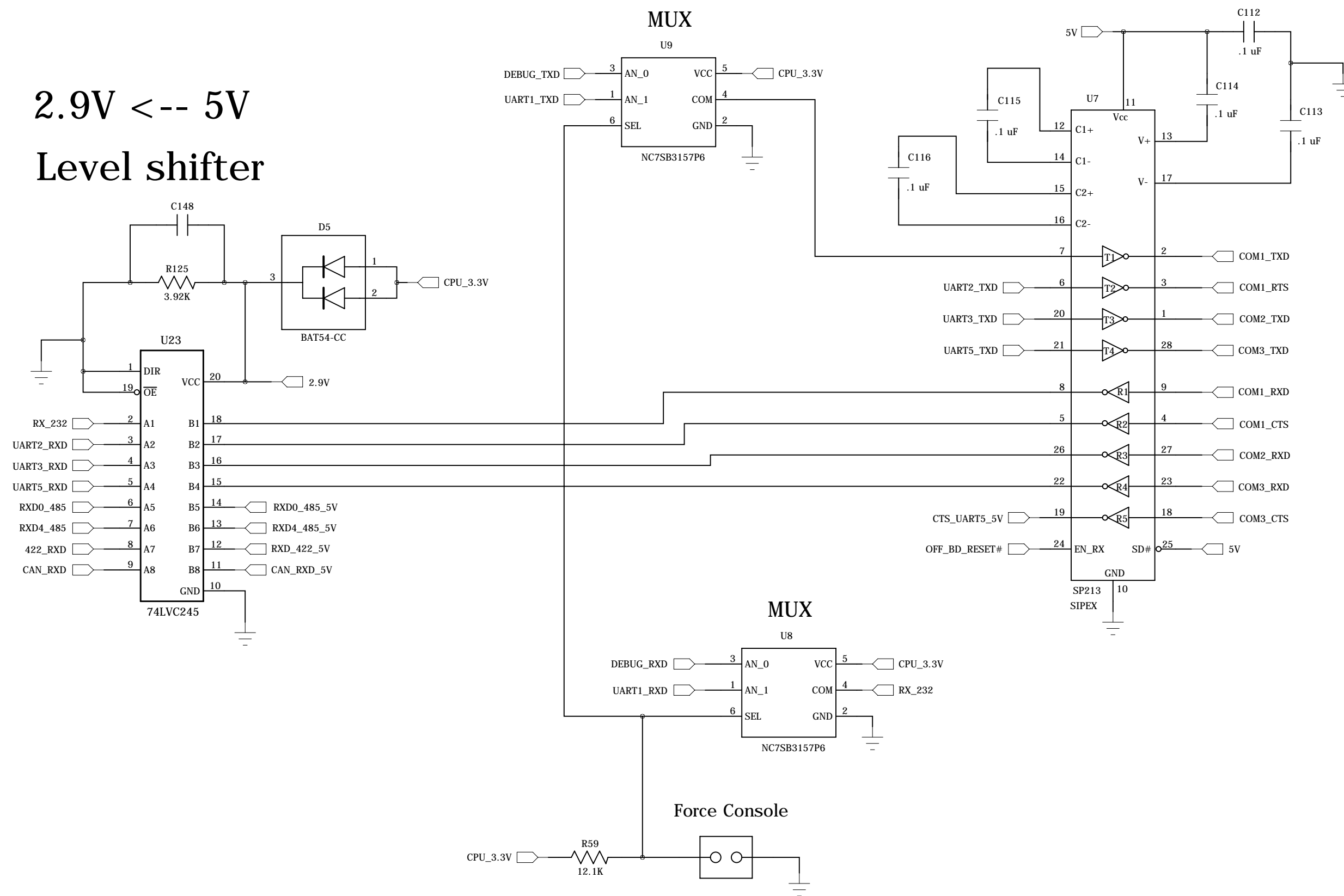
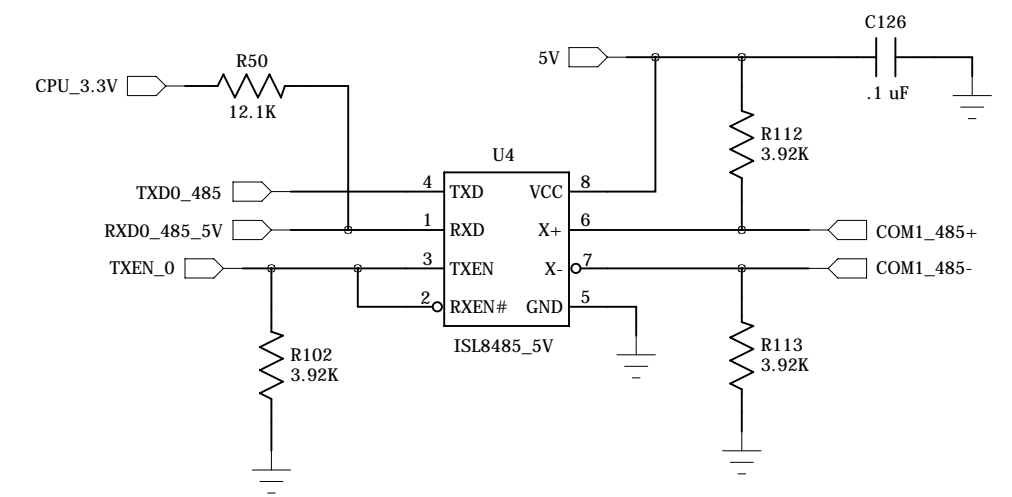


