

BANK 502

PS_DDR_DQ0_502
PS_DDR_DQ1_502
PS_DDR_DQ2_502
PS_DDR_DQ3_502
PS_DDR_DQ4_502
PS_DDR_DQ5_502
PS_DDR_DQ6_502
PS_DDR_DQ7_502
PS_DDR_DQ8_502
PS_DDR_DQ9_502
PS_DDR_DQ10_502
PS_DDR_DQ11_502
PS_DDR_DQ12_502
PS_DDR_DQ13_502
PS_DDR_DQ14_502
PS_DDR_DQ15_502
PS_DDR_DQ16_502
PS_DDR_DQ17_502
PS_DDR_DQ18_502
PS_DDR_DQ19_502
PS_DDR_DQ20_502
PS_DDR_DQ21_502
PS_DDR_DQ22_502
PS_DDR_DQ23_502
PS_DDR_DQ24_502
PS_DDR_DQ25_502
PS_DDR_DQ26_502
PS_DDR_DQ27_502
PS_DDR_DQ28_502
PS_DDR_DQ29_502
PS_DDR_DQ30_502
PS_DDR_DQ31_502

PS_DDR_A0_502
PS_DDR_A1_502
PS_DDR_A2_502
PS_DDR_A3_502
PS_DDR_A4_502
PS_DDR_A5_502
PS_DDR_A6_502
PS_DDR_A7_502
PS_DDR_A8_502
PS_DDR_A9_502
PS_DDR_A10_502
PS_DDR_A11_502
PS_DDR_A12_502
PS_DDR_A13_502
PS_DDR_A14_502

PS_DDR_DQS_P0_502
PS_DDR_DQS_N0_502
PS_DDR_DQS_P1_502
PS_DDR_DQS_N1_502
PS_DDR_DQS_P2_502
PS_DDR_DQS_N2_502
PS_DDR_DQS_P3_502
PS_DDR_DQS_N3_502
PS_DDR_CKE_P0_502
PS_DDR_CKE_N0_502
PS_DDR_BA0_502
PS_DDR_BA1_502
PS_DDR_BA2_502

PS_DDR_DM0_502
PS_DDR_DM1_502
PS_DDR_DM2_502
PS_DDR_DM3_502

PS_DDR_CS_B_502
PS_DDR_WE_B_502
PS_DDR_CAS_B_502
PS_DDR_RAS_B_502
PS_DDR_CKE_502
PS_DDR_ODT_502

PS_DDR_DRST_B_502
PS_DDR_VRP_502
PS_DDR_VRN_502

DDR_D_HL DDR3 DQ[7..0]
DDR_D_HL DDR3 DQ[15..8]
DDR_D_HL DDR3 DQ[23..16]
DDR_D_HL DDR3 DQ[31..24]

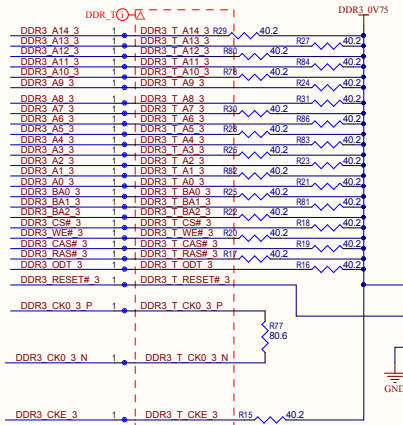
DDR_D

DDR_AC

DDR_DM

Layout Note:
DDR3 trace lengths must include
Zynq package flight times.
See UG933 and Layout
Guidelines.

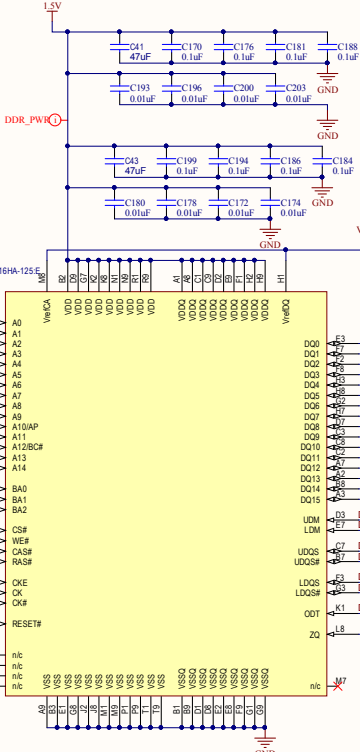
Layout Note:
DDR3 target trace impedances are
as follows:
Single Ended Signals = 40 ohms
Differential Signals = 80 ohms



