TRENTON Technology Inc.
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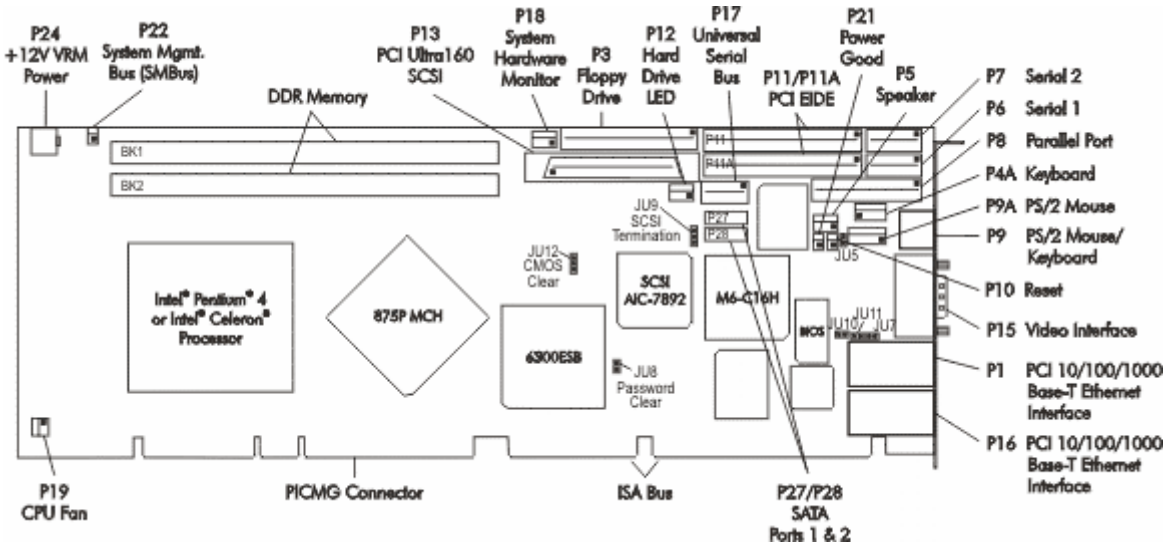
Technical Information – Jumpers, Connectors and Memory
MX8 (6240-xxx) System Host Board

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), "TOP" is toward the memory sockets; “BOTTOM” is toward the edge fingers.

JU5/7 Speed LED - LAN 1/LAN 2

These jumpers are used in conjunction with the Link/Speed LEDs for LAN 1 (JU5) and LAN 2 (JU7). The LEDs are located on the SBC's LAN connectors. For further information see the *Ethernet LEDs and Connectors* section.

Install to use the Link/Speed LED to indicate that the Ethernet interface has a valid link at either 1000-Mb/s or 100-Mb/s.

Green = valid link at 1000-Mb/s *
Orange = valid link at 100-Mb/s

Remove to use the Link/Speed LED to indicate that the Ethernet interface has a valid link at either 100-Mb/s or 10Mb/s.

Green = valid link at 100-Mb/s
Orange = valid link at 10-Mb/s

JU8 Password Clear

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

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.

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	JU10	JU11
All Blocks Write Enabled	Remove *	Remove *
Boot Block Write Protected	Install	Remove
Block 2-16 Write Protected	Remove	Install

JU12 CMOS Clear

Install on the TOP to operate. *
Install on the BOTTOM to clear.

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. Wait for at least two seconds and turn the power off. Then remove the jumper and turn the power on. When AMIBIOS displays the "CMOS Settings Wrong" message, press F1 to go to the BIOS Setup Utility, where you may reenter your desired BIOS settings, load optimal defaults or load failsafe defaults.

Jumpers & LEDs (continued)

P1 Ethernet LEDs

Each Ethernet interface has two LEDS for status indication and an RJ-45 network connector.

LED/Connector	Description
Activity LED	Orange LED which indicates network activity. This Is the upper LED on the LAN connector (i.e.,toward the memory sockets).
Off	No current network transmit or receive activity
On (flashing)	Indicates network transmit or receive activity.
Speed LED	Bi-color (green/orange) LED which identifies the link status and connection speed. This is the lower LED on the LAN connector (i.e., toward the edge connectors).
Green	Indicates a valid link at either 1000-Mb/s or 10-Mb/s, depending on the setting of the associated Speed LED jumper (JU5 or JU7).
Orange	Indicates a valid link at 100-Mb/s, regardless of the setting of the associated Speed LED jumper (JU5 or JU7). **NOTE:** For further information on the Speed LED Jumpers, see the *Jumpers* section.
RJ-45 Network Connectors	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. A category 5e (CAT5e) or higher UTP 2-pair cable is recommended for a 1000-Mb/s (Gigabit) network connection.

