



Portwell

Complete Your Network

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- **VoIP & NAS**
- **Wireless Gateway**
- **Media Server**
(VoIP, Video/Image Processing)
- **Network Management**
(RAS, QoS, Load Balancing)
- **Security**
(Firewall/VPN, IDS/IPS, Anti-Virus,
Anti-Spam, Content Filtering)

Ver.210C



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About Portwell



Who is Portwell?

Portwell, Inc. was founded in Taiwan in 1993 and entered the Industrial PC market in 1995 by developing single-board computers. Today, our continued development of leading-edge products has resulted in strong growth in market share and revenue, a firm place on the Taipei stock exchange (TAISDAQ), and has established Portwell as a major worldwide supplier of specialty computing application platforms and services. Portwell, Inc. is not only a member of the select group of Intel® Applied Computing Platform Providers (IACPP), but also an associate member of Intel® Embedded and Communications Alliance (ECA), as well as Advanced Telecom Computing Architecture (ATCA) and an executive member of PCI Industrial Computer Manufacturing group (PICMG).

Portwell, Inc. has worldwide offices in the U.S.A., Taiwan, Japan, China, Netherland, United Kingdom, and India.

Why Partner with Portwell?

Whether you are working on a computer board or turnkey system, Portwell is the perfect partner to help you deliver your products to market on time as well as maintain longevity of product life cycle. With 16 years experience in the design and manufacture of specialty computer boards and systems, Portwell not only provides a one-stop resource for off-the-shelf products, but also supplies custom-built solutions and a global logistics service to suit your needs.

Portwell OEM and ODM solutions satisfy a host of top-tier companies in the retail automation, medical equipment, industrial automation, Infotainment, communication, and network security markets. Encouraged by our flexible business support, manufacturing excellence, and compliance with high quality and environmental standards such as ISO 9001/14000 and RoHS, customers have taken advantage of our dedicated and sophisticated engineering resource to satisfy their requirements for the design, manufacturing and logistics of application-specific computer boards, unique computer chassis, and specific computer system configurations. Whether you're working on a Medical Single Board Computer or Internet Security Appliance, Portwell is the perfect partner to help you deliver your products to market on time and stay one step ahead of the competition.

Why Portwell Platforms and Services?

Complete Product Portfolio

Select from our full range of both off-the-shelf and versatile custom solutions to scale your products. Portwell provides not only board-level products, but also peripheral-level and complete system solutions.

Implement Latest Intel Technology

Partnering with Intel since 1999, and with streamline access to the latest Intel technologies and roadmap, Portwell delivers cutting-edge solutions not only to meet and exceed the demand for the technologies, but also the needs of the long product life cycle.

Faster Time-to-Market

Portwell experienced engineers, complete product solutions, global operation and flexible business service help you meet the time-to-market requirement and reduce your new product introduction cycle, as well as costs of conducting business.

Leading Edge Innovator

Portwell is committed to product and solution innovation, and not only has completed a variety of proof-of-concept designs with Intel, but is also a leader in offering the latest technologies to the market.

Committed to Customer Satisfaction

Portwell operates a high standard process in determined pursuit of our commitment to continuously improve our products and services to satisfy and exceed our customers' needs.

What is Portwell Value Proposition?

Design, Develop, and Deliver

- Design, develop and deliver to meet customer requirements, such as production, reliability, stability, cost-effectiveness, and longevity of product.
- Experienced and sophisticated engineering capability includes electronic, mechanical, firmware and system integration expertise.

Portwell Manufacturing Excellence

- Supply chain and component inventory management with automation.
- In-house SMT lines and PCB assembly and functional testing.
- In-house system integration and testing.
- ISO 14001 and ISO 9001 certified manufacturing facilities (89,000 sq. ft. in Taipei).
- Flexible production capability.

Portwell Global Presence

- One point of contact, global support.
- Sales and technical support teams are available through Portwell worldwide offices in the U.S.A., Taiwan, Japan, China, Netherland, United Kingdom, and India.
- Customer-centric service and support.

REFERENCE TABLE

< X86 Architecture >



MODEL	PMG-7095	CAR-5010	CAR-5000
Sub-Model	-1206	-4300	-4520
Chipset	Blackford 5000P	Tylersburg / Intel® 5520	Intel® 3420
Launch Date	Q1'06	Q1'09	Q3'09
CPU (Max.)	Dual-Core Xeon® up to 3.0GHz Quad-Core Xeon® up to 2.66GHz	Nehalem-EP / Westmere-EP	Intel® C5500/C3500 series
RAM (Max.)	32GB	48GB	48GB
Ethernet			
Fiber	0	Optional	0
Copper GbE	6	Optional	4
10/100 FE	0	1	1
Bypass Seg.	0	Optional	2
Expansion Slot	Two expansion slots PCI-X, PCI-E	Optional one PCI-E x4 & PCI-E x8 slot	Optional one PCI-E x4 & PCI-E x8 slot
Storage Device			
HDD	12 Removable 3.5" SATA HDD	Two 3.5" SATA HDD	Two 3.5" SATA HDD
CF	Optional	Optional	Optional
DOM	Optional	Optional	Optional
DOC	N/A	N/A	N/A
Serial Port			
Console	RJ45 on front panel	RJ45 on the front panel	RJ45 on the front panel
LCD module	EZIO-300 or EZIO-G400	EZIO-300 or EZIO-G400 EZIO-500(Project base)	EZIO-300 or EZIO-G400 EZIO-G500(Project base)
LEDs	Power, Data-access, Lan status & Speed, Bypass	Power, Data-access, Lan status & speed, Bypass	Power, Data-access, Lan status & speed, Bypass
SATA	4 SATA-II connector	2 SATA-II connector	2 SATA-II connector
IDE	CF socket & 40-pin IDE connector	CF Socket	CF Socket
USB	Two USB 2.0 on the front	Dual USB 2.0	Two USB 2.0 on the front
VGA	N/A	2X5 pin-connector	2X5 pin-connector
Power	700W redundant PSU	500W redundant PSU	500W redundant PSU
Height (U)	4	2	2
Dimension (WxDxH)	484 x 576.5 x 176mm 19.1" x 22.7" x 16.9"	438 x 562 x 88 mm 17.2" x 22.1" x 3.5"	438 x 562 x 88 mm 17.2" x 22.1" x 3.5"
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MODEL	NAR-7100		NAR-7090				NAR-7102	NAR-5650
Sub-Model	-1414	-1014	-1412	-1012	-1417	-1418	-1011	-0830
Chipset	Tylersburg/5520		Blackford / 5000P				Tylersburg/5520	Bigby/3210
Launch Date	Q1 '09		Q1 '06				Q1 '09	Q4 '07
CPU (Max.)	Nehalem-EP/ Westmere-EP		Harperdown / Cloverdown				Nehalem-EP/ Westmere-EP	Core 2 Duo/ Core 2 Quad
RAM (Max.)	40GB		32GB				40GB	8GB
Ethernet								
Fiber	0	4	0	8	4	0	0	0
Copper GbE	14	6	8	0	4	8	10	8
10/100 FE	0	0	0	0	0	0	0	0
Bypass Seg.	0	0	4	0	0	2	0	3
Expansion Slot	One PCI-E x16 2 PCI-X or 2 PCI-E x8		Three PCI-X, PCI-E or PCI-E x8				One PCI-E x8	One PCI-E x8, one mini-PCI socket
Storage Device								
HDD	Two 3.5" SATA HDD		Two removable/ linner 3.5" SATA HDD				Two 2.5" SATA HDD	One 3.5" SATA HDD
CF	Optional		Optional				Optional	Optional
DOM	Optional		Optional				Optional	Optional
Serial Port								
Console	RJ45 on front panel		RJ45 on front panel				RJ45 on front panel	RJ45 on front panel
LCD module	EZIO-300 , EZIO-G400 or EZIO-G500		EZIO-300 or EZIO-G400				EZIO-300 , EZIO-G400 or EZIO-G500	EZIO-300 or EZIO-G400
LEDs	Power, Data-access, status		Power, Data-access, Lan status & Speed, Bypass				Power, Data-access, status	Power, Data-access, Lan status, Bypass
SATA	4 SATA II connector		4 SATA II connector				2 SATA II connector	2 SATA II connector
USB	2 on front panel		2 on front panel				2 on front panel	2 on front panel
VGA	2x5 pin-connector		N/A				2x5 pin-connector	2x5 pin-connector
Power	500W redundant PSU		400W redundant PSU				275W redundant PSU	300W full-range ATX
Height (U)	2		2				1	1
Dimension (WxDxH)	431.8x580x88mm 17"x22.8"x3.5"		454x510x88mm 16.97"x20.2"x3.46"				443x556x44mm 17.4"x21.9"x1.73"	443x457.2x44mm 17.4"x18"x1.73"
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Model	CAR-4000		CAR-4003		CAR-3005/3006/3007
Sub-Model	-4421	-4422	-4521	-4522	-3620
Chipset	Fox Hollow / Intel® 3420		Fox Hollow / Intel® 3420		Intel® G41
Launch Date	Q3'09		Q3'09		Q3'08
CPU (MAX.)	Intel® Xeon® X3400 Intel® Xeon® L3400 Intel Core i3/i5 processor		Intel® Xeon® X3400 Intel® Xeon® L3400 Intel Core i3/i5 processor		Core 2 Duo Core 2 Quad
RAM (MAX.)	16GB		16GB		4GB
Ethernet					
Fiber	0	0	1	1	0
Copper GbE	4	4	4	4	6
10/100 FE	0	0	0	0	0
Bypass Seg.	2	2	2	2	2
Expansion Slot	Optional one PCI-E x4 slot		Optional one PCI-E x4 slot		Two PCI-E x 8 slots
Storage Device					
HDD	One 3.5" or two 2.5" SATA HDD		One 3.5" or two 2.5" SATA HDD		One 3.5" or 2.5" SATA HDD
CF	Optional		Optional		Optional
DOM	Optional		Optional		N/A
Serial Port					
Console	RJ45 on the front panel		RJ45 on the front panel		RJ45 on the front panel
LCD module	EZIO-300 or EZIO-G400		EZIO-300 or EZIO-G400		EZIO-300 or EZIO-G400
LEDs	Power, Data-access, LAN status & speed, Bypass		Power, Data-access, LAN status & speed, Bypass		Power, Data-access, LAN status & speed, Bypass
SATA	2 SATA-II connector		2 SATA-II connector		2 SATA-II connector
USB	Dual USB2.0		Dual USB2.0		2
VGA	N/A		N/A		Internal pin-header
Power	80Plus 300W full-range ATX		80Plus 300W full-range ATX		200W full-range ATX, 250W DC48V 275W full-range Redundant
Height (U)	1		1		1
Dimension (WxDxH)	438 x 457 x 44 mm 17.20" x 18.00" x 1.73"		438 x 457 x 44 mm 17.20" x 18.00" x 1.73"		438 x 457 x 44 mm 17.20" x 18.00" x 1.73"
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MODEL	NAR-5520				CAR-3000	NAR-4060		CAR-2010
Sub-Model	-412	-612	-812	-1012	-3620	-600	-610	-3400
Chipset	Lakeport				Englelake / G41	Lakeport / 945GC		Englelake / G41
Launch Date	Q2`05				Q3`08	Q2`05		Q3`08
CPU (Max.)	Core 2 Duo/ Pentium 4/ Celeron D				Core 2 Duo Core 2 Quad	Core 2 Duo/ Pentium 4/ Celeron D		Celeron 440
RAM (MAX.)	4GB				4GB	4GB		4GB
Ethernet								
Fiber	0	0	0	0	0	0	0	0
Copper GbE	4	6	8	0	6	6	6	4
10/100 FE	0	0	0	0	0	0	0	0
Bypass Seg.	2	2	2	2	2	0	1	0
Expansion Slot	Two PCI-slots on rear panel, optional				One PCI-E x8 slot	N/A		One PCI-E x8 slot (Project Base)
Storage Device								
HDD	Two 3.5" SATA HDD				One 2.5" or 3.5" SATA HDD	one 3.5" SATA HDD		One 2.5" or 3.5" SATA HDD
CF	Optional				Optional	Optional		Optional
DOM	Optional				Optional	Optional		Optional
Serial Port								
Console	RJ45 on front panel				RJ45 on front panel	RJ45 on front panel		RJ45 on front Panel
LCD module	EZIO-300 , EZIO-G400				EZIO-300 or EZIO-G400	EZIO-300 , EZIO-G400		EZIO-300 or EZIO-G400
LEDs	Power, Data-access, Lan status & Speed, Bypass				Power, Data-access, Lan status & Speed, Bypass	Power, Data-access, Lan status & Speed, Bypass		Power, Data-access, Lan status & Speed.
SATA	2 SATA II connector				2 SATA II connector	1 SATA II connector		2 SATA II connector
USB	2 on front panel				2 on front panel	2 on front panel		2 on front panel
VGA	Internal pin-connector				Internal pin-connector	Internal pin-connector		Internal pin-header
Power	220W full-range ATX				200W full-range ATX	90W full-range ATX		100W full-range ATX
Height (U)	1				1	1		1
Dimension (WxDxH)	431x355.2X44mm 17""x14"x1.73"				443x292.1X44mm 17.45""x11.5"x1.73"	428x255X44mm 16.85""x10.04"x1.73"		438 x 292.1 x 44 mm 17.25" x 11.5" x 1.73"
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Model	NAR-2200		NAD-2100L		CAD-0205		CAD-0208	
Sub-Model	-601	-621	-601	-421	-3421	-3401	-3422	-3402
Chipset	Alviso		Alviso / 910GML		Luna pier / ICH8M			
Launch Date	Q1 '05		Q1 '05		Q1 '10			
CPU (Max.)	Dothan		Dothan		Pineview N450 / D410 / D510			
RAM (MAX.)	2GB		2GB		2GB			
Ethernet								
Fiber	0	0	0	0	0	0	0	0
Copper GbE	6	4	6	4	4	4	4	4
10/100 FE	0	2	0	0	0	0	0	0
Bypass Seg.	1	1	1	1	2	0	2	0
Expansion Slot	One PCI Slot		One PCI slot		One mini PCIe			
Storage Device								
HDD	Optional 2.5" or 3.5" SATA HDDs		One 2.5" or 3.5" SATA HDD		One 2.5" SATA HDD			
CF	Optional		Optional		Optional			
DOM	Optional		Optional		N/A			
Serial Port								
Console	RJ45 on front panel		RJ45 on rear panel		RJ45 on rear panel			
LCD module	Optional		N/A		N/A			
LEDs	Power, Data-access, Lan status & Speed, Bypass		Power, Data-access, Lan status & Speed, Bypass		Power, Data-access, Lan status & Speed, Bypass			
SATA	2 SATA I connector		1 SATA II connector		Optional			
USB	2 on front panel		2 on rear panel		2 on rear panel			
VGA	Internal pin-header		Internal pin-connector		Internal pin-connector			
Power	80W full-range AT		84W power adapter	60W power adapter	60W power adapter			
Height (U)	1		1.25		1			
Dimension (WxDxH)	428x255x44mm 16.85"x10.04"x1.73"		250x213x55mm 9.84"x8.39"x2.17"		180x150x42mm 7.1"x5.9"x1.65"			
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CA Application Diagram



Complete Network Applications

- **Network Security:** Firewall, VPN, IDS/IPS, UTM, Security Router
- **Network Management:** Load Balancing, QoS, Multi-Homing
- **Network Gateway:** Wireless
- **Network Voice:** SIP, VoIP
- **Network Storage:** Media Streaming, NAS, Storage back-up

PMG-7095

Portwell Media Giant Enterprise Virtual Array in 4U rack-mount

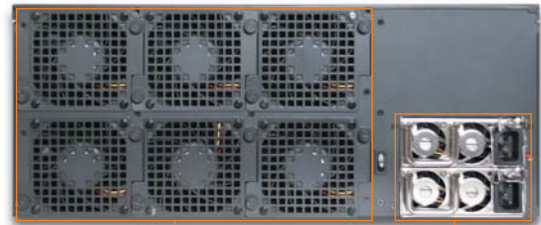


FEATURE

- With 12 SATA hot-swap bays
- Dual Intel® 51XX/54XX series CPU with 4M L2 cache/ 1333MHz FSB
- Flexible removable Ethernet modules
- Up to 10 Gigabit Ethernet ports
- Eight DDR667/533 FBDIMM memory slots
- Flexible PCI-X/PCI-E expansion slots
- Redundant ATX PSU
- Cable-less for user-friendly maintenance
- Supported PCI-X/PCI-E RAID card

SPECIFICATION

CPU Board	Supports Intel® Harpertown / Clovertown serie Xeon CPU
System Memory	- Eight FB-DIMM DDR2 667/533 sockets - Supports up to 32GB ECC/registered memory
Ethernet Port	- Two PCI32 management ports - Up to 8 PCI-E copper Ethernet ports - Up to 8 PCI-E SFP Ethernet ports - Flexible Ethernet modules
Expansion Slot	- Up to Two PCI-X expansion slots or - One low profile PCI-X and one PCI-E
Storage Device	- Up to 12 SATA HDD 3.5" with hot-swap bays - One compact flash socket for type-I CF card - Compact Flash
Serial Port	- One RJ45 connector for system consol - One 2x5 pin-connector
LCD Panel	2x16 characters and 128x32 graphical LCD module with 4 buttons
LEDs	LED indicator for power status and storage access
USB	Two USB 2.0 ports
VGA	N/A
Power	700W Full-range 1+1 redundant PSU
Dimension	484 (W) x 576.5 (D) x 176 (H) mm 19.1" (W) x 22.7" (D) x 6.9" (H)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity: 20%~90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity: 5%~95% RH
Certification	Project base



Swappable Fan module

700W ATX PSU

Option NIC

LAN module	Chipset	Ethernet	Bypass
ABN-454	intel 82571EB	4 GbE copper	0
ABN-454L	intel 82574L	4 GbE copper	0
ABN-462	intel 82571EB	2 Gbe Fiber	0
ABN-464	intel 82571EB	4 Gbe Fiber	0
ABN-482	intel 82571EB	2 Gbe Fiber	1
ABN-484	intel 82571EB	4 GbE copper	2
ABN-484L	intel 82571EB	4 GbE copper	2
ABN-522	intel 82598EB	2 10GbE Fiber	0
ABN-664	intel 82575EB	4 GbE Fiber	0

Option CPU

Model	Cores	Cache	TDP
E5440	4	12M	80W
L5410	4	12M	50W
L5408	4	12M	40W
E5345	4	8M	80W
E5335	4	8M	80W
L5318	4	8M	40W

ORDERING GUIDE

Part No.	PCI32 x1 GbE	PCI-E x4 GbE	Bays	EZIO
PMG-7095-1206	2 RJ45	4 RJ45	12	Yes

PMG-7095

Portwell Media Giant Enterprise Virtual Array in 4U rack-mount

NETWORK SECURITY

Firewall, Anti-Virus, UTM, IDS, IPS, VPN, Content Filtering / Spam, Load-Balancing, RAS, Bandwidth Management, QoS

STORAGE

12 bays with RAID



Computing

Boosting quad-core or dual-core performance for multi-threaded applications and heavy multi-tasked scenarios within constrained thermal profile, incorporating low power 45nm process in efficient memory controller hub for L2 cache and front-side bus speed, and configuring up to 32GB FBDIMM memory provide compelling performance-per-watt advantages to wide range of applications. The 64-bit OS is also available for your critical missions.

