

# FCC SAR Exemption per KDB 447498

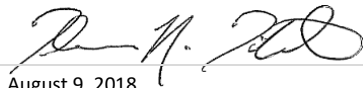
## KDB 447498 D01 General RF Exposure Guidance v05r02 (February 7, 2014)

### 1. Declaration of RF exposure compliance for exemption from routine evaluation limits

FCC ID:	NPI28738
Model number:	HUB NO.4
Manufacturer:	Lego System A/S
4.3.1. Standalone SAR test exclusion considerations:	<p>During normal operation, user extremities can come within 20 cm of the internal antenna and therefore product is considered as "Portable".</p> <p>The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at Test separation distances <math>\leq 50</math> mm are determined by:  <math display="block">[(\text{max. power of channel, including tune-up tolerance, mW}) \div (\text{min. test separation distance, mm})] \times \sqrt{f(\text{GHz})} \leq 3.0</math> for 1-g SAR and <math>\leq 7.5</math> for 10-g extremity SAR, where</p> <p>f(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</p> <p>The test exclusions are applicable only when the minimum test separation distance is <math>\leq 50</math> mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is <math>&lt; 5</math> mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion</p> <p>Tuneup tolerance is +/- 3dB. Tuning is set by firmware configuration.</p> <p>Calculation based on the above formula:            Separation Distance = 5 mm            Conducted Output Power = -0.88 dBm = 0.817 mW            EIRP = -0.88 + (2.1 dBi) = 1.2 dBm            Absolute eirp including tuneup tolerance = 1.2 dBm + 3 dB = 4.2 dBm (2.6 mW)            Frequency = 2440 MHz            Calculation = <math>(3 \div 5) \times \sqrt{2.44} = 0.9 &lt; 3</math>            The calculation is below the threshold, therefore the product exempt from the SAR test requirements</p>

### 2. Attestation

ATTESTATION: I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned departmental standard(s), and that the radio equipment identified in this application has been subject to all applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

Signature:	
Date:	August 9, 2018
Name:	Tom Tidwell