PBE-1400

XTX Evaluation Board

Quick Installation Guide

Version 1.1

Form Factor	VGA	Audio
XTX Evaluation Board	***LVDS 18/24/36/48-bit CRT connectors***	***ALC888 HD Codec, Line-in/out, Mic-in***

I/O	Ethernet
Express Card/ PCI Express/ PCI/ SATA/ USB/ IDE/ COM/ LPT/ FDD	***1 x LAN Connector***

♦ Technical Support

If you have any technical difficulties, please do not hesitate to call or e-mail our customer service.

http://www.arbor.com.tw
E-mail: info@arbor.com.tw

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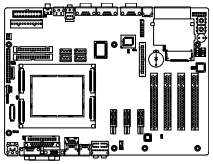
What is “XTX™” ?

XTX™ is an expansion and continuation of the well-established and highly successful ETX® standard. XTX™ offers the newest I/O technologies on this proven form factor. Now that the ISA bus is being used less and less in modern embedded applications XTX™
offers an array of different features on the X2 connector than those currently found on the ETX® platform.
These features include new serial high speed buses such as PCI Express, SATA, Express Card, LPC Bus, Extended Power Management, 6 USB 2.0 devices, Digital Audio.
All other signals found on connectors X1, X3, and X4 remain the same in accordance to the ETX® standard (Rev. 2.7) and therefore will be completely compatible.

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:



1 x PBE-1400 XTX evaluation board

1 x UltraDMA 100 IDE flat cable
1 x Serial ATA cable

1 x Quick Installation Guide
1 x Driver CD

Ordering Information

PBE-1400	XTX evaluation board in ATX form factor
Bracket	For PBE-1400 Bracket

The Installation Paths of CD Driver

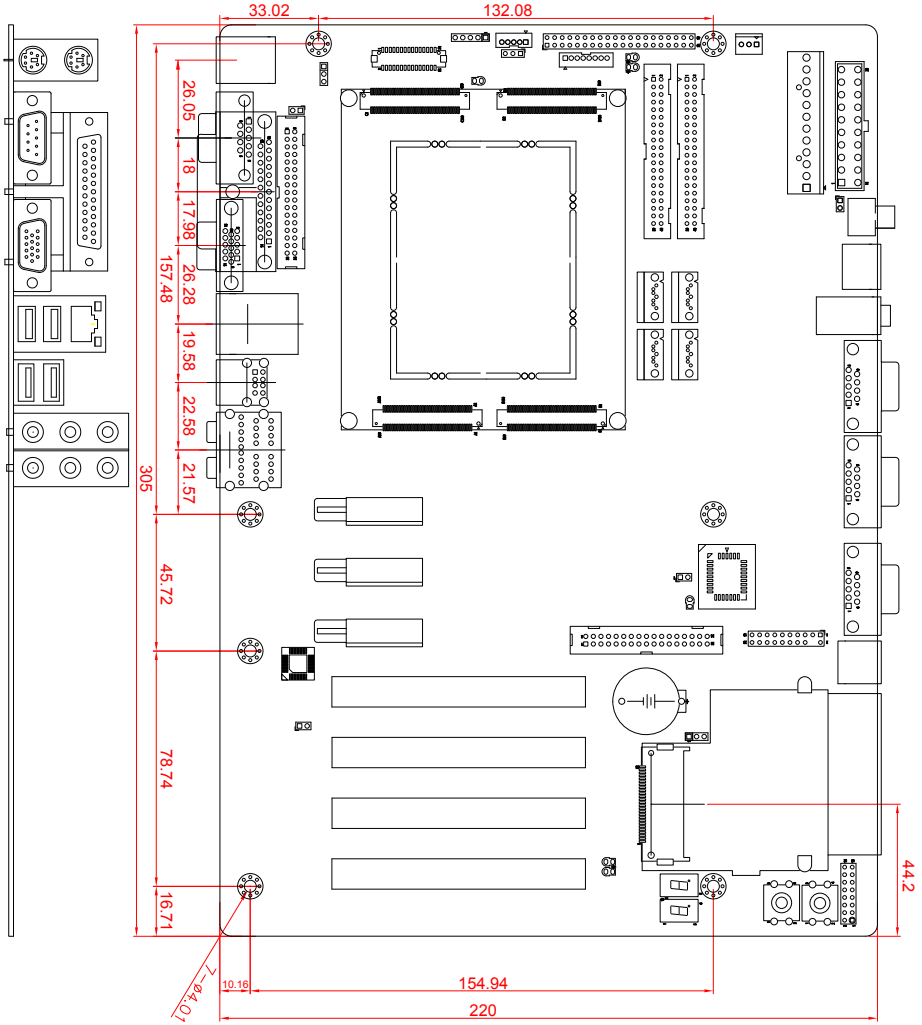
Driver	Path
AUDIO	\AUDIO\REALTEK_HD\WINDOWS_R178

