

Page 2: MXM3 interface connector
Page 3: Power Supply
Page 4: Ethernet interfaces
Page 5: USB Interfaces
Page 6: HDMI Interface
Page 7: uSD Memory Card Interface
Page 8: CAN Interfaces
Page 9: SATA Interface
Page 10: UART Interfaces
Page 11: PCIe Interface
Page 12: Camera / Display Interfaces
Page 13: I2C Connections
Page 14: LVDS#0 Interfaces
Page 15: LVDS#1 Interfaces
Page 16: Parallel LCD Interface
Page 17: Expansion Connectors
Page 18: Audio Interface
Page 19: Debug Interfaces

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 C

Added onoff-handling for Android. R176/177 mounted.
Added C82, C83, R174, R203, Q21. Changed R57 (60R).
Added R171, R172, R204, R205, JP7, JP8, JP9, JP10.
Mount R93, R94.

Rev B2

Changed to alphabetical numbering of UART, SPI and I2C.

Rev B-B1

Several small enhancements. Added battery charging.
Corrected D17, D23 and D24.

Rev A

Correct U5 pinning error. Added R139 (100K). Change C13.
Correct Q1 pinning. Change L17/L24 to UL.
Added SJ8 for uSD/MMC powering from COM board.
Added H3, J35, JP4/JP6, LED8, Q17/Q18/Q19, U16/U19,
U20, R139/ R145/R146/R141/R147/R148/R178/R179,
R180/R181/R143, SJ12, C113/C132/C133/C134/C109,
C139/C111/C112/C135/C136/C137/C138



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TITLE: COM Carrier Board rev C

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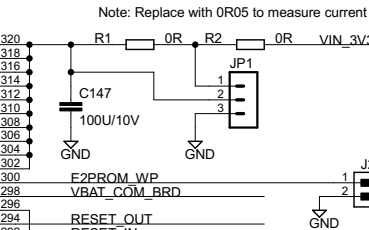
Sheet: 1/19

EACOM Board connector (MXM3)

J1B
AS0B826-S78B

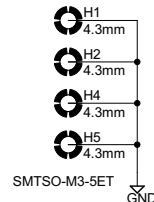
MXM3 connector

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_CLKP	299
CSL_CLKM	297
CSL_D0P	295
CSL_D0M	293
CSL_D1P	291
CSL_D1M	289
CSL_D2P	287
CSL_D2M	285
CSL_D3P	283
CSL_D3M	281
CSL_DATA07	279
CSL_DATA06	277
CSL_DATA05	275
CSL_DATA04	273
CSL_DATA03-TP_IRQ_LCD	271
CSL_DATA02-XBEE_RST	269
CSL_DATA01	267
CSL_DATA00	265
CSL_PIXCLK	263
CSL_MCLK	261
CSL_VSYNCP	259
CSL_HSYNCP	257
GPIO_32-SCAM_DATA	255
GPIO_34	253
GPIO_35	251
GPIO_36	249
GPIO_37	247
GPIO_38	245
GPIO_39	243
GPIO_40	241
VADC_IN0-MIPI_DSI_CP	239
VADC_IN1-MIPI_DSI_CN	237
VADC_IN2-MIPI_DSI_DP0	235
VADC_IN3-MIPI_DSI_DN0	233
ADC1_IN0-MIPI_DSI_DP1	231
ADC1_IN1-MIPI_DSI_DN1	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_VREFIN-GPIO	215
LCD_ENABLE	213
LCD_VSYNCP	211
LCD_HSYNCP	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



320	R1	0R	R2	0R	VIN_3V3
318					
316					
314					
312					
310					
308					
306					
304					
302					
300					
298					
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294					
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186					
184					
182					
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178					
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SMARC mounting holes



