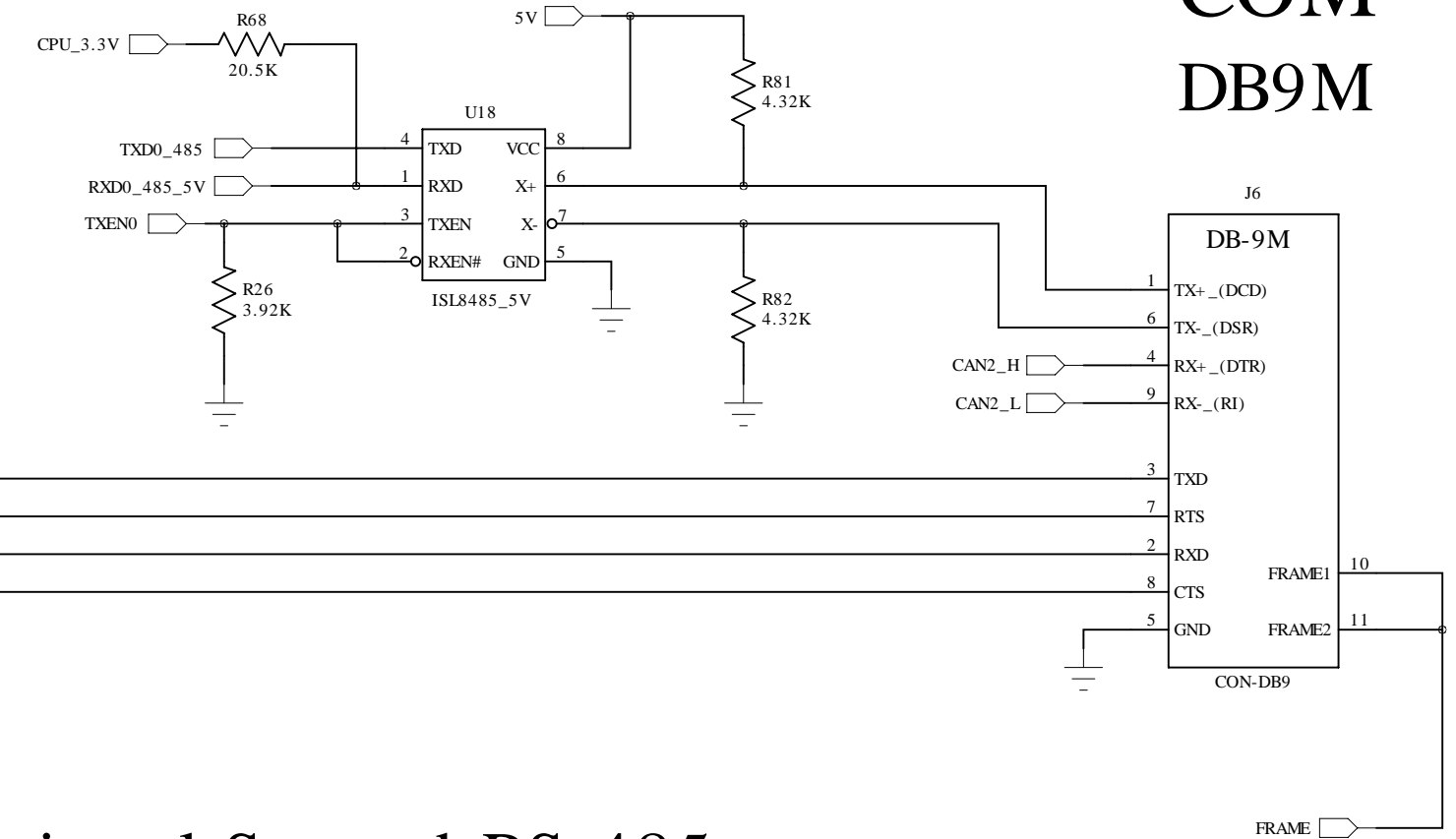
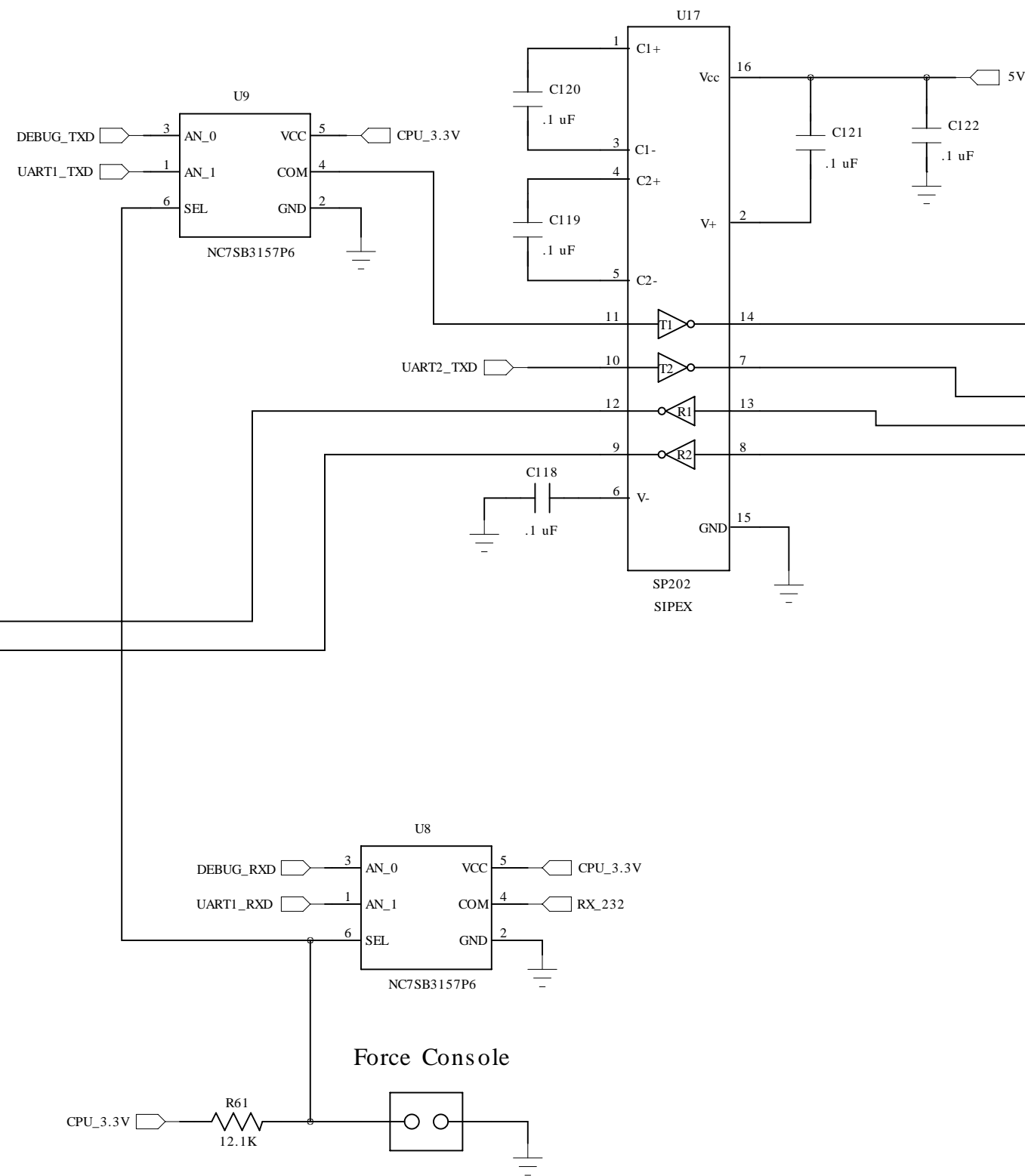
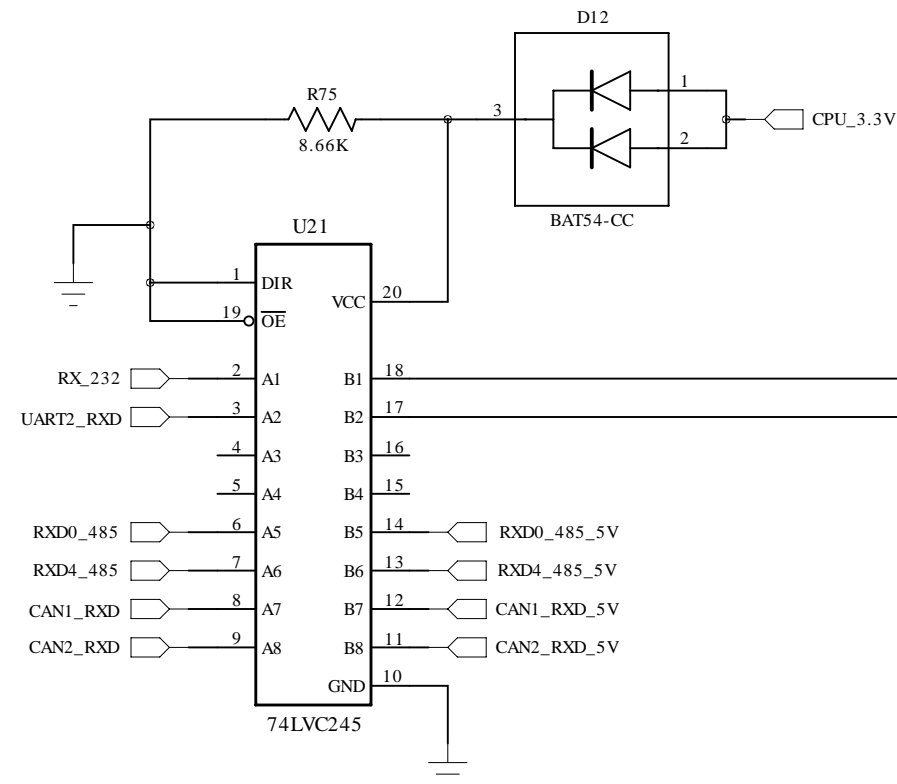


