

Comments:

Cortex M0 can be powered from USB or by 8-28VDC Power

Cortex M0 is powered up first, then it controls MX286 start up

Cortex M0 does these functions:

- Controls MX286 power up sequence
- Controls MX286 Boot Strapping
- USB Device to Console conversion
- Controls Blue LED
- Can read Push Switch
- Measures Analog Vin value
- Reads SD_BOOT Jumper
- Contains customer specific "ID Code" ?
- Other NV Parameter storage ?

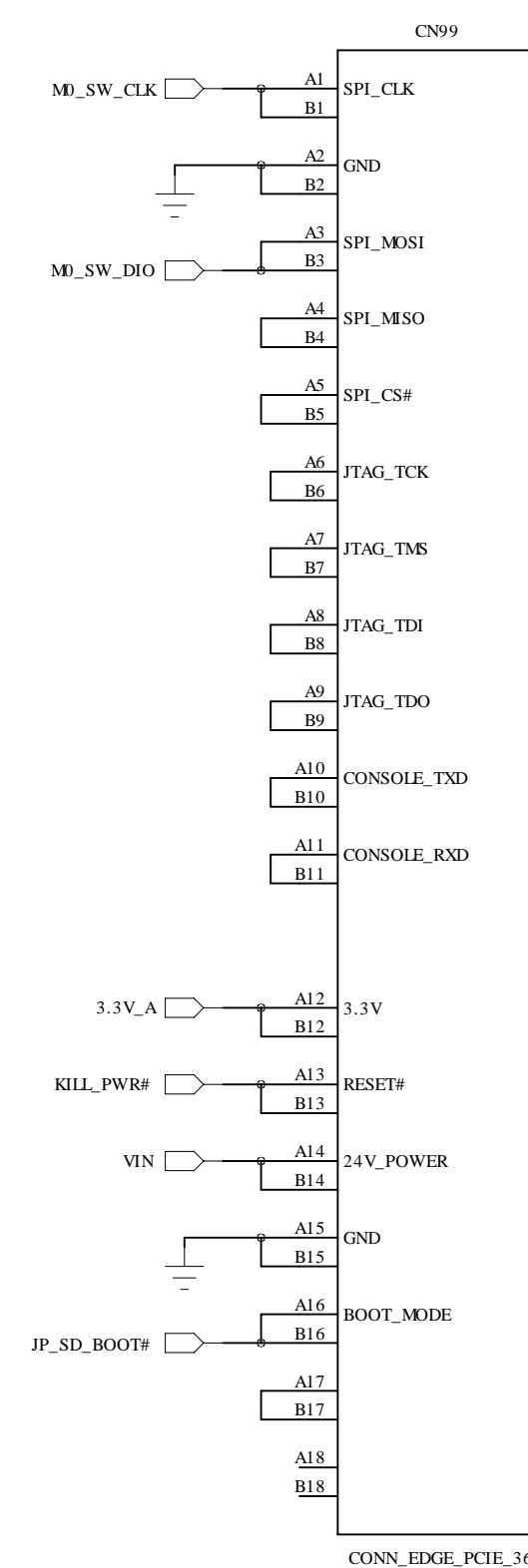
Serial Port Usage

UART0 = RS-232
UART1 = RS-232
UART2 = Modbus/DC
UART3 = DC
UART4 = GPS Radio
Debug = Console/DC

DC = Daughter Card

10 DIO also go to DC

Programmer Edge Conn.



GPS option adds:

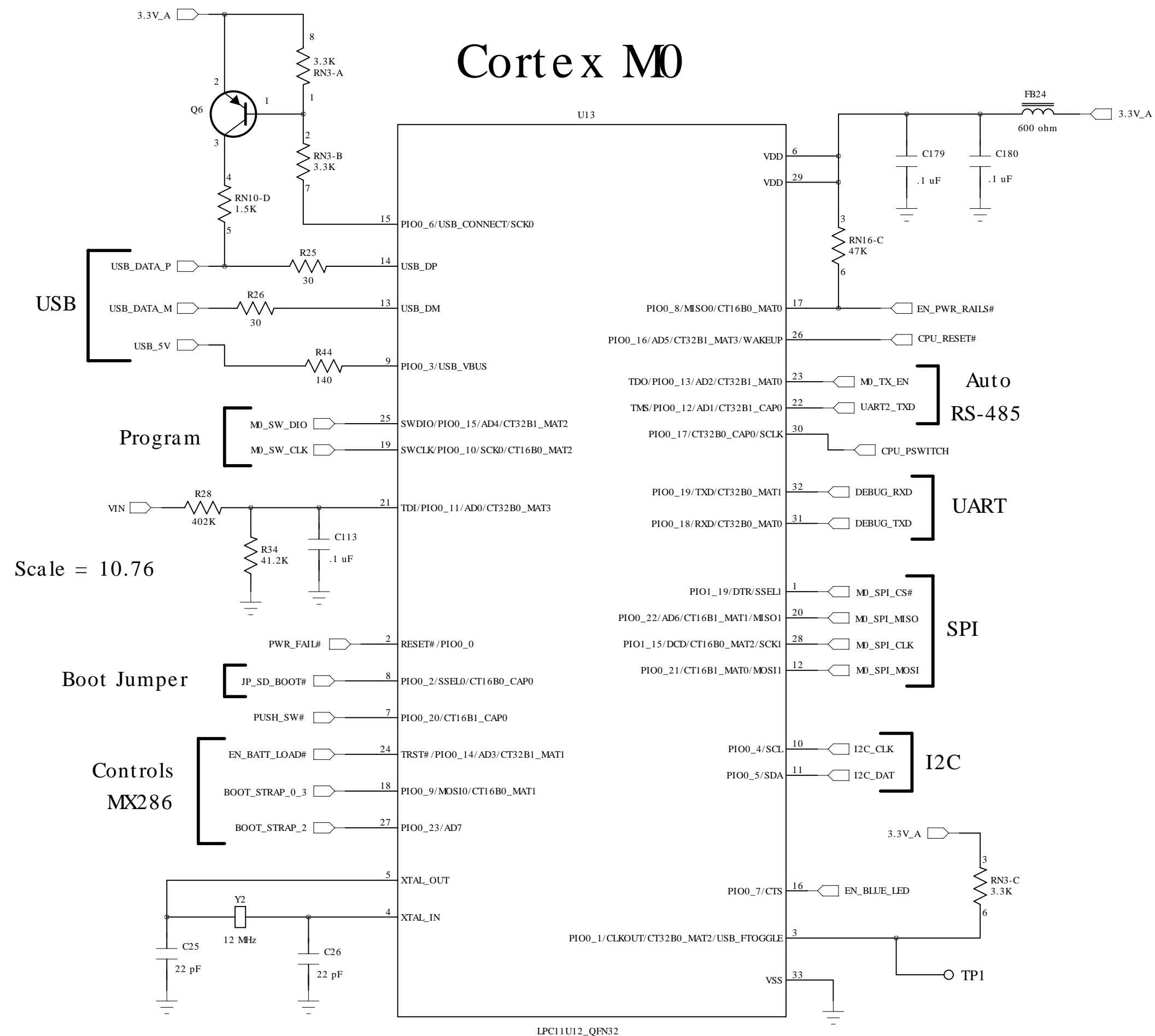
U14, PF2, L4, HD3

2nd CAN adds:

U26 and TVS6

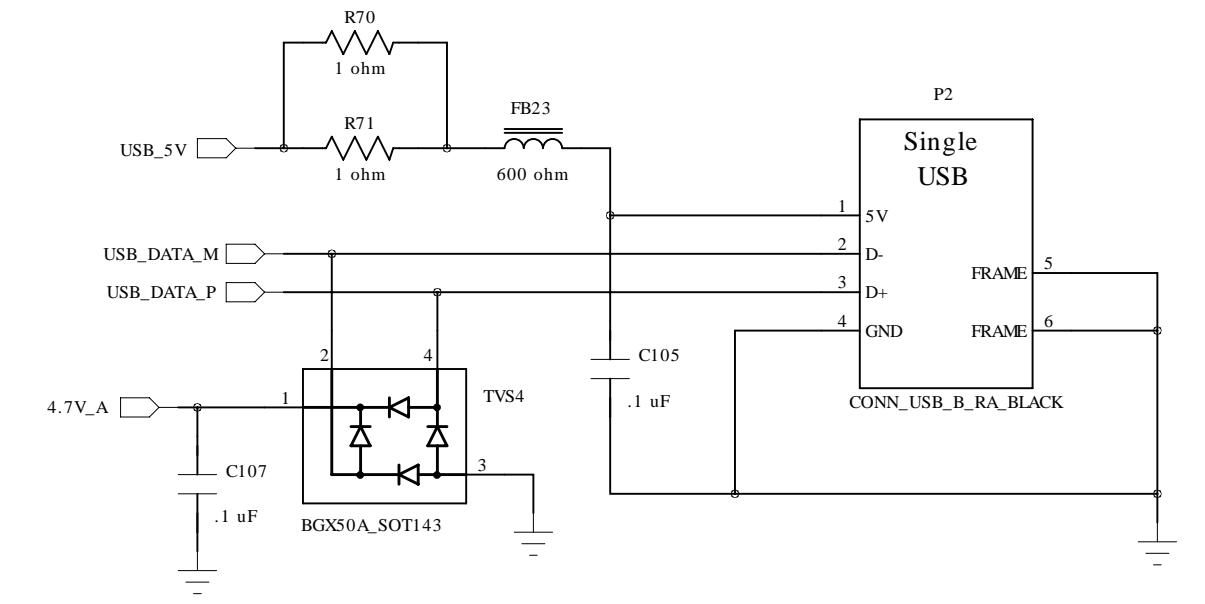
Technologic Systems	Date	Jan. 7, 2014
Title: TS-7670 Documentation		
Rev: B	Designer	Sheet 1 of 13

