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CPCI-9120

Release Notes

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Abbreviations

Abbreviation	Description
BOOTP	Bootstrap Protocol
CO	Central Office
CPCI	Compact Peripheral Component Interconnect
DHCP	Dynamic Host Configuration Protocol
EEPROM	Electrically Erasable Programmable Read Only Memory
EXT2	Second Extended File System
FRU	Field Replaceable Unit
FTP	File Transfer Protocol
GPIO	General Purpose Input Output
IPMI	Intelligent Platform Management Interface
IXA	Intel Internet Exchange Architecture
I2C	Inter Integrated Circuit
JFFS2	Journaling Flash File System, Version 2
KCS	Keyboard Controller Style
MAC	Media Access Control
MSF	Media Switch Fabric
NFS	Network File System
OS	Operating System
PMC	PCI Mezzanine Card
RTC	Real Time Clock
SDK	Software Development Kit
TFTP	Trivial File Transfer Protocol

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1 Introduction

The IXP/CPCI-9120 is a 6U 4HP CompactPCI Single Board Computer complex based on the Intel® IXP2400 network processor for up to duplex OC-48 or 4 Gbit Ethernet bandwidth applications. IXP/CPCI-9120 has a Processor PMC expansion for expandable control plane processing power, a flexible media interface mezzanine to support different 4 Gigabit Ethernet interfaces. An SRAM expansion mezzanine site for memory expansion or co-processing support is provided.

1.1 Purpose of this Document

This document describes the content of the IXP/CPCI-9120 PICMG 2.16 variant EA release 1.0

The information regarding the environment and the installation procedures are described in the user guides.

1.2 Readers for this Document

Intended readers of this document are customers for th IXP/CPCI-9120.

1.3 Format of the Delivery

The format of delivery is in the form of source code and binaries.

1.4 New Features of this Release

Hardware Features

• The CPCI-9120 is the PSB Variant and it is with RoHS components, except for QDR SRAM.

• The main features are :

Single-NPU Intel IXP2400 board at 600 MHz
256 MB SO-DIMM DDRSDRAM with ECC
8 MB QDRSRAM with ECC onboard
8 MB QDRSRAM with ECC on accessory LA-1 mezzanine card
4 MB Boot Flash onboard
16 MB User Flash onboard
2 x PCI GbE MAC or 2 x SPI-3 GbE MAC on MSF mezzanine routed to PICMG 2.16 links.

Redboot Bootloader

• ‘exec’ command provides support to specify the address location for placing Linux Tags in SDRAM

• Added support for ATAG_INITRD2. This tag will specify the physical address where the Ramdisk is placed to the Linux kernel.

• New commands **ixf_backplane** and **82546_backplane** have been provided

• RedBoot bootloader now supports DHCP.

Linux

• A configuration option has been provided in **‘make menuconfig’** to specify the memory start and memory size to be used by Linux kernel.

• The default kernel configuration supports Ramdisk of size up to 32 MB.

• On system bootup, system clock gets synchronized with hardware clock.

• Enabled **cramfs** support

• Ramdisk has been updated to provide support for static IP assignment, FTP, telnet, strace, tcpdump etc.

2 Hardware Release

2.1 Known Limitations

- Non RoHS QDR SRAMs have been mounted on the boards due to non availability of RoHS SRAM part.
- Some of the components are in the process of qualification for W18 Certification.
- The eDVT is undergoing now.

3 Content of the Software Release

3.1 Features

IXP/CPCI-9120 single slot board complex comprises of the following features:

Single-NPU Intel IXP2400 board at 600 MHz
256 MB SO-DIMM DDRSDRAM with ECC
8 MB QDRSRAM with ECC onboard
8 MB QDRSRAM with ECC on accessory LA-1 mezzanine card
4 MB Boot Flash onboard
16 MB User Flash onboard
2 x PCI GbE MAC or 2 x SPI-3 GbE MAC on MSF mezzanine routed to PICMG 2.16 links

The following table lists the main features of the subsystems

Subsystem Name	**Features**
RedBoot Bootloader	• Based on RedBoot 1.24 for XScale • Xscale initialization and PCI devices enumeration • Boots Linux and supports tags for OS parameters • BOOTP, DHCP, TFTP support • 2.16 Ethernet links support • XYZ serial modem Protocol • IPMI KCS interface support
IPMI	• IPMI 1.0 mandatory command sets • Sensor devices support, Event Messages, BMC watchdog, FRU inventory • Integrates with CO 21KX, CO 21K
Montavista PE3.1 Linux	• Based on 2.4.20 kernel • Serial Console at 9600 Baud Rate • NFS Support for the Root File System • Ramdisk support for the Root File System with support for FTP, telnet, tcpdump, strace etc • Support for Ext2/3, JFFS2 file System • Intel 82546 Dual Ethernet MAC Driver • IPMI KCS style Driver • Watchdog timer support • On-Board MAX6900 RTC Driver • Intel 28F320J3A and 28F128J3A Flash Driver • Intel 82559 PMC Card Support • BOOTP and DHCP Support • I2C Adapter over two wire GPIO • I2C Driver for the AT24C02 serial EEPROM

Intel NPU SDK environment	• Intel IXA SDK 4.1 Software Framework ported for CPCI-9120 • Reference IPv4 forwarding application able to support 4 ports • IXF1104 MAC Driver Support • User utility to provide support for statistics collection for the IXF1104 MAC • User utility to read and program AT24C02 EEPROMS • Support for IO920 MSF Mezzanine card • Reference Application (Microcode) – Forwarding packets between IO920 Mezzanine Card Ports

4 Environment of the SW Release

4.1 SW Release Environment and Dependencies

Please refer to following documents :

1) IXP/CPCI-9120 Reference Guide
2) IXP/CPCI-9120 Linux Installation Guide

4.2 Operating Environment

Please refer to following documents:

1) IXP/CPCI-9120 Reference Guide
2) IXP/CPCI-9120 Linux Installation Guide

Applicable Documents

Third-Party Documents

Not applicable

References :

1) IXP/CPCI-9120 Reference Guide
2) IXP/CPCI-9120 Linux Installation Guide

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