

# TS-8550

## Rev.A to Rev.B Changes

Relayout of 5V Regulator

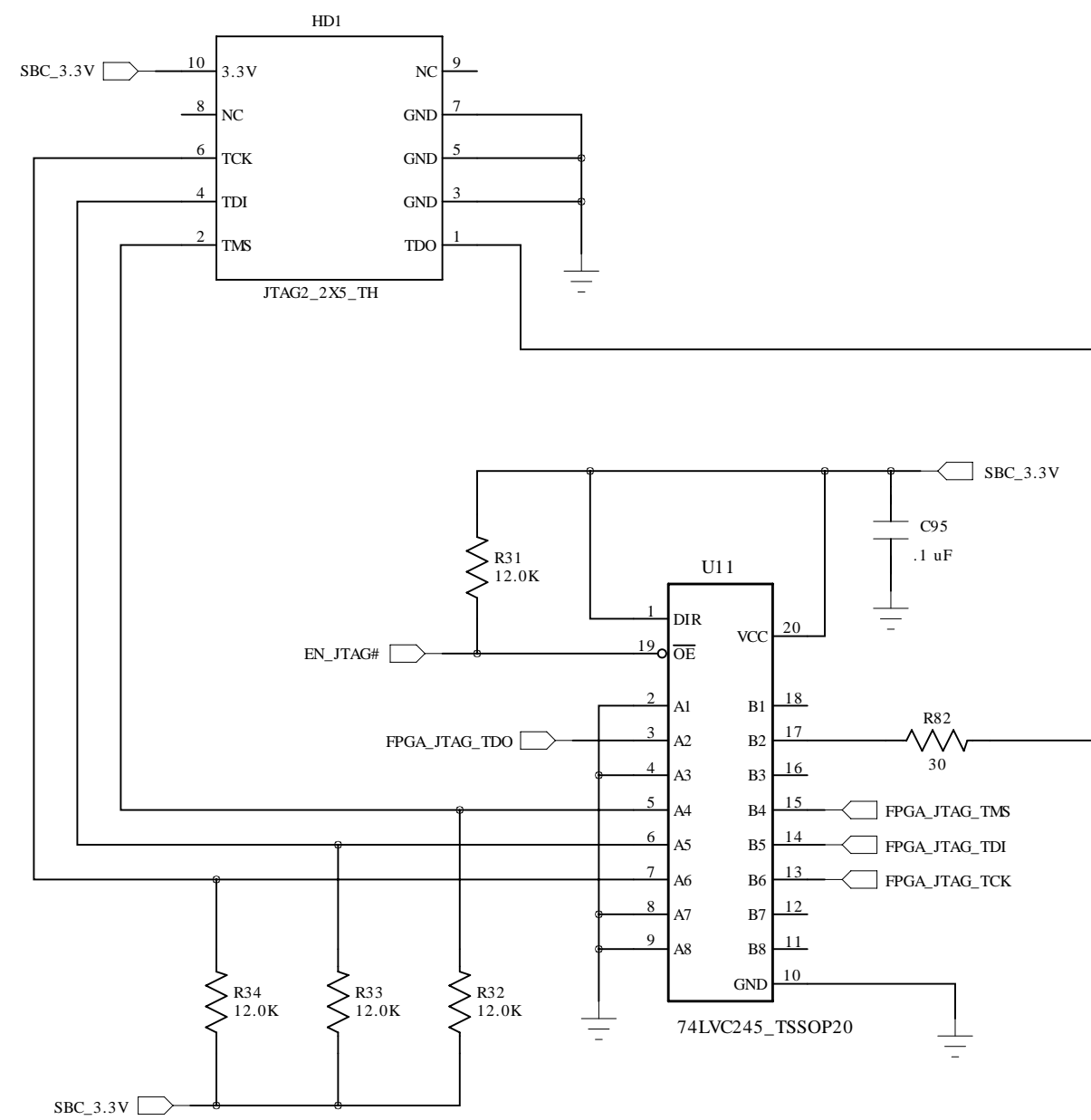
Added res for SD Boot

Power Sw also switches 5V Input Power

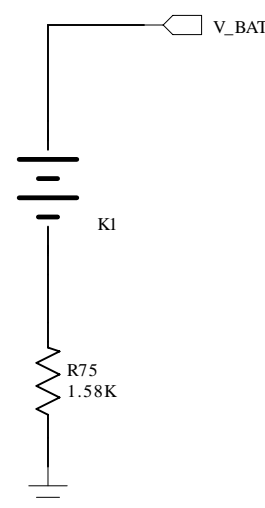
Added PU resistor to CNI pin 54

|                              |          |               |
|------------------------------|----------|---------------|
| Technologic Systems          | Date     | Dec. 12, 2014 |
| Title: TS-8550 Documentation |          |               |
| Rev: B                       | Designer | Sheet 1 of 9  |

