

RF Exposure

FCC ID: 2AZKI-COM-11

Applicant: Shenzhen Youbo Life Technology Co., Ltd.

Exposure category: General population/uncontrolled environment

EUT Type: Production Unit

Device Type: AX1800 Dual Band Wi-Fi6 Router

Refer Standard: FCC Part 2.1091: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

FCC MPE Limited:

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

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density

P = power input to the antenna

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)

Antenna Gain information:

Antenna System	STBC
	2 antennas are uncorrelated with each other
Antenna Type	IFA
Antenna Gain	2.4G ANT0/1:5dBi
	5G ANT0/1:5dBi
Directional Gain(MIMO Mode)	5dBi

Worst-Case mode Conducted Output Power Results for 2.4G WIFI

802.11b mode

Channel	Frequency (MHz)	Output Power(dBm)	Tune Up tolerance(dBm)
1	2412	16.37	17 ± 1

Worst-Case mode Conducted Power Test results of band U-NII-1/U-NII-3

802.11n(20MHz) MIMO

Frequency (MHz)	Conducted Output Power (dBm)	Tune Up tolerance(dBm)
5745	15.25	16 ± 1

Calculation results (for 2.4G WIFI): Worst-case mode

Frequency (MHz)	Maximum tune up power(dBm)	RF distance(cm)	Result (mW/cm ²)	Limit (mW/cm ²)
2412	18	20	0.024	1.0

Calculation results (for 5G WIFI): Worst-Case mode

Frequency (MHz)	Maximum tune up power(dBm)	RF distance(cm)	Result (mW/cm ²)	Limit (mW/cm ²)
5745	17	20	0.032	1.0

Simultaneous Transmission Calculation

No.	Transmitter Combinations	Scenario Supported or not
1	2.4G WLAN+5G WLAN	Yes

Max Simultaneous Transmission Calculation (Worst-case mode)

No.	Worst Mode	MPE Ratio	Results
1	2.4G WLAN+5G WLAN	$0.024+0.032=0.056$	<1.0(pass)