


Page 2: MXM3 interface connector
Page 3: Power Supply
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UL = UnLoaded = normally not mounted component.

Default jumper settings are indicated in the schematic.
However, always check jumper positions on actual boards
since there is no guarantee that all jumpers are in default place.

Rev A	
First release	
	
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COM Board connector (MXM3)

J1A

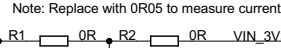
J1B

MXM3 connector

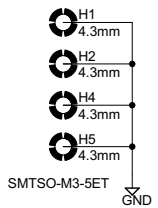
bottom side

top side

bottom side		top side	
PCIE_RX_N	321	P156	320
PCIE_RX_P	319	P155	318
PCIE_TX_N	317	P154	316
PCIE_TX_P	315	P153	314
PCIE_CLK_N	313	P152	312
PCIE_CLK_P	311	P151	310
SATA_RXP	309	P150	308
SATA_RXN	307	P149	306
SATA_TXN	305	P148	304
SATA_TXP	303	P147	302
CSL_CLKOP	299	P146	300
CSL_CLKOM	297	P145	298
CSL_D0P	295	P144	296
CSL_D0M	293	P143	294
CSL_D1P	291	P142	292
CSL_D1M	289	P141	290
CSL_D2P	287	P140	288
CSL_D2M	285	P139	286
CSL_D3P	283	P138	284
CSL_D3M	281	P137	282
CSI_DATA07	279	P136	280
CSI_DATA00	277	P135	278
CSI_DATA01	275	P134	276
CSI_DATA02	273	P133	274
CSI_DATA03	271	P132	272
CSI_DATA04	269	P131	270
CSI_DATA05	267	P130	268
CSI_DATA06	265	P129	266
CSI_DATA07	263	P128	264
CSI_DATA08	261	P127	262
CSI_DATA09	259	P126	260
CSI_DATA10	257	P125	258
CSI_DATA11	255	P124	254
CSI_DATA12	253	P123	252
CSI_DATA13	251	P122	250
CSI_DATA14	249	P121	248
CSI_DATA15	247	P120	246
CSI_DATA16	245	P119	244
CSI_DATA17	243	P118	242
CSI_DATA18	241	P117	240
CSI_DATA19	239	P116	238
CSI_DATA20	237	P115	236
CSI_DATA21	235	P114	234
CSI_DATA22	233	P113	232
CSI_DATA23	231	P112	230
CSI_DATA24	229	P111	228
CSI_DATA25	227	P110	226
CSI_DATA26	225	P109	224
CSI_DATA27	223	P108	222
CSI_DATA28	221	P107	220
CSI_DATA29	219	P106	218
CSI_DATA30	217	P105	216
CSI_DATA31	215	P104	214
CSI_DATA32	213	P103	212
CSI_DATA33	211	P102	210
CSI_DATA34	209	P101	208
CSI_DATA35	207	P100	206
CSI_DATA36	205	P99	204
CSI_DATA37	203	P98	202
CSI_DATA38	201	P97	200
CSI_DATA39	199	P96	198
CSI_DATA40	197	P95	196
CSI_DATA41	195	P94	194
CSI_DATA42	193	P93	192
CSI_DATA43	191	P92	190
CSI_DATA44	189	P91	188
CSI_DATA45	187	P90	186
CSI_DATA46	185	P89	184
CSI_DATA47	183	P88	182
CSI_DATA48	181	P87	180
CSI_DATA49	179	P86	178
CSI_DATA50	177	P85	176
CSI_DATA51	175	P84	174
CSI_DATA52	173	P83	172
CSI_DATA53	171	P82	170
CSI_DATA54	169	P81	168
CSI_DATA55	167	P80	166
CSI_DATA56	165	P79	164
CSI_DATA57	163	P78	162
CSI_DATA58	161	P77	160
CSI_DATA59	159	P76	158
CSI_DATA60	157	P75	156



