

2012

Bridge Your Life with

Embedded
Solutions

Surveillance

Medical

Gaming

Kiosk

Surveillance

POS

Digital Signage



About Avalue

Since established in 2000, Avalue has spent much effort providing both customers and employees benefits and satisfactions. We not only expect ourselves to be a leader in this industry, we also create a very good working environment; because I believe a successful enterprise is not just making lots of money or having a big company.

It is having a stable company with steady growth, and having an excellent reputation. I hope that Avalue will be like this kind of business.

A handwritten signature in white ink, appearing to read 'Alice Liu', is enclosed in a white rectangular box.

Alice Liu
President



Vision in Future INNOVATIONS

◆ Our Missions

Provide solutions to different markets by delivering a complete range of Products and ODM Services to our customers.

◆ Our Vision

Become a leading international enterprise by providing professional design and production services to the embedded industry.



A Team of IPC Experts

With a wealth of experience in the IPC industry, Avalue's design and development team is capable to quickly transform the customer ideas into viable computing solutions. Our team is skilled in streamlining the development process and develops most products with seamless integration between hardware and software. Customers can therefore focus on their core business, knowing that less time will be spent on prototyping. This integrated service creates an increase in the overall efficiency and time-to-market advantage.

30-day Baseboard Prototyping Service

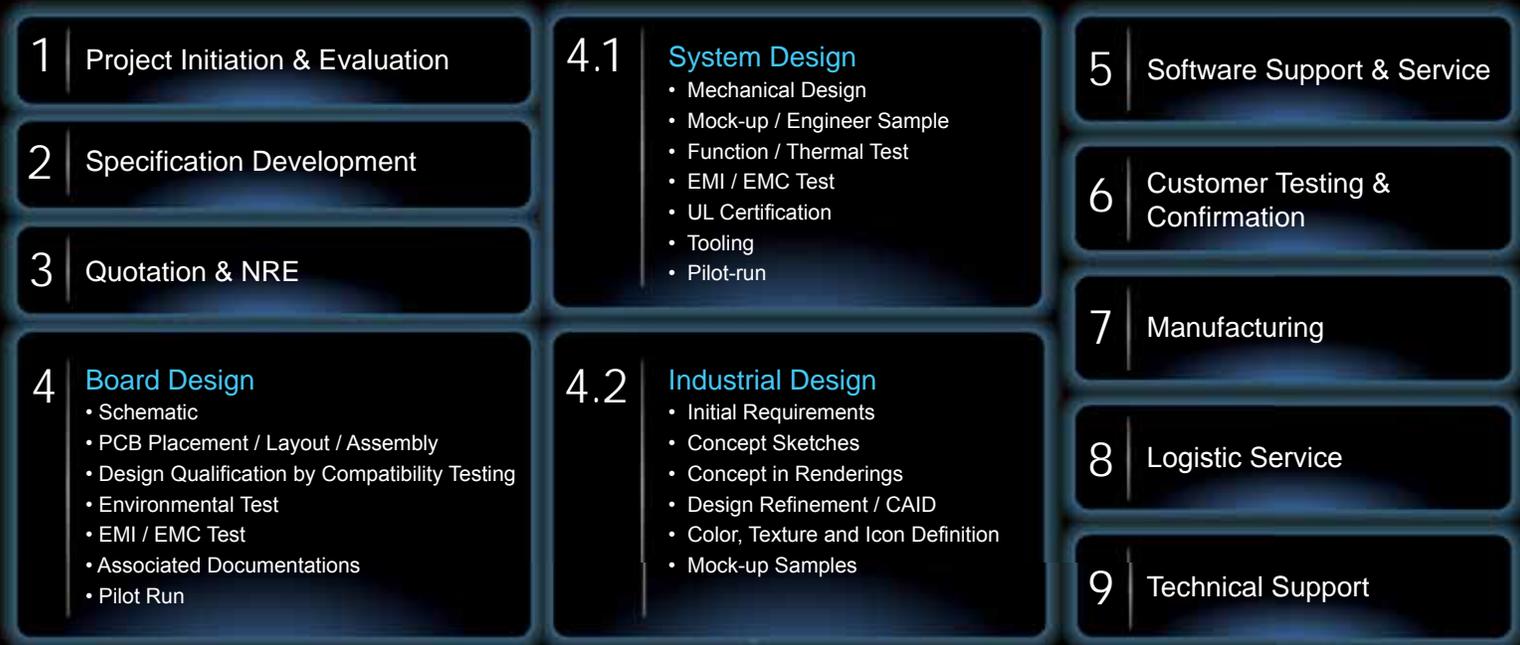
80% Standard, 20% Tailor-made

The ETX/COMexpress Computer on Module series offers fast customization. We deliver a 30-day prototype with a two-phase design, 80% standard and 20% tailor-made upon request. This saves customers at least 60% in both development time and cost.

Avalue's ETX/COMexpress products and baseboard prototyping service (BPS) delivers timely products with more flexibility, scalability and reliability.

- 1 > **Select ETX/COMexpress Engine**
Test different ETX/COMexpress CPU modules to meet your system requirements
- 2 > **Select Function Block**
Choose interfaces for storage device connection or use them for software compatibility tests
- 3 > **Select I/O Connectors**
Identify various I/O interfaces for external peripheral connections
- 4 > **Draft PCB Placement**
- 5 > **Confirm Specification**
- 6 > **NRE Charges**
- 7 > **30 Working Days**
- 8 > **Complete 3 pieces of Engineering Samples**

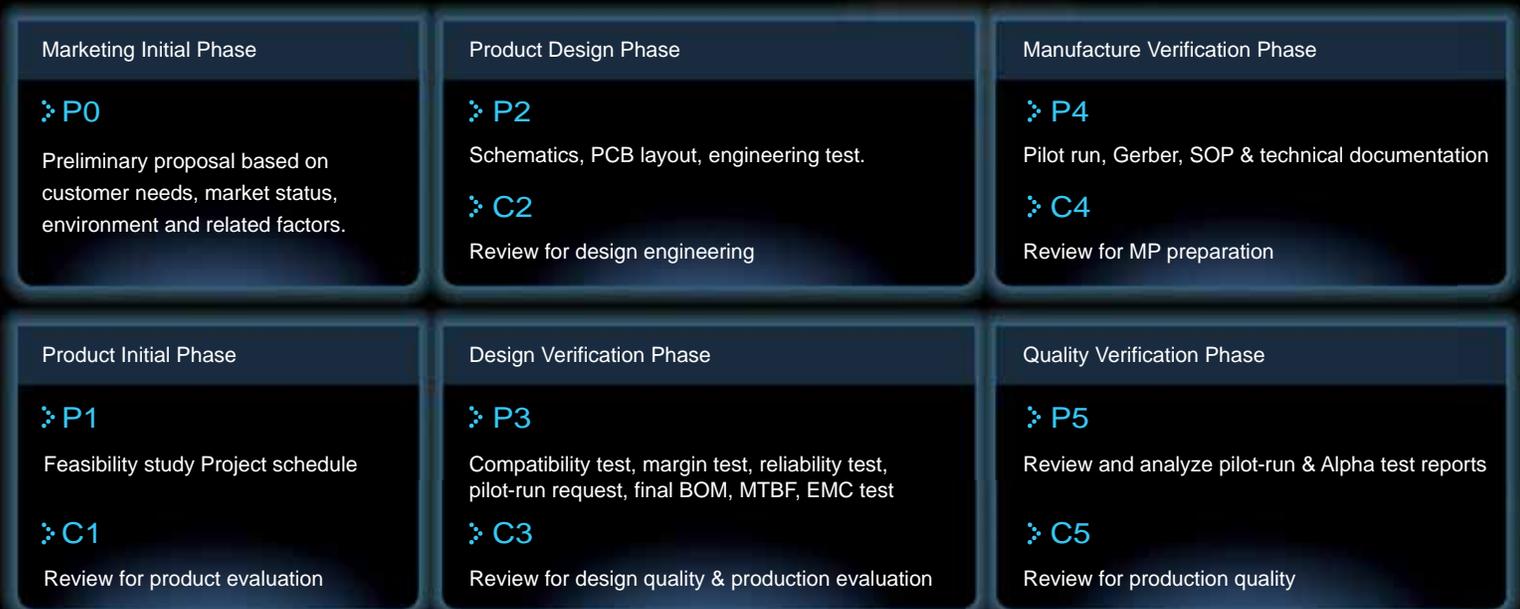
Design Services*



New Product Development Process

Optimized Design-to-production Process with Quality & Efficiency

Avalue has established the New Product Development Process (NPDP) to optimize project output, and shorten the product development cycle. It is oriented toward customer demands and market opportunities. The NPDP integrates all development capacities and resources throughout the company, including planning, projecting and implementation. The result of this integration is a full optimization of the product design for volume manufacturing and quality fulfillment.





Manufacturing & Quality

Green Manufacturing

Avalue conducts its business in a manner that respects, preserves, and improves the environment. The company is committed to total quality management that applies to a full range of manufacturing and design services. Also, Avalue is devoted to approaching green manufacturing aimed at reducing the energy and hazardous material throughout the product life span, starting from original design, component acquisition, manufacturing, all the way through its transport, usage, and disposal.

Approaches to RoHS Compliance

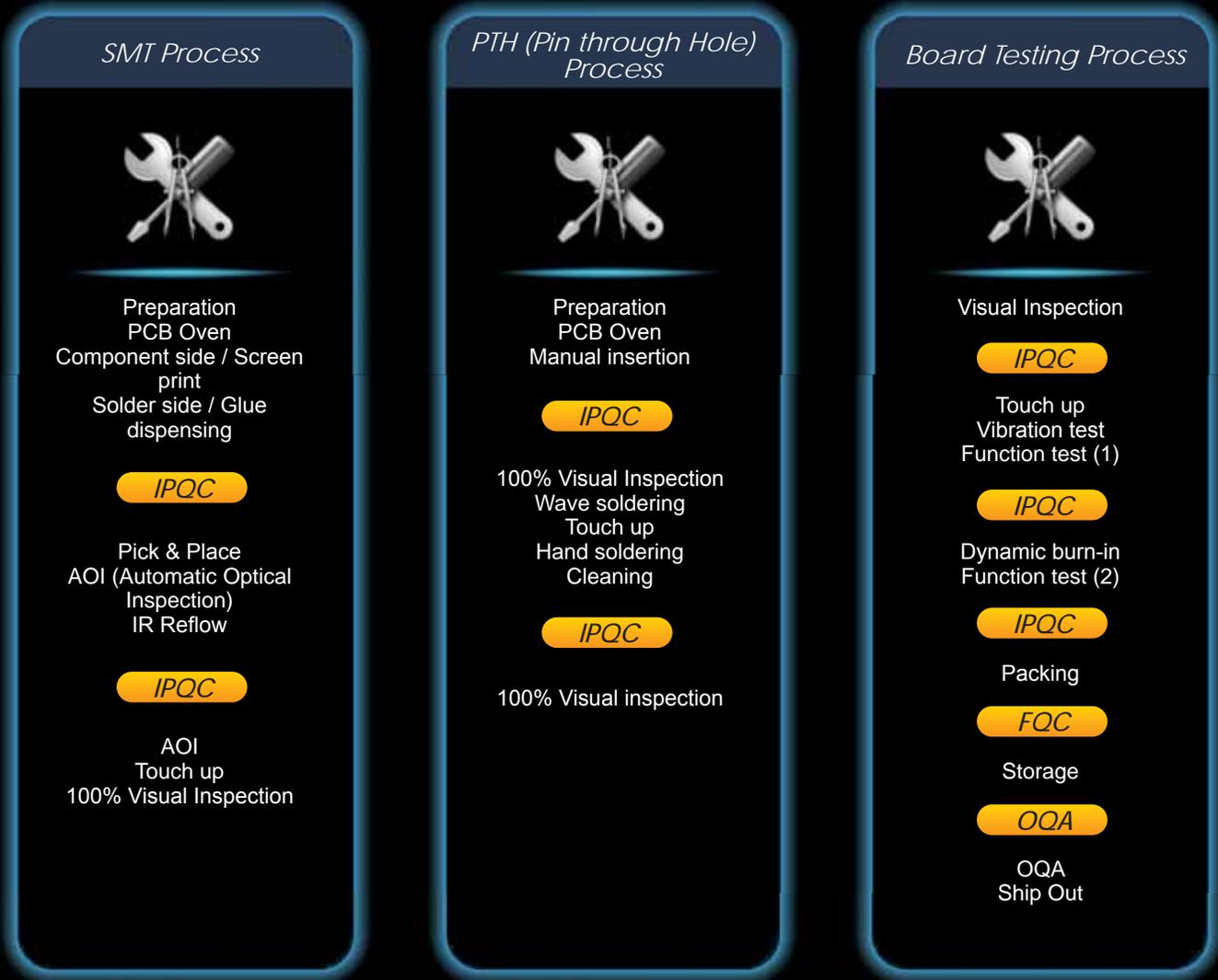
According to RoHS directive (2002/95/EG), Avalue has initiated a series of action plans to comply with RoHS regulations since 2004. The first RoHS compliance product has been assessed by third party laboratory with successful qualification in August 2005. The report verifies the facts that Avalue is capable to monitor RoHS manufacturing process, and ensures its manufacturing achieves 100% lead-free quality.

Check for regular status updates available online at the Avalue website.

Component Quality Control

Avalue applies handheld XRF (X-ray fluorescence) analyzer to detect the banned substances from incoming inspection to component release. It becomes a standard procedure to accurately examine alloy grades based on the elemental composition, and therefore ensure all components qualified with RoHS compliance

Board Manufacturing & QC Processes



Quality standard set for customer satisfaction

Customer satisfaction and quality management are at the top of Avalue's priority list. Avalue considers customer satisfaction in every aspect of quality control and implements a quality assurance system throughout the entire product life cycle. Every model strictly complies with CE, FCC and other certified standards. All business processes are conducted in accordance with ISO-9001 standards to ensure quality assurance.

System QC Processes

1	2	3	4	5
<p>Pre-assembly Test</p> <ul style="list-style-type: none"> • Component qualifications • Motherboard test • CPU test • RAM test 	<p>System Assembly</p> <ul style="list-style-type: none"> • Functionality test • Configuration and format test • Customized software installation 	<p>Temperature burn-in (32°F-104°F)</p> <ul style="list-style-type: none"> • Extensive burn-in • Diagnostic software test 	<p>Final Testing - 100%</p> <ul style="list-style-type: none"> • System functional test • Input / output test • Final test report 	<p>Final Q.C. Assurance</p> <ul style="list-style-type: none"> • Visual inspection • Specification adherence check • Quality engineer approval

Support & Service

❖ Sales Services

Listen & Respond to Your Needs

Avalue's sales people listen to customer needs, and provide the best-fit advice to the needs with their in-depth experience. A full analysis of system requirements will be carried out from the project study throughout the project implementation. We greatly value the opportunity to respond to customer inquiries, so please do call any of our worldwide branches, or write to us on www.avalu.com.tw. Our sales staff is committed to responding to any of your inquiries with in 24 hours during working day.

❖ Technical Services

Carefree system development

Avalue offers a 24/7 technical database service right at your fingertips. Simply click to access our service Web site at www.avalu.com.tw. The web site provides the most update information and free download services including BIOS, drivers, utilities, reference manuals, and data sheets.

❖ e-RMA Service

Hardware Warranty Support

Avalue provides eRMA (Return of Material Authorization) service that helps the customers to return the defective products with easy and interactive operation. This real-time service allows customer to submit RMA requests and check the status online. Customers may check the online flash user-guide for the complete process demonstration, or write to us at rma_service@avalu.com.tw if any question.



Services Software

Commitment to intensive OS test and support



Extending Avalue's proven expertise for embedded hardware platforms, Avalue has built up a sound capability in embedded OS support. All hardware products are delivered with certified device drivers with optional preinstalled Embedded WinCE.NET or Embedded Linux.

Microsoft Embedded Windows OS



As a valued Windows Embedded Partner (WEP), Avalue provides Microsoft embedded OS consulting, training, and support. Avalue is authorized with board manufacturer limited distribution right for the latest Windows CE.NET as well as Windows 7/XP/2000/NT Embedded and Vista.

Embedded Linux OS



Nearly all Avalue products will support the Linux operating system. Though Avalue's Linux support is limited to driver availability, Avalue has developed business relationships with system integrators who specialize in developing Linux solutions.

Avalue Software Services



- OS-Verified with Avalue Products > Microsoft Windows OS > Open Source Linux OS
- Intensive OS Tests in Design Phase > Internal by QE Department > External by NSTL Verified Test Lab
- Application Software Options > Custom Application Software such as for Set top boxes, Thin servers and so on > Design & Integratio



Faster Time-to-Market

Scalable Performance

High Reliability

Small Footprint

Product Longevity

Revision Control

Embedded OS Support

OEM/ODM Services

Tailored To Your

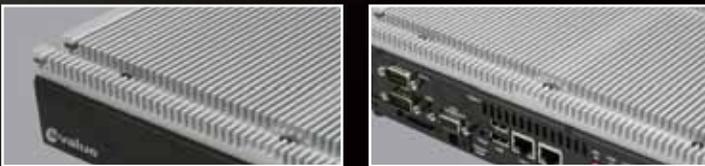
Needs

Avalue's Board Solutions

You name it, we make it. Avalue designs and manufactures a full range of “tailored made” single board computers. Our mission is to satisfy various requirements. By providing full-line product which is ranged from ETX/COMexpress module to 5.25” SBC, customers could choice the most suitable ones upon various demands. Avalue also provides scalable platforms to cover diverse applications and operations.



@value



Avalue's System Solutions

Avalue has developed a full range of modular-design, barebone systems to offer its customers the major advantages of affordable cost, rapid development, and scalable flexibility in system performance. All enclosures are designed with a high quality cooling mechanism that increases heat transfer reliability for any space or thermal concerned application.



❖ ODM Turn-Key Services

Tailored to your Need

Avalue accumulates more than 10 year design and development knowledge in Single Board Design & System Level Design for Embedded Market & Vertical Field. We deliver an outsourcing turn key solution that meet customer specific requirements from Component Sourcing, ID design to complicated system product.

Electronic Engineering Design

- Schematics
- PCB layout
- Power circuit plan
- Prototype Fabrication
- Digital, Analog, and Mixed Circuit Design
- Consultancy

Mechanical Engineering Design

- Industrial Design
- Structure Analysis
- Rapid metal prototyping
- CNC, Laser cutting
- Aluminum Extrusion
- Plastic tooling
- IP standard
- Thermal Simulation

System Design

- Longevity Support
- Wide Temperature Range
- Wide Range Voltage Input
- IP Standard Comply
- Sunlight Readable
- Anti Shock/Vibration

Solutions Design
Gaming, POS/Kiosk, Medical,

❖ ODM Design Capability

Flexible and Experienced Design

Dedicated to understanding your project needs by go through the whole project process from conceptualization to manufacturing. And delivering cost-effective and quality solution on time.

Expertise

CAD

ProE, AutoCAD, CorelDRAW

EE

Allegro, OrCAD, Component information system (CIS)

PLM

Oracle Agile

Project Management Team

❖ PSM Team

Consultancy / Specification define / Validation & environment / Regulatory requirement / Component selection / Schedule planning / Terms & Quotation

❖ PM Team

R&D / PE / PMC communication / Project management / Schedule control / Report generate / Documentation control

❖ KAM Team

Product management / Logistic management / Life cycle management / Revision control / General support

Deeply embedded
Higher Integration
Lower Power
3D Performance
Visual Enhancement

Focus Applications

With decade's expertise, Avalue has built a well-known reputation at IPC markets. Avalue is dedicated to customer's success in various businesses and industries through our value-add products implemented in versatile environments cross countries. Based on the explicit perspectives and professional technologies of experienced team, Avalue has developed a range of product lines as well grabbed the trust from clients.

To confront the bounding markets, Avalue focus on several applications: Embedded Gaming Computers in Gambling and Amusement industry, Health Care Terminals in Medical field, Point of Sales (POS), Kiosk and Digital Signage aimed for Interactive Clients, and Surveillance Systems in Automation, with the mission of delivering quality and worthy products and services.



DSS



IP Media Phone



Digital Signage



Gaming



Medical



Retail



Residential/Home Automation



Kiosks



IVI



Transportation

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EMX-945GSE	Intel® Atom™ N270 Mini ITX Motherboard with Intel® 945GSE + ICH7-M Chipset	9-9
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Service Portfolio



System Design & Development

Concept sketches
Mechanical design
Mock-up engineering sample
EMI/EMC test

Manufacturing

Production & system integration

OEM/ODM Design

Kernel platform design
Specification development

Technical Support

Application engineering
RMA, Warranty
OS adaptation
Driver, LCD test
BIOS adaptation

Business Support

Component & peripherals sourcing

Consultancy

Project administration
Project initiation & evaluation

Why Avalue?

Avalue has positioned itself as an innovative solution provider in embedded industry. Avalue is dedicated to designing and manufacturing a board range of computing solutions along with comprehensive technical services to keep Avalue's customers ahead of the competition and to be more competitive in high mobility yet extra low-power applications.

❖ The Preferred Architecture for Embedded Boards

Scalable Architecture
Fanless
Low power
Ruggedized
Supercomputing

Long Life Cycle Support

Full Function Range
CPU, Audio, Video, Network, Control, Power, DIO, FPGA, AD/DA

Software Engineering Support for porting, training.
Windows XPe, WinCE, BIOS

❖ Advantages of Boards and Modules

Facilitation	<ol style="list-style-type: none">1. Off-the-shelf computer board2. Support the future bus architecture extension interfaces	
Reliability	<ol style="list-style-type: none">1. Expertise of ruggedize design2. Serving medical, transportation, and harsh environment demanding	
Compliance	<ol style="list-style-type: none">1. Compliant regulatory of industry standards2. Compliant Safety Regulatory3. In-house testing and certification facilities	

1

Embedded System

Embedded System

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Embedded System Position

Ruggedized Embedded System



- Robust, High Reliability Design, Rigorous Testing
- Expansions with Express Card & PCI Slots
- Configuration Flexibility
- Rich I/O



Performance



- Unrivaled Performance with Intel® Core™ 2 Duo
- Multi-tasking Applications
- Great Thermal Design



Ultra-Compact BOX



- Fanless Fully Sealed
- Trusted Platform with Atom™ N270
- Affordable Price with Moderate Performance
- Designed for Space Critical Applications



Cost-Effective System



- Basic Computing
- Full Functions in Compact Size
- For Price Sensitive Clients



Fanless Rugged System

Avalue Rugged Systems were specially designed for long-term operation in extreme harsh environments.

Specially Designed for Usage in Harsh Environments:

to fulfill harsh environment usage, long-term operation such as automation, heavy vehicle...etc.

- ▶ **Anti-shock:** according to IEC60068-2-27
(CF : 50G ; HDD : 20G)
- ▶ **Anti-Vibration:** according to IEC60068-2-64
(CF : 5G ; HDD : 1G)
- ▶ **Extreme temperatures:**
-10 °C to 55° C
- ▶ **Wide Range DC Power Input:**
9V ~ 32V DC acceptable

Mobile Expansion – Express Card Slot/ 34mm

to add memory, wireless communications, multimedia by inserting ExpressCard modules

- ▶ **Wireless LAN**
(802.11 b/g, WiFi)
- ▶ **Wireless Broadband Internet**
(3G, CDMA, EVDO, GPRS, UMTS, etc.)

Great Thermal Design

to meet the harsh environment demands.



Industrial Automation
Factory Management



Transportation
Heavy Vehicle



Outdoor Kiosk

Customized Functions

Phoenix-type

Easy to use, resistant to vibration, resistant to loosening

Customized I/O

- LVDS & Backlight Control Connector
- GPIO connector



VGA/ DVI

Standard VGA, Optional DVI

2 PCI Slot

2 PCI expansion slots for most industrial I/O cards



Features

- Intel® Ivy Bridge Processor with Intel® QM77 Chipset
- Two 204-pin SODIMM Sockets Up to 16GB DDR3 1333/ 1600 SDRAM
- Triple Display, CRT, HDMI and Display Port
- Intel® HD Audio, Dual Intel® Gigabit Ethernet
- 1 CFast, 2 SATA III, 8 COM, 8 USB, 1 LPT, 2PCI, 1 SIM Card, 8-bit/ 16-bit DIO
- Supported H/W RAID Mode 0/ 1
- Service Windows, Easy to Install HDD/ SSD, Memory
- Operating Temperature -20 ~ 60°C, Ambient w/ Air Flow
- Optional: PCI + PCIe16 Riser Card, Single PCIe16 Riser Card and Table Mount Bracket

Intel® QM77	HDMI	2 GbE	CFast	2 SATA III
8 COM	8 USB	2PCI	SIM Card	Fanless

Specifications

System

• Board	ESM-QM77
• CPU	Intel® Ivy Bridge Processor
• BIOS	AMI 16Mbit SPI BIOS
• System Chipset	Intel® QM77 Chipset
• I/O Chip	Nuvoton NTC6776F
• System Memory	Two 204-pin SODIMM Sockets Up to 16GB DDR3 1333/ 1600 SDRAM
• SSD	1 x CFast
• Hard Disk	2 x 2.5" SATA HDD/ SSD
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• Display	Intel® QM77 with Integrated Graphics Engine
• Audio	Intel® High Definition Audio
• Ethernet	Dual Intel® Gigabit Ethernet
• System Indicators	7 LED Indicators Show Power, HDD 1/2, LAN 1/2, RAID 0/1 Mode
• Expansion Interface	2 PCI Slots, 2 Mini PCIe Sockets (One Supported SIM Card Slot)

External I/O

• COM	8 x RS232 (2 x COM RS-232/422/485 Setting by BIOS)
• LAN	2 x RJ-45
• Display Output Port	1 x CRT, 1 x HDMI, 1 x Display Port
• Audio	Mic-in, Line-out
• USB	5 x USB 2.0 ; 3 x USB 3.0 (Rear 5; Front 3)
• Digital I/O	1 x DB-9 (8-bit), 1 x DB-25 (16-bit)
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• Extending Switch	1 x 2-pin Phoenix Type Connector

Environment & Mechanical

• Power Requirement	+8 ~ 28Vdc 4-Pin Phoenix Type Connector
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	-20 ~ 60°C (w/ SSD), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Vibration Protection	With CFast/ SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis With HDD: 1Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis
• Shock Protection	With CFast/ SSD: 50G, IEC 60068-2-27, Half Sine, 11ms With HDD: 20G, IEC 60068-2-27, Half Sine, 11ms
• Mounting	Table Mount
• Dimension (W x D x H)	250mm x 220mm x 108mm
• Weight	10lbs (5Kgs)

Ordering Information

- **EPS-QM77-A1-1R**
Fanless Intel® Ivy Bridge Embedded System with Intel® QM77 Chipset
- **ACC-EPS-WM-2R**
EPS-QM57 Wall Mount Kit (RoHS)



Features

- Support Intel® Core™ i7-2710QE 2.1GHz with 6MB Cache CPU/ Intel® Core™ i5-2510E 2.5GHz with 3MB Cache CPU
- Intel® QM67 Chipset
- One 204-pin DDR3 SODIMM Up to 8GB DDR3 1066/ 1333 SDRAM
- Dual Display, 1 DVI-I, 1 HDMI
- 5.1-CH Audio, Dual Gigabit Ethernet
- 1 SATA, 1 mSATA, 2 COM, 6 USB
- 10 ~ +60°C Wide Temperature Operation
- Rugged Design for Vibration/ Shock Protection
- Service Windows, Easy to Install mSATA, SSD and Memory
- Support iAMT 7.0

Intel® QM67	HDMI	2 GbE	SATA	mSATA
2 COM	6 USB	Fanless	Wide Temp.	iAMT 7.0

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Board	EPI-QM67
• CPU	Support Intel® Core™ i7-2710QE 2.1GHz with 6MB Cache CPU/ Intel® Core™ i5-2510E 2.5GHz with 3MB Cache CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	Intel® QM67 Chipset (3.9W)
• I/O Chip	Nuvoton NTC6776F
• System Memory	One 204-pin DDR3 SODIMM Up to 8GB DDR3 1066/ 1333 SDRAM
• SSD	1 x mSATA, 1 x SATA
• Display	Intel® QM67 with Integrated Graphics Engine
• Audio	Realtek ALC892 Supports 5.1-CH Audio
• Ethernet	Dual Intel® Gigabit Ethernet
• System Indicators	2 LED Indicators Show Power and HDD Status
• Watchdog Timer	Reset: 1 sec. ~ 65535 sec./min. and 1 sec. or 1 min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Trotting Control

External I/O

• COM	1 x RS-232, 1 x RS-232/422/485
• LAN	2 x RJ-45
• Display Port	1 x DVI-I; 1 x HDMI
• Audio	Mic-in, Line-in and Line-out
• USB	6 x USB 2.0 (Rear 4; Front 2)
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)

Power Supply Unit

• Power Input	100 ~ 240Vac/ 50 ~ 60Hz
• Power Output	12Vdc/ 7A (Lockable DC Plug)

Environment & Mechanical

• Power Requirement	+12V ~ 19V (Lockable DC Jack)
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	-10 ~ 60°C (w/ SSD), Ambient w/ Air Flow; i5-2510E -10 ~ 50°C (w/ SSD), Ambient w/ Air Flow; i7-2710QE
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Vibration Protection	With SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis
• Shock Protection	With SSD: 50G, IEC 60068-2-27, Half Sine, 11ms
• Mounting	VESA Compliance
• Dimension (W x D x H)	250mm x 220mm x 60mm
• Weight	7.7lbs (3.5Kgs)

Ordering Information

- **EPS-QM67-A1-1R**
Fanless Intel® rPGA988B Socket Rugged Embedded System with Intel® QM67 Chipset and 4G DDR3
- **EPS-QM67-A1-2R**
Fanless Intel® Core™ i7-2710QE Rugged Embedded System with Intel® QM67 Chipset and 4G DDR3
- **EPS-QM67-A1-3R**
Fanless Intel® Core™ i5-2510E Rugged Embedded System with Intel® QM67 Chipset and 4G DDR3
- **ACC-EPS-WM-2R**
EPS-QM57 Wall Mount Kit (RoHS)



Features

- Support Intel® Core™ i7-620LE 2.0GHz with 4MB Cache CPU/ Intel® Celeron® P4505 1.86GHz with 2MB Cache CPU
- Intel® QM57 Chipset
- Two 204-pin SODIMMs Up to 8GB DDR3 800/ 1066 SDRAM
- 5.1-CH HD Audio, Dual Gigabit Ethernet
- 1 CFast, 1 SATA, 8 COM, 6 USB, 1 LPT, 2 PCI, 1 x SIM Card, 8-bit/ 16-bit DIO
- Service Windows, Easy to Install HDD/ SSD and Memory
- Fanless Operation; -10 ~ +55°C Wide Temperature Operation
- Optional : PCI + PCIe16 Riser Card, PCIe Riser Card, Table Mount Bracket

Intel® QM57	2 GbE	CFast	8 COM	6 USB
2 PCI	SIM Card	Fanless	Wide Temp.	Wide Voltage

Specifications

System

• Board	ESM-QM57
• CPU	Intel® Core™ i7-620LE 2.0GHz with 4MB Cache CPU Intel® Celeron® P4505 1.86GHz with 2MB Cache CPU
• BIOS	AMI 8MBit Flash BIOS
• System Chipset	Intel® QM57 Chipset
• I/O Chip	Winbond W83627DHG-P
• System Memory	Two 204-pin SODIMM Sockets Up to 8GB DDR3 800/1066 SDRAM
• SSD	One CFAST Socket with Ejector and Cover
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• Display	Intel® QM57 with Integrated Graphics Engine
• Audio	Realtek HD Audio Supports 5.1-CH Audio
• Ethernet	Dual Intel® 82577LM (PHY) Gigabit Ethernet
• System Indicators	6 LED Indicators Show Power, HDD, LAN
• Drive Bay	Mounting Kit for One 2.5" HDD
• Expansion Interface	2 PCI Slots, 2 Mini PCIe Sockets

External I/O

• COM	8 x RS-232
• LAN	2 x RJ-45
• Display Output Port	1 x VGA, 1 x Dual-channel 18/24-bit LVDS
• Audio	Mic-in, Line-out
• USB	6 x USB 2.0 (Rear 4; Front 2)
• Digital I/O	1 x DB-9 (8-bit), 1 x DB-25 (16-bit)
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• Extending Switch	1 x 2-pin Phoenix Type Connector

Environment & Mechanical

• Power Requirement	+9 ~ 32V
• ACPI	Single Power ATX Support S0 ~ S5 ACPI 2.0B
• Power Type	ATX
• Operating Temperature	-10 ~ 55°C (-14 ~ 131°F); 1 SODIMM Slot Occupied -10 ~ 50°C (-14 ~ 122°F); 2 SODIMM Slots Occupied
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	5 ~ 90% @ 40°C (104°F), Relative Humidity, Non-condensing
• Vibration Protection	With CFast: 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis With HDD: 1Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
• Shock Protection	With CFast: 50G, IEC 60068-2-27, Half Sine, 11ms With HDD: 20G, IEC 60068-2-27, Half Sine, 11ms
• Mounting	Table Mount
• Dimension (W x D x H)	250mm x 220mm x 108mm
• Weight	10lbs (5Kgs)

Ordering Information

- **EPS-QM57-620-A1-1R**
Fanless Intel® Core™ i7-620LE Rugged Embedded System with QM57 Chipset and 2 PCI, Wide Operating Temp.
- **EPS-QM57-620-A1-2R**
Fanless Intel® Core™ i7-620LE Rugged Embedded System with QM57 Chipset and 1 PCI, 1 PCIe, Wide Operating Temp.
- **EPS-QM57-620-A1-3R**
Fanless Intel® Core™ i7-620LE Rugged Embedded System with QM57 Chipset and 1 PCIe, Wide Operating Temp.
- **EPS-QM57-P45-A1-1R**
Fanless Intel® Celeron® P4505 Rugged Embedded System with QM57 Chipset and 2 PCI
- **EPS-QM57-P45-A1-2R**
Fanless Intel® Celeron® P4505 Rugged Embedded System with QM57 Chipset and 1 PCI, 1 PCIe
- **EPS-QM57-P45-A1-3R**
Fanless Intel® Celeron® P4505 Rugged Embedded System with QM57 Chipset and 1 PCIe
- **ACC-EPS-WM-2R**
EPS-QM57 Wall Mount Kit (RoHS)



Features

- Onboard Intel® Atom™ D525 Dual Core 1.8GHz CPU
- Intel® ICH8-M Chipset
- One 200-pin DDR2 SODIMM Supports Up to 2GB DDR2 667 SDRAM
- Audio, Dual Gigabit Ethernet
- 1 SATA, 6 COM, 5 USB, 1 VGA, 1 CF
- Service Windows, Easy to Install SSD/ HDD and Memory
- 9 ~ 32V Wide Range DC Power Input
- Operating Temperature : -20 ~ 55°C, Ambient w/ Air Flow

Intel® Atom™	2 GB e	1 SATA	6 COM	5 USB
CF	Wide Voltage	Fanless		

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Board	ECM-PNV
• CPU	Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
• BIOS	AMI 8 Mbit Flash BIOS
• System Chipset	Intel® ICH8-M Chipset
• I/O Chip	ITE IT8712F-S
• System Memory	One 200-pin SODIMM Socket Supports Up to 2 GB DDR2 667 SDRAM
• SSD	1 x CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status

External I/O

• COM	4 x RS-232 (COM1 ~ 4) ; 2 x RS-422/485 (COM5 ~ 6)
• LAN	2 x RJ-45
• VGA/ DVI Port	1 x VGA
• Audio	1 x Line-out
• USB	5 x USB 2.0 (Rear 3; Front 2)
• SSD	1 x CompactFlash Type I/II Socket
• Expansion Slot	2 x PCI Slots (AUX-039 + New Version of AUX-028)
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)

Display

• Chipset	Intel® Pineview Integrated, GMA3150 @ 400MHz
• Resolution	CRT Mode: 2048 x 1536 @ 60Hz

Audio

• Audio Chipset	Realtek ALC888 HD Audio Codec
• Audio Interface	1 x Line-out

Ethernet

• LAN Chip	Dual Intel® 82574L Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/ 100/ 1000 Base-Tx Fast Ethernet Compatible

Environment & Mechanical

• Power Requirement	9 ~ 32V Wide Range DC Power Input
• ACPI	Single Power ATX Support S0 ~ S5 ACPI 2.0B
• Power Type	AT/ ATX
• Operating Temperature	-20 ~ 55°C (HDD), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Vibration Protection	With CF/ SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis With HDD: 1Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
• Shock Protection	With CF/ SSD: 50G, IEC 60068-2-27, Half Sine, 11ms With HDD: 20G, IEC 60068-2-27, Half Sine, 11ms
• Dimension (W x D x H)	220mm x 215mm x 126mm
• Weight	7.7lbs (3.5Kgs)

Ordering Information

- **EPS-PNV-525-A1-1R**
Fanless Intel® Atom™ D525 Dual Core Rugged Embedded System with Intel® ICH8-M Chipset and 2 PCI
- **ACC-EPS-WM-1R**
EPS-PNV Wall Mount Kit (RoHS)
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



Features

- Onboard Intel® Cedarview D2700 2.13GHz CPU
- Intel® NM10 Express Chipset
- One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
- Dual View, VGA and HDMI
- 5.1-CH Audio, Dual Intel® Gigabit Ethernet
- 1 CF, 1 SATA, 2 COM, 6 USB, 16-bit GPIO
- Service Windows, Easy to Install HDD/ SSD, Memory
- Operating Temperature -10 ~ 60°C, Ambient w/ Air Flow

Intel® NM10	Dual View	2 GbE	5.1-CH Audio	CF
SATA	2 COM	6 USB	16-bit GPIO	Fanless

Specifications

System

• Board	ECM-CDV
• CPU	Onboard Intel® Cedarview D2700 2.13GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
• SSD	1 x CompactFlash Type I/II Socket
• Hard Disk	1 x 2.5" SATA HDD/ SSD
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control

External I/O

• COM	1 x RS-232, 1 x RS-232/ 422/ 485
• LAN	2 x RJ45
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• VGA	1 x VGA
• HDMI	1 x HDMI
• Audio Port	Mic-in, Line-in, Line-out
• GPIO	8-bit GPI and 8-bit GPO (LPT DB 25pin Connector)
• USB Port	6 x USB 2.0 (Rear 5; Front 1)
• Expansion	1 x Mini-PCIe Socket (mSATA Supported)

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz

Audio

• Audio Chipset	Realtek ALC892 Supports 5.1-CH Audio
• Audio Interface	Line-in, Line-out and Mic-in

Ethernet

• LAN Chip	2 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S3, S4, S5 and ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	-10 ~ 60°C (w/ CF), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Vibration Protection	With CF/ SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis
• Shock Protection	With CF/ SSD: 50G, IEC 60068-2-27, Half Sine, 11ms
• Dimension (W x D x H)	271mm x 150mm x 55mm
• Weight	5.5lbs (2.5Kgs)

Ordering Information

- **ERS-CDV**
Fanless Intel® Cedarview Rugged Embedded System with Intel® NM10 Express Chipset and Heatsink, VGA, HDMI, 2 COM, 6 USB, 2 Gigabit Ethernet, CF, Audio, 12V DC Input
- **ACC-ERS-WM**
ERS Series Wall Mount Kit (RoHS)
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



Features

- Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU (Optional: D510)
- Intel® ICH8-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 667 SDRAM
- 5.1-CH Audio, Dual Gigabit Ethernet
- 1 VGA, 1 CF, 1 SATA, 3 COM, 5 USB, 1 Mini PCIe
- Service Windows, Easy to Install HDD/ SSD and Memory
- Fanless Operation
- 10 ~ 50°C Wide Temperature Operation
- Rugged Design for Vibration/ Shock Protection
- Optional Function:
 1. 9 ~ 32V Wide Range DC Power Input + Phoenix Type Power Conn
 2. Add 3 COMs in Front
 3. WiFi 802.11b/g Module

Atom™	5.1-CH Audio	2 GbE	1 CF	1 SATA
3 COM	5 USB	Mini PCIe	Fanless	Wide Temp.

Specifications

System

• Board	ECM-PNV
• CPU	Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU or D510 1.66GHz CPU (Optional)
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® ICH8-M Chipset
• System Memory	One 200-pin DDR2 SODIMM Supports Up to 2GB DDR2 667 SDRAM
• SSD	One CompactFlash Type I/II Socket with Ejector and CompactFlash Cover
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• Display	Intel® Pineview Integrated, GMA3150 @ 400MHz
• Audio	Realtek ALC888 Supports 5.1-CH Audio
• Ethernet	Dual Intel® 82574L Gigabit Ethernet
• System Indicators	2 LED Indicators Show Power and HDD Status
• Drive Bay	Mounting Kit for One 2.5" HDD (Hidden)
• Expansion Interface	1 x Mini PCIe Slot (Internal)

External I/O

• COM	3 x RS-232 (COM2 Can be Set as RS-232/422/485 by BIOS)
• LAN	2 x RJ-45
• Display Output Port	1 x VGA
• Audio	Mic-in, Line-in, Line-out
• USB	5 x USB 2.0 (Rear 4 ; Front 1)

Power Supply Unit

• Power Input	100 ~ 240Vac/ 50 ~ 60Hz
• Power Output	12Vdc/ 5A (Screw Type; 60W)

Environment & Mechanical

• Power Requirement	12V
• Operating Temperature	-10°C ~ 50°C (14 ~ 122°F)
• Storage Temperature	-40°C ~ 75°C (-40 ~ 167°F)
• Relative Humidity	5 ~ 90% @ 40°C (104°F), Relative Humidity, Non-condensing
• Vibration Protection	With Compact Flash: 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis With HDD: 1Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
• Shock Protection	With Compact Flash: 50G, IEC 60068-2-27, Half Sine, 11ms With HDD: 20G, IEC 60068-2-27, Half Sine, 11ms
• Dimension (W x D x H)	271mm x 150mm x 55mm
• Weight	5.5lbs (2.5Kgs)

Ordering Information

• ERS-PNV-525-A2-1R

Fanless Intel® Atom™ D525 Dual-Core 1.8GHz Rugged Embedded System with Intel® ICH8-M Chipset and Heatsink, 1G DDR2, VGA, 3 COM, 5 USB, 2 Gigabit Ethernet, CF, Audio, 12V DC Input

• ERS-PNV-525-A2-2R

Fanless Intel® Atom™ D525 Dual-Core 1.8GHz Rugged Embedded System with Intel® ICH8-M Chipset and Heatsink, 2G DDR2, VGA, 3 COM, 5 USB, 2 Gigabit Ethernet, CF, Audio, 12V DC Input

• ACC-ERS-WM

ERS Series Wall Mount Kit (RoHS)

• ACC-CF-xx

CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- Onboard AMD eOntario T56N 1.6GHz CPU
- AMD A50M Chipset
- One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
- 1 mSATA, 1 CF, 1 SSD
- Dual Gigabit Ethernet, 7.1-CH Audio
- 1 VGA, 1 HDMI, 2 COM, 6 USB
- Service Windows, Easy to Install HDD/ SSD and Memory
- Operating Temperature -10 ~ 50°C, Ambient w/ Air Flow

AMD A50M	5.1-CH Audio	2 GbE	1 CF	mSATA
HDMI	2 COM	6 USB	Mini PCI	Fanless

Specifications

System

• Board	ECM-A50M-56N
• CPU	Onboard AMD eOntario T56N 1.6GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	AMD A50M Chipset
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
• SSD	1 x CompactFlash Type I/II Socket
• Hard Disk	1 x 2.5" SATA HDD/ SSD
• Watchdog Timer	Reset: 1 sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control

External I/O

• COM	2 x RS-232 (COM2 Can be Set as RS-422/ 485 by BIOS)
• LAN	2 x RJ-45
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• VGA	1 x VGA
• HDMI	1 x HDMI
• Audio	Mic-in, Line-in, Line-out
• USB	6 x USB 2.0 (Rear 5, Front 1)
• Expansions	1 Mini PCIe Socket (mSATA Supported)

Display

• Chipset	AMD Radeon 6320
• Resolution	VGA: 2560 x 1600 @ 75Hz, HDMI: 1920x1200 @75Hz

Audio

• Audio Chipset	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in and Line-out

Ethernet

• LAN Chip	Dual Realtek 8111E Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/100/1000 Base-Tx Fast Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 and ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	-10°C ~ 50°C (w/CF), Ambient w/ Air Flow
• Storage Temperature	-40°C ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Vibration Protection	With CF/ SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis
• Shock Protection	With CF/ SSD: 50G, IEC 60068-2-27, Half Sine, 11ms
• Dimension (W x D x H)	271mm x 150mm x 55mm
• Weight	5.5lbs (2.5Kgs)

Ordering Information

- **ERS-A50M-56N-A1-1R**
Fanless AMD eOntario T56N Rugged Embedded System with AMD A50M Chipset and Heatsink, VGA, HDMI, 2 COM, 6 USB, 2 Gigabit Ethernet, CF, Audio, 12V DC Input
- **ACC-ERS-WM**
ERS Series Wall Mount Kit (RoHS)
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



ERS-AT270-A2

Fanless Intel® Atom™ N270 Rugged Embedded System with Intel® 945GSE + ICH7-M Chipset



Features

- Onboard Intel® Atom™ N270 1.6GHz CPU
- Intel® 945GSE/ ICH7-M Chipset
- One 200-pin SODIMM Supports Up to 2GB DDR2 533 SDRAM
- 5.1-CH HD Audio, Dual Gigabit Ethernet
- 1 VGA, 1 LVDS, 1 SATA, 12 COM, 4 USB, 1 LPT, 2 PS/2, 1 CF, 16-bit GPIO
- Service Windows, Easy to Install HDD and Memory
- 0 ~ 50°C Fanless Operation, Ambient w/ air flow
- 1 DC-in 9 ~ 32V, 1 DC-out 12V

Atom™	Intel® 945GSE	5.1-CH Audio	2 GbE	CF
1 SATA	12 COM	4 USB	16-bit GPIO	Fanless

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Board	EPI-945GSE
• CPU	Onboard Intel® Atom™ N270 1.6GHz CPU
• BIOS	Award 4MBit Flash BIOS
• System Chipset	Intel® 945GSE/ ICH7-M
• I/O Chip	ITE 8712F/KX + Fintek F81216DG
• System Memory	One 200-pin SODIMM Supports Up to 2GB DDR2 533 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status

External I/O

• COM Port	12 x DB-9 (11 x RS-232, 1 x RS-232/422/485) COM1~6 by EPI-945GSE, COM 7~12 by LPC Module
• LPT Port	1 x DB25 (by LPC Module)
• LAN Port	2 x RJ-45
• VGA Port	1 x DB-15 VGA
• LVDS	1 x 18-bit LVDS (as DVI conn. type), LVDS +3.3V
• Audio Port	Mic-in and Line-out
• USB Port	4 x USB 2.0
• SSD	1 x CompactFlash Type I/II Socket
• Digital I/O	1 x 8-bit GPI; 1 x 8-bit GPO. Conn. DB-9
• Indicate LED	Onboard : 1 x Power ; 1 x HDD Chassis: 1 x Power ; 1 x HDD

Display

• Chipset	Intel® 945GSE Integrated
• Resolution	CRT Mode: 2048 x 1536 @ 60Hz LVDS : 1600 x 1200 @ 75Hz

Audio

• Audio Chipset	Realtek ALC655 supports 5.1-CH HD Audio
• Audio Interface	Mic-in and Line-out

Ethernet

• LAN Chip	Dual Realtek RTL8111C Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/100/1000 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Requirement	1 x DC-in (+9 ~ 32V/ 2-pin Phoenix Type DC Jack) 1 x DC-out (+12V/ 2-pin Phoenix Type DC Jack)
• Power Type	Single Power AT
• Operating Temp.	0 ~ 50°C (HDD/ CF), Ambient w/ Air Flow
• Storage Temp.	-20 ~ 75°C (-4 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (W x H x D)	235 x 100.8 x 165mm

Ordering Information

• ERS-AT270-A2-1R

Fanless Intel® Atom™ N270 Rugged Embedded System with 1G DDR2, VGA, LVDS, 12 COM, 4 USB, 2 Gigabit Ethernet, CF, Audio, GPIO, Wide Range DC Input



Features

- Onboard Intel® Cedarview D2700 2.13GHz CPU
- Intel® NM10 Express Chipset
- One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
- Dual View, VGA and HDMI
- 5.1-CH Audio, Dual Intel® Gigabit Ethernet
- 1 CF, 1 SATA, 1 mSATA, 2 COM, 5 USB
- VESA Compliance

Intel® NM10	Dual View	HDMI	5.1-CH Audio	2 GbE
CF	mSATA	2 COM	5 USB	VESA

Specifications

System

• Board	ECM-CDV
• CPU	Onboard Intel® Cedarview D2700 2.13GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Hard Disk	1 x 2.5" SATA HDD/ SSD
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control

External I/O

• COM Port	1 x RS-232, 1 x RS-232/ 422/ 485
• LAN Port	2 x RJ-45
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• VGA	1 x VGA
• Audio Port	Mic-in, Line-in, Line-out
• USB Port	5 x USB 2.0 (Rear 4; Front 1)
• Expansions	1 x Mini-PCIe Socket (mSATA Supported)

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz

Audio

• AC97 Codec	Realtek ALC892 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	2 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 50°C (32 ~ 122°F) (w/CF), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	7" x 4.4" x 2.0" (178mm x 112mm x 50mm)
• Weight	2.7lbs (1.2Kgs)
• Mounting	VESA Compliance

Ordering Information

- **EPC-CDV**
Fanless Intel® Cedarview Tiny Box PC with Intel® NM10 Express Chipset
- **ACC-EPC-VESA-2R**
EPC series LCD VESA kit (RoHS)
- **ACC-EPC-DINRACK-1R**
EPC series Din-Rack
- **ACC-EPC-WIFIUSB-1R**
EPC series USB WiFi Module
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



Features

- Onboard Intel® Atom™ E640 1.00GHz CPU
- Intel® Platform Controller Hub EG20T Chipset
- Onboard DDR2 1GB Memory
- Realtek ALC892 Supports 7.1-CH Audio
- Dual Intel® 82574L PCI-E Gigabit Ethernet
- 1 CF, 1 Micro SD, 1 SATA, 4 COM, 3 USB
- Fanless Operation, VESA Compliance
- 40 ~ +70°C Wide Temperature Operation

Intel® Atom™	2 GbE	CF	Micro SD	SATA
4 COM	3 USB	Fanless	VESA	Wide Temp.

