TRENTON Technology Inc.
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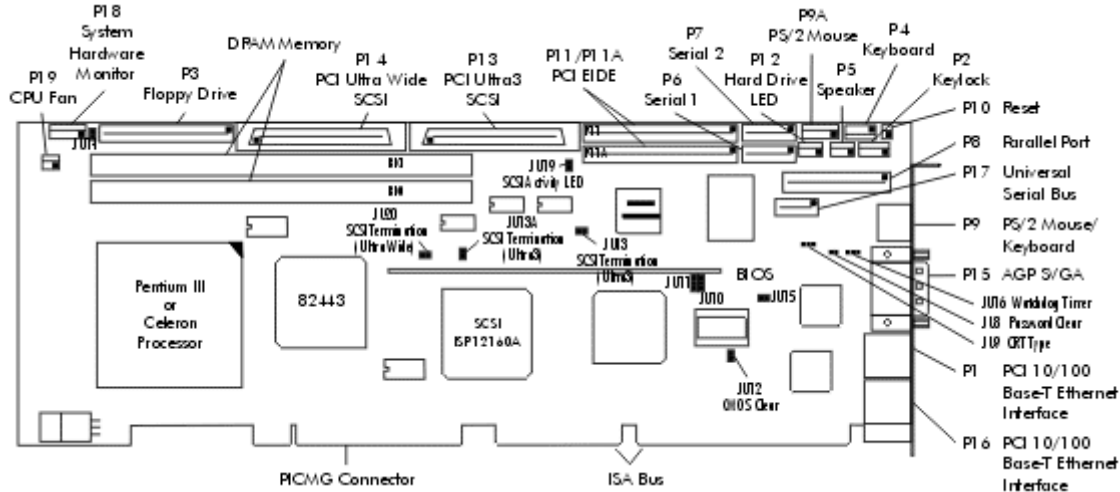Sales (800) 875-6031 • Phone (770) 287-3100 • Fax (770) 287-3150

Technical Information – Jumpers, Connectors and Memory
CBU/CGU (5870-xxx) System Host Board

Layout Diagram

Jumpers & LEDs

The setup of the configuration jumpers on the SHB is described below. An asterisk (*) indicates the default value of each jumper.

NOTE: For two-position jumpers (3-post), "RIGHT" is toward the bracket end of the board; "LEFT" is toward the memory sockets.

JU8   **Password Clear**
Install for one power-up cycle to reset the password to the default (null password).
Remove for normal operation. *

JU9   **CRT TYPE SELECT**
LEFT = Monochrome
RIGHT = Color *

JU10/11   **SYSTEM FLASH ROM OPERATIONAL MODES**
The Flash ROM has two programmable sections: the Boot Block for "flashing" in the BIOS and the Main Block for the executable BIOS and PnP parameters. Normally only the Main Block is updated when a new BIOS is flashed into the system.

	JU10	JU11
Write Protect	Top	Top
Normal PnP (Program Main Block)	Bottom *	Top *
Program All (Boot and Main)	Bottom	Bottom

JU12   **CMOS Clear**
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.

JU13/13A   **SCSI TERMINATION - CHANNEL 0**
These two jumpers may be used to enable or disable on-board active termination for the Ultra3 SCSI

interface.

	JU13	JU13A
Enable active termination	Install *	Install *
Disable active termination	Remove	Remove
Enable upper byte only	Remove	Install

JU14   FAN SPEED MONITOR
INSTALL = Enable fan speed monitor *
REMOVE = Disable monitor

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

JU19   SCSI ACTIVITY LED ENABLE

INSTALL= Light the hard drive LED for SCSI drive activity*

REMOVE= No SCSI drive (i.e., the SCSI controller is not being used

JU20   SCSI TERMINATION - CHANNEL 1

INSTALL= Disable on-board active termination for Ultra Wide SCSI interface

REMOVE= Enable active termination *

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

LED/Connector	Description
Link/Activity LED	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 = (solid)	The Ethernet interface has a valid link on the network connection and is ready for normal operation. The Speed LED identifies connection speed.
On = (flashing)	Indicates network transmit or receive activity.
Speed LED	Amber LED which identifies connection speed.
Off =	Indicates a 10Mb/s connection.
On =	Indicates a 100Mb/s connection.
RJ-45 Network Connector	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.

P1 - PCI 10/100BASE-T ETHERNET CONNECTOR

8 pin shielded RJ-45 connector, Pulse #J0035D21B

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

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

P11A - SECONDARY IDE HARD DRIVE CONNECTOR

40 pin dual row header, 3M #30340-6002HB

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 1	22	Gnd
23	IOW	24	Gnd
25	IOR	26	Gnd
27	IORDY	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

PIN	SIGNAL	PIN	SIGNAL
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

Connectors (Continued)

P4 - 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

P6 - SERIAL PORT 1 CONNECTOR
10 pin dual row header, 3M #30310-6002HB

PIN	SIGNAL	PIN	SIGNAL
1	Carrier Detect	2	Data Set Ready-I
3	Receive Data-I	4	Request to Send-O
5	Transmit Data-0	6	Clear to Send-I
7	Data Terminal Ready-0	8	Ring Indicator-I

