



RF Exposure Analysis

Product: Net2 proximity MIFARE® reader - P50

FCC ID: USE353467V2

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:

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

- 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 proximity MIFARE® reader - P50, the maximum radiated power is 73.21 dBuV/m @ 3m (0.00628mW) 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 2mm.

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

$$(0.00628\text{mW} / 2 \text{ mm}) \times \sqrt{2.475 \text{ GHz}} \leq 3.0$$
$$0.00314 \times 1.5732 = 0.00493 \text{ rounded up to } 0.005$$

Therefore, the resultant value of 0.005 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

ISSUE	DESCRIPTION	DATE
B	PCOQ PIN REPLACEMENT ADDED rrs-5605	25/09/2009
C	NON CONDUCTIVE RESIN ADDED AND COIL REPLACED: RC01703	12/08/2015
D	ITEM 4 PICTORIAL UPDATE	27/04/2014



