

SAR Test exclusion documentation according to FCC KDB 447498, RSS-102 and EN 62479

Report identification number: 1-1109/16-01-12

Certification numbers and labeling requirements	
FCC ID	LCGFMR2XKF
IC number	2519A-2KF
HVIN (Hardware Version Identification Number)	FMR10+R7, FMR20+R7, FMR20+R8
PMN (Product Marketing Name)	FMR10/20
FVIN (Firmware Version Identification Number)	-/-
HMN (Host Marketing Name)	-/-

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

Document authorized:

Thomas Vogler
 Lab Manager
 Radio Communications & EMC

EUT technologies:

Technologies:	Max. power: (AVG)	Max. gain:	Min. pathloss:
Bluetooth Low Energy	Declared: 0 dBm Maximum tune-up: 2.0 dBm	4.0 dBi	0 dB (if applicable)

Note:

Bluetooth LE test results see CETECOM test report 1-1109/16-01-03 and 1-1109/16-01-09

)* exempted from routine evaluation

SAR test exclusion according to KDB447498 (General RF Exposure Guidance v05)

Equation from Chapter 4.3.1: Standalone SAR test exclusion considerations page 11 and ff.

(1) Standalone SAR test exclusion for 100 MHz to 6 GHz at test separation distances $\leq 50\text{mm}$

$$(\text{Threshold}_{1\text{-g};10\text{-g}}) \times d_{\text{separation}} / f^{0.5}$$

where

Threshold_{1-g;10-g} is 3 for 1-g; 7.5 for 10-g

d_{separation} is the min. test separation distance; 5mm is used if the distance is less

f is the RF channel transmit frequency

The table below gives the calculated maximal power that could be used for source based time averaged conducted or radiated power, adjusted for tune up tolerance. If this is at or below the calculated value the DUT is exempted from SAR evaluation.

f in [MHz]	d _{separation} [mm]	Threshold _{1-g}	Powerlimit [mW]	P _{max-declared} [mW]	Exclusion
2450.00	5	3	9.58	4.00	yes

SAR test exclusion according to RSS-102 Issue 5 Section 2.5.1/Table 1

The table below gives the calculated maximal power that could be used for source based time averaged conducted or radiated power, adjusted for tune up tolerance. If this is at or below the calculated value the DUT is exempted from SAR evaluation.

f in [MHz]	d _{separation} [mm]	tissue volume	Powerlimit [mW]	P _{max-declared} [mW]	Exclusion
2450.00	5	1 g	4.00	4.00	yes

SAR test exclusion according to EN 62479

Compliance is given according TO EN 62479 because the output power of the DUT is smaller than 20 mW.