



ASRock IPC Motherboard, Ubiquitous Solutions

2014 / 2H



Reliable
Life Monitoring System



Fun
Slot Machine



Convenient
Kiosk



Retail
POS System



Information
Signage



Security
DVR System



Professional
Industrial Automation
Panel PC

About ASRock

ASRock Inc. was established in 2002, specializing in the field of motherboards and striving to build up its own brand image. ASRock was publicly listed in TAIEX (#3515) in 2007 and its revenue up to \$365 million USD in 2013 (projection). With the 3C design concept, "Creativity, Consideration, Cost-effectiveness", the company explores the limits of motherboard manufacturing while paying attention to eco issues at the same time, developing products with eco-friendly concepts.

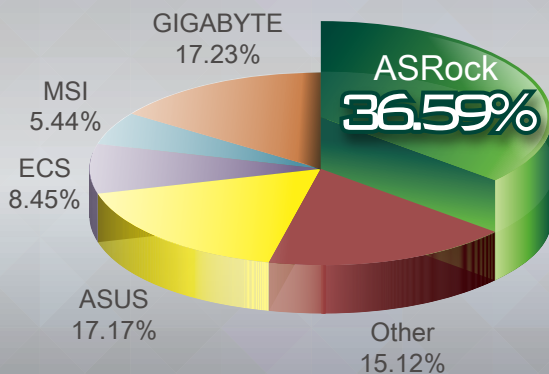
ASRock is growing fast and has become the world's 3rd largest motherboard brand with its headquarters in Taipei, Taiwan and branches in Europe and USA. The young and vibrant company targets from entry level to mainstream segment MB business, owning reputation around the world market with its reliability and proficiency. Recently, ASRock continuously expanded its product lines and has successfully launched Industrial PC motherboards to satisfy the most demanding technology nowadays. With the core value "Productivity, Reliability, Stability", ASRock provides the best price/performance mainboards to cater for vertical market needs.

World's Top3 Brand Motherboard Manufacturer

- ◆ ASRock Inc. Established in 2002, Capital USD\$38 million
- ◆ Became a public company in Nov, 2007 (TWSE: 3515)
- ◆ Revenue : USD \$365 million 2013 (projection)



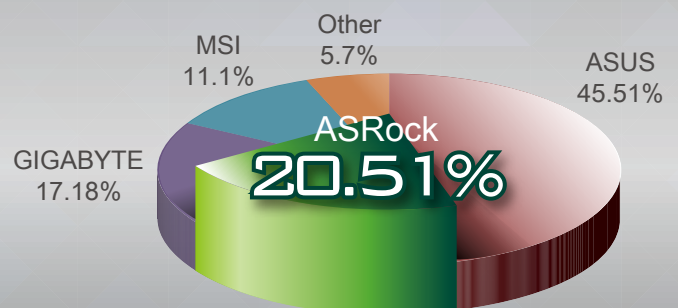
2013 Market Share in Korea



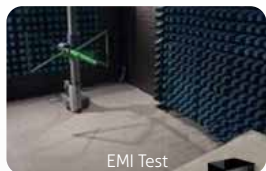
2013 January-June MB Market Share in Korea
Source :Danawa.com



2013 Market Share in Japan



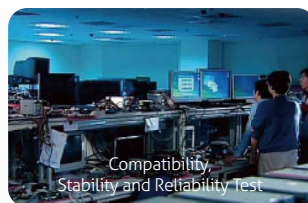
2013 June Best Selling Motherboard Brand in Japan
Source :Kakaku.com



EMI Test



Temperature Humidity Test

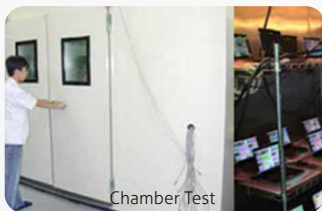


Compatibility,
Stability and Reliability Test

ASRock Top Production and Quality Control



Vibration Test



Chamber Test



Power Consumption Test

Productivity . Stability . Reliability

When it comes to professional industry PCs, functionality is everything! ASRock's industrial motherboard series will enhance your business with lots of easy-to-use applications. From POS, KIOSK, Gaming Machines, Panel PCs to Surveillance... and so on, getting more from the motherboard has never been easier. Our comprehensive motherboard packages include everything you need for building a successful business.

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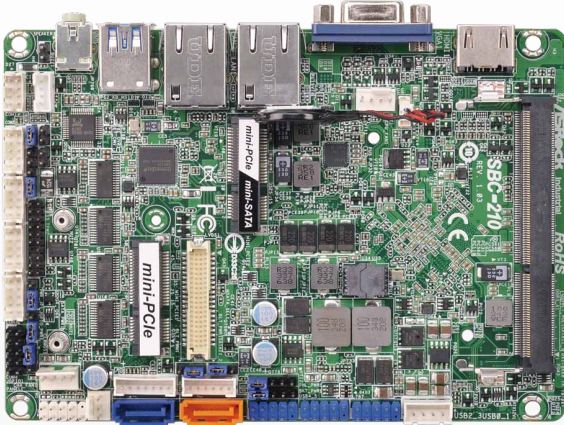
Software APIs / Utilities

SBC-210

3.5" SBC Motherboard

Spotlight Features

- Intel® Atom™ Baytrail-M/D Processor
- Integrated Intel® Gen7 Intel Graphics DX 11, OGL3.2
- Supports Single Channel DDR3L 1333MHz, 1 x SO-DIMM, up to 4GB system memory
- 1 x COM (RS-232/422/485), 3 x COM (RS-232)
- 1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 2 x USB 3.0, 6 x USB 2.0, 2 x SATA2
- 1 x mini-PCIe, 1x mSATA (shared)
- Gigabit LAN : 2 x Realtek Lan
- 1 x TPM Header
- 9~36 V DC-in



Specifications

Processor System

Dimension	3.5" SBC (5.8-in x 4.0-in) / (146 x 102 mm)
CPU	Intel® new Atom™ Baytrail-M/D Supports Hyper-Threading Technology
Core Number	4
Max Speed	(By CPU)
L3 Cache	2MB
Chipset	N/A
BIOS	UEFI

Expansion Slot

PCI	0
Mini-PCIe	1 (Half Size) + 1 (Full Size) shared with mSATA
mSATA	1 (Full Size) shared with SATA2
PCIe	0
CFast Card Socket	0

Memory

Technology	Single Channel DDR3L 1333 MHz SDRAM
Max.	4GB
Socket	1 x SO-DIMM

Graphics

Controller	Intel® Gen7 Intel Graphics DX 11*, OGL3.2
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz
HDMI	Supports HDMI 1.4a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes (Dual Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: Realtek RTL8111G-CG
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	2
USB	2 x USB 3.0 compliant
Audio	1 (Line out)
Serial	0
PS/2	0

Internal Connector

USB	6 (3*2.54 pitch header USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	4 (RS-232)
SATA	2x SATA2 (3.0Gb/s)
m-SATA	1 (shared)
Mini-PCIe	1
Parallel	0
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	9-36V DC-In using 4-pin ATX PWR Con
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

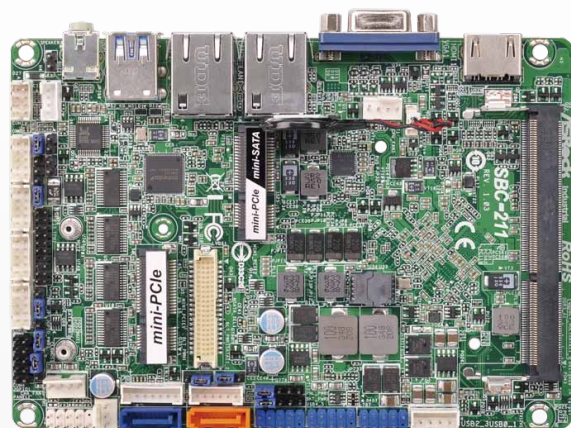
Environment

Operating Temperature	0°C – 60°C
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E3800 SERIES

SBC-211

3.5" SBC Motherboard



Spotlight Features

- Intel® Atom™ Baytrail-E3800 Series Processor
- Integrated Intel® Gen7 Intel Graphics DX 11*, OGL3.2
- Supports Single Channel DDR3L 1333MHz, 1 x SO-DIMM, up to 4GB system memory
- 1x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 2xUSB 3.0, 6 x USB 2.0, 2 x SATA2
- 1 x mini-PCIe, 1x mSATA(shared)
- Gigabit LAN : 2 x Realtek Lan
- 1 x TPM Header
- 9~36 V DC-in

Specifications

Processor System

Dimension	3.5" SBC (5.8-in x 4.0-in)/ (146 x 102 mm)
CPU	Intel® new Atom™ Baytrail-E3800 Series Supports Hyper-Threading Technology Default E3826 Dual core processor
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L2 Cache	(By CPU)
Chipset	(By CPU)
BIOS	UEFI

Expansion Slot

PCI	0
Mini-PCIe	1 (Half Size) + 1 (Full Size) shared with mSATA
mSATA	1 (Full Size) shared with SATA2
PCIe	0
CFast Card Socket	0

Memory

Technology	Single Channel DDR3L 1333 MHz SDRAM
Max.	4GB
Socket	1 x SO-DIMM

Graphics

Controller	Intel® Gen7 Intel Graphics DX 11*, OGL3.2
VRAM	Shared Memory
VGA	Supports max. resolution 1920X1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz
HDMI	Supports HDMI 1.4a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes (Dual Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: Realtek RTL8111G-CG
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	2
USB	2 x USB 3.0 compliant
Audio	1 (Line out)
Serial	0
e-SATA	0
PS/2	0

Internal Connector

USB	6 (3*2.54 pitch header USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	4 (RS-232)
SATA	2x SATA2 (3.0Gb/s)
m-SATA	1 (shared)
Mini-PCIe	1
Parallel	0
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	9-36V DC-In using 4-pin ATX PWR Con
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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SBC-310

3.5" SBC Motherboard

coming soon



Spotlight Features

- BGA Haswell MCP for Intel core i5-4300U / Celeron 2980U (Default) (Haswell ULT)
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3L 1333/1600MHz, 1 x SO-DIMM, up to 8GB system memory
- 1 x DP, 2 x HDMI, 1 x 24 bit Dual Channel LVDS
- 4 x USB 3.0, 4 x USB 2.0, 2 x SATA3
- 1 x mini-PCIe, 1x mSATA,
- Gigabit LAN : 1 x RTL8111G x 1, 1 x Intel I218LM(4300U SKU)
- Gigabit LAN : 1 x RTL8111G x 1, 1 x Intel I218V(2980U SKU)
- 1 x TPM Header

Specifications

Processor System	
Dimension	3.5" SBC (5.8-in x 4.0-in) / (146 x 102 mm)
CPU	BGA type for Intel Core i5-4300U / Celeron 2980U mobile processor (Haswell ULT MCP) Default 2980U Dual core MCP
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L2 Cache	(By CPU)
Chipset	(By CPU)
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCIe	1 (Half Size) + 1 (Full Size) shared with mSATA
mSATA	1 (Full Size) shared with SATA2
PCIe	0
CFast Card Socket	0
Memory	
Technology	Single Channel DDR3L 1333/1600 MHz SDRAM
Max.	8GB
Socket	1 x SO-DIMM
Graphics	
Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	0
LVDS	1
HDMI	Supports HDMI 1.4a, supported with Level Shifter, resolution up to 4096x2304 (1x HDMI)
DVI	0
Display Port	1
Multi Display	Yes (Three Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1:RTL8111G, LAN2: Intel I218LM (4300U SKU) GbE LAN1:RTL8111G, LAN2: Intel I218V (2980U SKU)
Connector	2 x RJ 45
SATA	
Max Data Transfer Rate	SATA3 (6.0Gb/s)

Rear I/O	
VGA	0
HDMI	2
DVI-I/D	0
Display Port	1
Ethernet	2
USB	4 x USB 3.0
Audio	0
Serial	0
e-SATA	0
PS/2	0
Internal Connector	
USB	4 (2 x USB Header 2.54mm pitch)
LVDS/Inverter	24 bit dual channel LVDS
VGA	0
Serial	4 (2 RS-232/422/485, 2 RS-232)
SATA	2 x SATA3 (6.0Gb/s)
m-SATA	1 (shared)
Mini-PCIe	1
Parallel	0
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

