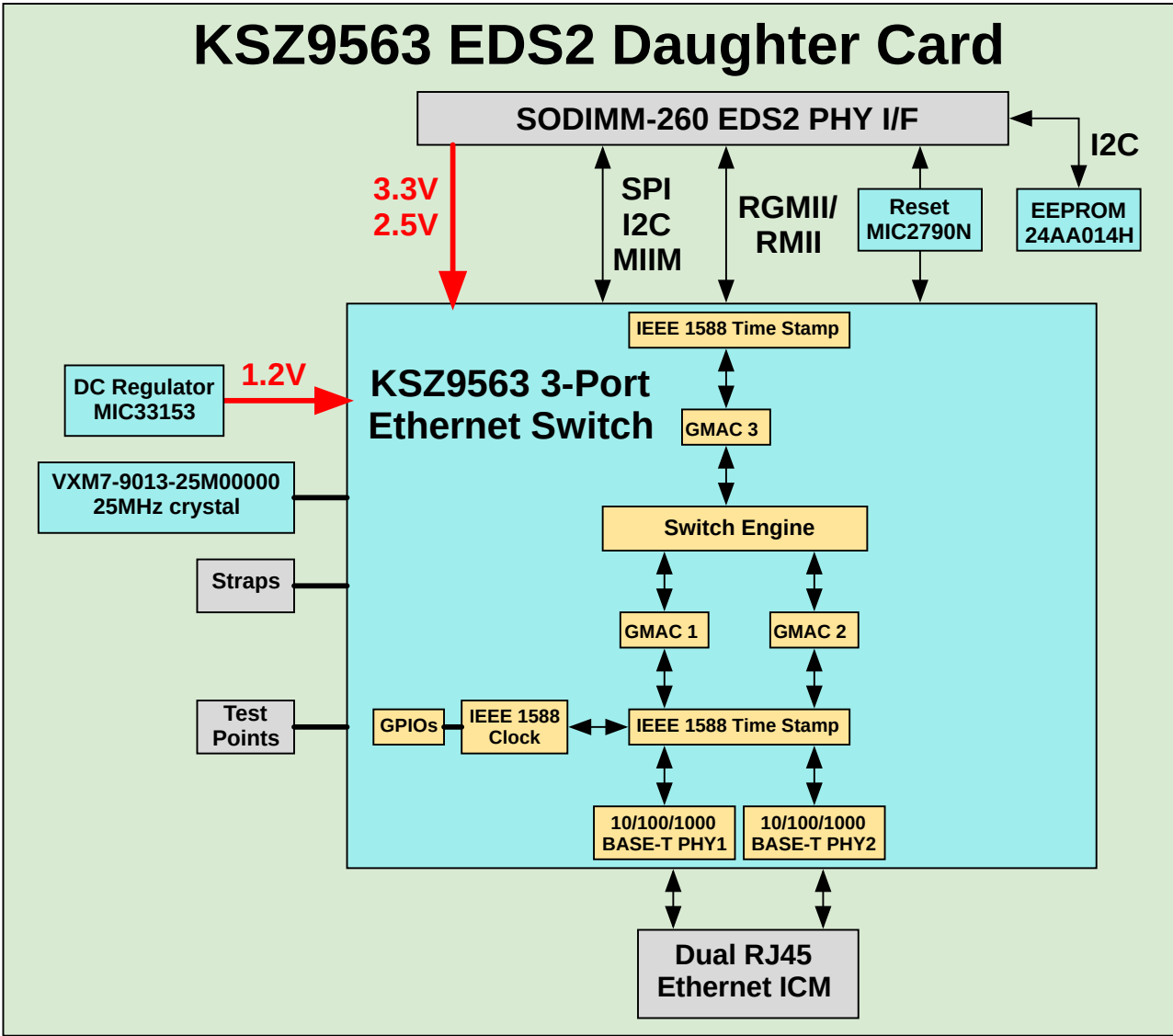
