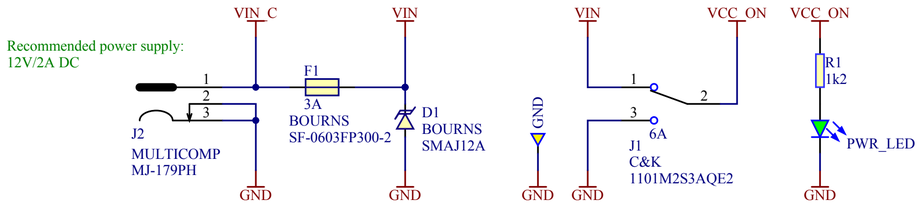
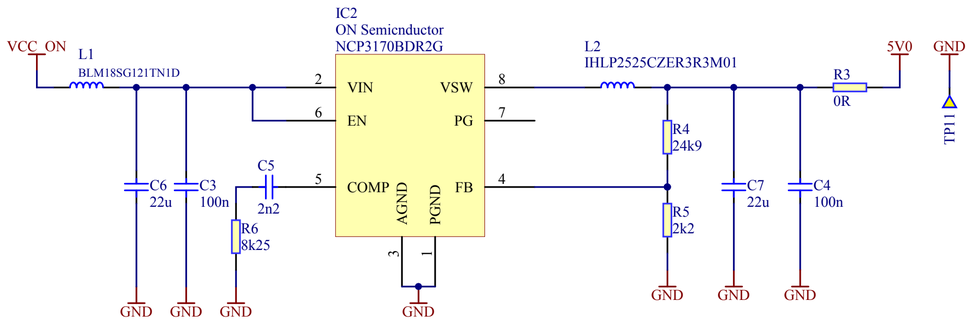
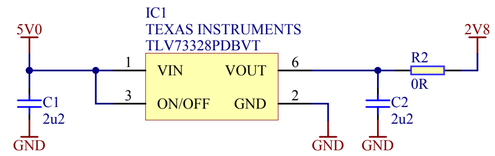
## DC supply input



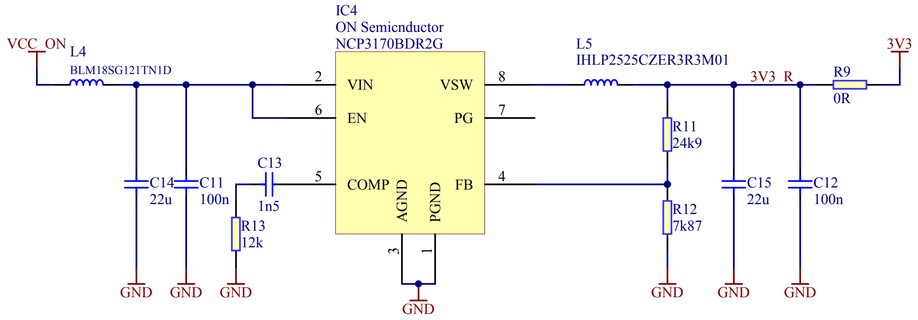

## Step-down converter (5V, 3A)



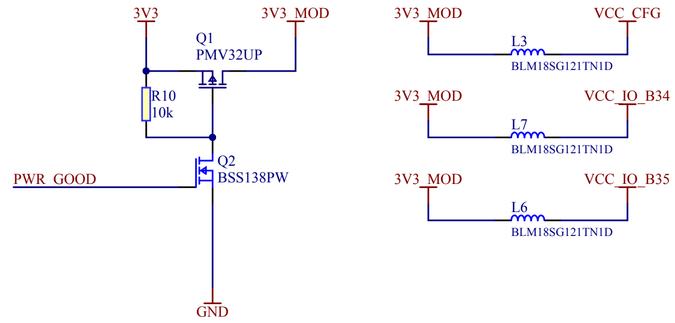

## LDO (2.8V, 300mA)




## Step-down converter (3.3V, 3A)




## Mars module power sequencer

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|---|---|
| Title: **Zynq Video Board** | |
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| File: [1] Power Supply.SchDoc | |

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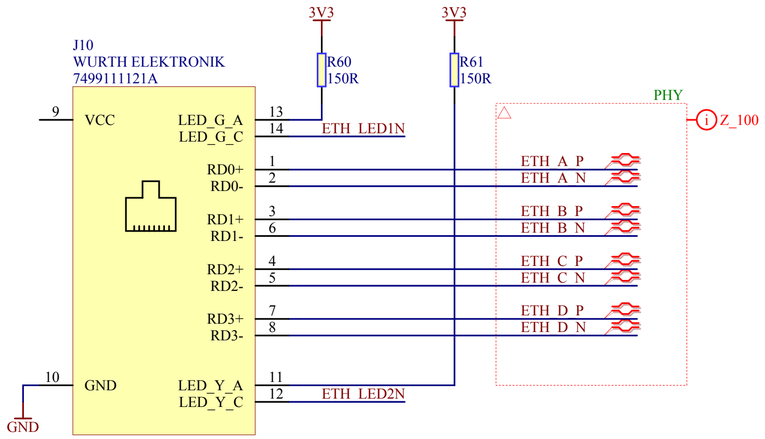
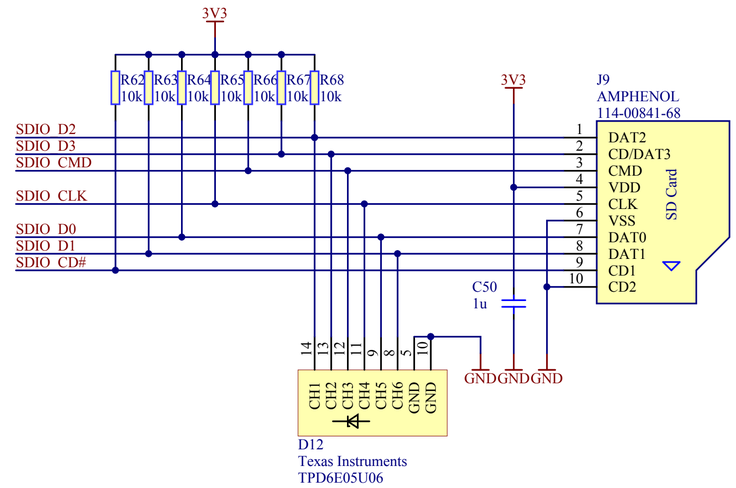
## Gigabit Ethernet interface