RS-232 Transceiver

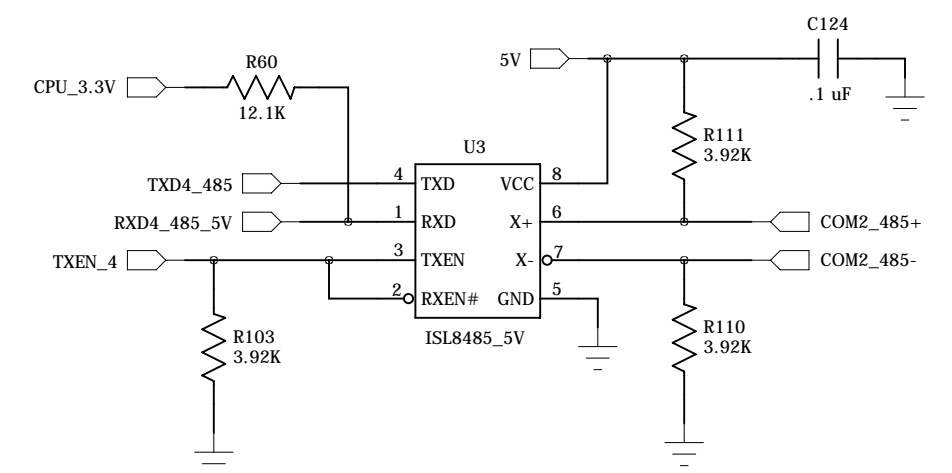
2.9V <-- 5V
Level shifter



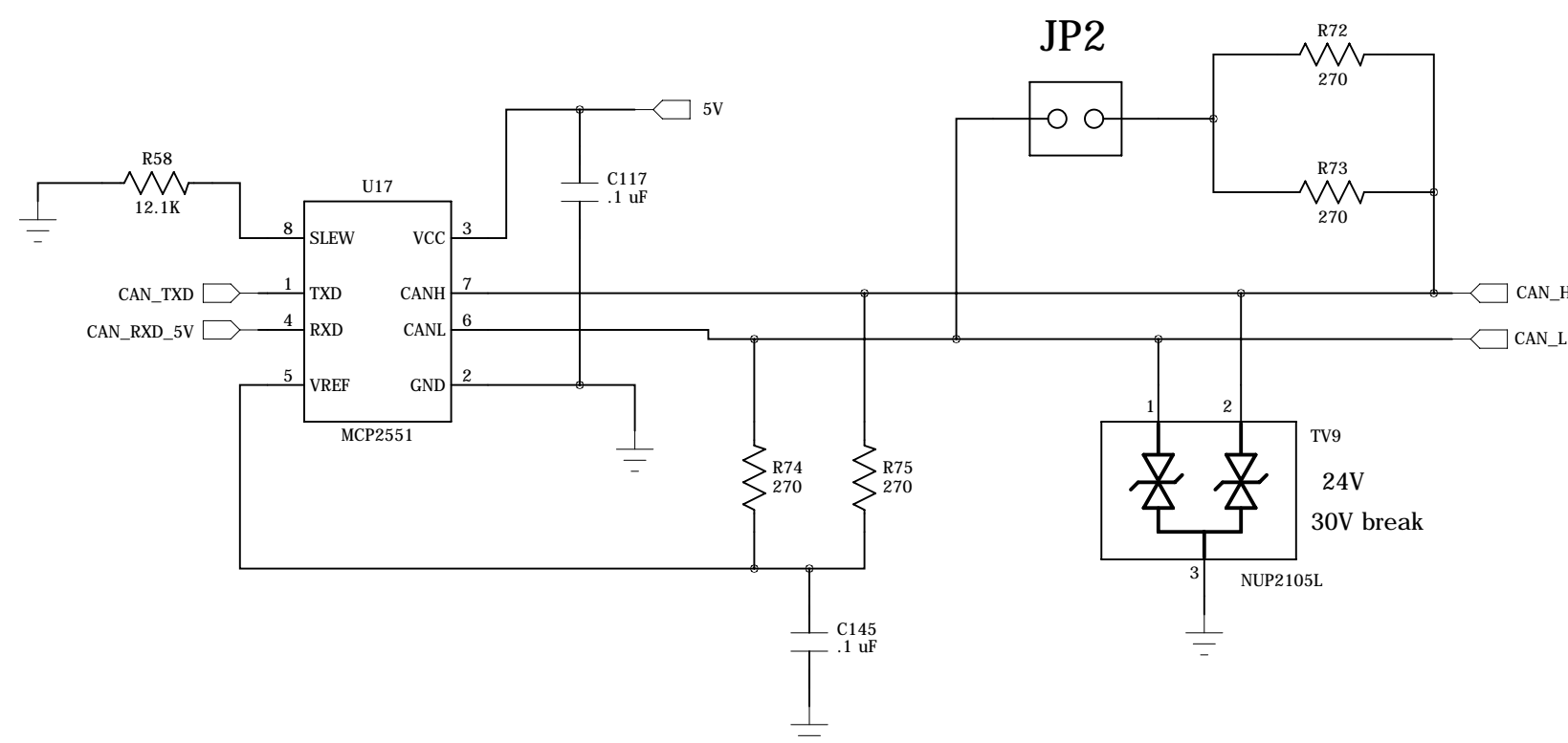
COM1 RS-485 Driver



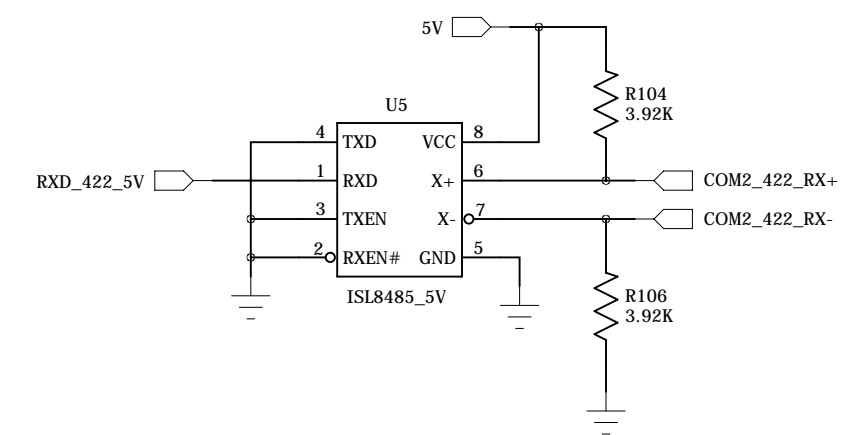
COM2 RS-485 Driver



Primary CAN Transceiver

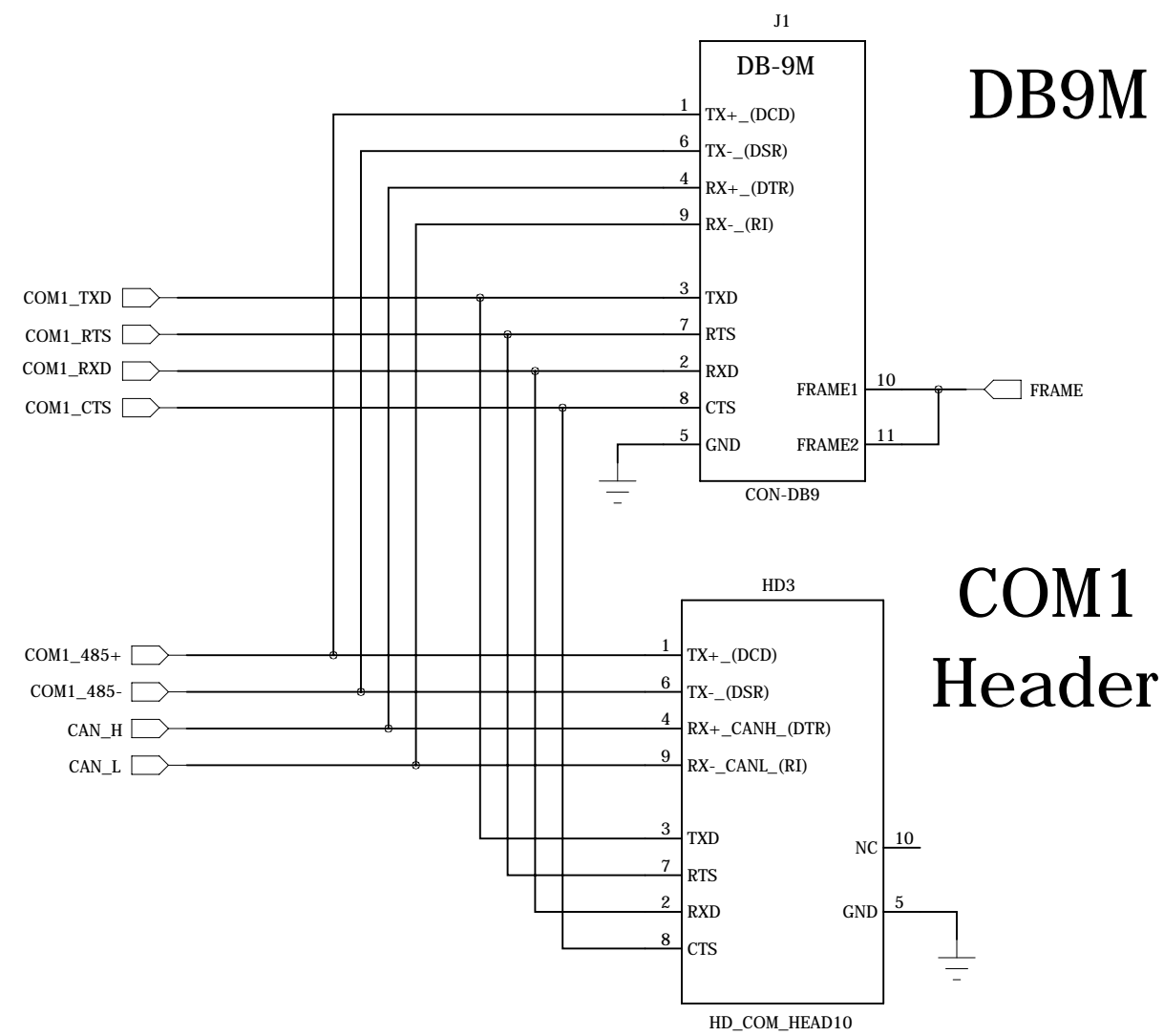


COM2 RS-422 Receiver

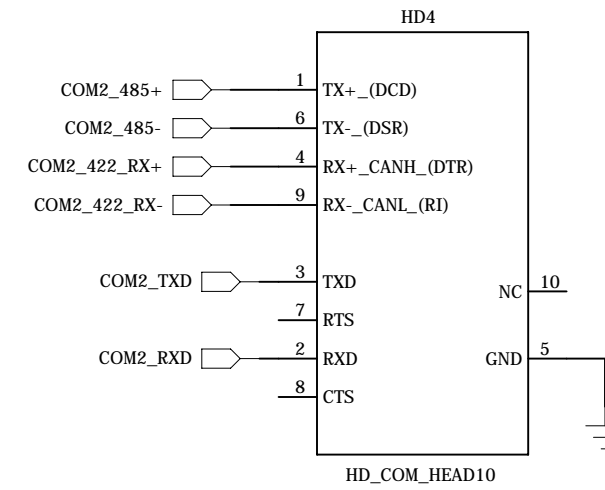


COM Connectors and Headers

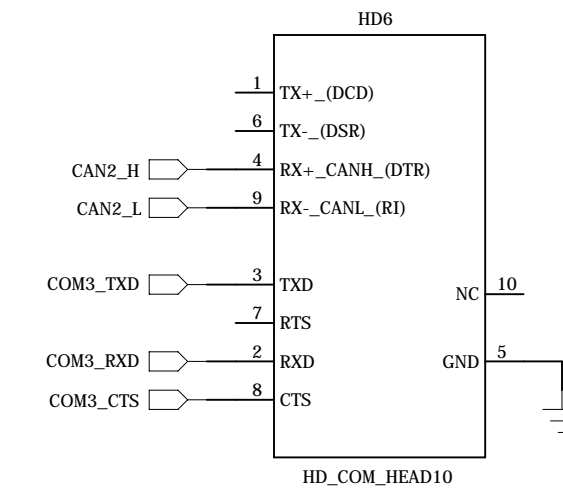
COM1



COM2 Header

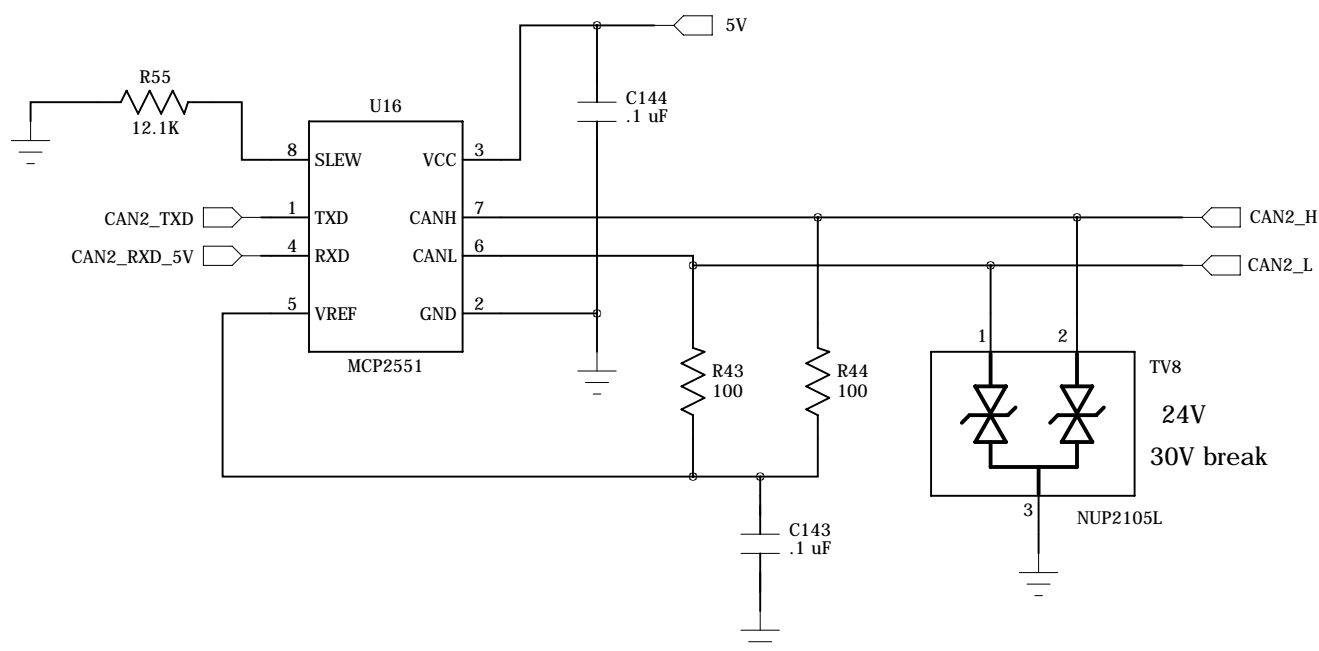


