RuggedBoard-A5D2x Rev 1P1

RuggedBoard		#1688, 25th Cross, 27th Main Rd HSR Layout, Bangalore, India.	
Project Name: RuggedBoard-A5D2x		Department: Design and Development	
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Block Diagram

To Be update

Revision History

Company Name	**Rugged Board**
Project Title	**RuggedBoard-A5D2x Rev 1P1**
Designed By	**Sriram**

Version #	Designer	Release Date	Verified	Modifications Done	Remarks
1P0	**Sriram**	**MMDDYYYY**	**Baswaraj**		
1P1	**Sriram**	**MMDDYYYY**	**Baswaraj**	**Refer Notepad**	

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Project Overview

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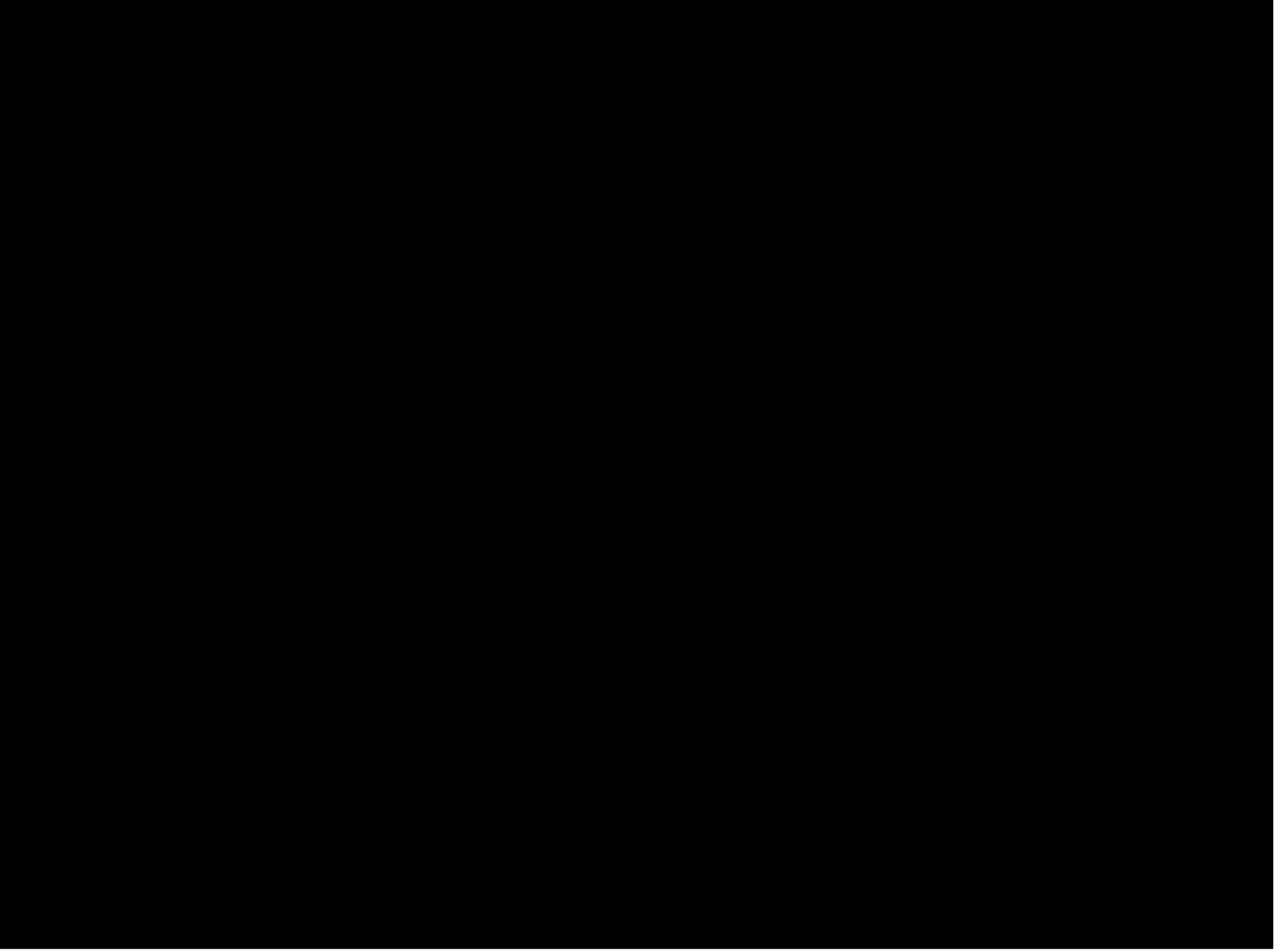
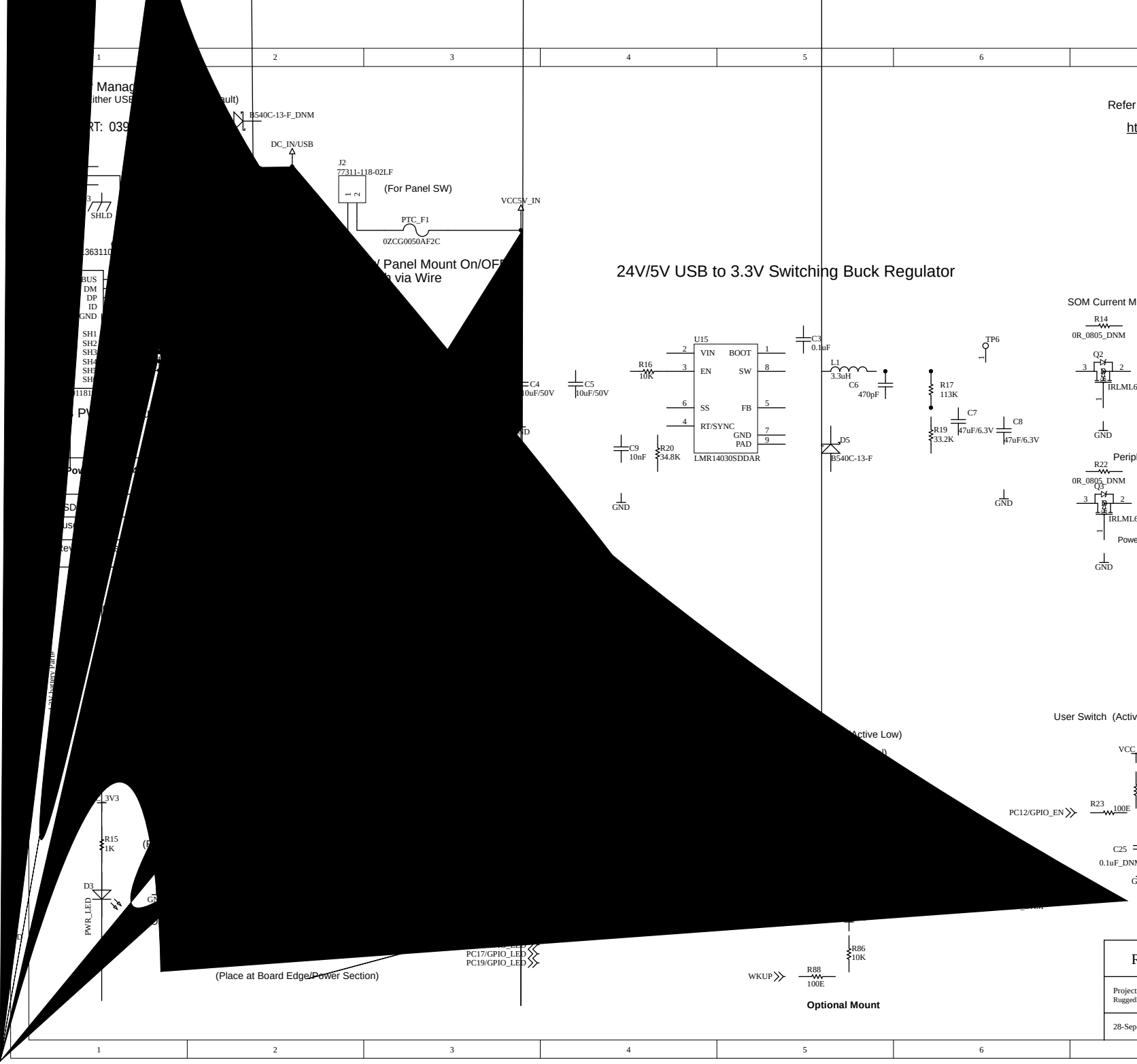


