TEK930

PCI-ISA SINGLE BOARD COMPUTER
486DX/DX2/DX4 MICROPROCESSOR
TECHNICAL REFERENCE MANUAL
VERSION 1.4, JULY 1996

TEKNOR INDUSTRIAL COMPUTERS INC.
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Boisbriand, Quebec
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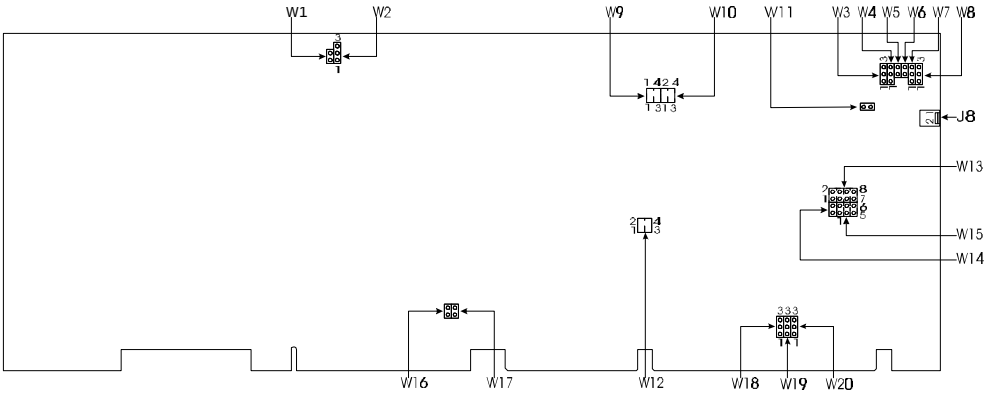
ref: M930S_1-4

2 JUMPER LOCATIONS & CONFIGURATION

2.01 JUMPER LOCATIONS ON THE BOARD

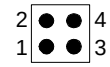
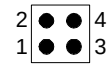
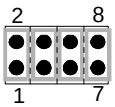
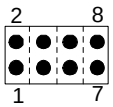
Diagram 2-1 shows 21 jumpers labeled from W1 to W20 and J8. These appear as rectangular boxes containing small circles which represent the pins. The jumpers are labeled on the board as well. When there are more than two pins in a jumper, then some of the pins are also numbered on the diagram and on the board, so that it will be possible to locate each pin with its number.

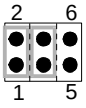
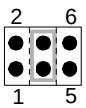
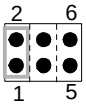
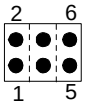
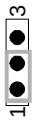
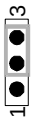
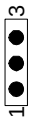
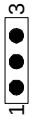
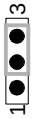
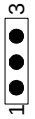


2.02 JUMPER SETTINGS

Table 2-1a to 2-1c on the following pages show the jumper settings for W1 to W20 and J8.

NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)
W1	CPU Power	5 V (DX, DX2) 3.3 V (DX4)
W2	Multiplier for DX4 Internal CPU Clock Speed	2.5X 2X 3X *
W3	Serial Port 2 Configuration	RS232 * RS422/RS485
W4	Serial Port 2 Configuration	RS232 * RS422/RS485
W7	Serial Port 2 Configuration	RS232 * RS422/RS485
W8	Serial Port 2 Configuration	RS232 * RS422/RS485
W5	RTS2-CTS2 Serial Port 2 RS422/RS485 Loopback	Loopback Normal *
W6	DSR2-DTR2 Serial Port 2 RS422/RS485 Loopback	Loopback Normal *

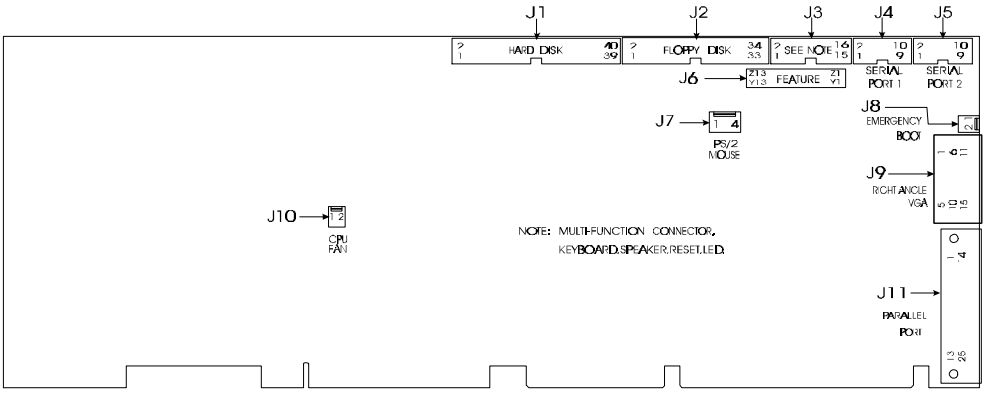
NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)
W9 & W10	2.88 MB High Density Floppy, EDOUT signal 2.88 MB High Density Floppy, HDOUT signal	EDOUT left to software*  HDOUT left to software*  *OR:* 1-3: EDOUT to Pin 29 (J2); 2-4: Ground to Pin 17 (J2) 1-3: HDOUT to Pin 33 (J2); 2-4: Ground to Pin 27 (J2) *OR:* 1-2: EDOUT to Pin 17 (J2); 3-4: Ground to Pin 29 (J2) 1-2: HDOUT to Pin 27 (J2); 3-4: Ground to Pin 33 (J2)
W11	VBAT Internal Battery	Enabled * Disabled
W12	External CPU Clock Speed	50 MHz 40 MHz 33 MHz 25 MHz
W13	Extended BIOS Modes (These jumpers are configured separately, even though they are grouped together here)	1-2: Serial Download Mode 3-4: VT100 Mode 5-6: Disable TEKNOR Extension 7-8: Disable Onboard VGA Controller  1-2: Normal Mode * 3-4: Standard Mode * 5-6: Enable TEKNOR Extension * 7-8: Enable Onboard VGA Controller * 