USB Device Port and Cortex M0

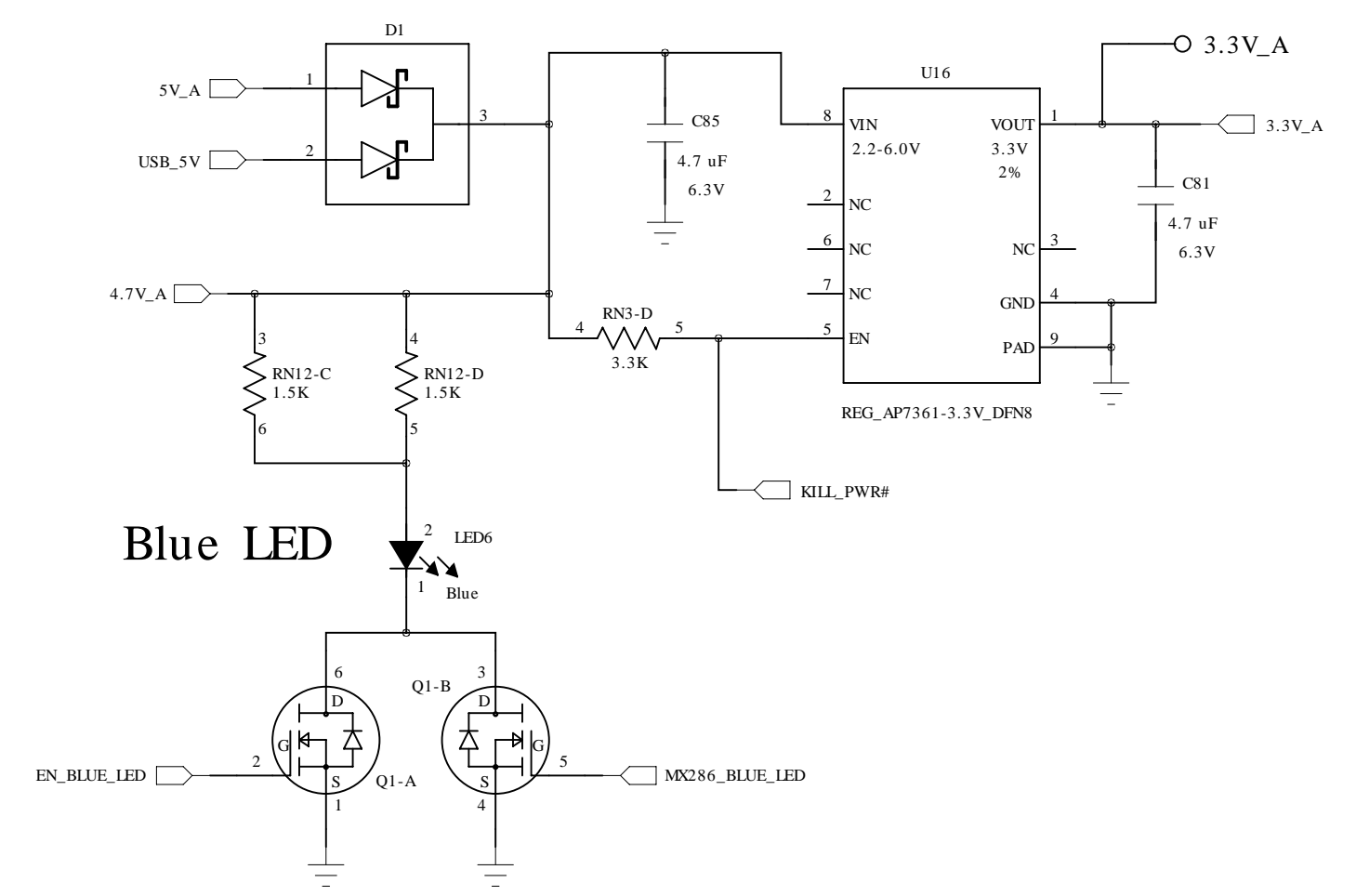


Pins 2 and 3 must be high at PU

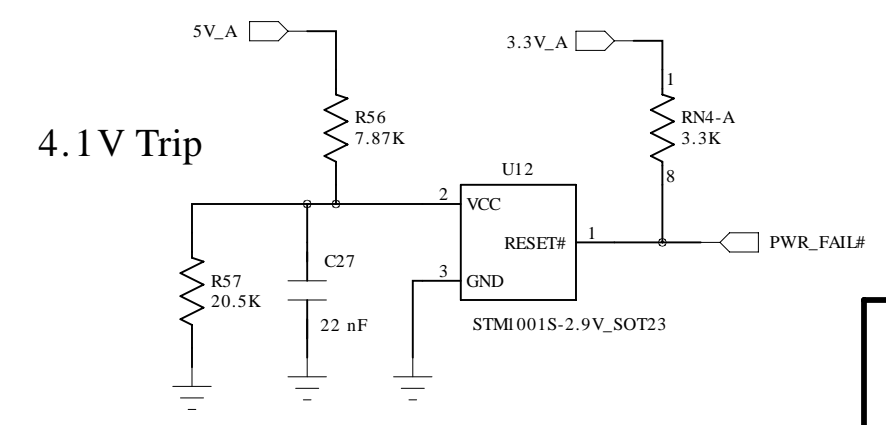
USB Device Port



3.3V Reg. for M0

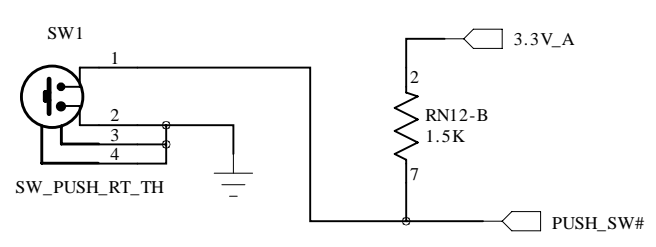


Brown out Detect



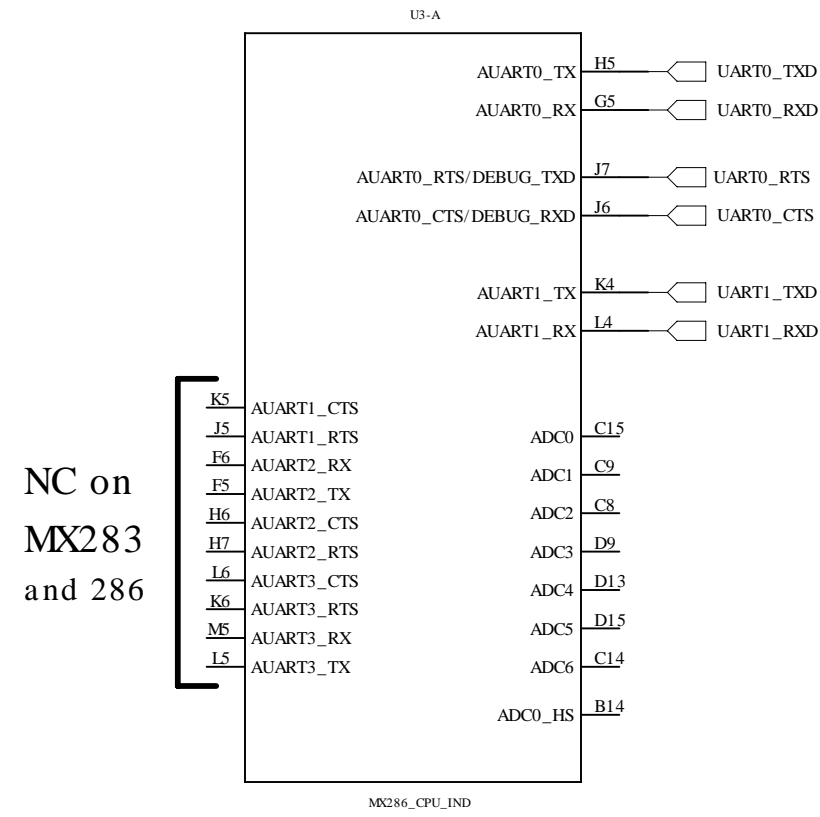
If D8 not installed
Then U12 not installed

