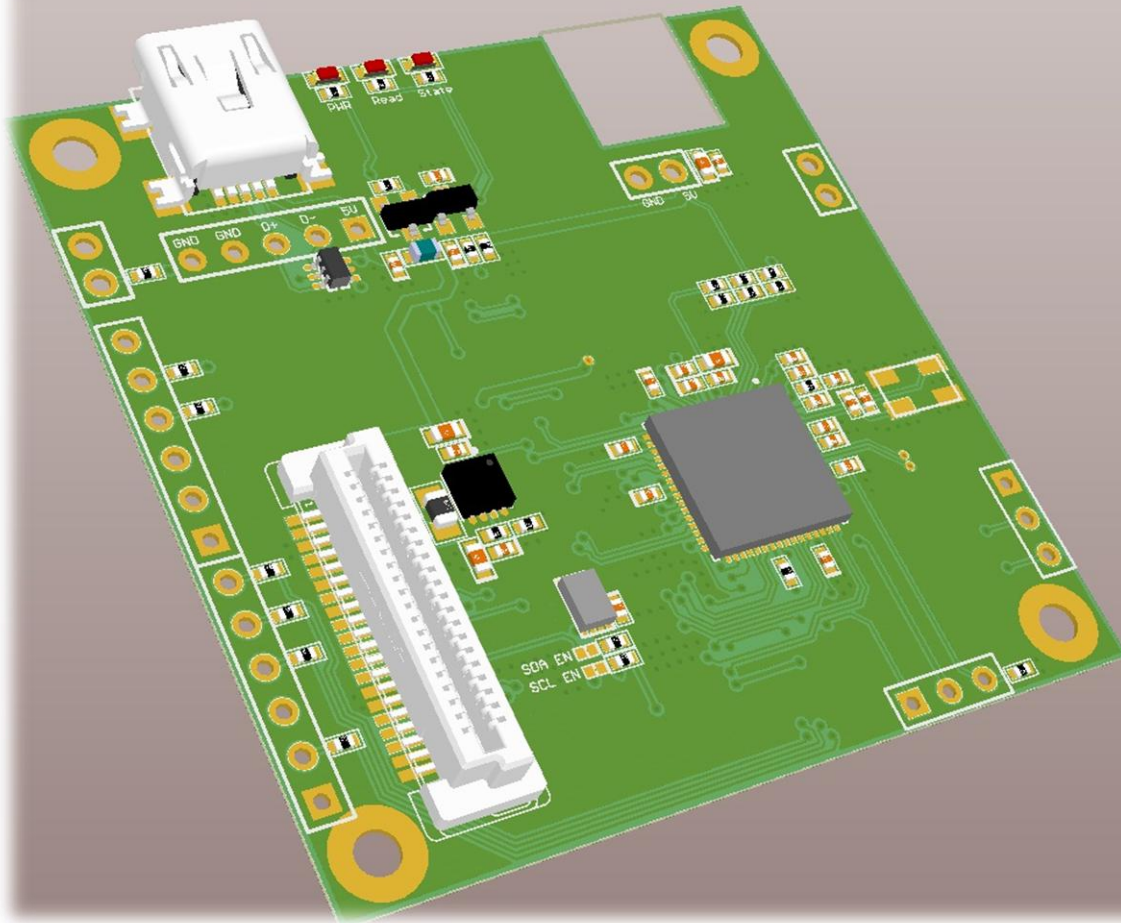


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PUR-CU-I_V5.1

HARDWARE DESCRIPTION



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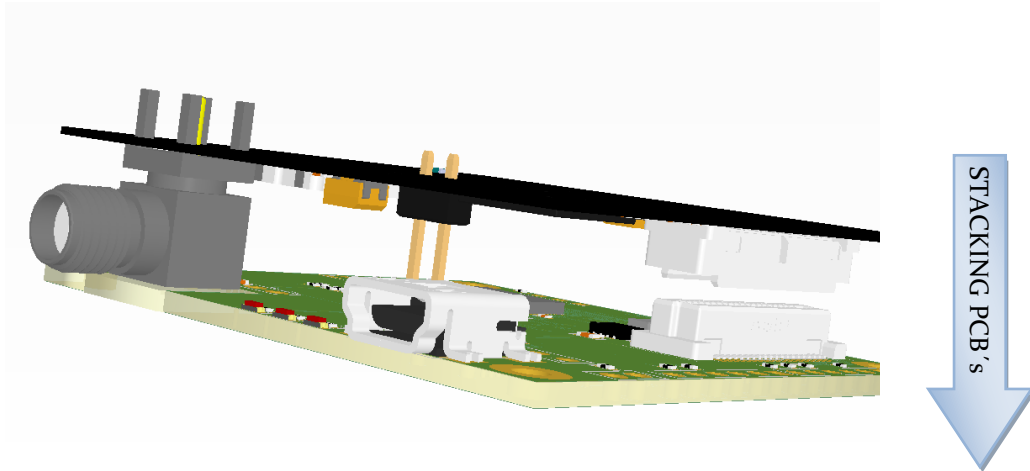
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1 Mechanical Description

1.1 Stack Concept

The PUR-CU-I is designed as stack up system. The PUR-CU-I always needs a Reader Module (RM) to work.

