EMAC, INC.

SBC-598

Device Type	Single Board Computer
Processor	CX 6X86L/CX 6X86MX/AM K6/Pentium/Pentium MMX
Processor Speed	100/133/166/200/233MHz
Chip Set	SIS
Video Chip Set	SIS
Maximum Onboard Memory	256MB (EDO & SDRAM supported)
Maximum Video Memory	4MB
Cache	512KB
BIOS	Award
Dimensions	338mm x 122mm
I/O Options	AT keyboard interface, Digital I/O connector, Floppy drive interface, IDE interfaces (2), IR connector, Parallel interface, Power connector, PS/2 keyboard port/mouse port, Serial interface, Serial port, Solid-state flash disk socket, USB interface, VGA port
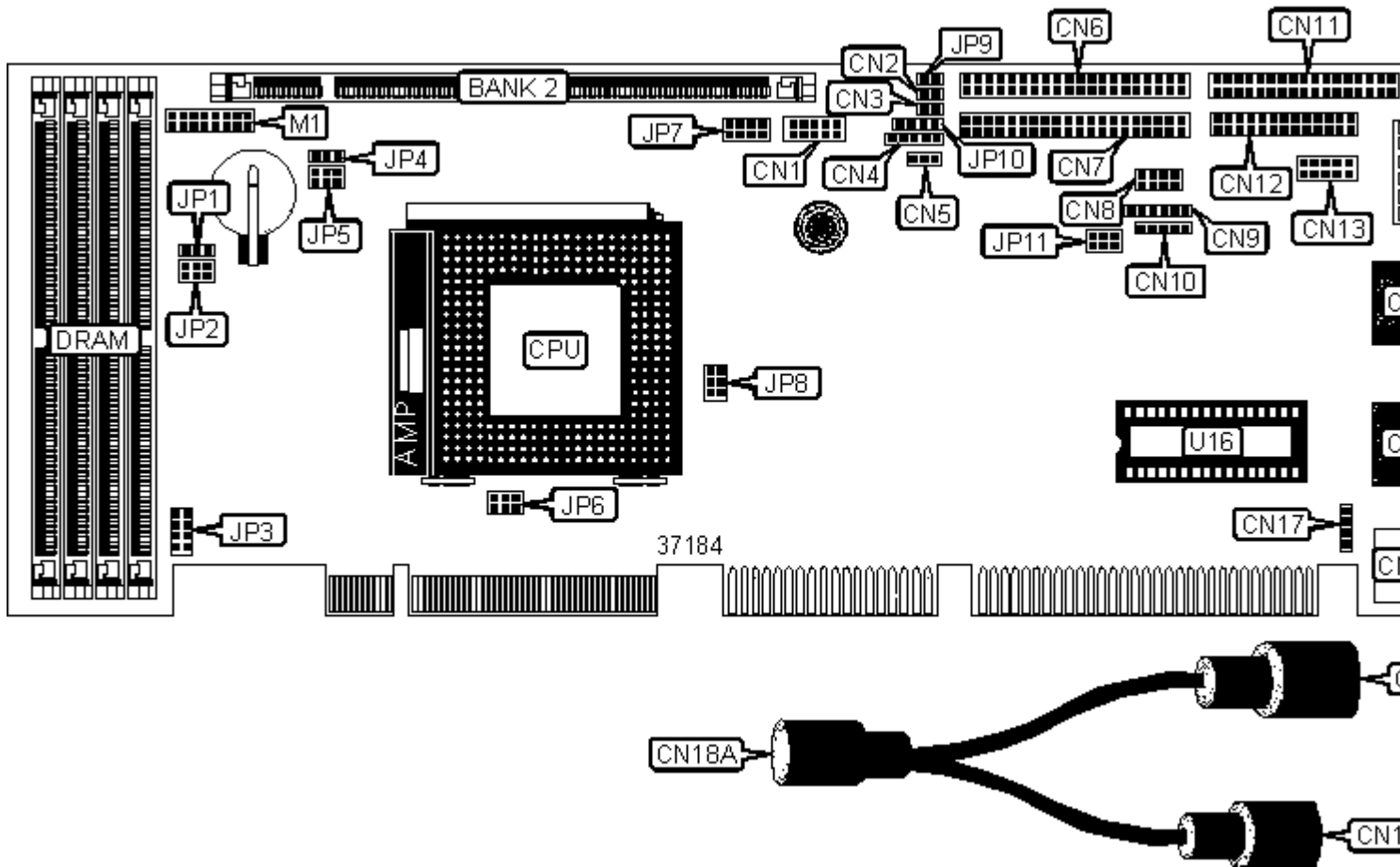
CONNECTIONS			
Purpose	**Location**	**Purpose**	**Location**
USB interface	CN1	Serial interface	CN13
IDE interface LED	CN2	Power connector	CN14
System monitor LED	CN3	Serial port	CN15

