# conmeleon C1

STEP 1 – PRECAUTION

● remove electrostatic charge from your body by wearing an antistatic wristband or touching a metal surface before you touch the electronic parts
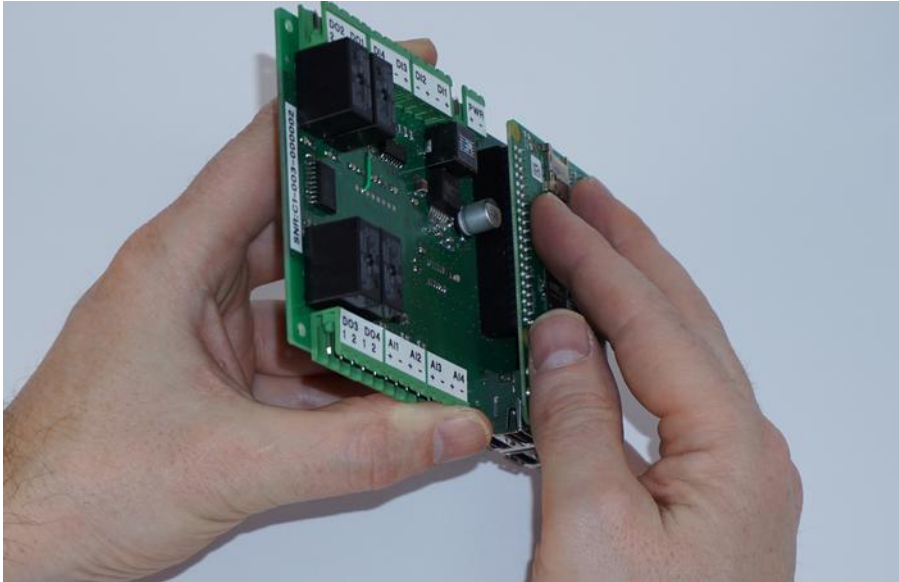
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STEP 2 – CHECK NEEDED PARTS

- CONMELEON C1board
- Raspberry Pi Model 2 B
- microSD card with C1 image (e.g. q4PLC) on it
- CAT5 ethernet cable
- 24V / 1A power supply with 2 pole straight 5mm terminal block
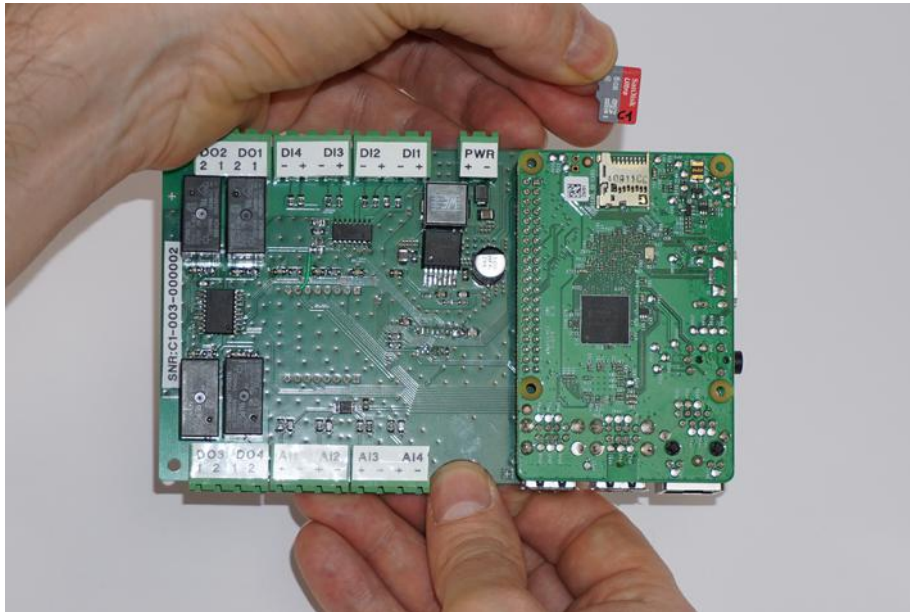
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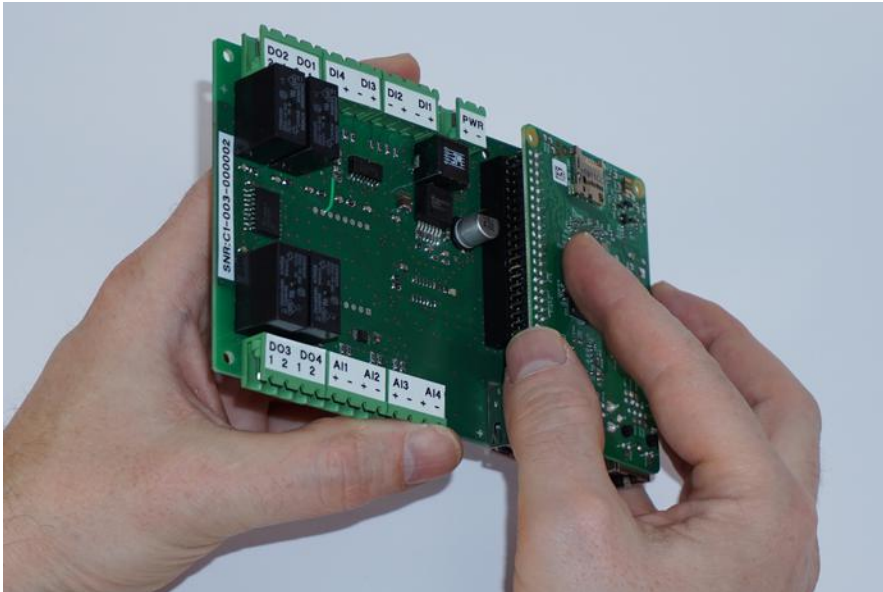
STEP 3a– ATTACH RASPBERRY PI

