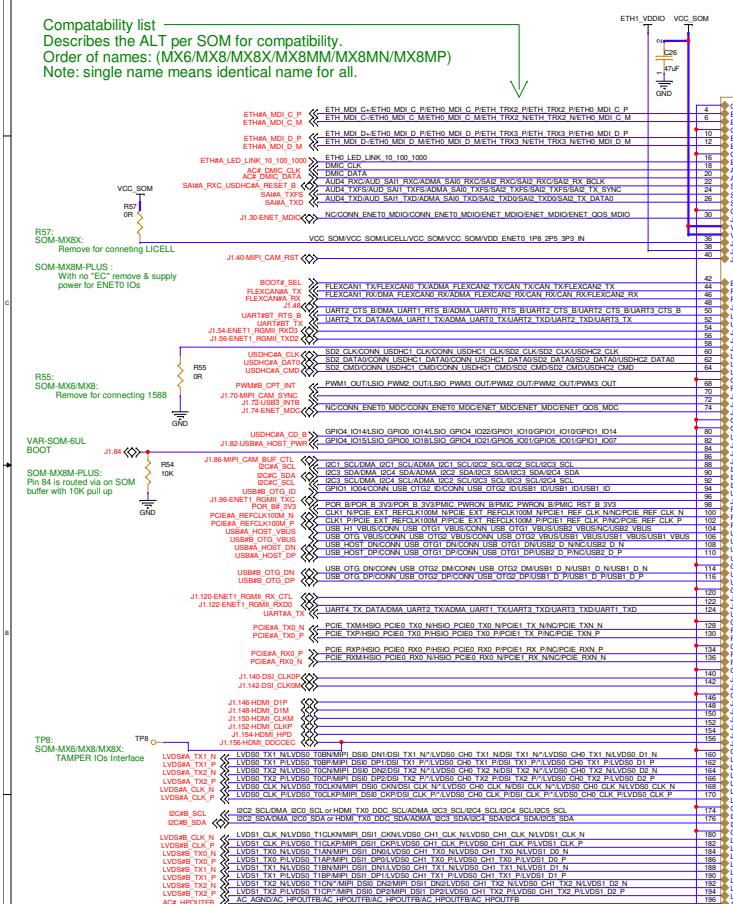


OFF PAGE CONNECTOR INDEX:

1. Function# :Interface common to ALL SOMs
2. J1.xxx-Function :Interface common to certains SOMs or Used for carrier board common function
3. J1.xxx :No common interface

Compatibility list
Describes the ALT per SOM for compatibility.
Order of names: (MX6/MX8/MX8X/MX8MM/MX8MN/MX8MP)
Note: single name means identical name for all.

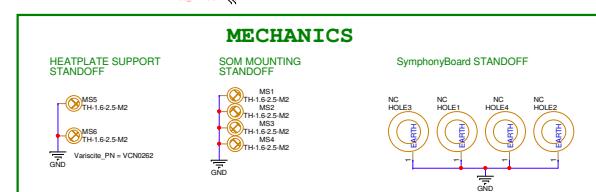
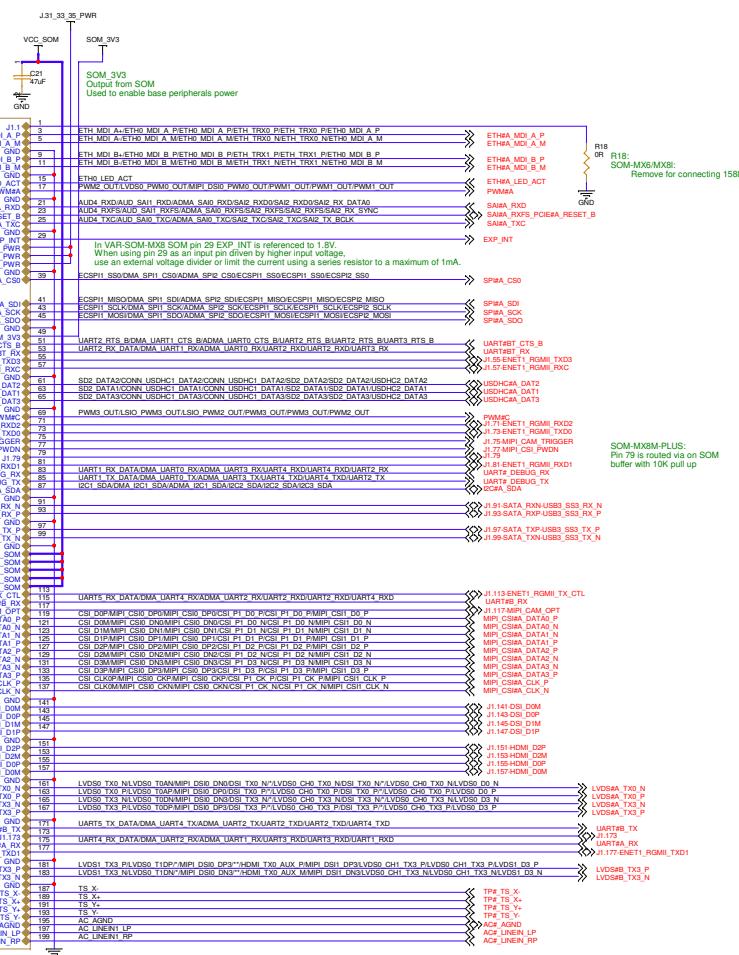


For cross probing between SOM symbol and the specific SOM Connector used,
set the "Implementation" property value in SOM port symbol
to one of the following:

1. VAR-SOM-MX6
2. VAR-SOM-MX8
3. VAR-SOM-MX8X
4. VAR-SOM-MX8M-MINI
5. VAR-SOM-MX8M-NANO
6. VAR-SOM-MX8M-PLUS

Implementation = VAR-SOM-MX8-NANO

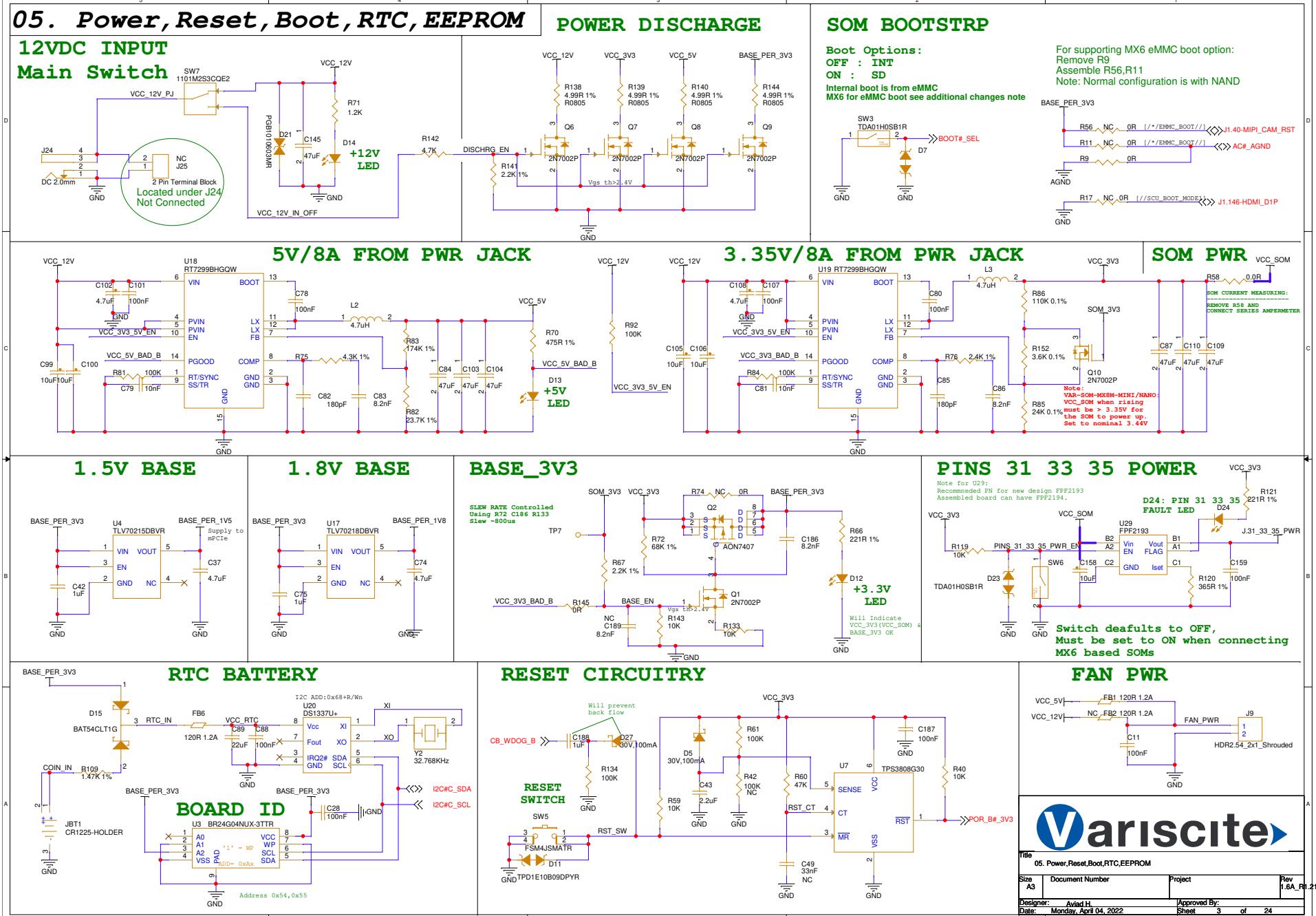
For complete alternate function per pin and specific SOM:
please refer to "VAR-SOMs_Compatibility_and_Pinout.XLS" located at:
ftp://ftp.variscite.com/SOM_Compatibility



R8 R10 R12 R13:
without Touch screen controller on SOM,
remove to prevent stubs on high speed lines

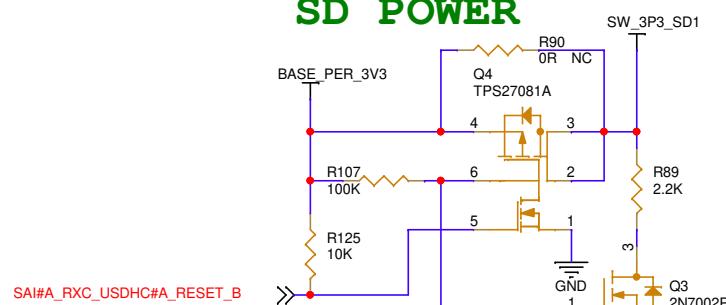
T#P TS X- R13 OR T#P TS X- CONN
T#P TS Z- R12 OR T#P TS X- CONN
T#P TS Y- R11 OR T#P TS Y- CONN
T#P TS Y- R10 OR T#P TS Y- CONN



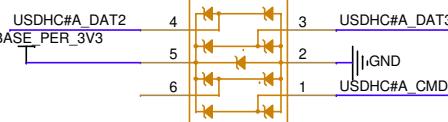
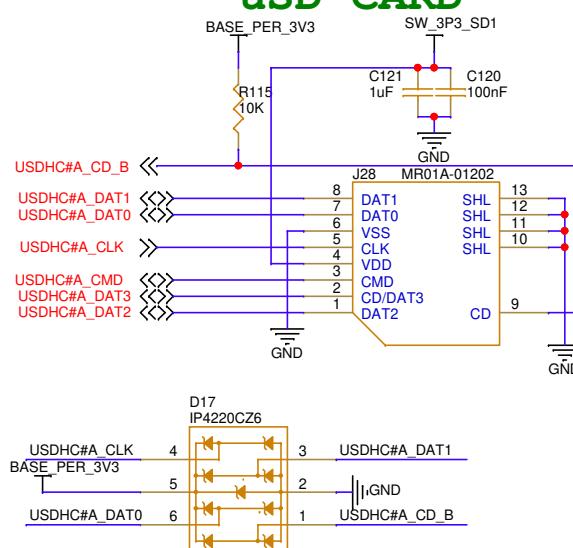


06. uSD, Audio, CAN

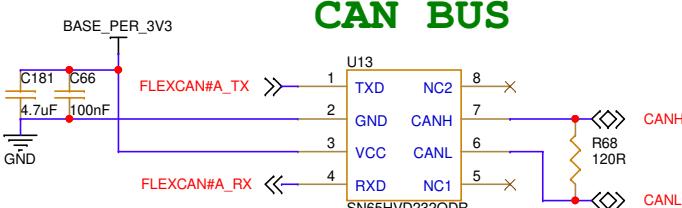
SD POWER



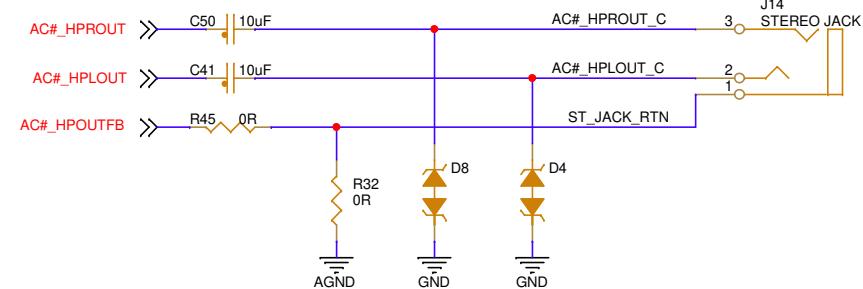
uSD CARD



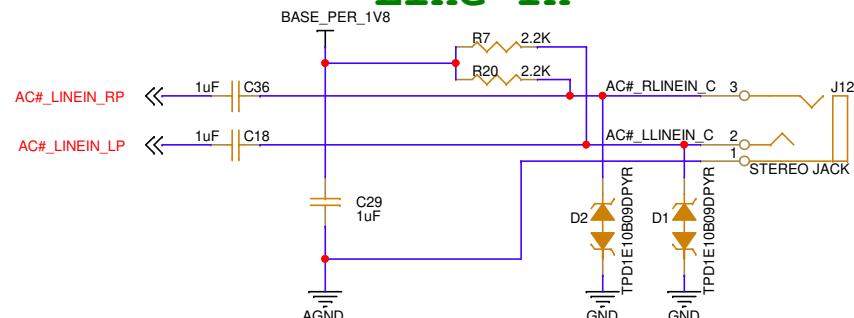
CAN BUS



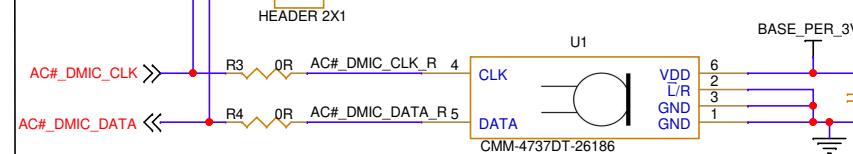
Headphones



Line In



DIGITAL MIC



Variscite

Title

06. uSD, Audio,CAN

Size

A4

Document Number

Symphony-Board

Project

Symphony-Board

Rev

1.6A

R1.2

Designer:

Aviad H.

