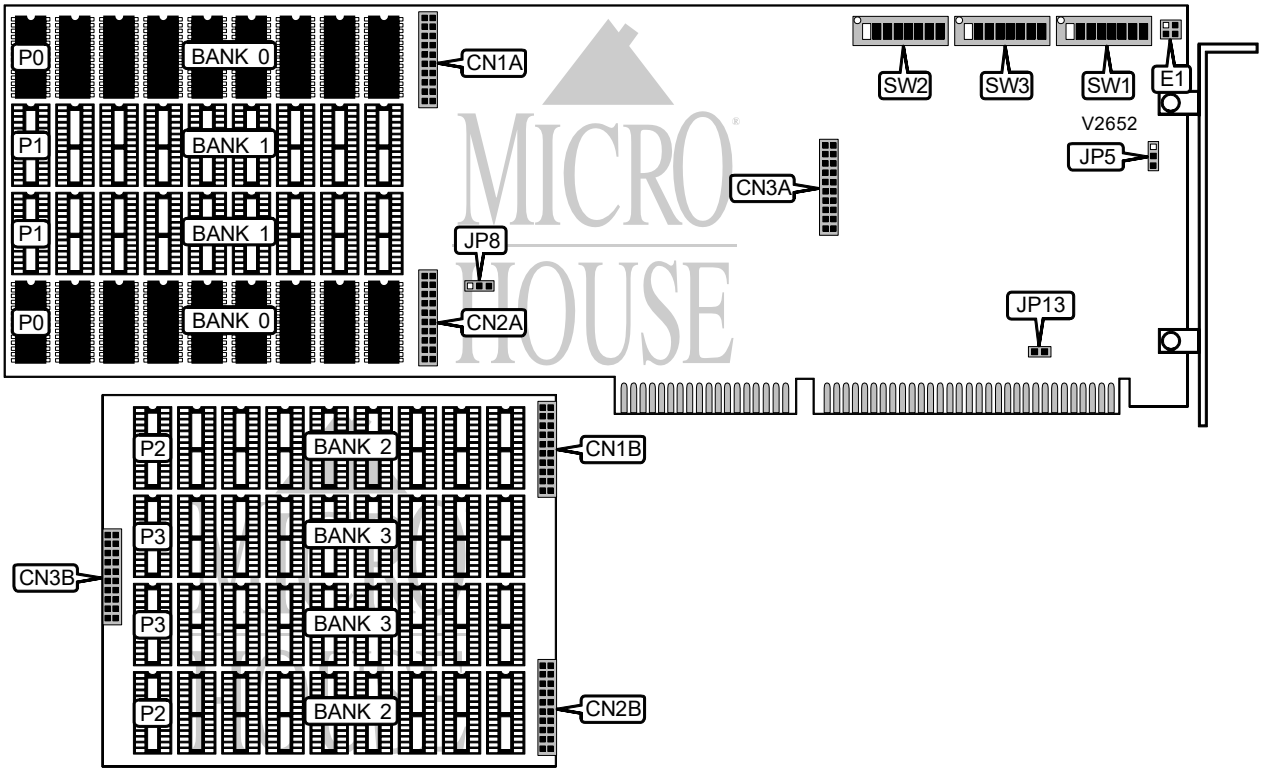
MONOLITHIC SYSTEMS, INC. (COLORADO MSI)
J U S T R A M / A T Z

Card Type Memory
Maximum Onboard Memory 8MB DRAM
Data Bus 16-bit ISA



CONNECTIONS			
Function	**Label**	**Function**	**Label**
Daughterboard header	CN1A	Header to main board (on back)	CN2B
Header to main board (on back)	CN1B	Daughterboard header	CN3A
Daughterboard header	CN2A	Header to main board (on back)	CN3B

USER CONFIGURABLE SETTINGS		
Setting	**Label**	**Position**
í Factory configured - do not alter	E1	Unidentified
í Normal address timing	JP5	Pins 1 & 2 closed
20ns delay for non-compatible machines	JP5	Pins 2 & 3 closed
í Factory configured - do not alter	JP8	Pins 2 & 3 closed
í Zero wait states enabled	JP13	Closed
Zero wait states disabled	JP13	Open

DRAM				
Setting	**Bank 0**	**P0**	**Bank 1**	**P1**
2MB	(16) 1M x 1	(2) 1M x 1	None	None
4MB	(16) 1M x 1	(2) 1M x 1	(16) 1M x 1	(2) 1M x 1
6MB	(16) 1M x 1	(2) 1M x 1	(16) 1M x 1	(2) 1M x 1
8MB	(16) 1M x 1	(2) 1M x 1	(16) 1M x 1	(2) 1M x 1