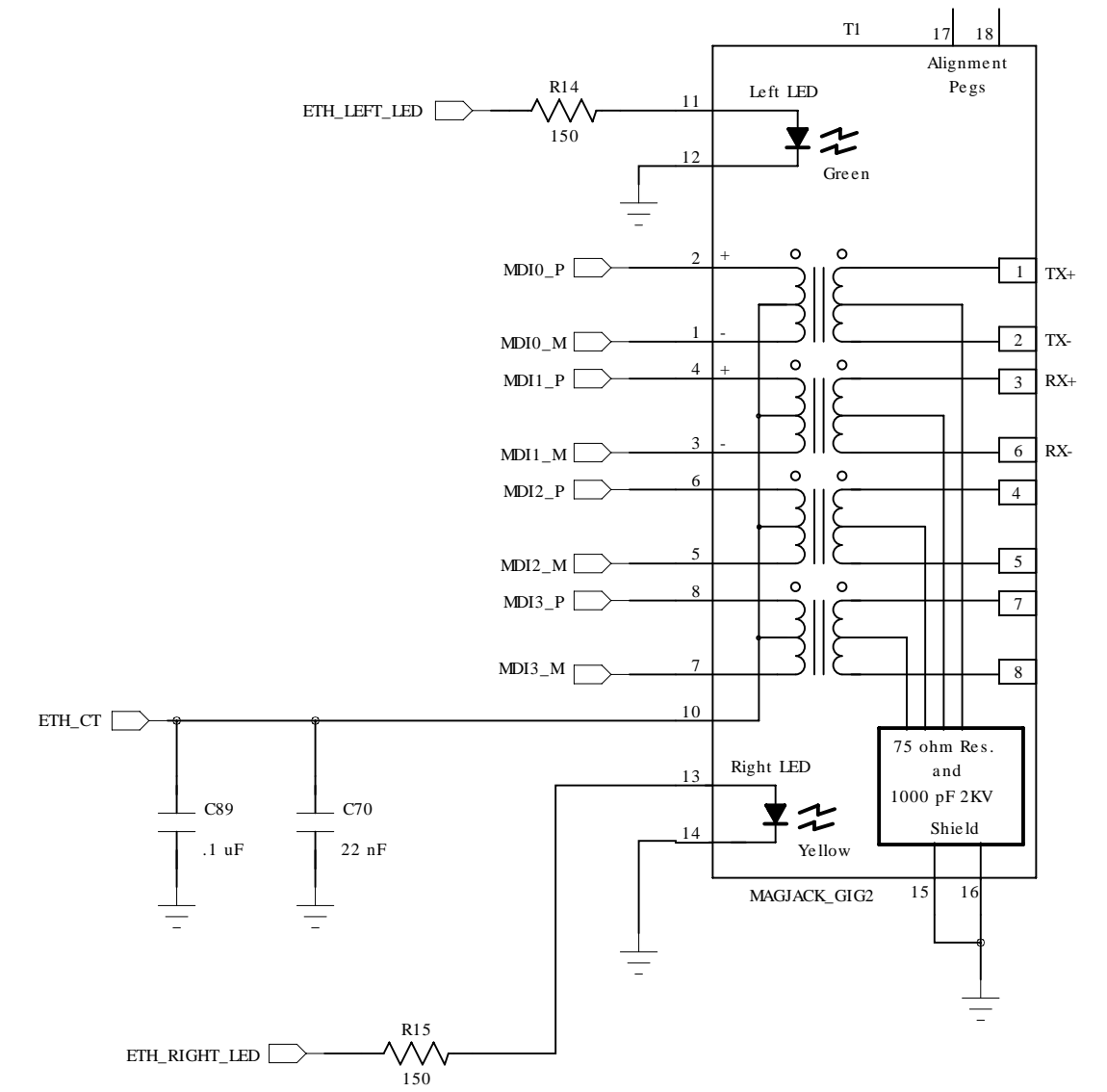
# FPGA JTAG Header



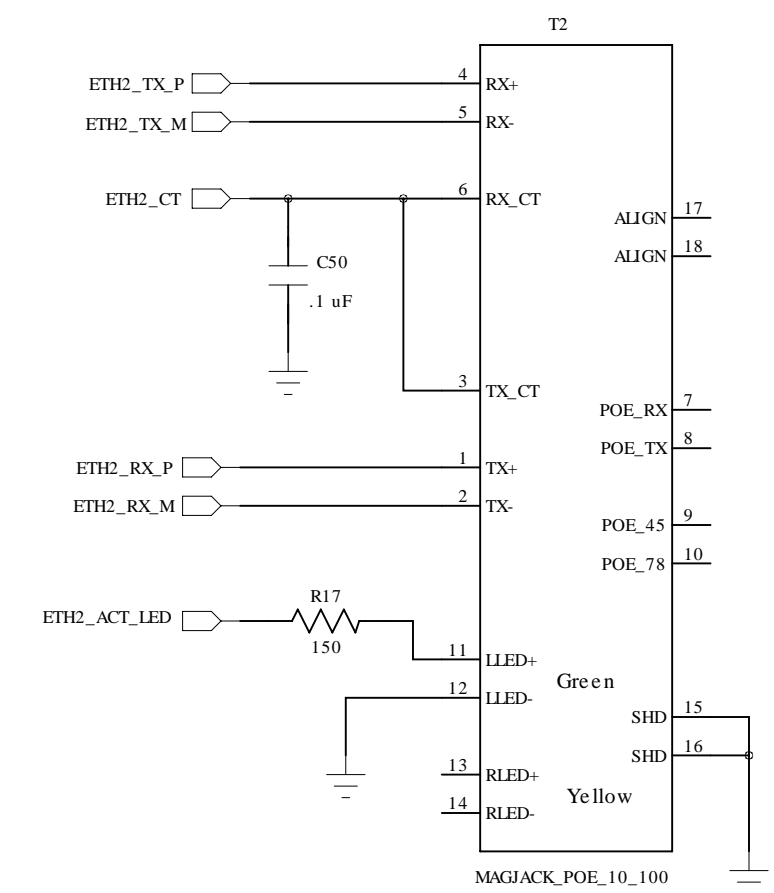
# RTC Battery



# Gig MagJack



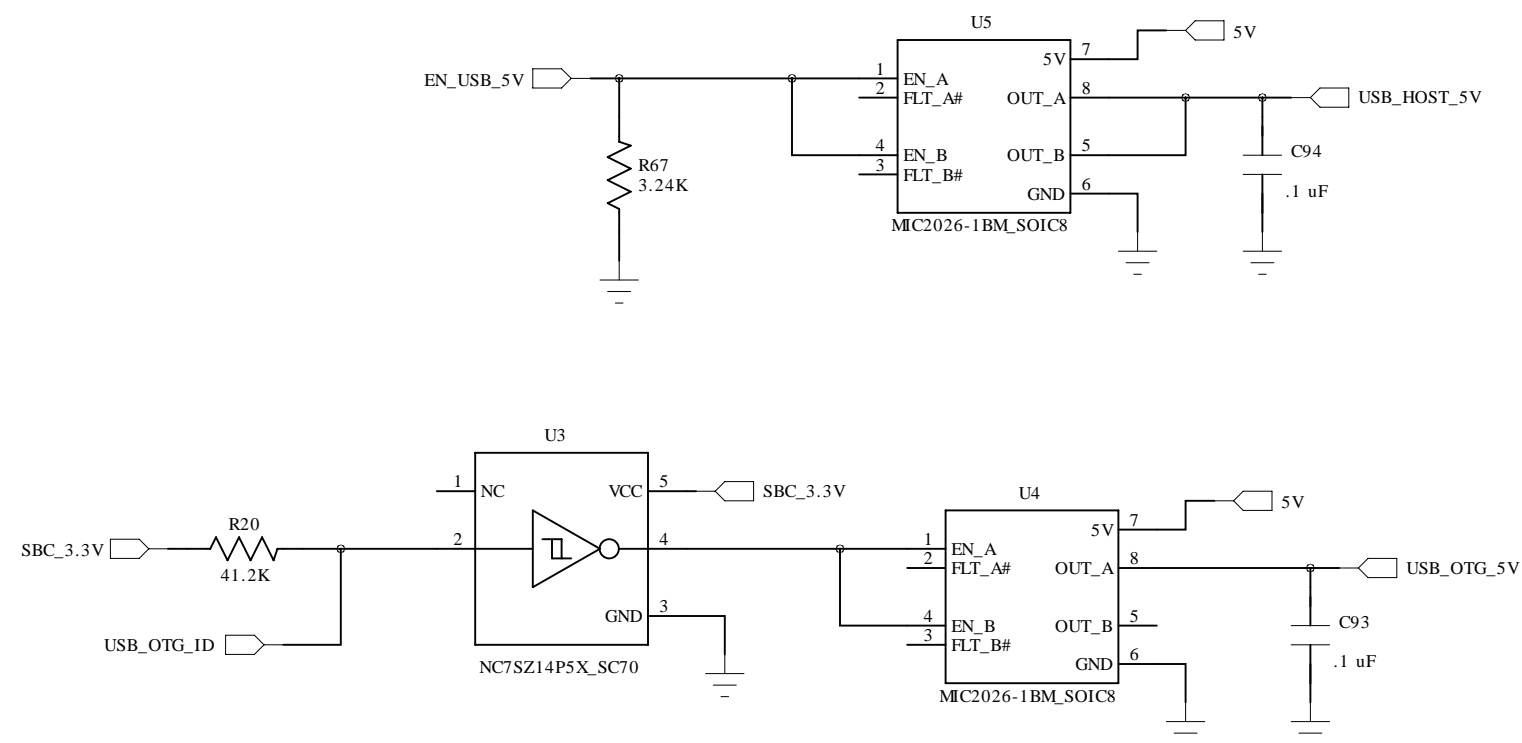
# 10/100 MagJack



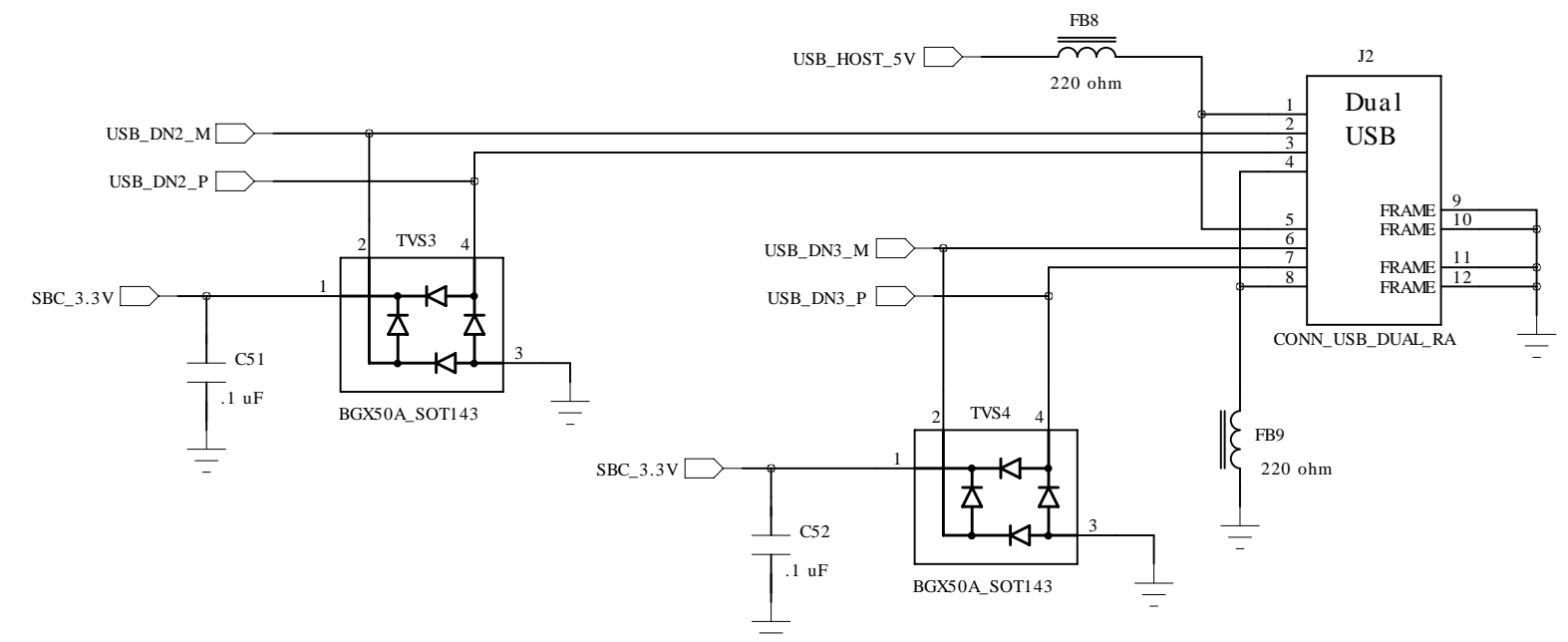
Swapped RX and TX Pairs

|  |                    |
|--|--------------------|
| Technologic Systems                    | Date Dec. 12, 2014 |
| Title: TS-8550 MagJacks, JTAG, Battery |                    |
| Rev: B                                 | Designer           |
| Sheet 2 of 9                           |                    |