SMARC mounting holes



LCD_DATA00	149	S75	LCD_B0	148	USB_OTG_OC	P74
LCD_DATA15	145	S74	GND	146	USB_OTG_PWRN	P73
LCD_DATA14	143	S73	LCD_G7	144	USB_OTG_VBUS	P72
LCD_DATA13	141	S72	LCD_G6	142	USB_OTG_VBUS	P71
LCD_DATA12	139	S71	LCD_G5	140	USB_OTG_DP	P70
LCD_DATA11	137	S70	LCD_G4	138	USB_OTG_DM	P69
LCD_DATA10	135	S69	LCD_G3	136	USB_OTG_ID	P68
LCD_DATA09	133	S68	LCD_G2	134	USB_OTG_DP	P67
LCD_DATA08	131	S67	LCD_G1	132	USB_OTG_DM	P66
LCD_DATA23	129	S66	LCD_G0	130	USB_OTG_ID	P65
LCD_DATA22	127	S65	LCD_R7	128	USB_OTG_DP	P64
LCD_DATA21	125	S64	LCD_R6	126	USB_OTG_DM	P63
LCD_DATA20	123	S63	LCD_R5	124	ETH2_TRXP2	P62
LCD_DATA19	121	S62	LCD_R4	122	ETH2_TRXN2	P61
LCD_DATA18	119	S61	LCD_R3	120	ETH2_TRXP3	P60
LCD_DATA17	117	S60	LCD_R2	118	ETH2_TRXN3	P59
LCD_DATA16	115	S59	LCD_R1	116	ETH2_LED_10_100	P58
	113	S58	LCD_R0	114	ETH2_LINK	P57
BL_CONTRAST_PWM-GPIO	111	S57	GND	112	ETH2_LED_ACT	P56
BL_PWR_EN-GPIO	109	S56	BL_PWM	110	ETH2_LED_1000	P55
DISP_PWR_EN-GPIO	107	S55	BL_PWR_EN	108	ETH2_TRXN0	P54
TP_IRQ-GPIO	105	S54	DISP_PWR_EN	106	ETH2_TRXP0	P53
TP_RST-GPIO	103	S53	TP_IRQ	104	ETH2_TRXN1	P52
I2C3_SCL	101	S52	TP_RST	102	ETH2_TRXP1	P51
I2C3_SDA	99	S51	HDMI/I2C_SCL	100	ETH2_TRXN2	P50
I2C2_SCL	97	S50	HDMI/I2C_SDA	98	ETH1_TRXP2	P49
I2C2_SDA	95	S49	I2C2_SCL	96	ETH1_TRXN2	P48
I2C1_SCL	93	S48	I2C2_SDA	94	ETH1_TRXP3	P47
I2C1_SDA	91	S47	I2C1_SCL	92	ETH1_TRXN3	P46
LVDS0_CLK_N	89	S46	I2C1_SDA	90	ETH1_LED_10_100	P45
LVDS0_CLK_P	87	S45	LVDS0_CLK_N	88	ETH1_LED_1000	P44
	85	S44	LVDS0_CLK_P	86	ETH1_LINK	P43
LVDS0_DATA0_N	83	S43	GND	84	ETH1_ACT	P42
LVDS0_DATA0_P	81	S42	LVDS0_D0_N	82	ETH1_LINK1000	P41
	79	S41	LVDS0_D0_P	80	ETH1_MD0_N	P40
LVDS0_DATA1_N	77	S40	GND	78	ETH1_MD0_P	P39
LVDS0_DATA1_P	75	S39	LVDS0_D1_N	76	ETH1_TRXP0	P38
	73	S38	LVDS0_D1_P	74	ETH1_TRXN1	P37
LVDS0_DATA2_N	71	S37	GND	72	ETH1_TRXP1	P36
LVDS0_DATA2_P	69	S36	LVDS0_D2_N	70	ETH1_MD1_P	P35
GPIO_41	67	S35	LVDS0_D2_P	68	GND	P34
LVDS0_DATA3_N	65	S34	GPIO8	66	HDMI_CEC_IN	P33
LVDS0_DATA3_P	63	S33	LVDS0_D3_N	64	HDMI_D2P	P32
	61	S32	LVDS0_D3_P	62	HDMI_D2M	P31
LVDS1_CLK_N	59	S31	GND	60	HDMI_D1P	P30
LVDS1_CLK_P	57	S30	LVDS1_CLK_N	58	HDMI_D1M	P29
	55	S29	LVDS1_CLK_P	56	HDMI_HPD	P28
LVDS1_DATA0_N	53	S28	GND	54	HDMI_D0P	P27
LVDS1_DATA0_P	51	S27	LVDS1_D0_N	52	HDMI_D0M	P26
	49	S26	LVDS1_D0_P	50	HDMI_TXD0_N	P25
LVDS1_DATA1_N	47	S25	GND	48	HDMI_TXD0_P	P24
LVDS1_DATA1_P	45	S24	LVDS1_D1_N	46	HDMI_TXC_P	P23
	43	S23	LVDS1_D1_P	44	HDMI_TXC_N	P22
LVDS1_DATA2_N	41	S22	GND	42	GND	P21
LVDS1_DATA2_P	39	S21	LVDS1_D2_N	40	MMC_DATA2	P20
GPIO_42	37	S20	LVDS1_D2_P	38	MMC_DATA3	P19
LVDS1_DATA3_N	35	S19	GPIO9	36	MMC_DATA4	P18
LVDS1_DATA3_P	33	S18	LVDS1_D3_N	34	MMC_CMD	P17
	31	S17	LVDS1_D3_P	32	MMC_DATA5	P16
CAN1_RD	29	S16	GND	30	MMC_CLK	P15
CAN1_TX	27	S15	CAN1_RX	28	MMC_DATA6	P14
CAN2_RD	25	S14	CAN1_TX	26	MMC_DATA7	P13
CAN2_TX	23	S13	CAN2_RX	24	MMC_DATA0	P12
SPDIF_OUT-GPIO	21	S12	CAN2_TX	22	MMC_DATA1	P11
SPDIF_IN-GPIO	19	S11	SPDIF_OUT	20	SD_DATA2	P10
	17	S10	SPDIF_IN	18	SD_DATA3	P9
AUD_MCLK	15	S9	GND	16	SD_PWR	P8
AUD_TXD	13	S8	AUDIO_MCLK	14	SD_CLK	P7
AUD_TXC	11	S7	AUDIO_TXC	12	SD_DATA0	P6
AUD_RXD	9	S6	AUDIO_TXD	10	SD_DATA1	P5
AUD_TXFS	7	S5	AUDIO_RXD	8	GPIO_28-SD_PWR_EN	P4
	5	S4	AUDIO_TXFS	6	GPIO_29-SD_CD	P3
MOS_LEFT-GPIO	3	S3	GND	4	GPIO_30-PCIE_DISABLE	P2
MOS_RIGHT-GPIO	1	S2	MOS_LEFT	2	GPIO_31-CAN_STRB	P1
		S1	MOS_RIGHT			