CPU Support List

Harpertown Xeon Quad cores

E5440/L5410/L5408

Clovertown Xeon Quad cores

E5345/ E5335/L5318

Networking

The leading edge Gigabit Ethernet adopts a PCI Express standard with balanced performance and energy-efficient design that meets the throughput and latency requirements of storage demanding applications. The wide internal data path, advanced interrupt-handling, and large on-chip packet buffer eliminate performance bottlenecks by efficiently handling large address and data words. The I/O optimization secures the full utilization of computing capability without compromise.

Three PCI-E x8 Modules designed
You can choose any configuration you want

ABN-454L= 4 GbE copper ports
ABN-462 = 2 GbE Fiber ports
ABN-464 = 4 GbE Fiber ports
ABN-482 = 2 GbE Fiber ports with Bypass
ABN-484 = 4 GbE ports with Bypass
ABN-484L= 4 GbE copper ports with Bypass
ABN-522 = 2 10G Fiber ports
ABN-664 = 4 GbE Fiber ports

Storage

Adopting RAID level 0, 1, 10, and 5 provides protection, fault tolerance, and performance. The RAID 0, called "striping", is a performance-oriented data mapping technique, which enables high I/O performance at a low cost. The RAID 1, called "mirroring", is a data redundancy technique, which provides full protection against data loss in the event of the failure of either of the disks. The RAID 5 stripes both data and parity information across three or more drives. Fault tolerance is maintained by a distributed parity algorithm. The RAID 10, called "striped mirrors", is a combination of RAID 0 and RAID 1, which provides excellent overall performance by combining the speed of RAID 0 with the redundancy of RAID 1.

Support PCI-X and PCI-E x8 interface
You can choose any RAID card you want

RAID 0, 1, 5, 10 or more

CAR-5010

Tylersburg platform (Intel 5520), Up to 26 GbE ports



FEATURE

- Support Six-core Xeon and Quad-core Xeon processors
- Flexible removable network, HDD and expansion modules
- Up to 26 Gigabit Ethernet ports
- Support twelve DDR3 ECC memory sockets
- One PCI-Ex8 or one PCI-Ex4 for expansion
- Support character or graphic LCD modules
- Front access for easy maintenance
- Redundant 500W ATX PSU
- IPMI V2.0 with iKVM

SPECIFICATION

CPU Board	- Support Intel® Nehalem-EP and Westmere-EP processor - Intel® 5520 chipset
System Memory	- Twelve DDR3 ECC DIMM sockets - Supports up to 96 GB RDIMM (Based on DIMM spec.)
Ethernet Port	- Two PCI-E GbE ports (Intel® 82574L) for management - Three flexible Ethernet modules up to 24GbE Ethernet ports
Bypass function	Support both copper and fiber bypass modules
Expansion Slot	- One PCI-E x4 connector on board - One PCI-E x8 connector on board (can transfer into removable module)
Storage Device	- Up to two 3.5" SATA HDD - Compact Flash socket on-board
Serial Port	- One RJ45 connector for system console - Two 2x5 pin-connector
LCD Panel	- 2x16 characters or 128x32 with 4-buttons - 128x64 graphical LCD module with 7-buttons
LEDs	Power status and Data access
USB	Two USB 2.0 ports, front access
VGA	2x5 pin-connector
Power	Full-range 500W 1+1 redundant PSU
Dimension	438(W) x 562(D) x 88(H) mm 17.2"(W) x 22.1"(D) x 3.46"(H)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



Removable Smart Fan

Redundant 500W ATX PSU

ORDERING GUIDE

Part No.	PCI-E GbE	Bypass	EZIO	Exp.
CAR-5010-4300-000	Optional	Optional	Yes	One PCI-E x4 One PCI-E x8

CAR-5010

Tylersburg platform (Intel 5520), Up to 26 GbE ports



PCI-Express Gen.2 NIP

NIP-53020		intel® 82599ES	• Two 10GbE fiber ports w/o bypass segment
NIP-54020		intel® 82599EB	• Two 10GbE copper ports w/o bypass segment
NIP-51080		intel® 82580EB	• Eight GbE copper ports w/o bypass segment
NIP-51240		intel® 82580EB	• Four GbE copper ports w/o bypass segment
NIP-52080		intel® 82580EB	• Eight GbE fiber ports w/o bypass segment
NIP-52120		intel® 82580DB	• Two GbE fiber ports w/o bypass segment

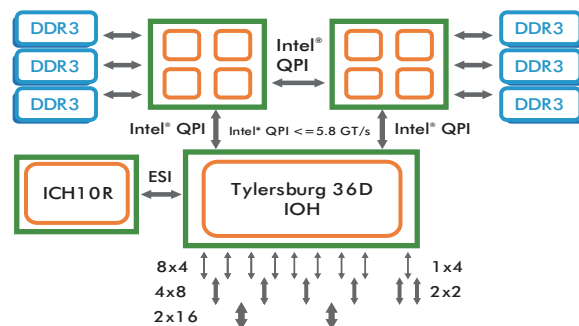
NIP

ABN-668		intel® 82575EB	• Eight GbE fiber ports w/o bypass segment
ABN-664		intel® 82575EB	• Four GbE fiber ports w/o bypass segment
ABN-482		intel® 82571EB	• Two GbE fiber ports w/ one bypass segment
ABN-458		intel® 82571EB	• Eight GbE copper ports w/o bypass segment
ABN-454		intel® 82571EB	• Four GbE copper ports w/o bypass segment
ABN-484L		intel® 82574L	• Four GbE copper ports w/ two bypass segment
ABN-454L		intel® 82574L	• Four GbE copper ports w/o bypass segment

CPU	Clock	Core/Thread	QPI	Cache	Memory	TDP	Turbo	Socket
E5645	2.40	6/12	5.86	12MB	1333	80W	YES	LGA1366
E5620	2.40	4/8	5.86	12MB	1066	80W	YES	LGA1366
L5638	2.00	6/12	5.86	12MB	1333	60W	YES	LGA1366
L5618	1.87	4/8	5.86	12MB	1066	40W	YES	LGA1366
E5540	2.53	4/8	5.86	8MB	1066	80W	YES	LGA1366
E5504	2.00	4/4	4.8	4MB	800	80W	NO	LGA1366
L5518	2.13	4/8	5.86	8MB	1066	60W	YES	LGA1366
L5508	2.00	2/4	5.86	8MB	1066	38W	YES	LGA1366

Block Diagram

Quad Core 2S configuration shown



Processor Core

- Nehalem-EP (45nm) and Westmere-EP (32nm)
- Integrated Memory Controller
- Turbo Technology
- Turbo Technology
- Intel® QuickPath interconnect
- Intel® Hyper-Threading Technology
- Lead and halogen free platform kit

CAR-5000

Jasper Forest(Intel 3420), up to 26 GbE ports, PCI-Express 2.0



FEATURE

- Intel® Xeon® processor with integrated memory and PCI-Express 2.0 controllers
- Intel® Turbo Boost and power efficiency
- IPMI V2.0 with iKVM
- Ready for PCIe 2.0 5GT/s solution
- Removable Ethernet and HDD expansion modules

SPECIFICATION

CPU Board	- Support LGA1366 Intel® processor Xeon® C5500/C3500 processors with 8M-2M L3 Cache - Intel® QPI 5.87GT/s processor bus
System Memory	- Six DDR3 240-pin DIMM sockets for each processor - Support DDR3 1333/1067/800 UDIMMs or RDIMMs, up to 48 GB
Ethernet Port	- Two PCIe GbE ports for management - Capable for three flexible NIP modules, up to 24GbE ports
Expansion Slot	One PCIe x8 and two PCIe x4 slots (optional)
Storage Device	- Up to two 3.5" or eight 2.5" SATA HDD - One onboard compact flash socket for type-I CF, supports DMA mode
Serial Port	- One front accessible RJ45 connector for system console - One internal 2x5 pin header for connecting with EZIO or other device
LCD Panel	Supports one optional 16x2 characters or 128x32/128x64 LCD module
LED	LED indicators for power status, storage access, Ethernet status/speed and bypass status
USB	Dual USB 2.0 ports
VGA	Built-in on-board 2x5 pin-header
Power	Full range 500W 1+1 redundant PSU
Dimension	431.8(W) x 580(D) x 88(H) mm 17.0"(W) x 22.8"(D) x 3.5" (H)
Operation Environment	- Temperature: 5 to 35°C (41~95°F) - Humidity: 20% ~ 90%RH
Storage Environment	- Temperature: 0 to 70°C (32~158°F) - Humidity: 5% ~ 95%RH
Certification	CE/FCC/UL (to be applied)



ORDERING GUIDE

Part No.	PCIe 2.0 Eth. Interface	EZIO	Expansion
CAR-5000-4E2G	2 copper GbE mgt. ports 12 copper GbE ports	EZIO-300, EZIO-G400 or EZIO-G500	Optional
CAR-5000-4I2K	2 copper GbE mgt. ports 16 copper GbE ports	EZIO-300, EZIO-G400 or EZIO-G500	Optional

CAR-5000

Jasper Forest (Intel 3420), up to 26 GbE ports, PCI-Express 2.0

Optional NIC

LAN module	Ethernet Controller	Interface	Bypass
NIP-54020 	82599EB	2 10GBASE-T	0
NIP-53020 	82599ES	2 10G SFP+	0
NIP-52080 	82580EB	8 GbE SFP	0
NIP-52040 	82580EB	4 GbE SFP	0
NIP-51080 	82580EB	8 GbE RJ45	0
NIP-51240 	82580EB	4 GbE RJ45	2
NIP-51040 	82580EB	4 GbE RJ45	0
ABN-668 	82575EB	8 GbE SFP	0
ABN-482 	82571EB	2 GbE SFP	1
ABN-484L 	82574L	4 GbE RJ45	2
ABN-484 	82571EB	4 GbE RJ45	2
ABN-464 	82571EB	4 GbE SFP	0
ABN-458 	82574L	8 GbE RJ45	0
ABN-454L 	82574L	4 GbE RJ45	0
ABN-454 	82571EB	4 GbE RJ45	0

Optional Processor

	Core Freq.	Cache (MB)	Cores/Threads	TDP
EC5549	2.53GHz	8	4/8	85
EC5539	2.27 GHz	4	2/2	65
EC3539	2.13GHz	8	4/4	65
EC5509	2.00GHz	8	4/4	85
LC5528	2.13GHz	8	4/8	60
LC5518	1.73GHz	8	4/8	48
LC3528	1.73GHz	4	2/4	35
LC3518	1.73GHz	2	1/1	23
P1053	1.33GHz	2	1/2	30



NAR-7100

Tylersburg platform (Intel 5520), Up to 26 GbE ports

FEATURE

- Dual Quad-core Xeon® 55XX and 56XX series
- Flexible removable Ethernet/HDD modules w/ PCI-E Gen.2
- Up to twenty-six Gigabit Ethernet ports
- One PCI-E x16, two PCI-E x8, two PCI-X expansion slots (Optional)
- Redundant 500W ATX PSU
- Front access for user-friendly maintenance
- 2x16, 128x32, 128x64 LCD/Keypad for friendly installation and operation interface
- Support IPMI Function via third party module



SPECIFICATION

CPU Board	- Support Dual Intel® Nehalem-EP E55XX/L55XX processor and Westmere-EP E56XX/L56XX processor - Intel® 5520 chipset with Intel® QPI up to 6.4GT/s
System Memory	- Ten DDR3 ECC DIMM sockets - Supports up to 80GB RDIMM
Ethernet Port	- Two PCI-E GbE ports (Intel® 82574L) for management - Capable for three flexible NIP modules, up to 24GbE ports
Expansion Slot	- One PCI-E x16 connector on board or - One PCI-E x4 (could transfer to two PCI-X) or Two PCI-E x8 expansion slots
Storage Device	- Up to two 3.5" SATA HDD - CompactFlash socket on-board
Serial Port	- One RJ45 (for system console) - Two 2x5 pin-connector
LCD Panel	2x16 characters or 128x32 with 4-buttons, 128x64 graphical LCD module with 7-buttons
LEDs	LED indicator for power status and storage access
IDE	- PCI transfer to IDE (CF socket and 40pin) - 4 SATA connectors
USB	Two USB 2.0 ports
VGA	YES (Pin header on board)
Power	Full range 500W 1+1 redundant PSU
Dimension	431.8(W) x 580(D) x 88(H) mm 17"(W) x 22.8"(D) x 3.5"(H)
Packing Dimension	24.9"(W) x 26.9"(D) x 8.4"(H)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



Removable Smart Fan

500W ATX PSU

ORDERING GUIDE

Part No.	Ethernet Interface	EZIO	Expansion
NAR-7100-1414-000	14 Copper GbE ports	EZIO-300 EZIO-G400 EZIO-G500	Optional
NAR-7100-1014-000	6 Copper GbE ports & 4 Fiber GbE ports	EZIO-300 EZIO-G400 EZIO-G500	Optional



CAR-7100

Tylersburg platform (Intel 5520), Up to 26 GbE ports



PCI-Express Gen.2 NIP

NIP-53020		intel® 82599ES	• Two 10GbE fiber ports w/o bypass segment
NIP-54020		intel® 82599EB	• Two 10GbE copper ports w/o bypass segment
NIP-51080		intel® 82580EB	• Eight GbE copper ports w/o bypass segment
NIP-51240		intel® 82580EB	• Four GbE copper ports w/o bypass segment
NIP-52080		intel® 82580EB	• Eight GbE fiber ports w/o bypass segment
NIP-52120		intel® 82580DB	• Two GbE fiber ports w/o bypass segment

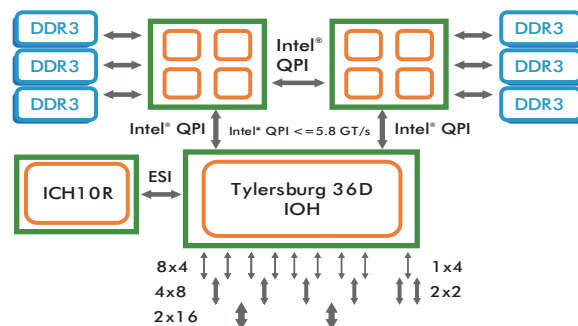
NIP

ABN-668		intel® 82575EB	• Eight GbE fiber ports w/o bypass segment
ABN-664		intel® 82575EB	• Four GbE fiber ports w/o bypass segment
ABN-482		intel® 82571EB	• Two GbE fiber ports w/ one bypass segment
ABN-458		intel® 82571EB	• Eight GbE copper ports w/o bypass segment
ABN-454		intel® 82571EB	• Four GbE copper ports w/o bypass segment
ABN-484L		intel® 82574L	• Four GbE copper ports w/ two bypass segment
ABN-454L		intel® 82574L	• Four GbE copper ports w/o bypass segment

CPU	Clock	Core/Thread	QPI	Cache	Memory	TDP	Turbo	Socket
E5645	2.40	6/12	5.86	12MB	1333	80W	YES	LGA1366
E5620	2.40	4/8	5.86	12MB	1066	80W	YES	LGA1366
L5638	2.00	6/12	5.86	12MB	1333	60W	YES	LGA1366
L5618	1.87	4/8	5.86	12MB	1066	40W	YES	LGA1366
E5540	2.53	4/8	5.86	8MB	1066	80W	YES	LGA1366
E5504	2.00	4/4	4.8	4MB	800	80W	NO	LGA1366
L5518	2.13	4/8	5.86	8MB	1066	60W	YES	LGA1366
L5508	2.00	2/4	5.86	8MB	1066	38W	YES	LGA1366

Block Diagram

Quad Core 2S configuration shown



Processor Core

- Nehalem-EP (45nm) and Westmere-EP (32nm)
- Integrated Memory Controller
- Turbo Technology
- Turbo Technology
- Intel® QuickPath interconnect
- Intel® Hyper-Threading Technology
- Lead and halogen free platform kit

NAR-7090

Blackford(5000P) platform, Dual sockets with Xeon grade CPUs, Removable Fan, HDD, NIC and PSU



SPECIFICATION

CPU Board	Supports Intel Harpertown /Clovertown series Xeon CPU
System Memory	- Eight FB-DIMM DDR2 667/533 sockets - Supports up to 32GB ECC/registered memory
Ethernet Port	- Two PCI-Express Gigabit Ethernet ports (Intel® 82563) - 24 PCI-Express Gigabit Ethernet ports (Intel® 82571EB) - Up to two flexible Ethernet modules
Expansion Slot	- Up to three PCI-X expansion slots or - One low profile PCI-X and one PCI-Express x4 slot
Storage Device	- Up to two 3.5" SATA HDD - CompactFlash
Serial Port	- One RJ45 connector for system console - One 2x5 pin-connector
LCD Panel	2x16 characters or 128x32 graphical LCD module with 4-buttons
LEDs	LED indicator for power status and storage access
IDE	One CF-socket & one 40-pin connector
USB	Two USB 2.0 ports
VGA	N/A
Power	Full range 400W 1+1 redundant PSU
Dimension	443(W) x 512(D) x 88(H) mm 17.44"(W) x 20.1"(D) x 3.46"(H)
Packing Dimension	24.9"(W) x 24.9"(D) x 8.4"(H) (Subject to change without notice)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL

FEATURE

- Supports Dual socket with Xeon grade CPU.
- Flexible removable Ethernet, HDD, Fan and PSU modules
- Up to 26 Gigabit Ethernet ports(Copper/Fiber)
- Up to Three PCI-X expansion slots
- Stable, highest performance and long life support



