

4th Generation Intel[®] Core[™] Computing Solutions



About the 4th Generation Intel[®] Core[™] Technology

The latest Intel platform provides some major improvements on power and time responsiveness, creating driving innovations on form factor and delivering more extensive media capabilities than the 3rd generation platform. Here are the key features of Intel's 4th generation new technology:

Green, New Advanced Power-Saving System



The Intel 4th generation platform provides power improvements of around 50% over the previous platform. One of the major reasons is that the 4th generation moves the CPU voltage regulator off the motherboard and into the CPU package, creating a Fully Integrated Voltage Regulator, or FIVR. Secondly, this is a far more efficient design and with the use of “enhanced” tri-gate transistors, current leakage has been reduced by two to three times versus the 3rd generation.

Intel's CPPM is a new 4th generation framework that reduces platform idle power and allows for the safer usage of deep, long latency platform power

Overclocking on the 4th Generation Platform

Intel provides all new overclocking features on the 4th generation Core processors. These new overclocking features give users the most stable and highest overlocks achievable on their hardware. In the past, achieving a stable overclock usually necessitated a system reboot and specific adjustments through the BIOS. This changed with the new 3rd generation when users could change CPU and iGPU frequencies and settings from within Windows in real-time. However, the BCLK ratio could only be configured to around 7%, which tempted the enthusiast to switch back to the standard BIOS/UEFI

management states through new bus extensions. The 4th generation processor and PCH will include embedded power control modules, which promises to deliver a 30% reduction in processor power consumption compared to the 2nd generation CPU. Moreover, the new power management framework extends beyond the processor itself and assures a twenty-fold reduction in overall platform power consumption. For the ULT SKU, Intel permits up to ten days of idle, but connected usage, on a single charge, potentially making the 4th generation new technology platform a turning point for Intel on more power saving related applications.

interface.

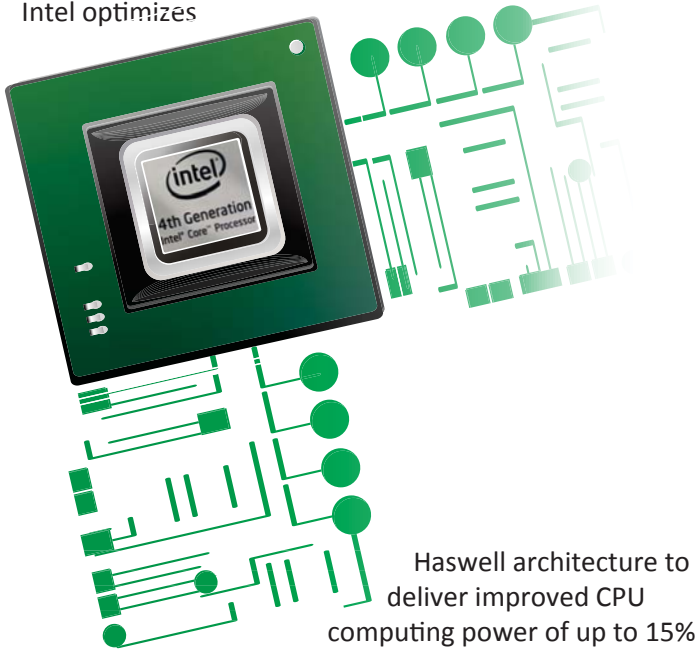
The new 4th generation platform offers significant improvements in real-time overclocking. While the configurations and features that allow higher BCLK ratio adjustments exist only on the high end 3rd generation platform, mainstream 4th generation processor users can get these features out of box. With BCLK ratios of 100MHz, 125MHz and 166MHz available on the 4th generation processor, users can benefit from unprecedented overclock levels simply by adjusting the multiplier value in real-time.

Feature and Performance

Core Technology and Benefits

The 4th generation Intel Xeon® and Core microprocessor family—built on 22nm process technology—drives Portwell's boards and systems to higher performance and more functional expansion flexibility.

Intel optimizes



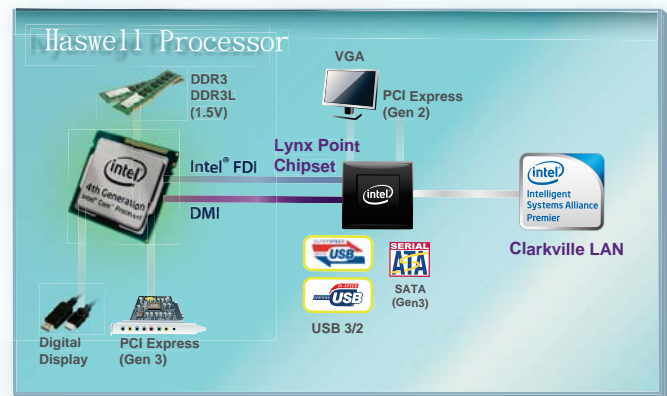
Haswell architecture to deliver improved CPU computing power of up to 15%

and graphic performance of up to 30%. It also implements flexible input/output to improve connected capabilities. This next generation powerful CPU supports Microsoft DirectX® 11.1, OpenGL® 4.0 and OpenCL™ 1.2. For multi-display, Haswell also supports three simultaneous displays, HDMI and 2 DisplayPorts, with high resolution up to 4K x 2K.

The Intel C226/Q87/QM87/H81 chipsets continue to work on the edge of innovation with a new architecture to deliver quality, performance, and industry-leading I/O technologies on most of the platforms powered by the 4th generation Intel Core processor family. The processors, housed in an LGA1150 socket supporting two-channel DDR3 long DIMM sockets and PCI Express Gen 3, provide great data transferring bandwidth for improving graphics performance. The PCI Express 3.0 connectivity from the Intel Xeon processors provides three flexible options, one PCIe x16, two PCIe x8 or one PCIe x8 plus two PCIe x4 lanes for versatile applications. Moreover, the enhancement in flash playback, rich 2D/3D graphics quality, security and power efficiency enables a fascinating visual experience in a variety of industrial market segments such as Retail, Military, Medical, Factory Automation, Digital Security Surveillance, Network Management and Gateway Solution. These incredible technologies are already implemented in Portwell's latest board level and system products.

