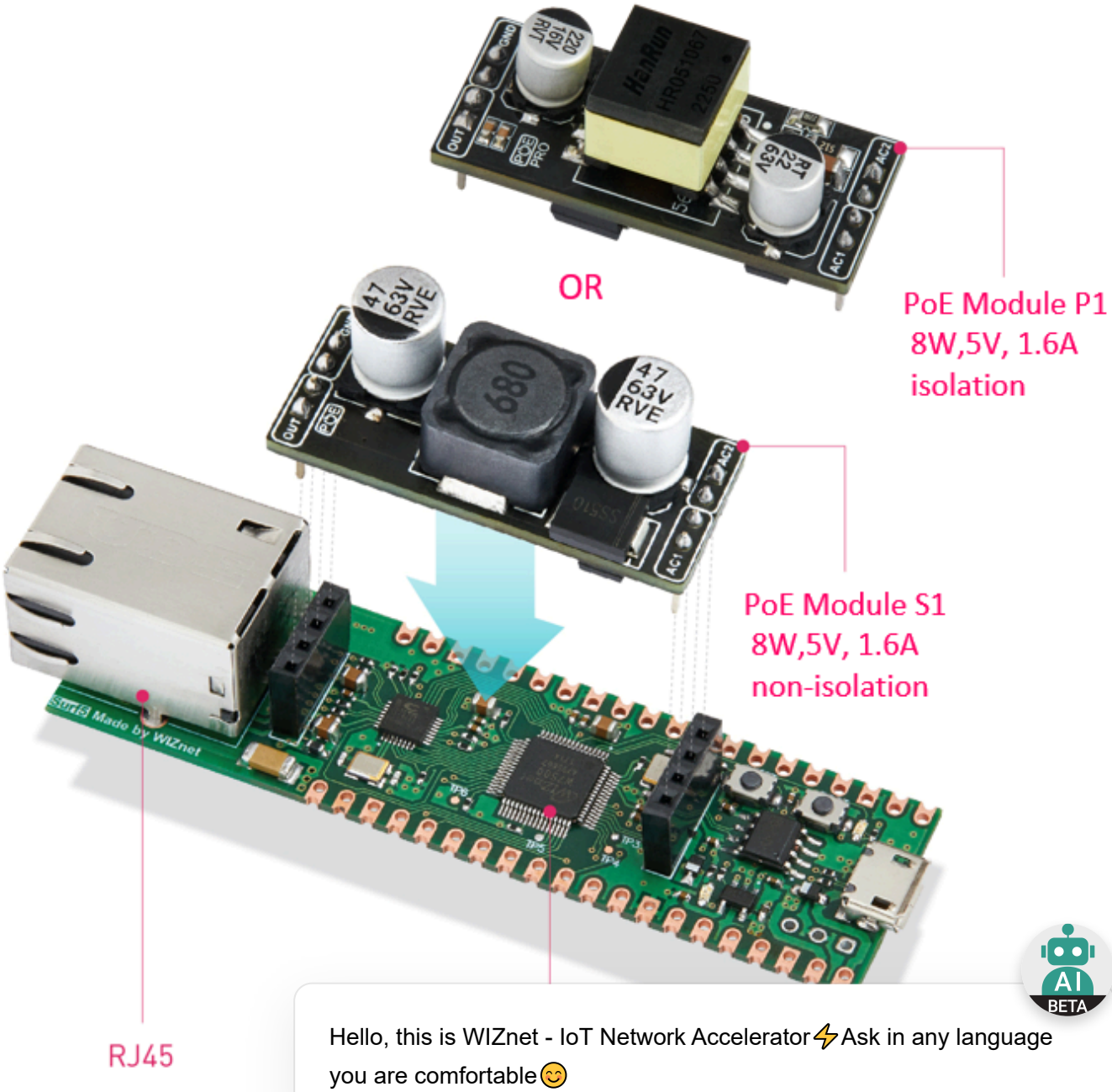
Surf 5

Overview

Surf 5 is a microcontroller evaluation board based on the W7500 that can be used with our PoE Modules.



You can get a detail infomation of our PoE here.

