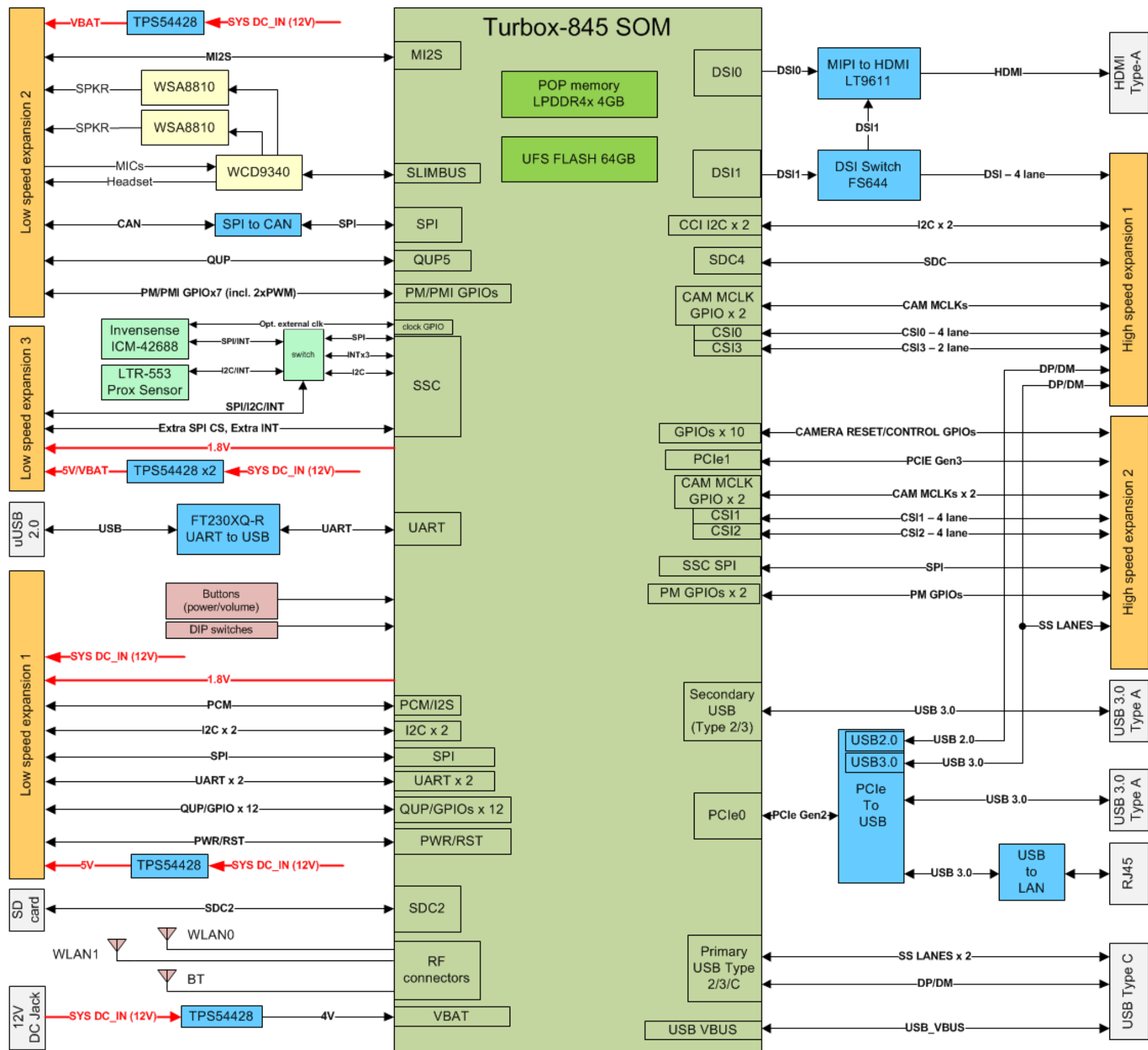


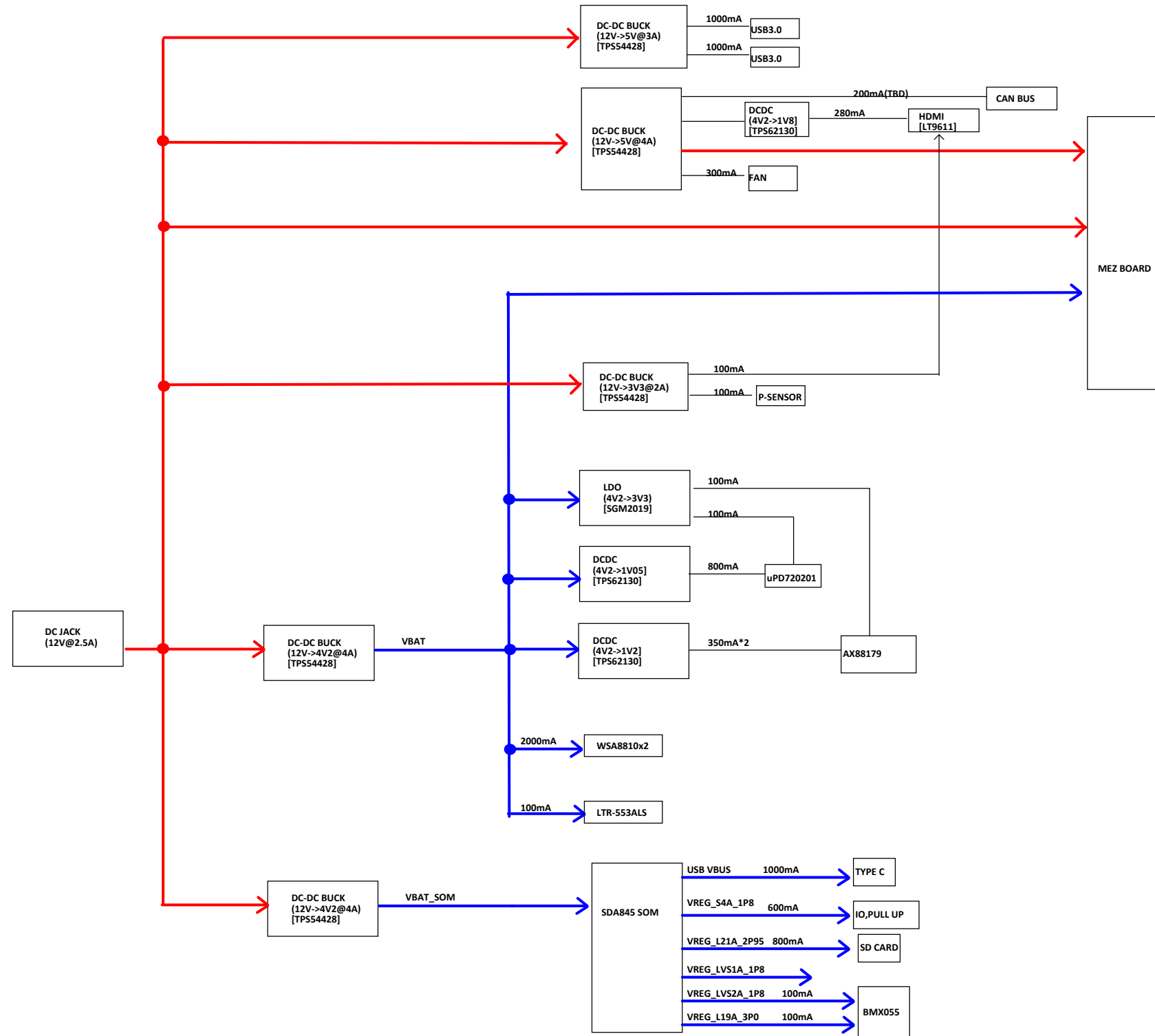
Sheet #	Content	Sheet #	Content
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04.	Power tree		
05.	GPIOs Map		
06.	Board to Board		
07.	DC JACK/POWER SWITCH		
08.	DC3V3 & 5V		
09.	WCD Codec & Audio PA		
10.	DSI->HDMI output		
11.	Debug_UART2USB		
12.	Sensor		
13.	T-card &UI		
14.	Wifi/bt antenna		
15.	PCIE0 TO USB		
16.	USBSS TO LAN		
17.	SPI TO CAN		
18.	USB TYPEC &USB SS		
19.	96Boards LS conn		
20.	96Boards HS conn		

Revision History

REV	DESCRIPTION
V01	EVT 1.0 Initial release
V02	1.page07:add mesurement sense resistors; 2.page12:add sensor icm-42688; 3.page13:change dip switch to 6pins; 4.page16:change usb2lan rom to smaller size; 5.page17:change CAN transceiver and translator to samller size; 6.page20:update the LS1 pin35, LS2 pin6/8 net;



POWER TREE



GPIO Configuration For 845 96Boards

GPIO_0	GPIO0_CAN_SPI_MISO	GPIO_41	GPIO41_UART0_CTS [LS1] *	GPIO_82	GPIO82_PCM_DI [LS1]
GPIO_1	GPIO1_CAN_SPI_MOSI	GPIO_42	GPIO42_UART0_RTS [LS1] *	GPIO_83	GPIO83_PCM_DO [LS1]
GPIO_2	GPIO2_CAN_SPI_CLK	GPIO_43	GPIO43_UART0_TXD [LS1] *	GPIO_84	GPIO84_HDMI_IRQ *
GPIO_3	GPIO3_CAN_SPI_CS	GPIO_44	GPIO44_UART0_RXD [LS1] *	GPIO_85	GPIO85_QUP5 [LS2] *
GPIO_4	GPIO4_DEBUG_UART_TX	GPIO_45	{BT_UART_RFR_N}	GPIO_86	GPIO86_QUP5 [LS2] *
GPIO_5	GPIO5_DEBUG_UART_RX	GPIO_46	{BT_UART_CTS_N}	GPIO_87	GPIO87_QUP5 [LS2] *
GPIO_6	GPIO6_I2C_SDA [LS1] *	GPIO_47	{BT_UART_RX}	GPIO_88	GPIO88_QUP5 [LS2] *
GPIO_7	GPIO7_I2C_SCL [LS1] *	GPIO_48	{BT_UART_TX}	GPIO_89	GPIO89_HDMI_PWREN *
GPIO_8	GPIO8_CAM1_RST_N [LS1] *	GPIO_49	GPIO49_QUP12 [LS1] *	GPIO_90	GPIO90_PCIE0_PWREN *
GPIO_9	GPIO9_CAM0_RST_N [LS1]	GPIO_50	GPIO50_QUP12 [LS1] *	GPIO_91	SDC4_CMD [HS1]
GPIO_10	GPIO10 [LS1] *	GPIO_51	GPIO51_QUP12 [LS1] *	GPIO_92	SDC4_DATA3 [HS1]
GPIO_11	GPIO11_PCIE1_WAKE_N [HS2] *	GPIO_52	GPIO52_QUP12 [LS1] *	GPIO_93	SDC4_CLK [HS1]
GPIO_12	GPIO12_CAM2_RST_N [HS2]	GPIO_53	CODEC_INT2_N	GPIO_94	SDC4_DATA2 [HS1]
GPIO_13	CAM0_MCLK [HS1]	GPIO_54	CODEC_INT1_N	GPIO_95	SDC4_DATA1 [HS1]
GPIO_14	CAM1_MCLK [HS2]	GPIO_55	GPIO55_HDMI_SDA	GPIO_96	SDC4_DATA0 [HS1]
GPIO_15	CAM2_MCLK [HS2]	GPIO_56	GPIO56_HDMI_SCL	GPIO_97	{NC}
GPIO_16	CAM3_MCLK [HS1]	GPIO_57	FORCE_USB_BOOT/MI2S3_MCLK *	GPIO_98	{NC}
GPIO_17	CCI_I2C_SDA0 [HS1]	GPIO_58	MI2S3_SCK *	GPIO_99	{NC}
GPIO_18	CCI_I2C_SCL0 [HS1]	GPIO_59	MI2S3_WS *	GPIO_100	{NC}
GPIO_19	CCI_I2C_SDA1 [HS1]	GPIO_60	MI2S3_DATA0 *	GPIO_101	{WDOG_DISABLE}
GPIO_20	CCI_I2C_SCL1 [HS1]	GPIO_61	MI2S3_DATA1 *	GPIO_102	GPIO102_PCIE1_RST_N [HS2] *
GPIO_21	GPIO21_CAM3_RST_N [HS2]	GPIO_62	MI2S3_DATA2 *	GPIO_103	GPIO103_PCIE1_CLK_REQ [HS2] *
GPIO_22	GPIO22_CAM0_STROBE_OUT [HS2]	GPIO_63	MI2S3_DATA3 *	GPIO_104	GPIO104_CAN_INT *
GPIO_23	GPIO23 [HS2] (CAM1_STROBE)	GPIO_64	CODEC_RST_N	GPIO_105	{NC}
GPIO_24	GPIO24_CAM2_SLM_IRQ [HS2] (CAM2_STROBE)	GPIO_65	CODEC_SPI_MISO	GPIO_106	{NC}
GPIO_25	GPIO25_LAN_RST	GPIO_66	CODEC_SPI_MOSI	GPIO_107	{NC}
GPIO_26	GPIO26_CAM0_VSYNC_OUT [LS1] (CAM0_PWDN)	GPIO_67	CODEC_SPI_CLK	GPIO_108	{NC}
GPIO_27	GPIO27_SPI0_MISO [LS1] *	GPIO_68	CODEC_SPI_CS_N	GPIO_109	{NC}
GPIO_28	GPIO28_SPI0_MOSI [LS1] *	GPIO_69	GPIO69_CAM2_SLM_EN [HS2] (CAM2_PWDN)	GPIO_110	{NC}
GPIO_29	GPIO29_SPI0_SCLK [LS1] *	GPIO_70	CODEC_SLIMBUS_CLK	GPIO_111	{NC}
GPIO_30	GPIO30_SPI0_CS [LS1] *	GPIO_71	CODEC_SLIMBUS_DATA0	GPIO_112	{NC}
GPIO_31	GPIO31_I2C1_SDA [LS1] *	GPIO_72	CODEC_SLIMBUS_DATA1	GPIO_113	{NC}
GPIO_32	GPIO32_I2C1_SCL [LS1] *	GPIO_73	{BT_FM_SLIMBUS_DATA}	GPIO_114	{NC}
GPIO_33	GPIO33_I2C0_SDA [LS1] *	GPIO_74	{BT_FM_SLIMBUS_CLK}	GPIO_115	{NC}
GPIO_34	GPIO34_I2C0_SCL [LS1] *	GPIO_75	GPIO75_MI2S2_SCK [LS2]	GPIO_116	GPIO116_CAM3_VSYNC_OUT [HS2] * (CAM3_PWDN)
GPIO_35	GPIO35_PCIE0_RST_N *	GPIO_76	GPIO76_MI2S2_WS [LS2]	GPIO_117	GPIO117_ACCEL_INT
GPIO_36	GPIO36_PCIE0_CLK_REQ *	GPIO_77	GPIO77_MI2S2_DATA0 [LS2]	GPIO_118	GPIO118_GYRO_INT
GPIO_37	GPIO37_PCIE0_WAKE_N *	GPIO_78	GPIO78_MI2S2_DATA1 [LS2]	GPIO_119	GPIO119_MAG_DRDY_INT
GPIO_38	{CC_DIR}	GPIO_79	GPIO79_MI2S1_MCLK [LS1]	GPIO_120	GPIO120_DSI_SW_SEL *
GPIO_39	{NC}	GPIO_80	GPIO80_PCM_CLK [LS1]	GPIO_121	GPIO121_SBU_SW_OE *
GPIO_40	GPIO40_CAM1_AFE_GPO [LS1] (CAM1_PWDN)	GPIO_81	GPIO81_PCM_FS [LS1]	GPIO_122	{Reserved for internal SOM function}

