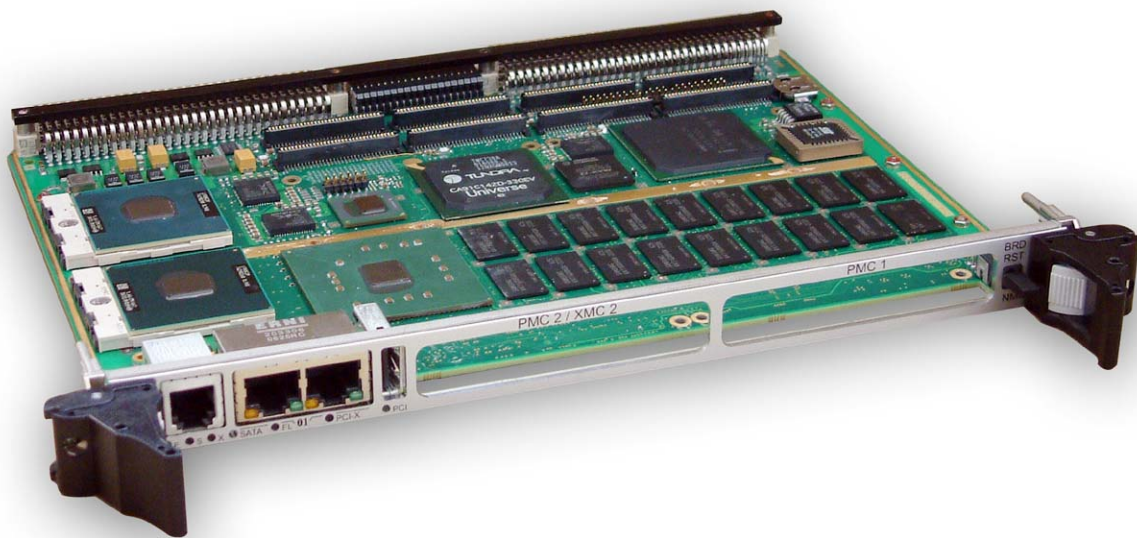


# » PENTXM2 or PENTXM4 «



## Hardware Release Notes

CA.DT.A09-12e - July 2013

## Revision History

Publication Title:		PENTXM2 or PENTXM4 Hardware Release Notes	
Doc. ID:		CA.DT.A09-12e	
Rev.	Brief Description of Changes		Date of Issue
12e	PENTXM2-SA	E.C. Level 31017, 31018, 31057, 31058 32017, 32017, 32097, 32098	07-2013
	PENTXM2-RA/RC	E.C. Level 31097, 31098, 32097, 32098	
	PENTXM4-SA	E.C. Level 31117, 31118, 32117, 32118	
	PENTXM4-RC	E.C. Level 31197, 31198, 32197, 32198	
11e	Add information related to E.C. Levels 31116, 31196, 31056, and 31096		12-2010
10e	Inappropriate line removed in Chapter 3 - CRP 3431		06-2010
9e	Chapter 3: VITA 31.1 Compliance		11-2009
8e	PENTXM2-SA	E.C. Level 21025, 31014, 31015, 31054 and 31055	10-2009
	PENTXM2-RA/RC	E.C. Level 31014, 31094 and 31095	
	PENTXM4-SA	E.C. Level 21118, 31114 and 31115	
	PENTXM4-RC	E.C. Level 31194 and 31195	

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## Environmental Protection Statement

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.



**Environmental protection is a high priority with Kontron.**

**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.

## 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

Chapter 1 - Introduction .....	1
Chapter 2 - Board Identification .....	2
Chapter 3 - General Information for PENTXM2 or PENTXM4 .....	4
Chapter 4 - Revision Guide for PENTXM2 .....	8
4.1 Revision Guide PENTXM2-SA .....	9
4.2 Revision Guide PENTXM2-RA and PENTXM2-RC .....	11
Chapter 5 - Revision Guide for PENTXM4 .....	12
5.1 Revision Guide PENTXM4-SA .....	13
5.2 Revision Guide PENTXM4-RA and PENTXM4-RC .....	15
Chapter 6 - Detailed Description for Revision Guide Items .....	16

## Chapter 1 - Introduction

This document describes the design changes that have been incorporated into the PENTXM2 or PENTXM4 products. Refer to the hardware User's Guide for a detailed description of the current version of the product.

This document:

- explains how to identify the revision level of your board; refer to Chapter 2 "Board Identification".
- describes the important information related to the different revisions of the board:
  - ▶ Chapter 3 "General information for PENTXM2 or PENTXM4" page 4.
  - ▶ Chapter 4 "Revision Guide for PENTXM2" page 8.
  - ▶ Chapter 5 "Revision Guide for PENTXM4" page 12.
  - ▶ Chapter 6 "Detailed Description for PENTXM2 or PENTXM4 Revision Guide Items" page 16.

