

SAR Test exemption documentation according to CFR 47 §1.1307

Report identification number: 1-4450/22-01-09 Exemption / MPE (FCC)

contains the module with the following certification numbers	
FCC ID	KWC-RX24

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.

Document authorised:



Alexander Hnatovskiy
Lab Manager
Radio Communications & EMC



Marco Scigliano
Testing Manager
Radio Communications & EMC

EUT technologies:

Technologies:	Max. rated power: (AVG)	Max. gain:	Max declared EIRP:	Max declared ERP:
BT Basic Rate 2450 MHz	8.1 dBm	2.1 dBi	11.0 dBm (=12.58 mW)	8.85 dBm (=7.67 mW)
DM 2450 MHz	6.1 dBm	2.5 dBi	9.0 dBm (=7.94 mW)	6.85 dBm (=4.84 mW)

Note:

BT Basic Rate results taken from CTC Advanced GmbH 1-4450/22-01-07

DM results taken from CTC Advanced GmbH 1-4450/22-01-08

Declared minimum safety distances: 20cm

According to the manual a safety distance of 20cm 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)	Treshold ERP		Minimal Safety (cm)	Verdict
			(mW)	(dBm)		
BT Basic Rate	2450	7.67	3060.00	34.8	20	EXCEMPTED
DM	2450	4.84	3060.00	34.8	20	EXCEMPTED

COLLOCATION:

Overview:

Technology , [MHz]	BT Basic Rate, 2450	DM, 2450
Exemption based on	SAR , 20cm distance	
Limit ERP [mW]:	3060	3060
Result ERP [mW]:	7.67	4.84
Limit-Exhaustion [%]	0.3	0.2
Collocated percentage [%]	0.4	
Verdict:	pass	

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.