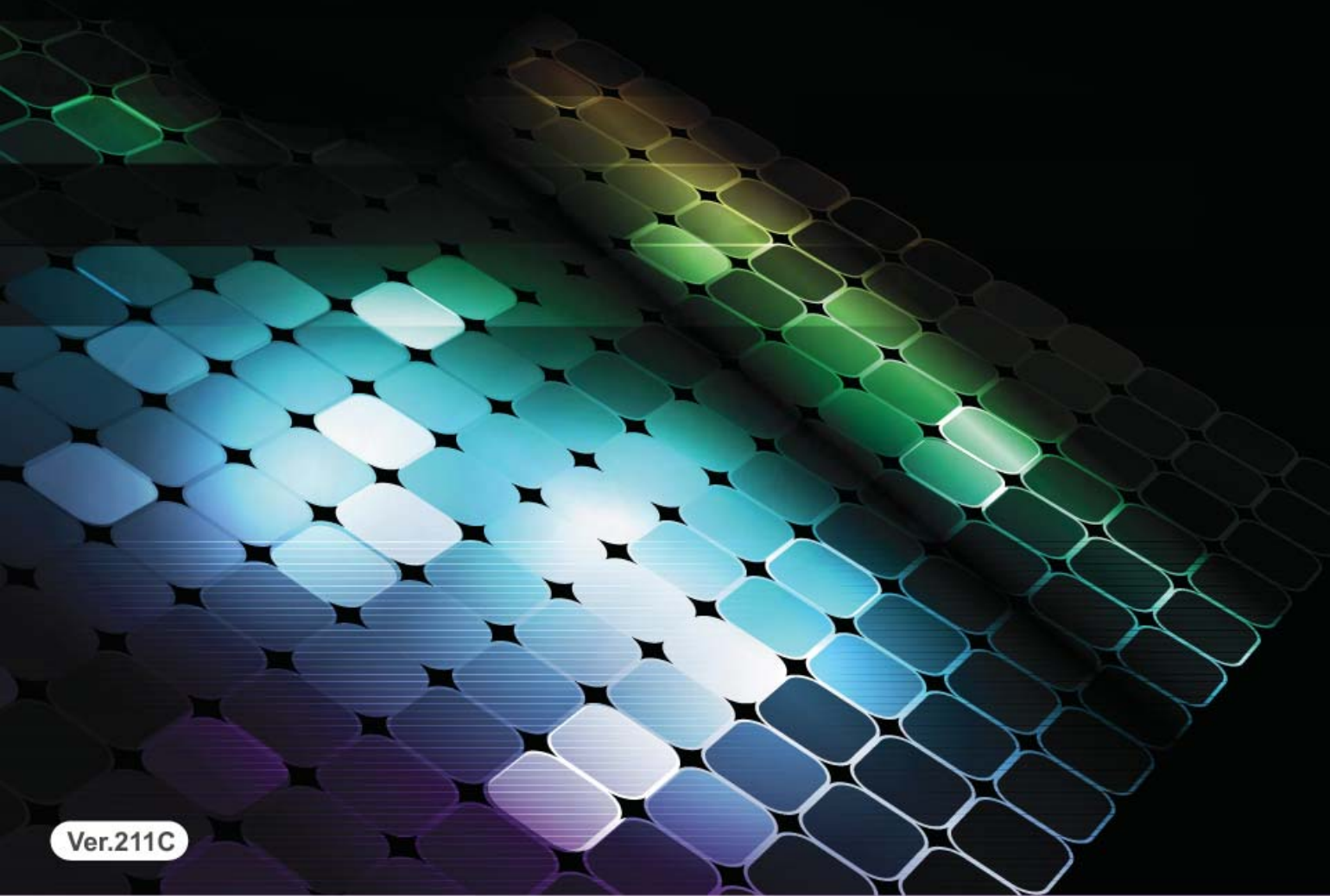
Portwell

Complete Your Solution

www.portwell.com

- Wireless Gateway
- Network Management
  (RAS, QoS, Load Balancing)
- Network Security
  (UTM, Firewall/VPN, IDS/IPS,
  Anti-Spam, Content Filtering)
- VoIP , MMBS and ATCA



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These LABs are all inside PE

These LABs are all inside PE

- Environmental Chamber Lab
- Noise Lab
- Drop & Vibration & Shock Lab
- ESD Lab - Electrostatic Discharge
- EMS Lab - Electro-Magnetic Susceptibility
- IP Lab - International Protection (Rain / Dust test)
- EMI Lab – Electro-Magnetic Interference
- Halt & Hass Lab - Highly Accelerated Life Testing / Highly Accelerated Stress Screen
- Power Lab

These LABs are all inside PE

Portwell performs specific customized tasks from design, system assembly, testing, delivery and installation with high reliability, high availability and high flexibility, which definitely meet some specific requirements in system integration and communication appliance projects. From material purchasing through production, testing, and assembly, we are always your reliable and efficient one-stop service provider.

Portwell's engineers are well-positioned to assist customers with the development of tailored solutions that meet their requirements, especially for network security field. Customers are assured that Portwell products meet the highest quality and reliability standards available. Portwell's products and services always conform to the ISO QA requirements at the strictest level. For many years, Portwell has been the best tier 1 security software company provider.

Over the years, Portwell has been equipped with automatic facilities and flexible assembly lines that provides a network security products including ruggedized rackmount, and high computing and LAN bandwidth with industrial level products.

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ABOUT Portwell

Customized

Scalable

Embedded

Versatile

Company Information

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 Alliance, 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.

Mission & Focus

Portwell's mission is to provide all human with complete network access, to the complete solution for life. Focusing on niche market, in providing innovation and technology as number one priority, the following with sales and profit.

Portwell is not only leading in Network Security Market (Firewall, VPN, UTM, etc.), but also investing resources in Telecom Voice Appliance for CPE Enterprise use, Network Attached Storage, and Cloud Computing Modular Servers.

Why Portwell Communication Appliance?

- Allow ISV entering the market with shorter time-to-market and lowest cost for a complete platform
- Allow ISV offering end-users with Plug-and-Play solution.
- Allow ISV promoting solutions with own brand image exposure.
- Allow ISV concentrating on software development without hardware headaches.
- Allow ISV providing preloaded complete system instead of software only solution.

ABOUT Portwell

Benefits to Our Customers

- **Faster time-to-market**

Customer can port/develop their software to/on our ready-to-ship solution for time-to-market.

- **Better products scalability and coverage**

Select from our wide range of solutions to scale your products. Portwell not only provides board level solutions but system and peripheral level solutions as well.

- **Leading edge hardware innovation**

You can always trust the most leading-edge products from Portwell because of our dedication to hardware platform development.

- **Free of inventory and manufacturing hassle**

Independent software venders can team up with Portwell to provide solutions to system integrators or end-users without manufacturing and inventory hassles.

What Value-added services will Portwell offer?

Hardware platform development

- Scalable and flexible appliance platform easy for Build-to-order business demand
- The minimum 3-year H/W lifecycle maintenance
- Dedicated and embedded system design for not only reliability but also ergonomic advantage
- Advanced thermal design to assure product stability
- Provide HDD, CF, and DOM storage solution
- Watchdog timer prevents the software lockup
- Redirect to console BIOS allows user to operate system through serial port
- Validated with embedded Linux and FreeBSD
- Load factory-default mechanism
- Multiple listing available on CE, FCC, and UL

Manufacturing

- In-house design, engineering, manufacturing, system integration to assure comprehensive quality and revision control
- ISO 14001 and ISO 9001 certified manufacturing facility
- Flexible to accept low- to high-volume requirement
- Manufacturing guide to flaw-less assurance
- Integration service for OS and AP loading

Private-label branding

- Custom BIOS splash screen
- Chassis desired color and Private-logo bezel printing
- Private branded packaging
- Data label with production number control, EMC and Safety mark
- Drop-shipment for global logistic service

REFERENCE TABLE

< X86 Architecture >

MODEL	CAR-5010	CAR-5000
Sub-Model	-4300	-4520
Chipset	Tylersburg / Intel® 5520	Intel® 3420
Launch Date	Q1`09	Q3`09
CPU (Max.)	Nehalem-EP / Westmere-EP	Intel® C5500/C3500 series
RAM (Max.)	48G	48G
Ethernet		
Fiber	Optional	0
Copper GbE	Optional	4
10/100 FE	1	1
Bypass Seg.	Optional	2
Expansion Slot	Optional one PCI-E x4 & PCI-E x8 slot	Optional one PCI-E x4 & PCI-E x8 slot
Storage Device		
SATA HDD	Two Removable 3.5" HDDs	Two 3.5" HDDs or Six 2.5" HDDs
CF	Optional	Optional
DOM	Optional	Optional
DOC	N/A	N/A
Serial Port		
Console	RJ45 on the front panel	RJ45 on the front panel
LCD module optuon	EZIO-300 EZIO-G400 EZIO-500(Project base)	EZIO-300 EZIO-G400 EZIO-G500(Project base)
LEDs	Power, Data-access, Lan status & speed, Bypass	Power, Data-access, Lan status & speed, Bypass
SATA	4 SATA-II connectors	6 SATA-II connectors
IDE	CF Socket	CF Socket
USB	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel
VGA	2X5 pin-connector	2X5 pin-connector
Power	500W redandant PSU	500W redandant PSU
Height (U)	2	2
Dimension (WxDxH)	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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REFERENCE TABLE

