

# RF Exposure Evaluation Declaration

Product Name : GPS Locator  
Model No. : GV500  
FCC ID: YQD-GV500

Applicant : Queclink Wireless Solutions Co.,Ltd.  
Address : Room 501, Building 9, No.99,  
Tianzhou Road, Shanghai, China

Date of Receipt : 07/28/2014  
Issued Date : 08/05/2014  
Report No. : UL12620140728FCC016-3  
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.  
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Issued Date : 08/05/2014

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Product Name : GPS Locator  
Applicant : Queclink Wireless Solutions Co.,Ltd  
Address : Room 501, Building 9, No 99, TianZhou Road, Shanghai, China  
Manufacturer : Queclink Wireless Solutions Co.,Ltd.  
Address : Room 501, Building 9, No 99, TianZhou Road, Shanghai, China  
Model No. : GV500  
EUT Voltage : Extreme Low:8,Nominal:12,Extreme High:32  
Brand Name : Queclink  
Applicable Standard : FCC OET Bulletin 65 Supplement C (Edition 01-01)  
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:+86-21-5027-5126-876

Documented By :

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(Technical Engineer: Andy Wei)

Reviewed By :

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(Senior Engineer: Forest Cao)

Approved By :

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(Supervisor: Eva Wang)

## 1. EUT Description

Product Name:	GPS Locator
Model Name:	GV500
Hardware Version:	V1.04
Software Version:	A04V14
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:	Connector
Antenna Peak Gain:	GSM 850: 0dBi PCS 1900: 0.5dBi

## 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:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

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: 22°C and 45% 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	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> )
GSM850	29.51	31.69	1475.71	185.78	0.04	0.55
GSM1900	/	26.71	468.81	59.02	0.01	1.00
GPRS850	28.96	31.11	1291.22	162.55	0.03	0.55
GPRS1900	/	26.28	424.62	53.46	0.01	1.00

Test Mode	Antenna Gain (dBi)	Maximum Output Power (dBm)	Maximum Output Power (mW)	Average EIRP (mW)	Calculated RF Exposure at d = 20cm (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )
GSM 850	0	35	3162.28	398.11	0.08	0.55
GSM 1900	0.5	32	1584.89	223.87	0.05	1.00
GPRS 850	0	35	3162.28	398.11	0.08	0.55
GPRS 1900	0.5	32	1584.89	223.87	0.05	1.00

This device can pass RF exposure limit.