Figure 6-4. Power Configuration # 1 and 2

Refer SIP Doc's: DS60001521B-1308349 page# 25/49

http://www.ti.com/lit/ds/symlink/lmr14030.pdf



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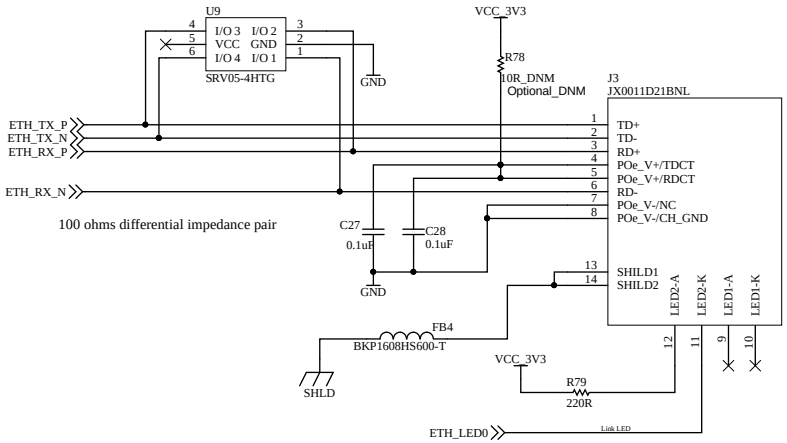
Ethernet RJ45 CONN 10/100Mbps