COM3 Header

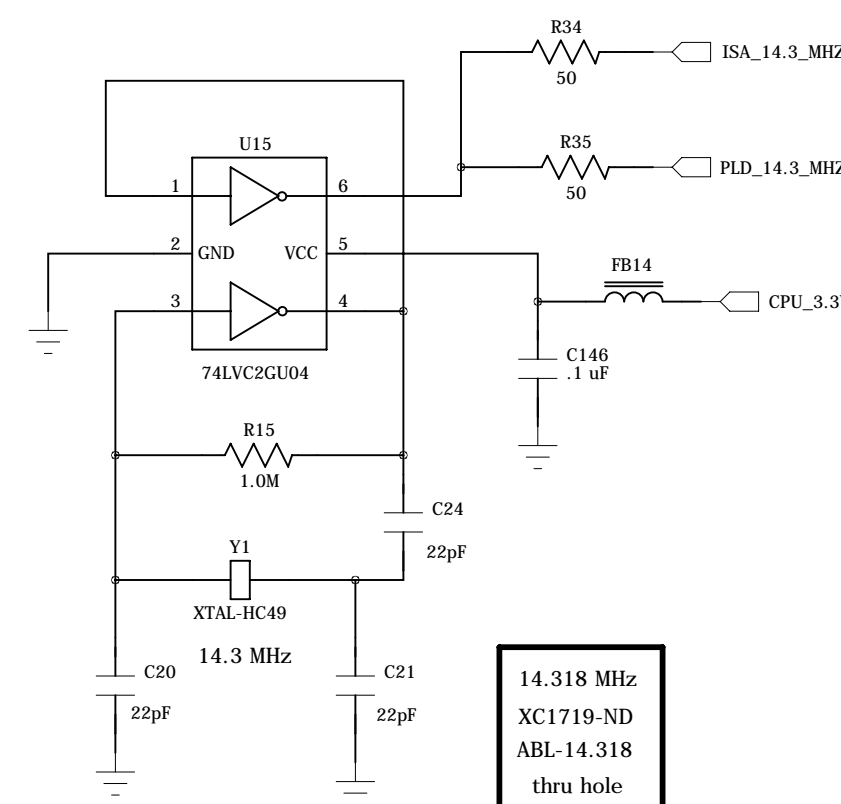


2nd

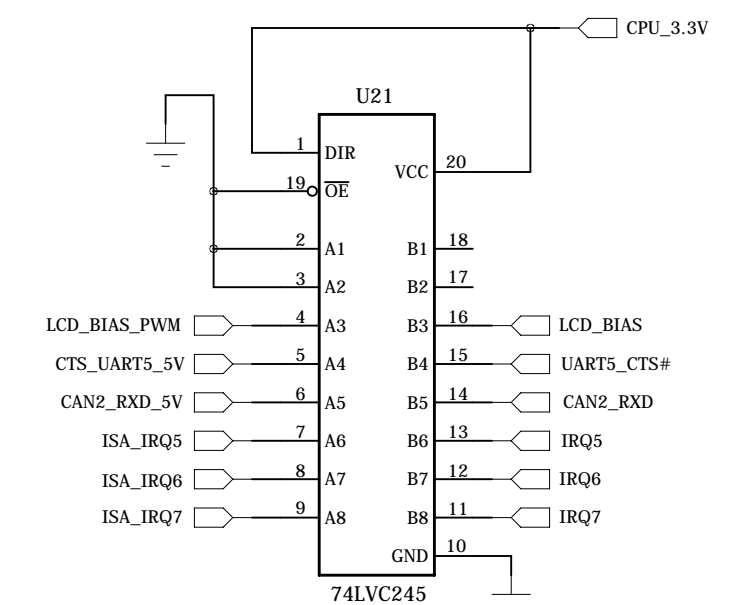
CAN Transceiver



14.3 MHz Osc.



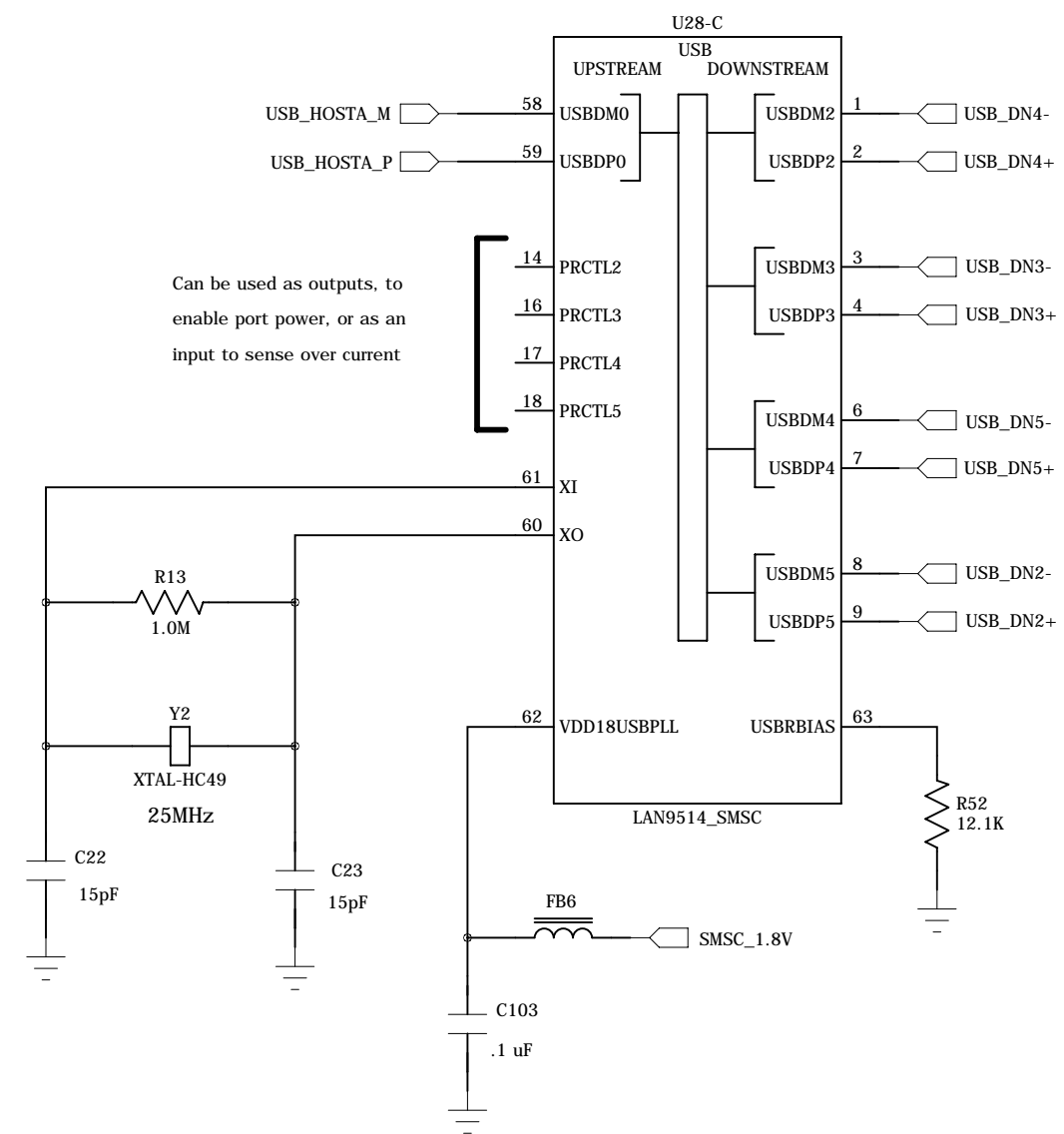
5V --> 3.3V



Provides 5V Tolerance

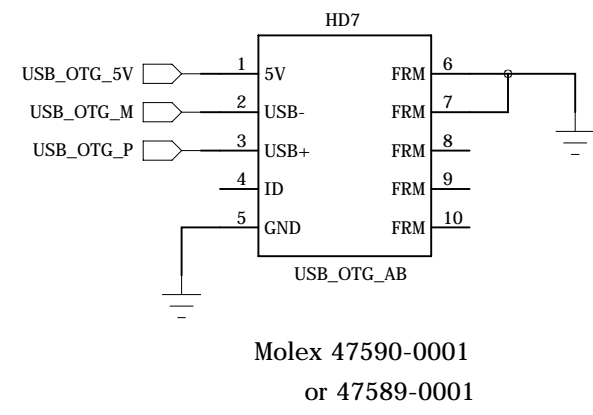
Technologic Systems	Aug. 7, 2010
Title: TS-8100 DB9, COM Headers	
Rev:	Designer
Sheet 2 of 10	

SMSC USB Hub



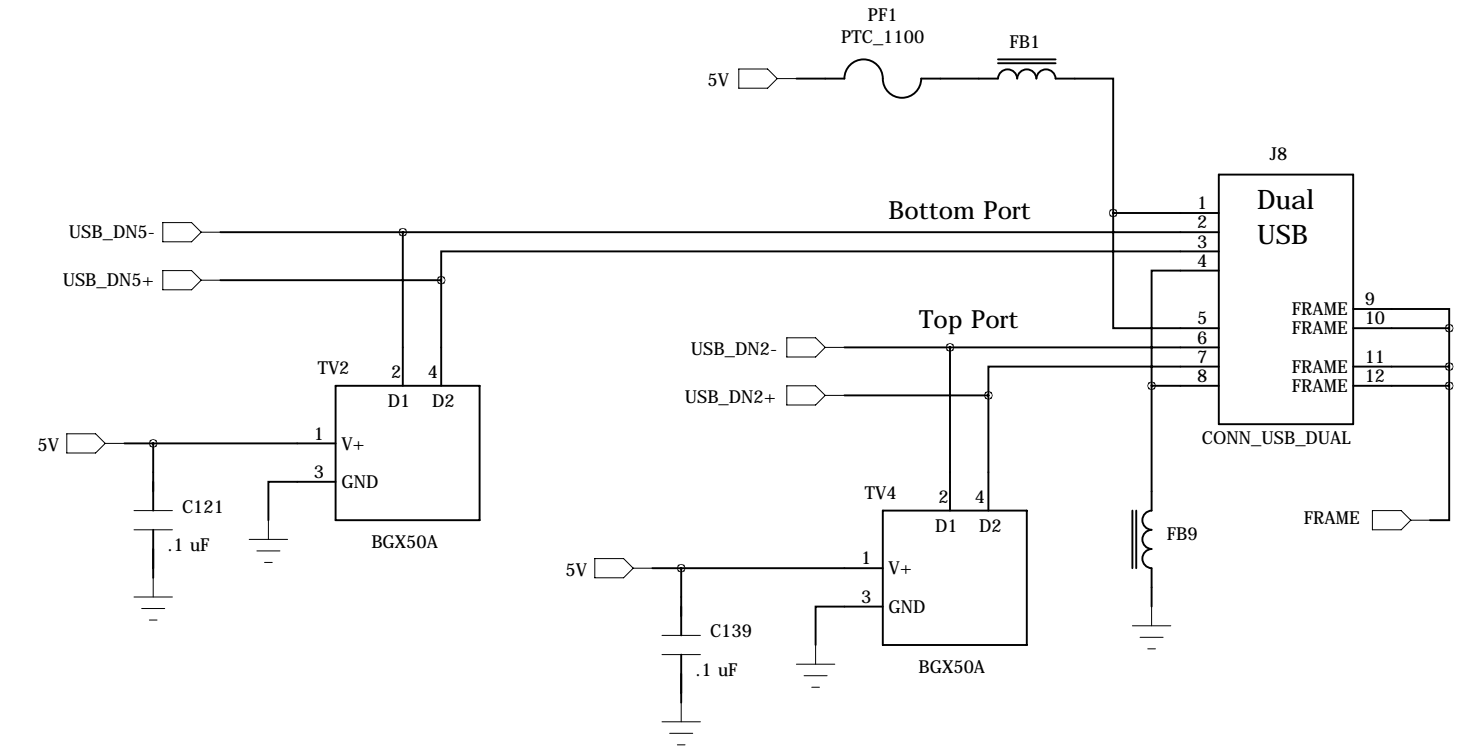
Can be used as outputs, to enable port power, or as an input to sense over current

