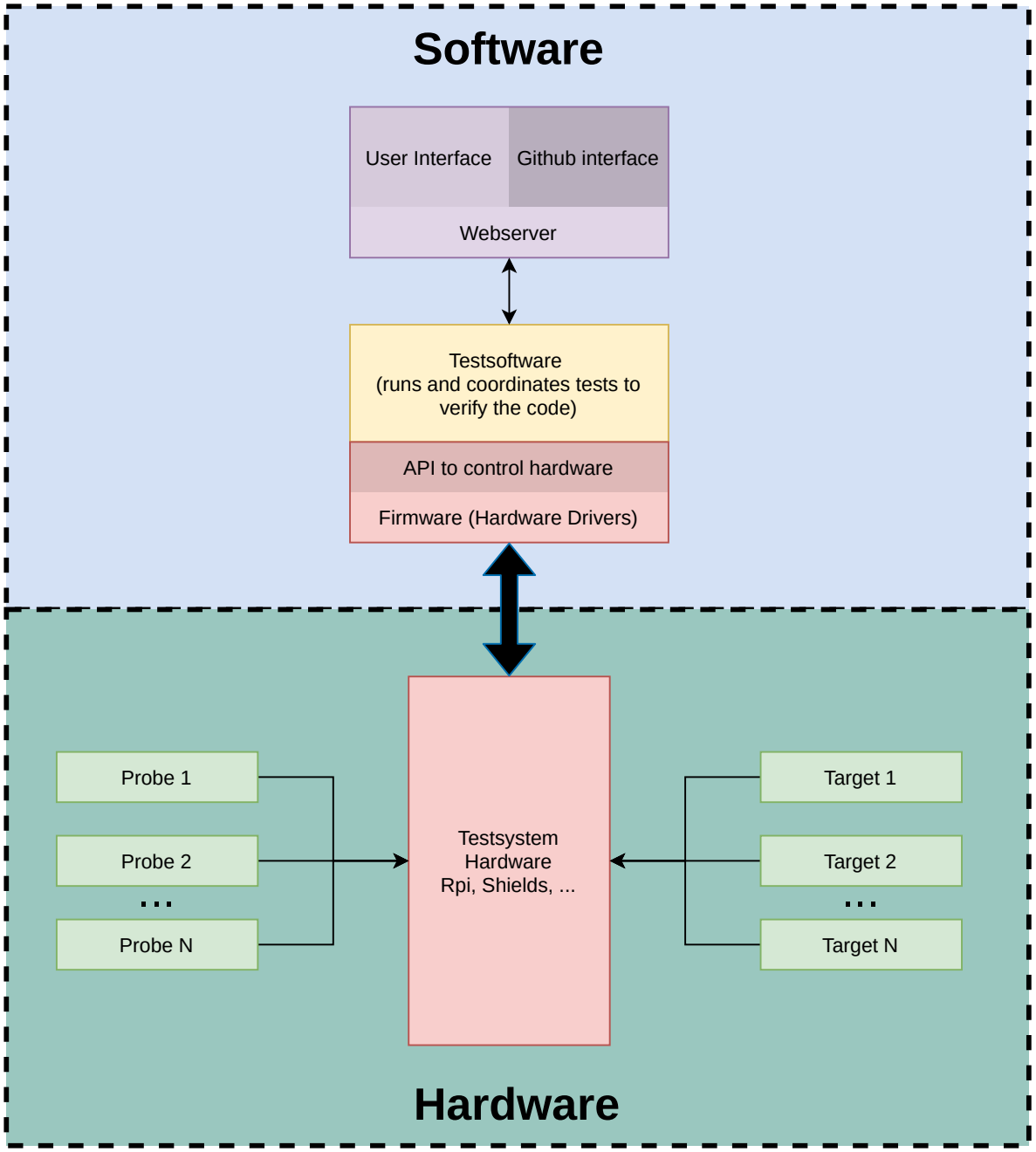
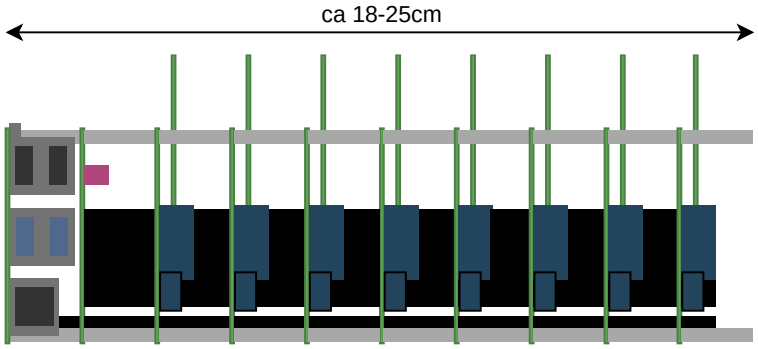