- put the Raspberry Pi on the C1 board upside down
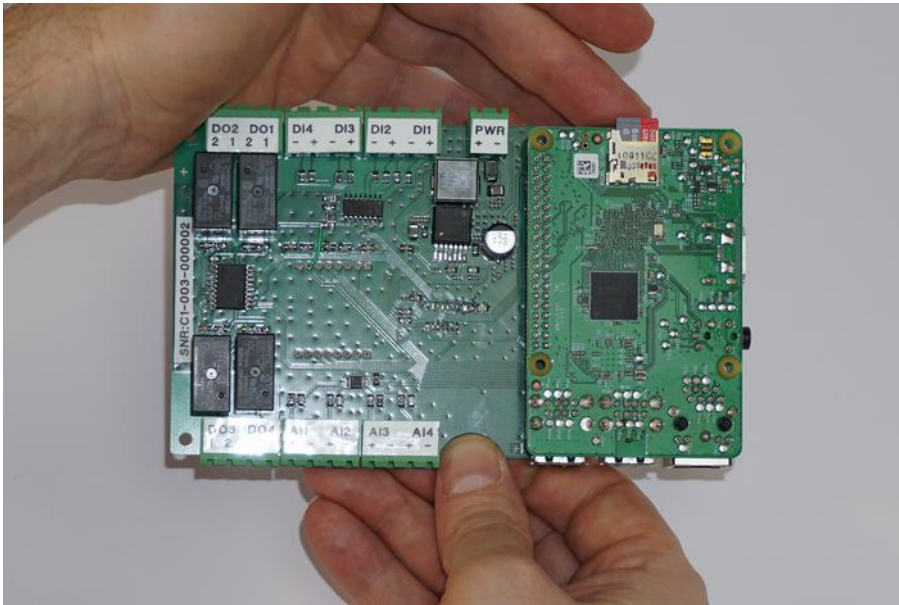- check the alignment of the 40 pin header that no pins will be bent

