

excimer



***PowerPC
Embedded Controller Module***

***Digital DNA**
from Motorola



NOTES:

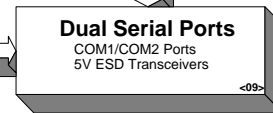
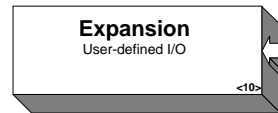
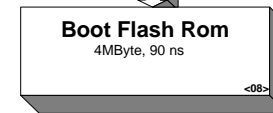
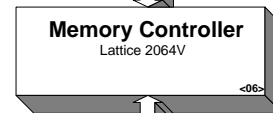
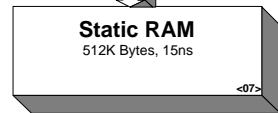
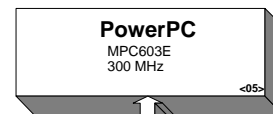
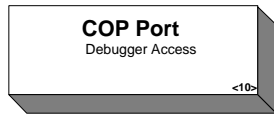
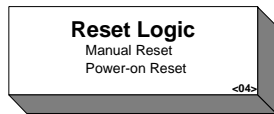
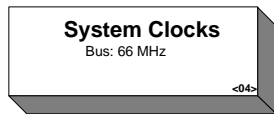
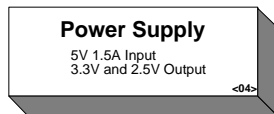
- 1) Unless otherwise specified:
 All resistors are SMD0805, in ohms, 0.1W, +/-5%
 All capacitors are SMD0805, in microfarads (μ F), +/-20%.
 All inductances are in microhenries (μ H).
 All ferrites are Z=50 ohms at 100 MHz.
 All fuses are self-resetting polyswitch (PTC) devices.
 Board impedance is 50-60 ohms.
 - 2) Most IC devices shown have default connections to appropriate power and ground levels unless shown explicitly otherwise.
 - 3) Part numbers used are for reference only; compatible parts may be used; refer to the bill of materials.
 - 4) Motorola and the Motorola colophon are registered trademarks of Motorola. PowerPC is a trademark of IBM. Other trademarks are the respective property of their respective copyright holders. I've got good news! That gum you like is going to come back in style. All rights reserved.
 - 5) The sheet-to-sheet cross reference format is:
 Sheet "*" VertZoneLetter HorizZoneNumber
 - 6) Components surrounded by a dashed/crossed-out box are not to be installed by default; they are for test or manufacturing purposes only.
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- 7) All buses follow big-endian bit numbering order (bit 0 is the most-significant bit), except where industry standards apply (i.e. PCI). Little-endian numbering is noted at the source component.