## RS-232 Transceiver

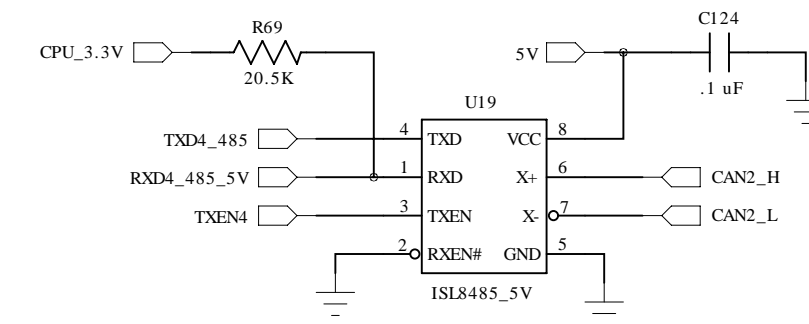
## RS-485 Driver

COM  
DB9M

2.9V <-- 5V  
Level shifter



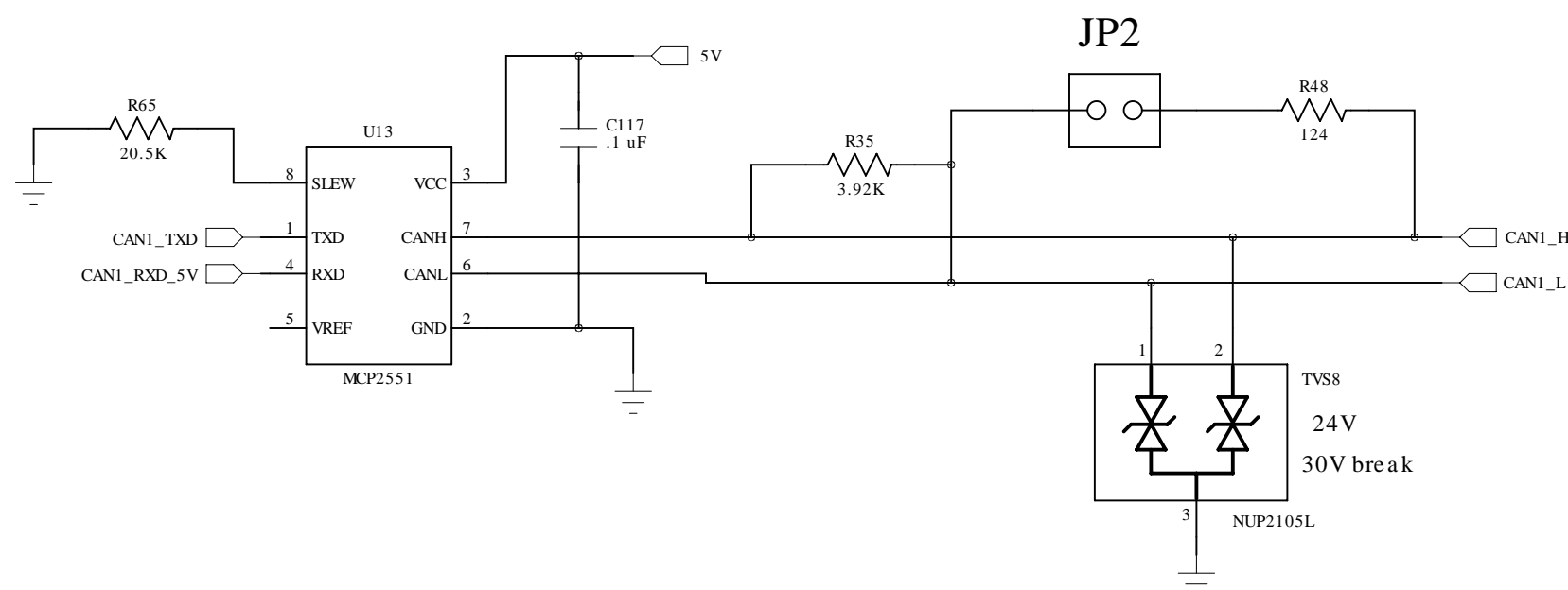
## Optional Second RS-485



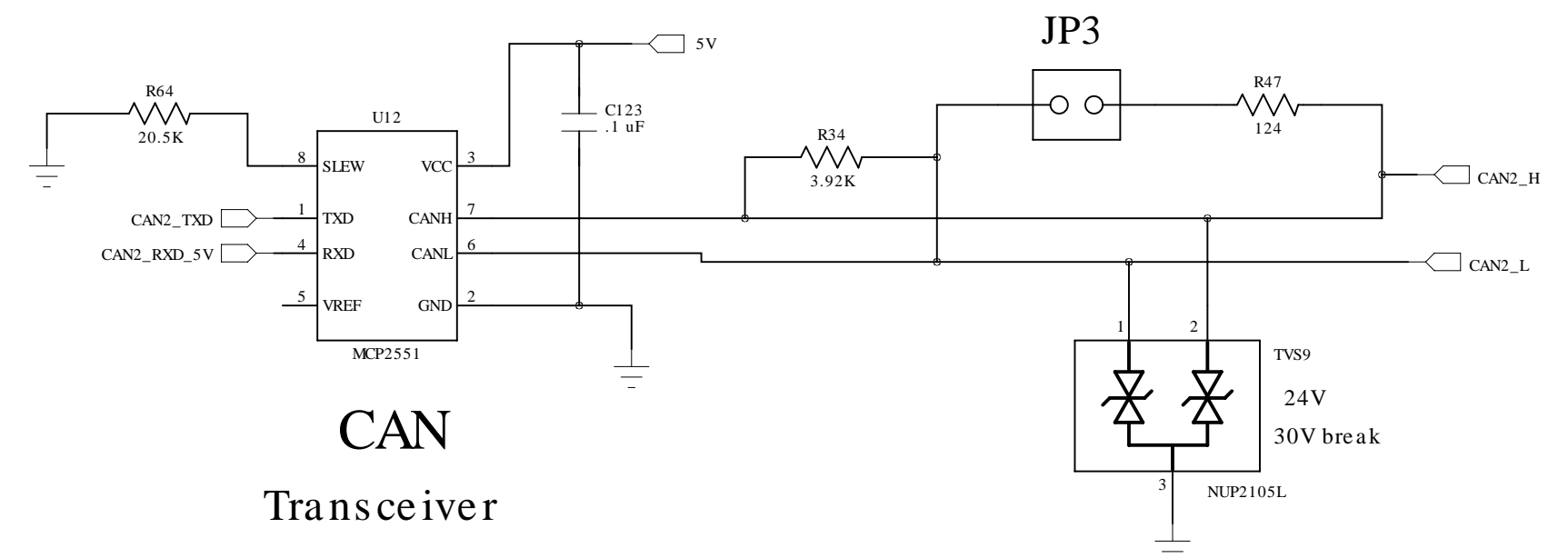
If this transceiver is populated,  
then CAN2 must be de-populated