J1A
AS0B826-S78B

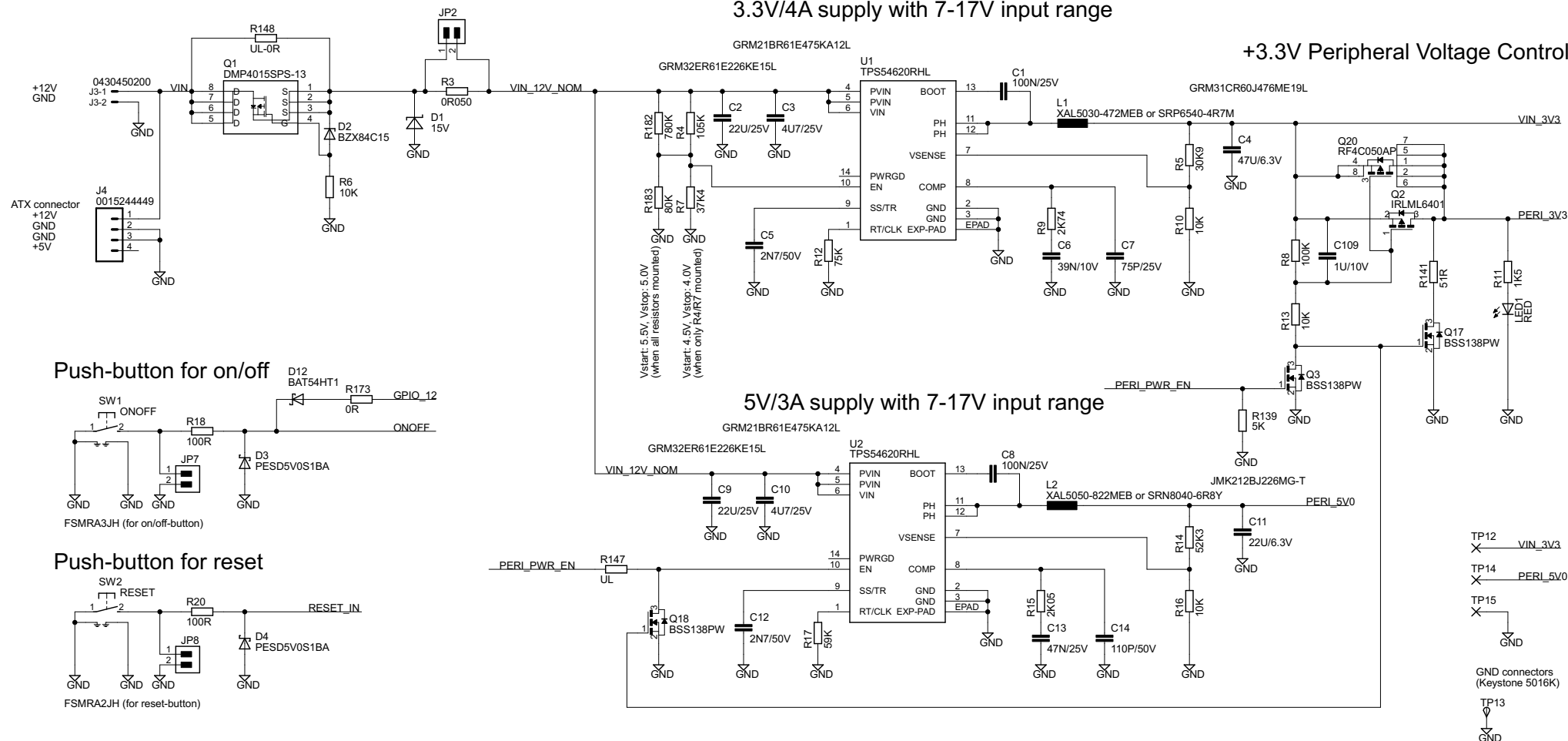
MXM3 connector

bottom side	top side
LCD_DATA00	149
LCD_DATA15	147
LCD_DATA14	145
LCD_DATA13	143
LCD_DATA12	141
LCD_DATA11	139
LCD_DATA10	137
LCD_DATA09	135
LCD_DATA08	133
LCD_DATA07	131
LCD_DATA06	129
LCD_DATA05	127
LCD_DATA04	125
LCD_DATA03	123
LCD_DATA02	121
LCD_DATA01	119
LCD_DATA00	117
LCD_DATA16	115
BL_CONTRAST_PWM-GPIO	113
BL_PWR_EN-GPIO	111
DISP_PWR_EN-GPIO	109
TP_IRQ-GPIO	107
TP_RST-GPIO	105
I2C-C_SCL	103
I2C-C_SDA	101
I2C-B_SCL	99
I2C-A_SCL	97
I2C-A_SDA	95
LVD00_CLK_N	93
LVD00_CLK_P	91
LVD00_DATA0_N	89
LVD00_DATA0_P	87
LVD00_DATA1_N	85
LVD00_DATA1_P	83
LVD00_DATA2_N	81
LVD00_DATA2_P	79
LVD00_DATA3_N	77
LVD00_DATA3_P	75
LVD01_CLK_N	73
LVD01_CLK_P	71
LVD01_DATA0_N	69
LVD01_DATA0_P	67
LVD01_DATA1_N	65
LVD01_DATA1_P	63
LVD01_DATA2_N	61
LVD01_DATA2_P	59
LVD01_DATA3_N	57
LVD01_DATA3_P	55
CAN1_RD	53
CAN1_TD	51
CAN2_RD	49
CAN2_TD	47
SPDIF_OUT-GPIO	45
SPDIF_IN-GPIO	43
AUD_MCLK	41
AUD_TXD	39
AUD_TXC	37
AUD_RXD	35
AUD_TXFS	33
MOS_LEFT-GPIO	31
MOS_RIGHT-GPIO	29
USB_OTG_OC	27
USB_OTG_PWR	25
USB_OTG_VBUS	23
USB_OTG_SSXN	21
USB_OTG_SSRXN	19
USB_OTG_DP	17
USB_OTG_DN	15
ETH2_TRXP2	13
ETH2_TRXN2	11
ETH2_TRXP3	9
ETH2_TRXN3	7
ETH2_LED_10_100	5
ETH2_LED_1000	3
ETH2_TRXP0	1
ETH2_TRXN1	149
ETH2_TRXP1	147
ETH1_TRXP2	145
ETH1_TRXN2	143
ETH1_TRXP3	141
ETH1_TRXN3	139
ETH1_LED_10_100	137
ETH1_LED_ACT	135
ETH1_LED_1000	133
ETH1_TRXP0	131
ETH1_TRXN1	129
ETH1_TRXP1	127
ETH1_TRXP2	125
ETH1_TRXN2	123
ETH1_TRXP3	121
ETH1_TRXN3	119
ETH1_LED_10_100	117
ETH1_LED_ACT	115
ETH1_LED_1000	113
ETH1_TRXP0	111
ETH1_TRXN1	109
ETH1_TRXP1	107
ETH1_TRXP2	105
ETH1_TRXN2	103
ETH1_TRXP3	101
ETH1_TRXN3	99
ETH1_LED_10_100	97
ETH1_LED_ACT	95
ETH1_LED_1000	93
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ETH1_TRXN1	89
ETH1_TRXP1	87
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ETH1_TRXN2	83
ETH1_TRXP3	81
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ETH1_LED_ACT	75
ETH1_LED_1000	73
ETH1_TRXP0	71
ETH1_TRXN1	69
ETH1_TRXP1	67
ETH1_TRXP2	65
ETH1_TRXN2	63
ETH1_TRXP3	61
ETH1_TRXN3	59
ETH1_LED_10_100	57
ETH1_LED_ACT	55
ETH1_LED_1000	53
ETH1_TRXP0	51
ETH1_TRXN1	49
ETH1_TRXP1	47
ETH1_TRXP2	45
ETH1_TRXN2	43
ETH1_TRXP3	41
ETH1_TRXN3	39
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ETH1_LED_ACT	35
ETH1_LED_1000	33
ETH1_TRXP0	31
ETH1_TRXN1	29
ETH1_TRXP1	27
ETH1_TRXP2	25
ETH1_TRXN2	23
ETH1_TRXP3	21
ETH1_TRXN3	19
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ETH1_LED_ACT	15
ETH1_LED_1000	13
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ETH1_TRXN1	9
ETH1_TRXP1	7
ETH1_TRXP2	5
ETH1_TRXN2	3
ETH1_TRXP3	1
ETH1_TRXN3	149
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ETH1_TRXP2	135
ETH1_TRXN2	133
ETH1_TRXP3	131
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ETH1_LED_10_100	127
ETH1_LED_ACT	125
ETH1_LED_1000	123
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ETH1_TRXN1	119
ETH1_TRXP1	117
ETH1_TRXP2	115
ETH1_TRXN2	113
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ETH1_TRXN3	109
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ETH1_TRXN2	73
ETH1_TRXP3	71
ETH1_TRXN3	69
ETH1_LED_10_100	67
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ETH1_TRXP0	61
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ETH1_TRXP2	55
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ETH1_TRXN3	49
ETH1_LED_10_100	47
ETH1_LED_ACT	45
ETH1_LED_1000	43
ETH1_TRXP0	41
ETH1_TRXN1	39
ETH1_TRXP1	37
ETH1_TRXP2	35
ETH1_TRXN2	33
ETH1_TRXP3	31
ETH1_TRXN3	29
ETH1_LED_10_100	27
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ETH1_LED_1000	23
ETH1_TRXP0	21
ETH1_TRXN1	19
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ETH1_TRXN2	13
ETH1_TRXP3	11
ETH1_TRXN3	9
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ETH1_LED_ACT	5
ETH1_LED_1000	3
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ETH1_TRXN1	149
ETH1_TRXP1	147
ETH1_TRXP2	145
ETH1_TRXN2	143
ETH1_TRXP3	141
ETH1_TRXN3	139
ETH1_LED_10_100	137
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ETH1_LED_1000	133
ETH1_TRXP0	131
ETH1_TRXN1	129
ETH1_TRXP1	127
ETH1_TRXP2	125
ETH1_TRXN2	123
ETH1_TRXP3	121
ETH1_TRXN3	119
ETH1_LED_10_100	117
ETH1_LED_ACT	115
ETH1_LED_1000	113
ETH1_TRXP0	111
ETH1_TRXN1	109
ETH1_TRXP1	107
ETH1_TRXP2	105
ETH1_TRXN2	103
ETH1_TRXP3	101
ETH1_TRXN3	99
ETH1_LED_10_100	97
ETH1_LED_ACT	95
ETH1_LED_1000	93
ETH1_TRXP0	91
ETH1_TRXN1	89
ETH1_TRXP1	87
ETH1_TRXP2	85
ETH1_TRXN2	83
ETH1_TRXP3	81
ETH1_TRXN3	79
ETH1_LED_10_100	77
ETH1_LED_ACT	75
ETH1_LED_1000	73
ETH1_TRXP0	71
ETH1_TRXN1	69
ETH1_TRXP1	67
ETH1_TRXP2	65
ETH1_TRXN2	63
ETH1_TRXP3	61
ETH1_TRXN3	59
ETH1_LED_10_100	57
ETH1_LED_ACT	55
ETH1_LED_1000	53
ETH1_TRXP0	51
ETH1_TRXN1	49
ETH1_TRXP1	47
ETH1_TRXP2	45
ETH1_TRXN2	43
ETH1_TRXP3	41
ETH1_TRXN3	39
ETH1_LED_10_100	37
ETH1_LED_ACT	35
ETH1_LED_1000	33
ETH1_TRXP0	31
ETH1_TRXN1	29
ETH1_TRXP1	27
ETH1_TRXP2	25
ETH1_TRXN2	23
ETH1_TRXP3	21
ETH1_TRXN3	19
ETH1_LED_10_100	17
ETH1_LED_ACT	15
ETH1_LED_1000	13
ETH1_TRXP0	11
ETH1_TRXN1	9
ETH1_TRXP1	7
ETH1_TRXP2	5
ETH1_TRXN2	3
ETH1_TRXP3	1
ETH1_TRXN3	149
ETH1_LED_10_100	147
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ETH1_TRXP0	141
ETH1_TRXN1	139
ETH1_TRXP1	137
ETH1_TRXP2	

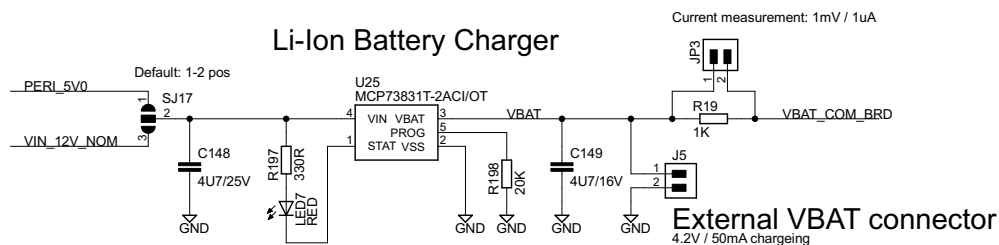
Power Supply Input

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

+3.3V Peripheral Voltage Control

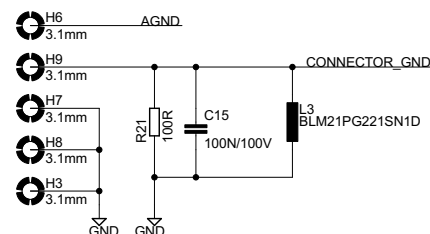


Li-Ion Battery Charger



Note: This design is not recommended for customer carrier boards since VBAT will be above maximum recommended voltage (3.6V). A 3.3V LDO is recommended to control the voltage below 3.6V.