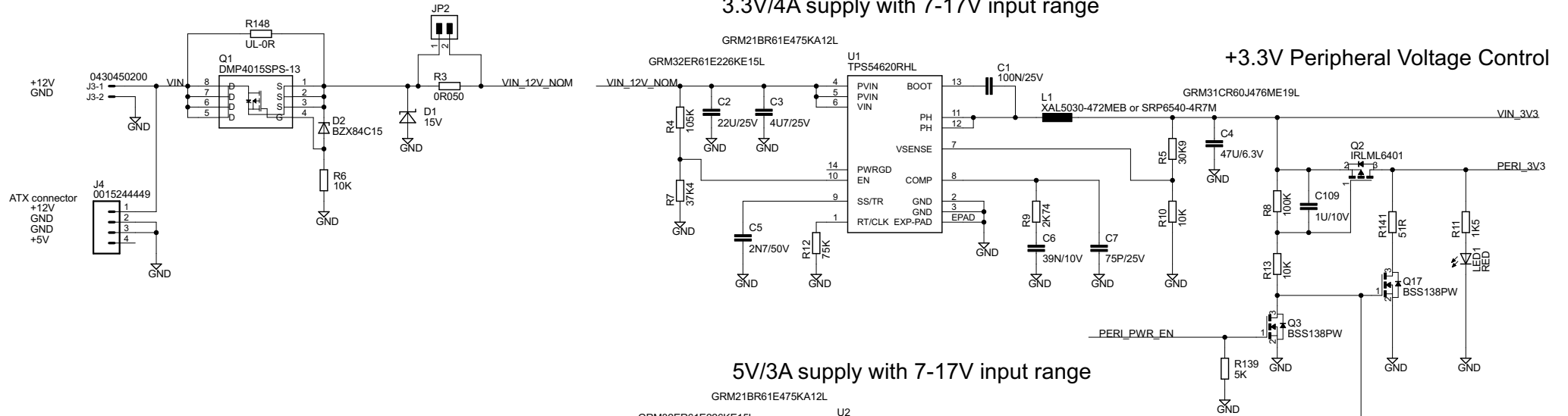


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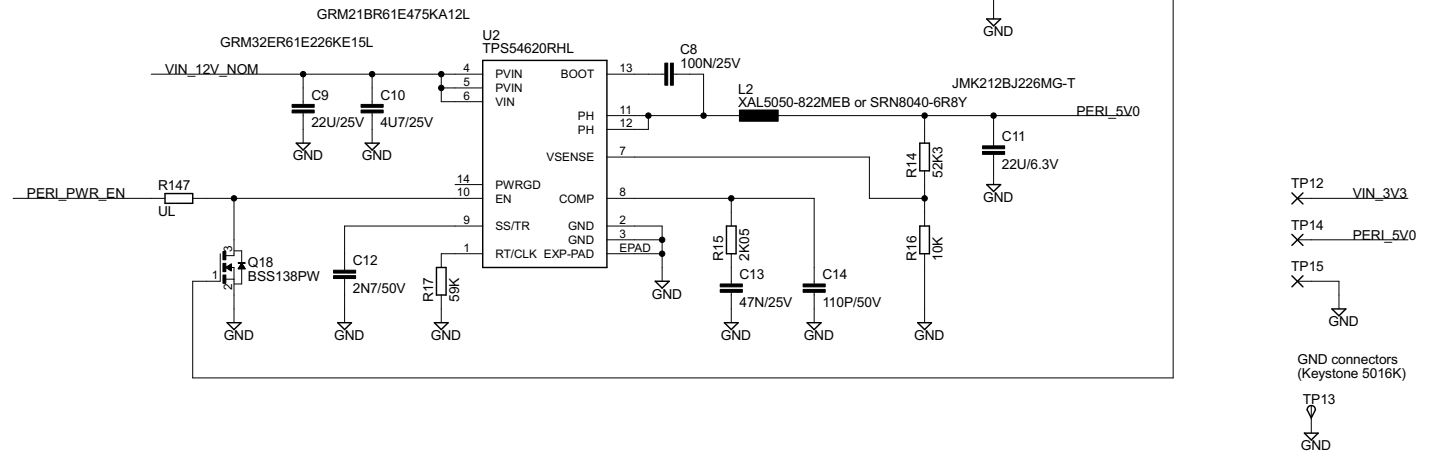
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Power Supply Input

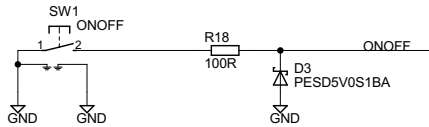
3.3V/4A supply with 7-17V input range



5V/3A supply with 7-17V input range

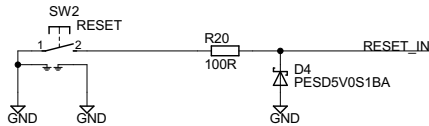


Push-button for on/off



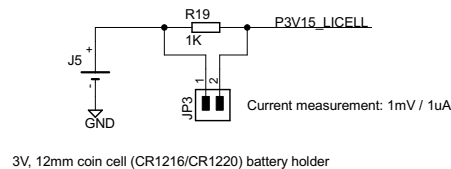
FSMRA3JH (for on/off-button)

Push-button for reset



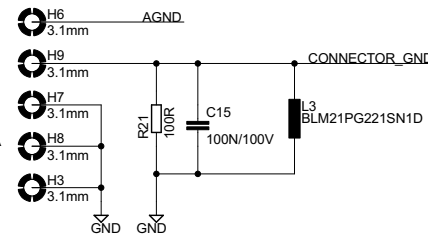
FSMRA2JH (for reset-button)

External Li-Cell



3V, 12mm coin cell (CR1216/CR1220) battery holder

Mounting Holes



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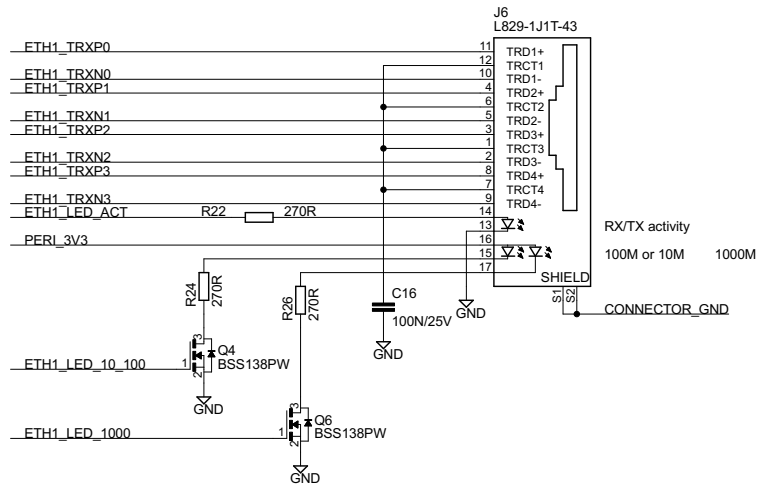
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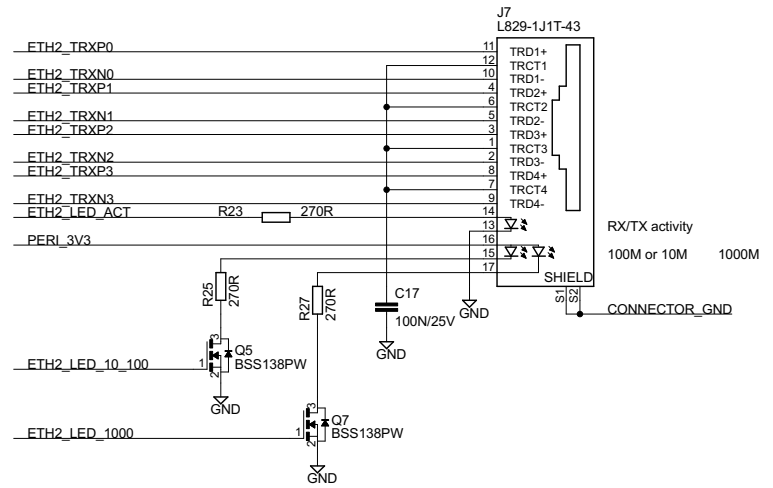
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Ethernet interfaces

