


Page 2: MXM3 interface connector  
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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

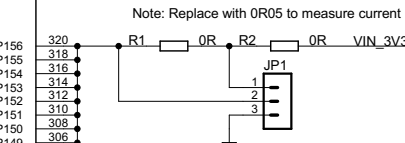
## MXM3 connector

bottom side

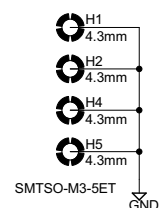
top side

S75 LCD_B0	P74	148	USB_OTG_OC
S74 GND	P73	146	USB_OTG_PWR
S73 LCD_G7	P72	144	USB_OTG_VBUS
S72 LCD_G6	P71	142	
S71 LCD_G5	P70	140	✕TP2
S70 LCD_G4	P69	138	✕TP2
S69 LCD_G3	P68	136	
S68 LCD_G2	P67	134	✕TP3
S67 LCD_G1	P66	132	✕TP4
S66 LCD_G0	P65	130	USB_OTG_ID
S65 LCD_R7	P64	128	USB_OTG_DP
S64 LCD_R6	P63	126	USB_OTG_DN
S63 LCD_R5	P62	124	
S62 LCD_R4	P61	122	ETH2_TRXP2
S61 LCD_R3	P60	120	ETH2_TRXN2
S60 LCD_R2	P59	118	ETH2_TRXP3
S59 LCD_R1	P58	116	ETH2_TRXN3
S58 LCD_R0	P57	114	ETH2_LED_10_100
S57 GND	P56	112	ETH2_LINK
S56 BL_PWM	P55	110	ETH2_LED_ACT
S55 BL_PWM_EN	P54	108	ETH2_LED_1000
S54 DISP_PWR_EN	P53	106	ETH2_TRXN0
S53 TP_IRQ	P52	104	ETH2_TRXP0
S52 TP_RST	P51	102	ETH2_TRXN1
S51 HDMI/I2C_SCL	P50	100	ETH2_TRXP1
S50 HDMI/I2C_SDA	P49	98	
S49 I2C2_SCL	P48	96	ETH1_TRXP2
S48 I2C2_SDA	P47	94	ETH1_TRXN2
S47 I2C1_SCL	P46	92	
S46 I2C1_SDA	P45	90	ETH1_TRXP3
S45 LVDS0_CLK_N	P44	88	ETH1_TRXN3
S44 LVDS0_CLK_P	P43	86	ETH1_LED_10_100
S43 GND	P42	84	ETH1_LED_ACT
S42 LVDS0_D0_N	P41	82	ETH1_LED_1000
S41 LVDS0_D0_P	P40	80	ETH1_TRXN0
S40 GND	P39	78	ETH1_TRXP0
S39 LVDS0_D1_N	P38	76	
S38 LVDS0_D1_P	P37	74	ETH1_TRXN1
S37 GND	P36	72	ETH1_TRXP1
S36 LVDS0_D2_N	P35	70	
S35 LVDS0_D2_P	P34	68	HDMI_CEC_IN
S34 GPIO8	P33	66	HDMI_D2P
S33 LVDS0_D3_N	P32	64	HDMI_D2M
S32 LVDS0_D3_P	P31	62	
S31 GND	P30	60	HDMI_D1P
S30 LVDS1_CLK_N	P29	58	HDMI_D1M
S29 LVDS1_CLK_P	P28	56	HDMI_HPD
S28 GND	P27	54	HDMI_D0P
S27 LVDS1_D0_N	P26	52	HDMI_D0M
S26 LVDS1_D0_P	P25	50	
S25 GND	P24	48	HDMI_CLKP
S24 LVDS1_D1_N	P23	46	HDMI_CLKM
S23 LVDS1_D1_P	P22	44	
S22 GND	P21	42	MMC_DATA2
S21 LVDS1_D2_N	P20	40	MMC_DATA3
S20 LVDS1_D2_P	P19	38	MMC_DATA4
S19 GPIO9	P18	36	MMC_CMD
S18 LVDS1_D3_N	P17	34	MMC_DATA5
S17 LVDS1_D3_P	P16	32	MMC_CLK
S16 GND	P15	30	MMC_DATA6
S15 CAN1_RX	P14	28	MMC_DATA7
S14 CAN1_TX	P13	26	MMC_DATA0
S13 CAN2_RX	P12	24	MMC_DATA1
S12 CAN2_TX	P11	22	SD_DATA2
S11 SPDIF_OUT	P10	20	SD_PWR
S10 SPDIF_IN	P9	18	SD_DATA3
S9 GND	P8	16	SD_CMD
S8 AUDIO_MCLK	P7	14	SD_CLK
S7 AUDIO_TXD	P6	12	SD_DATA0
S6 AUDIO_TXC	P5	10	SD_DATA1
S5 AUDIO_RXD	P4	8	GPIO_28-SD_PWR_EN
S4 AUDIO_TXFS	P3	6	GPIO_29-SD_CD
S3 GND	P2	4	GPIO_30-PCIE_DISABLE
S2 MOS_LEFT	P1	2	GPIO_31-CAN_STRB
S1 MOS_RIGHT			

bottom side	top side
PCIE_RX_N	321
PCIE_RX_P	319
PCIE_TX_N	317
PCIE_TX_P	315
PCIE_CLK_N	313
PCIE_CLK_P	311
SATA_RXP	309
SATA_RXN	307
SATA_TXN	305
SATA_TXP	303
CSL_CLKOP	301
CSL_CLKOM	299
CSL_D0P	297
CSL_D0M	295
CSL_D1P	293
CSL_D1M	291
CSL_D2P	289
CSL_D2M	287
CSL_D3P	285
CSL_D3M	283
CSL_DATA07	281
CSL_DATA06	279
CSL_DATA05	277
CSL_DATA04	275
CSL_DATA03-TP_IRQ_LCD	273
CSL_DATA02	271
CSL_DATA01	269
CSL_DATA00	267
CSL_PIXCLK	265
CSL_MCLK	263
CSL_VSYNC	261
CSL_HSYNC	259
GPIO_32-SCAM_DATA	257
GPIO_33-SCAM_CLK	255
GPIO_34	253
GPIO_35	251
GPIO_36	249
GPIO_37	247
GPIO_38	245
GPIO_39	243
GPIO_40	241
VADC_IN0	239
VADC_IN1	237
VADC_IN2	235
VADC_IN3	233
ADC1_IN0	231
ADC1_IN1	229
ADC1_IN2-GPIO	227
ADC1_IN3-GPIO	225
ADC2_IN0-GPIO	223
ADC2_IN1-GPIO	221
ADC2_IN2-GPIO	219
ADC2_IN3-GPIO	217
ADC_VREFH-GPIO	215
LCD_ENABLER	213
LCD_VSYNC	211
LCD_HSYNC	209
LCD_DISP_EN-GPIO	207
LCD_CLK	205
LCD_DATA07	203
LCD_DATA06	201
LCD_DATA05	199
LCD_DATA04	197
LCD_DATA03	195
LCD_DATA02	193
LCD_DATA01	191
LCD_ENABLER	189
LCD_VSYNC	187
LCD_HSYNC	185
LCD_DISP_EN-GPIO	183
LCD_CLK	181
LCD_DATA07	179
LCD_DATA06	177
LCD_DATA05	175
LCD_DATA04	173
LCD_DATA03	171
LCD_DATA02	169
LCD_DATA01	167
LCD_ENABLER	165
LCD_VSYNC	163
LCD_HSYNC	161
LCD_DISP_EN-GPIO	159
LCD_CLK	157



