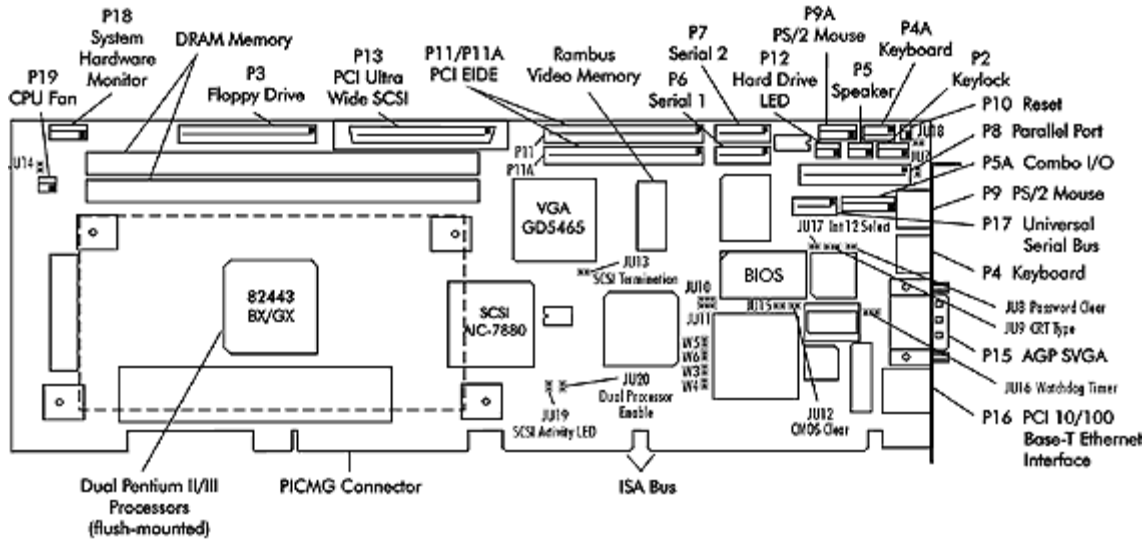




## Technical Information – Jumpers, Connectors and Memory DP2/DP2GX (5664-xxx) System Host Board

### Layout Diagram





INSTALL = Clear CMOS  
 REMOVE = Operate \*

**NOTE:** The CMOS Clear jumper works on power-up. To clear the CMOS, power down the system, install the jumper, then turn the power back on. CMOS is cleared during the POST routines. Then power down the system again and remove the jumper before the next power-up.

**JU13 SCSI TERMINATION ENABLE**  
 (Not available on BASIC model)

INSTALL= Disable on-board active termination for SCSI interface  
 REMOVE= Enable \*

**JU14 FAN SPEED MONITOR**  
 This jumper *must* be removed (disabled).

**JU15 3.3V MONITOR ENABLE**  
 INSTALL = Enable 3.3V monitor  
 REMOVE = Disable monitor \*

NOTE: JU15 enables the 3.3V monitor, which monitors the 3.3V power plane of the backplane. This voltage is routed to the SBC via the PICMG® connector. The monitor generates a RESET to the SBC if 3.3V is below tolerance. If your system does *not* supply 3.3V to the backplane, this jumper *must* be removed (disabled).

**JU16 WATCHDOG TIMER**  
 LEFT = Normal reset \*  
 RIGHT = Enable watchdog

**JU17 INTERRUPT 12 (IRQ12) SELECT**  
 INSTALL = IRQ12 dedicated to PS/2 mouse \*  
 REMOVE = IRQ12 available for system use

**JU18 COMBO I/O (P5A) RESET CONNECT**  
 (Also refer to JU7 = Combo I/O Speaker Connect.)  
 INSTALL= Connect reset data signal to pin 1 of Combo I/O connector (P5A) \*  
 REMOVE= Disconnect

**JU19 SCSI ACTIVITY LED ENABLE**  
 (not available on BASIC model)  
 INSTALL= Light the hard drive LED for SCSI drive activity\*  
 REMOVE= No SCSI drive (i.e., the SCSI controller is not being used)

**JU20 DUAL PROCESSOR ENABLE**  
 INSTALL = Enable dual processor operation \*  
 REMOVE = Single processor operation

**CPU SPEED JUMPERS**

There are four jumpers (W3, W4, W5 and W6) which must be set correctly to allow the SBC to take full advantage of the speed of the Pentium II/III microprocessor. These jumpers must be set as specified below.