STEP 3b– RASPBERRY PI ATTACHED
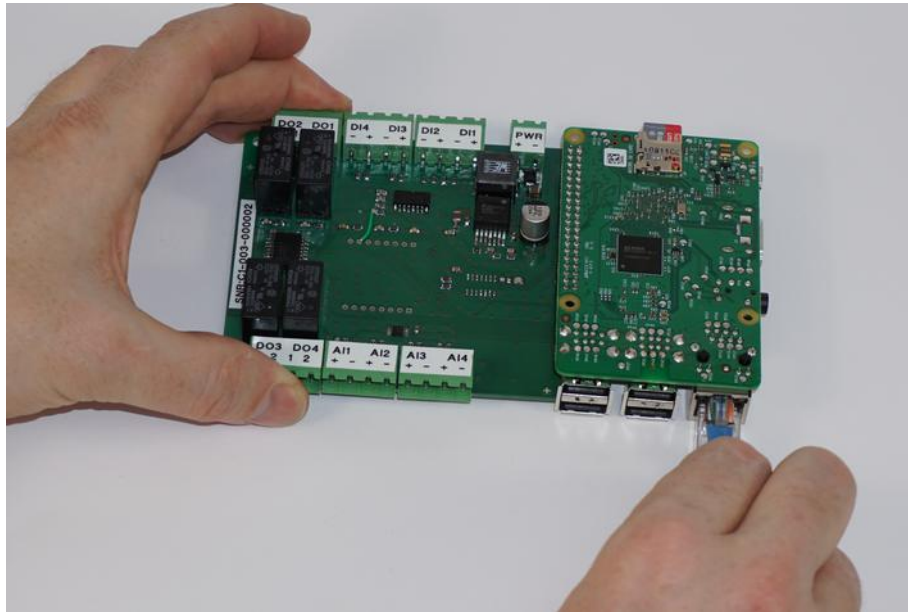
● press firmly until header is fully inserted

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STEP 4a– INSERT SD CARD

● insert the microSD card into the slot of the Raspberry Pi
● the contacts of the SD card should be on the back side

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STEP 4b– SD CARD INSERTED

● push the SD card gently into the slot until you hear a faint clicking sound
● the SD card will stay in place now

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STEP 5– CONNECT ETHERNET CABLE

● insert your CAT5 ethernet cable into the RJ45 jack in the bottom right corner
● the notch of the connector should face upwards
● insert the connector until you hear a clicking sound and the notch is secured firmly

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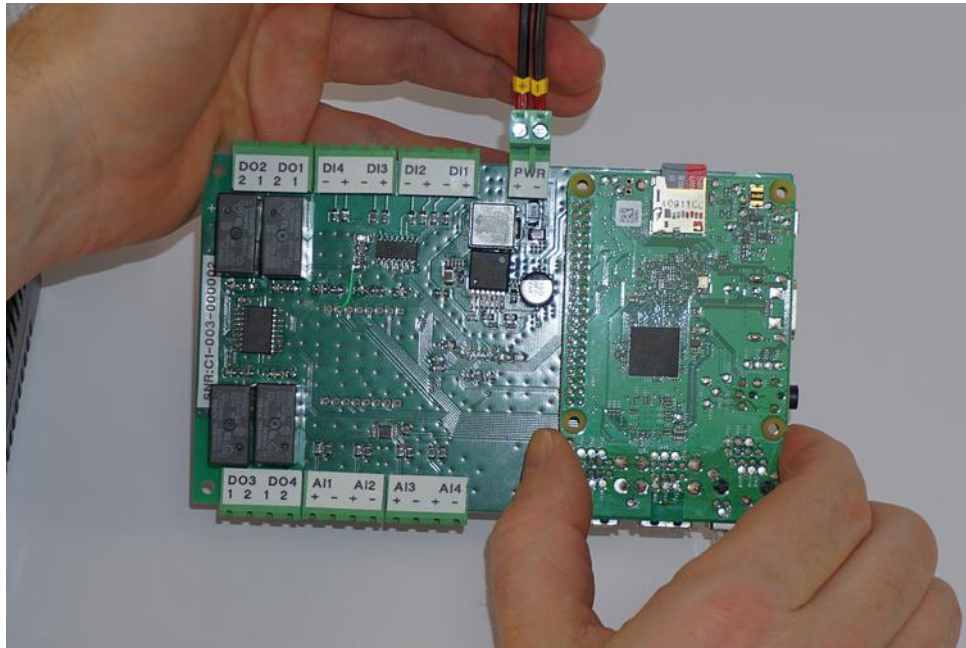
STEP 6– CONNECT POWER SUPPLY

- check that the power supply is not yet connected to the outlet
- check the voltage and current rating (24V, 1A)
- triple check the polarity of the connector
- insert the connector into the terminal block (it is labelled PWR) of the C1 board

