



HQ

**Axiomtek Co., Ltd**  
8F., No.4, Lane 235,  
Baoqiao Road, Xindian District,  
New Taipei City, 231,  
Taiwan  
Tel: +886-2-2917-4550  
Fax: +886-2-2917-3200  
E-mail: info@axiomtek.com.tw

USA

**Axiomtek**  
18138 Rowland Street,  
City of Industry, CA 91748  
USA  
Tel: +1-626-581-3232  
Fax: +1-626-581-3552  
E-mail: info@axiomtek.com

**Regional Sales Office**

Western Region ext. 116  
Northeast/Southeast Region ext. 123  
North Region ext. 189

**Axiomtek Systems**

300 Griffin Brook Drive,  
Methuen, MA 01844  
USA  
Tel: +1-978-258-0108  
E-mail: sales@axiomtek.com

EUR

**Axiomtek Deutschland GmbH**  
Hans-Böckler-Str. 10,  
40764 Langenfeld,  
Germany  
Tel: +49-2173-399360  
Fax: +49-2173-3993636  
E-mail: sales@axiomtek.eu

**Axiomtek UK Limited**

920 Peter House, Oxford Street,  
Manchester M1 5AN,  
UK  
Tel: +44(0)1612093680  
E-mail: wen@axiomtek.com.tw

**Axiomtek ITALIA S.r.l.**

Via Pavia, 21,  
20835 Muggiò (MB),  
Italy  
Tel: +39-02-664299.1 r.a.  
Fax: +39-02-66400279  
E-mail: info@axiomtek.it

ASIA

**Axiomtek Technology Co., Ltd**  
10F, Block B, Build 6 (Boahui Building),  
Baoneng Science and Technology Park, NO.1,  
Qingxiang Road, Longhua New District,  
Shenzhen 518109  
P.R. China  
Tel: +86-0755-32909050  
Fax: +86-0755-32909060  
E-mail: axcn@axiomtek.com.cn

**Axiomtek (Malaysia) Sdn. Bhd.**

No 16, Jalan Tandang 51/205A  
Seksyen 51, 46050 Petaling Jaya  
Selangor, Malaysia

Tel: +603-77733908  
Fax: +603-77733873  
E-mail: info@axiomtek.com.my

**Axiomtek (Thailand) Co., Ltd.**

7/17 Moo 6, Tumbol Banmai,  
Amphur Pakkret, Nonthaburi,  
Thailand 11120

Tel: +662-573-4725  
Fax: +662-573-4726  
E-mail: sales@axiomtek.co.th



intel IoT Solutions Alliance V702 94300004370E

AXIOMTEK

2017 Embedded Boards & SoMs

V702



# 2017 Embedded Boards & SoMs

- System on Modules
- Embedded Single Board Computers
- Industrial Motherboards
- Slot CPU Cards
- ARM Embedded Boards

www.axiomtek.com



# Overview

## About Axiomtek

Innovations for the embedded world

For over 25 years, Axiomtek has been among the major design and manufacturing companies in the field of industrial computers & embedded systems. Since its establishment, Axiomtek has successfully gained worldwide recognition for our innovative designs and outstanding customer satisfaction. As a valuable & reliable industrial manufacturer, Axiomtek is devoted to producing state-of-the-art solutions that support users in achieving success. Axiomtek takes pride and ownership in what we do through our commitment to excellence.

### Vision

To bring smart, innovative and sustainable embedded solutions to our connected world

### Mission

Designs and manufactures embedded solutions for mission critical applications allowing our customers to bring superior products to their vertical markets

### Value Systems

**Passion:** We are passionate about our vision, our goals and our commitment to serve our employees and customers.

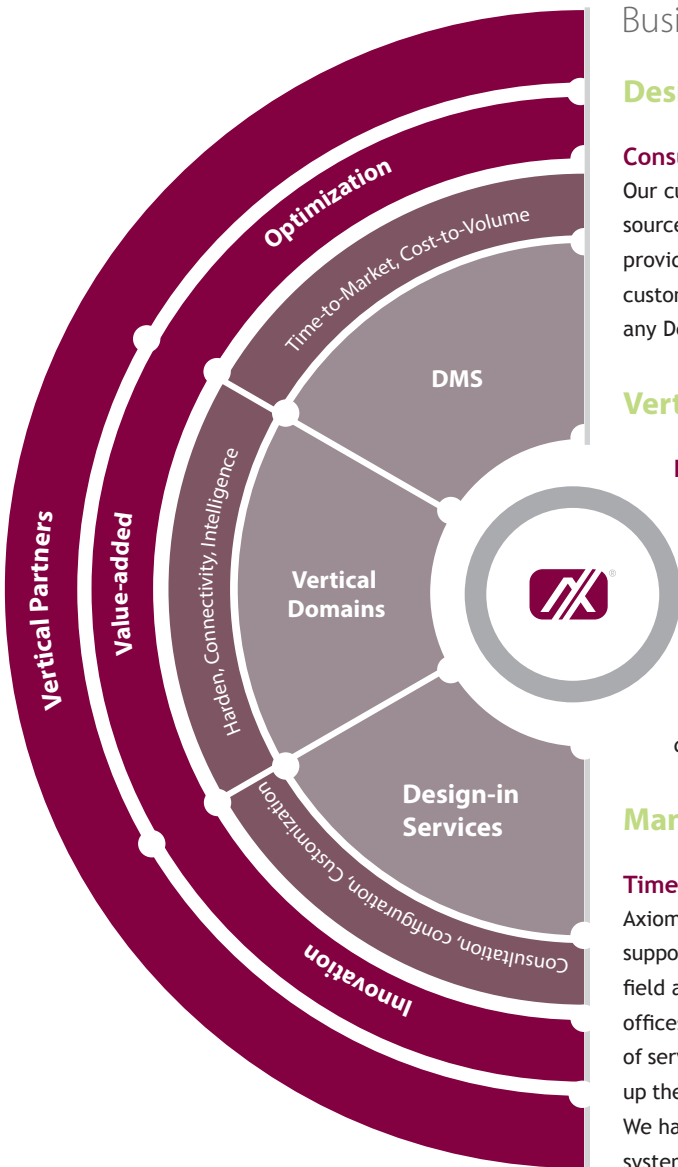
**Integrity:** We earn your trust through honest and ethical business practice.

**Innovation:** Our focus is on developing new products using the most advanced technologies and customer-based experiences.

**Partnership:** We commit to long-term mutual success with customers, employees and stakeholders.

**Leadership:** Our goal is always to be the leader in our targeted markets.

**Diversity:** We strive to diversify our products and services to serve specific industry needs.



## Business Models

### Design-in Services

#### Consultation, Configuration, Customization (Innovation)

Our customers come to us when they want a single, reliable, and valuable source for their industrial computers and embedded platforms. Axiomtek provides high quality, innovative and quick Design-in services to our customers. We have the experience, capability and R&D resources to make any Design-in projects a success.

### Vertical Domains

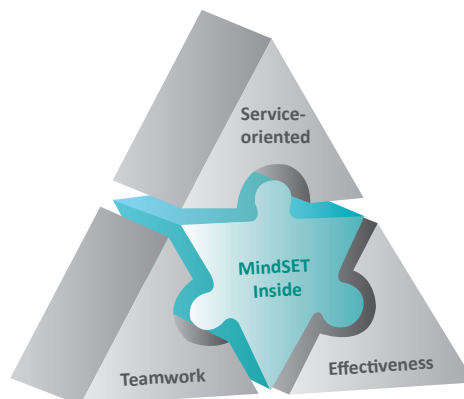
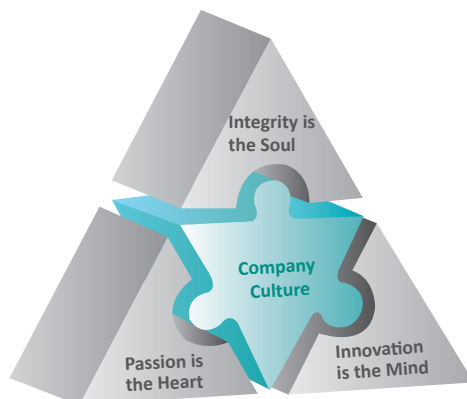
#### Hardened, Connectivity, Intelligence (Value-added)

As a leading industrial manufacturer, Axiomtek is devoted to producing state-of-the-art solutions that support users in achieving their goals. We have heavy-duty design capability and professional certification experience. Our business concept of vertical domains is to deliver hardened, connective, intelligent and valuable systems & solutions for vertical markets in automation, smart factory, gaming, transportation, utility, digital signage, POS, kiosk, network, medical and many more!

### Manufacturing Services

#### Time-to-Market, Cost-to-Volume (Optimization)

Axiomtek specializes in OEM and ODM projects. Each project is fully supported by a group of experienced engineers, mechanical engineers, field application engineers, and sales coordinators from our worldwide offices. From concept to design, Axiomtek provides a comprehensive set of services to help you shorten your product development cycle and speed up the "Time to Market" and "Cost-to-Volume" gaining a competitive edge. We have the most advanced SMT assembly lines and optical inspection systems utilizing the lead-free technology. Our manufacturing facility is ISO 9001, ISO 13485 and ISO 14001 certified.



# Strength and Services



## Global Support

Axiomtek maintains a global network of international subsidiaries and distributors in more than 40 countries. To maximize service efficiency, Axiomtek employs an international service network. Our worldwide technical support and sales service among our 16 office locations located in Taiwan, North America, Europe, China and recently expanded to Malaysia and Thailand ensures we deliver dedicated and prompt services. Through our global network of international subsidiaries, customers obtain faster services and the most competitive pricing. Each project is fully supported by a group of experienced engineers, mechanical engineers, field application engineers, and sales coordinators from our worldwide offices. From concept to design, Axiomtek provides a comprehensive set of services to help you shorten your product development cycle and speed up your "Time to Market" gaining a competitive advantage. It has never been this easy to develop a project! With years of experience and knowledge, Axiomtek is your best partner for industry applications.

## Technical Support

Outstanding technical support is important to Axiomtek, therefore we have organized our customer service department into a team of technical support professionals from our headquarters as well as team members from global regions, providing real-time technical support and professional knowledge.

## Partnership Program

As an Intel®, Microsoft® and AMD partner, Axiomtek has ample awareness of market trends and can rapidly develop advanced applications that enhance the competitiveness of our customers.

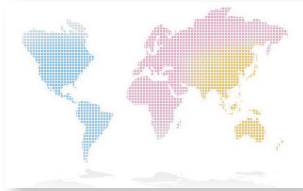


# Global Website

[www.axiomtek.com](http://www.axiomtek.com)

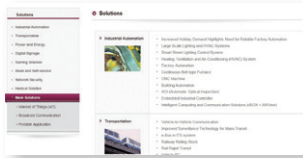
Axiomtek's global website is designed with multi-languages support to provide visitors with rich, valuable, interactive information. Through our global website you can access a wide variety of resources such as Products, Solutions, eCatalogs & Videos, Partner Zone, Supports and more! Major sections of the Axiomtek global website are as follow:

## Multi-languages



Visitors can select from a wide selection of languages including, English, German, French, Italian, Japanese, Traditional Chinese and Simplified Chinese.

## Solutions



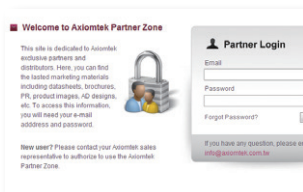
Here, you can refer to any vertical market in which your product offering is applicable. Configuration diagrams show how Axiomtek's products can be implemented into specific applications, and help customers build a successful solutions.

## Supports



Axiomtek is devoted to providing the best customer services possible. Customers can obtain real-time update information such as manuals, drivers, VGA/LCD BIOS support lists and a FAQ database thru our eService. Axiomtek's creative eRMA online service offers a non-stop RMA service. Customers can access eRMA service, obtaining the most update information on repair and print test reports directly.

## Partner Zone



This page is exclusively provided for Axiomtek sales representatives, channel partners and distributors. Here you can find the latest marketing information and collateral such as datasheets, brochures, press releases, product images, as well as product and company presentations.

## Mobile Website



Axiomtek mobile site is designed to provide a better reading experience, with a focus on simplicity. You will be presented with a clear view of products, news, and solutions with minimal distraction. You can access Axiomtek mobile site by entering [www.axiomtek.com](http://www.axiomtek.com) into your mobile device browser.

## Various Products



Axiomtek offers Embedded Boards & SoMs, Industrial & Embedded Computers, Network Appliances, signage and Touch Panel Computers. Customers can view product photos, features and ordering information and download complete product datasheets.

## eCatalogs & Videos



Here, you can find our environmentally-friendly paperless online catalogs and videos for additional product information.

## Social Links



Axiomtek social media links can keep you up-to-date on product information, solutions, news and events. Axiomtek is devoted to providing various platforms to let people get information faster and easier. Search "Axiomtek" at any of social links to visit us and be sure to bookmark them and check back often!

## eNewsletters



To provide customers with real time news from Axiomtek, customers can sign up our eNewsletters by visiting our eNews page directly for the latest product news, service updates, event invitations, and more!

## Axiomtek APP



iOS

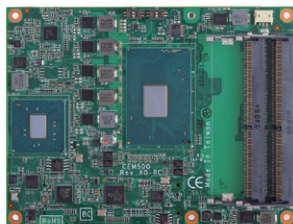


Android

# New Product Highlights

## System on Modules

### ■ CEM510 >>Page 50



COM Express Type 6 Module with 7th Gen Intel® Xeon® and Core™ i7/i5/i3 Processor, Intel® CM238/QM175/HM175 Chipset

- 7th gen Intel® Xeon® and Core™ i7/i5/i3 processors (KabyLake-H)
- Intel® CM238/QM175/HM175 chipset
- 2 DDR4-2133 SO-DIMM, up to 32GB ECC or non-ECC
- 1 x PCIe x16 and 8 x PCIe x1 Gen. 3
- 4 SATA-600 with RAID 0/1/5/10
- 4 USB 3.0 and 8 USB 2.0
- Intel® AMT 11.0 and TPM function supported
- AXView 2.0 intelligent remote management software



### ■ CEM313 >>Page 57

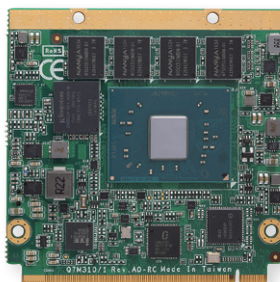


COM Express Type 6 Compact Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350

- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 2 DDR3L-1600 SO-DIMM, up to 8GB
- Max. up to 4 lanes of PCIe
- 2 SATA-600
- 4 USB 3.0 and 8 USB 2.0
- AXView 2.0 intelligent remote management software



### ■ Q7M311 >>Page 70

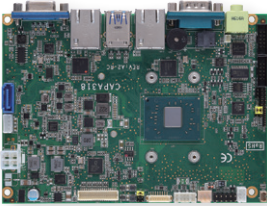


Qseven Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350

- Intel® Pentium® Processor N4200 & Celeron® Processor N3350 (Apollo Lake)
- DDR3L on-board memory, up to 4GB
- 4 lanes of PCI Express
- 2 SATA-600
- 2 USB 3.0 and 4 USB 2.0



## 3.5" Capa SBC



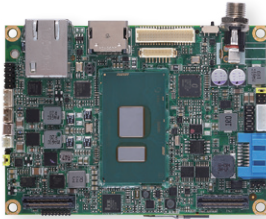
### ■ CAPA318 >>Page 100

3.5" Embedded SBC with Intel® Pentium® Processor N4200/Celeron® Processor N3350, VGA/LVDS, Dual LANs and Audio

- Intel® Pentium® processor N4200/Celeron® processor N3350
- 1 DDR3L SO-DIMM, up to 8GB
- 2 USB 2.0 and 2 USB 3.0 ports
- PCI Express Mini card with mSATA supported



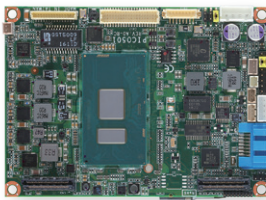
## Pico-ITX SBCs



### ■ PICO512 >>Page 120

Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, HDMI/LVDS and LAN

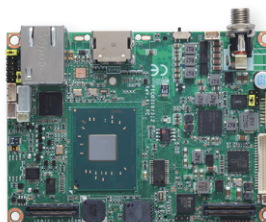
- 7th Gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4-2133 SO-DIMM, up to 16GB
- 1 PCI Express Mini Cards
- Intel® AMT 11 supported



### ■ PICO511 >>Page 121

Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 and Celeron® Processor, LVDS and LAN

- 7th gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4-2133 SO-DIMM, up to 16GB
- 2 PCI Express Mini Cards
- Intel® AMT 11 supported



### ■ PICO312 >>Page 124

Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI (VGA)/LVDS and LAN

- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 1 DDR3L-1867 SO-DIMM, up to 8GB
- 1 USB 2.0 port
- PCI Express Mini Card with mSATA supported



## Mini-ITX Motherboards



### MANO501 >>Page 149

Thin Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3, Pentium® and Celeron® Processor, Intel® H110, Dual HDMI/LVDS, Dual LANs and USB 3.0

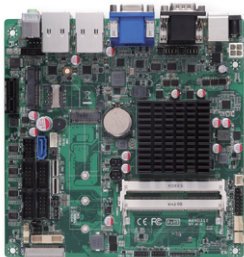
- Low profile thin Mini-ITX
- LGA1151 socket 6th/7th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor
- 2 DDR4-2133 MHz SO-DIMM, up to 32GB
- 1 PCIe x16
- 1 PCIe Mini card and SIM card slots
- 2 SATA-600 and 1 mSATA
- 4 USB 3.0 and 4 USB 2.0 ports
- 4-pin ATX 12 V/ 19-24 VDC jack support



### MANO310 >>Page 153

Mini-ITX SBC with Intel® Celeron® Processor N3350 SoC, VGA/HDMI/LVDS, USB 3.0, PCIe Mini Card, M.2, and HD Audio

- Intel® Celeron® processor N3350 (Apollo Lake)
- 2 DDR3L-1600 SO-DIMM, up to 8GB
- PCI Express Mini Card slot and PCIe x1
- 4 USB 3.0 and 2 USB 2.0 ports
- 1 SATA-600, 1 M.2 and 1 SDXC
- 6 COM ports supported
- 12-24 VDC
- VGA, HDMI and LVDS with triple-view supported



## PICMG 1.3 System Host Board

### SHB140 >>Page 186

PICMG 1.3 Full-size CPU Card with LGA1151 6th/7th Gen Intel® Core™, Intel® Q170, SATA3, USB 3.0, LAN and DVI-I

- LGA1151 6th/7th gen Intel® Core™ processor
- Intel® Q170 chipset
- 2 DDR4-2133 un-buffered DIMM, up to 32GB
- Intel® AMT 11 & TPM (optional) supported
- PCIe Gen. 3 at 8GT/s supported
- 10 USB 2.0 and 4 USB 3.0 ports
- 6 SATA-600 with RAID 0/1/5/10





# Table of Contents

## Embedded Boards & SoMs

### 0 SBC Services and Solutions

---

Axiomtek Single Board Computer Solutions	44
Embedded Boards & SoMs	45
Design in Service	46
Embedded OS	49
LCD Lightening Service & User Friendly Accessories	52
Form Factors	53
Wide Operating Temperature Range for Rugged Environment	59

### 1 System on Modules

---

COM Express™ Technical Notes	63	
ETX Technical Notes	65	
Selection Guide	71	
CEM510 <b>NEW</b>	COM Express Type 6 Module with Intel® Xeon® and 7th Gen Intel® Core™ i7/i5/i3 Processor, Intel® CM238/QM175/HM175	78
CEM511 <b>NEW</b>	COM Express Type 6 Module with 7th Gen Intel® Core™ i7/i5/i3 Processor	79
CEM500	COM Express Type 6 Module with Intel® Xeon® and 6th Gen Intel® Core™ i7/i5/i3 Processor, Intel® CM236/QM170/HM170	80
CEM501	COM Express Type 6 Module with 6th Gen Intel® Core™ i7/i5/i3 Processor	81
CEM880	COM Express Type 6 Module with 5th Gen Intel® Core™ i7 & 4th Intel® Core™ i7/i5/i3 & Celeron® Processor and Intel® QM87	82
CEM881	COM Express Type 6 Compact Module with 5th/4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor	83
CEM860	COM Express Type 6 Module with Intel® Core™ i7/i5/i3 and Intel® QM67	84
CEM313 <b>NEW</b>	COM Express Type 6 Compact Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350	85
CEM312 <b>NEW</b>	COM Express Type 6 Compact Module with Intel® Atom™ x5 and x7 Processor	86
CEM842	COM Express Type 6 Compact Module with Intel® Celeron® Processor J1900/N2807	87
CEM843	COM Express Type 6 Compact Module with Intel® Atom™ Processor E3845	88
CEB94011 <b>NEW</b>	COM Express Type 6 Development Baseboard	89

CEB94006	COM Express Type 6 Development Baseboard	90
CEM311 <b>NEW</b>	COM Express Type 10 Mini Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350	91
CEM310 <b>NEW</b>	COM Express Type 10 Mini Module with Intel® Atom™ x5 and x7 Processor	92
CEM300 <b>NEW</b>	COM Express Type 10 Mini Module with Intel® Pentium® & Celeron® N3000 Series Processors	93
CEM846 <b>NEW</b>	COM Express Type 10 Mini Module with Intel® Atom™ E3800 Family	94
CEB94008	COM Express Type 10 Development Baseboard	95
CEM841	COM Express Type 2 Basic Module with Intel® Celeron® Processor J1900/N2807	96
CEM100	COM Express Type 2 Basic Module with AMD G-Series APU and AMD A55E	97
Q7M311 <b>NEW</b>	Qseven Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350	98
Q7M310 <b>NEW</b>	Qseven Module with Intel® Atom™ x5 and x7 Processor	99
ETM620	ETX V3.0 SoM with AMD Geode™ LX Family and Multiple I/O Features	100

## 2 Embedded Single Board Computers

ZIO Form Factor Technical Notes		103
Nano-ITX Form Factor Technical Notes		104
Pico-ITX Form Factor Technical Notes		105
PC/104 Expansion Modules Technical Notes		106
Selection Guide		109
EPIC Board		
EP100	EPIC SBC with AMD G-Series APU, AMD A50M FCH, Dual DisplayPort/ VGA/LVDS, Dual LANs and Audio	123
3.5" Capa Boards		
CAPA500 <b>NEW</b>	3.5" Embedded SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3 Processor, LVDS/ VGA/HDMI, Dual LANs and Audio	124
CAPA880	3.5" Embedded SBC with LGA1150 Socket 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® H81, LVDS/VGA/HDMI, Dual LANs and Audio	125
CAPA881	3.5" Embedded SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM86 (Intel® QM87 optional), LVDS/ VGA/Dual HDMI, Dual LANs and Audio	126
CAPA312 <b>NEW</b>	3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI/LVDS, Dual LANs and Audio	127
CAPA318 <b>NEW</b>	3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, VGA/LVDS, Dual LANs and Audio	128
CAPA848	3.5" Embedded SBC with Intel® Celeron® Processor N2807, LVDS/VGA/HDMI, LAN and Audio	129
CAPA843	3.5" Embedded SBC with Intel® Celeron® J1900 Processor, LVDS/VGA/HDMI, Dual LANs, Audio and ZIO	130
CAPA842	3.5" Embedded SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio	131
CAPA841	3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs and Audio	132
CAPA840	3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/ VGA/HDMI, Dual LANs, Audio and ZIO	133
CAPA831	3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio	134
CAPA830	3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/HDMI/VGA, Dual LANs, Audio and ZIO	135

CAPA112	3.5" Embedded SBC with AMD G-Series APU, AMD A55E, LVDS/VGA, Dual LANs, Audio, and PC/104	136
CAPA111	3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/VGA, Dual LANs and Audio	137
CAPA110	3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort/VGA, Dual LANs and Audio	138
SBC84622	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS/TTL	139
SBC84621	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS (-40°C to +85°C)	140
SBC84620	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/TTL (-40°C to +85°C)	141
Nano-ITX SBCs		
NANO842	Nano-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio	142
NANO840	Nano-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs and Audio	143
NANO831	Nano-ITX SBC with Intel® Atom™ N2600, Intel® NM10, LVDS/VGA, Dual LANs and Audio	144
NANO830	Nano-ITX SBC with Intel® Atom™ D2550, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio	145
NANO100	Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/DisplayPort/VGA, Dual LANs and Audio	146
NANO101	Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/VGA, Dual LANs and Audio	147
Pico-ITX SBCs		
PICO512 <b>NEW</b>	Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, HDMI/LVDS and LAN	148
PICO511 <b>NEW</b>	Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 and Celeron® Processor, LVDS and LAN	149
PICO500	Pico-ITX SBC with 6th Gen Intel® Core™ i7/i5/i3 & Celeron® Processors, HDMI/LVDS, LAN and Audio	150
PICO880	Pico-ITX SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, DisplayPort/LVDS, LAN and Audio	151
PICO312 <b>NEW</b>	Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI (VGA)/LVDS and LAN	152
PICO310 <b>NEW</b>	Pico-ITX SBC with Intel® Atom™ x5/x7 Processor, HDMI (VGA)/LVDS and LAN	153
PICO300	Pico-ITX SBC with Intel® Pentium® N3710 & Celeron® N3060 Processor, HDMI (VGA)/LVDS, LAN and Audio	154
PICO843	Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA, LAN and Audio	155
PICO842	Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA (HDMI), LAN and Audio	156
PICO841	Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA, LAN and Audio	157
PICO840	Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA (HDMI), LAN and Audio	158
PICO831	Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/VGA, LAN and Audio	159
PICO830	Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/DisplayPort or VGA, LAN and Audio	160
PICO121	Pico ITX SBC with AMD Embedded G-Series SoC, VGA/LVDS, LAN and Audio	161
PICO100	Pico-ITX SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort (VGA), LAN and Audio	162
PC/104 CPU Module		
AX12260	AMD LX PC/104 CPU Module with VGA/TTL, USB DoM and PC/104-Plus Expansion	163

# 3 Industrial Motherboards

Selection Guide 167

## Mini-ITX Form Factor

MANO501 <b>NEW</b>	Thin Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3, Pentium® and Celeron® Processor, Intel® H110, Dual HDMI/LVDS, Dual LANs and USB 3.0	177
MANO500	Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® H110, HDMI/DisplayPort/VGA/LVDS/eDP, Dual LANs and USB 3.0	178
MANO882	Mini-ITX SBC with LGA1150 Socket Intel® Xeon® E3-v3 and 4th Gen Intel® Core™ Processor, Intel® C226, HDMI/DisplayPort/VGA/LVDS, Dual LANs and USB 3.0	179
MANO881	Mini-ITX SBC with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® H81, HDMI/VGA/LVDS, Dual LANs and USB 3.0	180
MANO310 <b>NEW</b>	Mini-ITX SBC with Intel® Celeron® Processor N3350, VGA/HDMI/LVDS, USB 3.0, PCI Express Mini Card, M.2 and HD Audio	181
MANO311 <b>NEW</b>	Mini-ITX SBC with Intel® Celeron® Processor N3350, Dual HDMI/LVDS, USB 3.0, PCI Express Mini Card, mSATA and HD Audio	182
MANO300	Mini-ITX SBC with Intel® Celeron® Processor N3160 (up to 2.24 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card, mSATA, and HD Audio	183
MANO842	Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio	184
MANO840	Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio	185
MANO873	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, VGA/DVI-D, Dual LANs and USB 3.0	186
MANO872	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, DisplayPort/DVI-I/LVDS, Dual LANs and USB 3.0	187
MANO871	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, HDMI/DVI-I/LVDS, Dual LANs and USB 3.0	188
MANO870	Mini-ITX SBC with Socket G2 3rd Gen Intel® Core™ Processor, Intel® QM77, HDMI/DVI-D/VGA/LVDS, PCI Express Gen 3, SATA-600, Dual LANs and HD Audio	189
MANO861	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® H61, VGA/DVI-D/LVDS, Dual LANs and HD Audio	190
MANO860	Mini-ITX SBC with Socket G2 Intel® Core™ Processor, Intel® QM67, DisplayPort/HDMI/VGA/LVDS, SATA-600, Dual LANs and RAID	191
MANO831	Mini-ITX SBC with Intel® Atom™ Processor D2550, Intel® NM10, VGA/DVI-D/LVDS1/LVDS2, Dual LANs and HD Audio	192
MANO830	Mini-ITX SBC with Intel® Atom™ D2550/N2600, Intel® NM10, VGA/HDMI/LVDS, Mini PCIe Card, PCIe x1 and HD Audio	193
MANO800	Mini-ITX SBC with LGA1156 Intel® Core™ Processor, Intel® Q57, DVI-D/VGA, PCIe x4 and 4 SATA RAID	194
MANO120	Mini-ITX SBC with AMD G-Series APU, AMD A55E, HDMI/VGA/LVDS, Dual LANs and SATA-600	195

MANO111	Mini-ITX SBC with AMD Embedded R-Series APU, AMD A75, DDR3, USB 3.0, LVDS/DisplayPort/DVI-D and Dual LANs	196
SBC86620	Mini-ITX SBC with AMD LX800, Dual LANs, 4 COM and USB 2.0	197
ATX Form Factor		
IMB501	ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3 Processor, Intel® H110, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA	198
IMB500	ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® Q170, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA	199
IMB211	ATX Industrial Motherboard with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® Q87, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/VGA/HDMI and mSATA	200
IMB210	ATX Industrial Motherboard with LGA1150 Socket Intel® Xeon® E3-v3 and Core™ Processor, Intel® C226, ECC DDR3, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/DVI-I/HDMI and CFast™	201
IMB208	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® C216, USB 3.0, DisplayPort/DVI-I (VGA), Dual LANs and CFast™	202
IMB207	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® Q77, USB 3.0, DisplayPort/DVI-I, Dual LANs and CFast™	203
IMB206	ATX Industrial Motherboard with LGA1155 Socket 2nd Gen Intel® Core™ Processor, Intel® Q67, DVI-I/DisplayPort, Dual LANs and CFast™	204
IMB205	ATX Industrial Motherboard with LGA1156 Socket Intel® Core™ Processor, Intel® Q57, VGA/DisplayPort and Dual LANs	205
IMB204	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® B75, SATA3.0, Dual LANs, DVI-D/VGA and LPT	206

## 4 Slot CPU Cards

Selection Guide		209
PICMG 1.3 System Host Boards		
Full-size		
SHB140 <b>NEW</b>	PICMG 1.3 Full-size CPU Card with LGA1151 6th/7th Gen Intel® Core™, Intel® Q170, SATA3, USB 3.0, LAN and DVI-I	214
SHB131 <b>NEW</b>	PICMG 1.3 Full-size CPU Card with 4th Gen Intel® Core™ i7/i5 & Celeron® U-series Processor, SATA3, USB 3.0, LAN and Dual DVI-D	215
SHB130	PICMG 1.3 Full-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q87, SATA3, USB 3.0, DVI-D/VGA or DisplayPort for Dual Displays and Dual LANs	216
SHB120	PICMG 1.3 Full-size CPU Card with LGA1155 3rd Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q77, SATA3, USB 3.0, VGA/DVI and Dual LANs	217
SHB108	PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 & Xeon® Processor, Intel® C206, VGA, Dual LANs, Audio and ECC Memory	218

SHB106	PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® Q67, VGA, Dual LANs and Audio	219
SHB103	PICMG 1.3 Full-size CPU Card with LGA1156 Socket Intel® Core™ i7/i5/i3 & Pentium® Processor, Intel® Q57, VGA, Dual LANs and Audio	220
SHB111	PICMG 1.3 Full-size CPU Card with Socket G Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® QM57, VGA, LVDS, Dual LANs and Audio	221
Half-size		
SHB230	PICMG 1.3 Half-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® Q87, SATA3, USB 3.0, DVI-I/LVDS and Dual LANs	222
SHB213	PICMG 1.3 Half-size CPU Card with Socket G2 2nd Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM65, VGA, SATA3, USB 3.0 and Dual LANs	223
PICMG 1.0 CPU Cards		
Full-size		
SBC81210	PICMG 1.0 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® B65/Q67, VGA and Dual LANs	224

## 5 ARM Embedded Boards

---

Qseven® Technical Notes		227
QSeven® Carrier Board		227
Qseven® Mechanical Definitions		227
SMARC Technical Notes		228
SMARC Carrier Board		228
SMARC Mechanical Definitions		228
Selection Guide		229
Q7M100	Qseven v1.2 SoM with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	230
Q7M120	Qseven v2.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	231
SCM120	SMARC v1.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM	232
Q7M100-100-EVK	Qseven v1.2 SoM Evaluation Kit with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN and BSP	233
Q7M120-120-EVK	Qseven v2.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	234
SCM120-120-EVK	SMARC v1.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM	235

## 6 Accessories

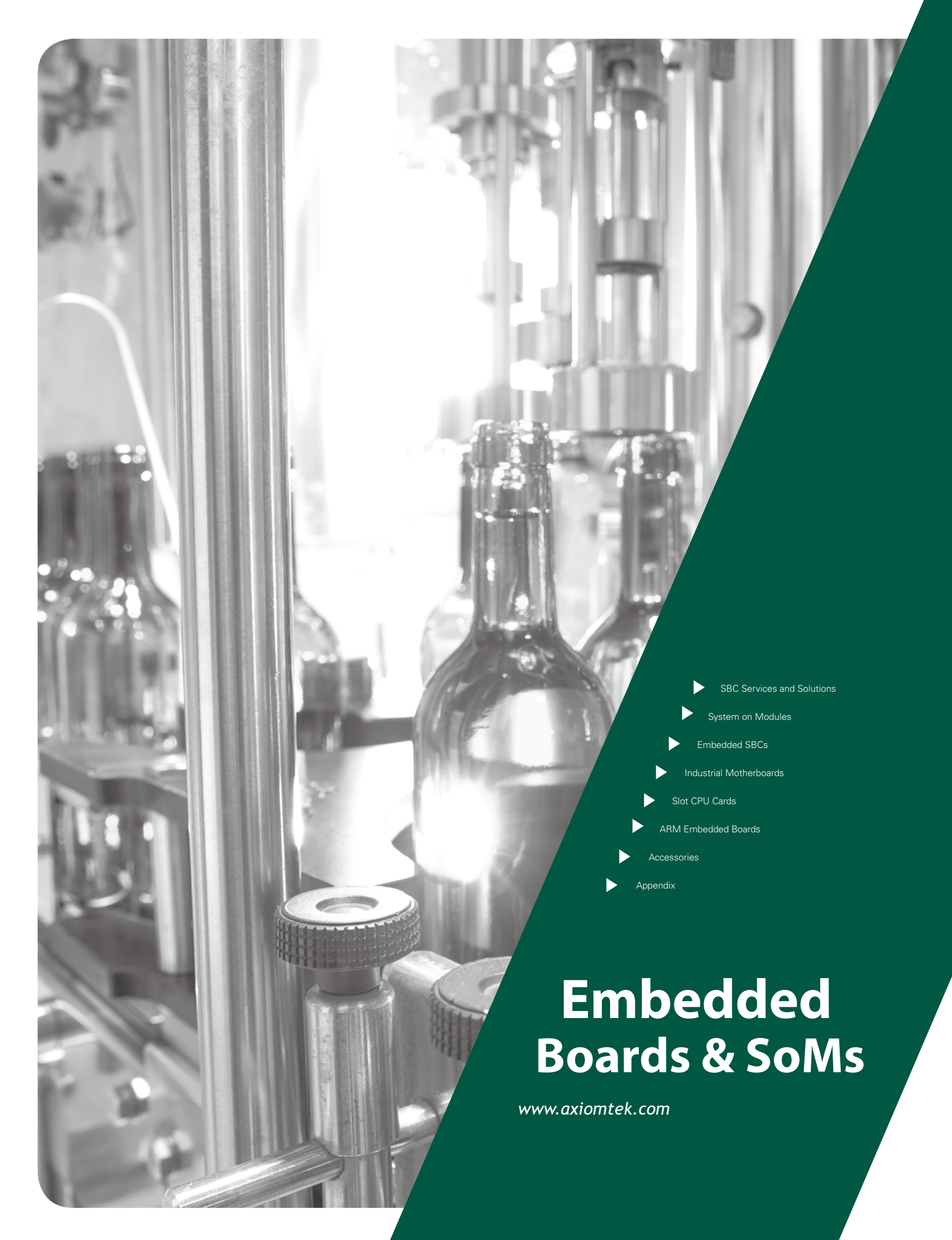
---

I/O Board for Pico-ITX Boards		237
AX93265		
AX93267		
AX93283		
AX93275		
AX93276		
AX93292		
AX93299		
AX93A00	<b>NEW</b>	
AX93A01	<b>NEW</b>	
AX93A02	<b>NEW</b>	
AX93A09	<b>NEW</b>	
I/O Cable Kit		
AX93242	HD Audio Converter Board with Bracket	239
Full-Size PCI Express Mini Modules		240
AX92902		
AX92903		
AX92904		
AX92905		
AX92906		
AX92907		
PoE I/O Boards		243
AX93274	<b>NEW</b> A PoE-PD I/O board complies with IEEE802.3at standard via an internal cable to power on SBC	
AX93280	<b>NEW</b> A PoE-PSE I/O board complies with IEEE802.3af standard via an internal cable connected to LAN port on a SBC to power an external PoE device	
ZIO Modules		244
AX93262	ZIO module with four COM ports and one PCI Express Mini Card	
AX93285	ZIO module with two COM ports and 32 bit programmable DIO	
AX93291	<b>NEW</b> ZIO module with two Gigabit Ethernet and two COM ports	
AX93295	<b>NEW</b> ZIO module with two isolated COM ports and three USB 3.0 ports	

## 7 Appendix

---

Cable List	247
Instructions of Backplane Installation	249
Installation of the LCD Wiring Kits	250

- 
- ▶ SBC Services and Solutions
  - ▶ System on Modules
  - ▶ Embedded SBCs
  - ▶ Industrial Motherboards
  - ▶ Slot CPU Cards
  - ▶ ARM Embedded Boards
  - ▶ Accessories
  - ▶ Appendix

# Embedded Boards & SoMs

[www.axiomtek.com](http://www.axiomtek.com)



# SBC Services and Solutions

## Axiomtek Single Board Computer Solutions

### Intel Solutions

Platform	COM Express	ETX	Qseven	EPIC	3.5" CAPA	Nano-ITX	Pico-ITX	PC/104	Mini-ITX	ATX	Full-Size 1.3	Half-Size 1.3	Full-Size 1.0
Sandy Bridge-S									MANO861	IMB206	SHB106 SHB108		SBC81210
Sandy Bridge-H	CEM860								MANO860		SHB111	SHB213	
Ivy Bridge-S (WS)									MANO871	IMB208			
Ivy Bridge-S (DT)									MANO871 MANO872 MANO873	IMB207 IMB204	SHB120		
Ivy Bridge-H									MANO870				
Haswell-S (WS)									MANO882	IMB210			
Haswell-S (DT)					CAPA800				MANO882 MANO881				
Haswell-H					CAPA881								
Haswell-U	CEM881						PICO880				SHB131		
Haswell Refresh-S (WS)									MANO882	IMB210			
Haswell Refresh-S (DT)					CAPA800				MANO882 MANO881		SHB130	SHB230	
Haswell Refresh-H	CEM880				CAPA881								
Broadwell-H	CEM880				CAPA881								
Broadwell-U	CEM881						PICO880						
Skylake-S (WS)													
Skylake-S (DT)					PICO500				MANO500	IMB500 IMB501	SHB140		
Skylake-H	CEM500												
Skylake-U	CEM501						PICO500						
Pine Trail					CAPA800 CAPA801								
Cedar Trail					CAPA830 CAPA831	NANO830 NANO831	PICO830 PICO831		MANO830 MANO831				
Bay Trail-D/M	CEM841 CEM842				CAPA842 CAPA843 CAPA848	NANO842	PICO842 PICO843		MANO840 MANO842				
Bay Trail-I	CEM846 CEM843				CAPA840 CAPA841	NANO840	PICO840 PICO841						
Braswell	CEM300						PICO300		MANO300				
Apollo Lake	CEM310 CEM311 CEM510 CEM511		Q7M310 Q7M311		CAPA311 CAPA312 CAPA318		PICO310 PICO311 PICO312 PICO313 PICO316		MANO310 MANO311				

### AMD Solutions

Platform	COM Express	ETX	Qseven	EPIC	3.5" CAPA	Nano-ITX	Pico-ITX	PC/104	Mini-ITX	ATX	Full-Size 1.3	Half-Size 1.3	Full-Size 1.0
LX800		ETM620			SBC84620 SBC84621 SBC84622			AX12260	SBC86620				
A50M				EP100	CAPA110 CAPA111	NANO100 NANO101	PICO100						
A55E	CEM100				CAPA112								



# SBC Services and Solutions

With many years of experience, Axiomtek has provided abundant product solutions from components (SBC, chassis and accessory individually) to platforms (SBC with embedded OS ported, related wiring kits integrated, plus system enclosure. Overall our product solutions have constituted revolutionary milestones in improving customers' system design TTM (Time-to-Market) and speeding up turnover without increased business overhead; especially, for project-based business essence. In addition, to break through the entry barrier to tailor-made requirements as embedded applications are frequently asked to, the COM Express, ETX are created to pave a suitable and reliable path to satisfaction through customized baseboard design with less R&D time and efforts without dealing with the critical core logic tune-up.

In essence, Axiomtek continues to lead the way in benefiting both customers and suppliers with better design concepts and pre/post-service considerations.

## Embedded Boards & SoMs

Axiomtek began to provide embedded SBC's in 1996 with compact size form factors which include Pico-ITX, EPIC boards, 3.5" Capa boards, Nano ITX, Mini ITX, ATX industrial motherboard, PICMG 1.3 system host boards (full-size & half-size), PICMG 1.0 CPU cards (full-size & half-size), ETX & COM Express,

PC/104 modules and customized sizes as well. The computing architecture for these boards is categorized as IBM PC-based compliant from 486 up to Intel® Core™ i/ Xeon. They are widely applied onto various embedded applications, such as intensive GUI in traditional industrial automation, human machine interfaces, transaction terminals, DVR and transportation equipment, as well as data processing in networking appliances. Reliability: To enhance system reliability for critical demands, Axiomtek's embedded SBC's are designed with precise Watchdog timer, a fanless low power consumption system, USB DOM (DiskOnModule), PC/104 and PC/104+ expansion interface, SSD with onboard Flash, NVRAM, DiskOnChip and CompactFlash, etc.

Communication: SBC offers auto flow control RS-232/422/485, Wake-on-LAN Ethernet with RPL/PXE Boot ROM to suit communication interactive demands.

Multimedia: The SBC's are equipped with user-friendly SmartView BIOS, DualView (also advanced Dual LVDS) and high quality audio playback.

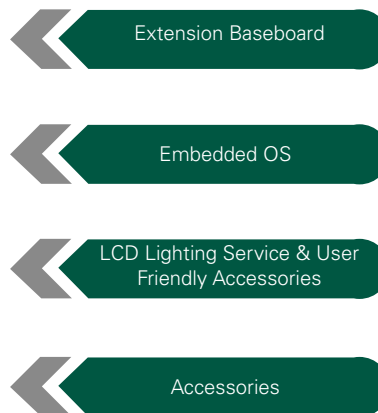
Security: For security purposes, the SBC's have a unique ID and MiniPCI interface for hardware encryption/authentication acceleration.

Critical Approach: The SBC's are designed to work in extreme temperature.

## Pre-configured HW & SW Combination for Custom Embedded Boards & SoM Solutions



Embedded SBC



## Design-in Service

Axiomtek's design-in services comprehensively satisfy electronic engineering demands at design-in stage while committing to bringing benefits in reducing design and integration cycle, thereby minimizing uncertainty and risk during the development process.

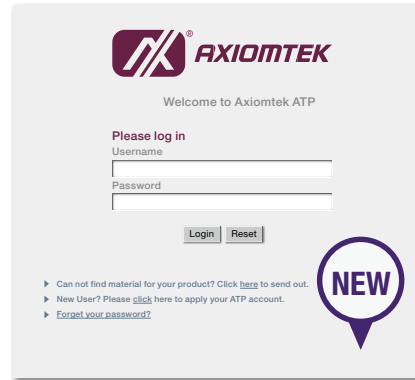
- Reduce design effort
- Shorten development cycle
- Save cost
- Speed up time to market

## Design Assistance Services

Axiomtek's design assistance services aim to offer indispensable help in achieving critical development tasks during the development process. Such services help system designers deal with issues in electric design, heat dissipation, verification test, production quality control and warranty support; as well help reduce design uncertainty and risks associated with customers' system integration completion.

## Axiomtek Technical Portal

ATP (Axiomtek Technical Portal) is a useful tool that provides abundant technical support, mechanical information, and application notes. Please email us at [info@axiomtek.com.tw](mailto:info@axiomtek.com.tw) or contact our sales representative to apply for your ID along with password to experience our valuable new portal!



Website: <http://atp.axiomtek.com.tw/atp/>

\* Web-based support services

Benefits of Axiomtek Technical Portal:

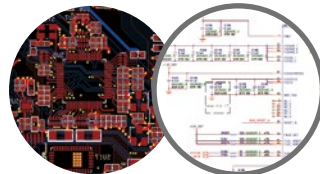
- Quick and easy access
  - Automatic login to all applications on your ATP pages
  - Tools and information are automatically provided to you
- Up-to-date information
  - Direct access to frequently used sites and applications
  - Download documents including products' technical specifications, mechanical 2D/3D drawings, software utilities (uAPI, DIO and Watchdog) and brightness control utilities
  - Quick links to additional relevant information
- Secured site
  - ATP is a secured site where users need to login with a unique user ID and password provided by Axiomtek

Axiomtek Technical Portal is a 24 hours, 7 days non-stop supporting system. No matter what time it is and where you are, useful technical information and utilities are just fingertips away.



### Initial Planning

- Product selection
- Domain knowledge sharing
- Comprehensive document support



### Design

- Schematic review
- Layout review
- Thermal design
- BIOS, EDS customization



### Debug

- Power on/off test
- Phenomenon duplication
- Analysis & verification
- Solutions & suggestions



### Validation

- Functionality
- Reliability/safety
- Thermal profile test
- Electrostatic signal compatibility
- Certification test



### Ready to Ship

- Production test
- Material maintenance
- Schedule control
- Warranty support

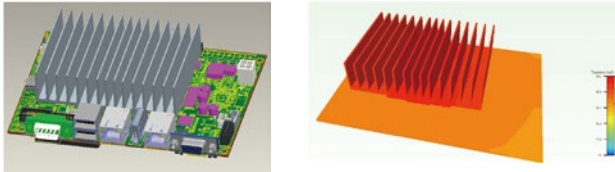


## Thermal Solution Services

A successful thermal design helps improving the reliability of a system and preventing failures before products go out to the field. Axiomtek's thermal solution service can offer flexible and efficient solutions by providing proven thermal modules for embedded boards or systems. When customers choose to do the work by themselves, we can provide all of the necessary mechanical and thermal information to help them complete their projects.

### 1. Proven thermal module

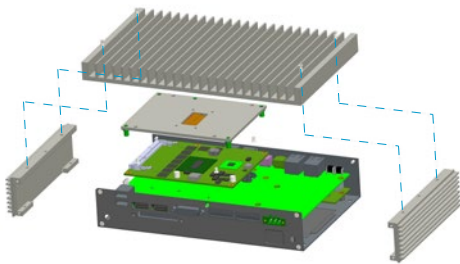
Axiomtek provides proven heatsink/cooler or system thermal solutions which are been qualified in different temperature conditions.



### 2. Customized thermal solution

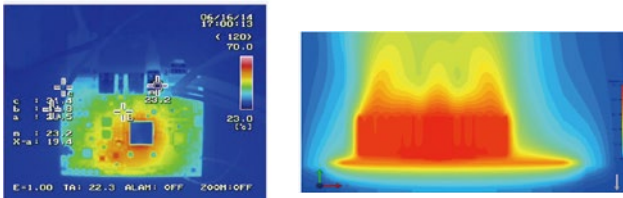
Customized thermal services are available upon request to suit different application environments.

Axiomtek also supports a custom designed heatsink or cooler based on the modularized thermal solution concept.



### 3. Design support for customers

Axiomtek has built up a thermal design database offering customers board-level ME drawings which assist the design of system chassis. As system thermal design is a highly important task, Axiomtek is pleased to offer thermal hot spot images and feasibility studies incorporating FloTHERM thermal simulations, which can predict airflow and heat transfer in and around electronic equipment thus helping reduce design risks and time.



## Modularized Accessory Services

Axiomtek's modularized accessory services provide different levels of customized services to meet complicated and variable system application requirements.

### ● Fully-customized design service

Fully-customized design service provides a total solution from board-level design to system-level integration in delivering valuable systems for vertical applications.

### ● Semi-customized design service

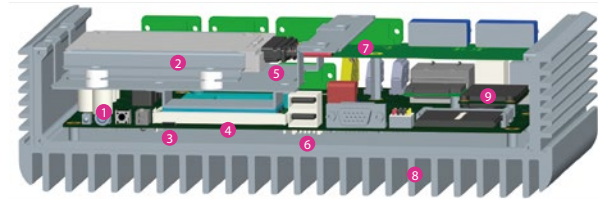
To satisfy growing demands for embedded solutions, we offer our customers' a wide range of embedded boards and accessories which can be integrated into specific systems. Whether customers choose to design their own IO boards or receive assistance from Axiomtek: we stand to provide all necessary information and cooperation to help our customers build their systems.

### ● Micro-customized design service

Through our micro-customized design service, customers can complete their systems quickly and easily with just a few minor configuration changes. Without the need of redesign, the almost ready embedded modules help speed up products' time to market.

Advantages:

- Increase flexibility and scalability
- Reduce design complexity
- Reduce system assembly parts
- Save costs and development time

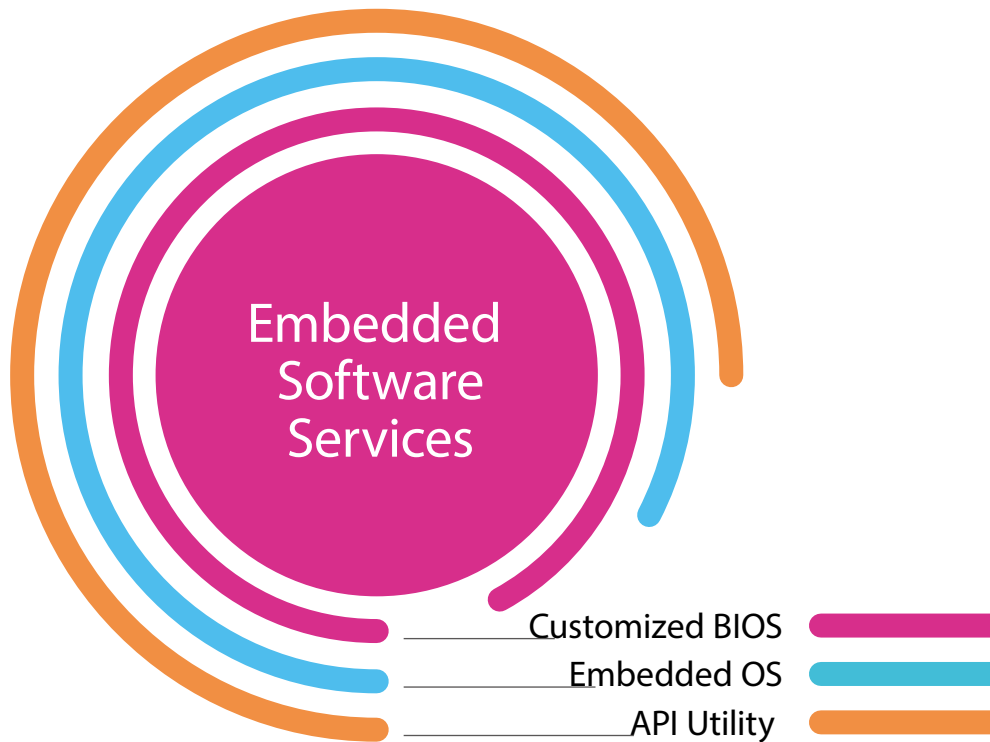


- |  |  |  |
|--|--|--|
| ① Power modules<br>60W, 90W, 120W      | ④ Memory modules                                     | ⑦ I/O boards<br>DP/HDMI, USB, LAN                        |
| ② Storage devices<br>SSD, mSATA, CFast | ⑤ ZIO modules<br>Mini PCI Express, USB, COM, LAN     | ⑧ Thermal solution<br>Heatsink, cooler, system enclosure |
| ③ Carrier boards                       | ⑥ Embedded boards<br>3.5" SBC, Pico-ITX, COM Express | ⑨ Embedded modules<br>Mini card for DIO, CAN, Wi-Fi      |

## Embedded Software Services

To optimize system resources in demand, reduce TCO (Total Cost of Ownership), improve system reliability and system design TTM (Time-to-Market), Axiomtek has established the embedded OS service force since 1999. Based on a platform

concept, ECP (Embedded Computing Platform) combines two elements, a hardware SBC body and an embedded software soul which constitute a perfect match for many application targets.



### Customized BIOS Services:

Axiomtek's customized BIOS services help implement many specific features in industrial markets and enable customers differentiate their embedded products and applications.

- Customized BIOS default settings
- Secured password
- LVDS panel resolution support
- I/O resource allocation
- Custom logo

### Software API Utility and Driver Services:

Axiomtek's software API utility and driver services provide system environmental protection, increase system reliability and reable remote management control.

- uAPI: hardware monitor, DIO, WatchDog
- AXView 2.0: remote management control
- Specific utilities and driver: CANbus
- CANopen, EtherCAT, EMGD driver
- DIO driver for IntervalZero RTX



# SBC Services and Solutions

## Embedded OS Services

Axiotek's embedded OS solutions are compatible with a wide range of operating systems such as Microsoft Windows®, Linux and QNX, namely:

- Windows® 10 IoT Core Pro, Windows® Embedded Compact 7
- Windows® XP Embedded, Windows® Embedded Standard 2009/7
- Embedded Linux
- QNX Neutrino RTOS

With Axiotek embedded OS solutions, the worry of dealing with various vendors, hardware suppliers, system integrators, and embedded OS distributors for tough projects, is cut to a minimum. Committed to helping customers from the very beginning planning stage to successful completion of system delivery, Axiotek helps contribute to faster time to market through a list of well-thought product services and solutions below.

## Windows® 10 IoT Core Pro Integration Services

Windows® 10 IoT Core Pro Integration Services consists of:

- Selected hardware platforms
- Selected existing device drivers
- Custom startup applications
- Customer proprietary device drivers and applications

Features:

- Full function test before any OS image is released
- Flexible product combinations
- Support of additional extension cards



Windows® 10 IoT Core Pro Ready Platforms:

- Rugged and compact industrial grade single board computers or panel computers
- Flash disk with pre-configured Windows® 10 IoT Core Pro English and Chinese (Traditional & Simplified) image for target platforms
- Windows® 10 IoT Core Pro license
- Utility and sample code
- User's manual

## Windows® Embedded Integration Services

(Windows® XP Embedded/ Embedded Standard/ Embedded Standard 7/ Embedded 8 Standard)

Windows® Embedded Integration Services consists of:

- Selected hardware platforms
- Customer applications requirements
- Required Windows® Embedded functions
- Customer target storage size

Features:

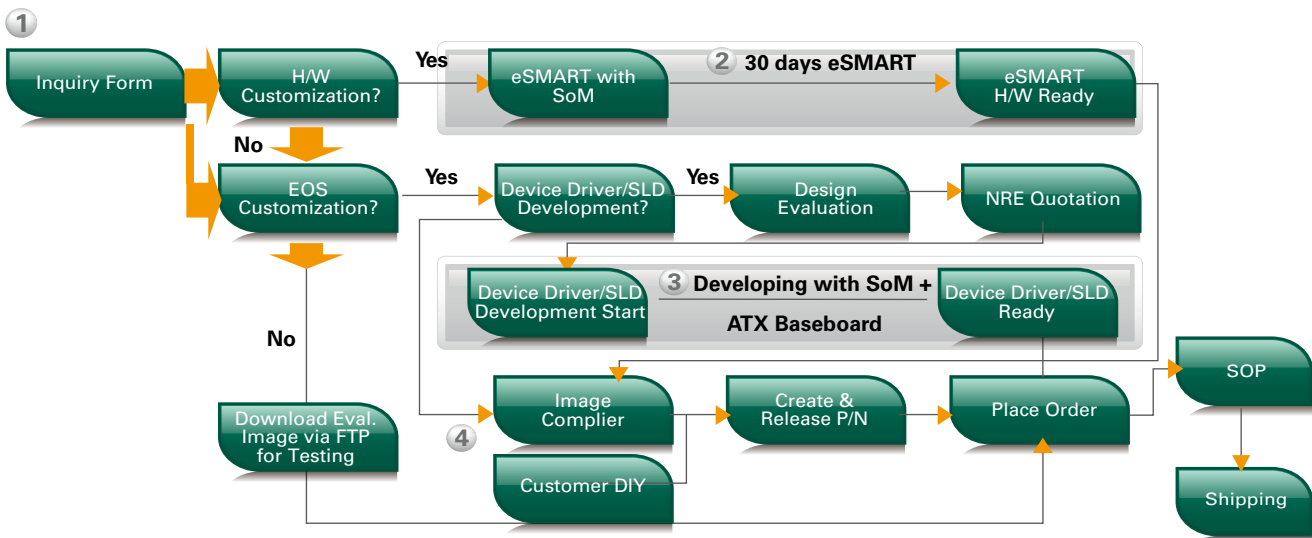
- Tailored to run from SSD on rugged compact industrial grade single board computers
- Direct I/O utility and sample code
- Optional Instant-On solution implementation with special non-volatile memory
- Reasonable development fee refundable after certain amount of Windows® Embedded licenses are purchased

Advantages:

- Customers focus on software development while taking full advantage of essential Windows® Embedded features
- Ready for mass production with standard hardware combined with Windows® Embedded license
- Optional service with eSMART
- Optional development kit



## Flow of Embedded OS Services



Note:

1. Define/consult platform spec (H/W & S/W)
2. Design hardware prototype for Windows® XP, Windows® CE, & Embedded Linux

3. Reference platform for prototype design
4. OS and device driver porting service



# SBC Services and Solutions



## Embedded Linux Integration Services



Embedded Linux Integration Services consist of:

- Selected hardware platforms
- Selected existing device drivers and IRQ settings
- Selected Embedded Linux functions
- Customer proprietary device drivers and applications
- Bootloader and utilities

Features:

- Full function test before any OS image releases
- Flexible product combination
- Additional extension cards supported when IRQ allows
- Optional Instant-On solution implementation with special non-volatile memory H/W

Advantages:

- Customer focus on software development with embedded visual tools
- Ready for mass production with standard hardware combined with Embedded Linux License
- Optional service with eSMART
- Optional platform development kit
- Reference platform for prototype design
- OS and device driver porting service

The Axiomtek Kernel Embedded Linux is free of charge for download from Axiomtek's web service upon request to Axiomtek's FAE team.

## QNX Neutrino RTOS (realtime operating system)

The QNX Neutrino RTOS provides a comprehensive, integrated set of technologies to help quickly deliver robust, reliable embedded systems. It's a memory-protected microkernel architecture for maximum reliability, unparalleled scalability, and realtime performance for embedded applications.

- High availability solution
- Essential networking technologies including IPv4, IPv6, IPSec, FTP, HTTP, SSH, Telnet, etc.
- Photon microGUI a full featured embedded graphical user interface
- Integrated file systems for flash devices and rotating media
- System visibility and debugging support
- Scalability
- Portability





## IntervalZero RTX64/RTX

IntervalZero's RTX64 and RTX transform Windows into a real-time operating system (RTOS) and RTX64 can scale from 1 to 63 cores for dedicated real-time processing. For complex, connected embedded systems that seek to take advantage of Windows' world-class HMI and that also require determinism and hard-real time, RTX64 and RTX provide an RTOS that is tightly integrated with Windows. Where Windows provides timers with a maximum resolution – smallest granularity – of 1000  $\mu$ s (1 millisecond), RTX64/RTX lower this to 1  $\mu$ s where supported by the hardware. We provide Digital Input/Output (DIO) driver development service to facilitate customer to integrate deterministic DIO control in their realtime application like motion control/robotics.

## LCD Lighting Services & User Friendly Accessories

To make system design with compact sizes meet various embedded applications, LCD has been widely adopted as the display device. Unfortunately, there's no universal standard for LCD interfacing connectors. In order to help our customers, Axiomtek develops various LCD wiring kits and SmartView BIOS to easily install the chosen LCD module onto the targeted system.

The major two qualities of LCD lighting services lie in ensuring the correctness of physical wiring and modifying VGA BIOS' configurations properly. Off-the-shelf solutions for this task are as follows:

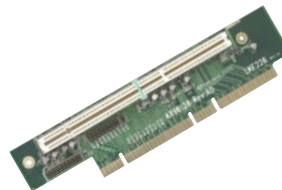
- LCD wiring kits: TTL, TTL-to-LVDS, LVDS transmission and receiving kits
- SmartView VGA BIOS: 15 types of LCD selection, display sequence setting, and application extensibility. Axiomtek continues to provide LCD lighting services where up-to-date reference support list can be found at Axiomtek's website.

Besides the LCD wiring kits, Axiomtek also provides different types of user-friendly accessories such as, expansion riser cards for ISA/PCI/PCI-X buses, I/O cabling, I/O adapter boards, passive backplanes, functional I/O modules, thermal solutions and dedicated developing kits. All are very helpful peripherals for customers to simplify and shorten their system design time.

