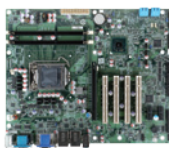


Industrial Motherboard Selection Guide

New


Model Name	IMBA-H610	IMBA-C2060	IMBA-Q670-R20	IMBA-G410-R20
CPU Socket	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 775
CPU Type	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Xeon® E3 Quad/Dual, Core™ i3 Dual, Celeron® Dual	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™2 Quad/Duo, Pentium® D/ Celeron®
FSB	N/A	N/A	N/A	800/1066/1333MHz
Chipset	Intel® H61	Intel® C206	Intel® Q67	Intel® G41+ICH7
Memory	Two 240-pin 1333/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 16GB)	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC Registered and non-ECC unbuffered DIMM (system max. 32GB)	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM unbuffered DIMM (system max. 32GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 8GB)
Display Interface	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	1 x VGA
Ethernet	Dual Realtek RTL8111E PCIe GbE controller	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported (LAN2)	Dual Realtek RTL8111E PCIe GbE controller
I/O Interface	5 x RS-232 1 x RS-422/485 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module	5 x RS-232 1 x RS-422/485 2 x USB 3.0 10 x USB 2.0 1 x LPT 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module		5 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module
Storage Interface	4 x SATA 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s		4 x SATA 3Gb/s 1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio Codec	Realtek ALC888 HD Audio codec		Realtek ALC888 HD Audio codec
Digital I/O	8-bit Programmable I/O (8-bit GPIO is for programming I/O)	8-bit digital I/O (4-bit input/4-bit output)		8-bit digital I/O (4-bit input/4-bit output)
Power Consumption	3.3V@1.27A, 5V@3.87A, 12V@0.54A, Vcore@7.67A, 5VSb@0.15A (Intel® Core™ i7-2600K 3.40GHz CPU with 1333MHz DDR3 2GB x 2 Memory)	3.3V@1.65A, 5V@6.31A, 12V@0.18A, Vcore@7.88A, 5VSb@0.15A (Intel® Core™ i5-2400 3.10GHz CPU with 1333MHz DDR3 4GB x 4 memory)		12V@4.80A, -12V@0.06A, 5V@5.45A, 3.3V@0.16A (Intel® Q9550 2.83GHz with DDR3 1333MHz 2GB memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Environment	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing			Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCIe x16 2 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 2 x PCIe x4 3 x PCI	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 slot (with x1 signal) 5 x PCI
CPU Cooler	CF-1156A-RS (for 1U chassis)/CF-1156B-RS/CF-1156C-RS/CF-1156D-RS			CF-775A-RS/CF-775B-RS (for 1U chassis) CF-520-RS-R11

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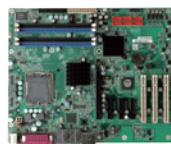
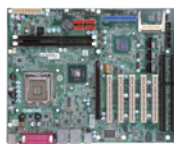
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Industrial Motherboard Selection Guide



Model Name	IMBA-G412ISA-R20	IMBA-Q454	IMBA-XQ354-R11	IMBA-9454-R40
CPU Socket	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775
CPU Type	Intel® Core™2 Quad/Duo, Pentium® D/ Celeron®	Intel® Core™2 Quad/Duo, Pentium® D/4/ Celeron® D	Intel® Core™2 Quad/Duo, Pentium® D/4/ Celeron® D	Intel® Core™2 Duo, Pentium®D/4/ Celeron® D
FSB	800/1066/1333MHz	800/1066/1333MHz	800/1066/1333MHz	800/1066/1333MHz
Chipset	Intel® G41+ICH7	Intel® Q45 + ICH10DO	Intel® Q35 + ICH9DO	Intel® 945G + ICH7
Memory	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 8GB)	Four 240-pin 667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 16GB)	Four 240-pin 667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 8GB)	Four 240-pin 533/667/800MHz dual- channel DDR2 SDRAM DIMM (system max. 4GB)
Display Interface	1 x VGA	1 x VGA	1 x VGA	1 x VGA
Ethernet	Dual Realtek RTL8111E PCIe GbE controller	LAN1: Intel® 82574L (MAC + PHY) LAN2: Intel® 82567LM (PHY)	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)	Dual Realtek RTL8111E PCIe GbE controller
I/O Interface	5 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module	6 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS	6 x RS-232 12 x USB 2.0 1 x LPT 1 x PS/2 KB & MS 1 x 6-pin wafer for KB & MS 2 x 10-pin header for TPM V1.2 module	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x PS/2 KB & MS 1 x 6-pin wafer for KB & MS 2 x 10-pin header for TPM V1.2 module
Storage Interface	4 x SATA 3Gb/s 1 x IDE 1 x CF Type II	6 x SATA 3Gb/s RAID 1 x FDD	6 x SATA 3Gb/s RAID 1 x FDD	4 x SATA 3Gb/s 1 x CF Type II 1 x IDE 1 x FDD
Audio	Realtek ALC888 HD Audio codec			Realtek ALC655 with AC'97 codec
Digital I/O	8-bit digital I/O (4-bit input/4-bit output)			
Power Consumption	12V@2.01A, -12V@0.05A, 3.3V@0.15A, 5V@5.06A (Intel® Core™ Duo E7400 2.8GHz CPU with DDR3 1GB memory)	3.3V@2.64A, 5V@5.4A, 12V@0.28A (Intel® Core™2 Duo E8500 3.16GHz with four 800MHz 2GB DDR2 memory)	3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™2 Duo E6850 CPU with four 800MHz 2GB DDR2 memory)	5V@2.86A, 12V@0.39A, 3.3V@ 6.24A, Vcore@ 1.05A (Intel® Core®2 Duo E7400 2.8GHz CPU at 1066MHz FSB with two 800MHz 2GB DDR2 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Environment	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing			
Expansion Slot	1 x PCIe x16 4 x PCI 1 x ISA 1 x PCI/ISA	1 x PCIe x16 1 x PCIe x4 3 x PCI	1 x PCIe x16 3 x PCIe x4 3 x PCI	1 x PCIe x16 1 x PCIe x4 5 x PCI
CPU Cooler	CF-775A-RS/CF-775B-RS (for 1U chassis) CF-520-RS-R11			

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Industrial Motherboard Selection Guide



Model Name	IMB-H610	IMB-H612	IMB-C2060	IMB-Q670-R20	IMB-G41A	IMB-Q354	IMB-9454G-R40
CPU Socket	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 1155	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775
CPU Type	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Xeon® E3 Quad/Dual, Core i3 Dual, Celeron® Dual	Intel® Core™ i7/i5/i3 Quad/Dual, Pentium® Dual, Celeron® Dual/Single	Intel® Core™2 Quad/Duo, Pentium® D Dual Core/Celeron	Intel® Core™2 Quad/Duo, Pentium® 4/ Celeron® D	Intel® Core™2 Duo, Pentium® D/4/ Celeron® D
FSB	N/A				800/1066/1333MHz	800/1066/1333MHz	533/800/1066MHz
Chipset	Intel® H61	Intel® H61	Intel® C206	Intel® Q67	Intel® G41 + ICH7	Intel® Q35 + ICH9-DO	Intel® 945G + ICH7
Memory	Two 240-pin 1333/1066MHz Dual-channel DDR3 SDRAM Unbuffered DIMM supported (system max. 16GB)		Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC Registered and non-ECC Unbuffered DIMM (system max. 32GB)	Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM Unbuffered DIMM (system max. 32GB)	Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM (system max. 4GB)	Four 240-pin 533/667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 8GB)	Four 240-pin 533/667/800MHz dual-channel DDR2 SDRAM DIMM (system max. 4GB)
Display Interface	Dual display supported 2 x VGA	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	1 x VGA	1 x VGA	1 x VGA
Ethernet	Dual Realtek RTL8111E PCIe GbE controller		Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported	Intel® 82574L PCIe controller Intel® 82579 PHY with Intel® AMT 7.0 supported (LAN2)	Dual Realtek RTL8111CP PCIe GbE controller	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)	Dual Realtek RTL8111E PCIe GbE controller
I/O Interface	5 x RS-232 (for IMB-H610A/ IMB-H612A) 9 x RS-232 (for IMB-H610B/ IMB-H612B) 1 x RS-422/485 10 x USB 2.0 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB/MS 2 x 10-pin header for TPM V1.2 Module		9 x RS-232 1 x RS-422/485 2 x USB 3.0 10 x USB 2.0 1 x Infrared interface 1 x 4-pin wafer for SMBus 1 x 4-pin wafer for I2C 1 x PS/2 KB &MS 2 x 10-pin header for TPM V1.2 module		9 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS	4 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 KB & MS 1 x 6-pin wafer for PS/2 KB & MS 2 x 10-pin header for TPM V1.2 module
Storage Interface	4 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 6Gb/s 4 x SATA 3Gb/s		4 x SATA 3Gb/s 1 x IDE	6 x SATA 3Gb/s RAID 1 x FDD	4 x SATA 3Gb/s 1 x IDE 1 x FDD
Audio	Realtek ALC662 HD Audio codec		Realtek ALC888 HD Audio codec		Realtek ALC888 HD Audio codec		Realtek ALC655 with AC'97 codec
Digital I/O	8-bit Programmable I/O (8-bit GPIO is for programming I/O)		24-bit Digital I/O (12-bit input/12-bit output)		8-bit digital I/O (4-bit input/4-bit output)		
Power Consumption	3.3V@1.75A, 5V@6.61A , Vcore@3.68A, 12V@0.09A, 5sb@0.12A (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)	3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5Vsb@0.12 (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)	3.3V@1.75A, 5V@6.61A , 12V@3.68A, 12V@0.09A, 5Vsb@0.12 (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)		5V@7.26A, 12V@0.26A, Vcore_12V@3.24A, 3.3V@0.16A (Intel® Core™2 Duo E8500 3.16GHz CPU with two 1066MHz 2GB DDR3 memory)	3.3V@2.41A, 5V@5.71A, 5Vsb@0.13A, 12V@3.69A (Intel® Core™2 Duo E6850 3.0GHz CPU with four 800MHz 2GB DDR2 memory)	5V@2.03A, 12V@0.39A, 3.3V@6.13A, 5Vsb@0.02A, Vcore@2.37A (Intel® Core 2 Duo E7500 2.93GHZ CPU with four 800MHz 1GB DDR2 memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset						
Operation Environment	Temperature Range: -10°C ~ 60°C (14°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing				Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	2 x PCIe x1 2 x PCI	1 x PCIe x16 3 x PCIe x1	1 x PCIe x16 1 x PCIe x16 (with x8 signal) 1 x PCIe x4 2 x PCI slot	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 2 x PCI slot	1 x PCIe x16 1 x PCIe x1 2 x PCI	1 x PCIe x16 1 x PCIe x4 2 x PCI	1 x PCIe x16 1 x PCIe x1 2 x PCI
CPU Cooler	CF-1156A-RS (for 1U chassis)/CF-1156B-RS/CF-1156C-RS/CF-1156D-RS				CF-775A-RS/CF-775B-RS (for 1U chassis) CF-520-RS-R11		

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Industrial Computing Solutions

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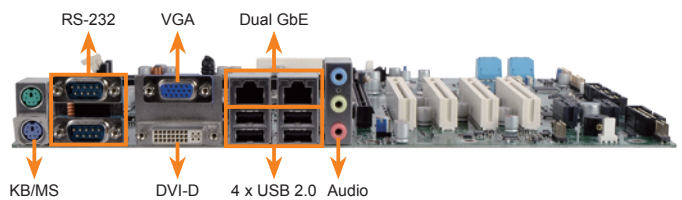
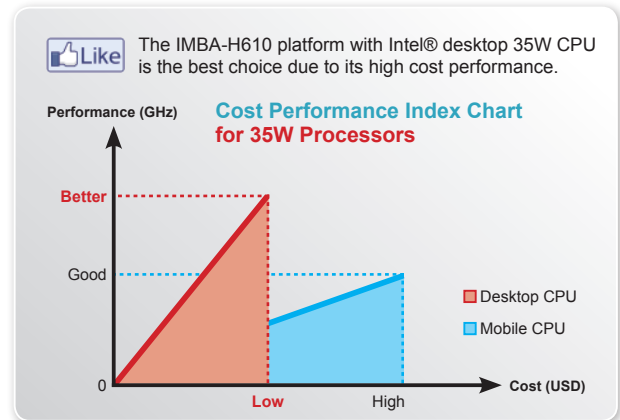
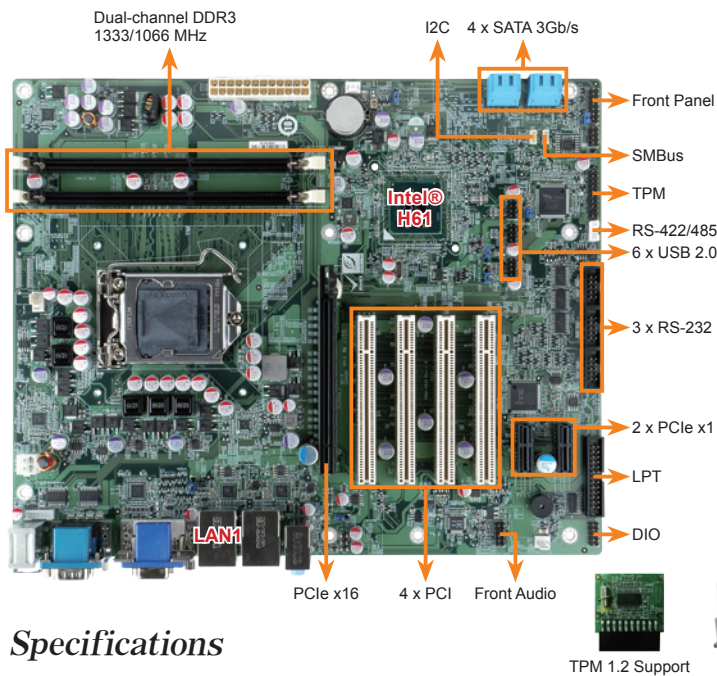
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Panel Solutions Introduction

IMBA-H610

ATX Motherboard Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, Dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS

New



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 240-pin 1333/1066MHz dual-channel unbuffered DDR3 SDRAM DIMM supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller, LAN1 with ASF 2.0 support
- ◆ Graphics Engine
Intel® HD Graphics 2000/3000 (based on CPU type)
Support for DX10.1 and OpenGL3.0
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ PCIe-PCI Bridge
ITE IT8892E
- ◆ Audio
Realtek ALC662 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
 - 5 x RS-232
 - 1 x LPT
 - 1 x PS/2 KB/MS
 - 10 x USB 2.0 (4 on Rear IO, 6 by pin header)
- ◆ Front Audio
1 x 10-pin header
- ◆ Front Panel
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM
1 x 20-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ I2C
1 x 4-pin wafer
- ◆ Expansions
 - 1 x PCIe x16 slot
 - 2 x PCIe x1 slots
 - 4 x PCI slots
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit programmable I/O
- ◆ Fan Connector
1 x 4-pin CPU Fan Connector
2 x 3-pin system Fan Connectors
- ◆ Power Supply
AT/ATX power supply supported
- ◆ Power Consumption
3.3V@1.27A, 5V@3.87A, 12V@0.54A, Vcore@7.67A, 5Vsb@0.15A
(Intel® Core™ i7-2600K 3.40GHz CPU with two 1333MHz 2GB DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 305mm
- ◆ Weight
GW:1200g, NW: 700g



Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® HD Graphics technology integrates high-performance graphics and media processing
4. TPM V1.2 hardware security provided by the TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

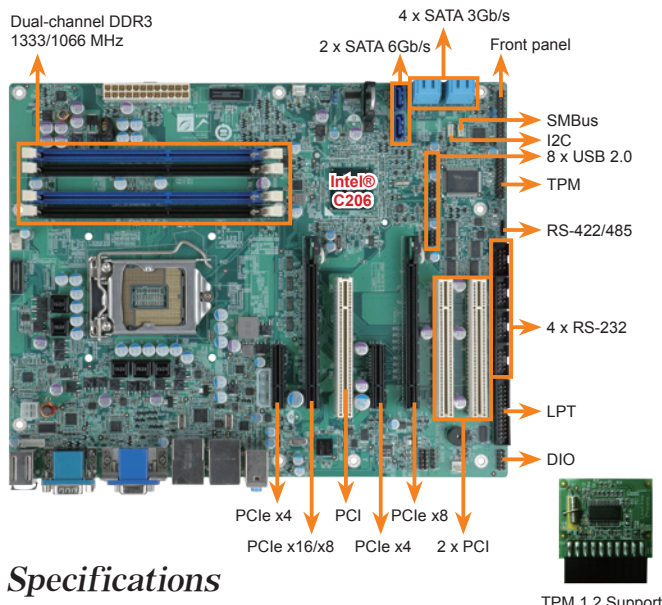
1 x IMBA-H610 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-H610-R10	ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000051-RS	RS-232 cable, 230mm
32102-000100-200-RS	SATA power cable
19800-000049-RS	LPT cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

IMBA-C2060

ATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/ Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, Audio and RoHS



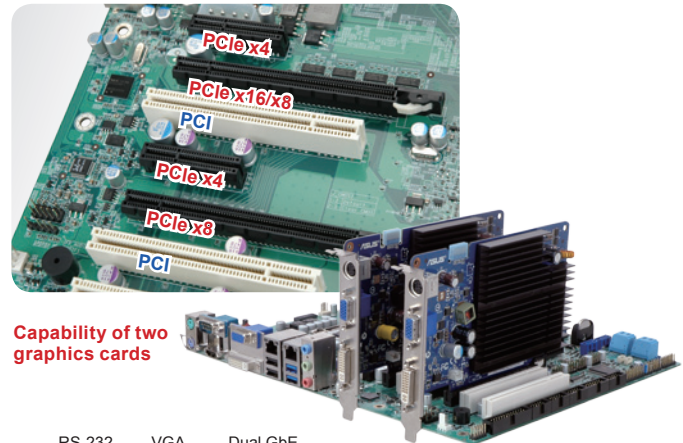
Specifications

- ◆ CPU: LGA1155 socket supports Intel® Xeon® E3 quad/dual, core™ i3 dual, Celeron® dual core processor
- ◆ System Chipset: Intel® C206
- ◆ Memory: Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMM supported (system max. 32GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82574L PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported
 - 1 x VGA
 - 1 x HDMI
 - 1 x DVI-D
- ◆ Super I/O: Fintek F81866
- ◆ Audio: Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface:
 - 5 x RS-232
 - 1 x LPT
 - 1 x PS/2 KB/MS
 - 2 x USB 3.0 by NEC D720200F1
 - Front Audio
 - 2 x 5-pin header
 - TPM
 - 2 x 10-pin header
 - SMBus
 - 1 x 4-pin wafer
 - I2C
 - 1 x 4-pin wafer
- ◆ Expansion:
 - 1 x PCIe x16/x8 slot
 - 2 x PCIe x4 slots
 - 1 x RS-422/485
 - 4 x SATA 3Gb/s with RAID 0/1/5/10 support
 - 2 x SATA 6Gb/s with RAID 0/1/5/10 support
 - 10 x USB 2.0 (2 by rear IO, 8 by pin header)
 - 1 x PCIe x16 slot (with x8 signal)
 - 3 x PCI slots

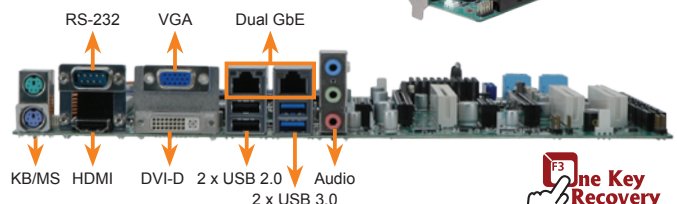
PCIe and PCI Slot Combination Table				
Slot	PCIe x16	PCIe x8	PCIe x4	PCI
Configuration 1	1	N/A	2	3
Configuration 2	N/A	2	2	3
Configuration 3	N/A	1	2	3

- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 2 x 3-pin system fan connector
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 3.3V@1.65A, 5V@6.31A, 12V@0.18A, Vcore@7.88A, 5VSB@0.15 (Intel® Core™ i5-2400 3.10GHz CPU with four 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 244mm x 305mm
- ◆ Weight: GW:1200g, NW: 700g

The IMBA-C2060 features PCIe x8 bifurcation supporting two I/O interface cards, two graphics cards or one graphics card plus one I/O interface card.



