ConnectCore for i.MX6 System Board Computer

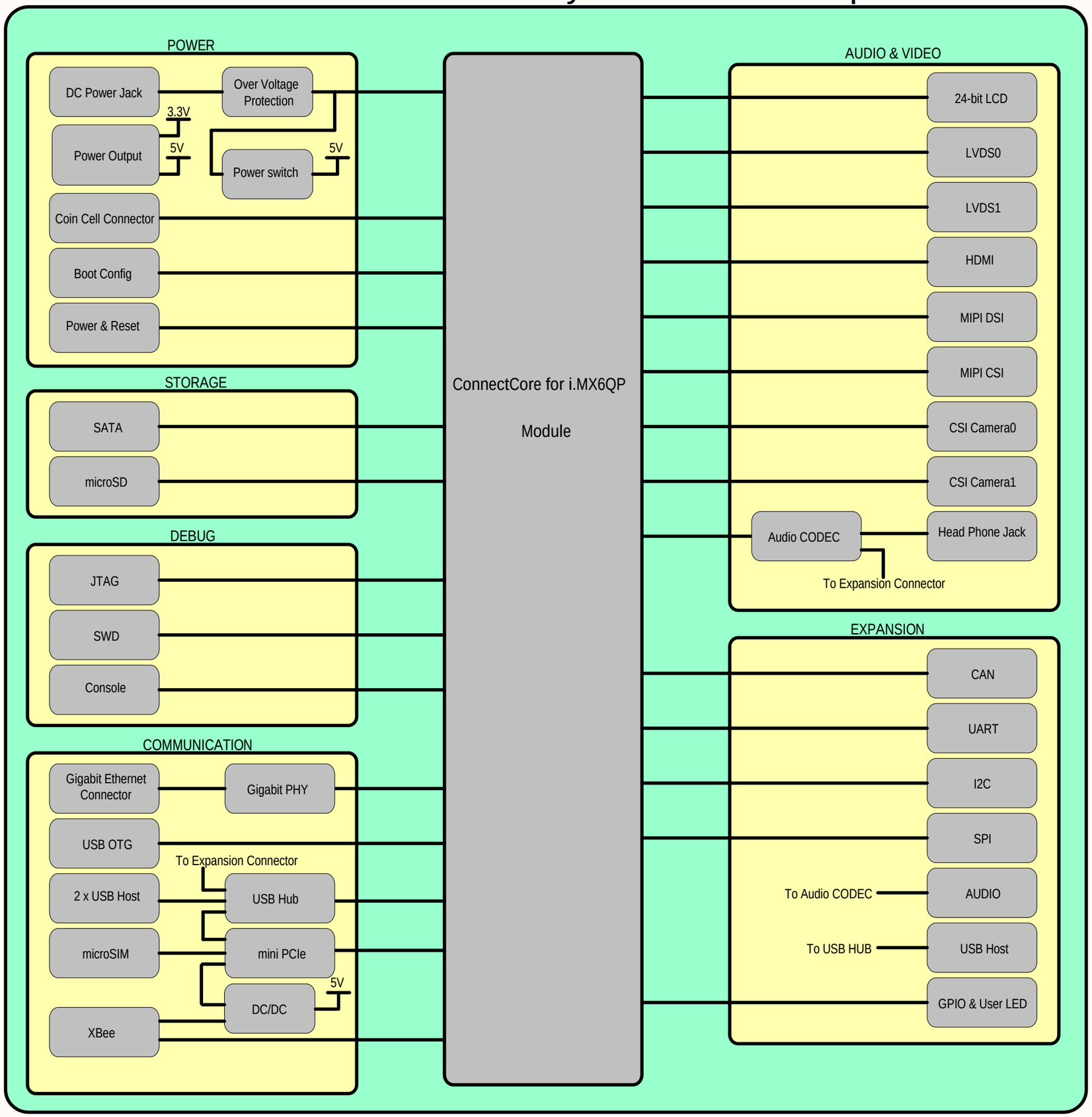


Table of Content

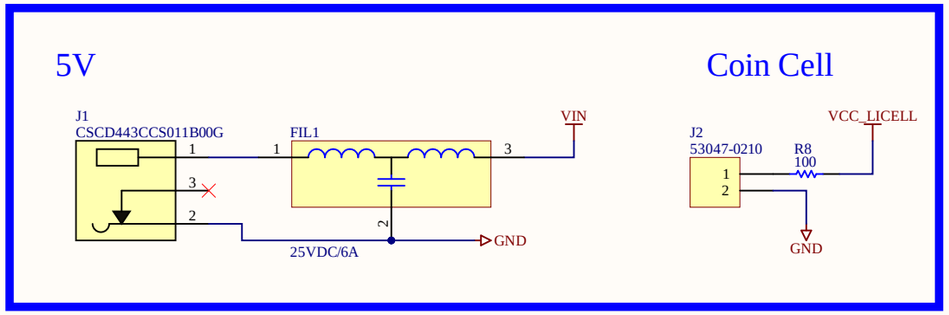
Title: Block Diagram	
Designer: Daniel Alesanco	Sheet: 1 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

ConnectCore for i.MX6 Module

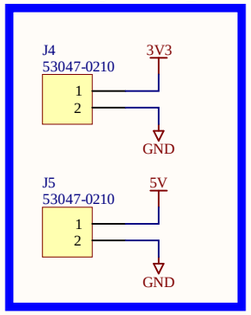
U1B
CC-WMX-KK8D-TN
U1A
CC-WMX-KK8D-TN
U1I
CC-WMX-KK8D-TN
U1E
CC-WMX-KK8D-TN
U1J
CC-WMX-KK8D-TN
U1K
CC-WMX-KK8D-TN
U1H
CC-WMX-KK8D-TN
U1C
CC-WMX-KK8D-TN
U1D
CC-WMX-KK8D-TN
U1G
CC-WMX-KK8D-TN
U1L
CC-WMX-KK8D-TN
U1F
CC-WMX-KK8D-TN

Title: ConnectCore for i.MX6QP module	
Designer: Daniel Alesanco	Sheet: 2 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