P13 - PCI ULTRA3 SCSI CONTROLLER CONNECTOR (CHANNEL 0)
50/68 high density SCSI connector, Amp #749069-7

PIN	SIGNAL	PIN	SIGNAL
1	SCD12	35	SCD#12
2	SCD13	36	SCD#13
3	SCD14	37	SCD#14
4	SCD15	38	SCD#15
5	SCDPH	39	SCDPH#
6	SCD0	40	SCD#0
7	SCD1	41	SCD#1
8	SCD2	42	SCD#2
9	SCD3	43	SCD#3
10	SCD4	44	SCD#4
11	SCD5	45	SCD#5
12	SCD6	46	SCD#6
13	SCD7	47	SCD#7
14	SCDPL	48	SCDPL#
15	Gnd	49	Gnd
16	DIFSENSE	50	Gnd
17	TERMPWR	51	TERMPWR
18	TERMPWR	52	TERMPWR
19	NC	53	NC
20	Gnd	54	Gnd
21	SCATN	55	SCATN#
22	Gnd	56	Gnd
23	SCBSY	57	SCBSY#
24	SCACK	58	SCACK#
25	SCRST	59	SCRST#
26	SCMSG	60	SCMSG#
27	SCSEL	61	SCSEL#
28	SCCD	62	SCCD#
29	SCREQ	63	SCREQ#
30	SCIO	64	SCIO#
31	SCD8	65	SCD#8
32	SCD9	66	SCD#9

Ready-0	10 NC	33 SCD10	67 SCD#10
9 Signal Gnd		34 SCD11	68 SCD#11

Connectors (Continued)

P7 - SERIAL PORT 2 CONNECTOR
10 pin dual row header, 3M #30310-6002HB

PIN	SIGNAL	PIN	SIGNAL
1	Carrier Detect	2	Data Set Ready-I
3	Receive Data-I	4	Request to Send-O
5	Transmit Data-0	6	Clear to Send-I
7	Data Terminal Ready-0	8	Ring Indicator-I
		10	NC
9	Signal Gnd		

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	Slct 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
17	Data Bit 7	18	Gnd
19	ACK	20	Gnd
21	Busy	22	Gnd
23	Paper End	24	Gnd
25	Slct	26	NC

P14 - PCI ULTRA WIDE SCSI CONTROLLER CONNECTOR (CHANNEL 1)
50/68 high density SCSI connector, Amp #749069-7

PIN	SIGNAL	PIN	SIGNAL
1	Gnd	35	SCD1#12
2	Gnd	36	SCD1#13
3	Gnd	37	SCD1#14
4	Gnd	38	SCD1#15
5	Gnd	39	SCD1PH#
6	Gnd	40	SCD1#0
7	Gnd	41	SCD1#1
8	Gnd	42	SCD1#2
9	Gnd	43	SCD1#3
10	Gnd	44	SCD1#4
11	Gnd	45	SCD1#5
12	Gnd	46	SCD1#6
13	Gnd	47	SCD1#7
14	Gnd	48	SCD1PL#
15	Gnd	49	Gnd
16	Gnd	50	Gnd
17	TERMPWR1	51	TERMPWR1
18	TERMPWR1	52	TERMPWR1
19	NC	53	NC
20	Gnd	54	Gnd
21	Gnd	55	SCD1ATN#
22	Gnd	56	Gnd
23	Gnd	57	SCD1BSY#
24	Gnd	58	SCD1ACK#
25	Gnd	59	SCD1RST#
26	Gnd	60	SCD1MSG#
27	Gnd	61	SCD1SEL#
28	Gnd	62	SCD1CD#

Connectors (Continued)

P9 - PS/2 MOUSE AND KEYBOARD CONNECTOR
6 pin mini DIN, Kycon #KMDG-6S-BS-PS

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

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

P10 - EXTERNAL RESET CONNECTOR
2 pin header, Amp #640456-2

PIN	SIGNAL
1	External Reset In (Low Active)
2	Gnd

P11 - PRIMARY IDE HARD DRIVE CONNECTOR
40 pin dual row header, 3M #30340-6002HB

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

PIN	SIGNAL	PIN	SIGNAL
29	Gnd	63	SCD1REQ#
30	Gnd	64	SCD1IO#
31	Gnd	65	SCD1#8
32	Gnd	66	SCD1#9
33	Gnd	67	SCD1#10
34	Gnd	68	SCD1#11

P15 - PCI SVGA VIDEO INTERFACE CONNECTOR
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
4	NC	9	+5V	14	VSYNC
5	Gnd	10	Gnd	15	EECS

P16 - PCI 10/100BASE-T ETHERNET CONNECTOR
8 pin shielded RJ-45 connector, Pulse #J0035D21B

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

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

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

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)

P19 - CPU Fan
3 pin single row header, Molex #22-23-2031

PIN	SIGNAL
1	Gnd
2	+12V
3	Fan Tach

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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 *

* CGU 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.