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Intel® IXDP425 / IXCDP1100 Development Platform

Specification Update

May 2004

Notice: The Intel® IXDP425 / IXCDP1100 Development Platform may contain design defects or errors known as errata that may cause the product to deviate from published specifications. Current characterized errata are documented in this specification update.

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Contents

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Revision History

Date	Version	Description
May 2004	005	Added Platform Revision A4 information. Removed Documentation Change 1.
November 2003	004	Added Erratum 2.
October 2003	003	Added Specification Change 2.
August 2003	002	Added Specification Change 1.
July 2003	001	Errata 1 and Documentation Changes 1 and 2.

Preface

This document is an update to the specifications contained in the Affected Documents/Related Documents table, below. This document is a compilation of device and documentation errata and specification clarifications and changes. It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools.

This document may contain information that was not previously published.

Affected Documents/Related Documents

This document contains updates for the Intel® IXDP425 / IXCDP1100 Development Platform (KIXDP425BD) and related documentation.

The *Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Specification Update* and the *Intel® IXP400 Software Specification Update* are available for updates related to the *Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Datasheet*, *Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Developer's Manual*, and *Intel® IXP400 Software Programmer's Guide*.

Title	Document Number
Intel® IXDP425 / IXCDP1100 Development Platform Quick Start Guide	253177
Intel® IXDP425 / IXCDP1100 Development Platform User's Guide	273743
Intel® IXDP425 / IXCDP1100 Development Platform Boot-Loader Flash Conversion Guide	253201
Intel® IXDP425 / IXCDP1100 Development Platform Schematics	N/A
Intel® IXDP425 Network Processor Development Platform Upgrade White Paper	252779
Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Datasheet	252479
Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Developer's Manual	252480
Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Specification Update	252702
Intel® IXP400 Software Programmer's Guide	252539
Intel® IXP400 Software Specification Update	273795

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Nomenclature

Errata are design defects or errors. These may cause the Intel® IXDP425 / IXCDP1100 Development Platforms' behavior to deviate from published specifications. Hardware and software designed to be used with any given board revision must assume that all errata documented for that board revision are present on all devices.

Specification Changes are modifications to the currently published specifications. These changes will be incorporated in any new release of the specification.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in any new release of the specification.

Documentation Changes include typos, errors, or omissions from the currently published specifications. These will be incorporated in any new release of the specification.

Note: Errata remain in the specification update throughout the product's life cycle, or until a particular stepping is no longer commercially available. Under these circumstances, errata removed from the specification update are archived and available upon request. Specification changes, specification clarifications, and documentation changes are removed from the specification update when the appropriate changes are made to the appropriate product specification or user documentation (quick start guide, users' guides, etc.).

Summary Table of Changes

The following table indicates the errata, specification changes, specification clarifications, or documentation changes that apply to the Intel® IXDP425 / IXCDP1100 Development Platform. Intel may fix some of the errata in a future stepping of the component and account for the other outstanding issues through documentation or specification changes as noted. This table uses the following notations:

Codes Used in Summary Table

Stepping

X: Errata exists in the revision indicated. Specification Change or Clarification that applies to this revision.

(No mark)

or (Blank box):   This erratum is fixed in listed revision or specification change does not apply to listed revision.

Page

(Page):   Page location of item in this document.

Status

Doc: Document change or update will be implemented.

Plan fix: This erratum may be fixed in a future revision of the component.

Fixed: This erratum has been previously fixed.

NoFix: There are no plans to fix this erratum.

Row

A change bar to left of table row indicates this erratum is either new or modified from the previous version of the document.

Errata

No.	Revision KIXDP425AD		Revision KIXDP425BD		Page	Status	Errata
	A1	A2	A3	A4			
1	X	X	X	X	12	No Fix	USB is Not Configured by Host If USB Cable Is Connected During Bootup (SCR 0930)
2	X	X	X		12	Fixed	RedBoot* NPE Ethernet Drivers May Fail to Load (SCR 2795)

Specification Changes

No.	Revision KIXDP425AD		Revision KIXDP425BD		Page	Status	Specification Changes
	A1	A2	A3	A4			
							None

Specification Clarifications

No.	Revision KIXDP425AD		Revision KIXDP425BD		Page	Status	Specification Clarifications
	A1	A2	A3	A4			
1	X	X	X		13	Fixed	PWRON_RESET_N Clarification
2	X	X	X		13	Fixed	JTG_TRST_N Clarification