Power LED & keylock	CN4	VGA port	CN16
CPU fan power	CN5	Keyboard interface	CN17
IDE interface 1	CN6	PS/2 keyboard/mouse port	CN18
IDE interface 2	CN7	PS/2 mouse/AT keyboard port adapter connector	CN18A
Digital I/O connector	CN8	AT keyboard connector	CN18B
Reserved	CN9	PS/2 mouse connector	CN18C
IR connector (reserved)	CN10	Reset switch	JP9
Floppy drive interface	CN11	Solid-state flash disk (DOC) socket	U16
Parallel interface	CN12		

USER CONFIGURABLE SETTINGS		
Function	**Label**	**Position**
» CMOS memory normal operation	JP1	Pins 1 & 2 closed
CMOS memory clear	JP1	Pins 2 & 3 closed
» Onboard video enabled	JP2	Pins 1 & 3, 2 & 4 closed
Onboard video disabled	JP2	Pins 3 & 5, 4 & 6 closed
» SIMM voltage select 5V	JP3	Pins 1 & 2, 3 & 4 closed
SIMM voltage select 3.3V	JP3	Pins 5 & 6, 7 & 8 closed
» PCI bus clock select asynchronous mode (33MHz)	JP4	Pins 1 & 2 closed
PCI bus clock select synchronous mode (25/30/33MHz)	JP4	Pins 2 & 3 closed
» Internal buzzer selected	JP10	Pins 2 & 3 closed
External speaker connector selected	JP10	Open

Note: Synchronous PCI clock is equal to half of the CPU external clock. Asynchronous PCI clock is fixed at 33MHz.
Note: Pin 1 locations of JP1, JP2, JP3, JP4 & JP10 are unidentified.

SIMM CONFIGURATION		
Size	**Bank 0**	**Bank 1**
2MB	(2) 256K x 36	None
4MB	(2) 512K x 36	None

Size		
4MB	(2) 256K x 36	(2) 256K x 36
8MB	(2) 1M x 36	None
8MB	(2) 512K x 36	(2) 512K x 36
16MB	(2) 2M x 36	None
16MB	(2) 1M x 36	(2) 1M x 36
24MB	(2) 2M x 36	(2) 1M x 36
32MB	(2) 4M x 36	None
32MB	(2) 2M x 36	(2) 2M x 36
40MB	(2) 4M x 36	(2) 1M x 36
48MB	(2) 4M x 36	(2) 2M x 36
64MB	(2) 8M x 36	None
64MB	(2) 4M x 36	(2) 4M x 36
72MB	(2) 8M x 36	(2) 1M x 36
80MB	(2) 8M x 36	(2) 2M x 36
96MB	(2) 8M x 36	(2) 4M x 36
128MB	(2) 8M x 36	(2) 8M x 36
128MB	(2) 16M x 36	None
136MB	(2) 16M x 36	(2) 1M x 36
144MB	(2) 16M x 36	(2) 2M x 36
160MB	(2) 16M x 36	(2) 4M x 36
192MB	(2) 16M x 36	(2) 8M x 36
256MB	(2) 16M x 36	(2) 16M x 36

Note: Do not mix SIMM & DIMM memory. Locations of Bank 0 & Bank 1 are unidentified.

DIMM CONFIGURATION	
Size	Bank 2
8MB	(1) 1M x 64
16MB	(1) 2M x 64
32MB	(1) 4M x 64

64MB	(1) 8M x 64
Note: Do not mix SIMM & DIMM memory.	

MEMORY BANK SELECTION	
Setting	**M1**
» SIMMs used	Pins 1 & 2, 3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12, 13 & 14, 15 & 16 closed
DIMM used	Pins 1 & 3, 2 & 4, 5 & 7, 6 & 8, 9 & 11, 10 & 12, 13 & 15, 14 & 16 closed
Note: Pin 1 location of M1 is unidentified.	