## SD card

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| File: [2]_Ethernet_SDCard.SchDoc | |

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# PSoC SO-DIMM connector

**Mars ZX2 FPGA PINOUT**

17 - T17_P
19 - R18_N
23 - T12_P
25 - U12_N
29 - V16_P
31 - W16_N
35 - R16_P
37 - R17_N
43 - N18_P
45 - P19_N
49 - N20_P
51 - P20_N
55 - V15_P
57 - W15_N
59 - Y16_P
61 - Y17_N
65 - Y18_P
67 - Y19_N
69 - W18_P
71 - W19_N
75 - N15_P
77 - N16_N
79 - M19_P
81 - M20_N
85 - H16_P
87 - H17_N
91 - L19_P
93 - L20_N
97 - K19_P
99 - J19_N

M1A
TE
1565917-4

3V3

| | | | | | |
|---|---|---|---|---|---|
| | 1 | VIN_MOD | GND | 2 | |
| | 3 | VIN_MOD | MGT_CLK0_P | 4 | |
| | 5 | VIN_MOD | MGT_CLK0_N | 6 | |
| | 7 | VIN_MOD | GND | 8 | |
| | 9 | VIN_MOD | MGT_CLK1_P | 10 | |
| | 11 | VIN_MOD | MGT_CLK1_N | 12 | |
| PWR_EN | 13 | PWR_EN | GND | 14 | |
| | 15 | GND | MGT_RX0_P | 16 | |
| | 17 | MGT_TX0_P | MGT_RX0_N | 18 | |
| | 19 | MGT_TX0_N | GND | 20 | |
| | 21 | GND | MGT_RX1_P | 22 | |
| | 23 | MGT_TX1_P | MGT_RX1_N | 24 | |
| | 25 | MGT_TX1_N | GND | 26 | |
| | 27 | GND | MGT_RX2_P | 28 | |
| | 29 | MGT_TX2_P | MGT_RX2_N | 30 | |
| | 31 | MGT_TX2_N | GND | 32 | |
| | 33 | GND | MGT_RX3_P | 34 | |
| | 35 | MGT_TX3_P | MGT_RX3_N | 36 | |
| | 37 | MGT_TX3_N | GND | 38 | |
| | 39 | GND | PWR_GOOD | 40 | PWR_GOOD |
| | 41 | VOUT_1V35 | VOUT_1V0 | 42 | |
| CN_C4_P | 43 | PCLK_P | IO_P | 44 | LED1 |
| CN_C4_N | 45 | PCLK_N | IO_N | 46 | LED2 |
| | 47 | GND | IO_P | 48 | LED3 |
| CN_C3_P | 49 | SCLK_P | IO_N | 50 | LED4 |
| CN_C3_N | 51 | SCLK_N | GND | 52 | |
| VCC_IO_B34 | 53 | VIN_IO | IO_P | 54 | LED5 |
| CN_C2_P | 55 | IO_P | IO_N | 56 | LED6 |
| CN_C2_N | 57 | IO_N | IO_P | 58 | UART2_TX |
| CN_C1_P | 59 | IO_P | IO_N | 60 | UART2_RX |
| CN_C1_N | 61 | IO_N | VIN_IO | 62 | VCC_IO_B34 |
| | 63 | GND | IO_P | 64 | CN_B4_P |
| TP7 | 65 | IO_P | IO_N | 66 | CN_B4_N |
| SDIO_CD# | 67 | IO_N | IO_P | 68 | CN_B3_P |
| LED7 | 69 | IO_P | IO_N | 70 | CN_B3_N |
| LED8 | 71 | IO_N | GND | 72 | |
| | 73 | VIN_IO | IO_P | 74 | CN_B2_P |
| TMDS_D2_P | 75 | IO_P | IO_N | 76 | CN_B2_N |
| TMDS_D2_N | 77 | IO_N | IO_P | 78 | CN_B1_P |
| TMDS_D1_P | 79 | IO_P | IO_N | 80 | CN_B1_N |
| TMDS_D1_N | 81 | IO_N | VIN_IO | 82 | VCC_IO_B35 |
| | 83 | GND | IO_P | 84 | CAM2_SCL |
| TMDS_CLK_P | 85 | PCLK_P | IO_N | 86 | CAM2_SDA |
| TMDS_CLK_N | 87 | PCLK_N | GND | 88 | |
| | 89 | VOUT_1V8 | IO_P | 90 | LP_CSI2_D1_N |
| TMDS_D0_P | 91 | IO_P | IO_N | 92 | LP_CSI2_D1_P |
| TMDS_D0_N | 93 | IO_N | VOUT_1V8 | 94 | |
| | 95 | GND | IO_P | 96 | LP_CSI2_D0_N |
| CAM1_SCL | 97 | IO_P | IO_N | 98 | LP_CSI2_D0_P |
| CAM1_SDA | 99 | IO_N | GND | 100 | |