▶ LCD Lighting



▶ PCI-X Riser Card



▶ 4-slot Backplane

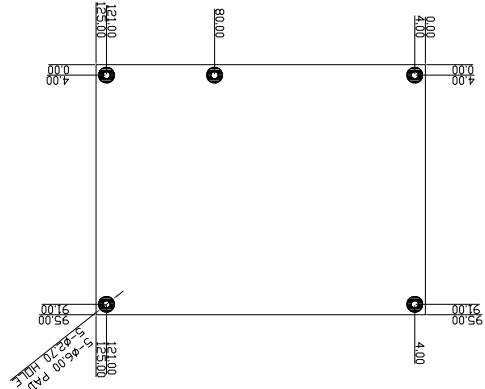
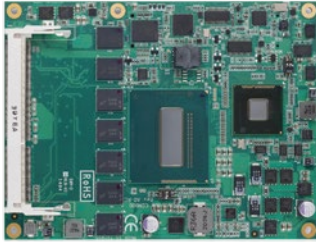


# SBC Services and Solutions

## Form Factors

### COM Express™ Module

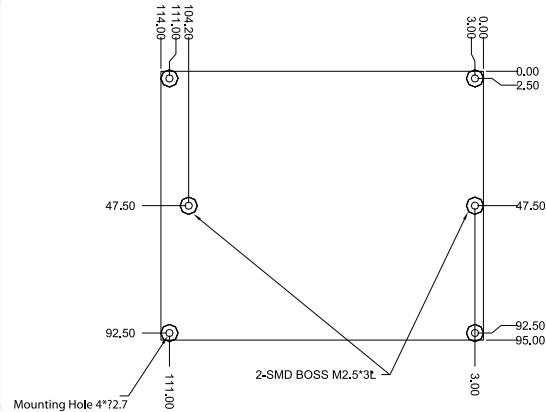
Model name: CEMxxx



125 x 95 mm

### ETX Module

Model name: ETMxxx

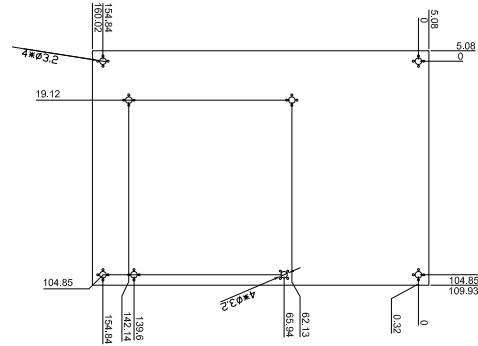


114 x 95 mm

## Form Factors

### EPIC Board

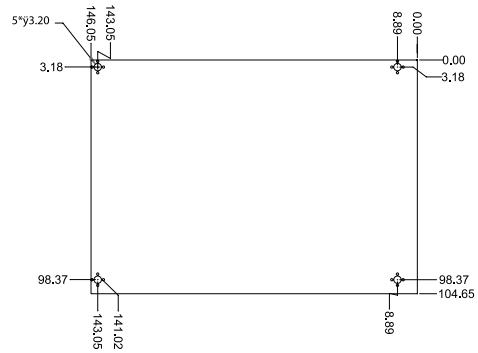
Model name: EPxxx



165 x 116 mm

### 3.5" Capa Board

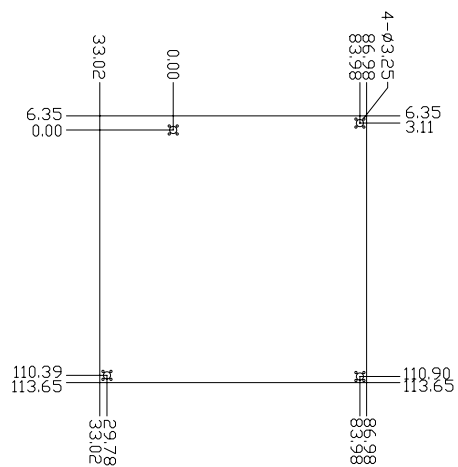
Model name: CAPAxxx, SBC84xxx



146 x 104 mm

### Nano-ITX SBC

Model name: NANOxxx



120 x 120 mm

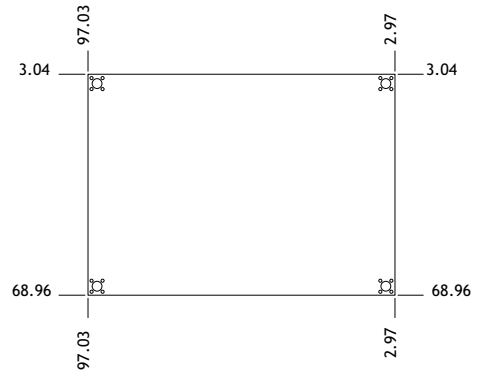


# SBC Services and Solutions

## Form Factors

### Pico-ITX SBC

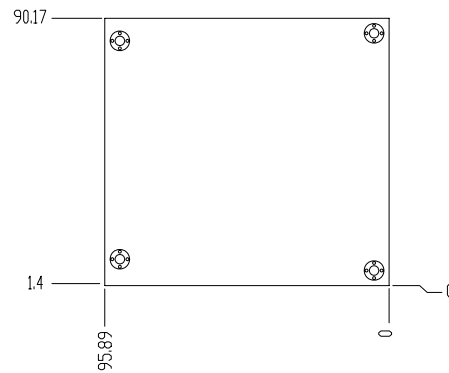
Model name: PICOxxx



**100 x 72 mm**

### PC/104 Module

Model name: AX122XX

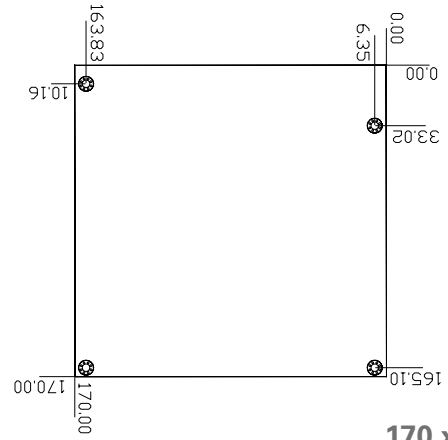


**96 x 90 mm**

## Form Factors

### Mini-ITX Motherboard

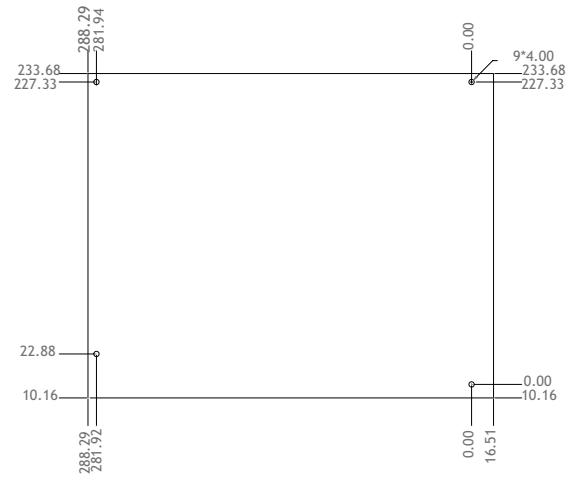
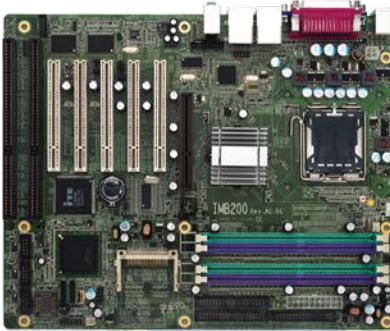
Model name: MANOxxx, SBC86xxx



**170 x 170 mm**

### ATX Industrial Motherboard

Model name: IMB2xx



**305 x 244 mm**



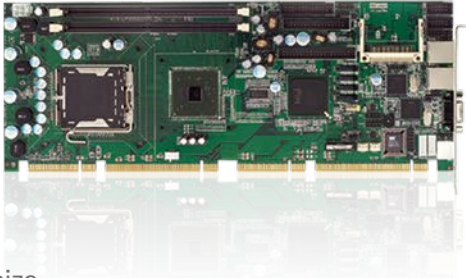
# SBC Services and Solutions

## Form Factors

### PICMG 1.3 System Host Board

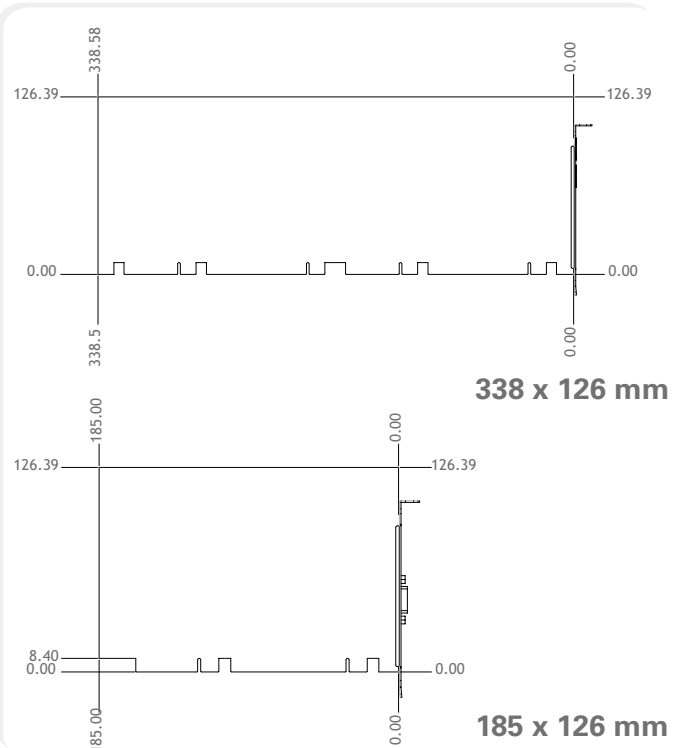
Full-size

Model name: SHB1xx



Half-size

Model name: SHB2xx



### PICMG 1.0 CPU Card

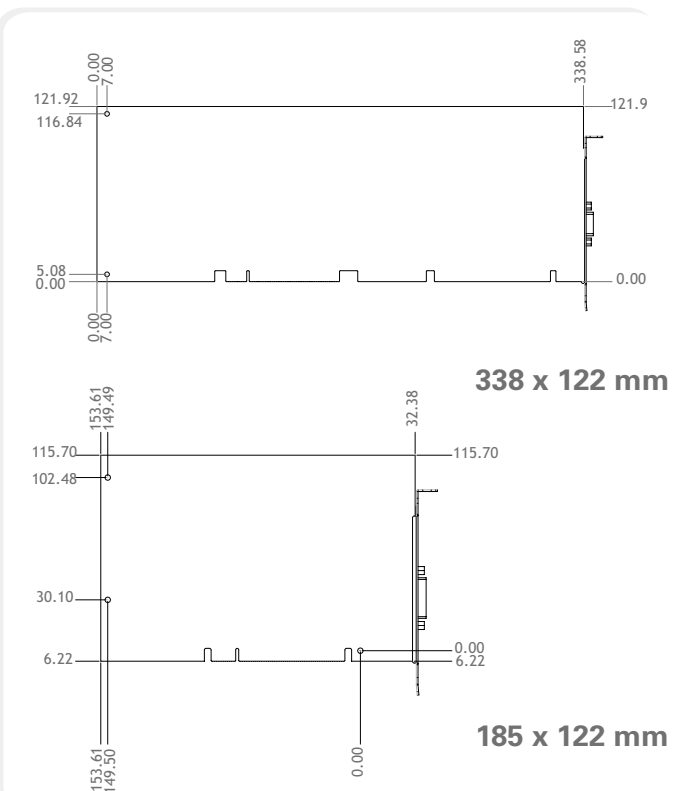
Full-size

Model name: SBC81xxx



Half-size

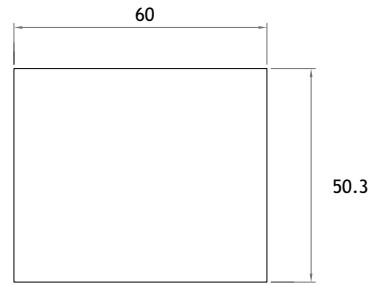
Model name: SBC82xxx



## Form Factors

### Mini PCI Module

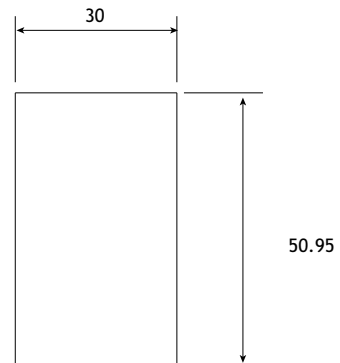
Model name: AX9xxxx



**60 x 50.3 mm**

### Mini PCI Express Module

Model name: AX929xx



**30 x 50.95 mm**



# SBC Services and Solutions

## Wide Operating Temperature Range for Rugged Environment

### 3.5 Capa Boards



#### **CAPA318** >>Page 128

3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI/LVDS, Dual LANs and Audio

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)



#### **CAPA312** >>Page 127

3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, VGA/LVDS, Dual LANs and Audio

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)

### Pico-ITX Boards



#### **PICO312** >>Page 152

Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI (VGA)/LVDS and LAN

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)



#### **PICO310** >>Page 153

Pico-ITX SBC with Intel® Atom™ x5/x7 Processor, HDMI (VGA)/LVDS and LAN

Military Temperature  
(-40°C ~ +80°C)

Industrial Temperature  
(-20°C ~ +70°C)



## COM Express™ Type 6 Modules



### CEM510 >>Page 78

COM Express Type 6 Module with 7th Gen Intel® Xeon® and Core™ i7/i5/i3 Processor, Intel® CM238/QM175/HM175 Chipset

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)



### CEM511 >>Page 79

COM Express Type 6 Module with 7th Gen Intel® Core™ i7/i5/i3 Processor

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)



### CEM312 >>Page 86

COM Express Type 6 Compact Module with Intel® Atom™ E3950/E3940/E3930 Processors

Military Temperature  
(-40°C ~ +85°C)

Industrial Temperature  
(-20°C ~ +70°C)



# 2

## Embedded Single Board Computers

Axiomtek's Embedded SBC (Single Board Computer) series includes EPIC (Embedded Platform & Industrial Computer) boards, 3.5" Capa boards, Nano-ITX boards, Pico-ITX boards and PC/104 modules. The EPIC board is a small industrial-grade embedded SBC with optional I/O expansion via PC/104, PC/104-Plus, USB, Ethernet, etc, supporting advanced processors plus complex I/O functions for various applications. The 3.5" Capa board is created in an architecture of low power consumption with reliability required for various applications in rugged environments. The Nano-ITX board is a highly efficient embedded board, providing with optimal performance per watt and per sq mm. Lastly, the Pico-ITX board is the world's smallest x86 embedded board, measured at the size of 100 mm x 72 mm only, delivering excellent computing performance at remarkably low power consumption.

ZIO Form Factor Technical Notes	103
Nano-ITX Form Factor Technical Notes	104
Pico-ITX Form Factor Technical Notes	105
PC/104 Expansion Modules Technical Notes	106
Selection Guide	109
EPIC Board	
EP100	EPIC SBC with AMD G-Series APU, AMD A50M FCH, Dual DisplayPort/ VGA/LVDS, Dual LANs and Audio 123
3.5" Capa Boards	
CAPA500 <b>NEW</b>	3.5" Embedded SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3 Processor, LVDS/ VGA/HDMI, Dual LANs and Audio 124
CAPA880	3.5" Embedded SBC with LGA1150 Socket 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® H81, LVDS/VGA/HDMI, Dual LANs and Audio 125
CAPA881	3.5" Embedded SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM86 (Intel® QM87 optional), LVDS/ VGA/Dual HDMI, Dual LANs and Audio 126
CAPA312 <b>NEW</b>	3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI/LVDS, Dual LANs and Audio 127
CAPA318 <b>NEW</b>	3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, VGA/LVDS, Dual LANs and Audio 128
CAPA848	3.5" Embedded SBC with Intel® Celeron® Processor N2807, LVDS/VGA/HDMI, LAN and Audio 129
CAPA843	3.5" Embedded SBC with Intel® Celeron® J1900 Processor, LVDS/VGA/HDMI, Dual LANs, Audio and ZIO 130
CAPA842	3.5" Embedded SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio 131
CAPA841	3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs and Audio 132
CAPA840	3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/ VGA/HDMI, Dual LANs, Audio and ZIO 133
CAPA831	3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio 134
CAPA830	3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/HDMI/VGA, Dual LANs, Audio and ZIO 135
CAPA112	3.5" Embedded SBC with AMD G-Series APU, AMD A55E, LVDS/VGA, Dual LANs, Audio, and PC/104 136

## Embedded Boards & SoMs

CAPA111	3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/VGA, Dual LANs and Audio	137
CAPA110	3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort/VGA, Dual LANs and Audio	138
SBC84622	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS/TTL	139
SBC84621	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS (-40°C to +85°C)	140
SBC84620	3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/TTL (-40°C to +85°C)	141
Nano-ITX SBCs		
NANO842	Nano-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio	142
NANO840	Nano-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/ VGA/HDMI, Dual LANs and Audio	143
NANO831	Nano-ITX SBC with Intel® Atom™ N2600, Intel® NM10, LVDS/VGA, Dual LANs and Audio	144
NANO830	Nano-ITX SBC with Intel® Atom™ D2550, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio	145
NANO100	Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/DisplayPort/VGA, Dual LANs and Audio	146
NANO101	Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/VGA, Dual LANs and Audio	147
Pico-ITX SBCs		
PICO512 <b>NEW</b>	Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, HDMI/LVDS and LAN	148
PICO511 <b>NEW</b>	Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 and Celeron® Processor, LVDS and LAN	149
PICO500	Pico-ITX SBC with 6th Gen Intel® Core™ i7/i5/i3 & Celeron® Processors, HDMI/LVDS, LAN and Audio	150
PICO880	Pico-ITX SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, DisplayPort/LVDS, LAN and Audio	151
PICO312 <b>NEW</b>	Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI (VGA)/LVDS and LAN	152
PICO310 <b>NEW</b>	Pico-ITX SBC with Intel® Atom™ x5/x7 Processor, HDMI (VGA)/LVDS and LAN	153
PICO300	Pico-ITX SBC with Intel® Pentium® N3710 & Celeron® N3060 Processor, HDMI (VGA)/LVDS, LAN and Audio	154
PICO843	Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA, LAN and Audio	155
PICO842	Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA (HDMI), LAN and Audio	156
PICO841	Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA, LAN and Audio	157
PICO840	Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA (HDMI), LAN and Audio	158
PICO831	Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/ VGA, LAN and Audio	159
PICO830	Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/DisplayPort or VGA, LAN and Audio	160
PICO121	Pico ITX SBC with AMD Embedded G-Series SoC, VGA/LVDS, LAN and Audio	161
PICO100	Pico-ITX SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort (VGA), LAN and Audio	162
PC/104 CPU Module		
AX12260	AMD LX PC/104 CPU Module with VGA/TTL, USB DoM and PC/104-Plus Expansion	163

# ZIO Form Factor Technical Notes

## ZIO Embedded Compact Extended Form Factor

ZIO is an embedded compact extended form factor that provides a flexible and functional design for single-board embedded systems. ZIO form factor is a solution for those who face limited expandability from the use of conventional single-board designs and has the ability to extend I/O modules in a flexible manner. ZIO form factor SBC can help drive market demand for various vertical applications using a more efficient approach. Included is a wide variety of interfaces such as DP (DisplayPort), PCIe, USB, LPC, Audio Line-out and power, meeting requirements for system integrations.

The ZIO form factor is an integrated interface standard defined by Axiomtek and has been adopted as one of our specifications in our 3.5" CAPA single board computers to meet concerns regarding insufficient expansion interfaces in small form factor (SFF) single board computers.

## Specification Requirements

The dimensions of the ZIO form factor SBC are 80 mm x 55 mm and it places on the Region II of the bottom side of 3.5" Capa single board computers. While it stacks under the Region I, I/O connector, of 3.5" Capa single board computers, it looks like a 2nd layer of I/O connector.

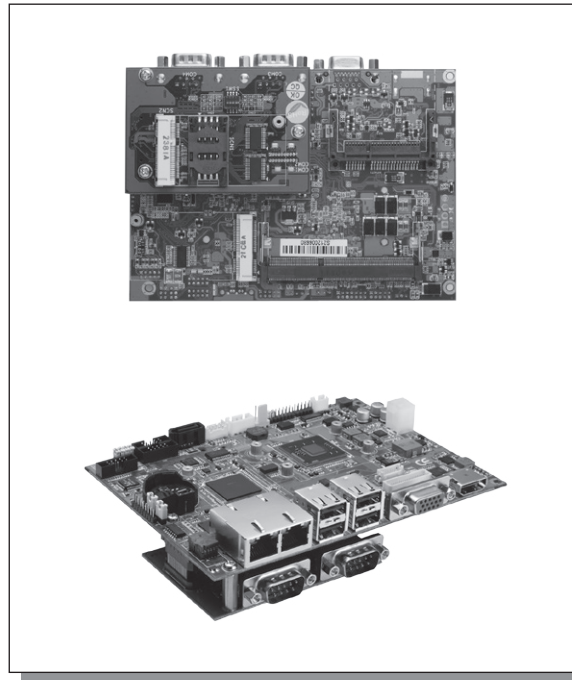


Figure 1: 3.5" CAPA Board with ZIO Module AX93262

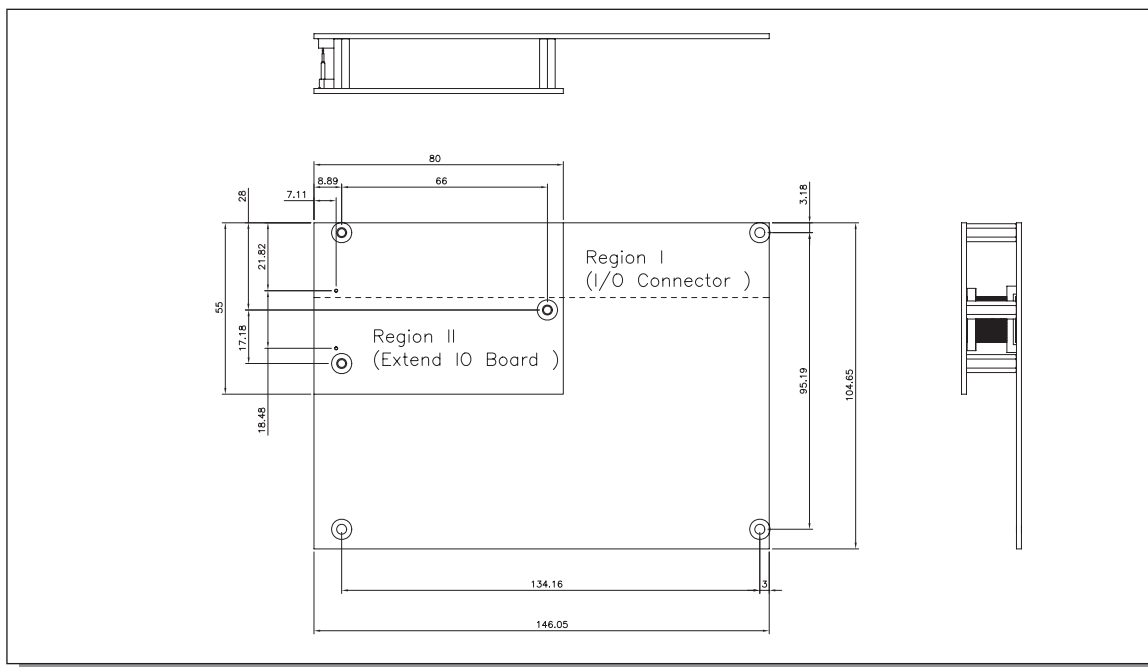


Figure 2: Board Dimensions and Mounting Holes

# Nano-ITX Form Factor Technical Notes

## Overview of Nano-ITX Form Factor

The Nano-ITX form factor is designed as a high integrated native x86 embedded platform, measuring a mere 120 mm x 120 mm which measures in at 50% smaller than the Mini-ITX form factor. The Nano-ITX form factor is available with a rich feature set and is targeted at the fast-emerging embedded markets, allowing developers to highly customize their system designs in the low-profile and fully-configured embedded devices. This ultra compact board format is designed to bring the performance of x86 architecture to the very broad field of embedded design, which underpins almost every aspect of daily life.

The Nano-ITX boards are highly efficient embedded boards to provide best performance per watt and best performance per mm<sup>2</sup>.

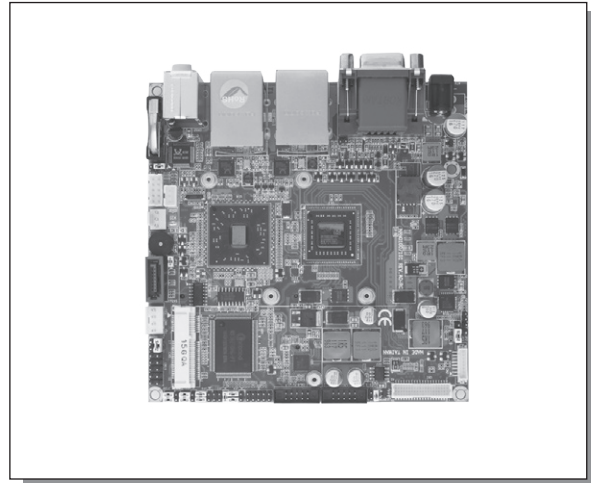
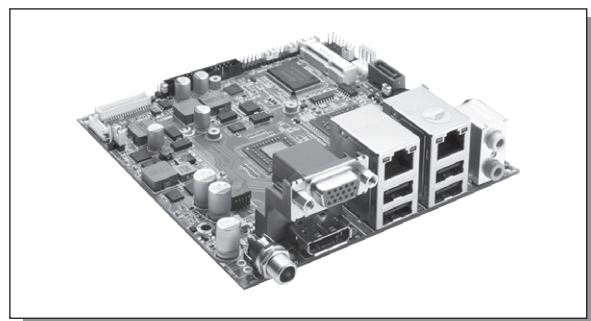
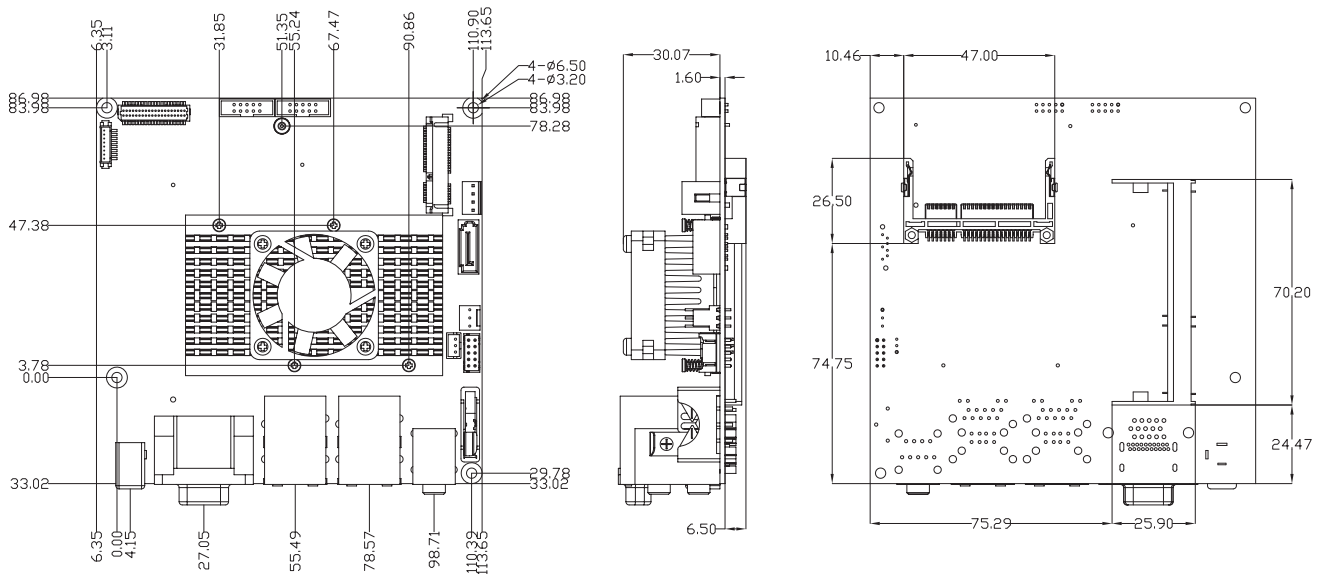


Figure 1: Axiomtek Nano-ITX Form Factor SBC - NANO100

## Dimensions of Nano-ITX Form Factor



Rich rear I/O for cableless solution

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Embedded SBCs



# Pico-ITX Form Factor Technical Notes

## Overview of Pico-ITX Form Factor

The Pico-ITX form factor, the world's smallest x86 embedded board, is developed by VIA Technologies, Inc. as part of its "Small is Beautiful" strategy of shrinking the x86 platform in order to inspire innovative system design and to make x86 accessible for a new generation of smaller computing and connecting devices.

Measuring of 100mm x 72mm only, the Pico-ITX form factor furnishes system developers and OEMs with a standardized, ultra compact yet highly integrated platform that can be utilized across multiple embedded systems, from car PC, in-flight entertainment system to industrial automation system and even ultra portable devices.

## A Broad Field of Applications

The Pico-ITX form factor opens up a new world of possibilities for system design with the potential for x86 devices across the commercial, industrial, medical, retail, travel, utility or personal environments. The standard PC computing and communicating functionality can be catered in the smaller than ever packages with the Pico-ITX form factor, even into portable devices for handbag or briefcase.

This ultra compact form factor is also designed to bring the x86 performance to a broad field of embedded designs, which underpin almost every aspect of daily life. Automation, digital signage, retail management, gaming, traffic management, factory, and more embedded information and entertainment applications can be given higher level of intelligence, and can now be built into smaller chassis with the Pico-ITX form factor.

## Dimensions of Pico-ITX Form Factor

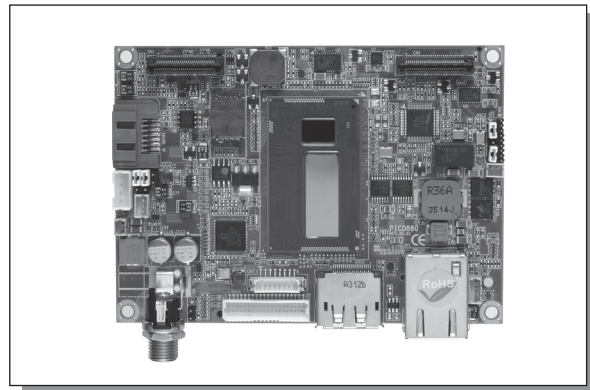
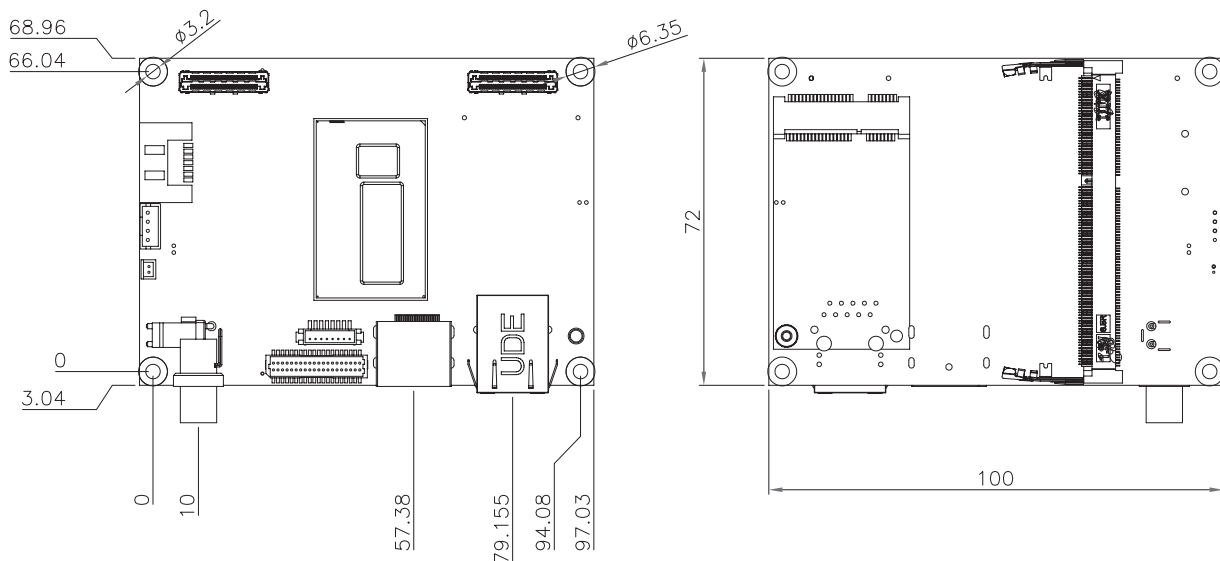
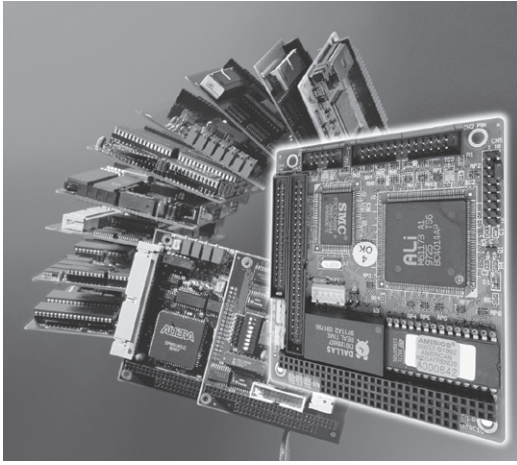


Figure 1: Axiomtek Pico-ITX Form Factor SBC - PIC0880



Figure 2: Axiomtek Ultra Compact Embedded System with Pico-ITX SBC - eBOX560-880-FL

# PC/104 Expansion Module Technical Notes



## PC/104 Expansion Modules Embedded-PC Module for Compact Industrial Solution

### The Need for an Embedded-PC Standard

Over the past decade, the PC architecture has become an accepted platform for far more than desktop applications. Dedicated and embedded applications for PCs are beginning to be found everywhere! PCs are used as controllers within vending machines, laboratory instruments, communications devices, and medical equipment, to name a few examples.

By standardizing hardware and software around the broadly supported PC architecture, embedded system designers can substantially reduce development costs, risks, and time. This means faster time-to-market and hitting critical market windows with timely product introductions. Another important advantage of using the PC architecture is that its widely available hardware and software are significantly more economical than traditional bus architectures such as STD, VME, and Multibus. This means lower product costs. For these reasons, companies that embed microcomputers as controllers within their products seek ways to reap the benefits of using the PC architecture. However, the standard PC bus form-factor (12.4" x 4.8") and its associated card cages and backplanes are too bulky (and expensive) for more embedded control applications.

The only practical way to embed the PC architecture in space- and power-sensitive applications has been to design a PC chip-by-chip directly into the product. But this runs counter to the growing trend away from "reinventing the wheel." Wherever possible, top management now encourages out-sourcing of components and technologies, to reduce development cost and accelerate product design cycles.

A need therefore arose for a more compact implementation of the PC bus, satisfying the reduced space and power constraints of embedded control applications. Yet these goals had to be realized without sacrificing full hardware and software compatibility with the popular PC bus standard. This would allow the PC's hardware, software, development tools, and system design knowledge to be fully leveraged.

PC/104 was developed in response to this need. It offers full architecture, hardware, and software compatibility with the PC bus, but in ultra-compact (3.6" x 3.8") stackable modules. PC/104 is therefore ideally suited to the unique requirements of embedded control applications.

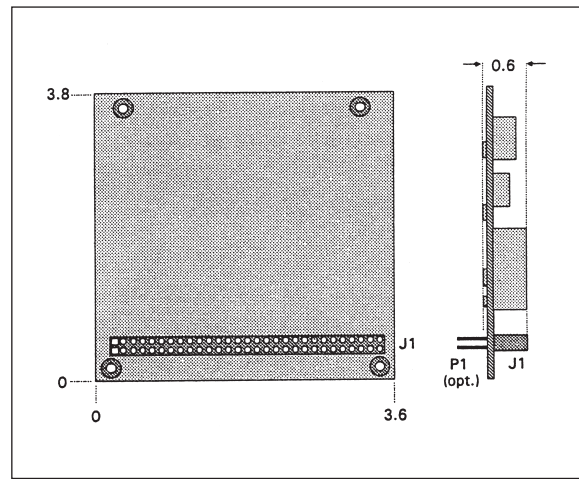


Figure 1. Basic Mechanical Dimensions (8-bit Version)



# PC/104 Expansion Module Technical Notes

## Two Ways to Use PC/104 Modules

Although configuration and application possibilities with PC/104 modules are practically limitless, there are two basic ways they tend to be used in embedded system designs:

- **Standalone module stacks**

As shown in Figure 2, PC/104 modules are self-stacking.

In this approach, the modules are used like ultra-compact bus boards, but without needing backplanes or card cages. Stacked modules are spaced 0.6 inches apart. (The three-module stack shown in Figure 2 measures just 3.6 by 3.8 by 2 inches.) Companies using PC/104 module stacks within their products frequently create one or more of their own application-specific PC/104 modules.

- **Component-like Applications**

Another way to use PC/104 modules is illustrated in Figure 3. In this configuration, the modules function as highly integrated components, plugged into custom carrier boards which contain application-specific interfaces and logic. The modules' self-stacking bus can be useful for installing multiple modules in one location. This facilitates future product upgrades or options, and allows temporary addition of modules during system debug or test.

## Total Solutions for Embedded System

Axiomtek designs & manufactures a whole series of embedded systems computers and industrial I/O module that support the PC/104 standard for OEM and industrial and laboratory applications. The Axiomtek PC/104 product line includes the 386SX, SBC (single board computer); RAM/ROM/FLASH disk, PCMCIA IC memory drive, SVGA module and eight data acquisition modules that provide A/D, D/A, DIO, Counter/Timer and RS-422/485, etc.

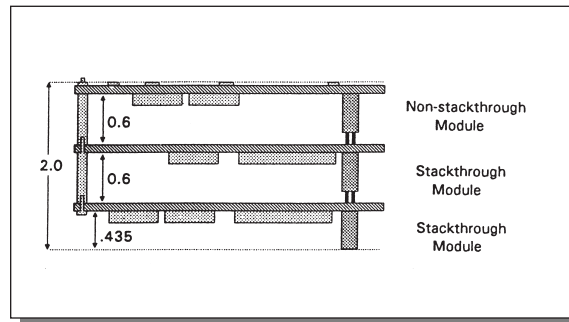


Figure 2. Standalone Module Stacks

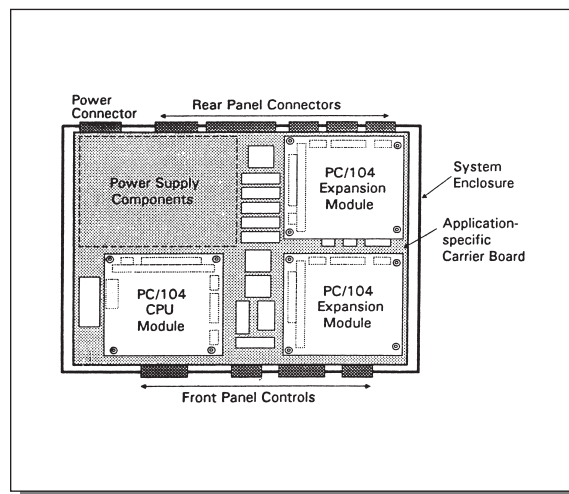
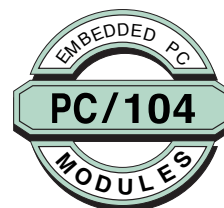


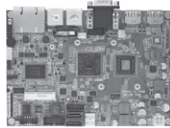
Figure 3. Component-like Application





# EPIC Board

## Selection Guide



Page 123

Features	Models	EP100	
<b>Form Factor</b>		EPIC	
<b>CPU Level</b>		AMD G-Series APU T56N/ T40R	
<b>CPU Socket</b>		Onboard	
<b>Core Logic Chipset</b>		AMD A50M	
<b>Memory Type</b>		DDR3-1066/1333	
<b>Max. DRAM Capacity</b>		4GB	
<b>Cache RAM Capacity</b>		Integrated in APU	
<b>BIOS</b>		AMI UEFI BIOS	
<b>Watchdog Timer</b>		255 levels, 1~255 sec.	
<b>Onboard SSD</b>		1 x CFast™	
<b>Onboard Digital I/O</b>		8-IN/OUT	
	<b>SATA</b>	2 x SATA-600	
<b>I/O</b>	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485
		<b>COM 2</b>	RS-232
		<b>COM 3</b>	RS-232
		<b>COM 4</b>	RS-232
	<b>USB</b>	6 x USB 2.0	
<b>SIM Card Slot</b>		Yes	
<b>Display</b>		1 x VGA, 2 x DisplayPort or 1 x VGA, 1 x DisplayPort, 1 x LVDS	
<b>Ethernet</b>		2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>		HD Codec	
<b>Hardware Monitoring</b>		Yes	
<b>SMBus</b>		Yes	
<b>Expansion Interface</b>		2 x Full-size PCIe Mini Card	
<b>Power Management</b>		ACPI	
<b>Battery</b>		Lithium	
<b>Operating Temperature</b>		0°C ~ +60°C (32°F~ 140°F)	
<b>Relative Humidity</b>		10% to 95%, non-condensing	
<b>EMI Compliance</b>		CE	
<b>Wide Temperature</b>		N/A	



# 3.5" Capa Boards

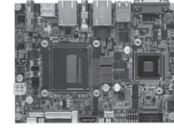
## Selection Guide



Page 124

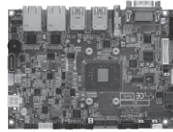


Page 125

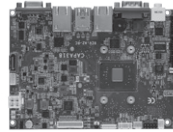


Page 126

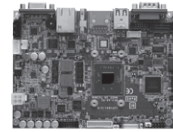
Features/Models	CAPA500	CAPA880	CAPA881	
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa	
<b>CPU Level</b>	6th/7th Gen Intel® Core™ i7/i5/i3 & Celeron®	4th Gen Intel® Core™ i7/i5/i3 & Celeron®	4th Gen Intel® Core™ i7/i5/i3 & Celeron®	
<b>CPU Socket</b>	LGA1151	LGA1150	Onboard	
<b>Core Logic Chipset</b>	Intel® H110	Intel® H81	Intel® HM86/QM87	
<b>Memory Type</b>	DDR4-1867	DDR3-1600	DDR3L-1600	
<b>Max. DRAM Capacity</b>	16GB	8GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 Levels, 1~255 sec.	255 Levels, 1~255 sec.	255 Levels, 1~255 sec.	
<b>Onboard SSD</b>	N/A	N/A	1 x CFast™	
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT	
<b>I/O</b>	<b>SATA</b>	1 x SATA-600	1 x SATA-600	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	N/A	N/A
		<b>COM 3</b>	N/A	RS-232
		<b>COM 4</b>	N/A	RS-232
	<b>USB</b>	3 x USB 2.0, 3 x USB 3.0	4 x USB 2.0, 2 x USB 3.0	4 x USB 2.0, 2 x USB 3.0
<b>SIM Card Slot</b>	N/A	N/A	N/A	
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 2 x HDMI 1 x LVDS 1 x DisplayPort (Optional)	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	HD Codec	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	Yes	Yes	Yes	
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus (through ZIO connector)	1 x Full-size PCIe Mini Card 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus (through ZIO connector)	1 x Full-size PCIe Mini Card with mSATA supported	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ +158°F)	-20°C ~ +50°C (-4°F ~ +122°F)	-20°C ~ +70°C (-4°F ~ +158°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	N/A	



Page 127



Page 128



Page 129

Features/Models	CAPA312	CAPA318	CAPA848	
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa	
<b>CPU Level</b>	Intel® Pentium® N4200/Celeron® N3350	Intel® Pentium® N4200/Celeron® N3350	Intel® Celeron® N2807	
<b>CPU Socket</b>	Onboard	Onboard	Onboard	
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated	
<b>Memory Type</b>	DDR3L-1867	DDR3L-1867	DDR3L-1333	
<b>Max. DRAM Capacity</b>	8GB	8GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	65536 levels, 1~65535 sec	65536 levels, 1~65535 sec	255 Levels, 1~255 sec.	
<b>Onboard SSD</b>	N/A	N/A	1 x CFast™	
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT	
<b>I/O</b>	<b>SATA</b>	1 x SATA-300	1 x SATA-300	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232
		<b>COM 2</b>	RS-232/422/485	RS-232
		<b>COM 3</b>	RS-232	N/A
		<b>COM 4</b>	RS-232	N/A
<b>USB</b>	2 x USB 2.0, 4 x USB 3.0	2 x USB 2.0, 2 x USB 3.0	4 x USB 2.0	
<b>SIM Card Slot</b>	Yes	Yes	Yes	
<b>Display</b>	1 x LVDS 1 x HDMI 1 x VGA (optional) 1 x eDP (optional)	1 x VGA 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	HD Codec	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	Yes	Yes	Yes	
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card w/mSATA supported 1 x Full-Size PCIe Mini Card	1 x Full-size PCIe Mini Card w/mSATA supported 1 x Full-size PCIe Mini Card	1 x Full-size PCIe Mini Card w/mSATA supported 1 x Half-size PCIe Mini Card	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ -158°F)	-20°C ~ +70°C (-4°F ~ -158°F)	-20°C ~ +70°C (-4°F ~ -158°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	N/A	

Embedded SBCs >3.5" Capa

0  
1  
2  
3  
4  
5  
6  
7

\* All specifications and photos are subject to change without notice.

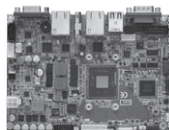


# 3.5" Capa Boards

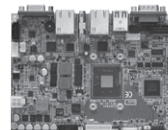
## Selection Guide



Page 130



Page 131

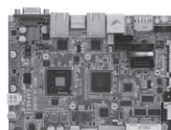


Page 132

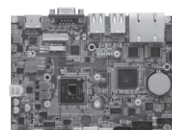
Features/Models	CAPA843	CAPA842	CAPA841
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa
<b>CPU Level</b>	Intel® Celeron® J1900	Intel® Celeron® J1900/N2807	Intel® Atom™ E3845/E3827
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated
<b>Memory Type</b>	DDR3L-1066/1333	DDR3L-1333	DDR3L-1066/1333
<b>Max. DRAM Capacity</b>	8GB	8GB	8GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 Levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x mSATA	1 x CFast™	1 x CFast™
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT
<b>I/O</b>			
<b>SATA</b>	1 x SATA-300	1 x SATA-300	1 x SATA-300
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232/422/485	RS-232/422/485
<b>COM 3</b>	N/A	RS-232	RS-232
<b>COM 4</b>	N/A	RS-232	RS-232
<b>USB</b>	4 x USB 2.0, 1 x USB 3.0	4 x USB 2.0	4 x USB 2.0
<b>SIM Card Slot</b>	N/A	Yes	Yes
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card 1 x Full-size PCIe Mini Card (USB only) 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus (through ZIO connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ +158°F)	-20°C ~ +70°C (-4°F ~ +158°F)	-40°C ~ +80°C (-40°F ~ +176°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 133



Page 134



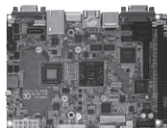
Page 135

Features/Models	CAPA840	CAPA831	CAPA830	
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa	
<b>CPU Level</b>	Intel® Celeron® N2807	Intel® Atom™ D2550/N2600/N2800	Intel® Atom™ D2550/N2600/N2800	
<b>CPU Socket</b>	Onboard	Onboard	Onboard	
<b>Core Logic Chipset</b>	SoC integrated	Intel® NM10	Intel® NM10	
<b>Memory Type</b>	DDR3L-1066/1333	DDR3-800/1066	DDR3-800/1066	
<b>Max. DRAM Capacity</b>	8GB	4GB	4GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.	
<b>Onboard SSD</b>	1 x mSATA	1 x CFast™	1 x CFast™	
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT	
<b>I/O</b>	<b>SATA</b>	1 x SATA-300	1 x SATA-300	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232	RS-232
		<b>COM 3</b>	N/A	RS-232
		<b>COM 4</b>	N/A	RS-232
<b>USB</b>	4 x USB 2.0, 1 x USB 3.0	6 x USB 2.0	6 x USB 2.0	
<b>SIM Card Slot</b>	N/A	N/A	N/A	
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x DisplayPort 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	HD Codec	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	Yes	Yes	Yes	
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card 1 x Full-size PCIe Mini Card (USB only) 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus (through ZIO connector)	1 x Full-size PCIe Mini Card	1 x Full-size PCIe Mini Card 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus (through ZIO connector)	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ +158°F)	0°C ~ +60°C (32°F~ 140°F)	-20°C ~ +70°C (-4°F ~ +158°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	-20°C ~ +70°C (-4°F ~ +158°F)	N/A	

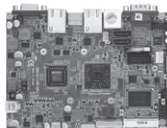


# 3.5" Capa Boards

## Selection Guide



Page 136



Page 137

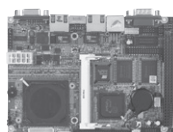


Page 138

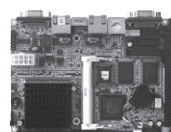
Features/Models	CAPA112	CAPA111	CAPA110
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa
<b>CPU Level</b>	AMD G-Series APU T40E/T16R	AMD G-Series APU T40E/T40R	AMD G-Series APU T56N
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	AMD A55E	AMD A50M	AMD A50M
<b>Memory Type</b>	DDR3-1066	DDR3-1066	DDR3-1333
<b>Max. DRAM Capacity</b>	4GB	4GB	4GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in APU	Integrated in APU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CFast™	1 x CompactFlash™	1 x CompactFlash™
<b>Onboard Digital I/O</b>	8 IN/OUT	8-IN/OUT	8-IN/OUT
<b>I/O</b>			
<b>SATA</b>	1 x SATA-600	2 x SATA-600	2 x SATA-600
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>COM 3</b>	RS-232	RS-232	RS-232
<b>COM 4</b>	RS-232	RS-232	RS-232
<b>USB</b>	6 x USB 2.0	6 x USB 2.0	6 x USB 2.0
<b>SIM Card Slot</b>	Yes	N/A	N/A
<b>Display</b>	1 x VGA 1 x LVDS	1 x VGA 1 x LVDS	1 x VGA 1 x LVDS 1 x DisplayPort
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card 1 x PC/104	1 x Full-size PCIe Mini Card	1 x Full-size PCIe Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-40°C ~ +70°C (-40°F~ 158°F)	0°C ~ +60°C (32°F~ 140°F)	0°C ~ +60°C (32°F~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 139



Page 140



Page 141

Features/Models	SBC84622	SBC84621	SBC84620
<b>Form Factor</b>	3.5" Capa	3.5" Capa	3.5" Capa
<b>CPU Level</b>	AMD LX800	AMD LX800	AMD LX800
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	AMD CS5536AD	AMD CS5536AD	AMD CS5536AD
<b>Memory Type</b>	DDR-333/400	DDR-333/400	DDR-333/400
<b>Max. DRAM Capacity</b>	1GB	1GB	1GB
<b>Cache RAM Capacity</b>	Integrated in APU	Integrated in APU	Integrated in APU
<b>BIOS</b>	Phoenix-Award	Phoenix-Award	Phoenix-Award
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CompactFlash™	1 x CompactFlash™	1 x CompactFlash™
<b>Onboard Digital I/O</b>	8-IN & 8-OUT	8-IN & 8-OUT	8-IN & 8-OUT
<b>I/O</b>			
<b>SATA</b>	N/A	N/A	N/A
<b>Serial</b>			
<b>COM 1</b>	RS-232	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>COM 3</b>	RS-232	RS-232	RS-232
<b>COM 4</b>	RS-232	RS-232	RS-232
<b>USB</b>	4 x USB 2.0	4 x USB 2.0	4 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x LVDS/TTL	1 x VGA 1 x LVDS	1 x VGA 1 x TTL
<b>Ethernet</b>	2 x 10/100 Mbps Ethernet	2 x 10/100 Mbps Ethernet	2 x 10/100 Mbps Ethernet
<b>Audio</b>	AC'97 Codec	AC'97 Codec	AC'97 Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	N/A	1 x Mini PCI 1 x PC/104	1 x Mini PCI 1 x PC/104
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F~ 140°F)	0°C ~ +60°C (32°F~ 140°F)	0°C ~ +60°C (32°F~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	-25°C ~ +70°C (-13°F~ 158°F)	-40°C ~ +85°C (-40°F~ 185°F) -25°C ~ +70°C (-13°F~ 158°F)	-40°C ~ +85°C (-40°F~ 185°F) -25°C ~ +70°C (-13°F~ 158°F)

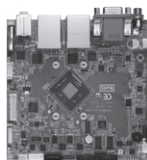
Embedded SBCs >3.5" Capa

0  
1  
2  
3  
4  
5  
6  
7

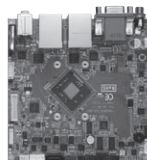


# Nano-ITX SBCs

## Selection Guide



Page 142



Page 143



Page 144

Features/Models	NANO842	NANO840	NANO831
<b>Form Factor</b>	Nano-ITX	Nano-ITX	Nano-ITX
<b>CPU Level</b>	Intel® Celeron® J1900/N2807	Intel® Atom™ E3845/E3827	Intel® Atom™ N2600
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	Intel® NM10
<b>Memory Type</b>	DDR3L-1333	DDR3L-1066/1333	DDR3-800
<b>Max. DRAM Capacity</b>	8GB	8GB	2GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	1 x CFast™
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT
<b>I/O</b>			
<b>SATA</b>	1 x SATA-300	1 x SATA-300	1 x SATA-300
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>USB</b>	5 x USB 2.0, 1 x USB 3.0	5 x USB 2.0, 1 x USB 3.0	6 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card	1 x Full-size PCIe Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F~ 158°F)	-40°C ~ +80°C (-40°F~ 176°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

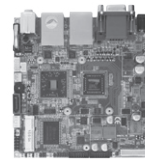




Page 145



Page 146



Page 147

Features/Models	NANO830	NANO100	NANO101
<b>Form Factor</b>	Nano-ITX	Nano-ITX	Nano-ITX
<b>CPU Level</b>	Intel® Atom™ D2550	AMD G-Series APU T56N	AMD G-Series APU T40E/T40R
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	Intel® NM10	AMD A50M	AMD A50M
<b>Memory Type</b>	DDR3-1066	DDR3-1333	DDR3-1066
<b>Max. DRAM Capacity</b>	4GB	4GB	4GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in APU	Integrated in APU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CFast™	1 x CFast™	1 x CFast™
<b>Onboard Digital I/O</b>	8-IN/OUT	8-IN/OUT	8-IN/OUT
<b>I/O</b>			
<b>SATA</b>	1 x SATA-300	1 x SATA-600	1 x SATA-600
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>USB</b>	6 x USB 2.0	6 x USB 2.0	6 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x DisplayPort 1 x LVDS	1 x VGA 1 x DisplayPort 1 x LVDS	1 x VGA 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card	1 x Full-size PCIe Mini Card	1 x Full-size PCIe Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ +158°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

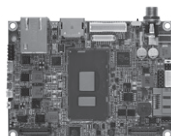
Embedded  
SOCs  
> Nano-ITX

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

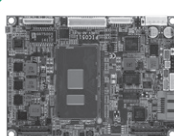


# Pico-ITX SBCs

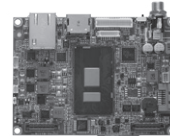
## Selection Guide



Page 148

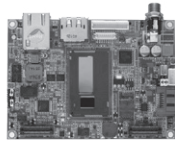


Page 149

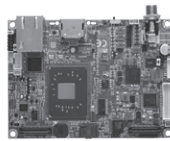


Page 150

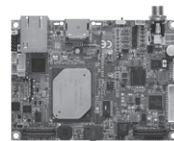
Features/Models	PICO512	PICO511	PICO500	
<b>Form Factor</b>	Pico-ITX	Pico-ITX	Pico-ITX	
<b>CPU Level</b>	7th Gen Intel® Core™ i7/i5/i3 & Celeron®	7th Gen Intel® Core™ i7/i5/i3 & Celeron®	6th Gen Intel® Core™ i7/i5/i3 & Celeron®	
<b>CPU Socket</b>	Onboard	Onboard	Onboard	
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated	
<b>Memory Type</b>	DDR4-2133	DDR4-2133	DDR4-2133	
<b>Max. DRAM Capacity</b>	16GB	16GB	16GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	65536 levels, 1–65535 sec	65536 levels, 1–65535 sec	255 levels, 1–255 sec.	
<b>Onboard SSD</b>	N/A	N/A	N/A	
<b>Onboard Digital I/O</b>	N/A	N/A	N/A	
<b>I/O</b>	<b>SATA</b>	1 x SATA-600	1 x SATA-600	
	<b>Serial</b>	<b>COM 1</b>	N/A	N/A
		<b>COM 2</b>	N/A	N/A
	<b>USB</b>	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A	
<b>Display</b>	1 x HDMI 1 x LVDS	1 x LVDS	1 x HDMI 1 x LVDS	
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	N/A	N/A	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	Yes	Yes	Yes	
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB3.0, 1 x HD audio link (through expansion connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB3.0, 1 x HD audio link (through expansion connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 2 x UART, 1 x DDI, 4 x USB 3.0 and 1 x HD audio (through expansion connector)	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F~ 158°F)	-20°C ~ +70°C (-4°F~ 158°F)	-20°C ~ +70°C (-4°F~ 158°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	N/A	



Page 151



Page 152



Page 153

Features/Models	PICO880	PICO312	PICO310	
<b>Form Factor</b>	Pico-ITX	Pico-ITX	Pico-ITX	
<b>CPU Level</b>	5th/4th Gen Intel® Core™ i7/i5/i3 & Celeron®	Intel® Pentium® N4200/Celeron® N3350	Intel® Atom™ x5/x7	
<b>CPU Socket</b>	Onboard	Onboard	Onboard	
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated	
<b>Memory Type</b>	DDR3L-1066/1333	DDR3L-1867	DDR3L-1867	
<b>Max. DRAM Capacity</b>	8GB	8GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	65536 levels, 1~65535 sec	65536 levels, 1~65535 sec	
<b>Onboard SSD</b>	N/A	N/A	N/A	
<b>Onboard Digital I/O</b>	N/A	N/A	N/A	
<b>I/O</b>	<b>SATA</b>	1 x SATA-600	1 x SATA-600	
	<b>Serial</b>	<b>COM 1</b>	N/A	N/A
		<b>COM 2</b>	N/A	N/A
	<b>USB</b>	1 x USB 2.0	1 x USB 2.0	1 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A	
<b>Display</b>	1 x DisplayPort 1 x LVDS	1 x HDMI 1 x LVDS	1 x HDMI 1 x LVDS	
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	N/A	N/A	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	Yes	Yes	Yes	
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 2 x UART, 1 x DP, 4 x USB 3.0 and 1 x HD audio (through expansion connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB3.0, 1 x HD audio link (through expansion connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB3.0, 1 x HD audio link (through expansion connector)	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ 158°F)	-20°C ~ +70°C (-4°F ~ 158°F)	-40°C ~ +85°C (-40°F ~ 185°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	N/A	

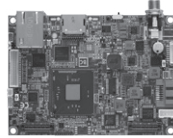
Embedded SBCs > Pico-ITX

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

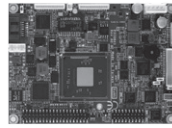


# Pico-ITX SBCs

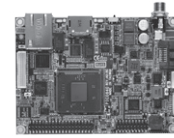
## Selection Guide



Page 154

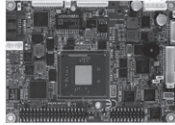


Page 155

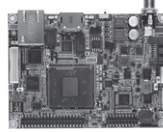


Page 156

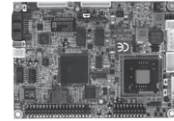
Features/Models	PICO300	PICO843	PICO842
<b>Form Factor</b>	Pico-ITX	Pico-ITX	Pico-ITX
<b>CPU Level</b>	Intel® Pentium® N3710/Celeron® N3060	Intel® Celeron® J1900/N2800	Intel® Celeron® J1900/N2800
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated
<b>Memory Type</b>	DDR3L-600	DDR3L-1066/1333	DDR3L-1066/1333
<b>Max. DRAM Capacity</b>	8GB	8GB	8GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	N/A
<b>Onboard Digital I/O</b>	N/A	N/A	N/A
<b>I/O</b>			
<b>SATA</b>	1 x SATA-600	1 x SATA-300	1 x SATA-300
<b>Serial</b>			
<b>COM 1</b>	N/A	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	N/A	RS-232/422/485	RS-232/422/485
<b>USB</b>	1 x USB 2.0	4 x USB 2.0	4 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>Display</b>	1 x HDMI or 1 x VGA 1 x LVDS	1 x VGA 1 x LVDS	1 x VGA or 1 x HDMI 1 x LVDS
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card with mSATA supported 1 x PCIe x1, 2 x UART, 1 x DP, 4 x USB 3.0 and 1 x HD audio (through expansion connector)	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card	1 x Full-size PCIe Mini Card with mSATA supported
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-20°C ~ +60°C (-4°F ~ 158°F)	-20°C ~ +70°C (-4°F ~ +158°F)	-20°C ~ +70°C (-4°F ~ +158°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 157



Page 158



Page 159

Features/Models	PICO841	PICO840	PICO831
<b>Form Factor</b>	Pico-ITX	Pico-ITX	Pico-ITX
<b>CPU Level</b>	Intel® Atom™ E3845/E3827	Intel® Atom™ E3845/E3827	Intel® Atom™ N2600/N2800
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	Intel® NM10
<b>Memory Type</b>	DDR3L-1066/1333	DDR3L-1066/1333	DDR3-800/1066
<b>Max. DRAM Capacity</b>	8GB	8GB	4GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	SATA SSD (Optional)
<b>Onboard Digital I/O</b>	N/A	N/A	N/A
<b>I/O</b>			
<b>SATA</b>	1 x SATA-300	1 x SATA-300	1 x SATA-300
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
<b>COM 2</b>	RS-232/422/485	RS-232/422/485	RS-232
<b>USB</b>	4 x USB 2.0	4 x USB 2.0	4 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	Yes
<b>Display</b>	1 x VGA 1 x LVDS	1 x VGA or 1 x HDMI 1 x LVDS	1 x VGA 1 x LVDS
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCIe Mini Card	1 x Full-size PCIe Mini Card with mSATA supported	1 x Full-size PCIe Mini Card 1 x Half-size PCIe Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	-20°C ~ +70°C (-4°F ~ +158°F)	-40°C ~ +70°C (-40°F ~ +158°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

Embedded SBCs > Pico-ITX

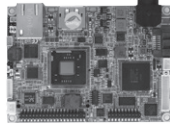
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

\* All specifications and photos are subject to change without notice.

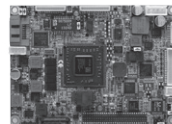


# Pico-ITX SBCs

## Selection Guide



Page 160



Page 161



Page 162

Features/Models	PICO830	PICO121	PICO100
<b>Form Factor</b>	Pico-ITX	Pico-ITX	Pico-ITX
<b>CPU Level</b>	Intel® Atom™ N2600/N2800	AMD Embedded GX-2103A SoC	AMD G-Series APU T40E/T40R
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>Core Logic Chipset</b>	Intel® NM10	SoC integrated	AMD A50M
<b>Memory Type</b>	DDR3-800/1066	DDR3/3L-1066/1333	DDR3-1066
<b>Max. DRAM Capacity</b>	4GB	8GB	4GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in APU	Integrated in APU
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CFast™	N/A	1 x CompactFlash™
<b>Onboard Digital I/O</b>	N/A	N/A	N/A
<b>I/O</b>			
<b>SATA</b>	1 x SATA-300	1 x SATA-600	1 x SATA-600
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>USB</b>	4 x USB 2.0	4 x USB 2.0	4 x USB 2.0
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA or 1 x DisplayPort 1 x LVDS	1 x VGA 1 x LVDS	1 x VGA or 1 x DisplayPort 1 x LVDS
<b>Ethernet</b>	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	N/A	1 x Full-size PCIe Mini Card with mSATA supported 1 x Half-size PCI Express Mini Card 1 x PCIe x1, 1 x DP, and 2 x USB 3.0 (through expansion connector)	N/A
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F~ 140°F)	-20°C ~ +70°C (-4°F~ 158°F)	0°C ~ +60°C (32°F~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

# PC/104 CPU Module

## Selection Guide



Page 143

Features/Models		AX12260	
<b>Form Factor</b>		PC/104	
<b>CPU Level</b>		AMD LX800	
<b>CPU Socket</b>		Onboard	
<b>CPU FSB Frequency</b>		N/A	
<b>Core Logic Chipset</b>		AMD CS5536AD	
<b>Memory Type</b>		DDR-333/400	
<b>Max. DRAM Capacity</b>		1GB	
<b>Cache RAM Capacity</b>		Integrated in CPU	
<b>BIOS</b>		Phoenix-Award	
<b>Watchdog Timer</b>		255 levels, 1~255 sec.	
<b>Onboard SSD</b>		1 x USB DiskOnModule	
<b>Onboard Digital I/O</b>		3-IN & 5-OUT	
<b>IDE</b>		1 x PATA-100	
<b>SATA</b>		N/A	
<b>FDD</b>		N/A	
<b>LPT</b>		N/A	
<b>I/O</b>	<b>Serial</b>	<b>COM 1</b>	RS-232
		<b>COM 2</b>	RS-232
		<b>COM 3</b>	N/A
		<b>COM 4</b>	N/A
	<b>USB</b>	4 x USB 2.0	
<b>IEEE 1394a</b>		N/A	
<b>Display</b>		1 x VGA 1 x TTL	
<b>Ethernet</b>		1 x 10/100 Mbps Ethernet	
<b>Audio</b>		AC'97 Codec	
<b>Hardware Monitoring</b>		Yes	
<b>SMBus</b>		Yes	
<b>Expansion Interface</b>		1 x PCI-104 1 x PC/104	
<b>Power Management</b>		ACPI	
<b>Battery</b>		Lithium	
<b>Operating Temperature</b>		0°C ~ +60°C (32°F ~ 140°F)	
<b>Relative Humidity</b>		10% to 95%, non-condensing	
<b>EMI Compliance</b>		CE	
<b>Wide Temperature</b>		-40°C ~ +85°C (-40°F ~ 185°F)	

0
1
2
3
4
5
6
7

Embedded  
SPCs  
>Pico-ITX



# EP100

EPIC SBC with AMD G-Series APU, AMD A50M FCH, Dual DisplayPort/VGA/LVDS, Dual LANs and Audio

## Features

- AMD G-Series APU T40R (1.0 GHz)/ T56N (1.65 GHz)
- 1 DDR3 DDR3-1066/1333 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 4 COM ports
- DirectX 11 supported



### Core System

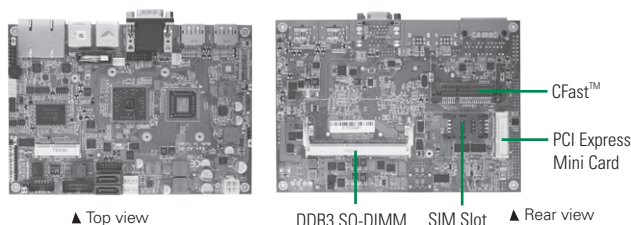
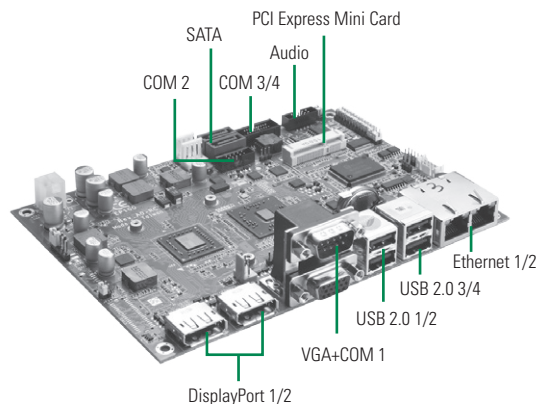
CPU	AMD G-Series APU T40R 1.0 GHz single core or T56N 1.65 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066/1333 SO-DIMM, up to 4GB
Chipset	AMD A50M FCH
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card 1 x PCI Express Mini Card with SIM slot
Battery	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power ON function supported
Power Requirements	AMD G-Series APU T56N @1.65 GHz, 1GB DDR3 Max. RMS: +12V @ 1.74A AMD G-Series APU T40R @ 1.0 GHz, 1GB DDR3 Max. RMS: +12V @ 1.24A
Size	165 x 115 mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1; +5V/+12V powered) 3 x RS-232 (COM 2/3/4; +5V/+12V powered)
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as Mic-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable

### Display

Chipset	AMD G-Series APU integrated graphics engine T56N - Radeon™ HD6320 T40R - Radeon™ HD6250
Memory Size	Up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA, 2 x DisplayPort or 1 x VGA, 1 x DisplayPort, 1 x LVDS; 18/24-bit single/dual channel



### Packing List

#### Standard

Quick installation guide, user's manual/utility CD, cable

#### Cable

Part Number	Description	Qty
59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

#### Optional

59380000300E	2 x COM w/ bracket, P=1.27 x 2.54, L=300 mm
59070213000E	DisplayPort to VGA cable, L=100 mm
59040131000E	DisplayPort to DVI cable, L=220 mm
59050203000E	DisplayPort to HDMI cable, L=185 mm
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm

### Ordering Information

#### Standard

EP100VPGGA-T56N w/ slim I/O (P/N: E38B100100)	EPIC SBC with AMD G-Series APU T56N 1.65 GHz, A50M FCH, VGA/Dual DisplayPort, 2 GbE LANs and audio
EP100VLGGA-T40R w/ rich I/O (fanless) (P/N: E38B100102)	EPIC SBC with AMD G-Series APU T40R 1.0 GHz, A50M FCH, VGA/DisplayPort/LVDS, 2 GbE LANs and audio



# CAPA500 NEW

3.5" Embedded SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3 Processor, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- LGA1151 6th/7th gen Intel® Core™ i7/i5/i3 processor (Skylake/Kaby Lake)
- Intel® H110 chipset (Q170 optional)
- 1 DDR4-1867 SO-DIMM, up to 16GB
- 3 USB 3.0 and 3 USB 2.0 ports
- 1 COM port
- Intel® AMT 11 supported (optional)



### Core System

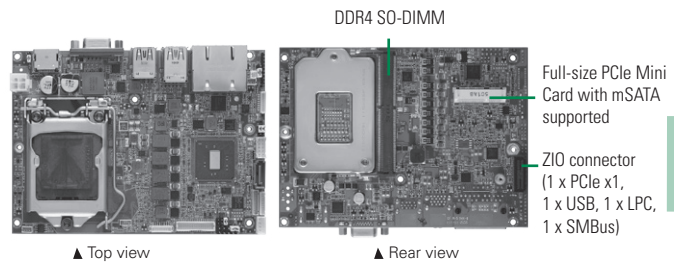
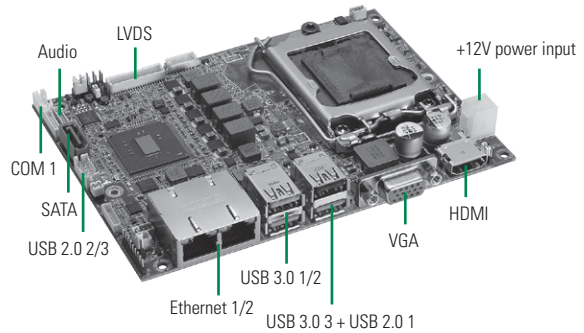
CPU	LGA1151 6th/7th generation Intel® Core™ i7/i5/i3 processor
System Memory	1 x 260-pin DDR4-1867 SO-DIMM, up to 16GB
Chipset	Intel® H110 Intel® Q170 (optional)
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA supported 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus through a ZIO connector (optional)
Battery Lithium	Lithium 3V/220mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485; with +5V/+12V powered
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT 1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i219LM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	3 x USB 3.0 3 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed

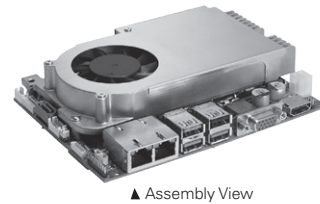
### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI



▲ Top view

▲ Rear view



▲ Assembly View

### Packing List

<b>Standard</b>	Quick installation guide, user's manual/utility CD and cable
-----------------	--

### Ordering Information

Standard	
CAPA500VHGGA-H110 (P/N: E38E500103)	3.5" embedded SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3 processor, Intel® H110 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box
CAPA500VHGGA-Q170 (E38E500102)	3.5" embedded SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3 processor, Intel® Q170 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box
CAPA500VHGGA-H110-ZIO (P/N: E38E500101)	3.5" embedded SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3 processor, Intel® H110 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
CAPA500VHGGA-Q170-ZIO (P/N: E38E500100)	3.5" embedded SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3 processor, Intel® Q170 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
Optional	
AX93262 (P/N: E393262100)	ZIO module w/ four COM ports and one PCIe Mini Card
AX93285 (P/N: E393285100)	ZIO module w/ two COM ports and 32-bit programmable DIO
AX93291 (P/N: E393291100)	ZIO module w/ two COM ports and 2 Gigabit Ethernet
AX93295 (P/N: E393295100)	ZIO module w/ two isolated COM ports and two USB 3.0



