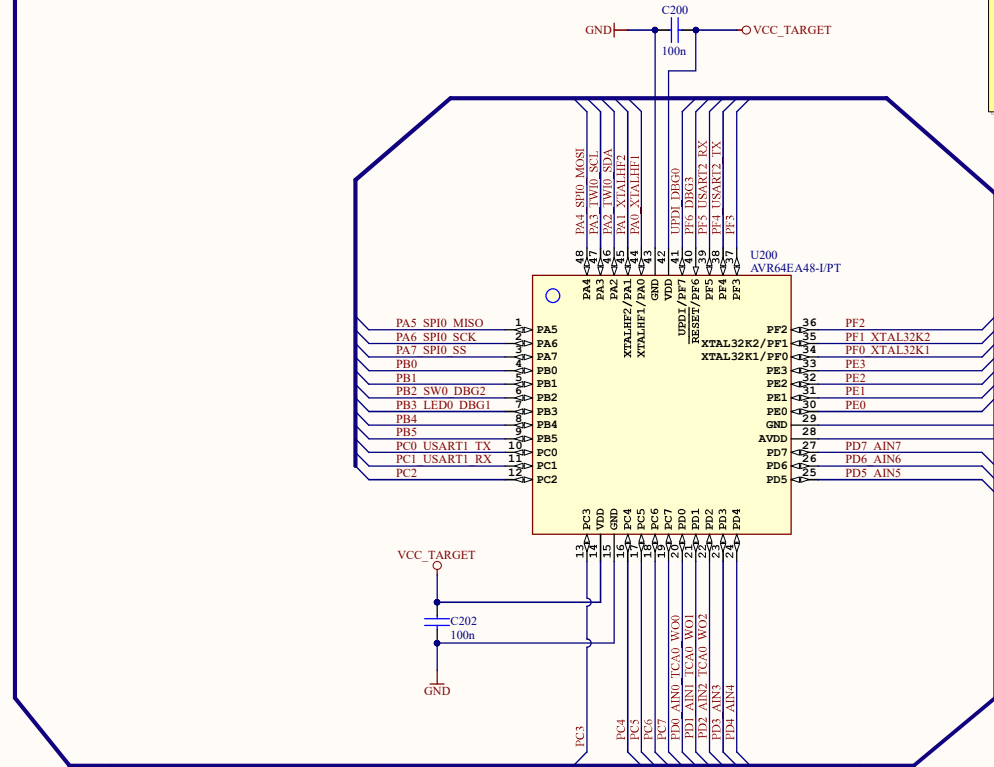


AVR64EA48

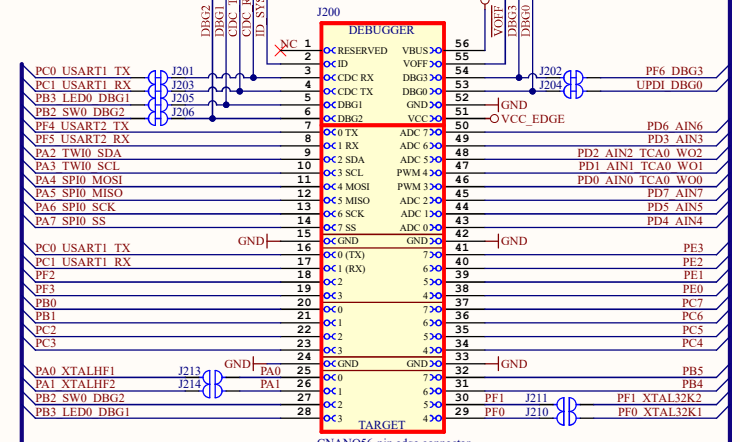
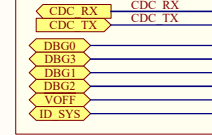


NOTE on UART/CDC:

RX/TX on the header denotes the input/output direction of the signal respective to it's source.

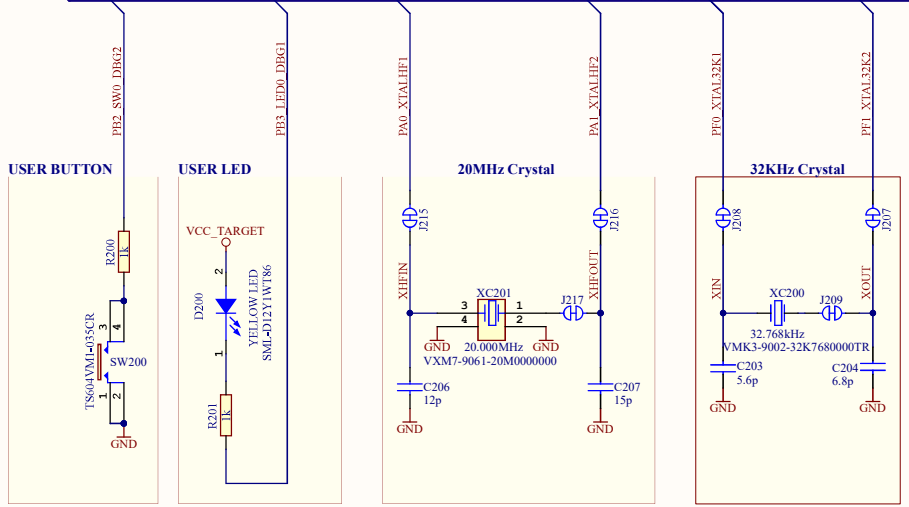
CDC TX is output from the DEBUGGER.
CDC RX is input to the DEBUGGER.
TX is output from the TARGET device.
RX is input to the TARGET device.

DEBUGGER CONNECTIONS



NOTE on I2C:

No pull-ups on board. Pull-ups should be mounted close to client device(s).



Crystal datasheet:
Crystal = 7pF (typical value)
max ESR = 70kOhm
Accuracy ±20ppm

AVR64EA48 datasheet:
C_{in} = 5.0pF (typical value)
C_{out} = 5.0pF (typical value)
C₁ ≈ 1/(1/(5.0pF) + (1/5.0pF)) ≈ 2.5pF
Maximum Load = 12.5pF
Maximum ESR = 50kOhm

Estimated C_{pcb} = 1.0pF

Estimated load
C = 2 (Crystal - C_{para} - C_{pcb})
C = 2 (7pF - 2.5pF - 1.0pF)
C = 7.0pF

Selected in design after verification
C = 5.6pF/6.8pF

Crystal datasheet:
Crystal = 12pF (typical value)
max ESR = 60kOhm
Accuracy ±20ppm

AVR64EA48 datasheet:
C_{in} = 5.0pF (typical value)
C_{out} = 5.0pF (typical value)
C₁ ≈ 1/(1/(5.0pF) + (1/5.0pF)) ≈ 2.5pF
Maximum Load = 12.5pF
Maximum ESR = 40kOhm

Estimated C_{pcb} = 2.0pF

Estimated load
C = 2 (Crystal - C_{para} - C_{pcb})
C = 2 (12pF - 2.5pF - 2.0pF)
C = 15.0pF

Selected in design after verification
C = 12pF/15pF

Drawn By:
ST

Engineer:
TF

MICROCHIP

Project Title
AVR64EA48 Curiosity Nano

Sheet Title
Target MCU

Size
A3

PCB Assembly Number: A09-3428

PCB Number: A08-3131

PCB Revision: 3

PCB Revision: 2

Date: 24.01.2023

Page: 2 of 4

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