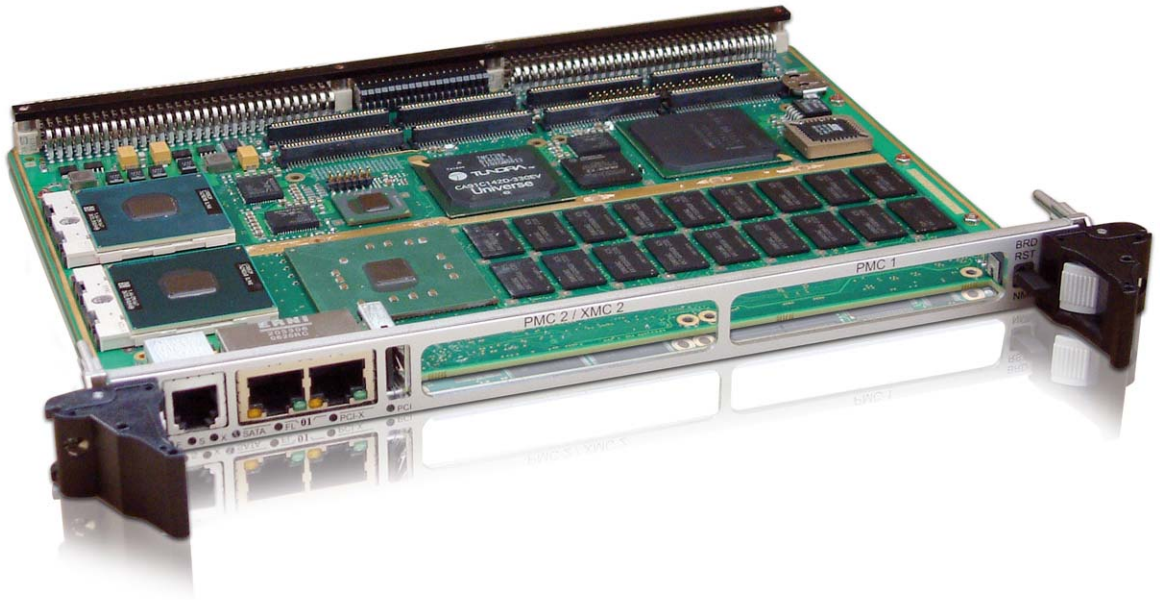
» PENTXM2 or PENTXM4 «



SATA Hard Disk Drive Mounting Kit

CA.DT.A84-0e - September 2010

Revision History

Publication Title:	SATA HDD Mounting Kit	
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Rev.	Brief Description of Changes	Date of Issue
0e	Initial version	09-2010

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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

List Of Tables

Chapter 1 - Introduction

This document describes the installation of the SATA Hard Disk Drive (HDD) kit on a PENTXM2 or PENTXM4 board.

Ordering Information

Article	Part. Number	Description
HDD Mounting Kit	KIT-DISK-PTXM2-S	SATA HDD mounting kit
HDD Mounting Kit	KIT-DISK-PTXM2-S-V	SATA HDD mounting kit, coated
HDD Kit	ICHD-PENTXM2-080-S	80 GB (1) SATA HDD and associated mounting kit
HDD Kit	ICHD-PENTXM2-080-S-V	80 GB (1) SATA HDD and associated mounting kit, coated

(1) 80 GB minimal size. Real HDD size may be higher, depending on current supply. For specific sizes, contact Kontron.

Table 1: Ordering Information

Installation

Refer to Chapter 2 “Installation” page 3

MTBF Data

Refer to Appendix A 'MTBF Data” page 10.

