

# FCC Part 15B TEST REPORT

**Product Name : GPS Locator**

**Model Name : GV300VC**

Prepared for:

**Queclink Wireless Solutions Co.,Ltd**  
**Room 501, Building 9, No 99, TianZhou Road, Shanghai, China**  
**TEL: +86 21 51082965**  
**FAX: +86 21 54451990**

Prepared by:

**Unilab (Shanghai) Co., Ltd.**  
**FCC 2.948 register number is 714465**  
**No. 1350, Lianxi Rd. Pudong New District, Shanghai, China**  
**TEL: +86-21-50275125**  
**FAX: +86-21-50277862**

**Report Number : UL12620140820 FCC 018-1**

**Date of Report : 13-09-2014**

**Date of Test : 20-08-2014~11-09-2013**

## Notes :

The test results only relate to these samples which have been tested.

Partly using this report will not be admitted unless been allowed by Unilab.

Unilab is only responsible for the complete report with the reported stamp of Unilab.

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

**Manufacturer:** Queclink Wireless Solutions Co.,Ltd.  
Room 501, Building 9, No 99, TianZhou Road, Shanghai, China.

**Product Name:** GPS Locator

**Brand Name:** Queclink

**Model Name:** GV300VC

**FCC ID:** YQD- GV300VC

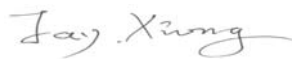
**EUT Voltage:** Extreme Low:DC 8V  
Nominal:DC12V  
Extreme High:DC32V


**Date of Receipt:** 20-08-2014


**Date of Test** 20-08-2014~11-09-2014

**Test Standard:** FCC CFR Title 47 Part 15 Subpart B

**Test Result:** PASS

Prepared by :   
(Technical Engineer: Jay Xiong)

Reviewed by :   
(Senior Engineer: Forest Cao)

Approved by :   
(Supervisor Engineer: Eva Wang)

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## 1. TECHNIACL SUMMARY

### 1.1 SUMMARY OF STANDARDS AND TEST RESULTS

The EUT have been tested according to the applicable standards as referenced below:

| Test Item             | FCC        | Result         |
|-----------------------|------------|----------------|
| Conducted disturbance | FCC 15.107 | P <sup>1</sup> |
| Radiated disturbance  | FCC 15.109 | P              |

Note 1: P means pass, F means failure, N/A means not applicable.

### 1.2 TEST UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Test item             | Value (dB) |
|-----------------------|------------|
| Conducted disturbance | 3.4        |
| Radiated disturbance  | 4.2        |

### 1.3 TEST EQUIPMENT LIST

| Shielding Room No. 3 - Conducted disturbance Test |              |        |            |            |
|---|--------------|--------|------------|------------|
| Equipment   | Manufacturer | Model  | Serial No. | Due Date   |
| Receiver  | Agilent      | N9038A | MY51210142 | 2014/09/27 |
| LISN  | R&S          | ENV216 | 100069     | 2015/07/27 |

| 3m Semi-anechoic Chamber - Radiated disturbance Test |                |           |            |            |
|--|----------------|-----------|------------|------------|
| Equipment  | Manufacturer   | Model     | Serial No. | Due Date   |
| 3m Chamber & Accessory Equipment                     | ETS-LINDGREN   | FACT-3    | CT-0000336 | 2014/11/26 |
| Receiver   | Agilent        | N9038A    | MY51210142 | 2014/09/27 |
| Biconilog Antenna                                    | SCHWARZBECK    | VULB 9160 | 3316       | 2014/09/19 |
| Horn Antenna   | SCHWARZBECK    | BBHA9120D | 942        | 2014/09/19 |
| Microwave Preamplifier                               | EM Electronics | EM30180   | 3008A02425 | 2015/02/28 |

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and has been calibrated by accredited calibration laboratories.

