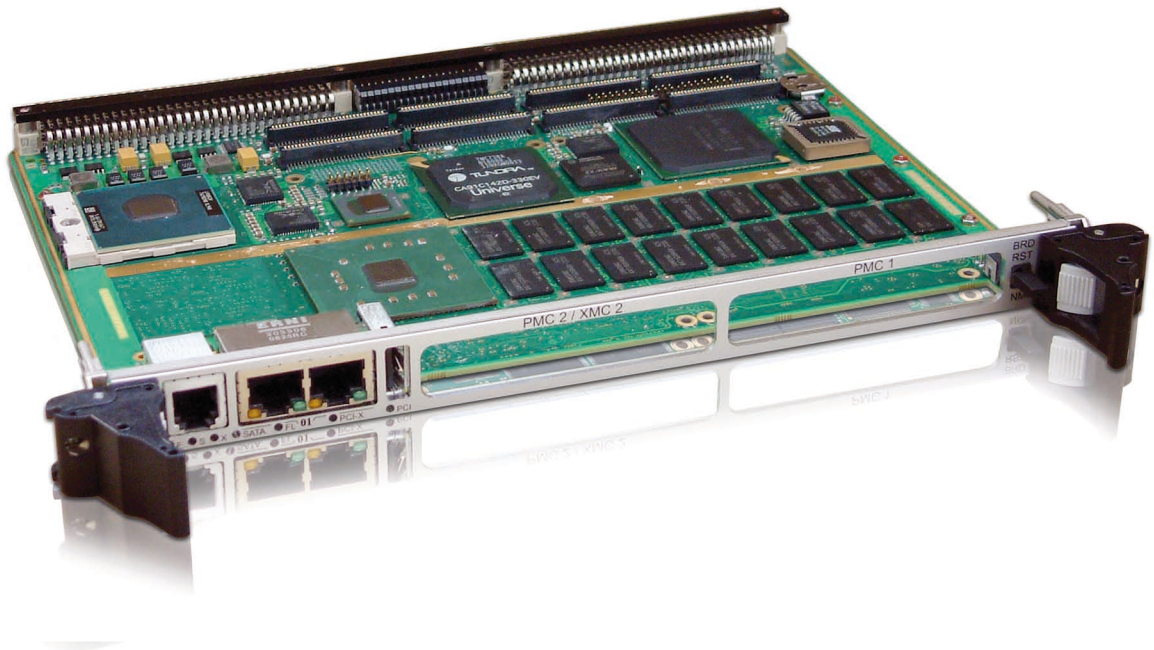

PENTXM2 and PENTXM4 Connection Guide

CA.DT.A10-5e — February 2009

kontron

Revision History

Publication Title:	PENTXM2/PENTXM4 Connection Guide	
Doc. ID:	CA.DT.A10-5e	
Rev.	**Brief Description of Changes**	**Date of Issue**
5e	PBV36-P0-PENTXM2-00 Rev. C	02-2009

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This product has been manufactured to satisfy environmental protection requirements where possible. Many of the components used (structural parts, printed circuit boards, connectors, batteries, etc.) are capable of being recycled.

Final disposition of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

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Kontron follows the DEEE/WEEE directive.

You are encouraged to return our products for proper disposal.

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- reduce waste arising from electrical and electronic equipment (EEE)
- make producers of EEE responsible for the environmental impact of their products, especially when they become waste
- encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- improve the environmental performance of all those involved during the lifecycle of EEE

Conventions

This guide uses several types of notice: Note, Caution, ESD.

Note: this notice calls attention to important features or instructions.


Caution: this notice alert you to system damage, loss of data, or risk of personal injury.


ESD: This banner indicates an Electrostatic Sensitive Device.

All numbers are expressed in decimal, except addresses and memory or register data, which are expressed in hexadecimal. The prefix `0x' shows a hexadecimal number, following the `C' programming language convention.

The multipliers `k', `M' and `G' have their conventional scientific and engineering meanings of $*10^3$, $*10^6$ and $*10^9$ respectively. The only exception to this is in the description of the size of memory areas, when `K', `M' and `G' mean $*2^{10}$, $*2^{20}$ and $*2^{30}$ respectively.

When describing transfer rates, `k' `M' and `G' mean $*10^3$, $*10^6$ and $*10^9$ *not $*2^{10}$ $*2^{20}$ and $*2^{30}$.*

In PowerPC terminology, multiple bit fields are numbered from 0 to n, where 0 is the MSB and n is the LSB. PCI and CompactPCI terminology follows the more familiar convention that bit 0 is the LSB and n is the MSB.

Signal names ending with an asterisk (*) or a hash (#) denote active low signals; all other signals are active high.

Signal names follow the PICMG 2.0 R3.0 CompactPCI Specification and the PCI Local Bus 2.3 Specification.

For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions


Warning!
All operations on this device must be carried out by sufficiently skilled personnel only.


Caution, Electric Shock!
Before installing a not hot-swappable Kontron product into a system always ensure that your mains power is switched off. This applies also to the installation of piggybacks. Serious electrical shock hazards can exist during all installation, repair and maintenance operations with this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing work.

Special Handling and Unpacking Instructions

ESD Sensitive Device!
Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the board is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the board.

Personal Injury

Be careful while handling the board, because of the cutting edges of the CPU heatsink.

Do not touch the CPU heatsink or the ruggedizer while removing the board from a rack because it can get very hot.

Do not place the board on any surface or in any form of storage container until the board and its heatsink have cooled down to room temperature.

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the device, which are not explicitly approved by Kontron and described in this manual or received from Kontron's Technical Support as a special handling instruction, will void your warranty.

This device should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This applies also to the operational temperature range of the specific board version, which must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, please follow only the instructions supplied by the present manual.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the board, please re-pack it as nearly as possible in the manner in which it was delivered.

Special care is necessary when handling or unpacking the product. Please consult the special handling and unpacking instruction on the previous page of this manual.

