

VIPer801

**386SX / 486SLC SINGLE BOARD COMPUTER
TECHNICAL REFERENCE MANUAL
VERSION 2.1, JUNE 1997**

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NOTE:

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ref: M801S_2-1

SECTION 3

SETTING JUMPERS

This Section describes how to configure hardware options by setting jumper switches on the VIPer board.

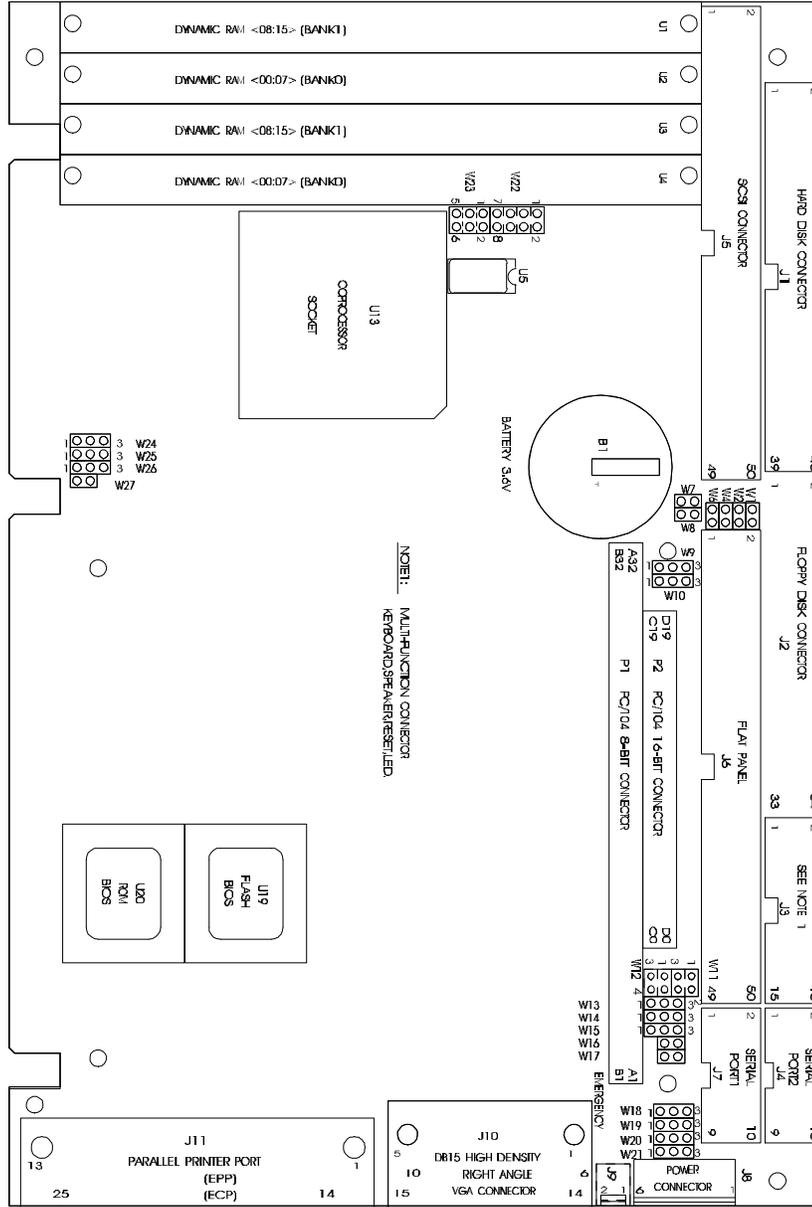
3.01 TERMINOLOGY

Jumper switches are small pins that you can set by using jumper caps. Two pins can be joined by a jumper cap, thereby closing or shorting a circuit. So you **short** (or close) a jumper by placing a plastic jumper cap over two pins of the jumper switch, and you **open** a jumper switch by removing a jumper cap.

