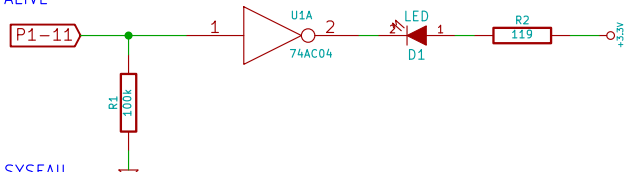


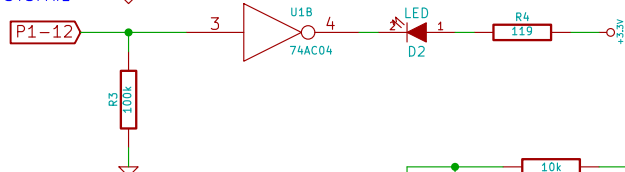


Raspberry Pi
P1 GPIO (3.3V)

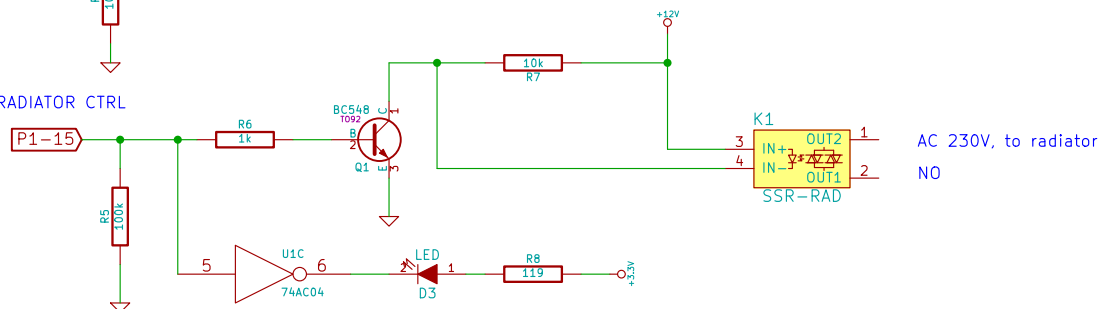
ALIVE



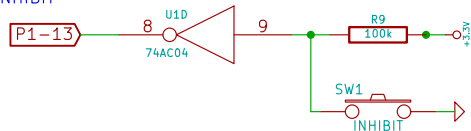
SYSFAIL



RADIATOR CTRL



INHIBIT

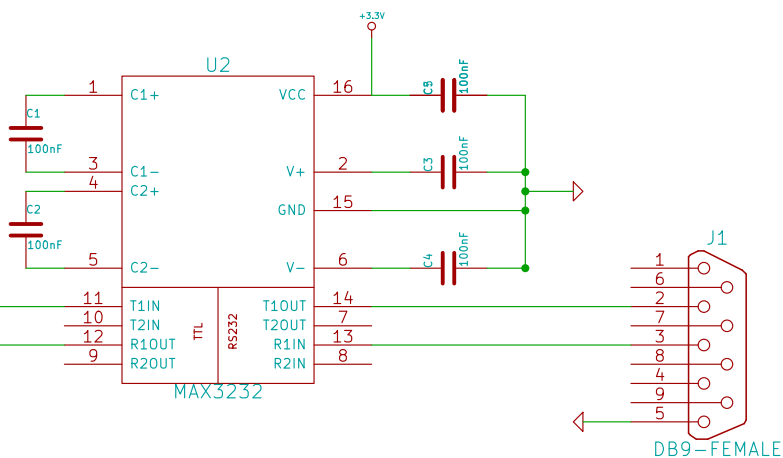


TX - RS232

P1-08

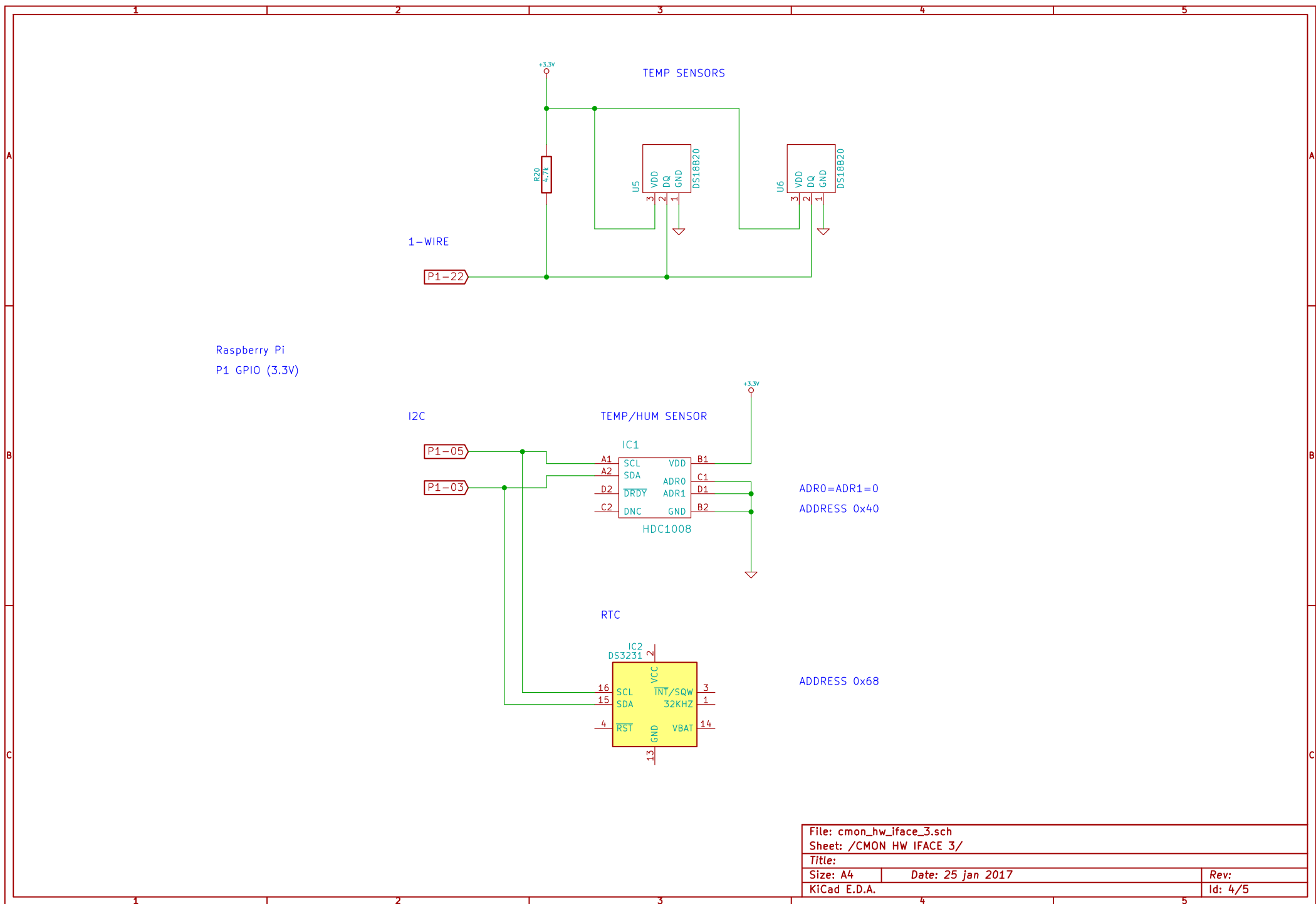
P1-10

RX - RS232



To PC COM-port
Straight through cable

File: cmon_hw_iface_1.sch
Sheet: /CMON HW IFACE 1/
Title: CARAMON Hardware Interface Circuit
Size: A4 Date: 25 jan 2017
KiCad E.D.A. Rev: Id: 2/5



To input stage of
5V power control circuit

5V-PWR-CTRL

BC548
T092
Q4

1.2k
R21

1.2k
R22

+5V

C12
100n

1 GND
2 TR U7
3 Q LM555N
4 R THR
5 CV

56k
R23

4.7k
R24

560
R25

C13
10n

C14
22u

$T_{charge} = 0.693 \times (R23 + R24) \times C14$ (Watchdog timeout)

$T_{charge} = 0.693 \times (56 + 4.7) \times 22 = 925ms$

$T_{discharge} = 0.693 \times R24 \times C14$

$T_{discharge} = 0.693 \times 4.7 \times 22 = 72ms$

Keep Tperiod < 0.9s to avoid watchdog timeout

WDI

P1-16

1k
R26

BC548
T092
Q5

100k
R27

10k
R28

C16

10k
R29

D6
1N4148

+5V

C15
100n

1 GND
2 TR U8
3 Q LM555N
4 R THR
5 CV

10k
R30

C18
10u

C17
10n

$T_{out} (high) = 1.1 \times R30 \times C18$

$T_{out} (high) = 1.1 \times 10 \times 10 = 110ms$

Raspberry Pi
P1 GPIO (3.3V)

+3.3V

100k
R31

WDE_N

P1-18

Set low to enable watchdog

1N4148
D7

1N4148
D8

1k
R7

BC548
T092
Q6

File: cmon_hw_iface_4.sch
Sheet: /CMON HW IFACE 4/

Title:

Size: A4

Date: 25 jan 2017

Rev:

KiCad E.D.A.

Id: 5/5