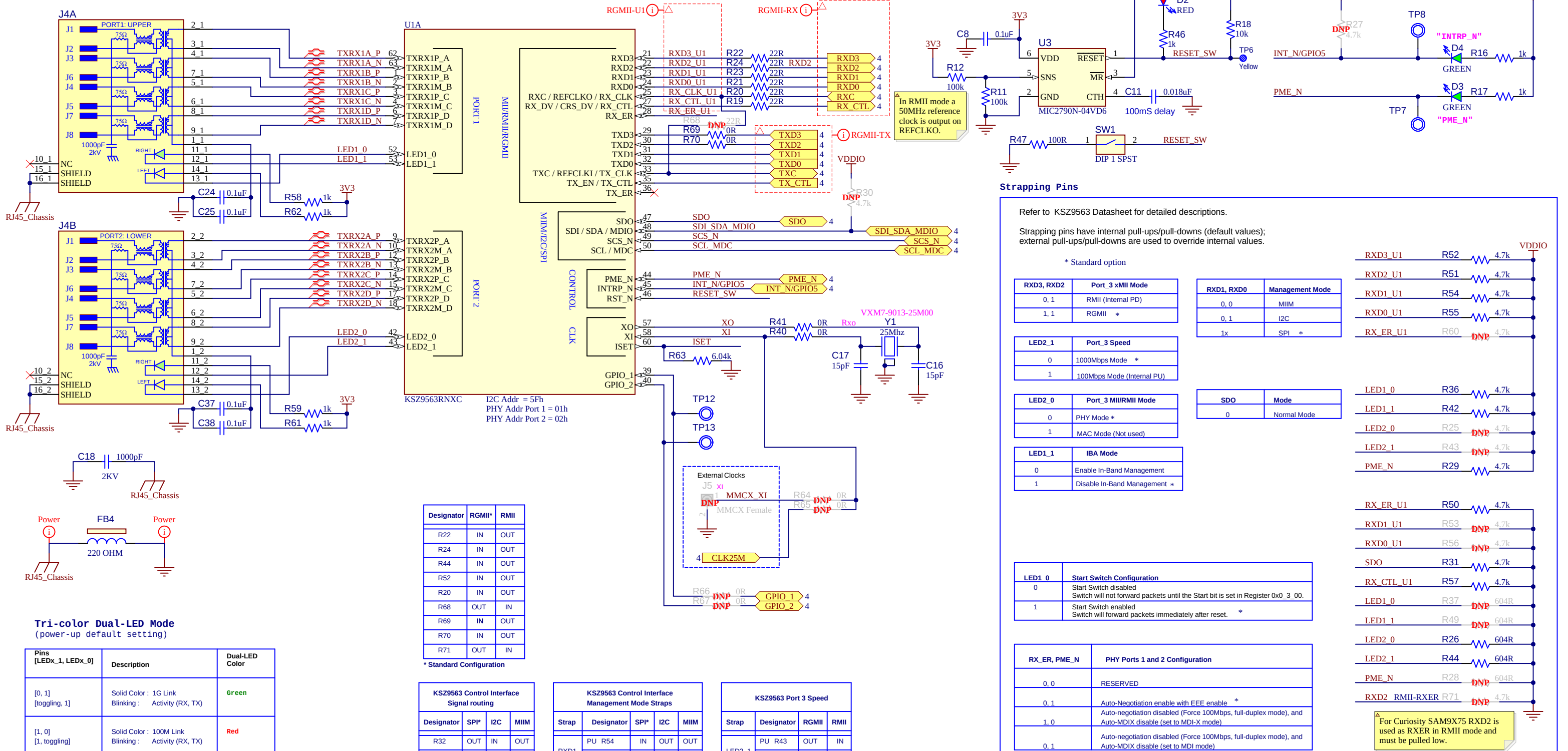


