



# **BCT-ETX-EVAL-BP**

## **ETX Format Evaluation Backplane**

### **User Manual**

Document Reference  
Document Issue Level

BCT-ETX-EVAL-BP User Manual  
1.0

Manual covers PCBs with the following Issue

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# INTRODUCTION

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## COMPANY PROFILE

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Blue Chip Technology is a leading specialist PC product manufacturer in Europe, providing innovation with quality design and manufacturing from a single source.

Based in the North West of England, our purpose built complex contains both advanced research and development facilities, and manufacturing facilities.

Specialising in the provision of industrial computing and electronic solutions for a wide range of UK and European organisations, Blue Chip Technology has one of the UK's largest portfolios of industrial PCs, Single Board Computers, peripherals and data acquisition cards. This extensive range of products, coupled with our experience and expertise, enables Blue Chip Technology to offer an industrial processing solution for any application. This is one of the products from our portfolio, providing you with a cost effective product development and volume production tool.

A unique customisation and specialised system integration service is also available, delivering innovative solutions to customers problems. The company's success and reputation in this area has led to a number of large design and manufacturing projects for major companies.

British Standards Institute approval (BS EN 9001) means that all of Blue Chip Technology's design and manufacturing procedures are strictly controlled, ensuring the highest levels of quality, reliability and performance.

Blue Chip Technology are committed to the single European market, and continue to invest in the latest technology and skills to provide high performance computer and electronic solutions for a world-wide customer base.

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## RELATED PUBLICATIONS

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The following publications will provide useful information related to the Standard Personal Computer and can be used in conjunction with this manual.

- IBM Personal Computer AT Technical Reference, 1502494, IBM, 1984.
- IBM Personal System/2 and Personal Computer BIOS Interface Technical Reference, 15F0306, IBM, 1987.
- The Programmers PC Sourcebook, Microsoft
- The Winn L. Rosch Hardware Bible, Brady
- BCT-ETX-C3-XXX User Manual

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## TRADEMARKS

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All trademarks and registered names acknowledged.

IBM, PC, AT and PS/2 are trademarks of International Business Machines Corporation (IBM).

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Intel is a registered trademark of the Intel Corporation.

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ATA-Disk Chip is a trademark of Silicon Storage Technology Inc.

## OVERVIEW

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The ETX concept provides the user with a plug in processor board with a standard connector interface, with fixed connector locations and predefined IO functions. This allows the user to concentrate their design efforts on the supporting baseboard for the target application. This modular approach provides a cost effective means of system upgrade and allows the user to easily validate a number of CPU board price / power / performance options.

Blue Chip Technology provides a number of ETX processor board modules as part of the BCT-ETX-C3-XXX family. These processor boards are available with CPU build options of an extremely Low Power VIA Eden ESP 4000 (400MHz) and Low Power VIA C3 1Gz processor. The 400MHz ESP C3 version of BCT-ETX-C3-XXX is targeted at lower cost, power conscious, and performance driven applications. The 1Ghz C3 build offers a higher performance solution for applications where reduced power is less of a requirement. In addition a special 266MHz version is available for the lowest power consumption applications. Further variants are VIA Eden 733Mhz and VIA C3 800Mhz processors.

The BCT-ETX-EVAL-BP backplane provides access to all of the features of the BCT-ETX-C3-XXX processor board through industry standard connectors utilising the ATX form factor. This arrangement allows the processor board to be tested and evaluated whilst the target baseboard is being developed. As the BCT-ETX-EVAL-BP backplane provides expansion through standard interfaces such as PCI and ISA it allows external peripheral devices to be tested to ensure that the correct silicon choices are made for the target baseboard.

## PRECAUTIONS

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Certain precautions are necessary when designing with, handling, and using circuit boards. *It is imperative that precautions are taken at all stages to avoid electro-static discharges, which will damage boards. Those boards fitted with an on-board lithium battery must be handled carefully to avoid maltreatment of the battery that could create a hazard.*

### **ELECTRO-STATIC DISCHARGES**

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The devices on this card can be totally destroyed by static electricity. Also bear in mind that the damage caused by static electricity may be partial and not immediately obvious. This could have an effect on your product's reliability and warranty. Ensure that you take necessary static precautions, ideally you should wear an approved wrist strap or if that is not possible, touch a suitable ground to discharge any static build up. This should be repeated if the handling is for any length of time.