Push Switch

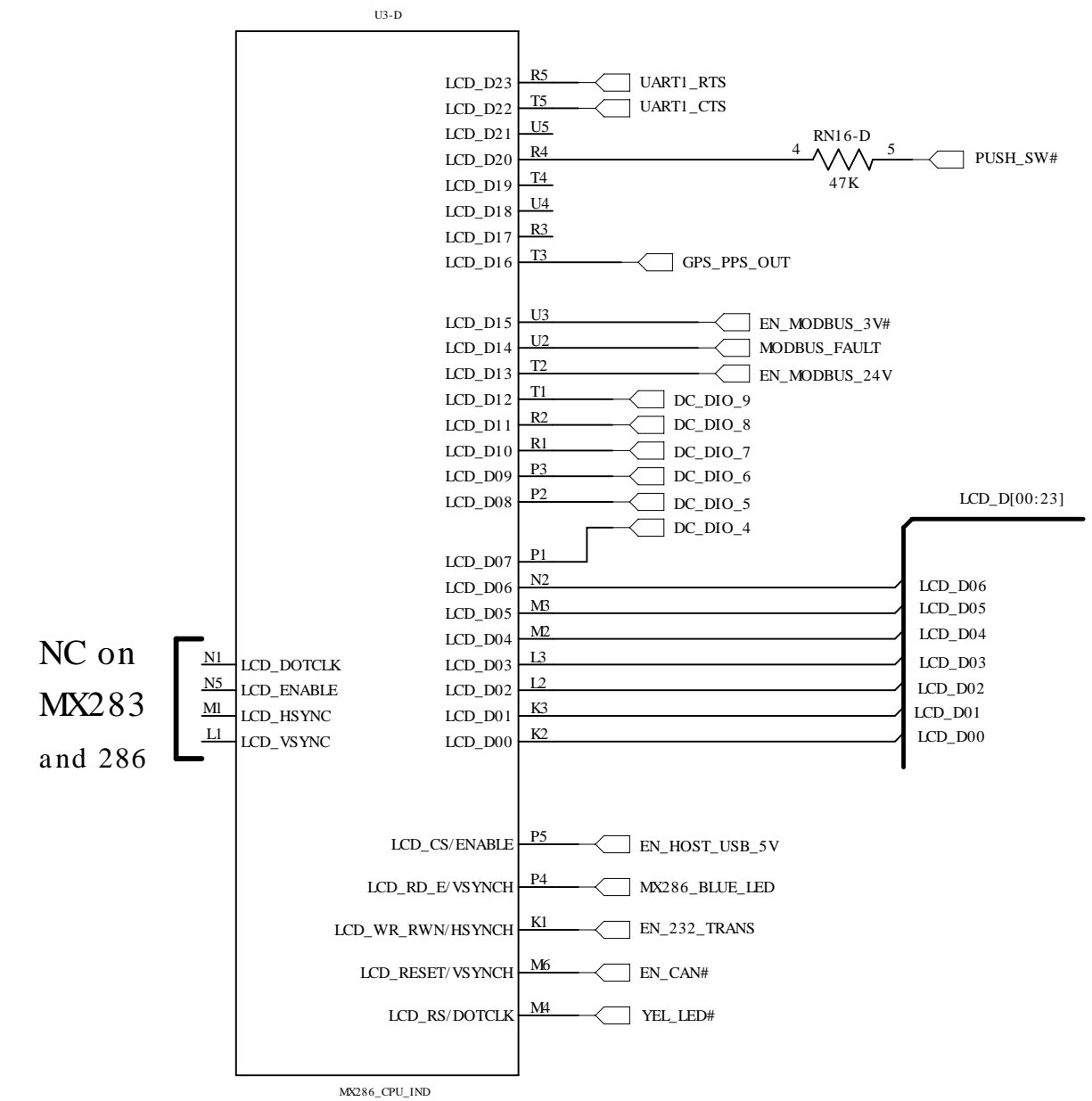


MX286 ARM9 CPU

UARTs, ADC

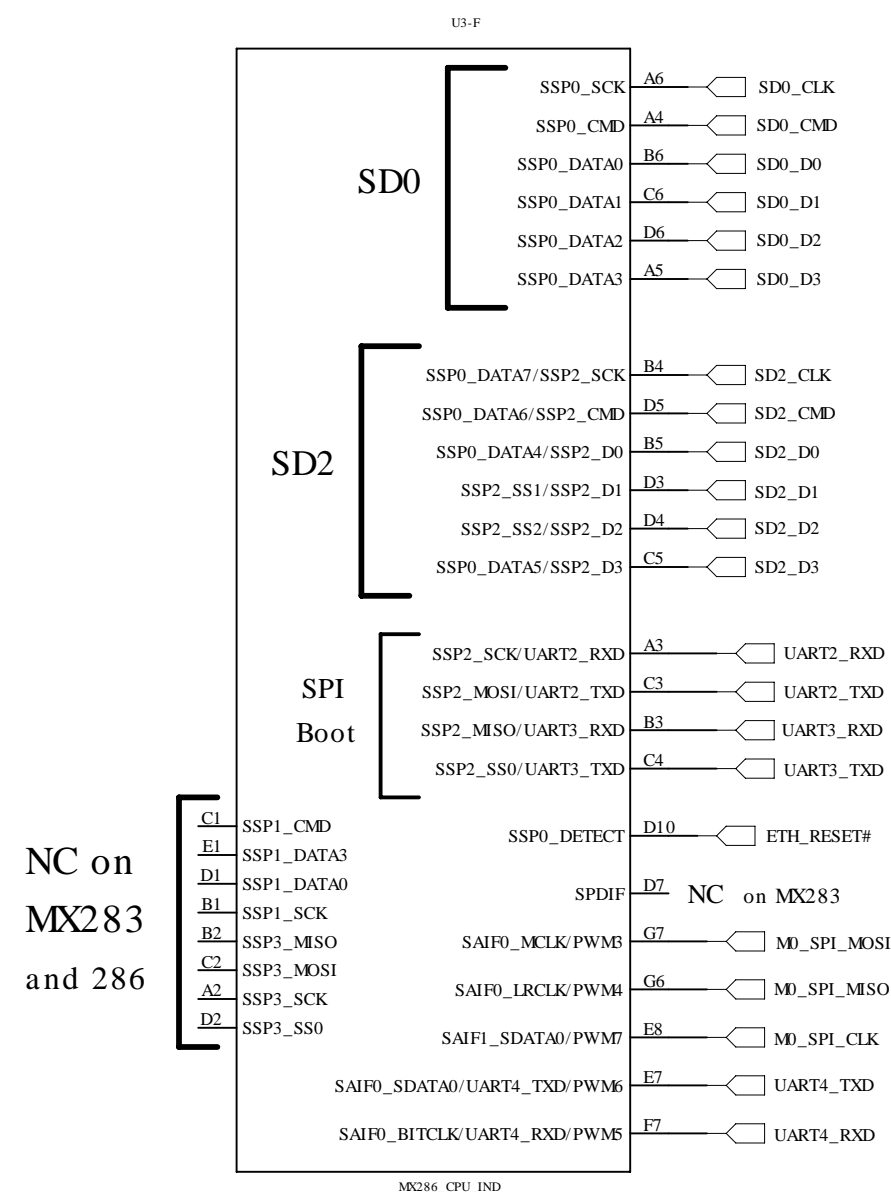


LCD



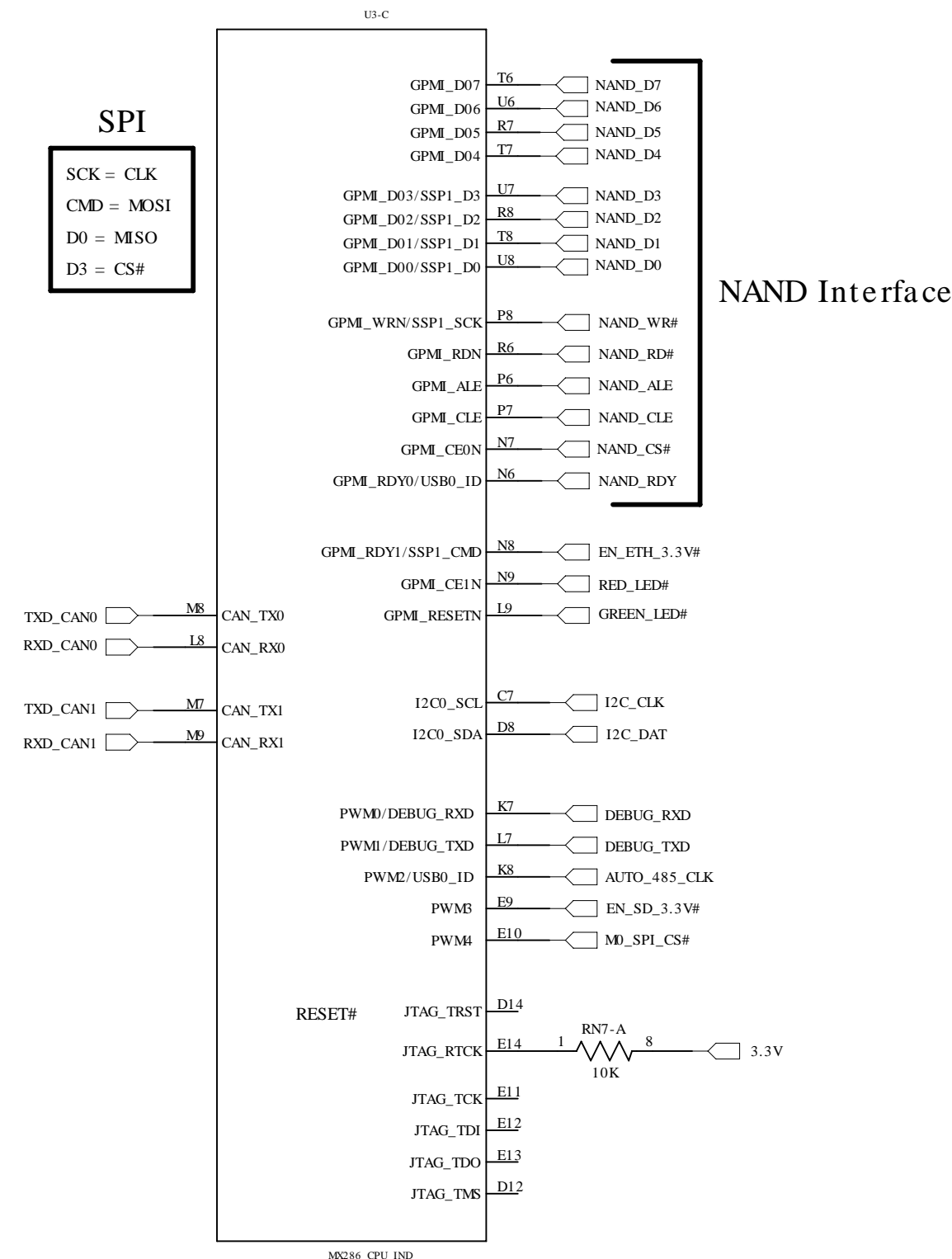
NAND, PWM JTAG, I2C

Audio SD Card SPI Boot



SPI
SCK = CLK
CMD = MOSI
D0 = MISO
D3 = CS#

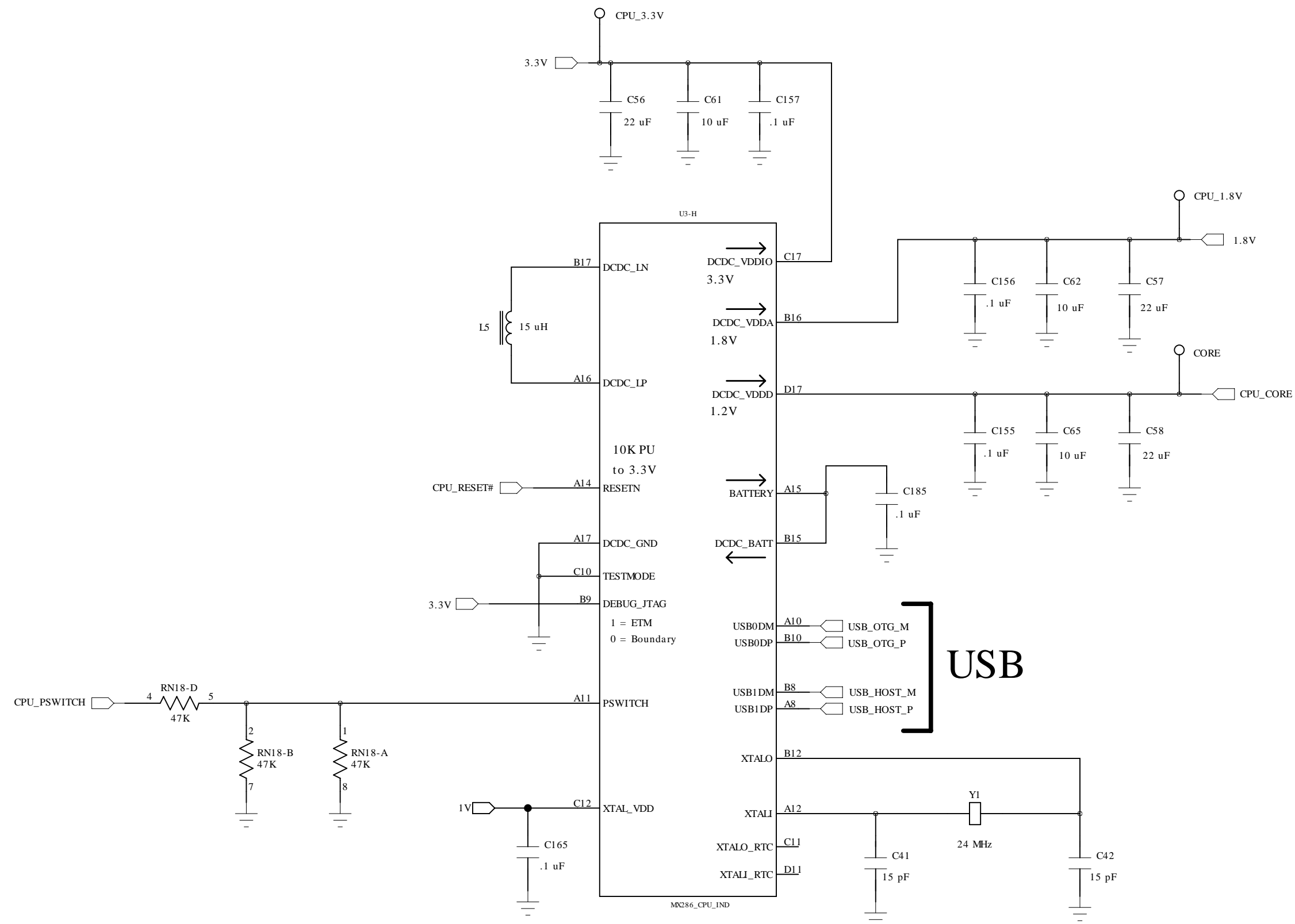
MX286 adds
4 CAN signals
and ball D7



All JTAG have 47K internal PU except RTCK

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Rev: B	Designer
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CPU Power