< x86 Architecture >

MODEL	NAR-7100		NAR-7102	CAR-4010
Sub-Model	-1414	-1014	-1011	-3820
Chipset	Tylersburg/Intel® 5520		Tylersburg/Intel® 5520	Intel® C206
Launch Date	Q1`09		Q1`09	Q1`11
CPU (Max.)	Nehalem-EP/ Westmere-EP		Nehalem-EP/ Westmere-EP	Xeon® E3-series CPU
RAM (Max.)	40G		40G	8G
Ethernet				
Fiber	0	4	0	4
Copper GbE	14	6	10	4
10/100 FE	0	0	0	0
Bypass Seg.	0	0	0	2
Expansion Slot	Two PCI-X or TwoPCI-E x 8		One PCI-E x8	One PCI-E x8 & One PCI-E x16
Storage Device				
SATA HDD	Two Removable 3.5" HDDs		Two 2.5" HDDs	One 3.5" (Removable)HDD Two 2.5" (Removable)HDDs
CF	Optional		Optional	Optional
DOM	Optional		Optional	N/A
Serial Port				
Console	RJ45 on front panel		RJ45 on front panel	RJ45 on front Panel
LCD module option	EZIO-300 EZIO-G400 EZIO-G500 (Project base)		EZIO-300 EZIO-G400 EZIO-G500 (Project base)	EZIO-300 EZIO-G400 EZIO-G500 (Project base)
LEDs	Power, Data-access, status		Power, Data-access, status	Power, Data-access, LAN status & Speed, Bypass
SATA	4 SATA II connectors		4 SATA II connectors	4 SATA II connectors
USB	Two USB 2.0 on the front panel		Two USB 2.0 on the front panel	Two USB 2.0 on the front panel
VGA	2x5 pin-connector		2x5 pin-connector	2x5 pin connector
Power	500W redundant ATX		275W redundant ATX	80Plus 250W full-range ATX
Height (U)	2		1	1
Dimension (WxDxH)	431.8x580x88mm 17"x22.8"x3.5"		443x556X44mm 17.4""x21.9"x1.73"	438(W) x 508(D) x 44(H) mm 17.24"(W) x 20"(D) x 1.73"(H)
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Model	CAR-4000	CAR-4003	CAR-3005/3006/3007
Sub-Model	-4C22	-4D22	-3620
Chipset	Fox Hollow / Intel® 3420	Fox Hollow / Intel® 3420	Eaglelake Intel® G41
Launch Date	Q3`09	Q3`09	Q3`08
CPU (MAX.)	Intel®Xeon® X3400 Intel® Xeon® L3400 Intel Corei3/i5 processor	Intel® Xeon® X3400 Intel® Xeon® L3400 Intel Corei3/i5 processor	Core 2 Duo Core 2 Quad
RAM (MAX.)	16G	16G	8G
Ethernet			
Fiber	0	0	0
Copper GbE	12	12	6
10/100 FE	0	1	0
Bypass Seg.	12	12	2
Expansion Slot	Optional one PCI-E x4 slot	Optional one PCI-E x4 slot	Two PCI-E x 8 slots
Storage Device			
SATA HDD	One 3.5" or two 2.5" HDDs	One 3.5" or two 2.5" HDDs	One 3.5" or 2.5" 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 option	EZIO-300 EZIO-G400	EZIO-300 EZIO-G400	EZIO-300 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 connectors	2 SATA-II connectors	2 SATA-II connectors
USB	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel
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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REFERENCE TABLE

< x86 Architecture >

MODEL	CAR-3000	CAR-2010
Sub-Model	-3620	-3400
Chipset	Eaglelake / Intel®G41	Eaglelake /Intel®G41
Launch Date	Q3`08	Q3`08
CPU (Max.)	Core 2 Duo Core 2 Quad	Celeron 440
RAM (MAX.)	8G	8G
Ethernet		
Fiber	0	0
Copper GbE	6	4
10/100 FE	0	0
Bypass Seg.	2	0
Expansion Slot	One PCI-E x8 slot	One PCI-E x8 slot (Project Base)
Storage Device		
SATA HDD	One 2.5" or 3.5" HDD	One 2.5" or 3.5" SATA HDD
CF	Optional	Optional
DOM	Optional	Optional
Serial Port		
Console	RJ45 on front panel	RJ45 on front panel
LCD module option	EZIO-300 EZIO-G400	EZIO-300 EZIO-G400
LEDs	Power, Data-access, Lan status & Speed, Bypass	Power, Data-access, Lan status & Speed.
SATA	2 SATA II connectors	2 SATA II connectors
USB	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel
VGA	2x5 pin-connector	2x5 pin-connector
Power	200W full-range ATX	100W full-range ATX
Height (U)	1	1
Dimension (WxDxH)	443x292.1X44mm 17.45""x11.5"x1.73"	438 x 292.1 x 44 mm 17.25" x 11.5" x 1.73"
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Model	CAR-1000	CAD-0210	CAD-0205		CAD-0208	
Sub-Model	-3622	-3622	-3421	-3401	-3422	-3402
Chipset	Luna pier	Luna pier	Luna pier			
Launch Date	Q1 '10	Q1 '10	Q1`10			
CPU (Max.)	Atom D510 1.66GHz	Atom D510 1.66GHz	Pineview M / D			
RAM (MAX.)	4G	4G	2G			
Ethernet						
Fiber	0	0	0	0	0	0
Copper GbE	6	6	4	4	4	4
10/100 FE	0	0	0	0	0	0
Bypass Seg.	2	2	2	0	2	0
Expansion Slot	One Mini-PCI slot	One Mini-PCI slot One PCI slot (Optional)	One Mini PCI-E			
Storage Device						
SATA HDD	3.5"HDD or 2.5"HDD	One 2.5" HDD	One 2.5" HDD			
CF	Optional	Optional	Optional			
DOM	N/A	N/A	N/A			
Serial Port						
Console	RJ45 on front panel	RJ45 on front panel	RJ45 on rear panel			
LCD module option	EZIO-300 EZIO-G400	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-II connectors	2 SATA-II connectors	Optional			
USB	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel	Two USB 2.0 on the front panel			
VGA	2x5 pin-header	2x5 pin-header	2x5 pin-connector			
Power	80W open frame AT	60W adapter	60W power adapter			
Hetight (U)	1	Desktop	1			
Dimension (WxDxH)	428 x 255 x 44 mm 16.8" x 10.0" x 1.7"	250 x 213 x 55 mm 9.8" x 8.4" x 2.2"	180x150X42mm 7.1""x5.9"x1.65"		300x145x44mm 11.8"x5.9"x1.73"	
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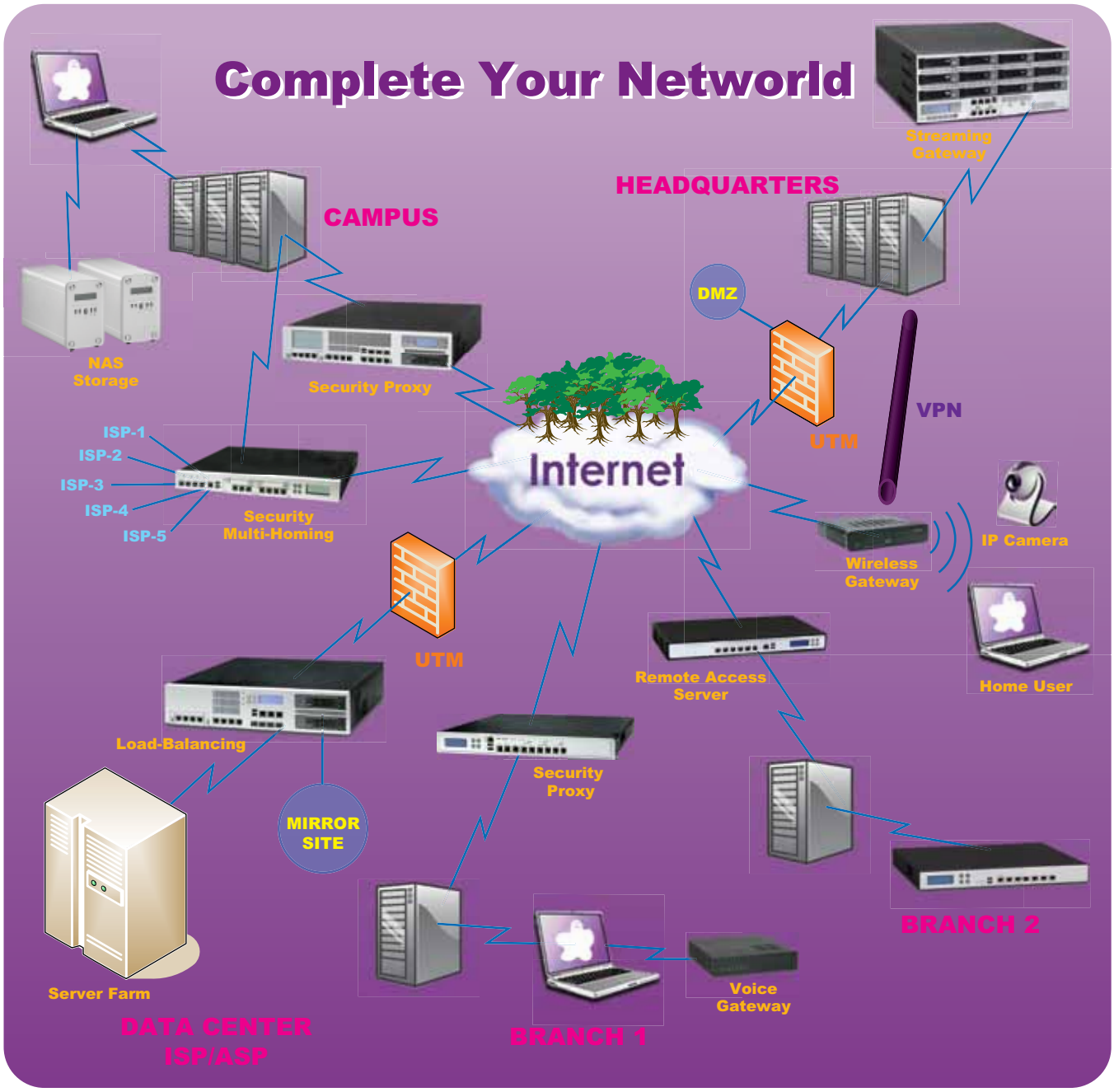
CA Application Diagram