Capability of two graphics cards



Features

1. LGA1155 Intel® Xeon® E3 and Intel® Core™ i3 processor supported
2. Dual-channel 1333 MHz DDR3 supports up to 32 GB memory
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. Providing high-speed graphics interface by two PCIe x8/PCIe x4 add-on cards
5. USB 3.0 and SATA 6Gb/s supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

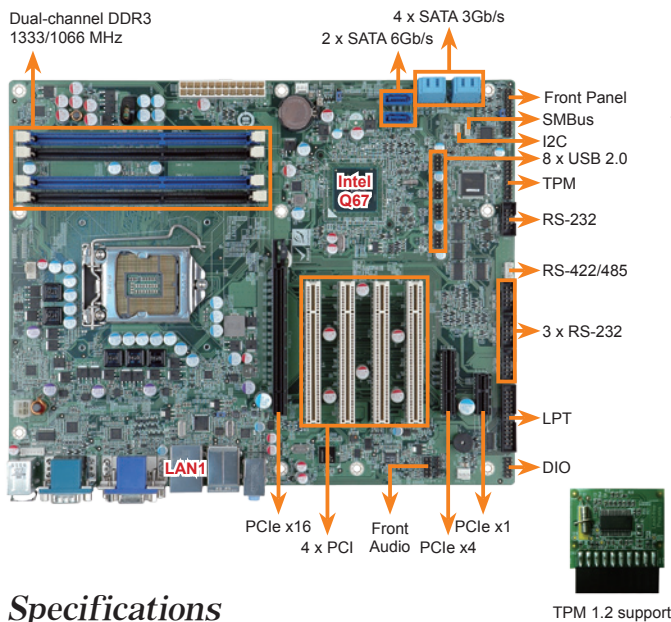
1 x IMBA-C2060 single board computer	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-C2060-R10	ATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/ Core™ i3/Celeron® CPU per Intel® C206, DDR3, VGA/DVI/ HDMI, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, Audio and RoHS
19800-003100-200-RS	Dual ports USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooling kit, 1U chassis compatible, 73W
CF-1156B-RS	High performance LGA1155/LGA1156 cooling kit, 95W
19800-000049-RS	LPT cable
19800-000051-RS	RS-232 cable, 230mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

IMBA-Q670-R20

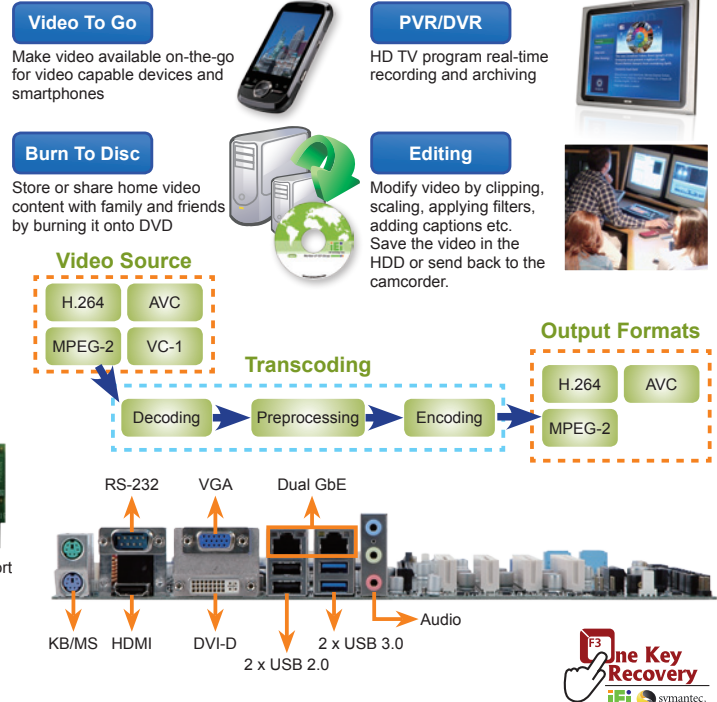
ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset
Intel® Q67
- ◆ Memory
Four 240-pin 1333/1066MHz dual-channel unbuffered DDR3 SDRAM DIMM supported (system max. 32GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Intel® 82583V PCIe controller
Intel® 82579 PHY with Intel® AMT 7.0 support (LAN2)
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Audio
Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
5 x RS-232
1 x LPT
1 x PS/2 KB/MS
2 x USB 3.0 by NEC D720200F1
- ◆ Front Audio
1 x 10-pin header
- ◆ TPM
1 x 20-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ I2C
1 x 4-pin wafer
- ◆ Expansion
1 x PCIe x16 slot
1 x PCIe x4 slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Fan Connector
1 x 4-pin CPU Fan Connector
2 x 3-pin system Fan Connectors
- ◆ Power Supply
ATX/AT power supply
- ◆ Power Consumption
3.3V@1.65A, 5V@6.31A, 12V@0.18A, Vcore@7.88A, 5VSb@0.15
(Intel® Core™ i5-2400 3.10GHz CPU with four 4 GB 1333MHz DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 305mm
- ◆ Weight
GW:1200g, NW: 700g

Evolution of Media Usages in Transcoding



Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 32 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. USB 3.0 and SATA 6Gb/s supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

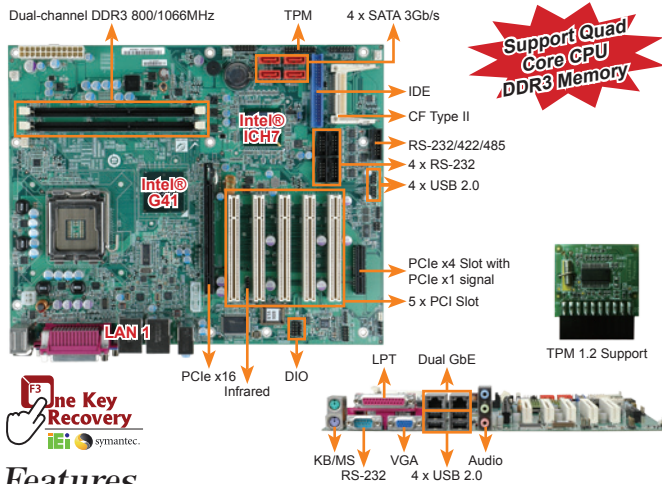
1 x IMBA-Q670 single board computer	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-Q670-R20	ATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS
19800-003100-100-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
19800-000049-RS	LPT cable
19800-000051-RS	RS-232 cable, 230mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

IMBA-G410-R20

ATX motherboard supports Intel® LGA775 Core™2 Duo/Quad processor with 1333 MHz FSB, including VGA, Dual PCIe GbE, USB 2.0, COM, CF, SATA 3Gb/s and audio, RoHS



One Key Recovery
IEI symantec.

Features

1. Support Intel® Core™2 Quad/Core™2 Duo/Pentium®4/Celeron® processor
2. Dual-channel 1066MHz DDR3 supports up to 8GB
3. Intel® GMA X4500 delivers an excellent blend of graphics performance
4. TPM V1.2 hardware security function supported by TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processors at FSB 800/1066/1333MHz
- ◆ System Chipset: Intel® G41+ICH7
- ◆ Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (system max. 8GB)
- ◆ BIOS: AMI BIOS
- ◆ Ethernet: Dual Realtek RTL8111E PCIe GbE controllers LAN 1 with ASF 2.0 support
- ◆ Display Interface: Intel® GMA X4500 Supports DirectX 10/OpenGL 1.5 VGA display supports analog CRT up to 2048x1536 @75MHz
- ◆ Super I/O: Fintek F81865
- ◆ I/O Interface:
 - 5 x RS-232
 - 1 x LPT
 - 2 x PS/2 KB/MS
 - 1 x CF Type II slot
 - 1 x RS-232/422/485 with auto flow control
 - 8 x USB 2.0
 - 1 x IDE
 - 4 x SATA 3Gb/s
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ TPM: 2 x 10-pin header
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ Expansion:
 - 1 x PCIe x16 slot (supports PCIe x1/x16 add-on card and SDVO card)
 - 1 x PCIe x4 slot (with x1 signal)
 - 5 x PCI slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 3 x 3-pin system fan connector
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 12V@4.80A, -12V@0.06A, 5V@5.45A, 3.3V@0.16A (Intel® Q9550 2.83GHz with 2GB 1333MHz DDR3 memory)
- ◆ Temperature Operation: -10°C ~ 60°C
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244mm x 305mm
- ◆ Weight: GW:1200g/NW: 650g

Packing List

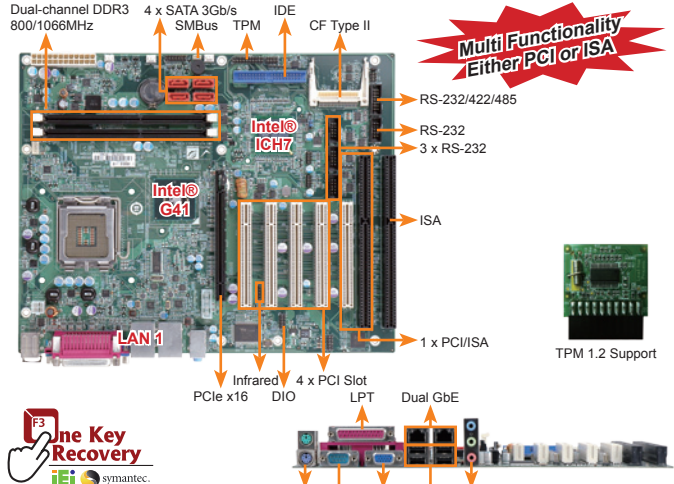
1 x IMBA-G410 single board computer	
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-G410-R20	ATX motherboard supports Intel® LGA775 Core™2 Duo/Quad processor with 1333 MHz FSB, VGA, PCIe x16, PCIe x4 (x1 signal), PCI, dual PCIe GbE, USB 2.0, COM, CF, SATA 3Gb/s and audio, RoHS
32200-000052-RS	IDE cable
32102-000100-200-RS	SATA power cable
19800-000100-200-RS	Quad ports USB cable with bracket
19800-003100-200-RS	Dual ports USB cable with bracket
19800-000058-RS	RS-232/422/485 cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
SDVO-100DVI-R10	PCIe x16 DVI Output SDVO card supports dual display (IEI CPU board only)
SDVO-100VGA-R10	PCIe x16 VGA Output SDVO card supports dual display (IEI CPU board only)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

IMBA-G412ISA-R20

ATX motherboard supports LGA775 Intel® Core™2 Duo/Quad processor with 1333 MHz FSB, DDR3, Dual PCIe GbE, ISA, COM, SATA 3Gb/s, USB 2.0 and RoHS



One Key Recovery
IEI symantec.

Features

1. Support the next generation 45nm LGA775 Intel® Core™2 processor family with higher system performance
2. Intel® GMA X4500 delivers an excellent blend of graphics performance
3. Integrated VGA and PCIe x16 SDVO card interface for dual display
4. Support dual-channel DDR3 800/1066MHz up to 8GB
5. TPM V1.2 hardware security function supported by TPM module
6. Expansion capability supports either five PCI slots plus one ISA slot or four PCI slots plus two ISA slots
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processors at FSB 800/1066/1333MHz
- ◆ System Chipset: Intel® G41+ICH7
- ◆ Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (system max. 8GB)
- ◆ BIOS: AMI BIOS
- ◆ Graphics Engine: Intel® GMA X4500
- ◆ Display Interface: VGA supports analog CRT up to 2048x1536 @75MHz
- ◆ Ethernet: Dual Realtek RTL8111E PCIe GbE controller, LAN 1 with ASF 2.0 support
- ◆ Super I/O: Fintek F81865
- ◆ ISA Bridge: ITE IT8888
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ TPM: 2 x 10-pin header
- ◆ SMBus: 1 x 4-pin wafer
- ◆ I/O Interface:
 - 5 x RS-232
 - 4 x SATA 3Gb/s
 - 1 x CF Type II
 - 1 x RS-232/422/485 with auto flow control
 - 1 x LPT
 - 8 x USB 2.0
 - 1 x IDE
- ◆ Expansion:
 - 1 x ISA slot
 - 4 x PCI slot
 - 1 x PCI/ISA slot
 - 1 x PCIe x16 slot
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Power Supply: ATX power supply
- ◆ Power Consumption: 12V@2.01A, -12V@0.05A, 3.3V@0.15A, 5V@5.06A (Intel® Core™2 Duo CPU E7400@2.8GHz with 1GB DDR3 memory)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305mm x 244mm
- ◆ Weight: GW: 1200g/NW: 650g

Packing List

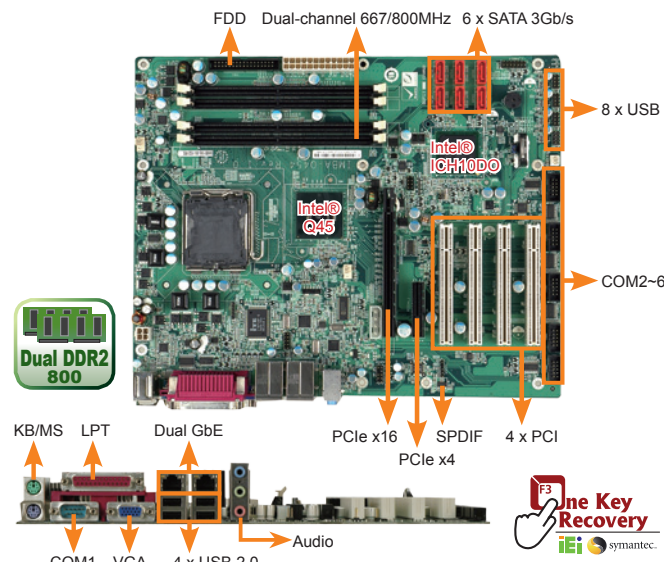
1 x IMBA-G412ISA single board computer	
1 x Dual-port RS-232 cable with bracket (P/N: 19800-000051-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-G412ISA-R20	ATX motherboard supports LGA775 Intel® Core™2 Duo/Core™2 Quad CPU with FSB 1333MHz, DDR3, dual PCIe GbE, ISA, PCI, PCIe x16, COM, LPT, SATA 3Gb/s, IDE, USB 2.0, audio and RoHS
32102-000100-200-RS	SATA power cable
32200-000052-RS	IDE cable
19800-003100-200-RS	Dual-port USB cable with bracket
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU Board Only)
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU Board Only)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

IMBA-Q454

ATX motherboard supports 45nm Intel® LGA775 Core™2 Duo/Quad with a 1333/1066/800MHz FSB, dual Intel® GbE, six SATA 3Gb/s with RAID, six COM ports, USB and Audio



Features

1. Designed for Intel® Core™2 Quad/Duo processor Q9000/E8000/E7000 series in the LGA775 with a 1333/1066/800 MHz FSB
2. Intel® GbE LAN with Intel® AMT 5.0 supported
3. Intel® Q45 chipset integrating high-performance graphics with DX10 and OpenGL 2.1. External graphics card with PCIe 2.0 and 1x16 PEG support
4. PCIe x16 expansion slot and VGA output for dual display support
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
LGA 775 45nm Intel® Core™2 Duo/Quad, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ System Chipset
Intel® Q45 + Intel® ICH10DO
- ◆ BIOS
AMI BIOS
- ◆ System Memory
Four 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 16 GB
- ◆ Ethernet Chipset
LAN 1: Intel® 82567LM (Intel® AMT 5.0 supported)
LAN 2: Intel® 82574L
- ◆ IO Interface
6 x RS-232 1 x VGA
1 x LPT 2 x RJ-45
12 x USB 2.0 2 x PS/2 for KB & MS
1 x Audio jack for Line-in/Line-out/Mic-in
- ◆ Expansion
One PCIe x16 One PCIe x4 Four PCI
- ◆ Graphics Integrated
Intel® GMA 4500 support for Microsoft DirectX® 10, Shader Model 4.0 and OpenGL® 2.0
- ◆ Display Output
Analog CRT and PEG x 16
- ◆ Super IO
ITE IT8718F
- ◆ Digital I/O
8-bit (4-bit input/4-bit output)
- ◆ Storage
1 x FDD
6 x SATA 3Gb/s (with RAID 0, 1, 5, 10 function)
- ◆ Audio
Realtek ALC888
- ◆ TPM
iTPM1.2
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
ATX supported
- ◆ Fan connector
1 x 4-pin CPU fan
1 x 4-pin chipset fan
1 x 3-pin system fan
- ◆ Power Consumption
3.3V@2.64A, 5V@5.4A, 12V@0.28A, Vcore@3.45 (Intel® Core 2 Duo E8500 3.16 GHz with four 800 MHz 2 GB DDR2)
- ◆ Temperature
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW: 1200 g/NW: 600 g

Packing List

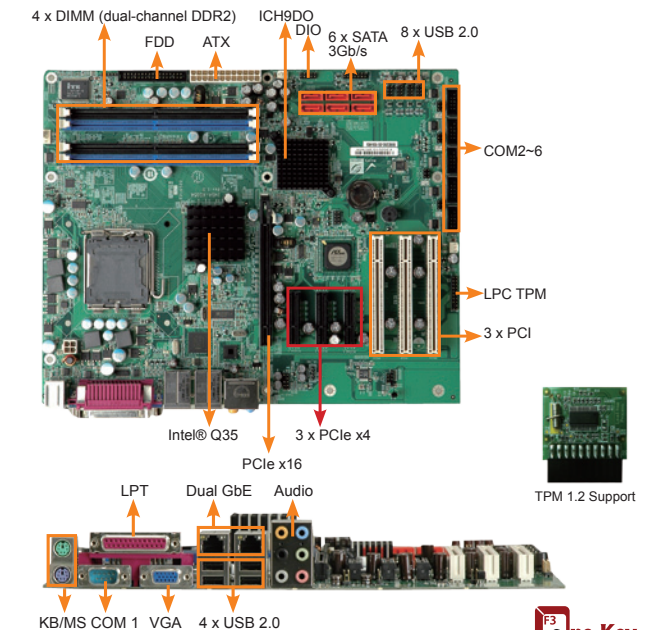
1 x IMBA-Q454 single board computer	1 x One Key Recovery CD
2 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45002-450903-00-RS)	1 x Utility CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
IMBA-Q454-R10	ATX motherboard supports 45nm Intel® Core™2 Duo/Quad with a 1333/1066/800 MHz FSB, Intel® Q45 & ICH10DO platform, dual Intel® GbE, six SATA 3Gb/s with RAID, six COM ports, USB and audio
CF-775A-RS	CPU cooler
CF-520-RS-R11	
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card support dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card support dual display (IEI CPU board only)
32229-000100-100-RS	FDD cable
32102-000100-100/200-RS	SATA power cable

