M TECHNOLOGY, INC.
R542 MUSTANG-ULTRA (VER. 1)

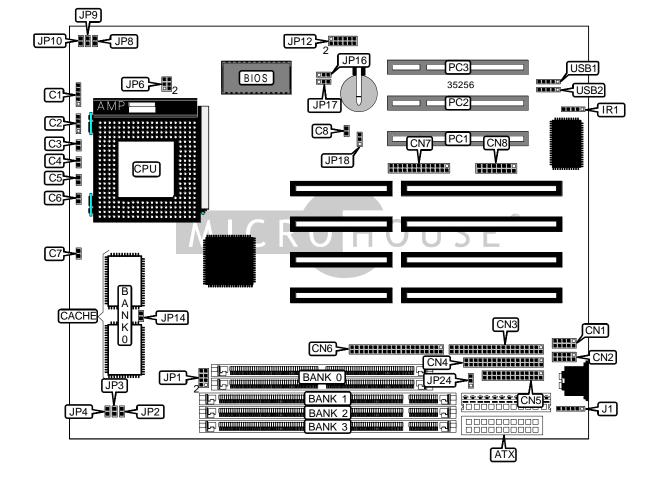|	
Device Type	Mainboard
Processor	CX 6X86/IBM 6X86/CX 6X86L/IBM 6X86L/CX 686MX/AM K5/ AM K6/Pentium/Pentium MMX
Processor Speed	90/100/120/133/150/166/180/200/233/266MHz
Chip Set	SIS
Video Chip Set	SIS
Maximum Onboard Memory	192MB (EDO & SDRAM supported) Unified Memory Architecture (UMA)
Cache	512KB
BIOS	Award
Dimensions	280mm x 220mm
I/O Options	32-bit PCI slots (3), floppy drive interface, IDE interfaces (2), parallel port, PS/2 mouse interface, serial ports (2), IR connector, USB connectors (2), ATX power connector, VGA interface, VGA feature connector
NPU Options	None

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CONNECTIONS			
Purpose	**Location**	**Purpose**	**Location**
ATX power connector	ATX	IDE interface 1	CN3
Power LED & keylock	C1	Floppy drive interface	CN4
Speaker	C2	Parallel port	CN5
Turbo switch	C3	IDE interface 2	CN6
Turbo LED	C4	VGA feature connector	CN7
Reset switch	C5	VGA interface	CN8
PWRBT connector	C6	IR connector	IR1
IDE interface LED	C7	PS/ mouse interface	J1
Soft off power supply	C8	32-bit PCI slots	PC1 – PC3
Serial port 2	CN1	USB connector 1	USB1
Serial port 1	CN2	USB connector 2	USB2

USER CONFIGURABLE SETTINGS		
Function	**Label**	**Position**
í Factory configured - do not alter	JP10	Unidentified
CPU mode select togger	JP14	Open
CPU mode select linear	JP14	Closed
í CMOS memory normal operation	JP18	Pins 1 & 2 closed
CMOS memory clear	JP18	Pins 2 & 3 closed
On board video enabled	JP24	Pins 2 & 3 closed
On board video disabled	JP24	Pins 1 & 2 closed

SIMM CONFIGURATION	
Size	**Bank 0**
8MB	(2) 1M x 36
16MB	(2) 2M x 36
32MB	(2) 4M x 36
64MB	(2) 8M x 36
Note: Board accepts EDO memory.	

DIMM CONFIGURATION			
Size	**Bank 1**	**Bank 2**	**Bank 3**
8MB	(1) 1M x 64	None	None
16MB	(1) 2M x 64	None	None
16MB	(1) 1M x 64	(1) 1M x 64	None
24MB	(1) 2M x 64	(1) 1M x 64	None
24MB	(1) 1M x 64	(1) 1M x 64	(1) 1M x 64
32MB	(1) 4M x 64	None	None

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DIMM CONFIGURATION (CON'T)			
Size	**Bank 0**	**Bank 1**	**Bank 2**
32MB	(1) 2M x 64	(1) 1M x 64	(1) 1M x 64
32MB	(1) 2M x 64	(1) 2M x 64	None
40MB	(1) 4M x 64	(1) 1M x 64	None
40MB	(1) 2M x 64	(1) 2M x 64	(1) 1M x 64
48MB	(1) 4M x 64	(1) 1M x 64	(1) 1M x 64
48MB	(1) 4M x 64	(1) 2M x 64	None
48MB	(1) 2M x 64	(1) 2M x 64	(1) 2M x 64
56MB	(1) 4M x 64	(1) 2M x 64	(1) 1M x 64
64MB	(1) 8M x 64	None	None
64MB	(1) 4M x 64	(1) 2M x 64	(1) 2M x 64
64MB	(1) 4M x 64	(1) 4M x 64	None
72MB	(1) 8M x 64	(1) 1M x 64	None
72MB	(1) 4M x 64	(1) 4M x 64	(1) 1M x 64
80MB	(1) 8M x 64	(1) 1M x 64	(1) 1M x 64
80MB	(1) 8M x 64	(1) 2M x 64	None
80MB	(1) 4M x 64	(1) 4M x 64	(1) 2M x 64
88MB	(1) 8M x 64	(1) 2M x 64	(1) 1M x 64
96MB	(1) 8M x 64	(1) 2M x 64	(1) 2M x 64
96MB	(1) 8M x 64	(1) 4M x 64	None
96MB	(1) 4M x 64	(1) 4M x 64	(1) 4M x 64
104MB	(1) 8M x 64	(1) 4M x 64	(1) 1M x 64
112MB	(1) 8M x 64	(1) 4M x 64	(1) 2M x 64
128MB	(1) 8M x 64	(1) 4M x 64	(1) 4M x 64
128MB	(1) 8M x 64	(1) 8M x 64	None
136MB	(1) 8M x 64	(1) 8M x 64	(1) 1M x 64
144MB	(1) 8M x 64	(1) 8M x 64	(1) 2M x 64
160MB	(1) 8M x 64	(1) 8M x 64	(1) 4M x 64
192MB	(1) 8M x 64	(1) 8M x 64	(1) 8M x 64
Note: Board accepts SDRAM memory. To use the on board VGA, bank 1 must be filled.			

