

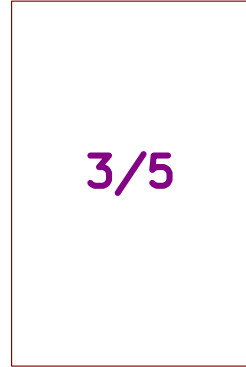
# 8XRELAY-20.0

RASPI



File: raspi.kicad\_sch

PICO



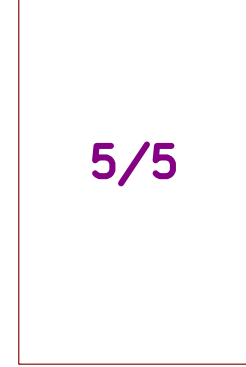
File: pico.kicad\_sch

CONNECTOR



File: connector.kicad\_sch

OUTPUT



File: output.kicad\_sch

According to OSHA <https://www.oshwa.org/a-resolution-to-redefine-spi-signal-names/>

New signal names:

SDO – Serial Data Out. An output signal on a device where data is sent out to another SPI device.  
SDI – Serial Data In. An input signal on a device where data is received from another SPI device.  
CS – Chip Select. Activated by the controller to initiate communication with a given peripheral.  
PICO (peripheral in/controller out). For devices that can be either a controller or a peripheral; the signal on which the device sends output when acting as the controller, and receives input when acting as the peripheral.  
POCI (peripheral out/controller in). For devices that can be either a controller or a peripheral; the signal on which the device receives input when acting as the controller, and sends output when acting as the peripheral.  
SDIO – Serial Data In/Out. A bi-directional serial signal.

Deprecated signal names:

MOSI – Master Out Slave In  
MISO – Master In Slave Out  
SS – Slave Select  
MOMI – Master Out Master In  
SOSI – Slave Out Slave In

Signal names unchanged:

SCK – Serial Clock. The clock for the bus generated by the controller.

8XRELAY  
WIZcube  
WIZCUBE



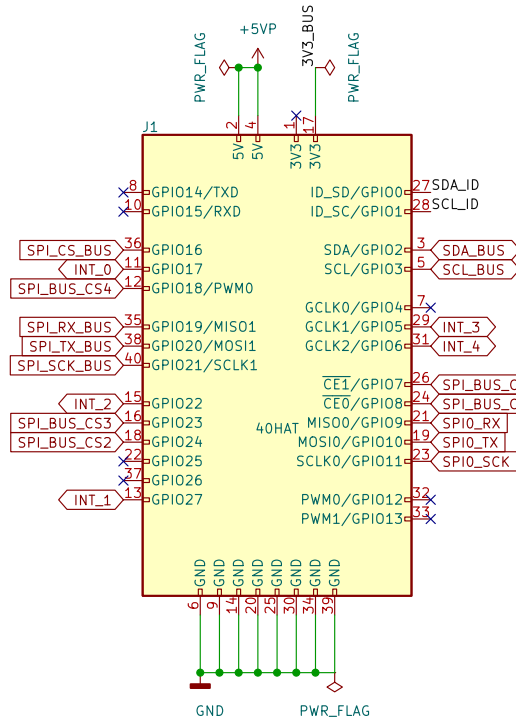
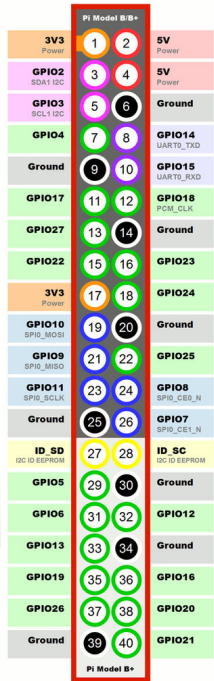
Sheet: /  
File: M10RL01-20.kicad\_sch

Title: **M10RL01 –**

Size: A4 Date: 2022-04-10  
KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu21.10.1

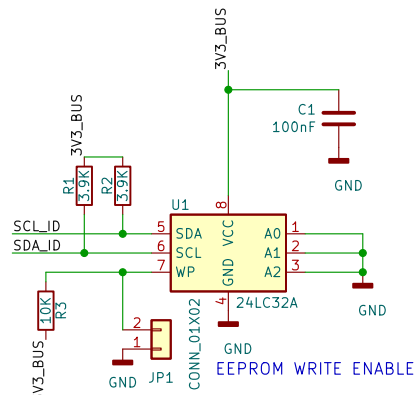
Rev: **20.0**  
Id: 1/5

# RASPBERRY PI HAT STAGE-20.0

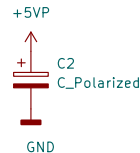


## HAT EEPROM

The HAT spec requires this EEPROM with system information to be in place in order to be called a HAT. It should be set up as write protected (WP pin held high), so it may be desirable to either put a jumper as shown to enable writing, or to hook up a spare IO pin to do so.