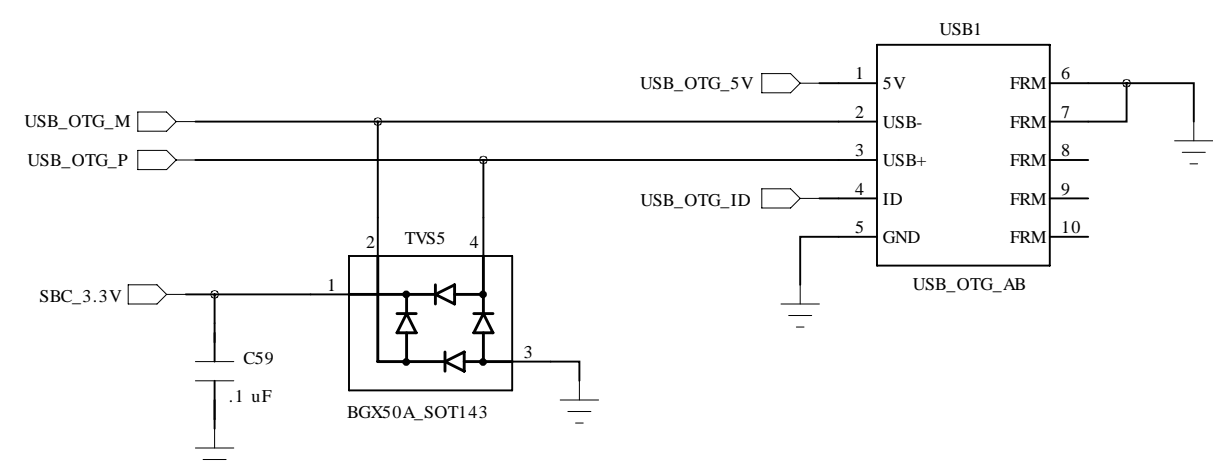
# USB Power Switches



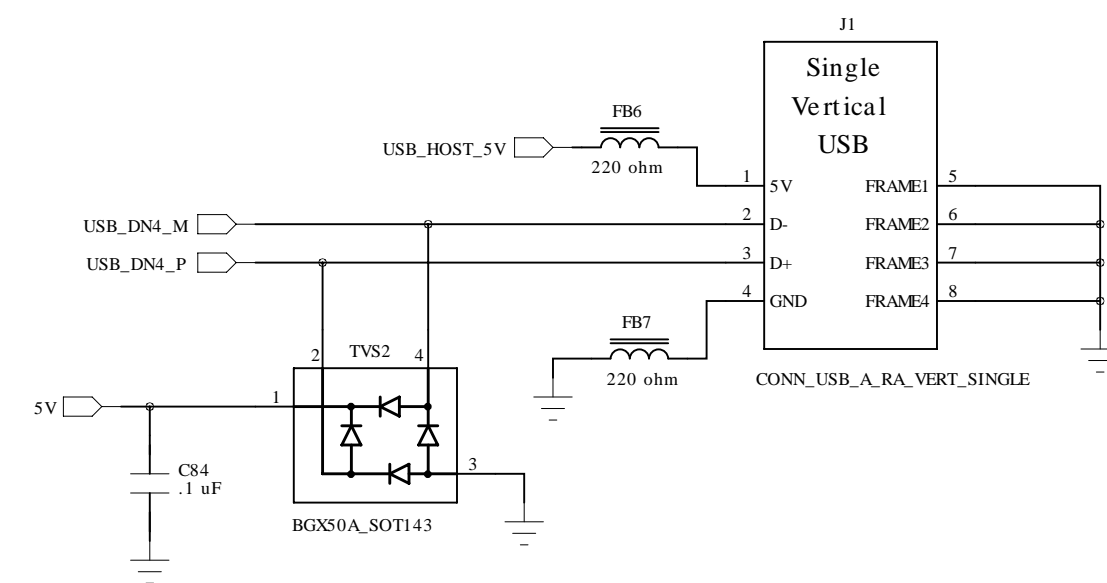
# Dual Host USB



# USB Micro A/B OTG Port



# Host USB

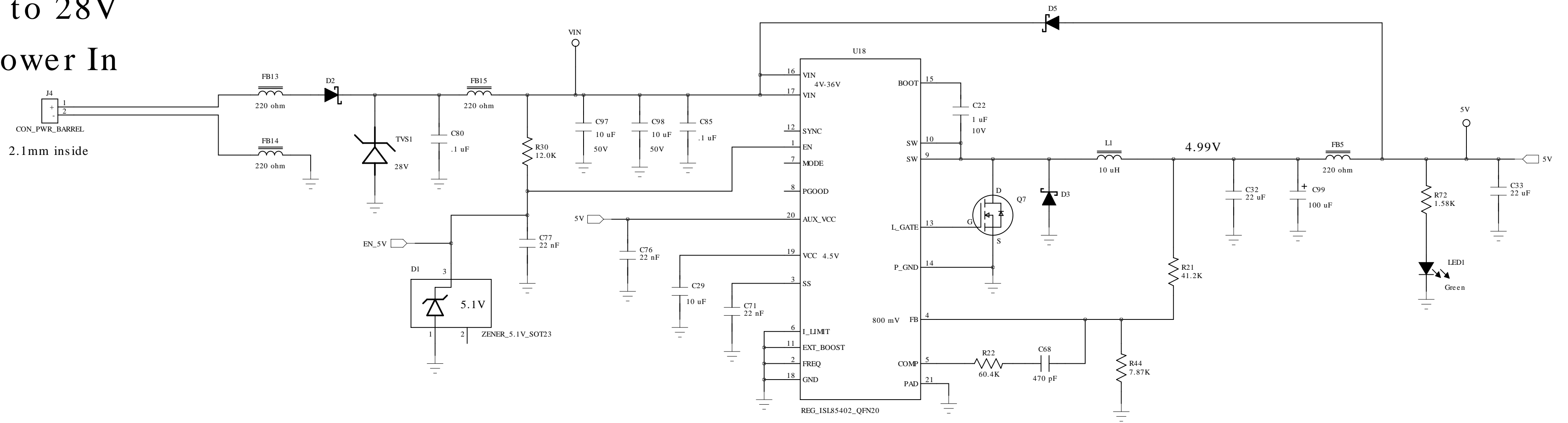


|                                     |          |                    |
|-------------------------------------|----------|--------------------|
| Technologic Systems                 |          | Date Dec. 12, 2014 |
| Title: TS-8550 USB Ports, USB Power |          |                    |
| Rev: B                              | Designer | Sheet 3 of 9       |

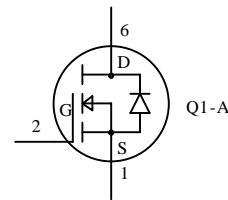
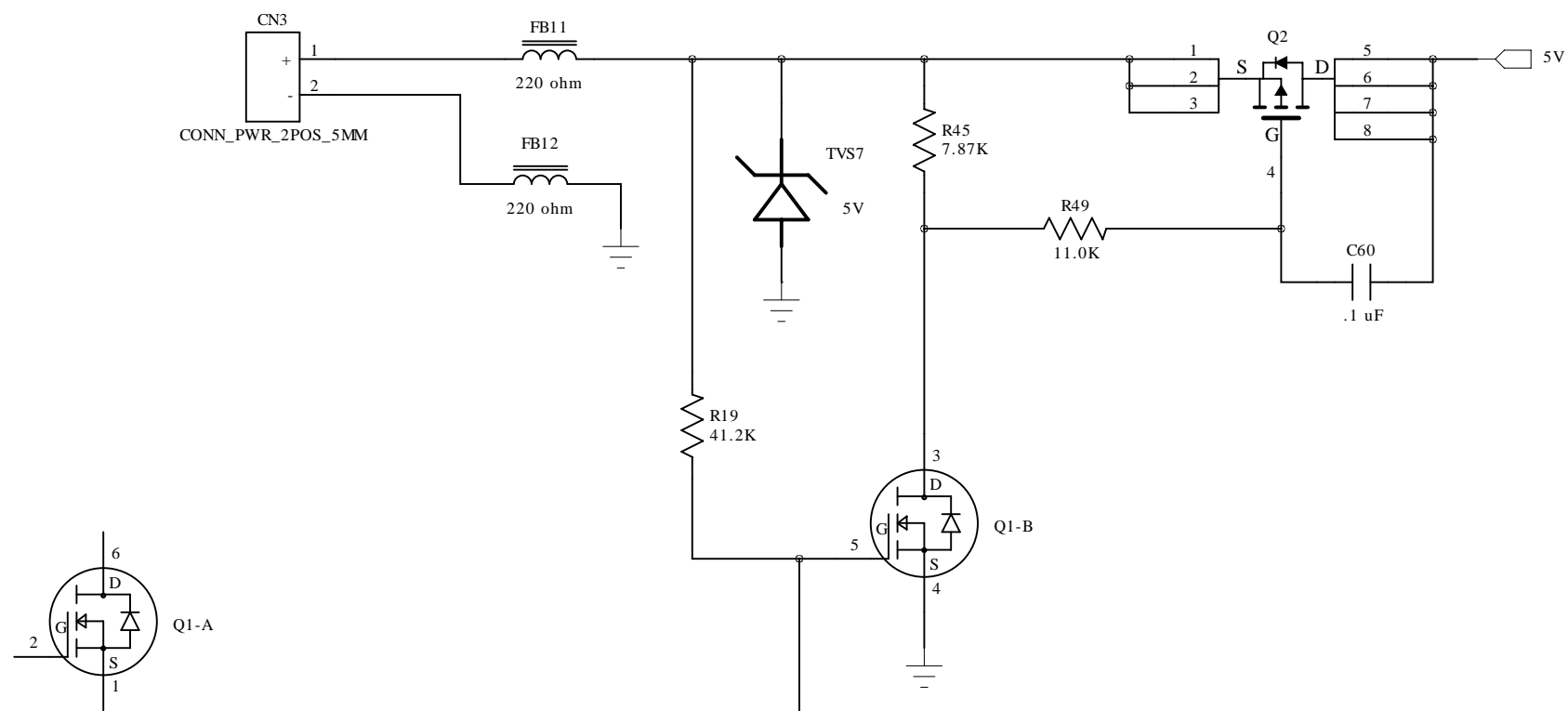
# 5V Power Supply (2000 mA)

8V to 28V

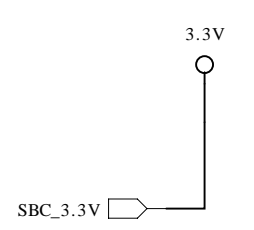
Power In



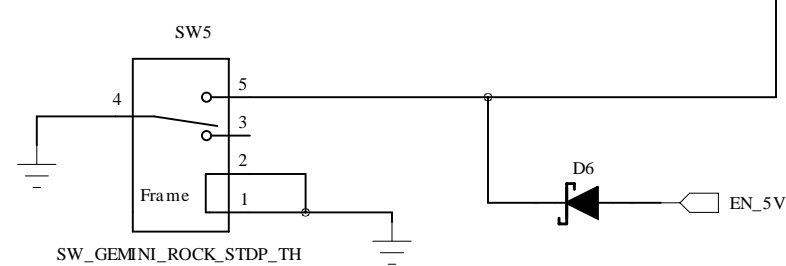
5V Power In



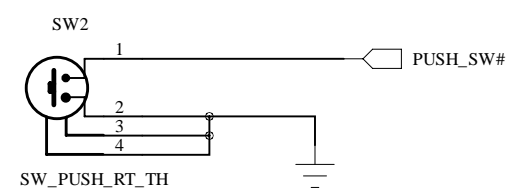
5011K-ND = Black  
.063 hole  
GND



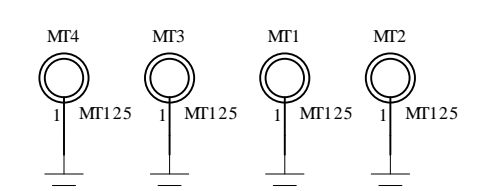
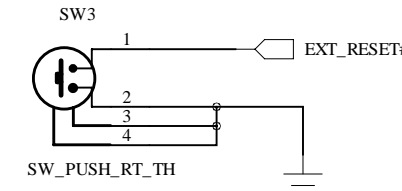
Power Switch



Push Switch



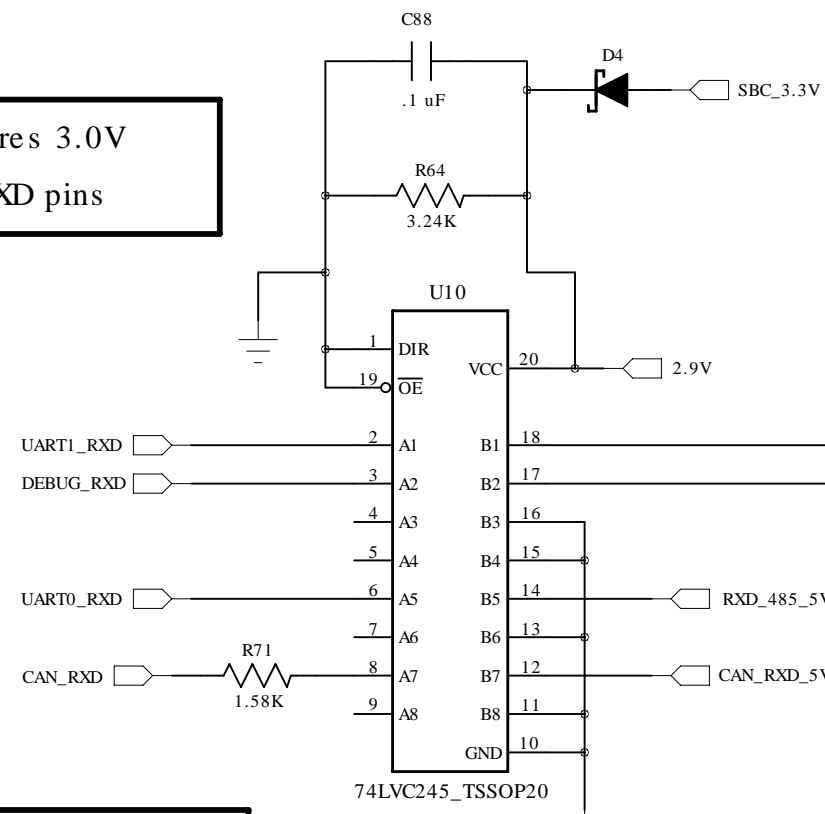
Reset Switch



|   |                           |
|---|---------------------------|
| Technologic Systems                       | Date Dec. 12, 2014        |
| Title: TS-8550 Power IN, 5V Reg, Switches |                           |
| Rev: B                                    | Designer RLM Sheet 4 of 9 |

