



CTC  **advanced**
member of RWTÜV group



Bundesnetzagentur

BNetzA-CAB-02/21-102



Deutsche
Akreditierungsstelle
D-PL-12076-01-04

SAR Test exclusion documentation according to FCC KDB 447498

Report identification number: 1-2295/21-01-07-A Exclusion (FCC)

contains the module with the following certification numbers	
FCC ID	2AJ58-15

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:

Technologies:	Max. declared cond. AVG Power	Max. measured EIRP	Antenna gain
NFC 125 kHz	27.4 dBm (=550 mW)	53.5 dB μ V (Peak)@3m = -41.7 dBm	< 0 dBi

NOTE:

The measured PEAK EIRP according proofs that the EUT antenna gain is far below 0dBi and that considering the max. declared output power is by far larger than the EIRP. Conducted values will be used for the RF exposure calculation. EIRP values are for information only.

Test results for EIRP taken from CTC advanced GmbH report 1-2295/21-01-05

Max. output power for the 125 kHz circle is 1100 mW with 50% duty cycle according customer declaration.

Separation distance: 20cm

NFC:

(3a) Standalone SAR test exclusion below 100 MHz at test separation distances > 50mm and < 200mm

$$(\text{Threshold}_{100\text{MHz} > 50\text{mm}}) \times (1 + \log(100/f))$$

where

Threshold _{1-g;10-g}	is 3 for 1-g; 7.5 for 10-g
d _{separation}	is the min. test separation distance (>50mm and <200mm)
f	is the RF channel transmit frequency
Threshold _{50mm; 100MHz < 50mm}	is Threshold _{1-g;10-g} × d / f ^{0.5}
Threshold _{100MHz > 50mm}	with f = 100MHz and d=50mm is (Threshold _{50mm; 100MHz < 50mm}) + (d _{separation} - 50mm) × f / 150 with f = 100MHz

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]	d _{separation} [mm]	Threshold _{1-g}	Threshold _{50mm} (100MHz)		Powerlimit [mW]	P _{max-declared}		Exclusion
			< 50mm	> 50mm		[dBm]	[mW]	
0.13	199	3	13416.41	573.67	2239.11	27.40	549.54	yes

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.