Table Of Contents

List Of Figures

Chapter 1 - Introduction

This Connection Guide provides information about:

- Connecting cables that can be plugged in the PENTXM2 or PENTXM4 front panel connector, refer to Chapter 3 “Front Panel Connections" page 5,
- Rear Transition Module (RTM) available for PENTXM2 or PENTXM4 boards, refer to Chapter 4 “Expanding I/Os on Rear" page 11.

Functional changes that differ from previous version of the document are identified by a vertical bar in the margin.

The information about the onboard mass storage options, are available in the section 4.5 “Installing the Onboard Mass Storage"of the “PENTXM2 or PENTXM4 User's Guide" (CA.DT.A07).

The information about the V2PMC2 carrier card is available is the “V2PMC2 - Dual Slots PCI-X/PMC VME Carrier - User's Guide" (CA.DT.A11).

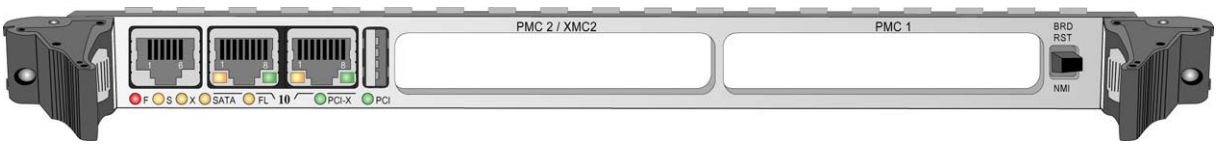


Figure 1: PENTXM2 Front Panel

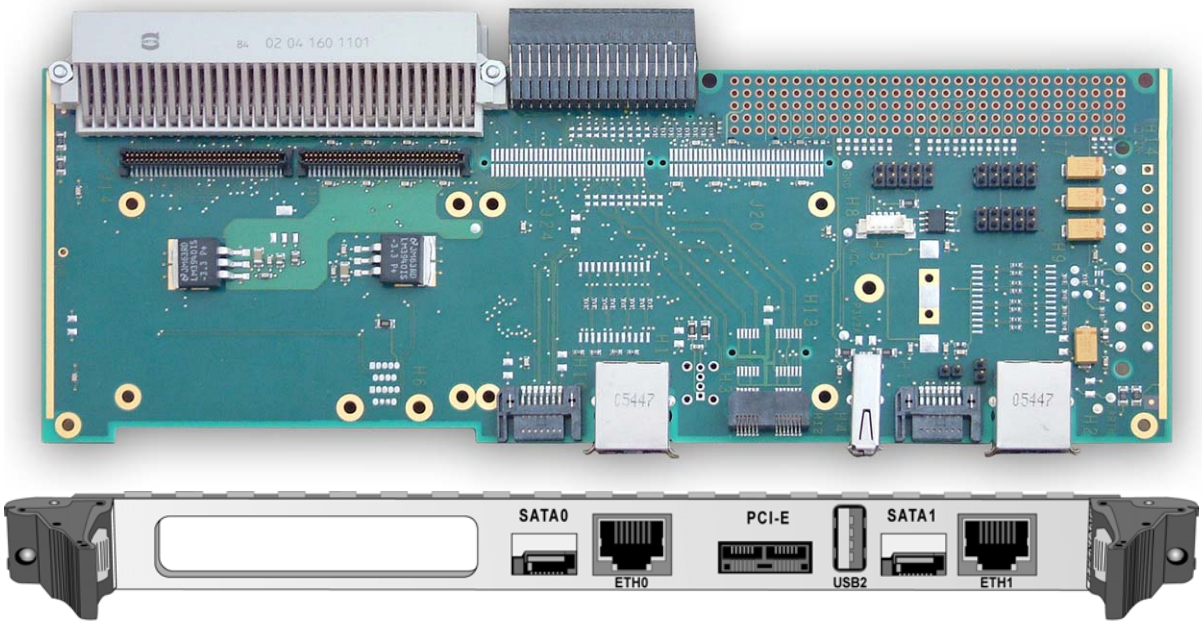


Figure 2: PENTXM2 Rear Transition Module

Electrostatic Discharge (ESD) can damage components. To avoid ESD damage, the board should be kept in its protective antistatic packaging until it is ready to be installed. During installation make sure to wear an antistatic wrist strap to discharge static electricity.

Ensure that your PENTXM2 or PENTXM4 is correctly inserted into the backplane connectors.

Only use the PENTXM2 or PENTXM4 in backplanes that supply power on both P1 and P2 connectors. Failure to observe this warning may result in damage to the board.

Chapter 2 - PENTXM2 I/O Options

2.1 Front Panel Cables

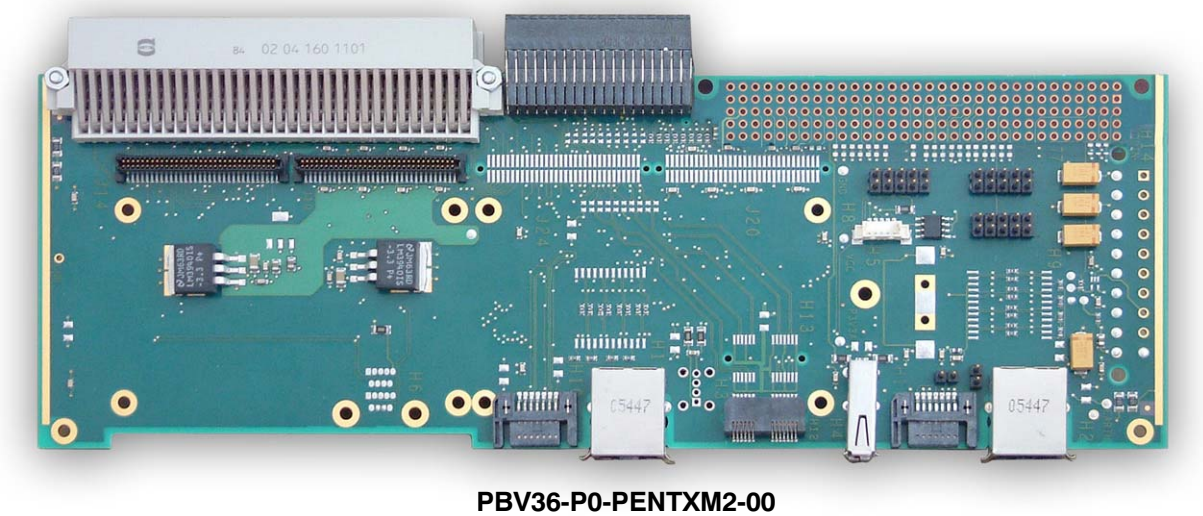
Gigabit Ethernet Cable

1000BASE-T requires category 5e, 5+ or 6 copper cable, with a maximal length of 100m for an UTP or FTP cable, and 150m for a STP or FSTP cable.