BANK 34
BANK 35

GND

**Mars ZX2 FPGA PINOUT**

4 - U18_P
6 - U19_N
10 - U14_P
12 - U15_N
16 - V17_P
18 - V18_N
22 - U13_P
24 - V13_N
28 - T11_P
30 - T10_N
34 - V12_P
36 - W13_N
44 - W14_P
46 - Y14_N
48 - P14_P
50 - R14_N
54 - T14_P
56 - T15_N
58 - T16_P
60 - U17_N
64 - P15_P
66 - P16_N
68 - N17_P
70 - P18_N
74 - V20_P
76 - W20_N
78 - T20_P
80 - U20_N
84 - M14_P
86 - M15_N
90 - L14_P

103 - J18_P
105 - H18_N
109 - J20_P
111 - H20_N
113 - G19_P
115 - G20_N
119 - F19_P
121 - F20_N
123 - D19_P
125 - D20_N
129 - C20_P
131 - B20_N
133 - B19_P
135 - A20_N
139 - W10_P
141 - W9_N
143 - W11_P
145 - Y11_N
149 - Y9_P
151 - Y8_N
153 - T5_P
155 - U5_N

M1B

| | | | | | |
|---|---|---|---|---|---|
| | 101 | VOUT_1V8 | IO_P | 102 | LP_CSI1_D1_N |
| | 103 | SCLK_P | IO_N | 104 | LP_CSI1_D1_P |
| | 105 | SCLK_N | VOUT_1V8 | 106 | TP5 |
| | 107 | GND | IO_P | 108 | LP_CSI1_D0_N |
| | 109 | IO_P | IO_N | 110 | LP_CSI1_D0_P |
| | 111 | IO_N | PCLK_P | 112 | HP_CSI1_CLK_P |
| LP_CSI1_CLK_N | 113 | IO_P | PCLK_N | 114 | HP_CSI1_CLK_N |
| LP_CSI1_CLK_P | 115 | IO_N | GND | 116 | |
| VCC_IO_B35 | 117 | VIN_IO | IO_P | 118 | HP_CSI1_D0_P |
| LP_CSI2_CLK_N | 119 | IO_P | IO_N | 120 | HP_CSI1_D0_N |
| LP_CSI2_CLK_P | 121 | IO_N | IO_P | 122 | HP_CSI1_D1_P |
| | 123 | IO_P | IO_N | 124 | HP_CSI1_D1_N |
| TP6 | 125 | IO_N | VIN_IO | 126 | |
| AUX_JTAG_RST | 127 | GND | SCLK_P | 128 | HP_CSI2_CLK_P |
| AUX_JTAG_TMS | 129 | IO_P | SCLK_N | 130 | HP_CSI2_CLK_N |
| AUX_JTAG_TDO | 131 | IO_N | IO_P | 132 | TMDS_HPD |
| AUX_JTAG_TDI | 133 | IO_P | IO_N | 134 | CAM_RST |
| AUX_JTAG_TCK | 135 | IO_N | GND | 136 | |
| VCC_CFG | 137 | VIN_CFG | IO_P | 138 | HP_CSI2_D0_P |
| SDIO_CLK | 139 | IO_P | IO_N | 140 | HP_CSI2_D0_N |
| SDIO_CMD | 141 | IO_N | IO_P | 142 | HP_CSI2_D1_P |
| SDIO_D0 | 143 | IO_P | IO_N | 144 | HP_CSI2_D1_N |
| SDIO_D1 | 145 | IO_N | VIN_CFG | 146 | |
| SDIO_D2 | 147 | GND | IO_P | 148 | BTN1 |
| SDIO_D3 | 149 | SCLK_P | IO_N | 150 | BTN3 |
| UART1_RX | 151 | SCLK_N | IO_P | 152 | BTN4 |
| UART1_TX | 153 | IO_P | IO_N | 154 | BTN2 |
| | 155 | IO_N | GND | 156 | |
| | 157 | GND | JTAG_TCK | 158 | JTAG_TCK |
| USB_UP_P | 159 | USB_DP | JTAG_TDI | 160 | JTAG_TDI |
| USB_UP_N | 161 | USB_DM | JTAG_TMS | 162 | JTAG_TMS |
| | 163 | VBUS_HDP | JTAG_TDO | 164 | JTAG_TDO |
| | 165 | ID_HDM | USB_CPEN | 166 | |
| | 167 | GND | RSVD | 168 | |
| ETH_A_N | 169 | ETH_A_N | RSVD | 170 | |
| ETH_A_P | 171 | ETH_A_P | GND | 172 | |
| ETH_LED1N | 173 | ETH_LED1# | I2C_INT# | 174 | |
| ETH_LED2N | 175 | ETH_LED2# | I2C_SDA | 176 | MIO_SDA_3V3 |
| ETH_B_N | 177 | ETH_B_N | I2C_SCL | 178 | MIO_SCL_3V3 |
| ETH_B_P | 179 | ETH_B_P | GND | 180 | |
| | 181 | ETH_CTREF | FLASH_CLK | 182 | |
| ETH_C_N | 183 | ETH_C_N | FLASH_DO | 184 | |
| ETH_C_P | 185 | ETH_C_P | FLASH_DI | 186 | |
| | 187 | ETH_LED1# | FLASH_CS# | 188 | |
| ETH_D_N | 189 | ETH_LED2# | BOOT_MODE | 190 | BOOT_MODE |
| ETH_D_P | 191 | ETH_D_N | SRST#_RDY# | 192 | SRST_RDYN |
| | 193 | ETH_D_P | FPGA_DONE | 194 | FPGA_DONE |
| | 195 | GND | POR#_LOAD# | 196 | POR_LOADN |
| 3V3 | 197 | VIN_3V3 | VMON | 198 | |
| | 199 | VIN_3V3 | VIN_BAT | 200 | |