CPU Speed	Synthesizer Frequency	Jumpers			
		W4*	W3	W6	W5
850MHz	100MHz	In	Out	In	Out
800MHz	100MHz	Out	In	In	Out
750MHz	100MHz	Out	Out	Out	In



700MHz	100MHz	Out	In	Out	In
650MHz	100MHz	Out	Out	In	In
600MHz	100MHz	Out	In	In	In
550MHz	100MHz	In	Out	Out	Out
500MHz	100MHz	In	In	Out	Out
450MHz	100MHz	In	Out	In	Out
400MHz	100MHz	In	In	In	Out
350MHz	100MHz	In	Out	Out	In
333MHz	66MHz	In	In	Out	Out
300MHz	66MHz	In	Out	In	Out
266MHz	66MHz	In	In	In	Out

**NOTE:** In revision D-D-02 and earlier, W4 was hard-wired in an "In" position

**ETHERNET LEDS AND CONNECTORS**

The Ethernet interface has two LEDs for status indication and an RJ-45 network connector.

LED/Connector	Description
<b>Link/Activity LED</b>	Green LED which indicates the link status. Off = The Ethernet interface did not find a valid link on the network connection. Transmit and receive are not possible. On = The Ethernet interface has a valid link on the network connection and is ready for normal operation. (solid) The Speed LED identifies connection speed. On = Indicates network transmit or receive activity. (flashing)
<b>Speed LED</b>	Amber LED which identifies connection speed. Off = Indicates a 10Mb/s connection. On = Indicates a 100Mb/s connection.
<b>RJ-45 Network Connector</b>	The RJ-45 network connector requires a category 5 (CAT5) unshielded twisted-pair (UTP) 2-pair cable for a 100-Mb/s network connection or a category 3 (CAT3) or higher UTP 2-pair cable for a 10-Mb/s network connection.



## Connectors

### NOTE:

Pin 1 on the connectors is indicated by the square pad on the PCB.

### P2 - KEYLOCK CONNECTOR

5 pin single row header, Amp #640456-5

PIN	SIGNAL
1	LED Power
2	Key
3	Gnd
4	Keylock Data
5	Gnd

### P3 - FLOPPY DRIVE CONNECTOR

34 pin dual row header,  
 Robinson Nugent #IDH-34LP-S3-TR

PIN	SIGNAL	PIN	SIGNAL
1	Gnd	2	N-RPM
3	Gnd	4	NC
5	Gnd	6	D-Rate0
7	Gnd	8	P-Index
9	Gnd	10	N-Motoron 1
11	Gnd	12	N-Drive Sel2
13	Gnd	14	N-Drive Sel1
15	Gnd	16	N-Motoron 2
17	Gnd	18	N-Dir
19	Gnd	20	N-Stop Step
21	Gnd	22	N-Write Data
23	Gnd	24	N-Write Gate
25	Gnd	26	P-Track 0
27	Gnd	28	P-Write Protect
29	Gnd	30	N-Read Data
31	Gnd	32	N-Side Select
33	Gnd	34	Disk Chng

### P11 - PRIMARY IDE HARD DRIVE CONNECTOR

40 pin dual row header,  
 Robinson Nugent #IDH-40LP-S3-TR

PIN	SIGNAL	PIN	SIGNAL
1	Reset	2	Gnd
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Gnd	20	NC
21	DRQ 0	22	Gnd
23	IOW	24	Gnd
25	IOR	26	Gnd
27	IORDY	28	SELPDP
29	DACK 0	30	Gnd
31	IRQ 14	32	NC
33	Add 1	34	Gnd
35	Add 0	36	Add 2
37	CS 1P	38	CS 3P
39	IDEACTP	40	Gnd

### P11A - SECONDARY IDE HARD DRIVE CONNECTOR

40 pin dual row header,  
 Robinson Nugent #IDH-40LP-S3-TR

PIN	SIGNAL	PIN	SIGNAL
1	Reset	2	Gnd
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Gnd	20	NC
21	DRQ 0	22	Gnd
23	IOW	24	Gnd
25	IOR	26	Gnd
27	IORDY	28	SELPDP
29	DACK 0	30	Gnd
31	IRQ 14	32	NC
33	Add 1	34	Gnd
35	Add 0	36	Add 2
37	CS 1P	38	CS 3P
39	IDEACTP	40	Gnd



## Connectors (Continued)

### **P4 - KEYBOARD CONNECTOR**

6 pin mini DIN, Kycon #KMDG-6S-BS-PS

PIN	SIGNAL
1	Kbd Data
2	Reserved
3	Gnd
4	Kbd Power (+5V fused) with self-resetting fuse
5	Kbd Clock
6	Reserved

### **P4A - KEYBOARD HEADER**

5 pin single row header, Amp #640456-5

PIN	SIGNAL
1	Kbd Clock
2	Kbd Data
3	Key
4	Kbd Gnd
5	Kbd Power (+5V fused) with self-resetting fuse