Performance and Display

The 4th generation Intel Core microprocessors implements new 22nm processes with tri-gate architecture for improving CPU performance between 5% and 15%. The new 4th generation platform is the first implementation of Intel's FIVR, the latest generation circuit design that decreases the complexity of the power module and makes power management more stable. In the new processors, Intel adds several new Haswell instructions with advanced vector extension (AVX) to improve Intel Advanced Encryption Standard Instructions (AES-NI). AES-NI instructions can be used in any application that uses AES for



encryption. AES is very widely used in several applications such as network encryption, and disk and file encryption applications. Networking applications use encryption to protect data and file-level and disk encryption applications use AES to protect data stored on a disk. Every year, there is expected to be one "tick" or "tock," and Haswell is a "tock" with new microarchitecture to improve graphic performance. The enhanced graphic engine provides up to 30% performance increase with GT3. In this generation, Intel processor supports DirectX® 11.1, OpenGL® 4.0 and OpenCL™ 1.2, providing significant 3D and media performance. The 4th generation Intel microprocessors implement internal VGA via Lynx Point chipset for most legacy industrial systems to drive multiple display applications of up to 3 independent displays, including HDMI 1.4, DVI, DisplayPort, and VGA. HDMI also supports the highest resolution 4K x 2K. Following the triple display combination table, the processor and PCH can provide specific display and resolution, supporting both clone and extension modes.

Introduction

Triple Display Combination Table

Display 1		Display 2		Display 3	
HDMI/DP	4096x2160@24Hz/ 3840x2160@60Hz	HDMI/DP	4096x2160@24Hz/ 3840x2160@60Hz	DP/eDP	3840x2160@60Hz
DP/eDP	3840x2160@60Hz	DVI/WiDi	1920x1200@60Hz/ 1920x1080@30Hz	DVI	1920x1200@60Hz
VGA/WiDi	1920x1200@60Hz/ 1920x1080@30Hz	DP/eDP/HDMI	3840x2160@60Hz/ 3840x2160@60Hz/ 4096x2160@24Hz	HDMI/DP	4096x2160@24Hz/ 3840x2160@60Hz
DP/eDP	3840x2160@60Hz	DP	3840x2160@60Hz	DVI	1920x1200@60Hz
VGA	1920x1200@60Hz	DVI	1920x1200@60Hz	DVI/WiDi	1920x1200@60Hz/ 1920x1080@30Hz
VGA	1920x1200@60Hz	DP/eDP/HDMI	3840x2160@60Hz/ 3840x2160@60Hz/ 4096x2160@24Hz	DVI/WiDi	1920x1200@60Hz/ 1920x1080@30Hz
DVI	1920x1200@60Hz	DVI	1920x1200@60Hz	DVI	1920x1080@30Hz

Flexible I/O

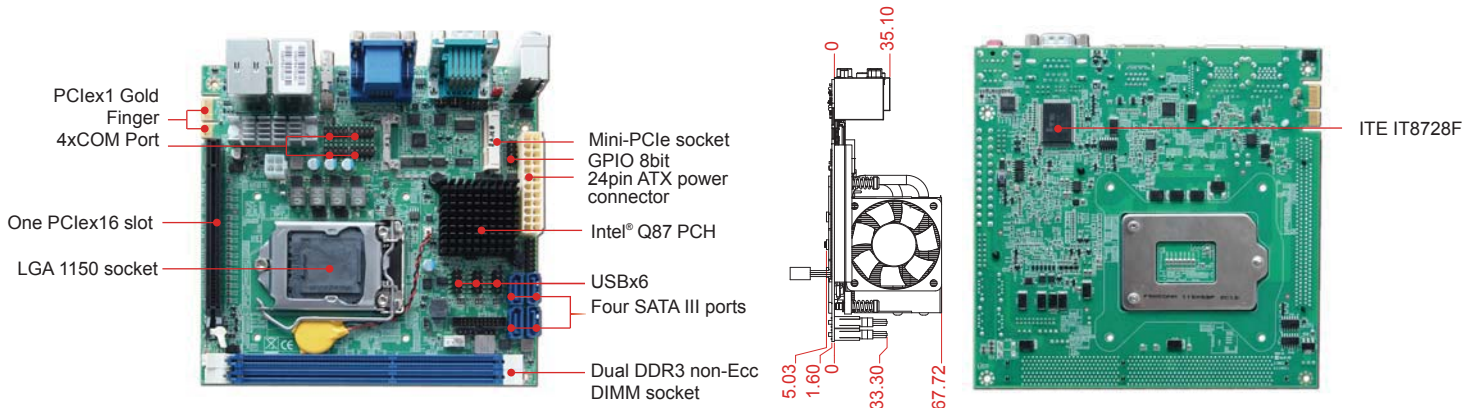
Fixed Signals				Muxed Signals		Fixed Signals						Muxed Signals		Fixed Signals			
USB 31	USB 32	USB 35	USB 36	USB 1	PCIE 2	PCIE 3	PCIE 4	PCIE 5	PCIE 6	PCIE 7	PCIE 8	SATA 4	SATA 5	SATA 0	SATA 1	SATA 2	SATA 3
I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15	I/O 16	I/O 17	I/O 18
		MAX Possible per interface		Default Config		ALT Config # 1		ALT Config # 2		ALT Config # 3		ALT Config # 4		ALT Config # 5			
USB 3.0		6		4		6		6		5		5		6			
PCI Express 2.0(5GB)		8		8		6		8		8		7		7			
SATA 3 (6 Gb)		6		6		6		4		5		6		5			

With exceptional new architecture of instruction and graphics, the Intel Lynx Point chipset implements new design of input and output, called Flexible I/O, which allows some I/O ports to be configured at the time as system design. There are a total of 18 differential signal pairs, splitting between SATA III, USB 3.0 and PCIe Gen2. The mixed signals that can be selected are either USB/PCIe or SATA/PCIe, with two signal pairs for

both. This means that the system can implement up to 6 USB 3.0 ports, 6 SATA III ports and 8 PCIe ports. Based on the definition of Flexible I/O, feature configuration of system can be much more varied. For network storage applications, the design of the system can implement 8 PCIe and 6 SATA with 4 USB ports remaining. Intel's latest chipset improves the connective abilities to fit various requirements and different applications.