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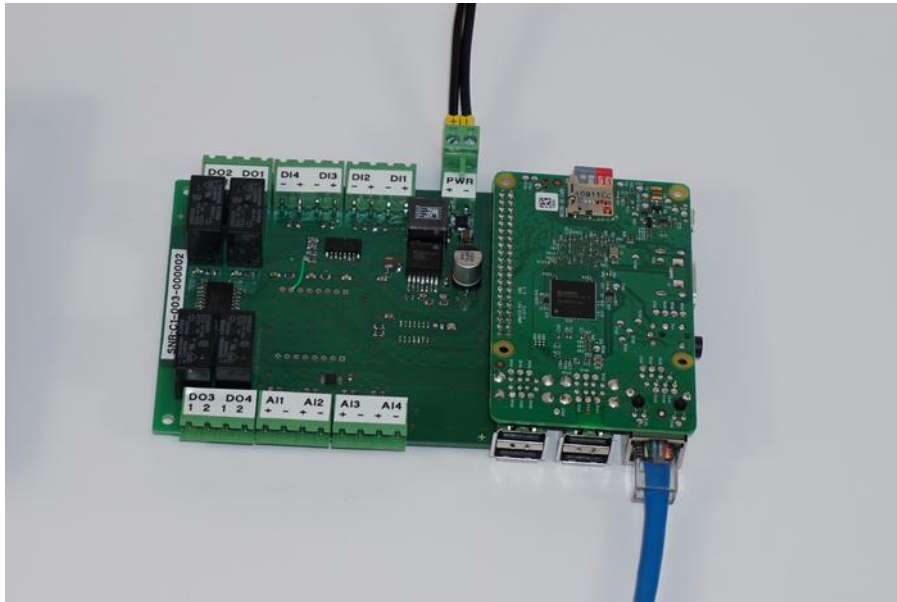
STEP 7– READY TO GO

- everything is ready to go now
- check the polarity of the PWR connector once more (you cannot do that too often)
- connect the power supply with the outlet

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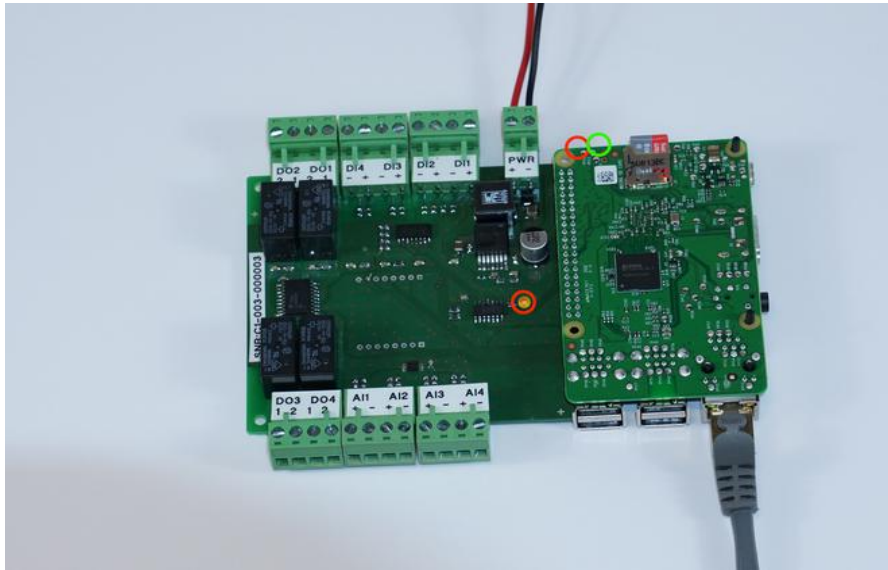
STEP 8– POWER ON

- plug your power supply in
- the red power LED of the C1 board should be on (if not, switch off your power supply, check the polarity and the voltage)
- the red power LED of the Raspberry Pi should be on (if not, switch off your power supply and check the connection header for misaligned pins)
- the green SD card activity LED should be flashing a couple of times, afterwards it will be off

