



ElanSC520 Microcontroller Customer Development Platform

ElanSC520 Microcontroller Development System With On-Board
Am79C973 10/100Mbps Ethernet Controller, Integrated SDRAM
Controller, PCI Controller, GP-Bus Controller, RTC, etc.

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Rev 0.0: Pre-CAD Design

Rev 1.0: First Rev For CAD

Rev 1.1: Incorporated with the reworks done on Rev1.0
(See ElanSC520 CDP Rev1.0 Rework List_b)

Rev 1.2: Incorporated with the reworks done on Rev1.1
(See ElanSC520 CDP Rev1.1 Rework List_a)

- 1) Removed Clock Delay IC;
- 2) Removed Series Rs on TIP and IDE;
- 3) Connected SPD to SSI with Rs
- 4) Removed POD3
- 5) Removed SRAM
- 6) Redirected AMDebug_VCC to PWRGOOD

Rev 1.3: Incorporated with the reworks done on Rev1.2

- 1) Inserted an R184 for CLKMEMOUT impedance match;
- 2) Inserted an C240 for temp solution by damping the glitch on CLKMEMOUT;
- 3) Inserted an R185 for U17 CS# P/U when PROMICE is used.

Rev 1.4: Incorporated with the reworks done on Rev1.3

- 1) Connect U44 power pins to VCC5 net (sheet20);
- 2) Replace GPAEN net with IDEBACK# net on U4 PAL (sheet 6);
- 3) Add net names to some unnamed nets.

SCHEMATICS: DO NOT COPY


7/23/1998: Rev 1.0 DESIGN STARTED
6/14/1999: Rev 1.1 MODIFICATION STARTED
9/01/1999: Rev 1.2 MODIFICATION STARTED
2/14/2000: Rev 1.3 MODIFICATION STARTED
8/21/2000: Rev 1.4 MODIFICATION STARTED

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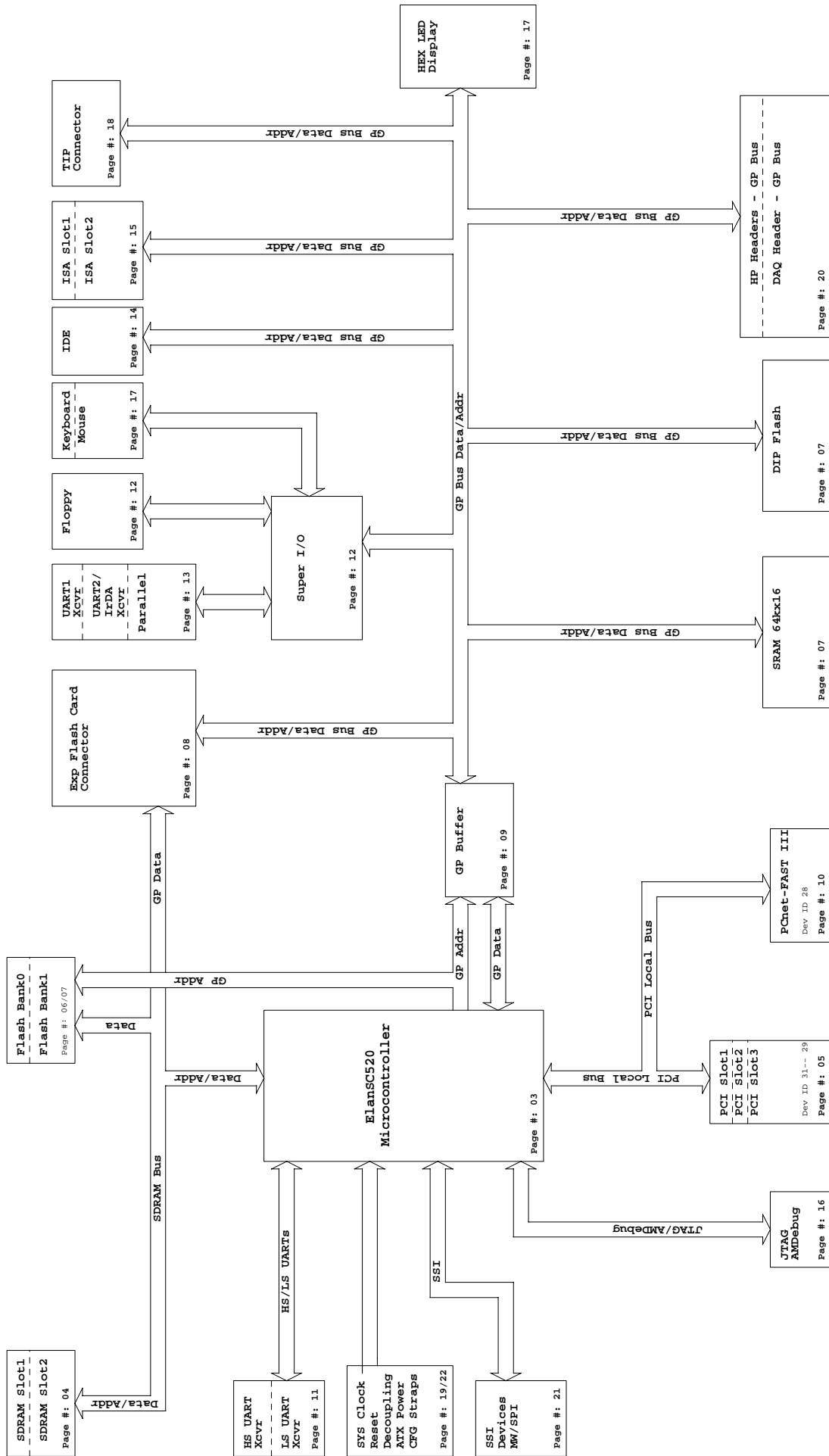
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BLOCK DIAGRAM



ElanSC520 :

- JTAG & AMDebug
- Flash & Drivers
- Clock & Driver for SDRAM
- CFG Jumpers
- Power Supply and Decoupling
- Test Headers for HP & DAQ
- Clock Sources - 33MHz & 32KHz
- SDRAM

Flash Mem :

- Flash_MEM_16M : 2x8MB 3.3V + Buffer to MD(31..0)
- Flash_MEM_DIP : DIP 5V onto GPD15..0
- Flash_MEM_16M : 2x8MB 3.3V onto GPD15..0 & GPA16..1
- Flash_MEM_16M : 2x8MB 3.3V onto GPD15..0 & GPA16..1
- Flash_MEM_16M : 2x8MB 3.3V onto GPD15..0 & GPA16..1

SDRAM :

- DIMM sockets x2
- Clock Driver - 1-to-4

GP-Bus :

- Buffer & Buffer for GPD15..0, GPA125..0
- ISA Buffer, IDE Buffer, IDE connectors
- ISA Buffer, ISA connectors, PAL Logic
- ISA_CONN : ISA Connectors, PAL Logic
- Super_I/O_M512x : SuperI/O - Ali M512x
- Serial_SC520 : UARTs - 3.3V(RS-232) & 5V(RS-422)
- Serial_Parallel_SuperI/O : UARTs & Parallel - SuperI/O
- Parallel_Ports : Parallel port of Aspen
- Keyboard/Mouse : Keyboard & Mouse
- IRDA Port
- FDD Connector

PCI Bus :

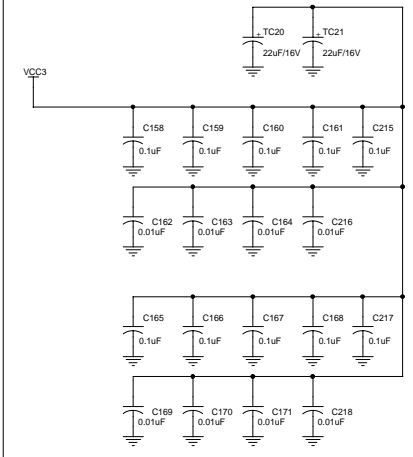
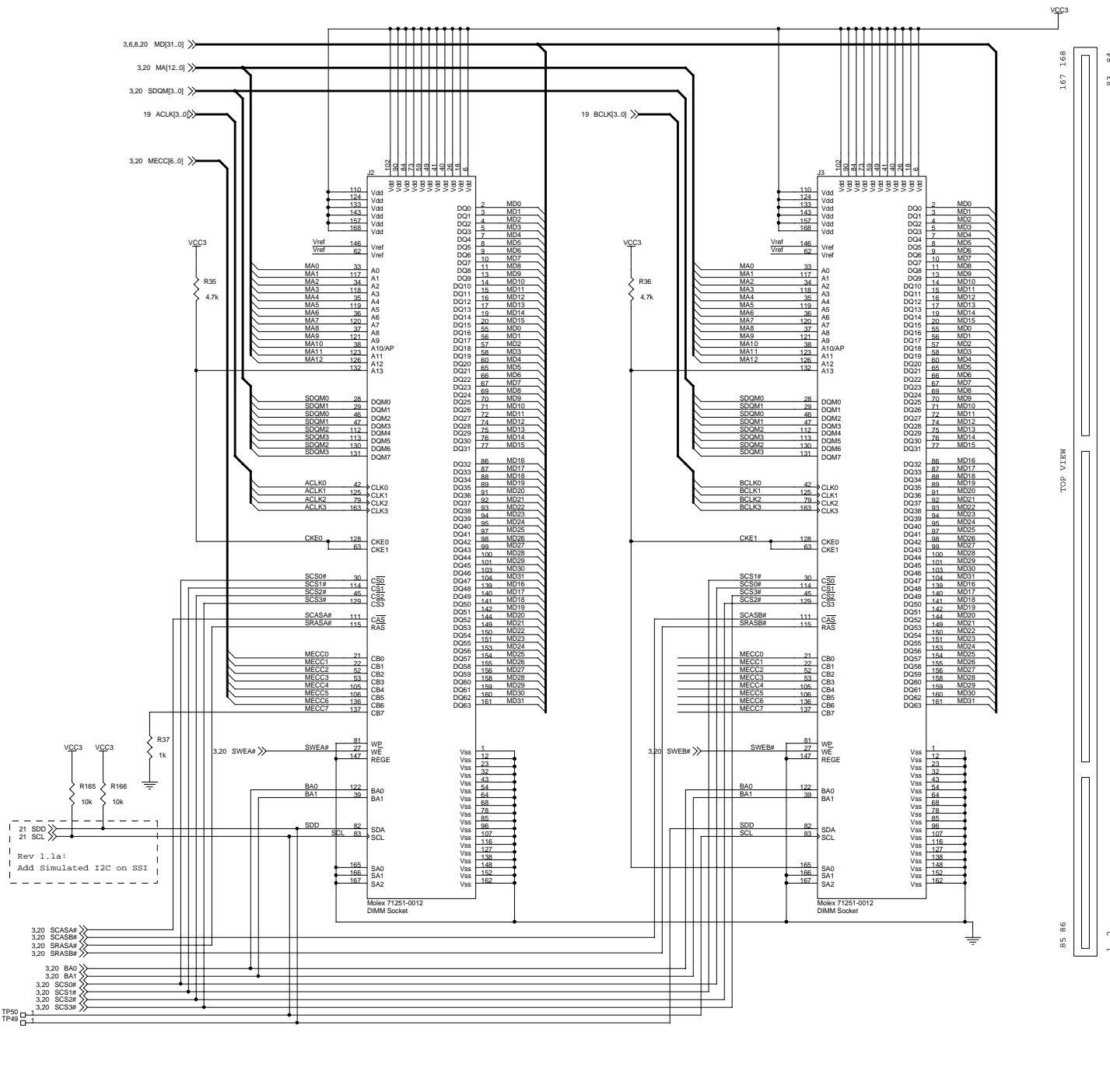
- PCI Connectors
- Ethernet - PChetFast-III EEPROM 3.3V

