August 13, 2020

3. Conducted & Radiated Measurement Test Set-Up Photos

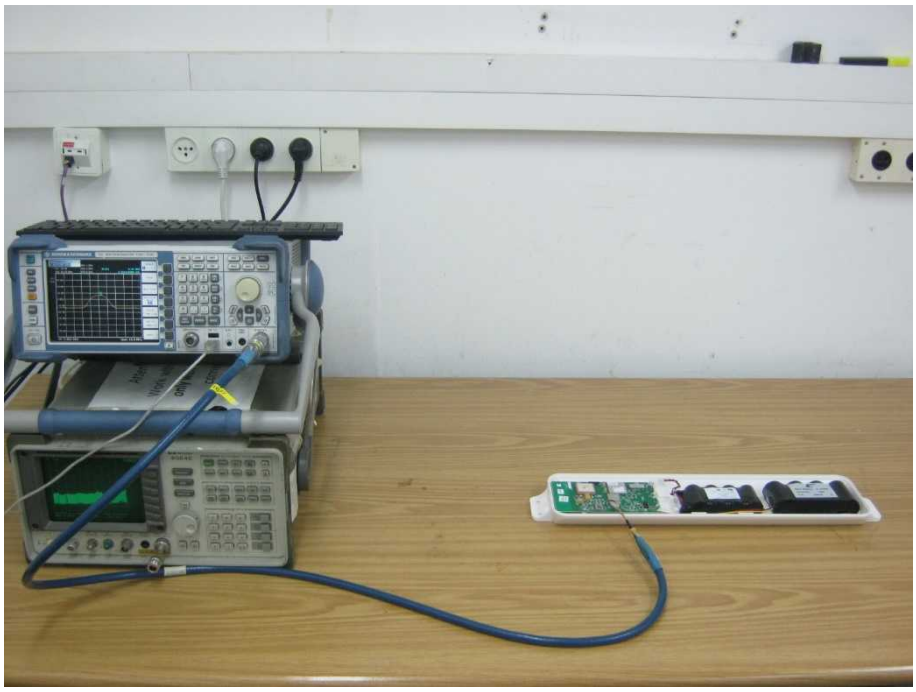

Figure 4. Conducted Emission Test

Figure 5. Radiated Emission Test, 0.009-30MHz

Figure 6. Radiated Emission Test, 30-200MHz

Figure 7. Radiated Emission Test, 200-1000MHz

Figure 8. Radiated Emission Test, 1-18GHz and Intermodulation Radiated Emission Test

Figure 9. Radiated Emission Test, 18-26.5GHz

4. Maximum Conducted Output Power

4.1 *Test Specification*

FCC, Part 15, Subpart C, Section 247(b)(3)

RSS 247, Issue 2, Section 5.4(d)

4.2 *Test Procedure*

(Temperature (22°C)/ Humidity (61%RH))

The E.U.T operation mode and test set-up are as described in Section 2 of this report.

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (total loss=21.0 dB). Special attention was taken to prevent Spectrum Analyzer RF input overload.

4.3 *Test Limit*

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

4.4 *Test Results*

Protocol Type	Operation Frequency (MHz)	Power (dBm)	Power (mW)	Limit (mW)	Margin (mW)
BLE	2402.0	4.3	2.69	1000.0	-997.31
	2440.0	4.6	2.88	1000.0	-997.12
	2480.0	4.1	2.57	1000.0	-997.43