IMBA-XQ354-R11

LGA 775 45nm Intel® Core™2 Quad, Core™2 Duo, Celeron® CPU with a 1333/1066/800MHz FSB



Features

1. ATX form factor supports Intel® Q35/ICH9DO
2. Supports Intel® Core™2 Quad/Duo 45nm processor with a 1333/1066/800 MHz FSB
3. PLX PCIe switch for three PCIe x4 add-on cards
4. Six SATA 3Gb/s with Intel® Matrix Storage Technology supported
5. Intel® PCIe GbE with Intel® AMT 3.0 supported
6. TPM1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
LGA 775 45nm Intel® Core™2 Quad, Core™2 Duo, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ FSB
1333/1066/800 MHz
- ◆ System Chipset
Intel® Q35
- ◆ Intel® ICH9DO
- ◆ BIOS
AMI BIOS
- ◆ Memory
4 x 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 8 GB
- ◆ Graphics
Integrated Graphics Device from Q35
- ◆ Display Output
Analog display (VGA)
- ◆ Ethernet
Intel® 82566DM (PHY) + ICH9-DO (MAC) for Intel® AMT support
Intel® 82573L (MAC+PHY) PCIe GbE
- ◆ Super IO
ITE IT8718F
- ◆ Audio
Realtek ALC888 HD Audio codec
- ◆ Digital I/O
8-bit digital I/O 4-bit input/4-bit output
- ◆ IO Interface
1 x KB/MS 1 x LPT
1 x FDD 12 x USB 2.0
6 x SATA 3Gb/s
2 x RS-232 COM Port (2 by super IO, 4 by Fintek F81216DG)
- ◆ Expansions
1 x PCIe x16
3 x PCIe x4 (by PLX PEX8518)
3 x PCI
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ TPM
- ◆ 2 x 10-pin LPC header
- ◆ Power Supply
ATX supported
- ◆ Fan Connector
1 x 4-pin CPU fan 2 x 3-pin system fan
- ◆ Power Consumption
3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™2 Duo E8500 CPU with 800 MHz 8GB DDR2 DIMM)
- ◆ Temperature
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW: 1200 g/NW: 600 g

Packing List

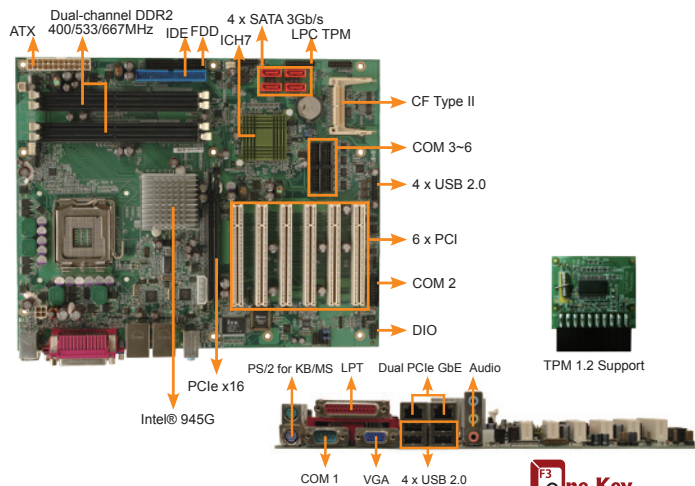
1 x IMBA-XQ354 single board computer	
1 x I/O shielding (P/N: 45014-0025C0-00-RS)	1 x One Key Recovery CD
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	1 x Mini jumper pack
1 x RS-232 cable (P/N: 19800-000114-RS)	1 x Utility CD
6 x SATA cable (P/N: 32102-000100-200-RS)	1 x QIG

Ordering Information

Part No.	Description
IMBA-XQ354-R11	ATX motherboard with Intel® LGA775, Core™2 Quad CPU, Celeron® with a 1333/1066/800 MHz FSB, PCIe x16, PCIe x4, PCIe GbE, SATA 3Gb/s and audio
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS	CPU cooler
CF-520-RS-R11	
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

IMBA-9454-R40

ATX form factor with Intel® Core™2 Duo, Pentium® D/Pentium® 4/Celeron® D CPU FSB 533/800/1066 MHz, VGA, dual-channel DDR2, FDD, LPT, four SATA 3Gb/s, eight USB 2.0 and six COM



Features

1. Intel® Core™2 Duo, Pentium® D, Pentium® 4, Celeron® D processor in a LGA 775 package
2. Integrated Intel® GMA950 graphics engine that offers adequate display quality via VGA interface
3. Dual-channel 400/533/667 MHz DDR2 SDRAM socket supports up to 4 GB
4. TPM V1.2 hardware security function supported
5. Four SATA 3Gb/s, eight USB 2.0, audio and ATX power only
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - LGA 775 Intel® Core™2 Duo, Pentium® 4/ Celeron® D processor, FSB 533/800/1066 MHz
- ◆ System Chipset
 - Intel® 945G + ICH7
- ◆ BIOS
 - AMI BIOS
- ◆ System Memory
 - 4 x 240-pin dual-channel 400/533/667 MHz DDR2 (system max. 4 GB)
- ◆ Ethernet
 - Dual PCIe Realtek RTL8111E GbE controller
- ◆ I/O Interface
 - 8 x USB 2.0
 - 1 x LPT
 - 2 x PS/2 for KB/MS
 - 5 x RS-232
 - 1 x CF Type II
 - 1 x 20-pin LPC for TPM
- ◆ Expansions
 - One PCIe x16 (Support PCIe x1/x16 PCIe add-on cards)
 - 6 x PCI
- ◆ Infrared Interface
 - 1 x Infrared interface by pin header
- ◆ Super I/O
 - ITE IT8712F
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Audio
 - Realtek ALC655 with AC'97 codec
- ◆ Display
 - VGA integrated in Intel® 945G
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - ATX support
- ◆ Power Consumption
 - 5V@2.86A, 12V@0.39A, 3.3V@6.24A, Vcore@1.05A (Intel® Core™2 Duo E7400 2.8 GHz/1066 MHz CPU with two 800 MHz 2GB DDR2)
- ◆ Temperature
 - Operating: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity
 - Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 305 (L) mm x 244 (W) mm
- ◆ Weight
 - GW: 1200 g/NW: 650 g

Packing List

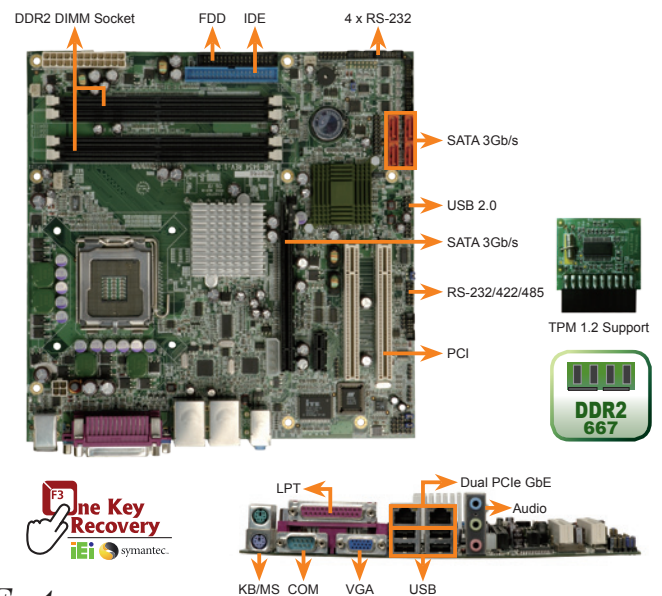
1 x IMBA-9454 single board computer	
1 x IDE cable (P/N: 32200-000052-RS)	
2 x Dual RS-232 cable (P/N: 19800-003600-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMBA-9454G-R40	ATX motherboard with Intel® LGA 775 Core™2 Duo, Pentium® D/Pentium® 4/Celeron® D processor FSB 533/800/1066MHz, PCIe GbE, SATA 3Gb/s and Audio
32229-000100-100-RS	FDD cable
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

IMB-9454G-R40

microATX motherboard with Intel® Core™2 Duo, Pentium® 4/Pentium® D/ Celeron® D FSB 533/800/1066 MHz CPU, VGA, dual PCIe GbE, SATA 3Gb/s, USB 2.0, six COM, & audio



Features

1. Intel® Core™2 Duo, Pentium® 4/Pentium® D/Celeron® D CPU with a 533/800/1066MHz FSB
2. VGA integrated in Intel® 945G
3. Dual-channel 533/667MHz DDR2 supports up to 4GB
4. FDD, LPT, four SATA 3Gb/s, eight USB 2.0 and six COM
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - LGA 775 Intel® Core™2 Duo, Pentium® 4/D/ Celeron® D with a 533/800/1066 MHz FSB
- ◆ System Chipset
 - Intel® 945G + ICH7
- ◆ BIOS
 - AMI BIOS
- ◆ System Memory
 - 4 x 240-pin dual-channel DDR2 533/667MHz (system max. 4GB)
- ◆ Ethernet
 - Dual PCIe Realtek RTL8111E GbE chipset with ASF 2.0 support
- ◆ I/O Interface
 - 8 x USB 2.0
 - 1 x LPT
 - 5 x RS-232
 - 2 x PS/2 for KB/MS
 - 1 x 20-pin LPC for TPM
- ◆ Expansions
 - 1 x PCIe x1
 - 1 x PCIe x16 (Support PCIe x1/x16 PCIe add-on cards)
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
 - 1 x Infrared interface by pin header
- ◆ Super I/O
 - ITE IT8712F
- ◆ Audio
 - Realtek ALC655 with AC'97 codec
- ◆ Display
 - VGA integrated in Intel® 945G
- ◆ Watchdog Timer
 - Software programmable 1-255 sec. by super I/O
- ◆ Power Supply
 - ATX power supply
- ◆ Power Consumption
 - 5V@2.03A, 12V@0.39A, 3.3V@6.13A, 5Vsb@0.02A, Vcore@2.37A (2.93 GHz Intel® Core 2 Duo E7500 with four 800 MHz 1GB DDR2)
- ◆ Temperature
 - Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
 - Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 244 mm x 244 mm
- ◆ Weight
 - GW: 1200 g; NW: 680 g

Packing List

1 x IMB-9454G single board computer	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
2 x Dual RS-232 cable (P/N: 19800-000112-RS)	1 x One Key Recovery CD
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x IDE cable (P/N: 32200-000052-RS)	1 x QIG

Ordering Information

Part No.	Description
IMB-9454G-R40	microATX motherboard, Intel® Core™2 Duo CPU 800/1066/1333 MHz FSB with VGA, dual PCIe GbE, SATA 3Gb/s, COM and audio
32229-000100-100-RS	FDD cable
19800-003100-200-RS	Dual USB cable
19800-000100-200-RS	Four USB cable
19800-000082-RS	RS-232/422/485 cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)
CF-775A-RS	CPU cooler
CF-520-RS-R11	

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

ORing
Network
Communication

5

Power Supply/
Peripherals

6

Panel
Solutions
Introduction

IMB-H610A IMB-H610B

microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 6 x COM, SATA 3Gb/s, HD Audio and RoHS

microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 10 x COM, SATA 3Gb/s, HD Audio and RoHS

New

Application Level

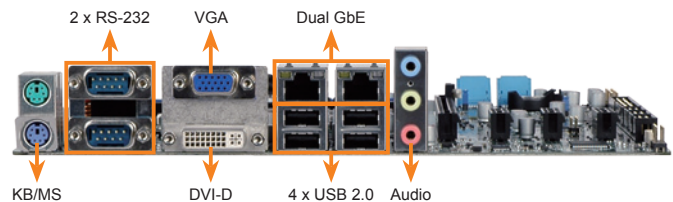
The IMB-H61 platform with Intel® 35W CPU is cost-efficient and fulfills common application needs.

High Cost
Low Value
Premium
Standard
Basic
Position


2nd Gen. Core i5/i3 CPU



Small size board by IMB-H610



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3 quad/Dual, Pentium® dual, Celeron® dual/single core processor
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 240-pin 1333/1066 MHz dual-channel unbuffered DDR3 SDRAM DIMMs supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller, LAN1 with ASF 2.0 support
- ◆ Graphics Engine
Intel® HD Graphics 2000/3000 (based on CPU type)
Support for DX10.1 and OpenGL 3.0
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Audio
Realtek ALC662 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
5 x RS-232 (for IMB-H610A-R10) / 9 x RS-232 (for IMB-H610B-R10)
1 x RS-422/485
4 x SATA 3Gb/s without RAID & AHCI
1 x PS/2 KB/MS
10 x USB 2.0 (4 by rear I/O, 6 by pin header)
- ◆ Front Audio
1 x 10-pin header
- ◆ Front Panel
1 x Front panel connector (power LED, HDD LED, speaker, power button, reset button)
- ◆ TPM
1 x 20-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ I2C
1 x 4-pin wafer
- ◆ Expansions
1 x PCIe x16 slot
3 x PCIe x1 slots
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit programmable I/O
- ◆ Fan Connector
1 x 4-pin CPU fan connector
2 x 3-pin system fan connector
- ◆ Power Supply
ATX/AT power supply
- ◆ Power Consumption
3.3V@1.75A, 5V@6.61A, Vcore@3.68A, 12V@0.09A, 5sb@0.12A
(Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 244mm
- ◆ Weight
GW: 1200g/NW: 680g

TPM 1.2 Support

Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® HD Graphics technology integrates high-performance graphics and media processing
4. TPM V1.2 hardware security provided by the TPM module
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x IMB-H610 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

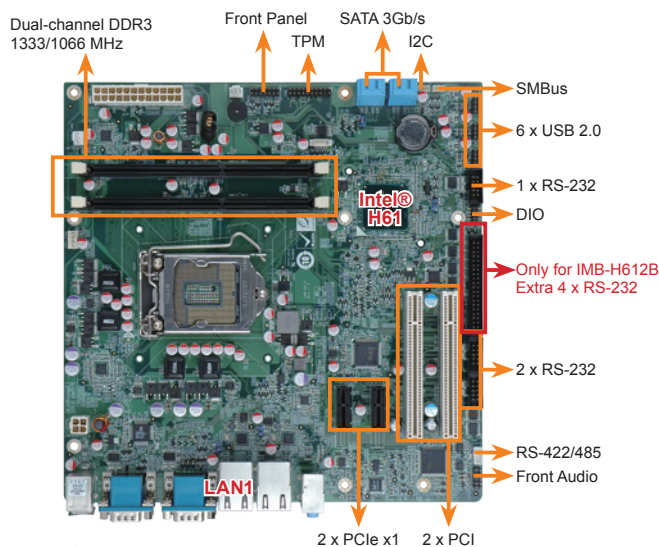
Part No.	Description
IMB-H610A-R10	microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 6 COM, SATA 3Gb/s, HD Audio and RoHS
IMB-H610B-R10	microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® H61, DDR3, VGA/DVI-D, dual Realtek PCIe GbE, USB 2.0, 10 COM, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
32102-000100-200-RS	SATA power cable
32205-001203-100-RS	Quad-port RS-232 cable with bracket, 400/400/400/400mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

IMB-H612A

IMB-H612B

microATX motherboard supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU per Intel® H61, DDR3, Dual VGA, Dual PCIe GbE, USB 2.0, PCI, 6 COM, SATA 3Gb/s, Audio and RoHS

microATX motherboard supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU per Intel® H61, DDR3, Dual VGA, Dual PCIe GbE, USB 2.0, PCI, 10 COM, SATA 3Gb/s, Audio and RoHS



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3 quad/dual, Pentium® dual, Celeron® dual/single core processor
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 240-pin 1333/1066MHz dual-channel DDR3/DDR3L (1.35V) SDRAM unbuffered DIMM supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller, LAN1 with ASF 2.0 supported
- ◆ Graphics Engine
VGA1: Intel® HD Graphics 2000/3000 (Base on CPU type)
Support for DX10.1 and OpenGL 3.0
Full MPEG2, VC1, AVC Decode
Resolution supports up to 2048 x 1536 @75Hz
VGA2: Chrontel CH7317B
Resolution supports up to 1920 x 1200 @60Hz
- ◆ Display Output
Dual display supported
2 x VGA
- ◆ Super I/O
Fintek F81866
- ◆ PCIe to PCI Bridge IC
ITE IT8893E
- ◆ Audio
Realtek ALC662 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
1 x PS/2 KB/MS 4 x SATA 3Gb/s without RAID & AHCI
1 x RS-422/485 10 x USB 2.0 (4 by rear I/O, 6 by pin header)
5 x RS-232 (for IMB-H612A-R10) / 9 x RS-232 (for IMB-H612B-R10)
- ◆ Front Audio
2 x 5-pin header
- ◆ TPM
2 x 10-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ I2C
1 x 4-pin wafer
- ◆ Expansions
2 x PCIe x1 slots
2 x PCI slots
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit programmable I/O
- ◆ Fan Connector
1 x 4-pin CPU fan connector
2 x 3-pin system fan connector
- ◆ Power Supply
AT/ATX power supply supported
- ◆ Power Consumption
12V@0.27A, Vcore@5.3A, 5V@2.0A, 3.3V@1.0A
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 244mm
- ◆ Weight
GW: 1200g/NW: 680g

Simple I/O, Easy Way

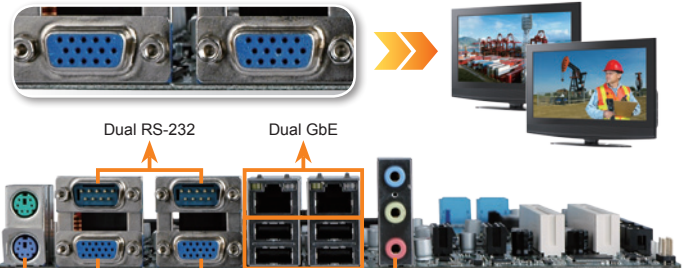
The IMB-H612 has two RS-232 and VGA ports on the rear I/O panel to make it easy for cable-less solutions and dual display.