Mounting Holes



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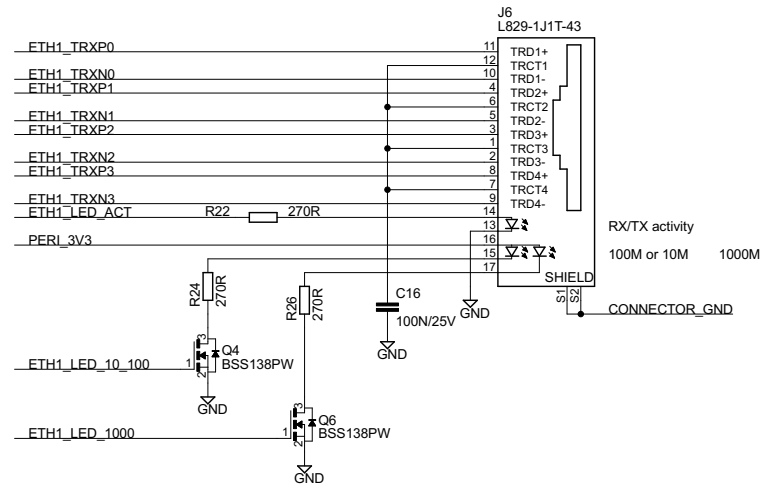
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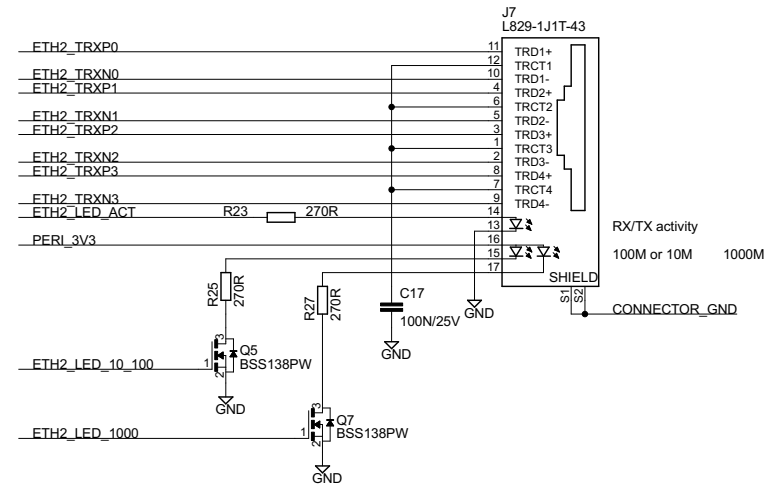
Sheet: 3/19

Ethernet interfaces

Ethernet Interface #1



Ethernet Interface #2



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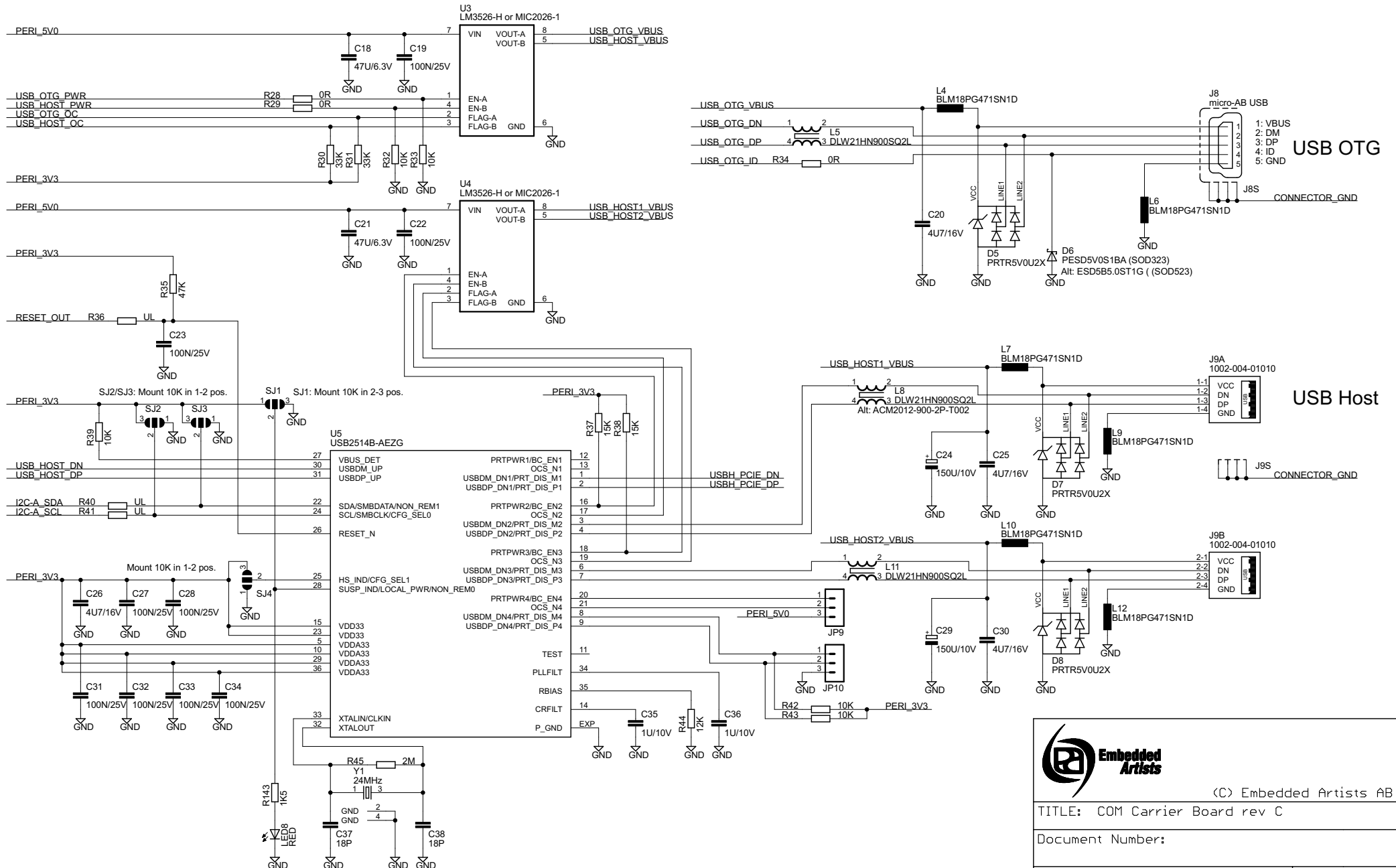
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Sheet: 4/19

USB Interfaces



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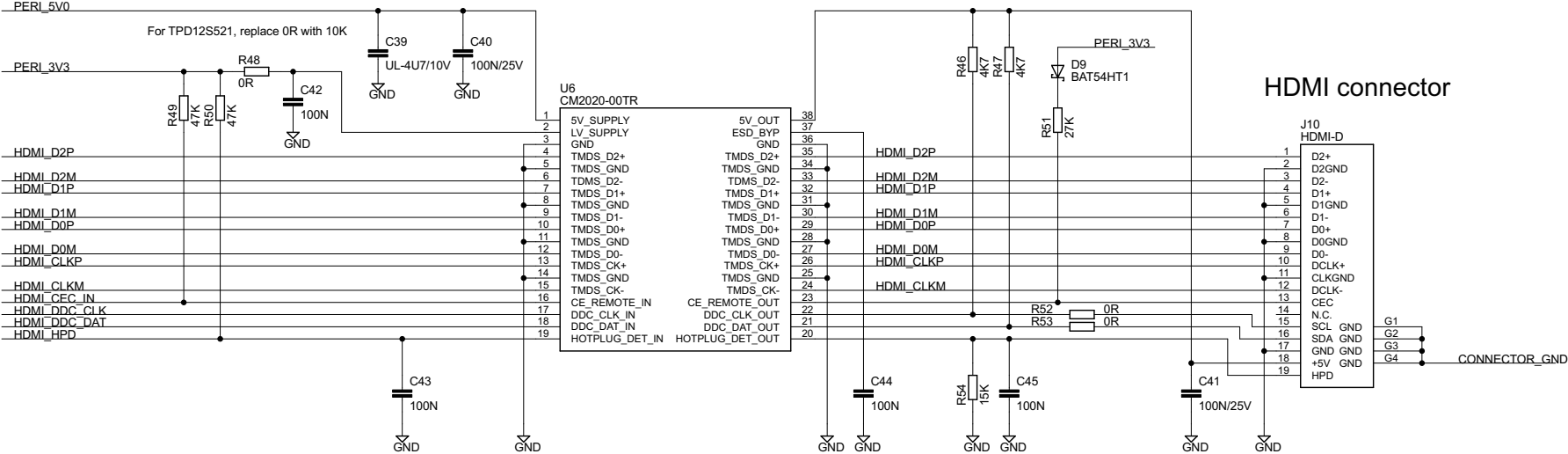
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Sheet: 5/19