GPIO_123	GPIO123_MAG_INT
GPIO_124	GPIO124_PS_INT
GPIO_125	GPIO125_SBU_SW_SEL *
GPIO_126	SD_CARD_DET_N
GPIO_127	{NC}
GPIO_128	GPIO128_HDMI_RST *
GPIO_129	GPIO129_LAN_WAKE0
GPIO_130	{NC}
GPIO_131	{NC}
GPIO_132	{NC}
GPIO_133	{NC}
GPIO_134	GPIO134_PCIE0_PONRST *
GPIO_135	{Reserved for internal SOM function}
GPIO_136	{NC}

GPIO_137	{NC}
GPIO_138	{NC}
GPIO_139	{NC}
GPIO_140	{NC}
GPIO_141	{NC}
GPIO_142	{NC}
GPIO_143	{NC}
GPIO_144	{WLAN_COEX_UART_TXD}
GPIO_145	{WLAN_COEX_UART_RXD}
GPIO_146	{NC}
GPIO_147	{NC}
GPIO_148	{NC}
GPIO_149	{NC}

PMI8998 GPIO Configuration For 845 96Boards

GPIO_1	{WLED_EXT_FET_CTRL_N}	GPIO_6	{NC}	GPIO_11	{NC}
GPIO_2	{NC}	GPIO_7	{LCD_MODE_SET}	GPIO_12	{NC}
GPIO_3	{NC}	GPIO_8	PMI_GPIO8 [LS2]	GPIO_13	{NC}
GPIO_4	{NC}	GPIO_9	{NC}	GPIO_14	{NC}
GPIO_5	PMI_GPIO5 [LS2]	GPIO_10	{NC}		

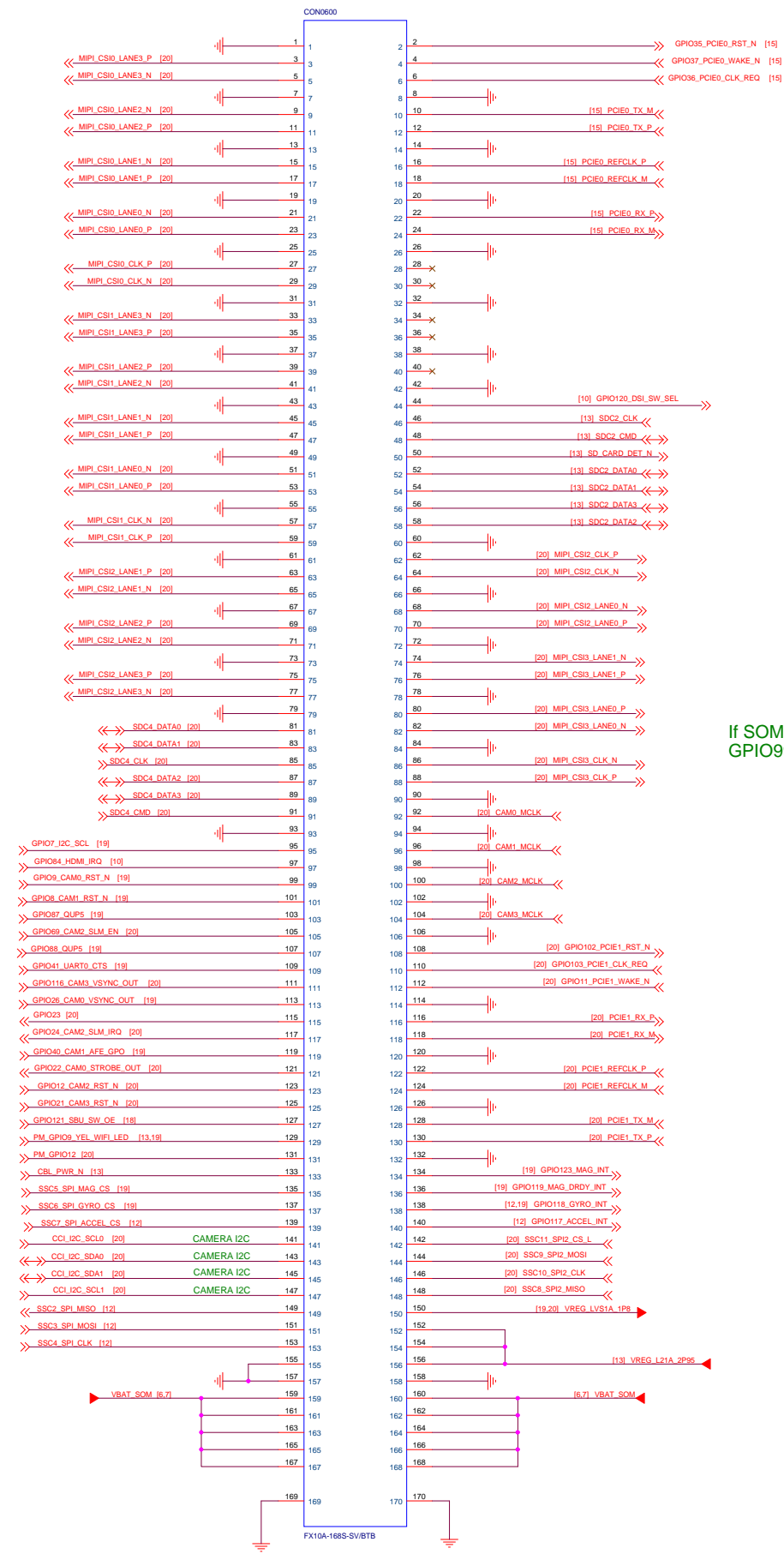
PM845 GPIO Configuration For 845 96Boards

GPIO_1	{NC}	GPIO_12	PM_GPIO12 [HS2] (CAM0_DVDD_EN)	GPIO_23	{WCSS_PWR_REQ}
GPIO_2	{NC}	GPIO_13	PM_GPIO13_GREEN_U4_LED [LS2]	GPIO_24	{PM845_GPIO24}
GPIO_3	{WLAN_SW_CTRL}	GPIO_14	{DIV_CLK2}	GPIO_25	{OPTION2}
GPIO_4	{NC}	GPIO_15	{NC}	GPIO_26	{PM845_SLB}
GPIO_5	PM_GPIO5_BLUE_BT_LED [LS2]	GPIO_16	{NC}		
GPIO_6	VOL_UP_N	GPIO_17	{NC}		
GPIO_7	{NC}	GPIO_18	{SMB_STAT}		
GPIO_8	PM_GPIO8 [LS2] (ADC_IN1)	GPIO_19	{NC}		
GPIO_9	PM_GPIO9_YEL_WIFI_LED [LS2]	GPIO_20	{NC}		
GPIO_10	PM_GPIO10 [HS2] (CAM0_AVDD_EN)	GPIO_21	PM_GPIO21 [LS2] (ADC_IN2)		
GPIO_11	{NC}	GPIO_22	{OPTION1}		

WCD9340 GPIO Configuration For 845 96Boards

GPIO_0	WSA1_EN *	GPIO_2	GND	GPIO_4	GND
GPIO_1	WSA0_EN	GPIO_3	GND		

* change from TurboX carrier
 [] signals with LS/HS designation go directly to mezz conn
 { } signals do not come out of 845SOM