New

Cable-less for RS-232 devices



Easy dual display setup



Features

1. LGA1155 Intel® Core™ i7/i5/i3 processor supported
2. Dual-channel 1333MHz DDR3/DDR3L (1.35V) supports up to 16GB
3. Intel® HD Graphics technology integrates high-performance graphics and media processing
4. Supports independent display output via dual VGA
5. Supports legacy PCI 32-bit 33/66MHz
6. Supports lower power 1.35V DDR3 memory
7. TPM V1.2 hardware security function supported by TPM module
8. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x IMB-H612 single board computer	
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMB-H612A-R10	microATX motherboard supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU per Intel® H61, DDR3, VGA, dual PCIe GbE, PCI, 6 COM, LPT, USB 2.0, SATA 3Gb/s, Audio and RoHS
IMB-H612B-R10	microATX motherboard supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU per Intel® H61, DDR3, VGA, dual PCIe GbE, PCI, 10 COM, LPT, USB 2.0, SATA 3Gb/s, Audio and RoHS
19800-003100-100-RS	Dual-port USB cable with bracket
32205-003800-100-RS	RS-422/485 cable, 200mm
32102-000100-200-RS	SATA power cable
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
32205-001203-100-RS	Quad-port RS-232 cable with bracket, 400/400/400/400MM
19800-000049-RS	LPT cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

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Industrial
Computing
Solutions

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Video
Capture
Solutions

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Embedded
Computing
Solutions

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ORing
Network
Communication

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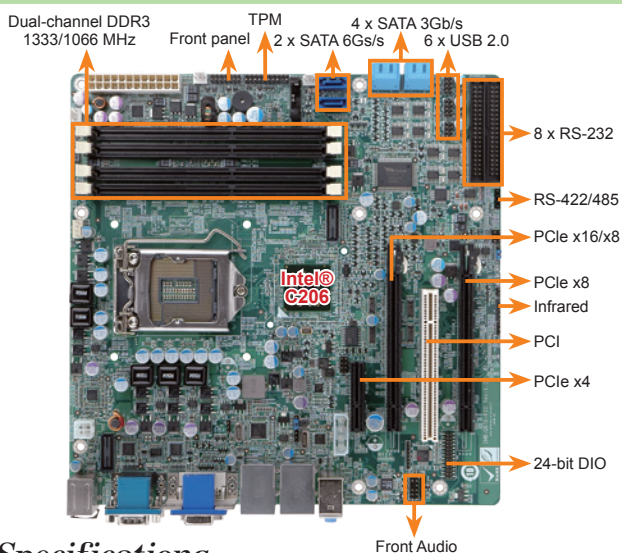
Power Supply/
Peripherals

6

Panel
Solutions
Introduction

IMB-C2060

microATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/ Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, Audio and RoHS



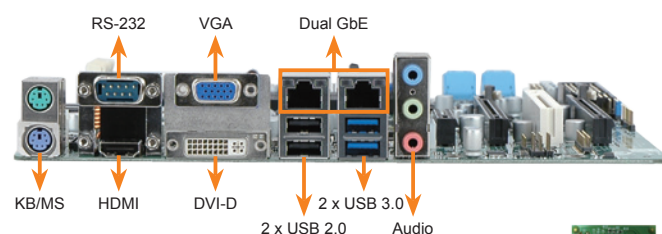
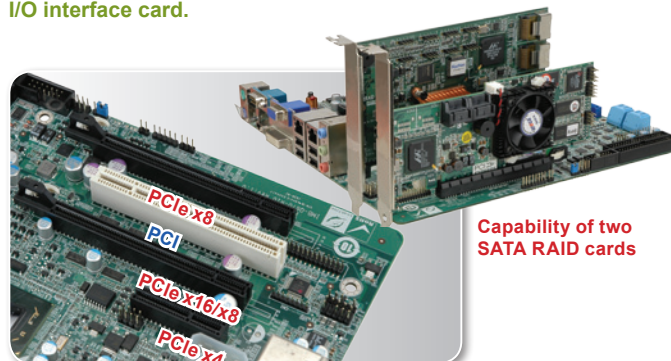
Specifications

- ◆ CPU
LGA1155 socket supports Intel® Xeon® E3 quad/dual, Core™ i3 dual, Celeron® dual core processor
- ◆ System Chipset
Intel® C206
- ◆ Memory
Four 240-pin 1333/1066MHz dual-channel DDR3 SDRAM ECC and non-ECC unbuffered DIMM supported (system max. 32GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Intel® 82574L PCIe controller
Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Audio
Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
9 x RS-232
1 x RS-422/485
1 x PS/2 KB/MS
10 x USB 2.0 (2 by Rear IO, 8 by pin header)
4 x SATA 3Gb/s with RAID 0/1/5/10 support
2 x SATA 6Gb/s with RAID 0/1/5/10 support
2 x USB 3.0 by NEC D720200F1
- ◆ Front Audio
2 x 5-pin header
- ◆ TPM
2 x 10-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ Expansions
1 x PCIe x16/x8 slot
1 x PCIe x4 slot
1 x PCIe x16 slot (with x8 signal)
1 x PCI slot

PCIe and PCI Slot Combination Table				
Slot	PCIe x16	PCIe x8	PCIe x4	PCI
Configuration 1	1	N/A	1	1
Configuration 2	N/A	2	1	1
Configuration 3	N/A	1	1	1

- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
24-bit digital I/O (12-bit input, 12-bit output)
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin NB fan connector
2 x 3-pin system fan connector
- ◆ Power Supply
ATX Power Supply
- ◆ Power Consumption
3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5VSb@0.12 (Intel® 2.60GHz CPU with four 1333MHz 4GB DDR3 memory)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 244mm
- ◆ Weight
GW: 1200g/NW: 680g

The two PCIe x8 interfaces of the IMB-C2060 can support two I/O interface cards, two graphic cards or one graphic card plus one I/O interface card.



Features

1. LGA1155 Intel® Xeon® E3 and Intel® Core™ i3 processor supported
2. Dual-channel 1333MHz DDR3 supports up to 32GB
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. Providing high-speed graphics interface by two PCIe x8/two PCIe x4 add-on cards
5. USB 3.0 and SATA 6Gb/s supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x IMB-C2060 single board computer	
2 x Quad-port RS-232 cable (P/N: 32205-001203-100-RS)	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMB-C2060-R10	microATX motherboard supports 32nm LGA1155 Intel® Xeon® E3/Core™ i3/Celeron® CPU per Intel® C206, DDR3, VGA/DVI/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
CF-1156A-RS	High performance LGA1155/LGA1156 cooling kit, 1U chassis compatible, 73W
CF-1156B-RS	High performance LGA1155/LGA1156 cooling kit, 95W
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

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Industrial
Computing
Solutions

2
Video
Capture
Solutions

3
Embedded
Computing
Solutions

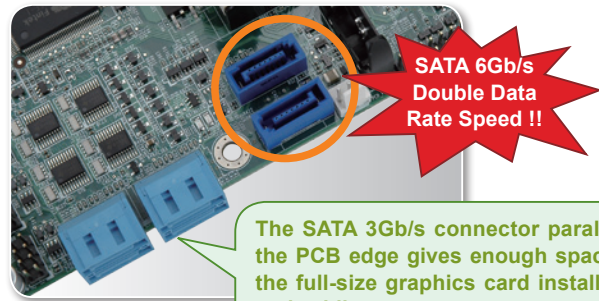
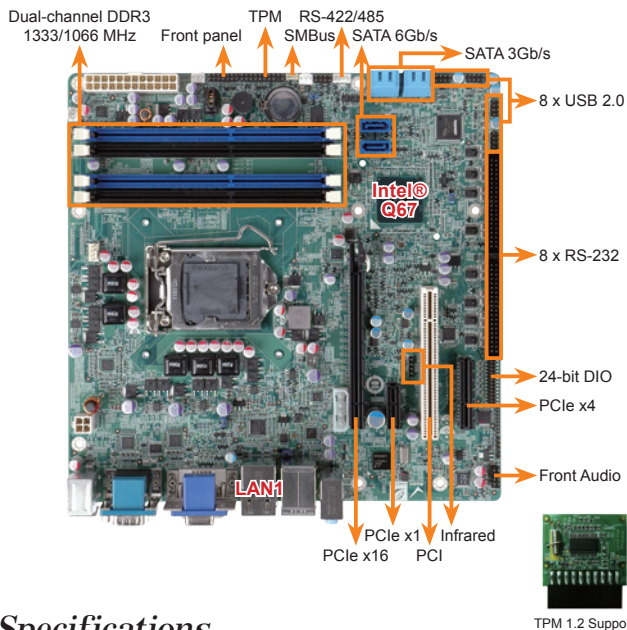
4
O/Ring
Network
Communication

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Power Supply/
Peripherals

6
Panel
Solutions
Introduction

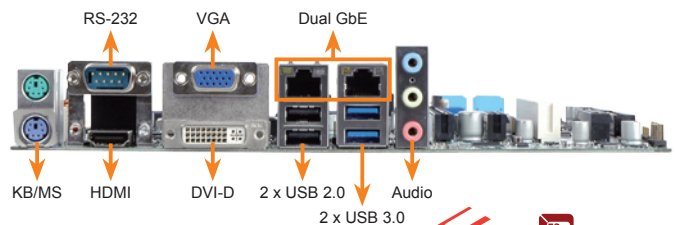
IMB-Q670-R20

microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, HD Audio and RoHS



**SATA 6Gb/s
Double Data
Rate Speed !!**

The SATA 3Gb/s connector parallel to the PCB edge gives enough space for the full-size graphics card installation and cabling.



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3 quad/dual, Pentium® dual, Celeron® dual/single core processor
- ◆ System Chipset
Intel® Q67
- ◆ Memory
Four 240-pin 1333/1066 MHz dual-channel unbuffered DDR3 SDRAM DIMMs supported (system max. 32GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Intel® 82574L PCIe controller
Intel® 82579 PHY with Intel® AMT 7.0 support (LAN2)
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Audio
Realtek ALC888 HD Audio codec (Line-in, Line-out, Mic)
- ◆ I/O Interface
9 x RS-232
1 x RS-422/485
1 x PS/2 KB/MS
10 x USB 2.0 (2 by rear IO, 8 by pin header)
- 4 x SATA 3Gb/s with RAID 0/1/5/10 support
2 x SATA 6Gb/s with RAID 0/1/5/10 support
2 x USB 3.0 by NEC D720200F1
- ◆ Front Audio
1 x 10-pin header
- ◆ TPM
1 x 20-pin header
- ◆ SMBus
1 x 4-pin wafer
- ◆ Expansions
1 x PCIe x16 slot
1 x PCIe x4 slot
1 x PCI slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
24-bit digital I/O (12-bit input, 12-bit output)
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin NB fan connector
2 x 3-pin system fan connectors
- ◆ Power Supply
ATX/AT power supply
- ◆ Power Consumption
3.3V@1.75A, 5V@6.61A, 12V@3.68A, 12V@0.09A, 5VSb@0.12 (Intel® 2.60GHz CPU with four 1333 MHz 4GB DDR3 DIMMs)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
244mm x 244mm
- ◆ Weight
GW: 1200g/NW: 680g



Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 32 GB 1333 MHz dual-channel DDR3 SDRAM
3. Intel® PCIe GbE with Intel® AMT 7.0 support
4. USB 3.0 and SATA 6Gb/s supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x IMB-Q670 single board computer	
2 x Quad-port RS-232 cable (P/N: 32205-001203-100-RS)	
1 x I/O shielding (P/N: 45014-0028C0-01-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMB-Q670-R20	microATX motherboard supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with Intel® Q67, DDR3, VGA/DVI-D/HDMI, dual Intel® PCIe GbE, USB 3.0, COM, SATA 6Gb/s, HD Audio and RoHS
19800-003100-100-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-003800-100-RS	RS-422/485 cable, 200mm
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

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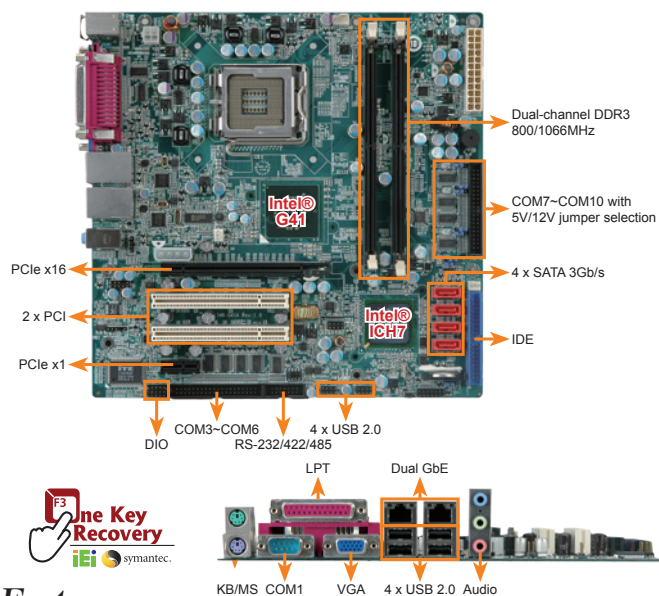
Power Supply/
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IMB-G41A

microATX motherboard supports 45nm LGA775 Intel® Core™2 Quad CPU with a 1333/1066/800MHz FSB, PCIe x16, PCIe x1, two PCI, 10 COM, dual PCIe GbE, SATA 3Gb/s, audio and RoHS



Features

1. Support for the next-generation 45nm Intel® Core™2 processor family with faster system performance
2. Intel® GMA X4500 delivers an excellent blend of graphics performance
3. Integrated VGA and PCIe x16 SDVO add-on card for dual display
4. Diverse I/O interfaces, including 10 COM ports, four SATA 3Gb/s ports
5. Support dual-channel DDR3 SDRAM DIMM up to 8GB (max.)
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® processor with a 800/1066/1333MHz FSB
- ◆ System Chipset: Intel® G41+ICH7
- ◆ Memory: Two 240-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (System max. 8GB)
- ◆ BIOS: AMI BIOS
- ◆ Ethernet: Dual Realtek RTL8111PC PCIe GbE controller
- ◆ Display Interface: Intel® GMA X4500 Supports DirectX 10/OpenGL 1.5 One VGA supports analog CRT up to 2048x1536@75MHz
- ◆ Super I/O: ITE IT873F
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ I/O Interface:
 - 1 x IDE
 - 8 x USB 2.0
 - 1 x LPT
 - 4 x SATA 3Gb/s
 - 2 x PS/2 for KB/MS
 - 1 x RS-232/422/485
 - 9 x RS-232 (COM7~COM10 with 5V/12V jumper selection)
- ◆ Infrared Interface: 1 x Infrared connector by 5-pin header
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansions:
 - 1 x PCIe x16 slot
 - 1 x PCIe x1 slot
 - 2 x PCI slot
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector:
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin northbridge fan connector
 - 1 x 3-pin system fan connector
- ◆ Power Supply: ATX power
- ◆ Power Consumption: 5V@7.42A, 3.3V@0.15A, 12V@0.27A, Vcore@3.03A 3.16GHz (Intel® Core™2 Duo E8500 and 4GB 1066MHz DDR3)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Humidity: Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244mm x 244mm
- ◆ Weight: GW: 1200g/NW: 700g

Packing List

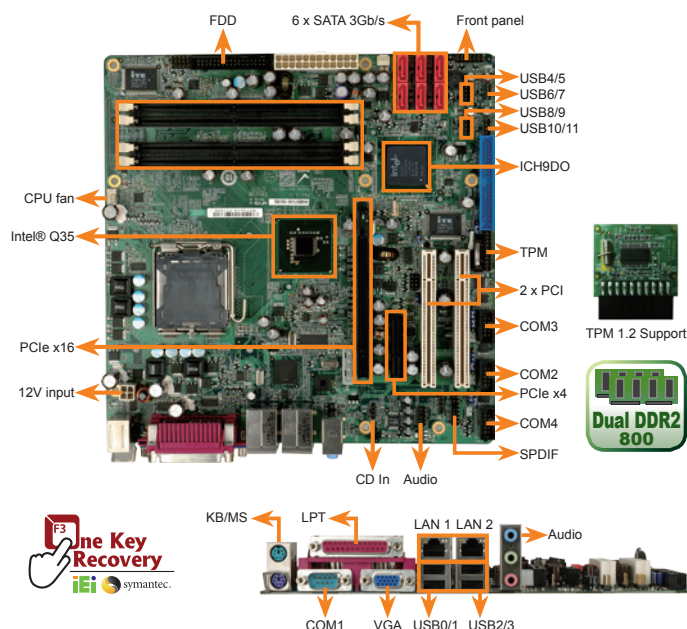
1 x IMB-G41A single board computer	
2 x Quad-port RS-232 cable (P/N: 32205-001203-100-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
IMB-G41A-R10	microATX motherboard supports 45nm LGA775 Intel® Core™2 Quad CPU with a 1333/1066/800MHz FSB, PCIe x16, PCIe x1, two PCI, ten COM, dual PCIe GbE, SATA 3Gb/s and audio, RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32200-000063-RS	RS-232/422/485 cable
32200-000052-RS	ATA66 IDE flat cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
SDVO-100VGA-R10	PCIe x16 VGA Output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI Output SDVO card supports dual display (IEI CPU board only)

IMB-Q354

microATX motherboard supports 45nm LGA775 Intel® Core™2 Duo CPU with a 800/1066/1333 MHz FSB, Intel® Q35 & ICH9DO platform, dual Intel® PCIe GbE, SATA 3Gb/s with RAID functions



Features

1. microATX and RoHS compliant
2. Supports LGA775 Intel® Core™2 Quad, Core™2 Duo, 45 nm processor with a 1333/1066/800 MHz FSB
3. Intel® Q35 & ICH9DO platform
4. Six SATA 3Gb/s with Intel® Matrix Storage Technology supported
5. Intel® PCIe GbE with Intel® AMT 3.0 supported
6. TPM1.2 IT security solution supported
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Celeron® CPU with a 1333/1066/800 MHz FSB
- ◆ System Chipset: Intel® Q35 + ICH9DO
- ◆ BIOS: AMI BIOS
- ◆ System Memory: 4 x 240-pin 2 GB (max.) 800/667 MHz dual-channel DDR2 SDRAM DIMM (system max. 8 GB)
- ◆ Ethernet: Dual GbE LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY) with Intel® AMT support
- ◆ I/O Interface:
 - 4 x RS-232
 - 12 x USB 2.0
 - 1 x LPT
 - 1 x FDD
 - 2 x PS/2 for KB/MS (external)
 - 6 x SATA 3Gb/s with RAID 0, 1, 5, 10 support
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface: One Infrared Interface by pin header
- ◆ Audio: Realtek ALC883 HD Audio codec
- ◆ Graphics: VGA integrated in Intel® Q35
- ◆ Super I/O: ITE IT8712F
- ◆ Expansions:
 - 1 x PCIe x16
 - 1 x PCIe x4
 - 2 x PCI
- ◆ TPM1.2: 1 x 20-pin header on-board for TPM (Trusted Platform Module)
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: ATX
- ◆ Power Consumption: 3.3V@2.41A, 5V@5.71A, 5Vsb@0.13A, 12V@3.69A (2Dmark 2001) Intel® Core™2 Duo E6850 3.0GHz, 8GB DDR2 800MHz, 3Dmark 2001
- ◆ Temperature: Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions: 244 mm x 244 mm
- ◆ Weight: GW: 1100 g

Packing List

1 x IMB-Q354 single board computer	
3 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	1 x One Key Recovery CD
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 19800-003100-200-RS)	1 x Utility CD
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
IMB-Q354-R10	microATX motherboard supports 45 nm LGA775 Intel® Core™2 Duo CPU with a 800/1066/1333 MHz FSB, Intel® Q35 & ICH9DO platform, dual Intel® PCIe GbE, six SATA 3Gb/s with RAID functions
CF-520-RS-R11	High performance CPU cooler, (115mm x 115mm x 67mm, 115W)
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SDVO-100VGA-R10	PCIe x16 VGA output SDVO card supports dual display (IEI CPU board only)
SDVO-100DVI-R10	PCIe x16 DVI output SDVO card supports dual display (IEI CPU board only)