Associated Documentation

- Hardware
  - PENTXM2 or PENTXM4 Hardware Release Notes CA.DT.A09
  - PENTXM2 or PENTXM4 User's Guide CA.DT.A07
  - PENTXM2 or PENTXM4 Connection Guide CA.DT.A10
  - PENTXM2/RC or PENTXM4/RC Supplement User's Guide CA.DT.A08
  - PENTXM2/RA supplement User's Guide CA.DT.A72
  - V2PMC2 - Dual Slots PCI-X/PMC VME Carrier - User's Guide CA.DT.A11
- Software
  - InsydeH2O Firmware for PENTXM2 and PENTXM4 - User Reference Manual SD.DT.E86
  - PENTXM2 and PENTXM4 XBIT V2.xx User's Guide SD.DT.E90
  - PENTXM2 and PENTXM4 IPMI BMC User Manual SD.DT.F12
  - WindRiver Linux 3.0 BSP for PENTXM2 or PENTXM4 . . . . . SD.DT.F70
  - Release Notes RHEL5.2 for PENTXM2 and PENTXM4 Boards SD.DT.F34
  - Release Notes RHEL5 for PENTXM2 and PENTXM4 Boards SD.DT.F28
  - Release Notes RHEL4 for PENTXM2 and PENTXM4 Boards SD.DT.E82
  - Release Notes Windows XP on PENTXM2 and PENTXM4 Boards SD.DT.F39

Chapter 2 - Installation

The SATA HDD is mounted in the PMC site 1 area and connected to the EIDE header (P6 connector) that is located between the PMC connectors of PMC Site 1.

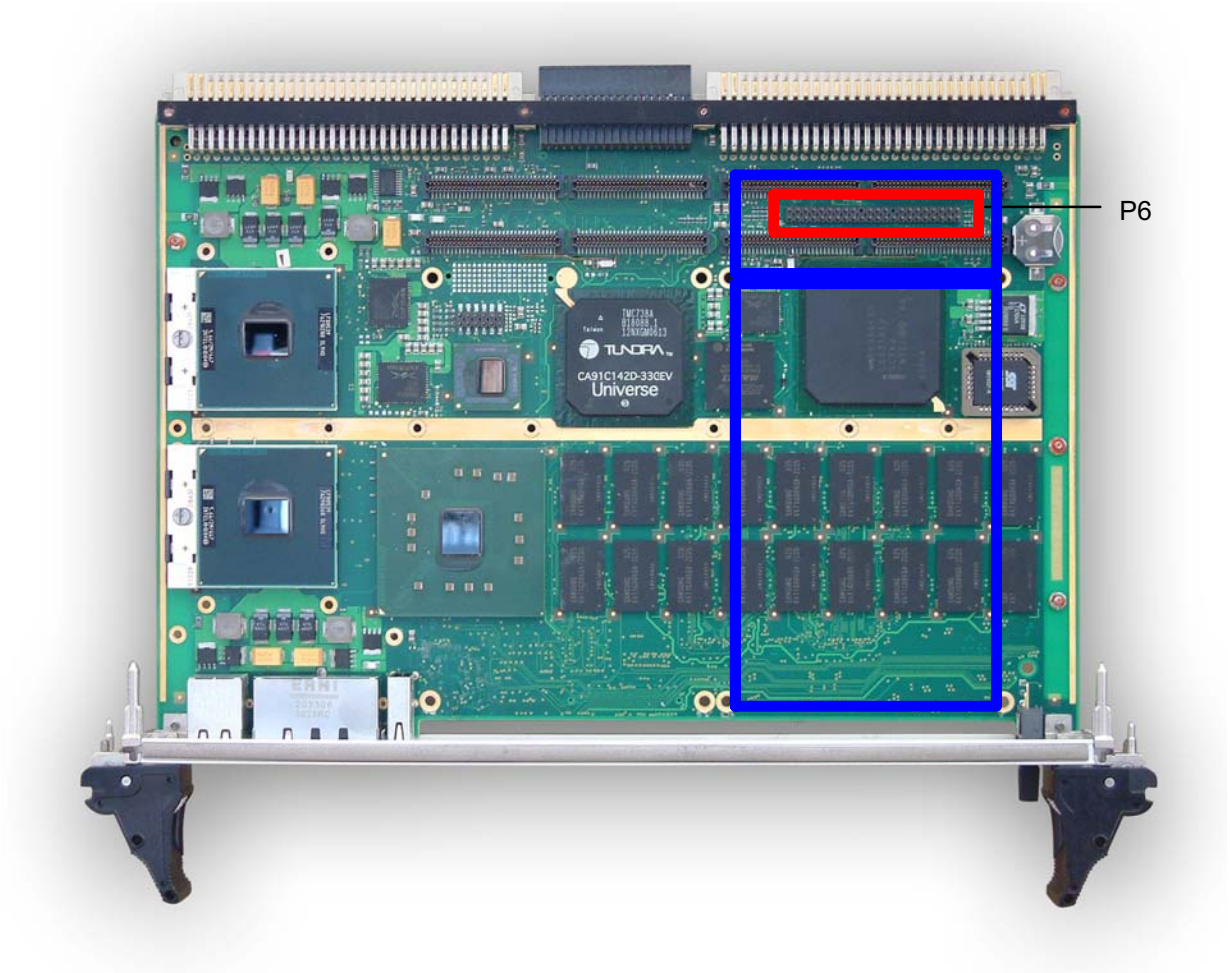


Figure 1: PENTXM2 or PENTXM4 P6 Connector Location

Two hard disk storage references are available:

- **ICHD-PENTXM2-080-S**: SATA hard disk drive (80 GB) and associated mounting kit

  The associated mounting kit is referenced:

  - **KIT-DISK-PTXM2-S**: SATA HDD Mounting Kit on PENTXM2 or PENTXM4

- **ICHD-PENTXM2-080-S-V**: SATA hard disk drive (80 GB) and associated mounting kit, coated version

  The associated mounting kit is referenced:

  - **KIT-DISK-PTXM2-S-V**: SATA HDD Mounting Kit on PENTXM2 or PENTXM4, coated version

The following sections detail the installation procedure of the SATA HDD on a PENTXM2 or PENTXM4 board.

2.1 Description of the SATA HDD Mounting Kit

Item N°	Description	Quantity	Note
1	Mounting Plate	1	
2	Front Blank Panel (mofified)	1	
3	Insulating Sticker	1	
4	SATA - IDE Adaptation Board	1	
5	M2.5x10 Torx Screw	2	- Torque requirements of 0.279 Nm
6	M2.5x16 Torx Screw	2	- Torque requirements of 0.279 Nm
7	M3x5 Torx Screw (extremely low head)	3	- Torque requirements of 0.46 Nm
8	M2.5x4 Standoff	2	- Torque requirements of 0.279 Nm
9	M2.5x7 Standoff	2	- Torque requirements of 0.279 Nm
10	d3.2xD6xL4 Standoff	2	
11	d3.2xD5.5xL2.2 Washer	2	
12	HM2.5 Nut	2	

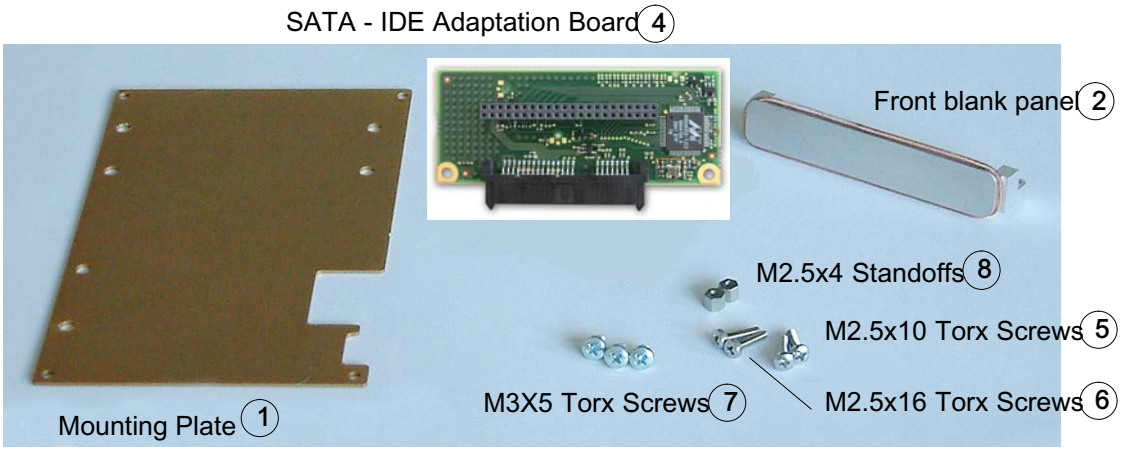


Figure 2: Hard Disk Storage Mounting Kit

Use the thread lock compound LOCTITE® 222 on all the assemblies.