#### 1.4 SUPPORT EQUIPMENT

| Equipment | Manufacturer | Model      | Serial No.                   | Due Date |
|-----------|--------------|------------|------------------------------|----------|
| PC        | DELL         | VOSTRO 260 | 7JXLB3X                      | /        |
| Displayer | DELL         | E1910Hc    | CN-0CD1MT-64180-OC7-06TS     | /        |
| Mouse     | DELL         | MS111-P    | CN-0MF3JY-71581-2C7-05GB     | /        |
| Keyboard  | DELL         | KB212-B    | CN-0Y88XT-65890-22L-01MG-A01 | /        |

#### 1.5 TEST FACILITY

All test facilities used to collect the test data are located at No. 1350, Lianxi Rd. Pudong New District, Shanghai, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4, CISPR 16-1-1 and other equivalent standards. The laboratory is compliance with the requirements of the ISO/IEC/E 17025.

#### 1.6 TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

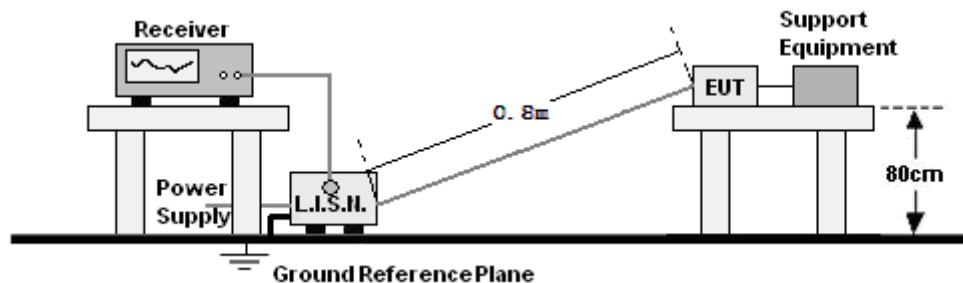
**Notes:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

## 2. CONDUCTED DISTURBANCE

### 2.1 TEST SETUP

For mains port:



### 2.2 LIMITS

Limits for Class B digital devices

| Frequency range<br>(MHz) | Limits<br>dB(μV) |          |
|--------------------------|------------------|----------|
|                          | Quasi-peak       | Average  |
| 0,15 to 0,50             | 66 to 56         | 56 to 46 |
| 0,50 to 5                | 56               | 46       |
| 5 to 30                  | 60               | 50       |

**NOTE:** 1. The lower limit shall apply at the transition frequencies.  
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

### 2.3 TEST PROCEDURE

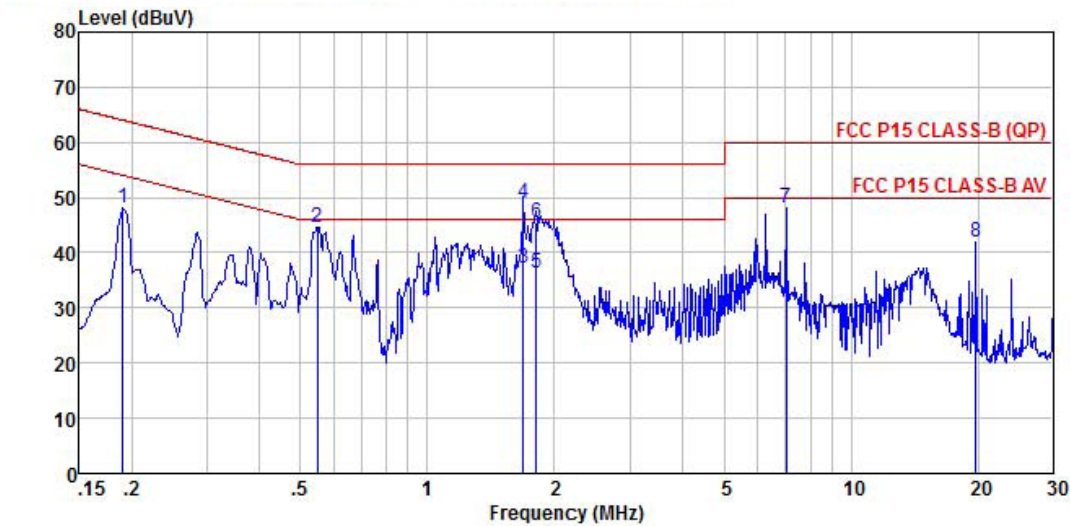
For mains port:

- The EUT and support equipment were placed on a nonconductive table 0.8m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane. The EUT connected to the main through Line Impedance Stability Network (L.I.S.N) to provide a  $50\ \Omega/50\mu\text{H}$  coupling impedance for the measuring equipment. The support equipment is also connected to the main power through a LISN that provides a  $50\ \Omega/50\mu\text{H}$  coupling impedance with  $50\ \Omega$  terminations. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission.
- The RBW of the receiver was set at 9 kHz. The frequency range from 150 kHz to 30 MHz was checked. Run the receiver's pre-scan to record the maximum disturbance generated from EUT in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

2.4 TEST RESULT

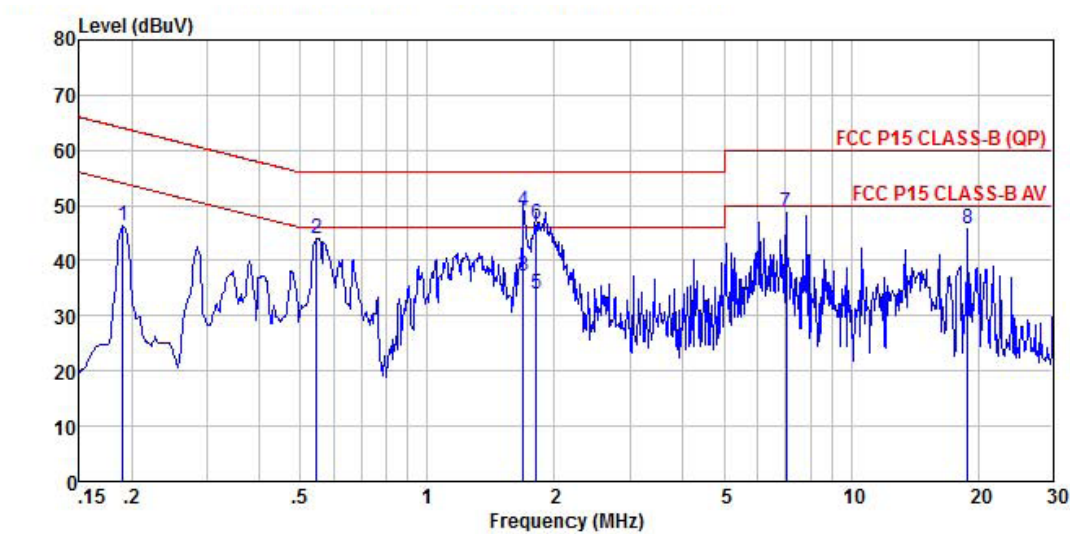
For mains port:

Test mode: Data exchange



Site : chamber  
Condition : FCC P15 CLASS-B (QP) ENV216(L)-20120730 LINE  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

|      |       | ReadAntenna |        | Cable Preamp |        |       | Limit | Over   |         |
|------|-------|-------------|--------|--------------|--------|-------|-------|--------|---------|
|      | Freq  | Level       | Factor | Loss         | Factor | Level | Line  | Limit  | Remark  |
|      | MHz   | dBm         | dB/m   | dB           | dB     | dBm/m | dBm/m | dB     |         |
| 1    | 0.19  | 37.36       | 10.47  | 0.23         | 0.00   | 48.06 | 64.02 | -15.96 | Peak    |
| 2 pk | 0.55  | 33.94       | 10.52  | 0.11         | 0.00   | 44.57 | 56.00 | -11.43 | Peak    |
| 3 av | 1.69  | 26.67       | 10.52  | 0.15         | 0.00   | 37.34 | 46.00 | -8.66  | Average |
| 4 pp | 1.69  | 38.24       | 10.52  | 0.15         | 0.00   | 48.91 | 56.00 | -7.09  | QP      |
| 5    | 1.81  | 25.62       | 10.52  | 0.15         | 0.00   | 36.29 | 46.00 | -9.71  | Average |
| 6    | 1.81  | 34.73       | 10.52  | 0.15         | 0.00   | 45.40 | 56.00 | -10.60 | QP      |
| 7    | 7.02  | 37.28       | 10.46  | 0.32         | 0.00   | 48.06 | 60.00 | -11.94 | Peak    |
| 8    | 19.74 | 31.29       | 10.53  | 0.10         | 0.00   | 41.92 | 60.00 | -18.08 | Peak    |