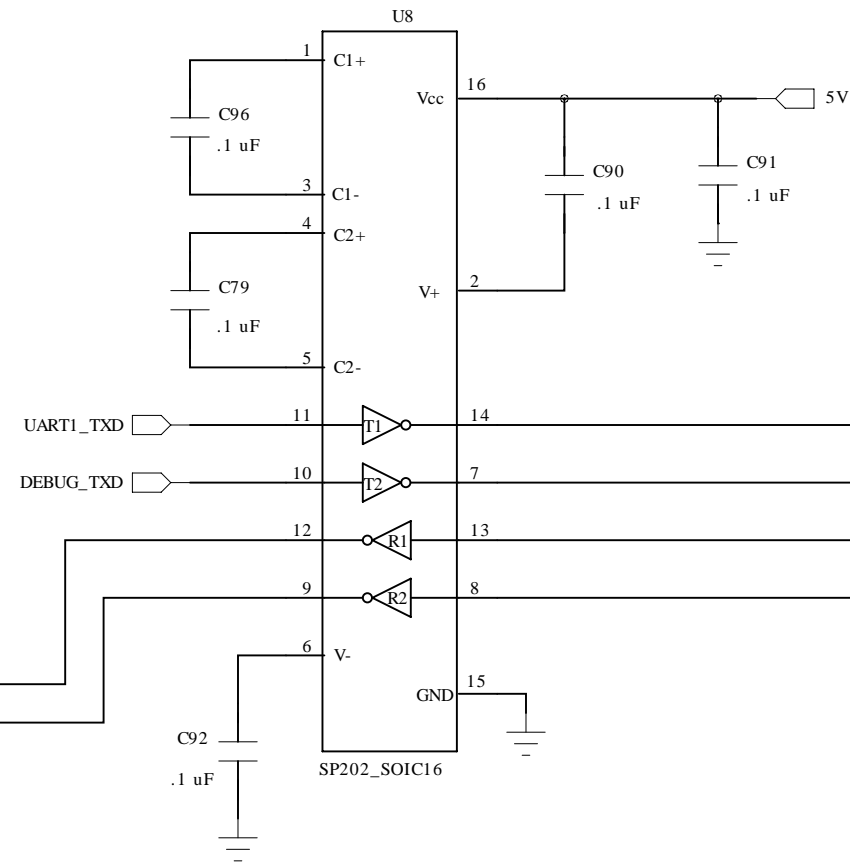
2.9V <-- 5V  
Level shifter

TS-4800 requires 3.0V max on the RXD pins

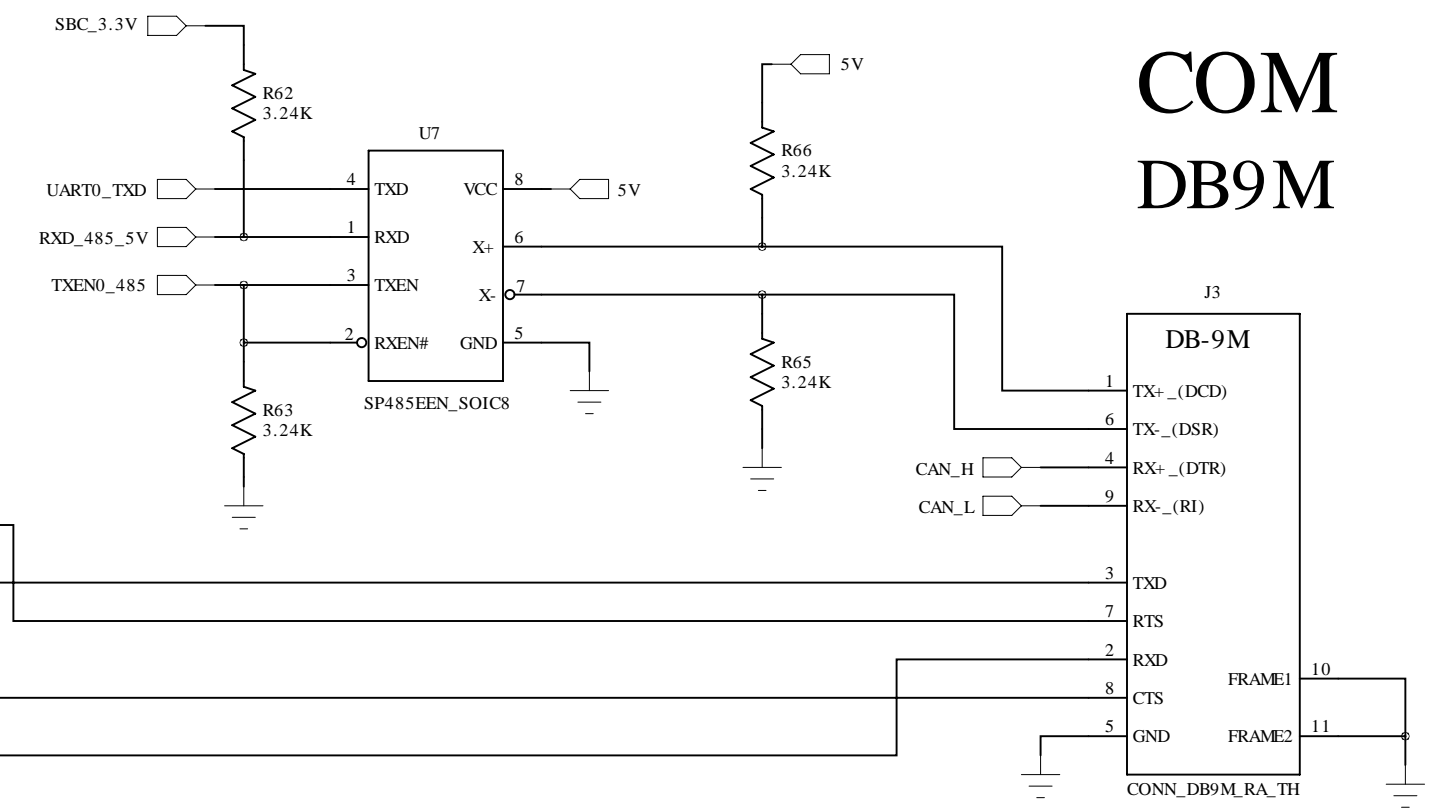


TS-4200 has 1.8V levels on the CAN RXD

RS-232 Transceiver



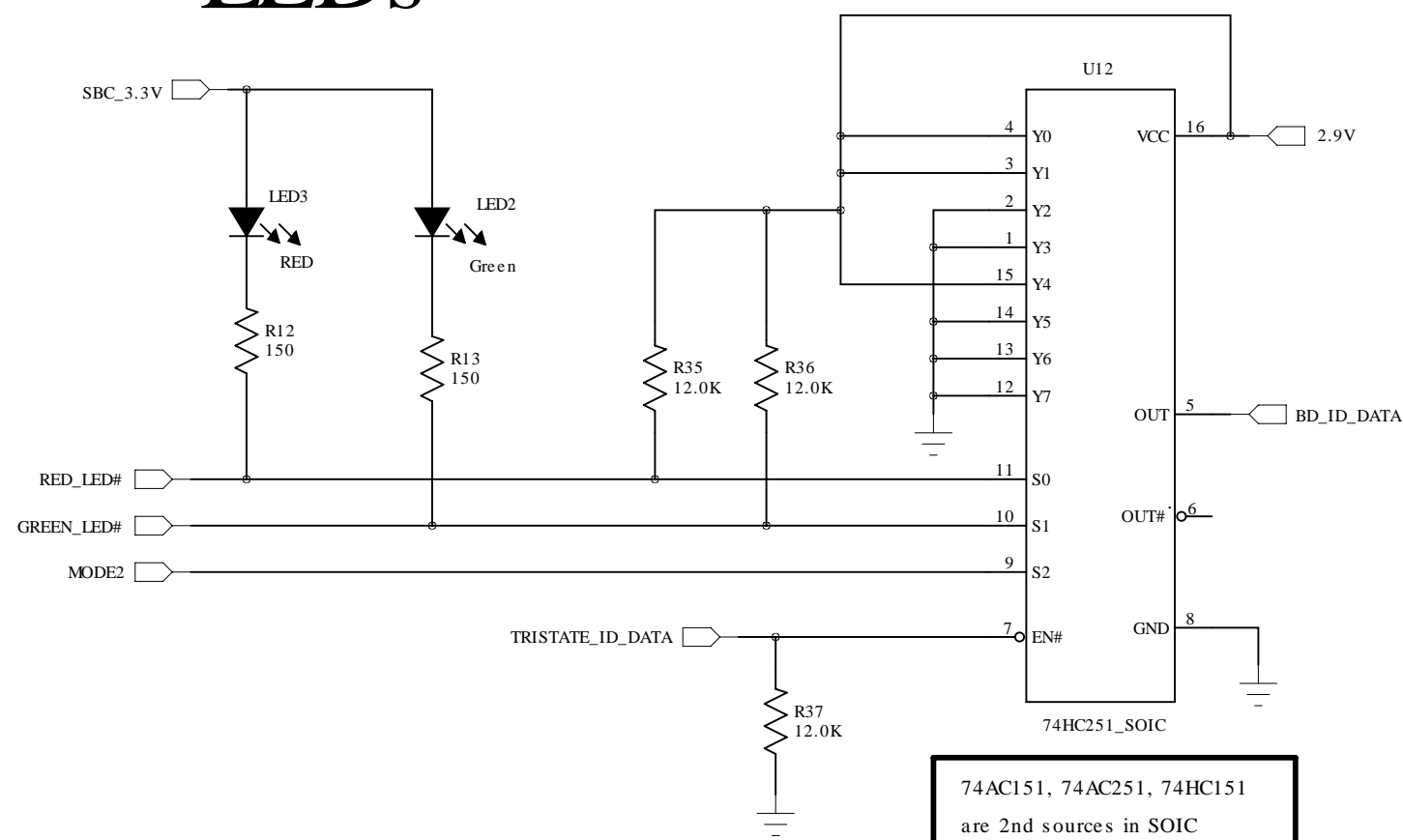
RS-485 Driver



COM DB9M

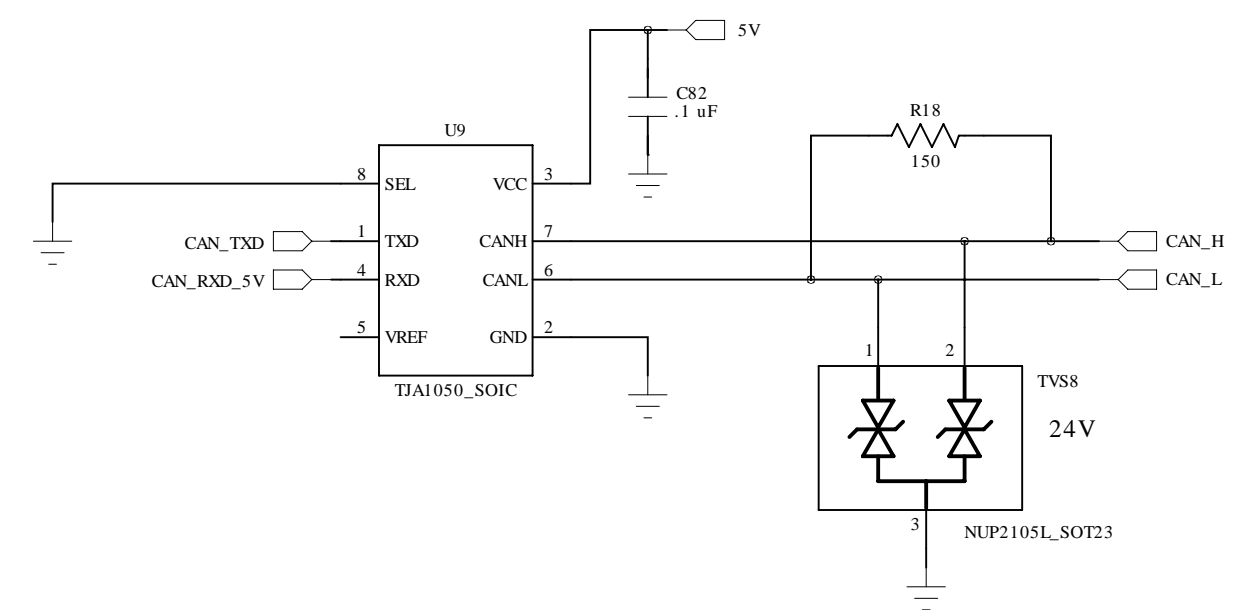
Board ID = 19

LEDs



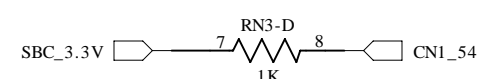
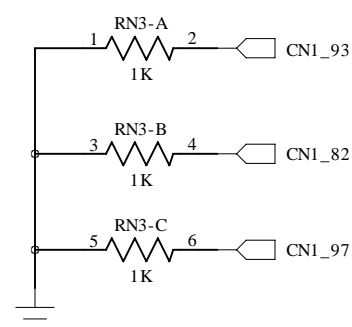
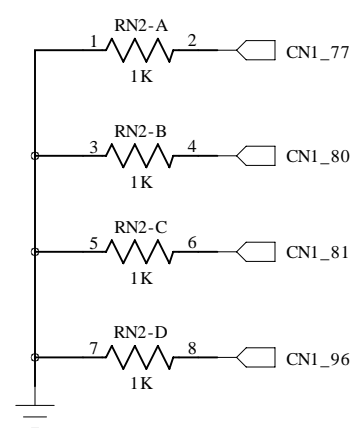
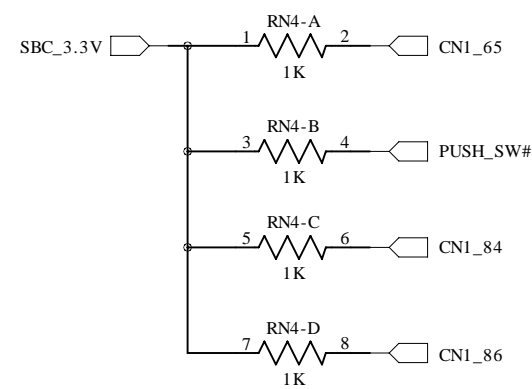
74AC151, 74AC251, 74HC151 are 2nd sources in SOIC

CAN Transceiver

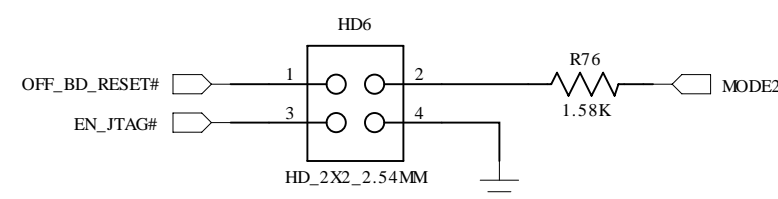