Ethernet Interface #1



Ethernet Interface #2



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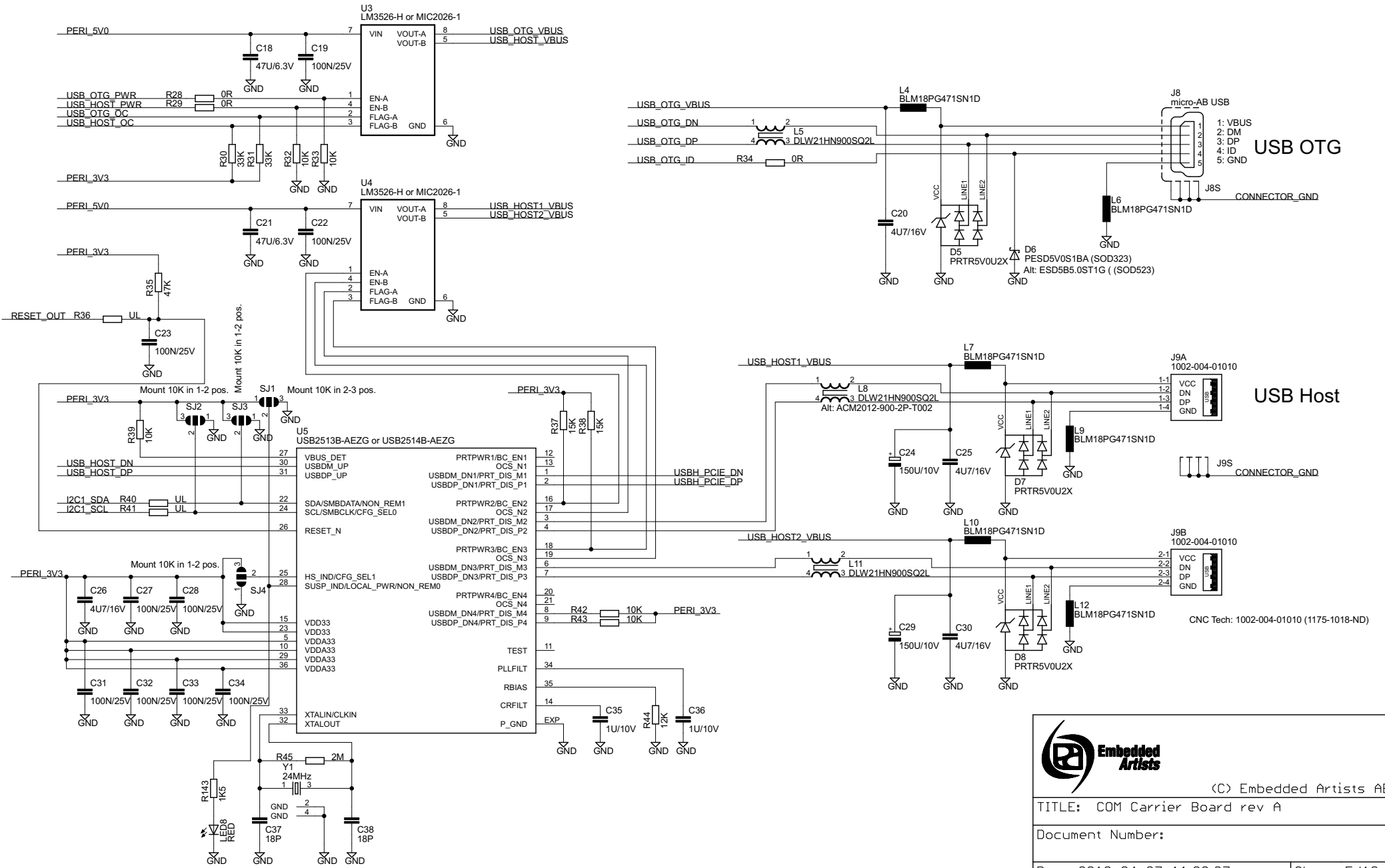
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USB Interfaces