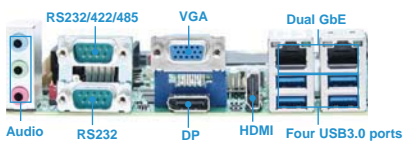
WADE-8015

Intel® Next-Gen Dual/Quad processor based Mini-ITX Board with dual Gigabit Ethernet, four STAT ports, Six COM ports, one PCIe x16 expansion slot and one Mini-PCIe slot support mSATA interface



WADE-8015 is based on Intel Q87 chipset and desktop processor sku like Core™ i7 and i5. WADE-8015 of the Intel platform will provide high performance and flexibility for functional expansion, such as Gaming, Kiosk, DS, Medical, Defense, Industrial automation and control applications.

REAR I/O



FEATURES

- Intel® 4th Dual/Quad processor in LGA 1150
- Intel® Q87 PCH
- Two DDR3 Long-DIMM slots up to 16GB(support 1600/1333)
- One PCIe x16 slot (Gen3 support)
- One Mini-PCIe slot (support mSATA)
- One PCIe x1 Gold Finger (2*PCIe x1 signal)
- Audio Jack (support Line-in / Line-out / Mic-in)
- Six COM ports (2pcs on rear I/O , 4pcs on board header)
- Four SATA III Ports (support RAID 0,1,5,10)
- Total Ten USB port (4xUSB3.0 Ports & 6xUSB2.0 Ports)
- Support Triple Display function(DP/VGA/HDMI)

ORDERING GUIDE

AB1-3910	(R)WADE-8015.Mini-ITX ESB.Q87 w/o ECC LGA1150.w/DDR3 SDRAM /VGA/DP/HDMI/Dual GbE/COM/Audio/USB
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PACKING LIST

One WADE-8015 Mini-ITX Motherboard
One installation CD
One SATA cable
One I/O shield



GENERAL

processor	- Intel® Core™ i5/i7 processor in LGA-1150 package - DMI x4 Link: 5.0GT/s - Support Intel® Turbo Boost , Hyper-Threading, Virtualization, Thermal Monitoring, Trusted Execution and SpeedStep Technology (depends on CPU sku)
Chipset	- Intel® Q87 PCH
BIOS	- Pheonix UEFI BIOS
Memory	- Support up to 16GB DDR3 1333/1600 SDRAM on two 240-pin DIMM sockets
Storage Devices	- 4x SATA III support up to 6.0 Gb/s data transfer rate
Watchdog Timer	- Programmable via S/W from 0.5 sec. to 254.5 sec.
Hardware Monitoring	- FAN Speed (CPU & System), Temperature (CPU & System) - Beep alarms for field fan out, over/under voltage of DC voltages and over temperature threshold
Expansion Interface	- 1x PCI Express x16 Gen3 up to 8.0 GT/s - 1x Mini-PCIe slot - 1x PCI Express x1 Gold Finger

I/O INTERFACE

Super I/O	- ITE IT8728F
Audio	- Intel® Q87 PCH built-in High Definition Audio up to 192-kHz 32-bit - Realtek ALC886-GR HDA codec, 5.1 channels
Ethernet	- Intel® WG1217LM + WG1210AT gigabit ethernet controller - Dual 10BASE-T / 100BASE-TX / 1000BASE-T Ethernet - PCI Express x1 interface based on gigabit ethernet - Dual RJ-45 connector with two LED indicators
Serial Port	- 1x RS232 port on rear I/O - 1x RS232/422/485 selectable port on rear I/O - 3x RS232 with header - 1x RS232/422/485 with header
USB	- 4x USB3.0 Ports on rear I/O - 6x USB2.0 Ports on board
Keyboard & Mouse	- PS/2 on board dedicated to Keyboard&Mouse
GPIO	- on board programmable 8bit Digital I/O

DISPLAY

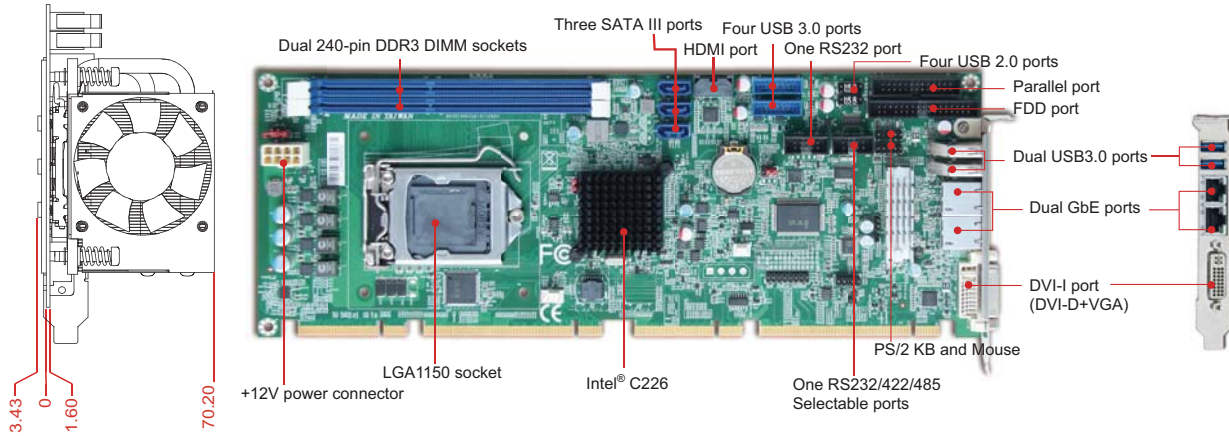
Graphic Controller	- Intel® Core™ i5/i7 processors integrated graphic engine - Provided improved 3D multimedia capabilities including Microsoft DirectX 11.1, Shader Model 4.0, MPEG-2 and OpenGL 3.2
Display Interface	- VGA: one connector DB-15 on rear I/O,analog resolution up to 1920x1200 - DP : one connector on rear I/O,support up to 3200x2000resolution - HDMI : one connector on rear I/O,support up to 4096x2304resolution

