

# Andromeda Box Edge Main Board


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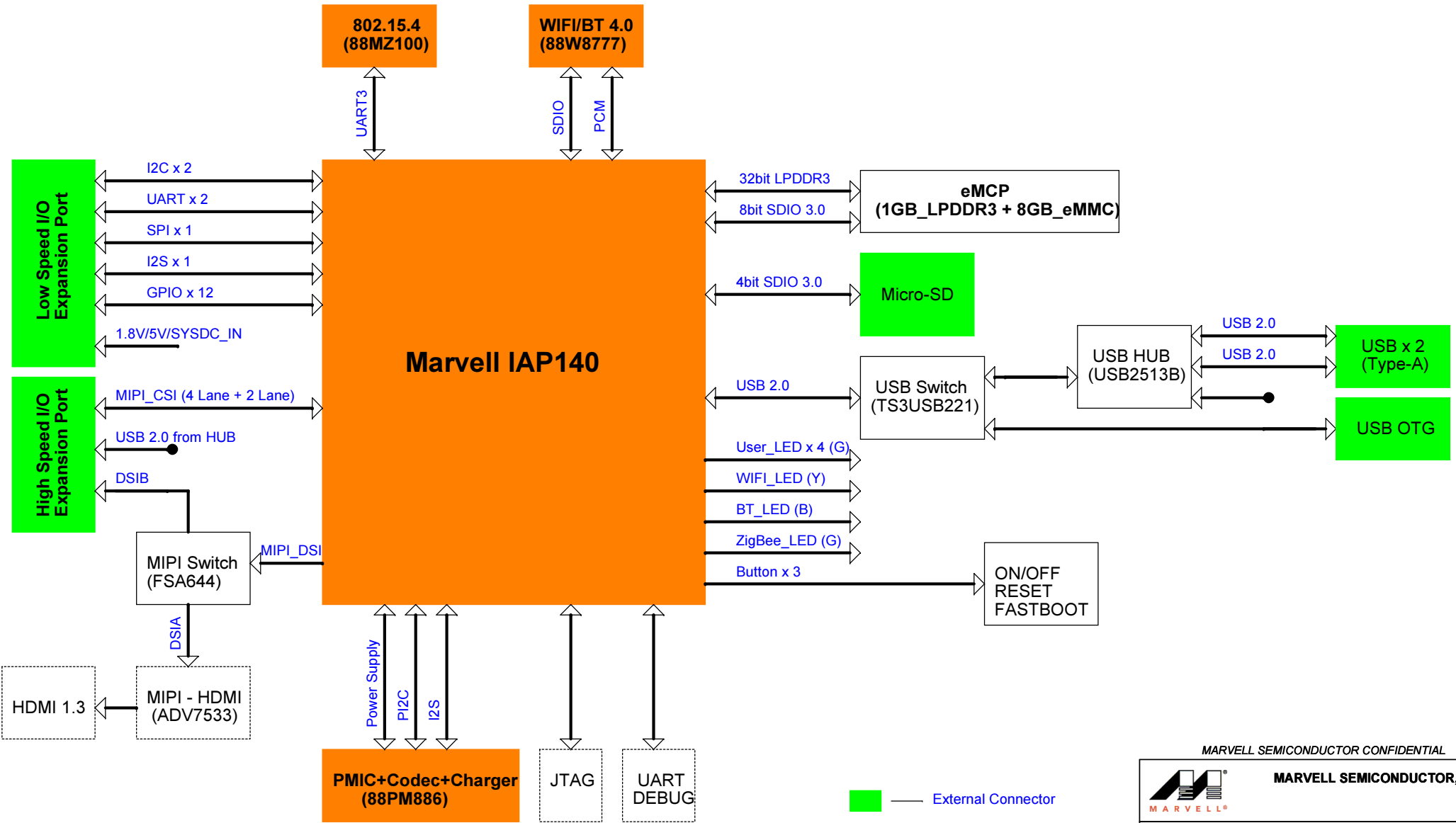
## VERSION HISTORY

REVISION	DATE	DESCRIPTION
1.0	2015.11.06	FIRST RELEASE

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Title <b>Andromeda Box Edge</b>	
Size B	Document Number <b>RD-Andromeda-140-01</b>
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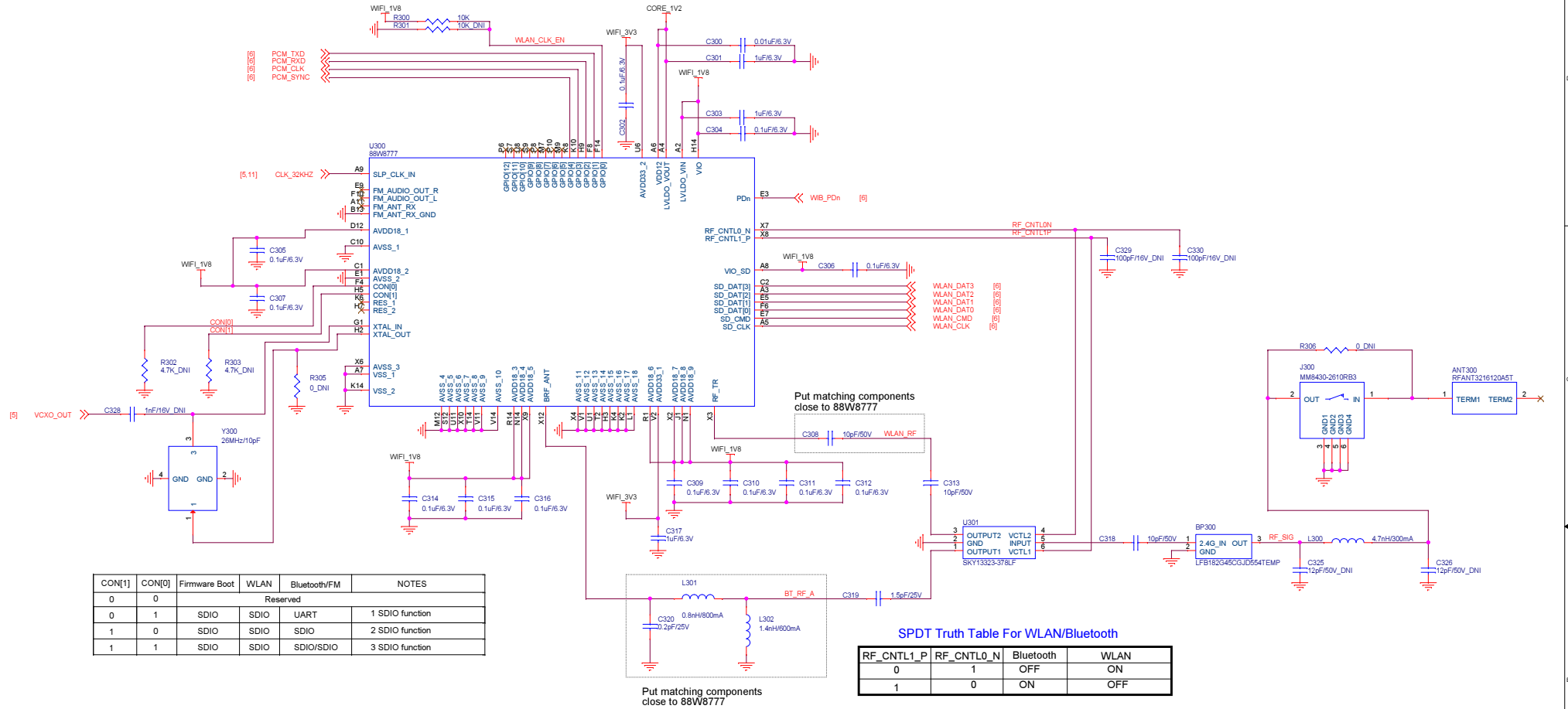
# FUNCTION DIAGRAM



