



August 9, 2013

UL Japan, Inc.
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FCC ID: KSNAD1321-10MW

To whom it may concern,

We, UL Japan, Inc, hereby declare that Wireless Module, model: AD1321-10MW (FCC ID: KSNAD1321-10MW) of A&D Company Limited is exempt from RF exposure SAR evaluation as its output power meets the exclusion limits stated in FCC Part 2 §2.1093.

KDB 447498D01(V05) 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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]$

$\cdot [\sqrt{f(\text{GHz})}] \leq 3.0$

for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

$\cdot f(\text{GHz})$ is the RF channel transmit frequency in GHz

$\cdot$ Power and distance are rounded to the nearest mW and mm before calculation

$\cdot$ 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 has $f = 2.48$ GHz and distance = 5 mm (minimum separation distance: 5mm was used in the calculation) and the maximum tune-up tolerance limit was 1.36mW*

* Clause 6.3 Low transmission duty factor devices of KDB447498 D01 v05r01 was applied to this product due to its specification.

Maximum tune-up tolerance limit = Conducted Output power (9.36dBm)*Antenna Gain (2.14dBi)*duty cycle correction factor (-10.19dB)

So for this device:

$1.36\text{mW}[\text{maximum tune-up tolerance limit}]/5\text{mm}[\text{minimum separation distance}]*\sqrt{2.48} = 0.43$

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

Thank you for your attention to this matter.

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WiSE Japan
UL Verification Service
UL Japan, Inc.