Embedded SBCs >3.5" Capa

0

1

2

3

4

5

6

7

# CAPA880

3.5" Embedded SBC with LGA1150 Socket 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® H81, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- LGA1150 socket 4th gen Intel® Core™ i7/i5/i3 & Celeron® processor
- Intel® H81 chipset
- 1DDR3-1600 SO-DIMM, up to 8GB
- 2 USB 3.0 and 4 USB 2.0 ports
- 1 COM and 2 Gigabit LAN ports



### Core System

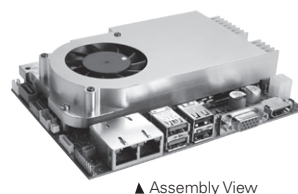
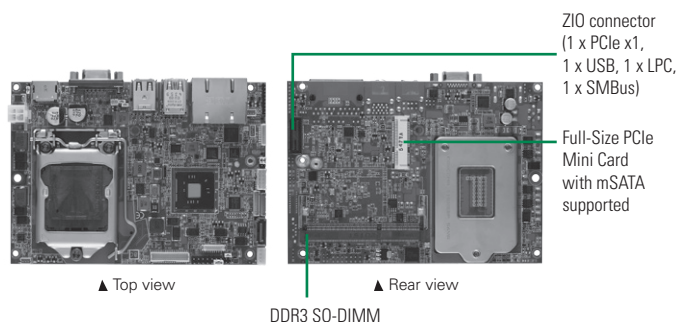
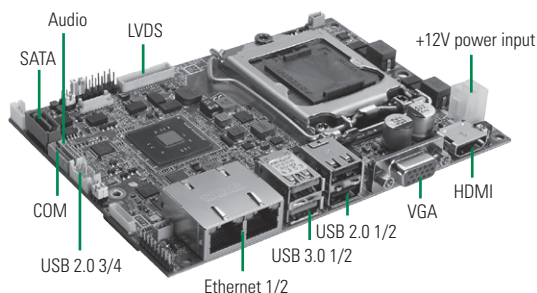
CPU	LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	1 x 204-pin DDR3-1600 SO-DIMM, up to 8GB
Chipset	Intel® H81
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x USB 3.0, 1 x PCIe x1, 1 x LPC, 1 x SMBus through a ZIO connector
Battery Lithium	Lithium 3V/220mAH
Power Input	2 x 2-pin connectors +12V DC-in only AT Auto Power On function supported
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +55°C (-4°F ~ 131°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 with +5V/+12V powered
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT 1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i218LM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	2 x USB 3.0 4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed

### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI



### Packing List

#### Standard

Quick installation guide, User's Manual/Utility CD and cable

#### Cable

Part Number	Description	Qty
59380880250E	1 x COM, P=1.25 mm, L=250 mm	1
59312260020E	Audio Cable w/bracket, P=1.25 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/bracket, L=180 mm	1
5078E880100E	Cooler	1

### Ordering Information

#### Standard

CAPA880VHGGGA-H81 (P/N: E38E880102)	3.5" Embedded SBC with LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® processor, Intel® H81 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box
CAPA880VHGGGA-H81-ZIO (P/N: E38E880100)	3.5" Embedded SBC with LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® processor, Intel® H81 chipset, VGA/LVDS/HDMI, 2GbE LANs, audio and ZIO connector

#### Optional

AX93262 (P/N:E393262100)	ZIO module w/ four COM ports and one PCIe Mini Card
AX93285 (P/N: E393285100)	ZIO module w/ two COM ports and 32-bit programmable DIO
AX93291 (P/N: E393291100)	ZIO module w/ two COM ports and 2 Gigabit Ethernet
AX93295 (P/N: E393295100)	ZIO module w/ two isolated COM ports and two USB 3.0

# CAPA881

3.5" Embedded SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM86 (Intel® QM87 optional), LVDS/VGA/Dual HDMI, Dual LANs and Audio

## Features

- 4th/5th gen Intel® Core™ i7/i5/i3 & Celeron® processor (Haswell/Haswell Refresh/Broadwell)
- Intel® HM86 chipset (Intel® QM87 optional)
- 1 DDR3L-1600 SO-DIMM, up to 8GB
- 2 USB 3.0 and 4 USB 2.0 ports
- 4 COM ports
- Intel® AMT 9.0 supported (optional)



## Core System

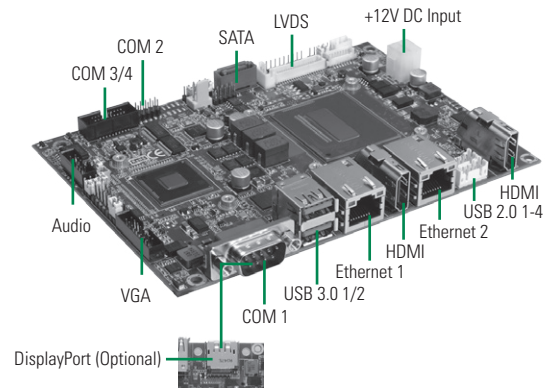
CPU	4th/5th generation Intel® Core™ i7/i5/i3 & Celeron® processor onboard (Haswell/Haswell Refresh/Broadwell)
System Memory	1 x 204-pin DDR3L-1600 SO-DIMM, up to 8GB
Chipset	Intel® HM86 Intel® QM87 (optional)
BIOS	AMI UEFI BIOS
SSD	1 x CFAST™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA
Battery Lithium	Lithium 3V/220mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	4th Intel® Core™ i7-4700EQ @ 2.4 GHz+HM86 2GB DDR3L Max. RMS: +12V @ 3.9A 4th Intel® Core™ i5-4402E @ 1.6 GHz+HM86 2GB DDR3L Max. RMS: +12V @ 2.7A 4th Intel® Core™ i3-4100E @ 2.4 GHz+HM86 2GB DDR3L Max. RMS: +12V @ 2.9A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

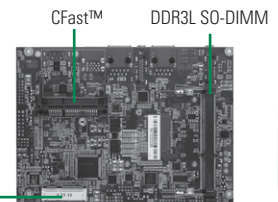
MIO	2 x RS-232/422/485 (COM 1/2); with +5V/+12V powered 2 x RS-232 (COM 3/4)
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT 1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i218LM
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	2 x USB 3.0 4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
TPM	ST ST33TPM12LPC with TPM 1.2 compliant
Digital I/O	8 channels IN/OUT programmed

## Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 2 x HDMI 1 x DisplayPort (Optional)



▲ Assembly View



▲ Rear view

Full-size PCIe Mini Card w/mSATA supported

## Packing List

Standard		
Quick installation guide, User's Manual/Utility CD and cable		
Cable		
Part Number	Description	Qty
594E8812100E	COM 2 cable 5 x 2P, P=2.0 mm, L=190 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, L=180 mm	1
59384500100E	Audio cable w/ bracket, P=2.45 mm	1

## Ordering Information

Standard		
CAPA881VHGGGA-i7 4700EQ (P/N: E38E881100)	3.5" Embedded SBC with Intel® Core™ i7-4700EQ processor 2.4 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-i5 4402E (P/N: E38E881102)	3.5" Embedded SBC with Intel® Core™ i5-4402E processor 1.6 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-i3 4100E (P/N: E38E881104)	3.5" Embedded SBC with Intel® Core™ i3-4100E processor 2.4 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-i5 4422E (P/N:E38E881110)	3.5" Embedded SBC with Intel® Core™ i5-4422E processor 1.8 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-Celeron 2000E (P/N:E38E881111)	3.5" Embedded SBC with Intel® Celeron® 2000E processor 2.2 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-i3 4110E (P/N:E38E881112)	3.5" Embedded SBC with Intel® Core™ i3-4110E processor 2.6 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
CAPA881VHGGGA-i7 5850EQ (P/N:E38E881113)	3.5" Embedded SBC with Intel® Core™ i7-5850EQ processor 2.7 GHz, Intel® HM86 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box	
Optional		
594P8800600E	SATA power cable 4P to 15P P=2.0 mm, L=200 mm	
59403208000E	SATA2 cable 180D to 180D with lock, L=200 mm	
594E8812000E	CAPA881 VGA cable D-15->16P P=2.0 mm, L=120 mm	



# CAPA312 NEW

3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI/LVDS, Dual LANs and Audio

## Features

- Intel® Pentium® processor N4200/Celeron® processor N3350
- 1 DDR3L SO-DIMM, up to 8GB
- 2 USB 2.0 and 4 USB 3.0 ports
- 2 PCI Express Mini Cards

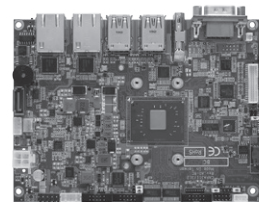
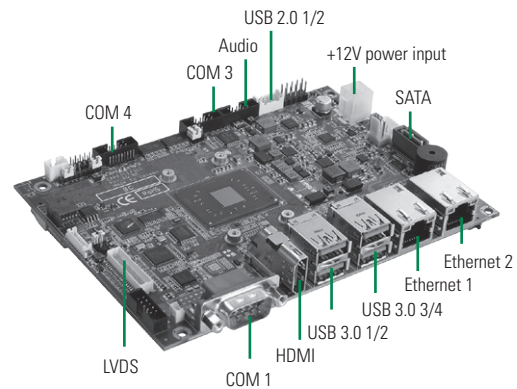


### Core System

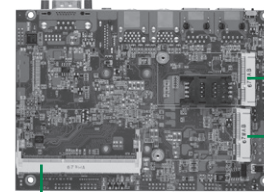
CPU	Intel® Pentium® processor N4200/Celeron® processor N3350 onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	1~ 65535 sec.
Expansion Interface	1 x Full-Size PCI Express Mini Card with mSATA supported 1 x Full-Size PCI Express Mini Card
Battery Lithium	Lithium 3 V/220 mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	Standard: -20°C ~ +60°C (-4°F ~ 140°F) Optional: -20°C ~ +70°C (-4°F ~ 158°F)
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	2 x RS-232/422/485 2 x RS-232
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as Mic-in/Line-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 4 x USB 3.0
I2C	I2C Bus for advanced monitoring/control
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 Channels IN/OUT programmed
TPM	ST ST33TPM12LPC with TPM1.2 compliant



▲ Top view



▲ Rear view

DDR3L SO-DIMM

Full-Size PCIe Mini Card with mSATA supported  
Full-Size PCIe Mini Card

### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI 1 x VGA (optional) 1 x eDP (optional)

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD and accessories

### Ordering Information

#### Standard

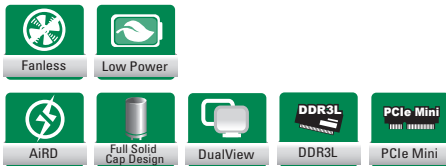
CAPA312VGGA-N4200	3.5" Embedded SBC with Intel® Pentium® processor N4200 (1.1-2.5 GHz, 2MB Cache, 6 W) LVDS/HDMI, 2 GbE LANs and audio
CAPA312VGGA-N3350	3.5" Embedded SBC with Intel® Celeron® processor N3350 (1.1-2.4 GHz, 2MB Cache, 6 W) LVDS/HDMI, 2 GbE LANs and audio

# CAPA318 NEW

3.5" Embedded SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, VGA/LVDS, Dual LANs and Audio

## Features

- Intel® Pentium® processor N4200/Celeron® processor N3350
- 1 DDR3L SO-DIMM, up to 8GB
- 2 USB 2.0 and 2 USB 3.0 ports
- PCI Express Mini card with mSATA supported

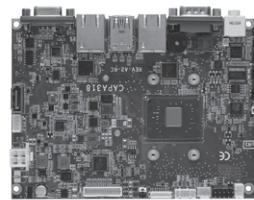
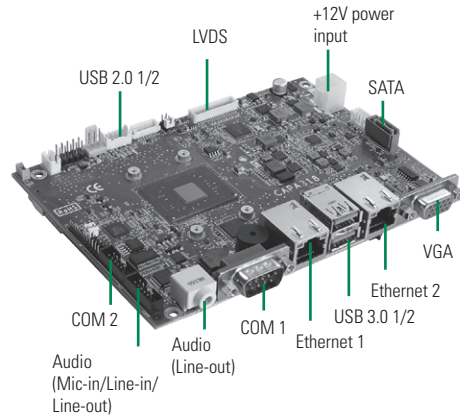


### Core System

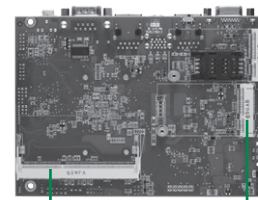
CPU	Intel® Pentium® processor N4200/Celeron® processor N3350 onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	65536 levels, 1~65535 sec.
Expansion Interface	1 x Full-Size PCI Express Mini Card with mSATA supported 1 x Full-Size PCI Express Mini Card
Battery Lithium	Lithium 3 V/220 mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	2 x RS-232
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 2 x USB 3.0
I2C	I2C Bus for advanced monitoring/control
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 Channels IN/OUT programmed



▲ Top view



▲ Rear view

DDR3L SO-DIMM

Full-Size PCIe Mini Card with mSATA supported

### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

### Packing List

<b>Standard</b>	Quick installation guide, user's manual/utility CD and accessories
-----------------	--

### Ordering Information

<b>Standard</b>	
CAPA318VGGGA-N4200	3.5" Embedded SBC with Intel® Pentium® processor N4200 (1.1-2.5 GHz, 2MB Cache, 6W) VGA/LVDS, 2 GbE LANs and audio
CAPA318VGGGA-N3350	3.5" Embedded SBC with Intel® Celeron® processor N3350 (1.1-2.4 GHz, 2MB Cache, 6W) VGA/LVDS, 2 GbE LANs, and audio



# CAPA848

3.5" Embedded SBC with Intel® Celeron® Processor N2807, LVDS/VGA/HDMI, LAN and Audio

## Features

- Intel® Celeron® processor N2807 (1.58 GHz)
- 1 DDR3L-1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 4 COM ports
- 2 PCI Express Mini Card and 1 SIM slot
- Gigabit Ethernet port
- LVDS/VGA/HDMI with dual view supported

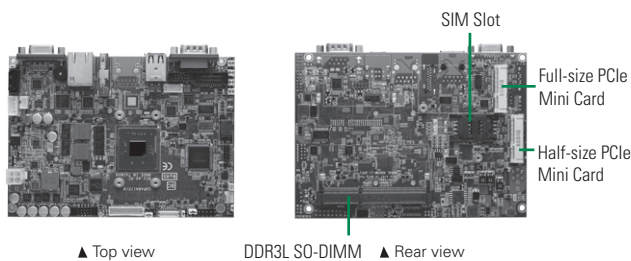
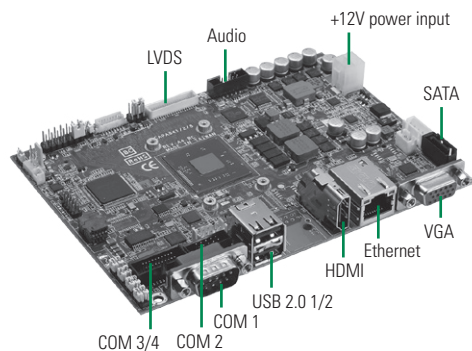


### Core System

CPU	Intel® Celeron® processor N2807 1.58 GHz dual core onboard (Bay Trail)
System Memory	1 x 204-pin DDR3L-1333 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1-255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card 1 x SIM slot
Battery Lithium	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Celeron® N2807 @ 1.58 GHz, 8GB DDR3L Max. RMS. +12V @ 0.64A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ +158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	2 x RS-232/422/485 2 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed



### Display

Chipset	Intel® HD Graphics
Memory Size	Share System Memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD

#### Cable

59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm
59380000300E	2 x COM w/bracket, P=1.27 x 2.54, L=300 mm

### Ordering Information

#### Standard

CAPA848VHGA-N2807 (P/N: E38E48100)	3.5" Embedded SBC with Intel® Celeron® processor N2807 1.58 GHz, VGA/LVDS/HDMI, 1 GbE LAN and audio
---------------------------------------	--

# CAPA843

3.5" Embedded SBC with Intel® Celeron® J1900 Processor, LVDS/VGA/HDMI, Dual LANs, Audio and ZIO

## Features

- Intel® Celeron® processor J1900
- 2 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports and 1 USB 3.0 port
- 2 COM ports



### Core System

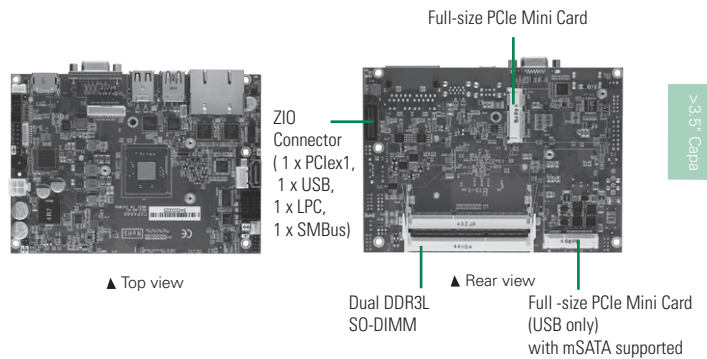
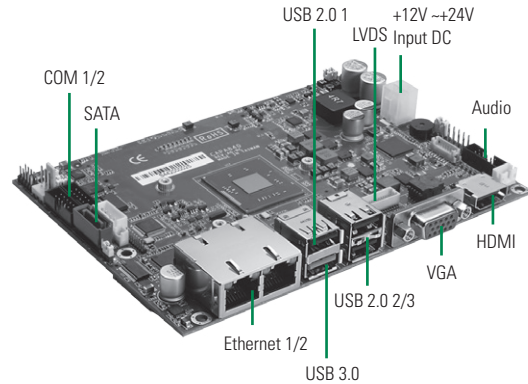
CPU	Intel® Celeron® processor J1900 quad core onboard
System Memory	2 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	1 x mSATA
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card 1 x Full-size PCI Express Mini Card (USB only) 1 x USB, 1x PCIe x1, 1 x LPC, 1 x SMBus through a ZIO connector
Battery Lithium	Lithium 3V/220mAh
Power Input	2 x 2-pin connector +10V~24V DC-in AT Auto Power On function supported
Power Requirements	Intel® Celeron® J1900 @2.0 GHz, 8GB DDR3L Max. RMS: +24V @ 0.5A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485; with +5V/+12V powered 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 2.0 1 x USB 3.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed

### Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI



### Packing List

Standard		
Quick installation guide, User's Manual/Utility CD and cable		
Accessories		
Part Number	Description	Qty
59382620000E	1 x COM w/bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/bracket, P=2.45 mm	1
594P8802800E	1 x USB 2.0 wafer cable	1

### Ordering Information

Standard	
CAPA843VHGGGA-J1900 (P/N: E38E843100)	3.5" Embedded SBC with Intel® Celeron® processor J1900 (2~2.42 GHz, 2MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA843VHGGGA-J1900-ZIO (P/N: E38E843102)	3.5" Embedded SBC with Intel® Celeron® processor J1900 (2~2.42 GHz, 2MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
Optional	
AX93262 (P/N: E393262100)	ZIO module w/ four COM ports and one PCIe Mini Card
AX93285 (P/N: E393285100)	ZIO module w/ two COM ports and 32-bit programmable DIO
AX93291 (P/N: E393291100)	ZIO module w/two COM ports and two Gigabit Ethernet



# CAPA842

3.5" Embedded SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- Intel® Celeron® processor J1900/N2807 (Bay Trail SoC)
- 1 DDR3L-1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 4 COM ports
- 2 PCI Express Mini Card and 1 SIM slot
- 2 Gigabit Ethernet ports
- LVDS/VGA/HDMI with dual-view supported

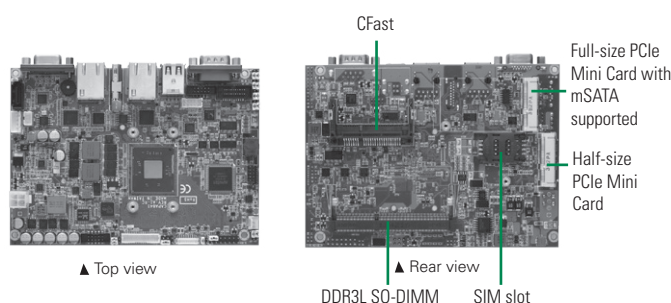
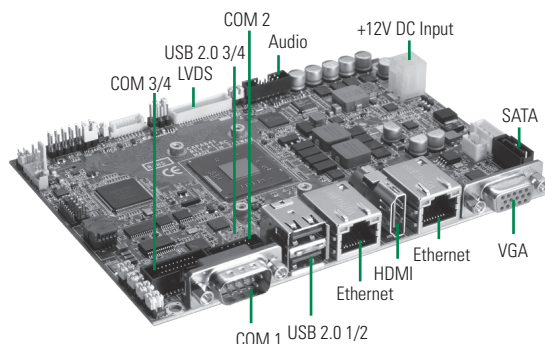


## Core System

CPU	Intel® Celeron® processor J1900 quad core or N2807 dual core onboard (Bay Trail)
System Memory	1 x 204-pin DDR3L-1333 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card 1 x SIM slot
Battery Lithium	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Celeron® J1900 @ 2 GHz, 8GB DDR3L Max. RMS. +12V @ 1.41A Intel® Celeron® N2807 @ 1.58 GHz, 8GB DDR3L Max. RMS. +12V @ 0.64A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ +158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	2 x RS-232/422/485 (+5V/+12V powered) 2 x RS-232 (+5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 x 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed
TPM	ST ST33TPM12LPC with TPM 1.2 compliant



## Display

Chipset	Intel® HD Graphics
Memory Size	Share System Memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

## Packing List

<b>Standard</b>	Quick installation guide, user's manual/utility CD, cable
-----------------	---

<b>Cable</b>		
Part Number	Description	Qty
5938262000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

<b>Optional</b>	
Part Number	Description
5078E841200E	Heatspreader

## Ordering Information

<b>Standard</b>	
CAPA842VHGA-J1900 (P/N: E38E842102)	3.5" Embedded SBC with Intel® Celeron® processor J1900 (2~2.42 GHz, 2 MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA842VHGA-N2807 (P/N: E38E842100)	3.5" Embedded SBC with Intel® Celeron® processor N2807 (1.58~2.16 GHz, 1 MB Cache, 4.3W), VGA/LVDS/HDMI, 2 GbE LANs and audio

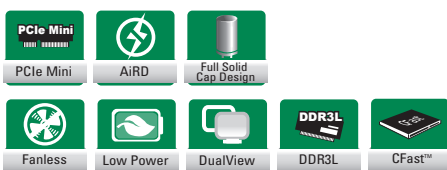
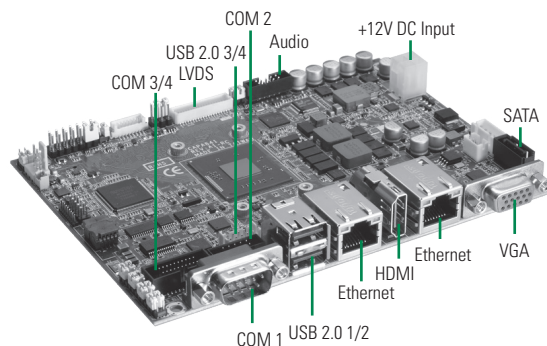


# CAPA841

3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- Intel® Atom™ processor E3845/E3827 (Bay Trail SoC)
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 4 COM ports
- 2 PCI Express Mini Card and 1 SIM slot
- 2 Gigabit Ethernet ports
- LVDS/VGA/HDMI with dual-view supported

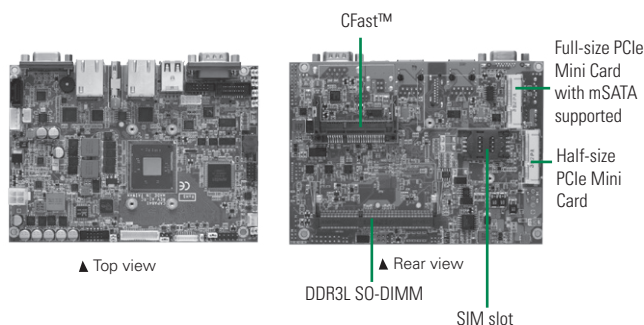


### Core System

CPU	Intel® Atom™ processor E3845 quad core or E3827 dual core onboard (Bay Trail)
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card 1 x SIM slot
Battery Lithium	Lithium 3V/220mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom™ E3845 @ 1.91 GHz, 8GB DDR3L Max. RMS: +12V @ 1.22A Intel® Atom™ E3827 @ 1.75 GHz, 8GB DDR3L Max. RMS: +12V @ 0.96A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-40°C ~ +80°C (-40°F ~ +176°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	2 x RS-232/422/485 (+5V/+12V powered) 2 x RS-232 (5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 x 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210IT
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed
TPM	ST ST33TPM12LPC with TPM 1.2 compliant



### Display

Chipset	Intel® HD Graphics
Memory Size	Share System Memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

### Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

Optional	
Part Number	Description
5078E841200E	Heatspreader

### Ordering Information

Standard		
CAPA841VHGGGA-E3845 w/ET (P/N:E38E841109)	3.5" Embedded SBC with Intel® Atom™ E3845 (1.91 GHz, 2 MB Cache, 10 W), VGA/LVDS/HDMI, 2 GbE LANs and audio	
CAPA841VHGGGA-E3827 (P/N:E38E841110)	3.5" Embedded SBC with Intel® Atom™ E3827 (1.75 GHz, 1 MB Cache, 8 W), VGA/LVDS/HDMI, 2 GbE LANs and audio	



# CAPA840

3.5" Embedded SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs, Audio and ZIO

## Features

- Intel® Atom™ processor E3845/E3827
- 2 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports and 1 USB 3.0 port
- 2 COM ports



## Core System

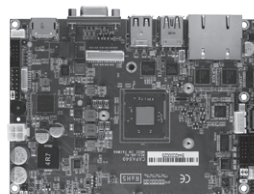
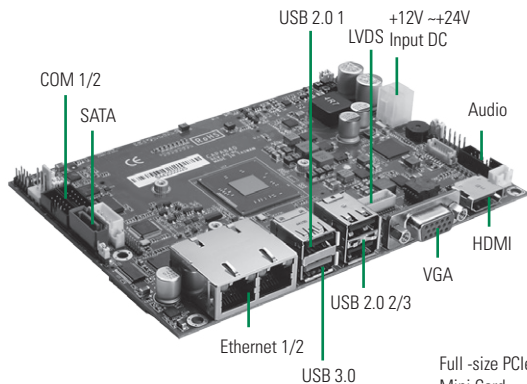
CPU	Intel® Atom™ processor E3845 quad core, E3827 dual core onboard (Bay Trail)
System Memory	2 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	1 x mSATA
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card 1 x Full-size PCI Express Mini Card (USB only) 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus through a ZIO connector
Battery Lithium	Lithium 3V/220MAH
Power Input	2 x 2-pin connector +10V~24V DC-in AT Auto Power On function supported
Power Requirements	Intel® Atom™ E3845 @ 1.91 GHz, 4GB DDR3L Max. RMS: +24V @ 0.68A Intel® Atom™ E3827 @ 1.75 GHz, 4GB DDR3L Max. RMS: +24V @ 0.6A
Size	146 x 104 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

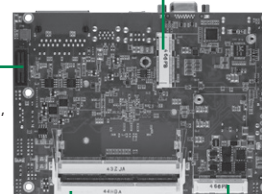
MIO	1 x RS-232/422/485 (+5V/+12V powered) 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 2.0 1 x USB 3.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed

## Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI



▲ Top view



▲ Rear view

ZIO Connector (1 x PCIe x1, 1 x USB, 1 x LPC, 1 x SMBus)  
Dual DDR3L SO-DIMM  
Full -size PCIe Mini Card (USB only) with mSATA supported

## Packing List

### Standard

Quick installation guide, user's manual/utility CD and cable

### Accessories

Part Number	Description	Qty
59382620000E	1 x COM w/bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/bracket, P=2.45 mm	1
594P8802800E	1 x USB 2.0 wafer cable	1

## Ordering Information

### Standard

CAPA840VHGGGA-E3845 (P/N:E38E840100)	3.5" Embedded SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2 MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA840VHGGGA-E3827 (P/N:E38E840101)	3.5" Embedded SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1 MB Cache, 8W), VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA840VHGGGA-E3845-ZIO (P/N:E38E840103)	3.5" Embedded SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2 MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
CAPA840VHGGGA-E3827-ZIO (P/N:E38E840104)	3.5" Embedded SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1 MB Cache, 8W), VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector

### Optional

AX93262 (P/N:E393262100)	ZIO module w/ four COM ports and one PCIe Mini Card
AX93285 (P/N:E393285100)	ZIO module w/ two COM ports and 32-bit programmable DIO
AX93291 (P/N:E393291100)	ZIO module w/two COM ports and two Gigabit Ethernet

# CAPA831

3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio

## Features

- Intel® Atom™ processor D2550 (1.86 GHz)/N2800 (1.86 GHz)/N2600 (1.6 GHz)
- 1 DDR3-800/1066 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 4 COM ports
- DisplayPort, LVDS, and VGA with dual-view supported
- PCI Express Mini Card with mSATA supported



## Core System

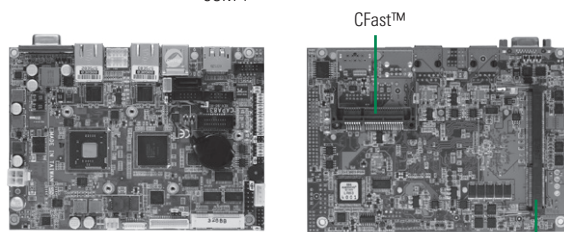
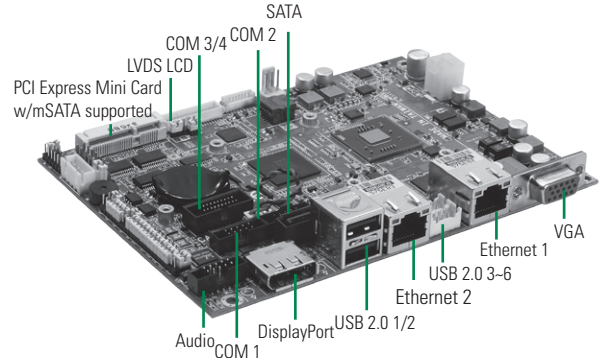
CPU	Intel® Atom™ processor D2550 1.86 GHz, N2800 1.86 GHz, N2600 1.6 GHz dual core onboard
System Memory	1 x 204-pin DDR3-800/1066 SO-DIMM, up to 4GB (N2600 supports DDR-800, up to 2GB)
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2 with mSATA
Battery	Lithium 3V/220mAh
Power Input	2 x 2-pin connectors +12V DC-in only AT Auto Power On function supported
Power Requirement	Intel® Atom™ D2550 @ 1.86 GHz, 1GB DDR3 Max. RMS: +12V @ 1.48A
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	Standard: 0°C ~ +60°C (32°F ~ 140°F) Optional: -20°C ~ +70°C (-4°F ~ +158°F)
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	2 x RS-232/422/485 (COM 1/2 with +5V/+12V powered) 2 x RS-232 (COM 3/4 with +5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable
TPM	ST 33TPM12LPC with TPM 1.2 compliant

## Display

Chipset	Intel® GMA 3650 graphics core for D2550/ N2800 Intel® GMA 3600 graphics core for N2600
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DisplayPort 1 x LVDS; 18/24-bit single/dual channel



▲ Top view

▲ Rear view

DDR3 SO-DIMM

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
5938262000E	1 x COM w/ bracket, P=2.0mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2,450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

### Optional

5938000300E	2 x COM w/ bracket, P=1.27 x 2.54, L=300 mm	
59070213000E	DisplayPort to VGA cable, L=100 mm	
59040131000E	DisplayPort to DVI cable, L=220 mm	
59050203000E	DisplayPort to HDMI cable, L=185 mm	
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm	

## Ordering Information

### Standard

CAPA831VPGGA-N2800 (fanless) (P/N: E38E831103)	3.5" Embedded SBC with Intel® Atom™ N2800 1.86 GHz, VGA/DisplayPort/ LVDS, 2 GbE LANs and audio
CAPA831VPGGA-N2600 (fanless) (P/N: E38E831105)	3.5" Embedded SBC with Intel® Atom™ N2600 1.6 GHz, VGA/DisplayPort/ LVDS, 2 GbE LANs and audio
CAPA831VPGGA-D2550 (P/N: E38E831106)	3.5" Embedded SBC with Intel® Atom™ D2550 1.86 GHz, VGA/DisplayPort/ LVDS, 2 GbE LANs, audio and heatsink fan
CAPA831VPGGA-N2800 w/ WT (fanless)	3.5" Embedded SBC with Intel® Atom™ N2800 1.86 GHz, VGA/DisplayPort/LVDS, 2 GbE LANs, audio and WT (-20°C ~ +70°C)
CAPA831VPGGA-D2550 w/ WT (fanless) (P/N: E38E831108)	3.5" Embedded SBC with Intel® Atom™ D2550 1.86 GHz, VGA/DisplayPort/LVDS, 2 GbE LANs, audio and WT (-20°C ~ +70°C)

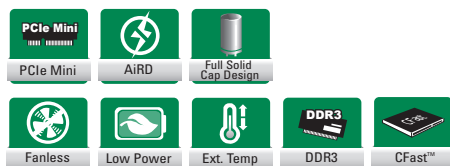


# CAPA830

3.5" Embedded SBC with Intel® Atom™ D2550/N2600/N2800, Intel® NM10, LVDS/HDMI/VGA, Dual LANs, Audio and ZIO

## Features

- Intel® Atom™ processor D2550 (1.86 GHz)/N2800 (1.86 GHz)/N2600 (1.6 GHz)
- 1 DDR3-800/1066 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 2 COM ports
- ZIO connector
- PCI Express Mini Card V1.2 with mSATA supported



## Core System

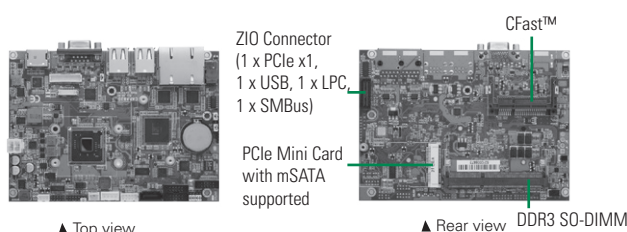
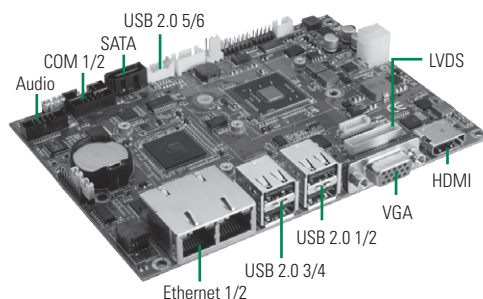
CPU	Intel® Atom™ processor D2550 1.86 GHz/N2800 1.86 GHz/N2600 1.6 GHz dual core onboard
System Memory	1 x 204-pin DDR3-800/1066 SO-DIMM, up to 4GB (N2600 supports DDR3-800, up to 2GB)
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2 with mSATA 1 x USB, 1 x PCIe x1, 1 x LPC, 1 x SMBus through a ZIO connector
Battery	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power ON function supported
Power Requirements	Intel® Atom™ N2600 @ 1.6 GHz, 1GB DDR3 Max. RMS: +12V @ 1.077A Intel® Atom™ N2800 @ 1.86 GHz, 1GB DDR3 Max. RMS: +12V @ 1.156A Intel® Atom™ D2550 @ 1.86 GHz, 1GB DDR3 Max. RMS: +12V @ 1.44A
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C ~ +70°C (-4°F ~ +158°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (+5V/+12V powered) 1 x RS-232 (+5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for Advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable
TPM	ST ST33TPM12LPC with TPM 1.2 compliant

## Display

Chipset	Intel® GMA 3650 graphics core for D2550/ N2800 Intel® GMA 3600 graphics core for N2600
Memory Size	Share system memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS; 18/24-bit single/dual channel



## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket 180 mm	1

## Ordering Information

### Standard

CAPA830VHGGA-D2550 (P/N: E38E830103)	3.5" Embedded SBC with Intel® Atom™ processor D2550 1.86 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and heatsink fan
CAPA830VHGGA-N2800 (P/N: E38E830102)	3.5" Embedded SBC with Intel® Atom™ processor N2800 1.86 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA830VHGGA-N2600 (P/N: E38E830101)	3.5" Embedded SBC with Intel® Atom™ processor N2600 1.6 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs and audio
CAPA830VHGGA-D2550-ZIO (P/N: E38E830106)	3.5" Embedded SBC with Intel® Atom™ processor D2550 1.86 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio, heatsinkfan and ZIO connector
CAPA830VHGGA-N2800-ZIO (P/N: E38E830105)	3.5" Embedded SBC with Intel® Atom™ processor N2800 1.86 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
CAPA830VHGGA-N2600-ZIO (P/N: E38E830104)	3.5" Embedded SBC with Intel® Atom™ processor N2600 1.6 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and ZIO connector
CAPA830VHGGA-N2600 w/ET	3.5" Embedded SBC with Intel® Atom™ processor N2600 1.6 GHz, Intel® NM10 chipset, VGA/LVDS/HDMI, 2 GbE LANs, audio and -40°C to +85°C

### Optional

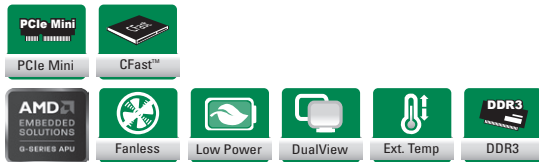
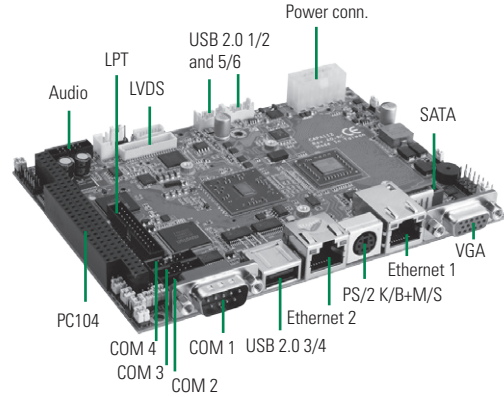
AX93262 (P/N: E393262100)	ZIO module w/ four COM ports and one PCIe Mini Card
AX93285 (P/N: E393285100)	ZIO module w/ two COM ports and 32-bit programmable DIO
AX93291 (P/N: E393291100)	ZIO module w/ two COM ports and two Gigabit Ethernet

# CAPA112

3.5" Embedded SBC with AMD G-Series APU, AMD A55E, LVDS/VGA, Dual LANs, Audio, and PC/104

## Features

- AMD G-Series APU T16R (615 MHz)/ T40E (1.0 GHz)
- AMD A55E FCH
- 1 DDR3-1066 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 4 COM ports
- 1 PC/104 for 16-bit ISA Bus

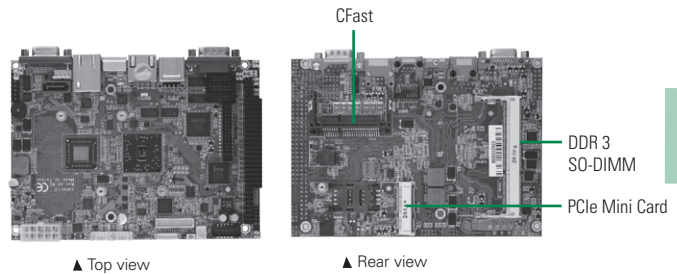


## Core System

CPU	AMD G-Series APU T16R 615 MHz single core/ T40E 1.0 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	AMD A55E
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card 1 x PC/104 for 16-bit ISA bus
Battery	Lithium 3V/220mAH
Power Input	2 x 5-pin connector ATX standard power source DC+5V only (+12V is required for +12V powered COM and LVDS inverter) AT Auto Power ON function supported
Power Requirement	AMD G-Series APU T40E @ 1.0 GHz, 1GB DDR3 Max. RMS: +5VSB @ 4mA, +5V @ 3.92A, +12V @ 40mA
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-40°C ~ +70°C (-40°F ~ 158°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 3 x RS-232 (COM 2-4 with +5V/+12V powered) 1 x PS/2 keyboard and mouse 1 x LPT; with SPP/EPP/ECP supported
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 port 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed



## Display

Chipset	AMD G-Series APU integrated graphic engine – Radeon™ HD6250
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

## Packing List

Standard		
Quick installation guide, user's manual/utility CD and cable		
Cable		
Part Number	Description	Qty
59382620000E	1 x COM w/bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/bracket	1
59402010000E	ATX power cable 10P, L=150 mm	1

## Ordering Information

Standard	
CAPA112VGA-T16R (P/N: E38E112101)	3.5" Embedded SBC with AMD G-Series APU T16R 615 MHz and FCH A55E, VGA/LVDS, 2 GbE LANs and audio
CAPA112VGA-T40E (P/N: E38E112100)	3.5" Embedded SBC with AMD G-Series APU T40E 1.0 GHz and FCH A55E, VGA/LVDS, 2 GbE LANs and audio

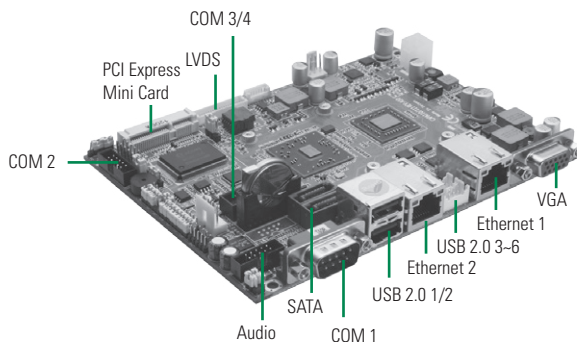


# CAPA111

3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/VGA, Dual LANs and Audio

## Features

- AMD G-Series APU T40R (1.0 GHz)/ T40E (1.0 GHz)
- 1 DDR3-1066 SO-DIMM, up to 4GB
- 2 SATA-600
- 6 USB 2.0 ports
- 4 COM ports
- DirectX 11 supported

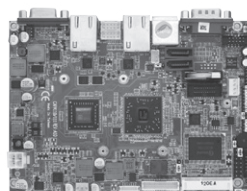


## Core System

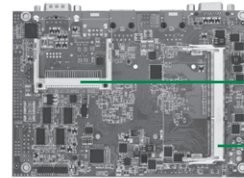
CPU	AMD G-Series APU T40R 1.0 GHz single core and T40E 1.0 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	AMD A50M
BIOS	AMI UEFI BIOS
SSD	1 x CompactFlash™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	AMD G-Series APU T40E @ 1.0 GHz, 1GB DDR3 Max. RMS: +12V @ 1.06A AMD G-Series APU T40R @ 1.0 GHz, 1GB DDR3 Max. RMS: +12V @ 0.96A
Size	146 x 104mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 3 x RS-232 (COM 2-4 with +5V/+12V powered)
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports 10/100/1000 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control (optional)
Digital I/O	8 channels IN/OUT programmable



▲ Top view



▲ Rear view

## Display

Chipset	AMD G-Series APU integrated graphic engine T40E/T40R - Radeon™ HD6250
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

### Optional

59380000300E	2 x COM w/ bracket, P=1.27 x 2.54, L=300 mm
--------------	---

## Ordering Information

### Standard

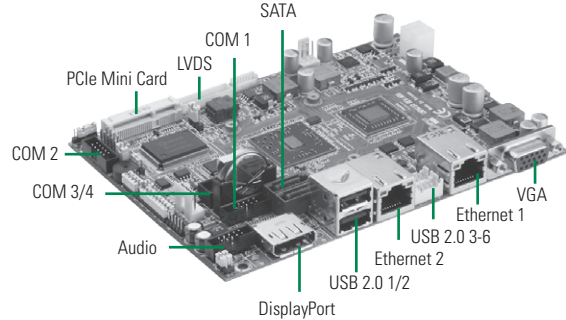
CAPA111VGGA-T40R (P/N: E38E111101)	3.5" Embedded SBC with AMD G-Series APU T40R 1.0 GHz, A50M chipset, VGA/LVDS, 2 GbE LANs, 2 SATA-600, 4 COM, 6 USB and audio
CAPA111VGGA-T40E (P/N: E38E111100)	3.5" Embedded SBC with AMD G-Series APU T40E 1.0 GHz and A50M chipset, VGA/LVDS, 2 GbE LANs, 2 SATA-600, 4 COM, 6 USB and audio

# CAPA110

3.5" Embedded SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort/VGA, Dual LANs and Audio

## Features

- AMD G-Series APU dual core T56N (1.65 GHz)
- 1 DDR3-1333 SO-DIMM, up to 4GB
- 2 SATA-600
- 6 USB 2.0 ports
- 4 COM ports
- DirectX 11 supported

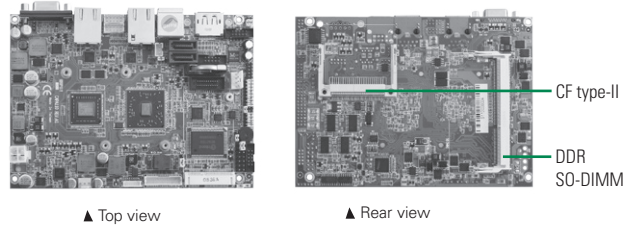


### Core System

CPU	AMD G-Series APU T56N 1.65 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1333 SO-DIMM, up to 4GB
Chipset	AMD A50M
BIOS	AMI UEFI BIOS
SSD	1 x CompactFlash™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAh
Power Input	3. 2 x 2-pin connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	AMD G-Series APU T56N @ 1.65 GHz, 1GB DDR3 Max. RMS: +12V @ 1.5A
Size	146 x 104mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 3 x RS-232 (COM 2-4 with +5V/+12V powered)
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 port 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control (optional)
Digital I/O	8 channels IN/OUT programmable



### Display

Chipset	AMD G-series APU integrated graphic engine T56N - Radeon™ HD6320
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA 1 x DisplayPort 1 x LVDS; 18/24-bit single/dual channel

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD, cable

#### Cable

Part Number	Description	Qty
59382620000E	1 x COM w/ bracket, P=2.0 mm, L=300 mm	1
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	1
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	1

#### Optional

59380000300E	2 x COM w/ bracket, P=1.27 x 2.54, L=300 mm
59070213000E	DisplayPort to VGA cable, L=100 mm
59040131000E	DisplayPort to DVI cable, L=220 mm
59050203000E	DisplayPort to HDMI cable, L=185 mm
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm

### Ordering Information

#### Standard

CAPA110VPGGA-T56N (P/N: E38E110105)	3.5" Embedded SBC with AMD G-Series APU T56N 1.65 GHz, VGA/DisplayPort/LVDS, 2 GbE LANs, 2 SATA-600, 4 COM, 6 USB and audio
-------------------------------------	---

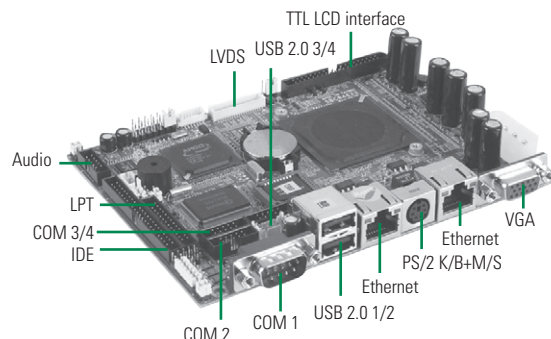


# SBC84622

3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS/TTL

## Features

- Low power fanless AMD LX800 processor
- Dual 10/100 Mbps Ethernet supported
- 4 COM ports and 4 USB 2.0 ports
- VGA and LVDS/TTL LCD

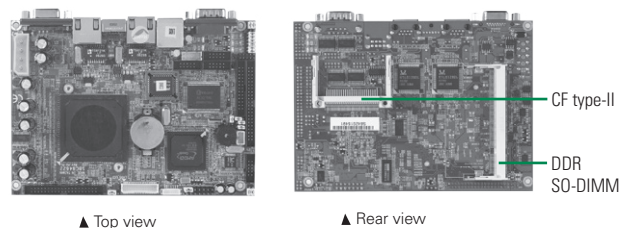


## Core System

CPU	AMD LX800 processor onboard
System Memory	1 x 200-pin DDR-333/400 SO-DIMM, up to 1GB
Chipset	AMD CS5536AD
BIOS	Phoenix-Award
SSD	1 x CompactFlash™ type-II
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	N/A
Battery	Lithium 3V/220 mAh
Power Input	1 x 4-pin connector +5V DC-in only (+12V is required for +12V powered COM and LVDS inverter) AT Auto Power On function supported
Power Requirements	AMD LX800 @ 500 MHz, 1GB DDR Max. RMS: +5V @ 1.544A, +12V @ 33mA
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	Standard: 0°C ~ +60°C (32°F ~ 140°F) Optional: -25°C ~ +70°C (-13°F ~ +158°F)
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x IDE PATA-100 1 x PS/2 keyboard and mouse 4 x RS-232 (+5V/+12V powered) 1 x LPT; with SPP/EPP/ECP supported
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Digital I/O	3 channel IN and 5 channel OUT
Ethernet	2 ports as 10/100 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8139DL
Audio	AC'97 Codec audio as MIC-in/Line-in/Line-out/speaker-out with Realtek ALC203
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control



## Display

Chipset	AMD LX integrated
Memory Size	Max. up to 254 MB
Display Interface	1 x VGA 1 x LCD interface for TTL (max. up to 24-bit) or LVDS (18/24-bit single channel)

## Packing List

<b>Standard</b>		
Quick installation guide, user's manual/utility CD, cable		
<b>Cable</b>		
Part Number	Description	Qty
59384500200E	COM w/ bracket, P=2.0 mm, L=250 mm	1

## Ordering Information

<b>Standard</b>	
SBC84622VEEA-500 W/TTL LCD (P/N: E384622100)	3.5" embedded SBC with AMD LX800, VGA/TTL LCD, 2 GbE LANs, 4 COM, 4 USB and AC'97 audio
SBC84622VEEA-500 w/ 24-bit LVDS LCD (P/N: E384622102)	3.5" embedded SBC with AMD LX800, VGA/24-bit LVDS LCD, 2 GbE LANs, 4 COM, 4 USB and AC'97 audio
SBC84622VEEA-500 w/ 18-bit LVDS LCD (P/N: E384622101)	3.5" embedded SBC with AMD, VGA/18-bit LVDS LCD, 2 GbE LANs, 4 COM, 4 USB and AC'97 audio

\* W.T.: Wide Temperature



# SBC84621

3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/LVDS (-40°C to +85°C)

## Features

- Low power fanless AMD LX800 processor
- Dual 10/100 Mbps Ethernet
- 4 COM ports and 4 USB 2.0 ports
- PC/104 and PCI Express Mini Card slots for expansion
- VGA and LVDS LCD



## Core System

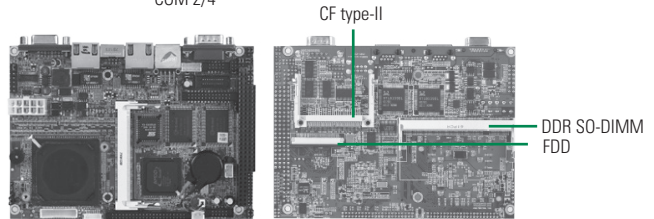
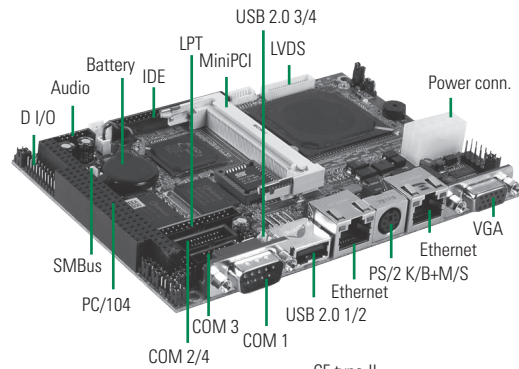
CPU	AMD LX800 processor onboard
System Memory	1 x 200-pin DDR-333/400 SO-DIMM, up to 1GB
Chipset	AMD CS5536AD
BIOS	Phoenix-Award
SSD	1 x CompactFlash™ type-II
Board Unique ID	Board unique ID (optional)
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Mini PCI 1 x PC/104 for 16-bit ISA bus
Battery	Lithium 3V/196 mAh
Power Input	2 x 5-pin connector +5V DC-in only (+12V is required for +12V powered COM and LVDS inverter) AT Auto Power ON function supported
Power Requirements	AMD LX800 @ 500 MHz, 512MB DDR Max. RMS: +5VSB @ 62.91mA, +3.3V @ 24.31mA, +5V @ 1.071A, +12V @ 24mA, -12V @ 25mA
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	Standard: 0°C ~ +60°C (32°F ~ 140°F) Optional: -40°C ~ +85°C (-40°F ~ +185°F) -25°C ~ +70°C (-13°F ~ +158°F)
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x IDE; PATA-100 1 x FDD (optional) 1 x PS/2 keyboard and mouse 1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 3 x RS-232 (COM 2-4 with +5V/+12V powered) 1 x LPT; with SPP/EPP/ECP supported
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports as 10/100 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8139DL
Audio	AC'97 Codec audio as MIC-in/Line-in/Line-out/speaker-out with Realtek ALC203
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	Refer to Ordering information

## Display

Chipset	AMD LX integrated
Memory Size	Max. up to 254 MB
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single channel



▲ Top view

▲ Rear view

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	SBC84621	SBC84621	SBC84621
		VEEA-500	VEA-500	VEE-500
		Qty	Qty	Qty
59484500010E	44-44-40 pin IDE cable	1	1	1
59402010000E	ATX power cable 10P	1	1	1
59384500000E	COM + printer cable	1	1	
59384500100E	Audio cable w/ bracket	1	1	
59382631000E	2 x USB 2.0 wafer cable	1	1	1
59380000300E	COM port x 2 w/ bracket	1	1	
59380010300E	COM port x 1 w/ bracket			1

## Ordering Information

### Standard

Models	CPU	LCD	LAN	Audio	COM	PC/104	DIO
SBC84621 VEEA-500 (P/N: E384621100)	LX800 500 MHz	VGA/18-bit LVDS	2	Yes	4	Yes	8-In and 8-Out
SBC84621 VEA-500 (P/N: E384621101)	LX800 500 MHz	VGA/18-bit LVDS	1	Yes	4	Yes	8-In and 8-Out
SBC84621 VEE-500 (P/N: E384621102)	LX800 500 MHz	VGA/18-bit LVDS	2	N/A	2	N/A	3-In and 5-Out
SBC84621 VEEA-500 (P/N: E384621106)	LX800 500 MHz	VGA/24-bit LVDS	2	Yes	4	Yes	8-In and 8-Out
SBC84621 VEA-500 (P/N: E384621107)	LX800 500 MHz	VGA/24-bit LVDS	1	Yes	4	Yes	8-In and 8-Out

### Optional

Models	CPU	LCD	LAN	Audio	COM	PC/104	D I/O	W.T.
SBC84621 VEA-500 (P/N: E384621109)	LX800 500 MHz	VGA/18-bit LVDS	1	Yes	4	Yes	8-In and 8-Out	-25°C~ +70°C
SBC84621 VEA-500 (P/N: E384621123)	LX800 500 MHz	VGA/24-bit LVDS	1	Yes	4	Yes	8-In and 8-Out	-25°C~ +70°C

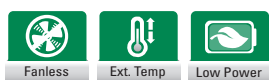


# SBC84620

3.5" Embedded SBC with AMD LX800, Dual LANs, 4 COM, 4 USB 2.0 and VGA/TTL (-40°C to +85°C)

## Features

- Low power fanless AMD LX800 processor
- Dual 10/100 Mbps Ethernet
- 4 COM ports and 4 USB 2.0 ports
- PC/104 and PCI Express Mini Card slot for expansion
- VGA and TTL LCD
- Wide range temperature supported



## Core System

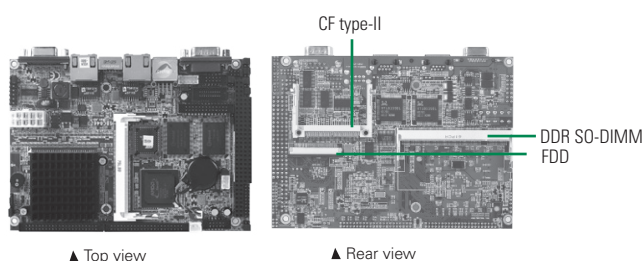
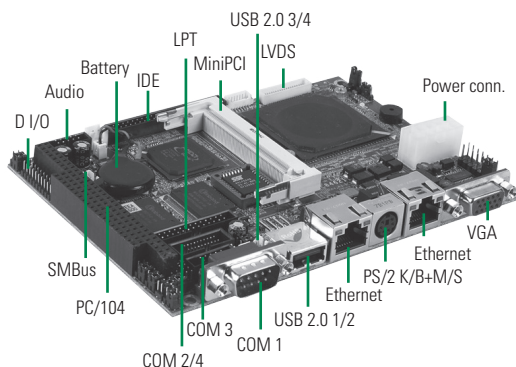
CPU	AMD LX800 processor onboard
System Memory	1 x 200-pin DDR-333/400 SO-DIMM, up to 1GB
Chipset	AMD CS5536AD
BIOS	Phoenix-Award
SSD	1 x CompactFlash™ type-II
Board Unique ID	Board unique ID (optional)
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Mini PCI 1 x PC/104 for 16-bit ISA bus
Battery	Lithium 3V/196 mAH
Power Input	2 x 5-pin connector +5V DC-in only (+12V is required for +12V powered COM and LVDS inverter) AT Auto Power ON function supported
Power Requirements	AMD LX800 @ 500 MHz, 1GB DDR Max. RMS: +5VSB @ 98mA, +5V @ 1.295A, +12V @ 21mA, -12V @ 21mA
Size	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	Standard: 0°C ~ +60°C (32°F ~ 140°F) Optional: -40°C ~ +85°C (-40°F ~ +185°F) -25°C ~ +70°C (-13°F ~ +158°F)
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x IDE; PATA-100 1 x FDD 1 x PS/2 keyboard and mouse 1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 3 x RS-232 (COM 2-4 with +5V/+12V powered) 1 x LPT; with SPP/EPP/ECP supported
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports as 10/100 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8139DL
Audio	AC'97 Codec audio as MIC-in / Line-in/ Line-out/ Speaker-out with Realtek ALC203
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	Refer to ordering information

## Display

Chipset	AMD LX integrated
Memory Size	Max. up to 254 MB
Display Interface	1 x VGA 1 x TTL LCD; max. up to 24-bit



## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	SBC84620	SBC84620	SBC84620
		VEEA-500	VEA-500	VEE-500
		Qty	Qty	Qty
59484500010E	44-44-40 pin IDE cable	1	1	1
59402010000E	ATX power cable 10P	1	1	1
59384500000E	COM + printer cable	1	1	
59384500100E	Audio cable w/ bracket	1	1	
59382631000E	2 x USB 2.0 wafer cable	1	1	1
59380000300E	COM port x 2 w/ bracket	1	1	
59380010300E	COM port x 1 w/ bracket			1

## Ordering Information

### Standard

Models	CPU	LCD	LAN	Audio	COM	PC/104	DIO
SBC84620	LX800	VGA/TTL	2	Yes	4	Yes	8-In and 8-out
VEEA-500 (P/N: E384620100)	500 MHz						
SBC84620	LX800	VGA/TTL	1	Yes	4	Yes	8-In and 8-out
VEA-500 (P/N: E384620101)	500 MHz						
SBC84620	LX800	VGA/TTL	2	N/A	2	N/A	3-In and 5-out
VEE-500 (P/N: E384620102)	500 MHz						

### Optional

Models	CPU	LCD	LAN	Audio	COM	PC/104	DIO	W.T.
SBC84620	LX800	VGA/TTL	2	N/A	2	N/A	3-In and 5-out	-25°C~ +70°C
VEEA-500 (P/N: E384620114)	500 MHz							
SBC84620	LX800	VGA/TTL	2	Yes	4	Yes	8-In and 8-out	-25°C~ +70°C
VEEA-500 (P/N: E384620113)	500 MHz							

\* W.T.: Wide Temperature

# NANO842

Nano-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- Intel® Celeron® Processor J1900/N2807 (Bay Trail SoC)
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 5 USB 2.0 ports and 1 USB 3.0 port
- 2 COM ports
- 2 PCI Express Mini Card slots

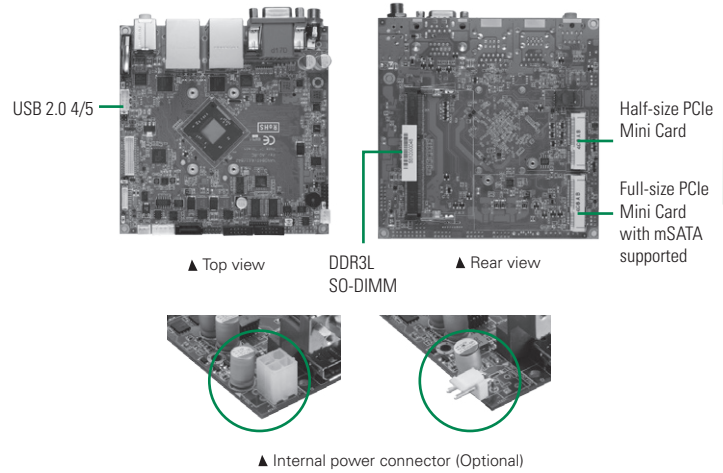
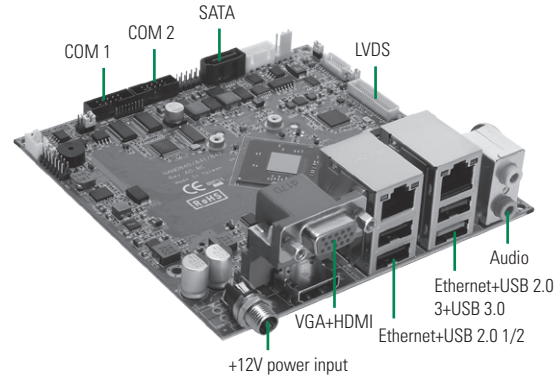


### Core System

CPU	Intel® Celeron® Processor J1900, N2807
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card
Battery Lithium	Lithium 3V/220mAh
Power Input	DC power jackconnector +12V DC-in AT Auto Power On function supported
Power Requirements	Intel® Celeron® J1900 @ 2 GHz 8GB DDR3L Max. RMS: +12V @0.9A Intel® Celeron® N2807 @ 1.58 GHz 8GB DDR3L Max. RMS: +12V @0.7A
Size	120 x 120 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (+5V/+12V powered) 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	5 x USB 2.0 1 x USB 3.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed
TPM	ST ST33TPM12LPC with TPM 1.2 compliant



### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

### Packing List

Standard		
Quick installation guide, User's Manual/Utility CD and cable		
Cable		
Part Number	Description	Qty
59382620000E	1 x COM cable w/ bracket, P=2.0 mm L=300 mm	1
Optional		
50966124030E	ADAPTER 12V60W FSP060-DIBAN2 W/SCREW	

### Ordering Information

Standard	
NANO842VHGGG-J1900 (P/N: E38K842100)	Nano-ITX SBC with Intel® Celeron® processor J1900 (2 GHz-2.4 GHz, 2 MB Cache, 10W), VGA/LVDS/HDMI, 2 GbE LANs, and audio
NANO842VHGGG-N2807 (P/N: E38K842101)	Nano-ITX SBC with Intel® Celeron® processor N2807 (1.58 GHz-2.16 GHz, 1 MB Cache, 4.3W), VGA/LVDS/HDMI, 2 GbE LANs, and audio



# NANO840

Nano-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA/HDMI, Dual LANs and Audio

## Features

- Intel® Atom™ processor E3845/E3827
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 5 USB 2.0 ports and 1 USB 3.0 port
- 2 COM ports
- 2 PCI Express Mini Card slots

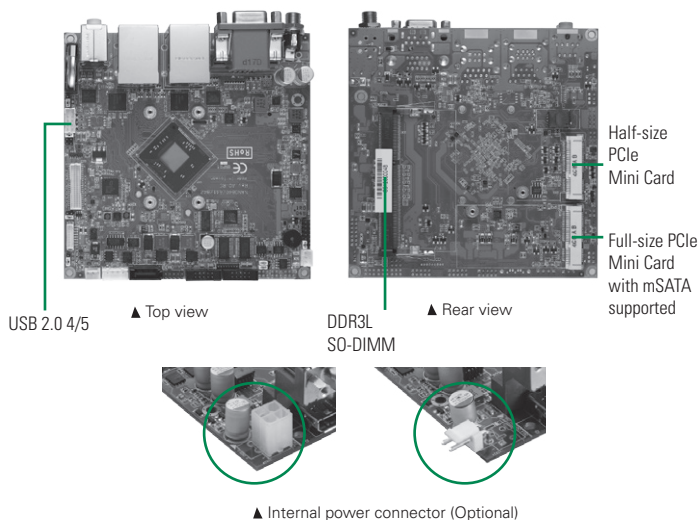
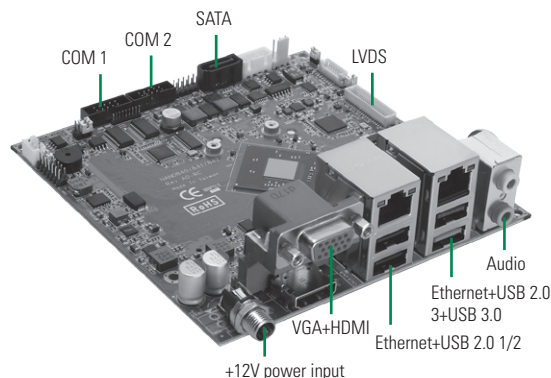


### Core System

CPU	Intel® Atom™ processor E3845 quad core, E3827 dual core onboard
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1-255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card
Battery Lithium	Lithium 3V/220mAh
Power Input	DC power jack connector +12V DC-in AT Auto Power On function supported
Power Requirements	Intel® Atom™ E3845 @1.91 GHz 8GB DDR3L Max. RMS: +12V @ 0.9A Intel® Atom™ E3827 @1.75 GHz 8GB DDR3L Max. RMS: +12V @ 0.8A
Size	120 x 120 mm
Board Thickness	1.6 mm
Temperature	-40°C ~ +80°C (-40°F ~ 176°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (+5V/+12V powered) 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210IT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	5 x USB 2.0 1 x USB 3.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmed
TPM	ST ST33TPM12LPC with TPM 1.2 compliant



### Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

### Packing List

<b>Standard</b>		
Quick installation guide, user's manual/utility CD and cable		
<b>Cable</b>		
Part Number	Description	Qty
5938262000E	1 x COM cable w/ bracket, P=2.0 mm, L=300 mm	1
<b>Optional</b>		
50966124030E	ADAPTER 12V60W FSP060-DIBAN2 W/SCREW	