3.02 JUMPER LOCATIONS ON THE BOARD

Diagram 3-1 on the next page shows 26 jumpers labeled from W1 to W27 and J9 (W3 and W5 do not exist). These appear as rectangular boxes containing small circles which represent the pins. The jumpers are labeled on the board as well. When there are more than two pins in a jumper, then some of the pins are also numbered on the diagram and on the board, so that it will be possible to locate each pin with its number.

DIAGRAM 3-1: VPer801 Jumper Locations



3.03 JUMPER SETTINGS

TABLE 3-1a to 3-1c on the following pages 3-4 to 3-6 show the jumper settings for W1 to W27 and J9.

TABLE 3-1a: Jumper Settings: W1 - W12

NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)	
W1	Watchdog Timer	 Enabled *	 Disabled
W2	Flash Disk Write	 Enabled *	 Disabled
W4	Flash BIOS Write	 Enabled *	 Disabled
W6	IOCHRDY Signal to IDE Interface	 Enabled	 Disabled *
W7	Power Fail Monitoring (Non Maskable Interrupt on Power Fail Output)	 Enabled	 Disabled *
W8	SCSI I/O: Base Address	 140H	 340H *
W9	Battery Selection	 Internal battery *	 External battery
W10	Power Fail Detection Source (Enabled with W7)	 External Power Fail Input to Pin 6 of J8 *	 Internal/external battery when less than 3 volts
W11 & W12	2.88 MB High Density Floppy, EDOUT Signal 2.88 MB High Density Floppy, HDOUT Signal	EDOUT left to software* HDOUT left to software* 	OR: 1-3: EDOUT to Pin 29 (J2); 2-4: Ground to Pin 17 (J2) OR: 1-2: EDOUT to Pin 17 (J2); 3-4: Ground to Pin 29 (J2) OR: 1-2: HDOUT to Pin 27 (J2); 3-4: Ground to Pin 33 (J2)  

TABLE 3-1b: Jumper Settings: W13 - W21

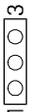
NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)		
W13 &	DMA Request Signal for SCSI Controller	 DRQ0	OR:  DRQ5	OR:  NONE *
W14	DMA Acknowledge Signal for SCSI Controller	 DACK0	 DACK5	 NONE *
W15	SCSI IRQ Channel	 IRQ10	 IRQ11 *	 No Interrupt Used (Free up 10 & 11)
W16	RTS2-CTS2 Serial Port 2 RS-485/RS-422 Loopback	 Loopback	 Normal *	
W17	DSR2-DTR2 Serial Port 2 RS-485/RS-422 Loopback	 Loopback	 Normal *	
W18	Serial Port 2 Configuration	 RS-232 *	 RS-485/RS-422	
W19	Serial Port 2 Configuration	 RS-232 *	 RS-485/RS-422	
W20	Serial Port 2 Configuration	 RS-232 *	 RS-485/RS-422	
W21	Serial Port 2 Configuration	 RS-232 *	 RS-485/RS-422	

TABLE 3-1c: Jumper Settings: W22 - J9

NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)
W22	Extended BIOS Modes (These jumpers are configured separately, even though they are grouped together here)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1-2: Disable onboard VGA Controller 3-4: Not used 5-6: VT100 Mode 7-8: Serial Download Mode</p> </div> <div style="text-align: center;"> <p>1-2: Enable onboard VGA Controller * 3-4: Not used 5-6: Standard Mode * 7-8: Normal Mode *</p> </div> </div>
W23	1-4: Supervisor I/O: Base Address 5-6: Not Used	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1-2: 190H * 3-4: 290H</p> </div> <div style="text-align: center;"> <p>1-2: 390H 3-4: 390H</p> </div> </div>
W24 & W26	DMA Acknowledge Signal for ECP Mode DMA Request Signal for ECP Mode	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>DACK1 DRQ1</p> </div> <div style="text-align: center;"> <p>OR: DACK3 DRQ3</p> </div> <div style="text-align: center;"> <p>OR: NONE * NONE *</p> </div> </div>
W25	Interrupt Signal from Onboard Parallel Port	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>IRQ5 (Normally used for LPT2)</p> </div> <div style="text-align: center;"> <p>IRQ7 (Normally used for LPT1) *</p> </div> <div style="text-align: center;"> <p>NONE: IRQ5 & IRQ7 are free</p> </div> </div>
W27	System Clock (SYSCLK)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>8 MHz Standard; Asynchronous *</p> </div> <div style="text-align: center;"> <p>Frequency programmable in AMI BIOS Setup (Section 10); Synchronous</p> </div> </div>
J9	BIOS Boot Selection	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Emergency boot (from ROM BIOS)</p> </div> <div style="text-align: center;"> <p>Normal boot (from Flash BIOS) *</p> </div> </div>

