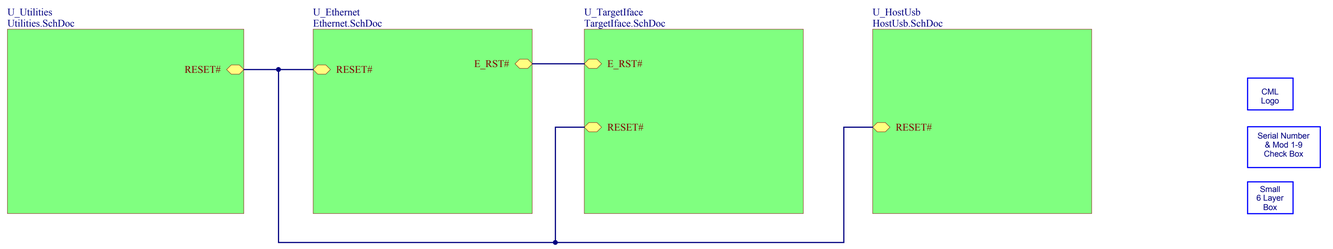
CML Microcircuits

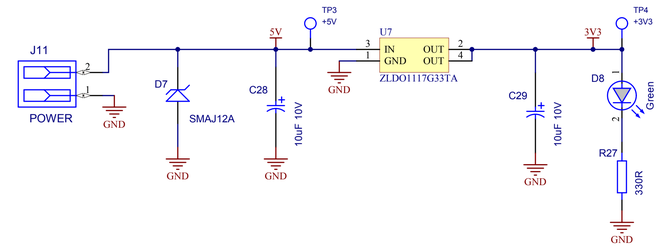
COMMUNICATION SEMICONDUCTORS

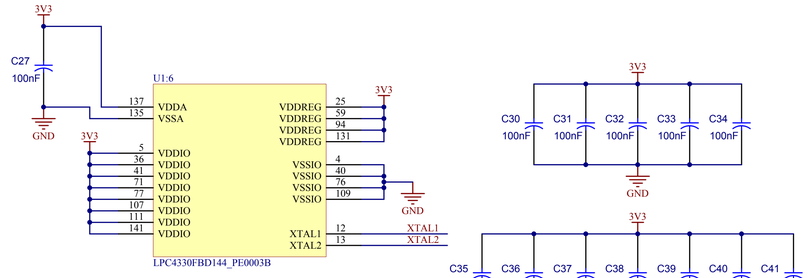
High Resolution Circuit Diagrams for PE0003 August 2014

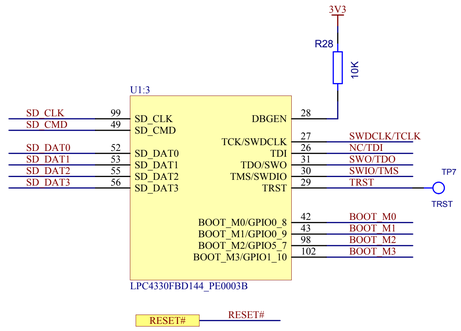
Complementary to CML User Manual: UM0003/1


U_Utilities
Utilities.SchDoc
RESET#
U_Ethernet
Ethernet.SchDoc
RESET#
E_RST#
U_TargetIface
TargetIface.SchDoc
E_RST#
RESET#
U_HostUsb
HostUsb.SchDoc
RESET#
CML
Logo
Serial Number
& Mod 1-9
Check Box
Small
6 Layer
Box

