



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

Report identification number: 1-3949/22-01-16 Exclusion (FCC)

contains the module with the following certification numbers	
FCC ID	2ACAHAU5ITE

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:

Technologies:	Max. declared cond. AVG Power	Max. measured EIRP @ 3m
NFMI 3.84 MHz	-48.0 dBm (=15 nW)*	54.7 dBμV (Peak) = -40.5 dBm (=89 nW)
BT LE 2450	1.9 dBm (=1.55 mW)	- 5.7 dBm (= 0.27 mW)

*: Declared by manufacturer

Collocation:

Technology \ Active scenario:	1	2	3	4
NFMI	x		x	
BT LE	x	x		

SAR test exclusion according to KDB447498 (General RF Exposure Guidance v06)

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

BT LE:(1) Standalone SAR test exclusion for 100 MHz to 6 GHz at test separation distances ≤ 50 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-gd_{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.

frequency [MHz]	d _{separation} [mm]	Threshold _{1-g}	Powerlimit [mW]	P _{max-declared}		Exclusion
				[dBm]	[mW]	
2450.00	5	3	9.58	1.90	1.55	yes

NFC:

(c) (2) Standalone SAR test exclusion below 100 MHz < 50mm

$$0.5 \times (\text{Threshold}_{100\text{MHz}}) \times (1 + \log(100/f))$$

where

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

f is the RF channel transmit frequency

Threshold_{100MHz,50mm} is Threshold_{1-g;10-g} × d / f^{0.5}; with f = 100MHz and d=50mm

The table below gives the calculated maximal power that could be used for source based time averaged conducted power, adjusted for tune up tolerance. If this is below the calculated value SAR testing is excluded.

frequency [MHz]	Threshold _{1-g;10-g}	Threshold _{100MHz,50mm}	Powerlimit [mW]	P _{max-declared}		Exclusion
				[dBm]	[mW]	
3.84	3	474.34	572.93	-40.50	0.0	yes

Collocation:

Overview:

Technology , [MHz]	NFMI	BT LE	
Exemption based on	SAR Exclusion		
Limit EIRP [mW]:	572.9	9.58	
Result EIRP [mW]:	0.000000015	1.55	
Limit-Exhaustion [%]	0.0	16.2	
Collocated percentage [%] [NFMI + BT LE]	16.2		
Verdict:	Excluded		

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.