

RF Exposure Exclusion Calculation according
KDB447498 (2013-05-28)

Test Item	
Kind of test item:	Cableless Transducer
	866075
Model name:	866076
	866077
FCC ID:	PQC-OBRTBV1
IC:	3549C-OBRTBV1
	608 MHz – 614 MHz
Frequency:	Lowest Channel 3 (608.375 MHz) / Highest Channel 38 (613.625 MHz)

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Extracted from KDB 447498:

4.3. General SAR test reduction and exclusion guidance

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, listed below, is 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.²² The minimum *test separation distance* 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 (see 5) of section 4.1). To qualify for SAR test exclusion, the *test separation distances* applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required *published RF exposure KDB procedures*. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the 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 & tablets etc.²³

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot$$

$$[\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{24} \text{ where}$$

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁵
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 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 5) in section 4.1 is applied to determine SAR test exclusion.

Frequency of the EUT:	608 MHz - 614 MHz
Separation distance:	< 5 mm
Threshold (1-g):	3

Calculation:

$$\text{Threshold} * d_{\text{Separation}} [\text{mm}] / (f[\text{GHz}])^{1/2} = \text{Max. Power} [\text{mW}]$$

$$3 * 5 [\text{mm}] / (0.608 [\text{GHz}])^{1/2} = \mathbf{19.2 \text{ mW} = \text{Max. Power}}$$

The module generates a maximum conducted output power of 9.3 mW. (manufacturer declaration)

Conclusion:

The device is excluded from SAR tests.

Signature:

Date: 2013-07-09

NAME (Please print or type):

Dipl.-Ing. (FH) Stefan Bös

TITLE (Please print or type):

Senior Testing Manager

COMPANY (Please print or type):

Cetecom ICT Services GmbH