Removable Fan

400W ATX PSU

Option NIC

LAN module	Chipset	Ethernet	Bypass
ABN-454	intel 82571EB	4 GbE copper	0
ABN-454L	intel 82574L	4 GbE copper	0
ABN-462	intel 82571EB	2 GbE Fiber	0
ABN-464	intel 82571EB	4 GbE Fiber	0
ABN-482	intel 82571EB	2 GbE Fiber	1
ABN-484	intel 82571EB	4 GbE copper	2
ABN-484L	intel 82571EB	4 GbE copper	2
ABN-522	intel 82598EB	2 10GbE Fiber	0
ABN-664	intel 82575EB	4 GbE Fiber	0

ORDERING GUIDE

Part No.	Ethernet Interface	EZIO	PCI-X Expansion
NAR-7090-1412	14 Copper GbE ports	EZIO-300 EZIO-G400	3
NAR-7090-1413	6 Copper + 8 Fiber GbE ports	EZIO-300 EZIO-G400	3
NAR-7090-1417	10 Copper + 4 fiber GbE ports	EZIO-300 EZIO-G400	3

Option CPU

Model	Cores	Frequency	TDP
E5440	4	12M	80W
L5410	4	12M	50W
L5408	4	12M	40W
E5345	4	8M	80W
E5335	4	8M	80W
L5318	4	8M	40W



NAR-7090

Blackford(5000P) platform, Dual sockets with Xeon grade CPUs,
Removable Fan, HDD, NIC and PSU



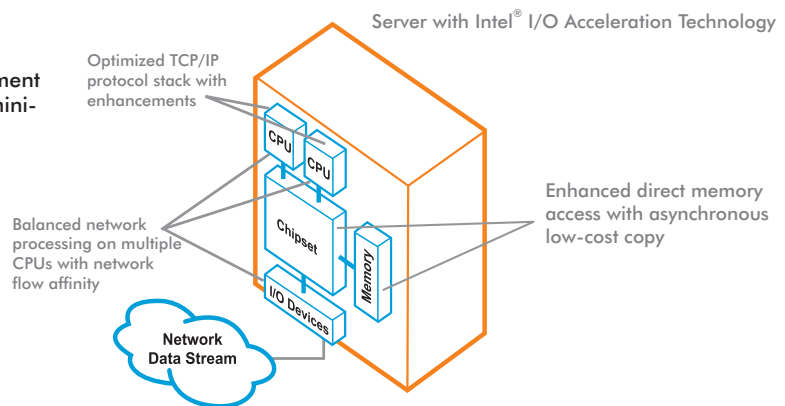
PCI-Express Gen.2 NIP

NIP-53020		intel® 82599ES	• Two 10GbE fiber ports w/o bypass segment
NIP-54020		intel® 82599EB	• Two 10GbE copper ports w/o bypass segment
NIP-51080		intel® 82580EB	• Eight GbE copper ports w/o bypass segment
NIP-51240		intel® 82580EB	• Four GbE copper ports w/o bypass segment
NIP-52080		intel® 82580EB	• Eight GbE fiber ports w/o bypass segment
NIP-52120		intel® 82580DB	• Two GbE fiber ports w/o bypass segment

NIP

ABN-668		intel® 82575EB	• Eight GbE fiber ports w/o bypass segment
ABN-664		intel® 82575EB	• Four GbE fiber ports w/o bypass segment
ABN-482		intel® 82571EB	• Two GbE fiber ports w/ one bypass segment
ABN-458		intel® 82571EB	• Eight GbE copper ports w/o bypass segment
ABN-454		intel® 82571EB	• Four GbE copper ports w/o bypass segment
ABN-484L		intel® 82574L	• Four GbE copper ports w/ two bypass segment
ABN-454L		intel® 82574L	• Four GbE copper ports w/o bypass segment

Intel® I/O Acceleration Technology (Intel® I/OAT):
Accelerates TCP/IP processing, delivers data-movement
Efficiencies across the entire server platform, and mini-
mizes system overhead.





NAR-7102

Tylersburg platform (Intel 5520), Up to 10 GbE ports

FEATURE

- Intel® Nehalem-EP and Westmere-EP
- Flexible Ethernet modules
- Up to ten Gigabit Ethernet ports
- PCI-E X 8 expansion slot
- Redundant 275W ATX PSU
- Support Compact Flash and Disk on Module(DOM)
- Front access for user-friendly maintenance
- Character or graphic LCD/Keypad for friendly installation and operation interface



SPECIFICATION

CPU Board	- Supports Intel® Nehalem-EP and westmere-EP processors - Intel® 5520 chipset with Intel® QPI up to 6.4 GT/s
System Memory	- Support DDR3 800/1066/1333 DIMM - Supports up to 40 GB RDIMM
Ethernet Port	- Two PCI-E GbE ports (Intel® 82574L) - One flexible Ethernet module up to 8 GbE ports
Expansion Slot	One PCI-E x8 slot
Storage Device	- Up to two SATA 2.5" HDD - Compact Flash socket on-board
Serial Port	- One front accessible RJ45 connector for system console - Two 2X5 pin-connector
LCD Panel	- 2x16 characters LCD module with 4-buttons - 128x32 graphical LCD module with 4-buttons - 128x62 graphical LCD module with 7-buttons and 3 software control Bi-LEDs (project base)
LEDs	LED indicator for power status and storage access
USB	Two USB 2.0 ports
VGA	On-board 2x5 pin-header
Power	275W redundant ATX PSU
Dimension	443(W) x 556(D) x 44(H) mm 17.44"(W) x 21.9"(D) x 1.73"(H)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



Redundant 275W ATX PSU

ORDERING GUIDE

Part No.	Ethernet Interface	EZIO	Exp.
NAR-7102-1011	10 Copper GbE ports	YES	PCI-E x 8



NAR-5650

Bigby (3210), Support up to 16 GbE ports

FEATURE

- Xeon® 3000 series CPU
- FSB 1333MHz
- 8 GbE RJ45 ports / 3Gen2.0 bypass
- Up to 8 GbE ports expansion RJ45 or SFP
- Ready for 10G solution



SPECIFICATION

CPU Board	- Built with Intel® server grade 3210 Chipset, supports 1333/1066MHz FSB - Supports the latest 45 amd 65nm Dual Core™/Quad Core™ Xeon® 3000 series and Core™ 2 Duo/Core™ 2 Quad processors in LGA775 package
System Memory	- Dual channel DDR2 with four 240-pin DIMM sockets - Supports DDR2 800/667, ECC un-buffered memory up to 8GB
Ethernet Port	- Onboard Max. 6 PCI-E x1 and two PCI32 GbE ports - Up to 8 GbE ports with RJ45 or SFP expandable - Support dual 10G ports through expansion module
Bypass feature	Up to 3 Gen.-2.0* bypass segments available
Expansion Slot	- One proprietary PCI-E x8 slot for Ethernet expansion with up to 8 RJ45/SFP GbE or dual 10G ports - One PCI-E x8 golden finger for expansion through backplane - One MiniPCI socket
Storage Device	- Up to two SATA 2.5" HDD - Compact Flash socket on-board
Serial Port	- One front-access RJ45 connector for system console - One internal 2x5 pin-header for connection with EZIO or preferred device
LCD Panel	2x16 characters or 128x32, 128x64 graphical LCD module with 4 blue backlight and 4 buttons
LEDs	Power status, data access, Ethernet status (LNK/ACT), Ethernet speed (10/100/1000) and bypass
USB	Dual USB 2.0 ports, front accessible
VGA	MiniPCI module for option
Power	Full-range 300W PSU
Dimension	443 (W) x 457.2 (D) x 44 (H) mm 17.4" (W) x 18" (D) x 1.73" (H)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity: 20 %~90% RH
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity: 5%~95% RH
Certification	CE/FCC/UL/cUL



300W ATX PSU

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
ABN-668	82575EB	8 GbE SFP	0
ABN-664	82575EB	4 GbE SFP	0
ABN-482	82571EB	2 GbE SFP	1
ABN-458	82571EB	8 GbE RJ45	0
ABN-484L	82571EB	4 GbE RJ45	2
ABN-454L	82574L	4 GbE RJ45	0

Option CPUs

Model	Cores	Frequency	Cache	TPD
Q9400	4	2.66 GHz	6M	95 W
E8400	2	3.00 GHz	6M	65 W
E7400	2	2.80 GHz	3M	65 W
E6400	2	2.13 GHz	2M	65 W
440	1	2.00 GHz	512K	35 W

ORDERING GUIDE

Model No.	Ethernet	Gen2.0 Bypass	EZIO	Mini PCI Socket	Add-on -card	PCI-E Expansion
NAR-5650-0830	8 GbE RJ45	3	YES	YES	No	2
NAR-5650-1631	16 GbE RJ45	3	YES	YES	ABN-458	1

CAR-4003

FoxHollow platform (Intel 3420), up to 20 GbE ports, PCI-Express 2.0



FEATURE

- Intel® Xeon® processor with Integrated memory and PCI-Express 2.0 controllers
- Intel Turbo Boost technology
- IPMI v2.0 with iKVM
- 80 Plus Certified ATX PSU
- Ready for PCIe2.0 5GT/s Ethernet controllers

SPECIFICATION

CPU Board	- Intel® LGA1156 Xeon® X3400/L3400, and Corei3/i5 processor - Intel® DMI with up to 2.5 GT/s
System Memory	- Dual-channel DDR3 with four 240-pin DIMM sockets - Support DDR3 1333/1066/800 UDIMMs or RDIMMs, up to 16 GB
Ethernet Port	Up to 20 GbE ports (16 for PCIe2.0)
Bypass feature	Up to 6 Gen.2 bypass segment
Storage Device	- One 3.5" or two 2.5" SATA HDD - One onboard compact flash socket for type-I CF, supports DMA mode
Serial Port	- 1 front accessible RJ45 connector for system console - 1 internal 2x5 pin connector for connecting with EZIO or other device
LCD Panel	Support 16x2 characters or 128x32/128x64 LCD module with buttons
LED	LED indicators for power status, storage access, Ethernet status/speed and bypass status
USB	Dual USB 2.0 ports
VGA	Built-in on-board 2x5 pin-header
Management	IPMI v2.0 with iKVM
Power	80 Plus bronze level Certified 300 W ATX PSU
Dimension	438(W) x 457(D) x 44(H) mm 17.20"(W) x 18.00"(D) x 1.73" (H)
Operation Environment	- Temperature: 5 to 35°C (41~95°F) - Humidity: 20% ~ 90%RH
Storage Environment	- Temperature: -20 to 70°C (-4~158°F) - Humidity: 5% ~ 95%RH
Certification	CE/FCC/UL



ORDERING GUIDE

Part No.	PCIe 2.0 Eth. Interface	EZIO	PCIe x4 Expansion
CAR-4003-4422	12 GbE RJ45	EZIO-300 or EZIO-G400	Optional
CAR-4003-4C22	16 GbE RJ45	EZIO-300 or EZIO-G400	Optional

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-54020	82599EB	2 10GBASE-T	0
NIP-53020	82599ES	2 10G SFP+	0
NIP-52080	82580EB	8 GbE SFP	0
NIP-52040	82580EB	4 GbE SFP	0
NIP-51080	82580EB	8 GbE RJ45	0
NIP-51240	82580EB	4 GbE RJ45	2
NIP-51040	82580EB	4 GbE RJ45	0
ABN-668	82575EB	8 GbE SFP	0
ABN-482	82571EB	2 GbE SFP	1
ABN-484L	82574L	4 GbE RJ45	2
ABN-484	82571EB	4 GbE RJ45	2
ABN-464	82571EB	4 GbE SFP	0
ABN-458	82574L	8 GbE RJ45	0
ABN-454L	82574L	4 GbE RJ45	0
ABN-454	82571EB	4 GbE RJ45	0

Optional NIC

CPU	Core Freq.	Cache (MB)	Cores/Threads	TDP
Xeon X3450	2.67GHz	8	4/8	95
Xeon X3430	2.4GHz	8	4/8	95
Corei5-660	3.33GHz	4	2/4	73
Corei3-540	3.06GHz	4	2/4	73
Pentium G6950	2.8GHz	2	2/2	73



CAR-4000

FoxHollow platform (Intel 3420), up to 20 GbE ports, PCI-Express 2.0



FEATURE

- Intel® Xeon® processor with Integrated memory and PCI-Express 2.0 controllers
- Intel® Turbo Boost technology
- 80 Plus Certified ATX PSU
- Ready for PCIe2.0 5GT/s Ethernet controllers

SPECIFICATION

CPU Board	- Intel® LGA1156 Xeon® X3400/L3400, and Corei3/i5 processor - Intel® DMI with up to 2.5 GT/s
System Memory	- Dual-channel DDR3 with four 240-pin DIMM sockets - Support DDR3 1333/1066/800 UDIMMs or RDIMMs, up to 16 GB
Ethernet Port	Up to 20 GbE ports (16 for PCIe2.0)
Bypass feature	Up to 6 Gen.2 bypass segment
Storage Device	- One 3.5" or two 2.5" SATA HDD - One onboard compact flash socket for type-I CF, supports DMA mode
Serial Port	- 1 front accessible RJ45 connector for system console - 1 internal 2x5 pin connector for connecting with EZIO or other device
LCD Panel	Support 16x2 characters or 128x32/128x64 LCD module with buttons
LED	LED indicators for power status, storage access, Ethernet status/speed and bypass status
VGA	Built-in on-board 2x5 pin-header
Power	80 Plus bronze level Certified 300 W ATX PSU
Dimension	438(W) x 457(D) x 44(H) mm 17.20"(W) x 18.00"(D) x 1.73" (H)
Operation Environment	- Temperature: 5 to 35°C (41~95°F) - Humidity: 20% ~ 90%RH
Storage Environment	- Temperature: -20 to 70°C (-4~158°F) - Humidity: 5% ~ 95%RH
Certification	CE/FCC/UL



Optional NIC

CPU	Core Freq.	Cache (MB)	Cores/Threads	TDP
Xeon X3450	2.67GHz	8	4/8	95
Xeon X3430	2.4GHz	8	4/8	95
Corei5-660	3.33GHz	4	2/4	73
Corei3-540	3.06GHz	4	2/4	73
Pentium G6950	2.8GHz	2	2/2	73

ORDERING GUIDE

Part No.	PCIe 2.0 Ethernet	EZIO	PCIe x4 Expansion
CAR-4000-4422	12 RJ45	EZIO-300 or EZIO-G400	Optional
EZIO-G400	Optional	EZIO-300 or EZIO-G400	Optional

Optional NIC

LAN Module	Ethernet Controller Interface	Bypass	
NIP54020	82599EB	2 10GBASE-T	0
NIP53020	82599ES	2 10G SFP+	0
NIP-52080	82580EB	8 GbE SFP	0
NIP-52040	82580EB	4 GbE SFP	0
NIP-51080	82580EB	8 GbE RJ45	0
NIP-51240	82580EB	4 GbE RJ45	2
NIP-51040	82580EB	4 GbE RJ45	0
ABN-668	82575EB	8 GbE SFP	0
ABN-482	82571EB	2 GbE SFP	1
ABN-484L	82574L	4 GbE RJ45	2
ABN-484	82571EB	4 GbE RJ45	2
ABN-464	82571EB	4 GbE SFP	0
ABN-458	82574L	8 GbE RJ45	0
ABN-454L	82574L	4 GbE RJ45	0
ABN-454	82571EB	4 GbE RJ45	0



CAR-3005/6/7

Eaglelake (G41), Support up to 16 GbE ports

FEATURE

- Support All LGA 775 CPU
- 2 DIMMs DDR3 (Dual-channel)
- 6 GbE ports / 2 x Bypass Gen2.0
- Expandable with 10 GbE ports (RJ45 or SFP)
- Single ATX, Redundant ATX or DC48V PSU



SPECIFICATION

CPU Board	- Support All LGA775 CPU - Intel® G41 chipset with ICH7R with 1333/1066/800 MHz FSB
System Memory	- Dual channel DDR3 with two 240-pin DIMM sockets - Supports DDR3 1066 up to 4 GB
Ethernet Port	6 GbE RJ45 ports
Bypass feature	2 Gen2.0 segment
Expansion	PCI-E x8 golden finger for proprietary or standard interface
Storage Device	- Support one 3.5" or 2.5" SATA HDD - CF socket on-board
Serial Port	- One front-access RJ45 for system console - One 2x5 pin-header for EZIO
LCD Panel	2x16 characters or 128x32 graphic LCD module with 4 buttons
LEDS	- Power status, data access, Ethernet status (LNK/ACT), and Ethernet speed (10/100/1000) and bypass.
USB	- Dual USB 2.0, front accessible
Power	- 275W full-range Redundant (CAR-3005) - 200W full-range 200W (CAR-3006) - 250W DC48V Input (CAR-3007)
Dimension	- 443(W) x 406(D) x 44(H) mm - 17.45"(W) x 16"(D) x 1.73"(H)
Operating Environment	- Temperature: 0 to 40 °C (32 to 104 °F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: -10 to 70 °C (14 to 158 °F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL

ORDERING GUIDE

Model No.	Ethernet	Gen2.0 Bypass	EZIO	PCI-E Expansion
CAR-3005/6/7-3620	6 RJ45 GbE ports	2	Optional	2*

* Proprietary & Standard interface



▲ CAR-3005



▲ CAR-3006



▲ CAR-3007

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-53120	82599ES	2 10GbE SFP +	1
NIP-53020	82599ES	2 10GbE SFP +	0
ABN-668	82575EB	8 GbE SFP	0
ABN-664	82575EB	4 GbE SFP	0
ABN-482	82571EB	2 GbE SFP	1
ABN-458	82571EB	8 GbE RJ45	0
ABN-484L	82571EB	4 GbE RJ45	2
ABN-454L	82574L	4 GbE RJ45	0

Option CPUs

Model	Cores	Frequency	Cache	TPD
Q9400	4	2.66 GHz	6M	95 W
E8400	2	3.00 GHz	6M	65 W
E7400	2	2.80 GHz	3M	65 W
E6500	2	2.93 GHz	2M	65 W
E6400	2	2.13 GHz	2M	65 W
E5300	2	2.60 GHz	2M	65 W
E4300	2	1.80 GHz	2M	65 W
E2160	2	1.80 GHz	1M	65 W
E1500	2	2.20 GHz	512K	65 W
440	1	2.00 GHz	512K	35 W



NAR-5520

Lakeport platform (945G), Up to 10 GbE ports



FEATURE

- Support Intel® Core™ 2 Duo/Pentium® 4/Celeron® D processor
- Up to Ten Gigabit Ethernet ports with two bypass segments
- Two PCI expansion slots (Optional)
- Non-volatile memory on-board
- Support Compact Flash and Disk on Module (DOM)
- Load factory-Default mechanism
- Front access for user-friendly maintenance
- 2x16 LCD/Keypad for friendly installation and operation interface

