

PM1200 CPU Module -- OAK

(Showing PM1230-1 Stuff Option)

Notes:

See design and layout
notes on schematic.

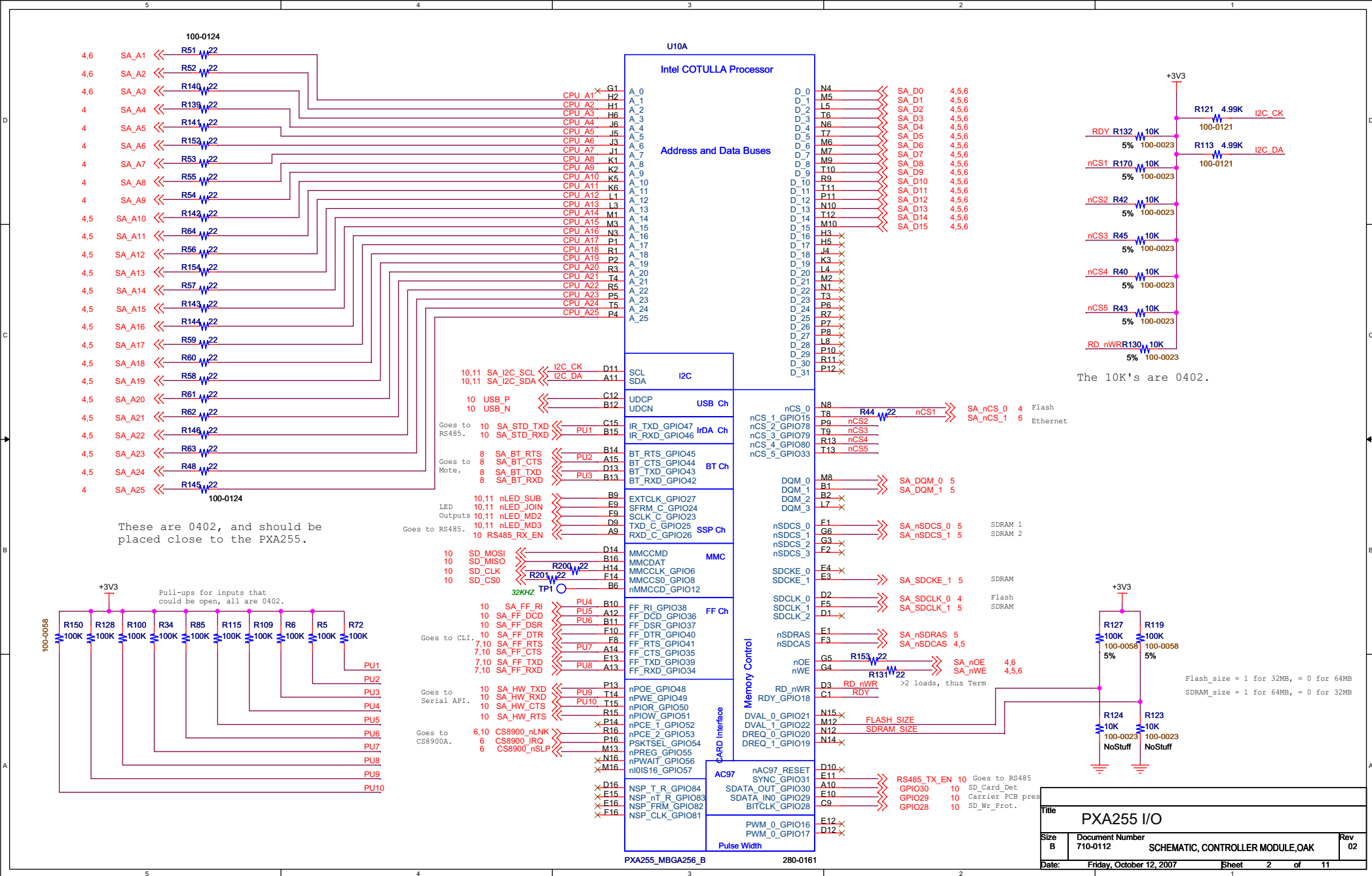
Revision History of OAK:

Rev	Description	ECO	Author
01	Start with PM1200 Rev3, then -- Fix BT2 polarity. NoStuff SW1, SW2. Add R198 to preload VCORE. Add R197 to discharge input caps. Change U2 to Ultra-bright. Delete R117. Delete DB9 and Xcvr. Change U4 to TFS3307-18 and don't check +5V. Add SD/MMC and USB interface.		R. Leath
02	Stuff J7 and R87 to enable CPU JTAG	386	S Bennett

PCB Fab: 600-0095
PCA BOM: 700-0111

Title			
Title Page / Revision History			
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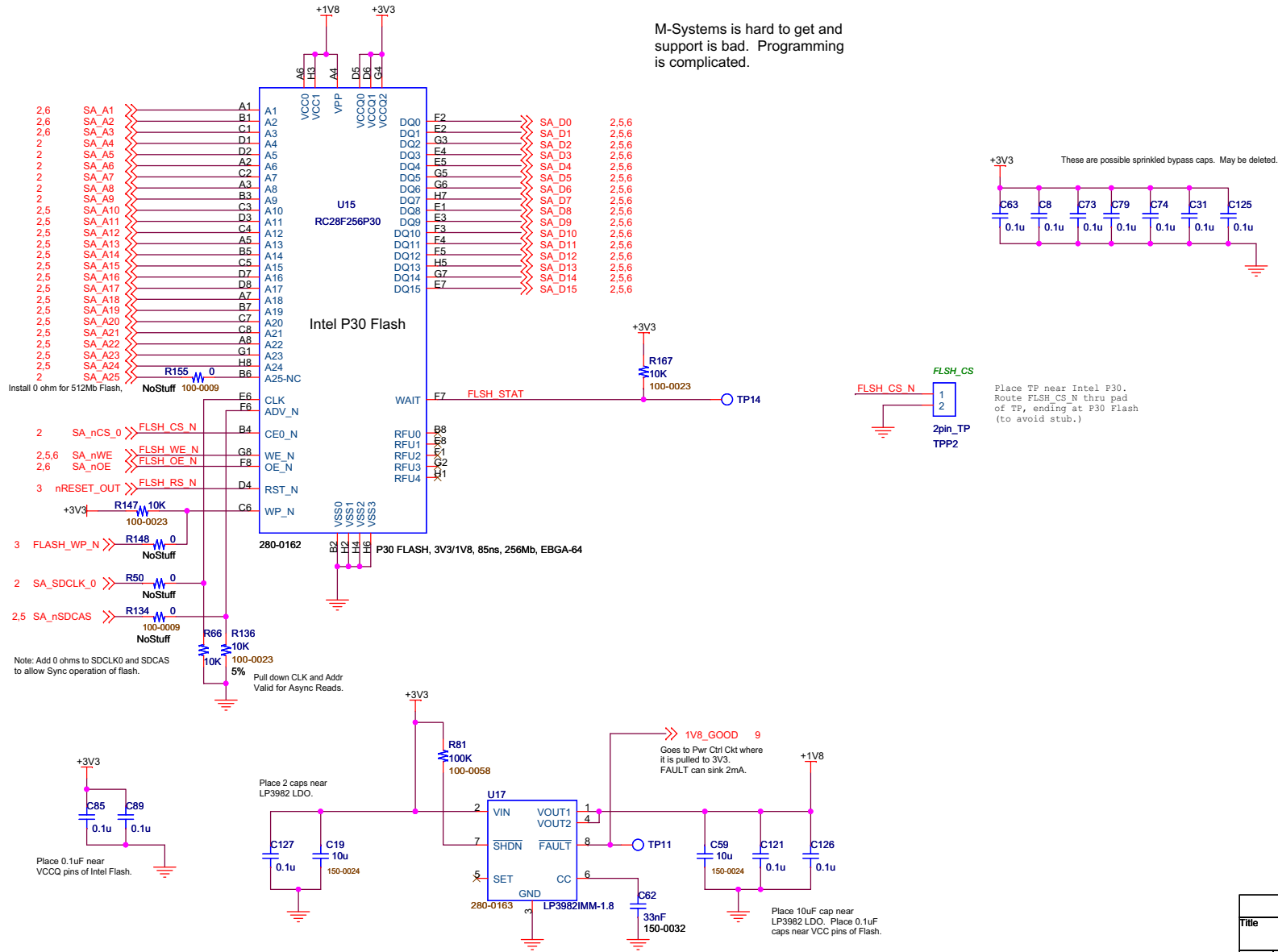


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P30 Flash with PXA255 gets discount.
Thus, P30 will be cheaper than Spansion.