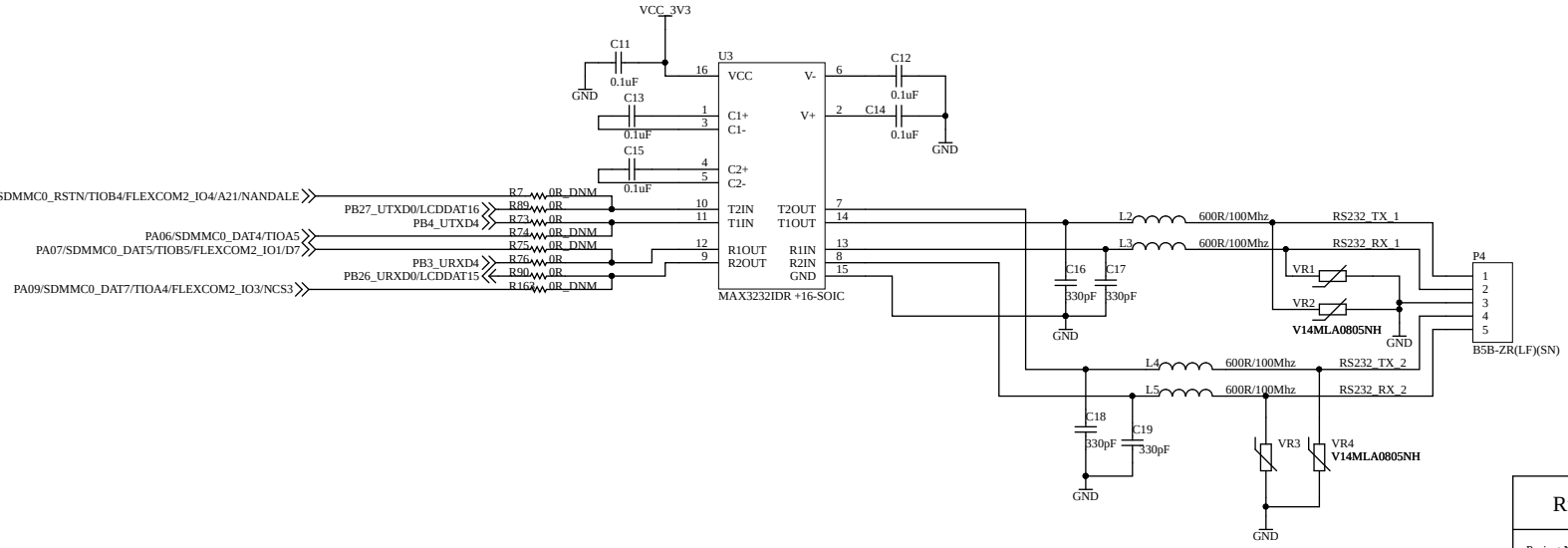


Alternate Equivalent Pin out Connectors ::

Industrial Grade: -40°C ~ 85°C
Part# 74990111211
Make: WE

Industrial Grade: -40°C ~ 85°C
Part# LPJ4011GDNL
Make : LINK-PP

Serial Port; RS232 x 2 (or Single Full Duplex Mode Option via Zero Ohm)



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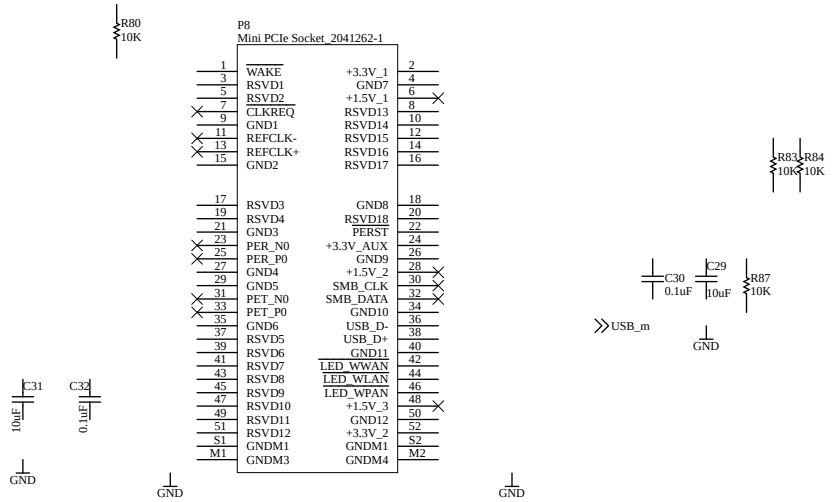
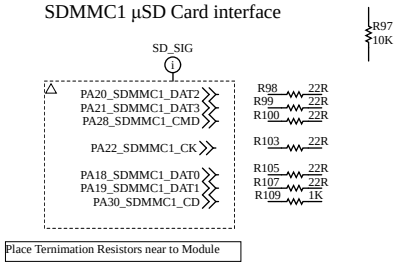
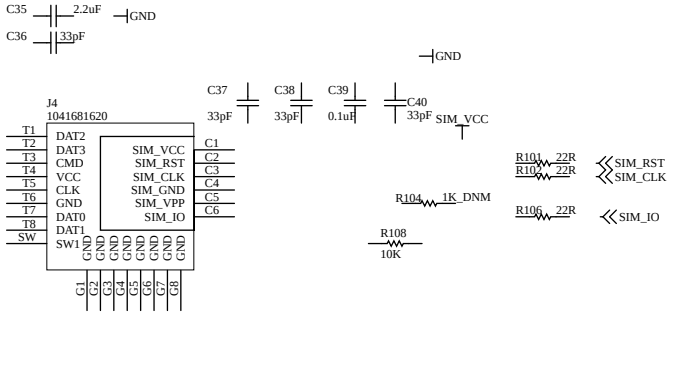
Mini PCIe Connector with SIM Conn (3G/4G Modem without SIM Socket)

