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MPE TEST REPORT

FCC Per 47 CFR 2.1091(b)

Report Reference No.....: CTL1308161300-WM

FCC ID.....:

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Date of issue.....: Sept. 23, 2013

Representative Laboratory Name : Shenzhen CTL Electromagnetic Technology Co., Ltd.

Address.....: Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Test Firm.....: Bontek Compliance Testing Laboratory Ltd

Address.....: 1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China

Applicant's name.....: GATOR GROUP CO., LTD

Address.....: 5 Floor, TKG NO. 11 Building, Yangtian Road, the 72nd Zone of Bao'an, Shenzhen, China

Test specification:

Standard: FCC Per 47 CFR 2.1091(b)

TRF Originator.....: Shenzhen CTL Electromagnetic Technology Co., Ltd.

Master TRF.....: Dated 2011-01

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Test item description: GPS Tracker

FCC ID.....: 2AA2S-M508

Trade Mark: GATOR

Model/Type reference.....: M508, M518, M528, M538, M548, M558, M568, M578, M588, M598

Power Supply.....: DC 12V

Result.....: Positive

Test Report

Test Report No. :	CTL1308161300-WM	Sept. 23, 2013
		Date of issue

Equipment under Test : GPS Tracker

Model /Type : M508

Listed Models : M518, M528, M538, M548, M558, M568, M578, M588, M598

Difference Description : Only the model's name is different

Applicant : **GATOR GROUP CO., LTD**

Address : 5 Floor, TGK NO. 11 Building, Yangtian Road, the 72nd Zone of Bao'an, Shenzhen, China

Manufacturer : **GATOR GROUP CO., LTD**

Address : 5 Floor, TGK NO. 11 Building, Yangtian Road, the 72nd Zone of Bao'an, Shenzhen, China

Test Result	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- o - supplied by the lab

1.2. Equipment Under Test

Power supply system utilised

Power supply voltage : o 120V / 60 Hz o 115V / 60Hz
 ■ 12 V DC o 24 V DC
 o Other (specified in blank below)

1.3. Description of the test mode

CTL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: GSM850
Mode 2: PCS1900
Mode 3: GPRS850
Mode 4: GPRS1900

Note:

1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. For the ERP/EIRP and radiated emission test, every axis (X, Y, Z) was verified, and show the worst result on this report.
3. Radiated power output working at GSM link was higher than that working at GPRS link, so all of test items were done working at GSM mode. Refer to peak power output for more details.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Bontek Compliance Testing Laboratory Ltd
1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements

2.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Bontek Compliance Testing Laboratory Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Bontek laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~12.75GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.22dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	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

3.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna is 0.5dBi for GSM850, 2.0 dBi for PCS1900, the RF power density can be obtained.

TEST RESULTS

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm ²)	Power Density At 20 cm (mW/cm ²)	Test Results
824.2	20.00	31.79	1510.0802	1.1220	0.5495	0.3372	Pass
836.6	20.00	31.84	1527.5661	1.1220	0.5577	0.3411	Pass
848.6	20.00	31.82	1520.5475	1.1220	0.5659	0.3396	Pass
1850.2	20.00	29.95	988.5531	1.5849	1.0000	0.3117	Pass
1880.0	20.00	29.97	993.1160	1.5849	1.0000	0.3133	Pass
1909.8	20.00	29.94	986.2795	1.5849	1.0000	0.3111	Pass

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 (b) for the controlled RF Exposure.

.....**End of Report**.....