### Ordering Information

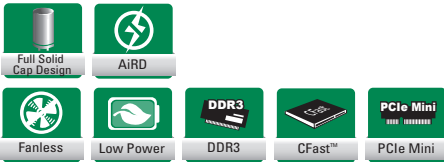
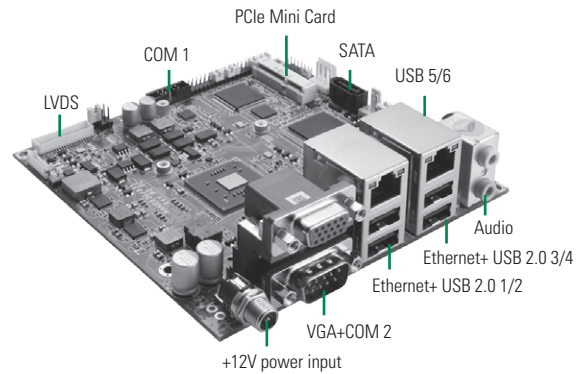
<b>Standard</b>	
NANO840VHGGG-E3845 (P/N: E38K840100)	Nano-ITX SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2 MB Cache, 10 W), VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box
NANO840VHGGG-E3827 (P/N: E38K840101)	Nano-ITX SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1 MB Cache, 8 W), VGA/LVDS/HDMI, 2 GbE LANs, audio and gift box

# NANO831

Nano-ITX SBC with Intel® Atom™ N2600, Intel® NM10, LVDS/VGA, Dual LANs and Audio

## Features

- Intel® Atom™ processor N2600 (1.6 GHz)
- 1 DDR3 SO-DIMM, up to 2GB
- 6 USB 2.0 ports
- 2 COM ports
- 1 CFast™ and 1 PCI Express Mini Card slot

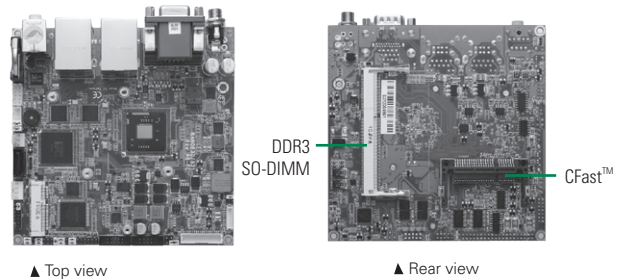


## Core System

CPU	Intel® Atom™ processor N2600 1.6 GHz dual core onboard
System Memory	1 x 204-pin DDR3-800 SO-DIMM, up to 2GB
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	Intel® Atom™ N2600 @1.6 GHz, 1GB DDR3 Max. RMS: +12V @ 0.995A
Size	120 x 120 mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 1 x RS-232 (COM 2 with +5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable
TPM	Infineon SLB9635 with TPM 1.2 compliant



▲ Top view

▲ Rear view



▲ Internal power connector (Optional)

## Display

Chipset	Intel® GMA 3600 graphics core
Memory Size	Share system memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

## Packing List

<b>Standard</b>		
Quick installation guide, user's manual/utility CD, cable		
<b>Cable</b>		
Part Number	Description	Qty
5938262000E	1 x COM cable w/ bracket, P=2.0 mm, L=300 mm	1
<b>Optional</b>		
59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	

## Ordering Information

<b>Standard</b>		
NANO831VGA-N2600 (P/N: E38K831100)	Nano-ITX SBC with Intel® Atom™ processor N2600, VGA/ LVDS, 2 GbE LANs, 2 COM, 6 USB, CFast™ and audio	

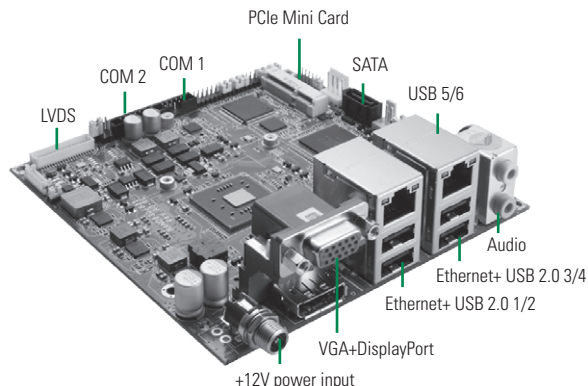


# NANO830

Nano-ITX SBC with Intel® Atom™ D2550, Intel® NM10, LVDS/DisplayPort/VGA, Dual LANs and Audio

## Features

- Intel® Atom™ processor D2550 (1.86 GHz)
- 1 DDR3-1066 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 2 COM ports
- 1 CFast™ and 1 PCI Express Mini Card slot
- LVDS, DisplayPort, VGA with dual-view supported

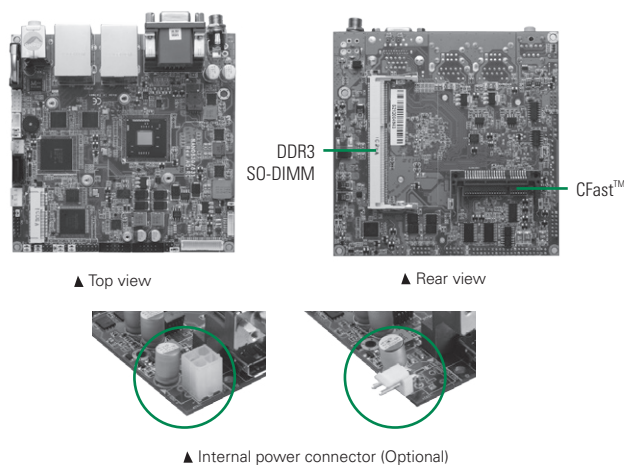


## Core System

CPU	Intel® Atom™ processor D2550 1.86 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	Intel® Atom™ D2550 @1.86 GHz, 1GB DDR3 Max. RMS: +12V @ 1.25A
Size	120 x 120 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C ~ +70°C (-4°F ~ +158°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 1 x RS-232 (COM 2 with +5V/+12V powered)
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable
TPM	Infineon SLB9635 with TPM 1.2 compliant



## Display

Chipset	Intel® GMA 3650 graphics core
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DisplayPort 1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59382620000E	1 x COM cable w/ bracket, P=2.0 mm, L=300 mm	1

### Optional

59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	
59070213000E	DisplayPort to VGA cable, L=100 mm	
59040131000E	DisplayPort to DVI cable, L=220 mm	
59050203000E	DisplayPort to HDMI cable, L=185 mm	
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm	

## Ordering Information

### Standard

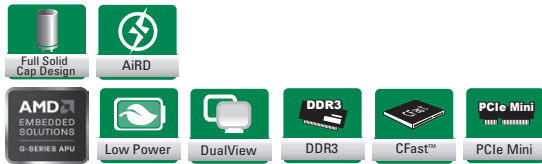
NANO830VPGGA-D2550 (heatsink fan included) (P/N: E38K830100)	Nano-ITX SBC with Intel® Atom™ processor D2550 1.86 GHz, VGA/DisplayPort/LVDS, 2 GbE LANs, 2 COM, 6 USB, CFast™ and audio
--	---

# NANO100

Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/DisplayPort/VGA, Dual LANs and Audio

## Features

- AMD G-Series APU T56N (1.65 GHz)
- 1 DDR3-1333 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 1 CFast™ and 1 PCI Express Mini Card slot
- DirectX 11 supported
- LVDS/DisplayPort/VGA supported

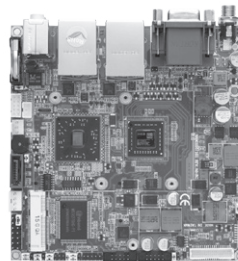
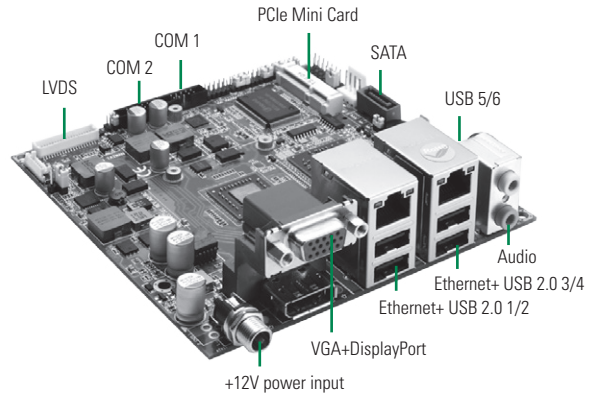


### Core System

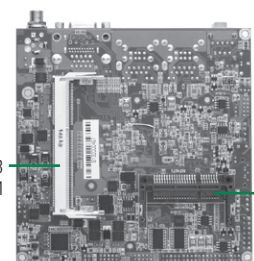
CPU	AMD G-Series APU T56N 1.65 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1333 SO-DIMM max. up to 4GB
Chipset	AMD A50M FCH
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	AMD G-Series APU T56N @1.65 GHz, 1GB DDR3 Max. RMS: +12V @ 1.65A
Size	120 x 120mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

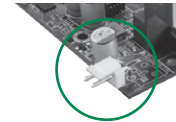
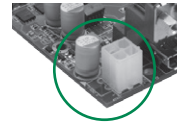
MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 1 x RS-232 (COM 2 with +5V/+12V powered)
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable



▲ Top view



▲ Rear view



▲ Internal power connector (Optional)

### Display

Chipset	AMD G-Series APU integrated graphic engine T56N-Radeon™ HD6320
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA 1 x DisplayPort 1 x LVDS; 18/24-bit single/dual channel

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD, cable

#### Cable

Part Number	Description	Qty
59382620000E	1 x COM cable w/ bracket, P=2.0 mm, L=300 mm	1

#### Optional

59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	
59070213000E	DisplayPort to VGA cable, L=100 mm	
59040131000E	DisplayPort to DVI cable, L=220 mm	
59050203000E	DisplayPort to HDMI cable, L=185 mm	
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm	

### Ordering Information

#### Standard

NANO100VPGGA-T56N (P/N: E38K100100)	Nano-ITX SBC with AMD G-Series APU T56N 1.65 GHz, A50M FCH, VGA/DisplayPort/LVDS, 2 GbE LANs, 2 COM, 6 USB, CFast™ and audio
-------------------------------------	--

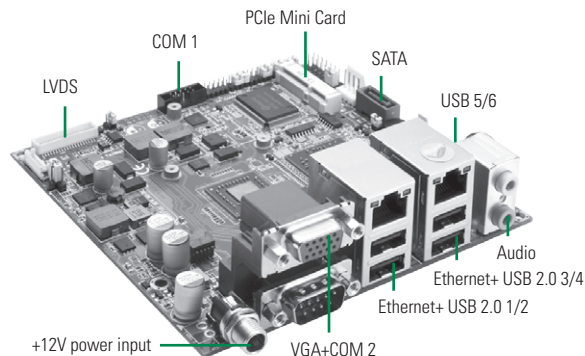


# NANO101

Nano-ITX SBC with AMD G-Series APU, AMD A50M FCH, LVDS/VGA, Dual LANs and Audio

## Features

- AMD G-Series APU T40R (1.0 GHz)/ T40E (1.0 GHz)
- 1 DDR3-1066 SO-DIMM, up to 4GB
- 6 USB 2.0 ports
- 1 CFast™ and 1 PCI Express Mini Card slot
- DirectX 11 supported

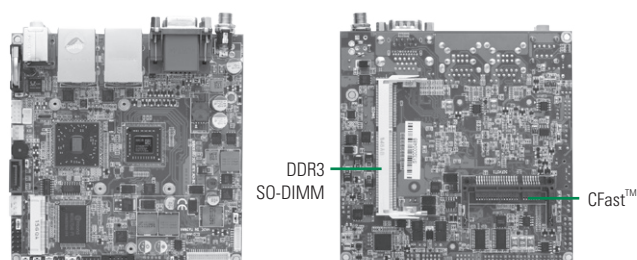


## Core System

CPU	AMD G-Series APU T40R 1.0 GHz single core or T40E 1.0 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	AMD A50M FCH
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI Express Mini Card V1.2
Battery	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power ON function supported
Power Requirement	AMD G-Series APU T40E @1.0 GHz, 1GB DDR3 Max. RMS: +12V @ 1.11A AMD G-Series APU T40R @1.0 GHz, 1GB DDR3 Max. RMS: +12V @ 1.06A
Size	120 x 120 mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1 with +5V/+12V powered) 1 x RS-232 (COM 2 with +5V/+12V powered)
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable



▲ Top view

▲ Rear view



▲ Internal power connector (Optional)

## Display

Chipset	AMD G-Series APU integrated graphic engine T40E/ T40R-Radeon™ HD6250
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59382620000E	1 x COM cable w/ bracket, P=2.0 mm, L=300 mm	1

### Optional

59382631000E	2 x USB 2.0 wafer cable w/ bracket, 180 mm	
--------------	--	--

## Ordering Information

### Standard

NANO101VGGA-T40R (P/N: E38K101100)	Nano-ITX SBC with AMD G-Series APU T40R 1.0 GHz, A50M FCH, VGA/LVDS, 2 GbE LANs, 2 COM, 6 USB, CFast™ and audio
NANO101VGGA-T40E (P/N: E38K101101)	Nano-ITX SBC with AMD G-Series APU T40E 1.0 GHz, A50M FCH, VGA/LVDS, 2 GbE LANs, 2 COM, 6 USB, CFast™ and audio

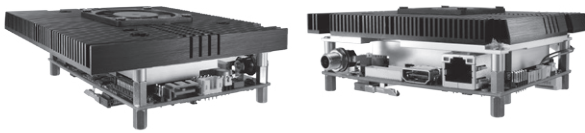


# PICO512 NEW

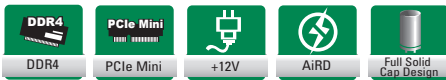
Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, HDMI/LVDS and LAN

## Features

- 7th Gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4 SO-DIMM, up to 16GB
- 1 PCI Express Mini Cards
- Intel® AMT 11 supported



▲ Assembly view

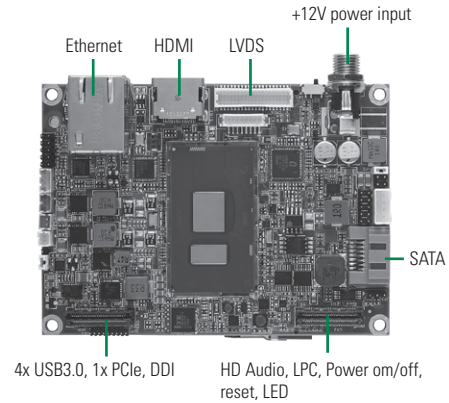


### Core System

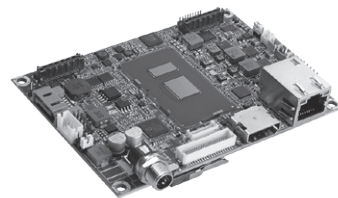
CPU	7th generation Intel® i7/i5/i3 & Celeron® processor onboard
System Memory	1 x 260-pin DDR4-2133 SO-DIMM, up to 16GB
Chipset	N/A
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-Size Mini PCI Express Mini Card with mSATA 1 x PCIe1, 1 x LPC, 1 x DDI, 4 x USB3.0, 1 x HD audio and 1 x SMBus (through expansion connector)
Battery Lithium	Lithium 3V/220MAH
Power Input	DC Jack +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

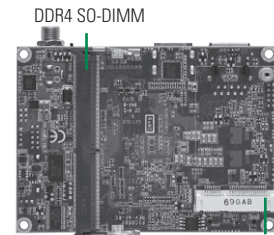
MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i219LM
Audio	N/A
USB	1 x USB 2.0
I2C	I2C Bus for advanced monitoring/control
SMBus	N/A
Digital I/O	8 channels IN/OUT programmable
TPM	ST ST33TPM12LPC with TPM1.2 compliant (Optional)



4x USB3.0, 1x PCIe, DDI HD Audio, LPC, Power on/off, reset, LED



▲ Side view



▲ Rear view

Full-Size PCI Express Mini Card with mSATA supported

### Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1x HDMI 1 x LVDS; 18/24-bit single/dual channel

### Packing List

<b>Standard</b>	Quick installation guide, User's Manual/Utility CD and accessories
-----------------	--

Accessories	
Part Number	Description
	SATA cable
	SATA power cable
	Fan cable
	USB cable
	Heatspreader
	Cooler

### Ordering Information

Standard	
P/N	Description
PICO512HG-i7-7600U	Pico-ITX SBC with Intel® Core™ i7-7600U HDMI/LVDS, 1 GbE LAN, 1 USB (P/N: TBD)
PICO512HG-i5-7300U	Pico-ITX SBC with Intel® Core™ i5-7300U, HDMI/LVDS, 1 GbE LAN, 1 USB (P/N: TBD)
PICO512HG-i3-7100U	Pico-ITX SBC with Intel® Core™ i3-7100U, HDMI/LVDS, 1 GbE LAN, 1 USB (P/N: TBD)
PICO512HG-Celeron-3965U	Pico-ITX SBC with Intel® Celeron® 3965U, HDMI/LVDS, 1 GbE LAN, 1 USB (P/N: TBD)



# PICO511 NEW

Pico-ITX SBC with 7th Gen Intel® Core™ i7/i5/i3 and Celeron® Processor, LVDS and LAN

## Features

- 7th gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4-2133 SO-DIMM, up to 16GB
- 2 PCI Express Mini Cards
- Intel® AMT 11 supported



▲ Assembly view

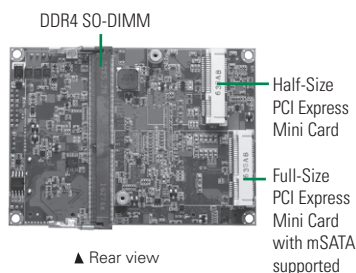
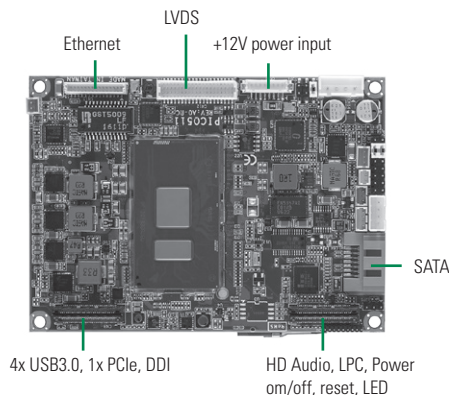


## Core System

CPU	7th generation Intel® i7/i5/i3/ & Celeron® processor onboard
System Memory	1 x 260-pin DDR4-2133 SO-DIMM, up to 16GB
Chipset	N/A
BIOS	AMI
SSD	N/A
Watchdog Timer	65536 levels, 1-65535 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA supported 1 x Half-size PCI Express Mini Card 1 x PCIe1, 1 x LPC, 1 x DDI, 4 x USB 3.0, 1 x HD audio and 1 x SMBus (through expansion connector)
Battery Lithium	Lithium 3V /220 mAh
Power Input	1 x 4-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel i219LM
Audio	N/A
USB	1 x USB 2.0
I2C	I2C Bus for advanced monitoring/control
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A
TPM	ST ST33TPM12LPC with TPM1.2 compliant (Optional)



▲ Rear view

## Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD and accessories

### Accessories

Part Number	Description
	AX93A07 I/O board
	SATA cable
	SATA power cable
	USB cable
	Fan cable
	Heatspreader
	Cooler

## Ordering Information

### Standard

PICO511LG-i7-7600U	Pico-ITX SBC with Intel® Core™ i7-7600U, LVDS, 1 GbE LAN, 1 USB
PICO511LG-i5-7300U	Pico-ITX SBC with Intel® Core™ i5-7300U, LVDS, 1 GbE LAN, 1 USB
PICO511LG-i3-7100U	Pico-ITX SBC with Intel® Core™ i3-7100U, LVDS, 1 GbE LAN, 1 USB
PICO511LG-Celeron-3965U	Pico-ITX SBC with Intel® Celeron® 3965U, LVDS, 1 GbE LAN, 1 USB

# PICO500

Pico-ITX SBC with 6th Gen Intel® Core™ i7/i5/i3 & Celeron® Processors, HDMI/LVDS, LAN and Audio

## Features

- 6th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Skylake)
- 1 DDR4 SO-DIMM, up to 16GB
- 1 USB 2.0 and 1 Gigabit LAN ports
- PCI Express Mini Card with mSATA supported
- Intel® AMT 11 supported
- AXView 2.0 intelligent remote management software



### Core System

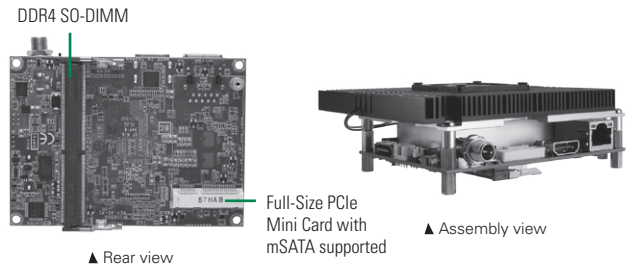
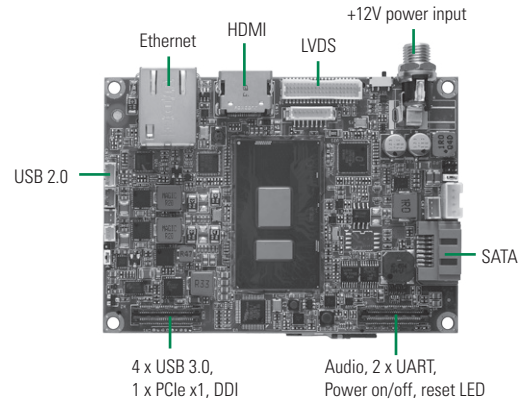
CPU	6th generation Intel® Core™ i7/i5/i3 & Celeron® processors onboard (Skylake)
System Memory	1 x 260-pin DDR4-2133 SO-DIMM. up to 16GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x PCIe x1, 2 x UART, 1 x DDI, 4 x USB 3.0, and 1 x HD audio (through expansion connector)
Battery Lithium	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Core™ i7-6600U @ 2.6 GHz, 16GB DDR4 Max. RMS: +12V @ 2.3A Intel® Core™ i5-6300U @ 2.4 GHz, 16GB DDR4 Max. RMS: +12V @ 2.2A Intel® Core™ i3-6100U @ 2.3 GHz, 16GB DDR4 Max. RMS: +12V @ 1.9A Intel® Celeron® 3955U @ 2 GHz, 16GB DDR4 Max. RMS: +12V @ 1.7A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i219LM
Audio	HD Codec audio as Mic-in/Line-out with Realtek ALC662
USB	1 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

### Display

Chipset	Intel® HD graphics
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI



### Packing List

Standard		
Quick installation guide, user's manual/utility CD and accessories		
Accessories		
Part Number	Description	Qty
59403208000E	SATA cable	1
594P8800600E	SATA power cable	1
594P8802800E	USB cable	1
59190400500E	Fan cable	1
5078H500100E	Heatsink with fan	1
5078H500000E	Heatspreader	1

### Ordering Information

Standard		
PICO500HGA-i7-6600U (P/N: E38H500102)	Pico-ITX SBC with Intel® Core™ i7-6600U (2.6-3.4 GHz, 4 MB cache, 15W), HDMI/LVDS, 1 GbE LAN and 1 USB 2.0	
PICO500HGA-i5-6300U (P/N: E38H500103)	Pico-ITX SBC with Intel® Core™ i5-6300U (2.4-3 GHz, 3 MB cache, 15W), HDMI/LVDS, 1 GbE LAN and 1 USB 2.0	
PICO500HGA-i3-6100U (P/N: E38H500101)	Pico-ITX SBC with Intel® Core™ i3-6100U (2.3 GHz, 3 MB cache, 15W), HDMI/LVDS, 1 GbE LAN and 1 USB 2.0	
PICO500HGA-Celeron® 3955U (P/N: E38H500100)	Pico-ITX SBC with Intel® Celeron® 3955U (2 GHz, 2 MB cache, 15W), HDMI/LVDS, 1 GbE LAN and 1 USB 2.0	
Optional		
AX93275 (P/N: E393275102)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x VGA, 1 x Audio	
AX93276 (P/N: E393276102)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x HDMI, 1 x Gigabit LAN	
AX93292 (P/N: E393292100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio	
AX93299 (P/N: E393299100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x Audio	



# PICO880

Pico-ITX SBC with 4th/5th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, DisplayPort/LVDS, LAN and Audio

## Features

- 4th/5th gen Intel® Core™ i7/i5/i3 & Celeron® processor (Haswell/Broadwell)
- 1 DDR3L-1600 SO-DIMM, up to 8GB
- Intel® AMT 9.5 supported
- PCI Express Mini card with mSATA supported



## Core System

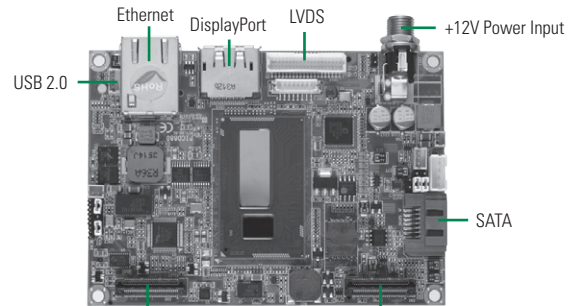
CPU	4th/5th generation Intel® i7/i5/i3 & Celeron® processor
System Memory	1 x 204-pin DDR3L-1600 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1-255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x PCIe x1, 2 x UART, 1 x DDI, 4 x USB 3.0, and 1 x HD audio (through expansion connector)
Battery Lithium	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Core™ i7-4650U @ 1.7 GHz, 2GB DDR3L Max. RMS: +12V @ 2.95A Intel® Core™ i5-4300U @ 1.9 GHz, 2GB DDR3L Max. RMS: +12V @ 2.55A Intel® Core™ i3-4010U @ 1.7 GHz, 2GB DDR3L Max. RMS: +12V @ 1.84A Intel® Celeron® 2980U @ 1.6 GHz, 2GB DDR3L Max. RMS: +12V @ 1.75A Intel® Core™ i7-5650U @ 2.2 GHz, 8GB DDR3L Max. RMS: +12V @ 3A Intel® Core™ i5-5350U @ 1.8 GHz, 8GB DDR3L Max. RMS: +12V @ 2.8A Intel® Core™ i3-5010U @ 2.1 GHz, 8GB DDR3L Max. RMS: +12V @ 2A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i218LM
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	1 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

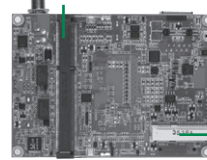
## Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x DisplayPort



4 x USB 3.0, 1 x PCIe x1, DDI Audio, 2 x UART, Power on/off, reset, LED

DDR3L SO-DIMM



▲ Rear view

Full-size PCIe Mini Card with mSATA supported



▲ Assembly view

## Packing List

### Standard

Quick installation guide, user's manual/utility CD and accessories

### Accessories

Part Number	Description	Qty
59403208000E	SATA cable	1
594P8800600E	SATA power cable	1
594P8802800E	USB cable	1
59190400500E	Fan cable	1
5078H880010E	Heatspreader for 4th generation Intel® Core™ processor	1
5078H100100E	Heatsink with fan	1
5078H880000E	Heatspreader for 5th generation Intel® Core™ processor	1

## Ordering Information

### Standard

PICO880PGA-i7 4650U (P/N: E38H880102)	Pico-ITX SBC with Intel® Core™ i7-4650U 1.7 GHz, DisplayPort/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-i5 4300U (P/N: E38H880103)	Pico-ITX SBC with Intel® Core™ i5-4300U 1.9 GHz, DisplayPort/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-i3 4010U (P/N: E38H880100)	Pico-ITX SBC with Intel® Core™ i3-4010U 1.7 GHz, DisplayPort/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-CELERON 2980U (P/N: E38H880104)	Pico-ITX SBC with Intel® Celeron® 2980U 1.6 GHz, DisplayPort/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-i7-5650U (P/N: E38H880110)	Pico-ITX SBC with Intel® Core™ i7-5650U 2.2 GHz DP/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-i5-5350U (P/N: E38H880111)	Pico-ITX SBC with Intel® Core™ i5-5350U 1.8 GHz DP/LVDS, 1 GbE LAN, 1 USB 2.0
PICO880PGA-i3-5010U (P/N: E38H880112)	Pico-ITX SBC with Intel® Core™ i3-5010U 2.1 GHz DP/LVDS, 1 GbE LAN, 1 USB 2.0

### Optional

AX93275 (P/N: E393275100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x VGA, 1 x Audio
AX93276 (P/N: E393276102)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x HDMI, 1 x GbE LAN
AX93292 (P/N: E393292100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio
AX93299 (P/N: E393299100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x Audio

\*For more Ordering Information, please visit Axiomtek's website.

# PICO312 NEW

Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350, HDMI (VGA)/LVDS and LAN

## Features

- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 1 DDR3L-1867 SO-DIMM, up to 8GB
- 1 USB 2.0 ports
- PCI Express Mini Card with mSATA supported

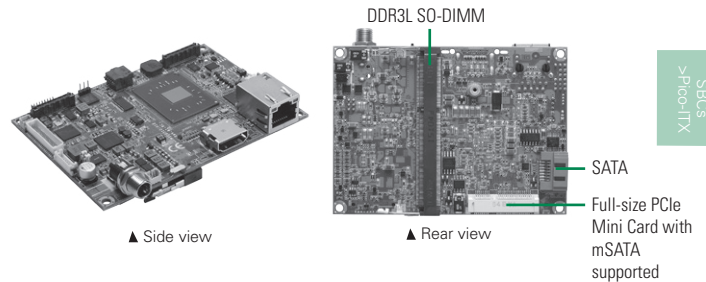
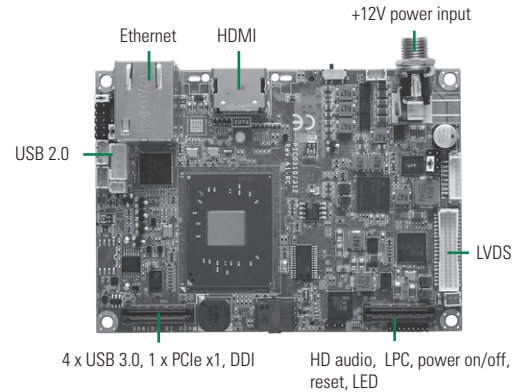


### Core System

CPU	Intel® Pentium® processor N4200 & Celeron® processor N3350 onboard (Apollo Lake)
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x full-size PCI Express Mini Card with mSATA 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB 3.0, 1 x HD audio and 1 x SMBus (through expansion connector)
Battery Lithium	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +60°C (-4°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	N/A
USB	1 x USB 2.0
I <sup>2</sup> C	I <sup>2</sup> C Bus for advanced monitoring/control
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A



Embedded SBCs > Pico-ITX

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI or 1 x VGA

### Packing List

<b>Standard</b>		
Quick installation guide, user's manual/utility CD and accessories		
<b>Accessories</b>		
Part Number	Description	Qty
	SATA cable	1
	SATA power cable	1
	Heatspreader	1
	Heatsink	1

### Ordering Information

<b>Standard</b>	
PICO312HG-N4200	Pico-ITX SBC with Intel® Pentium® processor N4200, HDMI/LVDS, 1 GbE LAN, 1 USB 2.0
PICO312VG-N3350	Pico-ITX SBC with Intel® Celeron® processor N3350, VGA/LVDS, 1 GbE LAN, 1 USB 2.0

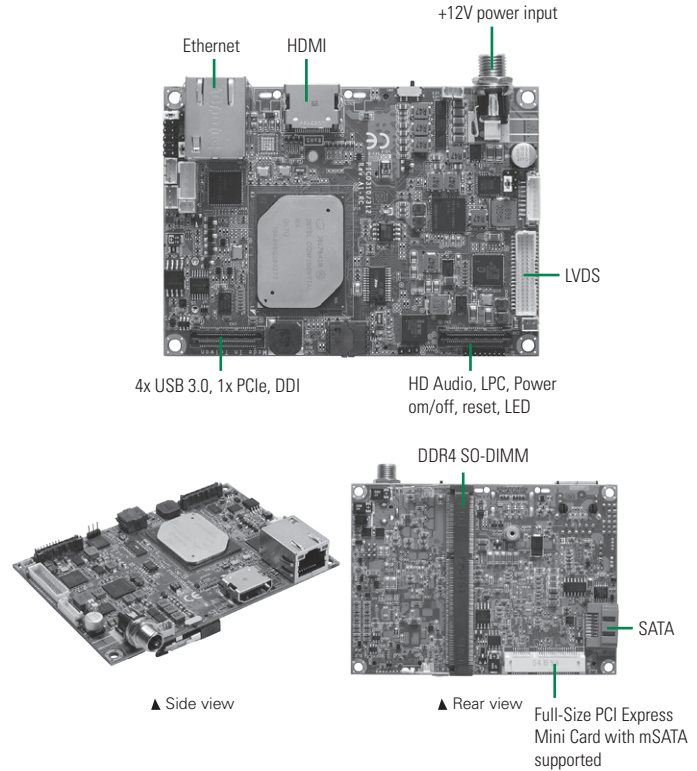


# PICO310 NEW

Pico-ITX SBC with Intel® Atom™ x5/x7 Processor, HDMI (VGA)/LVDS and LAN

## Features

- Intel® Atom™ x5/x7 processors (Apollo Lake)
- 1 DDR3L-1867 SO-DIMM, up to 8GB
- PCI Express Mini Card with mSATA supported



### Core System

CPU	Intel® Atom™ x5/x7 processors onboard (Apollo Lake)
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC Integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x full-size PCI Express Mini Card with mSATA 1 x PCIe x1, 1 x LPC, 1 x DDI, 4 x USB 3.0, 1 x HD audio and 1 x SMBus (through expansion connector)
Battery Lithium	Lithium 3V/220mAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	TBD
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +60°C (-4°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	N/A
USB	1 x USB 2.0
I <sup>2</sup> C	I <sup>2</sup> C Bus for advanced monitoring/control
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

### Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI or 1 x VGA

### Packing List

<b>Standard</b>	Quick installation guide, user's manual/utility CD and accessories
-----------------	--

Accessories		
Part Number	Description	Qty
	SATA cable	1
	SATA power cable	1
	Heatspreader	1
	Heatsink	1

### Ordering Information

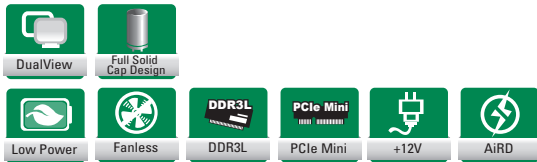
<b>Standard</b>	TBD
-----------------	-----

# PICO300

Pico-ITX SBC with Intel® Pentium® N3710 & Celeron® N3060 Processor, HDMI (VGA)/LVDS, LAN and Audio

## Features

- Intel® Pentium® N3710 & Celeron® N3060 processor (Braswell SoC)
- 1 DDR3L-1600 SO-DIMM, up to 8GB
- 1 USB 2.0 ports
- PCI Express Mini Card
- AXView 2.0 Intelligent remote management software



## Core System

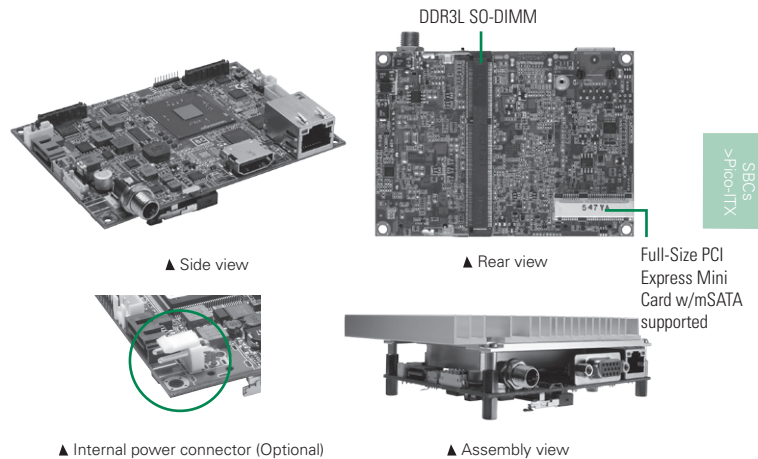
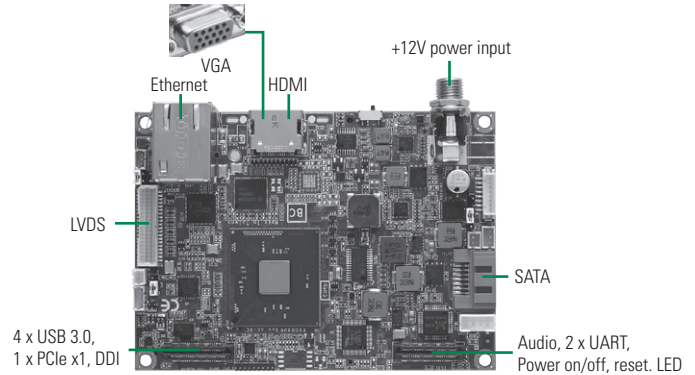
CPU	Intel® Pentium® N3710 & Celeron® N3060 processor
System Memory	1 x 204-pin DDR3L-1600 SO-DIMM, up to 8GB
Chipset	N/A
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x full-size PCI Express Mini Card with mSATA 1 x PCIe x1, 2 x UART, 1 x DDI, 4 x USB 3.0 and 1 x HD audio (through expansion connector)
Battery Lithium	Lithium 3V/220mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Pentium® N3710 @ 1.6 GHz, 8GB DDR3L Max RMS: +12V @ 1.3A Intel® Celeron® N3060 @ 1.6 GHz, 8GB DDR3L Max. RMS: +12V @ 1.2A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +60°C (-4°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	N/A
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	1 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

## Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI or 1 x VGA



## Packing List

### Standard

Quick installation guide, User's Manual/Utility CD and accessories

### Accessories

Part Number	Description	Qty
59403208000E	SATA cable	1
594P8800600E	SATA power cable	1
594P8802800E	USB cable	1
5078H300100E	Heatspreader	1
5078H300200E	Heatsink	1

## Ordering Information

### Standard

PICO300HGA-N3710 (P/N: E38H300100)	Pico-ITX SBC with Intel® Pentium® N3710 (1.6-2.56 GHz, 2 MB Cache, 6W) HDMI/LVDS, 1 GbE LAN, 1 USB 2.0
PICO300VGA-N3710 (P/N: E38H300101)	Pico-ITX SBC with Intel® Pentium® N3710 (1.6-2.56 GHz, 2 MB Cache, 6W) VGA/LVDS, 1 GbE LAN, 1 USB 2.0
PICO300HGA-N3060 (P/N: E38H300102)	Pico-ITX SBC with Intel® Celeron® N3060 (1.6-2.48 GHz, 1 MB Cache, 6W) HDMI/LVDS, 1 GbE LAN, 1 USB 2.0
PICO300VGA-N3060 (P/N: E38H300104)	Pico-ITX SBC with Intel® Celeron® N3060 (1.6-2.48 GHz, 1 MB Cache, 6W) VGA/LVDS, 1 GbE LAN, 1 USB 2.0

### Optional

AX93275 (P/N: E393275102)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x VGA, 1 x Audio
AX93276 (P/N: E393276102)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x HDMI, 1 x Gigabit LAN
AX93292 (P/N: E393292100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio
AX93299 (P/N: E393299100)	I/O board for 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x Audio

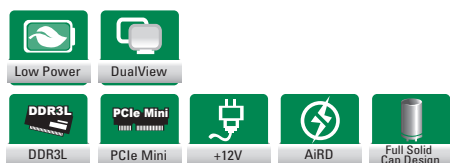


# PICO843

Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA, LAN and Audio

## Features

- Intel® Celeron® processor J1900/N2807 onboard
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 2 COM ports
- 2 PCI Express Mini Cards



## Core System

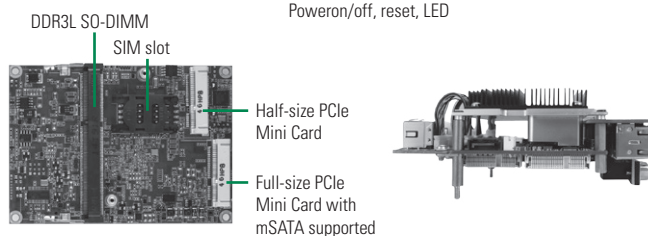
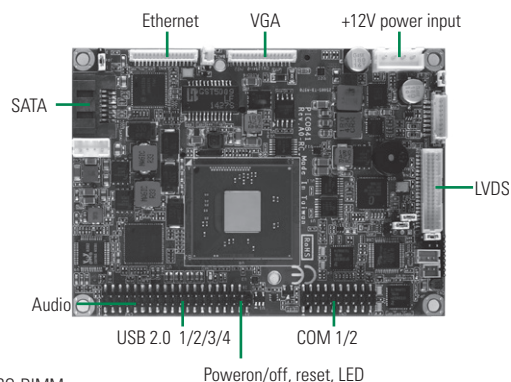
CPU	Intel® Celeron® processor J1900/N2807 onboard
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card
Battery Lithium	Lithium 3V/220mAH
Power Input	1 x 4-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Celeron® J1900 @ 2 GHz 4GB DDR3L
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

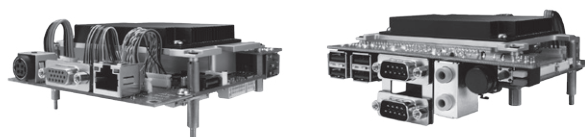
MIO	2 x RS-232/422/485
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	NA
TPM	ST ST33TPM12LPC with TPM 1.2 compliant

## Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel



▲ Rear view



▲ Assembly view

## Packing List

### Standard

Quick installation guide, user's manual/utility CD and cable

### Accessories

Part Number	Description	Qty
85932831000E	AX93283 I/O board	1
85932671000E	AX93267 I/O board	1
59406308010E	SATA cable	1
594P8800600E	SATA power cable	1
5078H843000E	Heatspreader	1
5078H100200E	Heatsink	1

## Ordering Information

### Standard

PICO843VGA-J1900 (P/N: E38H843100)	Pico-ITX SBC with Intel® Celeron® processor J1900 (2 GHz-2.42 GHz, 2 MB Cache, 10W), VGA/LVDS, 1 GbE LAN and audio
PICO843VGA-N2807 (P/N: E38H843101)	Pico-ITX SBC with Intel® Celeron® processor N2807 (1.58 GHz-2.16 GHz, 1 MB Cache, 4.3W), VGA/LVDS, 1 GbE LAN and audio

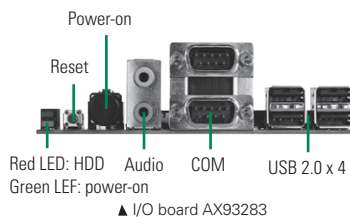
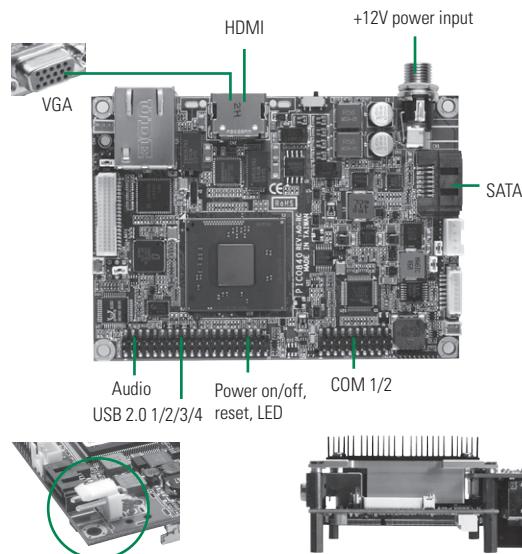
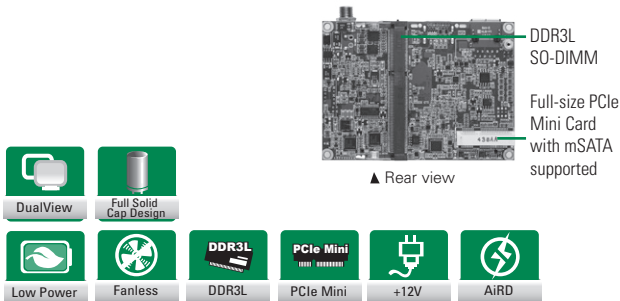


# PICO842

Pico-ITX SBC with Intel® Celeron® Processor J1900/N2807, LVDS/VGA (HDMI), LAN and Audio

## Features

- Intel® Celeron® processor J1900/N2807 (Bay Trail SoC)
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 2 COM ports (RS-232/422/485 selectable)
- PCI Express Mini Card with mSATA supported



## Core System

CPU	Intel® Celeron® processor J1900/N2807
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA
Battery Lithium	Lithium 3V/220mAh
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Celeron® J1900 @ 8GB DDR3L Max. RMS. +12V @ 0.9A Intel® Celeron® N2807 @ 8GB DDR3L Max. RMS. +12V @ 0.7A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	2 x RS-232/422/485
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	NA
TPM	ST 3T32TPM12LPC with TPM 1.2 compliant

## Display

Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x VGA or 1 x HDMI 1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, User's Manual/Utility CD and cable

### Accessories

Part Number	Description	Qty
85932831000E	AX93283 I/O board	1
59403208000E	SATA Cable w/lock, L=200 mm	1
594P8800600E	SATA power cable, L=200 mm	1
5078H842100E	Heatspreader	1
5078H100200E	Cooler	1

### Optional

Part Number	Description
594H8302800E	USB cable 20 x 2P, P=2.0 mm, L=200 mm
594H8303000E	Audio cable 20 x 2P, P=2.0 mm, L=200 mm
594H8301600E	Power/Reset button + LED cable
594H8302100E	COM cable 10 x 2P, P=2.0 mm, L=200 mm
59340000200E	USB + audio + LED cable, L=200 mm

## Ordering Information

### Standard

PICO842VGA-J1900 (P/N: E38H842100)	Pico-ITX SBC with Intel® Celeron® processor J1900 (2-2.4 GHz, 2 MB Cache, 10W), VGA/LVDS, 1 GbE LAN, audio and gift box
PICO842VGA-N2807 (P/N: E38H842101)	Pico-ITX SBC with Intel® Celeron® processor N2807 (1.58-2.16 GHz, 1 MB Cache, 4.3W), VGA/LVDS, 1 GbE LAN, audio and gift box
PICO842HGA-J1900 (P/N: E38H842102)	Pico-ITX SBC with Intel® Celeron® processor J1900 (2-2.4 GHz, 2 MB Cache, 10W), HDMI/LVDS, 1 GbE LAN, audio and gift box
PICO842HGA-N2807 (P/N: E38H842103)	Pico-ITX SBC with Intel® Celeron® processor N2807 (1.58-2.16 GHz, 1 MB Cache, 4.3W), HDMI/LVDS, 1 GbE LAN, audio and gift box

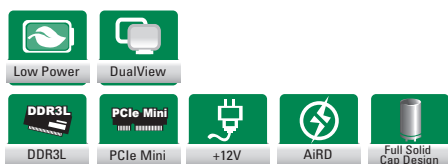


# PICO841

Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA, LAN and Audio

## Features

- Intel® Atom™ processor E3845/E3827
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 2 COM ports
- 2 PCI Express Mini Cards



### Core System

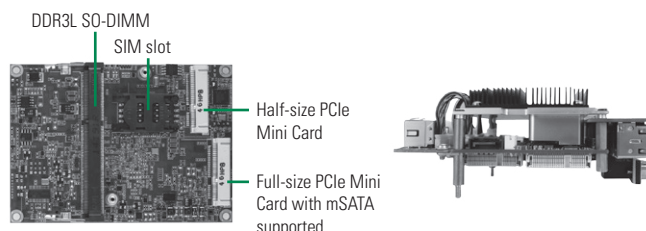
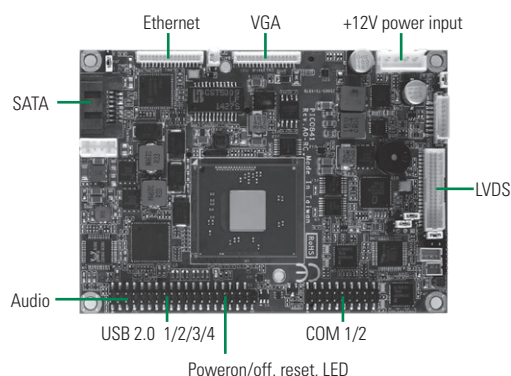
CPU	Intel® Atom™ processor E3845 quad core, E3827 dual core onboard (Bay Trail)
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card
Battery Lithium	Lithium 3V/220mAH
Power Input	1 x 4-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom™ E3845 @ 1.91 GHz, 8GB DDR3L Max. RMS: +12V @ 1.49A Intel® Atom™ E3827 @ 1.75 GHz, 8GB DDR3L Max. RMS: +12V @ 1.31A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	2 x RS-232/422/485
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i211AT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	NA
TPM	ST ST33TPM12LPC with TPM 1.2 compliant

### Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel



▲ Rear view



▲ Assembly view

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD and cable

#### Accessories

Part Number	Description	Qty
85932831000E	AX93283 I/O board	1
85932671000E	AX93267 I/O board	1
59406308010E	SATA cable	1
59405300610E	SATA power cable	1
5078H841000E	Heatspreader	1
5078H100200E	Heatsink	1

### Ordering Information

#### Standard

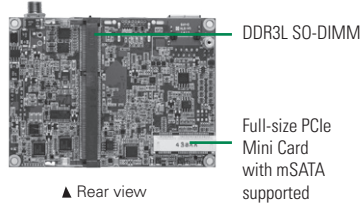
PICO841VGA-E3845 (P/N: E38H841104)	Pico-ITX SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2 MB Cache, 10W), VGA/LVDS, 1 GbE LAN, audio and gift box
PICO841VGA-E3827 (P/N: E38H841105)	Pico-ITX SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1 MB Cache, 8W), VGA/LVDS, 1 GbE LAN, audio and gift box

# PICO840

Pico-ITX SBC with Intel® Atom™ Processor E3845/E3827, LVDS/VGA (HDMI), LAN and Audio

## Features

- Intel® Atom™ processor E3845/E3827 (Bay Trail SoC)
- 1 DDR3L-1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports
- 2 COM ports (RS-232/422/485 selectable)
- PCI Express Mini Card with mSATA supported



## Core System

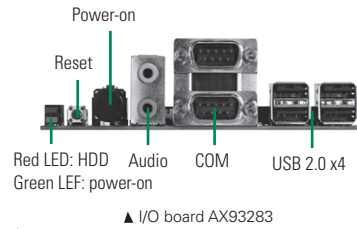
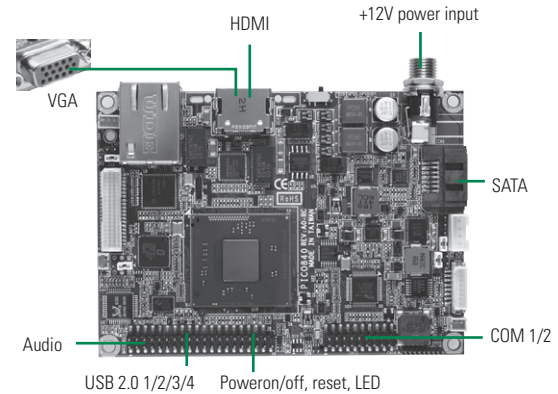
CPU	Intel® Atom™ processor E3845 quad core, E3827 dual core onboard (Bay Trail)
System Memory	1 x 204-pin DDR3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA
Battery Lithium	Lithium 3V/220MAH
Power Input	DC power jack connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom™ E3845 @ 1.91 GHz, 8GB DDR3L Max. RMS: +12V @ 1.33A Intel® Atom™ E3827 @ 1.75 GHz, 8GB DDR3L Max. RMS: +12V @ 1.2A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-40°C ~ +70°C (-40°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	2 x RS-232/422/485
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210IT
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	NA
TPM	ST ST33TPM12LPC with TPM 1.2 compliant

## Display

Chipset	Intel® HD Graphics
Memory Size	Share System memory
Display Interface	1 x VGA or 1 x HDMI 1 x LVDS; 18/24-bit single/dual channel



## Packing List

### Standard

Quick installation guide, User's Manual/Utility CD and cable

### Accessories

Part Number	Description	Qty
85932831000E	AX93283 I/O board	1
594P8800600E	SATA power Cable	1
59403208000E	SATA cable	1
5078H842100E	Heatspreader	1
5078H100200E	Heatsink	1

### Optional

Part Number	Description
594H8302800E	USB cable 20 x 2P, P=2.0 mm, L=200 mm
594H8303000E	Audio cable 20 x 2P, P=2.0 mm, L=200 mm
594H8301600E	Power/Reset button + LED cable
594H8302100E	COM cable 10 x 2P, P=2.0 mm, L=200 mm
59340000200E	USB + Audio + LED cable, L=200 mm

## Ordering Information

### Standard

PICO840VGA-E3845 (P/N: E38H840100)	Pico-ITX SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2MB Cache, 10W), and VGA/LVDS, 1 GbE LAN, audio and gift box
PICO840VGA-E3827 (P/N: E38H840104)	Pico-ITX SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1MB Cache, 8W) and VGA/LVDS, 1 GbE LAN, audio and gift box
PICO840HGA-E3845 (P/N:E38H840101)	Pico-ITX SBC with Intel® Atom™ processor E3845 (1.91 GHz, 2MB Cache, 10W), and HDMI/LVDS, 1 GbE LAN, audio and gift box
PICO840HGA-E3827 (P/N: E38H840105)	Pico-ITX SBC with Intel® Atom™ processor E3827 (1.75 GHz, 1MB Cache, 8W)and HDMI/LVDS, 1 GbE LAN, audio and gift box

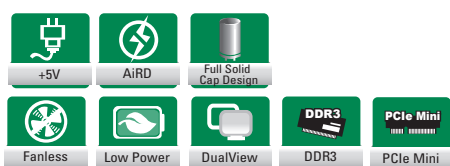


# PICO831

Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/VGA, LAN and Audio

## Features

- Intel® Atom™ processor N2800 (1.8 GHz)/N2600 (1.6 GHz) dual core onboard
- 1 DDR3-800/1066 SO-DIMM, up to 4GB
- 4 USB 2.0 ports
- 2 COM ports
- LVDS/VGA supported



### Core System

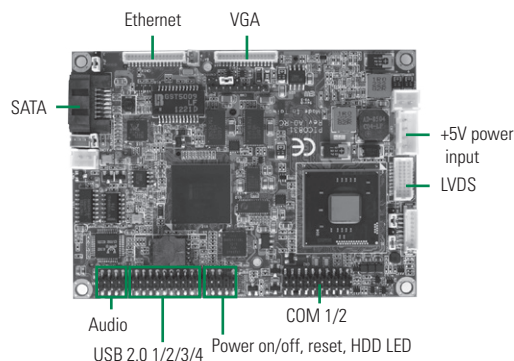
CPU	Intel® Atom™ processor N2800 1.8 GHz, N2600 1.6 GHz dual core onboard
System Memory	1 x 204-pin DDR3-800/1066 SO-DIMM, up to 4GB (N2600 supports DDR3-800, up to 2GB)
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	SATA SSD 16GB (optional)
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card
Battery	Lithium 3V/220mAH
Power Input	1 x 4-pin connector +5V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom™ N2800 @ 1.86 GHz, 1GB DDR3 Max. RMS: +5V @ 2.9A Intel® Atom™ N2600 @ 1.6 GHz, 1GB DDR3 Max. RMS: +5V @ 2.6A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

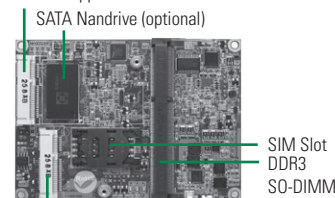
MIO	1 x RS-232/422/485 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

### Display

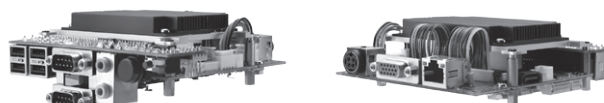
Chipset	Intel® GMA 3650 graphics core for N2800 Intel® GMA 3600 graphics core for N2600
Memory Size	Share System memory
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single channel



Full-size PCIe Mini Card with mSATA supported



Half-size PCIe Mini Card ▲ Rear view



▲ Assembly view

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD and accessories

#### Accessories

Part Number	Description	Qty
85932651000E	AX93265 I/O board	1
85932671000E	AX93267 I/O board	1
59406308010E	SATA cable	1
59405300610E	SATA power cable	1
5078H831000E	Heatspreader	1
5078H100200E	Heatsink	1

#### Optional

594H8302800E	USB cable 20 x 2P, P=2.0 mm, L=200 mm
594H8303000E	Audio cable 20 x 2P, P=2.0 mm, L=200 mm
594H8301600E	Power/Reset button + LED cable
594H8302100E	COM cable 10 x 2P, P=2.0 mm, L=200 mm
59340000200E	USB + Audio + LED cable, L=200 mm

### Ordering Information

#### Standard

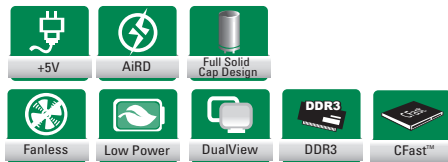
PICO831VGA-N2600 (P/N: E38H831101)	Pico-ITX SBC with Intel® Atom™ processor N2600 1.6 GHz, VGA/LVDS, 1 GbE LAN, 2 COM, 4 USB and audio
PICO831VGA-N2800 (P/N: E38H831100)	Pico-ITX SBC with Intel® Atom™ processor N2800 1.8 GHz, VGA/LVDS, 1 GbE LAN, 2 COM, 4 USB and audio

# PICO830

Pico-ITX SBC with Intel® Atom™ N2600/N2800, Intel® NM10, LVDS/DisplayPort or VGA, LAN and Audio

## Features

- Intel® Atom™ processor N2800 (1.86 GHz)/N2600 (1.6 GHz)
- 1 DDR3-800/1066 SO-DIMM, up to 4GB
- 4 USB 2.0 ports
- 2 COM ports
- LVDS/DisplayPort or VGA supported



## Core System

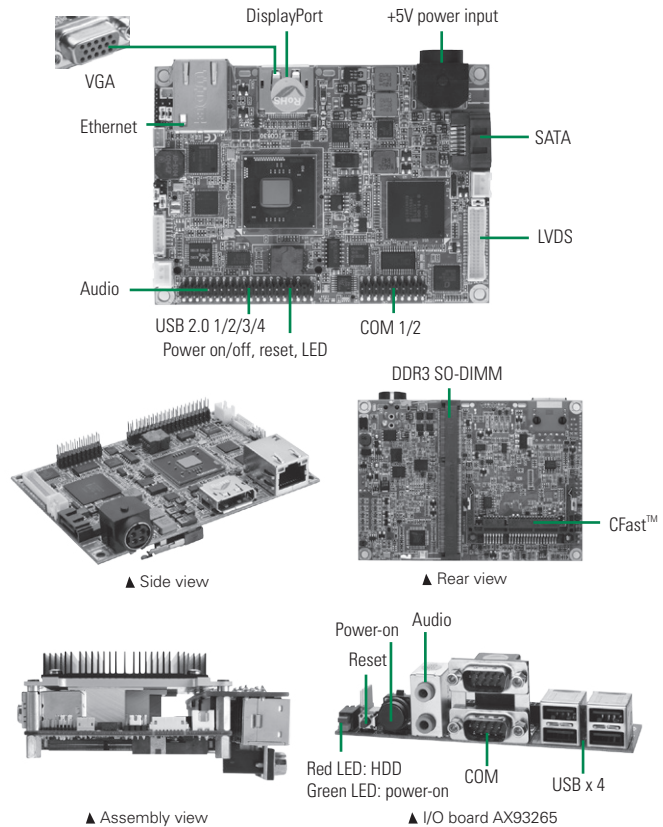
CPU	Intel® Atom™ processor N2800 1.86 GHz/ N2600 1.6 GHz dual core onboard
System Memory	1 x 204-pin DDR3-800/1066 SO-DIMM, up to 4GB (N2600 supports DDR3-800, up to 2GB)
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1 ~ 255 sec.
Expansion Interface	N/A
Battery	Lithium 3V/220MAH
Power Input	DC power jack connector +5V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom™ N2800 @ 1.86 GHz, 1GB DDR3 Max. RMS: +5V @ 3A Intel® Atom™ N2600 @ 1.6 GHz, 1GB DDR3 Max. RMS: +5V @ 2.7A
Size	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 1 x RS-232
SATA	1 x SATA-300
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

## Display

Chipset	Intel® GMA 3650 graphics core for N2800 Intel® GMA 3600 graphics core for N2600
Memory Size	Share system memory
Display Interface	1 x VGA or 1 x DisplayPort 1 x LVDS; 18/24-bit single/dual channel



## Packing List

### Standard

Quick installation guide, user's manual/utility CD and accessories

### Accessories

Part Number	Description	Qty
85932651000E	AX93265 I/O board	1
594PICO8200E	DC power cable	1
594K5328200E	SATA+power wire cable, L=60mm	1
5078H830000E	Heatspreader	1
5078H100200E	Heatsink	1

### Optional

Part Number	Description
59040131000E	DisplayPort to DVI cable, L=220 mm
59050203000E	DisplayPort to HDMI cable, L=185 mm
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm
594H8302800E	USB cable 20 x 2P, P=2.0 mm, L=200 mm
594H8303000E	Audio cable 20 x 2P, P=2.0 mm, L=200 mm
594H8301600E	Power/Reset button + LED cable
594H8302100E	COM cable 10 x 2P, P=2.0 mm, L=200 mm
59340000200E	USB + Audio + LED cable, L=200 mm

## Ordering Information

### Standard

PICO830VGA-N2600	Pico-ITX SBC with Intel® Atom™ processor N2600 1.6 GHz, VGA/LVDS, 1 GbE LAN, 2 COM and audio
(P/N: E38H830100)	
PICO830PGA-N2600	Pico-ITX SBC with Intel® Atom™ processor N2600 1.6 GHz, DisplayPort/LVDS, 1 GbE LAN, 2 COM and audio
(P/N: E38H830102)	
PICO830VGA-N2800	Pico-ITX SBC with Intel® Atom™ processor N2800 1.8 GHz, VGA/LVDS, 1 GbE LAN, 2 COM and audio
(P/N: E38H830101)	
PICO830PGA-N2800	Pico-ITX SBC with Intel® Atom™ processor N2800 1.8 GHz, DisplayPort/LVDS, 1 GbE LAN, 2 COM and audio
(P/N: E38H830103)	

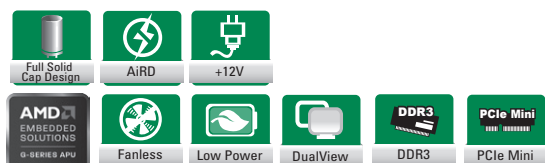


# PICO121

Pico ITX SBC with AMD Embedded G-Series SoC, VGA/LVDS, LAN and Audio

## Features

- AMD Embedded GX-210JA SoC (1.0 GHz)
- 1 DDR3/3L- 1066/1333 SO-DIMM, up to 8GB
- 4 USB 2.0 ports, 2 COM ports
- Half-size PCIe Mini Card and full-size PCIe Mini Card with mSATA
- DASH supported



## Core System

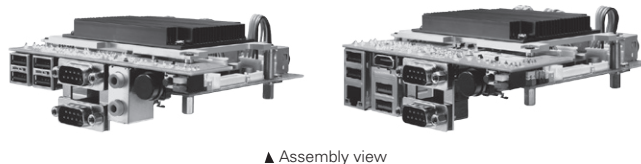
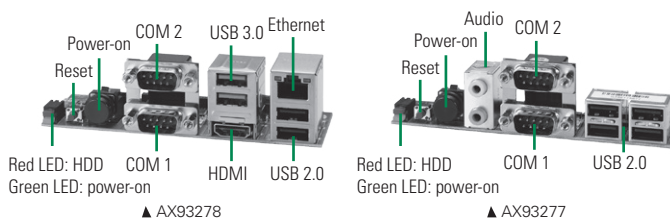
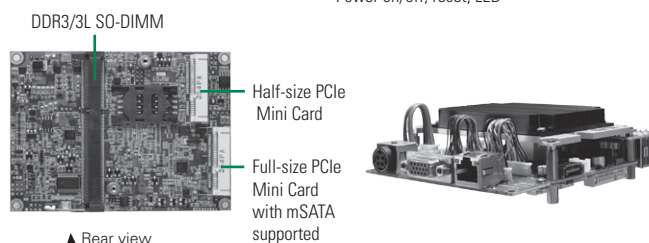
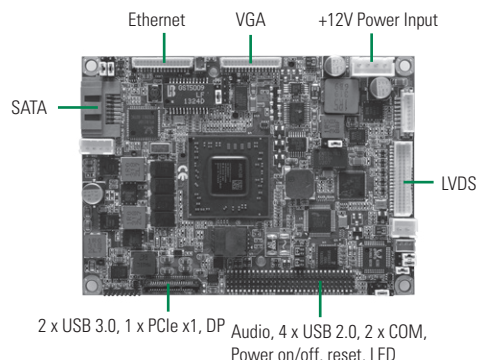
CPU	AMD Embedded GX-210JA SoC 1.0 GHz dual core onboard
System Memory	1 x 204-pin DDR3/3L-1066/1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card with mSATA 1 x Half-size PCI Express Mini Card 1 x PCIe x1, 1 x DP, 2 x USB 3.0 (through expansion connector)
Battery Lithium	Lithium 3V/220mAh
Power Input	1 x 4-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	AMD G-Series Embedded SoC GX-210JA @1.0 GHz 8GB DDR3 Max. RMS: +12V @ 0.8A
Size	100 x 72 mm
Board Thickness	1.6 mm
Temperature	-20°C ~ +70°C (-4°F ~ 158°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 1 x RS-232
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Realtek RTL8111DP
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

## Display

Chipset	AMD G-Series Embedded SoC integrated Gfx graphic engine GX-210JA - Radeon™ HD8180
Memory Size	AMD Radeon™ HD8180
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel



## Packing List

### Standard

Quick installation guide, User's Manual/Utility CD and accessories

### Accessories

Part Number	Description
85932771000E	AX93277 I/O board
85932671000E	AX93267 I/O board
59403208000E	SATA cable
594P8800600E	SATA power cable
5078H121010E	Heatspreader
5078H100200E	Heatsink

## Ordering Information

### Standard

PICO121VGA-GX210JA (P/N: E38H121101)	Pico-ITX SBC with AMD embedded GX-210JA SoC 1.0 GHz, VGA/LVDS, GbE LAN, audio and 4 USB 2.0
--------------------------------------	---

### Optional

I/O board	RS-232/422/485	RS-232	USB 2.0	USB 3.0	Display	2nd LAN
AX93278 (P/N:E393278100)	1	1	2	2	HDMI	Yes

# PICO100

Pico-ITX SBC with AMD G-Series APU, AMD A50M, LVDS/DisplayPort (VGA), LAN and Audio

## Features

- AMD G-Series APU T40E (1.0 GHz)/T40R (1.0 GHz)
- 1 DDR3-1066 SO-DIMM, up to 4GB
- 4 USB 2.0 ports
- 2 COM ports



## Core System

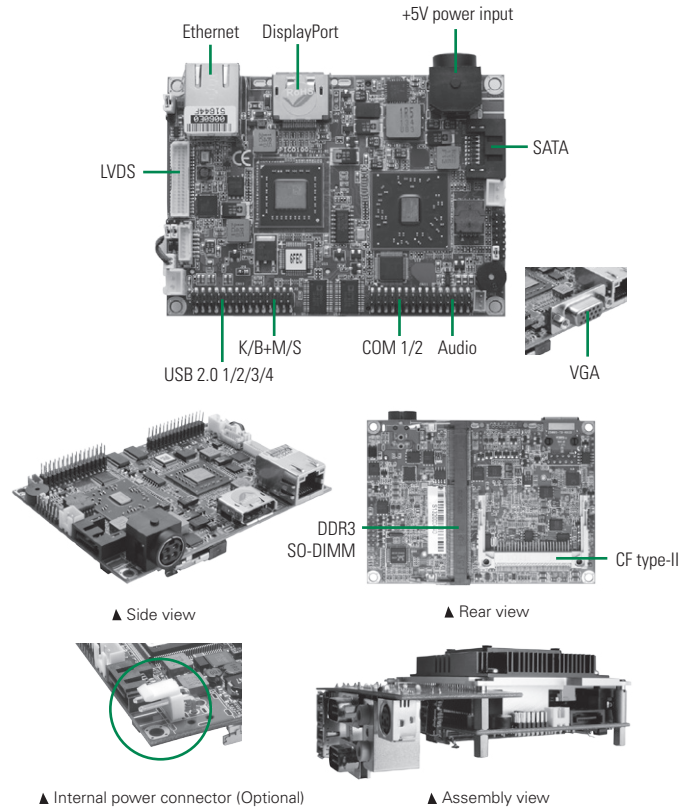
CPU	AMD G-Series APU T40E 1.0 GHz dual core or T40R 1.0 GHz single core onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	AMD A50M
BIOS	AMI UEFI BIOS
SSD	1 x CompactFlash™
Watchdog Timer	255 levels, 1 ~ 255 sec.
Expansion Interface	N/A
Battery	Lithium 3V/220mAh
Power Input	DC power jack connector +5V DC-in only AT Auto Power On function supported
Power Requirements	AMD G-Series APU T40E @ 1.0 GHz, 1GB DDR3 Max. RMS: +5V @ 3.16A AMD G-Series APU T40R @ 1.0 GHz, 1GB DDR3 Max. RMS: +5V @ 2.93A
Size	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard and mouse 2 x RS-232
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8111E
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC662
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	N/A

## Display

Chipset	AMD G-Series APU integrated graphics engine T40E/ T40R - Radeon™ HD6250
Memory Size	Max. up to 2GB in 4GB DDR3 module
Display Interface	1 x VGA or 1 x DisplayPort 1 x LVDS; 18 bit single channel



## Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable and accessories		
Accessories		
Part Number	Description	Qty
E393238101	AX93238 I/O board	1
594PICO8200E	DC power cable	1
59411208000E	SATA cable	1
59405300610E	SATA power cable	1

## Ordering Information

Standard	
PICO100VGA-T40E (P/N: E38H100109)	Pico-ITX SBC with AMD G-Series APU T40E 1.0 GHz processor, VGA/LVDS, 1 GbE LAN, 2 COM, SATA-600 and audio
PICO100PGA-T40E (P/N: E38H100111)	Pico-ITX SBC with AMD G-Series APU T40E 1.0 GHz processor, DisplayPort/LVDS, 1 GbE LAN, 2 COM, SATA-600 and audio
PICO100VGA-T40R (fanless) (P/N: E38H100110)	Pico-ITX SBC with AMD G-Series APU T40R 1.0 GHz processor, VGA/LVDS, 1 GbE LAN, 2 COM, SATA-600 and audio
PICO100PGA-T40R (fanless) (P/N: E38H100112)	Pico-ITX SBC with AMD G-Series APU T40R 1.0 GHz processor, DisplayPort/LVDS, 1 GbE LAN, 2 COM, SATA-600 and audio
Optional	
5938H820010E	COM x 2 + audio cable
5938H820000E	USB x 4 + Mini DIN cable
5948H823000E	DC power cable (for internal power connector)
59040131000E	DisplayPort to DVI cable, L=220 mm
59050203000E	DisplayPort to HDMI cable, L=185 mm
59091501000E	DisplayPort to DisplayPort cable, L=1500 mm



# AX12260

AMD LX PC/104 CPU Module with VGA/TTL, USB DoM and PC/104-Plus Expansion

## Features

- Low power fanless AMD LX800 processor
- 4 USB 2.0 ports for high speed peripherals & DoM
- PC/104-Plus slot for 16-bit ISA, 1 x 32-bit PCI expansion



## Core System

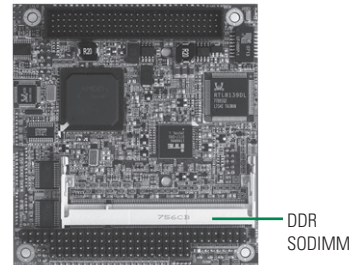
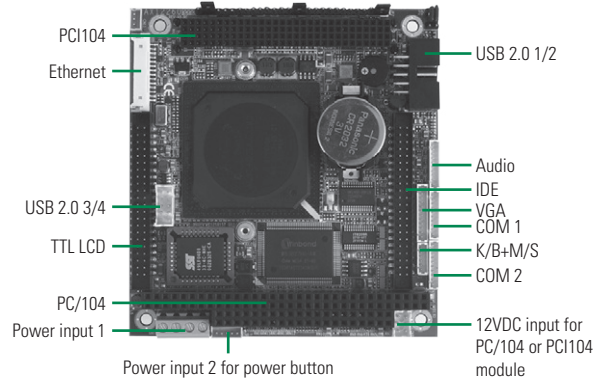
CPU	AMD LX800 processor onboard
System Memory	1 x 200-pin DDR-333/400 SO-DIMM, up to 1GB
Chipset	AMD CS5536AD
BIOS	Phoenix-Award
SSD	1 x USB DoM
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI-104 for 32-bit PCI supports 3 bus masters 1 x PC/104 for 16-bit ISA bus
Battery	Lithium 3V/220 mAh
Power Input	1 x 4-pin Phoenix connector +5V DC-in only
Power Requirements	AMD LX800, 1 GB DDR 400 Max. RMS: 5V @ 1.846A
Size	96 x 90 mm
Board Thickness	1.6 mm
Operating Temperature	Standard: 0°C ~ +60°C (32°F ~ 140°F) Optional: -40°C ~ +85°C (-40°F ~ +185°F)
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x IDE; PATA-100 1 x PS/2 keyboard & mouse 1 x PS/2 mouse 2 x RS-232
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 port as 10/100Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8139DL
Audio	AC'97 Codec audio as MIC-in/Line-in/Line-out/speaker-out with Realtek ALC203
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels IN/OUT programmable

## Display

Chipset	AMD LX integrated
Memory Size	8 channels IN/OUT programmable
Display Interface	1 x VGA 1 x TTL LCD; Max up to 24-bit



▲ Rear view

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59484500010E	44-44-40 pin IDE cable, L=200 mm + 200 mm	1
59382631000E	2xUSB 2.0 wafer cable w/ bracket, L=180 mm	1
59386831000E	USB cable w/ bracket, USB x 2, 2 x 5P, P=2.54, L=175 mm	1
59312260020E	Audio cable w/ bracket, P=1.25, L=450 mm	1
59412260010E	PS/2 cable, P=1.25, 6P to PS/2, L=150 mm	1
59312260010E	COM port x 2 w/ bracket, P=1.25, L=250 mm	1
59412260000E	ATX power cable, 4P+5P+6P, L=150 mm	1
59312260000E	VGA cable, DB15P, P=1.25, 12P, L=200 mm	1
59093201000E	AX93201 to AX93202 LAN cable, L=200 mm	1

## Ordering Information

### Standard

AX12260VEA-500 (P/N: E112260100)	PC/104 CPU module with AMD LX800 500 MHz CPU, VGA/TTL, 10/100 Mbps Ethernet, AC'97 audio and 2 COM ports
-------------------------------------	--

### Optional

AX12260VEA-500-ET (P/N: E112260102)	PC/104 CPU module with AMD LX800 500 MHz CPU, VGA/TTL, 10/100 Mbps Ethernet, AC'97 audio, 2 COM ports and W.T. (-40°C to +85°C)
--	---

\* W.T.: Wide Temperature



# NOTES

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

0
1
2
3
4
5
6
7

Embedded  
SBCs  
>Pico-ITX



# 3

## Industrial Motherboards

The Industrial motherboards offered by Axiomtek feature Intel® Core™/Pentium®/Celeron® and AMD processors. The ATX form factor fulfills the demand on multiple slot expansion with PCIe x16, PCIe x4, PCIe x1 and PCI interfaces. The Mini-ITX form factor is specially tailored for space-concerned applications with various computing ranges and thermal solutions; it comes with AMD ultra low power, Intel® laptop and Intel® desktop silicon platforms.