This document applies to all PENTXM2 or PENTXM4 Environment Classes (if available):

- Standard Air: SA
- Rugged Air-Cooled RA
- Rugged Conduction-Cooled: RC

If a specific information applies only to a specific environment class, it is clearly specified in the information description. For example, the reference PENTXM2/RC applies only to PENTXM2 Rugged Conduction-Cooled environment class.

This document references the most recent release of the following hardware documentation:

- PENTXM2 or PENTXM4 User's Guide ..... CA.DT.A07
- PENTXM2/RC and PENTXM4/RC Supplement User's Guide ..... CA.DT.A08
- PENTXM2/RA and PENTXM4/RA Supplement User's Guide ..... CA.DT.A72

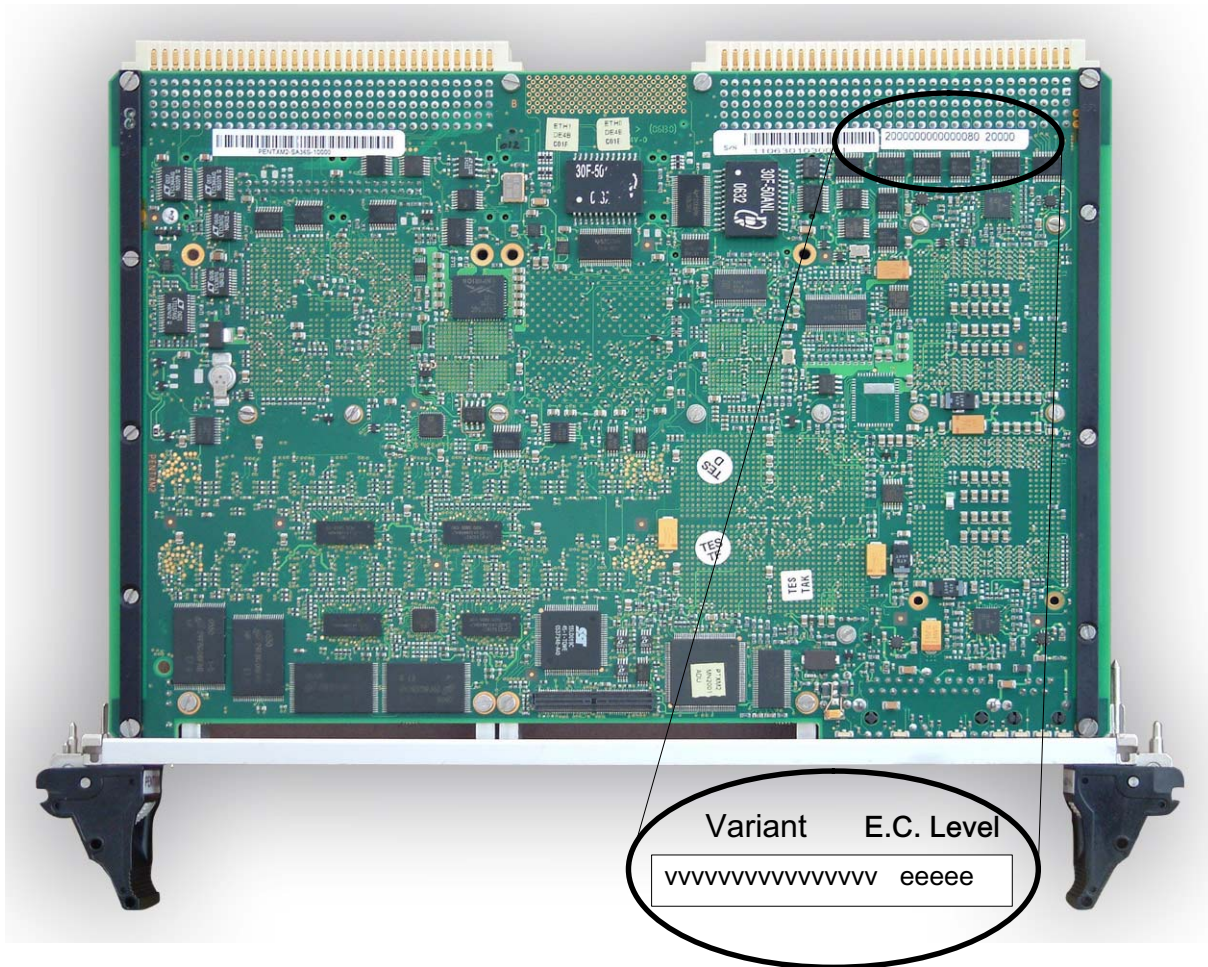


Functional changes that differ from previous version of the document are identified by a vertical bar in the margin.