BANK 35
BANK 13

VCC_IO_B35
VCC_CFG

5V0
C58 2u2
R94 9k1
R95 0R
GND

**Mars ZX2 FPGA PINOUT**

102 - H15_P
104 - G15_N
108 - M17_P
110 - M18_N
112 - K17_P
114 - K18_N
118 - K16_P
120 - J16_N
122 - G17_P
124 - G18_N
128 - L16_P
130 - L17_N
132 - F16_P
134 - F17_N
138 - E18_P
140 - E19_N
142 - E17_P
144 - D18_N
148 - U7_P
150 - V7_N
152 - T9_P
154 - U10_N

BANK 35
BANK 13

## Boot Mode Select

3V3 — R7 0R — R8 0R — GND
DNP
BOOT_MODE
R20 0R — 3V3_MOD
R80 330R — D13 — GND

## PSoC control switches

3V3
R14 10k
SW5 OMRON B3S-100X
SRST_RDYN
C16 10n
GND

SW6 OMRON B3S-100X
POR_LOADN
C17 10n
GND

## Fan connector

5V0 — FAN
GND — Molex MX-22-23-2021

## Mars mounting studs

SP1 WURTH ELEKTRONIK 9774030243 — GND
SP2 WURTH ELEKTRONIK 9774030243 — GND

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**Module VOUT**
VOUT_1V35 - Max current 0.3A
VOUT_1V0 - Max current 0.3A
VOUT_1V8 - Max current 0.7A (and 0.3A per pin)

| | |
|---|---|
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| File: [3]_SO-DIMM.SchDoc | |

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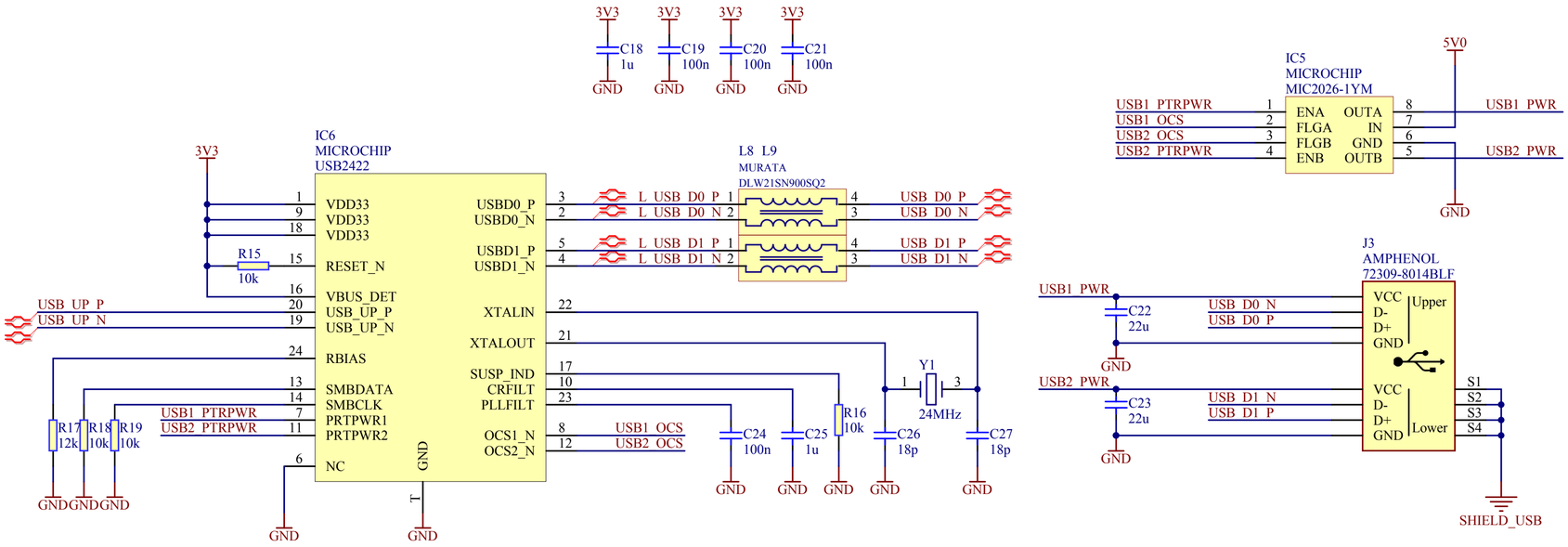
# USB 2.0 HUB