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Board	ECM-QB
• CPU	Onboard Intel® Atom™ E640 1.00GHz CPU
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® Platform Controller Hub EG20T Chipset
• I/O Chip	Nuvoton W83627DHG
• System Memory	Onboard DDR2 1GB Memory
• SSD	1 x CompactFlash Type I/II Socket, 1 x MicroSD
• Hard Disk	1 x 2.5" SATA HDD
• Watchdog Timer	Reset: 1us ~ 10min
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control

External I/O

• COM Port	2 x RS-232 (COM2 Can be Set as RS-232/422/485 by BIOS)
• Multi-Function Port	1 x RS-422, 1 x RS-485, 1 x CAN Bus
• LAN Port	2 x RJ-45
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WIFI & 3G)
• VGA	1 x VGA
• GPIO	8-bit GPI and 8-bit GPO
• Audio Port	Line-out
• USB Port	3 x USB 2.0
• Expansions	1 Mini-PCIe Socket

Display

• Chipset	Intel® Tunnel Creek Integrated
• Resolution	CRT Mode: 1280 x 1024 @ 85Hz

Audio

• Audio Chipset	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in and Line-out

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S3, S4, S5 and ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	7" x 5.6" x 2.0" (178mm x 142mm x 50mm)
• Weight	2.7lbs (1.2Kgs)
• Mounting	VESA Compliance

Ordering Information

- **EPC-QB**
Fanless Intel® Atom™ E6XX Series Tiny Box PC with Intel® Platform Controller Hub EG20T Chipset
- **ACC-EPC-VESA-2R**
EPC Series LCD VESA kit (RoHS)
- **ACC-EPC-DINRACK-1R**
EPC Series Din-Rack
- **ACC-EPC-WIFIUSB-1R**
EPC Series USB WiFi Module
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



EPC-A50M-40E Fanless AMD eOntario T40E Tiny Box PC with AMD A50M Chipset



Features

- ☞ Onboard AMD eOntario T40E 1.0GHz CPU
- ☞ AMD A50M Chipset
- ☞ One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
- ☞ Dual View, VGA and HDMI
- ☞ Dual Gigabit Ethernet, 7.1-CH HD Audio
- ☞ 1 CF, 1 SATA, 2 COM, 4 USB
- ☞ Supported mSATA, 2.5" SATA HDD
- ☞ VESA Compliance

AMD A50M	Dual View	2 GbE	7.1-CH Audio	CF
SATA	2 COM	4 USB	VESA	Fanless

Specifications

System

• Board	ECM-A50M-40E
• CPU	AMD eOntario T40E 1.0GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	AMD A50M Chipset
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Hard Disk	1 x 2.5" SATA HDD
• mSATA	1 x Mini Card
• Watchdog Timer	Reset: 1 sec. ~ 255 min. and 1 sec. or 1 min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control

External I/O

• COM Port	2 x RS-232 (COM2 Supports RS-422/485 Setting by BIOS)
• LAN Port	2 x RJ-45
• VGA/ HDMI Port	1 x VGA; 1 x HDMI
• Audio Port	Mic-in, Line-in and Line-out
• USB Port	4 x USB 2.0
• Antenna	1 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• SSD	1 x Type I/II CompactFlash Socket
• Expansions	Mini-PCIe (mSATA Supported)

Display

• Chipset	AMD Radeon 6250
• Resolution	VGA: 1920 x 1200 @ 75Hz HDMI: 1920 x 1200 @ 75Hz

Audio

• AC97 Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	2 x Realtek 8111E Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/100/1000 Base-Tx Gigabit Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Screw Type DC Jack)
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 50°C (32 ~ 122°F) (w/CF), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	7" x 4.4" x 2.0" (178mm x 112mm x 50mm)
• Weight	2.7lbs (1.2Kgs)
• Mounting	VESA Compliance

Ordering Information

- **EPC-A50M-40E-A1-1R**
Fanless AMD eOntario T40E Tiny Box PC with A50M Chipset and 2G DDR3
- **ACC-EPC-VESA-2R**
EPC series LCD VESA kit (RoHS)
- **ACC-EPC-DINRACK-1R**
EPC series Din-Rack
- **ACC-EPC-WIFIUSB-1R**
EPC series USB WiFi Module
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



EPC-A50M-56N Fanless AMD eOntario T56N Tiny Box PC with AMD A50M Chipset



Features

- Onboard AMD eOntario T56N 1.6GHz CPU
- AMD A50M Chipset
- One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
- Dual View, VGA and HDMI
- Dual Gigabit Ethernet, 7.1-CH HD Audio
- 1 CF, 1 SATA, 2 COM, 4 USB
- Supported mSATA, 2.5" SATA HDD
- VESA Compliance

AMD A50M	Dual View	2 GbE	7.1-CH Audio	CF
SATA	2 COM	4 USB	VESA	Fanless

Specifications

System

• Board	ECM-A50M-56N
• CPU	AMD eOntario T56N 1.6GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	AMD A50M Chipset
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Up to 4GB DDR3 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Hard Disk	1 x 2.5" SATA HDD
• mSATA	1 x Mini PCIe
• Watchdog Timer	Reset: 1 sec. ~ 255 min. and 1 sec. or 1 min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage. with Auto Throttling Control

External I/O

• COM Port	2 x RS-232 (COM2 Supports RS-422/485 Setting by BIOS)
• LAN Port	2 x RJ-45
• VGA/ HDMI Port	1 x VGA; 1 x HDMI
• Audio Port	Mic-in, Line-in and Line-out
• USB Port	4 x USB 2.0
• Antenna	1 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• SSD	1 x Type I/II CompactFlash Socket
• Expansions	Mini-PCIe (mSATA Supported)

Display

• Chipset	AMD Radeon 6320
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Audio

• AC97 Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	2 x Realtek 8111E Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/100/1000 Base-Tx Gigabit Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 50°C (32 ~ 122°F) (w/CF), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	7" x 4.4" x 2.0" (178mm x 112mm x 50mm)
• Weight	2.7lbs (1.2Kgs)
• Mounting	VESA Compliance

Ordering Information

- **EPC-A50M-56N-A1-1R**
Fanless AMD eOntario T56N Tiny Box PC with A50M Chipset, System Fan, 2G DDR3
- **ACC-EPC-VESA-2R**
EPC Series LCD VESA kit (RoHS)
- **ACC-EPC-DINRACK-1R**
EPC Series Din-Rack
- **ACC-EPC-WIFIUSB-1R**
EPC Series USB WiFi Module
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)

1	Embedded System
2	Qseven Module
3	ETX/XTX COM Express
4	3.5" SBC
5	EPIC
6	5.25" SBC
7	ATX
8	Micro ATX
9	Mini ITX
10	Nano ITX
11	ACP
12	Rack Mount System
13	Mini ITX System
14	Peripherals
15	Index



EPC-LX800W

Fanless AMD Geode™ LX800 Tiny Box PC
with AMD LX800 + CS5536 Chipset



Features

- Onboard AMD Geode™ LX800 @ 0.9W 500MHz with 128K L2 Cache CPU
- AMD Geode™ LX800 / CS5536 Chipset
- One 200-pin SODIMM Socket Supports Up to 1GB DDR 333/ 400 SDRAM
- Realtek AC97 Audio
- Dual Realtek RTL8101L LAN
- 1 CF, 1 SATA, 2 COM, 3 USB, 1 VGA
- Support 2.5" SATA HDD
- Fanless Operation, VESA Compliance
- 40 ~ +70°C Wide Temperature Operation

AMD LX800	Dual LAN	CF	SATA	2 COM
3 USB	Fanless	VESA	Wide Temp.	

Specifications

System

• Board	ECM-LX800W
• CPU	AMD Geode™ LX800 @ 0.9W 500MHz with 128K L2 Cache CPU
• BIOS	Award 4Mbit Flash BIOS
• System Chipset	AMD Geode™ LX800/ CS5536
• System Memory	One 200-pin SODIMM Socket Supports Up to 1GB DDR 333/ 400 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• Display	AMD Geode™ with Integrated Graphics Engine
• Audio	Realtek ALC203 Supports 2-CH Audio
• Ethernet	Dual Realtek RTL8101L Ethernet
• System Indicators	2 LED Indicators Show Power and HDD Status
• Drive Bay	Mounting Kit for One 2.5" HDD

External I/O

• COM	2 x RS-232 (COM2 Can be Set as RS-422/ 485 by BIOS)
• LAN	2 x RJ-45
• Display Output Port	1 x VGA
• Audio	Line-out
• USB	3 x USB 2.0 (Rear 2; Front 1)
• Mouse & KB	1 x PS/2 Mini DIN

Power Supply Unit

• Power Input	100 ~ 240 Vac/ 50 ~ 60Hz
• Power Output	+5 Vdc/ 8A (40W)

Environment & Mechanical

• Power Requirement	+5V
• Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	5 ~ 90% @ 40°C (104°F), Relative Humidity, Noncondensing
• Dimension (W x D x H)	7" x 4.4" x 2.0" (178mm x 112mm x 50mm)
• Weight	2.7lbs (1.2Kgs)
• Mounting	VESA Compliance

Ordering Information

- **EPC-LX800W-A1-1R**
Fanless Wide Temperature AMD Geode™ LX800 Tiny Box PC with AMD LX800 + CS5536 and 256 DRAM, VGA, Audio, Dual Ethernet, CF, 2 COM, 3 USB
- **ACC-EPC-VESA-1R**
EPC series LCD VESA kit (RoHS)
- **ACC-EPC-DINRACK-1R**
EPC series Din-Rack
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



Features

- ▶ Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
- ▶ Intel® ICH8-M Chipset
- ▶ Onboard 1GB DDR3 and One SODIMM Up to 3GB
- ▶ 5.1-CH HD Audio, Dual Gigabit Ethernet
- ▶ 1 SATA, 1 CRT, 1 COM, 4 USB, 1 CF
- ▶ Supports 2.5" SATA HDD
- ▶ Super Slim (Size: 182mm x 257mm x 25mm)
- ▶ Fanless Operation



Specifications

System

• Board	EBM-PNV
• CPU	Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® ICH8-M
• System Memory	Onboard 1GB DDR3 and One 204-pin SODIMM Socket Supports Up to 3GB DDR3 1066/1333* SDRAM (* Due to CPU spec limitations, the data transfer rate of DDR3 will be limited to 800MT/s only)
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1 ~ 65535sec./mm and 1min./step
• Display	Intel® Pineview Integrated
• Audio	Realtek ALC888 Supports 5.1-CH Audio
• Ethernet	Dual Intel® 82574L Gigabit Ethernet, Supports Wake on LAN
• System Indicators	4 LED Indicators Show Power and HDD Status
• Drive Bay	Mounting Kit for One 2.5" SATA HDD (Hidden)
• Expansion Interface	2 x Mini PCIe (Optional)

External I/O

• COM	1 x RS-232 (Can be Set as RS-232/422/485 by BIOS)
• LAN	2 x RJ-45
• WiFi	Optional (USB Module)
• VGA	1 x DB-15
• Audio	Mic-in, Line-in, Line-out
• USB	4 x USB 2.0
• Mouse & KB	1 x PS/2 Mini DIN (Optional, Colay LAN2)

Power Supply Unit

• Power Input	100 ~ 240Vac/ 50 ~ 60Hz
• Power Output	+12Vdc/ 5A (60W)

Environment & Mechanical

• Power Requirement	12 ~ 28V
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 75°C (-4 ~ 167°F)
• Relative Humidity	5 ~ 90% @ 40°C (104°F), Relative Humidity, Non-condensing
• Dimension (W x D x H)	7.2" x 10.1" x 1.0" (182mm x 257mm x 25mm)
• Weight	3.3lbs (1.5Kgs)
• Mounting	VESA Compliance

Ordering Information

- **ASM-PNV-525-B1-1R**
Intel® Atom™ D525 Dual-Core Ultra Slim PC with Intel® ICH8-M Chipset and 1G DDR3, VGA, 2 GbE, COM, 4 USB, CF
- **ACC-ASM-VESA-1R**
ASM Series LCD VESA Kit (RoHS)
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)

1	Embedded System
2	Qseven Module
3	ETX/XTX COM Express
4	3.5" SBC
5	EPIC
6	5.25" SBC
7	ATX
8	Micro ATX
9	Mini ITX
10	Nano ITX
11	ACP
12	Rack Mount System
13	Mini ITX System
14	Peripherals
15	Index



Features

- ▶ **AMD Fusion Accelerated Dual-Core Processor T40E 1.0GHz CPU**
- ▶ **AMD A50M Controller Hub Chipset**
- ▶ **Onboard 2GB DDR3 1066 SDRAM and One 204-pin SODIMM Up to 6GB**
- ▶ **Dual Display Output, VGA, HDMI**
- ▶ **7.1-CH Audio, Dual Gigabit Ethernet**
- ▶ **1 CF, 1 SATA, 2 COM, 4 USB**
- ▶ **Compliance with ErP/EuP 2.0**

AMD A50M	Dual View	7.1-CH Audio	2 GbE	25mm High
CF	SATA	2 COM	4 USB	Fanless

Specifications

System

• Board	EBM-A50M
• CPU	AMD Fusion Accelerated Dual-Core Processor T40E 1.0GHz CPU
• BIOS	AMI 32M-bit SPI BIOS
• System Chipset	AMD A50M Controller Hub
• System Memory	Onboard 2GB DDR3 1066 SDRAM and One 204-pin SODIMM Up to 6GB
• SSD	One CompactFlash Type I/II Socket
• Display	AMD Radeon 6250
• Audio	Realtek ALC892 Supports 7.1-CH Audio
• Ethernet	Dual Realtek 8111E Gigabit Ethernet
• Watchdog Timer	Reset: 1 sec.-65535 sec./min. and 1 sec. or 1 min./step
• System Indicators	4 LED Indicators Show Power, HDD, Two LED Status
• Drive Bay	Mounting Kit for One 2.5" SATA HDD (Internal)
• Expansion Interface	Optional 2 Mini-PCIe Sockets (Replaces HDD Location)

External I/O

• COM	2 x RS-232 (COM2 RS-232/422/485 Setting by JP & SW)
• LAN	2 x RJ-45
• VGA	1 x DB-15
• Audio	1 x Mic-in, 1 x Line-in, 1 x Line-out
• HDMI	1 x HDMI
• USB	4 x USB 2.0 (Front 2; Rear 2)
• Optional	Digital I/O DB9 (Replaces CF Socket)

Power Supply Unit

• Power Input	100 ~ 240Vac/ 50 ~ 60Hz
• Power OutPut	+12Vdc/ 5A (60W)

Environment & Mechanical

• Power Requirement	+12V
• Operating Temperature	0 ~ 50°C (32 ~ 122°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	7.2" x 10.1" x 1.0" (182mm x 257mm x 25mm)
• Weight	3.3lbs (1.5Kgs)
• Mounting	VESA 100 & 75

Ordering Information

- **ASM-A50M-40E-A1-1R**
Fanless AMD Fusion Accelerated Dual-Core Processor T40E Ultra Slim PC with AMD A50M Chipset and 2G DDR3
- **ACC-ASM-VESA-1R**
ASM Series LCD VESA Kit (RoHS)
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



Features

- Onboard Intel® Cedarview D2700 2.13GHz CPU
- Intel® NM10 Express Chipset
- One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
- Dual View, VGA and HDMI
- 5.1-CH Audio, Dual Intel® Gigabit Ethernet
- 1 CF, 1 SATA, 1 mSATA, 2 COM, 5 USB
- Wall Mount Kit

Intel® NM10	Dual View	HDMI	5.1-CH Audio	2 GbE
CF	mSATA	2 COM	5 USB	Fanless

1	Embedded System
2	Qseven Module
3	ETX/XTX COM Express
4	3.5" SBC
5	EPIC
6	5.25" SBC
7	ATX
8	Micro ATX
9	Mini ITX
10	Nano ITX
11	ACP
12	Rack Mount System
13	Mini ITX System
14	Peripherals
15	Index

Specifications

System

• Board	ECM-CDV
• CPU	Onboard Intel® Cedarview D2700 2.13GHz CPU
• BIOS	AMI 8 Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• System Memory	One 204-pin DDR3 SODIMM Socket Supports Up to 4GB DDR3 800/ 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• HDD	1 x 2.5" SATA HDD/ SSD
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control

External I/O

• COM Port	1 x RS-232, 1 x RS-232/ 422/ 485
• LAN Port	2 x RJ-45
• Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• VGA	1 x VGA
• HDMI	1 x HDMI
• Audio Port	Mic-in, Line-in, Line-out
• USB Port	5 x USB 2.0
• Expansions	1 x Mini-PCIe Socket (mSATA Supported)

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz

Audio

• Chipset	Realtek ALC892 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	2 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Environment & Mechanical

• Power Requirement	+12V/ 5A (Lockable DC Plug)
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 50°C (w/ CF), Ambient w/ Air Flow
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	8.7" x 2.8" x 5.8" (220mm x 66.1mm x 147mm)
• Weight	2.7lbs (1.2kg)
• Mounting	Wall Mount Kit

Ordering Information

- **EES-CDV**
Fanless Intel® Cedarview Tiny Box PC with Intel® NM10 Express Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)



EES-AT270

Fanless Intel® Atom™ N270 Tiny Box PC
with Intel® 945GSE + ICH7-M Chipset



Features

- ☞ Onboard Intel® Atom™ N270 1.6GHz with 512K Cache CPU
- ☞ Intel® 945GSE/ ICH7-M Chipset
- ☞ One 200-pin SODIMM Up to 2GB DDR2 533 SDRAM
- ☞ 5.1-CH Audio, Dual Gigabit Ethernet
- ☞ 1 Mini-PCIe, 1 CF, 1 eSATA, 2 COM, 4 USB
- ☞ Fanless Operation
- ☞ Lockable DC Plug

Atom™	Intel® 945GSE	5.1-CH Audio	2 GbE	Mini PCIe
CF	1 eSATA	2 COM	4 USB	Fanless

Specifications

System

• Board	ECM-945GSE
• CPU	Onboard Intel® Atom™ N270 1.6GHz 512K Cache CPU
• BIOS	Award 8MBit Flash BIOS
• System Chipset	Intel® 945GSE/ ICH7-M
• System Memory	One 200-pin SODIMM Supports Up to 2GB DDR2 533 SDRAM
• SSD	One CompactFlash Type I/II Socket
• HDD	2.5" HDD/ SSD
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status with Auto Trotting Control
• Expansion Interface	1 x Mini PCIe (Internal)

External I/O

• COM Port	1 x RS-232, 1 x RS-232/422/485 (Setting by BIOS)
• LAN Port	2 x RJ-45
• Antenna	1 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
• Display Output Port	1 x VGA
• Audio Port	Mic-in, Line-in, Line-out
• USB Port	4 x USB 2.0
• Other	1 x eSATA

Display

• Chipset	Intel® 945GSE Integrated
• Display Memory	Intel® DVMT 3.0 Supports 224MB Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz

Audio

• Chipset	Realtek ALC655 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	Dual Marvell 88E8053 Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	10/ 100/1000 Base-Tx Fast Ethernet Compatible

Environment & Mechanical

• Power Requirement	AC/ DC Adapter 100 ~ 240V; 50 ~ 60Hz, 12V/ 5A
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Dimension (W x D x H)	8.7" x 2.6" x 5.8" (220mm x 65mm x 147mm)
• Weight	3.74lbs (1.7kg)
• Mounting	VESA Compliance

Ordering Information

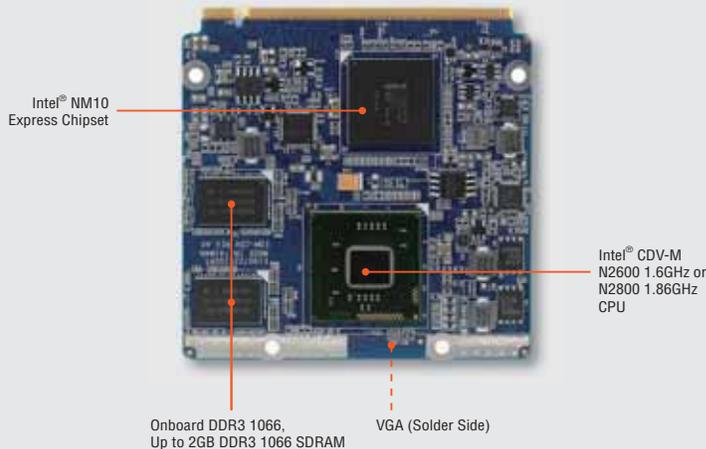
- **EES-AT270-A1-1R**
Fanless Intel® Atom™ N270 Tiny Box PC with Intel® 945GSE + ICH7-M Chipset and 1G DDR2
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 2, 4, 8, 16, 32GB)

2 Qseven Module

Qseven Modules

EQM-CDV	Intel® Cedarview Qseven Module with Intel® NM10 Express Chipset	2-1
EEV-Q701	3.5" Qseven Carrier Board	2-2
Qseven Introduction		2-3





Features

- ☞ Onboard Intel® Cedarview-M N2600/ N2800 CPU
- ☞ Intel® NM10 Express Chipset
- ☞ Onboard 1GB DDR3, Up to 2GB DDR3 1066 SDRAM
- ☞ Intel® Gigabit Ethernet
- ☞ VGA Interface Onboard; HDMI to Carrier Board
- ☞ Single-channel 18-bit LVDS to Carrier Board
- ☞ 2 SATA, 8 USB 2.0, LPC, 3 PCIe1
- ☞ Fanless Operation

Intel® NM10	GbE	LVDS	2 SATA	8 USB
LPC	3 PCIe1	Fanless		

Specifications

System

• CPU	Onboard Intel® CDV-M N2600 1.6GHz or N2800 1.86GHz CPU
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• System Memory	Onboard 1GB DDR3, Up to 2GB DDR3 1066 SDRAM
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control
• Expansion	LPC, SMBus, HD Audio I/F

I/O

• MIO	2 x SATA Ports to Carrier Board
• USB	8 x USB 2.0 Ports to Carrier Board
• External I/O Connector	Qseven Spec 1.2 Connector for Expansions

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz LCD/ Simultaneous Mode : 1366 x 768 @ 60Hz (CDV-M)
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	Single-channel 18-bit LVDS to Carrier Board

Ethernet

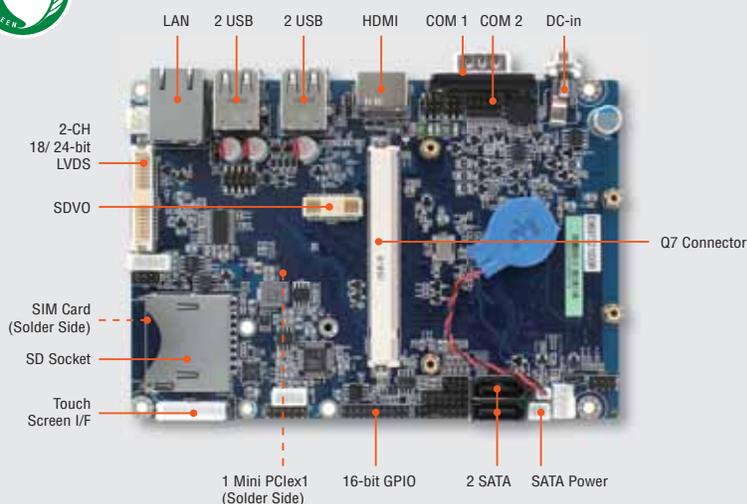
• LAN Chip	1 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+5V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Qseven Power Spec
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-20 ~ 80°C (4 ~ 176°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	2.8" x 2.8" (70mm x 70mm)
• Weight	TBD

Ordering Information

- EQM-CDV
Intel® Cedarview Qseven Module with Intel® NM10 Express Chipset



Features

- 3.5" SBC Form Factor
- Accept Avalue and Others Qseven Compatible CPU Modules
- HDMI, LVDS, SDVO
- Audio Interface
- 1 Mini PCIe with SIM Card Socket
- 2 SATA, 2 COM, 6 USB, 16-bit GPIO
- SD Socket



Specifications

System

• Form Factor	3.5" SBC
• CPU	Qseven 1.2 CPU Module Socket: Supports Avalue EQM-CDV and Future New Qseven CPU Modules
• BIOS	Carrier Board BIOS SPI ROM (Enable/ Disable by 2-pin Jumper)
• I/O Chip	Winbond W83627HG-AW
• SSD	1 SD Socket Support Boot from SD (SDIO 1.1, Only When CPU Module Can Support)
• Expansion	1 Mini PCIe with SIM Card Socket

I/O

• MIO	2 x SATA, 1 x RS-232, 1 x RS-232, 1 x K/B, 1 x Mouse
• USB	6 USB (2 Double Deck USB Supports 4 USB. One 5 x 2 Header Supports Additional 2 USB)
• IrDA	5 x 1, Pitch 2.00mm Header
• DIO	16-bit GPIO
• External I/O Connector	COM 1(DB-9), HDMI, Two Dual Deck USB Ports, 1 x RJ-45, Power Connector: One Power Jack Connector
• LVDS Connector	One HIROSE DF13-40DP-1.25V
• Fan Connector	Two 3 x 1 Header, Pitch 2.54mm
• Power Connector	2.5mm DC Power Jack

Audio

• AC97 Codec	Realtek ALC892 Supports 5.1-CH Audio
• Audio Interface	Line-in, Mic-in, Line-out, CD Audio-in

Mechanical & Environmental

• Power Input	+12V DC-in
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-20 ~ 80°C (-4 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	TBD

- 1 Embedded System
- 2 Qseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Ordering Information

- **EEV-Q701**
3.5" Qseven Carrier Board

Qseven Solution

Small Form Factor for Ultra Mobile Applications

- Freely available industry standard
- Defined for low product cost
- High performance interfaces
- Fast serial interfaces
- Compact size
- Perfect for new low power chipsets and processors



A new Standard for Computer-On-Modules

Why do we need a new Standard?

- To provide the features of latest 45nm mobile chipsets and processors.
- To provide the ability to use the successful Computer-On-Module concept for mobile and ultra mobile embedded applications.
- To support the latest graphic standards such as DisplayPort and HDMI.
- Small form factor for easy integration.

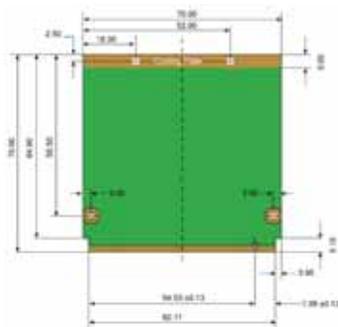
Mechanic and Cooling

Compact size

- Quadratic 7 cm (2¾" x 2¾")
- Solid mechanical mounting
- Cost efficient direct edge connector
- Rugged 1.2 mm PCB thickness

Cooling interface

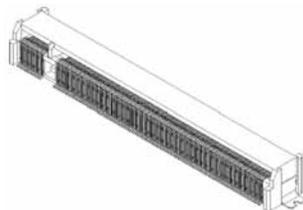
- Top edge defined for heat transfer
- Heat transfer from CPU, Chipset and DRAM enhanced via copper layers
- Heatspreader defined for high power versions (max. 12 W)



Q7 Module Top Side

MXM Edge Connector

- Foxconn ASOB3 series
- Also offered by Speedtech, Lotes and Aces
- Currently used for notebook MXM graphics cards
- 230 positions, .020" pitch, SMT
- 5.5 and 7.8 mm height versions
- Certified for rugged mobile applications and for high speed serial buses (PEG bus)
- Low cost connector
- 30µ gold plated versions for industrial applications



What is special about Q7?

- **Legacy free** – only new serial buses are defined
- **Flexible graphics** – new graphic standards are supported
- **Embedded API** – Software interface for easy interchangeability.

Interfaces

Legacy free interfaces only

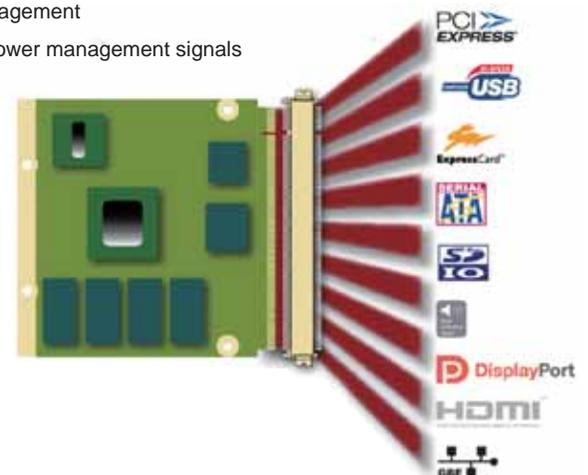
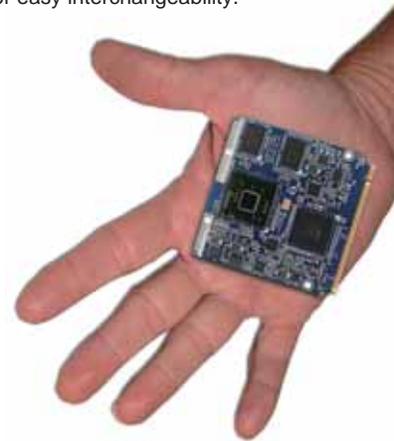
- 4 x PCI Express lanes
- 2 x SATA, 8 x USB 2.0
- 2 x ExpressCard
- SDIO, I²C Bus
- High Definition Audio (HDA)
- Gigabit Ethernet

Graphic Interfaces

- LVDS 2 x 24-bit (with DisplayID flat panel detection)
- SDVO, DisplayPort and HDMI (shared)

Power

- 5V power rail for low cost implementation
- Battery Management
- Additional power management signals

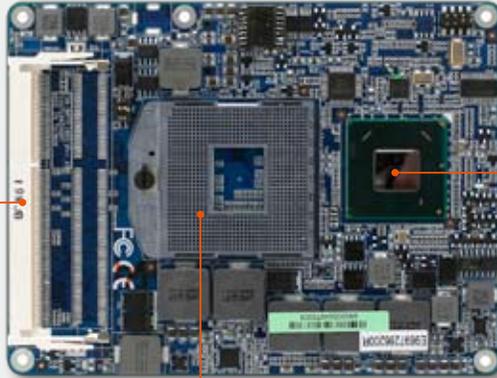


3 ETX/XTX/COM Express

ETX/ XTX & COM Express Module

ESM-QM77	Intel® Core™ i7/ i5/ i3 COM Express Type 6 Module with Intel® QM77 Chipset	3-2
ESM-QM57	Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 COM Express Module with Intel® QM57 Chipset	3-3
ESM-945GSE	Intel® Atom™ N270 COM Express Module with Intel® 945GSE + ICH7-M Chipset	3-4
ESM-945GME	Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M COM Express Module with Intel® 945GME + ICH7-M Chipset	3-5
ESM-GM45	Intel® Core™ 2 Duo/ Celeron® M COM Express Module with Intel® GM45 + ICH9-M Chipset	3-6
ESM-A50M	AMD eOntario COM Express Type 6 Module with AMD A50M Chipset	3-7
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ESK-COM	COM Express Starter Kit Supports Quick Start-up of COM Express	3-10
XTX-PNV	Intel® Pineview D525 XTX Module with Intel® ICH8-M Chipset	3-11
XTX-US15WP	Intel® Atom™ Z510P/ Z530P XTX Module with Intel® US15WP Chipset	3-12
EEV-EX20	Micro ATX XTX Carrier Board	3-13
ESM-945GSX	Intel® Atom™ N270 ETX Module with Intel® 945GSE + ICH7-M Chipset	3-14
ESM-945ETX	Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M ETX Module with Intel® 945GME + ICH7-M Chipset	3-15
ESM-LX800	AMD Geode LX800 ETX Module with AMD Geode LX800 + CS5536 Chipset	3-16
EEV-EX03	Micro ATX ETX Carrier Board	3-17
ESK-ETX/ XTX	ETX/ XTX Starter Kit Supports Quick Start-up of ETX/ XTX	3-18





One 204-pin SODIMM Up to 8GB DDR3 1333/ 1600 SDRAM

Intel® QM77 Chipset

Intel® Core™ i7/ i5/ i3/ Celeron® (Socket-G2) Socket

Features

- Intel® Core™ i7/ i5/ i3 (Socket-G2) Processors
- Intel® QM77 Chipset
- One 204-pin SODIMM Up to 8GB DDR3 1333/ 1600 SDRAM (Second SODIMM for Optional, Up to 16GB)
- Support CRT, LVDS, Display Port, HDMI, DVI, SDVO
- Intel® High Definition Audio
- Intel® 82579LM Gigabit Ethernet
- 7 PCIe1, 1 PCIe16, 4 SATA, 8 USB 2.0, 4 USB 3.0, 8-bit GPIO
- +9 ~ +19V Wide Range Power Input
- Type 6 Pin-out

Intel® QM77	3 Display	HDMI	Audio	GbE
7 PCIe1	1 PCIe16	4 SATA	12 USB	8-bit GPIO

Specifications

System

• CPU	Intel® Core™ i7/ i5/ i3/ Celeron® (Socket-G2) Processors
• BIOS	AMI 16Mbit SPI BIOS
• System Chipset	Intel® QM77
• System Memory	One 204-pin SODIMM Up to 8GB DDR3 1333/ 1600 SDRAM (Second SODIMM for Optional, Up to 16GB)
• Expansion	7 PCIe1, 1 PCIe16
• EEPROM	ATMEL AT24C02 (Optional)

I/O

• MIO	4 x Serial ATA, SMBus/ I ² C Bus
• USB	8 x USB 2.0, 4 x USB 3.0
• DIO	4-bit GPI and 4-bit GPO

Display

• Chipset	Intel® QM77 Chipset Integrated
• Memory	DVMT 5.0 Up to 512MB
• Resolution	CRT Mode: 2048 x 1536 LCD/ Simultaneous Mode: 1920 x 1200
• LVDS Interface	Dual-Channel 18/24-bit LVDS
• Display Supported	SDVO, HDMI, DVI, Display Port

Audio Interface

• Chipset	Intel® QM77 Integrated
• Interface	Intel® High Definition Audio

Ethernet

• LAN	Intel® 82579LM Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+9 ~ +19V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- ESM-QM77
Intel® Core™ i7/ i5/ i3 COM Express Type 6 Module with Intel® QM77 Chipset
- EEV-EX14
COM Express Type 6 Carrier Board for Evaluation



Intel® Core™ i7 620LE/ 620UE/ Celeron® M P4505 CPU



Intel® QM57 Chipset

Two 204-pin SODIMM Sockets
Up to 8GB DDR3 800/1066 SDRAM

Features

- Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 Processor
- Intel® QM57 Chipset
- Two 204-pin SODIMM Sockets Up to 8GB DDR3 800/ 1066 SDRAM
- Dual View, Dual-Channel 18/24-bit LVDS
- Intel® High Definition Audio
- Intel® 82577LM Gigabit Ethernet
- LPC, 4 PCI, 6 PCIe1, 1 PCIe16
- 4 SATA, 8 USB 2.0
- Support RAID 0/ 1/ 5/ 10, TPM
- Type 2 Pin-out

Intel® QM57	Dual View	2-CH LVDS	GbE	4 PCI
6 PCIe1	1 PCIe16	4 SATA	8 USB	TPM

Specifications

System

• CPU	Intel® Core™ i7 620LE/ 620UE/ Celeron® M P4505
• BIOS	AMI 8MBit Flash BIOS
• System Chipset	Intel® QM57
• System Memory	Two 204-pin SODIMM Sockets Support Up to 8GB DDR3 800/1066 SDRAM
• Expansion	LPC, 4 PCI (PCI Rev. 2.3 Compliant), 6 PCIe1, 1 PCIe16 (Shared with SDVO, HDMI & Displayport)
• TPM	Nuvoton WPCT200A
• RAID	0/ 1/ 5/ 10

I/O

• MIO	1 x EIDE (Ultra DMA 100), LPC, SMBus/ I ² C Bus, 4 x SATA
• USB	8 x USB 2.0
• DIO	4-bit GPI and 4-bit GPO

Display

• Chipset	Intel® QM57
• Resolution	CRT Mode: 2048 x 1536 @ 60Hz LCD/ Simultaneous Mode: 1600 x 1200 @ 75Hz
• Multiple Display	CRT + LVDS, CRT + SDVO, LVDS + SDVO
• LVDS Interface	Dual-Channel 18/24-bit LVDS
• HDMI DisplayPort	HDMI, DisplayPort Shared with PCIe16

Audio Interface

• Chipset	Intel® QM57 Integrated
• Interface	Intel® High Definition Audio

Ethernet

• LAN	Intel® 82577LM (PHY) Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+8 ~ +19V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

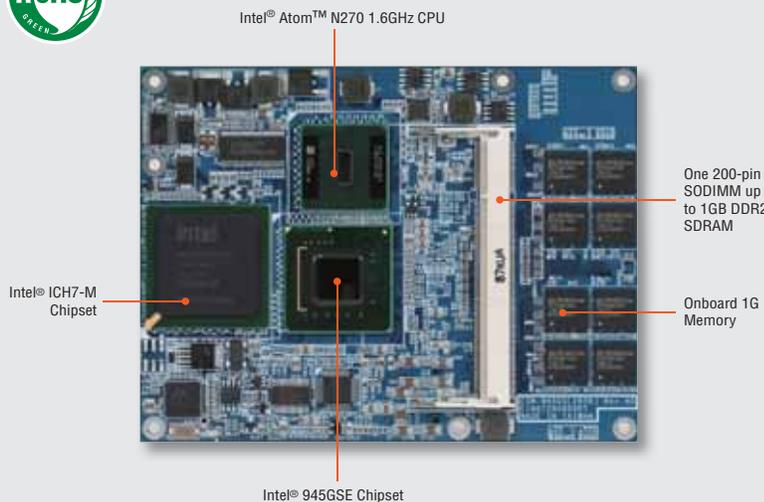
- **ESM-QM57**
Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 COM Express Module with Intel® QM57 Chipset
- **EEV-EX13**
COM Express Carrier Board for Evaluation
- **ACC-HSK-2860-1R**
Heatsink with Fan for ESM-QM57

1	Embedded System
2	Seven Module
3	ETX/XTX COM Express
4	3.5" SBC
5	EPIC
6	5.25" SBC
7	ATX
8	Micro ATX
9	Mini ITX
10	Nano ITX
11	ACP
12	Rack Mount System
13	Mini ITX System
14	Peripherals
15	Index



ESM-945GSE

Intel® Atom™ N270 COM Express Module with Intel® 945GSE + ICH7-M Chipset



Features

- ☞ Onboard Intel® Atom™ N270 1.6GHz CPU
- ☞ Intel® 945GSE/ ICH7-M Chipset
- ☞ Onboard 1GB DDR2 Memory, One 200-pin SODIMM Up to 1GB DDR2 400/ 533 SDRAM
- ☞ Dual View, Dual-channel LVDS
- ☞ Intel® High Definition Audio
- ☞ Intel® 82583V Gigabit Ethernet
- ☞ 4 PCI, 3 PCIe1, 2 SATA, 8 USB, 8-bit GPIO
- ☞ Type 2 Pin-out

Atom™	Intel® 945GSE	Dual View	2-CH LVDS	GbE
3 PCIe1	4 PCI	2 SATA	8 USB	8-bit GPIO

Specifications

System

• CPU	Onboard Intel® Atom™ N270 1.6GHz CPU
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® 945GSE/ ICH7-M
• System Memory	One 200-pin SODIMM Socket Supports Up to 1GB DDR2 400/ 533 SDRAM Onboard 1GB DDR2 Memory
• Expansion	4 x PCI (PCI Rev. 2.3 Compliant), 3 x PCIe1, 1 x SDVO

I/O

• MIO	1 x EIDE (Ultra DMA 100), LPC, SMBus/I ² C Bus, 2 x SATA
• USB	8 x USB 2.0
• DIO	4-bit GPI and 4-bit GPO

Display

• Chipset	Intel® 945GSE Integrated
• Display Memory	Intel® DVM T 3.0 Supports up to 224MB Shared Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz LCD/ Simultaneous Mode: 1600 x 1200 @ 60Hz
• Multiple Display	CRT + LVDS
• LVDS Interface	Dual-channel 18-bit LVDS

Audio Interface

• Chipset	Intel® ICH7-M
• Interface	Intel® High Definition Audio

Ethernet

• LAN	Intel® 82583V Gigabit Ethernet
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V, +5Vsb
• Power Type	AT/ ATX (+5Vsb is Required for AT Input)
• Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ESM-945GSE**
Intel® Atom™ N270 COM Express Module with Intel® 945GSE + ICH7-M Chipset, Wide Temperature -20 ~ 70°C
- **EEV-EX13**
COM Express Carrier Board for Evaluation
- **ACC-HSK-2856-2R**
Heat Sink for ESM-945GSE
- **ACC-HSP-2856-2R**
Heat Spreader for ESM-945GSE



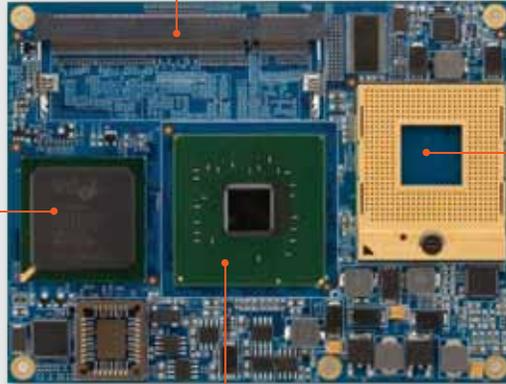
ESM-945GME

Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M COM Express Module with Intel® 945GME + ICH7-M Chipset



One 200-pin SODIMM Up to 2GB DDR2 SDRAM

Intel® ICH7-M Chipset



Intel® 945GME Chipset

Supports 65nm Intel® Core™ Duo / Core™ 2 Duo / Celeron® M CPU

Features

- Supports 65nm Intel® Core™ Duo/ Core™ 2 Duo/ Celeron® M CPU
- Intel® 945GME/ ICH7-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 400/ 533/ 667 SDRAM
- Dual View, Dual-channel LVDS
- Intel® High Definition Audio
- Marvell 88E8053 Gigabit Ethernet
- 4 PCI, 1 PCIe16, 3 PCIe1, 2 SATA, 8 USB, 8-bit GPIO
- Type 2 Pin-out

Intel® 945GME	Dual View	GbE	4 PCI	1 PCIe16
3 PCIe1	2 SATA	8 USB	8-bit GPIO	

Specifications

System

• CPU	Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M CPU Socket Onboard Intel® Core™ 2 Duo L7400 1.5GHz CPU/ Onboard Intel® Celeron® M ULV 423 1.06GHz CPU Note: Available in Different CPU Speed by Request
• BIOS	Award 4Mbit Flash BIOS
• System Chipset	Intel® 945GME/ ICH7-M
• System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 400/ 533/ 667 SDRAM
• Expansion	4 x PCI (PCI Rev. 2.3 Compliant), 3 x PCIe1, 1 x PCIe16

I/O

• MIO	1 x EIDE (Ultra DMA 100), 2 x SATA
• USB	8 x USB 2.0
• DIO	4-bit GPI and 4-bit GPO

Display

• Chipset	Intel® 945GME GMCH Integrated Extreme Graphics Controller
• Display Memory	Intel® DVMT 3.0 Supports Up to 224MB Shared Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 32bpp (75Hz) LCD/ Simultaneous Mode: 1600 x 1200 @ 16bpp (60Hz)
• Multiple Display	CRT + LVDS
• LVDS Interface	Dual-channel 18/ 24-bit LVDS

Audio Interface

• Chipset	Intel® ICH7-M
• Interface	Intel® High Definition Audio

Ethernet

• LAN	Marvell 88E8053
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V @ 2.28A, +5Vsb @ 0.43A (with Intel® Core™ Duo T2300 2.0GHz & 1GB DDR2 533 SDRAM)
• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ESM-945GME**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M COM Express Module with Intel® 945GME + ICH7-M Chipset
- **ESM-945GME-L74**
Intel® Core™ 2 Duo L7400 1.5GHz CPU COM Express Module with Intel® 945GME + ICH7-M Chipset
- **ESM-945GME-423**
Intel® Celeron® M ULV 423 1.06GHz CPU COM Express Module with Intel® 945GME + ICH7-M Chipset
- **EEV-EX13**
COM Express Carrier Board for Evaluation
- **ACC-HSP-2852-1R**
Heat Spreader for ESM-945GME/ GME965 Series with PGA Type, 125 x 95 x 11mm
- **ACC-HSP-2852-2R**
Heat Spreader for ESM-945GME/ GME965 Series with BGA Type, 125 x 95 x 11mm

- 1 Embedded System
- 2 Qseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Two 200-pin SODIMM up to 4GB DDR2 SDRAM



Features

- Supports Intel® Core™ 2 Duo and Celeron® M CPU (Penryn)
- Intel® GM45/ ICH9-M Chipset
- Two 200-pin SODIMMs Up to 4GB DDR2 667/ 800 SDRAM
- Dual View, Dual-channel LVDS
- Intel® High Definition Audio
- Intel® 82583V Gigabit Ethernet
- 4 PCI, 4 PCIe1, 1 PCIe16, 4 SATA, 8 USB, 8-bit GPIO
- Type 2 Pin-out

Intel® GM45	Dual View	GbE	4 PCI	4 PCIe1
1 PCIe16	4 SATA	8 USB	8-bit GPIO	

Specifications

System

• CPU	Socket mPGA479M Support Intel® Core™ 2 Duo/ Celeron® M CPU (Penryn)
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® GM45/ ICH9-M
• System Memory	Two 200-pin SODIMM Sockets Up to 4GB DDR2 667/ 800 SDRAM
• Expansion	4 x PCI (PCI Rev. 2.3 Compliant), 4 x PCIe1, 1 x PCIe16

I/O

• MIO	1 x EIDE (Ultra DMA 100), LPC, SMBus/ I ² C Bus, 4 x SATA
• USB	8 x USB 2.0
• DIO	4-bit GPI and 4-bit GPO

Display

• Chipset	Intel® GM45 Integrated
• Display Memory	Intel® DVMT 5.0
• Resolution	CRT Mode: 2048 x 1536 @ 60Hz LCD/ Simultaneous Mode: 1600 x 1200 @ 75Hz
• Multiple Display	CRT + LVDS
• LVDS Interface	Dual-channel 18/ 24-bit LVDS

Audio Interface

• Chipset	Intel® ICH9-M
• Audio Interface	Intel® High Definition Audio

Ethernet

• LAN	Intel® 82583V Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V, +5Vsb
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX (+5Vsb is Required for AT Input)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44 lbs (0.2kg)

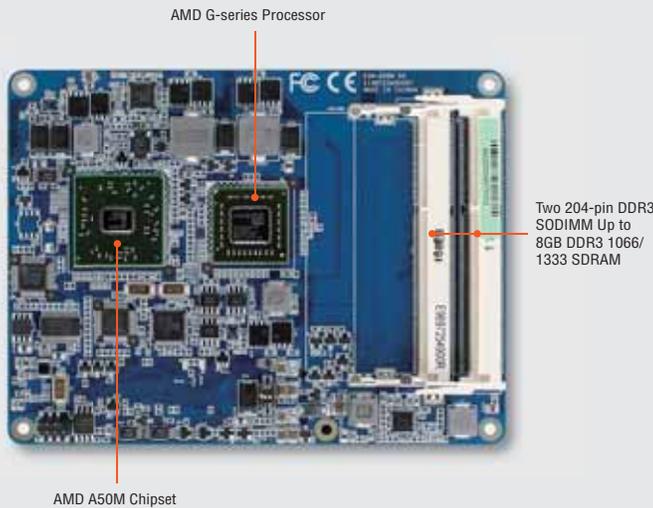
Ordering Information

- **ESM-GM45**
Intel® Core™ 2 Duo/ Celeron® M CPU COM Express Module with Intel® GM45 + ICH9-M Chipset
- **EEV-EX13**
COM Express Carrier Board for Evaluation
- **ACC-HSK-2858-1R**
Heatsink with Fan for ESM-GM45



ESM-A50M

AMD eOntario COM Express Type 6 Module with AMD A50M Chipset



Features

- AMD G-series Processor (T40E, T56N)
- AMD A50M Chipset
- Two 204-pin DDR3 SODIMM Up to 8GB DDR3 1066/ 1333 SDRAM
- Dual View, Dual-Channel 18/ 24-bit LVDS
- Gigabit Ethernet
- 4 SATA, 8 USB, 8-bit GPIO
- Type 6 Pin-out
- TPM (Support Version 1.2)

AMD A50M	Dual View	2-CH LVDS	GbE	4 SATA
8 USB	8-bit GPIO	TPM		

Specifications

System

• CPU	AMD G-series Processor (T40E, T56N)
• BIOS	AMI 32Mbit SPI BIOS
• System Chipset	AMD A50M
• System Memory	Two 204-pin DDR3 SODIMM Socket, Supports Up to 8GB DDR3 1066/ 1333 SDRAM
• Expansion	7 PCIe1
• TPM	Support Version 1.2

I/O

• MIO	4 x Serial ATA Ports, SMBus/ I ² C Bus
• USB	8 x USB 2.0
• DIO	4-bit GPI, 4-bit GPO

Display

• Chipset	AMD Fusion Accelerated Processors
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz (with T40E CPU) 2560 x 1600 @ 60Hz (with T56N CPU) LCD/ Simultaneous Mode: 1920 x 1200 @ 60Hz
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LVDS Interface	Dual-Channel 18/ 24-bit LVDS

Audio Interface

• HD Codec	AMD A50M Integrated
• Audio Interface	AMD A50M High Definition Audio

Ethernet

• LAN	Realtek 8111E Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

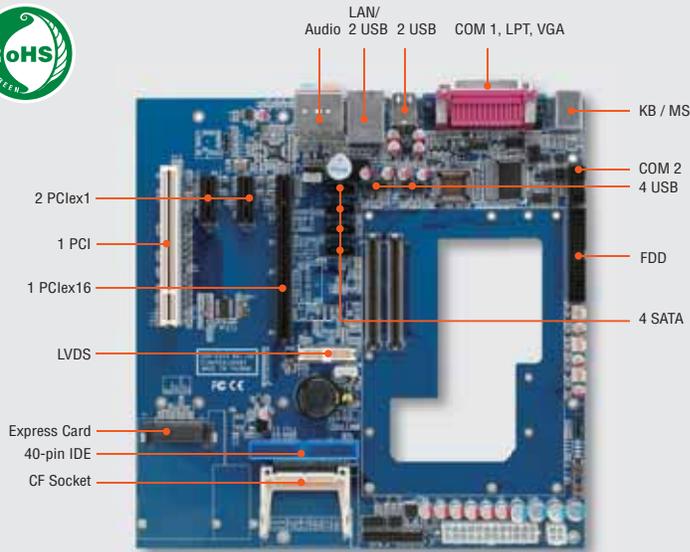
Mechanical & Environmental

• Power Requirement	+8 ~ +18V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5" x 3.7" (125mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ESM-A50M**
AMD eOntario COM Express Type 6 Module with AMD A50M Chipset
- **EEV-EX14**
Micro ATX COM Express Type 6 Carrier Board for evaluation

- 1 Embedded System
- 2 Seven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- Micro ATX Form Factor
- Accept Avalue and Other COM Express Type 6 Compatible CPU Modules
- VGA/ LVDS/ Audio Interface
- 1 CF, 1 PCI, 2 PClex1, 1 PClex16
- 4 SATA, 2 COM, 8 USB, 8-bit GPIO, Express Card/ 54mm
- Type 2 Pin-out

LVDS	CF	1 PCI	2 PClex1	1 PClex16
4 SATA	2 COM	8 USB	8-bit GPIO	Express Card/54

Specifications

System

• Form Factor	Micro-ATX
• I/O Chip	Winbond W83627HG-AW
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• SSD	One CompactFlash Type I/II Socket
• Expansion	1 x PCI, 2 x PClex1, 1 x PClex16, Express Card (54mm)

I/O

• MIO	1 x EIDE, 4 x SATA, 1 x LPT, 1 x FDD, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB, 1 x Mouse
• IrDA Connector	5 x 1 Header, Pitch 2.54mm
• USB Connector	8 x USB 2.0
• DIO	8-bit GPIO

Audio

• Audio Codec	Realtek ALC883 Supports 7.1-CH Audio
• Audio Interface	Line-in, Mic-in, Line-out, CD Audio-in

Connectors

• External Connector	1 x Mouse, 1 x KB, 1 x LPT, 1 x COM, 1 x VGA, 4 x USB, 1 x Audio Jack (6-Ports)
• LVDS Connector	One HIROSE DF13-40DP-1.25V
• Power Connector	One ATX 2 (12 x 2-pin), One Aux 1 (2 x 2-pin 12V) Power Connectors

Mechanical & Environmental

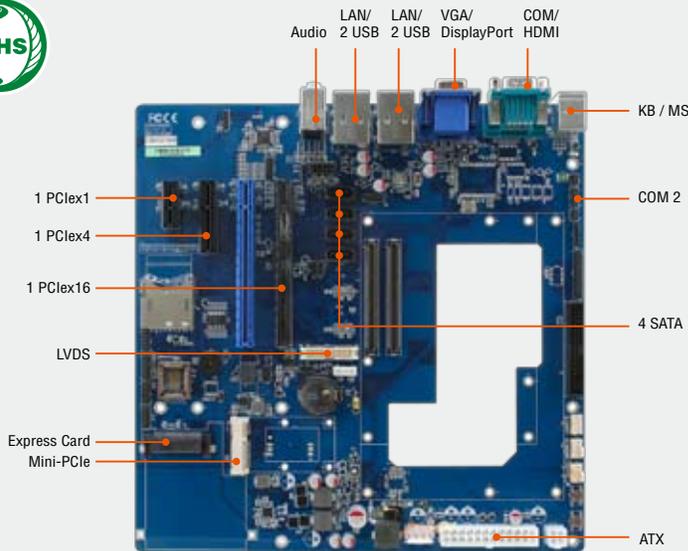
• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	243.84mm x 243.84mm
• Weight	1.10lbs (0.5Kg)

Supported COM Express CPU Modules

- **ESM-QM57**
Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 COM Express Module with Intel® QM57 Chipset
- **ESM-GM45**
Intel® Core™ 2 Duo/ Celeron® CPU COM Express Module with Intel® GM45 + ICH9-M Chipset
- **ESM-945GSE**
Intel® Atom™ N270 COM Express Module with Intel® 945GSE + ICH7-M Chipset
- **ESM-945GME**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M COM Express Module with Intel® 945GME + ICH7-M Chipset

Ordering Information

- **EEV-EX13**
Micro ATX COM Express Carrier Board
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Features

- **Micro ATX Form Factor**
- **Accept Avalue and others COM Express Type 6 Compatible CPU Modules**
- **VGA/ LVDS/ HDMI/ DisplayPort**
- **Audio Interface**
- **1 PCIe16, 1 PCIe4, 1 PCIe1 Slot**
- **4 SATA, 2 COM, 8 USB (Up to 4 USB 3.0), 8-bit GPIO**
- **Mini-PCIe Card with SIM Card Slot, Express Card/ 54**

LVDS	HDMI	Audio	1 PCIe1	1 PCIe4
1 PCIe16	4 SATA	2 COM	8 USB	Express Card/54

Specifications

System

• Form Factor	Micro-ATX
• BIOS	Carrier Board BIOS Socket (Enable/ Disable by 2-pin Jumper)
• I/O Chip	Nuvoton NCT6776F
• Expansion	1 PCIe16, 1 PCIe4, 1 PCIe1, Mini-PCIe card, Express Card (54mm)

I/O

• MIO	4 x SATA, 1 x LPT, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x K/B, 1 x Mouse
• IrDA Connector	5 x 1 Header, Pitch 2.54mm
• USB Connector	8 x USB 2.0, 4 x USB 3.0
• DIO	8-bit GPIO
• External I/O Connector	<ul style="list-style-type: none"> • PS/2 Mouse (Mini-DIN) & PS/2 KB (Mini-DIN) • COM1 (DB-9) over HDMI • VGA (DB-15) over DisplayPort • 2 Dual Deck USB ports • 2 RJ45 over Dual USB • 3-Ports Audio Jack
• Internal I/O Connector	<ul style="list-style-type: none"> • LVDS Connector (HIROSE DF13-40DP-1.25V) • USB: One 5 x 2, pitch 2.54mm Header • COM: One 5 x 2, pitch 2.54mm Header (RS-232/ 422/ 485 & Pin-9 5/ 12V Set by Jumper) • LPC: One 7 x 2, pitch 2.00mm Header • CPU Fan: One 3 x 1, pitch 2.54mm Header • System Fan: Two 3 x 1, pitch 2.54mm Header • LPT: One 13 x 2, pitch 2.00mm Header • Floppy: One 17 x 2, pitch 2.54mm Header • Carrier Board Power: One Switch Button • Carrier Board Switch: One Switch Button • GPIO: One 5 x 2, pitch 2.54mm Header • Power Connector: ATX, One 12 x 2-pin & 2 x2-pin (12V Aux Power) Connector • Miscellaneous Setting Connector: One 13 x 2, pitch 2.54mm Header (Including Power/Reset Switch, Power/SATA/Suspend LED, K/B Locked, Speaker-out, Case Open Detection, Thermal Detection, LCD Brightness Setting)

Audio

• Audio Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Line-in, Mic-in, Line-out, SPDIF, CD-in

Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-20 ~ 80°C (-4 ~ 176°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	243.84mm x 243.84mm
• Weight	1.10lbs (0.5Kg)

Supported COM Express CPU Modules

- **ESM-QM77**
Intel® Core™ i7/ i5/ i3 COM Express Type 6 Module with Intel® QM77 Chipset
- **ESM-A50M**
AMD eOntario COM Express Type 6 Module with AMD A50M Chipset

Ordering Information

- **EEV-EX14**
Micro ATX COM Express Type 6 Carrier Board

- 1 Embedded System
- 2 Qseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Specifications

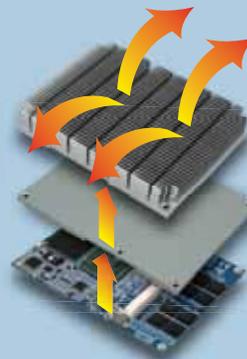
Mechanical

- **Dimension (W x D x H)** 400mm x 350mm x 10mm
 - **Weight** 7.42lbs (3.36kgs)
- For More Details, Please See P.3-8 for EEV-EX13 and P.3-6 for ESM-945GSE

Packing List

- EEV-EX13 Evaluation Carrier Board
- ESM-945GSE COM Express Module
(Can be Changed to Other COM Express Modules)
- Thermal Solutions (Heatspreader+Heatsink)
- Schematics, Design Guide, and User Manual
- ATX Power Supply
- Cable Set
- WinXP Embedded & Linux BSPs

Thermal Solution



Customized Thermal Solution

The heatsink customization service is available upon request to meet different application requirements.