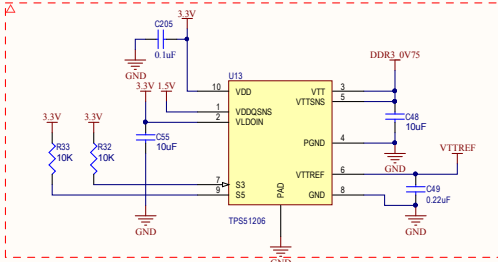
Layout Note:
Use Fly-by routing and termination for DDR3
control signals.
Resistors should be placed past the last
memory IC & as close to the device as
possible.

Default: Pins 2 - 3, 4.7K ohm resistor.

NOTE:
RESET# requires a 4.7K pull
down resistor. Please refer to
the latest Xilinx UG933 for
further information.

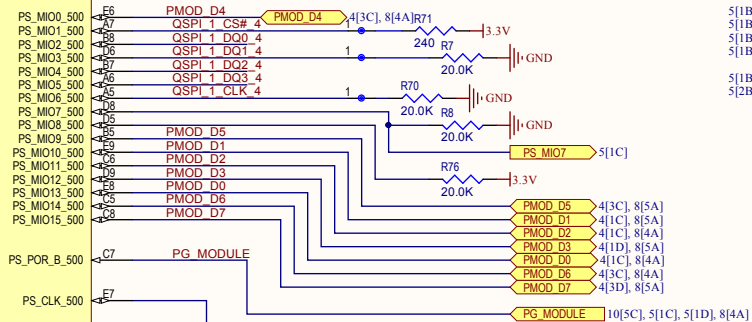


DDR3 Termination Supply

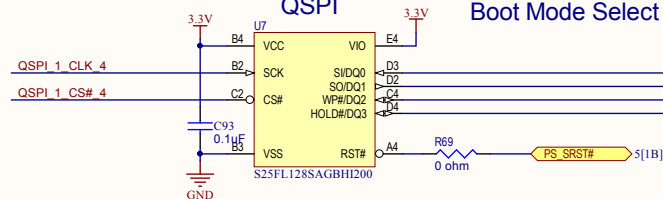


U9E
Zynq 7010/7020 SOC CLG400

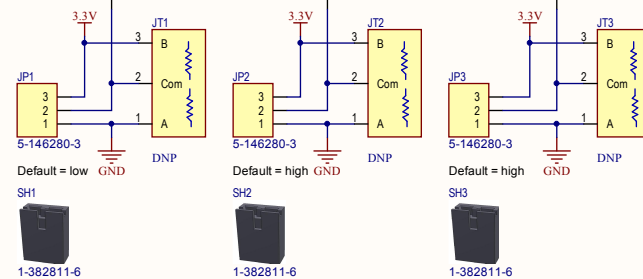
BANK 500



QSPI