HDMI Interface



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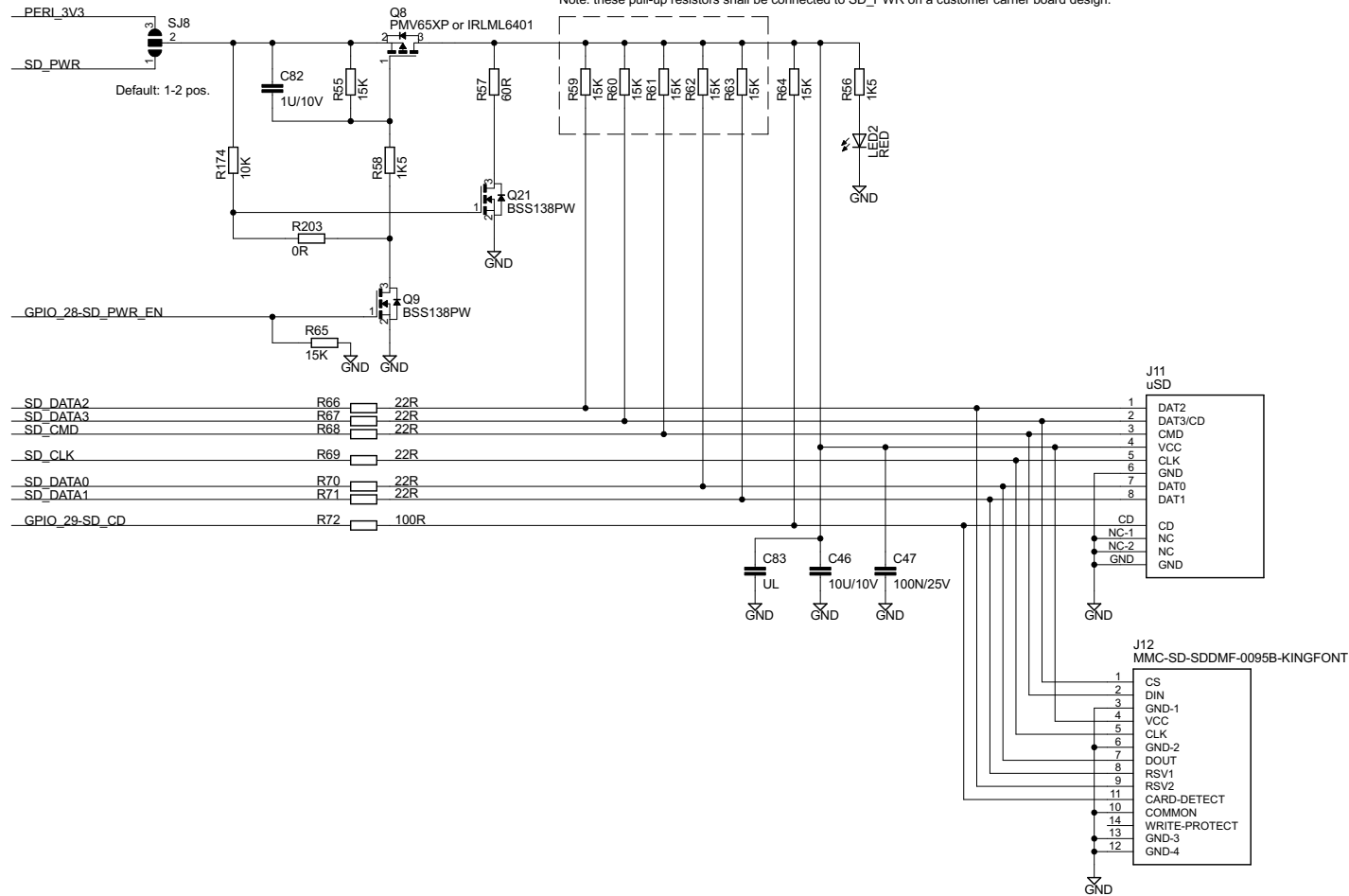
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Sheet: 6/19

uSD Memory Card Interface

Note: the board is shipped with position 1-2 shorted.
This is not correct for customer carrier boards.
The SD/MMC card shall be powered by PERI_3V3.

Note: these pull-up resistors shall be connected to SD_PWR on a customer carrier board design.



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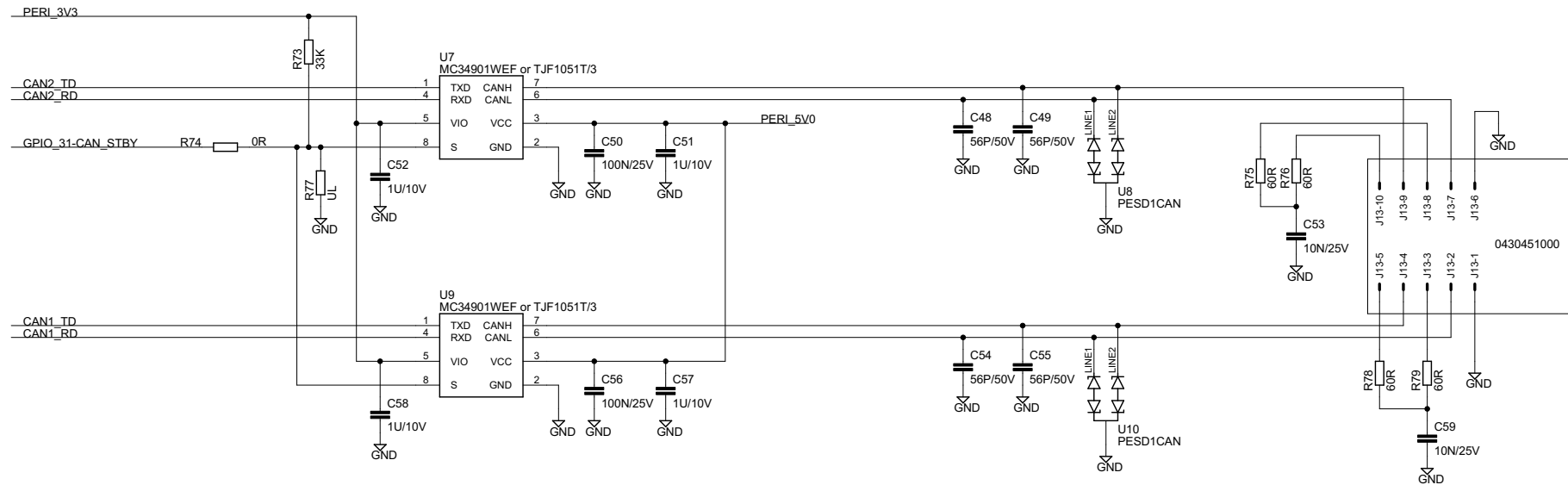
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Sheet: 7/19

CAN Interfaces

CAN transceivers



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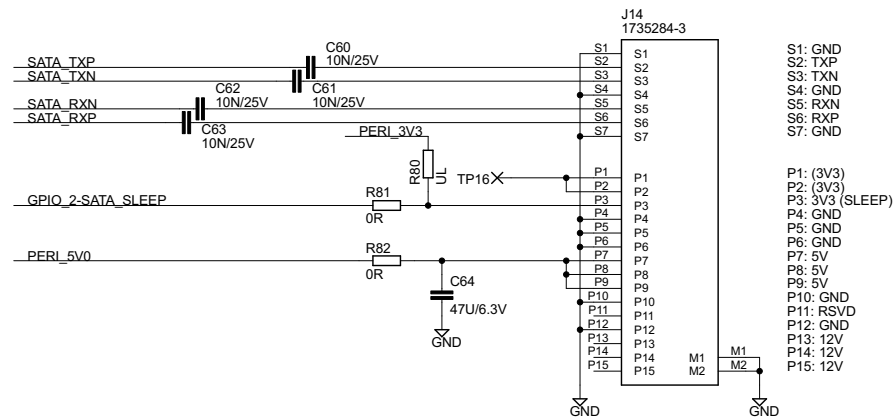
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Sheet: 8/19

