

IP160

ETX Baseboard with
Multiple Ethernets

USER'S MANUAL

Version 1.0

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Introduction

Product Description

The IP160 is a custom size baseboard designed for ETX CPU modules for applications that requires multiple Ethernets. The IP160 is designed with three Ethernet controllers on board with corresponding RJ45 Ethernet connectors. A fourth Ethernet connector can be used to support the additional or 4th Ethernet function as provided by the ETX CPU module.

The IP160 baseboard also supports other essential connectors including one serial port, MicroPCI connector, VGA CRT connector, primary IDE and secondary IDE connectors, PS/2 keyboard/mouse connector and four ETX connectors where the ETX CPU module is plugged into.

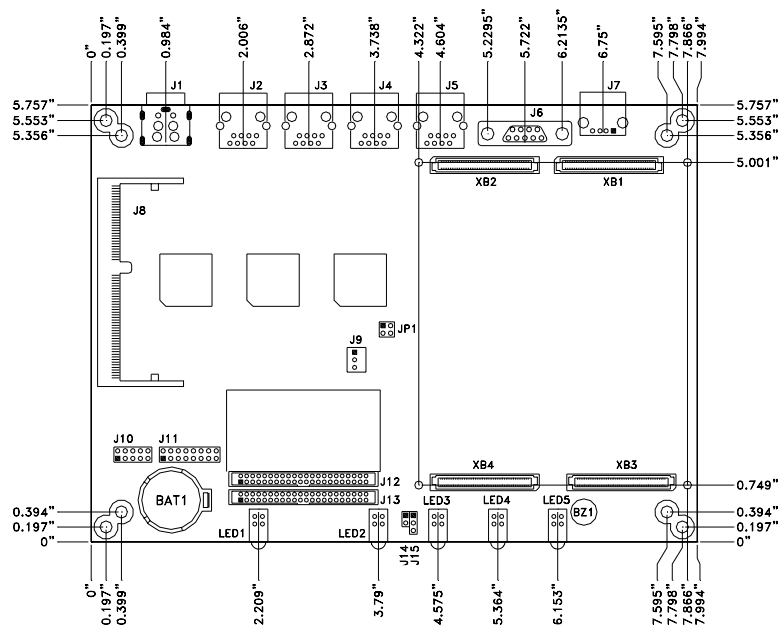
The IP160 has dimensions of 5.75" by 8".

Checklist

Your IP160 package should include the items listed below. Damaged or missing items should be reported to your supplier.

- The IP160 Embedded Little Board
- This User's Manual
- One compact disc containing the following:
 - Ethernet Drivers
- Optional cables such as:
 - 1 PS/2 Keyboard/Mouse Cable
 - 1 VGA Cable

Board Dimensions



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Installations

This section provides information on how to use the jumpers and connectors on the IP160 in order to set up a workable system. The topics covered are:

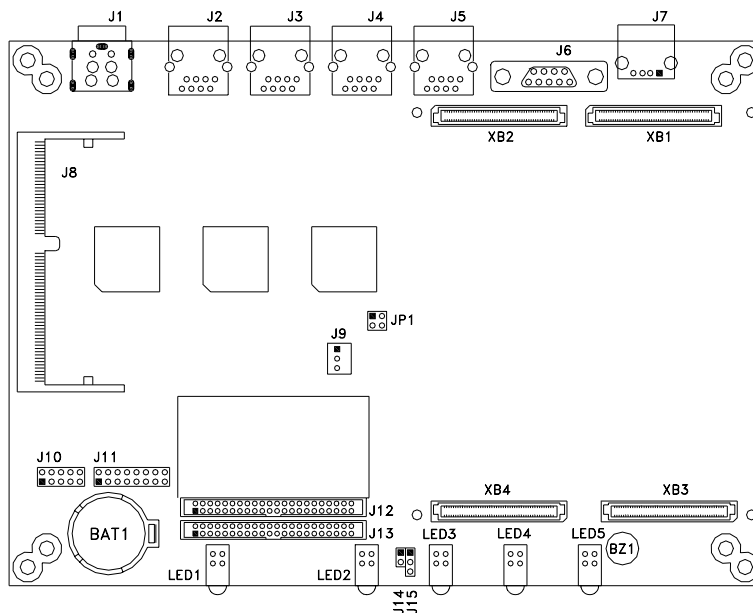
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Connectors on IP160

The connectors on IP160 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on IP160 and their respective functions.

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Connector Locations on IP160



NOTE: Before installing the ETX CPU module, make sure of the pin orientation of both the ETX interface connectors and the ETX module connector before plugging the module. Once the module is slightly plugged in, use an even force to fully plug in the module.

Connectors on IP160

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J1: Power Connector

This power connector is located on the rear-side connectors and is used for an optional power adaptor.