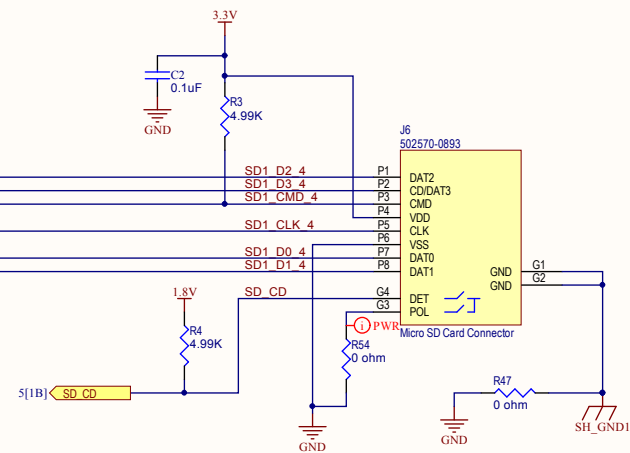


Boot Mode Select

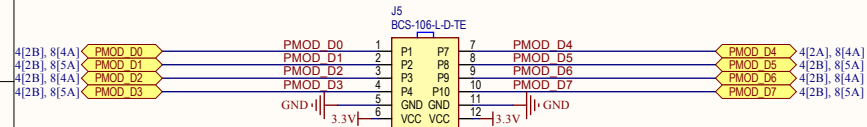


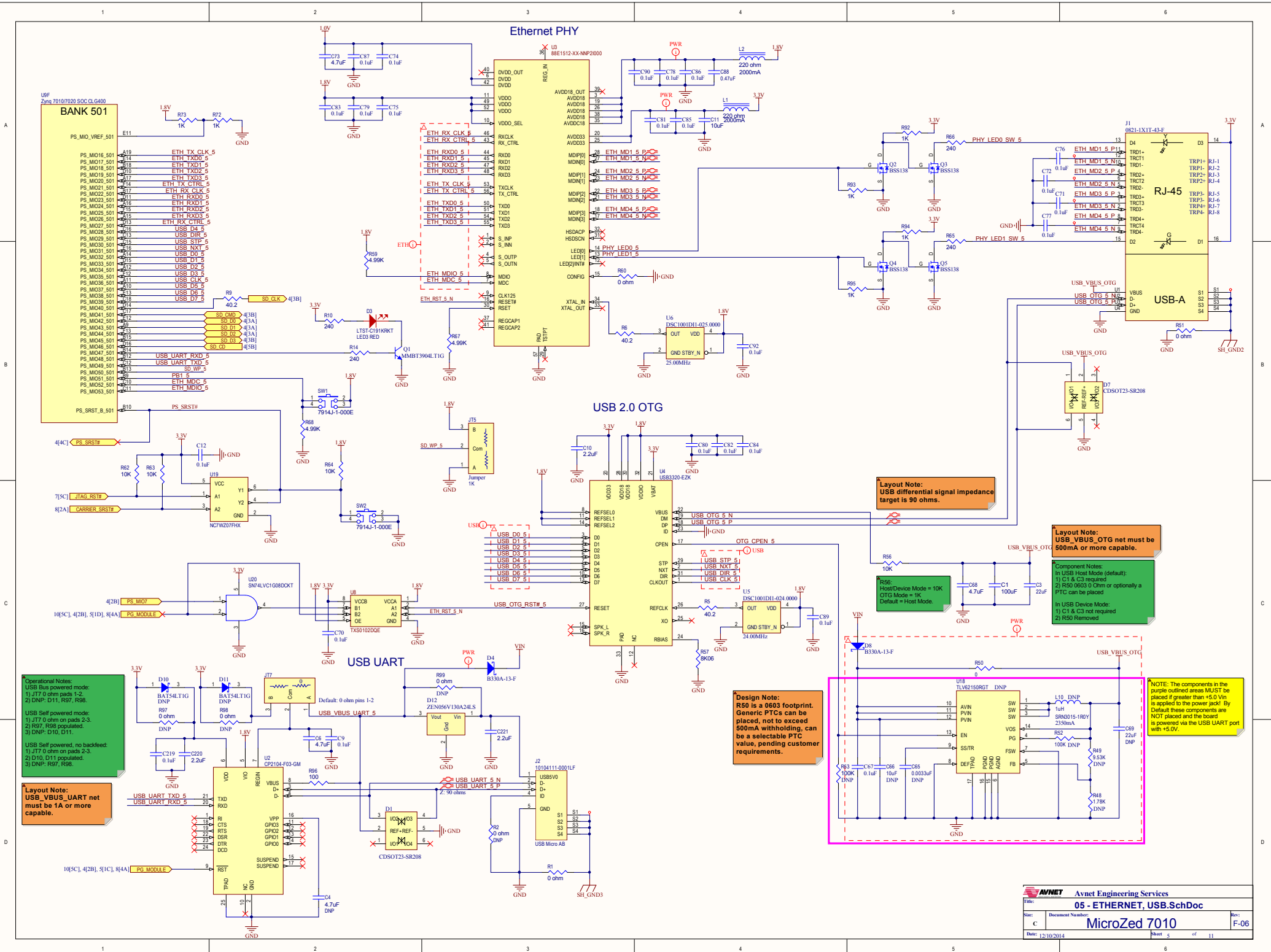
Boot Mode:	JT1:	JT2:	JT3:
Cascade JTAG	1 - 2 (low)	1 - 2 (low)	1 - 2 (low)
Ind. JTAG	2 - 3 (high)	2 - 3 (high)	2 - 3 (high)
QSPI	x	1 - 2 (low)	2 - 3 (high)
SD Card	1 - 2 (low)	2 - 3 (high)	2 - 3 (high)

Micro SD Card



PMOD Interface





Operational Notes:
USB Bus powered mode:
1) J77 0 ohm on pads 1-2.
2) DNP: D11, R97, R98.

USB Self powered mode:
1) J77 0 ohm on pads 2-3.
2) R97, R98 populated.
3) DNP: D10, D11.

