

TEST REPORT

Applicant: Queclink Wireless Solutions Co., Ltd.
Address: No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, 201101
Equipment Type: GNSS Tracker
Model Name: GV30CAU (refer to section 2.3)
Brand Name: Queclink
FCC ID: YQD-GV30CAU
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: Aug. 05, 2025
Test Date: Aug. 20, 2025
Date of Issue: Oct. 13, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu

(Testing Director)

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Oct. 13, 2025</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	3
1.1	Test Laboratory	3
1.2	Test Location	3
2	PRODUCT INFORMATION	4
2.1	Applicant Information	4
2.2	Manufacturer Information	4
2.3	General Description for Equipment under Test (EUT)	4
2.4	Technical Information	5
3	SUMMARY OF TEST RESULT	6
3.1	Test Standards	6
4	DEVICE CATEGORY AND LEVELS LIMITS	7
5	ASSESSMENT RESULT	9
5.1	Output Power	9
5.2	Tune-up power	10
5.3	RF Exposure Evaluation Result	10
5.4	Conclusion	10

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☒ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Queclink Wireless Solutions Co., Ltd.
Address	No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, 201101

2.2 Manufacturer Information

Manufacturer	Queclink Wireless Solutions Co., Ltd.
Address	No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, 201101

2.3 General Description for Equipment under Test (EUT)

EUT Name	GNSS Tracker
Model Name Under Test	GV30CAU
Series Model Name	GV37CAU
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name and shell shape. (this information provided by the applicant)
Hardware Version	R103V1.02, R110V1.02
Software Version	GV30CAUR01A01V32M128
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

All Network and Wireless connectivity for EUT	2G Network GPRS/EDGE 850/1900 MHz 4G Network FDD LTE Band 2/4/5/7 GPS, BDS, Galileo, GLONASS
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GPRS; LTE		
Frequency Range	GPRS 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GPRS 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN	PIFA Antenna	
Exposure Category	General Population/Uncontrolled Exposure		
Product Type	Mobile Device		

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices
2	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

5 ASSESSMENT RESULT

5.1 Output Power

GPRS							
GPRS850 Band	Burst Average Power(dBm)			Division	Frame-Averaged power (dBm)		
Channel	128	190	251	Factors	128	190	251
GPRS (GMSK, 1-Slot)	32.14	32.30	32.45	9.19	22.95	23.11	23.26
GPRS (GMSK, 2-Slots)	32.17	32.33	32.48	6.13	26.04	26.20	26.35
GPRS (GMSK, 3-Slots)	31.30	31.48	31.62	4.42	26.88	27.06	27.20
GPRS (GMSK, 4-Slots)	29.24	29.37	29.54	3.18	26.06	26.19	26.36
EGPRS (8PSK, 1-Slot)	30.85	30.56	31.23	9.19	21.66	21.37	22.04
EGPRS (8PSK, 2-Slots)	28.94	28.60	29.41	6.13	22.81	22.47	23.28
EGPRS (8PSK, 3-Slots)	26.41	26.00	26.98	4.42	21.99	21.58	22.56
EGPRS (8PSK, 4-Slots)	24.44	24.14	24.62	3.18	21.26	20.96	21.44
GPRS1900 Band	Burst Average Power(dBm)			Division	Frame-Averaged power(dBm)		
Channel	512	661	810	Factors	512	661	810
GPRS (GMSK, 1-Slot)	29.46	29.19	29.11	9.19	20.27	20.00	19.92
GPRS (GMSK, 2-Slots)	29.42	29.15	29.05	6.13	23.29	23.02	22.92
GPRS (GMSK, 3-Slots)	28.18	27.92	27.82	4.42	23.76	23.50	23.40
GPRS (GMSK, 4-Slots)	26.15	25.88	25.79	3.18	22.97	22.70	22.61
EGPRS (8PSK, 1-Slot)	30.02	29.53	29.58	9.19	20.83	20.34	20.39
EGPRS (8PSK, 2-Slots)	28.34	27.76	28.05	6.13	22.21	21.63	21.92
EGPRS (8PSK, 3-Slots)	25.99	25.44	25.46	4.42	21.57	21.02	21.04
EGPRS (8PSK, 4-Slots)	23.86	23.20	23.39	3.18	20.68	20.02	20.21
Note 1: This report listed the worst case conducted power value, please refer to BL-SZ2571737-501 report for more details. Note 2: The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below: Frame-averaged power = Burst averaged power (1 Tx Slot) – 9.19 dB Frame-averaged power = Burst averaged power (2 Tx Slots) – 6.13 dB Frame-averaged power = Burst averaged power (3 Tx Slots) - 4.42dB Frame-averaged power = Burst averaged power (4 Tx Slots) – 3.18 dB							

Mode	GPRS850	GPRS1900	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 7
Conducted Power (dBm)	27.20	23.28	23.87	23.00	23.03	22.32
Antenna Gain (dBi)	1.80	2.32	2.32	1.18	1.80	2.00
EIRP/ERP (dBm)	26.85	25.60	26.19	24.18	22.68	24.32
Note: This report listed the worst case conducted power value, please refer to BL-SZ2571737-501 report for more details.						

5.2 Tune-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
GPRS850	[26.00, 28.00]	/	[25.65, 27.65]
GPRS1900	[22.00, 24.00]	[24.32, 26.32]	[22.17, 24.17]
LTE Band 2	[22.00, 24.00]	[24.32, 26.32]	[22.17, 24.17]
LTE Band 4	[22.00, 24.00]	[23.18, 25.18]	[21.03, 23.03]
LTE Band 5	[22.00, 24.00]	/	[21.65, 23.65]
LTE Band 7	[21.00, 23.00]	[23.00, 25.00]	[20.85, 22.85]

Note1: ERP= EIRP -2.15dB.

Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.

5.3 RF Exposure Evaluation Result

Evolution Mode	Maximum Power (dBm)	Maximum Power (mw)	Distance (mm)	Threshold Power (mW)	Verdict
GPRS850	28.00	630.96	200	1680.96	Pass
GPRS1900	24.17	261.22	200	3060.00	Pass
LTE Band 2	24.17	261.22	200	3060.00	Pass
LTE Band 4	24.00	251.19	200	3060.00	Pass
LTE Band 5	24.00	251.19	200	1680.96	Pass
LTE Band 7	23.00	199.53	200	3060.00	Pass

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

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