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| File: [4]_USB.SchDoc | |

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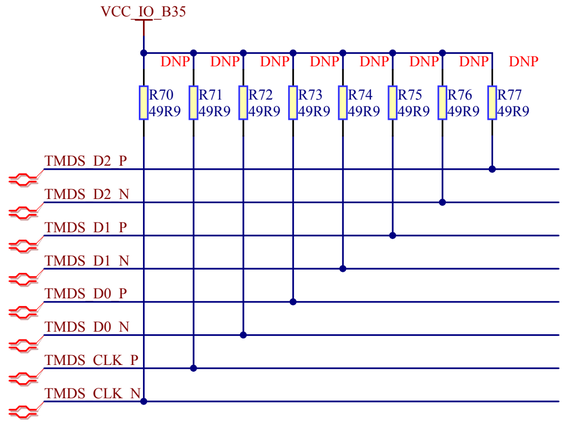
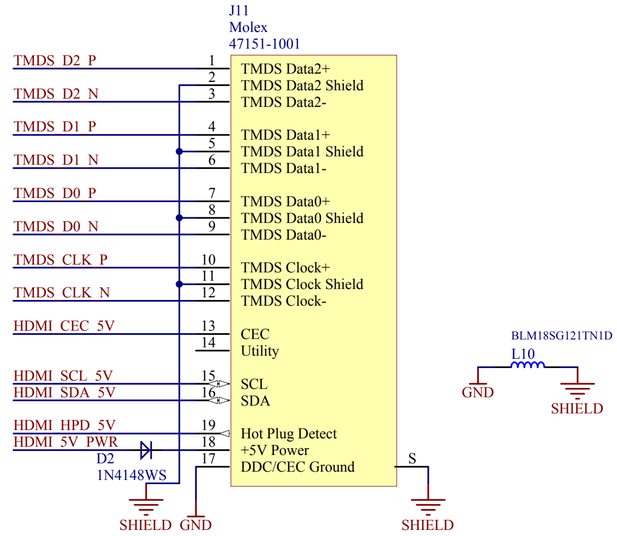
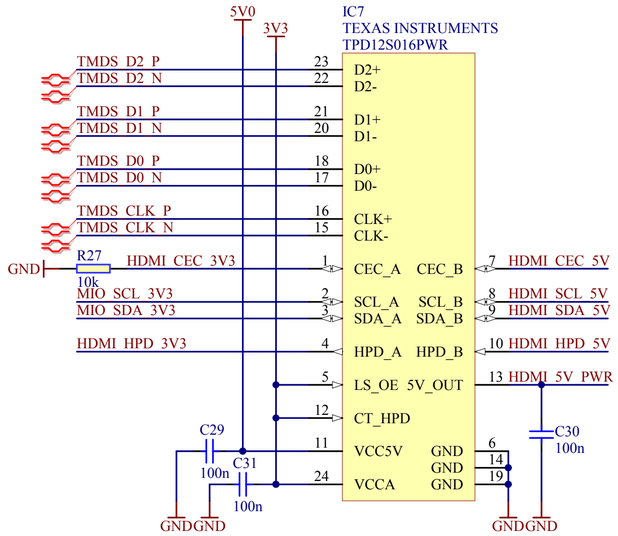
# HDMI interface

