

Maximum permissible emission (MPE) ver.2

As PTT Voice Responder has two *Bluetooth* Class 2 devices with maximum transmit power 3dBm (2mW) and 4dBm (2.5mW), max sum power 4.5mW. It is per definition by EN50360 paragraph 6 deemed to comply with the basic restrictions without testing, also it is excluded from routine environmental evaluation for RF exposure as it does not fall under the product categories listed in Section 2.1093 of the FCC 's Rules.

Calculation from FCC document "Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies" attached.

4.3. General SAR test reduction and exclusion guidance

4.3.1. Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, 16 where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion.

Calculation:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

Power = (2.0mW+2.5mW) = 4.5mW => rounded to 5mW

Distance = (if distance < 5 mm, use value 5mm) = 5mm

Frequency = 2.45GHz

$[(5\text{mW})/(5\text{mm})] \cdot [\sqrt{2.45\text{GHz}}] = 1.6 < 3.0$ (1g SAR limit) => **SAR test excluded for 1g and 10g SAR tests.**

EN50360; paragraph 6.

“If the average power emitted by the mobile phone is less than or equal to 20mW, then the mobile phone is deemed to comply with the basic restrictions without testing.”

FCC §2.1093.

(c)(1) Portable devices that operate in the Cellular Radiotelephone Service pursuant to part 22 of this chapter; the Personal Communications Service (PCS) pursuant to part 24 of this chapter; the Satellite Communications Services pursuant to part 25 of this chapter; the Miscellaneous Wireless Communications Services pursuant to part 27 of this chapter; the Maritime Services (ship earth station devices only) pursuant to part 80 of this chapter; the Specialized Mobile Radio Service, the 4.9 GHz Band Service, and the 3650 MHz Wireless Broadband Service pursuant to part 90 of this chapter; the Wireless Medical Telemetry Service (WMTS) and the Medical Device Radiocommunication Service (MedRadio), pursuant to subparts H and I of part 95 of this chapter, respectively, unlicensed personal communication service, unlicensed NII devices and millimeter wave devices authorized under §§15.253(f), 15.255(g), 15.257(g), 15.319(i), and 15.407(f) of this chapter; and the Citizens Broadband Radio Service pursuant to part 96 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use.

(2) All other portable transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§1.1307(c) and 1.1307(d) of this chapter.