USB Device Port for Win CE

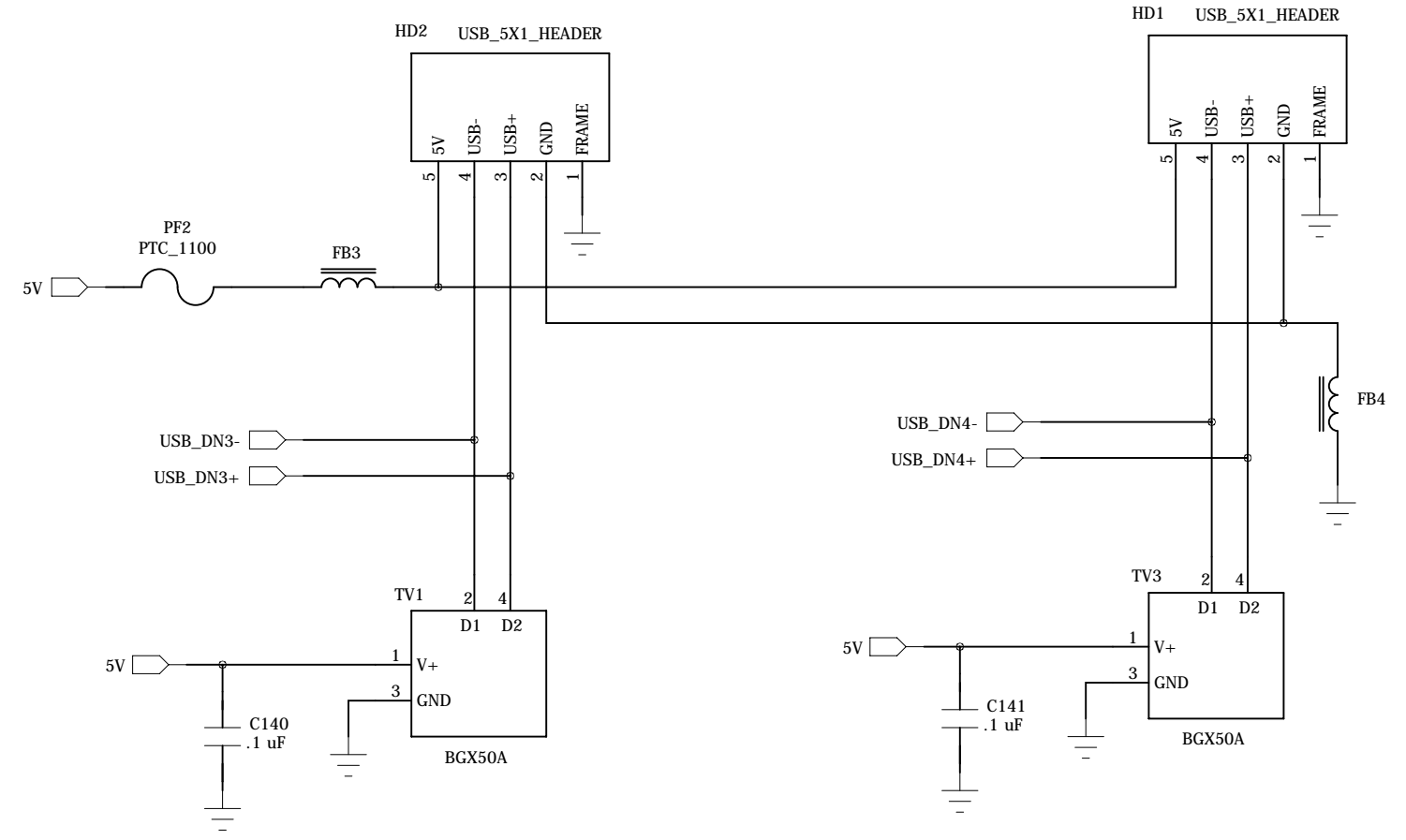


Molex 47590-0001
or 47589-0001

External Dual USB

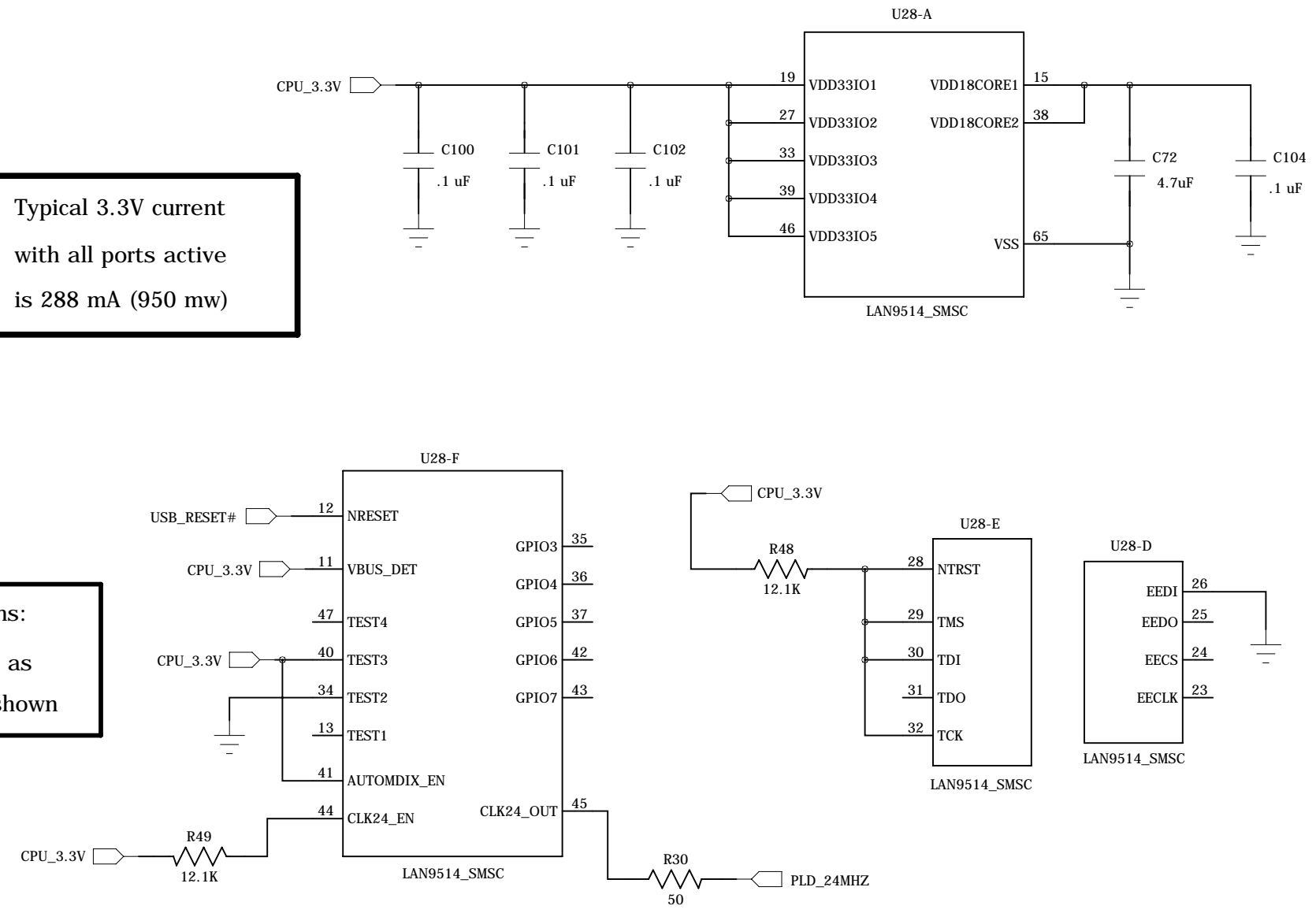


Internal USB Headers



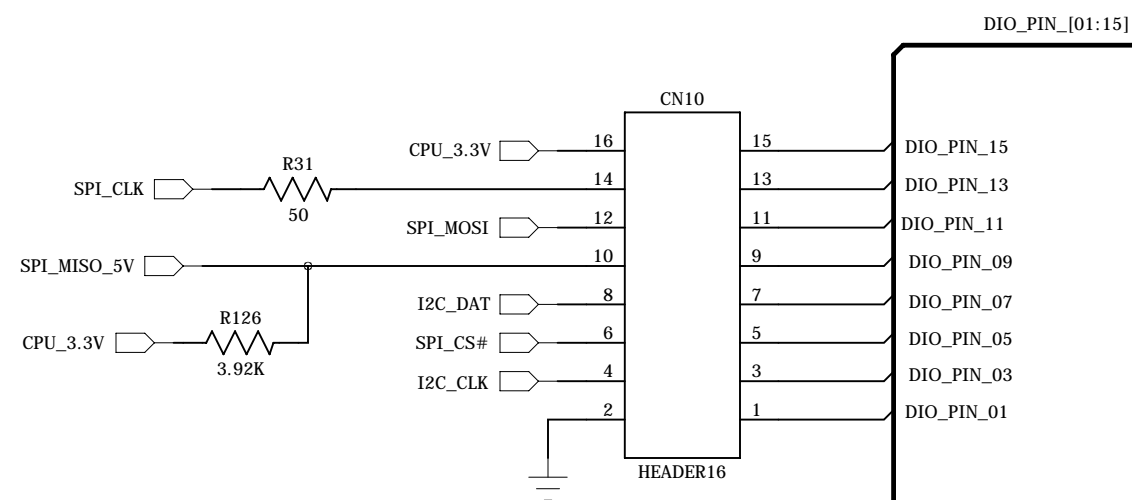
Typical 3.3V current
with all ports active
is 288 mA (950 mw)