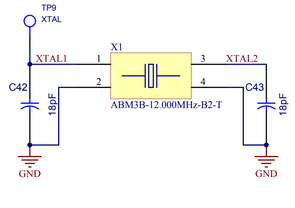
POWER SUPPLY



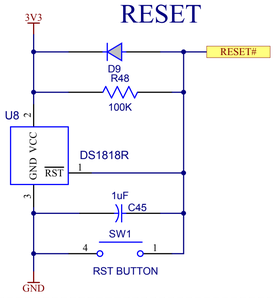




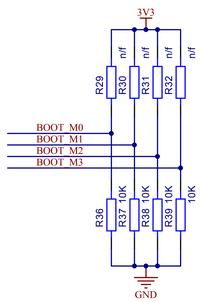
CLOCK



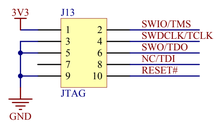
RESET



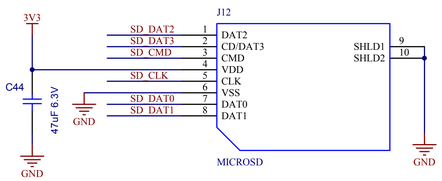
BOOT

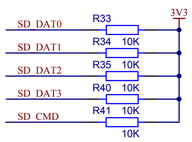


JTAG

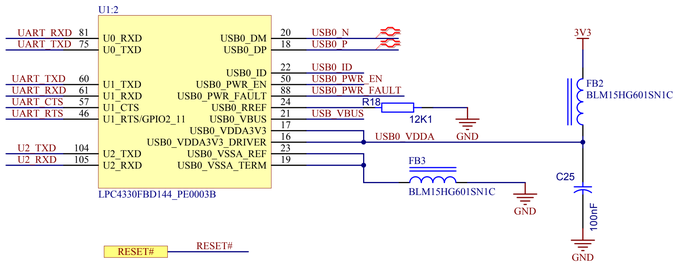


SD CARD

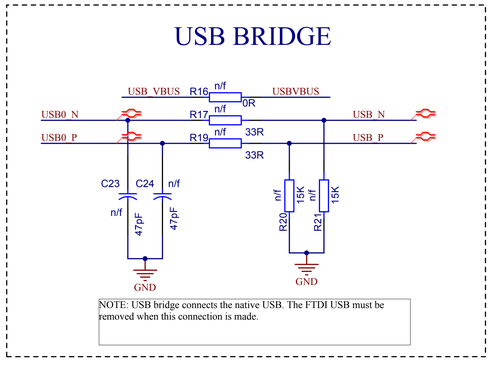




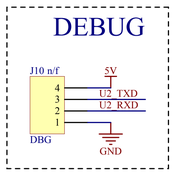
USB ROUTING GUIDELINES
=>Route USB trace pairs together [DM & DP].
=>Do not route USB traces under crystals, oscillators,magnetic devices or ICs that use and/or duplicate clocks.
=>Route high-speed USB signals using a minimum of vias and corners.
=>Use 0.5mm minimum spacing between high-speed USB signal pairs and other signal traces for optimal signal quality.

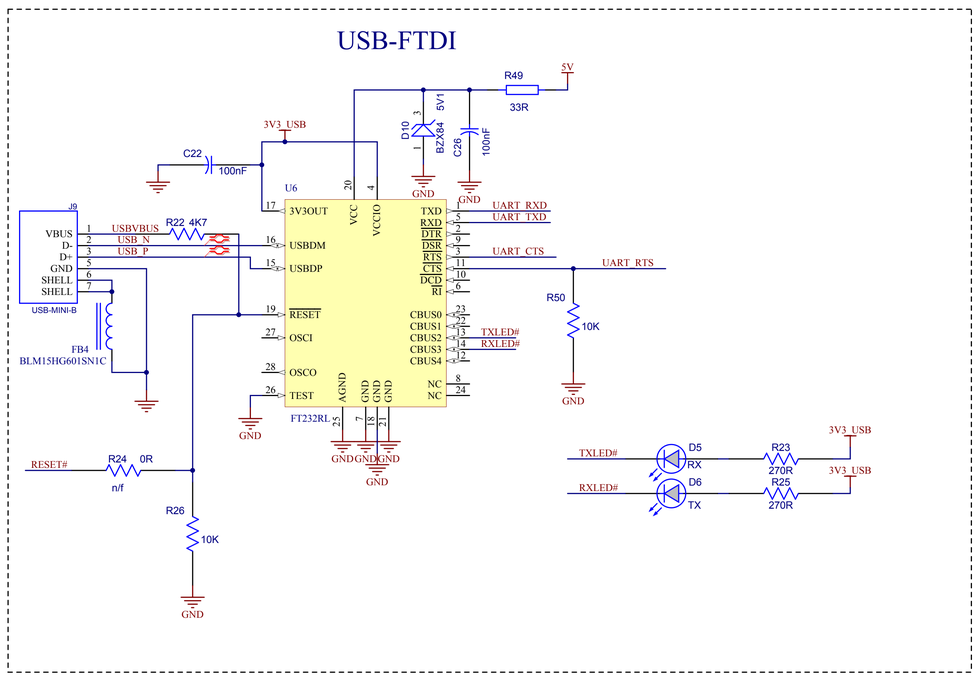


NOTE: UART1 and USART0 are connected to the same FTDI. Use one at a time, with the other disabled.