External Connector

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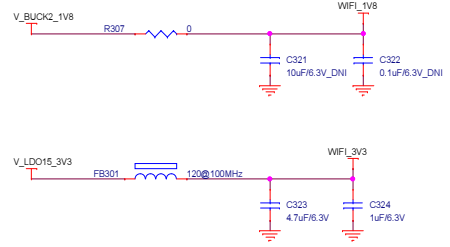
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<b>Title</b> Andromeda Box Edge			
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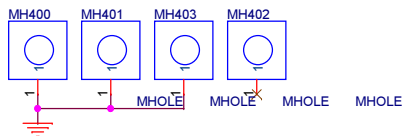
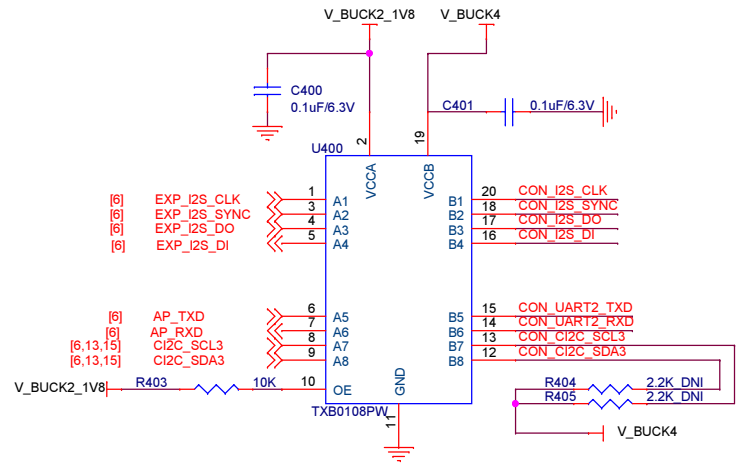
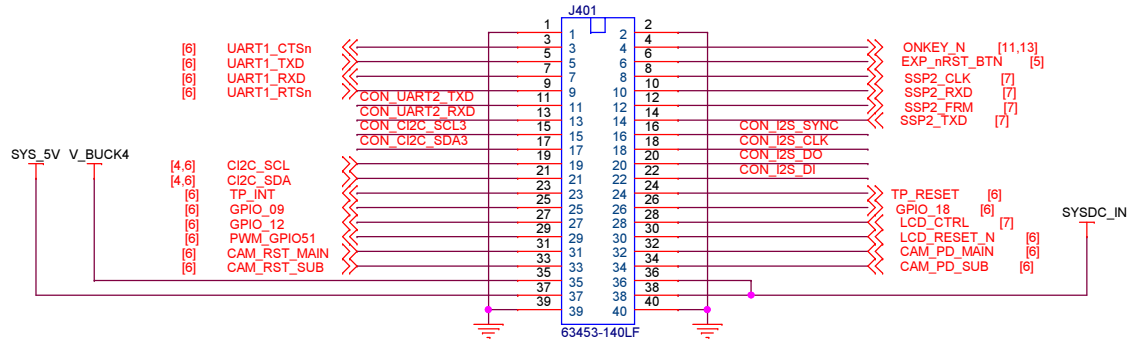
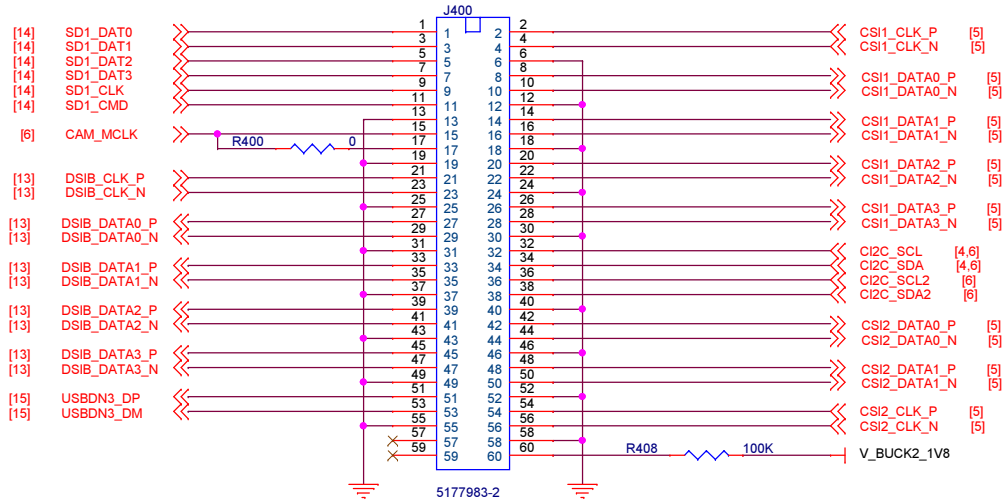
CON[1]	CON[0]	Firmware Boot	WLAN	Bluetooth/FM	NOTES
0	0			Reserved	
0	1	SDIO	SDIO	UART	1 SDIO function
1	0	SDIO	SDIO	SDIO	2 SDIO function
1	1	SDIO	SDIO	SDIO/SDIO	3 SDIO function

**SPDT Truth Table For WLAN/Bluetooth**

RF_CNTL1_P	RF_CNTL0_N	Bluetooth	WLAN
0	1	OFF	ON
1	0	ON	OFF



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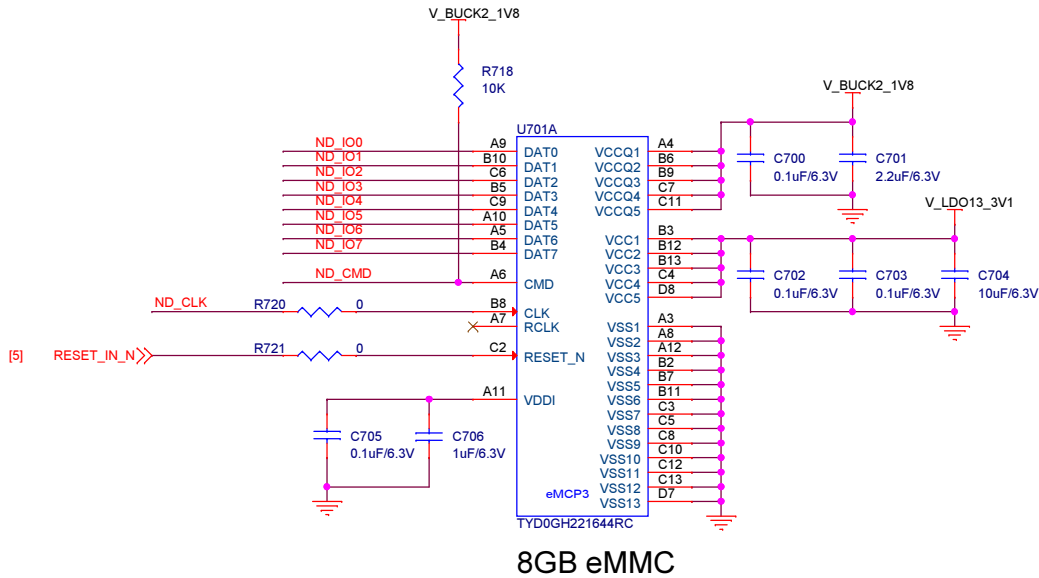
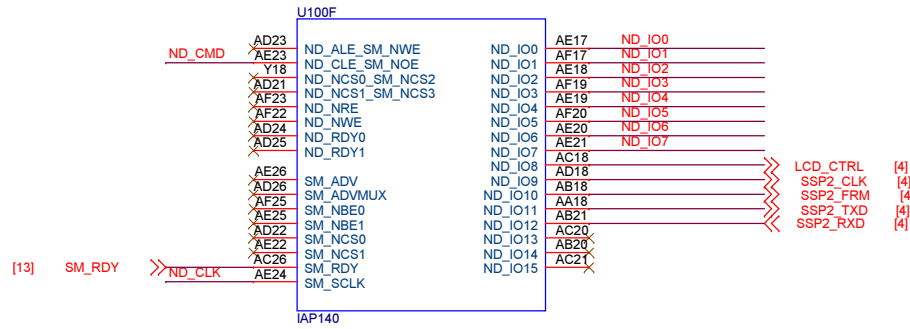