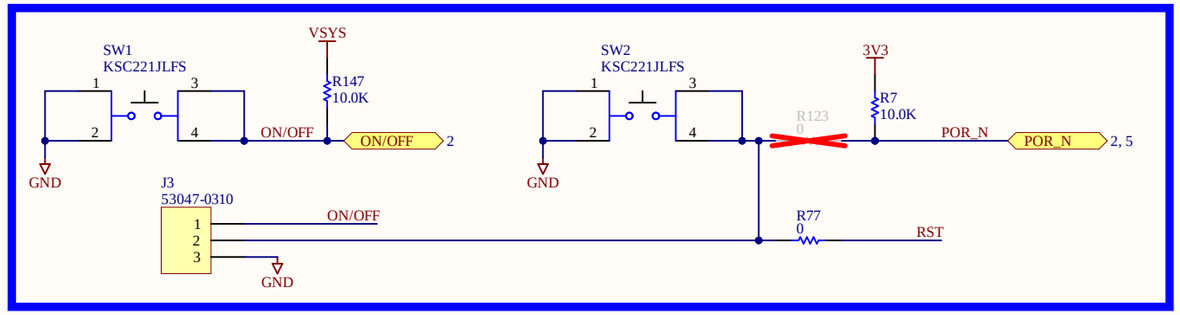
Supply Inputs



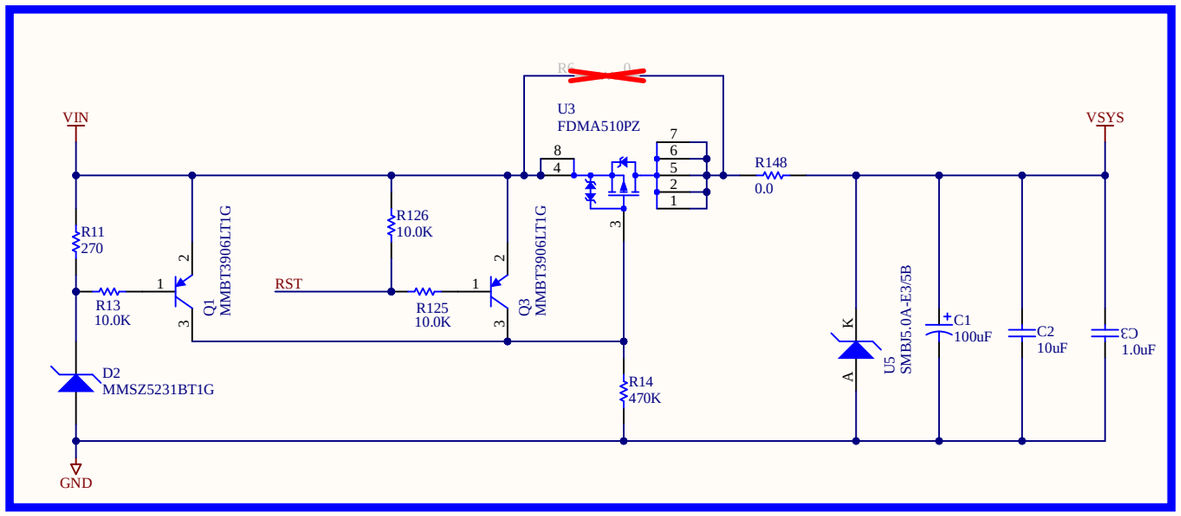
Supply Outputs



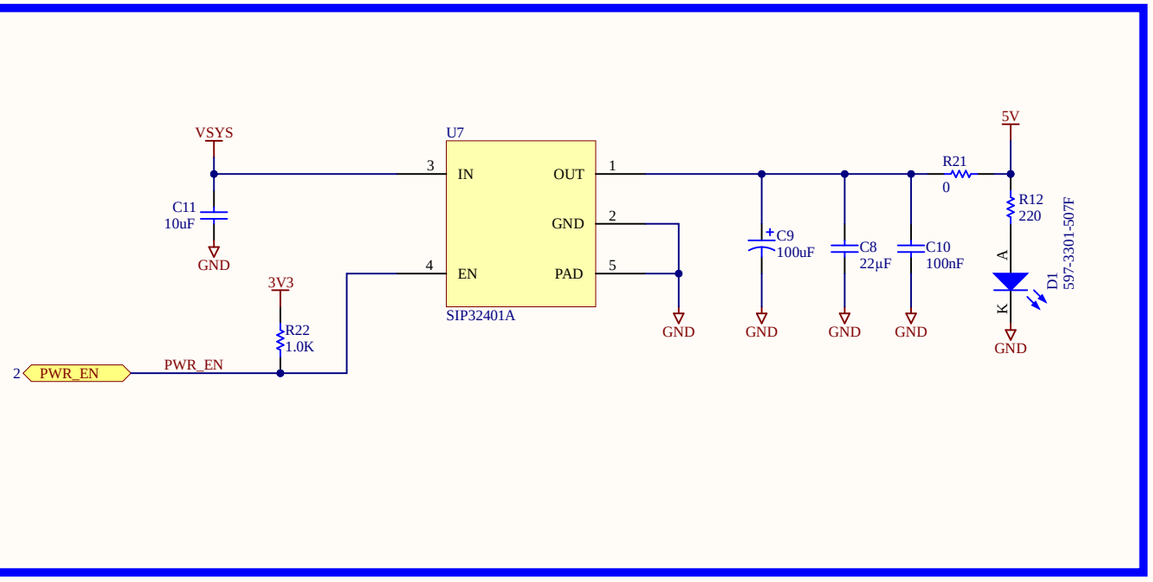
Power and Reset



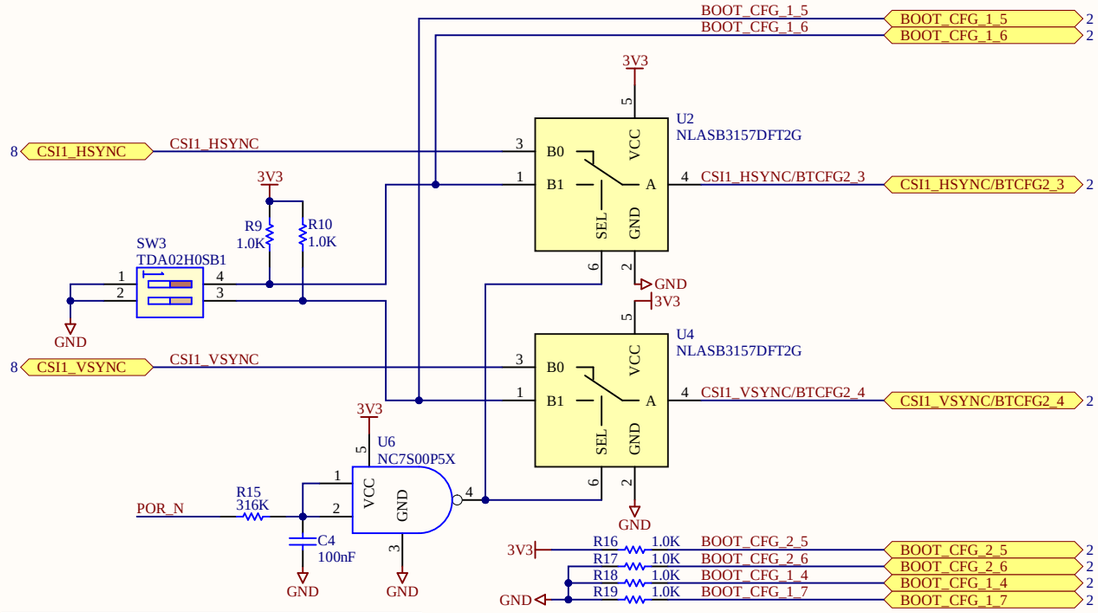
Over Voltage Protection



5V Load switch



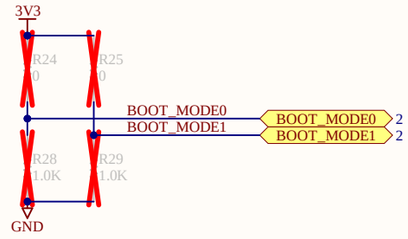
Boot Configuration



SW3_1/4	SW3_2/3	Description
Open	Open	Boot from eMMC
Open	Close	Boot from microSD
Close	Open	Boot from SATA
Close	Close	Reserved

Boot Mode

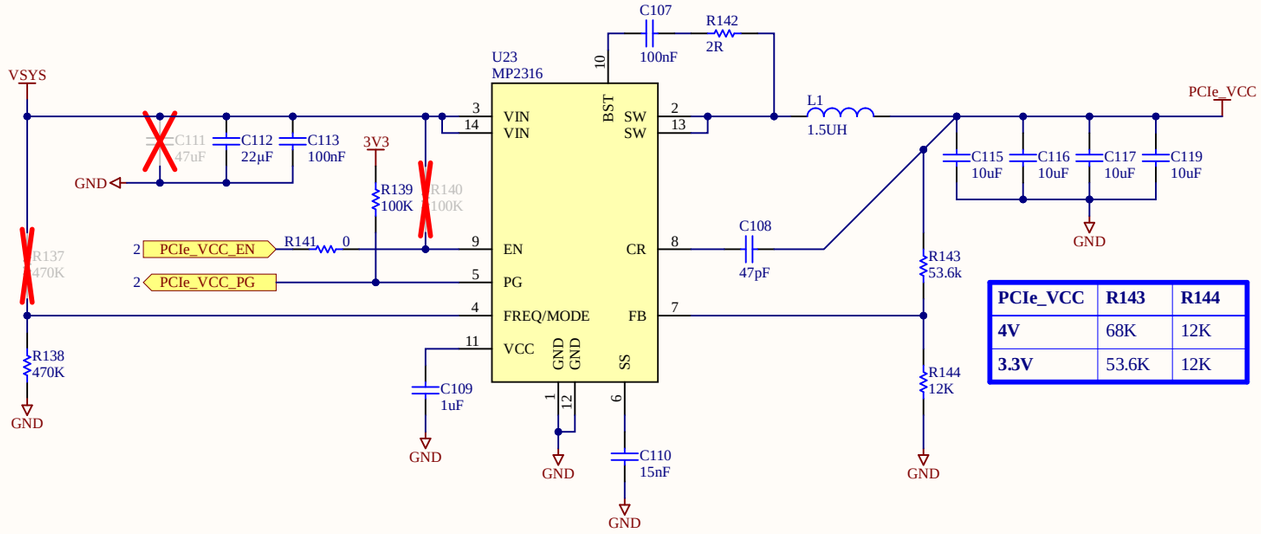
BOOT_MODE1	BOOT_MODE0	Description
0	0	Boot from Fuses
0	1	Serial Downloader
1	0	Boot from board settings
1	1	Reserved



Title: Power, Boot	
Designer: Daniel Alesanco	Sheet: 3 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