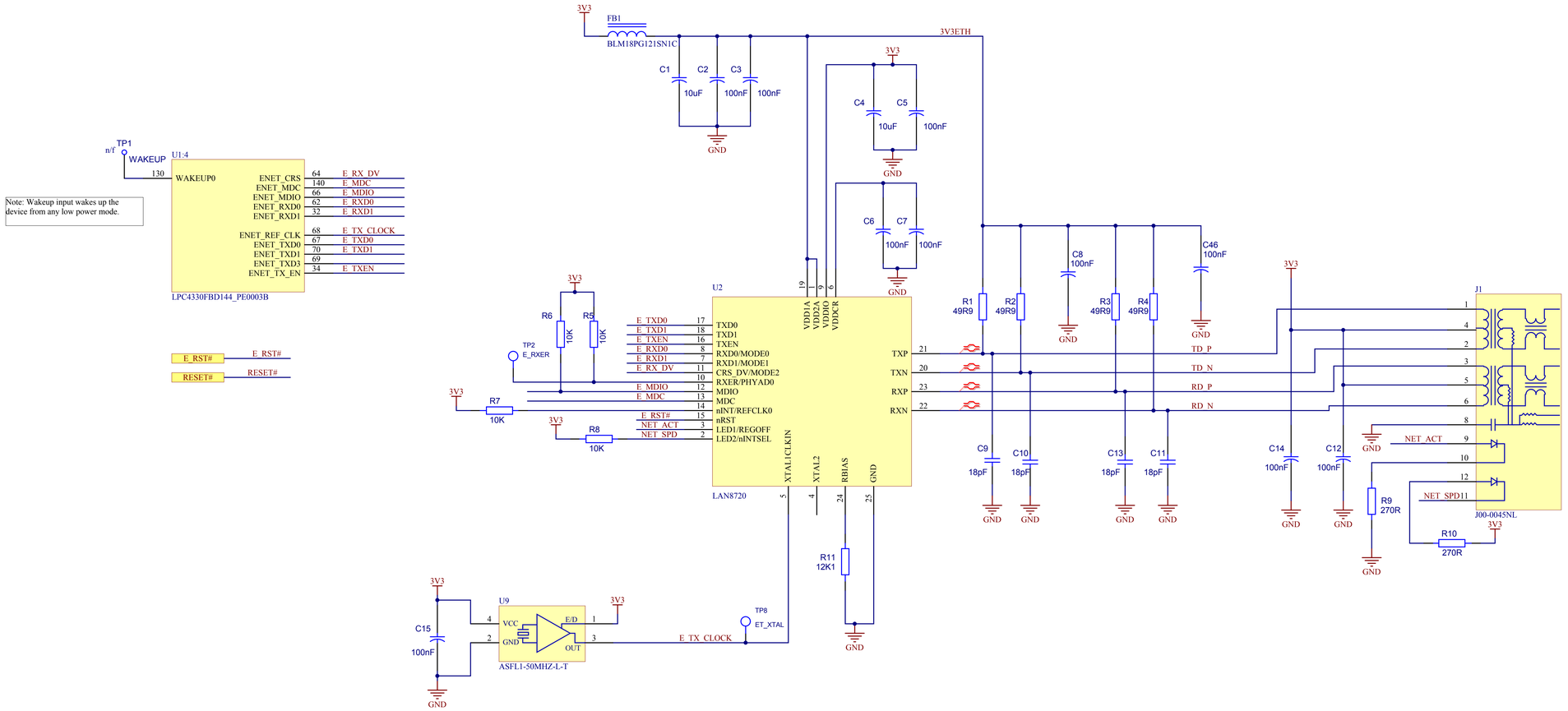


NOTE: USB bridge connects the native USB. The FTDI USB must be removed when this connection is made.