Date:

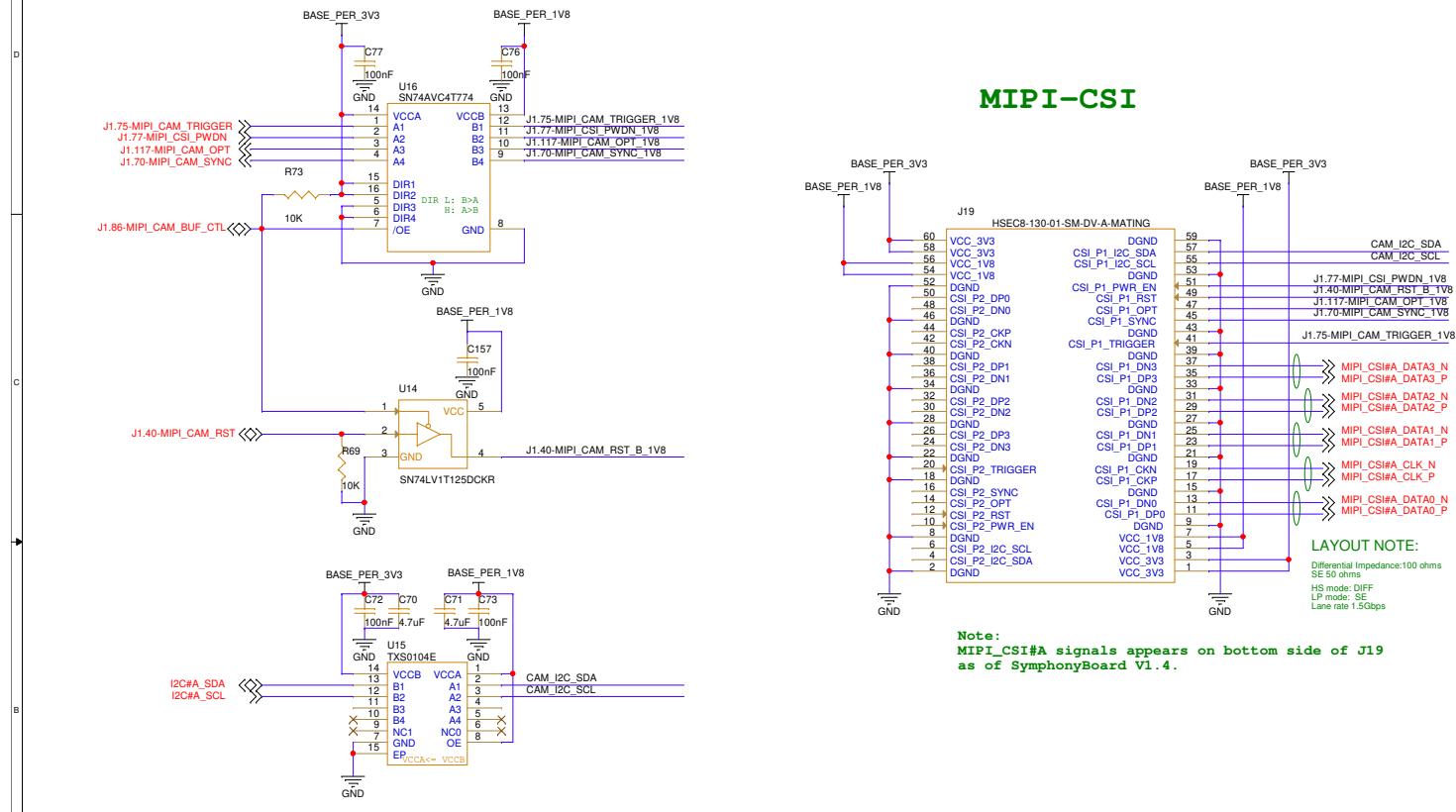
Monday, April 04, 2022

Approved By:

Sheet

1 of 24

07. Camera, HDMI, DP



Note for U32 (analog switch):
 Switch is to enable support for the following adapters:
 Parallel camera, HDMI, DisplayPort and second MIPI-CSI .

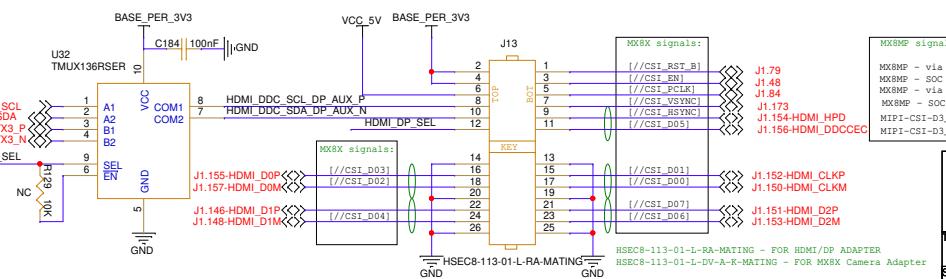
Switch select controlled on adaptor will select between:
 1) I₂C#B which can export

VAR-SOM-MX8X-I2C3 Used by parallel camera
 VAR-SOM-MX8: I₂C#B SDA
 LVDS#B_TX3_F
 LVDS#B_TX3_N

2) LVDS#B_TX3 which can export:
 VAR-SOM-MX8(DP assembly option): HDMI AUX used by DP

Switch can be omitted when designing for only one of the above interfaces.

J13: MX6/MX8-HDMI, MX8-DP, MX8X-CSI, MX8MP-2nd MIPI-CSI



Title: 07. Camera, HDMI, DP

Size	Document Number	Project	Rev
A3	Symphony-board	Symphony-Board	1.6A_R1.21
Designer: Aviad H.	Approved By:		

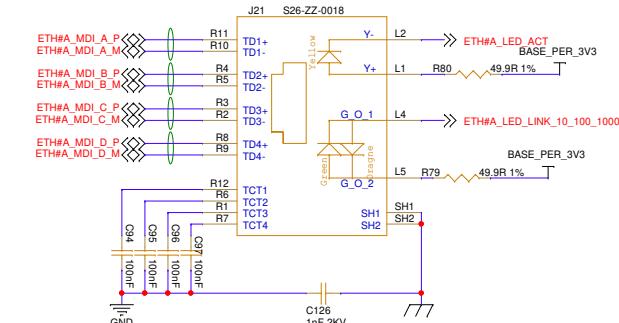
Date: Monday, April 04, 2022

Sheet 5 of 24

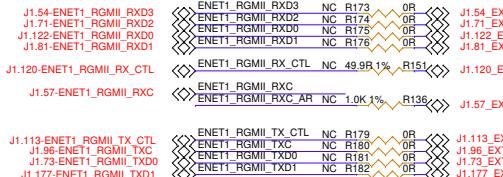
08. Ethernet

Gigabit Ethernet (Internal)

LAYOUT NOTE:
Giga Ethernet Differential Pair,
Follow Giga Ethernet routing
guidelines
Differential Impedance: 100 ohms