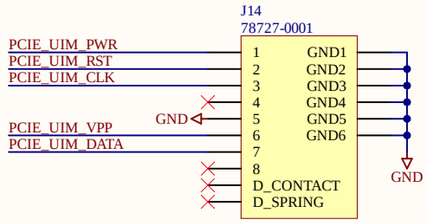
miniPCIe

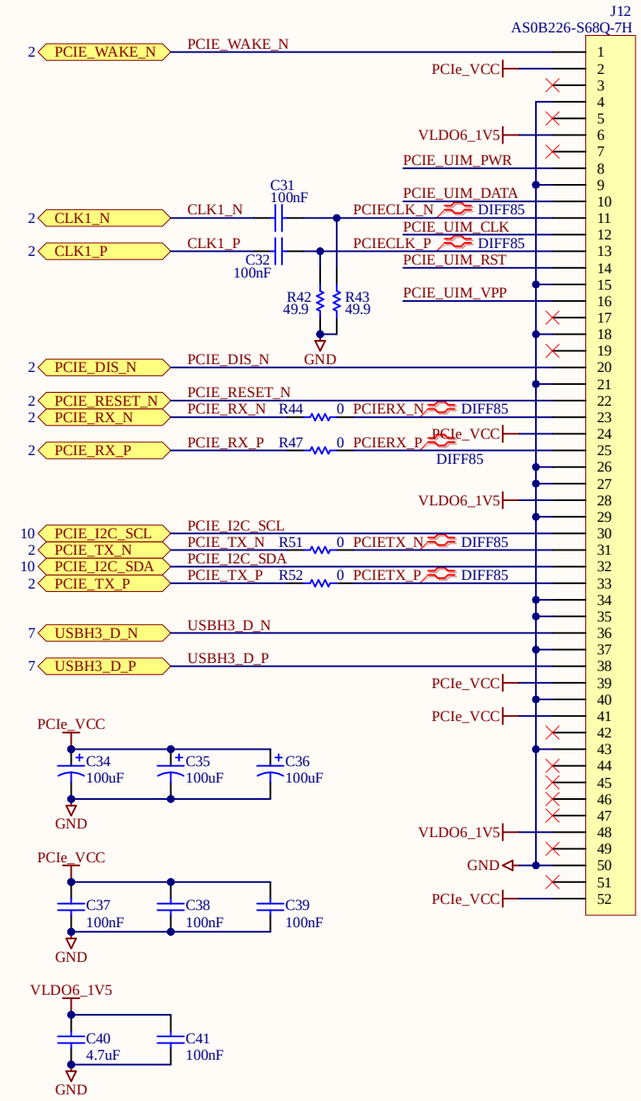
PCIe power supply



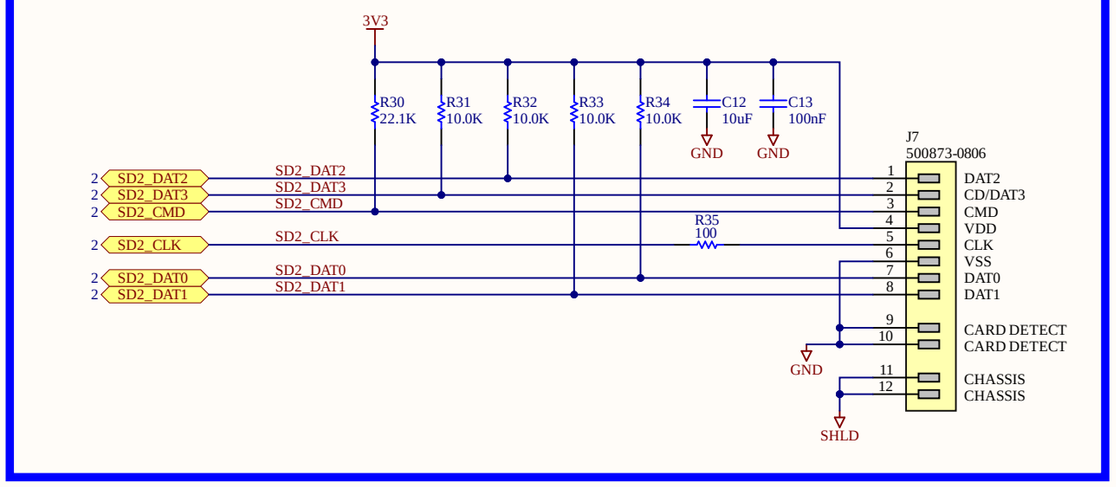
PCIe_VCC	R143	R144
4V	68K	12K
3.3V	53.6K	12K

micro SIM

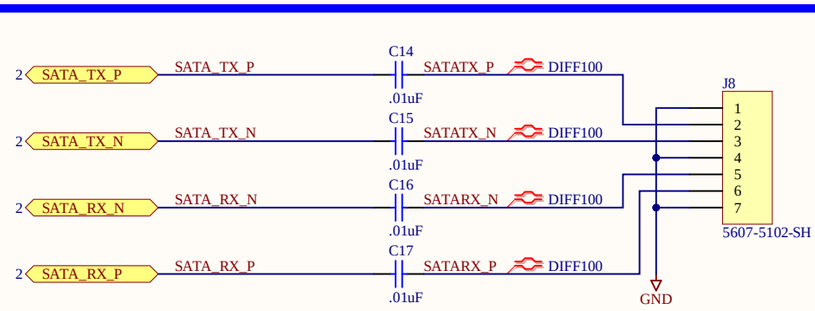




microSD

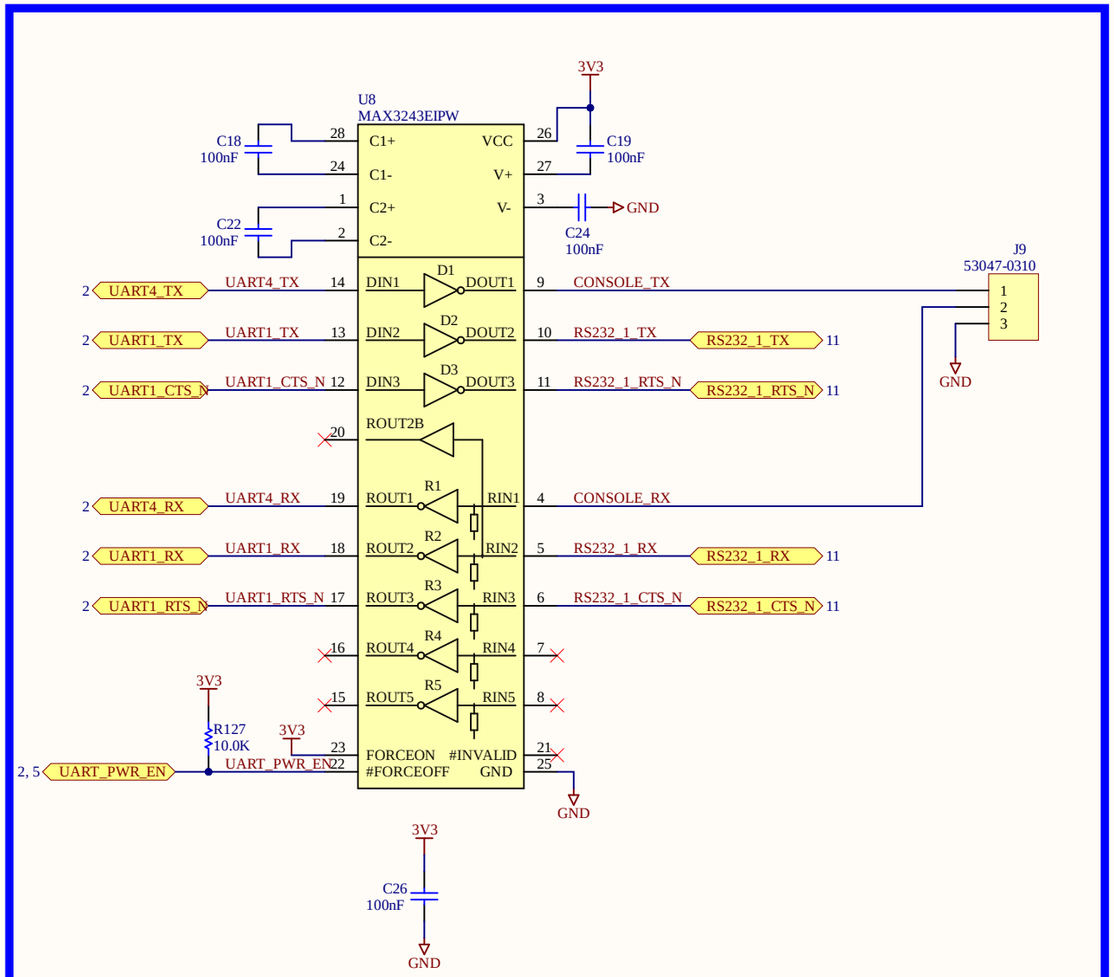


SATA

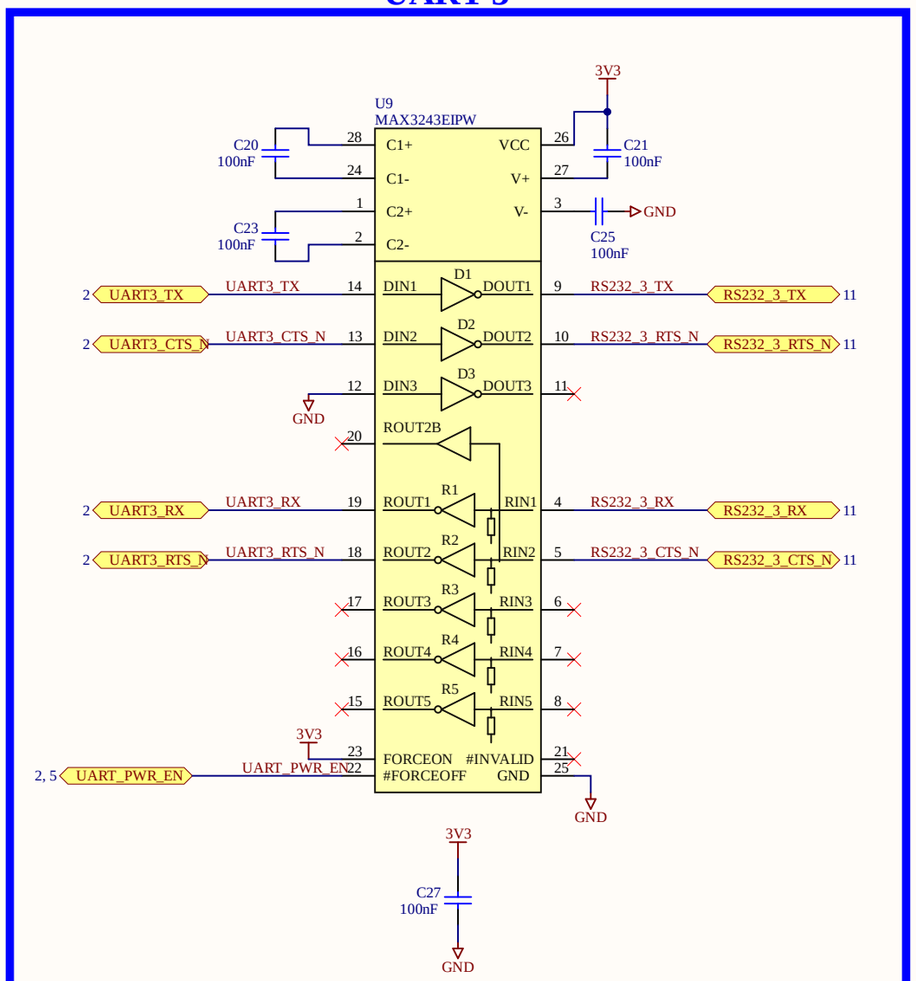


Title: SATA, MicroSD, Mini PCIe, MicroSIM	
Designer: Daniel Alesanco	Sheet: 4 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