When carrying the board around, please place it into the anti-static bag in which it came. This will prevent any static electricity build up. Do not use black anti-static bags because these tend to be conductive and will discharge any on-board battery.

### **ON-BOARD BATTERY**

---

The BCT-ETX-EVAL-BP backplane has an on-board lithium cell. The following precautions apply and should be observed. If the battery is mistreated in any way there is a very real possibility of fire, explosion, and harm. Great care should be taken with this type of battery. Under NO circumstances should it be:

- short-circuited
- exposed to temperatures in excess of 100 °C or burnt
- immersed in water

- unsoldered
- recharged
- disassembled

Expired batteries remain hazardous and must be disposed of in a safe manner.

## **BIOS & CMOS RAM**

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Please be aware that on single board computer products, it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

## **ELECTROMAGNETIC COMPATIBILITY**

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This product meets the requirements of the European EMC Directive (89/336/EEC) and is eligible to bear the CE mark.

It has been assessed operating in a Blue Chip Technology housing. However, because the board can be installed in a wide variety of chassis, certain conditions have to be applied to ensure that the compatibility is maintained. Subject to those conditions, it meets the requirements for an industrial environment (ITE Class A product).

- The board must be installed in a computer system chassis that provides screening suitable for an industrial environment.
- Any recommendations made by the computer system manufacturer/supplier must be complied with regarding earthing and the installation of boards.
- Any metal back plate must be securely screwed to the chassis of the computer to ensure good metal-to-metal (i.e. earth) contact.
- Connector bodies must be securely connected to the enclosure.
- The external cabling to boards causes most EMC problems. It is imperative that any external cabling to the board is totally screened, and that the screen of the cable connects to the metal end bracket of the board or the enclosure and hence to earth. It is recommended that round, screened cables with a braided wire screen are used in preference to those with a foil screen and drain wire. Use metal connector shells that connect around the full circumference of the cable screen: they are far superior to those that earth the screen by a simple “pig-tail”.
- The keyboard and mouse will play an important part in the compatibility of the processor card since they are ports into the board. Similarly, they will affect the compatibility of the complete system. Fully compatible peripherals must be used otherwise the complete system could be degraded. They may radiate or behave as if keys/buttons are pressed when subject to interference. Under these circumstances it may be beneficial to add a ferrite clamp on the leads as close as possible to the connector. A suitable type is the Chomerics type H8FE-1004-AS.
- USB cables should be high quality screened types.
- Ensure that the screens of any external cables are bonded to a good RF earth at the remote end of the cable.

Failure to observe these recommendations may invalidate the EMC compliance.

### **Warning**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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### ***MOUNTING THE ETX PROCESSOR BOARD***

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The BCT-ETX-EVAL-BP backplane has 4 mounting holes of 2.5mm diameter, which correspond to the mounting holes on the BCT-ETX-C3-XXX processor board. Care should be taken on the underside of the board to not cause any mechanical damage to the components adjacent to the mounting holes.

All connections to the BCT-ETX-EVAL-BP backplane are made through connectors X1-X4 inclusive. These Hirose socket connectors (Part Number **FX8-100S-SV**) mate with corresponding Hirose plug connectors (Part Number **FX8-100P-SV**) on the BCT-ETX-C3-XXX processor board.

When installing or removing the BCT-ETX-C3-XXX module into the target base board, ensure all power has been removed. This includes the 5volt supply, the 5V stand-by supply and the external Lithium cell or RTC back-up battery. Before applying power to the backplane and processor board ensure that all four connectors have located and been pressed together firmly.

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# USER GUIDE

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## MANUAL ORGANISATION

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This manual describes in detail the Blue Chip Technology BCT-ETX-EVAL-BP backplane used as a companion to the BCT-ETX-C3-XXX family of single board computers.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of either the BCT-ETX-C3-XXX single board computer or BCT-ETX-EVAL-BP backplane.