USB Self powered, no backfeed:
1) J77 0 ohm on pads 2-3.
2) D10, D11 populated.
3) DNP: R97, R98.

Layout Note:
USB_VBUS_UART net must be 1A or more capable.

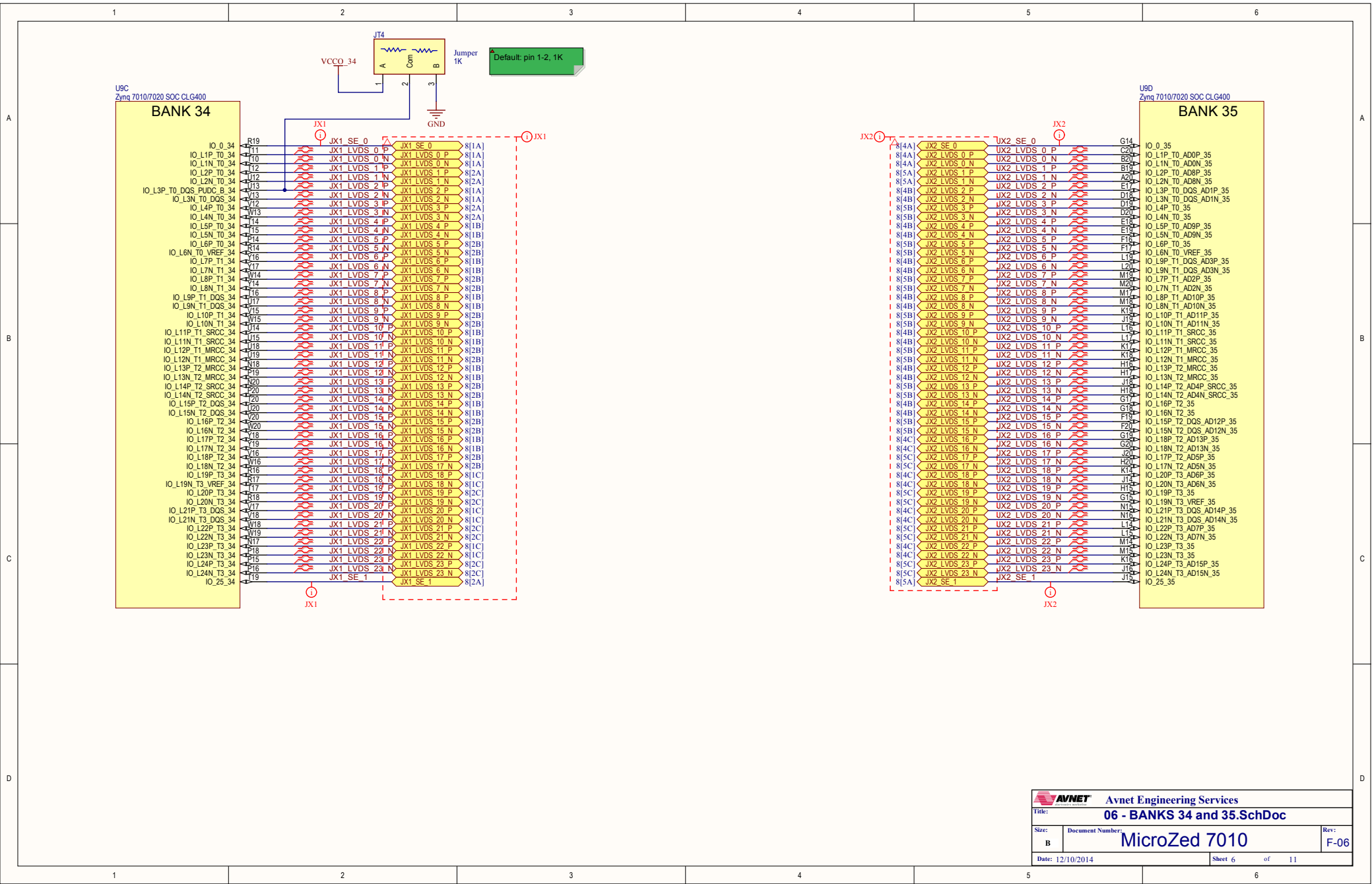
Design Note:
R50 is a 0603 footprint. Generic PTCs can be placed, not to exceed 500mA withstanding, can be a selectable PTC value, pending customer requirements.

Layout Note:
USB differential signal impedance target is 90 ohms.