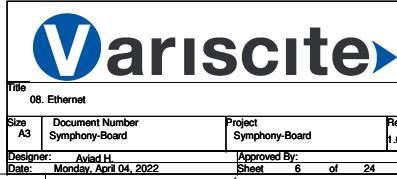
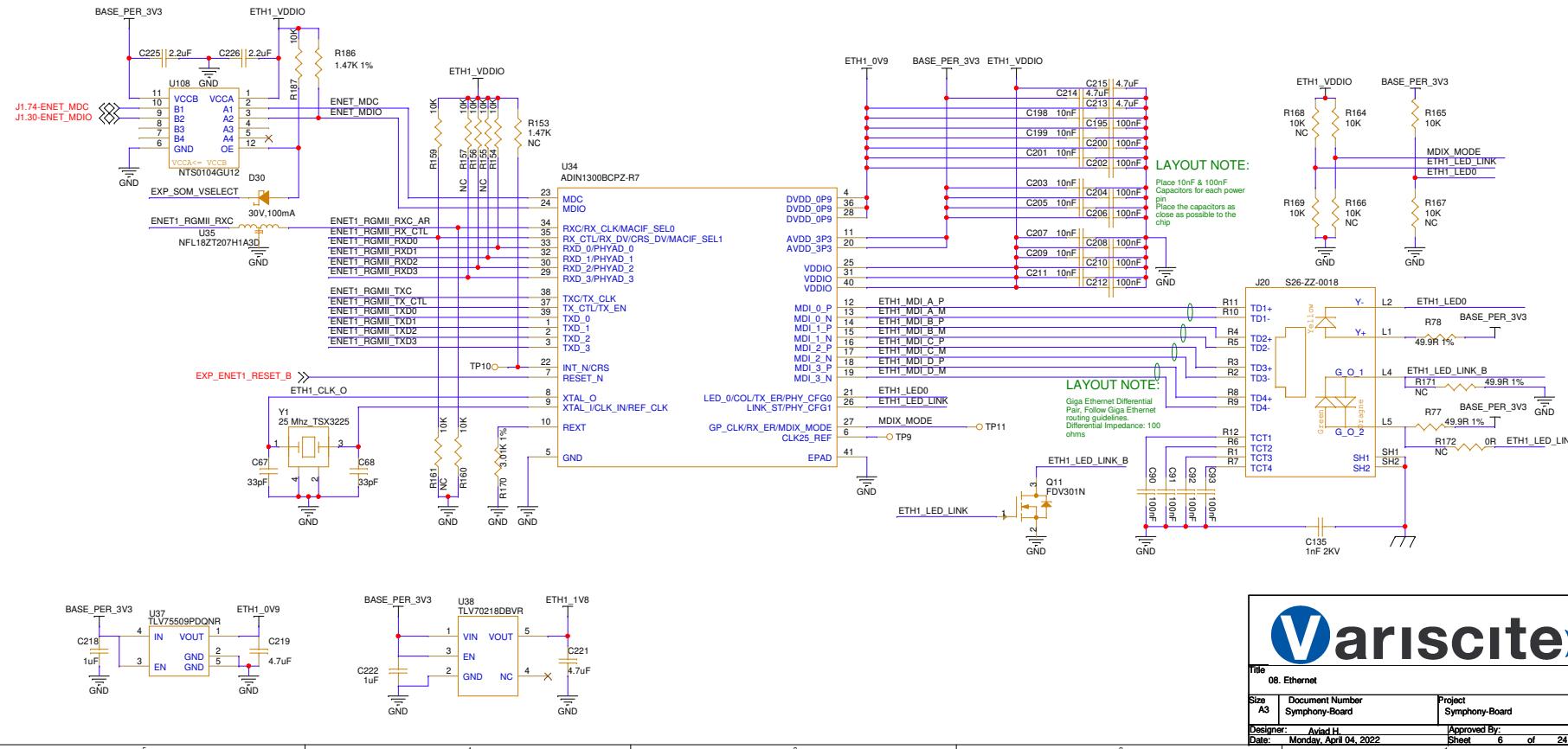
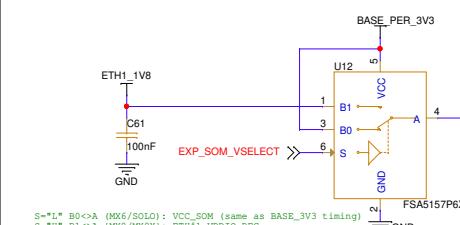
Header/Stub isolation resistors



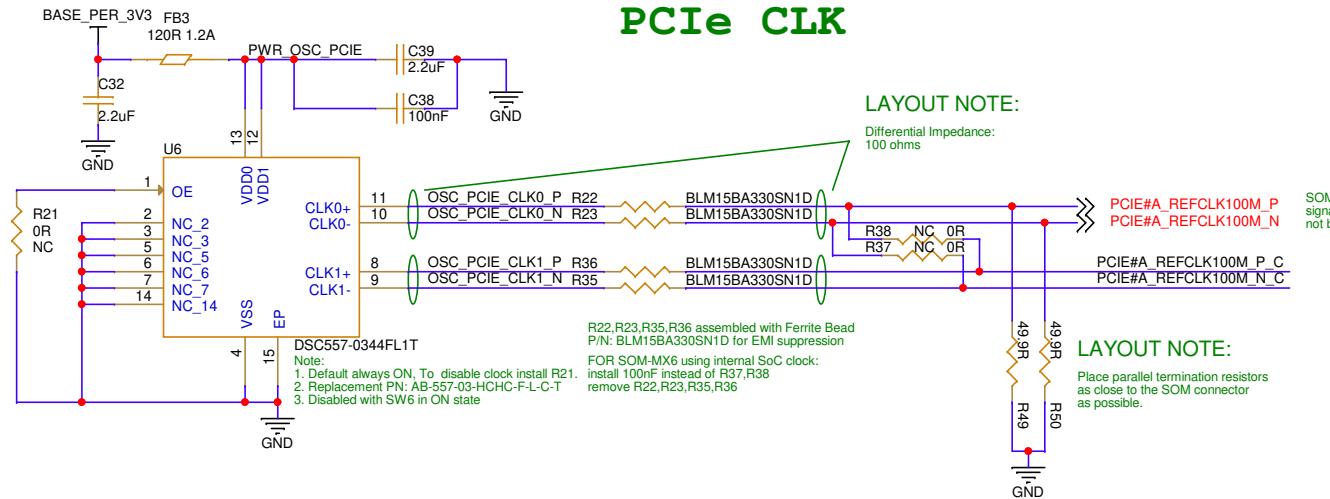
Note:
Customer requiring usage of J30 header (located on bottom side)
should assemble these resistors if not assembled by default