Figure 10 Maximum Peak Power Output, New

JUDGEMENT: Passed by 997.12 mW

For additional information see *Figure 11* to *Figure 13.*

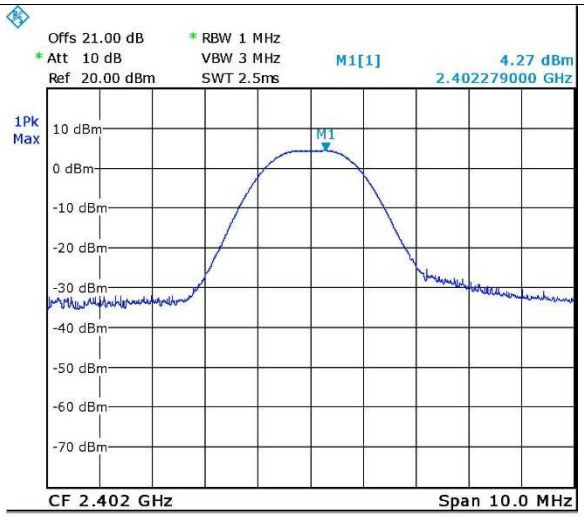

Figure 11. 2402.0 MHz, BLE

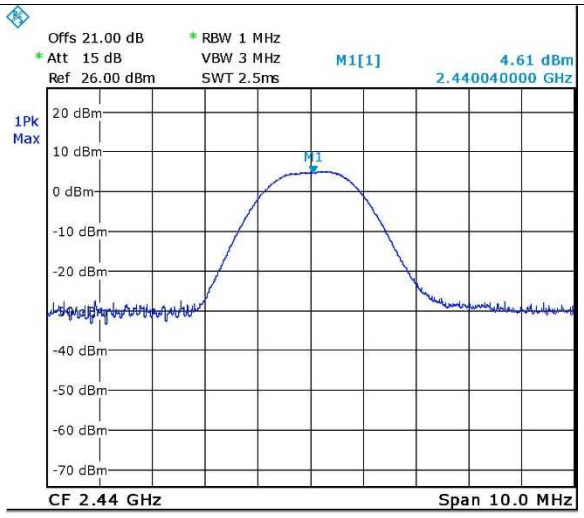

Figure 12. 2440.0 MHz, BLE

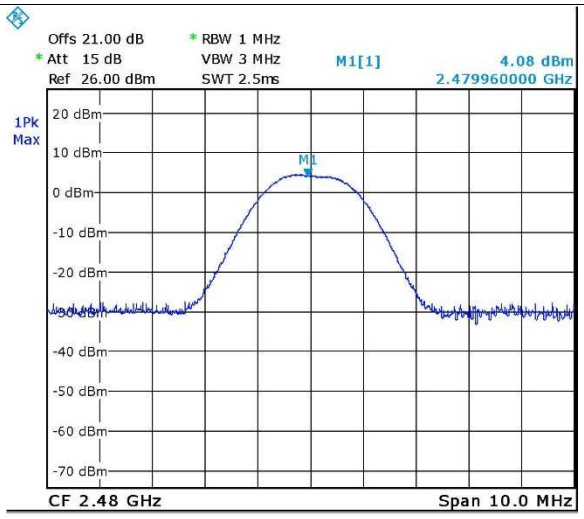

Figure 13. 2480.0 MHz, BLE

4.5 *Test Equipment Used; Maximum Peak Power Output*

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	March 9, 2020	March 31, 2021
20dB Attenuator	MICROWAVE MIDWEST	ATT-0217-20-NNN-02	-	March 12, 2020	March 31, 2021
RF Cable	Huber Suner	Sucofelex	28239/4PEA	December 24, 2018	December 31, 2020

Figure 14 Test Equipment Used

5. Occupied Bandwidth

5.1 *Test Specification*

FCC, Part 2, Sub part J, Section 2.1049

RSS-Gen, Issue 5 +A1 : 2019, Section 6.7

5.2 *Test Procedure*

(Temperature (22°C)/ Humidity (61%RH))
The E.U.T. operation mode and test set-up are as described in Section 2 of this report.
The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator and an appropriate coaxial cable (total loss= 21.0dB). Special attention was taken to prevent Spectrum Analyzer RF input overload.

The RBW set to the range of 1% to 5% of the OBW. The span was set to ~ 3 times the OBW.
99% occupied bandwidth function was set on.