Test pins:
must be as
wired as shown

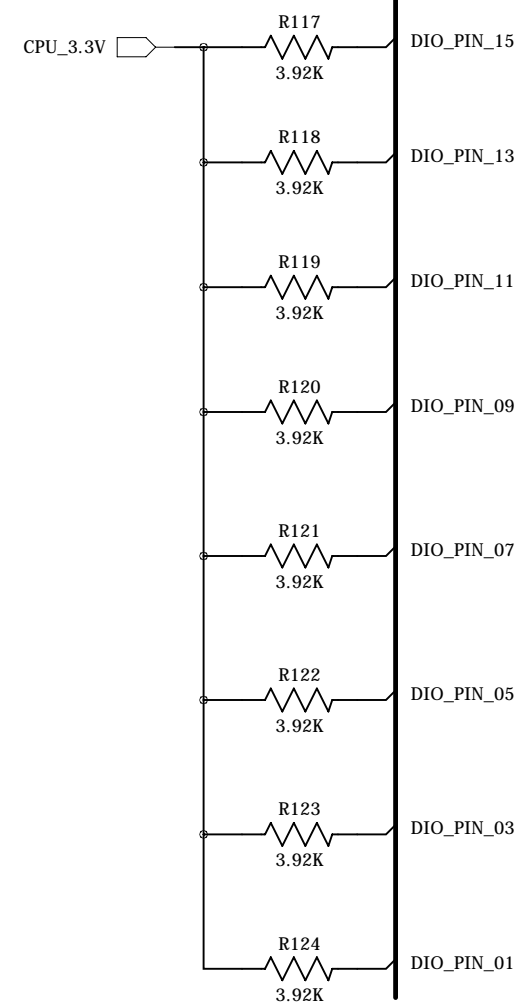


DIO and LCD and SATA

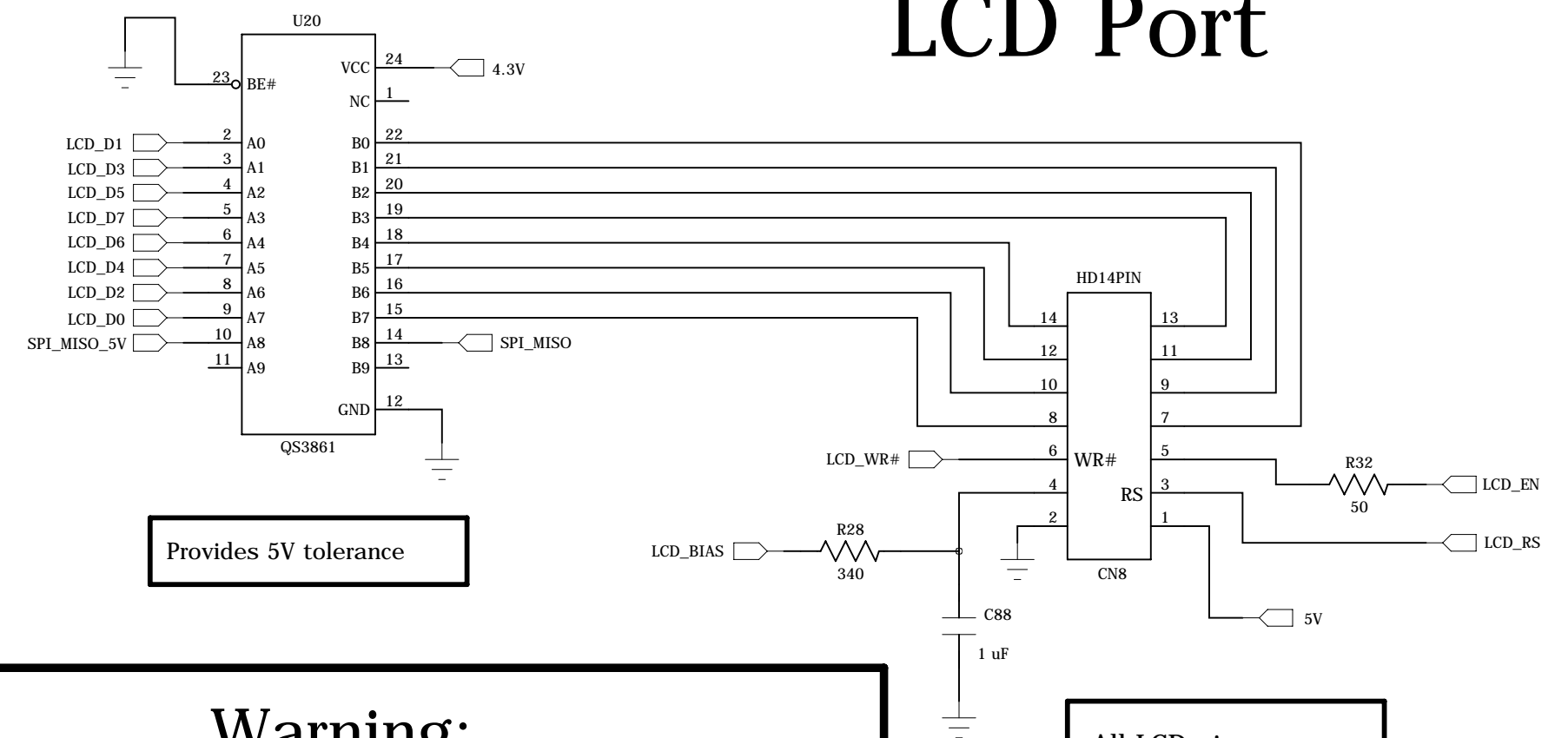
DIO Port



Warning:
DIO are not 5V tolerant !
Only SPI_MISO is 5V tolerant



LCD Port

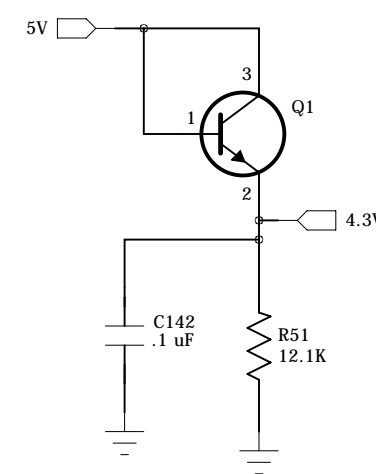


Provides 5V tolerance

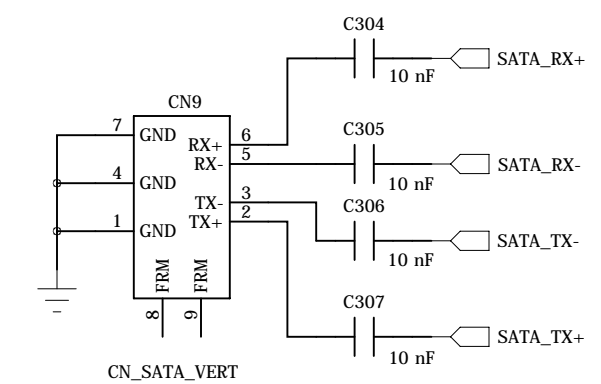
Warning:
LCD_D0 thru LCD_D7 are 5V tolerant
LCD_WR#, LCD_RS, and LCD_EN are not !

All LCD pins are
bi-directional DIO

4.3V Supply



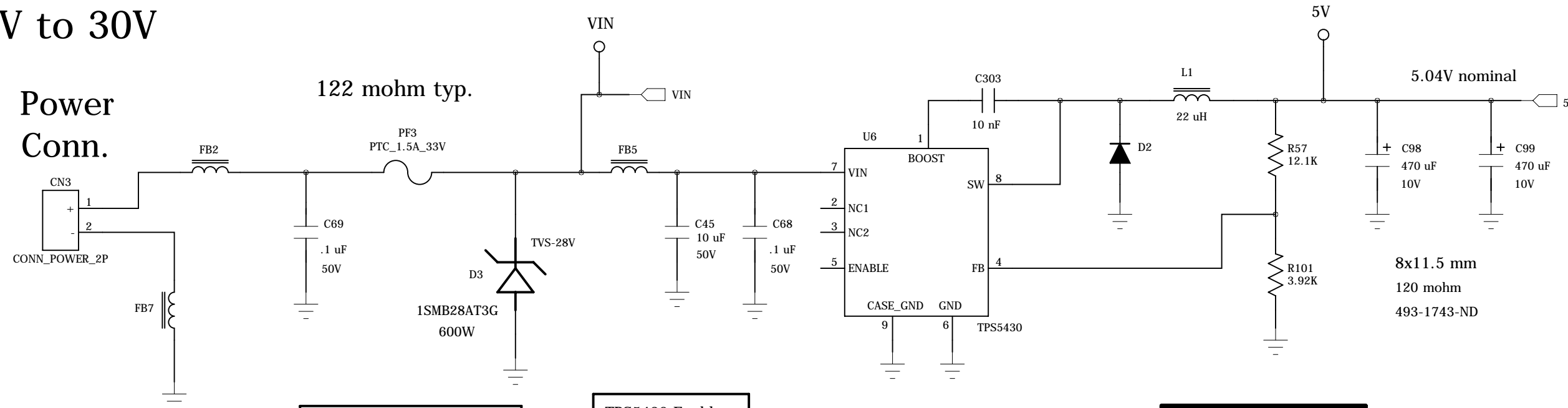
SATA Port



Input Power

4.7V to 5.4V
or
6.0V to 30V

5V Power Supply (3.0 Amps)



Zener knee at 31-34V
for 1 mA of current
13 Amps @ 45V

TPS5430 Enable
must be driven
by open drain
Float = ON

500 KHz nominal
Switching frequency

MSS1260T
3.1A @ 85 deg.
37 mOhm
86 cents @ 500

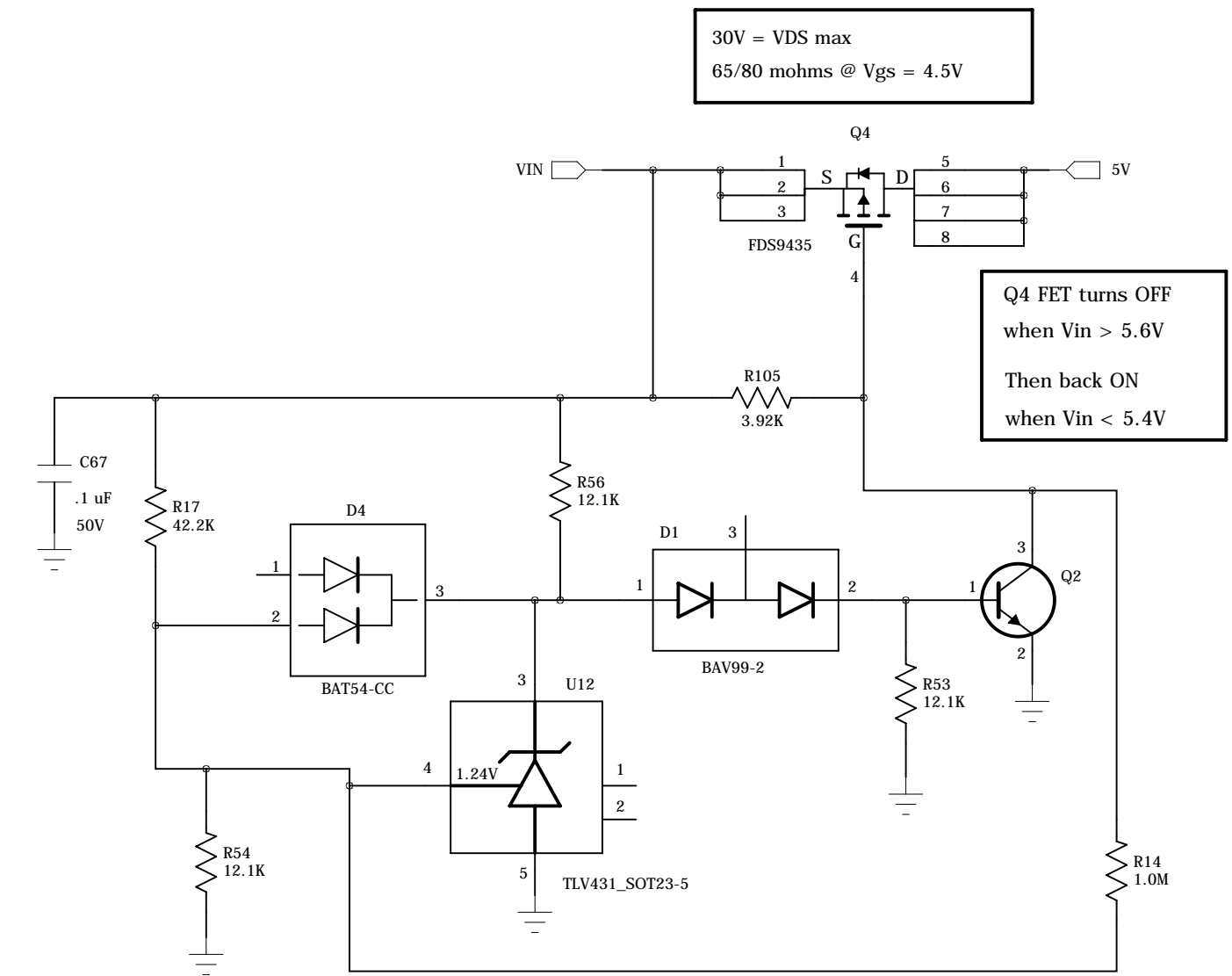
$V_{out} = 1.22V * [(10K / R_{bot}) + 1]$
18 uA shutdown 3 mA quiescent
36V max operating
Under-Voltage lockout = 5.3V typ.
87% Max. duty cycle
This forces Vin min = 6.2V

DR125-220-R
74 cents @ 600
3.7A rms @ 85 deg.
39 mOhm
exact same size as
CoilCraft MSS1260
same footprint too

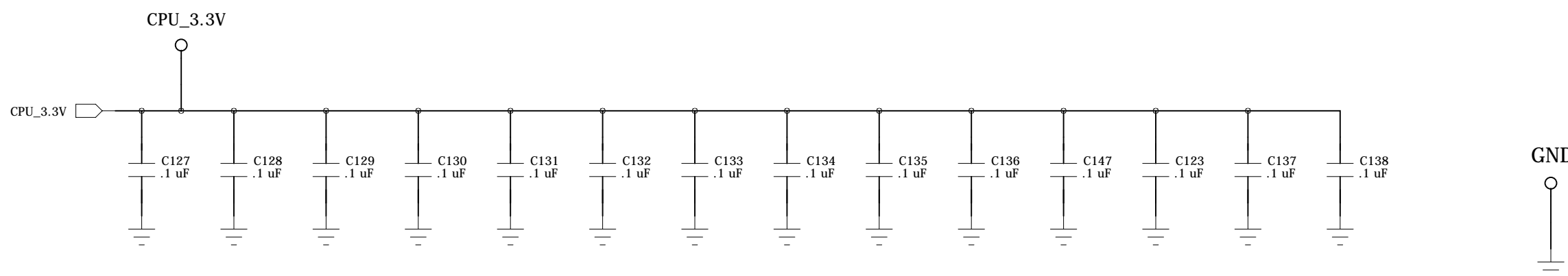
Warning:

When Vin is between 5.4V and 6.0V
The 5V rail can fall below 4.5V
This means the SBC may reset

5V Regulator Bypass

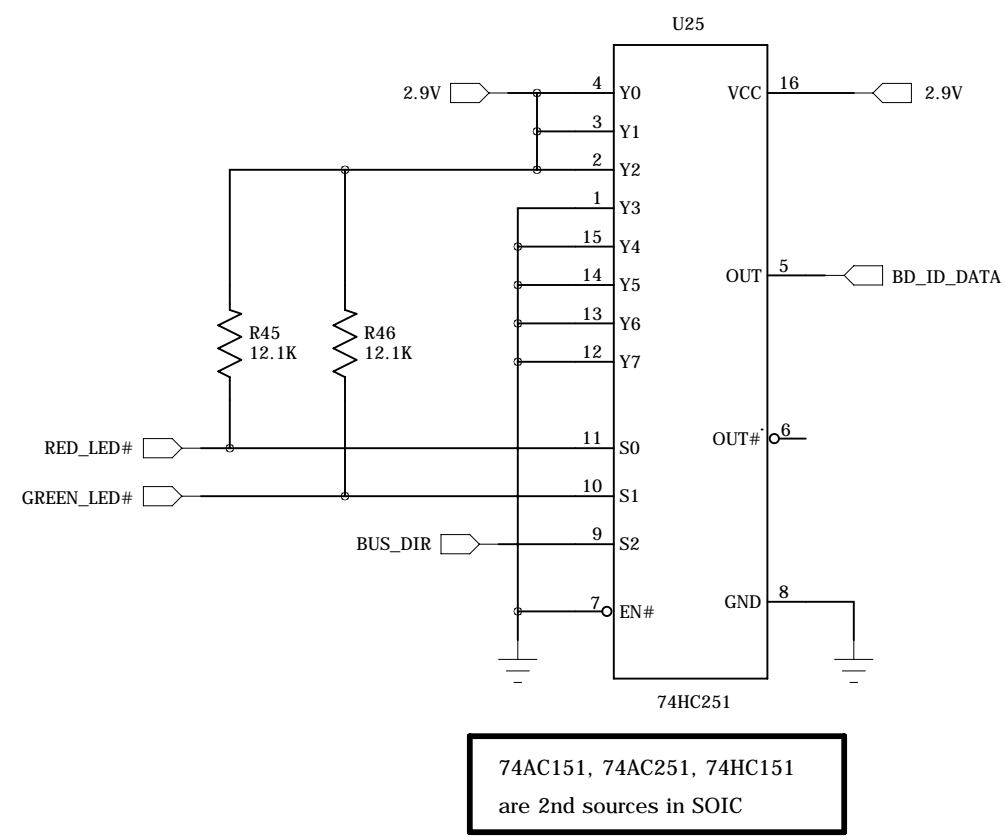


Turns FET on when Vin < 5.5V nominal

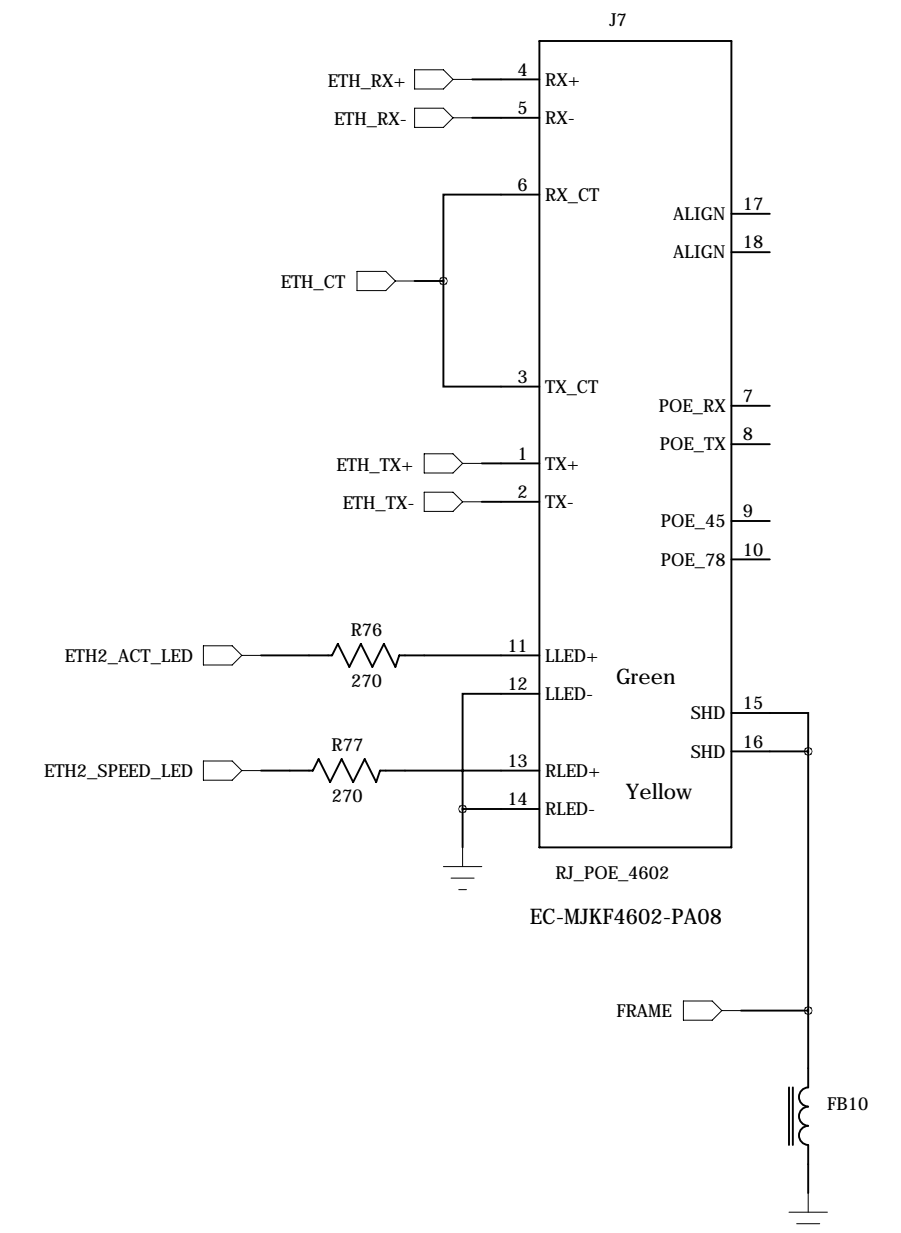


When the Input voltage drops below 6.5V
the 5V rail will start to drop
(5V supply falls out of regulation)
At 5.6V Input, the 5V rail could be as low as 4.3V
Then at around 5.5V, the 5V rail will "snap"
back up due to the "Bypass circuit" turning on
(5V rail could go as high as 5.4V)
Then below 5.5V input, it will track the input
with a small voltage drop

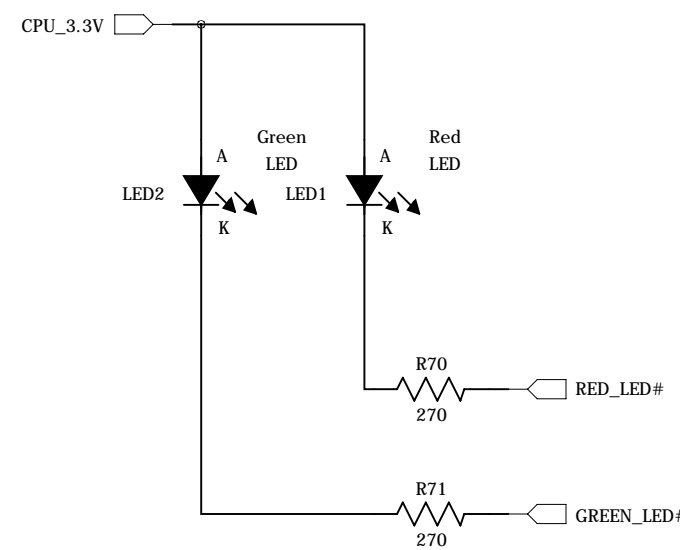
Board ID = 7



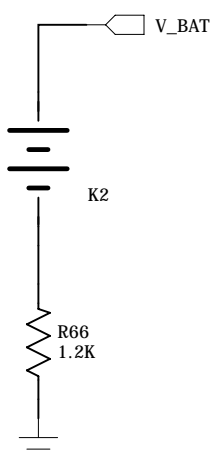
SBC Primary 10/100 Ethernet



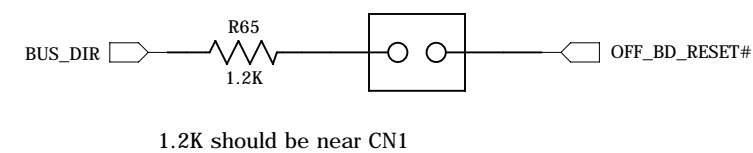
LEDs



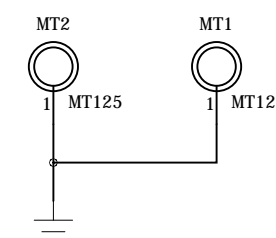
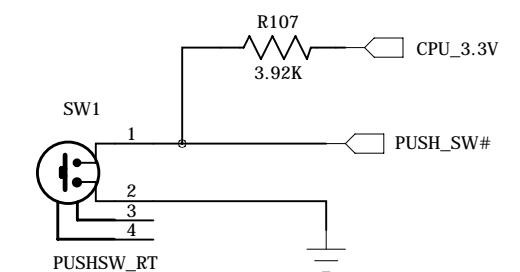
RTC Battery



Force Boot to SD card



Push Switch



Technologic Systems	Aug. 7, 2010
Title: TS-8100 Ethernet, Battery, Board ID	
Rev:	Designer RLM Sheet 6 of 10