Site : chamber  
Condition : FCC P15 CLASS-B (QP) ENV216(N)-20120730 NEUTRAL  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

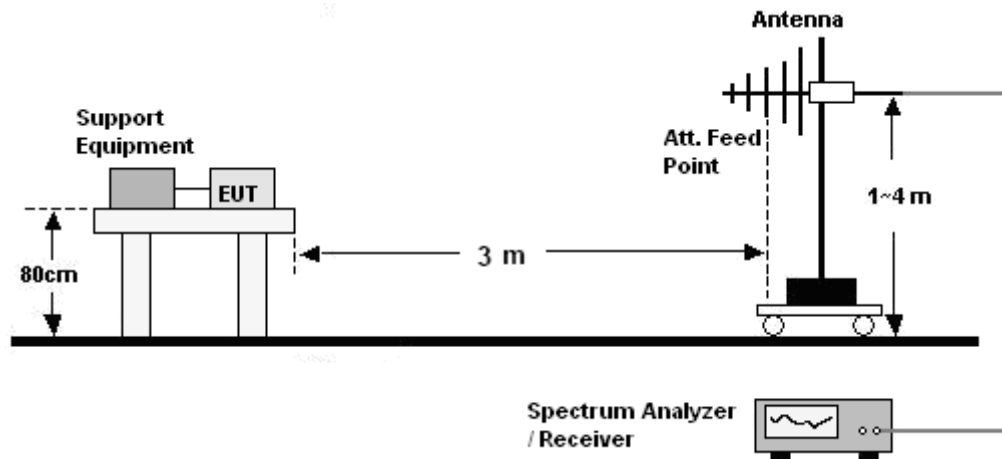
|      | ReadAntenna | Cable  | Preamp |        | Limit | Over  |                      |
|------|-------------|--------|--------|--------|-------|-------|----------------------|
| Freq | Level       | Factor | Loss   | Factor | Level | Line  | Limit Remark         |
| MHz  | dBm         | dB/m   | dB     | dB     | dBm/m | dBm/m | dB                   |
| 1    | 0.19        | 35.91  | 10.33  | 0.23   | 0.00  | 46.47 | 64.02 -17.55 Peak    |
| 2    | 0.55        | 33.62  | 10.39  | 0.11   | 0.00  | 44.12 | 56.00 -11.88 Peak    |
| 3 av | 1.69        | 26.77  | 10.31  | 0.15   | 0.00  | 37.23 | 46.00 -8.77 Average  |
| 4 pp | 1.69        | 38.59  | 10.31  | 0.15   | 0.00  | 49.05 | 56.00 -6.95 QP       |
| 5    | 1.81        | 23.54  | 10.31  | 0.15   | 0.00  | 34.00 | 46.00 -12.00 Average |
| 6    | 1.81        | 36.19  | 10.31  | 0.15   | 0.00  | 46.65 | 56.00 -9.35 QP       |
| 7 pk | 7.02        | 38.04  | 10.33  | 0.32   | 0.00  | 48.69 | 60.00 -11.31 Peak    |
| 8    | 18.92       | 35.08  | 10.42  | 0.11   | 0.00  | 45.61 | 60.00 -14.39 Peak    |



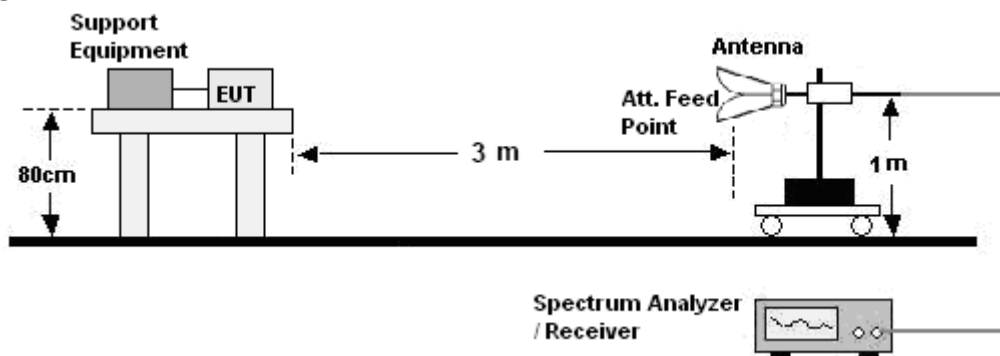
### 3. RADIATED DISTURBANCE (RE)