M-Systems is hard to get and
support is bad. Programming
is complicated.



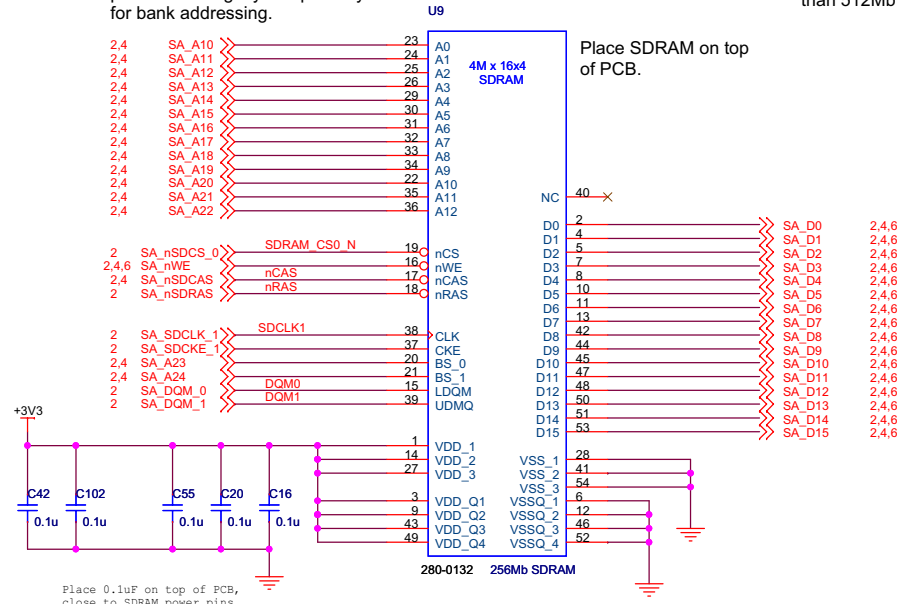
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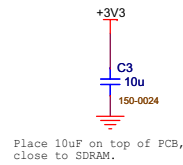
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Note that addressing is connected per SA1110 legacy compatibility mode for bank addressing.

256Mb parts are more cost effective (by 50%) than 512Mb parts.

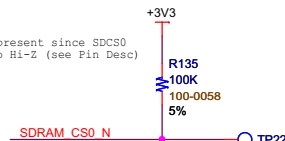


Place 0.1uF on top of PCB, close to SDRAM power pins.

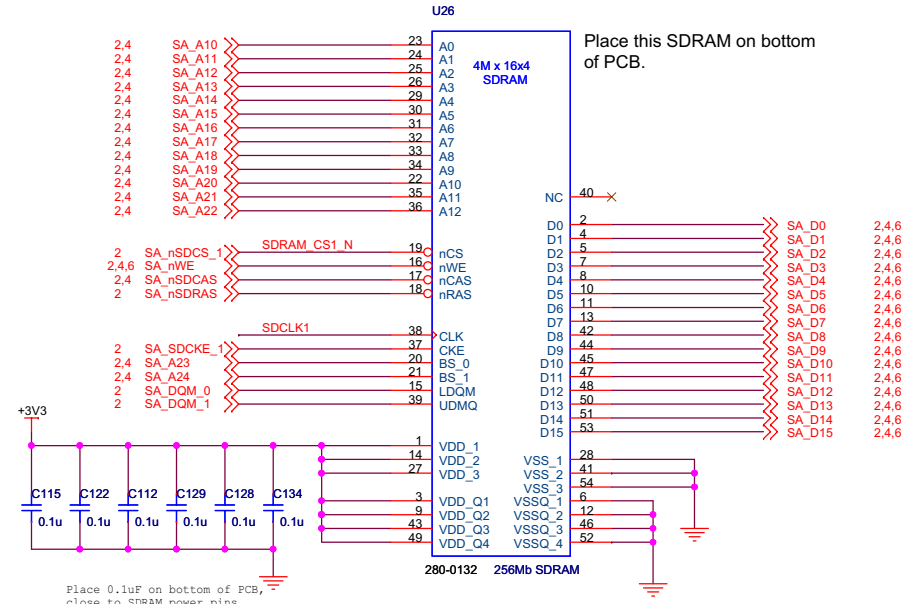


Place 10uF on top of PCB, close to SDRAM.