Note:

- Unless otherwise stated the resistors are a 0805 package and 5% Tol.
- Unless otherwise stated the capacitors are a 0805 package and 10% Tol.

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SDRAM DIMM Sockets

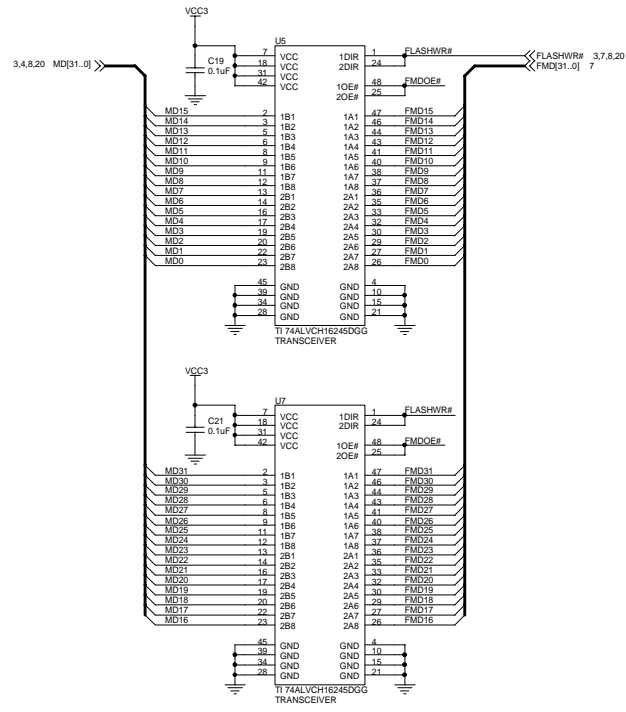


Place the above Caps next to each DIMM socket

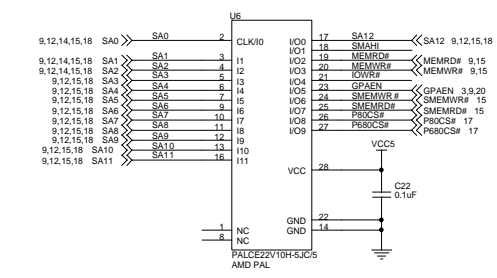
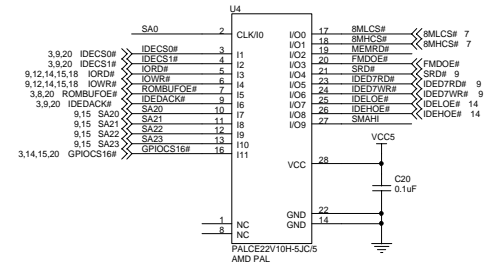
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Mem. SDRAM_2Socket		
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Flash Memory Buffer



On-Board Flash Bank Data Buffer to MD[31..0] (3.3V-to-3.3V)



```

FMD0E# == (8M LCS# + 8MHCS#) * ROMBUFOE#
SRD# == GPIORD# + GPMEMRD#
IDED7RD# == IORD# * [IDECO# + (IDEC1# * SA0# * IORD#)]
+ IDEACK# * IORD#
IDED7WR# == IOWR# * [IDECO# + (IDEC1# * SA0#)]
+ IDEACK# * IOWR#
IDELO# == [IDECO# * (IORD# + IOWR#)]
+ [IDEC1# * ((IOWR# * SA0#) + IORD#)]
+ IDEACK# * (IORD# + IOWR#)
IDEHI# == IOCS16# * IDECO# * (IORD# + IOWR#)
+ IDEACK# * (IORD# + IOWR#)
SMAHI# == SA23# * SA22# * SA21# * SA20#
SMEMWR# == MEMWR# * GPAEN * SMAHI#
SMEMRD# == MEMRD# * GPAEN * SMAHI#
P80CS# == IOWR# * GPAEN# * (SA12# * SA11# * SA10# * SA9# * SA8#
* SA7 * SA6# * SA5# * SA4# * SA3# * SA2# * SA1# * SA0#)
P680CS# == IOWR# * GPAEN# * (SA12# * SA11# * SA10# * SA9# * SA8#
* SA7 * SA6# * SA5# * SA4# * SA3# * SA2# * SA1# *
SA0#)
    
```

Design Notes:

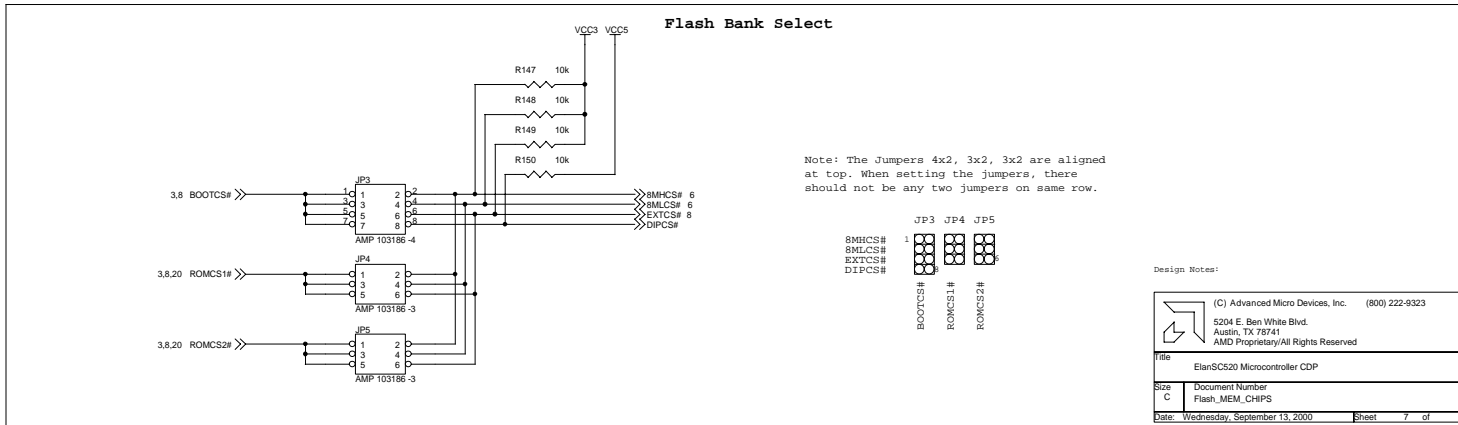
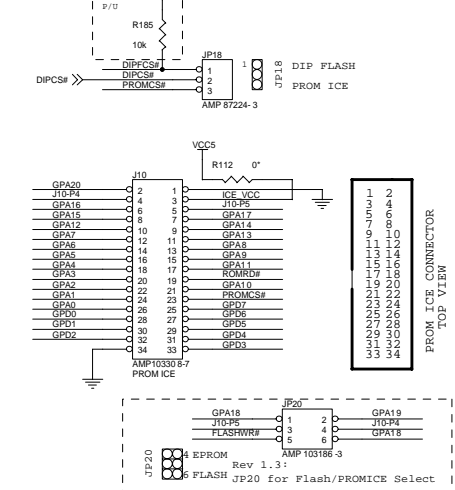
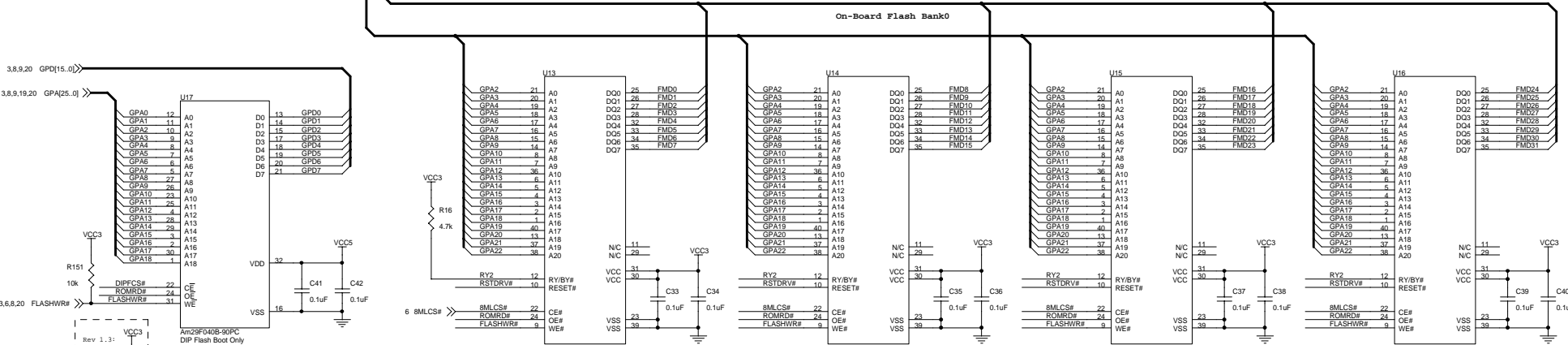
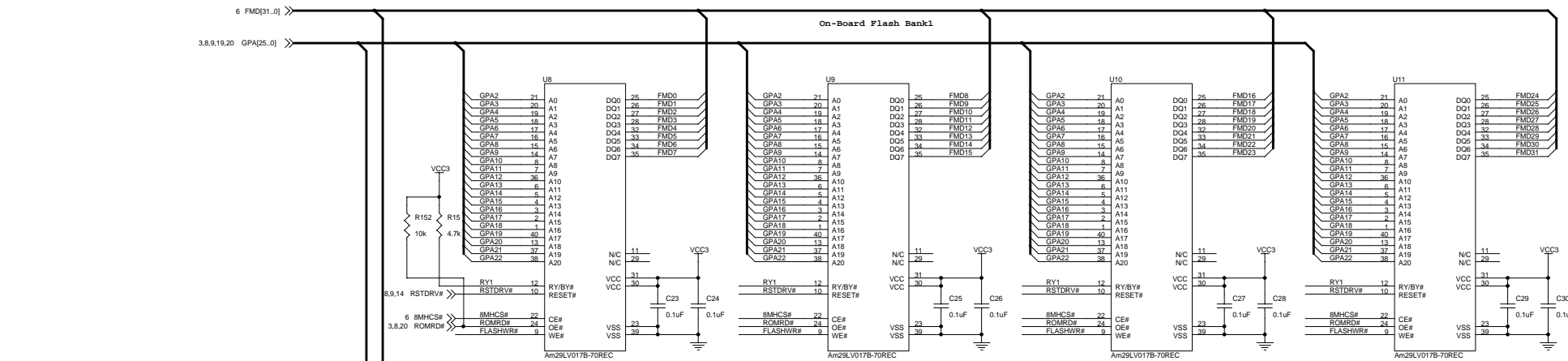
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Flash Memory Banks



