



Shenzhen GUOREN Certification Technology Service Co., Ltd.

101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

RF Exposure evaluation

Report Reference No.: GRCTR250502038-02

FCC ID.: 2BK77-R-W42506

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Testing Laboratory Name: Shenzhen GUOREN Certification Technology Service Co., Ltd.

Address: 101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

Applicant's name: Chengdu U-speed Information Technology Co., Ltd

Address: No.602, 6/F, Unit 1, Building 1, No.168 Huayang Zhongxing Shangjie, Tianfu New District, Chengdu, Sichuan, China

Test specification:

Standard: 47CFR §2.1091
KDB447498 D01 v06

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Test item description: N300 Wireless Router

Trade Mark: /

Manufacturer: Chengdu U-speed Information Technology Co., Ltd

Model/Type reference: T1 Pro

Listed Models: WRN300

Hardware Version: V1.0

Software Version: V1.0

Frequency: From 2402MHz to 2480MHz

Ratings: DC 12V From External Circuit

Result: PASS

TEST REPORT

Equipment under Test : N300 Wireless Router

Model /Type : T1 Pro

Listed Models : WRN300

Applicant : **Chengdu U-speed Information Technology Co., Ltd**

Address : No.602, 6/F, Unit 1, Building 1, No.168 Huayang Zhongxing
Shangjie, Tianfu New District, Chengdu, Sichuan, China

Manufacturer : **Chengdu U-speed Information Technology Co., Ltd**

Address : No.602, 6/F, Unit 1, Building 1, No.168 Huayang Zhongxing
Shangjie, Tianfu New District, Chengdu, Sichuan, China

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.

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1. SUMMARY

1.1. General Remarks

Date of receipt of test sample	:	May. 28, 2025
Testing commenced on	:	May. 28, 2025
Testing concluded on	:	Jun. 18, 2025

1.2. Product Description

Product Name:	N300 Wireless Router
Model/Type reference:	T1 Pro
Listed Models:	WRN300(The products are identical in interior structure, electrical circuits and components, just model names is different.)
Power supply:	DC 12V From External Circuit
Adapter information:	M/N:TS-A006-120050A7 Input:AC 100-240V 50/60Hz 0.2A Output:12V---0.5A
Testing sample ID:	GRCTR250502038-1# (Engineer sample), GRCTR250502038-2# (Normal sample)
2.4G WIFI:	
Supported type:	802.11b/802.11g/802.11n HT20/802.11n HT40
Modulation:	802.11b: DSSS 802.11g/802.11n HT20 /802.11n HT40: OFDM
Operation frequency:	802.11b/802.11g/802.11 HT20: 2412MHz~2462MHz 802.11n HT40: 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n HT20: 11 802.11n HT40: 7
Channel separation:	5MHz
Antenna type:	External antenna
Antenna gain*(Supplied by the customer):	Ant 1: 3.52 dBi Ant 2: 3.54 dBi Directional gain:6.54
Remark: *When the information provided by the customer was used to calculate test results, if the information provided by the customer is not accurate, shenzhen GUOREN Certification Technology Service Co., Ltd. does not assume any responsibility.	

According to KDB 662911 D01 Multiple Transmitter Output,Directional Gain Calculations for In-Band Measurements:

If transmit signals are correlated, then

Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

1.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	<input type="radio"/>	230V / 50 Hz	<input type="radio"/>	120V / 60Hz
		<input type="radio"/>	12 V DC	<input type="radio"/>	24 V DC
		<input checked="" type="radio"/>	Other (specified in blank below)		

DC 12V From External Circuit

1.4. Short description of the Equipment under Test (EUT)

This is a N300 Wireless Router.

For more details, refer to the user's manual of the EUT.

1.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

<input type="radio"/> /		M/N:	/
		Manufacturer:	/

1.6. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen GUOREN Certification Technology Service Co., Ltd.

101#, Building K & Building T, The Second Industrial Zone, Jiaxitang Community, Fenghuang Street, Guangming District, Shenzhen, China

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 920798 Designation Number: CN1304

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6202.01

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

ISED#: 27264 CAB identifier: CN0115

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

CNAS-Lab Code: L15631

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories for the Competence of Testing and Calibration Laboratories.

The 3m-Semi anechoic test site fulfills CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen GUOREN Certification Technology Service Co., Ltd.quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GUOREN Certification Technology Service Co., Ltd.:

Test Items	Measurement Uncertainty	Notes
Max output power	0.54 dB	(1)

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

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this 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.

According to §1.1310 and §2.1091 RF exposure is calculated.

KDB447498 D01 v06: RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE 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				
300 – 1500	61.4	0.163	1.0	6
1500 –	/	/	f/300	6
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/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300				
300 – 1500	27.5	0.073	0.2	30
1500 –	/	/	f/1500	30
100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

3.3. 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

3.4. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

Antenna No.	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
2.4GWIFI	/	External antenna	Ant 1: 3.52 dBi for 2400-2500MHz Ant 2: 3.54 dBi for 2400-2500MHz	

3.5. Manufacturing Tolerance

For ANT1

2.4GWIFI(Peak)			
802.11b			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11g			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(HT20)			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(HT40)			
Channel	Channel 03	Channel 6	Channel 9
Target (dBm)	12.0	12.0	12.0
Tolerance \pm (dB)	1.0	1.0	1.0

For ANT 2

2.4GWIFI(Peak)			
802.11b			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11g			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(HT20)			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(HT40)			
Channel	Channel 03	Channel 6	Channel 9
Target (dBm)	13.0	13.0	13.0
Tolerance \pm (dB)	1.0	1.0	1.0

For MIMO:

2.4GWIFI			
802.11n(HT20)			
Channel	Channel 01	Channel 6	Channel 11
Target (dBm)	16.0	16.0	16.0
Tolerance \pm (dB)	1.0	1.0	1.0
802.11n(HT40)			
Channel	Channel 03	Channel 6	Channel 9
Target (dBm)	15.0	15.0	15.0
Tolerance \pm (dB)	1.0	1.0	1.0

4. Evaluation Result

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				
2.4GWIFI ANT 1	14.0	25.1189	3.52	2.2491	0.011239	1.0000
2.4GWIFI ANT 2	14.0	25.1189	3.54	2.2594	0.011291	1.0000

Remark:

1. *Output power (Peak) including turn-up tolerance;*
2. *MPE evaluate distance is 20cm from user manual provide by manufacturer.*

Simultaneous Evaluation

2.4G WIFI ANT 1 MPE (mW/cm ²)	2.4G WIFI ANT 2 MPE (mW/cm ²)	MPE	MPE Limits
0.011239	0.011291	0.02253	1.0000

5. Conclusion

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

.....**End of Report**.....