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# IAP140 eMMC

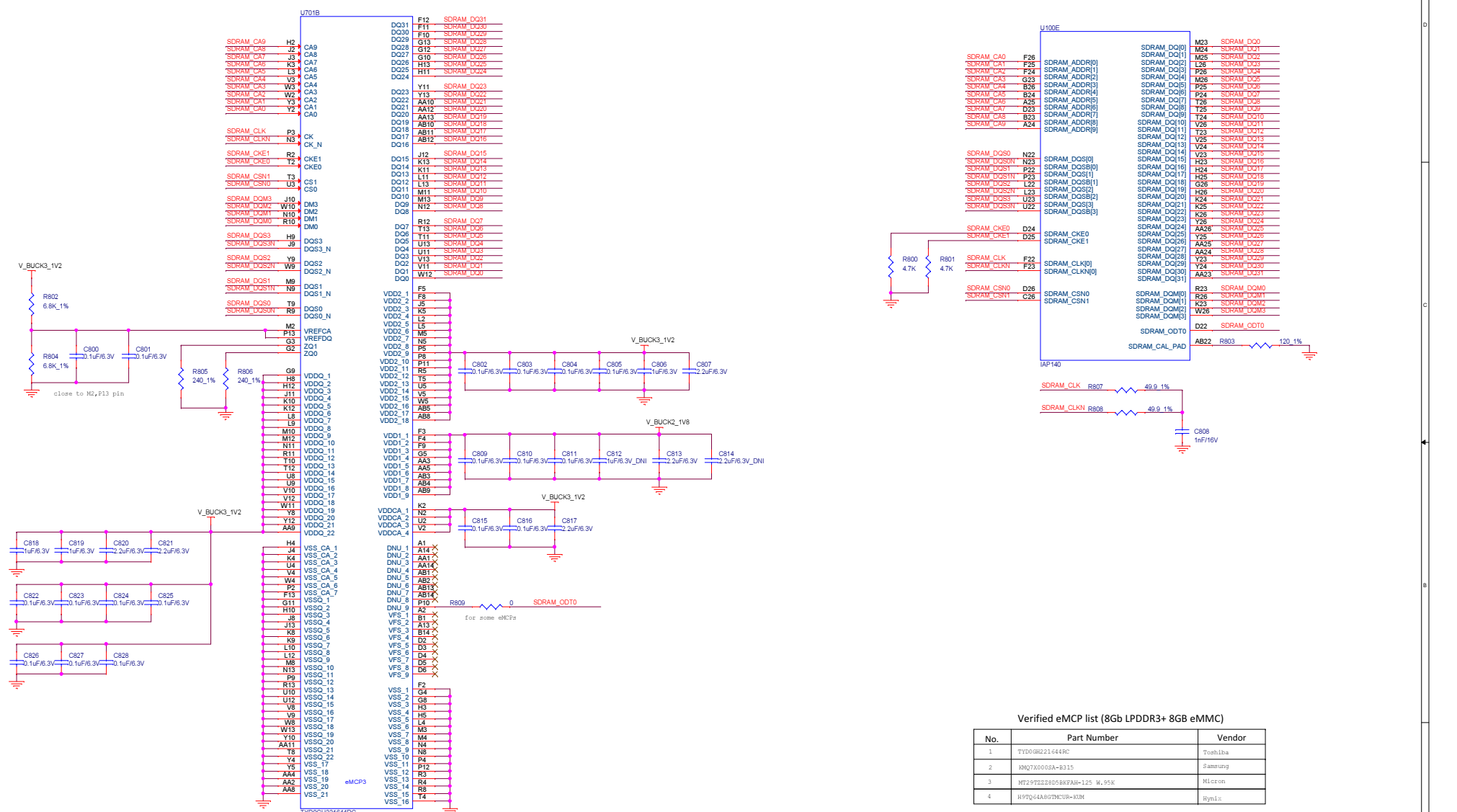


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# IAP140 LPDDR3



8Gb LPDDR3

Verified eMCP list (8Gb LPDDR3+ 8Gb eMMC)

No.	Part Number	Vendor
1	TYD06H221644RC	Toshiba
2	RMQ7X00028-R315	Samsung
3	MT29Z2228D58KFAH-125: W, 95K	Micron
4	H9PQ64A8G2MCR-RJM	Hynix

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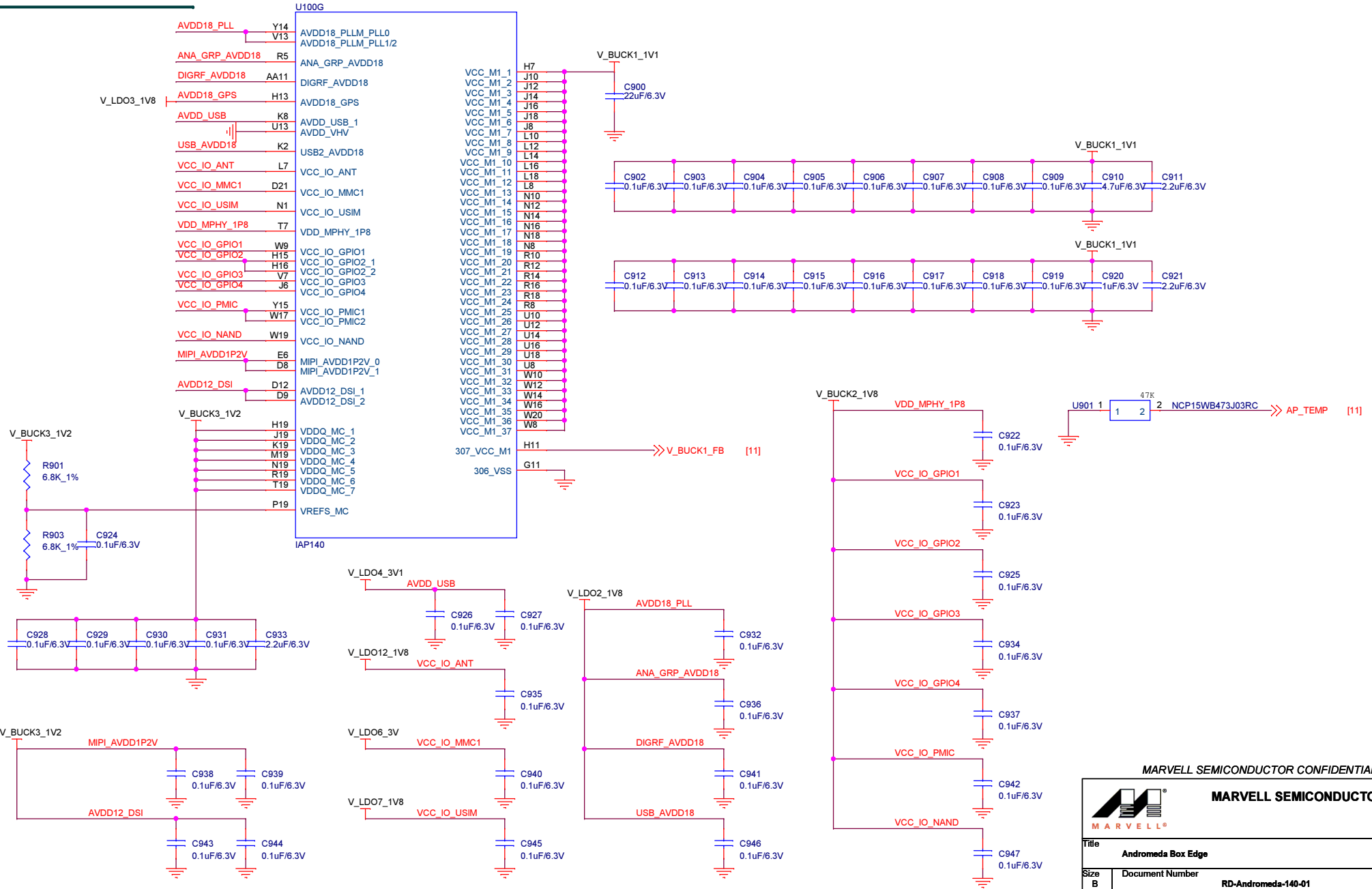
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# IAP140 POWER