#### 3.1 TEST SETUP

30MHz ~ 1GHz:



Above 1GHz:



#### 3.2 LIMITS

Limits for Class B digital devices

| Frequency (MHz) | limits at 3m (QP)<br>dB(μV/m)   |                               |
|-----------------|---------------------------------|-------------------------------|
| 30-88           | 40.0                            |                               |
| 88-216          | 43.5                            |                               |
| 216-960         | 46.0                            |                               |
| Above 960       | 54.0                            |                               |
| Above 1000      | limits at 3m (PEAK)<br>dB(μV/m) | limits at 3m (AV)<br>dB(μV/m) |
|                 | 74                              | 54                            |

- NOTE:**
1. The lower limit shall apply at the transition frequency.
  2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
  3. The limits shown above are based on measuring equipment employing an average detector function for frequencies above 1000MHz.

### 3.3 TEST PROCEDURE

#### **30MHz ~ 1GHz:**

- a. The EUT and support equipment were placed on the non-conductive turntable 0.8m above the horizontal metal ground plane at a chamber. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna.
- b. The frequency range from 30MHz to 1GHz was checked. The RBW of the receiver was set at 120kHz. Set the receiver in Peak detector, Max Hold mode. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where EUT radiated the maximum emission, then set the test frequency receiver to QP Detector and record the maximum value.

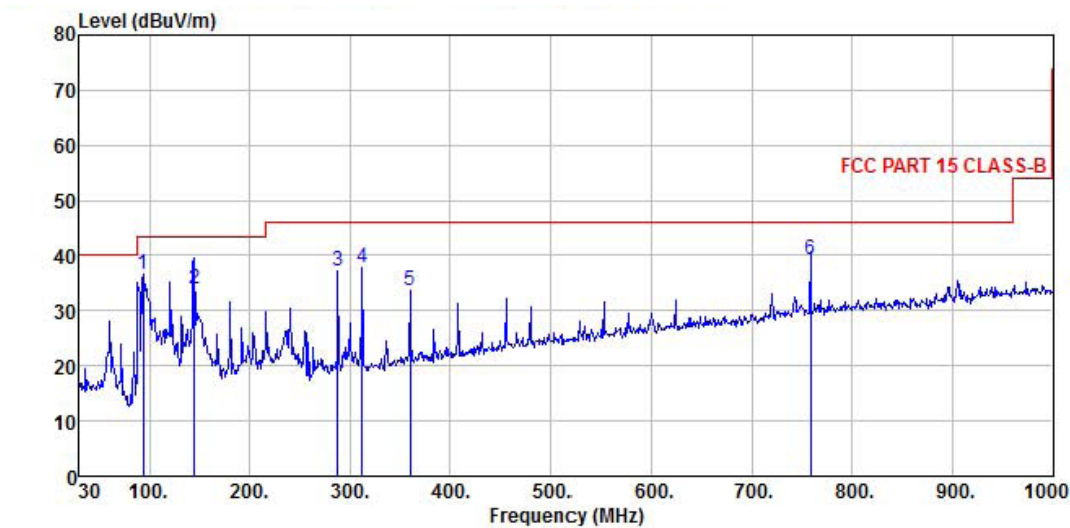
#### **Above 1GHz:**

- a. The EUT and support equipment were placed on the non-conductive turntable 0.8m above the ground at a chamber. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Horn antenna was used as receiving antenna.
- b. The frequency range above 1GHz was checked. The RBW of the receiver was set at 1MHz. Set the receiver in Peak detector, Max Hold mode. Record the maximum field strength of all the pre-scan process in the full band when the antenna is 1m and varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its Average value: rotate the turntable from 0 to 360 degrees to find the degree where EUT radiated the maximum emission, then set the test frequency receiver to EMI Average Detector and record the maximum value.

