

FCC EMF Compliance

26 March 2018

To whom it may concern

The GK001 is exempt from SAR evaluation as its output power meets the exclusion limits stated in FCC part 2.1093 and the general SAR test exclusion requirements detailed in KDB 447498 D01 V06, which states:

- b) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

- $f(\text{GHz})$ 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 device operates in the 2400-2483.5 MHz band and the minimum separation distance from antenna to outside edge of case is 5.5 mm (see below), but 5mm is used for the calculation as this is the smallest value that is required to be used and represents worst case for any mechanical tolerance

Maximum rated power = 34.36 mW, but with a 1% duty cycle as shown on following pages

Calculation is:

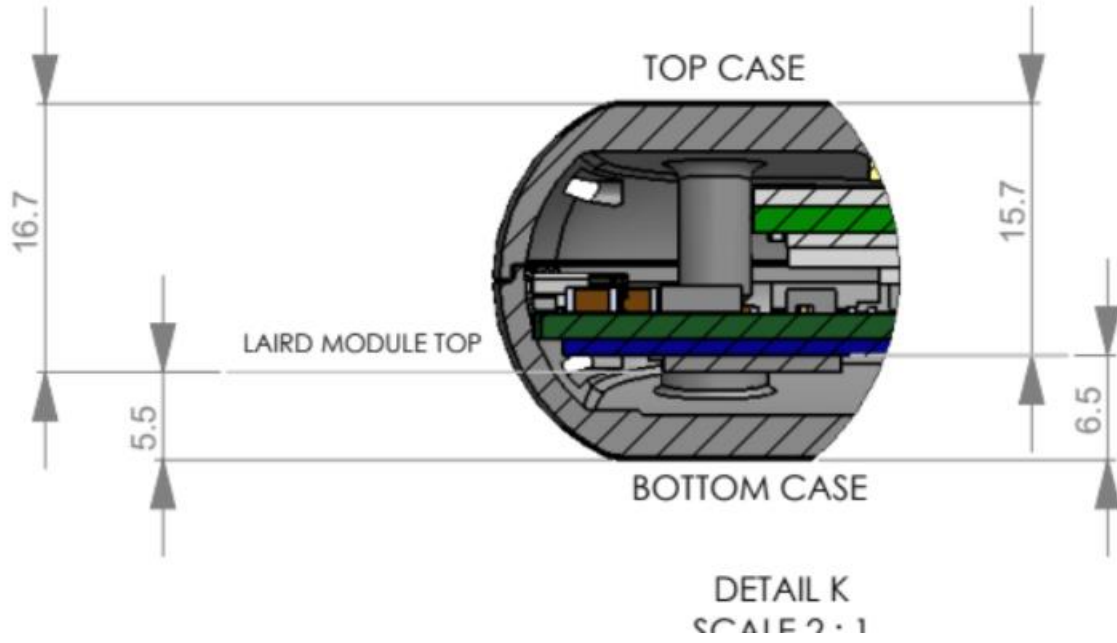
$$\frac{34.36 * 0.01}{5} * \sqrt{2.4} = 0.106$$

0.106 is less than 3.0, so no SAR is required

Sincerely

C F J Blackham
Director

Antenna to case separation



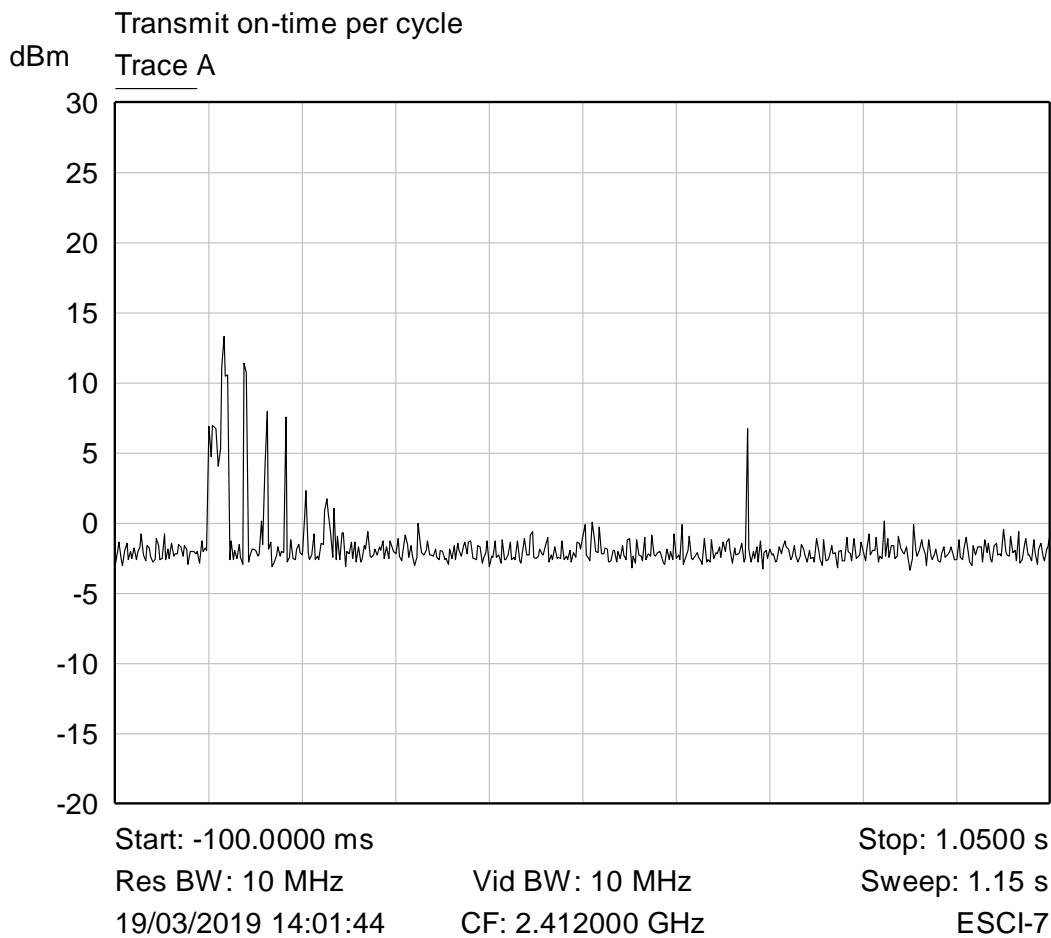


Figure 2: Transmit duty cycle

Analysing Figure 2 in excel:

- Number of measurement points where power > 0dBm = 26
- Number of measurement points where power < 0dBm = 475

$$\text{"Transmit time"} = 1.05 * \frac{26}{26+475} = 0.0545 \text{ s}$$

$$\text{Duty cycle} = \frac{0.0545}{5.640} = 0.97\%$$