Console Cable

Kontron Order Code: `KIT-PENTXM2-RJ12DB9`

2.2 Rear Transition Module



PBV36-P0-PENTXM2-00

Figure 3: PENTXM2 or PENTXM4 I/O Options: Rear Transition Module

2.3 Onboard Mass Storage

Hard Disk Storage Kit

Kontron Order Code: ICHD-PENTXM2-040

- Description: Mechanical hard disk storage mounting kit + 2.5-inch EIDE disk drive (40 GB)

Kontron Order Code: KIT-DISK-PXTM2

- Description: Mechanical hard disk storage mounting kit only

CompactFlash Storage Kit

Kontron Order Code: PENTXM2-CFG

The information about the onboard mass storage options, are available in the section 3.6 “Installing the Onboard Mass Storage"of the “PENTXM2 or PENTXM4 User's Guide" (CA.DT.A07).

2.4 SATA Disk Drives

2.5-inch 40GB Serial ATA Hardware Device Disk

Kontron Order Code: SATA40-2P5-A

3.5-inch 40GB Serial ATA Hardware Device Disk

Kontron Order Code: SATA40-3P5-B

3.5-inch 250GB Serial ATA Hardware Device Disk

Kontron Order Code: SATA250-3P5-B

2.5 IDE Disk Drives

2.5-inch 40GB IDE Hardware Device Disk

Kontron Order Code: IDE40-2P5

Chapter 3 - Front Panel Connections

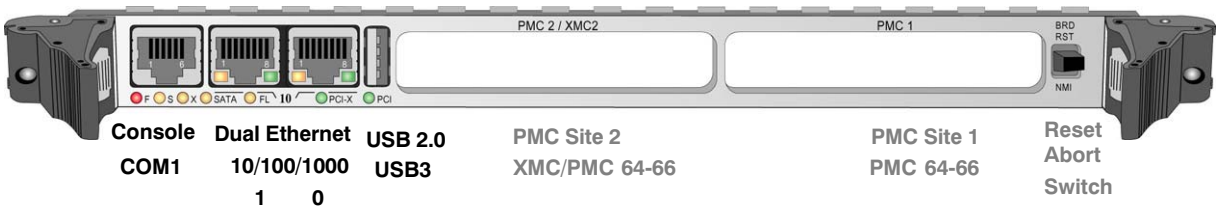


Figure 4: PENTXM2 or PENTXM4 Front Panel

- COM1 Serial Port is described in section 3.1 “Serial Port" page 6.
- Ethernet (0 & 1) connectors are described in section 3.2 “Ethernet" page 8.
- USB3 connector is described in section 3.3 “USB" page 10.

3.1 Serial Port

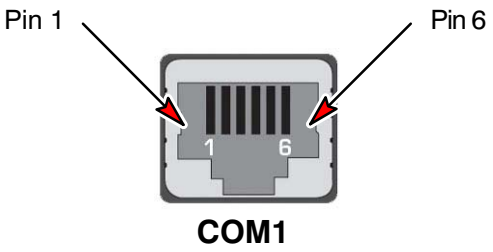
This 6-pin modular connector provides the COM1 serial port.

If hardware handshaking is not required in EIA-232, the cable may be RJ-14 (6 positions, 4 conductors).

If hardware handshaking is required or if the port is configure for EIA-485, the cable must be RJ-12 (6 positions, 6 conductors).

Pin Assignment

Pin	Signal
1	RTS/TXDb (1)
2	Shell
3	TXD/TXDa
4	RXD/RXDa
5	GND
6	CTS/RXDb (1)



(1) unused pins with a RJ-14 cable

Signal Description

Mnemonic	Description
CTS/RXDb	EIA-232 Clear-To-Send / EIA-485 Receive Data (pair b)
RTS/TXDb	EIA-232 Ready-To-Send / EIA-485 Transmit Data (pair b)
RXD/RXDa	EIA-232Receive Data / EIA-485 Receive Data (pair a)
TXD/TXDa	EIA-232 Transmit Data / EIA-485 Receicve Data (pair a)
GND	Ground
Shell	Chassis Ground

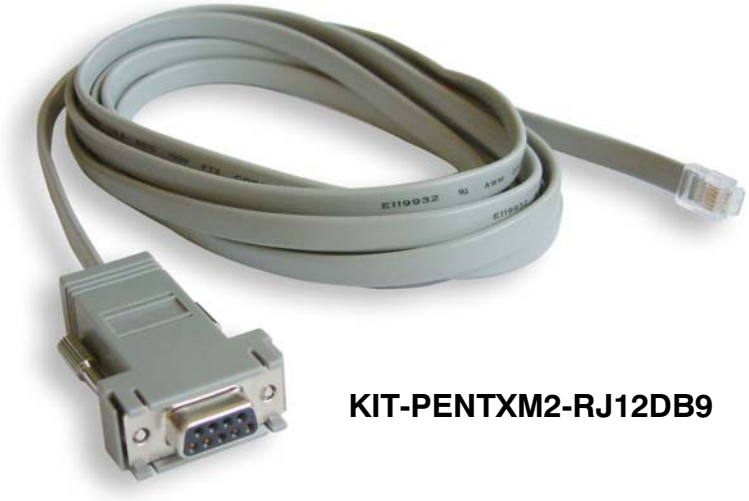
Cable Designation

Serial cable is :

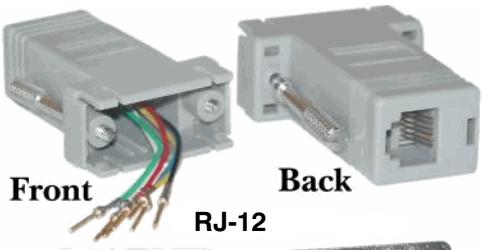
- RJ-14 (6 pin, 4 conductor) for a simple EIA-232 without handshake support.
- RJ-12 (6 pin, 6 conductor) for EIA-232 with handshaking or EIA-485.

