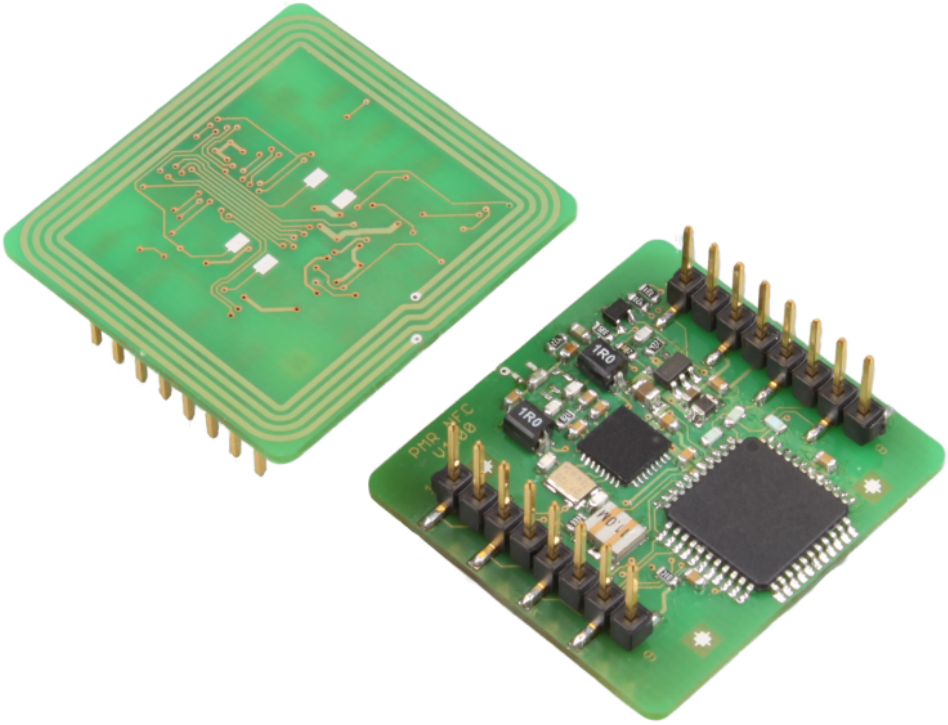
# TWN4

# MultiTech Mini

DocRev9, November 7, 2022



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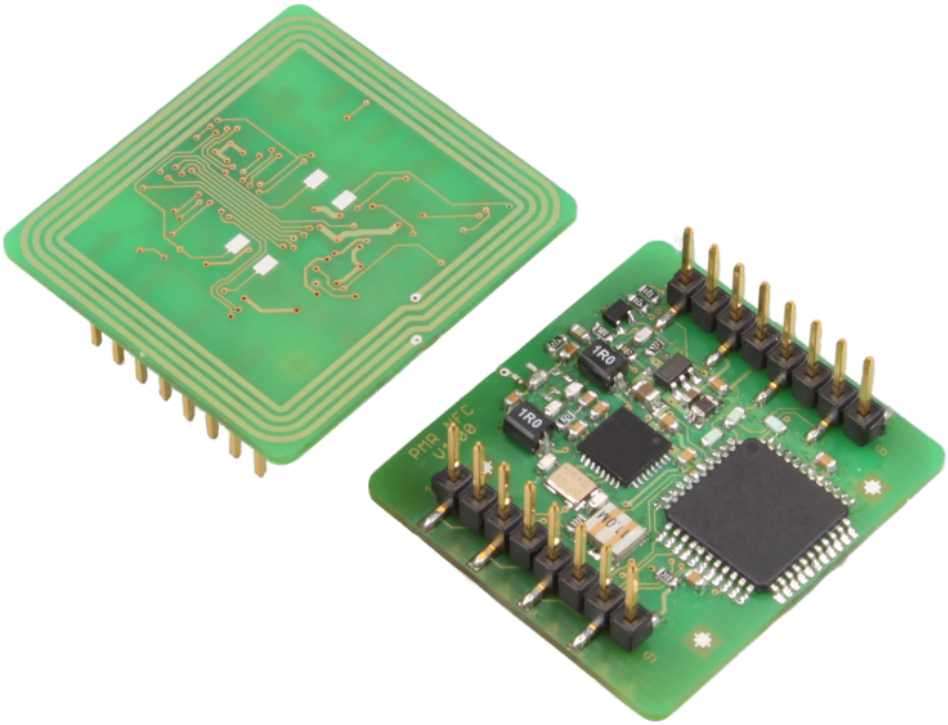
# Contents