Note: The Jumpers 4x2, 3x2, 3x2 are aligned at top. When setting the jumpers, there should not be any two jumpers on same row.

Design Notes:

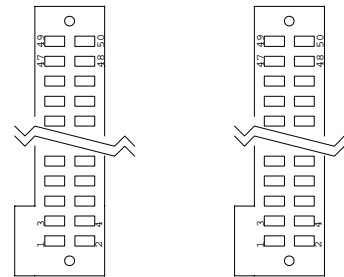
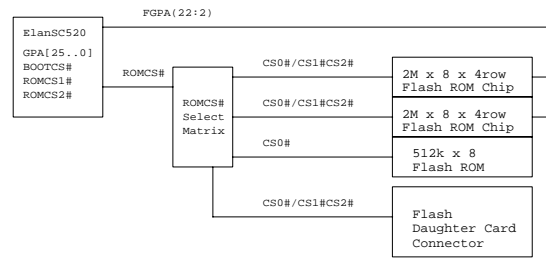
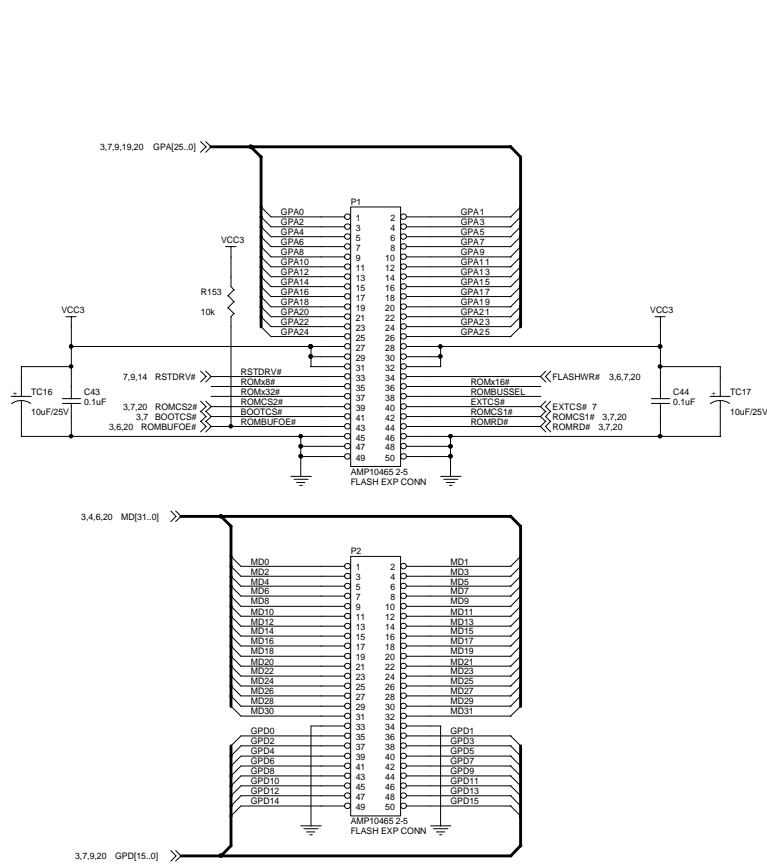
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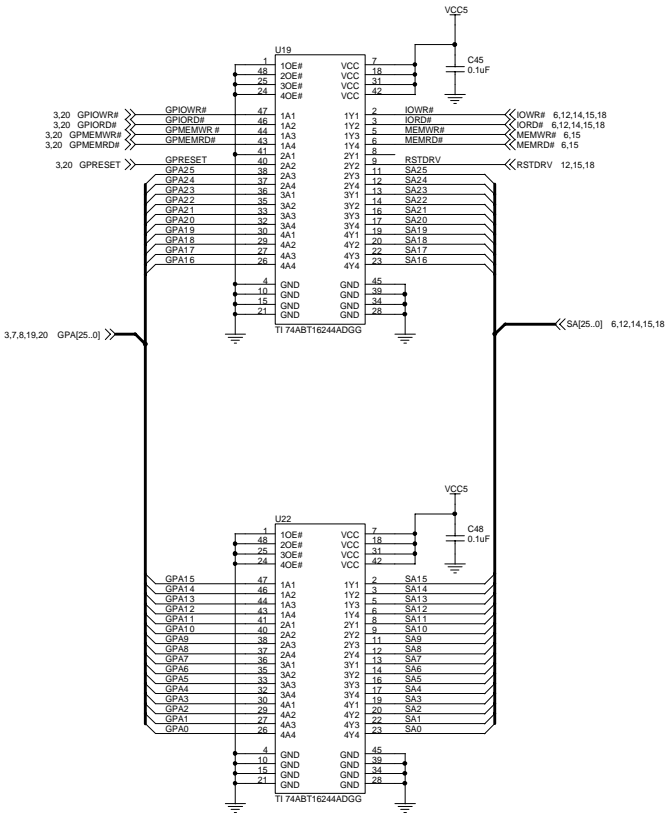
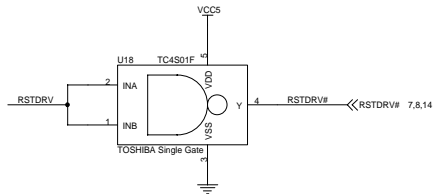
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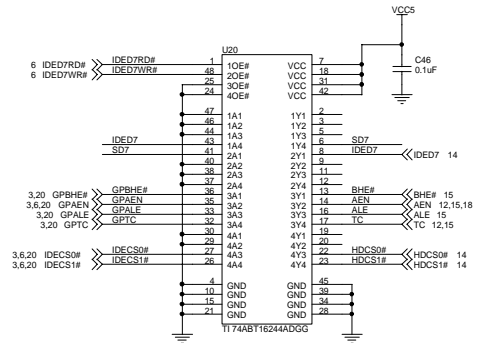
Flash Memory Expansion Connector



GP Bus Buffer

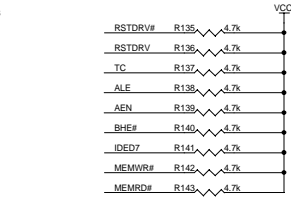
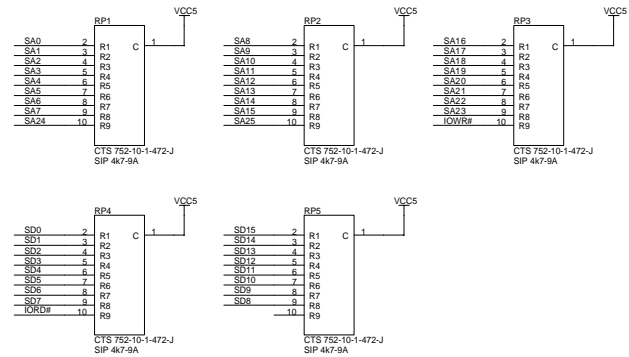