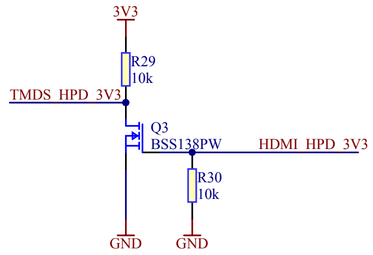






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| File: [5]_HDMI.SchDoc | |

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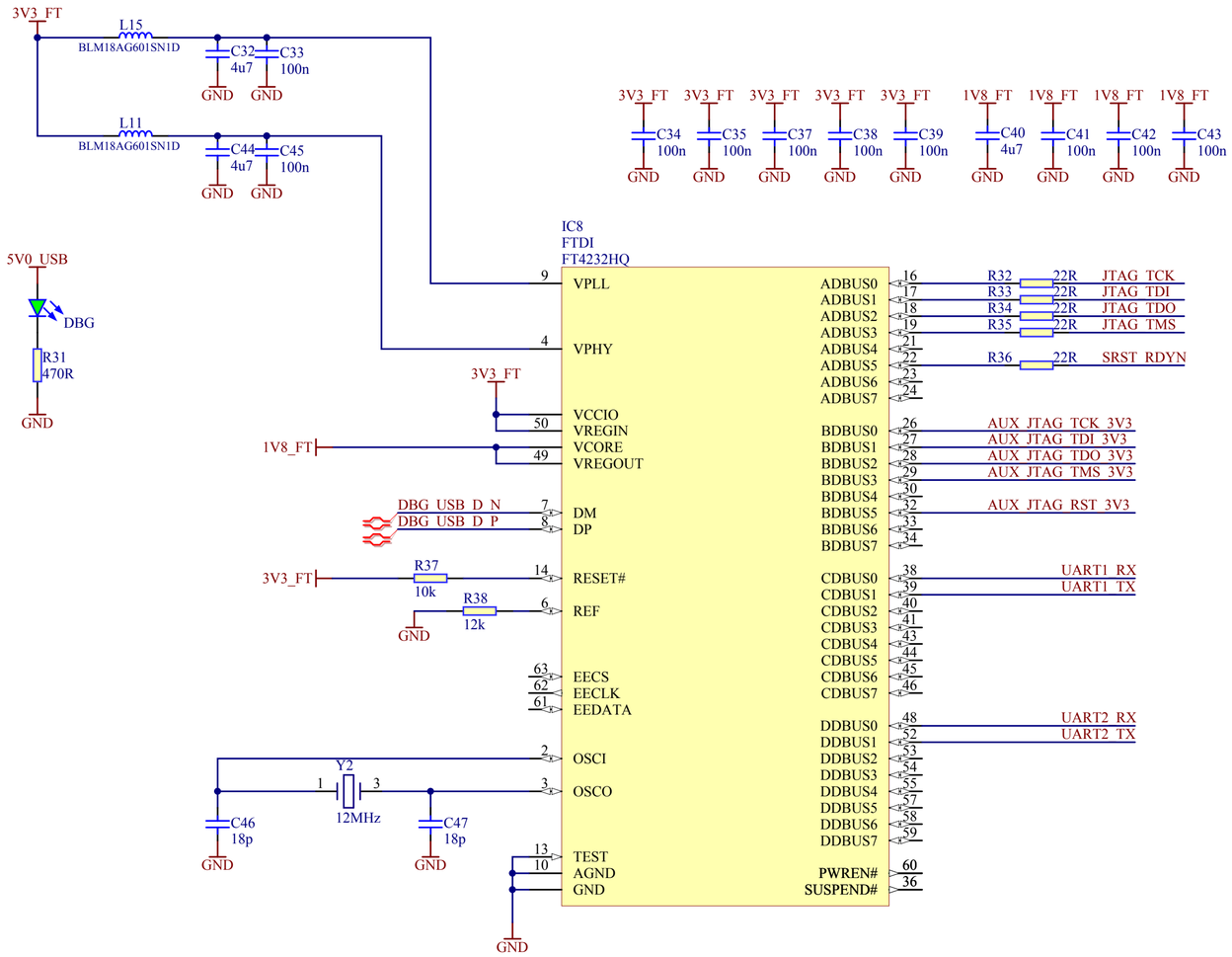
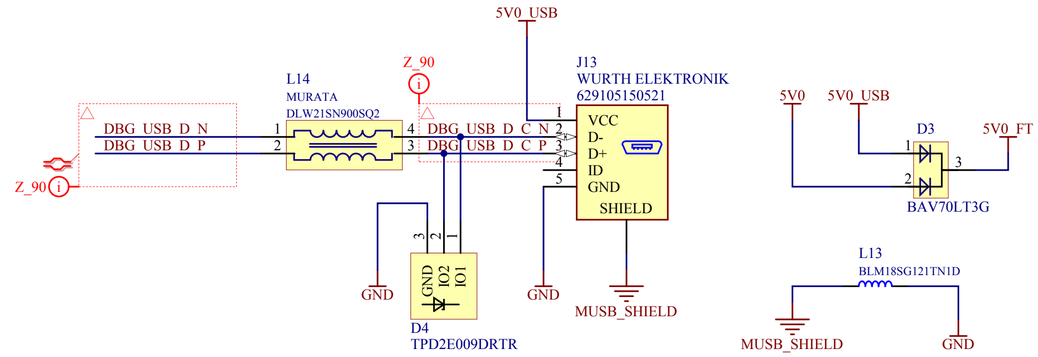
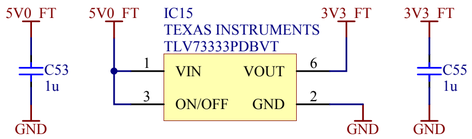
## UART and JTAG to USB

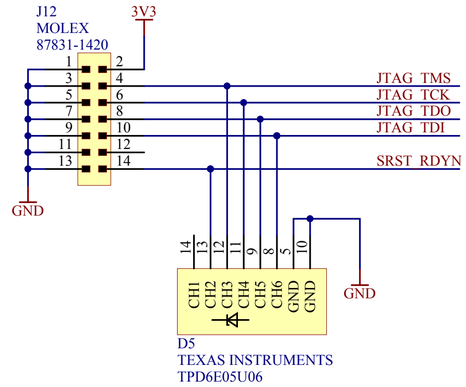



## Debug USB connector




## Zynq JTAG




## Auxiliary JTAG level translator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|---|---|
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| File: [6] Debug.SchDoc | |