KSZ9563 EDS2 Daughter Card

Table of Contents	
Sheet	Description
1	Table of Contents, Revision History, Block Diagram
2	KSZ9563, Ethernet Ports, Reset, Configuration Straps
3	KSZ9563 Power
4	SODIMM EDS2 Edge Connector

Revision History			
Revision	Date	Revision Summary	Author
A	05/30/2023	Initial Release	Sam Charles
00B	08/27/2024	Added RMII option, changed default assembly to SPI control interface.	Arnaldo Cruz
B	09/09/2024	Updated as per review comments.	Arnaldo Cruz
R2	01/15/2025	Released for production	Arnaldo Cruz





Tri-color Dual-LED Mode
(power-up default setting)

Pins [LEDx_1, LEDx_0]	Description	Dual-LED Color
[0, 1] [togglg, 1]	Solid Color : 1G Link Blinking : Activity (RX, TX)	Green
[1, 0] [1, togglg]	Solid Color : 100M Link Blinking : Activity (RX, TX)	Red
[0, 0] [togglg, togglg]	Solid Color : 10M Link Blinking : Activity (RX, TX)	Orange
[1, 1]	Link off	<off>

Designator	RGMI*	RMII
R22	IN	OUT
R24	IN	OUT
R44	IN	OUT
R52	IN	OUT
R20	IN	OUT
R68	OUT	IN
R69	IN	OUT
R70	IN	OUT
R71	OUT	IN

* Standard Configuration

KSZ9563 Control Interface Signal routing				
Designator	SPI*	I2C	MIIM	
R32	OUT	IN	OUT	
R33	OUT	IN	OUT	
R34	OUT	OUT	IN	
R35	IN	OUT	OUT	
R38	OUT	OUT	IN	
R39	IN	OUT	OUT	

KSZ9563 Control Interface Management Mode Straps				
Strap	Designator	SPI*	I2C	MIIM
RXD1	PU R54	IN	OUT	OUT
	PD R53	OUT	IN	IN
RXD0	PU R55	IN	IN	OUT
	PD R56	OUT	OUT	IN

KSZ9563 Port 3 Speed			
Strap	Designator	RGMI	RMII
LED2_1	PU R43	OUT	IN
	PD R44	IN	OUT

Strapping Pins

Refer to KSZ9563 Datasheet for detailed descriptions.

Strapping pins have internal pull-ups/pull-downs (default values); external pull-ups/pull-downs are used to override internal values.

* Standard option

RXD3, RXD2	Port_3 xMII Mode
0, 1	RMII (Internal PD)
1, 1	RGMI *

RXD1, RXD0	Management Mode
0, 0	MIIM
0, 1	I2C
1x	SPI *

LED2_1	Port_3 Speed
0	1000Mbps Mode *
1	100Mbps Mode (Internal PU)

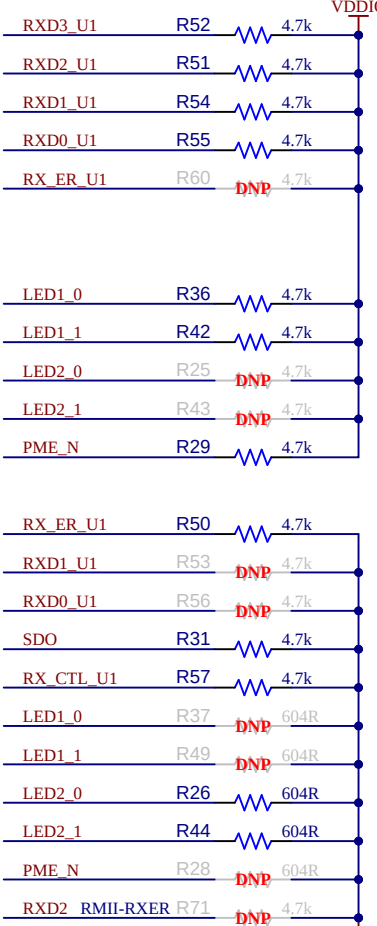
SDO	Mode
0	Normal Mode

LED2_0	Port_3 MIIR/MII Mode
0	PHY Mode *
1	MAC Mode (Not used)

LED1_1	IBA Mode
0	Enable In-Band Management
1	Disable In-Band Management *

LED1_0	Start Switch Configuration
0	Start Switch disabled Switch will not forward packets until the Start bit is set in Register 0x0_3_00.
1	Start Switch enabled Switch will forward packets immediately after reset. *

RX_ER, PME_N	PHY Ports 1 and 2 Configuration
0, 0	RESERVED
0, 1	Auto-Negotiation enable with EEE enable *
1, 0	Auto-negotiation disabled (Force 100Mbps, full-duplex mode), and Auto-MDIX disable (set to MDI-X mode)
0, 1	Auto-negotiation disabled (Force 100Mbps, full-duplex mode), and Auto-MDIX disable (set to MDI mode)



For Curiosity SAM9X75 RXD2 is used as RXER in RMII mode and must be pulled low.