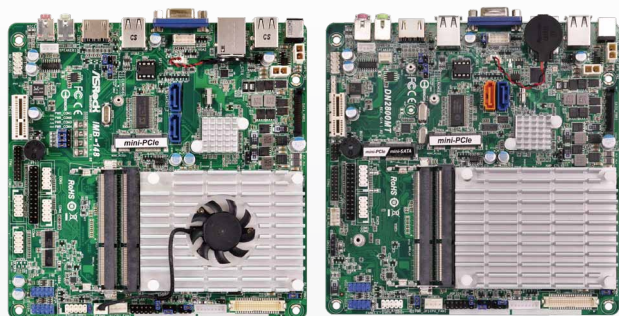
Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	DC 9-36 input
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C

IMB-148 / DN2800MT

Mini-ITX Motherboard



IMB-148

DN2800MT



Spotlight Features

- Intel® Atom™ CedarView Processor D2550/N2800 (IMB-148/DN2800MT)
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, PS3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- IMB-148 : 4 x COM (RS-232); DN2800MT : 2 x RS-232 COM
- 1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS (IMB-148/DN2800MT)
- IMB-148 : 8 x USB 2.0, 2 x SATA2; DN2800MT : 8 x USB 2.0, 2 x SATA2
- 1 x mini-PCle, 1 x mSATA (DN2800MT)
- Gigabit LAN : IMB-148 : 1 x Realtek LAN; DN2800MT : 1 x Intel 82574L LAN
- 9~19 V DC-in

Specifications

Processor System		IMB-148	DN2800MT
Dimension	Mini-ITX (6.7-in x 6.7-in)		
CPU	Intel® Atom™ CedarView Processor D2550/N2800 (IMB-148/DN2800MT) Supports Hyper-Threading Technology		
Core Number	2	2	
Max Speed	D2550: 1.86 GHz	N2800: 1.86 GHz	
L3 Cache	N/A	N/A	
Chipset	NM10	NM10	
BIOS	UEFI	UEFI	
Expansion Slot			
PCI	0	0	
Mini-PCle	1(half size) PCle only	1(half size) + 1 (Full size) shared with m-SATA	
mSATA	0	1 (shared with mini-PCle)	
PCle	1*1x	1 *1x	
CFast Card Socket	0	0	
Memory			
Technology	Single Channel DDR3 800/1066 MHz SDRAM	Single Channel DDR3 800/1066 MHz SDRAM	
Max.	4 GB	4 GB	
Socket	2 x SO-DIMM	2 x SODIMM	
Graphics			
Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0		
VRAM	share Memory		
VGA	Supports max. resolution 1920 x 1200		
LVDS	Single channel 24-bit, max resolution 1440 x 900@60Hz	Dual channel 24-bit, max resolution 1920 x 1200@60Hz	
HDMI	1		
DVI	no		
Display Port	no		
Multi Display	Yes (Dual Display)		
Ethernet			
Interface	10/100/1000 Mbps		
Controller	GbE LAN Realtek	GbE LAN Intel 82574L	
Connector	1 x RJ 45		
SATA			
Max Data Transfer Rate	SATA2 (3.0Gb/s)		

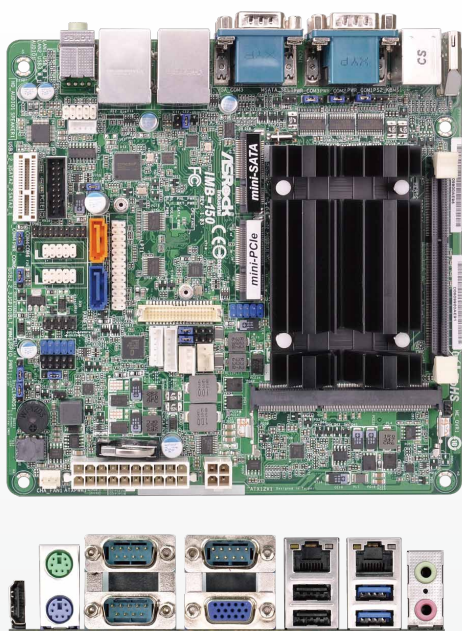
Rear I/O		IMB-148	DN2800MT
VGA	1		
HDMI	1		
DVI-I/D	0		
Display Port	0		
Ethernet	1		
USB	4 x USB 2.0		
Audio	2 (Mic-in, Line-out)		
Serial	0		
PS/2	0		

Internal Connector		
USB	4 x USB 2.0	
LVDS/Inverter	1/1	
VGA	1 (shared with rear I/O VGA)	
Serial	4 x RS-232	2 x RS-232
SATA	2 x SATA2 (3.0Gb/s)	
m-SATA	0	1
Mini-PCle	1	
Parallel	1	
IrDA	0	1
GPIO	4 in / 4 out	
SATA PWR Output Con	1	
Speaker Header	1	

Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements	
Input PWR	9~19V DC-In (2-pin PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment	
Operating Temperature	0°C ~ 60°C



IMB-150

Mini-ITX Motherboard

Spotlight Features

- Intel® Atom™ Baytrail-M/D Processor
- Integrated Intel® Gen7 Intel Graphics DX 11*, OGL3.2
- Supports Dual Channel DDR3 1333MHz, 2 x SO-DIMM, up to 8GB system memory
- 3 x COM (RS-232/422/485), 2 x COM (RS-232)
- 1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 4 x USB 3.0, 6 x USB 2.0, 2 x SATA2
- 1 x mini-PCle, 1 x mSATA(shared)
- Gigabit LAN : 2 x Realtek Lan
- 9~19 V DC-in / ATX Power Support

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Atom™ Baytrail-M/D Processor Supports Hyper-Threading Technology
Core Number	4
Max Speed	(By CPU)
L3 Cache	2MB
Chipset	N/A
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCle	1 (Full Size)
mSATA	1
PCle	1
CFast Card Socket	0
Memory	
Technology	Dual Channel DDR3 1333 MHz SDRAM
Max.	8GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel® Gen7 Intel Graphics DX 11*, OGL3.2
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz
HDMI	Supports HDMI 1.3a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes (Dual Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN: 2 x Realtek RTL8111G-CG
Connector	2 x RJ-45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/s)

Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	2
USB	4 (2 x USB 3.0 compliant, 2 x USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	3 (RS-232/422/485)
PS/2	2 (1 x keyboard and 1 x mouse)

Internal Connector	
USB	6 (2 x USB 3.0 compliant, 4 x USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	1 (shared with rear I/O VGA COM)
Serial	2 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	1 (shared)
Mini-PCle	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements	
Input PWR	9-19V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

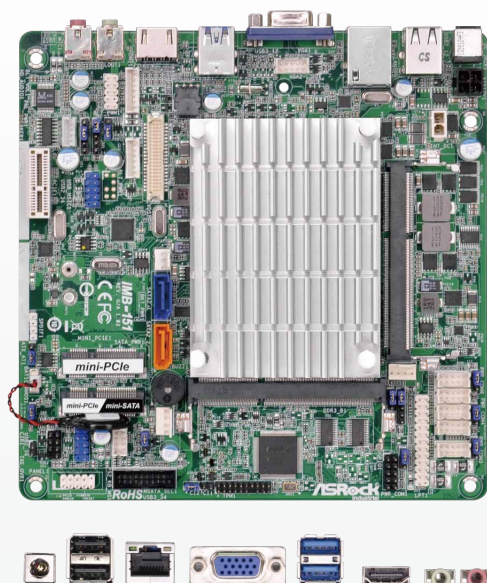
Environment	
Operating Temperature	0°C ~ 60°C

IMB-151

Mini-ITX Motherboard

Spotlight Features

- Intel® Atom™ Baytrail-M/D Processor
- Integrated Intel® Gen7 Intel Graphics DX 11, OGL3.2
- Supports Dual Channel DDR3 1333MHz, 2 x SO-DIMM, up to 8GB system memory
- 1 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 4 xUSB 3.0, 6 x USB 2.0, 2 x SATA3
- 1 x mini-PCle, 1x mSATA (shared)
- Gigabit LAN : 1 x Realtek Lan
- 9~19 V DC-in



Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Atom™ Baytrail-M/D Processor Supports Hyper-Threading Technology
Core Number	4
Max Speed	(By CPU)
L3 Cache	2MB
Chipset	N/A
BIOS	UEFI

Expansion Slot

PCI	0
Mini-PCle	1 (half size) + 1 (full size) shared
mSATA	1
PCle	1
CFast Card Socket	0

Memory

Technology	Dual Channel DDR3 1333 MHz SDRAM
Max.	8GB
Socket	2 x SO-DIMM

Graphics

Controller	Intel® Gen7 Intel Graphics DX 11*, OGL3.2
VRAM	share Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz
HDMI	Supports HDMI 1.3a, max resolution 1920x1200
DVI	no
Display Port	no
Multi Display	Yes (Dual Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN Realtek
Connector	1 x RJ 45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	1
USB	4 (2 x USB 3.0 compliant, 2 x USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	0
PS/2	0

Internal Connector

USB	6 (2 x USB 3.0 compliant, 4 x USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	1 (shared with rear I/O VGA COM)
Serial	5 (1 RS-232/422/485, 4 RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	1 (shared)
Mini-PCle	1
Parallel	1
IrDA	0
GPIO	4in / 4 out
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

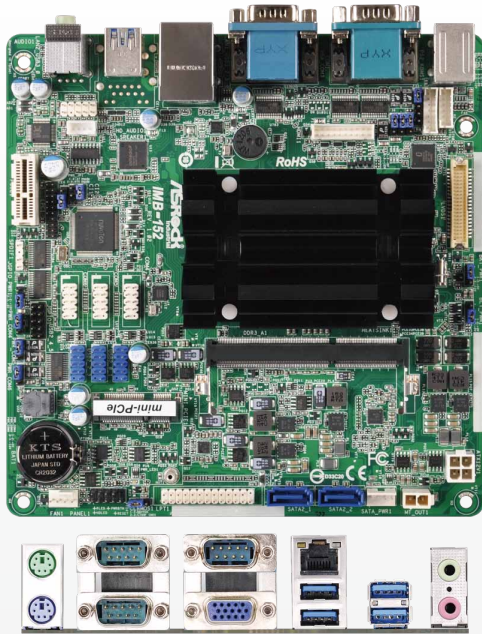
Input PWR	9~19V DC-In (2-pin PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-152

Mini-ITX Motherboard



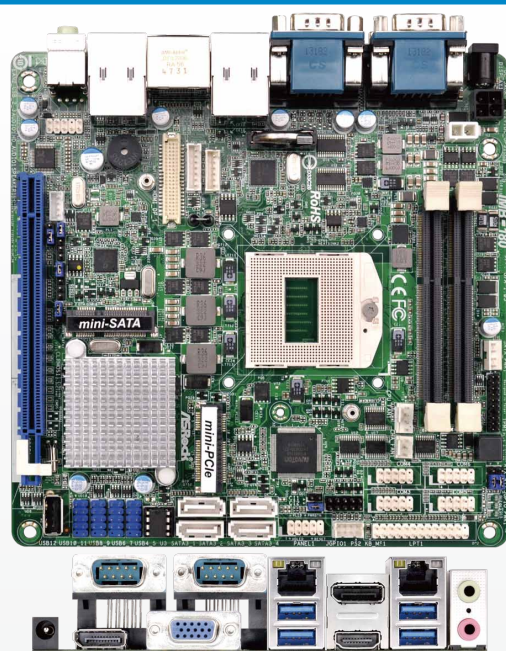
Spotlight Features

- Intel® Atom™ Baytrail-M/D Processor
- Integrated Intel® Gen7 Intel Graphics DX 11*, OGL3.2
- Supports Dual Channel DDR3L 1333MHz, 2 x SO-DIMM, up to 4GB system memory
- 1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 4 xUSB 3.0, 6 x USB 2.0, 2 x SATA2
- 1 x mini-PCle, 1 x PCIe x1 slot
- Gigabit LAN : 1 x Realtek Lan
- 1 x TPM Header
- 12 V DC-in

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® new Atom™ Baytrail-M/D Supports Hyper-Threading Technology Default J1900 Quad core processor
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L2 Cache	(By CPU)
Chipset	(By CPU)
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCle	1 (Half Size)
mSATA	0
PCIe	1 (x1)
CFast Card Socket	0
Memory	
Technology	Single Channel DDR3L 1333 MHz SDRAM
Max.	4GB
Socket	1 x SO-DIMM
Graphics	
Controller	Intel® Gen7 Intel Graphics DX 11*, OGL3.2
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz
HDMI	Supports HDMI 1.4a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes (Dual Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN: 1 x Realtek RTL8111G-CG Optional Support 2 x Realtek RTL8111g-CG
Connector	1 x RJ-45 Optional 2 x RJ-45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/s)