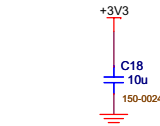
100k present since SDCS0 can go Hi-Z (see Pin Desc)



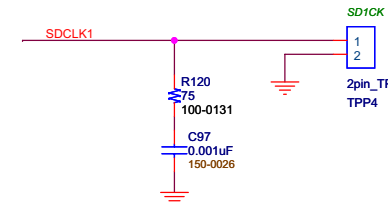
Place TP near SDRAM. Route SDRAM CS0_N from FXA255 to pad of TP. From pad, route to the SDRAM pin with no stub.



Place 0.1uF on bottom of PCB, close to SDRAM power pins.



Place 10uF on bottom of PCB, close to SDRAM.



Place TP near RC term. Route trace thru pad to avoid stub.

Place R and C near SDRAMs on a short stub past pin of last SDRAM. (Route trace thru TP to RC term.)

Note: Both SDRAM are loaded for 64MB. It is 2 x 256Mb for 64MB of x16 RAM. If we only need 32MB, then the one of the right is NOSTUFF, and we have 32MB of x16 SDRAM. SDRAM on left is Partition 0. SDRAM on right is Partition 1.

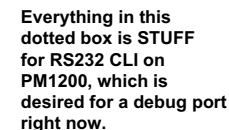
Note: For 0-70C, Samsung SDRAMs are more cost effective (about \$5 instead of \$7).

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SDRAM			
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2,10	SA_FF_TXD	>>>	<u>CLI_TXD</u>
2,10	SA_FF_RXD	<<<	<u>CLI_RXD</u>
2,10	SA_FF_RTS	>>>	<u>CLI_RTS</u>
2,10	SA_FF_CTS	<<<	<u>CLI_CTS</u>