VDD_ENET for SOM-MX8/MX8X/MX8MP

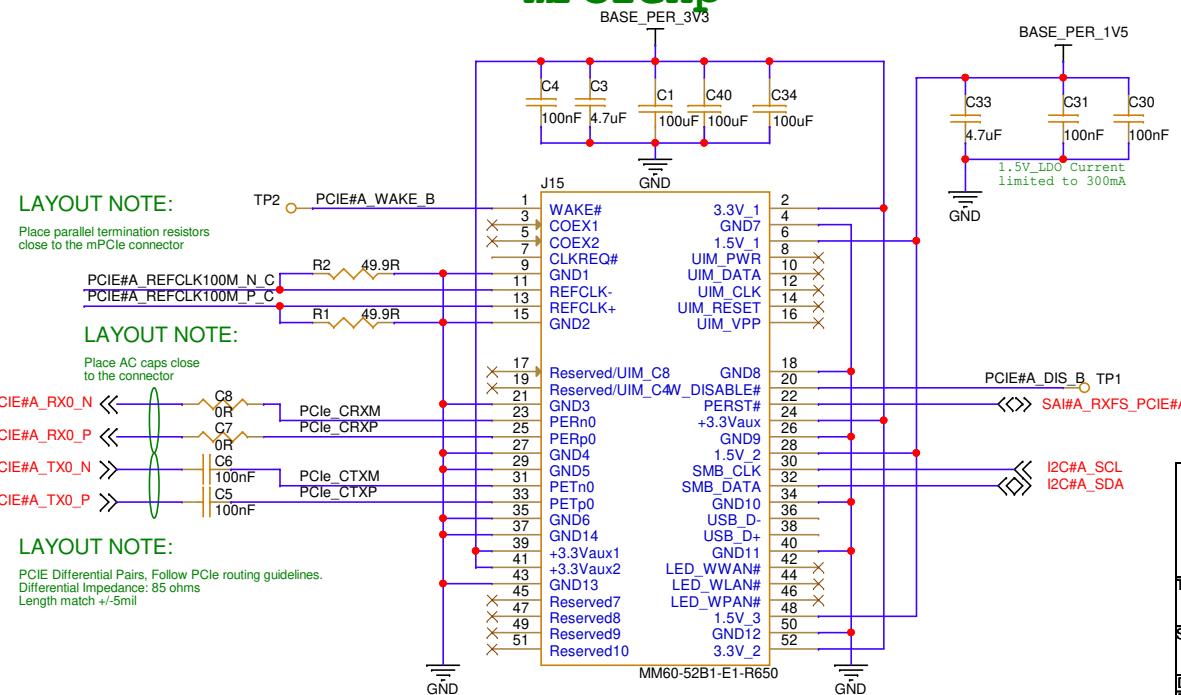
Power for ENET1_RGMII IOs on SOM power fed from pin J1.38
For specific SOM listed above, requiring second ETH port on ENET1 this power should
be set to 1.8V source from U11 PHY



09. PCIe



mPCIexp

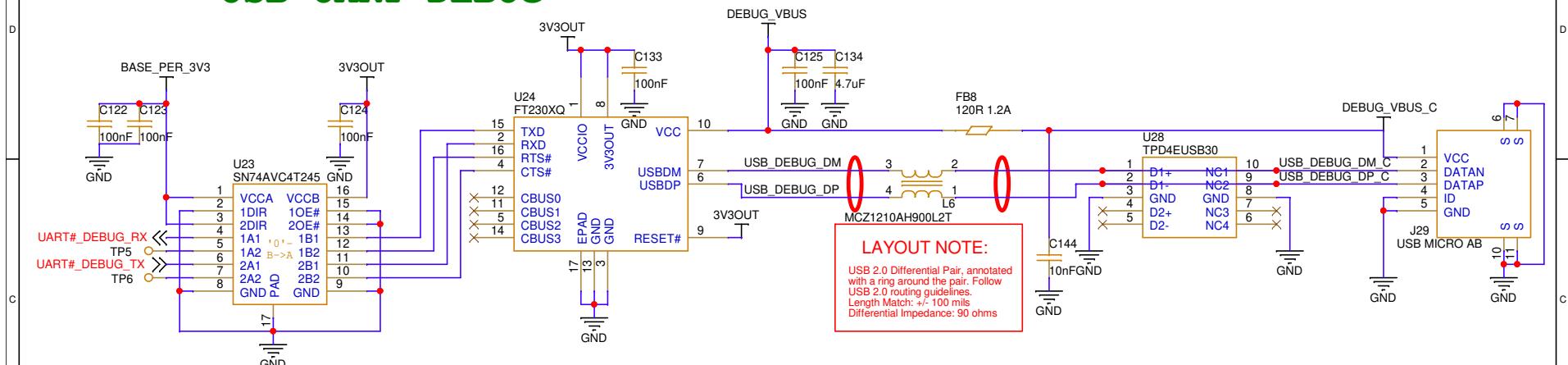


Variscite

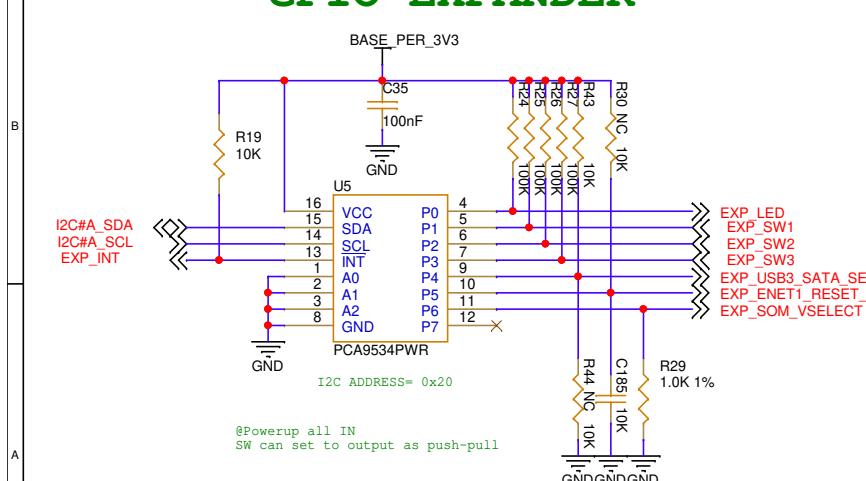
Title 09. PCIe			
Size A4	Document Number Symphony-Board	Project	Rev 1.6A_R1.21
Designer: Aviad H.		Approved By:	
Date: Monday, April 04, 2022		Sheet 7	of 24

