

Renesas Starter Kit+ for RX62N CPU Board Schematics

REV	REF	DATE	DRAWN BY
1.00	Release	29.07.2010	YOI
1.10	Ticket#1681	09.09.2010	YOI
1.20	Ticket#1715	30.09.2010	YOI
1.30	Ticket#1715	07.10.2010	YOI
1.40	Ticket#1715	25.10.2010	YOI
1.50	Ticket#1715	07.01.2011	YOI
1.51	None	09.05.2011	YOI

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Note:

R : Fixed Resistor
 RV : Potentiometer
 U : Integrated Circuit
 X : Crystal
 RES : Reset Switch
 SW : Switch
 LED : Light Emitting Diode
 PWR : Power Jack
 J : Connector, Jumper

* "DNF" marking means that component does not fit by default.

Board Variation:

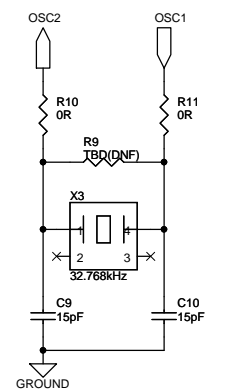
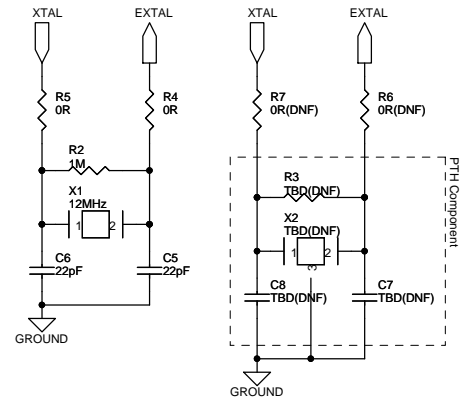
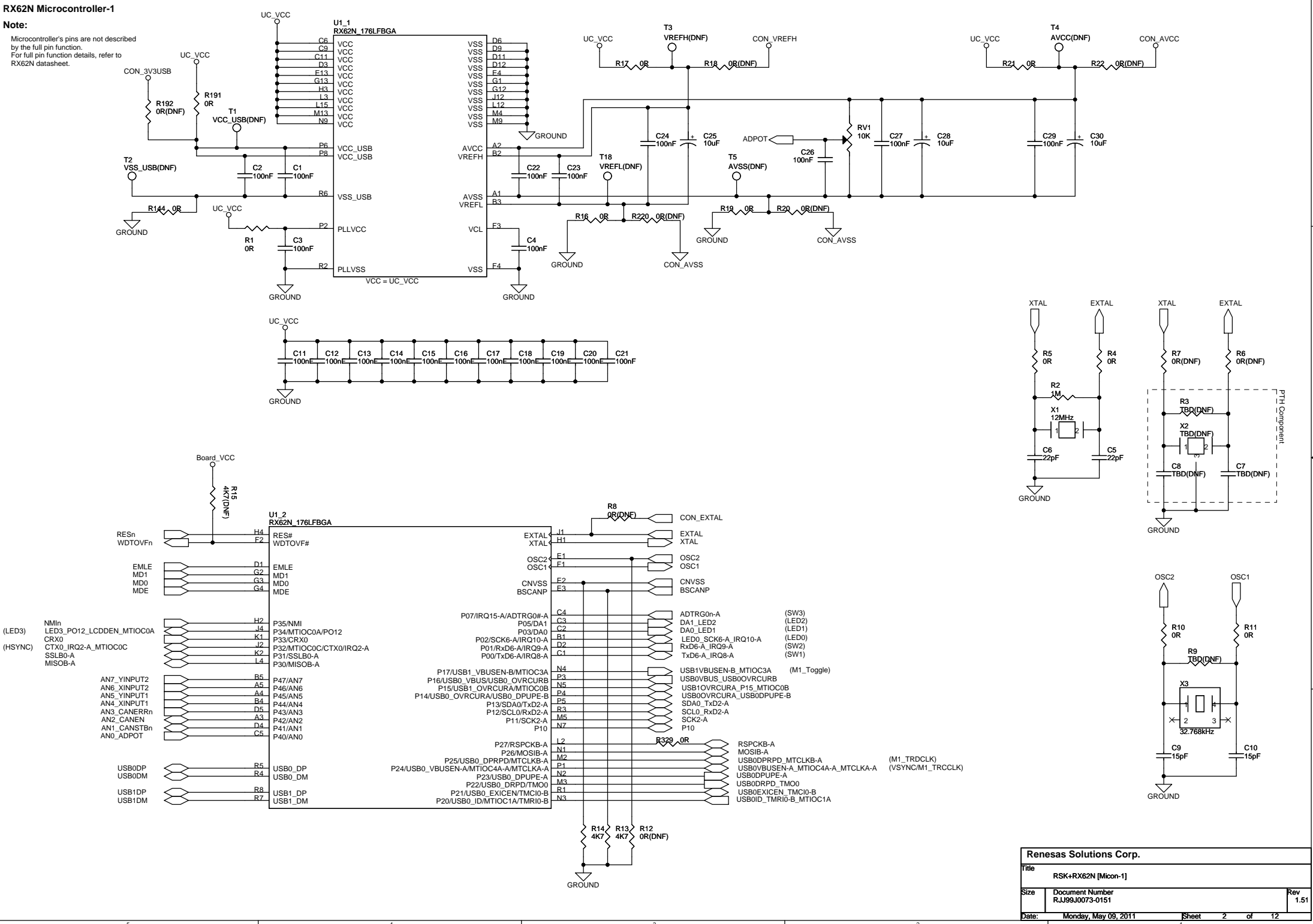
R0K5562N0C000BE : WS/MP Product

REE Drawing No. D009402
 RSO Drawing No. DK30838

Renesas Solutions Corp.			
Title			
RSK+RX62N [INDEX]			
Size	Document Number		Rev
	RJ99J0073-0151		1.51
Date:	Monday, May 09, 2011	Sheet	1 of 12

RX62N Microcontroller-1

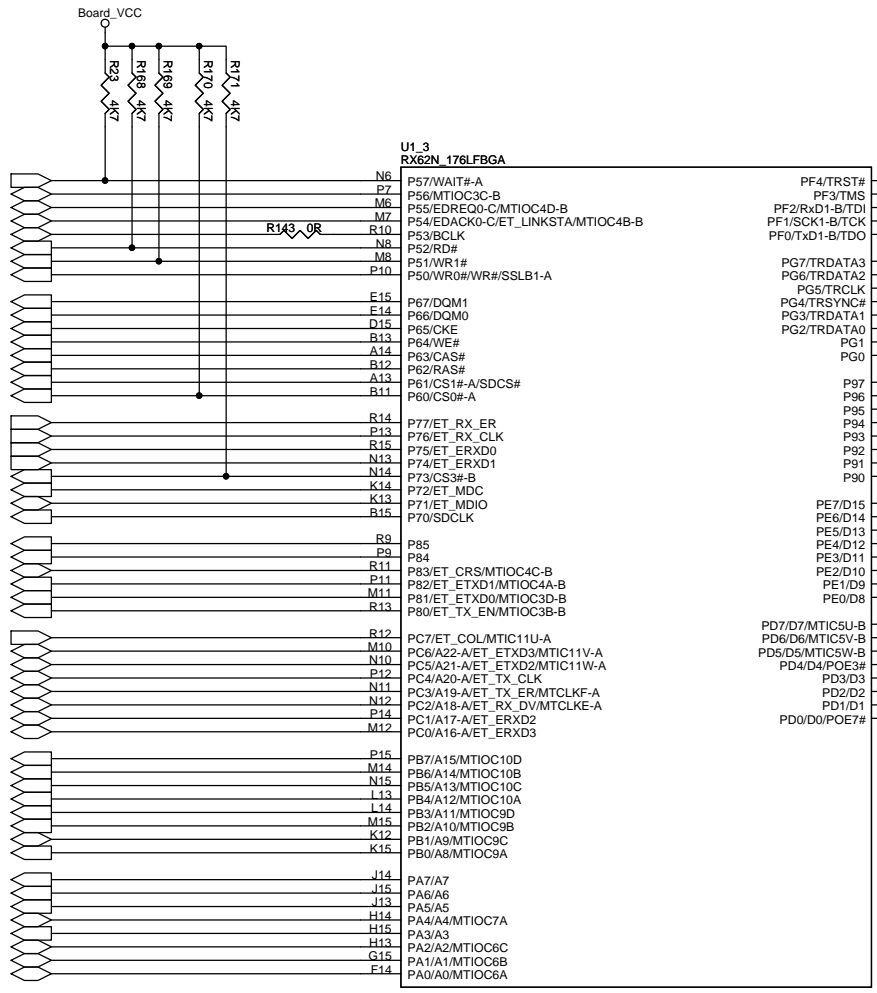
Note:
Microcontroller's pins are not described by the full pin function.
For full pin function details, refer to RX62N datasheet.