  A RJ-12 to DB9/DB25 male or DB9/DB25 female adapter is available from multiple sources, such as *Triangle Cable*, http://www.trianglecables.com/db9m-rj12.html

  Kontron also provides a `KIT-PENTXM2-RJ12DB9` that includes a RJ-12 cable and a RJ-12 to DB9 adapter.



KIT-PENTXM2-RJ12DB9



RJ-12

DB9

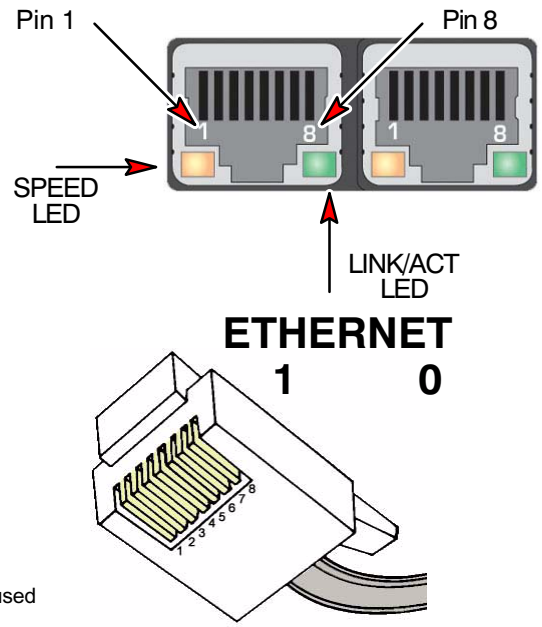
3.2 Ethernet

A dual RJ-45 connector with integrated LED's provides the 10/100/1000 Mbps connectivity and status LED's. Both RJ-45 Ethernet ports have identical pinouts, so only one pinout is shown.

Pin Assignment

Pin	Signal
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+ (*)
5	BI_DC- (*)
6	BI_DB-
7	BI_DD+ (*)
8	BI_DD-(*)
Shell	Chassis Ground

(*) : In 10BASE-T or 100BASE-T these signals are not used

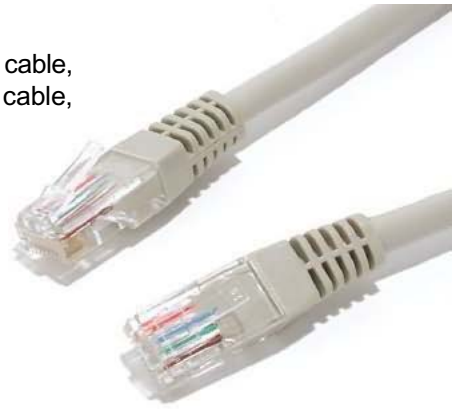


Signal Description

Mnemonic	Description
BI_DA+/-	In 1000BASE-T: First pair of Transmit/Receive data In 10BASE-T/100BASE-T: Pair of Transmit data
BI_DB+/-	In 1000BASE-T: Second pair of Transmit/Receive data In 10BASE-T/100BASE-T: Pair of Receive data
BI_DC+/-	In 1000BASE-T: Third pair of Transmit/Receive data In 10BASE-T/100BASE-T: Unused.
BI_DD+/-	In 1000BASE-T: Fourth pair of Transmit/Receive data In 10BASE-T/100BASE-T: Unused.

Cable Designation

Gigabit Ethernet standard cable:
1000BASE-T requires category 5e, 5+ or 6 copper cable, with a maximal length of 100m for an UTP or FTP cable, and 150m for a STP or FSTP cable.

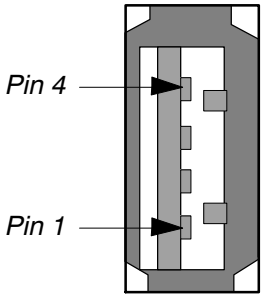


3.3 USB

➤ Connector Pin Assignment

The USB-type socket connector that has the following pin assignment:

Pin	Mnemonic
1	+5V Protected
2	DATA1-
3	DATA1+
4	GND
CASE	M GND



USB3

➤ Signal Description

Mnemonic	Signal Description
DATA1+/-	Differential data pair of USB line 1.
+5V Protected	+5 V Protected Power, up to 270 mA continuous, short circuit current limited (1.2 A max) with thermal shutdown, and automatic restart when short is removed.
GND	Logical Ground.
M GND	Case Ground. Chassis Ground.

Chapter 4 - Expanding I/Os on Rear

The PBV36-P0-PENTXM2-00 rear transition module is compliant to PMC I/O Module Standard VITA 36 - 199x Draft 0.1 July 19, 1999 (mechanical and PIM format).

