



2016/3/28

UL Japan, Inc.
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FCC ID: A269ZUA147

To whom it may concern,

We, UL Japan, Inc., hereby declare that Car Navigation Unit, model : X109D (FCC ID: A269ZUA147) of Alpine Electronics, Inc. is exempt from RF exposure SAR evaluation as its output power meets the exclusion limits stated in FCC Part 2 §2.1093.

KDB 447498D01(v06) has the following exclusion for portable devices:

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

$$[(\text{measured maximum average output power(mW)})/(\text{Minimum separation distance(mm)})] \cdot [\sqrt{f \text{ (GHz)}}]$$

≤ 3.0 for 1g SAR and ≤ 7.5 for 10g 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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

This device $f = 2.48$ GHz, distance = 5mm (minimum separation distance: 5 mm was used in the calculation) and the measured maximum average output power was 1 mW

So for this device:

$1 \text{ mW} [\text{measured maximum average output power}] / 5 \text{ mm} [\text{minimum separation distance}] \cdot (\sqrt{2.48}) = 0.3$

*This is less than 3.0, so no SAR is required.

Even taking into account the tolerance, this device can be satisfied with the limits.

Thank you for your attention to this matter.

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