Datasheet

# RFID13 R01

13.56 MHz Multistandard RFID transceiver module for Zypad WL1x1x

## Introduction

The module is a multistandard RFID transceiver for use with the Zypad WL1x1x wearable computer family. It works at 13.56 MHz and supports the following standards: ISO 14443A, ISO 14443B and ISO 15693.
The interface with the Zypad main unit is made through the serial port COM2.

## FCC information and compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference

(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Instruction manual for FCC ID labeling

Module type: <RFID Transceiver Module> RFID 13
FCC-ID : UKMRFID13

This intends to inform you how to specify the FCC ID of our <RFID Transceiver Module> Module RFID13 on your final product.

Based on the Public Notice from FCC, the product into which the our transmitter module is installed must display a label referring to the enclosed module.

Example of label: “Contains FCC ID: UKMRFID13”

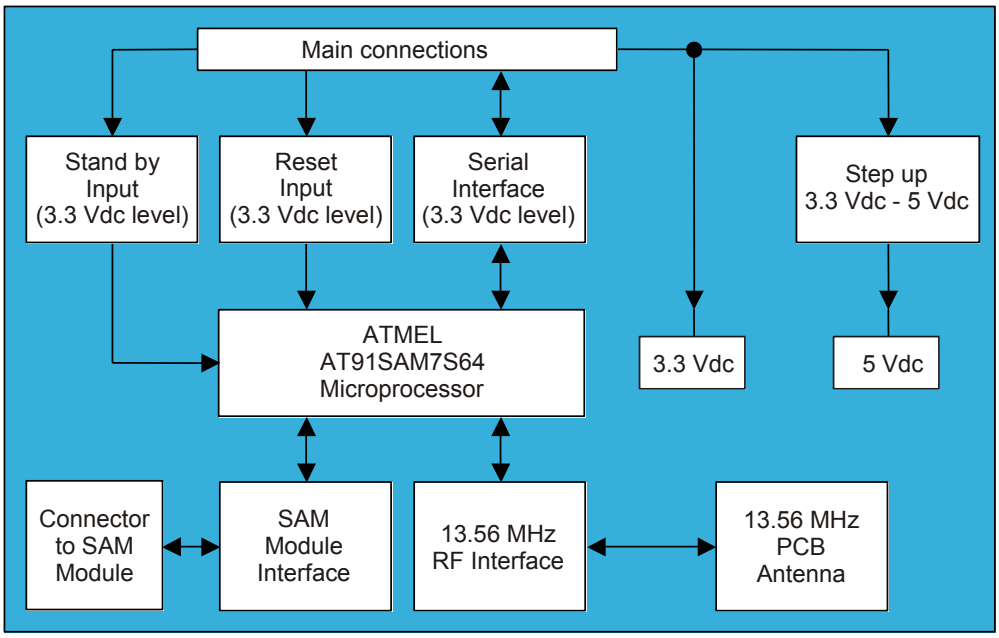
Main features

- SMT (Surface Mount Technology) connections
- Firmware upgradeable via serial interface
- Possibility to connect an external SAM (Secure Access Module)

## Electrical features

| Parameter | Value | Notes |
|---|---|---|
| **Input power supply** | +3.3 Vdc @ 100mA (max) | |
| **Serial interface line** | +3.3 Vdc | Serial communication characteristics:<br>Bit per second: 115200<br>Parity: None<br>Data bits: 8<br>Stop bits: 1 |
| **Stand by input line** | +3.3 Vdc | Active low signal |
| **Hardware reset input line** | +3.3 Vdc | Active low signal |

# *Block diagram*

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# LMS-Zypad-1x1x

13.56 MHz Multistandard RFID transceiver for Zypad WL1x1x

## Functional description

The device reads and writes transponders at a frequency of 13.56 MHz and supports the ISO 14443A, ISO14443B and ISO 15693 standards.

The microprocessor is an ARM ATMEL AT91SAM7S64.
The RF interface is based on the PHILIPS CLRC632 'Multiple contactless reader IC' controller.
The SAM interface is formed by the ON NCN4555 'SIM card power supply / level translator' circuit.

The power voltage is 3.3 Vdc and is used to supply the digital devices (such as: microprocessor and I/O). An internal MAX1724 DC/DC step-up converter allows you to obtain a +5V voltage to supply RF devices. A 1.8 Vdc voltage regulator is integrated inside the microprocessor and supplies the ARM core.

The RF antenna is integrated on the PCB (Printed Circuit Board) of the module.

The reset signal operates at a hardware level.
The stand by signal is managed at a firmware level.

The following table lists the supported tags:

| Tag | Made by | Standard | Uid length |
|---|---|---|---|
| MIFARE 1k | Philips | 14443A | 4 bytes |
| MIFARE 4k | Philips | 14443A | 4 bytes |
| MIFARE ultralight | Philips | 14443A | 7 bytes |
| ICODE2 | Philips | 15693 | 8 bytes |
| TAG-IT HF-I | Texas | 15693 | 8 bytes |
| EM4135 | MEM | 15693 | 8 bytes |
| LRI64 / LRI512 | ST | 15693 | 8 bytes |
| SR176 | ST | 14443B | 8 bytes |

The following table lists the interfacing signals:

| Signal | Description | WL1x1x signal |
|---|---|---|
| +3.3 Vdc | Input power supply | VDD |
| GND | Ground signal | GND |
| IN1 | Stand by input (active low signal) | GPIO |
| IN2 | Reset input (active low signal) | RESET |
| GND | Ground signal | GND |
| RX | Serial Input (3.3 Vdc line) | TX |
| TX | Serial Output (3.3 Vdc line) | RX |