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

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

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 24 GbE 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 HDDs - Compact Flash socket on-board
Serial Port	- One RJ45 connector for system console - Two 2x5 pin-connectors
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	EZIO-300 or EZIO-G400	One PCI-E x4 One PCI-E x8

CAR-5010

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

Casewell PCI-Express Gen.2

PCI-Express Gen2

LAN module		Ethernet Controller	Interface	Bypass
NIP-53020		intel® 82599ES	2 10GbE SFP+	0
NIP-53120		intel® 82599ES	2 10GbE SFP+	1
NIP-51080		intel® 82580EB	8 GbE RJ45	0
NIP-51240		intel® 82580EB	4 GbE RJ45	2
NIP-52080		intel® 82580EB	8 GbE SFP	0
NIP-52120		intel® 82580DB	2 GbE SFP	1

Casewell NIP

ABN-668		intel® 82575EB	8 GbE SFP	0
ABN-664		intel® 82575EB	4 GbE SFP	0
ABN-482		intel® 82571EB	2 GbE SFP	1
ABN-458		intel® 82571EB	8 GbE RJ45	0
ABN-454		intel® 82571EB	4 GbE RJ45	0
ABN-484L		intel® 82574L	4 GbE RJ45	2
ABN-454L		intel® 82574L	4 GbE RJ45	0

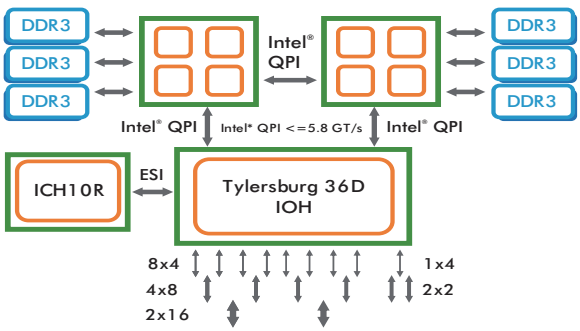
CPU	Clock	Core/Thread	QPI	Cache	Memory	TDP	Turbo	Socket
E5645	2.40	6/12	5.86	12MB	1333	80W	YES	LGA1366
E5620	2.40	4/8	5.86	12MB	1066	80W	YES	LGA1366
L5638	2.00	6/12	5.86	12MB	1333	60W	YES	LGA1366
L5618	1.87	4/8	5.86	12MB	1066	40W	YES	LGA1366
E5540	2.53	4/8	5.86	8MB	1066	80W	YES	LGA1366
E5504	2.00	4/4	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

Processor Core

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

Block Diagram

Quad Core 2S configuration shown



CAR-5000

Jasper Forest(Intel 3420), up to 26 GbE ports, PCI-Express 2.0,IPMI v2.0

FEATURE

- Intel® Xeon® proccessor with integrated memory and PCI-Express 2.0 controllers
- Intel® Turbo Boost and power efficiency
- IPMI V2.0 with iKVM
- Ready for PCI-E 2.0 5GT/s solution
- Removable Ethernet and HDD expasion 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 PCI-E GbE ports for management - Capable for three flexible NIP modules, up to 24 GbE ports
Expansion Slot	One PCI-E x8 and two PCIe x4 slots (optional)
Storage Device	- Up to two 3.5" or eight 2.5" SATA HDDs - 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

Casewell *PCI-Express Gen.2*

LAN module		Ethernet Controller	Interface	Bypass
NIP-53120		intel®82599ES	2 10G SPF+	1
NIP-55140		intel®82580EB	2 GbE RJ45 & 2GbE SFP	1
NIP-53020		intel®82599ES	2 10G SFP+	0
NIP-52080		intel®82580EB	8 GbE SFP	0
NIP-52040		intel®82580EB	4 GbE SFP	0
NIP-51080		intel®82580EB	8 GbE RJ45	0
NIP-51240		intel®82580EB	4 GbE RJ45	2
NIP-51040		intel®82580EB	4 GbE RJ45	0

Casewell *NIP*

ABN-668		intel®82575EB	8 GbE SFP	0
ABN-482		intel®82571EB	2 GbE SFP	1
ABN-484L		intel®82574L	4 GbE RJ45	2
ABN-484		intel®82571EB	4 GbE RJ45	2
ABN-464		intel®82571EB	4 GbE SFP	0
ABN-458		intel®82574L	8 GbE RJ45	0
ABN-454L		intel®82574L	4 GbE RJ45	0
ABN-454		intel®82571EB	4 GbE RJ45	0

CPU	Clock	Core/Thread	QPI	L3 Cache	Memory	MAX TDP	Turbo	Socket
LC5528	2.13	4C/8T	4.8	8MB	1066	60W	YES	LGA1366
LC5518	1.73	4C/8T	4.8	8MB	1066	48W	YES	LGA1366
EC5549	2.53	4C/8T	5.87	8MB	1333	85W	YES	LGA1366
EC5539	2.27	2C/2T	5.87	4MB	1333	65W	NO	LGA1366
EC5509	2.0	4C/4T	4.8	8MB	1066	85W	NO	LGA1366
LC3528	1.73	2C/4T	N/A	4MB	1066	35W	YES	LGA1366
LC3218	1.73	1C/1T	N/A	2MB	800	23W	NO	LGA1366
EC3539	2.13	4C/4T	N/A	8MB	1066	65W	NO	LGA1366
P1053	1.3	1C/2T	N/A	2MB	800	30W	NO	LGA1366

NAR-7100

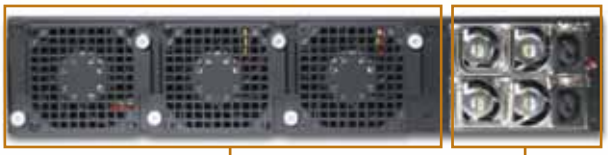
Tylersburg platform (Intel 5520), Up to 26 GbE ports

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
- Suppot 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	- Support DDR 800/1066/1333 /DIMM - Support up to 40 GB RDIMM
Ethernet Port	- Two PCI-E GbE ports for management - Capable for three flexible NIP modules, up to 24 GbE 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 HDDs - 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 or EZIO-G400	Optional
NAR-7100-1014-000	6 Copper GbE ports & 4 Fiber GbE ports	EZIO-300 or EZIO-G400	Optional

NAR-7100

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

Casewell *PCI-Express Gen.2* NIP

PCI-Express Gen2

LAN module	Ethernet Controller	Interface	Bypass
NIP-53020	intel® 82599ES	2 10GbE SFP+	0
NIP-53120	intel® 82599ES	2 10GbE SFP+	1
NIP-51080	intel® 82580EB	8 GbE RJ45	0
NIP-51240	intel® 82580EB	4 GbE RJ45	2
NIP-52080	intel® 82580EB	8 GbE SFP	0
NIP-52120	intel® 82580DB	2 GbE SFP	1