Selection Guide		167
Mini-ITX Form Factor		
MANO501 <b>NEW</b>	Thin Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3, Pentium® and Celeron® Processor, Intel® H110, Dual HDMI/LVDS, Dual LANs and USB 3.0	177
MANO500	Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® H110, HDMI/DisplayPort/VGA/LVDS/eDP, Dual LANs and USB 3.0	178
MANO882	Mini-ITX SBC with LGA1150 Socket Intel® Xeon® E3-v3 and 4th Gen Intel® Core™ Processor, Intel® C226, HDMI/DisplayPort/VGA/LVDS, Dual LANs and USB 3.0	179
MANO881	Mini-ITX SBC with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® H81, HDMI/VGA/LVDS, Dual LANs and USB 3.0	180
MANO310 <b>NEW</b>	Mini-ITX SBC with Intel® Celeron® Processor N3350, VGA/HDMI/LVDS, USB 3.0, PCI Express Mini Card, M.2 and HD Audio	181
MANO311 <b>NEW</b>	Mini-ITX SBC with Intel® Celeron® Processor N3350, Dual HDMI/LVDS, USB 3.0, PCI Express Mini Card, mSATA and HD Audio	182
MANO300	Mini-ITX SBC with Intel® Celeron® Processor N3160 (up to 2.24 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card, mSATA, and HD Audio	183
MANO842	Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio	184
MANO840	Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio	185
MANO873	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, VGA/DVI-D, Dual LANs and USB 3.0	186
MANO872	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, DisplayPort/DVI-I/LVDS, Dual LANs and USB 3.0	187
MANO871	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, HDMI/DVI-I/LVDS, Dual LANs and USB 3.0	188
MANO870	Mini-ITX SBC with Socket G2 3rd Gen Intel® Core™ Processor, Intel® QM77, HDMI/DVI-D/VGA/LVDS, PCI Express Gen 3, SATA-600, Dual LANs and HD Audio	189

MANO861	Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® H61, VGA/DVI-D/LVDS, Dual LANs and HD Audio	190
MANO860	Mini-ITX SBC with Socket G2 Intel® Core™ Processor, Intel® QM67, DisplayPort/HDMI/VGA/LVDS, SATA-600, Dual LANs and RAID	191
MANO831	Mini-ITX SBC with Intel® Atom™ Processor D2550, Intel® NM10, VGA/DVI-D/LVDS1/LVDS2, Dual LANs and HD Audio	192
MANO830	Mini-ITX SBC with Intel® Atom™ D2550/N2600, Intel® NM10, VGA/HDMI/LVDS, Mini PCIe Card, PCIe x1 and HD Audio	193
MANO800	Mini-ITX SBC with LGA1156 Intel® Core™ Processor, Intel® Q57, DVI-D/VGA, PCIe x4 and 4 SATA RAID	194
MANO120	Mini-ITX SBC with AMD G-Series APU, AMD A55E, HDMI/VGA/LVDS, Dual LANs and SATA-600	195
MANO111	Mini-ITX SBC with AMD Embedded R-Series APU, AMD A75, DDR3, USB 3.0, LVDS/DisplayPort/DVI-D and Dual LANs	196
SBC86620	Mini-ITX SBC with AMD LX800, Dual LANs, 4 COM and USB 2.0	197
 ATX Form Factor		
IMB501	ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3 Processor, Intel® H110, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA	198
IMB500	ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® Q170, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA	199
IMB211	ATX Industrial Motherboard with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® Q87, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/VGA/HDMI and mSATA	200
IMB210	ATX Industrial Motherboard with LGA1150 Socket Intel® Xeon® E3-v3 and Core™ Processor, Intel® C226, ECC DDR3, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/DVI-I/HDMI and CFast™	201
IMB208	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® C216, USB 3.0, DisplayPort/DVI-I (VGA), Dual LANs and CFast™	202
IMB207	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® Q77, USB 3.0, DisplayPort/DVI-I, Dual LANs and CFast™	203
IMB206	ATX Industrial Motherboard with LGA1155 Socket 2nd Gen Intel® Core™ Processor, Intel® Q67, DVI-I/DisplayPort, Dual LANs and CFast™	204
IMB205	ATX Industrial Motherboard with LGA1156 Socket Intel® Core™ Processor, Intel® Q57, VGA/DisplayPort and Dual LANs	205
IMB204	ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® B75, SATA3.0, Dual LANs, DVI-D/VGA and LPT	206

# Mini-ITX Form Factor

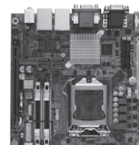
## Selection Guide



Page 177

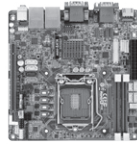


Page 178



Page 179

Features/Models	MANO501	MANO500	MANO882
<b>Form Factor</b>	Thin Mini-ITX	Mini-ITX	Mini-ITX
<b>CPU Level</b>	Intel® Core™, Pentium® & Celeron®	Intel® Core™ i7/i5/i3, Pentium® & Celeron®	Intel® Xeon® E3-V3/ Core™ i7/i5/i3 & Celeron®
<b>CPU Socket</b>	LGA1151	LGA1151	LGA1150
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	Intel® H110	Intel® H110	Intel® C226
<b>Memory Type</b>	DDR4-2133	DDR4-2133	DDR3-1333/1600
<b>Max. DRAM Capacity</b>	32GB	32GB	16GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	N/A	AMI	AMI
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	N/A
<b>Onboard Digital I/O</b>	8-IN & 8-OUT	4-IN & 4-OUT	4-IN & 4-OUT
<b>IDE</b>	N/A	N/A	N/A
<b>SATA</b>	3 x SATA-600 1 x mSATA	3 x SATA-600 1 x mSATA	4 x SATA-600
<b>FDD</b>	N/A	N/A	N/A
<b>LPT</b>	N/A	N/A	N/A
<b>I/O</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485
	<b>COM 2</b>	RS-232	RS-232
	<b>COM 3</b>	RS-232	RS-232
	<b>COM 4</b>	RS-232	RS-232
	<b>COM 5</b>	N/A	RS-232
	<b>COM 6</b>	N/A	RS-232
	<b>Serial</b>		
<b>USB</b>	4 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 4 x USB 3.0	6 x USB 2.0, 4 x USB 3.0
<b>IrDA</b>	N/A	N/A	N/A
<b>SIM Card Slot</b>	1 x SIM	1 x SIM	1 x SIM
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	2 x HDMI 1 x LVDS 1 x eDP (co-lay with LVDS)	1 x VGA 1 x HDMI 1 x DisplayPort 1 x LVDS (1 x eDP) for option	1 x VGA 1 x HDMI 1 x DisplayPort 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	N/A	N/A	N/A
<b>Expansion Interface</b>	1 x PCI Express Mini card 1 x PCIe x16 1 x SIM	1 x PCI Express Mini card 1 x PCIe x16 1 x mSATA	1 x PCI Express Mini card (support mSATA) 1 x PCIe x16
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 180



Page 181



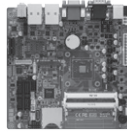
Page 182

Features/Models	MANO881	MANO310	MANO311		
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX		
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Celeron® N3350	Intel® Celeron® N3350		
<b>CPU Socket</b>	LGA1150	Onboard	Onboard		
<b>CPU FSB Frequency</b>	N/A	N/A	N/A		
<b>Core Logic Chipset</b>	Intel® H81	SoC Integrated	SoC Integrated		
<b>Memory Type</b>	DDR3-1333/1600	DDR3L-1600	DDR3L-1600		
<b>Max. DRAM Capacity</b>	16GB	8GB	8GB		
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU		
<b>BIOS</b>	AMI	AMI	AMI		
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.		
<b>Onboard SSD</b>	N/A	N/A	N/A		
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT		
<b>IDE</b>	N/A	N/A	N/A		
<b>SATA</b>	2 x SATA-600, 2 x SATA-300 (one coloy mSATA)	1 x SATA-600, 1 x M.2	1 x SATA-600, 1 x mSATA		
<b>FDD</b>	N/A	N/A	N/A		
<b>LPT</b>	N/A	N/A	N/A		
<b>I/O</b>	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232/422/485	RS-232/422/485	RS-232
		<b>COM 3</b>	RS-232/422/485	RS-232	RS-232
		<b>COM 4</b>	RS-232	RS-232	RS-232
		<b>COM 5</b>	RS-232	RS-232	RS-232
		<b>COM 6</b>	RS-232	RS-232	RS-232
	<b>USB</b>	8 x USB 2.0, 2 x USB 3.0	2 x USB 2.0, 4 x USB 3.0	2 x USB 2.0, 4 x USB 3.0	
<b>IrDA</b>	N/A	N/A	N/A		
<b>SIM Card Slot</b>	N/A	1 x SIM	1 x SIM		
<b>IEEE 1394a</b>	N/A	N/A	N/A		
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	2 x HDMI 1 x LVDS		
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet		
<b>Audio</b>	HD Codec	HD Codec	HD Codec		
<b>Hardware Monitoring</b>	Yes	Yes	Yes		
<b>SMBus</b>	N/A	N/A	N/A		
<b>Expansion Interface</b>	1 x PCIe x16	1 x PCI Express Mini card 1 x PCIe x1	1 x PCI Express Mini card 1 x PCIe x1		
<b>Power Management</b>	ACPI	ACPI	ACPI		
<b>Battery</b>	Lithium	Lithium	Lithium		
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)		
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing		
<b>EMI Compliance</b>	CE	CE	CE		
<b>Wide Temperature</b>	N/A	N/A	N/A		

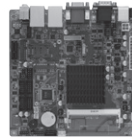


# Mini-ITX Form Factor

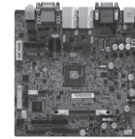
## Selection Guide



Page 183



Page 184



Page 185

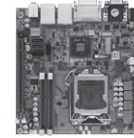
Features/Models	MANO300	MANO842	MANO840
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX
<b>CPU Level</b>	Intel® Celeron® N3160	Intel® Celeron® J1900	Intel® Celeron® J1900
<b>CPU Socket</b>	Onboard	Onboard	Onboard
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	SoC integrated	SoC integrated	SoC integrated
<b>Memory Type</b>	DDR3L-1333	DDR3L-1333	DDR3L-1333
<b>Max. DRAM Capacity</b>	8GB	8GB	8GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI	AMI	AMI
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 Levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	N/A
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT
<b>I/O</b>			
<b>IDE</b>	N/A	N/A	N/A
<b>SATA</b>	1 x SATA-600 1 x mSATA	1 x SATA-300	2 x SATA-300
<b>FDD</b>	N/A	N/A	N/A
<b>LPT</b>	N/A	N/A	1 x LPT
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232
<b>COM 2</b>	RS-232/422/485	RS-232/422/485	RS-232
<b>COM 3</b>	RS-232	RS-232	RS-232
<b>COM 4</b>	RS-232	RS-232	RS-232
<b>COM 5</b>	RS-232	RS-232	RS-232
<b>COM 6</b>	RS-232	RS-232	RS-232
<b>USB</b>	4 x USB 3.0, 2 x USB 2.0	5 x USB 2.0, 1 x USB 3.0	5 x USB 3.0, 1 x USB 2.0
<b>IrDA</b>	N/A	N/A	N/A
<b>SIM Card Slot</b>	1 x SIM	1 x SIM	N/A
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	N/A	N/A	N/A
<b>Expansion Interface</b>	1 x PCI Express Mini card 1 x mSATA 1 x PCIe x1 1 x SD	1 x PCI Express Mini card 1 x mSATA 1 x PCIe x1	1 x PCI Express Mini Card (mSATA supported) 1 x PCIe x1
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 186



Page 187



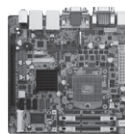
Page 188

Features/Models	MANO873	MANO872	MANO871		
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX		
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®		
<b>CPU Socket</b>	LGA1155	LGA1155	LGA1155		
<b>CPU FSB Frequency</b>	N/A	N/A	N/A		
<b>Core Logic Chipset</b>	Intel® Q77	Intel® Q77	Intel® Q77		
<b>Memory Type</b>	DDR3-1333/1600	DDR3-1333/1600	DDR3-1333/1600		
<b>Max. DRAM Capacity</b>	16GB	16GB	16GB		
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU		
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built		
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 Levels, 1~255 sec.	255 levels, 1~255 sec.		
<b>Onboard SSD</b>	N/A	N/A	N/A		
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT		
<b>I/O</b>	<b>IDE</b>	N/A	N/A		
	<b>SATA</b>	2 x SATA-300, 2 x SATA-600	2 x SATA-600, 2 x SATA-300	2 x SATA-600, 2 x SATA-300	
	<b>FDD</b>	N/A	N/A	N/A	
	<b>LPT</b>	N/A	N/A	N/A	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232	RS-232	RS-232
		<b>COM 3</b>	N/A	RS-232	RS-232
		<b>COM 4</b>	N/A	RS-232	RS-232
		<b>COM 5</b>	N/A	N/A	N/A
		<b>COM 6</b>	N/A	N/A	N/A
<b>USB</b>	4 x USB 3.0, 4 x USB 2.0	4 x USB 3.0, 4 x USB 2.0	4 x USB 2.0, 4 x USB 3.0		
<b>IrDA</b>	N/A	N/A	N/A		
<b>SIM Card Slot</b>	N/A	N/A	N/A		
<b>IEEE 1394a</b>	N/A	N/A	N/A		
<b>Display</b>	1 x VGA 1 x DVI-D	1 x DVI-I 1 x DisplayPort 1 x LVDS	1 x DVI-I 1 x HDMI 1 x LVDS		
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet		
<b>Audio</b>	HD Codec	HD Codec	HD Codec		
<b>Hardware Monitoring</b>	Yes	Yes	Yes		
<b>SMBus</b>	N/A	Yes	N/A		
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCI Express Mini Card (mSATA supported)	1 x PCIe x16 1 x PCI Express Mini Card	1 x PCIe x16 1 x PCI Express Mini Card		
<b>Power Management</b>	ACPI	ACPI	ACPI		
<b>Battery</b>	Lithium	Lithium	Lithium		
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)		
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing		
<b>EMI Compliance</b>	CE	CE	CE		
<b>Wide Temperature</b>	N/A	N/A	N/A		

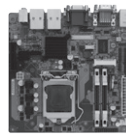


# Mini-ITX Form Factor

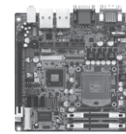
## Selection Guide



Page 189



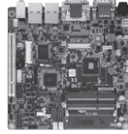
Page 190



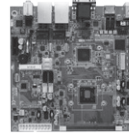
Page 191

Features/Models	MANO870	MANO861	MANO860
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®
<b>CPU Socket</b>	rPGA 988 (socket G2)	LGA1155	rPGA 988 (socket G2)
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	Intel® QM77	Intel® H61	Intel® QM67
<b>Memory Type</b>	DDR3-1333/1600	DDR3-1066/1333	DDR3-1066/1333
<b>Max. DRAM Capacity</b>	16GB	16GB	16GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CFast™	N/A	1 x CFast™
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT
<b>I/O</b>			
<b>IDE</b>	N/A	N/A	N/A
<b>SATA</b>	2 x SATA-600, 3 x SATA-300	3 x SATA-300	2 x SATA-600, 3 x SATA-300
<b>FDD</b>	N/A	N/A	N/A
<b>LPT</b>	N/A	N/A	N/A
<b>Serial</b>			
<b>COM 1</b>	RS-232	RS-232/422/485	RS-232
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>COM 3</b>	RS-232	RS-232	RS-232
<b>COM 4</b>	N/A	RS-232	RS-232
<b>COM 5</b>	N/A	RS-232	N/A
<b>COM 6</b>	N/A	RS-232	N/A
<b>USB</b>	8 x USB 2.0, 4 x USB 3.0	6 x USB 2.0	12 x USB 2.0
<b>IrDA</b>	N/A	N/A	N/A
<b>SIM Card Slot</b>	N/A	N/A	N/A
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x DVI-D 1 x HDMI 1 x LVDS	1 x VGA 1 x DVI-D 1 x LVDS	1 x VGA 1 x DisplayPort 1 x HDMI 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	N/A	N/A	N/A
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCI Express Mini Card	1 x PCIe x4 1 x PCI Express Mini Card	1 x PCIe x16 1 x PCI Express Mini Card
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

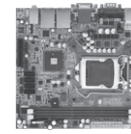




Page 192



Page 193



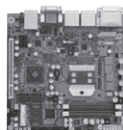
Page 194

Features/Models	MANO831	MANO830	MANO800	
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX	
<b>CPU Level</b>	Intel® Atom™ D2550	Intel® Atom™ D2550/N2600	Intel® Core™ i7/i5/i3 & Pentium®	
<b>CPU Socket</b>	Onboard	Onboard	LGA1156	
<b>CPU FSB Frequency</b>	N/A	N/A	N/A	
<b>Core Logic Chipset</b>	Intel® NM10	Intel® NM10	Intel® Q57	
<b>Memory Type</b>	DDR3-1066	DDR3-1066	DDR3-1066/1333	
<b>Max. DRAM Capacity</b>	4GB	4GB/2GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.	
<b>Onboard SSD</b>	N/A	N/A	1 x CompactFlash™ or 1 x CFast™ (optional)	
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT	
<b>I/O</b>	<b>IDE</b>	N/A	N/A	
	<b>SATA</b>	2 x SATA-300	2 x SATA-300	4 x SATA-300
	<b>FDD</b>	N/A	N/A	N/A
	<b>LPT</b>	N/A	1 x LPT	N/A
	<b>Serial</b>	<b>COM 1</b>	RS-232	RS-232/422/485
		<b>COM 2</b>	RS-232	RS-232
		<b>COM 3</b>	RS-232/422/485	RS-232
		<b>COM 4</b>	RS-232/422/485	RS-232
		<b>COM 5</b>	N/A	N/A
		<b>COM 6</b>	N/A	N/A
	<b>USB</b>	7 x USB 2.0	7 x USB 2.0	10 x USB 2.0
<b>IrDA</b>	N/A	N/A	N/A	
<b>SIM Card Slot</b>	N/A	N/A	N/A	
<b>IEEE 1394a</b>	N/A	N/A	N/A	
<b>Display</b>	1 x VGA 1 x DVI-D 1 x LVDS	1 x VGA 1 x HDMI 1 x LVDS	1 x DVI-D 1 x VGA	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	HD Codec	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	Yes	
<b>SMBus</b>	N/A	N/A	Yes	
<b>Expansion Interface</b>	1 x PCI 1 x PCI Express Mini Card	1 x PCIe x1 1 x PCI Express Mini Card (mSATA supported)	1 x PCIe x4	
<b>Power Management</b>	ACPI	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	Lithium	
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	N/A	

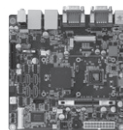


# Mini-ITX Form Factor

## Selection Guide



Page 195



Page 196

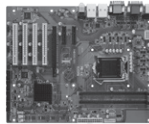


Page 197

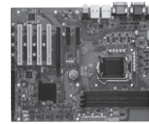
Features/Models	MANO120	MANO111	SBC86620
<b>Form Factor</b>	Mini-ITX	Mini-ITX	Mini-ITX
<b>CPU Level</b>	AMD G-Series APU T56N	AMD Embedded R-Series APU	AMD LX800
<b>CPU Socket</b>	Onboard	FS1r2 Socket	Onboard
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	AMD A55E	AMD A75 PCH	AMD LX800 + CS5536AD
<b>Memory Type</b>	DDR3-1066/1333	DDR3-1333/1600	DDR-333/400
<b>Max. DRAM Capacity</b>	4GB	16GB	1GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI	AMI UEFI BIOS with OA 3.0 built	Phoenix-Award
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	1 x CFast™	1 x CFast™	1 x CompactFlash™
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT
<b>I/O</b>	<b>IDE</b>	N/A	2 x PATA-100
	<b>SATA</b>	5 x SATA-600	4 x SATA-600
	<b>FDD</b>	N/A	N/A
	<b>LPT</b>	N/A	1 x LPT
	<b>Serial COM 1</b>	RS-232	RS-232/422/485
	<b>Serial COM 2</b>	RS-232	RS-232
	<b>Serial COM 3</b>	RS-232	RS-232
	<b>Serial COM 4</b>	RS-232	RS-232
	<b>Serial COM 5</b>	N/A	RS-232
	<b>Serial COM 6</b>	N/A	N/A
<b>USB</b>	8 x USB 2.0	4 x USB 2.0	4 x USB 2.0
<b>IrDA</b>	N/A	N/A	N/A
<b>SIM Card Slot</b>	N/A	Yes	N/A
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA 1 x HDMI 1 x LVDS	2 x DVI-D 2 x DisplayPort 1 x LVDS	1 x VGA/TTL 1 x LVDS
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	AC'97 Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	N/A	Yes
<b>Expansion Interface</b>	1 x PCIe x4 1 x PCI Express Mini Card	1 x PCI 1 x PCI Express Mini Card	1 x PCI
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A

# ATX Form Factor

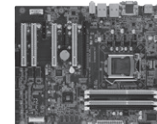
## Selection Guide



Page 198



Page 199



Page 200

Features/Models	IMB501	IMB500	IMB211		
<b>Form Factor</b>	ATX	ATX	ATX		
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®		
<b>CPU Socket</b>	LGA1151	LGA1151	LGA1150		
<b>CPU FSB Frequency</b>	N/A	N/A	N/A		
<b>Core Logic Chipset</b>	Intel® H110	Intel® Q170	Intel® Q87		
<b>Memory Type</b>	DDR4-2133/1866	DDR4-2133/1866	DDR3-1333/1600		
<b>Max. DRAM Capacity</b>	32GB	64GB	32GB		
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU		
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built		
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.		
<b>Onboard SSD</b>	N/A	N/A	N/A		
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT		
<b>I/O</b>	<b>IDE</b>	N/A	N/A		
	<b>SATA</b>	3 x SATA-600	5 x SATA-600	5 x SATA-600	
	<b>FDD</b>	N/A	N/A	N/A	
	<b>LPT</b>	N/A	N/A	1 x LPT	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232/422/485	RS-232/422/485	RS-232
		<b>COM 3</b>	RS-232	RS-232	RS-232
		<b>COM 4</b>	RS-232	RS-232	RS-232
		<b>COM 5</b>	RS-232	RS-232	RS-232
		<b>COM 6</b>	RS-232	RS-232	RS-232
<b>USB</b>	4 x USB 2.0, 4 x USB 3.0	8 x USB 2.0, 4 x USB 3.0	10 x USB 2.0, 4 x USB 3.0		
<b>IrDA</b>	N/A	N/A	N/A		
<b>SIM Card Slot</b>	1 x SIM	1 x SIM	N/A		
<b>IEEE 1394a</b>	N/A	N/A	N/A		
<b>Display</b>	1 x VGA 1 X DisplayPort 1 x HDMI	1 x VGA 1 X DisplayPort 1 x HDMI	1 x VGA 1 X DisplayPort 1 x HDMI		
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet		
<b>Audio</b>	HD Codec	HD Codec	HD Codec		
<b>Hardware Monitoring</b>	Yes	Yes	Yes		
<b>SMBus</b>	N/A	N/A	N/A		
<b>Expansion Interface</b>	4 x PCI 2 x PCIe x1 1 x PCIe x16 1 x PCI Express Mini Card 1 x mSATA	4 x PCI 2 x PCIe x4 1 x PCIe x16 1 x PCI Express Mini Card 1 x mSATA	4 x PCI 1 x PCIe x1 1 x PCIe x4 1 x PCIe x16 1 x PCI Express Mini Card		
<b>Power Management</b>	ACPI	ACPI	ACPI		
<b>Battery</b>	Lithium	Lithium	Lithium		
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)		
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing		
<b>EMI Compliance</b>	CE	CE	CE		
<b>Wide Temperature</b>	N/A	N/A	N/A		

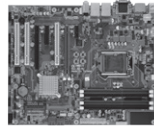
ATX Form Factor

0  
1  
2  
3  
4  
5  
6  
7

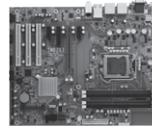


# ATX Form Factor

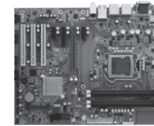
## Selection Guide



Page 201



Page 202

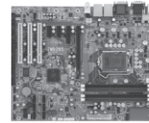


Page 203

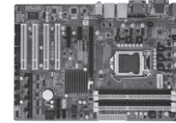
Features/Models	IMB210	IMB208	IMB207		
<b>Form Factor</b>	ATX	ATX	ATX		
<b>CPU Level</b>	Intel® Xeon® E3-V3, Core™ i7/i5/i3 & Celeron®	Intel® Xeon® E3-V2, Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Celeron®		
<b>CPU Socket</b>	LGA1150	LGA1155	LGA1155		
<b>CPU FSB Frequency</b>	N/A	N/A	N/A		
<b>Core Logic Chipset</b>	Intel® C226	Intel® C216	Intel® Q77		
<b>Memory Type</b>	DDR3-1333/1600	DDR3-1333/1600	DDR3-1333/1600		
<b>Max. DRAM Capacity</b>	32GB	32GB	32GB		
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU		
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS with OA 3.0 built		
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.		
<b>Onboard SSD</b>	1 x CFast™	1 x CFast™	1 x CFast™		
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT		
<b>I/O</b>	<b>IDE</b>	N/A	N/A		
	<b>SATA</b>	5 x SATA-600	2 x SATA-600, 3 x SATA-300	2 x SATA-600, 3 x SATA-300	
	<b>FDD</b>	N/A	N/A	N/A	
	<b>LPT</b>	N/A	N/A	N/A	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232	RS-232	RS-232
		<b>COM 3</b>	RS-232	RS-232	RS-232
		<b>COM 4</b>	RS-232	RS-232	RS-232
		<b>COM 5</b>	RS-232	N/A	N/A
		<b>COM 6</b>	RS-232	N/A	N/A
<b>USB</b>	6 x USB 2.0, 4 x USB 3.0	8 x USB 2.0, 4 x USB 3.0	4 x USB 2.0, 8 x USB 3.0		
<b>IrDA</b>	N/A	N/A	N/A		
<b>SIM Card Slot</b>	N/A	N/A	N/A		
<b>IEEE 1394a</b>	N/A	N/A	N/A		
<b>Display</b>	1 x DVI-I 1 x DisplayPort 1 x HDMI	1 x DVI-I 2 x DisplayPort	1 x DVI-I 2 x DisplayPort		
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet		
<b>Audio</b>	HD Codec	HD Codec	HD Codec		
<b>Hardware Monitoring</b>	Yes	Yes	Yes		
<b>SMBus</b>	Yes	N/A	N/A		
<b>Expansion Interface</b>	3 x PCI 1 x PCIe x1 1 x PCIe x4 1 x PCIe x16 or 2 x PCIe x8	1 x PCIe x16 1 x PCIe x4 2 x PCIe x1 3 x PCI	1 x PCIe x16 1 x PCIe x4 2 x PCIe x1 3 x PCI		
<b>Power Management</b>	ACPI	ACPI	ACPI 3.0		
<b>Battery</b>	Lithium	Lithium	Lithium		
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)		
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing		
<b>EMI Compliance</b>	CE	CE	CE		
<b>Wide Temperature</b>	N/A	N/A	N/A		



Page 204



Page 205



Page 206

Features/Models	IMB206	IMB205	IMB204		
<b>Form Factor</b>	ATX	ATX	ATX		
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Celeron®	Intel® Core™ i7/i5/i3 & Pentium®	Intel® Core™ i7/i5/i3 & Celeron®		
<b>CPU Socket</b>	LGA1155	LGA1156	LGA1155		
<b>CPU FSB Frequency</b>	N/A	1066/1333 MHz	1333/1600 MHz		
<b>Core Logic Chipset</b>	Intel® Q67	Intel® Q57	Intel® B75		
<b>Memory Type</b>	DDR3-1066/1333	DDR3-1066/1333	DDR3-1333/1600		
<b>Max. DRAM Capacity</b>	16GB	32GB	32GB		
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU		
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS	AMI		
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.		
<b>Onboard SSD</b>	1 x CFast™	USB DOM	N/A		
<b>Onboard Digital I/O</b>	4-IN & 4-OUT	4-IN & 4-OUT	4-IN & 4-OUT		
<b>I/O</b>	<b>IDE</b>	N/A	N/A		
	<b>SATA</b>	2 x SATA-600, 3 x SATA-300	6 x SATA-300	1 x SATA-600, 5 x SATA-300	
	<b>FDD</b>	N/A	1 x FDD	N/A	
	<b>LPT</b>	N/A	1 x LPT	1 x LPT	
	<b>Serial</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485	RS-232/422/485
		<b>COM 2</b>	RS-232	RS-232	RS-232
		<b>COM 3</b>	RS-232	RS-232	RS-232
		<b>COM 4</b>	RS-232	RS-232	RS-232
		<b>COM 5</b>	N/A	N/A	RS-232
		<b>COM 6</b>	N/A	N/A	RS-232
	<b>USB</b>	12 x USB 2.0	12 x USB 2.0	12 x USB 2.0	
	<b>IrDA</b>	N/A	N/A	N/A	
<b>SIM Card Slot</b>	N/A	N/A	N/A		
<b>IEEE 1394a</b>	N/A	N/A	N/A		
<b>Display</b>	1 x DVI-I 2 x DisplayPort	1 x VGA 1 x DisplayPort	1 x VGA 1 x DVI-D		
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet		
<b>Audio</b>	HD Codec	HD Codec	HD Codec		
<b>Hardware Monitoring</b>	Yes	Yes	Yes		
<b>SMBus</b>	Yes	Yes	N/A		
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCIe x4 2 x PCIe x1 3 x PCI	1 x PCIe x16 1 x PCIe x4 2 x PCIe x1 3 x PCI	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 4 x PCI		
<b>Power Management</b>	ACPI	ACPI	ACPI		
<b>Battery</b>	Lithium	Lithium	Lithium		
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)		
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing		
<b>EMI Compliance</b>	CE	CE	CE		
<b>Wide Temperature</b>	N/A	N/A	N/A		

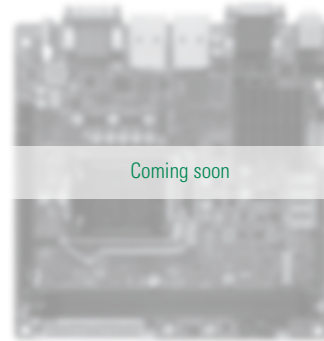


# MANO501 NEW

Thin Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ i7/i5/i3, Pentium® and Celeron® Processor, Intel® H110, Dual HDMI/LVDS, Dual LANs and USB 3.0

## Features

- Low profile thin Mini-ITX
- LGA1151 socket 6th/7th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Skylake/Kaby Lake)
- 2 DDR4-2133 MHz SO-DIMM, up to 32GB
- 1 PCIe x16
- 1 PCIe Mini card and SIM card slots
- 2 SATA-600 and 1 mSATA
- 4 USB 3.0 and 4 USB 2.0 ports
- 4-pin ATX 12 V/ 19~24 VDC jack support



### Core System

CPU	LGA1151 Socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor
System Memory	2 x 260-pin SO-DIMM dual channel DDR4-2133, up to 32GB
Chipset	Intel® H110
BIOS	AMI
SSD	N/A
Watchdog Timer	255 level, 1 ~ 255 sec
Expansion Interface	1 x PCIe x16 1 x PCIe Mini card slot 1 x SIM card slot
Battery	Lithium 3 V/220 mAH
Power Requirements	TBD
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation.
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1) 3 x RS-232 (COM 2-4); COM 2 with 5V power
SATA	2 x SATA-600 1 x mSATA
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps support WOL, PXE with Intel® i219LM (LAN 1) 2nd port as 10/100/1000 Mbps support WOL, PXE with Intel® i211AT (LAN 2)
Audio	HD Audio as Line-out with Realtek ALC662
USB	4 x USB 3.0 (Rear I/O) 4 x USB 2.0
TPM	N/A
Digital I/O	16 channels programmable
SM BUS	N/A

### Display

Chipset	Intel® HD graphics 530/510
Memory Size	Shared memory
Display Interface	2 x HDMI 1 x LVDS 1 x eDP (co-lay with LVDS)

### Packing List

<b>Standard</b>	
I/O Bracket, Driver DVD	

### Ordering Information

<b>Standard</b>	
MANO501 (P/N:TBD)	Thin Mini-ITX SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® Processor, Intel® H110, 2 HDMI/LVDS, 2 GbE LANs and USB 3.0

# MANO500

Mini-ITX SBC with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® H110, HDMI/DisplayPort/VGA/LVDS/eDP, Dual LANs and USB 3.0

## Features

- LGA1151 socket 6th/7th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Skylake/Kaby Lake)
- 2 DDR4-2133 Long-DIMM, up to 32GB
- 1 PCIe x16 slot
- 1 PCI Express Mini Card and SIM card slots
- 3 SATA-600 and 1 mSATA
- 4 USB 3.0 and 4 USB 2.0 ports

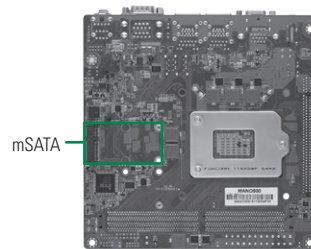
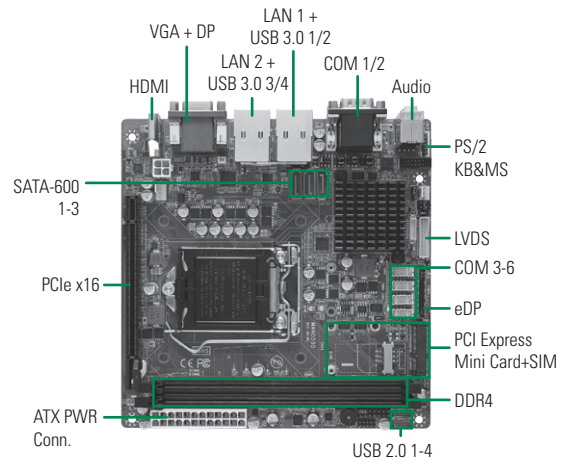


### Core System

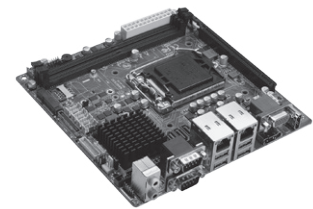
CPU	LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor
System Memory	2 x 288-pin Long-DIMM dual channel DDR4-2133, up to 32GB
Chipset	Intel® H110
BIOS	AMI
SSD	N/A
Watchdog Timer	255 level, 1 – 255 sec.
Expansion Interface	1 x PCIe x16 1 x mSATA 1 x PCI Express Mini Card 1 x SIM card slot
Battery	Lithium 3V/220 mAH
Power Requirements	TBD
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 keyboard & mouse 1 x RS-232/422/485 (COM 1 with 5V/12V power select) 5 x RS-232 (COM 2-6)
SATA	3 x SATA-600 1 x mSATA
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Intel® i219LM (LAN 1) 2nd port as 10/100/1000 Mbps supports, PXE with Intel® i211AT (LAN 2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 (rear I/O) 4 x USB 2.0
TPM	N/A
Digital I/O	8 channels programmable
SM BUS	N/A



▲ Rear view



▲ Side view

### Display

Chipset	Intel® HD graphics 530/510
Memory Size	Shared memory
Display Interface	1 x HDMI 1 x VGA 1 x DisplayPort 1 x LVDS 1 x eDP (co-lay with LVDS) (optional)

### Packing List

<b>Standard</b>	I/O Bracket
-----------------	-------------

### Ordering Information

<b>Standard</b>	MANO500VPHGGA (P/N:E38M500101)	Mini-ITX SBC with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor, Intel® H110, HDMI/DisplayPort/VGA/LVDS/eDP, 2 GbE LANs and USB 3.0
-----------------	--------------------------------	---

<b>Optional</b>	594M5002100E	2 x COM port with bracket P=2.0 mm, L=300 mm
	59382631000E	2 x USB 2.0 wafer cable with bracket 180 mm
	59384500100E	Audio cable with bracket P=2.0 mm, L=450 mm

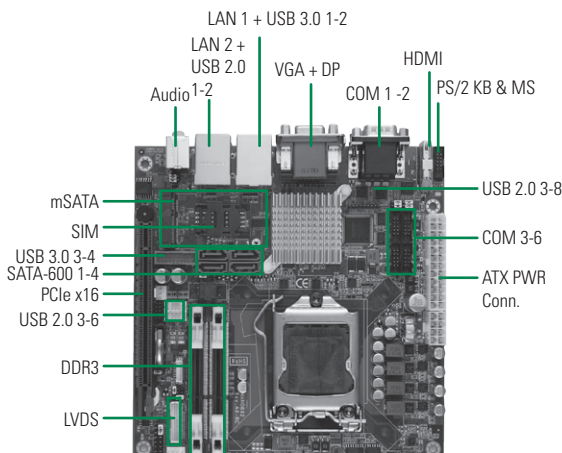


# MANO882

Mini-ITX SBC with LGA1150 Socket Intel® Xeon® E3-v3 and 4th Gen Intel® Core™ Processor, Intel® C226, HDMI/DisplayPort/VGA/LVDS, Dual LANs and USB 3.0

## Features

- LGA1150 socket Intel® Xeon® E3-v3 and 4th gen Intel® Core™ i7/i5/i3, Celeron® & Pentium® processor (Haswell/ Haswell Refresh)
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- PCIe x16 Gen3 supported
- 4 SATA-600 with RAID 0/1/5/10
- mSATA and SIM slots
- Intel® AMT 9.0 (Intel® C226)
- TPM 1.2 supported
- HDMI/DisplayPort/VGA/LVDS with triple-view supported (DisplayPort is a must for triple view)

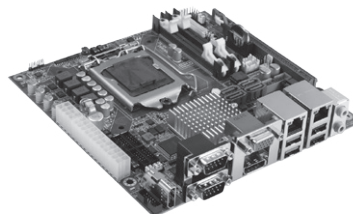


## Core System

CPU	LGA1150 socket Intel® Xeon® E3-v3 and 4th generation Intel® Core™ i7/i5/i3, Celeron® & Pentium® processor (Haswell/ Haswell Refresh)
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® C226 (Intel® H81 as option)
BIOS	AMI
SSD	N/A
Watchdog Timer	255 level, 1 ~ 255 sec
Expansion Interface	1 x PCIe x16 1 x PCI Express Mini Card (Full size and shared mSATA) 1 x SIM card slot (Intel® C226)
Battery	Lithium 3V/220 mAh
Power Requirements	Intel® i7-4770S +5V@2.62A, +12V@4.97A, +5VSB@0.04A, +3.3V@0.76A
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 2 x RS-232/422/485 (COM 1-2 with 5V/12V power; no rear IO) 4 x RS-232 (COM 3-6: by pin header)
SATA	4 x SATA-600 with RAID 0/1/5/10 (Optional: Intel® H81 with 2 x SATA 600)
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed, smart fan supported.
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Intel® i217LM (LAN1) 2nd port as 10/100/1000 Mbps supports WOL, PXE with Intel® i210AT (LAN2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	Intel® C226: 4 x USB 3.0 (2 on rear IO, 2 on internal) 6 x USB 2.0 (2 on rear IO, 4 on internal) Intel® H81: 2 x USB 3.0 (2 on rear IO) 6 x USB 2.0 (2 on rear IO, 4 on internal)
TPM	Infineon TPM 1.2 SLB9635 (Intel® C226)
Digital I/O	8 channels Programmable (4-IN & 4-OUT default)
SM BUS	N/A



▲ Side view

## Display

Chipset	Intel® HD 4000/ 5000 graphics
Memory Size	Shared memory
Display Interface	1 x HDMI (Intel® C226) 1 x DisplayPort 1 x VGA 1 x LVDS 24 bit dual channel

## Packing List

<b>Standard</b>	I/O bracket, Driver CD, COM & SATA cable
-----------------	--

## Ordering Information

<b>Standard</b>	
MANO882VPHGGA (P/N: E38M882100)	Mini-ITX SBC with LGA1150 socket Intel® Xeon® E3-v3 and 4th generation Core™ i7/i5/i3, Celeron® & Pentium® processor, Intel® C226, HDMI/DisplayPort/ VGA/LVDS, 2 GbE LANs and USB 3.0
<b>Optional</b>	
MANO882VPGGA-H81 (P/N: E38M882101)	Mini-ITX SBC with LGA1150 socket Intel® 4th generation Core™ i7/i5/i3, Celeron® & Pentium® processor, Intel® H81, DisplayPort/VGA/LVDS, 2 GbE LANs and USB 3.0

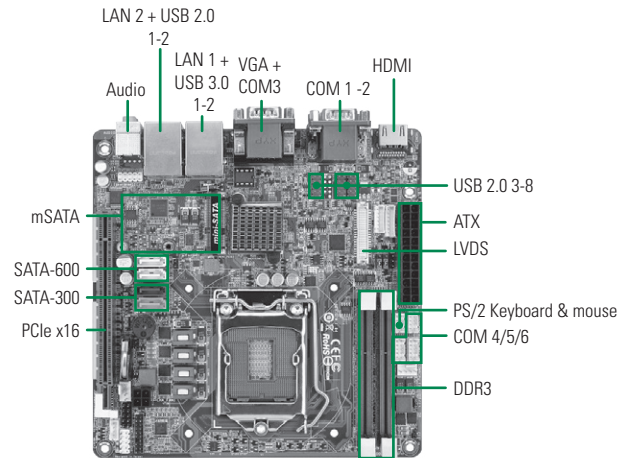


# MANO881

Mini-ITX SBC with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® H81, HDMI/VGA/LVDS, Dual LANs and USB 3.0

## Features

- LGA1150 socket 4th gen Intel® Core™ i7/i5/i3 & Celeron® processors (Haswell/Haswell Refresh)
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- PCIe x16 Gen2 supported
- 2 SATA-600, 2 SATA-300 and 1 mSATA
- 2 USB 3.0 and 8 USB 2.0 ports
- HDMI/VGA/LVDS with dual-view supported



## Core System

CPU	LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® processor (Haswell/Haswell Refresh)
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® H81
BIOS	AMI
SSD	N/A
Watchdog Timer	255 level, 1 - 255 sec
Expansion Interface	1 x PCIe x16 Gen2 1 x mSATA
Battery	Lithium 3V/220 mAh
Power Requirements	i7-4770S 3.1 GHz 4GB x 1 DDR3-1333, +12V @ 5.2A, -12V @ 0.1A, +5V @ 2.2A, +5VSB @ 0.2A, +3.3V @ 0.9A
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (+32°F ~ +140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 3 x RS-232/422/485 (COM 1-3) 3 x RS-232 (COM 4-6) COM 1-6 with 5V/12V power select
SATA	2 x SATA-300 2 x SATA-600
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Intel® i210AT (LAN 1) 2nd port as 10/100/1000 Mbps supports WOL, PXE with Intel® i217V (LAN 2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	2 x USB 3.0 8 x USB 2.0
TPM	N/A
Digital I/O	8 channels programmable
SM BUS	N/A

## Display

Chipset	Intel® HD 4000/5000 series graphics
Memory Size	Shared memory
Display Interface	1 x HDMI 1 x VGA 1 x LVDS

## Packing List

<b>Standard</b>	I/O Bracket, Driver CD
-----------------	------------------------

## Ordering Information

<b>Standard</b>	MANO881VGGA (P/N: E38M881101)	Mini-ITX SBC with LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron®, USB 3.0, SATA 3.0, 2 GbE LANs, HDMI/VGA/LVDS and mSATA
-----------------	-------------------------------	--

<b>Optional</b>	593826A0000E	SATA signal cable, L=500 mm
	593M8810300E	COM port cable, P=2.0, L=300 mm
	593M8810400E	USB cable with bracket, p=2.54 mm, L=200 mm
	593M8400400E	Audio cable with bracket, p=2.54 mm, L=300 mm

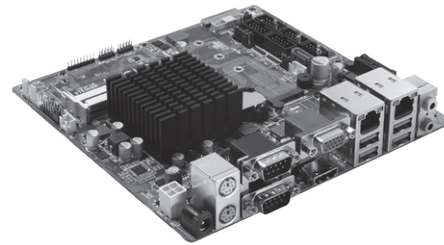
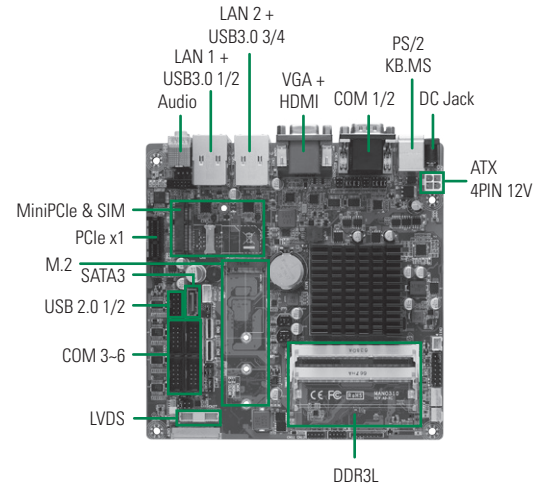


# MANO310 NEW

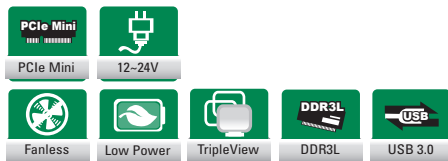
Mini-ITX SBC with Intel® Celeron® Processor N3350, VGA/HDMI/LVDS, USB 3.0, PCI Express Mini Card, M.2, and HD Audio

## Features

- Intel® Celeron® processor N3350 (Apollo Lake)
- 2 DDR3L-1600 SO-DIMM, up to 8GB
- PCI Express Mini Card slot and PCIe x1
- 4 USB 3.0 and 2 USB 2.0 ports
- 1 SATA-600, 1 M.2 and 1 SDXC
- 6 COM ports supported
- 12~24 VDC
- VGA, HDMI and LVDS with triple-view supported



▲ Side view



## Core System

CPU	Intel® Celeron® processor N3350 (Apollo Lake)
System Memory	2 x 204-pin DDR3L-1600 SO-DIMM dual channel, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	SDXC Slot
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card 1 x SIM card slot
Battery	Lithium 3V/220 mAh
Power Requirements	12~24 VDC
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard and mouse 2 x RS-232/422/485 (Rear I/O) 4 x RS-232 (COM 3 with +5/+12V)
SATA	1 x SATA-600 1 x M.2
Ethernet	2 x Realtek RTL8111F for Gigabit LAN support WoL & PXE
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 (internal) 4 x USB 3.0 (rear I/O)
TPM	N/A
Digital I/O	8 channels programmable
SM BUS	N/A

## Display

Chipset	Intel® HD graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS; 18/24bit dual channel

## Packing List

<b>Standard</b>	I/O Bracket
-----------------	-------------

## Ordering Information

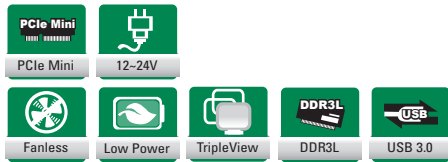
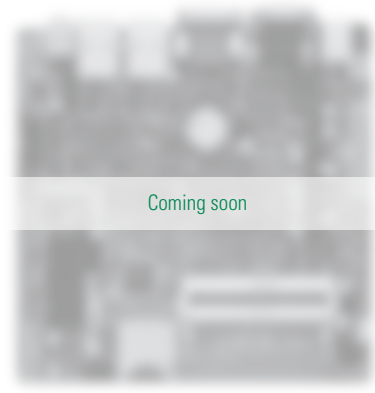
<b>Standard</b>	
MANO310 (P/N: TBD)	Mini-ITX SBC with Intel® Celeron® processor N3350, VGA/HDMI/LVDS, 2 GbE LANs, 6 COM, USB 3.0, M.2, PCI Express Mini Card and HD audio
<b>Optional</b>	
59411500600E	SATA power cable 4P 18CM (RC)

# MANO311 NEW

Mini-ITX SBC with Intel® Celeron® Processor N3350, Dual HDMI/LVDS, USB 3.0, PCI Express Mini Card, mSATA and HD Audio

## Features

- Intel® Celeron® processor N3350 (Apollo Lake)
- 1 DDR3L-1600 SO-DIMM, up to 8GB and 4GB memory down (optional)
- PCI Express Mini Card slot and PCIe x1
- 4 USB 3.0 and 2 USB 2.0 ports
- 1 SATA-600, 1 mSATA and 1 SDXC
- 6 COM ports supported
- 12~24 VDC
- VGA, HDMI and LVDS with triple-view supported



### Core System

CPU	Intel® Celeron® processor N3350 (Apollo Lake)
System Memory	1 x 204-pin SO-DIMM dual channel DDR3L-1600, memory down 4GB (optional), up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	SDXC Slot
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card 1 x SIM card slot
Battery	Lithium 3V/220 mAH
Power Requirements	12~24 VDC
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 keyboard and mouse 1 x RS-232/422/485 (Rear I/O) 5 x RS-232 (COM 2 with +5/+12V powered)
SATA	1 x SATA-600 1 x mSATA
Ethernet	2 x Realtek RTL8111F for Gigabit LAN support WoL & PXE
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 (internal) 4 x USB 3.0 (rear I/O)
TPM	N/A
Digital I/O	8 Channels programmable
SM BUS	N/A

### Display

Chipset	Intel® HD graphics
Memory Size	Shared memory
Display Interface	2 x HDMI 1 x LVDS; 18/24bit dual channel

### Packing List

<b>Standard</b>	
I/O Bracket	

### Ordering Information

<b>Standard</b>	
MANO311 (P/N: TBD)	Mini-ITX SBC with Intel® Celeron® processor N3350, dual HDMI/LVDS, 2 GbE LANs, 6 COM, USB 3.0, mSATA, PCI Express Mini Card and HD audio
<b>Optional</b>	
59411500600E	SATA power cable 4P 180 mm (RC)

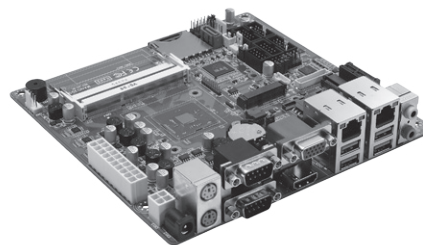
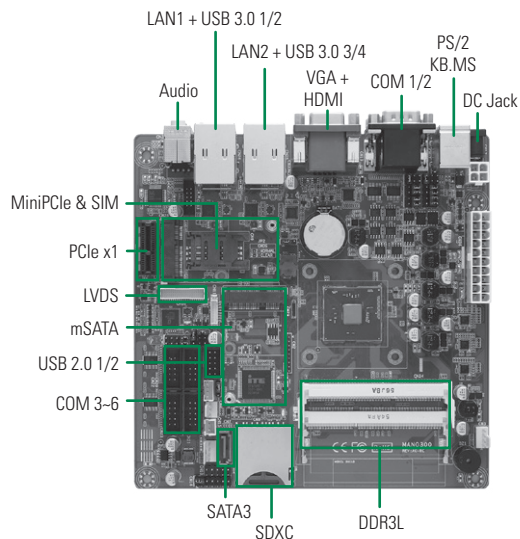


# MANO300

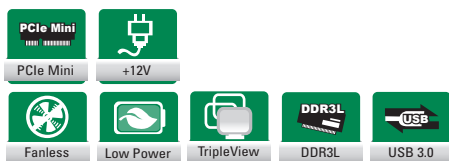
Mini-ITX SBC with Intel® Celeron® Processor N3160 (up to 2.24 GHz) SoC, VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card, mSATA and HD Audio

## Features

- Intel® Celeron® processor N3160 2.24 GHz (Braswell)
- 2 DDR3L-1600 SO-DIMM, up to 8GB
- PCI Express Mini Card slot and PCIe x1
- 4 USB 3.0 and 2 USB 2.0 ports
- 1 SATA-600, 1 mSATA and 1 SDXC
- 6 COM ports
- 12 VDC and STD ATX
- VGA, HDMI and LVDS with triple-view supported



▲ Side view



## Core System

CPU	Intel® Celeron® processor N3160 (up to 2.24 GHz) quad core (Braswell)
System Memory	2 x 204-pin SO-DIMM dual channel DDR3L-1600, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	SDXC Slot
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card 1 x SIM card slot
Battery	Lithium 3V/220 mAh
Power Requirements	12VDC or STD ATX
Size/Weight	170 x 170 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard and mouse 2 x RS-232/422/485 (Rear I/O) 4 x RS-232 (COM 3 with +5/+12V)
SATA	1 x SATA-600 1 x mSATA
Ethernet	2 x Realtek RTL8111F for Gigabit LAN support WoL & PXE
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 (internal) 4 x USB 3.0 (rear I/O)
TPM	N/A
Digital I/O	8 channels programmable
SM BUS	N/A

## Display

Chipset	Intel® HD graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS; 18/24bit dual channel

## Packing List

<b>Standard</b>	
I/O Bracket	

## Ordering Information

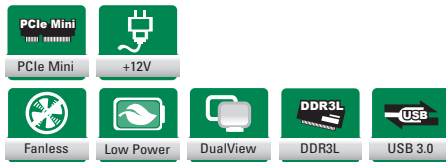
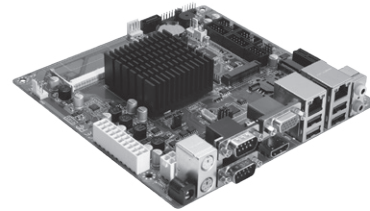
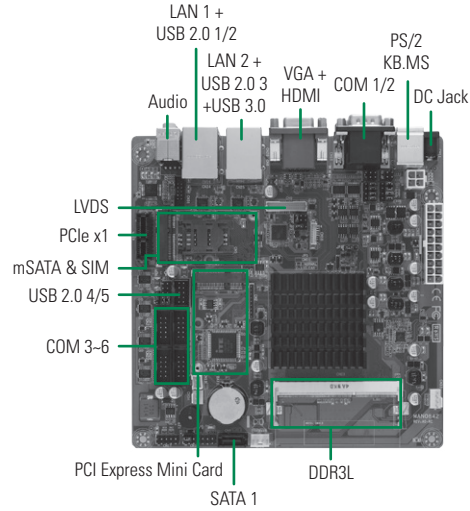
<b>Standard</b>	
MANO300VHGGGA (P/N: E38M300101)	Mini-ITX SBC with Intel® Celeron® N3160, VGA/HDMI/LVDS, 2 GbE LANs, 6 COM, USB 3.0, mSATA, PCI Express Mini Card and HD audio
<b>Optional</b>	
59411500600E	SATA power cable 4P 180 mm (RC)

# MANO842

Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio

## Features

- Intel® Celeron® processor J1900 2.0 GHz
- 1 DDR3L-1333 SO-DIMM, up to 8GB
- PCIe x1 supported
- 1 USB 3.0 and 5 USB 2.0 ports
- 1 SATA-300 and 1 mSATA slots
- 6 COM ports
- 12 VDC and ATX
- VGA/HDMI/LVDS with dual-view supported



### Core System

CPU	Intel® Celeron® processor J1900 (up to 2.42 GHz) quad core SoC (Bay Trail)
System Memory	1 x 204-pin DDR3L-1333 SO-DIMM dual channel, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1 ~ 255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card 1 x SIM card slot
Battery	Lithium 3V/220 mAh
Power Requirements	12VDC or STD ATX
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation.
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 Keyboard & mouse 2 x RS-232/422/485 (rear I/O) 4 x RS-232
SATA	1 x SATA-300 1 x mSATA
Ethernet	2 x Realtek RTL8111F for Gigabit LAN support WoL & PXE
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	5 x USB 2.0 1 x USB 3.0; (rear I/O: 1 x USB 3.0+3 x USB 2.0)
TPM	N/A
Digital I/O	8 Channels programmable
SM BUS	N/A

### Display

Chipset	Intel® HD graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS 18/24bit dual channel

### Packing List

<b>Standard</b>	I/O Bracket, Driver CD
-----------------	------------------------

### Ordering Information

<b>Standard</b>	MANO842VHGGGA (P/N: E38M842101)	Mini-ITX SBC with Intel® Celeron® J1900, VGA/HDMI/LVDS, 2 GbE LANs, USB 3.0, PCI Express Mini Card and HD audio
<b>Optional</b>	59411500600E	SATA power cable 4P 180 mm (RC)

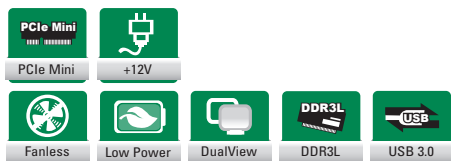
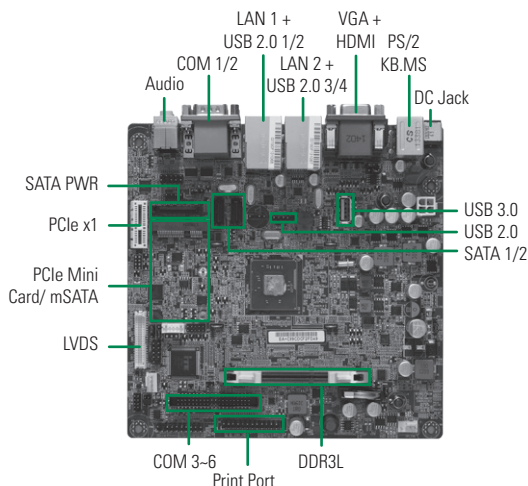


# MANO840

Mini-ITX with Intel® Celeron® Processor J1900 (up to 2.42 GHz), VGA/HDMI/LVDS, USB 3.0, Mini PCIe Card and HD Audio

## Features

- Intel® Celeron® processor J1900 2.0 GHz
- 1 DDR3L-1333 SO-DIMM, up to 8GB
- PCIe x1 supported
- 1 USB 3.0 and 5 USB 2.0 ports
- 2 SATA-300 and 1 mSATA slots
- 6 COM ports
- 12V DC Jack
- Dual view displays

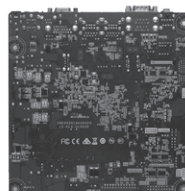


## Core System

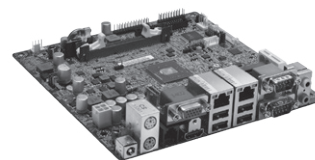
CPU	Intel® Celeron® processor J1900 (up to 2.42 GHz) quad core SoC (Bay Trail)
System Memory	1 x 204-pin DDR3L-1333 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	N/A
Watchdog Timer	255 levels, 1 ~ 255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	12V ATX or 12V DC-Jack
Size/Weight	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 Keyboard & mouse 1 x LPT 6 x RS-232 (1 RS-232 supports +5V/+12V by jumper)
SATA	2 x SATA-300 1 x mSATA (by PCI Express Mini Card slot, shared with SATA2 Conn)
Ethernet	2 Ports as 10/100/1000 Mbps with Realtek RTL8111G
Audio	HD Audio as Mic-in/Line-out with Realtek ALC269
USB	5 x USB 2.0 1 x USB 3.0
TPM	N/A
Digital I/O	8 channels programmable
SM BUS	N/A



▲ Rear view



▲ Side view

## Display

Chipset	Intel® HD graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS 18/24bit dual channel

## Packing List

### Standard

I/O Bracket, Driver CD

## Ordering Information

### Standard

MANO840VHGGGA-030 (P/N: E38M840101)	Mini-ITX SBC with Intel® Celeron® J1900, VGA/HDMI/LVDS, 2 GbE LANs, USB 3.0, PCI Express Mini Card and HD audio
-------------------------------------	---