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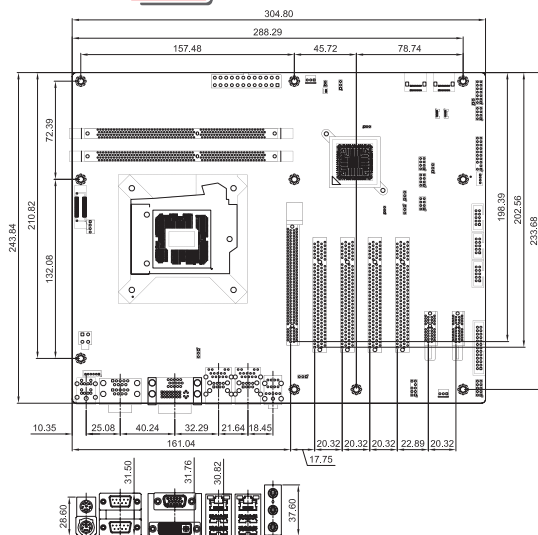
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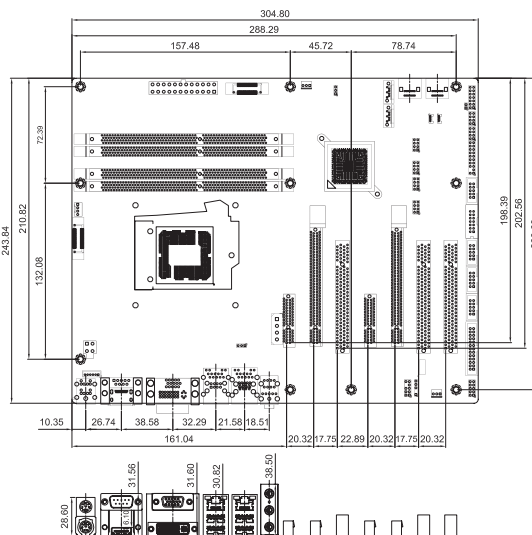
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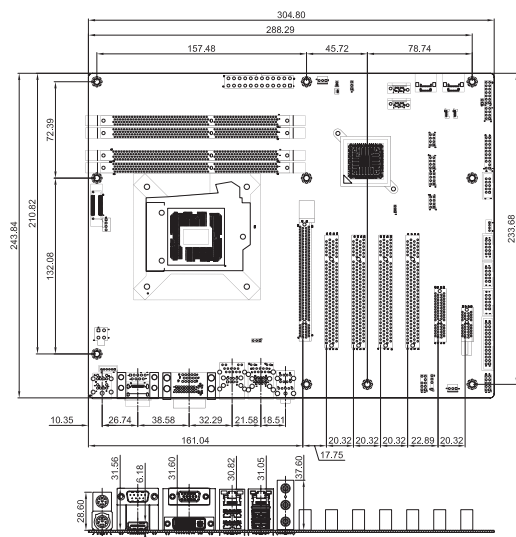
Dimensions (Unit: mm)

IMBA-H610 **New**

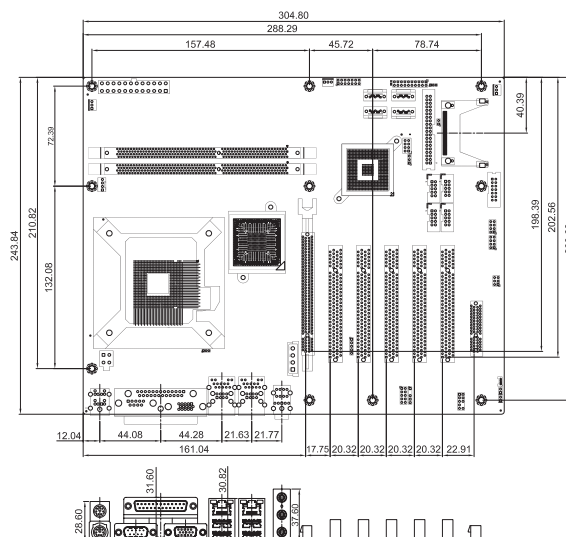
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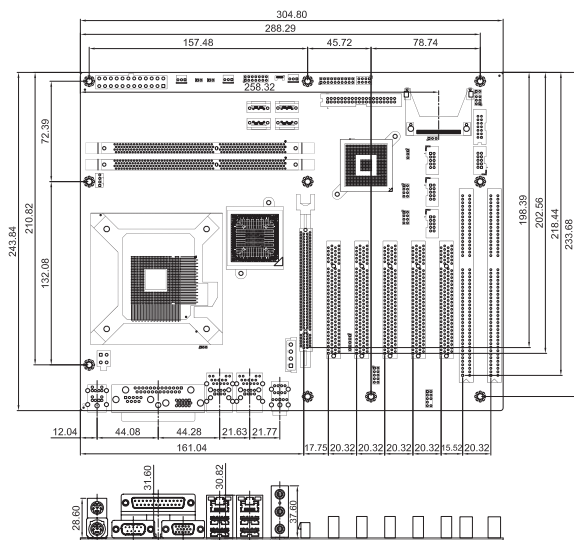
IMBA-Q670-R20



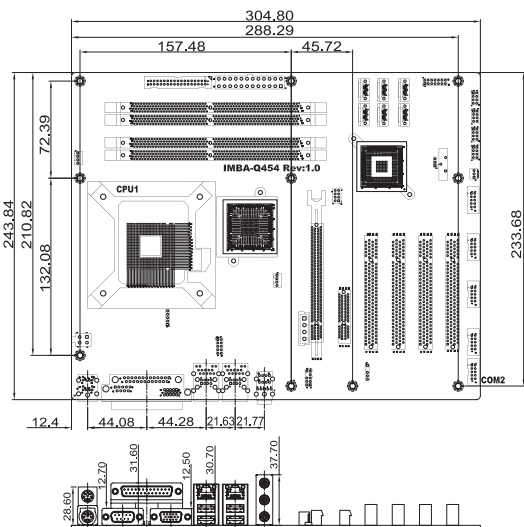
IMBA-G410



IMBA-G412ISA



IMBA-Q454



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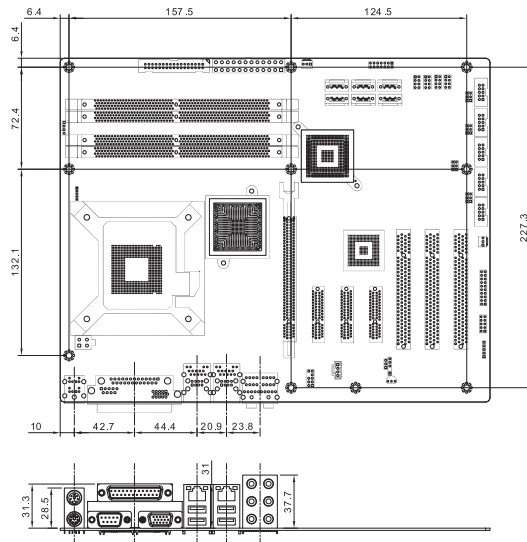
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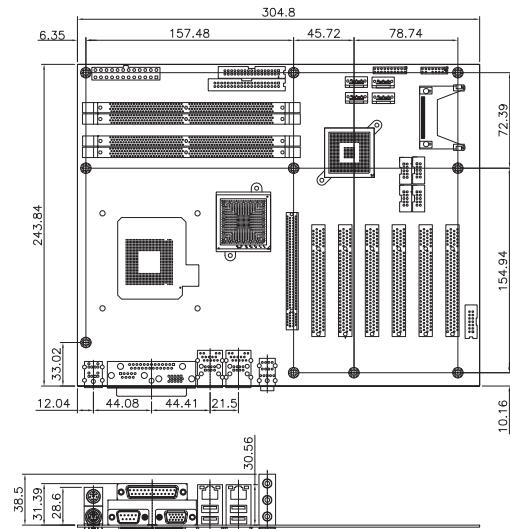
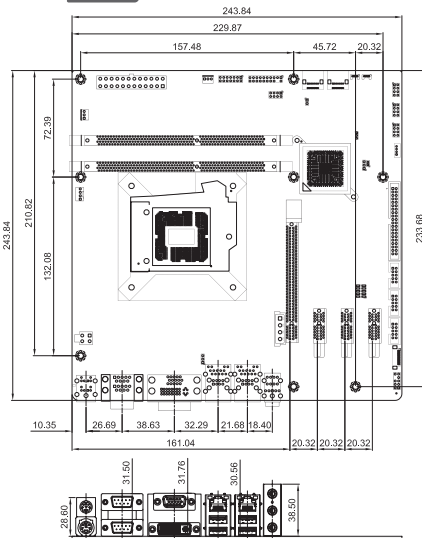
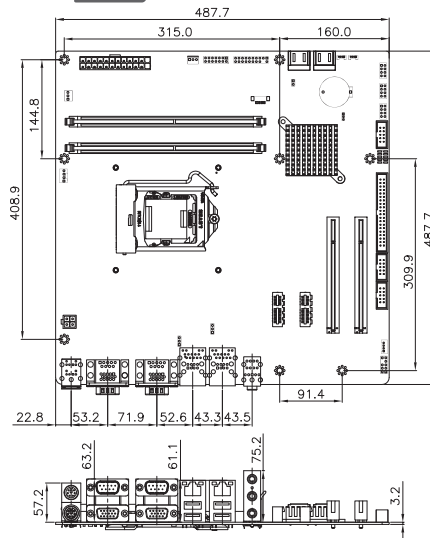
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Dimensions (Unit: mm)

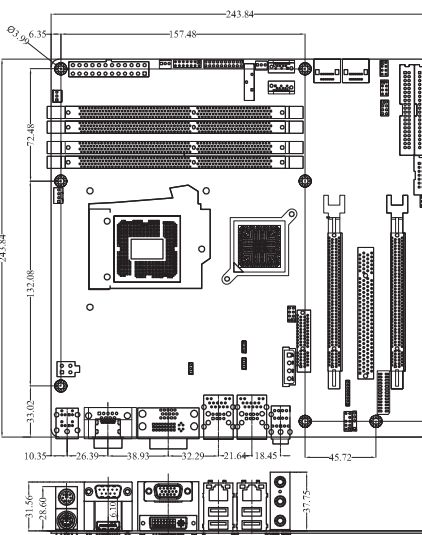
IMBA-XQ354



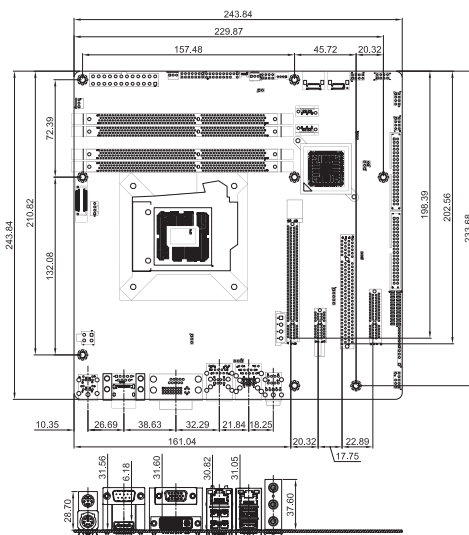
IMBA-9454-R40

IMB-H610 **New**IMB-H612 **New**

IMB-C2060



IMB-Q670-R20



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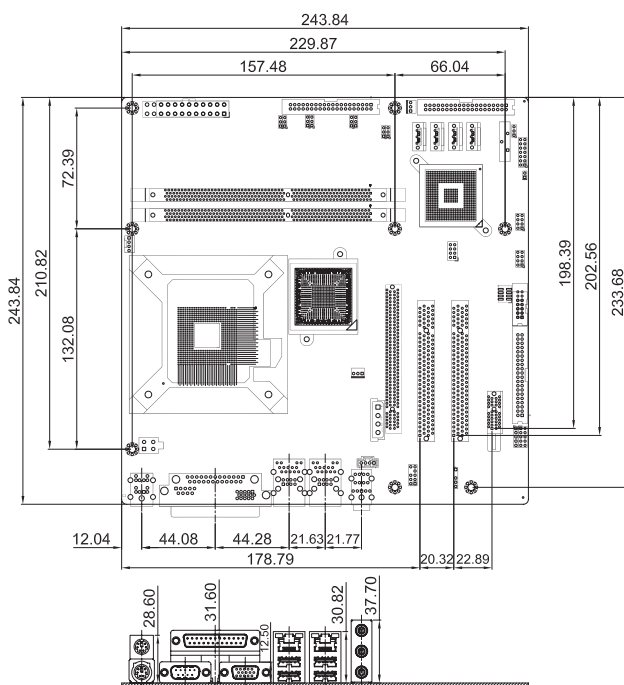
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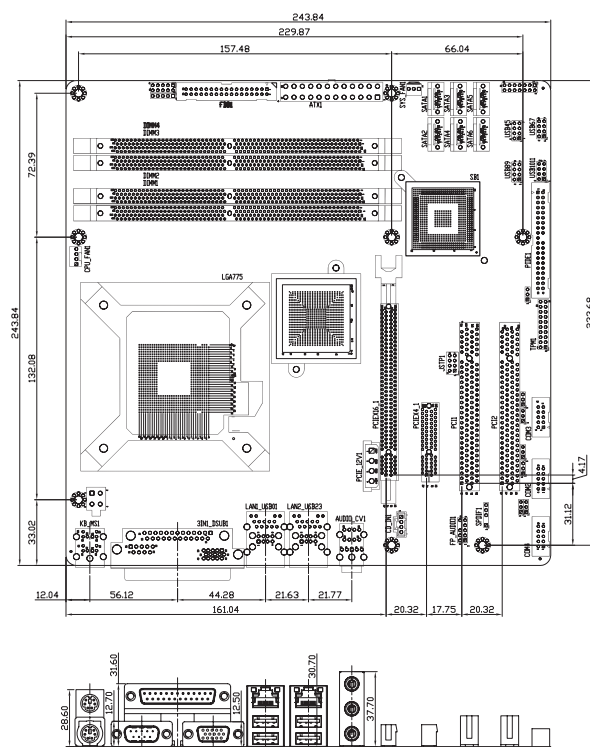
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Dimensions (Unit: mm)

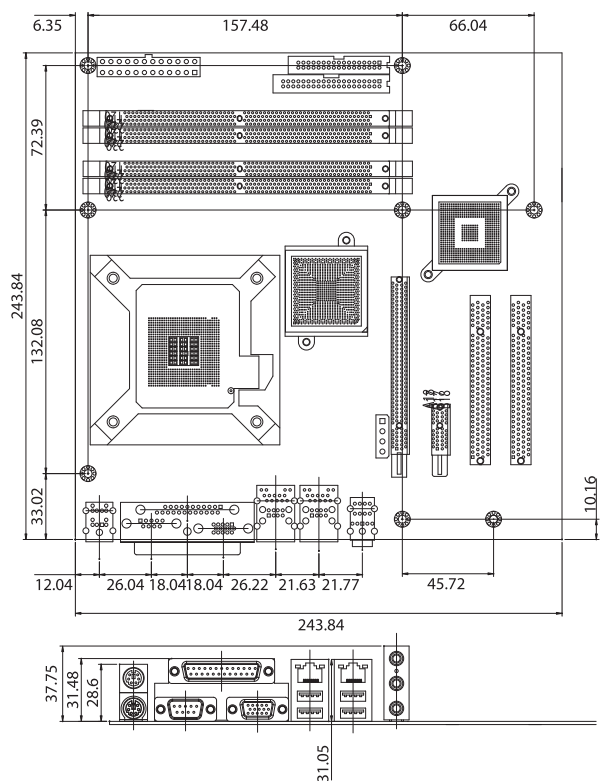
IMB-G41A



IMB-Q354



IMB-9454G-R40



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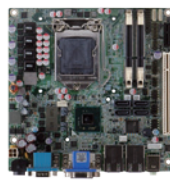
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Mini-ITX Selection Guide

New


Model Name	KINO-AQ670	KINO-DH610	KINO-AH611	KINO-AH612	KINO-CV-D27001/N26001	KINO-CVR-D27002/N26002
CPU Socket	Socket H2	Socket H2	Socket H2	Socket H2	On Board	On Board
CPU Type	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	2nd Generation Intel® Core™ i3/Pentium®/Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	2nd Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron®	Intel® Atom™ Processor D2700 2.13GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Atom™ Processor D2700 2.13GHz Intel® Atom™ Processor N2600 1.6GHz
Chipset	Intel® Q67	Intel® H61	Intel® H61	Intel® H61	NM10	ICH10R
Memory	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.16GB, 1066/1333 MHz dual-channel DDR3 SO-DIMMs	2 x 204-pin, Max.4GB, 1066 MHz DDR3/DDR3L (1.35V) SO-DIMM (D2700) 2 x 204-pin, Max.2GB, 800 MHz DDR3/DDR3L (1.35V) SO-DIMM (N2600)	2 x 204-pin, Max.4GB, 1066 MHz DDR3 SO-DIMM (D2700) 2 x 204-pin, Max.2GB, 800 MHz DDR3 SO-DIMM (N2600)
Display Interface	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 2 x VGA 2 x HDMI	Dual display supported 1 x VGA 1 x DVI-D	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2700) 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI
Ethernet	Intel® 82583V PCIe controller Intel® 82579 PHY with Intel® AMT7.0 support	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Intel® 82574L
I/O Interface	2 x RS-232 2 x USB 3.0 8 x USB 2.0 1 x PS2 KB/MS 1 x 20-pin LPC for TPM	1 x RS-232 1 x RS-422/485 10 x USB 2.0 1 x KB/MS by 6-pin header 1 x 20-pin LPC for TPM	2 x RS-232 8 x USB 2.0 1 x 20-pin LPC for TPM 1 x KB/MS by pin header	5 x RS-232 1 x RS-422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x PS2 KB/MS	5 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 3.0 1 x 20-pin LPC for TPM 1 x KB/MS by 6-pin header	2 x RS-232 6 x USB 2.0 2 x USB 3.0
Drive Interface	2 x SATA 3Gb/s 2 x SATA 6Gb/s	4 x SATA 3Gb/s	3 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA 1 x microSD slot (bootable)	6 x SATA 3Gb/s or 5 x SATA 3Gb/s + 1 x mSATA 1 x microSD slot (bootable)
Audio	Realtek ALC662 HD Audio codec					
Digital I/O	8-bit digital I/O					
Power Consumption	5V@3.84A, 12V@0.16A, Vcore_12V@5.31A, 3.3V@1.81A, 5VSB@0.5A (2.5GHz Intel® Core™ i5-2400S with two 1333MHz 2GB DDR3)	12V@5.07A (2.2GHz Intel® G620T with 2GB*2 DDR3 1066MHz running 3DMark06 burn in) 12V@8.85A (2.8GHz Intel® Core™ i7-2600S with two 1066MHz 2GB DDR3 running 3DMark06 burn in)	5V@3.47A, 12V@0.11A, Vcore_12V@6.73A, 3.3V@1.01A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 1333MHz 2GB DDR3)	5V@3.9A, 12V@0.36A, Vcore_12V@8.28A, 3.3V@1.24A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600 with two 1333MHz 2GB DDR3)	12V@2.8A (2.13GHz Intel® D2700 CPU with DDR3 1333MHz 4GB DIMM) 12V@2.4A (1.6GHz Intel® N2600 CPU with 1333MHz 2GB DDR3 DIMM)	5V@1.21A, 12V@0.09A, Vcore_12V@0.32A, 3.3V@0.37A, 5VSB@0.04A (2.13GHz Intel® D2700 with two 1066MHz 2GB DDR3)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset					
Operation Environment	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing				-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slots	1 x PCIe x16	1x PCI Slot 1x PCIe x1 slot	1 x PCIe x16 slot 1 x Half-size PCIe Mini card slot	1 x PCIe x4 slot	1 x PCIe Mini Card Slot 1 x PCI	1 x PCIe Mini Card Slot 1 x PCIe x4 slot (x1 signal)
CPU Cooler	CF-1156A/B/C/D-RS	CF-1156C/D-RS	CF-1156A/B/C/D-RS	CF-1156A/B/C/D-RS	Heatsink	Heatsink