DC+5V 4A



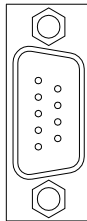
J2, J3, J4: RJ45 LAN Connectors

These three LAN (LAN1/2/3) connectors are used in conjunction with the three Realtek RTL8100BL Ethernet controllers on IP160. A fourth RJ45 connector supports the LAN function on the ETX CPU module.

J5: LAN4 RJ45 Connector

The fourth RJ45 connector (LAN4) is used in conjunction with the Ethernet controller that is onboard the ETX CPU module that is plugged into IP160.

J6: Serial Port

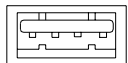


Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	Ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator

J7: USB Connector

J7 is a USB port located on the rear side of IP160 baseboard.

USB

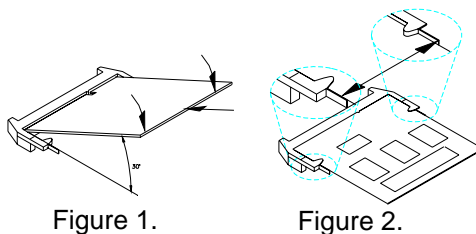


Pin #	Signal Name
1	5 Vcc
2	6 USB-
3	7 USB+
4	8 Ground

J8: MicroPCI Connector

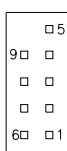
The IP160 baseboard is integrated with a **MicroPCI socket** that uses SO-DIMM 144-pin connectors. These sockets can accommodate the optional MicroPCI daughter cards.

To insert the MicroPCI daughter cards, position it at 30° to the PCB and gently push it into the MicroPCI connector (See Figure 1 below). The card will not fit when inserted at an angle of 45° or 15°. Once inserted, slowly press the card towards the PCB until it locks on both sides to the clips of the connector. Screw the card to the PCB to secure the installation. To remove the MicroPCI card, pull the ‘clips’ sideways as shown in Figure 2 below.



J10: PS/2 Keyboard/Mouse Connector

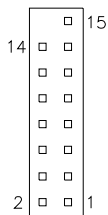
J10 is a 10-pin header connector that supports keyboard and mouse.



Signal Name	Pin #	Pin #	Signal Name
N.C.	10	5	N.C.
KB clock	9	4	Mouse clock
KB data	8	3	Mouse data
Vcc	7	2	Vcc
Ground	6	1	Ground

J11: VGA CRT Connector

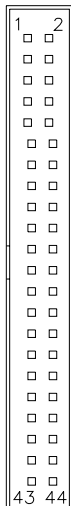
J11 is a 15-pin header for an external VGA CRT female connector.



Signal Name	Pin	Pin	Signal Name
Red	1	2	Vcc
Green	3	4	Ground
Blue	5	6	N.C.
N.C.	7	8	N.C.
Ground	9	10	H-Sync
Ground	11	12	V-Sync
Ground	13	14	N.C.
Ground	15	16	N.C.

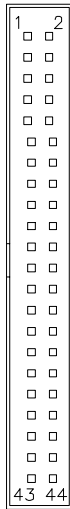
J12, J13: EIDE Connectors

J12 is the *primary* IDE connector. J13 is the *secondary* IDE connector.



J12: IDE1

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground
Vcc	41	42	Vcc
Ground	43	44	N.C.



J13: IDE2

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK1	29	30	Ground
MIRQ0	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground
Vcc	41	42	Vcc
Ground	43	44	N.C.

XB1: ETX Interface for PCI-Bus, USB

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	51	VCC	52	VCC
3	PCICLK3	4	PCICLK4	53	PAR	54	SERRJ
5	GND	6	GND	55	GPERRJ	56	N C
7	PCICLK1	8	PCICLK2	57	PMEJ	58	NC
9	REQJ3	10	GNTJ3	59	NC	60	DEVSELJ
11	GNTJ2	12	3V	61	TRDYJ	62	USB30
13	REQJ2	14	GNTJ1	63	IRDYJ	64	STOPJ
15	REQJ 1	16	3V	65	FRAMEJ	66	NC
17	GNTJ0	18	N.C.	67	GND	68	GND
19	VCC	20	VCC	69	AD16	70	CBEJ2
21	NC	22	REQJ0	71	AD17	72	NC
23	AD0	24	3V	73	AD19	74	AD18
25	AD1	26	AD2	75	AD20	76	USB00
27	AD4	28	AD3	77	AD22	78	AD21
29	AD6	30	AD5	79	AD23	80	NC
31	CBFJ0	32	AD7	81	AD24	82	CBEJ3
33	AD8	34	AD9	83	VCC	84	VCC
35	GND	36	GND	85	AD25	86	AD26
37	AD10	38	NC	87	AD28	88	USB01
39	AD11	40	NC	89	AD27	90	AD29
41	AD12	42	NC	91	AD30	92	NC
43	AD13	44	NC	93	PCIRSTJ	94	AD31
45	AD14	46	NC	95	IRQY	96	IRQZ
47	AD15	48	NC	97	IRQW	98	IRQX
49	CBEJ1	50	NC	99	GND	100	GND