## SMARC mounting holes

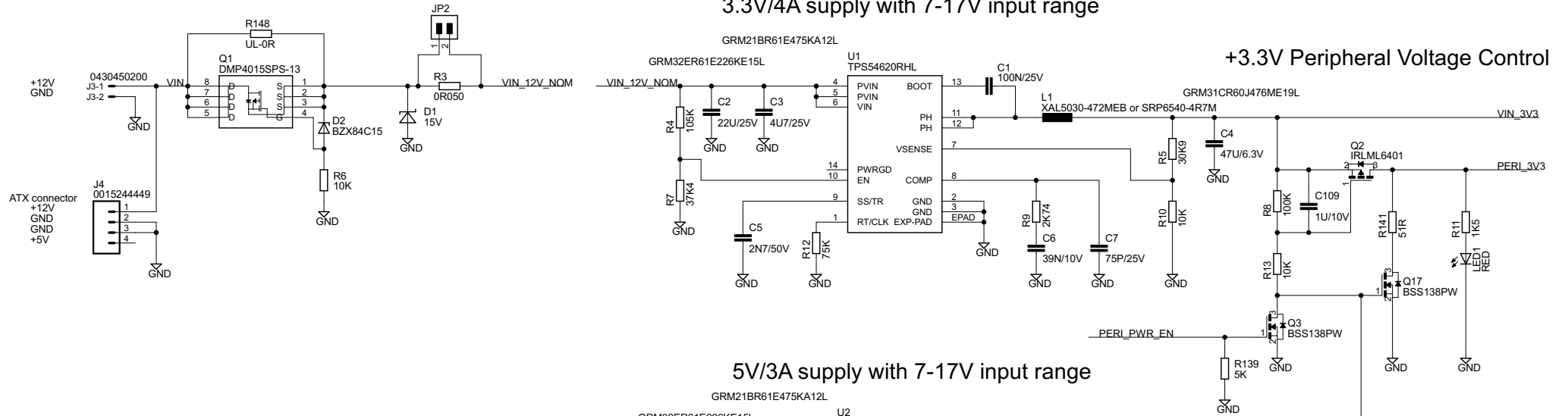


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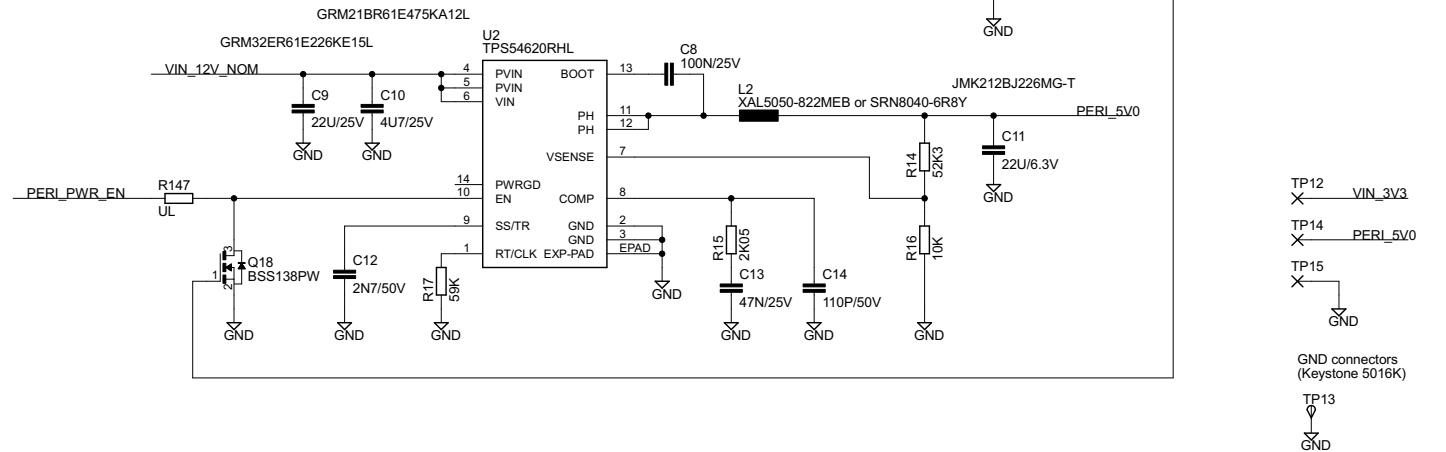
TITLE: COM Carrier Board rev A	
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# Power Supply Input

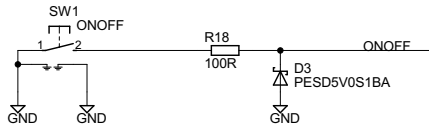
## 3.3V/4A supply with 7-17V input range



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

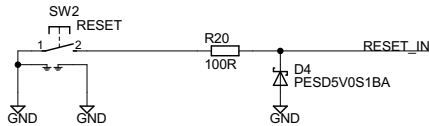


## Push-button for on/off



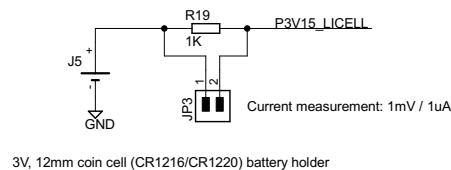
FSMRA3JH (for on/off-button)

## Push-button for reset



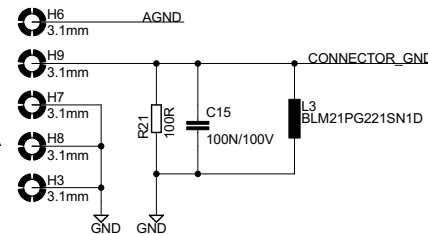
FSMRA2JH (for reset-button)

## External Li-Cell



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

## Mounting Holes



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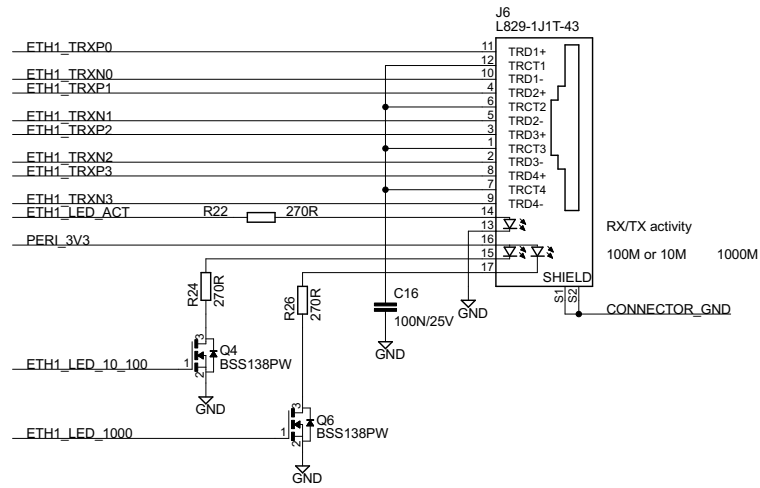
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Date: 2016-09-23 18:48:03