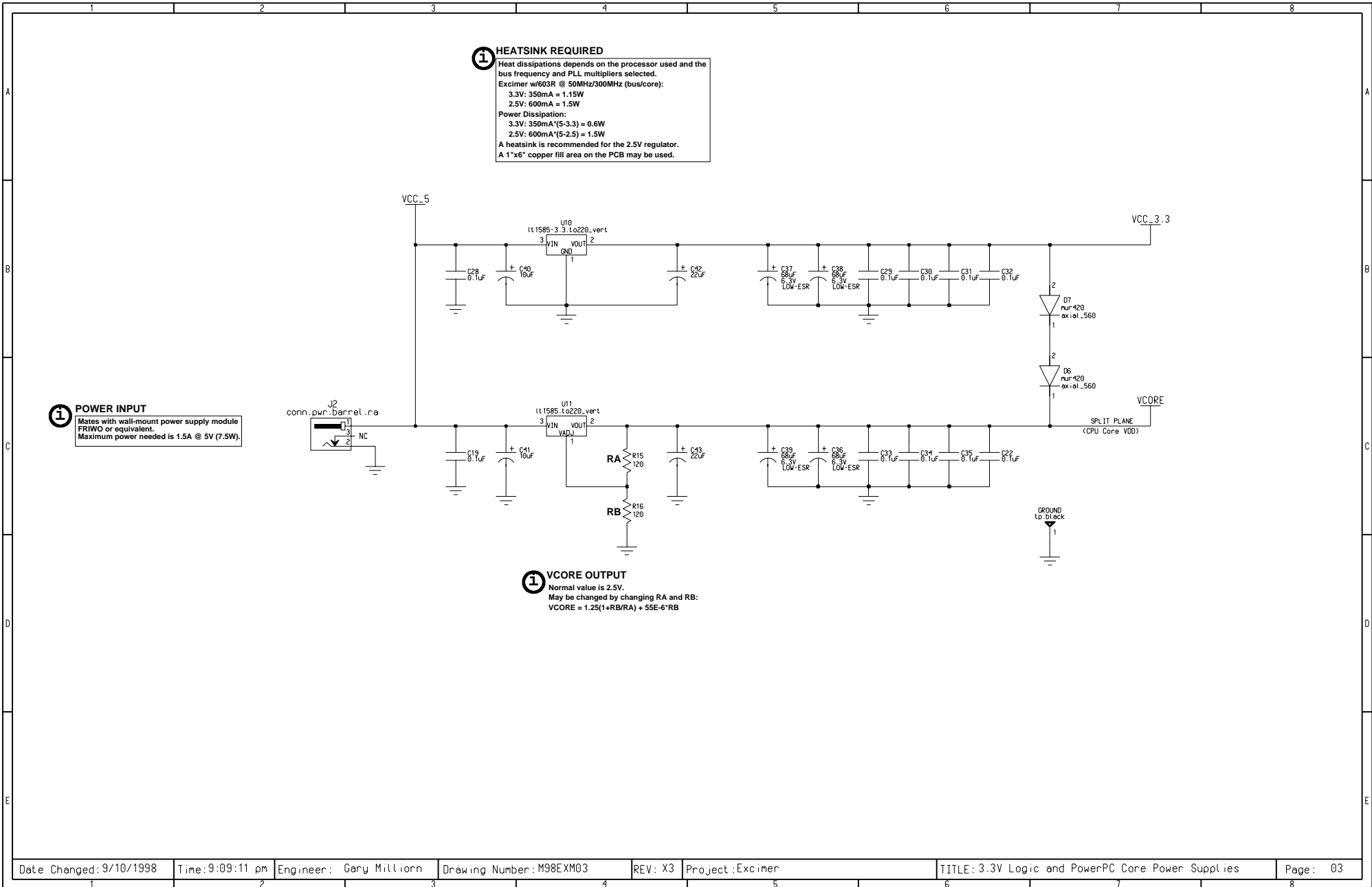
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REV	DATE	CHANGES
X1	98JUN02	Original
X2	98JUL16	Bug fixes; upgrades.
X3	98SEP10	Power conn, bus bit reversed.

**Excimer
 Embedded Controller Module
 Version X3
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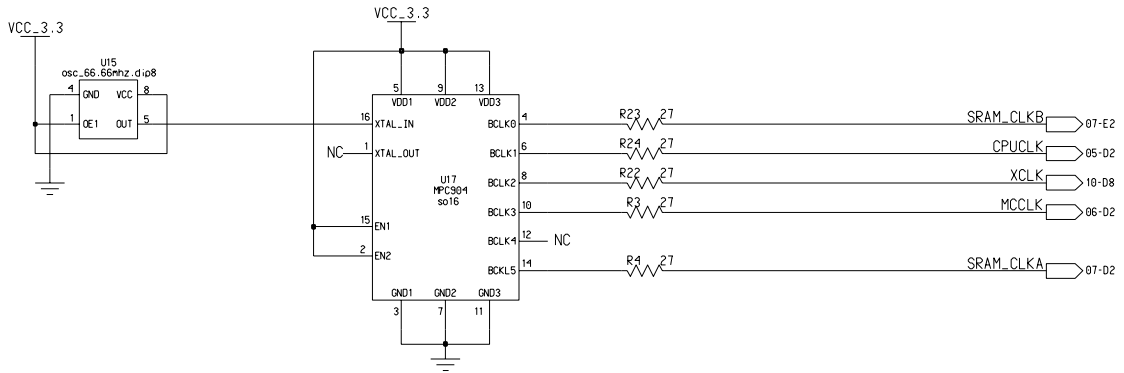


HEATSINK REQUIRED
 Heat dissipation depends on the processor used and the bus frequency and PLL multipliers selected.
 Excimer w/603R @ 50MHz/300MHz (bus/core):
 3.3V: 350mA = 1.15W
 2.5V: 600mA = 1.5W
Power Dissipation:
 3.3V: 350mA*(5-3.3) = 0.6W
 2.5V: 600mA*(5-2.5) = 1.5W
 A heatsink is recommended for the 2.5V regulator.
 A 1"x6" copper fill area on the PCB may be used.