SPECIFICATION

CPU Board	- Support Intel® Core™ 2 Duo/Pentium® 4/Celeron® D processor - Intel® 945G chipset with 1066/800/533 MHz FSB
System Memory	Up to 4GB DDR2 667/533/400 on two DIMM sockets
Ethernet Port	Six PCI-E x1 GbE ports, up to ten ports
Bypass Feature	Up to two Gen.-2.0* bypass segments available
Expansion Slot	Up to two PCI expansion slots, optional
Storage Device	- One 3.5" SATA HDD as default, up to two installable - One compact flash socket for type-I CF card, supports DMA mode - One 40-pin IDE connector supports DOM (Disk on Module) - Removable 3.5" HDD design ready for project based request
Serial Port	- One front accessible RJ45 connector for system console - One internal 2x5 pin-header for connection with EZIO or preferred device
LCD Panel	2x16 characters or 128x32 graphical LCD module with 4 buttons
LEDs	Power status, data access, Ethernet status/speed and bypass status
USB	Two USB 2.0 ports, front accessible
VGA	Build-in on-board 2x5 pin-header
Power	Full-range 220W ATX PSU
Dimension	431.8(W) x 355.2(D) x 44(H) mm 17"(W) x 14"(D) x 1.73"(H)
Packing Dimension	22.4"(W) x 24.4"(D) x 8.7"(H)
Weight	Gross: 11kg (24.23 lbs); Net: 6.4kg (14.1 lbs)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity: 20%~90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity: 5%~95% RH
Certification	CE/FCC/UL



Two PCI expansion slots

220W ATX PSU

ORDERING GUIDE

Part No.	PCI-E GbE	EZIO	PCI Expansion
NAR-5520-412	4 RJ45 GbE ports	Yes	Optional
NAR-5520-612	6 RJ45 GbE ports	Yes	Optional
NAR-5520-812	8 RJ45 GbE ports	Yes	0
NAR-5520-1012	10 RJ45 GbE ports	Yes	0

CAR-3000

Eaglelake (G41), Support up to 14 GbE ports

FEATURE

- Support All LGA 775 CPU
- 2 DIMMs DDR3 (Dual-channel)
- 6 GbE ports / 2 x Bypass Gen2.0
- Expandable with 8 GbE ports (RJ45 or SFP)
- Ready for 10G solution



SPECIFICATION

CPU Board	- Support All LGA775 CPU - Intel® G41 chipset with ICH7R with 1333/1066/800 MHz FSB
System Memory	- Dual channel DDR3 with two 240-pin DIMM sockets - Supports DDR3 1066 up to 4 GB
Ethernet Port	6 GbE RJ45 ports
Bypass feature	2 Gen2.0 segment
Expansion	PCI-E x8 golden finger for proprietary or standard interface
Storage Device	- Support one 3.5" or 2.5" SATA HDD - CF socket on-board
Serial Port	- One front-access RJ45 for system console - One 2x5 pin-header for EZIO
LCD Panel	2x16 characters or 128x32 graphic LCD module with 4 buttons
LEDs	- Power status, data access, Ethernet status (LNK/ACT), and Ethernet speed (10/100/1000) and bypass.
USB	Dual USB 2.0, front accessible
Power	200W full-range ATX
Dimension	- 438(W) x 292.1(D) x 44(H) mm - 17.25"(W) x 11.5"(D) x 1.73"(H)
Operating Environment	- Temperature: 0 to 40 °C (32 to 104°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



Full-range 200W ATX PSU

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-53120	82599ES	2 10GbE SFP+	1
NIP-53020	82599ES	2 10GbE SFP+	0
ABN-668	82575EB	8 GbE SFP	0
ABN-664	82575EB	4 GbE SFP	0
ABN-482	82571EB	2 GbE SFP	1
ABN-458	82571EB	8 GbE RJ45	0
ABN-484L	82571EB	4 GbE RJ45	2
ABN-454L	82574L	4 GbE RJ45	0

Option CPUs

Model	Cores	Frequency	Cache	TPD
Q9400	4	2.66 GHz	6M	95 W
E8400	2	3.00 GHz	6M	65 W
E7400	2	2.80 GHz	3M	65 W
E6500	2	2.93 GHz	2M	65 W
E6400	2	2.13 GHz	2M	65 W
E5300	2	2.60 GHz	2M	65 W
E4300	2	1.80 GHz	2M	65 W
E2160	2	1.80 GHz	1M	65 W
E1500	2	2.20 GHz	512K	65 W
440	1	2.00 GHz	512K	35 W

ORDERING GUIDE

Model No.	Ethernet	Gen2.0 Bypass	EZIO	PCI-E Expansion
CAR-3000-3620	6 RJ45 GbE ports	2	Optional	1*

* Proprietary or Standard interface



NAR-4060

Lakeport platform (Intel 945GC), supporting up to 6 GbE RJ45 ports



FEATURE

- Compact design for Intel® Conroe-L 400 series processor
- Cost-effective solution

SPECIFICATION

CPU Board	- Supports Intel® Conroe Lite 400 series - Intel® 82945GC chipset with 800/533 MHz FSB
System Memory	- Dual-channel DDR2 with two 240-pin DIMM socket - Supports DDR2 667/533/400, un-buffered, none ECC up to 2GB
Ethernet Port	6 10/100/1000 Mbps PCI-E Gigabit ports
Bypass feature	One optional Gen.2 bypass segment
Storage Device	- One SATA or IDE 3.5" HDD - One onboard compact flash socket for type-I CF card, supports DMA mode
Serial Port	- One front accessible RJ45 connector for system console - One internal 2x5 pin connector for connecting with EZIO or other device
LCD Panel	Supports one optional 2x16 characters LCD module with 4 buttons
LED	LED indicators for power status, storage access, Ethernet status/speed and bypass status
USB	Dual USB 2.0 ports
VGA	Built-in on-board 2x5 pin-header
Power	90 Watt Auto-range ATX PSU
Dimension	429 (W) x 255 (D) x 44 (H) mm 16.9"(W) x 10.04"(D) x 1.73" (H)
Operation Environment	- Temperature: 5 to 40°C (41~104°F) - Humidity: 20% ~ 90%RH
Storage Environment	- Temperature: -20 to 70°C (32~158°F) - Humidity: 5% ~ 95%RH
Certification	CE/FCC/UL



Reserved External VGA port (optional)

Power

Option CPUs

CPU	Core Freq.	Cache (MB)	Cores	TDP
Conroe Celeron440	2G	512K	1	35W
Conroe Celeron430	1.8G	512K	1	35W

ORDERING GUIDE

Model	PCI-E GbE	Gen.2 Bypass
NAR-4060-610	6 RJ45 GbE	1



CAR-2010

Eaglelake (G41), Support up to 10 GbE ports*

FEATURE

- Cost effective in Rackmount solution
- Low power 440 CPU
- 2 DIMMs DDR3 (Dual-channel)
- 4 GbE ports
- PCI-E expansion**



SPECIFICATION

CPU Board	Support Conroe Lite 440
System Memory	- Dual channel DDR3 with two 240-pin DIMM sockets - Supports DDR3 1066 up to 4 GB
Ethernet Port	4 GbE RJ45 ports
Bypass feature	Reservation for project base
Expansion	PCI-E x8 golden finger for proprietary or standard interface
Storage Device	- Support one 3.5" or 2.5" SATA HDD - CF socket on-board
Serial Port	- One front-access RJ45 for system console - One 2x5 pin-header for EZIO
LCD Panel	2x16 characters or 128x32 graphic LCD module with 4 buttons
LEDs	- Power status, data access, Ethernet status (LNK/ACT), and Ethernet speed (10/100/1000).
USB	Dual USB 2.0, front accessible
Power	100W full-range ATX
Dimension	- 438(W) x 292.1(D) x 44(H) mm - 17.25"(W) x 11.5"(D) x 1.73"(H)
Operating Environment	- Temperature: 0 to 40°C (32 to 104°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



Full-range 100W ATX PSU

ORDERING GUIDE

Model No.	Ethernet	Gen2.0 Bypass	EZIO	PCI-E Expansion
CAR-2010-3400	4 RJ45 GbE ports	0	Optional	1

* Project base

** Proprietary or Standard interface

Option CPUs

Model	Cores	Frequency	Cache	TPD
440	1	2.00 GHz	512K	35 W



NAR-2200

Alviso (910MLE/915ME) , Support up to 6 GbE ports



FEATURE

- Up to Six GbE, 4x PCI-Express x1 with 2x 82541PI(GbE)
- Cost effective system with 2.5/3.5" HDD and Fanless solution
- High computing performance with low power consumption
- Fulfill most Entry level Rack-mount platform requirement
- Supports Compact Flash and Disk on Module (DOM)
- Generation-2 Bypass function supported (Software control)
- Supports dual channel DDR2 533 up to 2GB

SPECIFICATION

CPU Board	- Support Intel® Celeron® M/Pentium M processors up to 2GHz - Intel® 915GME/910GME chipset with 533/400MHz FSB
System Memory	Dual channel 200-pin SODIMM sockets support DDR2 400/533MHz up to 2GB
Ethernet Port	- 4 PCI-E x1 GbE ports - 2 PCI FE or GbE ports
PCI Expansion	Optional
Storage Device	- CompactFlash - Disk on Module (DOM) - One SATA/IDE 2.5/3.5" HDD
Serial Port	- One RJ45 for system console - One 2x5 pin-connector
LCD Panel	Optional, 2x16 characters or 128x32 graphical LCD module with 4 buttons
LEDs	Power status, data access, Ethernet status (LNK/ACT), Ethernet speed (10/100/1000) and bypass
IDE	- One 40-pin IDE connector - Two SATA connectors
USB	Two USB 2.0 ports, front accessible
VGA	Built-in on-board 2x5 pin-header
Power	80W full-range AT
Dimension	428(W) x 255(D) x 44(H)mm 16.83"(W) x 10.04"(D) x 1.73"(H)
Packing Dimension	22.4"(W) x 24.4"(D) x 8.7"(H)
Operation Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



ORDERING GUIDE

Part No.	CPU	Chipset	Ethernet	Bypass	EZIO	PCI Exp.
NAR-2200-621	Intel® ULV Celeron® M 600MHz	910GMLE	4 GbE+2 FE	One bypass seg.	N/A	N/A
NAR-2200-601	Intel® Celeron® M / Pentium® M	915GME	6 GbE	One bypass seg.	N/A	N/A



NAD-2100L

Alviso platform (Intel GMLE), supporting up to 6GbE port

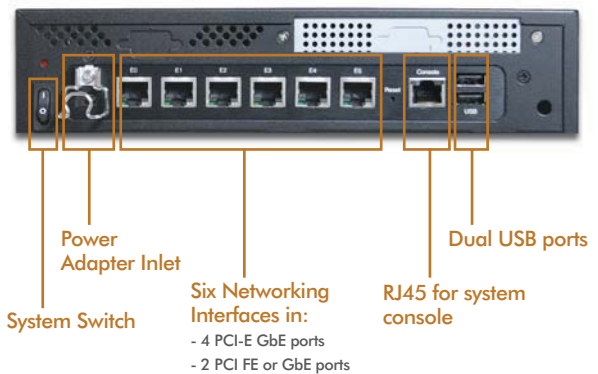


FEATURE

- Support Intel® Celeron® ULV processor
- Fanless at Intel® Celeron® ULV version
- Ready for either wall-mounted or placing on a desktop

SPECIFICATION

CPU Board	- Support Intel® Celeron® M ULV/ Intel® Celeron® M/ Intel® Pentium® M - Intel® 910GMLE chipset
System Memory	Dual-channel DDR2 400, up to 2G with 2 slots
Ethernet Port	- 4 Intel PCI-E GbE ports - 2 Intel PCI FE or GbE ports
Bypass function	One Gen-2.0 bypass segment
Expansion Slot	Optional 1 PCI32 or PCIe x4 slot
Storage Device	- 2.5"/3.5" SATA HDD within 22mm in height - CompactFlash - SATA DOM
Serial Port	- One RJ45 system console on the rear - One on-board 2x5 pin-header
LED	LED indicators for power and storage access, and LNK/ACT on each LAN port
USB	Dual USB 2.0 ports on the rear
VGA	Built-in on-board 2x5 pin-header
Power	84W / 60W power adapter
Dimension	250(W) x 213(D) x 55(H) mm 9.84"(W) x 8.39"(D) x 2.17"(H)
Packing Dimension	335(W) x 320(D) x 325(H) mm 13.19"(W) x 12.60"(D) x 12.80"(H)
Operation Environment	- Temperature: 5 ~ 40°C (41 ~ 104°F) - Humidity: 20 ~ 90%RH
Storage Environment	- Temperature: -20 ~ 70°C (-4 ~ 158°F) - Humidity: 5 ~ 95%RH
Certification	CE/FCC/UL



ORDERING GUIDE

Model	CPU	GbE Port	Gen.2 Bypass
NAD-2100L-601	Intel® Celeron® M Intel® Pentium® M	6	1
NAD-2100L-421	Intel® UVL Celeron® M 600MHZ	4	1



CAD-0205/0206/0208

Pineview platform, 4 GbE ports



▲ CAD-0205



▲ CAD-0206



▲ CAD-0208

FEATURE

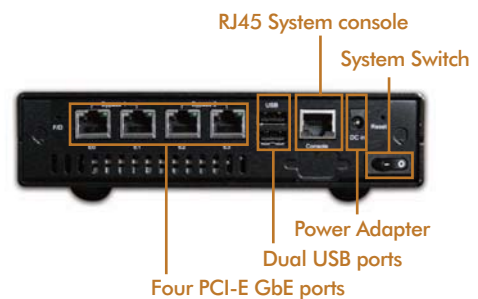
- Price-competitive desktop network appliance
- Fanless solution
- Energy and space saving
- Support for IA 32-bit and Intel 64 Technology
- Support Mini PCIe interface for expansion

SPECIFICATION

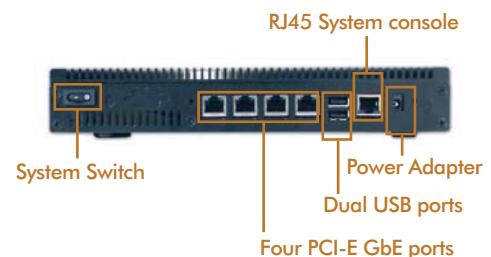
CPU Board	- Intel® Atom N450/D410 1.66GHz single core - Intel® Atom D510 1.66GHz dual core - Intel® 82801HN I/O Controller(ICH8M)
System Memory	- One 200-pin SODIMM socket - Supports DDR2 667, un-buffered, none ECC up to 2GB
Ethernet Port	- Four Gigabit Ethernet ports via Intel® 82583V Ethernet controller
Bypass function	Two Gen. 1.5 bypass segments
Storage Device	- One 2.5" SATA HDD - Compact Flash socket on-board
Serial Port	One RJ45 connector for system console
USB	Two USB 2.0 ports, rear access
LEDs	Power status, Data access, Ethernet status, speed and Bypass status
VGA	Optional
Power	60W adapter
Dimension	180(W) x 150(D) x 42(H)mm 7.1"(W) x 5.9"(D) x 1.65"(H)
Operation Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL

ORDERING GUIDE

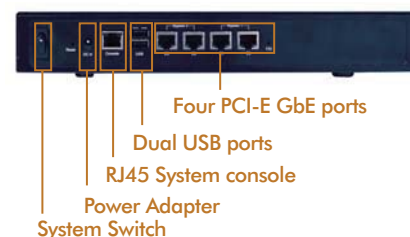
Patr No.	CPU	PCI-E	Bypass	Fan
CAD-0205-3421	Atom N450	4	2	Optional
CAD-0205-3401	Atom N450	4	0	Optional
CAD-0208-3422	Atom D510	4	2	Yes
CAD-0208-3402	Atom D510	4	0	Yes



▲ CAD-0205



▲ CAD-0206



▲ CAD-0208

Model Selection Guide

x86 Platform

Model	LAN ports*					Max. Bypass		Expansion					EZIO			IPMI
	On board	NIC	Total	Fiber	10 G	Gen. 1.5	Gen 2	Mini PCI	Mini PCIe	PCI	PCI-X	PCI-E	16x2	128x32	128x64*	
CAR-5010	3	24	27	V	V		6					V	V	V	V	V
CAR-5000	3	24	27	V	V		6					V	V	V	V	V
NAR-7100	2	24	26	V	V		6				V	V	V	V	V	V*
NAR-7090	2	24	26	V	V		6				V	V	V	V	V	V*
NAR-7102	2	16	10	V	V		4					V	V	V	V	
CAR-4000		20	20	V	V		6					V	V	V	V	
CAR-4003		20	20	V	V		6					V	V	V	V	
NAR-5650	8	8	16	V	V		5	V		V		V	V	V	V	
CAR-300X	6	8	14	V	V		4					V	V	V	V	
NAR-5520	6	4	10				2			V		V	V	V		
CAR-3000	6	8	14	V	V		4					V	V	V	V	
NAR-4060	6		6				1						V	V		
CAR-2010	4		4									V	V	V	V	
NAR-2200	6	4	10	V			3			V		V	V	V		
NAD-2100L	6		6				1			V		V				
CAD-020X	4		4			2			V							

MIPS Platform

Model	LAN ports*					Max. Bypass		Expansion					EZIO			IPMI
	On board	NIC	Total	Fiber	10 G	Gen. 1.5	Gen 2	Mini PCI	Mini PCIe	PCI	PCI-X	PCI-E	16x2	128x32	128x64*	
KiLIN-6030	5	10	15	V	V	5					V		V	V		
KiLIN-6020	5	4	9	V	V	2					V		V	V		
CAK-3000	6	4	10	V			2					V	V	V	V	
KiLIN-6005	7		7				1			V			V	V		
CAK-2000	6		6				2		V				V	V		
CAM-0100	6		6			1		V								

*1. The number of LAN ports on board or NIC means the maximum ports which model can support

