

TEST REPORT

Applicant: Queclink Wireless Solutions Co., Ltd.
Address: No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, 201101
Equipment Type: Industrial Router
Model Name: WR100LAU
Brand Name: Queclink
FCC ID: YQD-WR100LAU
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: May 22, 2026
Test Date: Jul. 18, 2026
Date of Issue: Jul. 24, 2026

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Liao Jianming

(Technical Director)

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jul. 24, 2026</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	601, Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen, Guangdong
	☒ 1/F., Building B, Ganghongji High-Tech Intelligent Industrial Park, No.1008, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong
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	Industrial Router
Model Name Under Test	WR100LAU
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V1.05
Software Version	WR100_R00A15V02
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/66 WIFI 802.11b, 802.11g and 802.11n
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, WCDMA, LTE, WLAN		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850~1910 MHz	RX: 1930~1990 MHz
	WCDMA Band 4	TX: 1710~1755 MHz	RX: 2110~2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850~1910 MHz	RX: 1930~1990 MHz
	LTE Band 4	TX: 1710~1755 MHz	RX: 2110~2115 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 1710 ~ 1780 MHz
	WLAN	2412 ~ 2462 MHz	
Antenna Type	WWAN	Dipole Antenna	
	WLAN	Dipole 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

Mode	GSM		WCDMA		
	GSM 850	GSM 1900	Band 2	Band 4	Band 5
Conducted Power (dBm)	25.97	22.97	25.00	25.00	25.00
Antenna Gain (dBm)	-0.97	1.02	1.02	1.01	-0.97
ERP/EIRP (dBm)	22.85	23.99	26.02	26.01	21.88
Mode	LTE				
	Band 2	Band 4	Band 5	Band 7	Band 66
Conducted Power (dBm)	25.00	25.00	25.00	25.00	25.00
Antenna Gain (dBm)	1.02	1.01	-0.97	-0.45	1.01
ERP/EIRP (dBm)	26.02	26.01	21.88	24.55	26.01

Note: This table listed the worst case conducted power value, please refer to BTL-FCCP-4-2110H020 report for more details.

Mode	2.4G WIFI
Conducted Power (dBm)	15.63
Antenna Gain (dBm)	2.01
EIRP (dBm)	17.64

Note: This table listed the worst case conducted power value, please refer to Ti-EE26050379-601 report for more details.

5.2 Tune-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
GSM 850	[24.00, 26.00]	/	[20.88, 22.88]
GSM 1900	[21.00, 23.00]	[22.02, 24.02]	[19.87, 21.87]
WCDMA Band 2	[23.00, 25.00]	[24.02, 26.02]	[21.87, 23.87]
WCDMA Band 4	[23.00, 25.00]	[24.01, 26.01]	[21.86, 23.86]
WCDMA Band 5	[23.00, 25.00]	/	[19.88, 21.88]
LTE Band 2	[23.00, 25.00]	[24.02, 26.02]	[21.87, 23.87]
LTE Band 4	[23.00, 25.00]	[24.01, 26.01]	[21.86, 23.86]
LTE Band 5	[23.00, 25.00]	/	[19.88, 21.88]
LTE Band 7	[23.00, 25.00]	[22.55, 24.55]	[20.40, 22.40]
LTE Band 66	[23.00, 25.00]	[24.01, 26.01]	[21.86, 23.86]
2.4G WIFI	[14.00, 16.00]	[16.01, 18.01]	[13.86, 15.86]

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)	Power / Limit	Verdict
GSM 850	26.00	398.11	200	1680.96	0.237	Pass
GSM 1900	23.00	199.53	200	3060.00	0.065	Pass
WCDMA Band 2	25.00	316.23	200	3060.00	0.103	Pass
WCDMA Band 4	25.00	316.23	200	3060.00	0.103	Pass
WCDMA Band 5	25.00	316.23	200	1680.96	0.188	Pass
LTE Band 2	25.00	316.23	200	3060.00	0.103	Pass
LTE Band 4	25.00	316.23	200	3060.00	0.103	Pass
LTE Band 5	25.00	316.23	200	1680.96	0.188	Pass
LTE Band 7	25.00	316.23	200	3060.00	0.103	Pass
LTE Band 66	25.00	316.23	200	3060.00	0.103	Pass
2.4G WIFI	16.00	39.81	200	3060.00	0.013	Pass

5.4 Collocated Power Calculation

Evolution Mode	Power / Limit	$\Sigma(\text{Power / Limit})$ of WLAN + WWAN	Verdict
GSM 850	0.237	0.250	Pass
2.4G WIFI	0.013		

Note:

1. $\Sigma(\text{Power / Limit})$: This is a summation of [(power for each transmitter/ antenna included in the simultaneous transmission)/ (corresponding Power limit)], for WLAN + WWAN.
2. Both of the WLAN/WWAN can transmit simultaneously, the formula of calculated the Power is $CP1 / LP1 + CP2 / LP2 + \dots \text{etc.} < 1$
 CP = Calculation power
 LP = Limit of power
3. The worst-case situation is 0.250, which is less than "1". This confirmed that the device comply with FCC KDB 447498 D04 Power limit.
4. The DUT work frequency range used is 824 MHz ~ 849 MHz and 2412 MHz ~ 2462 MHz, the result close to the limit by the above formula, so we select worst case power to calculate the exclusion power threshold.

5.5 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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--END OF REPORT--