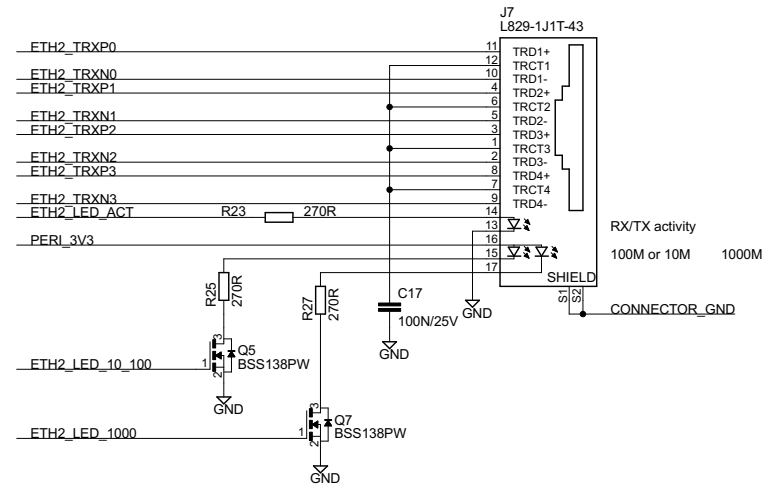
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# Ethernet interfaces

## Ethernet Interface #1



## Ethernet Interface #2



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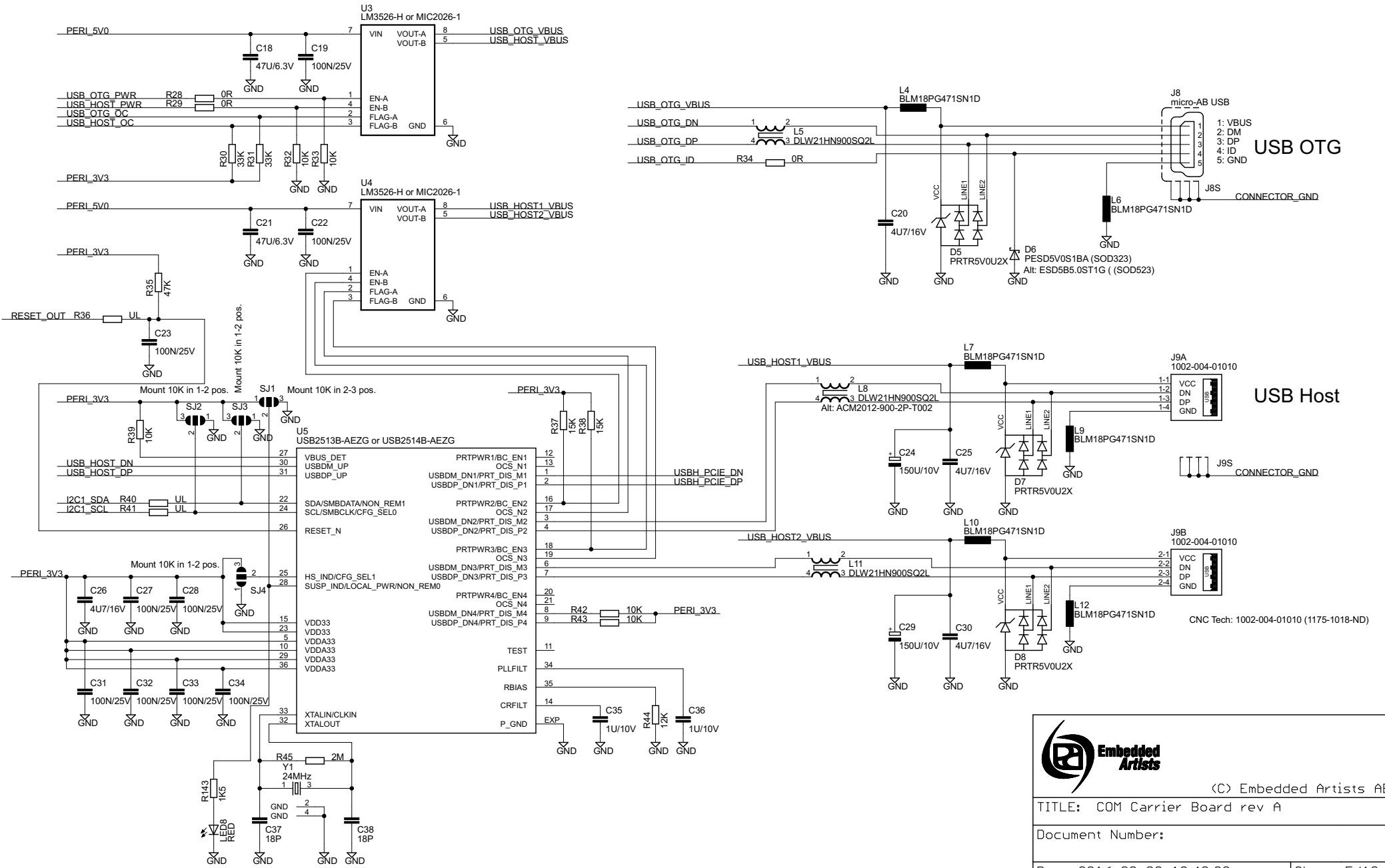
TITLE: COM Carrier Board rev A

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# USB Interfaces



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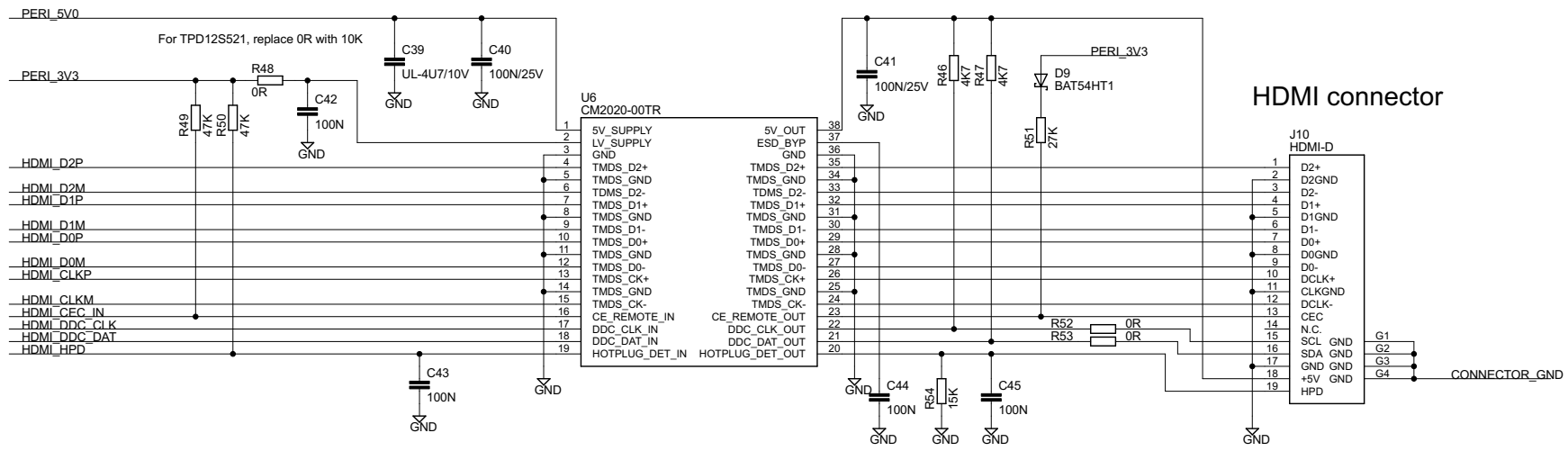
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Document Number:

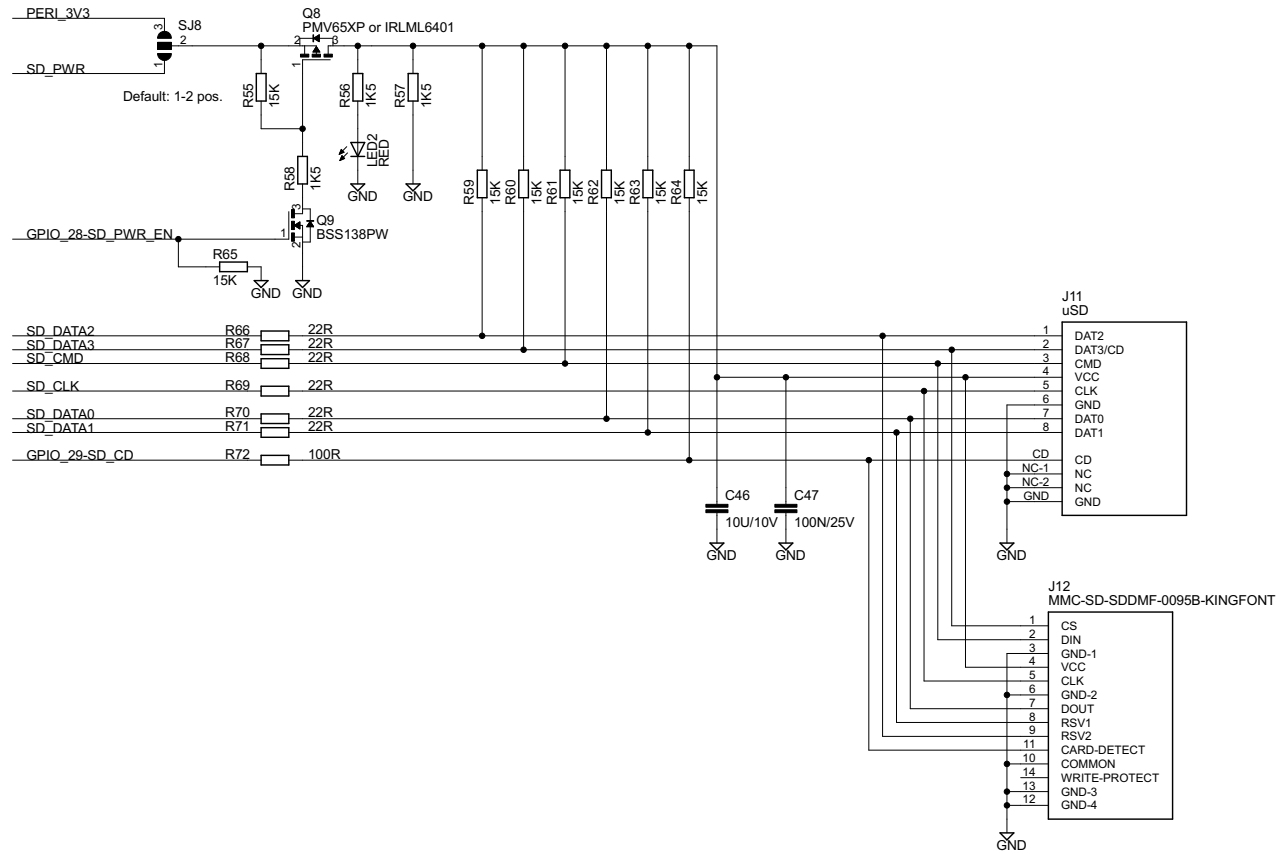
Date: 2016-09-23 18:48:03


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# HDMI Interface



# uSD Memory Card Interface





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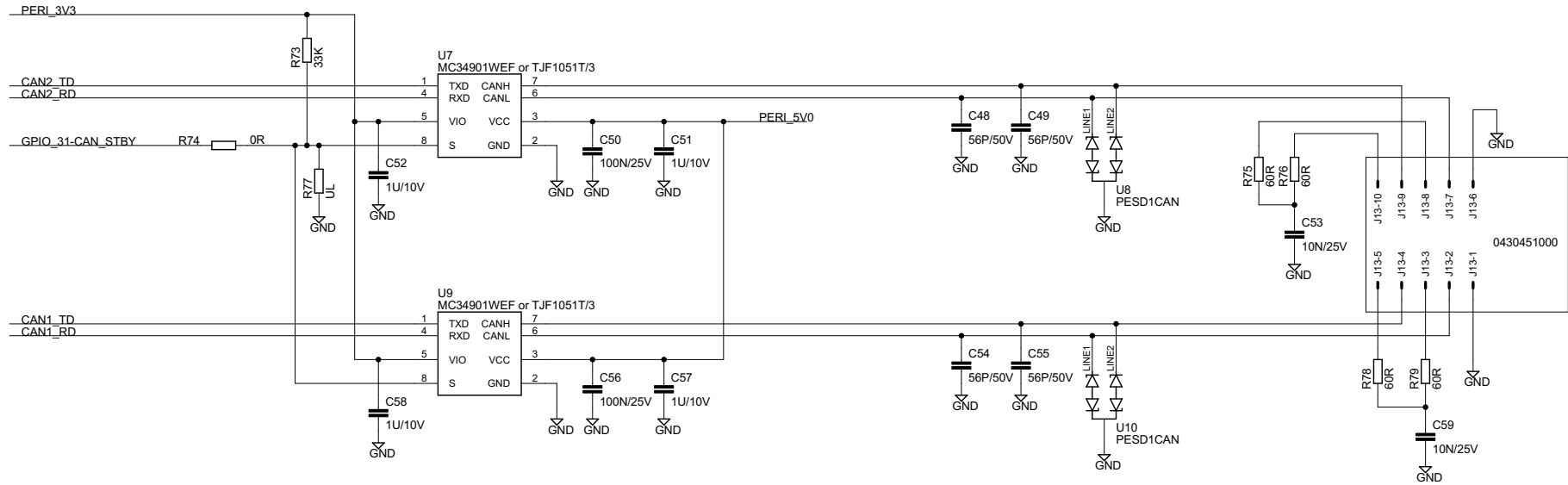
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Date: 2016-09-23 18:48:03 Sheet: 7/18