Specifications

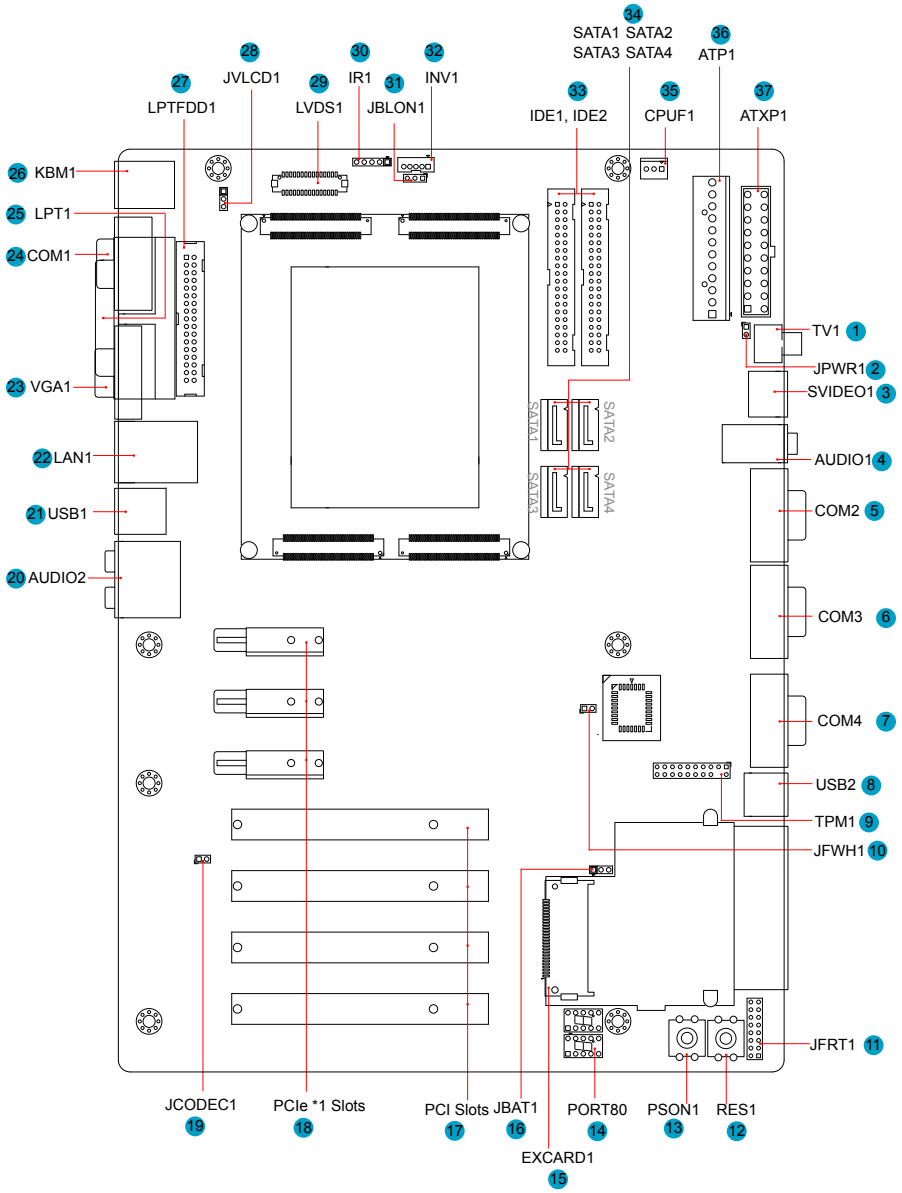
Form Factor	XTX evaluation board in ATX form factor
I/O Chips	WINBOND W83627
BIOS	Phoenix-Award PnP Flash BIOS
Audio	ALC888 HD Codec, Line-in/out, Mic-in
Serial ATA	4 x Serial ATA connector
IDE Interface	2 x Ultra DMA 100, support 4 IDE devices
Serial Port	4 x COM port (two by Module, two by evaluation board)
Parallel Port/ Floppy	1 x SPP/EPP/ECP mode 1 x Floppy connector, shared with Parallel Port #1
KBMS	Standard PS/2 Keyboard and mouse
Universal Serial Bus	5 x USB port
VGA/ LCD/TV	CRT: 15-pin D-Sub female connector LVDS: 30-pin for 18/24/36/48-bit 1 x 3 pin header for 3.3/5V LCD power selection 1 x 5 pin wafer for Inverter power TV: 1 x RCA Jack & 1 x S-Video Mini DIN for TV-out
LAN	1 x RJ-45 connector (Transfer rate depends on Module)
Expansion Interface	1 x Express Card/54 3 x PCI Express *1 4 x PCI slot (32-bit/33MHz)
Hardware Monitor Chip	Integrated in W83627
RTC	Real Time Clock
Port 80 LED	For debug using
Operation Temp.	0°C ~ 60°C (32°F ~ 140°F)
Power Connector	ATX and AT Power
Dimension	305(L) x 220(W) mm (12” x 8.7”)