- Mechanical drawing
- Mock-up sample
- Production

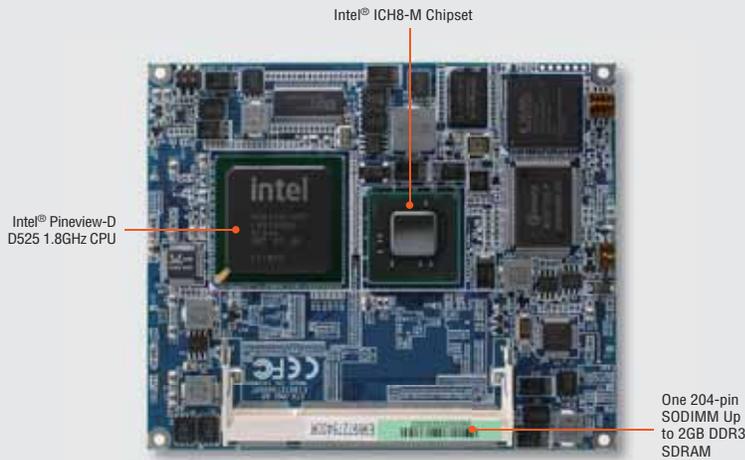
Modularized Thermal Solution

Provides a flexible way to meet any thermal requirements. We offer heatspreaders, heatsinks and coolers as optional items

- Reducing design effort
- High flexibility
- Easy to upgrade

Ordering Information

- **ESK-COM**
COM Express Starter Kit
- **ESM-QM57**
Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 COM Express Module with Intel® QM57 Chipset
- **ESM-GM45**
Intel® Core™ 2 Duo/ Celeron® CPU COM Express Module with Intel® GM45 + ICH9-M Chipset
- **ESM-945GSE**
Intel® Atom™ N270 COM Express Module with Intel® 945GSE + ICH7-M Chipset
- **ESM-945GME**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M COM Express Module with Intel® 945GME + ICH7-M Chipset



Features

- ☞ Onboard Intel® Pineview-D D525 1.8 GHz CPU
- ☞ Intel® ICH8-M Chipset
- ☞ One 204-pin SODIMM Socket Supports Up to 2GB DDR3 800MHz SDRAM
- ☞ Dual View, Dual-channel 18/24-bit LVDS
- ☞ Intel® High Definition Audio
- ☞ Realtek 8103E LAN
- ☞ 4 PCIe1, 4 PCI, 1 LPC Bus, I²C Bus
- ☞ 3 SATA, 2 COM, 6 USB

Pineview	Intel® ICH8-M	Dual View	4 PCIe1	4 PCI
LPC	I ² C	3 SATA	2 COM	6 USB

Specifications

System

• CPU	Onboard Intel® PNV-D D525 1.8GHz CPU
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® ICH8-M Chipset
• I/O Chip	NuvoTon W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports Up to 2GB DDR3 800MHz SDRAM
• Watchdog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
• Expansion	4 PCIe1, 4 PCI, 1 LPC Bus, I ² C Bus

I/O

• MIO	1 x EIDE, 3 x SATA, 1 x FDD/ LPT, 2 x TTL Serial, 1 x K/B & Mouse
• USB	6 x USB 2.0
• IrDA	115Kbps, IrDA 1.0 Compliant

Display

• Chipset	Intel® Pineview Integrated, Gen3.5 + GFX Core @ 400MHz
• Resolution	VGA Mode : Up to 2048 x 1536 @ 60 Hz
• Multiple Display	VGA + LVDS
• LCD Interface	Dual-channel 18/24-bit LVDS (for 1280 x 1024)

Audio

• AC97 Codec	Realtek ALC888
• Audio Interface	Line-in, Line-out, Mic-in AC97 Rev2.2 Compatible, Digital High Definition Audio Interface with Support for Multiple Audio Codecs

Ethernet

• LAN	Realtek 8103E
• Ethernet Interface	10/ 100 Base-Tx Fast Ethernet Compatible

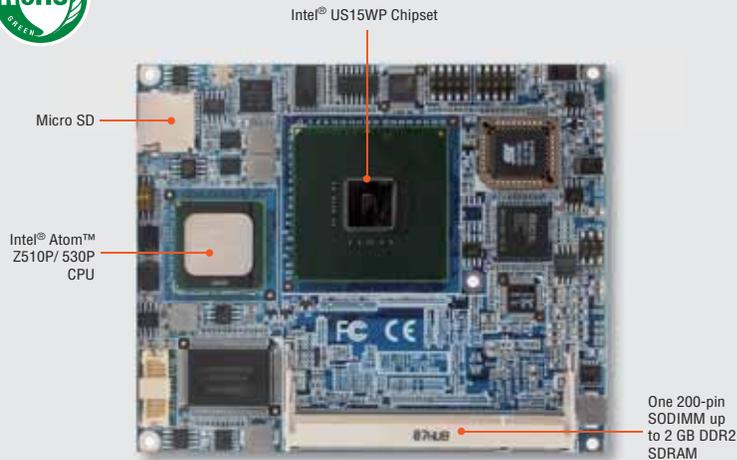
Mechanical & Environmental

• Power Requirement	+5V, +5Vsb (for ATX Only)
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 3.7" (114mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **XTX-PNV**
Intel® Pineview D525 XTX Module with Intel® ICH8-M Chipset
- **EEV-EX20**
Micro-ATX XTX Carrier Board
- **ACC-HSP-2754-2R**
Heatspreader for XTX-PNV
- **ACC-HSK-2754-1R**
Heatsink for XTX-PNV

- 1 Embedded System
- 2 Qseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- Intel® Atom™ Z510P/ Z530P CPU
- Intel® US15WP Chipset
- One 200-pin SODIMM Up to 2GB DDR2 400/533SDRAM
- Dual View, Dual LVDS
- Intel® High Definition Audio
- Realtek 8103E LAN
- 1 PCIe1, 4 PCI, 1 LPC Bus, Micro SD
- 2 SATA, 6 USB, 4 COM
- Wide Temperature Design

Atom™	Intel® US15WP	1 PCIe1	4 PCI	LPC Bus
Micro SD	2 SATA	6 USB	4 COM	Wide Temp.

Specifications

System

• CPU	Onboard Intel® Atom™ Z510P/ Z530P CPU
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® US15WP Chipset
• I/O Chip	Winbond W83627DHG
• System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 400 SDRAM (Z530 can also support DDR 533)
• SSD	1 x Micro SD Slot
• Watchdog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
• Expansion	1 x PCIe1, 4 x PCI, 1 x LPC Bus

I/O

• MIO	1 x EIDE, 2 x SATA, 1 x FDD/ LPT, 4 x TTL Serial, 1 x KB & Mouse
• USB	6 x USB 2.0
• IrDA	115Kbps, IrDA 1.0 Compliant

Display

• Chipset	Intel® Advanced Low Power Graphics Supporting 3.0 Shader and Texture
• Display Memory	Intel® Pouslbo Graphics Core Supports Up to 256MB for Dynamic Video Memory
• Resolution	LCD/ Simultaneous Mode: 1366 x 768
• Multiple Display	Dual LVDS
• LCD Interface	Dual-Channel 18/ 24-bit LVDS (from CH7308) Single-Channel 18/24-bit LVDS (from US15WP, Onboard)

Audio

• AC97 Codec	Realtek ALC883
• Audio Interface	Line-in, Line-out, Mic-in Digital High Definition Audio Interface with Support for Multiple Audio Codecs

Ethernet

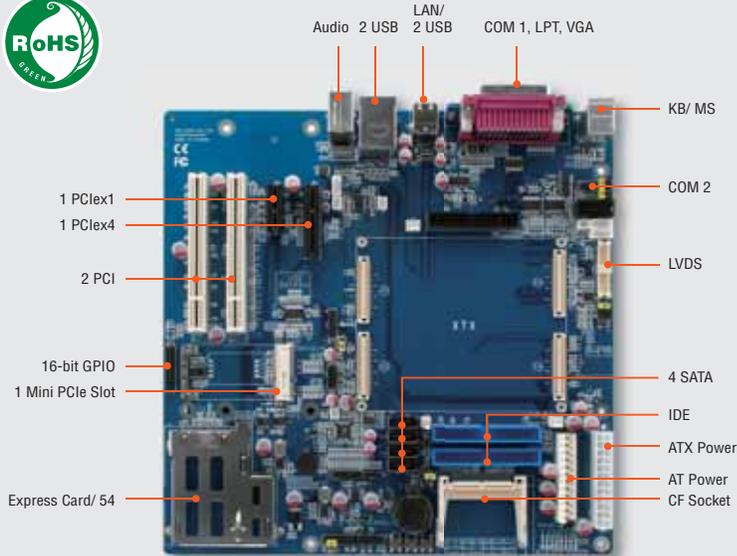
• LAN	Realtek 8103E
• Ethernet Interface	10/ 100 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+5V, +5Vsb (for ATX Only)
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	Standard Version: 0 ~ 60°C (32~140°F) Wide Temp. Version: -40 ~ 85°C (-40~194°F)
• Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 3.7" (114mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **XTX-US15WP-510**
Intel® Atom™ Z510P XTX Module with Intel® US15WP Chipset
- **XTX-US15WP-530**
Intel® Atom™ Z530P XTX Module with Intel® US15WP Chipset
- **XTX-US15WPT-510**
Intel® Atom™ Z510PT XTX Module with Intel® US15WPT Chipset, Wide Temperature -40 ~ 85°C
- **EEV-EX20**
Micro-ATX XTX Carrier Board
- **ACC-HSP-2752-2R**
Heatspreader for XTX-US15WP



Features

- Micro ATX Form Factor
- Accept Avalue XTX Modules & Other XTX CPU Modules
- VGA/ LVDS/ Audio Interface
- 2 PCI, 1 PClex4, 1 PClex1
- 1 Express Card/ 54, 1 Mini PCIe Slot
- 1 CF, 1 LPT, 2 COM, 6 USB, 16-bit GPIO

LVDS	2 PCI	1 PClex4	1 PClex1	1 CF
Express Card/54	Mini PCIe	2 COM	6 USB	16-bit GPIO

- 1 Embedded System
- 2 Qseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Form Factor	Micro ATX
• SSD	One CompactFlash Type I/II Socket
• Expansion	2 x PCI, 1 x PClex1, 1 x PClex4 (PClex4 Can be Transferred to 4 PClex1)

I/O

• MIO	2 EIDE, 1 x LPT/ FDD, 4 SATA, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB, 1 x Mouse
• IrDA	5 x 1 Header, Pitch 2.54mm
• USB	6 x USB 2.0 (2 Double Deck USB Supports 4 USB, 2 for 5 x 2 Pitch 2.54mm Header Share with Mini-PCIe & Express Card)
• DIO	16-bit GPIO

Audio

• Audio Codec	Realtek ALC883 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out
• Amplifier	APA4863RI Audio Power Amplifier

Connectors

• External Connector	1 x Mouse, 1 x KB, 1 x LPT, 1 x COM, 1 x VGA, 4 x USB, 1 x Audio Jack (3-Ports)
• LVDS Connector	One HIROSE DF13-40DP-1.25V
• Power Connector	One 24-pin ATX, One P9/ P8 AT Power Connector

Mechanical & Environmental

• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	240mm x 240mm
• Weight	1.10lb (0.5Kg)

Supported XTX CPU Modules

- **XTX-US15WP**
Intel® Atom™ Z510P/ Z530P XTX Module with Intel® US15WP Chipset
- **XTX-PNV**
Intel® Pineview D525 XTX Module with Intel® ICH8-M Chipset

Ordering Information

- **EEV-EX20**
Micro ATX XTX Carrier Board
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Onboard Intel® N270 Atom™ 1.6GHz CPU

Intel® 945GSE Chipset



Intel® ICH7-M Chipset

2 SATA

One 200-pin up to 2 GB DDR2 SDRAM

Features

- Onboard Intel® Atom™ N270 1.6GHz CPU
- Intel® 945GSE/ ICH7-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 SDRAM
- Dual View, Dual-channel LVDS
- Realtek RTL8101L LAN
- 4 PCI, 1 ISA Bus
- 2 SATA, 4 USB, 2 COM

Atom™	Intel® 945GSE	Dual View	LVDS	LAN
4 PCI	ISA Bus	2 SATA	2 COM	4 USB

Specifications

System

• CPU	Onboard Intel® Atom™ N270 1.6GHz CPU
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® 945GSE/ ICH7-M
• System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 400/ 533 SDRAM
• Watchdog Timer	Reset: 1 ~ 65535min. and 1sec. or 1min./ step
• Expansion	4 x PCI, 1 x ISA Bus

I/O

• MIO	2 x EIDE, 2 x SATA, 1 x FDD/ LPT, 2 x TTL Serial, 1 x KB & Mouse
• USB	4 x USB 2.0
• IrDA	115Kbps, IrDA 1.0 Compliant

Display

• Chipset	Intel® 945GSE Integrated
• Display Memory	Intel® DVMT 3.0 Supports Up to 224MB Shared Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz LCD/ Simultaneous Mode: 1600 x 1200 @ 60Hz
• Multiple Display	CRT + LVDS
• LVDS Interface	Dual-channel 18/ 24-bit LVDS

Audio

• Chipset	Intel® ICH7-M
• AC97 Codec	Realtek ALC655
• Audio Interface	Line-in, Line-out & Mic-in

Ethernet

• LAN	Realtek RTL8101L
• Ethernet Interface	10/ 100 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+5V, +5Vsb
• Power Type	AT/ ATX (ATX is Only Available in +5Vsb)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 3.7" (114mm x 95mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ESM-945GSX**
Intel® Atom™ N270 ETX Module with Intel® 945GSE + ICH7-M Chipset
- **EEV-EX03**
ETX Carrier Board for Evaluation
- **ETX Carrier Board**
Available in Various form Factors
- **ACC-HSP-2749-2R**
HeatSpreader for ESM-945GSX
- **ACC-HSK-2749-2R**
Heatsink for ESM-945GSX

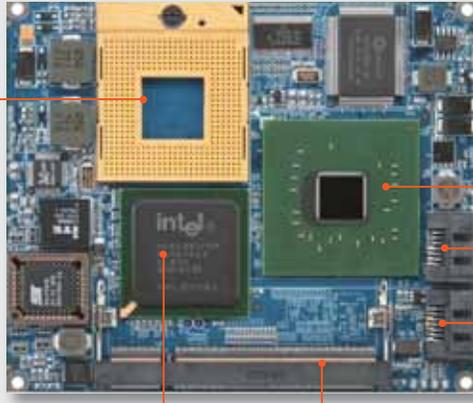


ESM-945ETX

Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M ETX Module with Intel® 945GME + ICH7-M Chipset



Supports 65nm Intel® μFC-PGA 478 / μFC-BGA 479 Core™ 2 Duo / Core™ Duo CPU



Intel® ICH7-M Chipset

One 200-pin up to 2 GB DDR2 SDRAM

Intel® 945GME Chipset

2 SATA

Features

- Supports Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M CPU
- Intel® 945GME/ ICH7-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 SDRAM
- Dual View, Dual-channel LVDS
- Realtek RTL8101L LAN
- 4 PCI, 1 ISA Bus
- 2 SATA, 4 USB, 2 COM

Intel® 945GME	Dual View	2 LVDS	LAN	4 PCI
ISA Bus	2 SATA	4 USB	2 COM	

Specifications

System

CPU	Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M CPU Socket Onboard Intel® Core™ 2 Duo L7400 1.5GHz CPU/ Onboard Intel® Celeron M ULV 423 1.06GHz CPU Note: T7400 Can't be Used Due to Power Issue
BIOS	Award 4Mbit Flash BIOS
System Chipset	Intel® 945GME/ ICH7-M
System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 400/ 533/ 667 SDRAM
Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./ step
Expansion	4 x PCI, 1 x ISA Bus

I/O

MIO	1 x EIDE (Ultra DMA 100), 2 x SATA, 1 x FDD/ LPT, 2 x TTL Serial, 1 x KB & Mouse
USB	4 x USB 2.0
IrDA	115Kbps, IrDA 1.0 Compliant

Display

Chipset	Intel® 945GME
Display Memory	Intel® DVMT 3.0 Supports up to 224MB Shared Video Memory
Resolution	CRT Mode: 2048 x 1536 @ 32 bpp (75Hz) LCD/ Simultaneous Mode: 1600 x 1200 @16 bpp (60Hz)
Multiple Display	CRT + LVDS
LVDS Interface	Dual-channel 18/ 24-bit LVDS

Audio

Chipset	Intel® ICH7-M
AC97 Codec	Realtek ALC203
Audio Interface	Line-in, Line-out & Mic-in

Ethernet

LAN	Realtek RTL8101L
Ethernet Interface	10/ 100 Base-Tx Fast Ethernet compatible

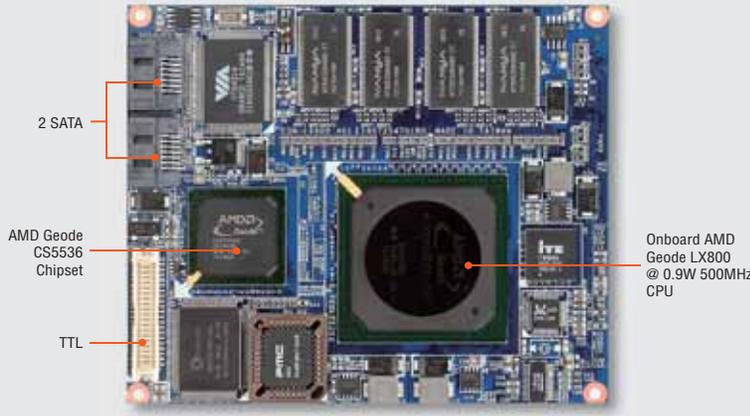
Mechanical & Environmental

Power Requirement	+5V
Power Type	AT/ ATX
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	0%~90% Relative Humidity, Non-condensing
Size (L x W)	4.5" x 3.7" (114mm x 95mm)
Weight	0.44lbs (0.2kg)

Ordering Information

- ESM-945ETX**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M ETX Module with Intel® 945GME + ICH7-M Chipset
- ESM-945ETX-L74**
Intel® Core™ 2 Duo L7400 1.5GHz CPU ETX Module with Intel® 945GME + ICH7-M Chipset
- ESM-945ETX-423**
Intel® Celeron M ULV 423 1.06GHz CPU ETX Module with Intel® 945GME + ICH7-M Chipset
- EEV-EX03**
ETX Carrier Board for Evaluation
- ACC-HSP-945-1R**
Heat Spreader for ESM-910ETX/ 945ETX with PGA Type

- 1 Embedded System
- 2 Seven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- ☞ Onboard AMD Geode LX800 @ 0.9W 500MHz with 128K L2 Cache CPU
- ☞ AMD Geode LX800/ CS5536 Chipset
- ☞ Onboard 256MB DDR Memory; Optional Onboard 512MB DDR Memory
- ☞ LVDS, AC97 Audio
- ☞ Realtek RTL8101L LAN
- ☞ 4 PCI, 1 ISA Bus, 2 SATA, 4 USB, 2 COM
- ☞ Fanless Operation

AMD LX800	Onboard Memory	LVDS	4 PCI	ISA Bus
2 SATA	2 COM	4 USB	Fanless	

Specifications

System

• CPU	Onboard AMD Geode LX800 @ 0.9W 500MHz
• BIOS	Award 4Mbit Flash BIOS
• System Chipset	AMD Geode LX800/ CS5536
• I/O Chip	Winbond W83627HG-AW
• System Memory	Onboard 256MB DDR Memory, Optional 512MB
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./ step
• Expansion	4 x PCI Bus, 1 x ISA Bus

I/O

• MIO	2 x EIDE, 2 x SATA, 1 x FDD/ LPT, 2 x TTL Serial, 1 x KB & MS
• IrDA	115Kbps, IrDA 1.0 Compliant
• USB	4 x USB 2.0

Display

• Chipset	AMD Geode LX800 with Integrated Graphics Engine
• Display Memory	8/ 16/ 32/ 64/ 128/ 254MB Frame Buffer Using System Memory
• Resolution	CRT Mode: 1920 x 1440 @ 32 bpp (85Hz) TFT Mode: 1600 x 1200 @ 32 bpp (60Hz)
• Multiple Display	CRT + LVDS, CRT + TTL
• VGA/LCD Interface	PCI Bus VGA/ LCD Interface
• LVDS Interface	Single 18-bit LVDS (Optional 24-bit)
• TTL Interface	Signal 18/24-bit LVDS

Audio

• Chipset	AMD Geode CS5536
• AC97 Codec	Realtek ALC203 Supports 2-CH Audio
• Audio Interface	Line-in, Line-out, Mic-in

Ethernet

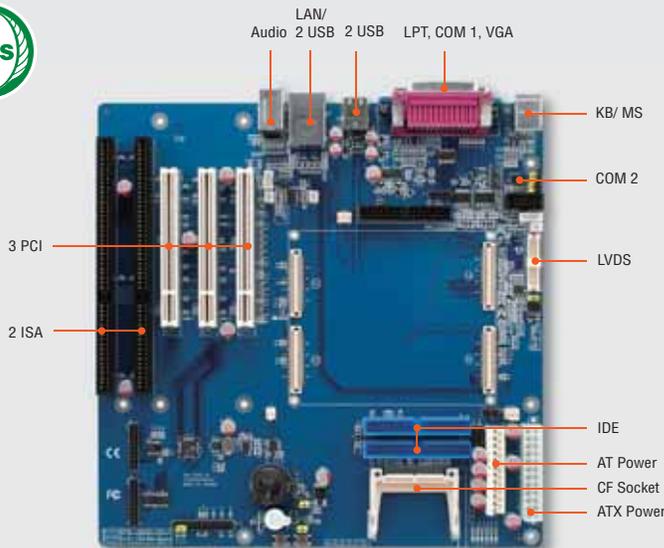
• LAN	Realtek RTL8101L
• Ethernet Interface	10/ 100 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Required	+5V
• Power Type	AT/ ATX (ATX is Only Available in 5VSB)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 3.7" (114mm x 95mm)
• Weight	0.22lbs (0.1kg)

Ordering Information

- **ESM-LX800**
AMD Geode LX800 ETX Module with AMD Geode LX800 + CS5536 Chipset
- **EEV-EX03**
ETX Carrier Board for Evaluation
- **ETX Carrier Board**
Available in Various form Factors
- **ACC-HSP-2547-2R**
Heatspreader for ESM-LX800



Features

- Micro-ATX Form Factor
- Accepts Avalue ETX Modules & Other ETX CPU Modules
- VGA/ LVDS/ Audio Interface
- 3 PCI, 2 ISA (4 External Slots Max.)
- 1 CF, 2 COM, 4 USB, 32-bit GPIO



- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• Form Factor	Micro-ATX
• SSD	One CompactFlash Type I/II Socket
• Expansion	3 x PCI, 2 x ISA (External 3 x PCI & 1 x ISA or 2 x PCI & 2 x ISA)

I/O

• MIO	2 x EIDE (Up to 4 Devices), 1 x LPT/ FDD, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB, 1 x Mouse
• IrDA	5 x 1 Header, Pitch 2.54mm
• USB	4 x USB 2.0 (2 Double Deck USB Support 4 USB)
• DIO	1 x 8-bit GPI, 1 x 8-bit GPO (20pin Pitch 2.54mm) & 1 x 16-bit DIO (20pin Pitch 2.54mm)

Audio

• Audio Codec	Realtek ALC883 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out
• Amplifier	APA4863RI Audio Power Amplifier (2 x 2 Wafer, Pitch 2mm)

Connectors

• External Connector	1 x Mouse, 1 x KB, 1 x LPT, 1 x COM, 1 x VGA, 4 x USB, 1 x Audio Jack (6-Ports)
• LVDS Connector	One HIROSE DF13-40DP-1.25V
• Power Connector	One 24-pin ATX, One P9/ P8 AT Power Connector

Mechanical & Environmental

• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	240mm x 240mm
• Weight	1.10lb (0.5Kg)

Supported ETX CPU Modules

- **ESM-945GSX**
Intel® Atom™ N270 ETX Module with Intel® 945GSE + ICH7-M Chipset
- **ESM-945ETX**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M ETX Module with Intel® 945GME + ICH7-M Chipset
- **ESM-LX800**
AMD Geode LX800 ETX Module with AMD Geode LX800 + CS5536 Chipset

Ordering Information

- **EEV-EX03**
Micro-ATX ETX Carrier Board
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Specifications

Mechanical

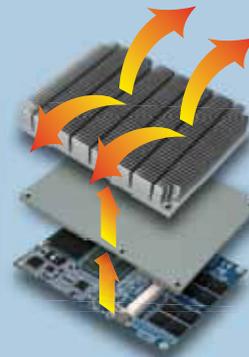
- **Dimension (W x D x H)** 400mm x 350mm x 10mm
- **Weight** 7.42lbs (3.36kgs)

For More Details, Please See P. 3-17 for EEV-EX03 and P. 3-14 for ESM-945GSX
Please See P.3-13 for EEV-EX20 and P.3-12 for XTX-US15WP

Packing List

- EEV-EX03/ EX20 Evaluation Carrier Board
- ESM-945GSX ETX Module/ XTX-US15WP XTX Module (Can be Changed to Other ETX Modules)
- Thermal Solutions (Heatspreader+Heatsink)
- Schematics, Design Guide, and User Manual
- ATX Power Supply
- Cable Set
- WinXP Embedded & Linux BSPs

Thermal Solution



Customized Thermal Solution

The heatsink customization service is available upon request to meet different application requirements.

- Mechanical drawing
- Mock-up sample
- Production

Modularized Thermal Solution

Provides a flexible way to meet any thermal requirements. We offer heatspreaders, heatsinks and coolers as optional items

- Reducing design effort
- High flexibility
- Easy to upgrade

Ordering Information

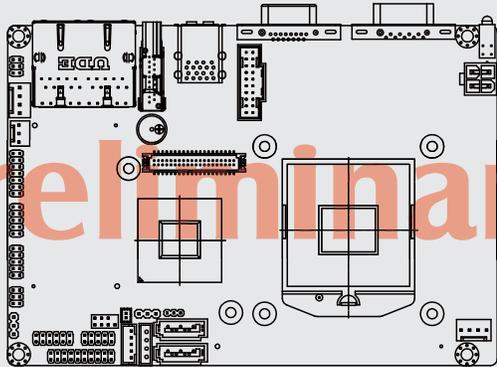
- **ESK-ETX**
ETX Starter Kit
- **ESM-945GSX**
Intel® Atom™ N270 ETX Module with Intel® 945GSE + ICH7-M Chipset
- **ESM-945ETX**
Intel® Core™ 2 Duo/ Core™ Duo/ Celeron® M ETX Module with Intel® 945GME + ICH7-M Chipset
- **ESM-LX800**
AMD Geode LX800 ETX Module with AMD Geode LX800 + CS5536 Chipset
- **ESK-XTX**
XTX Starter Kit
- **XTX-PNV**
Intel® Pineview D525 XTX Module with Intel® ICH8-M Chipset
- **XTX-US15WP**
Intel® Atom™ Z5XX Series XTX Module with Intel® US15WP Chipset

4 3.5" SBC

3.5" Micro Modules

ECM-QM77	Intel® Ivy Bridge Processors 3.5" Micro Module with Intel® QM77 Chipset	4-2
ECM-QM57	Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 3.5" Micro Module with Intel® QM57 Chipset	4-3
ECM-CDV	Intel® Cedarview 3.5" Micro Module with Intel® NM10 Express Chipset	4-4
ECM-QB	Intel® Atom™ E640 3.5" Micro Module with Intel® Platform Controller Hub EG20T Chipset	4-5
ECM-PNV	Intel® Atom™ D525 Dual-Core 3.5" Micro Module with Intel® ICH8-M Chipset	4-6
ECM-US15WP	Intel® Atom™ Z510P/ Z530P 3.5" Micro Module with Intel® US15WP Chipset	4-7
ECM-945GSE	Intel® Atom™ N270 3.5" Micro Module with Intel® 945GSE + ICH7-M Chipset	4-8
ECM-A50M	AMD eOntario T40N 3.5" Micro Module with AMD A50M Chipset	4-9
ECM-LX800W	AMD Geode LX800 3.5" Micro Module with AMD Geode LX800 + CS5536 Chipset	4-10
ECM-LX800D	AMD Geode LX800 3.5" Micro Module with AMD Geode LX800 + CS5536 Chipset	4-11
ECM-VX900	VIA Nano U3100E 3.5" Micro Module with VIA VX900 Chipset	4-12





Features

- Intel Chief_River Platform
- Intel® QM77 Chipset
- One 204-pin DDR3 SODIMM Up to 8GB DDR3 1333/ 1600 SDRAM
- Dual-channel 18/24-bit LVDS, HDMI, VGA
- Realtek ALC892 HD Audio Codec
- 2 x Gigabit Ethernet
- Triple Display
- 2 SATA III, 1 Mini PCIe
- 4 USB 3.0, 2 USB 2.0, 2 COM, 8-bit DIO
- iAMT 8.0



Specifications

System

• CPU	Intel® Ivy Bridge Processors (35 ~ 45W CPU)
• BIOS	AMI uEFI BIOS, 64Mbit SPI Flash ROM iAMT8.0 Supported
• System Chipset	Intel® QM77 Chipset
• I/O Chip	Nuvoton NCT6776F
• System Memory	One 204-pin DDR3 SODIMM Socket Supports Up to 8GB DDR3 1333/ 1600 SDRAM
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control
• Expansion	1 x Mini PCIe
• TPM	TPM 1.2 Supported

I/O

• MIO	1 x RS-232, 1 x RS-232/ 422/ 485, LPC, 2 x SATA III
• USB	2 x USB 2.0, 4 x USB 3.0
• DIO	4-bit GPI, 4-bit GPO

Display

• Chipset	Intel® QM77
• Resolution	VGA Mode: 1920 x 1200 @ 60Hz HDMI Mode: 1920 x 1200 @ 60Hz LVDS Mode: 1920 x 1200 @ 60Hz
• Multiple Display	VGA + LVDS + HDMI
• LCD Interface	Dual-channel 18/ 24-bit LVDS

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen, Share with USB6)

Audio

• HD Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

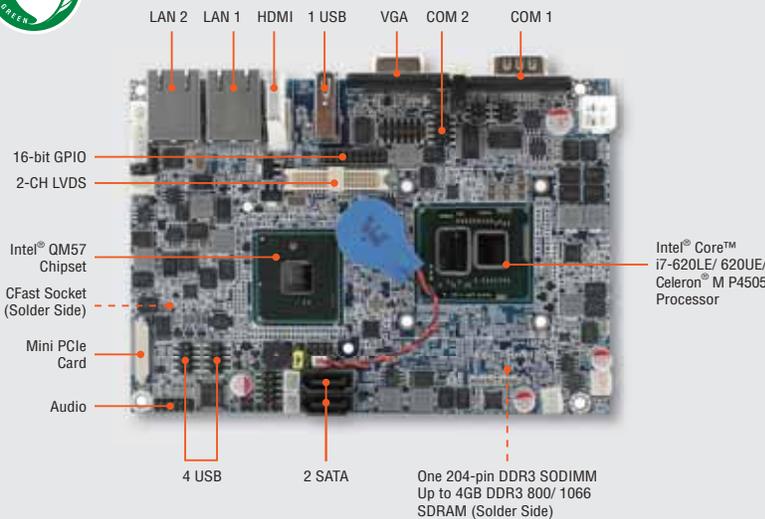
• LAN Chip	1 x Intel® 82574L Gigabit Ethernet, 1 x Intel® 82579 Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-QM77**
Intel® Ivy Bridge Processors 3.5" Micro Module with Intel® QM77 Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Features

- Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 Processor
- Intel® QM57 Chipset
- One 204-pin DDR3 SODIMM Up to 4GB DDR3 800/ 1066 SDRAM
- Dual View, 2-CH LVDS, VGA, HDMI
- 5.1-CH Audio, Dual Intel® Gigabit Ethernet
- 1 CFast, 2 SATA, 2 COM, 5 USB, 16-bit GPIO
- Support iAMT 6.0



- 1 Embedded System
- 2 Osven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 Processor
• BIOS	AMI 8Mbit SPI BIOS
• System Chipset	Intel® QM57
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 800/ 1066 SDRAM
• SSD	One CFast Socket
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, with Auto Throttling Control
• Expansion	1 x PCIe Mini Card Slot (From AUX-033)

I/O

• MIO	1 x RS-232, 1 x RS-232/ 422/ 485, LPC, 2 x SATA
• USB	5 x USB 2.0
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	Intel® QM57
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz LCD/ Simultaneous Mode: 1600 x 1200 @ 75 Hz
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	Dual-channel 18/ 24-bit LVDS

Audio

• HD Codec	Realtek ALC888 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

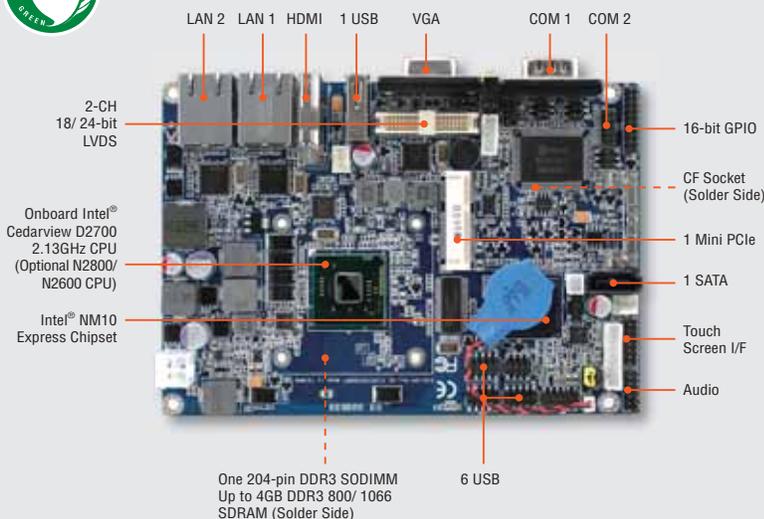
• LAN	1 x Intel® 82577LM Gigabit Ethernet 1 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-QM57**
Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 3.5" Micro Module with Intel® QM57 Chipset and VGA, 2-CH LVDS, HDMI, 5.1-CH Audio, 2 Gigabit Ethernet, CFast, 2 SATA, 2 COM, 5 USB & 16-bit GPIO
- **AUX-033-1R**
Mini-PCIe Daughter Board for ECM-QM57
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)



Features

- Onboard Intel® Cedarview D2700 2.13GHz CPU (Optional N2800/ N2600 CPU)
- Intel® NM10 Express Chipset
- One 204-pin DDR3 SODIMM Socket, Supports Up to 4GB DDR3 800/ 1066 SDRAM
- HDMI, VGA, Dual-channel 18/ 24-bit LVDS
- 7.1-CH Audio, Dual Intel® Gigabit Ethernet
- 1 CF, 1 SATA, 2 COM, 7 USB, 16-bit GPIO
- 1 x Mini PCIe Card (Support mSATA)
- Optional Built-in Touch Screen Interface



Specifications

System

• CPU	Onboard Intel® Cedarview D2700 2.13GHz CPU (Optional N2800/ N2600 CPU)
• BIOS	AMI 16Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Socket, Supports Up to 4GB DDR3 800/ 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control
• Expansion	1 x Mini-PCIe (mSATA Supported)

I/O

• MIO	1 x RS-232, 1 x RS-232/ 422/ 485, LPC, 1 x SATA
• USB	7 x USB 2.0
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz LCD/ Simultaneous Mode: 1366 x 768 @ 60Hz (CDV-M); 1400 x 900 @ 60Hz (CDV-D)
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	Dual-channel 18/ 24-bit LVDS (with eDP)

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen, Share with USB6)

Audio

• HD Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

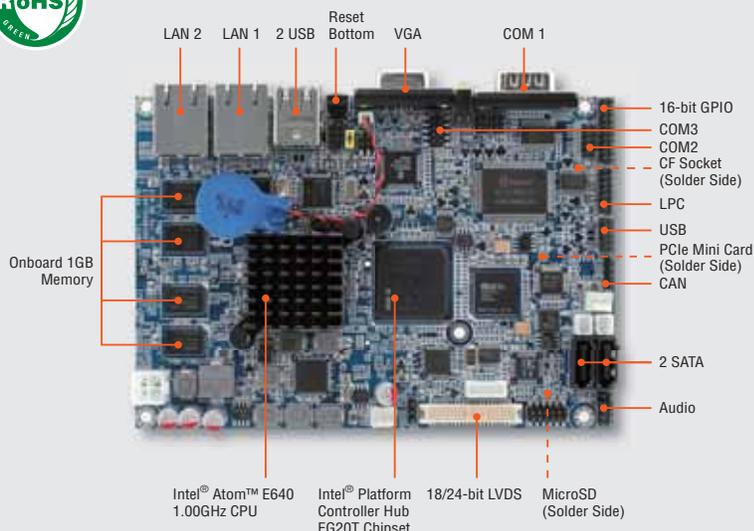
• LAN Chip	2 x Intel® 82574L Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V ~ +28V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-20 ~ 80°C (4 ~ 176°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-CDV**
Intel® Cedarview 3.5" Micro Module with Intel® NM10 Express Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Features

- Onboard Intel® Atom™ E640 1.00GHz CPU
- Intel® Platform Controller Hub EG20T Chipset
- Onboard DDR2 1GB Memory
- Dual View, Single-channel 18/24-bit LVDS, 7.1-CH Audio, Dual Gigabit Ethernet
- 2 SATA, 1 CAN Bus, 5 COM, 4 USB, 16-bit GPIO
- 1 MicroSD, 1 CF Socket
- 1 Mini PCIe Card

Atom™	Dual View	2 GbE	2 SATA	CAN Bus
5 COM	4 USB	CF	MicroSD	Mini PCIe

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® Atom™ E640 1.00GHz CPU
• BIOS	AMI 16Mbit Flash BIOS
• System Chipset	Intel® Platform Controller Hub EG20T
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	Onboard DDR2 1GB Memory
• SSD	1 x CompactFlash Type I/II Socket, 1 x MicroSD
• Watch Dog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, with Auto Throttling Control
• Expansion	1 x Mini PCIe Card (Optional mSATA Supported), 1 x LPC

I/O

• MIO	2 x SATA, 3 x RS-232, 1 x RS-422, 1 x RS-485, 1 x CAN
• USB	4 x USB 2.0
• DIO	8-bit GPI and 8-bit GPO

Display

• Chipset	Intel® Tunnel Creek Integrated
• Resolution	CRT Mode: 1280 x 1024 @ 85Hz LCD/ Simultaneous Mode: 1280 x 768 @ 60Hz
• Multiple Display	CRT + LVDS
• LCD Interface / DVI	Single-channel 18/24-bit LVDS

Audio

• HD Codec	Realtek ALC892 Support 7.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

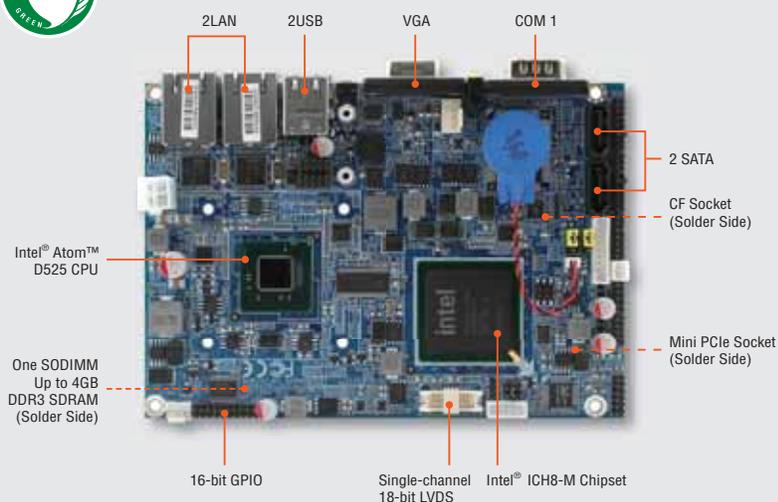
• LAN	Dual Intel® 82574L PCI-E Gigabit Ethernet
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-QB**
Intel® Atom™ E640 3.5" Micro Module with Intel® Platform Controller Hub EG20T Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Features

- Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
- Intel® ICH8-M Chipset
- One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066/1333 SDRAM
- Dual View, Single-channel LVDS, VGA
- 5.1-CH HD Audio
- 2 Intel® 82574L Gigabit Ethernet
- 1 CF, 1 Mini PCIe Card
- 2 SATA, 2 COM, 6 USB, 16-bit GPIO
- Optional AUX-035 for Dual-channel LVDS
- Optional Built-in Touch Screen Interface



Specifications

System

• CPU	Intel® Atom™ D525 Dual-Core 1.8GHz CPU
• FSB	667/ 800MHz
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® ICH8-M
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066/1333* SDRAM (*Due to CPU spec limitation, the data transfer rate of DDR3 will be limited to 800MT/s only.)
• SSD	One CompactFlash Type I/II Socket
• Watch Dog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• Expansion	1 x Mini PCIe Card

I/O

• MIO	2 x SATA, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB & Mouse (Optional)
• USB	6 x USB 2.0
• DIO	16-bit General Purpose I/O for DI and DO

Display

• Chipset	Intel® Pineview Integrated, GMA3150 @ 400MHz
• Resolution	VGA Mode : Up to 2048 x 1536 @ 60Hz
• Multiple Display	CRT + LVDS
• LCD Interface	Single-channel 18-bit LVDS Dual-channel 18/24-bit LVDS (Optional via AUX-035)

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• Chipset	Intel® ICH8-M
• HD Codec	Realtek ALC888 Supports 5.1-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN	Dual Intel® 82574L Gigabit Ethernet
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V ~ +28V
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

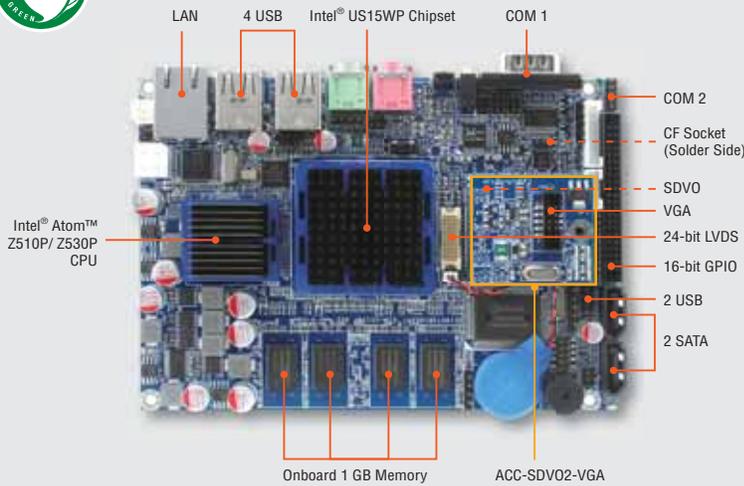
Ordering Information

- **ECM-PNV**
Intel® Atom™ D525 Dual-Core 3.5" Micro Module with Intel® ICH8-M Chipset
- **AUX-035**
Dual-Channel 18/ 24-bit LVDS Adaptor for PNV Series
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)



ECM-US15WP

Intel® Atom™ Z510P/ Z530P 3.5" Micro Module with Intel® US15WP Chipset



Features

- Intel® Atom™ Z510P/ Z530P CPU
- Intel® US15WP Chipset
- Onboard 1GB Memory
- Supports 5.1-CH Audio
- Intel® 82583V Gigabit Ethernet
- 1 CF, 2 SATA, 6 USB, 2 COM, 16-bit GPIO
- 1 SDIO, 1 SDVO
- Optional Built-in Touch Screen Interface
- Fanless Operation
- Wide Temperature Version Available



- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® Atom™ Z510P/ Z530P CPU
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® US15WP
• I/O Chip	Winbond W83627DHG
• System Memory	Onboard 1GB Memory
• SSD	One CompactFlash Type I/II Socket
• Watch Dog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• Expansion	1 x SDIO, 1 x SDVO

I/O

• MIO	1 x EIDE, 1 x RS-232, 1 x RS-232/ 422/ 485, 2 x SATA
• USB	6 x USB 2.0
• IrDA	115Kbps 1.0 Compliant
• DIO	8-bit GPI and 8-bit GPO

Display

• Chipset	Intel® Advanced Low Power Graphics Supporting 3.0 Shader and Texture
• Display Memory	Intel® Poulso Graphics Core Supports Up to 256MB for Dynamic Video Memory
• Resolution	LCD/ Simultaneous Mode: 1366 x 768
• Multiple Display	SDVO + LVDS
• LCD Interface	Single-channel 18/ 24-bit LVDS

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• HD Codec	Realtek ALC883 supports 5.1 CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN	Intel® 82583V
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V, +5Vsb (for ATX Only)
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F) (-20 ~ 70°C for Wide Temp. Version) (On/off Temperature -10 ~ 70°C)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

• ECM-US15WP

Intel® Atom™ Z510P/ Z530P 3.5" Micro Module with Intel® US15WP Chipset and VGA, LVDS, 5.1-CH Audio, Gigabit Ethernet, CF, 2 SATA, 2 COM, 6 USB, 16-bit GPIO, SDIO & SDVO

• ECM-US15WPT

Intel® Atom™ Z510PT 3.5" Micro Module with Intel® US15WPT Chipset and VGA, LVDS, 5.1-CH Audio, Gigabit Ethernet, CF, 2 SATA, 2 COM, 6 USB, 16-bit GPIO, SDIO & SDVO Support Wide Operating Temperature (-20 ~ 70°C)

• ACC-SDVO2 LVDS-1R

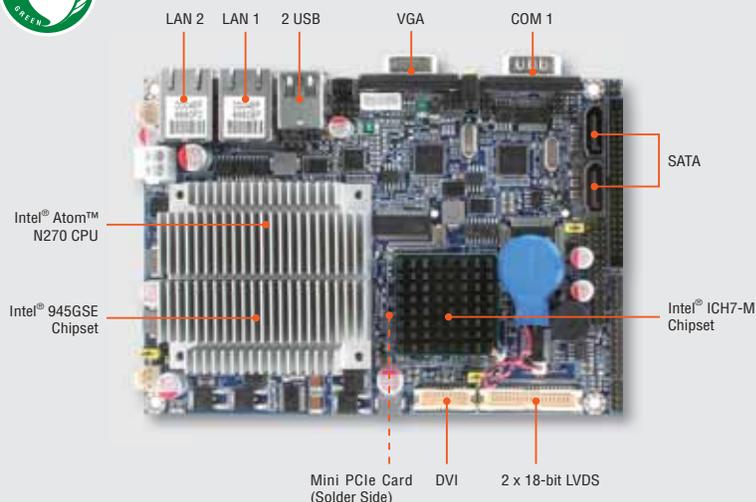
SDVO to Dual 18/ 24-bit LVDS Adaptor for ECM-US15WP

• ACC-SDVO2 DVI-1R

SDVO to DVI Adaptor for ECM-US15WP

• ACC-SDIO2 VGA-1R

SDVO to VGA Adapter for ECM-US15WP (Included in Standard Packing)



Features

- Onboard Intel® Atom™ N270 1.6GHz CPU
- Intel® 945GSE/ ICH7-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 400/ 533 SDRAM
- Dual View, Dual-channel LVDS
- 5.1-CH Audio
- 2 Intel® 82583V Gigabit Ethernet
- 1 CF, 1 Mini PCIe Card
- 2 SATA, 2 COM, 6 USB, 16-bit GPIO



Specifications

System

• CPU	Intel® Atom™ N270 1.6GHz CPU
• FSB	533/ 667 MHz
• BIOS	Award 8Mbit Flash BIOS
• System Chipset	Intel® 945GSE/ ICH7-M
• I/O Chip	ITE 8712F
• System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 400/ 533 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watch Dog Timer	Reset: 1 ~ 65535sec./min and 1min./step
• Expansion	1 x Mini PCIe Card

I/O

• MIO	1 x EIDE (Ultra DMA 100), 2 x SATA, 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB & Mouse
• USB	6 x USB 2.0
• DIO	16-bit General Purpose I/O for DI and DO

Display

• Chipset	Intel® 945GSE Integrated
• Display Memory	Intel® DVMT 3.0 Supports Up to 224MB Shared Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz LCD/ Simultaneous Mode (4:3): 1600 x 1200 @ 60Hz
• Multiple Display	CRT + LVDS, CRT + DVI
• LVDS/ DVI	ECM-945GSE-18: Dual-CH 18-bit LVDS + DVI ECM-945GSE-24: Dual-CH 18/ 24-bit LVDS

Audio

• Chipset	Intel® ICH7-M
• AC97 Codec	Realtek ALC655 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

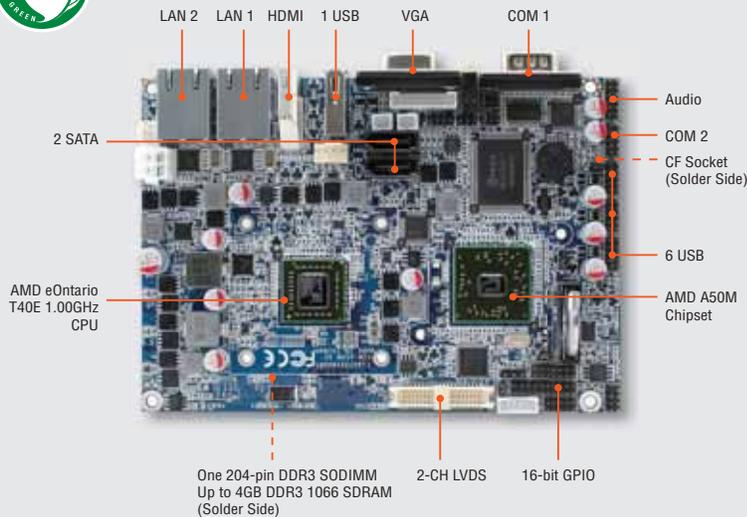
• LAN	Dual Intel® 82583V Gigabit Ethernet (Marvell 88E8053 for Rev.A1)
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V @ 1.38A (with 512MB DDR2 533 SDRAM)
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-945GSE-18**
Intel® Atom™ N270 3.5" Micro Module with Intel® 945GSE + ICH7-M Chipset and VGA, 2-CH 18-bit LVDS, DVI, 5.1-CH Audio, 2 Gigabit Ethernet, Mini PCIe Card, CF, 2 SATA, 2 COM, 6 USB & 16-bit GPIO
- **ECM-945GSE-24**
3.5" Intel® Atom™ N270 Micro Module with Intel® 945GSE + ICH7-M Chipset and VGA, 2-CH 18/ 24-bit LVDS, 5.1-CH Audio, 2 Gigabit Ethernet, Mini PCIe Card, CF, 2 SATA, 2 COM, 6 USB & 16-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)
- **E1704440300R**
DVI cable 24P/1.91-20P/1.25 30cm



Features

- AMD eOntario T40E 1.00GHz CPU (Optional T56N 1.60GHz CPU)
- AMD A50M Chipset
- One 204-pin DDR3 SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
- Dual View, 2-CH LVDS, CRT, HDMI
- 7.1-CH Audio, Dual Gigabit Ethernet
- 1 CF, 2 SATA, 2 COM, 7 USB, 16-bit GPIO



- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	AMD eOntario T40E 1.00GHz CPU (Optional T56N 1.60GHz CPU)
• BIOS	AMI 32Mbit SPI BIOS
• System Chipset	AMD A50M
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin DDR3 SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, with Auto Throttling Control
• Expansion	1 x Mini PCIe (mSATA Supported)

I/O

• MIO	1 x RS-232, 1 x RS-232/ 422/ 485, LPC, 2 x SATA
• USB	7 x USB 2.0
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	AMD Fusion Accelerated Processors
• Resolution	CRT Mode: 1920 x 1200 @ 75Hz (T40N) CRT Mode: 2560 x 1600 @ 75Hz (T56N) LCD/ Simultaneous Mode: 1920 x 1200 @ 75Hz (T40N) LCD/ Simultaneous Mode: 2048 x 1536 @ 75Hz (T56N)
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	Dual-channel 18/24-bit LVDS (Transfer Through DDI)

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• HD Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

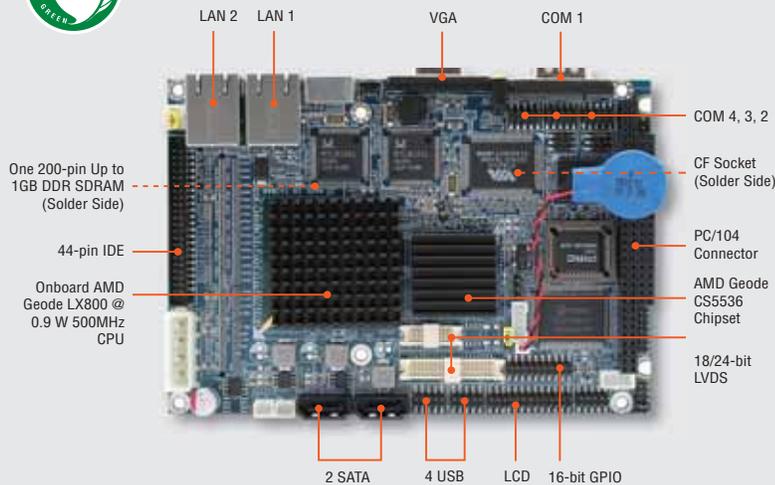
• LAN	2 x Realtek 8111E Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V
• ACPI	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0%~90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-A50M-40E**
AMD eOntario T40E 3.5" Micro Module with AMD A50M Chipset and CRT, 2-CH LVDS, HDMI, 7.1-CH Audio, 2 Gigabit Ethernet, CF, 2 SATA, 2 COM, 7 USB & 16-bit GPIO
- **ECM-A50M-56N**
AMD eOntario T56N 3.5" Micro Module with AMD A50M Chipset and CRT, 2-CH LVDS, HDMI, 7.1-CH Audio, 2 Gigabit Ethernet, CF, 2 SATA, 2 COM, 7 USB & 16-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)



Features

- Onboard AMD Geode LX800 @ 0.9W 500MHz with 128K L2 Cache CPU
- AMD Geode LX800/ CS5536 Chipset
- One 200-pin SODIMM Up to 1GB DDR SDRAM
- Dual View, TFT, LVDS, 2-CH Audio
- Dual Realtek RTL8101L LAN
- ITE IT8888G PCI to ISA Bridge
- 1 PC/104, 1 CF
- 2 SATA, 4 COM, 4 USB, 16-bit GPIO
- Fanless Operation
- Wide Temp.: -40 ~ 85°C

LX800 @ 0.9W	LVDS	ISA Bridge	PC/104	2 SATA
4 COM	4 USB	16-bit GPIO	Fanless	Wide Temp.