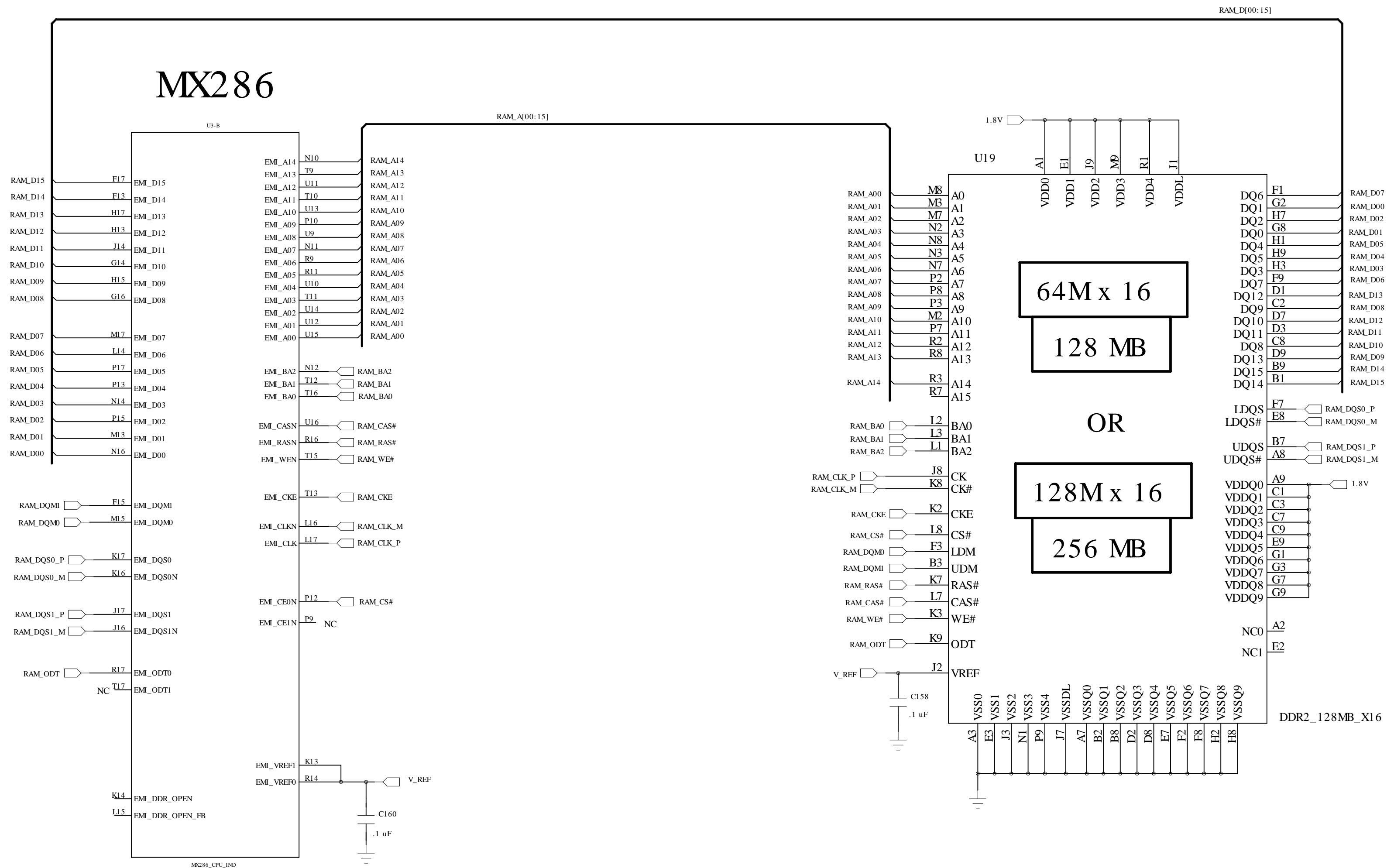


GND Test Point



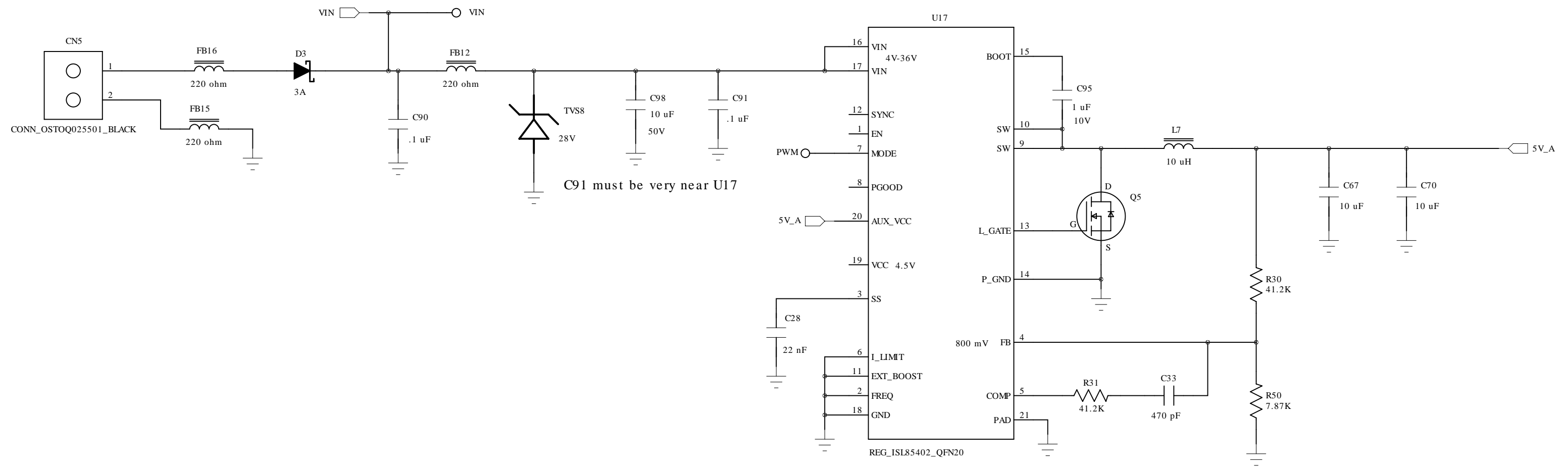
Technologic Systems	Date	Jan. 7, 2014
Title: TS-7670 MX286 CPU Power		
Rev: B	Designer	Sheet 4 of 13

DDR2 SDRAM (128 or 256 MByte)

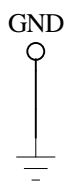


5V Power Supply (2000 mA)

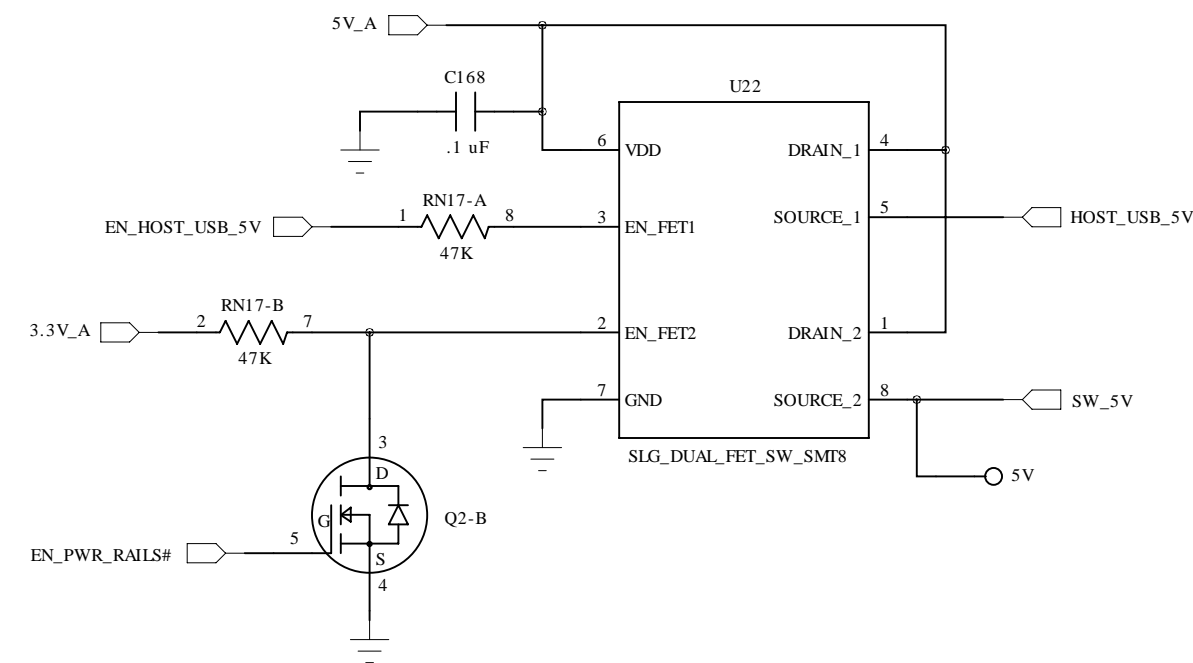
8-28 VDC
Power Input



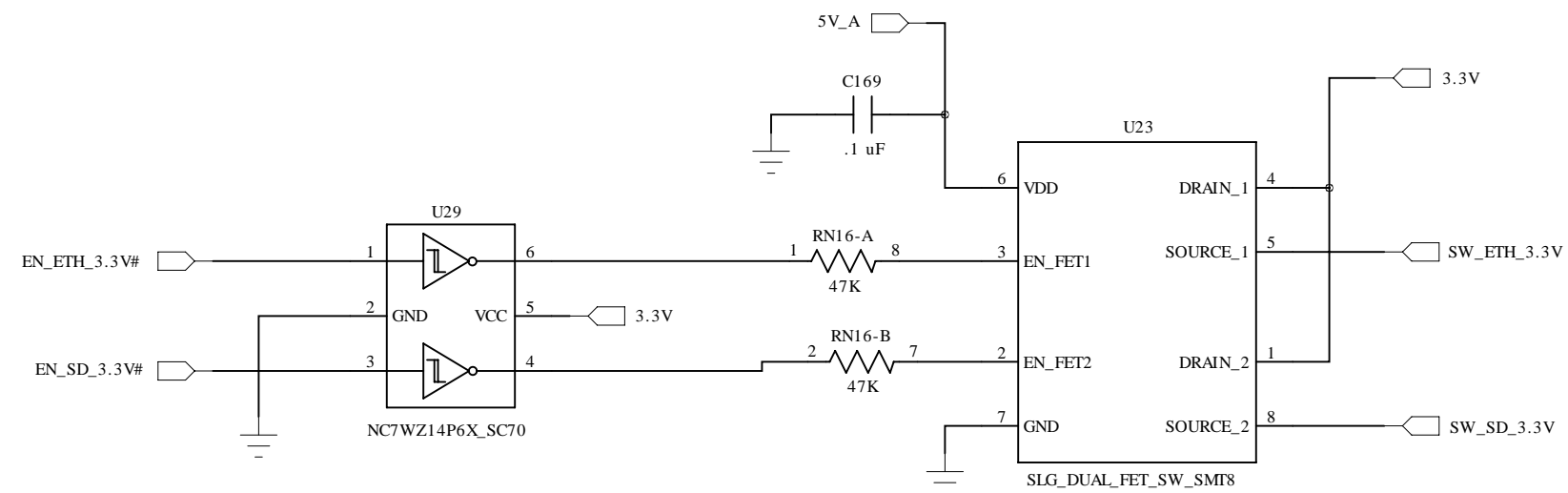
.063 hole



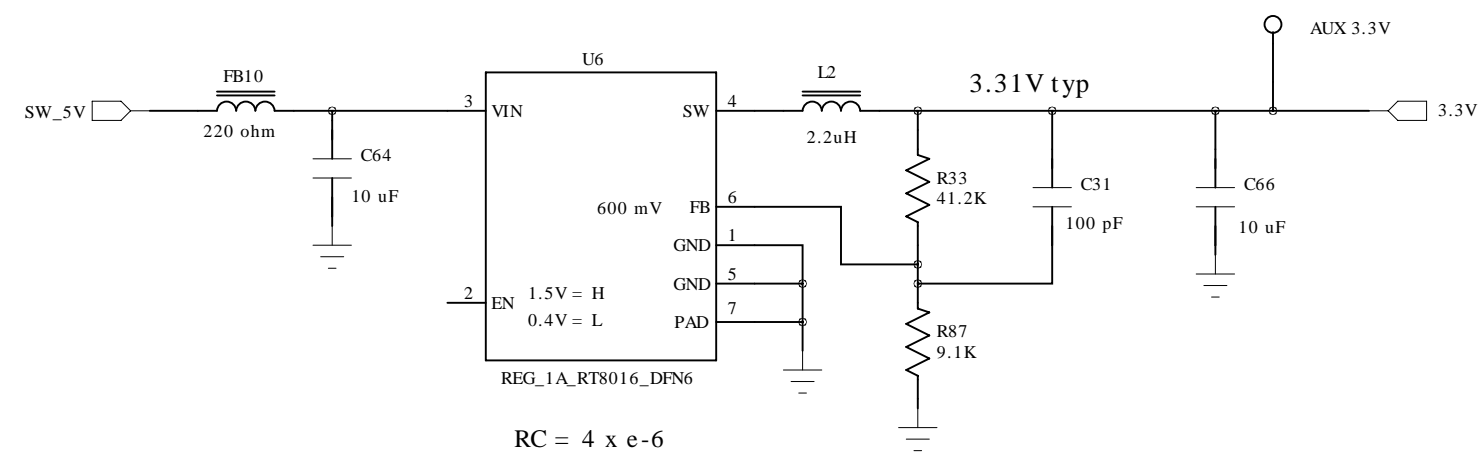
USB and MX286
Switched Power



Ethernet and SD
Switched Power



3.3V Reg

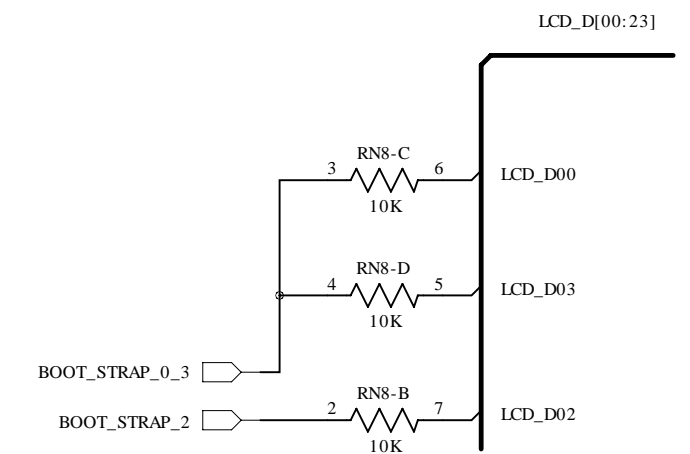


Boot Strap Bias Res.