SP4082 = RS-485 driver

## CAN Transceiver # 1



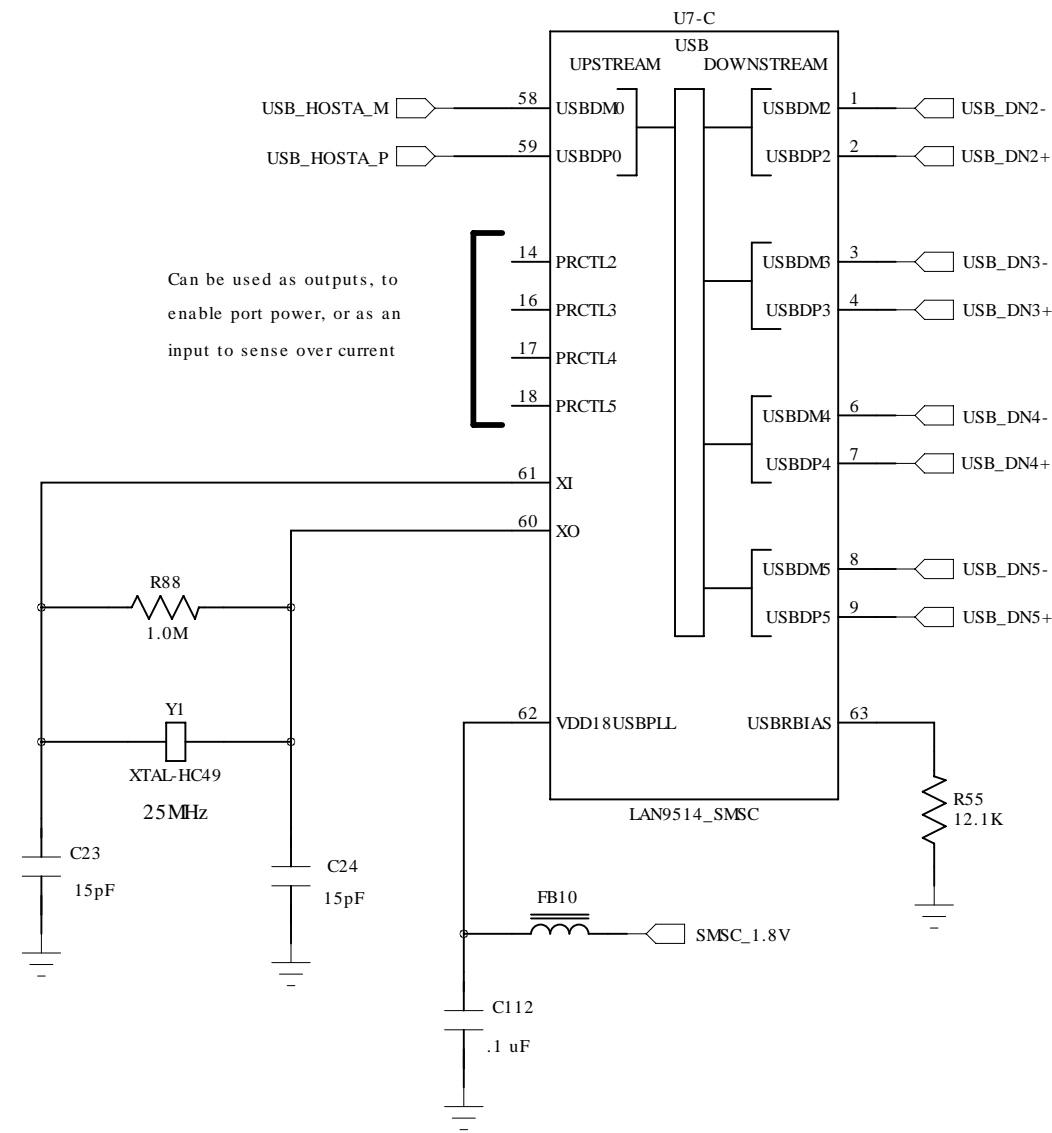
## CAN Transceiver # 2



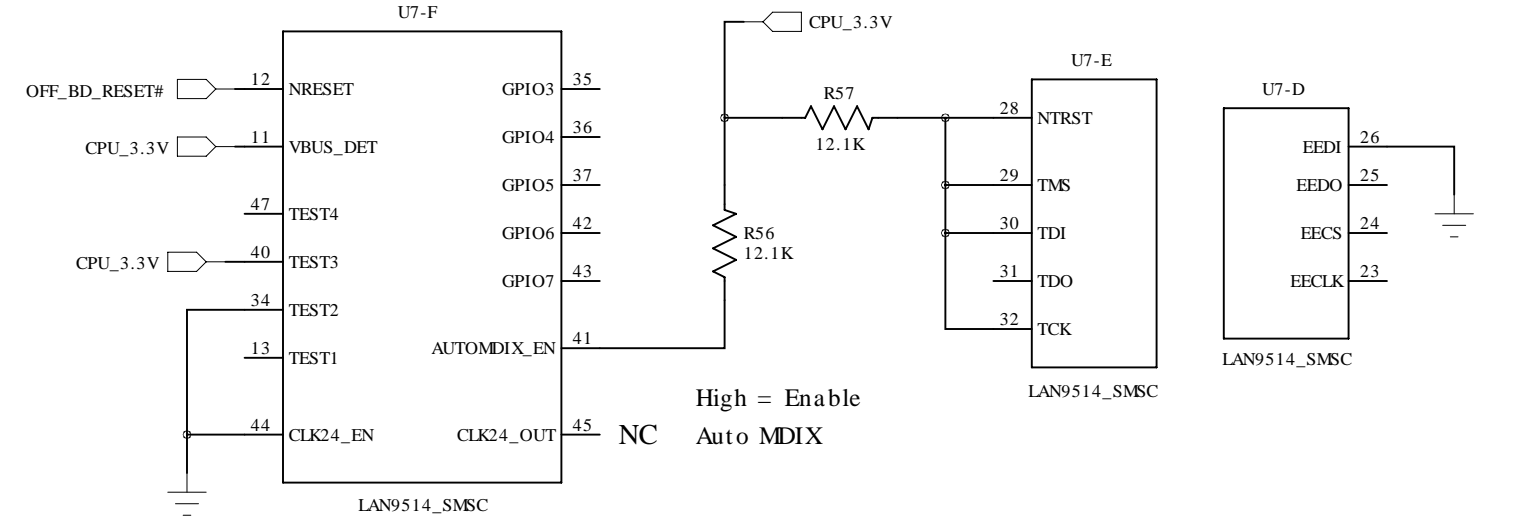
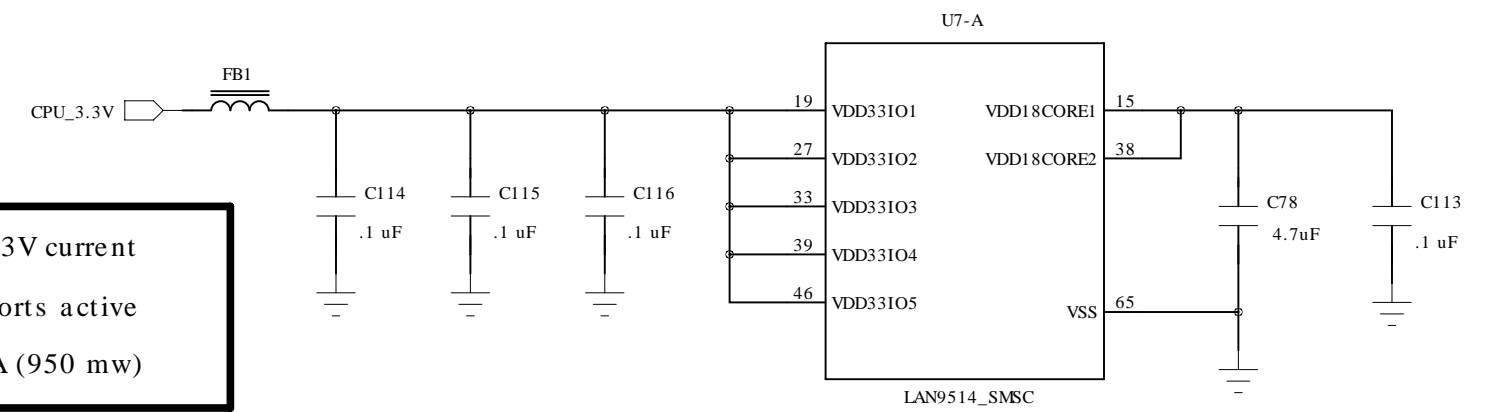
CAN  
Transceiver

# USB Ports

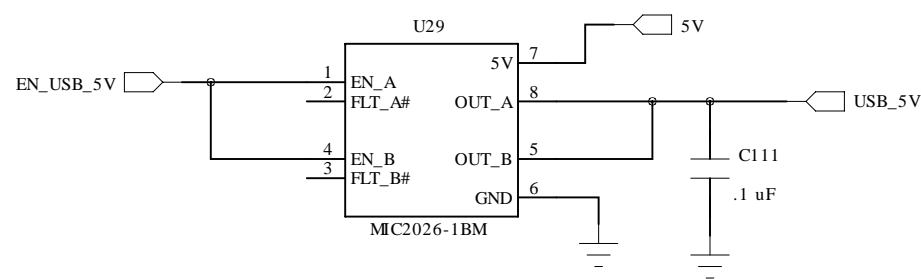
## SMSC USB Hub



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

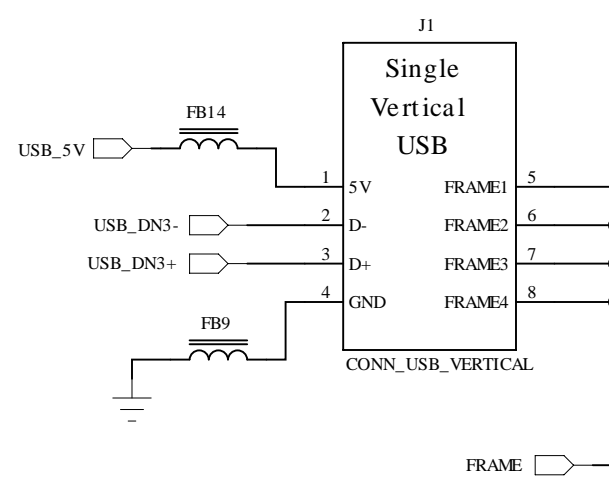


## USB Power Switch

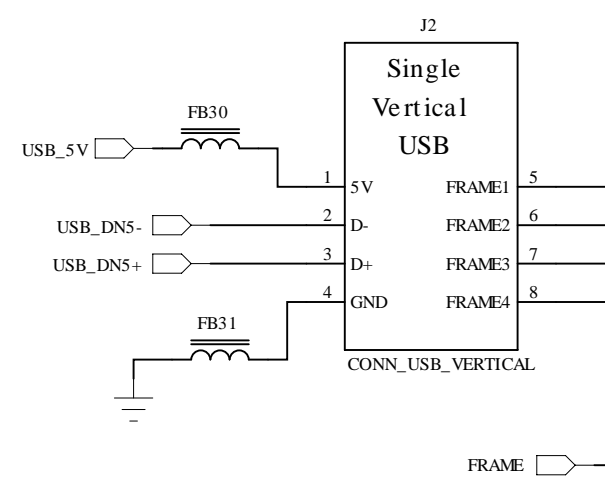


1400 mA typ. current limit

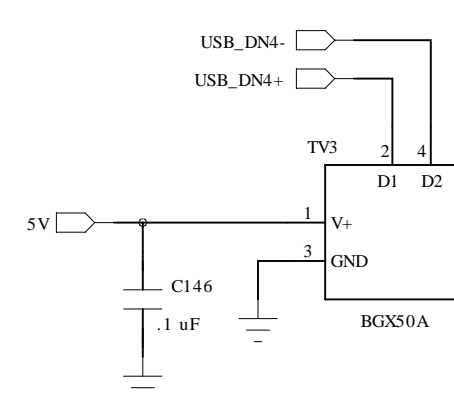
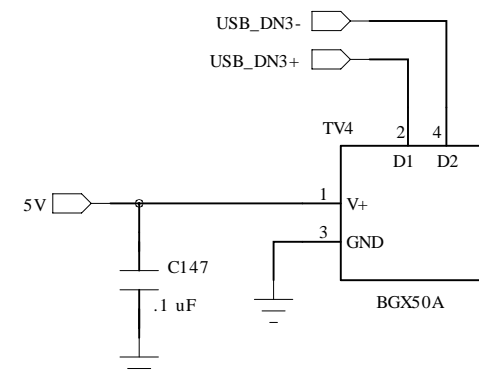
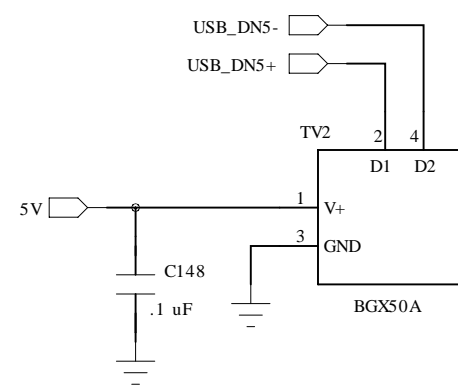
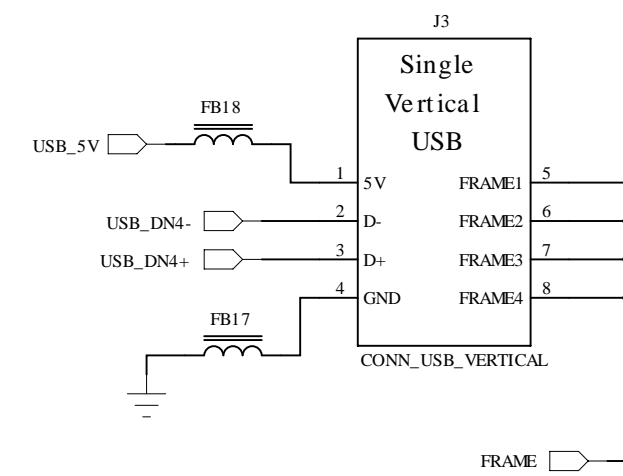
## USB 1