The main functionalities of the PBV36-P0-PENTXM2-00 I/O transition module are:

- Two 10/100/1000BASE-T Ethernet interface, H1 and H2 connectors on Figure 5
- One USB connector, H4 on Figure 5
- One SMB connector, H5 on Figure 5
- Two Serial lines ports available on two HE10 connectors (H7, H8 on Figure 5)
- Three GPIOs signals available through an HE10 connector, H9 connector on Figure 5
- Two Serial ATA connectors, H10 and H11 connector on Figure 5
- One PCI Express connector, H12 connector on Figure 5
- PMC Site 1[64:1] I/O routed to J14[32:1] connector from RP2 connector
- PMC Site 2[64:1] I/O routed to J24[32:1] connector from RP2 connector (only on PBV36-P0-PENTXM2-00 Rev. C)

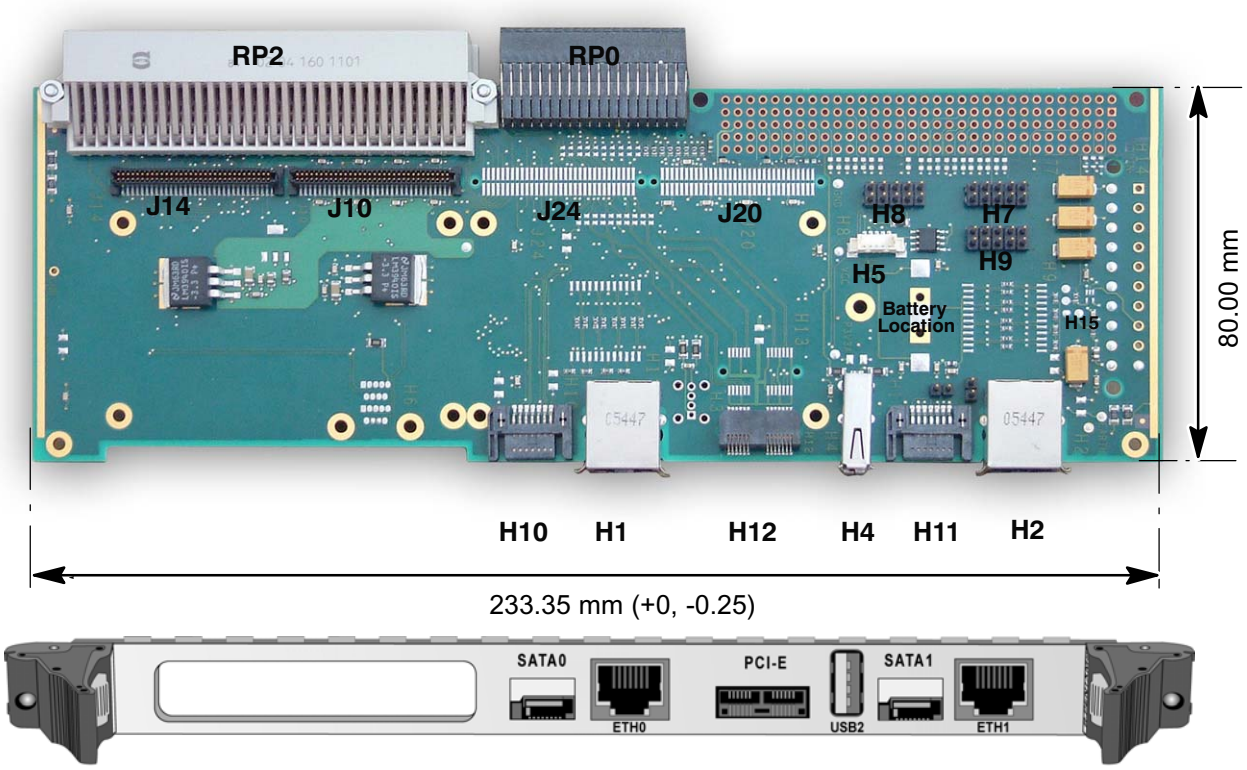


Figure 5: PBV36-P0-PENTXM2-00 Module Overview

4.1 Installing the Rear Transition Module

The PBV36-P0-PENTXM2-00 module is designed to be used with a VME64 extensions backplane. Each slot in the backplane contains two 160-pin connectors and one connector with 95 user-defined pins. The top connector in each slot is designed J1, the middle connector is J0 and the bottom connector is J2.

The PBV36-P0-PENTXM2-00 transition module plugs into the J0, J1 and J2 connectors, on the back side of the VMEbus backplane, in the same slot as the PENTXM2 or PENTXM4 board (see Figure 6).

To install the I/O transition modules:

1. Make sure the system and peripheral equipment power are off.
2. Install the cables into the appropriate connectors on the transition module (see section 4.2 page 13).
3. Line-up the RP0 and RP2 connectors (also named P0 and P2 in this chapter) on the rear transition module with the J0 and J2 connectors on the backplane.
4. Press the outer edge of the transition module until the board is firmly seated in the connector.
5. Connect any additional cables.
6. Turn on system power.