Casewell NIP

ABN-464	Intel® 82571EB	4 GbE SFP	0
ABN-458	intel® 82571EB	8 GbE RJ45	0
ABN-484	Intel® 82571EB	4 GbE RJ45	2
ABN-522	Intel® 82598EB	2 GbE SFP+	0
ABN-454	Intel® 82571EB	4 GbE RJ45	0
ABN-454L	Intel® 82574L	4 GbE RJ45	0
ABN-484L	Intel® 82574L	4 GbE RJ45	2
ABN-668	Intel® 82575EB	8 GbE SFP	0
ABN-482	Intel® 82571EB	2 GbE SFP	1

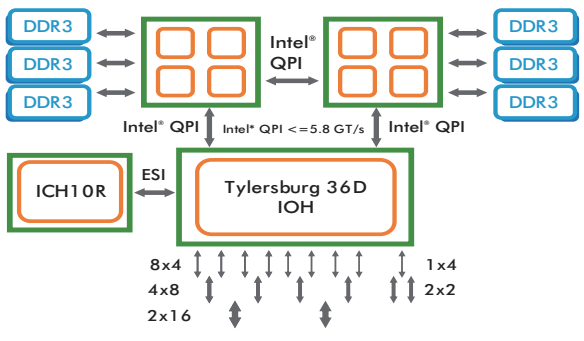
CPU	Clock	Core/Thread	QPI	Cache	Memory	TDP	Turbo	Socket
E5645	2.40	6/12	5.86	12MB	1333	80W	YES	LGA1366
E5620	2.40	4/8	5.86	12MB	1066	80W	YES	LGA1366
L5638	2.00	6/12	5.86	12MB	1333	60W	YES	LGA1366
L5618	1.87	4/8	5.86	12MB	1066	40W	YES	LGA1366
E5540	2.53	4/8	5.86	8MB	1066	80W	YES	LGA1366
E5504	2.00	4/4	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

Processor Core

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

Block Diagram

Quad Core 2S configuration shown



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 modulees up to 8 GbE ports
Expansion Slot	One PCI-E x8 slot
Storage Device	- Up to two SATA 2.5" HDDs - Compact Flash socket on-board
Serial Port	- One front accessible RJ45 connector for system concole - Two 2X5 pin-connectors
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

Option CPUs

CPU	Cores/Threads	Frequency	Cache	TPD
E5645	6/12	2.40 GHz	12M	80W
E5620	4/8	2.40 GHz	12M	80W
L5638	6/12	2.00 GHz	12M	60W
L5618	4/8	1.87 GHz	12M	40W
E5540	4/8	2.53 GHz	8M	80W
E5504	4/4	2.00 GHz	4M	80W
E5518	4/8	2.13 GHz	8M	60W
E5508	2/4	2.00 GHz	8M	38W

Redundant 275W ATX PSU

Optional NIC

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

ORDERING GUIDE

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

CAR-4010

Intel Xeon E3-1200 Series Sandy Bridge (C206), up to 16 GbE ports, PCI-E 2.0

FEATURE

- Support Intel® LGA1155 Xeon® CPU
- 4 DIMMs DDR3 (Dual-channel)
- 8 GbE ports (PCI-E 2.0) / 2 x Bypass Gen2.0
- Expandable with 8 GbE ports (RJ45 or SFP)
- IPMI v2.0 with iKVM

SPECIFICATION

CPU Board	- Intel® LGA1155 Xeon® E3-series CPU - Intel® C206 PCH with DMI 5GT/
System Memory	- Dual channel DDR3 with four 240-pin DIMM sockets - Supports DDR3 1333/1066 up to 8 GB
Ethernet Port	- 8 GbE RJ45 ports or 4 GbE + 4 GbE SFP ports
PCI Expansion	- PCI-E x8 golden finger for proprietary interface - PCI-E x16* golden finger for standard interfac
Storage Device	- Optional one/two 3.5" or two/four 2.5" (Removable) 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	- Optional 80Plus 250Wfull-range ATX - Optional 275W Redundant - Optional 250W DC48V Input
Dimension	- 438(W) x 508(D) x 44(H) mm - 17.24"(W) x 20"(D) x 1.73"(H)
Operation 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

▲Single ATX PSU

▲Redundant PSU

▲DC Input PSU

Optional NIC

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

ORDERING GUIDE

Model	Ethernet	Gen.2 Bypass	EZIO	PCI-E Expansion
CAR-4010	4 GbE RJ45 ports 4 GbE SFP ports	2	Optional	2**

* PCI-E x16 interface offers one PCI-E x8 & one PCI-E x4 bandwidth
** One PCI-E x8 & One PCI-E x16

Optional CPUs

Model	Cores/ Threads	Frequency	Cache	TPD
E3-1275	4/8	3.40 GHz	8M	95 W
E3-1225	4/4	3.10 GHz	6M	95 W
i3-2120	2/4	3.30 GHz	3M	65 W

CAR-4003

FoxHollow platform (Intel 3420), up to 20 GbE ports, PCI-Express 2.0,IPMI v2.0

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 PCI-E 2.0 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 HDDs - 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

Optional CPUs

Model	Cores/Threads	CPUs	Cache	TDP
Xeon X3450	4/8	2.67GHz	8M	95W
Xeon X3430	4/8	2.4GHz	8M	95W
Corei5-660	2/4	3.33GHz	4M	73W
Corei3-540	2/4	3.06GHz	4M	73W
Pentium G6950	2/2	2.8GHz	3M	73W

ORDERING GUIDE

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

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-53120	82599ES	2 10G SFP+	1
NIP-55140	82580EB	2 SFP & 2 RJ45	1
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	82571EB	8 GbE RJ45	0
ABN-454L	82574L	4 GbE RJ45	0
ABN-454	82571EB	4 GbE RJ45	0

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 PCI-E2.0 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 PCI-E2.0)
Bypass feature	Up to 6 Gen.2 bypass segments
Storage Device	- One 3.5" or two 2.5" SATA HDDs - 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	Cores/Threads	Frequency	Cache	TDP
Xeon X3450	4/8	2.67GHz	8M	95W
Xeon X3430	4/8	2.4GHz	8M	95W
Corei5-660	2/4	3.33GHz	4M	73W
Corei3-540	2/4	3.06GHz	4M	73W
Pentium G6950	2/2	2.8GHz	3M	73W

ORDERING GUIDE

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

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-55140	82580EB	2 SFP & 2RJ45	1
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	82571EB	8 GbE RJ45	0
ABN-454L	82574L	4 GbE RJ45	0
ABN-454	82571EB	4 GbE RJ45	0

CAR-3005/6/7

Eaglelake (G41), 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)
- Single ATX, Redundant ATX or DC48V PSU

▲ CAR-3005

▲ CAR-3006

▲ CAR-3007

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 8 GB
Ethernet Port	up to 14 GbE ports
Bypass feature	2 Gen2.0 segments
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), 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

Optional NIC

LAN Module	Ethernet Controller	Interface	Bypass
NIP-51040	82580EB	4 GbE RJ45	0
NIP-51240	82580EB	4 GbE RJ45	2
NIP-52040	82580EB	4 GbE Fiber	0
NIP-52120	82580DB	2 GbE Fiber	1
NIP-52080	82580EB	8 GbE Fiber	0
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	82574L	4 GbE RJ45	2
ABN-454L	82574L	4 GbE RJ45	0

Optional CPUs

Model	Cores	Frequency	Cache	TDP
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	2.33 GHz	4M	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

CAR-3000

Eaglelake (G41), 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 8 GB
Ethernet Port	up to 14 GbE ports
Bypass feature	2 Gen2.0 segments
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), 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-51040	82580EB	4 GbE RJ45	0
NIP-51240	82580EB	4 GbE RJ45	2
NIP-52040	82580EB	4 GbE Fiber	0
NIP-52120	82580DB	2 GbE Fiber	1
NIP-52080	82580EB	8 GbE Fiber	0
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	82574L	4 GbE RJ45	2
ABN-454L	82574L	4 GbE RJ45	0

Optional 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	2.33 GHz	4M	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

CAR-2010

Eaglelake (G41), up to 4GbE 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 8 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 (samples for project base only)

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

* Project base

CAR-1000

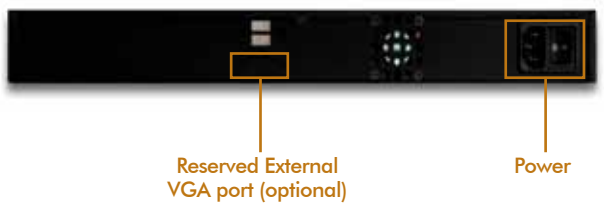
Luna pier platform, 6 GbE ports

FEATURE

- Price-competitive rackmount network
- Best performance per watt
- Energy saving
- Support DDR2 memory, up to 4GB
- One Mini PCI slot for expansion