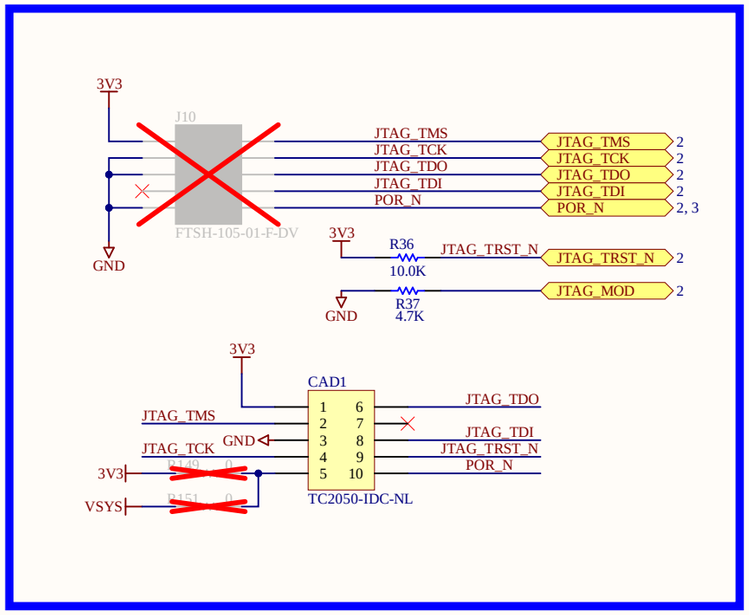
Console and UART1



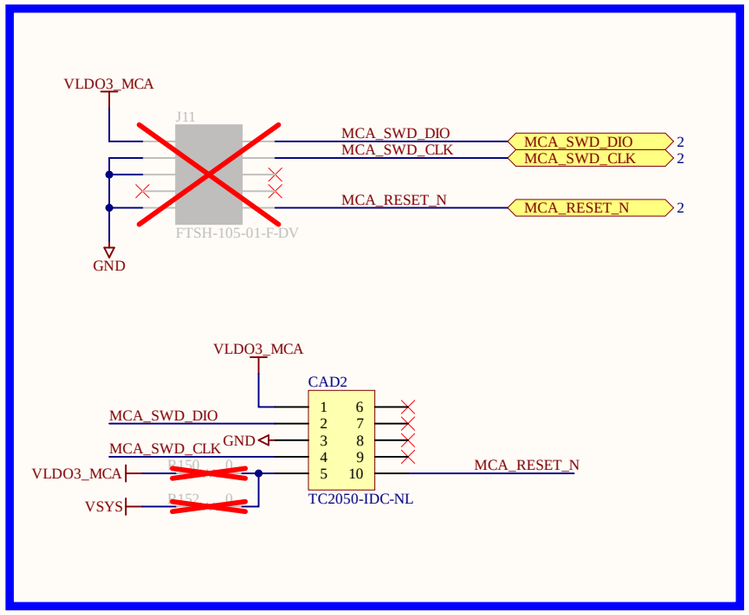
UART 3



JTAG

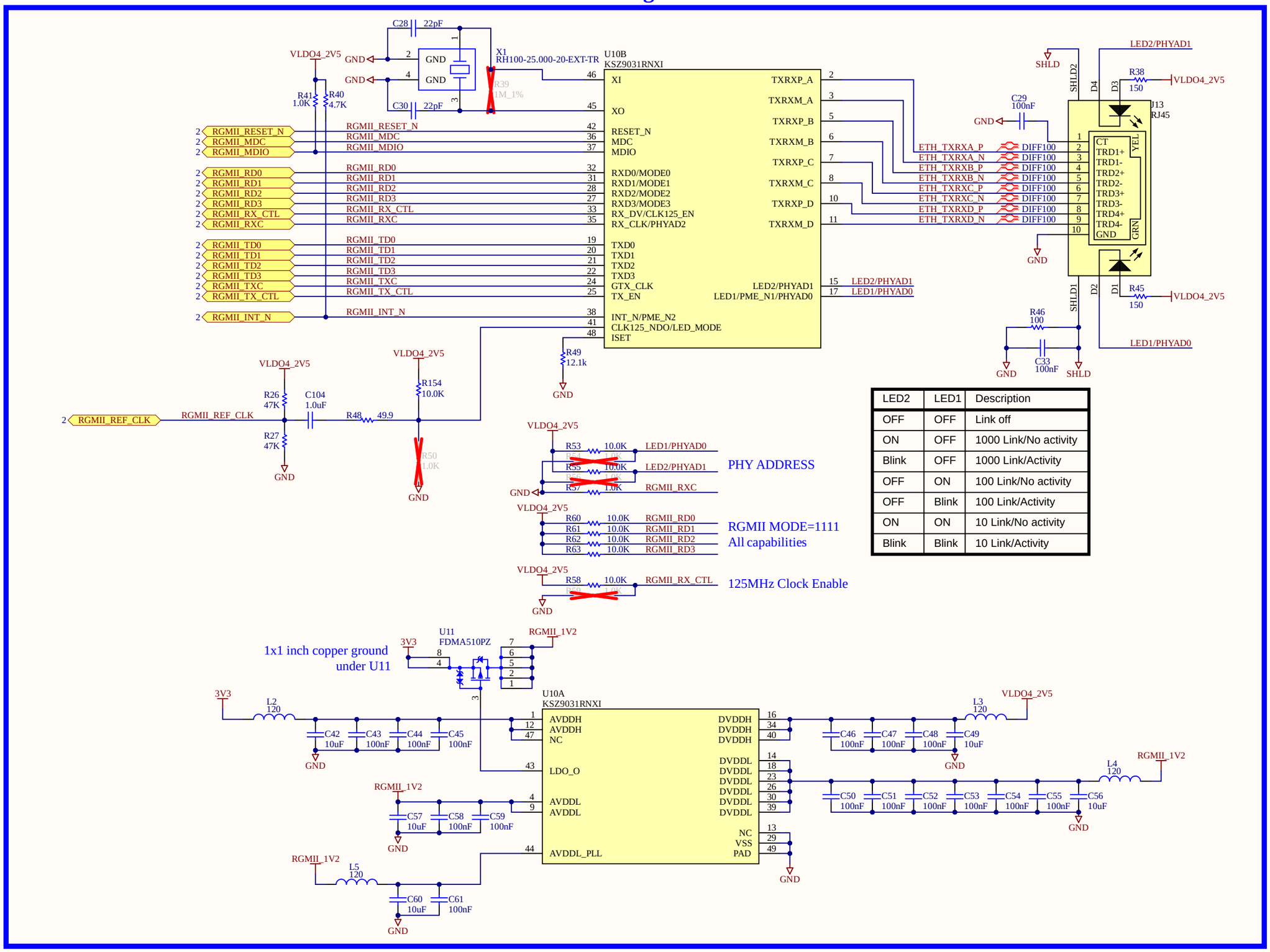


SWD



Title: JTAG, SWD, Console, UART	
Designer: Daniel Alesanco	Sheet: 5 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