Jumpers/ Connectors Quick Reference

Board Layout Top View



Jumpers & Connectors



Jumpers

JPWR1: AT/ATX Power Mode (2)

Connector type: 2.54mm pitch 1x2 pin header.

Pin	Setup	Mode	
1-2	Open (Default)	ATX	
1-2	Short	AT	

JFWH1: BIOS Boot Select (10)

Connector type: 2.54mm pitch 1x2 pin header.

Pin	Setup	Mode	
1-2	Open (Default)	XTX module	
1-2	Short	Carrier Board	

JBAT1: Clear CMOS Setup (16)

Connector type: 2.54mm pitch 1x3 pin header.

Pin	Mode	
1-2	Keep CMOS (Default)	
2-3	Clear CMOS	

JCODEC1: Codec Select (19)

Connector type: 2.54mm pitch 1x2 pin header.

Pin	Setup	Mode	
1-2	Open (Default)	XTX module	
1-2	Short	Carrier Board	

JVLCD1: LCD Panel Voltage Select (28)

The voltage of LCD panel could be selected by JVLCD1 in +5V or +3.3V.

Connector type: 2.54mm pitch 1x3 pin header.

Pin	Voltage	
1-2	+5V	
2-3	+3.3V (Default)	

JBLON1: LCD Panel Backlight Select (31)

Connector type: 2.54mm pitch 1x3 pin header.

Pin	Mode	
1-2	Backlight on Hi Active	
2-3	Backlight on Low Active (Default)	

Switches and Indicators

RES1: Reset Button (12)

PSON1: Power On Button (13)

PORT80: Port 80 Postcodes for debug (14)

Connectors

TV1: TV OUT Connector (1)

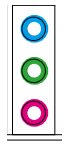
Connector type: RCA Jack 3-pin.

SVIDEO1: Super Video (3)

Connector type: Mini DIN Jack.

AUDIO1: AC'97 Audio Jacks (4)

Connector type: triple stack audio jacks (Stereo ø3.50).



Blue: Line In

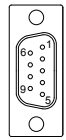
Green: Line Out

Pink: MIC In

COM1~4: RS-232 Connectors (5, 6, 7, 24)

Connector type: D-Sub 9-pin male.

Pin	Desc.	Pin	Desc.
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND		



USB1/ 2: USB Connectors (8, 21)

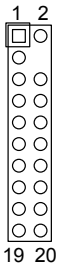
Connector type: 2.00m pitch 2x5 pin header.

Pin	Desc.	Pin	Desc.
1	+5V	2	+5V
3	USBD-	4	USBD-
5	USBD+	6	USBD+
7	GND	8	GND
9	GND	10	N/C (Key)

TPM1: Trusted Platform Module Connector (9)

Connector type: 2.00mm pitch 2x10 pin header

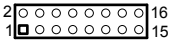
Pin	Desc.	Pin	Desc.
1	LCLK	2	GND
3	LFRAME#	4	Key
5	LRESET#	6	+5V
7	LAD3	8	LAD2
9	+3.3V	10	LAD1
11	LAD0	12	GND
13	SMBCLK	14	SMBDATA
15	+3.3V_SB	16	SERIRQ
17	GND	18	CLKRUN#
19	LPCPD#	20	LDRQ#



JFRT1: Switches and Indicators (11)

It provides connectors for system indicators that provides light indication of the computer activities and switches to change the computer status.

