



## Device Errata

**MPC860ADS Application Development System  
Board Versions ENG, PILOT, REV A**

February 5, 1997

**1. Failures bursting to EDO DRAM.****[Applies to: Any ENG, PILOT, or REV A board populated with EDO DRAM.]**

Some Revision A MPC860 Application Development System (ADS) boards are shipped with a 4 Mbyte Extended Data Out (EDO) DRAM SIMM. The memory controller initialization for bursts to EDO DRAM has been found to be unreliable, resulting in occasional failure and lockup when the caches of the MPC860 perform bursts.

Normal startup configuration when operating with MPC8Bug does not enable the caches, and therefore failures are not encountered in this default configuration.

**Note:** This problem will also occur on ENG and PILOT boards if the fast page-mode DRAM is replaced with EDO DRAM.

**Workarounds:**

- 1) Do not enable MPC860 caches when an EDO DRAM SIMM is installed in the ADS board, **OR**
- 2) Use a standard (i.e. non-EDO) DRAM SIMM in the ADS memory socket.

**Fixed in Revision B.****2. Spikes on  $\overline{\text{RAS}}$  and  $\overline{\text{CAS}}$  signals.****[Applies to: All ENG and PILOT boards, and REV A boards shipped before June 25, 1996.]**

Impedance mismatch problems with some SIMMs causes spikes on the  $\overline{\text{RAS}}$  and  $\overline{\text{CAS}}$  lines which can cause problems with interfacing to DRAM.

**Workarounds:**

Insert the following series damping resistors:

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- (1) 51ohm series resistors from the output of RAS2, RAS1DD, and RAS2DD of the Mach220 at U10 [U9 of ENG board revision]
- (2) 470ohm pull-down resistor on RAS1 output of the Mach220 at U10 [U9 of ENG board revision]
- (3) 51ohm series resistor from the output of BDRM\_W of the 74ACT541 at U35 [U33 of ENG board revision]
- (4) 51ohm series resistors from the outputs of BBS0A, BBS1A, BBS2A, and BBS3A of the 74ACT541 at U37 [U35 of ENG board revision]

Updates for REV A schematic sheets effected by this are included with this errata list.