LOG1  
OSHWGR



- FID1
- FID2
- FID3

- H1
- H2
- H3
- H4
- H5
- H6

<b>GR000004</b>	
RASPBERRY PI HAT STAGE WIZcube WIZCUBE	
Sheet: /RASPI/ File: raspi.kicad_sch	
<b>Title: M10RL01 --</b>	
Size: A4	Date: 2022-03-31
KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu21.10.1	Rev: 20.0
	Id: 2/5

# WIZNET PICO CLONE STAGE-20.0

README FIRST

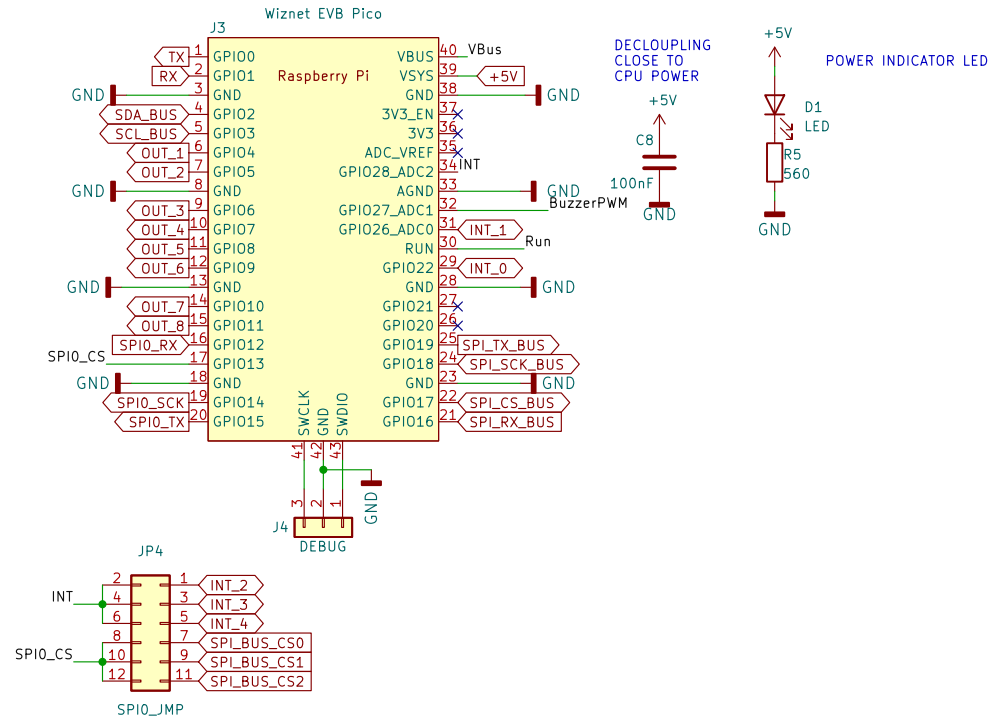
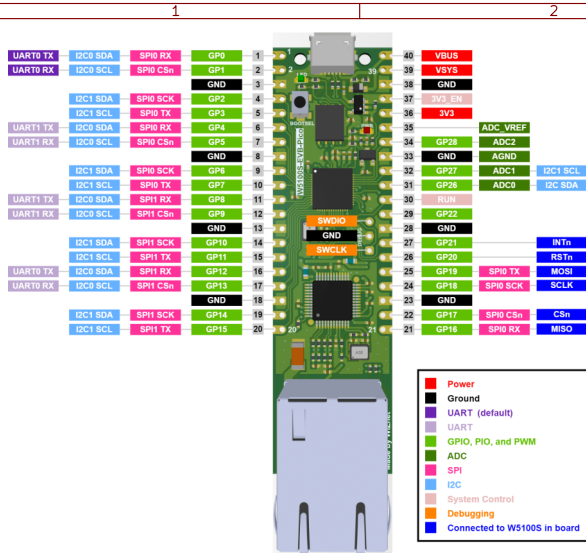
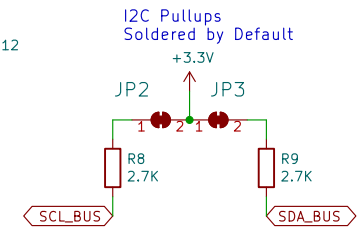
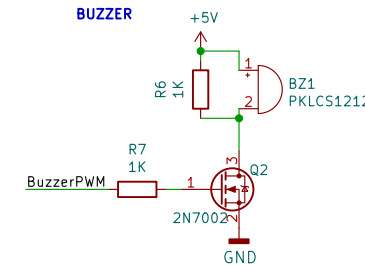
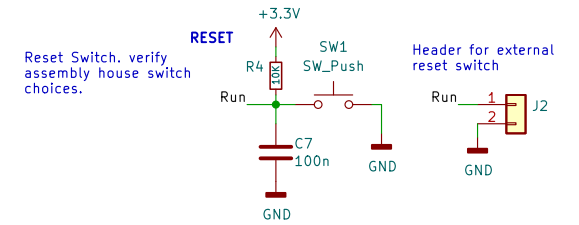
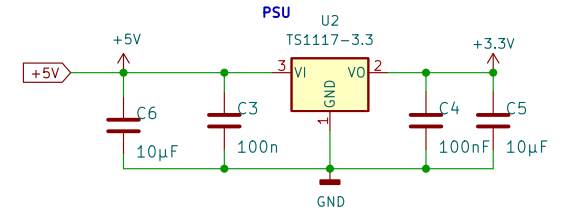
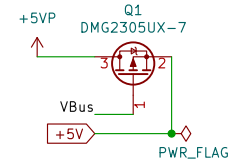
GPIO16–GPIO21 used by WIZNET  
 GPIO16, GPIO18, GPIO19 shared with WIZNET, CANBUS, SD, SPI on the BUS to control other M10 module through SPI  
 ALL have different CS pins and INTERRUPT pins