Connector type: 2.54m pitch 2x8 pin header.



Pin	Description	Pin	Description
1	Power LED+	2	PWRBTN-
3	GND	4	PWRBTN+
5	GND	6	RESET+
7	HDD LED+	8	RESET-
9	HDD LED-	10	SPEAKER+
11	SMBCLK	12	SPEAKER+
13	SMBDATA	14	SPEAKER-
15	GND	16	SPEAKER-

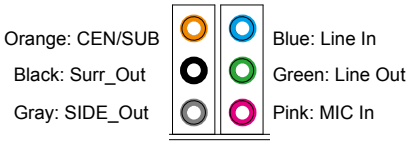
EXCARD1: Express Card (15)

PCI1/ PCI2/ PCI3/ PCI4: 32-bit PCI Slot (17)

PCIE2/ PCIE3/ PCIE4: PCI Express x1 Slot (18)

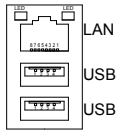
AUDIO2: HD AUDIO Jacks (20)

Connector type: 2 x triple stack audio jacks (Stereo ø3.50).



LAN1, USB1: 1 x RJ-45 + 2 x USB (22)

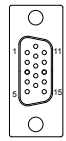
Connector type: RJ-45 + double stack USB type A connector.



VGA1: CRT Connector (23)

Connector type: D-Sub 15-pin female.

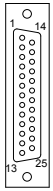
Pin	Desc.	Pin	Desc.
1	RED	9	N/C
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	D-DATA
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	D-DCLK
8	GND		



LPT1: Parallel Port (25)

Connector type: D-Sub 25-pin female.
SPP/EPP/ECP mode, shared with LPTFDD1.

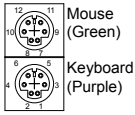
Pin	Desc.	Pin	Desc.
1	STROBE	14	AFD
2	PTD0	15	ERROR
3	PTD1	16	INIT
4	PTD2	17	SLIN
5	PTD3	18	GND
6	PTD4	19	GND
7	PTD5	20	GND
8	PTD6	21	GND
9	PTD7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		



KBM1: PS/2 Keyboard & Mouse (26)

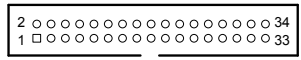
Standard PS/2 Keyboard & Mouse connector
Connector type: double stack 6-pin mini DIN.

Pin	Description
1	KB Data
2	N/C
3	GND
4	+5V
5	KB Clock
6	N/C
7	MS Data
8	N/C
9	GND
10	+5V
11	MS Clock
12	N/C



LPTFDD1: FDD Connector (27)

Floppy connector, LPTFDD1 shared with LPT1.
Connector type: 2.54mm pitch 2x17 box header.

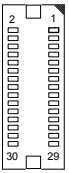


Pin	Description	Pin	Description
1	GND	2	DRVDEN0
3	GND	4	N/C
5	GND	6	DRVDEN1
7	GND	8	INDEX#
9	GND	10	MOA#
11	GND	12	DSB#
13	GND	14	DSA#
15	GND	16	MOB#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TRACK0#
27	GND	28	WP#
29	GND	30	RDATA#
31	GND	32	HEAD#
33	GND	34	DSKCHG#

LVDS1: LVDS LCD Connector (29)

Connector type: DF-13-30DP-1.25V connector.

Pin	Desc.	Pin	Desc.
2	VDD	1	VDD
4	TX2CLK+	3	TX1CLK+
6	TX2CLK-	5	TX1CLK-
8	GND	7	GND
10	TX2D0+	9	TX1D0+
12	TX2D0-	11	TX1D0-
14	GND	13	GND
16	TX2D1+	15	TX1D1+
18	TX2D1-	17	TX1D1-
20	GND	19	GND
22	TX2D2+	21	TX1D2+
24	TX2D2-	23	TX1D2-
26	GND	25	GND
28	TX2D3+	27	TX1D3+
30	TX2D3-	29	TX1D3-



SIR1: Infrared Connector (30)

Connector type: 2.54mm pitch 1x5 pin header.