# CAN Interfaces

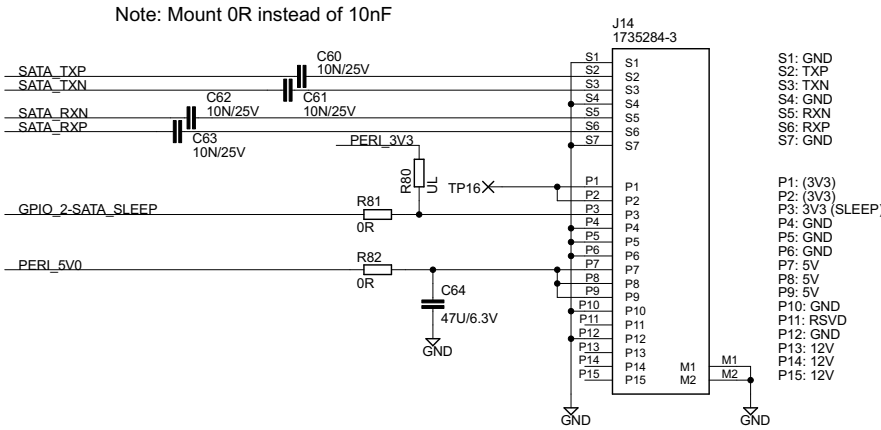
## CAN transceivers





# SATA Interface

## 22 pos SATA Connector



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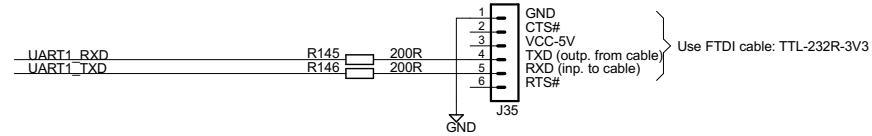
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Date: 2016-09-23 18:48:03

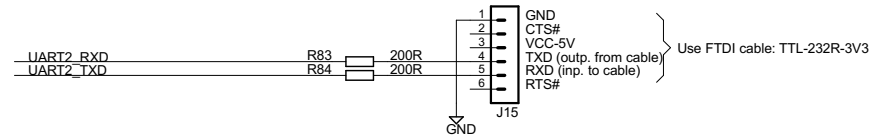
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# UART Interfaces

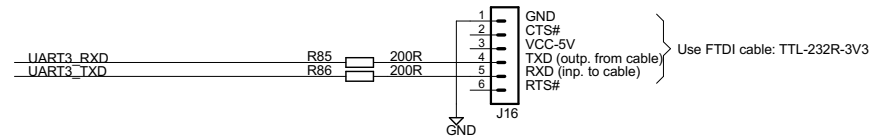
## UART header for FTDI cable



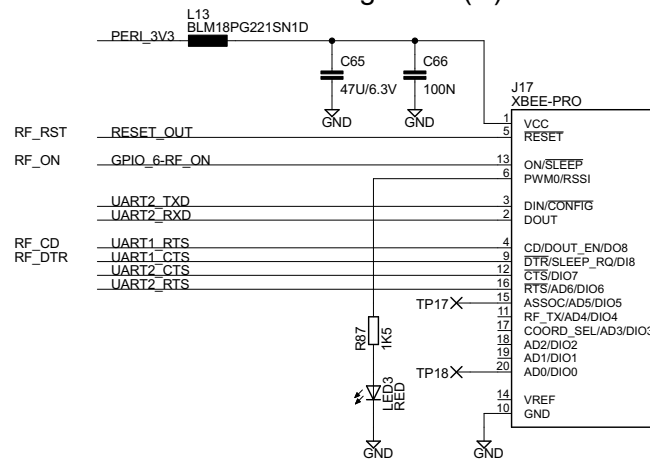
## UART header for FTDI cable



## UART header for FTDI cable



## Digi XBee(R) RF-module



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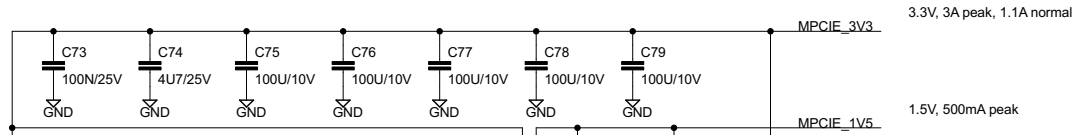
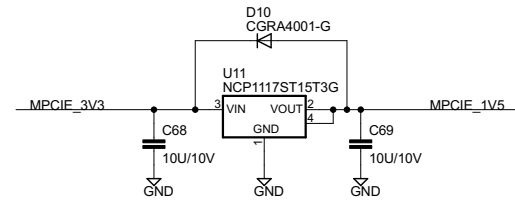
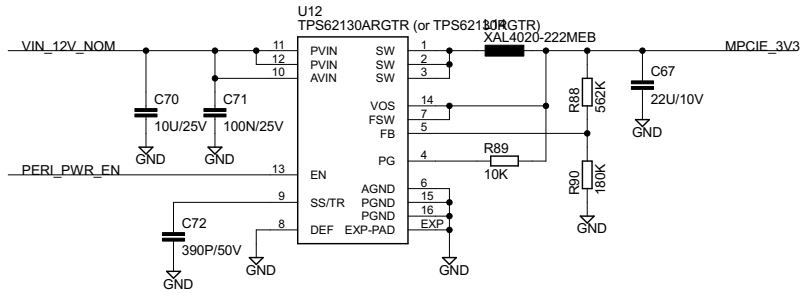
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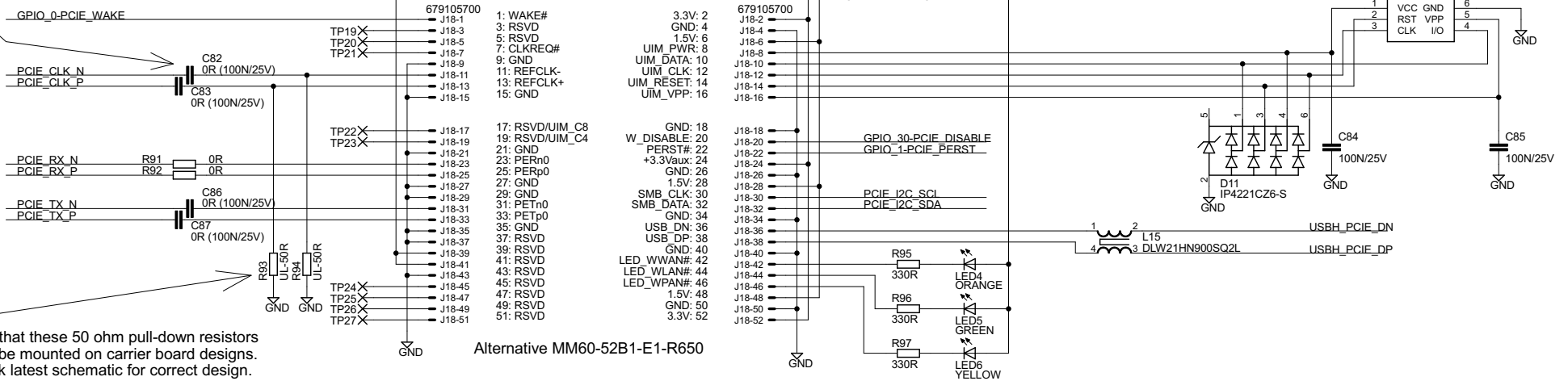
# PCIe Interface

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

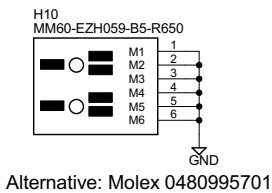


Note that these capacitors on REFCLK shall normal not be part of the carrier board design. Check latest schematic for correct design.