GP Address Buffer



GP Data Buffer

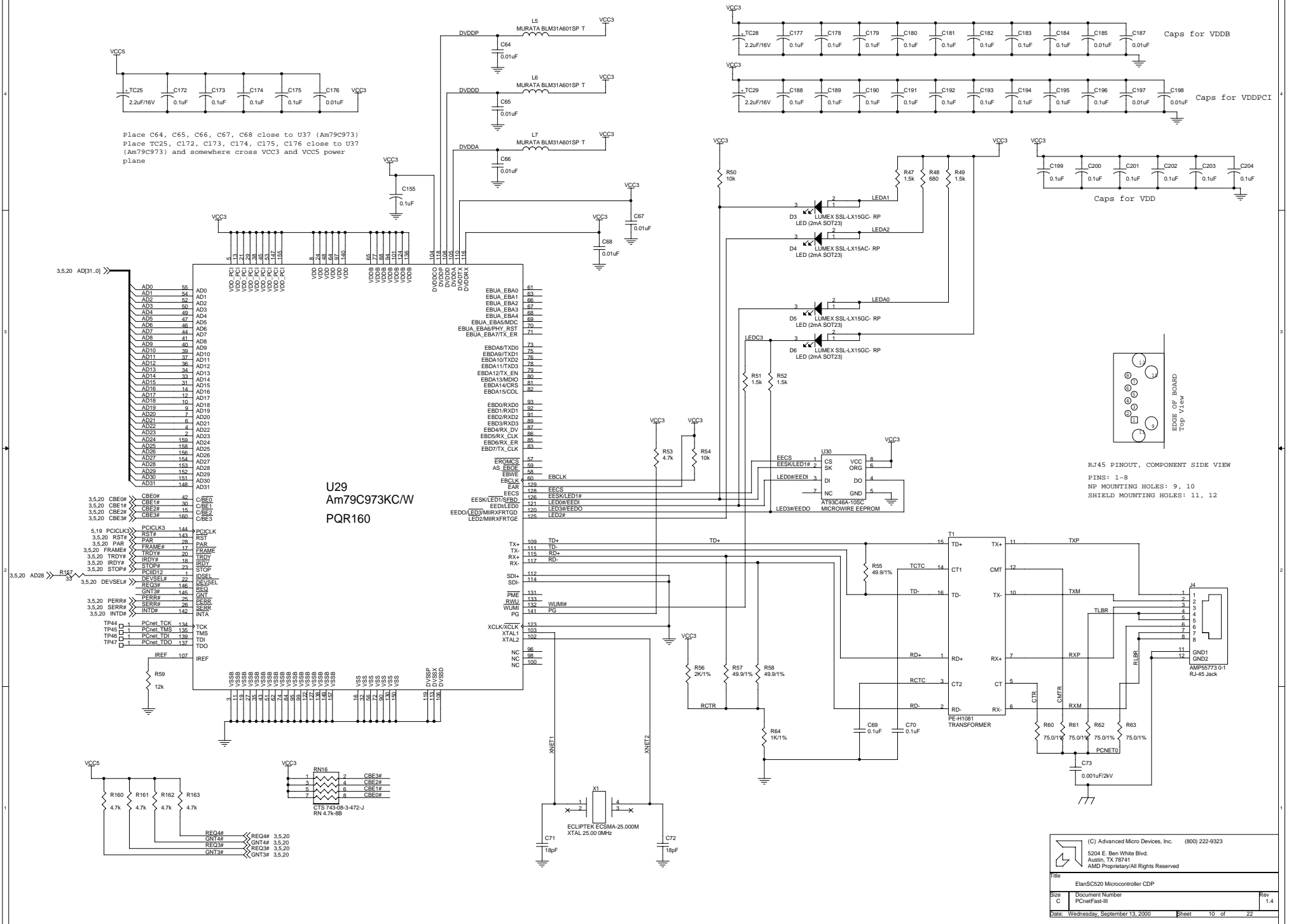
SRD# == GPIORD# + GPMEWWR#



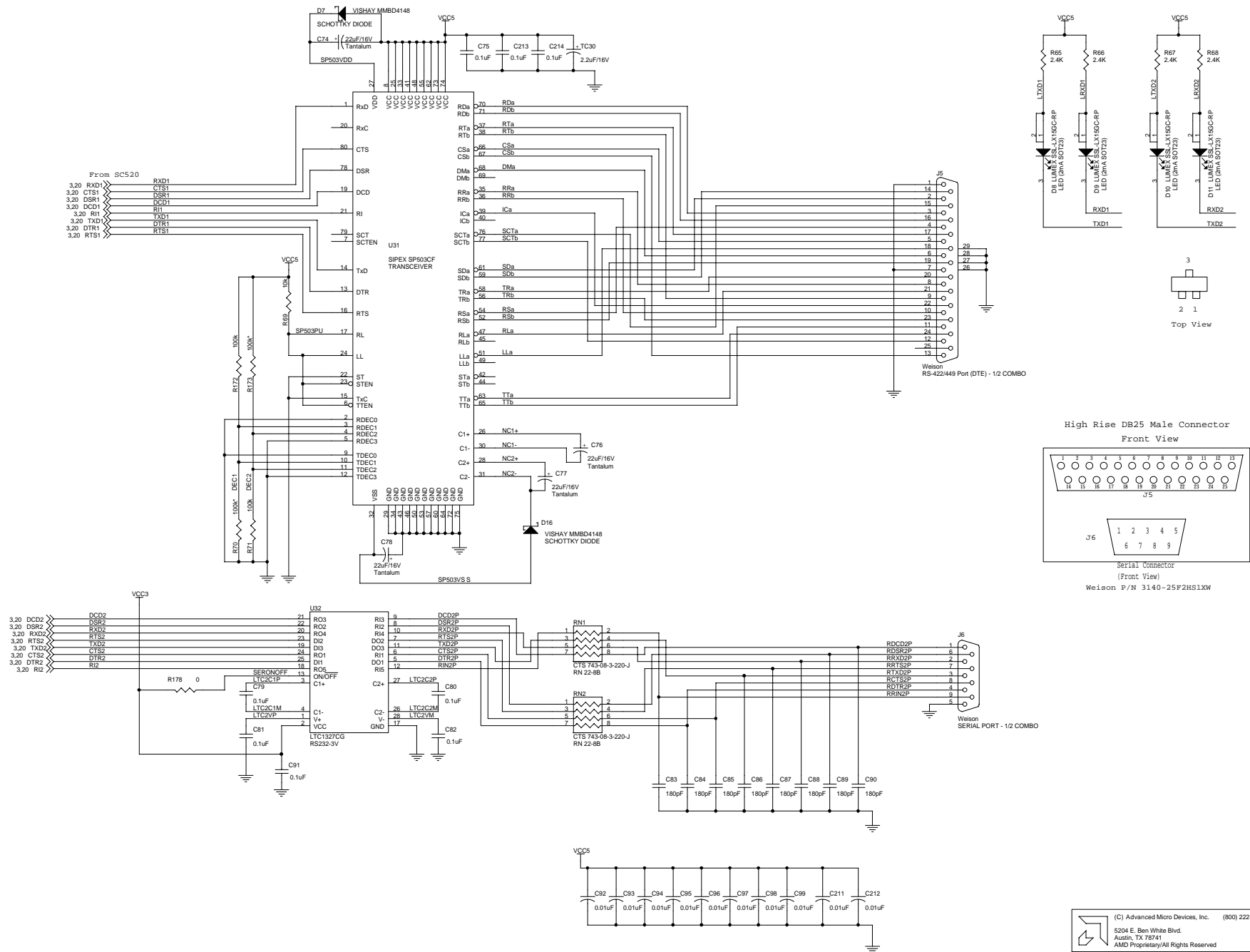
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10/100Base-T NIC (PCnetFast-III)



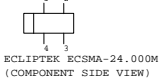
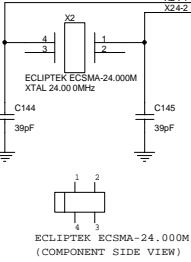
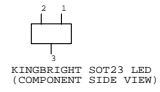
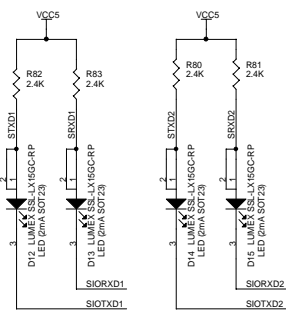
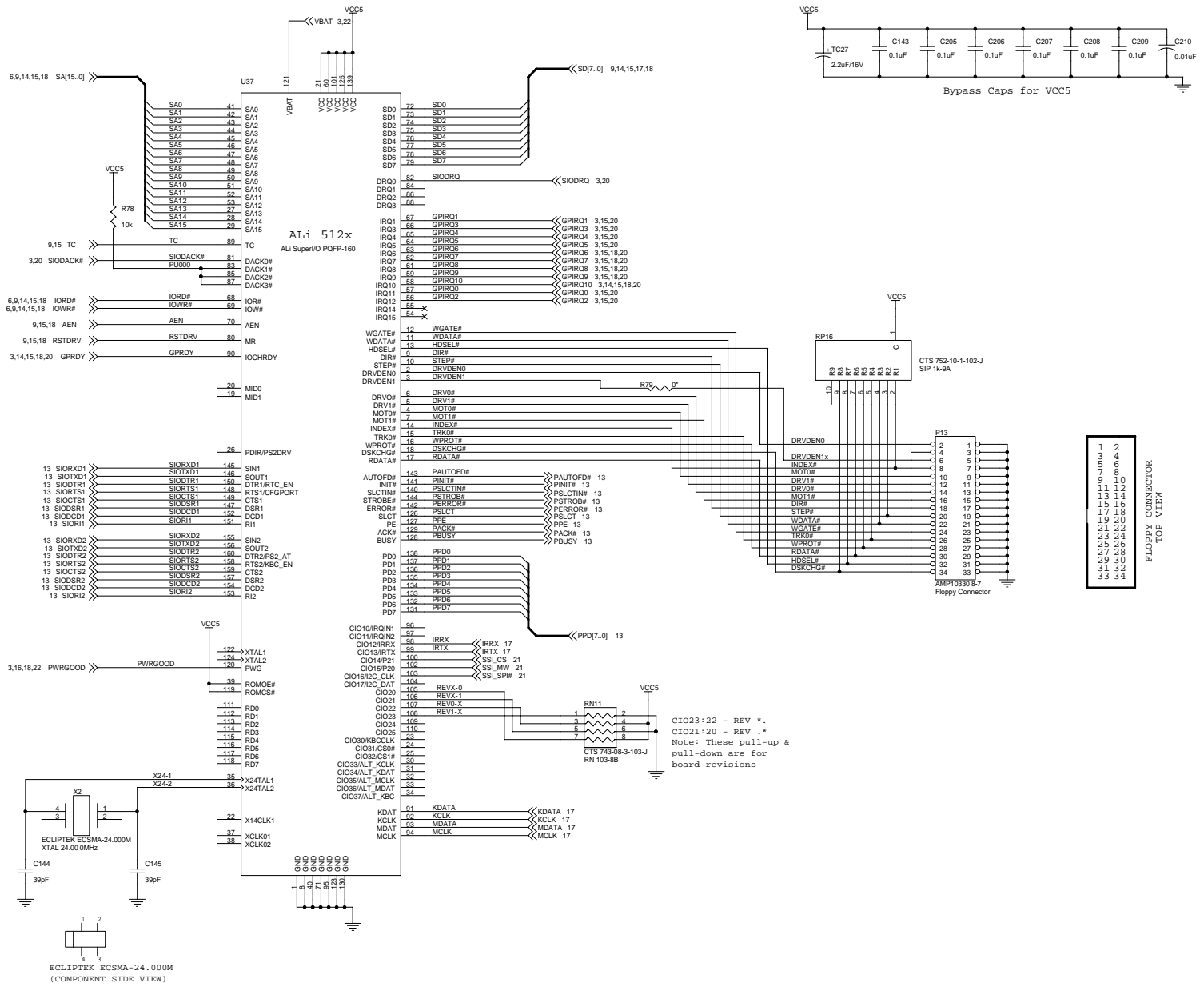
ElanSC520 Microcontroller Serial Ports - RS-422/RS-232