Specifications

System

• CPU	Onboard AMD Geode LX800 @ 0.9W 500MHz with 128K L2 Cache CPU
• BIOS	Award 4Mbit Flash BIOS
• System Chipset	AMD Geode LX800/ CS5536
• I/O Chip	Winbond W83627DHG-PT
• System Memory	One 200-pin SODIMM Socket Supports Up to 1GB DDR 333/ 400 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
• Expansion	1 PC/104

I/O

• MIO	1 x EIDE (Ultra DMA 100), 2 x SATA, 1 x LPT, 3 x RS-232, 1 x RS-232/422/485, 1 x K/B & Mouse
• IrDA	115k bps, IrDA 1.0 Compliant
• USB	4 x USB 2.0
• DIO	16-bit General Purpose I/O for DI and DO

Display

• Chipset	AMD Geode LX800 with Integrated Graphics Engine
• Display Memory	8/ 16/ 32/ 64/ 128/ 254MB Frame Buffer Using System Memory
• Resolution	CRT Mode: 1920 x 1440 @ 32bpp (85Hz) LCD/ Simultaneous Mode: 1600 x 1200 @ 32bpp (85Hz)
• Multiple Display	CRT + LVDS, CRT + TTL
• LCD Interface	Supports 18/ 24-bit TFT Panel
• LVDS	Single-channel 18-bit LVDS/ Optional 24-bit

Audio

• AC97 Codec	Realtek ALC203 Supports 2-CH Audio
• Audio Interface	Mic-in, Line-in, CD Audio-in, Line-out

Ethernet

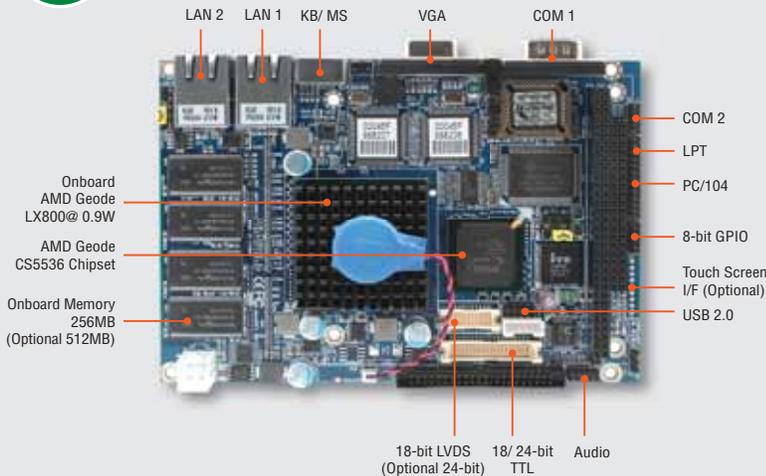
• LAN	Dual Realtek RTL8101L
• Ethernet Interface	100 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+5V @ 1.97A, +12V @ 0.10A (with AMD Geode LX800 @ 0.9W 500MHz & 1GB DDR 333 SDRAM) *Note: +12V is for LVDS Inverter Only
• Power Type	AT/ ATX
• Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)
• Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-LX800W**
3.5" AMD LX800 @ 0.9W 500MHz Micro Module with VGA, LVDS, Audio, Dual LAN, CF, PC/104, 2 SATA, 4 COM, 4 USB, 16-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1GB)



Features

- Onboard AMD Geode LX800 @ 0.9W 500MHz CPU
- AMD Geode LX800/ CS5536 Chipset
- Onboard 256MB Memory (Optional Up to 512MB)
- LVDS, 2-CH Audio
- Dual Realtek RTL8101L LAN
- 1 CF, 1 PC/104, 2 COM, 2 USB, 8-bit GPIO
- Optional Built-in Touch Screen Interface
- Fanless Operation
- Wide Voltage: +10V~+28V

LX800 @ 0.9W	Onboard Memory	LVDS	Dual LAN	PC/104
2 COM	2 USB	8-bit GPIO	Fanless	Wide Voltage

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Onboard AMD Geode LX800 @ 0.9 W 500MHz CPU
• BIOS	Award 4Mbit Flash BIOS
• System Chipset	AMD Geode LX800/ CS5536
• I/O Chip	Winbond W83627HG-AW
• System Memory	Onboard 256MB DDR Memory, Optional 512MB
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control
• Expansion	1 x PC/104

I/O

• MIO	1 x EIDE (Ultra DMA 100), 1 x RS-232, 1 x RS-232/ 422/ 485, 1 x KB & Mouse, 1 x LPT
• IrDA	115Kbps, IrDA 1.0 Compliant
• USB	2 x USB 2.0
• DIO	8-bit General Purpose I/O for DI and DO

Display

• Chipset	AMD Geode LX800 Integrated
• Display Memory	8/ 16/ 32/ 64/ 128/ 256MB Frame Buffer Using System Memory
• Resolution	CRT Mode: 1920 x 1440 @ 32bpp (85Hz) TFT: 1600 x 1200 @ 16bpp (60Hz)
• Multiple Display	CRT + LVDS, CRT + TTL
• LCD Interface	Support 18/ 24-bit TFT Panel
• LVDS	Single-channel 18-bit LVDS/ Optional 24-bit

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• AC97 Codec	Realtek ALC203 Supports 2-CH Audio
• Audio Interface	Mic-in, Line-in, Audio-in, Line-out

Ethernet

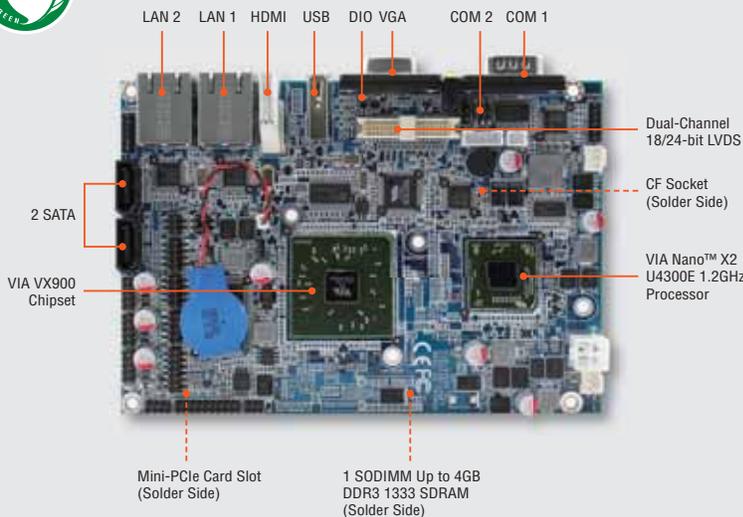
• LAN	Dual Realtek RTL8101L
• Ethernet Interface	10/ 100 Base-Tx Fast Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+10V ~ +28V
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

- **ECM-LX800D**
AMD Geode LX800 3.5" Micro Module with AMD Geode LX800 + CS5536 Chipset and LVDS, Audio, Dual LAN, CF, PC/104, 2 COM, 2 USB, 8-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)



Features

- ▶ VIA Nano™ X2 U4300E 1.2GHz Processor
- ▶ VIA VX900 Chipset
- ▶ One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1333MHz SDRAM
- ▶ Dual View, Dual-channel LVDS, HDMI
- ▶ 7.1-CH Audio
- ▶ Dual Realtek RTL8111E Gigabit Ethernet
- ▶ Mini-PCle Card Slot
- ▶ 1 CF, 2 SATA, 2 COM, 7 USB, 16-bit GPIO



Specifications

System

• CPU	VIA Nano™ X2 U4300E 1.2GHz Processor
• FSB	800MHz
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	VIA VX900
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1333MHz SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 3 ~ 255min. and 1min./step
• H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
• Expansion	Mini-PCle Card Slot

I/O

• MIO	2 x SATA, 1 x RS232, 1 x RS232/422/485, 1 x K/B & Mouse, LPC
• USB	7 x USB 2.0
• DIO	8-bit GPI and 8-bit GPO

Display

• Chipset	VIA VX900
• Display Memory	Up to 512MB Frame Buffer Size Using System Memory
• Resolution	CRT Mode: 2560 x 1600 LCD/ Simultaneous Mode: 1600 x 1200
• Multiple Display	CRT + LVDS, CRT + HDMI, LVDS + HDMI
• LVDS	Dual-Channel 18/24-bit LVDS
• HDMI	Integrated by VIA VX900

Audio

• HD Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

• LAN	Dual Realtek RTL8111E Gigabit Ethernet, Supports Wake on LAN
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V ~ +28V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	5.7" x 4" (146mm x 101mm)
• Weight	0.44lbs (0.2kg)

Ordering Information

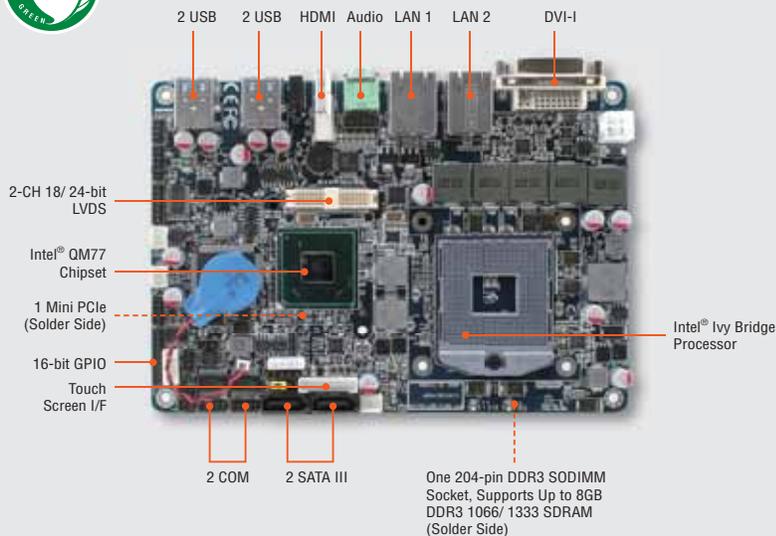
- **ECM-VX900**
VIA Nano™ X2 U4300E 3.5" Micro Module with VIA VX900 Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)

5 EPIC Module

EPIC Module

EPI-QM77	Intel® Ivy Bridge EPIC Module with Intel® QM77 Chipset	5-2
EPI-QM67	Intel® Sandy Bridge EPIC Module with Intel® QM67 Chipset	5-3
EPI-QM57	Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 EPIC Module with Intel® QM57 Chipset	5-4





Features

- Intel® Ivy Bridge Processor
- Intel® Panther Point-Mbl (QM77) Chipset
- One 204-pin DDR3 SODIMM Up to 8GB DDR3 1066/ 1333 SDRAM
- Triple Display, 2-CH LVDS, 1 DVI-I, 1 HDMI
- Dual Intel® Gigabit Ethernet
- 2 SATA III, 2 COM, 16-bit GPIO, 2 USB 2.0, 4 USB 3.0
- Support iAMT 8.0
- Support mSATA
- Backward Compatibility (EPI-QM77 can adopt Intel Sandy Bridge CPU)
- TPM Function



Specifications

System

• CPU	Intel® Ivy Bridge Processor (35W ~ 45W CPU)
• BIOS	AMI 64Mbit SPI BIOS
• System Chipset	Intel® Panther Point-Mbl (QM77)
• I/O Chip	Nuvoton NTC6776F
• System Memory	One 204-pin DDR3 SODIMM Socket, Supports Up to 8GB DDR3 1066/ 1333 SDRAM
• SSD	1 x mSATA (from Mini-PCIe Slot)
• Watchdog Timer	Reset: 1sec. ~ 65535min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, voltage with Auto Throttling Control
• Expansion	1 x Mini PCIe (Support mSATA)

I/O

• MIO	2 x SATA III, 1 x RS-232, 1 x RS-232/ 422/ 485, LPC
• IrDA	Nuvoton NTC6776F (Share with COM2)
• USB	2 x USB 2.0 (Pin Header), 4 x USB 3.0 (Edge Connectors)
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	Intel® QM77
• Display Memory	Share System Memory Up to 512MB
• Resolution	DVI Mode: 1920 x 1200 @ 60Hz LCD/ Simultaneous Mode : 18 or 24 bits/ pixel; Pixel Resolution Clock 25 - 112MHz HDMI Mode: 1920 x 1200 @ 60Hz
• Multiple Display	DVI + LVDS + HDMI or CRT + LVDS + HDMI
• LVDS	Dual-channel 18/ 24-bit LVDS
• DVI	One DVI Port Co-lay with VGA

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• HD Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

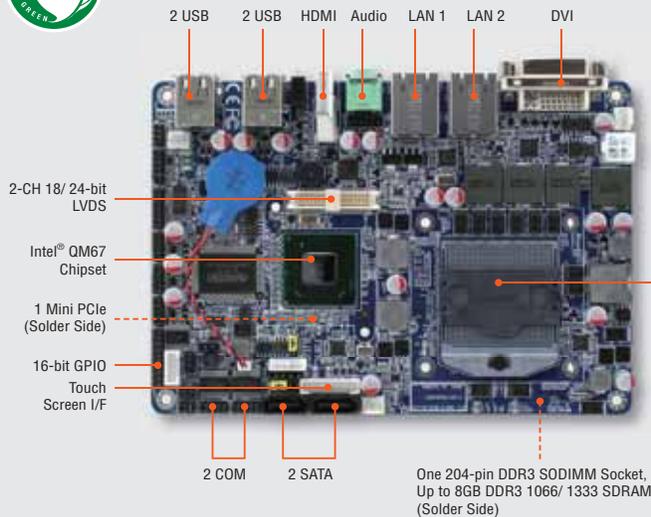
• LAN Chip	1 x Intel® 82574L 1 x Intel® 82579 (Gigabit PHY)
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V ~ 19V, Reverse Power Connector for SATA
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 6.5" (115mm x 165mm)
• Weight	0.4lbs (0.18kg)

Ordering Information

- **EPI-QM77**
Intel® Ivy Bridge EPIC Module with Intel® QM77 Chipset and DVI-I, 2-CH LVDS, HDMI, 7.1-CH Audio, 2 Gigabit Ethernet, 2 SATA III, 2 COM, 6 USB & 16-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1GB)



Features

- Intel® FCPGA988 Socket Supports Sandy Bridge Processor
- Intel® QM67 Chipset
- One 204-pin DDR3 SODIMM Up to 8GB DDR3 1067/ 1333 SDRAM
- Dual View, Dual-channel LVDS, DVI, HDMI
- Dual Intel® Gigabit Ethernet
- 2 SATA III, 2 COM, 10 USB, 16-bit GPIO
- Support iAMT 7.0
- Support mSATA



- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® FCPGA988 Socket Supports Sandy Bridge Processor
• BIOS	AMI 64Mbit SPI BIOS
• System Chipset	Intel® QM67
• I/O Chip	Nuvoton NTC6776F
• System Memory	One 204-pin DDR3 SODIMM Socket Supports Up to 8GB DDR3 1066/ 1333 SDRAM
• SSD	1 x mSATA (from Mini PCIe Slot)
• Watchdog Timer	Reset: 1sec. ~ 65535min. and 1sec. or 1min./step
• Expansion	1 x Mini PCIe (Support mSATA)

I/O

• MIO	2 x SATA III, 1 x RS-232, 1 x RS-232/ 422/ 485, LPC
• USB	10 x USB 2.0
• IrDA	Nuvoton NTC6776F (Share with COM2)
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	Intel® QM67
• Display Memory	Share System Memory Up to 512MB
• Resolution	DVI Mode: 1920 x 1200 @ 60Hz LCD/ Simultaneous Mode : 18 or 24 bits/pixel; Pixel Clock 25-112MHz HDMI Mode: 1920 x 1200 @ 60Hz
• Multiple Display	DVI + LVDS, DVI + HDMI, HDMI + LVDS
• LVDS	Dual-channel 18/ 24-bit LVDS

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• HD Codec	Realtek ALC892 Supports 5.1-CH Audio
• Audio Interface	High Definition Audio

Ethernet

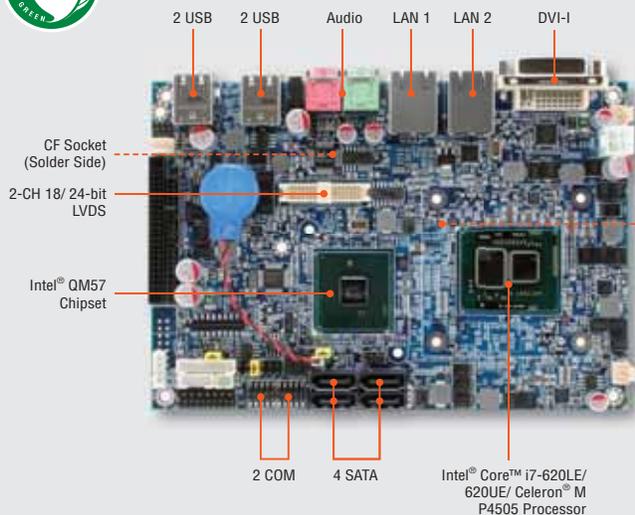
• LAN Chip	1 x Intel® 82574L 1 x Intel® 82579 (Gigabit PHY)
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V ~ 19V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	Single Power AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 6.5" (115mm x 165mm)
• Weight	0.4lbs (0.18kg)

Ordering Information

- **EPI-QM67**
Intel® Sandy Bridge EPIC Module with Intel® QM67 Chipset
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1GB)



One 204-pin SODIMM Socket Supports up to 4GB DDR3 800/ 1066 SDRAM (Solder side)

Features

- Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 Processor
- Intel® QM57 Chipset
- One 204-pin SODIMM non-ECC Up to 4GB DDR3 800/ 1066 SDRAM
- Dual View, Dual-channel LVDS, DVI
- Dual Intel® Gigabit Ethernet
- 1 CF, 4 SATA, 2 COM, 8 USB, 16-bit GPIO
- Options: Express Card/ 34mm, Built-in Touch Screen Interface
- Support iAMT 6.0
- Support RAID 0/ 1/ 5/ 10



Specifications

System

• CPU	Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 Processor
• BIOS	AMI 64Mbit Flash BIOS
• System Chipset	Intel® QM57
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports up to 4GB DDR3 800/ 1066 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 65535min. and 1sec. or 1min./step
• Expansion	One Express Card/ 34mm Slot (Optional)

I/O

• MIO	1 x EIDE, 4 x SATA, 1 x KB & Mouse 1 x RS-232, 1 x RS-232/ 422/ 485
• IrDA	115Kbps, IrDA 1.0 Compliant
• USB	8 x USB 2.0
• DIO	8-bit GPI, 8-bit GPO

Display

• Chipset	Intel® QM57
• Resolution	DVI Mode: 1920 x 1536 @ 75Hz (DVI-I) LCD/ Simultaneous Mode : 1600 x 1200 @ 75Hz
• Multiple Display	DVI + LVDS
• LVDS	Dual-channel 18/ 24-bit LVDS
• DVI	1 x DVI

Built-in Touch Screen (Optional)

• Chipset	PenMount 6000
• Touch Screen Interface	With 9-pin 2.0mm Box Header (Can be Selected to Support 4/ 5/ 8-wire Touch Screen)

Audio

• HD Codec	Realtek ALC888 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN Chip	1 x Intel® 82577LM (Gigabit PHY) 1 x Intel® 82574L
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	+12V
• ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 1.0b and 2.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.5" x 6.5" (115mm x 165mm)
• Weight	0.4lbs (0.18kg)

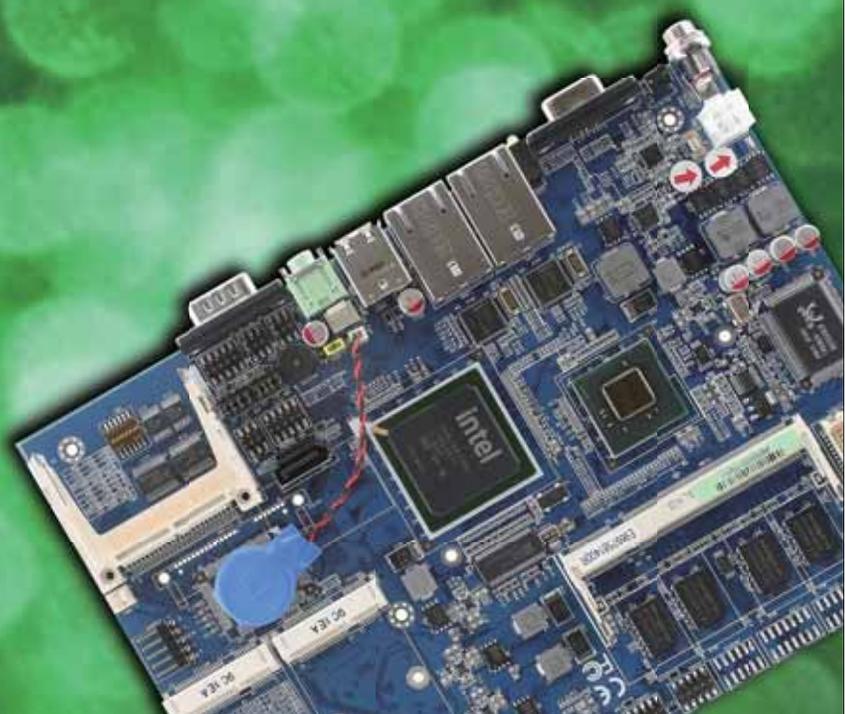
Ordering Information

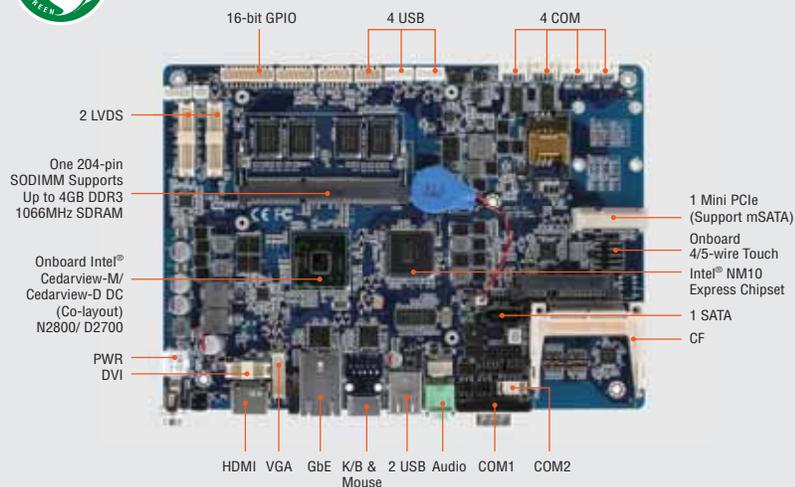
- **EPI-QM57**
Intel® Core™ i7-620LE/ 620UE/ Celeron® M P4505 EPIC Module with Intel® QM57 Chipset and DVI-I, 2-CH LVDS, 5.1-CH Audio, 2 Gigabit Ethernet, 2 COM, 4 SATA, 8 USB & 16-bit GPIO
- **AUX-033-2R**
Mini-PCIe Daughter Board for EPI-QM57
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1GB)

6 5.25" SBC

5.25" Mini Modules

EBM-CDV	5.25" Intel® Cedarview Atom™ 5.25" Mini Module with Intel® NM10 Express Chipset	6-2
EBM-PNV	Intel® Atom™ D525 Dual-Core 5.25" Mini Module with Intel® ICH8-M Chipset	6-3
EBM-A50M	AMD eOntario 5.25" Mini Module with AMD A50M Chipset	6-4





Features

- Onboard Intel® Cedarview-M/ Cedarview-D DC (Co-layout) N2800/ D2700
- Intel® NM10 Express Chipset
- One 204-pin SODIMM Supports Up to 4GB DDR3 1066MHz SDRAM
- Dual View, 2-CH 18/ 24-bit LVDS, HDMI
- Built-in Touch Screen Interface
- 5.1-CH Audio, Dual Intel® 82574L Gigabit Ethernet
- 1 x Mini PCIe Port (Support mSATA)
- 1 SATA, 6 COM, 8 USB 2.0, 16-bit GPIO



Specifications

System

• CPU	Onboard Intel® Cedarview-M/ Cedarview-D DC (Co-layout) N2800/ D2700
• BIOS	AMI 16Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• I/O Chip	E/C IT8518E
• System Memory	One 204-pin SODIMM Supports Up to 4GB DDR3 1066MHz SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status with Auto Throttling Control
• Expansion	1 x Mini PCIe Slot (Share USB 3 and SATA)

I/O

• MIO	1 x SATA Connector (7+15-pin), 2 x RS-232/422/485, 4 x RS-232, 1 x K/B & Mouse (Co-lay with LAN2), HDMI, VGA & DVI in Wafer
• USB	6 x USB 2.0 Ports
• DIO	8-bit GPI, 8-bit GPO (PCA9555)
• Touch Interface	USB 4 (EETI ETP-CP-S458XRU Support 4/ 5-wire)

Display

• Chipset	Intel® Cedarview Integrated Graphics
• Resolution	CRT Mode: 1920 x 1200 @ 60Hz LCD/Simultaneous Mode : 1366 x 768 @ 60Hz (CDV-M), 1400 x 900 @ 60Hz (CDV-D)
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	Dual-channel 18/ 24-bit LVDS (with eDP)

Touch Screen Interface

• Chipset	EETI ETP-CP-S458XRU Support 4/ 5-wire
• Touch Interface	USB (4), With 5-pin 2.0mm Box Header (Can be Selected to Support 4/ 5-wire Touch Screen)

Audio

• HD Codec	Realtek ALC892 Supports 5.1 CH Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

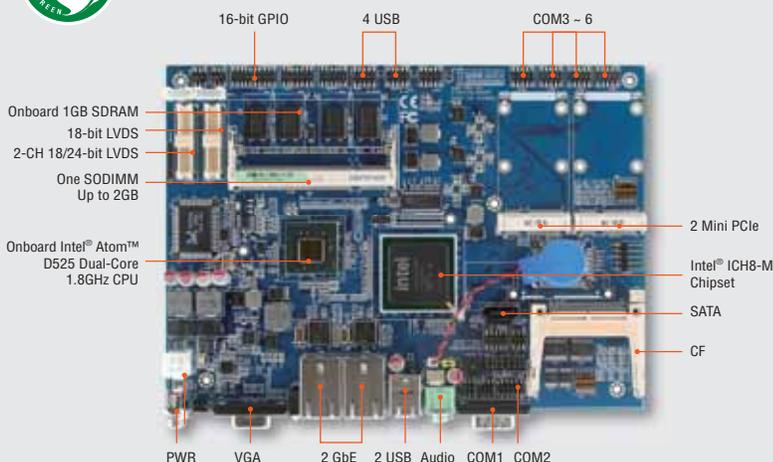
• LAN Chip	Dual Intel® 82574L PCIe Gigabit Ethernet
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

• Power Requirement	TBD
• Power Type	AT Single +12~28V Power Input/ ATX, Optional +24V Input (Inverter Still +12V Out)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	8" x 5.75" (203mm x 146mm)
• Weight	0.55lb (0.25kg)

Ordering Information

- **EBM-CDV**
Intel® Cedarview Atom™ 5.25" Mini Module with Intel® NM10 Express Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512 MB, 1, 2 GB)



Features

- Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
- +12V ~ 28V Wide Voltage Input, ErP Power
- Onboard 1GB DDR3 SDRAM & Touch Controller
- Dual View, 2 x 18/24-bit LVDS
- 5.1-CH Audio, 2W Amplifier
- 2 Intel® 82574L Gigabit Ethernet (Optional 1 PS/2)
- 1 CF, 2 Mini PCIe Slots, Support Mini Card DOM
- 1 SATA, 1 LPT, 6 COM, 7 USB, 16-bit GPIO
- Over Current & Surge Protection
- Power-on Timer

Intel® Atom™	Dual LVDS	2 GbE	2 x 2W Amplifier	4/5 wire Touch
2 Mini PCIe	CF	6 COM	16-bit GPIO	Power Protection

Specifications

System

• CPU	Onboard Intel® Atom™ D525 Dual-Core 1.8GHz CPU
• FSB	800MHz
• BIOS	AMI 8Mbit Flash BIOS
• System Chipset	Intel® ICH8-M Chipset (2.4W)
• I/O Chip	Nuvoton W83627DHG
• System Memory	Onboard 1GB Up to 2GB DDR3 SDRAM & One 204-pin SODIMM Supports Up to 4GB DDR3
• SSD	One CompactFlash Type I/II Socket
• Watch Dog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status with Auto Throttling Control
• Expansion	Two Mini PCIe Slots (One Supports Mini Card DOM)

I/O

• MIO	1 x SATA, 1 LPT (Option), 2 x RS-232/422/485, 4 x RS-232 (Option), 1 x K/B & Mouse (Option)
• USB	7 x USB 2.0
• DIO	16-bit General Purpose I/O for DI and DO 8-bit Parallel Port Data

Display

• Chipset	Intel® Pineview™ Integrated, Gen3.5 + GFX Core @ 400MHz
• Resolution	CRT Mode : Up to 2048 x 1536 @ 60Hz LCD/ Simultaneous Mode: Up to 1366 x 768 @ 75Hz
• Multiple Display	CRT + LVDS, LVDS + LVDS
• LVDS	1 x 18-bit, 2 x 18/24-bit LVDS
• Backlight Control	VR, PWM (Setting by BIOS)

Touch Screen Interface (Optional)

• Chipset	ETP-CP-S458XRU
• Touch Screen Interface	With 5-pin 2.54mm Pin Header (Can be Selected to Support 4/5-wire Touch Screen)

Audio

• AC97 Codec	Realtek ALC888 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out
• Audio Amplifier	2 x 2W

Ethernet

• LAN 1	Intel® 82574L PCI-E Gigabit Ethernet
• LAN 2	Intel® 82574L PCI-E Gigabit Ethernet (Optional 1 x PS/2 Keyboard & Mouse)
• Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible

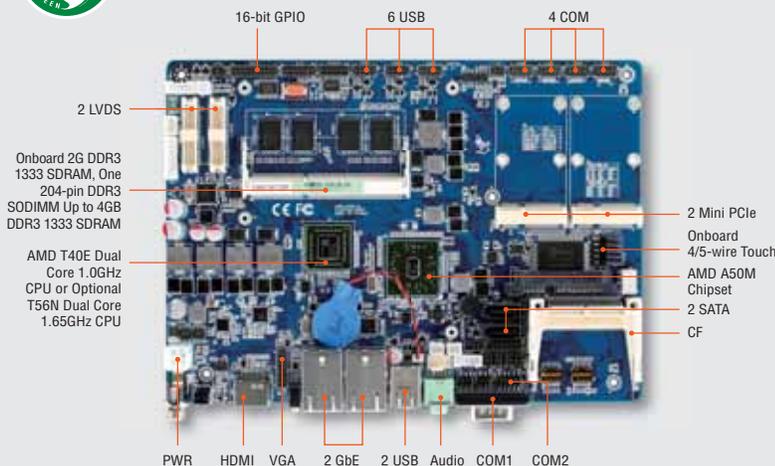
Mechanical & Environmental

• Power Consumption	+12V @ 1.80A
• Power Type	+12V ~ +28V Power Input
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size	8" x 5.75" (203mm x 146mm)
• Weight	0.55lb (0.25kg)

Ordering Information

- **EBM-PNV**
Intel® Atom™ D525 Dual-Core 5.25" Mini Module with Intel® ICH8-M Chipset and Onboard 1GB DDR3 SDRAM, Extra SODIMM, VGA, LVDS, 1 SATA, 7 USB, 2 COM, 16-bit GPIO
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- AMD T40E Dual Core 1.0GHz CPU without Fan or Optional T56N Dual Core 1.65GHz CPU with Fan
- AMD A50M Chipset
- Onboard 2G DDR3 1333 SDRAM, One 204-pin DDR3 SODIMM Up to 4GB DDR3 1333 SDRAM
- Dual View, 2-CH LVDS, HDMI
- 7.1-CH Audio, Dual Gigabit Ethernet, 2W Amplifier
- Two Mini PCIe Slots, Supports Optional mSATA
- 1 CF, 2 SATA, 6 COM, 8 USB, 16-bit GPIO
- +12V ~ 28V Wide Voltage Power Input
- Compliance with ErP/ EuP 2.0



Specifications

System

• CPU	AMD T40E Dual Core 1.0GHz CPU without Fan or Optional T56N Dual Core 1.65GHz CPU with Fan
• BIOS	AMI 32Mbit SPI BIOS
• System Chipset	AMD A50M
• I/O Chip	Nuvoton W83627DHG-P
• System Memory	Onboard 2G DDR3 1333 SDRAM, One 204-pin DDR3 SODIMM Socket Supports Up to 4GB DDR3 1333 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage, with Auto Throttling Control
• Expansion	2 x Mini-PCIe (Optional mSATA Supported)

I/O

• MIO	2 x SATA Connector (7-pin); 2 x COM with Pin Header LPC, CIR, 1 x HDMI or 1 x Display Port (Co-layout)
• USB	8 x USB 2.0 Ports
• DIO	8-bit GPI, 8-bit GPO (PCA9555)
• TPM	NuvoTon WPCT200AA0WG (Optional)

Display

• Chipset	AMD Fusion Accelerated Processors
• Resolution	CRT Mode: T56N : 2560 x 1600 @ 60Hz T40E : 1920 x 1200 @ 60Hz LCD/ Simultaneous Mode : 1600 x 1200 @ 75Hz HDMI : 1920 x 1200 @ 60Hz Display Port T56N : 2560 x 1600 @ 60Hz T40E : 1920 x 1200 @ 60Hz 18-bit LVDS : 1400 x 1050 @ 60Hz Dual 24-bit LVDS : 1920 x 1200 @ 60Hz
• Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
• LCD Interface	18-bit LVDS or Dual-channel 18/24-bit LVDS (Transfer Through DDI)

Audio

• AC97 Codec	Realtek ALC892 Supports 7.1-CH Audio
• Audio Interface	Headphone (Jack), AMP Line-out, Line-in, and Mic-in (in Header)
• Audio Amplifier	2W Per Channel

Ethernet

• LAN Chip	2 x Realtek 8111E (Optional 2nd LAN CO-lay with KB/MS)
• Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Touch Screen Interface (Optional)

• Chipset	EETI ETP-CO-S458XRU Supports 4/5-wire
• Touch Screen Interface	With 5-pin 2.0mm Box Header (Can be Selected to Support 4/5-wire Touch Screen)

Mechanical & Environmental

• Power Requirement	+12V ~ 28V
• ACPI	Single power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	8" x 5.75" (203mm x 146mm)
• Weight	0.55lb (0.25kg)

Ordering Information

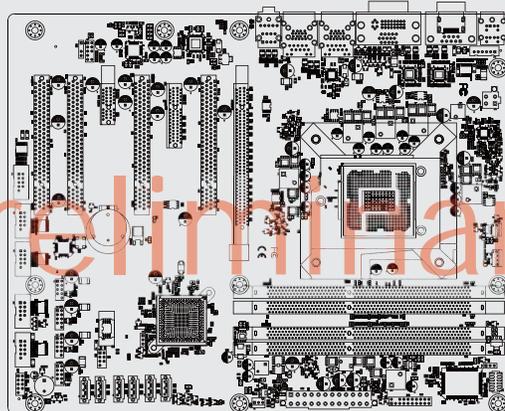
- **EBM-A50M**
5.25" AMD eOntario Mini Module with AMD A50M Chipset
- **ACC-CF-xx**
CompactFlash Card Series (xx = Capacity, Capacity Option: 128, 256, 512MB, 1, 2, 4, 8GB)
- **ACC-MEM-xx**
Memory Series (xx = Capacity, Capacity Option: 256, 512MB, 1, 2GB)

7 ATX

ATX Series

EAX-Q77	Intel® Ivy Bridge ATX Motherboard with Intel® Q77 Chipset	7-2
EAX-Q67	Intel® Sandy Bridge ATX Motherboard with Intel® Q67 Chipset	7-3
EAX-Q45	Intel® Core™ 2 Quad/ Core™ 2 Duo ATX Motherboard with Intel® Q45 + ICH10DO Chipset	7-4
EAX-Q35	Intel® Core™ 2 Quad/ Core™ 2 Duo ATX Motherboard with Intel® Q35 + ICH9DO Chipset	7-5
EAX-785E	AMD Turion/ Athlon II Neo Processor ATX Motherboard with AMD RS785E + SB850 Chipset	7-6





Preliminary

Features

- Intel® Ivy Bridge Desktop LGA1155
- Intel® Q77 Chipset
- Two 240-pin DDR3 DIMMs Up to 8GB DDR3 1066/ 1333 SDRAM
- DVI, HDMI, VGA, Triple Display
- Realtek ALC892 HD Audio Codec
- Dual Gigabit Ethernet
- 4 PCI, 1 PCIe16, 1 PCIe4, 1 PCIe1
- 6 SATA II, 8 USB 2.0, 4 COM, 8-bit DIO, 1 x 6-pin Header for PS/2
- TPM 1.2

Intel® Q77	HDMI	HD Audio	2 GbE	1 PCIe16
1 PCIe4	1 PCIe1	4 PCI	6 SATA II	4 COM
8 USB	8-bit DIO	TPM 1.2		

Specifications

System

• CPU	Intel® Ivy Bridge Desktop LGA1155, TDP Offereing Quad Core 95W
• BIOS	AMI uEFI BIOS, 64Mbit SPI Flash ROM
• System Chipset	Intel® Panthan Point (Intel® Q77 Chipset)
• I/O Chip	Nuvoton NCT6776F
• System Memory	Two 240-pin DDR3 DIMMs Up to 8GB DDR3 1066/ 1333 SDRAM
• Watchdog Timer	1 ~ 255sec./min. Programmable (Inside Super IO)
• H/W Status Monitor	Monitoring Temperatures, Voltages and Fan Status with Auto Throttling Control
• Expansion	1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 4 x PCI
• TPM	TPM 1.2

I/O

• MIO	4 x RS-232, 6 x SATA II, 1 x 6-pin Header for PS/2, 1 x VGA D-SUB-15, 1 x HDMI, 1 x DVI, 3 Independent Displays Capability
• USB	8 x USB 2.0
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Realtek ALC892 Audio HD Codec
• Audio Interface	Mic-in, Line-in and Line-out, S/PDIF-out

Display

• Chipset	Panthan Point (Intel® Q77 Chipset)
• Resolution	DirectX 11, OCL 2.1, Clone, Twin and Extended Display Modes Max: SXGA 2048 x 1536 @ 60Hz

Ethernet

• Chipset	1 x Intel® 82579LM/V GbE Controller 1 x Intel® 82583V GbE PHY
• Ethernet Interface	10/ 100/ 1000 Base-Tx Compatible

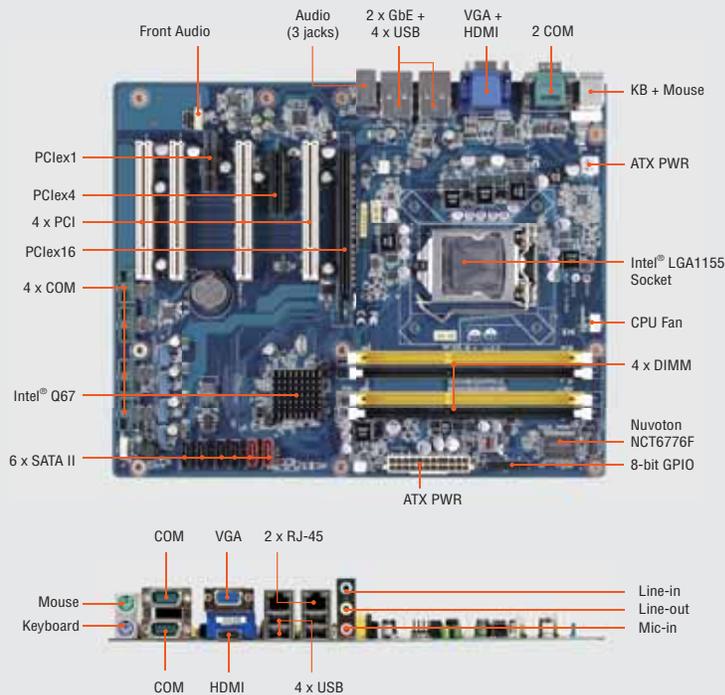
Mechanical & Environmental

• Power Type	AT/ ATX
• Power Requirement	+12V (6.86A), +5V (2.33A), +3.3V (1.67A), 5VSB (0.95A)
• ACPI	Single Power ATX Support S0, S1, S3, S4 ACPI 3.0 Compliant
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 90°C (-40 ~ 194°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (304.8mm x 243.84mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

• EAX-Q77-A1R

Intel® Ivy Bridge ATX Motherboard with Intel® Q77 Chipset



Features

- Intel® Sandy Bridge Desktop LGA1155 (Socket H2) CPU
- Intel® Q67 Chipset
- Four 240-pin DIMM Sockets Support Up to 16GB Dual Channel DDR3 1066/1333/1600 SDRAM, Non-ECC
- Integrated GFX
- 5.1-CH HD Audio, Dual Gigabit Ethernet
- 1 PCIe16, 1 PCIe4, 1 PCIe1, 4 PCI
- 2 SATA 3.0 and 4 SATA II
- 6 COM, 12 USB, 8-bit GPIO
- TPM 1.2 (Optional)
- RAID 0, 1, 5 and 10

Intel® Q67	5.1-CH HD Audio	2 GbE	1 PCIe16	1 PCIe4
1 PCIe1	4 PCI	2 SATA 3.0	4 SATA II	6 COM
12 USB	8-bit GPIO	RAID		

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® Sandy Bridge Desktop LGA1155 (Socket H2)
• FSB	1333/ 1066/ 800MHz
• BIOS	AMI 64Mbit SPI BIOS
• System Chipset	Intel® Q67
• I/O Chip	Nuvoton NCT6776F
• System Memory	Four 240-pin DIMM Sockets Support Up to 16GB Dual Channel DDR3 1066/1333/1600 SDRAM, Non-ECC
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring Temperatures, Voltages and Fan Status with Auto Throttling Control
• Expansion	1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 4 x PCI
• S3/ S4	Yes
• TPM	TPM1.2 (Optional)
• RAID	RAID 0,1,5 and 10
• Wake up Mode	LAN Mode (PME/ RPL)
• SmartFan Control	Yes ,Support 3 Modes (Silent/ Optimal/ Performance)

I/O

• MIO	6 x RS-232, 2 x SATA 3.0, 4 x SATA II, 1 x PS/2 Keyboard, 1 x PS/2 Mouse
• USB	12 USB 2.0 (4 Rear, 8 Internal)
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Realtek ALC892 Supports 5.1-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out

Display

• Chipset	Integrated GFX
• Display Memory	Shared System Memory
• Max. Resolution	Onboard VGA: SXGA 2048 x 1536 @ 60Hz Onboard HDMI 1.3: 1920 x 1080
• Dual Display	VGA + HDMI
• VGA	Through ADD2 VGA Card
• HDMI	Through ADD2 HDMI Card

Ethernet

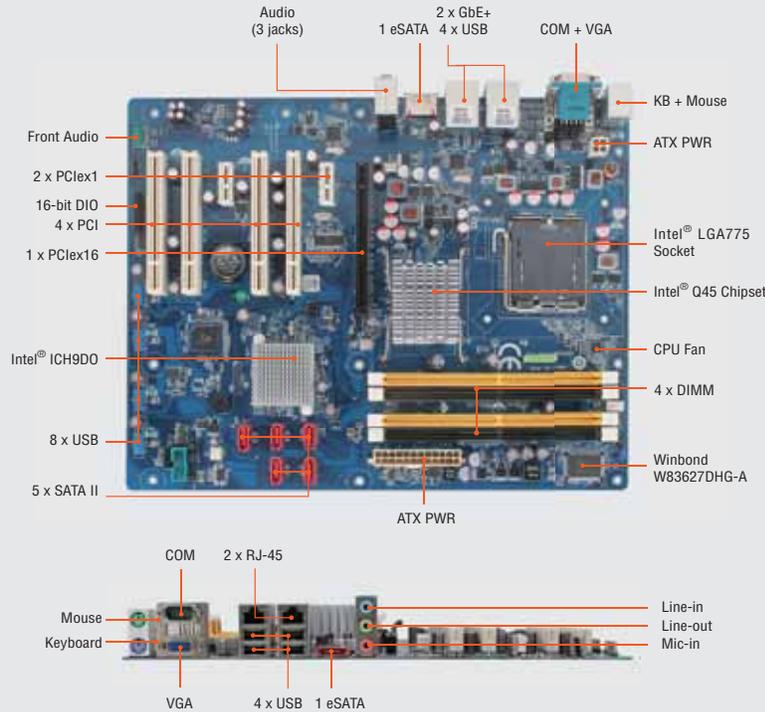
• LAN 1	Intel® 82579LM Gigabit Ethernet
• LAN 2	Intel® 82583V Gigabit Ethernet

Mechanical & Environmental

• Power Type	AT/ ATX
• Power Requirement	+12V (6.86A), +5V (2.33A), +3.3V (1.67A), 5VSB (0.95A)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (304.8mm x 243.84mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

- EAX-Q67-A1R
Intel® Sandy Bridge ATX Motherboard with Intel® Q67 Chipset



Features

- ☞ Intel® LGA 775 Socket for Intel® Core™ 2 Quad/ Core™ 2 Duo CPU
- ☞ Intel® Q45/ ICH10DO Chipset
- ☞ Four DIMMs Up to 8GB 2-CH DDR2 800/ 677 SDRAM, Non-ECC
- ☞ Intel® Graphics Media Accelerator 4500
- ☞ 5.1+2-CH HD Audio
- ☞ Dual Realtek RTL8111SC Gigabit Ethernet
- ☞ 1 PCIe16, 2 PCIe1, 4 PCI
- ☞ 2 COM (5/ 12V), 5 SATA II, 12 USB, 1 eSATA, 16-bit DIO
- ☞ Auto Power-on After FaiPure
- ☞ 5 SATA II with RAID 0, 1, 5 and 10

Intel® Q45	Intel® GMA 4500	2 GbE	5.1+2-CH Audio	12 USB
2 COM	Power COM	PCIe16	2 PCIe1	4 PCI
5 SATA II	eSATA	16-bit DIO	RAID	TPM

Specifications

System

• CPU	Intel® LGA775 Socket Supports Intel® Core™ 2 Quad/ Core™ 2 Duo Processors with 45nm Process Technology
• FSB	1333/ 1066/ 800MHz
• BIOS	AMI 4MB BIOS
• System Chipset	Intel® 82Q45/ 82801JO (ICH10DO)
• I/O Chip	Winbond W83627DHG-A
• System Memory	Four 240-pin DIMM Sockets Support Up to 8GB Dual Channel DDR2 800/ 667 SDRAM, Non-ECC
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring Temperatures, Voltages and Fan Status with Auto Throttling Control
• Expansion	1 x PCIe16, 2 x PCIe1, 4 x PCI (PCI Rev. 2.3 Compliant)
• S3/S4	Yes
• TPM	TPM1.2 (Infineon TPM Chip 9635 TT 1.2 on Board)
• RAID	5 SATA II with RAID 0,1,5 and 10
• Wake up Mode	LAN Mode (PME/ RPL)
• SmartFan Control	Yes ,Support 3 Modes (Silent/ Optimal/ Performance)

I/O

• MIO	5 x SATA II, 1 x FDD, 1 x eSATA, 2 x RS-232 (5V/ 12V Output), 1x K/B, 1 x Mouse
• USB	12 x USB 2.0
• DIO	16-bit DIO (8-in/ 8-out)