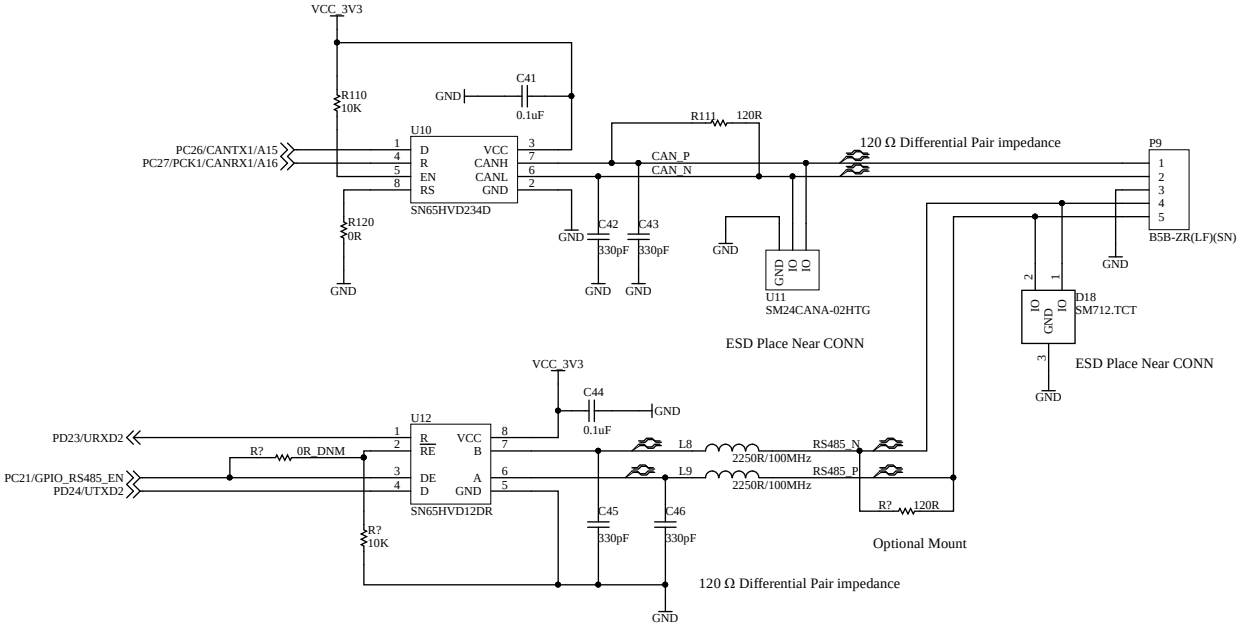


Hybrid Slot (Micro SD Card and Micro SIM)

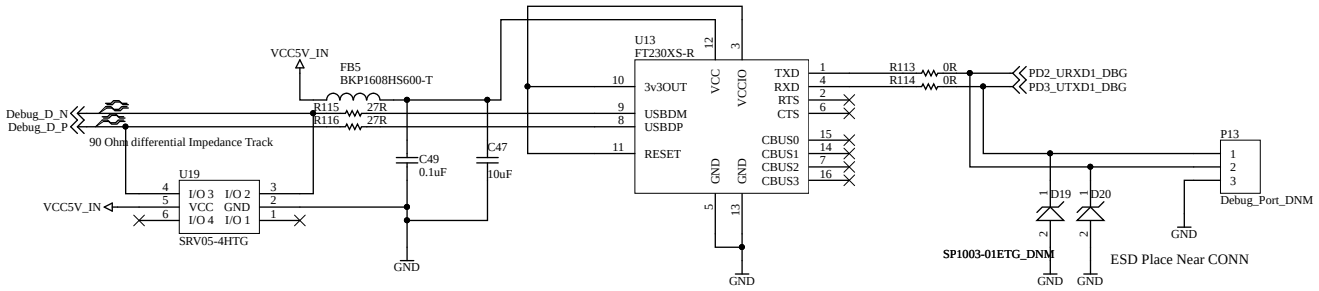




Serial Interface RS485 and CAN



USB Debug Port (UART to USB) /TTL Debug Port (3.3V)



FTDI Chip (Default Mount)

Debug Port;TTL 3V3

(To Use Above Por to Isolate FTDI Chip when 24V DC IN)