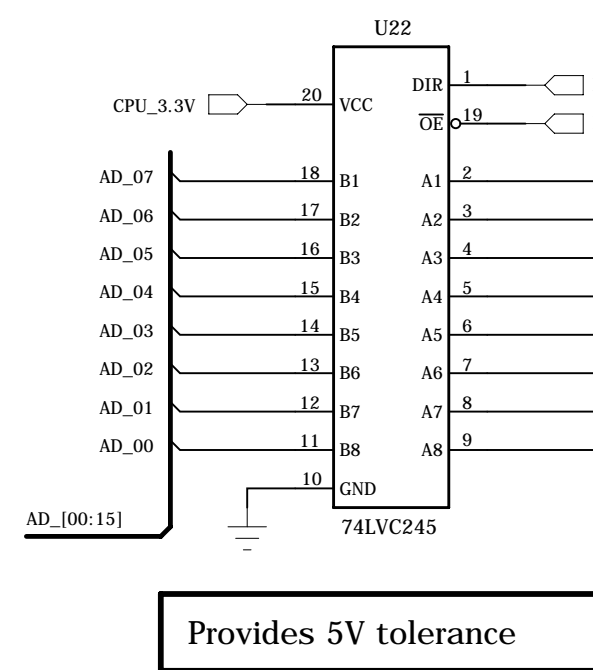
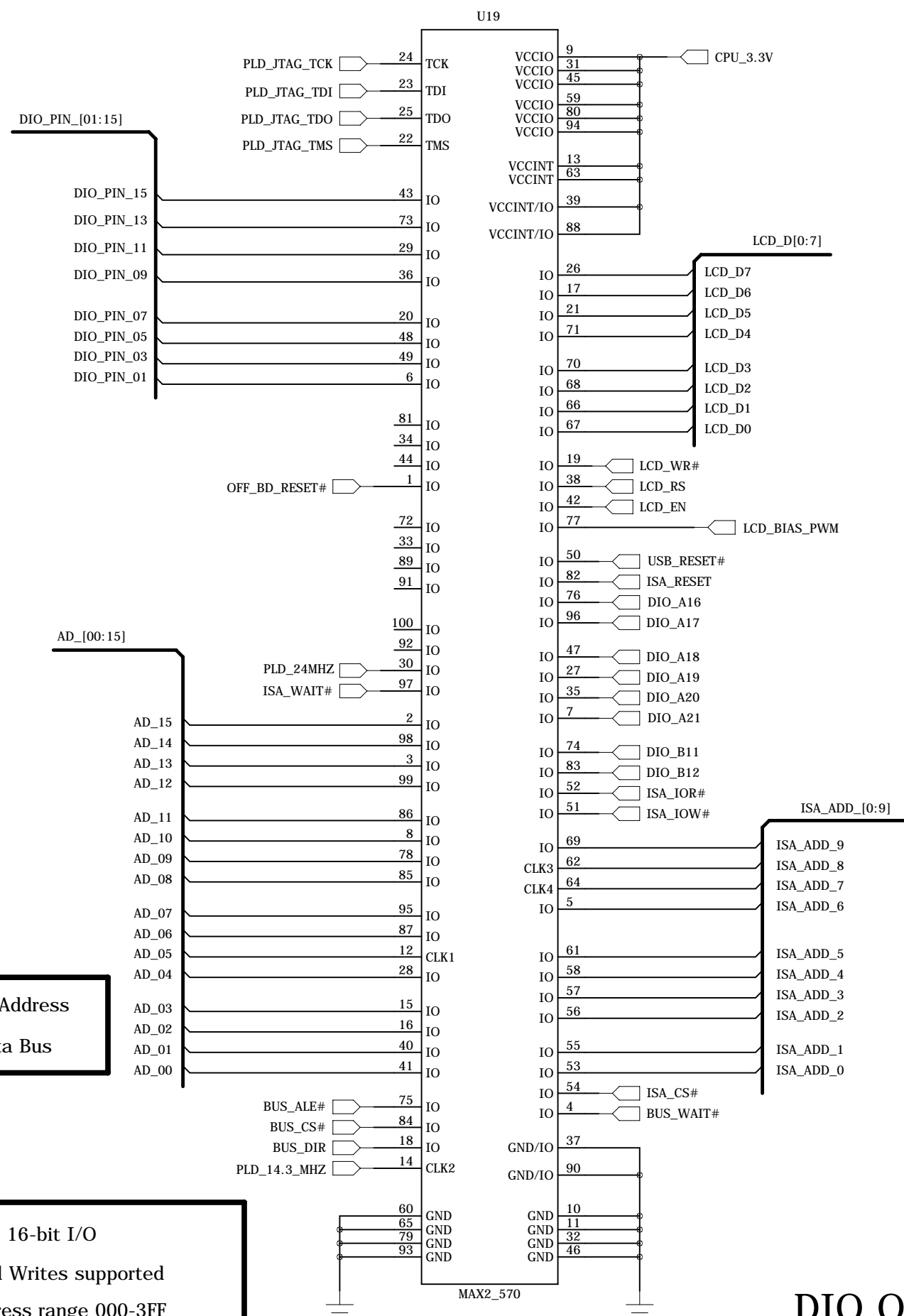
Inputs on Left

PLD

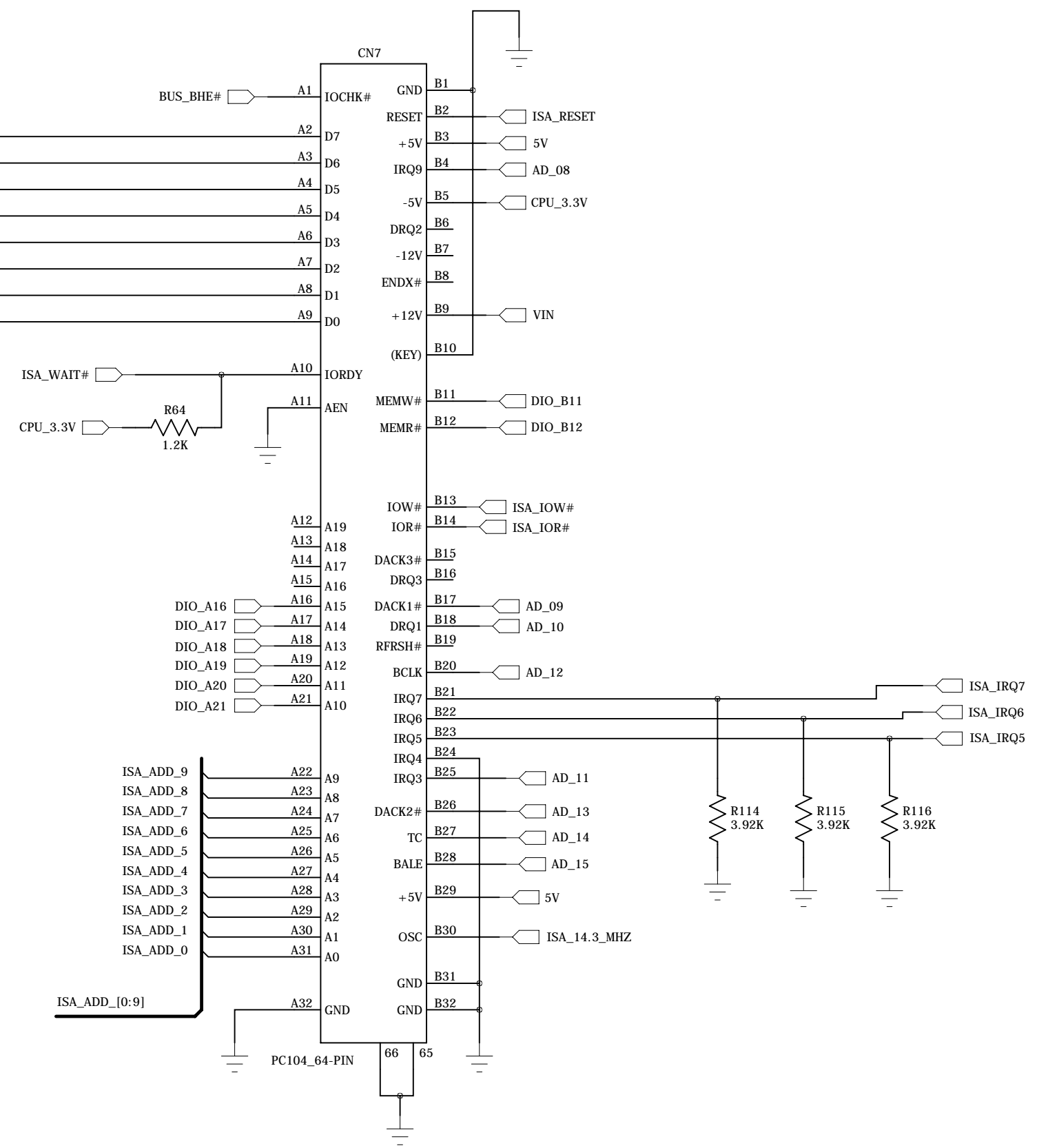
Outputs on Right

PC/104

64-pin Connector



Provides 5V tolerance



MUXed Address and Data Bus

8-bit and 16-bit I/O
Read and Writes supported over address range 000-3FF

Address range 100-3FF drives PC/104 bus

Address range 000-0FF is internal PLD registers

MAX240

Warning:
Make sure PLD pins 39 and 88 are Inputs

DIO Outputs

DIO_A16 thru DIO_A21 and LCD_EN should default to logic zero

DIO_B11 and DIO_B12 should default to logic "1"