POWER INPUT
 Mates with wall-mount power supply module FR1W0 or equivalent.
 Maximum power needed is 1.5A @ 5V (7.5W).

VCCORE OUTPUT
 Normal value is 2.5V.
 May be changed by changing RA and RB:
 $VCCORE = 1.25(1+RB/RA) + 55E-6/RB$

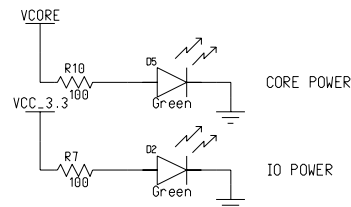
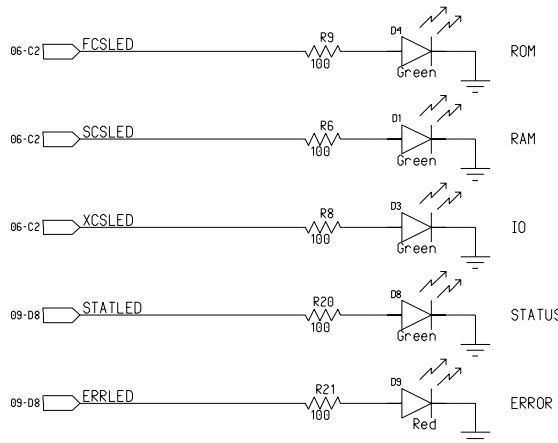
1 System Clock
 Replace crystal oscillator with standard 3.3V oscillators to set bus frequency.