|  |                           |
|--|---------------------------|
| Technologic Systems                      | Date Dec. 12, 2014        |
| Title: TS-8550 COM Port, CAN, RS-485, ID |                           |
| Rev: B                                   | Designer RLM Sheet 5 of 9 |

# Bias Res.

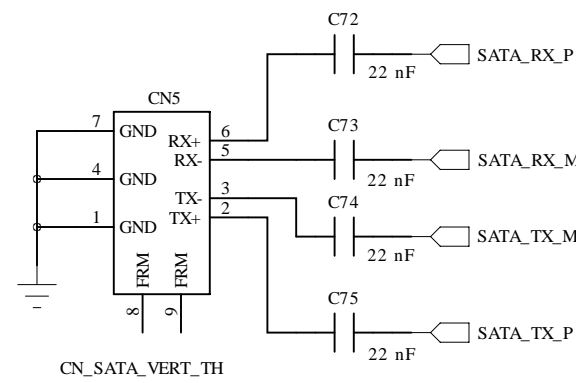


# Jumpers



SD Boot and JTAG Enable

# SATA Port

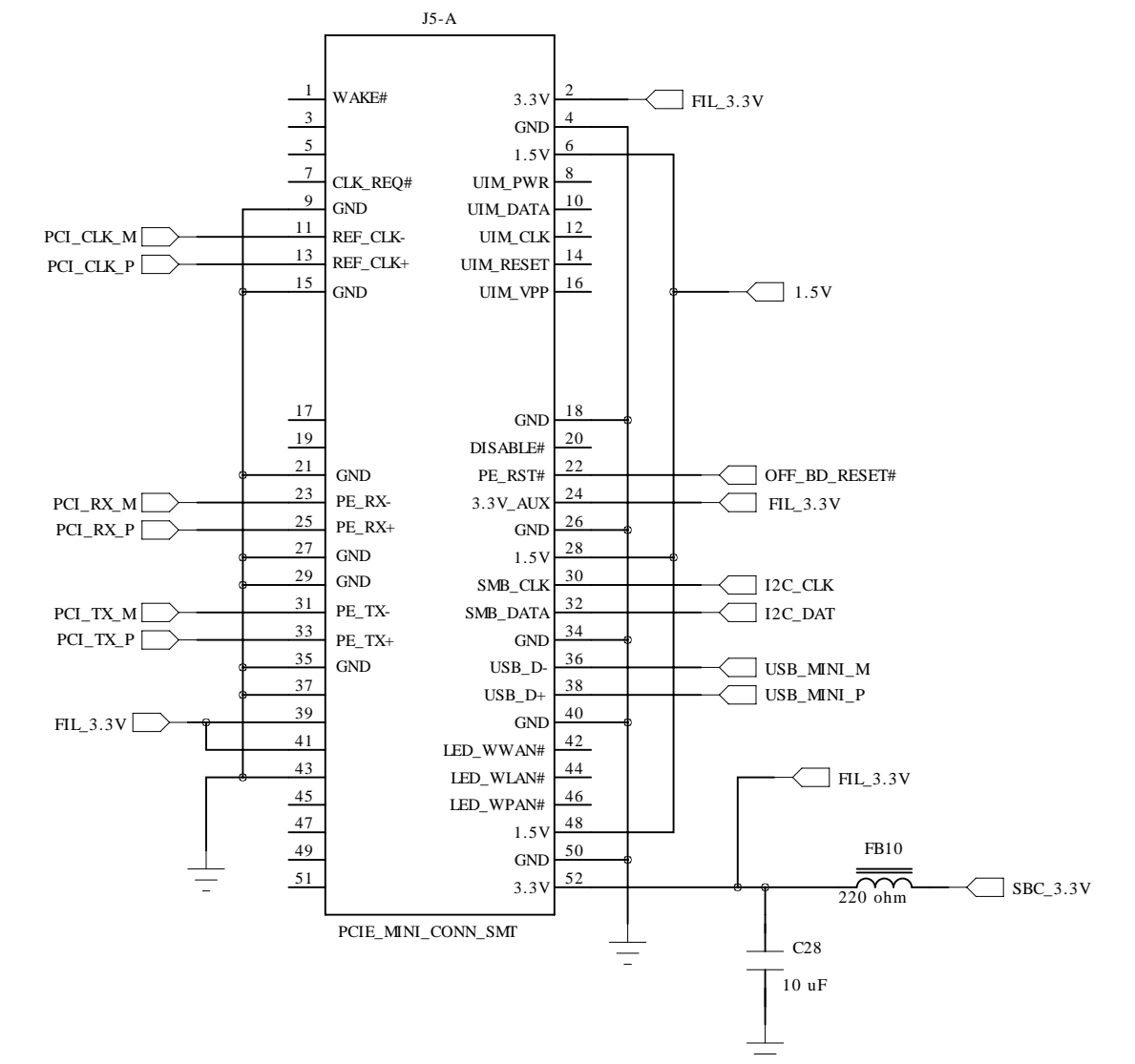


PCIe Diff Pairs can be Polarity swapped

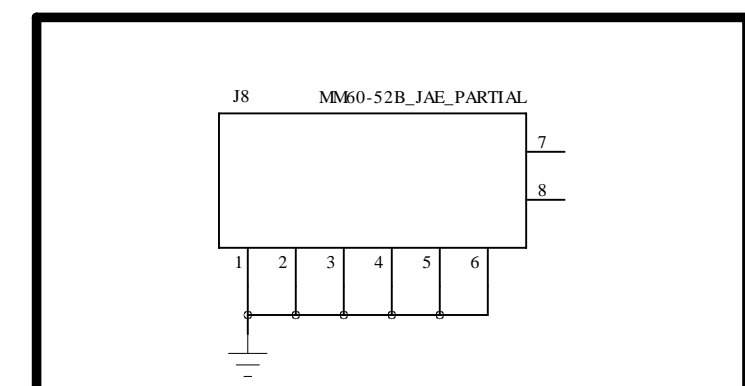
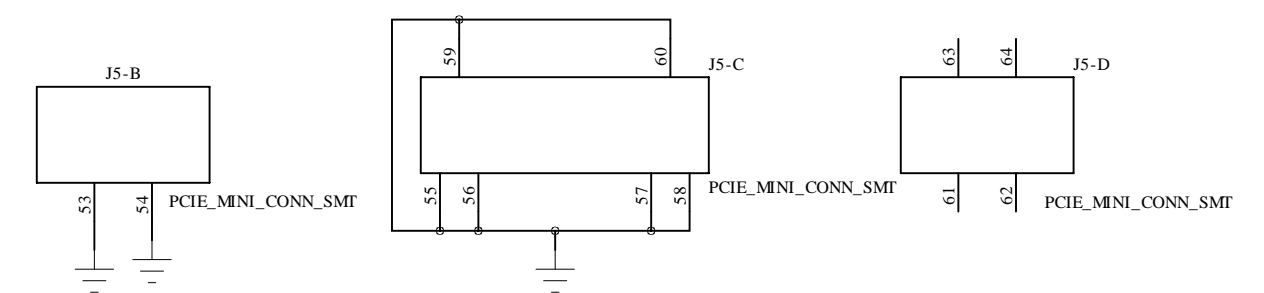
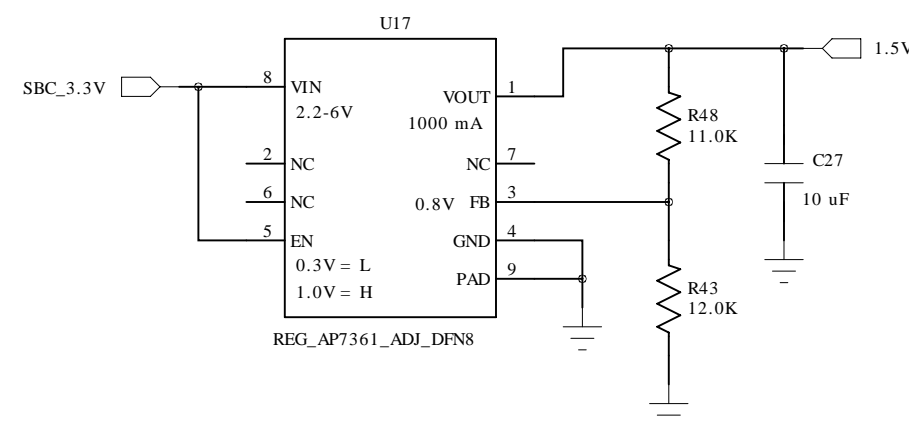
SATA can NOT have polarity swapped