USB_RESET# should default to a logic zero

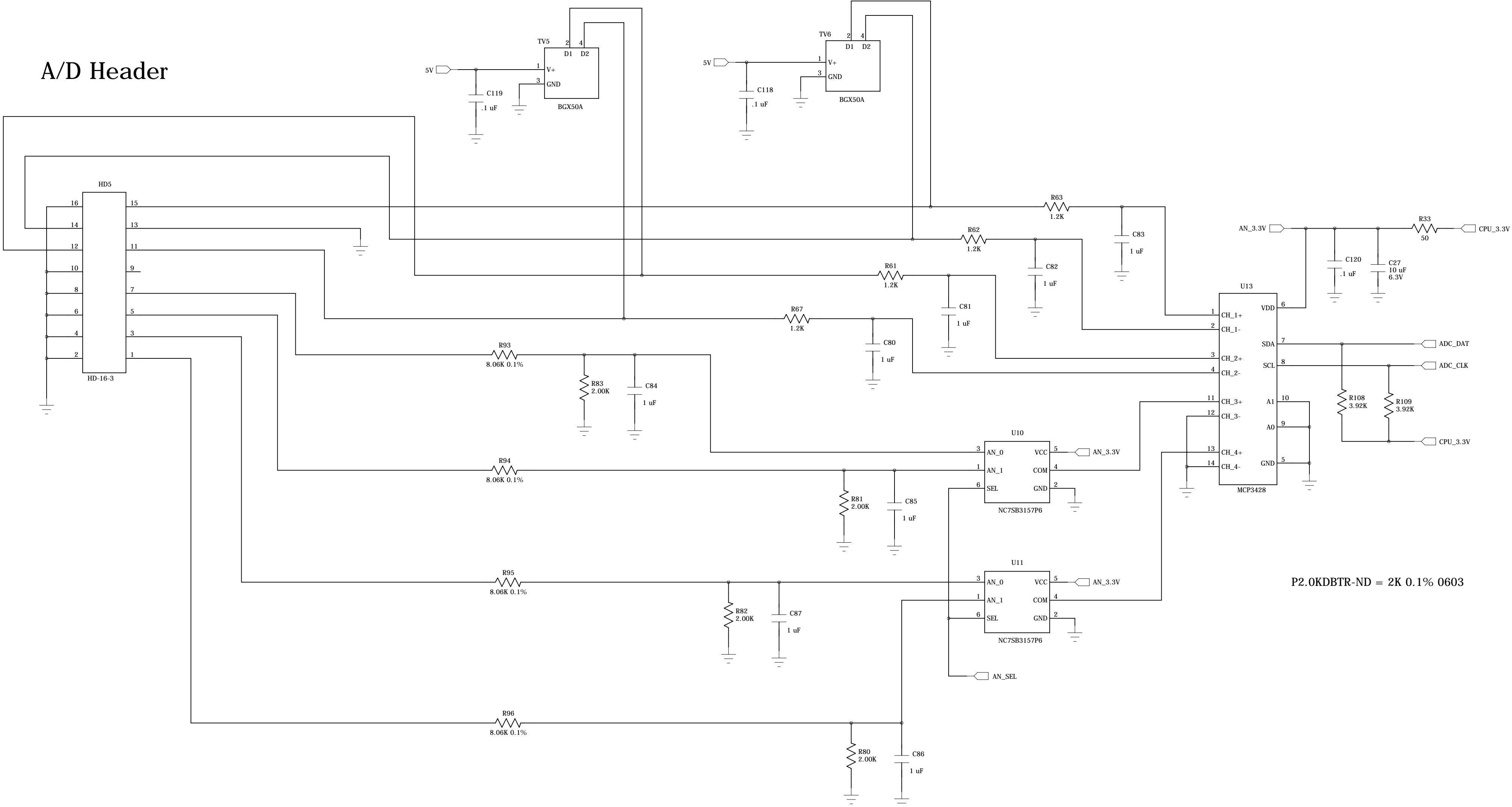
DIO Inputs

LCD_WR#, LCD_RS and LCD_D0 thru LCD_D7 should default as Inputs

DIO_PIN_1 thru DIO_PIN_15 should default as Inputs

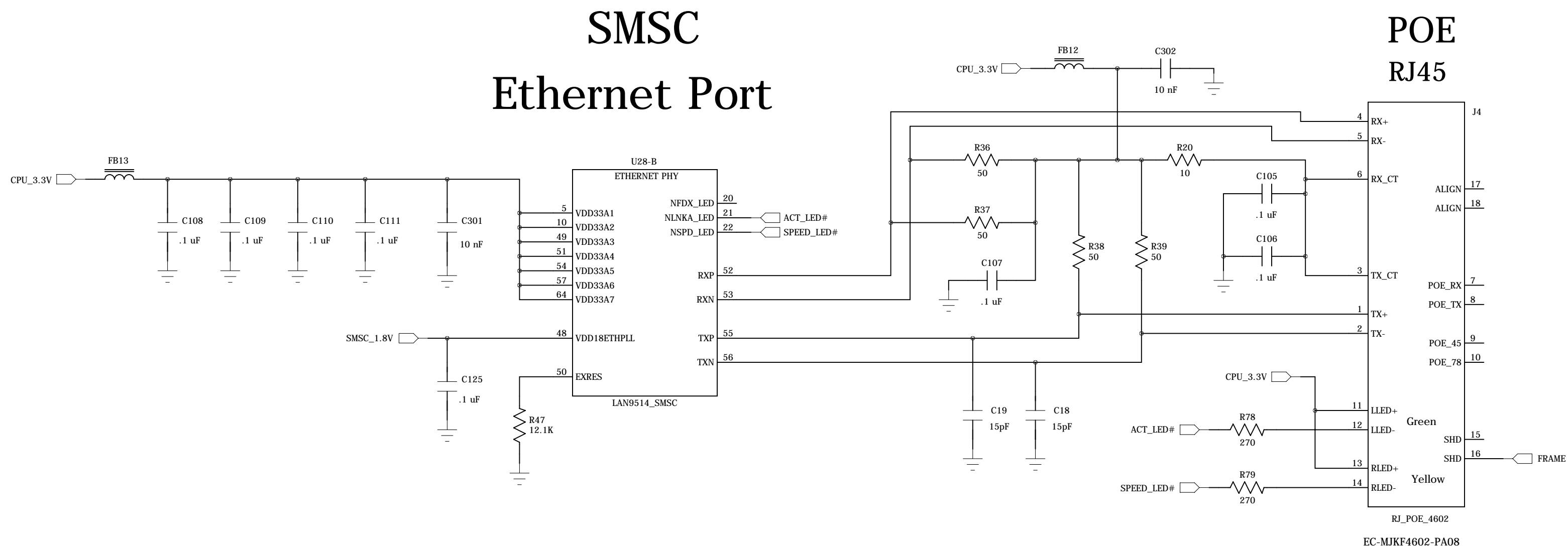
16-bit A/D Converter

Four single-ended 0-10V Inputs
Two differential pairs 0-2V range



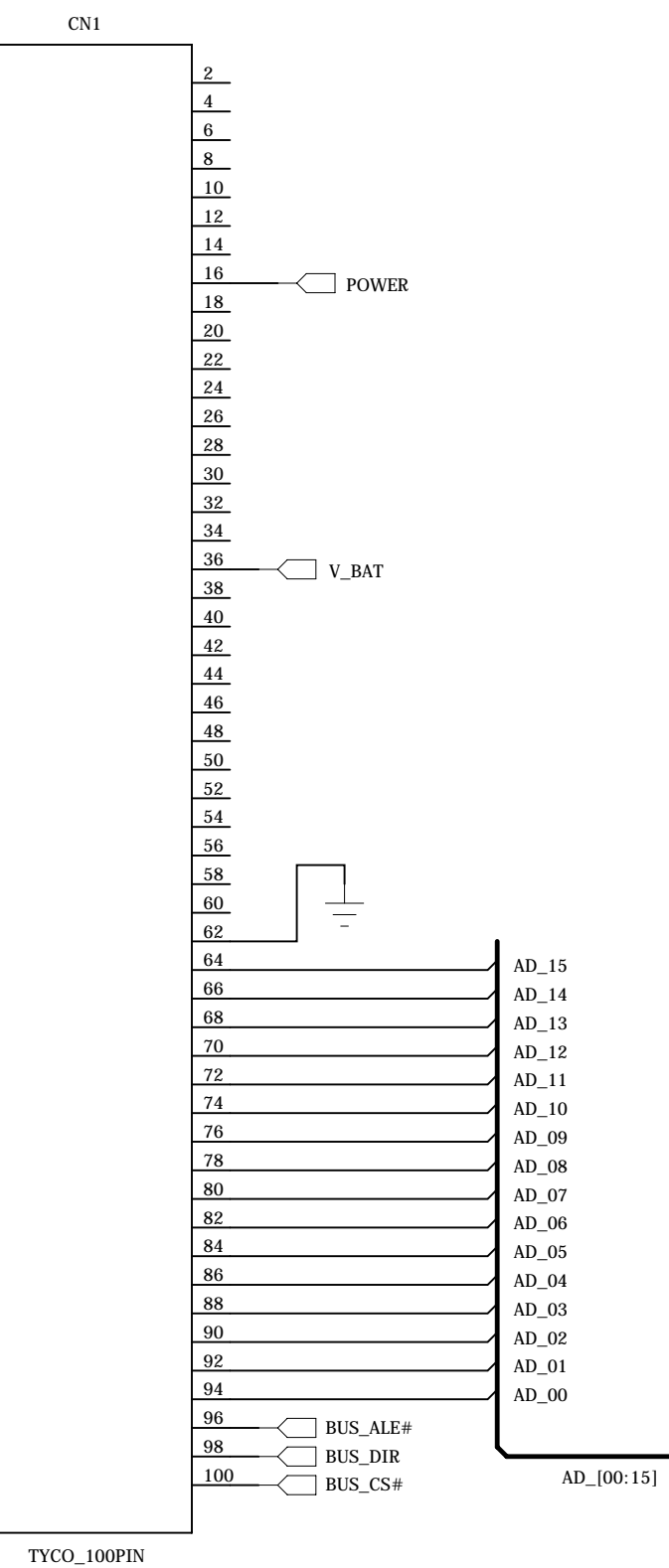
2nd Ethernet Port

(Optional)



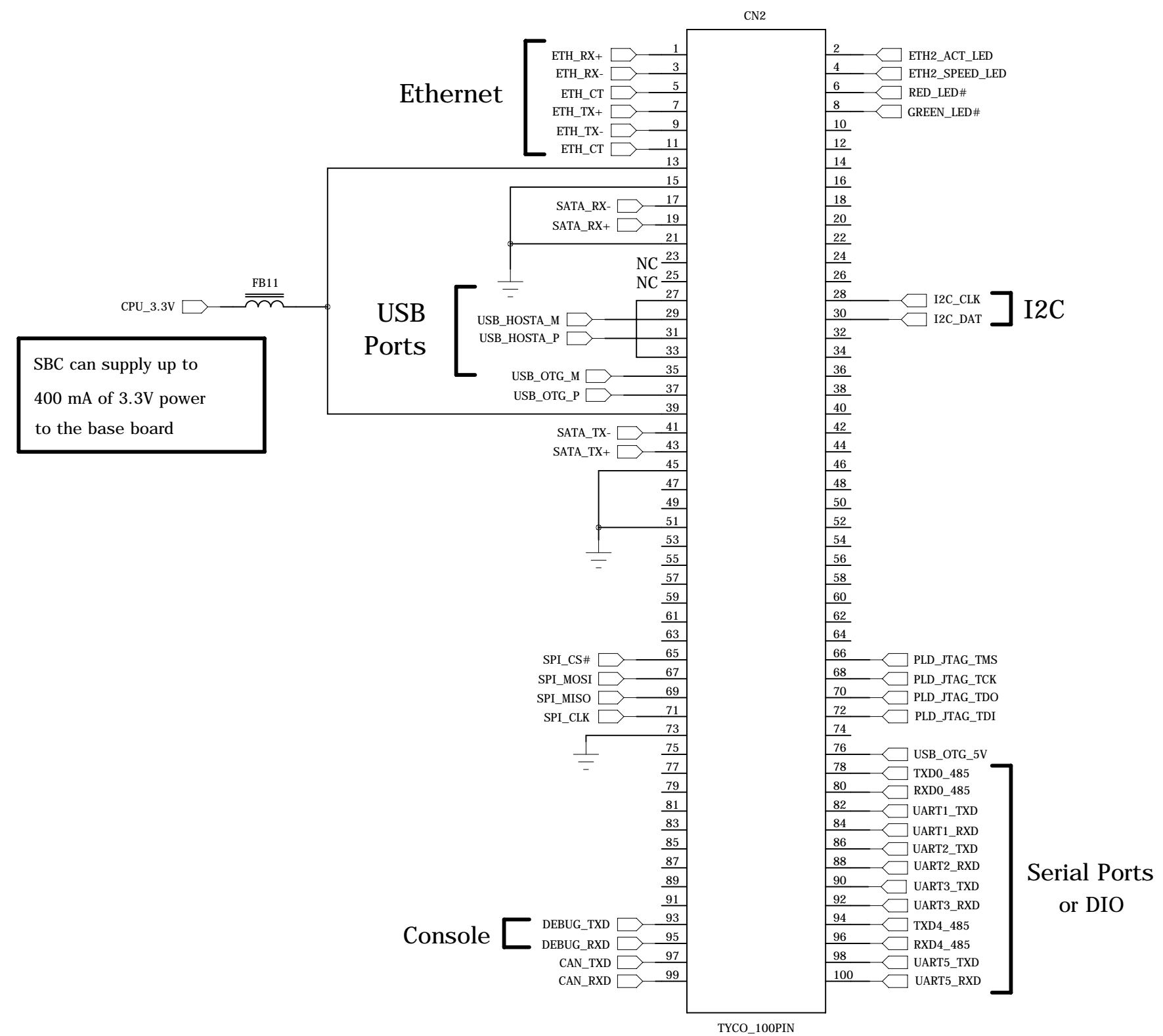
Two 100-pin Module Connectors

Left



OFF_BD_RESET# is an Output from the SBC used to reset all peripherals

Right



SBC can supply up to 400 mA of 3.3V power to the base board

Boot Strap

BUS_DIR	SBC Boots from
1	NAND Flash
0	SD Card

BUS_DIR state is latched prior to OFF_BD_RESET# deasserted

BUS_DIR has a 12K pull-up resistor on the SBC module

Use 1.2K ohm resistor to OFF_BD_RESET# to strap logic low