

FCC SAR Exemption per KDB 447498

KDB 447498 D01 General RF Exposure Guidance v06 (October 23, 2015)

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

FCC ID:	NPI19071
Model number:	19071
Manufacturer:	Lego Systems, A/S
4.3.1. Standalone SAR test exclusion considerations:	During normal operation, user extremities can come within 20 cm of the internal antenna and therefore product is considered as "Portable". The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at Test separation distances ≤ 50 mm are determined by: $[(\text{max. power of channel, including tune-up tolerance, mW}) \div (\text{min. test separation distance, mm})] \times [\sqrt{F(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$ 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 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 according to 5) in section 4.1 is applied to determine SAR test exclusion Calculation based on the above formula: • Separation Distance = 5 mm • Conducted Output Power (from test report) = -23 dBm = 1 mW • Peak antenna gain (from antenna datasheet) = 3 dBi • Tuneup tolerance = 3 dB • EIRP including tuneup tolerance = +2.77 dBm + 3 dBi = 5.77 dBm (3.8 mW) • Frequency = 2.45 GHz • Calculation = $(4 \div 5) \times \sqrt{2.45} = 1.3$ which is less than the 1-g SAR threshold of 3.0. The calculation is below both the 1-g and 10-g SAR threshold, therefore the product exempt from the SAR test requirements.

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:	January 11, 2016
Name:	Tom Tidwell