5.3 *Test Limit*

N/A

5.4 *Test Results*

Protocol Type	Operation Frequency (MHz)	Reading (MHz)
BLE	2402.0	1.0
	2440.0	1.0
	2480.0	1.0

Figure 15. Bandwidth Test Results

JUDGEMENT: N/A

See additional information in *Figure 16* to *Figure 18.*

Occupied Bandwidth

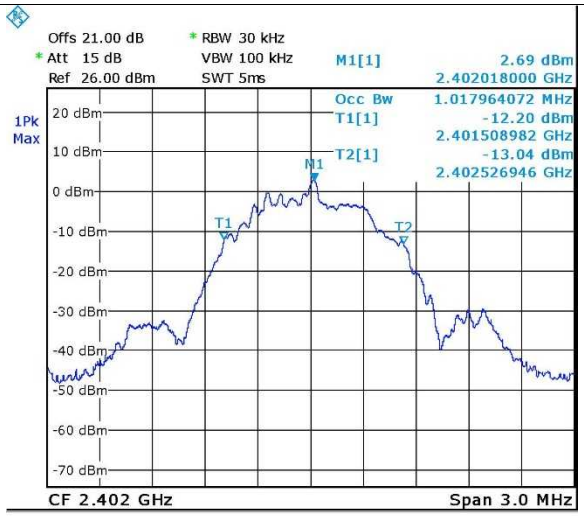

Figure 16. 2402.0 MHz, BLE

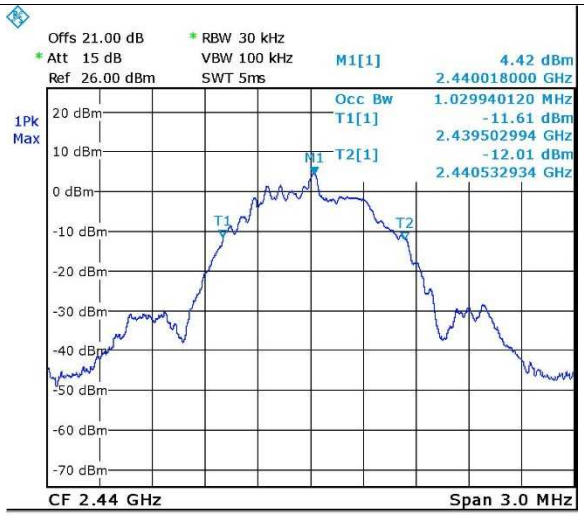

Figure 17. 2440.0 MHz, BLE

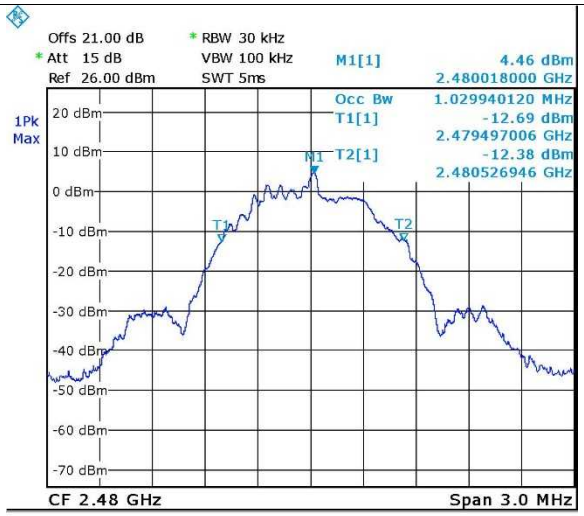

Figure 18. 2480.0 MHz, BLE

5.5 *Test Equipment Used; Occupied Bandwidth*

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
Spectrum Analyzer	R&S	FSL6	100194	March 9, 2020	March 31, 2021
20dB Attenuator	MICROWAVE MIDWEST	ATT-0217-20-NNN-02	-	March 12, 2020	March 31, 2021
RF Cable	Huber Suner	Sucofelex	28239/4PEA	December 24, 2018	December 31, 2020

Figure 19 Test Equipment Used

6. Spurious Radiated Emissions

6.1 *Test Specification*

FCC Part 15, Subpart C, Sections 15.209, 15.205, 15.247(d)

RSS 247, Issue 2, Section 3.3

RSS Gen, Issue 5, Section 8.10

6.2 *Test Procedure*

(Temperature (28°C)/ Humidity (55%RH))
The E.U.T. operation mode and test set-up are as described in Section 2 of this report.