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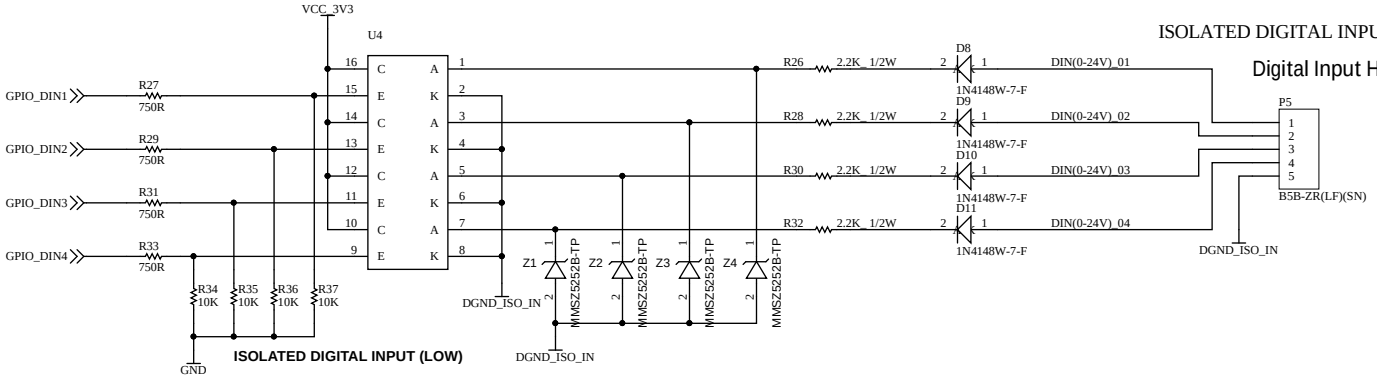
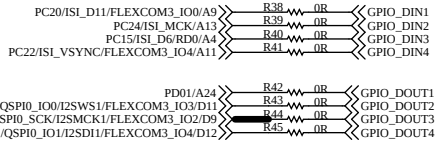
ISOLATED DIGITAL INPUT /OUTPUTS (From 0 ~ 24V)

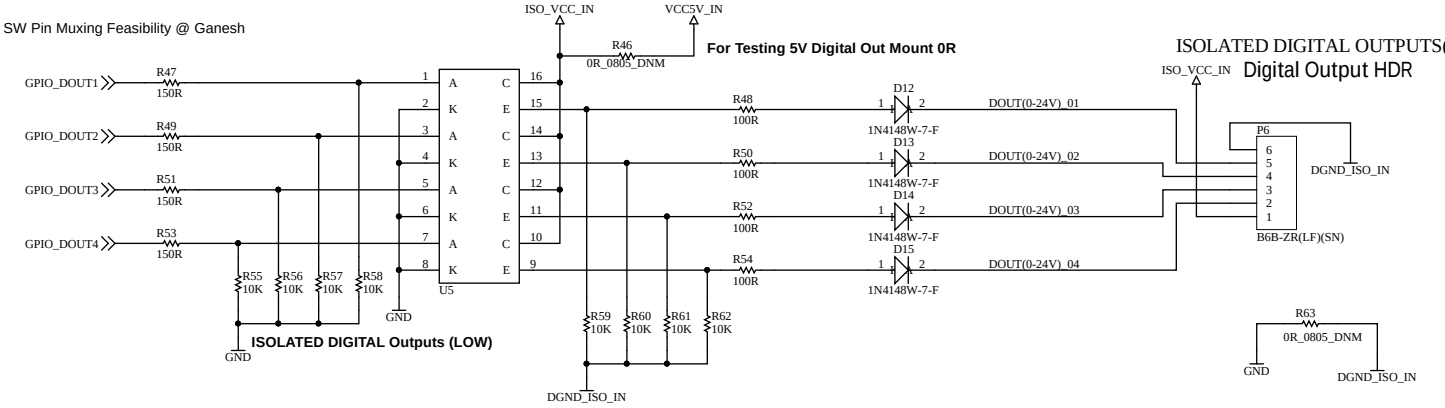
Note:

Default State of Digital Input (Low) and Defined as Input Port
When Isolated Voltage connected upto 24V from external ; MCU reads High (3.3V)





GPIO_DOUT3 assigned Pin Can be Swapped /@ Check SW Pin Muxing Feasibility @ Ganesh



Note:

Default State of Digital output (Low) and Defined as Output Port
When Isolated Voltage connected upto 24V from external ;At SOM configured as Out (High :3.3V)
the Opto Triggers & Send Isolated VCC to Out (Default Output Is LOW (Pulled Down)

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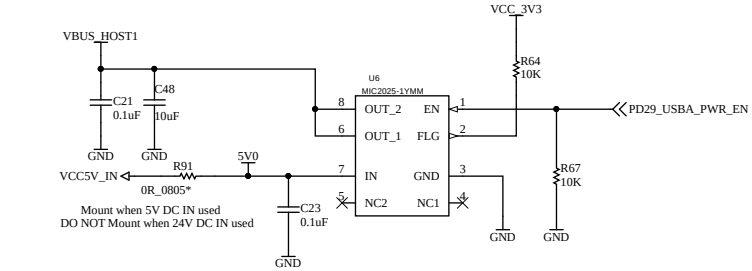
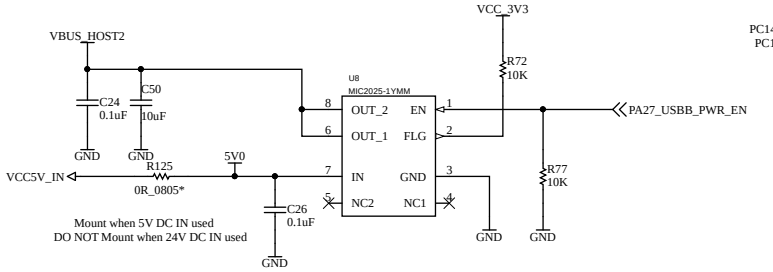
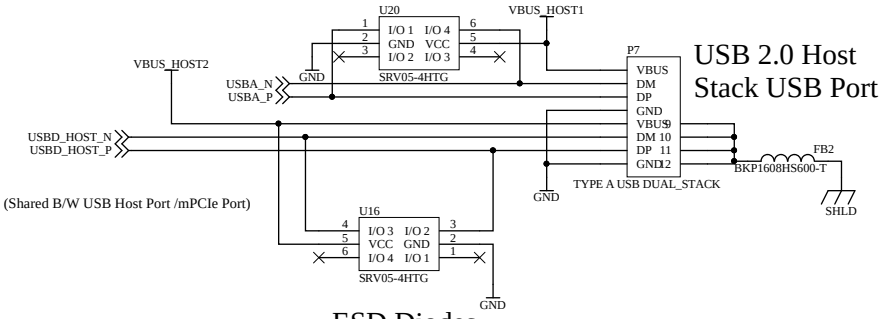
USB Host 2.0 x 2 Ports (One Port Splitted to mPCIE)