Additional to the required Reader Module there can be added communication modules like Ethernet.



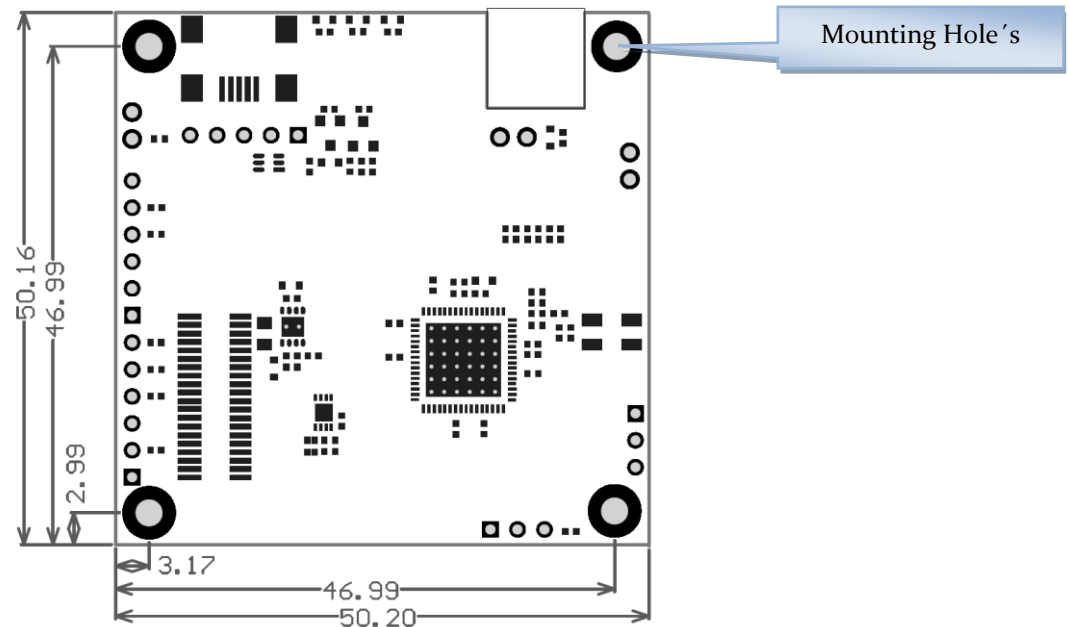
The stack height is 5mm.

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1.2 Mechanical Dimensions

1.2.1 Board Outline



1.2.2 Mounting Holes

Mounting Hole Parameter

The hole diameter = **2.5mm**

The holes are designed for M2.5 screws.

The pad around the hole has a diameter of 5mm and is connected to electrical ground of the PCB.