For measurements between 0.009-30MHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 0.009MHz-30MHz was scanned.

For measurements between 30-1000MHz:
A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. The frequency range 30MHz -1000MHz was scanned and the list of the highest emissions was verified and updated accordingly.

For measurements between 1GHz-25GHz:

The E.U.T was tested inside the shielded room and placed on a non-metallic table, 1.5 meters above the ground. The emissions were measured at a distance of 3 meters. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization.
The frequency range 1GHz -25GHz was scanned.

The highest radiation is described in the tables below.

6.3 *FCC Test Limit*

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)).

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement distance (meters)	Field Strength* (dBµV/m)	Field Strength* (dBµV/m)@3m
0.009-0.490	2400/F(kHz)	300	48.5-13.8	128.5-73.8
0.490-1.705	24000/F(kHz)	30	33.8-23.0	73.8-63.0
1.705-30.0	30	30	29.5	69.5
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

Figure 20 Table of Limits

6.4 *IC Test Limit*

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Magnetic Field strength (microampere/meter)	Measurement distance (meters)	Magnetic Field strength (dBµA/m)	Magnetic Field strength * (dBµA/m)@3m
0.009-0.490	6.37/F(kHz)	300	-3.0-(-37.7)	77.0-42.2
0.490-1.705	63.7/F(kHz)	30	-17.7-(-28.5)	22.3-11.4
1.705-30.0	0.08	30	-21.9	18.0
Frequency (MHz)	**Field strength (microvolts/meter)**	**Measurement distance (meters)**	**Field strength (dBµV/m)**	**Field strength * (dBµV/m)@3m**
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

6.5 *Test Results*

JUDGEMENT: Passed by 0.8 dB

For the operation frequency of 2402 MHz, the margin between the emission level and the specification limit is in the worst case 21.4 dB at the frequency of 2390.0 MHz, horizontal polarization.

For the operation frequency of 2440 MHz, the margin between the emission level and the specification limit is in the worst case 27.8dB at the frequency of 7320.0 MHz, horizontal polarization.

For the operation frequency of 2480 MHz, the margin between the emission level and the specification limit is in the worst case 0.8dB at the frequency of 2483.5 MHz, horizontal polarization.

The EUT met the requirements of the F.C.C. Part 15, Subpart C Sections 15.209, 15.205, 15.247(d) specifications.

The details of the highest emissions are given in *Figure 21*.

Radiated Emission

E.U.T Description Asset Tracking Device
Type LV500
Serial Number: Not designated

Specifications: FCC, Part 15, Subpart C, Sections 15.209, 15.205, 15.247(d)
RSS 247, Issue 2, Section 3.3; RSS Gen, Issue 5, Section 8.10

Antenna Polarization: Horizontal/Vertical Frequency Range: 9kHz to 25.0 GHz
Protocol Type: BLE Detector: Peak, Average

Operation Frequency	Freq.	Pol	Peak Reading	Peak Limit	Peak Margin	Average Reading	Average Limit	Average Margin
(MHz)	(MHz)	(H/V)	(dBµV/m)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
2402.0	2390.0	V	52.6	74.0	-21.4	-	54.0	-
	2390.0	H	52.3	74.0	-21.7	-	54.0	-
	4804.0	V	45.8(N.L)	74.0	-28.2	-	54.0	-
	4804.0	H	46.0(N.L)	74.0	-28.0	-	54.0	-
2440.0	4880.0	V	45.7(N.L)	74.0	-28.3	-	54.0	-
	4880.0	H	45.1(N.L)	74.0	-28.9	-	54.0	-
	7320.0	V	46.0(N.L)	74.0	-28.0	-	54.0	-
	7320.0	H	46.2(N.L)	74.0	-27.8	-	54.0	-
2480.0	4960.0	V	45.8(N.L)	74.0	-28.2	-	54.0	-
	4960.0	H	44.9(N.L)	74.0	-29.1	-	54.0	-
	2483.5	V	63.2	74.0	-10.8	53.0	54.0	-1.0
	2483.5	H	63.0	74.0	-11.0	53.2	54.0	-0.8

(N.L)=noise level

Figure 21. Radiated Emission Results

Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

"Peak Amp" includes correction factor.