2.2 Installation of the SATA HDD on the Mounting Plate

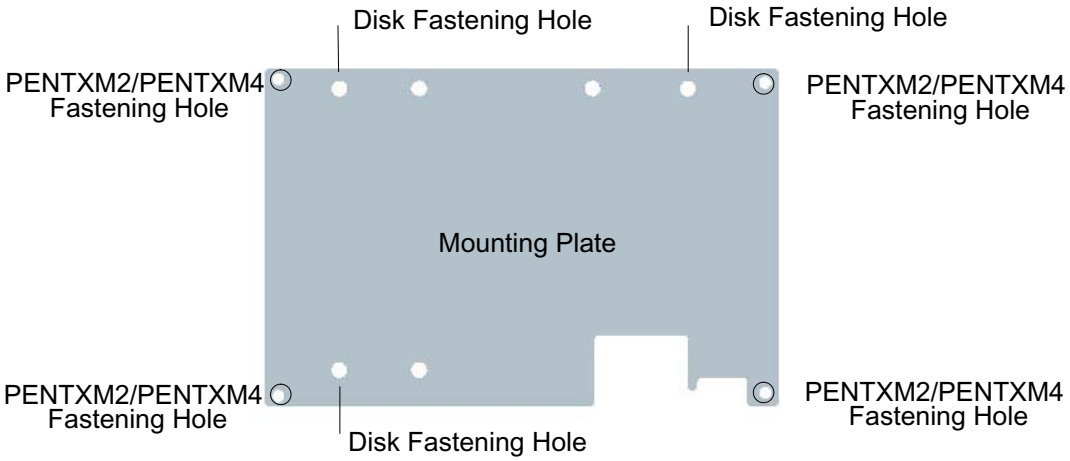


Figure 3: Hard Disk Drive Mounting Plate

1. Set up the insulating sticker on the mounting plate as shown below.

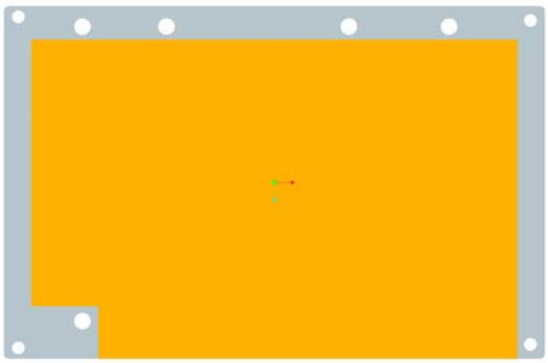


Figure 4: Setting up the Insulating Sticker

2. Fix the SATA disk on the mounting plate using the three M3x5mm Torx screws as shown in Figure 5.

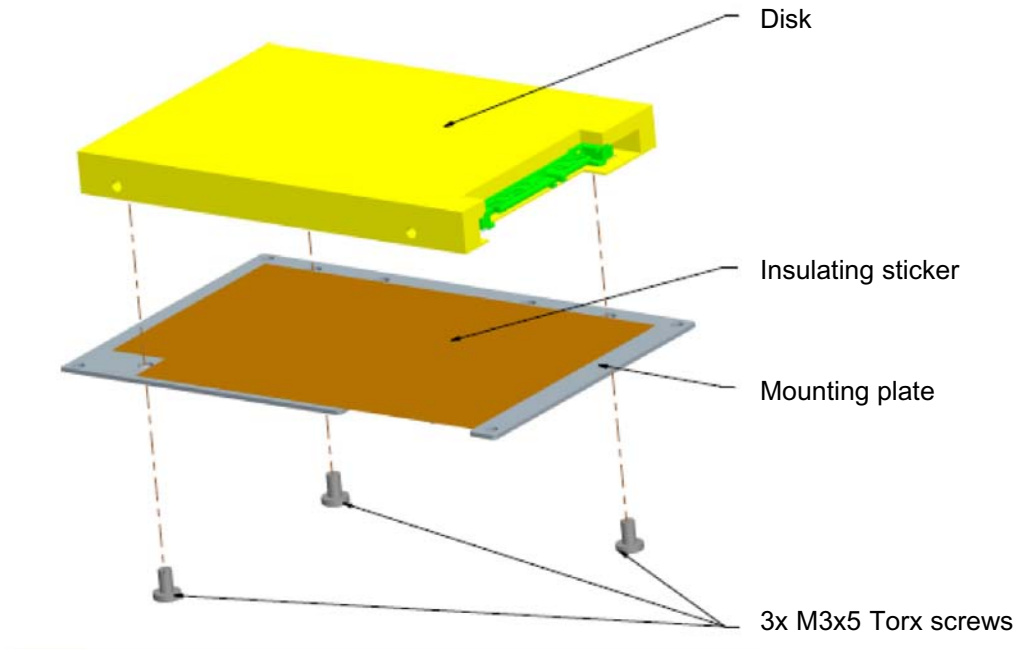


Figure 5: Fixing the SATA Disk

2.3 Pre-Equipement of the Board

1. Remove the bank panel from the slot PMC 1 of the PENTXM2 or PENTXM4 board.
2. Install the specific front blank panel delivered in the mounting kit.
   Use two M2.5x10 Torx screws to fix it to the board.
3. Fix the two standoffs M2.5x4 to the board using two M2.5x16 Torx screws.