Mechanical & Environment

Dimension	-170(L) x 170mm(W); 6.69"(L) x 6.69"(W)
Power Supply	- ATX 24pin power input
Environment	- Operation Temperature: 0~60 °C (with highest performance on 50 °C) - Storage Temperature: -20~80 °C - Relative Humidity: 5~90%, non-condensing
MTBF	Over 120,000 hours at 40°C

ROBO-8112VG2AR

Intel® Xeon® E3-1200v3/Core™ i3 series processor based on PICMG 1.3 SHB with DDR3 SDRAM, VGA, Dual Gigabit Ethernet, Audio and USB



ROBO-8112VG2AR is based on Intel C226 chipset and workstation processor sku like Xeon and Core i3. Build with flexible PCI express expansion, it's suitable for Medical, Industrial automation, and digital signage applications.

FEATURES

- Supports Intel® Xeon® E3-1200v3 series/Core™ i3 processors in LGA1150 package
- Delivers up to 16GB maximum DDR3 1333/1600 ECC SDRAM on two DIMM sockets
- Supports triple display by DVI-I (DVI-D+VGA) and HDMI
- Supports iAMT 9.0 on Intel® Xeon® E3-1200v3 series processors
- High speed dual Gigabit Ethernet based on PCI Express x1, high bandwidth I/O interface
- Rich I/O connections such as FDD, two Gigabit Ethernet, serial ports, parallel port, USB 2.0/3.0
- On-board five SATA III ports support RAID 0, 1, 5, 10 (dual ports on backplane)

ORDERING GUIDE

AB1-3954	ROBO-8112VG2AR PICMG 1.3(PCI-E+PCI),LGA1150, Intel Xeon/Core i3 processors.SHB.w/VGA/Dual GbE/Audio
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PACKING LIST

	Standard
	B6902930 SATA III cable (Black)
	B690021S Cable kit for FDD+PRN with bracket
	B8981980 PICMG SBC Handling and Installation Notice
	B6902890 DVI-D + VGA cable with bracket
	B6903240 dual head COM port cable with bracket
	B3751640 Installation CD
	Option
	B6902980 PS/2 Keyboard / Mouse Cable with bracket
	B6902230 USB port cable with bracket
	AB9-2066 PA-M1AU Multiple Media kit
	B6903090 USB 3.0 cable with bracket



GENERAL

processor	- Intel® Core™ i3 and Xeon® E3-1200v3 series processor up to 3.5 GHz (45~95W) with (8MB) Cache in LGA-1150 package - DMI x4 Link: 5.0GT/s - Support Intel® Turbo Boost, Hyper-Threading, Virtualization, Thermal Monitoring, Trusted Execution and SpeedStep Technology (depends on CPU sku)
Chipset	Intel® C226 PCH
BIOS	Phoenix uEFI BIOS
Memory	- Supports up to 16GB DDR3 1333/1600 SDRAM on two 240-pin ECC DIMM sockets - Supports ECC
Storage Devices	- Supports 5x SATA III drive (Dual ports via Backplane) - RAID 0, 1, 5, 10 - 1x FDD channel
Watchdog Timer	Programmable via S/W from 0.5 sec. to 254.5 sec.
Hardware Monitoring	System monitor (Voltage, Fan speed and Temperature)
Expansion Interface	- From CPU (Xeon/Core i3): 1x PCI Express x16 or 2x PCI Express x8 or 1x PCI Express x8 + 2x PCI Express x4 by jumper setting (Gen3 up to 8.0 GT/s) - From PCH: 1x PCI Express x4 or 4x PCI Express x1 by different bios support (Gen2 up to 5.0 GT/s) - 4x PCI devices at 32 bit 33 MHz

I/O INTERFACE

Super I/O	ITE IT8728F
Audio	- Intel® BD82C226 PCH built-in High Definition Audio up to 192-kHz 32-bit - Realtek ALC886-GR HDA codec, 7.1 channels
Ethernet	- Intel® WG1217LM + WG1210AT gigabit ethernet controller - Dual 10BASE-T / 100BASE-TX / 1000BASE-T Ethernet - PCI Express x1 interface based on gigabit ethernet - Dual RJ-45 connector with two LED indicators
Serial Port	- 1x RS232 and 1x selectable RS232/422/485 on board
USB	- 8x USB 2.0 ports (four ports through backplane) - 480Mb/s bus capable of high-speed/full-speed/low-speed data ranges - 6x USB 3.0 ports on board (four ports on board, dual ports on bracket) - 5Gbps bus capable of high-speed/ full-speed/low-speed data ranges
Keyboard & Mouse	- 2x USB 3.0 ports on bracket dedicated to keyboard & mouse (on bracket) - 1x 10 pin box header for external PS/2 keyboard/mouse
GPIO	On board programmable 8-bit Digital I/Os
Others	1x Parallel port

DISPLAY

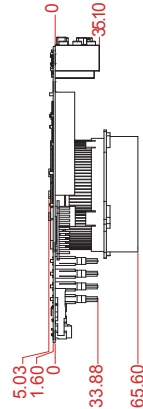
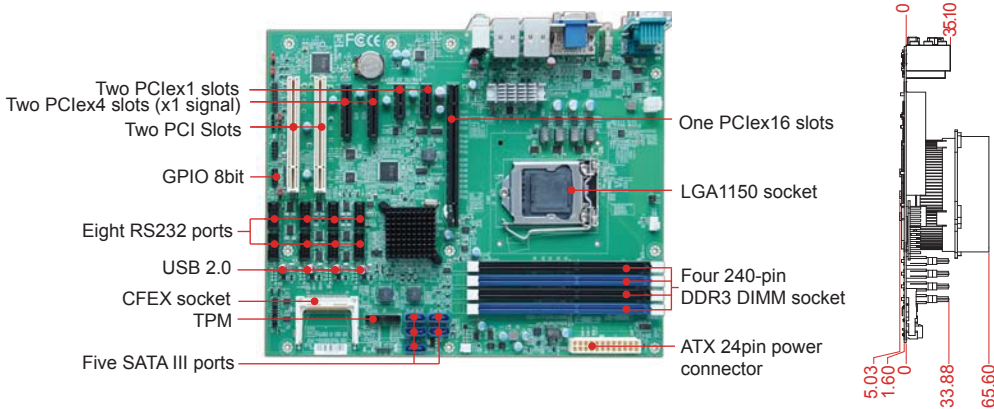
Graphic Controller	- Intel® Xeon® and Core™ i3 processors integrated graphics engine - Provides improved 3D multimedia capabilities including Microsoft DirectX 11.1, Shader Model 4.0, MPEG-2 and OpenGL 3.2
Display Interface	- Support independent triple display by - CRT on bracket: Resolution up to 1920x1200 @ 60Hz - DVI-D on bracket: up to 1920x1200 @ 60Hz - HDMI: up to 4096x2160 @ 24Hz (CRT + DVI-D on bracket by DVI-I port)