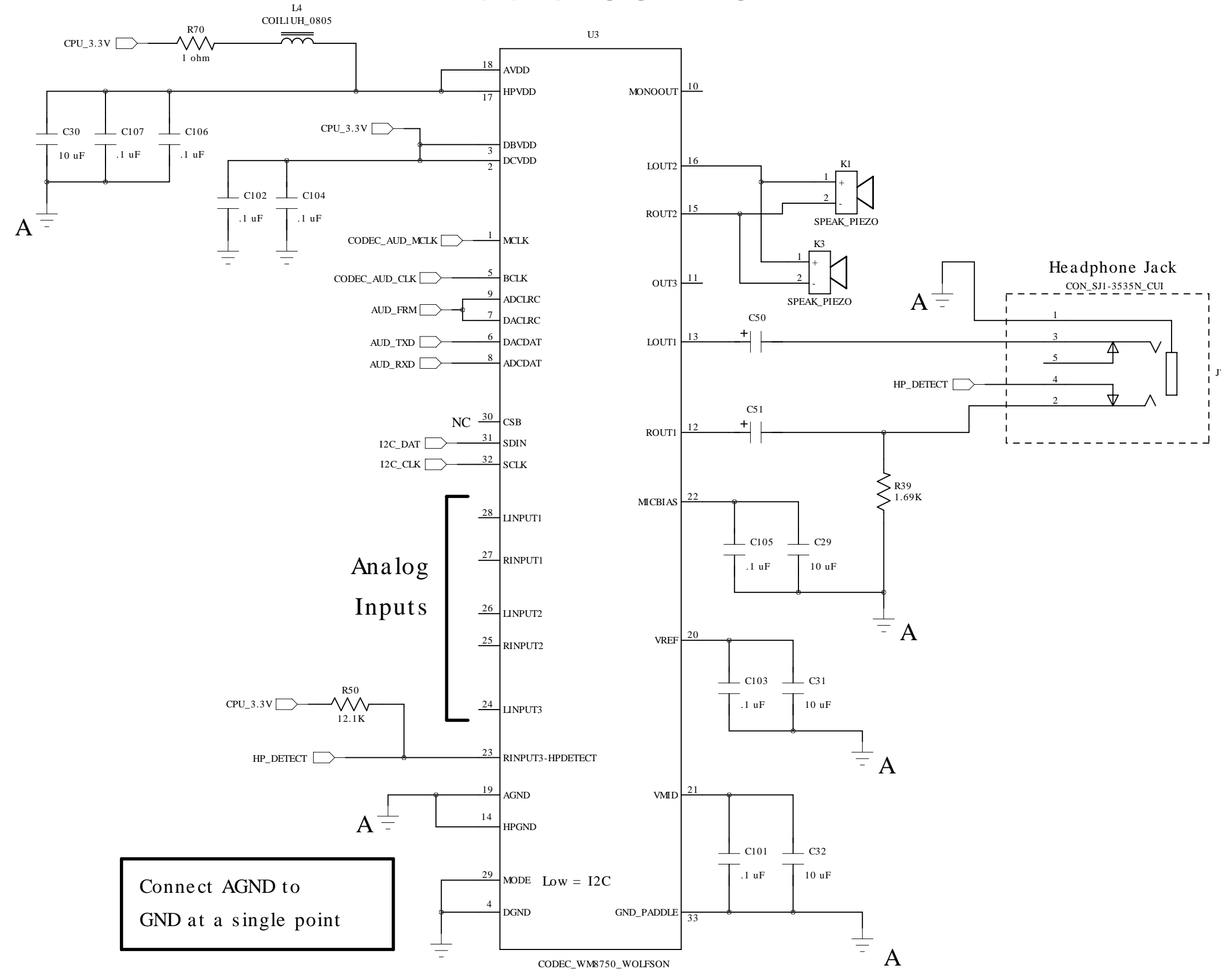
## USB 2



## USB 3

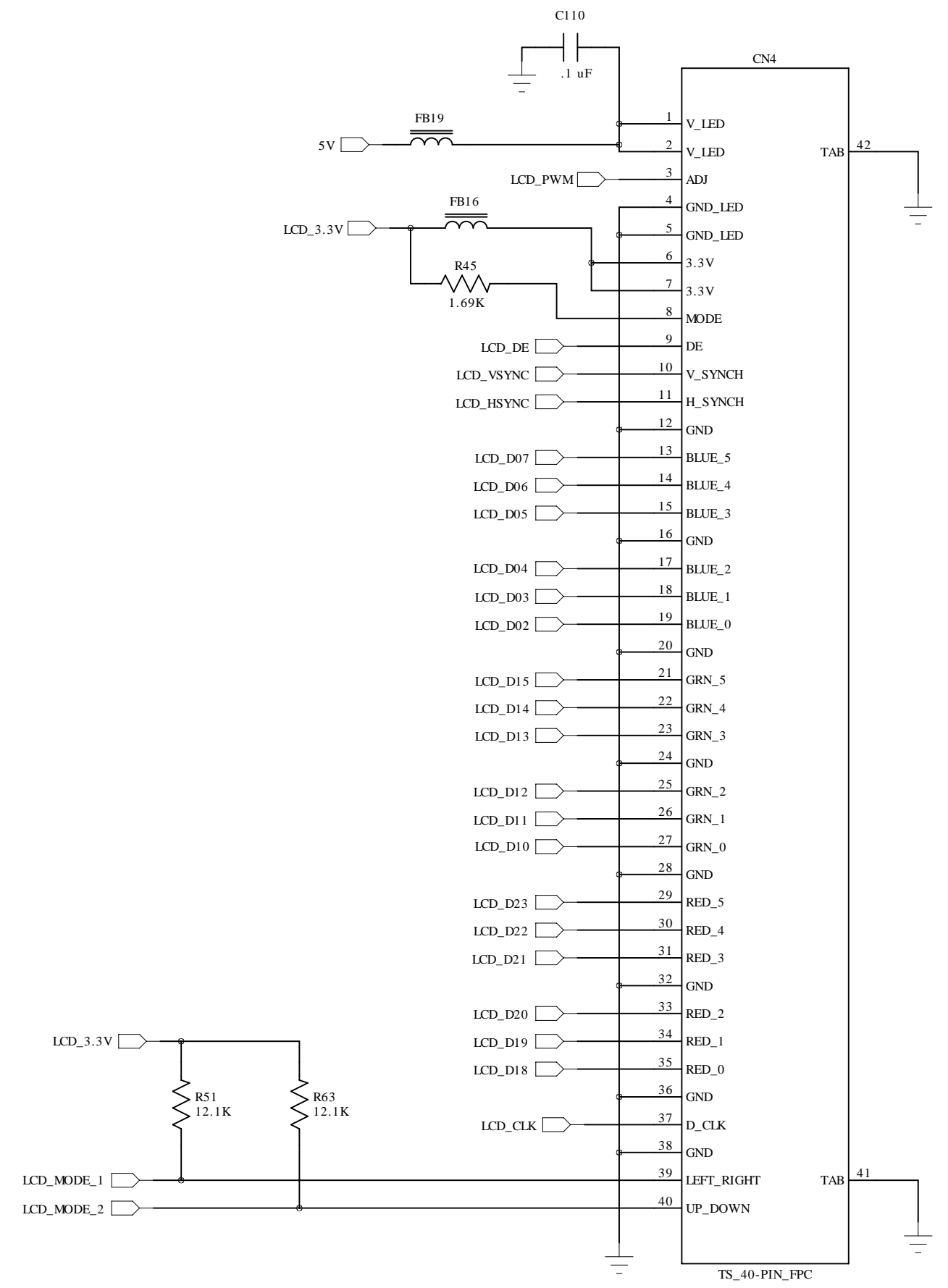


# Audio CODEC

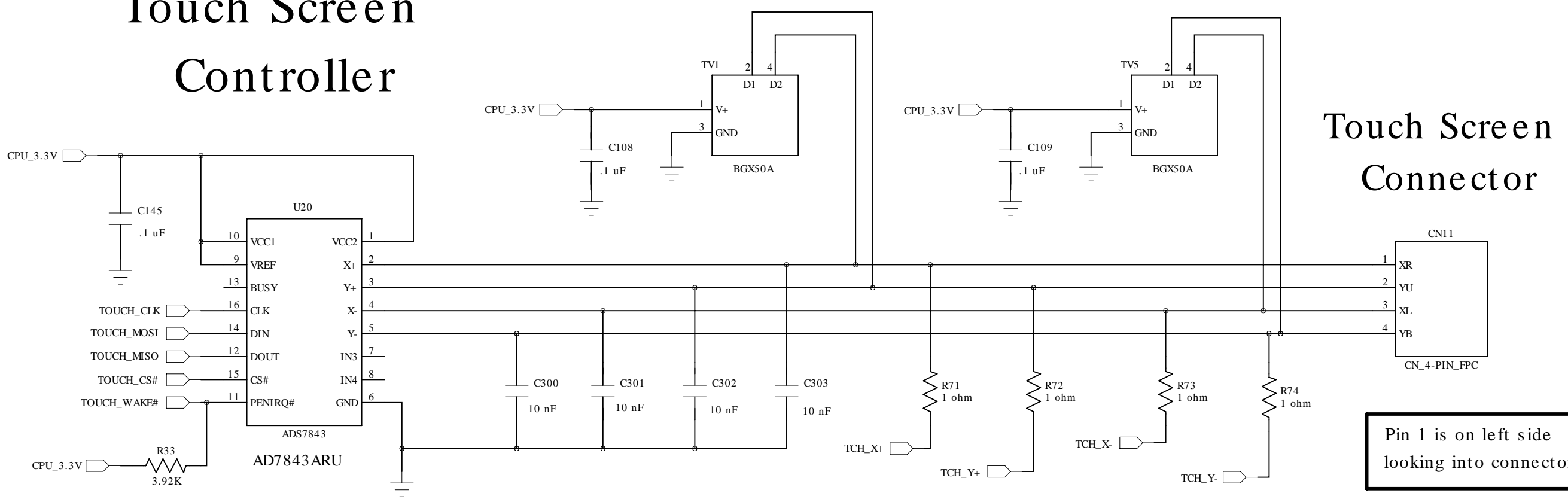


Connect AGND to GND at a single point

# LCD Conn.



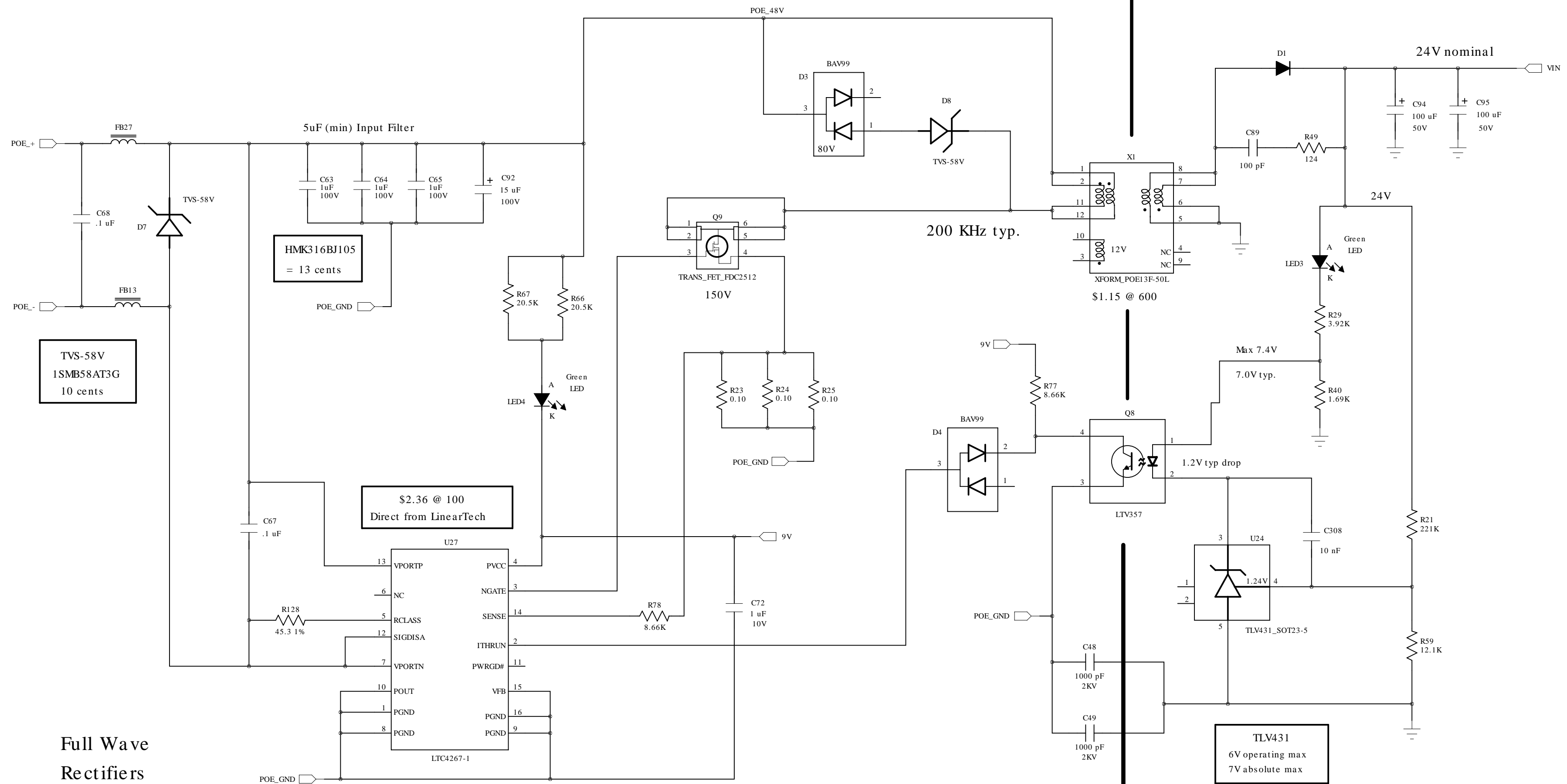
# Touch Screen Controller



Pin 1 is on left side looking into connector

# POE Side 48V DC Input

# Reg. 24V Out



TVS-58V  
1SMB58AT3G  
10 cents

HMK316BJ105  
= 13 cents

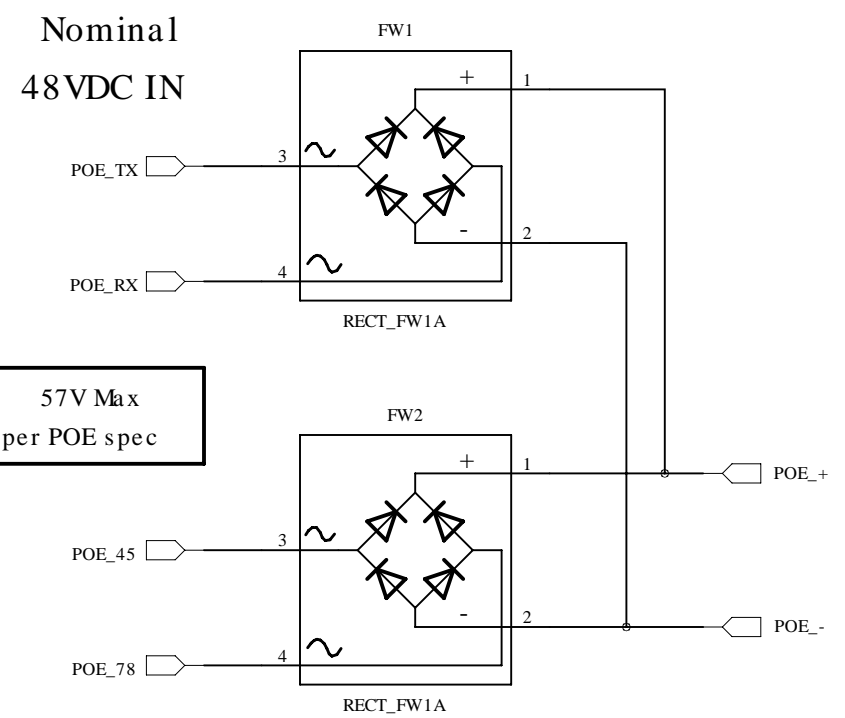
