kontron

» VX3905 «

Hardware Release Notes

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Revision History

Publication Title:	VX3905 Hardware Release Notes	
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Rev.	Brief Description of Changes	Date of Issue
4e	Mechanical E.C. level A3 added	04-2015
3e	Mechanical E.C. level D1/D2 added.	08-2014
2e	E.C. level 30004 added (ROHS2 VPX connectors) and mechanical E.C. level suffix added.	07-2014
1e	E.C. Levels 01000 - 21000 - 30000 - 30002	01-2013
0e	Initial Issue	07-2011

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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 instructions.

Table Of Contents

Chapter 1 - Introduction

This document describes the engineering evolution of the referenced products.

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

You will find in the following pages:

This document applies to all VX3905 Environment Classes (if available):

- Standard Air: SA
- 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 VX3905/RC applies only to VX3905 Rugged Conduction-Cooled environment class.

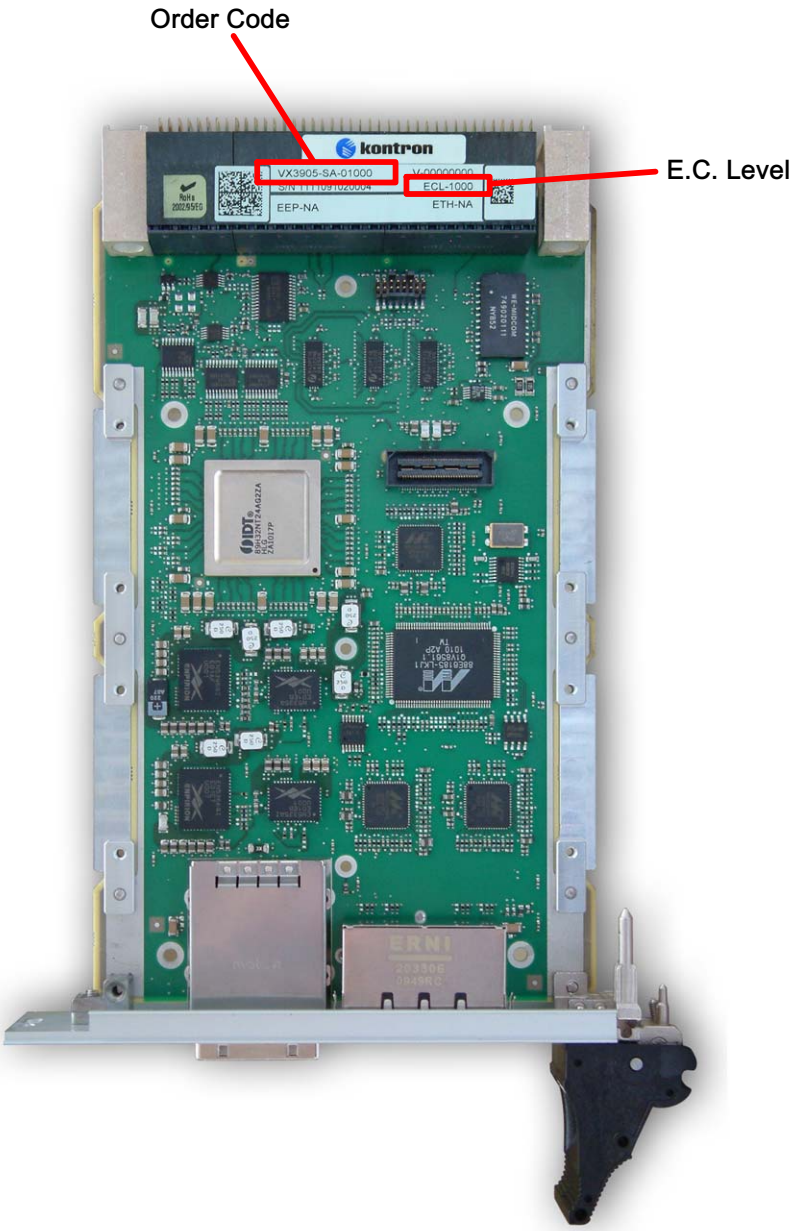
This document refers to the up-to-date release of the following hardware documentation:

> VX3905 User's Guide CA.DT.A89

Chapter 2 - Board Identification

E.C. Level & Order Code

The E.C. Level (five digits) and Order Code information is available on the “Order Code, Variant, Serial Number and E.C. Level" label, located on the top side of the board.



Chapter 3 - Board Revision Guide

3.1 How to Use the Board Revision Guide Table

1. Find the E.C. Level associated to your board as described in the Chapter 2 “Board Identification" page 2.
2. Find the column associated to this E.C. Level in associated table.
3. Check for a specific item in the table lines:
   3.1. A “x" (cross) in the E.C. Level column indicates that this item applies to this E.C. Level.
   3.2. No “x" (cross) in the E.C. Level column indicates that this item does not apply to this E.C. Level.
   3.3. 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.