XB2: ETX Interface

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	51	VCC	52	VCC
3	NC	4	NC	53	NC	54	NC
5	NC	6	NC	55	NC	56	NC
7	NC	8	NC	57	NC	58	NC
9	NC	10	NC	59	NC	60	NC
11	NC	12	NC	61	NC	62	NC
13	NC	14	NC	63	NC	64	NC
15	NC	16	NC	65	NC	66	NC
17	NC	18	NC	67	GND	68	NC
19	NC	20	NC	69	NC	70	NC
21	NC	22	NC	71	NC	72	NC
23	NC	24	NC	73	NC	74	NC
25	NC	26	NC	75	NC	76	NC
27	NC	28	NC	77	NC	78	NC
29	NC	30	NC	79	NC	80	NC
31	NC	32	NC	81	NC	82	NC
33	NC	34	NC	83	VCC	84	VCC
35	GND	36	GND	85	NC	86	NC
37	NC	38	NC	87	NC	88	NC
39	NC	40	OSC	89	NC	90	NC
41	NC	42	NC	91	NC	92	NC
43	NC	44	NC	93	NC	94	NC
45	NC	46	NC	95	NC	96	NC
47	NC	48	NC	97	NC	98	NC
49	NC	50	NC	99	GND	100	GND

XB3: ETX Interface for VGA, Video, COM1, Mouse, Keyboard

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	51	N C	52	N C
3	R	4	B	53	VCC	54	GND
5	HSY	6	G	55	NC	56	NC
7	VSY	8	DDCK	57	NC	58	NC
9	NC	10	DDDA	59	NC	60	NC
11	NC	12	NC	61	NC	62	NC
13	NC	14	NC	63	NC	64	NC
15	GND	16	GND	65	GND	66	GND
17	NC	18	NC	67	NC	68	NC
19	NC	20	NC	69	NC	70	NC
21	GND	22	GND	71	NC	72	NC
23	NC	24	NC	73	NC	74	NC
25	NC	26	NC	75	NC	76	NC
27	GND	28	GND	77	NC	78	NC
29	NC	30	NC	79	NC	80	NC
31	NC	32	NC	81	VCC	82	VCC
33	GND	34	GND	83	RXD1	84	NC
35	NC	36	NC	85	RTS1J	86	NC
37	NC	38	NC	87	DTR1J	88	NC
39	VCC	40	VCC	89	DCD1J	90	NC
41	NC	42	NC	91	DSR1J	92	MSCLK
43	NC	44	NC	98	CTS1J	94	MSDAT
45	NC	46	NC	95	TXD1	96	KBCLK
47	NC	48	NC	97	RI1J	98	KBDAT
49	NC	50	NC	99	GND	100	GND

XB4: ETX Interface for IDE 1, IDE 2, Ethernet, etc.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	51	SIDE IOWJ	52	PIDE_IORJ
3	5V SB	4	PWGIN	53	SIDE DRQ	54	PIDE_IOWJ
5	NC	6	SPEAKER	55	SIDE D15	56	PIDE DRQ
7	NC	8	BATT	57	SIDE DO	58	PIDE D15
9	NC	10	LILED	59	SIDE D14	60	PIDE DO
11	NC	12	ACTLED	61	SIDE D1	62	PIDE D14
13	NC	14	NC	63	SIDE D13	64	PIDE D1
15	NC	16	NC	65	GND	66	GND
17	VCC	18	VCC	67	SIDE D2	68	PIDE D13
19	OVCRJ	20	NC	69	SIDE D12	70	PIDE D2
21	EXTSMI	22	NC	71	SIDE D3	72	PIDE D12
23	SMBCLK	24	SMBDATA	73	SIDE-D 1	74	PIDE D3
25	SIDE_CS3J	26	N.C.	75	SIDE D4	76	PIDE D11
27	SIDE_CS1J	28	DASP S	77	SIDE D10	78	PIDE D4
29	SIDE A2	30	PIDE_CS3J	79	SIDE D5	80	PIDE D10
31	SIDE A0	32	PIDE_CS1J	81	VCC	82	VCC
33	GND	34	GND	83	SIDE-D9	84	PIDE D5
35	NC	36	PIDE_A2	85	SIDE D6	86	PIDE D9
37	SIDE AI	38	PIDE_A0	87	SIDE-D8	88	PIDE D6
39	SIDE INTRO	40	PIDE A1	89	N.C.	90	N.C.
41	N.C.	42	N.C.	91	RXD-	92	PIDE D8
43	SIDE_AKJ	44	PIDE INTRO	93	RXD+	94	SIDE D7
45	SIDE_RDY	46	PIDE_AKJ	95	TXD-	96	PIDE D7
47	SIDE_IORJ	48	PIDE_RDY	97	TXD+	98	HDRSTJ
49	VCC	50	VCC	99	GND	100	GND

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