10. Debug, GPIO Exp, Buttons, LED

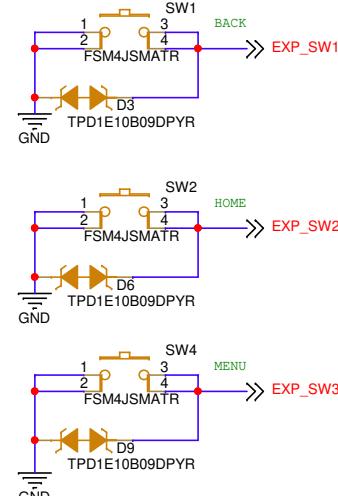
USB UART DEBUG



GPIO EXPANDER



GP BUTTON



GP LED

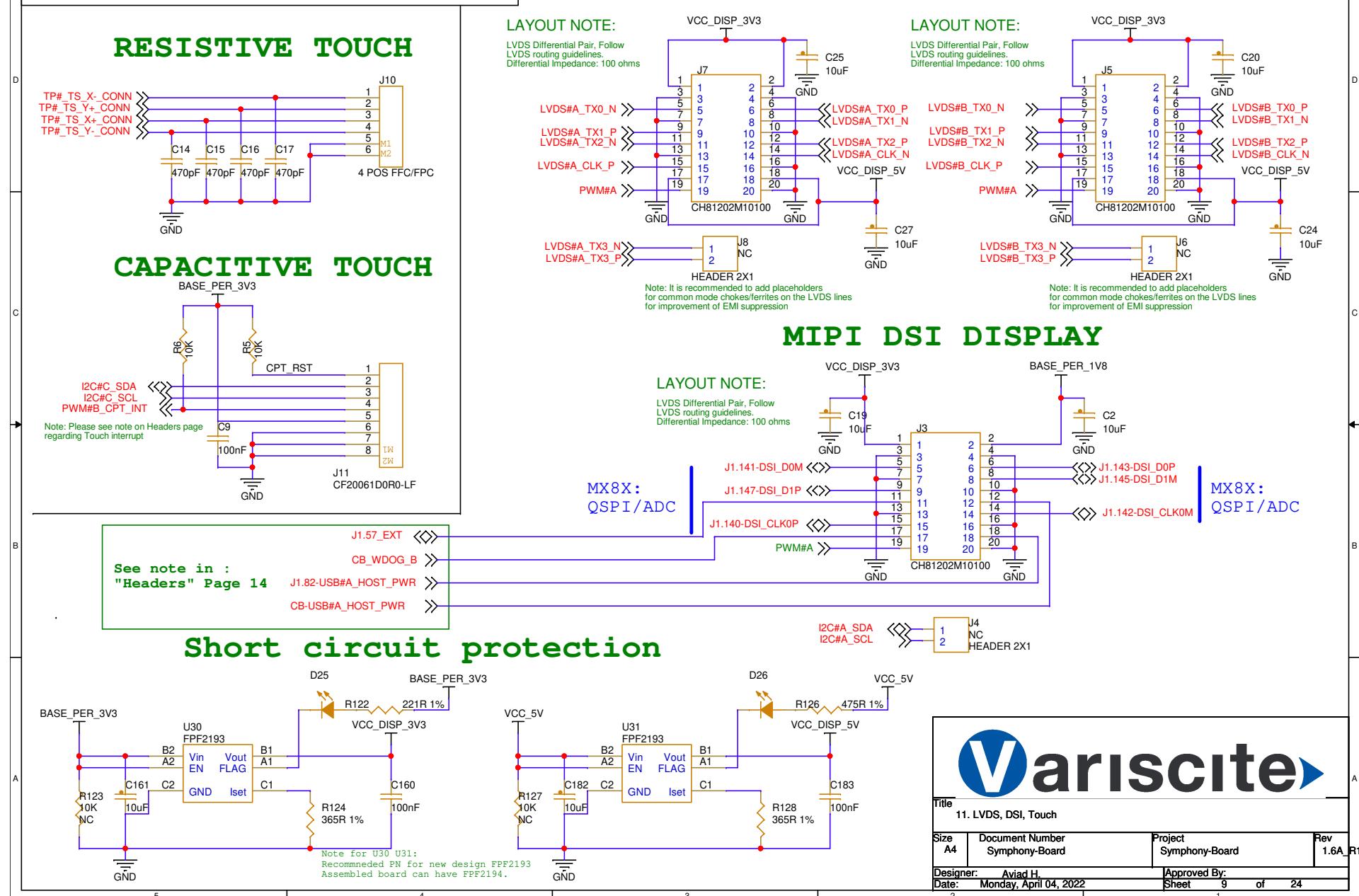


Variscite

Title: 10. Debug, GPIO Exp, Buttons, LED

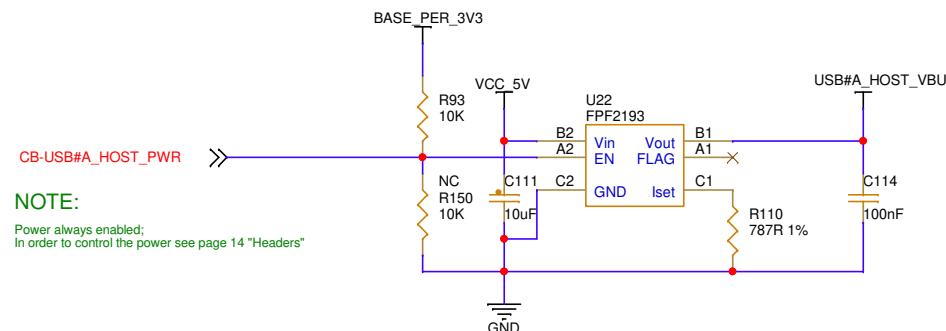
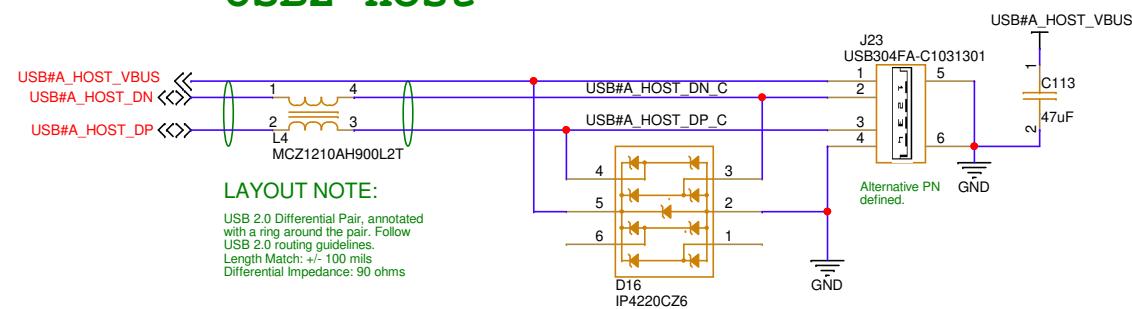
Size	Document Number	Project	Rev
A4	Symphony-Board		1.6A_R1.21
Designer:	Aviad H.	Approved By:	
Date:	Monday, April 04, 2022	Sheet	8 of 24

11. LVDS, DSI, Touch



12. USB2 Host

USB2 Host



Variscite

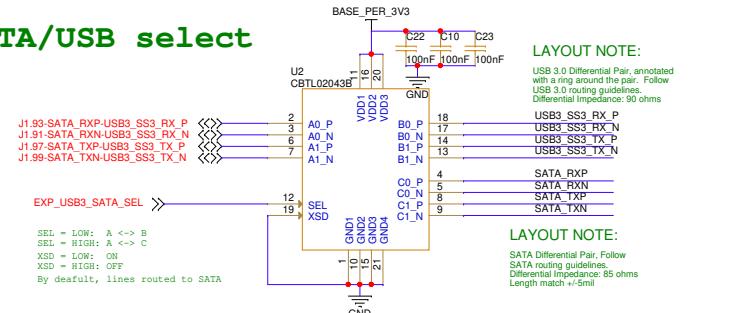
Title

12. USB2 Host

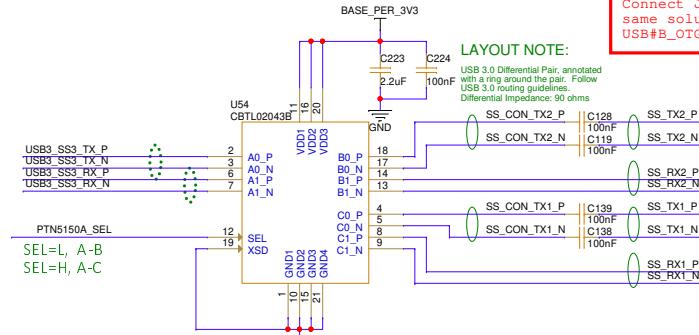
Size	Document Number	Project	Rev
A4	Symphony-Board	Symphony-Board	1.6A R1.2
Designer:	Aviad H.	Approved By:	
Date:	Monday, April 04, 2022	Sheet	10 of 24