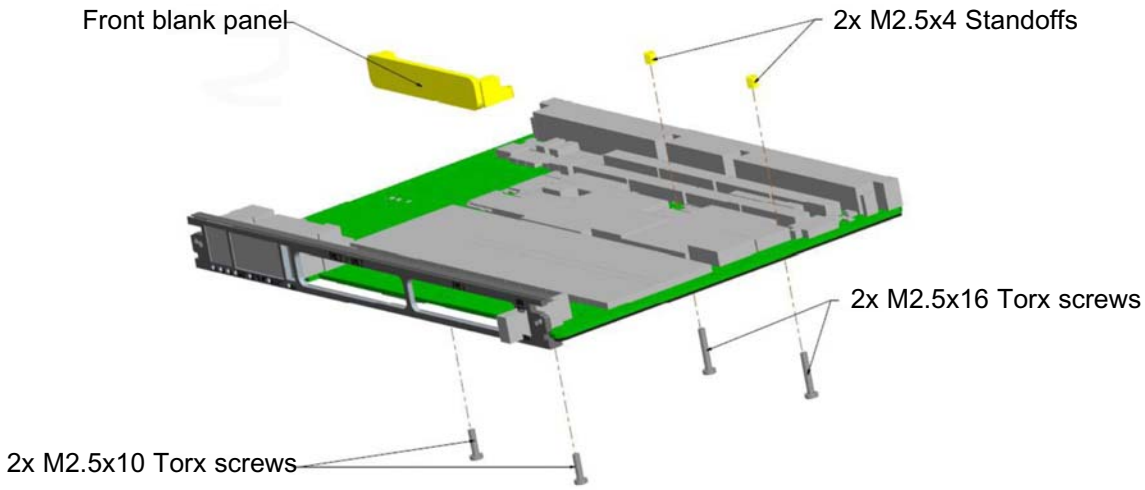


Figure 6: Pre-Equiping the Board

2.4 Final Assembly

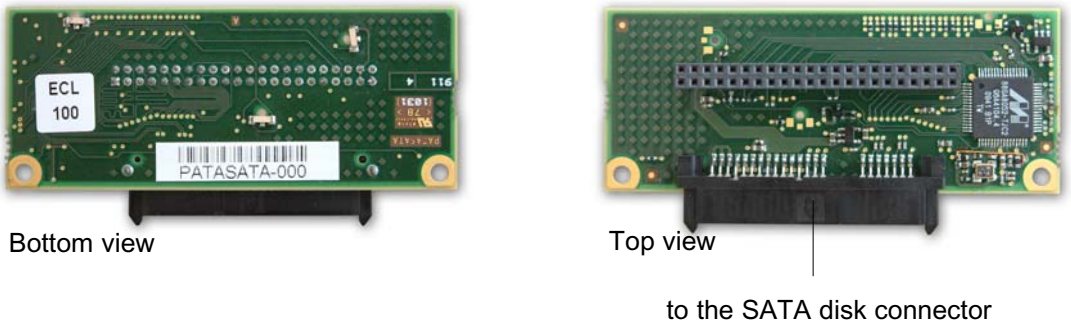


Figure 7: SATA - IDE Adaptation Board

1. Connect the SATA - IDE adaptation board to the SATA disk as shown in Figure 8.

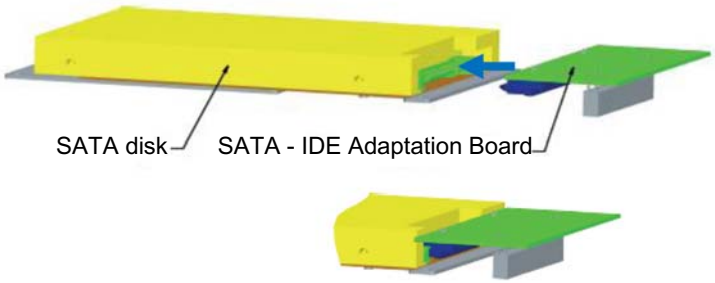
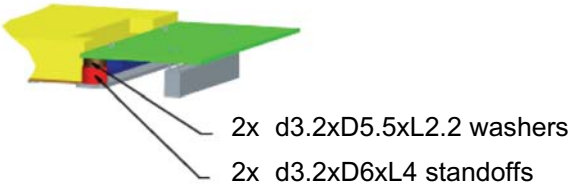


Figure 8: Connecting the SATA - IDE Adaptation Board

2. Set-up, on each side of the SATA - IDE adaptation board, the two standoffs and washers, as shown below:



3. Fix the set (mounting plate + SATA disk + SATA - IDE adaptation board) to the board, using:
   - two standoffs on the front side
   - the nuts on the rear side

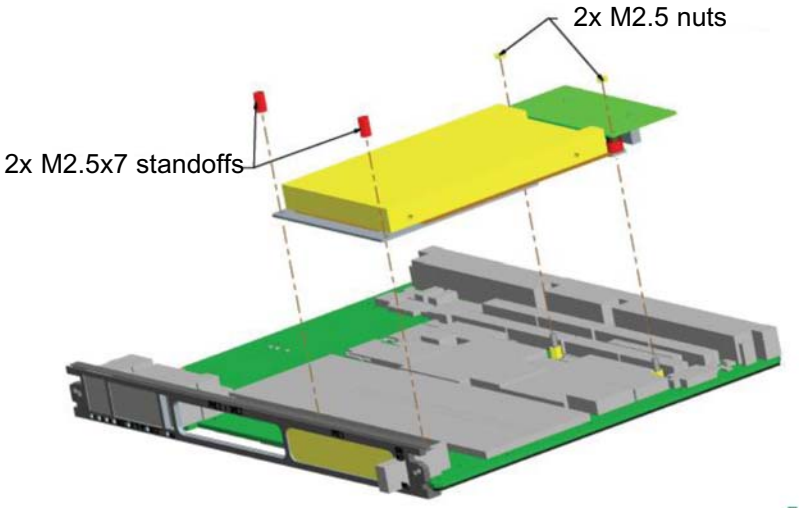


Figure 9: Final Assembly