## Chapter 2 - Board Identification

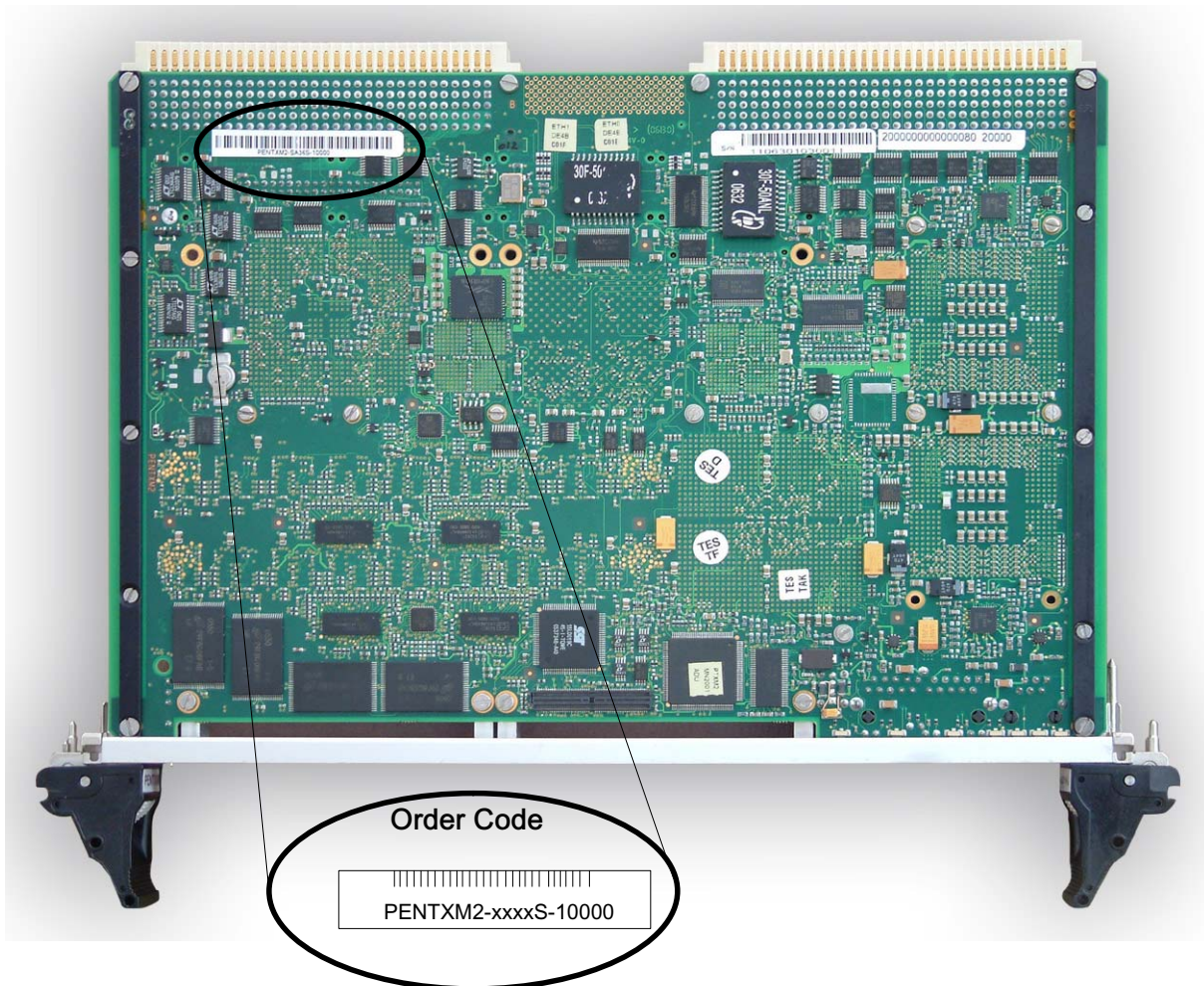
### » Engineering Change Level

The Engineering Change Level (E.C. Level) information is available on the the "Variant and Engineering Change Level" label, located on the bottom side of the board.



» Order Code

The Order Code information is available on the "Board Identification" label, located on the bottom side of the board.



