



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



RF EXPOSURE EVALUATION

Applicant: Iconnect

Address: No.9, Aly. 58, Ln. 112, Ruiguang Rd., Neihu Dist., Taipei City, Taiwan

FCC ID: 2AB87XS5G01

Product Name: 5GNR Global band+ Wi-Fi 6 Router

**Standard(s): 47 CFR §1.1307, 47 CFR §2.1091
447498 D04 Interim General RF Exposure Guidance
v01**

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: 2403U80942E-RF-00D

Date Of Issue: 2024/9/11

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2403U80942E-RF-00D	Original Report	2024/9/11

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	5GNR Global band+ Wi-Fi 6 Router
Trade Name:	ALFA
EUT Model:	AX5GRM
Multiple Model:	AX5GRMB, AX5GRQ, AX5GRQB, AX5GXXX, Matrix-5GAX, Matrix-5GAXR, Matrix-5GAXE, Matrix-5GT, Matrix-5GXXX, MatrixPro-5GXXX(X:Any alphanumeric character or blank)
Rated Input Voltage:	12Vdc from Adapter
EUT Received Date:	2024.6.14
EUT Received Status:	Good
Note: The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

2. RF EXPOSURE EVALUATION

2.1 Applicable Standard

According to subpart 15.247(i) and subpart §1.1310, 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.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	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;

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

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.2 EUT WWAN Information▲:

Operation Modes	Operation Frequency (MHz)	Maximum Conducted Power including Tune-up Tolerance (dBm)	Antenna Gain (dBi)	Max Gain Allowed (dBi)
LTE B2	1850-1910	23	0.14	10.01
LTE B4	1710-1755	23	1.76	7.00
LTE B5	824-849	23	-3.29	11.41
LTE B12	699-716	23	-2.93	10.70
LTE B13	777-787	23	-3.79	11.16
LTE B17	704-716	23	-2.96	10.73
LTE B25	1850-1915	23	0.14	10.01
LTE B26	814-849	23.5	-3.28	10.86
LTE B30	2305-2315	23.5	-2.31	0.48
LTE B38	2570-2620	24	-1.25	9.01
LTE B40	2305-2315	23.5	-2.31	0.48
LTE B41	2496-2690	24	-1.25	9.01
LTE B42	3450-3550	23	-0.62	7.00
LTE B42	3550-3600	23	-0.62	0.01
LTE B43	3600-3700	23	-0.58	0.01
LTE B48	3550-3700	23	-0.58	0.01
LTE B66	1710-1780	23	1.76	7.00
NR N2	1850-1910	23.5	0.14	10.51
NR N71	663-698	22.5	-2.91	10.97
NR N77	3450-3550	23	-0.62	7.00
NR N77	3700-3980	23	-0.50	7.00

Note:

The devices contain certified WWAN Module, FCC ID: 2A7G3XS5G01.

2.3 Measurement Result

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	(dBm)	(mW)			
LTE B2	1850-1910	0.14	1.03	23	199.53	20	0.0409	1
LTE B4	1710-1755	1.76	1.5	23	199.53	20	0.0595	1
LTE B5	824-849	-3.29	0.47	23	199.53	20	0.0187	0.549
LTE B12	699-716	-2.93	0.51	23	199.53	20	0.0202	0.466
LTE B13	777-787	-3.79	0.42	23	199.53	20	0.0167	0.518
LTE B17	704-716	-2.96	0.51	23	199.53	20	0.0202	0.469
LTE B25	1850-1915	0.14	1.03	23	199.53	20	0.0409	1
LTE B26	814-849	-3.28	0.47	23.5	223.87	20	0.0209	0.543
LTE B30	2305-2315	-2.31	0.59	23.5	223.87	20	0.0263	1
LTE B38	2570-2620	-1.25	0.75	24	251.19	20	0.0375	1
LTE B40	2305-2315	-2.31	0.59	23.5	223.87	20	0.0445	1
LTE B41	2496-2690	-1.25	0.75	24	251.19	20	0.0375	1
LTE B42	3450-3550	-0.62	0.87	23	199.53	20	0.0345	1
	3550-3600	-0.62	0.87	23	199.53	20	0.0345	1
LTE B43	3600-3700	-0.58	0.87	23	199.53	20	0.0345	1
LTE B48	3550-3700	-0.58	0.87	23	199.53	20	0.0345	1
LTE B66	1710-1780	1.76	1.5	23	199.53	20	0.0595	1
NR N2	1850-1910	0.14	1.03	23.5	223.87	20	0.0459	1
NR N71	663-698	-2.91	0.51	22.5	177.83	20	0.0180	0.442
NR N77	3450-3550	-0.62	0.87	23	199.53	20	0.0345	1
	3700-3980	-0.50	0.89	23	199.53	20	0.0353	1
2.4G Wi-Fi	2412-2462	3.46	2.22	22	158.49	20	0.0700	1
5.2G Wi-Fi	5180-5240	4.20	2.63	21	125.89	20	0.0659	1
5.8G Wi-Fi	5745-5825	4.00	2.51	21	125.89	20	0.0629	1

Note:

The 2.4G Wi-Fi, 5G Wi-Fi and WWAN can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$= S_{2.4G \text{ Wi-Fi}} / S_{limit-2.4G \text{ Wi-Fi}} + S_{5G \text{ Wi-Fi}} / S_{limit-5G \text{ Wi-Fi}} + S_{WWAN} / S_{limit-WWAN}$$

$$= 0.0700/1 + 0.0659/1 + 0.0595/1$$

$$= 0.195$$

$$< 1.0$$

Result: The device meets FCC MPE at **20 cm** distance

3. EUT PHOTOGRAPHS

Please refer to the attachment 2403U80942E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and
2403U79820E-RF-INP EUT INTERNAL PHOTOGRAPHS

===== END OF REPORT =====