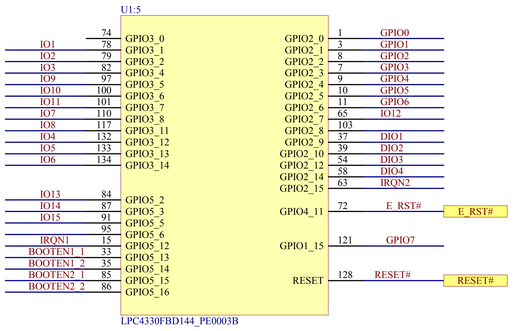


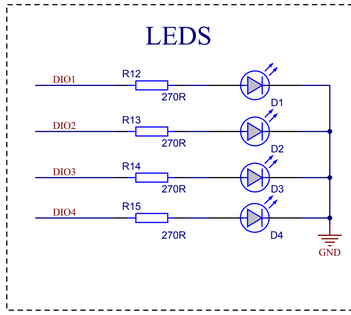


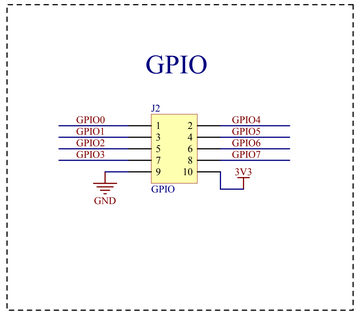
ETHERNET

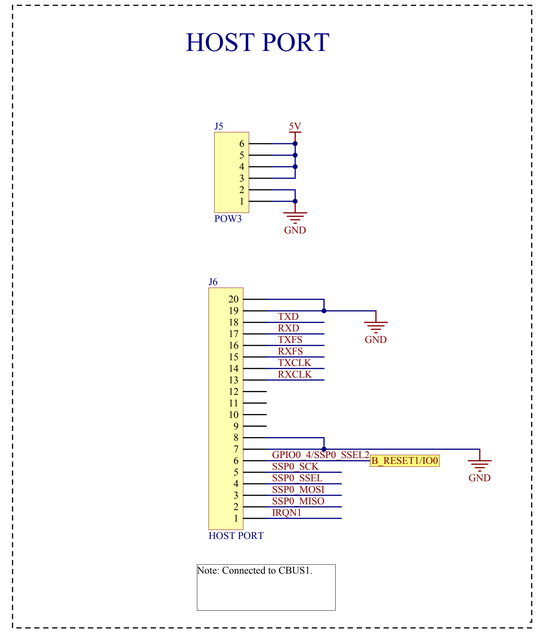


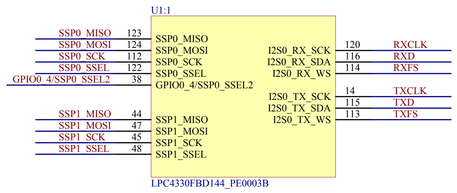
ROUTING GUIDELINES
=> Keep trace length difference between TX+ and TX- (or RX+ and RX-) in 700 mils.
=> Keep RX+/- signal on the top layer, the RX+/- signal should avoid any vias, if possible. Avoid right angle signal trace.
=>The crystal/oscillator clock and the switching noise from digital signals should be far away from TX+/-, RX+/- pairs.
=>Keep TX, RX differential signals running symmetric, equal length, and closely. The trace spacing between TX+ and TXor between RX+ and RX- pair should be 8 to 10 mils.
The better spacing between TX+/- and RX+/- pairs should be larger than 200 mils
=>The trace length from LAN8720 to the transformer should not be longer than 5 inches, keep the trace as straight as possible, and keep it parallel for differential pairs.
=>The termination resistors 49.9Ohm and capacitors of TX± and RX± pairs should be placed near the transformer side and should be shorter than 400 mils.

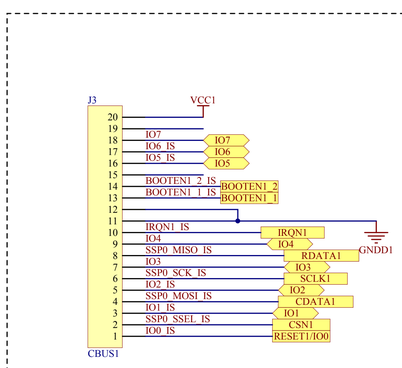


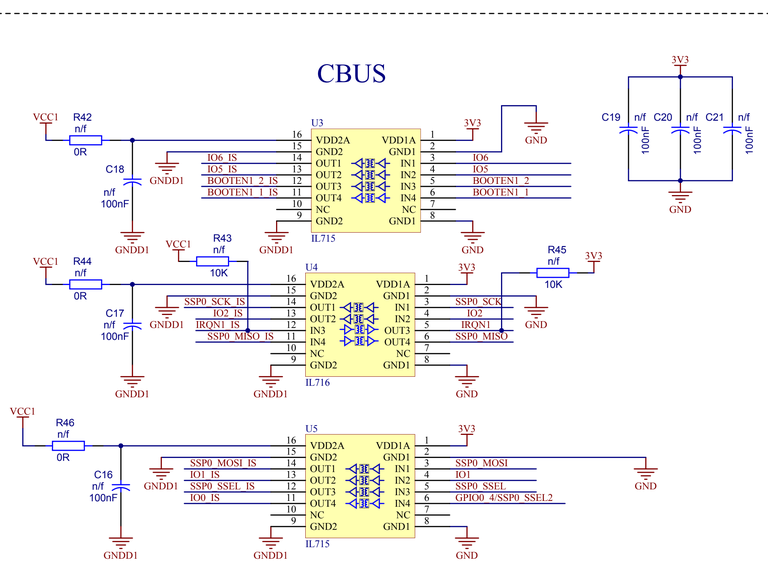


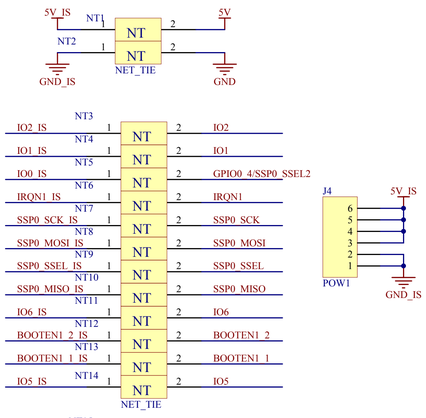












NOTE: In order to use the isolators cut the copper for the tracks under the isollators and solder the isolators.