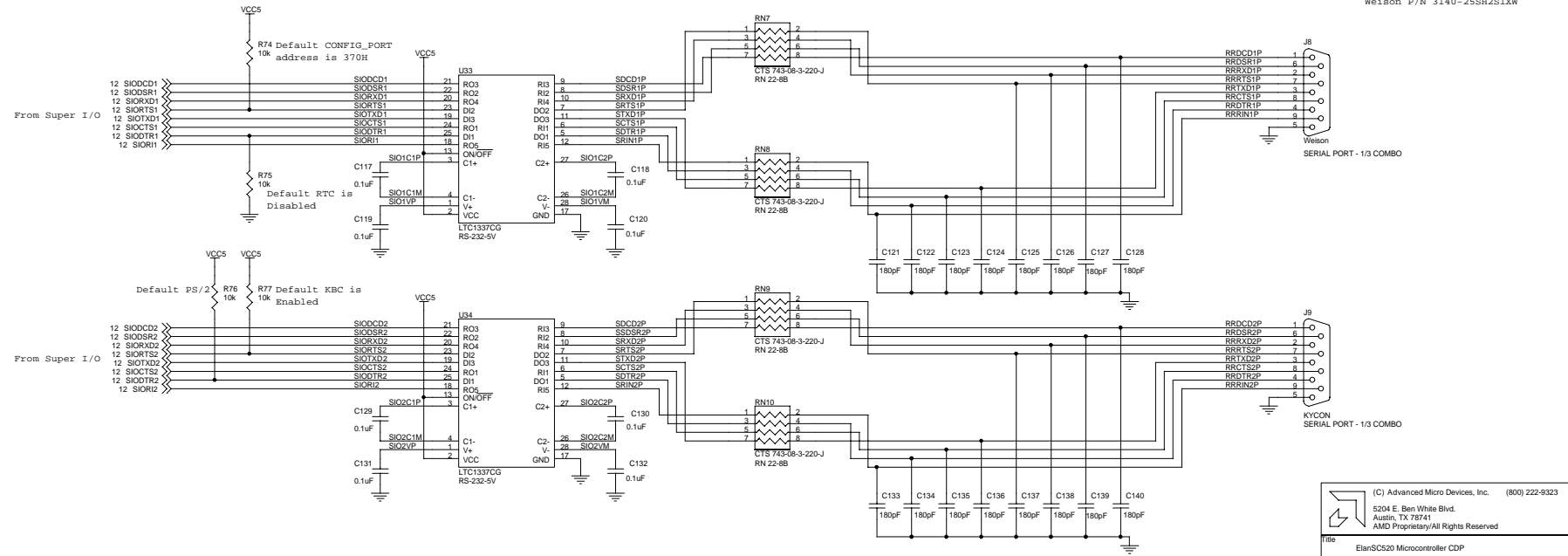
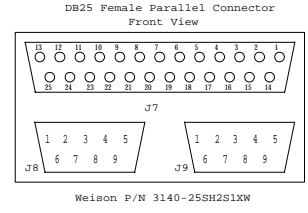
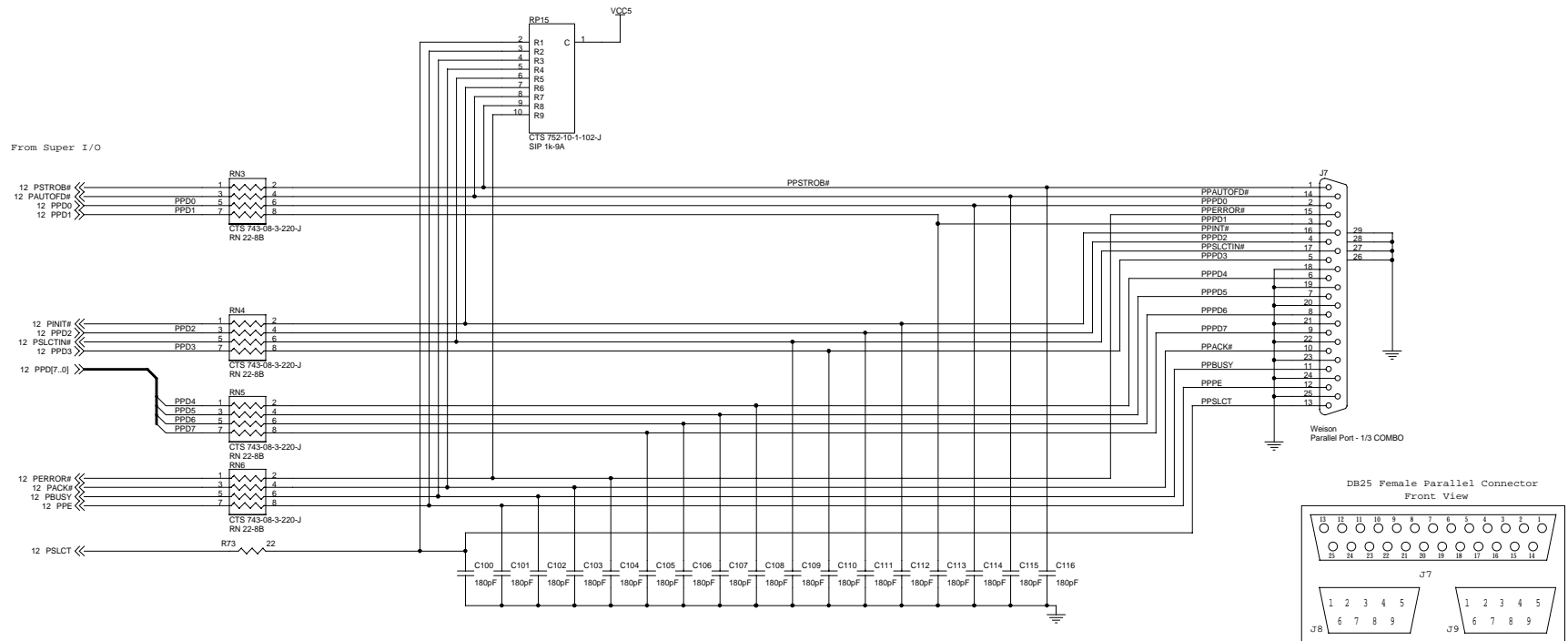
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SuperI/O - ALi M5123



SuperIO Serial & Parallel Ports (RS-232 & EPP)