Appendix A - MTBF Data

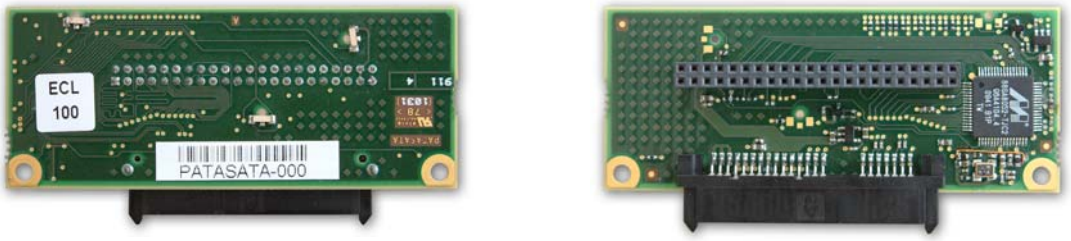


Figure 10: SATA - IDE Adaptation Board

Calculations are made according to the standard MIL-HDBK217F-2 for following types of environment:

- Ground Benign (GB)
- Air Inhabited Cargo (AIC)
- Naval Sheltered (NS)
- Air Rotary Wing (ARW)

Ground Benign (Hours)	25°C:	4 040 384	40°C:	3 240 663
Air Inhabited Cargo (Hours)	40°C:	600 156		
Naval Sheltered (Hours)	25°C:	754 470	40°C:	614 038
Air Rotary Wing (Hours)	55°C:	123 684		

Table 2: MTBF Data of the SATA - IDE Adaptation Board

MAILING ADDRESS
Kontron Modular Computers S.A.S.
150 rue Marcelin Berthelot - BP 244
ZI TOULON EST
83078 TOULON CEDEX - France

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