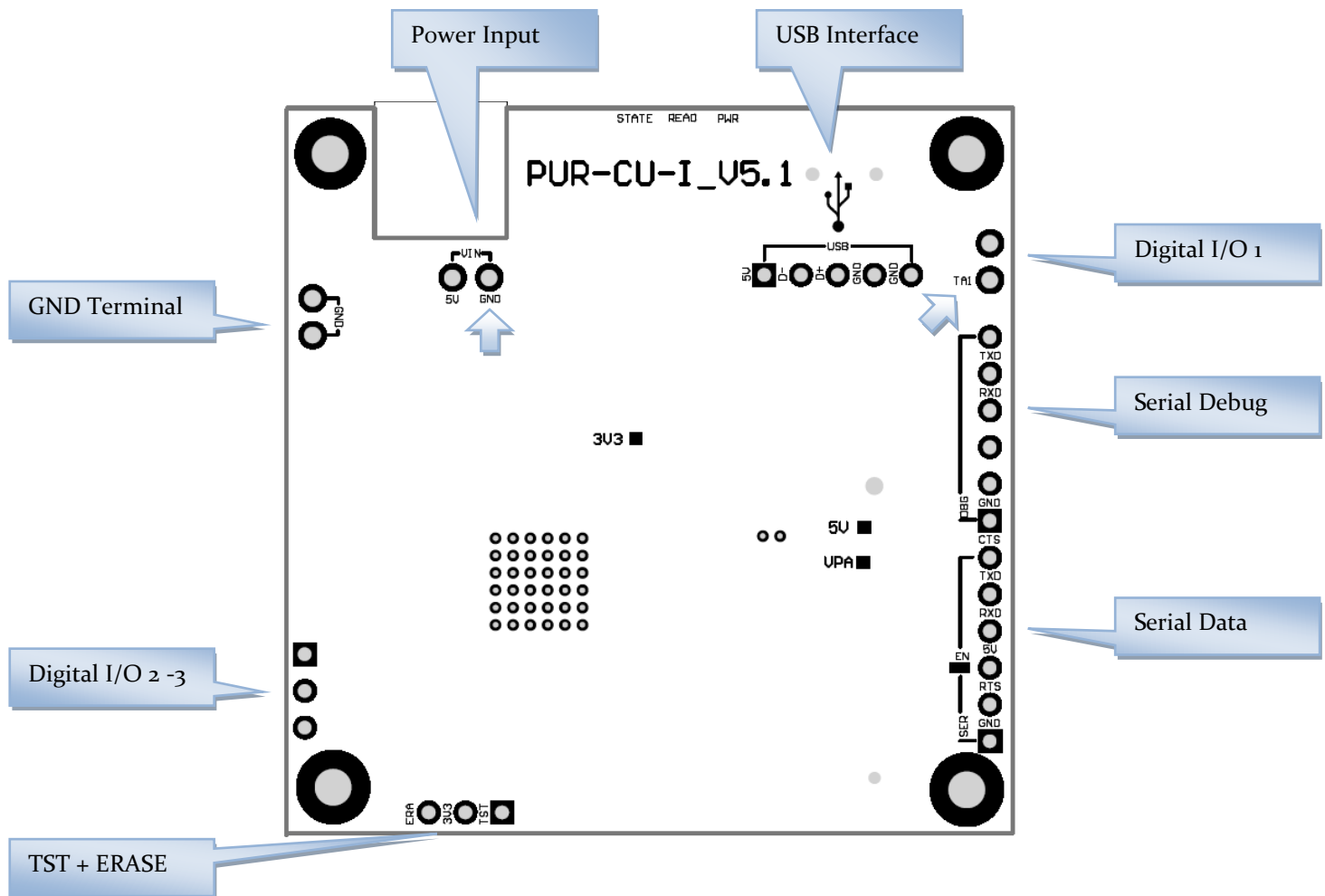
Mounting Hole Positions

Description	X-Pos.	Y-Pos.	Diameter	Hole Size
Hole 1	3.17 mm	3 mm	5 mm	2.5 mm
Hole 2	47 mm	3.17 mm	5 mm	2.5 mm
Hole 3	47 mm	47 mm	5 mm	2.5 mm
Hole 4	47 mm	3.17 mm	5 mm	2.5 mm

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1.2.3 Connector Pad Positions



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Serial Data Interface

Pin 1 is the rectangle pad.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	GND	1.58 mm	21.60 mm	1.5 mm	0.9 mm
2	RTS*	1.58 mm	24.14 mm	1.5 mm	0.9 mm
3	VCC**	1.58 mm	26.68 mm	1.5 mm	0.9 mm
4	RXD	1.58 mm	29.22 mm	1.5 mm	0.9 mm
5	TXD	1.58 mm	31.76 mm	1.5 mm	0.9 mm
6	CTS*	1.58 mm	34.30 mm	1.5 mm	0.9 mm

* Refer to the electrical description!!!