**Note:** This workaround has already been implemented in REV A MPC860ADS boards shipped after June 25, 1996.

**Important:** This change is unrelated to the MPC860ADS device erratum concerning failures when bursting to EDO DRAM.

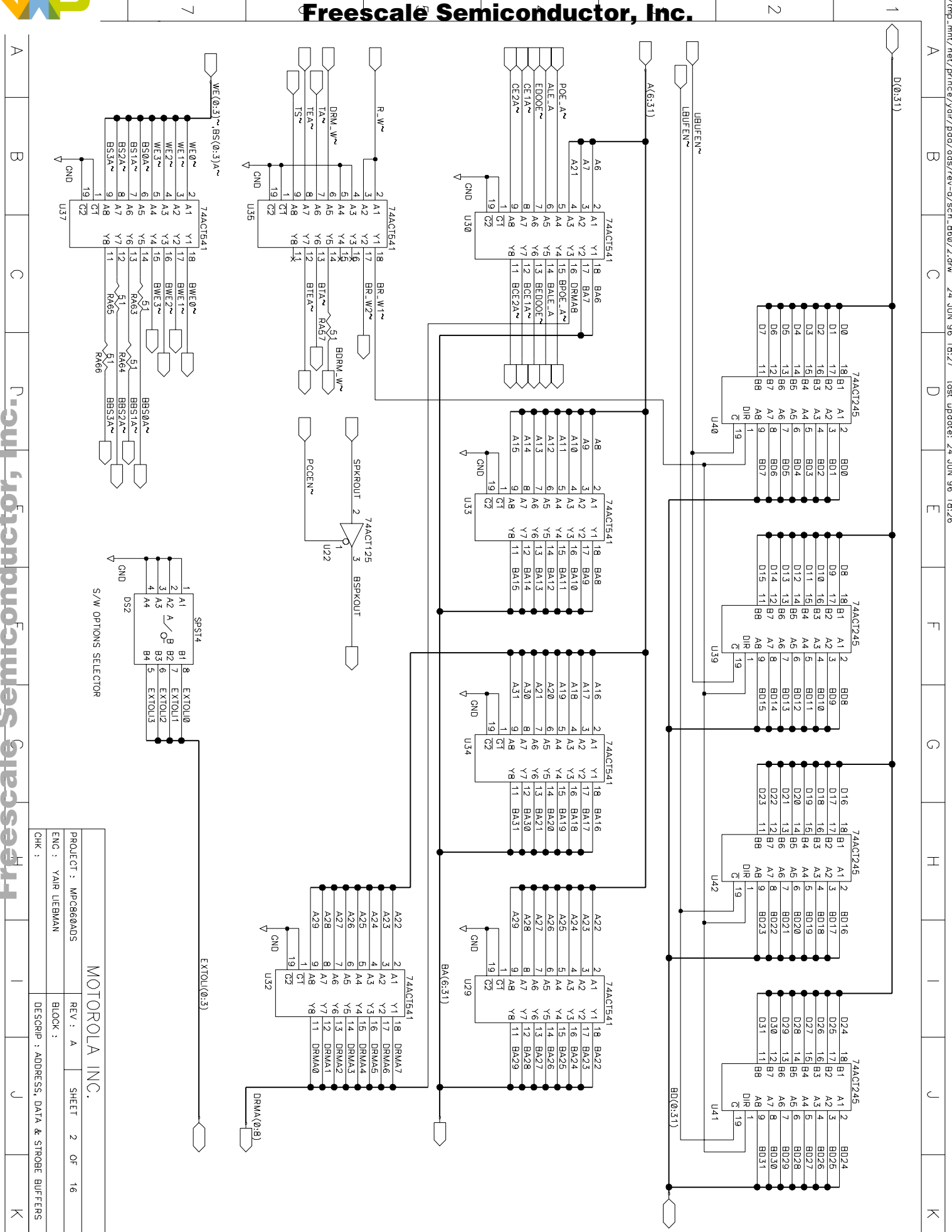
**Fixed in Revision B.**

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A B C D E F G H I J K

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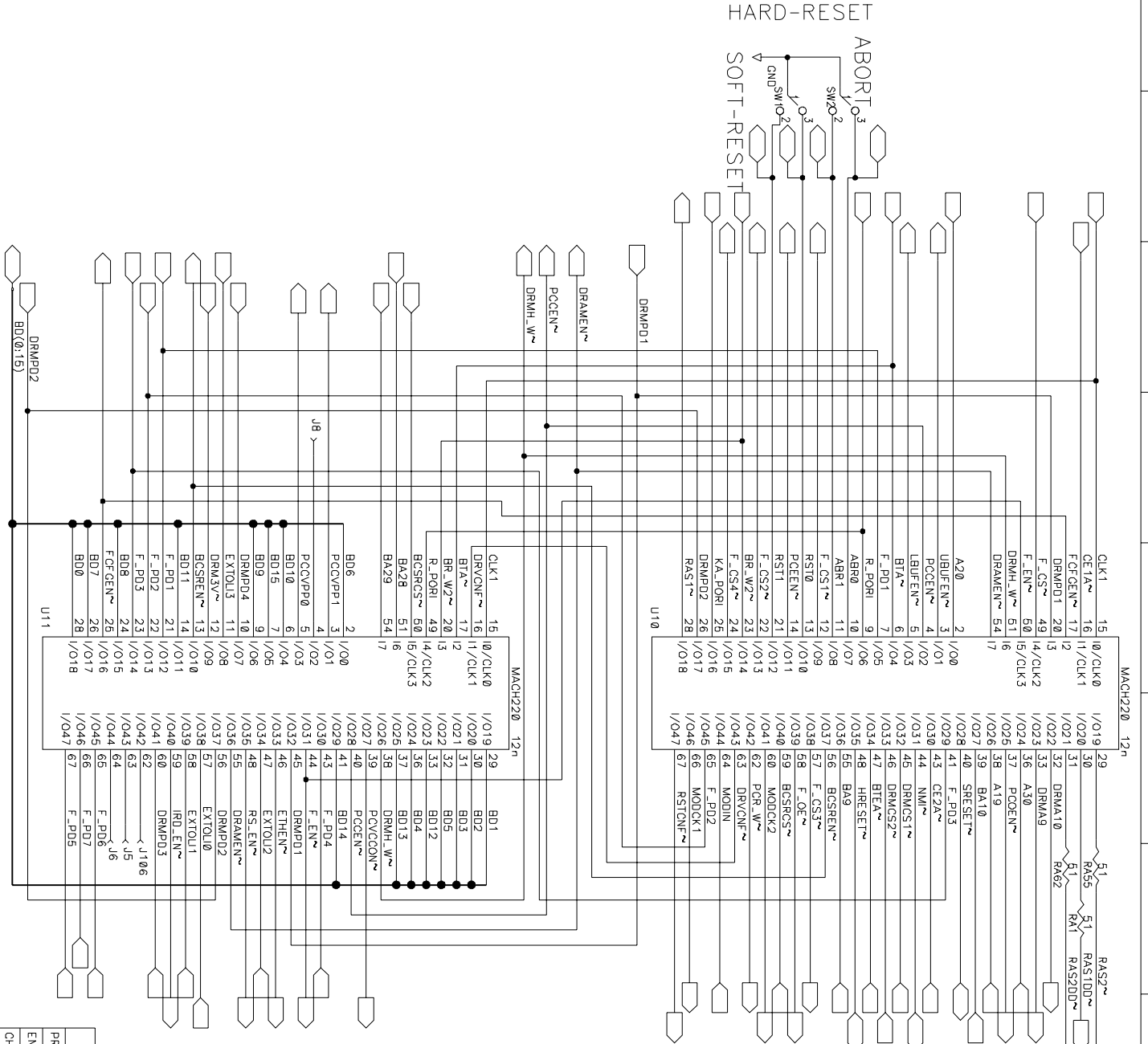
MOTOROLA INC.