*2. 128x64 graphical LCM for project based request

*3. Support IPMI function via three party solution

Portwell Proprietary NICs

Module

ABN-454

4 port copper w/
Intel 82571EB



ABN-454L

4 port copper w/
Intel 82574L



ABN-458

8 port copper w/
Intel 82571EB



ABN-464

4 port fiber w/
Intel 82571EB



ABN-482

2 port fiber and Gen-2
Bypass w/ Intel 82571EB



ABN-484

4 port copper w/
Intel 82571EB



ABN-484L

4 port copper and 2 Gen-2
Bypass w/ Intel 82574L



ABN-522

2 port SPF+ card w/
Intel 82598B



ABN-664

4 port Fiber w/
Intel 82575EB



ABN-668

8 port fiber w/
Intel 82575EB



NIP-51040

4 port copper w/
Intel 82580EB



NIP-51080

8 port copper w/
Intel 82580EB



NIP-51240

4 port copper and 2 Gen-2
Bypass w/ Intel 82580EB



NIP-52040

8 port fiber w/
Intel 82580EB



NIP-52080

8 port fiber w/
Intel 82580EB



NIP-52120

2 port fiber and Gen-2
Bypass w/ Intel 82580DB



NIP-53020

2 port 10Gbe fiber w/
Intel 82599ES



NIP-53120

2 port 10Gbe fiber and Gen-2
Bypass w/ Intel 82599ES



NIP-61040/61080

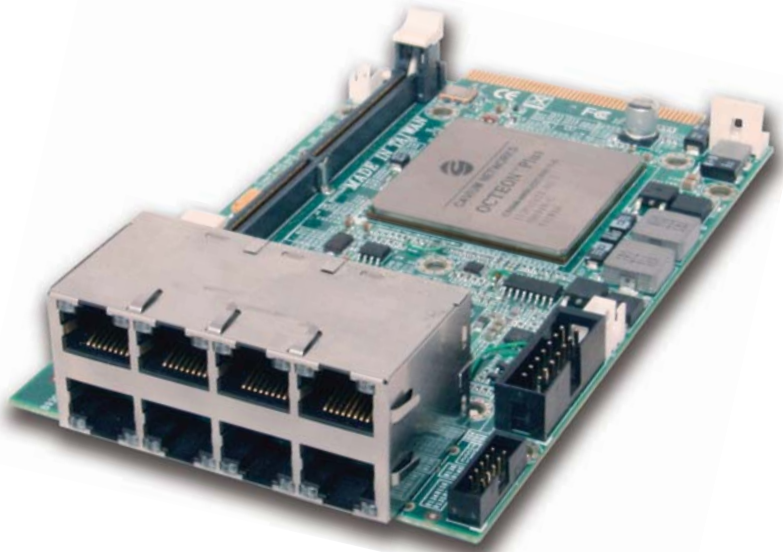
4/8 port copper w/ Cavium
CN5430/CN5640





NIP-61080/61040

8-/4-port Network Processing Unit built with Cavium Octeon™ Plus CN5640/CN5430 Processors



FEATURE

- Comprehensive acceleration for compression/decompression, encryption/decryption, pattern matching, TCP-offload, QoS etc. via Cavium Octeon™ Plus CN5640 processor (NIP-61080).
- Best compression performance of up to 6Gbps
- Best security acceleration for IPsec/SSL and TCP of up to 16Gbps/2GBps
- 8 MIPS64 processor cores (NIP-61080)
- 8 10/100/1000 GbE ports with RJ45 connectors (NIP-61080)
- One DDR2-800 miniDIMM slot supports ECC reg. memory up to 1GB
- Proprietary PCI-E x8 interface (x4 signal) for host connection.
- Pin out for USB and console for testing and debugging.

SPECIFICATION

Model	NIP-61080
Form Factor	PCI-E module for NAR-7100, CAR-4000 & CAR-5000 series.
Processor	Cavium Octeon™ Plus CN5640-600BG1217-NSP-G
Ethernet Port	8x RJ45 GbE ports
Memory	– One miniDIMM socket – Supports ECC registered DDR2-800 up to 1GB.
Operating Environment	Temperature 5 ~ 40 °C Humidity 20~ 95% RH
Storage Environment	Temperature -20 ~ 70 °C Humidity 5 ~ 95% RH
Security	IPsec & SSL
Dimension	85 x 150 x 36 mm
Launch date	Jun., 2010

Model	NIP-61040
Form Factor	PCI-E module for NAR-7100, CAR-4000 & CAR-5000 series.
Processor	Cavium Octeon™ Plus CN5430-600BG1217-NSP-G
Ethernet Port	4x RJ45 GbE ports
Memory	– One miniDIMM socket – Supports ECC registered DDR2-800 up to 1GB.
Operating Environment	Temperature 5 ~ 40 °C Humidity 20~ 95% RH
Storage Environment	Temperature -20 ~ 70 °C Humidity 5 ~ 95% RH
Security	IPsec & SSL
Dimension	85 x 150 x 36 mm
Launch date	Sep. 2010

ORDERING GUIDE

Model	Cavium Processor	MIPs Core	GbE Port
NIP-61080	CN5640-600BG1217-NSP-G	8	8
NIP-61040	CN5430-600BG1217-NSP-G	4	4

RF-330

Advanced Packet Optimizing card to enhance your x86 server with MIPS multi-core power



FEATURE

- Tremendous packet processing power with up to 16 MIPS64 processor cores
- Rich built-in security features: compression-decompression, encryption-decryption, regular expression, pattern matching, TCP-offload, SSL, IPS, Antivirus and Qos
- Supports both Host Mode for stand-alone system board and Target Mode as a PCI-X add-on card
- Four Copper GbE ports with two Gen.-2⁽¹⁾ bypass segments
- Flexible SPI 4.2 interface for variable application expansion
- Optional onboard RLDRAM for high performance pattern matching
- Two Mini-DIMM sockets support ECC registered DDR2 up to 8GB
- Onboard CF-socket for Type-I/II CF card

SPECIFICATION

Processor	Cavium Octeon™ CN38XX series Multi-core MIPS64® SoCs
Form Factor	PCI-X board in proprietary length
System Memory	- Two 244pin Mini-DIMM sockets, support DDR2/667 up to 8GB - Onboard RLDRAM up to 288MB for pattern matching
Ethernet Port	Four RJ45 Gigabit Ethernet ports
Bypass Segment	Two Gen-2 bypass segments onboard
Expansion	- One vertical SPI 4.2 interface for connection with 10G/1G modules - Golden finger of 64bit/133MHz PCI-X interface for installation as a PCI-X add-on card
Operating Environment	- Temperature: 5 to 40°C - Humidity 5% to 95%RH
Storage Environment	- Temperature: -20 to 70°C - Humidity 5% to 95% RH

ORDERING GUIDE

Part No.	Cavium Processor	MIPS64 Cores	Ethernet Port	Bypass Segment	RLDRAM
RF-330	CN3860-500	16	4	1	288MB

⁽¹⁾Gen.-2.0 bypass: The latest bypass generation with software programmable Open/Bypass mode by power failure and Next Boot Mode

Reference Table

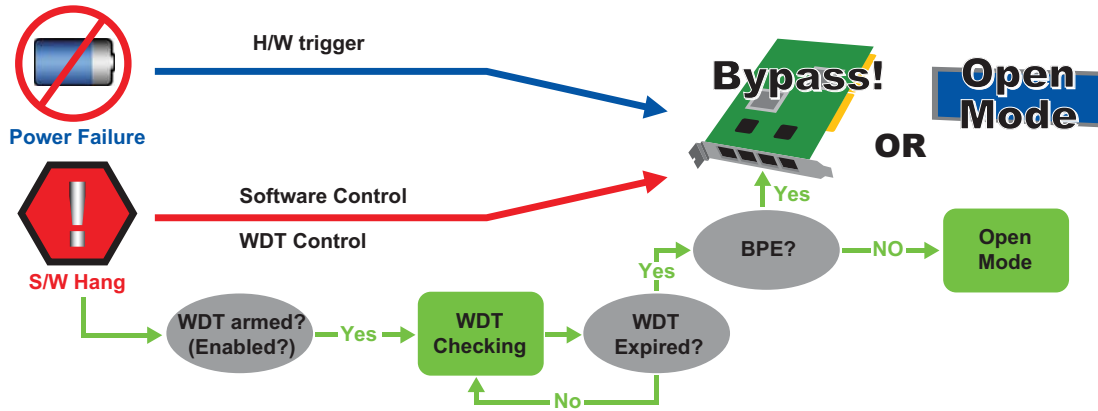
Portwell module

LAN module	Specification			Model supported									
	Chipset	Ethernet	Bypass	CAR-5010	CAR-5000	NAR-7100	NAR-7090	CAR-4000	NAR-5650	CAR-300X	NAR-5520	CAR-3000	NAR-2200
ABN-454	Intel 82571EB	4 Gb Copper	0	V	V	V	V	V					
ABN-454L	Intel 82574L	4 Gb Copper	0	V	V	V	V	V	V	V		V	
ABN-458	Intel 82571EB	8 Gb Copper	0	V	V	V	V	V	V				
ABN-464	Intel 82571EB	4 Gb Fiber	0	V	V	V	V	V					
ABN-482	Intel 82571EB	2 Gb Fiber	1	V	V	V	V	V	V	V		V	
ABN-484	Intel 82571EB	4 Gb Copper	2	V	V	V	V	V					
ABN-484L	Intel 82574L	4 Gb Copper	2	V	V	V	V	V	V	V		V	
ABN-522	Intel 82598EB	2 10G Fiber	0	V	V	V	V	V	V	V		V	
ABN-664	Intel 82575EB	4 Gb Fiber	0	V	V	V	V	V	V	V		V	
ABN-668	Intel 82575EB	8 Gb Fiber	0	V	V	V	V	V	V	V		V	
NIP-51040	Intel 82580EB	4 Gb Copper	0	V	V	V	V	V	V	V		V	
NIP-51080	Intel 82580EB	8 Gb Copper	0	V	V	V	V	V					
NIP-51240	Intel 82580EB	4 Gb Copper	2	V	V	V	V	V	V	V		V	
NIP-52040	Intel 82580EB	4 Gb Fiber	0	V	V	V	V	V	V	V		V	
NIP-52080	Intel 82580EB	8 Gb Fiber	0	V	V	V	V	V					
NIP-52120	Intel 82580DB	2 Gb Fiber	1	V	V	V	V	V	V	V		V	
NIP-53020	Intel 82599ES	2 10G Fiber	0	V	V	V	V	V	V	V		V	
NIP-53120	Intel 82599ES	2 10G Fiber	1	V	V	V	V	V	V	V		V	
NIP-61040	NPU CN5430	4 Gb Copper	0	V	V	V	V	V	V	V		V	
NIP-61080	NPU CN5640	8 Gb Copper	0	V	V	V	V	V	V	V		V	

Standard NIC

LAN module	Specification			Model supported									
	Chipset	Ethernet	Bypass	CAR-5010	CAR-5000	NAR-7100	NAR-7090	CAR-4000	NAR-5650	CAR-300X	NAR-5520	CAR-3000	NAR-2200
NIC-51240	Intel 82580EB	4 Gbe Copper	2	V	V	V	V	V	V				
ABN-262	Intel 82574L	2 Gb Copper	1	V	V	V	V	V		V		V	V
ABN-194	Intel 82546GB	4 Gb Copper	2			V	V						
ABN-192	Intel 82546GB	2 Gb Copper	1			V	V						
ABN-112	Intel 82551QM	2 FE Copper	1								V		V
RF-330	NPU CN38XX	4 Gb Copper	1			V	V						

Gen2 Bypass



* WDT arming (enabling), Expire-time setting and BPE (Bypass Enable) setting are programmable by software

Gen2 programmable bypass module, in practice, the programmable bypass mode allows network packets to flow in and out unattended when the appliance is shutting down. The programmable next boot-up status means that the Bypass or Open mode can be determined in advance before a system shut down. This means that the system can be predetermined to reboot to the preferred status and is immediately ready to serve. Bypass mode status can be changed instantly by software commands. Each Bypass segment has its own WatchDog Timer (WDT), therefore, Bypass behavior can be operate independently.

FEATURE

- Bypass/Open Mode selectable by power failure
- System is monitored by WDT and bypass can be triggered by s/w hang while WDT in armed
- Software programmable modes: Normal, Bypass and Open (non-bypass)
- Bypass-mode configurable by s/w for Next Boot

NIC-51240 PCIe v2.0 Quad Copper Gigabit Ethernet Adapter with Bypass function

SPECIFICATION



Ethernet Port	Intel® 82580EB, support 8 transmit/receive queues
Bus Type	PCI-Express x4
Compliance	- IEEE 802.3 auto-negotiation for 1000BASE-T, 100BASE-TX, and 10BASE-T applications - IEEE 802.3x and 802.3z flow control supported
Watchdog Timer	Built-in watchdog timer bypass Ethernet ports when host system hang or power failure
H/W Selection	Selection of normal or bypass model when power on
S/W Programmable	WDT time-out setting
LED	- Two LED indicators adjacent to each RJ45 port, indicate Active/Link & 10/100/1000Mbps - Onboard LED indicator to show bypass status - LED pin-out for LAN status and bypass, providing more variable LED location for system integration
Dimension	110(W) x 88(L) mm; 4.33"(W) x 3.46"(L)

FEATURE

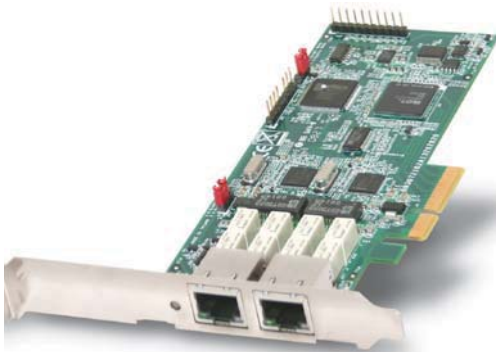
- Intel® 82580EB PCI-Express2.0 MAC+PHY controller
- Built with onboard LED and LED pin-out
- Built-in Watchdog Timer (WDT)
- Easy configuration of Normal/Bypass mode and WDT timer
- Ready for PCIe v2.0 5GT/s solution

ORDERING GUIDE

Part No.	Description
NIC-51240	Quad port Server Adapter, PCI-Express v2.0, 4 x RJ45, 10/100/1000Base-T

ABN-262

PCI-E Dual Copper Gigabit Ethernet Adapter with Bypass Function



FEATURE

- Dual copper PCI-E Gigabit Ethernet ports based on Intel® 82574L controller n Built-in Watchdog Timer (WDT) to bypass Ethernet ports on a host system hang or power failure n Easy configuration of Normal/Bypass model and WDT timer
- Built with both onboard LED and LED pin-out for LAN status and bypass mode, provides variable LED location for system integration
- Low Profile form factor to fit in a wider variety of systems

SPECIFICATION

Ethernet Port	Intel® 82574L Gigabit controller with advanced performance features
Bus Type	PCI-Express x4
Compliance	- IEEE 802.3 auto-negotiation for 1000BASE-T, 100BASE-TX, and 10BASE-T applications - IEEE 802.3x and 802.3z flow control supported
Watchdog Timer	Built-in watchdog timer to bypass model when power on
H/W Selection	Selection of normal or bypass model when power on
S/W Programmable	WDT time-out setting
LED	- Two LEDs adjacent to each RJ45 port, indicate Active/Link & 10/100/1000Mbps - One on-board LED to show bypass status for each bypass segment
Dimension	147.3(W) x 68.9(L) mm; 5.8"(W) x 2.71"(L)

ORDERING GUIDE

Part No.	Description
ABN-262	Dual port Gigabit Ethernet PCI-E x4 adapter with Bypass function

ABN-192

Dual-Port 64-bit Gigabit Ethernet Adaptor with Bypass Function



FEATURE

- Dual 64-bit Gigabit Ethernet ports base on Intel® 82546GB controller
- Supports 133MHz PCI-X bus and backwards with 64/32-bit PCI
- Built-in Watchdog Timer (WDT) to switch Ethernet ports to bypass mode3 by system hang and power failure
- Easy configuration of Normal/Bypass mode and WDT time-out by hardware setting or software programming
- Built with both on-board LED and LED pin-out for LAN status and bypass mode, provides variable LED location for system integration

SPECIFICATION

Ethernet Port	Intel® 82546GB high performance dual-port Gigabit Ethernet controller
Bus Type	64bit/133MHz PCI-X
Compliance	- IEEE 802.3 auto-negotiation for 1000BASE-T, 100BASE-TX and 10BASE-T supported - IEEE 802.3x flow control supported
Watchdog Timer	Built in watchdog timer to switch to bypass mode for Ethernet ports by power failure and software hang
H/W Selection	- S/W programmable to select normal mode or bypass mode - WDT time-out setting
S/W Programmable	WDT time-out setting
LED	- Two LEDs adjacent to each RJ45 port to display Active/Link & 10/100/1000Mbps - One on-board LED to show bypass status
Dimension	197.8(W) x 78(L) mm; 6.9"(W) x 3.07"(L)

ORDERING GUIDE

Part No.	Description
ABN-192	Dual 64-bit intel 82546GB Gigabit Ethernet PCI-X card with bypass function

ABN-194

Quad-Port 64-bit PCI-X Gigabit Ethernet Adaptor with 2nd Generation Bypass Function



FEATURE

- Configuration of Normal/Bypass mode and WDT time-out period can be deployed by software commands
- Software programmable modes (Bypass, Normal, Open) after reboot
- Two independent bypass segments
- Quad 64-bit Gigabit Ethernet ports based on Intel® 82546GB controllers
- Supports 133MHz PCI-X bus and is backwards compatible with 64/32-bit PCI
- Built-in Watchdog Timer (WDT) to switch Ethernet ports to bypass mode by system hang
- Built with both on-board LED and LED pin-out for LAN status and bypass mode, provides variable LED location for system integration

SPECIFICATION

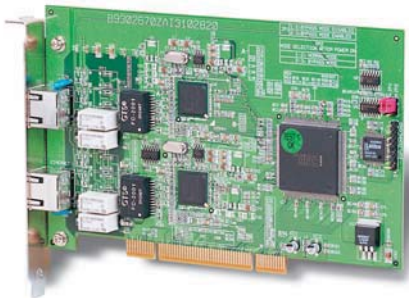
Ethernet Port	Intel® 82546GB high performance dual-port Gigabit Ethernet controller
Bus Type	64bit/133MHz PCI-X, backwards compatible with PCI-64/32
Compliance	- IEEE 802.3 auto-negotiation for 1000BASE-T, 100BASE-TX and 10BASE-T supported - IEEE 802.3x flow control supported
Watchdog Timer	Built in watchdog timer to switching to bypass mode for Ethernet ports by software hang
S/W programmable	- Selection of normal-, bypass- or open mode - WDT time-out setting
LED Display	- Two LEDs adjacent to each RJ45 port to display Active/Link & 10/100/1000Mbps - One on-board LED for each bypass segment to show bypass status
Dimension	167.64(W) x 106.68(L) mm