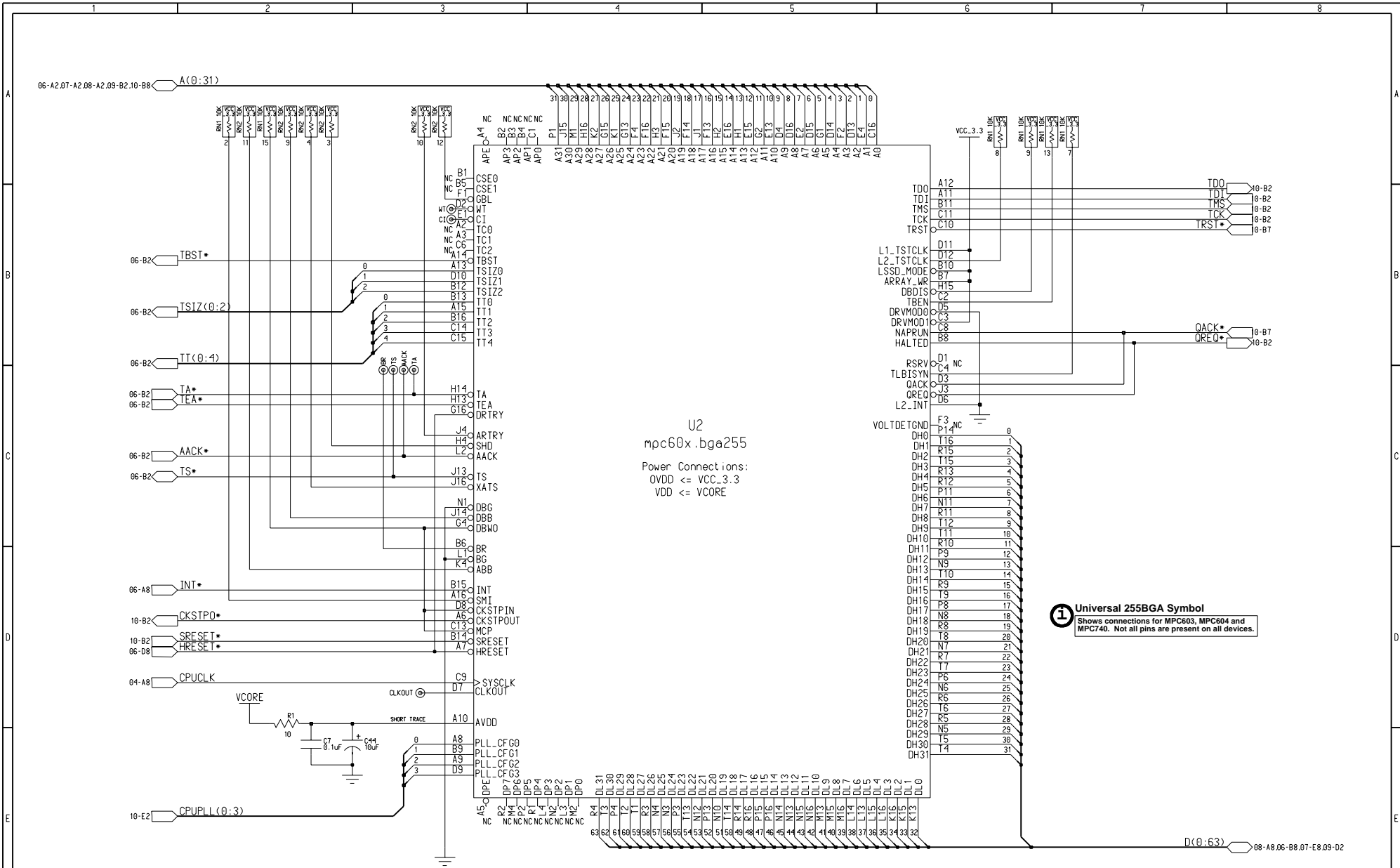


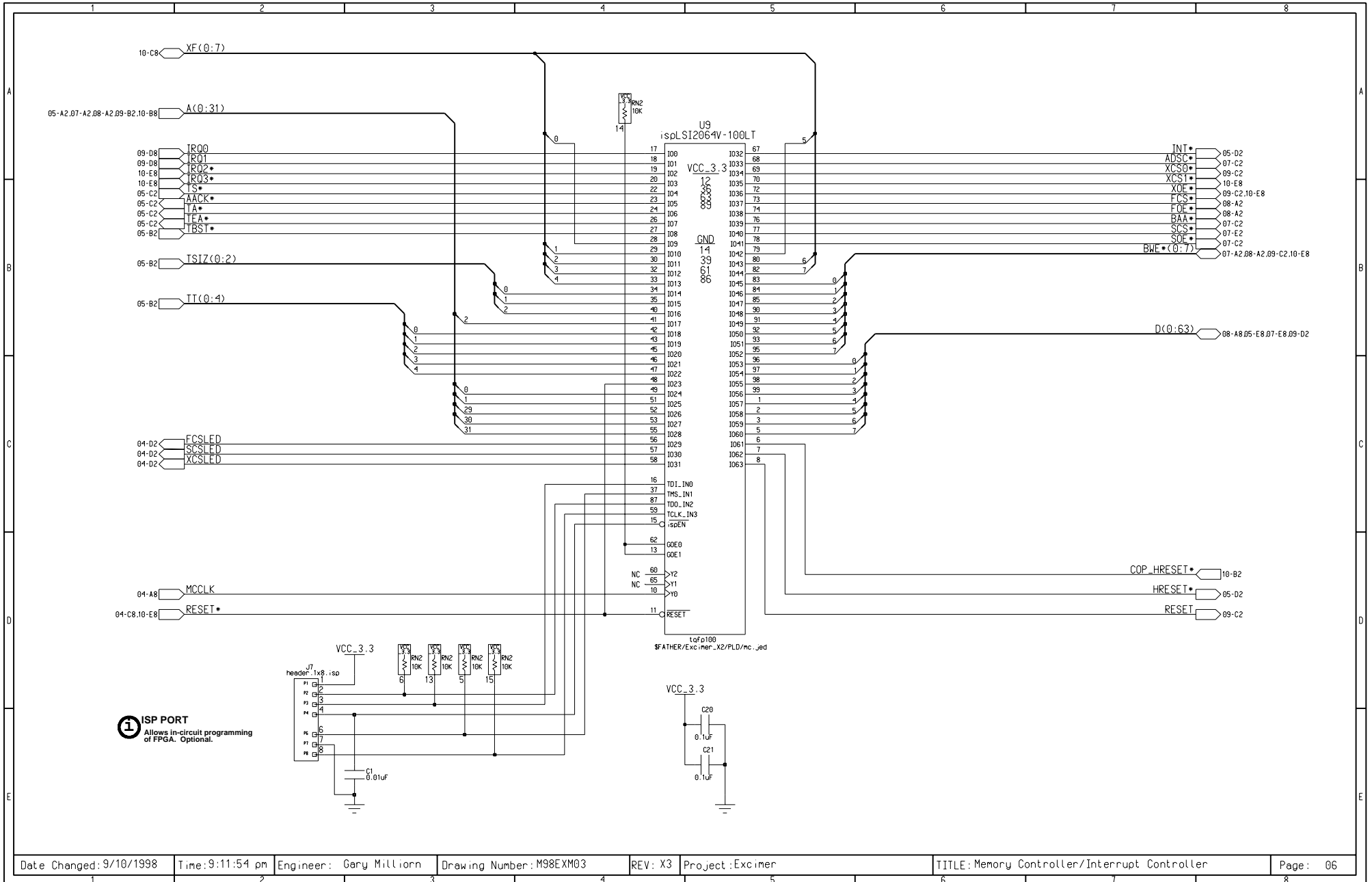
1 Reset Switch
 Reset switch and power supply monitor.