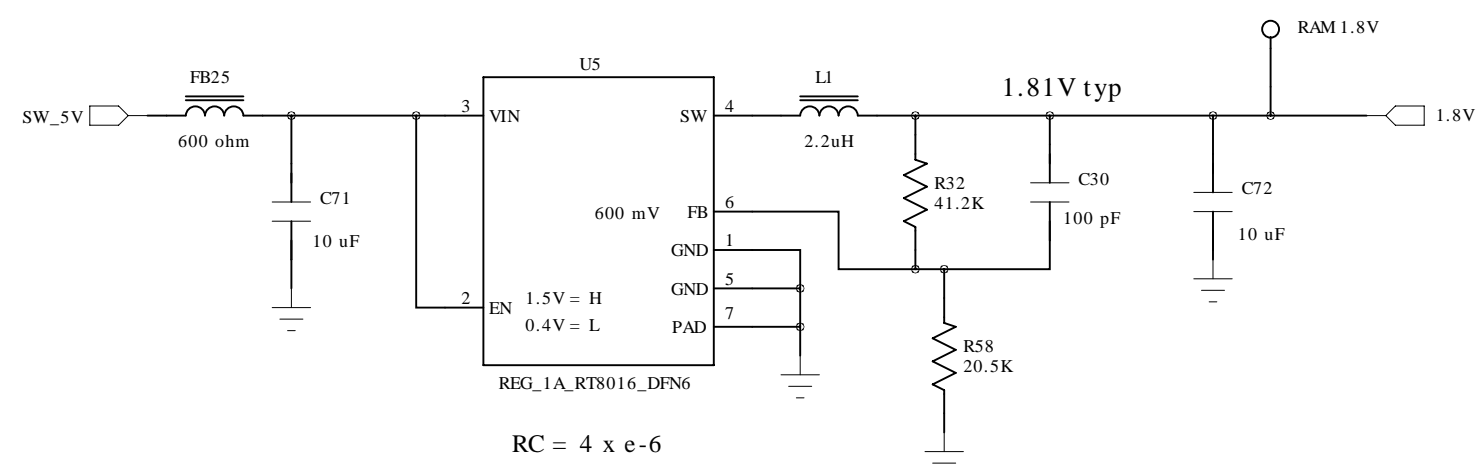
Defaults
to NAND

Boot Source

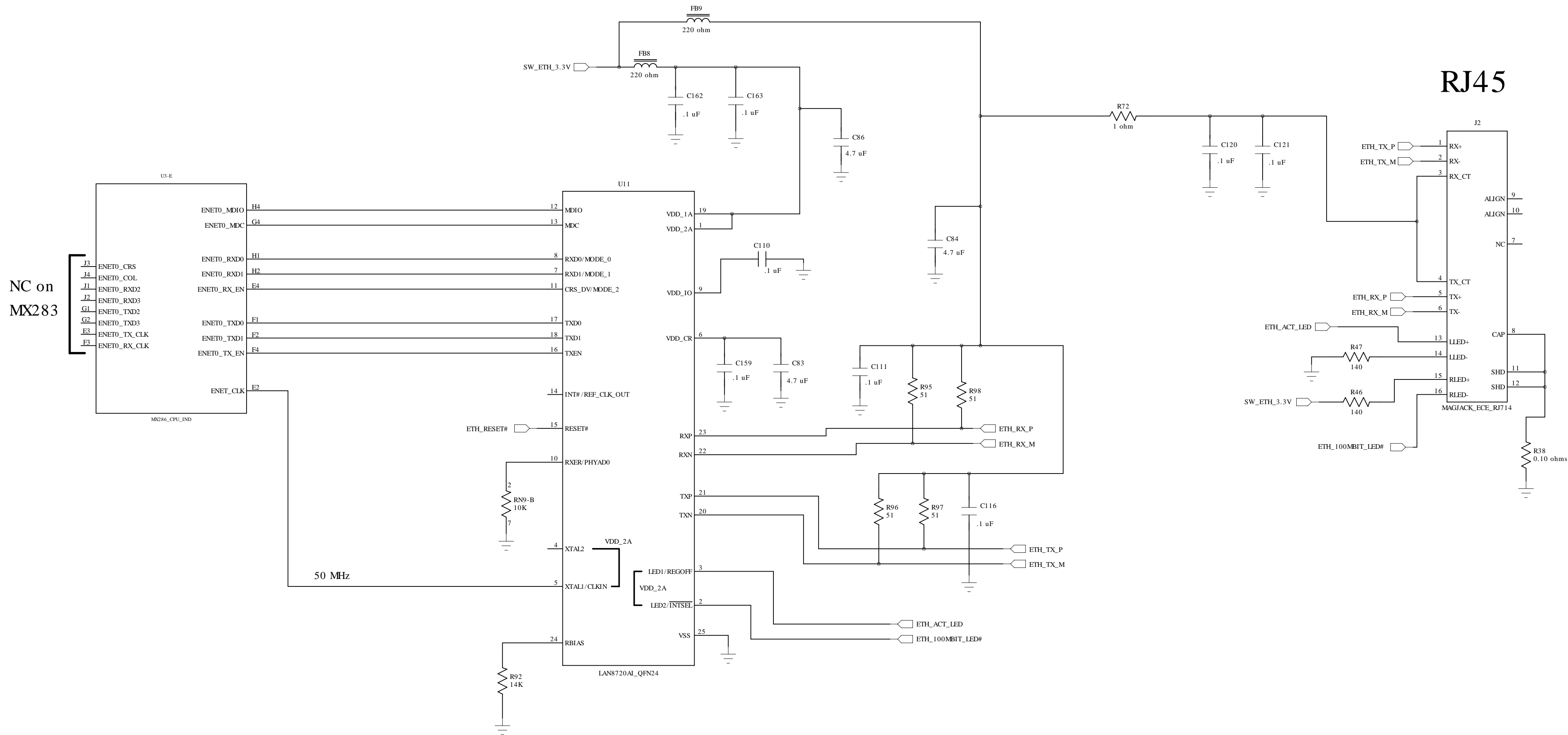
LCD_3	LCD_0			
0	0	1	0	SPI
1	0	0	1	SD Card
0	0	0	0	USB
0	1	0	0	NAND



1.8V Reg



10/100 Ethernet

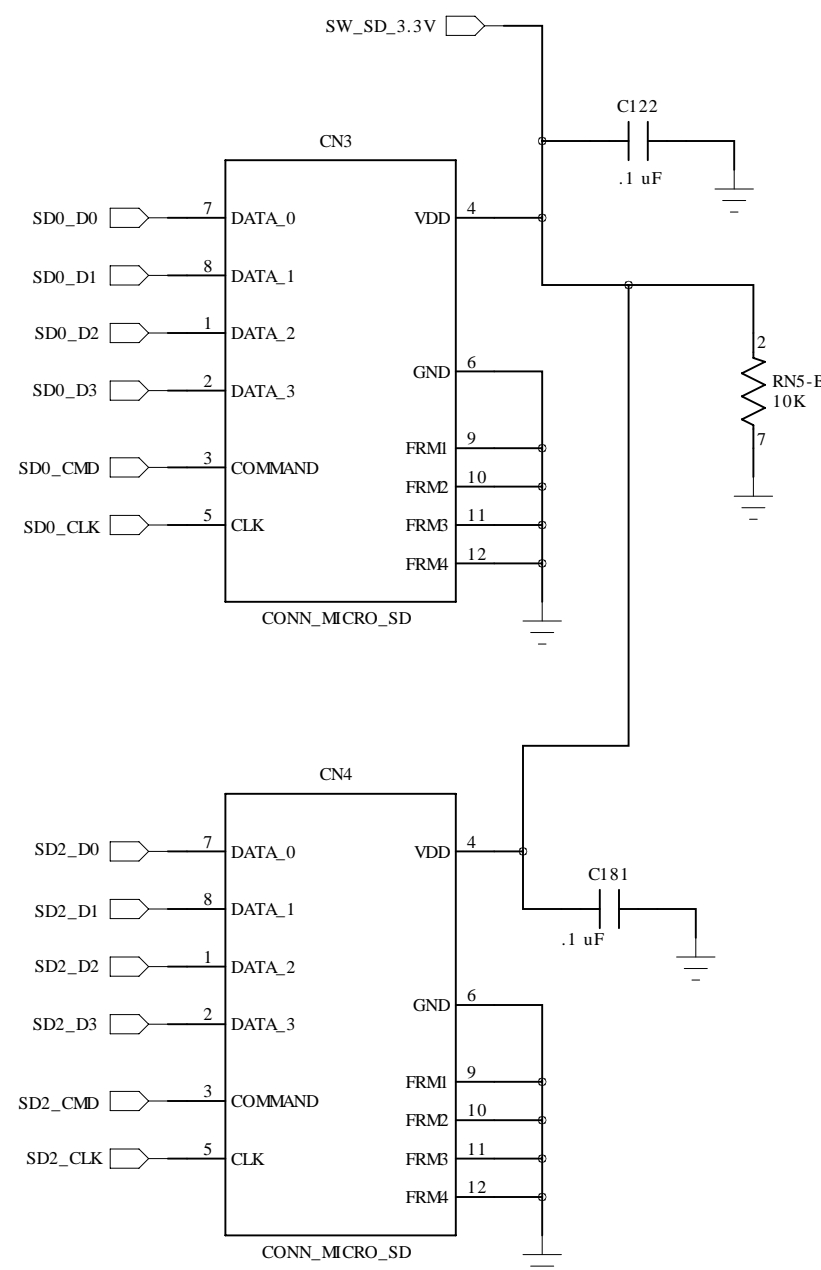


Auto MDIX is supported and
Polarity Correction supported

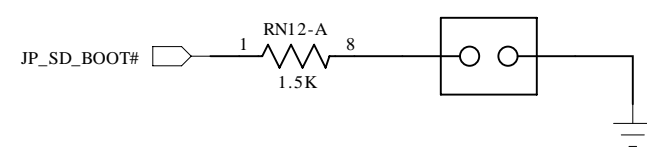
Technologic Systems	Date Jan. 7, 2014
Title: TS-7670 Ethernet Port	
Rev: B	Designer
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Flash Memory