CANBUS IS THE LATEST STANDARD. SPEED UP TO 5MHZ.  
 MAYBE THIS IS ALSO A SOLUTION FOR FAST I/O. WE CHECK THIS BY EXPERIMENTING.

BELOW SIGNALS ARE CONNECTED TO  
 RASPI 40 PIN CONNECTOR

- INT\_0
- INT\_1
- INT\_2
- INT\_3
- INT\_4
- SPI\_BUS\_CS0
- SPI\_BUS\_CS1
- SPI\_BUS\_CS2
- SPI\_BUS\_CS3
- SPI\_BUS\_CS4

PMOSFET to allow powering PICO while still connected via USB. Per Raspberry PI Pico datasheet.



WIZNET PICO CLONE STAGE  
 WIZcube  
 WIZCUBE  
 Sheet: /PICO/  
 File: pico.kicad\_sch



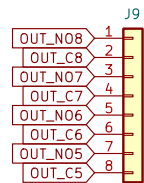
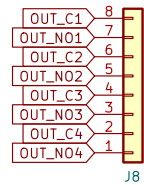
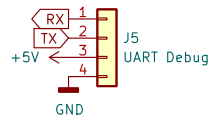
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Size: A4 Date: 2022-04-10  
 KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu21.10.1

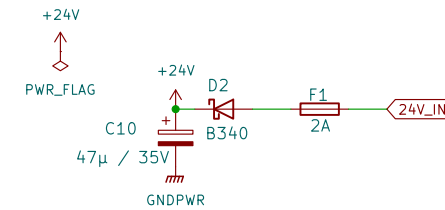
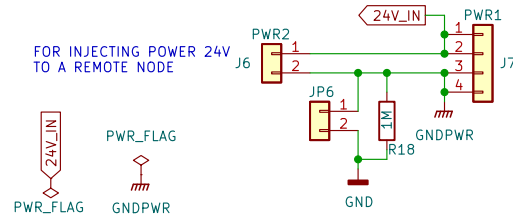
Rev: 20.0  
 Id: 3/5

# CONNECTOR STAGE-20.0

UART DEBUG CONNECTOR



+24V POWER



CONNECTOR STAGE  
 WIZcube  
**WIZCUBE**  
 Sheet: /CONNECTOR/  
 File: connector.kicad\_sch