### Optional

593M8400300E	COM port cable for MANO840, P=2.0mm, L=300 mm
59460412800E	USB cable A type DuPont 1 x 5, L=200 mm (RC)
593M8400400E	Audio cable with bracket, P=2.54 mm L=300 mm
593F2040300E	LPT cable with bracket, P=2.54 mm L=300 mm

# MANO873

Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, VGA/DVI-D, Dual LANs and USB 3.0

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processors
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- PCIe x16 Gen3 supported
- 2 SATA-600 and 2 SATA-300 with RAID 0/1/5/10
- 4 USB 3.0 ports
- Intel® AMT 8.0 supported
- TPM 1.2 supported
- mSATA supported

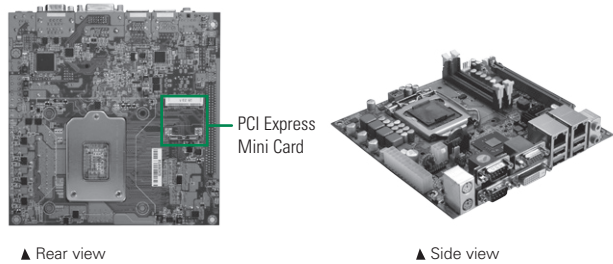
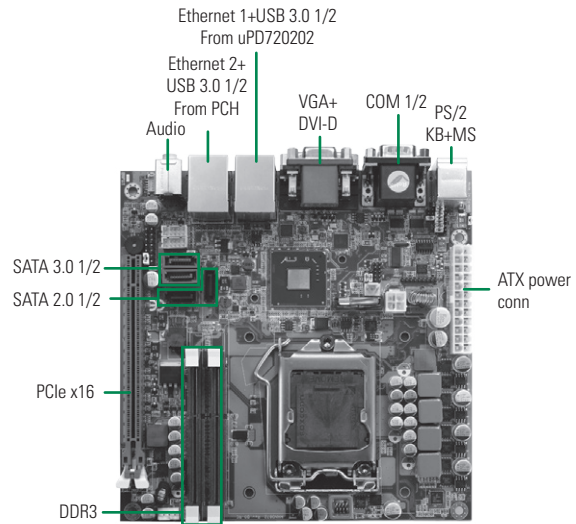


### Core System

CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® Q77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	255 level, 1 ~ 255 sec
Expansion Interface	1 x PCIe x16 Gen3 1 x PCI Express Mini Card (shared mSATA)
Battery	Lithium 3V/220 mAh
Power Requirements	i7-2700K: +5V @ 1.8A, +12V @ 6.1A, +5Vsb @ 0.3A, +3.3V @ 0.9A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1); with 5V/12V power 1 x RS-232 (COM 2) 1 x PS/2 keyboard & mouse
SATA	2 x SATA-300; 1 SATA-300 supports SATA DOM 2 x SATA-600, support RAID 0/1/5/10
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps support WOL, PXE with Intel® 82579LM/V (LAN 1) 2nd port as 10/100/1000 Mbps support WOL, PXE with Intel® 82583V (LAN 2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 (2 USB 3.0 from Intel® Q77; 2 USB 3.0 from Renesas uPD720202 with WinXP driver) 4 x USB 2.0
TPM	Infineon TPM1.2 SLB9635
Digital I/O	8 channels (4-IN & 4-OUT)
SM BUS	N/A



### Display

Chipset	Intel® HD 2000/3000/4000 graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x DVI-D

### Packing List

<b>Standard</b>	User's manual/utility CD, cable, I/O Bracket
-----------------	--

### Ordering Information

<b>Standard</b>	
MANO873VGGA (P/N: E38M873101)	Mini ITX SBC with LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, VGA/DVI-D, 2 GbE LANs and USB 3.0



# MANO872

Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, DisplayPort/DVI-I/LVDS, Dual LANs and USB 3.0

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- PCIe x16 Gen3 supported
- 2 SATA-600 and 2 SATA-300 with RAID 0/1/5/10
- 4 USB 3.0 ports
- Intel® AMT 8.0 supported
- TPM 1.2 supported
- DisplayPort, DVI-I and LVDS with triple-view supported

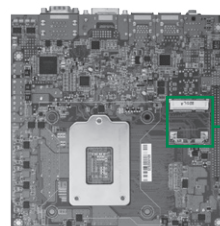
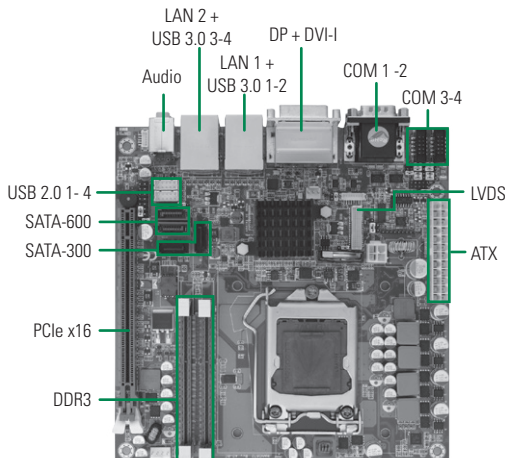


## Core System

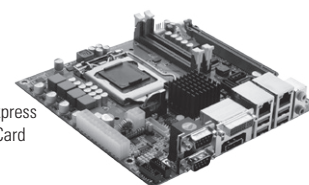
CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® Q77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	255 level, 1 ~ 255 sec.
Expansion Interface	1 x PCIe x16 Gen3 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	i7-2700K: +5V @ 1.5A, +12V @ 6.8A, +5Vsb @ 0.5A, +3.3V @ 1A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1) 3 x RS-232 (COM 2-4) COM 1 and 3 with 5V/12V power
SATA	2 x SATA-300, 2 x SATA-600, support RAID 0/1/5/10
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps support WOL, PXE with Intel® 82579LM/V (LAN 1) 2nd port as 10/100/1000 Mbps support WOL, PXE with Intel® 82583V (LAN 2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 4 x USB 2.0
TPM	Infineon TPM 1.2 SLB9635
Digital I/O	8 channels (4-IN & 4-OUT)
SM BUS	N/A



▲ Rear view



▲ Side view

## Display

Chipset	Intel® HD 2000/3000/4000 graphics
Memory Size	Shared memory
Display Interface	1 x DisplayPort 1 x DVI-I 1 x LVDS

## Packing List

### Standard

User's manual/utility CD, cable, I/O bracket

## Ordering Information

### Standard

MANO872VGGA (P/N: E38M872100)	Mini-ITX SBC with LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, DisplayPort/DVI-I/LVDS, 2 GbE LANs and 4 USB 3.0
----------------------------------	--



# MANO871

Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® Q77, HDMI/DVI-I/LVDS, Dual LANs and USB 3.0

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor
- 2 DDR3-1333/1600 SO-DIMM. up to 16GB
- PCIe x16 Gen 3 supported
- 2 SATA-600 and 2 SATA-300, support RAID 0/1/5/10
- 4 USB 3.0 ports
- Intel® AMT 8.0 supported
- TPM 1.2 supported
- HDMI, DVI-I and LVDS with dual-view supported

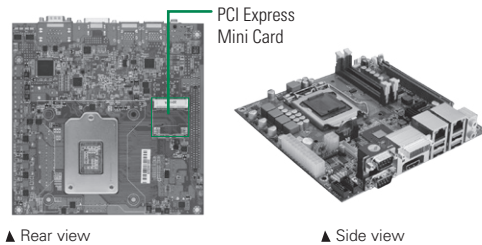
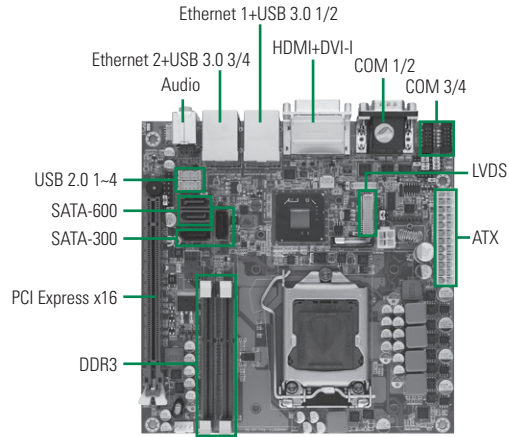


## Core System

CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® Q77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	255 level, 1 ~ 255 sec.
Expansion Interface	1 x PCIe x16 Gen. 3 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	Intel® Core™ i7-2700K 3.5 GHz, 8GB DDR3 1333 x 2 +5V @ 1.5A, +12V @ 6.8A, -12V @ 0.1A, +5VSB @ 0.5A, +3.3V @ 1.0A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1) 3 x RS-232 (COM 2-4) COM 1 and COM 3 with 5V/12V power
SATA	2 x SATA-300; 1 SATA-300 supports SATA DOM 2 x SATA-600, support RAID 0/1
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Intel® 82579LM/V (LAN 1) 2nd port as 10/100/1000 Mbps supports WOL, PXE with Intel® 82583V (LAN 2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 4 x USB 2.0
TPM	Infineon TPM 1.2 SLB9635
SMBUS	N/A
Digital IO	8 channels (4-IN & 4-OUT)



## Display

Chipset	Intel® HD 4000/2500 graphics
Memory Size	Shared memory
Display Interface	1 x HDMI 1 x DVI-I 1 x LVDS

## Packing List

User's manual/utility CD, cable

## Ordering Information

Standard	
MANO871VGGA (P/N: E38M871100)	Mini-ITX SBC with LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, HDMI/DVI-I/LVDS, 2 GbE LANs and USB 3.0

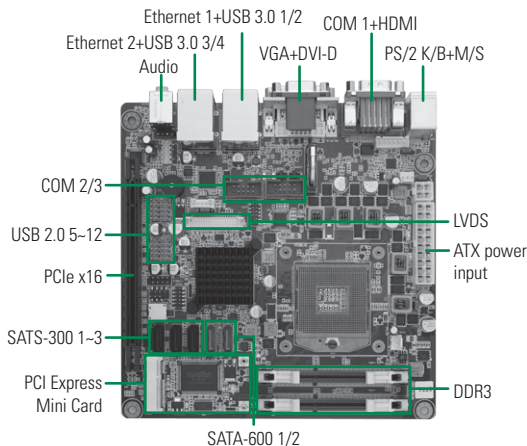


# MANO870

Mini-ITX SBC with Socket G2 3rd Gen Intel® Core™ Processor, Intel® QM77, HDMI/DVI-D/VGA/LVDS, PCI Express Gen 3, SATA-600, Dual LANs and HD Audio

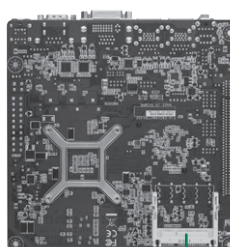
## Features

- Socket G2 (rPGA 988B) for 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- PCIe x16 Gen 3 supported
- 4 USB 3.0 ports
- 2 SATA-600 and 3 SATA-300, support RAID 0/1/5/10
- Intel® AMT 8.0 supported
- TPM 1.2 supported
- HDMI, DVI-D, LVDS and VGA with dual-view supported

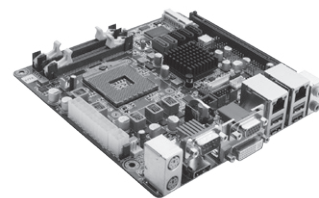


## Core System

CPU	Socket G2 (rPGA 988B) for 3rd generation Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM dual channel, up to 16GB
Chipset	Intel® QM77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x CFast™
Watchdog Timer	255 level, 1 ~ 255 sec
Expansion Interface	1 x PCIe x16 Gen 3 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	Intel® Core™ i5-3610ME 2.7 GHz, 4GB DDR3 1333 x 2 +5V @ 1.4A, +12V @ 6.7A, -12V @ 0.1A, +5VSB @ 0.4A, +3.3V @ 1.0A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 144°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing



▲ Rear view CFast™



▲ Side view

## Display

Chipset	Intel® Integrated GMA
Memory Size	Shared memory
Display Interface	1 x HDMI 1 x DVI-D 1 x VGA 1 x LVDS

## Packing List

User's manual/utility CD, cable

## I/O

MIO	1 x PS/2 keyboard & mouse 3 x RS-232 (COM 1-3) with 5V/12V power
SATA	2 x SATA-600 3 x SATA-300 support RAID 0/1/5/10
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Intel® 82579LM (LAN1) 2nd port as 10/100/1000 Mbps supports WOL, PXE with Intel® 82583V (LAN2)
Audio	HD Audio as Mic-in/Line-out with Realtek ALC892
USB	4 x USB 3.0 8 x USB 2.0
TPM	Infineon TPM 1.2 SLB9635
Digital I/O	8 channels (4-IN & 4-OUT)
SM BUS	N/A

## Ordering Information

Standard	
MANO870VGGA (P/N: E38M870100)	Mini-ITX SBC with socket G2 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, HDMI/DVI-D/VGA/LVDS, PCIe x16 Gen3, SATA-600, 2 GbE LANs and audio

Optional	
59460642100E	COM port cable, 5 x 2P, P=2.54 mm, L=300 mm
594F2112100E	COM port DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK
594F2112110E	COM port x 2 DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK

# MANO861

Mini-ITX SBC with LGA1155 Socket 3rd Gen Intel® Core™ Processor, Intel® H61, VGA/DVI-D/LVDS, Dual LANs and HD Audio

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor
- Intel® H61
- 2 DDR3-1066/1333 SO-DIMM, up to 16GB
- 1 PCIe x4 supported
- 3 SATA-300
- 6 USB 2.0 ports
- 6 COM ports
- VGA/DVI-D/LVDS with dual-view supported

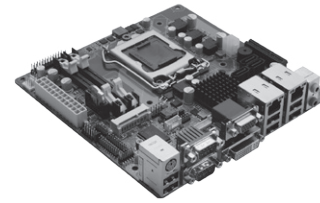
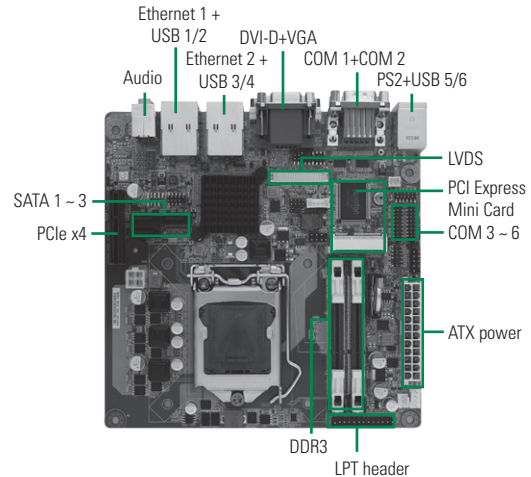


### Core System

CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 and Celeron® processors
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM, up to 16GB
Chipset	Intel® H61
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	255 levels, 1 ~ 255 sec.
Expansion Interface	1 x PCIe x4 1 x PCI Express Mini Card (Shared USB & mSATA)
Battery	Lithium 3V/ 220 mAh
Power Requirements	+5V @ 1.7A, +12V @ 5.9A, +5Vsb @ 0.1A, +3.3V @ 1.0A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1) 5 x RS-232 (COM 2-6)
SATA	3 x SATA-300
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL, PXE with Realtek 8111E (LAN1) 2nd port as 10/100/1000 Mbps supports WOL, PXE with Realtek 8111E (LAN2)
Audio	HD audio as MIC-in/Line-out with Realtek ALC892
USB	6 x USB 2.0
TPM	N/A
SMBus	N/A
Digital IO	8 Channels (4-IN & 4-OUT)



▲ Side view

### Display

Chipset	Intel® Integrated graphics
Memory Size	Shared memory
Display Interface	1 x VGA 1 x DVI-D 1 x LVDS

### Packing List

User's manual/utility CD, cable

### Ordering Information

Standard	
MANO861VGGA (P/N: E38M861100)	Mini-ITX SBC with LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, VGA/DVI-D/LVDS, 2 GbE LANs, 6 COM and audio
Optional	
5938M861010E	COM Port Cable, 10 x 2P, P=2.0 mm, L=300 mm

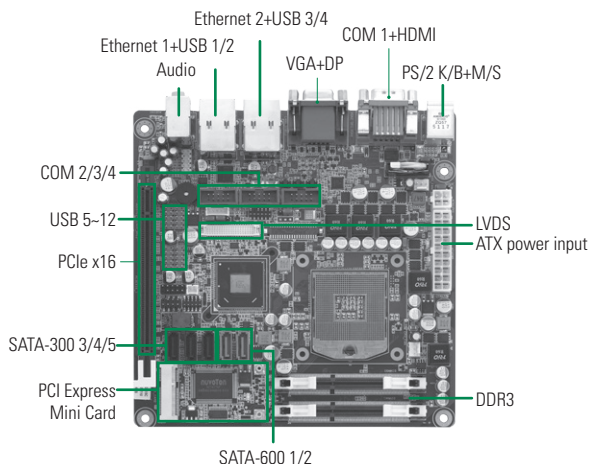


# MANO860

Mini-ITX SBC with Socket G2 Intel® Core™ Processor, Intel® QM67, DisplayPort/HDMI/VGA/LVDS, SATA-600, Dual LANs and RAID

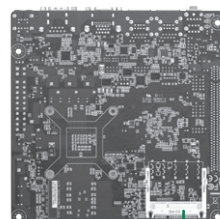
## Features

- Socket G2 (rPGA 988B) 2nd gen Intel® Quad/Dual Core™ i7/i5/i3 & Celeron® processor
- 2 DDR3-1066/1333 SO-DIMM. up to 16GB
- PCIe x16 Gen. 2 supported
- 2 x SATA-600, 3 x SATA-300 with RAID 0/1/5/10
- Intel® AMT supported
- TPM supported
- DisplayPort/HDMI/VGA/LVDS with dual-view supported

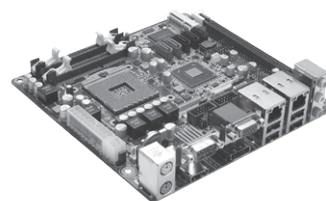


## Core System

CPU	Socket G2 (rPGA 988B) 2nd generation Intel® Core™ i7/i5/i3 and Celeron® processor
System Memory	2 x 204-pin DDR3-1066/1333 SO-DIMM, up to 16GB
Chipset	Intel® QM67
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 Gen. 2 1 x PCI Express Mini Card
Battery	Lithium 3 V / 220 mAh
Power Requirements	+12V @ 4.86A, +5V @ 1.28A, +3.3V @ 1.05A, +5VSB @ 0.36A, -12V @ 0.41A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing



▲ Rear view



▲ Side view

## Display

Chipset	Intel® HD graphics 2000/3000
Memory Size	1.7GB
Display Interface	1 x DisplayPort 1 x HDMI 1 x LVDS 1 x VGA

## Packing List

User's manual/utility CD, SATA cable, I/O bracket

## Ordering Information

### Standard

MANO860PHGGA (P/N: E38M860100)	Mini-ITX SBC with socket G2 Intel® Core™ i7/i5/i3, VGA/DisplayPort/HDMI/LVDS, 2 GbE LANs, HD audio, 4 COM, 5 SATA and CFast™
-----------------------------------	--

### Optional

59460642100E	COM port cable, 5 x 2P, P=2.54 mm, L=300 mm
594F2112100E	COM port DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK
594F2112110E	COM portx2 DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK

## I/O

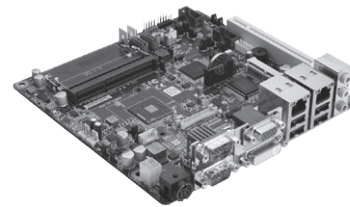
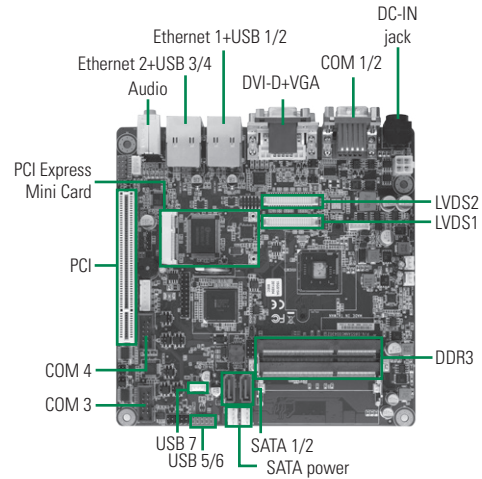
MIO	1 x PS/2 keyboard & mouse 4 x RS-232 (COM 2-4); with +5V/+12V powered
SATA	2 x SATA-600, 3 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82579LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out speaker-out with Realtek ALC892
USB	12 x USB 2.0
TPM	Infineon SLB9625 for trusted platform
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)

# MANO831

Mini-ITX SBC with Intel® Atom™ Processor D2550, Intel® NM10, VGA/DVI-D/LVDS1/LVDS2, Dual LANs and HD Audio

## Features

- Intel® Atom™ processor D2550 (1.86 GHz) onboard
- 2 DDR3-1066 SO-DIMM, up to 4GB
- DVI-D/VGA/LVDS1/LVDS2 with dual-view supported
- PCI and PCI Express Mini Card
- 2 SATA-300
- 7 USB 2.0 ports
- TPM 1.2 supported



▲ Side view



## Core System

CPU	Intel® Atom™ processor D2550 (1.86 GHz)
System Memory	2 x 204-pin DDR3-1066 SO-DIMM, up to 4GB
Chipset	Intel® NM10
BIOS	AMI 16Mb flash ROM
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	+12V @ 1.6A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	2 x RS-232 (COM 1-2) 2 x RS-232/422/485 (COM 3-4)
SATA	2 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	2 x Realtek RTL8111E for Gigabit LAN
Audio	HD Codec audio as MIC-in/Line-in/Line-out speaker-out with Realtek ALC892
USB	7 x USB 2.0
SMBus	N/A
Digital I/O	8 Channels (4-IN & 4-OUT)
TPM	Infineon TPM 1.2 SLB9635

## Display

Chipset	Intel® graphics media accelerator (GMA) 3650
Memory Size	Share memory
Display interface	1 x VGA 1 x DVI-D 1 x LVDS1 (single channel) 1 x LVDS2 (dual channel)

## Packing List

User's manual/utility CD, cable

## Ordering Information

Standard	
MANO831VGGGA (P/N: E38M831100)	Mini-ITX SBC with Intel® Atom™ D2550, VGA/DVI-D/LVDS, 2 GbE LANs, 4 COM, 7 USB and HD audio
Optional	
59460642100E	COM port cable, 5 x 2P, P=2.54 mm, L=300 mm
594F2112100E	COM port DB9 to 5 x 2P P=2.54 mm, L=300 mm w/BK
594F2112110E	COM portx2 DB9 to 5 x 2P P=2.54 mm, L=300 mm w/BK

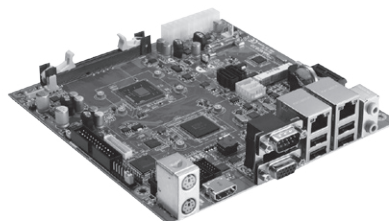
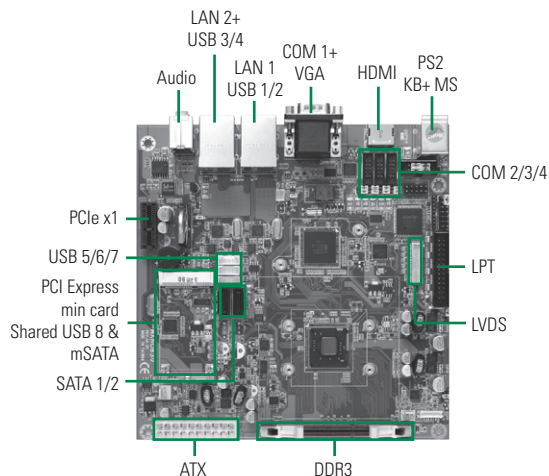


# MANO830

Mini-ITX SBC with Intel® Atom™ D2550/N2600, Intel® NM10, VGA/HDMI/LVDS, Mini PCIe Card, PCIe x1 and HD Audio

## Features

- Intel® Atom™ Cedarview processor D2550 (1.86 GHz)/N2600 (1.6 GHz) onboard
- 1 DDR3-1066 SO-DIMM MHz, up to 4GB
- 8 USB 2.0 ports
- 2 SATA-300
- PCIe x1 and PCI Express Mini Card
- ATX power supported
- VGA/HDMI/LVDS with dual-view supported



▲ Side view



## Core System

CPU	Intel® Atom™ Cedarview processor D2550 1.86 GHz/N2600 1.6 GHz onboard
System Memory	1 x 204-pin DDR3-1066 SO-DIMM, up to 4GB (N2600 supports DDR3-800 SO-DIMM, up to 2GB)
Chipset	Intel® NM10
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	Reset: 1 ~ 255 sec.
Expansion Interface	1 x PCIe x1 1 x PCI Express Mini Card (By jumper selection for mSATA or PCI Express Mini Card)
Battery	Lithium 3V/220 mAH
Power Requirements	D2550: +5V @ 1.7A, +12V @ 1.5A, +5Vsb @ 0A, +3.3V @ 1.0A N2600: +5V @ 1.4A, +12V @ 1.4A, +5Vsb @ 0A, +3.3V @ 1.0A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard and mouse 4 x RS-232 (COM 1 ~ COM 4) with 5V/12V jumper selection 1 x LPT
SATA	2 x SATA-300
Ethernet	2 x Realtek RTL8111E for Gigabit LAN
Audio	HD Audio as Mic-in/Line-out with Realtek ALC892
USB	7 x USB 2.0
TPM	N/A
Digital I/O	8 Channels (4-IN & 4-OUT)
SM BUS	N/A

## Display

Display Chipset	Intel® GMA graphic core
Memory Size	Shared memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS 24-bit dual channel

## Packing List

User's manual/utility CD, cable, I/O bracket

## Ordering Information

Standard	
MANO830-D2550 (P/N: E38M830101)	Mini-ITX SBC with Intel® Atom™ Cedar-view D2550, Intel® NM10, VGA/HDMI/LVDS, 2 GbE LANs, HD Audio
MANO830-N2600 (P/N: E38M830102)	Mini-ITX SBC with Intel® Atom™ Cedar-view N2600, Intel® NM10, VGA/HDMI/LVDS, 2 GbE LANs, HD Audio

# MANO800

Mini-ITX SBC with LGA1156 Intel® Core™ Processor, Intel® Q57, DVI-D/VGA, PCIe x4 and 4 SATA RAID

## Features

- LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium® processor with FSB 1066/1333 MHz
- 2 DDR3-1066/1333 DIMM, up to 8GB
- 4 SATA-300 with RAID 0/1/5/10
- CompactFlash™ type-II or CFast™ (optional)
- DVI-D/VGA with dual-view supported

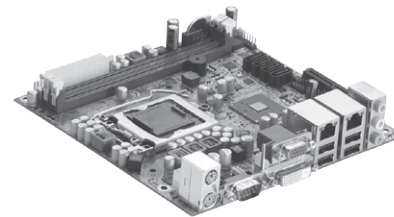
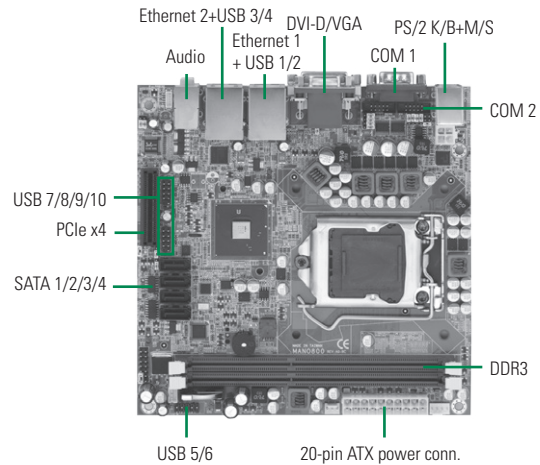


### Core System

CPU	LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium® processor with FSB 1066/1333 MHz
System Memory	2 x 240-pin DDR3-1066/1333 DIMM, up to 8GB
Chipset	Intel® Q57
BIOS	AMI UEFI BIOS
SSD	1 x CompactFlash™ type-II or 1 x CFast™ (optional)
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x4
Battery	Lithium 3 V/ 220 mAh
Power Requirements	Intel® Core™ i5-660 @ 3.33 GHz, 2GB DDR3 Max. RMS: +5V_SBY @ 0.022A, +3.3V @ 0.845A, +5V @ 1.252A, +12V @ 2.495A, -12V @ 0.034A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 keyboard & mouse 1 x RS-232/422/485 (+5V/+12V powered) 1 x RS-232 (COM 2 with +5V/+12V powered)
SATA	4 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82578DM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out speaker-out with Realtek ALC662
USB	10 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
Digital IO	8 channels (4-IN & 4-OUT)



▲ Side view

### Display

Chipset	Intel® HD graphics
Memory Size	Intel® DVMT 5.0 compliant
Display Interface	1 x VGA 1 x DVI-D

### Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
593826A0000E	SATA signal cable 500 mm	1

### Ordering Information

Standard		
MANO800DGGA CF w/ CF (P/N: E38M800100)	LGA1156 Mini-ITX SBC with DVI-D/VGA, 2 GbE LANs, HD audio, 2 COM ports, 4 SATA and CompactFlash™	
MANO800DGGA (P/N: E38M800102)	LGA1156 Mini-ITX SBC with DVI-D/VGA, 2 GbE LANs, HD audio, 2 COM ports, 4 SATA	
Optional		
MANO800DGGA w/ CFast (P/N: E38M800101)	LGA1156 Mini-ITX SBC with DVI-D/VGA, 2 GbE LANs, HD audio, 2 COM ports, 4 SATA and CFast™	

\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

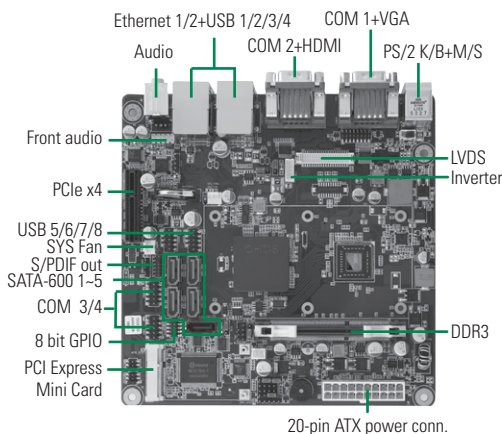


# MANO120

Mini-ITX SBC with AMD G-Series APU, AMD A55E, HDMI/VGA/LVDS, Dual LANs and SATA-600

## Features

- AMD G-Series APU T56N 1.65 GHz
- AMD A55E FCH
- 1 DDR3-1066/1333 SO-DIMM, up to 4GB
- 18 bit single channel LVDS
- VGA/HDMI/LVDS with dual-view supported
- PCIe x4 slot and PCI Express Mini Card
- SATA-600
- AT/ATX mode supported

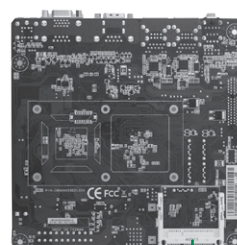


## Core System

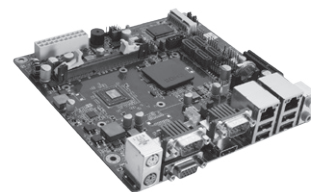
CPU	AMD G-Series APU T56N 1.65 GHz dual core onboard
System Memory	1 x 204-pin DDR3-1066/1333 SO-DIMM, up to 4GB
Chipset	AMD A55E
BIOS	AMI EFI 16Mb SPI
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x4 slot 1 x PCI Express Mini Card 1 x CFast™
Battery	Lithium 3 V/ 220 mAH
Power Requirements	+5V @ 1.65A, +12V @ 1.7A, -12V @ 0.06A, +5VSB @ 0.09A, +3.3V @ 0.41A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 4 x RS-232 (with 2 powered COM)
SATA	5 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	2 ports as 10/100/1000 Mbps support Wake-on-LAN, PXE Boot ROM with Realtek RTL8111DL
Audio	HD Codec audio as MIC-in/Line-out 2 CH support multiple streaming with Realtek ALC892 Speaker-out 3W x 2 with TPA3005D2 amplifier Front Audio pin header
USB	8 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control interface
Digital I/O	8 channels (4-IN & 4-OUT)



▲ Rear view CFast



▲ Side view

## Display

Chipset	AMD Radeon™ HD6320 graphic engine
Memory Size	2GB
Display Interface	1 x HDMI 1 x VGA 1 x LVDS

## Packing List

User's manual/utility CD, SATA cable and I/O bracket

## Ordering Information

<b>Standard</b>	
MANO120VGA-RC with cooler (P/N: E38M120100)	Mini-ITX SBC with AMD G-Series APU T56N, A55E FCH, LVDS/HDMI/VGA, 2 GbE LANs, HD audio, 4 COM, 8 USB ports and CFast™



# MANO111

Mini-ITX SBC with AMD Embedded R-Series APU, AMD A75, DDR3, USB 3.0, LVDS/DisplayPort/DVI-D and Dual LANs

## Features

- FS1r2 Socket AMD Embedded R-Series APU
- AMD A75 FCH
- Integrated graphics AMD Radeon HD 7 series
- DDR3-1333/1600 Dual channel SO-DIMM, up to 16GB
- 4 SATA-600 with RAID 0/1/5/10
- 4 USB 3.0 ports
- DisplayPort/LVDS/DVI-D with 4 independent displays supported
- DisplayPort 2 supports multi-stream
- TPM 1.2 supported
- DASH Remote Management Supported

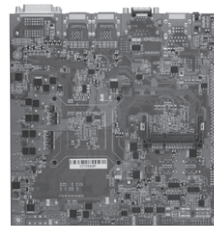
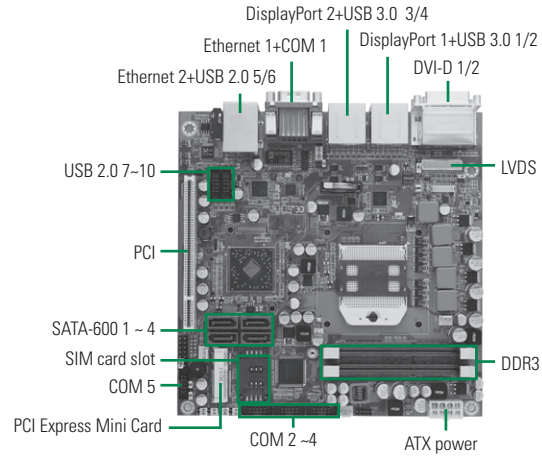


### Core System

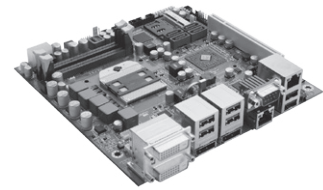
CPU	FS1r2 socket AMD Embedded R-Series APU
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM, up to 16GB
Chipset	AMD A75
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	CFast™
Watchdog Timer	255 level, 1 ~ 255 sec
Expansion Interface	PCI, PCI Express Mini Card, SIM card
Battery	Lithium 3V/220 mAh
Power Requirements	AMD R-Series R-464L 2.3 GHz, 8GB DDR3 1600 x 2 +12V @ 3.4A
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x RS-232/422/485 (COM 1); with +5V/+12V. 4 x RS-232 (COM 2-5); with +5V/+12V.
SATA	4 SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports wake-on-LAN PXE with Realtek RTL8111E 2nd port as 10/100/1000 Mbps supports wake-on-LAN, PXE and DUSH with Realtek RTL8111DP
Audio	Supports 2.1 channel audio lineout via HD Codec ALC662
USB	4 x USB 3.0 6 x USB 2.0
TPM	1.2
SMBus	N/A
Digital IO	8 channels (4-IN & 4-OUT)



▲ Rear view



▲ Side view

### Display

Chipset	Integrated Gfx (AMD Radeon HD7000 series)
Memory Size	Shared memory
LCD Interface	18/24 bit Dual channel LVDS
Display Interface	1 x LVDS 2 x DisplayPort 2 x DVI-D

### Packing List

User's manual/utility CD, cable

### Ordering Information

<b>Standard</b>	
MANO111LGGA-DASH (P/N: E38M111101)	Mini-ITX SBC with AMD R-Series APU, DDR3, LVDS/DisplayPort/DVI-D, 5 COM, 4 USB 3.0 and 2 GbE LANs

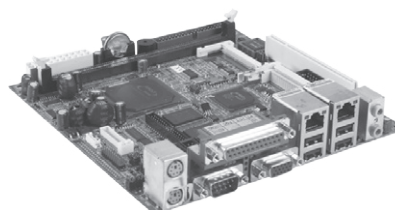
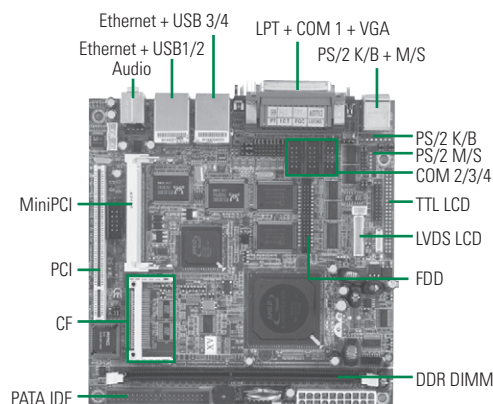


# SBC86620

Mini-ITX SBC with AMD LX800, Dual LANs, 4 COM and USB 2.0

## Features

- Low Power Fanless AMD LX800
- Dual 10/100 Mbps Ethernet supported
- 4 COM and 4 USB 2.0 ports
- 1 PCI slot and PCI Express Mini Card



## Core System

CPU	AMD LX800 processor onboard
System Memory	1 x 184-pin DDR-333/400 DIMM, up to 1GB
Chipset	AMD LX800 + CS5536AD
BIOS	Phoenix-Award
SSD	1 x CompactFlash™ type-II
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCI for 32-bit PCI supports 2 bus masters 1 x PCI Express Mini Card
Battery	Lithium 3V/220 mAh
Power Requirements	AMD LX800, 1GB DDR Max. RMS: +5V_SBY @ 0.07A, +3.3V @ NA, +5V @ 1.255A, +12V @ 0.046A, -12V @ NA
Size	170 x 170 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x IDE; PATA-100 1 x FDD 1 x PS/2 keyboard & mouse 3 x RS-232 (COM 2/3/4); with +5V/+12V powered 1 x RS-232/422/485 (COM 1); with +5V/+12V powered 1 x LPT; with SPP/EPP/ECP supported
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 ports as 10/100 Mbps support Wake-on-LAN, RPL/PXE Boot ROM with Realtek RTL8100C
Audio	AC'97 Codec audio as MIC-in/Line-out/Speaker-out with Realtek ALC203
USB	4 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control interface
Digital I/O	8 channels (4-IN & 4-OUT)

## Display

Chipset	AMD LX intergrated
Memory Size	Max. up to 254 MB
Display Interface	1 x VGA 1 x LCD interface for TTL (Max up to 24-bit) or LVDS (18/24-bit single channel)

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380402010E	COM port cable w/ bracket	1
593836A0010E	40-40-40 IDE cable L=310+155 mm	1

## Ordering Information

### Standard

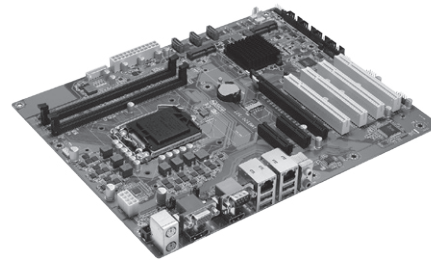
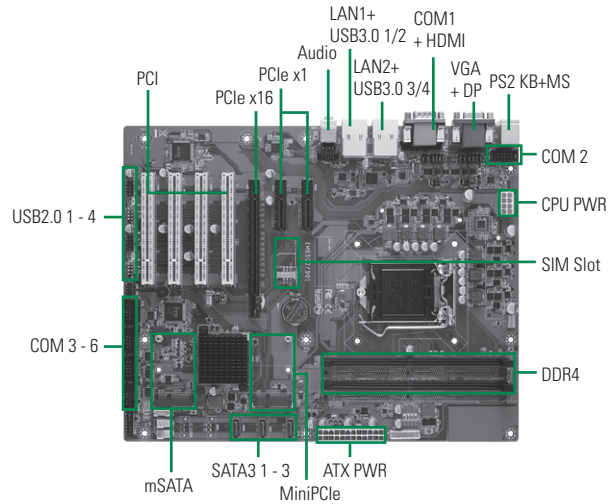
SBC86620VEEA -500 (P/N: E386620101)	Mini-ITX SBC with AMD LX800 500 MHz CPU, VGA/LCD, 2 GbE LANs, AC 97 audio and 4 COM ports
--	--

# IMB501

ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® H110, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA

## Features

- LGA1151 socket 6th/7th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Skylake/Kaby Lake)
- 2 DDR4- 2133/1866 SO-DIMM, up to 32GB
- DisplayPort, HDMI, and VGA with dual-view supported
- 3 SATA-600
- 4 USB 3.0 and 4 USB 2.0 ports
- Supports mASTA and PCI Express Mini Card



▲ Side view



## Core System

CPU	LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor
System Memory	2 x 288-pin DDR4-2133/1866 DIMM, up to 32GB
Chipset	Intel® H110
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x mSATA
Watchdog Timer	255 levels, 1-255 sec.
Expansion Interface	1 x PCIe x16 slot 2 x PCIe x4 slot (only support x1 signal) 4 x PCI slot 1 x PCI Express Mini Card 1 x SIM slot
Battery	Lithium 3 V/ 220 mAH
Size/Weight	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: rear IO, COM 2: internal box header)
SATA	3 x SATA-600 1 x mSATA
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i219LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210
Audio	HD Codec audio as Mic-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 4 x USB 2.0
TPM	N/A
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels programmable

## Display

Display Chipset	Intel® HD graphics 530/510
Memory Size	TBD
Display Interface	1 x DisplayPort 1 x HDMI 1 x VGA

## Ordering Information

Standard	
IMB501 (P/N: E38M501101)	ATX industrial motherboard with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor, Intel® H110, DDR4, USB 3.0, SATA 3.0, 2 GbE LANs, VGA/DisplayPort/HDMI and mSATA

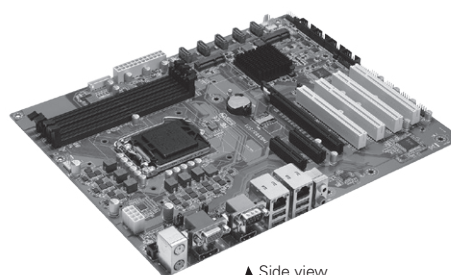
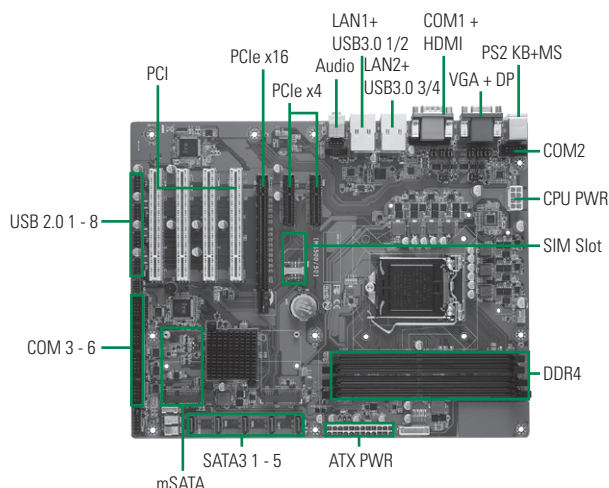


# IMB500

ATX Industrial Motherboard with LGA1151 Socket 6th/7th Gen Intel® Core™ Processor, Intel® Q170, DDR4, USB 3.0, SATA 3.0, Dual LANs, VGA/DisplayPort/HDMI and mSATA

## Features

- LGA1151 socket 6th/7th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Skylake/Kaby Lake)
- 4 DDR4- 2133/1866 SO-DIMM, up to 64GB
- DisplayPort, HDMI, and VGA with triple-view supported
- 5 SATA-600 RAID 0/1/5/10
- 4 USB 3.0 and 8 USB 2.0 ports
- mSATA supported
- PCI Express Mini Card



## Core System

CPU	LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor
System Memory	4 x 288-pin DDR4-2133/1866 DIMM, up to 64GB
Chipset	Intel® Q170
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x mSATA
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 slot 2 x PCIe x4 slot 4 x PCI slot 1 x PCI Express Mini Card 1 x SIM slot
Battery	Lithium 3 V/ 220 mAH
Size/Weight	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: Rear IO; COM 2: internal box header)
SATA	5 x SATA-600 with RAID 0/1/5/10 1 x mSATA
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® i219LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 3.0 8 x USB 2.0
TPM	N/A
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels programmable

## Display

Chipset	Intel® HD graphics 530/510
Memory Size	TBD
Display Interface	1 x DisplayPort 1 x HDMI 1 x VGA

## Ordering Information

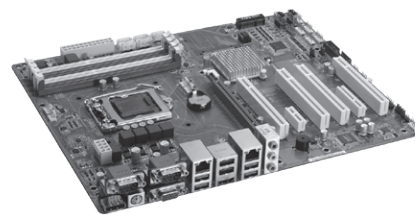
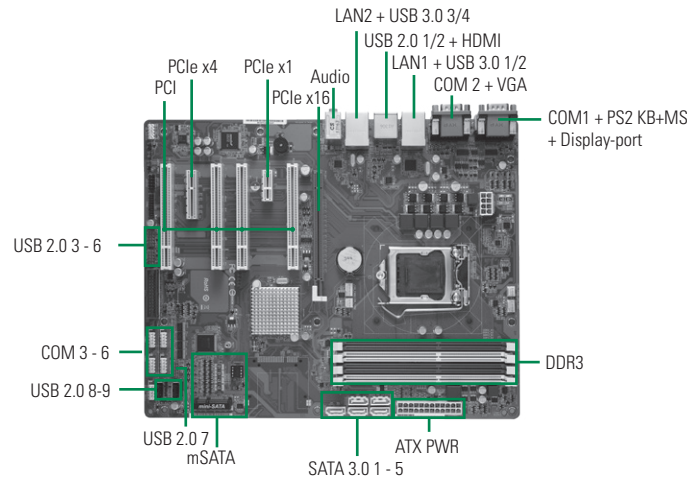
Standard	
IMB500 (P/N: E38M500101)	ATX industrial motherboard with LGA1151 socket 6th/7th generation Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor, Intel® Q170, DDR4, USB 3.0, SATA 3.0, 2 GbE LANs, VGA/DisplayPort/HDMI and mSATA

# IMB211

ATX Industrial Motherboard with LGA1150 Socket 4th Gen Intel® Core™ Processor, Intel® Q87, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/VGA/HDMI and mSATA

## Features

- LGA1150 socket 4th gen Intel® Core™ i7/i5/i3 and Celeron® processor (Haswell)
- 4 DDR3-1333/1600 DIMM, up to 32GB
- DisplayPort, HDMI, VGA with triple-view supported
- PCIe x16 Gen. 3 supported
- 5 SATA-600 with RAID 0/1/5/10
- 4 USB 3.0 ports
- Intel® AMT 9.0 supported



▲ Side view



## Core System

CPU	LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® processor (Haswell)
System Memory	4 x 240-pin DDR3-1333/1600 DIMM, up to 32GB
Chipset	Intel® Q87
BIOS	AMI UEFI BIOS whit OA 3.0 built
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 Gen. 3 slots 1 x PCIe x4 Gen. 2 1 x PCIe x1 Gen. 2 4 x PCI 1 x mSATA
Battery	Lithium 3 V/220 mAH
Power Requirements	i7-4770S 3.1 GHz 8GB x 4 DDR3-1600, +12V @ 5.3A, -12V @ 0.1A, +5V @ 2.7A, +5VSB @ 0.2A, +3.3V @ 0.8A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 4 x RS-232 (Internal box header) 2 x RS-232/422/485 (Rear IO)
SATA	5 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan Control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® i210 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i217LM
Audio	HD Codec audio as MIC-in/Line-in/Line-out
USB	4 x USB 3.0 10 x USB 2.0 (2 in rear IO, 6 with pin header and 2 vertical type conn)
TPM	N/A
SMBus	N/A
Digital I/O	8 channels programmable

## Display

Display Chipset	Intel® HD Integrated graphics
Memory Size	TBD
Display Interface	1 x DisplayPort 1 x HDMI 1 x VGA

## Packing List

I/O Bracket

## Ordering Information

Standard	
IMB211 (P/N: E38F211101)	ATX industrial motherboard with LGA1150 socket Intel® Core™ i7/i5/i3 & Celeron® USB 3.0, SATA 3.0, 2 GbE LANs, DisplayPort/VGA/HDMI and mSATA
Optional	
59460642100E	COM port cable, 5 x 2P, P=2.54 mm, L=300 mm
593826A000E	SATA signal cable, L=500 mm
594F2112100E	COM port DB9 to 5 x 2P P=2.54 L30cm w/BK
594F2112110E	COM port x 2 DB9 to 5 x 2P P=2.54 L30cm w/BK
593F2040300E	LPT cable w/bracket, P=2.54 mm, L=300 mm

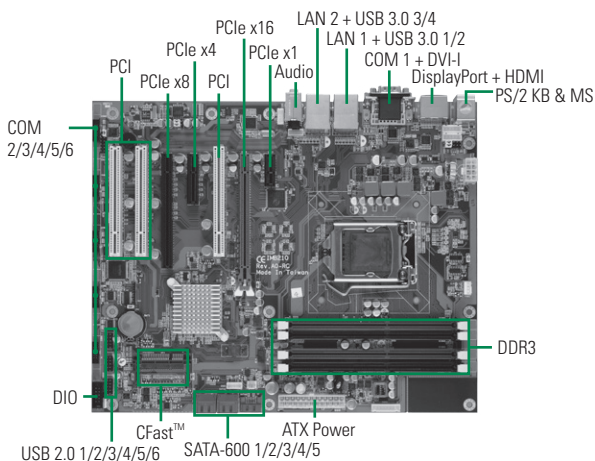


# IMB210

ATX Industrial Motherboard with LGA1150 Socket Intel® Xeon® E3-v3 Processor, Intel® C226, ECC DDR3, USB 3.0, SATA 3.0, Dual LANs, DisplayPort/DVI-I/HDMI and CFast™

## Features

- LGA1150 socket Intel® Xeon® E3-v3, Core™ i7/i5/i3, Pentium® & Celeron® (Haswell/ Haswell Refresh)
- Intel® C226
- 4 DDR3-1333/1600 DIMM, up to 32GB
- DisplayPort, HDMI, DVI-I with triple-view supported
- PCIe x16 Gen. 3 supported
- 5 SATA-600 with RAID 0/1/5/10
- 4 USB 3.0 ports
- TPM 1.2 supported
- Intel® AMT 9.0 supported

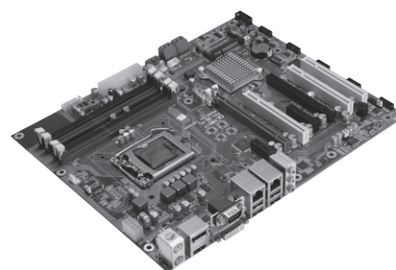


## Core System

CPU	LGA1150 socket 4th generation Intel® Xeon® E3-v3, Core™ i7/i5/i3, Pentium® and Celeron® processor (Haswell/ Haswell Refresh)
System Memory	4 x 240-pin DDR3-1333/1600 DIMM, up to 32GB
Chipset	Intel® C226
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x CFast™
Watchdog Timer	255 levels
Expansion Interface	2 x PCIe x16 Gen. 3 slots (1 PCIe x16 or 2 PCIe x8 when use dual PCIe x8 concurrently ) 1 x PCIe x4 Gen. 2 1 x PCIe x1 Gen. 2 3 x PCI
Battery	Lithium 3 V/220 mAH
Power Requirements	E3-1275V3 3.5 GHz DDR3, 2GB 1333 +5V @ 1.7A, +12V @ 0.55A, +5V SBY @ 0.12A, +3.3V @ 0.73A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 5 x RS-232 (Internal box header) 1 x RS-232/422/485 (Rear IO)
SATA	5 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® i217LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® i210AT
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662 speaker-out with 1W/8ohm x 2
USB	4 x USB 3.0 6 x USB 2.0



▲ Side view

## I/O

TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)

## Display

Display Chipset	Intel® HD Integrated Graphics
Memory Size	Max. up to 1.7GB
Display Interface	1 x DisplayPort 1 x HDMI 1 x DVI-I

## Packing List

User's manual/utility CD, cable

## Ordering Information

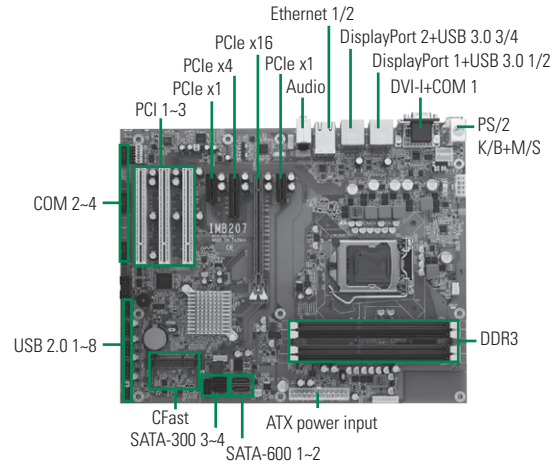
<b>Standard</b>	
IMB210 (P/N: E38F210100)	ATX industrial motherboard with LGA1150 socket Intel® Xeon® E3-v3, Core™ i7/i5/i3, Pentium® & Celeron® (Haswell/ Haswell Refresh) ECC DDR3, USB 3.0, SATA3.0, 2 GbE LANs, DisplayPort/DVI-I/HDMI and CFast™

# IMB208

ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® C216, USB 3.0, DisplayPort/DVI-I (VGA), Dual LANs and CFast™

## Features

- LGA1155 socket 3rd gen Intel® Xeon® E3-V2, Core™ i7/i5/i3 & Celeron® processor (Ivy Bridge)
- 4 DDR3-1333/1600 DIMM, up to 32GB
- 2 DisplayPort and 1 DVI-I (VGA) with triple-view supported
- PCIe Gen. 3 supported
- 2 SATA-600, 3 SATA-300 with RAID 0/1/5/10
- 4 USB 3.0 ports
- TPM 1.2 supported
- Intel® AMT 8.0 supported

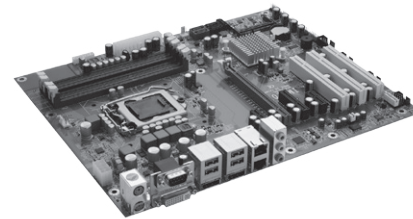


## Core System

CPU	LGA1155 socket 3rd generation Intel® Xeon® E3-V2, Core™ i7/i5/i3 & Celeron® processor (Ivy Bridge)
System Memory	4 x 240-pin DDR3-1333/1600 DIMM, up to 32GB
Chipset	Intel® C216
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 Gen. 3 (slot 2) 1 x PCIe x4 Gen. 2 2 x PCIe x1 Gen. 2 3 x PCI
Battery	Lithium 3 V/220 mAh
Power Requirements	E3-1275V2 3.5 GHz DDR3, 8GB 1600 x 1 +5v@2.8A, +12V@9.3A, -12V@0.4A, +5VSB@0.4A, +3.3V@2.1A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 3 x RS-232 (COM 2/3/4) 1 x RS-232/422/485 (COM 1)
SATA	2 x SATA-600 3 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan Control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82579LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82574L
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662 speaker-out with 1W/8ohm x 2
USB	4 x USB 3.0 8 x USB 2.0
TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)



▲ Side view

## Display

Display Chipset	Intel® HD 4000/2500 graphics
Memory Size	Max. 1.7GB
Display Interface	2 x DisplayPort 1 x DVI-I

## Packing List

User's manual/utility CD, cable

## Ordering Information

Standard	
IMB208 (P/N: E38F208100)	ATX industrial motherboard with LGA1155 socket 3rd gen Intel® Xeon® E3-V2, Core™ i7/i5/i3 & Celeron® USB 3.0, 2 GbE LANs, DisplayPort/DVI-I (VGA) and CFast™

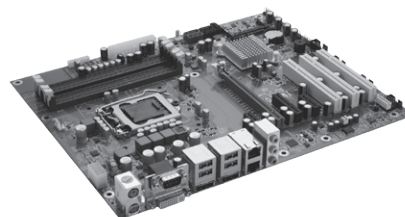
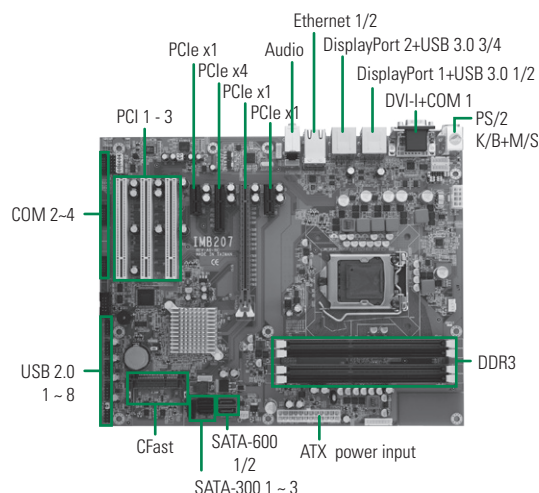


# IMB207

ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® Q77, USB 3.0, DisplayPort/DVI-I, Dual LANs and CFast™

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor (Ivy Bridge)
- 4 DDR3-1333/1600 DIMM, up to 32GB
- 2 DisplayPort and 1 DVI-I with triple-view supported
- PCIe Gen. 3 supported
- 2 SATA-600, 3 SATA-300 with RAID 0/1/5/10
- 4 USB 3.0 ports
- TPM 1.2 supported
- Intel® AMT 8.0 supported



▲ Side view



## Core System

CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron® processor (Ivy Bridge)
System Memory	4 x 240-pin DDR3-1333/1600 DIMM, up to 32GB
Chipset	Intel® Q77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x CFast™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 Gen. 3 (Slot 2) 1 x PCIe x4 Gen. 2 2 x PCIe x1 Gen. 2 3 x PCI
Battery	Lithium 3 V/220 mAH
Power Requirements	Intel® Core™ i7-3770K 3.5 GHz, 8GB DDR3 1600 x 1 +5V @ 2.2A, +12V @ 7.1A, -12V @ 0.2A, +5VSB @ 0.2A, +3.3V @ 1.4A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 3 x RS-232 (COM 2/3/4) 1 x RS-232/422/485 (COM 1)
SATA	2 x SATA-600 3 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan Control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82579LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662 speaker-out with 1W/8ohm x 2
USB	4 x USB 3.0 8 x USB 2.0
TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)

## Display

Display Chipset	Intel® HD 4000/2500 graphics
Memory Size	Max. 1.7GB
Display Interface	2 x DisplayPort 1 x DVI-I

## Packing List

User's manual/utility CD, cable

## Ordering Information

<b>Standard</b>	
IMB207 (P/N: E38F207100)	ATX industrial motherboard with LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 & Celeron®, USB 3.0, 2 GbE LANs, DisplayPort/ DVI-I, 4 COM and CFast™

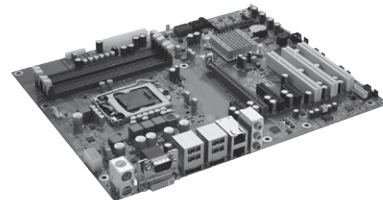
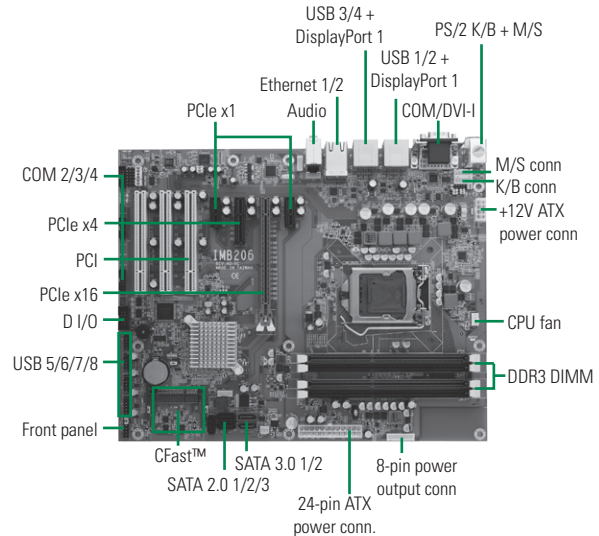


# IMB206

ATX Industrial Motherboard with LGA1155 Socket 2nd Gen Intel® Core™ Processor, Intel® Q67, DVI-I/DisplayPort, Dual LANs and CFAST™

## Features

- LGA1155 socket 2nd gen Intel® Core™ i7/i5/i3 & Celeron® processor (Sandy Bridge)
- 4 DDR3-1066/1333 DIMM, up to 16GB
- 2 DisplayPort and 1 DVI-I with dual-view supported
- PCIe Gen. 2
- 2 SATA-600, 3 SATA-300 with RAID 0/1/5/10
- 12 USB 2.0 ports
- TPM supported
- Intel® AMT 7.0 supported



▲ Side view



## Core System

CPU	LGA1155 socket for 2nd generation Intel® Core™ i7/i5/i3 & Celeron® processors (Sandy Bridge)
System Memory	4 x 240-pin DDR3-1066/1333 DIMM, up to 16GB
Chipset	Intel® Q67 PCH
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	1 x CFAST™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 Gen. 2 (slot 2) 1 x PCIe x4 Gen. 2 2 x PCIe x1 Gen. 2 3 x PCI
Battery	Lithium 3 V/220 mAH
Power Requirements	Intel® quad core CPU, 8GB DDR3, Max. RMS 12V @ 2.4A, +5V @ 1.6A, +3V @ 1.6A, 5V_SB @ 0.2A.
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 3 x RS-232 (COM 2/3/4) 1 x RS-232/422/485 (COM 1)
SATA	2 x SATA-600 3 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan Control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82579LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662 speaker-out with 1W/8ohm x 2
USB	12 x USB 2.0
TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)

## Display

Chipset	Intel® HD 2000/3000 graphics
Memory Size	Max. 1.7GB
Display Interface	2 x DisplayPort 1 x DVI-I

## Packing List

Standard		
User's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
593826A0000E	SATA signal cable 500mm	1
59380502000E	COM+printer cable w/ braket	1

## Ordering Information

Standard	
IMB206DGGGA (P/N: E38F206100)	ATX industrial motherboard with LGA1155 socket Intel® Core™ i7/i5/i3 & Celeron®, Intel® Q67, DisplayPort/DVI-I, 2 GbE LANs, 4 COM, RAID and HD audio

\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

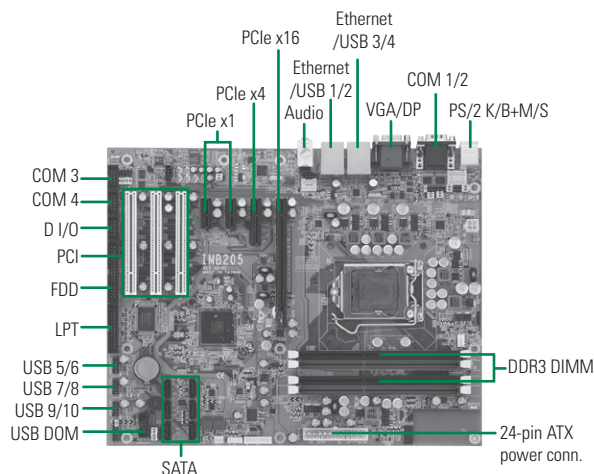


# IMB205

ATX Industrial Motherboard with LGA1156 Socket Intel® Core™ Processor, Intel® Q57, VGA/DisplayPort and Dual LANs

## Features

- LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium® processor
- 4 DDR3-1066/1333 DIMM, up to 16GB
- 6 SATA-300 with RAID 0/1/5/10
- Intel® AMT & TPM (optional) supported
- DisplayPort and VGA with dual-view supported

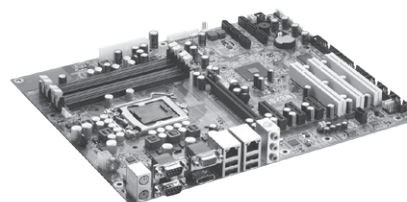


## Core System

CPU	LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium® processor
System Memory	4 x 240-pin DDR3-1066/1333 DIMM, up to 16GB
Chipset	Intel® Q57
BIOS	AMI UEFI BIOS
SSD	USB DOM
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 1 x PCIe x4 (refer to user's manual for setting) 2 x PCIe x1 (refer to user's manual for setting) 3 x PCI
Battery	Lithium 3V/220 mAH
Power Requirements	Intel® Core™ i5-660 @3.33 GHz, 2GB DDR3 Max. RMS: +5V_SBY @ 0.43A, +3.3V @ 0.8A, +5V @ 0.966A, +12V @ 2.533A, -12V @ 0.033A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 3 x RS-232 (COM 2/3/4); with +5V/+12V powered 1 x RS-232/422/485 (COM 1); with +5V/+12V powered
SATA	6 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000Mbps supports iAMT, Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82578DM 2nd port as 10/100/1000Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82574L
Audio	HD Codec audio as MIC-in/ Line-out/Speaker-out
USB	12 x USB 2.0 ,4 ports on the rear I/O, 8 ports with pin-headers
TPM	Infineon SLB9635 for trusted platform (optional)
SMBus	System Management Bus for advanced monitoring/control interface
Digital I/O	8 channels (4-IN & 4-OUT)



▲ Side view

## Display

Chipset	Intel® HD graphics
Memory Size	Intel® DVM T 5.0 compliant
Display Interface	1 x VGA 1 x DisplayPort

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
593826A0000E	SATA signal cable 500 mm	1
59380502000E	COM + printer cable w/ bracket	1

## Ordering Information

### Standard

IMB205VGGA (P/N: E38F205100)	ATX industrial motherboard with LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium®, VGA/DisplayPort, 2 GbE LANs, 4 COM, audio, iAMT and RAID
IMB205VGGA TPM (P/N: E38F205101)	ATX industrial motherboard with LGA1156 socket Intel® Core™ i7/i5/i3 & Pentium®, VGA/DisplayPort, 2 GbE LANs, 4 COM, audio, iAMT, TPM and RAID

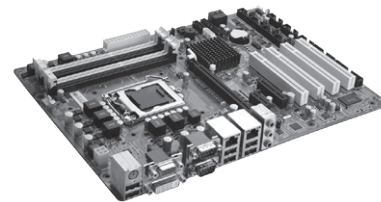
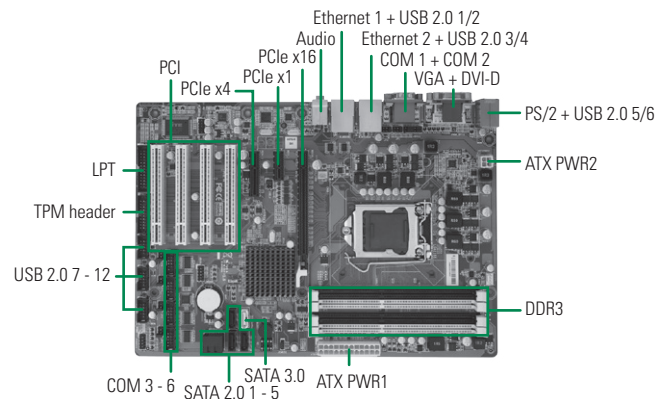
\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

# IMB204

ATX Industrial Motherboard with LGA1155 Socket Intel® Core™ Processor, Intel® B75, SATA3.0, Dual LANs, DVI-D/VGA and LPT

## Features

- LGA1155 socket 3rd gen Intel® Core™ i7/i5/i3 & Celeron® processor
- 4 DDR3-1333/1600 DIMM, up to 32GB
- VGA and DVI-D with dual-view supported
- PCIe Gen. 3 supported
- 1 SATA-600 and 5 SATA-300
- 12 USB 2.0 ports
- TPM 1.0 header support



▲ Side view



## Core System

CPU	LGA1155 socket Intel® Core™ i7/i5/i3 & Celeron® processor
System Memory	4 x 240-pin DDR3-1333/1600 DIMM, up to 32GB
Chipset	Intel® B75
BIOS	AMI
SSD	N/1
Watchdog Timer	255 levels
Expansion Interface	1 x PCIe x16 Gen. 3 1 x PCIe x4 Gen. 2 1 x PCIe x1 Gen. 2 4 x PCI
Battery	Lithium 3 V/ 220 mAH
Power Requirements	Intel® Core™ i5-2320 3.0 GHz 2GB x 4 DDR3-1333, +12V @ 7.06A, +5V @ 10.21A, +5VSB @ 0.02A, +3.3V @ 1.25A
Size	305 x 244 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 5 x RS-232 (COM 2/3/4/5/6) 1 x RS-232/422/485 (COM 1) 1 x LPT 1 x TPM header
SATA	1 x SATA-600 & 5 x SATA-300
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart fan control
Ethernet	1st port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82574LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82579V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC892
USB	12 x USB 2.0
TPM	Support TPM1.0 header
SMBus	System Management Bus for advanced monitoring/control
Digital I/O	8 channels (4-IN & 4-OUT)

## Display

Chipset	Intel® HD 4000/2500 graphics
Memory Size	Max. 1.7GB
Display Interface	1 x VGA 1 x DVI-D

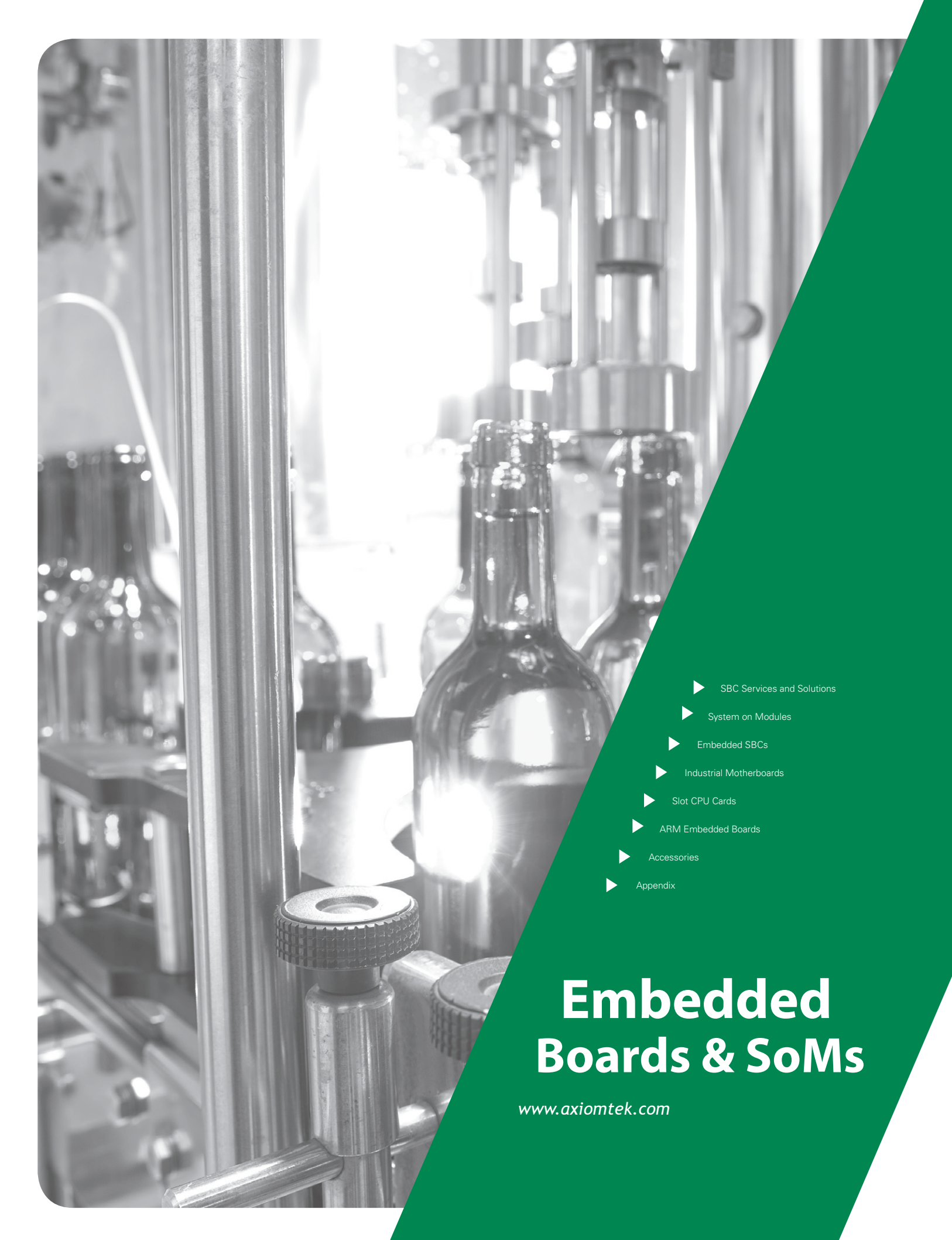
## Packing List

<b>Standard</b>	User's manual/utility CD cable, I/O bracket
-----------------	---

## Ordering Information

<b>Standard</b>	
IMB204 (P/N: E38F204101)	ATX industrial motherboard with LGA1155 socket Intel® Core™ i7/i5/i3 & Celeron® processor, 2 GbE LANs, DVI-D/VGA, 6 COM and LPT
<b>Optional</b>	
59460642100E	COM port cable, 5 x 2P, P=2.54 mm, L=300 mm
593F2040300E	LPT cable, w/ bracket, P=2.54 mm, L=300 mm
594F2112100E	COM port DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK
594F2112110E	COM port x2 DB9 to 5 x 2P, P=2.54 mm, L=300 mm w/BK



- 
- ▶ SBC Services and Solutions
  - ▶ System on Modules
  - ▶ Embedded SBCs
  - ▶ Industrial Motherboards
  - ▶ Slot CPU Cards
  - ▶ ARM Embedded Boards
  - ▶ Accessories
  - ▶ Appendix

# Embedded Boards & SoMs

[www.axiomtek.com](http://www.axiomtek.com)

# 4

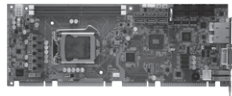
## Slot CPU Cards

The Slot CPU card family is featured by VIA V4, Intel® Celeron®/ Celeron® D/ Celeron® M/ Pentium® 4/ Pentium® D/ Pentium® M/ Core™ Duo/ Core™2 Duo/ Core™2 Extreme up to Core™2 Quad and Core™ i processors. The PICMG 1.0 full-size CPU card uses multiple-slot PCI and ISA expansion to suit customer demands. The PICMG 1.0 half-size CPU card is mainly for small footprint with limited slot expansion. The PICMG 1.3 full-size CPU card is ideal for performance-demanding and bandwidth-concerned applications. And the PICMG 1.3 half-size CPU card is specially designed for space-concerned yet performance-demanding applications.