Each item is fully described in section 3.4 “Item Detailed Description" page 5.

3.2 Revision Guide Table - Functional E.C. Levels

Item	Description	E.C. Levels				
		01000	21000	30000	30002	30004 (*)
1	The 7th 1000BASE-BX Ethernet link is not available on the backplane connector			x		
2	The PIC firmware debug command `setmd` doesn't work			x		

(*) 30004 is equivalent to 30002 except the VPX connector types which complies to the updated ROHS directive 2011/65/EU for 30004.

3.3 Revision Guide Table - Mechanical E.C. Levels

Item	Description	E.C. Levels					
		xxxxxA0 or xxxxx	xxxxxA1	xxxxxA2	xxxxA3 (SA-01E00 only)	xxxxxD0, xxxxxD1 (*) or xxxxx	xxxxxD2
M1	Electrostatic discharge performance on front panel not optimized for Ethernet only 1E00 product version	X					
M2	No "COM" marking on front panel to identify the RJ-11 serial port for the Ethernet only 1E00 product version	X	X				
M3	Ejector lever exceeding 0.8 inch pitch module mechanical envelope					X	
M4	ESD discharge level not supported above 4 KV	X	X	X		X	

(*) xxxxxD1 is equivalent to xxxxxD0, except increased electrical isolation gap between the thermal drain and some routed nets.

For E.C. Levels xxxxxA0 and xxxxxD0 the number may be “xxxxx__” (blank instead of A0 or D0)

3.4 Item Detailed Description for Functional E.C. Levels

Each item applies only to a specific group of E.C. Levels.
Refer to the table available in section 3.2 “Revision Guide Table - Functional E.C. Levels” page 4 to find the specific functional E.C. Levels associated to a specific item.

Item # 1 The 7th 1000BASE-BX Ethernet link not available on the backplane connector

Description: The 7th 1000BASE-BX Ethernet link is not available on the backplane connector

Impact: The user manual of VX3905, for products based on PCB revision C or higher, indicates that a 7th Serdes 1000BASE-BX Ethernet link CH9 is available on single ended contacts 15/13/11/9 of P2 VPX connector. This CH9 link is in fact not available on early revision of the product due to the absence of some series resistor on the link.

Solution: This issue is fixed starting at E.C. Level 30002.

Item # 2 The PIC firmware debug command `setmd` doesn't work

Description: The PIC firmware debug command `setmd` doesn't work. After the command is entered, it is executed correctly, but the firmware then reset the Ethernet switch device so that the manual modification of the device register by the `setmd` command is not retained.

Impact: The `setmd` command is not effective

Solution: This issue is fixed starting at E.C. Level 30002 which includes a PIC firmware revision greater or equal to 1.3.

3.5 Item Detailed Description for Mechanical E.C. Levels

Each item applies only to a specific group of Mechanical E.C. Levels.
Refer to the table available in section 3.3 “Revision Guide Table - Mechanical E.C. Levels” page 4 to find the specific Mechanical E.C. Levels associated to a specific item.

Item #M1 Electrostatic discharge performance on front panel not optimized for Ethernet only 1E00 product version

Description: On the Ethernet only version 1E00, the VX3905 will fail during an electrostatic discharge test greater than 4 KV.

Impact: Correct board operation cannot be guaranteed in presence of electrostatic discharge higher than 4 KV

Solution: An EMI gasket is used starting at E.C. Level xxxxxA1 to optimize the electro-static discharge performance up to 6 KV for 1E00 product version.

Item #M2 No "COM" marking on front panel to identify the RJ-11 serial port for Ethernet only 1E00 product version

Description: On version 1E00 of the product, equipped with an RJ-11 front connector, there is no "COM" marking on the front panel to reflect the type of link to be connected is RS-232 asynchronous serial line.

Impact: Lack of information to the user

Solution: A "COM" marking is added on the front panel of 1E00 product version starting at E.C. Level xxxxxA2.

Item #M3 Ejector lever exceeding 0.8 inch pitch module mechanical envelope

Description: The module ejector lever is too high on the top side of the module and exceed the 0.8 inch mechanical envelop for a standard conduction cooled chassis.

Impact: In a 0.8 inch conduction cooled chassis, it may be impossible to plug the card because of a mechanical conflict between the ejector lever of the VX3905 and the next module.

Solution: Use the conduction cooled card in a 1 inch pitch conduction cooled chassis, or adopt an E.C. Level greater or equal to xxxxxD2.

Item #M4 ESD discharge level not supported above 4 KV

Description: ESD discharges by contact above 4 KV are not supported.
4 KV which is the initial standard requirement is OK.

Impact: VX3905 function is not operational in presence of electrostatic discharge above 4 KV.

Solution: Improved EMI gasket on front panel used starting at mechanical E.C. Level greater or equal to A3 allows support of ESD at up to 6 KV. This improvment is available only for Ethernet only model SA-01E00 .

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