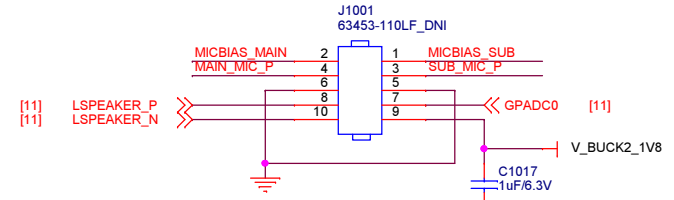
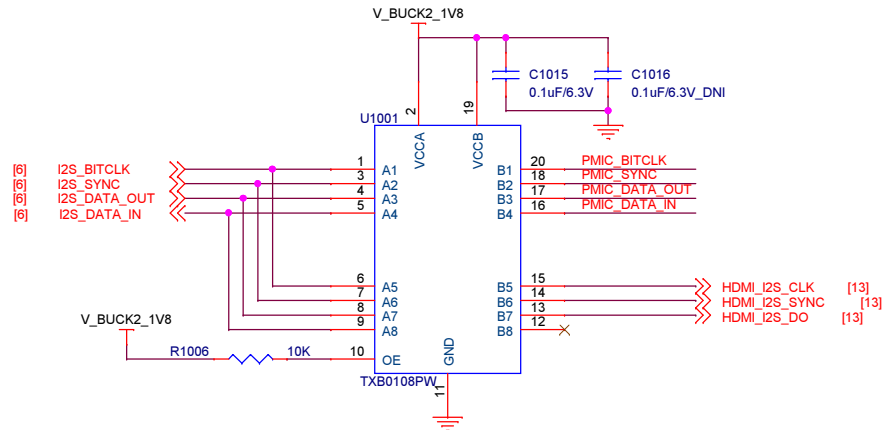
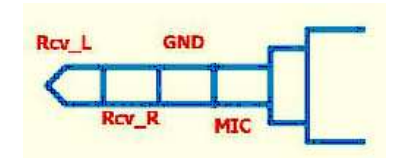
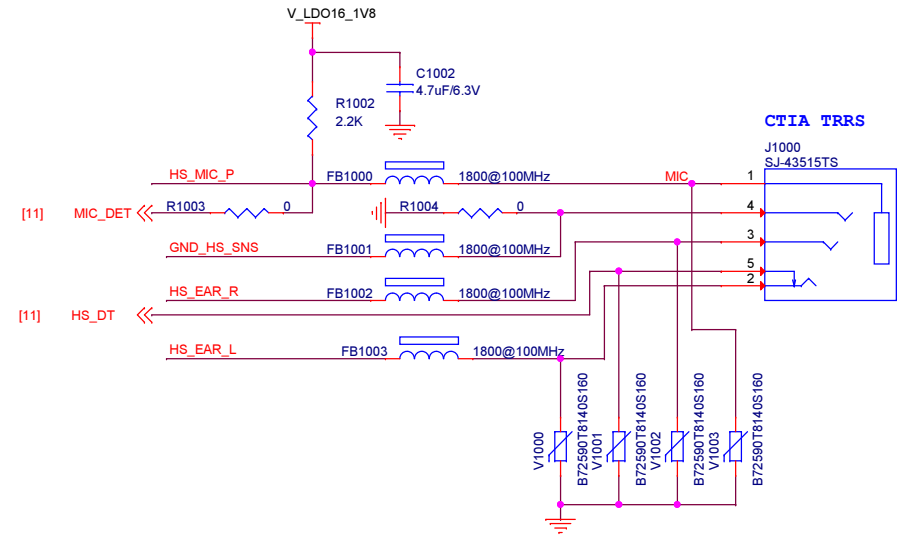
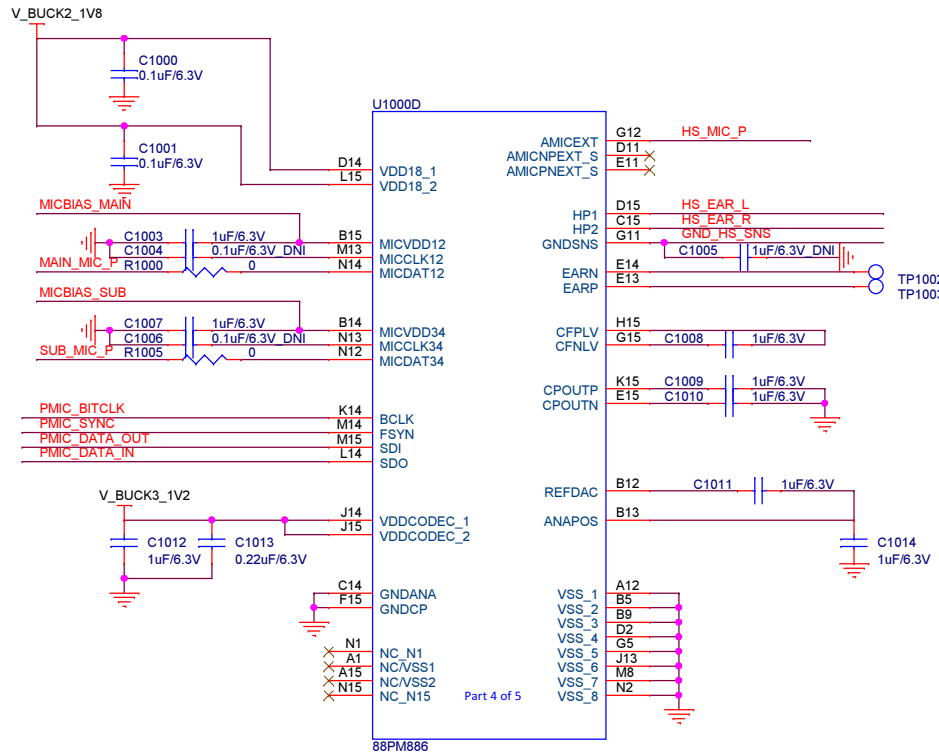
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# 88PM886\_CODEC



MEMS MIC list

No.	Part Number	Vendor
1	SPU0410HR5H	Knowles
2	NSM0416ATX	NeoMEMS
3	AKU142	Akustica