Mechanical & Environment

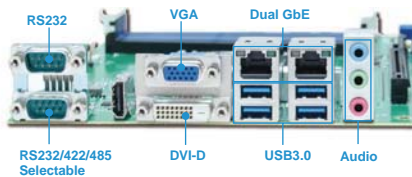
Dimension	- 338.5mm(L) x 126.39mm(W), 13.33""(L) x 4.98""(W) - PCB: 8 layers
Power Supply	- Typical: +12V@5.29A; +5V@4.94A - Support ATX mode
Environment	- Operation Temperature: 0~60 °C - Storage Temperature: -20~80 °C - Relative Humidity: 5~90%, non-condensing
MTBF	Over 100,000 hours at 40°C

RUBY-D716

Intel Core™ i5/i7 processor based ATX with DDR3 SDRAM, Triple display, Dual Gigabit Ethernet, and USB Ports



RUBY-D716VG2AR is based on Intel® Q87 chipset and desktop processor sku like Core™ i7 and i5. Built with flexible PCI express expansion and bifurcation feature, it can support two I/O interface cards and can also suitable for Medical, Industrial automation, and digital signage applications.



FEATURES

- Intel® Core™ i5 and i7 processor Support
- Four Long-DIMMs support dual channel DDR3 non-ECC SDRAM up to 32GB
- Triple display by VGA/DVI-D/HDMI
- Rich I/O, USB2.0/3.0 dual Gigabit Ethernet, COM Port and SATA III ports support Intel RAID 0, 1, 5, 10.
- One PCIe x16 (Gen3), Two PCIe x4 (Gen2, x1 signal), Two PCIe x1 (Gen2), And two PCI slot.
- Intel® Active Management Technology 9.0

ORDERING GUIDE

AB1-3941	RUBY-RUBY-D716VG2AR ATX IMB. LGA1150 CPU. Q87. DDR3/VGA/DVI-D/ HDMI/Dual GbE/COM/Audio/USB
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PACKING LIST

One RUBY-D716VG2AR ATX Industrial Main Board
One SATA III Cable
One Installation CD
One I/O shield



GENERAL

Processor	- Intel® Core™ i5/i7 processor up to 3.4 GHz (65~95W) with (3~8MB) Cache in LGA-1150 package - DMI x4 Link: 5.0GT/s - Support Intel® Turbo Boost, Hyper-Threading, Virtualization, Thermal Monitoring, Trusted Execution and SpeedStep Technology (depends on CPU sku)
Chipset	Intel® Q87 PCH
BIOS	Phoenix UEFI BIOS
Memory	Support up to 32GB DDR3 1333/1600 SDRAM on four 240-pin DIMM sockets(dual channel)
Storage Devices	Support 5x SATA 600 drives Support 1x CFEX slot Support RAID 0,1,5,10
Watchdog Timer	Programmable via S/W from 0.5 sec. to 254.5 sec.
Expansion Interface	- 1x PCI Express x16 Gen3 up to 8.0 GT/s - 2x PCI Express x4 (PCIe x1signal Gen2 up to 5.0 GT/s) - 2x PCI Express x1 (Gen2 up to 5.0 GT/s) - 2x PCI devices at 32 bit 33 MHz

I/O INTERFACE

Super I/O	ITE IT8728F
Audio	Intel® Q87 PCH built-in High Definition Audio up to 192-kHz 32-bit Realtek ALC886-GR HDA codec, 5.1 channels
Ethernet	- Intel® WG1218LM + WG1210AT gigabit ethernet controller - Dual 10BASE-T / 100BASE-TX / 1000BASE-T Ethernet - PCI Express x1 interface based on gigabit ethernet - Dual RJ-45 connector with two LED indicators
Serial Port	- 4x RS232 - 2x RS232/422/485 (support BIOS switch) - 4x RS232 optional (up to total 10 COM port)
USB	4x USB3.0 Ports on real IO 8x USB2.0 Ports on board
Keyboard & Mouse	PS/2 on board dedicated to Keyboard&Mouse
GPIO	on board programmable 8-bit Digital I/Os

DISPLAY

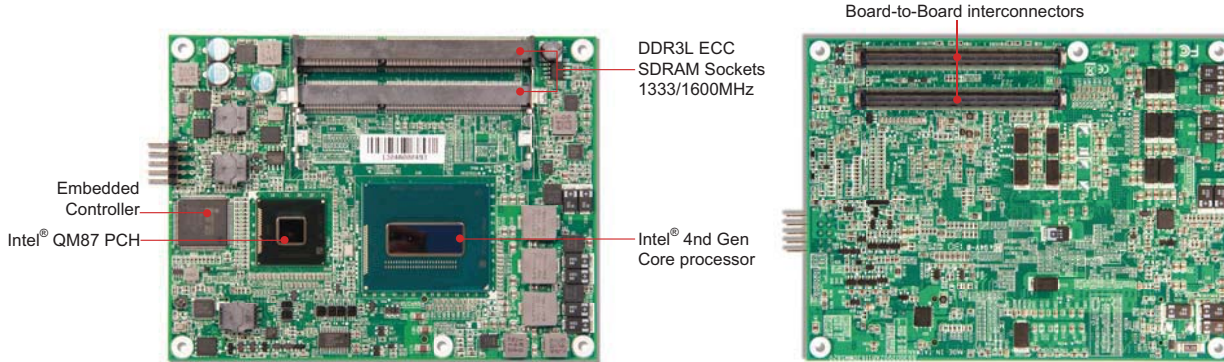
Graphic Controller	- Intel® Core™ i5/i7 processors integrated graphic engine - Provided improved 3D multimedia capabilities including Microsoft DirectX 11.1, Shader Model 4.0, MPEG-2 and OpenGL 3.2
Display Interface	- VGA: Resolution up to 2560x1600 @ 60Hz - DVI-D: up to 1920x1200 @ 60Hz - HDMI: up to 1920x1200 @ 60Hz Support Triple Display