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Connectors

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

P1 - 10/100/1000Base-T Ethernet Connectors - LAN2

8 pin shielded RJ-45 connector, Belfuse #0826-1X1T-23

PIN	SIGNAL	PIN	SIGNAL
1	TRP1+	5	TRP3-
2	TRP1-	6	TRP2-
3	TRP2+	7	TRP4+
4	TRP3+	8	TRP4-

P3 - FLOPPY DRIVE CONNECTOR

34 pin dual row header, AMP #103308-7

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

P12 - HARD DRIVE LED CONNECTOR

4 pin single row header, Amp #640456-4

PIN	SIGNAL
1	LED +
2	LED -
3	LED -
4	LED +

P13 - ULTRA160 SCSI CONNECTOR

68 pin high density 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#

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Connectors (Continued)

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

P6 - SERIAL PORT 1 CONNECTOR

10 pin dual row header, Amp #103308-1

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
9	Signal Gnd	10	NC

P7 - SERIAL PORT 2 CONNECTOR

10 pin dual row header, Amp #103308-1

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

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
33	SCD10	67	SCD#10
34	SCD11	68	SCD#11

P15 - VIDEO INTERFACE CONNECTOR

15 pin HD15 connector, Amp #1-1470250-3

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 - 10/100/1000BASE-T ETHERNET CONNECTOR - LAN1

8 pin shielded RJ-45 connector, Belfuse #0826-1X1T-23

PIN	SIGNAL	PIN	SIGNAL
1	TRP1+	5	TRP3-
2	TRP1-	6	TRP2-
3	TRP2+	7	TRP4+
4	TRP3+	8	TRP4-

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+

	Ready-0	10	NC
9	Signal Gnd		

Connectors (Continued)

P7 - 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 - USB2	2	+5V - USB3
3	USB2-	4	USB3-
5	USB2+	6	USB3+
7	Gnd - USB2	8	Gnd - USB3
9	Chassis Gnd	10	Chassis Gnd

P8 - PARALLEL PORT CONNECTOR

26 pin dual row header, Amp #103308-6

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

7	Gnd - USB0	8	Gnd - USB1

P18 - SYSTEM HARDWARE MONITOR CONNECTOR

4 pin single row header, Amp #640456-4

PIN	SIGNAL
1	Gnd
2	GPO (General Purpose Output)
3	CI (Chassis Intrusion Input)
4	OVT (Over Temperature)

P19 - CPU FAN

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

PIN	SIGNAL
1	Gnd
2	+12V
3	Fan Tach

P21 - POWER GOOD LED

2 pin single row header, Amp #640456-2

PIN	SIGNAL
1	LED -
2	LED +

P22 - SYSTEM MANAGEMENT BUS CONNECTOR

2 pin single row header, Amp #640456-2

PIN	SIGNAL
1	SMB Clock
2	SMB Data

P24 - +12V VRM POWER INPUT

4 pin header, Molex #39-29-3046

PIN	SIGNAL
1	GND
2	GND
3	+12V
4	+12V

Connectors (Continued)

P9 - PS/2 MOUSE AND KEYBOARD CONNECTOR
6 pin mini DIN, Kycon #KMDG-6S-B4T

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

P10 - External Reset Connector
2 pin single row 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

P27 - SATA PORT1
7 pin vertical connector, Molex #67491-0031

PIN	SIGNAL	PIN	SIGNAL
1	Gnd	5	RX-
2	TX+	6	RX+
3	TX-	7	Gnd
4	Gnd		

P28 - SATA PORT2
7 pin vertical connector, Molex #67491-0031

PIN	SIGNAL	PIN	SIGNAL
1	Gnd	5	RX-
2	TX+	6	RX+
3	TX-	7	Gnd
4	Gnd		

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	PCBL DET*
35	Add 0	36	Add 2
37	CS 1P	38	CS 3P
39	IDEACTP	40	Gnd

Connectors (Continued)

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	IRQ 15	32	NC
33	Add 1	34	SCBL DET*
35	Add 0	36	Add 2
37	CS 1S	38	CS 3S
39	IDEACTS	40	Gnd

* For ATA/66 and ATA/100 drives, which should be set for Cable Select for proper speed operation. If other Drives are detected, pin definition is Gnd.

Memory

The Double Data Rate (DDR) memory interface supports up to 2GB of memory and can operate as either a single-channel (64-bit) or dual-channel (128-bit) DDR interface. Each of the channels terminates in a dual in-line memory module (DIMM) socket. Installing two identical DIMMs doubles the interface bandwidth. The System BIOS automatically detects memory type, size and speed.

The SBC uses industry standard 72-bit wide ECC or 64-bit wide non-ECC gold finger PC2100, PC2700 or PC3200 memory modules in two 184-pin sockets.

NOTE: Memory modules can be installed in one or both DIMM sockets. If two modules of different speeds are used, the DIMMs will operate in dual-channel mode at the speed of the slowest DIMM. If the modules are different sizes, they will operate in single-channel mode. Registered DIMMs are not supported. All memory modules must have gold contacts.

The SBC supports DIMMs which are PC2100/PC2700/PC3200 compliant and have the following features:

- 184-pin with gold-plated contacts
- ECC (72-bit) or non-ECC (64-bit) DDR memory
- Unbuffered configuration

The following DIMM sizes are supported:

DIMM Size	DIMM Type	ECC
64MB	Unbuffered	8M x 72
128MB	Unbuffered	16M x 72
256MB	Unbuffered	32M x 72
512MB	Unbuffered	64M x 72
1GB	Unbuffered	128M x 72