



RF Exposure Evaluation

According to KDB 447498 D01 General RF Exposure Guidance v06 and part 2.1093, 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 (mm) | Calc. thresholds | limit |
|-----------|-----------------|---------------------|----------------|----------------|--------------------|------------------|-------|
| 433.15MHz | -7.06 | -7 ± 1 | 0.25 | 433.15 | 5 | 1.045 | 3.0 |

$$\text{EIRP} = 88.10 + 20\log(3) - 104.7 = -7.06 \text{ dBm}$$

So a SAR test is not required
Remark: Antenna gain=2.15dBi