SATA Interface

22 pos SATA Connector



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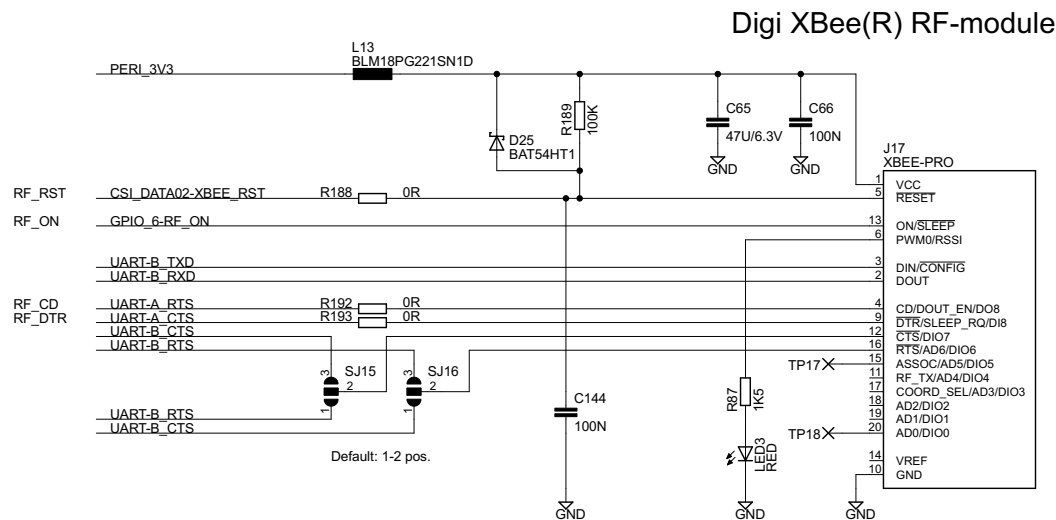
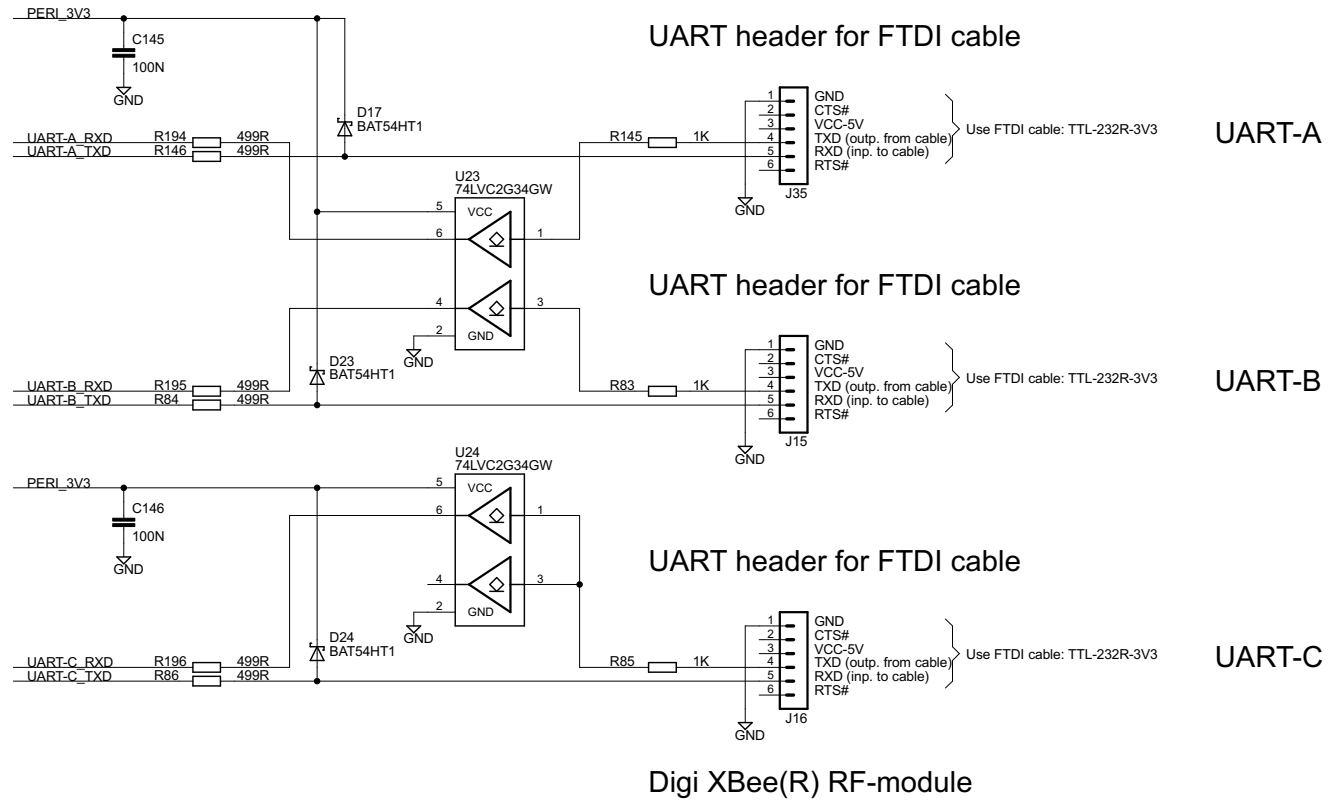
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Sheet: 9/19

UART Interfaces



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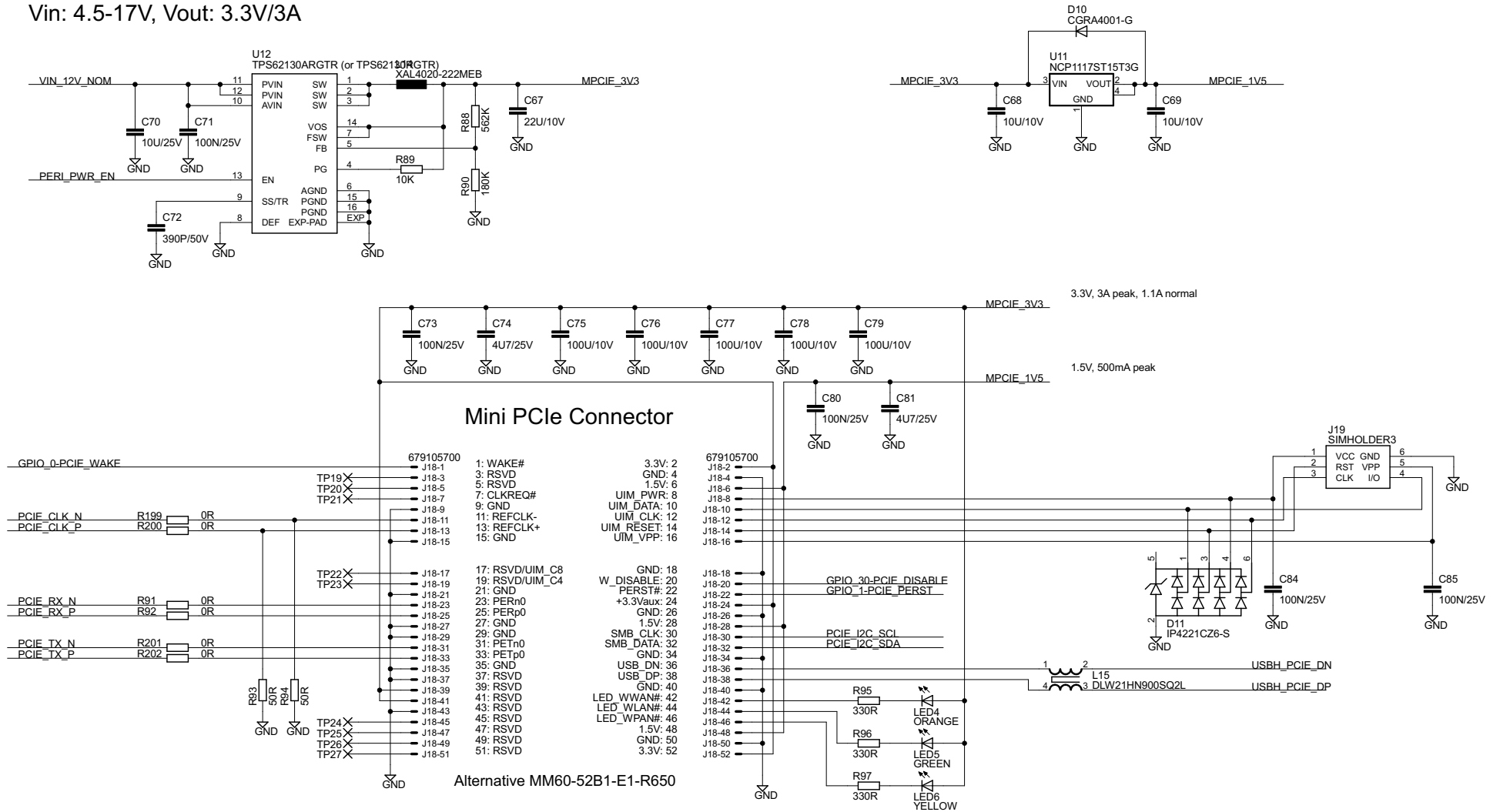
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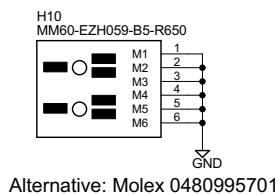
Sheet: 10/19