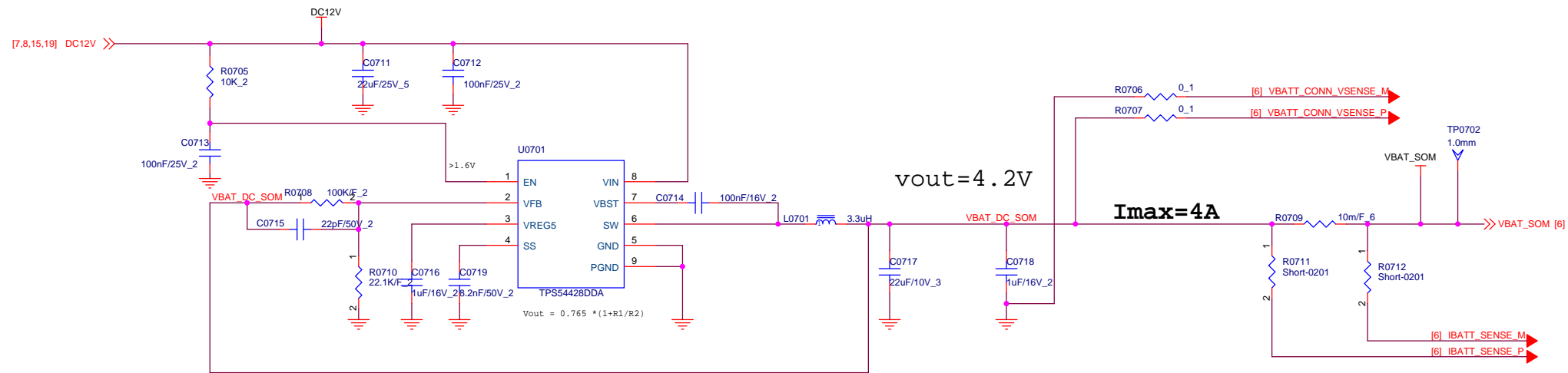
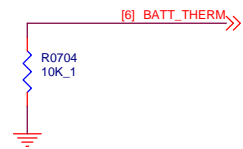
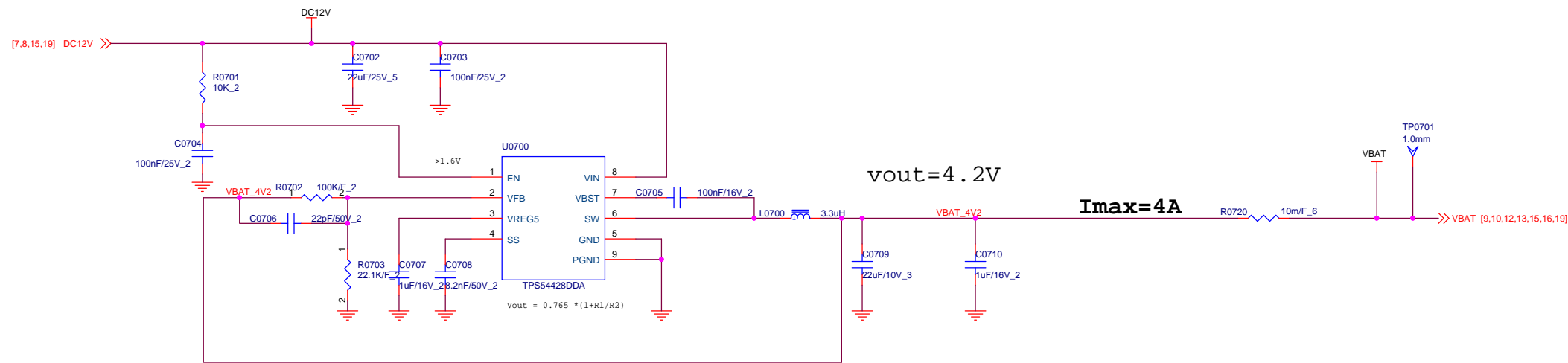
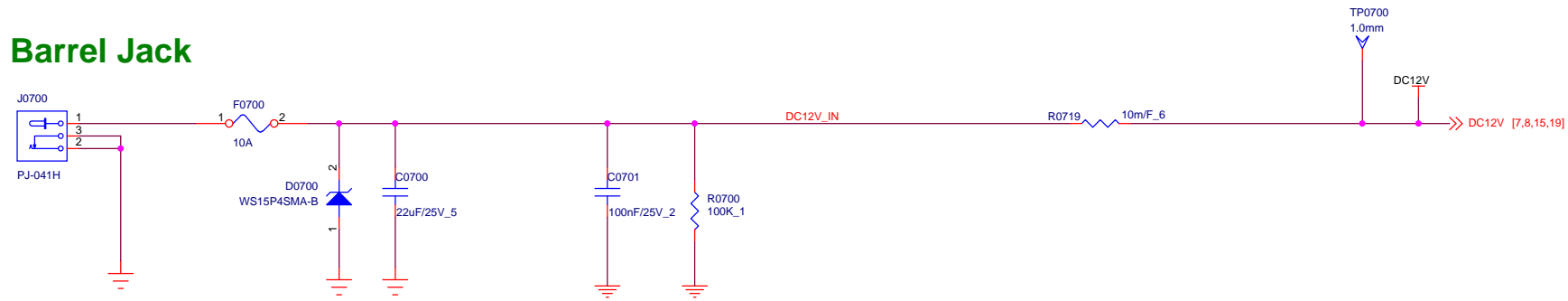


If SOM is spun, connect used P87 to GPIO9 boot_config1/fastboot0, SDC2 boot

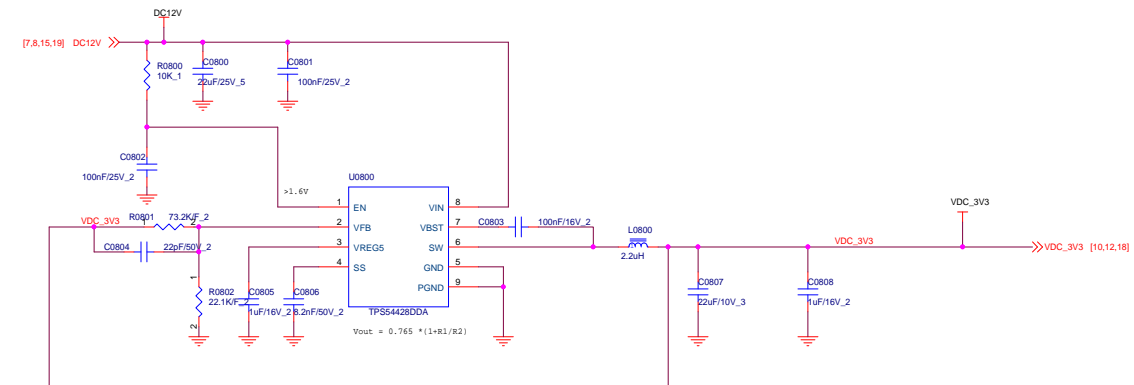
GPIO 78 is also a general purpose clock

845 SOM 2x 168pos Connectors

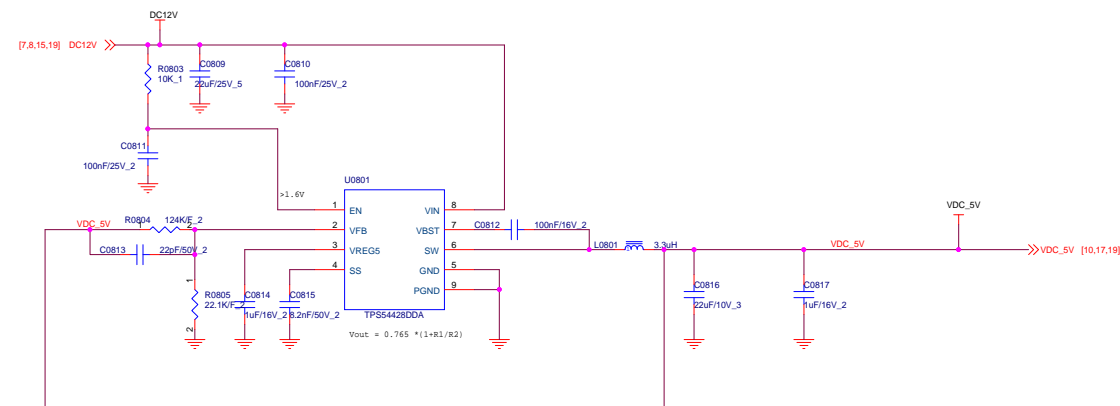
96Boards Barrel Jack



DCDC 3.3V (ALWAYS ON)

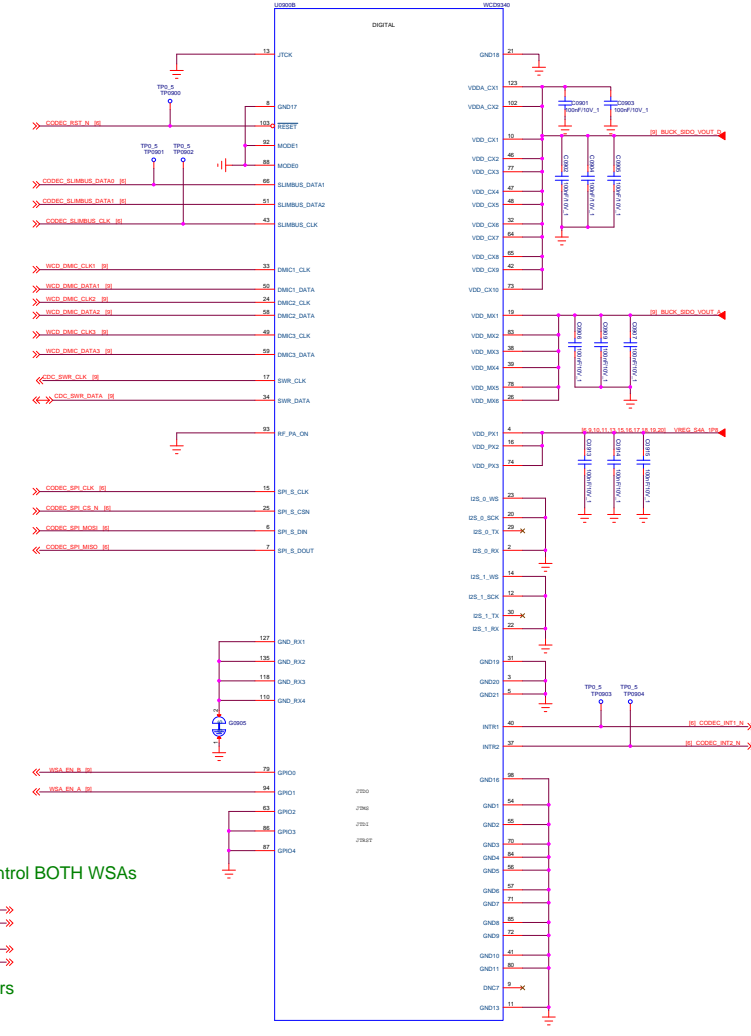
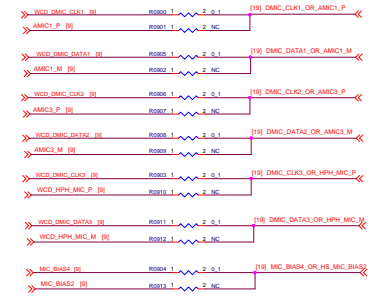
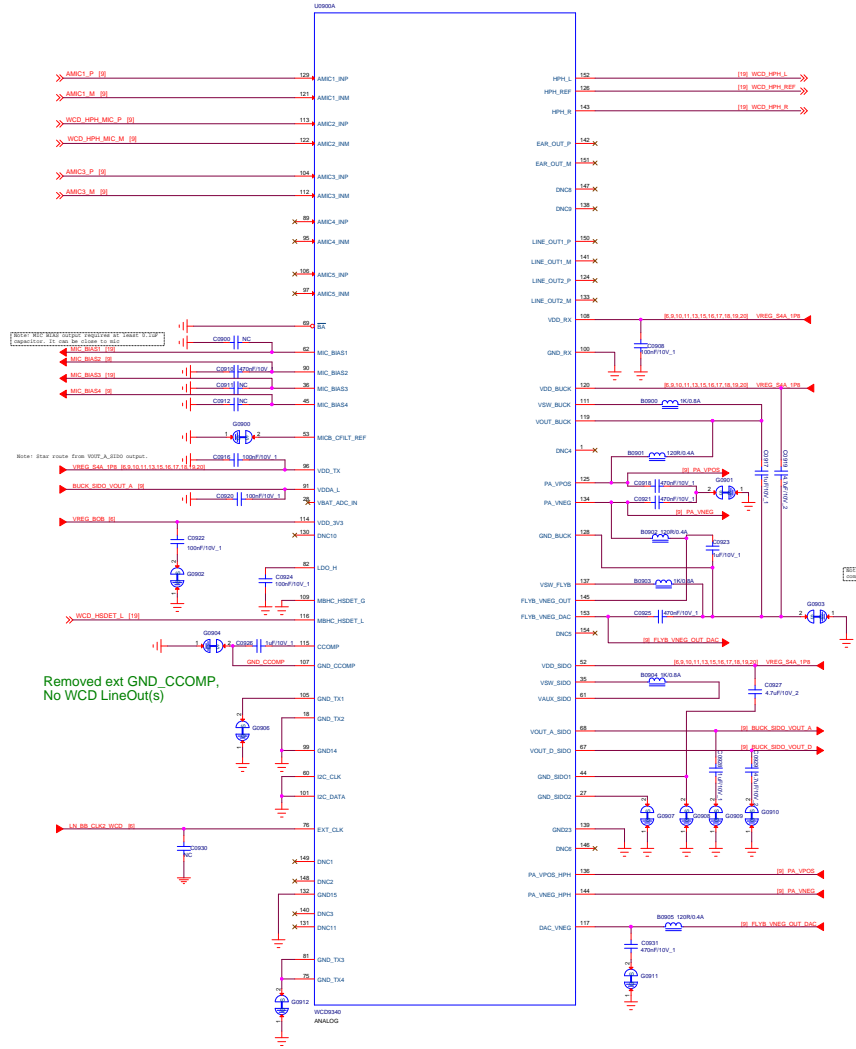


DCDC 5V (ALWAYS ON)