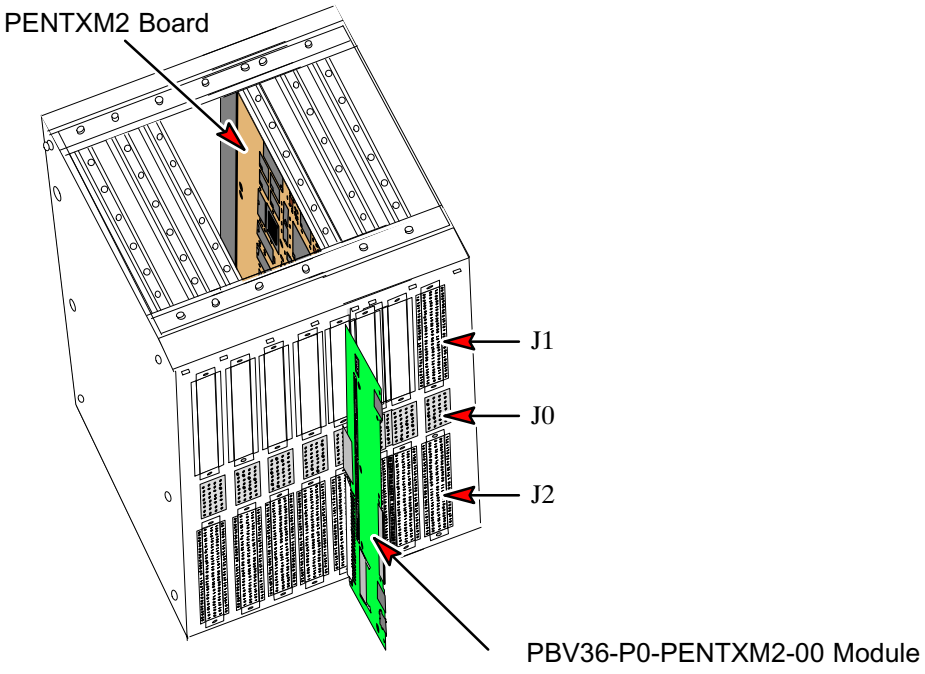


Figure 6: Installing the PBV36-P0-PENTXM2-00

4.2 Connectors

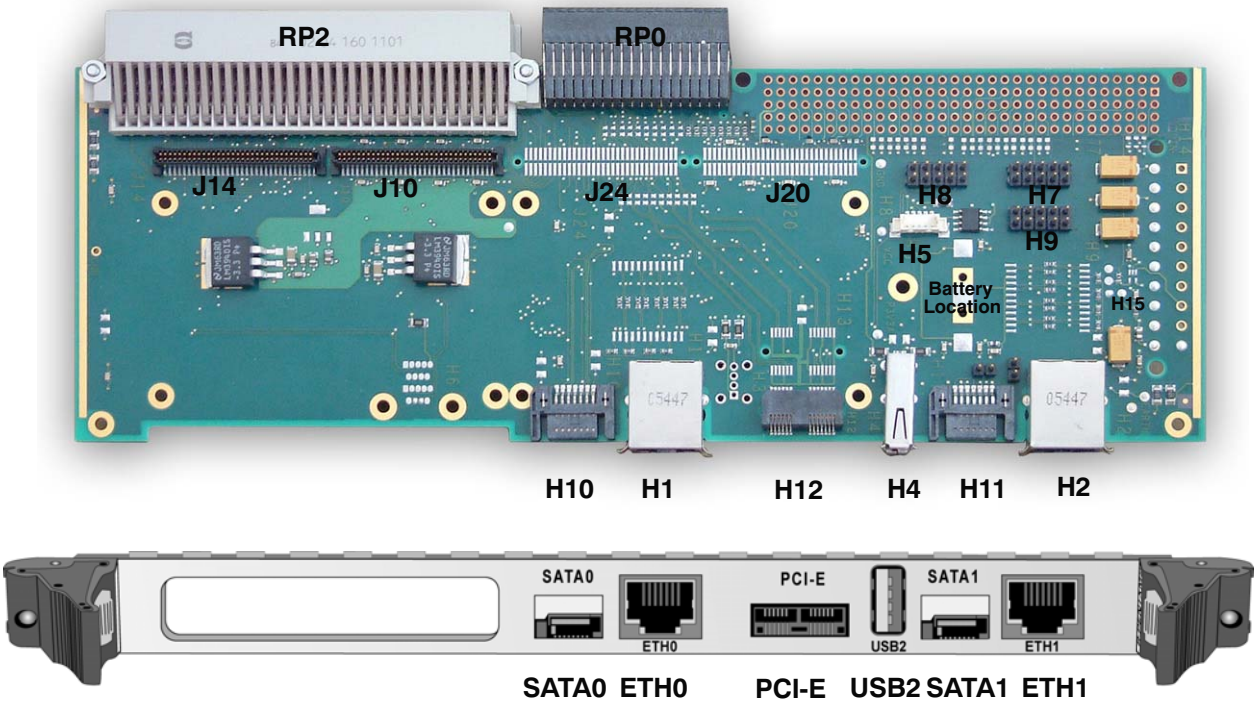


Figure 7: PBV36-P0-PENTXM2-00 Connectors Location

4.2.1 RP0 Connector Pin Assignment

The RP0 connector has the same pin assignment as the P0 connector of the PENTXM2 or PENTXM4 board.

Refer to the “P0 Connector Assignment" in the User's Guide (CA.DT.A07) for a complete information about the pin assignments of the RP0 connector.

4.2.2 RP2 Connector Pin Assignment

The RP2 connector has the same pin assignment as the P2 connector of the PENTXM2 or PENTXM4 board.

Refer to the “P2 Connector Assignment" in the User's Guide (CA.DT.A07) for a complete information about the pin assignments of the RP2 connector.

4.2.3 H1 (ETHERNET 0) & H2 (ETHERNET 1) - Gigabit ETHERNET Connector

Routed from P0 to **H1** and **H2**, RJ-45 connectors (AMP - Part Number 106066-2).

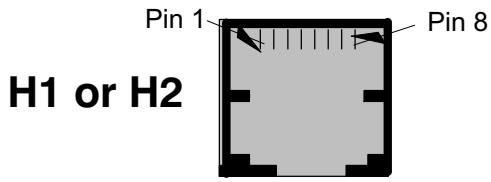
Available through the **ETH0** and **ETH1** RTM front panel connectors.

➤ Pin Assignment

Pin	Signal	Pin	Signal
1	BI_DA+	2	BI_DA-
3	BI_DB+	4	BI_DC+ (*)
5	BI_DC- (*)	6	BI_DB-
7	BI_DD+ (*)	8	BI_DD- (*)
9	Chassis Ground		

(*) : In 10BASE-T or 100BASE-T these signals are not used.

➤ Type of Connector



➤ Signal Description

Mnemonic	Signal Description
BI_DA+/-	In 1000BASE-T: First pair of Transmit/receive data In 10BASE-T/100BASE-T: Pair of Transmit data
BI_DB+/-	In 1000BASE-T: Second pair of Transmit/receive data In 10BASE-T/100BASE-T: Pair of Receive data
BI_DC+/-	In 1000BASE-T: Third pair of Transmit/receive data In 10BASE-T/100BASE-T: Unused.
BI_DD+/-	In 1000BASE-T: Fourth pair of Transmit/receive data In 10BASE-T/100BASE-T: Unused.

4.2.4 H4 (USB1) - USB Connector

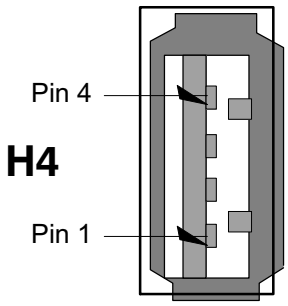
Routed from P0 to **H4**, a vertical USB connector.