SPECIFICATION

CPU Board	-Intel® Atom Pineview-M/D Processors -Intel® 82801HM I/O Controller (ICH8M)
System Memory	-Two 200-pin SODIMM socket -Supports DDR2 800/667,un-buffered, none ECC up to 4GB (Based on CPU specification)
Ethernet Port	Up to Six Gigabit Ethernet ports via Intel 82583V Ethernet controller
Bypass function	Up to Two Gen.1.5 bypass segments
Expansion Slot	One mini PCI-E slot and one PCI slot
Storage Device	- Support 3.5" or 2.5" SATA HDD - Compact Flash socket on-board
Serial Port	- One RJ45 connector for system console
LED	Power status, Data access, Ethernet status/speed and Bypass status
USB	Two USB 2.0 ports, front access; One internal USB 2.0 port
VGA	Built-in on-board 2x5 pin-header
Power	80W Open frame PSU
Dimension	428(W) x 255(D) x 44(H) mm 16.8"(W) x 10.0"(D) x 1.7"(H)
Packing Dimension	540(W) x 390(D) x 175(H) mm 21.3" (W) x 15.4 (D) x 6.9(H)
Packing Dimension (2 in1 outer carton)	560(W) x 410(D) x 395(H) mm 22.1"(W) x 16.1"(D) x 15.6"(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

Model	CPU	GbE Port	Gen.2 Bypass	EZIO	Mini PCI slot
CAR-1000-3622-000	Atom D510 1.66GHz	6	2	Optional	1

CAD-0210

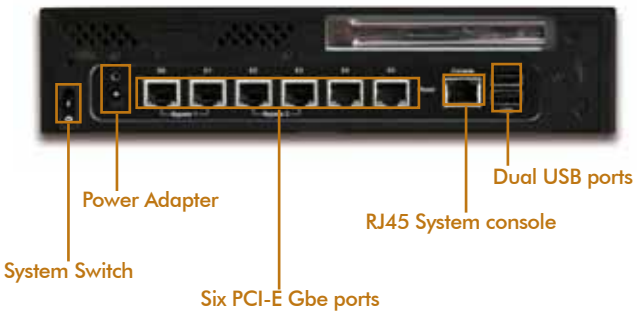
Luna pier platform, 6 GbE ports

FEATURE

- Price-competitive desktop network appliance
- Best performance per watt
- Energy saving
- Support DDR2 memory, up to 4GB
- Support PCI and Mini PCI slot for expansion

SPECIFICATION

CPU Board	- Intel® Atom Pineview-M/D Processors - Intel® 82801HM I/O Controller (ICH8M)
System Memory	- Two 200-pin DIMM socket - Supports DDR2 800/667,un-buffered, none ECC up to 4GB (Based on CPU specification)
Ethernet Port	Up to Six Gigabit Ethernet ports via Intel 82583V Ethernet controller
Bypass function	Up to Two Gen.1.5 bypass segments
PCI Expansion	- One mini PCI-E slot and one PCI slot
Storage Device	- Support 2.5" SATA HDD - Compact Flash socket on-board
Serial Port	- One RJ45 connector for system console
LEDs	- Power status, Data access, Ethernet status/speed and Bypass status
VGA	- Optional
USB	- Two USB 2.0 ports, front access; One internal USB 2.0 port
Power	- 60W Adapter
Dimension	- 250(W) x 213(D) x 55(H) mm - 9.8"(W) x 8.4"(D) x 2.2"(H)
Package Dimension (Inner carton)	- 315(W) x 300(D) x 145(H) mm - 12.4" (W) x 11.8 (D) x 5.7(H)
Package Dimension (2 in1 outer carton)	- 335(W) x 320(D) x 345(H) mm - 13.2"(W) x 12.6"(D) x 12.8"(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

Model	CPU	GbE Port	Gen.2 Bypass	PCI slot	Mini PCI slot
CAD-0210-3622-000	Atom D510 1.66GHz	6	2	Optional	1

CAD-0205/0206/0208

Luna pier platform, 4 GbE ports

▲ CAD-0205

▲ CAD-0206

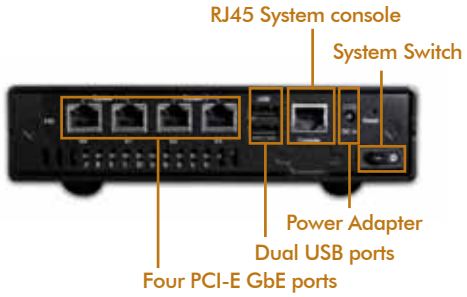
▲ CAD-0208

FEATURE

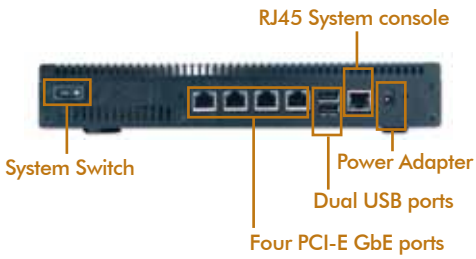
- Price-competitive desktop network appliance
- Fanless solution
- Energy and space saving
- Support for IA 32-bit and Intel 64 Technology
- Support Mini PCI-E interface for expansion

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 Ethemet ports via Intel® 82583V Ethemet 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 / 300(W) x 145(D) x 44(H) mm 7.1"(W) x 5.9"(D) x 1.65"(H) / 11.8"(W) x 5.9"(D) x 1.73"(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



▲ CAD-0205



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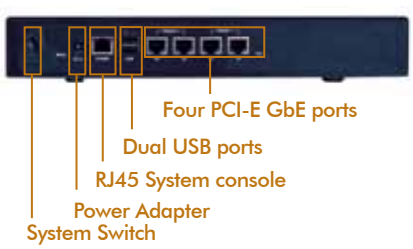


▲ CAD-0208

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

Model Selection Guide

x86 Platform

Model	LAN ports*1					Max. Bypass		Expansion					EZIO			IPMI
	On board	NIC	Total	Fiber	10 G	Gen. 1.5	Gen 2	Mini PCI	Mini PCI-E	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*3
NAR-7102	2	16	18	V	V		4					V	V	V	V	
CAR-4010	8	8	16	V	V		4					V	V	V	V	V
CAR-4003		20	20	V	V		6					V	V	V	V	V
CAR-4000		20	20	V	V		6					V	V	V	V	
CAR-300X	6	8	14	V	V		4					V	V	V	V	
CAR-2010	4		4									V	V	V	V	
CAR-1000	6		6			2		V					V	V		
CAD-0210	6		6			2		V		V						
CAD-020X	4		4			2			V							

MIPS Platform

Model	LAN ports*1					Max. Bypass		Expansion					EZIO			IPMI
	On board	NIC	Total	Fiber	10 G	Gen. 1.5	Gen 2	Mini PCI	Mini PCI-E	PCI	PCI-X	PCI-E	16x2	128x32	128x64*2	
CAK-3000	6	4	10	V			2					V	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 third party solution

Portwell Proprietary NICs

Portwell module

LAN module	Specification		
	Chipset	Ethernet	Bypass
NIP-52020	Intel® 82580DB	2 GbE Fiber	0
NIP-51040	Intel® 82580EB	4 GbE Copper	0
NIP-51080	Intel® 82580EB	8 GbE Copper	0
NIP-51240	Intel® 82580EB	4 GbE Copper	2
NIP-52040	Intel® 82580EB	4 GbE Fiber	0
NIP-52080	Intel® 82580EB	8 GbE Fiber	0
NIP-52120	Intel® 82580DB	2 GbE Fiber	1
NIP-53020	Intel® 82599ES	2 10G Fiber	0
NIP-53120	Intel® 82599ES	2 10G Fiber	1
NIP-55140	Intel® 82580EB	2 GbE Fiber & 2 Gbe Copper	1
NIP-61040	Cavium CN5430	4 GbE Copper	0
NIP-61080	Cavium CN5640	8 GbE Copper	0

NIP-52020/55140

2 port GbE Fiber w/ Intel® 82580DB
2 port GbE Fiber and 2 port GbE copper w/ Gen-2 Bypass and Intel®82580EB