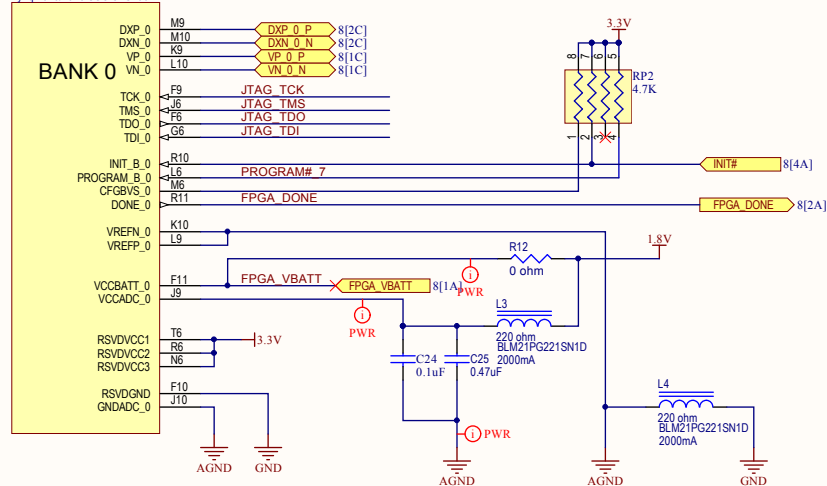
Layout Note:
USB_VBUS_OTG net must be 500mA or more capable.

Component Notes:
In USB Host Mode (default):
1) C1 & C3 required.
2) R50 0603 0 Ohm or optionally a PTC can be placed.
In USB Device Mode:
1) C1 & C3 not required
2) R50 Removed

NOTE: The components in the purple outlined areas MUST be placed if greater than +5.0 Vin is applied to the power jack! By Default these components are NOT placed and the board is powered via the USB UART port with +5.0V.

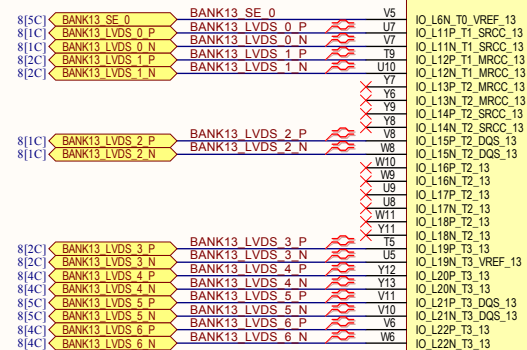


USA
Zynq 7010/7020 SOC CLG400

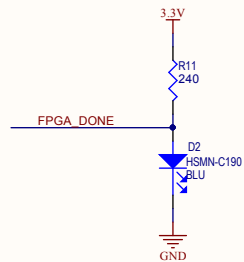


U9B
Zynq 7010/7020 SOC CLG400

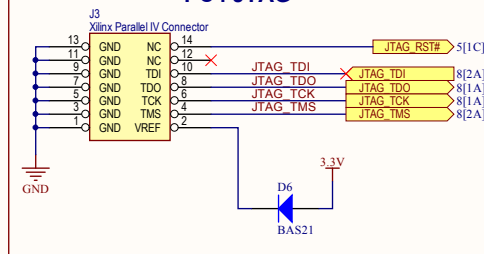
BANK 13 (Z7020 Only)

