


# RF EXPOSURE REPORT



Report No.: 18020543-FCC-H1

Supersede Report No.: N/A

Applicant	Nanjing Hanlong Technology Co., Ltd.	
Product Name	IP PHONE	
Model No.	UC912E	
Serial Model	N/A	
Test Standard	FCC 2.1091	
Issue Date	August 8, 2018	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
<i>peter wei</i>	<i>Amos Xia</i>	
Peter Wei Test Engineer	Amos Xia Engineer Reviewer	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

**SIEMIC (Nanjing-China) Laboratories**

2-1 Longcang Avenue Yuhua Economic and  
Technology Development Park, Nanjing, China

Tel: +86(25)86730128/86730129 Fax: +86(25)86730127 Email: China@siemic.com.cn

## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### Accreditations for Conformity Assessment

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

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## 1 Report Revision History

Report No.	Report Version	Description	Issue Date
18020543-FCC-H1	NONE	Original	August 8, 2018

## 2 Customer information

Applicant Name	Nanjing Hanlong Technology Co., Ltd.
Applicant Add	5th Floor, 1st Building, Huashen Tech Park, 10 Huashen Temple, Yuhuatai Dis, Nanjing China
Manufacturer	Nanjing Hanlong Technology Co., Ltd.
Manufacturer Add	5th Floor, 1st Building, Huashen Tech Park, 10 Huashen Temple, Yuhuatai Dis, Nanjing China

## 3 Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMG

## 4 Equipment under Test (EUT) Information

Description of EUT:	IP PHONE
Main Model:	UC912E
Serial Model:	N/A
Date EUT received:	May 29, 2018
Test Date(s):	N/A
Output power	BT:1.042 dBm BLE:0.66dBm WIFI:802.11b: 20.03 dBm 802.11n(40M): 18.51dBm
Antenna Gain:	BT/WIFI/BLE: 3.8 dBi
Type of Modulation:	WIFI:802.11b/g/n(20M/40M): DSSS, OFDM BT: GFSK& $\pi/4$ -DQPSK&8DPSK BLE:GFSK
RF Operating Frequency (ies):	BT&BLE: 2402-2480 MHz WIFI:802.11b/g/n(20M): 2412-2472 MHz 802.11n(40M):2422-2462 MHz
Number of Channels:	BT: 79CH BLE: 40CH WIFI :802.11b/g/n(20M): 13CH WIFI :802.11n(40M): 9CH
Port:	Power Port, Internet Port, PC Port, Earphone Port, Phone Port
Input Power:	AC Adapter: MODEL: RD0501200-C55-KOG INPUT: 100-240V~50/60Hz 250mA OUTPUT: DC 5V 1.2A POE: DC48V 500 mA
Trade Name :	Htek
FCC ID:	2ACUGUC912ESERIAL

## 5 FCC §2.1091 - Maximum Permissible exposure (MPE)

### 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 <sup>2</sup> )	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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

### 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/cm<sup>2</sup>)

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)

Type	Modulation	CH	Freq (MHz)	Conducted Power (dBm)	Limit (mW)	Result
Output Power	GFSK	Low	2402	-1.301	1000	Pass
		Mid	2441	-0.883	1000	Pass
		High	2480	-0.540	1000	Pass
	$\pi/4$ DQPSK	Low	2402	0.025	125	Pass
		Mid	2441	0.470	125	Pass
		High	2480	0.825	125	Pass
	8-DPSK	Low	2402	0.311	125	Pass
		Mid	2441	0.727	125	Pass
		High	2480	1.042	125	Pass

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	802.11b	1	2412	19.51	30	Pass
		6	2437	19.23	30	Pass
		11	2462	19.52	30	Pass
		12	2467	19.55	30	Pass
		13	2472	19.65	30	Pass
	802.11g	1	2412	19.85	30	Pass
		6	2437	19.68	30	Pass
		11	2462	20.03	30	Pass
		12	2467	19.98	30	Pass
		13	2472	20.01	30	Pass
	802.11n(20M)	1	2412	19.54	30	Pass
		6	2437	19.34	30	Pass
		11	2462	19.81	30	Pass
		12	2467	19.76	30	Pass
		13	2472	19.56	30	Pass
	802.11n(40M)	3	2422	18.18	30	Pass
		6	2437	18.05	30	Pass
		9	2452	18.35	30	Pass
		10	2457	18.46	30	Pass
		11	2462	18.51	30	Pass

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
Output power	BLE	Low	2402	-0.396	30	Pass
		Mid	2440	0.254	30	Pass
		High	2480	0.660	30	Pass



Test mode	Freq (MHz)	Max Conducted Power (dBm)	MPE(mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
BT	2480	1.042	0.00061	1	Pass
BLE	2402	0.660	0.00056	1	Pass
802.11b	2462	19.65	0.04403	1	Pass
802.11g	2462	20.03	0.04805	1	Pass
802.11n(20M)	2462	19.81	0.04568	1	Pass
802.11n(40M)	2452	18.51	0.03386	1	Pass

Simultaneous transmission MPE result:

BT+802.11g

$$0.00061 + 0.04805 = 0.04866 \text{ mW/cm}^2$$

$$0.04866 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

BLE+802.11g

$$0.00056 + 0.04805 = 0.04861 \text{ mW/cm}^2$$

$$0.04861 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

Result: Pass

Antenna Gain (typical): 3.8dBi, 2.0(numeric)

Prediction distance:  $\geq 20$ cm

The power density level worst case at 20 cm is below the uncontrolled exposure limit.