PCIe Interface

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



Mini PCIe board fastening



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TITLE: COM Carrier Board rev C

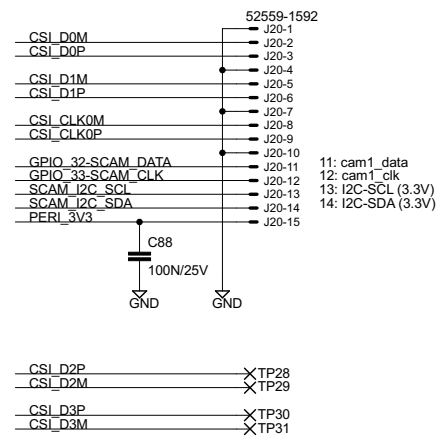
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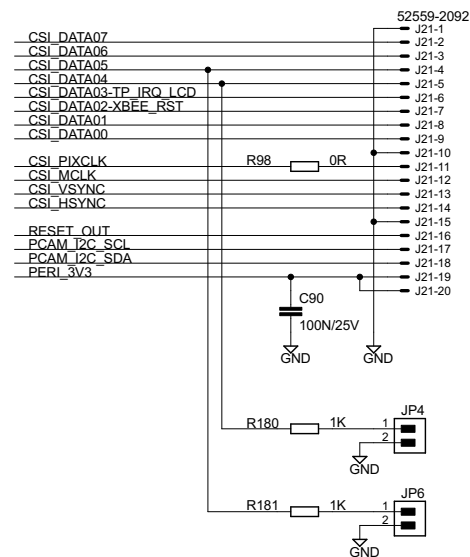
Sheet: 11/19

Camera / Display Interfaces

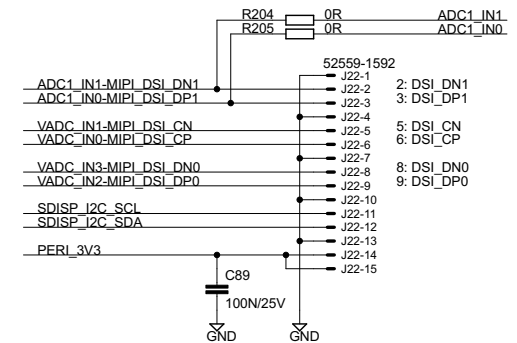
RPI serial camera (MIPI)



Parallel camera interface (+3.3V logic levels)



RPI serial display (MIPI) or VADC signals



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TITLE: COM Carrier Board rev C

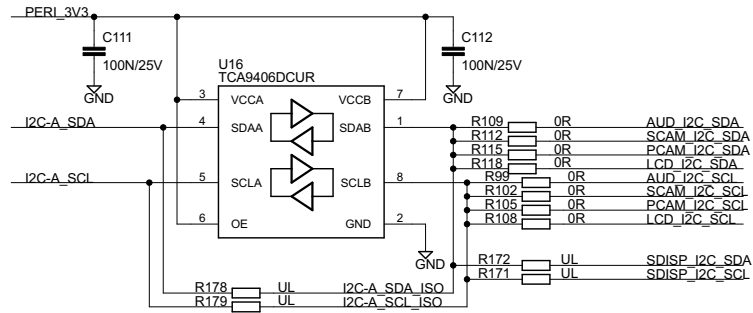
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Sheet: 12/19

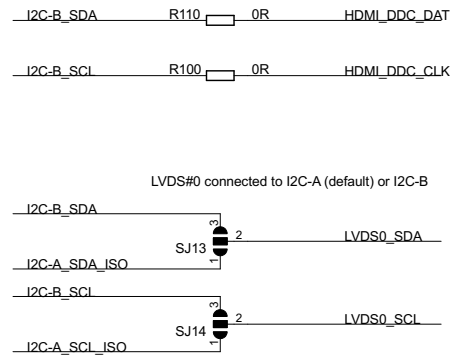
I2C Connections

I2C-A

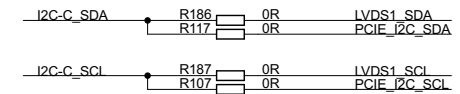


Audio codec: WM8731SEDS
8-bit I2C address (0x34/0x35): 0.0.1.1.0.1.0.RW
7-bit I2C address (0x1A): 0.0.1.1.0.1.0

I2C-B



I2C-C



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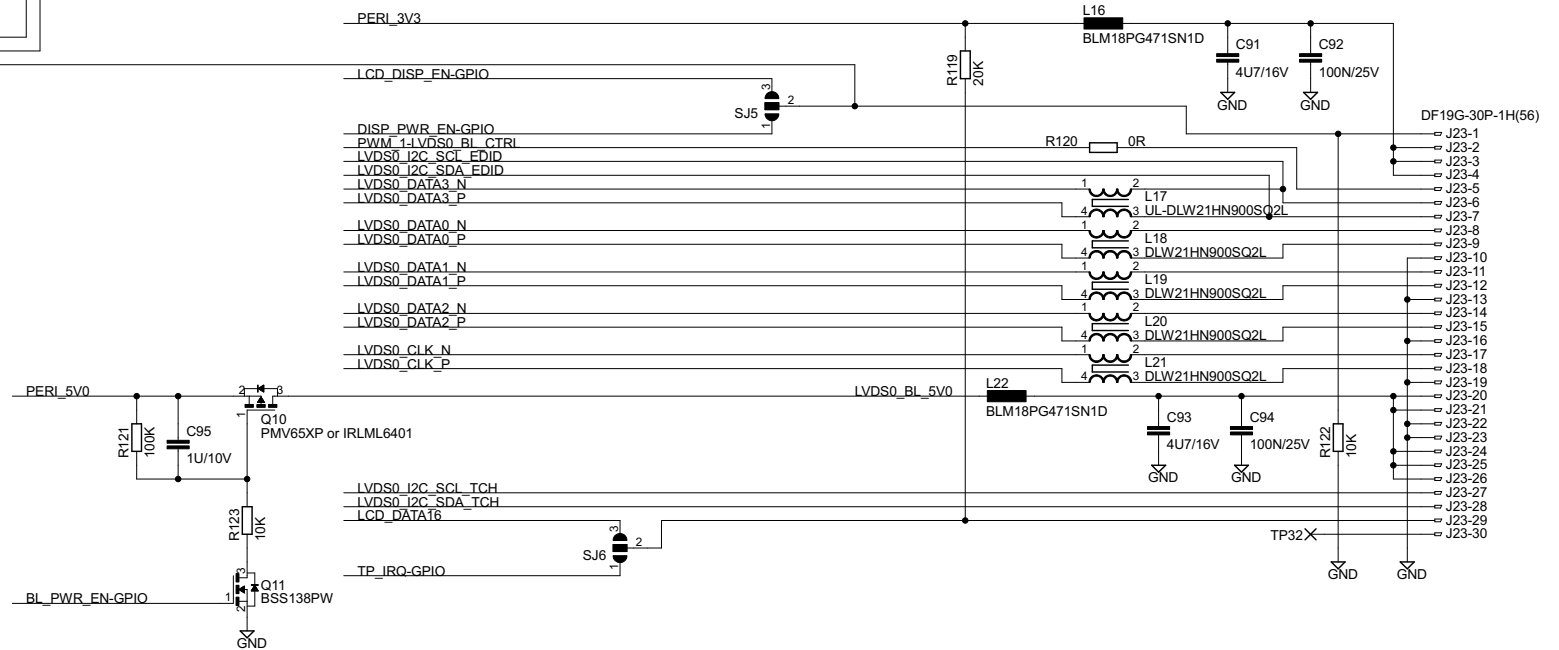
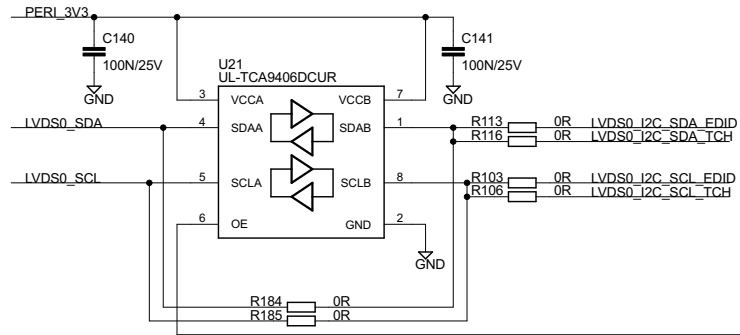
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Sheet: 13/19