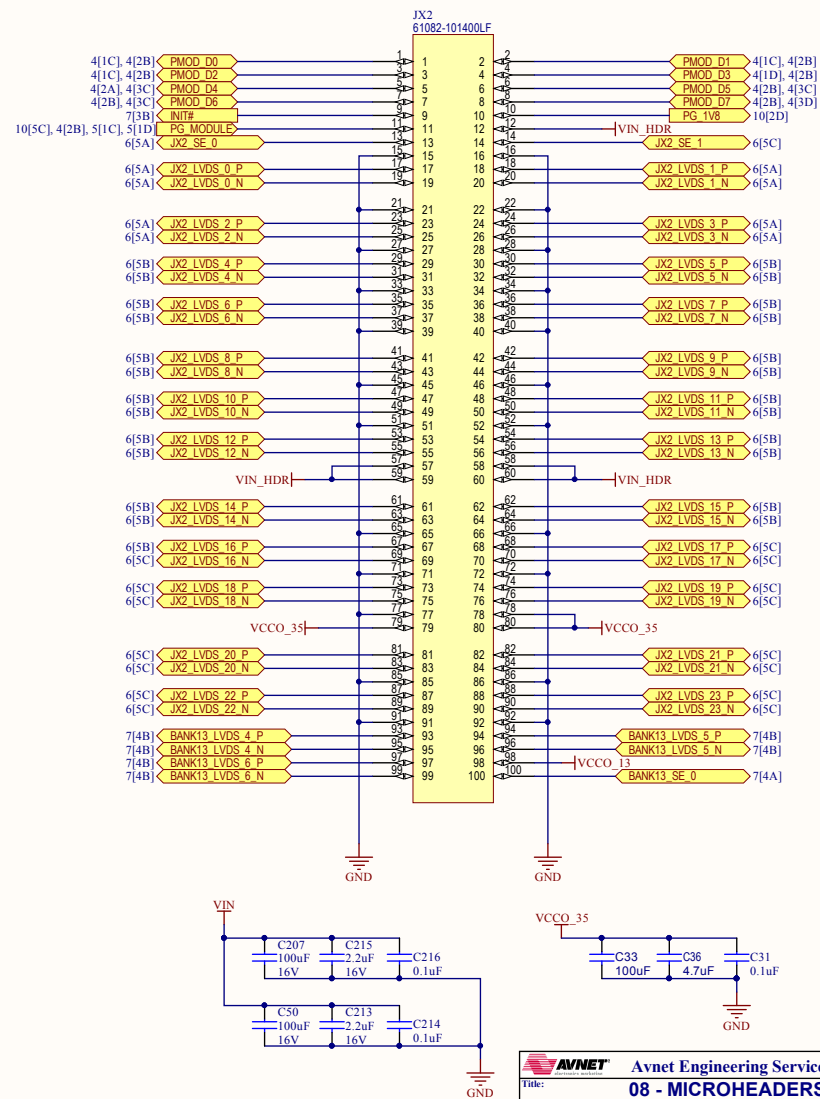


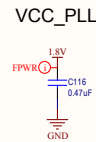
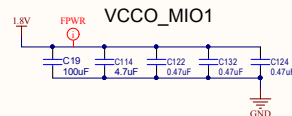
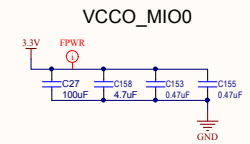
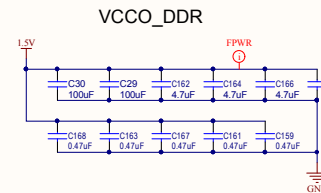
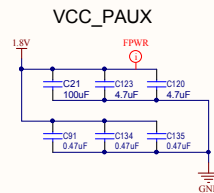
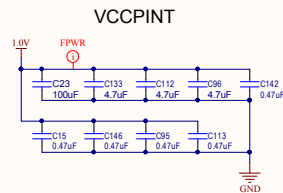
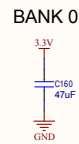
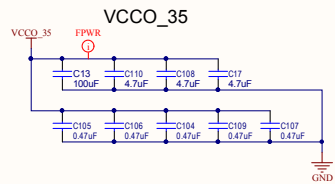
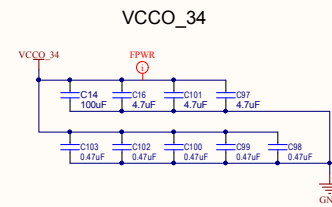
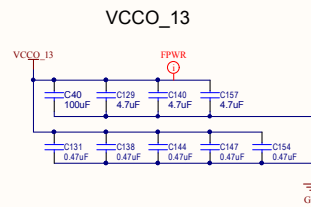
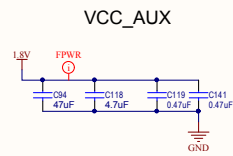
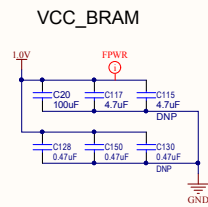
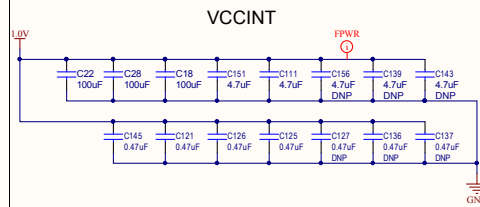
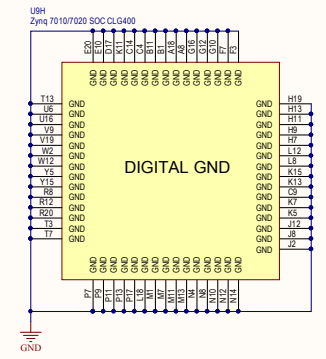
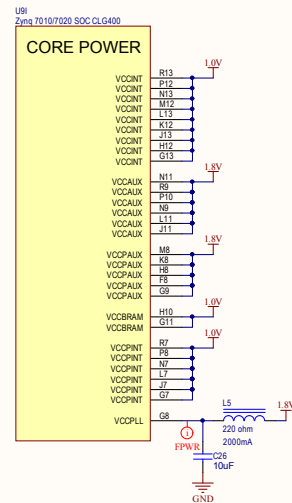
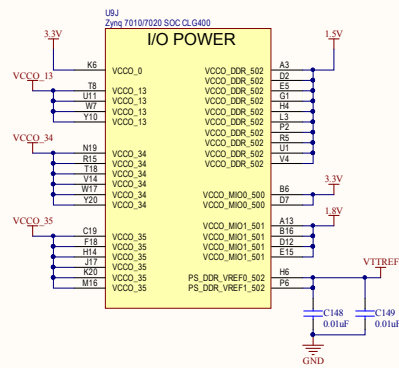
DONE LED