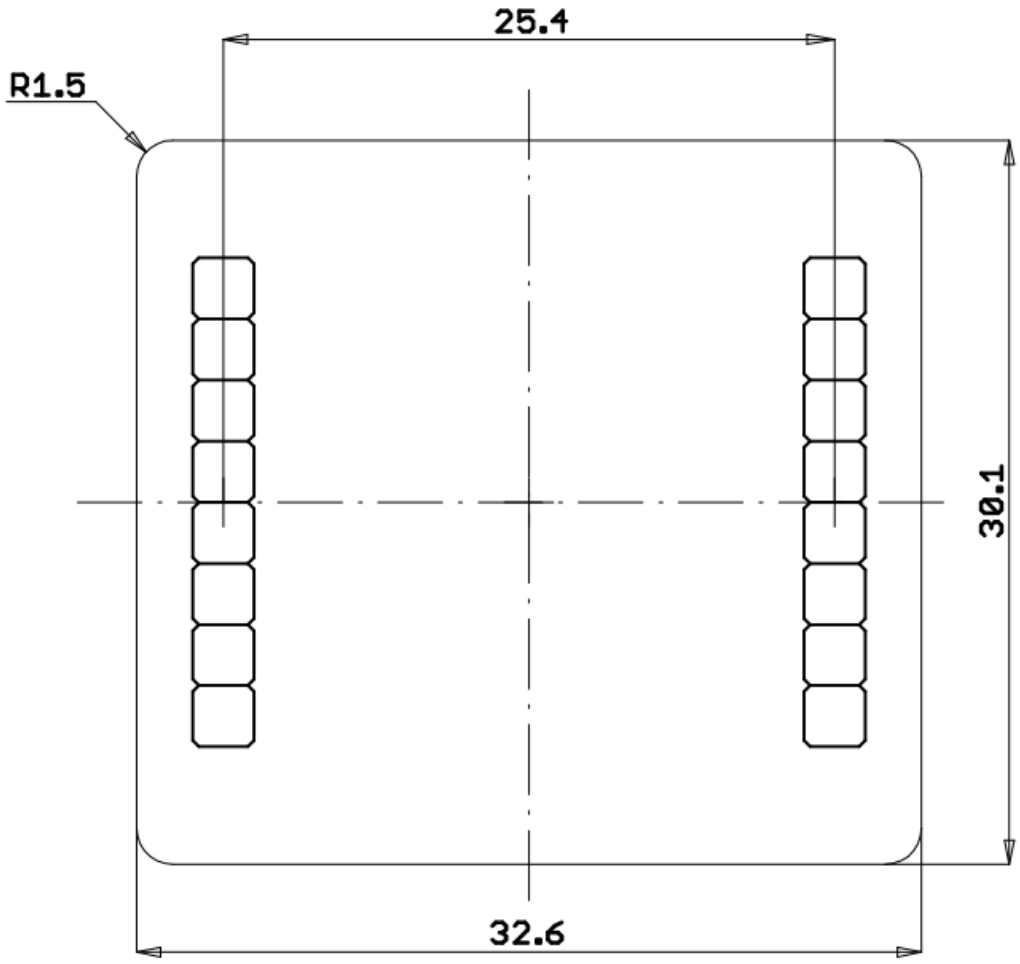
# 1 Introduction

TWN4 MultiTech Mini is a module to be integrated on custom PCB. It has a built-in HF antenna and subset of IOs compared to TWN4 Core Module. TWN4 Mini Reader is currently available as version TWN4 Mini Reader MIFARE NFC.