DIMM VOLTAGE CONFIGURATION	
Voltage	**JP1**
3.3v	Pins 5 & 6, 7 & 8 closed
5v	Pins 1 & 2, 3 & 4 closed

CACHE CONFIGURATION	
Size	**Bank 0**
512KB	(2) 64K x 32

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CPU SPEED SELECTION (CX 6X86)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
133MHz	55MHz	2x	Closed	Closed	Open	Open	Closed
150MHz	60MHz	2x	Closed	Open	Open	Open	Closed
166MHz	66MHz	2x	Open	Open	Open	Open	Closed
200MHz	75MHz	2x	Open	Closed	Closed	Open	Closed

CPU SPEED SELECTION (IBM 6X86)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
133MHz	55MHz	2x	Closed	Closed	Open	Open	Closed
150MHz	60MHz	2x	Closed	Open	Open	Open	Closed
166MHz	66MHz	2x	Open	Open	Open	Open	Closed
200MHz	75MHz	2x	Open	Closed	Closed	Open	Closed

CPU SPEED SELECTION (CX 6X86L)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
133MHz	55MHz	2x	Closed	Closed	Open	Open	Closed
150MHz	60MHz	2x	Closed	Open	Open	Open	Closed
166MHz	66MHz	2x	Open	Open	Open	Open	Closed
200MHz	75MHz	2x	Open	Closed	Closed	Open	Closed

CPU SPEED SELECTION (IBM 6X86L)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
133MHz	55MHz	2x	Closed	Closed	Open	Open	Closed
150MHz	60MHz	2x	Closed	Open	Open	Open	Closed
166MHz	66MHz	2x	Open	Open	Open	Open	Closed
200MHz	75MHz	2x	Open	Closed	Closed	Open	Closed

CPU SPEED SELECTION (CX 6X86MX)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
166MHz	60MHz	2.5x	Closed	Open	Open	Closed	Closed
200MHz	66MHz	2.5x	Open	Open	Open	Closed	Closed
233MHz	66MHz	3x	Open	Open	Open	Closed	Open
233MHz	75MHz	2.5x	Open	Closed	Closed	Closed	Closed
266MHz	66MHz	3.5x	Open	Open	Open	Open	Open
266MHz	75MHz	3x	Open	Closed	Closed	Closed	Open

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CPU SPEED SELECTION (AM K5)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
90MHz	60MHz	1.5x	Closed	Open	Open	Open	Open
100MHz	66MHz	1.5x	Open	Open	Open	Open	Open
166MHz	66MHz	2.5x	Open	Open	Open	Closed	Closed

CPU SPEED SELECTION (AM K6)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
166MHz	66MHz	2.5x	Open	Open	Open	Closed	Closed
200MHz	66MHz	3x	Open	Open	Open	Closed	Open
233MHz	66MHz	3.5x	Open	Open	Open	Open	Open

CPU SPEED SELECTION (INTEL)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
90MHz	60MHz	1.5x	Closed	Open	Open	Open	Open
100MHz	66MHz	1.5x	Open	Open	Open	Open	Open
120MHz	60MHz	2x	Closed	Open	Open	Open	Closed
133MHz	66MHz	2x	Open	Open	Open	Open	Closed
150MHz	60MHz	2.5x	Closed	Open	Open	Closed	Closed
166MHz	66MHz	2.5x	Open	Open	Open	Closed	Closed
180MHz	60MHz	3x	Closed	Open	Open	Closed	Open
200MHz	66MHz	3x	Open	Open	Open	Closed	Open

CPU SPEED SELECTION (INTEL MMX)							
CPU speed	**Clock speed**	**Multiplier**	**JP2**	**JP3**	**JP4**	**JP8**	**JP9**
166MHz	66MHz	2.5x	Open	Open	Open	Closed	Closed
200MHz	66MHz	3x	Open	Open	Open	Closed	Open
233MHz	66MHz	3.5x	Open	Open	Open	Open	Open

CPU VOLTAGE SELECTION (SINGLE)		
Voltage	**JP6**	**JP12**
3.4v	Pins 1 & 2, 3 & 4, 5 & 6 closed	Pins 3 & 4 closed
3.5v	Pins 1 & 2, 3 & 4, 5 & 6 closed	Pins 1 & 2 closed

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CPU VOLTAGE SELECTION (DUAL)			
Voltage	**V core**	**JP6**	**JP12**
3.4v	2.5v	Open	Pins 11 & 12 closed
3.4v	2.8v	Open	Pins 9 & 10 closed
3.4v	2.9v	Open	Pins 7 & 8 closed
3.4v	3.2v	Open	Pins 5 & 6 closed

BIOS SELECTION		
Type	**JP16**	**JP17**
1M/5v	Pins 1 & 2 closed	Pins 2 & 3 closed
1M/12v	Pins 2 & 3 closed	Pins 2 & 3 closed