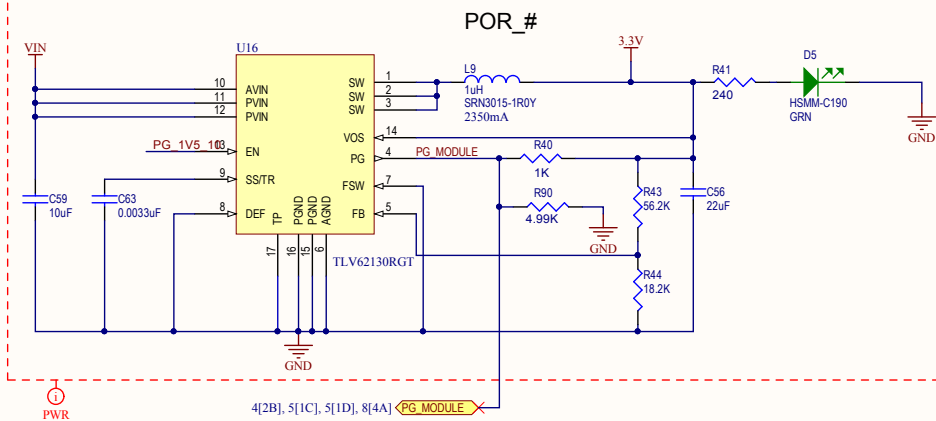
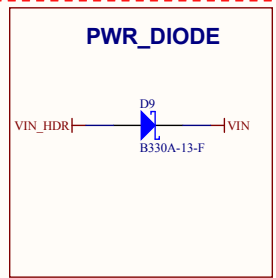
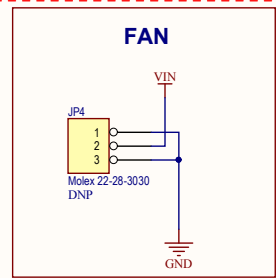
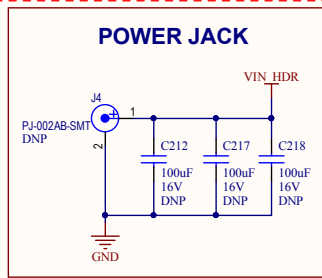
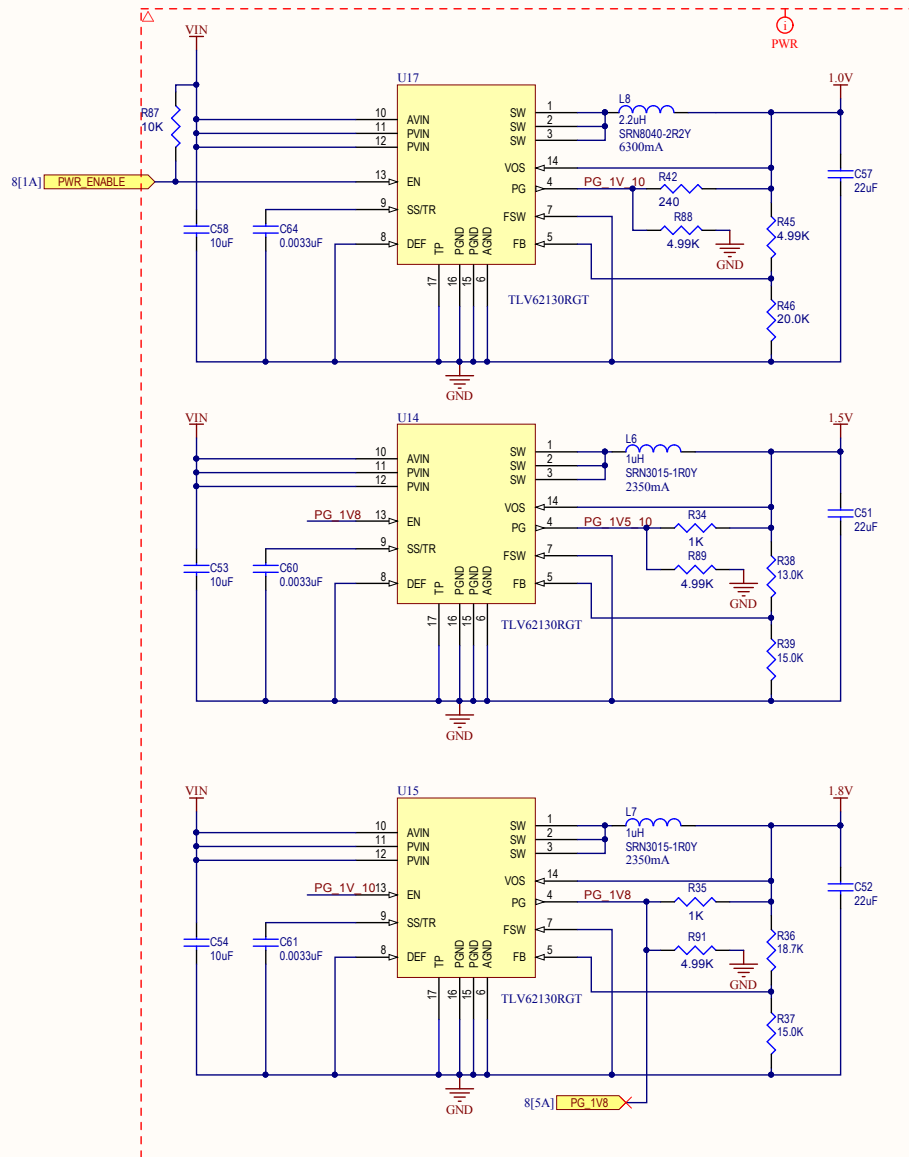