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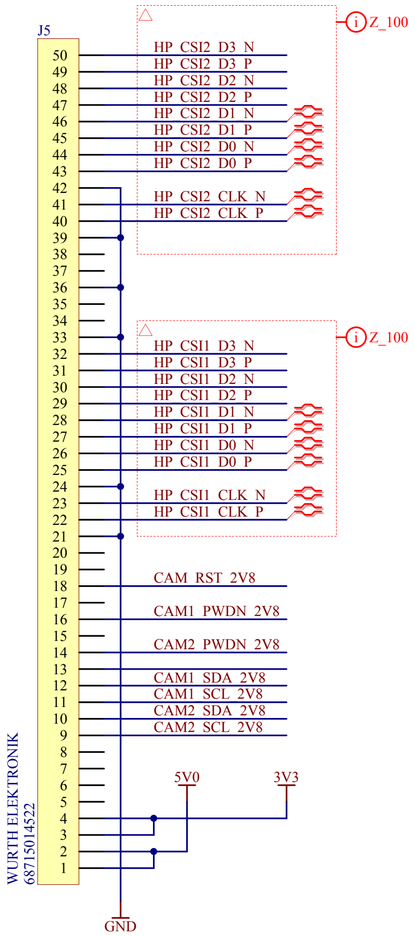
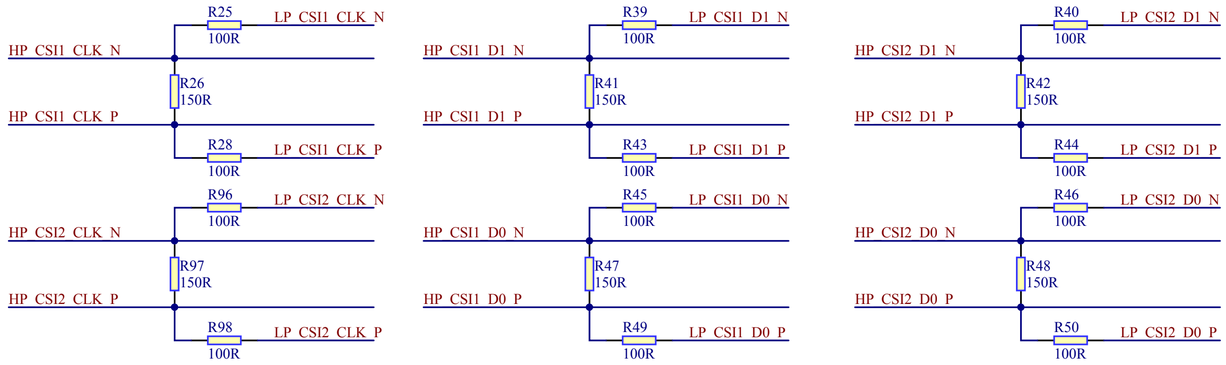
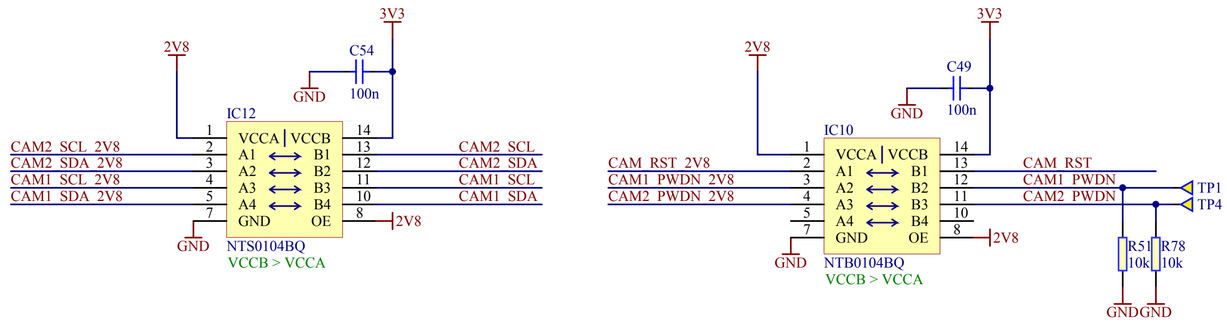
## MIPI CSI camera connector