LVDS Interface #0



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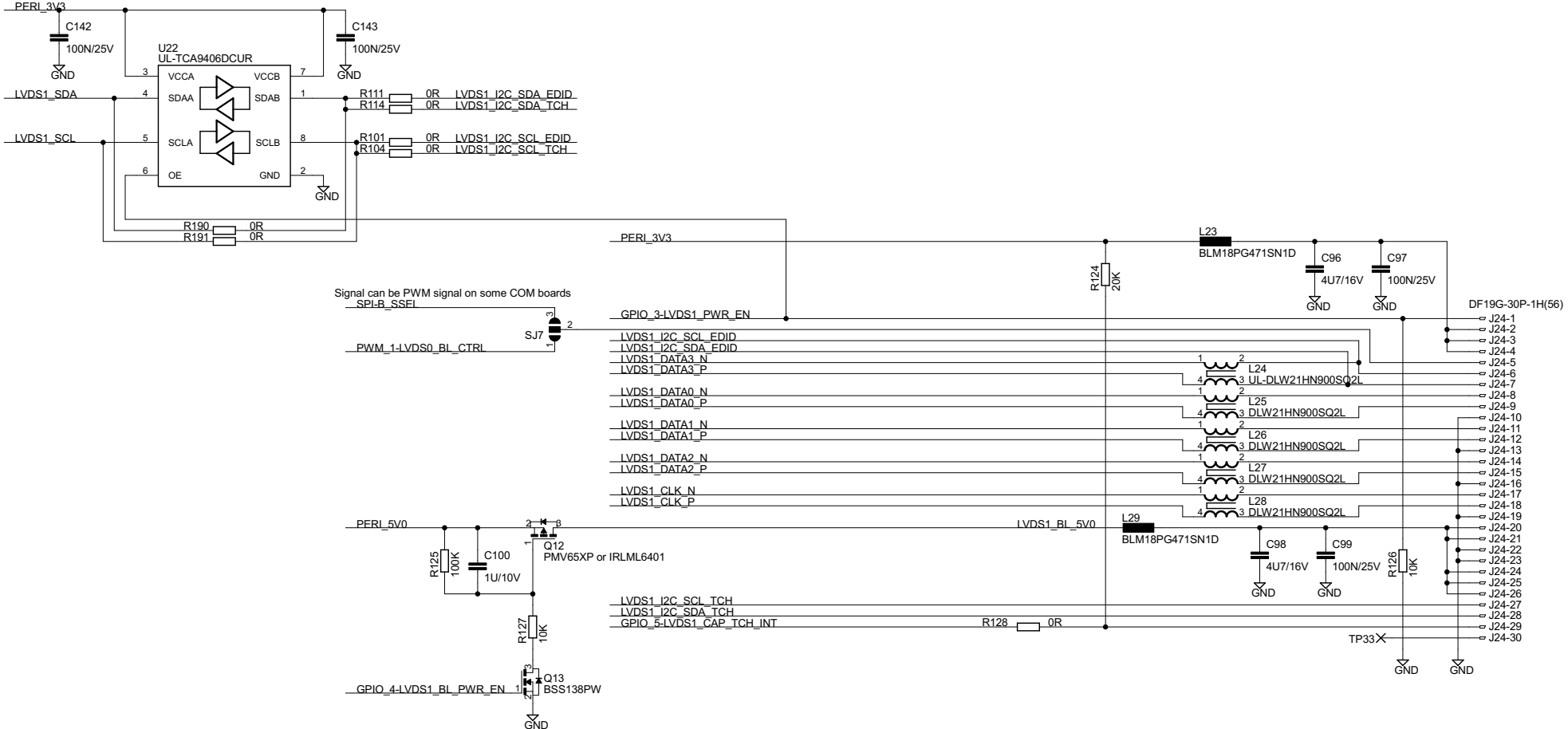
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Sheet: 14/19

LVDS Interface #1



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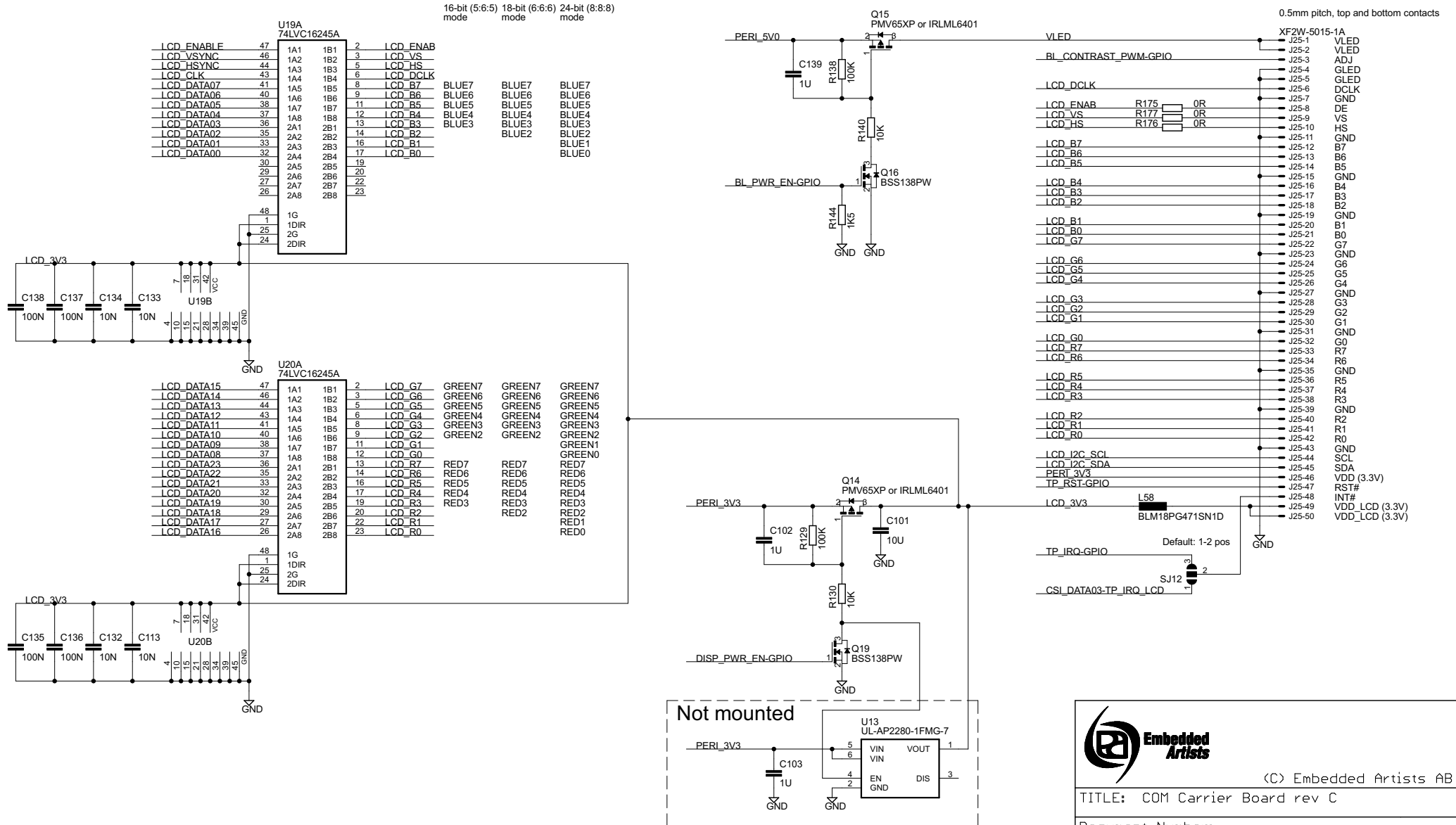
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Sheet: 15/19