**APPENDIX D
CONNECTOR PINOUTS**

Hard Disk Connector (J1) - Pinout

Pin Number	Signal Flow	Signal	Pin Number	Signal Flow	Signal
1	I	RESET*	2	-	GND
3	I/O	SD7	4	I/O	SD8
5	I/O	SD6	6	I/O	SD9
7	I/O	SD5	8	I/O	SD10
9	I/O	SD4	10	I/O	SD11
11	I/O	SD3	12	I/O	SD12
13	I/O	SD2	14	I/O	SD13
15	I/O	SD1	16	I/O	SD14
17	I/O	SD0	18	I/O	SD15
19	-	GND	20	-	Not Used
21	-	Not Used	22	-	GND
23	I	IOW*	24	-	GND
25	I	IOR*	26	-	GND
27	O	IOCHRDY	28	I	BALE
29	-	Not Used	30	-	GND
31	O	IRQ14	32	O	IOCS16*
33	I	SA1	34	-	Not Used
35	I	SA0	36	I	SA2
37	I	CS0*	38	I	CS1*
39	O	ACTIVE*	40	-	GND

* Active low signal

Floppy Disk Connector (J2) - Pinout

Pin Number	Signal Flow	Signal	Pin Number	Signal Flow	Signal
1	-	GND	2	O	RPM/LC
3	-	GND	4	-	Not Used
5	-	GND	6	-	Not Used
7	-	GND	8	I	INDEX*
9	-	GND	10	O	MOTOR ON 0,1*
11	-	GND	12	O	DRIVE SELECT B*
13	-	GND	14	O	DRIVE SELECT A*
15	-	GND	16	O	MOTOR ON 2*
17	-	N. C. ¹	18	O	DIR CONTROL
19	-	GND	20	O	STEP*
21	-	GND	22	O	WRITE DATA*
23	-	GND	24	O	WRITE ENABLE*
25	-	GND	26	I	TRACK0*
27	-	N. C. ¹	28	I	WRITE PROTECT*
29	-	N. C. ¹	30	I	READ DATA*
31	-	GND	32	O	HEAD SELECT*
33	-	N. C. ¹	34	I	DSKCHG*

* Active low signal

¹ By default, these pins are not connected, however, by installing the W11 and W12 jumpers, these configurations are possible (see also page 6-8 in the manual):

- | | |
|--------------------|---------------------------|
| 1) 17 GND | Or: 2) 17 EDOUT (2.88 MB) |
| 27 GND | 27 HDOUT (2.88 MB) |
| 29 EDOUT (2.88 MB) | 29 GND |
| 33 HDOUT (2.88 MB) | 33 GND |

Keyboard Connector (J3) - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
KBDCLK	I/O	1	2	-	GND
KBDDATA	I/O	3	4	-	GND
VCC	-	5	6	-	VCC
SPKR	O	7	8	-	VCC
KBDINH	I	9	10	-	GND
DOWNLD*	I	11	12	-	GND
PBRES*	I	13	14	-	GND
ACT*	O	15	16	-	VCC

* Active low signal

Serial Port 2 (J4) RS-232 - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
DCD	I	1	2	I	DSR
RX	I	3	4	O	RTS
TX	O	5	6	I	CTS
DTR	O	7	8	I	RI
GND	-	9			