\$2.36 @ 100  
Direct from LinearTech

202R18W102KV4E  
1000 pF @ 2KV  
4.5 cents @ 3K

TLV431  
6V operating max  
7V absolute max

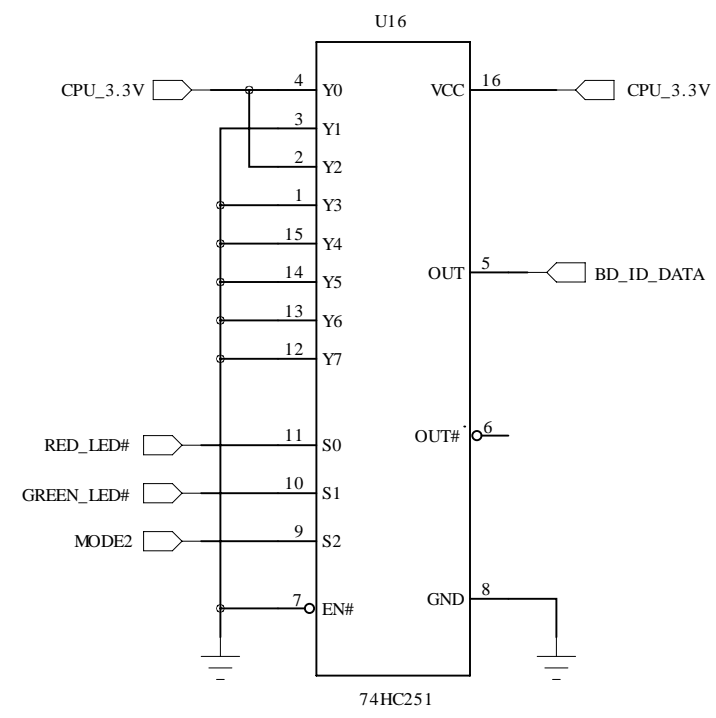
Power Good Circuit  
is optional

## Full Wave Rectifiers

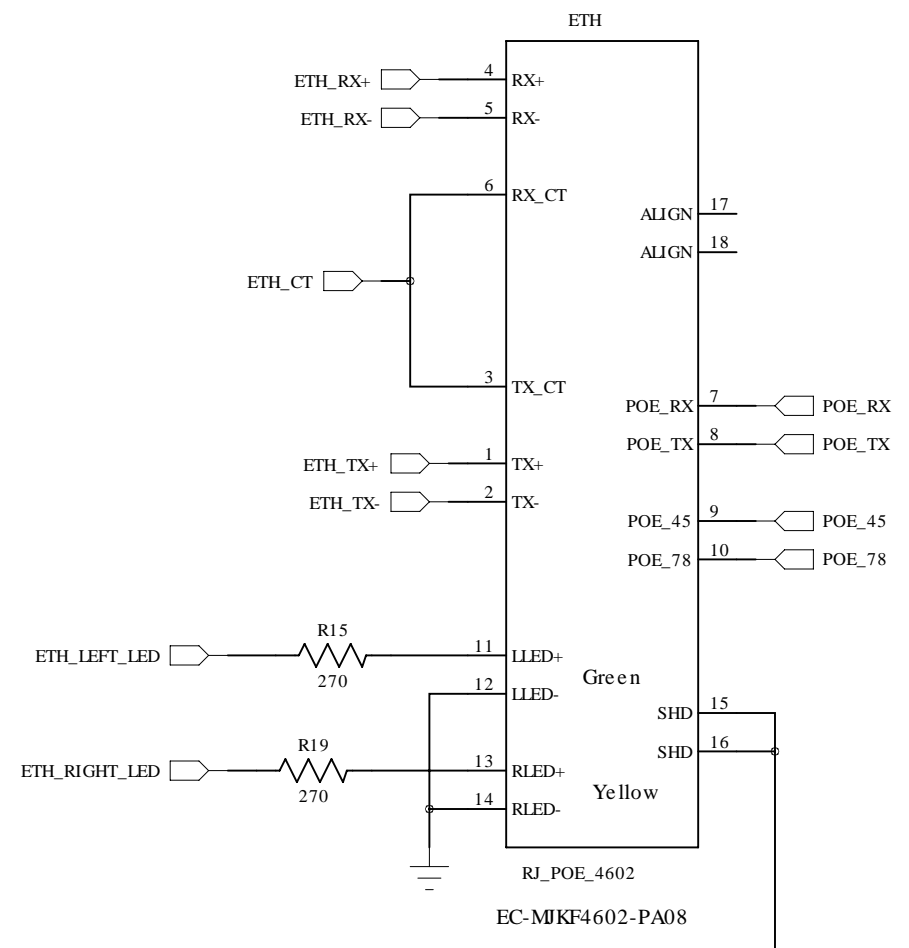


Board ID = 5

# 10/100 Ethernet

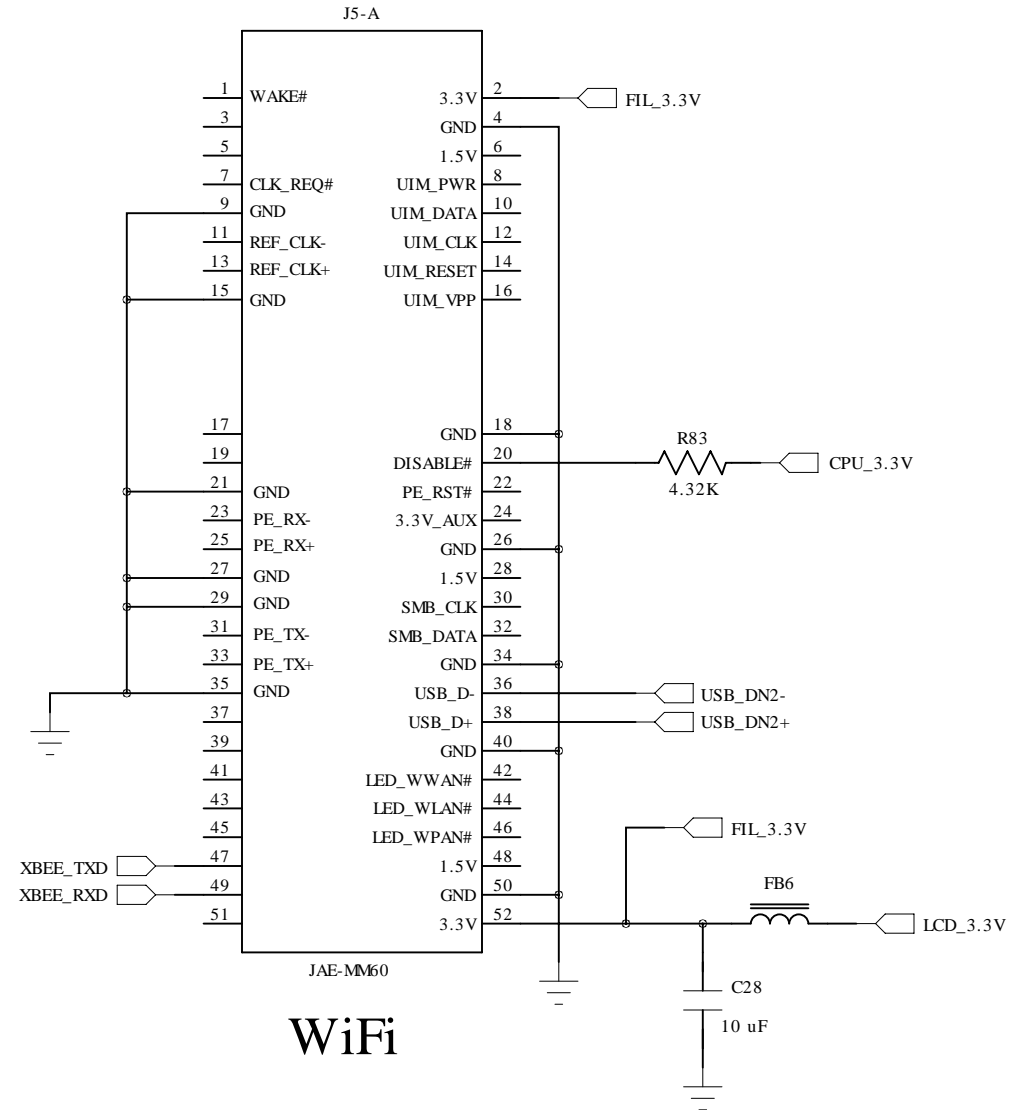


74AC151, 74AC251, 74HC151 are 2nd sources in SOIC

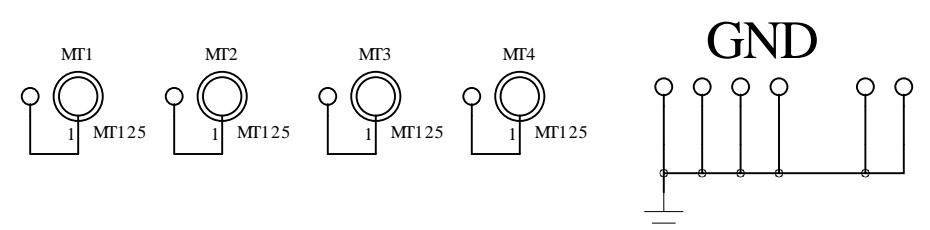
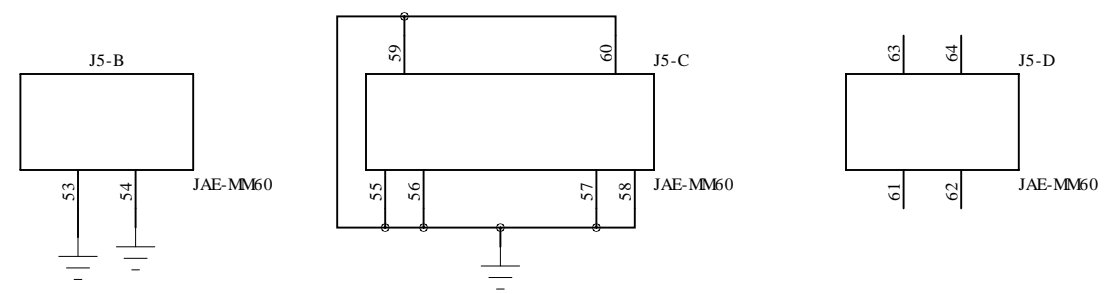