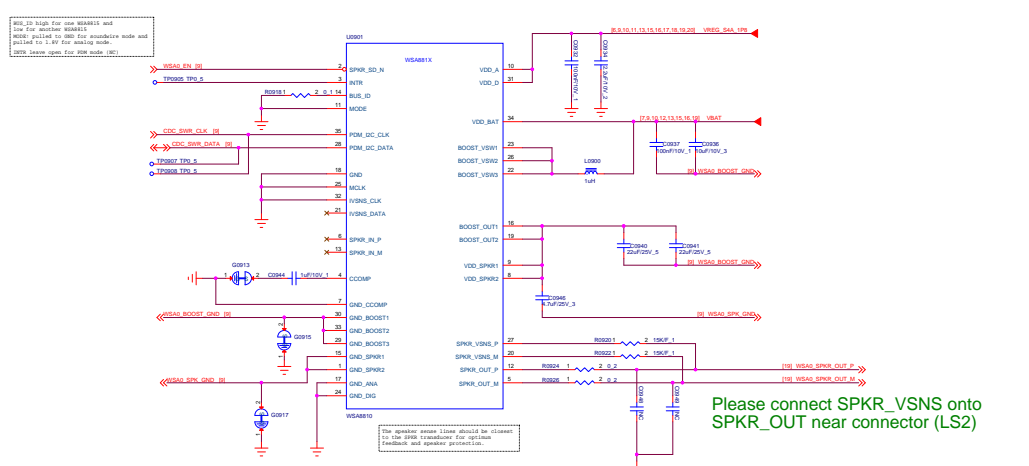
WCD9340

Audio options - share resistor pads



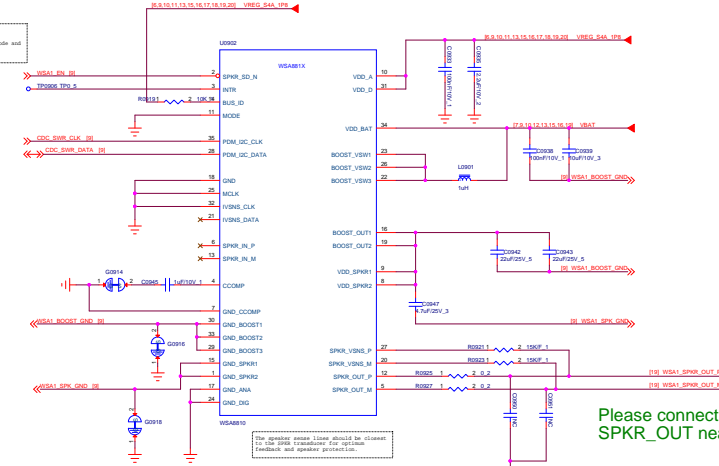
Default is to have only 1 WSA_EN_A to control BOTH WSAs
 Shared pads on these resistors

WSA8810

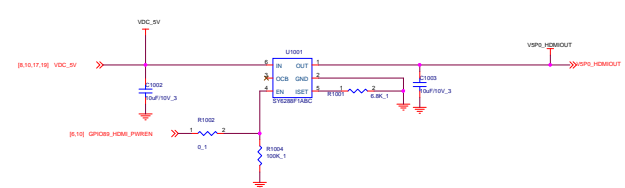
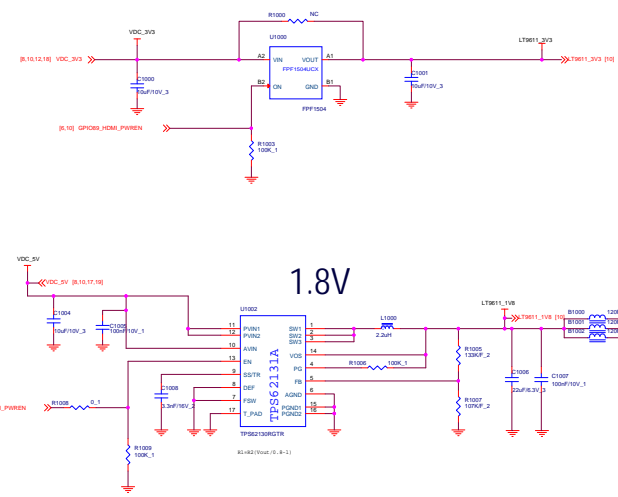


Please connect SPKR_VSNS onto SPKR_OUT near connector (LS2)

Added 2nd WSA



Please connect SPKR_VSNS onto SPKR_OUT near connector (LS2)



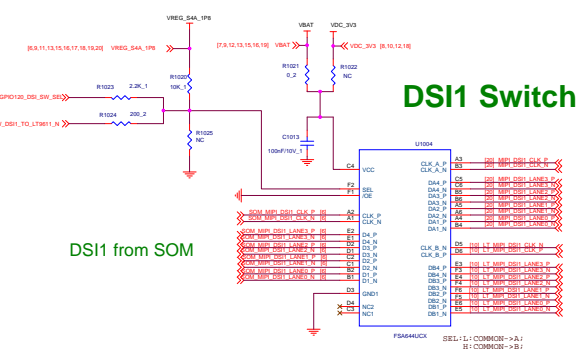
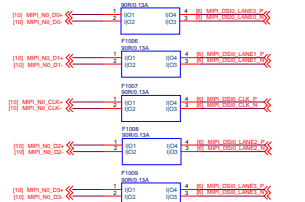
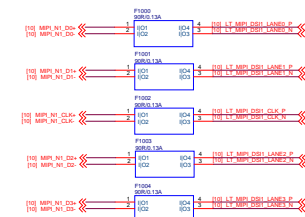
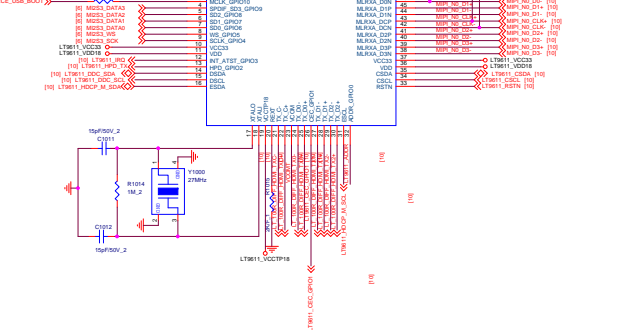
Power sequence requirement:
1.8V should be power up before 3.3V.

Dual Port MIPI2HDMI 4K30Hz	IVCC18=280mA
	IVCC33=7mA
single Port MIPI2HDMI 4K30Hz	IVCC18=235mA
	IVCC33=7mA
single Port MIPI2HDMI 1080P	IVCC18=145mA
	IVCC33=7mA

LT9611

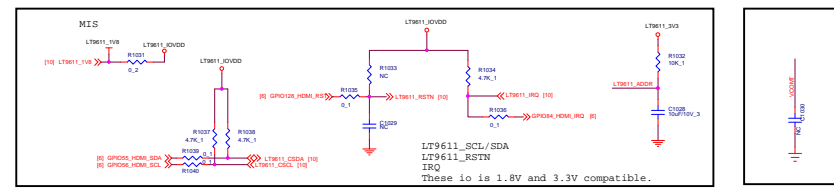
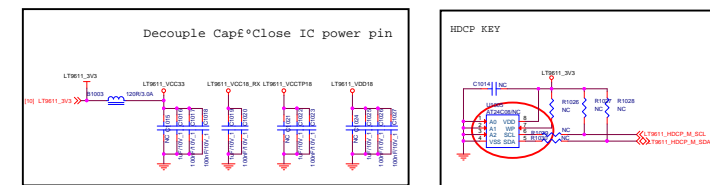
845 GPIO 57:

- FORCE_USB_BOOT
- MIZ3_MCLK

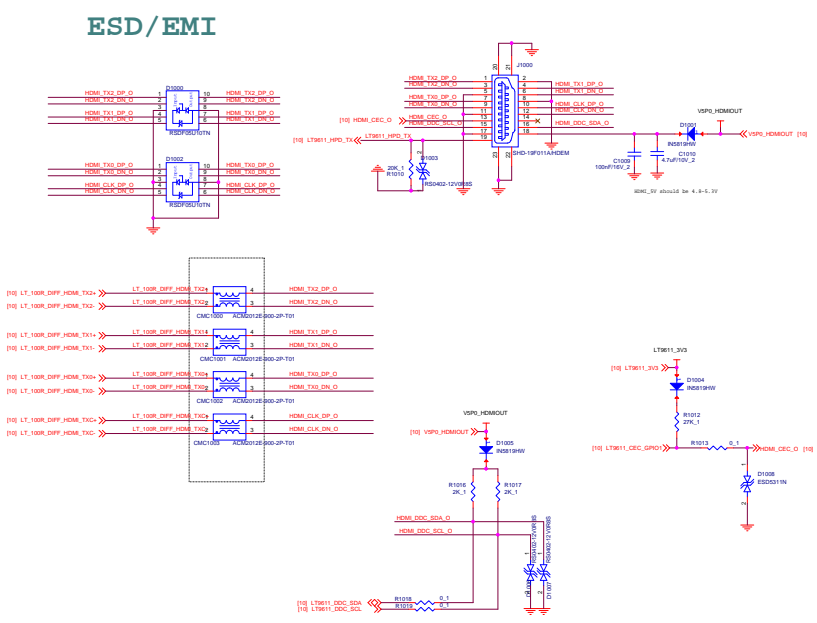


DSI for HS1

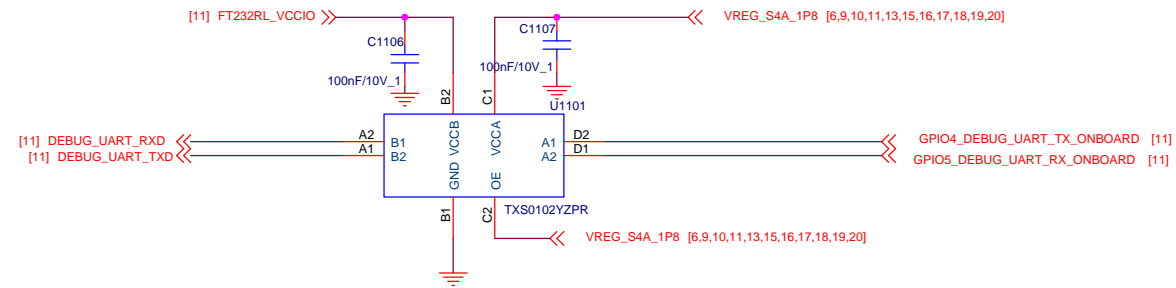
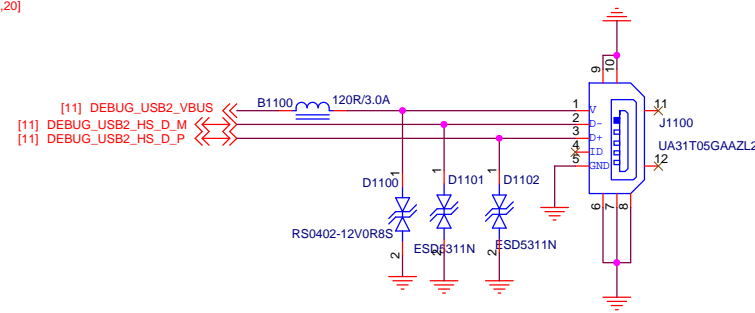
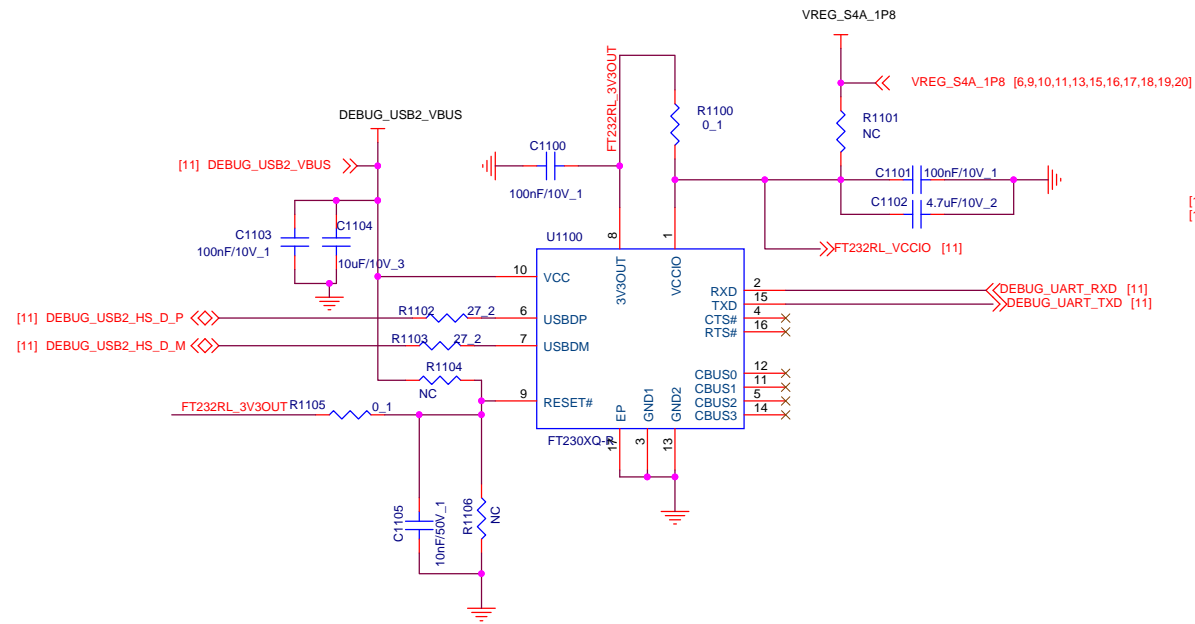
LT 2nd DSI