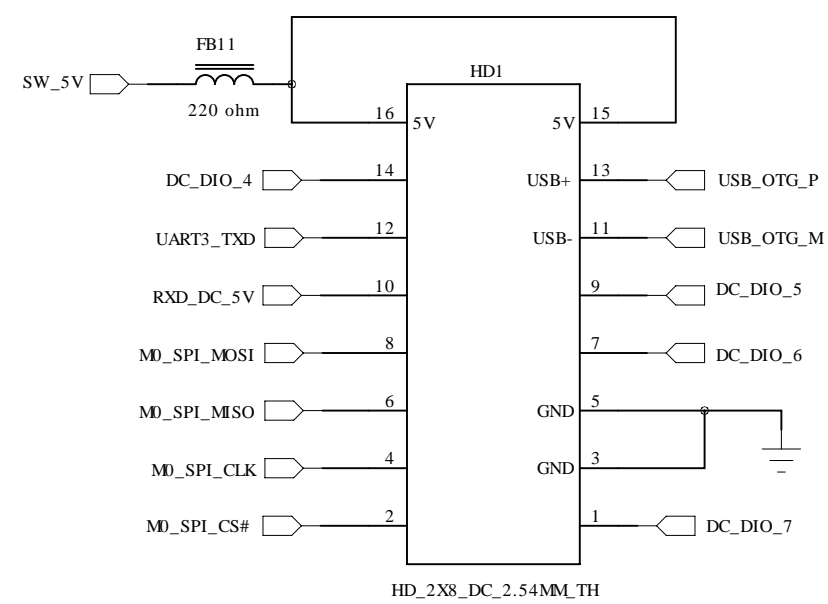
Micro SD Card Socket



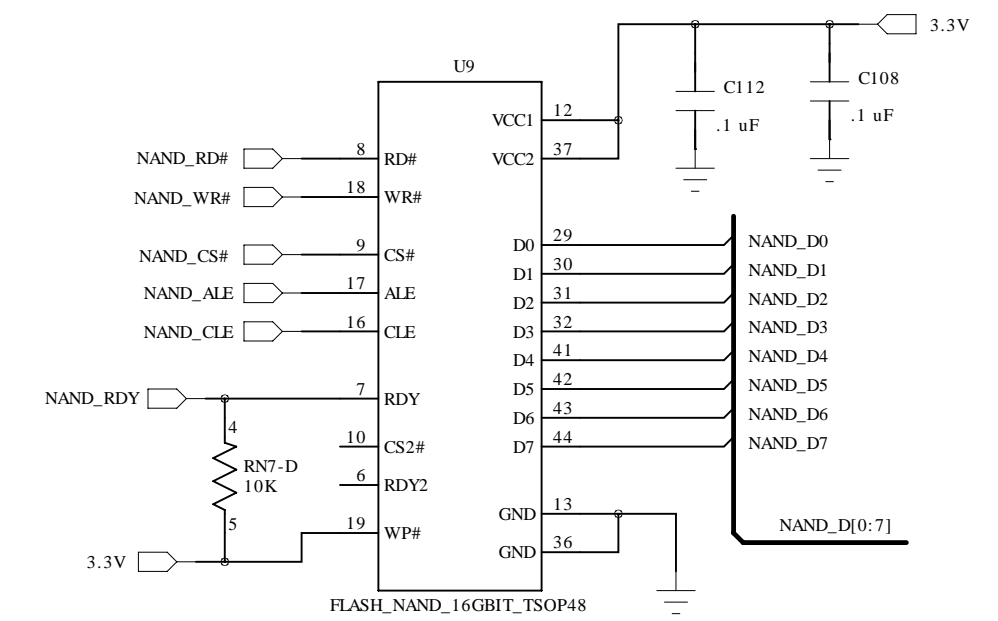
SD Boot Jumper



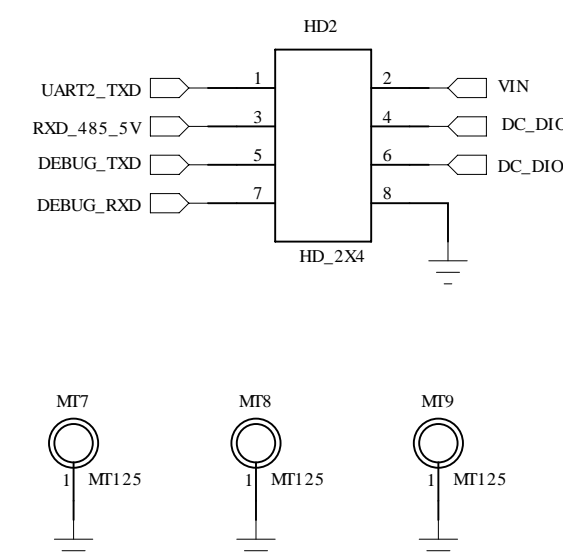
Daughter Card Interface



NAND Flash

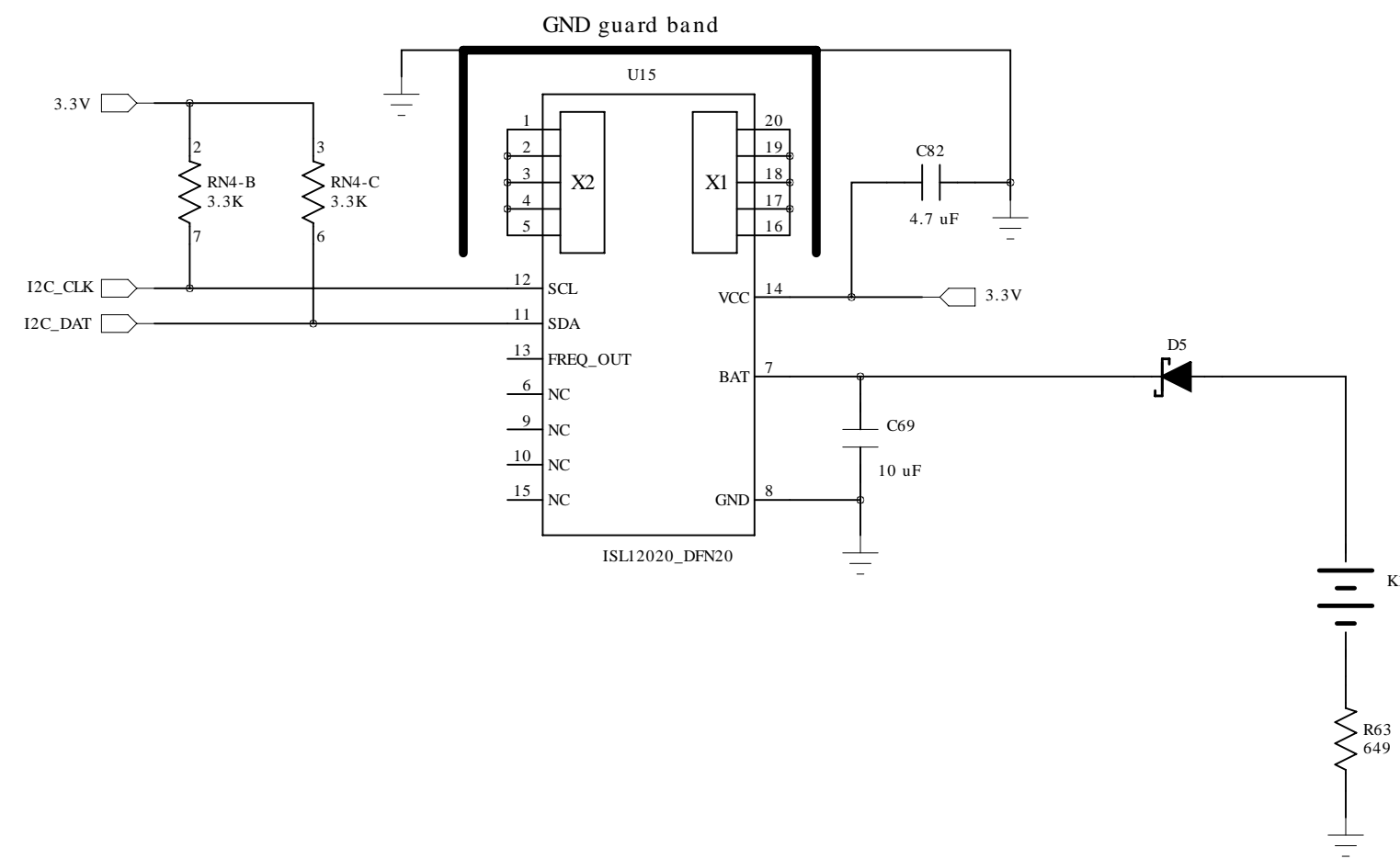


Supplemental Interface

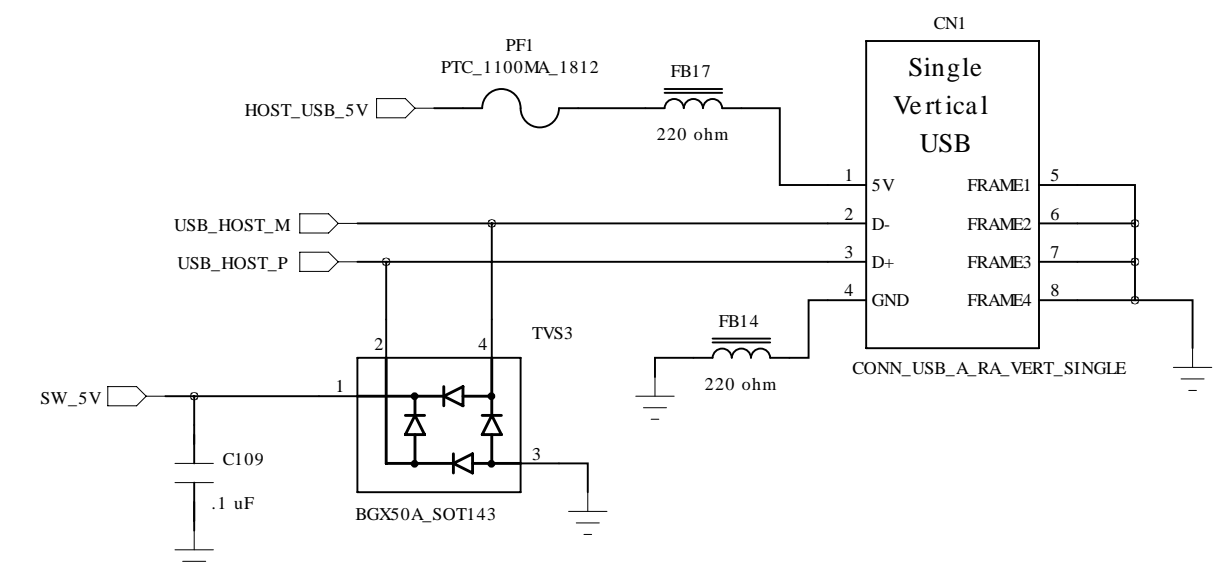


