RF EXPOSURE Test Report

Report Reference No:	MAX250425010P02-R01
FCC ID:	2A2F4-AX3000-U22
Compiled by (position+printed name):	Engineer/ Cindy Zheng
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Approved by (position+printed name):	RF Manager/ Vivian Jiang
Date of issue:	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-U22
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*G)/(4*pi*r^2)**

Where

Pd = power density in mW/cm^2, **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 id the limit of MPE, 1 mW/cm^2. 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	16.541	12.635	/	0.0090	1.0	PASS
	2437	16.324	12.241	/	0.0085	1.0	PASS
	2462	16.141	12.142	/	0.0082	1.0	PASS
802.11g	2412	15.523	11.265	/	0.0071	1.0	PASS
	2437	15.241	11.421	/	0.0067	1.0	PASS
	2462	15.051	11.265	/	0.0064	1.0	PASS
802.11n (HT20)	2412	13.562	10.526	15.314	0.0068	1.0	PASS
	2437	13.452	10.542	15.247	0.0067	1.0	PASS
	2462	13.241	10.265	15.013	0.0063	1.0	PASS
802.11n (HT40)	2422	11.256	7.952	12.921	0.0039	1.0	PASS
	2437	11.632	7.452	13.037	0.0040	1.0	PASS
	2452	11.352	7.652	12.895	0.0039	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	11.632	9.562	7.652	/	14.56	0.0029	1.0	PASS
	5200	11.563	9.412	7.365	/	14.33	0.0029	1.0	PASS
	5240	11.241	9.024	7.142	/	13.31	0.0027	1.0	PASS
802.11n (HT20)	5180	9.562	7.254	5.658	12.561	18.03	0.0036	1.0	PASS
	5200	9.456	7.124	5.241	12.386	17.32	0.0034	1.0	PASS
	5240	9.354	7.062	5.129	12.294	16.96	0.0034	1.0	PASS
802.11n (HT40)	5190	7.523	5.501	3.856	10.657	11.63	0.0023	1.0	PASS
	5230	7.241	5.124	3.654	10.363	10.87	0.0022	1.0	PASS
802.11ac (HT20)	5180	8.256	5.963	4.125	11.214	13.23	0.0026	1.0	PASS
	5200	8.142	5.874	4.025	11.110	12.91	0.0026	1.0	PASS
	5240	8.062	5.523	4.114	10.985	12.55	0.0025	1.0	PASS
802.11ac (HT40)	5200	6.584	3.652	1.652	9.209	8.33	0.0017	1.0	PASS
	5240	6.852	3.524	1.542	9.305	8.52	0.0017	1.0	PASS
802.11ac (HT80)	5210	4.658	1.965	0.865	7.570	5.71	0.0011	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;

∑∑of MPE ratios ≤ 1.0

Mode	WIFI 2.4G MPE (mW/cm2)	WIFI 5.1G MPE (mW/cm2)	∑MPE ratios	Limit	Results
2.4G WIFI+5.1G WIFI	0.0090	0.0036	0.0126	1.0	PASS

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

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