Shenzhen Huatongwei International Inspection Co., Ltd.
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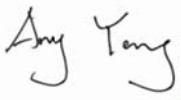
RF EXPOSURE REPORT

Report Reference No. ..... :	**TRE1501001302**	R/C……..: 87757
FCC ID. ..... :	**ZF3-LTL-6310WMG**	
Applicant's name ..... :	**Shenzhen Ltl Acorn Electronics Co., Ltd.**	
Address..... :	Room 405, Building No. 9, Wangtang Industrial Park, Xinwei, Xili Town, Nanshan District, Shenzhen, Guangdong, China	
Manufacturer..... :	Zhuhai Ltl Acorn Electronics Co., Ltd.	
Address..... :	3rd floor, Kangde Lai Medical Industrial Park, Sanzao Town, Jinwan District, Zhuhai, Guangdong, China.	
Test item description ..... :	**Infrared Digital Scouting Camera**	
Trade Mark ..... :	LTL ACORN	
Model/Type reference..... :	Ltl-6310WMG-940nm LED	
Listed Model(s) ..... :	Ltl-6310MG-940nm LED,Ltl-6310MG-850nm LED, Ltl-6210MG-940nm LED,Ltl-6210MG-850nm LED, Ltl-6510MG-940nm LED,Ltl-6510MG-850nm LED, Ltl-6310WMG-850nm LED	
Standard ..... :	**FCC Per 47 CFR 2.1091(b)**	
Date of receipt of test sample..... :	Jan. 07, 2015	
Date of testing ..... :	Jan. 08, 2015 ~ July 06, 2015	
Date of issue… ..... :	July 06, 2015	
Result..... ……..... :	**PASS**	

Compiled by (position+printed name+signature)..:	File administrators May Hu	
Supervised by (position+printed name+signature)..:	Project Engineer Lion Cai	
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	
Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd**	
Address..... :	Bldg3, Hongfa Hi-tech Industrial Park, Genyu Road, Shenzhen, China	

Contents

1. SUMMARY

1.1. Client Information

Applicant:	Shenzhen Ltl Acorn Electronics Co., Ltd.
Address:	Room 405, Building No. 9, Wangtang Industrial Park, Xinwei, Xili Town, Nanshan District, Shenzhen, Guangdong, China
Manufacturer:	Zhuhai Ltl Acorn Electronics Co., Ltd.
Address:	3rd floor, Kangde Lai Medical Industrial Park, Sanzao Town, Jinwan District, Zhuhai, Guangdong, China.

1.2. Product Description

Name of EUT	Infrared Digital Scouting Camera
Trade Mark:	LTL ACORN
Model No.:	Ltl-6310WMG-940nm LED
Listed Model(s):	Ltl-6310MG-940nm LED,Ltl-6310MG-850nm LED , Ltl-6210MG-940nm LED,Ltl-6210MG-850nm LED , Ltl-6510MG-940nm LED,Ltl-6510MG-850nm LED , Ltl-6310WMG-850nm LED
Power supply:	DC 6.0V From internal battery
Adapter information:	-
2G:	
Support Network:	GPRS
Support Band:	GPRS850, GPRS1900
Modulation:	GPRS: GMSK
Transmit Frequency:	GPRS850: 824.20MHz-848.80MHz GPRS1900: 1850.20MHz-1909.80MHz
Receive Frequency:	GPRS850: 869.20MHz-893.80MHz GPRS1900: 1930.20MHz-1989.80MHz
GPRS Class:	12
Antenna type:	Dedicated Antenna
Antenna gain:	GSM850:2.0dBi PCS1900:2.0dBi
Hardware version:	6210-C-EMC
Software version:	V1.2.119T

Operation Frequency List:

GPRS 850		GPRS1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

Note:In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

1.3. EUT operation mode

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in continous transmitting and receiving mode for testing.

Test mode:GPRS communication.

1.4. EUT configuration

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

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
○	Multimeter	Manufacturer :	/
		Model No. :	/

1.5. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd. (Gongming)
Address: Bldg3, Hongfa Hi-tech Industrial Park, Genyu Road, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept 30, 2015.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jul. 01, 2012, valid time is until Jun. 01, 2015.

FCC-Registration No.: 317478

Shenzhen Huatongwei International Inspection Co., Ltd. (Gongming EMC Laboratory) has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478, Renewal date July 18, 2014, valid time is until July. 18, 2017.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Dec. 31, 2013, valid time is until Dec. 31, 2016.

IC-Registration No.: 5377B

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. (Gongming EMC Laboratory) has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B on September 3, 2014, valid time is until September 3, 2017.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.:R-2484. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 29, 2015.

Radiated disturbance above 1GHz measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2013. Valid time is until Dec. 23, 2016.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2013. Valid time is until May 06, 2016.

DNV

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2016.

according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2016.

2.3. Environmental conditions

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

Temperature:	15~35°C
lative Humidity:	30~60 %
Air Pressure:	950~1050mba

2.4. 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 TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1" and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., 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 Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-40 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emissio 1~18GHz	5.16 dB	(1)
Radiated Emissio 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	---------	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

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.
KDB447498:Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

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	($900/f^2$)*	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	($180/f^2$)*	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

TEST RESULS

GPRS850						
Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (W)	Antenna Gain (Nemeric)	Power Density (mW/cm2)	Limit (mW/cm2)
824.20	30	34.00	2.512	1.58	0.351	0.5495
836.60	30	34.00	2.512	1.58	0.351	0.5577
848.80	30	34.00	2.512	1.58	0.351	0.5659

GPRS1900						
Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (W)	Antenna Gain (Nemeric)	Power Density (mW/cm2)	Limit (mW/cm2)
1850.20	30	31.00	1.259	1.58	0.176	1.0000
1880.00	30	31.00	1.259	1.58	0.176	1.0000
1909.80	30	31.00	1.259	1.58	0.176	1.0000

4. Conclusion

So standalone SAR measurements are not required for both head and body.

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