MEMS Tag (EUT) RF Exposure:-

The MEMS Tag is intended as a portable device. The Tag is fitted inside a vehicles tyre. However, during set-up of the device the EUT could be held in the hand and as such a distance of 5mm has been assumed for the calculations as worst case.

Evaluation is for exposure potential against the Exclusion limits given in **KDB447498** section 4.3.1.

Exclusion requirements are based upon 10g SAR exclusion for extremities.

Equation of 4.3.1. part 1A Transposed is:

$$\text{Exclusion in mW} = ((\text{Threshold} / (\sqrt{F}) * D$$

where: Threshold = 7.5 for 10g SAR Extremities (or 3 for 1g SAR Body worn)
F = Frequency in GHz (0.43392GHz)
D = Separation distance in mm (5mm)

Threshold in mW for 433.92MHz is based on equation above and 4.3.1. part2A

= **56.93 mW**

Worst case Average power, P = 0.004 mW (-23.63 dBm), (71.6 dBuV/m @3m).
And antenna gain included in field strength measurement, the EUT is excluded from RF Exposure / SAR testing requirements.

With reference to **RSS-102 issue 5** section 2.5.1 the exemption limit for devices @450MHz at 5mm separation distance is 52mW increasing to 71mW at 300MHz. Therefore the device is exempt from routine SAR/RF exposure evaluations.