In SW Driver/Check Both USB ports Host Configuration process



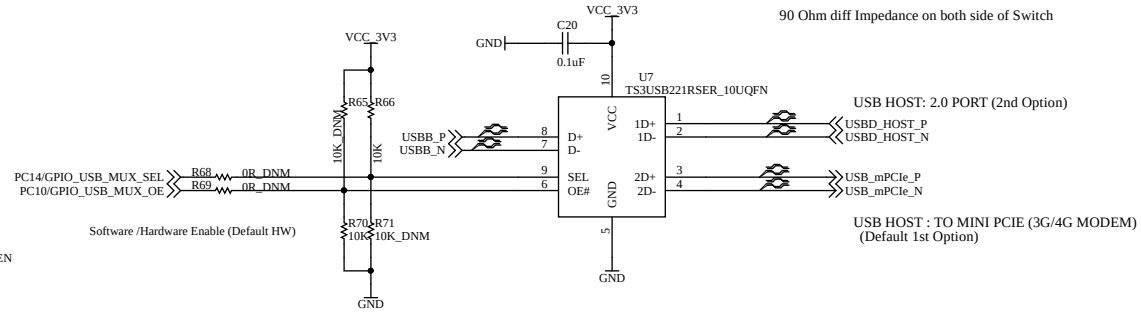




USB 2.0 Host Stack USB Port

ESD Diodes

USB 2.0 MUX Switch IC (SPDT) - Bidirectional IC



Truth Table : USB MUX Switch Operation

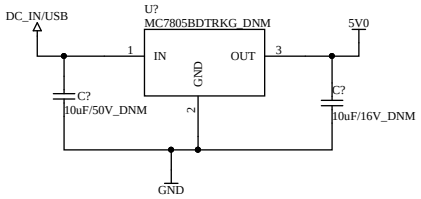
S	OE#	FUNCTION
X	H	Disconnect
L	L	D = 1D
H	L	D = 2D

Default

Below 5V,1A LDO Use Only when main Input is 24V DC (Default DNM)

(Remove Power In -line resistor 0R 0805* and DNM USB CONN and Use TTL UART Debug)

IC REG LDO 5V 1A DPAK (Max In 35V)



Note:

USB-A HOST : Direct data lines Interface from SOM

USB- B Host : Datalines shared between USB HOST CONN and mPCIe CONN (Default) via a USB Mux GPIO Selection

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MikroBUS Module HDR (2.54mm Female) & W

PD25_AN_mBUS1
PB2_RST_mBUS1
PD0_NPCS1_mBUS
PC30_SPCK_mBUS1
PC29_MISO_mBUS1
PC28_MOSI_mBUS1
VCC

MOD BLUETOOTH/WIFI CHIP (With PCB Antenna 2.4GHz)/ e.