PROJECT :	MPC860ADS	REV :	A	SHEET	2	OF	16
ENG :	YAIR LIEBMAN	BLOCK :					
CHK :		DESCRIP :	ADDRESS, DATA & STROBE BUFFERS				

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Memory & Buffer Control

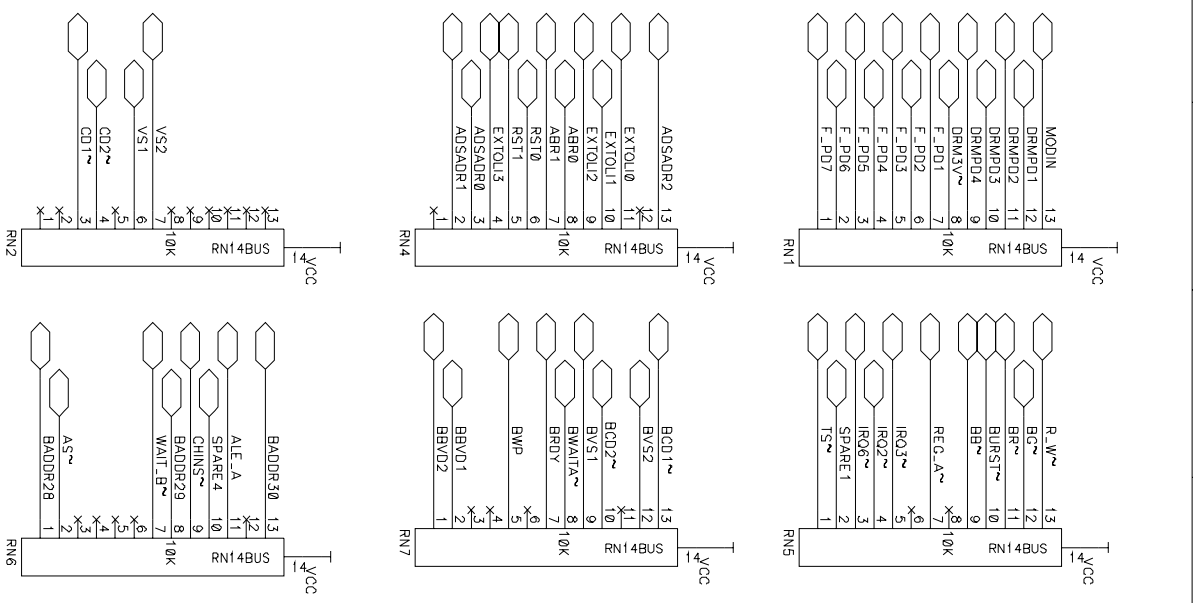
Board Control & Status Reg.