** To use this pin a separate hardware modification is required

Serial Debug Interface

Pin 1 is the rectangle pad.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	GND	1.58 mm	6.35 mm	1.5 mm	0.9 mm
2	NC	1.58 mm	8.89 mm	1.5 mm	0.9 mm
3	NC	1.58 mm	11.43 mm	1.5 mm	0.9 mm
4	RXD**	1.58 mm	13.97 mm	1.5 mm	0.9 mm
5	TXD**	1.58 mm	16.51 mm	1.5 mm	0.9 mm
6	NC	1.58 mm	19.05 mm	1.5 mm	0.9 mm

** Refer to the electrical description!!!

USB Interface

Pin 1 is the rectangle pad.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	VUSB	17.18 mm	38.60 mm	1.5 mm	0.9 mm
2	DM (-)	14.64 mm	38.60 mm	1.5 mm	0.9 mm
3	DP (+)	12.10 mm	38.60 mm	1.5 mm	0.9 mm
4	GND	9.56 mm	38.60 mm	1.5 mm	0.9 mm
5	GND	7.02 mm	38.60 mm	1.5 mm	0.9 mm

Power Input

PIN₁ is marked by the blue arrow.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	GND	36.19 mm	38.41 mm	1.8 mm	1.1 mm
2	VIN	38.73 mm	38.41 mm	1.8 mm	1.1 mm

GND Terminal

PIN₁ is not needed.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	GND	48.41 mm	36.98 mm	1.8 mm	1.1 mm
2	GND	48.41 mm	34.44 mm	1.8 mm	1.1 mm

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Digital I/O 1

PIN₁ is marked by the blue arrow.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	Digital I/O 1 *	1.58 mm	38.25 mm	1.8 mm	1.1 mm
2	GND	1.58 mm	40.79 mm	1.8 mm	1.1 mm

* Refer to the electrical description!!!

Digital I/O 2 – 3

Pin 1 is the Rectangle Pad.

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	GND	48.95 mm	12.37 mm	1.5 mm	0.9 mm
2	Digital I/O 2*	48.95 mm	9.83 mm	1.5 mm	0.9 mm
3	Digital I/O 3*	48.95 mm	7.29 mm	1.5 mm	0.9 mm

* Refer to the electrical description!!!

TST + ERASE

PIN	Description	X-Pos.	Y-Pos.	Diameter	Hole Size
1	TST *	35.30 mm	1.42 mm	1.5 mm	0.9 mm
2	3.3V	37.84 mm	1.42 mm	1.5 mm	0.9 mm
3	ERASE*	40.38 mm	1.42 mm	1.5 mm	0.9 mm

