

RF Exposure Compliance Requirement

Calculation formula:

$$E \text{ (V/m)} = (30 \cdot P \cdot G)^{0.5} / d$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between EUT and antenna (m)

Remark: $E \text{ (V/m)} = 10^{(dB_{UV}/m)/20} \times 10^{-6}$

$$P = (E \cdot d)^2 / 30G$$

in the formula above, d=3m, field strength= 88dBuV/m (max described by client),

G=1.70 (Antenna gain=2.3dBi)

so P=mW

In KDB 447498 D01 v06: 4.3.1 Standalone SAR test exclusion considerations:

The SAR Test Exclusion Threshold is calculated from:

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

The worst case test separation distance is **5mm**.

The product belongs to **standalone portable device** base the FCC rule part 2.1091&2.1093. The transmission frequencies of the device are between 100 MHz and 6 GHz.

The ERP and SAR Test Exclusion Threshold (mW) are listed below:

Output power (mW)	SAR Test Exclusion Threshold (mW)
0.111	6.22