PROJECT : MPC860ADS	
ENG : YAIR LIEBMAN	REV : A
SHEET 3 OF 16	
BLOCK :	
DESCRIP : Board Control	
CHK :	

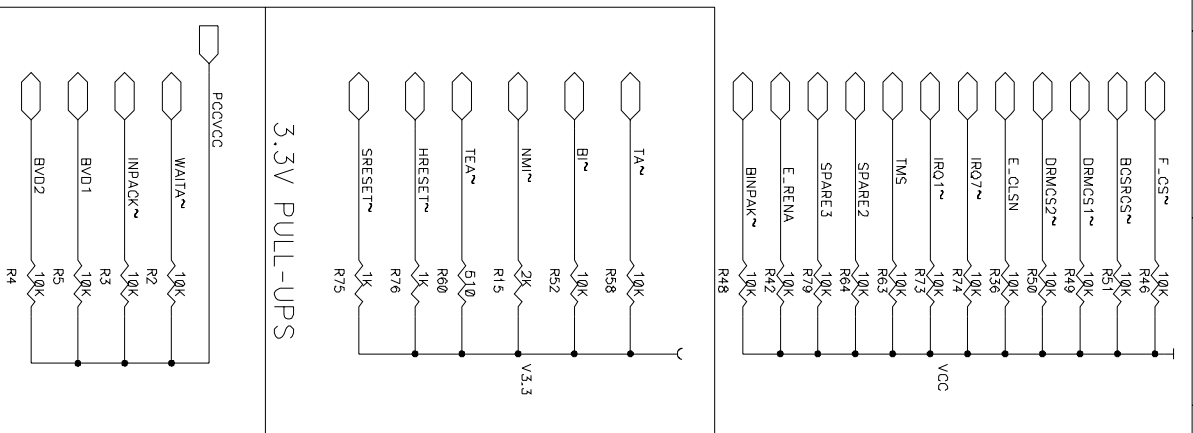
MOTOROLA INC.



# Freescale Semiconductor, Inc.

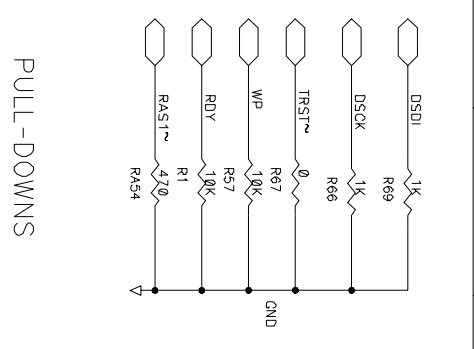


5V PULL-UPS



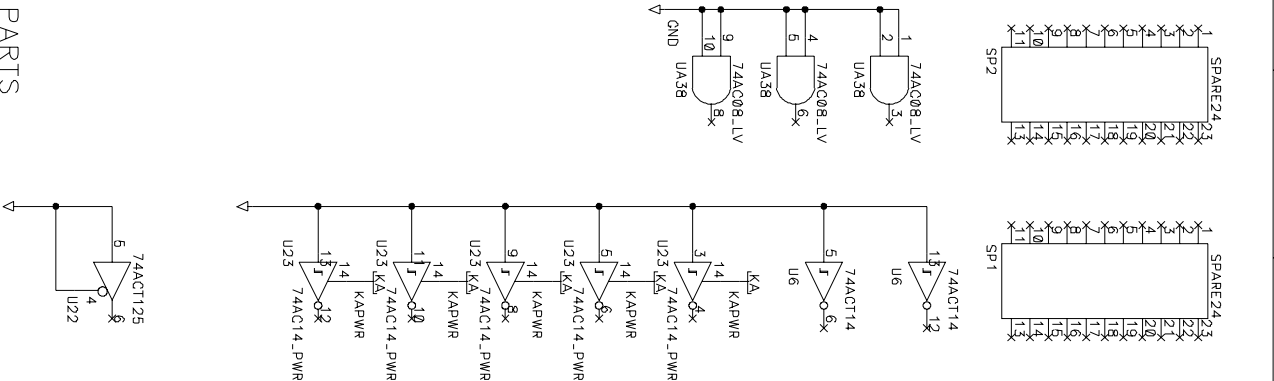
3.3V PULL-UPS

PC-CARD PULL-UPS



PULL-DOWNS

SPARE PARTS



MOTOROLA INC.

PROJECT : MPC860ADS	REV : A	SHEET 11 OF 16
ENG : YAIR LEBMAN	BLOCK :	
CHK :	DESCRIP : PULL-UP / DOWN RESISTORS	