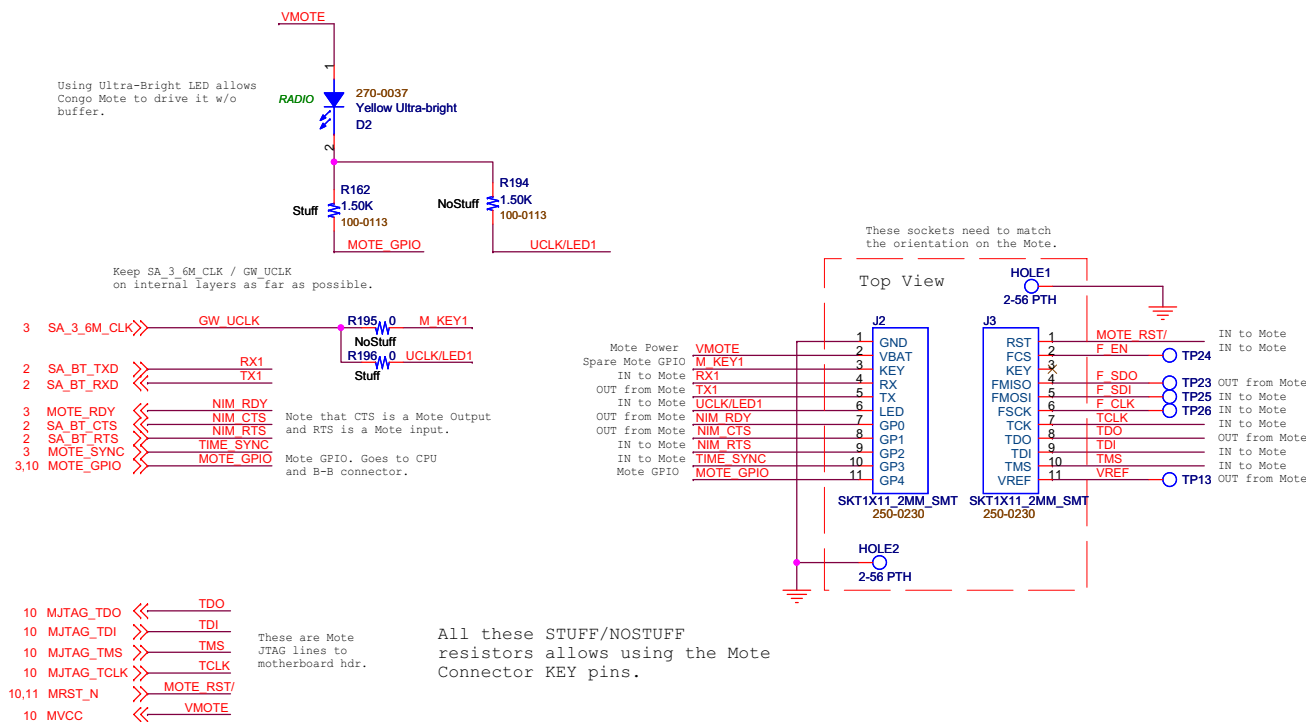


Note: 5-pin header allows RS-232 connection to CLI port. This would be stuffed for debug and development only. Header is unshrouded and unkeyed, but plugging in backwards causes no failures.

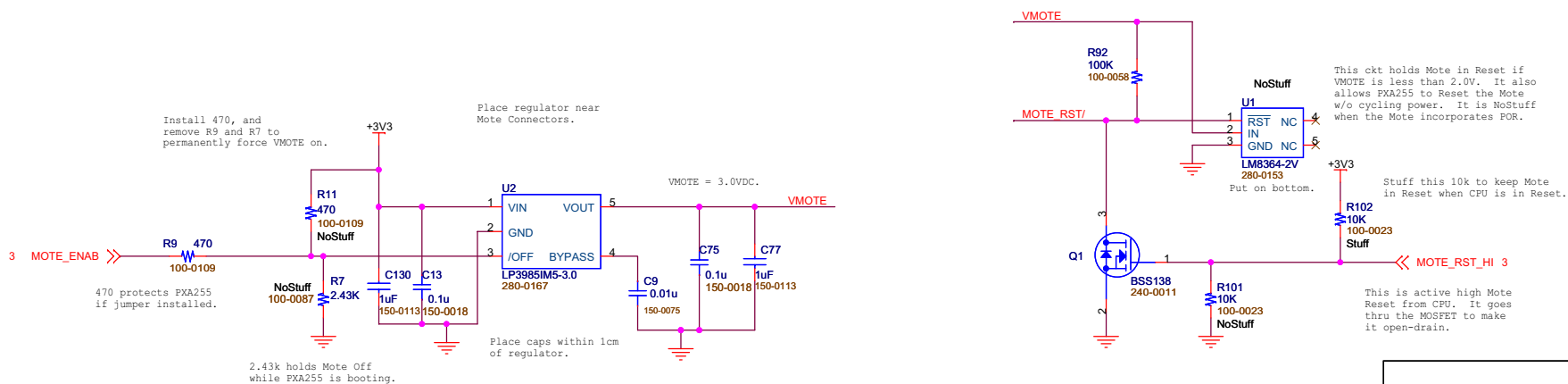
NOSTUFF this CLI LVTTTL test port.

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RS-232 Ports				
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All these STUFF/NOSTUFF resistors allows using the Mote Connector KEY pins.

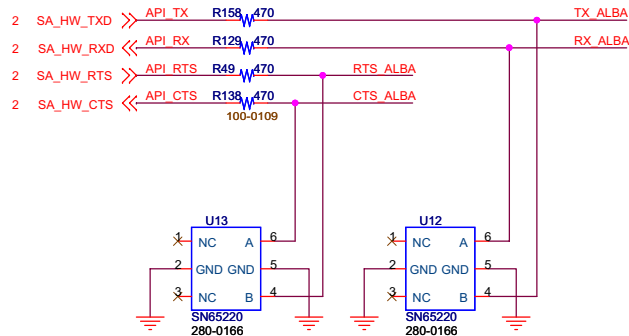


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Mote Interface			
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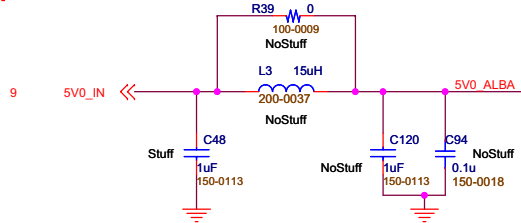
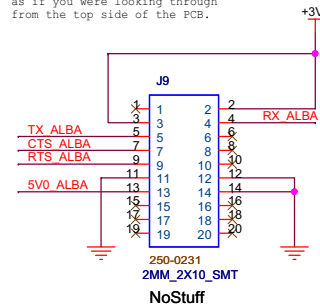
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These 4 lines go directly to the CPU and to a NOSTUFF (usually) RS232 Xcvr. The 470ohms prevents damage if the RS232 Xcvr is STUFFED. The Transient Suppressors (and 470 ohm) protect this board.