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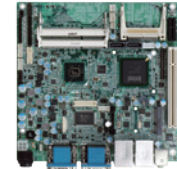
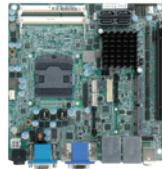
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Mini-ITX Selection Guide



Model Name	KINO-QM670	KINO-HM551	KINO-G410	KINO-PVN-D5251/D4251	KINO-PV-D5252/D4252
CPU Socket	Socket G2	Socket G1	LGA775	On board	On board
CPU Type	Socket G2 for Intel® mobile Core™ i7/i5/i3	Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron®	Intel® Core™2 Duo/Quad/Extreme	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz
FSB	NA	NA	800/1066/1333MHz	NA	NA
Chipset	Intel® QM67	Intel® HM55	Intel® G41 + ICH7	ICH8M	ICH8M
Memory	2 x 204-pin 1333/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	2 x 204-pin 800/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	2 x 240-pin 800/1066 MHz 4GB dual-channel DDR3 DIMMs (system max. 8GB)	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)
Display Interface	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit LVDS by VGA-LVDS-R10	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS
Ethernet	Intel® 82579 GbE LAN controller with Intel® AMT 7.0 support Intel® 82583V GbE LAN	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0
I/O Interface	2 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 3.0 1 x 6-pin header for KB/MS 1 x 20-pin LPC for TPM	4 x RS-232 2 x RS-232/422/485 8 x USB 2.0 1 x 6-pin header for KB/MS 1 x 20-pin LPC for TPM	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS 1 x LPT	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS by pin header	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header
Drive Interface	2 x SATA 3Gb/s 2 x SATA 6Gb/s	4 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II
Audio	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec
Digital I/O	8-bit digital I/O (4 input/4 output)				
Power Consumption	12V@6.5A (2.2GHz Intel® Core i7 with two 1333MHz 4GB DDR3 DIMM)	12V@4.67A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)	5V@6.41A, Vcore_12V@2.52A, 3.3V@0.27A (2.8GHz Intel® Core™2 Duo E7400 with two 1066MHz 1GB DDR3 DIMM)	12V@3.44A (Intel® Atom™ D525 1.8GHz with two 1333MHz 2GB DDR3 DIMM) 12V@3.11A (Intel® Atom™ D425 1.8GHz with two 1333MHz 2GB DDR3 DIMM)	12V@1.95A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing				-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor Relative Humidity 5% ~ 95%, non-condensing
Expansion Slots	1 x PCI x16 1 x PCIe Mini card slot	1 x PCI x16 1 x PCIe Mini card slot	1 x PCIe x16	1 x PCI Slot 1 x PCIe x1 slot 1 x PCIe Mini card slot	1 x PCI Slot 1 x PCIe x1 slot 1 x PCIe Mini card slot
CPU Cooler	CF-989A-RS-R12	CF-989A-RS-R12	CF-775A-RS CF-520-RS-R11	Cooler	Heatsink

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Model Name	KINO-PV-D5253/D4253	KINO-945GSE3	KINO-G45A	KINO-QM57A	KINO-GM45A
CPU Socket	On board	On Board	LGA775	Socket G1	Socket P
CPU Type	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Core™2 Duo/Quad/Extreme	Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron	Intel® Core™2 Duo/Quad, Core™ Duo/Solo, Celeron® M
FSB	NA	533MHz	800/1066/1333MHz	NA	667/800/1066 MHz
Chipset	ICH8M	Intel® 945GSE + ICH7M	Intel® G45 + ICH10	Intel® QM57	Intel® GM45 + ICH9M
Memory	2 x 204-pin 800 MHz 2GB DDR3 SO-DIMM (system max. 4GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	2 x 240-pin 667/800 MHz 2GB dual-channel DDR2 DIMM (system max. 4GB)	2 x 204-pin 800/1066 MHz 4GB DDR3 SO-DIMM (system max. 8GB)	2 x 200-pin 667/800 MHz 2GB DDR2 SO-DIMM (system max. 4GB)
Display Interface	1 x VGA	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x HDTV
Ethernet	Three PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	PCIe GbE Realtek RTL8111CP Controller	Intel® 82577 GbE LAN controller with Intel® AMT 6.0 support Intel® 82574L GbE LAN	PCIe GbE Realtek RTL8111CP Controller
I/O Interface	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header	9 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x Infrared Interface 1 x 6-pin header for KB/MS	1 x RS-232 6 x USB 2.0 2 x PS/2 KB/MS	2 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x 6-pin header for KB/MS	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x 6-pin header for KB/MS
Drive Interface	2 x SATA 3Gb/s	2 x SATA 1 x IDE 1 x CF Type II	6 x SATA 3Gb/s	6 x SATA 3Gb/s	2 x SATA 3Gb/s
Audio	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec
Digital I/O	8-bit digital I/O (4 input/4 output)				
Power Consumption	12V@0.76A, 5V@2.62A (Intel® Atom™ D525 1.8GHz with two 1333MHz 1GB DDR3 DIMM)	12V@0.43A, 5V@4.5A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)	5V@6.99A, 12V@3.54A, 3.3V@0.38A, 5VSB@0.07A (3.16GHz Intel® Core™2 Duo E8500 with two 800MHz 2GB DDR2)	12V@5.27A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 2GB DDR3 DIMM)	12V@5.56A (2.0GHz Intel® Core™2 Quad Q9000 with two 800MHz 1GB DDR2)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor Relative Humidity 5% ~ 95%, non-condensing Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing				
Expansion Slots	1 x PCI Slot 1 x PCIe x1 slot 2 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card	1 x PCI	1 x PCIx16 1 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card slot
CPU Cooler	Heatsink	Heatsink	CF-775A-RS CF-520-RS-R11	CF-989A-RS-R12	CF-479B-RS

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Mini-ITX Selection Guide



Model Name	eKINO-945GSE-R11	KINO-945GSE-R11	KINO-945GSE2	KINO-780AM2	KINO-780EB
CPU Socket	On board	On board	On board	AMD Socket AM2	On board
CPU Type	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	AMD Athlon™ 64, Athlon™ 64 x2, Sempron™, AM3	AMD ASB1 Processor Dual core L325 1.5GHz AMD ASB1 Processor Single core 210U 1.5GHz
FSB	533MHz	533MHz	533MHz	2600MHz Hyper transport	1600MHz Hyper transport
Chipset	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	AMD780E + SB710	AMD780E + SB710
Memory	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	1 x 200-pin 400/533 MHz 2GB DDR2 SO-DIMM (system max. 2GB)	2 x 240-pin 667/800 MHz 2GB dual-channel DDR2 DIMMs (system max. 4GB)	Two 200-pin 667MHz dual-channel DDR2 SDRAM SO-DIMMs supported (system max. 4GB for L325 CPU) One 200-pin 667MHz single-channel DDR2 SDRAM SO-DIMMs supported (system max. 2GB for 210U CPU)
Display Interface	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x DVI 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 18/24-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x HDMI 1 x DVI-D	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS
Ethernet	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset	PCIe GbE Realtek RTL8111CP controller	Dual PCIe GbE Realtek RTL8111CP controller	PCIe GbE Realtek RTL8111CP controller
I/O Interface	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS	4 x RS-232 2 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x 6-pin header for KB/MS	1 x RS-232 8 x USB 2.0 1 x PS2 for KB/MS 1 x LPC pin header for TPM	1 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x Infrared interface 1 x 6-pin header for KB/MS 1 x LPC pin header for TPM
Drive Interface	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA	4 x SATA 3Gb/s	4 x SATA 3Gb/s 1 x CF Type II (optional)
Audio	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec
Digital I/O	8-bit digital I/O (4 input/4 output)				
Power Consumption	12V@1A (Intel® Atom™ N270 with 1GB DDR2)	5V@2.89A, 12V@0.04A (Intel® Atom™ N270 with 1GB DDR2)	12V@2.94A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)	5V@4.8A, 12V@0.22A, Vcore 12V@12.69A, 3.3V@0.54A (AMD Phenom X4 9950 CPU)	12V@3.49A (AMD Dual core L325 1.5GHz ASB1 processors with two 667MHz 2GB DDR2)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 70°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slots	1 x PCI 1 x PCIe Mini card	1 x PCI 1 x PCIe Mini card	1 x PCI 1 x PCIe Mini card	1 x PCIe x16	1 x PCI 1 x PCIe Mini card
CPU Cooler	Heatsink	Heatsink	Heatsink	CF-478D-RS	Cooler

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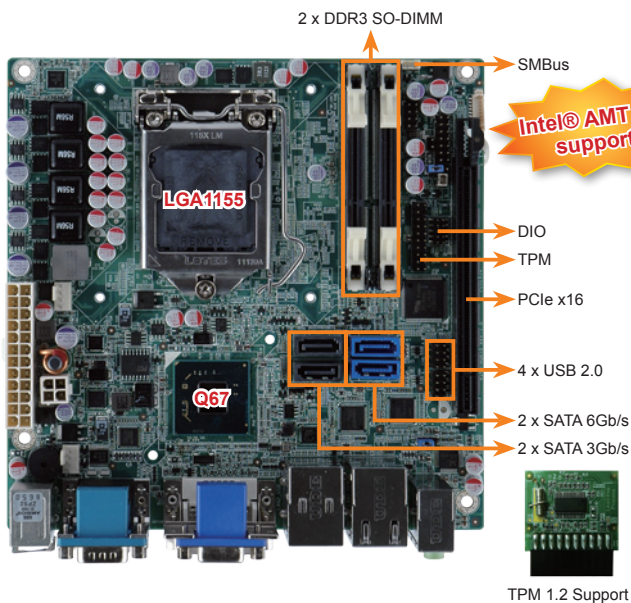
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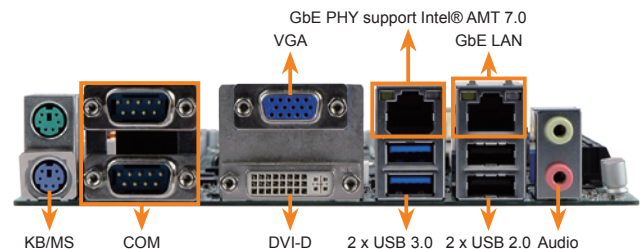
KINO-AQ670

Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium® and Celeron® CPU, DDR3, VGA/DVI-D, two COM, Intel® GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS



IEI iEZMan Features:

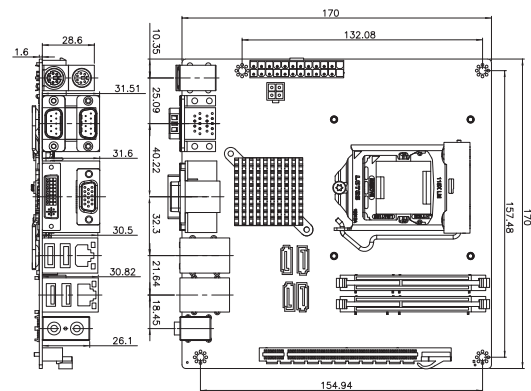
1. Remote troubleshooting and recovery
2. Event log and alert
3. Remote HW/SW asset tracking
4. Network outbreak containment
5. Agent presence alerts when agent is not available



Features

1. LGA1155 with Intel® 2nd generation Core™ Core™ i7/i5/i3/Pentium® and Celeron® processor supported
2. Dual-channel DDR3 1333/1066MHz supports up to 16GB
3. Support dual independent displays by VGA and DVI-D
4. High speed USB 5Gb/s and SATA 6Gb/s supported
5. Intel® GbE LAN with Intel® AMT 7.0 support
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x KINO-AQ670 single board computer	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-AQ670-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3 CPU, DDR3, VGA/DVI-D, 2COM, Intel® GbE, SATA 6Gb/s, USB 3.0, HD Audio and RoHS
19800-003100-100-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
SACF-KIT01-R10	SATA to CF converter board
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA-1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA-1155, dual core 2.7GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2120T	Intel® Core™ i3-2120T processor, LGA-1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA-1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA-1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium® and Celeron® processor
- ◆ System Chipset
Intel® Q67
- ◆ Memory
Two 204-pin 1066/1333MHz dual-channel DDR3 SDRAM SO-DIMM supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Intel® 82583V PCIe controller
Intel® 82579 PHY with Intel® AMT 7.0 support
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0, full MPEG2. VC1. AVC decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ I/O Interface
2 x RS-232
6 x USB 2.0
2 x SATA 3Gb/s
1 x PS/2 KB/MS
Expansion
1 x PCIe x16 slot
Watchdog Timer
Software programmable support 1~255 sec. System reset
GPIO
Programmable 8-bit GPIO
Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector (cotay with 4-pin)
Power Supply
AT/ATX Power Supply
Power Consumption
5V@3.84A, 12V@0.16A, Vcore_12V@5.31A, 3.3V@1.81A, 5VSB@0.5A (2.5GHz Intel® Core™ i5-2400S with two 1333MHz 2GB DDR3)
Operating Temperature
-10°C ~ 60°C
Operating Humidity
5% ~95%, non-condensing
Dimensions
170mm x 170mm
Weight
GW:1100g, NW: 700g

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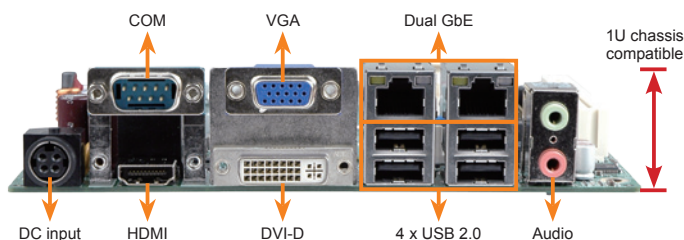
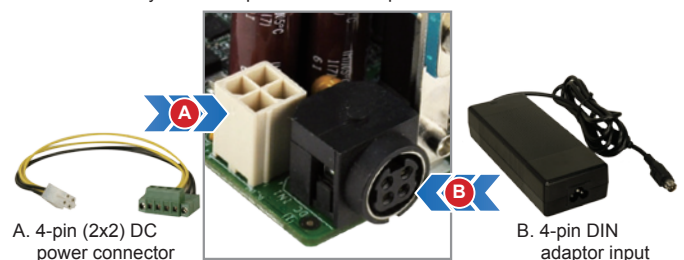
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Mini-ITX SBC Supports LGA1155 Intel® Core™ i5/i3/Pentium®/Celeron® CPU, DDR3, VGA/DVI-D/HDMI, Dual PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS



- ◆ CPU
LGA1155 socket supports Intel® Core™ i3/Pentium®/Celeron® dual-core processor (TDP 65W Max.)
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 204-pin 1066/1333 MHz dual-channel DDR3 SO-DIMM supported (system max. 16 GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0, full MPEG2. VC1. AVC decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Embedded Controller
iWDD
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ I/O Interface
1 x RS-232
10 x USB 2.0
4 x SATA 3Gb/s
1 x RS-232/422/485
1 x TPM pin-header
2 x SATA power (5V) connector

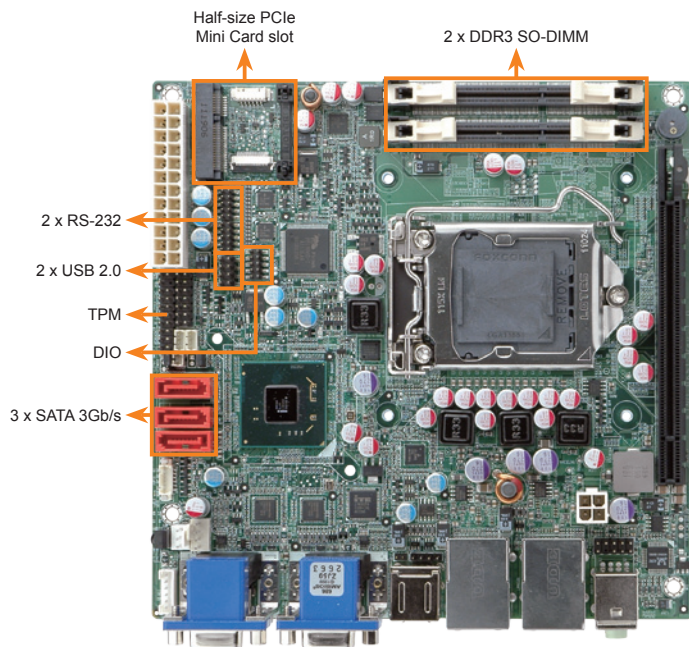
1. LGA1155 socket for Intel® 2nd generation Core™ i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333/1066 MHz dual-channel DDR3 SDRAM
3. Support dual display by DVI/VGA/HDMI
4. SATA 3Gb/s, PCI and PCIe x1 expansion slots supported
5. Wide range 9~28V DC input support with either adaptor or 4-pin (2x2) ATX power connector
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

1 x KINO-DH610 single board computer
2 x SATA with 5V power cable (P/N: 32801-000201-100-RS)
1 x I/O shielding (P/N: 45014-0032C0-00-RS)
1 x One Key Recovery CD
1 x Mini jumper pack
1 x Utility CD
1 x QIG

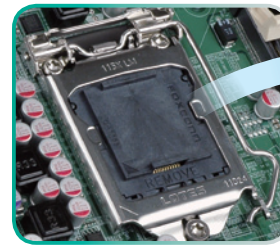
Part No.	Description
KINO-DH610-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i5/i3/Pentium®/Celeron® CPU, DDR3, VGA/DVI-D/HDMI, dual PCIe GbE, USB 2.0, SATA 3Gb/s, HD Audio and RoHS
19800-003100-100-RS	Dual port USB cable w/bracket
19800-004300-100-RS	RS-232/422/485 cable w/bracket
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
32000-023800-RS	KB/MS Y cable
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
63040-010060-050-RS	12V 60W Power adaptor with DIN 4-pin lock, 90~264VAC input, FRP

KINO-AH611

Mini-ITX SBC Supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU, DDR3, Dual HDMI/Dual VGA, Dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS



2011 LGA1155 Solution

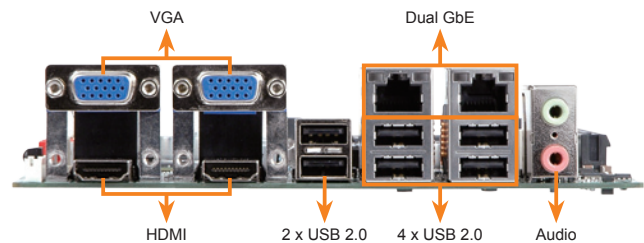


Upgradable

Socket compatible with Intel® 2012 3rd generation Core™ i7 Processor

New

2012 3rd generation Core™ i7 Processor



TPM 1.2 Support

Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 204-pin 1066/1333 MHz dual-channel DDR3 SDRAM SO-DIMMs supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0, full MPEG2, VC1, AVC decode
- ◆ Display Output
Dual display supported
2 x VGA
2 x HDMI
- ◆ Super I/O
Fintek F81866
- ◆ Embedded Controller
iWDD
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ I/O Interface
2 x RS-232 8 x USB 2.0
1 x TPM pin-header 3 x SATA 3Gb/s
1 x 6-pin header for PS/2 KB/MS
- ◆ Expansions
1 x PCIe x16 slot
1 x Half-size PCIe Mini card slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
Programmable 8-bit GPIO
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector
- ◆ Power Supply
ATX Power Supply
- ◆ Power Consumption
5V@3.47A, 12V@0.11A, Vcore_12V@6.73A, 3.3V@1.01A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with two 1333 MHz 2 GB DDR3 SO-DIMMs)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
170mm x 170mm
- ◆ Weight
GW:1100g, NW: 700g