GPIO

GND

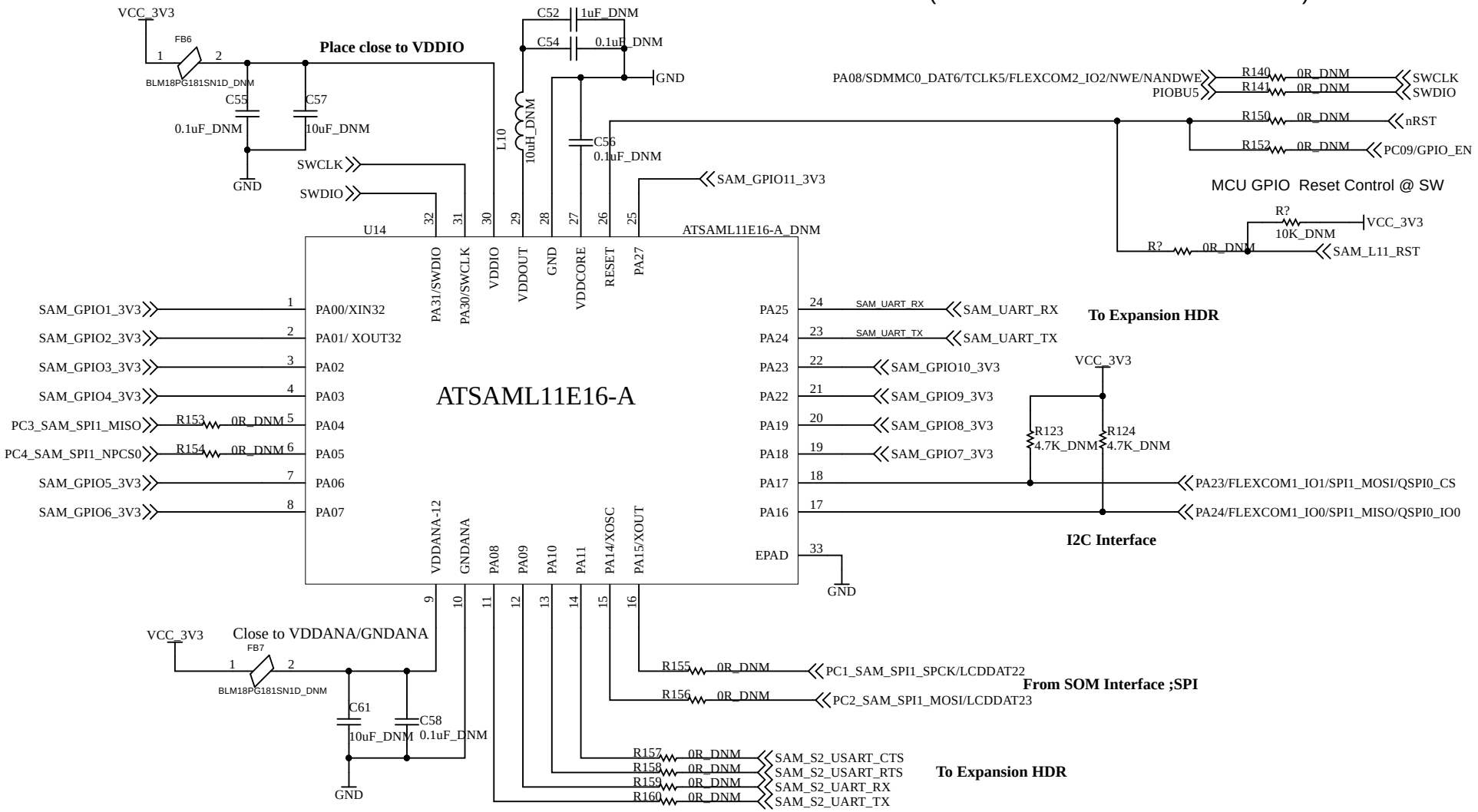
Note:

SDIO,U

SAM L11 Controller With SWD HDR

(Default DNM)

GPIO INTERFACE WITH A5D2 & part of EXPNSN
(Flash from A5D2x SOM Linux Platform)



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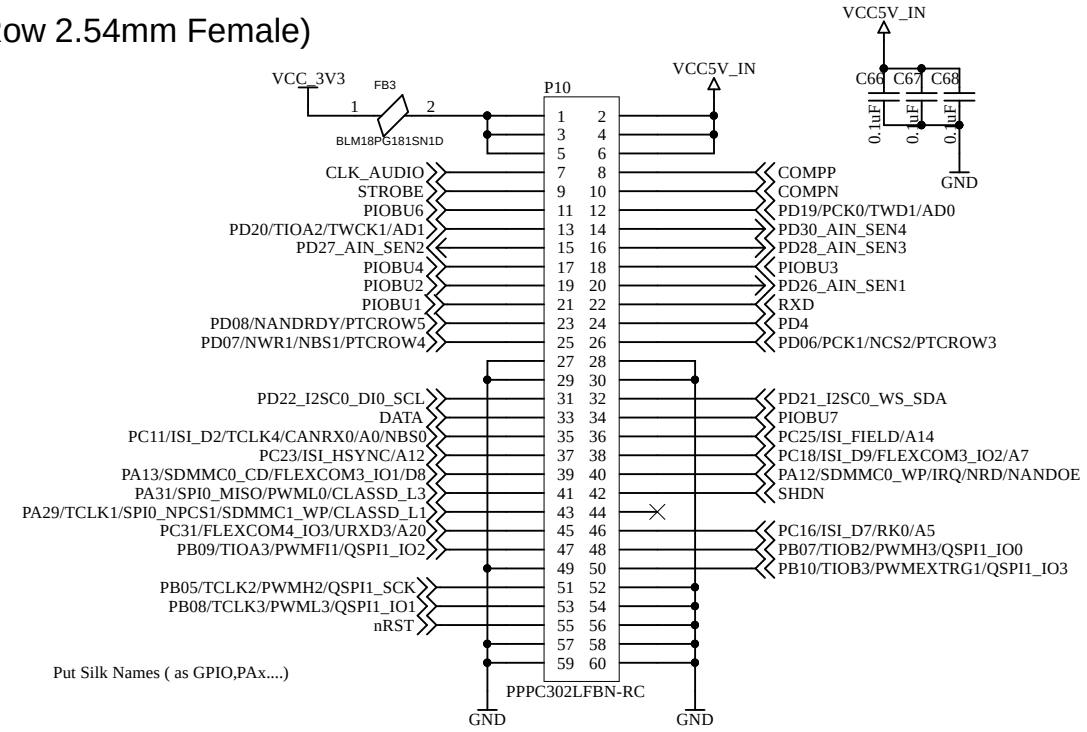
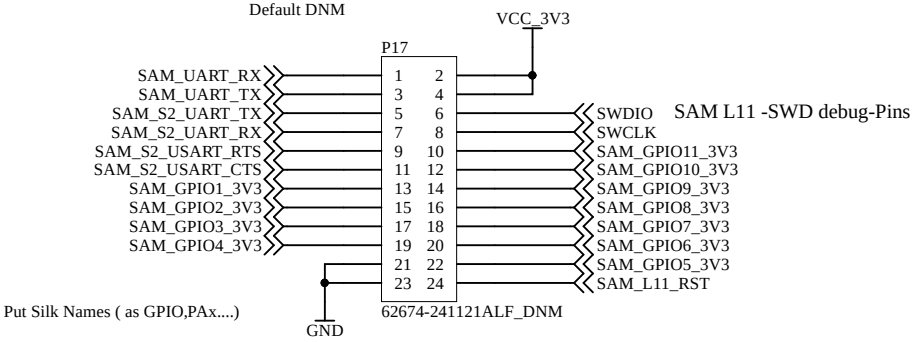
Expansion HDR (Dual Row 2.54mm Female)