3.4 TEST RESULT

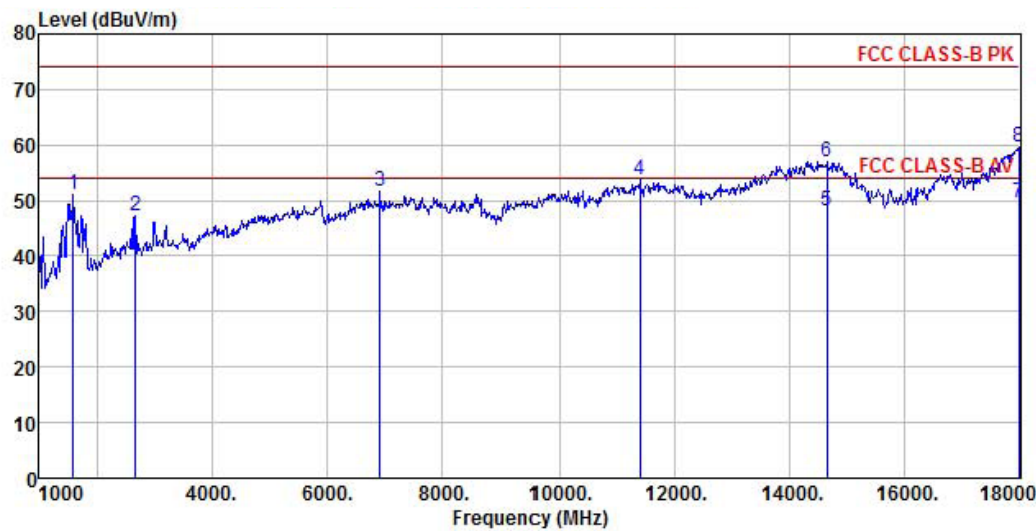
30MHz ~ 1GHz:

Test mode: Data exchange



Site : chamber  
Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

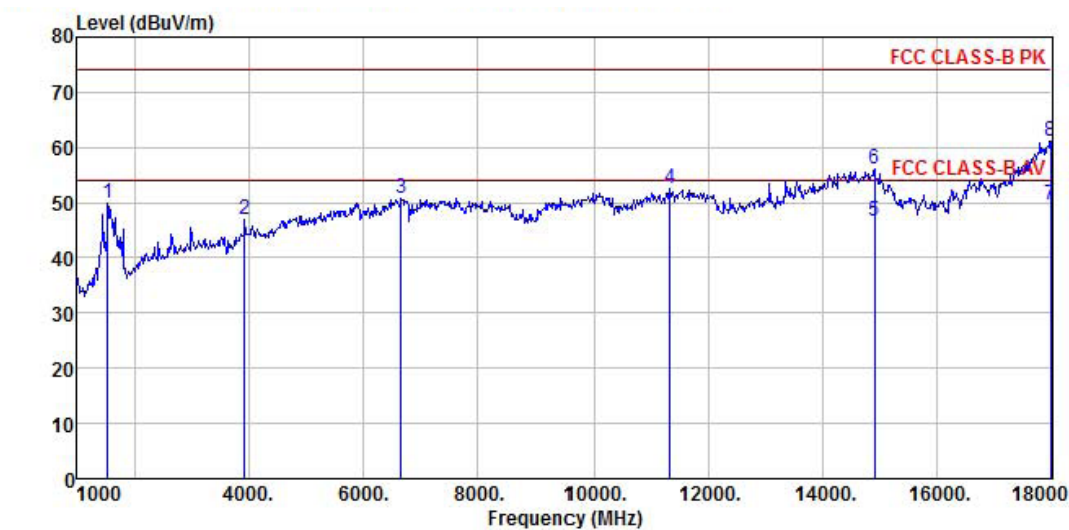
|      | Freq   | ReadAntenna |        | Cable Preamp |        | Limit | Over  |             |
|------|--------|-------------|--------|--------------|--------|-------|-------|-------------|
|      |        | Level       | Factor | Loss         | Factor |       |       |             |
|      | MHz    | dBm         | dB/m   | dB           | dB     | dBm/m | dBm/m | dB          |
| 1 pk | 94.02  | 25.16       | 9.74   | 1.83         | 0.00   | 36.73 | 43.50 | -6.77 Peak  |
| 2    | 144.50 | 18.06       | 13.68  | 2.35         | 0.00   | 34.09 | 43.50 | -9.41 QP    |
| 3    | 288.02 | 20.70       | 12.96  | 3.44         | 0.00   | 37.10 | 46.00 | -8.90 Peak  |
| 4    | 312.27 | 20.56       | 13.47  | 3.64         | 0.00   | 37.67 | 46.00 | -8.33 Peak  |
| 5    | 359.80 | 15.24       | 14.39  | 3.95         | 0.00   | 33.58 | 46.00 | -12.42 Peak |
| 6 pp | 758.60 | 11.97       | 21.37  | 5.90         | 0.00   | 39.24 | 46.00 | -6.76 QP    |