13. USB3, uSATA

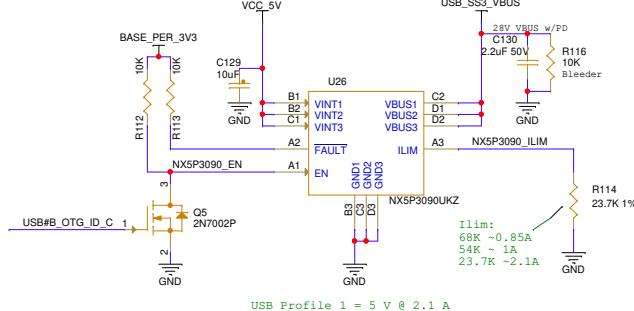
SATA/USB select



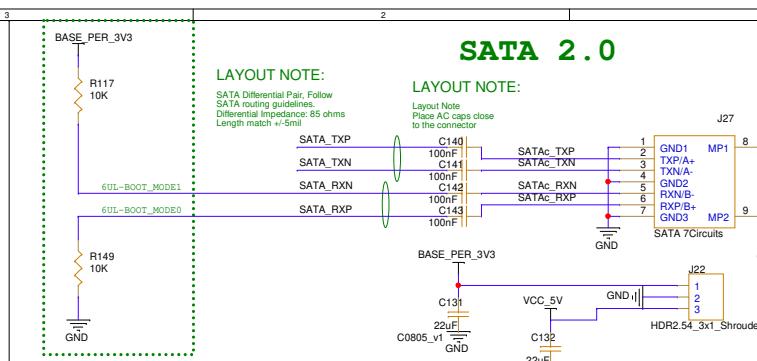
USB TYPE C Circuitry



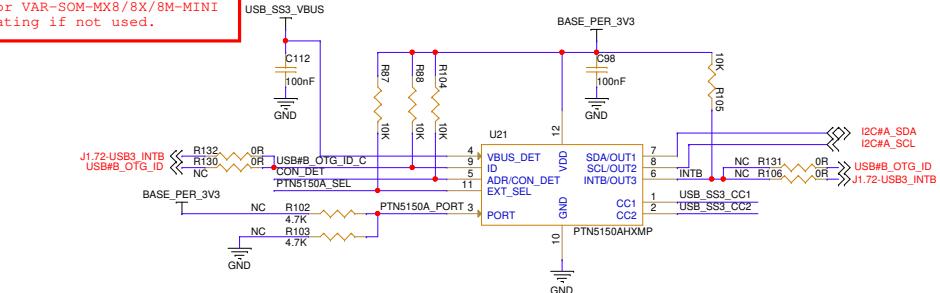
5V Source Load Switch



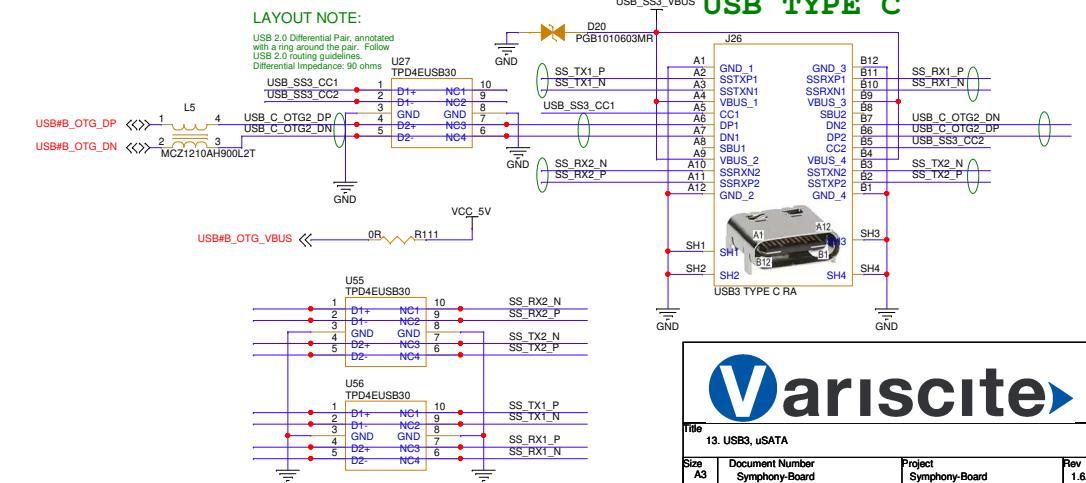
SATA 2.0



Config Channel Logic Detection & Indication of Plug Orientation

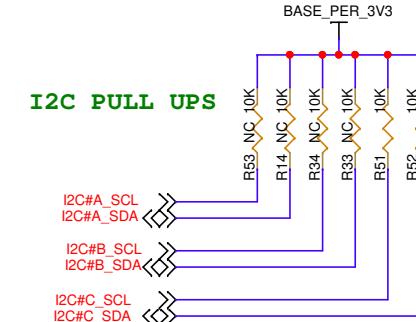
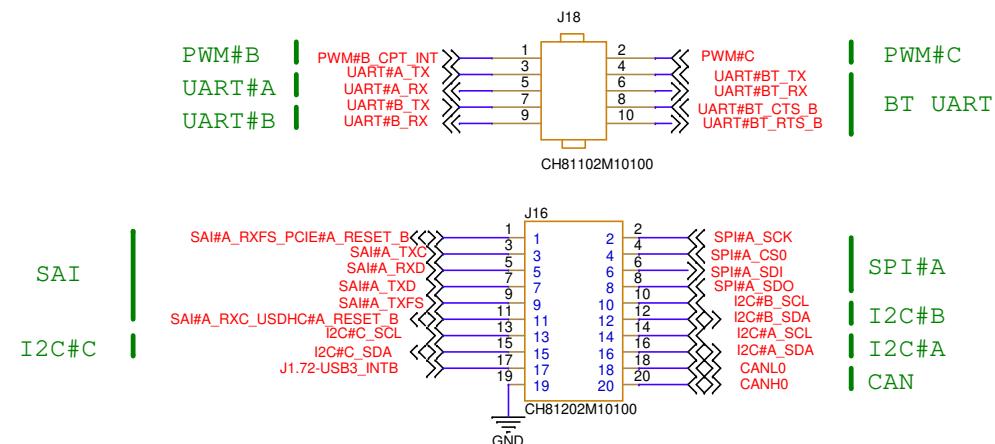