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

4 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

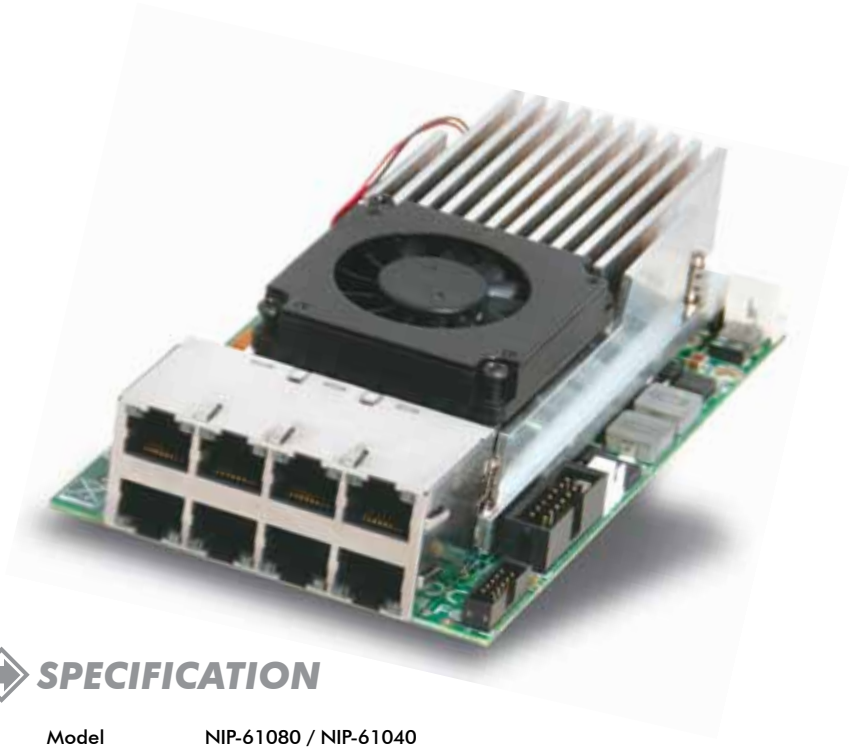
NIP-61080/NIP-61040

8/4 port copper w/ Cavium CN5640/CN5430

NOTE: Fiber Bypass is optional for project base

NIP-61080/NIP-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 / NIP-61040
Form Factor	Portwell Proprietary PCI-E module for NAR-7100, CAR-4000 ,CAR-4010 & 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	Portwell Proprietary PCI-E module for NAR-7100, CAR-4000, CAR-4010 & CAR-5000 series.
Processor	Cavium Octeon™ Plus CN5430-600BG1217-NSP-G
Ethernet Port	4x RJ454 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

Reference Table

Portwell module

LAN module	Specification		
	Chipset	Ethernet	Bypass
ABN-454	Intel® 82571EB	4 GbE Copper	0
ABN-454L	Intel® 82574L	4 GbE Copper	0
ABN-458	Intel® 82571EB	8 GbE Copper	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® 82574L	4 GbE Copper	2
ABN-522	Intel® 82598EB	2 10G Fiber	0
ABN-664	Intel® 82575EB	4 GbE Fiber	0
ABN-668	Intel® 82575EB	8 GbE Fiber	0

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 and 2 Gen-2
bypass w/ Intel® 82571EB

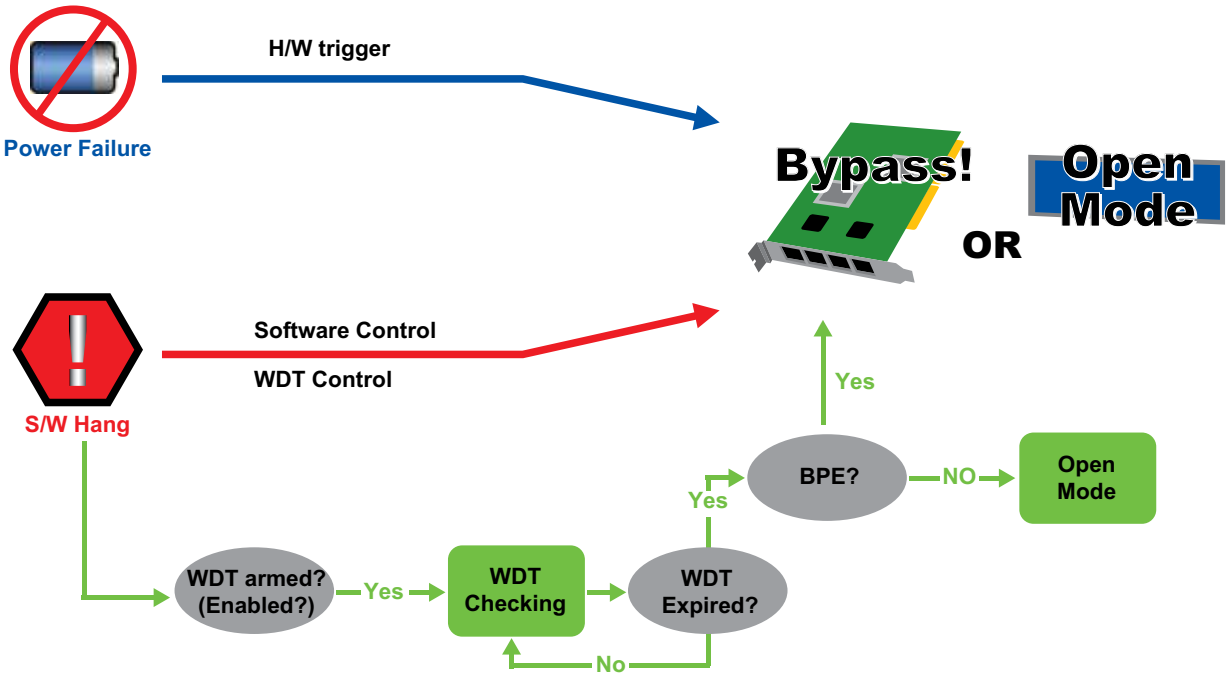
ABN-484L
4 port copper and 2 Gen-2
Bypass w/ Intel® 82574L

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

Portwell Gen2 Bypass



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

Portwell 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

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 PCI-E v2.0 5GT/s solution

SPECIFICATION

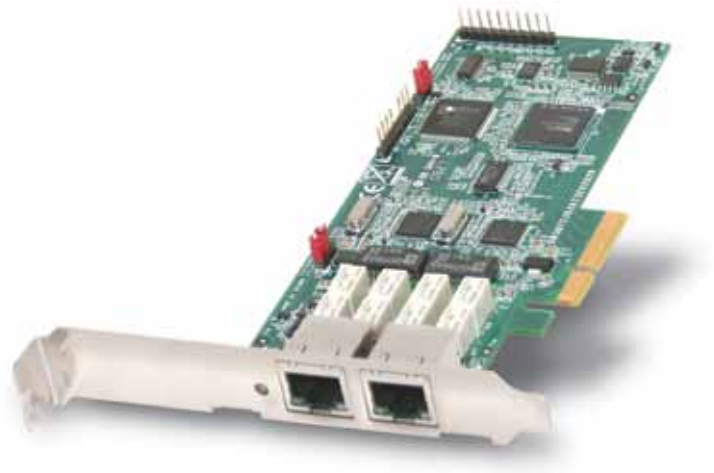
Model	NIC-51240
Ethernet Port	Intel® 82580EB, support 8 transmit/receive queues
Bus Type	PCI-Express x4
Compliance	- IEEE 802.3 auto-negotiation for 1000BASE-T, 100BASE-TX, and 10BASE-T applications - IEEE 802.3x and 802.3z flow control supported
Watchdog Timer	Built-in watchdog timer bypass Ethernet 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)

ORDERING GUIDE

Part No.	Description
NIC-51240	Quad port Server Adapter, PCI-Express v.2.0, 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

Model	ABN-262
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

LCD Module

Character and Graphical display

EZIO-350

16x2 characters External LCD Module

FEATURE

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

EZIO-300

16x2 characters LCD Module

FEATURE

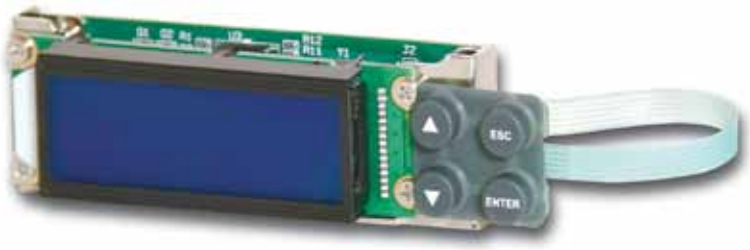
- Communication protocol RS-232
- 4 buttons
- Blue background and white character
- Dimension: 87(W) x 30(H) x 31.85(T)mm

LCD Module

Character and Graphical display

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

Portwell 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 allowing out-of-band access, monitor and administration - a more effective and efficient way to manage your computing environment.