## FPGA compatible D-PHY receiver




## Voltage level translators

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| File: [7]_CSI.SchDoc | |

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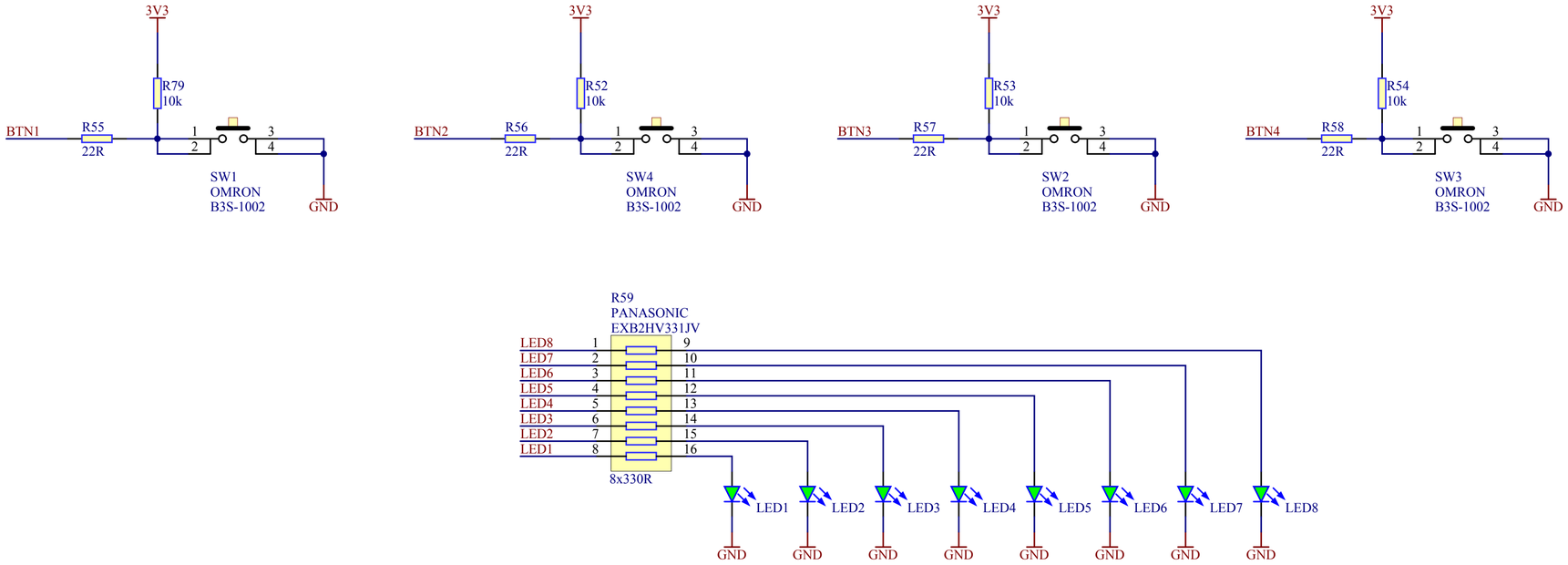
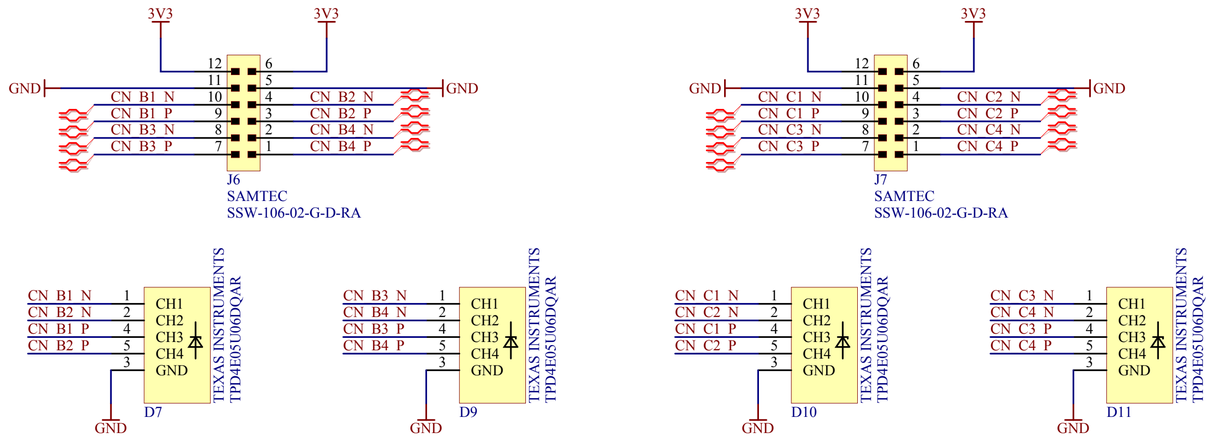
# GPIO/LED




## Pmod interfaces

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| File: [8]_Peripherals.SchDoc | |

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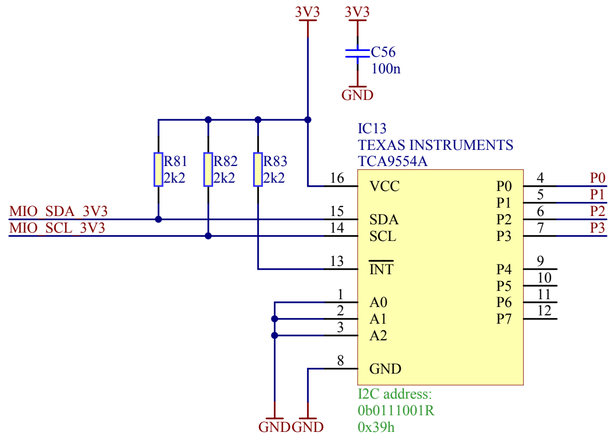
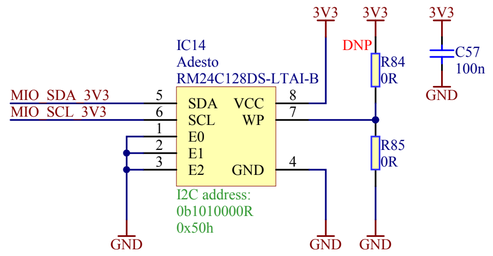
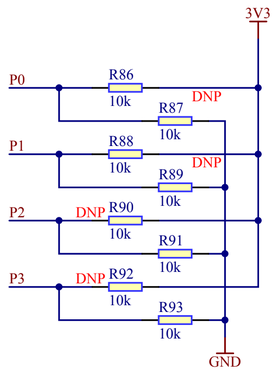
## GPIO expander




## Unique ID with OTP




## Serial number coding

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