Revision history

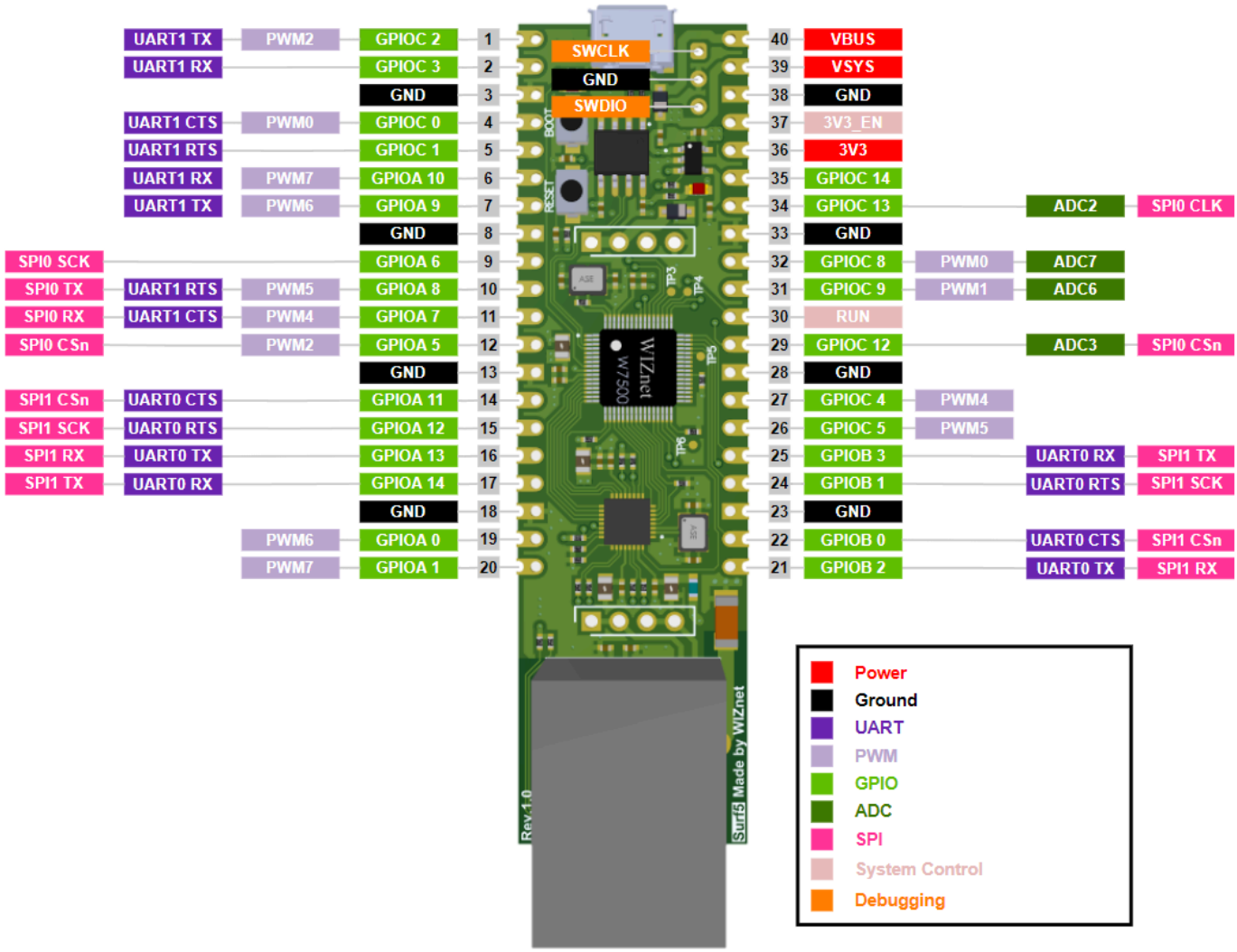
Date	Version	Description
Oct 2023	1.0	Initial board release

Features

- W7500 microcontroller
- Built-in RJ45
- Built-in LDO
- Built-in UART to USB

Hardware Specification

Pin-out v1.0



The pins below are fixed functions in surf 5

I/O	Pin Name	Description
O	PC_15	Connected to user LED
O	PC_10	UART2_TX connected USB to Serial IC
I	PC_11	UART2_RX connected USB to Serial IC
O	PA_03	SWCLK connected J3
IO	PA_04	SWDIO connected J3

Apart from GPIO and ground pins, there are 5 other pins on the main 40-pin interface:

Pin No.	Pin Name	
PIN40	VBUS	Micro-USB input voltage, connected to micro-USB port pin 1. Nominally 5V.

