Latch Hawk wireless sensor LHW 1701 E PS (EUT) RF Exposure: -

The Latch Hawk wireless sensor 1701 E PS is intended as a fixed device attached to equipment where monitoring of latch position/status is required. A person's body would not normally be within 20cm of the device.

Evaluation is for exposure potential against the SAR test Exclusion limits given in **KDB447498 D01 v06** section 4.3.1.

Exclusion requirements are based upon 1g SAR exclusion for body.

Equation of 4.3.1. part 1A Transposed is:

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

where: Threshold = 3 for 1g SAR body
        F = Frequency in GHz (2.4GHz)
        D = Separation distance in mm (50mm)

Threshold in mW for 2.4 GHz @ 50mm = 96.8246 mW.
Threshold in mW for 2.48 GHz @ 50mm = 95.2500 mW.

Threshold in mW for 2.4 GHz and 2.48 GHz @ 200mm is based on equation above and 4.3.1. part b)2) (excerpt below)

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:

2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance –50 mm)·10]} mW, for > 1500 MHz and ≤6 GHz

2.4 GHz = 96.8246(mW) + ((200-50)*10) = **1596.82 mW.**
2.48 GHz = 95.2500(mW) + ((200-50)*10) = **1595.25 mW.**

Both Radiated and conducted power measurements were made, with conducted power reporting higher results, therefore, conducted power is used for this evaluation. Measured conducted values for the EUT were worst case: **8.04 dBm (6.37 mW)** Peak on the middle channel 2440 MHz.
This shows the EUT is excluded from RF Exposure / SAR testing requirements before even any duty cycle (source-based time averaged maximum conducted power) conditions are applied. Maximum duty cycle specified by the client is 10%.

This calculation was prepared by Daniel Sims of Kiwa Electrical Compliance, Acting as Agent towards FCC certification.

Date: 17th December 2024

Signed: (Radio Approvals Manager)