



RF Exposure Evaluation

For

Queclink Wireless Solutions Co.,Ltd

GNSS Tracker

Test Model: GV75CG

Prepared for : Queclink Wireless Solutions Co.,Ltd
Address : No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China
201101

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : May 16, 2025
Number of tested samples : 2
Sample No. : A250515014-1, A250515014-2
Serial number : Prototype
Date of Test : May 16, 2025 ~ June 03, 2025
Date of Report : June 04, 2025



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Scan code to check authenticity

**RF Exposure Evaluation****Report Reference No.** : LCSA05155045ED**Date of Issue** : June 04, 2025**Testing Laboratory Name** : Shenzhen LCS Compliance Testing Laboratory Ltd.**Address** : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China**Testing Location/ Procedure** : Full application of Harmonised standards ☒
Partial application of Harmonised standards ☐
Other standard testing method ☐**Applicant's Name** : Queclink Wireless Solutions Co.,Ltd**Address** : No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101**Test Specification****Standard** : FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06
FCC CFR 47 part1 1.1310
FCC CFR 47 part2 2.1091**Test Report Form No.** : TRF-4-E-214 A/0**TRF Originator** : Shenzhen LCS Compliance Testing Laboratory Ltd.**Master TRF** : Dated 2011-03**Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

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EUT Description : GNSS Tracker**Trade Mark** : Queclink**Test Model** : GV75CG**Ratings** : Please Refer to Page 6**Result** : PASS**Compiled by:**

Jack Liu/Administrator

Supervised by:

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Approved by:

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**RF Exposure Evaluation**

Test Report No. : LCSA05155045ED	<u>June 04, 2025</u> Date of issue
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EUT.....	: GNSS Tracker
Test Model.....	: GV75CG
Applicant.....	: Queclink Wireless Solutions Co.,Ltd
Address.....	: No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101
Telephone.....	: /
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Manufacturer.....	: Queclink Wireless Solutions Co.,Ltd
Address.....	: No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101
Telephone.....	: /
Fax.....	: /
Factory.....	: Queclink Wireless Solutions Co.,Ltd
Address.....	: No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101
Telephone.....	: /
Fax.....	: /

Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.





Revision History

Report Version	Issue Date	Revision Content	Revised By
000	June 04, 2025	Initial Issue	---





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1. Product Information

EUT	: GNSS Tracker
Test Model	: GV75CG
Ratings	: Internal Battery: 1100mAh, 3.7V Operating Voltage: DC 9-90V
Hardware Version	: GV75CGhw_version:1.02
Software Version	: GV75CGR01A01V10M1024
Bluetooth	:
Frequency Range	: 2402MHz~2480MHz
Channel Number	: 40 channels for Bluetooth V5.2 (DTS)
Channel Spacing	: 2MHz for Bluetooth V5.2 (DTS)
Modulation Type	: GFSK for Bluetooth V5.2 (DTS)
Bluetooth Version	: V5.2
Antenna Description	: Chip Antenna, 2.1dBi(Max.)
2G	:
Support Band	: ☒ GSM 900 (EU-Band) ☒ DCS 1800 (EU-Band) ☒ GSM 850 (U.S.-Band) ☒ PCS 1900 (U.S.-Band)
Release Version	: R99
GPRS Class	: Class 12
EGPRS Class	: Class 12
Type Of Modulation	: GMSK for GSM/GPRS; GMSK/8PSK for EGPRS
Antenna Description	: PIFA Antenna 3.8dBi (max.) For GSM 850 1.15dBi (max.) For PCS 1900
LTE	:
Support Band	: ☒ LTE Band 1(Non U.S.-Band) ☒ LTE Band 2(U.S.-Band) ☒ LTE Band 3(Non U.S.-Band) ☒ LTE Band 4(U.S.-Band) ☒ LTE Band 5(U.S.-Band) ☒ LTE Band 7 (U.S.-Band) ☒ LTE Band 8(Non U.S.-Band) ☒ LTE Band 20(Non U.S.-Band) ☒ LTE Band 28(Non U.S.-Band)
Release Version	: R13
Type Of Modulation	: QPSK,16QAM
Antenna Description	: PIFA Antenna 1.15dBi (max.) For LTE Band 2 -0.3dBi (max.) For LTE Band 4 3.8dBi (max.) For LTE Band 5 4.25dBi (max.) For LTE Band 7
Power Class	: Class 3
GPS function	: Support and only RX
Extreme temp. Tolerance	: -30°C to +50°C
Extreme vol. Limits	: 3.15VDC to 4.26VDC (nominal: 3.70VDC)

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.