Rear I/O	
VGA	1
HDMI	1(Pin Header)
DVI-I/D	0
Display Port	0
Ethernet	1 Optional 2
USB	4 x USB 3.0
Audio	2 (Mic-in, Line-out)
Serial	3 x RS-232
e-SATA	
PS/2	2 (1 x keyboard and 1 x mouse)
Internal Connector	
USB	6 (3÷2.54 pitch header USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	3 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	0
Mini-PCle	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO Share with COM 5
SATA PWR Output Con	1
Speaker Header	1
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min
Power Requirements	
Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready
Environment	
Operating Temperature	0°C – 60°C



IMB-180

Mini-ITX Motherboard

Spotlight Features

- Socket rPGA 947 Intel Core i7/i5/i3/mobile processor (Haswell)
- Intel® QM87 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x VGA, 1 x HDMI, 2 x DisplayPort, 24 bit Dual Channel LVDS
- 4 x USB 3.0, 8 x USB 2.0, 4 x SATA3
- 1 x mini-PCIe, 1 x mSATA, 1 x PCIe (x16)
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Socket rPGA947 for Intel Core i7/i5/i3/mobile processor (Haswell)
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	QM87
BIOS	UEFI

Expansion Slot

PCI	0
Mini-PCIe	1 (Full size)
mSATA	1 (Full size)
PCIe	1 (x16) with Riser card extend to x8+x8 or x8+x4+x4
CFast Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	1
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x 1600
Multi Display	Yes (Three Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S), Supports RAID 0/1/5/10
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	2
Ethernet	2
USB	4 x USB 3.0 compliant
Audio	2 (Mic-In, Line-Out)
Serial	2 (RS-232/422/485)
PS/2	0

Internal Connector

USB	8 (4 x USB Header 2.54mm pitch,) 1 Vertical Type A USB Connector
LVDS/Inverter	24 bit dual channel LVDS
VGA	0
Serial	4 (RS-232)
SATA	4 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	1
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	0

Watchdog Timer

Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

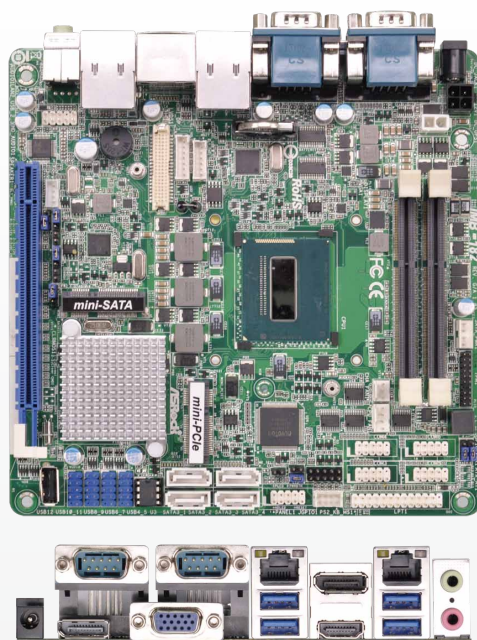
Input PWR	DC-in 12V~19V
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-182

Mini-ITX Motherboard



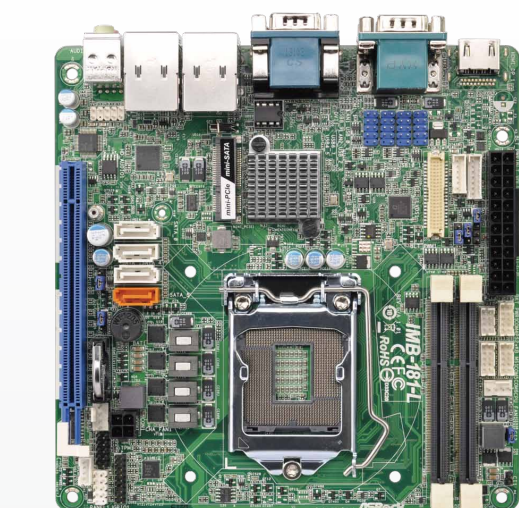
Spotlight Features

- BGA type for Intel Core i7/i5/i3/mobile processor (Haswell)
- Intel® QM87 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2x SO-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x VGA, 1 x HDMI, 2x DisplayPort, 24 bit Dual Channel LVDS
- 4 x USB 3.0, 8 x USB 2.0, 4 x SATA3
- 1 x mini-PCIe, 1 x mSATA, 1 x PCIe (x16),
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	BGA type for Intel Core i7/i5/i3/mobile processor (Haswell)
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	QM87
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCIe	1 (Full size)
mSATA	1 (Full size)
PCIe	1 (x16) with Riser card extend to x8+x8 or x8+x4+x4
CFast Card Socket	0
Memory	
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	1
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x 1600
Multi Display	Yes (Three Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/s), SATA3 (6.0Gb/s), Supports RAID 0/1/5/10

Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	2
Ethernet	2
USB	4 x USB 3.0 compliant
Audio	2 (Mic-In, Line-Out)
Serial	2 (RS-232/422/485)
PS/2	0
Internal Connector	
USB	8 (4 x USB Header 2.54mm pitch,) 1 Vertical Type A USB Connector
LVDS/Inverter	24 bit dual channel LVDS
VGA	0
Serial	4 (RS-232)
SATA	4 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	1
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	0
Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min
Power Requirements	
Input PWR	DC-in 12V~19V
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready
Environment	
Operating Temperature	0°C – 60°C



IMB-181-L



IMB-181-D

IMB-181-L / IMB-181-D

Mini-ITX Motherboard

Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® Q87 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 3 x COM (RS-232/422/485), 3 x COM (RS-232)
- 1 x VGA, 1 x HDMI, 1 x 24 bit Dual Channel LVDS/DisplayPort (181-L/181-D)
- 4 x USB 3.0, 8 x USB 2.0, 4 x SATA3
- 1 x mini-PCIe, 1 x PCIe (x16),
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System	IMB-181-L	IMB-181-D
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	Q87	
BIOS	UEFI	

Expansion Slot

PCI	0
Mini-PCIe	1 (full size) shared with m-SATA
mSATA	1 (shared with mini-PCIe)
PCIe	1 (x16)
CFAST Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	Supports max resolution 2048 x 1536	
LVDS	1	No
HDMI	Supports HDMI 1.4a, max resolution 1920x1200	
DVI	No	Yes
Display Port	No	Supports max resolution 2560 x 1600
Multi Display	Yes (Three Display)	

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S), Supports RAID 0/1/5/10
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Rear I/O	IMB-181-L	IMB-181-D
VGA	1	0
HDMI	1	
DVI-I/D	0	1 (DVI-I)
Display Port	0	1
Ethernet	2	
USB	4 x USB 3.0 compliant	
Audio	2 (Mic-in Line- out)	
Serial	3 (RS-232/422/485)	
PS/2	0	

Internal Connector

USB	8 (4 x USB Header 2.54mm pitch)	
LVDS/Inverter	24 bit dual channel LVDS	0
VGA	0	
Serial	3 (RS-232)	
SATA	4 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10	
m-SATA	1 (shared)	
Mini-PCIe	1 (shared)	
Parallel	0	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	0	
Speaker Header	1	

Watchdog Timer

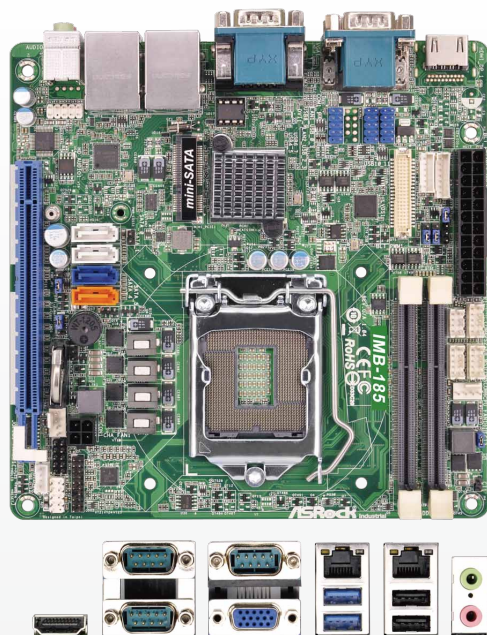
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

Input PWR	ATX PWR (4 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-185

Mini-ITX Motherboard

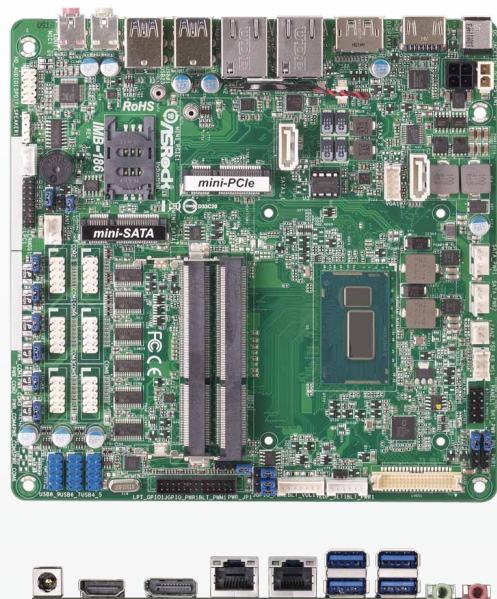
Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® H81 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 3 x COM (RS-232/422/485), 3 x COM (RS-232)
- 1 x VGA, 1 x HDMI, 1 x 24 bit Dual Channel LVDS
- 2 x USB 3.0, 8 x USB 2.0, 2 x SATA3, 2 x SATA2
- 1x mSATA, 1 x PCIE (x16),
- Gigabit LAN: 1 x Intel I210, LAN2: 1 x Intel I217V
- 1 x TPM Header

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	H81
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCIe	0
mSATA	1
PCIe	1 (x16)
CFast Card Socket	0
Memory	
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 1920X1200
LVDS	1
HDMI	Supports HDMI 1.4a, max resolution 4096X2304
DVI	0
Display Port	0
Multi Display	Yes (dual display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217V (w/o v-Pro support)
Connector	2 x RJ 45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S)

Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	2
USB	2 x USB 3.0 + 2 x USB2.0 compliant
Audio	Mic-in Line- out
Serial	3 (RS-232/422/485)
e-SATA	0
PS/2	0
Internal Connector	
USB	6 (3 x USB Header 2.54mm pitch)
LVDS/Inverter	24 bit dual channel LVDS
VGA	1
Serial	3 (RS-232)
SATA	2 x SATA3 (6.0Gb/s), 2 x SATA (3.0Gbs)
m-SATA	1
Mini-PCIe	0
Parallel	0
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	0
Speaker Header	1
Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min
Power Requirements	
Input PWR	ATX PWR (4 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready
Environment	
Operating Temperature	0°C – 60°C



IMB-186

Ultra Thin Mini-ITX Motherboard

Spotlight Features

- BGA Haswell MCP for Intel Core i5-4300U / Celeron 2980U (Default) (Haswell ULT)
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3L 1333/1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 1 x DP++, 1 x HDMI, 1 x 24 bit Dual Channel LVDS
- 4 x USB 3.0, 6 x USB 2.0, 2 x SATA3
- 1 x mini-PCle, 1x mSATA,
- Gigabit LAN : 1 x RTL8111G x 1, 1 x Intel I218LM(4300U SKU)
- Gigabit LAN : 1 x RTL8111G x 1, 1 x Intel I218V(2890U SKU)
- 1 x TPM Header

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	BGA type for Intel Core i5-4300U / Celeron 2980U mobile processor (Haswell ULT MCP) Default 2980U Dual core MCP
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L2 Cache	(By CPU)
Chipset	(By CPU)
BIOS	UEFI
Expansion Slot	
PCI	0
Mini-PCle	1 (Half Size + USB2.0) + 1 (Full Size) shared with mSATA
mSATA	1 (Full Size) shared with SATA2
PCIe	0
CFast Card Socket	0
Memory	
Technology	Dual Channel DDR3L 1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	1 (pin header share with HDMI)
LVDS	1
HDMI	Supports HDMI 1.4a, supported with Level Shifter, resolution up to 4096x2304 (1x HDMI)
DVI	0
Display Port	1
Multi Display	Yes (Three Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I218LM , LAN2: RTL8111G (4300U SKU) GbE LAN1: Intel I218V, LAN2: RTL8111G (2980U SKU)
Connector	2 x RJ 45
SATA	
Max Data Transfer Rate	SATA3 (6.0Gb/s)

Rear I/O	
VGA	1 (Co-lay with HDMI)
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	2
USB	4 x USB 3.0
Audio	Mic-in Line- out
Serial	0
e-SATA	0
PS/2	0