Serial Port 2 (J4) RS-485/RS-422 - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
DCD	I	1	2	I	DSR
RXD(-)	I/O	3	4	I/O	RXD(+)
TXD(-)	O	5	6	I	TXD(+)
DTR	O	7	8	I	RI
GND	-	9			

SCSI Connector (J5) - Pinout

Pin Number	Signal	Pin Number	Signal
1	GND	2	SCSI D0
3	GND	4	SCSI D1
5	GND	6	SCSI D2
7	GND	8	SCSI D3
9	GND	10	SCSI D4
11	GND	12	SCSI D5
13	GND	14	SCSI D6
15	GND	16	SCSI D7
17	GND	18	SCSI DP*
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	Term Power	26	Term Power
27	GND	28	GND
29	GND	30	GND
31	GND	32	ATN*
33	GND	34	GND
35	GND	36	BSY*
37	GND	38	ACK*
39	GND	40	RESET*
41	GND	42	MSG*
43	GND	44	SEL*
45	GND	46	C/D*
47	GND	48	REQ*
49	GND	50	I/O*

* Active low signal

Flat Panel Connector (J6) - Pinout

Pin Number	Signal	Pin Number	Signal
1	FLM	2	LP/BLANK (DE)
3	VCC (+5 V)	4	SHFCLK
5	VCC (+5 V)	6	M/ACDCLK (DE)*
7	VCC (+5 V)	8	P3
9	GND	10	P2
11	GND	12	P1
13	GND	14	P0
15	GND	16	P7
17	GND	18	P6
19	GND	20	P5
21	GND	22	P4
23	NOT USED	24	ENVDD*
25	ENVEE/ENBKL*	26	M/ACDCLK (DE)*
27	STNDBY*	28	P11
29	GND	30	P10
31	GND	32	P9
33	GND	34	P8
35	GND	36	P15
37	GND	38	P14
39	GND	40	P13
41	GND	42	P12
43	GND	44	P8
45	GND	46	Not Used
47	GND	48	P16(ACTI)
49	GND	50	P17(ENBKL)

* Active low signal

Serial Port 1 (J7) RS-232 - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
DCD	I	1	2	I	DSR
RX	I	3	4	O	RTS
TX	O	5	6	I	CTS
DTR	O	7	8	I	RI
GND	-	9			

Power Connector (J8) - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
VCC	-	1	2	-	GND
GND	-	3	4	-	+12V
-12V	-	5	6	-	PD (Power Fail Detection Input)or External Battery Source

VGA Connector (J10) - Pinout

Pin Number			Pin Number	
Signal				Signal
RED	1		2	GREEN
BLUE	3		4	Not Used
GND	5		6	GND
GND	7		8	GND
Not Used	9		10	GND
Not Used	11		12	Not Used
HSYNC	13		14	VSYNC
Not Used	15			

Parallel Port Connector (J11) - Standard Mode - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
STROBE*	O	1	2	I/O	D0
D1	I/O	3	4	I/O	D2
D3	I/O	5	6	I/O	D4
D5	I/O	7	8	I/O	D6
D7	I/O	9	10	I	ACK*
BUSY	I	11	12	I	PE
SELECT	I	13	14	O	AUTOFD*
ERROR*	I	15	16	O	INIT*
SELECTIN*	O	17	18	-	GND
GND	-	19	20	-	GND
GND	-	21	22	-	GND
GND	-	23	24	-	GND
GND	-	25			

* Active low signal

Parallel Port Connector (J11) - EPP Mode - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
WRITE*	O	1	2	I/O	D0
D1	I/O	3	4	I/O	D2
D3	I/O	5	6	I/O	D4
D5	I/O	7	8	I/O	D6
D7	I/O	9	10	I	INTR
WAIT*	I	11	12	I	Not Used
Not Used	I	13	14	O	DATASTB*
Not Used	I	15	16	O	Not Used
ADDRSTRB*	O	17	18	-	GND
GND	-	19	20	-	GND
GND	-	21	22	-	GND
GND	-	23	24	-	GND
GND	-	25			