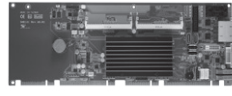
Selection Guide	209
PICMG 1.3 System Host Boards	
Full-size	
SHB140 <b>NEW</b>	PICMG 1.3 Full-size CPU Card with LGA1151 6th/7th Gen Intel® Core™, Intel® Q170, SATA3, USB 3.0, LAN and DVI-I 214
SHB131 <b>NEW</b>	PICMG 1.3 Full-size CPU Card with 4th Gen Intel® Core™ i7/i5 & Celeron® U-series Processor, SATA3, USB 3.0, LAN and Dual DVI-D 215
SHB130	PICMG 1.3 Full-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q87, SATA3, USB 3.0, DVI-D/VGA or DisplayPort for Dual Displays and Dual LANs 216
SHB120	PICMG 1.3 Full-size CPU Card with LGA1155 3rd Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q77, SATA3, USB 3.0, VGA/DVI and Dual LANs 217
SHB108	PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 & Xeon® Processor, Intel® C206, VGA, Dual LANs, Audio and ECC Memory 218
SHB106	PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® Q67, VGA, Dual LANs and Audio 219
SHB103	PICMG 1.3 Full-size CPU Card with LGA1156 Socket Intel® Core™ i7/i5/i3 & Pentium® Processor, Intel® Q57, VGA, Dual LANs and Audio 220
SHB111	PICMG 1.3 Full-size CPU Card with Socket G Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® QM57, VGA, LVDS, Dual LANs and Audio 221
Half-size	
SHB230	PICMG 1.3 Half-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® Q87, SATA3, USB 3.0, DVI-I/LVDS and Dual LANs 222
SHB213	PICMG 1.3 Half-size CPU Card with Socket G2 2nd Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM65, VGA, SATA3, USB 3.0 and Dual LANs 223
PICMG 1.0 CPU Cards	
Full-size	
SBC81210	PICMG 1.0 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® B65/Q67, VGA and Dual LANs 224

# PICMG 1.3 Full-size System Host Boards

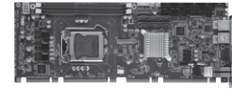
## Selection Guide



Page 214

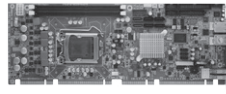


Page 215

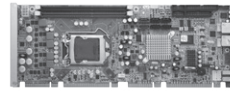


Page 216

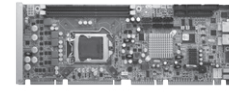
Features/Models	SHB140	SHB131	SHB130
<b>Form Factor</b>	PICMG 1.3	PICMG 1.3	PICMG 1.3
<b>CPU Level</b>	6th/7th Gen Intel® Core™ i7/i5/i3	4th Gen Intel® Core™ i7/i5 & Celeron®	4th Gen Intel® Core™ i7/i5 & Celeron®
<b>CPU Socket</b>	LGA1151	BGA1168	LGA1150
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	Intel® Q170	SoC	Intel® Q87
<b>Memory Type</b>	DDR4-2133	DDR3L-1600	DDR3-1333/1600
<b>Max. DRAM Capacity</b>	32GB	16GB	16GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI	AMI UEFI BIOS with OA 3.0 built
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	N/A
<b>Onboard Digital I/O</b>	N/A	N/A	N/A
<b>I/O</b>			
<b>IDE</b>	N/A	N/A	N/A
<b>SATA</b>	6 x SATA-600	2 x SATA-600	6 x SATA-600
<b>FDD</b>	N/A	N/A	N/A
<b>LPT</b>	N/A	1 x LPT	1 x LPT
<b>Serial</b>			
<b>COM 1</b>	RS-232/422/485	RS-232	RS-232/422/485
<b>COM 2</b>	RS-232	RS-232	RS-232
<b>COM 3</b>	RS-232	N/A	RS-232
<b>COM 4</b>	RS-232	N/A	RS-232
<b>COM 5</b>	RS-232	N/A	RS-232
<b>USB</b>	10 x USB 2.0, 2 x USB 3.0	6 x USB 2.0, 2 x USB 3.0	10 x USB 2.0, 4 x USB 3.0
<b>IrDA</b>	N/A	N/A	N/A
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	1 x DVI-I	2 x DVI-D	1 x VGA or DisplayPort 1 x DVI-D
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	N/A	Yes
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	1 x PCIe x4 or 4 x PCIe x1	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	UL, CE, FCC	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



Page 217



Page 218



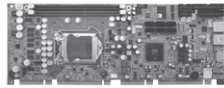
Page 219

Features/Models	SHB120	SHB108	SHB106
<b>Form Factor</b>	PICMG 1.3	PICMG 1.3	PICMG 1.3
<b>CPU Level</b>	3rd Gen Intel® Core™ i7/i5/i3	Intel® Xeon® & 3rd Gen Intel® Core™ i7/i5/i3	3rd Gen Intel® Core™ i7/i5/i3
<b>CPU Socket</b>	LGA1155	LGA1155	LGA1155
<b>CPU FSB Frequency</b>	N/A	N/A	N/A
<b>Core Logic Chipset</b>	Intel® Q77	Intel® C206	Intel® Q67
<b>Memory Type</b>	DDR3-1333/1600	DDR3-1066/1333	DDR3-1066/1333
<b>Max. DRAM Capacity</b>	1GB	16GB	16GB
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	Integrated in CPU
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS	AMI UEFI BIOS
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	255 levels, 1~255 sec.
<b>Onboard SSD</b>	N/A	N/A	N/A
<b>Onboard Digital I/O</b>	N/A	N/A	N/A
<b>IDE</b>	N/A	N/A	N/A
<b>SATA</b>	4 x SATA-300, 2 x SATA-600	4 x SATA-300, 2 x SATA-600	4 x SATA-300, 2 x SATA-600
<b>FDD</b>	1 x FDD	1 x FDD	1 x FDD
<b>LPT</b>	1 x LPT	1 x LPT	1 x LPT
<b>I/O</b>	<b>COM 1</b>	RS-232/422/485	RS-232/422/485
	<b>COM 2</b>	RS-232	RS-232
	<b>Serial COM 3</b>	N/A	N/A
	<b>COM 4</b>	N/A	N/A
	<b>COM 5</b>	N/A	N/A
<b>USB</b>	10 x USB 2.0, 4 x USB 3.0	14 x USB 2.0	14 x USB 2.0
<b>IrDA</b>	N/A	N/A	N/A
<b>IEEE 1394a</b>	N/A	N/A	N/A
<b>Display</b>	1 x VGA or DisplayPort	1 x VGA or DisplayPort	1 x VGA or DisplayPort
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>	HD Codec	HD Codec	HD Codec
<b>Hardware Monitoring</b>	Yes	Yes	Yes
<b>SMBus</b>	Yes	Yes	Yes
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI
<b>Power Management</b>	ACPI	ACPI	ACPI
<b>Battery</b>	Lithium	Lithium	Lithium
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
<b>EMI Compliance</b>	CE	CE	CE
<b>Wide Temperature</b>	N/A	N/A	N/A



# PICMG 1.3 Full-size System Host Boards

## Selection Guide



Page 220



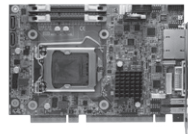
Page 221

Features/Models	SHB103	SHB111	
<b>Form Factor</b>	PICMG 1.3	PICMG 1.3	
<b>CPU Level</b>	Intel® Core™ i7/i5/i3 & Pentium®	Intel® Core™ i7/i5/i3	
<b>CPU Socket</b>	LGA1156	Socket G	
<b>CPU FSB Frequency</b>	N/A	N/A	
<b>Core Logic Chipset</b>	Intel® Q57	Intel® QM57	
<b>Memory Type</b>	DDR3-1066/1333	DDR3-800/1066	
<b>Max. DRAM Capacity</b>	8GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 levels, 1~255 sec.	255 levels, 1~255 sec.	
<b>Onboard SSD</b>	N/A	1 x CompactFlash™	
<b>Onboard Digital I/O</b>	N/A	N/A	
<b>IDE</b>	N/A	N/A	
<b>SATA</b>	6 x SATA-300	6 x SATA-300	
<b>FDD</b>	1 x FDD	1 x FDD	
<b>LPT</b>	1 x LPT	1 x LPT	
<b>I/O</b>	<b>COM 1</b>	RS-232/422/485	RS-232
	<b>COM 2</b>	RS-232	RS-232/422/485
	<b>Serial COM 3</b>	N/A	N/A
	<b>COM 4</b>	N/A	N/A
	<b>COM 5</b>	N/A	N/A
<b>USB</b>	12 x USB 2.0	14 x USB 2.0	
<b>IrDA</b>	N/A	N/A	
<b>IEEE 1394a</b>	N/A	N/A	
<b>Display</b>	1 x VGA or DisplayPort	1 x VGA 1 x LVDS	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	HD Codec	
<b>Hardware Monitoring</b>	Yes	Yes	
<b>SMBus</b>	Yes	Yes	
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	
<b>Power Management</b>	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	

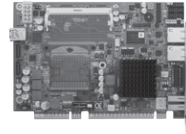


# PICMG 1.3 Half-size System Host Boards

## Selection Guide



Page 222



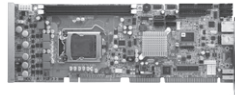
Page 223

Features/Models	SHB230	SHB213	
<b>Form Factor</b>	PICMG1.3	PICMG 1.3	
<b>CPU Level</b>	Intel® Core™ i7/i5/i3	Intel® Core™ i7/i5/i3 & Celeron®	
<b>CPU Socket</b>	LGA1150	Socket G2	
<b>CPU FSB Frequency</b>	N/A	N/A	
<b>Core Logic Chipset</b>	Intel® Q87	Intel® HM65	
<b>Memory Type</b>	DDR3-1333/1600	DDR3-1066/1333	
<b>Max. DRAM Capacity</b>	16GB	8GB	
<b>Cache RAM Capacity</b>	Integrated in CPU	Integrated in CPU	
<b>BIOS</b>	AMI UEFI BIOS with OA 3.0 built	AMI UEFI BIOS	
<b>Watchdog Timer</b>	255 levels, 1-255 sec.	255 levels, 1-255 sec.	
<b>Onboard SSD</b>	1 x CFast™	1 x CFast™	
<b>Onboard Digital I/O</b>	Yes	N/A	
<b>IDE</b>	N/A	N/A	
<b>SATA</b>	2 x SATA-600	2 x SATA-600	
<b>FDD</b>	N/A	N/A	
<b>LPT</b>	N/A	N/A	
<b>I/O</b>	<b>COM 1</b>	RS-232-422-485	RS-232/422/485
	<b>COM 2</b>	RS-232-422-485	RS-232
	<b>Serial COM 3</b>	N/A	N/A
	<b>COM 4</b>	N/A	N/A
	<b>COM 5</b>	N/A	N/A
	<b>USB</b>	4 x USB 2.0 2 x USB 3.0	2 x USB 3.0 6 x USB 2.0
<b>IrDA</b>	N/A	N/A	
<b>IEEE 1394a</b>	N/A	N/A	
<b>Display</b>	1 x DVI-I 1 x LVDS	1 x VGA	
<b>Ethernet</b>	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	
<b>Audio</b>	HD Codec	N/A	
<b>Hardware Monitoring</b>	N/A	Yes	
<b>SMBus</b>	N/A	Yes	
<b>Expansion Interface</b>	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1	
<b>Power Management</b>	ACPI	ACPI	
<b>Battery</b>	Lithium	Lithium	
<b>Operating Temperature</b>	0°C ~ +60°C (32°F ~ 140°F)	0°C ~ +60°C (32°F ~ 140°F)	
<b>Relative Humidity</b>	10% to 95%, non-condensing	10% to 95%, non-condensing	
<b>EMI Compliance</b>	CE	CE	
<b>Wide Temperature</b>	N/A	N/A	



# PICMG 1.0 Full-size CPU Cards

## Selection Guide



Page 224

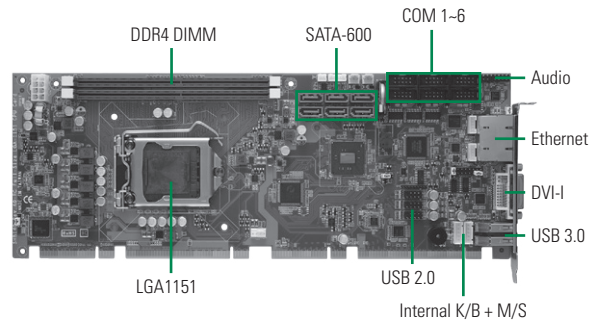
Features/Models		SBC81210
<b>Form Factor</b>		PICMG 1.0
<b>CPU Level</b>		Intel® Core™ i7/i5/i3 & Celeron®
<b>CPU Socket</b>		LGA1155
<b>CPU FSB Frequency</b>		N/A
<b>Core Logic Chipset</b>		Intel® B65
<b>Memory Type</b>		DDR3-1066/1333
<b>Max. DRAM Capacity</b>		8GB
<b>Cache RAM Capacity</b>		Integrated in CPU
<b>BIOS</b>		AMI UEFI BIOS
<b>Watchdog Timer</b>		255 levels, 0~255 sec.
<b>Onboard SSD</b>		N/A
<b>Onboard Digital I/O</b>		N/A
	<b>IDE</b>	N/A
	<b>SATA</b>	1 x SATA-600 & 3 SATA-300
	<b>FDD</b>	1 x FDD
	<b>LPT</b>	1 x LPT
<b>I/O</b>	<b>COM 1</b>	RS-232
	<b>COM 2</b>	RS-232/422/485
	<b>Serial COM 3</b>	N/A
	<b>Serial COM 4</b>	N/A
	<b>Serial COM 5</b>	N/A
	<b>USB</b>	6 x USB 2.0
	<b>IrDA</b>	N/A
<b>IEEE 1394a</b>		N/A
<b>Display</b>		1 x VGA
<b>Ethernet</b>		2 x 10/100/1000 Mbps Ethernet
<b>Audio</b>		By audio converter
<b>Hardware Monitoring</b>		Yes
<b>SMBus</b>		Yes
<b>Expansion Interface</b>		PCI
<b>Power Management</b>		ACPI
<b>Battery</b>		Lithium
<b>Operating Temperature</b>		0°C ~ +60°C (32°F ~ 140°F)
<b>Relative Humidity</b>		10% to 95%, non-condensing
<b>EMI Compliance</b>		CE
<b>Wide Temperature</b>		N/A

# SHB140 NEW

PICMG 1.3 Full-size CPU Card with LGA1151 6th/7th Gen Intel® Core™, Intel® Q170, SATA3, USB 3.0, LAN and DVI-I

## Features

- LGA1151 6th/7th gen Intel® Core™ processor
- Intel® Q170 chipset
- 2 DDR4-2133 un-buffered DIMM, up to 32GB
- Intel® AMT 11 & TPM (optional) supported
- PCIe Gen. 3 at 8GT/s supported
- 10 USB 2.0 and 4 USB 3.0 ports
- 6 SATA-600 with RAID 0/1/5/10



### Core System

CPU	LGA1151 socket 6th/7th generation Intel® Core™ processor, TDP up to 65W vPro supported
System Memory	2 x 288-pin DDR4-2133 un-buffered DIMM, up to 32GB
Chipset	Intel® Q170
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	Edge Connector A: 1 x PCIe x16 Gen. 3 Edge Connector B: 1 x PCIe x4 or 4 x PCIe x1 Gen. 2 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAh
Power Requirements	Intel® Core™ i7-6700, 8GB DDR4-2133 x 2 +5V @ 1.38A, +12V @ 2.13A, +5VSB @ 0.72A, +3.3V @ 0.54A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (+32°F ~ +140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 keyboard and mouse 5 x RS-232 (COM 2-6) 1 x RS-232/422/485 (COM 1), mode selection by SW 2 x Smart fan for system Fan 1/Fan 2
RIO	2 x RJ-45, 1 x DVI-I, 2 x USB 3.0
SATA	6 x SATA-600, support RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1st port as 10/100/1000 Mbps supports WOL/RPL/PXE Boot ROM with Intel® i219LM (AMT 11 supported) 2nd port as 10/100/1000 Mbps supports WOL/RPL/PXE Boot ROM with Intel® i211AT
Audio	1 x HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	10 x USB 2.0, 2 x USB 3.0
SMBus	N/A
TPM	Infineon SLB9635 for trusted platform (optional)

### Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVM T 5.0
Display Interface	1 x DVI-I

### Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
593826A0000E	SATA signal cable, 500 mm	1

### Ordering Information

Standard	
SHB140DGGA (P/N: E38C140101)	PICMG 1.3 full-size CPU card with LGA1151 socket, DVI-I, 2 GbE LANs and audio, PCIe x1
SHB140DGGA (P/N: E38C140102)	PICMG 1.3 full-size CPU card with LGA1151 socket, DVI-I, 2 GbE LANs and audio, PCIe x4
Optional	
E9B900C000	LGA1156 cooler 4-pin, H= 61.4 mm
50761222000E	LGA1156 2U cooler 3-pin, H= 68.8 mm
5938A808010E	2 x USB 2.0 cable w/bracket, P=2.54 mm, L=190 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593836A0030E	4 pin power cable to SATA x 2, L=150 mm
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
5948C122800E	2 x USB 3.0 cable w/bracket 20P, L=400 mm
59380703000E	COM port cable x 2 w/ bracket, P=2.54, L=300 mm (RC)



# SHB131 NEW

PICMG 1.3 Full-size CPU Card with 4th Gen Intel® Core™ i7/i5 & Celeron® U-series Processor, SATA3, USB 3.0, LAN and Dual DVI-D

## Features

- 4th gen Intel® Core™ i7/i5 & Celeron® U-series processors
- 2 DDR3L-1600 SO-DIMM, up to 16GB
- 2 DVI-D with dual-view supported
- 2 SATA-600 with RAID 0/1
- USB 3.0 supported

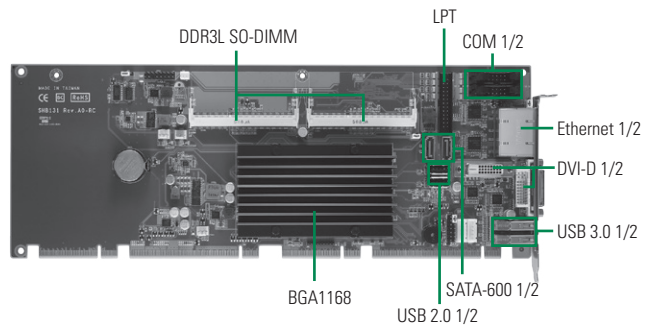


### Core System

CPU	4th generation Intel® Core™ i7/i5 & Celeron® U-series processor, TDP up to 15W
System Memory	2 x 204-pin DDR3L-1600 SO-DIMM, up to 16GB
Chipset	SoC integrated
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	Edge Connector A & B: 1 x PCIe x4 or 4 x PCIe x1, Gen. 2 Edge Connector C: 4 x USB 2.0
Battery	Lithium 3V/220 mAH
Power Requirements	Intel® Core™ i7-4650U, 8GB DDR3L-1600 x 2 +5V @ 1.2A, +12V @ 1.7A, +3.3V @ 0.2A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 2 x RS-232 (COM 1/2) 2 x USB 2.0 2 x fan for system Fan 1/Fan 2 1 x DVI-D
RIO	2 x RJ-45 1 x DVI-D 2 x USB 3.0
SATA	2 x SATA 6Gbps with RAID 0/1 (Intel® Core™) 2 x SATA 6Gbps (Intel® Celeron®)
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support WOL, RPL/PXE Boot ROM with Intel® i211AT
Audio	1 x HD Codec audio as MIC-in/Line-in/Line-out/speaker-out with audio kit AX93242 (optional)
USB	6 x USB 2.0 and 2 x USB 3.0
SMBus	N/A
TPM	N/A



### Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT 5.0
Display Interface	2 x DVI-D

### Packing List

#### Standard

Quick installation guide, user's manual/utility CD, cable

#### Cable

Part Number	Description	Qty
59380502000E	COM+Print cable w/bracket	1
593826A00000E	SATA signal cable, 500 mm	1

### Ordering Information

#### Standard

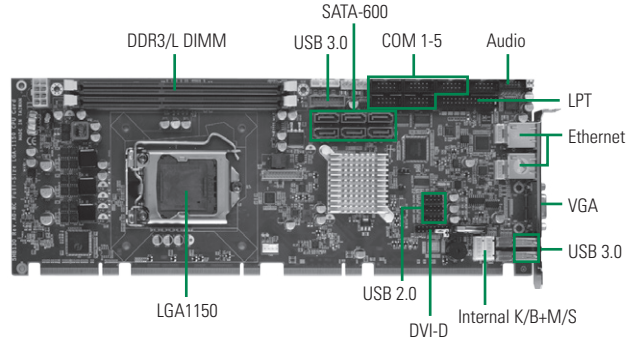
SHB131DGGA-i7-4650U (P/N: E38C131100)	PICMG 1.3 full-size CPU card with Intel® Core™ i7-4650U processor, DVI-D, 2 GbE LANs and audio
SHB131DGGA-i5-4300U (P/N: E38C131101)	PICMG 1.3 full-size CPU card with Intel® Core™ i5-4300U processor, DVI-D, 2 GbE LANs and audio
SHB131DGGA-Celeron-2980U (P/N: E38C131102)	PICMG 1.3 full-size CPU card with Intel® Celeron® 2980U processor, DVI-D, 2 GbE LANs and audio

# SHB130

PICMG 1.3 Full-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q87, SATA3, USB 3.0, DVI-D/VGA or DisplayPort for Dual Displays and Dual LANs

## Features

- LGA1150 socket 4th gen Intel® Core™ i7/i5/i3 processor (Haswell/Haswell Refresh)
- Intel® Q87 chipset
- 2 DDR3-1333/1600 DIMM, up to 16GB
- Intel® AMT 9.0 & TPM supported (optional)
- PCIe Gen. 3 at 8GT/s supported
- DisplayPort/DVI-D/VGA with dual-view supported
- 6 SATA-600 with RAID 0/1/5/10
- USB 3.0 supported



## Core System

CPU	LGA1150 socket 4th generation Intel® Core™ i7/i5/i3 processor (Haswell/Haswell Refresh), TDP up to 65W
System Memory	2 x 240-pin DDR3-1333/1600 DIMM, up to 16GB
Chipset	Intel® Q87
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	Edge Connector A: 1 x PCIe x16, Gen. 3 Edge Connector B: 1 x PCIe x4 or 4 x PCIe x1, Gen. 2 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAh
Power Requirements	Intel® Core™ i7-4770S +5V @ 2.26A, +12V @ 4.68A, +5VSB @ 0.2A, +3.3V @ 2.3A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 4 x RS-232 (COM 2/3/4/5) 1 x RS-232/422/485 (COM 1), mode selection by SW 1 x DVI-D 2 x Smart fan for system Fan 1/Fan 2 1 x DIO (4-IN & 4-OUT)
RIO	2 x RJ-45, 1 x VGA or DisplayPort, 2 x USB 3.0
SATA	6 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st ports as 10/100/1000 Mbps supports WOL/RPL/PXE Boot ROM with Intel® i217LM with iAMT 9.0 supported 2nd port as 10/100/1000 Mbps supports WOL/RPL/PXE Boot ROM with Intel® i210AT
Audio	1 x HD Codec audio as Mic-in/Line-in/Line-out/Speaker-out with ALC662
USB	10 x USB 2.0 4 x USB 3.0
SMBus	N/A
TPM	Infineon SLB9635 for trusted platform(optional)

## Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT 5.0
Display Interface	1 x VGA (default) 1 x DVI-D (header) 1 x DisplayPort (optional)

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380502000E	COM+print cable w/bracket	1
593826A0000E	SATA signal cable, 500 mm	1

## Ordering Information

### Standard

SHB130VGGA	PICMG1.3 full-size CPU card with LGA1150 socket, VGA, 2 GbE LANs and audio
(P/N: E38C130101)	
SHB130PGGA	PICMG1.3 full-size CPU card with LGA1150 socket, DisplayPort, 2 GbE LANs and audio
(P/N: E38C130100)	

### Optional

E9B900C000	LGA1156 cooler 4-pin, H=61.4 mm
50761222000E	LGA1156 2U cooler 3-pin, H=68.8 mm
5938A808010E	2 x USB 2.0 cable w/bracket, P=2.54mm, L=190 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593836A0030E	4 pin power cable to SATA x 2, L=150 mm
59384500100E	Audio cable w/ bracket P=2.0 mm, L=450 mm
594C1093500E	DVI cable 24-pin header to DVI-D, L=30 mm
71193221200E	DVI bracket
5948C122800E	2 x USB 3.0 cable w/bracket, 20P, L=400 mm

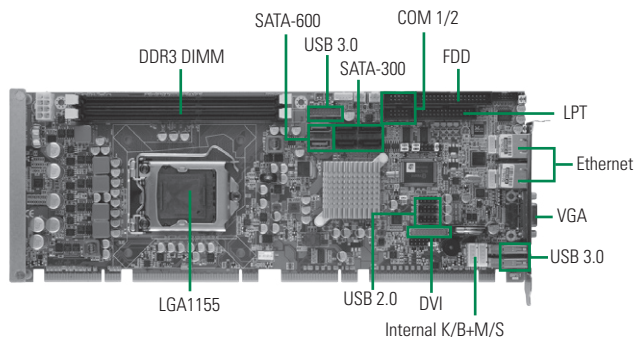


# SHB120

PICMG 1.3 Full-size CPU Card with LGA1155 3rd Gen Intel® Core™ i7/i5/i3 Processor, Intel® Q77, SATA3, USB 3.0, VGA/DVI and Dual LANs

## Features

- LGA1155 3rd gen Intel® Core™ i7/i5/i3 processor (Ivy Bridge)
- Intel® Q77 chipset
- 2 DDR3-1333/1600 DIMM, up to 16GB
- Intel® AMT 8.0 & TPM (optional) supported
- PCIe Gen. 3 at 8GT/s supported
- USB 3.0 ports
- DVI/VGA and optional DisplayPort with dual-view supported



## Core System

CPU	LGA1155 socket 3rd generation Intel® Core™ i7/i5/i3 processor (Ivy Bridge)
System Memory	2 x 240-pin DDR3-1333/1600 DIMM, up to 16GB
Chipset	Intel® Q77
BIOS	AMI UEFI BIOS with OA 3.0 built
SSD	N/A
Watchdog Timer	225 levels, 1-255 sec.
Expansion Interface	1 x PCIe x16, Gen. 3 1 x PCIe x4 (or 4 PCIe x1), Gen. 2 4 x 32 bit PCI bus masters
Battery	Lithium 3v/220 mAH
Power Requirements	Intel® Core™ i7-2700K +5V @ 2.1A, +12V @ 8A, +5VSb @ 0.1A, +3.3V @ 2.3A
Size	338 x 122 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232 (COM 2) 1 x RS-232/422/425 (COM 1) 1 x DVI-D
RIO	2 x RJ-45 1 x VGA or Displayport 2 x USB 3.0
SATA	2 x SATA-600 4 x SATA-300 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1st ports as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® 82574L 2nd port as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® 82579LM
Audio	1 x HD Codec audio as MIC-in/Line-in/Line-out/speaker-out with ALC662
USB	10 x USB 2.0 4 x USB 3.0
SMBus	Yes
TPM	Infineon SLB9635 for trusted platform (optional)

## Display

Chipset	Intel® HD Graphics
Memory Size	Max. up to 352MB frame buffer dedicated memory
Display Interface	1 x VGA (default) 1 x DVI-D (header) 1 x DisplayPort (optional)

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380502000E	COM+Print cable w/bracket	1
593826A0000E	SATA signal cable 500 mm	1

## Ordering Information

### Standard

SHB120VGGA	PICMG1.3 full-size CPU card with LGA1155 socket, VGA, (P/N: E38C120100)	2 GbE LANs and audio
SHB120PGGA	PICMG1.3 full-size CPU card with LGA1155 socket, (P/N: E38C120101)	DisplayPort, 2 GbE LANs and audio

### Optional

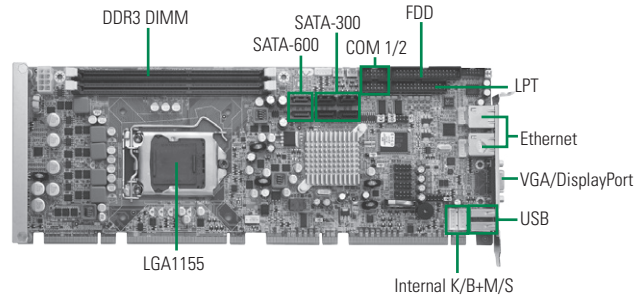
E9B900C000	LGA1156 cooler 4-pin H: 61.4 mm
50761222000E	LGA1156 2U cooler 3-pin H: 68.8 mm
5938A808010E	2 x USB 2.0 cable w/bracket, P=2.54 mm, L=190 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable 500 mm
593836A0030E	4 pin power cable to SATA x 2, L=150 mm
594C1093500E	DVI cable 24-pin header to DVI-D, L=300 mm
71193221200E	DVI bracket
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
5948C122800E	2 x USB 3.0 cable w/bracket 20P, L=400 mm

# SHB108

PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 & Xeon® Processor, Intel® C206, VGA, Dual LANs, Audio and ECC Memory

## Features

- LGA1155 socket Intel® Core™ i7/i5/i3 and Xeon® processor
- Intel® C206 chipset
- 2 DDR3-1066/1333 DIMM, up to 16GB
- Intel® AMT 7.0 & TPM supported
- SATA-600 supported
- PCIe Gen. 2 at 5GT/s supported
- Supports ECC memory



### Core System

CPU	LGA1155 socket Intel® Core™ i7/i5/i3 and Xeon® processor
System Memory	2 x 240-pin DDR3-1066/1333 DIMM, up to 16GB
Chipset	Intel® C206
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 graphics port supports for SDVO or PCIe x1 devices 4 x PCIe lanes support 1 PCIe x4 or 4 PCIe x1 I/O devices 4 x 32-bit PCI bus masters
Battery Lithium	3V/220mAH
Power Requirements	Intel® Xeon® E3-1275 @ 3.4 GHz, 1 GB DDR3 +5V SBY @ 0.1A, +3.3V @ 0.7A, +5V @ 0.95A, +12V @ 2.23A, -12V @ 17mA
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232/422/485 (COM 1) 1 x RS-232 (COM 2)
SATA	2 x SATA-600 4 x SATA-300 with RAID 0/1/10/5
Hardware Monitoring	Supports CPU/System temperature, CPU/System voltage, and CPU/System Smart Fan features
Ethernet	1st port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82579LM 2nd port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82574L
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	14 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
TPM	Infineon SLB9635 for trusted platform

### Display

Chipset	Intel® HD graphics
Memory Size	Max. up to 352MB frame buffer dedicated memory
Display Interface	1 x VGA 1 x DisplayPort (optional)

### Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
59380502000E	COM + Print cable w/ bracket	1
593826A0000E	SATA signal cable 500 mm	1

### Ordering Information

Standard		
SHB108VGGA (P/N: E38C108100)	PICMG 1.3 full-size CPU card with LGA1155 socket, VGA, 2 GbE LANs and audio, BIOS x4	
SHB108PGGA (P/N: E38C108101)	PICMG 1.3 Full-size CPU card with LGA1155 socket, DisplayPort, 2 GbE LANs and audio, BIOS x4	
Optional		
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm	
5938A808010E	2 x USB cable with bracket, P=2.54 mm, L=190 mm	
593836A0030E	4-pin power cable to SATA x 2, L=150 mm	
59380000290E	PS/2 keyboard and mouse cable with bracket	
E9B900C000	LGA1156 cooler 4-pin H=61.4 mm	
50761222000E	LGA1156 2U cooler 3pin H=68.8 mm	

\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

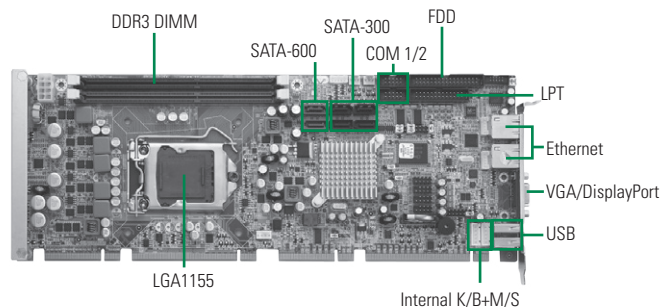


# SHB106

PICMG 1.3 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® Q67, VGA, Dual LANs and Audio

## Features

- LGA1155 socket Intel® Core™ i7/i5/i3 processor
- 2 DDR3-1066/1333 DIMM, up to 16GB
- Intel® AMT 7.0 & TPM supported
- 2 SATA-600 supported
- PCIe Gen2 at 5GT/s supported



## Core System

CPU	LGA1155 socket for Intel® Core™ i7/i5/i3 processor
System Memory	2 x 240-pin DDR3-1066/1333 DIMM, up to 16GB
Chipset	Intel® Q67
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 graphics port support for SDVO or PCIe x1 devices 4 x PCIe lanes support 1 PCIe x4 or 4 PCIe x1 I/O devices 4 x 32-bit PCI bus masters
Battery Lithium	3V/220mAH
Power Requirements	Intel® Core™ i5-2400 @ 3.1 GHz, 4 GB DDR3 +5V SBY @ 6.2mA, +3.3 @ 0.8A, +5V @ 1.34A, +12V @ 2.94A, -12V @ 0.08A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232/422/485 (COM 1) 1 x RS-232 (COM 2)
SATA	2 x SATA-600 4 x SATA-300 with RAID 0/1/10/5
Hardware Monitoring	Supports CPU/System temperature, CPU/System voltage, and CPU/System Smart Fan features
Ethernet	1st port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM, iAMT with Intel® 82579LM 2nd port 10/100/1000 Mbps supports Wake-on-LAN, PXE Boot ROM with Intel® 82574L
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	14 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control
TPM	Infineon SLB9635 for trusted platform

## Display

Chipset	Intel® HD graphics
Memory Size	Max. up to 352 MB frame buffer dedicated memory
Display Interface	1 x VGA 1 x DisplayPort (optional)

## Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
59380502000E	COM + Print cable w/ bracket	1
593826A0000E	SATA signal cable 500 mm	1

## Ordering Information

Standard	
SHB106VGGA (P/N: E38C106100)	PICMG 1.3 full-size CPU card with LGA1155 socket, VGA, 2 GbE LANs, audio and BIOS x4
SHB106PGGA (P/N: E38C106101)	PICMG 1.3 Full-size CPU card with LGA1155 socket, DisplayPort, 2 GbE LANs, audio and BIOS x4
SHB106VGGA (P/N: E38C106102)	PICMG 1.3 Full-size CPU card with LGA1155 socket, VGA, 2 GbE LANs, audio and BIOS x1
SHB106PGGA (P/N: E38C106103)	PICMG 1.3 Full-size CPU card with LGA1155 socket, DisplayPort, 2 GbE LANs, audio and BIOS x1
Optional	
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
5938A808010E	2 x USB cable with bracket, P=2.54 mm, L=190 mm
593836A0030E	4-pin power cable to SATA x 2, L=150 mm
59380000290E	PS/2 keyboard and mouse cable with bracket
E9B900C000	LGA1156 cooler 4-pin H=61.4 mm
50761222000E	LGA1156 2U cooler 3-pin H=68.8 mm

\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.



# SHB103

PICMG 1.3 Full-size CPU Card with LGA1156 Socket Intel® Core™ i7/i5/i3 & Pentium® Processor, Intel® Q57, VGA, Dual LANs and Audio

## Features

- LGA1156 socket Intel® Core™ i7/i5/i3 and Pentium® (G6950) processor
- 2 DDR3-1066/1333 DIMM, up to 8GB
- 6 SATA-300 with RAID 0, 1, 10 and 5
- Intel® AMT & TPM supported
- DisplayPort supported (optional)

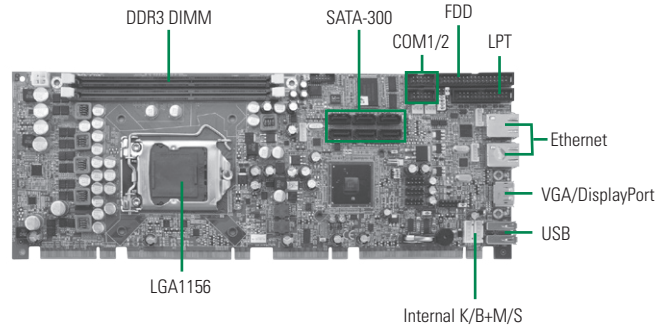


### Core System

CPU	LGA1156 socket Intel® Core™ i7/i5/i3 and Pentium® processor
System Memory	2 x 240-pin DDR3-1066/1333 DIMM, up to 8GB
Chipset	Intel® Q57
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 graphics port supports for SDVO or PCIe x1 devices 4 x PCIe lanes support 1 PCIe x4 or 4 PCIe x1 I/O devices 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAH
Power Requirements	Intel® Core™ i5-660 @3.33 GHz, 1 GB DDR3 +5V_SBY @ 23mA, +3.3V @ 1.372A, +5V @ 1.548A, +12V (System) @ 158mA, -12V @ 28mA, +12V (CPU) @ 1.809A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

### I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232/422/485 (COM 1) 1 x RS-232 (COM2)
SATA	6 x SATA-300 with RAID 0/1/10/5
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan control
Ethernet	1st port as 10/100/1000 Mbps supports iAMT, Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82578DM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out/speaker-out with Realtek ALC662
USB	12 x USB 2.0
TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control



### Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT 5.0 compliant
Display Interface	1 x VGA 1 x DisplayPort (optional)

### Packing List

Standard		
Quick installation guide, user's manual/utility CD, cable		
Cable		
Part Number	Description	Qty
59380502000E	COM + Print cable w/ bracket	1
593826A0000E	SATA signal cable 500mm	1

### Ordering Information

Standard		
SHB103VGGA (P/N: E38C103101)	PICMG 1.3 full-size CPU card with LGA1156 socket, Intel® Core™ i7/i5/i3 and Pentium® processor, VGA, 2 GbE LANs and audio	
SHB103PGGA (P/N: E38C103100)	PICMG 1.3 full-size CPU card with LGA1156 socket, Intel® i7/i5/i3 and Pentium® processor, DisplayPort and 2 GbE LANs	

Optional	
59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
5938A808010E	2 x USB cable with bracket, P=2.54 mm, L=190 mm
593836A0030E	4-pin power cable to SATA x 2, L=150 mm
59380000290E	PS/2 keyboard and mouse cable with bracket
E9B900C000	LGA1156 cooler 4-pin H=61.4 mm
50761222000E	LGA1156 2U cooler 3-pin H=68.8 mm

\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

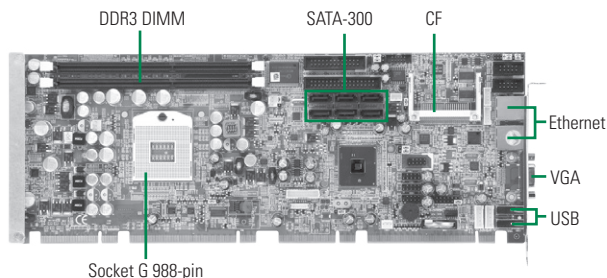


# SHB111

PICMG 1.3 Full-size CPU Card with Socket G Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® QM57, VGA, LVDS, Dual LANs and Audio

## Features

- Socket G Intel® Core™ i7/i5/i3 and Celeron® processor
- 2 DDR3-800/1066 DIMM, up to 8GB
- 6 SATA-300 with RAID 0/1/5/10
- Intel® AMT & TPM supported (optional)



## Core System

CPU	Socket G Intel® Core™ i7/i5/i3 and Celeron® processor
System Memory	2 x 240-pin DDR3-800/1066 DIMM, up to 8GB
Chipset	Intel® QM57
BIOS	AMI UEFI BIOS
SSD	1 x CompactFlash™
Watchdog Timer	255 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 graphics port supports for SDVO or PCIe x1 devices 4 x PCIe lanes support for 1 x PCIe x4 or 4 x PCIe x1 I/O devices 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAH
Power Requirements	Intel® Core™ i7-620M @2.66 GHz, 1 GB DDR3 +5V_SBY @ 63.52mA, +3.3V @ 842mA, +5V @ 869mA, +12V @ 2.178A
Size	338 x 126 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232 (COM 1) 1 x RS-232/422/485 (COM 2)
SATA	6 x SATA-300 with RAID 0/1/10/5
Hardware Monitoring	Detect CPU/system temperature, voltage and support Smart Fan control
Ethernet	1st port as 10/100/1000 Mbps supports iAMT, Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82577LM 2nd port as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out/ Speaker-out with Realtek ALC662
USB	14 x USB 2.0
TPM	Infineon SLB9635 for trusted platform
SMBus	System Management Bus for advanced monitoring/control

## Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT 5.0 compliant
Display Interface	1 x VGA 1 x LVDS; 18/24-bit single/dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380502000E	COM + print cable w/ bracket	1
593826A0000E	SATA signal cable 500 mm	1
5078C111100E	CPU PM989 cooler	1

## Ordering Information

### Standard

SHB111VGGA (P/N: E38C111100)	PICMG 1.3 full-size CPU card with socket G Intel® Core™ i7/i5/i3 & Celeron® processor, VGA, LVDS, 2 GbE LANs, audio and BIOS x1
SHB111VGGA (P/N: E38C111102)	PICMG 1.3 full-size CPU card with socket G Intel® Core™ i7/i5/i3 & Celeron® processor, VGA, LVDS, 2 GbE LANs, audio and BIOS x4

### Optional

59384500100E	Audio cable w/ bracket, P=2.0 mm, L=450 mm
5938A808010E	2 x USB cable with bracket, P=2.54 mm, L=190 mm
593836A0030E	4-pin power cable to SATA x 2, L=150 mm
59380000290E	PS/2 keyboard and mouse cable with bracket

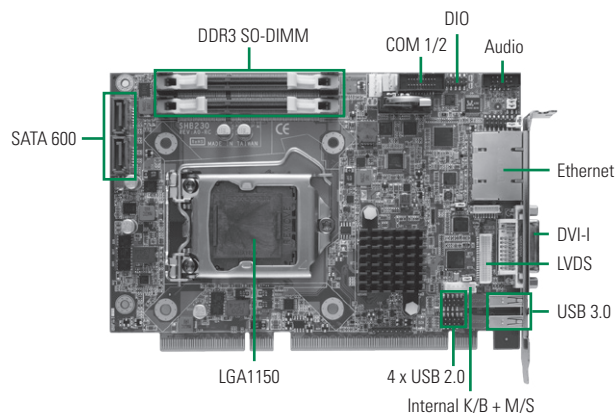
\* Discrete graphic card is necessary for display if the chosen CPU doesn't have integrated graphics support.

# SHB230

PICMG 1.3 Half-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® Q87, SATA3, USB 3.0, DVI-I/LVDS and Dual LANs

## Features

- LGA1150 4th gen Intel® Core™ i7/i5/i3 and Celeron® processor (Haswell/Haswell Refresh)
- Intel® Q87 chipset
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- DVI-I/LVDS with dual view supported
- Supports Intel® AMT 9.0
- 2 SATA-600 with RAID 0/1



## Core System

CPU	LGA1150 Socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® Low Power DT processor (Haswell/Haswell Refresh), TDP up to 45W
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM, up to 16GB
Chipset	Intel® Q87
BIOS	AMI
SSD	1 x CFast™
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 1 x PCIe x4 or 4 PCIe x1
Battery	Lithium 3v/220 mAh
Power Requirement	Intel® Core™ i7-4770TE@2.3 GHz, 8 GB DDR3 +5V@1.85A, +12V@2.3A, +5VSB @ 0.2A, +3.3V @ 1.5A
Size	185 x 126 mm
Board Thickness	1.6mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, on-condensing

## I/O

MIO	2 x RS-232/422/485 (COM 1/2) 1 x PS2 keyboard & mouse
RIO	2 x RJ-45 2 x USB 3.0 1 x DVI-I
SATA	2 x SATA-600 with RAID 0/1
Hardware Monitoring	Detect CPU/System temperature, voltage and support Smart Fan control
Ethernet	1st ports as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® i217LM with iAMT 9.0 support 2nd port as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® i210AT
Audio	HD Codec audio as MIC-in/Line-in/ Line-out/Speaker-out with Realtek ALC662
USB	4 x USB 2.0
DIO	Default 4 x IN & 4 x OUT, programmable
SMBus	N/A

## Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT
Display Interface	1 x DVI-I connector 1 x LVDS 24-bit dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380000300E	COM x 2 w/bracket, P=1.27 x 2.54, L=300 mm	1
593826A0000E	SATA signal cable 500 mm	1

## Ordering Information

### Standard

SHB230DGGA (P/N: E38C230100)	PICMG 1.3 half-size CPU card with LGA1150 socket, Intel® Core™ i7/i5/i3 processor, Intel® Q87, SATA3, USB 3.0, DVI-I, 2 GbE LANs and CFast™
------------------------------	---

### Optional

59384500100E	SBC84500 audio cable w/bracket, P=2.0 mm, L=450 mm
594C2302500E	PS2 keyboard/mouse cable
594C2303500E	DIO cable, L=150 mm
594C2302800E	USB cable, L=190 mm

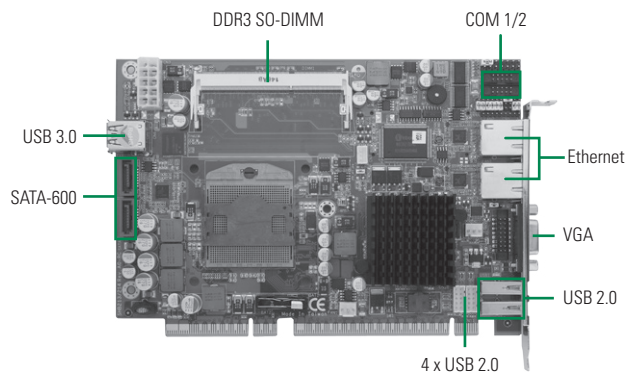


# SHB213

PICMG 1.3 Half-size CPU Card with Socket G2 2nd Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® HM65, VGA, SATA3, USB 3.0 and Dual LANs

## Features

- Socket G2 (rPGA 988B) 2nd gen Intel® Core™ i7/i5/i3 and Celeron® processor (Sandy Bridge)
- Intel® HM65 chipset (optional Intel® QM67 chipset)
- 2 DDR3-1066/1333 SO-DIMM, up to 8GB
- Supports Intel® HD graphics



## Core System

CPU	Socket G2 (rPGA 988B) 2nd generation Intel® Core™ i7/i5/i3 and Celeron® processor (Sandy Bridge)
System Memory	2 x 204-pin DDR3-1066/1333 SO-DIMM, up to 8GB
Chipset	Intel® HM65 (Intel® QM67 as option)
BIOS	AMI UEFI BIOS
SSD	1 x CFast™
Watchdog Timer	225 levels, 1-255 sec.
Expansion Interface	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1
Battery Lithium	3v/220 mAh
Power Requirements	Intel® Core™ i7-2710QE @ 2.1 GHz, 8GB DDR3 (HM 65) -12V @ 1.9A, +5VSB @ 0.1A, +12V @ 1.8A, +3.3V @ 2.5A
Size	185 x 126mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, on-condensing

## I/O

MIO	1 x RS-232/422/485 (COM 1) 1 x RS-232 (COM 2)
SATA	2 x SATA-600 (straight, 180, blue) Optional RAID 0/1 (only for Intel® QM67)
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	2 ports as 10/100/1000 Mbps support WOL, RPL/PXE boot ROM with Realtek RTL8111E.
Audio	N/A
USB	2 x USB 3.0 (right angle, 90) 6 x USB 2.0 (4 x internal, 2 x external)
SMBus	System Management Bus for advanced monitoring/control

## Display

Chipset	Intel® HD graphics
Memory Size	Max. up 352 MB frame buffer dedicated memory
Display Interface	1 x VGA

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59384500200E	COM x 2 w/bracket, P=2.0 mm, L=250 mm	1
593826A0000E	SATA signal cable 500 mm	1

## Ordering Information

### Standard

SHB213VGG-HM65 (P/N: E38C213101)	PICMG 1.3 half-size CPU card with Socket G2, Intel® HM65, VGA, SATA3, USB 3.0, 2 GbE LANs
SHB213VGG-QM67 (P/N: E38C213100)	PICMG 1.3 half-size CPU card with Socket G2, Intel® QM67, VGA, SATA3, USB 3.0, 2 GbE LANs

### Optional

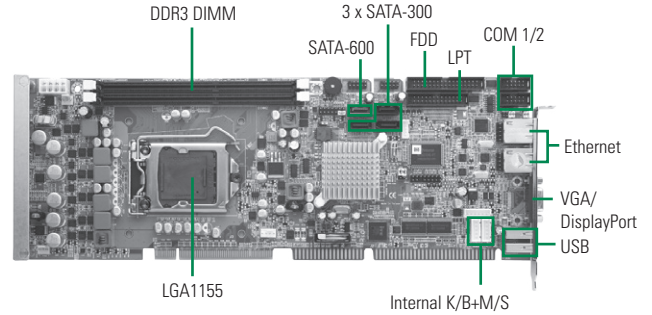
59382631000E	2 x USB 2.0 wafer cable with bracket, L=180 mm
5078C11200E	CPU cooler PGA 989 JACDD01C

# SBC81210

PICMG 1.0 Full-size CPU Card with LGA1155 Intel® Core™ i7/i5/i3 Processor, Intel® B65/Q67, VGA and Dual LANs

## Features

- LGA1155 socket Intel® Core™ i7/i5/i3 processor
- Intel® B65 chipset (Intel® Q67 chipset as option)
- 2 DDR3-1066/1333 DIMM, up to 8GB
- VGA and optional DisplayPort with dual view supported
- Supports Intel® HD Graphics



## Core System

CPU	LGA1155 socket Intel® Core™ i7/i5/i3 processor
System Memory	2 x 240-pin DDR3-1066/1333 DIMM, up to 8GB
Chipset	Intel® B65 (Intel® Q67 as option)
BIOS	AMI UEFI BIOS
SSD	N/A
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	4 x 32 bit PCI bus masters No ISA bus supported
Battery Lithium	3v/220 mAh
Power Requirements	Intel® i5-2500 @ 3.1 GHz, 4 G DDR3 +5V_SBY @ 41mA, +3.3V @ 26mA +5V @ 3.705A, +12V @ 698mA, -12V @ 26mA
Size	338 x 122 mm
Board Thickness	1.6 mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Relative Humidity	10% ~ 95% relative humidity, non-condensing

## I/O

MIO	1 x FDD 1 x PS/2 keyboard & mouse 1 x LPT; with SPP/EPP/ECP supported 1 x RS-232 (COM 1) 1 x RS-232/422/425 (COM 2)
SATA	1 x SATA-600 3 x SATA-300 optional RAID 0/1/10/5 (only for Intel® Q67)
Hardware Monitoring	Detect CPU/System temperature, voltage and fan speed
Ethernet	1 ports as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82579LM 2 ports as 10/100/1000 Mbps supports Wake-on-LAN, RPL/PXE Boot ROM with Intel® 82583V
Audio	HD Codec audio as MIC-in/Line-in/Line-out/speaker-out with Audio kit AX93242 (optional)
USB	6 x USB 2.0
SMBus	System Management Bus for advanced monitoring/control

## Display

Chipset	Intel® HD Graphics
Memory Size	Max. up 352 MB frame buffer dedicated memory
Display Interface	1 x VGA 1 x DisplayPort (optional)

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380502000E	COM+Print cable w/bracket	1
593826A0000E	SATA signal cable 500 mm	1
59381400000E	FDD cable	1

## Ordering Information

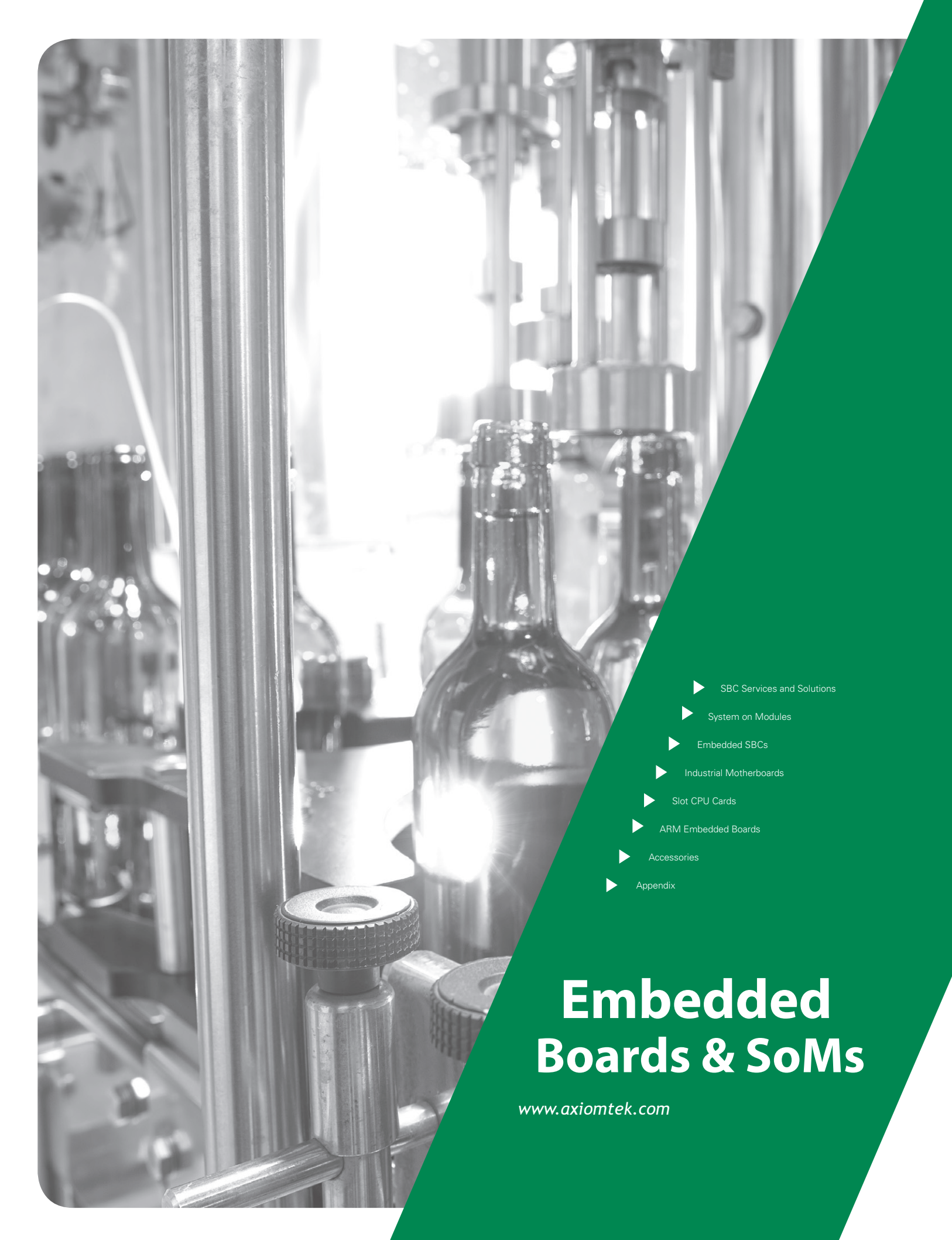
### Standard

SBC81210VGG-B65 (P/N: E381210100)	PICMG 1.0 full-size CPU card with LGA1155 socket, Intel® B65, VGA, 2 GbE LANs and 6 USB
SBC81210PGG-B65 (P/N: E381210101)	PICMG 1.0 full-size CPU card with LGA1155 socket, Intel® B65, DisplayPort, 2 GbE LANs and 6 USB
SBC81210VGG-Q67 (P/N: E381210102)	PICMG 1.0 full-size CPU card with LGA1155 socket, Intel® Q67, VGA, 2 GbE LANs and 6 USB

### Optional

5938A808010E	2 x USB cable with bracket, P=2.54 mm, L=190 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
E393242100	AX93242 HD audio converter kit
593826A0000E	SATA signal cable, 500 mm
593836A0030E	4 pin power cable to SATA x 2, L=150 mm
E9B900C000	LGA1156 cooler 4-pin, H=61.4 mm
50761222000E	LGA1156 2U cooler 3-pin, H=68.8 mm



- 
- ▶ SBC Services and Solutions
  - ▶ System on Modules
  - ▶ Embedded SBCs
  - ▶ Industrial Motherboards
  - ▶ Slot CPU Cards
  - ▶ ARM Embedded Boards
  - ▶ Accessories
  - ▶ Appendix

# Embedded Boards & SoMs

[www.axiomtek.com](http://www.axiomtek.com)

# 5

## ARM Embedded Boards

Axiotek provides both Qseven and SMARC SoM (System on module) product lines. The RISC SoM is to enable quick and competitive design services according to the needs of customers. With 26 years of industrial design experience, we have established a backbone that can incorporate customer's needs into the implementation of industrial grade systems of high reliability.

Qseven® Technical Notes		227
QSeven® Carrier Board		227
Qseven® Mechanical Definitions		227
SMARC Technical Notes		228
SMARC Carrier Board		228
SMARC Mechanical Definitions		228
Selection Guide		229
Q7M100	Qseven v1.2 SoM with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	230
Q7M120	Qseven v2.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	231
SCM120	SMARC v1.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM	232
Q7M100-100-EVK	Qseven v1.2 SoM Evaluation Kit with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN and BSP	233
Q7M120-120-EVK	Qseven v2.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN	234
SCM120-120-EVK	SMARC v1.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM	235

# Qseven® Technical Notes

The Qseven® standard is for off-the-shelf Single-Board-Computer that integrates all the core components of a common PC and is mounted onto an application specific carrier board. Qseven® modules have a standardized form factor of 70mm x 70mm and have specified pinouts based on the high speed MXM system connector that has a standardized pinout regardless of the vendor. The Qseven® module provides the functional requirements for an embedded application. These functions include, but are not limited to, graphics, sound, mass storage, network and multiple USB ports. A single ruggedized MXM connector provides the carrier board interface to carry all the I/O signals to and from the Qseven® module. This MXM connector is a well-known and proven high speed signal interface connector that is commonly used for high speed PCI Express graphics cards in notebooks.

## Qseven® Technical Notes

Qseven® offers the newest I/O technologies on this minimum size form factor. This includes serial high speed buses such as:

- PCI Express™
- USB 2.0
- USB 3.0
- High Definition Digital Audio (HDA)
- Serial ATA
- Gigabit Ethernet
- DisplayPort™, TMDS
- LVDS Display Interface
- Plus additional control and power management signals

## QSeven® Carrier Board

Carrier board can utilize as little or as many of the I/O interfaces as deemed necessary. The carrier board can therefore provide all the interface connectors required to attach the system to the application specific peripherals. This versatility allows the designer to create a dense and optimized package, which results in a more reliable product while simplifying system integration. Most importantly, Qseven® applications are scalable, which means once a product has been created there is the ability to diversify the product range through the use of different performance class Qseven® modules. Simply unplug one module and replace it with another, no redesign is necessary.

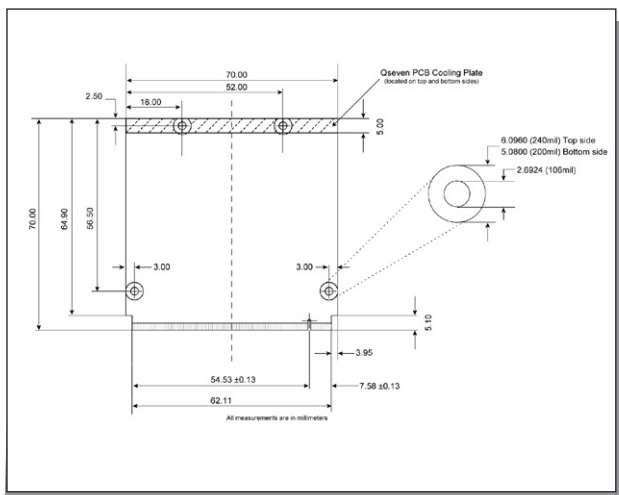


Figure 1: Qseven® module top view

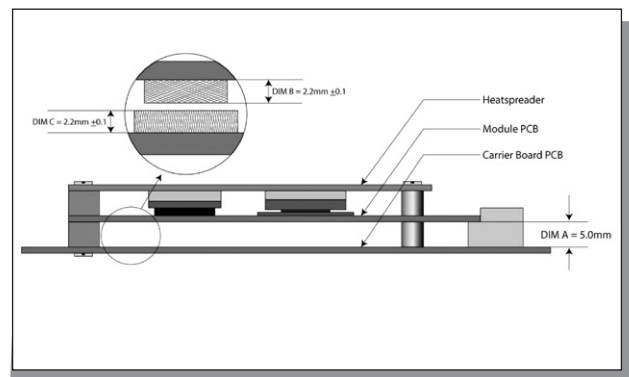


Figure 2: Bottom side Qseven® module and carrier board component heights

## Qseven® Mechanical Definitions

The Qseven® module utilizes a 230-pin card-edge connector that is also used for PCI Express capable notebook graphics cards following the MXM specification.