** "Correction Factor" = Antenna Factor + Cable Loss- Low Noise Amplifier Gain*

6.6 *Test Instrumentation Used; Emissions in Restricted Frequency Bands*

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	March 9, 2020	March 31, 2021
EMI Receiver	HP	8542E	3906A00276	March 11, 2020	March 31, 2021
RF Filter Section	HP	85420E	3705A00248	March 11, 2020	March 31, 2021
Spectrum Analyzer	HP	8593EM	3826A00265	March 9, 2020	March 31, 2021
Active Loop Antenna	EMCO	6502	9506-2950	February 15, 2019	February 28, 2021
Biconical Antenna	EMCO	3110B	9912-3337	May 21, 2019	May 31, 2021
Log Periodic Antenna	EMCO	3146	9505-4081	May 31, 2018	May 31, 2021
Horn Antenna	ETS	3115	29845	May 31, 2018	May 31, 2021
Horn Antenna	ARA	SWH-28	1007	December 31, 2017	December 31, 2020
Low Noise Amplifier 1GHz-18GHz	Miteq	AFSX4-02001800-50-8P	-	July 12, 2020	July 31, 2021
RF Cable Chamber	Commscope ORS	0623 WBC-400	G020133	December 24, 2018	December 31, 2020
RF Cable Oats	EIM	RG214-11N(X2)		May 26, 2019	May 30, 2021
Filter Band Pass 4-20 GHz	Meuro	MFL040120H50	902252	December 24, 2018	December 31, 2020
Semi Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR
Antenna Mast	ETS	2070-2	9608-1497	NCR	NCR
Turntable	ETS	2087	-	NCR	NCR
Mast & Table Controller	ETS/EMCO	2090	9608-1456	NCR	NCR

Figure 22 Test Equipment Used

7. Antenna Gain/Information

The antenna gain is +2.0 dBi

8. R.F Exposure/Safety

The typical placement of the E.U.T. is wall mounted. The typical distance between the E.U.T. and the user is greater than 20cm.

Calculation of Maximum Permissible Exposure (MPE)
Based on 47CFR1 Section 1.1307(b)(1) and RSS 102 Issue 5, Table 4 Requirements

(a) FCC Limit at 2440 MHz is: $1\frac{mW}{cm^2}$

Using Table 1 of 47CFR1 Section 1.1310 limit for general population/uncontrolled exposures, the above levels are an average over 30 minutes.

(b) ISED Limit: 300-6000MHz = $0.02619f^{0.6834}$ W/m^2=
$0.02619 \times 2440^{0.6834} = 0.02619 \times 206.51 = 5.41$ W/m^2 = 0.541 mW/cm^2

(c) The power density produced by the E.U.T. is:

$$S = \frac{P_t G_t}{4®R^2}$$

P_t = Conducted Transmitted Power 4.6 dBm = 2.88 mW

G_t = Antenna Gain 2.0 dBi = 1.58 numeric

R = Distance From Transmitter 20 cm

(d) The peak power density produced by the E.U.T. is:

$S = 2.88*1.58/4\pi(20)^2 = 9.05 \times 10^{-4}$ mW/cm^2

(e) This is below the FCC/ISED limit.

9. APPENDIX A - CORRECTION FACTORS

9.1 *Correction factors for RF OATS Cable 35m ITL #1911*

Frequency (MHz)	Cable loss (dB)
1.00	0.5
10.00	1.0
20.00	1.34
30.00	1.5
50.00	1.83
100.00	2.67
150.00	3.17
200.00	3.83
250.00	4.17
300.00	4.5
350.00	5.17
400.00	5.5
450.00	5.83
500.00	6.33
550.00	6.67
600.00	6.83
650.00	7.17
700.00	7.66
750.00	7.83
800.00	8.16
850.00	8.5
900.00	8.83
950.00	8.84
1000.00	9