Pin	Description
1	+5V
2	N/C
3	IRRX
4	GND
5	IRTX

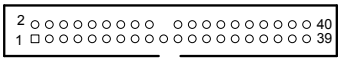
INV1: LCD Inverter Connector (32)

Connector type: 2.00m pitch 1x5 box wafer connector.

Pin	Description
1	+12V
2	GND
3	Backlight on/off
4	Brightness control
5	GND

IDE1/ IDE2: 40-pin IDE Connector (33)

Connector type: 2.54mm pitch 2x20 box header.

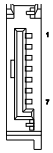


Pin	Description	Pin	Description
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N/C (Key)
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	IDESEL
29	DACK	30	GND
31	IRQ14	32	N/C
33	ADDR1	34	ATA66 DETECT
35	ADDR0	36	ADDR2
37	CS0#	38	CS1# (HD SELECT1#)
39	IDEACTP	40	GND

SATA1~4: Serial ATA Connectors (34)

High speed transfer rates (300MB/s).

Pin	Description
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



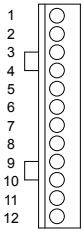
CPUF1: Fan Power Connector (35)

CPUF1 is a 3-pin header for the CPU fan. The fan must be a +12V fan.

Pin	Description
1	GND
2	+12V
3	FAN_CTL

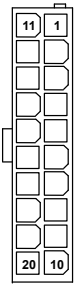
ATP1: AT Power Connector (36)

Pin	Description
1	Power good
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V



ATXP1: ATX Power (37)

Pin	Desc.	Pin	Desc.
11	+3.3V	1	+3.3V
12	-12V	2	+3.3V
13	GND	3	GND
14	PS-ON	4	+5V
15	GND	5	GND
16	GND	6	+5V
17	GND	7	GND
18	-5V	8	PW-OK
19	+5V	9	+5VSB
20	+5V	10	+12V



ETX1 Connector

A1	GND	GND10	A2
A3	PCICLK3	PCICLK4	A4
A5	GND	GND11	A6
A7	PCICLK1	PCICLK2	A8
A9	REQ#3	GNT#3	A10
A11	GNT#2	+3.3V	A12
A13	REQ#2	GNT#1	A14
A15	REQ#1	+3.3V	A16
A17	GNT#0	N.C	A18
A19	+5V	+5V	A20
A21	SERIRQ	REQ#0	A22
A23	AD0	+3.3V	A24
A25	AD1	AD2	A26
A27	AD4	AD3	A28
A29	AD6	AD5	A30
A31	CBE#0	AD7	A32
A33	AD8	AD9	A34
A35	GND7	GND	A36
A37	AD10	AUXAL	A38
A39	AD11	MIC	A40
A41	AD12	AUXAR	A42
A43	AD13	ASVCC	A44
A45	AD14	SNDL	A46
A47	AD15	ASGND	A48
A49	CBE#1	SNDR	A50
A51	+5V	+5V	A52
A53	PAR	SERR#	A54
A55	PERR#	N.C2	A56
A57	PME#	USB2-	A58
A59	LOCK#	DEVSEL#	A60
A61	TRDY#	USB3-	A62
A63	IRDY#	STOP#	A64
A65	FRAME#	USB2+	A66
A67	GND	GND	A68
A69	AD16	CBE#2	A70
A71	AD17	USB3+	A72
A73	AD19	AD18	A74
A75	AD20	USB0-	A76
A77	AD22	AD21	A78
A79	AD23	USB1-	A80
A81	AD24	CBE#3	A82
A83	+5V	+5V	A84
A85	AD25	AD26	A86
A87	AD28	USB0+	A88
A89	AD27	AD29	A90
A91	AD30	USB1+	A92
A93	PCIRST#	AD31	A94
A95	INTR#C	INTR#D	A96
A97	INTR#A	INTR#B	A98
A99	GND	GND	A100