Mechanical & Environment

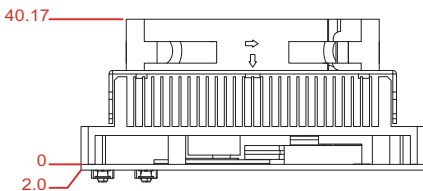
Dimension	304.8(L) x 243.8(W); 12"(L) x 9.6"(W) PCB: 6 layers
Power Supply	ATX 24-pin power input
Environment	- Operation Temperature: 0~60 °C (with highest performance on 50 °C) - Storage Temperature: -20~80 °C - Relative Humidity: 5~90%, non-condensing
MTBF	Over 120,000 hours at 40°C

PCOM-B630VG

Intel® 4th Generation Core i7 Processor based on Type VI COM Express module with DDR3L SDRAM, VGA, LVDS, Gigabit Ethernet, SATA 300 and USB



PCOM-B630VG can offer high computing power by Shark Bay processor brings quad core technology and provides significant performance improvement. 6GT/s SATA performance is supported by PCOM-B630VG. It supports storage back-up function and enhances performance ability. We also provide SOL, IDER, Serial over Lan and Remote control functions in PCOM-B630VG by Intel® iAMT 9.0 support.



FEATURES

- The Intel® Shark Bay processor brings Quad-core technology and provides significant performance improvement
- The Intel® QM87 integrated GMA graphic provides better performance and variable display interfaces
- Design to comply with both socket type and BGA type Core i7 processor for intensive computing
- Architecture of module and carrier boards speeds up time-to-market of tailor-made equipment
- Support smart computing and power gear by cTDP (Configurable TDP)
- Follow PICMG COM-Express R2.1 Standard (Type6)
- More Reliable, Rugged & Expandable Design

ORDERING GUIDE

AB1-3920	(R).PCOM-B630VG.Type VI. Compact Form Factor.COM Express Module.Haswell/PCH
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PACKING LIST

One PCOM-B630VG COM-Express module
One Driver CD



GENERAL

processor	- Intel® Core i5/i7 processor in BGA package - DMI x4 link: 5.0GT/s - Support Intel Turbo boost, hyper-treating and configurable cTDP (on 17watts/25watts CPU SKUs)
Chipset	Intel® QM87 PCH
BIOS	Phoenix uEFI BIOS
Memory	- Pheonix UEFI BIOS - AMI UEFI BIOS
Storage Devices	Support up to 16GB DDR 1333/1600 SDRAM on two 204pin SO-DIMM
Watchdog Timer	6x SATA ports (up to 6Gbps)
Hardware Monitoring	Programmable by embedded controller
Expansion Interface	1x PCI-Express x16 Gen 3, up to 8GT/s

I/O INTERFACE

Super I/O	N/A
Audio	HDA controller integrated in QM87
Ethernet	Onboard Intel I217LM
Serial Port	One series RX/TX supported from onboard EC (embedded controller)
USB	- 8 ports USB2.0 - 4 ports USB3.0
Keyboard & Mouse	KBC controller integrated in embedded controller
GPIO	8bit configurable controlled by embedded controller

DISPLAY

Graphic Controller	Intel® HD Graphics 4600 supports DX11.1, OpenGL 3.2
Display Interface	- VGA: resolution up to 1920x1200 - 3x Display Ports: resolution up to 4K x 2K

Mechanical & Environment

Dimension	125mm (L) x 95mm (W) x 2.0mm (H)
Power Supply	- Support 8V~18V DC input - Power saving that interoperable with carriers: 1) provide only 5V standby in power saving modes. 2) provide only the 12V primary power with no 5V standby source
Environment	- Operation temperature: 0~60°C - Storage temperature: -20~80°C - Relative humidity : 5~95%, non-condensing
MTBF	Over 120000 at 55°C

CAR-4020

The 1U Network Appliance with support for Intel® 4th Gen. Core™ and Xeon® Processors and C226 Chipset which Scales up to 24GbE



The CAR-4020 features the Intel C226 chipset, dual-channel DDR3 1600 memory (up to 32GB), up to four removable 2.5" SATA HDD or SSD, and three removable NIC modules in front. We design all I/O in front such as NIC, USB, IPMI/LOM, management port, and LCE module with 5 function keys.

CAR-4020 is ideal for network security applications (such as firewall, VPN, IDS/IPS, anti-spam, anti-virus, and UTM), and network management applications (such as routers, WAN optimization, RAS gateways, QoS, server load-balance, wireless controllers, medical DICOM and PACS, and industrial automation control via Ethernet TCP/IP). High density and flexibility meet your hardware requirements.