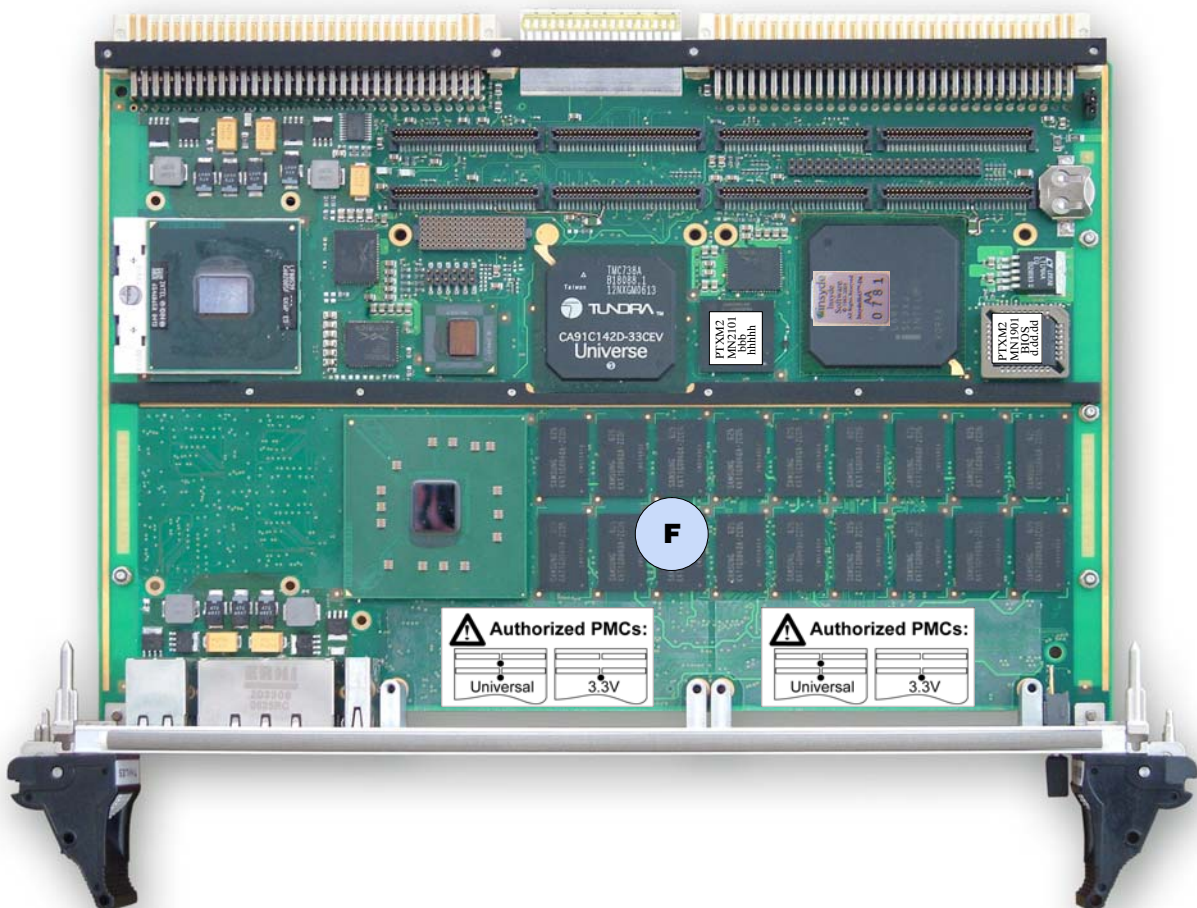
## Chapter 3 - General Information for PENTXM2 or PENTXM4

### » PMC Signaling Level

The PENTXM2 or PENTXM4 sets the signaling level for the 64-bit PCI bus to +3.3V. The V(I/O) pins of the PCI 64 PMCs are connected to the +3.3V. No PMC voltage selection key is provided on the board.

Only two PMC types can be installed on the PENTXM2: +3.3V PMC and Universal PMC. The user must check that its PMC type is compatible with this signaling voltage. Refer to the Chapter "PMC Sites" in the PENTXM2 or PENTXM4 User's Guide.

- F** Two specific labels fitted on the top side of the board inform the user of the supported PMC types.



## » EMC Gasket

In order to protect the EMC gasket located in the front panel, be careful during the insertion of the boards in the rack. It is recommended to insert the boards in a rack starting from the higher slot number and extract them starting from the lowest slot number.

## » Power Supplies

On +5V power supply, monotonic rise time no longer than 25 ms is required at power-on.

On +3.3V power supply, monotonic rise time no longer than 25 ms is required at power-on.

For a power-off condition to be valid, the +5V and +3.3V power supply input should remain at 0V for at least one second.

## » Components Height on Bottom Side of the Board - CRP3404

The shield of the P0 connector on the bottom side of the board is slightly higher than the maximum height as specified by the VME standard. No problem have been reported. Nevertheless, it is recommended to insert the boards in a rack starting from the higher slot number and extract them starting from the lowest slot number. This good habit also protects EMC gaskets located on the front panels of all VME boards.

List of components of the PENTXM2 or PENTXM4 that do not respect the VME standard (2.07 mm bottom height):

- Gigabit Ethernet Magnetics Low Profile
  - ▶ Belfuse S558-5999-AM: 2.13 mm
  - ▶ YDS Serie20T (alternate part): 2.90 mm

## » Components Height on Top Side of the Board - CRP3431

The front panel connectors are slightly higher than the maximum height specified by the VME standard.

List of components of the PENTXM2 or PENTXM4 that do not respect the VME standard (13.7 mm top height):

- Front panel Ethernet connectors: 13.80 mm
- Front panel USB connector: 13.83 mm
- Front panel Console (RJ11) connector: 13.84 mm

No impact since the exceeding height is located very close to the front panel.

## » Unavailable Functionalities

- LynxOS BSP not available.

**»» Misprint on the Front Panel of the Rear Transition Module**

FTH1 shall be understood as ETH1 on the PBV36-P0-PENTXM2-00 RTM.

Workaround: Silk-screen printing will be rectified in the release B of the front panel of the RTM.

**»» Height of the Board fitted with the Hard Disk Storage Kit - CRP3582**

The height of the PENTXM2/PENTXM4 board fitted with the hard disk storage kit (ICDH-PENTXM2-040) is slightly higher than the maximum height as specified by the VME standard.