SATA and PCIe Diff pairs do NOT have to be length matched

# Mini PCIe Socket

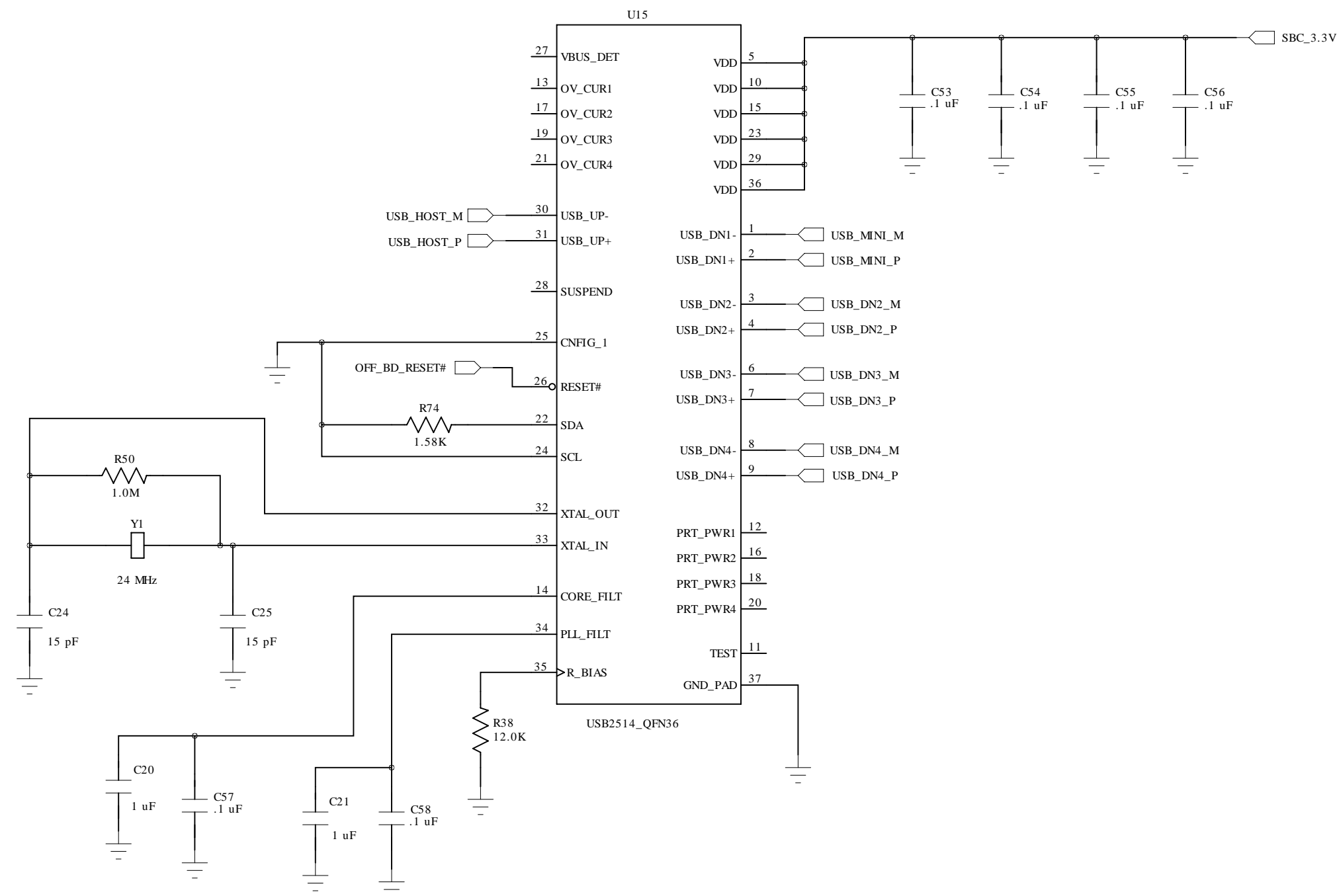


# Mini PCIe 1.5V Reg.

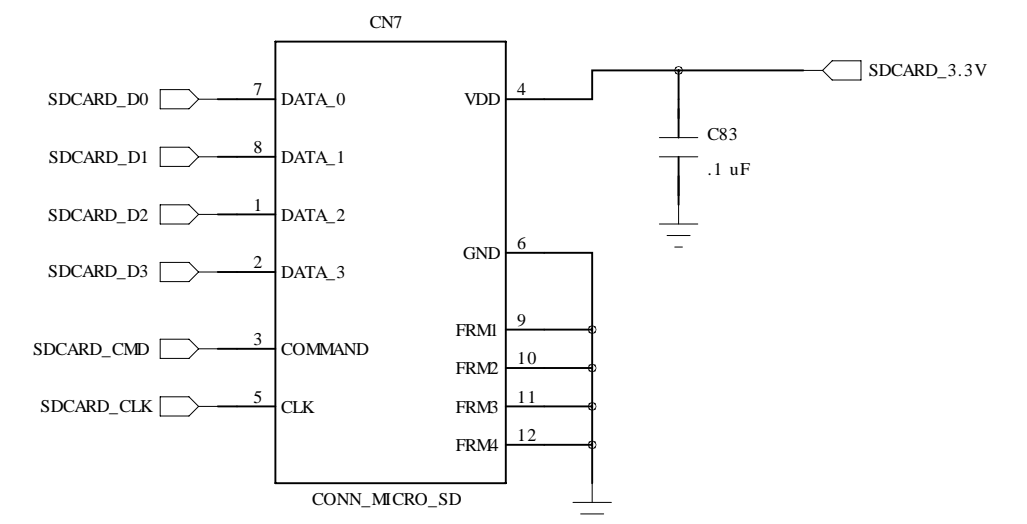


To Support Half-Size Mini-PCIe

# SMSC USB Hub

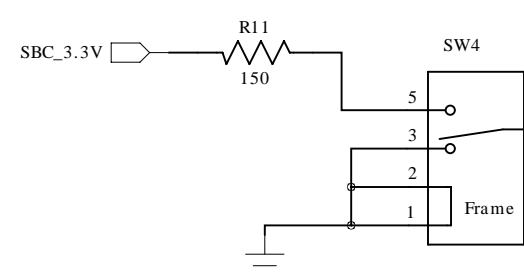


# Micro SD Card Socket

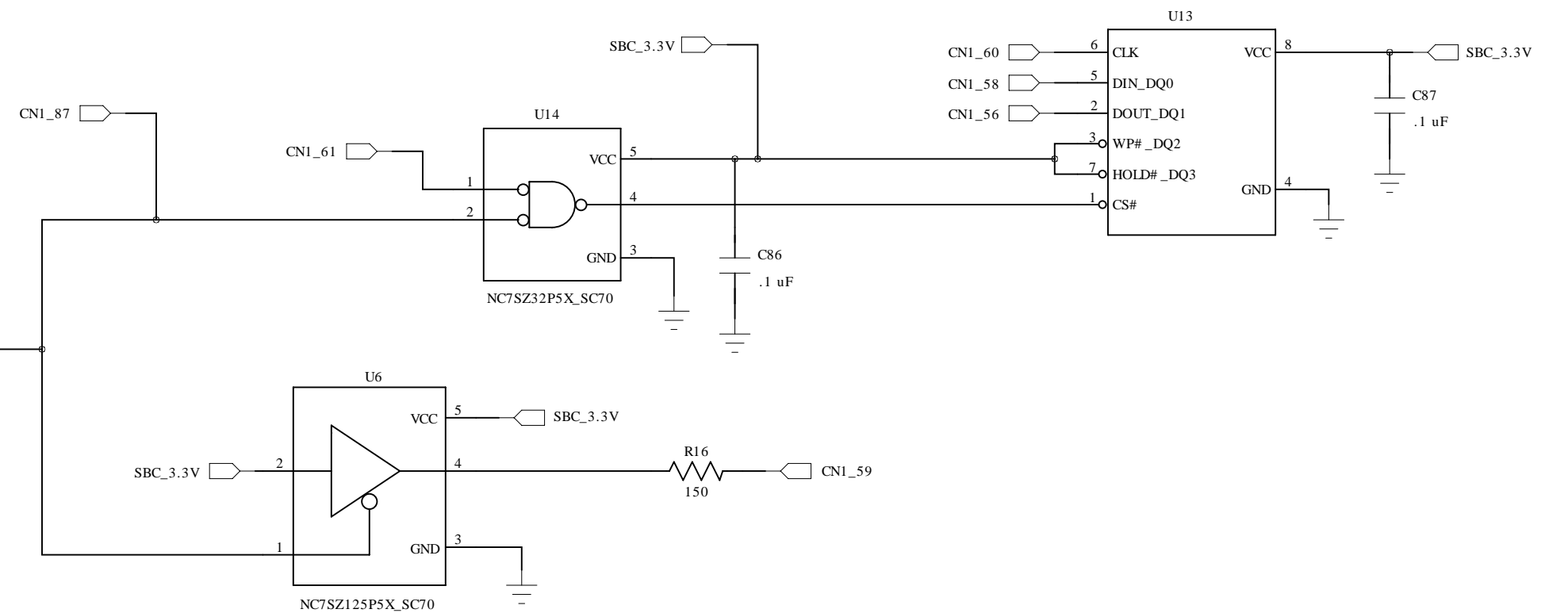


# TS-4900 SPI Boot Flash

## Boot Select Switch

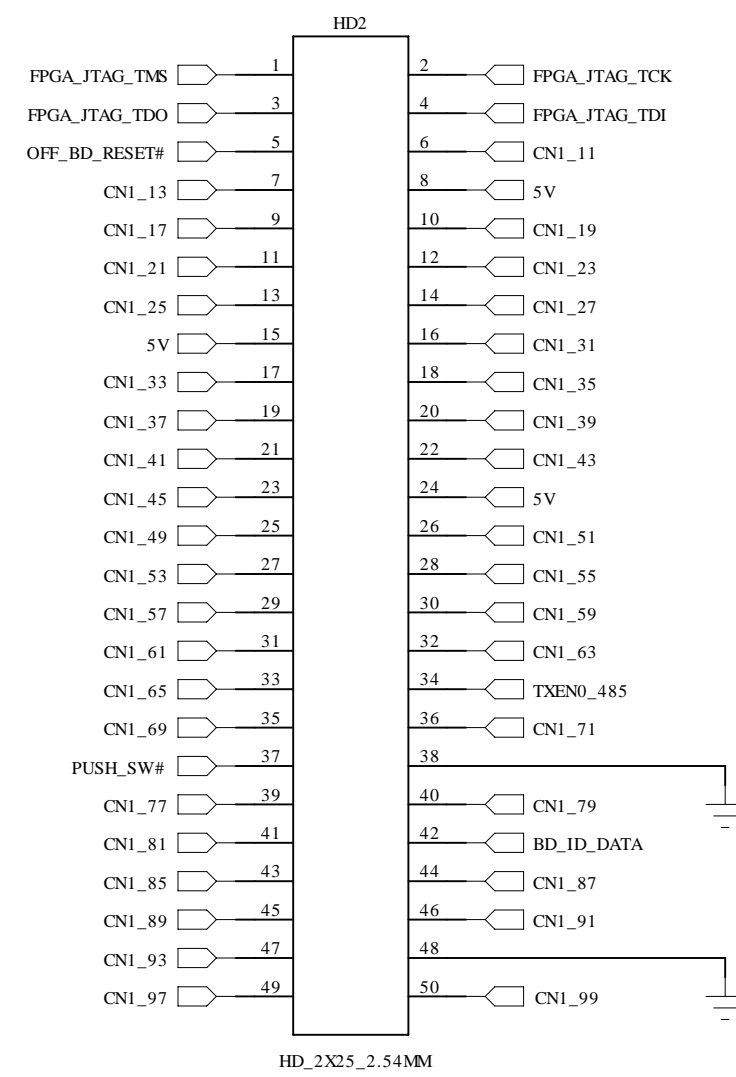