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STEP 9– GET IP ADDRESS
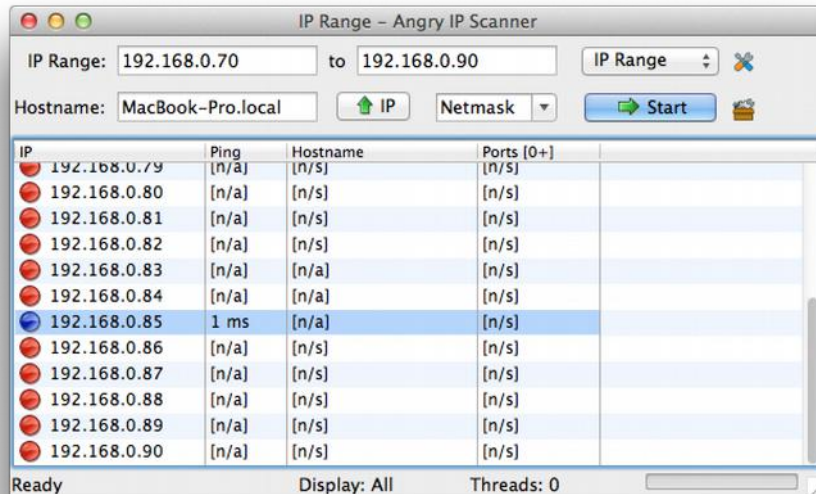
● normally the Raspberry Pi will get an IP address via DHCP
● if you don't know which IP address, you can use an IP scanner like Angry IP Scanner
● use the discovered IP address to connect to the Raspberry Pi via SSH later on
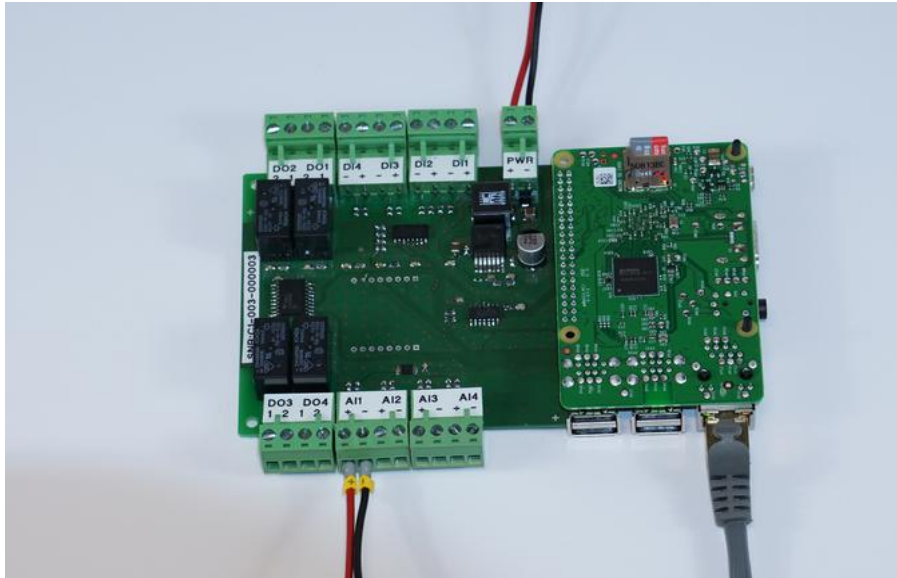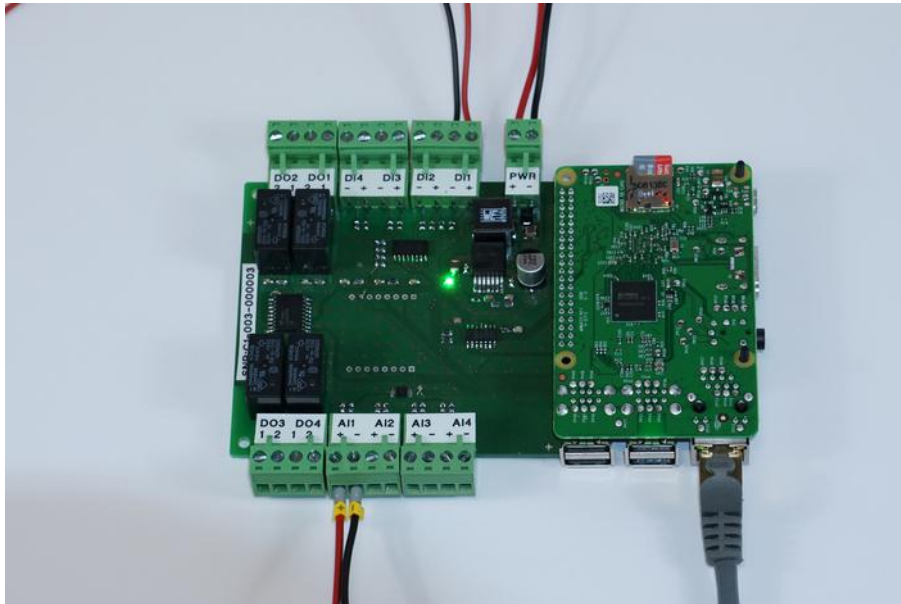
STEP 10a – CONNECT ANALOG IN