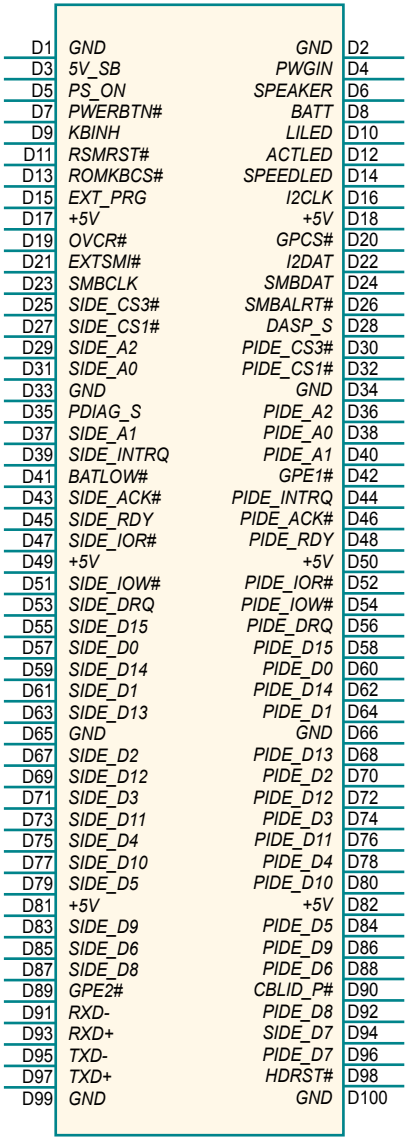
ETX2 Connector

B1	GND	GND	B2
B3	PCIE_CLK_REF+	SATA0_RX+	B4
B5	PCIE_CLK-REF-	SATA0_RX-	B6
B7	GND	GND	B8
B9	PCIE3_TX+	SATA0_TX-	B10
B11	PCIE3_TX-	SATA0_TX+	B12
B13	GND	5V_SB	B14
B15	PCIE3_RX+	SATA1_RX+	B16
B17	PCIE3_RX-	SATA1_RX-	B18
B19	VCC	5V_SB	B20
B21	EXC1_CPPE	SATA1_TX-	B22
B23	EXC1_RST	SATA1_TX+	B24
B25	USBP5	GND	B26
B27	USBP5#	SATA2_RX+	B28
B29	GND	SATA2_RX-	B30
B31	PCIE2_TX+	SUS_STAT#	B32
B33	PCIE2_TX-	PCI_CLKRUN#	B34
B35	GND	GND	B36
B37	PCIE2_RX+	SATA2_TX-	B38
B39	PCIE2_RX-	SATA2_TX+	B40
B41	EXC0_CPPE	GND	B42
B43	EXC0_RST	SATA3_RX+	B44
B45	USB4P	SATA3_RX-	B46
B47	USB4P#	WDTRIG	B48
B49	SLP_S3#	SATALED#	B50
B51	VCC	VCC	B52
B53	PCIE1_RX-	SATA3_TX-	B54
B55	PCIE1_RX+	SATA3_TX+	B56
B57	GND	IL_SATA#	B58
B59	PCIE1_TX-	PP_TPM	B60
B61	PCIE1_TX+	NC	B62
B63	PCE_WAKE	PCI_GNT#A	B64
B65	SLP_S5#	PCI_REQ#A	B66
B67	GND	GND	B68
B69	PCIE0_RX-	NC	B70
B71	PCIE0_RX+	NC	B72
B73	GND	VCC	B74
B75	PCIE0_TX-	NC	B76
B77	PCIE0_TX+	NC	B78
B79	CODECSET	VCC	B80
B81	AC_RST#	AC_SDOUT	B82
B83	VCC	VCC	B84
B85	AC_SYNC	AC_SDIN0	B86
B87	AC_SDIN1	AC_SDIN2	B88
B89	AC_BIT_CLK	FAN_TACHOIN	B90
B91	LPC_AD0	FAN_PWMOUT	B92
B93	LPC_AD1	LPC_FRAME#	B94
B95	LPC_AD2	LPC_DRQ0#	B96
B97	LPC_AD3	LPC_DRQ1#	B98
B99	GND	GND	B100

