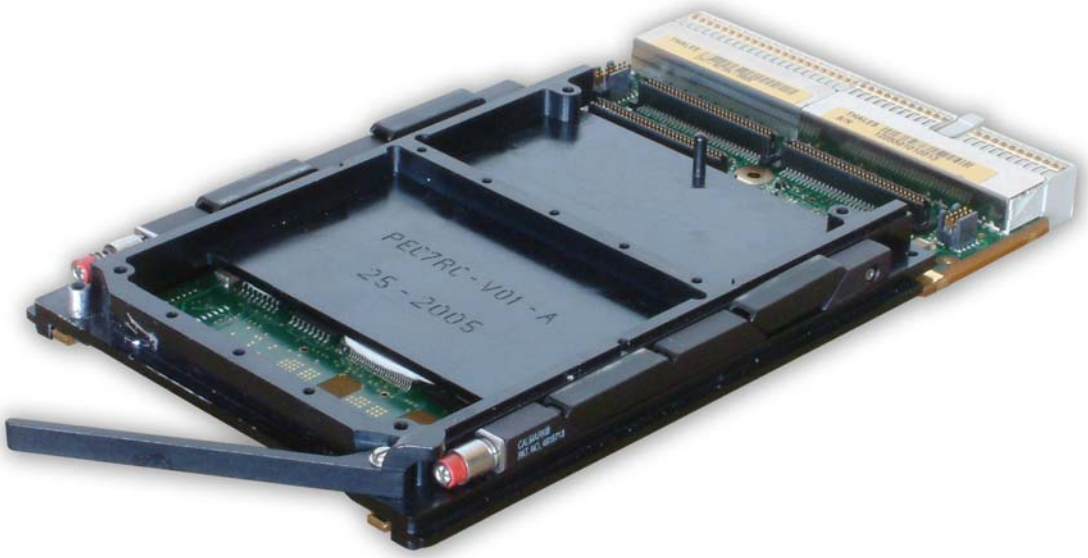
kontron

» PowerEngineC7 «



Hardware Release Notes

CA.DT.A37-1e - February 2013

Revision History

Publication Title:	PowerEngineC7 Hardware Release Notes	
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Rev.	Brief Description of Changes	Date of Issue
1e	New Kontron Corporate Design	02-2013
0e	Initial version	04-2006

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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

List Of Figures

Chapter 1 - Introduction

This document describes the engineering evolution of the referenced products to the up-to-date ones which are detailled in the Kontron hardware documentation.

Thus, you will find in the following pages:

- How to identify the Engineering Change (E.C.) level of the board you have in hand (page 2),
- What is the important information related to the different revisions of the board and the PowerEngineC7 User's Guide:
  - General information for all boards (page 4),

This document applies to all PowerEngineC7 Environment Classes (if available): Standard, Extended Temperature and Rugged versions.

If a specific information applies only to a specific environment class, it is clearly specified in the information description. For example, the reference PowerEngineC7/RC applies only to PowerEngineC7 Rugged Conduction-Cooled environment class.

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

- “PowerEngineC7 User's Guide" CA.DT.A31

Chapter 2 - Board Identification

Engineering Change Level

The Engineering Change Level (E.C. Level) is given by the “Variant and Engineering Change Level" label available on the bottom side of the board:

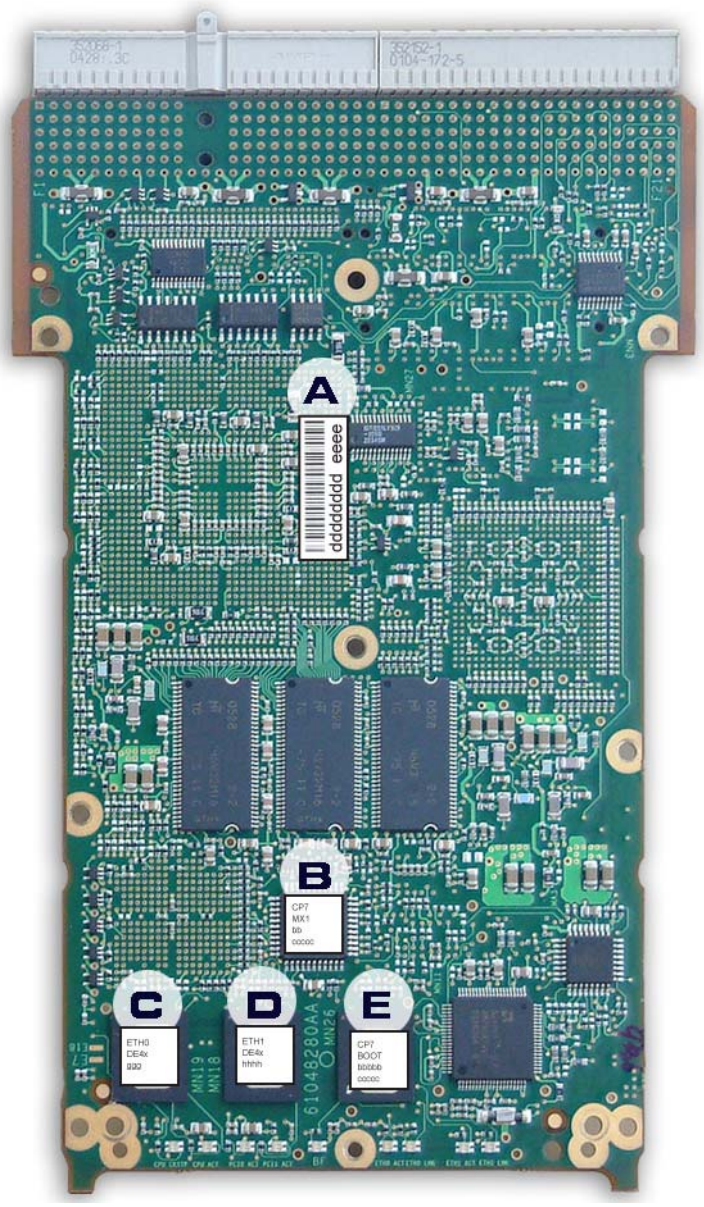

Figure 1: Bottom Side Identification Labels

A — Variant" and “Engineering Change Level" (E.C. Level) label: The “Variant" number is used with the Self-Tests and manufacturing Self-Tests.

B — “PLD ISPPAC" identification.

C — “ETH0 Ethernet Number" label. This number is in hexadecimal format.

D — “ETH1 Ethernet Number" label. This number is in hexadecimal format.

E — “Boot Flash" identification label.

Order Code

The Order Code is given by the “Board Identification" label available on the bottom side of the board:

A “Chronological serial number" label.

B **“Board Identification" label of the board.**

C “PLD EIDER" identification label.

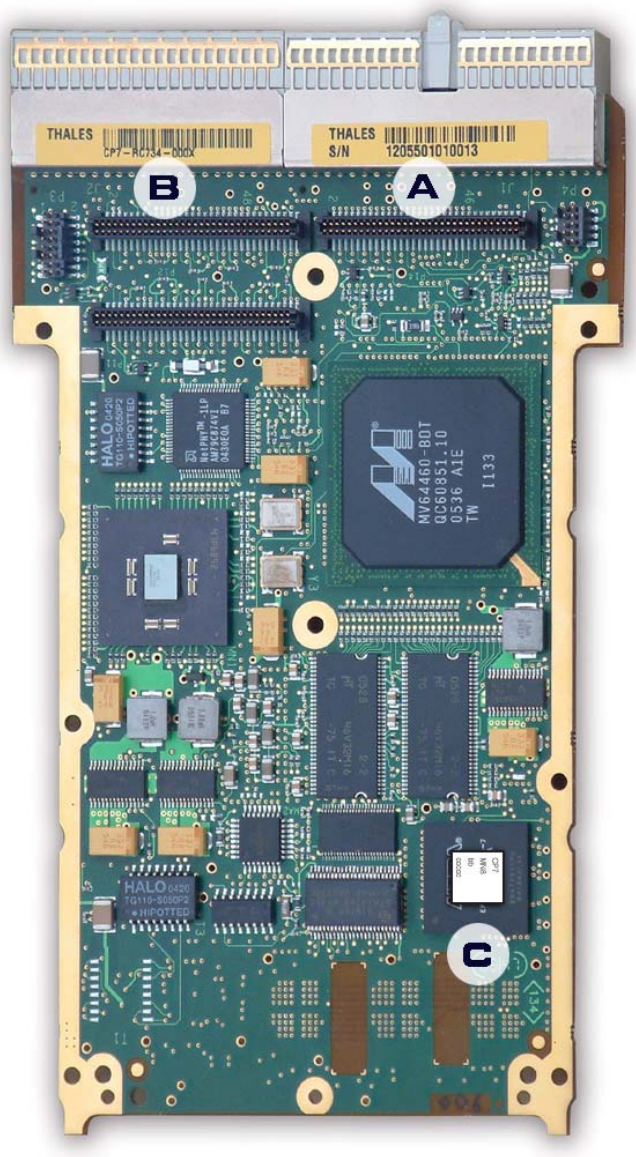

Figure 2: Top Side Identification Labels

Chapter 3 - General Information

JTAG Chain on CPCI

User must take care with the JTAG port which is available on the J1 CPCI connector of the PowerEngineC7 board.

This JTAG port is daisy chained between the J1 CPCI connector, the MV64460 host bridge and the ALTERA PLD.

As noticed in the PICMG 2.0 R3.0 CompactPCI Specification (October 1, 1999): `Usage of JTAG signals is discouraged`. Indeed, `TCK, TRST#` and `TMS` signals are generally bussed to all slots within the backplane. Some excessive noise on the backplane may propagate spikes onto those signals and make the bridge and the PLD going into an unpredicted or hazardous behavior.

If JTAG is needed, it is recommended to use a dedicated chain per slot instead of a single one per backplane.

We would recommend not to leave the JTAG port in high impedance state while fixing `TCK, TRST#` and `TDI` to level zero and `TMS` to level one.

RTC Time Loss

Some transitions from/to power up mode to/from power down mode may introduce a one second time loss and accumulating time loss within the RTC. No workaround currently available.

Minimal E.C. Level for the COP JTAG Equipment

A COP JTAG Equipment, Order Code COP-PN3-A is available with the PowerEngineC7 board. The minimal E.C. level required for this equipment is `110`.

Power Saving

To improve power saving, NAP Mode might be used with the processor still running at 700 MHz. It is not recommended to decrease the CPU core frequency. Overall power dissipation remains similar in both cases.

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