1 Diagnostic LEDs
 Optional installation. All legend to PCB silkscreen for identification.

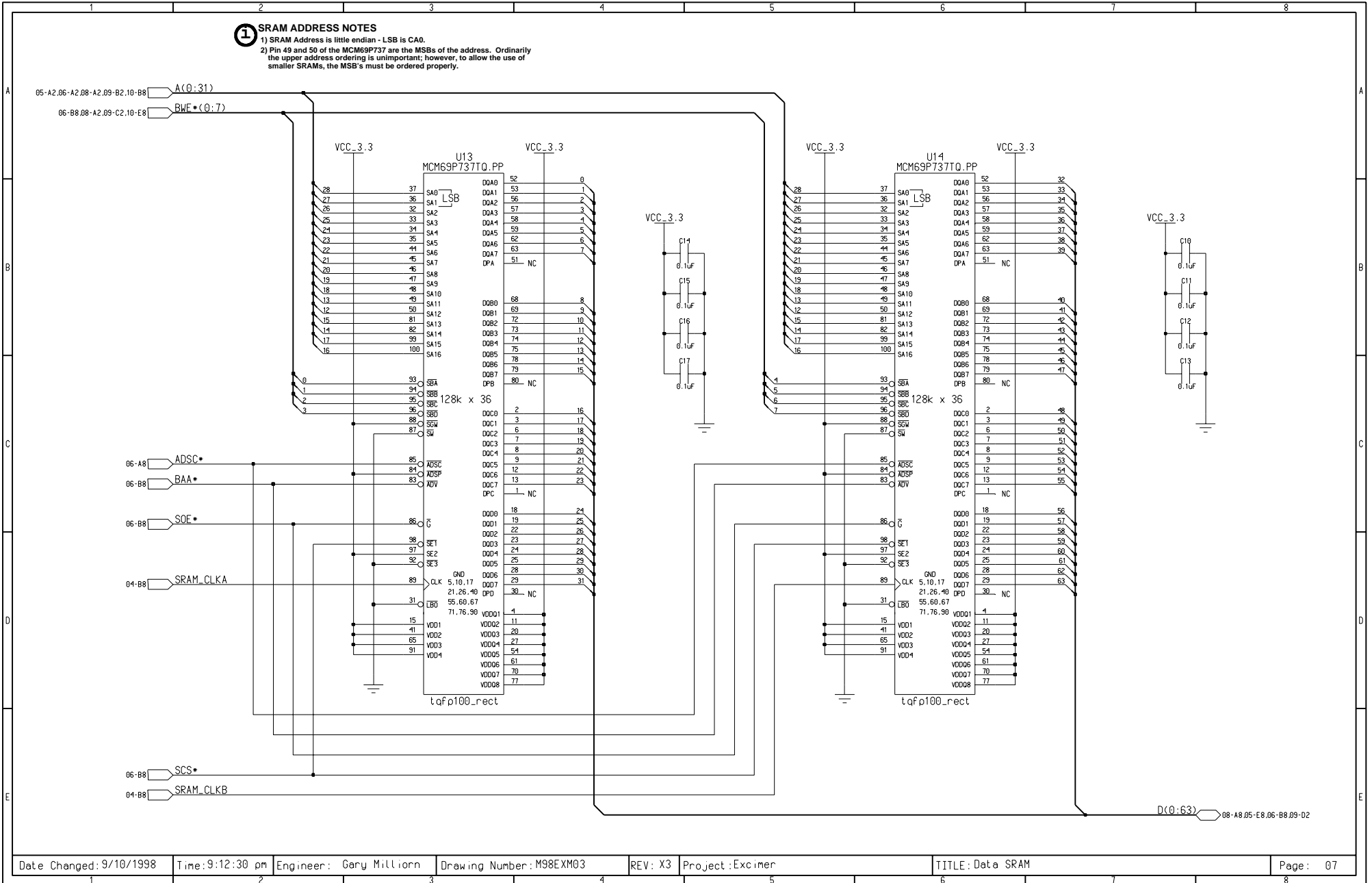


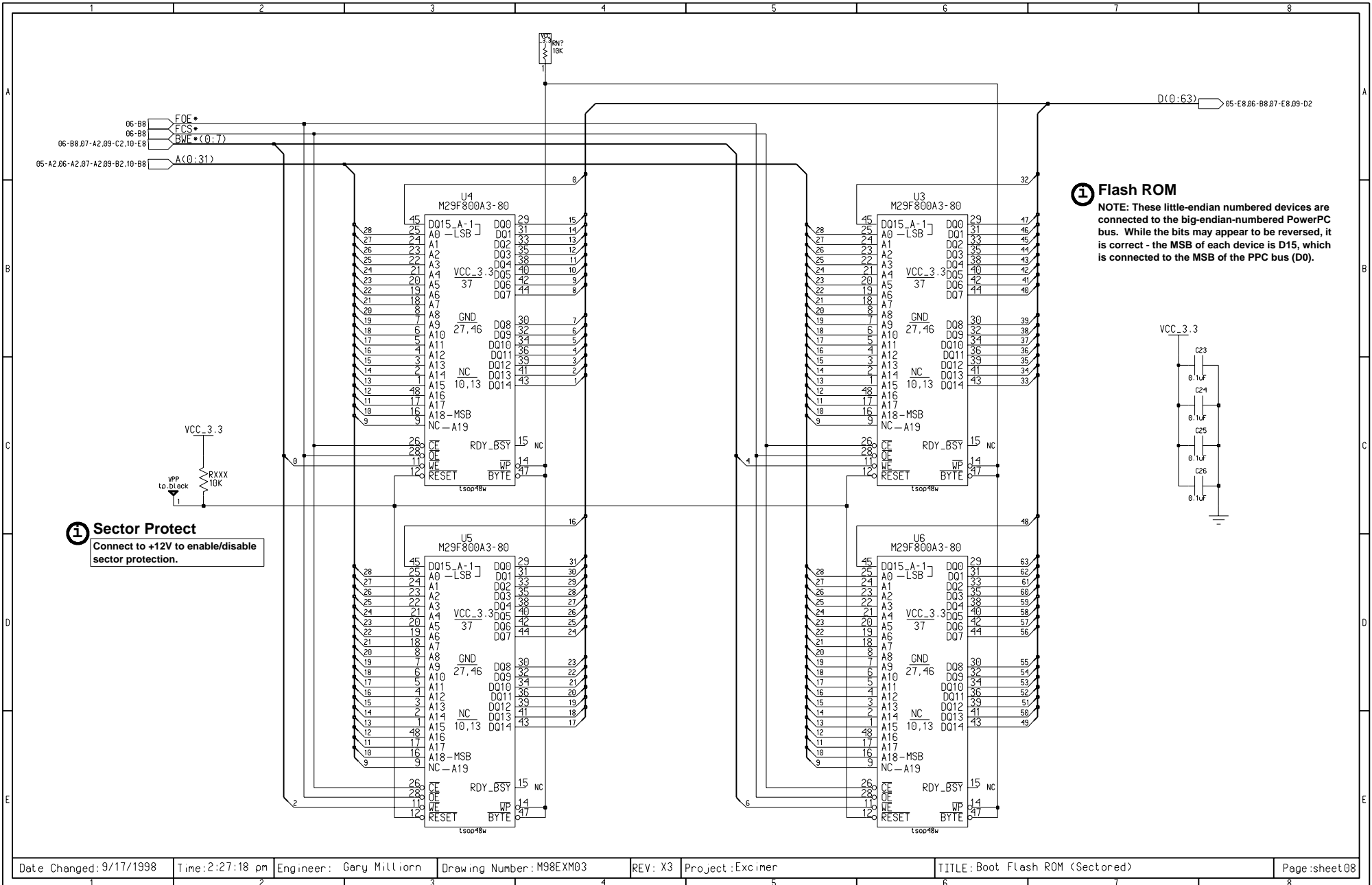




① SRAM ADDRESS NOTES

- 1) SRAM Address is little endian - LSB is CA0.
- 2) Pin 49 and 50 of the MCM69P737 are the MSBs of the address. Ordinarily the upper address ordering is unimportant; however, to allow the use of smaller SRAMs, the MSB's must be ordered properly.