Left LED (Green)  
Link / Activity

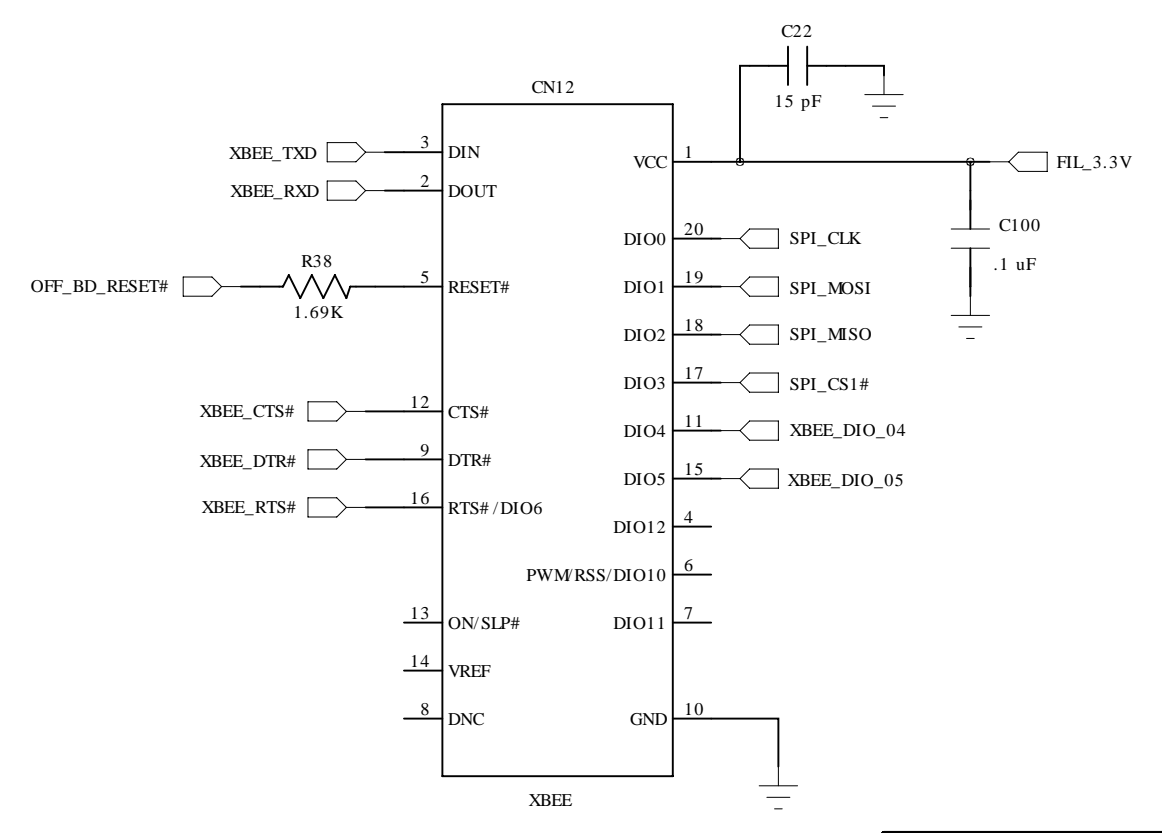
## Mini PCIe Socket



WiFi



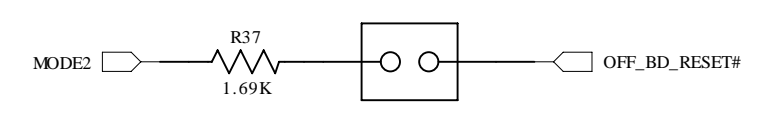
## Digi/MaxStream ZigBee Radio



CTS# is an output that can be used for hardware flow control

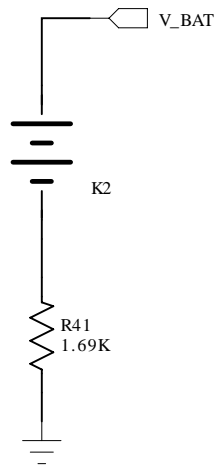
Baud rates up to 230.4K supported

## Force Boot to SD card

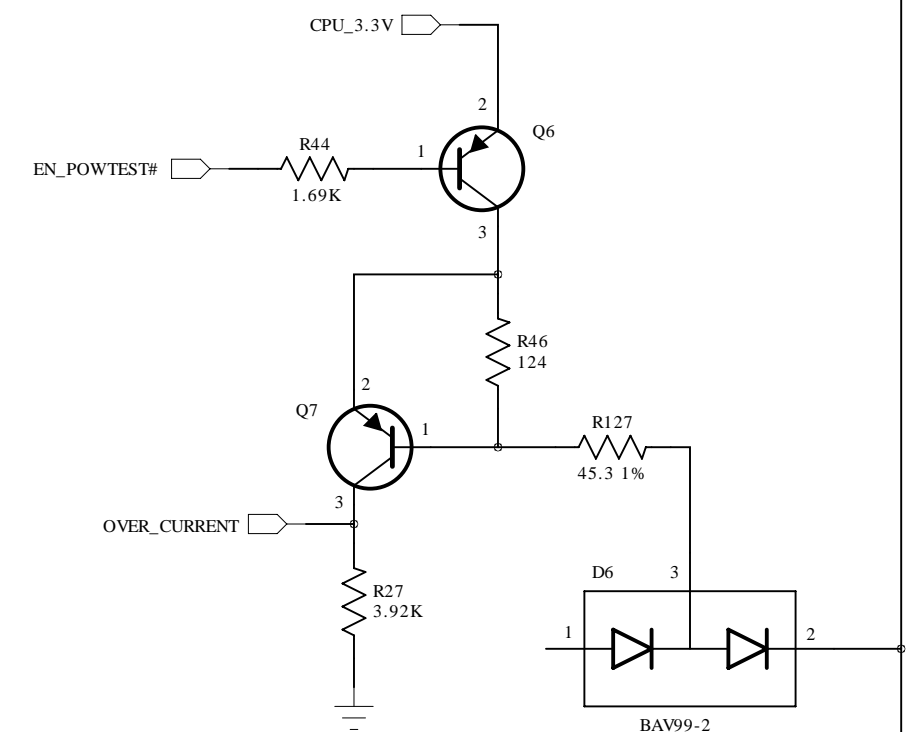
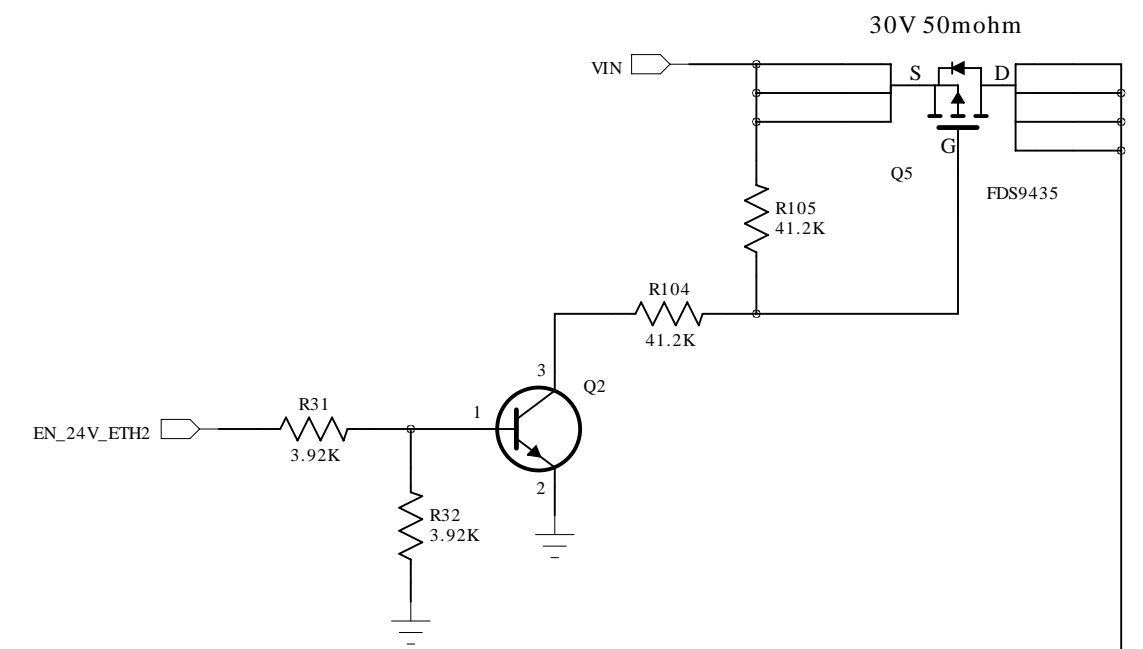
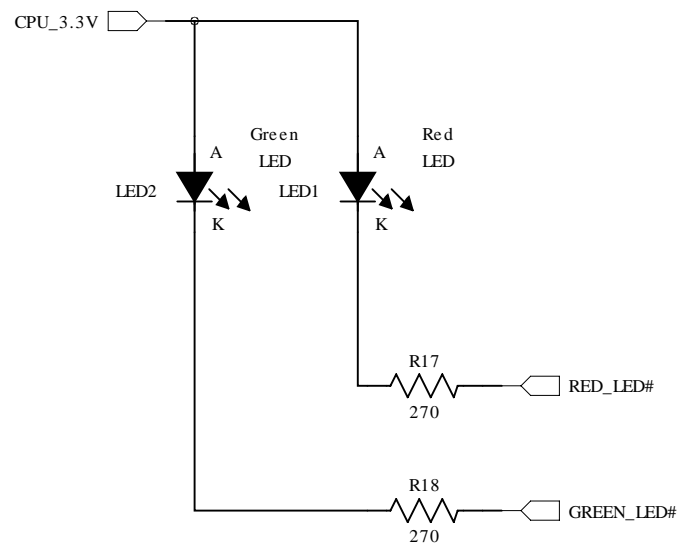