USB TYPE C



14. Headers

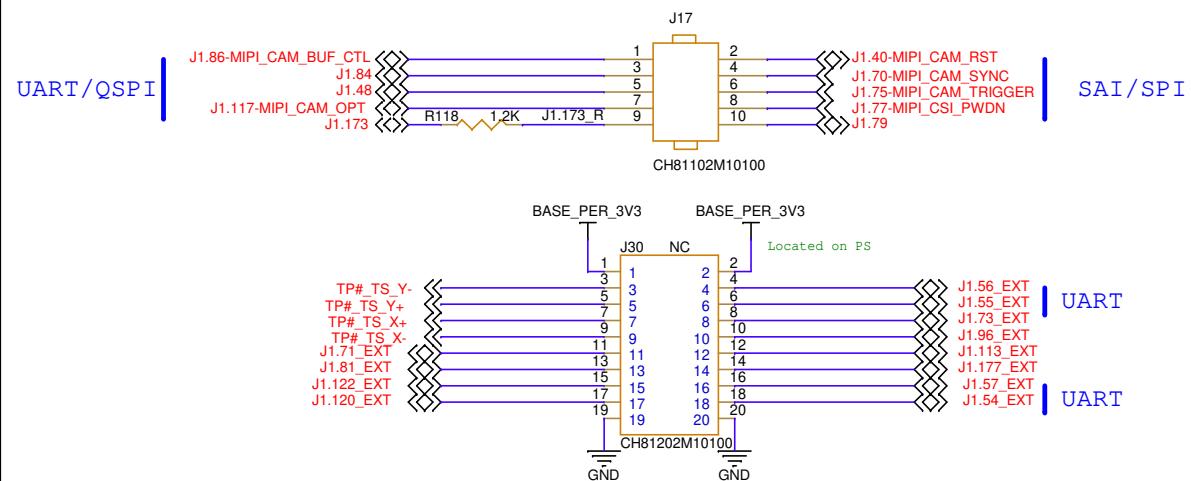
Headers arranged for compatible alternate function



I2C_A has internal pulls in Camera buffer

I2C_B has internal pulls in MX6/MX8/MX8X/MX8MP SOMs.
For MX8MM/MX8MN/6UL SOMs - external pull ups should be added.

Headers arranged for partial compatible alternate function



For complete header alternate function refer
to "VAR-SOMs_Compatibility_and_Pinout.XLS " located at:
ftp://ftp.variscite.com/SOM_Compatibility

COLD RESET ON WDOG_B EVENT for MX6/SOLO and 6UL SOMs

Listed above SOMs require short on headers to
get "reboot" to function.
For all other watch dog looped on SOM

CB_WDOG_B	Symphony Board reset circuitry watch dog input	See J3.17
J1.57_EXT	SOM_GUL: PIN57_WDOG1_B	See J3.11
PWM#B_CPT_INT	MX6/SOLO: PIN68_WDOG1_B	See J18.1

USB#A Host VBUS power control

In order to control the USB#A HOST VBUS power a short is required:

CB-USBA_HOST_PWR	↳ Symphony Board U22	See J3.12
J1.82-USBA_HOST_PWR	↳ control input	See J3.18



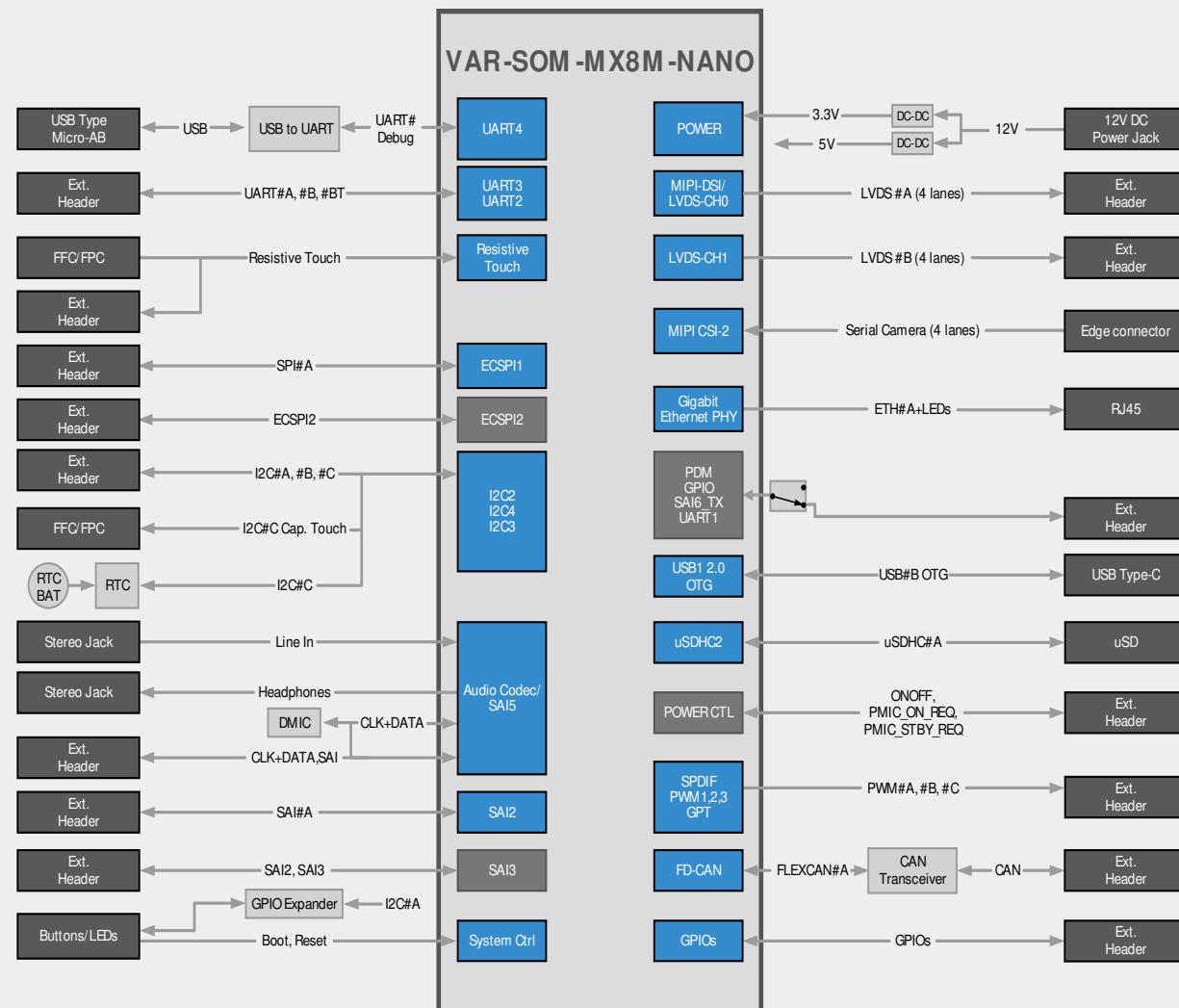
Title
14. Headers

Size	Document Number	Project	Rev
A4	Symphony-Board	Symphony-Board	R1.2
Designer:	Ayad H.	Approved By:	
Date:	Monday, April 04, 2022	Sheet	12 of 24

02. Block Diagram VAR-SOM-MX8M-NANO

Symphony-Board

Doc rev 1.1



Pin2pin with additional VAR-SOM products.
Please check pin-list document for details

Not Compatible



04. VAR-SOM-MX8M-NANO Connector



Version V1.1

PIN NAMING MNEMONICS:

- "/" - Prefix number of "/" denotes alternate function number; none is ALT0=PAD name
- "//*" - Prefix denotes pin connected to a configurable module on SOM;
E.g. with "EC" pin ENET_TD//ECGPIO1_IO18/*ETH_TRX0_P source is Ethernet PHY
- "~~" - Prefix points to an alternate function optionally used or shared on SOM;
Verify with SOM datasheet before using this pin;

SETUP NOTES FOR VAR-SOM-MX8M-MINI:

ENET_SSEL = Set to Ground
Pin T1, S0 IO levels running from NVC_SDO2 set on SOM