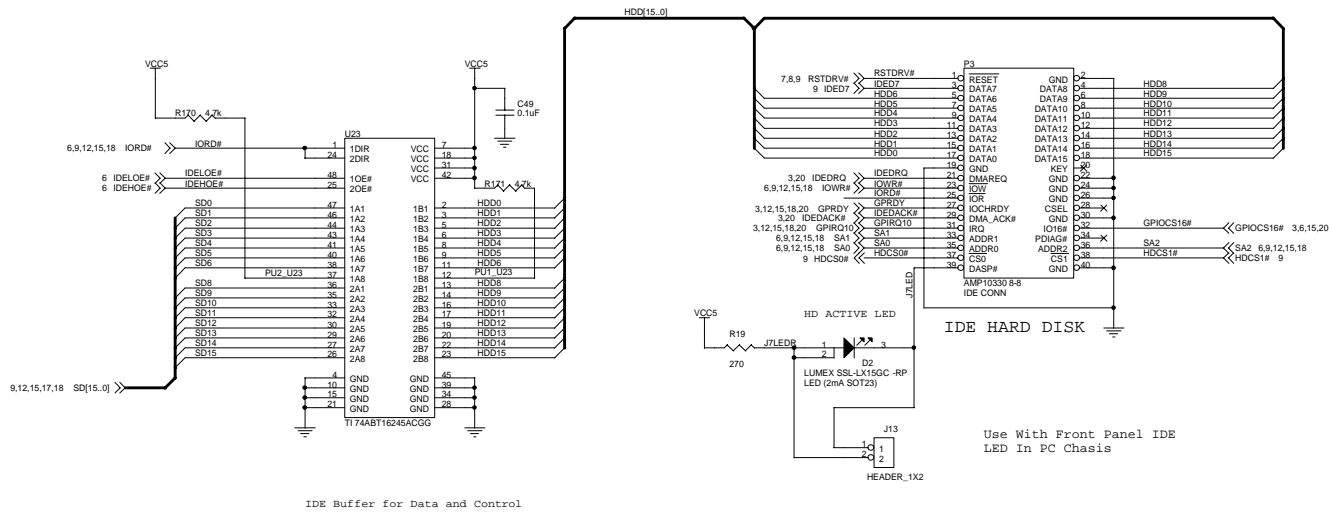
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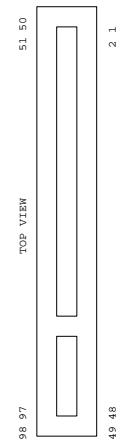
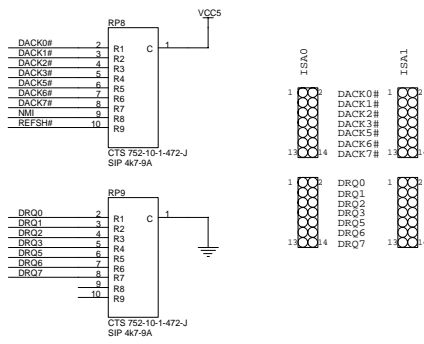
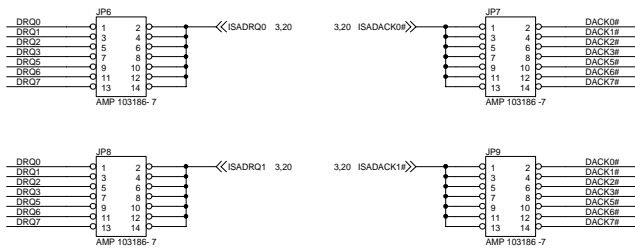
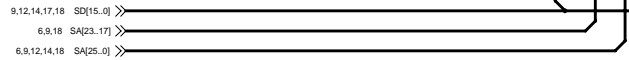
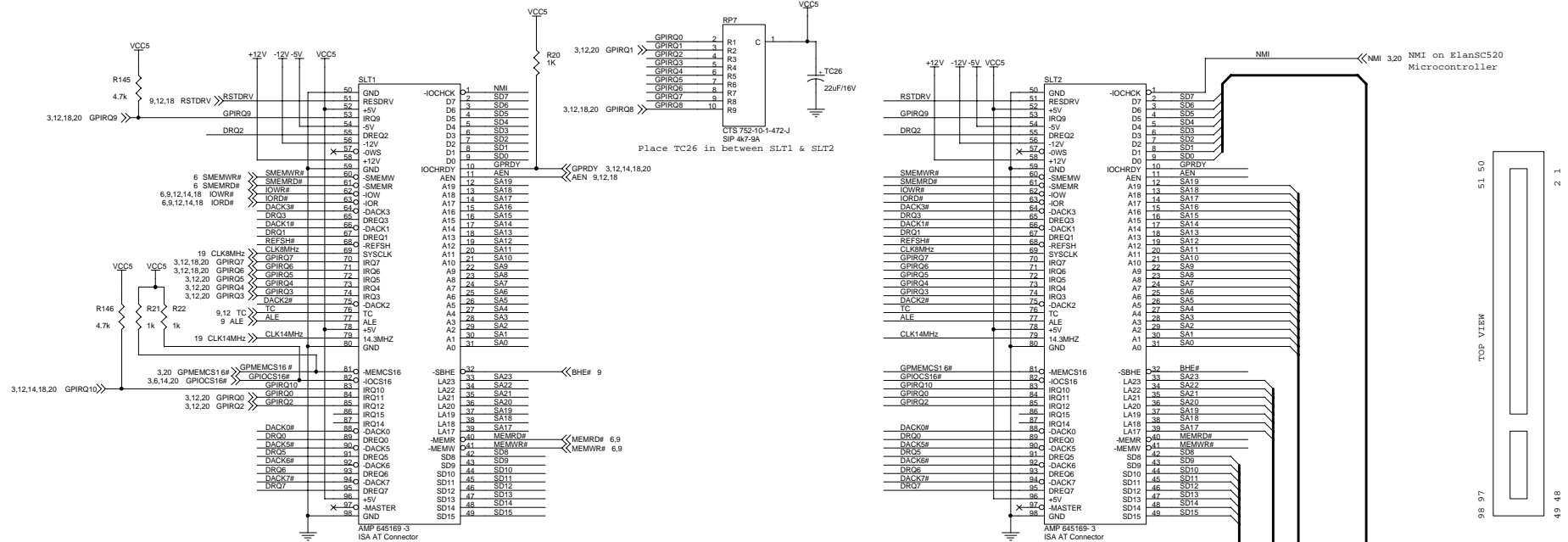
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IDE Port



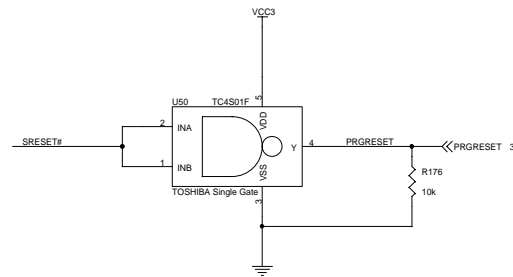
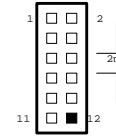
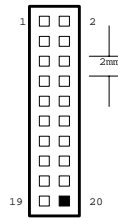
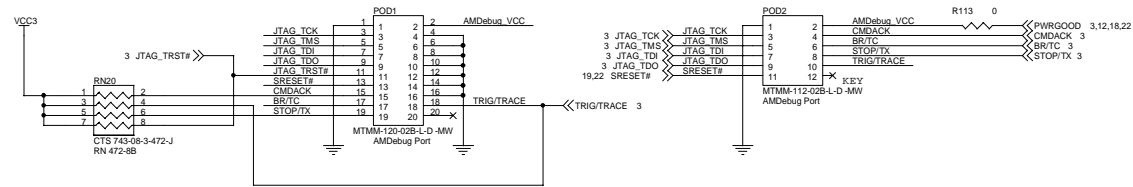
ISA Bus Connector



Design
 Note: Pull-up Ra on IRQs

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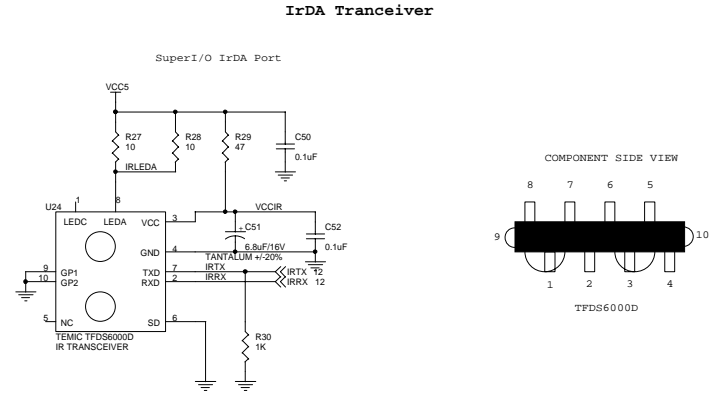
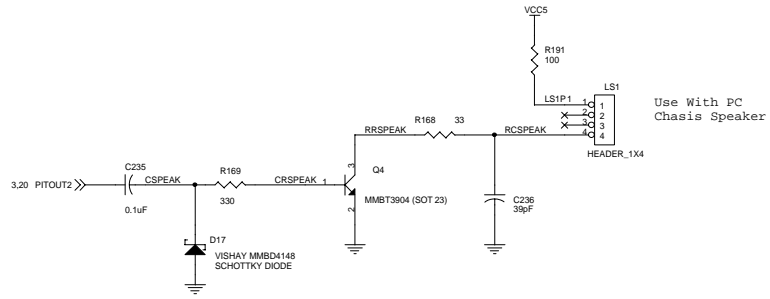
JTAG & AMDebug Port



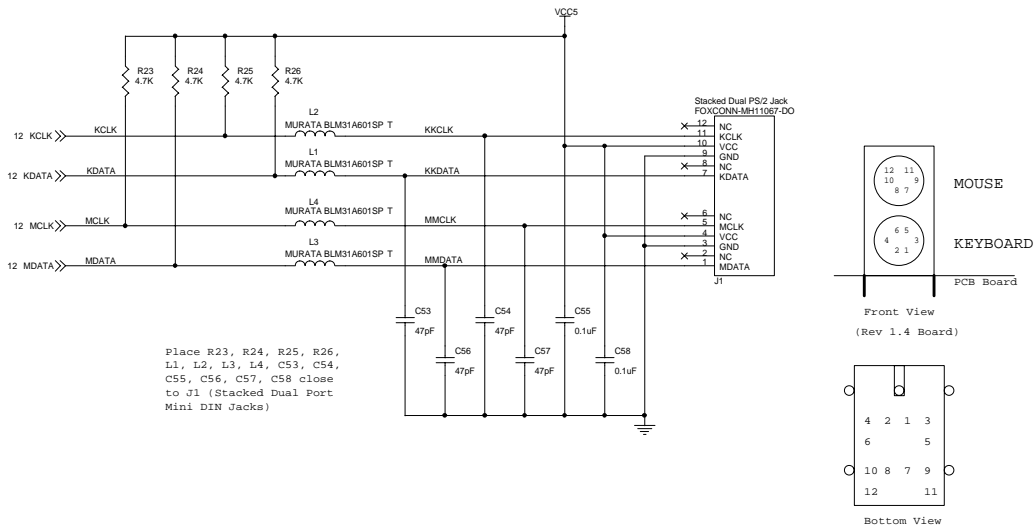
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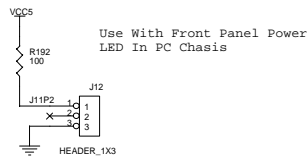
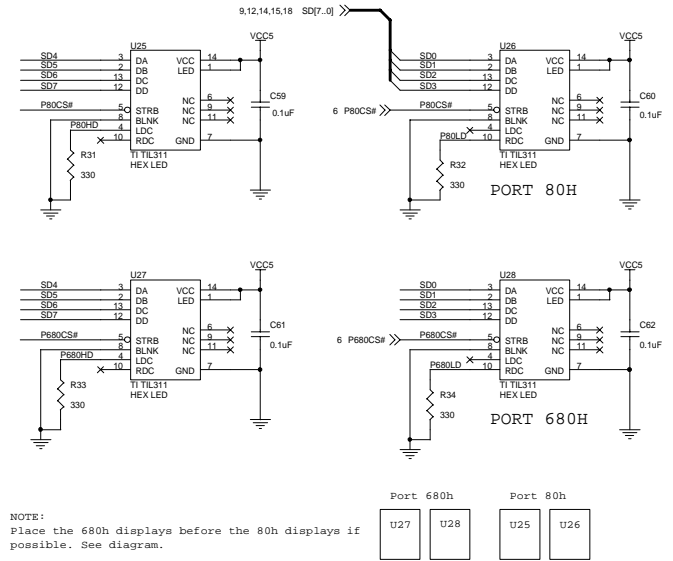
Keyboard, Mouse, IrDA & HEX LED