This switch selects whether the TS-4900 SPI Flash or the Base Bd. Flash is used to Boot

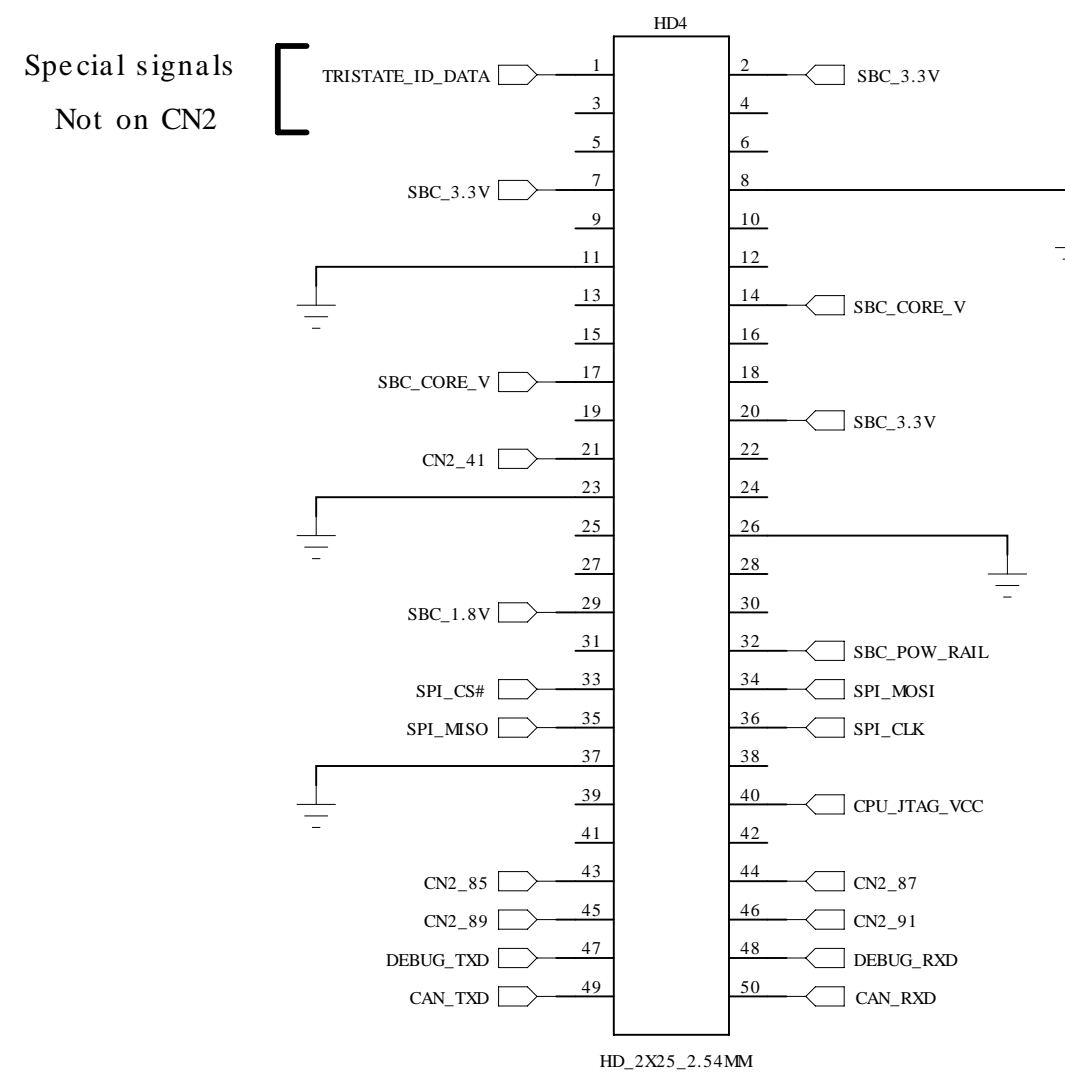


CN1\_87 allows software to take control of which SPI Flash chip is accessed

# CN1 Odd Pins

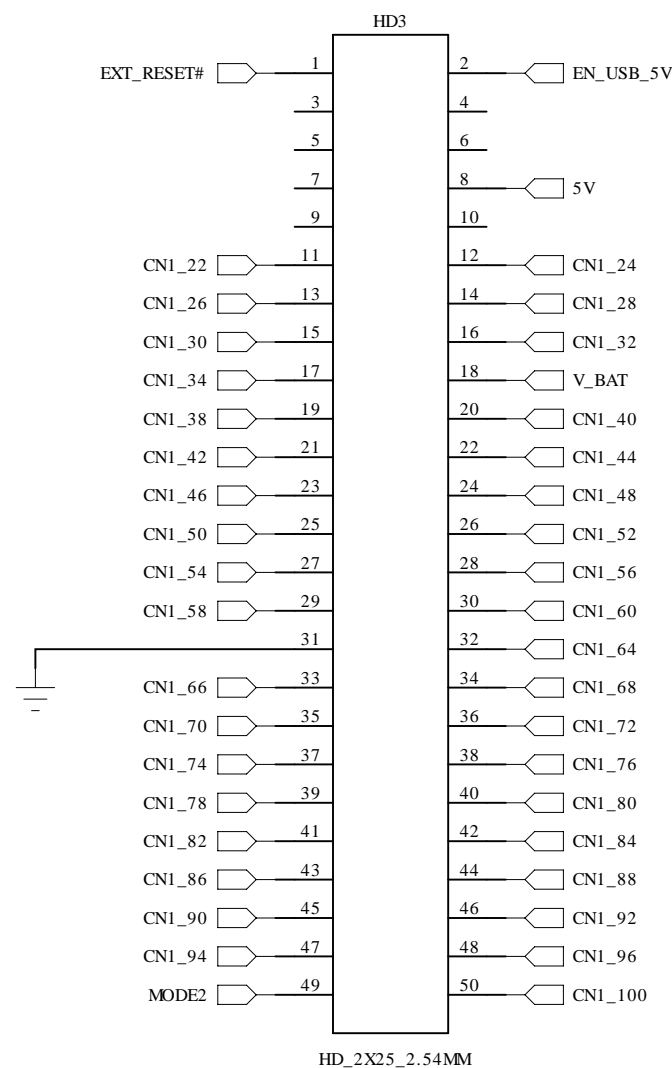


# CN2 Odd Pins

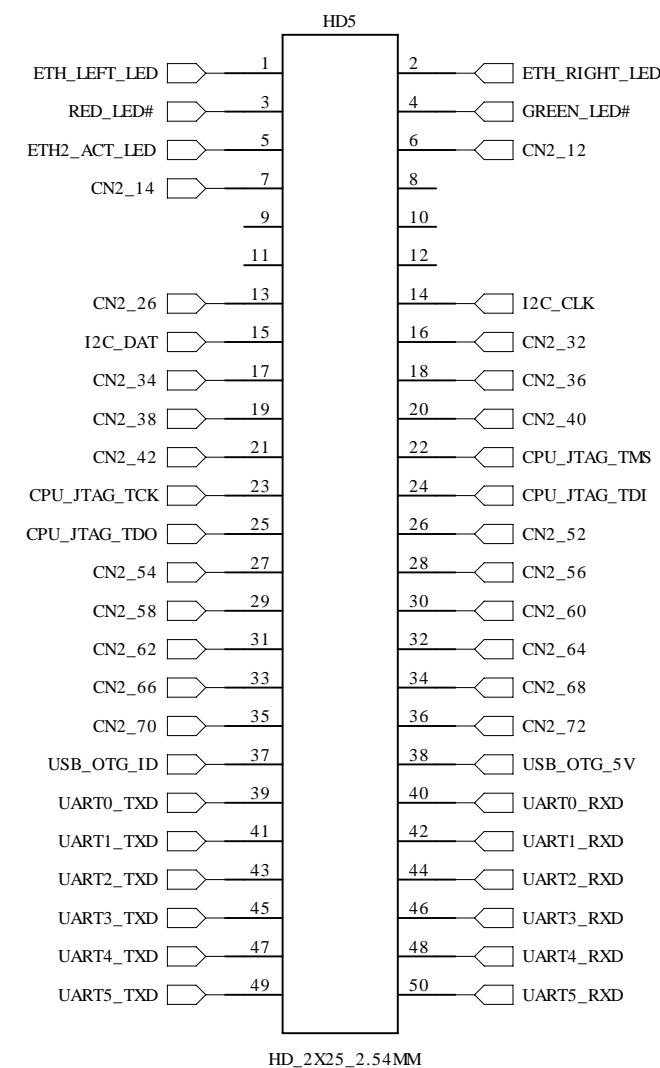


High-speed differential pairs are not routed to these headers  
 USB, SATA, Ethernet, SD card, PCIe and Ethernet pairs are not connected because this would mismatch the transmission lines.