* Active low signal

Parallel Port Connector (J11) - ECP Mode - Pinout

Pin Number			Pin Number		
Signal Flow			Signal Flow		
Signal			Signal		
STROBE*	O	1	2	I/O	D0
D1	I/O	3	4	I/O	D2
D3	I/O	5	6	I/O	D4
D5	I/O	7	8	I/O	D6
D7	I/O	9	10	I	ACK*
BUSY, PERIPHACK ³	I	11	12	I	PERROR, ACKREVERSE* ³
SELECT	I	13	14	O	AUTOFD*, HOSTACK ³
FAULT* ¹ , PERIPHRQST* ³	I	15	16	O	INIT* ¹ , REVERSERQST* ³
SELECTIN* ^{1,3}	O	17	18	-	GND
GND	-	19	20	-	GND
GND	-	21	22	-	GND
GND	-	23	24	-	GND
GND	-	25			

- * Active low signal
- ¹ Compatible Mode
- ³ High Speed Mode

PC/104 Card Connector (P1)

A Side

B Side

P1 Pin	I/O Pin	Signal Name	I/O	P1 Pin	I/O Pin	Signal Name	I/O
2	A1	IOCHK*	I	1	B1	GND	-
4	A2	SD7	I/O	3	B2	RESET DRV	O
6	A3	SD6	I/O	5	B3	VCC	-
8	A4	SD5	I/O	7	B4	IRQ9	I
10	A5	SD4	I/O	9	B5	-5 Vdc	-
12	A6	SD3	I/O	11	B6	DRQ2	I
14	A7	SD2	I/O	13	B7	-12 Vdc	-
16	A8	SD1	I/O	15	B8	OWS*	I
18	A9	SD0	I/O	17	B9	+12 Vdc	-
20	A10	IOCHRDY	I	19	B10	NOT USED	-
22	A11	AEN	O	21	B11	SMEMW*	O
24	A12	SA19	I/O	23	B12	SMEMR*	O
26	A13	SA18	I/O	25	B13	IOW*	I/O
28	A14	SA17	I/O	27	B14	IOR*	I/O
30	A15	SA16	I/O	29	B15	DACK3*	O
32	A16	SA15	I/O	31	B16	DRQ3	I
34	A17	SA14	I/O	33	B17	DACK1*	O
36	A18	SA13	I/O	35	B18	DRQ1	I
38	A19	SA12	I/O	37	B19	REFRESH*	I/O
40	A20	SA11	I/O	39	B20	SYSCLK	O
42	A21	SA10	I/O	41	B21	IRQ7	I
44	A22	SA9	I/O	43	B22	IRQ6	I
46	A23	SA8	I/O	45	B23	IRQ5	I
48	A24	SA7	I/O	47	B24	IRQ4	I
50	A25	SA6	I/O	49	B25	IRQ3	I
52	A26	SA5	I/O	51	B26	DACK2*	O
54	A27	SA4	I/O	53	B27	T/C	O
56	A28	SA3	I/O	55	B28	BALE	O
58	A29	SA2	I/O	57	B29	VCC	-
60	A30	SA1	I/O	59	B30	OSC	O
62	A31	SA0	I/O	61	B31	GND	-
64	A32	GND	-	63	B32	GND	-

* Active low signal

PC/104 Card Connector (P2)

C Side

P2 Pin	I/O Pin	Signal Name	I/O
1	C0	GND	-
3	C1	SBHE*	I/O
5	C2	LA23	I/O
7	C3	LA22	I/O
9	C4	LA21	I/O
11	C5	LA20	I/O
13	C6	LA19	I/O
15	C7	LA18	I/O
17	C8	LA17	I/O
19	C9	MEMR*	I/O
21	C10	MEMW*	I/O
23	C11	SD08	I/O
25	C12	SD09	I/O
27	C13	SD10	I/O
29	C14	SD11	I/O
31	C15	SD12	I/O
33	C16	SD13	I/O
35	C17	SD14	I/O
37	C18	SD15	I/O
39	C19	NOT USED	-