Renesas Solutions Corp.		
Title	RSK+RX62N [Micon-1]	
Size	Document Number RJJ99J0073-0151	Rev 1.51
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RX62N Microcontroller-2

Note:
Microcontroller's pins are not described by the full pin function.
For full pin function details, refer to RX62N datasheet.



- (DOTCLK/M1_UD)
- (M1_WN)
- (M1_WP)
- (M1_VN)
- (M1_VP)
- (M1_UN)
- (M1_UP)
- (M2_Uin)
- (M2_Vin)
- (M2_Win)
- (M2_TRDCLK)
- (M2_TRCCLK)
- (M2_WN)
- (M2_WP)
- (M2_VN)
- (M2_VP)
- (M2_UN)
- (M2_UP)
- (M2_UD *GPIO)
- (M2_Toggle)
- (M2_EncZ)
- (M2_HSIN2)
- (M2_HSIN1)
- (M2_HSIN0)

- WAITn-A
- MTIOC3C-B
- EDREQ0-C_MTI0C4D-B
- EDACK0-C_ETLINKSTA_MTI0C4B-B
- P53_BCLK
- RdN
- WR1n
- WRn_WR0n_SSLB1-A
- DOM1
- DOM0
- CkE
- WE_n
- CAS_n
- RAS_n
- SDCS_n
- CS0n-A
- ETRXER
- ETRXCLK
- ETRXD0
- ETRXD1
- CS3n-B
- ETMDC
- ETMDIO
- SDCLK
- DLCDDE_YDrive
- DLCDRS_XDrive
- ETCRS_MTI0C4C-B
- ETTXD1_MTI0C4A-B
- ETTXD0_MTI0C3D-B
- ETTXEN_MTI0C3B-B
- ETCOL_MTI0C11U-A
- A22-A_ETTXD3_MTI0C11V-A
- A21-A_ETTXD2_MTI0C11W-A
- A20-A_ETTXCLK
- A19-A_ETTXER_MTCLKF-A
- A18-A_ETTXDV_MTCLKF-A
- A17-A_ETTXD2
- A16-A_ETTXD3
- A15_MTI0C10D
- A14_MTI0C10B
- A13_MTI0C10C
- A12_MTI0C10A
- A11_MTI0C9D
- A10_MTI0C9B
- A9_MTI0C9C
- A8_MTI0C9A
- A7
- A6
- A5
- A4_MTI0C7A
- A3
- A2_MTI0C6C
- A1_MTI0C6B
- A0_MTI0C6A

- N6
- P7
- M6
- M7
- R10
- N8
- M8
- P10
- E15
- F14
- D15
- R13
- A14
- B12
- A13
- B11
- R14
- P13
- R15
- N13
- N14
- K14
- K13
- B15
- R9
- P9
- R11
- P11
- M11
- R13
- R12
- M10
- N10
- P12
- N11
- M12
- P14
- M12
- P15
- M14
- N15
- L13
- L14
- M15
- K12
- K15
- J14
- J15
- J13
- H14
- H15
- H13
- G15
- F14

- P57/WAIT#-A
- P56/MTIOC3C-B
- P55/EDREQ0-C_MTI0C4D-B
- P54/EDACK0-C_ET_LINKSTA_MTI0C4B-B
- P53/BCLK
- P52/RD#
- P51/WR1#
- P50/WR0#/WR#/SSLB1-A
- P67/DQM1
- P66/DQM0
- P65/CkE
- P64/WE#
- P63/CAS#
- P62/RAS#
- P61/CS1#-A/SDCS#
- P60/CS0#-A
- P77/ET_RX_ER
- P76/ET_RX_CLK
- P75/ET_ERXD0
- P74/ET_ERXD1
- P73/CS3#-B
- P72/ET_MDC
- P71/ET_MDIO
- P70/SDCLK
- P85
- P84
- P83/ET_CRS/MTIOC4C-B
- P82/ET_ETXD1/MTIOC4A-B
- P81/ET_ETXD0/MTIOC3D-B
- P80/ET_TX_EN/MTIOC3B-B
- PC7/ET_COL/MTIC11U-A
- PC6/A22-A/ET_ETXD3/MTIC11V-A
- PC5/A21-A/ET_ETXD2/MTIC11W-A
- PC4/A20-A/ET_TX_CLK
- PC3/A19-A/ET_TX_ER/MTCLKF-A
- PC2/A18-A/ET_RX_DV/MTCLKF-A
- PC1/A17-A/ET_ERXD2
- PC0/A16-A/ET_ERXD3
- PB7/A15/MTIOC10D
- PB6/A14/MTIOC10B
- PB5/A13/MTIOC10C
- PB4/A12/MTIOC10A
- PB3/A11/MTIOC9D
- PB2/A10/MTIOC9B
- PB1/A9/MTIOC9C
- PB0/A8/MTIOC9A
- PA7/A7
- PA6/A6
- PA5/A5
- PA4/A4/MTIOC7A
- PA3/A3
- PA2/A2/MTIOC6C
- PA1/A1/MTIOC6B
- PA0/A0/MTIOC6A

- K4
- J3
- L1
- M1
- K3
- H12
- G14
- F15
- F12
- F13
- E12
- D10
- A11
- B9
- B8
- D8
- C8
- D7
- C7
- B6
- A6
- D14
- C15
- C14
- D13
- C13
- B14
- A15
- C12
- A12
- B10
- C10
- A9
- A9
- A9
- A8
- B7
- A7

- TRSTn
- TMS
- TDI_RxD1-B
- TCK_SCK1-B
- TDO_TxD1-B
- TRDATA3
- TRDATA2
- TRCLK
- TRSYNCn
- TRDATA1
- TRDATA0
- PG1
- PG0
- DLCDD7 (DLCDD7)
- DLCDD6 (DLCDD6)
- DLCDD5 (DLCDD5)
- DLCDD4 (DLCDD4)
- BACKLIGHT
- P92
- P91
- P90
- D15_IO7
- D14_IO6
- D13_IO5
- D12_IO4
- D11_IO3
- D10_IO2
- D9_IO1
- D8_IO0
- D7_MTI0C5U-B (M1_Uin)
- D6_MTI0C5V-B (M1_Vin)
- D5_MTI0C5W-B (M1_Win)
- D4_POE3n (M1_POE)
- D3
- D2
- D1
- D0_POE7n (M2_POE)

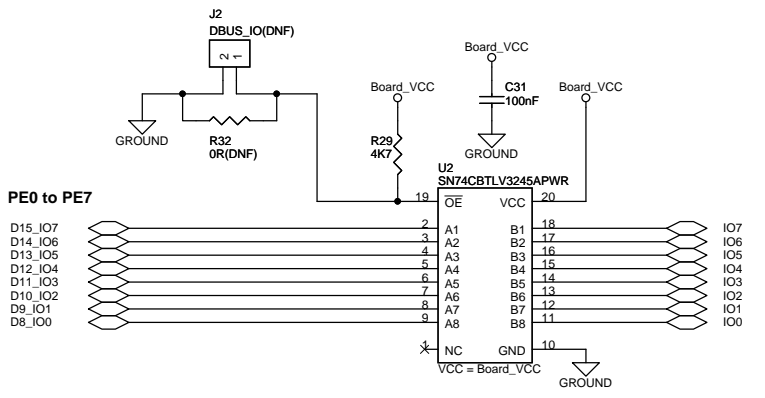
Chip Select

CSn	Interface
CS0n-A	Applicatin Header (JA3)
CS3n-B	Applicatin Header (JA3)
SDCSn (CS1n-A)	On-board SDRAM (BD_SDCSn) / Application Header JA3 (CON_SDCSn)

