

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:	EZSG7857
Product Marketing Name (PMN)	915MHz Remote Start Handheld Key fob
Model number:	G7857V
Manufacturer:	VOXX DEI Canada Ltd.
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 ≤ 50 mm are determined by:</p> $[(\text{max. power of channel, including tune-up tolerance, mW}) \div (\text{min. test separation distance, mm})] \times [\sqrt{F(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR, where}$ <ul style="list-style-type: none"> 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>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 section 4.1(f) is applied to determine SAR test exclusion</p> <p>As per customer, the G7857 is a hand held key fob. The separation distance between the user and the antenna is 2 cm. At 907 MHz, The exemption limit for extremity is: $63 \text{ mW} * 2.5 = 157.5 \text{ mW}$</p> <p>Measured conducted output power: 21.10 dBm, Antenna gain: 3 dBi</p> $\text{EIRP [W]} = 10^{(\text{Power [dBm]} + \text{Antenna gain [dBi]})/10} = 10^{(21.10 + 3)/10} = 257.0 \text{ mW,}$ <p>As per KDB 447498 section 6.3, EUT is considered as devices that transmit only intermittently in data mode, without any voice support. According to EUT's operational description, in worst-case, the HHU sends user's commands (99.6ms) to the IVU and listen to the IVU confirmation (100.4ms).</p> <p>With a 50 % transmission duty factor as conservative evaluation, Average EIRP = $257.0 * 50\% = 128.5 \text{ mW}$</p> <p>The calculation is below the threshold, therefore the product exempt from the SAR test requirements.</p> <p>Margin for compliance: 29.0 mW</p> <p>As per equation :</p> $[(\text{max. power of channel, including tune-up tolerance, mW}) \div (\text{min. test separation distance, mm})] \times [\sqrt{F(\text{GHz})}] = (129 \text{ mW} \div 20 \text{ mm}) \times \sqrt{0.907 \text{ GHz}} = 6.1 \text{ which is } \leq 7.5$

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:	March 25, 2021
Name:	Redwanul Rasel, EMC Specialist