Software
User Interface
Github interface
Webserver
Testsoftware
(runs and coordinates tests to verify the code)
API to control hardware
Firmware (Hardware Drivers)
Probe 1
Probe 2
...
Probe N
Testsystem
Hardware
Rpi, Shields, ...
Target 1
Target 2
...
Target N
Hardware

Layout



1x
Raspberry Pi 4B

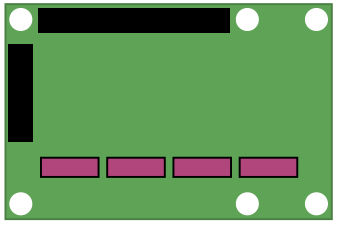
ETH **To user / To Cluster controller**

2x USB 3.0

2x USB 2.0

To probes

1x
Probe Shield

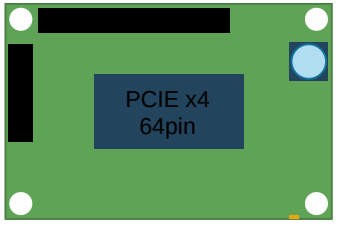


STDC 14 Connector

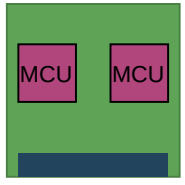
40 Pin 2.56mm GPIO Connector

20 Pin 2.56mm Probe Bus Connector

up to 8x
Target Stack Shield



Target Daugtherboard



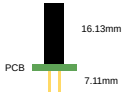
Max 4 MCU per board

PCIE x4
64pin

Connectors

Possible GPIO shield / Probe shield pass through connectors:

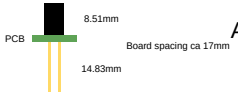
ESQ-120-34-L/T-D (40Pin)
ESQ-110-34-L/T-D (20Pin)



Price: ~8-10CHF

Availability: Non plated, ok

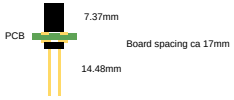
SSQ-120-04-L/T-D (40Pin)
SSQ-110-04-L/T-D (20Pin)