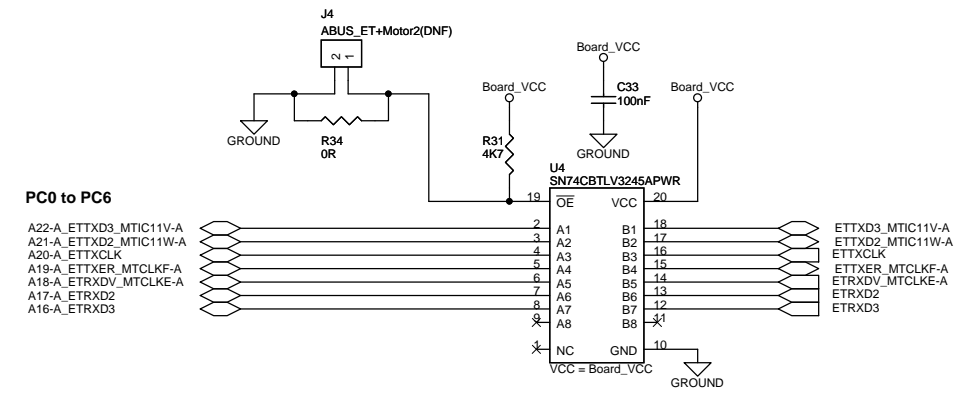
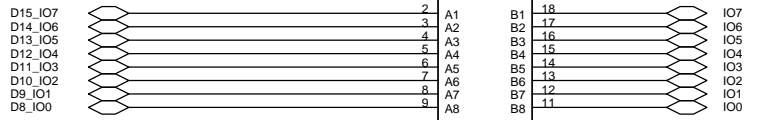
RSPI Slave Select

SSL	Interface
SSLB0-A	On-board SPI Serial Flash
SSLB1-A / P15	Generic LCD Connector (TFT)

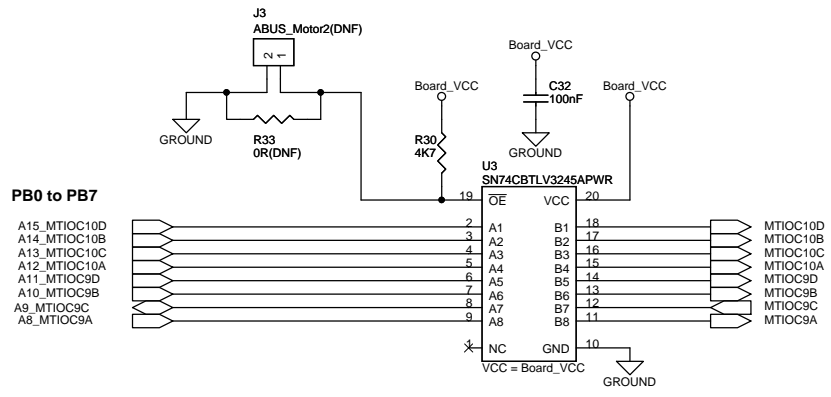
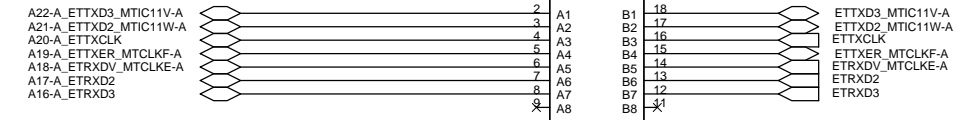
MCU Pin Function Select-1



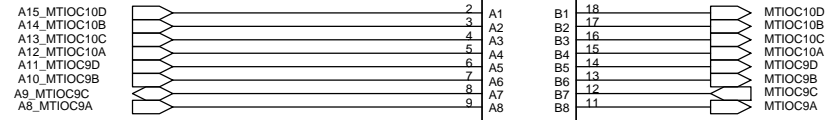
PE0 to PE7



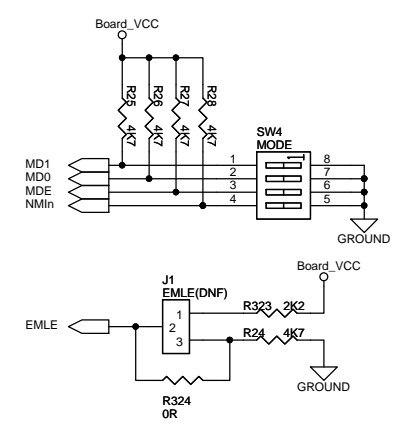
PC0 to PC6



PB0 to PB7



MCU Mode Setting



[Initial setting for SW4]

- SW4-1: OFF
- SW4-2: OFF
- SW4-3: ON
- SW4-4: OFF

Note:

If you debug/flash program using E1/E20, please be sure to set to Single Chip Mode (SW4-1: OFF, SW4-2: OFF).

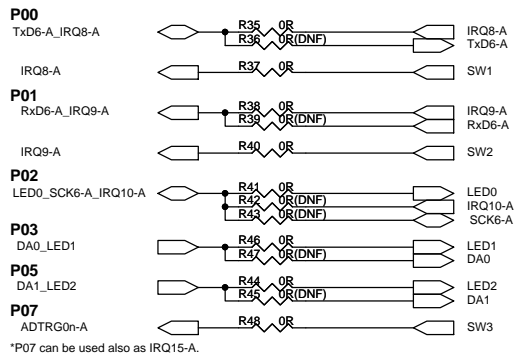
SW4 Pin1=MD1, Pin2=MD0	Operating Mode
Pin1 = OFF Pin2 = OFF	Single Chip Mode
Pin1 = ON Pin2 = OFF	Boot Mode
Pin1 = OFF Pin2 = ON	USB Boot Mode
Pin1 = ON Pin2 = ON	DO NOT SET

SW4 Pin3=MDE	Endian
Pin3 = OFF	Big Endian
Pin3 = ON	Little Endian

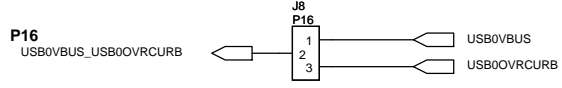
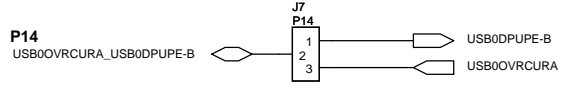
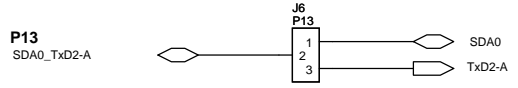
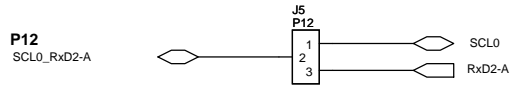
SW4 Pin4=P35(NMin)	USB0 Power Select for USB Boot Mode
Pin4 = OFF	Bus-powered
Pin4 = ON	Self-powered

J1 (EMLE)	Emulator Configuration
1-2 shorted	E1/E20 debugging with Hot plug-in
2-3 shorted / R324 fitted	E1/E20 normal debugging
	or
	Microcontroller single operation
all open	DO NOT SET

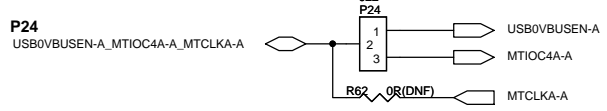
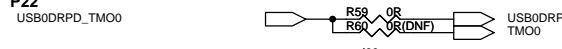
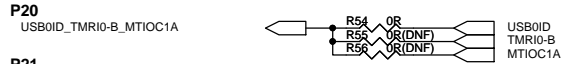
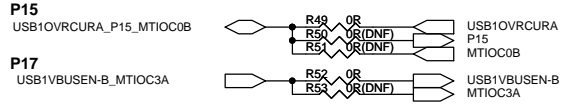
MCU Pin Function Select-2



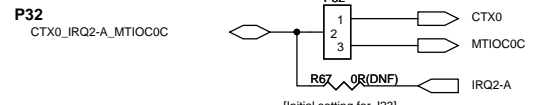
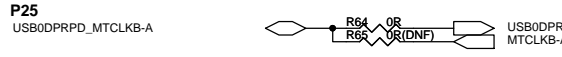
*P07 can be used also as IRQ15-A.