Pin No.	Pin Name	Description
PIN39	VSYS	Main system input voltage, which can vary in the allowed range 4.3V to 5.5V, and is used by the on-board LDO to generate the 3.3V .
PIN37	3V3_EN	Connects to the on-board LDO enable pin. To disable the 3.3V (which also de-power Surf 5), short this pin low.
PIN36	3V3	Main 3.3V supply to W7500 and IP101GRI, generated by the on-board LDO.
PIN30	RUN	Reset pin, To reset W7500, short this pin low.

Operation Condition

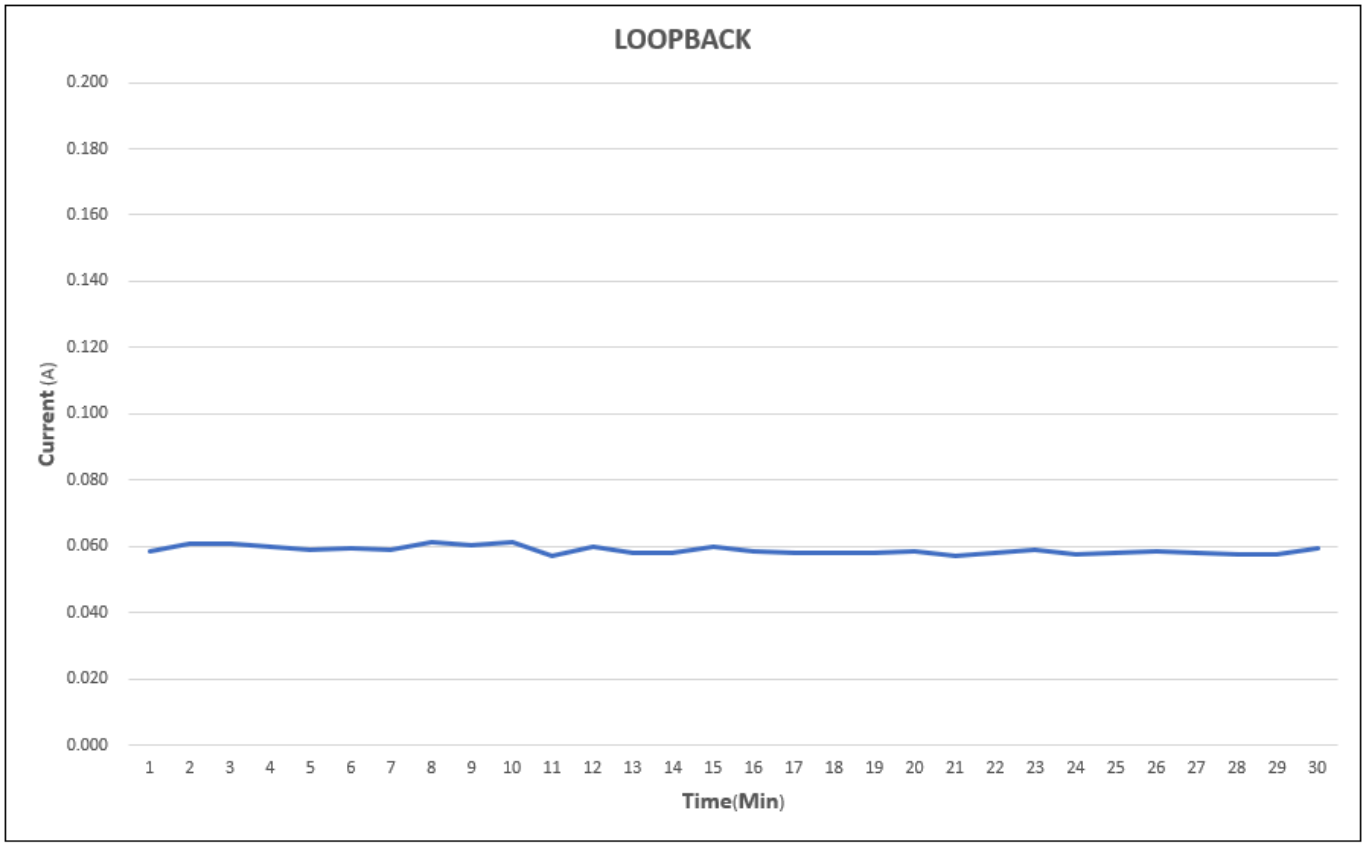
Item	Description
Operation Temperature MAX	70C (including self-heating)
Operation Temperature MIN	-20C
VBUS	DC 5V (+/- 10%)
VSYS Min	DC 4.3V
VSYS Max	DC 5.5V