# Second Ethernet Port

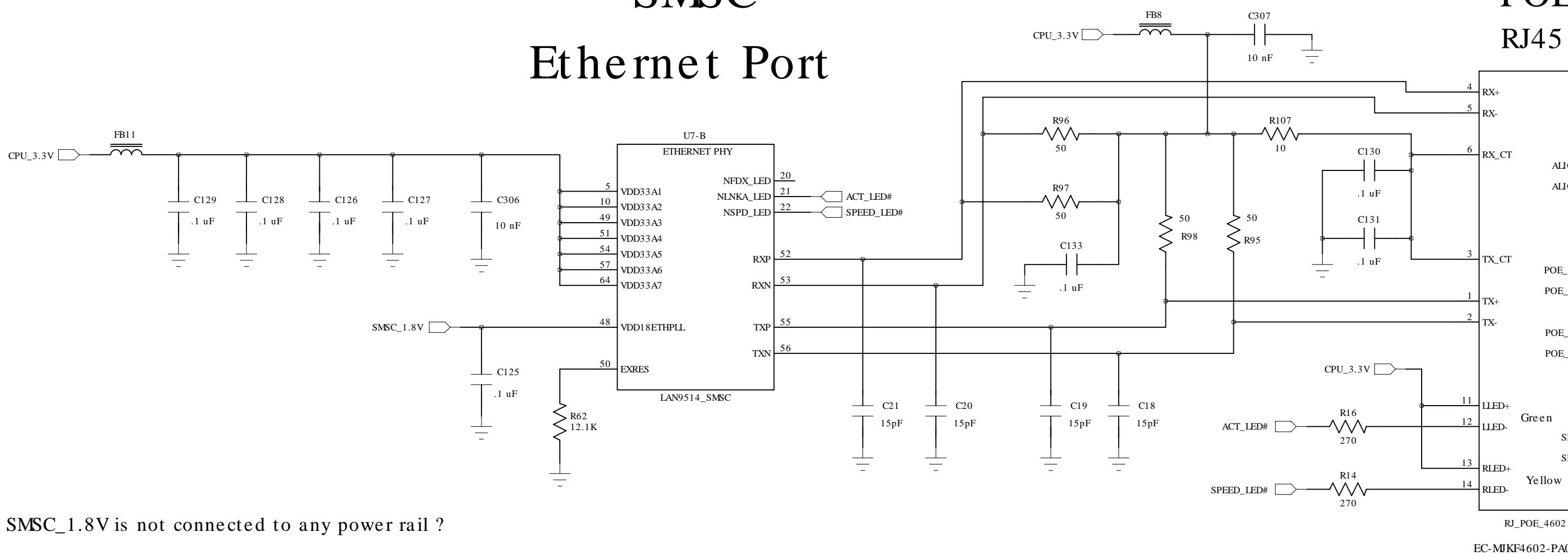
## RTC Battery



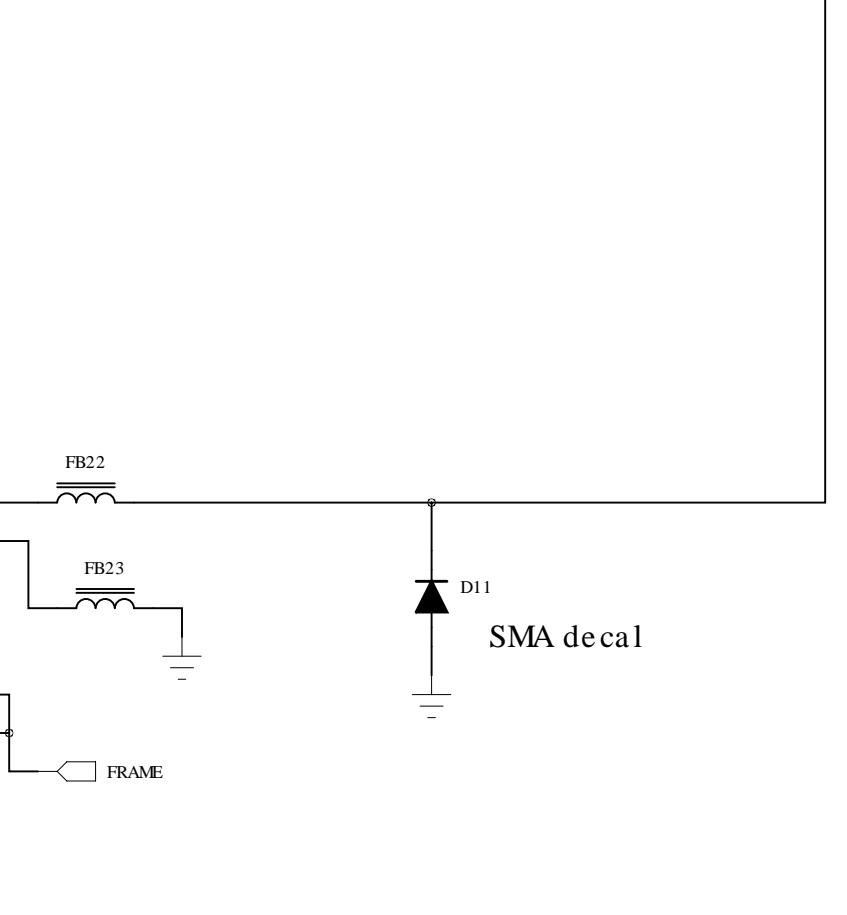
## LEDs



## SMSC Ethernet Port



## POE RJ45



SMSC\_1.8V is not connected to any power rail ?

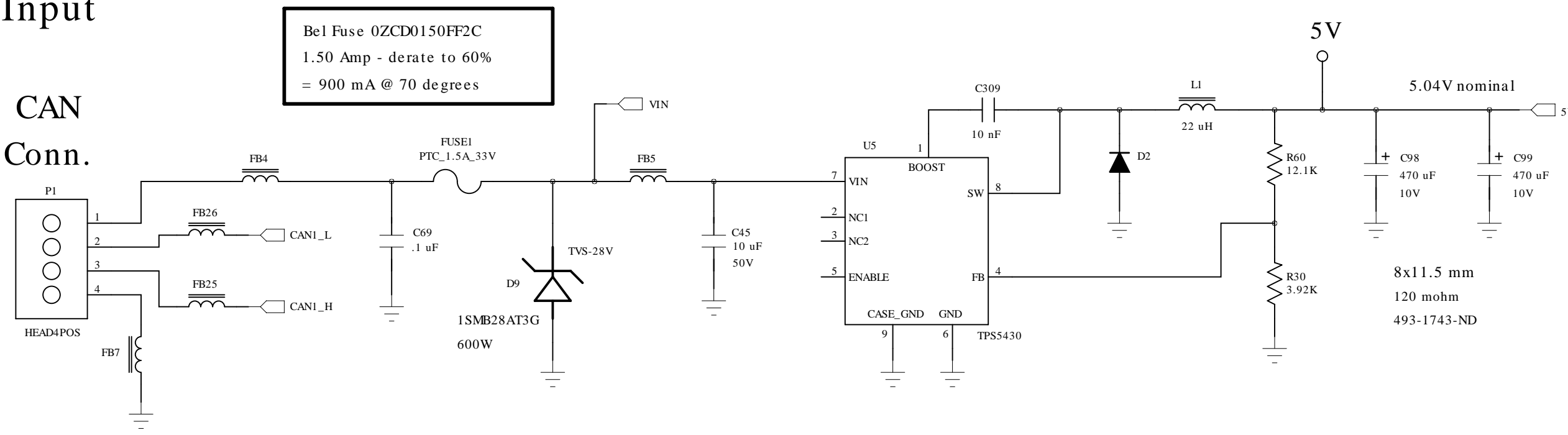
Technologic Systems		June 9, 2013
Title: TS-8400 (StarFire) 2nd Ethernet		
Rev:	Designer	Sheet 6 of 10

5V to 28V

Input

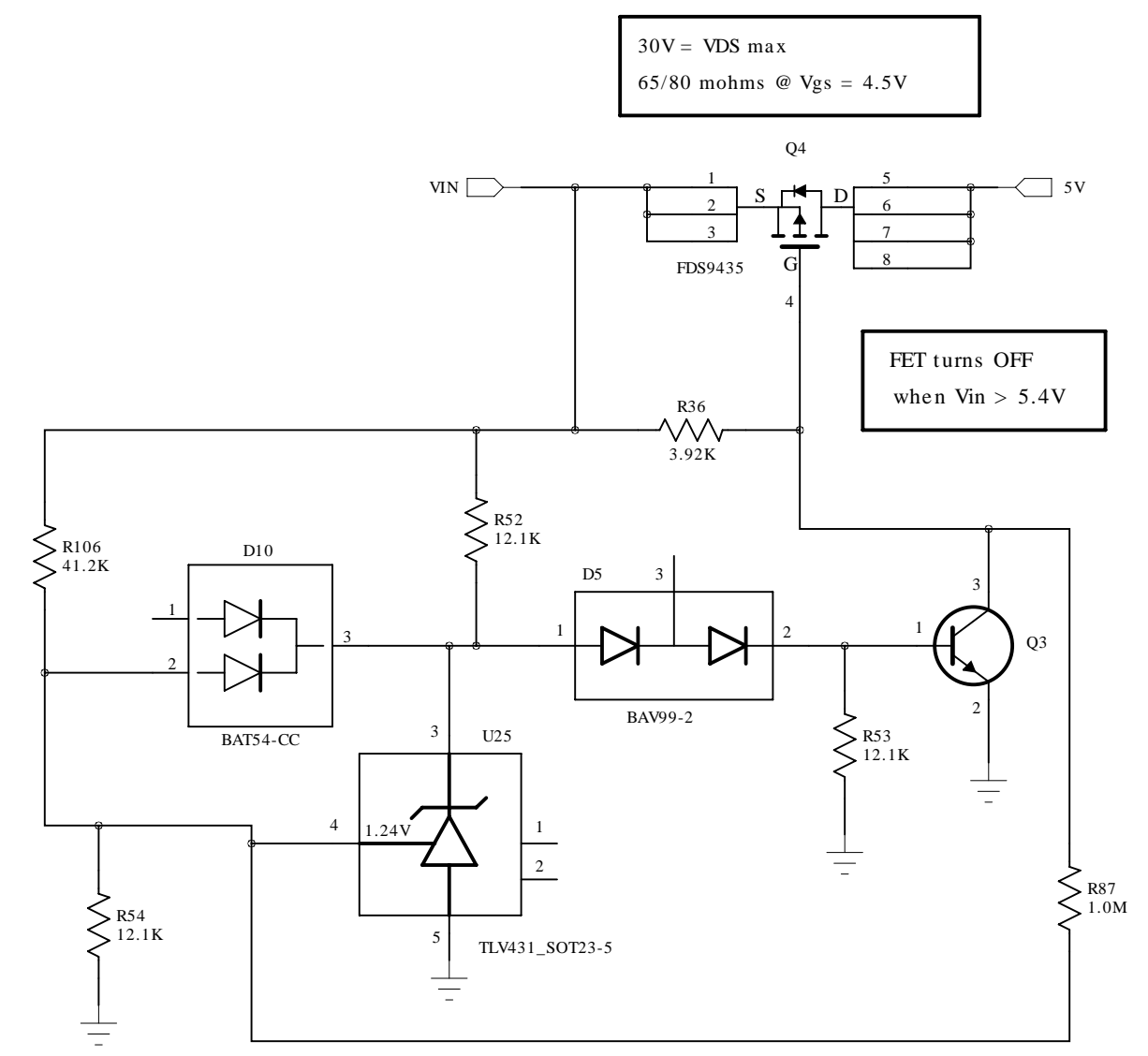
CAN  
Conn.

