

Standalone SAR test exclusion considerations

May 17, 2024

- Device category = Portable device Mobile device
- Transmitting mode = Single Transmitting Simultaneous Transmitting
- Max. transmitting frequency = 433.92 MHz
- Min. test separation distance = 0 mm
- Max. Antenna Gain = -4.09 dBi
- Max. power with turn-up tolerance = 1.00 dBm = 1.3 mW (Typical Power = Max. 1.00 dBm)

Note. The max power includes a correction factor of $20\log(0.4275)$ to cover an operational duty factor of 42.75% as the device transmit a maximum of 42.75ms in period 100 msec.

KDB 447498 D01v06 clause 4.3.1 a) SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm

$$\left[\left(\text{max. power of channel, including tune-up tolerance, mW} \right) / \left(\text{min. test separation distance, mm} \right) \right] \cdot \left[\sqrt{f(\text{GHz})} \right] \leq 3.0 \text{ for } 1\text{g SAR and } \leq 7.5 \text{ for } 10\text{g extremity SAR}$$
$$= \left[\left(1.3\text{mW} / 5\text{mm} \right) \right] \times \left[\sqrt{0.43392\text{GHz}} \right] = 0.2$$

Note. The calculation result was rounded to one decimal place for comparison.

→ SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.