KEYBOARD_MOUSE



HEX LED Display



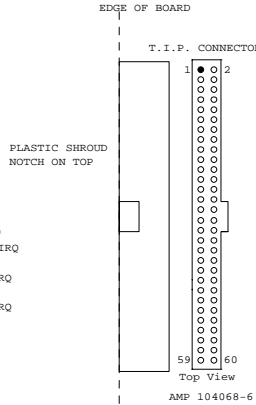
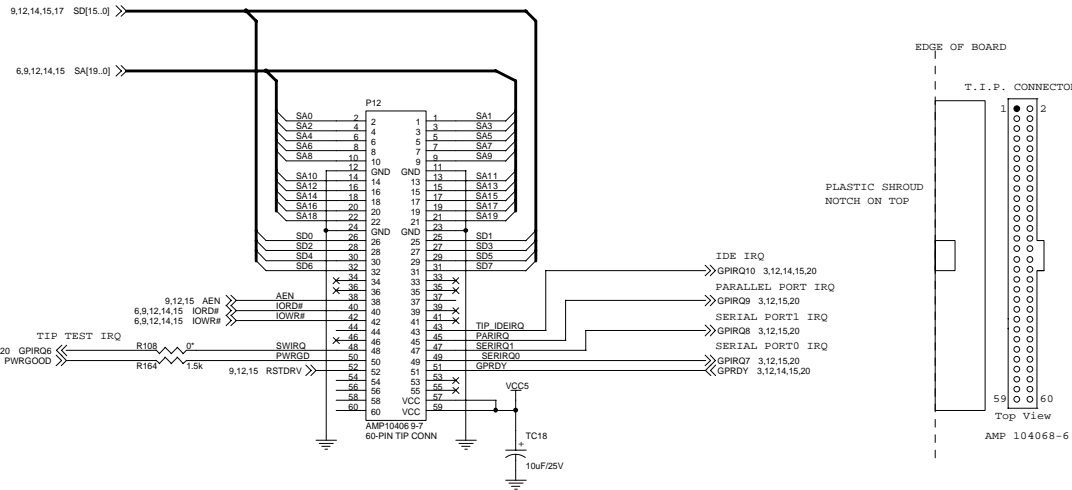
Design Notes:

- Show pin location of the Stacked PS/2 connector

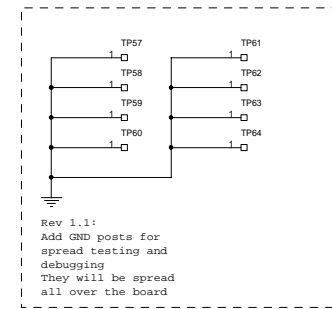
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T.I.P. CONNECTOR

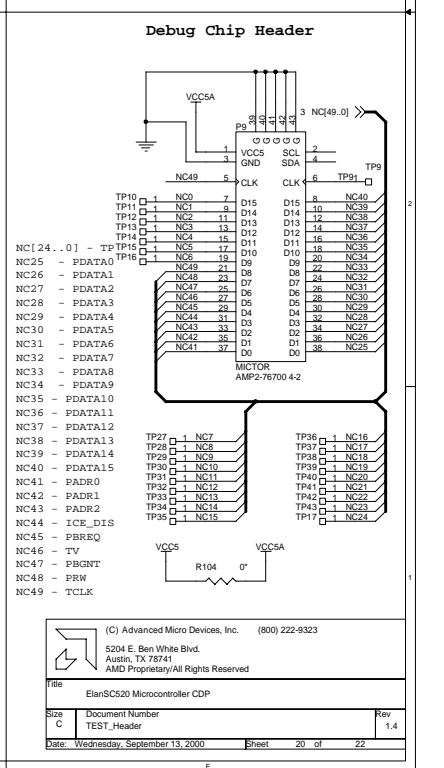
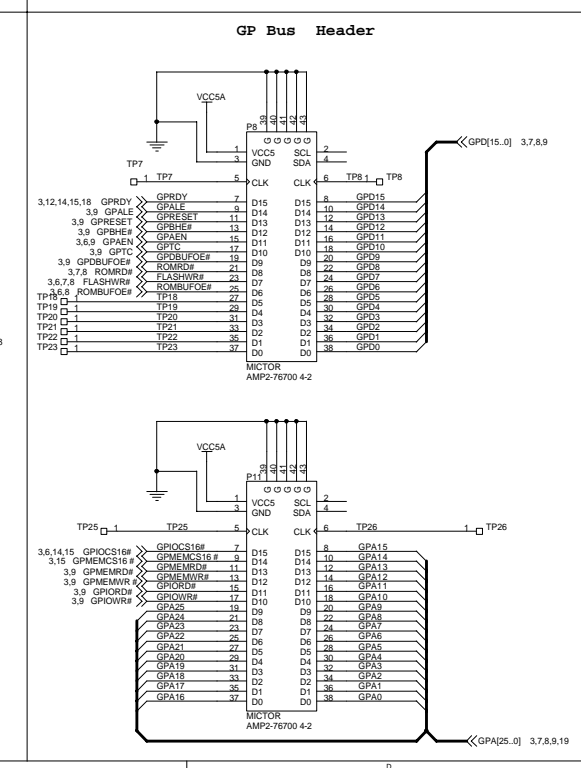
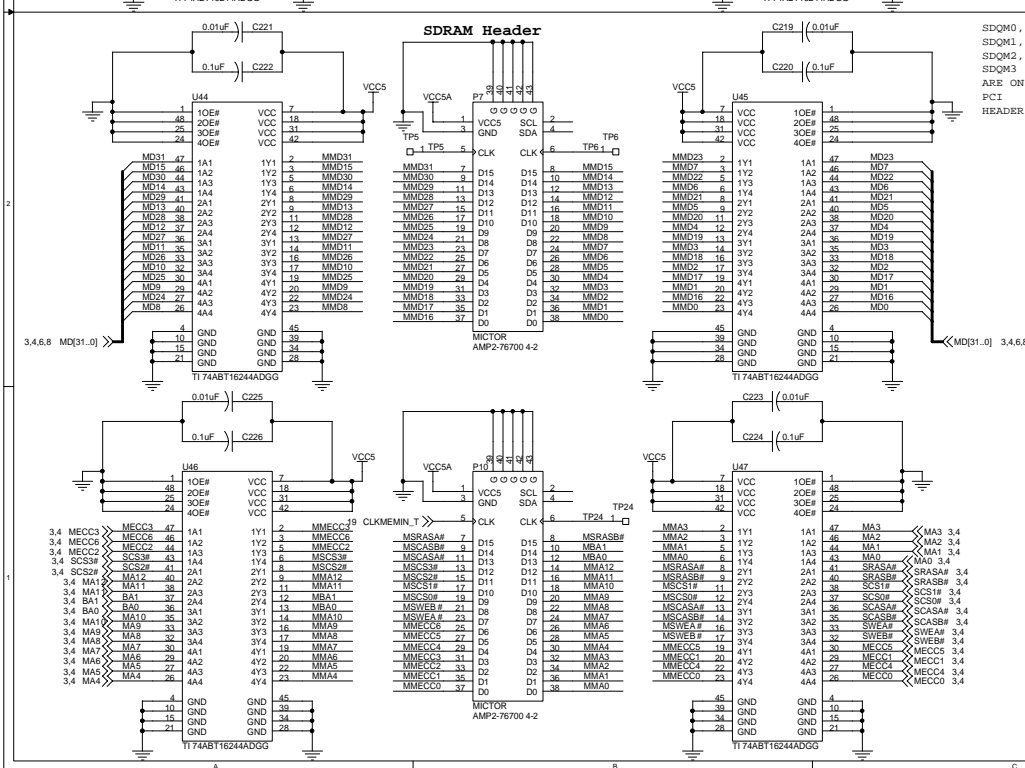
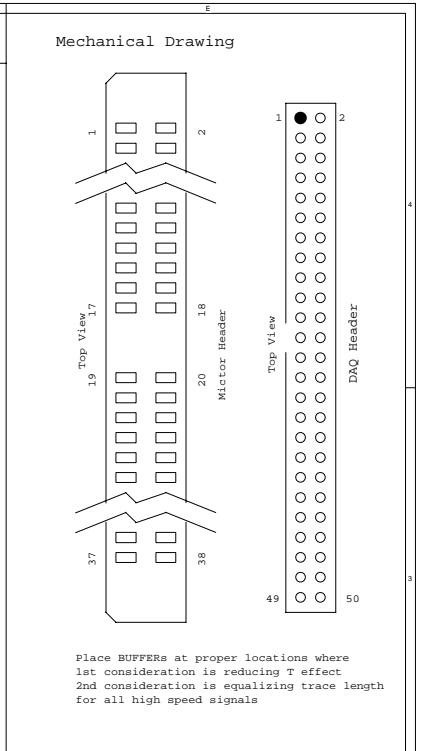
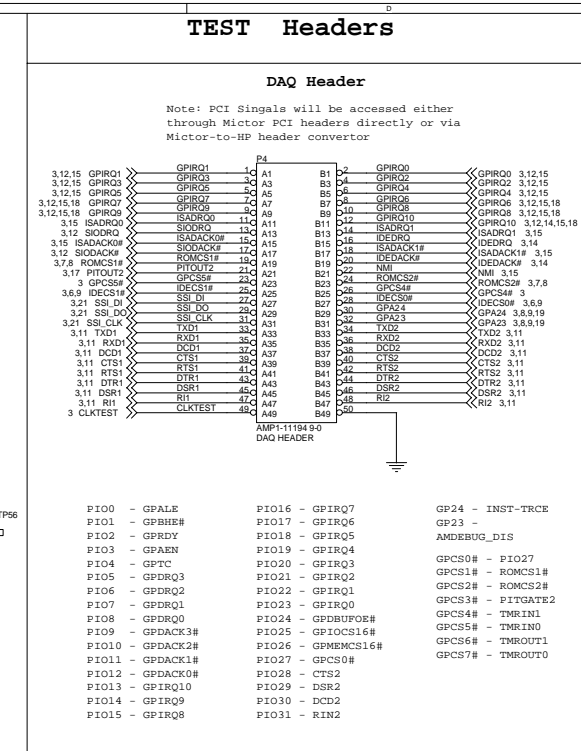
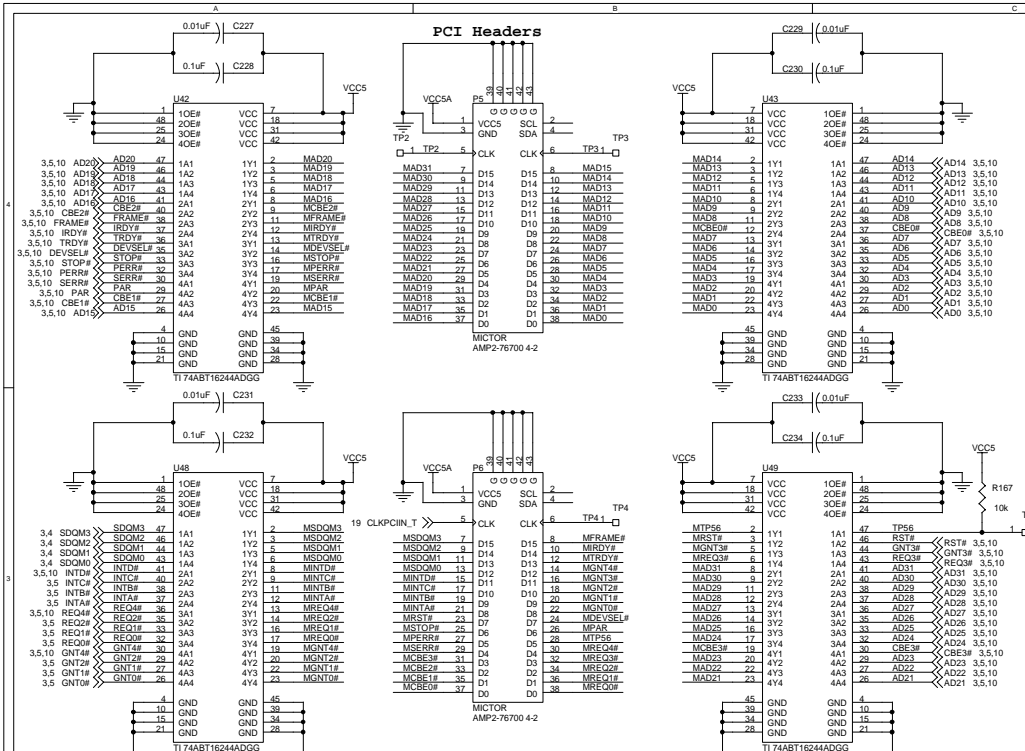