Audio

• Audio Codec	Realtek ALC888 High-definition Audio Codec Supports 5.1+2-CH Independent Audio Streamings
• Audio Interface	Mic-in, Line-in, Line-out

Display

• Chipset	Intel® Q45 Integrated Intel® Graphics Media Accelerator 4500
• Display Memory	Intel® DVMT 5.0 Supports Up to 1.7GB Shared Video Memory
• Max. Resolution	2048 x 1536 @ 32bpp (75Hz)
• VGA	Yes, Onboard GMA 4500
• LVDS	Through ADD2 LVDS Card (Customized BIOS)
• DVI	Through ADD2 DVI Card
• HDMI	Through ADD2 HDMI Card
• Secondary VGA	Through ADD2 VGA Card

Ethernet

• LAN 1 & 2	Dual Realtek RTL8111SC Gigabit Ethernet
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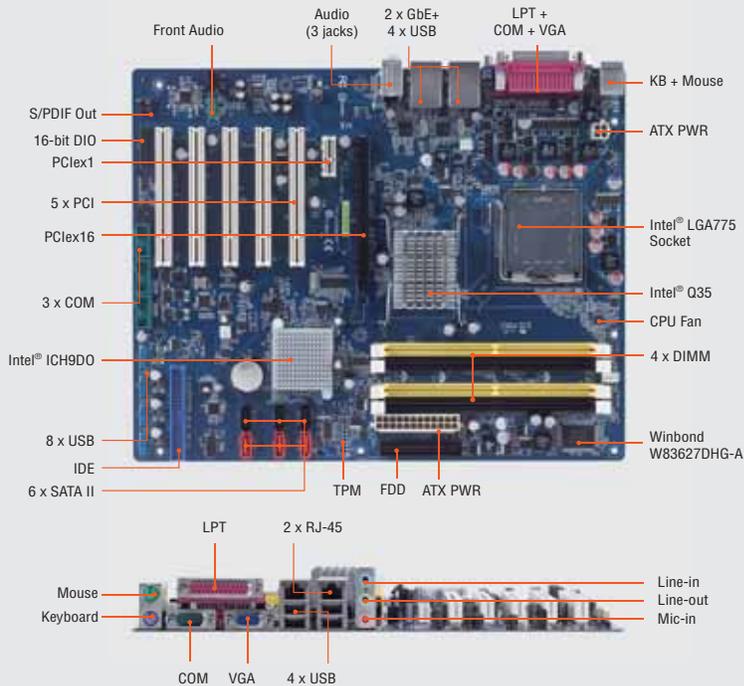
Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (304.8mm x 243.84mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

• EAX-Q45-A1R

Intel® Core™ 2 Quad/ Core™ 2 Duo ATX Motherboard with Intel® Q45 + ICH10DO Chipset and VGA, Audio, Dual GbE, 12 USB, 2 COM, 5 SATA, 1 eSATA, 1 PCIe16, 2 PCIe1 & 4 PCI, iTPM w/ SATA Cable, Bracket, CD Driver



Features

- Supports 45nm Intel® Core™ 2 Quad Processors
- Intel® Q35/ ICH9DO Chipset
- Four DIMMs Up to 8GB 2-CH DDR2 800/ 677 SDRAM, Non-ECC
- Intel® Graphics Media Accelerator 3100
- Realtek ALC888 Supports 5.1+2-CH HD Audio Streams, 6W AMP
- Dual Realtek RTL8111C Gigabit Ethernet
- 1 PClex16, 1 PClex1, 5 PCI 2.3
- 4 COM (5/ 12V), 6 SATA II, 12 USB, 16-bit DIO
- TPM 9635TT 1.2
- 6 SATA II with RAID 0, 1, 5 and 10

Intel® Q35	Intel® GMA 3100	2 GbE	2 Audio Streams	6W AMP
4 COM	Powered COM	PClex16	5 PCI	12 USB
6 SATA II	RAID	16-bit DIO	TPM	PClex1

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® LGA775 socket supports Intel® Core™ 2 Quad/ Core™ 2 Duo Processors with 45nm Process Technology
• FSB	1333/ 1066/ 800MHz
• BIOS	AMI 4MB SPI BIOS
• System Chipset	Intel® 82Q35/ 82801D0 (ICH9DO)
• I/O Chip	Winbond W83627DHG-A
• System Memory	Four 240-pin DIMM Sockets Support Up to 8GB Dual Channel DDR2 800/ 667 SDRAM, Non-ECC
• Watchdog Timer	Reset: 1sec.~255min. and 1sec. or 1 min./step
• H/W Status Monitor	Monitoring Temperatures, Voltages and Fan Status with Auto Throttling Control
• Expansion	1 x PClex16, 1 x PClex1, 5 x PCI (PCI Rev. 2.3 compliant)
• S3/S4	Yes
• TPM	TPM1.2 (Infineon TPM Chip 9635 TT 1.2 on Board)
• RAID	6 SATAII with RAID 0, 1, 5 and 10
• Wake up Mode	LAN Mode (PME/ RPL)
• SmartFan Control	Yes , Support 3 Modes (Silent/ Optimal/ Performance)

I/O

• MIO	1 x EIDE 66/ 100/ 133, 6 x SATA II, 1 x LPT, 1 x FDD 4 x RS-232 (5V/ 12V Output) , 1 x K/B, 1 x Mouse
• USB	12 x USB 2.0
• DIO	16-bit DIO (8-in/ 8-out)

Audio

• Audio Codec	Realtek ALC888 High-definition Audio Codec Supports 5.1+2-CH Independent Audio Streamings
• Audio Interface	Mic-in, Line-in, CD Audio-in, Line-out
• Audio Amplifier	TPA3005D2 6W (Per Front Channel) Stereo Amplifier

Display

• Chipset	Intel® Q35 GMCH Integrated Graphics Media Accelerator 3100
• Display Memory	Intel® DVMT 4.0 Supports Up to 256MB Shared Video Memory
• Max. Resolution	2048 x 1536 @ 32bpp (75Hz)
• VGA	Yes, Onboard GMA 3100
• LVDS	Through ADD2 LVDS Card (Customized BIOS)
• DVI	Through ADD2 DVI Card
• HDMI	Through ADD2 HDMI Card
• Secondary VGA	Through ADD2 VGA Card

Ethernet

• LAN 1 & 2	Dual Realtek RTL8111C PCIe Gigabit Ethernet Controller
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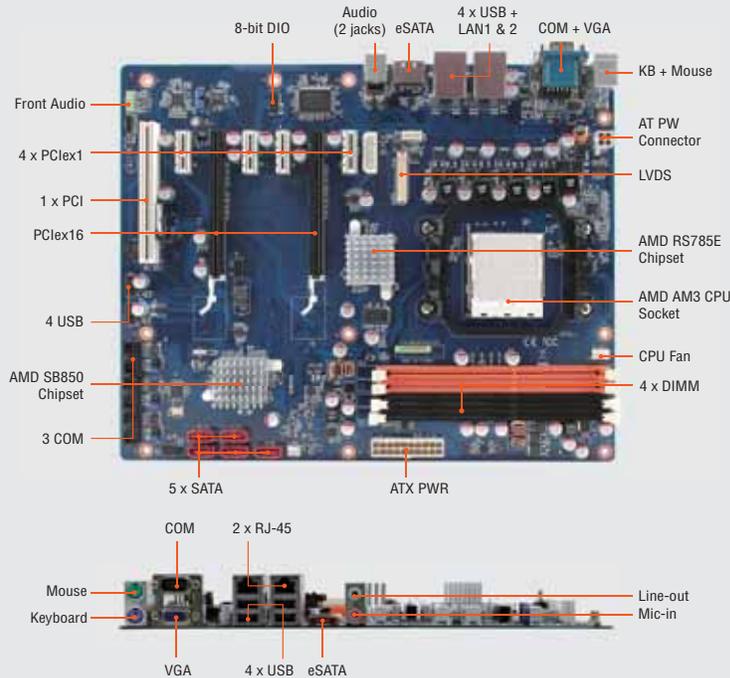
Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (304.8mm x 243.84mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

• EAX-Q35-A1R

Intel® Core™ 2 Quad/ Core™ 2 Duo ATX Motherboard with Intel® Q35 + ICH9DO Chipset and VGA, Audio, Dual GbE, 12 USB, 1 PClex16, 1 PClex4 & 5 PCI w/ SATA Cable, IDE Cable, Bracket, CD Driver



Features

- ▶ **AMD Turion/ Athlon II Neo Processor**
- ▶ **AMD RS785E/ SB850 Chipset**
- ▶ **Four 240-pin DDR3 DIMMs Up to 8GB DDR3 800/ 1066/ 1333 SDRAM with ECC Support**
- ▶ **RS785E Integrated: ATI Radeon HD4200 Series**
- ▶ **Dual Display, 1 VGA, 1 LVDS**
- ▶ **7.1+2-CH HD Audio, 6W AMP**
- ▶ **2 x RTL8111DL Gigabit Ethernet**
- ▶ **2 PCIe16, 4 PCIe1x, 1 PCI**
- ▶ **4 COM, 8 USB, 5 SATA, 1 eSATA, 8-bit DIO**



Specifications

System

• CPU	AMD AM3 CPU Phenom II X6 1055T: 95W AMD AM3 CPU Phenom II X4 820: 95W AMD AM3 CPU Phenom II X4 Q54L: 65W AMD AM3 CPU Phenom II X4 910e: 65W AMD AM3 Phenom II X2 B55 : 80W AMD AM3 Athlon II X4 640: 95W
• FSB	1333/ 1066/ 800MHz
• BIOS	AMI 8Mb SPI BIOS
• System Chipset	AMD RS785E/ SB850
• I/O Chip	NuvoTon W83627DHG-P & F81216AD
• System Memory	Four 240-pin DIMMs Up to 8GB DDR3 800/ 1066/ 1333 SDRAM with ECC Support
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring Temperatures, Voltages and Fan Status with Auto Throttling Control
• Expansion	2 x PCIe16 (Supports PCIe8), 4 x PCIe1x, 1 x PCI
• S3/S4	Yes (S1/ S3/ S4/ S5)

I/O

• MIO	5 x SATA, 1 x K/B, 1 x Mouse, 4 x RS-232, 1 x eSATA
• USB	8 x USB 2.0 (4 x Rear I/O, 4 x Pitch 2.54 Pin-header)
• DIO	8-bit DIO (4-in/ 4-out)

Audio

• Audio Codec	Realtek ALC888 HD Audio Codec
• Audio Interface	Mic-in, Line-out
• Audio Amplifier	TPA3005D2 Stereo 6Watt Per Channel

Display

• Chipset	RS785E Integrated: ATI Radeon HD4200. Support DX 10.1 & Dual Display Support UVD 2 for Hardware Decode of H.264 and VC-1 Video Codec Standards
• Display Memory	DDR3 128MB (Side-Port Memory)
• Max. Resolution	CRT: 2048 x 1536 @ 85Hz (Pixel Clock at 388.5MHz) 4:3 Format 2560 x 1440 @ 75Hz (Pixel Clock at 397.25MHz) 16:9 Format 2456 x 1536 @ 60Hz (Pixel Clock at 320MHz) 16:10 Format
• Dual Display	VGA + LVDS
• LVDS	Dual-channel 24-bit LVDS
• LVDS Backlight	Yes , Through Internal LVDS Backlight Connector

Ethernet

• LAN 1	Realtek RTL8111DL Gigabit Ethernet
• LAN 2	Realtek RTL8111DL Gigabit Ethernet

Mechanical & Environmental

• Power Type	20-pin ATX Interface + 4-pin CPU Power Connector
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (308mm x 244mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

• EAX-785E-A1R

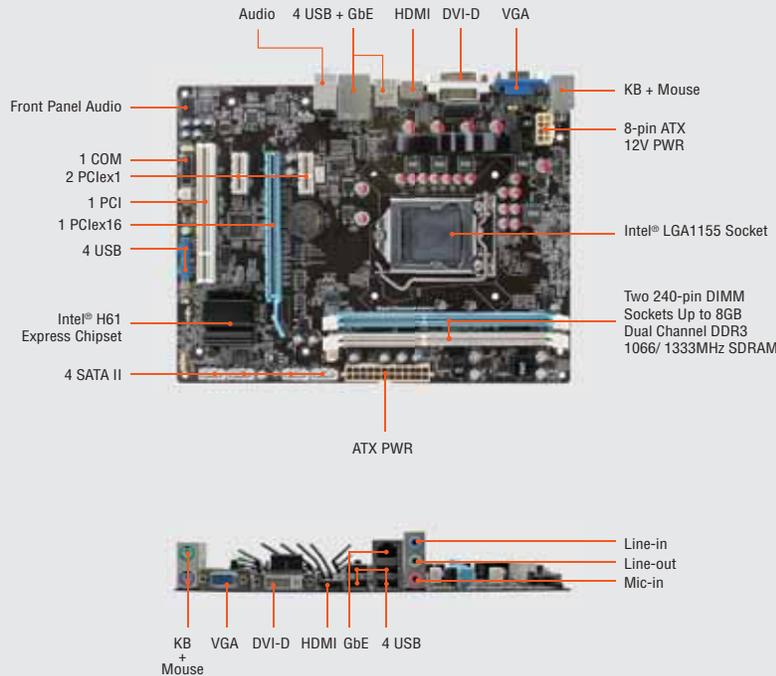
AMD Turion/ Athlon II Neo Processor ATX Motherboard with AMD RS785E + SB850 Chipset and 7.1+2-CH HD Audio, 2 x 24-bit LVDS, Dual GbE, 2 PCIe16, 4 PCIe1x, PCI, 5 SATA, 1 eSATA, 8 USB

8 Micro ATX

Micro ATX Series

ERX-H61	Intel® Core™/ Pentium®/ Celeron® Micro ATX Motherboard with Intel® H61 Express Chipset	8-2
ERX-Q67	Intel® Sandy Bridge Micro ATX Motherboard with Intel® Q67 Chipset	8-3
ERX-G41	Intel® Core™ 2 Quad/ Core™ 2 Duo Micro ATX Motherboard with Intel® G41 + ICH7-R Chipset	8-4





Features

- Intel® LGA1155 Socket Supports Core™ i7/ i5/ i3, Pentium® and Celeron® Processors
- Intel® H61 Express Chipset
- Two 240-pin DIMM Sockets Up to 8GB Dual Channel DDR3 1066/ 1333MHz SDRAM
- VGA, DVI-D, HDMI
- Realtek ALC662/ 661 5.1-CH HD Audio Codec
- Realtek RTL8111E PCI-Express Gigabit Ethernet
- 1 x PCIe16, 2 x PCIe1, 1 x PCI
- 4 SATA II, 8 USB 2.0



Specifications

System

• CPU	Intel® LGA1155 Socket Supports Core™ i7/ i5/ i3, Pentium® and Celeron® Processors
• BIOS	AMI UEFI 32Mbit Flash ROM BIOS
• System Chipset	Intel® H61 Express Chipset
• I/O Chip	Nuvoton NCT5577D
• System Memory	Two 240-pin DIMM Sockets Up to 8GB Dual Channel Unbuffered DDR3 1066/ 1333MHz SDRAM
• H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
• Expansion	1 x PCIe16, 2 x PCIe1, 1 x PCI

I/O

• MIO	4 STAT II 3.0Gb/s, 1 x S/PDIF-out Header 1 x Keyboard, 1 x Mouse, 1 x RS-232
• USB	8 x USB 2.0

Display

• Chipset	Intel® HD Graphics Media Accelerator 2000/ 3000 (Based on CPU Type) Support for DX10.1 and OpenGL3.0
• Resolution	VGA: 2048 x 1536 @ 75Hz HDMI: 1920 x 1200 @ 60Hz or DVI-D: 1920 x 1200 @ 60Hz Selection by Jump (The DVI-D Port does't Support D-Sub Connection by Adapter)
• Dual Display	VGA + DVI-D, VGA + HDMI

Audio

• Audio Codec	Realtek ALC662/ 661 5.1-CH HD Audio Codec
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1	Realtek RTL8111E PCI-Express Gigabit Ethernet
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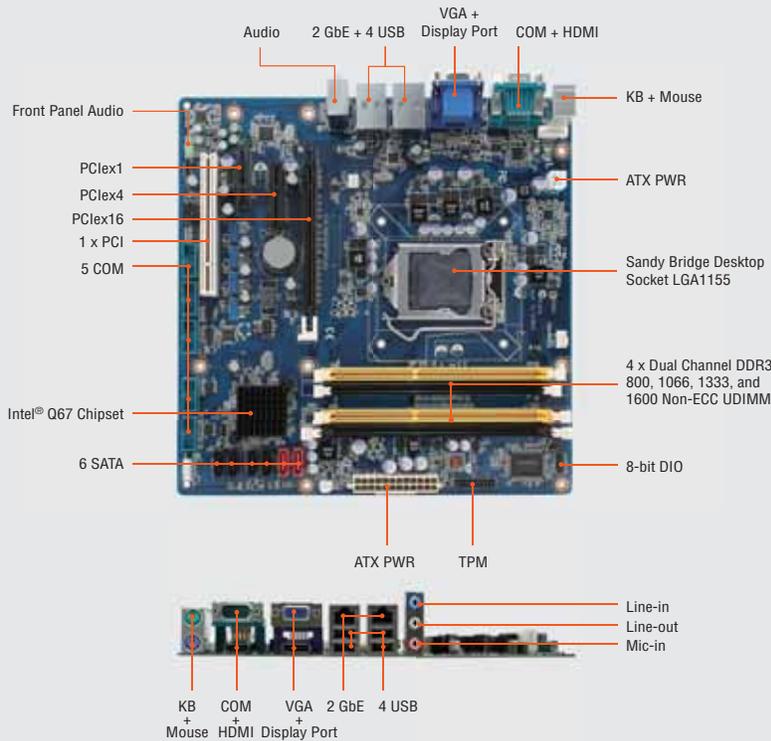
Mechanical & Environmental

• Power Requirement	+12V/ +5V/ 5Vsb
• Power Type	ATX
• Operating Temperature	0 ~ 50°C (32 ~ 121°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	9.6" x 7.28" (244mm x 185mm)
• Weight	0.88lbs (0.4kg)

Ordering Information

• ERX-H61-A1R

Intel® Core™ i7/ i5/ i3, Pentium®/ Celeron® Micro ATX Motherboard with Intel® H61 Express Chipset and VGA, DVI-D, HDMI, Audio, 1 GbE, 1 PCIe16, 2 PCIe x1, 1 PCI, 4 SATA II, 8 x USB 2.0, 1 PS2 K/B, 1 PS2 Mouse, ATX, w/ SATA Cable, Bracket/ CD Driver



Features

Sandy Bridge Desktop Socket LGA1155, Sandy Bridge DT Monolithic 32nm 4 Core™ & 2 Core™ w/ IMC & Gfx CPU

Cougar Point (Intel® Q67 Chipset)

4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM (240-pin)

1 VGA, 1 Display Port and 1 HDMI

Realtek ALC892 Supports 5.1-CH HD Audio

Dual Gigabit Ethernet

1 PCIe16, 1 PCIe4, 1 PCIe1, 1 PCI

4 SATA 2.0, 2 SATA 3.0, 6 COM, 12 USB, 8-bit DIO

RAID 0, 1, 5, 10

TPM 1.2 (Optional)

Intel® Q67	HDMI	5.1-CH Audio	2 GbE	PCIe16
PCIe4	PCIe1	1 PCI	4 SATA2.0	2 SATA3.0
6 COM	12 USB	8-bit DIO	RAID	

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Sandy Bridge Desktop Socket LGA1155, Sandy Bridge DT Monolithic 32nm 4 Core™ & 2 Core™ w/ IMC & Gfx
• BIOS	AMI 8MB SPI BIOS
• System Chipset	Cougar Point (Intel® Q67 Chipset)
• I/O Chip	NCT6776F
• System Memory	4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM (240-pin) Memory Data Transfer Rate 800, 1066, 1333, and 1600 MT/s
• Watchdog Timer	1 ~ 255 sec./min. Programmable (Inside Super IO)
• H/W Status Monitor	Monitoring Temperatures, Voltages and FAN Status with Auto Throttling Control
• TPM	Infineon TPM 1.2 SLB9635 (Optional)
• Expansion	1 PCIe16, 1 PCIe4, 1 PCIe1, 1 PCI
• RAID	RAID 0, 1, 5 and 10
• S3/ S4	Yes
• SmartFan Control	Yes

I/O

• MIO	6 x COM (1 x Edge, 5 x Pin Header), 4 x SATA 2.0 (Black), 2 x SATA 3.0 (RED), 1 x Audio Jack (Line-in/ Line-out/ Mic-in), 2 x PS2 (1 x Edge, 1 x Pin Header)
• USB	12 x USB 2.0
• DIO	8-bit DIO

Audio

• Audio Codec	Realtek ALC892 Supports 5.1-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out
• S/PDIF	1 x S/PDIF (14-pin Header)

Display

• Chipset	Integrated GFX
• Video Memory	Share System Memory Up to 512MB
• Resolution	On Board VGA, Max: SXGA 2048 x 1536 @ 60Hz

Ethernet

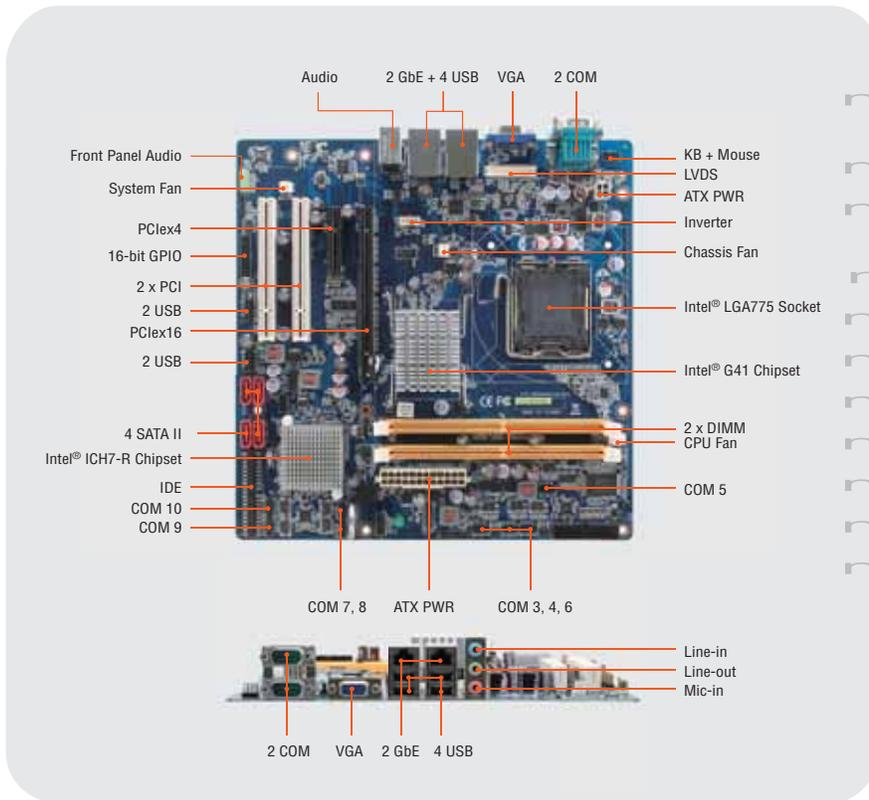
• LAN 1	Intel® 82579LM/V Gigabit Ethernet
• LAN 2	Intel® 82583V Gigabit Ethernet

I/O Port

• Back Panel I/O Port	1 x COM, 4 x USB 2.0, 1 x VGA, 1 x Display Port, 1 x HDMI 1.3, 1 x Audio Jack, 1 x K/B, 1 x Mouse
• Internal I/O Connector	5 x COM, 8 x USB 2.0, 4 x SATA 2.0 (Black), 2 x SATA 3.0 (RED), 1 x Audio Jack, 1 x PS2 (Pin Header), 1 x S/PDIF (14-pin Header)

Mechanical & Environmental

• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	9.6" x 9.6" (243.84mm x 243.84mm)
• Weight	1.35lbs (0.6Kg)



Features

- Intel® LGA775 Socket Supports Intel® Core™ 2 Quad/ Core™ 2 Duo CPU
- Intel® G41/ ICH7-R Chipset
- Two 240-pin DIMM Sockets Support Up to 8GB Dual Channel DDR2 667/ 800MHz SDRAM
- Intel® Graphics Media Accelerator X4500
- Dual View, LVDS, VGA
- Realtek ALC888 Supports 5.1+2-CH HD Audio
- Dual Realtek RTL8111D Gigabit Ethernet
- 1 PCIe16, 1 PCIe4, 2 PCI
- 4 SATA II, 1 LPT, 10 COM, 8 USB, 16-bit GPIO
- RAID 0, 1, 5, 10
- TPM 1.2 (Optional)

Intel® GM41	Intel® GMA X4500	Dual View	24-bit LVDS	5.1+2-CH Audio
2 GbE	PCIe16	PCIe4	2 PCI	4 SATA II
10 COM	8 USB	16-bit GPIO	RAID	

Specifications

System

• CPU	Intel® LGA775 Socket Supports Intel® Core™ 2 Quad/ Core™ 2 Duo with 45nm Process Technology
• FSB	800/ 1066/ 1333MHz
• BIOS	AMI 32Mb Flash ROM BIOS
• System Chipset	Intel® 82G41/ 82801GB (ICH7-R)
• I/O Chip	Winbond W83627DHG-A
• System Memory	Two 240-pin DIMM Sockets Support Up to 8GB Dual Channel DDR2 667/ 800MHz SDRAM
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
• TPM	Infineon TPM 1.2 SLB9635 (Optional)
• Expansion	1 PCIe16, 1 PCIe4, 2 PCI (PCI 2.3 Compliant)
• RAID	RAID 0, 1, 5 and 10
• Power State	Yes (S1/ S3/ S4/ S5)
• SmartFan Control	Yes

I/O

• MIO	4 SATA II, 9 x RS-232, 1 x RS-232/422/485, 1 LPT, 1 PS/2 KB+MS
• USB	8 x USB 2.0
• GPIO	PCA9555 Supports 16-bit General Purpose I/O for 8-bit DI and 8-bit DO

Audio

• Audio Codec	Realtek ALC888 Supports 5.1+2-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out

Display

• Chipset	Intel® Graphics Media Accelerator X4500 Integrated
• Display Memory	Intel® DVMT 4.0 Supports Up to 352MB Memory
• Max. Resolution	VGA Mode : 2048 x 1536 @ 75Hz
• Dual Display	VGA + LVDS
• VGA	Yes, Onboard GMA X4500
• LVDS	18-bit Single Channel LVDS/ 24-bit Dual Channel LVDS
• DVI	Through ADD2 Card
• HDMI	Through ADD2 Card
• 2 nd VGA	Through ADD2 Card

Ethernet

• LAN 1	Realtek RTL8111D Gigabit Ethernet
• LAN 2	Realtek RTL8111D Gigabit Ethernet

Mechanical & Environmental

• Power Requirement	+12V @ 0.3A, +5V @ 2.1A, +3.3V @ 1.3A, 5VSB @ 0.3A
• Power Type	AT/ ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	9.6" x 9.6" (243.84mm x 243.84mm)
• Weight	1.35lbs (0.6Kg)

Ordering Information

• ERX-G41-A1R

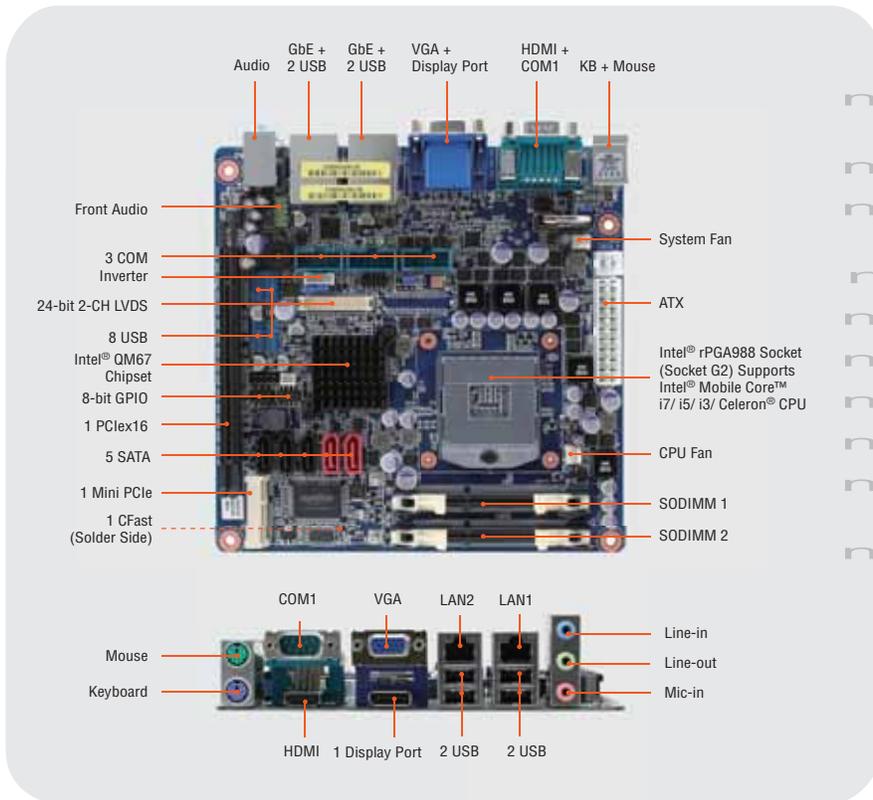
Intel® Core™ 2 Quad/ Core™ 2 Duo Micro ATX Motherboard with Intel® G41 + ICH7-R Chipset and VGA, LVDS, Audio, 2 GbE, 2 PCI, 1 PCIe16, 1 PCIe4, 4 SATA II, 10 COM, 8 USB, 16-bit GPIO

9 Mini ITX

Mini ITX Series

EMX-QM67	Intel® Core™ i7/ i5/ i3 Mini-ITX Motherboard with Intel® QM67 Chipset	9-2
EMX-QM57	Intel® Calpella Mini ITX Motherboard with Intel® QM57 Chipset	9-3
EMX-H61	Intel® Core™/ Pentium®/ Celeron® Mini ITX Motherboard with Intel® H61 Express Chipset	9-4
EMX-CDV	Intel® Atom™ Cedarview-D Mini ITX Motherboard with Intel® NM10 Express Chipset	9-5
EMX-CDT	Intel® Atom™ Cedar Trail Mini ITX Motherboard with Intel® D2700 Processor + NM10 Chipset	9-6
EMX-PNV	Intel® Atom™ PNV-M/ PNV-D Mini ITX Motherboard with Intel® ICH8-M Chipset	9-7
EMX-G41	Intel® Core™ 2 Quad/ Core™ 2 Duo Mini ITX Motherboard with Intel® G41 + ICH7-R Chipset	9-8
EMX-945GSE	Intel® Atom™ N270 Mini ITX Motherboard with Intel® 945GSE + ICH7-M Chipset	9-9
EMX-GM45E	Intel® Core™ 2 Duo Mini ITX Motherboard with Intel® GM45 + ICH9-M Chipset	9-10
EMX-780E	AMD Athlon/ Athlon X2/ Quad-Core™ AMD Phenom™ Mini ITX Motherboard with AMD RS780E + SB710 Chipset	9-11
EMX-A55E	AMD G-Series Mini ITX Motherboard with AMD A55E Controller Hub Chipset	9-12





Features

- Intel® rPGA988 Socket (Socket G2) Supports Intel® Mobile Core™ i7/ i5/ i3/ Celeron® CPU
- Intel® QM67 Chipset
- Two 204-pin Dual-channel DDR3 1333/ 1066 Non-ECC SODIMM, Up to 16GB
- Intel® GMA HD 2000/ 3000 Supports DirectX 10.1
- HDMI, DisplayPort, VGA, 24-bit 2-CH LVDS
- Realtek ALC892 Supports 5.1-CH HD Audio
- Dual Gigabit Ethernet
- 1 PCIe16 Gen. 2, 1 Mini PCIe, 1 CFast
- 2 SATA 3.0 (6Gb/s) and 3 SATA II Supports RAID 0, 1, 5, 10
- 4 COM, 12 USB 2.0, 8-bit GPIO

Intel® QM67	5.1-CH Audio	2 GbE	PCIe16	Mini PCIe
CFast	4 COM	12 USB	8-bit GPIO	

Specifications

System

• CPU	Intel® rPGA988 Socket (Socket G2) Supports Intel® Mobile Core™ i7/ i5/ i3/ Celeron® CPU
• BIOS	AMI 16Mb SPI
• System Chipset	Intel® QM67
• I/O Chip	Nuvoton NCT6776F
• System Memory	Two 204-pin Dual-channel DDR3 1333/ 1066 Non-ECC SODIMM, Up to 16GB
• Watchdog Timer	Reset: 1 to 255 sec/min per step
• H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
• Expansion	1 PCIe16 Gen. 2, 1 Mini PCIe, 1 CFast Card Connector
• Power State	Yes (S1, S3, S4, S5)
• TPM	Onboard TPM 1.2 by Infineon SLB9635
• SmartFan Control	Yes

I/O

• MIO	3 COM RS-232 with Power (5V/ 12V, Internal), 1 COM RS-232 (Rear), 2 SATA 3.0, 2 SATA II, 1 HDMI, 1 DisplayPort, 1 VGA, 1 LVDS, 1 LVDS Backlight, 2 LAN, 1 CFast Card, 1 PS/2 Keyboard, 1 PS/2 Mouse
• USB	12 USB 2.0 (4 Rear, 8 Internal)
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Realtek ALC892, 5.1-CH HD Audio
• Audio Interface	Line-in, Line-out, Mic-in, Front Audio Header

Display

• Chipset	Intel® GMA HD 2000/ 3000
• Display Memory	Shared Memory, Up to 1.7GB
• Dual Display	VGA + LVDS, VGA + DisplayPort, VGA + HDMI, DisplayPort + HDMI, LVDS + HDMI, LVDS + DisplayPort
• VGA	Onboard, Supports Max Resolution 2048 x 1536 (@60Hz)
• HDMI	Onboard HDMI 1.3 Supports Max Resolution 1920 x 1080
• DisplayPort	Onboard, Supports Max Resolution 2560 x 1600
• LVDS	Onboard Dual-channel 24-bit LVDS Supports Max Resolution 1920 x 1080
• LVDS Backlight	Yes, Through Internal LVDS Backlight Connector

Ethernet

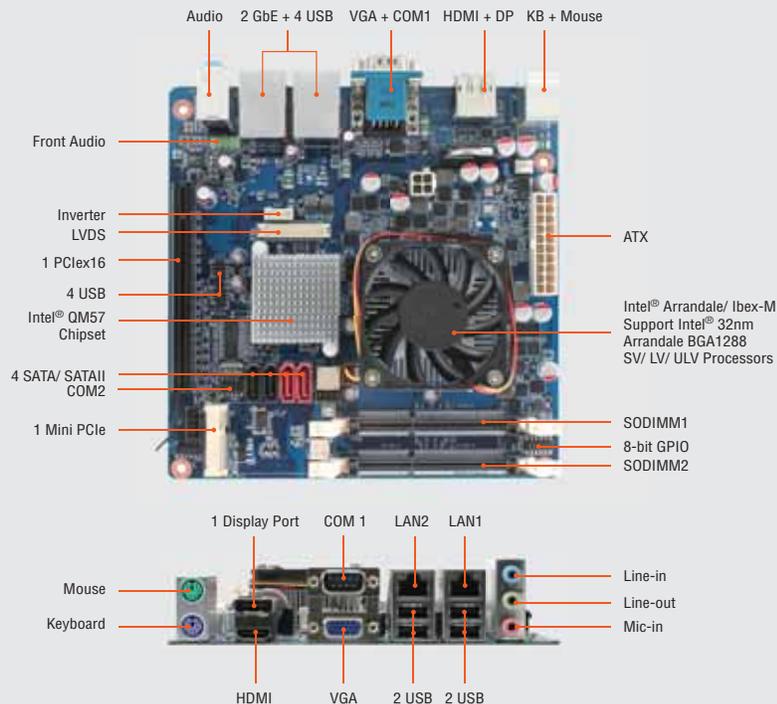
• LAN 1	Intel® 82579LM Gigabit Ethernet
• LAN 2	Intel® 82583V Gigabit Ethernet

Mechanical & Environmental

• Power Type	ATX (Supports AT Mode)
• Power Connector	1 20-pin ATX Power Connector, 1 4-pin ATX 12V Power Connector
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	1.03lbs (0.47Kg)

Ordering Information

- EMX-QM67-A1R
Intel® Core™ i7/ i5/ i3 Mini ITX Motherboard with Intel® QM67 Chipset



Features

Intel® Arrandale/ Ibex-M Support Intel® 32nm Arrandale BGA1288 SV/ LV/ ULV Processors, TDP Up to 35W by iMVP-6.5

Intel® QM57 Chipset

Two SODIMMs Up to 8GB DDR3 Dual-channel 1066/ 800MHz SDRAM

Realtek ALC888 Supports 5.1+2-CH HD Audio

Intel® 82577-LM PCI-E Gigabit Ethernet Support iAMT 6.0; Realtek RTL8111C PCI-E Gigabit Ethernet

1 PCIe16, 1 Mini PCI Express

4 SATA/ SATAII, 1 Display Port, 1 HDMI, 1 VGA, 1 LVDS Conn., 1 LVDS backlight Conn., 2 COM, 8 USB, 8-bit GPIO

RAID 0, 1, 5, 10

Intel® QM57	5.1+2-CH Audio	2 GbE	PCIe16	Mini PCIe
4 SATA/ SATA II	Display Port	HDMI	VGA	2-CH LVDS
2 COM	8 USB	8-bit GPIO	RAID	

Specifications

System

• CPU	Intel® Arrandale/ Ibex-M Support Intel® 32nm Arrandale BGA1288 SV/ LV/ ULV Processors, TDP Up to 35W by iMVP-6.5
• BIOS	AMI uEFI 2MB SPI BIOS
• System Chipset	Intel® BD82QM57 PCH
• I/O Chip	Winbond W83667HG-A
• System Memory	Two SODIMMs Up to 8GB DDR3 Dual-channel 1066/ 800MHz SDRAM
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature and Cooling Fan Status. Auto Throttling Control When CPU Overheats
• Expansion	1 PCIe16 (PEG & SDVO); 1 Mini PCIe1
• DIO	8-bit (4-in/ 4-out)
• S3/ S4	Yes (S1/ S3/ S4/ S5)
• Wake Up on LAN or Ring	WOL & WOR
• SmartFan Control	Yes

Display

• Chipset	Intel® Arrandale Integrated Graphic Device
• Display Memory	Intel® Arrandale IGD Support DVMT 5.0
• Max Resolution	CRT: 2048 x 1536 @ 75MHz
• Dual Display	VGA + LVDS, VGA + DP, VGA + HDMI (Lower bpp config.)
• VGA	Yes
• LVDS	Yes, Through Internal LVDS Connector
• LVDS Backlight Power Connector	Yes, Through Internal LVDS Backlight Connector
• Display Port	Yes. (Chrontel 7318)
• HDMI	Yes. (Chrontel 7318, HDMI 1.3 w/ HDCP)

Audio

• Audio Codec	Realtek ALC888 Supports 5.1+2-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1	Intel® 82577LM PCI-E Gigabit Ethernet Support iAMT 6.0
• LAN 2	Realtek RTL8111C PCI-E Gigabit Ethernet

I/O

• Back Panel I/O Port	1 x PS/2 KB/MS, 1 x Display Port, 1 x HDMI, 1 x VGA + COM Conn., 2 x RJ-45 Port + 2USB Conn., 1 x Audio Jack
• Internal I/O Connector	2 x USB Connectors Support Additional 4 USB Ports, 1 x LVDS Connector, 1 x Backlight Connector, 4 x SATA Connectors, 1 x CPU Fan Connector, 1 x Chassis Fan Connector, 1 x Front Panel Header, 1 x RS-232 Pin-header, 1 x 8-bit DIO (4-in/ 4-out)

Mechanical & Environmental

• Power Type	ATX
• ACPI	APMI 1.2, support ACPI
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.6" (170mm x 170mm)
• Weight	0.88lbs (0.4kg)

Ordering Information

EMX-QM57-520E-A1R

Intel® QM57 with i5-520E 2.4GHz CPU Min-ITX M/B W/ VGA, 1 PCIe16, 2-CH 24-bit LVDS, 1 Mini-PCI Express, 2 COM, 8 USB, 4 SATA II, 8-bit GPIO

EMX-QM57-P45-A1R

Intel® QM57 with Celeron® P4505 1.86GHz CPU Min-ITX M/B W/ VGA, 1 PCIe16, 2-CH 24-bit LVDS, 1 Mini-PCI Express, 2 COM, 8 USB, 4 SATA II, 8-bit GPIO

1 Embedded System

2 Oseven Module

3 ETX/XTX COM Express

4 3.5" SBC

5 EPIC

6 5.25" SBC

7 ATX

8 Micro ATX

9 Mini ITX

10 Nano ITX

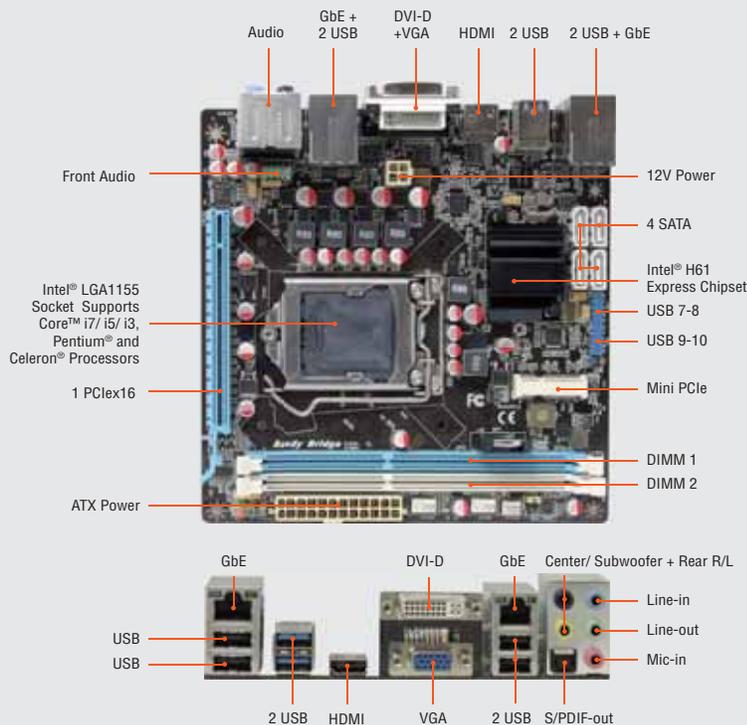
11 ACP

12 Rack Mount System

13 Mini ITX System

14 Peripherals

15 Index



Features

- Intel® LGA1155 Socket Supports Core™ i7/ i5/ i3, Pentium® and Celeron® Processors
- Intel® H61 Express Chipset
- Two 240-pin DIMM Sockets Up to 8GB Dual Channel DDR3 1066/ 1333MHz SDRAM
- VGA, DVI-D, HDMI
- Realtek ALC892 Supports 7.1-CH HD Audio
- Dual Broadcom® 57788 Gigabit Ethernet
- 1 x Mini PCIe, 1 x PCIe16
- 4 SATA II, 2 USB 3.0, 8 USB 2.0



Specifications

System

• CPU	Intel® LGA1155 Socket Supports Core™ i7/ i5/ i3, Pentium® and Celeron® Processors
• BIOS	AMI UEFI 32Mbit Flash ROM BIOS
• System Chipset	Intel® H61 Express Chipset
• I/O Chip	Nuvoton NCT5577D
• System Memory	Two 240-pin DIMM Sockets Up to 8GB Dual Channel Unbuffered DDR3 1066/ 1333MHz SDRAM
• H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
• Expansion	1 x Mini PCIe, 1 x PCIe16

I/O

• MIO	4 SATA II 3.0Gb/s, 1 x S/PDIF-out Header
• USB	2 x USB 3.0, 8 x USB 2.0

Display

• Chipset	Intel® HD Graphics Media Accelerator 2000/ 3000 (Based on CPU Type) Support for DX10.1 and OpenGL3.0
• Resolution	VGA: 2048 x 1536 @ 75Hz HDMI: 1920 x 1200 @ 60Hz DVI-D: 1920 x 1200 @ 60Hz (The DVI-D Port does't Support D-Sub Connection by Adapter)
• Dual Display	VGA + DVI-D, VGA + HDMI, DVI-D + HDMI

Audio

• Audio Codec	Realtek ALC892 7.1-CH High-Definition Audio Codec
• Audio Interface	Mic-in, Line-in, Line-out, Center/ Subwoofer, Rear R/L, S/PDIF-out

Ethernet

• LAN 1	Broadcom® 57788 PCI-Express Gigabit Ethernet
• LAN 2	Broadcom® 57788 PCI-Express Gigabit Ethernet

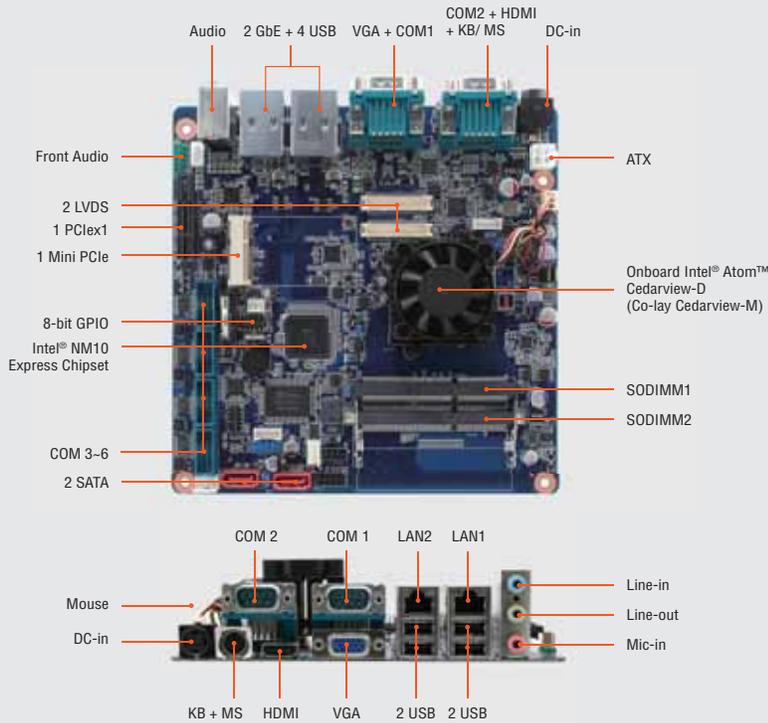
Mechanical & Environmental

• Power Requirement	+12V/ +5V/ 5Vsb
• Power Type	ATX
• Operating Temperature	0 ~ 50°C (32 ~ 121°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

• EMX-H61-A1R

Intel® Core™ i7/ i5/ i3, Pentium®/Celeron® Mini ITX Motherboard with Intel® H61 Express Chipset and VGA ,DVI-D, HDMI, Audio, 2 GbE, 1 PCIe16, 1 Mini PCIe, 4 SATA II, 2 USB 3.0, 8 USB 2.0, ATX, w/ SATA Cable, Bracket/ CD Driver



Features

- 1 Onboard Intel® Atom™ Cedarview-D (Co-lay Cedarview-M)
- 2 Intel® NM10 Express Chipset
- 3 Two 204-pin DDR3 SODIMM Socket Supports Up to 4GB DDR3 800/ 1066 SDRAM
- 4 HDMI, VGA, 1 x 24-bit LVDS
- 5 7.1-CH Audio, Dual Intel® Gigabit Ethernet
- 6 1 Mini PCIe, 1 PClex1, CFast (Optional)
- 7 2 SATA II, 6 COM (5V/ 12V), 7 USB, 8-bit GPIO
- 8 TPM 1.2 (Optional)

Intel® NM10	HDMI	2 GbE	1 PClex1	Mini PCIe
2 SATA II	6 COM	7 USB	8-bit GPIO	

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Onboard Intel® Atom™ Cedarview-D (Co-lay Cedarview-M)
• BIOS	AMI 16Mbit SPI BIOS
• System Chipset	Intel® NM10 Express Chipset
• I/O Chip	Winbond W83627DHG-P
• System Memory	Two 204-pin DDR3 SODIMM Sockets Support Up to 4GB DDR3 800/ 1066 SDRAM
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring System Temperature, Voltage with Auto Throttling Control
• Expansion	1 x PClex1, 1 x Mini PCIe, 1 x CFast (Optional)
• Power State	Yes (S1, S3, S4, S5)
• TPM	TPM 1.2 (Optional)
• SmartFan Control	Yes

I/O

• MIO	6 x RS-232 (5V/ 12V, Internal), 2 x SATA II (1 SATA Connector Co-lay CFast Connector)
• USB	7 USB 2.0 (4 Rear, 3 Internal)
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Azalia Realtek ALC892-GR
• Audio Interface	Line-in, Line-out, Mic-in, Front Audio Header

Display

• Chipset	Integated Cedarview SGX545 at 640Mhz, Support DX10.1 Graphics
• Display Memory	Shared Memory
• Dual Display	LVDS + VGA, VGA + HDMI, HDMI + LVDS
• VGA	Onboard VGA Supports Max Resolution 1920 x 1600
• HDMI	Onboard HDMI Supports Max Resolution 1920 x 1600
• LVDS	1 x Single-channel 18/ 24-bit LVDS 1440 x 900
• LVDS Backlight	Yes, Through Internal LVDS Backlight Connector

Ethernet

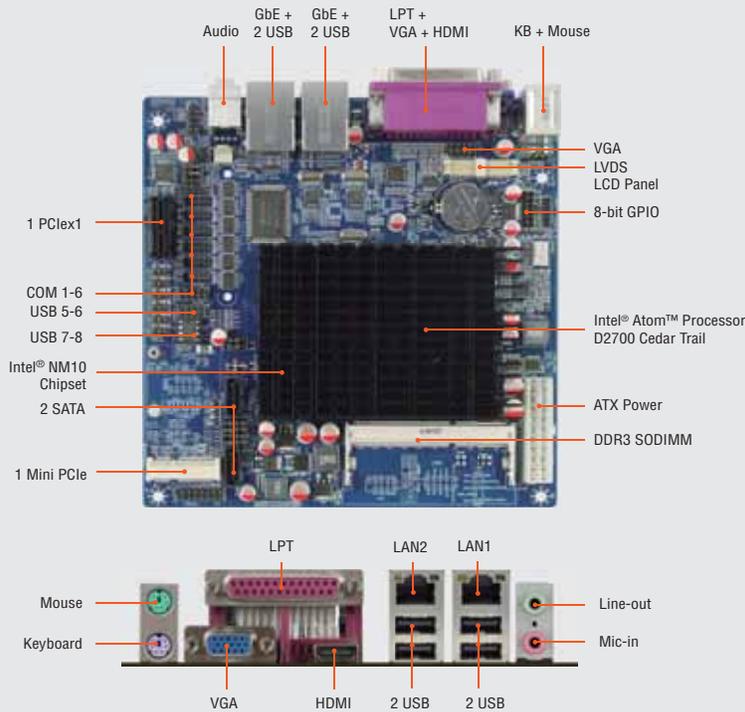
• LAN 1	Realtek RTL8111E Gigabit Ethernet
• LAN 2	Realtek RTL8111E Gigabit Ethernet

Mechanical & Environmental

• Power Requirement	DC +12V
• Power Type	Support AT/ ATX Mode
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

- EMX-CDV
Intel® Atom™ Cedarview-D Mini ITX Motherboard with Intel® NM10 Express Chipset



Features

- ☞ Intel® Atom™ Processor D2700 Cedar Trail
- ☞ Intel® NM10 Chipset
- ☞ 1 x DDR3 1066/1333MHz SO-DIMM Support 4GB MAX
- ☞ VGA, HDMI, Single-channel 18/ 24-bit LVDS
- ☞ 2 x Realtek RTL8111E PCIe Gigabit Ethernet
- ☞ 1 x Mini PCIe, 1 x PCIe1
- ☞ 2 SATA II, 6 COM (5V/ 12V), 8 USB, 8-bit GPIO

Intel® NM10	VGA	HDMI	1-CH LVDS	2 GbE
1 PCIe1	Mini PCIe	2 SATA II	6 COM	8 USB
8 GPIO				

Mini ITX

Specifications

System

• CPU	Onboard Intel® Atom™ Processor D2700 Cedar Trail (1M Cache, 2.13 GHz)
• BIOS	AMI 16MBit SPI BIOS
• System Chipset	Intel® NM10
• I/O Chip	Winbond W83627UHG
• System Memory	One 204-pin DDR3 1066/ 1033MHz SO-DIMM socket, supports up to 4GB Max
• Watchdog Timer	Reset : 1 to 255 sec/min per step
• H/W Status Monitor	Monitoring Temperature, Voltage and Cooling Fan Status with Auto Throttling Control
• Expansion	1 x Mini PCIe socket *Mini PCIe and mSATA SSD Switch Through Jumper 1 x PCIe1