The manual is sectioned as follows:

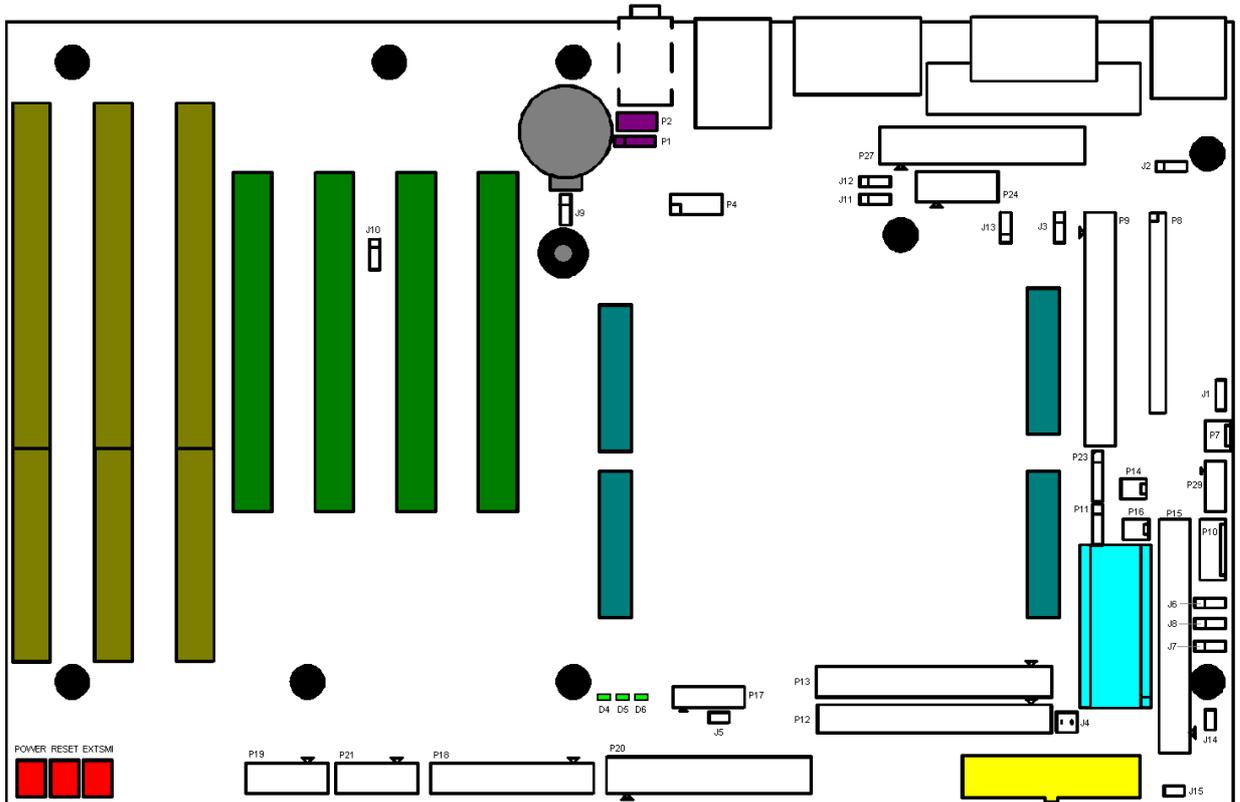
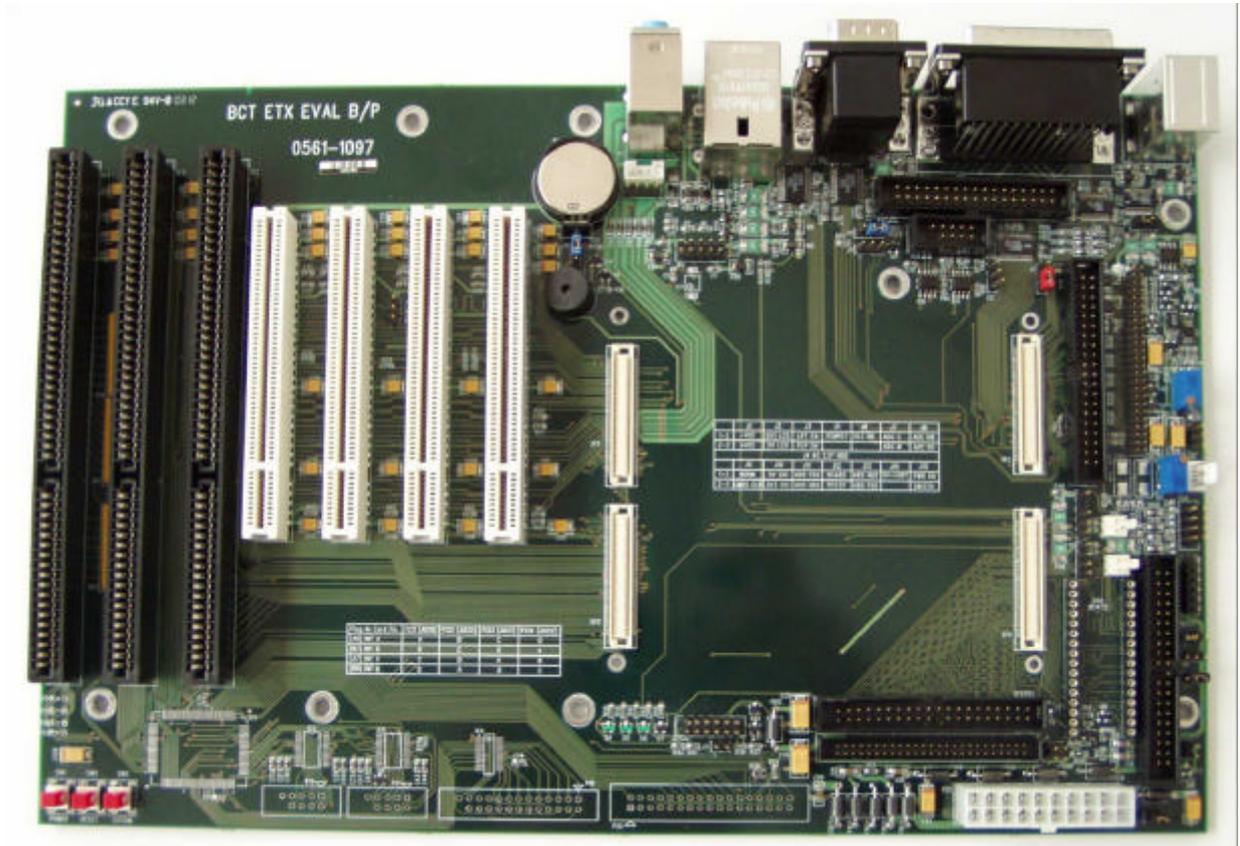
- Overview, listing the board's features and specification;
- Layout, showing where the various items are located;
- Installation, and associated issues;
- Configuration jumpers;
- Connector Pin-Out details.