ORDERING GUIDE

Part No.	Description
ABN-194	Quad-Port 64-bit PCI-X Gigabit Ethernet Adaptor with 2 nd Generation Bypass Function

ABN-112

Dual Intel® 82551 Fast Ethernet PCI card with bypass function



FEATURE

- Switch automatically to bypass mode while power fails or software hangs
- Built-in watchdog timer to switch Ethernet ports to bypass while power lost or software hang
- Ethernet status and bypass mode pin-headers for optional LED display
- Universal voltage input, supports both +3.3V and +5V
- Hardware selectable (by Jumper setting) to normal or bypass mode after PCI reset
- Software programmable to select normal or bypass mode

SPECIFICATION

Ethernet Port	- Intel® 82551 high performance IEEE 802.3 - 10/100 BaseTX Ethernet controller
Bridge	Intel® 21152 32-bit PCI bridge
PCI bus	32-bit, 33MHz universal (5V or 3.3V) PCI card
Watchdog Timer	Built-in watchdog timer to switch to bypass mode for Ethernet ports while power fails or software hangs
Jumper Setting	Selectable by Jumper setting to normal or bypass mode after PCI reset. Also software programmable to select normal or bypass mode
LED Display	Two LEDs adjacent to each RJ45 port to display Active/Link & 10/100Mbps speed
LED Pin-Head	Pin-heads reserved for LAN status and bypass mode for optional LED display
Dimension	176.5(W) x 107(D) mm 6.95"(W) x 4.21"(D)

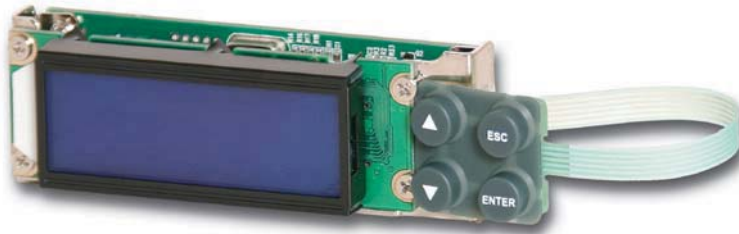
ORDERING GUIDE

Part No.	Description
ABN-112	Dual Intel® 82551 Fast Ethernet PCI card with bypass function

LCD Module

Character and Graphical display

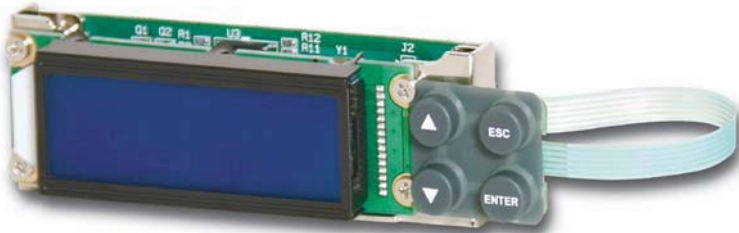
EZIO-300 16x2 characters LCD Module



FEATURE

- Communication protocol RS-232
- 4 buttons
- Blue background and white character
- Dimension: 87(W) x 30(H) x 31.85(T)mm

EZIO-G400 128x32 graphical LCD Module



FEATURE

- Communication protocol RS-232
- 4 buttons
- Blue background and white graph
- Dimension: 87(W) x 30(H) x 31.85(T)mm

EZIO-G500 128x64 graphical LCD and RS-232 control board w/ 7 buttons



FEATURE

- Communication protocol RS-232. (USB Project base)
- 7 buttons
- 3 bi-color programmable LEDs
- Power on/off and Reset switch on board
- Blue background and white graph
- Dimension: 108.5(W) x 33.5(H) x 42.8(T)mm



IPMI

Overview

Now a day, every company's IT infrastructure is getting larger and more complex. To reduce the complexity of managing the infrastructure, Portwell enables Intelligent Platform Management Interface (IPMI) solution in our platforms allow out-of-band access, monitor and administration - a more effective and efficient way to manage your computing environment.

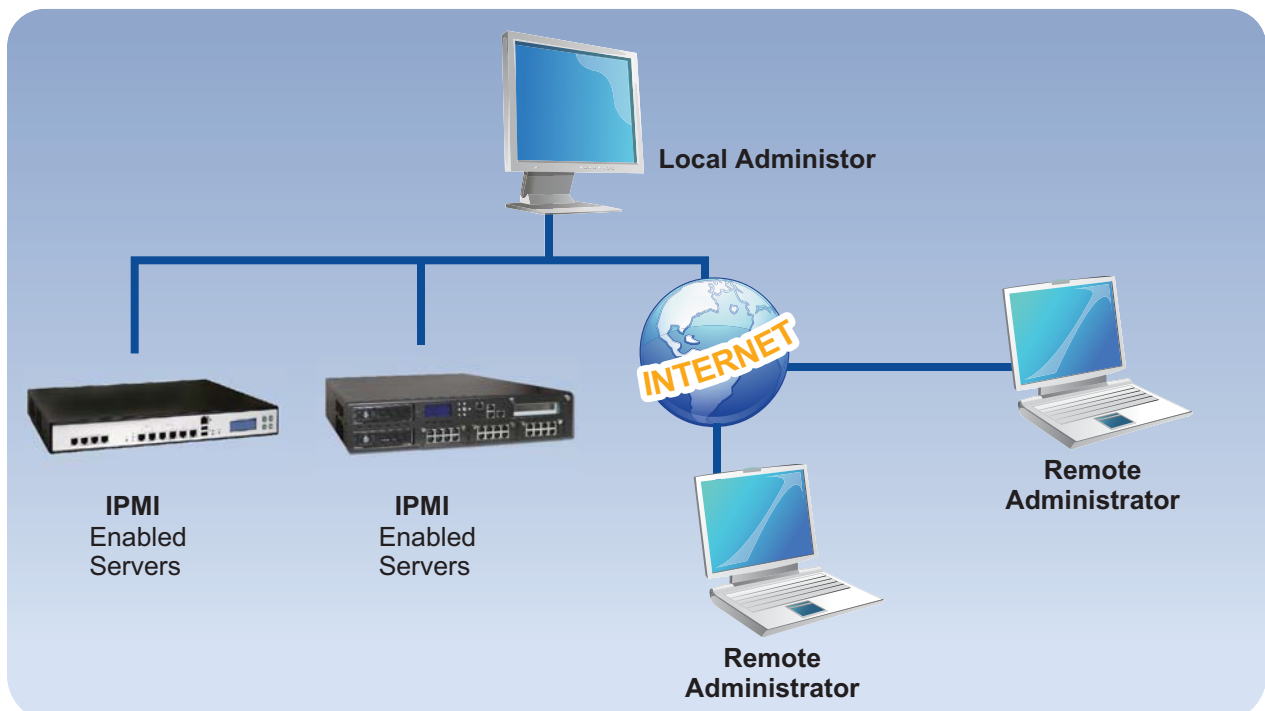
What is IPMI

IPMI specification is an Intel led standard. It defines a standardized, abstracted, message-based interface, which records platform management devices and their characteristics. With this interface, system administrators can remotely monitor system health and manage the system.

IPMI operate independently of either a resource's CPU or operating system provides system even in the event of a device failure. This access is cross-platform and regardless the OS is used.

Key Features of Portwell IPMI

- Power Control - control resource's power state in the field
- Serial over LAN (SOL) - serial access over the management LAN
- KVM over LAN (iKVM) - re-direct the screen from the resource
- LAN Alerting-SNMP Trap - generate SNMP traps by configuration
- Event Log - log system even and user activities in the resource
- USB2.0 Virtual Media - emulate a host media to resource as a local device
- OS Independency - operate independently of a resource's CPU & OS
- Remote Hardware Health Monitoring - monitor system health in the field
- IMPI Security - RMCP+ protocol supported (Remote Management Control Protocol)
- Remote firmware upgrade - upgrade LOM firmware in the field



ABOUT KiLIN KiLIN™



KiLIN-6005

KiLIN-6020

KiLIN-6030

Product Overview

The wire speed performance in small packets, has been long attempted since day one. Portwell's Kilin family platforms achieve it by implementing the new generation MIPS64 technology from Cavium.

To adapt this new technology, ISVs need time to migrate their existing computing centric architecture to network (or packet processing) centric architecture. Portwell has seamlessly embedded x86 module into Kilin platforms so the migration can be smooth. Besides, some written codes has been fully optimized based on x86 hardware. Embedded x86 module also offers customers the opportunity to enjoy the synergy between x86 and MIPS64 technologies.

No matter it is a voice or data connection, " security " is always the first concern by service providers as well as enterprises. To ensure " secure " voice/data connection between two or more parties, Kilin platforms equip all necessary security features in hardware based.

Although there are up to sixteen MIPS64 cores available to make the real-time applications feasible, the power consumption of the processor unit is less than 30 watts. This low power merit not only saves the daily operating cost but also improves the system reliability due to fewer moving parts being used.

Kilin Family is Built for

- Traditional security appliances, such as Firewall, VPN, AV, and IPS, call for wire speed performance in small packets
- High performance UTM appliance requires remarkable processing capability as well as HW based security features
- New generation appliances which consider 10 Giga Ethernet interface is mandatory
- VOIP and Wireless appliances/gateways demand high quality and "secure" communication
- Triple or Quadruple play systems

REFERENCE TABLE

< MIPS64 Architecture >



MODEL	KiLIN-6030			KiLIN-6020	CAK-3000
Sub-Model	-4101	-2700	-2701	-0351	-7621
Processor	Cavium Octeon CN5860			Cavium Octeon CN3860	Octeon
CPU (Max.)	750MHz, 16 cores			500MHz, 8 cores	750MHz 4 Cores
RAM (Max.)	8GB			8GB	4GB
Ethernet					
Fiber	0	0	4	0	0
Copper GbE	4	8	4	4	4
10/100 FE	1	1	1	1	2
Expansion Slot	2	2	2	1	One PCI-E x4
Storage Device					
HDD	Two Removable 3.5" HDD			One 3.5" HDD	One 2.5"/3.5" SATA HDD
CF	Optional			Optional	Optional
DOM	N/A			N/A	N/A
DOC	N/A			N/A	N/A
Serial Port					
Console	RJ45 on front Panel			RJ45 on front Panel	RJ45 on front Panel
LCD module	EZIO-300 or EZIO-G400			EZIO-300 or EZIO-G400	EZIO-300 or EZIO-G400
LEDs	Power, Storage			Power, Storage	Power, Data-access, LAN status & Speed, Bypass
SATA	Two SATA connectors			Two SATA connectors	One SATA connector
USB	2			2	1 on front
VGA	N/A			N/A	N/A
Power	350W 1+1 redundant PSU w/PFC			200W Full-range ATX	100W full-range ATX
Height (U)	2U			1U	1U
Dimension (WxDxH)	431 x 394 x 88 mm 16.97" x 15.5" x 3.46"			431 x 394 x 44 mm 16.97" x 15.5" x 1.73"	438x292x44mm 17.2"11.5"x1.73"
PAGE	45			46	47



MODEL	KILIN-6005		CAK-2000	CAM-0100	
Sub-Model	-1270	-3270	-3620	-7611	-7616
Processor	Cavium Octeon CN3120 series		P2020	CN5010	CN5020
CPU (Max.)	500MHz, 2 cores		1.2GHz 2 Cores	500MHz, 1 core	500MHz, 2 cores
RAM (Max.)	4GB		4GB*	1G	
Ethernet					
Fiber	0		0	0	
Copper GbE	3 or 6		6	6	
10/100 FE	1		0	0	
Expansion Slot	1		1	1	
Storage Device					
HDD	One 3.5" HDD		3.5"HDD or 2.5"HDD	1 (2.5" SATA optional)	
CF	Optional		N/A (SD socket)	Optional	
DOM	N/A		N/A	N/A	
DOC	N/A		N/A	N/A	
Serial Port					
Console	RJ45 on front Panel		RJ45 on front Panel	RJ45 on rear panel	
LCD module	EZIO-300 or EZIO-G400		EZIO-300 or EZIO-G400	N/A	
LEDs	Power, Storage		Power, Data-access, LAN status & Speed, Bypass	Power, Storage, Lan	
SATA	Two SATA connectors		Two SATA-II connector	One SATA connector	
USB	1		2	1	
VGA	N/A		N/A	N/A	
Power	65W Full-range		65W Open Frame	12V DC 35W	
Height (U)	1U		1U	1U	
Dimension (WxDxH)	428 x 255 x 44 mm 16.8" x 10.1" x 1.73"		428 x 255 x 44 mm 16.85" x 10.04" x 1.73"	210 x 148 x 44 mm 8.27" x 5.85" x 1.73"	
PAGE	48		49	50	



KiLIN-6030 KiLIN™

2U rack-mount network server with Cavium Octeon processor and redundant PSU



4101

2701

FEATURE

- MIPS64 Cavium Octeon processor with 16 cores and up to 750MHz
- Security, Regular expression and Decom/compression functions inside
- Up to Sixteen Gigabit Ethernet ports with five bypass segments in KiLIN-6030
- SPI4.2 interface for possible 10G solution or additional extensions
- Four DDR2/400 memory slots and 256MB RLDRAM on-board
- Up to two PCI-X expansion slots
- Redundant 350W ATX PSU

SPECIFICATION

CPU Board	- Cavium Octeon CN5860 series with security function inside - 16 cores with 750MHz CPU frequency
System Memory	- Four 240-pin DDR2 DIMM slots - Supports DDR2 667/533/400 up to 8GB - 256MB RLDRAM on-board
Ethernet Port	- One 64bit/66MHz Gigabit Ethernet ports for management - Four Gigabit Ethernet ports on-board in two bypass segments - Ten Gigabit Ethernet ports from SPI4.2 interface in three bypass segments in KiLIN-6030 (Optional)
Expansion Slot	Up to two PCI-X expansion slots
Storage Device	- Two swappable 3.5" SATA HDD - CompactFlash socket on-board
Serial Port	- One RJ-45 connector for console - One 2x5 pin-connector from carrier board
LCD Panel	2x16 characters or 128x32 graphical with 4-buttons
LEDs	Power status, data access, Ethernet status/speed and bypass status
IDE/SATA	Two SATA connectors from Cavium
USB	Two USB ports
VGA	N/A
Power	Full-range 350W 1+1 redundant PSU
Dimension	431(W) x 394(D) x 88(H) mm 16.97"(W) x 15.5"(D) x 3.46"(H)
Packing Dimension	25.98"(W) x 21.93"(D) x 10.23"(H)
Weight	Gross: 18kg (39.65 lbs); Net: 12.5kg (27.53 lbs)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



Optional NIC

LAN module	Ethernet	Bypass
ABN-1000	2 10G Fiber	1
ABN-1004	4 Gb Fiber	2
ABN-1010	10 Gb Copper	2
ABN-1014	4 Gb Copper	0

ORDERING GUIDE

Part No.	Cavium Processor	Ethernet	EZIO	Bypass Segment	SPI 4.2
KiLIN-6030-4101	Octeon CN5860-750NSP	4 Copper GbE + 2 management port	Yes	2	Yes
KiLIN-6030-2700	Octeon CN5860-750NSP	8 Copper GbE + 2 management ports	Yes	4	N/A
KiLIN-6030-2701	Octeon CN5860-750NSP	4 Copper + 4 Fiber + 2 management ports	Yes	2	N/A

*EZIO supports EZIO-300 or E

KiLIN-6020 KiLIN™

1U rack-mount network server with Cavium Octeon processor and up to eight Gigabit Ethernet ports



FEATURE

- MIPS64 Cavium Octeon processor with 8 cores and up to 500MHz
- Security, Regular expression and Decom/compression functions inside
- SPI4.2 interface for possible 10G solution or fiber bypass function
- Four DDR2/400 memory slots and 64MB RLDRAM on-board
- One PCI-X expansion slot supports

SPECIFICATION

CPU Board	- Cavium Octeon CN3840 and CN3600 series with security function inside - 8 cores with 500MHz CPU frequency
System Memory	- Four 240-pin DDR2 DIMM slots - Supports DDR2 667/533/400 up to 8GB - 64MB RLDRAM on-board
Ethernet Port	- One 64bit/66MHz Gigabit Ethernet port for management - Four Gigabit Ethernet ports on-board in two bypass segments - Four optional Gigabit Ethernet ports from SPI4.2 interface in two bypass segments, with other options such as 10G interface
Expansion Slot	One PCI-X expansion slot
Storage Device	- Two 2.5" SATA HDD - CompactFlash socket on-board
Serial Port	- One RJ45 connector for system console - One 2x5 pin-connector for LCD or other option
LCD Panel	2x16 characters or 128x32 graphical with 4-buttons, option for 6-buttons
LEDs	Power status, data access, Ethernet status/speed and bypass status
IDE/SATA	Two SATA connectors
USB	2
VGA	N/A
Power	Full-range 200W ATX PSU
Dimension	431 (W) x 394 (D) x 44 (H) mm; 16.97" (W) x 15.5" (D) x 1.73" (H)
Weight	Gross: 12kg(26.43 lbs); Net: 7kg(15.42 lbs)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



ORDERING GUIDE

Part No.	Cavium Processor	Ethernet	EZIO	COM-Express
KiLIN-6020-0351	Octeon CN3860-500 NSP	4 Copper GbE + 1 management port	Yes	N/A

CAK-3000

Octeon Plus CN52xx platform, Up to 10 ports



FEATURE

- Highly-integrated networking appliance
- Excellent performance/watt
- MIPS64 Cavium Octeon 52XX series up to 4 cores and 750MHz
- Hardware packet processing acceleration and TCP acceleration, including checksum and timer
- Hardware work queueing, scheduling, ordering, and synchronization
- Hardware cryptographic and CRC acceleration

SPECIFICATION

CPU Board	- Cavium Octeon 52XX series with hardware - Up to 4 cores and 750MHz
System Memory	- Dual-channel DDR2 with two 240-pin DIMM socket - Supports DDR2 800 ECC UDIMM up to 4GB
Ethernet Port	- 4 GbE ports via SGMII - 2 FE ports via MII
Bypass function	Two programmable bypass segments
Expansion Slot	One optional PCI-E x4 expansion slot, rear access
Storage Device	- One SATA 3.5"/2.5" HDD - CompactFlash socket on-board
Serial Port	- One front accessible RJ45 connector for system console - One internal 2x5 pin connector
LCD Panel	- Optional 2x16 characters or 128x32 graphic LCD module with 4 buttons - 128x64 graphic LCD module for project based request software control Bi-LEDs
LEDs	Power status, Data access, Ethernet status/speed and Bypass status
USB	One USB 2.0 ports, front access
Power	Full-range 100W ATX PSU
Dimension	438(W) x 292(D) x 44(H) mm 17.2" (W) x 11.5" (D) x 1.73" (H)
Operating Environment	- Temperature: 5 to 40°C (67 to 130°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: 0 to 70°C (58 to 184°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