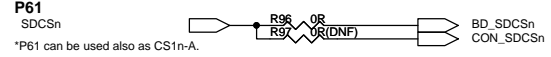
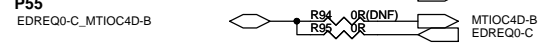
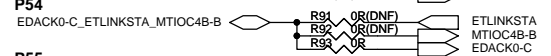
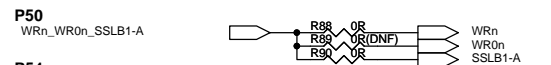
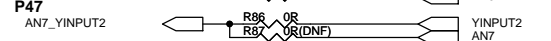
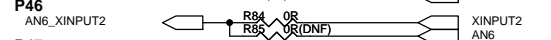
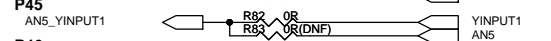
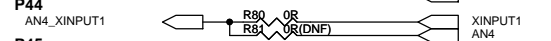
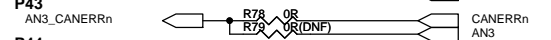
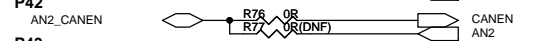
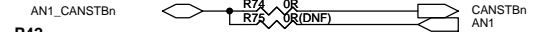
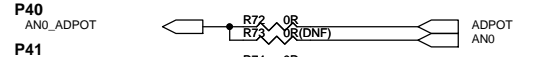
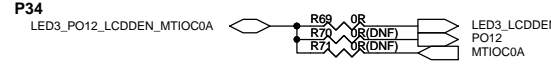
[Initial setting for J5 to J8]
J5: 2-3 shorted
J6: 2-3 shorted
J7: 1-2 shorted
J8: 1-2 shorted



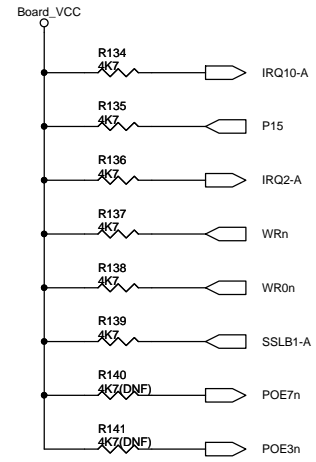
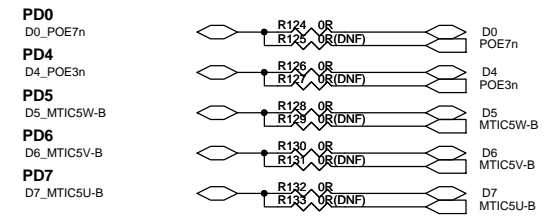
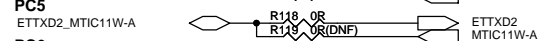
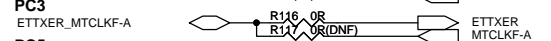
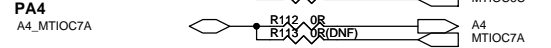
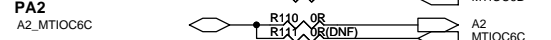
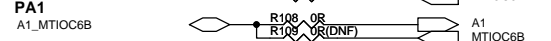
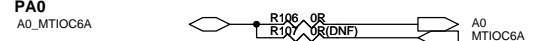
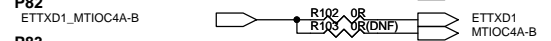
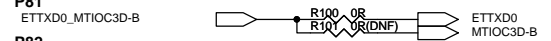
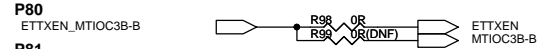
[Initial setting for J22]
J22: 1-2 shorted



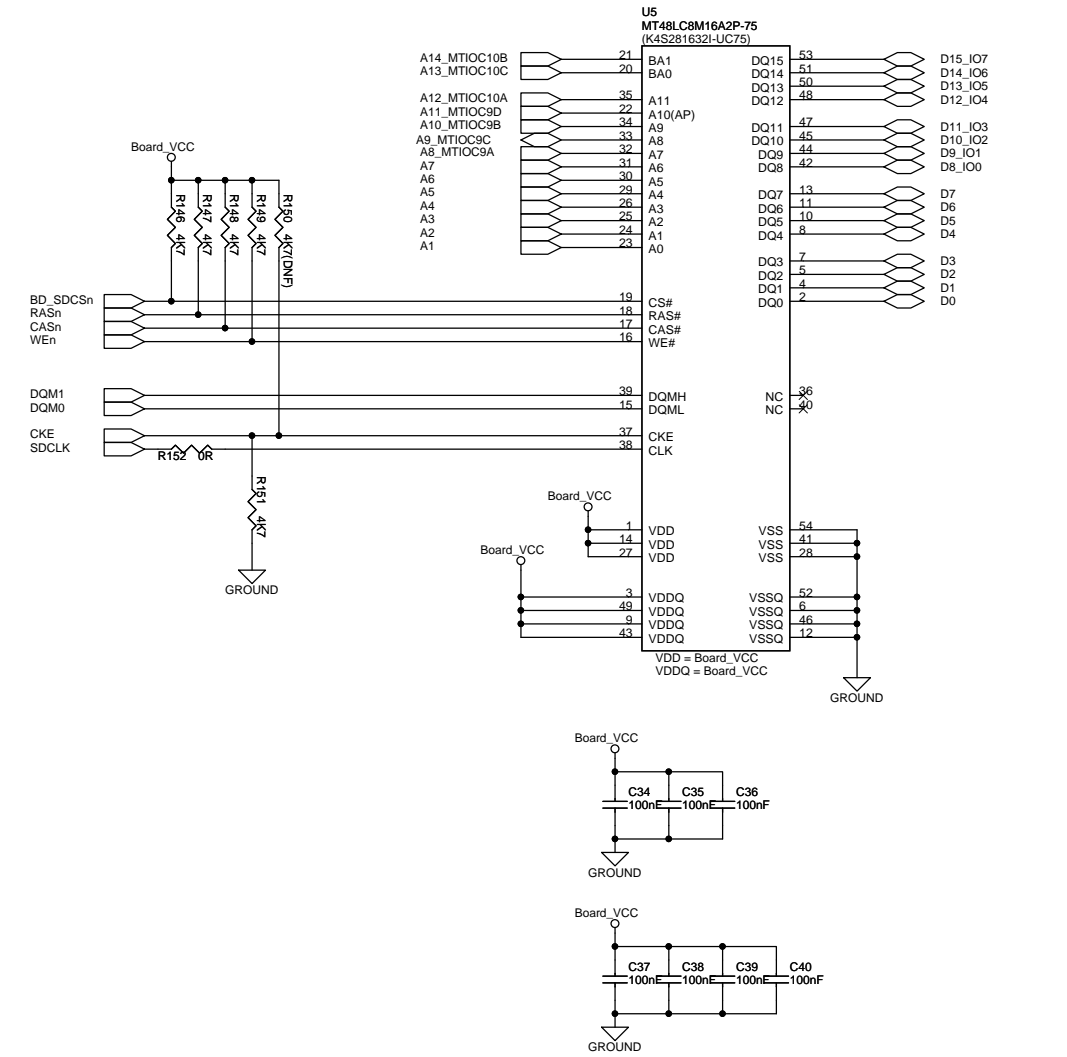
[Initial setting for J23]
J23: 1-2 shorted



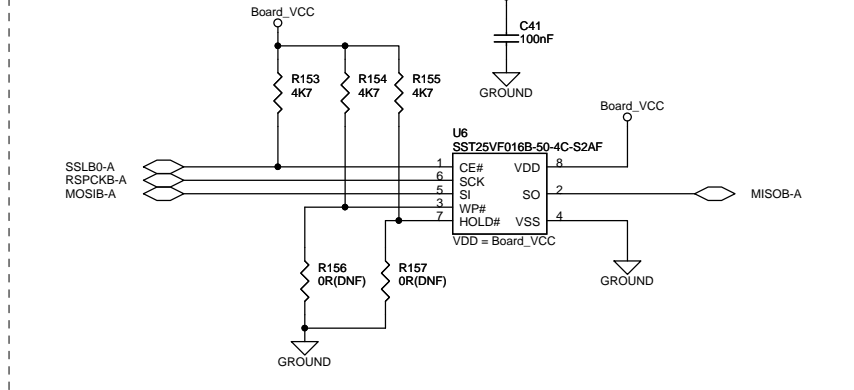
*P61 can be used also as CS1n-A.



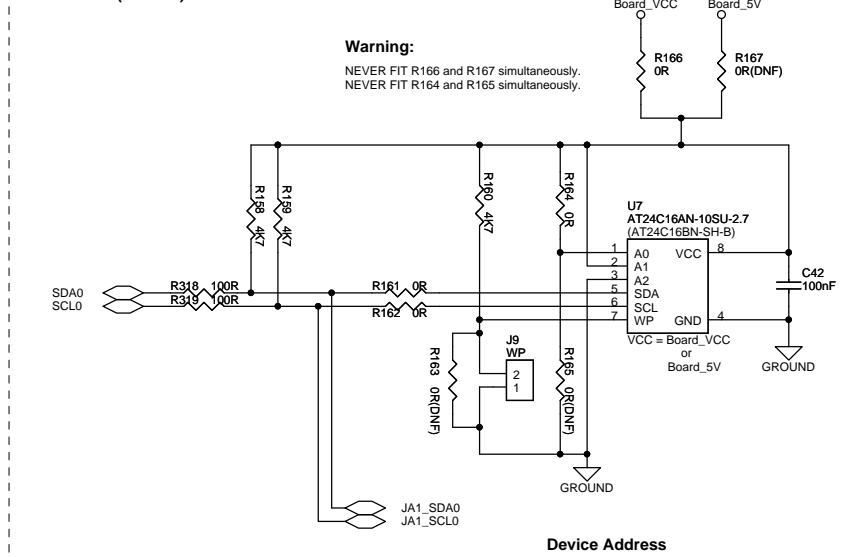
SDRAM(128Mbits)



SPI Serial Flash(16Mbits)



IIC EEPROM(16Kbits)



Warning:
NEVER FIT R166 and R167 simultaneously.
NEVER FIT R164 and R165 simultaneously.

