TEST REPORT

Reference No.	:	WTS17S1093648-3EV1
FCC ID	:	2AC88-R1
Applicant	:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address	:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, HongKong
Manufacturer	:	Shenzhen uCloudlink Network Technology, Co., Ltd
Address	:	3rd Floor, A Part of Building 1, Shenzhen Software Industry Base, nanshan district xuefu Road Post Code 518057, Shenzhen City, Guangdong Province P.R.China
Product	:	4G modem
Model(s)	:	R1
Brand Name	:	GlocalMe
Standards	:	FCC 1.1307
Date of Receipt sample	:	2017-10-27
Date of Test	:	2017-10-28 to 2017-11-29
Date of Issue	:	2018-02-26
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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2 Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation) of USA, Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CEC(California energy efficiency), IC(Industry Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek(ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.

Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. Electro Magnetic Compatibility (EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

Test Facility:

A. Accreditations for Conformity Assessment (International)

Country/Region	Accreditation Body	Scope	Note
USA	**A2LA (Certificate No.: 4243.01)**	FCC ID \ DOC \ VOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India	**International Services**	WPC	-
Thailand		NTC	-
Singapore		IDA	-
Note: 1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476. 2. IC Canada Registration No.: 7760A			

B. TCBs and Notify Bodies Recognized Testing Laboratory.

Recognized Testing Laboratory of …	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

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4 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS17S10936 48-3E	2017-10-27	2017-10-28 to 2017-11-29	2018-02-25	original	-	Replaced
WTS17S10936 48-3E V1	2017-10-27	2017-10-28 to 2017-11-29	2018-02-26	Version 1	Updated	Valid

5 General Information

5.1 General Description of E.U.T.

Product:	4G modem
Model(s):	R1
Model Description:	N/A
GSM Band(s):	N/A
GPRS/EGPRS Class:	N/A
WCDMA Band(s):	FDD Band I/II/IV/V/VIII
LTE Band(s):	FDD Band 2/4/5/7/17 TDD Band 41
Wi-Fi Specification:	N/A
Bluetooth Version:	N/A
GPS:	N/A
NFC:	N/A
Hardware Version:	R1 MAIN VA
Software Version:	R1_HTSV1.1.005.007.1711130
Highest frequency (Exclude Radio):	580MHz
Storage Location:	Internal Storage
Note:	This EUT has two SIM card slots, and two RF module. We found that RF parameters are the same, when we insert the card 1 and card 2. So we usually performed the test under main card slot 1. Main board (Modem 1): The EUT Main board support WCDMA Band I/II/IV/V/VIII, LTE Band 2/4/5/7/17/41 function. It is intended for speech, Multimedia Message Service (MMS) transmission and 4G free roaming hotspot. It is equipped with Wi-Fi functions. For more information see the following datasheet. Vice board (Modem 2): The EUT Vice board support WCDMA Band I/II/IV/V/VIII, it is intended for system localization.

5.2 Details of E.U.T.

Operation Frequency:	WCDMA Band II: 1850~1910MHz WCDMA Band V: 824~849MHz WCDMA Band IV:1710~1755MHz LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 824~849MHz LTE Band 7: 2500~2570MHz

	LTE Band 17: 704~716MHz LTE Band 41: 2496~2690MHz
Max. RF output power:	Main Board: WCDMA Band II: 22.89dBm WCDMA Band V: 22.60dBm WCDMA Band IV: 22.61dBm LTE Band 2: 23.09dBm LTE Band 4: 22.92dBm LTE Band 5: 22.63dBm LTE Band 7: 22.04dBm LTE Band 17: 22.85dBm LTE Band 41: 21.74dBm Vice Board: WCDMA Band II: 22.60dBm WCDMA Band V: 22.71dBm WCDMA Band IV: 22.70dBm
Type of Modulation:	WCDMA: BPSK, 16QAM LTE: QPSK, 16QAM
Antenna installation:	WCDMA/LTE: internal permanent antenna
Antenna Gain:	WCDMA Band II: 4.79dBi WCDMA Band V: 1.10dBi WCDMA Band IV: 3.93dBi LTE Band 2: 4.79dBi LTE Band 4: 3.93dBi LTE Band 5: 1.10dBi LTE Band 7: 3.39dBi LTE Band 17: 1.12dBi LTE Band 41: 3.99dBi
Ratings:	DC 12V, 2.0A, charging from adapter (Adapter Input: 100-240V~50/60Hz 0.6A)
Adapter:	Manufacture: Shenzhen Fu Jia Electronic Co., Ltd. Model No.: FJ-SW1202000C
Type of Emission:	WCDMA850: 4M15F9W, WCDMA1900: 4M19F9W, WCDMA1700: 4M16F9W

6 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

7 RF Exposure

Test Requirement: FCC Part 1.1307

Test Mode: The EUT work in test mode(Tx).

7.1 Requirements

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 levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

7.2 The procedures / limit

FCC Part 1.1307:

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes)
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

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	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

Note: f = frequency in MHz ;

*Plane-wave equivalent power density

7.3 MPE Calculation Method

Predication of MPE limit at a given distance

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

S = power density (in appropriate units, e.g. mW/cm^2)

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)

From the peak EUT RF output power, the minimum mobile separation distance, d=20cm, as well as the gain of the used antenna, the RF power density can be obtained

Remark:

LTE: Directional antenna Gain = Antenna Gain + 10 lg (ANT_N) = 3+10 lg (2)=6dBi

FCC Part 1.1307:

Mode	Antenna Gain (dBi)	Antenna Gain (numeric)	Max.Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (mW/cm^2)	Limit of Power Density (mW/cm^2)
WCDMA BAND II	4.79	3.013	22.89	194.54	0.1166	1.0
WCDMA BAND V	1.1	1.288	22.60	181.97	0.0466	0.56
WCDMA BAND IV	3.93	2.472	22.61	182.39	0.0897	1.0
LTE Band 2	4.79	3.013	23.09	203.70	0.1221	1.0
LTE Band 4	3.93	2.472	22.92	195.88	0.0963	1.0
LTE Band 5	1.1	1.288	22.63	183.23	0.0470	0.56
LTE Band 7	1.39	1.377	22.04	159.956	0.0438	1.0
LTE Band 17	1.12	1.12	22.85	192.752	0.0496	0.47
LTE Band 41	3.99	3.99	21.74	149.279	0.0744	1.0

Note:The all max peak output power are conducted output power.

======End of Report======