

# RF Exposure Report

**Project Number: 4602458****Proposal Number: 10607****Report Number: 4602458EMC03****Revision Level: 0****Client: HavenLock Inc.****Equipment Under Test: Electrically Operated Security Door Lock****PMN: Haven Connect Z****Model: HL1-CNT-001-Z****FCC ID: 2ARFQHL1CNT001Z****Applicable Standards: 47 CFR §§ 2.1093;****FCC KDB 447498 D01 General RF Exposure Guidance v06****Report issued on: 28 April 2020****Test Result: SAR Evaluation Exempt**

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*Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.*

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## 1 General Information

### 1.1 Client Information

Name: HavenLock Inc.  
Address: 188 Front Street Suite 116-112  
City, State, Zip, Country: Franklin, TN 37064

### 1.2 Test Laboratory

Name: SGS North America, Inc.  
Address: 620 Old Peachtree Road NW, Suite 100  
City, State, Zip, Country: Suwanee, GA 30024, USA

Accrediting Body: A2LA  
Type of lab: Testing Laboratory  
Certificate Number: 3212.01

### 1.3 General Information of EUT

Product Marketing Name (PMN): Haven Connect Z  
Model Number (HVIN): HL1-CNT-001-Z  
Electrically Identical (HVIN): HL1-CNT-001-LDZ  
Serial Number: 5244

Rated Voltage: 100-240Vac, 50/60Hz

### 1.4 Transmitter Specification

Modulation Techniques: GFSK (Z Wave)  
Frequency Range: 908.4 – 908.4 MHz  
Antenna Type: PCB Trace  
Antenna Frequency Range: 902 – 928 MHz

### 1.5 Operating Modes and Conditions

Highest Reported Power levels were utilized for all calculations.

## 2 RF Exposure

The maximum output power has been used to demonstrate compliance.

### 447498 D01 General RF Exposure Guidance v06

SAR test exclusion calculations

Section 4.3: General SAR test exclusion guidance / Section 4.3.1: Standalone SAR test exclusion considerations

	Input	Select Units
Max Power:	-4.1	dBm
Min separation distance:	5	mm
Frequency, f:	908.4	MHz

Value reference Number	Values used for Calculation	Reference number definition
v1	0 mW	[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW
v2	5 mm	[min. test separation distance, mm] 'Rounded to nearest mm
v3	0.953	[f(GHz)]

- a) For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:  

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})]}{\sqrt{f(\text{GHz})}} \leq 3.0$$
 for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR,

1g Exclusion Threshold:	15.7	mW	$\leq 3 * v2 / v3$
10g Exclusion Threshold:	39.3	mW	$\leq 7.5 * v2 / v3$

Conclusions:	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Body applications
	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Extremity applications

### 3 Revision History

Revision Level	Description of changes	Revision Date
DRAFT	--	
0	Initial release	28 April 2020