### **P5 - SPEAKER PORT CONNECTOR**

4 pin single row header, Amp #640456-4

PIN	SIGNAL
1	Speaker Data
2	Key
3	Gnd
4	+5V

### **P5A - COMBO I/O CONNECTOR**

8 pin single row header, Amp #640456-8

PIN	SIGNAL
1	Reset (See JU18 in <i>Configuration Jumpers</i> above.)
2	Gnd
3	NC
4	Kbd Clock
5	Kbd Data

13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Gnd	20	NC
21	DRQ 1	22	Gnd
23	IOW	24	Gnd
25	IOR	26	Gnd
27	IRDY	28	SELPDS
29	DACK 1	30	Gnd
31	IRQ15	32	NC
33	Add 1	34	Gnd
35	Add 0	36	Add 2
37	CS 1S	38	CS 3S
39	IDEACTS	40	Gnd

### **P12 - HARD DRIVE LED CONNECTOR**

4 pin single row header, Amp #640456-4

(This connector is used for both IDE and SCSI drives. See JU19 in the *Jumpers* section.)

PIN	SIGNAL
1	+5V Pullup
2	Light
3	Light
4	+5V Pullup

### **P13 - PCI ULTRA3 SCSI CONTROLLER CONNECTOR**

(not available on BASIC models)

50/68 high density SCSI connector, Amp #749069-7

PIN	SIGNAL	PIN	SIGNAL
1	Gnd	35	SCZDB12
2	Gnd	36	SCZDB13
3	Gnd	37	SCZDB14
4	Gnd	38	SCZDB15
5	Gnd	39	SCZDBPH
6	Gnd	40	SCZDB0
7	Gnd	41	SCZDB1



6 Kbd Lock Data	8 Gnd	42 SCZDB2
7 Kbd Power (+5V fused) with self-resetting fuse	9 Gnd	43 SCZDB3
8 Speaker Data	10 Gnd	44 SCZDB4

**Connectors (Continued)**

**P6 - SERIAL PORT 1 CONNECTOR**

10 pin dual row header, 3M #30310-6002HB

PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	Carrier Detect	2	Data Set Ready-I	15	Gnd
3	Receive Data-I	4	Request to Send-O	16	Gnd
5	Transmit Data-0	6	Clear to Send-I	17	TERMPWR
7	Data Terminal Ready-0	8	Ring Indicator-I	18	TERMPWR
9	Signal Gnd	10	NC	19	NC
				20	Gnd
				21	Gnd
				22	Gnd
				23	Gnd
				24	Gnd
				25	Gnd
				26	Gnd
				27	Gnd
				28	Gnd
				29	Gnd
				30	Gnd
				31	Gnd
				32	Gnd
				33	Gnd
				34	WIDEPS
				49	Gnd
				50	Gnd
				51	TERMPWR
				52	TERMPWR
				53	NC
				54	Gnd
				55	SCZATN
				56	Gnd
				57	SCZBSY
				58	SCZACK
				59	SCZRST
				60	SCZMSG
				61	SCZSEL
				62	SCZCD
				63	SCZREQ
				64	SCZIO
				65	SCZDB8
				66	SCZDB9
				67	SCZDB10
				68	SCZDB11

**P7 - SERIAL PORT 2 CONNECTOR**

10 pin dual row header, 3M #30310-6002HB

PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	Carrier Detect	2	Data Set Ready-I	15	Gnd
3	Receive Data-I	4	Request to Send-O	16	Gnd
5	Transmit Data-0	6	Clear to Send-I	17	Gnd
7	Data Terminal Ready-0	8	Ring Indicator-I	18	Gnd
9	Signal Gnd	10	NC	19	Gnd
				20	Gnd
				21	Gnd
				22	Gnd
				23	Gnd
				24	Gnd
				25	Gnd
				26	Gnd
				27	Gnd
				28	Gnd
				29	Gnd
				30	Gnd
				31	Gnd
				32	Gnd
				33	Gnd
				34	WIDEPS
				49	Gnd
				50	Gnd
				51	TERMPWR
				52	TERMPWR
				53	NC
				54	Gnd
				55	SCZATN
				56	Gnd
				57	SCZBSY
				58	SCZACK
				59	SCZRST
				60	SCZMSG
				61	SCZSEL
				62	SCZCD
				63	SCZREQ
				64	SCZIO
				65	SCZDB8
				66	SCZDB9
				67	SCZDB10
				68	SCZDB11

**P8 - PARALLEL PORT CONNECTOR**

26 pin dual row header, 3M #30326-6002HB

PIN	SIGNAL	PIN	SIGNAL
1	Strobe	2	Auto Feed XT
3	Data Bit 0	4	Error
5	Data Bit 1	6	Init
7	Data Bit 2	8	Sltc In
9	Data Bit 3	10	Gnd
11	Data Bit 4	12	Gnd
13	Data Bit 5	14	Gnd
15	Data Bit 6	16	Gnd