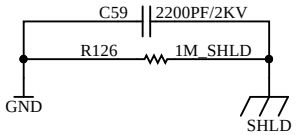


From SAM L11
Separate HDR
Default DNM

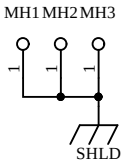


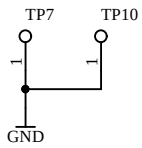
SAM L11 -SWD debug-Pins

Board GND Connect to Shield via RC

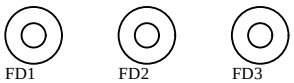


Board Mounting Holes Connect to Shield





Ground TP's for Testing/Debug



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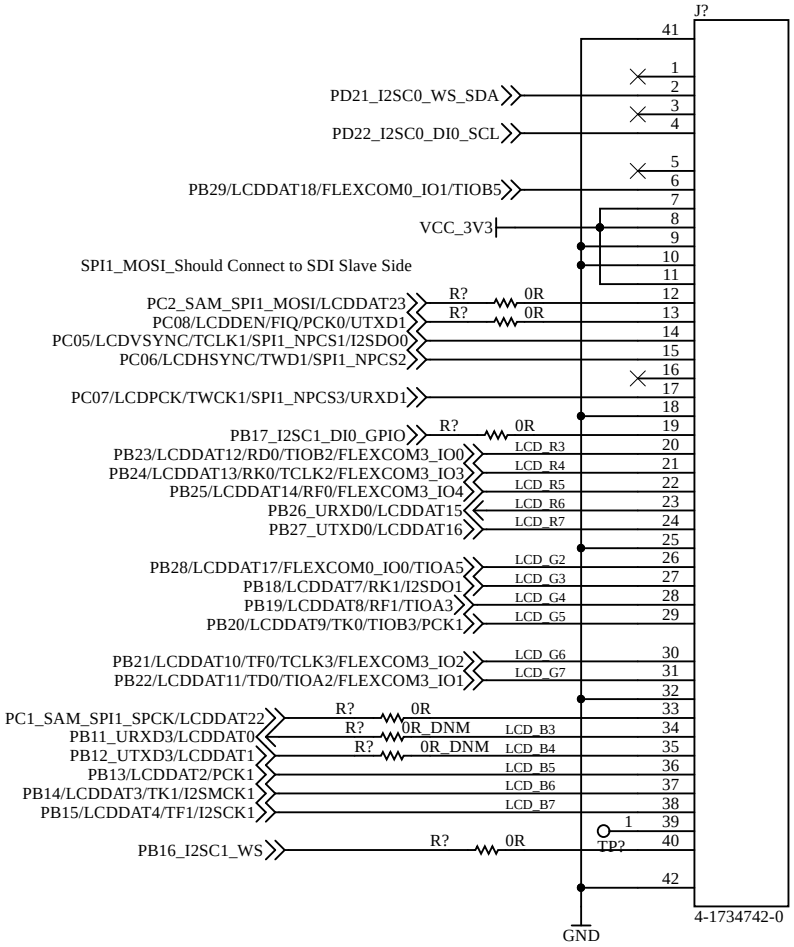
RGB LCD Interface (Without Backlight) reference to "PEB-AV-02" Connector

Note; BACK LIGHT CKT Part of Mapper Board



PEB-AV-02 Connector pinouts Compactible

To be Check or Map @ A5D2x Pin muxing / Design a Mapper Board as per RGB sequence ....!

No of layer : 4 Layer Impedance Controlled Board

1. Board thickness: 1.6mm
2. Surface finish:Enig , Green Mask
3. Copper finish thickness: 35 micron
4. Minimum line/spacing: As per Fab house Stack up
5. Impedance Controlled : Yes
6. Board Dimensions : 100 × 72.5mm MAX

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Pin Muxing Table

To be Update

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