I/O

• MIO	6 x Internal RS-232 (5V/ 12V), 2 x SATA II, 1 x LPT, 1 x PS2 Keyboard, 1 x PS2 Mouse, 1 x 10-pins Header for VGA Output Port
• USB	8 x USB 2.0/ 1.1
• GPIO	8-bit General Purpose I/O for DI and DO

Display

• Chipset	Intergated Cedar Trail SGX545 at 640Mhz, Support DX10.1 Graphics
• Resolution	VGA/ HDMI Display: 1920 x 1200 Internal LVDS 1440 x 900
• Multiple Display	LVDS + VGA, VGA + HDMI, HDMI + LVDS
• LCD Interface	Single-channel 18/ 24-bit LVDS

Audio

• Audio Codec	Realtek ALC661 HD Audio Decoding Controller, 5.1-CH Audio Output
• Audio Interface	Mic-in, Line-out Support On-board S/PDIF Input/ Output

Ethernet

• LAN 1	Realtek RTL8111E PCI-Express Gigabit Ethernet
• LAN 2	Realtek RTL8111E PCI-Express Gigabit Ethernet

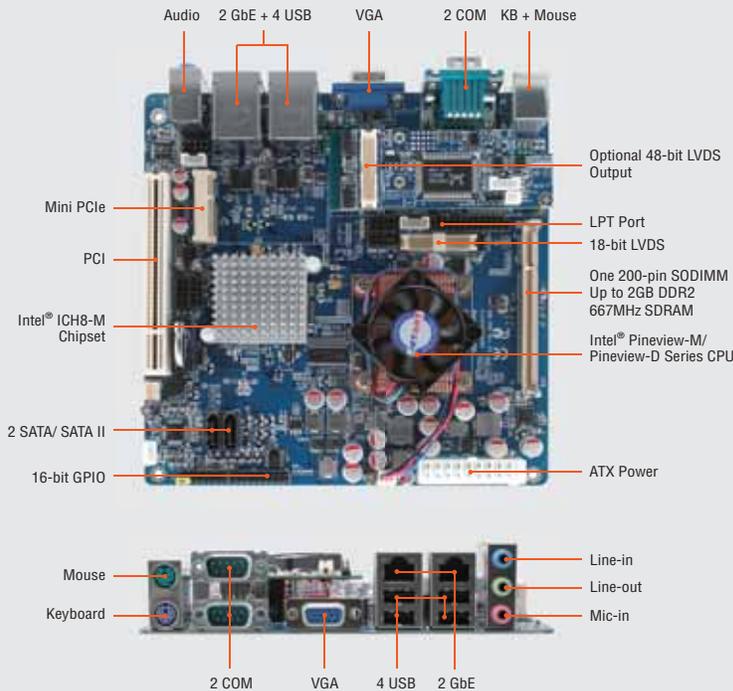
Mechanical & Environmental

• Power Requirement	+12V/ +5V/ 5Vsb
• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	1.058lbs (0.48kg)

Ordering Information

• EMX-CDT-A1R

Intel® Atom™ Cedar Trail D2700 Processor Mini ITX Motherboard with NM10 Chipset and VGA, LVDS, HDMI, Audio, 2 GbE, 1 PCIe1, 1 Mini PCIe, 2 SATA, 6 COM, 8 USB, 1 LPT, 1 PS2 KB, 1 PS2 MS, ATX, w/ SATA Cable, Bracket/ CD Driver



Features

- Intel® Pineview-M/ Pineview-D Series CPU
- Intel® ICH8-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 667MHz SDRAM/ One 204-pin SODIMM 4GB DDR3 800MHz SDRAM (EMX-PNV-D525)
- Dual View, VGA, 18-bit LVDS, Optional 48-bit LVDS Output
- Realtek ALC888 Supports 5.1+2-CH HD Audio
- Dual Intel® 82583V Gigabit Ethernet
- 1 PCI, 1 Mini PCI Express, 1 CF
- 2 SATA/ SATA II, 4 COM, 8 USB, 16-bit GPIO
- ATX/ AT Power Mode
- TPM 1.2 (Optional)

Atom™	Dual View	LVDS	5.1+2-CH Audio	2 GbE
CF	PCI	Mini PCIe	2 SATA/ SATA II	4 COM
8 USB	16-bit GPIO			

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

CPU	Onboard Intel® PNV-M SC N450 1.6GHz (EMX-PNV-N450) Onboard Intel® PNV-D DC D510/ D525 1.66GHz (EMX-PNV-D510, EMX-PNV-D525)
BIOS	AMI 8Mbit Flash BIOS
System Chipset	Intel® ICH8-M
I/O Chip	Winbond 83627DHG
System Memory	1 x 200-pin SODIMM 2GB DDR2 667MHz SDRAM/ 1 x 204-pin SODIMM 4GB DDR3 800MHz SDRAM (EMX-PNV-D525)
SSD	One CompactFlash Type I/II Socket
Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
TPM	Infineon TPM 1.2 SLB9635 (Optional)
Expansion	1 x PCI, 1 x Mini PCIe
S3/ S4	Yes (S1/ S3/ S5)
Wake up and LAN/RING	Yes
SmartFan Control	Yes

I/O

MIO	2 x SATA/ SATA II, 4 x COM (5V/ 12V), 2 x PS/2 KB/MS, 1 x LPT
USB	8 x USB 2.0
DIO	16-bit (8-in/ 8-out)

Audio

Audio Codec	Realtek ALC888 Supports 5.1+2-CH Audio
Audio Interface	Mic-in, Line-out, Line-in
Audio Amplifier	PA3005D2 Stereo 6 Watt Per Channel

Display

Chipset	Integrated Intel® Gen 3.5 + GFX Render Core 200MHz (PNV-M)/ 400MHz (PNV-D)
Display Memory	Shared Memory
Max. Resolution	VGA Mode : Up to 2048 x 1536 @ 60Hz (PNV-D) VGA Mode : Up to 1400 x 1050 @ 60Hz (PNV-M)
Dual Display	VGA + LVDS
VGA	One D-sub & one Buffered Pin-head Shared The Same Signals
LVDS	Single Channel 18-bit LVDS

Ethernet

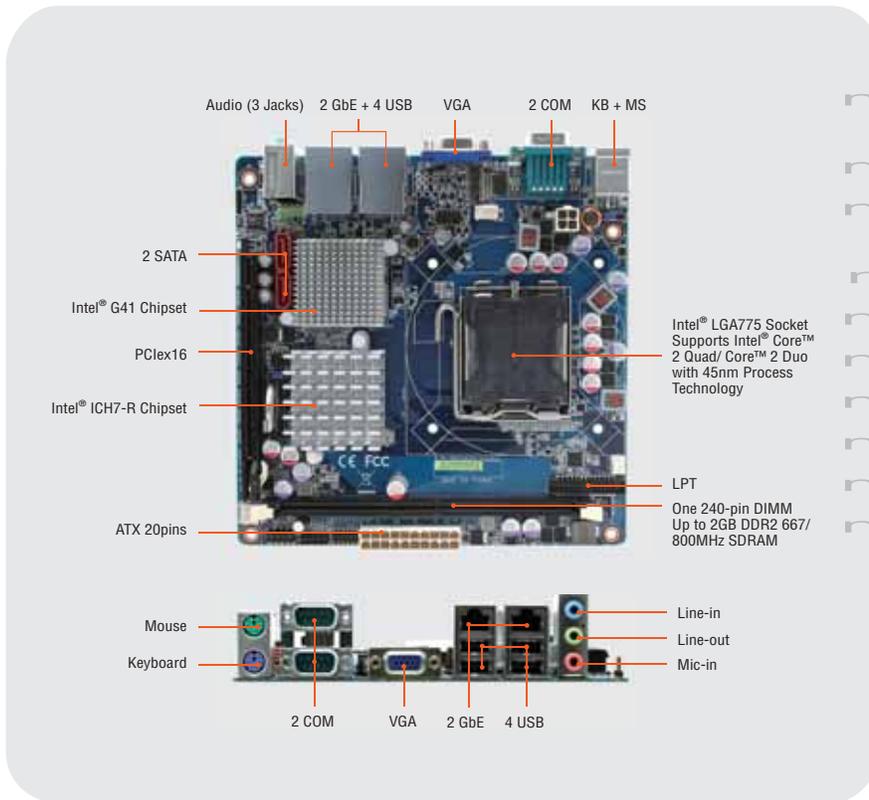
LAN 1	Intel® 82583V PCIe Gigabit Ethernet
LAN 2	Intel® 82583V PCIe Gigabit Ethernet

Mechanical & Environmental

Power Type	ATX/ AT
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
Size (L x W)	6.69" x 6.69" (170mm x 170mm)
Weight	0.88lbs (0.4Kg)

Ordering Information

- EMX-PNV-D525-A1R**
Intel® Atom™ PNV-D525 Mini ITX Motherboard with Intel® ICH8-M Chipset
- EMX-PNV-D510-A1R**
Intel® Atom™ PNV-D510 Mini ITX Motherboard with Intel® ICH8-M Chipset
- EMX-PNV-N450-A1R**
Intel® Atom™ PNV-N450 Mini ITX Motherboard with Intel® ICH8-M Chipset



Features

- Intel® LGA775 Socket Supports Intel® Core™ 2 Quad/ Core™ 2 Duo CPU
- Intel® G41/ ICH7-R Chipset
- One 240-pin DIMM Up to 2GB DDR2 667/ 800MHz SDRAM
- Intel® Graphics Media Accelerator 4500
- Dual View, VGA, LPT
- Realtek ALC888 Supports 5.1+2-CH HD Audio
- Dual Realtek RTL8111DL Gigabit Ethernet
- 1 PCIe16, 2 SATA/ SATA II
- 2 COM (5V/ 12V), 6 USB, 8-bit DIO
- RAID 0, 1

Intel® G41	Intel® GMA 4500	Dual View	5.1+2-CH Audio	2 GbE
PCIe16	2 SATA/ SATA II	2 COM	6 USB	8-bit DIO

Specifications

System

• CPU	Intel® LGA775 Socket Supports Intel® Core™ 2 Quad/ Core™ 2 Duo with 45nm Process Technology
• FSB	800/ 1066/ 1333MHz
• BIOS	AMI 4MB Flash ROM BIOS
• System Chipset	Intel® 82G41/ 82801GB (ICH7-R)
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 240-pin DIMM Up to 2GB DDR2 667/ 800MHz SDRAM
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature and Fan Status with Auto Throttling Control
• Expansion	1 x PCIe16
• S3/ S4	Yes (S1/ S3/ S4)
• SmartFan Control	Yes

I/O

• MIO	2 x SATA/ SATA II, 2 x RS-232 (5V/ 12V), 1 x LPT, 1 x PS/2 KB/MS
• USB	6 x USB 2.0
• DIO	8-bit

Audio

• Audio Codec	Realtek ALC888 Supports 5.1+2-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out,
• Audio Amplifier	TPA3005D2 Stereo 6Watt Per Channel

Display

• Chipset	Intel® Graphics Media Accelerator 4500 Integrated
• Display Memory	Intel® DVMT 4.0 Supports Up to 352MB Memory
• Max. Resolution	VGA Mode : 2048 x 1536 @ 75Hz
• Dual Display	VGA + ADD2
• VGA	Yes, Onboard GMA 4500

Ethernet

• LAN 1	Realtek RTL8111DL PCIe Gigabit Ethernet
• LAN 2	Realtek RTL8111DL PCIe Gigabit Ethernet

Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

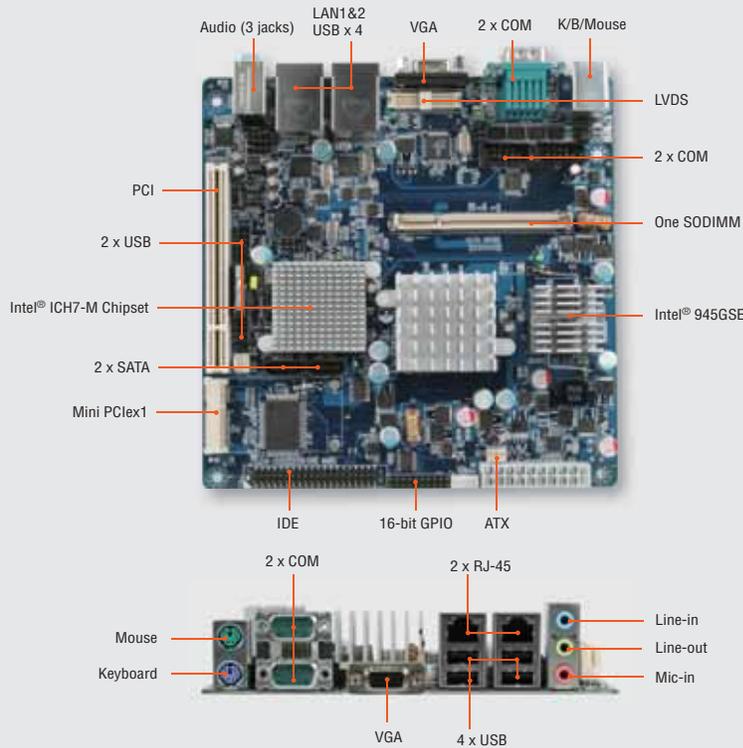
• EMX-G41-A1R

Intel® Core™ 2 Quad/ Core™ 2 Duo Mini ITX Motherboard with Intel® G41 + ICH7-R Chipset and VGA, Audio, 2 GbE, PCI, 1 PCIe16, 2 SATA/ SATA II, 2 COM, 6 USB, 8-bit GPIO



EMX-945GSE

Intel® Atom™ N270 Mini ITX Motherboard with Intel® 945GSE + ICH7-M Chipset



Features

- Supports Intel® XFCBGA 45nm Atom™ N270 1.6GHz Processor
- Intel® 945GSE/ ICH7-M Chipset
- One 200-pin SODIMM Up to 2GB DDR2 533 SDRAM, Non-ECC
- Intel® Graphics Media Accelerator 950
- Dual View, 2-CH LVDS
- DVI for EMX-945GSE-A1-DVIR Only
- 5.1-CH HD Audio, 6W AMP
- Dual Realtek RTL8111C Gigabit Ethernet
- 1 PCI 2.3, 1 Mini PClex1
- 1 CF, 4 COM, 2 SATA, 6 USB, 16-bit GPIO

Intel® 945GSE	2-CH LVDS	5.1-CH Audio	2 GbE	CF
PCI	Mini PCIe	2 SATA	4 COM	6 USB
16-bit GPIO				

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Supports Intel® XFCBGA 45nm Atom™ N270 1.6 GHz Processor
• FSB	533MHz
• BIOS	Award 8Mbit SPI BIOS
• System Chipset	Intel® 82945GSE/ 82801GBM (ICH7-M)
• I/O Chip	Winbond W83627DHG-A
• System Memory	One 200-pin SODIMM Up to 2GB DDR2 533 SDRAM, Non-ECC
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1 sec.~255 min. and 1 sec. or 1 min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Fan Status with Auto Throttling Control
• Expansion	1 x PCI (PCI Rev. 2.3 Compliant), 1 Mini PClex1
• TPM	TPM (Infineon SLB 9635 TCG 1.2 Compliant)
• S3/ S4	Yes
• SmartFan Control	Yes (1 x Fan Connector)

I/O

• MIO	1 x IDE, 2 x SATA, 4 x COM, 1 x K/B, 1 x Mouse
• USB	6 x USB 2.0
• GPIO	16-bit General Purpose I/O for DI and DO

Audio

• Audio Chipset	Intel® ICH7-M
• Audio Codec	Realtek ALC888, 5.1-CH HD Audio
• Audio Interface	Mic-in, Line-in, Line-out
• Audio Amplifier	TPA3005D2 6W (Per Front Channel) Stereo Amplifier

Display

• Chipset	Intel® 945GSE GMCH Integrated Graphics Media Accelerator 950
• Display Memory	Intel® DVMT 3.0 Supports Up to 224MB Shared Video Memory
• Resolution	CRT Mode: 2048 x 1536 @ 75Hz LCD Mode: 1920 x 1200 @ 60Hz
• Dual Display	CRT + LVDS
• VGA	Onboard GMA 950, Supports for CRT Resolutions Up to QXGA
• LVDS	2-CH 18-bit LVDS (EMX-945GSE-A1-DVIR) 2-CH 18/24-bit LVDS (EMX-945GSE-A1R)

Ethernet

• LAN 1	Realtek RTL8111C Gigabit Ethernet
• LAN 2	Realtek RTL8111C Gigabit Ethernet

Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

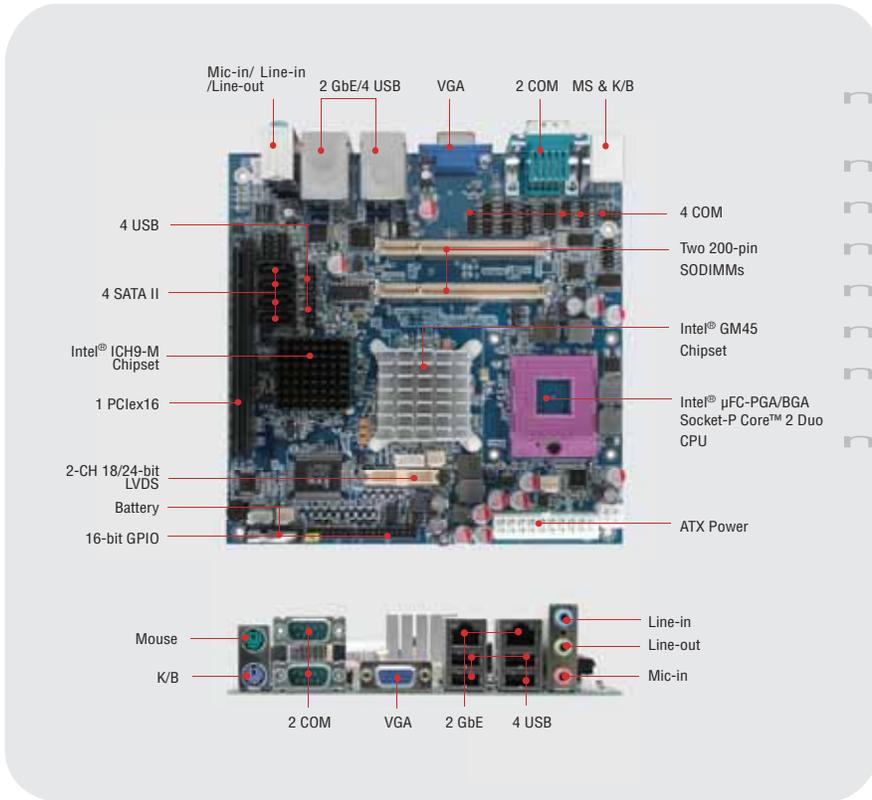
Ordering Information

- **EMX-945GSE-A1R**
Intel® 945GSE Atom™ N270 Mini ITX Motherboard with 5.1-CH HD Audio, 2-CH LVDS, Dual GbE, PCI, Mini PCIe, CF, 2 SATA, 4 COM, 6 USB, 16-bit GPIO
- **EMX-945GSE-A1-DVIR**
Intel® 945GSE Atom™ N270 Mini ITX Motherboard with 5.1-CH HD Audio, DVI, 2-CH LVDS, Dual GbE, PCI, Mini PCIe, CF, 2 SATA, 4 COM, 6 USB, 8-bit GPIO



EMX-GM45E

Intel® Core™ 2 Duo Mini ITX Motherboard with Intel® GM45 + ICH9-M Chipset



Features

- Supports 45nm Intel® µFC-PGA/ BGA Socket-P Core™ 2 Duo CPU
- Intel® GM45/ ICH9-M Chipset
- Two SODIMMs Up to 4GB DDR2 SDRAM
- Intel® Graphic Media Accelerator HD4500
- Intel® 82574L & Intel® 82567LM Gigabit Ethernet
- Realtek ALC888 7.1-CH Audio, 6W AMP
- 1 CF, 1 PCIe16, 4 SATA II, 6 COM, 2 CCTalk, 8 USB, 16-bit GPIO
- iAMT 4.0

Intel® GM45	7.1-CH Audio	6W AMP	2 GbE	1 CF
1 PCIe16	4 SATA II	6 COM	2 CCTalk	8 USB
16-bit GPIO	iAMT 4.0			

Specifications

System

CPU	Supports 45nm Intel® µFC-PGA/ BGA Socket-P Core™ 2 Duo CPU (Penryn)
BIOS	Award 2MB SPI Flash ROM
System Chipset	Intel® 82GM45/ 82801IBM (ICH9-M)
I/O Chip	Winbond W83627DHG
System Memory	Two 200-pin SODIMM Sockets Support Up to 4GB DDR2 667/ 800 SDRAM
SSD	One Compact Flash Type I/II Socket
Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
RTC	2 Sets
Battery	1 for System

I/O

MIO	1 x PS/2 Keyboard, 1 x PS/2 Mouse
USB	8 x USB 2.0
Serial Port	1 x RS-232/ 482/ 485, 3 x RS-232, 2 x RS-232/ CCTalk
SATA	4 x SATA II
GPIO	16-bit Programmable GPIO (DIP Switch)
Expansion	1 PCIe16 Slot

Audio

Chipset	Intel® ICH9-M Integrated
AC97 Codec	Realtek ALC888 Supports 7.1-CH with 6W Amplifier

Display

Chipset	Intel® GM45 Integrated
Display Memory	Intel® DVMT 5.0
Resolution	CRT Mode: 2048 x 1536
Dual Display	CRT + LVDS
LVDS	2-CH 18/24-bit LVDS
VGA Ports	Single VGA External Ports
LVDS	Through ADD2 LVDS Card
DVI-D	Through ADD2 DVI Card
Secondary VGA	Through ADD2 VGA Card

Ethernet

LAN 1	Intel® 82574L Gigabit Ethernet, Supports Wake on LAN
LAN 2	Intel® 82567LM Gigabit Ethernet, Supports Wake on LAN
Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible

Mechanical & Environmental

Power Requirement	+12V/ +5V
ACPI	APMI 1.2, Support ACPI
Power Type	ATX
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
Size (L x W)	6.7" x 6.7" (170mm x 170mm)
Weight	0.44lbs (0.2kg)

Ordering Information

• EMX-GM45E-A1R

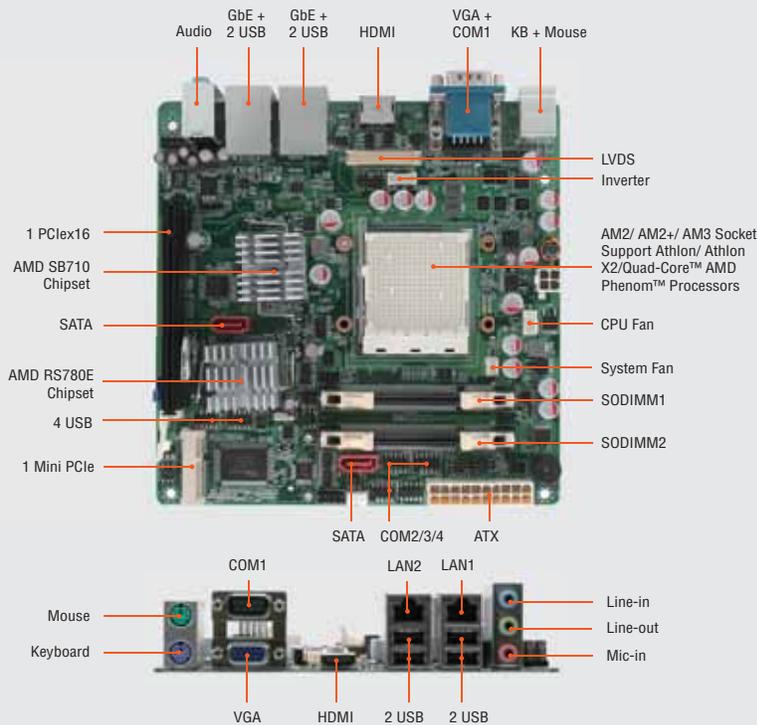
Intel® Core™ 2 Duo Mini ITX Motherboard with Intel® GM45 + ICH9-M Chipset and w/ VGA, 2-CH LVDS, 7.1-CH Audio, 6W AMP, Dual GbE, CF, 1 PCIe16, 8 USB, 4 SATA II, 6 COM, 2 CCTalk, 16-bit GPIO

Mini ITX



EMX-780E

AMD Athlon/ Athlon X2/ Quad-Core™ AMD Phenom™ Mini ITX Motherboard with AMD RS780E + SB710 Chipset



Features

- AM2/ AM2+/ AM3 Socket Support Athlon/ Athlon X2/ Quad-Core™ AMD Phenom™ Processors
- AMD RS780E/ SB710 Chipset
- Two SODIMMs Up to 4GB DDR2 800 SDRAM
- Dual View, 2-CH LVDS, HDMI
- ALC888 Supports 5.1-CH Audio
- Dual Realtek RTL8111D Gigabit Ethernet
- CF, 1 PCIe16, 1 Mini PCIe
- 2 SATA, 8 USB, 4 COM, 8-bit GPIO

AMD Athlon X2	5.1-CH Audio	2 GbE	Dual View	CF
PCIex16	Mini PCIe	8 USB	4 COM	8-bit GPIO
2 SATA	2-CH LVDS			

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	AM2/ AM2+/ AM3 Socket Support Athlon/ Athlon X2/ Quad-Core™ AMD Phenom™ Processors
• FSB	400MHz
• BIOS	AMI 2MB SPI BIOS
• System Chipset	AMD RS780E/ SB710
• I/O Chip	FINTEK F71863FG
• System Memory	Two 200-pin SODIMMs Support Up to 4GB DDR2 800 SDRAM
• SSD	1 CompactFlash Type I/II Socket
• Watchdog Timer	1sec. ~ 255min. and 1sec. or 1min/step
• H/W Status Monitor	Monitoring CPU Temperature and Cooling Fan Status with Auto Throttling Control
• Expansion	1 PCIe16, 1 Mini PCIe
• S3/ S4	Yes (S1/ S2/ S3/ S4)
• SmartFan Control	Yes

I/O

• MIO	2 SATA, 1 K/B, 1 Mouse, 4 RS-232 (COM1 on Edge, COM2/ 3/ 4, 10-pin 2.0 Pitch Box Header)
• USB	8 x USB 2.0
• DIO	8-bit General Purpose I/O

Audio

• Audio Code	Realtek ALC888 Supports 5.1-CH Audio
• Audio Interface	Mic-in, Line-in, Line-out
• Audio Amplifier	TPA A3005D2 Stereo 6W Per Channel

Display

• Chipset	IGP ATI Radeon HD3200
• Resolution	CRT Mode: 2560 x 1600 @ 32bpp
• Dual Display	CRT + HDMI, CRT + LVDS
• LVDS	2-CH 24-bit LVDS
• HDMI	1 x External Port (HDMI 1.3)

Ethernet

• LAN 1	Realtek RTL8111D Gigabit Ethernet
• LAN 2	Realtek RTL8111D Gigabit Ethernet

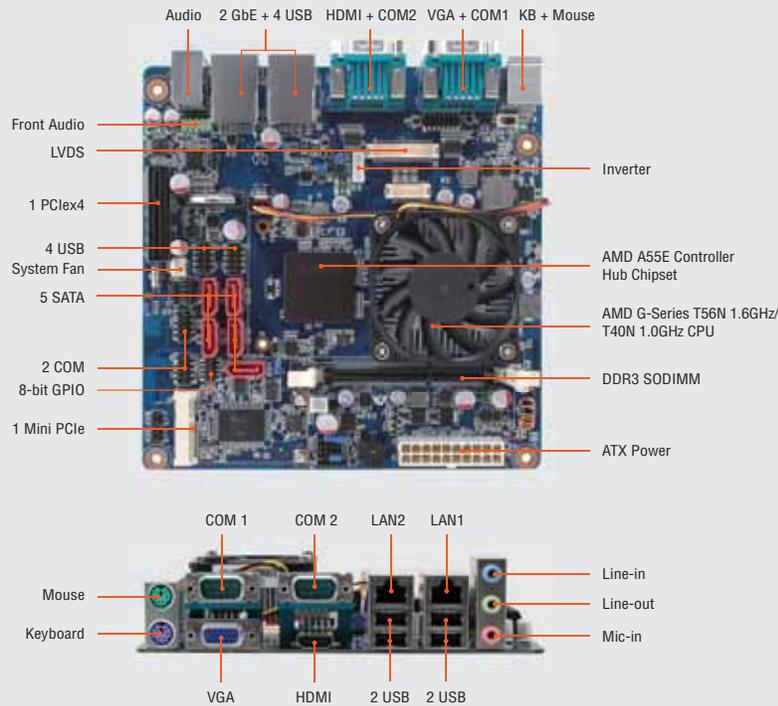
Mechanical & Environmental

• Power Requirement	ATX (5V/ 12V), 5Vsb
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.6" (170mm x 170mm)
• Weight	0.88lbs (0.4kg)

Ordering Information

• EMX-780E-A1R

AMD Athlon/ Athlon X2/ Quad-Core™ AMD Phenom™ Mini ITX Motherboard with AMD RS780E + SB710 Chipset and 2-CH LVDS, 5.1-CH Audio, 2 GbE, PCIe16, Mini PCIe, 4 COM, 2 SATA, 8 USB, 8-bit GPIO



Features

- AMD G-Series T56N 1.6GHz/ T40N 1.0GHz CPU
- AMD A55E Controller Hub Chipset
- One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
- AMD Radeon HD 6310/ HD 6250 Graphics
- Dual View, HDMI, VGA, 18-bit Single-channel LVDS
- Realtek ALC892 Supports 7.1-CH HD Audio
- Dual Realtek RTL8111DL Gigabit Ethernet
- 1 PCIe4, 1 Mini PCIe, 1 CFast
- 5 SATA 3.0, 4 COM, 8 USB, 8-bit GPIO
- RAID 0, 1, 5, 10 Support



Specifications

System

• CPU	AMD G-Series T56N 1.6GHz/ T40N 1.0GHz
• BIOS	AMI EFI 16Mb SPI
• System Chipset	AMD A55E Controller Hub
• I/O Chip	Winbond W83627DHG-P
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
• Watchdog Timer	Reset: 1 to 255 sec/min per step
• H/W Status Monitor	Monitoring Temperature, Voltage and Cooling Fan Status. Auto Throttling Control when CPU Overheats.
• Expansion	1 PCIe4 Gen.2, 1 Mini PCIe, 1 CFast
• TPM	Onboard TPM 1.1/ 1.2 by Infineon SLB9635 (Optional)
• Power State	Yes (S3/ S4/ S5)
• SmartFan Control	Yes

I/O

• MIO	4 COM RS-232, 5 SATA 3.0, 2 LAN, 1 HDMI, 1 VGA, 1 LVDS, 1 Inverter, 1 PS/2 Keyboard, 1 PS/2 Mouse
• USB	8 USB 2.0 (4 Rear, 4 Internal)
• GPIO	8-bit General Purpose I/O

Audio

• Audio Codec	Realtek ALC892 Supports 7.1-CH HD Audio
• Audio Interface	Line-in, Line-out, Mic-in, S/PDIF, Front Audio Header
• Audio Amplifier	3W + 3W, TPA3005

Ethernet

• LAN 1	Realtek RTL8111DL Gigabit Ethernet
• LAN 2	Realtek RTL8111DL Gigabit Ethernet

Display

• Chipset	AMD Radeon HD 6310 (T56N)/ AMD Radeon HD 6250 (T40N)
• Display Memory	Shared Memory, Up to 512MB
• Dual Display	VGA + LVDS, VGA + HDMI, LVDS + HDMI
• VGA	Onboard T56N (18W) Supports Up to 2560 x 1600 Onboard T40N (9W) Supports Up to 1920 x 1200
• HDMI	Onboard, Supports HDMI 1.3a & 1080P Up to 1920 x 1200
• LVDS	Onboard, 18-bit Single-channel LVDS
• LVDS Backlight	Yes, PWM Control (Backlight Adjusted from AMD A55E Controller Hub)

Mechanical & Environmental

• Power Type	ATX (Supports at AT Mode)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.96lbs (0.436Kg)

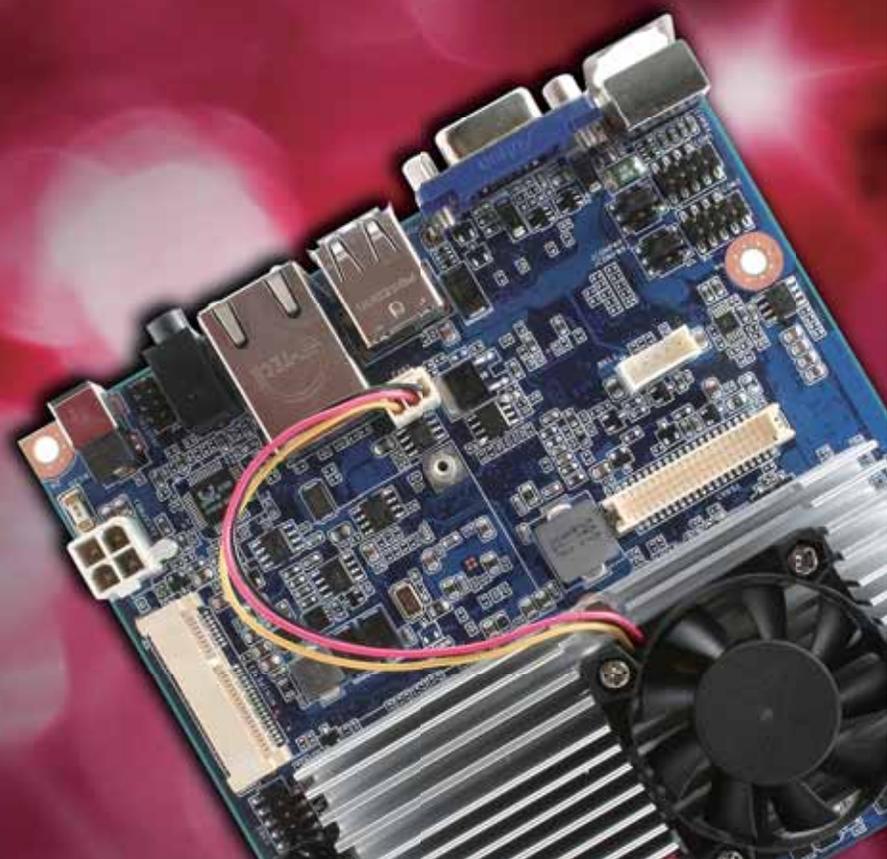
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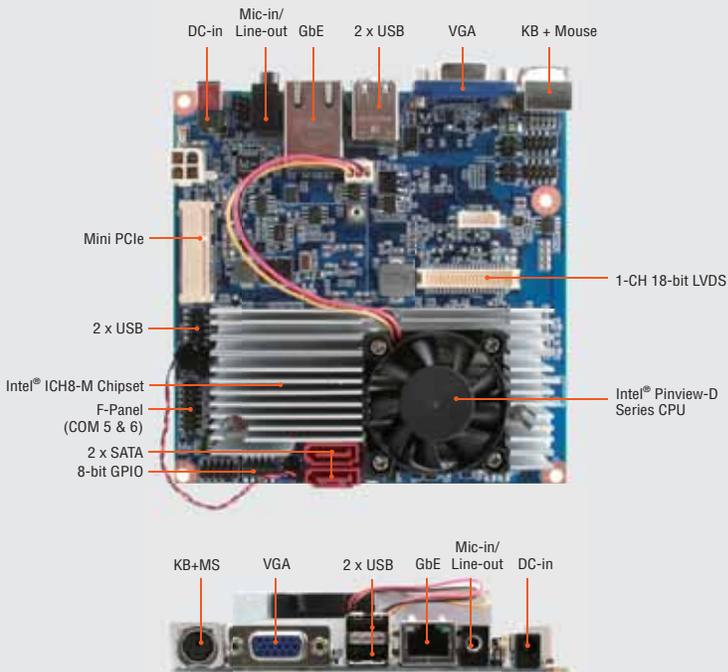
- **EMX-A55E-T56N-A1R**
AMD G-Series T56N 1.6GHz Mini ITX Motherboard with A55E Controller Hub Chipset
- **EMX-A55E-T40N-A1R**
AMD G-Series T40N 1.0GHz Mini ITX Motherboard with A55E Controller Hub Chipset

10 Nano ITX

Nano ITX Series

ENX-PNV	Intel® Atom™ PNV-M/ PNV-D Nano ITX Motherboard with Intel® ICH8-M Chipset	10-2
ENX-US15WP	Intel® Atom™ Z510P/ Z530P Nano ITX Motherboard with Intel® US15WP Chipset	10-3
ENX-LX800	AMD Geode LX800 Nano ITX Motherboard with AMD Geode LX800 + CS5536 Chipset	10-4





Features

- ☞ Intel® Pineview-D Series CPU
- ☞ Intel® ICH8-M Chipset
- ☞ One 200-pin SODIMM Up to 2GB DDR2 667 SDRAM (PNV-M); 4GB (PNV-D), Non-ECC
- ☞ Dual View, VGA, LVDS
- ☞ Realtek ALC888 Supports HD Audio
- ☞ Realtek RTL8111C Gigabit Ethernet
- ☞ 1 LVDS, VGA
- ☞ 1 Mini PCIe, CF
- ☞ 2 COM, 2 SATA, 6 USB, 8-bit GPIO
- ☞ TPM 1.2 (Optional)

Atom™	Dual View	LVDS	7.1-CH Audio	GbE
CF	Mini PCIe	2 COM	2 SATA	6 USB
8-bit GPIO				

Specifications

System

• CPU	Onboard Intel® Atom™ PNV-D (w/ 1024KB Cache) Series CPU with 45nm Processor Technology
• BIOS	AMI 2MB SPI BIOS
• System Chipset	Intel® 82801HM (ICH8M)
• I/O Chip	Winbond W83627DH-A
• System Memory	1 x 200-pin SODIMM 4GB DDR2 667 SDRAM, Non-ECC
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	1 ~ 255sec Programmable
• TPM	Infineon TPM 1.2 SLB9635 (Optional)
• Wake up and LAN/RING	Yes
• SmartFan Control	Supports 3 Modes (Silent/ Optimal/ Performance)
• Expansion	1 x Mini PCIe

I/O

• MIO	2 x SATA, 2 x COM (5V/ 12V), 1 x K/B + Mouse
• USB	6 x USB 2.0
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Realtek ALC888 Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-out (1 Jack), Line-in (Pin-header)

Display

• Chipset	Integrated Intel® Gen 3.5 + GFX Render Core 400MHz
• Display Memory	Shared Memory
• Max. Resolution	SXGA 1400 x 1050 @ 60Hz
• LVDS	Single Channel 18-bit LVDS

Ethernet

• LAN	Realtek RTL8111C Gigabit Ethernet
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Mechanical & Environmental

• Power Type	12V DC-in
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.72" x 4.72" (120mm x 120mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

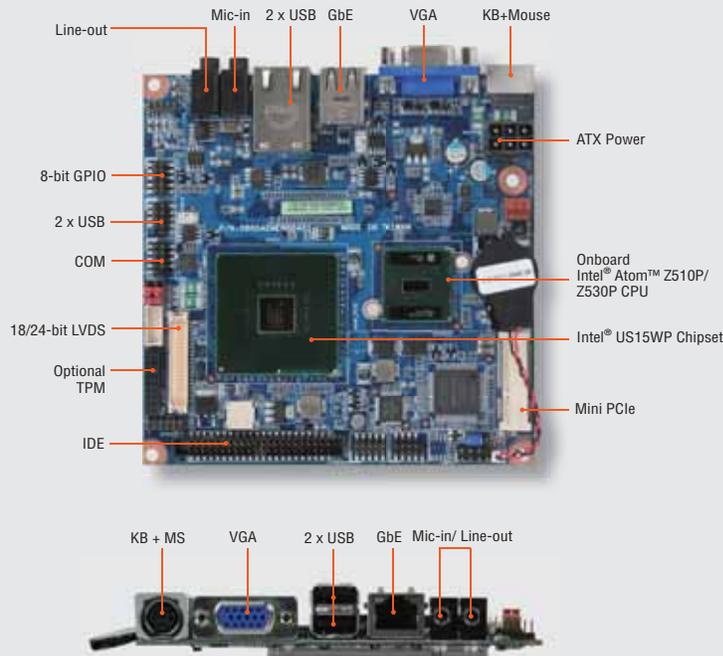
• ENX-PNV-D510-A1R

Intel® Atom™ PNV-D Nano ITX Motherboard with Intel® ICH8-M Chipset and VGA, LVDS, Audio, GbE, Mini PCIe, CF, 2 SATA, 2 COM, 6 USB, 8-bit GPIO



ENX-US15WP

Intel® Atom™ Z510P/ Z530P Nano ITX Motherboard with Intel® US15WP Chipset



Features

- Intel® Atom™ Z510P/ Z530P CPU
- Intel® US15WP Chipset
- 2D/3D Graphic Acceleration Supports Direct X9, WMV9, H.264.A and MPEG 2 Video Decoding
- One 200-pin SODIMM Up to 2GB DDR2 400/ 533 SDRAM
- Dual View, VGA, LVDS
- Realtek ALC888 Supports 7.1-CH HD Audio
- Realtek RTL8111C Gigabit Ethernet
- 1 Mini PCIe, 1 CF
- 1 COM, 4 USB, 8-bit GPIO
- Optional TPM

Atom™	US15WP	Dual View	LVDS	7.1-CH Audio
GbE	CF	Mini PCIe	4 USB	8-bit GPIO
Optional TPM				

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Onboard Intel® Atom™ Z510P/ Z530P CPU
• FSB	533MHz
• BIOS	Award 8Mbit FHW BIOS
• System Chipset	Intel® SCH US15WP (Single Chip SCH, GMCH+ICH)
• I/O Chip	Winbond W83627DHG-A
• System Memory	1 x 200-pin SODIMM 2GB DDR2 400/ 533 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Fan Status with Auto Throttling Control
• Expansion	1 Mini PCIe
• S3/ S4	Yes
• TPM	Optional
• Wake up and LAN/ RING	Yes
• SmartFan Control	Supports 3 Modes (Silent/ Optimal/ Performance)

I/O

• MIO	1 x IDE, 1 x COM (Pin-header), 1 x K/B+Mouse
• USB	4 x USB 2.0 (2 x Edge ports, 2 x Pin-header)
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Audio Codec	Realtek ALC888 (Co-lay ALC888VC) Supports 7.1-CH Audio
• Audio Interface	Mic-in, Line-out (2 Jack), Line-in (Pin-header)

Display

• Chipset	Intel® US15WP Supports Direct X9, WMV9, H.264.A and MPEG2 Video Decoding
• Display Memory	Shared Memory
• Max. Resolution	LVDS mode: 1366 x 768 @ 85Hz Ext Display: 1280 x 1024 @ 85Hz
• Multiple Display	LVDS + VGA
• LVDS	Single channel 18/24-bit LVDS
• LVDS Backlight Power	Yes

Ethernet

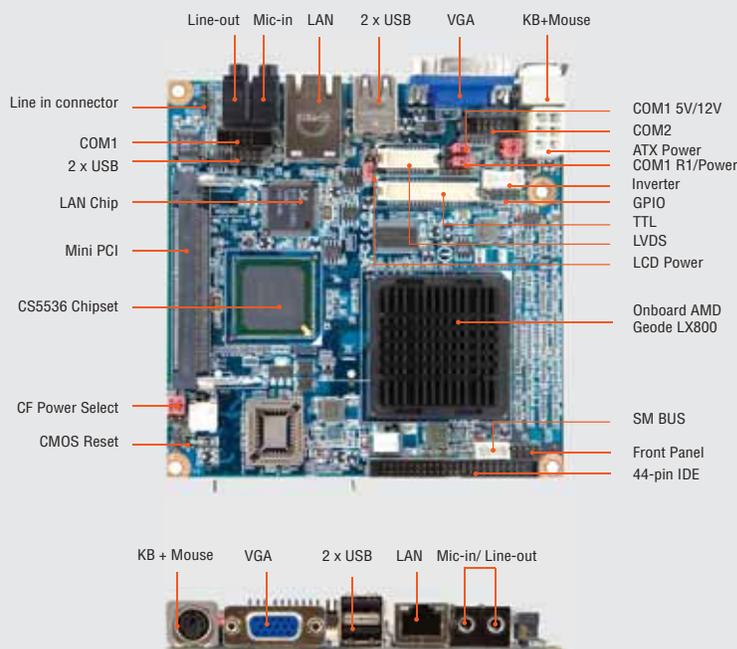
• LAN	Realtek RTL8111C Gigabit Ethernet
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Mechanical & Environmental

• Power Type	ATX (5V/ 12V; 5Vsb)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.72" x 4.72" (120mm x 120mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

- **ENX-US15WP-510-A1R**
Intel® Atom™ Z510P 1.1GHz Nano ITX Motherboard with Intel® US15WP Chipset and VGA, LVDS, Audio, GbE, Mini PCIe, CF, COM, 4 USB, 8-bit GPIO
- **ENX-US15WP-530-A1R**
Intel® Atom™ Z530P 1.6GHz Nano ITX Motherboard with Intel® US15WP Chipset and VGA, LVDS, Audio, GbE, Mini PCIe, CF, COM, 4 USB, 8-bit GPIO



Features

- ☞ Onboard AMD Geode LX800 500MHz @ 0.9W CPU
- ☞ AMD Geode LX800/ CS5536 Chipset
- ☞ One SODIMM Up to 1GB DDR 400 SDRAM
- ☞ 24-bit TTL, 18-bit LVDS
- ☞ Realtek ALC655 Supports 2-CH Audio
- ☞ Realtek RTL8139DL 10/ 100Mbps LAN
- ☞ 1 Mini PCI, 1 CF
- ☞ 2 COM (1 Powered COM), 4 USB, 8-bit GPIO



Specifications

System

• CPU	Onboard AMD Geode LX800 @ 0.9W CPU with 128K L2 Cache or 64K L1 Cache
• BIOS	Award 512KB Flash BIOS
• System Chipset	AMD Geode LX800/ CS5536
• I/O Chip	Winbond W83627HG-AW
• System Memory	One 200-pin SODIMM Socket Supports Up to 1GB DDR 400 SDRAM
• SSD	One CompactFlash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Fan Status with Auto Throttling Control
• Expansion	1 Mini PCI

I/O

• MIO	1 x EIDE (DMA 33), 2 x RS-232 (COM1, 5V/ 12V), 1 x K/B + Mouse
• IrDA	115kbps, IrDA 1.0 Compliant
• USB	4 x USB 2.0
• DIO	8-bit General Purpose I/O for 4-bit DI and 4-bit DO

Audio

• Chipset	AMD Geode CS5536
• Audio Codec	Realtek ALC655 Supports 2-CH AC97 Audio
• Audio Interface	Mic-in, Line-out (2 Jack), Line-in (Pin-header)

Display

• Chipset	AMD Geode LX800 with Integrated Graphics Engine
• Display Memory	AMD LX800 Integrated Graphics Controller Supports Up to 32MB Shared Video Memory
• Resolution	CRT Mode: 1024 x 768 @ 32bpp (85Hz) TFT Mode: 1600 x 1200 @ 32bpp (100Hz)
• TTL TFT	24-bit Color Support for Digital Pixel Input
• LVDS	Single Channel 18-bit LVDS

Ethernet

• LAN	Realtek RTL8139DL 10/ 100Mbps LAN
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Mechanical & Environmental

• Power Type	ATX (5V/ 12V; 5Vsb)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	4.72" x 4.72" (120mm x 120mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

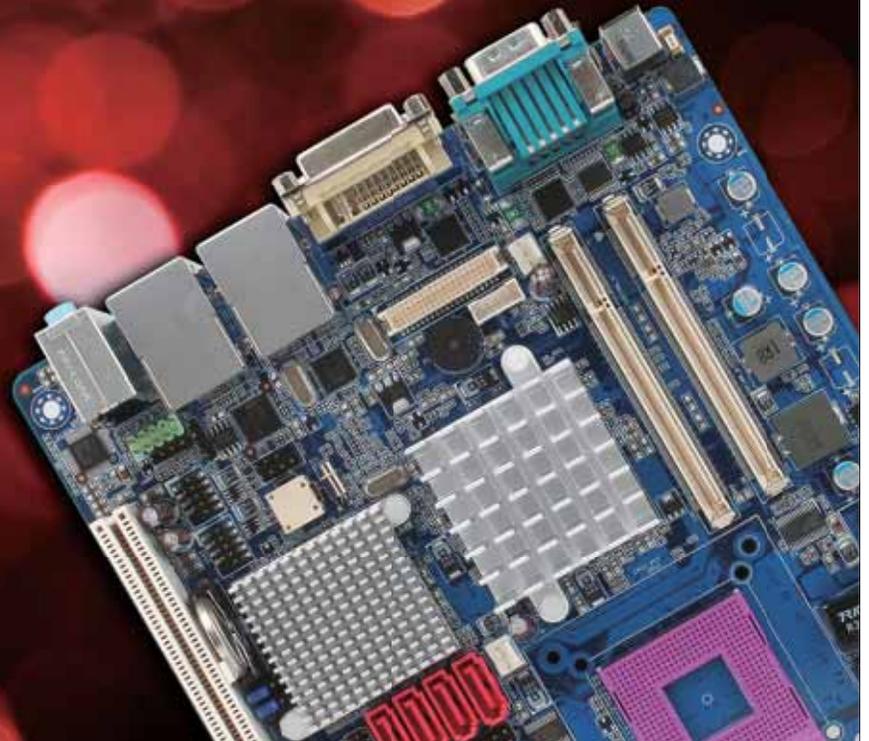
• ENX-LX800-A1R

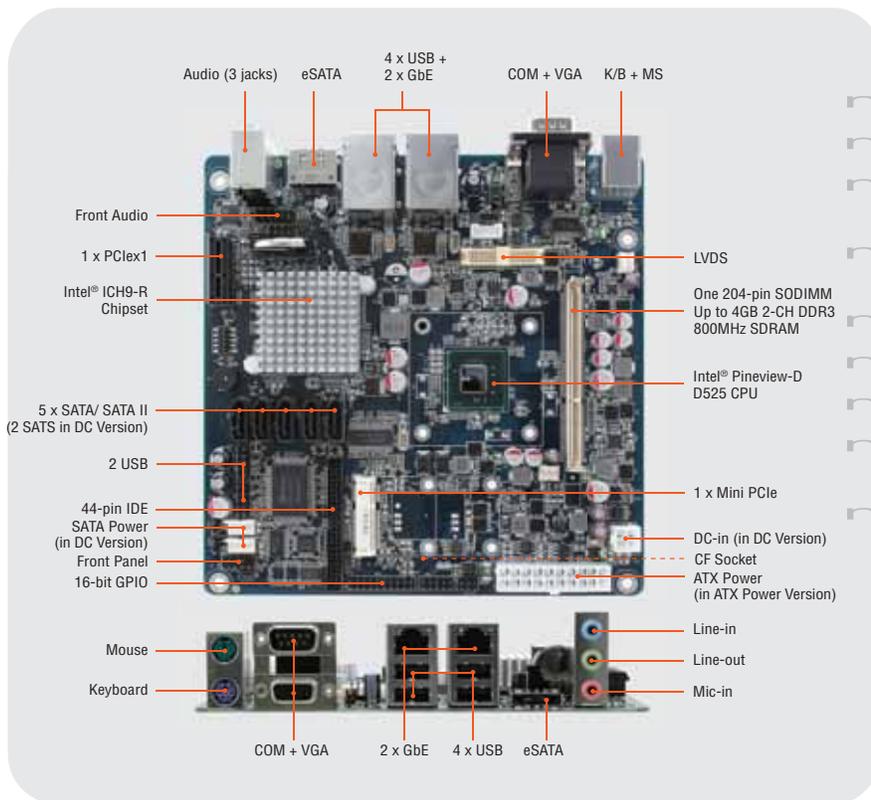
AMD Geode LX800 500MHz Nano ITX Motherboard with AMD Geode LX800 + CS5536 Chipset and VGA, TFT, LVDS, Audio, LAN, CF, Mini PCI, 2 COM, 4 USB & 8-bit GPIO w/ IDE Cable, Bracket, CD Driver