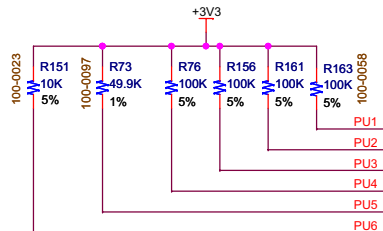
Place these parts near the 20-pin socket. They can be NoStuff if protection is not a concern -- which may be a good assumption since the socket leads to isolators that are powered by this board.

This is the Alba 20-pin socket on the bottom of the PCB. Pin 1 on this sheet is oriented as if you were looking through from the top side of the PCB.



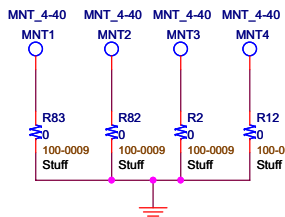
Place these parts near the 20-pin socket. Nets "5V0_IN" and "5V0_ALBA" should be 50mils wide.

This filter keeps hi-freq noise where it came from.



These pull-ups are 0402.

Mounting Hole is plated-thru, 0.125" diameter hole with 0.250" pads on both sides.

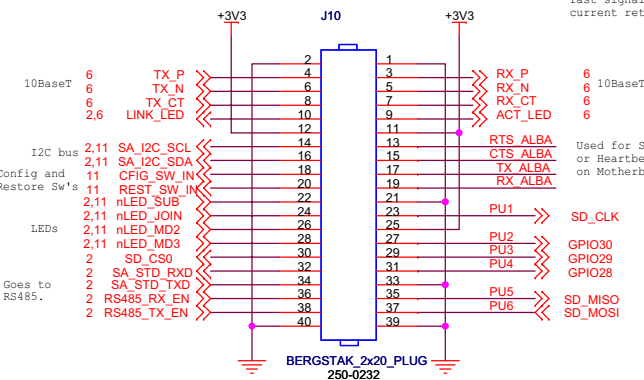


Place 0 ohm at each Mounting Hole.

Non-plated thru Tooling Holes, 0.125" diameter. Locate per Placement Drawing.



Board-to-Board connector near CPU. NOSTUFF for Alba.



Note: Put GND pins near fast signals for good image current return.

Used for Serial SPI or Heartbeat Port on Motherboard.

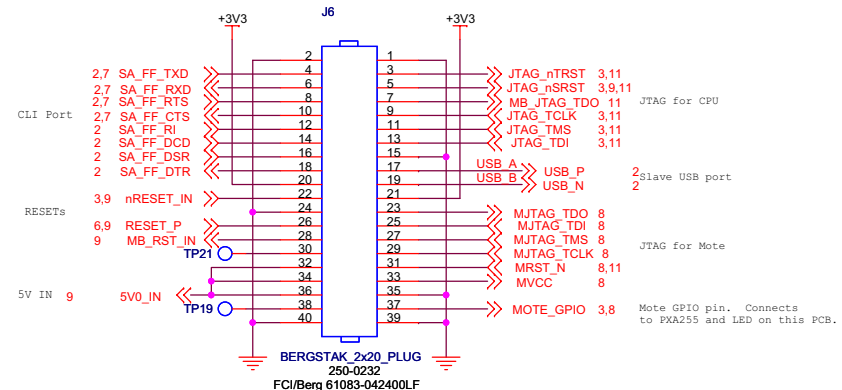
These are spare I/O. Pulled-up in case they stay inputs w/o drive.

Note: Pin 29 (GPIO29) is pulled-down on D1230.

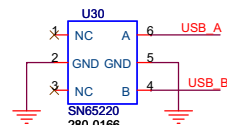
FCI/Berg 61083-042400LF Stuff

Board-to-Board connector near Mote. NOSTUFF for Alba.

These are 5.7mm tall connectors that mates with a connector on the motherboard to achieve a 6mm board-board spacing.



Stuff



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Board to Board Connectors			
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