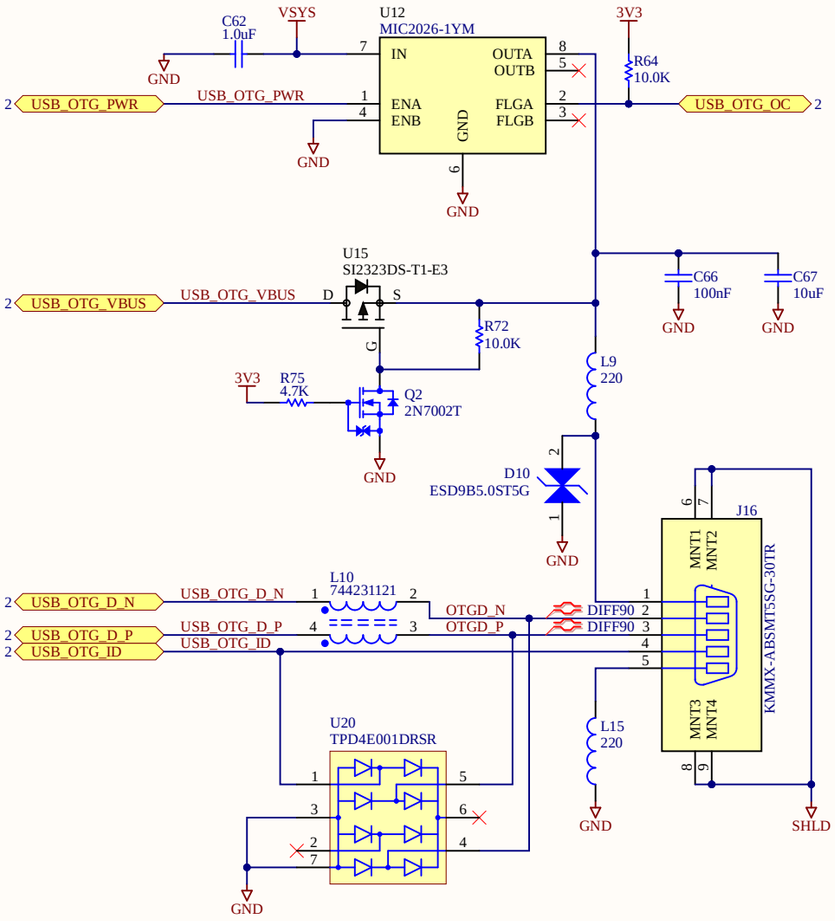
Gigabit Ethernet



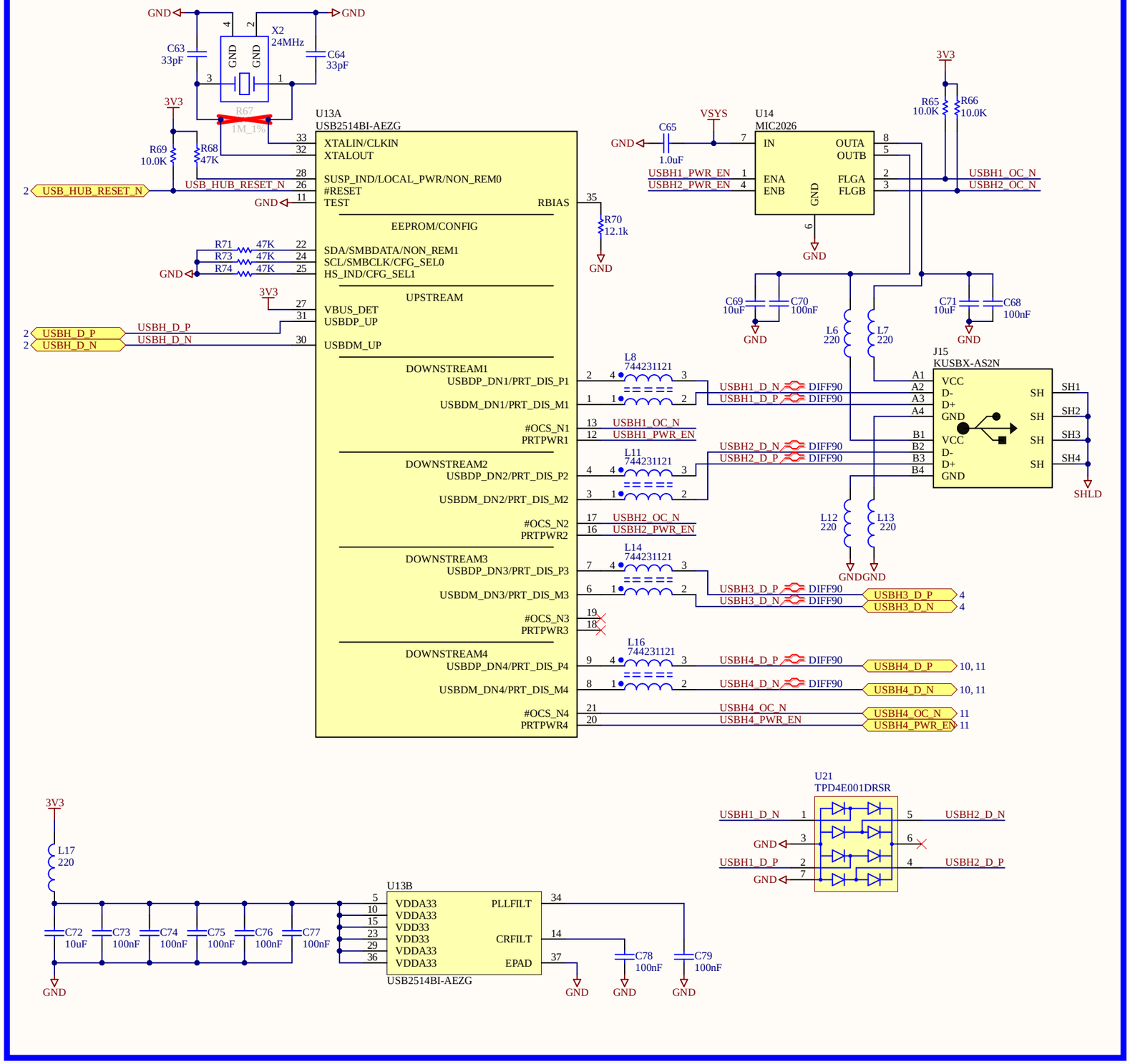
LED2	LED1	Description
OFF	OFF	Link off
ON	OFF	1000 Link/No activity
Blink	OFF	1000 Link/Activity
OFF	ON	100 Link/No activity
OFF	Blink	100 Link/Activity
ON	ON	10 Link/No activity
Blink	Blink	10 Link/Activity

Title: Gigabit Ethernet		
Designer: Daniel Alesanco	Sheet: 6 of 13	
Variant: 55002017-01	Rev: H	
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85		

USB_OTG

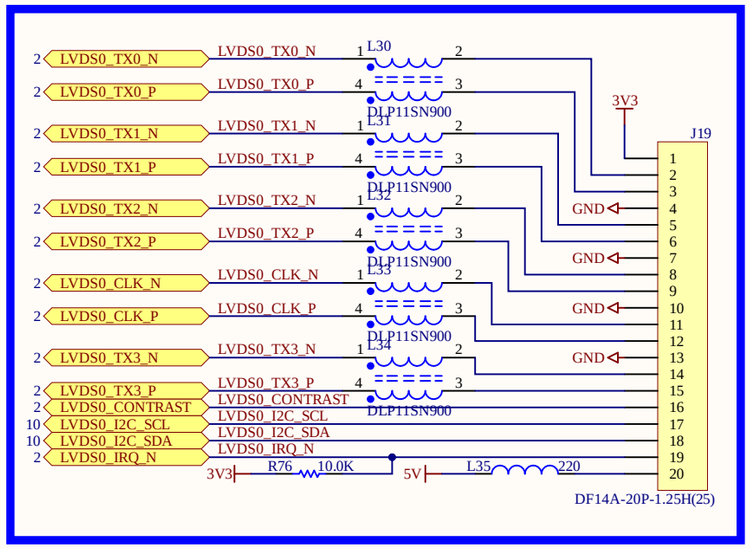


USB_HOST

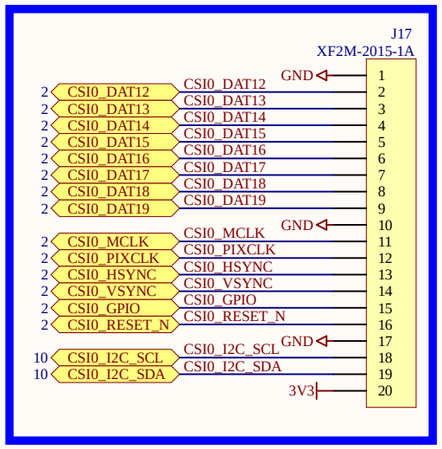


Title:	**USB OTG, USB Hub, USB Host**
Designer: Daniel Alesanco	Sheet: 7 of 13
Variant: 55002017-01	Rev: H
Description:	ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85