We strongly recommend that you study this manual carefully before attempting to interface with BCT-ETX-C3-XXX or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance. ***IT IS PARTICULARLY IMPORTANT THAT YOU READ THE SECTION 'PRECAUTIONS' BEFORE HANDLING THE BOARD.***

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Technical Services department with the relevant details.

# LAYOUT

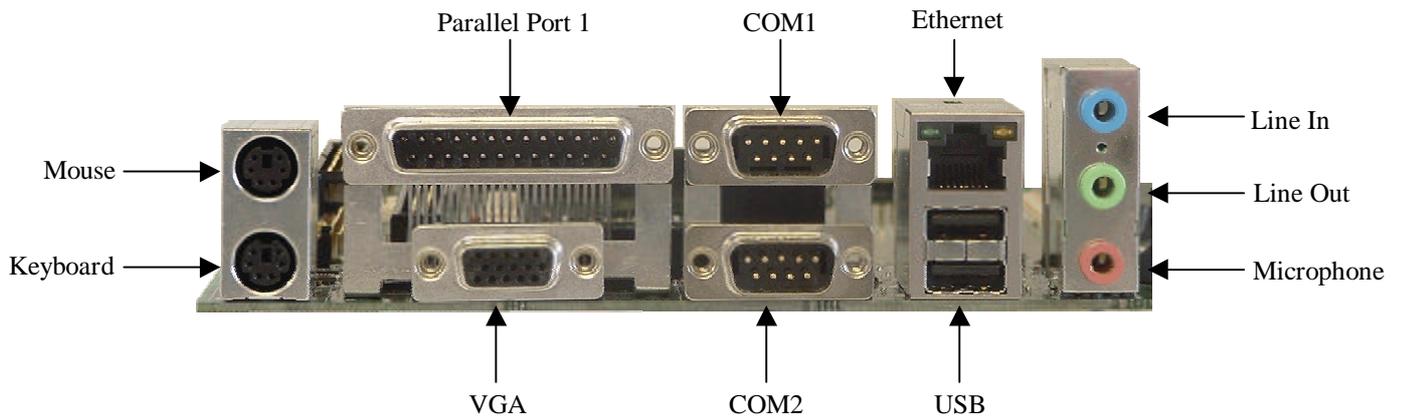
The drawing below shows the layout of the BCT-ETX-EVAL-BP and shows the locations of all the connectors and configuration jumpers.