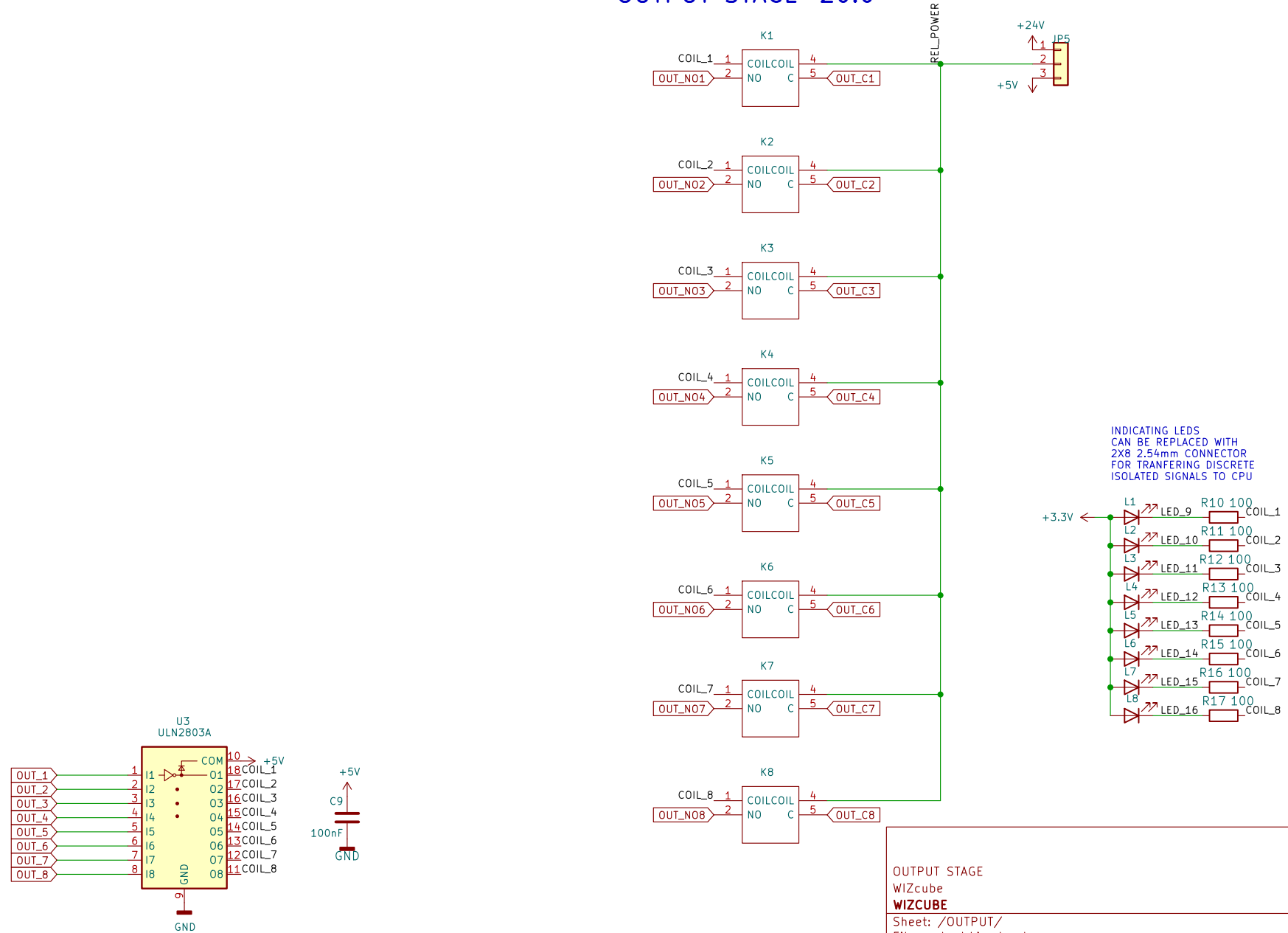


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Size: A4 Date: 2022-03-26  
 KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu21.10.1

Rev: 20.0  
 Id: 4/5

# OUTPUT STAGE-20.0



INDICATING LEDs  
CAN BE REPLACED WITH  
2X8 2.54mm CONNECTOR  
FOR TRANFERING DISCRETE  
ISOLATED SIGNALS TO CPU

OUTPUT STAGE  
WIZcube  
WIZCUBE



Sheet: /OUTPUT/  
File: output.kicad\_sch

Title: M10RL01 -

Size: A4 Date: 2022-04-10  
KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu21.10.1

Rev: 20.0  
Id: 5/5