Internal Connector	
USB	6 (2 x USB Header 2.00mm pitch)
LVDS/Inverter	24 bit dual channel LVDS
VGA	1
Serial	6 (2 RS-232/422/485, 4 RS-232)
SATA	2 x SATA3 (6.0Gb/s)
m-SATA	1 (shared)
Mini-PCle	1
Parallel	1 (Co-lay with DIO)
IrDA	0
GPIO	8 x GPI + 8 x GPO (Co-lay with LPT)
SATA PWR Output Con	2
Speaker Header	1

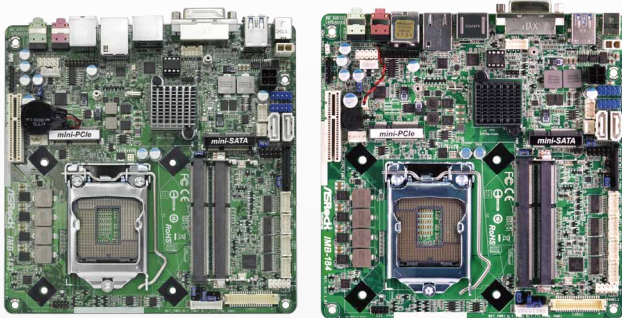
Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	DC 9-19 input
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C

IMB-183 / IMB-184

Mini-ITX Motherboard



IMB-183

IMB-184



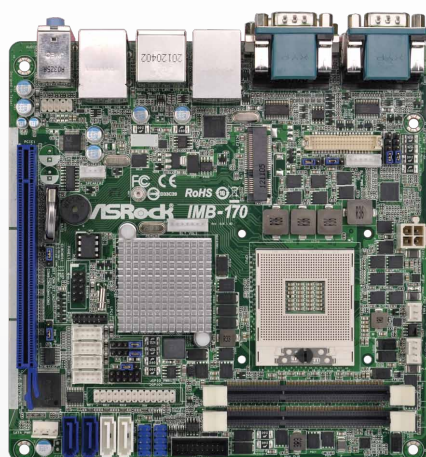
Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® H81 / Q87 Chipset (IMB-183 / IMB-184)
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 1 x COM (RS-232/422/485), 3 x COM (RS-232)
- 1 x DVI, 1 x HDMI, 1 x 24 bit Dual Channel LVDS
- 2 x USB 3.0, 6 x USB 2.0, 2 x SATA3
- 1 x mini-PCle, 1x mSATA, 1 x PCIE (x4)
- IMB-183 : 1 x Intel I217V; IMB-184 : 1 x Intel I217LM (with v-Pro support)
- 1 x TPM Header

Specifications

Processor System		IMB-183	IMB-184
Dimension	Mini-ITX (6.7-in x 6.7-in)		
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)		
Core Number	(By CPU Max 4)		
Max Speed	(By CPU)		
L3 Cache	(By CPU)		
Chipset	H81	Q87	
BIOS	UEFI		
Expansion Slot			
PCI	0		
Mini-PCIe	1 (Half Size + USB 2.0)		
mSATA	1		
PCIe	1 (x4)		
CFast Card Socket	0		
Memory			
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM		
Max.	16GB		
Socket	2 x SO-DIMM		
Graphics			
Controller	Intel HD Graphics (By CPU)		
VRAM	Shared Memory		
VGA	Internal header (share with DVI)		
LVDS	1		
HDMI	Supports HDMI 1.4a, supported with Level Shifter, resolution up to 4096x2304 (1x HDMI)		
DVI	Supports max resolution 1920 x 1200		
Display Port	0		
Multi Display	Yes (dual display)	Yes (Three display)	
Ethernet			
Interface	10/100/1000 Mbps		
Controller	Intel I217V	Intel I217LM	
Connector	1 x RJ 45		
SATA			
Max Data Transfer Rate	SATA3 (6.0Gb/S)		

Rear I/O		IMB-183	IMB-184
VGA		0	
HDMI		1	
DVI-I/D		1 (DVI-I)	
Display Port		0	
Ethernet		1	
USB		2 x USB 3.0 + 2 x USB2.0 compliant	
Audio		Mic-in Line- out	
Serial		0	
e-SATA		1	
PS/2		0	
Internal Connector			
USB		4 (2 x USB Header 2.54mm pitch)	
LVDS/Inverter		24 bit dual channel LVDS	
VGA		1	
Serial		4 (1 RS-232/422/485, 3 RS-232)	
SATA		2 x SATA3 (6.0Gb/s)	
m-SATA		1	
Mini-PCle		1	
Parallel		0	
IrDA		0	
GPIO		4 x GPI + 4 x GPO	
SATA PWR Output Con		1	
Speaker Header		1	
Watchdog Timer			
Output		Output from super I/O to drag RESETCON#	
Interval		256 Segments, 0,1,2...255 Sec/Min	
Power Requirements			
Input PWR		DC 12-19 input	
Power On		AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready	
Environment			
Operating Temperature		0°C – 60°C	



IMB-170



IMB-170-V

IMB-170 / IMB-170-V

Mini-ITX Motherboard

Spotlight Features

- Socket G2 (rPGA988B) for Intel Core i7/i5/i3/Celeron (Ivy Bridge and Sandy Bridge)
- Intel® QM77 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x DVI-I / D-Sub (IMB-170 / IMB-170-V), 1 x HDMI, 1 x DisplayPort, 1 x Dual Channel 24-bit LVDS
- 4 x USB 3.0, 8 x USB 2.0, 2 x SATA3, 2 x SATA2
- 1 x PCIe 2.0 x16, 1 x mini-PCIe
- Gigabit LAN : 1 x Intel 82579LM, 1 x Intel 82583V

Specifications

Processor System	IMB-170	IMB-170-V
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	Socket G2 (rPGA988B) for Intel Core i7/i5/i3/Celeron (Sandy Bridge and Ivy Bridge)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	QM77	
BIOS	UEFI	

Expansion Slot

PCI	0
Mini-PCIe	1 (Full size)
mSATA	0
PCIe	1 (IVY Bridge: Gen3; Sandy Bridge: Gen2)
CFast Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x SO-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	No	Supports max resolution 2048 x 1536
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz	
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200	
DVI	Supports max resolution 1920x1200	No
Display Port	Supports max resolution 2560 x 1600	
Multi Display	Yes	

Ethernet

Interface	10/100/1000 Mbps	
Controller	GbE LAN1: Intel 82579LM, LAN2: Intel 82583V	
Connector	2 x RJ-45	

SATA

Max Data Transfer Rate	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Supports RAID 0/1/5/10	
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Rear I/O	IMB-170	IMB-170-V
VGA	0	1
HDMI	1	
DVI-I/D	1 (DVI-I)	0
Display Port	1	
Ethernet	2	
USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant)	
Audio	3 (Mic-in, Line-out, Line-in)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector

USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	4 (RS-232)
SATA	2 x SATA2 (3.0Gb/s) + 2 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	0
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

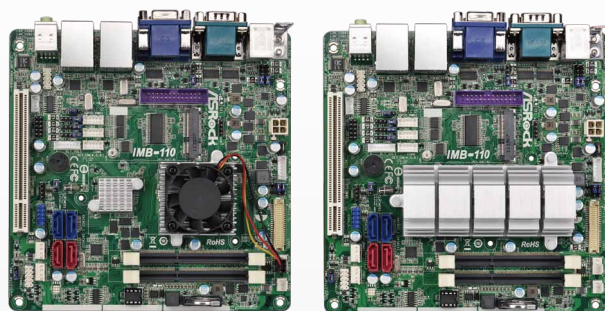
Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-110

Mini-ITX Motherboard



IMB-110D

IMB-110C / 110N



Spotlight Features

- Intel® Atom™ PineView Processor D525/D425/N455
- Intel® NM10 Express Chipset
- Integrated Intel® Graphics Media Accelerator 3150, DirectX 9.0
- Supports DDR3 800MHz, 2 x SO-DIMM, up to 4GB system memory
- 3 x COM (RS-232/422/485), 3 x COM (RS-232)
- 1 x D-Sub, 1 x Single Channel 18-bit LVDS
- 8 x USB 2.0, 2 x SATA3, 2 x SATA2
- 1 x PCI, 1 x mini-PCIe
- Gigabit LAN : 2 x Realtek RTL8111E-VL

Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ PineView Processor D525/D425/N455 Supports Hyper-Threading Technology
Core Number	D525 : 2 ; D425/N455 : 1
Max Speed	D525/D425: 1.8 GHz, N455: 1.66 GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI
Expansion Slot	
PCI	1
Mini-PCIe	1 (Full Size)
mSATA	0
PCIe	0
CFast Card Socket	0
Memory	
Technology	D525/D425: Single Channel DDR3 800 MHz SDRAM N455: Single Channel DDR3 667 MHz SDRAM
Max.	D525/D425: 4GB, N455: 2GB
Socket	2 x SO-DIMM
Graphics	
Controller	Intel® Graphics Media Accelerator 3150 Pixel Shader 2.0, DirectX 9.0
VRAM	Shared Memory
VGA	D525/D425: supports max. resolution 2048x1536 @ 60Hz N455: supports max. resolution 1400x1050 @ 60Hz
LVDS	Single channel 18-bit, max resolution 1366X768
HDMI	No
DVI	No
Display Port	No
Multi Display	Yes
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN: 2 x Realtek RTL8111E-VL
Connector	2 x RJ-45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/s), SATA3 (6.0Gb/s), Supports RAID 0/1

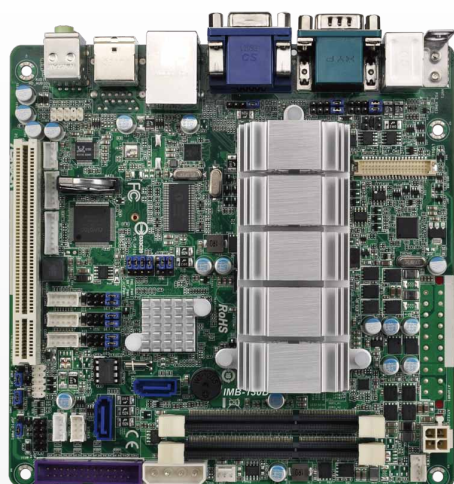
Rear I/O	
VGA	1
HDMI	0
DVI-I/D	0
Display Port	0
Ethernet	2
USB	4 (USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	3 (RS-232/422/485)
PS/2	2 (1 x keyboard and 1 x mouse)

Internal Connector	
USB	4 (USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	3 (RS-232)
SATA	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Support RAID 0/1
m-SATA	0
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	2
Speaker Header	1

Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements	
Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-130

Mini-ITX Motherboard

Spotlight Features

- Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, Pixel Shader 3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- 1 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x Dual Channel 24-bit LVDS
- 7 x USB 2.0, 2 x SATA2
- 1 x PCI, 1 x mini-PCle
- Gigabit LAN : 1 x Realtek RTL8111E-VL

Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ CedarView Processor D2550/ N2600/N2800 Supports Hyper-Threading Technology
Core Number	2
Max Speed	D2550/N2800: 1.86 GHz, N2600: 1.6GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI

Expansion Slot

PCI	1
Mini-PCle	1 (Full Size)
mSATA	0
PCle	0
CFast Card Socket	0

Memory

Technology	Single Channel DDR3 800/1066 MHz SDRAM
Max.	D2550/N2800: 4GB, N2600: 2GB
Socket	D2550/N2800: 2 x SO-DIMM, N2600: 1 x SO-DIMM

Graphics

Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920x1200
HDMI	Supports HDMI 1.3a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: 1 x Realtek RTL8111E-VL
Connector	1 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
------------------------	-----------------

Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	1
USB	4 (USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	1 (RS-232/422/485) + 1 (RS232)
PS/2	2 (1 x keyboard and 1 x mouse)

Internal Connector

USB	3 (USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	3 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	0
Mini-PCle	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-140 / IMB-140D-Plus

Mini-ITX Motherboard

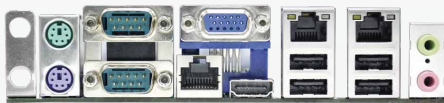
Spotlight Features

- Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, Pixel Shader 3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- 1 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x Dual Channel 24-bit LVDS
- 7 x USB 2.0, 2 x SATA2
- 1 x PCI, 1 x mini-PCIe
- Gigabit LAN : 2 x Realtek RTL8111E-VL



