

FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance V01

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(3)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2f$.
1,500-100,000	$19.2R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

Mode	Frequency (MHz)	Tune up conducted power [#] (dBm)	Antenna Gain [#]		ERP		Evaluation Distance (m)	ERP Limit (mW)
			(dBi)	(dBd)	(dBm)	(mW)		
Lora	917-922.2	7.5	-2.79	-4.94	2.56	1.8	0.2	469.5
BT	2402-2480	9	-5.25	-7.4	1.6	1.4	0.2	768
BLE	2402-2480	7	-5.25	-7.4	-0.4	0.9	0.2	768
2.4G WIFI	2412-2462	27	-5.25	-7.4	19.6	91.2	0.2	768

Note: The tune up conducted power and antenna gain was declared by the applicant. EUT's Bluetooth and WiFi module ESP32 is contain ID. And all wireless functions cannot be sent at the same time.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.