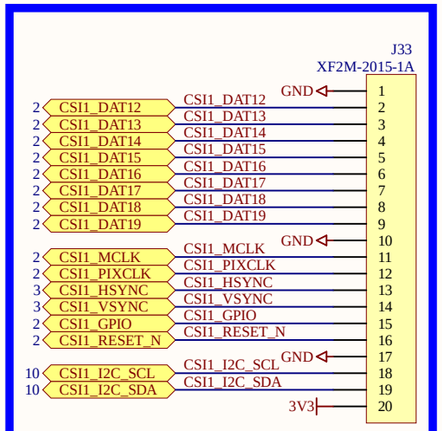
LVDS0



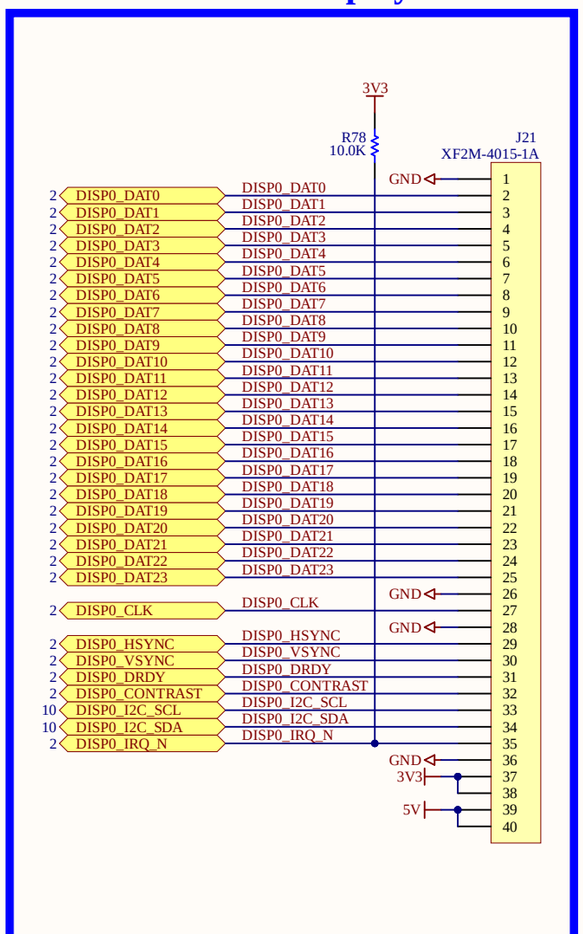
Parallel Camera 0



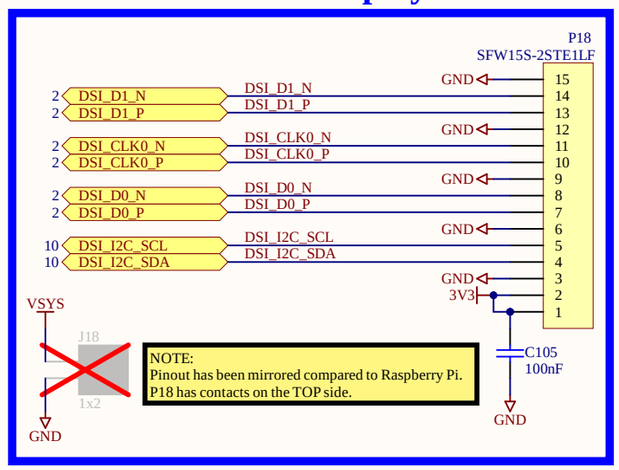
Parallel Camera 1



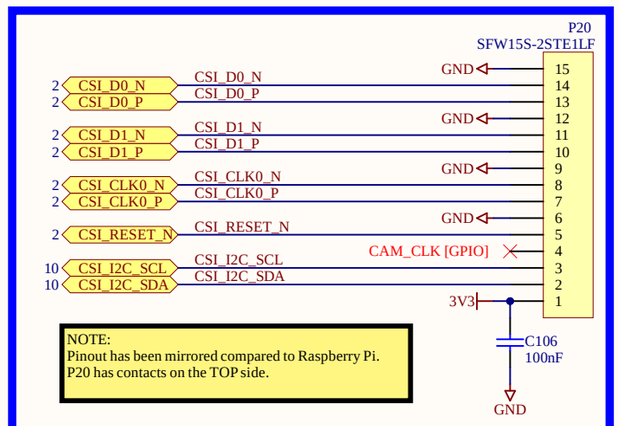
Parallel Display 0



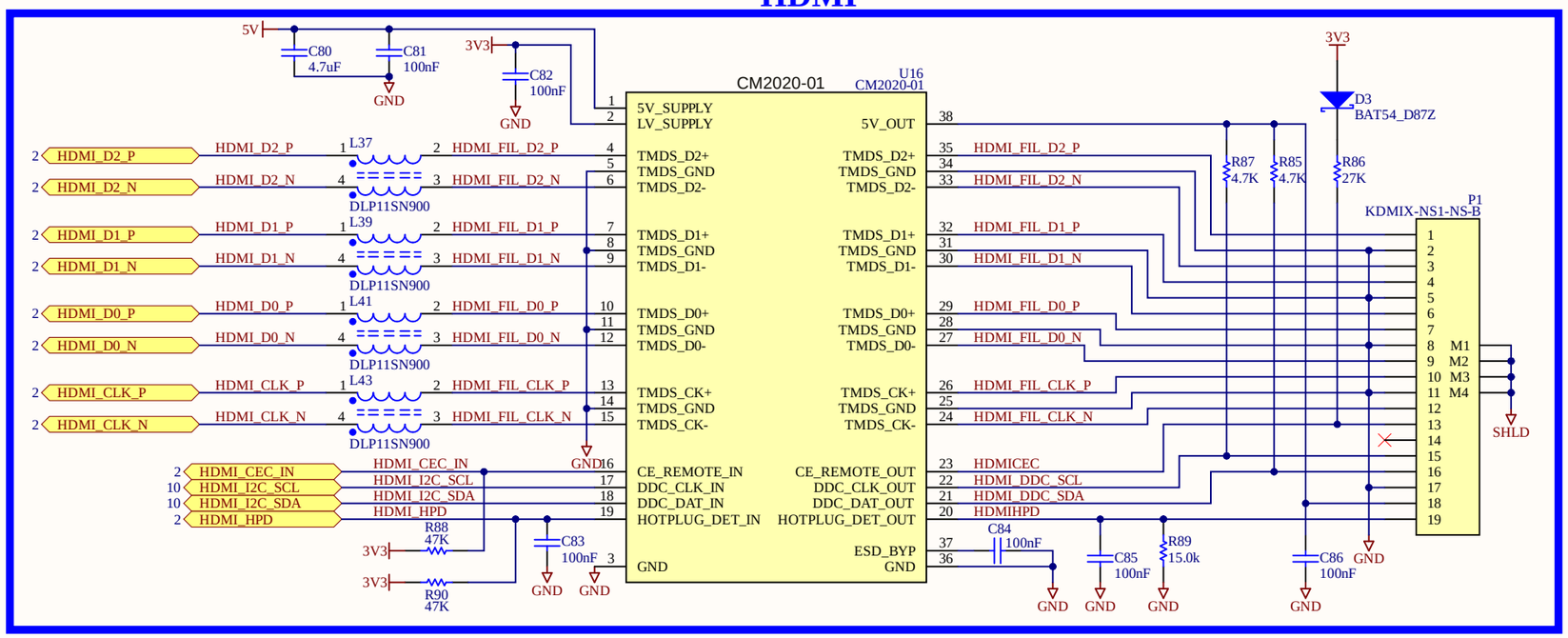
MIPI Display



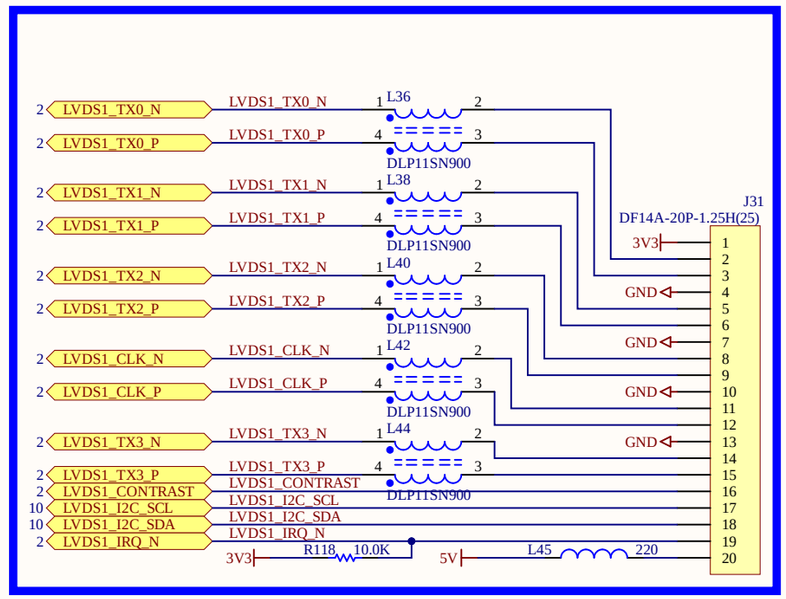
MIPI Camera



HDMI



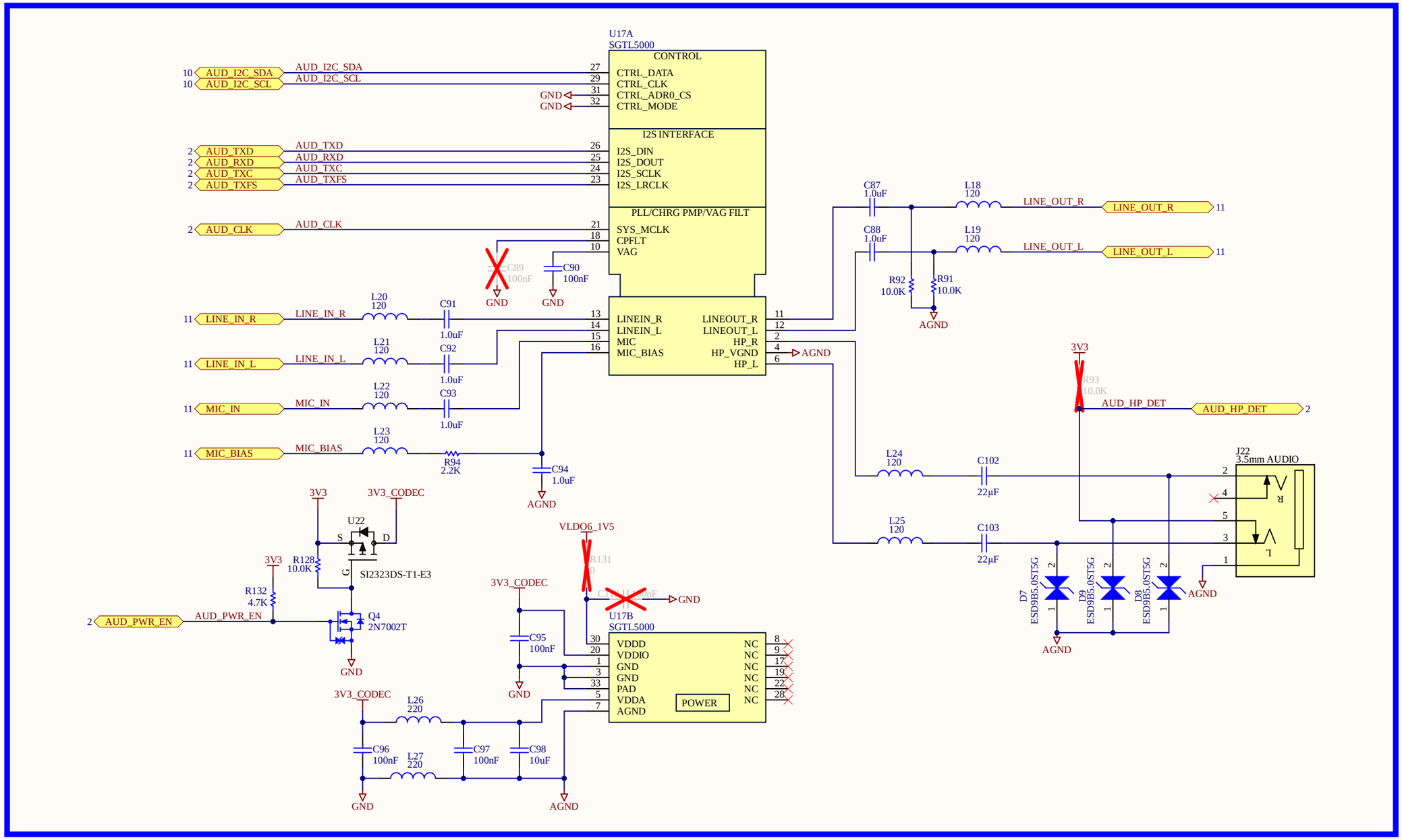
LVDS1



Title: Displays, HDMI and Cameras	
Designer: Daniel Alesanco	Sheet: 8 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

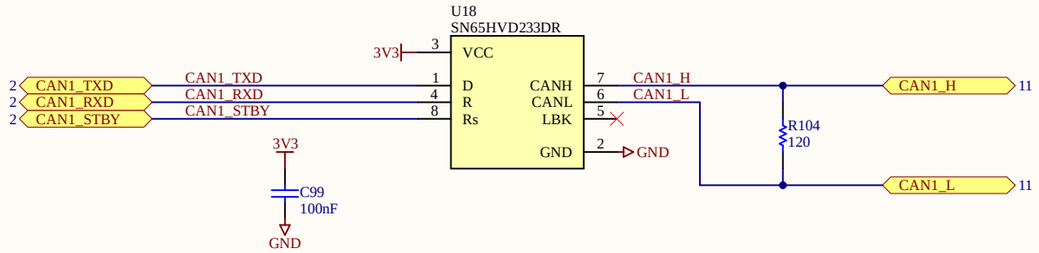
DIGI

AUDIO

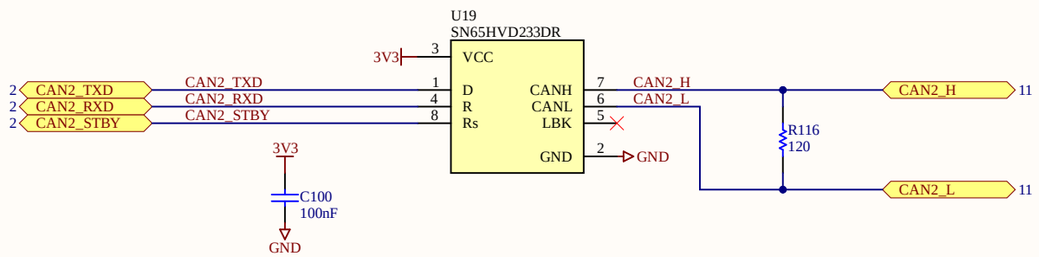


Title: Audio	
Designer: Daniel Alesanco	Sheet: 9 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	

