

FCC SAR exemption letter according KDB 447498 D01 v06

Customer	Product	Model	Type	HW Status	SW status	FCC ID
Alois Kober GmbH, Ichenhauser Straße 14, 89359 Kötzing Germany	E&P levelsystem	E&P levelsystem Touchpanel	Remote Touchpanel Camper/Caravan	V1.5	V1.11.xW	2A5AD- 4100938 (Touchpanel USA)

Declared minimum distance to human body according to customer = 2 cm according external document “MPE Touchscreen” 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 Touchscreen” provided by customer.

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

$$P_{\text{threshold_DUT}} = 1 \text{ mW} * 10^{((9 \text{ dBm} + 1 \text{ dB} - 0 \text{ dB})/10)} \leq 10 \text{ mW}$$

FCC General SAR test exclusion acc. KDB 447498 D01 v06					
Frequency (MHz)	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
902.5	10.0000	0.4750	0.4750	yes	yes
906.0	10.0000	0.4759	0.4759	yes	yes
909.5	10.0000	0.4768	0.4768	yes	yes
min. test separation distance (mm)			20		

The user manual must list the given usage position.