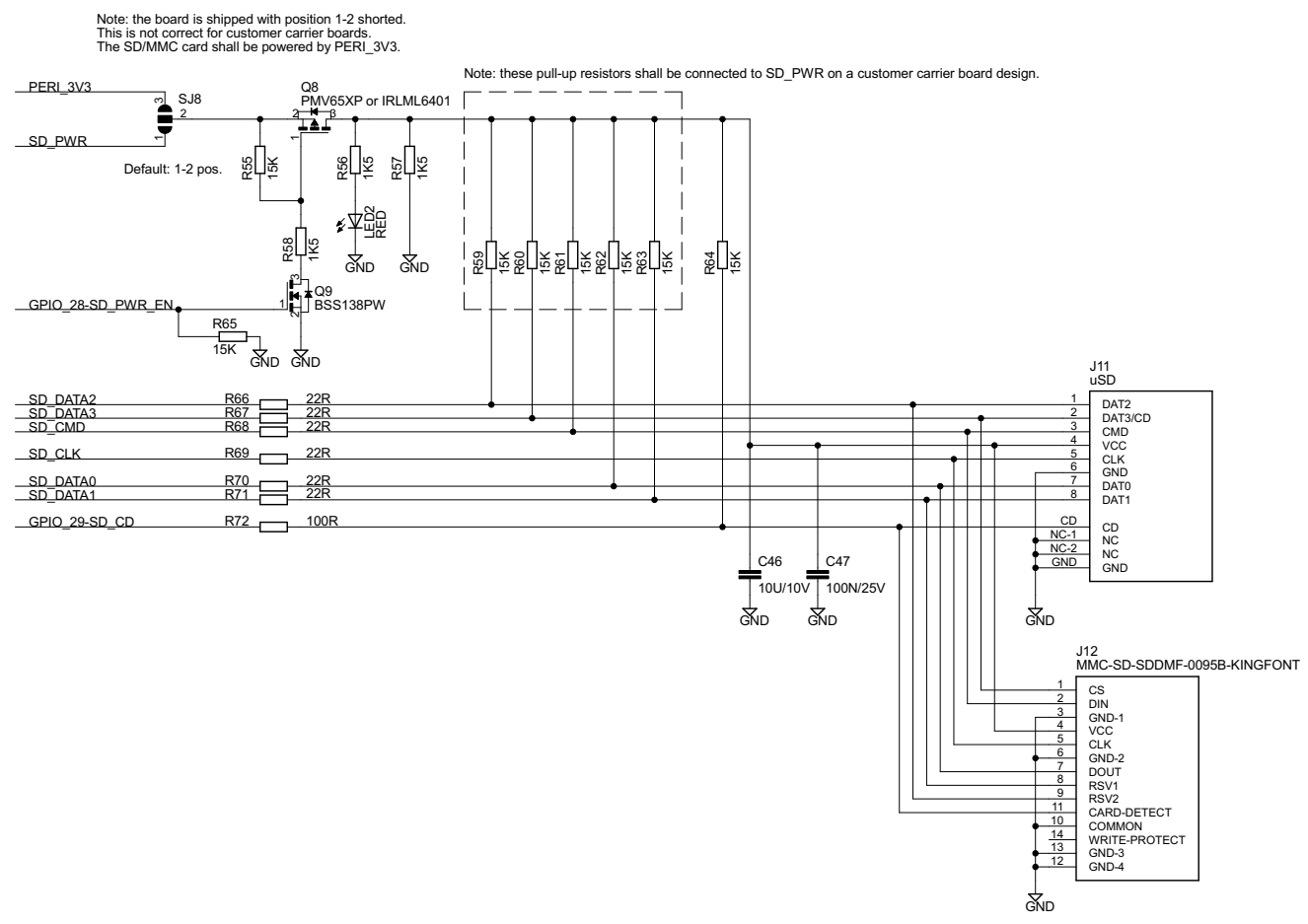
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uSD Memory Card Interface





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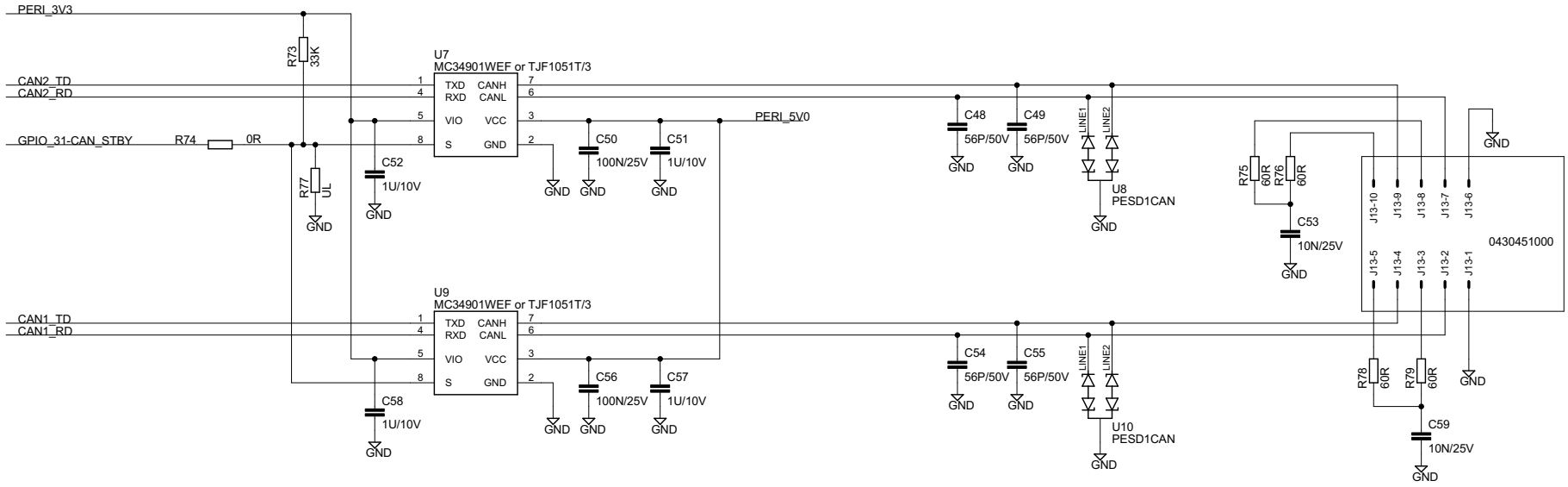
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CAN Interfaces