Documentation Changes

No.	Page	Status	Documentation Changes
			None

Identification Information

Markings

Figure 1. Base Board Markings

NOTE: The board revision can be found on the BIXMB425 base card beneath the two middle PCI slots.
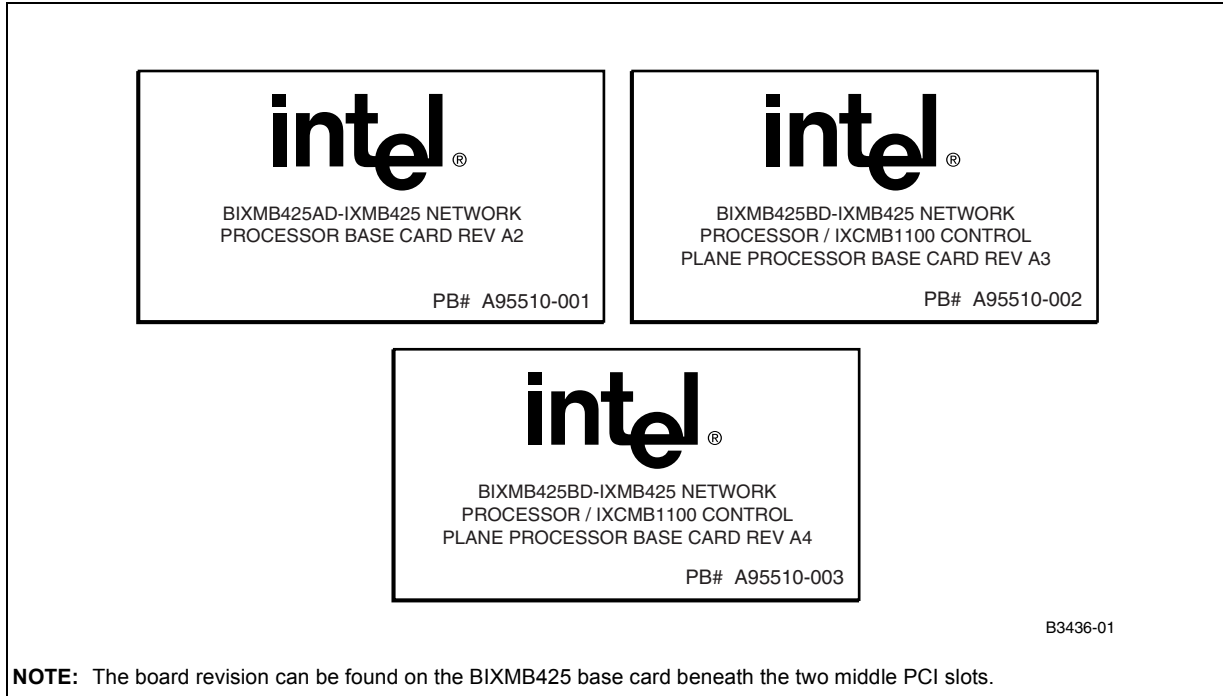
Table 1. Part Numbers

Device	Part #	MM #
Intel® IXDP425 / IXCDP1100 Development Platform	KIXDP425BD	855572

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Change Summary: KIXDP425BD: Rev A3 to Rev A4

The KIXDP425BD has been updated from Rev A3 to Rev A4. This section will highlight the changes.

A design note was added to page 31 of the schematics for clarification purposes. The JTAG debug unit (or TAP controller) must be reset during power up. This will initialize the TAP controller state machine. The implementation of the JTAG_TRST_N signal was updated to be pulled low with a 10-KΩ resistor to ground.

The PWRON_RESET_N circuitry was updated to show that PWRON_RESET_N must be driven to Vss during power up and then de-asserted to 1.3 V. For details, see the *Intel® IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Datasheet*.

A supervisor circuit was added to the 1.3V regulator to ensure that the 3.3V rail has stabilized before the 1.3V rail stabilizes.

The KIXDP425BD Rev A4 schematics are available in the 'documentation kit' that is available for download at:

http://www.intel.com/design/network/products/npfamily/ixdp425.htm

Errata

1.   USB is Not Configured by Host If USB Cable Is Connected During Bootup (SCR 0930)

Problem: If the USB cable is connected during bootup, the host box immediately recognizes the device and tries to address it. When this fails, the box gives up. When the board boots fully and the USB driver is initialized, no signal is sent to the box so it does not attempt to re-address the device.

Implication: USB is not accessible if it is connected during boot-up.

Workaround: There are two work arounds for the Intel® IXDP425 / IXCDP1100 Development Platform:

- Disconnect and reconnect the USB cable, so addressing will take place.

- Connect the USB cable after bootup.

A possible work around for customer designs would be to design a board-level circuit on/off switch on the USB connector lines, controlled by software (for example, using GPIO).

When the software is booted and the USB driver is initialized and enabled, this "switch" should be flipped to cut off the USB link for a few milliseconds (around 100 ms). The switch then should be flipped back— to reconnect it — and enumeration should occur.

This would have the very same effect as manually unplugging the cable and plugging it back, except it would be done in software.

Status: There is no fix planned for a future revision of this board.

2.   RedBoot* NPE Ethernet Drivers May Fail to Load (SCR 2795)

Problem: Due to an issue in the npe-epk v1.0 eCos package file, RedBoot v1.92 built with npe-epk v1.0 will only load the NPE Ethernet driver if both NPE Ethernet ports are available on the device.

Implication: If an error occurs while loading either NPE Ethernet port, the driver will not be loaded. This means the NPE Ethernet driver will never load on the Intel® IXP421 network processor due to the fact that it only has one NPE Ethernet port.

Workaround: Obtain RedBoot v1.92p1 (or higher) built with npe-epk v1.1 (or higher) that fixes this issue.

Specification Changes

None.

Specification Clarifications

1. PWRON_RESET_N Clarification

Issue: The *Intel*® *IXDP425 / IXCDP1100 Development Platform Schematics* incorrectly drive the PWRON_RESET_N input pin to a 3.3-V level. The PWRON_RESET_ON input pin should be driven with a 1.3-V level, as specified in the *Intel*® *IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Datasheet*. The IXDP425 / IXCDP1100 platform functionality is not affected by this. Customers should design their boards to use the correct, 1.3-V level.

Affected Docs: *Intel*® *IXDP425 / IXCDP1100 Development Platform Schematics*

Status: Fixed.

2. JTG_TRST_N Clarification

Issue: The *Intel*® *IXDP425 / IXCDP1100 Development Platform Schematics* incorrectly pull the JTG_TRST_N pin to a 3.3-V level. The JTG_TRST_N pin should be pulled low with a 10-KΩ resistor to ground, as specified in the *Intel*® *IXP42X Product Line of Network Processors and IXC1100 Control Plane Processor Datasheet*.

Affected Docs: *Intel*® *IXDP425 / IXCDP1100 Development Platform Schematics*

Status: Fixed.

Documentation Changes

None.