Site : chamber  
Condition : FCC CLASS-B PK 3m BBHA9120D(942) VERTICAL  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

|      | Freq     | ReadAntenna | Cable  | Preamp |        | Limit | Over  |               |
|------|----------|-------------|--------|--------|--------|-------|-------|---------------|
|      |          | Level       | Factor | Loss   | Factor | Level | Line  | Limit         |
|      | MHz      | dBm         | dB/m   | dB     | dB     | dBm/m | dBm/m | dB            |
| 1    | 1595.00  | 58.87       | 24.98  | 5.71   | 38.46  | 51.10 | 74.00 | -22.90 Peak   |
| 2    | 2666.00  | 49.96       | 27.92  | 7.49   | 38.24  | 47.13 | 74.00 | -26.87 Peak   |
| 3    | 6916.00  | 40.43       | 35.14  | 12.49  | 36.34  | 51.72 | 74.00 | -22.28 Peak   |
| 4    | 11404.00 | 36.63       | 40.14  | 16.10  | 39.10  | 53.77 | 74.00 | -20.23 Peak   |
| 5    | 14651.00 | 25.48       | 42.33  | 18.38  | 38.06  | 48.13 | 54.00 | -5.87 Average |
| 6    | 14651.00 | 34.41       | 42.33  | 18.38  | 38.06  | 57.06 | 74.00 | -16.94 Peak   |
| 7 pp | 17983.00 | 19.62       | 47.82  | 18.74  | 36.73  | 49.45 | 54.00 | -4.55 Average |
| 8 pk | 17983.00 | 29.85       | 47.82  | 18.74  | 36.73  | 59.68 | 74.00 | -14.32 Peak   |

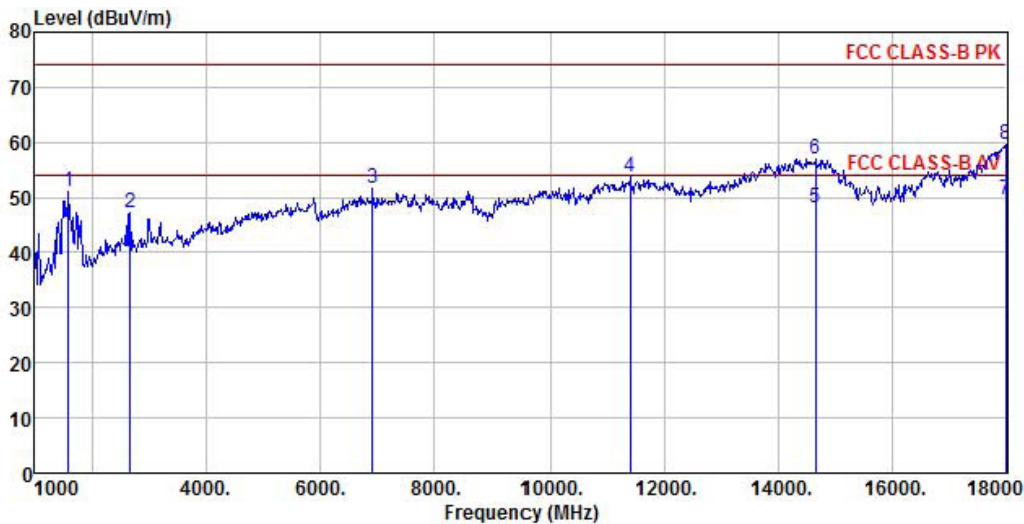
Above 1GHz:  
Test mode: Data exchange



Site : chamber  
Condition : FCC CLASS-B PK 3m BBHA9120D(942) HORIZONTAL  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