Device Address

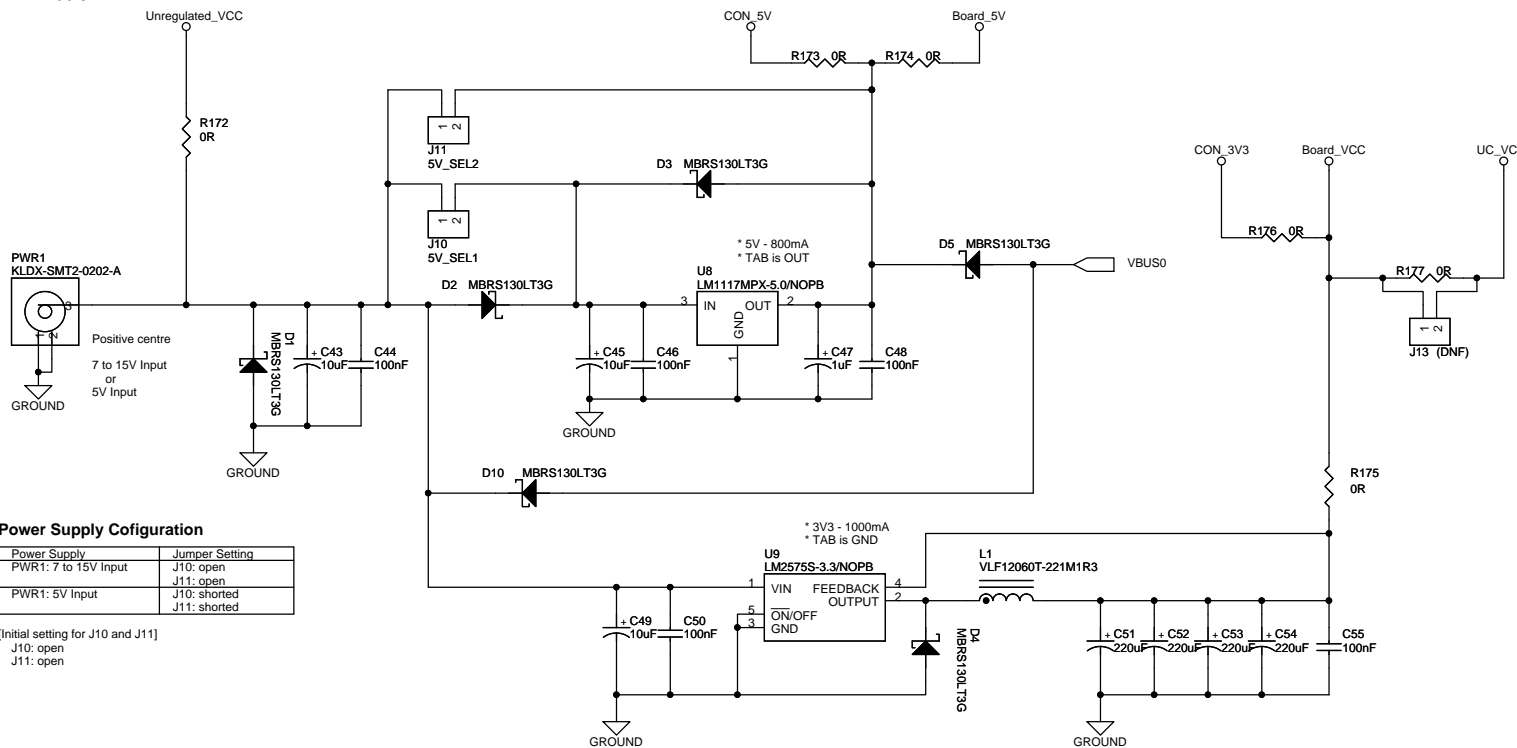
Device ADDR	A2	A1	A0
	0	1	1

Write Protect

J9	
shorted	Allows normal Read/Write operations
open	Protects Full Array

[Initial setting for J9]
J9: shorted

Power Supply Unit

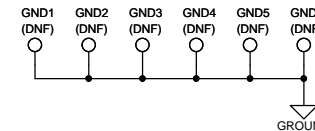


Power Supply Configuration

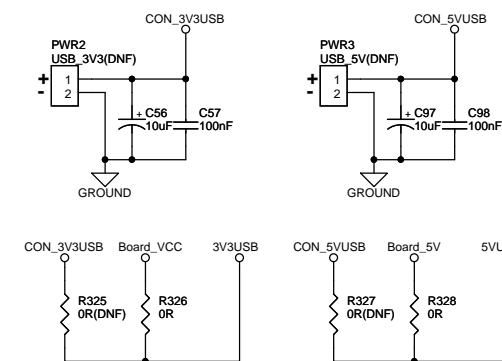
Power Supply	Jumper Setting
PWR1: 7 to 15V Input	J10: open J11: open
PWR1: 5V Input	J10: shorted J11: shorted