14.5 mm instead of the required standard of 13.7 mm

▶ Mounting plate	4.0 mm away from the PCB
	1.0 mm thick
▶ 2.5" disk	9.5 mm thick
Total	<hr/> 14.5 mm

**»» PMC may lose Ethernet link when VME backplane 3.3V is below 3.25V - CRP3434**

If the VME backplane voltage 3.3V is below 3.25V, some Ethernet PMCs may disconnect their Ethernet link and consequently the current Ethernet process will crash.

Workaround: Make sure to use a VME backplane compliant to the VME standard which recommends a VME backplane voltage not lower than 3.25V.

**»» Corrupted Ethernet data on PMC - CRP3435**

Data corruptions on gigabit ethernet links using Ethernet PMC (SBS or RAMIX) have been observed.

Workaround: This is a software problem solved using the Linux Ethernet driver provided in the RPM e1000-7.3.15-1.386.rpm

» VITA 31.1 Compliance

The P0 ethernet routing allows to support VITA 31.1 backplane networking but P0 pinout is not compliant to VITA 31.1 standard because:

1. Ethernet port a (or 0) and Ethernet port b (or 1) are inverted regarding to the VITA 31.1 standard.
2. The pins in P0 connector position 1 and 6 are used for PMC I/O, misc signal and rear USB power supplies, whereas VITA 31.1 specifies to keep them Not Connected (NC) to avoid the possibility of interfering with the Ethernet signals.

Pin	P0 connector					
	Row a	Row b	Row c	Row d	Row e	Row f
1	PMC2 IO 39	PMC2 IO 38	PMC2 IO 37	PMC2 IO 36	PMC2 IO 35	GND
2	ETH1 BI_DA+	ETH1 BI_DA-	GND	ETH1 BI_DC+	ETH1 BI_DC-	GND
3	ETH1 BI_DB+	ETH1 BI_DB-	GND	ETH1 BI_DD+	ETH1 BI_DD-	GND
4	ETH0 BI_DA+	ETH0 BI_DA-	GND	ETH0 BI_DC+	ETH0 BI_DC-	GND
5	ETH0 BI_DB+	ETH0 BI_DB-	GND	ETH0 BI_DD+	ETH0 BI_DD-	GND
6	RESET#	USB1 PWR	PWR DOWN	Reserved	USB0 PWR	GND

➤ PENTXM2 or PENTXM4 P0 Pin Assignment

Pin	P0 connector					
	Row a	Row b	Row c	Row d	Row e	Row f
1	N.C.	N.C.	N.C.	N.C.	N.C.	GND
2	+Txa LPa_DA+	-Txa LPa_DA-	GND	LPa_DC+	LPa_DC-	GND
3	+Rxa LPa_DB+	-Rxa LPa_DB-	GND	LPa_DD+	LPa_DD-	GND
4	+Txb LPb_DA+	-Txb LPb_DA-	GND	LPb_DC+	LPb_DC-	GND
5	+Rxb LPb_DB+	-Rxb LPb_DB-	GND	LPb_DD+	LPb_DD-	GND
6	N.C.	N.C.	GND	N.C.	N.C.	GND

➤ VITA 31.1 Standard - P0 Pin Assignment

To support more efficiently VITA 31.1 backplane:

- ▶ The PENTXM2 board family uses shielded HSHM P0 connector which suppresses the interference between adjacent pin positions in P0 connector.
- ▶ The pins in P0 connector position 1 may be NC by removing 0 ohm network resistor.

## Chapter 4 - Revision Guide for PENTXM2

### » How to use following tables:

1. Find the the E.C. Level associated to your board as described in the Chapter 2 "Board Identification" page 2.
2. Refer to section 4.1 page 9 for PENTXM2-SA boards  
or  
Refer to section 4.2 page 11 for PENTXM2-RA and PENTXM2-RC boards
3. Find the column associated to the E.C. Level of your board in the first table.
4. Check for a specific item in the second table lines:
  - 4.1. A "x" (cross) in the E.C. Level column indicates that this item applies to this E.C. Level.
  - 4.2. No "x" (cross) in the E.C. Level column indicates that this item does not apply to this E.C. Level.
  - 4.3. If the functionality described by the item is not available on your board don't take into account this item. To know the functionalities available or not on your board, read the User's Guide associated with your board version.
5. A full description associated to a specific item is available in Chapter 6 "Detailed Description for PENTXM2 or PENTXM4 Revision Guide Items"