100W ATX PSU

Optional PCI-E x4

Optional NIC

LAN module	Chipset	Ethernet	Bypass
ABN-454L	82574L	4Gb Copper	0
ABN-484L	82574L	4Gb Copper	2
ABN-482	82571EB	2Gb Fiber	1
ABN-664	82575EB	4Gb Fiber	0

ORDERING GUIDE

Part No.	CPU	CPU	GbE/ FE ports	Bypass	EZIO
CAK-3000-7621	CN5220	SPC 500MHz	4 / 2	2	Optional



KiLIN-6005 KiLIN™

1U network appliance with Cavium Octeon 31XX series CPU

FEATURE

- MIPS64 Cavium Octeon processor with 2 cores and up to 500MHz
- Security, Regular expression and compression/de-compression functions inside
- Up to Six Gigabit Ethernet ports with one bypass segments
- Two DDR2 667/533 memory slots and option up to 256MB DFA RAM on-board
- Up to one 32bit 3.3V PCI expansion slots
- 65W PSU



SPECIFICATION

CPU Board	- Cavium Octeon CN3120 series with various function inside via different CPU type - 2 cores with 500MHz CPU frequency
System Memory	- Two DDR2 667/533 memory slots up to 2GB, - Optional 256MB DFA RAM on-board
Ethernet Port	- One 32bit/33MHz Gigabit Ethernet port for management - Three Gigabit Ethernet ports on-board in one bypass segment - Optional four Gigabit Ethernet ports from switch interface
Expansion Slot	Up to one PCI expansion slots
Storage Device	- Optional one SATA 3.5" HDD, - Compact Flash socket on-board
Serial Port	- One RJ45 connector for system console - One 2x5 pin-connector on board
LCD Panel	2x16 characters LCD module with 4-buttons
LEDs	Power status, data access, Ethernet status/speed and bypass status
IDE	One SATA connectors from M/B
USB	One USB 2.0 port on front panel
VGA	N/A
Power	Full-range 65W
Dimension	428 (W) x 255 (D) x 44 (H) mm; 16.85" (W) x 10.04" (D) x 1.73" (H)
Packing Dimension	22.2" (W) x 16.1" (D) x 15.6" (H) (2 in 1 packing)
Weight	Gross: 8.2kg(18.06 lbs) (2in 1 packing) Net: 3kg(6.61 lbs)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



System Switch

ORDERING GUIDE

Part No.	Ethernet Interface	EZIO	CF	PCI
KiLIN-6005-3270	- 6 copper Gigabit Ethernet - 1 10/100M Fast Ethernet	Yes	1	1

CAK-2000

FreeScale QorIQ platform.



FEATURE

- QorIQ P2020 / Dual Core
- 2 DIMM DDR3*
- 6 Gb GbE ports
- 2 Bypass Segments
- SD device
- Mini PCI-E socket for expansion

SPECIFICATION

CPU Board	Built with FreeScale QorIQ P2020
System Memory	Two DDR3 DIMM up to 4GB*
Ethernet Port	- 2 PCI-E GbE ports - 4 RGMII GbE ports
Bypass feature	Up to 2 Gen.-2.0 bypass segments available
Expansion	One Mini PCI-E slot
Storage Device	Support one 3.5" SATA HDD or two 2.5" SATA HDD
Serial Port	- One front-access RJ45 for system console - One 2x5 pin-header for EZIO
LCD Panel	2x16 characters or 128x32 graphic LCD module with 4 buttons
LEDS	Power status, data access, Ethernet status (LNK/ACT), Ethernet speed (10/100/1000) and bypass
USB	Dual USB 2.0, front accessible
Power	65W Open frame
Dimension	428(W) x 255(D) x 44(H) mm - 16.85"(W)x 10.04"(D) x 1.73"(H)
Operating Environment	- Temperature: 0 to 40°C (32 to 104°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



ORDERING GUIDE (samples for project base only)

Model No.	CPU	Ethernet	Gen2.0 Bypass	EZIO	Mini PCI-E slot
CAK-2000-3620	P2020 (Dual/1.2GHz)	6 RJ45 GbE ports	2	Optional	YES

*Project base



CAM-0100

1U Desktop Fanless network appliance with Cavium Octeon processor CN5010/5020

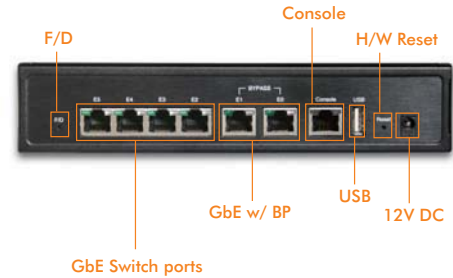


FEATURE

- A5 Size Desktop platform for entry SMB & SOHO market
- Highest price-performance, best cost efficiency
- Fanless system

SPECIFICATION

CPU Board	- Cavium Octeon CN50X0 series with security function inside - 1 or 2 cores with 500MHz CPU frequency
System Memory	DDR2 SODIMM 400/533/667, up to 1GB
Ethernet Port	- 2 RJ45 ports, RGMII w/ one bypass seg. - 4 switch RJ45 ports, RGMII
Expansion Slot	1 MiniPCI socket
Storage Device	1 SATA interface, 1 CF socket
Serial Port	1 RJ-45 connector
LCD Panel	N/A
LEDs	LED indicators for power, storage and Lan access
IDE/SATA	1 SATA connector
USB	1 USB connector
VGA	N/A
Power	DC 12V, 35W
Dimension	210 (W) x 148 (D) x 44 (H) mm; 8.27" (W) x 5.85" (D) x 1.73" (H)
Operating Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (58 to 184°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



ORDERING GUIDE

Part No.	Cavium processor	Ethernet
CAM-0100-7611	CN5010-500scp	6GbE
CAM-0100-7616	CN5020-500scp	6GbE



ABOUT TANC [®]

High performance mode card with PMC/XMC interfaces for ATCA system

AdvancedTCA™ (ATCA)

AdvancedTCA™ stands for Advanced Telecom Computing Architecture and was specified by PICMG (PCI Industrial Computer Manufacturers Group) as PICMG 3.x in December, 2002 and then amended by ECN001 in January 2004. It's a blade-based architecture based on high performance switched fabrics, with features designed to support 99.999%+ levels of availability to enable next generation platforms with terabit switching capacity within a single chassis. It is intent of PICMG 3.x family to accommodate a wide variety of switch fabrics in a layered set of specifications that evolves over time along side the evolution of fabric technologies. The specification defines new generation architecture for building high-end "CARRIER GRADE" equipment and includes following subsidiary:

- PICMG 3.0: The base spec covers mechanical, power-, cooling-, interconnect- and RASM properties of AdvancedTCA family of specs.
- PICMG 3.1: Ethernet and Fiber Channel Transport
- PICMG 3.2: InfiniBand Transport
- PICMG 3.3: StarFabric Transport
- PICMG 3.4: PCI-Express Transport
- PICMG 3.5: Advanced Fabric Interconnect / Serial Rapid IO

AdvancedTCA™ achieved a set of standards for building Industrial Standard Based Platforms by choosing to buy hardware as Commercial Off The Shelf or to design, manufacture and support selected elements in house. Through this the development expense, lifecycle costs and time to market risks can be reduced.

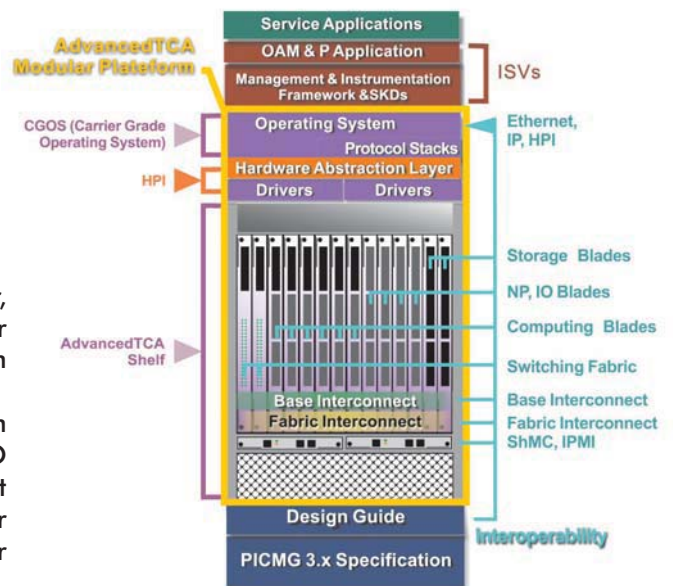
Target Market

The PICMG 3.x specifications are designed to provide an open, multi-vender architecture that is originally aimed at Central Office telecom applications, but its high bandwidth communications capability, unprecedented processor density and extremely robust mechanical and electrical definitions are also attractive for many other market segments such as military communication equipment. In summary, the applications which can take advantage of IP data transportations, like wireless access, Voice/Video over IP as well as high-end Firewall and security application, are typical key target applications for AdvancedTCA™.

Platform Architecture

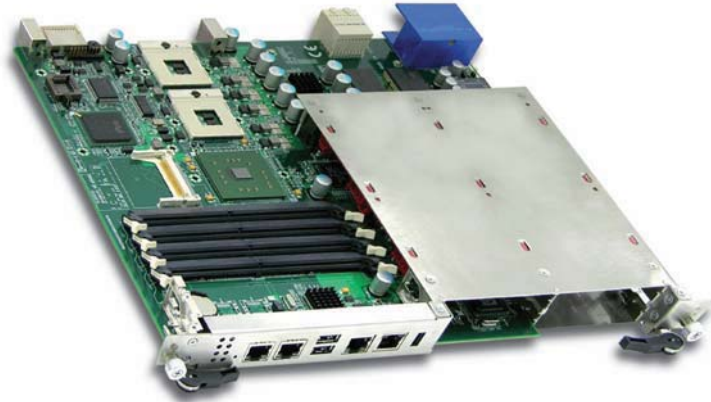
AdvancedTCA™ system consists from standard based modular building blocks with interoperability and includes the following components:

1. AdvancedTCA Shelf - The shelf is built with backplane with preferred star or mesh topology.
2. Front Board - There are two key categories:
 - a. Node Card: Storage blades, NP/IO blades and computing blades.
 - b. Switching Board: Switching blade supports base and fabric interface.
- 3 Shelf Manager - Manage/Track the FRU population and common infrastructure of a shelf, especially the power, cooling and interconnect. It enables the System Manager to join in that management/tracking through the System Manager Interface (IPMI).
4. RTM, Rear Transition Module - RTMs are optional for system service. It simplifies servicing of front boards by putting I/O cable assemblies on the RTM. I/O signals from the front board are routed to Zone3 where a user-defined connector mates with the RTM and takes the signals outside the rear of the shelf.



TANC-5340 TANC®

ATCA control board with Dual Sossaman CPU



FEATURE

- High performance of dual Intel® Xeon® LV (Sossaman) with 667MHz FSB
- ATCA control node
- 4 Gigabit Ethernet, Two for front connection and two for base channel
- Front access console port and 10/100M management port
- Support major OS

SPECIFICATION

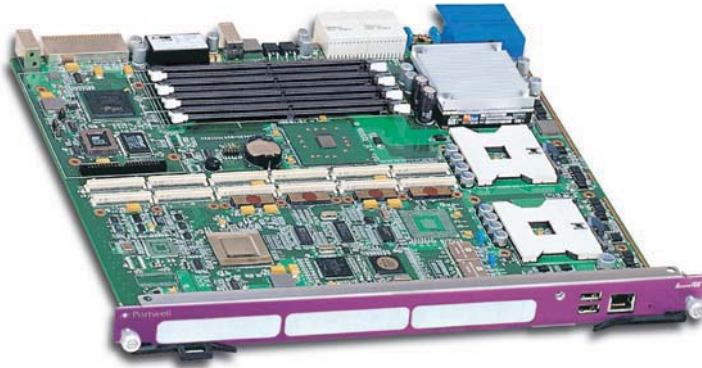
CPU Board	Dual Intel® Xeon LV Sossaman processor
Chipset	Intel® E7520 chipset with 667MHz FSB
System Memory	Up to 16GB DDR400/DDRII registered memory with ECC support
BIOS	Award BIOS
Ethernet Port	Default with 2 Gigabit Ethernet and Flexible from two AMC modules
Storage Devices	- Support one 2.5" HDD at SATA 1.5Gbs - One on-board Compact Flash sock
I/O	- One RJ-45 system console - One dual-USB connector - Zone 3 connector for RTM connection
Expansion Interface	- Two AMC interfaces
LEDs	Power status, System health, HDD activity
Hardware Monitoring	- Build-in IPMC - Dual IPM Bus (IPMB) provide improved system reliability
Power	- Supports voltage: -48VDC for board - Redundant DC-feed
Dimension	280 (W) x 322.5 (L) mm 11.02" (W) x 12.70" (L)
Operating Environment	- Operating Temperature: 5 to 45°C - Storage Temperature: -20 to 70°C - Relative Humidity: 5% to 90%, non-condensing
Compliance	- Advanced TCA core specification, PICMG 3.0 - IPMI v1.5 - Design for NEBS GR-63-Core Level 3
Certification	- Design for CE/FCC, UL/cUL

ORDERING GUIDE

Part No.	Ethernet Interface	AMC Interface
TANC-5340	2 Copper GbE	2

TANC-5320 TANC®

High performance node card with PMC/XMC interfaces for ATCA system



FEATURE

- High computing power of dual Intel® LV Nocona processor with 800MHz FSB
- Intel® E7520 chipset
- Three 64bit/133MHz PMC interfaces
- Two optional PCI-Express XMC interfaces (alternative with PMC interfaces)
- Intelligent Platform Management Controller (IPMC) performs via dual Intelligent Platform Management Bus (IPMB) to enhance system reliability
- Support most major OS

SPECIFICATION

CPU Board	Dual Intel® LV Nocona processor
Chipset	Intel® E7520 chipset with 800MHz FSB
System Memory	Up to 16GB DDR400/DDRII registered memory with ECC support
BIOS	Award BIOS
Ethernet Port	Flexible from three PMC/XMC modules
Storage Devices	- Support one 2.5" HDD at UMDA33/66/100 - One on-board Compact Flash socket - One optional SATA 2.5" HDD from PMC interface
I/O	- One RJ-45 system console - One dual-USB connector - Zone 3 connector for RTM connection
Expansion Interface	- Three 64bit/133MHz PMC interfaces - Two optional PCI-Express XMC interfaces (alternative with two PMC interfaces)
LEDs	Power status, System health, HDD activity
Hardware Monitoring	- Build-in IPMC - Dual IPM Bus (IPMB) provide improved system reliability
Power	- Supports voltage: -48VDC for board - Redundant DC-feed
Dimension	280 (W) x 322.5 (L) mm 11.02" (W) x 12.70" (L)
Operating Environment	- Operating Temperature: 5 to 45°C - Storage Temperature: -20 to 70°C - Relative Humidity: 5% to 90%, non-condensing
Compliance	- Advanced TCA core specification, PICMG 3.0 - IPMI v1.5 - Design for NEBS GR-63-Core Level 3
Certification	- Design for CE/FCC, UL/cUL

ORDERING GUIDE

Part No.	Ethernet Interface	PMC Interface
TANC-5320	- 2 SFP - 4 Copper GbE	1

CVD-4200

The Desktop T1 Link Converged Networking Platform

Voice Gateway/IP PBX

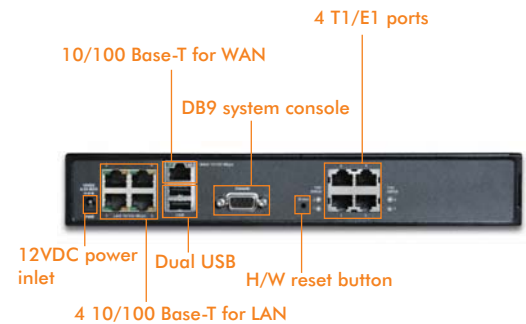


FEATURE

- Powered by FreeScale MPC 8360
- On board 128MB system memory, expandable up to 256MB
- Five 10/100 BASE-T interfaces for WAN/LAN connection
- 4 TDM/PCM channels for T1/E1 connection
- Compliant with 802.11 b/g for wireless application
- Optional PSTN Module for VoIP application

SPECIFICATION

CPU Board	Built with FreeScale MPC 8360 CPU
System Memory	- Onboard un-buffered, none-ECC DDR2 128MB - Up to 256MB expandable
Ethernet Port	- Four 10/100 Base-T Ethernet ports with RJ45 connectors for LAN - One 10/100 Base-T Ethernet port with RJ45/SFP connector for WAN
TDM Channel	- Four TDM channels to T1 Quad Framer - 2x2 T1/E1 ports build onboard
Expansion Slot	Mini-PCI socket onboard
Serial Port	One DB9 connector for system console through RS232
LEDs	- Power, System Status, T1/E1 Status on front panel - Ethernet LNK/Speed, T1/E1 Status on rear panel
USB	Dual USB 2.0 ports on rear panel
Power	40W external power adaptor
Dimension	280 (W) x 322.5 (L) mm 11.02" (W) x 12.70" (L)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL/CB/Industry Canada



ORDERING GUIDE

Part No.	CPU	T1/E1	WAN	LAN
CVD-4200-1200	MPC 8360	4	1	4

CVR-4300

FreeScale, MPC8360



FEATURE

- Powered by FreeScale MPC8360
- 24 Gb Ethernet ports LAN connection
- 4 TDM/PCM channels for T1/E1 connection
- V.90 interface
- 2 FXO & 6 FXS connection
- Optional DSP & PoE module
- Mini-PCI socket for wireless application

SPECIFICATION

CPU Board	Built with FreeScale MPC8567
System Memory	- Onboard un-buffered, none-ECC DDR2 128MB - Up to 256MB expandable
Network Interface	- 12 or 24 10/100/1000 GbE switching LAN ports w/ PoE (optional) - 1 x 10/100 FE WAN port - 1 x V.90 Modem port
PSTN Interface	- 6 FXS ports - 2 FXO ports
Serial Port	One RJ45 connector for system console through RS232
LEDs	LED indicators for power and status
USB	Dual USB 2.0
Power	200W AC-DC
Dimension	443 (W) x 336 (D) x 44 (H) mm 17.45" (W) x 13.23" (D) x 1.73" (H)
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90% RH
Storage Environment	- Temperature: 0 to 70°C (32 to 158°F) - Humidity 5% to 95% RH
Certification	CE/FCC/UL



ORDERING GUIDE

Part No.	CPU	T1/E1	WAN	LAN	FXS	FXO	DSP	PoE
CVR-4300-6240	MPC8360	4	1	24	6	2	Optional	Optional

* Specifications are subject to change without notice.
* Other trademarks, logo, brands and company names are the property of their respective owners.



