RF Exposure Evaluation Report

APPLICANT	**:**	**Positioning Universal Inc**
EQUIPMENT	**:**	**GPS TRACK**
MODEL NAME	**:**	**FT7000MW**
FCC ID	**:**	**2AHRH-FT7000MW**
STANDARD	**:**	**47 CFR Part 2.1091**

We, Sporton International Inc. (Kunshan), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Tony Zhang

Reviewed by: Tony Zhang / Supervisor

Kat Yin

Approved by: Kat Yin / Manager

Sporton International Inc. (Kunshan)
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People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA1D2402	Rev. 01	Initial issue of report	Mar. 07, 2022

1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR01-KS	CN1257	314309

Applicant	
Company Name	Positioning Universal Inc
Address	4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122

Manufacturer	
Company Name	Positioning Universal Inc
Address	4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	GPS TRACK
Model Name	FT7000MW
FCC ID	2AHRH-FT7000MW
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850MHz ~ 1910MHz LTE Category M1: LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 85: 698 MHz ~ 716 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GPRS/EGPRS LTE Cat M1: QPSK, 16QAM 802.11b/g/n HT20 Bluetooth LE
Antenna Type	WWAN : PIFA Antenna WLAN : PCB Antenna Bluetooth : PCB Antenna
HW Version	P2.2
SW Version	A0.18.1
EUT Stage	Identical Prototype
Remark: 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.	

Comments and Explanations:
1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. 2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

3. Maximum RF average output tune up power among production units

<GSM>

Mode	Burst Average Power (dBm)	
	GSM 850	GSM 1900
GPRS 1 Tx slot	35.00	32.00
GPRS 2 Tx slots	35.00	32.00
GPRS 3 Tx slots	33.00	30.00
GPRS 4 Tx slots	32.00	30.00
EDGE 1 Tx slot	30.00	29.00
EDGE 2 Tx slots	30.00	29.00
EDGE 3 Tx slots	30.00	29.00
EDGE 4 Tx slots	30.00	29.00

<LTE>

Mode		Maximum Average power(dBm)
LTE Cat M1	Band 2	25.00
	Band 4	25.00
	Band 5	25.00
	Band 12	25.00
	Band 13	25.00
	Band 25	25.00
	Band 26	25.00
	Band 66	25.00
	Band 85	25.00

<2.4GHz WLAN>

Frequency	Mode	Maximum Average Power (dBm)
WLAN 2.4GHz	802.11b	18.00
	802.11g	17.00
	802.11n-HT20	17.00

<Bluetooth>

Frequency	Mode	Maximum Average Power (dBm)
Bluetooth	LE	9.00

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	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

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
GPRS850 (1 Tx slot)	824.2	-3.50	35.00	31.50	177.828	0.035	0.549	0.064
GPRS850 (2 Tx slots)	824.2	-3.50	35.00	31.50	354.813	0.071	0.549	0.129
GPRS850 (3 Tx slots)	824.2	-3.50	33.00	29.50	334.195	0.067	0.549	0.121
GPRS850 (4 Tx slots)	824.2	-3.50	32.00	28.50	354.813	0.071	0.549	0.129
EGPRS850 (1 Tx slot)	824.2	-3.50	30.00	26.50	56.234	0.011	0.549	0.020
EGPRS850 (2 Tx slots)	824.2	-3.50	30.00	26.50	112.202	0.022	0.549	0.041
EGPRS850 (3 Tx slots)	824.2	-3.50	30.00	26.50	167.494	0.033	0.549	0.061
EGPRS850 (4 Tx slots)	824.2	-3.50	30.00	26.50	223.872	0.045	0.549	0.081
GPRS1900 (1 Tx slot)	1850.2	1.10	32.00	33.10	257.040	0.051	1.000	0.051
GPRS1900 (2 Tx slots)	1850.2	1.10	32.00	33.10	512.861	0.102	1.000	0.102
GPRS1900 (3 Tx slots)	1850.2	1.10	30.00	31.10	483.059	0.096	1.000	0.096
GPRS1900 (4 Tx slots)	1850.2	1.10	30.00	31.10	645.654	0.129	1.000	0.129
EGPRS1900 (1 Tx slot)	1850.2	1.10	29.00	30.10	128.825	0.026	1.000	0.026
EGPRS1900 (2 Tx slots)	1850.2	1.10	29.00	30.10	257.040	0.051	1.000	0.051
EGPRS1900 (3 Tx slots)	1850.2	1.10	29.00	30.10	383.707	0.076	1.000	0.076
EGPRS1900 (4 Tx slots)	1850.2	1.10	29.00	30.10	512.861	0.102	1.000	0.102
CAT M1 Band 2	1850.7	1.10	25.00	26.10	407.380	0.081	1.000	0.081
CAT M1 Band 4	1710.7	1.20	25.00	26.20	416.869	0.083	1.000	0.083
CAT M1 Band 5	824.7	-3.50	25.00	21.50	141.254	0.028	0.550	0.051
CAT M1 Band 12	699.7	0.20	25.00	25.20	331.131	0.066	0.466	**0.141**
CAT M1 Band 13	779.5	0.40	25.00	25.40	346.737	0.069	0.520	0.133
CAT M1 Band 25	1850.7	1.10	25.00	26.10	407.380	0.081	1.000	0.081
CAT M1 Band 26	814.7	-3.50	25.00	21.50	141.254	0.028	0.543	0.052
CAT M1 Band 66	1710.7	1.20	25.00	26.20	416.869	0.083	1.000	0.083
CAT M1 Band 85	700.5	0.20	25.00	25.20	331.131	0.066	0.467	0.141
WLAN2.4GHz 802.11b	2412	2.00	18.00	20.00	100.000	0.020	1.000	**0.020**
WLAN2.4GHz 802.11g	2412	2.00	17.00	19.00	79.433	0.016	1.000	0.016
WLAN2.4GHz 802.11n-HT20	2412	2.00	17.00	19.00	79.433	0.016	1.000	0.016
Bluetooth	2402	1.00	9.00	10.00	10.000	0.002	1.000	**0.002**

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.

5.2. Collocated Power Density Calculation

Power Density / Limit			Σ (Power Density / Limit) of WWAN+2.4GHz WLAN+Bluetooth
1	2	3	1+2+3
WWAN	2.4GHz WLAN	Bluetooth	
0.141	0.020	0.002	0.163

Note:

1. Σ(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + Bluetooth+WLAN 2.4G.
2. For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

------THE END------