The colour-coded connectors and switches are defined as follows:

Colour	Function
Teal	ETX-C3-xxx mounting connectors
Olive	ISA expansion slots
Green	PCI Expansion slots
Yellow	20 way ATX power connector
Cyan	Additional ATA-Disk Chip connector
Purple	CD-ROM audio connectors
Red	Power, reset and external SMI switches
Grey	Lithium battery

The main connectors of the BCT-ETX-EVAL-BP backplane are laid out in a similar fashion to those found on a standard ATX motherboard. This allows the backplane to be mounted in a standard chassis. The connectors are laid out as follows:



## CONFIGURATION JUMPERS

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The BCT-ETX-EVAL-BP backplane includes a number of user options that can be configured through the use of two and three pin jumpers. Configuration of these options requires the use of 0.1" mini-dip links.

### **SWITCHED VEE POLARITY SELECTION**

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J1 - Jumper

Link	Operation
1-2	VEE is negative
2-3	VEE is positive

### **LCD VOLTAGE SELECTION**

---

J2 - Jumper

Link	Operation
1-2	LCD voltage is 3.3V
2-3	LCD voltage is 5V

### **PARALLEL PORT / FLOPPY DISK DRIVE SHARED INTERFACE**

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J3 - Jumper

Link	Operation
1-2	Interface is the parallel port
2-3	Interface is the floppy disk drive

### **2½" HARD DISK MODE SELECT**

---

J4 - Jumper

Link	Operation
1-2	As per selector jumpers on drive
3-4	As per selector jumpers on drive

NOTE: These settings are only applicable to a 2½" hard disk drive connected to P12 using a 50 way cable.

**RESUME RESET INPUT**

---

J5 - 2 pin header

Grounding this pin on the ETX board by closing the pins of J5 will cause a reset of the power management logic on the ETX module.

**DRIVE CONFIGURATION FOR SECONDARY IDE RIBBON CABLE CONNECTOR**

---

J6 - Jumper

Link	Operation
1-2	Connector is secondary master
2-3	Connector is secondary slave

**DRIVE CONFIGURATION FOR SECONDARY 32PIN ATA-DISK CHIP CONNECTOR**

---

J7 - Jumper

Link	Operation
1-2	Connector is secondary slave
2-3	Connector is secondary master

**ATA-DISK CHIP READ / WRITE CONTROL**

---

J8 - Jumper

Link	Operation
1-2	Device is read / write
2-3	Device is read only

**CMOS CONTROL**

---

J9 - Jumper

Link	Operation
1-2	Normal CMOS operation
2-3	Clear CMOS

**PCI V<sub>IO</sub> CONTROL**

---

J10 - Jumper

Link	Operation
1-2	PCI V <sub>IO</sub> is 5V
2-3	PCI V <sub>IO</sub> is 3.3V

**COM1 RS485 DUPLEX CONTROL**

---

J11 - Jumper

Link	Operation
1-2	Full duplex
2-3	Half duplex

**COM1 PROTOCOL CONTROL**

---

J12 - Jumper

Link	Operation
1-2	RS485
2-3	RS232

**COM1 HALF DUPLEX CONTROL SIGNAL SELECT**

---

J13 - Jumper

Link	Operation
1-2	Use DTR for controlling direction
2-3	COM 1 is transmit only

NOTE: This must be set in position 1-2 if link J11 is in position 2-3.

**5V STANDBY VOLTAGE SELECT**

---

J14 - Jumper

Link	Operation
Open	5VSB used from power supply
Closed	5VSB is linked to VCC.

**ATX POWER SUPPLY BYPASS**

---

J15 - Jumper

<b>Link</b>	<b>Operation</b>
Open	PSU power on signal used
Closed	ATX supply is always on.

## CONNECTORS

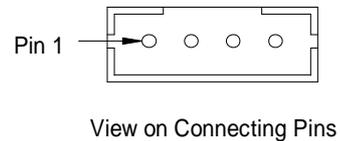
### CD AUDIO INPUT

P1 - Connector: 4-way 0.1" pitch header  
 Mating Connector: 4-way 0.1" SIL header and crimps

Pin	Signal
1	CD Left Channel
2	CD Ground
3	CD Ground
4	CD Right Channel

P2 - Connector: JST 2mm 4-way boxed pin header B 4B-PH-K/Tactpro WD.03/2  
 Mating Connector: JST PHR4 & SPH crimps

Pin	Signal
1	CD Ground
2	CD Left Channel
3	CD Ground
4	CD Right Channel



### AUDIO INPUT / OUTPUT JACKS

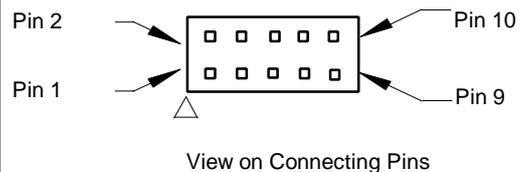
P3 - Connector: 3 off 3.5mm stereo jack sockets  
 Mating Connector: 3.5mm stereo jack plug.

