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Maximum Permissive Exposure

FCC ID: 2AU3BU9W42
EUT: WiFi module
Model No.: U9W42

1. According to FCC CFR 47 §1.1310, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

Table 1 Limits for Maximum Permissible Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	---	---	f/300	6
1500-100,000	---	---	5.0	6
(B) Limits for General Population / Uncontrolled Exposures (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	---	---	f/1500	30
1500-100,000	---	---	1.0	30



2. MPE Calculation

Funai Electric R & D (Shenzhen) Co., Ltd. declares that the product described above has been evaluated and found to comply with the RF exposure limits for humans, as specified based on ANSI/FCC recommendation.

RF Exposure Calculations: $S = (P * G) / (4 * \pi * r^2)$ or $r = \sqrt{(P * G) / (4 * \pi * S)}$

2.1. Estimation Result

Bluetooth MPE:

Mode	Frequency (MHz)	Output power (dBm)	Output power (mW)	antenna Gain (dBi)	antenna Gain (linear)	MPE (mW/cm ²)
GFSK (DSS)	2402	7.286	5.35	-7.4	0.18	0.000194
	2441	8.066	6.41	-7.4	0.18	0.000232
	2480	8.281	6.73	-7.4	0.18	0.000244
8-DPSK (DSS)	2402	10.581	11.43	-7.4	0.18	0.000414
	2441	11.312	13.53	-7.4	0.18	0.000490
	2480	11.394	13.78	-7.4	0.18	0.000499
GFSK (DTS) (1Mbps)	2402	7.180	5.22	-7.4	0.18	0.000189
	2440	7.804	6.03	-7.4	0.18	0.000218
	2480	8.188	6.59	-7.4	0.18	0.000239
GFSK (DTS) (2Mbps)	2402	6.208	4.18	-7.4	0.18	0.000151
	2440	6.784	4.77	-7.4	0.18	0.000173
	2480	7.186	5.23	-7.4	0.18	0.000189



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DTS Band MPE:

Mode	Frequency (MHz)	Output power (dBm)		Output power (mW)		antenna Gain (dBi)		antenna Gain (linear)		MPE (mW/cm ²)	
		Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B
11b	2412	11.96	11.84	15.70	15.28	-2.3	-1	0.59	0.79	0.001841	0.002415
	2437	12.07	11.79	16.11	15.10	-2.3	-1	0.59	0.79	0.001888	0.002388
	2462	12.21	12.30	16.63	16.98	-2.3	-1	0.59	0.79	0.001950	0.002685
11g	2412	16.94		49.43		1.385		1.38		0.013535	
	2437	17.03		50.47		1.385		1.38		0.013818	
	2462	17.06		50.82		1.385		1.38		0.013914	
11n HT20	2412	16.62		45.92		1.385		1.38		0.012573	
	2437	16.68		46.56		1.385		1.38		0.012748	
	2462	16.76		47.42		1.385		1.38		0.012985	
11n HT40	2422	13.69		23.39		1.385		1.38		0.006404	
	2437	13.45		22.13		1.385		1.38		0.006060	
	2452	13.49		22.34		1.385		1.38		0.006116	

U-NII-1 Band MPE:

Mode	Frequency (MHz)	Output power (dBm)		Output power (mW)		antenna Gain (dBi)		antenna Gain (linear)		MPE (mW/cm ²)	
		Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B
11a	5180	14.24	14.20	26.55	26.30	2.9	-3.8	1.95	0.42	0.010303	0.002182
	5200	14.12	14.35	25.82	27.23	2.9	-3.8	1.95	0.42	0.010022	0.002259
	5240	13.85	14.59	24.27	28.77	2.9	-3.8	1.95	0.42	0.009418	0.002388
11n HT20	5180	14.20		26.30		3.19		2.08		0.010913	
	5200	14.22		26.42		3.19		2.08		0.010964	
	5240	13.95		24.83		3.19		2.08		0.010303	
11n HT40	5190	16.47		44.36		3.19		2.08		0.018406	
	5230	16.37		43.35		3.19		2.08		0.017987	
11ac VHT20	5180	14.23		26.49		3.19		2.08		0.010989	
	5200	14.50		28.18		3.19		2.08		0.011694	
	5240	14.05		25.41		3.19		2.08		0.010543	
11ac VHT40	5190	16.20		41.69		3.19		2.08		0.017296	
	5230	15.82		38.19		3.19		2.08		0.015847	
11ac VHT80	5210	15.17		32.89		3.19		2.08		0.013644	



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U-NII-3 Band MPE:

Mode	Frequency (MHz)	Output power (dBm)		Output power (mW)		antenna Gain (dBi)		antenna Gain (linear)		MPE (mW/cm ²)	
		Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B	Ant A	Ant B
11a	5745	15.60	15.83	36.31	38.28	-1.9	-4.5	0.65	0.35	0.004666	0.002704
	5785	15.47	15.73	35.24	37.41	-1.9	-4.5	0.65	0.35	0.004528	0.002642
	5825	15.27	15.75	33.65	37.58	-1.9	-4.5	0.65	0.35	0.004325	0.002654
11n HT20	5745	18.08		64.27		-0.093		0.98		0.012521	
	5785	18.02		63.39		-0.093		0.98		0.012350	
	5825	18.31		67.76		-0.093		0.98		0.013202	
11n HT40	5755	16.68		46.56		-0.093		0.98		0.009071	
	5795	17.05		50.70		-0.093		0.98		0.009878	
11ac VHT20	5745	18.09		64.42		-0.093		0.98		0.012550	
	5785	18.15		65.31		-0.093		0.98		0.012725	
	5825	18.31		67.76		-0.093		0.98		0.013202	
11ac VHT40	5755	16.63		46.03		-0.093		0.98		0.008967	
	5795	16.51		44.77		-0.093		0.98		0.008723	
11ac VHT80	5775	14.97		31.41		-0.093		0.98		0.006119	

Based on **safety** distance (r) **20cm**, the antenna gain (G) is **2.08 Numerical**, and the highest power output (P) is **44.36mW**, the power density (S) is **0.018406mW/cm²**.

Bluetooth + WIFI MPE:

Bluetooth MPE (mW/cm ²)	WIFI MPE (mW/cm ²)	Max MPE (mW/cm ²)	Limit (mW/cm ²)	Compliance or not
0.000499	0.018406	0.018905	1	YES