Available through the **USB** RTM front panel connectors.

➤ Connector Pin Assignment

Pin	Signal
1	+5 V Fused
2	USB1 DATA-
3	USB1 DATA+
4	GND
CASE	M GND

➤ Type of Connector



4.2.5 H5 - SMB Connector

Routed from P1 to **H5** (MOLEX - Part Number 53398-0590)

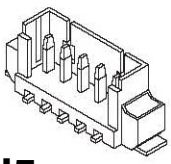
➤ Connector Pin Assignment

Pin	Signal
1	SMB_SCL
2	GND
3	SMB_SDA
4	N.C.
5	SMB_ALERT#

➤ Signal Description

Mnemonic	Signal Description
GND	Ground
N.C.	Not Connected
SMB_ALERT	System Management Bus - Alert
SMB_SCL	System Management Bus - Serial clock line from the SMBus master to SMBus slave devices.
SMB_SDA	System Management Bus - Bi-directional serial data line between the SMBus master and the SMBus slave device.

➤ Type of Connector



H5

4.2.6 H7 (S0/COM1) & H8 (S1/COM2) - SERIAL Connector

Routed from P2 to **H7** and **H8**; individual 10-pin HE10 connectors

➤ H7 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	S0_DCD	2	S0_RX/RX-
3	S0_TX/TX-	4	S0_DTR/DIR
5	GND	6	S0_DSR
7	S0_RTS/TX+	8	S0_CTS/RX+
9	N.C.	10	N.C.

➤ H8 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	S1_DCD	2	S1_RX/RX-
3	S1_TX/TX-	4	S1_DTR/DIR
5	GND	6	S1_DSR
7	S1_RTS/TX+	8	S1_CTS/RX+
9	N.C.	10	N.C.

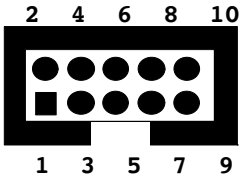
➤ Signal Meaning

Mnemonic	Signal Description
GND	Ground
S*x*_RX/RX-	Channel EIA-232 *x* Receive Data The signal acts as one side differential pair for EIA-422/485
S*x*_TX/TX-	Channel EIA-232 *x* Transmit Data The signal acts as one side differential pair for EIA-422/485
S*x*_CTS/RX+	Channel EIA-232 *x* Clear to Send The signal acts as the other side of the differential pair for EIA-422/485
S*x*_RTS/TX+	Channel EIA-232 *x* Ready To Send The signal acts as the other side of the differential pair for EIA-422/485
S*x*_DCD	Channel EIA-232 *x* Data Carrier Board
S*x*_DSR	Channel EIA-232 *x* Dat Set Ready
S*x*_DTR/DIR	Channel EIA-232 *x* Data Terminal Ready In EIA-485 mode, the signal acts as direction/control indicator.

➤ Type of Connector

Right angle HE10 10-pin connector, male, with board lock.

H7 & H8



The H7 and H8 connectors can be connected via a NULL MODEM adapter on a VT100 console.

4.2.7 H9 - GPIOs and MISC Signals

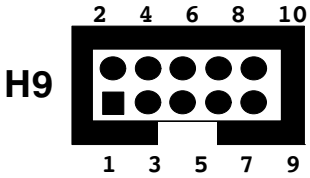
Routed from P0 to **H9**; individual 10 pins HE10 connector.

➤ H9 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	6300 ESB GPIO41	2	N.C.
3	6300 ESB GPIO42	4	N.C.
5	6300 ESB GPIO43	6	N.C.
7	N.C.	8	GND
9	RESET#	10	GND

➤ Type of Connector

Right angle HE10 10-pin connector, male, with board lock.



➤ Signal Meaning

Mnemonic	Signal Description
6300 ESB GPIO*xx*	GPIO *xx* from 6300 ESB
GND	Ground
N.C.	Not Connected
RESET#	

4.2.8 H10 (SATA0) and H11 (SATA1) - Serial ATA Connector

Routed from P0 to **H10** and **H11**; SATA connector, right angle version with metal latch (MOLEX - Part Number 47080-4001)

Available through the **SATA0** and **SATA1** RTM front panel connectors.

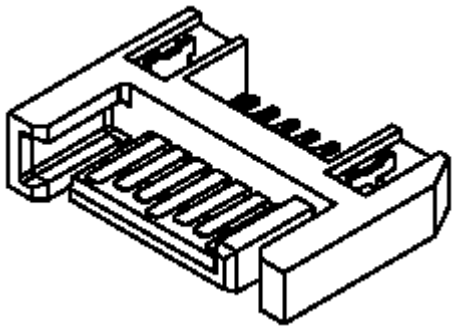
➤ Connector Pin Assignment

Pin	Signal	Pin	Signal
1	GND	2	SATA*x* TX+
3	SATA*x* TX-	4	GND
5	SATA*x* RX-	6	SATA*x* RX+
7	GND		

➤ Signal Description

Mnemonic	Signal Description
GND	Ground
SATA*x* RX+/RX-	Serial ATA *x* Receive +/-
SATA*x* TX+/TX-	Serial ATA *x* Transmit +/-

➤ Type of Connector



4.2.9 H12 - PCI Express Connector

Routed from P0 connector to **H12**, a 26-pin right angle connector (SAMTEC - Order Code MEC8-RA)

Available through the **PCI-E** RTM front panel connectors.

