RF Exposure Evaluation

FCC ID	XBG-ESP32WROOM32U
Model No.	ESP32-WROOM-32U
BT Specification	Bluetooth Dual Mode: V4.2
BT Frequency Range	2402~2480MHz

According to FCC KDB 447498 Section 4.3 - General SAR test exclusion guidance

For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [$\sqrt{f(GHz)}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR,

where

1. f(GHz) is the RF channel transmit frequency in GHz

2. Power and distance are rounded to the nearest mW and mm before calculation31

3. The result is rounded to one decimal place for comparison

4.The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

Calculation Result:

Mode	Frequency Band (MHz)	Output Power (dBm)	Output Power (mW)	Exclusion Threshold @5mm	SAR Test Exclusion Limit	
					mW	Exclusion Threshold
BT	2402~2480	5.12	3.25	1.02	7	3.0

So, this device can complies the SAR test exclusion.