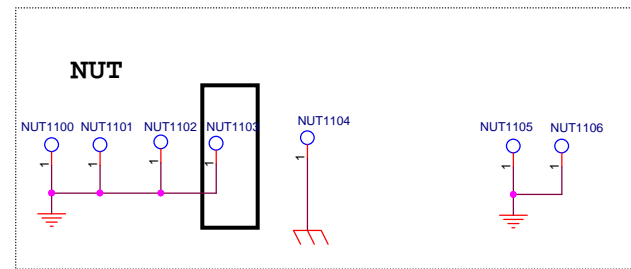
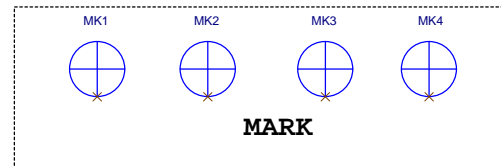
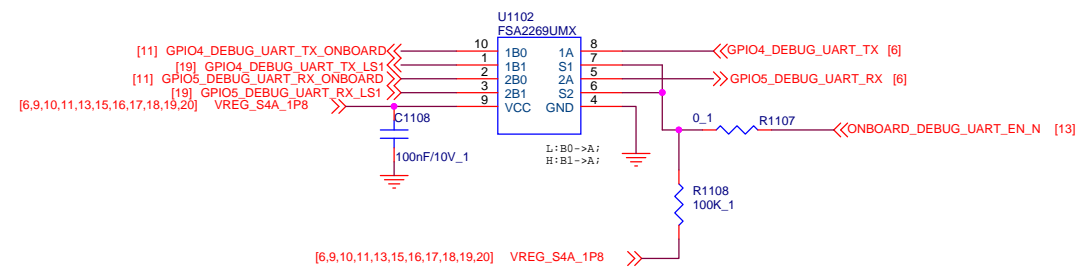
HDMI Type A



Pin	A Type	B Type	C Type	D Type
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3	NC	NC	NC	NC
4	NC	NC	NC	NC
5	NC	NC	NC	NC
6	NC	NC	NC	NC
7	NC	NC	NC	NC
8	NC	NC	NC	NC
9	NC	NC	NC	NC
10	NC	NC	NC	NC
11	NC	NC	NC	NC
12	NC	NC	NC	NC
13	NC	NC	NC	NC
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15	NC	NC	NC	NC
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99	NC	NC	NC	NC
100	NC	NC	NC	NC



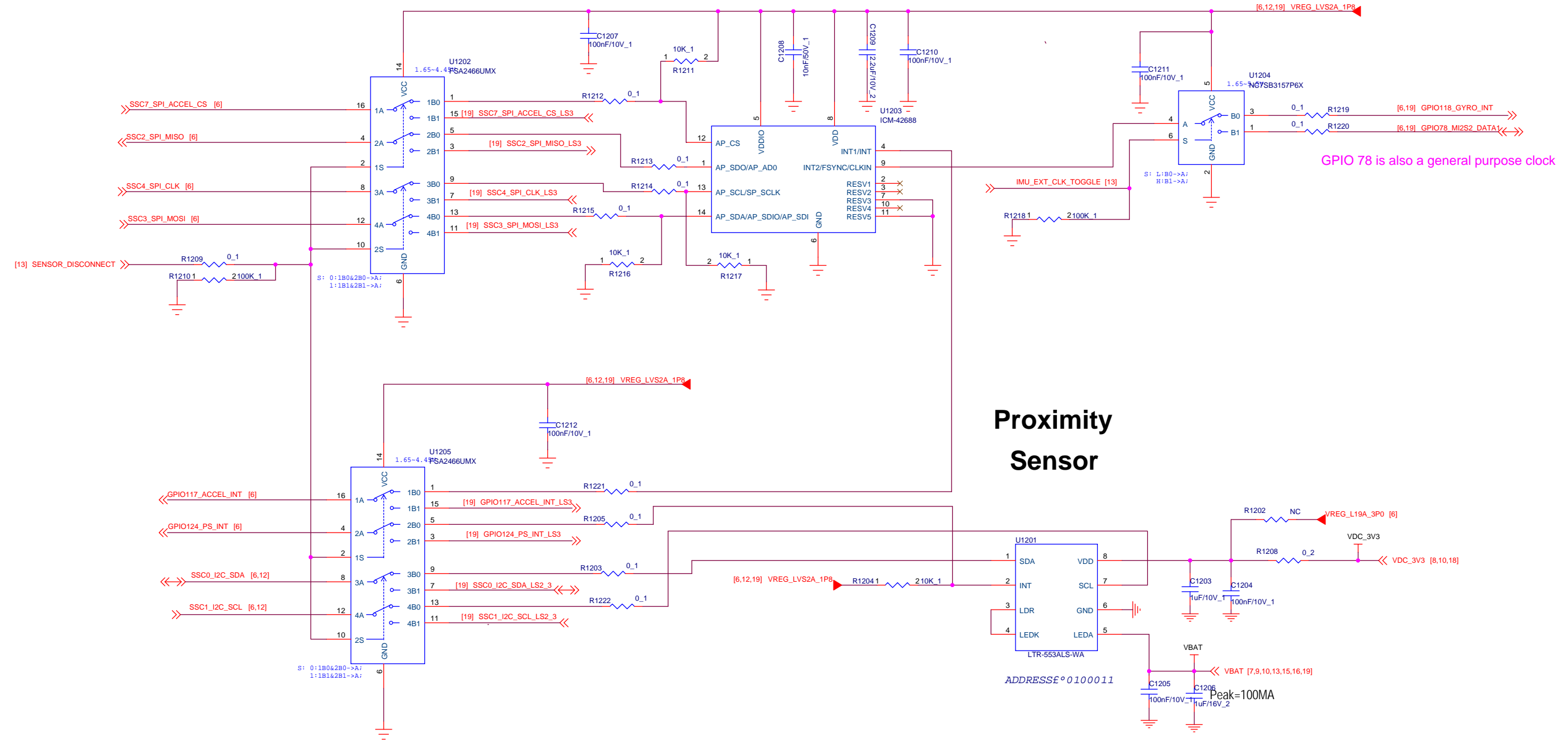
UART MUX



A+G

ACCELEROMETER+GYRO

SENSORS

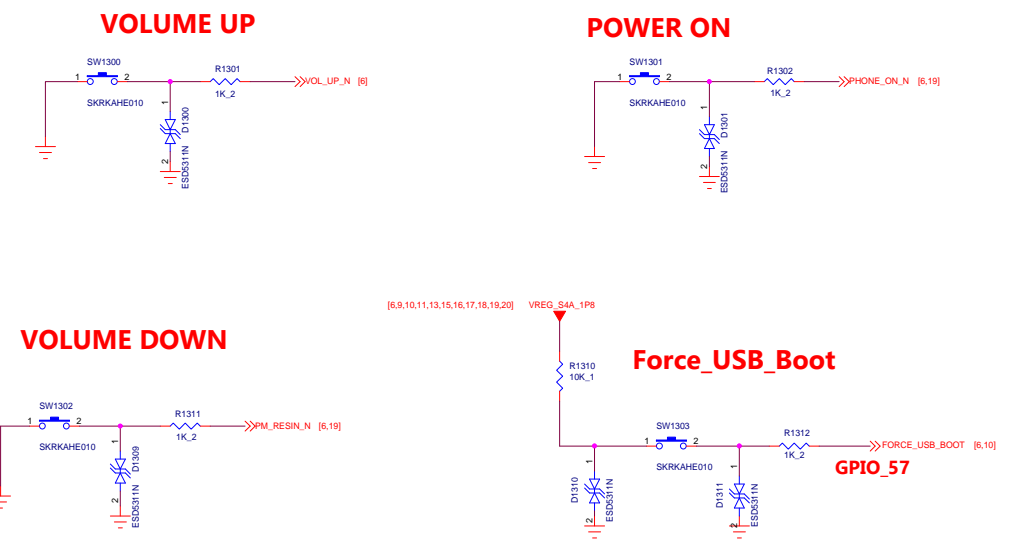
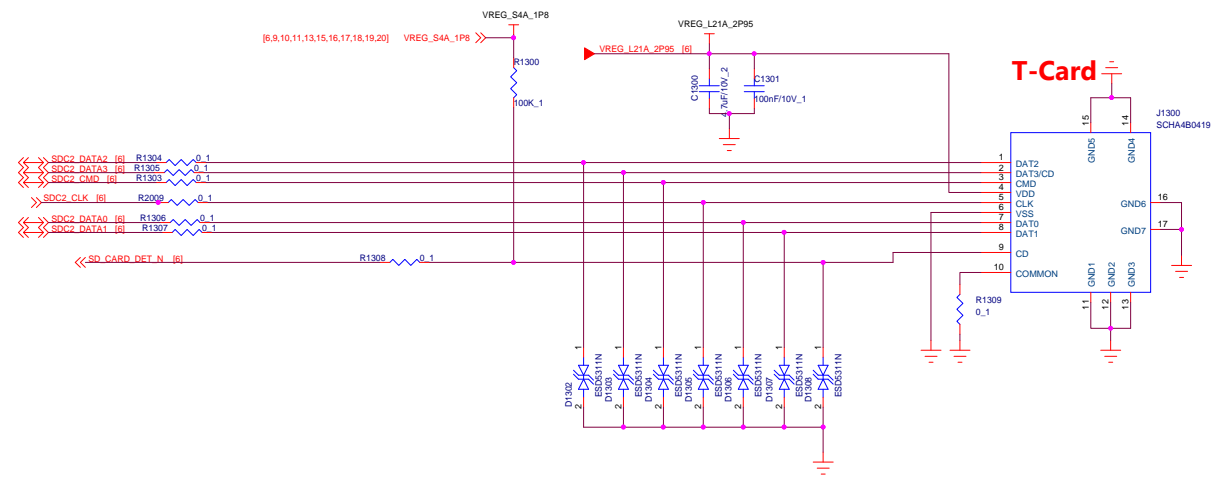


GPIO 78 is also a general purpose clock

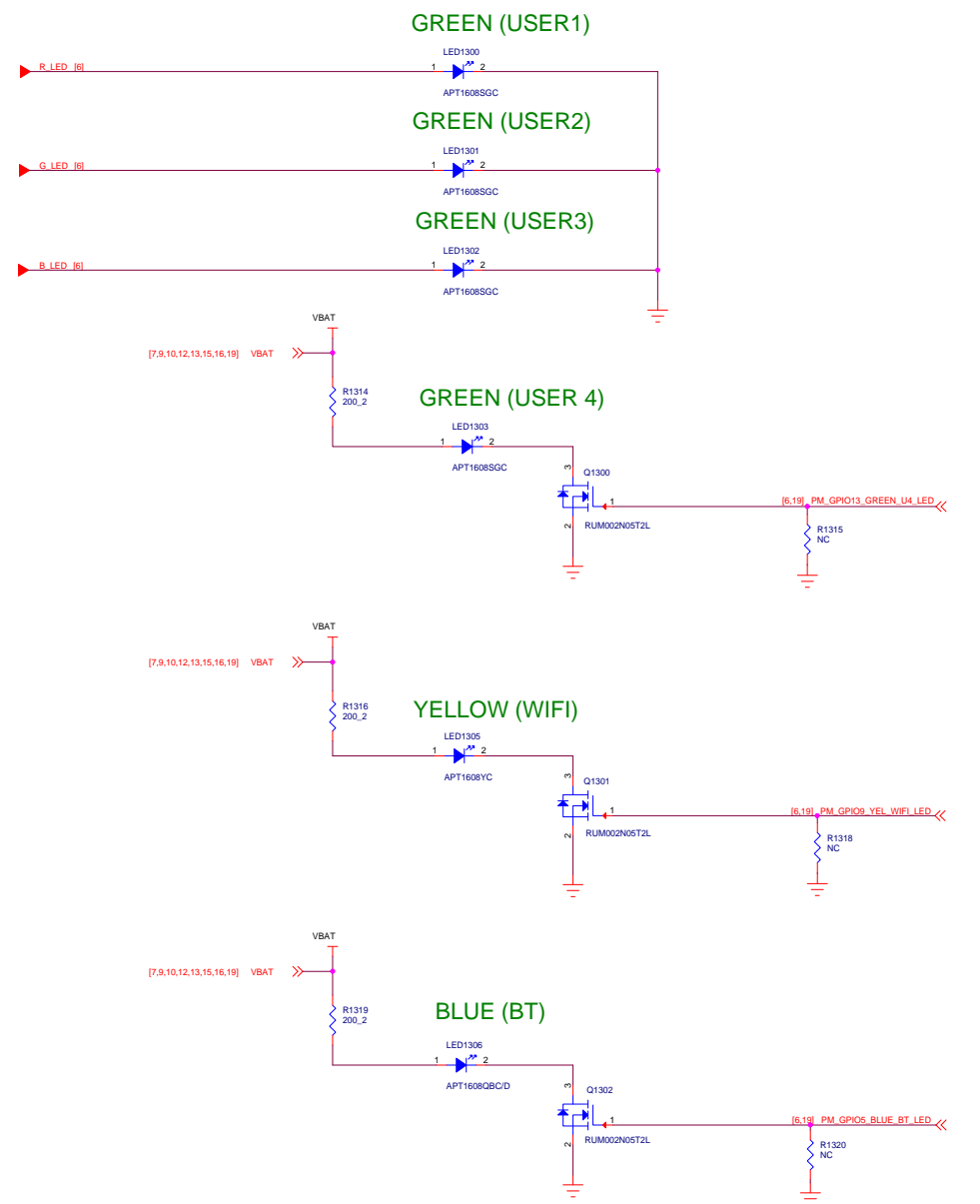
Proximity Sensor

Peak=100MA

Title		
Sensor		
Size	Document Number	Rev
C	845_96BOARD-Main_IO	<V02>
Date:	Wednesday, January 16, 2019	Sheet 12 of 20