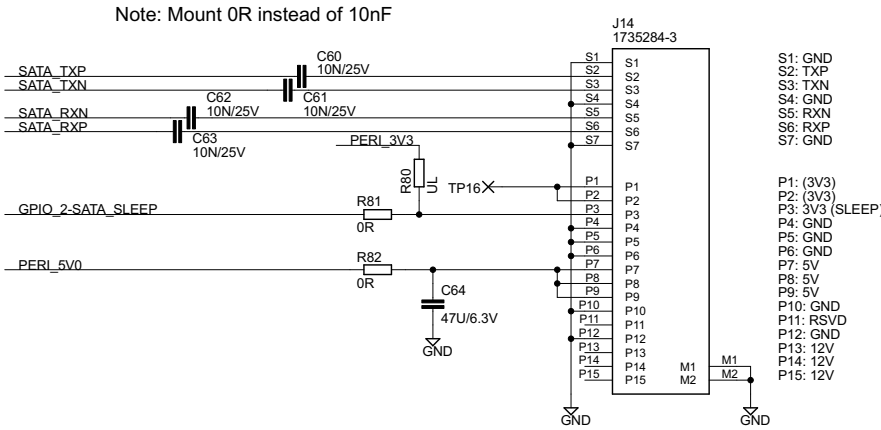
CAN transceivers



	
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SATA Interface

22 pos SATA Connector



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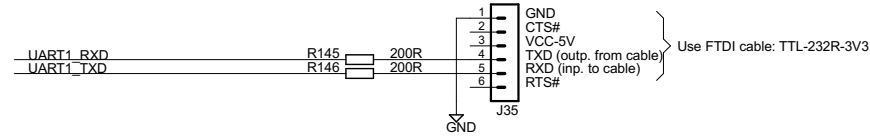
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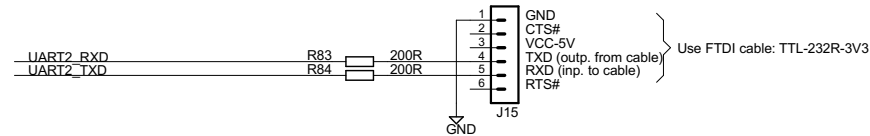
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UART Interfaces

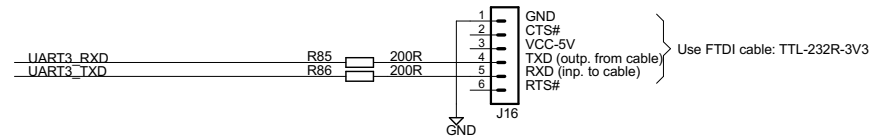
UART header for FTDI cable



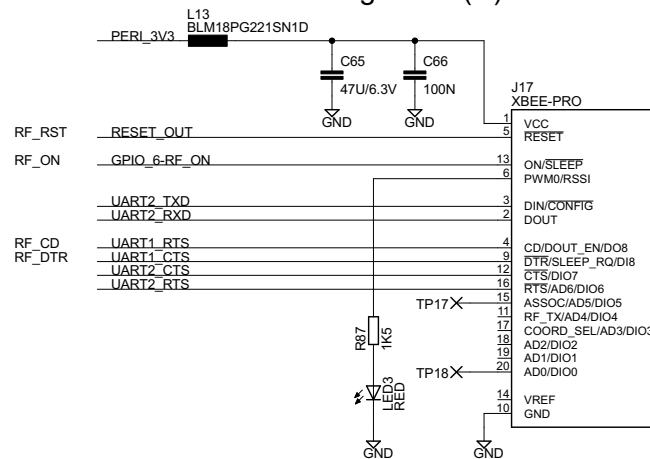
UART header for FTDI cable



UART header for FTDI cable



Digi XBee(R) RF-module



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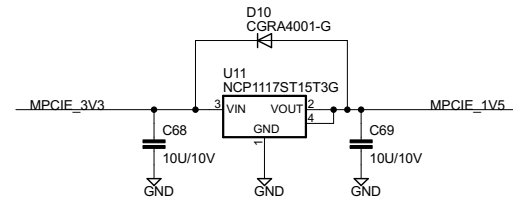
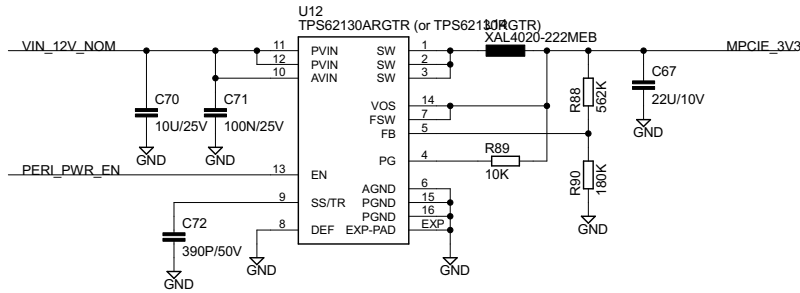
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PCIe Interface

Vin: 4.5-17V, Vout: 3.3V/3A

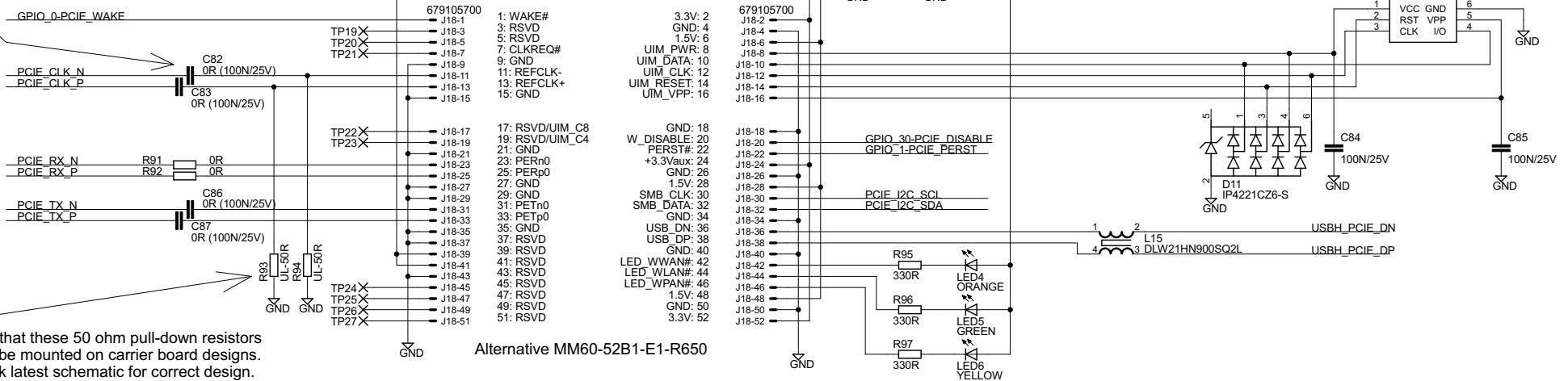


3.3V, 3A peak, 1.1A normal

1.5V, 500mA peak

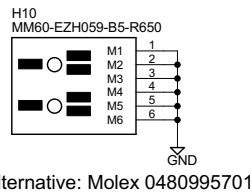
Note that these capacitors on REFCLK shall normal not be part of the carrier board design. Check latest schematic for correct design.

