MPE TEST REPORT

Applicant	Positioning Universal Inc
FCC ID	2AHRH-FJ1600LW
Product	GPS TRACK
Brand	PUI
Model	FJ1600LW
Report No.	R2406A0659-M1
Issue Date	July 11, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Wei Fang ying
Prepared by: Wei Fangying

Fan Guangchang
Approved by: Fan Guangchang

Eurofins TA Technology (Shanghai) Co., Ltd.
Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
TEL: +86-021-50791141/2/3
FAX: +86-021-50791141/2/3-8000

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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Fan Guangchang
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	https://www.eurofins.com/electrical-and-electronics
E-mail:	Jack.Fan@cpt.eurofinscn.com

1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25°C
Relative humidity	Min. = 20%, Max. = 80%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	Positioning Universal Inc
Applicant address	4660 La Jolla Village Drive, Suite 1100, San Diego, CA92122, United States
Manufacturer	Positioning Universal Inc
Manufacturer address	4660 La Jolla Village Drive, Suite 1100, San Diego, CA92122, United States

General Technologies

EUT Description			
Model	FJ1600LW		
Lab internal SN	R2406A0659/S01		
Hardware Version	P5.1		
Software Version	1.0		
Frequency	Band	TX (MHz)	RX (MHz)
	GSM 850	824 ~ 849	869 ~ 894
	GSM 1900	1850 ~ 1910	1930 ~ 1990
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 14	788 ~ 798	758 ~ 768
	LTE Band 25	1850 ~ 1915	1930 ~ 1995
	LTE Band 26	814 ~ 849	859 ~ 894
	Bluetooth LE	2400 ~ 2483.5	2400 ~ 2483.5
Date of Testing	June 26, 2024 ~ July 5, 2024		
Date of Sample Received	June 18, 2024		

Note:
1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.
2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

3 Maximum Output Power /Tune up and Antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by
Numeric gain (G)=10^(antenna gain/10)

Band		Burst-Averaged output power (adjusted for tune up) (dBm)	Division Factors	Frame-Averaged output power (adjusted for tune up) (dBm)
GSM850	1 Txslot	34.000	-9.030	24.970
	2 Txslots	33.000	-6.020	26.980
	3 Txslots	31.000	-4.260	26.740
	4 Txslots	30.000	-3.010	**26.990**
GSM1900	1 Txslot	33.000	-9.030	23.970
	2 Txslots	32.000	-6.020	25.980
	3 Txslots	32.000	-4.260	27.740
	4 Txslots	32.000	-3.010	**28.990**

Note:
Division Factors

To average the power, the division factor is as follows:
1Txslot = 1 transmit time slot out of 8 time slots
=> conducted power divided by (8/1) => -9.03 dB
2Txslots = 2 transmit time slots out of 8 time slots
=> conducted power divided by (8/2) => -6.02 dB
3Txslots = 3 transmit time slots out of 8 time slots
=> conducted power divided by (8/3) => -4.26 dB
4Txslots = 4 transmit time slots out of 8 time slots
=> conducted power divided by (8/4) => -3.01 dB

Band	Maximum Tune up Power		Antenna Gain (dBi)	Numeric Gain
	(dBm)	(mW)		
GSM 850	26.990	500.035	0.000	1.000
GSM 1900	28.990	792.501	2.600	1.820
LTE Band 2	25.000	316.228	2.600	1.820
LTE Band 4	25.000	316.228	2.000	1.585
LTE Band 5	25.000	316.228	0.000	1.000
LTE Band 12	25.000	316.228	0.000	1.000
LTE Band 13	25.000	316.228	0.000	1.000
LTE Band 14	25.000	316.228	0.000	1.000
LTE Band 25	25.000	316.228	2.600	1.820
LTE Band 26	25.000	316.228	0.000	1.000
Band	Maximum Output Power		Antenna Gain (dBi)	Numeric Gain
	(dBm)	(mW)		
Bluetooth LE	7.630	5.794	3.620	2.301

4 MPE Limit

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following.

TABLE 1 – LIMITS FOR MAXIMUN PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The maximum permissible exposure for 300~1500 MHz is f/1500, for 1500~100,000MHz is 1.0. So

Band	The Maximum Permissible Exposure (mW/cm^2)
GSM850	0.549
GSM1900	1.000
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 5	0.549
LTE Band 12	0.466
LTE Band 13	0.518
LTE Band 14	0.525
LTE Band 25	1.000
LTE Band 26	0.543
Bluetooth LE	1.000

5 RF Exposure Evaluation Result

RF exposure evaluation method is based on KDB 447498 D01，this calculation is based on the conducted power, maximum power and antenna gain with provides the minimum separation distance. The formula shown below is from OET Bulletin 65 Edition 97-01 Per KDB 447498 D01:

$$S= PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm^2)
P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)
G = the numeric gain of the antenna
R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	Maximum Tune up (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	PG (mW)	Result (mW/cm^2)	Limit Value (mW/cm^2)	The MPE Ratio
GSM850	26.990	0.000	26.990	500.035	0.099	0.549	0.181
GSM1900	28.990	2.600	31.590	1442.115	0.287	1.000	**0.287**
LTE Band 2	25.000	2.600	27.600	575.440	0.114	1.000	0.114
LTE Band 4	25.000	2.000	27.000	501.187	0.100	1.000	0.100
LTE Band 5	25.000	0.000	25.000	316.228	0.063	0.549	0.115
LTE Band 12	25.000	0.000	25.000	316.228	0.063	0.466	0.135
LTE Band 13	25.000	0.000	25.000	316.228	0.063	0.518	0.121
LTE Band 14	25.000	0.000	25.000	316.228	0.063	0.525	0.120
LTE Band 25	25.000	2.600	27.600	575.440	0.114	1.000	0.114
LTE Band 26	25.000	0.000	25.000	316.228	0.063	0.543	0.116
Band	**Maximum Output Power (dBm)**	**Antenna Gain (dBi)**	**Maximum EIRP (dBm)**	**PG (mW)**	**Result (mW/cm^2)**	**Limit Value (mW/cm^2)**	**The MPE Ratio**
Bluetooth LE	7.630	3.620	11.250	13.335	0.003	1.000	**0.003**
Note: **R** = 20cm **π**= 3.1416 The MPE Ratio = Mac Result÷Limit Value							

So the simultaneous transmitting antenna pairs as below:
∑of MPE ratios=Main Antenna + Bluetooth LE = 0.287+ 0.003 = 0.290 <1

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

********END OF REPORT ********