

RF Exposure Compliance

Company: Shuanghe Electron instrument Co.,Ltd
Model: KN128DSOB
Formal Name: KA GMT DIGITAL REMOTE THERMOMETER

Rule Part: CFR 47 Part 1.1307(b)
CFR 47 Part 2.1093

Test Procedure: FCC 447498 10 D01 General RF Exposure Guidance v05r02
4.3. General SAR test reduction and exclusion guidance
4.3.1. Standalone SAR test exclusion considerations

Limits: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* \leq 50 mm are determined by:

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

$f(\text{GHz})$ 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.

When the minimum *test separation distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Output Power: This is a portable device. The maximum field strength measured 86.3 dB μ V/m at a distance of 3 meters. $86.3 \text{ dB}\mu\text{V/m} = 0.020653802 \text{ V/m}$
Using the following equation:
(ref. FCC 412172 D01 Determining ERP and EIRP v01)
 $\text{eirp} = (E \times d)^{2/30}$
where E = electric field strength in V/m
 d = measurement distance in meters
 $\text{eirp} = (0.020653802 \times 3)^{2/30} = 0.000127974 \text{ Watts}$
 $0.000127974 \text{ Watts} = 0.13 \text{ mW}$

Exclusion threshold: $[1 \text{ mW} / 5 \text{ mm}] \times [\sqrt{0.43392 \text{ GHz}}] = \mathbf{0.13}$

Results: **0.13 is ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.**
SAR measurement is not necessary.