● connect a signal to AI1 to AI4 and check the polarity before you apply external voltage to the input

⚠️

DON'T APPLY MORE THAN 10V TO THE ANALOG INPUT, OTHERWISE IT WILL BE DAMAGED!
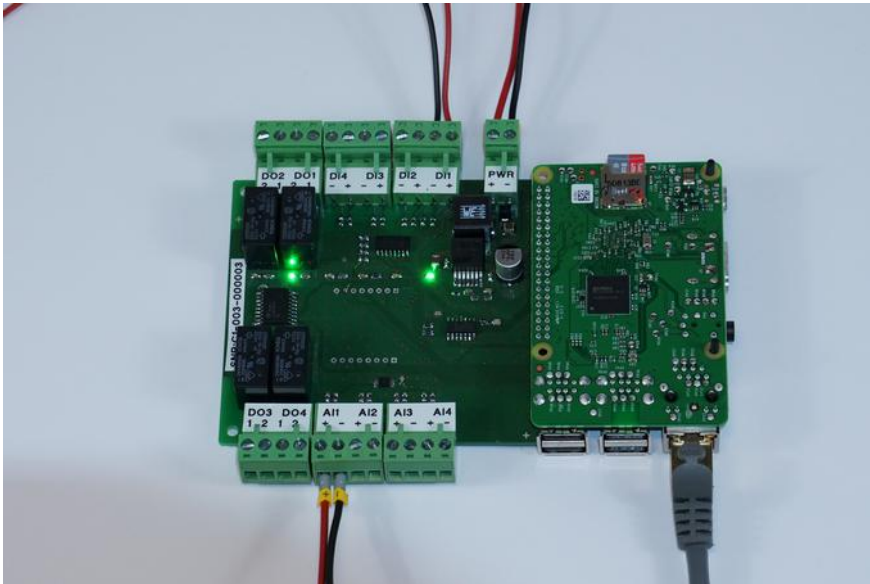
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STEP 10b – CONNECT DIGITAL IN

- connect a signal to DI1 to DI4 and check the polarity before you apply external voltage to the input
- the digital inputs will be TRUE if a voltage bigger than 5V is applied. Below this voltage level the digital input will be FALSE
- the digital input state will be indicated with a green LED

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STEP 11 – TEST INPUTS
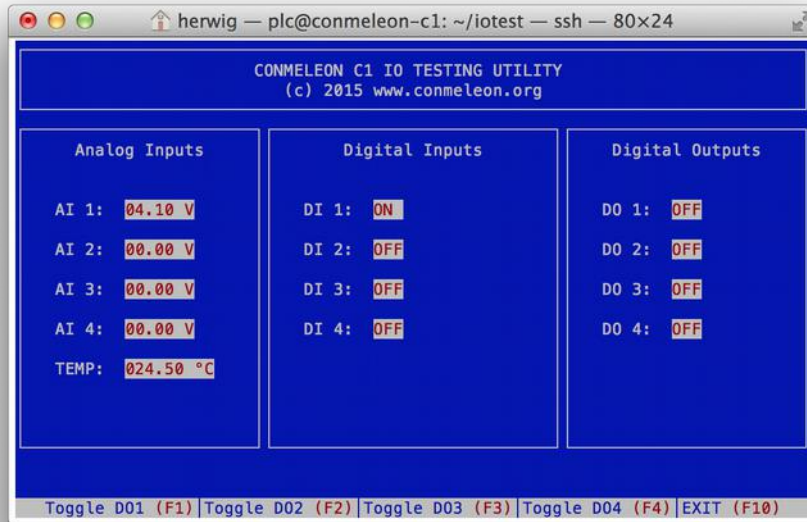
- copy the CONMELEON C1 testing utility to the Raspberry Pi via SFTP
- connect to the Raspberry Pi via SSH (use the standard user *pi* with password *raspberry*)
- start the testing utility with the command *sudo ./conmeleon.c1.test*
- you can see all the input states and you can switch the digital outputs with the F1 to F4 keys

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STEP 12 – TEST OUTPUTS

● use the F1 to F4 keys in the CONMELEON C1 testing utility to toggle the digital relay outputs
● a green LED shows the output state (LED on, output on)

The basic hardware testing and setup is now complete. Depending on the image you have, you can now use your favorite programming environment like q4Logix for instance.