## Mini PCIe Connector



## Mini PCIe board fastening



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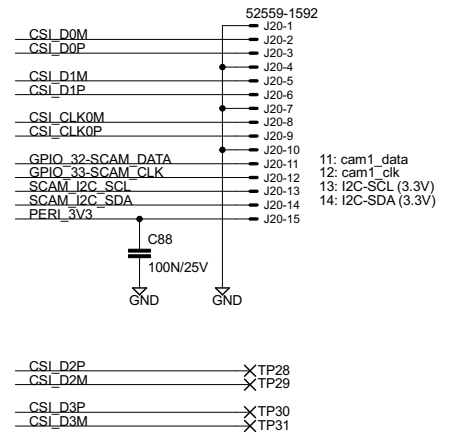
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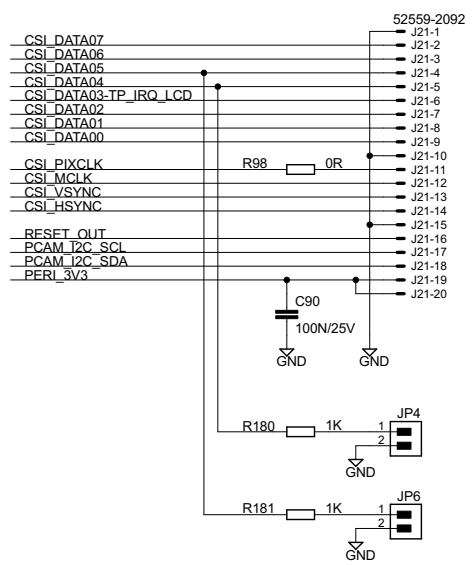
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# Camera / Display Interfaces

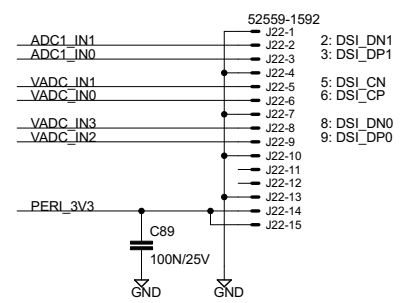
RPI serial camera (MIPI)



Parallel camera interface (+3.3V logic levels)

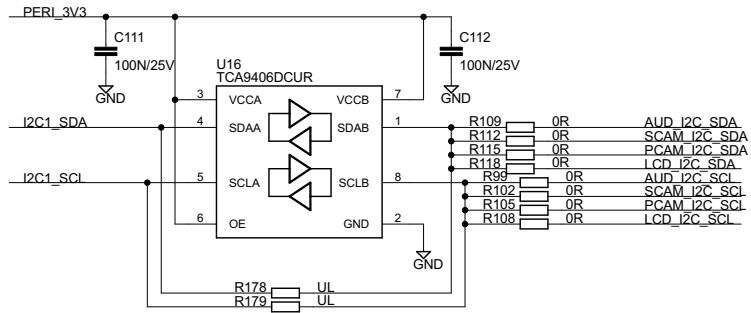


RPI serial display (MIPI) or VADC signals



## I2C Connections

### I2C1

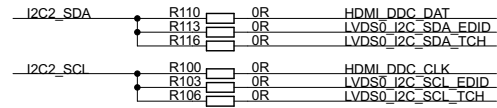


Audio codec: WM8731SEDS  
 8-bit I2C address (0x34/0x35): 0.0.1.1.0.1.0.RW  
 7-bit I2C address (0x1A): 0.0.1.1.0.1.0

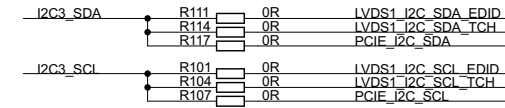
Touch Screen Controller: AR1021  
 8-bit I2C address (0x9A/0x9B): 1.0.0.1.1.0.1.RW  
 7-bit I2C address (0x4D): 1.0.0.1.1.0.1

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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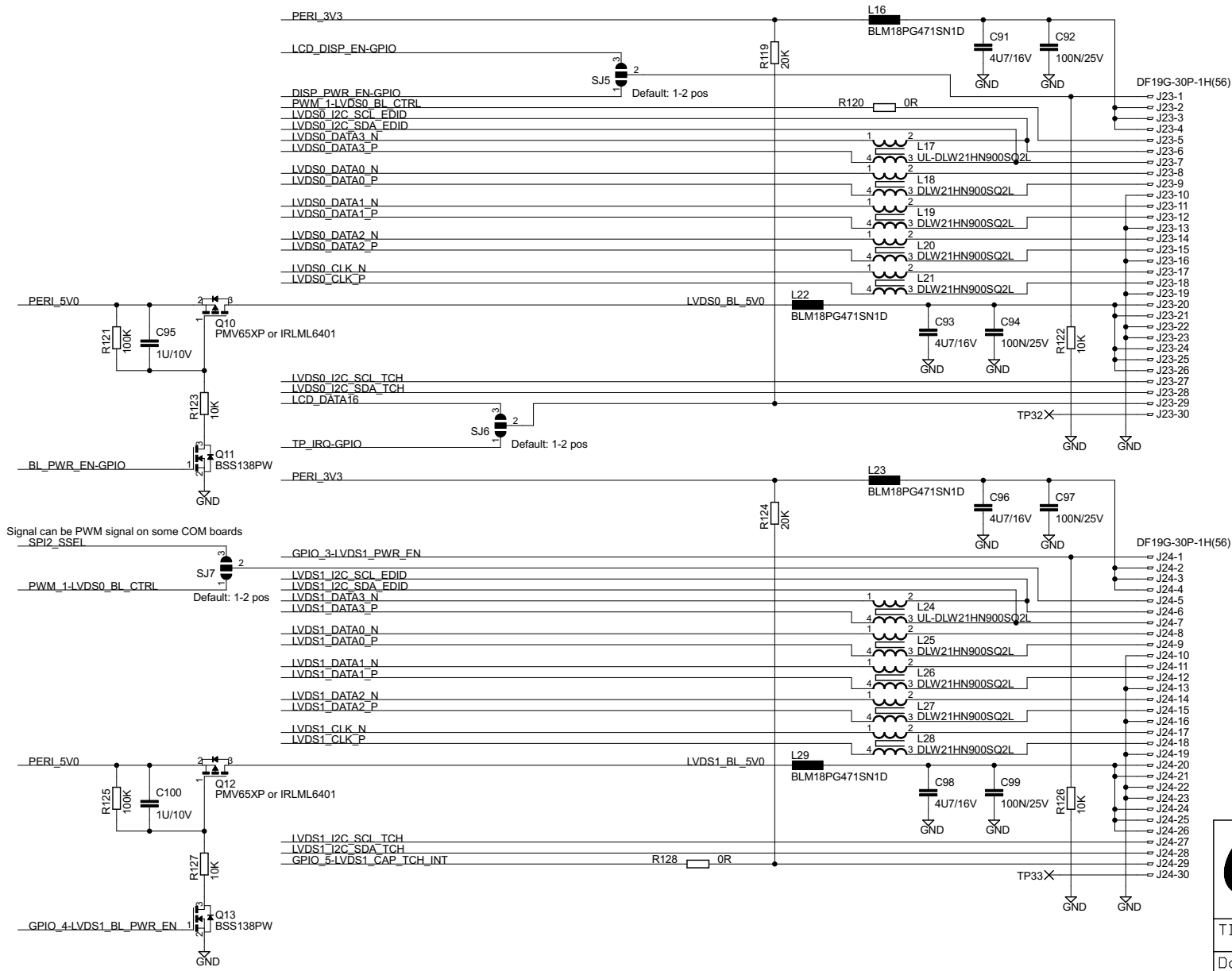
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# LVDS Interfaces