Parallel LCD Interface



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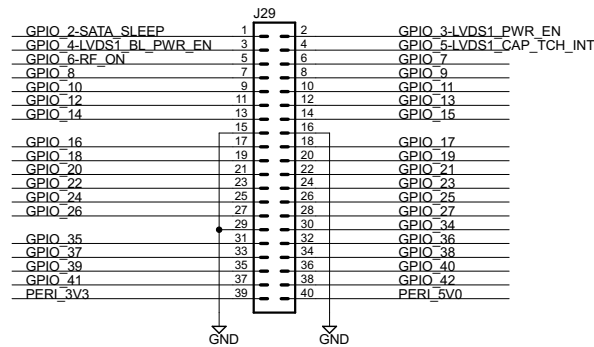
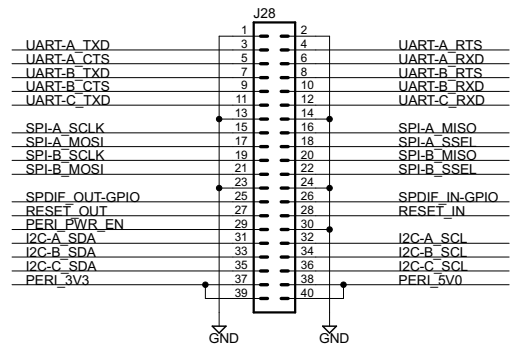
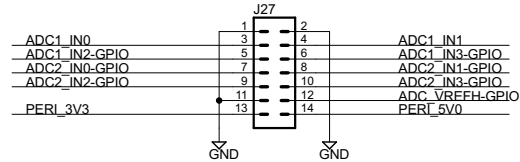
Document Number:

Date: 2018-04-27 10:49:18

Sheet: 16/19

Expansion Connectors

Expansion Connectors (50mil pitch)



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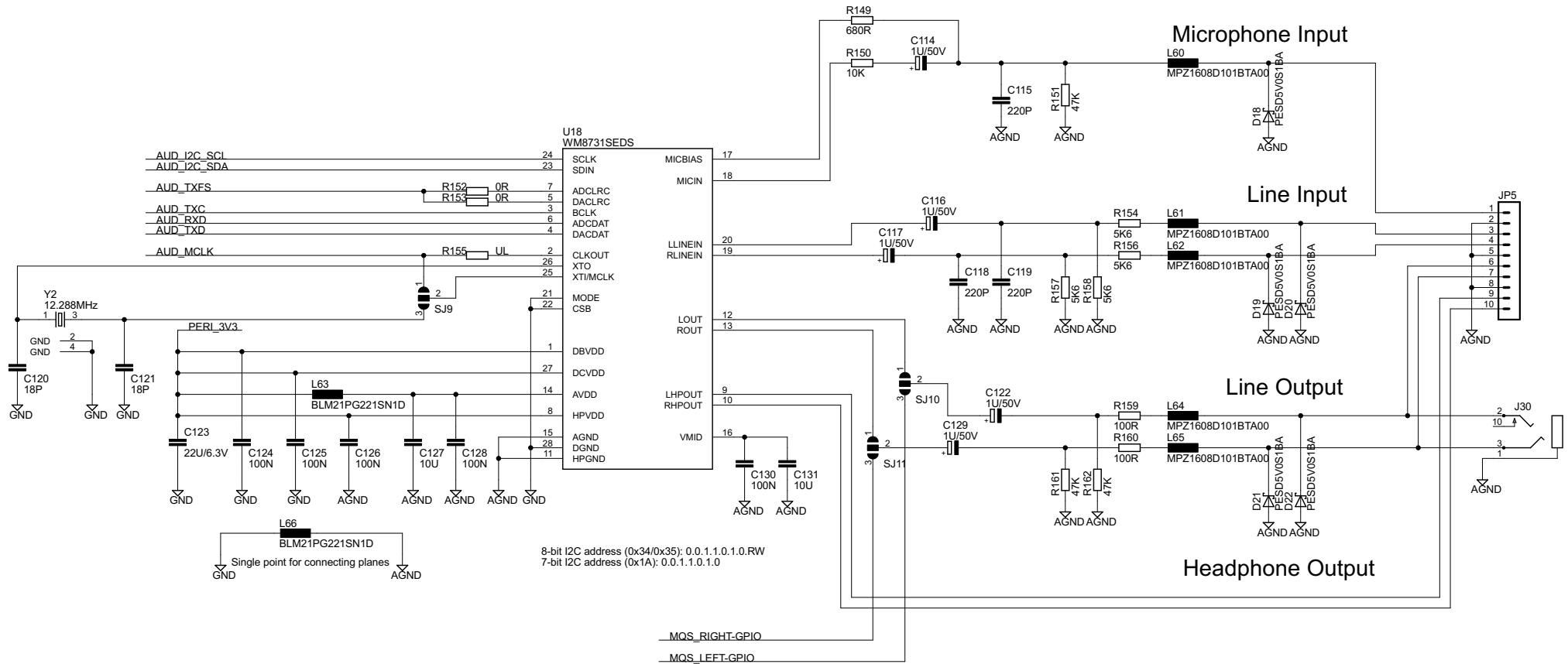
TITLE: COM Carrier Board rev C

Document Number:

Date: 2018-04-27 10:49:18

Sheet: 17/19

Audio Interface



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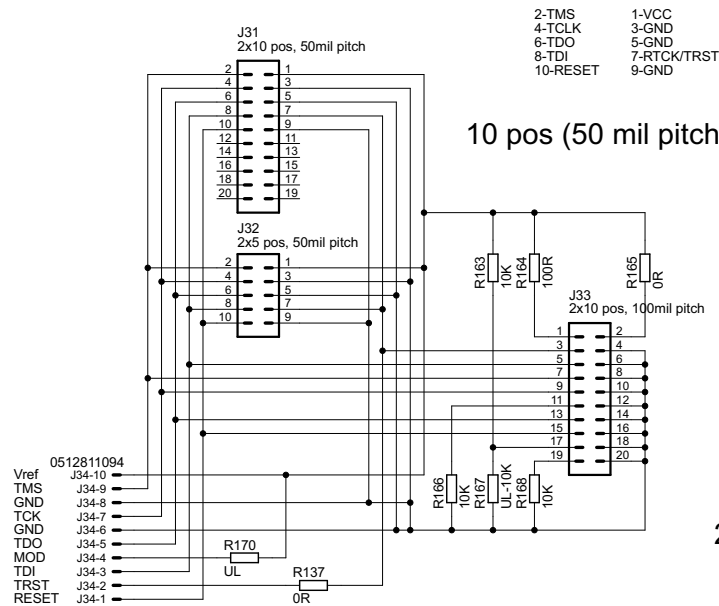
Document Number:

Date: 2018-04-27 10:49:18

Sheet: 18/19

Debug Interfaces

JTAG Debug Interfaces ARM 10-pin interface JTAG Mode

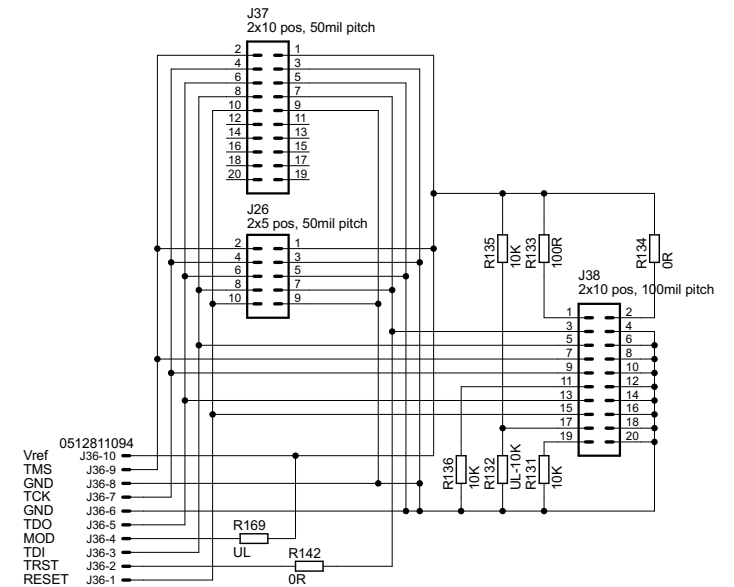


ARM 20-pin interface JTAG Mode

20 pos (100 mil pitch) connector

1-VCC (Vtref)
3-N/C (TRST)
5-TDI
7-TMS
9-TCLK
11-RTCK
13-TDO
15-RESET
17-N/C
19-N/C

2-N/C
4-GND
6-GND
8-GND
10-GND
12-GND
14-GND
16-GND
18-GND
20-GND



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Document Number:

Date: 2018-04-27 10:49:18

Sheet: 19/19