# RF Exposure Evaluation Declaration

Product Name : GPS Locator

Model No. :      GV300C

FCC ID:          YQD-GV300C

Applicant :  Shanghai Simcom Ltd.

Address    : Building A, SIM Technology Building, No.633, Jinzhong Road,Changning District, Shanghai P.R. China

Date of Receipt : 26/12/2013

Issued Date : 07/01/2014

Report No. : UL12620131226FCC004-3

Report Version : V1.0

# RF Exposure Evaluation Declaration

Issued Date : 07/01/2014
Report No. : UL12620131226FCC004-3

| | |
|---|---|
| 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.  : | GV300C |
| 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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# 1. EUT Description

| | |
|---|---|
| Product Name: | GPS Locator |
| Model Name: | GPS Locator |
| Hardware Version: | 1.03 |
| Software Version: | MRN |
| RF Exposure Environment: | Uncontrolled |
| **CDMA2000** | |
| Support Band: | CDMA2000 BC0/BC1 |
| Tx Frequency Range: | CDMA2000 BC0: 824.70 MHz to 848.31MHz<br>CDMA2000 BC1: 1851.25MHz to 1908.75MHz |
| Rx Frequency Range: | CDMA2000 BC0: 869.70 MHz to 893.31MHz<br>CDMA2000 BC1: 1931.25MHz to 2153.75MHz |
| Type of modulation: | QPSK |
| Antenna Type: | Connector |
| Antenna Peak Gain: | CDMA2000 BC0/BC1: 1dBi<br>GPS: 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 Filed Strength (V/m) | Magnetic Filed Strength (A/m) | Power Density (mW/cm2) | Average Time (Minutes) |
|---|---|---|---|---|
| (A)Limits for Occupation/Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100,000 | -- | -- | 5 | 6 |
| (B)Limits for General Occupation/UnControlled Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100,000 | -- | -- | 1 | 30 |

F= Frequency in MHz


Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4*Pi*R2)$


Where

Pd = power density in mW/cm2

Pout = 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


Pd id the limit of MPE, 1 mW/cm2 . 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℃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) | Calculated RF Exposure at d = 20cm (mW/cm2) | MPE Limit (mW/cm2) |
|---|---|---|---|---|---|
| CDMA2000 BC0 | 21.10 | 23.25 | 211.35 | 0.05 | 0.55 |
| CDMA2000 BC1 | / | 24.75 | 298.54 | 0.06 | 1.00 |

| Test Mode | Antenna Gain (dBi) | Maximum Output Power (dBm) | Maximum Output Power From Antenna (mW) | Calculated RF Exposure at d = 20cm (mW/cm2) | MPE Limit (mW/cm2) |
|---|---|---|---|---|---|
| CDMA2000 BC0 | 1 | 25 | 398.11 | 0.08 | 0.55 |
| CDMA2000 BC1 | 1 | 25 | 398.11 | 0.08 | 1.00 |

This device can pass RF exposure limit.