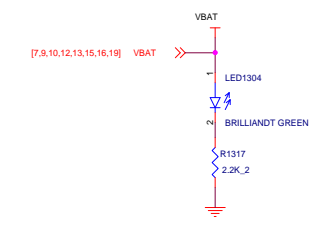
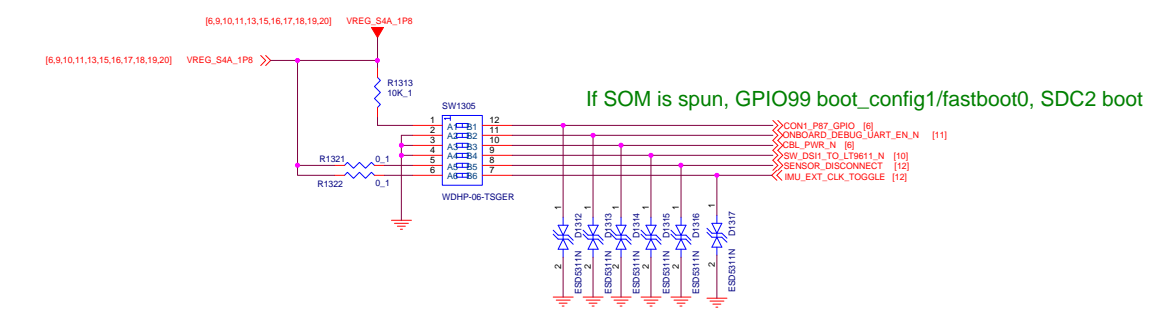