Price: ~3-6CHF

Availability: non plated ok

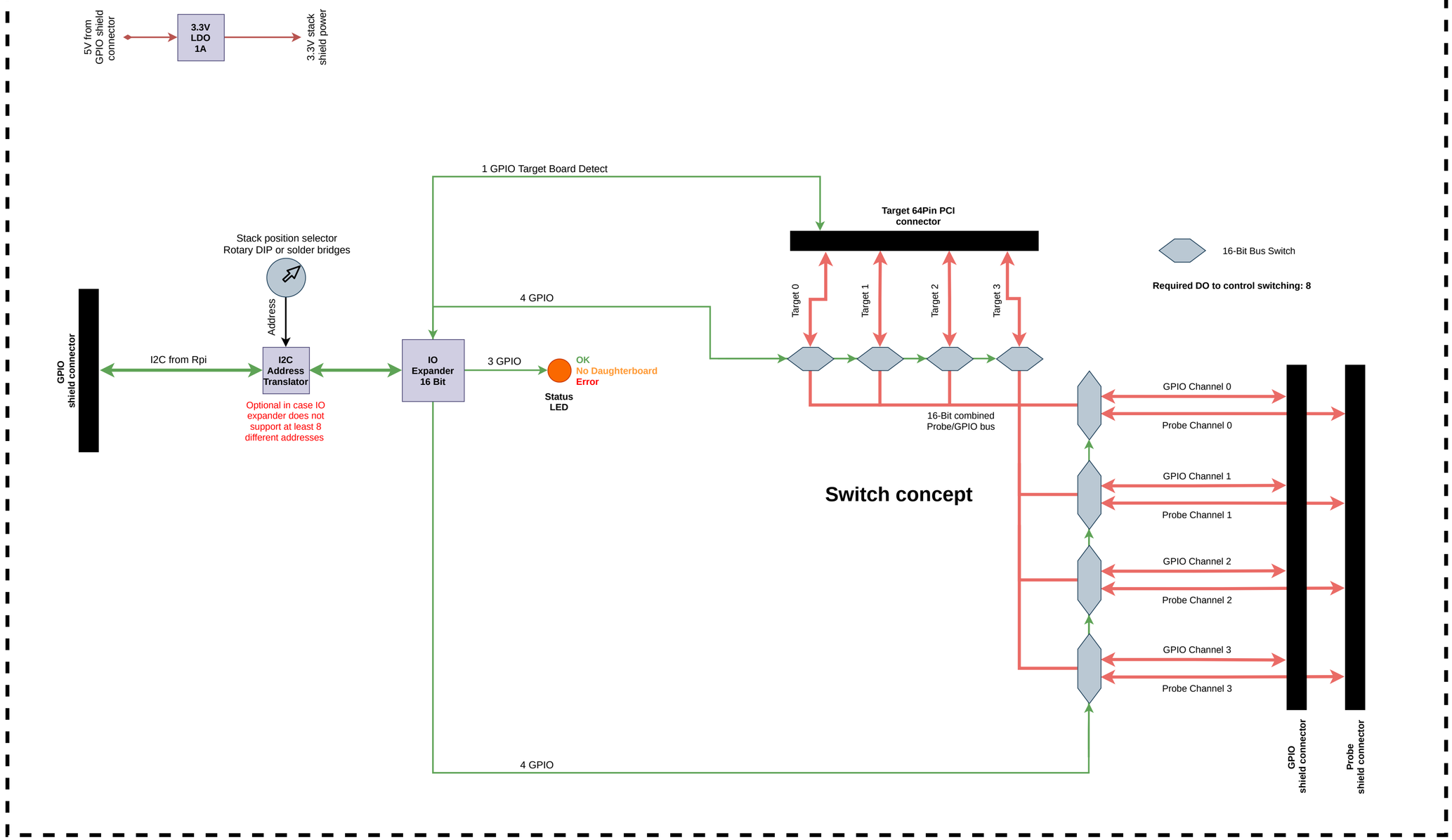
TSM-120-03-F/L-DV (40Pin)
TSM-110-03-F/L-DV (20Pin)
with
SSM-120-F/L-DV (40Pin)
SSM-110-F/L-DV (20Pin)



Price: ~9CHF per pair

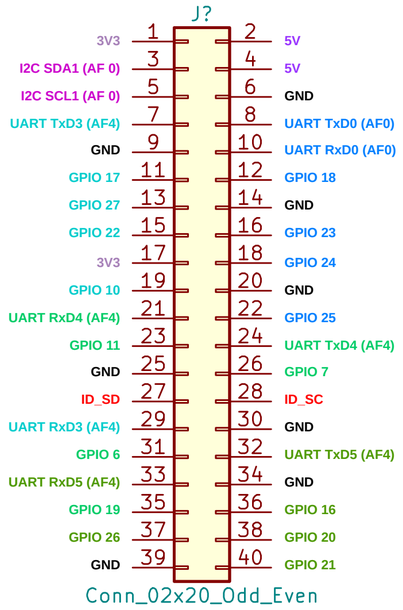
Availability: ok

Target Stack Shield



Raspberry 40pin connector config bcm2711 (rpi designations)

