

SAR Test exemption documentation according to CFR 47 §1.1307

Report identification number: 1-3175/21-01-09 Exemption / MPE (FCC)

contains the module with the following certification numbers	
FCC ID	UN6-EIO404

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

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EUT technologies:

SAR based exempted technologies:

Technologies:	Max. power [dBm]		Max. declared EIRP [dBm]	Max. declared ERP [dBm]	#
	decl. conducted	meas. Gain			
Bluetooth 2450 MHz	4.8 meas	5.1	10.0 (=10.0mW)	7.95 (=6.24mW)	A

Details and origins of the measurements shown in the table above:

#	Results from:	Additional information
A	1-3175/21-01-07 CTC Advanced GmbH	Antenna gain page 20, Max conducted page 24

Declared minimum safety distance: 20 cm

According the manual a safety distance of 20 cm shall be applied between the user (and/or bystanders) to the EUT antenna whilst active transmitting.

SAR-Based Exemption following 47 CFR 1.1307 amendment:

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW). This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left(\frac{d}{20cm}\right)^x & d \leq 20cm \\ ERP_{20cm} & 20cm \leq d \leq 40cm \end{cases} \quad (B.2)$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).

$$P_{th}(mW) = ERP_{20cm}(mW) = \begin{cases} ERP_{20cm} \left(\frac{d}{20cm}\right)^x & d \leq 20cm \\ ERP_{20cm} & 20cm \leq d \leq 40cm \end{cases} \quad (B.1)$$

Technology	Transmitter frequency (MHz)	Max. decl. ERP (mW)	Threshold ERP		Minimal Safety (mm)	Verdict
			(mW)	(dBm)		
BT	2450	10.00	3060.00	34.8	20	EXCEMPTED

This prediction demonstrates the following:

The power density levels for FCC that are larger than the minimum safety-distances stated above, are below the maximum levels allowed by regulations.