**P15 - PCI SVGA INTERFACE CONNECTOR**

(not available on BASIC models)

15 pin VGA connector, Amp #748390-5

PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	Red	6	Gnd	11	NC
2	Green	7	Gnd	12	EEDI
3	Blue	8	Gnd	13	HSYNC



17 Data Bit 7	18 Gnd	4 NC	9 +5V	14 VSYNC
19 ACK	20 Gnd	5 Gnd	10 Gnd	15 EECS
21 Busy	22 Gnd			
23 Paper End	24 Gnd			
25 Slct	26 NC			

**P16 - PCI 10/100BASE-T ETHERNET CONNECTOR**  
 (not available on BASIC models)  
 8 pin shielded RJ-45 connector, Molex #43202-8110

**PIN SIGNAL**

1 TD+
2 TD-
3 RX+
4 NC
5 NC
6 RX-
7 NC
8 NC

**Connectors (Continued)**

**P9 - PS/2 MOUSE CONNECTOR**

6 pin mini DIN, Kycon #KMDG-6S-BS-PS

**PIN SIGNAL**

1 Ms Data
2 Reserved
3 Gnd
4 Kbd Power (+5V fused) with self-resetting fuse
5 Ms Clock
6 Reserved

**P17 - UNIVERSAL SERIAL BUS (USB) CONNECTOR**

8 pin dual row header, Molex #702-46-0821  
 (+5V fused with self-resetting fuses)

PIN	SIGNAL	PIN	SIGNAL
1	+5V - USB0	2	+5V - USB1
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	Gnd - USB0	8	Gnd - USB1

**P9A - PS/2 MOUSE HEADER**

6 pin single row header, Amp #640456-6

**PIN SIGNAL**

1 Ms Data
2 Reserved
3 Kbd Gnd
4 Kbd Power (+5V fused) with self-resetting fuse
5 Ms Clock
6 Reserved

**P18 - SYSTEM HARDWARE MONITOR CONNECTOR**

6 pin single row header, Amp #640456-6

**PIN SIGNAL**

1 Gnd
2 GPO (General Purpose Output)
3 CI (Chassis Intrusion Input)
4 FAN1 (Fan 1 Tachometer Input)
5 FAN2 (Fan 2 Tachometer Input)
6 OS# (Temperature Sense Output)

**P10 - EXTERNAL RESET CONNECTOR**

2 pin header, Amp #640456-2

**PIN SIGNAL**

1 External Reset In (Low Active)
2 Gnd

**P19 - CPU Fan**

3 pin single row header, Molex #22-23-2031

**PIN SIGNAL**



TRENTON Technology Inc.  
2350 Centennial Drive • Gainesville, Georgia 30504  
Sales (800) 875-6031 • Phone (770) 287-3100 • Fax (770) 287-3150

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- 1 Gnd
- 2 +12V
- 3 Fan Tach





## Memory

The DRAM interface consists of two dual in-line memory module (DIMM) sockets and supports auto detection of memory up to 512MB of Synchronous DRAM (SDRAM) for the 440BX or up to 1GB of SDRAM for the 440GX. Minimum memory size is 8MB. The System BIOS automatically detects memory type, size and speed.

The SBC uses industry standard 64-bit or 72-bit wide gold finger DIMM DRAM in two 168-pin DIMM sockets.

**NOTE:** Memory can be installed in one or both DIMM sockets. If only one DIMM module is used, it must be populated in the top DIMM socket (Bank 1 - BK1). If two modules are used, they must be the same DIMM type, but may be different sizes (see table below). EDO DIMMs are not supported. All DIMMs must have gold contacts.

The SBC supports DIMM memory modules which are PC-100 compliant and have the following features:

- 168-pin DIMMs with gold-plated contacts
- 100MHz SDRAM
- Non-ECC (64-bit) or ECC (72-bit) memory
- 3.3 volt only
- Single or double-sided DIMMs in the sizes listed below
- Buffered or Registered configuration

DIMM Size	DIMM Type	Non-ECC	ECC
8 MB	Unbuffered	1M x 64	1M x 72
16 MB	Unbuffered	2M x 64	2M x 72
32 MB	Unbuffered	4M x 64	4M x 72
64 MB	Unbuffered	8M x 64	8M x 72
128 MB	Unbuffered	16M x 64	16M x 72
256 MB	Registered	32M x 64	32M x 72
512 MB	Registered	64M x 64	64M x 72 **

\*\* DP2GX models only

All memory components and DIMMs used with the SBC must be PC-100 compliant, which means that they comply with Intel's PC SDRAM specifications. These include the PC SDRAM Specification (memory component specific), the PC Unbuffered DIMM Specification, the PC Registered DIMM Specification and the PC Serial Presence Detect Specification.