96Boards LED Circuit



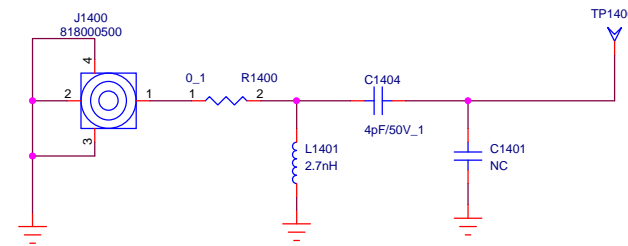
Boot Strap on DIP SW

Boot startup

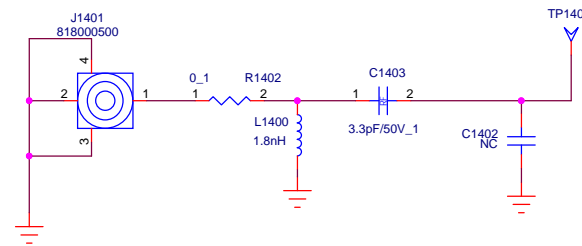


1 Dual Band and 1 GPS Antenna

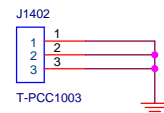
GPS Antenna



2.4/5GHz Antenna



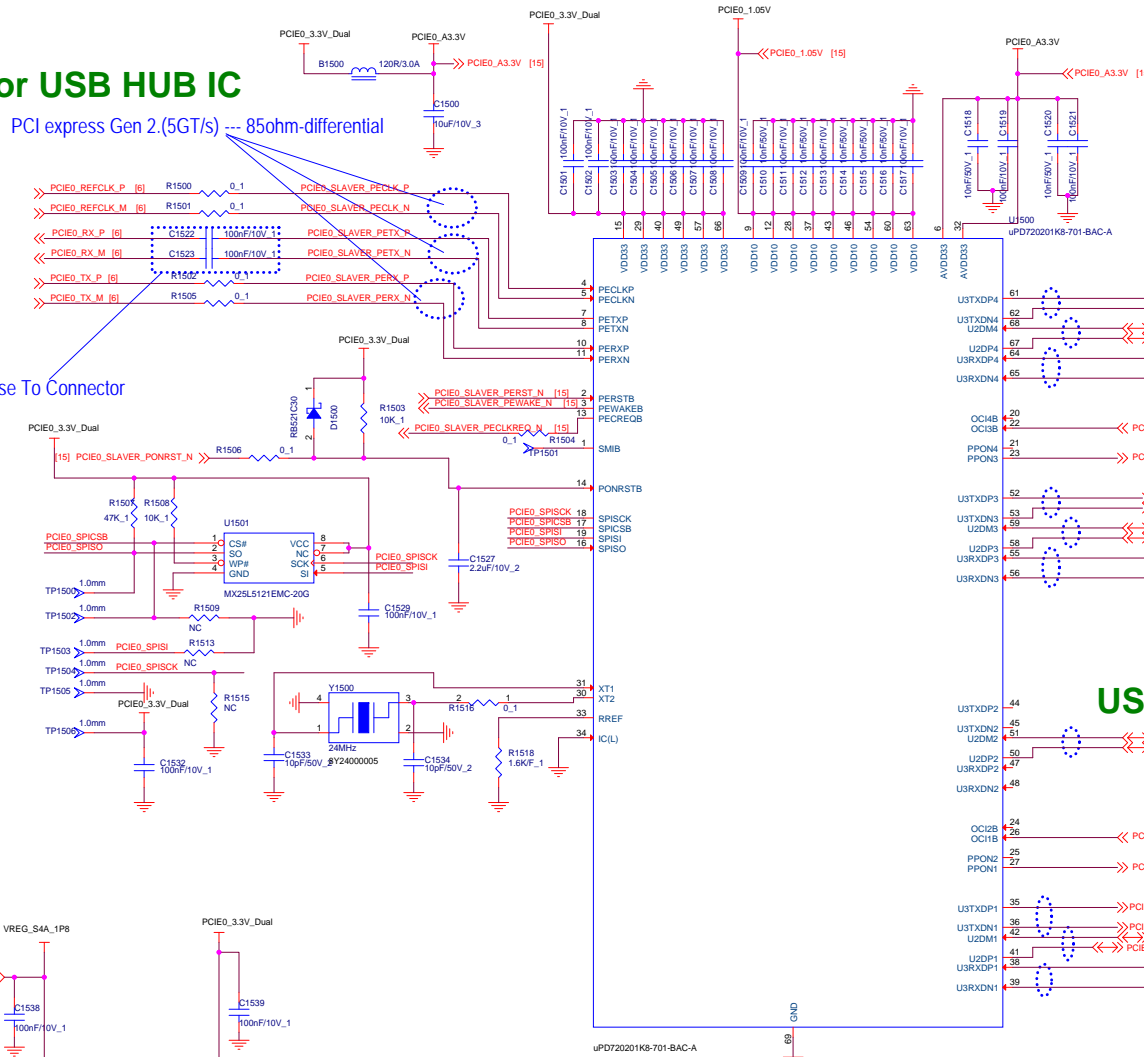
clip for antenna cable



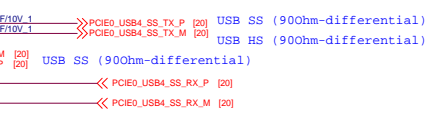
PCIE0 (gen 2) for USB HUB IC

PCI express Gen 2.(5GT/s) --- 85ohm-differential

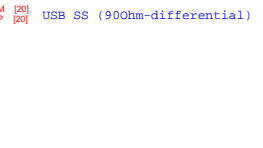
Close To Connector



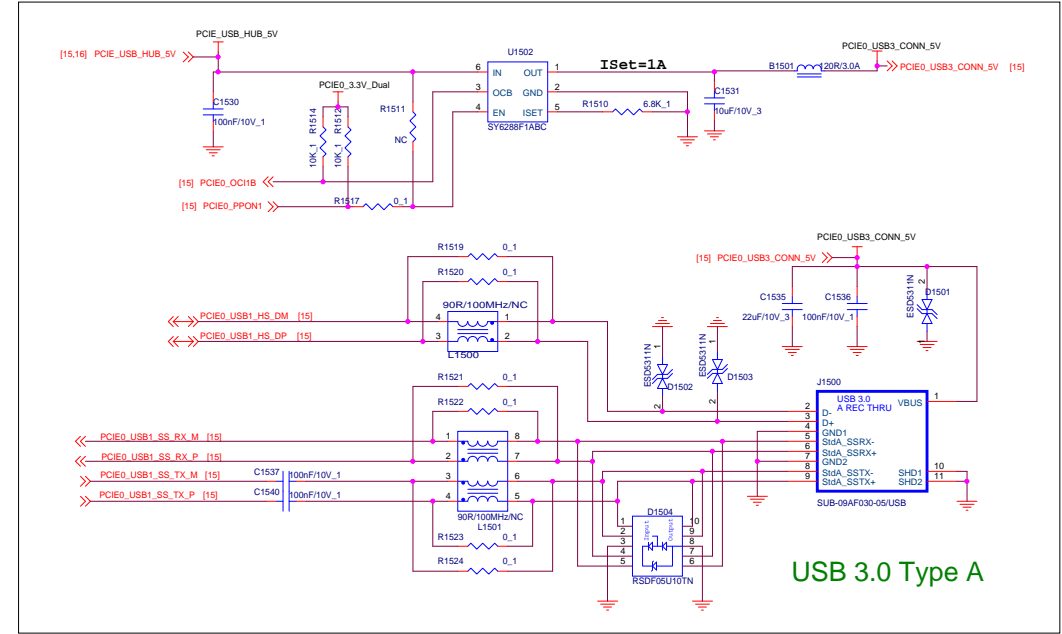
USB4 go mezzanine HS1 & HS2



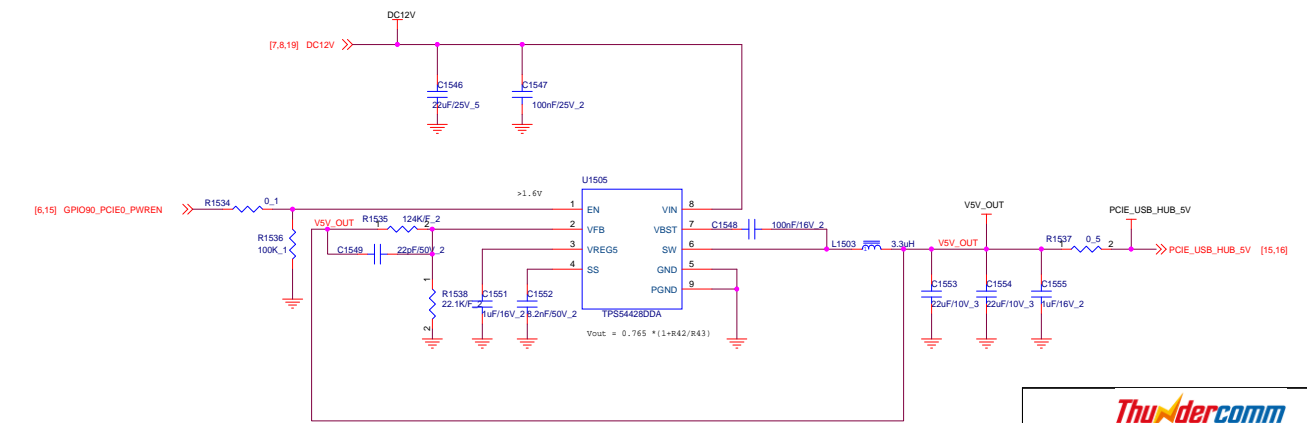
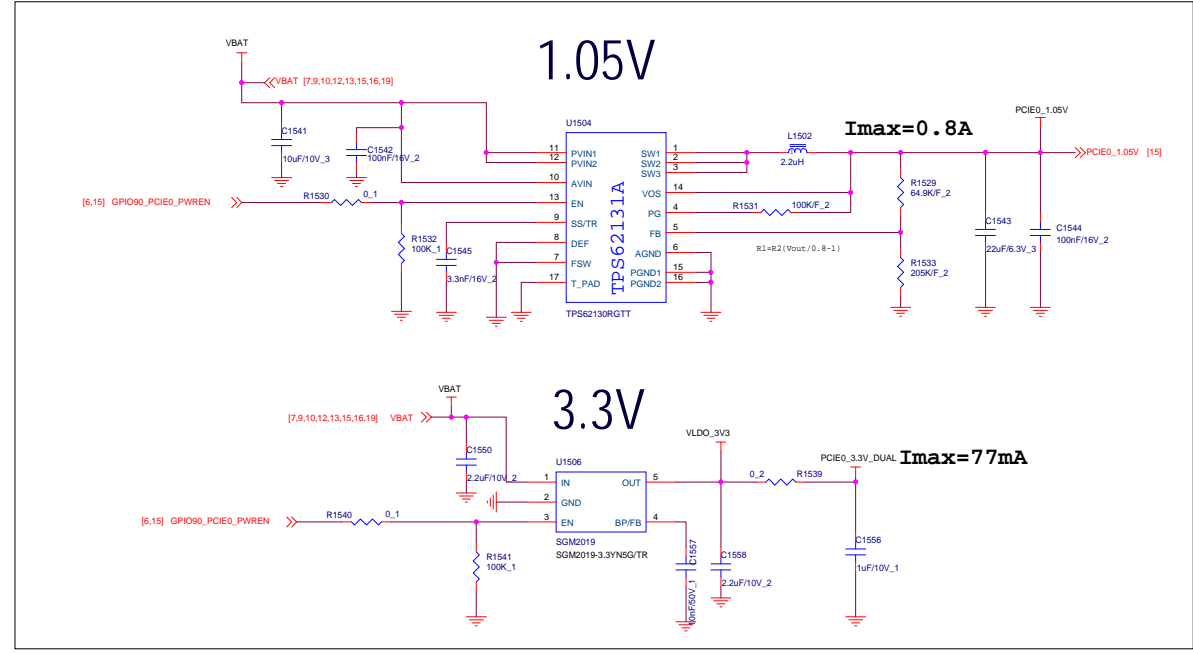
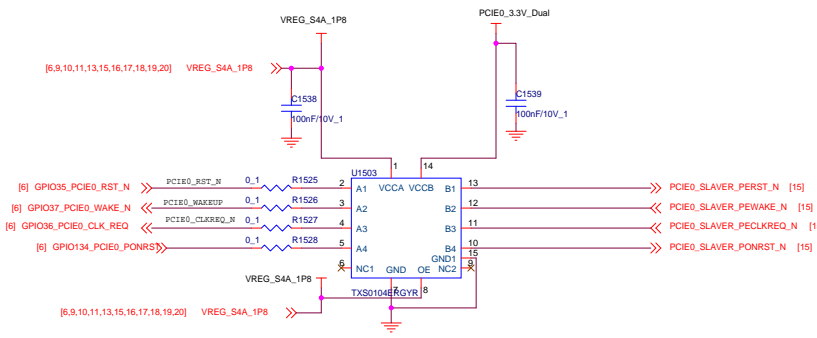
USB5 go mezzanine HS1 (USB2.0 only)

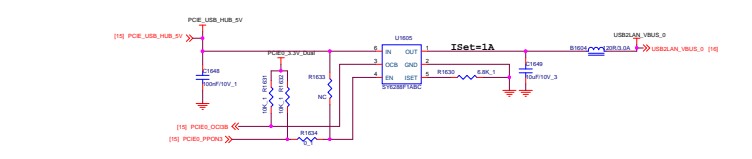
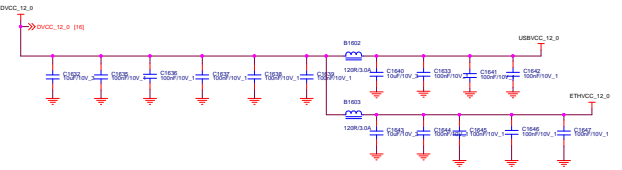
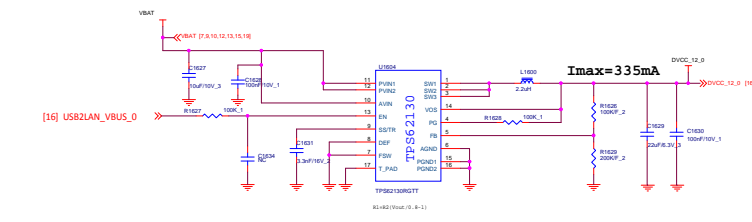
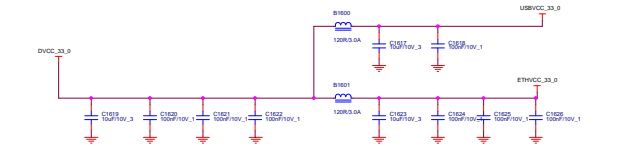
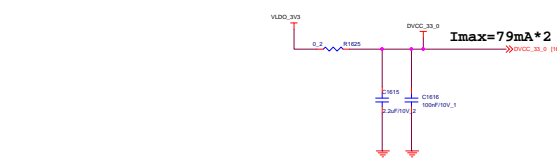
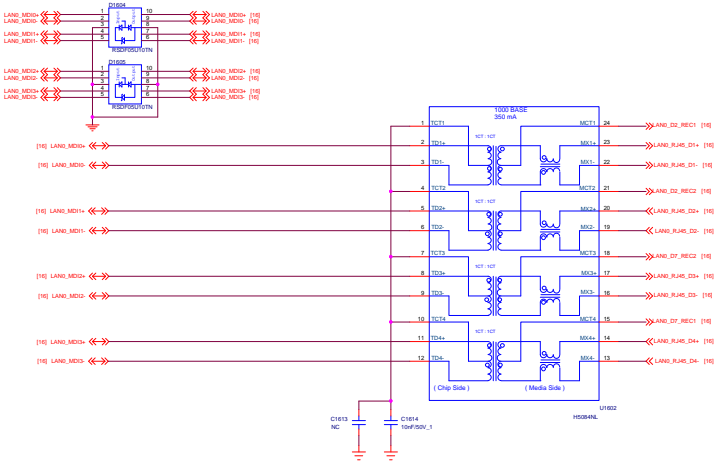
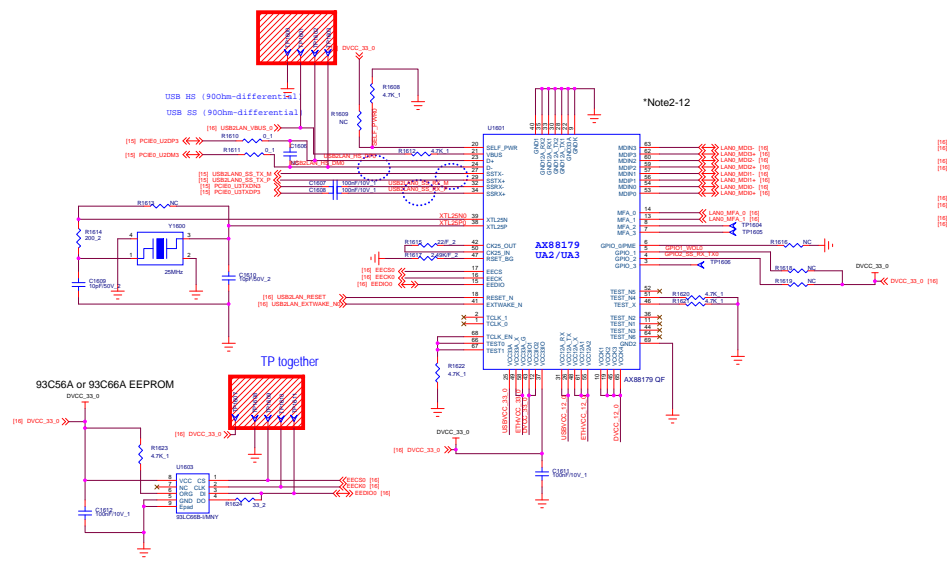
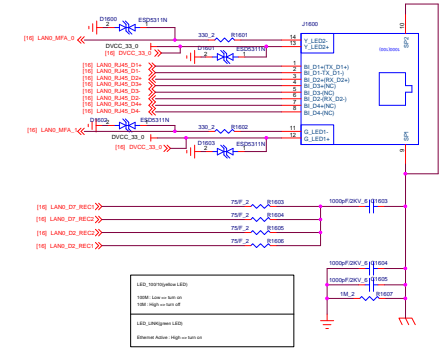
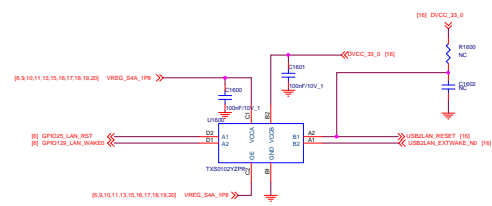


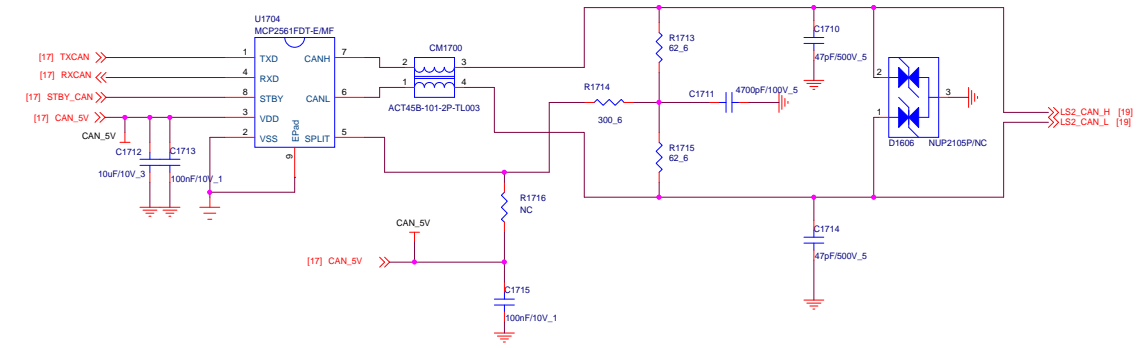
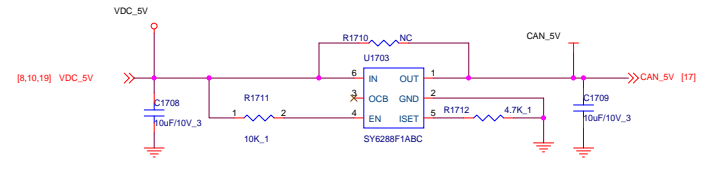
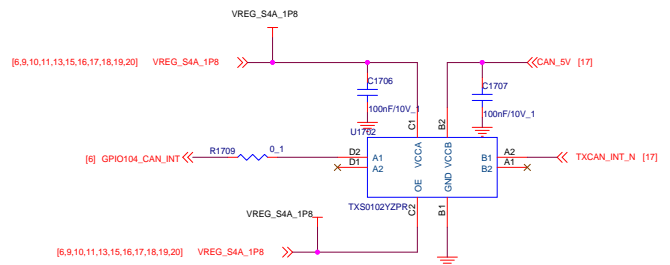
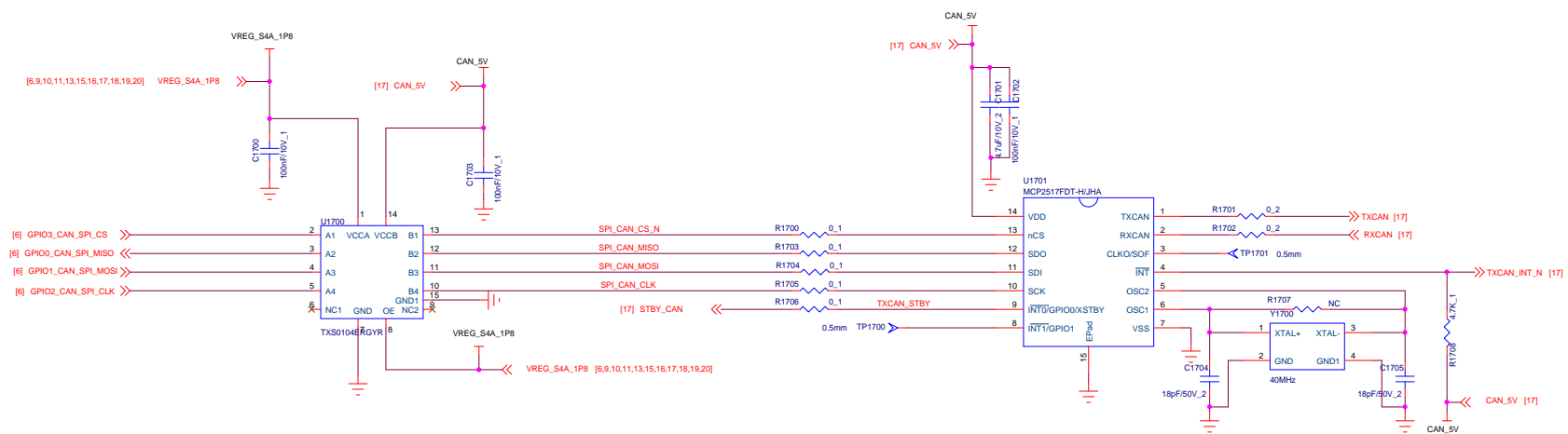
USB1