11 ACP

ACP Series

ACP-PNVDV	Intel® Atom™ PNV-D Mini ITX Motherboard with Intel® ICH9-R Chipset	11-2
ACP-GM45DS	Intel® Core™ 2 Duo Mini ITX Digital Signage Board with Intel® GM45 + ICH9M-E Chipset	11-3
ACP-945GDS	Intel® Atom™ N270 Mini ITX Digital Signage Board with Intel® 945GSE + ICH7-M Chipset	11-4
ACP-GM45	Intel® Core™ 2 Duo Mini ITX Gaming Board with Intel® GM45 + ICH9-M Chipset	11-5
ACP-Q45DV2	Intel® Core™ 2 Quad/ Core™ 2 Duo ATX Motherboard with Intel® Q45 + ICH10DO Chipset	11-6





Features

- ☞ Onboard Intel® Pineview-D D525 CPU
- ☞ Intel® ICH9-R Chipset
- ☞ One 204-pin SODIMM Socket Supports Up to 4GB Dual-channel DDR3 800MHz SDRAM
- ☞ Integrated Intel® Gen3.5 + GFX Render Core 400MHz (Pineview-D)
- ☞ VGA, Single-channel 18-bit LVDS (Optional)
- ☞ Dual Intel® 82583V Gigabit Ethernet
- ☞ 1 CF, 1 Mini PCIe, 1 PCIe1
- ☞ 5 SATA/ SATA II, 1 eSATA, 2 COM, 8 USB 2.0, 16-bit GPIO
- ☞ RAID 0, 1, 5, 10



Specifications

System

• CPU	Onboard Intel® Pineview-D D525
• BIOS	AMI EFI 8Mbit SPI BIOS
• System Chipset	Intel® ICH9-R
• I/O Chip	Winbond 83627DHG
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB Dual-channel DDR3 800MHz SDRAM
• SSD	One Compact Flash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255sec/min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Cooling Fan Status with Auto Throttling Control
• Expansion	1 Mini PCIe with SIM Card Socket, 1 PCIe1
• S3/ S4	Yes (S1/ S3/ S4/ S5)
• Smart Fan Control	Yes

Display

• Chipset	Integrated Intel® Gen3.5 + GFX Render Core 400MHz (Pineview-D)
• Display Memory	Intel® DVM T 3.0 Supports Up to 224MB Frame Buffer Using System Memory
• Resolution	VGA Mode : Up to 2048 x 1536 @ 60Hz (PNV D525)
• Dual Display	VGA + LVDS (Optional Function)
• VGA	1 External Port
• LVDS	Single-channel 18-bit LVDS (Optional) Max. 1366 x 768

Audio

• AC97 Codec	Realtek ALC892
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1	Intel® 82583V Gigabit Ethernet
• LAN 2	Intel® 82583V Gigabit Ethernet

Rear Panel I/O Port

- Rear Panel I/O Port 1 x PS/2 KB/MS, 1 x RS-232, 1 x VGA, 2 x RJ-45 Port, 4 USB 2.0, 1 x eSATA

Internal Panel I/O Port

- Internal Panel I/O Port 1 x Mini PCIe, 2 x USB (Additional 4 USB Ports), 1 x CPU Fan Connector, 1 x Chassis Fan Connector, 1 x LVDS Connector (Optional), 1 x Backlight Connector (Optional), 5 x SATA Connector, 1 x IDE Connector (44-pin Type), 1 x CF Connector, 1 x Front Panel Header, 1 x Front Audio, 1 x RS-232 Pin Header, 1 x 16-bit DIO Connector (8-in/ 8-out)

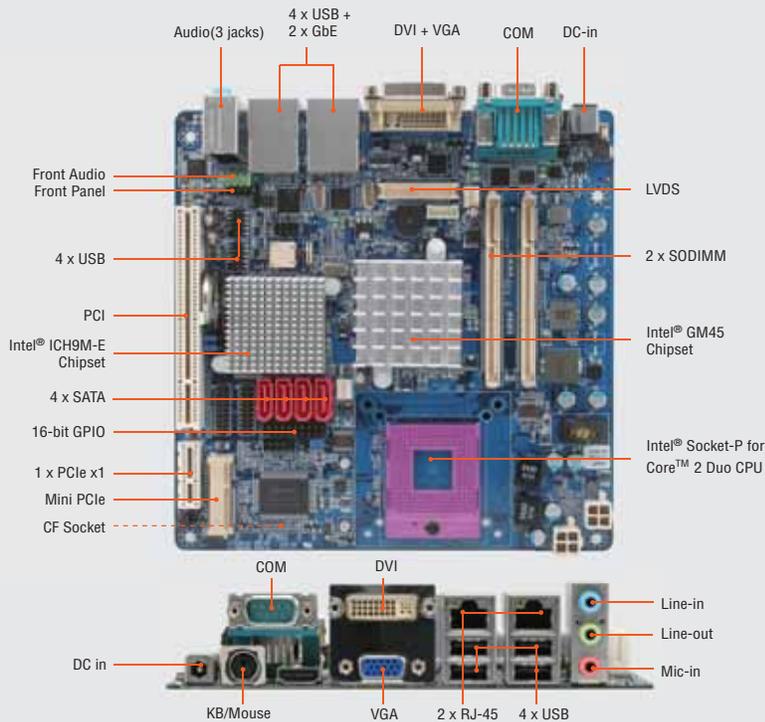
Mechanical & Environmental

• Power Requirement	ATX (+12V, +5V, +3.3V, 5VSB); DC-in (+12V ~ 24V)
• ACPI	APMI 1.2, Support ACPI
• Power Type	ATX 20-pin with Standby/ DC-in (4-pin Connector)
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

• ACP-PNV-DV-A1R

Intel® Atom™ PNV-D Mini ITX Motherboard with Intel® ICH9-R Chipset and VGA, 2 GbE, Mini PCIe, PCIe1, CF, 5 SATA/ SATA II, eSATA, 8 USB, 2 COM, 16-bit GPIO



Features

- Intel® Socket-P Supports Core™ 2 Duo Mobile CPU with 45nm Process Technology
- Intel® GM45/ ICH9M-E Chipset
- Two 200-pin SODIMMs Sockets Up to 8GB Dual Channel DDR2 800MHz SDRAM
- Intel® Graphics Accelerator 4500MHD
- Dual Display: VGA/ DVI/ LVDS
- Realtek ALC888 5.1 + 2-CH Audio Streams, 6W x 2-CH Amplifier
- Intel® 82567LM Gigabit Ethernet, Intel® 82574L PCI-E Gigabit Ethernet
- 1 Mini PCIe, 1 PCIe x1, 1 CF, 1 PCI 2.3, 5 COM, 8 USB 2.0, 4 SATA II, 16-bit GPIO
- +19 ~ 24V DC Input
- TPM 1.2, iAMT 4.0

Intel® GM45	Dual Display	5.1+2-CH Audio	6W Amplifier	2GbE
Mini PCIe	PCIex1	PCI	CF	5 COM
8 USB	4 SATA II	16-bit GPIO	TPM	iAMT4.0

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® Socket-P Supports Core™ 2 Duo Mobile CPU with 45nm Process Technology
• FSB	667/ 800/ 1066MHz
• BIOS	AMI 4MB BIOS
• System Chipset	Intel® 82GM45/ 828011EM (ICH9M-E)
• I/O Chip	Winbond W83627DHG-A
• System Memory	Two 200-pin SODIMM Sockets Support Up to 8GB Dual Channel DDR2 800MHz SDRAM
• SSD	One Compact Flash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255sec/min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Cooling Fan Status with Auto Throttling Control
• Expansion	1 Mini PCIe, 1 PCIe x1, 1 PCI 2.3
• S1/ S2/ S3	Yes
• Smart Fan Control	Yes QST

Display

• Chipset	Intel® GM45 Integrated Graphics Media Accelerator 4500MHD
• Display Memory	Intel® DVMT 5.0
• Resolution	2048 x 1536 @ 75MHz
• Dual Display	VGA + HDMI, LVDS + HDMI, VGA + DVI, LVDS + DVI, VGA + LVDS
• VGA	1 External Port
• LVDS	Dual-channel 18/ 24-bit LVDS
• DVI Chips	Chrontel CH7318C DVI Transmitter
• HDMI	1 x External Port (HDMI 1.3)

Audio

• AC97 Codec	Realtek ALC888 5.1+2-CH Audio Streams, 6W x 2-CH Amplifier
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1	Intel® 82567LM Gigabit Ethernet
• LAN 2	Intel® 82574L PCI-E Gigabit Ethernet

Rear Panel I/O Port

• Rear Panel I/O Port	1 x PS/2 Keyboard+Mouse (Through Y-Cable) 1 x RS-232 with 5V/ 12V Power 1 x VGA, 1 x DVI, 1 x HDMI, 4 x USB 2.0/1.1 2 x RJ-45 Port, Audio I/O (3 Jacks), 1 x DC-in
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Internal Panel I/O Port

• Internal Panel I/O Port	2 x USB Connectors Support Additional 4 USB Ports 4 x COM Port Header(No Box), 2 with 5V/ 12V Power 4 x SATA Connectors, 1 x Audio Amplifier Connector 1 x Front Audio, 1 x Front Panel, 1 x SPDIF_out 1 x LVDS Connector, 1 x Inverter Power Connector 1 x CPU Fan Connector, 1 x System Fan Connector 1 x 16-bit GPIO
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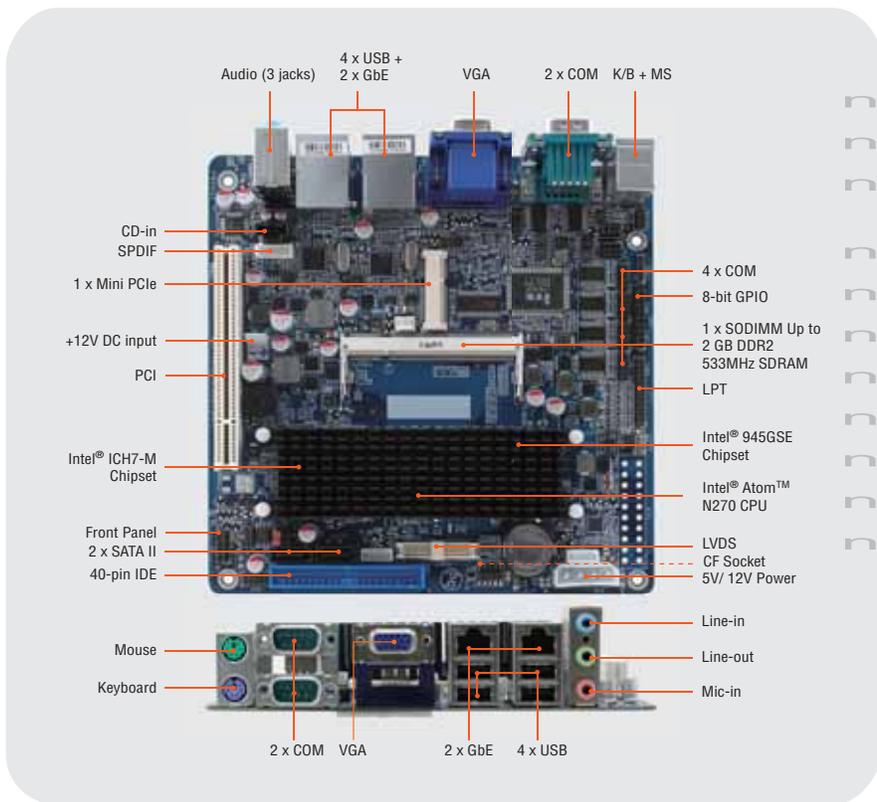
Mechanical & Environmental

• Power Type	+19V ~ 24V DC-in
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)

Ordering Information

• ACP-GM45DS-A1R

Intel® Core™ 2 Duo Mini ITX Digital Signage Board with Intel® GM45 + ICH9M-E Chipset and VGA, DVI, HDMI, LVDS, 5.1+2-CH Audio, 6W Amplifier, 2 GbE, Mini PCIe, PCIe x1, PCI, CF, 8 USB, 4 SATA, 5 COM, 16-bit GPIO



Features

- Intel® Atom™ N270 1.6GHz CPU
- Intel® 945GSE/ ICH7-M Chipset
- One 200-pin SODIMM Socket Up to 2GB DDR2 533MHz SDRAM
- Intel® Graphics Media Accelerator 950
- VGA, LVDS
- Realtek ALC888 5.1-CH HD Audio Streams
- Dual Intel® 82574L Gigabit Ethernet
- 1 Mini PCIe, 1 CF, 1 PCI, 1 LPT
- 6 COM, 6 USB, 2 SATA II, 8-bit GPIO
- Fanless Operation
- +12V DC Input

Intel® 945GSE	Dual Display	5.1-CH Audio	2 GbE	VGA
2-CH LVDS	Mini PCIe	PCI	CF	6 COM
6 USB	2 SATA II	8-bit GPIO	Fanless	+12V DC

Specifications

System

• CPU	Onboard Intel® Atom™ N270 1.6GHz CPU
• FSB	533MHz
• BIOS	Award 512KB SPI BIOS
• System Chipset	Intel® 82945GSE/ 82801GBM (ICH7-M)
• I/O Chip	Winbond W83627DHG-A
• System Memory	One 200-pin SODIMM Socket Supports Up to 2GB DDR2 533MHz SDRAM
• SSD	One Compact Flash Type I/II Socket
• Watchdog Timer	Reset: 1sec. ~ 255sec/min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring CPU Temperature, Voltage and Cooling Fan Status with Auto Throttling Control
• Expansion	1 Mini PCIe, 1 PCI
• Smart Fan Control	Yes (1 x Fan Connector)

Display

• Chipset	Intel® 945GSE Integrated Graphics Media Accelerator 950
• Display Memory	Intel® DVMT 3.0 Supports Up to 224MB Shared Video Memory
• Resolution	2048 x 1536 @ 75MHz
• Dual Display	VGA + LVDS
• VGA	1 External Port
• LVDS	Dual-channel 18-bit LVDS

Audio

• AC97 Codec	Realtek ALC888 Supports 5.1-CH Audio Streams
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1/2	Intel® 82574L Gigabit Ethernet
• LAN 2	Intel® 82574L Gigabit Ethernet

Rear Panel I/O Port

- Rear Panel I/O Port 1 x PS/2 Keyboard, 1 x PS/2 Mouse, 2 x RS-232 1 x VGA Port, 4 x USB 2.0, 2 x RJ-45 Port 5.1-CH Audio I/O (3 Jacks)

Internal Panel I/O Port

- Internal Panel I/O Port 1 x USB Connector Support Additional 2 USB Ports 1 x IDE Connector, 2 x SATA Connectors 1 x 4 Pins 5V/ 12V Power Connector 1 x 2 Pins +12V DC-in Power Connector 1 x SPDIF-out Header, 1 x Chassis FAN Connector 1 x LVDS Connector, 1 x Inverter Connector 2 x USB Header, 1 x GPIO Header

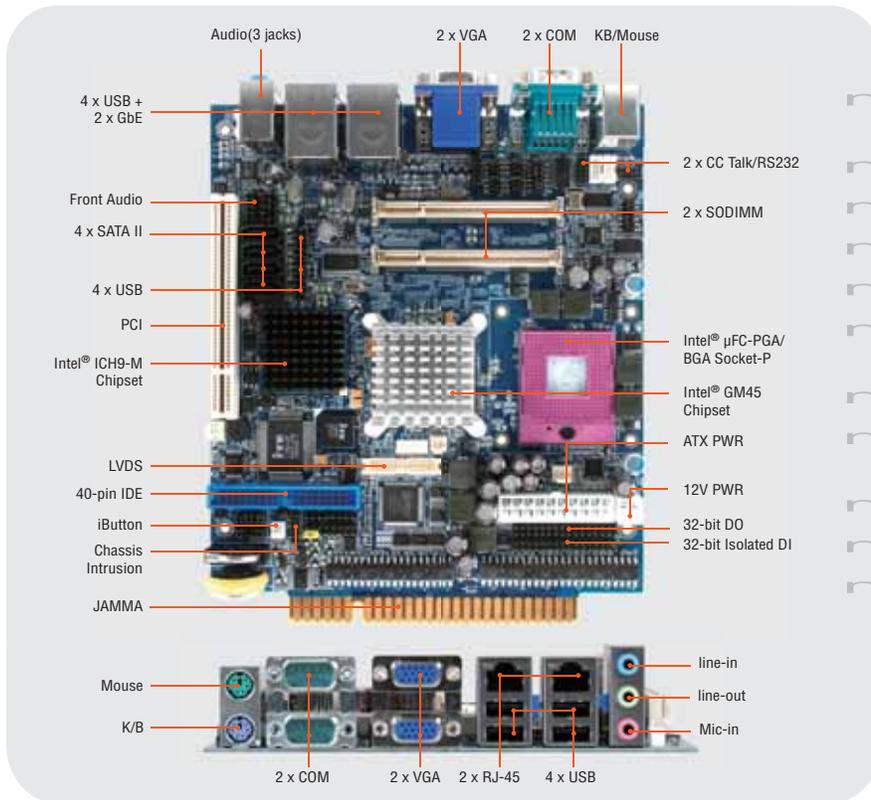
Mechanical & Environmental

• Power Requirement	+12V DC Input
• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	6.69" x 6.69" (170mm x 170mm)
• Weight	0.88lbs (0.4Kg)

Ordering Information

• ACP-945GDS-A1R

Intel® Atom™ N270 Mini ITX Motherboard with Intel® 945GSE + ICH7-M Chipset and VGA, 2 x 18-bit LVDS, 5.1-CH Audio, Dual GbE, Mini PCIe, PCI, CF, 6 USB, 2 SATA, 6 COM, 8-bit GPIO



Features

- Supports 45nm Intel® µFC-PGA/ BGA Socket-P Core™ 2 Duo CPU
- Intel® GM45/ ICH9-M Chipset
- Two SODIMMs Up to 8GB DDR2 667/ 800 SDRAM
- Intel® Graphics Accelerator 4500MHD
- Dual View, 2-CH LVDS, Dual VGA
- Realtek ALC888 7.1+2-CH Audio Streams, 6W Amplifier
- Dual Atheros Gigabit Ethernet
- 1 CF, 1 PCI 2.3, 8 USB, 4 SATA II, 3 COM, 2 CC Talk
- 32-bit Isolated DI, 32-bit Darlington DO
- 1 x 1MB Battery Backup SRAM
- JAMMA Interface

Intel® GM45	Dual View	Dual VGA	7.1+2-CH Audio	6W Amplifier
2 GbE	8 USB	4 SATA II	3 COM	32-bit DI 32-bit DO
iButton	RNG	2 CC Talk	JAMMA	

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

CPU	Supports 45nm Intel® µFC-PGA/ BGA Socket-P Core™ 2 Duo CPU (Penryn)
FSB	667/ 800/ 1066MHz
BIOS	Award 2MB SPI Flash ROM
System Chipset	Intel® 82GM45/ 828011BM (ICH9-M)
I/O Chip	Winbond W83627DHG
System Memory	Two 200-pin SODIMM Sockets Support Up to 8GB DDR2 667/ 800 SDRAM
SSD	One CompactFlash Type I/II Socket
Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
Expansion	One PCI Slot (PCI Rev. 2.3 Compliant)
SRAM	1 x 1MB Battery Backup SRAM; Optional Up to 4MB
RTC	2 Sets
Battery	Rechargeable LIR2477 mA/hr, 1 for System, 1 for MCU, SRAM, RNG, Timer, RTC, iButton

I/O

MIO	1 x IDE, 4 x SATA II, 1 x RS-232/ 422/ 485, 2 x RS-232, 2 x RS232/ CC Talk, 1 x K/B, 1 x Mouse
USB	8 x USB 2.0 (4 Edge, 4 Pin-header)
DI	32-bit Isolation Input (ESD Protected)
DO	32-bit Darlington Output (High Current)
Gaming IO	JAMMA Interface
Timer	4 x 16-bit Interruptible Timer

Display

Chipset	Intel® GM45 Integrated Graphic Media Accelerator 4500MHD
Display Memory	Intel® DVMT 5.0
Dual Display	CRT + LVDS, CRT + CRT
LVDS	2-CH 18/24-bit LVDS
VGA Chip	Chrontel CH7317A-TF (SDVO)
VGA Ports	Dual VGA External Ports

Audio

Audio Chip	Intel® ICH9-M Integrated
AC97 Codec	Realtek ALC888 Supports 7.1+2-CH Independent Audio Streams
Audio Amplifier	TPA3005D2 6W (Per Front Channel) Stereo Amplifier

Security

EEPROM	64KB for Storage of Serial Numbers
Security Chip	Microchip HCS300 KEELOQ® Code Hopping Encoder
iButton	Bi-Directional, Programmable GPIO Header for iButton (Dallas 1-Wired Interface)
Data Security	Hardware Random Number Generator (RNG)
Intrusion Detection	One Intrusion Detection line for Logger with Date/ Time/ Events

Ethernet

LAN 1	Atheros AR8121 Gigabit Ethernet, Supports Wake on LAN
LAN 2	Atheros AR8121 Gigabit Ethernet, Supports Wake on LAN
Ethernet Interface	10/100/1000 Base-Tx Gigabit Ethernet Compatible

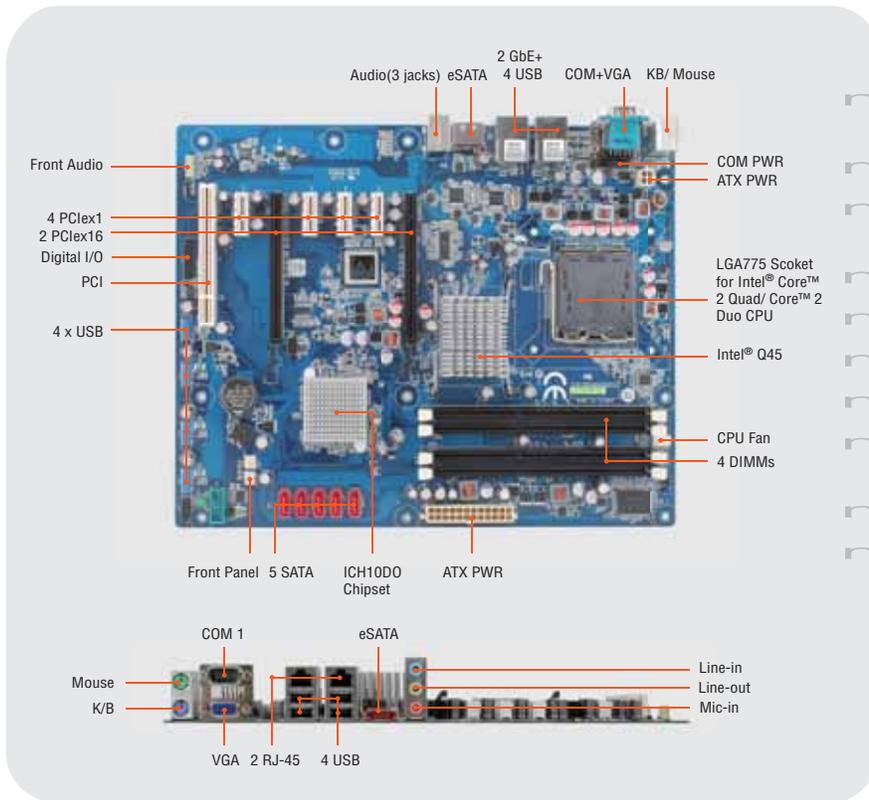
Mechanical & Environmental

Power Requirement	+12V/ +5V (ATX :+12V, +5V, +5VSB)
Power Type	ATX/ AT
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
Size (L x W)	6.7" x 7.9" (170mm x 200mm)
Weight	0.88lbs (0.4Kg)

Ordering Information

• ACP-GM45-A1R

Intel® Core™ 2 Duo Mini ITX Gaming Board with Intel® GM45 + ICH9-M Chipset and Dual VGA, 2-CH LVDS, 7.1+2-CH Audio, 6W Amplifier, Dual GbE, CF, PCI, 8 USB, 4 SATA, COM, 32-bit DI, 32-bit DO, 2 CC Talk, 1 MB Battery Backup SRAM, JAMMA



Features

- Intel® LGA775 Socket for Intel® Core™ 2 Quad/ Core™ 2 Duo CPU
- Intel® Q45/ ICH10DO Chipset
- 4 DIMMs Up to 8GB DDR3 800/ 1066/ 1333 Memory, Non-ECC
- Intel® Graphics Media Accelerator 4500
- 7.1+2-CH HD Audio
- Dual Realtek RTL8111SC Gigabit Ethernet
- 2 PClex16, 4 PClex1, 1 PCI
- 2 COM, 12 USB, 5 SATA/ SATA II, 1 eSATA, 16-bit DIO
- Power Fail-Auto on
- RAID 0, 1, 5, 10

Intel® Q45	Intel® GMA 4500	7.1+2-CH Audio	2 GbE	2 PClex16
4 PClex1	PCI	12 USB	5 SATA	eSATA
16-bit DIO	RAID			

Specifications

System

• CPU	LGA775 Socket for Intel® Core™ 2 Quad/ Core™ 2 Duo Processor with 45nm Process Technology
• FSB	1333/ 1066/ 800MHz
• BIOS	AMI 4MB BIOS
• System Chipset	Intel® 82Q45/ 82801JO (ICH10DO)
• I/O Chip	Winbond W83627DHG-A
• System Memory	Four 240-pin DIMMs Support Up to 8GB DDR3 800/ 1066/ 1333 SDRAM
• Watchdog Timer	Reset: 1sec. ~ 255min. and 1sec. or 1min./step
• H/W Status Monitor	Monitoring Temperatures, Voltages and Cooling Fan Status with Auto Throttling Control
• Expansion	2 x PClex16 (IDT 24LAN Switch), 4 x PClex1, 1 x PCI
• S3/ S4	Yes
• TPM	Integrated iTPM 1.2 (Optional)
• RAID	RAID 0, 1, 5, 10
• Wake up LAN or Ring	LAN (PXE/ RPL)
• Smart Fan Control	Yes

Display

• Chipset	Intel® Q45 Integrated Graphics Media Accelerator 4500
• Display Memory	Intel® DVM T 4.0 Supports Up to 284MB Shared Video Memory
• Max. 3D Resolution	2048 x 1536 @ 32bpp (75Hz)
• VGA	External Port

Audio

• Audio Codec	Realtek ALC888, 7.1+2 Independent Streaming
• Audio Interface	Mic-in, Line-in, Line-out

Ethernet

• LAN 1	Realtek RTL8111SC Gigabit Ethernet
• LAN 2	Realtek RTL8111SC Gigabit Ethernet

Rear Panel I/O Port

• Rear Panel I/O Port	1 x PS/2 Keyboard, 1 x PS/2 Mouse, 1 x VGA Port 1 x COM Port, 2 x RJ-45 Port, 4 x USB 2.0/ 1.1 1 x eSATA, Audio Jack (3 Ports)
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Internal Panel I/O Port

• Internal Panel I/O Port	4 x USB Connectors Support Additional 8 USB Ports (with 5V Dual), 5 x SATA II Connectors 1 x COM Header, 1 x CPU Fan Connector 1 x Chassis Fan Connector, 1 x Power Fan Connector 1 x Front Panel Header, 1 x Chassis Intrusion Header 1 x 24-pin ATX Power Connector 1 x 4-pin ATX 12V Power Connector 1 x 16-bit DIO
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Mechanical & Environmental

• Power Type	ATX
• Operating Temperature	0 ~ 60°C (32 ~ 140°F)
• Storage Temperature	-40 ~ 75°C (-40 ~ 167°F)
• Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
• Size (L x W)	12" x 9.6" (304.8mm x 243.84mm)
• Weight	1.32lbs (0.6Kg)

Ordering Information

• ACP-Q45DV2-A1R

Intel® Core™ 2 Quad ATX Motherboard with Intel® Q45 + ICH10DO Chipset and VGA, Audio, 2 GbE, 2 COM, 12 USB, 5 SATA, 1 eSATA, 2 PClex16, 4 PClex1, 1 PCI, 16-bit GPIO, TPM w/ SATA Cable, IDE Cable, Bracket, CD Driver

12 Rack Mount System

Rack Mount System

BAX-R4U7	4U Rack Mount System	12-2
BMX-R4U6	4U Rack Mount System	12-3
BMX-R2U7	2U Rack Mount System	12-4
BMX-R2U6	2U Rack Mount System	12-5
BMX-R1U6	1U Rack Mount System	12-6





Features

- ☞ Intel® Socket H2 LGA1155 Supports 2nd Gen Intel® Core™ i7, i5, i3 Processors
- ☞ Intel® Q67 Chipset
- ☞ 4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM Support Up to 16GB
- ☞ Great Scalability with One 3.5" and Two 5.25" Front-accessible Drive Bays
- ☞ 2 Front and 4 Rear USB 2.0 Ports
- ☞ Supports 1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 1 x PCI Expansion Slot
- ☞ Support RAID 0, 1, 5, 10

4U	Intel® Q67	DDR3	6 USB	PCIe16
PCIe4	PCIe1	PCI	RAID	

Specifications

System

• CPU	Intel® Socket H2 LGA1155 Supports 2nd Gen Intel® Core™ i7, i5, i3 Processors
• System Chipset	Intel® Q67 Chipset
• System Memory	4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM Support Up to 16GB
• Storage	6 x 3.5" HDD/ SSD Drive Bay 2 x 5.25" ODD Drive Bay 1 x FDD Drive Bay

I/O

• Display	1 x VGA, 1 x Display Port and 1 x HDMI
• Ethernet	LAN 1-Intel® 82579LM/V Gigabit Ethernet LAN 2-Intel® 82583V Gigabit Ethernet
• USB	6 x USB 2.0 (4 x Rear; 2 x Front)
• Serial Port	1 x 9-pin COM port
• Expansion Slot	1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 1 x PCI (Low Profile)
• Audio	1 x Audio Jack with Mic-in, Line-in, Line-out
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Mechanical & Environmental

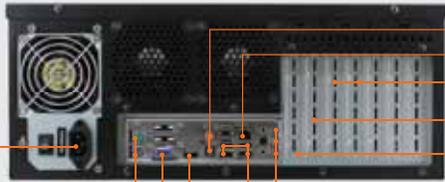
• Power Supply	350W ATX P/S2 Power Supply
• AC Input Range	90 ~ 264 Vac Full Range AC Input
• AC Input Current	6A (RMS)
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C Non-condensing
• Dimensions	450mm x 427mm x 177mm (D x W x H)
• Weight	13KG (Net)/ 15.25KG (Gross)

Ordering Information

- **BAX-R4U7-A1R**
4U Rack Mount System with ERX-Q67-A1R Motherboard
- **ACC-CPU-3.1G-2400**
Intel® Core™ i5-2400 Processor for BAX-R4U7-A1R
- **ACC-FAN-826R**
CPU Cooler for LGA1155/ 1156 77 x 77 x 20mm



2 USB



Built-in 350W PSU

Mouse & Keyboard
COM
HDMI
4 USB
Audio

S/PDIF (Coaxial)
S/PDIF (Optical)
GbE
2 Expansion
PCI Slots
Expansion
PClex1 Slot
Expansion
PClex16 Slot

Features

- Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775 CPU
- Intel® G41 Express Chipset
- 2 x 1066/ 800MHz DDR3 Non-ECC Un-Buffered Memory Support Up to 4GB
- VGA and HDMI Dual Display
- Great Scalability with One 3.5" and Two 5.25" Front-accessible Drive Bays
- 1 Front and 4 Rear USB 2.0 Ports
- Supports 1 x PClex16, 1 x PClex1, 2 x 32-bit PCI Expansion Slot

4U

Intel® G41

DDR3

VGA

HDMI

5 USB

PClex16

PClex1

2 PCI

- 1 Embedded System
- 2 Seven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775
• System Chipset	Intel® G41 Chipset
• System Memory	Up to 4GB DDR3 1066/ 800 Non-ECC Un-Buffered DIMM/ 4 DRAM Sockets
• Storage	4 x 3.5" HDD/ SSD Drive Bay 2 x 5.25" ODD Drive Bay 1 x FDD Drive Bay

I/O

• Display	VGA + HDMI Dual Display
• Ethernet	1 x Realtek 8111C Gigabit Ethernet
• USB	5 x USB 2.0 (4 x Rear; 1 x Front)
• Serial Port	1 x PClex16, 1 x PClex1, 2 x 32-bit PCI Expansion Slot
• Expansion Slot	6 x High Definition 7.1-CH Audio 1 x Optical S/PDIF Digital Output 1 x Coaxial S/PDIF digital output
• Audio	1 x Audio Jack with Mic-in, Line-in, Line-out
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Mechanical & Environmental

• Power Supply	350W ATX P/S2 Power Supply
• AC Input Range	90 ~ 264 Vac Full Range AC Input
• AC Input Current	6A (RMS)
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C Non-condensing
• Dimensions	450mm x 427mm x 177mm (D x W x H)
• Weight	13KG (Net)/ 15.25KG (Gross)

Ordering Information

- **BAX-R4U6-A1R**
4U Rack Mount System with ERX-G41S-A1R Motherboard
- **ACC-CPU-2.66-Q9400**
Intel® Core™ 2 Quad Processor Q9400 for BAX-R4U6-A1R
- **ACC-CPU-2.60-E5300**
Intel® Pentium® Processor E5300 for BAX-R4U6-A1R
- **ACC-FAN-825R**
CPU Cooler for LGA775/ 77 x 77 x 20mm



Features

- ☞ Intel® Socket H2 LGA1155 Supports 2nd Gen Intel® Core™ i7, i5, i3 Processors
- ☞ Intel® Q67 Chipset
- ☞ 4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM Support Up to 16GB
- ☞ Great Scalability with One 3.5" and Two 5.25" Front-accessible Drive Bays
- ☞ 1 Front and 4 Rear USB 2.0 Ports
- ☞ Supports 1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 1 x PCI Expansion Slot (Low Profile)
- ☞ Support RAID 0, 1, 5, 10

2U	Intel® Q67	DDR3	5 USB	PCIe16
PCIe4	PCIe1	PCI	RAID	

Specifications

System

• CPU	Intel® Socket H2 LGA1155 Supports 2nd Gen Intel® Core™ i7, i5, i3 Processors
• System Chipset	Intel® Q67 Chipset
• System Memory	4 x Dual Channel DDR3 800, 1066, 1333, and 1600 Non-ECC UDIMM Support Up to 16GB
• Storage	6 x 3.5" HDD/SSD Drive Bay 2 x 5.25" ODD Drive Bay 1 x FDD Drive Bay

I/O

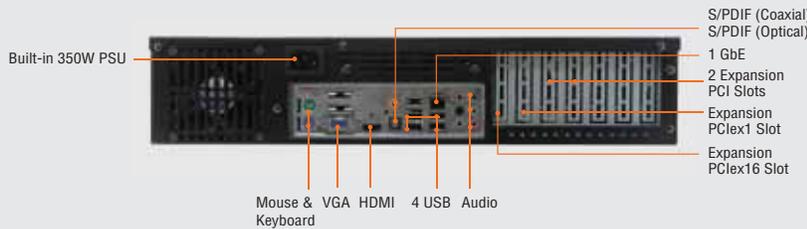
• Display	1 x VGA, 1 x Display Port and 1 x HDMI
• Ethernet	LAN 1-Intel® 82579LM/V Gigabit Ethernet LAN 2-Intel® 82583V Gigabit Ethernet
• USB	5 x USB 2.0 (4 x Rear; 1 x Front)
• Serial Port	1 x 9-pin COM port
• Expansion Slot	1 x PCIe16, 1 x PCIe4, 1 x PCIe1, 1 x PCI (Low Profile)
• Audio	1 x Audio Jack with Mic-in, Line-in, Line-out
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Mechanical & Environmental

• Power Supply	350W ATX P/S2 Power Supply
• AC Input Range	90 ~ 264 Vac Full Range AC Input
• AC Input Current	6A (RMS)
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C Non-condensing
• Dimensions	530mm x 427mm x 88mm (D x W x H)
• Weight	9.5KG (Net)/ 12.25KG (Gross)

Ordering Information

- **BAX-R2U7-A1R**
2U Rack Mount System with ERX-Q67-A1R Motherboard
- **ACC-CPU-3.1G-2400**
Intel® Core™ i5-2400 Processor for BAX-R2U7-A1R
- **ACC-FAN-826R**
CPU Cooler for LGA1155/ 1156 77 x 77 x 20mm



Features

- Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775 CPU
- Intel® G41 Express Chipset
- 2 x 1066/ 800MHz DDR3 Non-ECC Un-Buffered Memory Support Up to 4GB
- VGA and HDMI Dual Display
- Great Scalability with One 3.5" and Two 5.25" Front-accessible Drive Bays
- 1 Front and 4 Rear USB 2.0 Ports
- Supports 1 x PCIe16, 1 x PCIe1, 2 x 32-bit PCI Expansion Slot

2U	Intel® G41	DDR3	VGA	HDMI
5 USB	PCIe16	PCIe1	2 PCI	

- 1 Embedded System
- 2 Seven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index

Specifications

System

• CPU	Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775
• System Chipset	Intel® G41 Chipset
• System Memory	Up to 4GB DDR3 1066/ 800 Non-ECC Un-Buffered DIMM/ 4 DRAM Sockets
• Storage	4 x 3.5" HDD/ SSD Drive Bay 2 x 5.25" ODD Drive Bay 1 x FDD Drive Bay

I/O

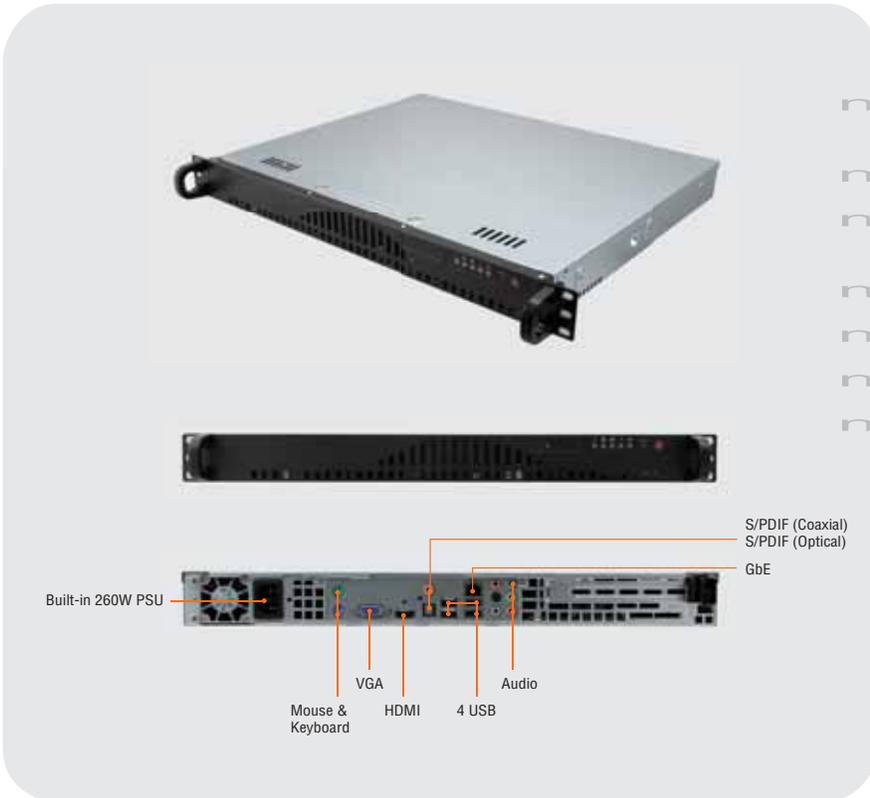
• Display	VGA + HDMI Dual Display
• Ethernet	1 x Realtek 8111C Gigabit Ethernet
• USB	5 x USB 2.0 (4 x Rear; 1 x Front)
• Serial Port	1 x PCIe16, 1 x PCIe1, 2 x 32-bit PCI Expansion Slot
• Expansion Slot	6 x High Definition 7.1-CH Audio 1 x Optical S/PDIF Digital Output 1 x Coaxial S/PDIF digital output
• Audio	1 x Audio Jack with Mic-in, Line-in, Line-out
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Mechanical & Environmental

• Power Supply	350W ATX P/S2 Power Supply
• AC Input Range	90 ~ 264 Vac Full Range AC Input
• AC Input Current	6A (RMS)
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C Non-condensing
• Dimensions	530mm x 427mm x 88mm (D x W x H)
• Weight	9.5KG (Net)/ 12.25KG (Gross)

Ordering Information

- **BAX-R2U6-A1R**
2U Rack Mount System with ERX-G41S-A1R Motherboard
- **ACC-CPU-2.66-Q9400**
Intel® Core™ 2 Quad Processor Q9400 for BAX-R2U6-A1R
- **ACC-CPU-2.60-E5300**
Intel® Pentium® Processor E5300 for BAX-R2U6-A1R
- **ACC-FAN-824R**
CPU Cooler for LGA775/ 77 x 77 x 20mm



Features

- ☞ Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775 CPU
- ☞ Intel® G41 Express Chipset
- ☞ 2 x 1066/ 800MHz DDR3 Non-ECC Un-Buffered Memory Support Up to 4GB
- ☞ VGA and HDMI Dual Display
- ☞ 2 x 3.5" SSD/ HDD Drive Bay
- ☞ 1 x 10cm System Blower Fan
- ☞ 260W Power Supply

1U

Intel® G41

DDR3

VGA

HDMI

3.5" SSD /HDD

260W PSU

Specifications

System

• CPU	Intel® C2Q, C2D, Pentium®/ Celeron® Dual-Core in LGA775
• System Chipset	Intel® G41/ ICH7 Chipset
• System Memory	Up to 4GB DDR3 1066/ 800 Non-ECC Un-Buffered DIMM/ 4 DRAM Sockets
• Storage	2 x 3.5" Drive Bay for HDD/ SSD

I/O

• Display	VGA + HDMI Dual Display
• Ethernet	1 x Realtek 8111C Gigabit Ethernet
• USB	4 x Rear USB 2.0 Port
• Audio	6 x High Definition 7.1-CH Audio 1 x Optical S/PDIF Digital Output 1 x Coaxial S/PDIF Digital Output
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Mechanical & Environmental

• Power Supply	260W 1U Flex ATX Power Supply
• AC Voltage	100 ~ 240V, 60 ~ 50Hz, 4 Amp Max
• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C Non-condensing
• Dimensions	356mm x 426mm x 43mm (D x W x H)
• Weight	7.0KG (Net)/ 9.5KG (Gross)

Ordering Information

- **BAX-R1U6-A1R**
1U Rack Mount System with ERX-G41S-A1R Motherboard
- **ACC-CPU-2.66-Q9400**
Intel® Core™ 2 Quad Processor Q9400 for BAX-R1U6-A1R
- **ACC-CPU-2.60-E5300**
Intel® Pentium® Processor E5300 for BAX-R1U6-A1R
- **ACC-FAN-824R**
1U Blower Type CPU Cooler for LGA775/ 80 x 80 x 15mm

13 Mini ITX System

Mini ITX System Series

BMX-P50	Mini ITX Barebone	13-2
BMX-P10	Mini ITX Barebone	13-3
BMX-T50A	Mini ITX Barebone	13-4





Features

- ☞ Intel® Mobile Core™ i7/ i5/ i3/ Celeron® CPU
- ☞ Intel® QM67 Chipset
- ☞ Two 204-pin Dual-channel DDR3 1333/ 1066 Non-ECC SODIMM, Up to 16GB
- ☞ Intel® GMA HD 2000/ 3000 Supports DirectX 10.1
- ☞ VGA, Display Port and HDMI (Dual Display Supported)
- ☞ Realtek ALC892 Supports 5.1-CH HD Audio
- ☞ Dual Gigabit Ethernet
- ☞ 2 COM, 6 USB 2.0
- ☞ One Expansion Slot for PClex4
- ☞ RAID 0, 1, 5, 10

Scalable Mini ITX	Intel® QM67	HDMI	5.1-CH Audio	2 GbE
PClex4	2 COM	6 USB	RAID	

Specifications

System

• CPU	Intel® Mobile Core™ i7/ i5/ i3/ Celeron® CPU
• System Chipset	Intel® QM67 Chipset
• System Memory	Two 204-pin Dual-channel DDR3 1333/ 1066 Non-ECC SODIMM, Up to 16GB
• Storage	1 x 3.5" and 2.5" SSD/HDD Drive Bay 1 x CFast Card Connector (Internal)

I/O Port

• Display	VGA, Display Port and HDMI (Dual Display Supported)
• Ethernet	LAN1-Intel® 82579LM Gigabit Ethernet LAN2-Intel® 82583V Gigabit Ethernet
• USB	6 USB 2.0 (4 x Rear; 2 x Front)
• Audio	Mic-in, Line-in, Line-out AC97 Codec Realtek ALC892, 5.1-CH HD Audio
• Mouse/ Keyboard	1 x Key Board; 1 x Mouse

Power Requirement

• Power Supply	DC Open Frame 120W + AC Adapter 120W
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Mechanical & Environmental

• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C (104°F), Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C (104°F), Non-condensing
• Dimensions (W x H x D)	273mm x 300mm x 65mm
• Weight	4.0Kgs (Net)/ 4.5Kgs (Gross)

Ordering Information

- **BMX-P507-A1R**
Mini-IPC with EMX-QM67-A1R Motherboard
- **ACC-CPU-2.1-2710QE**
Core™ i7 2710QE/ 6M/ 2.1G/ 45W
- **ACC-CPU-2.5G-2510E**
Core™ i5 2510E W/ 3M/ 2.5G/ 35W



Features

- AMD G-Series T56N 1.6GHz CPU
- AMD A55E Controller Hub Chipset
- One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
- AMD Radeon HD 6310
- Dual View, HDMI, VGA
- Realtek ALC892 Supports 7.1-CH HD Audio
- Dual Gigabit Ethernet
- 6 USB 2.0 and Up to 3 RS-232 Serial ports
- 1 CF Socket, Max. 2 x 2.5" Drive Tray
- RAID 0, 1, 5, 10 Supported

Scalable Mini ITX	AMD A55E	Dual View	HDMI	7.1-CH Audio
2 GbE	3 COM	6 USB	CF	RAID

Specifications

System

• CPU	AMD G-Series T56N 1.6GHz CPU
• System Chipset	AMD A55E Controller Hub Chipset
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
• Storage	2 x 2.5" Drive Tray for HDD/SSD (Option for Second Drive Tray) 1 x CompactFlash Type II Socket

I/O Port

• Display	VGA + HDMI Dual Display 2560 x 1600/ AMD Radeon HD 6310 Chipset
• Ethernet	2 x Dual Atheros AR8121 Gigabit Ethernet, Supports Wake on LAN
• USB	6 USB 2.0 (4 x Rear; 2 x Front)
• Serial Port	2 x RS-232
• Audio	Mic-in, Line-in, Line-out AC97 Codec Realtek ALC892 Supports 7.1-CH HD Audio
• Mouse/ Keyboard	2 x PS/2 for KB/ MS

Power Requirement

• Power Consumption	Max. 70W
• Power Input	84W, 100 ~ 240V Power Adapter
• Color	Black
• Mounting	Optional Wall Mount, VESA Mount

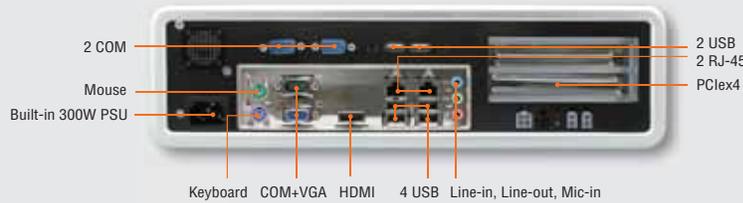
Mechanical & Environmental

• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C (104°F), Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C (104°F), Non-condensing
• Dimensions (W x H x D)	215mm x 230mm x 65mm
• Weight	6.6lbs (3Kgs)

Ordering Information

- **BMX-P10A-A1R**
Mini-IPC with EMX-A55E-T56N-A1R Motherboard

- 1 Embedded System
- 2 Osseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
- 14 Peripherals
- 15 Index



Features

- AMD G-Series T56N 1.6GHz CPU
- AMD A55E Controller Hub Chipset
- One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
- AMD Radeon HD 6310
- Dual View, HDMI, VGA, 18-bit Single-channel LVDS
- Realtek ALC892 Supports 7.1-CH HD Audio
- Dual Gigabit Ethernet
- 3 COM, 6 USB 2.0
- One Expansion Slot for PCIe4

Scalable Mini ITX	AMD A55E	Dual View	HDMI	7.1-CH Audio
2 GbE	3 COM	6 USB	PCIe4	

Specifications

System

• CPU	AMD G-Series T56N 1.6GHz CPU
• System Chipset	AMD A55E Controller Hub Chipset
• System Memory	One 204-pin SODIMM Socket Supports Up to 4GB DDR3 1066 SDRAM
• Storage	2 x 2.5" Drive Tray for HDD/SSD (Option for Second Drive Tray) 1 x CompactFlash Type II Socket

I/O Port

• Display	VGA + HDMI Dual Display 2560 x 1600/ AMD Radeon HD 6310 Chipset
• Ethernet	2 x Dual Atheros AR8121 Gigabit Ethernet, Supports Wake on LAN
• USB	6 USB 2.0 (4 x Rear; 2 x Front)
• Serial Port	3 x RS-232
• Audio	Mic-in, Line-in, Line-out AC97 Codec Realtek ALC892 Supports 7.1-CH HD Audio
• Mouse/ Keyboard	2 x PS/2 for KB/ MS

Power Requirement

• Power Consumption	Max. 250W
• Power Input	100 ~ 240V/ 50 ~ 60Hz Power Supply
• Color	Black

Mechanical & Environmental

• Operating Temperature	0 ~ 40°C (32 ~ 104°F)
• Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
• Operating Humidity	10 ~ 85% @ 40°C (104°F), Non-condensing
• Storage Humidity	10 ~ 95% @ 40°C (104°F), Non-condensing
• Dimensions (W x H x D)	231.5mm x 340mm x 95mm
• Weight	4.0Kgs (Net)/ 4.5Kgs (Gross)

Ordering Information

• BMX-T50A-A1R

Mini ITX Barebone with EMX-A55E-T56N-A1R Motherboard

14 Peripherals

Peripherals

EPM-1520	18/24-bit LVDS Transmitter Module	14-2
EPM-1530	18/24-bit LVDS Receiver Module	14-2
EPM-1522	18/24-bit TTL/ LVDS to DVI Transmitter	14-3
EPM-1560T	Panel-Link Transmitter Module	14-3
EPM-1524	USB to Serial Port Module	14-4
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EPM-1520 EPM-1530

18/24-bit LVDS Transmitter Module 18/24-bit LVDS Receiver Module

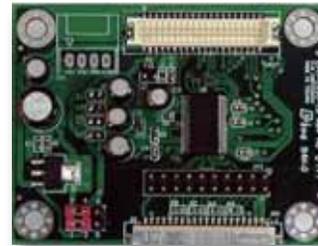
EPM-1520



Features

- Supports 20 to 85 MHz shift clock
- Up to 2.38 Gbps throughput
- Up to 297.5 Mbytes/sec bandwidth
- 345 mV (typ) swing LVDS devices for low EMI
- Compatible with TIA/EIA-644 LVDS standard
- Flat Panel/CRT interface:
 - NS DS90C385 or equivalent transmitter chipset (EPM-1520-24)
 - NS DS90C365 or equivalent transmitter chipset (EPM-1520-18)
 - Supports VGA, SVGA, XGA and single/dual pixel SXVGA display type
- 40-pin DFB-40DP-1.25V (Input)
- Operating temperature: 32 to 140°F (0 to 60°C)
- Size (L x W): 2.6" x 2.0" (65 mm x 50 mm)

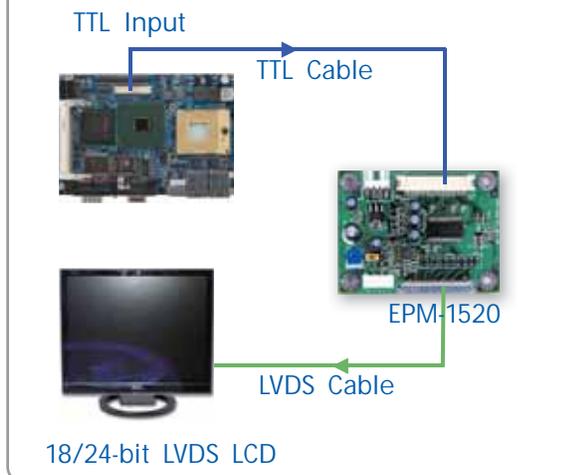
EPM-1530



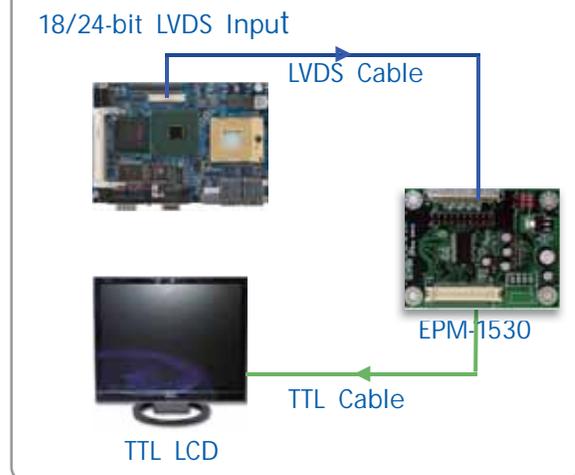
Features

- Supports 20 to 85 MHz shift clock
- Up to 2.38 Gbps throughput
- Up to 297.5 Mbytes/sec bandwidth
- 345 mV (typ) swing LVDS devices for low EMI
- Compatible with TIA/EIA-644 LVDS standard
- Flat Panel/CRT interface:
 - NS DS90C384 or equivalent receiver chipset
 - Supports VGA, SVGA, XGA and single/dual pixel SXVGA display type
- 20-pin HIROSE DF14A-20P-1.25H Connector (Input)
- Operating temperature: 32 to 140°F (0 to 60°C)
- Size (L x W): 2.6" x 2.0" (65 mm x 50 mm)