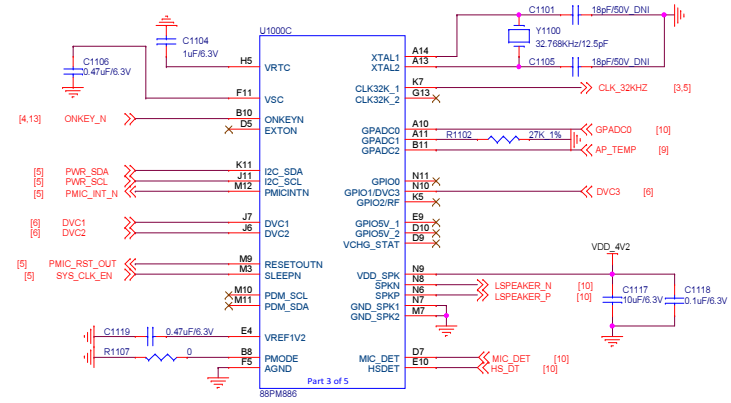
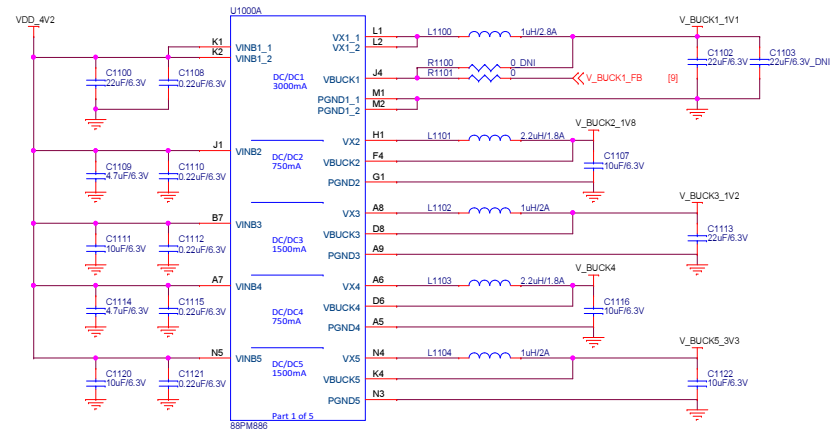
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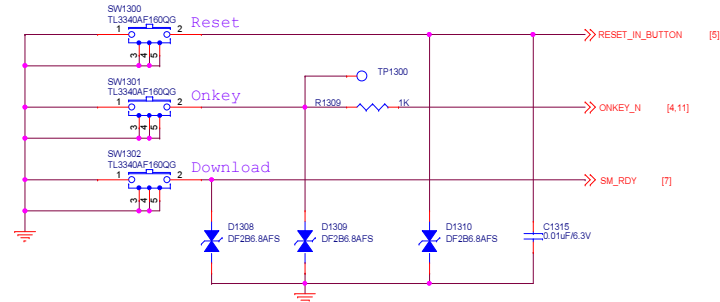
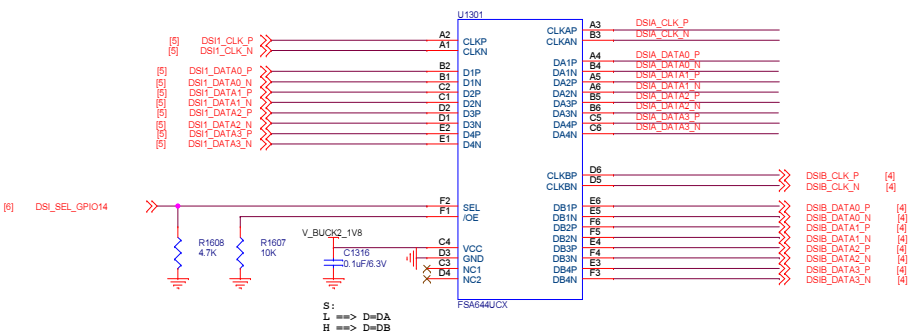
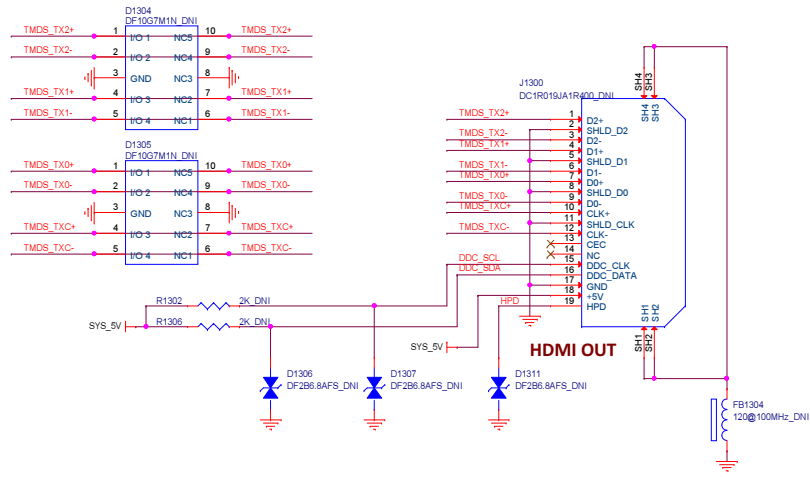
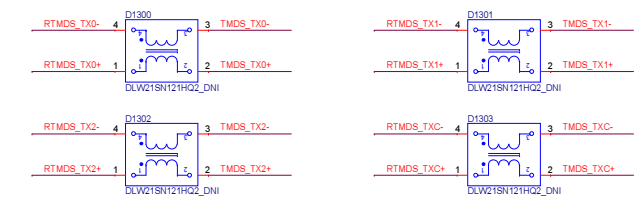
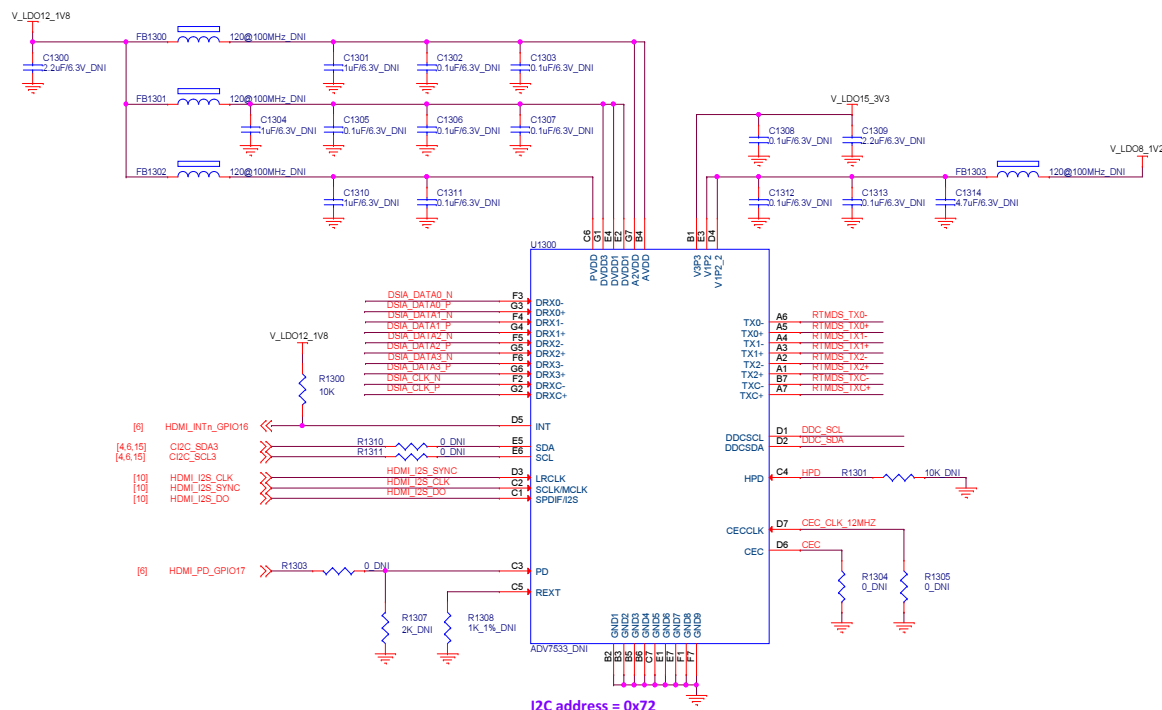
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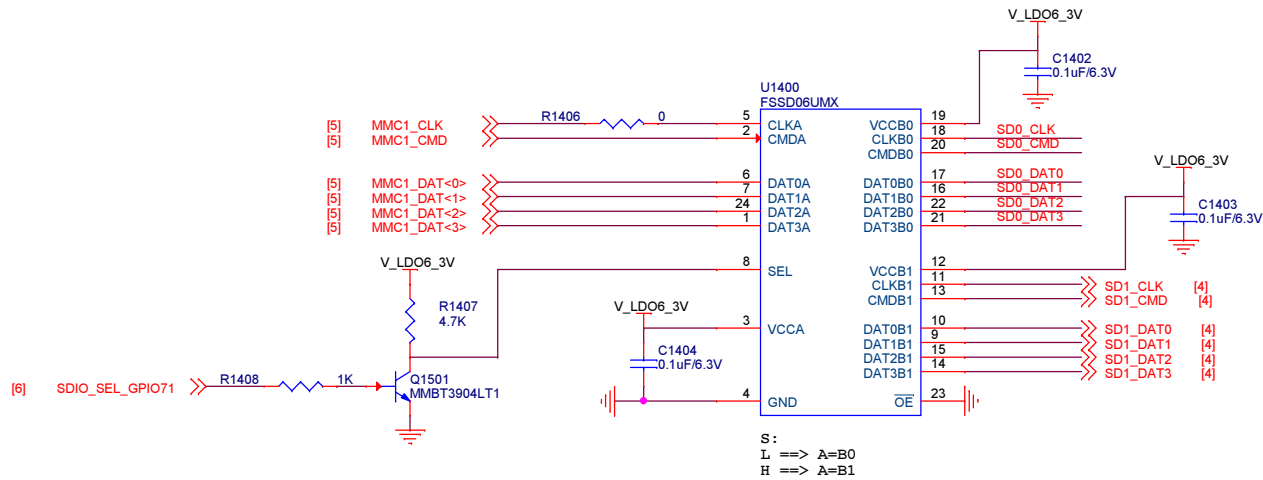
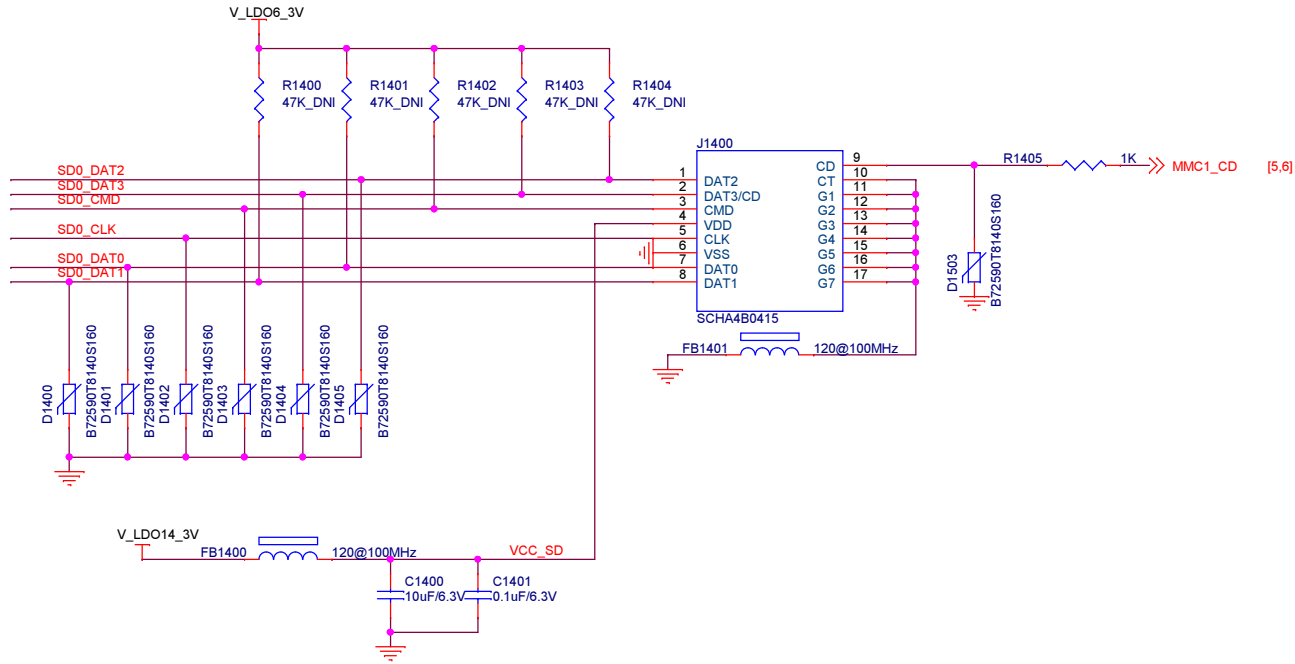
layout note: AGND pin(F5) should be grounded to a common plane right at the pad.







