

RF EXPOSURE Test Report

Report Reference No:	MAX250425011P02-R01RF	
FCC ID:	2A2F4-AX3000-U21	
Compiled by (position+printed name):	Engineer/ Cindy Zheng	<i>Cindy zheng</i>
Supervised by (position+printed name):	Manager/Haley Wen	<i>Haley wen</i>
Approved by (position+printed name):	RF Manager/ Vivian Jiang	<i>Haley wen</i>
Date of issu:	May 6, 2025	
Applicant:	Shenzhen Urant Technology Co., Ltd	
Address:	4th Floor, Building 63, Fumin Industrial Zone, Pinghu Community, Pinghu Street, Longgang District, Shenzhen	
Manufacturer:	Shenzhen Urant Technology Co., Ltd	
Address:	4th Floor, Building 63, Fumin Industrial Zone, Pinghu Community, Pinghu Street, Longgang District, Shenzhen	
Product Name:	repeater	
Model/Type reference:	AX3000-U21	
Power supply:	AC 110~240V 50/60z 0.01~0.05A 6W	
Adapter information	N/A	
Hardware version:	V1.0	
Software version:	V1.0	
Standards:	N/A	
Test procedure :	KDB 447498 D01 v06	
Exposure category	General population/uncontrolled environment	
EUT Type	Production Unit	
Device Type	Mobile Device	
Date of Test		
Date of tests	April 21, 2025~May 6, 2025	
Test Result.	Pass	
This device described above has been tested by MAXLAB Testing Co.,Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.		

RF Exposure Evaluation

Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

According to KDB 447498 D01 General RF Exposure Guidance v06, Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) satisfied.

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
(B) Limits for General Population/Uncontrolled Exposure				
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

Friis transmission formula: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm², **Pout** = output power to antenna in mW;

G = gain of antenna in linear scale, **Pi** = 3.1416;

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

Test Result of RF Exposure Evaluation

2.4GWiFi:

Antenna Type: External Antenna

Antenna gain: ANT 1/ ANT 2 : 4.52dBi

Channel	Frequency (MHz)	Output power to antenna (dbm)			Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
		ANT 1	ANT 2	ANT 1+2			
802.11b	2412	15.845	12.241	/	0.0076	1.0	PASS
	2437	15.325	12.354	/	0.0068	1.0	PASS
	2462	15.421	12.052	/	0.0069	1.0	PASS
802.11g	2412	14.235	11.652	/	0.0053	1.0	PASS
	2437	14.241	11.245	/	0.0053	1.0	PASS
	2462	14.526	11.354	/	0.0056	1.0	PASS
802.11n (HT20)	2412	12.354	8.965	13.992	0.0050	1.0	PASS
	2437	12.254	8.865	13.892	0.0049	1.0	PASS
	2462	12.264	8.542	13.800	0.0048	1.0	PASS
802.11n (HT40)	2422	10.635	6.524	12.059	0.0032	1.0	PASS
	2437	10.542	6.245	11.915	0.0031	1.0	PASS
	2452	10.241	6.421	11.748	0.0030	1.0	PASS

WiFi 5G:

Antenna Type: External Antenna

Antenna gain: ANT 2/3/4: 3.70dBi

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Channel	Frequency (MHz)	Output power to antenna (dBm)				Output power to antenna (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Result
		ANT 2	ANT 3	ANT 4	ANT 2+3+4				
802.11a	5180	9.586	6.956	4.622	/	9.09	0.0018	1.0	PASS
	5200	9.854	6.845	4.265	/	9.67	0.0019	1.0	PASS
	5240	9.421	6.856	4.241	/	8.75	0.0017	1.0	PASS
802.11n (HT20)	5180	8.635	5.652	3.654	10.405	10.98	0.0022	1.0	PASS
	5200	8.421	5.562	3.254	10.233	10.55	0.0021	1.0	PASS
	5240	8.241	5.241	3.415	10.005	10.01	0.0020	1.0	PASS
802.11n (HT40)	5190	6.521	3.865	2.564	8.403	6.92	0.0014	1.0	PASS
	5230	6.241	3.635	2.421	8.141	6.52	0.0013	1.0	PASS
802.11ac (HT20)	5180	7.562	4.254	3.141	9.226	8.37	0.0017	1.0	PASS
	5200	7.234	4.635	3.021	9.136	8.20	0.0016	1.0	PASS
	5240	7.635	4.425	3.085	9.330	8.57	0.0017	1.0	PASS
802.11ac (HT40)	5200	5.654	2.652	1.021	7.418	5.52	0.0011	1.0	PASS
	5240	5.652	2.542	1.125	7.380	5.47	0.0011	1.0	PASS
802.11ac (HT80)	5210	4.986	1.865	0.241	6.710	4.69	0.0009	1.0	PASS

Note1: The estimation distance is 20cm

Simultaneous transmission MPE

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

\sum of MPE ratios ≤ 1.0

Mode	WIFI 2.4G MPE (mW/cm ²)	WIFI 5.1G MPE (mW/cm ²)	\sum MPE ratios	Limit	Results
2.4G WIFI+5.1G WIFI	0.0076	0.0022	0.0098	1.0	PASS

Conclusion: MPE evaluation required since transmitter power is below FCC threshold

----END OF REPORT----