## 4.1 Revision Guide PENTXM2-SA

### » E.C. Level 3xxxx

Item	CRP	Description	E.C. Level															
			31001	31002	31003	31013	31014	31015	31016	31017	31018	31054	31055	31056	31057	31058	32017	32018
1 .. 10		Not applicable																
11	3546	Inoportune Permanent Reset may occur at Power-On	X															
12	3555	ITP (Intel Test Port) for debug and repair is not functional	X	X														
13	3455	VME SYSRESET signal resets the inicator board	X	X	X													
14	3567	Sequential Power On Implementation	X	X	X													
15	3599	Risks of freezing at power-on in presence of slow power supply rise time on the VME backplane	X	X	X	X												
16	3640	No output to the console on the serial line at power-on	X	X	X													
17		Not applicable																
18	3702	Battery current not limited when the protection diode is damaged	X	X	X	X	X	X <sup>(1)</sup>				X	X <sup>(1)</sup>					
19	3704	PMC clock skew is not compliant with PCI-X 66 MHz standard	X	X	X	X	X	X	X	X	X						X	X
20		Not applicable																
21	4008	BMC programmation process improvement	X	X	X	X	X	X	X			X	X	X				
22	4029	NAND Flash controller failure	X	X	X	X	X	X	X	X		X	X	X	X		X	
23	4040	I2C level are not respected	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24	4061	Board Power On failure	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

## » E.C. Level 2xxxx

Item	CRP	Description	E.C. Level					
			2000 2001 21001	21002	21003	21004	21005	21025
1	3430	82571 Ethernet device not detected at power-on under low temperature	X	X				
2	3429	USB peripherals may not be detected when using long leaf USB cable	X					
3 .. 5		Not applicable						
6	3452	Data corruption on self-powered USB devices plugged on the front panel	X					
7	3450	Rare Mating Problems with XMC Board	X					
8	3479	Serial lines data transfer may fail in null modem / hardware flow control configuration	X	X	X	X	X	X
9	3489	Data Rate of Gigabit Ethernet Links may be limited to 10Mb/s			X			
10	3429	Risk of Short-Circuit when Plugging the 44-pin EIDE Onboard Connector	X	X				
11	3546	Inopportune Permanent Reset may occur at Power-On	X	X	X	X		
12	3555	ITP (Intel Test Port) for debug and repair is not functional	X	X	X	X	X	
13	3455	VME SYSRESET signal resets the initiator board	X	X	X	X	X	X
14	3567	Sequential Power On Implementation	X	X	X	X	X	X
15	3599	Risks of freezing at power-on in presence of slow power supply rise time on the VME backplane	X	X	X	X	X	
16	3640	No output to the console on the serial line at power-on	X	X	X	X	X	X
17		Not applicable						
18	3702	Battery current not limited when the protection diode is damaged	X	X	X	X	X	X
19	3704	PMC clock skew is not compliant with PCI-X 66 MHz standard	X	X	X	X	X	X
20	3705	Error on vpdtool Linux command	X	X	X	X	X	
21	4008	BMC programming process improvement	X	X	X	X	X	X
22	4029	NAND Flash controller failure	X	X	X	X	X	X
23	4040	I2C level are not respected	X	X	X	X	X	X
24	4061	Board Power On failure	X	X	X	X	X	X

## 4.2 Revision Guide PENTXM2-RA and PENTXM2-RC

Item	CRP	Description	E.C. Level								
			31014	31094	31095	31096	31097	31098	32097	32098	
1 .. 16		Not applicable									
17	3683	NAND Flash not protected by default	X								
18	3702	Battery current not limited when the protection diode is damaged	X	X	X						
19	3704	PMC clock skew is not compliant with PCI-X 66 MHz standard	X	X	X <sup>(1)</sup>	X	X	X	X	X	X
20		Not applicable									
21	4008	BMC programming process improvement	X	X	X	X					
22	4029	NAND Flash controller failure	X	X	X	X	X			X	
23	4040	I2C level are not respected	X	X	X	X	X	X	X	X	X
24	4061	Board Power On failure	X	X	X	X	X	X	X		

## Chapter 5 - Revision Guide for PENTXM4

### » How to use following tables:

1. Find the the E.C. Level associated to your board as described in the Chapter 2 "Board Identification" page 2.
2. Refer to section 5.1 page 13 for PENTXM4-SA boards  
or  
Refer to section 5.2 page 15 for PENTXM4-RC boards
3. Find the column associated to the E.C. Level of your board in this table.
4. Check for a specific item in the table lines:
  - 4.1. A "x" (cross) in the E.C. Level column indicates that this item applies to this E.C. Level.
  - 4.2. No "x" (cross) in the E.C. Level column indicates that this item does not apply to this E.C. Level.
  - 4.3. If the functionality described by the item is not available on your board don't take into account this item. To know the functionalities available or not on your board, read the User's Guide associated with your board version.
5. A full description associated to a specific item is available in Chapter 6 "Detailed Description for PENTXM2 or PENTXM4 Revision Guide Items".