9.2 *Correction factor for RF cable for Anechoic Chamber ITL #1840*

Frequency (GHz)	loss Result (dB)
0.5	-1.0
1.0	-1.4
1.5	-1.7
2.0	-2.0
2.5	-2.3
3.0	-2.6
3.5	-2.8
4.0	-3.1
4.5	-3.3
5.0	-3.6
5.5	-3.7
6.0	-4.0
6.5	-4.4
7.0	-4.7
7.5	-4.8
8.0	-5.0
8.5	-5.1
9.0	-5.6
9.5	-5.8
10.0	-6.0
10.5	-6.2
11.0	-6.2
11.5	-6.0
12.0	-6.0
12.5	-6.1
13.0	-6.3
13.5	-6.5
14.0	-6.7
14.5	-7.0
15.0	-7.3
15.5	-7.5
16.0	-7.6
16.5	-8.0
17.0	-8.0
17.5	-8.1
18.0	-8.2
18.5	-8.2
19.0	-8.3
19.5	-8.6
20.0	-8.5

NOTES:

1. *The cable is manufactured by Commscope*
2. *The cable type is 0623 WBC-400, serial # G020132 and 10m long*

9.3 *Correction factors for Active Loop Antenna ITL # 1075:*

f(MHz)	MAF(dBs/m)	AF(dB/m)
0.01	-33.1	18.4
0.02	-37.2	14.3
0.03	-38.2	13.3
0.05	-39.8	11.7
0.1	-40.1	11.4
0.2	-40.3	11.2
0.3	-40.3	11.2
0.5	-40.3	11.2
0.7	-40.3	11.2
1	-40.1	11.4
2	-40	11.5
3	-40	11.5
4	-40.1	11.4
5	-40.2	11.3
6	-40.4	11.1
7	-40.4	11.1
8	-40.4	11.1
9	-40.5	11
10	-40.5	11
20	-41.5	10
30	-43.5	8

9.4 *Correction factors for biconical antenna ITL #1356*

Frequency [MHz]	ITL 1356 AF [dB/m]
30	14.77
35	13.46
40	12.57
45	11.62
50	10.87
60	9.19
70	9.52
80	9.55
90	9.27
100	10.20
120	11.18
140	12.02
160	12.62
180	13.44
200	14.82

9.5 *Correction factors for log periodic antenna ITL # 1349*

Frequency [MHz]	ITL 1349 AF [dB/m]
200	11.31
250	11.85
300	14.47
400	15.12
500	17.69
600	18.45
700	20.52
800	20.77
900	21.97
1000	23.21

9.6 *Correction factors for Double –Ridged Waveguide Horn ANTENNA ITL # 1352*

FREQUENCY (GHz)	AFE (dB/m)	FREQUENCY (GHz)	AFE (dB/m)
0.75	25	9.5	38
1.0	23.5	10.0	38.5
1.5	26.0	10.5	38.5
2.0	29.0	11.0	38.5
2.5	27.5	11.5	38.5
3.0	30.0	12.0	38.0
3.5	31.5	12.5	38.5
4.0	32.5	13.0	40.0
4.5	32.5	13.5	41.0
5.0	33.0	14.0	40.0
5.5	35.0	14.5	39.0
6.0	36.5	15.0	38.0
6.5	36.5	15.5	37.5
7.0	37.5	16.0	37.5
7.5	37.5	16.5	39.0
8.0	37.5	17.0	40.0
8.5	38.0	17.5	42.0
9.0	37.5	18.0	42.5

9.7 *Correction factors for Horn Antenna Model: SWH-28*

CALIBRATION DATA

3 m distance

Frequency, MHz	Measured antenna factor, dB/m [1]
18000	32.4
18500	32.0
19000	32.3
19500	32.4
20000	32.3
20500	32.8
21000	32.8
21500	32.7
22000	33.1
22500	33.0
23000	33.1
23500	33.8
24000	33.5
24500	33.5
25000	33.8
25500	33.9
26000	34.2
26500	34.7

[1] The antenna factor shall be added to receiver reading in dBµV to obtain field strength in dBµV/m.