2. Evaluation Method

Systems operating under the provisions of FCC 47 CFR 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.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0 . The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3.1 Refer Evaluation Method

[ANSI C95.1-2019](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz

[FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06](#): Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices.

3.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	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





4. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

5. Conducted Power

[BLE]

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)	ANT Max. Tune Up Power (dBm)
GFSK	0	2402	-1.31	-1±1.0
	19	2440	-1.27	-1±1.0
	39	2480	-1.38	-1±1.0

[GSM Max Average Power]

Test Mode	Channel	Frequency (MHz)	Max Average Power (dBm)	ANT Max. Tune Up Power (dBm)
GSM 850	LCH	824.2	30.41	30.0±1.0
	MCH	836.6	30.43	30.0±1.0
	HCH	848.8	30.40	30.0±1.0
PCS 1900	LCH	1850.2	29.44	29.0±1.0
	MCH	1880.0	29.43	29.0±1.0
	HCH	1909.8	29.43	29.0±1.0

[LTE Max Average Power]

Test Mode		Channel	Max Average Power (dBm)	ANT Max. Tune Up Power (dBm)
LTE	Band 2	LCH	21.39	21.0±1.0
		MCH	21.39	21.0±1.0
		HCH	21.40	21.0±1.0
	Band 4	LCH	21.37	21.0±1.0
		MCH	21.39	21.0±1.0
		HCH	21.39	21.0±1.0
	Band 5	LCH	23.33	23.0±1.0
		MCH	23.23	23.0±1.0
		HCH	22.99	22.0±1.0
	Band 7	LCH	21.76	21.0±1.0
		MCH	21.87	21.0±1.0
		HCH	21.81	21.0±1.0





6. Measurement Results

6.1 Standalone MPE Evaluation

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r = 20\text{cm}$, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW				
BLE	0	1.0000	2.1	1.6218	0.0003	1.0000

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW				
GSM 850	20.97	125.0259	3.8	2.3988	0.0597	0.5495
GSM 1900	21.97	157.3983	1.15	1.3032	0.0408	1.0000
LTE Band 2	22.0	158.4893	1.15	1.3032	0.0411	1.0000
LTE Band 4	22.0	158.4893	-0.3	0.9333	0.0294	1.0000
LTE Band 5	24.0	251.1886	3.8	2.3988	0.1199	0.5493
LTE Band 7	22.0	158.4893	4.25	2.6607	0.0839	1.0000

Remark:

1. Output power including tune-up tolerance;
2. Output power was adjust to duty cycle at 100% if measured duty cycle less than 98%;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer.
4. For GSM, Duty cycle=1/8.





6.2 Simultaneous Transmission MPE Evaluation

The sample support one BLE Antenna and another one GSM<E transmit antenna, so need consider simultaneous transmission;

Simultaneous transmission MPE

According to KDB447498 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;

$\sum \sum$ of MPE ratios ≤ 1.0

Mode	MPE1 Max.	MPE2 Max.	$\sum$ MPE ratios	Limit	Results
BT LE+ GSM 850	0.0003	0.1086	0.1089	1.000	Pass
BT LE + LTE Band 5	0.0003	0.2183	0.2186	1.000	Pass

7. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

8. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

9. Measurement Uncertainty

BLE/GSM/LTE:

Test Item	Frequency Range	Uncertainty	Note
Output power	1GHz-40GHz	$\pm 0.57\text{dB}$	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

-----THE END OF REPORT-----

