

NCP-7560

4U 8-way Packetarium™ Network Processor Platform



Features

- Advantech Packetarium™ design
- Scalable from 1 to 8 multi-Core Packetarium™ network processing cards
- SAS/SATA controller for two AdvancedMCs with 2.5" storage devices
- Six 10GbE and sixteen 1GbE external interfaces
- L2 switch management
- PCIe Switch for control plane
- MicroTCA style hardware management
- Hot Swappable, 850 W redundant AC or DC power supplies
- Wind River CGL Linux and 6WINDGate™ support
- Designed for NEBS 3.0



Introduction

The NCP-7560 represents the high performance end of Advantech's Packetarium™ product line. It integrates up to eight powerful, multi-Core Packetarium™ network processing cards for wire speed packet processing providing up to 80 Gbps throughput. The main carrier board provides high-speed switched interconnects between boards, along with storage, system management and external network connections.

Each network processing card is linked by dual XAUI ports to a Broadcom BCM56820 10 GbE switch on the carrier board. The 10 GbE switch also provides six front panel 10 GbE SFP+ ports and sixteen GbE SFP ports via a Broadcom BCM56512 GbE switch. An onboard SAS controller connects to two advanced mezzanine card slots for SAS/SATA 2.5" storage. The carrier board incorporates a MPC8545 local processor for overall switch and system management and provides two front panel 100BaseT ports for remote management. Debug ports are also made available for development of custom or application specific hardware.

The scalability of the NCP-7560 positions it ideally for OEMs designing high bandwidth systems in telecommunications and enterprise networking. It is particularly applicable for applications in service provider networks for enhanced security, in content-aware routing and subscriber-based services.

The initial Packetarium™ network processing card are based on the Cavium Octeon CN5650 (12 Cores). Each card supports up to 16 GB of memory on four DIMM sockets. Two PCIe x4 slots provide control plane connectivity with the carrier while two XAUI ports connect to the data plane. The card is remotely managed via a local Module Management Controller (MMC) connected to the carrier's IPMB-L (I2C) bus. A console port and a 100 Mbps port provide further management interface options. Operating system support is available for the Cavium SDK, Linux Debian and Wind River PNE LE.

Ethernet Switch System Specifications

Processor System	Local Management Processor	Freescale MPC8545 PowerQUICC III
	Max Speed	1 GHz
System Memory	Memory Socket	200-pin SODIMM slot
	Memory type and capacity	Unbuffered 1 GB DDR2 667 MHz DIMM
Boot Flash	Flash Type	Redundant NOR Flash up to 256 MB
	Max Flash Size	256 MB
Networking Interface	Ethernet Switch	Broadcom BCM56820 for 10 Gb Broadcom BCM56512 for 1 Gb
	Ethernet Port	SFP+ (10 Gb/1 Gb) ports x 6 SFP (1000BaseX) ports x 16
Management Interface	Management Ethernet Switch	Broadcom BCM53212
	Management Port	RJ-45 (1000 BaseT) x 1
Expansion	AMC Slot	2 mid-size, single width AMC modules supported (PICMG AMC.0)
	Packetarium Card Slot	8 slots
Storage Subsystem	Controller	LSISAS1064e PCIe Gen1 SAS/SATA HDD supported
	Storage Interface	2 mid-size, single width SAS/SATA shared with AMC bay One Mini-SAS connector
	On Board USB	On board 8 GB NAND flash
I/O Interface	LMP Debug Port	RJ-45 RS-232 x 1
	Packetarium® Debug Port	TYPE-B USB 2.0 x 1
	LMP USB Ports	TYPE-A USB 2.0 x 2

Ethernet Switch System Specifications (Cont.)

Power	Type/Watts	1 + 1 redundant hot-swappable/850 W
	Input	AC 110 V _{AC} to 240 V _{AC} at 50-60 Hz DC -48 to -60 V (option)
Cooling	FAN	6 x hot-swappable redundant fans
SW Support	Bootloader	U Boot 1.3.4
	Operating system	Linux Kernel 2.6.21
	HW Management	IPMI 2.0
	Switch Management	Broadcom FastPath
Physical Characteristics	Dimensions (W x H x D)	430 x 176 x 450 mm (16.93" x 6.93" x 17.72")
	Weight	21 kg (Net)
Environment	Operating Environment	Temperature: 0 to 40° C Humidity: 20% to 90% RH
	Storage Temperatures	Temperature: -20 to 70° C Humidity: 5% to 95% RH
Compliance	EMC/Safety	CE/FCC/UL/CB (planned)
	NEBS	NEBS 3.0 design compliant

Packetarium™ Card Specifications

NCPB-2310 Cavium Octeon Plus

Processor System	Processor	Cavium Octeon CN5650
	Max Speed	800 MHz
	Processor Cores	12
System Memory	Memory Socket	Four 240 pin DIMM slots
	Memory tType and Capacity	ECC registered DDR2 800 MHz DIMMs, up to 8 GB per processor
Boot Flash	Flash Type	Redundant NOR Flash up to 256 MB
	Max Flash Size	256 MB
Interface	Physical Connection	PCIe x 1 + PCIe x16 Gold Fingers
	Logical Connection	Two PCIe x4 Two XAUI One 100Base-T
Cooling	CPU Heatsink	Passive Aluminum Cooler
SW Support	Bootloader	Cavium SDK 1.7.2 U Boot
	Operating System	Debian Linux Kernel 2.6.21 MIPS WR PNELE2.0 (option)
Physical Characteristics	Dimensions (W x H)	245.6 x 148.6 mm (9.67" x 5.85")
	Weight	0.53 kg (Net)



Main Ethernet Switch Board



Packetarium™ Card

Ordering Information

Part Number	Description
NCP-7560-X3A4AE	NCP-7560 Chassis + Main Ethernet Switch Board + 4 Packetarium Cards
NCP-7560-X3A8AE	NCP-7560 Chassis + Main Ethernet Switch Board + 8 Packetarium Cards
NCPB-2310-00AE	Packetarium Card (Cavium Octeon CN5650)