## 5.1 Revision Guide PENTXM4-SA

### » E.C. Level 3xxxx

Item	CRP	Description	E.C. Level											
			31103	31113	31114	31115	31116	31117	31118	32117	32118			
1 .. 12		Not applicable												
13	3455	VME SYSRESET signal resets the initiator board	X											
14	3567	Sequential Power On Implementation	X											
15	3599	Risks of freezing at power-on in presence of slow power supply rise time on the VME backplane	X	X										
16	3640	No output to the console on the serial line at power-on	X											
17	3683	NAND Flash not protected by default	X	x	X	X	X	X	X	X	X	X	X	X
18	3702	Battery current not limited when the protection diode is damaged	X	X	X	X ( )								
19	3704	PMC clock skew not compliant with PCI-X 66 MHz standard	X	X	X	X	X	X	X	X	X	X	X	X
20		Not applicable												
21	4008	BMC programming process improvement	X	X	X	X	X							
22	4029	NAND Flash controller failure	X	X	X	X	X	X				X		
23	4040	I2C level are not respected	X	X	X	X	X	X	X	X	X	X	X	X
24	4061	Board power on failure	X	X	X	X	X	X	X	X				

## » E.C. Level 2xxxx

Item	CRP	Description	E.C. Level				
			21105	21106	21107	21117	21118
1 .. 10		Not applicable					
11	3546	Inopportune Permanent Reset may occur at Power-On	X				
12	3555	ITP (Intel Test Port) for debug and repair is not functional	X	X			
13	3455	VME SYSRESET signal resets the initiator board	X	X	X	X	X
14	3567	Sequential Power On Implementation	X	X	X		
15	3599	Risks of freezing at power-on in presence of slow power supply rise time on the VME backplane	X	X	X	X	
16	3640	No output to the console on the serial line at power-on	X	X	X		
17	3683	NAND Flash not protected by default	X	X	X	X	X
18	3702	Battery current not limited when the protection diode is damaged	X	X	X	X	X
19	3704	PMC clock skew not compliant with PCI-X 66 MHz standard	X	X	X	X	X
20	3705	Error on vpdtool Linux command	X				
21	4008	BMC programming process improvement	X	X	X	X	X
22	4029	NAND Flash controller failure	X	X	X	X	X
23	4040	I2C level are not respected	X	X	X	X	X
24	4061	Board power on failure	X	X	X	X	X

## 5.2 Revision Guide PENTXM4-RA and PENTXM4-RC

Item	CRP	Description	E.C. Level							
			31194	31195	31196	31197	31198	32197	32198	
1 .. 17		Not applicable								
18	3702	Battery current not limited when the protection diode is damaged	X	X <sup>(1)</sup>						
19	3704	PMC clock skew not compliant with PCI-X 66 MHz standard	X	X	X	X	X	X	X	X
20		Not applicable								
21	4008	BMC programming process improvement	X	X	X					
22	4029	NAND Flash controller failure	X	X	X	X			X	
23	4040	I2C level are not respected	X	X	X	X	X	X	X	X
24	4061	Board power on failure	X	X	X	X	X			

## Chapter 6 - Detailed Description for Revision Guide Items



Each item applies only to a specific group of E.C. levels.

Depending on the board you are using, refer to the table available in Chapter 4 "Revision Guide for PENTXM2" or in Chapter 5 "Revision Guide for PENTXM4" to find the specific E.C. levels associated to a specific item.

---

### Item # 1 82571 Ethernet device not detected at power-on under low temperature - CRP3430

The Intel 82571 Ethernet device may not be detected at power-on under low temperature (<5°C), neither under EFI BIOS Firmware nor Operating System.

**Workaround:** Ambient temperature must be above +5°C to allow Ethernet device correct behavior.

---

### Item # 2 USB peripherals may not be detected when using long leaf USB cable - CRP3428

When using certain long leaf USB cables, USB keys or other devices may not be detected due to incorrect initialization.

**Workaround:** Use a short leaf cable (1 meter maximum).

---

### Item # 3 PMC may lose Ethernet link when VME backplane 3.3V is below 3.25V - CRP3434

Refer to Chapter 3 "General Information for PENTXM2 or PENTXM4".

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### Item # 4 Corrupted Ethernet data on PMC - CRP3435

Refer to Chapter 3 "General Information for PENTXM2 or PENTXM4".

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### Item # 5 x4 PCI-Express link on P0 not fully qualified - CRP3449

Functionality fully qualified for all boards E.C. Levels.

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**Item # 6 Data corruption on self-powered USB devices plugged on the front panel - CRP3452**

Self-powered USB devices, when plugged on the USB connector of the front panel, may experience data corruption. This may happen with external CD/DVD drivers or other devices presenting a high power consumption. The problem is due to an excessive 5V power voltage dropout on the power pin of the connector.

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**Item # 7 Rare Mating Problems with XMC Board - CRP3450**

On some occasions, mating problems for XMC mezzanine boards have been observed. However, when proper mating is achieved, the XMC port has been qualified and is fully functional.

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**Item # 8 Serial lines data transfer may fail in null modem / hardware flow control configuration - CRP3479**

Serial lines data transfer on COM1 or COM2 may fail in null modem configuration (RX/TX simplified) when using hardware flow control.

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**Item # 9 Data Rate of Gigabit Ethernet Links may be limited to 10Mb/s - CRP3488**

E.C. Level 21003 boards may experience a 10 Mb/s data rate limitation on their two gigabit ethernet links.

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**Item # 10 Risk of Short-Circuit when Plugging the 44-pin EIDE Onboard Connector - CRP3429**

On the 44-pin onboard EIDE connector, the GND, 5V and 3V3 pins are interleaved in the same row. Consequently, in case of one step shifting error (right or left side) when plugging the connector, a short-circuit is generated between the 5V and the GND and between the 3V3 and the GND.