Per GPIO channel: 4x GPIO, 1x UART



I2C Bus: Controls all IO expanders on Target Stack Shields

3V3: Unused

5V: Power source for shields

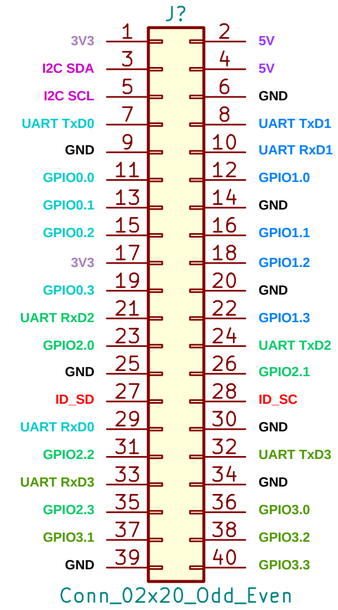
ID_XX: Unused

GPIO Channels:

- Channel 0
- Channel 1
- Channel 2
- Channel 3

GPIO shield connector (hive designations)

Per GPIO channel: 4x GPIO, 1x UART



I2C Bus: Controls all IO expanders on Target Stack Shields

3V3: Unused

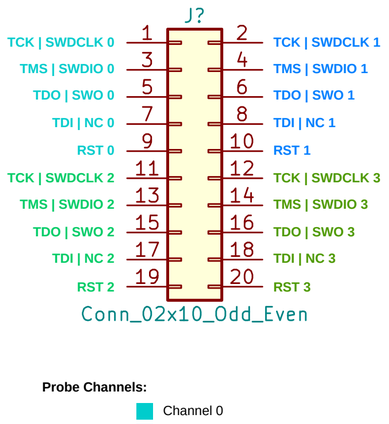
5V: Power source for shields

ID_XX: Unused

GPIO Channels:

- Channel 0
- Channel 1
- Channel 2
- Channel 3

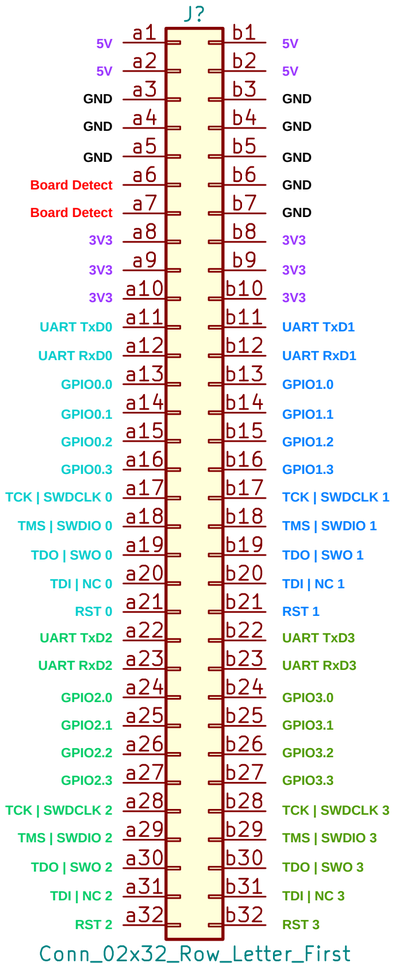
Probe shield connector (hive designations)



Probe Channels:

- Channel 0
- Channel 1
- Channel 2
- Channel 3

Target 64Pin PCI connector (hive designations)



3V3: 3.3V supplied from shield LDO. Not from rpi 3.3V!

5V: 5V supplied by power supply usb c rpi input

Board Detect: Needs to be connected together on daughterboard, allows shield to detect if daughterboard is present

Channels:

- Channel 0
- Channel 1
- Channel 2
- Channel 3