IMB-140

IMB-140D-Plus



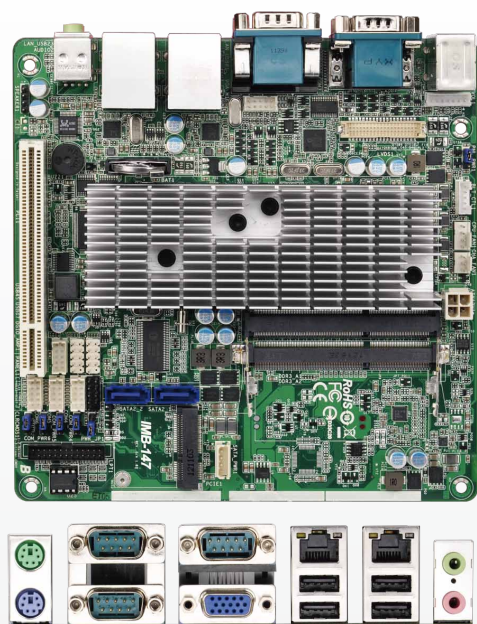
Specifications

Processor System	
Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800 Supports Hyper-Threading Technology
Core Number	2
Max Speed	D2550/N2800: 1.86 GHz, N2600: 1.6GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI
Expansion Slot	
PCI	1
Mini-PCIe	1 (Full Size)
mSATA	1
PCIe	0
CFast Card Socket	0
Memory	
Technology	Single Channel DDR3 800/1066 MHz SDRAM
Max.	D2550/N2800: 4GB, N2600: 2GB
Socket	D2550/N2800: 2 x SO-DIMM, N2600: 1 x SO-DIMM
Graphics	
Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920x1200
HDMI	Supports HDMI 1.3a, max resolution 1920x1200
DVI	No
Display Port	No
Multi Display	Yes
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN: 2 x Realtek RTL8111E-VL
Connector	2 x RJ-45
SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/s)

Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	0
Ethernet	2
USB	4 (USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	1 (RS-232/422/485) + 1 (RS232) + 1 (RJ45 type)
PS/2	2 (1 x keyboard and 1 x mouse)
Internal Connector	
USB	3 (USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	0
Serial	3 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	0
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1
Watchdog Timer	
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min
Power Requirements	
Input PWR	12V DC-In (4-pin ATX PWR Con) (IMB-140) 12V DC-In (4-pin ATX PWR Con) + 20-pin ATX PWR Con (IMB-140D-Plus)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready
Environment	
Operating Temperature	0°C – 60°C

IMB-147

Mini-ITX Motherboard



Spotlight Features

- Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, Pixel Shader 3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- 1 x COM (RS-232/422/485), 5 x COM (RS-232)
- 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 8 x USB 2.0, 2 x SATA2
- 1 x mini-PCle
- Gigabit LAN : 2 x Realtek RTL8111E-VL

Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ CedarView Processor D2550/ N2600/N2800 Supports Hyper-Threading Technology
Core Number	2
Max Speed	D2550/N2800: 1.86 GHz, N2600: 1.6GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI

Expansion Slot

PCI	1
Mini-PCle	1 (Half Size)
mSATA	0
PCle	0
CFast Card Socket	0

Memory

Technology	Single Channel DDR3 800/1066 MHz SDRAM
Max.	D2550/N2800: 4GB, N2600: 2GB
Socket	D2550/N2800: 2 x SO-DIMM, N2600: 1 x SO-DIMM

Graphics

Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual channel 24-bit, max resolution 1920 x 1200@60Hz Single Channel 18bits, max resolution 1440 x 900 (optional)
HDMI	No
DVI	No
Display Port	No
Multi Display	Yes

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: 1 x Realtek RTL8111E-VL
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	1
HDMI	0
DVI-I/D	0
Display Port	0
Ethernet	2
USB	4 (USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	1 (RS-232/422/485) + 2 (RS-232)
PS/2	2 (1 x keyboard and 1 x mouse)

Internal Connector

USB	4 (USB 2.0 compliant)
LVDS/Inverter	1/1
VGA	1 (shared with rear I/O VGA)
Serial	3 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	0
Mini-PCle	1
Parallel	1
IrDA	0
GPIO	2 x GPI + 2 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

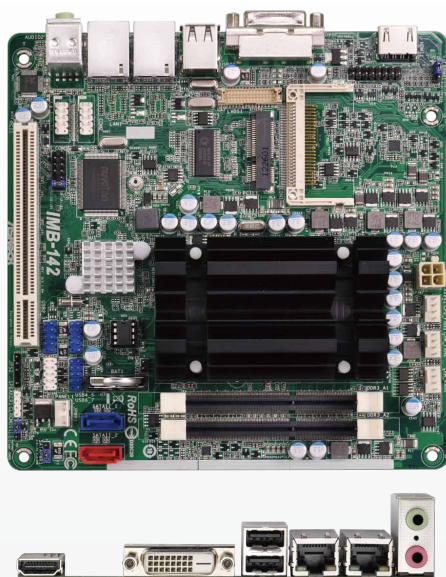
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-142

Mini-ITX Motherboard

Spotlight Features

- Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, Pixel Shader 3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- 2 x COM (RS-232)
- 1 x HDMI, 1 x DVI-D, 1 x Single Channel 18-bit LVDS
- 8 x USB 2.0, 2 x SATA2
- 1 x PCI, 1 x mini-PCIe
- Gigabit LAN : 2 x Intel WG82574L

Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ CedarView Processor D2550/ N2600/N2800 Supports Hyper-Threading Technology
Core Number	2
Max Speed	D2550/N2800: 1.86 GHz, N2600: 1.6GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI

Expansion Slot

PCI	1
Mini-PCIe	1 (Full Size)
mSATA	0
PCIe	0
CFAST Card Socket	0

Memory

Technology	Single Channel DDR3 800/1066 MHz SDRAM
Max.	D2550/N2800: 4GB, N2600: 2GB
Socket	D2550/N2800: 2 x SO-DIMM, N2600: 1 x SO-DIMM

Graphics

Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0
VRAM	Shared Memory
VGA	By Header, supports max. resolution 1920 x 1200
LVDS	Single Channel 18bits, max resolution 1440x900
HDMI	Supports HDMI 1.3a, max resolution 1920x1200
DVI	Supports max resolution 1920 x 1200
Display Port	No
Multi Display	Yes

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: 2 x Intel WG82574L
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	0
HDMI	1
DVI-I/D	1 (DVI-D)
Display Port	0
Ethernet	2
USB	2 (USB 2.0 compliant)
Audio	2 (Mic-in, Line-out)
Serial	0
PS/2	0

Internal Connector

USB	6 (USB 2.0 compliant)
LVDS/Inverter	1/0
VGA	1
Serial	2 (RS-232)
SATA	2 x SATA2 (3.0Gb/s)
m-SATA	0
Mini-PCIe	1
Parallel	0
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	0

Watchdog Timer

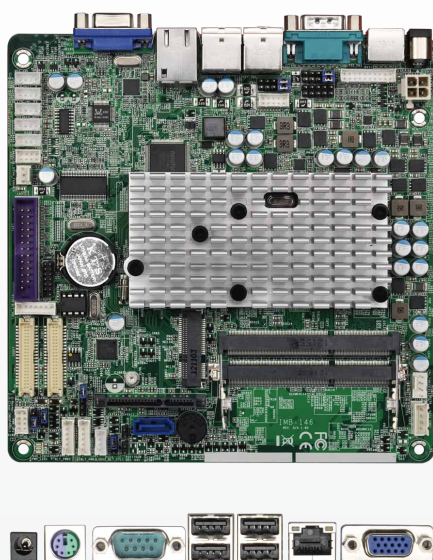
Output	N/A
Interval	N/A

Power Requirements

Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	ATX Supported: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-146

Mini-ITX Motherboard

Spotlight Features

- Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800
- Intel® NM10 Express Chipset
- Integrated Intel® PowerVR SGX545, DirectX 9.0, Pixel Shader 3.0
- Supports DDR3 1066MHz, 2 x SO-DIMM, up to 4GB system memory
- 2 x COM (RS-232)
- 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- 7 x USB 2.0, 2 x SATA2
- 1 x mini-PCIe
- Gigabit LAN : 1 x Realtek RTL8111E-VL

Specifications

Processor System

Dimension	Mini-ITX (6.7-in x 6.7-in)
CPU	Intel® Dual-Core Atom™ CedarView Processor D2550/N2600/N2800 Supports Hyper-Threading Technology
Core Number	2
Max Speed	D2550/N2800: 1.86 GHz, N2600: 1.6GHz
L3 Cache	N/A
Chipset	NM10
BIOS	UEFI

Expansion Slot

PCI	0
Mini-PCIe	1 (Half Size)
mSATA	0
PCIe	0
CFast Card Socket	0

Memory

Technology	Single Channel DDR3 800/1066 MHz SDRAM
Max.	D2550/N2800: 4GB, N2600: 2GB
Socket	D2550/N2800: 2 x SO-DIMM, N2600: 1 x SO-DIMM

Graphics

Controller	Intel® PowerVR SGX545, Support DirectX9 compliant Pixel Shader v3.0 and OGL 3.0
VRAM	Shared Memory
VGA	Supports max. resolution 1920 x 1200
LVDS	Dual Channel 24bits, max resolution 1920 x 1200
HDMI	No
DVI	Supports max resolution 1920 x 1200 (option by cable)
Display Port	No
Multi Display	Yes

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN: 1 x Realtek RTL8111E-VL
Connector	1 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s)
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Rear I/O

VGA	1
HDMI	0
DVI-I/D	0
Display Port	0
Ethernet	1
USB	4 (USB 2.0 compliant)
Audio	0
Serial	1 (RS-232)
PS/2	1 (Combo)

Internal Connector

USB	3 (USB 2.0 compliant)
LVDS/Inverter	2/2
VGA	0
Serial	1 (RS-232)
SATA	1 x SATA2 (3.0Gb/s) 7-pin + 1 x SATA2 (3.0Gb/s) 22pin
m-SATA	0
Mini-PCIe	1
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	1
Speaker Header	1

Watchdog Timer

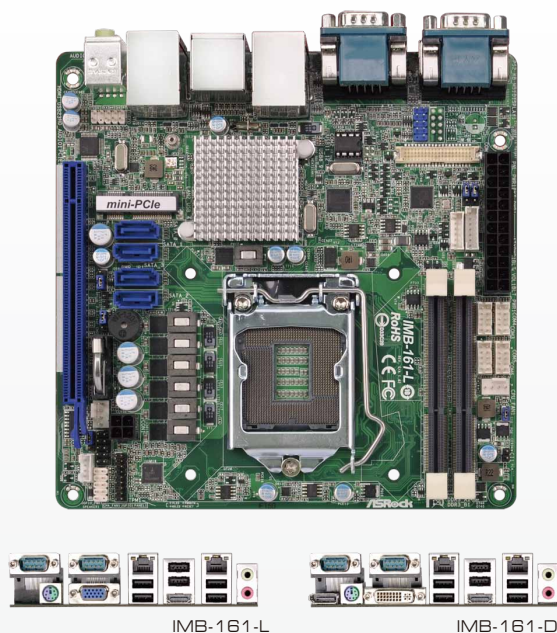
Output	From Super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	12V DC-In (4-pin ATX PWR Con) & DC-IN Jack
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-161-L / IMB-161-D

Mini-ITX Motherboard

Spotlight Features

- Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Ivy Bridge and Sandy Bridge)
- Intel® H61 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x Dual Channel 24-bit LVDS/DisplayPort (161-L / 161-D)
- 8 x USB 2.0, 4 x SATA2
- 1 x PCIe x16, 1 x mini-PCIe
- Gigabit LAN : 1 x Intel 82579V, 1 x Intel 82583V
- 1 x TPM Header

Specifications

Processor System	IMB-161-L	IMB-161-D
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Sandy Bridge and Ivy Bridge)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	H61	
BIOS	UEFI	
Expansion Slot		
PCI	0	
Mini-PCIe	1 (Half Size)	
mSATA	0	
PCIe	1 (x16) (IVY Bridge: Gen3; Sandy Bridge: Gen2)	
CFast Card Socket	0	
Memory		
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM	
Max.	16GB	
Socket	2 x SO-DIMM	
Graphics		
Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	Supports max resolution 2048 x 1536	No
LVDS	Dual Channel 24-bit, support max resolution 1920x1200	No
HDMI	Supports HDMI 1.4a, max resolution 1920x1200	
DVI	No	Supports max resolution 1920x1200
Display Port	No	Supports max resolution 2560x1600
Multi Display	Yes (Dual Display)	
Ethernet		
Interface	10/100/1000 Mbps	
Controller	GbE LAN1: Intel 82583V, LAN2: Intel 82579V	
Connector	RJ-45 x 2 w/ LED	
SATA		
Max Data Transfer Rate	4 x SATA2 (3.0Gb/S)	