NAME	FUNCTION	CONFIGURATION (INITIAL SETTING: *)
W14	Power fail monitoring (Non Maskable Interrupt on Power Fail Output)	Enabled Disabled *
W15	1-4: Supervisor I/O: Base address 5-6: Not used	 190H *  390H  290H  390H
W16	PS/2 Mouse Interrupt (IRQ12)	Enabled Disabled *
W17	IOCHRDY signal to IDE interface	Enabled Disabled *
W18	Interrupt Signal from onboard Parallel Port	 IRQ5 (Normally used for LPT2)  IRQ7 (Normally used for LPT1) *  NONE: IRQ5 & IRQ7 are free
W19 & W20	DMA Request Signal for ECP Mode DMA Acknowledge Signal for ECP Mode	DRQ1 *OR:* DRQ3 *OR:*  NONE * DACK1  DACK3  NONE *
J8	BIOS boot selection	Emergency boot (from EPROM BIOS) Normal boot (from Flash EPROM BIOS) *

4 CONNECTOR LOCATIONS & PIN-OUTS

4.01 LOCATION OF CONNECTORS ON THE BOARD

The connectors are labeled J1 to J11. They appear on the diagram below.



4.02 CONNECTOR PIN-OUTS

Consult the tables on the following pages for the J1-J11 connector pin-outs. This information will help you wire all devices and mating connectors to the TEK930 board. For additional information, consult the appropriate section:

Connector	Section which deals with it
J1 - Hard Disk	9 IDE & FLOPPY
J2 - Floppy Disk	9 IDE & FLOPPY
J3 - Multi-Function (Keyboard, Speaker, Reset, Led)	6 SYSTEM
J4 - Serial Port 1	10 SERIAL & PARALLEL PORTS
J5 - Serial Port 2	10 SERIAL & PARALLEL PORTS
J6 - Feature	12 VIDEO
J7 - PS/2 Mouse	6 SYSTEM
J8 - Emergency BIOS Boot Selection	6 SYSTEM
J9 - VGA	12 VIDEO
J10 - Fan	6 SYSTEM
J11 - Parallel Port	10 SERIAL & PARALLEL PORTS

TABLE 4-1: Hard Disk Connector (J1) - Pin-Out

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

TABLE 4-2: Floppy Disk Connector (J2) - Pin-Out

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 W8 and W9 jumpers, these configurations are possible (see also page 9-10 in the manual):

1) 17 GND
   27 GND
   29 EDOUT (2.88 MB)
   33 HDOUT (2.88 MB)

Or:

2) 17 EDOUT (2.88 MB)
   27 HDOUT (2.88 MB)
   29 GND
   33 GND

TABLE 4-3: Multi-Function Connector - Keyboard, Speaker, Reset, LED - (J3) - Pin-Out

Signal	Signal Flow	Pin Number		Pin Number	Signal Flow	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

TABLE 4-4: Serial Port 1 - COM1 (J4) RS232 - Pin-Out

Signal	Signal Flow	Pin Number		Pin Number	Signal Flow	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				

TABLE 4-5: Serial Port 2 - COM2 (J54) RS232 - Pin-Out

Pin Number / Signal	Signal Flow			Pin Number / Signal	Signal Flow	
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				

TABLE 4-6: Serial Port 2 - COM2 (J5) RS422/RS485 - Pin-Out

Pin Number / Signal	Signal Flow			Pin Number / Signal	Signal Flow	
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				

TABLE 4-7: Feature Connector (J6) - Pin-Out

I/O PIN	Signal Name	I/O PIN	Signal Name
Y1	PO	Z1	GND
Y2	P1	Z2	GND
Y3	P2	Z3	GND
Y4	P3	Z4	EVIDEO*
Y5	P4	Z5	ESYNC*
Y6	P5	Z6	EDCLK*
Y7	P6	Z7	Not Used
Y8	P7	Z8	GND
Y9	DOT CLK	Z9	GND
Y10	BLANK*	Z10	GND
Y11	HSYNC	Z11	GND
Y12	VSYNC	Z12	Not Used
Y13	GND	Z13	OVRW*

* Active low signal

TABLE 4-8: PS/2 Mouse Connector (J7) - Pin-Out

Pin Number	Signal	Pin Number	Signal
1	MCLK	2	GND
3	MDATA	4	VCC

TABLE 4-9: Emergency BIOS Boot (J8) - Pin- Out

Pin Number	Signal
1	EMER*
2	GND

* Active low signal

TABLE 4-10: VGA Connector (J9) - Pin-Out

Pin Number Signal				Pin Number Signal
RED	1		2	GREEN
BLUE	3		4	P2
GND	5		6	GND
GND	7		8	GND
Not Used	9		10	GND
P0	11		12	P1
HSYNC	13		14	VSYNC
P3	15			

TABLE 4-11: Fan Connector (J10) - Pin-Out

Pin Number	Signal
1	+12V
2	GND

TABLE 4-12: Parallel Port Connector (J11) - Standard Mode - Pin-Out

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

TABLE 4-13: Parallel Port Connector (J11) - EPP Mode - Pin-Out

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

TABLE 4-14: Parallel Port Connector (J11) - ECP Mode - Pin-Out

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