As from E.C. Level 21003, a keying pin in the 44-pin EIDE header prevents from incorrect insertion.

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**Item # 11 Inopportune Permanent Reset may occur at Power-On - CRP3546**

On PENTXM2 or PENTXM4 boards, with the manufacturing option *VITA 38 IPMI Board Management* set to *Disabled*, a rare erratic behaviour of the H8 microcontroller at power-on may cause a global permanent Reset state.

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**Item # 12 ITP (Intel Test Port) for debug and repair is not functional - CRP3555**

ITP is not operational and cannot be used for debug and repair.

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**Item # 13 VME SYSRESET\* signal resets the initiator board - CRP3455**

In standard mode, the PENTXM2 or PENTXM4 should generate the backplane VME SYSRESET signal and ignore it when another board asserts the signal.

Nevertheless, this functionality does not work as described, and the backplane VME SYSRESET signal always causes the PENTXM2 or PENTXM4 board to reset, even on a system controller board.

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**Item # 14 Sequential Power On Implementation - CRP3567**

Due to a high current draw on 3V3 and 5V, racks involving many PENTXM2 or PENTXM4 boards may experience power supply issues at power on.

The enhancement consists in adding a temporization related to the VME geographical addressing at the power on of the board. This will force several boards in the same rack to power up sequentially, avoiding any excessive current draw at the same time from the rack power supply.

---

**Item # 15 Risks of freezing at power-on slow power supply rise time on the VME backplane - CRP3599**

The PENTXM2 or PENTXM4 may hang at power ON due to a timing sequence issue which impacts the 6300 I/O hub bridge.

The problem is getting worse when a PENTXM2 or a PENTXM4 is plugged in a rack with low rise time power supplies.

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**Item # 16 No output to the console on the serial line at power-on - CRP3640**

Sometimes, the serial line of the PENTXM2 or the PENTXM4 does not work; it depends on the console/terminal used.

Workaround: Under the BIOS,

- Go to **Advanced** menu
  - Go to **Peripheral Configuration** sub-menu
    - Select **Enabled** instead of **Auto** for **Serial Port A**
    - Set **Termination** to **hi-Z** instead of **V.35**
  - Save the new configuration
- 

**Item # 17 NAND Flash not hardware protected by default- CRP3683**

NAND Flash is protected by GPIO 23 state and not by a hardware strap/jumper.

A risk to write in the NAND Flash can occur if the GPIO state is unintentionally modified by the software.

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**Item # 18 Battery current not limited when the protection diode is damaged - CRP3702**

Battery current is not limited in case of serial protection diode failure (short-circuit). The battery manufacturer can not warranty UL conformity.

Workaround: Fully fixed with E.C. Levels 31016, 31116, 31196, 31056, and 31096.

(1) Partially fixed with E.C. Levels 31015, 31115, 31195, 31055, and 31095.

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**Item # 19 PMC clock skew not compliant with PCI-X 66 MHz Standard - CRP3704**

Clock skews between 6300 feedback clock and the PMC site clock not in accordance with the PCI standard. The standard limit this skew at 1 ns. This problem may appear on a PMC with timing limit. PCI configuration cycle may hang the board at power on, and the PMC may not be detected.

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**Item # 20 Error on vpdtool Linux Command - CRP3705**

vpdtool command does not work. Following message is displayed:

```
Autodetect a PENTXM2/4 board.  
cpld_flash_read: flash never ready and/or data never valid  
0x80 Error while reading vpd data
```

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**Item # 21 BMC Programmation Process Improvement - CRP4008**

Erratic serial line BMC programming issues during manufacturing. No synchronization between BMC's serial line and the associated programming PC hot serial line.

BMC ( Board Manager Controller) is used for PENTXM2 family boards IPMI features.

Due to environmental conditions, IPMI communications may be wrong or slower (I2C bus has its speed changed).

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**Item # 22 NAND Flash Controller Failure - CRP4029**

In very rare cases, after a sudden Power-off of the PENTXM2 board, the NAND flash controller may fail in error and the flash device may not be detected by the BIOS.

Workaround: Reprogram the firmware of NAND Flash controller. Once the NAND flash controller firmware is reinitialised, data in flash memory are generally recovered.

Contact the support to get firmware program tool.

The problem has been fixed by using a more recent version of the NAND flash controller.

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**Item # 23 I2C level are not respected - CRP 4040**

The LTC I2C chip buffer does not respect, in worst case, the I2C specification for the low level input voltage. The LTC chip can be replaced by a chip Intersil ISL33002IUZ.

Impact: Interface errors on IPMB and SMB bus (VME P0 connector).

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**Item # 24 Board Power On Failure - CRP 4061**

In very rare case, PENTXM2/M4 may be held down in reset state after power on. When this issue occurs, an orange led is lit on and the board reset is ineffective. This problem is due to a wrong initialization state of Universe II that maintains a local reset or/and a VME SysReset.

Workaround: Power off, then power on the board.

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