



RF Exposure Analysis

Product: NET2 PaxLock

FCC ID: USE900120

Analysis for FCC standalone SAR evaluation

Standalone SAR test exclusion considerations are defined in KDB 447498D01 (v05r02) Chapter 4.3.1 where the 1-g head or body and 10-g extremity SAR exclusion threshold is defined by the following formula:

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

- 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

For Net2 PaxLock, the maximum radiated power is 0.27 dBm (1.0641 mW) EIRP, including tune-up tolerance. Appendix A (below) shows the cross sectional view of the reader module. The nominal distance between the PCB chip antenna and the front surface of the enclosure is 10.30mm.

Applying the above data to the given formula, the following result for assessment against the ≤ 3.0 mm limit is achieved:

$$\begin{aligned} (1 \text{ mW} / 10 \text{ mm}) \times \sqrt{2.475 \text{ GHz}} &\leq 3.0 \\ 0.1 \times 1.5732 &= 0.157 \end{aligned}$$

Result rounded to 0.2 for comparison.

Therefore the resultant value of 0.2 is < 3.0 limit for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, meaning RF exposure exemption (head, body and extremity) is applicable in the use of this product.

Appendix A – Reader module views

REV.	DESCRIPTION	DATE	ENGINEER	EC NUMBER
-J	UPDATED PART NUMBER AND DRAWING VIEWS	24/09/2017		
-K	ADDED GAUDEM	19/11/2017		
4	UPDATED BOM TABLE TO INCLUDE CNC-146 POGO PIN	26/11/2017		

DETAIL A
SCALE 2 : 1

PEEL OFF PAPER BACKING ON ILS-MK010 AND ADHERE MIFARE LOCATING AROUND PIN ON EPL-MK037

PEEL OFF PAPER BACKING AND ADHERE

NOTES:

1. ALL SCREWS TO BE FLUSH OR SUBFLUSH.
2. TORQUE SETTINGS ARE TO BE ADHERED TO.
3. ALL VISIBLE FACETS TO BE FREE OF SCRATCHES, BLEMISHES AND TOOLING MARKS.
4. TO BE SUPPLIED FREE OF CORROSION AND OXIDATION.
5. ALL DIMENSIONS SHOWN WITH \varnothing ARE TO BE INSPECTION DIMENSIONS.
6. COMPONENTS TO COMPLY WITH REACH & RoHS2.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	ISSUE:
1	z80-mk040	MKII PAXLOCK - INSECURE PCB MODULE LID ASSY	1	 MKII PAXLOCK - INSECURE PCB MODULE ASSY z90-mk010 A2 IF IN DOUBT - ASK
2	z80-mk047	MKI PAXLOCK - HITAG COIL ASSY	1	
3	aaa-mk051	MKII PAXLOCK - PCB FOAM SPACER	1	
4	fa3-08c	M3 x 8mm CSK Machine screw	2	
5	z80-mk079	MKII Paxlock - Battery PCB base assy	1	
6	q-p24	PCB Base Board	1	
7	cnc-1945	POGO PIN	1	