ETX3 Connector

C1	GND	GND	C2
C3	R	B	C4
C5	HSY	G	C6
C7	VSY	DDCK	C8
C9	DETECT#	DDDA	C10
C11	LCD16/B4	LCD18/SHFCLK	C12
C13	LCD17/B5	LCD19/EN	C14
C15	GND	GND	C16
C17	LCD13/B1	LCD15/B3	C18
C19	LCD12/B0	LCD14/B2	C20
C21	GND	GND	C22
C23	LCD8/G2	LCD11/G5	C24
C25	LCD9/G3	LCD10/G4	C26
C27	GND	GND	C28
C29	LCD4/R4	LCD7/G1	C30
C31	LCD5/R5	LCD6/G0	C32
C33	GND	GND	C34
C35	LCD1/R1	LCD3/R3	C36
C37	LCD0/R0	LCD2/R2	C38
C39	+5V	+5V	C40
C41	JILI_DAT	LTGIO0/VSYNC	C42
C43	JILI_CLK	BLON#	C44
C45	BIASON/HSYNC	DIGON	C46
C47	COMP	Y	C48
C49	SYNC	C	C50
C51	LPT/FLPY#	N.C	C52
C53	+5V	GND	C54
C55	STB#/I.C	AFD#/DENSEL	C56
C57	N.C	PD7/N.C	C58
C59	IRRX	ERR#/HDSEL#	C60
C61	IRTX	PD6/N.C	C62
C63	RXD2	INIT#/DIR#	C64
C65	GND	GND	C66
C67	RTS#2	PD5/N.C	C68
C69	DTR#2	SLIN#/STEP#	C70
C71	DCD#2	PD4/DSKCHG#	C72
C73	DSR#2	PD3/RDATA#	C74
C75	CTS#2	PD2/WP#	C76
C77	TXD#2	PD1/TRK0#	C78
C79	RI#2	PD0/INDEX#	C80
C81	+5V	+5V	C82
C83	RXD1	ACK#/DRV	C84
C85	RTS#1	BUSY#/MOT	C86
C87	DTR#1	PE/WDATA#	C88
C89	DCD#1	SLCT#/WGATE#	C90
C91	DSR#1	MSCLK	C92
C93	CTS#1	MSDAT	C94
C95	TXD#1	KBCLK	C96
C97	RI#1	KBDAT	C98
C99	GND	GND	C100

ETX4 Connector



D1	GND	GND	D2
D3	5V_SB	PWGIN	D4
D5	PS_ON	SPEAKER	D6
D7	PWERBTN#	BATT	D8
D9	KBINH	LILED	D10
D11	RSMRST#	ACTLED	D12
D13	ROMKBCS#	SPEEDLED	D14
D15	EXT_PRG	I2CLK	D16
D17	+5V	+5V	D18
D19	OVCR#	GPCS#	D20
D21	EXTSMI#	I2DAT	D22
D23	SMBCLK	SMBDAT	D24
D25	SIDE_CS3#	SMBALRT#	D26
D27	SIDE_CS1#	DASP_S	D28
D29	SIDE_A2	PIDE_CS3#	D30
D31	SIDE_A0	PIDE_CS1#	D32
D33	GND	GND	D34
D35	PDIAG_S	PIDE_A2	D36
D37	SIDE_A1	PIDE_A0	D38
D39	SIDE_INTRQ	PIDE_A1	D40
D41	BATLOW#	GPE1#	D42
D43	SIDE_ACK#	PIDE_INTRQ	D44
D45	SIDE_RDY	PIDE_ACK#	D46
D47	SIDE_IOR#	PIDE_RDY	D48
D49	+5V	+5V	D50
D51	SIDE_IOW#	PIDE_IOR#	D52
D53	SIDE_DRQ	PIDE_IOW#	D54
D55	SIDE_D15	PIDE_DRQ	D56
D57	SIDE_D0	PIDE_D15	D58
D59	SIDE_D14	PIDE_D0	D60
D61	SIDE_D1	PIDE_D14	D62
D63	SIDE_D13	PIDE_D1	D64
D65	GND	GND	D66
D67	SIDE_D2	PIDE_D13	D68
D69	SIDE_D12	PIDE_D2	D70
D71	SIDE_D3	PIDE_D12	D72
D73	SIDE_D11	PIDE_D3	D74
D75	SIDE_D4	PIDE_D11	D76
D77	SIDE_D10	PIDE_D4	D78
D79	SIDE_D5	PIDE_D10	D80
D81	+5V	+5V	D82
D83	SIDE_D9	PIDE_D5	D84
D85	SIDE_D6	PIDE_D9	D86
D87	SIDE_D8	PIDE_D6	D88
D89	GPE2#	CBLID_P#	D90
D91	RXD-	PIDE_D8	D92
D93	RXD+	SIDE_D7	D94
D95	TXD-	PIDE_D7	D96
D97	TXD+	HDRST#	D98
D99	GND	GND	D100