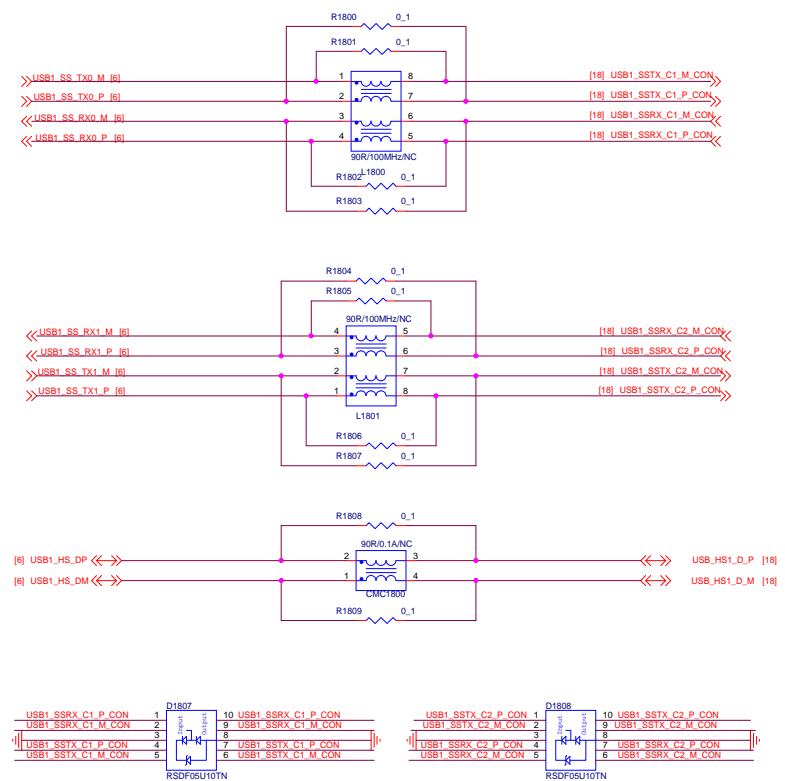


USB 3.0 Type A

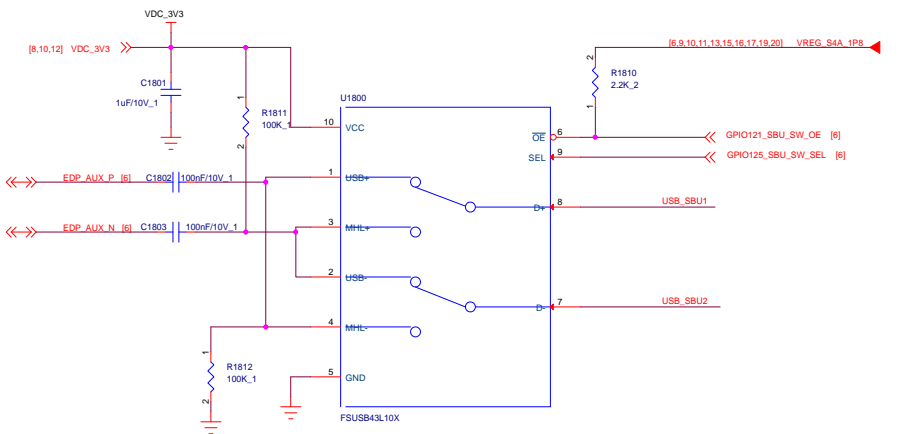
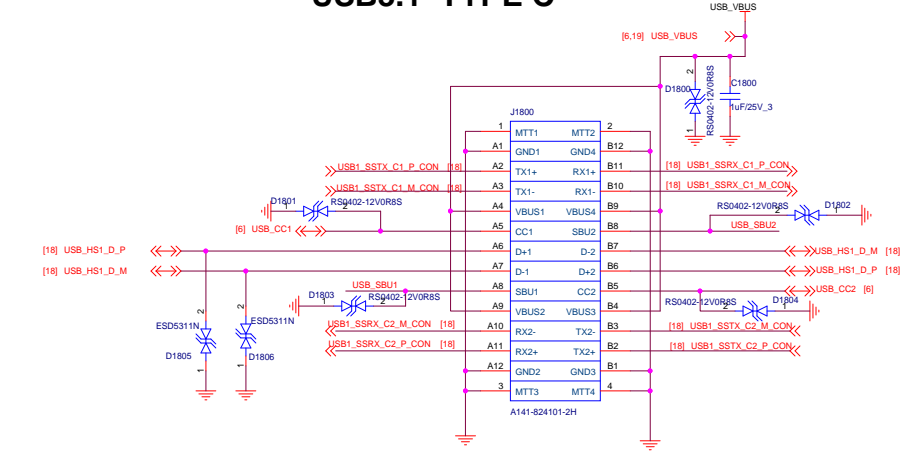




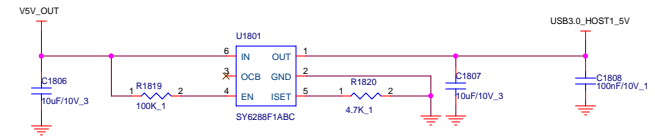
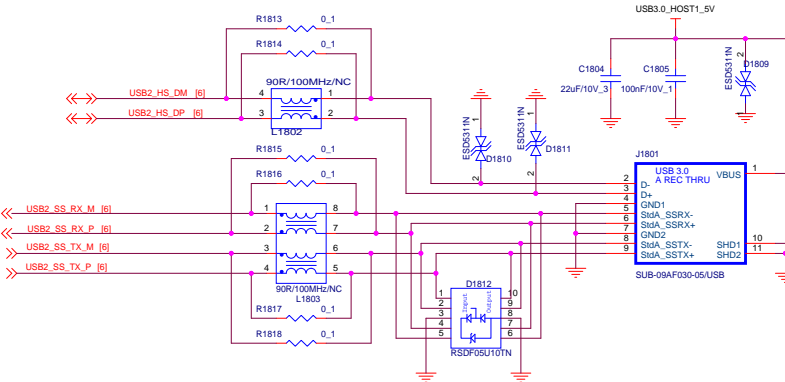


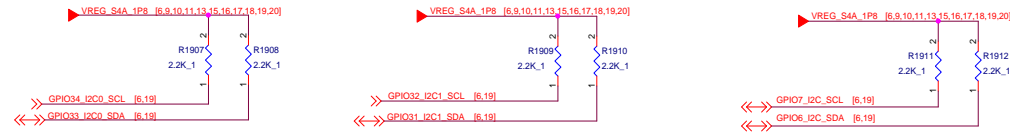


USB3.1 TYPE C



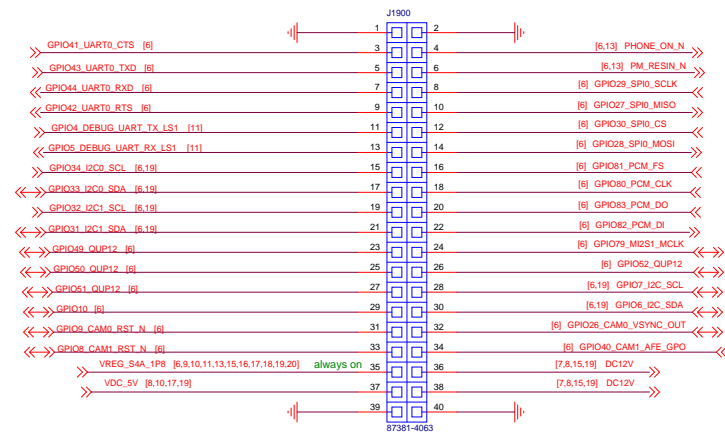
USB3.0 Type A





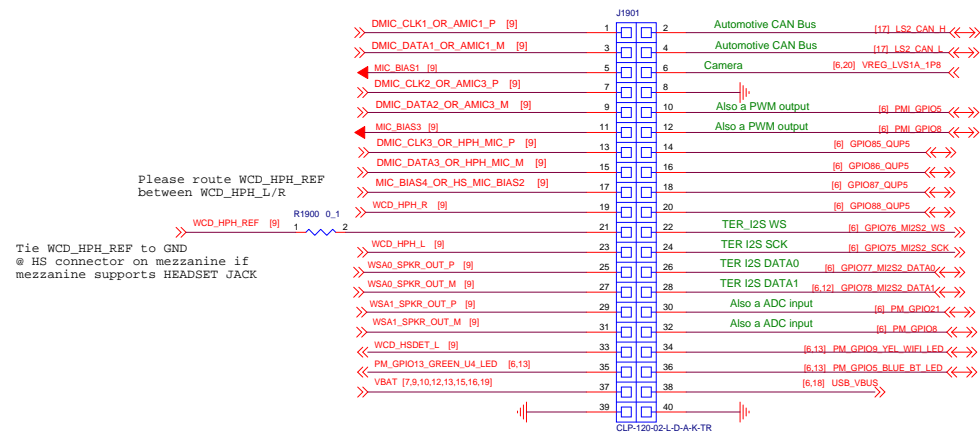
LS1

87381-4063



LS2

CLP-120-02-L-D-A-K-TR

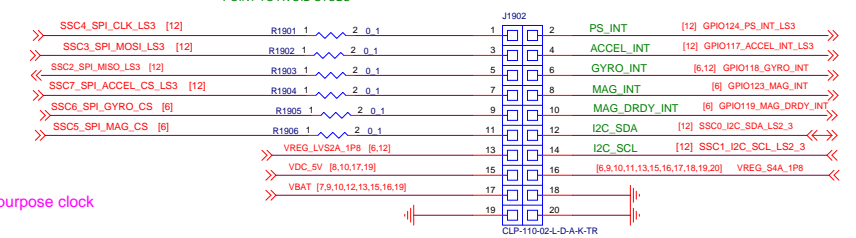


Sensor core expansion connector

LS3

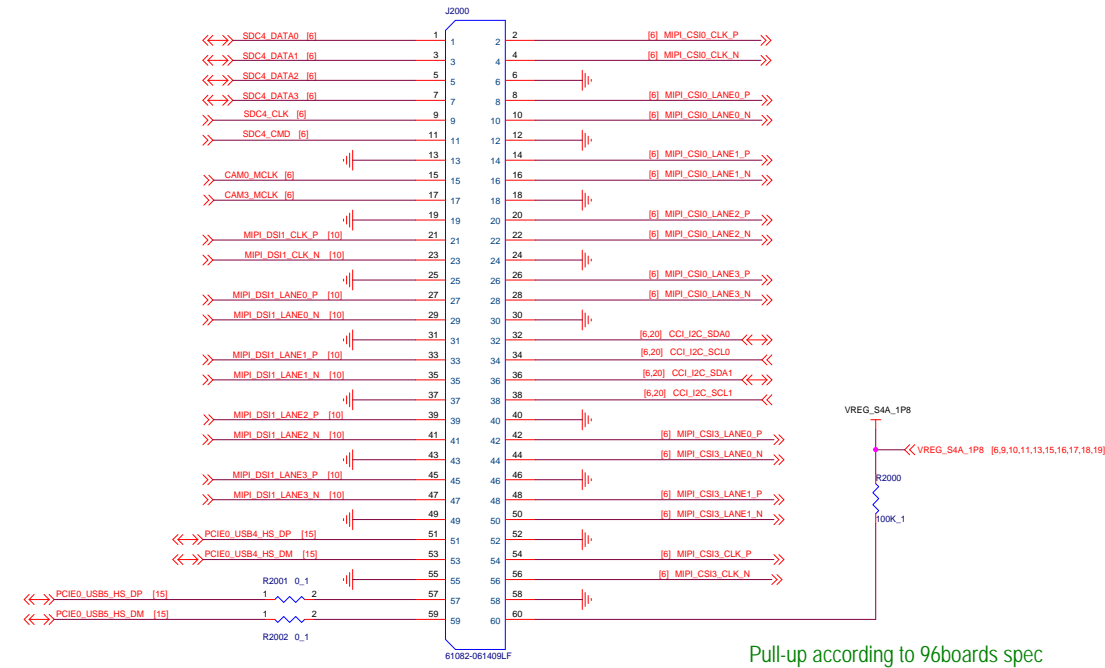
CLP-110-02-L-D-A-K-TR

PLACE RESISTORS NEAR BRANCH POINT TO AVOID STUBS



GPIO 78 is also a general purpose clock

HS1



HS2