CPU SPEED SELECTION (CX 6X86MX)				
CPU speed	**Clock speed**	**Multiplier**	**JP5**	**JP6**
166MHz	66MHz	2.0x	1 & 2, 5 & 6	1 & 2
200MHz	66MHz	2.5x	1 & 2, 5 & 6	1 & 2, 3 & 4
233MHz	66MHz	3.0x	1 & 2, 5 & 6	3 & 4
266MHz	66MHz	3.5x	1 & 2, 5 & 6	Open
Note: Pins designated should be in the closed position.				

CPU SPEED SELECTION (AM K6)				
CPU speed	**Clock speed**	**Multiplier**	**JP5**	**JP6**
166MHz	66MHz	2.5x	1 & 2, 5 & 6	1 & 2, 3 & 4
200MHz	66MHz	3.0x	1 & 2, 5 & 6	3 & 4
233MHz	66MHz	3.5x	1 & 2, 5 & 6	Open
Note: Pins designated should be in the closed position.				

CPU SPEED SELECTION (PENTIUM)				
CPU speed	**Clock speed**	**Multiplier**	**JP5**	**JP6**
166MHz	66MHz	2.5x	1 & 2, 5 & 6	1 & 2, 3 & 4
200MHz	66MHz	3x	1 & 2, 5 & 6	3 & 4
Note: Pins designated should be in the closed position.				

CPU SPEED SELECTION (PENTIUM MMX)

CPU speed	Clock speed	Multiplier	JP5	JP6
166MHz	66MHz	2.5x	1 & 2, 5 & 6	1 & 2, 3 & 4
200MHz	66MHz	3.0x	1 & 2, 5 & 6	3 & 4
233MHz	66MHz	3.5x	1 & 2, 5 & 6	Open

Note: Pins designated should be in the closed position.

CPU VOLTAGE SELECTION (DUAL)

	Voltage	JP7/Pins 1 & 2	JP7/Pins 3 & 4	JP7/Pins 5 & 6	JP7/Pins 7 & 8	JP8
	2.0V	Open	Open	Open	Open	1 & 3, 2 & 4
	2.1V	Open	Open	Open	Closed	1 & 3, 2 & 4
	2.2V	Open	Open	Closed	Open	1 & 3, 2 & 4
	2.3V	Open	Open	Closed	Closed	1 & 3, 2 & 4
	2.4V	Open	Closed	Open	Open	1 & 3, 2 & 4
	2.5V	Open	Closed	Open	Closed	1 & 3, 2 & 4
	2.6V	Open	Closed	Closed	Open	1 & 3, 2 & 4
	2.7V	Open	Closed	Closed	Closed	1 & 3, 2 & 4
»	2.8V	Closed	Open	Open	Open	1 & 3, 2 & 4
	2.9V	Closed	Open	Open	Closed	1 & 3, 2 & 4
	3.0V	Closed	Open	Closed	Open	1 & 3, 2 & 4
	3.1V	Closed	Open	Closed	Closed	1 & 3, 2 & 4
	3.2V	Closed	Closed	Open	Open	1 & 3, 2 & 4
	3.4V	Closed	Closed	Closed	Open	1 & 3, 2 & 4

Note: Pin 1 locations of JP7 & JP8 are unidentified. Pins designated should be in the closed position.

CPU VOLTAGE SELECTION (SINGLE)

Voltage	JP7/Pins 1 & 2	JP7/Pins 3 & 4	JP7/Pins 5 & 6	JP7/Pins 7 & 8	JP8
3.3V	Closed	Closed	Open	Closed	3 & 5, 4 & 6

3.5V	Closed	Closed	Closed	Closed	3 & 5, 4 & 6

Note: Pin 1 locations of JP7 & JP8 are unidentified. Pins designated should be in the closed position.

SOLID-STATE FLASH DISK (DOC) ADDRESS SELECTION				
Address		**JP11/Pins 1 & 2**	**JP11/Pins 3 & 4**	**JP11/Pins 5 & 6**
	Disable	Closed	Closed	Closed
	C800h	Closed	Closed	Open
	CC00h	Closed	Open	Closed
	D000h	Closed	Open	Open
	D400h	Open	Closed	Closed
»	D800h	Open	Closed	Open
	DC00h	Open	Open	Closed
	E000h	Open	Open	Open

Note: Pin 1 location of JP11 is unidentified.

MISCELLANEOUS TECHNICAL NOTES

Solid-state flash disk socket supports (DOC 2000 & 1000 series) devices from 2MB to 72MB.