

FCC SAR exemption letter according KDB 447498 D01 v06

Customer	Product	Model	Type	HW Status	SW status	FCC ID
BBC Bircher AG Wiesengasse 20 8222 Beringen Switzerland	Wireless Transmission System	XRF-R.2	XRF- R.2.9	395476D	2.4.2906. 2945	TBZ-XRFR29

Declared minimum distance to human body according to customer = 1 cm according external document “MPE Information Requirements (R.2) (1)” provided by customer.

According to KDB 447498 D01 General RF Exposure Guidance V06 SAR testing can be exempted if the following exclusion threshold are met:

4.3. General SAR test exclusion guidance

4.3.1. Standalone SAR test exclusion considerations

- 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:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{GHz}}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$

- f_{GHz} is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation³¹
- 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.

$P_{\text{threshold}}$ calculation based on external document “MPE Information Requirements (R.2) (1)” provided by customer.

$P_{\text{threshold}} = \text{Maximum Rated Conducted Output Power (dBm)} + \text{Tune-Up Tolerance} - \text{Maximum Path Loss to Antenna}$

$$P_{\text{threshold_DUT}} = 1 \text{ mW} * 10^{((10 \text{ dBm} + 1 \text{ dB} - 0 \text{ dB})/10)} = 12.59 \text{ mW}$$

FCC General SAR test exclusion acc. KDB 447498 D01 v06						
Frequency (MHz)	Max. power incl. Tune-up tolerance (dBm)	Max. power incl. Tune-up tolerance (mW)	Threshold 1-g SAR Limit < 3.0	Threshold 10-g SAR Limit < 7.5	1-G SAR Exemption fulfilled	10-g SAR Exemption fulfilled
921.5	11.0000	12.5893	1.2085	1.2085	yes	yes
min. test separation distance (mm)				10		

The user manual must list the given usage position.

The current version of Test Report 22_1_0131901T07a_C01 replaces the test report 22_1_0131901T07a dated 2023-Feb-10. The replaced test report is herewith invalid.

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Version	Applied changes	Date of release
--	Initial release	2023-Feb-10
C01	FCC-ID corrected, calculation corrected	2023-May-12