Rear I/O	IMB-161-L	IMB-161-D
VGA	1	0
HDMI	1	
DVI-I/D	0	1 (DVI-I)
Display Port	0	1
Ethernet	2	
USB	6 (USB 2.0 compliant)	
Audio	2 (Mic-in, Line-out)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector		
USB	2 (USB 2.0 compliant)	
LVDS/Inverter	1/1	0
VGA	0	
Serial	4 (RS-232)	
SATA	4 x SATA2 (3.0Gb/s)	
m-SATA	0	
Mini-PCIe	1	
Parallel	0	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	0	
Speaker Header	1	

Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements	
Input PWR	ATX PWR (24+4 pin)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

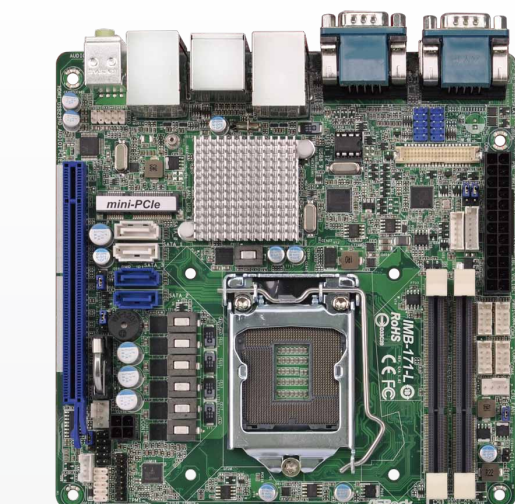
Environment	
Operating Temperature	0°C – 60°C

IMB-171-L / IMB-171-D

Mini-ITX Motherboard

Spotlight Features

- Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Ivy Bridge and Sandy Bridge)
- Intel® Q77 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x SO-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x Dual Channel 24-bit LVDS/DisplayPort (171-L / 171-D)
- 4 x USB 3.0, 6 x USB 2.0, 2 x SATA3, 2 x SATA2
- 1 x PCIe x16, 1 x mini-PCIe
- Gigabit LAN : 1 x Intel 82579LM, 1 x Intel 82583V
- 1 x TPM Header



IMB-171-L



IMB-171-D

Specifications

Processor System	IMB-171-L	IMB-171-D
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Sandy Bridge and Ivy Bridge)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	Q77	
BIOS	UEFI	

Expansion Slot

PCI	0
Mini-PCIe	1 (Half Size)
mSATA	0
PCIe	1 (x16) (IVY Bridge: Gen3; Sandy Bridge: Gen2)
CFAST Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM	
Max.	16GB	
Socket	2 x SO-DIMM	

Graphics

Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	Supports max resolution 2048 x 1536	No
LVDS	Dual Channel 24-bit, support max resolution 1920x1200	No
HDMI	Supports HDMI 1.4a, max resolution 1920x1200	
DVI	No	Supports max resolution 1920x1200
Display Port	No	Supports max resolution 2560x1600
Multi Display	Yes	

Ethernet

Interface	10/100/1000 Mbps	
Controller	GbE LAN1: Intel 82583V, LAN2: Intel 82579LM	
Connector	RJ-45 x 2 w/ LED	

SATA

Max Data Transfer Rate	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Supports RAID0/1/5
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Rear I/O	IMB-171-L	IMB-171-D
VGA	1	0
HDMI	1	
DVI-I/D	0	1 (DVI-I)
Display Port	0	1
Ethernet	2	
USB	6 (2 x USB 2.0 compliant, 4 x USB 3.0 compliant)	
Audio	2 (Mic-in, Line-out)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector

USB	4 (USB 2.0 compliant)	
LVDS/Inverter	1/1	0
VGA	0	
Serial	4 (RS-232)	
SATA	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Supports RAID0/1/5	
m-SATA	0	
Mini-PCIe	1	
Parallel	0	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	0	
Speaker Header	1	

Watchdog Timer

Output	Output from super I/O to drag RESETCON#
Interval	256 segments, 0,1,2...255sec/min

Power Requirements

Input PWR	ATX PWR (24+4 pin)
Power On	AT/ATX Supported AT : Directly PWR on as Power input ready ATX: Press Button to PWR on after Power input ready

Environment

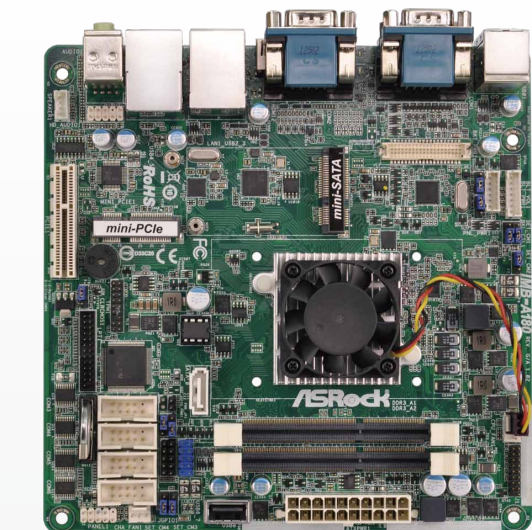
Operating Temperature	0°C – 60°C
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IMB-A180 / IMB-A180-H

Mini-ITX Motherboard

Spotlight Features

- AMD Embedded G-Series SOC processor(s)
- Supports DDR31600MHz (GX-420CA/GX-415GA), DDR3 1333MHz (GX-210HA)
- 1 x VGA, 1 x HDMI
- 24 bit dual channel LVDS (A180)
- 6 x COM ports, 6 x USB 2.0, 2 x USB 3.0
- 1 x PCIe4, 1x SATA 3.0, 1 x mSATA
- Dual Gbe LAN: 1 x Realtek RTL8111E, 1 x Realtek RTL8111DP to support Dash Function
- 1 x TPM header



Specifications

Processor System	IMB-A180	IMB-A180-H
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	AMD-- Embedded G-Series SOC processor(s) GX-420CA: 25W 4Core (2.0G Hz) GX-415GA: 15W 4Core (1.5G Hz) GX-210HA: 9W 2Core (1.0G Hz)	
Core Number	by SOC	
Max Speed	by SOC	
L3 Cache	by SOC	
Chipset	SOC	
BIOS	UEFI	
Expansion Slot		
PCI	NA	
Mini-PCIe	1 (half size)	
mSATA	1	
PCIe	1 (x4) Gen2	
CFast Card Socket	no	
Memory		
Technology	Single Channel Up to DDR3 1600 MHz (GX-420CA / GX-415GA) Single Channel Up to DDR3 1333MHz (GX-210HA)	
Max.	16 GB	
Socket	2 x So-DIMM	
Graphics		
Controller	by SOC	
VRAM	Shared Memory	
VGA	1	
LVDS	24-bit dual channel LVDS	No
HDMI	1	2
DVI	No	
Display Port	No	
Multi Display	YES (Dual display)	
Ethernet		
Interface	10/100/1000 Mbps	
Controller	1 x Realtek RTL8111E, 1 x Realtek RTL8111DP to support Dash Function	
Connector	2 x RJ-45	
SATA		
Max Data Transfer Rate	SATA3 (6.0Gb/S)	

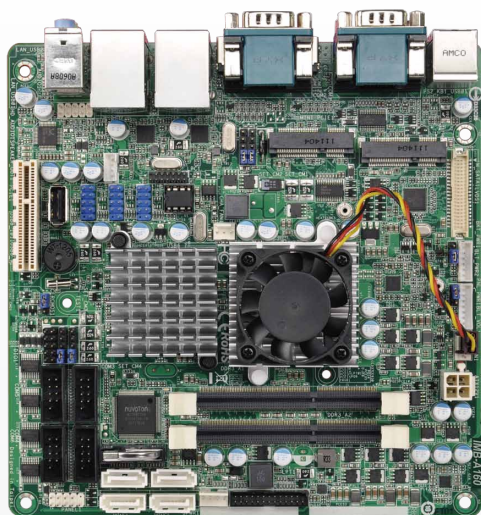
Rear I/O	IMB-A180	IMB-A180-H
VGA	1	
HDMI	1	2
DVI-I/D	0	
Display Port	0	
Ethernet	2	
USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant)	
Audio	2 (Mic-in, Line-out)	
Serial	2 (RS232/422/485)	
PS/2	1 (Combo)	

Internal Connector		
USB	2 x USB2.0 port (by Header), 1 x USB Type A Con	
LVDS/Inverter	YES (option)	0
VGA	0	
Serial	4 x RS232 and 4x (1x3) Header to offer PWR select for 2 rear and 2 internal	
SATA	1 x SATA3, 1 x m-SATA	
m-SATA	1	
Mini-PCIe	1 (half size)	
Parallel	1	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	0	
Speaker Header	1	

Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	20-pin ATX PWR con
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-A160

IMB-A160-H

IMB-A160 / IMB-A160-H

Mini-ITX Motherboard

Spotlight Features

- AMD Embedded G-Series APU T56N/T48E/T40E
- AMD A50M Express Chipset
- Integrated AMD Radeon HD 6320 (T56N)/ HD 6250 (T48E, T40E) Graphics
- Supports DDR3 1333MHz, 2 x SO-DIMM, up to 8GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1x/2x HDMI (A160/A160-H), 1 x Dual Channel 24-bit LVDS (A160)
- 6 x USB 2.0, 4 x SATA3
- 1 x mini-PCIe, 1 x mSATA, 1 x PCIe x4(x16)
- Gigabit LAN : 2 x Realtek RTL8111E
- 1 x TPM Header

Specifications

Processor System	IMB-A160	IMB-A160-H
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	AMD Embedded G-Series APU T56N/T48E/T40E Supports AMD Virtualization Technology (AMD-V)	
Core Number	2	
Max Speed	T56N : 1.65GHz (w/ Fan) / T48E : 1.4GHz (w/ Fan) T40E : 1.0GHz (Fanless)	
L3 Cache	0	
Chipset	AMD A50M	
BIOS	UEFI	
Expansion Slot		
PCI	0	
Mini-PCIe	1 (Half size)	
mSATA	1 (with USB 2.0)	
PCIe	1 (x4), x16 add on card compliant	
CFast Card Socket	0	
Memory		
Technology	Single Channel DDR3 1066/1333 MHz SDRAM	
Max.	8GB	
Socket	2 x SO-DIMM	
Graphics		
Controller	T56N : AMD Radeon HD 6320 / T48E : AMD Radeon HD 6250 T40E : AMD Radeon HD 6250	
VRAM	Shared Memory	
VGA	Supports max resolution 1920 x 1200	
LVDS	Supports Dual Channel 24-bit, max resolution 1920 x 1200	No
HDMI	Supports HDMI 1.3, max resolution 1920 x 1080	
DVI	No	
Display Port	No	
Multi Display	Yes	
Ethernet		
Interface	10/100/1000 Mbps	
Controller	Realtek RTL8111E	
Connector	2 x RJ-45	
SATA		
Max Data Transfer Rate	4 x SATA3 (6.0Gb/s)	

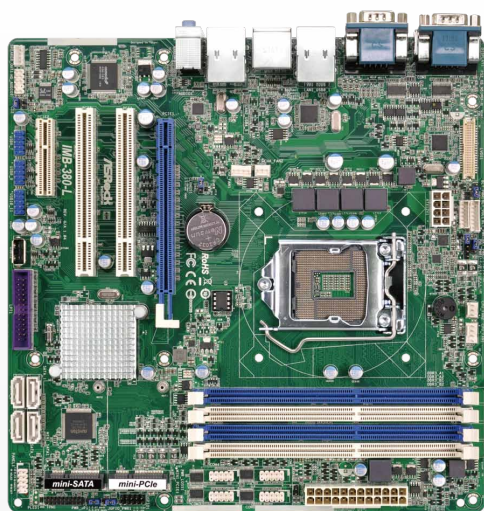
Rear I/O	IMB-A160	IMB-A160-H
VGA	1	
HDMI	1	2
DVI-I/D	0	
Display Port	0	
Ethernet	2	
USB	6 (USB 2.0 compliant)	
Audio	2 (Mic-In, Line-Out)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector		
USB	6 (USB 2.0 compliant, Header), 1 Vertical Type A USB Connector	
LVDS/Inverter	1/1	0
VGA	0	
Serial	4 (RS-232)	
SATA	4 x SATA3 (6.0Gb/s)	
m-SATA	1	
Mini-PCIe	1	
Parallel	1	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	1	
Speaker Header	1	

Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	12V DC-In (4-pin ATX PWR Con)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-380-L / IMB-380-D