Mini PCIe Connector



Note that these 50 ohm pull-down resistors shall be mounted on carrier board designs. Check latest schematic for correct design.

Mini PCIe board fastening



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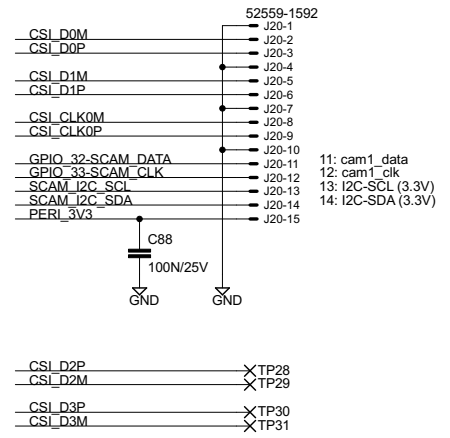
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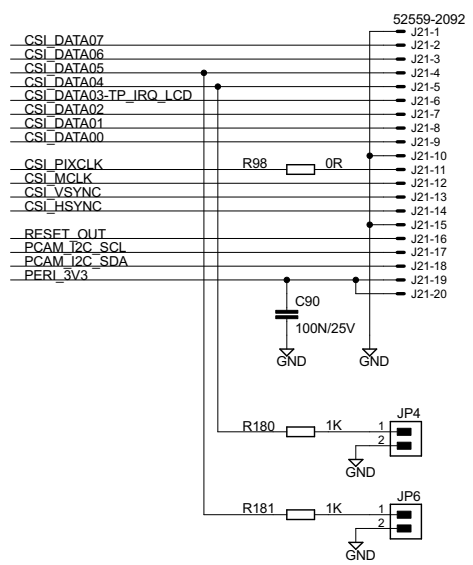
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Camera / Display Interfaces

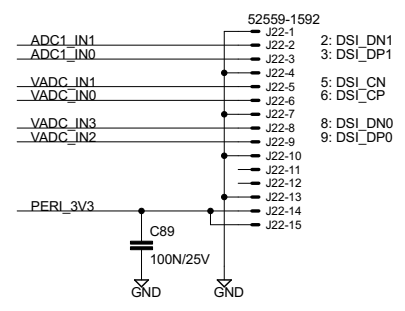
RPI serial camera (MIPI)



Parallel camera interface (+3.3V logic levels)

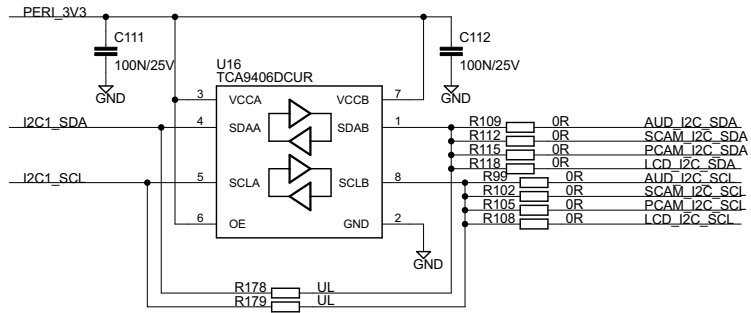


RPI serial display (MIPI) or VADC signals



I2C Connections

I2C1

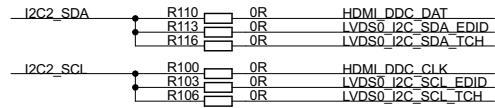


Audio codec: WM8731SEDS
 8-bit I2C address (0x34/0x35): 0.0.1.1.0.1.0.RW
 7-bit I2C address (0x1A): 0.0.1.1.0.1.0

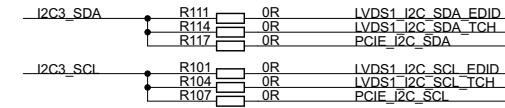
Touch Screen Controller: AR1021
 8-bit I2C address (0x9A/0x9B): 1.0.0.1.1.0.1.RW
 7-bit I2C address (0x4D): 1.0.0.1.1.0.1

64kbit BIOS E2PROM
 8-bit I2C address (0xAC/0xAD): 1.0.1.0.1.1.0.RW
 7-bit I2C address (0x56): 1.0.1.0.1.1.0