Recommended maximum ambient temperature of operation is 50C.

Power Consumption

The power comsumption of Surf5 depends on how much user use the peripheral in what temperature environment.

We measured power consumption by running TCP Server Loopback example code in a 25 degree environment.



	Current(A)	Voltage(V)
AVR	0.059	5V (VBUS)
MIN	0.057	5V (VBUS)
MAX	0.061	5V (VBUS)

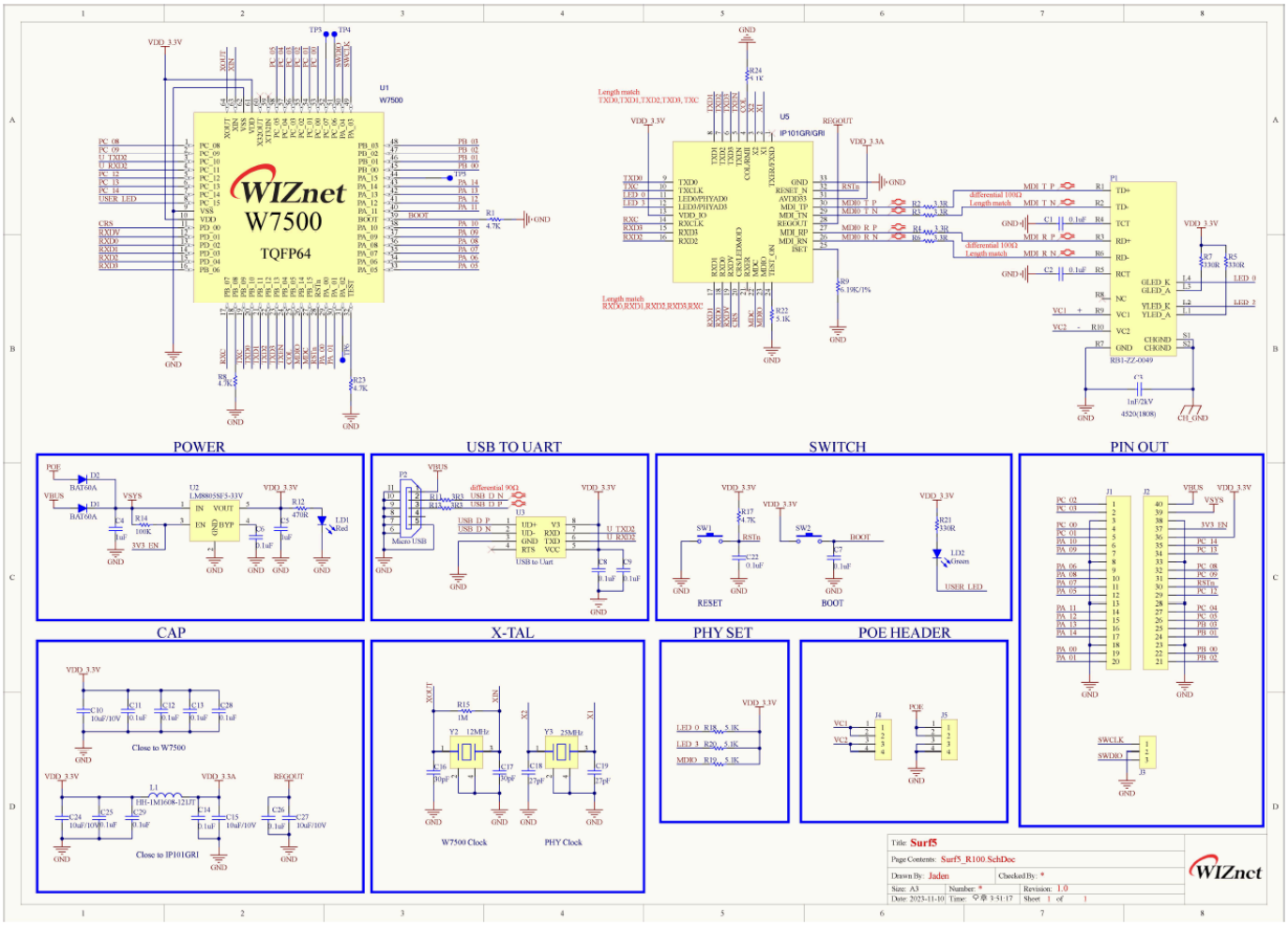
If you're planning to use a low-powered application, it's a good idea to test your code before mass production.