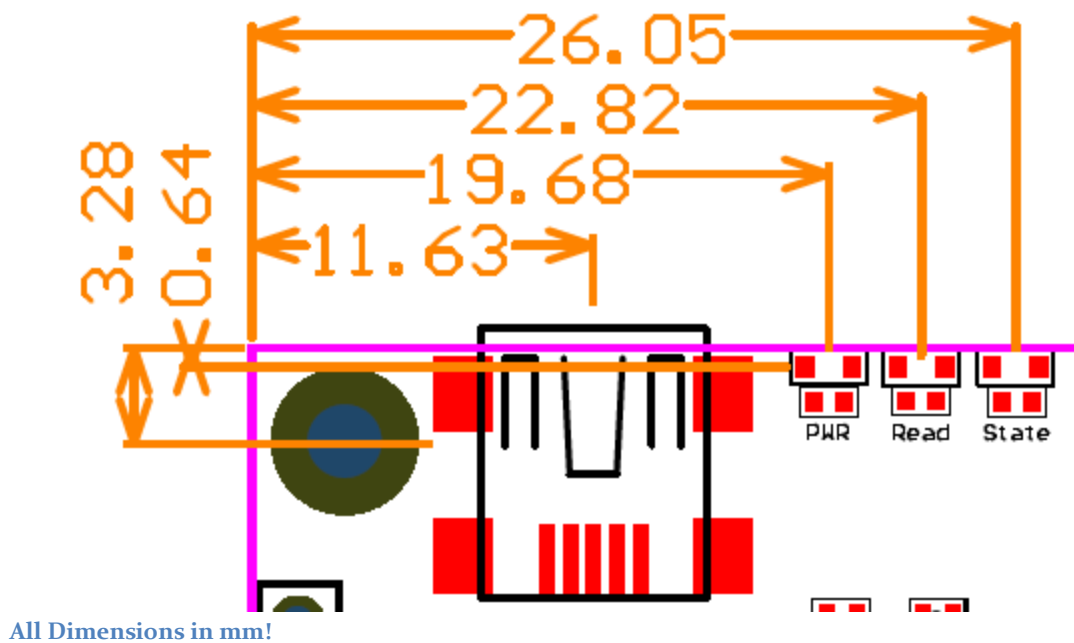
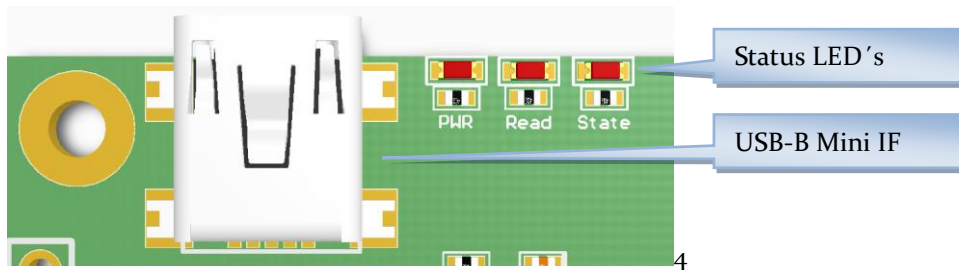
* Refer to the electrical description!!!

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1.3 Connectors and Status LED's

1.3.1 Position of USB Connector and LED's



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2 Electrical and Functional Description

2.1 Power

Input Voltage: 5 – 5.3 VDC
Input Current: up to 500mA *
** Dependent of the used Reader Module!*

2.2 I/O and Communication Interface Voltages

The I/O pins and communication pins are 5V (TTL) tolerant input's!

	Min	Max
Input Low-level Voltage	-0.3 V	0.8 V
Input High-level Voltage	2.0 V	5.5 V
Output High-level Voltage	2.9 V	3.3 V

2.3 Interfaces

2.3.1 USB Interface and the USB-B Mini Interface

The USB interface is a standard compliant interface with ESD protection.

To use the USB interface, the “U” version of the PUR-RMCU is needed.

2.3.2 Serial Interface

Serial data interface works with a speed of 115200 baud.
The pins DTS & CTS are not used in the standard firmware.

To use the serial interface, the “S” version of the PUR-RMCU is needed.

2.3.3 Serial Debug Interface

The serial debug interface is ONLY FOR INTERNAL TEST PURPOSES!
Connecting these pins can damage the module or lead to malfunction!

2.3.4 Digital I/O Pin's

The functions of the digital I/O pins are dependent of the used firmware and software application!

2.3.5 TST + EREASE Pin's

The TEST and EREASE pins are ONLY FOR INTERNAL TEST PURPOSES.
Connecting these pins can damage the module or lead to malfunction!

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2.4 LED's

2.4.1 PWR LED (Green)

The power LED indicates the correct powering of the system!

2.4.2 Read LED (Orange)

This LED indicates with a flash the successfully read of a tag.

2.4.3 State LED (RED)

The state Led indicates the state of the module!

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