RTC and Host USB

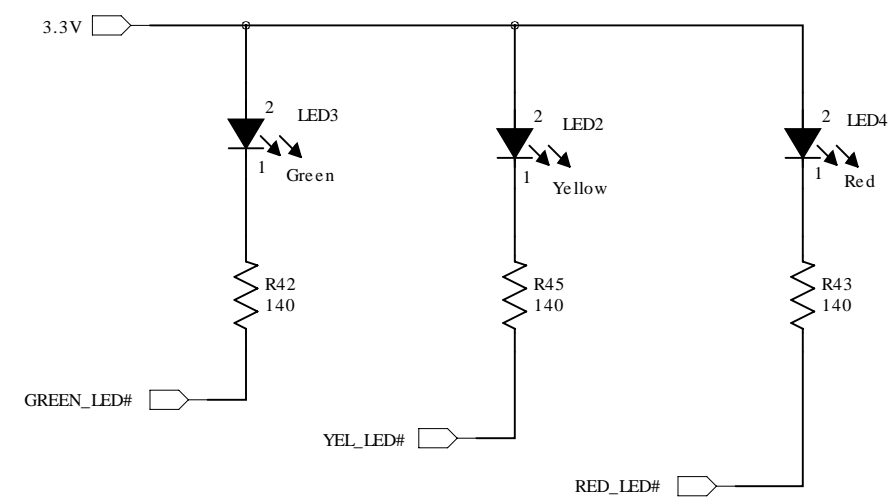
RTC and Temp. Sensor



External Host USB Port



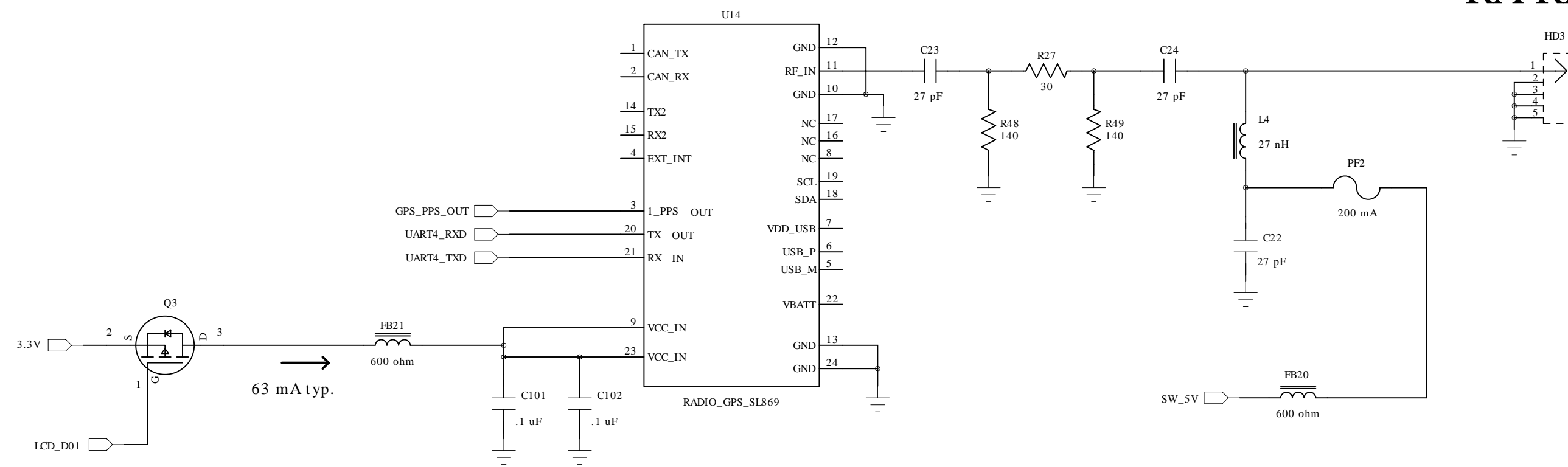
SMT RA LEDs



GPS Radio

Te lit SL869 GPS Radio

RF Conn.
RA RMA

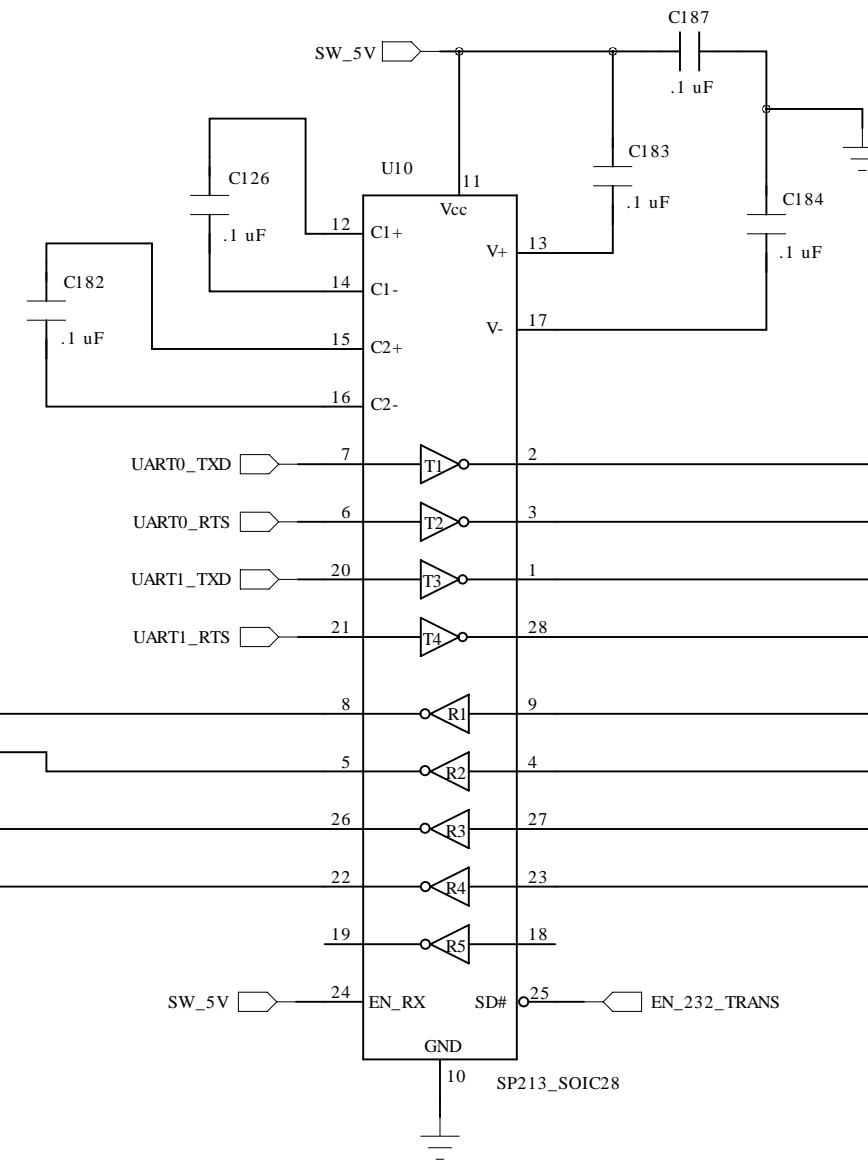
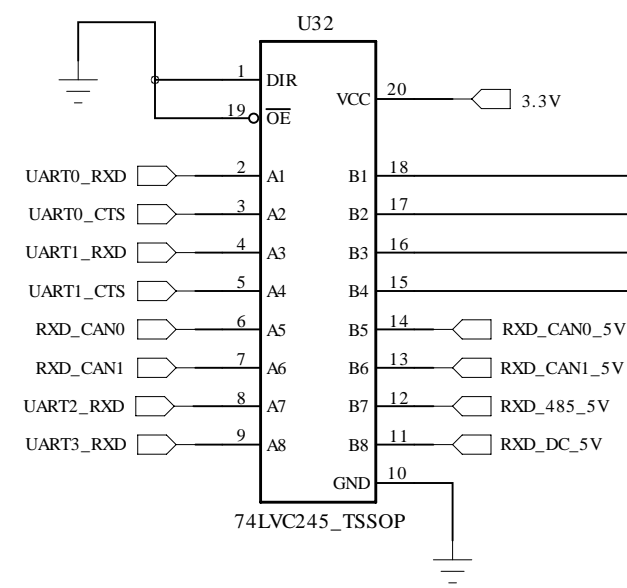