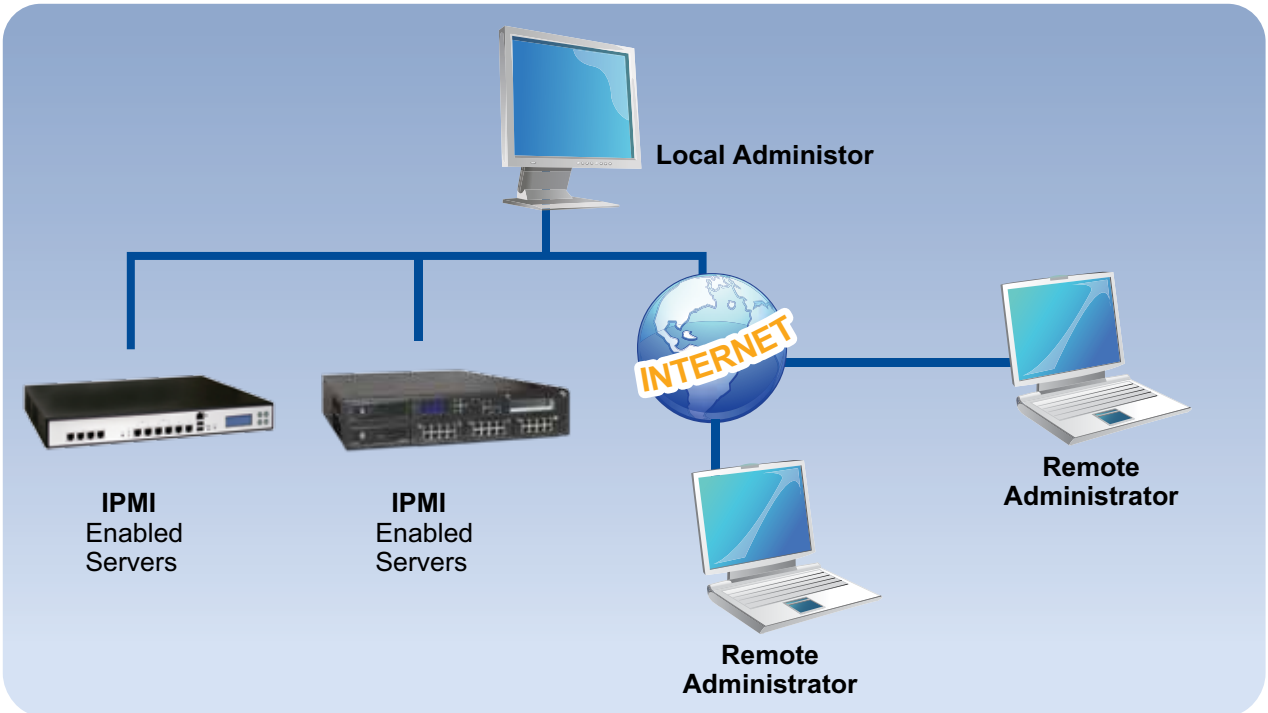
What is IPMI

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 operates independently of either a resource's CPU or operating system allowing administrators to manage a system remotely 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
- IPMI Security - RMCP+ protocol supported (Remote Management Control Protocol)
- Remote firmware upgrade - upgrade LOM firmware in the field



ABOUT CAK MIPS

CAK-6005

CAK-6020

CAK-6030

Product Overview

The wire speed performance in small packets, has been long attempted since day one. Portwell's CAK 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 CAK 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, CAK 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.

CAK 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

MODEL	CAK-3000	CAK-2000	CAM-0100	
Sub-Model	-7621	-3620	-7611	-7616
Processor	Octeon plus 52XX	P2020	CN5010	CN5020
CPU (Max.)	750MHz 4 Cores	1.2GHz 2 Cores	500MHz, 1 core	500MHz, 2 cores
RAM (Max.)	4GB	4GB	1G	
Ethernet				
Fiber	0	0	0	
Copper GbE	4	6	6	
10/100 FE	2	0	0	
Expansion Slot	One PCI-E x4	1	1	
Storage Device				
HDD	One 2.5"/3.5" SATA 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 EZIO-G400	EZIO-300 EZIO-G400	N/A	
LEDs	Power, Data-access, LAN status & Speed, Bypass	Power, Data-access, LAN status & Speed, Bypass	Power, Storage, Lan	
SATA	One SATA connector	Two SATA-II connectors	One SATA connector	
USB	One USB 2.0 on the front panel	Two USB 2.0 on the front panel	One USB 2.0 on the front panel	
VGA	N/A	N/A	N/A	
Power	100W full-range ATX	65W Open Frame	12V DC 35W	
Height (U)	1U	1U	1U	
Dimension (WxDxH)	438x292x44mm 17.2"11.5"x1.73"	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	40	41	42	

CAK-3000

Octeon Plus CN52xx platform, Up to 10 ports

FEATURE

- Highly-integrated networking appliance
- Excellent performance/watt
- MIPS64 Cavium Octeon Plus 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 Plus 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 with software controlled bi-color LEDs; project based.
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

Optional NIC

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

ORDERING GUIDE

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

CAK-2000

FreeScale (QorIQ P2020) , 6GbE ports

FEATURE

- QorIQ P2020 / Dual Core
- 1 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	One 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 HDDs
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

CAM-0100

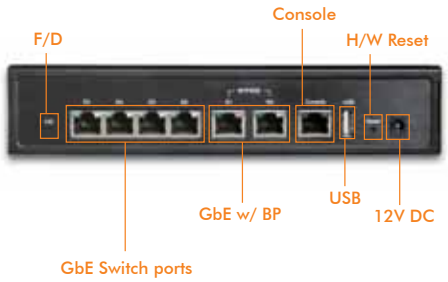
1U Desktop Fanless network appliance with Cavium OCTEON Plus processor CN5010/5020

FEATURE

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

SPECIFICATION

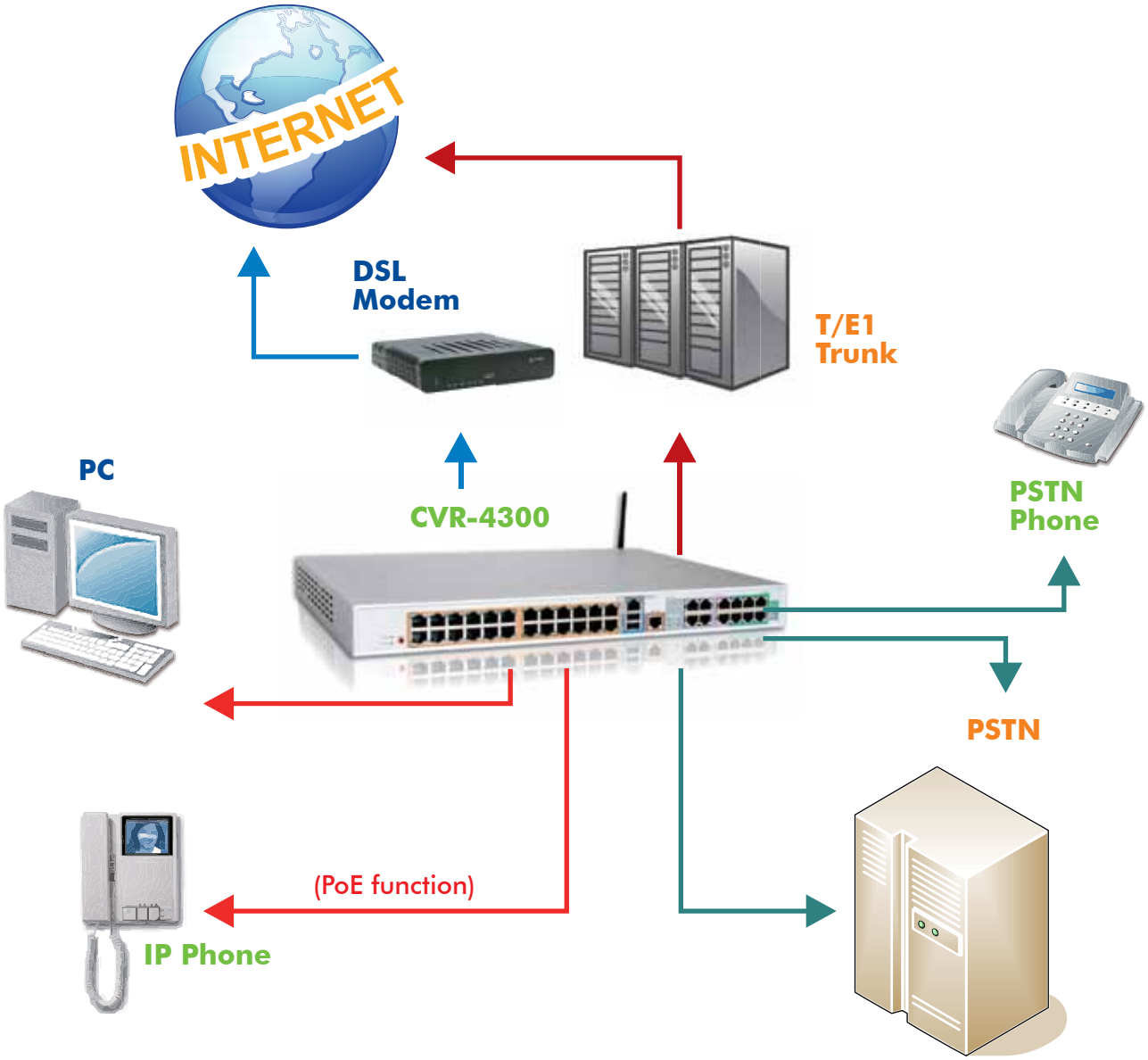
CPU Board	- Cavium Octeon plus CN50X0 series with security function inside - 1 or 2 cores with 500MHz CPU frequency
System Memory	DDR2 SODIMM 400/533/667, up to 1GB
Ethernet Port	- 2 RJ45 ports, RGMII w/ one bypass seg. - 4 switch RJ45 ports, RGMII
Expansion Slot	1 MiniPCI socket
Storage Device	1 SATA 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	6 GbE
CAM-0100-7616	CN5020-500SCP	6 GbE

ABOUT TCE



Product Overview

Portwell TCE focus on Telecommunication COE Enterprise products such as IP-PBX. TCE products are belonged to VoIP application, and Portwell TCE products provide multi-interfaces such as PSTN phone line, T1/E1, and RJ45 WAN/LAN port. It meets different communications requirements of enterprises, and TCE products are able to connect to various devices such as PC, SIP Phone, PSTN Phone, Fax machine etc. It allows users to access Internet with better bandwidth of WAN to speed up the transmission through the network. TCE includes voice and IP technology which provide you a converged communication solution.