Jack	Signal
Blue	Line input
Green	Line output
Red	Microphone input

### USB PORTS 3 AND 4

P4 - Connector: 10-way 0.1" pitch pin header  
 Mating Connector: 10-way 0.1" pitch IDC or crimp socket

Signal	Pin	Pin	Signal
+5V	1	2	Ground (Screen)
USB 3 Data-	3	4	Signal Ground
USB 3 Data+	5	6	USB 4 Data+
Signal Ground	7	8	USB 4 Data-
Ground (Screen)	9	10	+5V



**ETHERNET AND USB**

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P5 - USB Connector: Series A USB connector

Mating Connectors: Series A USB connector

Ethernet Connector: RJ-45 8-pin socket.

Mating Connector: RJ-45 8-pin plug.

[Standard Pin Out.](#)

**VEE VOLTAGE CONTROL**

---

P6 - Connector: Molex 0.1" KK 3-way pin header

Mating Connector: Molex 0.1" KK 3-way plug

Pin	Signal
1	Potentiometer +ve
2	Wiper
3	Potentiometer -ve

**VEE VOLTAGE OUTPUT**

---

P7 - Connector: Molex 0.1" KK 3-way pin header

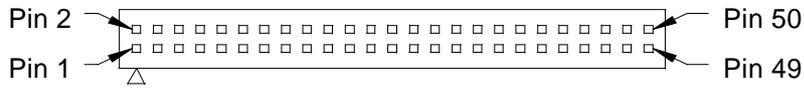
Mating Connector: Molex 0.1" KK 3-way plug

Pin	Signal
1	Ground
2	Contrast
3	VEE

**LCD TTL OUTPUT**

P8 - Connector: 50-way 2mm pitch pin header

Mating Connector: 50-way 2mm pitch IDC or crimp socket



View on Connecting Pins

Signal	Pin	Pin	Signal
Vcc	1	2	Vertical SYNC
Switched 12V	3	4	Ground
Switched VEE	5	6	Horizontal SYNC
Switched Vcc	7	8	Ground
Switched Vcc	9	10	Enable Backlight
Shift Clock	11	12	Ground
Line Pulse	13	14	Detect
Display Enable	15	16	Ground
First Line Marker	17	18	Ground
Data B5	19	20	Ground
Data B4	21	22	Not Used
Data B3	23	24	Ground
Data B2	25	26	Not Used
Data B1	27	28	Ground
Data B0	29	30	Not Used
Data G5	31	32	Ground
Data G4	33	34	Not Used
Data G3	35	36	Ground
Data G2	37	38	Not Used
Data G1	39	40	Ground
Data G0	41	42	Not Used
Data R5	43	44	Ground
Data R4	45	46	Data R0
Data R3	47	48	Ground
Data R2	49	50	Data R1

**LVDS OUTPUT**

P9 - Connector: 40-way 0.1" pitch pin header

Mating Connector: 40-way 0.1" pitch IDC or crimp socket

Signal	Pin	Pin	Signal
Ground	1	2	LVDS Channel 1 T3
LVDS Channel 1 T3#	3	4	Ground
LVDS Channel 1 CLK	5	6	LVDS Channel 1 CLK#
Panel hot plug detect	7	8	LVDS Channel 1 T2
LVDS Channel 1 T2#	9	10	Ground
LVDS Channel 1 T1	11	12	LVDS Channel 1 T1#
Ground	13	14	LVDS Channel 1 T0
LVDS Channel 1 T0#	15	16	Ground
LVDS Channel 0 T3	17	18	LVDS Channel 0 T3#
Ground	19	20	LVDS Channel 0 CLK
LVDS Channel 0 CLK#	21	22	Ground
LVDS Channel 0 T2	23	24	LVDS Channel 0 T2#
Ground	25	26	LVDS Channel 0 T1
LVDS Channel 0 T1#	27	28	Digital panel power control
LVDS Channel 0 T0	29	30	LVDS Channel 0 T0#
Display VCC	31	32	Display VCC
Panel contrast control	33	34	Enable backlight
Not used*	35	36	Not used*
Not used	37	38	Not used
12V	39	40	12V

\*On some ETX processor boards the signals on pins 35 and 36 of connector P9 are data and clock pins respectively for an I<sup>2</sup>C EEPROM interface for LCD panel configuration information.