SPECIFICATION

CPU Board - Support Intel® 4th generation Core Processor LGA 1150
- Intel® C226 PCH

System Memory 4 x DDR3/1600 ECC DIMMs, up to 32GB

Ethernet Port up to 24 GBE ports

Bypass feature Depends on Network Module

Expansion - 2 x PCI-E x8 slot
- 1 x PCI-ex8 Golden Finger (Slot C) from CPU

Storage Device - 4 x 2.5" Swappable SATA HDD/SSD
- CF socket on-board

Serial Port - One front-access RJ45 connector for system console
- One 2x5 pin-header for EZIO

LCD Panel Optional 2x16 characters or 128x32 graphic LCD module with 4 buttons

LOM IPMI 2.0 w/GbE speed (optional)

USB Dual USB 3.0 ports, front accessible

VGA Built-in on-board 2x5 pin-header

Power 280W Single Flex ATX / Redundant PSU/DC48V

Dimensions - 435(W) x 448(D) x 44(H)mm
- 17.13"(W) x 17.64"(D) x 3.5"(H)

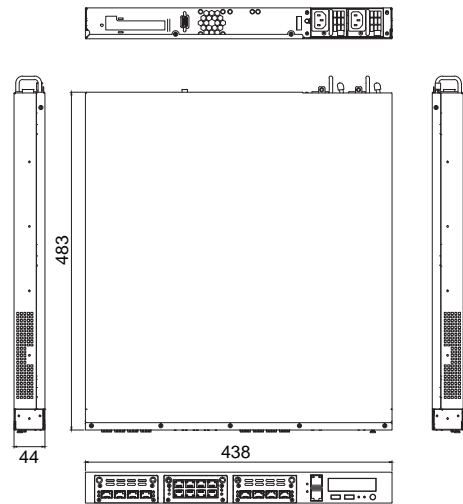
Operating Environment - Temperature: 0 to 40°C (32 to 104°F)
- Humidity 20% to 90%RH @ 55°C

Storage Environment - Temperature: -10 to 70°C (14 to 158°F)
- Humidity 5% to 95%RH @ 55°C

Certification CE/FCC/UL

FEATURE

- Intel® 4th Generation Core™ Processors with C226 Chipset
- High Scalability with 3 Expansion slots
- Maximum capacity of 24 GbE ports or Maximum 4 x 2.5" swappable HDD/SSD
- Modulized IPMI option supported
- Integrated LCD display with control buttons
- 4 DIMMs DDR3 (ECC option) up to 32GB



Ordering Guide	
P/N	Description
CAR-4020-4300-000	1U Denlow Platform

optional NIC			
LAN module	Chipset	Ethernet	Bypass
NIP-51240	82580EB	4Gb Copper	2
NIP-51040	82580EB	4Gb Copper	0
NIP-52120	82580DB	2Gb Fiber	1
NIP-52240	82580EB	4Gb Fiber	2
NIP-52080	82580EB	8Gb Fiber	0
NIP-52040	82580EB	4Gb Fiber	0
NIP-53040	82599ES	10Gb Fiber	0
NIP-53240	82599ES	10Gb Fiber	2
NIP-54021	X540	10Gb Copper	0
NIP-71042	Cave Creek	4Gb Copper	0

CAR-3040

Intel® 4th Generation Core™ Processor in LGA 1150 Package
Best Value for LAN Capacity and Performance



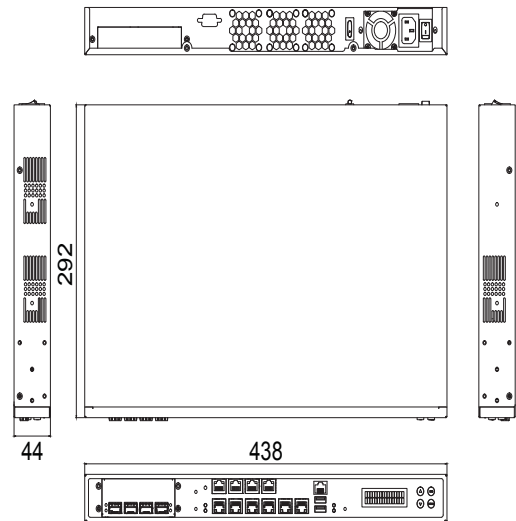
The CAR-3040 is a 1U rackmount network security appliance that supports Intel's 4th generation (Haswell) Core i7/i5/i3 processor with Intel H81/B85 PCH. The CAR-3040 1U network security appliance also features dual-channel 1066/1333 MHz DDR3 memory modules up to 16GB, PCI-E x8 expansion (with up to two generation 3.0 bypass segments), LGA-1150 socket, up to 18 gigabit Ethernet ports, optional dual 10G SFP+LAN module, 80 Plus power supply, and 6 onboard Ethernet ports with 2 bypass segments.

SPECIFICATION

CPU Board	- Support Intel® 4th generation Core Processor LGA 1150 - Intel® H81/B85 PCH
System Memory	2 DDR3 Long DIMMs, up to 16GB
Ethernet Port	- onboard 6 or 10 PCI-Ex1 GbE ports - Flexible Ethernet module options: 4 GbE RJ45 ports, 2 GbE SFP ports, 4 GbE SFP ports or 8 GbE SFP ports
Bypass feature	4 Segments Gen-3.0 on board
Expansion	- Two PCI-E x 8 slots expansions - One Standard PCIe x8 or One proprietary interface for ABN/NIP card
Storage Device	- Support one 3.5" or 2.5" SATA HDD - CF socket on-board
Serial Port	- One front-access RJ45 connector for system console - One 2x5 pin-header for EZIO
LCD Panel	Optional 2x16 characters or 128x32 graphic LCD module with 4 buttons
USB	Dual USB 3.0 ports, front accessible
VGA	Built-in on-board 2x5 pin-header
Power	80 plus 250W full-range ATX
Dimensions	- 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 @ 55°C
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity 5% to 95%RH @ 55°C
Certification	CE/FCC/UL

FEATURE

- Intel® 4th Generation Core™ Processors
- Two DIMMs DDR3 up to 16GB
- Up to 18 GbE ports
- One expandable CASwell NIP card support
- One 3.5" or two 2.5" internal SATA HDD



CAR-3040 network security appliance is capable of increasing LAN throughput by an average of 30 percent when compared with previous generation platforms.

