
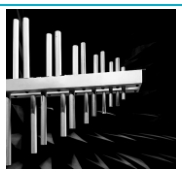
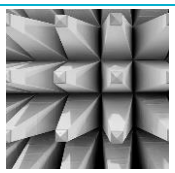

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RF Exposure Evaluation according to KDB 447498 D01 v06

Report identification number: 1-8137-24-02-04_TR1-R02_SAR_FCC

Certification numbers and labeling requirements	
FCC ID	2AXDT-RFM017

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1. SAR test exclusion (KDB 447498 D01 General RF Exposure Guidance v06)

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the *published RF exposure KDB procedures*, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding *SAR Test Exclusion Threshold* condition(s), listed below, is (are) satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum *test separation distance* required for the exposure conditions. The minimum *test separation distance* defined in 4.1 f) is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the *test separation distances* applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, according to the required *published RF exposure KDB procedures*. When no other RF exposure testing or reporting are required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for SAR test exclusion. When required, the device specific conditions described in the other *published RF exposure KDB procedures* must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops and tablets, etc.

a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

   [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

   - $f_{(GHz)}$ is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
   - The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

   The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

b) For 100 MHz to 6 GHz and *test separation distances* > 50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following (also illustrated in Appendix B):

   1) {[Power allowed at *numeric threshold* for 50 mm in step a)] + [(test separation distance – 50 mm)·($f_{(MHz)}$/150)]} mW, for 100 MHz to 1500 MHz

   2) {[Power allowed at *numeric threshold* for 50 mm in step a)] + [(test separation distance – 50 mm)·10]} mW, for > 1500 MHz and ≤ 6 GHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

   1) For *test separation distances* > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/$f_{(MHz)}$)]

   2) For *test separation distances* ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½

   3) SAR measurement procedures are not established below 100 MHz.

The following table from KDB 447498 D01 gives an fast overview of the applicable limits:

Appendix A

***SAR Test Exclusion Thresholds* for 100 MHz – 6 GHz and ≤ 50 mm**

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

2. EUT technologies

Technologies:	Max. power		Antenna gain max.: [dBi] *	Max EIRP for RF Exposure	#
	conducted	EIRP			
NFMI 10.2 MHz	-5.23	-/-	N/A	300 uW	A
BT LE 2450 MHz	5	5		5 dBm	A,B

**) worst case of all antenna types, channels and modulations (overrated)*

Declared minimum safety distance: 5 mm

Referenced Documents:

#	Information from External Annexes:		Kind of information used:
A	RFM017_-_Equipment_Description_v3	Customer declaration	Max. output power, page 1, 2
B	1-8137-24-02-06_TR1-R01	cetecom advanced GmbH test report	Ant gain max. for 2450 MHz on page 19

3. Exclusion for EUT technologies according clause 4.3.1.c)2):

Standalone SAR test exclusion below 100 MHz at test separation distances <50mm

frequency [MHz]	Thres-hold$_{1\text{-g};10\text{-g}}$	Thres-hold$_{100MHz,50\ mm}$	Powerlimit [mW]	$P_{max\text{-}declared}$		Exclusion	Share of Limit %
				[dBm]	[mW]		
10.60	3	474.34	468.34	-5.23	0.3	yes	**0.06%**

4. Exclusion for EUT technologies according clause 4.3.1.a:

Standalone SAR test exclusion for 1.5 GHz to 6 GHz at test separation distances <50mm

frequency [MHz]	$d_{separation}$ [mm]	Thres-hold$_{1\text{-g}}$	Powerlimit [mW]	$P_{max\text{-}declared}$		Exclusion	Share of Limit %
				[dBm]	[mW]		
2400.00	**5**	3	9.68	5.00	3.16	yes	**32.66%**

5. Collocation:

Technology	Share of Limit
NFMI	0.06%
Bluetooth Classic/LE	32.66%
Sum	**32.72%**

6. Conclusion

This prediction demonstrates the following:
The power density levels for FCC at a distance of 5 mm are below the maximum levels allowed by regulations.

Conclusion: RF exposure evaluation is not required.

Version	Applied Changes	Date of Release
-R01	Initial Release	2025-02-12
-R02	Editorial changes adding up from –R01 to –R02	2025-07-01