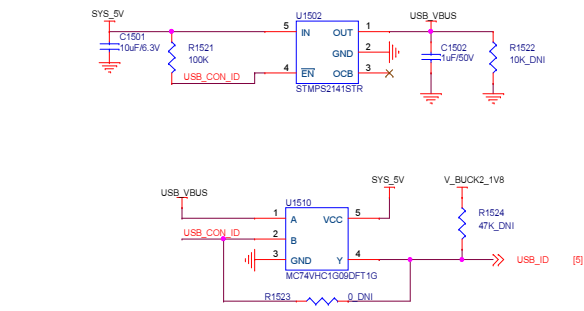
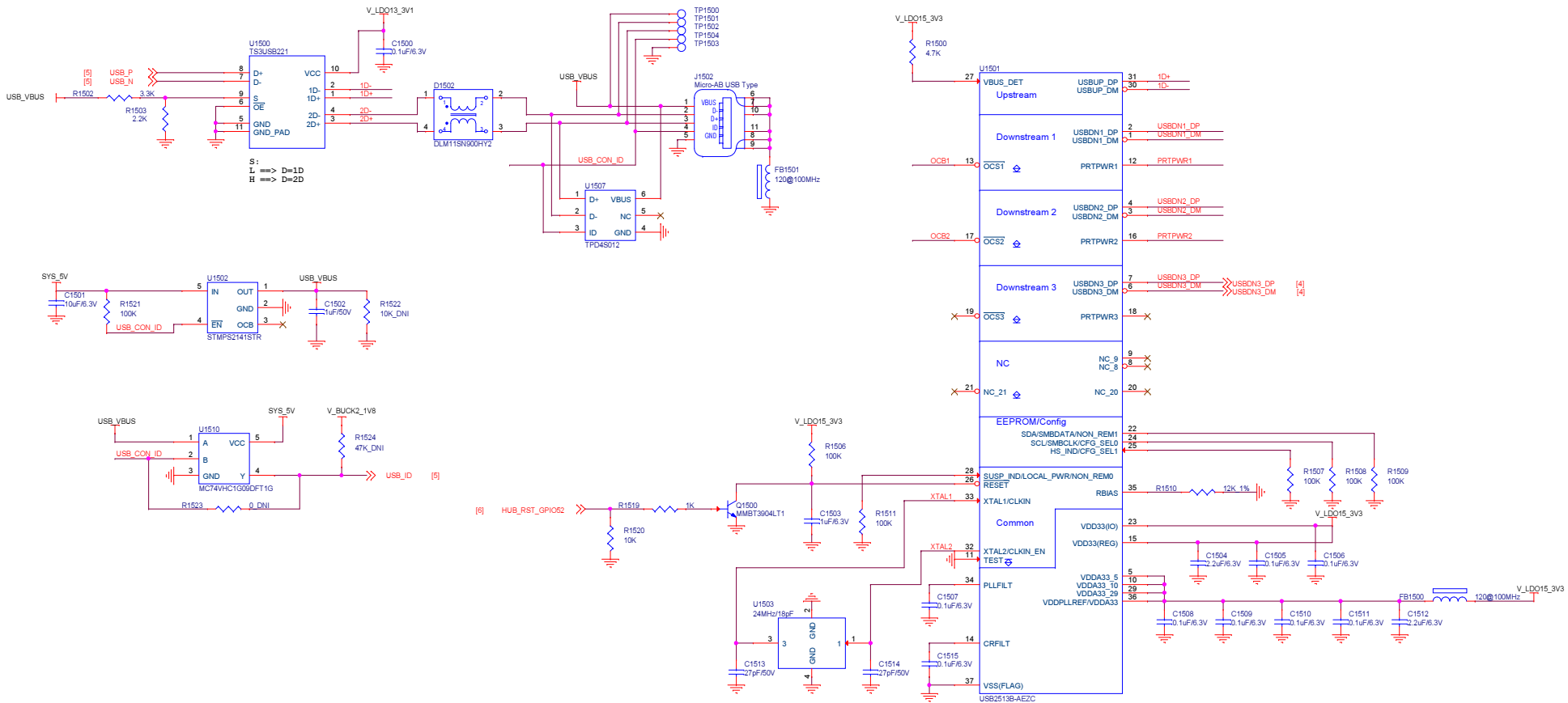
Micro SD Connector



