Launch Tech Co., Ltd.

golo^3

Main Model: golo^3
Serial Model: N/A

December 24, 2013

Report No.: 13070593-FCC-H2
(This report supersedes NONE)

Modifications made to the product : None

This Test Report is Issued Under the Authority of:

Herith shv	*Alex Liu*	
Herith Shi	**Alex Liu**	
Compliance Engineer	**Technical Manager**	

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Test result presented in this test report is applicable to the representative sample only.

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SIEMIC (Shenzhen-China) Laboratories Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC , RF/Wireless , Telecom
Canada	EMC, RF/Wireless , Telecom
Taiwan	EMC, RF, Telecom , Safety
Hong Kong	RF/Wireless ,Telecom
Australia	EMC, RF, Telecom , Safety
Korea	EMI, EMS, RF , Telecom, Safety
Japan	EMI, RF/Wireless, Telecom
Singapore	EMC , RF , Telecom
Europe	EMC, RF, Telecom , Safety

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1   EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programmers was to demonstrate compliance of the Launch Tech Co., Ltd., golo³ and Model: golo³ against the current Stipulated Standards. The golo³ has demonstrated compliance with the FCC 2.1091.

EUT Information

EUT Description	:	**golo³**
Main Model	:	**golo³**
Serial Model		**N/A**
Antenna Gain	:	**UMTS-FDD Band V/GPRS850: -4.95dBi** **UMTS-FDD Band II/GPRS1900: 2.15dBi** **Bluetooth: -1.2dBi** **WIFI: -1.2dBi**
Input Power	:	**Input: DC 12V**
Classification Per Stipulated Test Standard	:	**Class B Emission Product Per FCC 2.1091**

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2   TECHNICAL DETAILS

Purpose	**Compliance testing of golo3 with stipulated standards**
Applicant / Client	**Launch Tech Co., Ltd.** **Launch Industrial Park, North of Wuhe Rd., Banxuegang, Longgang, Shenzhen, China**
Manufacturer	**Launch Industrial Park, North of Wuhe Rd., Banxuegang, Longgang, Shenzhen, China**
Laboratory performing the tests	**SIEMIC (Shenzhen-China) Laboratories** **Zone A, Floor 1, Building 2, Wan Ye Long Technology Park, South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong, China** **Tel: +86-0755-2601 4629 / 2601 4953** **Fax: +86-0755-2601 4953-810** **Email: China@siemic.com.cn**
Test report reference number	**13070593-FCC-H2**
Date EUT received	**December 06, 2013**
Standard applied	**FCC 2.1091**
Dates of test (from – to)	**December 09 to December 19, 2013**
No of Units	**#1**
Equipment Category	**DSS**
Trade Name	**LAUNCH**
RF Operating Frequency (ies)	**GPRS850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz** **GPRS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz** **UMTS-FDD Band Ⅴ TX : 826.4 ~ 846.6 MHz; RX : 871.4 ~ 891.6 MHz** **UMTS-FDD Band Ⅱ TX :1852.4 ~ 1907.6 MHz; RX : 1932.4 ~ 1987.6 MHz** **802.11b/g/n(20M): 2412-2462 MHz** **Bluetooth: 2402-2480 MHz**
Number of Channels	**299CH (GPRS1900) and 124CH (GPRS850)** **UMTS-FDD Band Ⅴ : 102CH** **UMTS-FDD Band Ⅱ : 277CH** **Bluetooth: 79CH** **802.11b/g/n: 11CH**
Modulation	**GPRS: GMSK** **UMTS-FDD: QPSK** **802.11b/g/n: DSSS/OFDM** **Bluetooth: GFSK& π/4DQPSK&8DPSK**
FCC ID	**XUJRCUL**

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3   FCC §2.1091 - MaximuM Permissible exposure (MPE)

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.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	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

3.2   Test Data

Predication of MPE limit at a given distance

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

Where: S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

GPRS 850MHz

Maximum peak output power at antenna input terminal: <u>33.00 (dBm)</u>
Maximum peak output power at antenna input terminal: <u>1995.26(mW)</u>

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Prediction distance: >20 (cm)
Predication frequency: 848.8 (MHz)
Antenna Gain (typical): -4.95 (dBi)

Antenna Gain (typical): 0.32(numeric)
The worst case is power density at predication frequency at 20 cm: 0.127 (mW/cm^2)

MPE limit for general population exposure at prediction frequency: 0.566 (mW/cm^2)

0.127 (mW/cm^2) <0.566 (mW/cm^2)

GPRS 1900MHz
Maximum peak output power at antenna input terminal: 30.00(dBm)
Maximum peak output power at antenna input terminal: 1000 (mW)

Prediction distance: >20 (cm)
Predication frequency: 1850.2(MHz)
Antenna Gain (typical): 2.15 (dBi)

Antenna Gain (typical): 1.641 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.326(mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1 (mW/cm^2)

0.326(mW/cm^2) < 1 (mW/cm^2)

2.4GHz
802.11b
Maximum peak output power at antenna input terminal: 18.50(dBm)
Maximum peak output power at antenna input terminal: 70.79 (mW)

Prediction distance: >20 (cm)
Predication frequency: 2412(MHz)
Antenna Gain (typical): -1.2 (dBi)

Antenna Gain (typical): 0.7586 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.011(mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1 (mW/cm^2)

0.011(mW/cm^2) < 1 (mW/cm^2)

2.4GHz
GFSK
Maximum peak output power at antenna input terminal: 7 (dBm)
Maximum peak output power at antenna input terminal: 5.01 (mW)

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Prediction distance: >20 (cm)
Predication frequency: 2480(MHz)
Antenna Gain (typical): -1.2 (dBi)

Antenna Gain (typical): 0.7586 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.0008(mW/cm^2)

MPE limit for general population exposure at prediction frequency: 1 (mW/cm^2)

0.0008(mW/cm^2) < 1 (mW/cm^2)

GPRS 850MHz and 2.4GHz BT+WIFI total/sum MPE

GPRS 850MHz the worst case is power at predication frequency: 848.8 MHz at 20 cm: 0.127 (mW/cm2)

802.11b the worst case is power density at predication frequency 2412 MHz at 20 cm: 0.011 (mW/cm2)

BT the worst case is power density at predication frequency 2480MHz at 20 cm: 0.0008 (mW/cm2)

The worst case is total/sum=0.127 (mW/cm2) /0.565+
0.011(mW/cm2)/1+0.0008(mW/cm2)/1=0.235 (mW/cm2)

MPE limit for general population exposure at prediction frequency: 1 (mW/cm2)

0.237(mW/cm2) < 1 (mW/cm2)

Result: Pass