Technical Reference

W7500

- datasheet

Schematic V1.0



Schematic & Part list & 3D Step & Gerber File

- Go to Github

3D File

- 📥 Download

Dimension v1.0 (Unit : mm)

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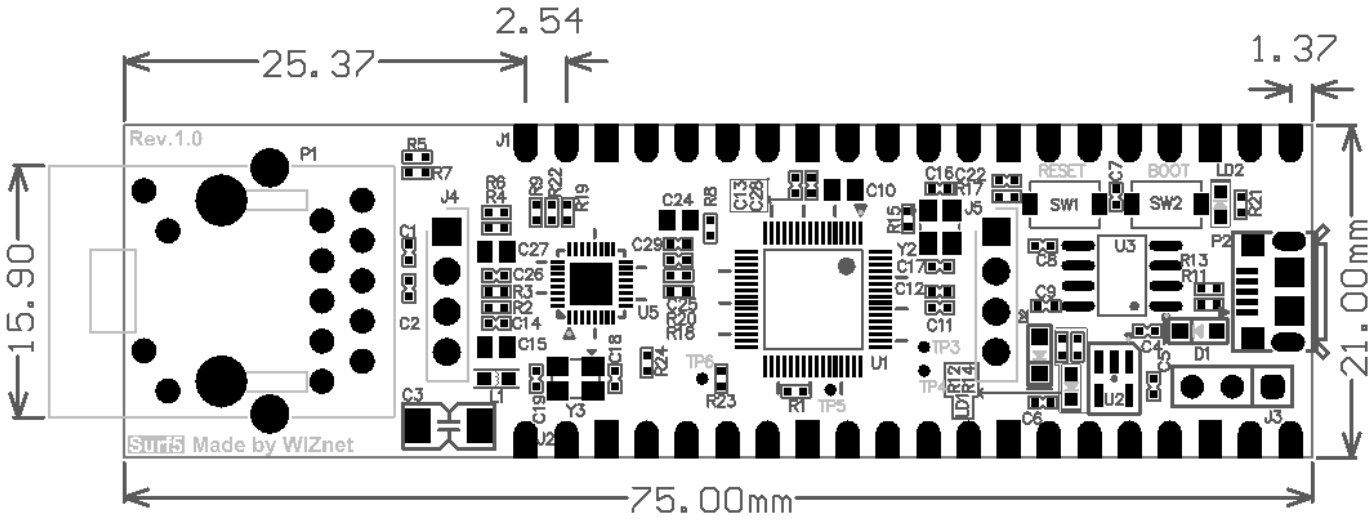

Surf 5 Project Files

- Surf 5 Github Link

Getting Started

- Getting Started

How to buy

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