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DRAM (CON'T)				
Setting	**Bank 2**	**P2**	**Bank 3**	**P3**
2MB	None	None	None	None
4MB	None	None	None	None
6MB	(16) 1M x 1	(2) 1M x 1	None	None
8MB	(16) 1M x 1	(2) 1M x 1	(16) 1M x 1	(2) 1M x 1

CONVENTIONAL MEMORY		
Setting	**SW1/7**	**SW1/8**
í All memory on board used for extended or expanded memory	Off	Off
First 128KB on board used for conventional memory above 512KB	On	On

EXPANDED MEMORY BASE I/O ADDRESSES				
Main Board	**Daughter Board**	**SW1/1**	**SW1/2**	**SW1/3**
208h	218h	On	On	On
228h	238h	On	On	Off
248h	258h	On	Off	On
268h	278h	On	Off	Off
288h	298h	Off	On	On
2A8h	2B8h	Off	On	Off
2C8h	2D8h	Off	Off	On
2E8h	2F8h	Off	Off	Off

EXTENDED MEMORY SIZE		
Setting	**SW1/5**	**SW1/6**
0MB	N/A	N/A
2MB	On	On
4MB	On	Off
6MB	Off	Off
8MB	Off	Off

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EXTENDED MEMORY STARTING ADDRESS								
Setting	**SW2/1**	**SW2/2**	**SW2/3**	**SW2/4**	**SW2/5**	**SW2/6**	**SW2/7**	**SW2/8**
1024KB	On	On	On	Off	On	On	On	On
1152KB	On	On	On	Off	On	On	Off	On
1280KB	On	On	On	Off	On	Off	On	On
1408KB	On	On	On	Off	On	Off	Off	On
1536KB	On	On	On	Off	Off	On	On	On
15744KB	Off	Off	Off	Off	On	Off	Off	On
15872KB	Off	Off	Off	Off	Off	On	On	On
16000KB	Off	Off	Off	Off	Off	On	Off	On
16128KB	Off	Off	Off	Off	Off	Off	On	On
16256KB	Off	Off	Off	Off	Off	Off	Off	On
Disabled	Off	Off	Off	Off	Off	Off	Off	Off

Note: A total of 112 memory address settings are available. The switches are a binary representation of the decimal memory addresses. SW2/1 is the Most Significant Bit and switch SW2/7 is the Least Significant Bit. The switches have the following decimal values: SW2/1=8192, SW2/2=4096, SW2/3=2048, SW2/4=1024, SW2/5=512, SW2/6=256, SW2/7=128. Turn off the switches and add the values of the switches that are off obtain the correct starting memory address. (Off=1, On=0). SW2/8 does not affect the address, but enables or disabled extended memory. If SW2 is set to Disabled, SW3 should also be set to Disabled.

EXTENDED MEMORY ENDING ADDRESS								
Setting	**SW3/1**	**SW3/2**	**SW3/3**	**SW3/4**	**SW3/5**	**SW3/6**	**SW3/7**	**SW3/8**
1152KB	On	On	On	Off	On	On	On	Off
1280KB	On	On	On	Off	On	On	Off	Off
1408KB	On	On	On	Off	On	Off	On	Off
1536KB	On	On	On	Off	On	Off	Off	Off
1664KB	On	On	On	Off	Off	On	On	Off
15872KB	Off	Off	Off	Off	On	Off	Off	Off
16000KB	Off	Off	Off	Off	Off	On	On	Off
16128KB	Off	Off	Off	Off	Off	On	Off	Off
16256KB	Off	Off	Off	Off	Off	Off	On	Off
16384KB	Off	Off	Off	Off	Off	Off	Off	Off
Disabled	On	On	On	On	On	On	On	On

Note: A total of 112 memory address settings are available. The switches are a binary representation of the decimal memory addresses. SW3/1 is the Most Significant Bit and switch SW3/7 is the Least Significant Bit. The switches have the following decimal values: SW3/1=8192, SW3/2=4096, SW3/3=2048, SW3/4=1024, SW3/5=512, SW3/6=256, SW3/7=128. Turn off the switches and add the values of the switches that are off to 128KB obtain the correct starting memory address. (Off=1, On=0). SW3/8 does not affect the address, but enables or disabled extended memory. If SW3 is set to Disabled, SW2 should also be set to Disabled.

MISCELLANEOUS TECHNICAL NOTE

The board may be configured for any combination of conventional, expanded, and extended memory. When conventional memory is enabled, be sure to subtract 128KB from the remaining memory. When configured for both extended and expanded memory, the memory on the main board will act as the extended memory, and the memory on the daughter board will be the expanded memory.