Diagram



Diagram



Supported Boards

- Avalue boards with 18/24-bit TTL port

Ordering Information

- **EPM-1520-24**
18/24-bit LVDS Transmitter Module

Supported Boards

- Avalue boards with 18/24-bit LVDS port

Ordering Information

- **EPM-1530-24**
18/24-bit LVDS Receiver Module



EPM-1522 EPM-1560T

18/24-bit TTL/ LVDS to DVI Transmitter Panel-Link Transmitter Module

EPM-1522

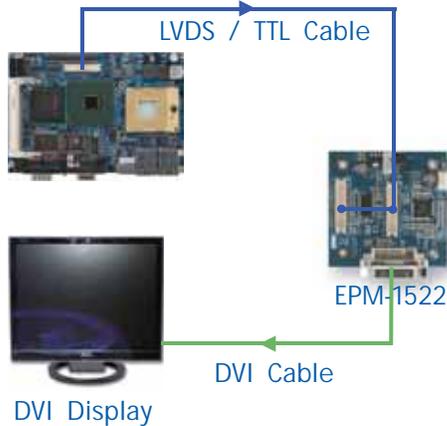


Features

- Supports 18 and 24 bit LVDS to DVI
- Supports 18 bit /24 bit TTL LCD to DVI (Option)
- Standard DVI connector
- Single +5 V power supply
- LCD Connector: Hirose DF13-40DP-1.25V x 2, one for LVDS input, one for TTL input
- Power input connector: Standard mini power connector, pitch 2.54mm (+5V, GND, GND, +12V), can be changed to vertical/horizontal type of connector
- DVI Output: Standard DVI connector
- Operating temperature: 32 to 140°F (0 to 60°C)
- Size (L x W): 2.6" x 2.6" (66mm x 66mm), 4 stand-offs need to be compatible with uPGA 479 cooler stand-off)

Diagram

18/24-bit LVDS Input



Supported Boards

- All Avalue boards

Ordering Information

- **EPM-1522-18**
18-bit TTL/LVDS to DVI transmitter
- **EPM-1522-24**
24-bit TTL/LVDS to DVI transmitter
- **E1963152200R**
DVI bracket for EPM-1522



DVI bracket for EPM-1522

EPM-1560T

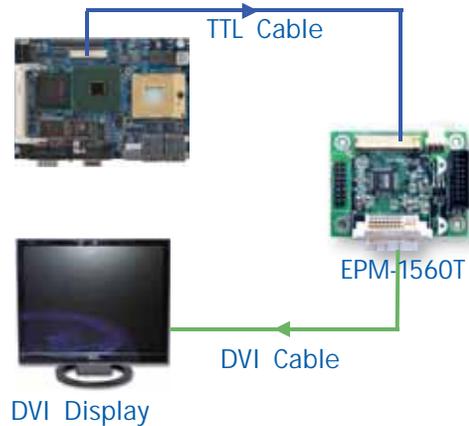


Features

- Scalable Bandwidth: 25 - 165 megapixels/sec (VGA to UXGA)
- Flexible graphics controller interface: 24-bit (1 pixel/clock) mode inputs
- Flexible input clocking:
 - Single clock single edge
 - Single clock dual edge
- Low EMI low voltage interface: +3.3 V with option for +1.0 to +1.8 V
- Receiver detection: Supports hot plug detection
- Cable distance support: Over 5 m with twisted pair and fiber-optics ready
- Standards compliant with DVI 1.0 (DVI is backwards compliant with VESA DTM and DFP)
- Size (L x W): 2.6" x 2" (66 mm x 50 mm)

Diagram

TTL Input



Supported Boards

- Avalue boards with 24-bit TTL LCD Port

Ordering Information

- **EPM-1560T**
Panel Link Transmitter Module

1	Embedded System
2	Seven Module
3	ETX/XTX COM Express
4	3.5" SBC
5	EPIC
6	5.25" SBC
7	ATX
8	Micro ATX
9	Mini ITX
10	Nano ITX
11	ACP
12	Rack Mount System
13	Mini ITX System
14	Peripherals
15	Index



EPM-1524



Features

- USB input via connector or pin header
- Supports USB Specification v 2.0 and USB CDC v 1.1
- +5V or 12 V power output select for each RS-232 serial port
- Supports additional power input from Avalue boards directly
- Operating temperature: 32 to 140°F (0 to 60°C)
- Size (L x W): 4.0" x 1.6" (101 mm x 40 mm)

EPM-1525



Features

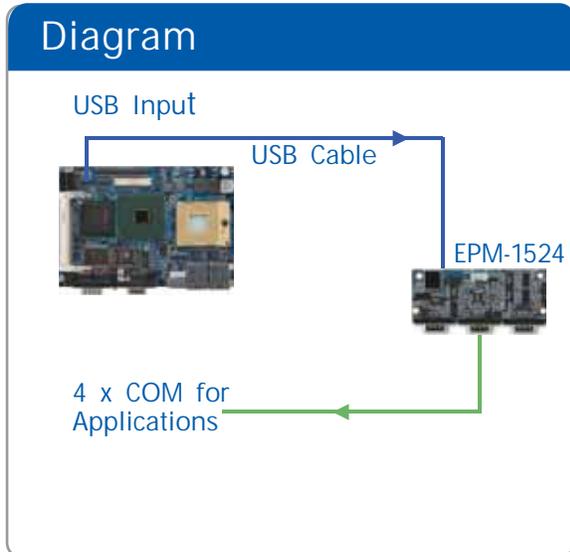
- Supports single channel 18/24-bit TTL and dual channel 18/24-bit LVDS
- Supports VGA/TMDS/YPbPr input to LVDS SXGA/UXGA/WSXGA+/WXGA+ resolution
- Fully programmable zoom ratios
- Supports non-linear scaling from 4:3 to 16:9 or 16:9 to 4:3
- Zoom scaling up and down
- Supports power saving mode when no signal input
- Programmable 5 keys OSD
- 2 W amplify audio output
- +12 V Only Operation

Note: Adjust firmware for specific LCD is necessary, please contact in advance

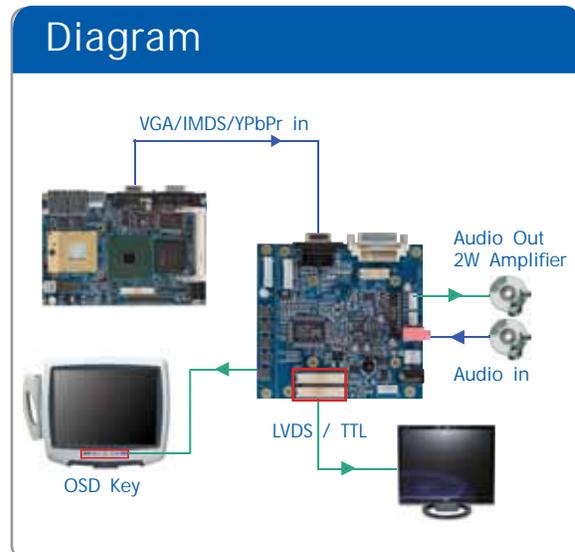
Note: Please link to www.avalue.com.tw for supported panels information

Note: Max current output: 5V@5A, 3.3V@5A

Diagram



Diagram



Supported Boards

- All Avalue boards

Ordering Information

- **EPM-1524**
USB to four serial (Ports Module)
- **E1963152400R**
Bracket for EPM-1524



Bracket for EPM-1524

Supported Boards

- All Avalue boards

Ordering Information

- **EPM-1525**
VGA/DVI to 18/24 TTL/LVDS Scaler Module
- **E170X100180R**
YPbPr Signal Input Cable



EPM-1534



Features

- Supports dual channel 18/24-bit LVDS signal
- +12V power input from power jack or ATX 4-pin power connector
- PC/104 Form Factor
- 1 x LVDS in, 4 x LVDS out (dual channel support)
- Operating temperature: 32 to 140°F (0 to 60°C)
- Size (L x W x H): 96 mm x 90 mm x 10 mm
- Note: Max current output: 5V @ 8A, 3.3V @ 7A

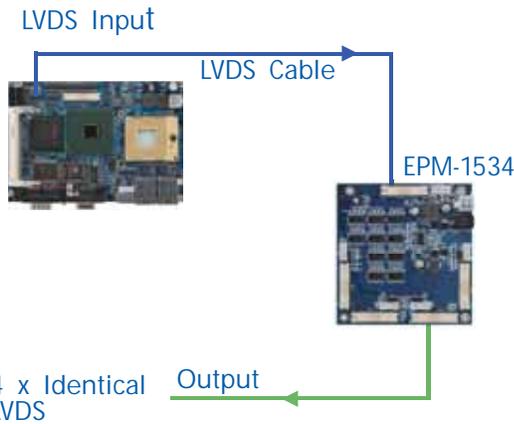
EPM-1712



Features

- Wide Range DC Power input: 6~30V DC
- Output Voltage: 12V DC
- Intelligent system on/off control via jumper setting
- 6 selectable power on/off timing modes
- Load Down Protection
- Over Voltage Protection
- Short Circuit Protection
- Over Current Protection
- Battery voltage monitor
- Size (L x W): 50mm x 135mm

Diagram



Specifications

Input Voltage (Operating)	+6V to +30V DC
Input Voltage (Full Load)	+10V to +24V DC
Input Current	15A (15A mini-blade fuse)
Max Power (Output)	100Watt 12V/8.33A
Output Voltage	12VDC
Output Current	8.33A continuous (10A peak)
Efficiency	Up to 88%
Dimensions	50 mm X 135 mm
Operating temperature	-20°C~85°C
Storage temperature	-40°C~125°C

Supported Boards

- All Avalue boards

Ordering Information

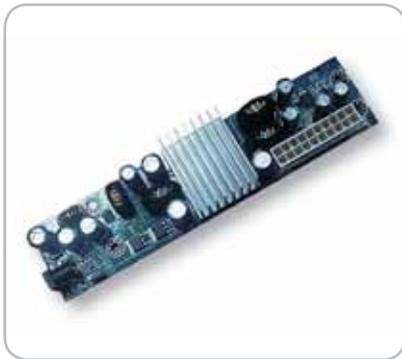
- **EPM-1534-24**
Single LVDS to 4 LVDS Module, Supports Single-channel 18/ 24bit LVDS
- **EPM-1534-48**
Single LVDS to 4 LVDS Module, Supports Dual-channel 18/ 24bit LVDS

Ordering Information

- **EPM-1712**
Vehicle 100Watt Smart DC/ DC Converter

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
- 13 Mini ITX System
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ACC D-D Board Series



AD-1003

DC-DC Converter Board

- **Input Voltage** +12Vdc or 15-24 Vdc, 110W
- **Input Current** Max. 9.5A at +12 Vdc
- **Efficiency** Min 85% at rated load & +12Vdc or 15-24 Vdc. Input
- **Ripple & Noise** +5VSB/ 50mV, +5V/ 50mV, +12V/ 120mV, -12V/ 120mV
- **Line Regulation** +5VSB/±2%, +5V/±2%, +12V/±2%, -12V/±2%
- **Load Regulation** +5VSB/±5%, +5V/±5%, +12V/ -7 ~ +5%, -12V/ -7 ~ +5%
- **Connector** 4-pin DC Input (2.54mm) and DC Jack Input, 20-pin DC Output
- **Dimensions** 170mm x 39mm
- **Temp./ Humidity** Operation Temp.: 0 ~ 60°C; Storage Temp:-40 ~ 85°C @ Humidity 20 ~ 95%
- **Power (Watt)** 110.2W
- **Ordering Information** ACC-PSU-AD-1003R

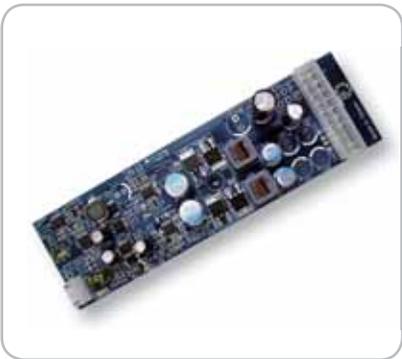
Output Voltage/ Current	Output	5VSB	+5V	+3.3V	+12V	-12V
	Voltage	5	5	3.3	12	-12
	Amp.	1	7	6	4	0.2
	Watt	5	35	19.8	48	2.4



AD-1012

DC-DC Converter Board

- **Input Voltage/ Current** DC24V: 2.08A/ 2.50A /2.71A, DC19V: 2.63A/ 3.16A/ 3.42A, DC15V: 4.33A, DC12V: 4.17A/ 5.00A
Power (Watt): 50W ~ 65W
- **Output Voltage/ Current** 12V ±0.5V/ 3.00A ±0.1A
5.0V ±0.3V/ 3.5A ±0.3A
Power (Watt): 55W ±7W
- **Efficiency** 85% ±5%
- **Connection** Input Connector: 1 x 6.5mm Power Jack for Adaptor
Output Connector: 1 x 6-pin ATX Male Connector
- **Dimensions** 35mm x 60mm
- **Operating Temp.** 0 ~ 70°C
- **Storage Temp.** 0 ~ 95°C
- **Power (Watt)** 55W ±7W
- **Ordering Information** ACC-PSU-AD-1012R



DD-ITX90AR

DC-DC Converter Board

- **Input Voltage/ Current** DC12V/ 9A (Max), 90W
- **Output Voltage/ Current** +12V: 4.2 ~ 6A (1A min), +5V: 4.2 ~ 8A, +3.3V: 3.1 ~ 6A, -12V: 0.14 ~ 0.2A
+5VSB: 1.4 ~ 2A (90W)
- **Efficiency** 90%
- **Operating/Storage Temp** 10 ~ 50°C/ -40 ~ 70°C
- **Power (Watt)** 90W
- **Ordering Information** ACC-PSU-DD-ITX90AR

Regulation & Ripple Noise					
Output	+5VDC	+3.3 VDC	+12VDC	-12VDC	+5VSB
Ripple&Noise	50 mV	50 mV	120 mV	120 mV	50 mV
V (Min)	4.84	3.14	11.4	-10.8	4.75
V (Typ)	5.1	3.3	12	-12	5.0
V (Max)	5.35	3.46	12.6	-13.2	5.25

Protections		
Item	Spec	Action
Output Over-current	+5VSB@ 4.0A typ, +12V by front-end DC source +5V@13A typ, +3.3V@11A typ, -12V @ 3.3W typ	Shutdown or Fuse Open
Output Short-circuit	+5VSB, +12V, +5V, +3.3V, -12V	Shutdown or Fuse Open
Output Over-voltage	+5V@7.5V (Max), +3.3V @ 5V (Max), +12V@15V (Max)	Shutdown& Latched
Output Under-voltage	+5V@3.7V (Max), +3.3V@2.4V (Max)	Shutdown& Latched



Flash Disk



ACC-CF Series

CompactFlash Card Series

Features

● Capacity	128MB ~ 16GB
● IDE Transfer Mode	PIO Mode 0-6, MwdMA Mode 0-4, UltraDMA Mode 0-4
● Interface	50pin Compact Flash
● Data Transfer Rate	128MB ~ 2GB (Single): Read-20MB/sec. (max.) Write-10MB/sec. (max.) 1GB ~ 16GB (Dual): Read-40MB/sec. (max.) Write-20MB/sec. (max.)
● Operating Temp.	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration (Operation)	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● DC Input Voltage	3.3V/ 5V
● Power Consumption	150mA (max.)
● Dimensions (W x L x H)	36.4 x 42.8 x 3.3mm
● Write Protect	Supported



ACC-CFast Series

CFast Series

Features

● Capacity	2GB ~ 16GB
● Interface	SATA II 3.0G
● Data Transfer Rate	Read-100MB/sec. (max.) Write-50MB/sec. (max.)
● Operating Temp.	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration(Operation)	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● DC Input Voltage	3.3V
● Power Consumption	150mA (Max.)
● Dimensions (W x L x H)	36.4 x 42.8 x 3.6mm



ACC-IDOM Series

Disk On Module IDE Series

Features

● Capacity	128MB ~ 8GB
● IDE Transfer Mode	PIO Mode 0-4, MwdMA Mode 0-2, UltraDMA Mode 0-4
● Interface	44pin or 40pin IDE
● Data Transfer Rate	128MB ~ 2GB (Single): Read-20MB/sec. (max.) Write-10MB/sec. (max.) 1GB ~ 8GB (Dual): Read-40MB/sec. (max.) Write-20MB/sec. (max.)
● Operating Temp.	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration(Operation)	5G (7 ~ 2000Hz)
● Shock	50G/ 10ms
● DC Input Voltage	5V
● Power Consumption	150mA (max.)
● Dimensions (W x L x H)	40 pin: 27.8 x 60.2 x 6.4mm, 44 pin: 27.3 x 50.3 x 5.8mm



ACC-SDOM Series

Serial ATA Disk on Module Series

Features

● Capacity	128MB ~ 8GB
● Interface	SATA I 1.5G
● Data Transfer Rate	Read: 24MB/sec Write: 14MB/sec.
● Operating Temp.	0°C ~ +70°C (Standard); -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration	5G (7 ~ 2000Hz)
● Shock	50G/ 10ms
● DC Input Voltage	5V
● Power Mode	Auto stand-by mode
● Power Consumption	180mA (max.)
● Dimensions (W x L x H)	Vertical High-profile: 20.8mm x 32.8mm x 8.0mm; R type: 20.5mm x 32.8mm x 8.0mm L type: 20.5mm x 32.8mm x 8.0mm; Low-profile: 32.8mm x 29.6mm x 8.0mm Horizontal High-profile: 18.0mm x 30.3mm x 11.4mm; Low-profile: 30mm x 20.3mm x 11.4mm

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
- 11 ACP
- 12 Rack Mount System
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ACC-mSATA Series

mSATA SSD Series

Features

● Capacity	2/ 4/ 8/ 16GB
● Form Factor (Interface)	Mini PCIe (SATA II)
● Data Transfer Rate (Read/ Write)	100MB/sec. 60MB/sec.
● Operating Temp.	0°C + 70°C (Standard)
● Vibration	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● DC Input Voltage	3.3V
● Power Consumption	250mA (max.)
● Dimensions (W x L x H)	30 x 50.95 x 3.4mm



ACC-SATA Slim Series

High Performance SATA Slim SSD Series

Features

● Capacity	1GB ~ 16GB
● Interface	SATA II 3.0G
● Data Transfer Rate (MB/sec.max.)	Read: 90MB/sec. Write: 60MB/sec.
● Operating Temp.	0°C ~ +70°C (Standard); -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● DC Input Voltage	5V
● Power Consumption	250mA (max.)
● Dimensions (W x L x H)	54 x 39 x 4mm
● SMART Function	Support
● Security Function	Support



ACC-2SFD Series

High Performance SATA Flash Disk Series (SLC)

Features

● Capacity	2.5" 8GB ~ 128GB
● Interface	SATA II 3.0G
● Data Transfer Rate (MB/sec.max.)	Read: 160MB/sec. Write: 140MB/sec.
● Operating Temp.	0°C ~ +70°C (Standard); -40°C ~ +85°C (Industrial)
● Storage Temp.	-55°C ~ +95°C
● Vibration	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● DC Input Voltage	5V
● Power Consumption	400mA (max.)
● Dimensions (W x L x H)	2.5" SATA: 69.6 x 99.8 x 9.3mm
● SMART Function	Support
● Security Function	Support



ACC-2SFD Series

EverGreen 2.5" SATA SSD (MLC)

Features

● Capacity	4GB ~ 256GB
● Interface	SATA II 3.0G
● Data Transfer Rate	Read: 200MB/sec. (max.) Write: 80MB/sec. (max.)
● IOPS Random Write @ 4KB	1200
● Operating Temp.	0°C ~ +70°C
● Storage Temp.	-55°C ~ +95°C
● Vibration	20G (7 ~ 2000Hz)
● Shock	1500G/ 0.5ms
● Dimensions (W x L x H)	69.6 x 99.8 x 9.3mm
● SMART Function	Supported
● Security Function	Supported

Memory & Software



ACC-MEM Series

Memory Series

Features

Category	DDR	DDR2	DDR3
Speed	266 ~ 400MHz	533 ~ 800Mbps	1066 ~ 1333Mbps
Power supply	SSTL_2	SSTL_18	SSTL_15
Voltage	2.5V±0.2V	1.8V±0.1V	1.5V±0.075V
Chip Package	TSOP/ FBGA	FBGA	FBGA
Pins/ DIMM	184pin DIMM/ 30um	240pin DIMM/ 30um	240pin DIMM/ 30um
	200pin SO-DIMM/ 30um	200pin SO-DIMM/ 30um	204pin SO-DIMM/ 30um
Operating Temp.	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)



ESW-XXX

Windows Embedded OS

Features

- Avalue provides Embedded Software to customers who integrated Avalue's hardware products.
- Windows XP Embedded
- Windows Embedded Standard
- Windows Embedded Standard 7
- Windows XP Pro Embedded
- Windows CE 4.2/ 5.0 / 6.0

ACC-CF-SATA Series

CompactFlash Card Series

Features

Capacity	2GB ~ 32GB
Interface	50pin Compact Flash
Data Transfer Rate	Read: 130MB/sec Write: 120MB/sec
Operation Temp.	0°C ~ +70°C (Standard) -40°C ~ +85°C (Industrial)
Storage Temp.	-55°C ~ +95°C
Vibration	20G (7 ~ 2000Hz)
Shock	1500G/ 0.5ms
DC Input Voltage	5V
Dimensions (W x L x H)	36.4 x 42.8 x 3.3mm



CF-SATA VS CF VS CFast

Model Name	CF SATA	Compact Flash Card	CFast
Capacity	2GB ~ 32GB	128MB ~ 32GB	2GB ~ 32GB
Interface	50 Pin	50 Pin	7pin SATA signal + 17 power supply
Transfer Rate	SATA II	UDMA 0-6 MDMA 0-2 PIO 0-4	SATA II
Channels	4 Channels	2 Channels	4 Channels
Sequential R/W (MB/sec, max.)	130/ 120	40/ 20	130/ 120
Operation Voltage	5V	3.3V/ 5V	5V
Write Protect	Supported	Supported	Supported
Security	Supported	Supported	Supported
iSMART	Supported	Supported	Supported
Dimension (L x W x H)	36.4 x 42.8 x 3.3mm	36.4 x 42.8 x 3.3mm	36.4 x 42.8 x 3.6mm

1
Embedded System

2
Oseven Module

3
ETX/XTX COM Express

4
3.5" SBC

5
EPIC

6
5.25" SBC

7
ATX

8
Micro ATX

9
Mini ITX

10
Nano ITX

11
ACP

12
Rack Mount System

13
Mini ITX System

14
Peripherals

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ACC-FAN-815R

CPU Cooler

Features

- CPU Cooler 3P/12V Socket 478 up to 35W
- Dimensions: 53.25 x 50 x 22.5mm
- Heatsink Material: Copper
- Heatsink Dimensions: 49.0 x 31.5 x 12.0mm
- FAN Dimensions: 40.0 x 40.0 x 10.5mm
- Weight: 86g



ACC-FAN-809R

CPU Cooler

Features

- CPU Cooler 3P/ 12V Socket 478/ 8000RPM
- Dimensions: 50 x 50 x 25mm
- Heatsink Material: C1100
- Heatsink Dimensions: 50 x 50 x 11mm
- Fan Dimensions: 40 x 40 x 10.5mm



ACC-FAN-819R

CPU Cooler

Features

- CPU Cooler 3P/12V LGA775 up to 115W/Hole
- Dimensions: 82 x 80 x 36mm
- Heatsink Material: Full Copper
- Heatsink Dimensions: 80 x 78.5 x 23.5mm
- Fan Dimensions: 70 x 70 x 10.5mm
- Weight: 480g



E1961000077R

CPU Cooler

Features

- CPU Cooler 3P/12V 5000rpm
- Dimensions: 60 x 60 x 30mm
- Heatsink Material: Copper
- Heatsink Dimensions: 60 x 60 x 18mm
- Fan Dimensions: 50 x 50 x 10mm
- For QM67 series



Mini HD/ WiFi/ PCIE



Mini-HD

ACC-MPCIE-HD-01R

Features

- Mini PCIe card with PCI Express 1.2 compliant
- H.264/AVC High Profile @ Level 4.2 up to 40Mbps
- VC-1 Advanced Profile @ Level 3 up to 45 Mbps
- VC-1 MP @ HL, VC-1 SP @ ML, WMV9
- MPEG-2 MP @ LL, ML and HL at up to 80 Mbps
- DivX 3.11, 4.1, 5.X, 6.X, XviD
- MPEG-4 Part2 SP & ASP
- AVS1-P2 Jizhun Profile, Level 6.0
- Supports one SD HD and one SD (HD+SD PIP) decoding up simultaneously
- Supports 16 QCIF, 10 CIF or 4 SD streams simultaneously
- Supports QCIF up to 1920 x 1088dpi
- Capable of 1.2 x HD decode
- Direct video playback by Windows Media Player 12 (on Windows 7) or Adobe Flash Player10.1 (on Windows XP).



Mini-WiFi

ACC-WIFI-PCIE-7R

Features

- IEEE802.11n/g/b, 1x1 11n Technology
 - 11b: 1, 2, 5.5, 11 Mbps
 - 11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
 - 11n: up to 150Mbps
- Supports 150MHz PHY Rate
- Supports WEP 64/128, WPA, WPA2, TKIP, AES
- QoS-WMM, WMM-PS
- Low power with advanced power management



Mini PCIE-3G

3G PCI Express Mini Card (E968X000052R)

Features

- HSPA+/ UMTS 850/ 900/ AWS/ 1900/ 2100MHz
- EGPRS 850/ 900/ 1800/ 1900MHz
- Antenna-50 Ohm compatible
- Single-sided design
- Windows 7, Vista, XP supported
- AT&T, Telefonica, Vodafone, Orange, TIM, T-Mobile(EMEA)
- Size: 51 x 30 x 3.15mm
- Operating Temperature: -30°C to 70°C
- Weight: 10g



AUX-MPCIE

USB to Mini-PCIE Module with USIM Interface

Features

- USB 2.0
- 5V/ 500mA

1
Embedded
System

2
Oseven
Module

3
ETX/XTX
COM Express

4
3.5" SBC

5
EPIC

6
5.25" SBC

7
ATX

8
Micro
ATX

9
Mini
ITX

10
Nano
ITX

11
ACP

12
Rack Mount
System

13
Mini ITX
System

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Adapters & Cables

Adapters



E1757206008R

AC/DC Adapter 100-240V
50-60Hz, 12V/5A



E1757206013R

AC/DC adapter 12V/5A 60W
90° Screw Type



E1757208400R

AC/DC Adapter 100-240V
50-60Hz, 12V/7A



E1757208401R

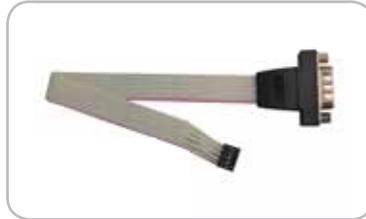
AC/DC Adapter 100-240V
50-60Hz, 12V/7A, Screw type

Cables



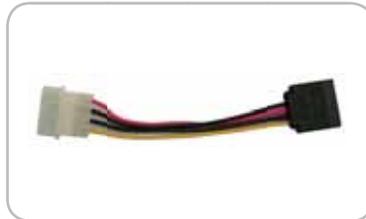
E1706170450R

Wire SATA Power 15P/1.27-PH
2P/2.0 45cm for PNV/QM57 Series



E1701100170R

RS232 Cable 9P(M)-Dupont
10P/2.0mm 17cm



E1706190150R

Wire SATA Power cable 15P/
1.27-4P/5.08 15cm



E1701100208R

RS232 Cable DB9P(M)-hou10P/
2.54mm 20cm



E1706190500R

Wire SATA Power 15P/1.27-EH 4P/
2.5 50cm for EPI-QM57



E1701251500R

VGA Cable 2.0mm/15cm- DB15
for LX800/ US15WP Series



E1704640400R

DVI Cable 24P/1.91-40P/1.25
40cm for EBM-945GSE



E1704440300R

DVI Cable 24P/1.91-20P/1.25
30cm for ECM-945GSE



E1701100150R

Audio Cable Dupont 10P/
2.0-Dupont 10P/2.0 15cm



E1706200151R

USB 2.0 Cable 10P/2.0- 10P/
2.54 15cm



Cables



E170X070500R

**Serial ATA Cable 7P/ 1.27mm-7P/
1.27mm 50cm**



E1701240230R

**Audio Cable 12P/2.00- 12P/2.00
23cm with HD for PNV/QM 57 Series**



E1700202000R

Y Cable 2.0mm/7P 20cm



E1963341000R

**LVDS to LVDS Cable 40P/
1.25-40P/1.25 20cm for EPM-1534**



E1701200203R

**Audio Cable with AC97 10P/
2.0- 10P/2.0 20cm**



E1700060200R

**Y Cable 6P-6P 20cm IVORY
PS/2KB&Mouse**



E1704800200R

**LVDS to LVDS Cable 40P/
1.25-40P/1.25 20cm for EPM-1534**



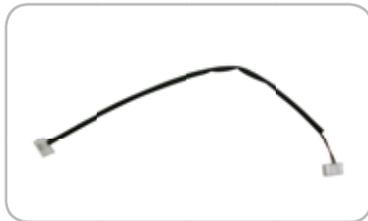
E1701380303R

**Flat Cable DB 9P(M)*2- 20P/
2.0 30cm**



E1700180250R

**USB Cable A-Type (F) x2-10P/
2.0 25cm**



E1702100206R

**Inverter Cable 5P/2.00-5P/2.00
20cm for EPM-1534**



E1701400502R

**IDE Cable 40P/2.54-40P/
2.54-40P/2.54 45cm**



E1701260170R

**Flat Cable IDC 26P/
2.0-DB 25P (F) 17cm**



E1701440501R

**IDE Cable 44P 2.0mm/ 44P
2.0mm /44P 2.0mm 50cm**



E1701C40450R

**IDE Cable 44P 2.0mm / 40P
2.54mm / 40P 2.54mm 45cm**



E1701380303R

**Flat Cable DB 9P (M) x2-20P/ 2.0 30cm
for EPI-QM57-77**

- 1 Embedded System
- 2 Oseven Module
- 3 ETX/XTX COM Express
- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
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Accessories & Peripherals



Avalue provides a variety of Peripherals to expand your computing experience and capability. These products are made compatible with our wide range of embedded platforms and Motherboards.

Our designed Modules, Cards and converter Boards offer unlimited capability, however not limited to Power monitoring & management, signal transmission and Display.

Avalue offers the latest Accessories featuring high performance, intelligent data management and security.

Compliant to Industrial computing use, whether for Embedded or Motherboard platforms, our Accessories fit demanding environment, form factor, energy saving, and speed requirements.

One Stop Service

Peripherals & Accessories Platform (PAP) is Avalue's customer service platform that provides resources to customers for various Peripherals & Accessories. With this Platform we inform customers about available options, offered by Avalue to strengthen capabilities in Industrial computing.

Purpose

This platform offers customers a knowledge bank when building high performance systems.

Save costs when renewing your system, a simple combination with our peripherals might just provide you similar results.

Find out what components from Avalue, in combination with your existing hardware or purchase, can help you enhance system capabilities.

One Click away

Refer to Avalue comprehensive range of components; we will offer you what is needed to build up your system in reduced time frame.

Use this platform to enjoy tailored service and get the most out of our Peripherals & Accessories.

Compatibility

The advantage of having a single platform is that compatibility will no longer be an issue. All our Peripherals & Acc. have been tested compatible with Avalue boards and Systems.

Variety

Among other options, Avalue offers peripherals for, but not limited to Power management and Signal transmission and a multitude of Accessories, meeting harsh conditions, speed and low voltage requirements. Whether you choose a bundled service or individual item purchase, Avalue will always give you the best.

Applications



Battery Backup System



Power Sensitive Equipment



Portable Equipment

Features

Delay Mode Protection, On/Off Protection, Low battery protection, LED alarm signal, Wide DC input range, Power regulator, Continuous current, Wide temperature, 85 - 90% efficiency, Easy assembly with any platform.



Industrial Communication



TV/ LCD Panels



High Speed-mixed Signal Application Designs

Features

Low EMI, Fast data transmission, Supports 18 and 24 bit, DVI connector (output), TTL/LVDS input, Low voltage, Hot plug detection, High digital quality, flexible clocking, low voltage, Scalable bandwidth, Signal integrity, Noise immunity.

➤ Add-on Service



Temperature testing service: Avalue offers compliant testing of equipment to meet requirements for demanding environments.

Upon request, we provide both High & Low temperature testing service for embedded platform, XTX Module and Com Express.

Coating service: In harsh environment, protect your electronics from external contamination by requesting prime coating service from Avalue.

Please note that test reports will be also provided for applicable tests.

Temperature Testing

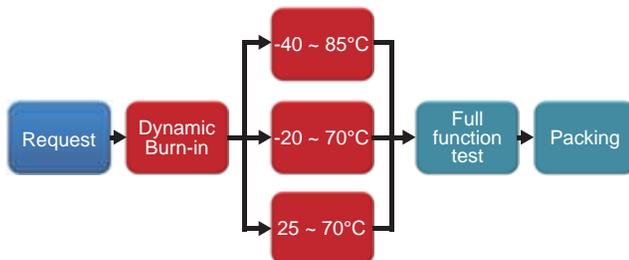
To cope with wide temperature requirement in Industrial and outdoor environments, Avalue designs Modules capable of undergoing the most demanding situations. Requirements could be for High temperature in some cases where as Low temperature would be requested in others. In addition to making reliable products that fit into a wide range of temperature requirements, Avalue also offers customized Temperature testing service for selected SBCs and upon buyer's request. Now if you need extra testing for your hardware, contact our sales representatives, they will provide you with the most updated information.

Test

Temperature	Test Time	Products	Test %	Testing capacity
-40°C ~ 85°C	>=10 hours	Seleted SBCs	100%	8 pcs/test
-20°C ~ 70°C	>=9 hours	Seleted SBCs	100%	8 pcs/test
25°C ~ 70°C	>=5 hours	Seleted SBCs	100%	30pcs /test (up to 50pcs depending on equipment)

Note:
Depending on the situation, the above information describes the approximate amount of time, and the equivalent in temperature, needed to carry out respective tests.
One minute in testing time raises or drops temperature by 1 degree.

Procedure



What's Modules?

Form Factor	Temperature(-20~70°C)	Temperature(-40~85°C)
XTX		XTX-US15WPT
COM Express	ESM-945GSE	
	ESM-945GSX	
3.5" SBC	ECM-945GSE	
		ECM-US15WPT
EPIC	EPI-945GSE	
5.25" SBC	EBM-945GSE	

Conformal Coating

Avalue now offers Conformal Coating Service upon request; this new service is added to expand existing service range.

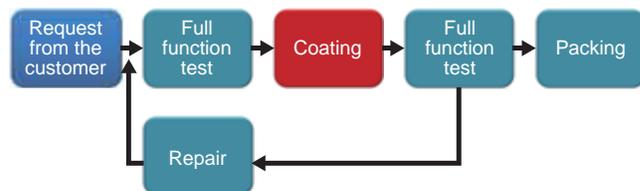
You can now make the request through our sales representatives, who in turn will translate those demands to our manufacturing unit.

Conformal coating is usually needed in harsh environments, where dust, humidity, high temperature or other external intrusion could impact the normal operation of boards and systems in general.

Method

Dow Corning (R) 1-2577 Conformal Coating Silicone	Spray coating • Medium volume application
	Brush coating • For low volume application • Finishing or repair

Procedure



Remark

For service quotes and/or any special request, please feel free to contact our sales representatives.

Warranty Invalidation

Boards that have already been coated can not be repaired. Meaning, there will not be any warranty for coated boards. If defective, boards have to be replaced by new ones.

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- 4 3.5" SBC
- 5 EPIC
- 6 5.25" SBC
- 7 ATX
- 8 Micro ATX
- 9 Mini ITX
- 10 Nano ITX
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Extended Warranty Service



Avalue entitles advantageous new Warranty program to its customers. Adding to our traditional 1 and 2-year warranty and technical support for systems and boards respectively, this new program offers extended coverage, and for a longer period of time.

It begins on the date of purchase, and for certain accessories, is inclusive of the manufacturer's warranty.

Extended Warranty Program (EWS)

Profit from our experience

With our rich experience in Computing, we are able to offer sustainable solutions and help you solve all issues.

Warranty Plan

Number of years	Premium
1	3%
2	8%
3	11%
4	25%

Note: Warranty for ODM projects would depend on contract/agreement. However, a total of 5 years is the maximum for both Board and System level Products.

Benefits

Profit from our experience

With our rich experience in Computing, we are able to offer sustainable solutions and help you solve all issues.

Long term support

Avalue will check every extended warranty contract when issuing EOL notice. Therefore respective parts or finished products for applicable programs would be kept in stock to ensure full support.

Convenience

Give us one form, we will offer you a complete service. Feel free to contact with our sales representatives, if you would like to subscribe to Avalue Extended Warranty Plan (EWP).

Avalue EWS

Peripherals



After warranty period: the maintenance premium is at USD40/each time, exclusive of material & repair charge

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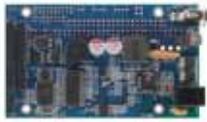




Daughter Boards

Mult-Function Daughter Board

ECM-US15WP	
ACC-SDVO2VGA 	SDVO to VGA Adaptor (Included in Standard Packing)
ACC-SDVO2LVDS 	SDVO to Dual-channel 18/24-bit LVDS Adaptor
ACC-SDVO2DVI 	SDVO to DVI-D adaptor
EPI-910 / EPI-945GSE	
AUX-027 	Express Card / 34mm slot for EPI series
ECM-QM57/ EPI-QM67	
AUX-033 	Mini PCIe AUX-033-1R for ECM-QM57 AUX-033-2R for EPI-QM57
ECM-PNV/ EMX-PNV	
AUX-035 	Dual-channel LVDS adaptor
General Daughter Board	
AUX-001 	1 x Audio IN/OUT/MIC 2 x USB
AUX-021 	1 x Audio IN/OUT/MIC 4 x USB AC97
AUX-032 	1 x Audio IN/OUT/MIC 4 x USB HD

ECM-945GSE+	
AUX-301 	1 x CFast Socket 1 x Audio IN/OUT/MIC
AUX-302 	1 x Audio OUT/MIC Built-in Touch Controller 1 x USB 2.0 2 x RS-232 Socket MODEM (RJ11) 8-bit GPI, 8-bit GPO
AUX-303 	2 x USB 2.0 4 x RS-232 8-bit GPI, 8-bit GPO 2 x Secure Erase
AUX-304 	Socket MODEM (RJ11) 1 x RS-232, 1 x RS-485, 1 x CAN Bus 8-bit GPI, 8-bit GPO PC/104
AUX-305 	1 x Audio OUT/MIC Built-in Touch Controller 1 x CFast Socket 1 x USB 2.0, 2 x RS-232 Smart Battery Charger GPS, Gyro



CPU List

Product Chipset and Processor Compatibility Table

Intel Platform																												
	90nm			65nm						45nm																		
	Celeron D	Pentium 4	Pentium 4	Celeron M	Celeron M	Core 2 Duo	Core 2 Duo	Core 2 Duo	Core 2 Duo	Celeron	Celeron	Pentium Dual-Core	Celeron Dual-Core	Celeron D	Pentium 4	Pentium Dual-Core	Pentium Dual-Core	Core 2 Duo	Core 2 Duo	Core 2 Duo	Core 2 Duo	Core 2 Duo	ATOM	ATOM	ATOM	ATOM	ATOM	
Processor Number	341	531	551	530	550	T7400	T7500	E6400	E4300	575	440	E2160	E1500	352	651	E5300	E6500	E7400	E8400	09400	T9400	P9400	Z530	Z510	D510	D525	N270	
Clock	2.93GHz	3.00GHz	3.40GHz	1.73GHz	2.0GHz	2.16GHz	2.2GHz	2.13GHz	1.80GHz	2.00GHz	1.80GHz	1.80GHz	2.2GHz	3.20GHz	3.40GHz	2.60GHz	2.93GHz	2.80GHz	3.00GHz	2.66GHz	2.53GHz	2.26GHz	1.6 GHz	1.1 GHz	1.66GHz	1.86GHz	1.6GHz	
FSB (MHz)	533	800	800	533	533	667	800	1066	800	667	800	800	800	533	800	1066	1066	1066	1333	1333	1066	1066	533	400	665	800	533	
L2	256KB	1MB	1MB	1MB	1MB	4MB	4MB	2MB	2MB	1MB	512KB	1MB	2MB	512KB	512KB	2MB	2MB	3MB	6MB	6MB	6MB	3MB	512KB	512KB	1MB	1MB	512KB	
Socket	LGA775	LGA775	LGA775	PGA	PGA	PGA	PGA	LGA775	LGA775	PGA	LGA775	LGA775	LGA775	LGA775	LGA775	LGA775	LGA775	LGA775	LGA775	LGA775	PGA	PGA478	FCBGA437	FCBGA437	FCBGA559	FCBGA559	PGA437	
CPU TDP	84W	84W	84W	30W	31W	34W	35W	65W	65W	45.5W	35W	65W	65W	88W	88W	35W	65W	65W	65W	95W	35W	29W	2.2W	2.2W	13W	13W	2.5 W	
MOQ																												
EMX-945GSE Intel 945GSE (6W)/ ICH7-M (3.3W)																												•
EAX-945G/ERX-945G Intel 945G (22.2W)/ ICH7(3.3W)	•	•	•					•	•		•	•	•	•	•													
EMX-945GM2/ EMX-945GME3 Intel 945GME (7W)/ ICH7-M (3.3W)				•		•	•																					
EAX-965Q/ ERX-965Q/ ERX-965Q2/ EMX-965Q Intel Q965(28W)/ ICH8(3.7W)/ ICH8DO(3.7W)	•	•	•					•	•		•	•	•	•	•													
EMX-965GME Intel GME965 (13.5W)/ ICH8-M (2.4W)					•		•																					
EAX-Q35/ERX-Q35 Intel Q35 (15W)/ ICH9DO (4.3W)								•	•		•	•	•	•	•		•	•	•	•	•							
EMX-G41/ ERX-G41/ ERX-G41L Intel G41 (25W)/ ICH7-R (3.3W)								•	•		•	•	•	•	•		•	•	•	•	•							
ACP-Q45DV/ACP-Q45DV2/ EAX-Q45 Intel Q45 (17W)/ ICH10DO (4.5W)								•	•		•	•	•	•	•		•	•	•	•	•							
ACP-GM45/ ACP-GM45DS/ EMX-GM45 Intel GM45 (12W)/ ICH9-M (2.5W)									•						•							•	•					
EMX-QM57 Intel QM57 (3.5W)/ i5-520E (35W)/ P4505 (35W)																												
ENX-US15WP Intel US15WP (2.3W)/ Z510P(2.2W)/ Z530P (2.2W)																								•	•			
EMX-PNV/ ENX-PNV Intel NM10 (2.1W)/ Intel D510 (13W)																										•	•	
EMX-QM67 Intel QM67 (3.9W)																												
ERX-Q67/ EAX-Q67 Intel Q67 (6.1W)																												



CPU List

Product Chipset and Processor Compatibility Table

Intel Platform										
32nm										
	Celeron Mobile	Core i5	Core i7	Core i5	Core i3	Celeron	Core i7	Core i5	Core i3	Celeron
Processor Number	P4505	520E	2710E	2510E	2330E	B810	2600	2400	2120	6850
Clock	1.86GHz	2.4GHz	2.1GHz	2.5GHz	2.2GHz	1.6GHz	3.4GHz	3.1GHz	3.3GHz	2.9GHz
FSB (MHz)	1067	1067								
L2	2MB	3MB	6MB	3MB	3MB	2MB	8MB	6MB	3MB	3MB
Socket	BGA1288	BGA1288	PGA	PGA	PGA	PGA	PGA	PGA	PGA	PGA
CPU TDP	35W	35W	45W	35W	35W	35W	95W	95W	65W	65W
MOQ										
EMX-945GSE Intel 945GSE (6W)/ ICH7-M (3.3W)										
EAX-945G/ERX-945G Intel 945G (22.2W)/ ICH7(3.3W)										
EMX-945GM2/ EMX-945GME3 Intel 945GME (7W)/ ICH7-M (3.3W)										
EAX-965Q/ ERX-965Q/ ERX-965Q2/ EMX-965Q Intel Q965(28W)/ ICH8(3.7W)/ ICH8DO(3.7W)										
EMX-965GME Intel GME965 (13.5W)/ ICH8-M (2.4W)										
EAX-Q35/ERX-Q35 Intel Q35 (15W)/ ICH9DO (4.3W)										
EMX-G41/ ERX-G41/ ERX-G41L Intel G41 (25W)/ ICH7-R (3.3W)										
ACP-Q45DV/ACP-Q45DV2/ EAX-Q45 Intel Q45 (17W)/ ICH10DO (4.5W)										
ACP-GM45/ ACP-GM45DS/ EMX-GM45 Intel GM45 (12W)/ ICH9-M (2.5W)										
EMX-QM57 Intel QM57 (3.5W)/ i5-520E (35W)/ P4505 (35W)	•	•								
ENX-US15WP Intel US15WP (2.3W)/ Z510P(2.2W)/ Z530P (2.2W)										
EMX-PNV/ ENX-PNV Intel NM10 (2.1W)/ Intel D510 (13W)										
EMX-QM67 Intel QM67 (3.9W)			•	•	•	•				
ERX-Q67/ EAX-Q67 Intel Q67 (6.1W)							•	•	•	•

VIA Platform										
	Eden	Eden	Eden	Eden	Eden	Eden	Eden ULV	Eden ULV	Eden ULV	Eden ULV
Clock	400MHz	500MHz	600MHz	800MHz	1GHz	1.2GHz	500MHz	1GHz	1.5GHz	1.5GHz
L1	128K	128K	128K	128K	128K	128K	128K	128K	128K	128K
L2	128K	128K	128K	128K	128K	128K	128K	128K	128K	128K
TDP	2.5W	3.5W	5W	5W	5W	7W	1W	3.5W	7.5W	13W
MOQ	•	•	•	•	•	•	•	•	•	•
ESM-CN896 VIA CN896 + VT8251 (3.1W + 3W)					•		•			
ESM-CN700 VIA CN700 + VT8237R (2.3W + 1.8W)					•		•		•	•
ECM-VX900 VIA Nano U4300E + VX900 (13W + 4.5W)										•
ERS-VX900 VIA Nano U4300E + VX900										•

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Product Chipset and Processor Compatibility Table

AMD Platform											
	LX800	Athlon 2100+	Athlon 2600+	Athlon 3100+	Athlon 3400e	Athlon 3800+	Athlon 4200+	Athlon X2 V50L	Athlon X2 V64L	Athlon X2 V66C	Phenom II X4 Qs4L
Clock	500MHz	1.0G	1.6GHz	2.0GHz	1.8GHz	1.9GHz	2.0GHz	2.0GHz	2.7GHz	2.8GHz	2.5GHz
L1	128K	128KB	128KB	128KB	64KB x 4	64KB x 4	64KB x 4	64KB x 4	64KB x 4	64KB x 4	64KB x 8
L2	128K	512KB	512KB	512KB	512KB x 2	512KB x 2	512KB x 2	1MB x 2	1MB x 2	1MB x 2	512KB x 4
Socket	BGA	AM2	AM2	AM2	AM2	AM2	AM2	AM3	AM3	AM3	AM3
CPU TDP	3.8W	8W	15W	25W	22W	35W	35W	25W	45W	45W	45W
MOQ											
ENX-LX800 AMD Geode LX800 + CS5536 (3.8W + 1.1W)	•										
EMX-780E AM2/ AM2+/ AM3 RS780E + SB710		•	•	•	•	•	•	•	•	•	•
EAX-785E AM3 RS785E + SB820									•	•	•

AMD Platform											
	LX800	T4DE	T40N	T56N							
Clock	500MHz	1.0GHz	1.0GHz	1.6GHz							
L1	128K	-	-	-							
L2	128K	-	-	-							
TDP	3.8W	6.4W	9W	18W							
MOQ			•	•							
ESM-LX800/ ECM-LX800D/ ECM-LX800W AMD Geode LX800 + CS5536 (3.8W + 1.1W)	•										
ECM-A50M/ ESM-A50M/ EBM-A50M AMD Embedded G-Series Processor + A50M (6.4W + 4.7W)		•	•	•							
EPC-LX800W AMD Geode LX800+CS5536	•										
EPC-A50M/ ERS-A50M/ ASM-A50M AMD Embedded G-Series Processor + A50M		•		•							

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AMD CPU Info										
OPN	Processor	Segment	Socket	Model	Core Freq	HT Freq	Watt	L1/Core	L2/Core	remark
TMDTL56HAX5DME	Turion X2	Mobile	S1	TL56	1.8G	800M	31W	128Kx2	512Kx2	65nm
TMDTL62HAX5DME	Turion X2	Mobile	S1	TL62	2.1G	800M	35W	128Kx2	512Kx2	65nm
TMDTL52HAX5CTE	Turion X2	Mobile	S1	TL52	1.6G	800M	35W	128Kx2	512Kx2	90nm
SMS3700HAX4DQE	Mobile Sempron	Mobile	S1	3700+	2.0G	800M	25W	128K	512K	65nm
SMS3500HAX4CME	Mobile Sempron	Mobile	S1	3500+	1.8G	800M	25W	128K	512K	90nm
SMF2100HAX3DQE	Mobile Sempron	Mobile	S1	2100+	1.0G	800M	8W	128K	512K	65nm
SDC2100HAX3CME	Mobile Sempron	Mobile	S1	2100+	1.0G	800M	9W	128K	512K	90nm
HEQ54LOEK4DGME	Phenom II	Mobile	AM3	Q54L	2.2G	1.8G	65W	64Kx4	512K x4	45nm
AEV66CHDK23GME	Athlon II	Mobile	AM3	V66C	2.8G	2G	45W	64Kx2	1MB x2	45nm
AEV64LHFK23GME	Athlon II	Mobile	AM3	V64L	2.7G	2G	45W	64Kx2	1MB x2	45nm
AEV50LSCK23GME	Athlon II	Mobile	AM3	V50L	2.0G	2G	25W	64Kx2	1MB x2	45nm
ADD4200IAA5DOE	Athlon X2	Mobile	AM2	4200+	2.0G	1G	35W	128Kx2	512Kx2	65nm
ADD3600IAA5DOE	Athlon X2	Mobile	AM2	3600+	1.9G	1G	35W	128Kx2	512Kx2	65nm
ADD3400IAA5CUE	Athlon X2	Mobile	AM2	3400e	1.8G	1G	22W	128Kx2	512Kx2	90nm
ADS3100IAR4DRE	Athlon	Desktop	AM2	3100+	2.0G	1G	25W	128K	512K	65nm
ADD3000IAA4CNE	Athlon	Desktop	AM2	3000+	1.8G	1G	35W	128K	512K	90nm
ADG2600IAV4DRE	Athlon	Desktop	AM2	2600+	1.6G	800M	15W	128K	512K	65nm
ADF2000IAV4DRE	Athlon	Desktop	AM2	2100+	1.0G	1G	8W	128K	512K	65nm
OSB144FOT5BKE	Opteron	Server	940Pin	144 EE	1.8G	1G	30W	128k	1MB	90nm
OSB240FOT5BLE	Opteron	Server	940Pin	240 EE	1.4G	1G	30W	128k	1MB	90nm
OSB244FOT5BLE	Opteron	Server	940Pin	244 EE	1.8G	1G	30W	128k	1MB	90nm

Embedded Computing

Computer On Module

Embedded System & Platform

Industrial Motherboard

Industrial Barebone

Industrial Platform



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