I2C2



I2C3



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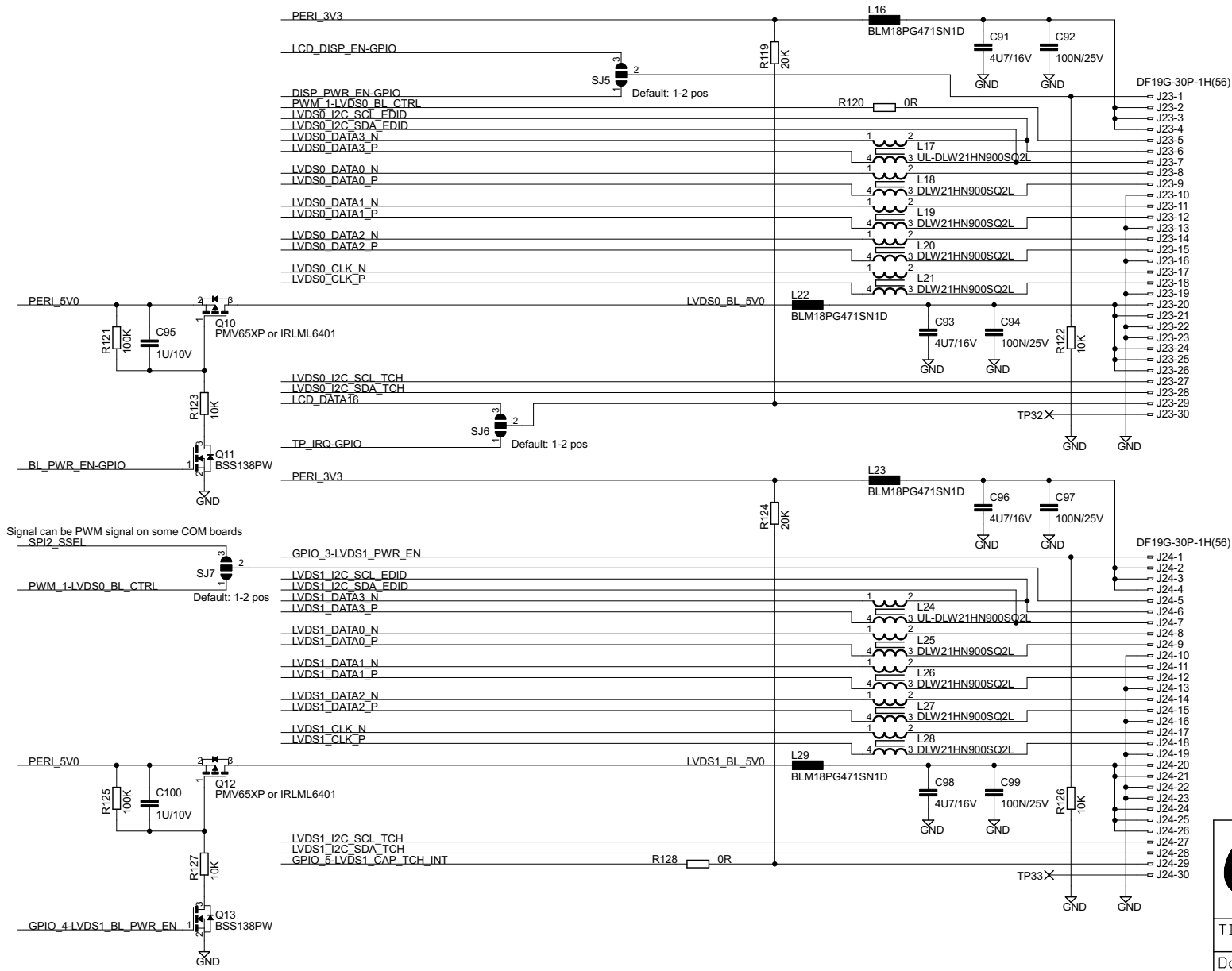
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LVDS Interfaces





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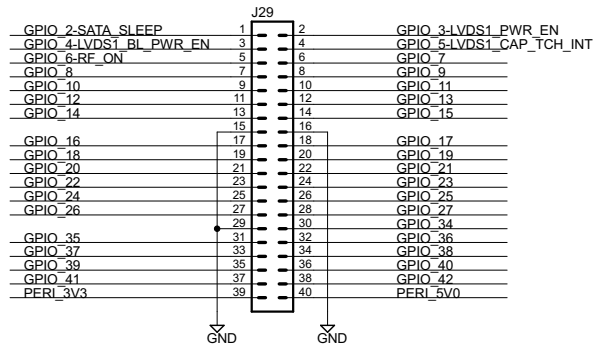
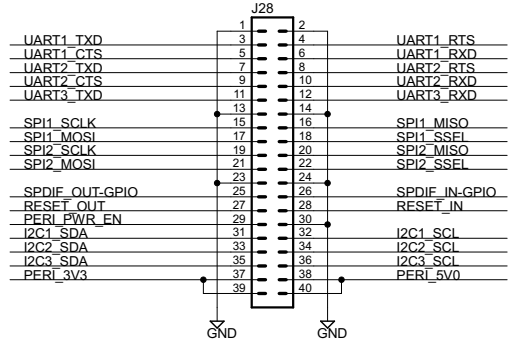
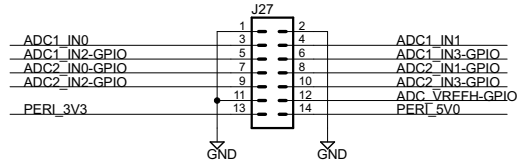
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Expansion Connectors

Expansion Connectors (50mil pitch)



Embedded Artists

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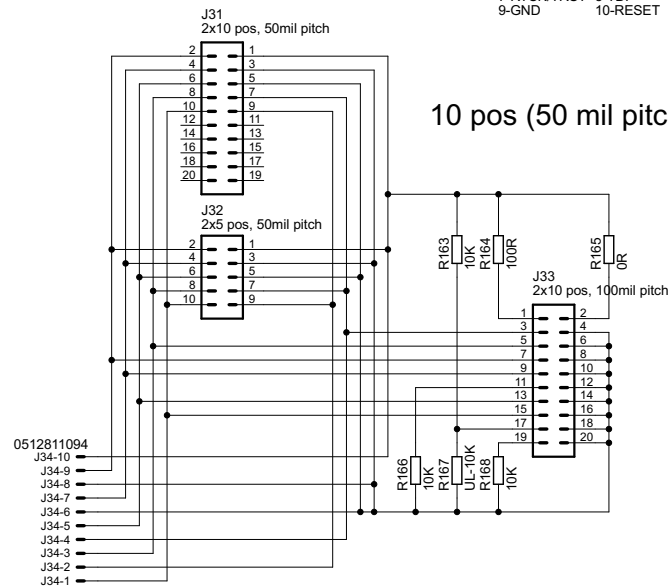
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Debug Interfaces

JTAG Debug Interfaces ARM 10-pin interface JTAG Mode

- | | |
|-------------|----------|
| 1-VCC | 2-TMS |
| 3-GND | 4-TCLK |
| 5-GND | 6-TDO |
| 7-RTCK/TRST | 8-TDI |
| 9-GND | 10-RESET |



ARM 20-pin interface JTAG Mode

- | | |
|---------------|--------|
| 1-VCC (Vtref) | 2-N/C |
| 3-N/C (TRST) | 4-GND |
| 5-TDI | 6-GND |
| 7-TMS | 8-GND |
| 9-TCLK | 10-GND |
| 11-RTCK | 12-GND |
| 13-TDO | 14-GND |
| 15-RESET | 16-GND |
| 17-N/C | 18-GND |
| 19-N/C | 20-GND |

20 pos (100 mil pitch) connector



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