Features

1. LGA1155 for the next generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Up to 16 GB 1333/1066 MHz dual-channel DDR3 SDRAM
3. Support dual independent display by dual VGA and dual HDMI
4. Two COM ports and three SATA 3Gb/s connectors supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

- 1 x KINO-AH611 single board computer
- 3 x SATA cable (P/N: 32801-000703-200-RS)
- 1 x Dual RS-232 cable (P/N: 19800-000112-RS)
- 1 x I/O shielding (P/N: 45014-0035C0-00-RS)
- 1 x One Key Recovery CD
- 1 x Mini jumper pack
- 1 x Utility CD
- 1 x QIG

Ordering Information

Part No.	Description
KINO-AH611-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU, DDR3, dual HDMI/dual VGA, dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual port USB cable with bracket
32102-000100-200-RS	SATA power cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
32000-023800-RS	KB/MS Y cable
CPU-DT-i5-2500T	Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-i5-2390T	Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-i3-2100T	Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

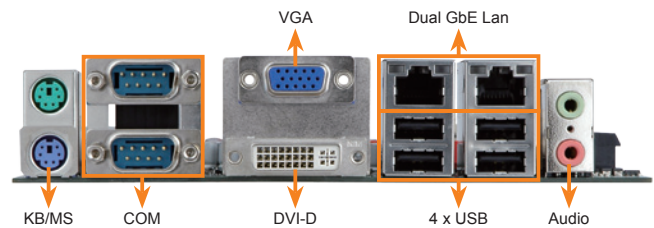
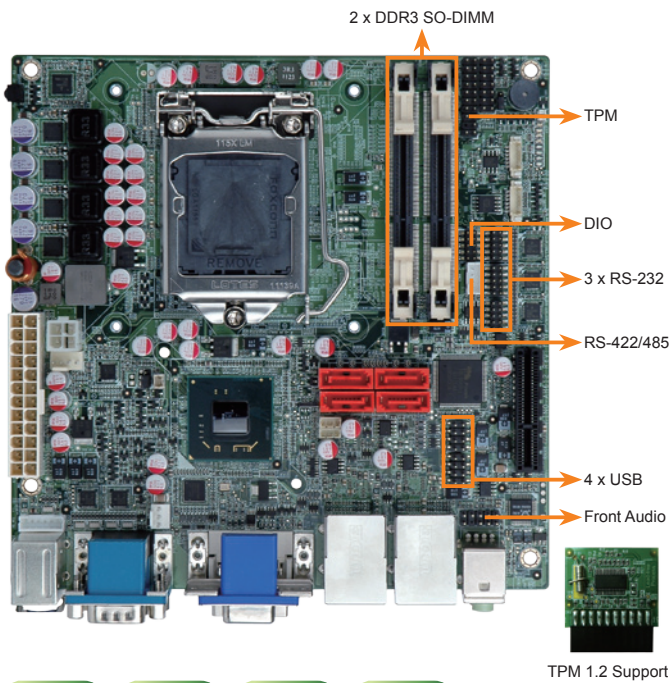
KINO-AH612

Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with H61, DDR3, VGA/DVI-D, six COM, Dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS

New

IEI Solutions Matrix Table

Model Name	KINO-DH610	KINO-AH611	KINO-AH612	KINO-AQ670
CPU TDP	65W	95W	95W	95W
Display Output	VGA/DVI-D/HDMI	Dual VGA/Dual HDMI	VGA/DVI-D	VGA/DVI-D
Expansion	1 x PCIe x1 slot 1 x PCI	1 x PCIe x16 slot 1 x PCIe Mini card	1 x PCIe x4 slot	1 x PCIe x16 slot
COM	1 x RS-232 1 x RS-232/422/485	2 x RS-232	5 x RS-232 1 x RS-422/485	2 x RS-232
USB 2.0	10	10	8	6
USB 3.0	No	No	No	2
SATA	4 x SATA 3Gb/s	3 x SATA 3Gb/s	4 x SATA 3Gb/s	2 x SATA 3Gb/s 2 x SATA 6Gb/s
RAID	No	No	No	Yes
TPM	Yes	Yes	Yes	Yes
Intel® AMT 7.0	No	No	No	Yes
Power Supply	DC 9~28V input	AT/ATX power	AT/ATX power	AT/ATX power



Specifications

- ◆ CPU
LGA1155 socket supports Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor
- ◆ System Chipset
Intel® H61
- ◆ Memory
Two 204-pin 1066/1333MHz dual-channel DDR3 SDRAM unbuffered SO-DIMM supported (system max. 16GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Graphics Engine
Support for DX10.1 and OpenGL3.0, full MPEG2, VC1, AVC decode
- ◆ Display Output
Dual display supported
1 x VGA
1 x DVI-D
- ◆ Super I/O
Fintek F81866
- ◆ Embedded Controller
iWDD
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ I/O Interface
5 x RS-232 1 x RS-422/485
8 x USB 2.0 1 x TPM pin header
4 x SATA 3Gb/s 1 x PS/2 KB/MS
- ◆ Expansion
1 x PCIe x4 slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ GPIO
Programmable 8-bit GPIO
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin NB fan connector
- ◆ Power Supply
ATX power supply
- ◆ Power Consumption
5V@3.9A, 12V@0.36A, Vcore_12V@8.28A, 3.3V@1.24A, 5VSB@0.18A (3.4GHz Intel® Core™ i7-2600 with two 1333MHz 2GB DDR3)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions
170mm x 170mm
- ◆ Weight
GW: 1100g, NW: 700g

Features

1. LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® processor supported
2. Dual-channel 1333/1066MHz DDR3 supports up to 16GB
3. Support dual independent display by VGA and DVI-D
4. Support six COM ports, four SATA 3Gb/s ports and one PCIe x4 slot for IO expansion card
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x KINO-AH612 single board computer	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
2 x SATA Cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-AH612-R10	Mini-ITX SBC supports LGA1155 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU with H61, DDR3, VGA/DVI-D, 6COM, Dual PCIe GbE, SATA 3Gb/s, HD Audio and RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
SACF-KIT01-R10	SATA to CF converter board
CPU-DT-I5-2500T	Intel® Core™ i5-2500T processor, LGA-1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
CPU-DT-I5-2390T	Intel® Core™ i5-2390T processor, LGA-1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
CPU-DT-I3-2100T	Intel® Core™ i3-2100T processor, LGA-1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-P-G620T	Intel® Pentium® G620T processor, LGA-1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
CPU-DT-C-G440	Intel® Celeron® G440 processor, LGA-1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
CF-1156A-RS	High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
CF-1156B-RS	High-performance LGA1155/LGA1156 cooler kit, 95W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

ORing
Network
Communication

5

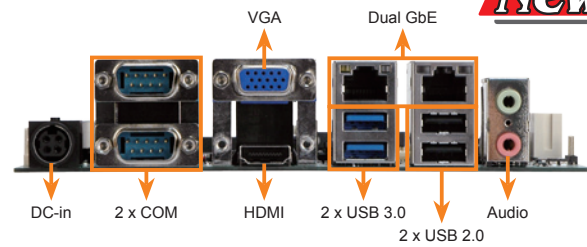
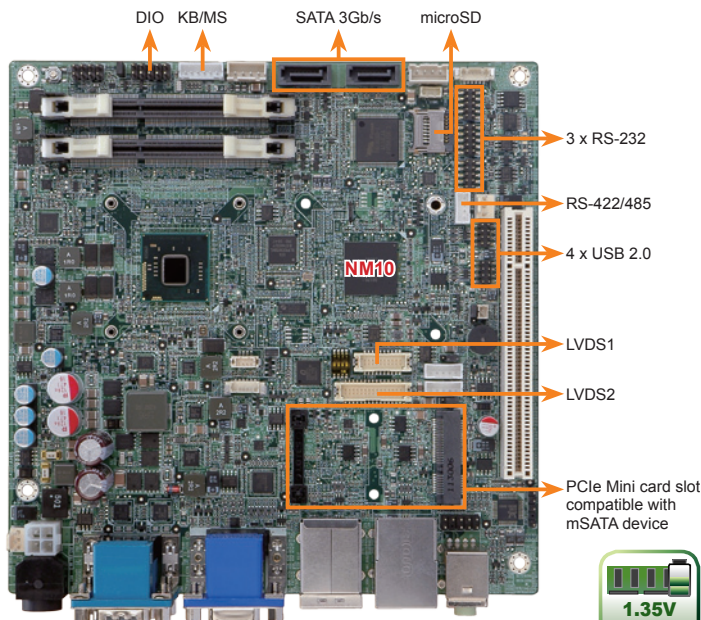
Power Supply/
Peripherals

6

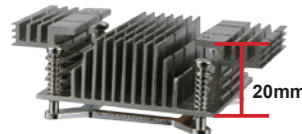
Panel
Solutions
Introduction

KINO-CV-D27001-N26001

Mini-ITX SBC with Intel® D2700/N2600 processor, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS



A. 20mm height heatsink with bracket preinstalled for D2700 series products



IEI P/N: 34000-000357-RS

B. 15mm height heatsink with bracket preinstalled for N2600 series products



IEI P/N: 34000-000356-RS



Specifications

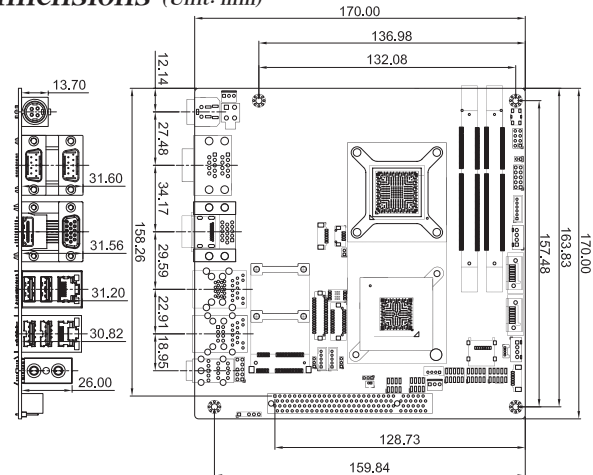
- ◆ CPU
 - 2.13GHz Intel® Atom™ D2700 dual-core processor
 - 1.6GHz Intel® Atom™ N2600 dual-core processor
- ◆ Chipset
 - Intel® NM10
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - 2 x 1066MHz DDR3/DDR3L (1.35V) SO-DIMM up to 4GB (D2700)
 - 2 x 800MHz DDR3/DDR3L (1.35V) SO-DIMM up to 2GB (N2600)
- ◆ Graphic
 - Intel® GMA 3650 with 640 MHz graphic core speed for D2700
 - Intel® GMA 3600 with 400 MHz graphic core speed for N2600
- ◆ Display Output
 - Support dual LVDS, VGA and HDMI for dual independent display
 - 1 x VGA
 - 1 x HDMI
 - LVDS1 integrated in D2700/N2600
 - Single-channel 24-bit LVDS by D2700, resolution support up to 1440x900
 - Single-channel 18-bit LVDS by N2600, resolution support up to 1366x768
 - LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter
- ◆ Ethernet
 - Dual GbE Realtek RTL8111E controller with ASF 2.0 support
- ◆ I/O Interfaces
 - 5 x RS-232
 - 1 x RS-422/485
 - 1 x 6-pin KB/MS
 - 2 x SATA 3Gb/s with 5/12V power connector
 - 6 x USB 2.0
 - 2 x USB 3.0
 - 1 x microSD slot (bootable)
- ◆ Super IO
 - Fintek F81866
- ◆ Digital I/O
 - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
 - 1 x PCIe Mini Card compatible with mSATA SSD storage
 - 1 x PCI
- ◆ Audio
 - Realtek ALC662 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
 - Maximum input voltage range: 9V~28V
 - Recommend operating input voltage range: 12V~24V
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
- ◆ Fan Connector
 - 1 x 3-pin CPU fan connector
 - 1 x 3-pin system fan connector
- ◆ SMBus
 - 1 x 4-pin connector
- ◆ Power Consumption
 - 12V@2.8A (2.13GHz Intel® D2700 CPU with DDR3 1333MHz 4GB DIMM)
 - 12V@2.4A (1.6GHz Intel® N2600 CPU with DDR3 1333MHz 2GB DIMM)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Weight
 - GW: 600g/NW: 250g



Features

1. Mini-ITX form factor with Intel® D2700/N2600 dual-core processor supports DDR3/DDR3L (1.35V) memory
2. Wide range 9V~28V DC input
3. Flexible VGA, dual LVDS and HDMI with dual-display support
4. Complete I/O: six USB 2.0, two USB 3.0, two SATA 3Gb/s, six COM and audio. mSATA SSD capable
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

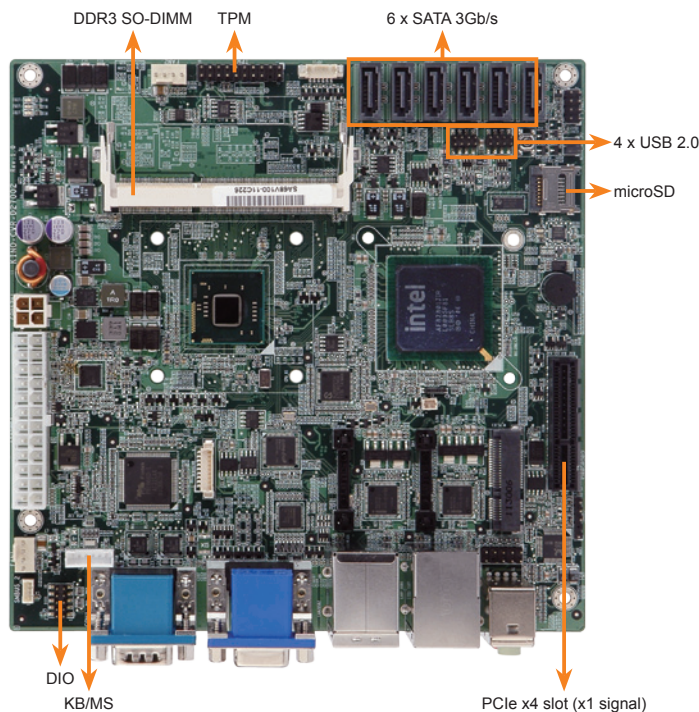
1 x KINO-CV-D27001/N26001 single board computer	
2 x SATA with 5V output cable Kit (P/N: 32801-000101-100-RS)	
1 x Dual-port USB cable (P/N: 19800-003100-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0038C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-CV-D27001-R10	Mini-ITX SBC with Intel® Atom™ D2700 2.13GHz, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, 9~28V, SATA 3Gb/s, Audio, RoHS
KINO-CV-N26001-R10	Mini-ITX SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/HDMI/Dual LVDS, Dual GbE, USB 3.0, 9~28V, SATA 3Gb/s, Audio, RoHS
32205-003800-100-RS	RS-422/485 cable
32000-023800-RS	KB/MS Y cable

KINO-CVR-D27002-N26002

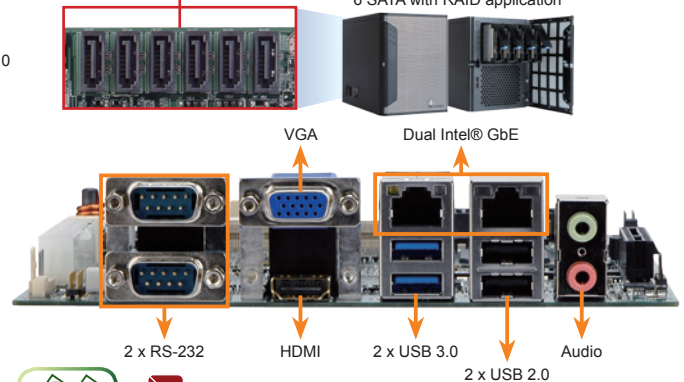
Mini-ITX SBC with Intel® D2700/N2600 processor, DDR3, VGA/HDMI, Dual GbE, USB 3.0, SATA 3Gb/s, Audio, RoHS



Six SATA 3Gb/s ports support RAID 0, 1, 5, 10

New

Compatible with EBC-3680 for 6 SATA with RAID application



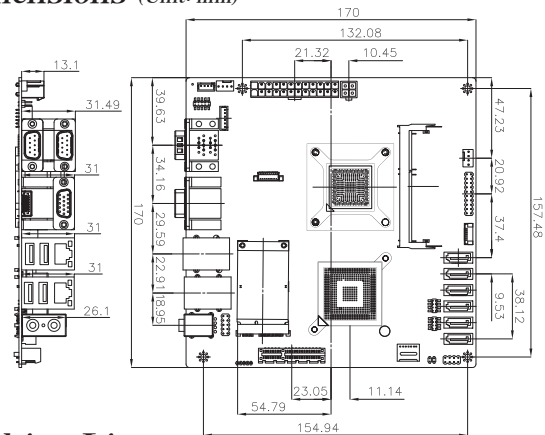
Specifications

- ◆ CPU
 - 2.13GHz Intel® Atom™ D2700 dual-core processor
 - 1.6GHz Intel® Atom™ N2600 dual-core processor
- ◆ Chipset
 - Intel® ICH10R
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - 1 x 1066MHz DDR3 SO-DIMM up to 4GB for D2700
 - 1 x 800MHz DDR3 SO-DIMM up to 2GB for N2600
- ◆ Graphic
 - Graphic Core Speed 640MHz For D2700
 - Graphic Core Speed 400MHz For N2600
- ◆ Display Output
 - Dual display supported
 - 1 x VGA
 - 1 x HDMI
- ◆ Ethernet
 - Dual GbE Intel® 82574L controller
- ◆ I/O Interfaces
 - 2 x RS-232
 - 2 x USB 3.0
 - 6 x SATA 3Gb/s with RAID 0, 1, 5, 10 support
 - 1 x microSD slot
 - 6 x USB 2.0
- ◆ Super IO
 - Fintek F81866
- ◆ Digital I/O
 - 8-bit digital I/O programmable
- ◆ Expansions
 - 1 x PCIe Mini card compatible with mSATA SSD storage
 - 1 x PCIe x4 slot (x1 signal)
- ◆ Audio
 - Realtek ALC662 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
 - ATX power supply, AT/ATX power mode
- ◆ Fan Connector
 - 1 x 4-pin CPU fan connector
 - 1 x 4-pin system fan connector
- ◆ Power Consumption
 - 5V@1.21A, 12V@0.09A, Vcore_12V@0.32A, 3.3V@0.37A, 5VSB@0.04A (2.13GHz Intel® D2700 with 2GB*2 DDR3 1066MHz)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Weight
 - GW: 600g/NW: 250g

Features

1. Mini-ITX form factor with Intel® D2700/N2600 dual core Processor support DDR3 memory
2. Six SATA 3Gb/s with with RAID 0, 1, 5, 10 support for storage market applications
3. Flexible VGA and HDMI with dual-display support
4. PCIe Mini card slot compatible with mSATA SSD storage
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x KINO-CVR-D27002/N26002 single board computer	
1 x I/O shielding (P/N: 45014-0038C0-01-RS)	
6 x SATA cable (P/N: 32801-000703-200-RS)	
1 x One Key Recovery CD	1 x Mini jumper pack
1 x Utility CD	1 x QIG