Be your partner, Portwell can customize the product to meet your market requirements.

CVD-4200

FreeScale (MPC8360) , 4T1/ E1,
1 WAN & 4 LAN ports

Project Base

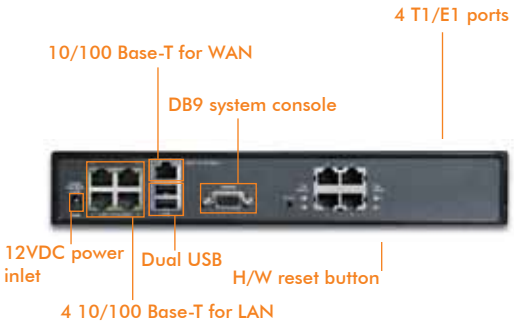
Voice Gateway/IP PBX

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 802.1 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 Part 68/UL



ORDERING GUIDE

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

CVR-1200

Pineview (Atom), 3 GbE ports , 2 FXO & 2 FXS ports

FEATURE

- Atom D-series Procesor
- 2 SO-DIMMs DDR3
- 3 GbE ports / 4 Analog ports
- One PCI expansion
- One Mini PCI-E socket

SPECIFICATION

CPU Board	-Intel Atom D525 1.8GHz Dual-Core
System Memory	-Two SO-DIMM sockets -Supports DDR3 800 up to 4 GB
Ethernet Port	-3 GbE RJ45 ports
Analog I/O	-2 FXS & 2 FXO ports
Expansion	- One PCI slot & One Mini PCI-E socket
Storage Device	- Support one 3.5" or 2.5" SATA HDD - CF socket on-board
Serial Port	-One front-access RJ45 for Intel system console -One rear-access DB-9 for AudioCode system console
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 Analog ports.
USB	- Dual USB 2.0, front accessible
Power	- 100W full-range ATX
Dimension	- 430(W) x 330.2(D) x 44(H) mm - 16.93"(W) x 13"(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 Part 68/UL

ORDERING GUIDE

Model	CPU	Ethernet	FXS	FXO	EZIO	PCI Expansion
CVR-1200-3040	Atom D525	3 RJ45 GbE ports	2	2	Optional	1

CVR-4300

FreeScale (MPC8360), 1WAN & 24 LAN (PoE) ports , 4 T1/E1 ports , 2 FXO & 6 FXS ports

Project Base

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
- Built with

SPECIFICATION

CPU Board	Built with FreeScale MPC8360
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 Part 68/UL

ORDERING GUIDE

Part No.	CPU	T1/E1	WAN	LAN	FXS	FXO	DSP	PoE
CVR-4300-6240	MPC 8360	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

FreeScale (MPC8367),8 T1/E1 ports, 4LAN ports, 24 FXO/FXS ports

Under development

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 MPC8567
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 Part 68/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

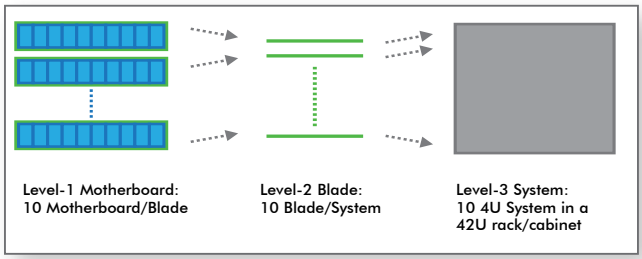
Multi-Motherboard Blade Server

What is MMBS?

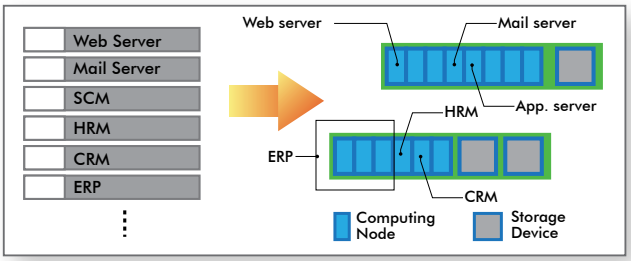
MMBS stands for "Multi-Motherboard Blade Server". Differs from traditional blade systems, in which single server is built on each individual blade, MMBS integrates up to ten (10) motherboards in each blade, up to ten (10) blades in a 4U rack-mount system to form a mini "Server Farm". MMBS integrates maximal 100 computing nodes in an enclosure which takes 4U space of a rack. In the same config 25U space will be required for two-way server with quad-CPUs. 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 issues, to increase the energy efficiency become one of the important topics 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 era, 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, optional 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: 0 to 70°C (32 to 95°F) - Humidity: 5% ~ 95% RH	
Certification	CE/FCC/UL	

Motherboard

Model	CCSN-1600IE-2220	CCSN-1601IE-2220
CPU/Chipset	Cavium Octeon™ Plus CN5020-500BG 564-SCP Secure Communication Processor	Intel® Atom™ E660T (Tunnel Creek) with EG20T (Topcliff) Platform Controller Hub.
System Memory	32bit DDR2 SODIMM 400/533/667, up to 1GB	32bit DDR2 SODIMM 667/800, up to 1GB
Ethernet	2x GbE interfaces 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	

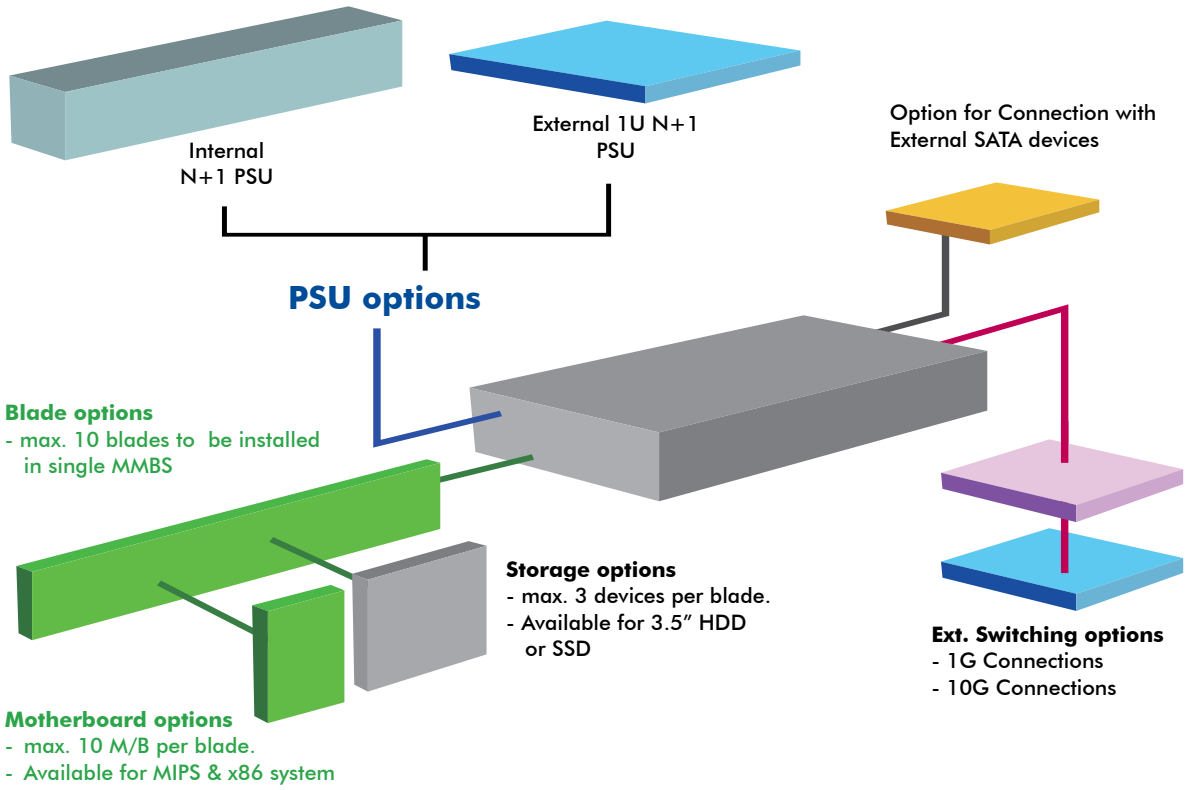
Blade

Node numbers	Front panel I/O
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 devices (HDD, SSD) (4) 4 motherboards & 3 3.5" storage devices (HDD, SSD)	- 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 LEDs 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.