# 5V Power Supply (3.0 Amps)

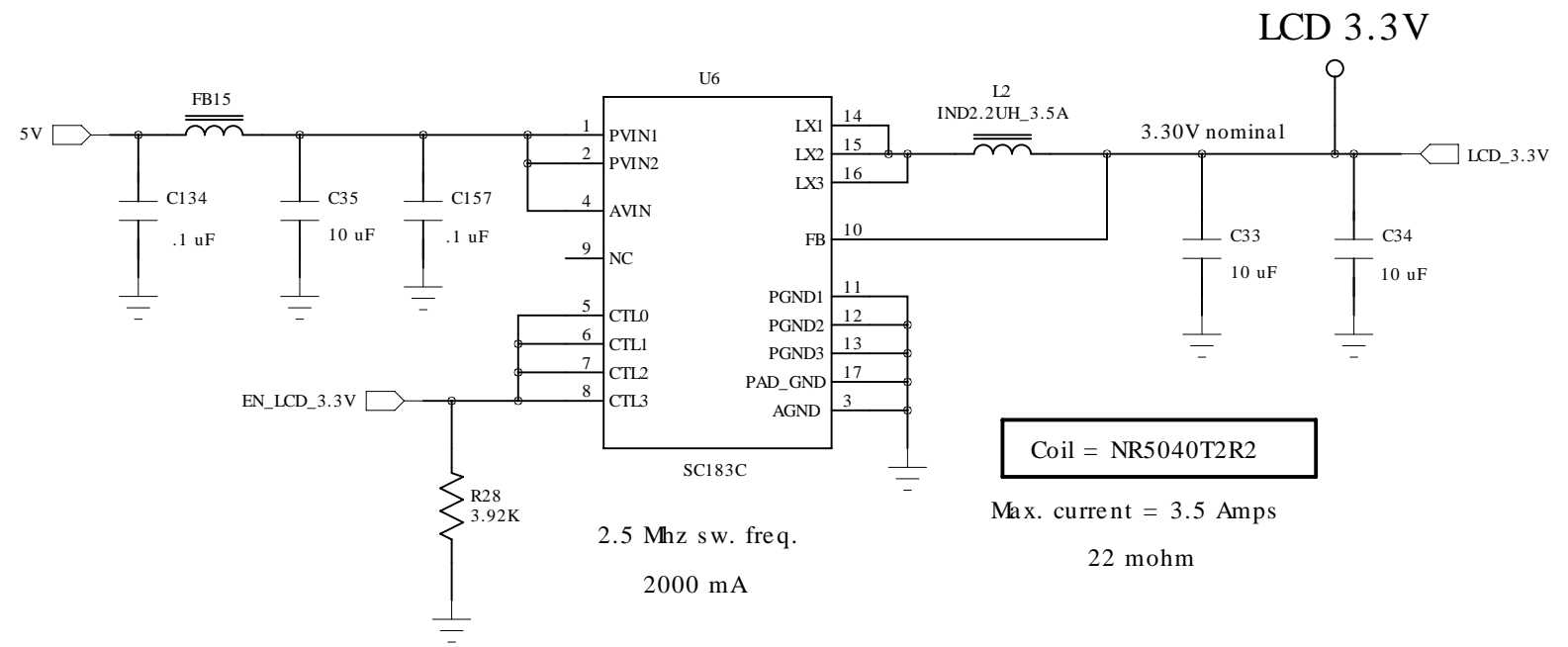


When the Input voltage drops below 6.5V  
the 5V rail will start to drop  
(5V supply falls out of regulation)  
At 5.5V Input, the 5V rail could be as low as 4V  
Then at around 5.4V, the 5V rail will "snap"  
back up due to the "Bypass circuit" turning on  
(5V rail could go as high as 5.4V)  
Then below 5.4V input, it will track the input  
with a small voltage drop

# 5V Regulator Bypass

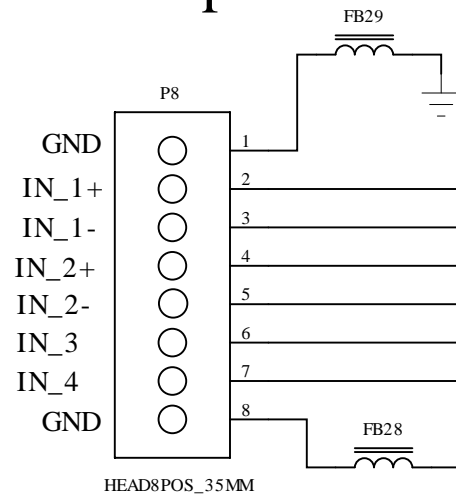


# 3.3V Power Supply for LCD and for radios



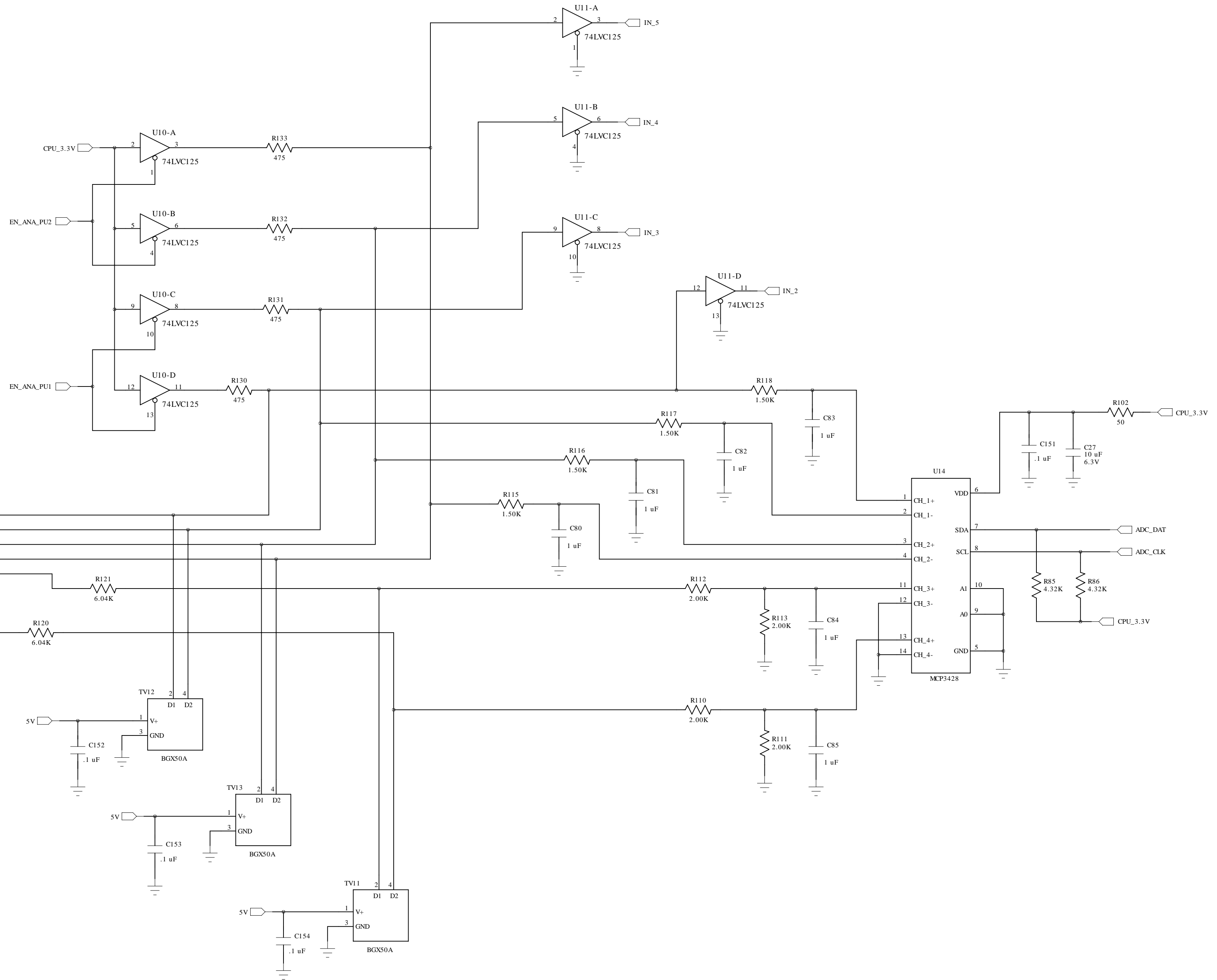
Turns on when Vin < 5.4V

# 8 Position Terminal Strip



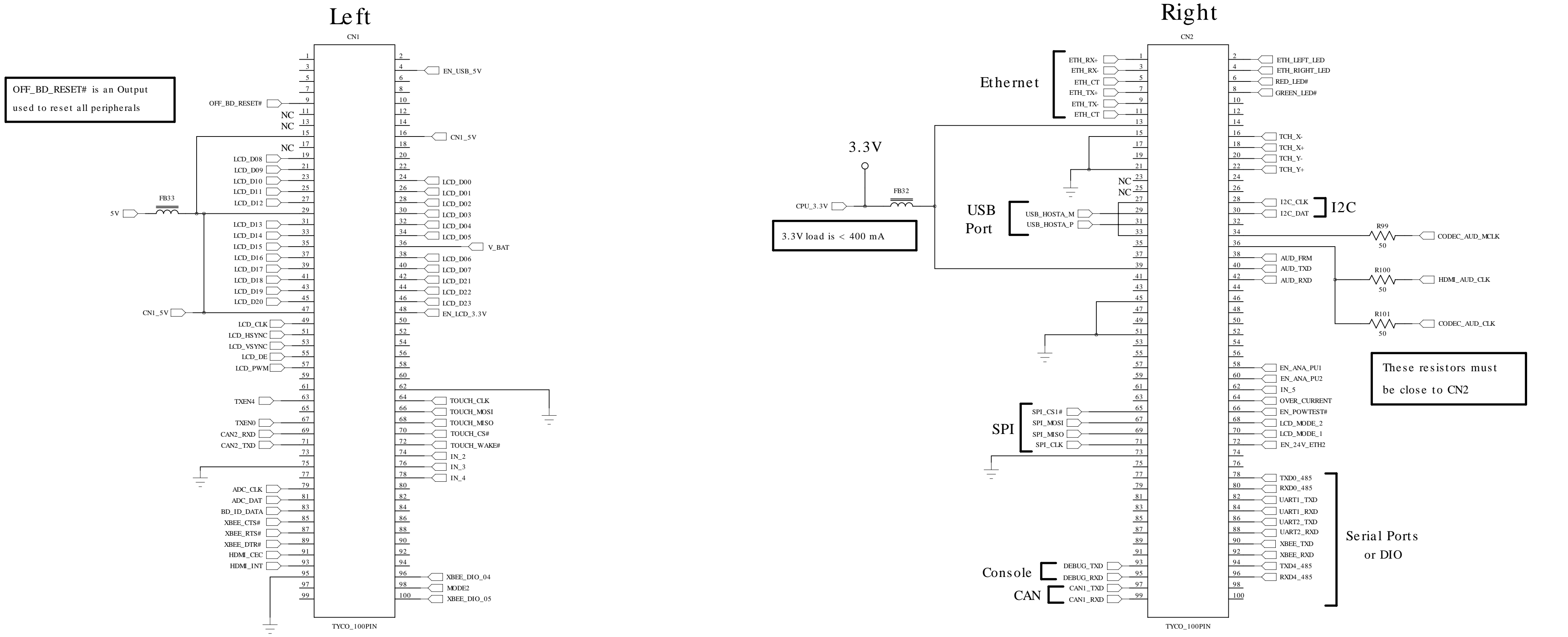
OSTOQ081251 = 58 cents  
8-pos. R/A board mt.

Mate = OSTIJ0811530  
8-pos. = \$1.72





# Two 100-pin Module Connectors



OFF\_BD\_RESET# is an Output used to reset all peripherals

3.3V load is < 400 mA

These resistors must be close to CN2

## Boot Strap

Mode 2	SBC Boots from
1	NAND Flash
0	SD Card

CN1 and CN2 are the same as on the TS-8200

MODE1 and MODE2 states are latched prior to OFF\_BD\_RESET# deasserted

MODE1 and MODE2 have PU resistors on the SBC module

Use 1.5K ohm resistor to OFF\_BD\_RESET# to strap logic low