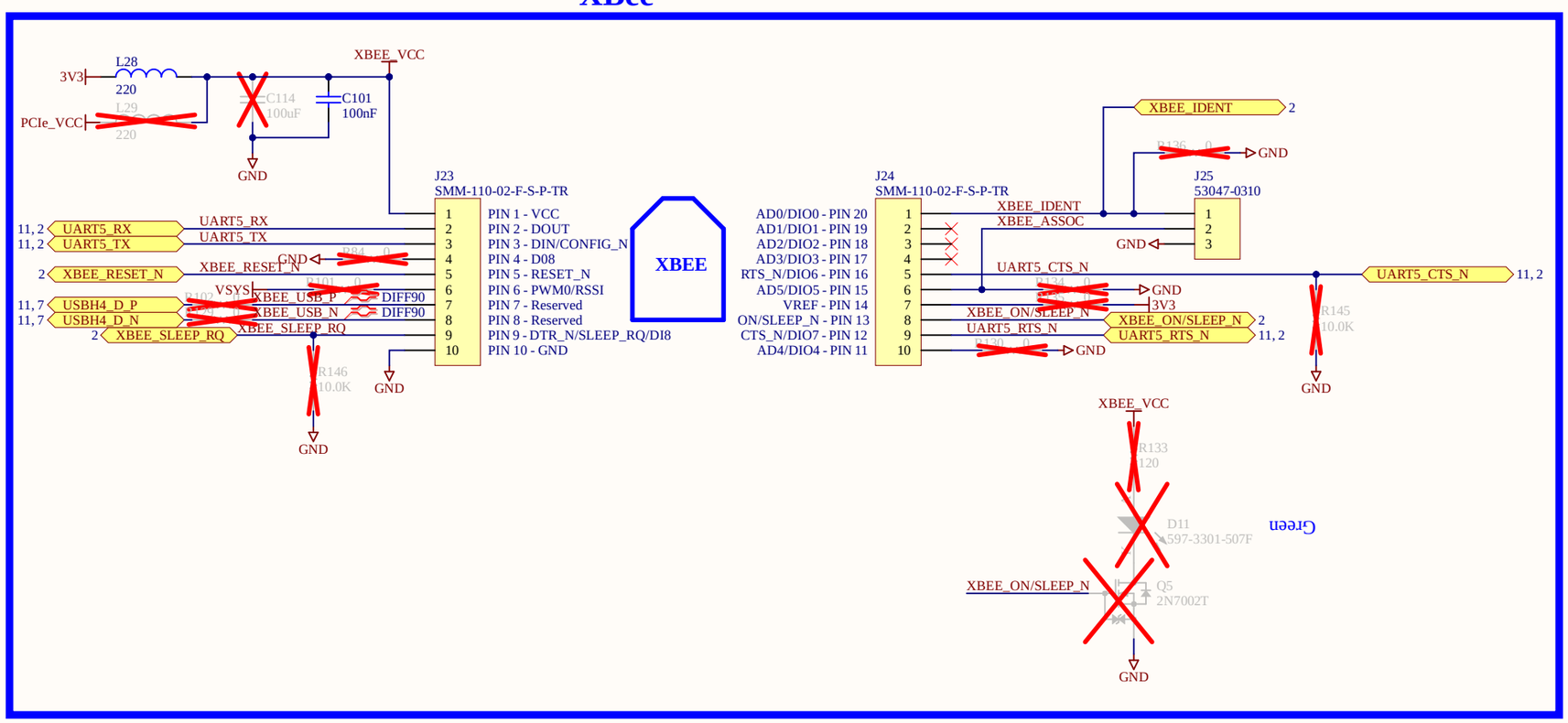
CAN1



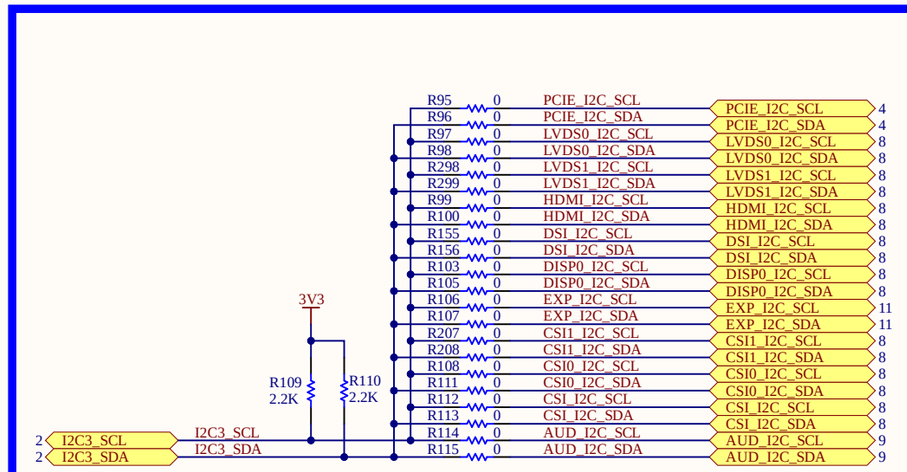
CAN2



XBee



I2C

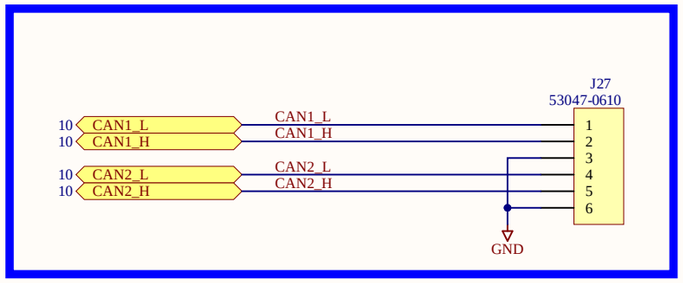


I2C3 (3.3V)

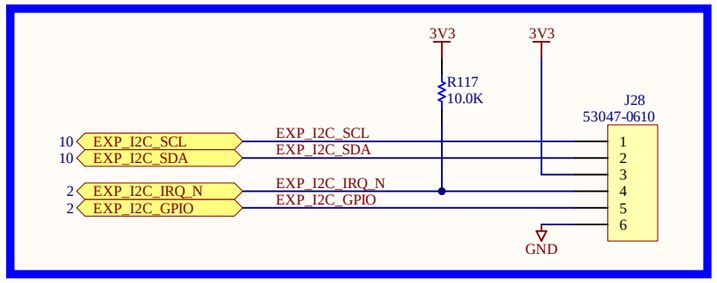
Peripheral	Speed (kbps)	Addresses (hex)	Default Address (hex)
PCIe Port	TBD	TBD	TBD
LVDS0 Touch	TBD	TBD	TBD
LVDS1 Touch	TBD	TBD	TBD
HDMI EDID	100	0x50	0x50
MIPI Display	TBD	TBD	TBD
LCD Touch	TBD	TBD	TBD
Expansion Port	TBD	TBD	TBD
CSI0 Camera	TBD	TBD	TBD
CSI1 Camera	TBD	TBD	TBD
MIPI Camera	TBD	TBD	TBD
Audio CODEC	400	Write : 0x14 Read : 0x15	Write : 0x14 Read : 0x15

Title: CAN, I2C, XBee		
Designer: Daniel Alesanco	Sheet: 10 of 13	
Variant: 55002017-01	Rev: H	
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85		