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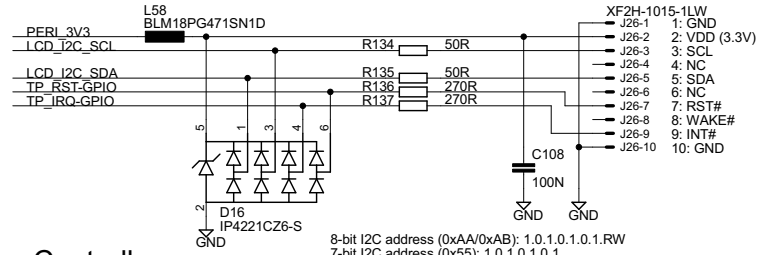
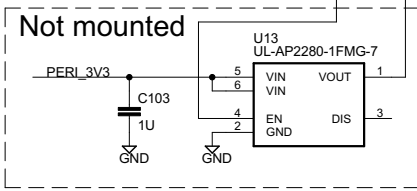
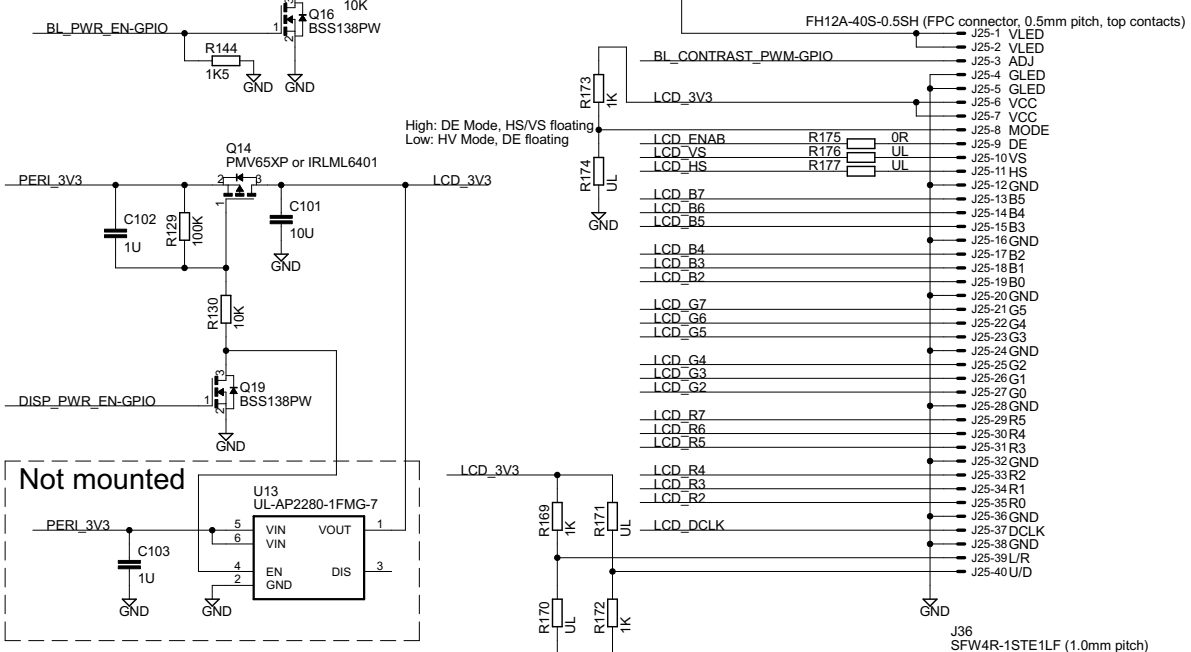
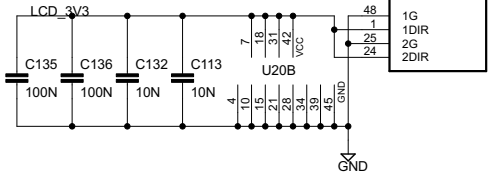
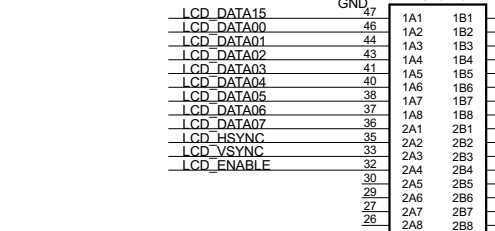
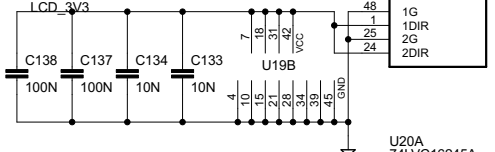
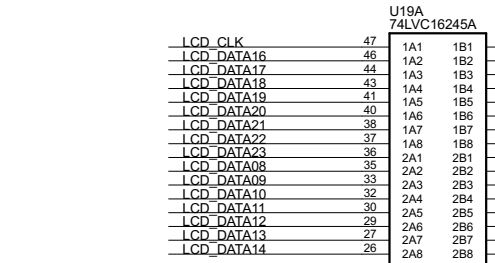
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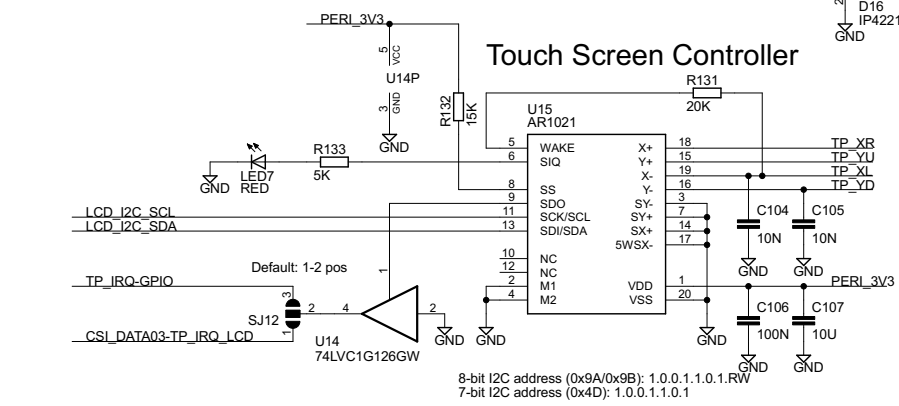
# Parallel LCD Interface