Project Owner:
Arnaldo Cruz

PCB Layout Contact:
Sam Charles

PartNumber:
EV35V13A

Project Title
KSZ9563 EDS2 Daughter Card

Variant: Standard

Sheet Title
KSZ9563, Ethernet Ports, Reset, Configuration Straps

Size
Tabloid

SCH #: 02-00888

Rev: 2

Date: 2/28/2025

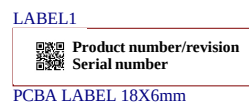
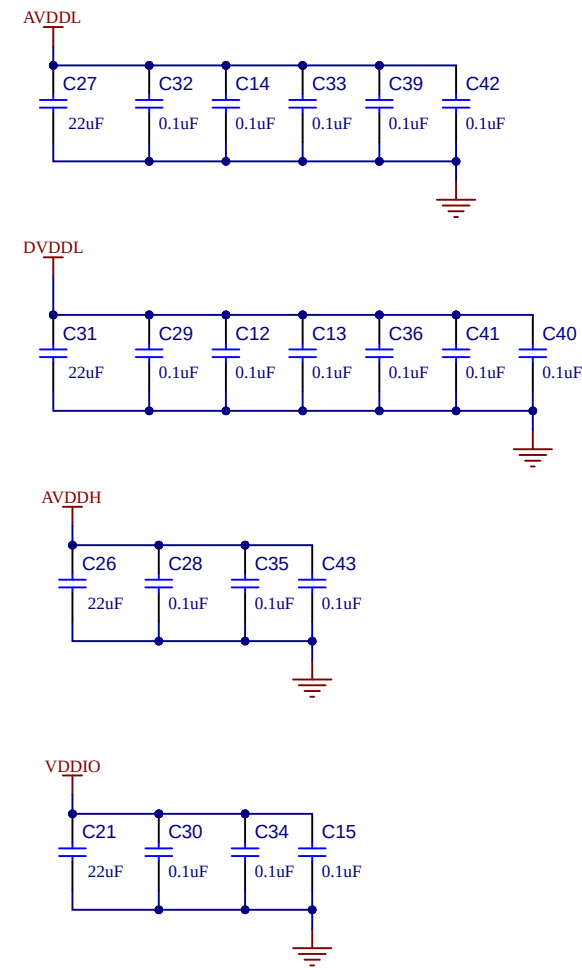
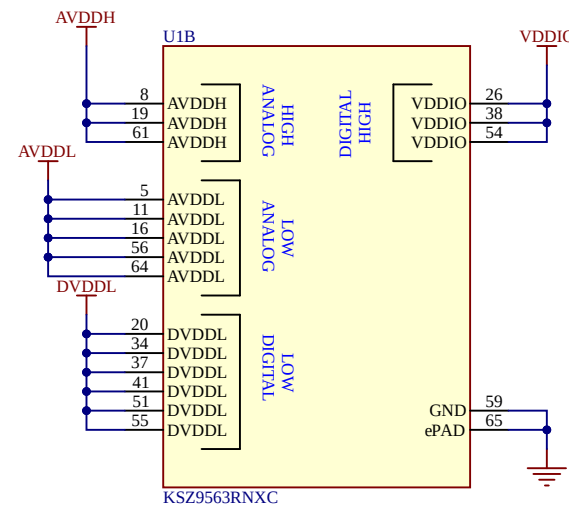
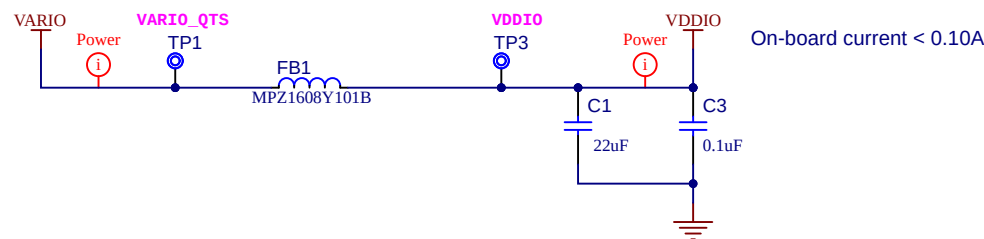
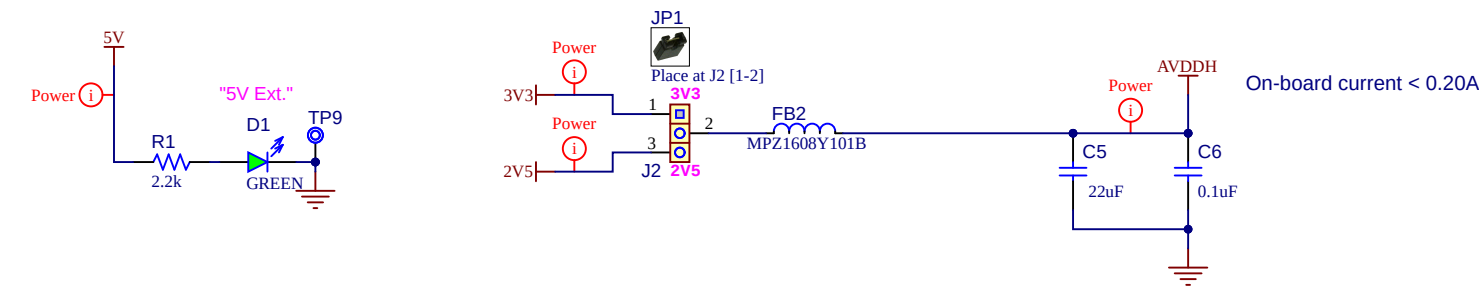
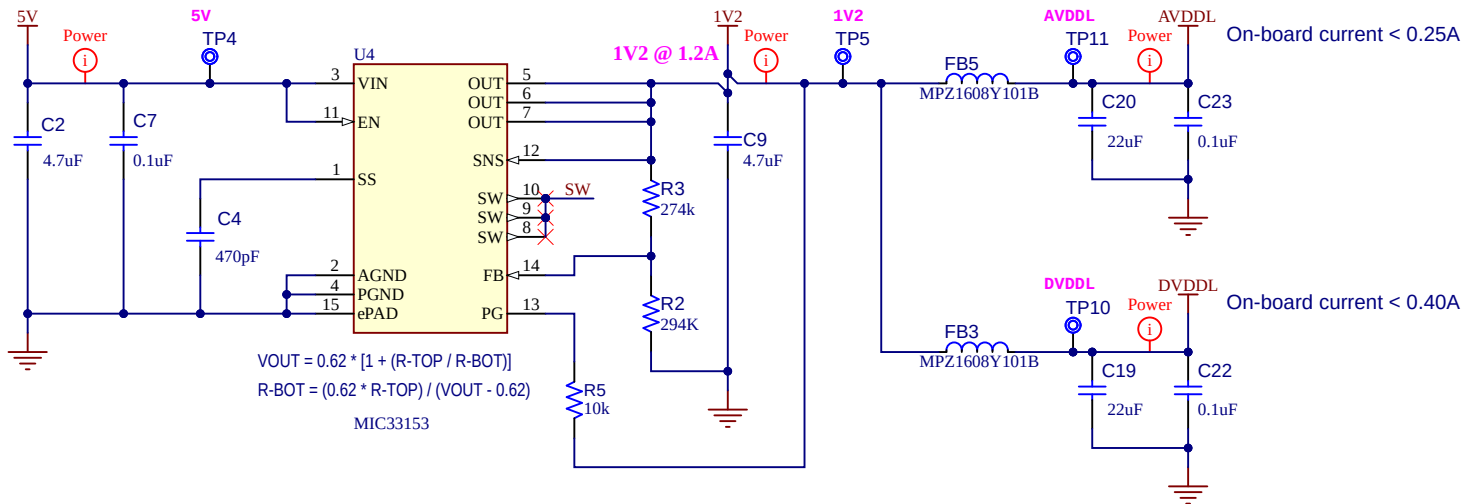
Rev: 2

Sheet 2 of 4

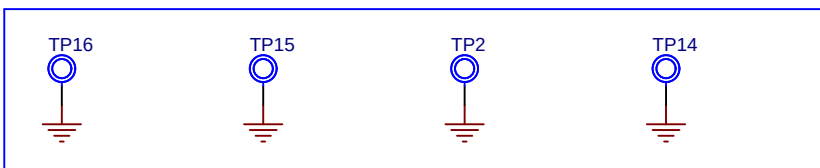
Designed with
Altium

File: 2_KSZ9563_Ethernet Ports_UNG8425_B.SchDoc

* Standard Configuration



GND Test Points



Fiducials



Project Owner: Arnaldo Cruz		 MICROCHIP	
PCB Layout Contact: Sam Charles			
PartNumber: EV35V13A	Project Title KSZ9563 EDS2 Daughter Card	Variant: <u>Standard</u>	
Sheet Title KSZ9563 Power		Designed with  <u>Altium.com</u>	
Size Tabloid	SCH #: 02-00888 PCB #: 04-11964		
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