**SYSTEM MANAGEMENT BUS**

P10 - Connector: Molex 0.1" KK 6-way pin header

Mating Connector: Molex 0.1" KK 6-way plug

Pin	Signal
1	VCC
2	SM Bus Clock
3	SM Bus Data
4	SM Bus Alert
5	Not Used
6	Ground

**I<sup>2</sup>C BUS**

P11 - Connector: 4-way 0.1" pin header

Mating Connector: 4-way 0.1" SIL and crimps

Pin	Signal
1	VCC
2	I <sup>2</sup> C Clock
3	I <sup>2</sup> C Data
4	Ground

**50 WAY PRIMARY IDE CONNECTOR**

P12 - Connector: 40-way 2mm pin header.

Mating connector: 40-way 2mm (IDC) socket.

Signal	Pin No	Pin No	Signal
J4 - Pin 1	1	2	J4 - Pin 2
J4 - Pin 3	3	4	J4 - Pin 4
Not Used	5	6	Not Used
-Reset	7	8	Ground
Data bit 7 (HD)	9	10	Data bit 8 (HD)
Data bit 6 (HD)	11	12	Data bit 9 (HD)
Data bit 5 (HD)	13	14	Data bit 10 (HD)
Data bit 4 (HD)	15	16	Data bit 11 (HD)
Data bit 3 (HD)	17	18	Data bit 12 (HD)
Data bit 2 (HD)	19	20	Data bit 13 (HD)
Data bit 1 (HD)	21	22	Data bit 14 (HD)
Data bit 0 (HD)	23	24	Data bit 15 (HD)
Ground	25	26	Not used
Drive Request	27	28	Ground
-IO Write (HD)	29	30	Ground
-IO Read (HD)	31	32	Ground
Drive Ready	33	34	Not Used
Drive Acknowledge	35	36	Ground
IRQ14	37	38	HDIOCS16
Address 1 (HD)	39	40	Not Used
Address 0 (HD)	41	42	Address 2 (HD)
-Chip Select 0 (HD)	43	44	-Chip Select 1 (HD)
PLED	45	46	Ground
5V	47	48	5V
Ground	49	50	Ground

**40 WAY PRIMARY IDE CONNECTOR**

P13 - Connector: 40-way 0.1" pitch header

Mating Connector: 40-way 0.1" pitch IDC socket

[Standard Pin Out.](#)

**KEYBOARD INHIBIT**

P14 - Connector: Molex 0.1" KK 2-way pin header

Mating Connector: Molex 0.1" KK 2-way plug

Pin	Signal
1	Keyboard inhibit
2	VCC

**40 WAY SECONDARY IDE CONNECTOR**

P15 - Connector: 40-way 0.1" pitch header

Mating Connector: 40-way 0.1" pitch IDC socket

[Standard Pin Out.](#)

**BATTERY LOW**

P16 - Connector: Molex 0.1" KK 2-way pin header

Mating Connector: Molex 0.1" KK 2-way plug

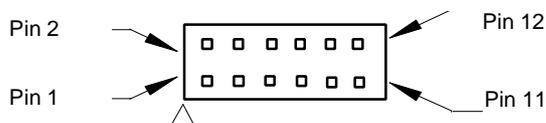
Pin	Signal
1	Ground
2	Battery low

NOTE: This signal can be used to notify the ETX processor card that the battery voltage is low, or can be used for other notification events.

**UTILITIES**

P17 - Connector: 12-way 0.1" pitch pin header

Mating Connector: 12-way 0.1" pitch IDC or crimp socket



View on Connecting Pins

Signal	Pin	Pin	Signal
HDD Activity +ve	1	2	HDD Activity -ve
Power LED +ve	3	4	Ground
Power Switch	5	6	Ground
Reset Button	7	8	Ground
External SMI	9	10	Ground
Speaker +ve	11	12	Speaker -ve

**PARALLEL PORT 2**

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P18 - Connector: 2x13-way 0.1" pitch pin header  
Mating Connector: 2x13-way 0.1" pitch IDC socket  
[Standard Pin Out.](#)

NOTE: This connector provides an additional parallel port when the SMC SuperIO device is fitted.