CVR-4400

2U rack-mount Network Services Gateway with optional swappable module cards



FEATURE

- Powered by FreeScale MPC8567
- 4 Gb Ethernet ports LAN connection
- V.90 interface
- Mini-PCI socket for wireless application
- Optional 4 or 8 TDM/PCM channels for T1/E1 connection
- Optional Single or Dual DSP module
- Optional 12 ports FXS & FXO module

SPECIFICATION

CPU Board	Built with FreeScale MCP8567
System Memory	One DDR2 DIMM up to 2GB
Network Interface	- 4 10/100/1000 GbE switching LAN ports - 1 x 10/100/1000 GbE WAN port - 1 x V.90 Modem port - Optional 4 or 8 T1/E1 module
PSTN Interface	- Optional 12 ports FXS or FXO ports - 2 Slots for FXS/FXO module
Expansion Slot	Mimi-PCI socket onboard
Serial Port	One RJ45 connector for system console through RS232
LEDs	LED indicators for power and status
USB	Dual USB 2.0
Power	200W ATX Power Supply
Dimension	430(W) x 88(H) x 443(D) mm
Operating Environment	- Temperature: 5 to 40°C (41 to 104°F) - Humidity 20% to 90%RH
Storage Environment	- Temperature: 5 to 70°C (32 to 158°F) - Humidity 5% to 95%RH
Certification	CE/FCC/UL



Rear View

ORDERING GUIDE

Part No.	CPU	T1/E1	WAN	LAN	FXS	FXO	DSP	PoE
CVR-4400-1000	MPC 8567	1	4	Optional	Optional	Optional	Optional	Optional

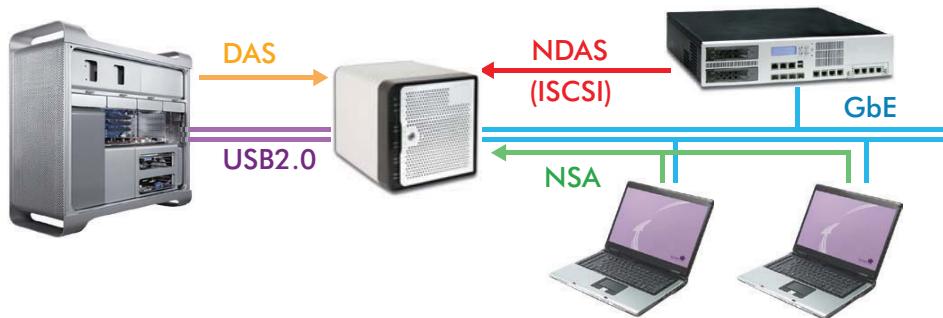
◀ About NAS NVR



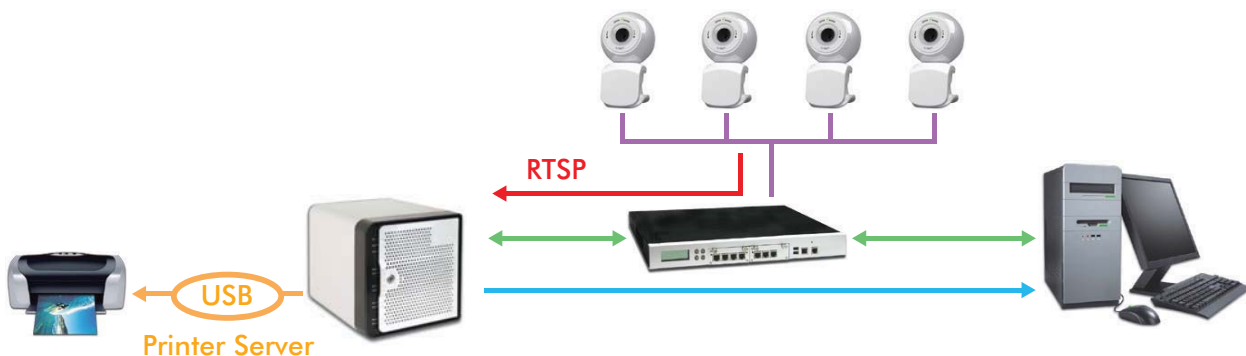
Product Overview

Portwell CSD-7700 (Project-based) NAS series are the first products in the market which provide Multi-function allowing user to easily configure the product into USB 2.0 DAS, NAS or iSCSI NAS. For application as small office, the combination of the 3 can provide the maximum usage and the flexibility of the product.

CSD-7700 designed with Linux 2.6 kernel on Marvell SOC platform, provide RAID 0, 1, 5 and JBOD (none RAID) with disk hot swappable, date auto rebuild, windows ADS, iTunes server and UPnP makes CSD-7700 a reliable, high performance and cost-effective storage selection for Home/SOHO/SMB.



Portwell CSD-7700 Network Video Recorder is a complete recording solution that connects directly to your network and is manageable remotely via a local area network or the Internet. It enables simultaneous recording and remote access to live views and playback of recorded images from up to four network cameras. Scheduled and triggered recordings can be performed. CSD-7700 is easy to install, use and manage, is an idea solution for surveillance application.



CSD-7700

Advanced featured iSCSI+ NAS (Unified Storage) Appliance for SMB



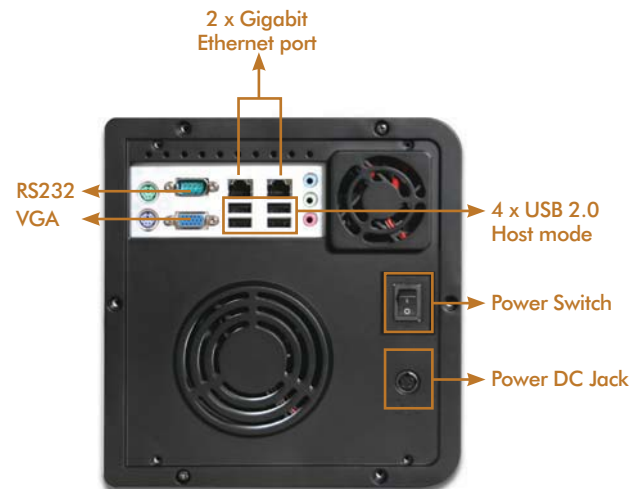
FEATURE

- File level ACL
- Block level Snapshot max. 40 versions
- Embedded Web File Manager
- Unified Storage Function, as
- iSCSI block device,
- NAS file sharing server
- Disk to Disk (D2D), NAS to NAS Backup
- USB Drive supports iSCSI target function
- Capacity Thin Provision
- Embedded Centralized and Local Backup
- USB2.0 Host mode for external backup
- Mutual CHAP support
- LV Capacity online expansion
- 4 bay Disk Hot-swappable
- RAID level 0, 1, 5, JBOD
- Multiple RAID Mode
- Support Multiple OS; Windows, Mac and UNIX/Linux cross-platform OS clients
- User Friendly Web UI configuration utility
- Network Load Balance / Fail over
- Robust Aluminum metal chassis

SPECIFICATION

Processor	Intel Processor 1.6GHz
Memory	1GB DDRII 667MHz Memory
Code memory	IDE 512MB DOM
Network Interface	2 x 10/100/1000 Ethernet Ports
Disk Interface	4 x 3.5" SATA-I/II Disk drives
Other Interface	- 4 x USB 2.0 (Host Mode); 1 x RS232 - 1 x VGA; 1 x power DC jack
LED indicators	Power, Status, HDD Access, HDD 1, Status (for failure), HDD 2, Status (for failure), HDD 3, Status (for failure), HDD 4, Status (for failure)
Alarm	Buzzer
Power Supply	AC Adapter, Input: 100 ~ 240V/ 2A, 50-60 Hz; Output: +12V/12.5A
Form Factor	Desktop Tower
Dimension	200(W)x210(H)x262(D) mm; 7.87(W)x8.27(H)x10.31(D) in
Weight	7 Kg / 15.4 Lb(without HDD)
Fan	1 x 8 cm cooling fan, 1 x 5 cm cooling fan
Ambient	Operating: 0°C to 40°C
Relative Humidity	Non-operating: 95% @ 30°C

** The specification is subject to change without notice



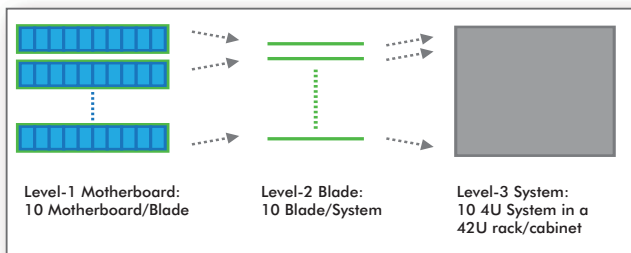
Multi-Motherboard Blade System

What is MMBS?

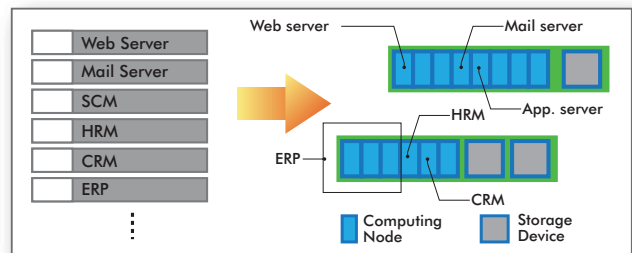
MMBS stands for “Multi-Motherboard Blade server”. Differs from traditional blade systems, in which single server is built on each individual blade, MMBS integrates up to ten (10) motherboards in each blade, up to ten (10) blades in a 4U rack-mount system to form a mini “Server Farm”. MMBS integrates maximal 100 computing nodes in a enclosure which takes 4U space of a rack. In the same config 25U space will be required for two-way server with quad-CPU. The extreme high CPU density is beyond imagination.

Flexible and Scalable Architecture

MMBS is a fully modularized system with building blocks in different level. (Fig 1.) It allows user to configure required hardware according to current application and operation scale and reserves the capability for further expansion as well.



(Fig 1.)



(Fig 2.)

In practice, for example, different applications will be executed from different servers in traditional way as shown in the left. (Fig 2.) In MMBS, each application can be assigned to dedicate computing node(s). Multiple computing nodes can operate together with others as one high performance CPU through virtualization technology as well as work individually as a stand-alone system. The flexibility enhances hardware usage efficiency and reduces TCO for enterprise as well as datacenter.

Green to the world

With the awareness on environment issue, to increase the energy efficiency become one of the important topic of cloud computing. Through Portwell’s outstanding design and engineering capability, MMBS achieves a total power consumption of 18.9W per node. And the highly integrated system dispatches much lower heat in much less volume in compare with traditional rack mount servers. It saves lots of cooling cost and increase the PUE significantly.

MMBS architecture enhances CPU density, shares the common resources of power supply, cooling, bandwidth and management with every computing node. It is designed with features to support the hardware requirements of cloud computing, for which optimized resources distribution, enhanced utilization efficiency, flexible and scalable hardware configuration counts. And as a leading communication appliance provider, Portwell commits with advanced design and engineering expertise in electronics, mechanical construction and system integration with high quality manufacturing capability. In the new cloud computing ear, Portwell is your best choice and trustful Cloud Partner!



CCS-3400/3300

Multi-Motherboard Blade Server (MMBS) With up to 100 computing nodes (200 CPU-cores) in a 4U system



FEATURE

- Extremely high computing density: Up to 100 CPU (200 cores) in 4U enclosure.
- Flexible combination of motherboard and storage devices in each blade.
- Intelligent system management
- 1G/10G external connection via variable application requests.
- Optional external SATA connection for Cloud Storage application.
- Scalable system extension w/ int. PSU (8 blades) or ext. 1U PSU (10 blades)
- High power efficiency: 15W/core.

SPECIFICATION

System

Model	CCS-3300	CCS-3400
Formfactor	4U enclosure	4U enclosure
Max. Blade	8	10
Power Supply	Built-in 1.6KW N+1 redundant PSU	Ext. 1U R/M 2.0KW N+1 redundant PSU
Management	2 hot swappable management modules installed as default	
External Switching	Two external switching available: - 2x GbE ports on each blade as direct connection to ext. switch. - 2 slots for integrated switching module on rear panel, available for 1G or 10G.	
Ext. SATA	1 optional SATA switching module for connection with external storage devices.	
Dimension	443 (W) x 836 (D) x 176 (H) mm	
Operation Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity: 20% to 90% RH	
Storage Environment	- Temperature: 5 to 35°C (41 to 95°F) - Humidity: 5% to 90% RH	
Certification	CE/FCC/UL	

Motherboard

CPU/Chipset	Cavium Octeon™ Plus CN50x0 series with security engine built-in
System Memory	32bit DDR2 SODIMM 400/533/667, up to 1GB
Ethernet	2GbE via RGMII connect with blade-switch.
Storage Device	One CF socket on board
SATA	One SATA interface connects with blade SATA-switch via integrated connector.
Console	One serial port connects with blade selector via integrated connector.
USB	One USB port connects with blade selector via integrated connector.
Dimension	145 (L) x 55 (W) x 29 (H) mm

Blade

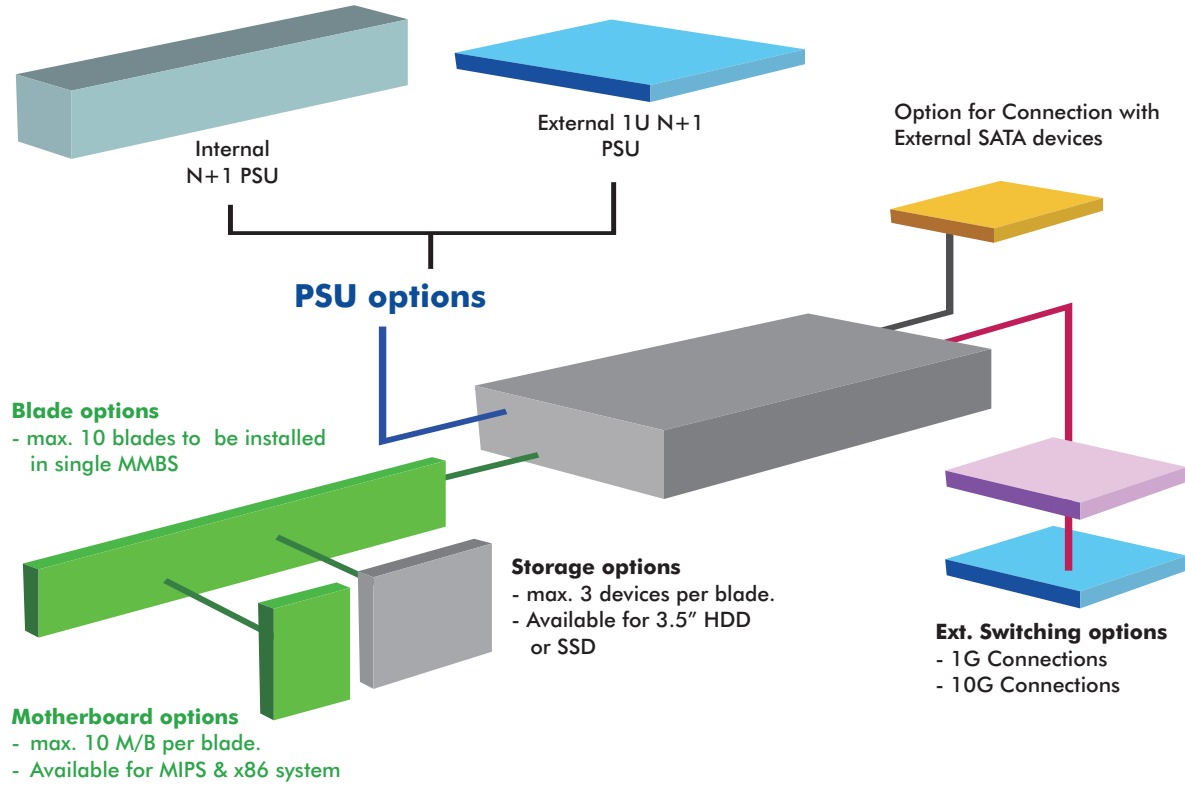
Node numbers	10 node connectors for variable motherboard and storage combinations: (1) 10 motherboards (2) 8 motherboards & 1 3.5" storage device (HDD, SSD) (3) 6 motherboards & 2 3.5" storage device (HDD, SSD) (4) 4 motherboards & 3 3.5" storage device (HDD, SSD)
Front panel I/O	- 2 GbE RJ45 ports - 1 USB port - 1 RJ45 Console port - 1 MB selector with digit-display - 1 LED for blade status - 1 LED for blade fan status - 10 LED for each motherboard status



CCS-3400/3300

Multi-Motherboard Blade Server (MMBS) With up to 100 computing nodes (200 CPU-cores) in a 4U system

System Ordering Block



ORDERING GUIDE

Part No.	Power Supply	Blade	Mgmt Module	SATA Module	SW Module
CCS-3300-4123-000	Int. 1.6kW Red. PSU	8	2	n/a	2x 1G
CCS-3300-4123-001	Int. 1.6kW Red. PSU	8	2	n/a	2x 10G
CCS-3300-4123-002	Int. 1.6kW Red. PSU	8	2	1	1x 1G
CCS-3300-4123-003	Int. 1.6kW Red. PSU	8	2	1	1x 10G
CCS-3400-4123-000	Ext. 2.0kW Red. PSU	10	2	n/a	2x 1G
CCS-3400-4123-001	Ext. 2.0kW Red. PSU	10	2	n/a	2x 10G
CCS-3400-4123-002	Ext. 2.0kW Red. PSU	10	2	1	1x 1G
CCS-3400-4123-003	Ext. 2.0kW Red. PSU	10	2	1	1x 10G

Remarks:

1. Sample availability: 3Q/2010 for system with 1GbE ext. switch, 1Q/2011 for 10G.
2. Systems listed above do not include MB nor storage device.
3. MIPS Motherboard (Cavium CN50x0) is available in 3Q/2010. x86 Motherboard (Intel Tunnel Creek) in 4Q/2010.