[Initial setting for J10 and J11]
J10: open
J11: open

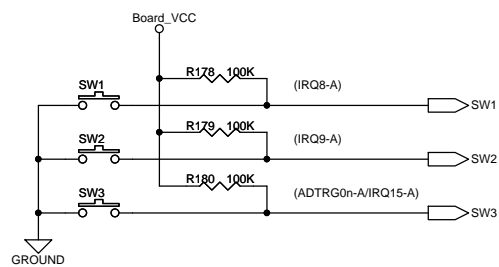
Ground Test Point



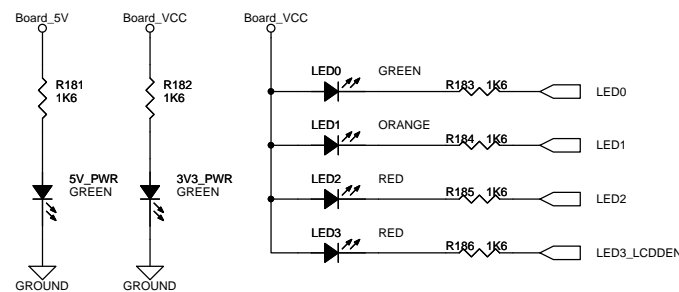
External USB Power Supply



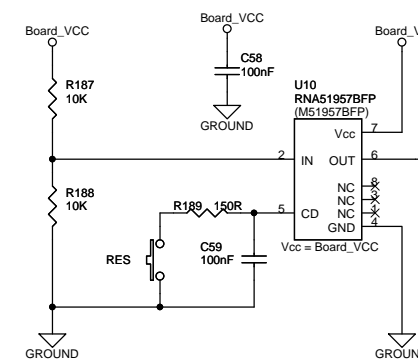
User Switches



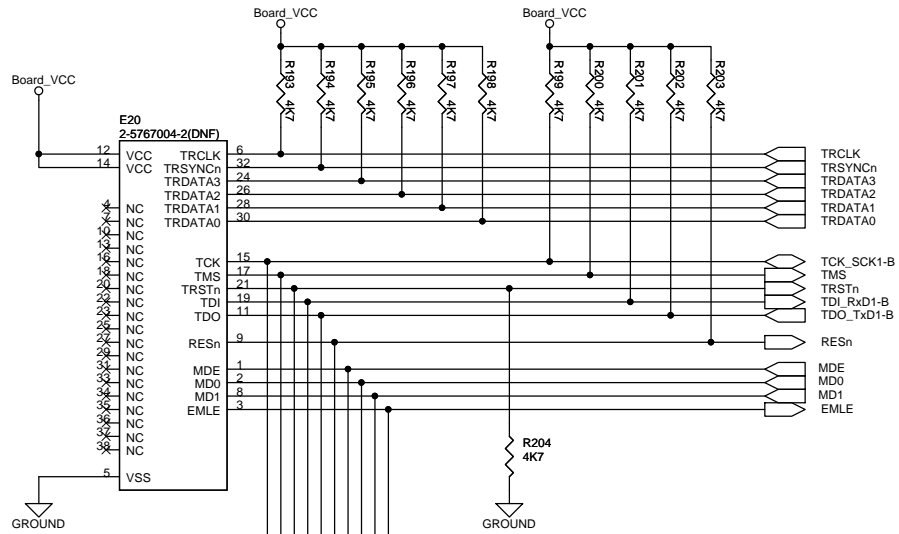
User LEDs & Power LEDs



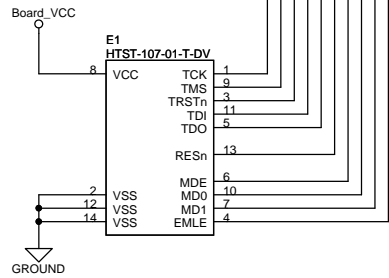
RESET Circuitry



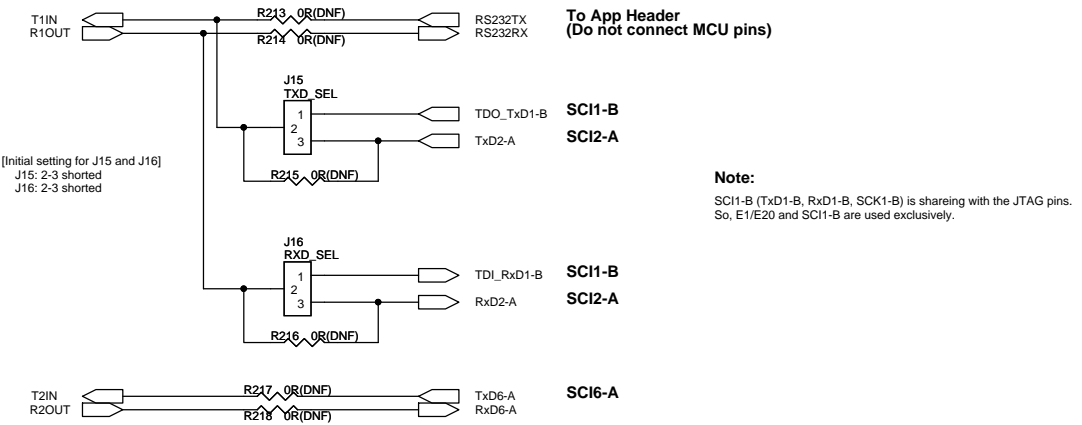
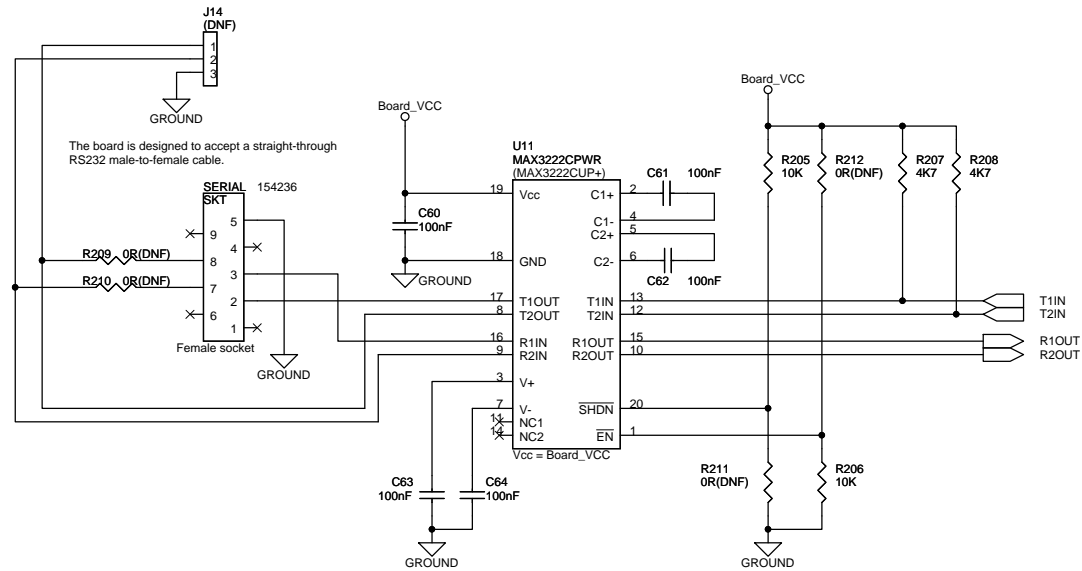
E20 Emulator Interface



E1 Emulator Interface

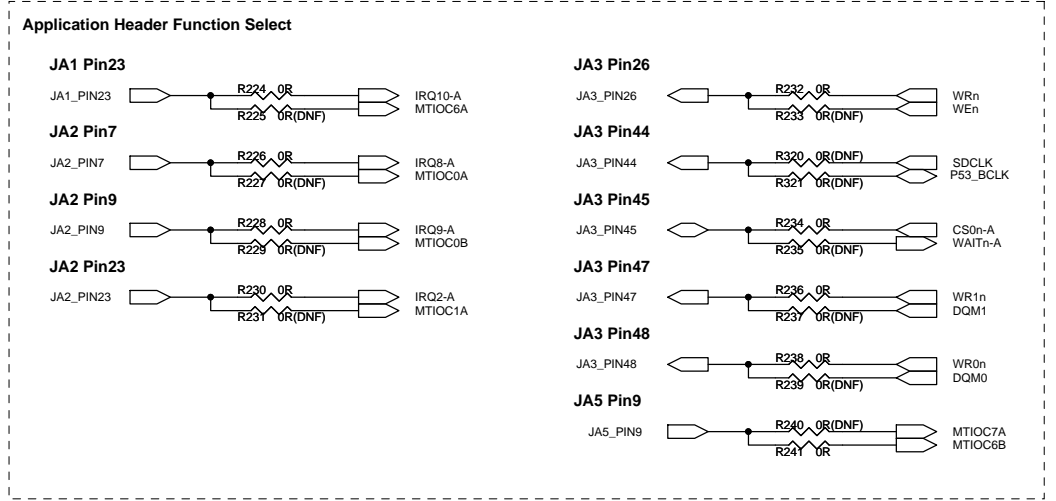
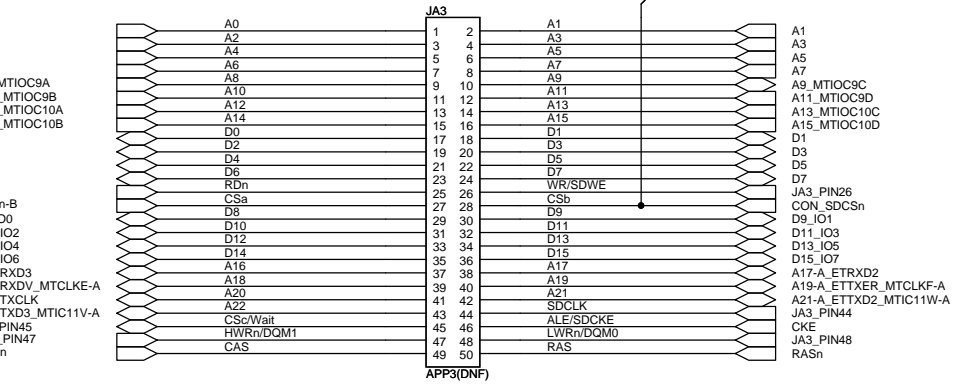
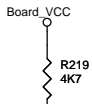
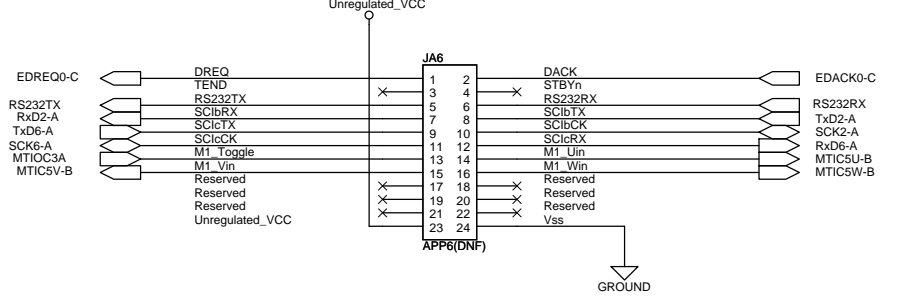
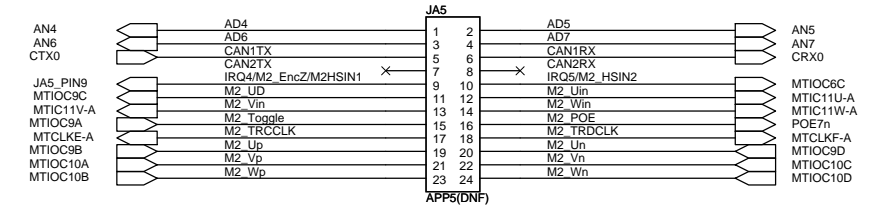
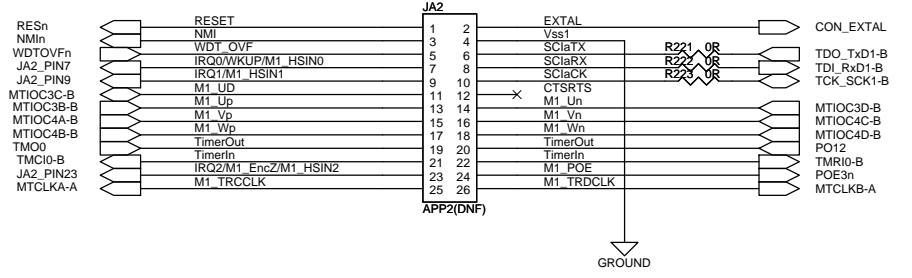
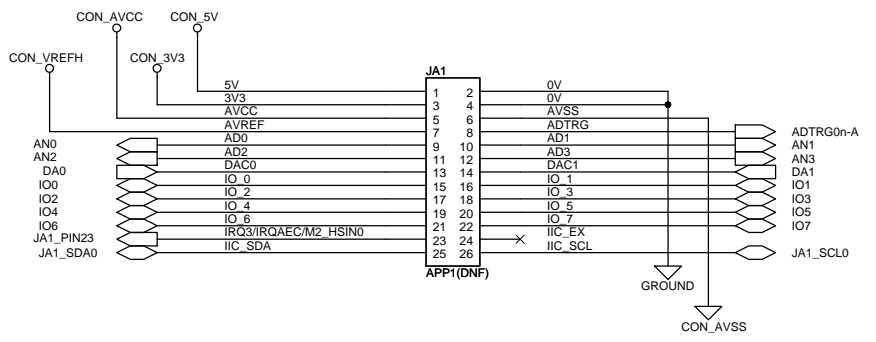