H12 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	GND	2	GND
3	PEX RXL0+	4	PEX TXL0+
5	PEX RXL0-	6	PEX TXL0-
7	GND	8	GND
9	PEX RX1L+	10	PEX TXL1+
11	PEX RXL1-	12	PEX TXL1-
13	GND	14	GND
15	PEX RXL2+	16	PEX TXL2+
17	PEX RXL2-	18	PEX TXL2-
19	GND	20	GND
21	PEX RXL3+	22	PEX TXL3+
23	PEX RXL3-	24	PEX TXL3-
25	GND	26	GND

Signal Meaning

Mnemonic	Signal Description
PEX RXL[0..3]+/-	x4 PCI Express Link - Differential Receive Lane [0..3]
PEX TXL[0..3]+/-	x4 PCI Express Link - Differential Transmit Lane [0..3]
GND	Ground

Type of Connector

4.2.10 PCI 64 PIM Site 1 Connector

J14Connector Pin Assignment

Pin	Signal	Pin	Signal
1	PMC64 IO 01	2	PMC64 IO 02
...	...	...	...
63	PMC64 IO 63	64	PMC64 IO 64

Signal Description

Mnemonic	Signal Description
PMC64 IO *xx*	I/O 01 through 64 of the motherboard PMC: J14[01 ... 64] for PMC Site 1
N.C.	Not Connected

Known Limitations

- 4.8 mm high components have been placed under PIM site 1. This trangresses the VITA 36 standard which specifies 2.5 mm. Some PIMs may not fit in this site.

J10 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	N.C.	2	N.C.
3	N.C.	4	N.C
5	+5V	6	N.C.
7	N.C.	8	N.C.
9	N.C.	10	+3.3V
11	N.C.	12	N.C.
13	GND	14	N.C.
15	N.C.	16	N.C.
17	N.C.	18	GND
19	N.C.	20	N.C.
21	+5V	22	N.C.
23	N.C.	24	N.C.
25	N.C.	26	+3.3V
27	N.C.	28	N.C.
29	GND	30	N.C.
31	N.C.	32	N.C.
33	N.C.	34	GND
35	N.C.	36	N.C
37	+5V	38	N.C.
39	N.C.	40	N.C.
41	N.C.	42	+3.3V
43	N.C.	44	N.C.
45	GND	46	N.C.
47	N.C.	48	N.C.
49	N.C.	50	GND
51	N.C.	52	N.C.
53	+5V	54	N.C.
55	N.C.	56	N.C.
57	N.C.	58	+3.3V
59	N.C.	60	N.C.
61	N.C.	62	N.C.
63	N.C.	64	N.C.

4.2.11 PCI 64 PIM Site 2 Connector

Up to PBV36-P0-PENTXM2-00 Rev. C, the pinout of J20 and J24 connectors is reserved. If available, do not try to use these connectors.

From PBV36-P0-PENTXM2-00 Rev. C, the pinout of the J20 and J24 connectors is available. See sections J24 and J20 Connector Pin Assignment below.

Installation of a PIM on the Site 2 of a PBV36-P0-PENTXM2-00 Rev C. requires specific adjustments:
- removing H10 (SATA0), H1 (ETH0) and H12 (PCI-E) connector on the RTM,
- usage of a RTM specific front panel.

Contact your Kontron representative for more information on this topic.

J24 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	PMC64 IO 01	2	PMC64 IO 02
...	...	...	...
63	PMC64 IO 63	64	PMC64 IO 64

Signal Description

Mnemonic	Signal Description
PMC64 IO *xx*	I/O 01 through 64 of the motherboard PMC: J24[01 ... 64] for PMC Site 2
N.C.	Not Connected

Known Limitations

- The RTM does not include the 3 mm recess at the rear card edge on the area of PIM Site as required by VITA 36 standard. This may require removal or loosening of the rear panel in order to remove and install a PIM at Site 2.

J20 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	N.C.	2	N.C.
3	N.C.	4	N.C
5	+5V	6	N.C.
7	N.C.	8	N.C.
9	N.C.	10	+3.3V
11	N.C.	12	N.C.
13	GND	14	N.C.
15	N.C.	16	N.C.
17	N.C.	18	GND
19	N.C.	20	N.C.
21	+5V	22	N.C.
23	N.C.	24	N.C.
25	N.C.	26	+3.3V
27	N.C.	28	N.C.
29	GND	30	N.C.
31	N.C.	32	N.C.
33	N.C.	34	GND
35	N.C.	36	N.C
37	+5V	38	N.C.
39	N.C.	40	N.C.
41	N.C.	42	+3.3V
43	N.C.	44	N.C.
45	GND	46	N.C.
47	N.C.	48	N.C.
49	N.C.	50	GND
51	N.C.	52	N.C.
53	+5V	54	N.C.
55	N.C.	56	N.C.
57	N.C.	58	+3.3V
59	N.C.	60	N.C.
61	N.C.	62	N.C.
63	N.C.	64	N.C.

4.2.12 Reset

The front panel reset toggle switch can be set to the RESET position to generate an hard reset.

4.2.13 Mechanical Ground

One HE10 2-pin connector is placed on the board to allow to hard connect electrical (GND) and mechanical (EARTH) grounds.

While adding a jumper on connector, both ground signals are tighten together.

➤ H15 Connector Pin Assignment

Pin	Signal	Pin	Signal
1	EARTH	2	GND

➤ Signal Meaning

Mnemonic	Signal Description
EARTH	Electrical Ground
GND	Mechanical Ground

A metalized mechanical hole (3mm diameter) is located on the board to allow to fix an electrical pod in order to bring the mechanical ground from the chassis.

4.2.14 Power Supplies

- Two 800 mAmp voltage regulators are used on the board to provide 3.3V power supply to each PIM site.
- A standard lithium battery (BR1632) to supply CPU board's RTC is also available.

4.3 Cables

Figure 8: PBV36-P0-PENTXM2-00 Associated Cables

SATA Cable

Serial ATA standard cable

Figure 9: Serial ATA Cable

PCI-Express Cable

Please contact your Kontron representative for more information on this topic.

USB 2.0 Cable

USB 2.0 standard cable

USB series “A" plug and receptacle

Figure 10: USB 2.0 Cable

Ethernet Cable

Gigabit Ethernet standard cable:
1000BASE-T requires category 5e, 5+ or 6 copper cable, with a maximal length of 100m for an UTP or FTP cable, and 150m for a STP or FSTP cable.

Figure 11: Gigabit Ethernet Cable

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