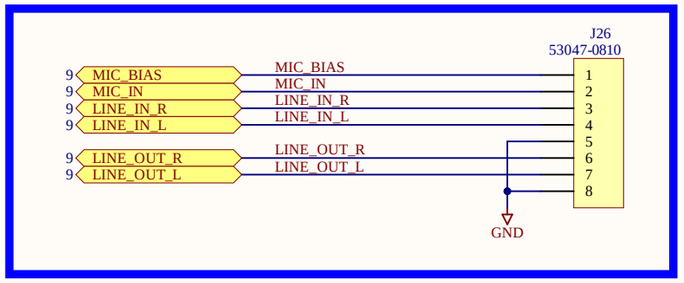
CAN



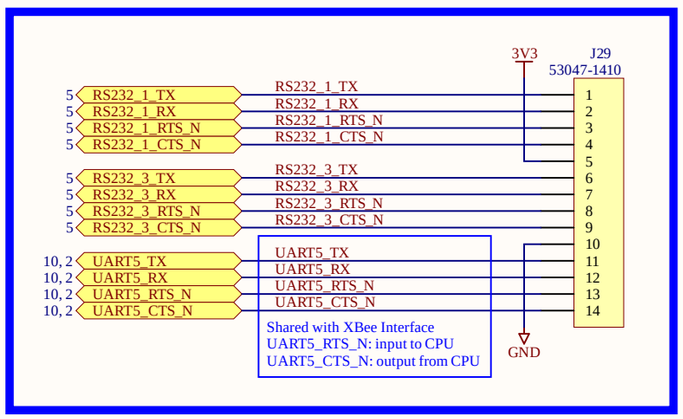
I2C



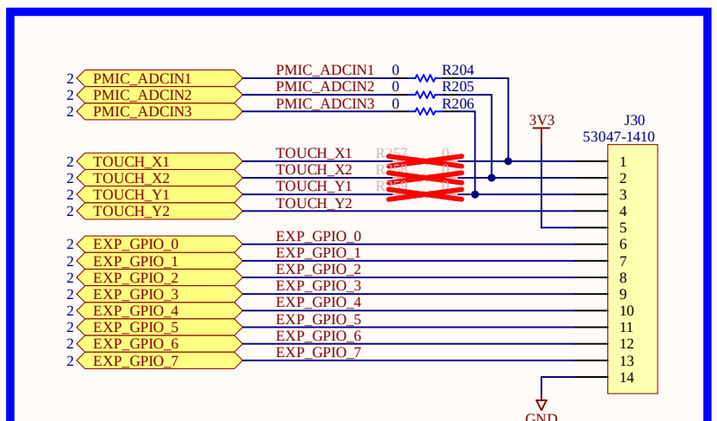
AUDIO



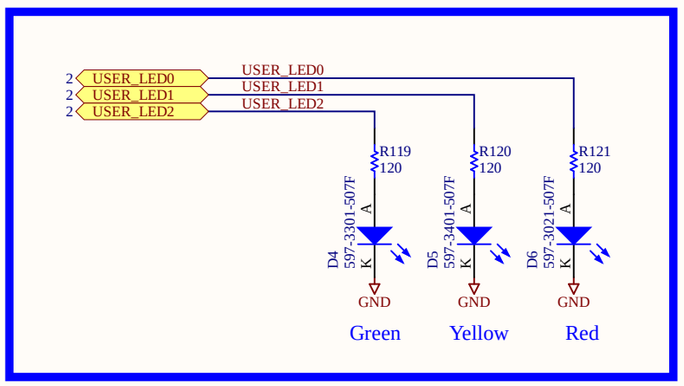
UART



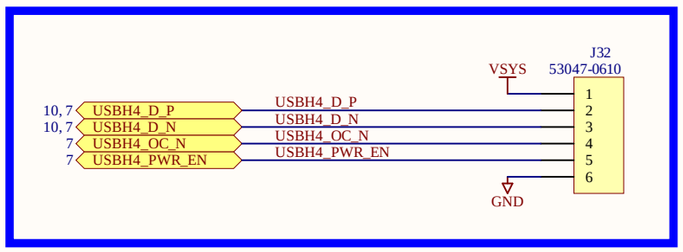
GPIO



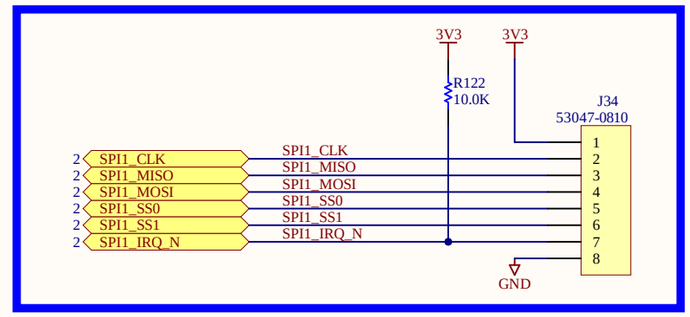
USER LEDs



USB



SPI



Title: Expansion Connectors, User LEDs		
Designer: Daniel Alesanco	Sheet: 11 of 13	
Variant: 55002017-01	Rev: H	
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85		

System Power Rails

Voltage (V)	Supply Name	Block	Generated by	Current Capability (mA)	Notes
5.0	VIN	Overvoltage Prot	External DC supply	3000	
	5V	USB Host	SIP32401A	2400	
		USB OTG			
		HDMI			
		LVDS0			
		LVDS1			
		MIPI DSI			
		MIPI CSI			
		LCD			
3.3	3V3	EMMC	DA9063 BUCKPERI	1500	
		microSD			
		UART			
		JTAG			
		ETHERNET			NVCC_CSI
		miniPCIE			NVCC_LCD
		AUDIO			NVCC_EIM0/1/2
		CAN1/2			NVCC_GPIO
		XBee			NVCC_JTAG
		I2C			NVCC_NANDF
		LVDS			NVCC_SD1/2/3
		MIPI DSI			
		Parallel Camera			
		Parallel Display			
		HDMI			
	VLDO3_MCA	MCA	DA9063 LDO3	200	MCA_VREFH
3.0	VCC_LICELL	RTC	External Coin Cell		
2.5	VLDO4_2V5	ETHERNET	DA9063 LDO4	200	NVCC_ENET
					NVCC_RGMII
1.5	VLDO6_1V5	miniPCIE	DA9063 LDO6	200	
3.3 - 4	PCIe_VCC	miniPCIE	MP2316	3000	

GPIO Table

Signal Name	GPIO	Use
CSI0_DATA_EN	GPIO_5_20	CSI0_GPIO
EIM_A25	GPIO_5_2	CSI1_GPIO
EIM_CS0	GPIO_2_23	SPI1_IRQ_N
EIM_CS1	GPIO_2_24	EXP_GPIO_3
EIM_D23	GPIO_3_23	LVDS1_PEN_IRQ_N
EIM_D27	GPIO_3_27	XBEE_ON/SLEEP_N
EIM_D28	GPIO_3_28	XBEE_RESET_N
EIM_D29	GPIO_3_29	XBEE_SLEEP_RQ
EIM_DA10	GPIO_3_10	USB_HUB_RESET_N
EIM_DA15	GPIO_3_15	CSI1_RESET_N
EIM_EB0	GPIO_2_28	EXP_GPIO_4
EIM_EB1	GPIO_2_29	EXP_GPIO_5
EIM_LBA	GPIO_2_27	PCIe_VCC_PG
EIM_OE	GPIO_2_25	AUD_PWR_EN
EIM_RW	GPIO_2_26	UART_PWR_EN
EIM_WAIT	GPIO_5_0	CSI0_RESET_N
ENET_CRS_DV	GPIO_1_25	RGMII_RESET_N
ENET_TX_EN	GPIO_1_28	RGMII_INT_N
GPIO_2	GPIO_1_2	CAN1_STBY
GPIO_4	GPIO_1_4	PCIE_DIS_N
GPIO_5	GPIO_1_5	CAN2_STBY
GPIO_9	GPIO_1_9	BT_DISABLE_N
GPIO_16	GPIO_7_11	LVDS0_PEN_IRQ_N
GPIO_18	GPIO_7_13	EXP_GPIO_6
GPIO_19	GPIO_4_5	EXP_GPIO_7
NANDF_ALE	GPIO_6_8	XBEE_IDENT
NANDF_CS2	GPIO_6_15	EXP_I2C_IRQ_N
NANDF_CS3	GPIO_6_16	EXP_I2C_GPIO
NANDF_D0	GPIO_2_0	AUD_HP_DET
NANDF_D1	GPIO_2_1	DISP_IRQ
NANDF_D2	GPIO_2_2	USER_LED0
NANDF_D3	GPIO_2_3	USER_LED1
NANDF_D4	GPIO_2_4	USER_LED2
NANDF_D5	GPIO_2_5	EXT_GPIO_0
NANDF_D6	GPIO_2_6	EXT_GPIO_1
NANDF_D7	GPIO_2_7	EXT_GPIO_2
NANDF_RB0	GPIO_6_10	PCIe_VCC_EN
SD3_DAT2	GPIO_7_6	CSI_RESET_N
SD3_DAT3	GPIO_7_7	PCIE_WAKE_N
SD3_RST	GPIO_7_8	PCIE_RESET_N
PMIC_GPIO7	PMIC_GPIO7	PWR_EN

Format: DD/MM/YYYY

13/03/2018 - ConnectCore i.MX6QP System Board Computer
* Revision: A - NPRO005261

12/02/2019 - ConnectCore i.MX6QP System Board Computer
* Revision: B - ECO009729
- Depopulate R93.
- Replace J13 from 18000677 to 18000732.
- Replace C63 and C64 from 14050738 to 14050400.

30/10/2019 - ConnectCore i.MX6QP System Board Computer
* Revision: C - ECO-010502
- PMIC OTP settings change on the ConnectCore 6P SoM.
- ConnectCore 6P SoM variant change: U1 replace 50001964-01 by 50001964-02.

06/09/2021 - ConnectCore i.MX6QP System Board Computer
* Revision: D - ECO-011539
- Move to next revision with no BOM change.

22/09/2021 - ConnectCore i.MX6QP System Board Computer
* Revision: E - ECO-011464
- Move to next revision with no BOM change. MCA circuitry has been removed from the ConnectCore 6P SoM.

20/01/2022 - ConnectCore i.MX6QP System Board Computer
* 55002017-02 Revision: 1P - NPRO-006077
- Release to 1P without BOM changes.

27/01/2022 - ConnectCore i.MX6QP System Board Computer
* 55002017-01 Revision: F - ECO-011769
- Release to rev:F without BOM changes.

03/02/2022 - ConnectCore i.MX6QP System Board Computer
* 55002017-02 Revision: A - ECO-011782
- Release to revA without BOM changes.

03/02/2022 - ConnectCore i.MX6N System Board Computer
* 55002017-04 Revision: 1P - NPRO-006131
- Initial release to rev 1P.

05/18/2022 - ConnectCore i.MX6N System Board Computer
* 55002017-04 Revision: A - ECO-011951
- Release to rev A without BOM changes.

15/09/2022 - ConnectCore i.MX6N System Board Computer
* 55002017-01/-02/-04 - ECO-012123
- Release to revC without BOM changes.

25/07/2023 - ConnectCore for i.MX6P module / ConnectCore for i.MX6N module
* ECO-012679:
- 55002017-01 to revH without changes.
- 55002017-02 to revD without changes.
- 55002017-04 to revD without changes.

LBL1
LABEL
28000351_LABEL

H1 H2 H3 H4
1 1 1 1
125mil 125mil 125mil 125mil

TXT1
LABEL
TEXT
95017001

Title: History	
Designer: Daniel Alesanco	Sheet: 13 of 13
Variant: 55002017-01	Rev: H
Description: ConnectCore for i.MX6QP SBC - 8GB FL/2GB QC 1GHz, -40-+85	