Ordering Guide		
P/N	Ethernet Ports	Power
CAR-3040-4620-000	6 GbE ports 2 BP segments	250W ATX
CAR-3040-4621-000	10 GbE ports 2 BP segments	250W ATX

optional NIC			
LAN module	Chipset	Ethernet	Bypass
NIP-51240	82580EB	4Gb Copper	2
NIP-51040	82580EB	4Gb Copper	0
NIP-52120	82580DB	2Gb Fiber	1
NIP-52240	82580EB	4Gb Fiber	2
NIP-52080	82580EB	8Gb Fiber	0
NIP-52040	82580EB	4Gb Fiber	0
NIP-53040	82599ES	10Gb Fiber	0
NIP-53240	82599ES	10Gb Fiber	2
NIP-54021	X540	10Gb Coppe	0
NIP-71042	Cave Creek	4Gb Copper	0

CAF-2000

Fan-less Desktop Networking Appliance with Intel® 4th Gen. Core™ Processor



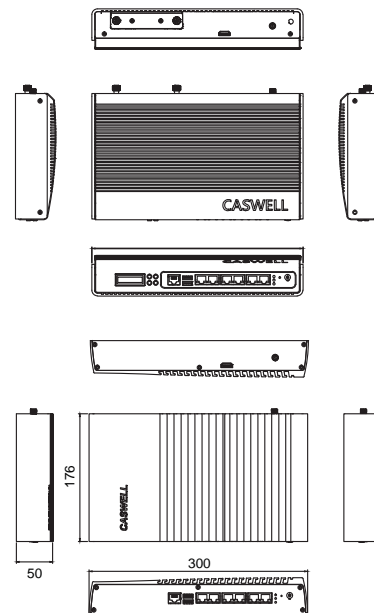
FEATURE

- Intel® 4th Generation Intel Core U processor Platform
- Fan-less design for long MTBF and low noise
- 3G/WiFi options support
- 2.5" Swappable HDD or SSD and Cfx support
- Small 4 button LCD

CAF-2000, a fanless embedded network appliance with the new generation with powerful thermal design, ensuring maximum heat dissipation and a true fanless system, utilizing Intel's latest Shark bay-ULT platform embedded mobile CPUs (i3/i5). The system provides redundant network connectivity of up to 6 ports, with WiFi and 3G support. One internal SIM slot offers system rich expansions. The DVI display output also makes it a great choice for system maintenance. This fanless system also supports one small 16x2 LCD module with four buttons and a removable 2.5" HDD tray for SSD.

SPECIFICATION

CPU Board	Support Intel® 4th Generation Intel Haswell Mobile ULT SoC include Linx-point LP PCH 15W
System Memory	1 x DDR3L SO-DIMM, up to 16GB
Ethernet Port	6 x GbE RJ45
Bypass feature	1 Segments Gen-3.0 on board
Expansion	N/A
Storage Device	- 2.5" Swappable SATA HDD/SSD - Cfx Socket
Serial Port	- One front-access RJ45 connector for system console - One 2x5 pin-header for EZIO
LCD Panel	Character or Graphics
USB	Dual USB 3.0 ports, front accessible
VGA	Built-in on-board HDMI pin-header
Power	60 W 12 V Adapter
Dimensions	- 280(W) x 175(D) x 44(H)mm - 11.02"(W) x 6.89"(D) x 1.73"(H)
Operating Environment	- Temperature: 0 to 40°C (32 to 104°F) - Humidity 20% to 90%RH @ 55°C
Storage Environment	- Temperature: -10 to 70°C (14 to 158°F) - Humidity 5% to 95%RH @ 55°C
Certification	CE/FCC/UL



Ordering Guide		
P/N	Ethernet Ports	Power
CAF-2000-4610-000	6 GbE ports	60W

Reference Table

Model	Dimension	Form Factor	PCH	Key Feature	Target Application
 WADE-8015	170(L) x 170(W)mm	Mini-ITX	Q87	<ul style="list-style-type: none"> Expansion: 1*PCIe x16(Gen3) \ 1*Mini-PCIe slot 1*PCIe x1 Gold Finger (2*PClex1 signal) Triple display: DP/VGA/HDMI 2*DDR3 Long-DIMM slot up to 16GB (1333/1600 MT/s) 4*SATA III Ports(support RAID 0,1,5,10) 	Gaming Digital Signage POS Industrial Automation Embedded Control
 ROBO-8112VG2AR	338.5(L) x 126.39(W) mm	PICMG 1.3	C226/Q87	<ul style="list-style-type: none"> Support ECC (C226) and non-ECC (Q87) Support Intel Xeon E3-1200v3 series (C226), Core i7/i5/i3 processors Flexible PCI Express configuration (C226) Support RAID 0,1,5, 10 Triple display: DVI-I and HDMI 	Factory Automation Digital Signage Storage Image Processing Military Medical
 RUBY-D716VG2AR	243.8(L) x 304.8(W)mm	ATX	Q87	<ul style="list-style-type: none"> Triple display: VGA/DVI-D/HDMI 4*DDR3 Long-DIMM slot up to 32GB (1333/1600 MT/s) SATA 6.0Gb/s x5 (RAID 0,1,5,10) CFEX Support 6*COM Port (10*COM Port optional) 	Medical Kiosk Industrial Automation and Control
 PCOM-B630	125(L) x 95 (W)mm	COM Express	QM87	<ul style="list-style-type: none"> Wide-Voltage input – 8V ~ 18V AT/ATX auto-detection DDR3L (1.35V) 1333/1600 MT/s Gigabit LAN x 1 I217LM Intel® HD Graphics 4000 supports DX11.1, OpenGL 3.2 ATA 6.0Gb/s x 6 cTDP support smart computing & performance 	Networking Defense Medical IVI
 CAR-4020	435(W) x 448(D) x 44(H) mm	1U	C226	<ul style="list-style-type: none"> Up to 24x GbE ports 3x Removable NIC module w/ PCIe Gen3 Extension PClex8 Add-on card slot AT/Redundant/DC solution ready GbE IPMI/LOM with dedicate RJ45 All I/O in front design 	Network Security Network Management
 CAR-3040	435(W) x 448(D) x 44(H) mm	1U	H81/B85	<ul style="list-style-type: none"> Up to 18x GbE ports 1x Removable NIC module H81/B85 flexibility co-design AT/Redundant/DC solution ready 	Network Security Network Management
 CAF-2000	280(W) x 175(D) x 44(H) mm	Desktop	Lynx Point - ULT	<ul style="list-style-type: none"> Fanless and long MTBF Green, low power consumption Robust and Cable-less 3G/Wi-Fi wireless ready 	Network Security Network Management Gateway Solution

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