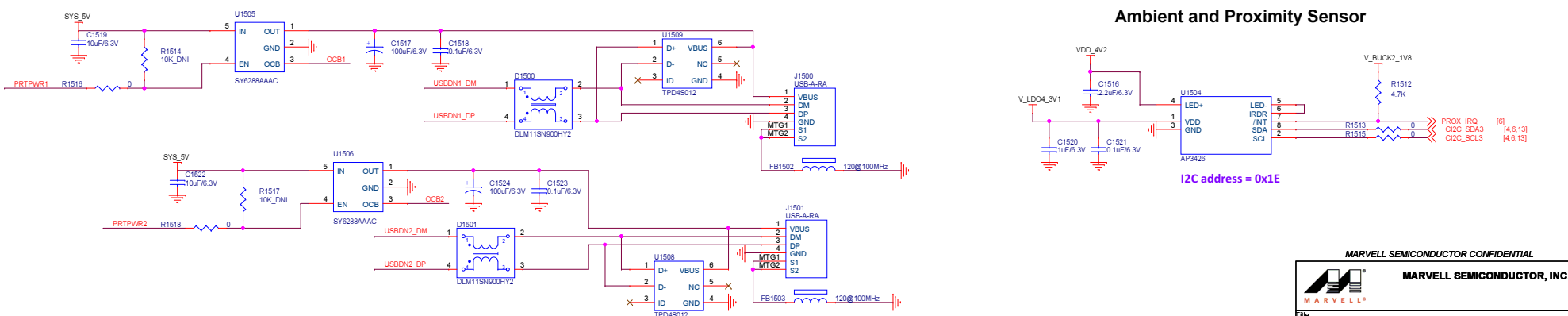
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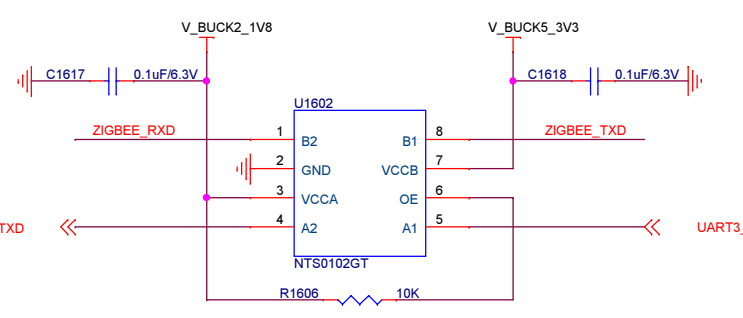
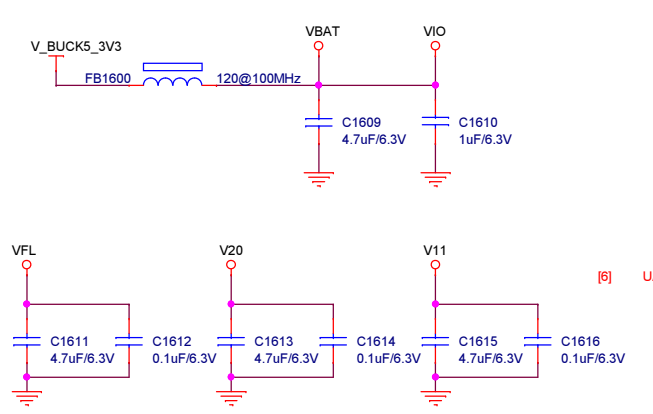
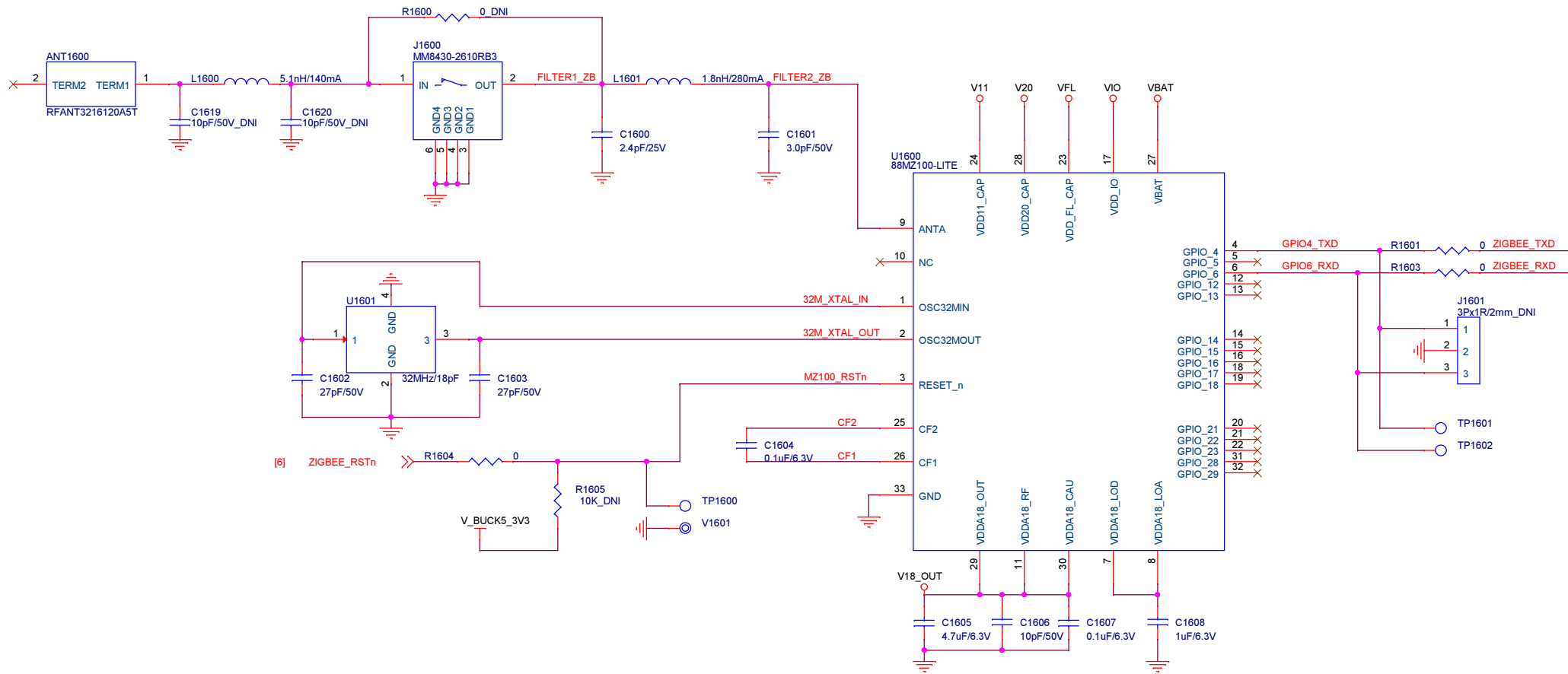
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### Ambient and Proximity Sensor



I2C address = 0x1E



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# POWER Supply

Supply order	Supply	Default voltage [V]	Default Enable	Recommended Supply	ILOAD [mA]
0	Buck1	1.1	On	VCC_CORE	3500mA
1	LDO2	1.8	On	ULC chip analog 1.8V power supply, DigRF_AVDD18, AVDD18_PLLM_PLL0, ANA_GRP_AVDD18_PLLM1/2, USB2_AVDD18 etc	100mA, Low Noise
2	Buck2	1.8	On	ULC chip 1.8V Domain, VCC_IO_GPIO1/2/3/4, VCC_IO_PMIC1/2, VCC_IO_NAND, VDD_MPHY_1P8, peripherals 1.8V, WiFi 1.8V etc	750mA
2	LDO4	3.1	On	ULC chip AVDD_USB, ambient and light sensor	100mA
3	Buck3	1.2	On	1.2V Domain	1500mA
4	LDO1	1.8	On	VCTCXO	100mA, Low Noise
5	Buck4	1.8	On	Expansion Port	750mA
5	LDO5	2.8	On	No use	100mA
6	LDO13	3.1	On	eMMC core voltage	400mA
7	LDO6	3	On	Micro SD I/O	100mA
7	LDO14	3	On	Micro SD	400mA
0	Buck5	3.3	Off	Zigbee Power	1500mA
0	LDO3	1.8	Off	ULC chip AVDD18_GPS	100mA, Low Noise
0	LDO7	1.8	Off	VCC_IO_USIM	100mA
0	LDO8	1.2	Off	No use	200mA
0	LDO9	2.8	Off	No use	200mA
0	LDO10	2.8	Off	No use	200mA
0	LDO11	2.8	Off	No use	200mA
0	LDO12	1.8	Off	VCC_IO_ANT	200mA
0	LDO15	3.3	Off	WIFI 3.3V/USB HUB/ADV7533	400mA
0	LDO16	1.8	Off	MIC Bias	10mA, very low noise

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**Andromeda-Edge Main Board GPIO Assignment**