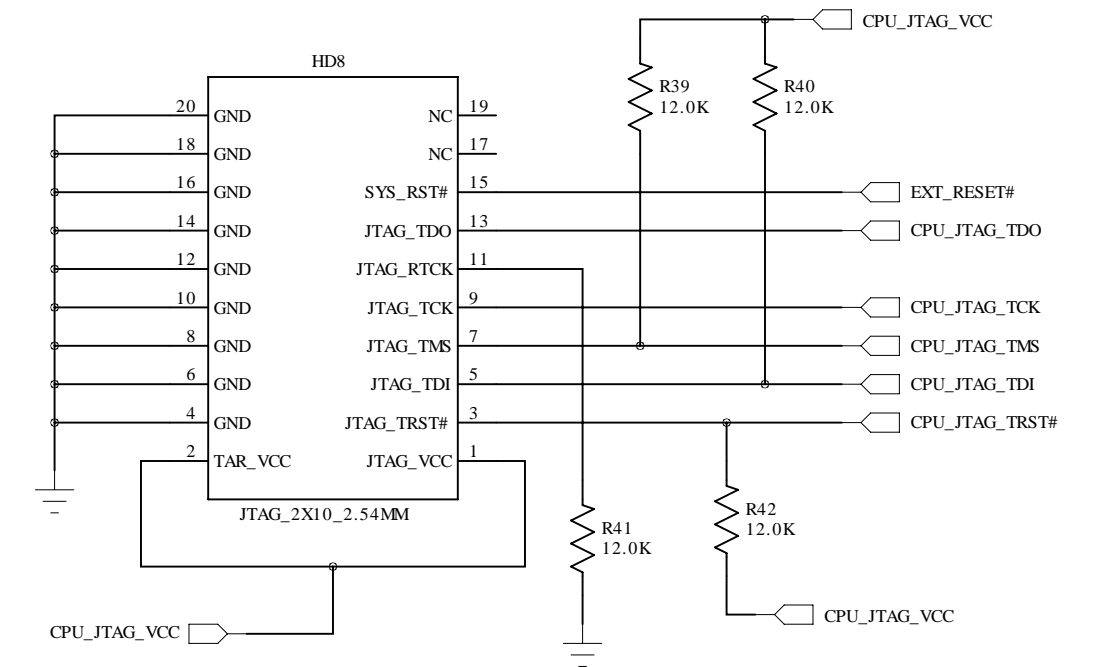
# CN1 Even Pins



# CN2 Even Pins



# CPU JTAG





# Two 100-pin Module Connectors

"5V" pins supply all power to the module  
Apply 4.5V to 5.5V to these pins

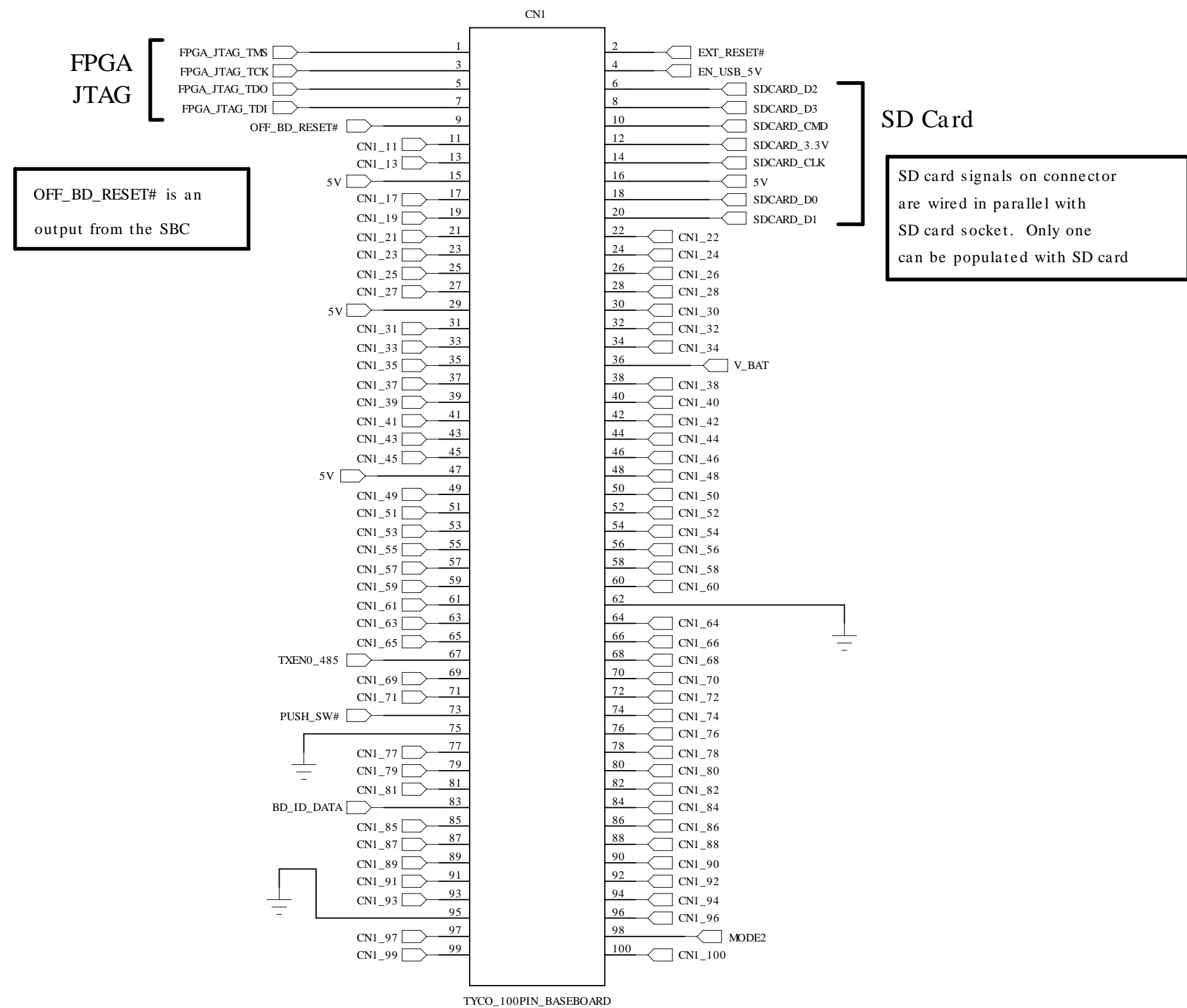
Current drain is < 800 mA  
(less than 4 Watts)

EXT\_RESET# is an Input to the  
SBC used to reboot the CPU

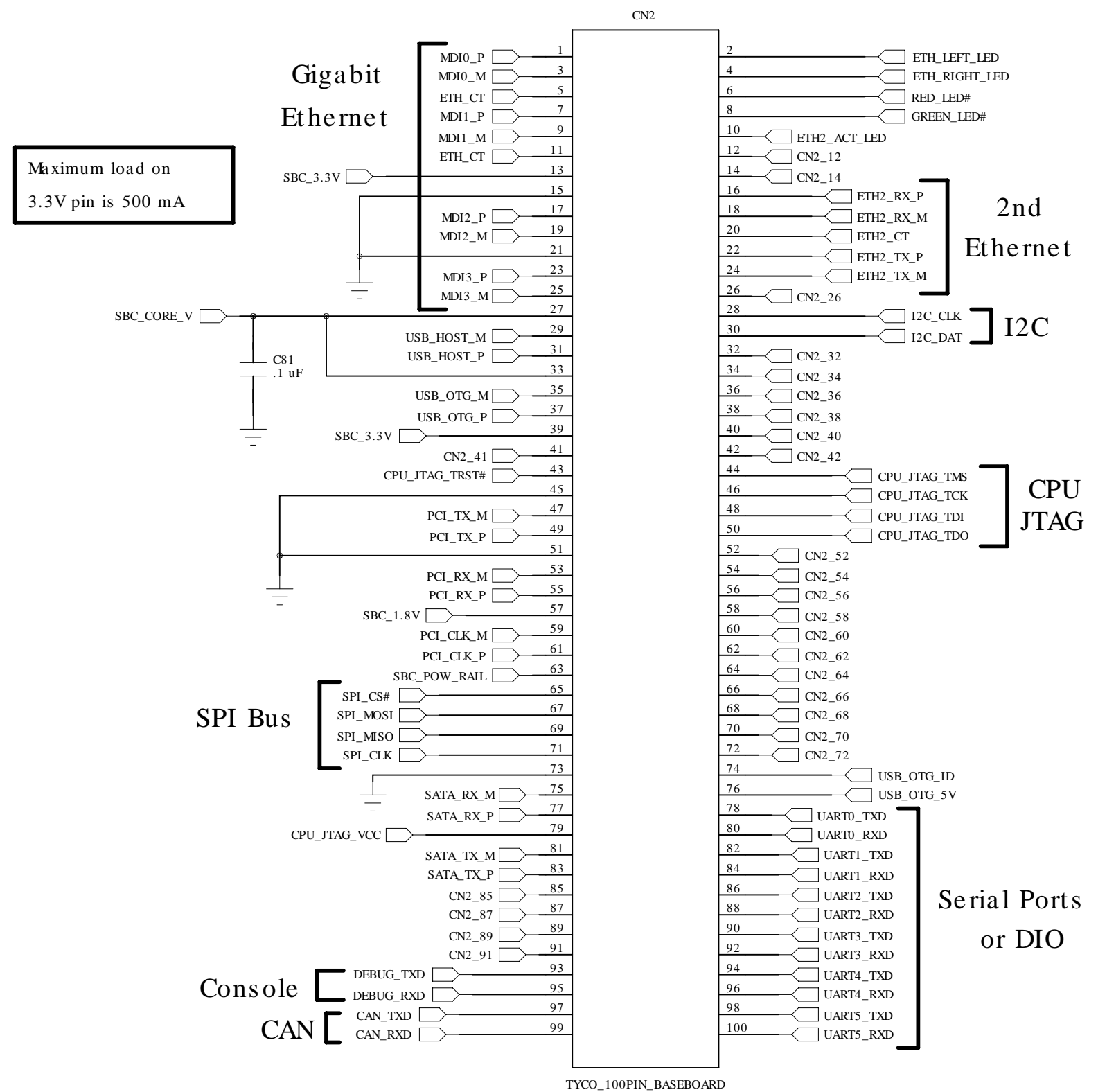
Do not drive active high  
(use open drain)

Left

Right



Maximum load on  
3.3V pin is 500 mA



SD Card  
SD card signals on connector  
are wired in parallel with  
SD card socket. Only one  
can be populated with SD card

OFF\_BD\_RESET# is an  
output from the SBC

| Mode 2 | Boots from |
|--------|------------|
| 1      | NAND Flash |
| 0      | SD Card    |

MODE2 state is latched prior  
to OFF\_BD\_RESET# deasserted

MODE2 has a 12K PU  
on the SBC module