**SERIAL PORT 3**

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P19 - Connector: 5x2-way 0.1" pitch pin header  
Mating Connector: 5x2-way 0.1" pitch IDC socket  
[Standard Pin Out.](#)

NOTE: This connector provides an additional RS232 serial port when the SMC SuperIO device is fitted.

**SECONDARY FLOPPY DISK INTERFACE**

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P20 - Connector: 34-way 0.1" pitch header  
Mating Connector: 34-way 0.1" pitch IDC socket  
[Standard Pin Out](#)

NOTE: This connector provides a full implementation of the floppy disk interface when the SMC SuperIO device is fitted.

**SERIAL PORT 4**

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P21 - Connector: 5x2-way 0.1" pitch pin header  
Mating Connector: 5x2-way 0.1" pitch IDC socket  
[Standard Pin Out.](#)

NOTE: This connector provides an additional RS232 serial port when the SMC SuperIO device is fitted.

**SERIAL PORT 1 (RS232) AND SERIAL PORT 2**

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P22 - Connector: Standard 9 way male D type  
Mating Connector: Standard 9 way female D type  
[Standard Pin Out.](#)

**IRDA**

P23 - Connector: 5-way 0.1" pitch pin header

Mating Connector: 5-way SIL 0.1" socket

Pin	Signal
1	5V
2	<b>KEY</b>
3	IR RX
4	0V
5	IR TX

**SERIAL PORT 1 (RS485)**

P24 - Connector: 10-way 0.1" pitch pin header

Mating Connector: 10-way 0.1" pitch IDC socket

Signal	Pin No.	Pin No.	Signal
+Rx FDX	1	2	+Term. 10K to +5V
-Rx FDX	3	4	No Connect
+Tx FDX, +Rx/+Tx HDX	5	6	No Connect
-Tx FDX, -RX/-Tx HDX	7	8	No Connect
-Term. 10K to Gnd	9	10	No Connect

**ATX POWER**

P25 - Connector: 20-way ATX power connector

Mating Connector: 20-way ATX power supply connector

Note: The power on signal can be bypassed to allow the power supply to be always on by fitting a link to jumper J15.

**PARALLEL PORT 1 / VGA**

P26 - LPT Connector: 25-way D-type socket

Mating Connector: 25-way D-type plug

P26 - VGA Connector: High-density 15-pin D-type socket.

Mating Connector: High-density 15-pin D-type plug.

[Standard Pin Out](#)

NOTE: The parallel port interface is shared with the primary floppy disk interface and is selected using jumper J3.

**PRIMARY FLOPPY DISK INTERFACE**

P27 - Connector: 34-way 0.1" pitch header  
 Mating Connector: 34-way 0.1" pitch IDC socket

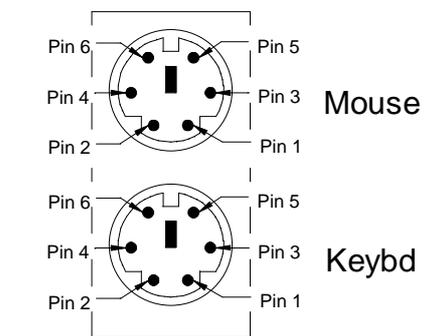
[Standard Pin Out](#)

NOTE: This interface is shared with parallel port 1 and is selected using jumper J3.

**PS/2 MOUSE AND KEYBOARD**

P28 - Connector: PS/2 6-pin mini-DIN socket.  
 Mating Connector: PS/2 keyboard or mouse connector.

Pin	Upper	Lower
1	Mouse Data	Keyboard Data
2	Not Used	Mouse Data
3	Ground	Ground
4	+5V	+5V
5	Mouse Clock	Keyboard Clock
6	Not Used	Mouse Clock



View on Connecting Sockets

**COMPOSITE / S-VIDEO OUTPUT**

P29 - Connector: 8-way 0.1" pitch pin header  
 Mating Connector: 8-way 0.1" pitch IDC socket or crimps

Signal	Pin	Pin	Signal
Intensity	1	2	Ground
Chroma	3	4	Ground
Composite Sync	5	6	Ground
Composite Video	7	8	Ground

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## STANDARD CONNECTORS

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The attached guide is a general reference point for the following standard pin-outs.

[Standard Pin Out](#)

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# AMENDMENT HISTORY

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Issue Level	Issue Date	Author	Amendment Details
0.1	02/07/2003	AJP	First Draft Issue