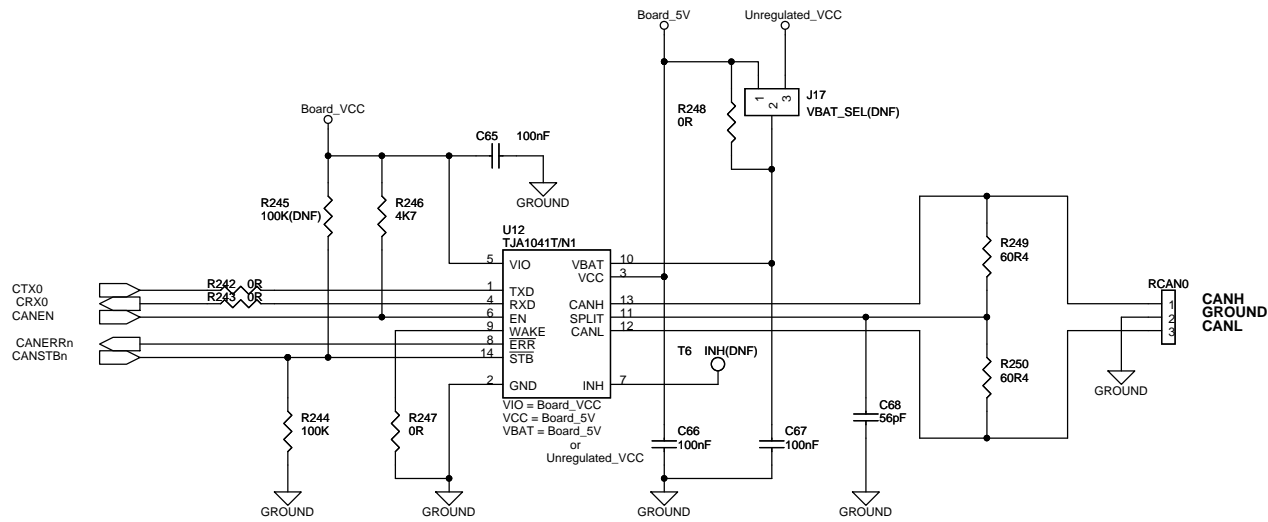
Serial Port



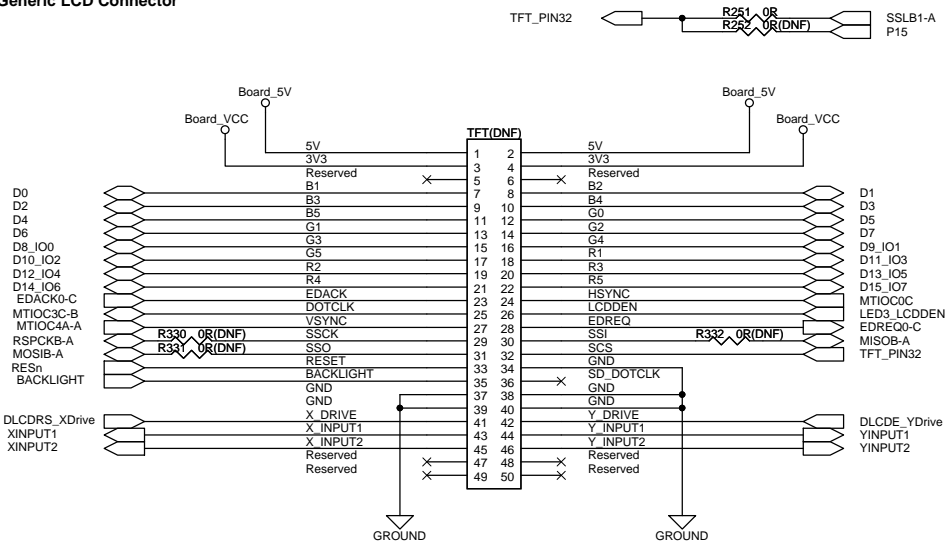
Application Headers

Note:
 SC11-B (Tx/D1-B, Rx/D1-B, SCK1-B) is sharing with the JTAG pins.
 So, E1/E20 and SC11-B are used exclusively.