16-bit (5:6:5) mode  
18-bit (6:6:6) mode  
24-bit (8:8:8) mode

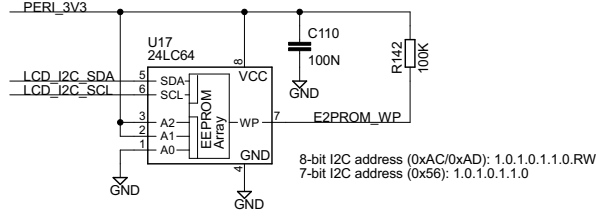
RED0	RED2	RED3	RED4	RED5	RED6	RED7
RED1	RED2	RED3	RED4	RED5	RED6	RED7
RED2	RED3	RED4	RED5	RED6	RED7	
RED3	RED4	RED5	RED6	RED7		
RED4	RED5	RED6	RED7			
RED5	RED6	RED7				
RED6	RED7					
RED7						
GREEN0	GREEN2	GREEN3	GREEN4	GREEN5	GREEN6	
GREEN1	GREEN2	GREEN3	GREEN4	GREEN5	GREEN6	
GREEN2	GREEN3	GREEN4	GREEN5	GREEN6		
GREEN3	GREEN4	GREEN5	GREEN6			
GREEN4	GREEN5	GREEN6				
GREEN5	GREEN6					
GREEN6						



## Touch Screen Controller



## 64kbit BIOS E2PROM

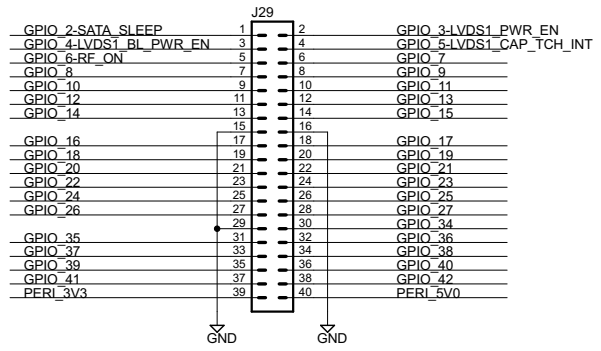
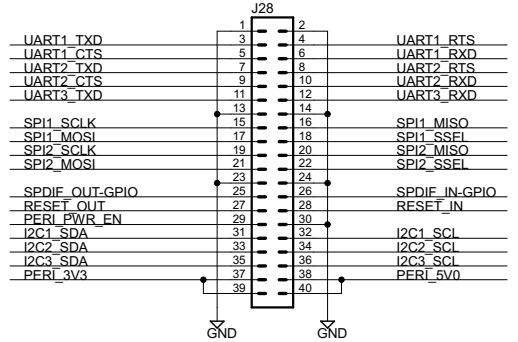
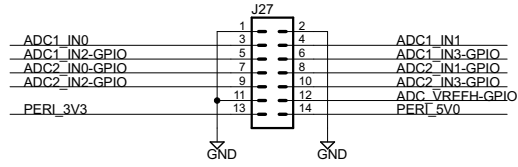


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# Expansion Connectors

## Expansion Connectors (50mil pitch)



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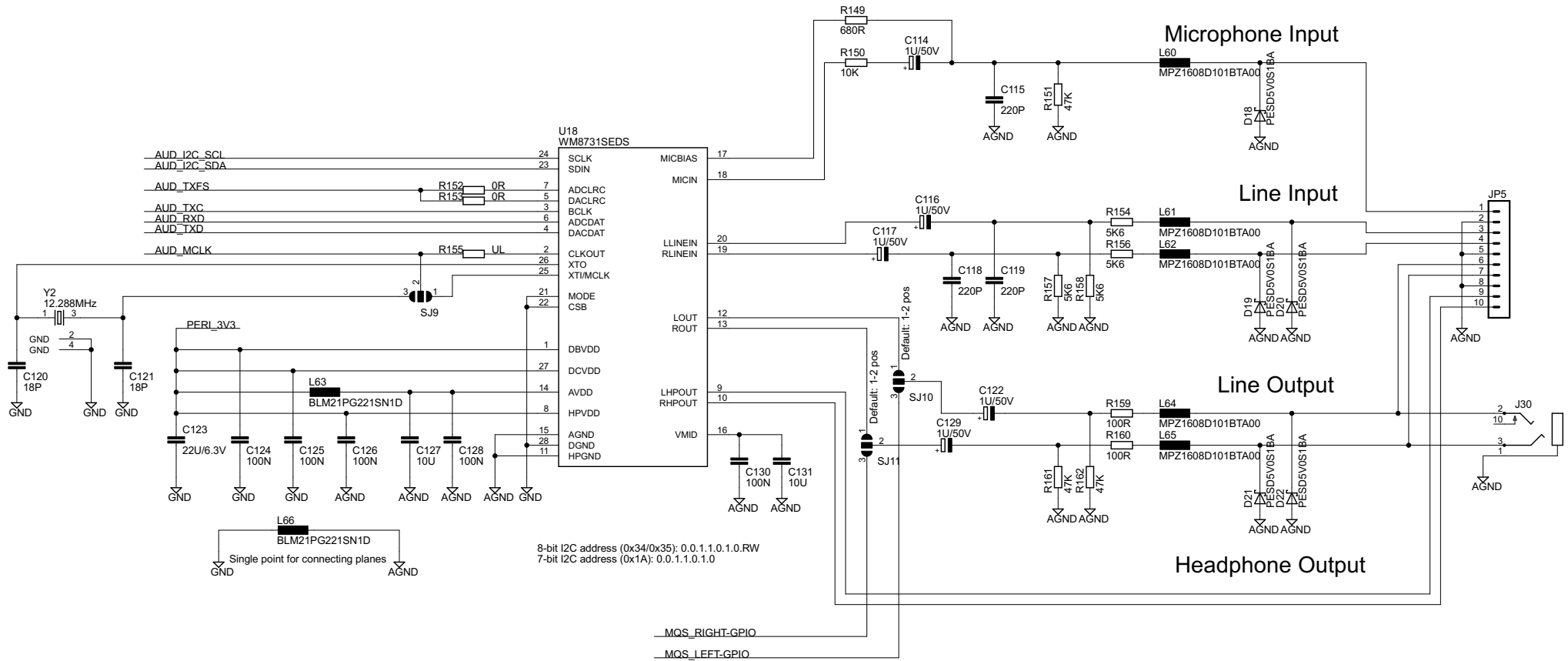

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# Audio Interface

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# Debug Interfaces

## JTAG Debug Interfaces ARM 10-pin interface JTAG Mode