Signal Name	Map to Pad	Reset State	Function	Multi-Function
EXP_I2S_CLK	GPIO_00	PULL_UP	SSPA2_CLK	Function 3
EXP_I2S_SYNC	GPIO_01	PULL_UP	SSPA2_FRM	Function 3
EXP_I2S_DO	GPIO_02	PULL_UP	SSPA2_TXD	Function 3
EXP_I2S_DI	GPIO_03	PULL_UP	SSPA2_RXD	Function 3
LCD_RESET_N	GPIO_04	PULL_UP	GPIO_04	Function 0
USER_LED1_GPIO05	GPIO_05	PULL_UP	GPIO_05	Function 0
USER_LED2_GPIO06	GPIO_06	PULL_UP	GPIO_06	Function 0
WIB_PDn	GPIO_07	PULL_UP	GPIO_07	Function 0
USER_LED3_GPIO08	GPIO_08	PULL_UP	GPIO_08	Function 0
GPIO_09	GPIO_09	PULL_UP	GPIO_09	Function 0
LED_ZIGBEE_GPIO10	GPIO_10	PULL_UP	GPIO_10/GPS_EXT_INT1	Function 0
ZIGBEE_RSTn_GPIO11	GPIO_11	PULL_UP	GPIO_11/GPS_EXT_INT2	Function 0
GPIO_12	GPIO_12	PULL_UP	GPIO_12	Function 0
GPIO_13	GPIO_13	PULL_UP	GPIO_13	Function 0
FS#44_SEL_GPIO14	GPIO_14	PULL_UP	GPIO_14	Function 0
USER_LED4_GPIO15	GPIO_15	PULL_UP	GPIO_15	Function 0
HDMI_INTr_GPIO16	GPIO_16	PULL_UP	GPIO_16	Function 0
HDMI_PD_GPIO17	GPIO_17	PULL_UP	GPIO_17	Function 0
GPIO_18	GPIO_18	PULL_UP	GPIO_18	Function 0
PA_EN	GPIO_19	PULL_UP	GPIO_19	Function 0
PROX_IRQ	GPIO_20	PULL_DOWN	GPIO20/GPS_EXT_INT6	Function 0
I2S_BITCLK	GPIO_21	PULL_UP	SSPA1_CLK	Function 7
I2S_SYNC	GPIO_22	PULL_UP	SSPA1_FRM	Function 7
I2S_DATA_OUT	GPIO_23	PULL_UP	SSPA1_TXD	Function 7
I2S_DATA_IN	GPIO_24	PULL_DOWN	SSPA1_RXD	Function 7
PCM_CLK	GPIO_25	PULL_UP	SSPA2_CLK	Function 7
PCM_SYNC	GPIO_26	PULL_UP	SSPA2_FRM	Function 7
PCM_TXD	GPIO_27	PULL_UP	SSPA2_TXD	Function 7
PCM_RXD	GPIO_28	PULL_UP	SSPA2_RXD	Function 7
LED_BT_GPIO29	GPIO_29	PULL_UP	GPIO_29	Function 0
LED_WLAN_GPIO30	GPIO_30	PULL_UP	GPIO_30	Function 0
UART3_TXD	GPIO_31	PULL_UP	UART3_TXD	Function 4
UART3_RXD	GPIO_32	PULL_UP	UART3_RXD	Function 4
NC	GPIO_33	PULL_UP	GPIO_33	Function 0
NC	GPIO_34	PULL_UP	GPIO_34	Function 0
NC	GPIO_35	PULL_UP	GPIO_35	Function 0
NC	GPIO_36	PULL_UP	GPIO_36	Function 0
WLAN_DAT3	GPIO_37	PULL_UP	MMC2_DATA3	Function 1
WLAN_DAT2	GPIO_38	PULL_UP	MMC2_DATA2	Function 1
WLAN_DAT1	GPIO_39	PULL_UP	MMC2_DATA1	Function 1
WLAN_DATA0	GPIO_40	PULL_UP	MMC2_DATA0	Function 1
WLAN_CMD	GPIO_41	PULL_UP	MMC2_CMD	Function 1
WLAN_CLK	GPIO_42	PULL_UP	MMC2_CLK	Function 1
UART1_RXD	GPIO_43	PULL_UP	UART1_RXD	Function 7
UART1_TXD	GPIO_44	PULL_UP	UART1_TXD	Function 7
UART3_RXD	GPIO_45	PULL_UP	UART3_RXD/GPS_UART_RXD	Function 1/Function 3
UART3_TXD	GPIO_46	PULL_UP	UART3_TXD/GPS_UART_TXD	Function 1/Function 3
AP_RXD	GPIO_47	PULL_UP	UART2_RXD	Function 6
AP_TXD	GPIO_48	PULL_UP	UART2_TXD	Function 6

**Andromeda-Edge Main Board GPIO Assignment**

Signal Name	Map to Pad	Reset State	Function	Multi-Function
NC	GPIO_49	PULL_UP	GPIO_49	Function 0
NC	GPIO_50	PULL_UP	GPIO_50	Function 0
PWM_GPIO51	GPIO_51	PULL_UP	PWM[2]	Function 2
HUB_RST_GPIO52	GPIO_52	PULL_UP	GPIO_52	Function 0
CI2C_SCL	GPIO_53	PULL_UP	CI2C_SCL/OVT_I2C0_SCL	Function 2 for smart camera sensor, Function 7 for RAW camera sensor.
CI2C_SDA	GPIO_54	PULL_UP	CI2C_SDA/OVT_I2C0_SDA	Function 2 for smart camera sensor, Function 7 for RAW camera sensor.
CAM_RST_MAIN	GPIO_67	PULL_UP	GPIO_67/camera0_rst	Function 0 for smart camera sensor, Function 5 for RAW camera sensor.
CAM_PD_MAIN	GPIO_68	PULL_UP	GPIO_68/camera0_pdn	Function 0 for smart camera sensor, Function 5 for RAW camera sensor.
CAM_RST_SUB	GPIO_69	PULL_UP	GPIO_69	Function 0
CAM_PD_SUB	GPIO_70	PULL_UP	GPIO_70	Function 0
SD_SEL_GPIO71	GPIO_71	PULL_UP	GPIO_71	Function 0
TP_INT	GPIO_72	PULL_UP	GPIO_72	Function 0
CI2C_SCL3	GPIO_73	PULL_UP	CI2C_SCL_3/GPS_I2C_SCL	Function 5 for sensors, Function 7 for GPS sensor hub.
CI2C_SDA3	GPIO_74	PULL_UP	CI2C_SDA_3/GPS_I2C_SDA	Function 5 for sensors, Function 7 for GPS sensor hub.
TP_RESET	GPIO_75	PULL_UP	GPIO_75	Function 0
NC	GPIO_76	PULL_UP	GPIO_76	Function 0
CAM_MCLK	GPIO_77	PULL_UP	CAM_MCLK	Function 1
NC	GPIO_78	PULL_UP	GPIO_78	Function 0
NC	GPIO_79	PULL_UP	GPIO_79	Function 0
NC	GPIO_80	PULL_UP	GPIO_80	Function 0
NC	GPIO_81	PULL_UP	GPIO_81	Function 0
NC	GPIO_82	PULL_UP	GPIO_82	Function 0
NC	GPIO_83	PULL_UP	GPIO_83	Function 0
NC	GPIO_84	PULL_UP	GPIO_84	Function 0
NC	GPIO_85	PULL_UP	GPIO_85	Function 0
NC	GPIO_86	PULL_UP	GPIO_86	Function 0
CI2C_SCL2	GPIO_87	PULL_UP	CI2C_SCL_2	Function 5 for cap touch panel.
CI2C_SDA2	GPIO_88	PULL_UP	CI2C_SDA_2	Function 5 for cap touch panel.
NC	GPIO_89	PULL_UP	GPIO_89	Function 0
NC	GPIO_90	PULL_UP	GPIO_90	Function 0
NC	GPIO_91	PULL_UP	GPIO_91	Function 0
MMC1_CD	GPIO_92	PULL_UP	GPIO_92	Function 0
DVC2	GPIO_93	PULL_DOWN	DVL[1]	Function 5
DVC1	GPIO_94	PULL_DOWN	DVL[0]	Function 5
DVC3	GPIO_95	PULL_DOWN	DVL[2]	Function 5
NC	GPIO_96	PULL_DOWN	GPIO_96	Function 0
NC	GPIO_97	PULL_DOWN	GPIO_97	Function 0
NC	GPIO_98	PULL_DOWN	GPIO_98	Function 0
NC	CLK_REQ	PULL_DOWN	GPIO_123	Function 1
NC	GPIO_124	PULL_DOWN	GPIO_124	Function 0
NC	VCXO_REQ	PULL_DOWN	GPIO_125	Function 1