Therefore, this connector type is also known as a MXM connector.

The MXM edge connector is the result of an extensive collaborative design effort with the industry's leading notebook manufacturers. This collaboration has produced a robust, low-cost edge connector that is capable of handling high-speed serialized signals. The MXM connector accommodates various connector heights for different carrier board applications needs. This specification suggests two connector heights, 7.8mm and 7.5mm.

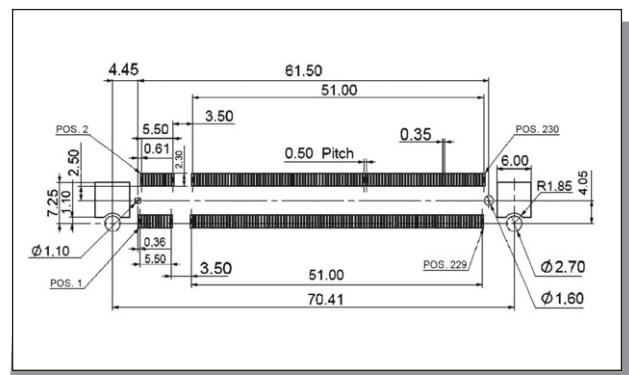


Figure 3: Qseven® carrier board PCB footprint



# SMARC Technical Notes

## SMARC Technical Notes

SMARC (Smart Mobility Architecture) is an open source computer module standard maintained by the SGeT (Standardization Group for Embedded Technologies). SMARC module is with small form factor (82mm x 50mm), low power (typically <6W) computer modules that are used on a carrier board that utilizes a 314 pin 0.5mm pitch right-angle memory socket style connector to host the Module.

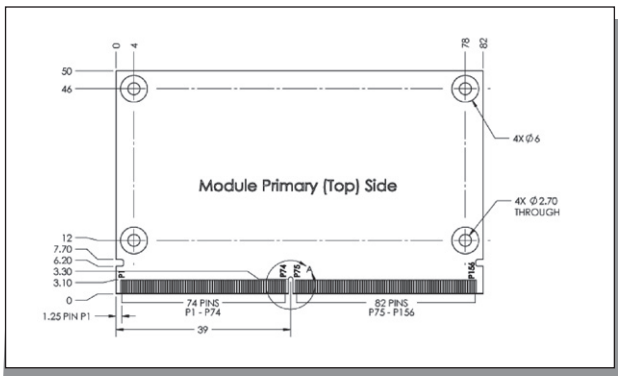


Figure 4: SMARC module top view

## SMARC Carrier Board

The SMARC carrier board is with a low profile, right angle 314 pin memory – socket style connector. The same connector is commonly used for MXM3 graphics cards. Various height profiles are available for the SMARC module connector. The lowest profile available has a Carrier Board PCB top-side to module PCB bottom-side separation of 1.5mm, and a connector body height of 4.6mm.

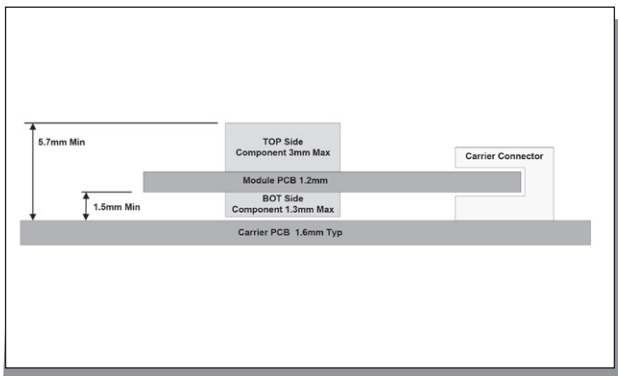


Figure 5: Bottom side Qseven® module and carrier board component heights

## SMARC Mechanical Definitions

SMARC Computer-on-Modules have 314 card edge contacts on the printed circuit board (PCB) of the module which is plugged via a low-profile connector on the carrierboard. In most cases, the connector has a construction height of 4.3 mm. It is also used for MXM 3.0 graphic cards, which naturally have completely differently pin assignments. Signal transmission is carried out via a total of 314 pins. 33 of these are reserved signal lines for power supply and grounding, so that with SMARC a total of 281 signal lines are effectively available. ARM- and SoC-typical energy-saving interfaces, like, for instance, parallel LCD for display connection, mobile industry processor interfaces for cameras, Serial Peripheral Interface (SPI) for general peripheral connection, I<sup>2</sup>S for audio and I<sup>2</sup>C are included. Besides these, classical computer interfaces such as USB, SATA and PCI Express are also defined.

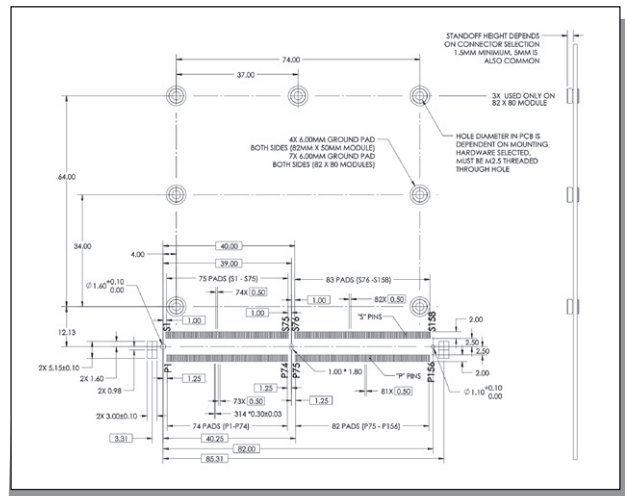
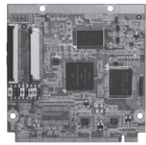


Figure 6: SMARC Carrier board PCB footprint

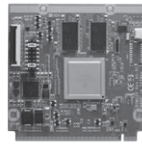


# RISC Embedded Boards

## Selection Guide



Page 230



Page 231



Page 232

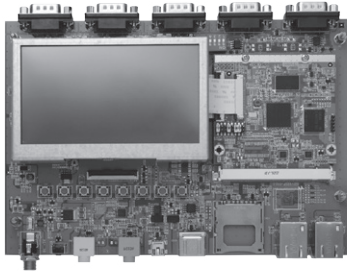
Features/Models		Q7M100	Q7M120	SCM120
<b>Form Factor</b>		Qseven	Qseven	SMARC
<b>CPU Level</b>		Freescall iMX28 ARM926EJ-S	Freescall i.MX6 ARM Cortex™-A9 (Quad/DualLite)	Freescall i.MX6 ARM Cortex™-A9 (Quad/DualLite)
<b>CPU FSB Frequency</b>		454 MHz	800 MHz, 1 GHz (solo)	800 MHz, 1 GHz
<b>System Memory</b>		DDR2-667, up to 128MB	DDR3-1600, up to 1GB	DDR3-1600, up to 1GB
<b>eMMC</b>		4GB	4GB	4GB
<b>I/O</b>	<b>PCIe</b>	N/A	1	1
	<b>SATA</b>	N/A	1 (Quad support)	1 (Quad support)
	<b>USB</b>	2 (OTG/Host)	2 (OTG/Host)	2 (OTG/Host)
	<b>Audio</b>	MIC IN, Headphone	MIC IN, Headphone	MIC IN, Headphone
	<b>CAN</b>	2	2	2
	<b>LAN</b>	1	1	1
	<b>I2C</b>	2	3	4
	<b>SPI</b>	Yes	Yes	Yes
	<b>UART</b>	5 (4 COM, 1 console)	5 (4 COM, 1 console)	4 (3 COM, 1 console)
	<b>SD/MMC(8 bit)</b>	1	1	1
	<b>MIPI-CSI</b>	N/A	N/A	1
	<b>PCAM</b>	N/A	N/A	1
	<b>GPIO</b>	8	8	8
	<b>Graphic</b>	<b>HDMI</b>	N/A	1
<b>VGA</b>		N/A	N/A	N/A
<b>24 bit TTL</b>		1	1	1
<b>LVDS</b>		N/A	Dual Channel	Dual Channel
<b>OS</b>	<b>Linux</b>	2.6.35	3.0.35	3.0.35
	<b>Android</b>	N/A	4.3	4.3
<b>Evaluation Kit Board</b>		Q7M100-100-EVK	Q7M120-120-EVK	SCM120-120-EVK
<b>Operating Temperature</b>		-40°C ~ +85°C (-40°F ~ +185°F)	-40°C ~ +85°C (-40°F ~ +185°F) 0°C ~ +60°C (32°F ~ +140°F) (1 GHz)	-40°C ~ +85°C (-40°F ~ +185°F) 0°C ~ +60°C (32°F ~ +140°F) (1 GHz)

# Q7M100

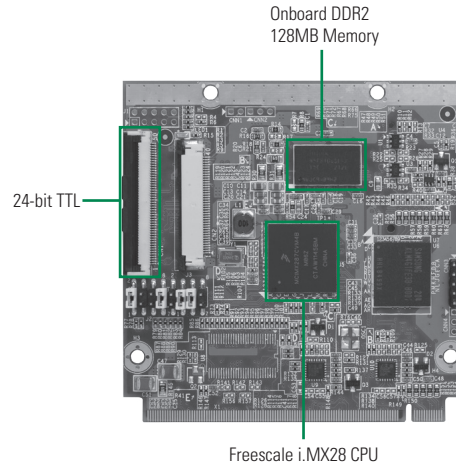
Qseven v1.2 SoM with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN

## Features

- Ultra low power consumption ARM9
- High flexibility Qseven v1.2 compliant design
- 2 CANBus 2.0B compliant ports
- 24-bit TTL LCD
- Dual 10/100 Base-T Ethernet
- Audio



▲ Q7M100-100-EVK



### Core System

CPU	Freescale iMX-28 Series SoC with 287 ARM926EJ-S CPU running @ 454MHz
System Memory	Onboard DDR2-667, up to 128MB
OS	Linux kernel 2.6.35 compliant
SSD	eMMC flash 4GB SDHC interface
RTC	Battery on the Carrier is required
Power Requirement	+5V ± 5% @ 800mA
Size	70 x 70 mm
Board Thickness	1.2 mm ± 0.1mm
Operating Temperature	-40°C ~ 85°C
Operation Humidity	10% ~ 95%, non-condensing

### I/O

Graphics	LCD supported, up to 24-bit TTL RGB modes and 24-bit system mode
Ethernet	2 x 10/100 Mbps Ethernet
Audio	Mic-in/Line-out on carrier board
COM	4 x COM ports 3 x TX/RX/RTS/CTS (2 RS232 and 1 RS-422/485), 1 x TX/RX 3.3V TTL
USB	1 x OTG client 1 x host
I <sup>2</sup> C	2 x I <sup>2</sup> C Interface
GPIO	8 interfaces, up to 400 kbps
SPI	Yes
CAN	2 ports

### Ordering Information

<b>Standard</b>	
Q7M100-287	Q7M100 with Freescale iMX-287 SoC, 128MB memory, 4GB eMMC and 1 GbE LAN, audio and CAN
<b>Optional</b>	
Q7M100-100-EVK	Evaluation kit board

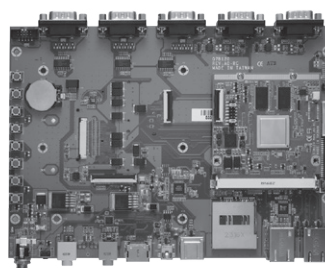
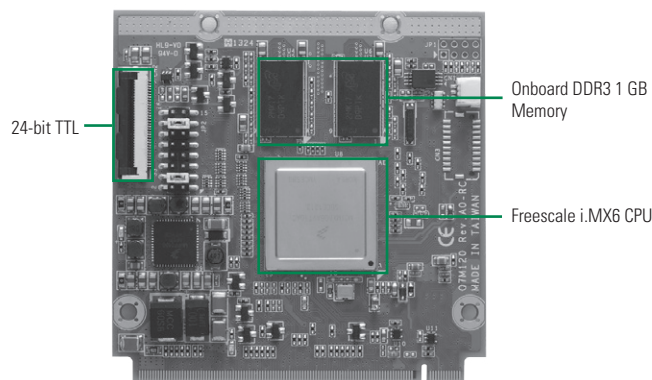


# Q7M120

Qseven v2.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN

## Features

- Ultra low power consumption Cortex™-A9
- High flexibility Qseven v2.0 compliant design
- 2 CAN
- 24-bit TTL signal
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Linux 3.0.35/Android 4.3
- Audio



▲ Q7M120-120-EVK

## Core System

Processor	Freescale i.MX6 Series SoC with Quad/DualLite/Solo ARM Cortex™-A9 CPU 800 MHz/ 1 GHz (only Solo)
System Memory	Onboard DDR3-1600, up to 1GB
OS	Linux kernel 3.0.35, Android 4.3
Storage	eMMC flash 4GB, SDIO interface SATA interface (Quad cores CPU)
RTC	Battery on the Baseboard is required
Power Requirement	+5V, 1A
Size	70 x 70 mm
Board Thickness	1.2 mm ± 0.1mm
Operating Temperature	-40°C ~ +85°C (Industrial)
Operation Humidity	10% ~ 95%, non-condensing

## I/O

Graphics	1 x 24-bit TTL signal 2 x Signal channel 24-bit LVDS 1 x HDMI 1080P
Ethernet	1 x 10/100/1000 Mbps
Audio	Mic-in/Headphone
COM	4 x COM with TX/RX/RTS/CTS (one with 3.3V TTL level) 1 x Console port
USB	1 x USB 2.0 1 x OTG client
I <sup>2</sup> C	3 x I <sup>2</sup> C Interface
SPI	Yes
CAN	2 ports as 2.0B protocol-compatible Controller Area Network (CAN) interfaces
GPIO	8 button-detect
PCIe	1 x PCIe x1

## Ordering Information

### Standard

Q7M120- DualLite-I (P/N:E38Q120100)	Q7M120 with Freescale iMX6 DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, 1 GbE LAN, audio, and CAN
Q7M120- Quad-I (P/N:E38Q120102)	Q7M120 with Freescale iMX6 Quad 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, 1 GbE LAN, audio, and CAN

### Optional

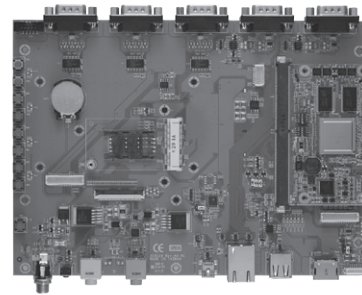
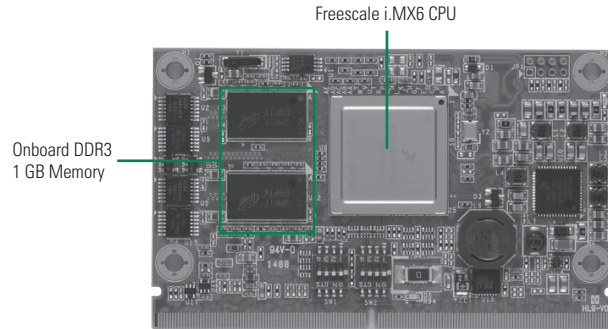
Q7M120-120-EVK DualLite-I	Evaluation kit board
Q7M120-120-EVK Quad-I	Evaluation kit board
Q7M120-Quad-T	Q7M120 with Freescale iMX6 Quad 1 GHz (Automotive) SoC, 1GB Memory, 4GB eMMC, 10/100/1000 Mbps Ethernet, audio, and CAN
P/N: 5078Q120100E	Q7M120 heatspread (-40 °C ~70 °C)
P/N: 5078Q120200E	Heatsink (-40 °C ~75 °C)

# SCM120

SMARC v1.0 SoM with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM

## Features

- Ultra low power consumption Cortex™-A9
- High flexibility SMARC v1.0 compliant design
- 2 CAN 2.0B
- 24-bit TTL signal
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Linux3.0.35/Android4.3
- Audio



▲ SCM120-120-EVK

## Core System

Processor	Freescale i.MX6 Series SoC with Quad/DualLite ARM Cortex™-A9 CPU 800 MHz
System Memory	Onboard DDR3-1600, up to 1GB
OS	Linux kernel 3.0.35, Android 4.3
Storage	eMMC flash 4GB, SDIO interface, SATA interface (Only Quad Support)
RTC	Battery on the Baseboard is required
Power Requirement	+3V~+5.25V
Size	82 x 50 mm
Board Thickness	1.2 mm ± 0.1mm
Operating Temperature	-40°C ~ +85°C (Industrial)
Operation Humidity	10% ~ 95%, non-condensing

## I/O

Graphics	1 x 24-bit TTL signal 1 x Dual channel 24-bit LVDS 1 x HDMI 1080P
Ethernet	1 x 10/100/1000 Mbps Ethernet
Audio	Mic-in/Headphone
COM	3 x COM with TX/RX/RTS/CTS 1 x Console port
USB	1 x USB 2.0 1 x OTG client
I <sup>2</sup> C	4 x I <sup>2</sup> C Interface
SPI	2
CAN	2 ports
GPIO	8
PCIe	1 x PCIe
Camera	1 x MIPI v1.0, 2 x Lane 1 x PCAM 8-bit

## Ordering Information

Standard	
SCM120-DualLite-I	SCM120 with Freescale iMX6 DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, 1 GbE LAN, audio, and CAN
SCM120-Quad-I	SCM120 with Freescale iMX6 Quad 800MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, 10/100/1000 Mbps Ethernet, audio, CAN and SATA

Optional	
SCM120-120-EVK DualLite-I	Evaluation kit board
SCM120-120-EVK Quad-I	Evaluation kit board
P/N: 5078S120100E	SCM120 heatspread (-40 °C ~70 °C)
P/N: 5078Q120200E	Heatsink (-40 °C ~75 °C)

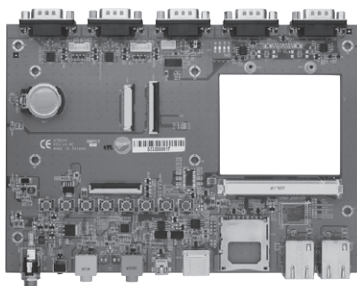


# Q7M100-100-EVK

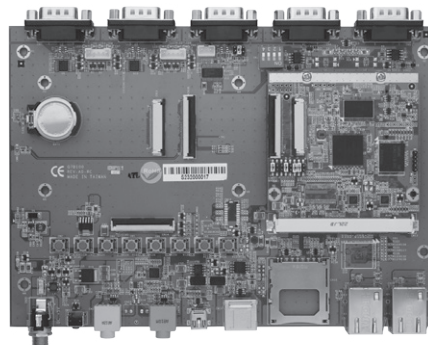
Qseven v1.2 SoM Evaluation Kit with i.MX287 454 MHz (Industrial) SoC, 128MB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN and BSP

## Features

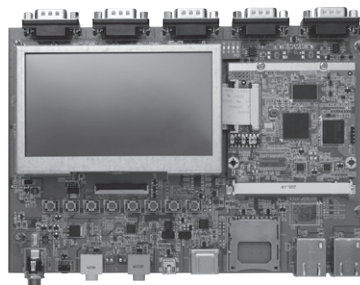
- Ultra low power consumption ARM9
- High flexibility Qseven v1.2 compliant design
- 5 UART
- 2 CAN
- 24-bit TTL LCD
- 10/100 Mbps Ethernet
- Linux 2.6.35



▲ Q7B100



▲ Q7M100-100-EVK



▲ Q7M100-100-EVK

## Core System

Processor	Freescle iMX-287 ARM926EJ-S CPU 454 MHz (On Q7M100 SoM)
System Memory	Onboard DDR2-667, up to 128MB (on Q7M100 SoM)
OS	Linux kernel 2.6.35
RTC	Battery on the Baseboard is required
Power Requirement	+5V ± 5%, 5A
Size	200 x 140 mm
Board Thickness	1.6 mm ± 0.15mm
Operation Humidity	10% ~ 95%, non-condensing

## I/O

Graphics	1 x 24-bit TTL LCD
Ethernet	2 x RJ-45 for 10/100 Mbps
Audio	2 x Audio connector on the rear I/O with MIC-in and Headphone
COM	4 x COM with TX/RX/RTS/CTS (one with 3.3V TTL level) 1 x Console Port
USB	1 x OTG client 1 x USB 2.0
I <sup>2</sup> C	2 x I <sup>2</sup> C Interface
CAN	2 x D-Sub 9-pin male connectors
Keypad	8
Storage	1 x SD/MMC socket 1 x SATA connector
Touch	4-wire touch screen controller

## Ordering Information

### Standard

Q7M100-100-EVK	Q7M100-100 evaluation kit board
----------------	---------------------------------

## Packing list

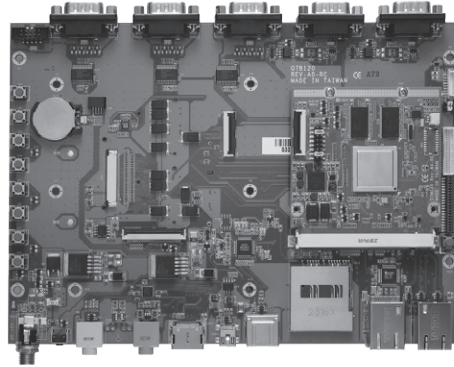
N/A	- USB OTG cable - Console port cable - Power cable - AC DC adapter 5V/5A 25W - Utility CD
-----	---

# Q7M120-120-EVK

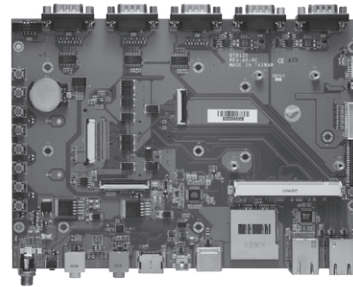
Qseven v2.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio and CAN

## Features

- Ultra low power consumption Cortex™-A9
- High flexibility Qseven v2.0 compliant design
- 2 CAN 2.0B
- 18/24-bit TTL LCD
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Linux3.0.35/Android4.3
- Audio



▲ Q7M120-120-EVK



▲ Q7B120

## Core System

Processor	Freescall i.MX6 Quad/DualLite ARM Cortex™-A9 CPU 800 MHz (On Q7M120 SoM)
System Memory	Onboard DDR3-1600, up to 1GB (on Q7M120 SoM)
OS	Linux kernel 3.0.35, Android 4.3
RTC	Battery on the Baseboard is required
Power Requirement	+5V ± 5%, 5A
Size	210 x 150 mm
Board Thickness	1.6 mm ± 0.15mm
Operation Humidity	10% ~ 95%, non-condensing

## I/O

Graphics	1 x 18/24-bit TTL LCD 1 x HDMI 1080P 1 x Dual channel 24-bit LVDS
Ethernet	1 x RJ-45 for 10/100 Mbps 1 x RJ-45 for 10/100/1000 Mbps
Audio	Mic-in/Headphone
COM	4 x COM with TX/RX/RTS/CTS (one with 3.3V TTL level) 1 x Console port
USB	1 x USB 2.0 1 x OTG client
I <sup>2</sup> C	3 x I <sup>2</sup> C Interface
CAN	2
Keypad	8
Storage	1 x SD/MMC socket 1 x SATA connector
Touch	4-wire touch screen controller
Mini Card	2 x Full-size (with SIM)

## Ordering Information

Standard	
Q7M120-120-EVK DualLite-I	Q7M120-120 (DualLite) evaluation kit board
Q7M120-120-EVK Quad-I	Q7M120-120 (Quad) evaluation kit board

Optional	
P/N: 5078Q120100E	Q7M120 heatspread (-40 °C ~70 °C)
P/N: 5078Q120200E	Heatsink (-40 °C ~75 °C)

## Packing list

N/A	- USB OTG cable - Console port cable - Power cable - AC DC adapter 5V/5A 25W - Utility CD
-----	---

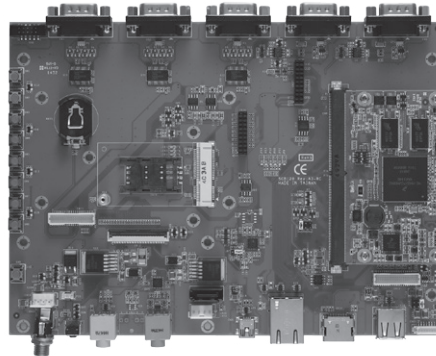


# SCM120-120-EVK

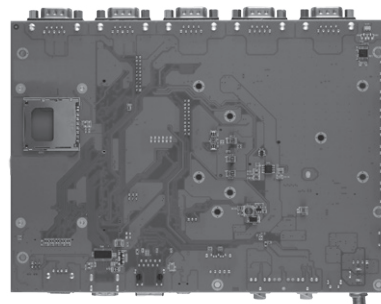
SMARC v1.0 SoM Evaluation Kit with Quad/DualLite 800 MHz (Industrial) SoC, 1GB Memory, 4GB eMMC, Gigabit Ethernet, Audio, CAN, MIPI and PCAM

## Features

- Ultra low power consumption Cortex™-A9
- High flexibility SMARC v1.0 compliant design
- 2 CAN 2.0B
- 24-bit TTL LCD
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Open GL ES2.0
- Linux3.0.35/Android4.3
- Audio



▲ Front view



▲ Rear view

## Core System

Processor	Freescall i.MX6 Quad/DualLite ARM Cortex™-A9 CPU 800 MHz (On SCM120 SoM)
System Memory	Onboard DDR3-1600, up to 1GB (on SCM120 SoM)
OS	Linux kernel 3.0.35, Android 4.3
RTC	Battery on the Baseboard is required
Power Requirement	+5V ± 5%, 5A
Size	200 x 140 mm
Board Thickness	1.6 mm ± 0.15mm
Operation Humidity	10% ~ 95%, non-condensing

## I/O

Graphics	1 x 24-bit TTL LCD 1 x HDMI 1080P 1 x Dual channel 24-bit LVDS
Ethernet	1 x RJ-45 for 10/100/1000 Mbps
Audio	MIC-in
COM	1 x COM with TX/RX/RTS/CTS 1 x Console port
USB	2 x USB 2.0: 1 OTG client and 1 Host
I <sup>2</sup> C	4 x I <sup>2</sup> C Interface
CAN	2 x D-Sub 9-pin male connectors for 2.0B protocol-compatible Controller Area Network (CAN) interfaces
Keypad	8 button-detect circuit
Storage	1 x SD/MMC socket 1 x SATA connector SPI nor Flash
Touch	4-wire touch screen controller
Mini Card	1 x Full-size (with SIM)
Extension Slot and Socket	1 x Connector with I2C/SPI/UART
MIPI	1 x Serial camera
PCAM	1 x PCAM 8-bit

## Ordering Information

Standard	
SCM120-120 EVK- DualLite-I	SCM120-120 (DualLite-I) evaluation kit board)
SCM120-120 EVK-Quad-I	SCM120-120 (Quad) evaluation kit board)

Optional	
P/N: 5078S120100E	SCM120 heatspread (-40 °C ~70 °C)
P/N: 5078Q120200E	Heatsink (-40 °C ~75 °C)

## Packing list

N/A	- USB OTG cable - Console port cable - Power cable - AC DC adapter 5V/5A 25W - Utility CD
-----	---



# 6

## Accessories

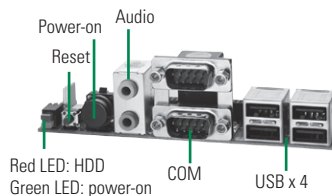
I/O Board for Pico-ITX Boards		237
AX93265		
AX93267		
AX93283		
AX93275		
AX93276		
AX93292		
AX93299		
AX93A00	<b>NEW</b>	
AX93A01	<b>NEW</b>	
AX93A02	<b>NEW</b>	
AX93A09	<b>NEW</b>	
I/O Cable Kit		
AX93242	HD Audio Converter Board with Bracket	239
Full-Size PCI Express Mini Modules		240
AX92902		
AX92903		
AX92904		
AX92905		
AX92906		
AX92907		
PoE I/O Boards		243
AX93274	<b>NEW</b> A PoE-PD I/O board complies with IEEE802.3at standard via an internal cable to power on SBC	
AX93280	<b>NEW</b> A PoE-PSE I/O board complies with IEEE802.3af standard via an internal cable connected to LAN port on a SBC to power an external PoE device	
ZIO Modules		244
AX93262	ZIO module with four COM ports and one PCI Express Mini Card	
AX93285	ZIO module with two COM ports and 32 bit programmable DIO	
AX93291	<b>NEW</b> ZIO module with two Gigabit Ethernet and two COM ports	
AX93295	<b>NEW</b> ZIO module with two isolated COM ports and three USB 3.0 ports	

# I/O Board for Pico-ITX Boards

## Attached as Accessory

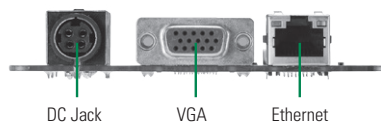
### AX93265

Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB2.0, 1 x Audio (MIC-IN/Line-out),  
1 x power-on, 1 x Reset, 2 x LED  
Dimension: 118 x 29 mm  
Compliant Product: PICO830, PICO831



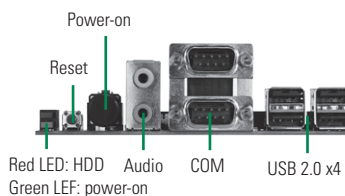
### AX93267

Specification: 1 x DC Jack, 1 x VGA, 1 x Gigabit LAN  
Dimension: 100 x 26 mm  
Compliant Product: PICO831, PICO841, PICO843



### AX93283

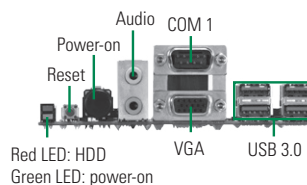
Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio (MIC-IN/Line-out),  
1 x power-on, 1 x Reset, 2 x LED  
Dimension: 118 x 29 mm  
Compliant Product: PICO840, PICO841, PICO843



## Ordered by Optional

### AX93275

Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x VGA,  
1 x Audio (MIC-in/Line-out), 1 x power-on, 1 x Reset, 2 x LED  
Dimension: 118 x 40 mm  
Compliant Product: PICO880, PICO500, PICO300

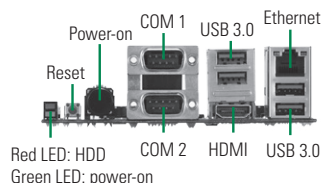


#### Ordering Information

AX93275	P/N: E393275100
---------	-----------------

### AX93276

Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x HDMI, 1 x Gigabit LAN,  
1 x power-on, 1 x Reset, 2 x LED  
Dimension: 118 x 40 mm  
Compliant Product: PICO880, PICO500, PICO300

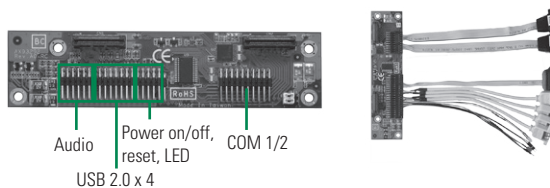


#### Ordering Information

AX93275 for PICO880	P/N: E393275100
AX93275	P/N: E393275102

### AX93292

Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio (MIC-in/Line-out),  
1 x power-on, 1 x Reset, 2 x LED  
Dimension: 118 x 29 mm  
Compliant Product: PICO880, PICO500, PICO300



#### Ordering Information

AX93292	P/N: E393292100
Cable for COM	P/N: 594H8302100E
Cable for Audio+USB+LED	P/N: 59340000200E

# I/O Board for Pico-ITX Boards

## Ordered by Optional

### AX93299

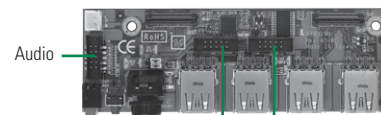
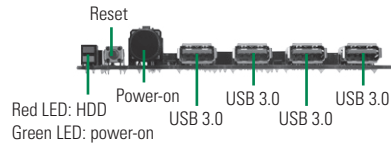
Specification: 1 x RS-232/422/485, 1 x RS-232, 1 x Audio (Mic-in/Line-in/Line-out),  
4 x USB 3.0, 1 x power-on, 1 x Reset, 2 x LED

Dimension: 118 x 40 mm

Compliant Product: PICO880, PICO500, PICO300

#### Ordering Information

AX93299	P/N: E393299100
Cable for COM	P/N: 59382620000E
Cable for Audio+USB+LED	P/N: 59384500100E



### AX93A00

NEW

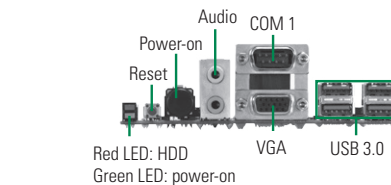
Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x VGA,  
1 x Audio (MIC-in/Line-out), 1 x power-on, 1 x Reset, 2 x LED

Dimension: 118 x 40 mm

Compliant Product: PICO310, PICO312, PICO511, PICO512

#### Ordering Information

AX93275	P/N: E393275100
---------	-----------------



### AX93A01

NEW

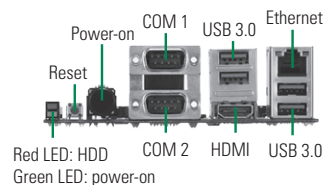
Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 3.0, 1 x HDMI, 1 x Gigabit LAN,  
1 x Audio (MIC-in/Line-out), 1 x power-on, 1 x Reset, 2 x LED

Dimension: 118 x 40 mm

Compliant Product: PICO310, PICO312, PICO511, PICO512

#### Ordering Information

AX93275 for PICO880	P/N: E393275100
AX93275	P/N: E393275102



### AX93A02

NEW

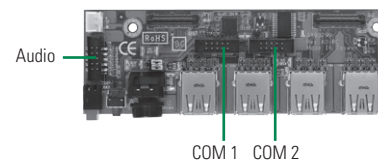
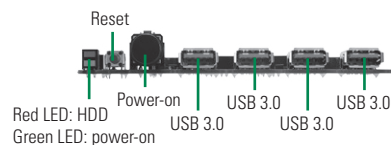
Specification: 1 x RS-232/422/485, 1 x RS-232, 1 x Audio (Mic-in/Line-in/Line-out),  
4 x USB 3.0, 1 x power-on, 1 x Reset, 2 x LED

Dimension: 118 x 40 mm

Compliant Product: PICO310, PICO312, PICO511, PICO512

#### Ordering Information

AX93299	P/N: E393299100
Cable for COM	P/N: 59382620000E
Cable for Audio+USB+LED	P/N: 59384500100E



### AX93A09

NEW

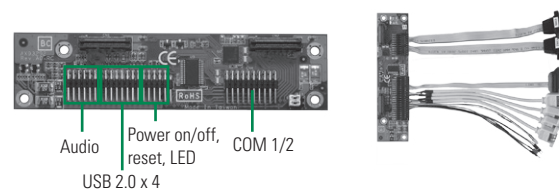
Specification: 1 x RS-232/422/485, 1 x RS-232, 4 x USB 2.0, 1 x Audio (MIC-IN/Line-out),  
1 x power-on, 1 x Reset, 2 x LED

Dimension: 118 x 29 mm

Compliant Product: PICO310, PICO312, PICO511, PICO512

#### Ordering Information

AX93292	P/N: E393292100
Cable for COM	P/N: 594H8302100E
Cable for Audio+USB+LED	P/N: 59340000200E



Accessories

0  
1  
2  
3  
4  
5  
6  
7



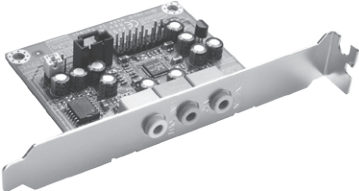
# I/O Cable Kit

## AX93242

HD audio converter board with bracket for SBC81205, SBC81206, SHB101 and SHB210  
Mic-in/CD-in/Line-in/Line-out/Speaker-out

### Ordering Information

AX93242 (P/N: E393242100)	HD audio kit for SBC81205, SBC81206, SHB101
AX93242 (P/N: E393242101)	HD audio kit for SHB210



# Full-Size PCI Express Mini Modules

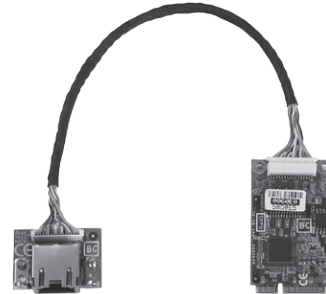
## AX92902

### Full-Size PCI Express Mini Module with Gigabit LAN

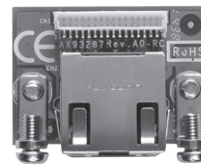
Features	<ul style="list-style-type: none"> <li>• Supports 10/100/1000 Mbps transfer rates</li> <li>• Supports Wake-on LAN</li> <li>• Supports PXE Boot ROM</li> </ul>
Form factor	Full-size PCI Express Mini Card
Controller	Intel® i210IT
Specification	1 Gigabit Ethernet
Dimension	51 x 30 mm

### Ordering Information

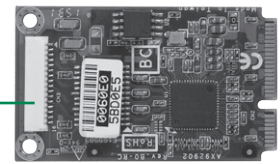
AX92902+AX93287 (P/N: E392902101)	Full-size PCI Express Mini Module with Gigabit LAN
--------------------------------------	--



▲ AX92902+AX93287



▲ AX93287



▲ AX92902

Gigabit LAN

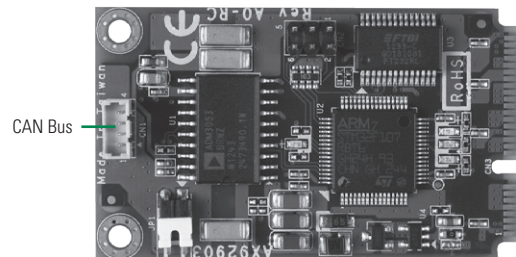
## AX92903

### Full-Size PCI Express Mini Module with CAN Bus

Features	<ul style="list-style-type: none"> <li>• USB to 1 channel CANBus port</li> <li>• Support CANOpen</li> </ul>
Form factor	Full-size PCI Express Mini Card
Specification	CAN 2.0A and CAN 2.0B
Dimension	51 x 30 mm

### Ordering Information

AX92903 (P/N: E392903100)	Full-size PCI Express Mini Module with CAN Bus
------------------------------	--



CAN Bus

Accessories

6



# Full-Size PCI Express Mini Modules

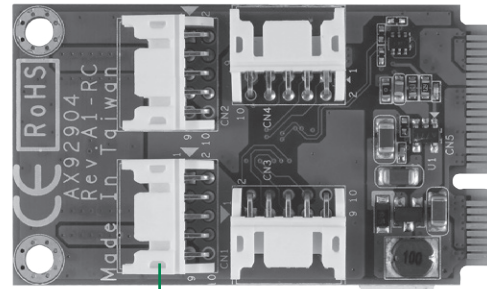
## AX92904

### Full-Size PCI Express Mini Module with 32 bit DIO

Features	<ul style="list-style-type: none"> <li>Support four 8-bit TTL level DIO ports with +5V powered</li> <li>Each bit can be programmable as input or output</li> </ul>
From factor	Full-size PCI Express Mini Card
Specification	32 bit programmable DIO
Dimension	51 x 30 mm

### Ordering Information

AX92904 (P/N: E392904101)	Full-size PCI Express Mini Module with 32 bit DIO
------------------------------	---



8 bit Digital I/O x 4

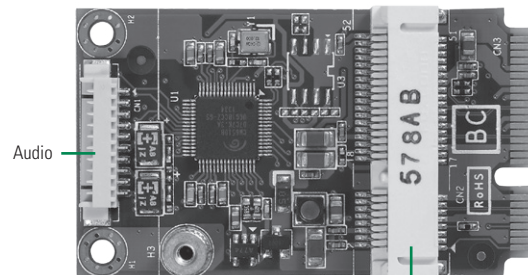
## AX92905

### Full-Size PCI Express Mini Module with Audio

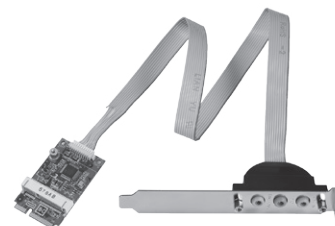
Features	<ul style="list-style-type: none"> <li>USB to Audio as Mic-In/Line-In/Line-Out</li> <li>Supports one half-size PCI Express Mini card slot (PCIe only)</li> </ul>
From factor	Full-size PCI Express Mini Card
Controller	Cmedia CM6510B
Specification	Specification Audio with Mic in/Line in/Line out and half-size PCI Express Mini Card slot (PCIe only)
Dimension	51 x 30 mm

### Ordering Information

AX92905 (P/N: E392905100)	Full-size PCI Express Mini Module with Audio and Half-size PCI Express Mini Card (PCIe only)
------------------------------	--



Full-size PCI Express Mini Card (PCIe only)



▲ AX92905 with cable

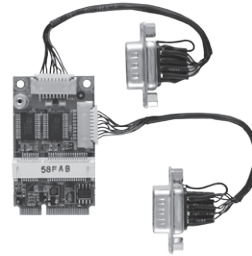
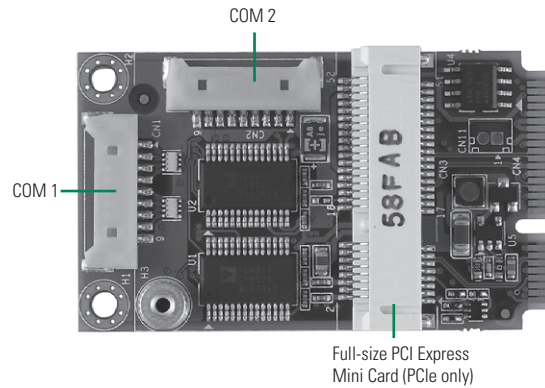
## AX92906

### Full-Size PCI Express Mini Module with COM

Features	<ul style="list-style-type: none"> <li>● USB to 2 Channel high speed RS-232 ports</li> <li>● Supports one half-size PCI Express Mini card slot (PCIe only)</li> </ul>
From factor	Full-size PCI Express Mini Card
Specification	2 COM ports (2 x RS-232) and half-size PCI Express Mini Card slot (PCIe only)
Dimension	51 x 30 mm

### Ordering Information

AX92906 (P/N: E392906100)	Full-size PCI Express Mini Module with COM and Half-size PCI Express Mini Card (PCIe only)
------------------------------	--



## AX92907

NEW

### Full-Size PCI Express Mini Module with SATA

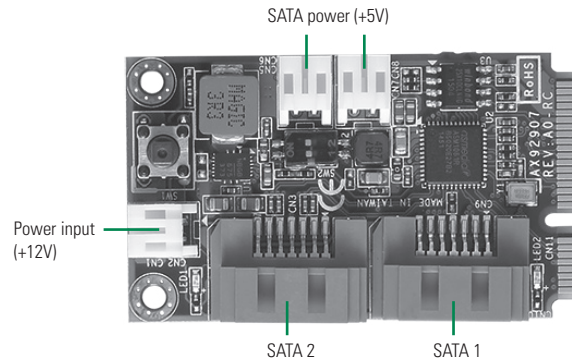
Features	<ul style="list-style-type: none"> <li>● Two independent SATA channels</li> <li>● Fully compatible with SATA revision 2.0 and 3.0 hard drives (HDD) and Solid State Drives (SSD)</li> <li>● Support RAID 0,1</li> <li>● Two SATA power connectors with +5V</li> </ul>
From factor	Full-size PCI Express Mini Card
Specification	2 SATA connector and SATA power connector
Dimension	51 x 30 mm

### Ordering Information

AX92907 (P/N: E392907100)	Full-size PCI Express Mini Module with SATA
------------------------------	---

### Optional ordering for cables

59429070600E	SATA power cable L=200mm
--------------	--------------------------



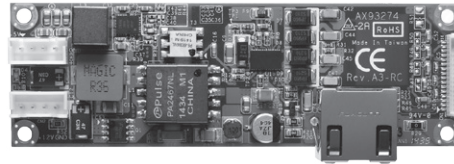
# PoE I/O Boards

## AX93274

- Specifications: A PoE-PD I/O board complies with IEEE802.3at standard via an internal cable to power on SBC
- Dimension: 100 x 32 mm
- Accessories: 1 x LAN cable, 1 x power cable, 1 x thermal module
- Compliant Product: PIC0831, PIC0121, PIC0841, PIC0843

### Ordering Information

AX93274	PoE-PD I/O board
(P/N: E393274100)	

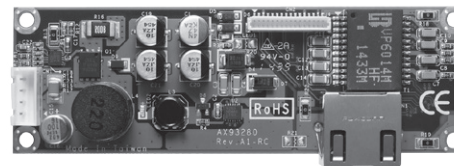


## AX93280

- Specifications: A PoE-PSE I/O board complies with IEEE802.3af standard via an internal cable connected to LAN port on a SBC to power an external PoE device
- Dimension: 100 x 32 mm
- Accessories: 1 x LAN cable, 1 x power cable
- Compliant Product: PIC0831, PIC0121, PIC0841, PIC0843

### Ordering Information

AX93280	PoE-PSE I/O board
(P/N: E393280100)	





# ZIO Modules

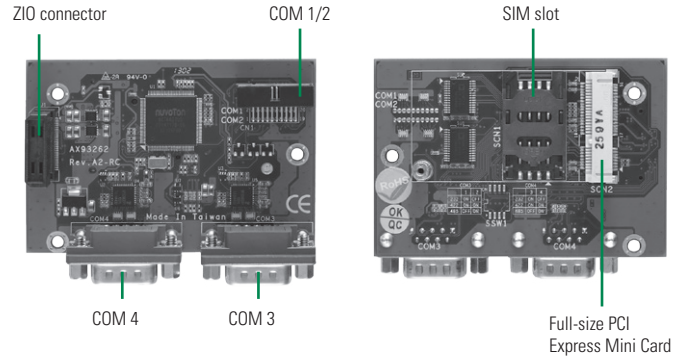
## AX93262

### ZIO module with four COM ports and one PCI Express Mini Card

- Specification: 2 x RS-232/422/485, 2 x RS-232, 1 x PCI Express Mini Card
- Dimension: 80 x 55 mm
- Accessory: 2 x COM with bracket cable
- Compliant Product: CAPA830, CAPA840, CAPA843, CAPA880, CAPA500

#### Ordering Information

AX93262 (P/N: E393262100)	ZIO module with 4 COM ports and 1 PCI Express Mini Card
------------------------------	---



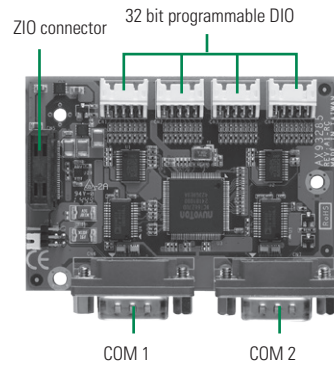
## AX93285

### ZIO module with two COM ports and 32 bit programmable DIO

- Specification: 2 x RS-232, 32-bit programmable DIO
- Dimension: 80 x 55 mm
- Compliant Product: CAPA830, CAPA840, CAPA843, CAPA880, CAPA500

#### Ordering Information

AX93285 (P/N: E393285100)	ZIO module with 2 COM ports and 32 bit programmable DIO
------------------------------	---



## AX93291

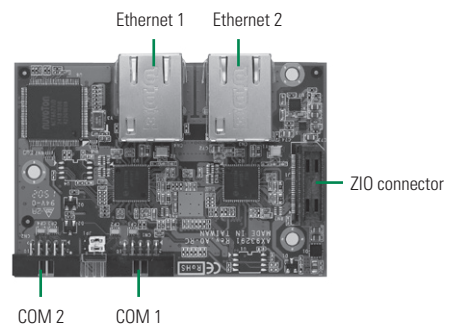
**NEW**

### ZIO module with two Gigabit Ethernet and two COM ports

- Specification: 2 x Gigabit Ethernet, 2 x RS-232
- Dimension: 80 x 55 mm
- Controller: Intel® i211AT
- Compliant Product: CAPA830, CAPA840, CAPA843, CAPA880, CAPA500

#### Ordering Information

AX93291 (P/N: E393291100)	ZIO module with two Gigabit Ethernet and two COM ports
------------------------------	--



## AX93295

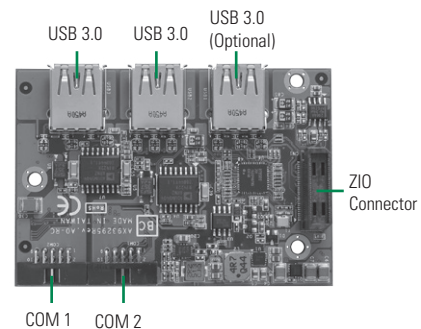
**NEW**

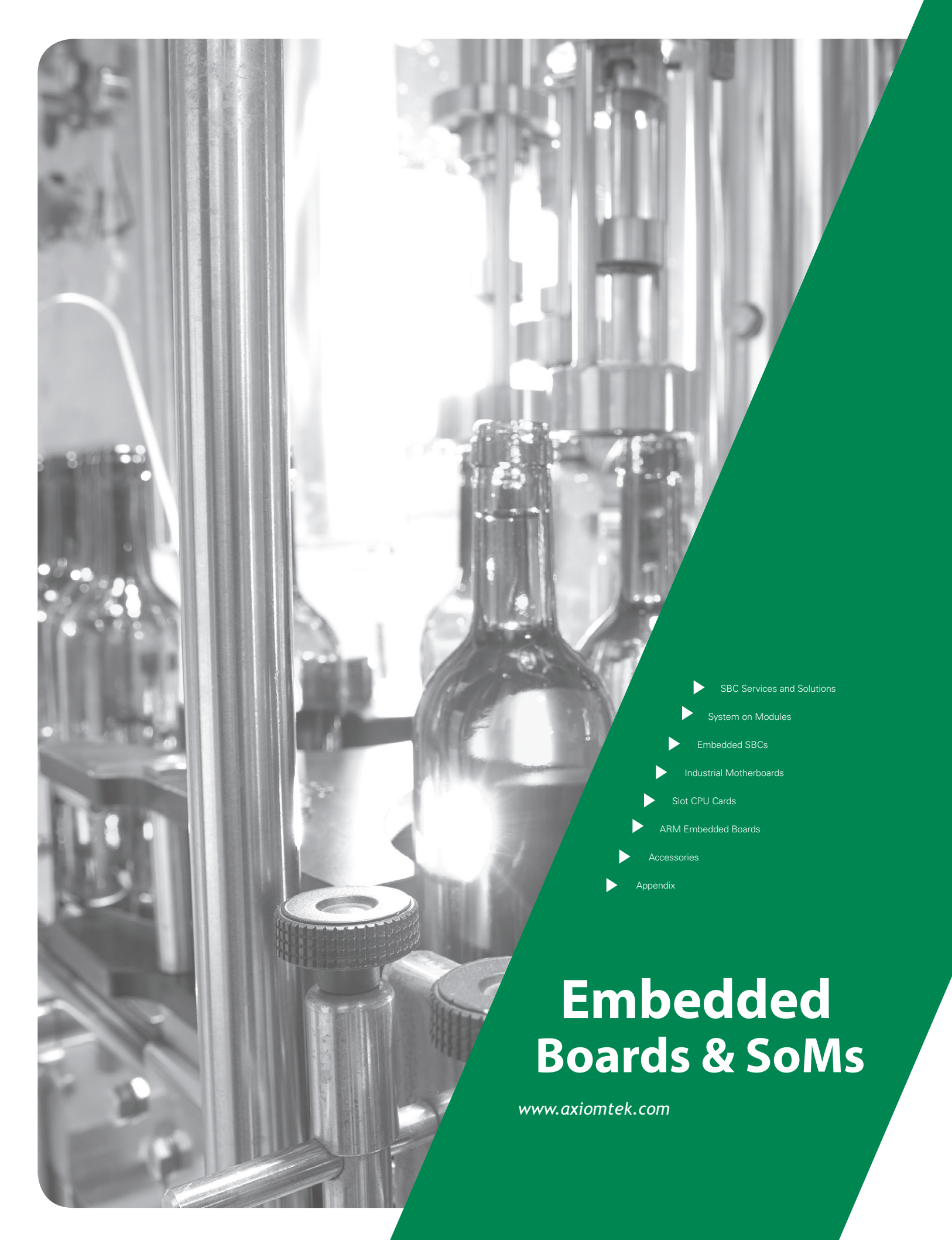
### ZIO module with two isolated COM ports and two USB 3.0 ports

- Specification: 2 x isolated RS-232, 2 x USB 3.0
- Dimension: 80 x 55 mm
- Compliant Product: CAPA830, CAPA840, CAPA843, CAPA880, CAPA500

#### Ordering Information

AX93295 (P/N: E393295100)	ZIO module with two isolated COM ports and two USB 3.0 ports
------------------------------	--



- 
- ▶ SBC Services and Solutions
  - ▶ System on Modules
  - ▶ Embedded SBCs
  - ▶ Industrial Motherboards
  - ▶ Slot CPU Cards
  - ▶ ARM Embedded Boards
  - ▶ Accessories
  - ▶ Appendix

# Embedded Boards & SoMs

[www.axiomtek.com](http://www.axiomtek.com)

# 7

## Appendix

Cable List	247
Instructions of Backplane Installation	249
Installation of the LCD Wiring Kits	250

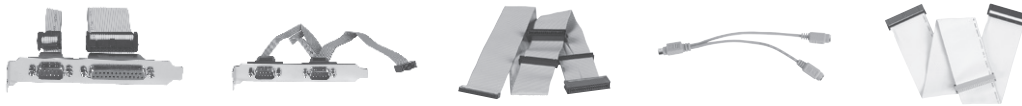
# Cable List



Part Number	59093201000E	59308300000E	59312260000E	59312260010E	59312260020E
Cable Description	AX93201 to AX93202 LAN cable, L=20 mm	IEE1394 cable w/ bracket, P= 2.0 mm, L=330 mm	VGA cable, DB15P, P=1.25, 12P, L=200 mm	COM port x 2 w/ bracket, P=1.25, L=250 mm	Audio cable w/ bracket, P=1.25, L=450 mm



Part Number	59327200000E	59380000300E	59380010300E	59380402010E	59380402020E
Cable Description	VGA+PS/2 cable, P=1.27 x 2.54, L=300 mm	COM port x 2 w/ bracket, P=1.27 x 2.54, L=300 mm	COM port x 1 w/ bracket, P=1.27 x 2.54, L=300 mm	COM port cable w/ bracket P=2.54, L=300 mm	COM port cable x1, P=2.0, L=300 mm



Part Number	59380502000E	59380703000E	59381400000E	59381560000E	59382601000E
Cable Description	COM + printer cable w/ bracket	COM port x 2 w/ bracket P=2.54	FDD cable, P=2.54, L=300 mm	Mini DIN Y-Cable for PS/2 K/B+M/S	ULTRA DMA66 IDE cable 40P 455 mm



Part Number	59382620000E	59382631000E	593826A0000E	59383600000E	593836A0000E
Cable Description	COM port x 1w/ bracket, P=2.0, L=300 mm	2 x USB 2.0 wafer cable w/ bracket 180 mm	SATA singal cable 500 mm	Audio cable w/ bracket	USB cable, 5 x 2P, P=2.0, L=180 mm



Part Number	593836A0010E	593836A0030E	59384500000E	59384500100E	59384500200E
Cable Description	40-40-40 IDE cable L=310+155 mm	SATA power cable 150 mm	COM + printer cable w/ bracket P=2.0, L=250 mm	Audio cable w/ bracket, P=2.0 L=450 mm	COM x 2 w/ bracket, P=2.0, L=250 mm



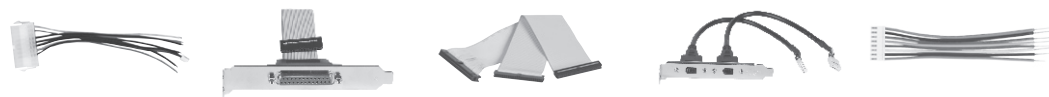
Part Number	59384500300E	59386831000E	59386832000E	59397300000E	59397300110E
Cable Description	FDD flat cable "2.54 to 2.0 pitch" 320 mm	USB cable w/ bracket, USB x 2, 2 x 5P, P=2.54, L=175 mm	Wafer 2.00mm 6P to PS/2 cable, L=200 mm	VGA cable, L=180 mm	USB cable w/ bracket, L=215 mm



Part Number	59397300200E	59402010000E	59408000010E	59408000090E	59408660010E
Cable Description	K/B & M/S cable, 2 x 5, P=2.0, L=300 mm	ATX power cable 10P L=150 mm	FFC 26P cable, L=210 mm	FFC 26P cable, L=290 mm	FFC 41P cable, L=60 mm



Part Number	59408660020E	59408660100E	59408660110E	59412260000E	59412260010E
Cable Description	FFC 41P cable, L=60 mm reverse	RCA cable+wafer 2P 2.0 mm, L=300 mm RC	S Video cable + wafer 4P 2.0 mm, L=300 mm	ATX power cable, 4P+5P+6P, L=150 mm	PS/2 cable, P=1.25, 6P to PS/2, L=150 mm



Part Number	59420040000E	59482630000E	59484500010E	594F2012900E	59908355000E
Cable Description	ATX power cable, 6P+4P, L=150 mm	Printer port cable, P=2.0, L=270 mm	44-44-40 pin IDE cable L=200 mm + 200 mm	2 ports of IEEE1394a cables w/ bracket 2.54-pitch	Power cable 8-pin P=130 mm



Part Number	59070213000E	59040131000E	59050203000E	59091501000E
Cable Description	DP to VGA cable L=85 mm	DP to DVI cable L=210 mm	DP to HDMI cable L=185 mm	DP to DP cable L=150 mm

\* All specifications and photos are subject to change without notice.

# Instructions of Backplane Installation

To make the ACPI (Advanced Configuration and Power Interface) feature work on the Embedded slot PC's, it is recommended to connect an ATX power supply and follow the instructions for wiring as shown below:



Photo 1 - Plug the ATX 20-pin male connector into the female connector of the Axiomtek backplane.

Photo 2 - Plug the 6-pin ACPI cable into the ACPI connector of the Axiomtek backplane.

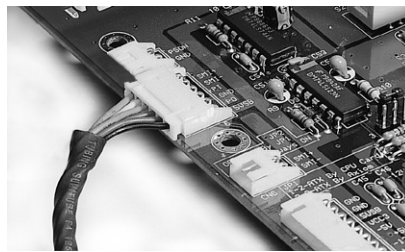
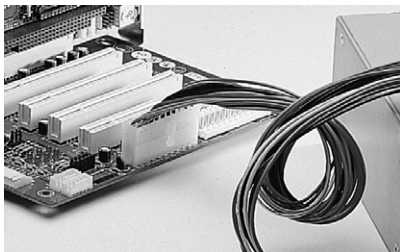
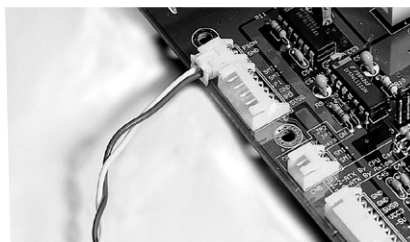
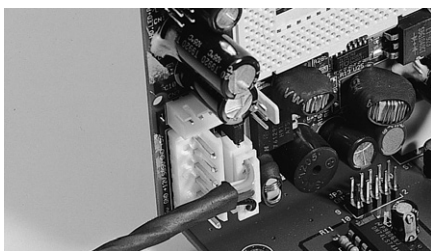


Photo 3 - Plug the ACPI cable into the ACPI connector of the Axiomtek SBC.

Photo 4 - Plug the soft switch bottom cable into the power connector of the Axiomtek backplane.



# Installation of the LCD Wiring Kits

To simplify the process of lighting up an LCD for embedded applications, Axiomtek provides suitable cable kit to connect the LCD panel to the SBC. The following photos illustrate the proper way to complete the first step of wiring. After the hardware installation is finished, go to CMOS setup by pressing "DEL" during POST to select the correct LCD type in the BIOS Setup Menu.

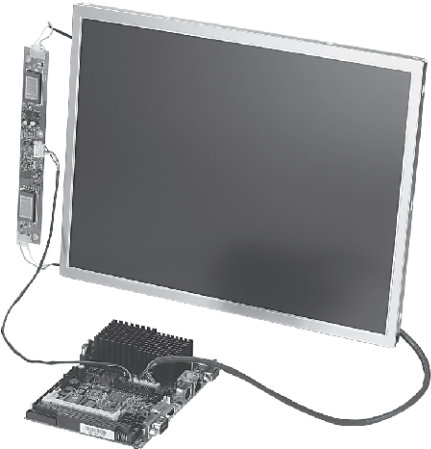


Photo 1 - - Install the SBC side adapter to the proper LCD interface on the Axiomtek SBC

Photo 2 - Plug the LCD side adapter to the applied LCD Panel

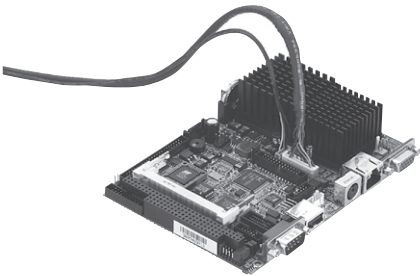
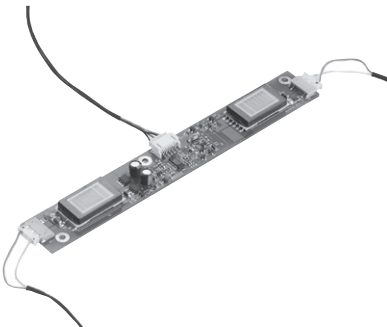


Photo 3 - - Connect the inverter cable from SBC side adapter to the inverter



0
1
2
3
4
5
6
Appendix
7









# 2017 Embedded Boards & SoMs

2017 Embedded Boards & SoMs



**Axiomtek Co., Ltd**  
8F., No.4, Lane 235,  
Baoqiao Road, Xindian District,  
New Taipei City, 231,  
Taiwan  
Tel: +886-2-2917-4550  
Fax: +886-2-2917-3200  
E-mail: info@axiomtek.com.tw



**Axiomtek**  
18138 Rowland Street,  
City of Industry, CA 91748  
USA  
Tel: +1-626-581-3232  
Fax: +1-626-581-3552  
E-mail: info@axiomtek.com

**Regional Sales Office**

Western Region ext. 116  
Northeast/Southeast Region ext. 123  
North Region ext. 189

**Axiomtek Systems**

300 Griffin Brook Drive,  
Methuen, MA 01844  
USA  
Tel: +1-978-258-0108  
E-mail: sales@axiomtek.com



**Axiomtek Deutschland GmbH**  
Hans-Böckler-Str. 10,  
40764 Langenfeld,  
Germany  
Tel: +49-2173-399360  
Fax: +49-2173-3993636  
E-mail: sales@axiomtek.eu

**Axiomtek UK Limited**

920 Peter House, Oxford Street,  
Manchester M1 5AN,  
UK  
Tel: +44(0)1612093680  
E-mail: wen@axiomtek.com.tw

**Axiomtek ITALIA S.r.l.**

Via Pavia, 21,  
20835 Muggiò (MB),  
Italy  
Tel: +39-02-664299.1 r.a.  
Fax: +39-02-66400279  
E-mail: info@axiomtek.it



**Axiomtek Technology Co., Ltd**  
10F, Block B, Build 6 (Boahui Building),  
Baoneng Science and Technology Park, NO.1,  
Qingxiang Road, Longhua New District,  
Shenzhen 518109  
P.R. China  
Tel: +86-0755-32909050  
Fax: +86-0755-32909060  
E-mail: axcn@axiomtek.com.cn

**Axiomtek (Malaysia) Sdn. Bhd.**

No 16, Jalan Tandang 51/205A  
Seksyen 51, 46050 Petaling Jaya  
Selangor, Malaysia

Tel: +603-77733908  
Fax: +603-77733873  
E-mail: info@axiomtek.com.my

**Axiomtek (Thailand) Co., Ltd.**

7/17 Moo 6, Tumbol Banmai,  
Amphur Pakkret, Nonthaburi,  
Thailand 11120

Tel: +662-573-4725  
Fax: +662-573-4726  
E-mail: sales@axiomtek.co.th



intel IoT Solutions Alliance V702 94300004370E

V702

System on Modules  
Embedded Single Board Computers  
Industrial Motherboards  
Slot CPU Cards  
ARM Embedded Boards

www.axiomtek.com

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Single Board Computers](#) category:*

*Click to view products by [Axiomtek](#) manufacturer:*

Other Similar products are found below :

[AmITX-SL-G-Q170](#) [MVME61006E-2173R](#) [BBS2600BPS](#) [BLKNUC7I3DNHNC1978015](#) [IOT-LS1012A-OXALIS](#) [NITX-300-ET-DVI](#)  
[UPN-EHLX4E-A10-0432](#) [UPN-EHLX4RE-A10-0864](#) [PCE-4129G2-00B2E](#) [81004-0000-99-1](#) [S26361-F5000-J004](#) [BPI-M2S\(AMLOGIC](#)  
[S922X\)](#) [BPI-M2S\(AMLOGIC A311D\)](#) [ROCK 4C+ PREMIUM KIT](#) [HUMMINGBOARD-I2EX BASE + WIFI/BT](#) [HUMMINGBOARD-I4](#)  
[PRO + WIFI/BT](#) [VAB-600-B](#) [RT5350F-OLINUXINO-EVB](#) [MITX-440-DVI-2E](#) [NITX-315-DEVKIT](#) [A13-SOM-512](#) [BANANA PI BPI-M1+](#)  
[A13-SOM-WIFI-4GB](#) [AM3359-SOM-EVB-IND](#) [1996](#) [AIMB-223G2-S0A1E](#) [AIMB-562VG-GRA1E](#) [MIO-2263JH-U0A1E](#) [MIO-5270DZ-](#)  
[2GS0A1E](#) [MIO-5251JZ2-2GA1E](#) [PCE-5126QVG-00A1E](#) [PCE-5125QG2-00A1E](#) [MIO-5251E-S3A1E](#) [MIO-2261Z-2GS6A1E](#) [MIO-](#)  
[5270DZ22GS0A1E](#) [PCE-7127G2-00A1E](#) [AIMB-230G2-U0A1E](#) [MIO-2263EZ22GS3A1E](#) [SIMB-M22-2G2S0A1E](#) [ASMB-823I-00A1E](#)  
[MIO-5251J-U0A1E](#) [AIMB-502WG2-00A1E](#) [BBB01-SC-505](#) [IMB-M43](#) [AmITX-BT-I-E3845](#) [UPS-APLC2-A10-0432](#) [PICO300VGA-N3710](#)  
[PICO300VGA-N3060](#) [PICO300HGA-N3710](#) [W65C265QBX](#)