RF Exposure Evaluation Report

APPLICANT	**:**	**Locus Solutions, LLC**
EQUIPMENT	**:**	**GO Tracker 1.5**
BRAND NAME	**:**	**Emerson**
MODEL NAME	**:**	**GO Tracker 1.5**
FCC ID	**:**	**AMH101011**
STANDARD	**:**	**47 CFR Part 2.1091**
		FCC KDB 447498 D01 v06

We, Sporton International (ShenZhen) Inc., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Long Liang / Supervisor

Approved by: Johnny Chen / Manager

ACCREDITED Cert #5145.01

Sporton International (ShenZhen) Inc.

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA9N1204	Rev. 01	Initial issue of report	Jan. 08, 2020

1. Administration Data

1.1. Testing Laboratory

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory		
Test Firm	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595	
Test Site No.	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CN1256	421272

Applicant	
Company Name	Locus Solutions, LLC
Address	7121 Fairway Dr. Suite #400 | Palm Beach Gardens, FL 33418 USA

Manufacturer	
Company Name	Queclink Wireless Solutions Co., Ltd.
Address	3 Floor, Building 2, No.717 Yishan Road, Xuhui District, shanghai, China 200233

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	GO Tracker 1.5
Brand Name	Emerson
Model Name	GO Tracker 1.5
FCC ID	AMH101011
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz LTE Category M1: LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz NB-IOT Category NB1 : LTE Band 2: 1850.1 MHz ~ 1909.9 MHz LTE Band 4: 1710.1 MHz ~ 1754.9 MHz LTE Band 5: 824.1 MHz ~ 848.9 MHz LTE Band 12: 699.1 MHz ~ 715.9 MHz LTE Band 13: 777.1 MHz ~ 786.9 MHz LTE Band 26: 814.1 MHz ~ 848.9 MHz
Mode	GPRS/EGPRS LTE Category M1: QPSK / 16QAM NB-IOT Category NB1 :BPSK / QPSK
Antenna Type	PCB Antenna
HW Version	V1.03
SW Version	R00A01V19
EUT Stage	Production Unit
Remark: 1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description. 2. This device does not support voice function.	

Comments and Explanations:
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.

3. Maximum RF average output power among production units

Mode	Maximum Average power(dBm)	
	GSM 850	GSM 1900
GPRS (GMSK, 1 Tx slot)	31.50	30.00
GPRS (GMSK, 2 Tx slots)	31.50	30.00
GPRS (GMSK, 3 Tx slots)	30.00	30.00
GPRS (GMSK, 4 Tx slots)	31.50	30.00
EDGE (8PSK, 1 Tx slot)	27.00	27.00
EDGE (8PSK, 2 Tx slots)	27.00	27.00
EDGE (8PSK, 3 Tx slots)	27.00	27.00
EDGE (8PSK, 4 Tx slots)	27.00	27.00

Mode	Maximum Average power(dBm)
NB-IOT Band 2	23.00
NB-IOT Band 4	24.00
NB-IOT Band 5	23.50
NB-IOT Band 12	24.00
NB-IOT Band 13	23.50
NB-IOT Band 26	23.50
Cat M1 Band 2	25.00
Cat M1 Band 4	24.00
Cat M1 Band 5	25.00
Cat M1 Band 12	25.50
Cat M1 Band 13	25.00
Cat M1 Band 26	24.00

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)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
GPRS 850 (1 Tx slot)	824.2	31.50	-5.51	25.99	0.40	50.00	0.010	0.549
GPRS 850 (2 Tx slots)	824.2	31.50	-5.51	25.99	0.40	99.77	0.020	0.549
GPRS 850 (3 Tx slots)	824.2	30.00	-5.51	24.49	0.28	105.44	0.021	0.549
GPRS 850 (4 Tx slots)	824.2	31.50	-5.51	25.99	0.40	199.07	0.040	0.549
EGPRS 850 (1 Tx slot)	824.2	27.00	-5.51	21.49	0.14	17.74	0.004	0.549
EGPRS 850 (2 Tx slots)	824.2	27.00	-5.51	21.49	0.14	35.40	0.007	0.549
EGPRS 850 (3 Tx slots)	824.2	27.00	-5.51	21.49	0.14	52.84	0.011	0.549
EGPRS 850 (4 Tx slots)	824.2	27.00	-5.51	21.49	0.14	70.63	0.014	0.549
GPRS 1900 (1 Tx slot)	1850.2	30.00	-4.12	25.88	0.39	48.75	0.010	1.000
GPRS 1900 (2 Tx slots)	1850.2	30.00	-4.12	25.88	0.39	97.27	0.019	1.000
GPRS 1900 (3 Tx slots)	1850.2	30.00	-4.12	25.88	0.39	145.21	0.029	1.000
GPRS 1900 (4 Tx slots)	1850.2	30.00	-4.12	25.88	0.39	194.09	0.039	1.000
EGPRS 1900 (1 Tx slot)	1850.2	27.00	-4.12	22.88	0.19	24.43	0.005	1.000
EGPRS 1900 (2 Tx slots)	1850.2	27.00	-4.12	22.88	0.19	48.75	0.010	1.000
EGPRS 1900 (3 Tx slots)	1850.2	27.00	-4.12	22.88	0.19	72.78	0.014	1.000
EGPRS 1900 (4 Tx slots)	1850.2	27.00	-4.12	22.88	0.19	97.27	0.019	1.000
NB-IOT Band 2	1850.1	23.00	-4.12	18.88	0.08	77.27	0.015	1.000
NB-IOT Band 4	1710.1	24.00	-4.11	19.89	0.10	97.50	0.019	1.000
NB-IOT Band 5	824.1	23.50	-5.51	17.99	0.06	62.95	0.013	0.549
NB-IOT Band 12	699.1	24.00	-7.41	16.59	0.05	45.60	0.009	0.466
NB-IOT Band 13	777.1	23.50	-10.34	13.16	0.02	20.70	0.004	0.518
NB-IOT Band 26	814.1	23.50	-5.51	17.99	0.06	62.95	0.013	0.543
Cat M1 Band 2	1850.7	25.00	-4.12	20.88	0.12	122.46	0.024	1.000
Cat M1 Band 4	1710.7	24.00	-4.11	19.89	0.10	97.50	0.019	1.000
Cat M1 Band 5	824.7	25.00	-5.51	19.49	0.09	88.92	0.018	0.550
Cat M1 Band 12	699.7	25.50	-7.41	18.09	0.06	64.42	0.013	0.466
Cat M1 Band 13	779.5	25.00	-10.34	14.66	0.03	29.24	0.006	0.520
Cat M1 Band 26	814.7	24.00	-5.51	18.49	0.07	70.63	0.014	0.543

Note:
1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band
2. Chose the maximum power to do MPE analysis.

Conclusion:

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