GND POST

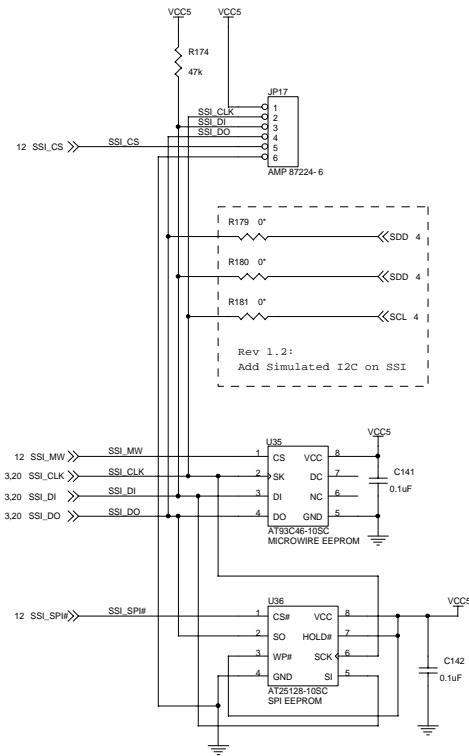


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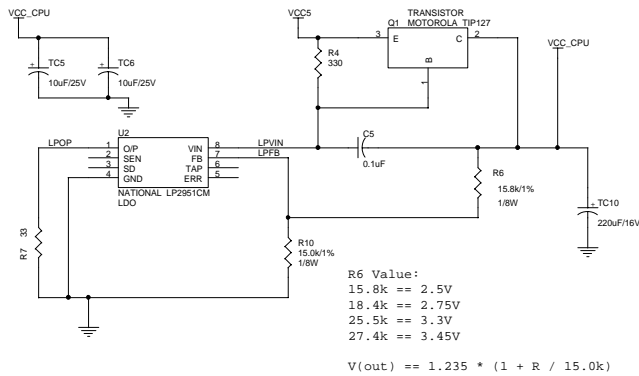


Synchronous Serial Interface

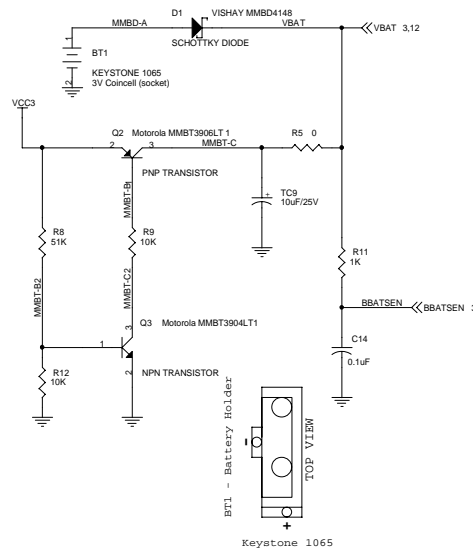


Power Sources & Reset Circuit

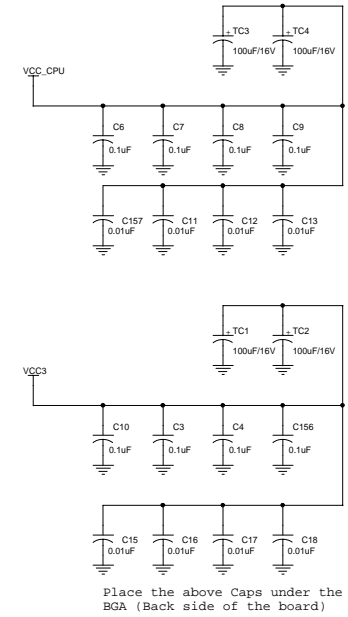
CPU Power Regulator



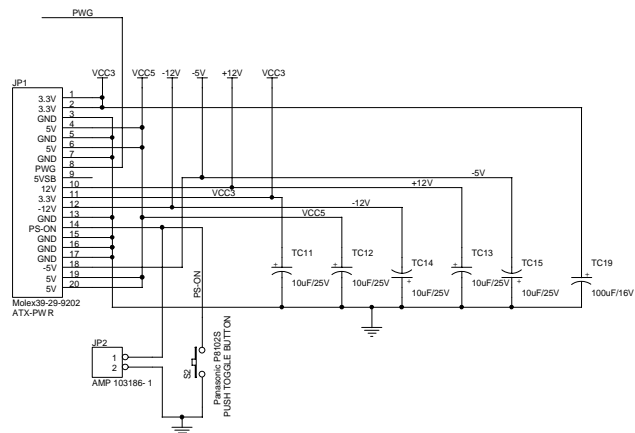
RTC VBAT Power



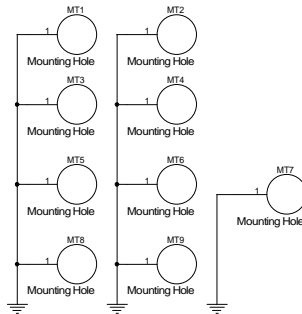
VCC_CPU Decoupling



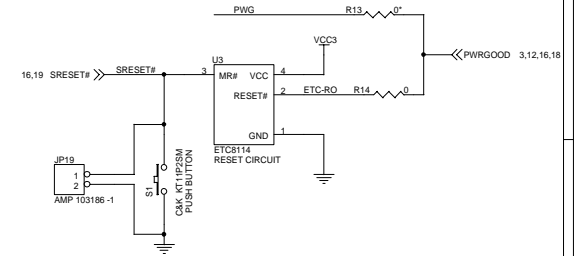
ATX Power Connector



Mounting Hole Grounding



System Reset Control



Design Notes:

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