

SAR Test exemption documentation according to CFR 47 §1.1307

Report identification number: 1-3700/21-03-02 Exemption / MPE (FCC)

contains the module with the following certification numbers	
FCC ID	MCQ-CCIMX6P

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:



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EUT technologies:

SAR based exempted technologies:

Technologies:	Max. measured power [dBm]		antenna gain [dBi]	Max. declared EIRP [dBm]	Max. declared ERP [dBm]	#
	conducted	EIRP				
BT EDR 2450 MHz	9.5 (=8.8 mW)	13.9	4.4	15.0	12.85 (=19.28 mW)	A
BT LE 2450 MHz	2.3 (=1.7 mW)	6.7	4.4	8.0	5.85 (=3.85 mW)	B
WLAN 2450 MHz	18.2	22.6	4.4	23.0	21.85 (=153.11 mW)	C
WLAN 5000 MHz	13.0 (=21.3 mW)	18.0	5.0	20.0	17.85 (=60.95 mW)	D

Note: Antenna Gains taken from manual 'ConnectCore 6 Plus Hardware Reference Manual' (page 96, ff.)

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

#	Results from:	Additional information
A	MCQ-CCIMX6P (FCC Grant, 2402 to 2480)	Max. output power
B		
C	MCQ-CCIMX6P (FCC Grant, 2412 to 2462)	Max. output power
D	MCQ-CCIMX6P (FCC Grant, 5240, 5320, 5720, 5825)	Max. output power

Declared minimum safety distance: 20 cm

According to 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 (cm)	Verdict
			(mW)	(dBm)		
BT EDR	2450	19.28	3060.00	34.8	20	EXCEMPTED
BT LE	2450	3.85	3060.00	34.8	20	EXCEMPTED
WLAN	2450	153.11	3060.00	34.8	20	EXCEMPTED
WLAN	5000	60.95	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.