

RF Exposure Evaluation

According to KDB 447498 D01 General RF Exposure Guidance v06 and part 2.1091, 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.

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:

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

$f_{\text{(GHz)}}$ 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

$\text{EIRP} = E_{\text{meas}} + 20\log(d_{\text{meas}}) - 104.7$

EIRP: is the equivalent isotropically radiated power in dBm

E_{Meas} : is the field strength of the emission at the measurement distance. in dBuV/m

d_{Meas} : is the measurement distance. in m

Here,

For 433.15MHz

Mode	Max Power (dBm)	Tune-up power (dBm)	Max Power (mW)	Frequency(MHz)	Min. Distance (cm)	Calc. thresholds	limit
433.15MHz	-8.01	-8 ± 1	0.20	433.15	20	0.00003	1.0

$\text{EIRP} = 87.08 + 20\log(3) - 104.7 = -8.01 \text{ dBm}$

So a SAR test is not required

Remark: Antenna gain = -1.6dBi