# 2 Dimensions

Below are the dimensions of the TWN4 MultiTech Mini. All dimensions in mm unless otherwise stated.



# 3 Connectors

The TWN4 Mini Reader has two on-board single row headers with 8 positions each. The pins of these two connectors are together enumerated from 1 to 16.

- Single row header
- Pitch 2.54mm
- Pin shape square 0.635mm

| Pin | Pin Name | Function |
|---|---|---|
| 1 | RESET- | Low active TTL input with internal pull-up resistor for hard reset. |
| 2 | PWRDWN- | Low active TTL input with internal pull-up resistor for turning off the voltage regulator. |
| 3 | GND | Ground |
| 4 | VIN | Unregulated input to on-board voltage regulator |
| 5 | RXD- (USB: D+) | Low active TTL input with internal pull-up resistor of asynchronous RXD to COM1. In case of USB version: USB Data+ |
| 6 | TXD- (USB: D-) | Low active TTL output (push/pull) of asynchronous TXD from COM1. In case of USB version: USB Data- |
| 7 | SCK | SCK from SPI host interface. |
| 8 | SS- | SS- from SPI host interface. |
| 9 | VCC | Internaly regulated 3.0V power supply. To be used for SAM1. |
| 10 | SAM_IO | I/O line for SAM1. |
| 11 | GPIO3 | GPIO3, I/O pin for general purposes. |
| 12 | GPIO2 | GPIO2, I/O pin for general purposes. |
| 13 | GPIO1 | GPIO1, I/O pin for general purposes. |
| 14 | GPIO0 | GPIO0, I/O pin for general purposes. |
| 15 | SAM_CLK | Clock output for SAM1 |
| 16 | SAM_RST | Reset output for SAM1 |

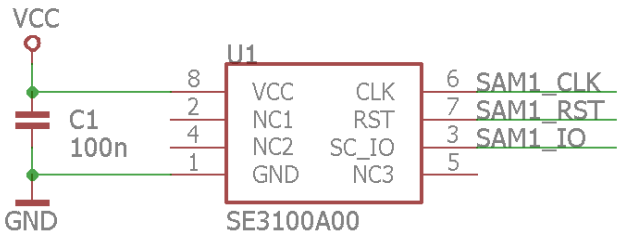
# 4 Using PI Option

To use the PI Option, e.g. to read the PAC bits from an iCLASS transponder, a SIO processor is needed. This can be either a SIO chip which is soldered directly on a PCB or a SAM card incorporating the SIO processor.

## 4.1 SIO Chip soldered on PCB

The SIO processor has to be added to the design of the mainboard. The chip shall be connected to the SAM-pins of the TWN4 Mini Reader.

Recommended schematic:

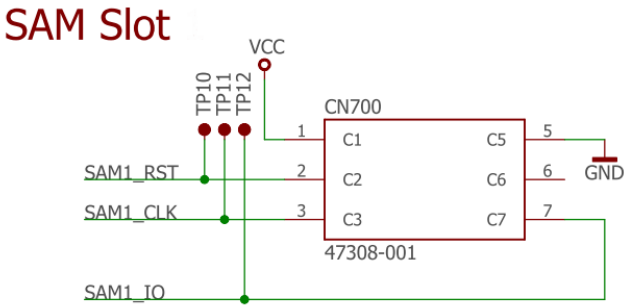



## 4.2 SAM Card Connection

A SAM socket has to be added to the design of the mainboard. The SAM socket shall be connected to the SAM-pins of the TWN4 Mini Reader.
Following SAM sockets are recommended:

- Molex 47388-2001
- Molex 47308-0001

Recommended schematic:



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