|      | Freq     | ReadLevel | AntennaFactor | CableLoss | PreamplifierFactor | Level | LimitLine | OverLimit | Remark  |
|------|----------|-----------|---------------|-----------|--------------------|-------|-----------|-----------|---------|
|      | MHz      | dBm       | dB/m          | dB        | dB                 | dBm/m | dBm/m     | dB        |         |
| 1    | 1527.00  | 57.37     | 25.17         | 5.74      | 38.45              | 49.83 | 74.00     | -24.17    | Peak    |
| 2    | 3924.00  | 45.70     | 29.77         | 9.10      | 37.54              | 47.03 | 74.00     | -26.97    | Peak    |
| 3    | 6661.00  | 40.30     | 34.49         | 12.35     | 36.47              | 50.67 | 74.00     | -23.33    | Peak    |
| 4    | 11336.00 | 35.31     | 40.04         | 16.14     | 39.07              | 52.42 | 74.00     | -21.58    | Peak    |
| 5    | 14906.00 | 24.16     | 41.45         | 18.85     | 37.80              | 46.66 | 54.00     | -7.34     | Average |
| 6    | 14906.00 | 33.45     | 41.45         | 18.85     | 37.80              | 55.95 | 74.00     | -18.05    | Peak    |
| 7 pp | 17983.00 | 19.86     | 47.82         | 18.74     | 36.73              | 49.69 | 54.00     | -4.31     | Average |
| 8 pk | 17983.00 | 31.29     | 47.82         | 18.74     | 36.73              | 61.12 | 74.00     | -12.88    | Peak    |





Site : chamber  
Condition : FCC CLASS-B PK 3m BBHA9120D(942) VERTICAL  
EUT : GPS LOCATOR  
Model Name : GV300VC  
Temp/Humi : 25 °C /60 %  
Power Rating: 12V DC  
Mode : USB DATA EXCHANGE  
Memo :

|      | Freq     | ReadLevel | AntennaFactor | CableLoss | PreamplifierFactor | Level | Limit | OverLimit | Remark  |
|------|----------|-----------|---------------|-----------|--------------------|-------|-------|-----------|---------|
|      | MHz      | dBm       | dB/m          | dB        | dB                 | dBm/m | dBm/m | dB        |         |
| 1    | 1595.00  | 58.87     | 24.98         | 5.71      | 38.46              | 51.10 | 74.00 | -22.90    | Peak    |
| 2    | 2666.00  | 49.96     | 27.92         | 7.49      | 38.24              | 47.13 | 74.00 | -26.87    | Peak    |
| 3    | 6916.00  | 40.43     | 35.14         | 12.49     | 36.34              | 51.72 | 74.00 | -22.28    | Peak    |
| 4    | 11404.00 | 36.63     | 40.14         | 16.10     | 39.10              | 53.77 | 74.00 | -20.23    | Peak    |
| 5    | 14651.00 | 25.48     | 42.33         | 18.38     | 38.06              | 48.13 | 54.00 | -5.87     | Average |
| 6    | 14651.00 | 34.41     | 42.33         | 18.38     | 38.06              | 57.06 | 74.00 | -16.94    | Peak    |
| 7 pp | 17983.00 | 19.62     | 47.82         | 18.74     | 36.73              | 49.45 | 54.00 | -4.55     | Average |
| 8 pk | 17983.00 | 29.85     | 47.82         | 18.74     | 36.73              | 59.68 | 74.00 | -14.32    | Peak    |

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Please refer to the file named “YQD-GV300VC \_Part 15B Setup Photos”.

APPENDIX 2 PHOTOGRAPHS OF EUT

Please refer to the file named “YQD- GV300VC \_EUT Photos”.

-----End of the report-----