

# RF Exposure Evaluation Declaration

Product Name: GPS Tracker

Model No.: GV300W

FCC ID: YQD-GV300W

Applicant : Queclink Wireless Solutions Co.,Ltd.

Address : Room 501, Building 9, No.99, Tianzhou Road, Shanghai, China

Date of Receipt : 07-03-2015

Issued Date : 07-22-2015

Report No. : UL12620150703FCC047-3

Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, CNAS or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of Unilab Corporation.

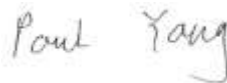
# RF Exposure Evaluation Declaration

Issued Date : 07-22-2015

Report No. : UL12620150703FCC047-3

Product Name : GPS Locator  
Model No. : GV300W  
Applicant : Quealink Wireless Solutions Co.,Ltd  
Address : Room 501, Building 9, No 99, TianZhou Road, Shanghai, China  
Manufacturer : Quealink Wireless Solutions Co.,Ltd.  
Address : Room 501, Building 9, No 99, TianZhou Road, Shanghai, China  
EUT Voltage : Extreme Low:8V DC,Nominal:12/24V DC,Extreme High:32V DC  
Brand Name : Quealink  
Applicable Standard : FCC's Rules(47 C.F.R. § 1.1310 and 2.1091)  
Test Result : Complied  
Performed Location : Unilab (Shanghai) Co.,Ltd.  
FCC 2.948 register number is 714465  
No.1350, Lianxi Road, Pudong New District, Shangha, China  
TEL:+86-21-5027-5125/FAX:+86-21-5027-7862

Documented By :



---

(Technical Engineer: Paul Yang)

Reviewed By :



---

(Senior Engineer: Forest Cao)

Approved By :



---

(Supervisor: Eva Wang)

## 1. EUT Description

Product Name:	GPS Locator
Model Name:	GV300W
Hardware Version:	V1.03
Software Version:	A01V20
RF Exposure Environment:	Uncontrolled
<b>GSM/GPRS</b>	
Support Band:	GSM850/ PCS 1900
Tx Frequency Range:	GSM 850: 824.2MHz to 848.8MHz PCS 1900: 1850.2MHz to 1909.8MHz
Rx Frequency Range:	GSM 850: 869.2MHz to 893.8MHz PCS 1900: 1930.2MHz to 1989.8MHz
Type of modulation:	GMSK
Antenna Type:	Internal
Antenna Peak Gain:	GSM 850: 0dBi PCS 1900: 0.5dBi
<b>WCDMA</b>	
Support Band:	WCDMA Band II
Tx Frequency Range:	WCDMA Band II : 1850MHz ~1910MHz
Rx Frequency Range:	WCDMA Band II : 1930MHz ~1990MHz
Type of modulation:	WCDMA(UMTS): QPSK
Antenna Type:	Internal
Antenna Peak Gain:	WCDMA Band II : 0.5dBi
Support Band:	WCDMA Band V
Tx Frequency Range:	WCDMA Band V: 824MHz ~849MHz
Rx Frequency Range:	WCDMA Band V: 869MHz ~894MHz
Type of modulation:	WCDMA(UMTS): QPSK
Antenna Type:	Internal
Antenna Peak Gain:	WCDMA Band V: 0dBi

## 2. RF Exposure Evaluation

### 2.1 Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range(MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
<b>(A)Limits for Occupation/Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
<b>(B)Limits for General Occupation/UnControlled Exposures</b>				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

### 2.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 26°C and 52% RH.

### 2.3.Test Result of RF Exposure Evaluation

This device is evaluated by mobile device with general population/uncontrolled exposure condition  
 For this device, the calculation is using the most conservative values, and the results are as follows:

Test Mode	Antenna Gain (dBi)	Maximum Output Power (dBm)	Average Power (dBm)	Average EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
GSM 850	0	33.5	24.5	281.8	0.06	0.55
GPR S850	0	33	24	251.2	0.05	0.55
PCS 1900	0.5	30.5	22.0	158.5	0.03	1.00
GPRS 1900	0.5	30	21.5	141.3	0.03	1.00

The averaged power calculated method are shown as below:  
 Averaged power=Maximum burst averaged power(1 Tx Slot)-9dB  
 Duty cycle =12.5%  
 Average EIRP Power=Average Power+Antenna Gain

Test Mode	Antenna Gain (dBi)	Maximum Output Power (dBm)	Maximum Output Power (mW)	Calculated RF Exposure at d = 20cm (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
WCDMA 850	0	24	251.2	0.05	0.55
WCDMA 1900	0.5	24	281.8	0.06	1.00

Duty cycle =100%

Test Mode	ERP (dBm)	EIRP (dBm)	Peak EIRP (mW)	Average EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
GSM 850	32.78	34.93	3111.7	391.7	0.08	0.55
GPRS 850	32.77	34.92	3104.6	390.8	0.08	0.55
PCS 1900	/	29.47	885.1	111.4	0.02	1.00
GPRS 1900	/	29.46	883.1	111.2	0.02	1.00

The frame-averaged power calculated method are shown as below:  
 Average EIRP=Peak EIRP-9dB  
 Duty cycle =12.5%

Test Mode	ERP (dBm)	EIRP (dBm)	Peak EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
WCDMA 850	23.02	25.17	328.9	0.07	0.55
WCDMA 1900	-----	22.70	186.2	0.04	1.00

Duty cycle =100%

This device can pass RF exposure limit.