RS-232 Ports

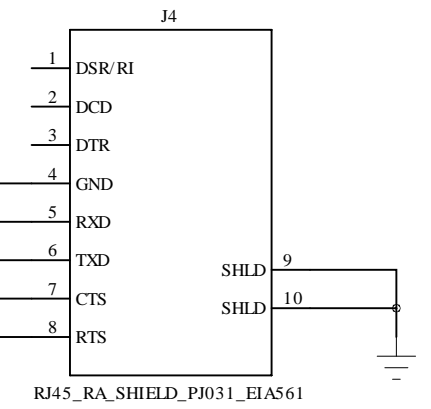
RS-232 Transceiver

3.3V <-- 5V

Level shifter

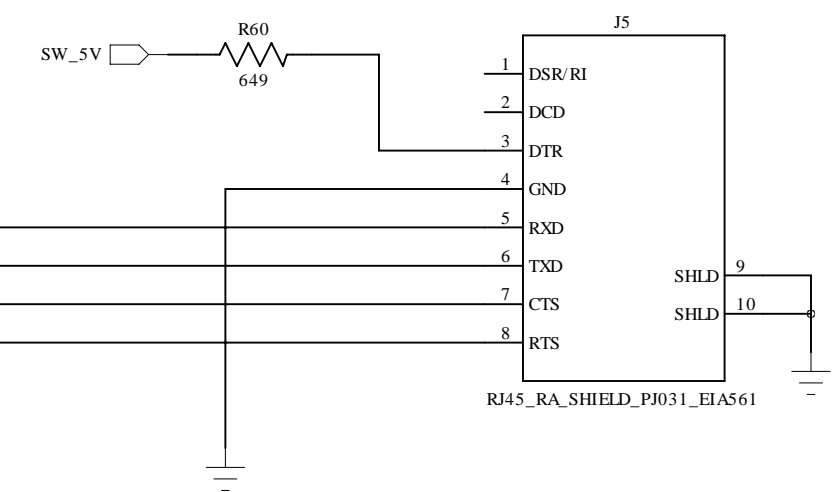


Port 1
RS-232



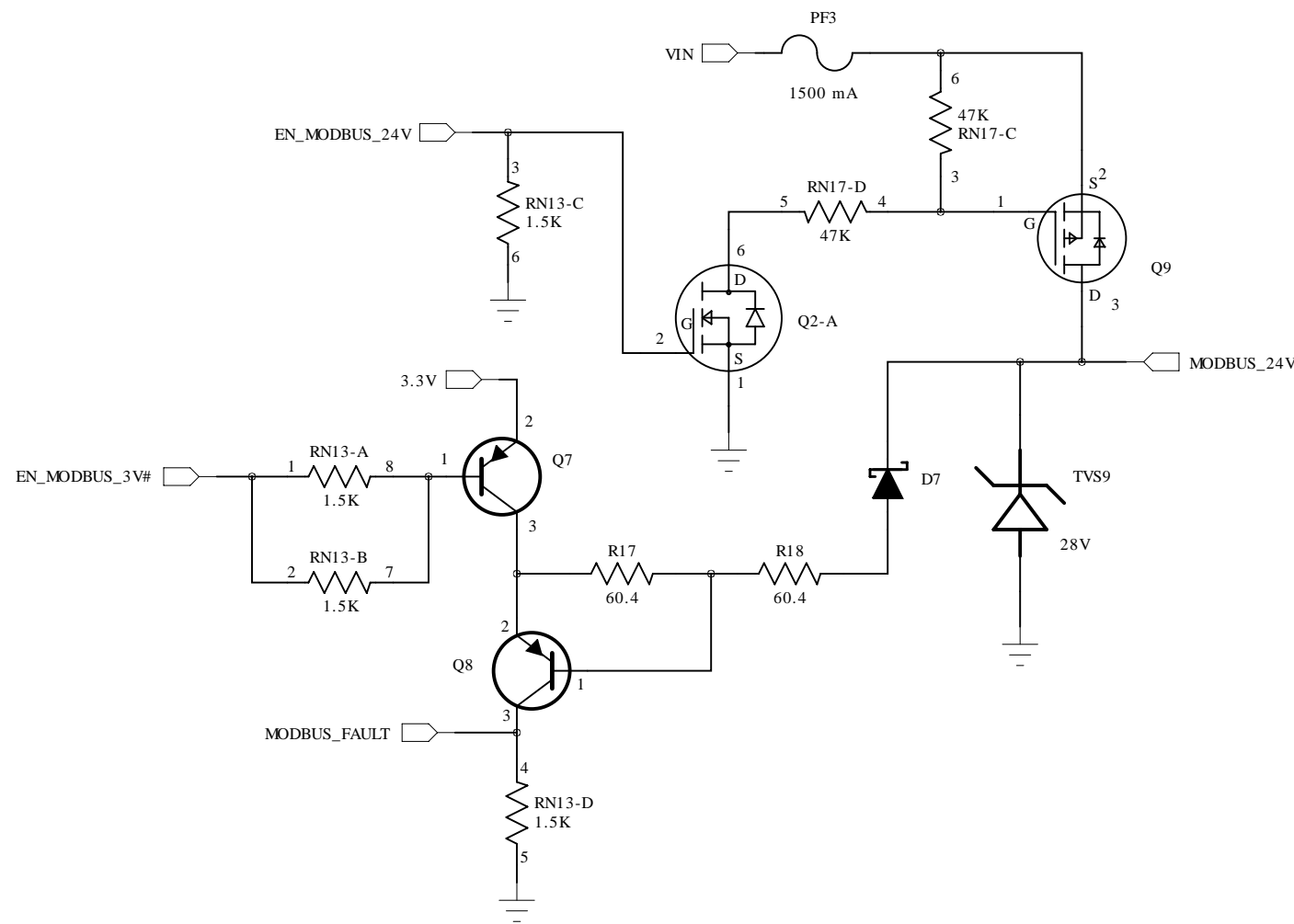
RTS/CTS Hardware
Flow control supported

Port 2
RS-232

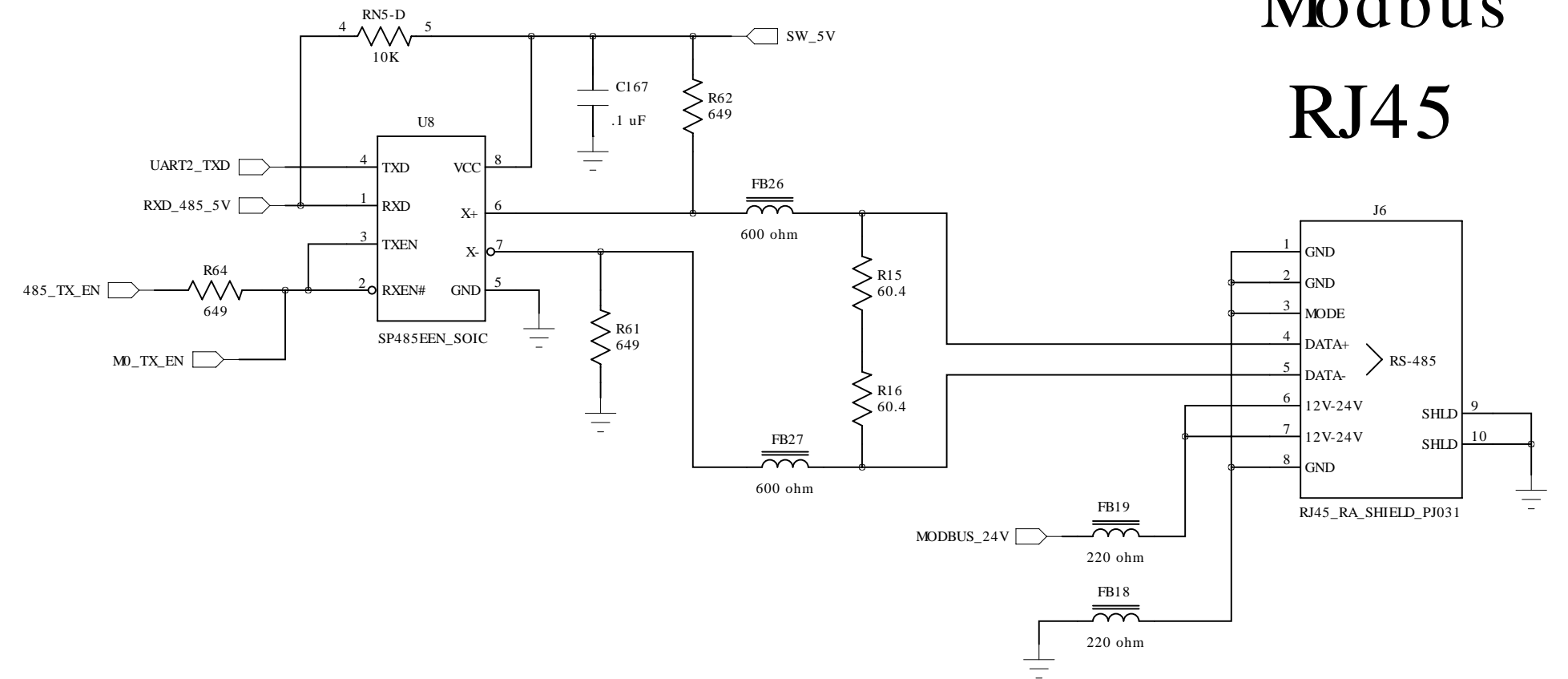


Mod Bus RS-485 and CAN Port

Modbus Power Switch

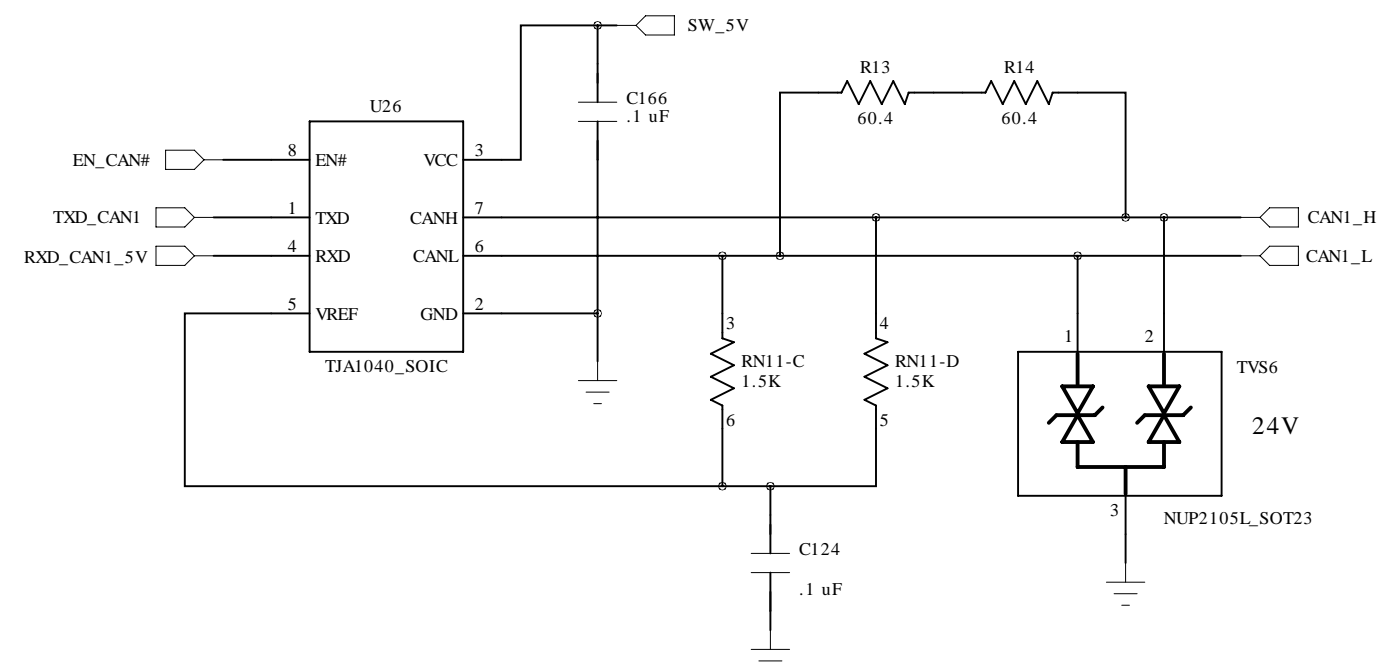


RS-485 Driver

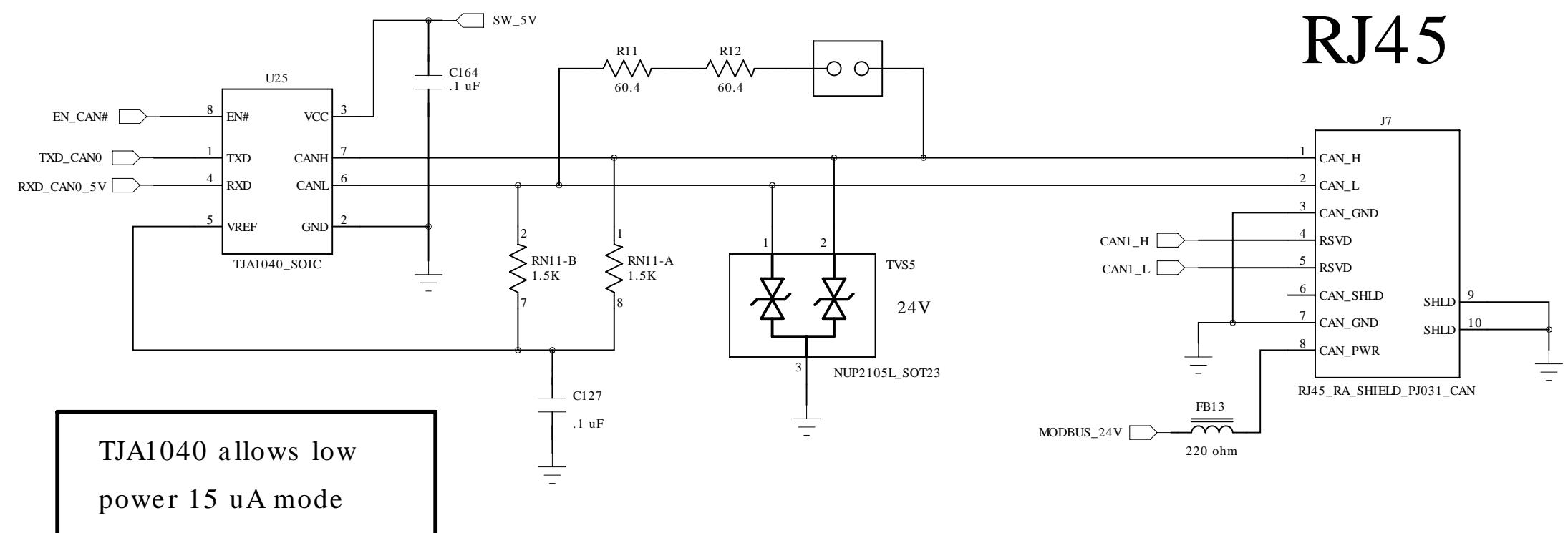


Modbus RJ45

CAN_1 Transceiver



CAN_0 Transceiver



CAN RJ45

TJA1040 allows low power 15 uA mode