PC4 JTAG









Revision Notes:

- Revision C Changes:
- 1) Add Silkscreen Logos - CE, RoHS and Copper Part Number on board
 - 2) Reduce R34, 35, (40), 42 from 100K to 1K
 - 3) Add pulldown resistors to R34, 35, (40), 42 - Value 2.2K - 5.00K
 - 4) Fuse (PTC) recommendation note for R50, 12V input
 - 5) Connect: U8.6 to U20.2
 - 6) Connect: U3.16 to U8.3
 - 7) Connect: JX2.10 to U15.4
 - 8) Change 4.75K resistors to 4.99K
 - 9) Added rubber feet to BOM
 - 10) Add staple point vias for J2 USB connector.

- Revision D Changes (no production):
- 1) Attached JX2.10 to U15.4

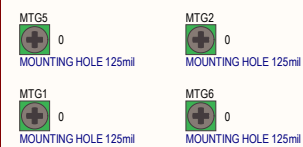
- Revision E Changes (no production):
- 1) Replaced U1 from MAX13035EETE+ to TI TXS02612ZQSR part.
 - 2) Added Sheet 11.
 - 3) Moved mechanical information to back page.

- Revision F Changes:
- 1) Changed USB UART default power to bus power. Attach VBUS power net to U2.7 REGIN pin. Disconnect Vdd pin from +3.3V.
 - 2) Added Ethernet LED drive buffer circuit to reduce 3.3V PHY backfeed.
 - 3) Added: D10, D11, J17, R97, R98 to allow user to configure USB Bus or Self power mode.
 - 4) Removed two fansink mounting holes. Removed ground attribute to mounting holes (in layout files).
 - 5) Added D12 PolyZen (PTC+Zen) USB UART protection component as configurable option.
 - 6) Added R99 0 ohm resistor for D12 bypass (default).
 - 7) Added C221 2.2uF capacitor for USB transient and flyback voltage protection.
 - 8) Revised notes (above).
 - 9) 28 Jan 14: Updated USB OTG configuration notes.
 - 10) 32F ge'36-Updated J16 note'up'ly ggv'5.

Mechanicals:



PCB Mounting Holes



Fansink Mounting Holes