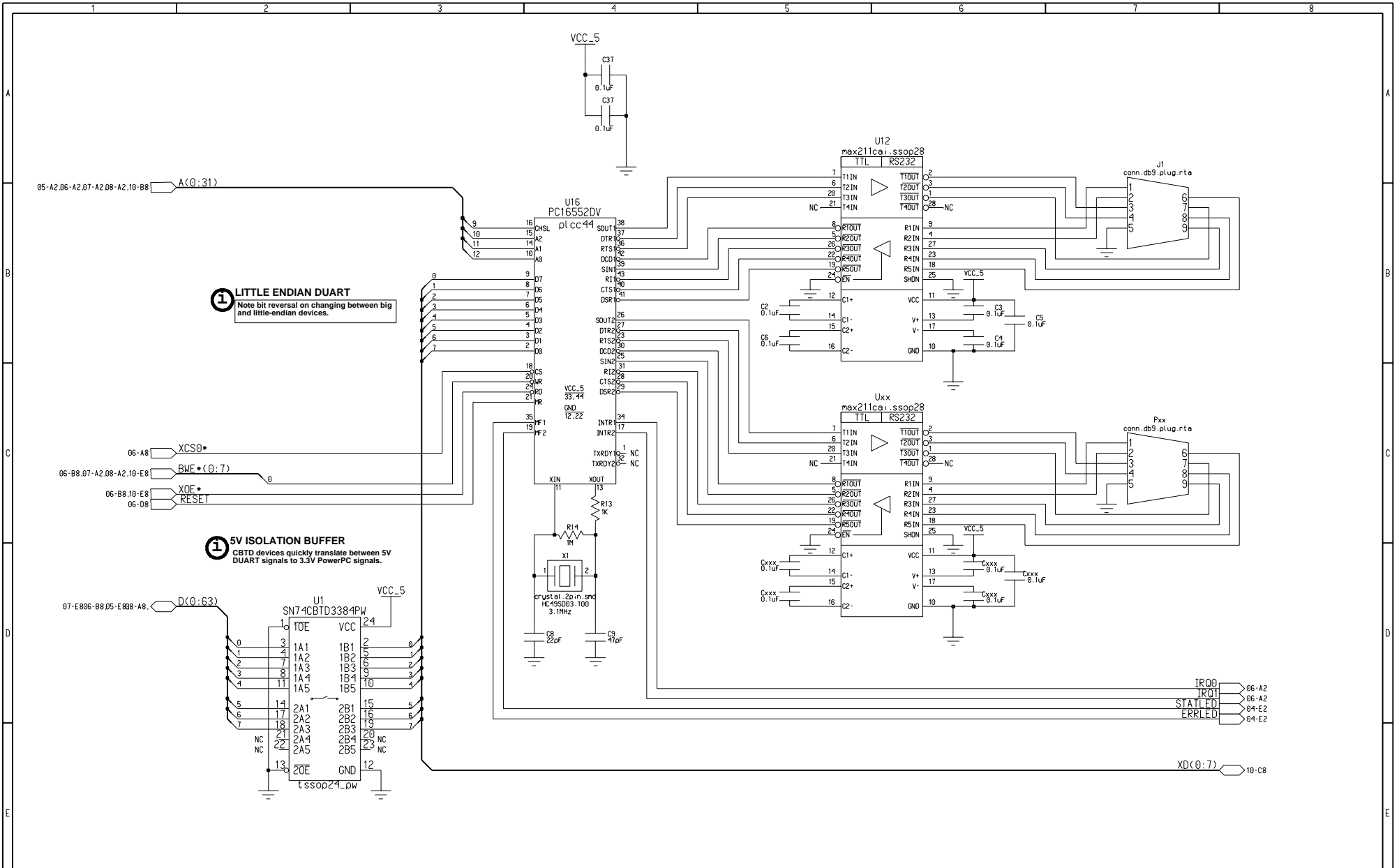


Flash ROM

NOTE: These little-endian numbered devices are connected to the big-endian-numbered PowerPC bus. While the bits may appear to be reversed, it is correct - the MSB of each device is D15, which is connected to the MSB of the PPC bus (D0).

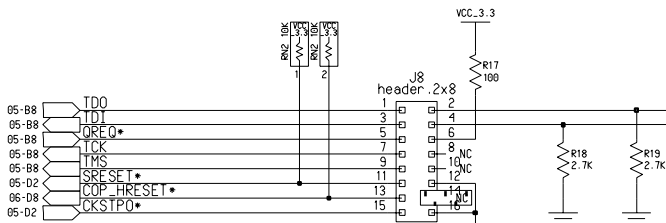
Sector Protect

Connect to +12V to enable/disable sector protection.



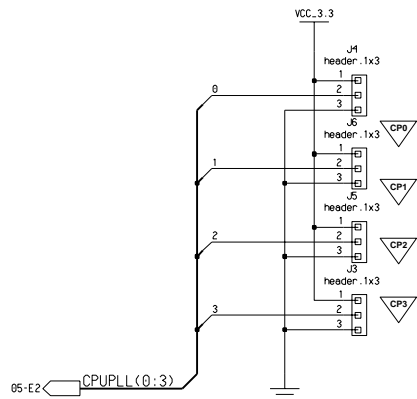
1 COP Connector

Processor debug via BlackBox or ESP/RiscWatch.
 NOTE: Connector pin numbering varies widely.
 The connector shown below is correct as physically
 viewed from above, with a key at location 14.



1 COP Expansion

Place two-pin Berg adjacent to end of COP header so that it would occupy pins 19 and 20 of a 2x10 Berg (with pins 17 and 18 missing).



1 TYPICAL CPU PLL SETTINGS

CP1	CP2	CP3	BUSMULT	BUSCLK
IN	IN	IN	--	--
IN	IN	IN	--	--
IN	IN	IN	BYPASS	--
IN	IN	IN	2X	60-83
IN	IN	IN	6.5X	25-40
IN	IN	IN	2.5X	50-83
IN	IN	IN	4.5X	33-60
IN	IN	IN	3X	40-83
IN	IN	IN	5.5X	25-40
IN	IN	IN	4X	33-66
IN	IN	IN	5X	25-50
IN	IN	IN	3.5X	40-75
IN	IN	IN	6X	25-40
IN	IN	IN	3.5X	40-75
IN	IN	IN	OFF	OFF

1 Customer Expansion

Unpopulated header for customer expansion.
 Includes 5V isolated data bus and unused FPGA pins.