Micro ATX Motherboard

Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® Q87 Express Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 4 x Long-DIMM, up to 32GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x HDMI, 1 x VGA, 1 x LVDS/DisplayPort (380-L/380-D)
- 4 x USB 3.0, 9 x USB 2.0, 4 x SATA3
- 2 x PCI, 1 x Mini-PCIe, 1 x mSATA, 1 x PCIe x16, 1 x PCIe x4
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System	IMB-380-L	IMB-380-D
Dimension	Micro-ATX (9.6-in x 9.6-in)	
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	Q87	
BIOS	UEFI	

Expansion Slot	
PCI	2
Mini-PCIe	1 (Full Size + USB 2.0)
mSATA	1
PCIe	1 (x16)+ 1 (x4)
CFast Card Socket	0

Memory	
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	32GB
Socket	4 x Long DIMM

Graphics		
Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	No	
LVDS	24 bit daul channel	No
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200	
DVI	Supports max resolution 1920 x 1200	
Display Port	No	Supports max resolution 2560x1600
Multi Display	Yes (Three Display)	

Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45

SATA	
Max Data Transfer Rate	4 x SATA3 (6.0Gb/s), Supports RAID 0/1/5

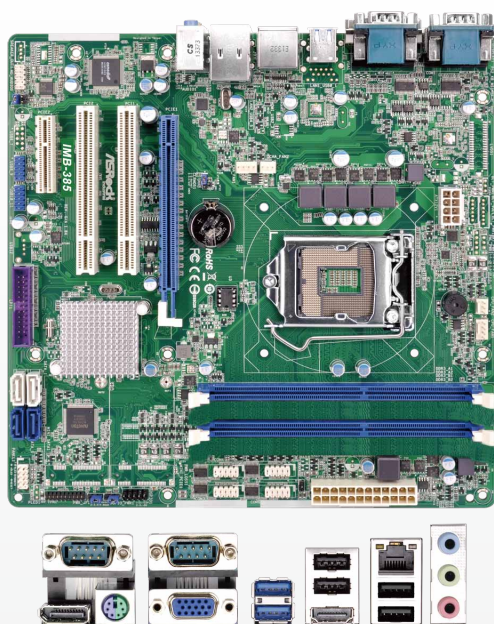
Rear I/O	IMB-380-L	IMB-380-D
VGA	1	0
HDMI	1	
DVI-I/D	0	1 (DVI-I)
Display Port	0	1
Ethernet	2	
USB	6 (4 x USB 3.0 compliant, 2 x USB 2.0 compliant)	
Audio	3 (Mic-In, Line-Out, Line-In)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector		
USB	6 (USB 2.0 compliant) 1 Vertical Type A USB Connector	
LVDS/Inverter	1	0
VGA	0	
Serial	4 (RS-232)	
SATA	4 x SATA3 (6.0Gb/s), Supports RAID0/1/5	
m-SATA	1	
Mini-PCIe	1	
Parallel	1	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	2	
Speaker Header	1	

Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	ATX PWR (8+24 pin)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-385

Micro-ATX Motherboard

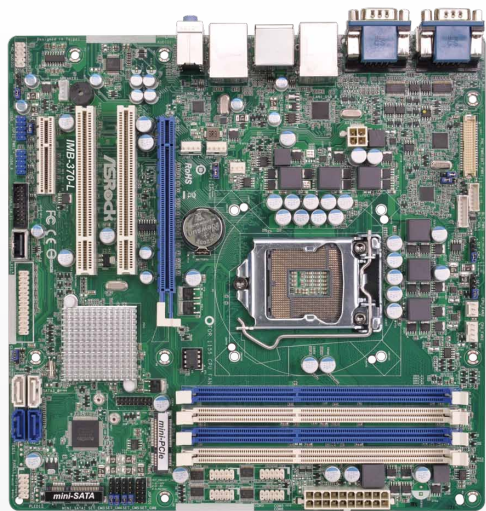
Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® H81 Express Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1066/1333/1600MHz, 2 x Long-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x HDMI, 1 x VGA, /DisplayPort
- 2 x USB 3.0, 6 x USB 2.0, 2 x SATA3, 2 x SATA2
- 2 x PCI, 1 x PCIe x16, 1 x PCIe x4
- Gigabit LAN : 1 x Intel I217v (without v-Pro support),
- 1 x TPM Header

Specifications

Processor System	
Dimension	Micro-ATX (9.6-in x 9.6-in)
CPU	Socket LGA1150 for Intel® Core i7/i5/i3/Celeron (Haswell)
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	H81
BIOS	UEFI
Expansion Slot	
PCI	2
Mini-PCIe	0
mSATA	0
PCIe	1 (x16)+ 1 (x4)
CFast Card Socket	0
Memory	
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x Long DIMM
Graphics	
Controller	Intel® HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 1920x1200
LVDS	No
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560x1600
Multi Display	Yes (Dual Display)
Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN: Intel® I217V
Connector	1 x RJ-45
SATA	
Max Data Transfer Rate	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s)

Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	1
USB	6 (2 x USB 3.0 compliant, 4 x USB 2.0 compliant)
Audio	3 (Mic-In, Line-Out, Line-In)
Serial	2 (RS-232/422/485)
e-SATA	0
PS/2	1 (Combo)
Internal Connector	
USB	2 * USB 2.0 headers
LVDS/Inverter	0
VGA	0
Serial	4 (RS-232)
SATA	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s)
m-SATA	0
Mini-PCIe	0
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	0
Speaker Header	0
Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min
Power Requirements	
Input PWR	ATX PWR (8+24 pin)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready
Environment	
Operating Temperature	0°C – 60°C



IMB-370-L



IMB-370-D

IMB-370-L / IMB-370-D

Micro ATX Motherboard

Spotlight Features

- Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Ivy Bridge and Sandy Bridge)
- Intel® Q77 Express Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 4 x Long-DIMM, up to 32GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x Dual Channel 24-bit LVDS/DisplayPort (370-L / 370-D)
- 2 x USB 3.0, 8 x USB 2.0, 2 x SATA3, 2 x SATA2
- 2 x PCI, 1 x Mini-PCIe, 1 x mSATA, 1 x PCIe x16, 1 x PCIe x4
- Gigabit LAN : 1 x Intel 82579LM, 1 x Intel 82583V
- 1 x TPM Header

Specifications

Processor System	IMB-370-L	IMB-370-D
Dimension	Micro-ATX (9.6-in x 9.6-in)	
CPU	Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Sandy Bridge and Ivy Bridge)	
Core Number	(By CPU, Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	Q77	
BIOS	UEFI	

Expansion Slot

PCI	2
Mini-PCIe	1 (Half Size)
mSATA	1 (with USB 2.0)
PCIe	1 (x16) (IVY Bridge: Gen3; Sandy Bridge: Gen2)+ 1 (x4)
CFAST Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	32GB
Socket	4 x Long DIMM

Graphics

Controller	Intel HD Graphics (By CPU)	
VRAM	Shared Memory	
VGA	Supports max resolution 2048 x 1536	No
LVDS	Supports Dual Channel 24-bit, max resolution 1920 x 1200	No
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200	
DVI	No	Supports max resolution 1920 x 1200
Display Port	No	Supports max resolution 2560x1600
Multi Display	Yes	

Ethernet

Interface	10/100/1000 Mbps	
Controller	GbE LAN1: Intel 82583V, LAN2: Intel 82579LM	
Connector	2 x RJ-45	

SATA

Max Data Transfer Rate	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Supports RAID 0/1/5
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Rear I/O	IMB-370-L	IMB-370-D
VGA	1	0
HDMI	1	
DVI-I/D	0	1 (DVI-I)
Display Port	0	1
Ethernet	2	
USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant)	
Audio	3 (Mic-In, Line-Out, Line-In)	
Serial	2 (RS-232/422/485)	
PS/2	1 (Combo)	

Internal Connector

USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant) 1 Vertical Type A USB Connector	
LVDS/Inverter	1/1	0
VGA	0	
Serial	4 (RS-232)	
SATA	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Supports RAID 0/1/5/10	
m-SATA	1	
Mini-PCIe	1	
Parallel	1	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	2	
Speaker Header	1	

Watchdog Timer

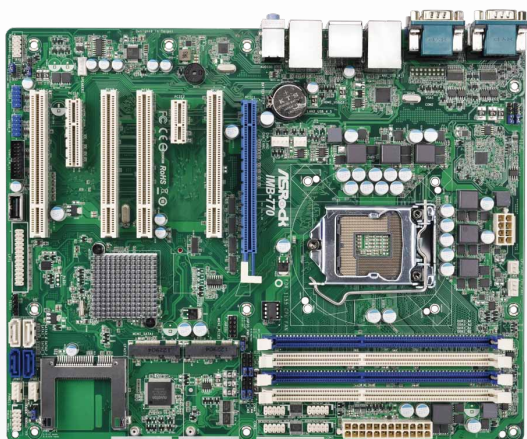
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

Input PWR	ATX PWR (4+20 pin)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-770

ATX Motherboard

Spotlight Features

- Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Ivy Bridge and Sandy Bridge)
- Intel® Q77 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 4 x Long-DIMM, up to 32GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x DisplayPort
- 4 x USB 3.0, 9 x USB 2.0, 2 x SATA3, 2 x SATA2
- 4 x PCI, 1 x mini-PCIe, 1 x mSATA, 3 x PCIe (x16/x4/x1), 1 x CFAST Card Socket
- Gigabit LAN : 1 x Intel 82579LM, 1 x Intel 82583V
- 1 x TPM Header

Specifications

Processor System

Dimension	ATX (9.6-in x 12-in)
CPU	Socket LGA1155 for Intel Core i7/i5/i3/Celeron (Sandy Bridge and Ivy Bridge)
Core Number	(By CPU, Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	Q77
BIOS	UEFI

Expansion Slot

PCI	4
Mini-PCIe	1 (Full Size)
mSATA	1
PCIe	1 (x16) (Ivy Bridge: Gen3; Sandy Bridge: Gen2) + 1 (x1) + 1 (x4)
CFAST Card Socket	1

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	32GB
Socket	4 x Long-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	0
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x 1600
Multi Display	Yes

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel 82583V, LAN2: Intel 82579LM
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/s), SATA3 (6.0Gb/s), Supports RAID 0/1/5
------------------------	---

Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	2
USB	6 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant)
Audio	3 (Mic-In, Line-Out, Line-In)
Serial	2 (RS-232/422/485)
PS/2	1 (Combo)

Internal Connector

USB	7 (4 x USB 2.0 compliant, 2 x USB 3.0 compliant) 1 Vertical Type A USB Connector
LVDS/Inverter	0
VGA	0
Serial	4 (RS-232)
SATA	2 x SATA2 (3.0Gb/s), 2 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	1
Mini-PCIe	1 (Supports half-size card)
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	2
Speaker Header	0

Watchdog Timer

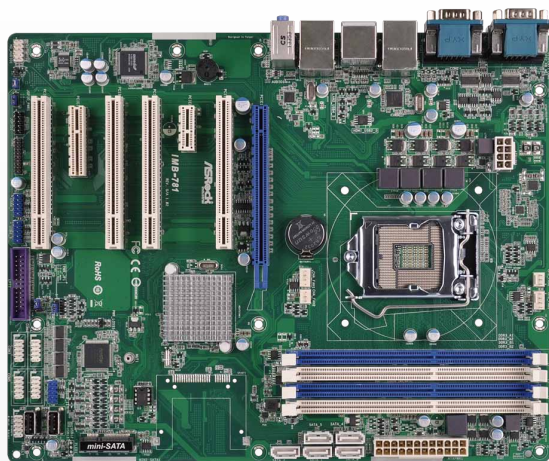
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

Input PWR	ATX PWR (8 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-781

ATX Motherboard

Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® Q87 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 4 x Long-DIMM, up to 32GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x DisplayPort
- 4 x USB 3.0, 10 x USB 2.0, 5 x SATA3
- 4 x PCI, 1 x mSATA, 3 x PCIe (x16/x4/x1), 1 x CFAST Card Socket (option)
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System	
Dimension	ATX (9.6-in x 12-in)
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	Q87
BIOS	UEFI

Expansion Slot	
PCI	4
Mini-PCIe	0
mSATA	1
PCIe	1 (x16)+1 (x4)+ 1 (x1)
CFAST Card Socket	1 (optional)

Memory	
Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	32GB
Socket	4 x Long-DIMM

Graphics	
Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	No
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x1 600
Multi Display	Yes (Three Display)

Ethernet	
Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45

SATA	
Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S), Supports RAID 0/1/5/10