D Side

P2 Pin	I/O Pin	Signal Name	I/O
2	D0	GND	-
4	D1	MEMCS16*	I
6	D2	IOCS16*	I
8	D3	IRQ10	I
10	D4	IRQ11	I
12	D5	IRQ12	I
14	D6	IRQ15	I
16	D7	IRQ14	I
18	D8	DACK0*	O
20	D9	DRQ0	I
22	D10	DACK5*	O
24	D11	DRQ5	I
26	D12	DACK6*	O
28	D13	DRQ6	I
30	D14	DACK7*	O
32	D15	DRQ7	I
34	D16	VCC	-
36	D17	MASTER*	I
38	D18	GND	-
40	D19	GND	-

* Active low signal

PC Bus Connector

A Side

I/O Pin	Signal Name	I/O
A1	IOCHK*	I
A2	SD7	I/O
A3	SD6	I/O
A4	SD5	I/O
A5	SD4	I/O
A6	SD3	I/O
A7	SD2	I/O
A8	SD1	I/O
A9	SD0	I/O
A10	IOCHRDY	I
A11	AEN	O
A12	SA19	I/O
A13	SA18	I/O
A14	SA17	I/O
A15	SA16	I/O
A16	SA15	I/O
A17	SA14	I/O
A18	SA13	I/O
A19	SA12	I/O
A20	SA11	I/O
A21	SA10	I/O
A22	SA9	I/O
A23	SA8	I/O
A24	SA7	I/O
A25	SA6	I/O
A26	SA5	I/O
A27	SA4	I/O
A28	SA3	I/O
A29	SA2	I/O
A30	SA1	I/O
A31	SA0	I/O

B Side

I/O Pin	Signal Name	I/O
B1	GND	-
B2	RESET DRV	O
B3	VCC	-
B4	IRQ9	I
B5	-5 Vdc	-
B6	DRQ2	I
B7	-12 Vdc	-
B8	OVS*	I
B9	+12 Vdc	-
B10	GND	-
B11	SMEMW*	O
B12	SMEMR*	O
B13	IOW*	I/O
B14	IOR*	I/O
B15	DACK3*	O
B16	DRQ3	I
B17	DACK1*	O
B18	DRQ1	I
B19	REFRESH*	I/O
B20	SYSCLK	O
B21	IRQ7	I
B22	IRQ6	I
B23	IRQ5	I
B24	IRQ4	I
B25	IRQ3	I
B26	DACK2*	O
B27	T/C	O
B28	BALE	O
B29	VCC	-
B30	OSC	O
B31	GND	-

* Active low signal

PC Bus Connector

C Side

I/O Pin	Signal Name	I/O
C1	SBHE*	I/O
C2	LA23	I/O
C3	LA22	I/O
C4	LA21	I/O
C5	LA20	I/O
C6	LA19	I/O
C7	LA18	I/O
C8	LA17	I/O
C9	MEMR*	I/O
C10	MEMW*	I/O
C11	SD08	I/O
C12	SD09	I/O
C13	SD10	I/O
C14	SD11	I/O
C15	SD12	I/O
C16	SD13	I/O
C17	SD14	I/O
C18	SD15	I/O

D Side

I/O Pin	Signal Name	I/O
D1	MEMCS16*	I
D2	IOCS16*	I
D3	IRQ10	I
D4	IRQ11	I
D5	IRQ12	I
D6	IRQ15	I
D7	IRQ14	I
D8	DACK0*	O
D9	DRQ0	I
D10	DACK5*	O
D11	DRQ5	I
D12	DACK6*	O
D13	DRQ6	I
D14	DACK7*	O
D15	DRQ7	I
D16	VCC	-
D17	MASTER*	I
D18	GND	-

* Active low signal