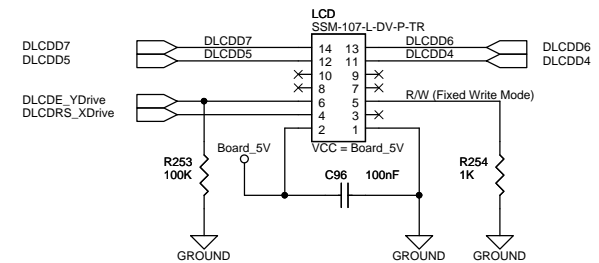




Generic LCD Connector



Debug LCD



USB0-Function/OTG

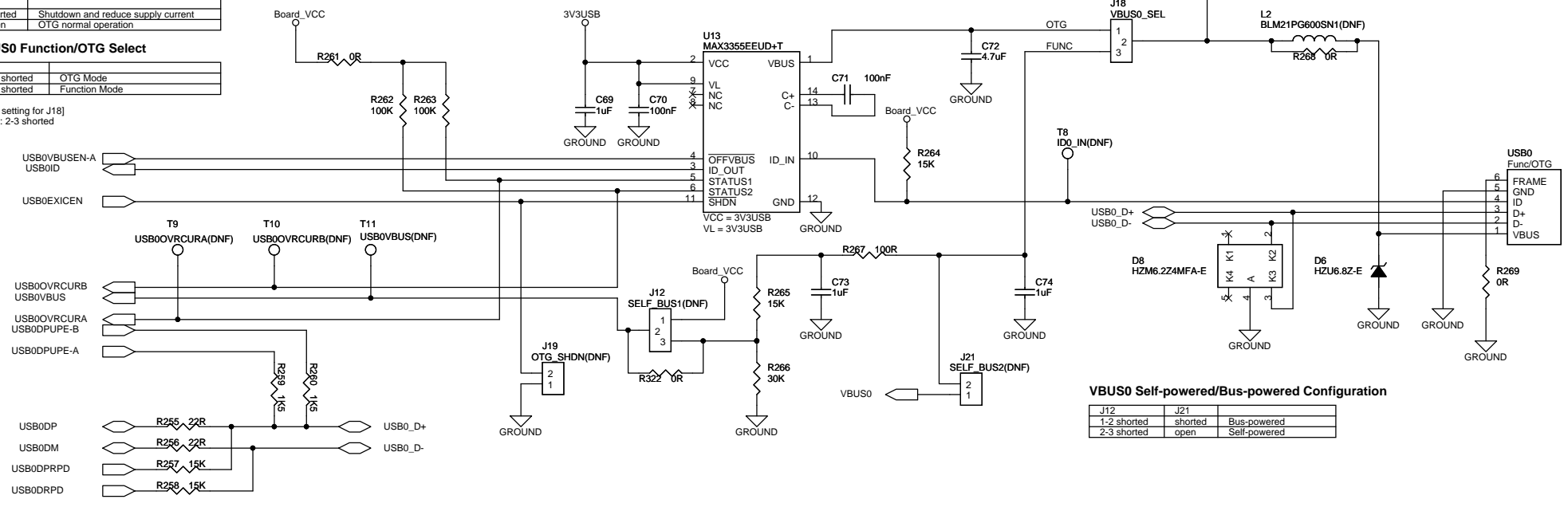
OTG SHDN Configuration

J19	Shutdown and reduce supply current
shorted	OTG normal operation
open	OTG normal operation

VBUS0 Function/OTG Select

J18	OTG Mode
1-2 shorted	Function Mode
2-3 shorted	Function Mode

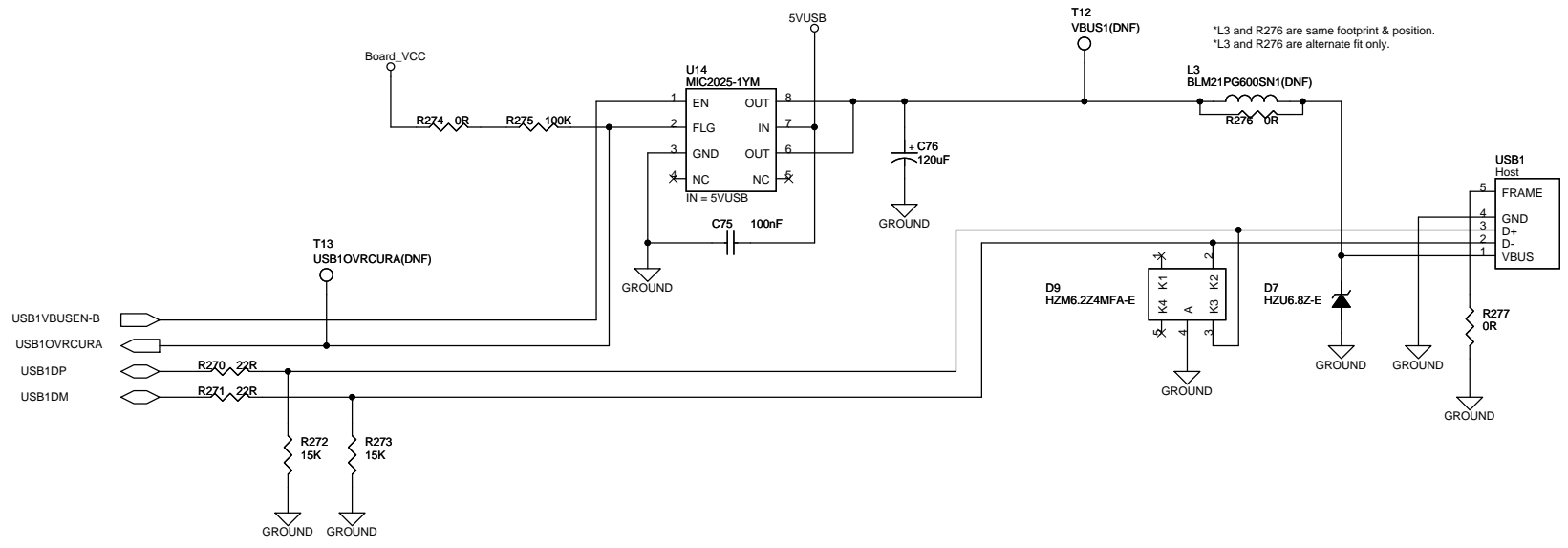
[Initial setting for J18]
J18: 2-3 shorted



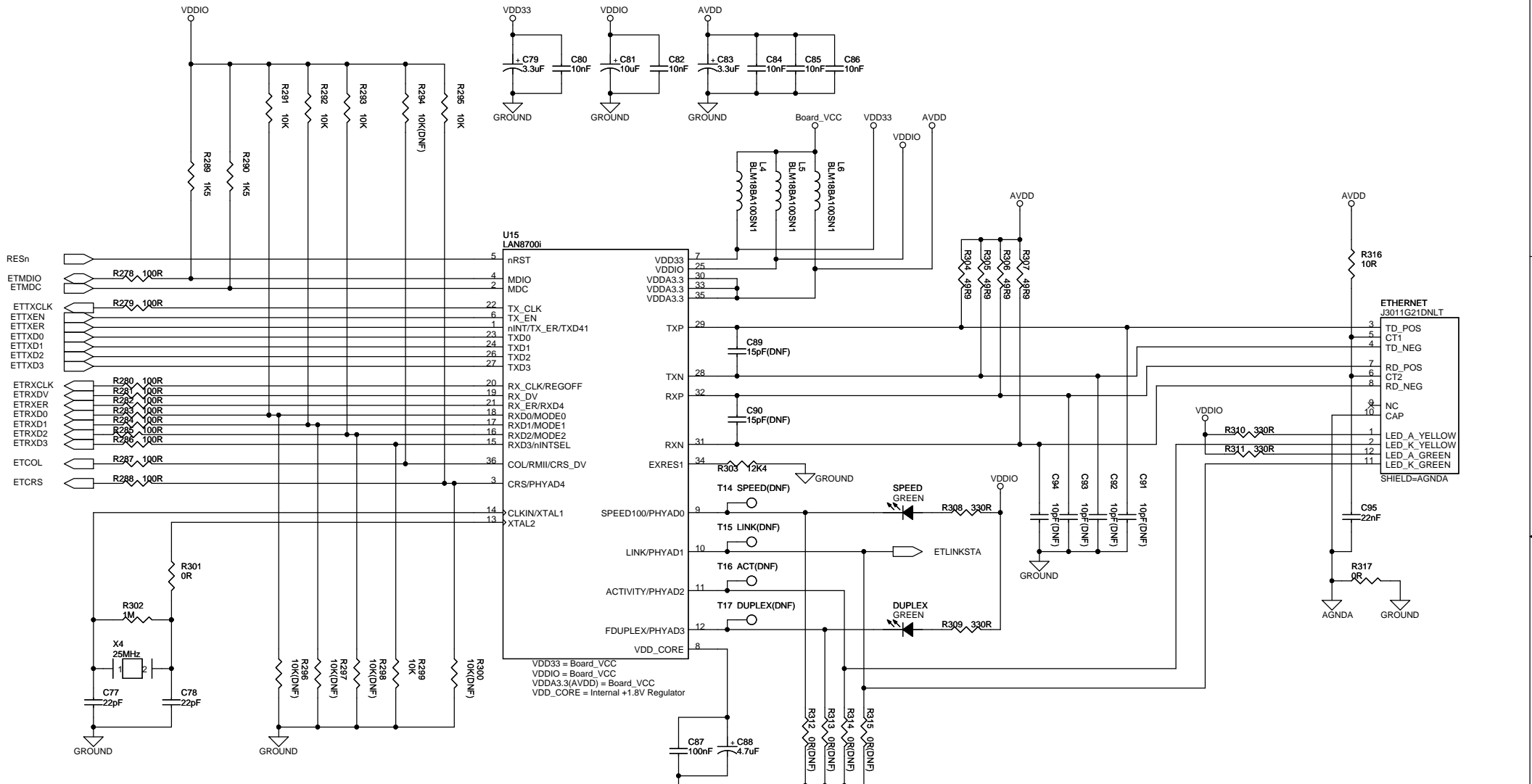
VBUS0 Self-powered/Bus-powered Configuration

J12	J21	
1-2 shorted	shorted	Bus-powered
2-3 shorted	open	Self-powered

USB1-Host



Ethernet



LED	PYH Pins	PHY ADDR
LED0	PHYAD0	1
LED1	PHYAD1	1
LED2	PHYAD2	1
LED3	PHYAD3	1
	PHYAD4	1

PHY address '11111' = 0x1F = 31d