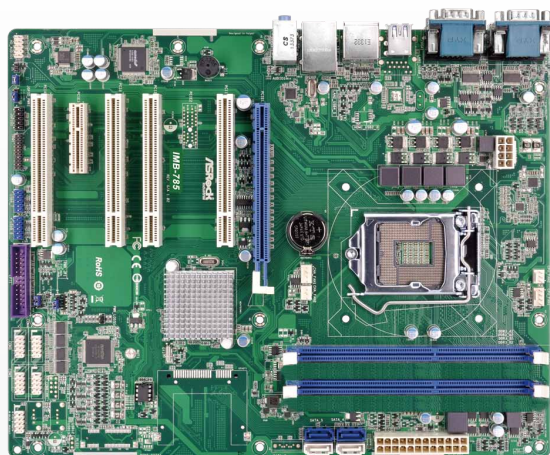
Rear I/O	
VGA	1
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	2
USB	6 (4 x USB 3.0 compliant, 2 x USB 2.0 compliant)
Audio	3 (Mic-In, Line-Out, Line-In)
Serial	2 (RS-232/422/485)
PS/2	1 (Combo)

Internal Connector	
USB	6 (3 x USB Header 2.54mm pitch,) 2 Vertical Type A USB Connector
LVDS/Inverter	0
VGA	0
Serial	4 (RS-232)
SATA	5 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	1
Mini-PCIe	0
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	0
Speaker Header	0

Watchdog Timer	
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements	
Input PWR	ATX PWR (8 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment	
Operating Temperature	0°C – 60°C



IMB-785

ATX Motherboard

Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® H81 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 2 x Long-DIMM, up to 16GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x DisplayPort
- 2 x USB 3.0, 8 x USB 2.0, 2 x SATA3, 2 x SATA2
- 4 x PCI, 2 x PCIE (x16/x4)
- Gigabit LAN : 1 x Intel I217V
- 1 x TPM Header

Specifications

Processor System

Dimension	ATX (9.6-in x 12-in)
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	H81
BIOS	UEFI

Expansion Slot

PCI	4
Mini-PCIe	0
mSATA	0
PCIe	1 (x16)+1 (x4)
CFast Card Socket	0

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	16GB
Socket	2 x Long-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	0
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x 1600
Multi Display	Yes (Dual Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	LAN: Intel I217V (without v-Pro support)
Connector	1 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S)
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	1
USB	6 (2 x USB 3.0 compliant, 4 x USB 2.0 compliant)
Audio	3 (Mic-In, Line-Out, Line-In)
Serial	2 (RS-232/422/485)
PS/2	1 (Combo)

Internal Connector

USB	4 (2 x USB Header 2.54mm pitch,)
LVDS/Inverter	0
VGA	0
Serial	4 (RS-232)
SATA	4 x (2*SATA3, 2*SATA2)
m-SATA	1
Mini-PCIe	0
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	0
Speaker Header	0

Watchdog Timer

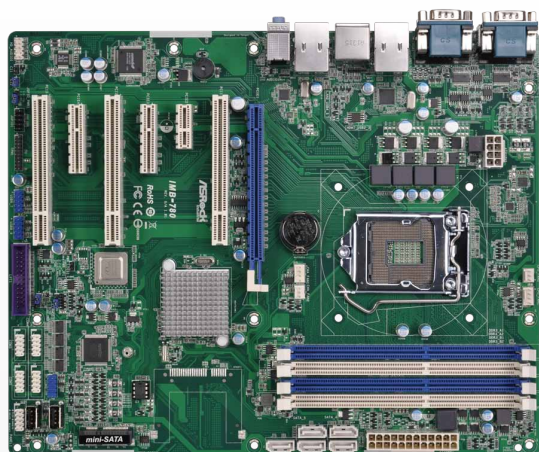
Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

Input PWR	ATX PWR (8 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment

Operating Temperature	0°C – 60°C
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IMB-780

ATX Motherboard

Spotlight Features

- Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
- Intel® Q87 Chipset
- Integrated Intel® HD Graphics Built-in Visuals
- Supports DDR3 1600MHz, 4 x Long-DIMM, up to 32GB system memory
- 2 x COM (RS-232/422/485), 4 x COM (RS-232)
- 1 x D-Sub, 1 x HDMI, 1 x DisplayPort
- 4 x USB 3.0, 10 x USB 2.0, 5 x SATA3
- 3 x PCI, 1 x mSATA, 4 x PCIe (x16/2*x4/x1), 1 x CFast Card Socket (option)
- Gigabit LAN : 1 x Intel I217LM (with v-Pro support), 1 x Intel I210
- 1 x TPM Header

Specifications

Processor System

Dimension	ATX (9.6-in x 12-in)
CPU	Socket LGA1150 for Intel Core i7/i5/i3/Celeron (Haswell)
Core Number	(By CPU Max 4)
Max Speed	(By CPU)
L3 Cache	(By CPU)
Chipset	Q87
BIOS	UEFI

Expansion Slot

PCI	3
Mini-PCIe	0
mSATA	1
PCIe	1 (x16)+2 (x4)+ 1 (x1)
CFast Card Socket	1 (optional)

Memory

Technology	Dual Channel DDR3 1066/1333/1600 MHz SDRAM
Max.	32GB
Socket	4 x Long-DIMM

Graphics

Controller	Intel HD Graphics (By CPU)
VRAM	Shared Memory
VGA	Supports max resolution 2048 x 1536
LVDS	No
HDMI	Supports HDMI 1.4a, max resolution 1920 x 1200
DVI	No
Display Port	Supports max resolution 2560 x1 600
Multi Display	Yes (Three Display)

Ethernet

Interface	10/100/1000 Mbps
Controller	GbE LAN1: Intel I210, LAN2: Intel I217LM (with v-Pro support)
Connector	2 x RJ-45

SATA

Max Data Transfer Rate	SATA2 (3.0Gb/S), SATA3 (6.0Gb/S), Supports RAID 0/1/5/10
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Rear I/O

VGA	1
HDMI	1
DVI-I/D	0
Display Port	1
Ethernet	2
USB	6 (4 x USB 3.0 compliant, 2 x USB 2.0 compliant)
Audio	3 (Mic-In, Line-Out, Line-In)
Serial	2 (RS-232/422/485)
PS/2	1 (Combo)

Internal Connector

USB	6 (3 x USB Header 2.54mm pitch,) 2 Vertical Type A USB Connector
LVDS/Inverter	0
VGA	0
Serial	4 (RS-232)
SATA	5 x SATA3 (6.0Gb/s), Support RAID 0/1/5/10
m-SATA	1
Mini-PCIe	0
Parallel	1
IrDA	0
GPIO	4 x GPI + 4 x GPO
SATA PWR Output Con	0
Speaker Header	0

Watchdog Timer

Output	Output from super I/O to drag RESETCON#
Interval	256 Segments, 0,1,2...255 Sec/Min

Power Requirements

Input PWR	ATX PWR (8 + 24)
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready

Environment

Operating Temperature	0°C – 60°C
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iBOX-280

Embedded BOX PC



Spotlight Features

- Intel Cedarview Atom N2800 Dual Core 1.86GHz
- VGA / HDMI
- Supports Embedded OS Window 7 and Linux
- Gigabit LAN
- Slim and Fanless Design
- DC 9-19V power input
- 2 x COM (RS-232)

Specifications

Processor System

CPU	Intel Cedarview Atom N2800 Dual core 1.86GHz TDP 6.5W
Memory	2 x DDR3-1066 SO-DIMM up to 8 GB
Chipset	Intel NM10
Graphic	Intel GMA3650
LAN Chipset	Intel 82574L
Watch Dog	256 Segments,0,1,2,...255sec/min

Rear I/O

Serial Port	2 x 232 port
USB	6 USB 2.0 ports
LAN	1 RJ45 Port for Gbe
Vedio output	1 x VGA, 1 x HDMI
Audio	Mic-in/ Line out
Expansion	1 x mini PCIe /1 x mSATA

Storage

Type	1 x 2.5" HDD/ SSD
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OS Support

Window 7 / Linux

Certifications

CE, FCC, Class A

Environmental

Operating Temp	0°C~50°C
Storage Temp	20°C~80°C
Humidity	10%~90%

Mechanical

Material	Top cover -aluminum extrusion/ Base- metal
Dimension	200 x 200 x 35mm
Weight	1.8 Kg
Mounting	mounting bracket (optional)

iBOX-210

Embedded BOX PC



Spotlight Features

- Intel Baytrail D/M/E Soc Processor
- VGA output,HDMI
- Support Embedded OS Window 8/7 and Linux
- Gigabit LAN and RS232
- Slim and Fanless Design
- DC 9-36V power input

Specifications

Processor System

CPU	Intel® Atom™ Baytrail SoC processor J1900/N2930/E3826 Quad/Dual core Processor up to 2GHz
Memory	1 x DDR3-1333 SO-DIMM up to 4 GB
Chipset	N/A
Graphic	Intel Gen7
LAN Chipset	Realtek RTL8111G
Watch Dog	256 Segments,0,1,2,...255sec/min

Rear I/O

Serial Port	1 x RS232/485/422, 1 x RS232
USB	2 USB 3.0 ports/2 USB2.0 ports
LAN	1 RJ45 Port for Gbe
Vedio output	1 x VGA output/ 1 x HDMI
Audio	Line out
Expansion	1 x mini PCIe /1 x mSATA

Storage

Type	1 x 2.5" HDD/ SSD
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OS Support

Window 8/7 Linux

Certifications

CE, FCC, Class A

Environmental

Operating Temp	0°C~50°C
Storage Temp	20°C~80°C
Humidity	10%~90%

Mechanical

Material	Top cover -aluminum extrusion/ Base- metal
Dimension	200x134.5x 39mm
Weight	1.3kg
Mounting	mounting bracket (optional)

Premium API Solutions

API (Application Programming Interface) is a set of routines, protocols, and tools for building software applications. It is used as an interface by software components to communicate with each other. A good API can facilitate programmers to build up their system easier and more effortlessly. ASRock IPC platforms come with an array of intelligent API solutions that make its motherboards easier and simpler to adopt and operate with customer applications.

Software APIs

Control



GPIO

GPIO (General Purpose Input/Output) is a flexible parallel interface that allows a variety of custom connections. Each GPIO port can be individually configured through software as either an input or output. It allows users to monitor the level of signal input or set the output status to switch on/off a device.



SMBus™

SMBus (System Management BUS) was developed by Intel. It's an interface between the CPU and computer system components used for low-speed system management communications. It can transfer serial messages by using SMBus protocols to control multiple devices simultaneously.



I2C

I2C (Inter-IC-Squared-C Bus) - a two-line, synchronous, serial bus, that is widely used to connect chips together on a circuit board. I2C API allows the system to transfer serial messages via I2C protocols and allows multiple simultaneous device control.

Display



Brightness Control

The Brightness Control API allows users to ideally change the screen brightness and controls the brightness of the entire screen easily.



Backlight

The Backlight API allows users to interface with an embedded device to easily adjust the level of the backlight (screen).

Monitor



Watchdog

Watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own. The interface provides uniform access to services of the underlying watchdog drivers.



Hardware Monitor

Hardware Monitor shows the major readings of your system. The main readings include Clock, Fan & Temperature, and Voltage. In Clock, there are CPU speed and CPU ratio. In Fan & Temperature, there are CPU temperature and CPU fan speed. You may find out if there's any abnormal situation occurs to your system's temperature. In Voltage, there are many respective voltages.



Hardware Control

The Hardware Control API provides more hardware settings more precisely. It allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices.

Power Saving



CPU Speed

Taken advantage of Intel SpeedStep technology, CPU Speed API ensures lower power consumption. CPU speed will be automatically adjusted when the system works under heavy-loading.



System Throttling

System Throttling provides a bucketful of methods to reduce power consumption. It keeps the system from overheated by lowering the clock frequency.

Software Utilities



BIOS Flash

BIOS Flash is the most user-friendly BIOS flash utility developed by ASRock. It is embedded in Flash ROM which is used to update the system BIOS without having to enter operating systems like MS-DOS or Windows.



Flash Lock

Secure your system the easy way with Flash Lock. It is a mechanism that binds the board and CF card (SQFlash) together. SQFlash can be "Locked" via Flash Lock function and "Unlocked" it when the system is restarting via BIOS. The locked SQFlash cannot be awaked by any device and can only be booted from the BIOS with the "Unlocked" feature.



Monitoring

Monitoring utility is an all-rounder utility which includes Voltage, CPU and System Temperature and Fan speed, allowing users to monitor system status more precisely.



Crashless BIOS

ASRock Crashless BIOS allows users to update their BIOS without fear of failing. If power loss occurs during the BIOS update process, ASRock Crashless BIOS will automatically finish the BIOS update procedure after regaining power.