Ordering Information

Part No.	Description
KINO-CVR-D27002-R10	Mini-ITX SBC with Intel® Atom™ D2700 2.13GHz, DDR3, VGA/HDMI, dual GbE, USB 3.0, SATA 3Gb/s, Audio, RoHS
KINO-CVR-N26002-R10	Mini-ITX SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/HDMI, dual GbE, USB 3.0, SATA 3Gb/s, Audio, RoHS
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
32102-000100-200-RS	SATA power cable
19800-003100-100-RS	Dual-port USB cable with bracket

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/Peripherals

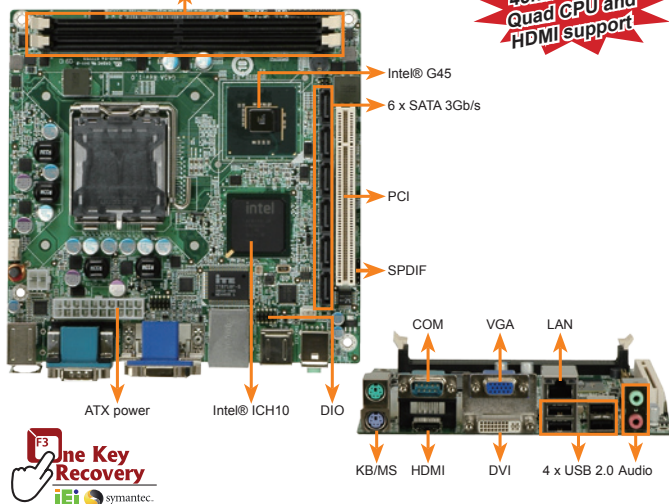
6

Panel Solutions Introduction

KINO-G45A

Mini-ITX SBC with LGA775 for 45nm Intel® Core™2 Duo/Quad CPU with FSB 1333MHz, VGA/DVI/HDMI, PCIe GbE, USB 2.0, SATA 3Gb/s and Audio

Dual-channel 667/800MHz DDR2



45nm Core™2
Quad CPU and
HDMI support



Features

1. Socket LGA775 for 45nm Intel® Core™2 Duo/Quad CPU with a 1333MHz FSB
2. Intel® GMA X4500HD for DX10 and OpenGL 2.0 support, high-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support
3. Display output support by VGA, HDMI, DVI
4. HDMI supports all HD formats including 720p, 1080i, and 1080p
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Supports Intel® Core™2 Duo/Quad/Extreme processor with a 800/1066/1333MHz FSB
- ◆ System Chipset: Intel® G45+ ICH10
- ◆ BIOS: AMI BIOS
- ◆ Memory: Two 240-pin 667/800MHz DDR2 dual-channel SDRAM DIMMs supported (system max. 4GB)
- ◆ Ethernet: Realtek RTL8111CP PCIe GbE controller
- ◆ I/O Interface: 6 x USB 2.0, 1 x PS2 for KB/MS, 1 x RS-232
- ◆ Graphic: Intel® GMA X4500HD for DX10 and OpenGL 2.0 support
- ◆ Display Output: VGA integrated in Intel® G45 support up to QXGA; Support HDMI integrated in Intel® G45; DVI-D output support
- ◆ Expansion: 1 x PCI
- ◆ SPDIF: 1 x 5-pin header
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super I/O: ITE IT8718F
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Fan Connector: 1 x CPU fan connector, 1 x System fan connector
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: ATX power
- ◆ Power Consumption: 5V@6.99A, 12V@3.54A, 3.3V@0.38A, 5VSB@0.07A (3.16GHz Intel® Core™2 Duo E8500 with two 800MHz 2GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 1000g/NW: 390 g

Packing List

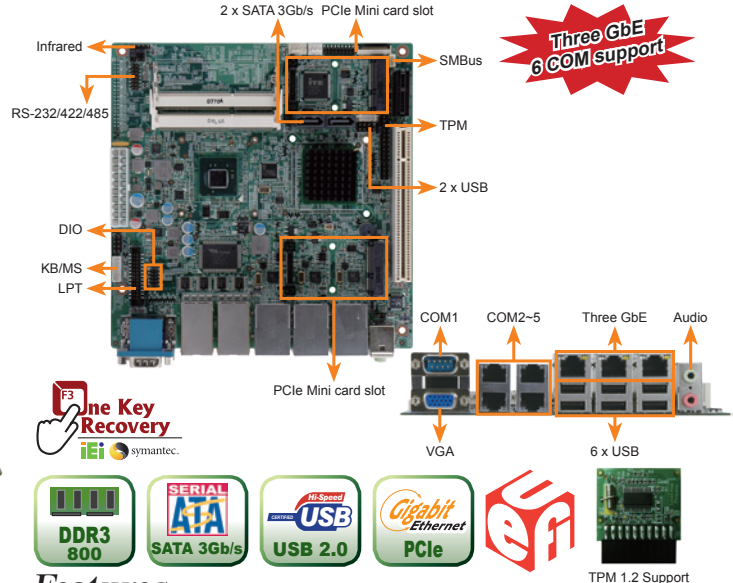
1 x KINO-G45A single board computer	
1 x Dual USB cable (P/N: 19800-003100-200-RS)	
1 x I/O shielding (P/N: 45014-0028C0-00-RS)	1 x Mini jumper pack
6 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-G45A-R10	Mini-ITX SBC with LGA775 for 45nm Intel® Core™2 Duo/Quad CPU with a 1333MHz FSB, VGA/DVI/HDMI, PCIe GbE, USB 2.0, SATA 3Gb/s and Audio
32102-000100-200-RS	SATA power cable
CF-520-RS-R11	CPU cooler (115mm x 115mm x 67mm, 115W)
CF-775A-RS	CPU cooler (92mm x 92mm x 73mm, 130W)
SAIDE-KIT01-R10	SATA/IDE/CF converter board

KINO-PV-D4253/D5253

Mini-ITX SBC supports Intel® Atom™ D525/D425, DDR3, VGA, three GbE, six COM, USB 2.0 and SATA 3Gb/s, RoHS



Three GbE
6 COM support



Features

1. Mini-ITX form factor with Intel® Atom™ D525/D425 processor
2. Two 800MHz DDR3 SO-DIMM slots support up to 4GB
3. Compliant with 1U chassis
4. Three GbE LAN with ASF 2.0 support
5. Complete I/O with eight USB, two SATA 3Gb/s, one LPT, six COM and audio

Specifications

- ◆ CPU: Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache; Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory: 2 x 800MHz DDR3 SO-DIMM up to 4GB
- ◆ Graphic: GMA 3150
- ◆ Display Interface: Analog CRT up to 2048x1536, CRT hotplug supported
- ◆ Ethernet: Three PCIe GbE by Realtek RTL8111E with ASF 2.0 support
- ◆ I/O Interfaces: 1 x LPT, 1 x KB/MS pin header, 2 x SATA 3Gb/s, 8 x USB 2.0, 4 x RS-232 (RJ-45), 1 x RS-232 (DB-9), 1 x RS-232/422/485 (pin header)
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ TPM: 2 x 10-pin header
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion: 1 x PCI Slot, 1 x PCIe x1 slot, 2 x PCIe Mini card slot
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: AT/ATX power supply support
- ◆ Super I/O: Fintek F81865
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Consumption: 12V@0.76A, 5V@2.62A (Intel® Atom™ D525 1.8GHz with two 1333MHz 1GB DDR3 DIMM)
- ◆ Temperature: -20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor; -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 360g

Packing List

1 x KINO-PV-D4253/D5253 single board computer	
1 x SATA cable (P/N: 32801-000703-200-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0036C0-00-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

Ordering Information

Part No.	Description
KINO-PV-D5253-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA, 6 COM, 3 GbE, dual PCIe Mini, SATA 3Gb/s, and audio
KINO-PV-D4253-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA, 6 COM, 3 GbE, dual PCIe Mini, SATA 3Gb/s, and audio
32000-0023800-RS	PS2 KB/MS cable
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
32005-000200-100-RS	RJ-45 to RS-232 cable
19800-003100-200-RS	Dual USB port with bracket
PCIER-K101L-R10	PCIe x1 riser card
19800-004300-100-RS	RS-232/422/485 cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

O/Ring
Network
Communication

5

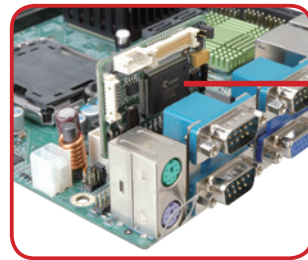
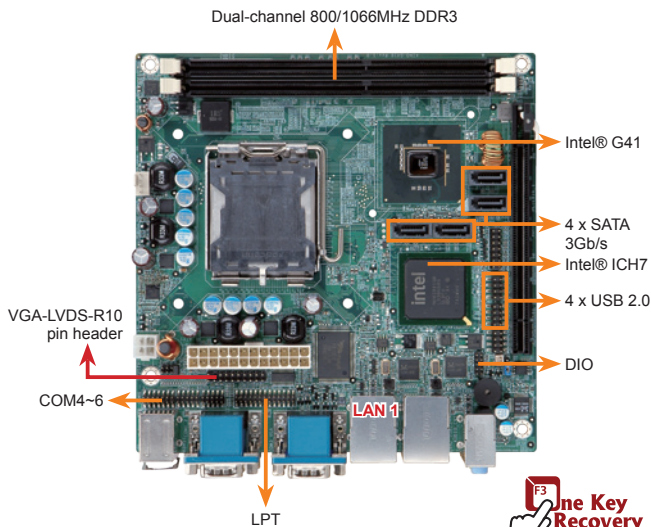
Power Supply/
Peripherals

6

Panel
Solutions
Introduction

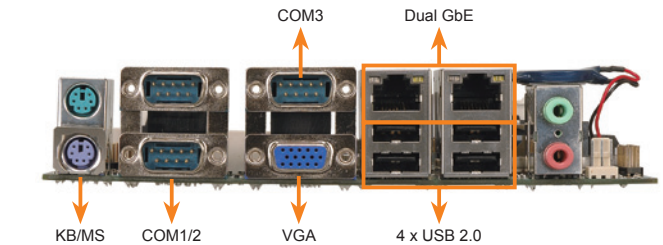
KINO-G410

Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, dual PCIe GbE, six COM, four SATA 3Gb/s, audio and RoHS



VGA-LVDS-R10

VGA to 24-bit dual-channel LVDS converter
Supported resolution:
800x600, 1024x768, 1280x1024, 1366x768, 1920x1080



Features

1. LGA775 Intel® Core™2 Extreme/Quad/Duo and Celeron® processor with up to 1333MHz FSB
2. Intel® GMA X4500 delivers an excellent blend of graphics performance
3. Dual-channel 800/1066MHz DDR3 supports up to 8GB
4. LVDS supported by VGA-LVDS-R10 convertor board
5. Complete I/O interfaces for six COM, eight USB, LPT and four SATA 3Gb/s
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
LGA775 45nm Intel® Core™2 Quad, Core™2 Duo, Pentium® D, Celeron® at FSB 800/1066/1333MHz processors
- ◆ System Chipset
Intel® G41 + ICH7
- ◆ Memory
Two 240-pin 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (System max. 8GB)
- ◆ BIOS
UEFI BIOS
- ◆ Ethernet
Dual Realtek RTL8111E PCIe GbE controller, LAN 1 with ASF 2.0 support
- ◆ Graphics Engine
Intel® GMA X4500
- ◆ Display Interface
VGA integrated in Intel® G41
24-bit LVDS by VGA-LVDS-R10
- ◆ Super I/O
Fintek F81865
- ◆ Audio
Realtek ALC888 HD Audio codec
- ◆ Expansion
1 x PCIe x16 slot
- ◆ TPM (Optional)
On-board Infineon SLB9635TT1.2
- ◆ I/O Interface
5 x RS-232 8 x USB 2.0
1 x LPT 4 x SATA 3Gb/s
2 x PS/2 KB/MS
1 x RS-232/422/485 with auto flow control
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector
- ◆ Power Supply
ATX power supply
- ◆ Power Consumption
5V@6.41A, Vcore_12V@2.52A, 3.3V@0.27A (2.8GHz Intel® Core™2 Duo E7400 with two 1066MHz 1GB DDR3)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW:1100g/NW: 700g



Packing List

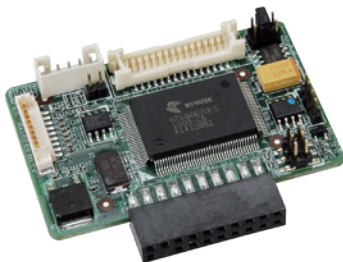
1 x KINO-G410 single board computer	
1 x I/O shielding (P/N: 45014-0014C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-G410-R10	Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, Dual PCIe GbE, 6 COM, 4 SATA 3Gb/s and Audio, TPM, RoHS
KINO-G410T-R10	Mini-ITX SBC supports LGA775 Intel® Core™2 Quad CPU with a 1333MHz FSB, DDR3, VGA, Dual PCIe GbE, 6 COM, 4 SATA 3Gb/s and Audio, TPM, RoHS
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
CF-775A-RS	CPU cooler for 130W
CF-520-RS-R11	CPU cooler for 115W
CF-775B-RS	1U CPU cooler for 90W
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
19800-000112-RS	Dual RS-232 with bracket cable
VGA-LVDS-R10	VGA to 24-bit dual-channel LVDS convertor module

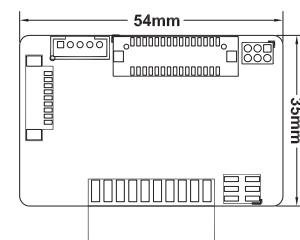
VGA-LVDS-R10

VGA to 24-bit dual-channel LVDS converter board



- ◆ LVDS supported by scaling chip Novatek 6867UFG
- ◆ Supported resolution:
800x600, 1024x768, 1280x1024, 1366x768, 1920x1080
- ◆ Compatible with IEI Mini-ITX SBC KINO-G410 only

Dimensions (Unit: mm)



Ordering Information

Part No.	Description
VGA-LVDS-R10	VGA to 24-bit dual-channel LVDS converter module
32600-004900-RS	30-pin LVDS connecting cable for evaluation only

Packing List

1 x VGA to LVDS converter module	1 x Mini jumper pack	1 x QIG
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Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

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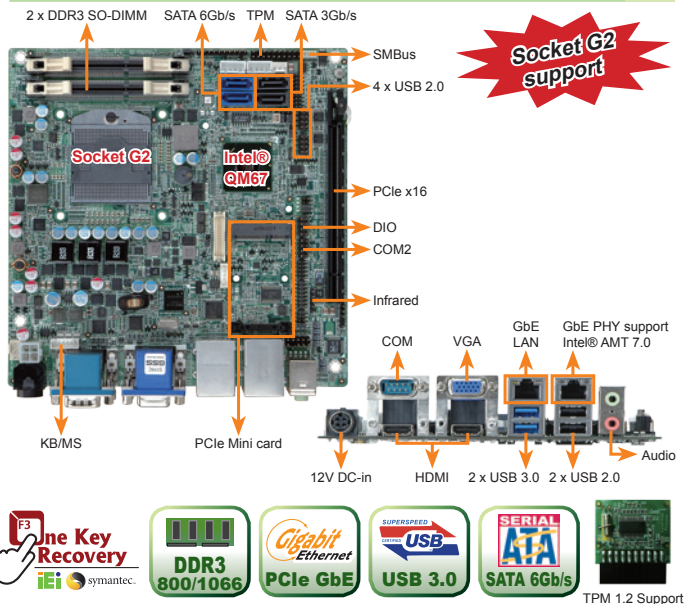
Power Supply/Peripherals

6

Panel Solutions Introduction

KINO-QM670

Mini-ITX SBC with Socket G2 for Intel® mobile Core™ i7/i5/i3 CPU, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio



Features

1. Mini-ITX SBC with Socket G2 for Intel® Core™ i7/i5/i3 processor
2. Dual-channel 1333/1066MHz DDR3 SDRAM (system max. 8GB)
3. HDMI 1.3 compliant
4. 3D micro-architecture enhancements supports DX*10.1 and OGL*3.0
5. Rich media acceleration for hardware decoding and encoding acceleration
6. Intel® GbE LAN with Intel® AMT 7.0 supported
7. High speed I/O interface for PCIe Gen2 add-on card, USB 3.0 and SATA 6Gb/s

Specifications

- ◆ CPU: Socket G2 for Intel® Core™ i7/i5/i3 processor
- ◆ PCH: Intel® QM67
- ◆ Memory: Two 204-pin 1333/1066 DDR3 dual-channel SO-DIMMs supported (system max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: Intel® 82583V PCIe controller, Intel® 82579 PHY with Intel® AMT 7.0 supported
- ◆ Graphics Engine: Support for DX10.1 and OpenGL3.0, Full MPEG2, VC1, AVC Decode
- ◆ Display Output: Dual display supported, 1 x VGA, 1 x 18/24-bit dual-channel LVDS support
- ◆ Super I/O: Fintek F81865
- ◆ Embedded Controller: ITE I8518
- ◆ I/O Interface: 2 x RS-232, 1 x RS-422/485, 6 x USB 2.0, 2 x USB 3.0, 2 x SATA 3Gb/s, 2 x SATA 6Gb/s with RAID 0/1/5/10 support, 2 x SATA power connector, 1 x 6-pin KB/MS
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ SM bus: 1 x 4-pin wafer
- ◆ TPM: 2 x 10-pin header
- ◆ Expansion: 1 x PCIe Mini card slot, 1 x PCIe x16
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface: 1 x 5-pin header
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: Single voltage 12V DC input, 1 x External DIN 4-pin DC jack, 1 x Internal 4-pin (2x2) power connector, Support AT/ATX mode
- ◆ Power Consumption: 12V@6.5A (2.1GHz Intel® Core™ i7-2710QE CPU with two 1333MHz 2GB DDR3 DIMM)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 450g

Packing List

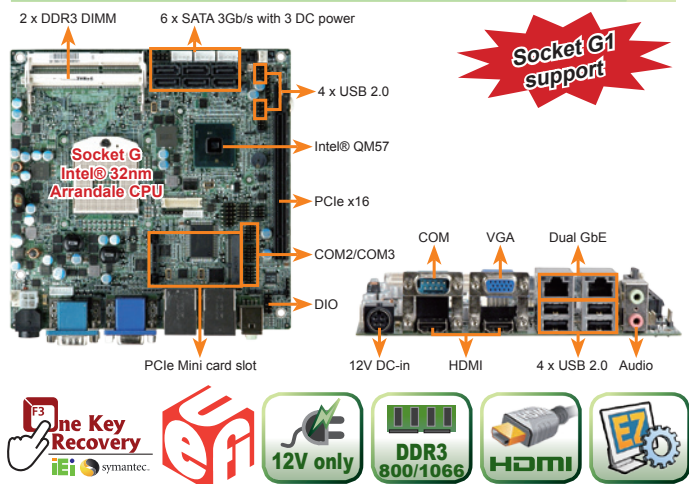
1 x KINO-QM670 single board computer	
2 x SATA with power output cable (P/N: 32801-000100-100-RS)	
1 x RS-232 cable (P/N: 19800-000300-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0029C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-QM670-R10	Mini-ITX SBC with Socket G2 for Intel® mobile Core i7/i5/i3 CPU, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and audio
19800-003100-200-RS	Dual USB cable
32000-023800-RS	KB/MS Y cable
32205-003800-100-RS	RS-422/485 cable
SACF-KIT01-R10	SATA to CF converter board
CF-989A-RS-R12	CPU cooler
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

KINO-QM57A

Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3/Celeron® CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s, Audio and RoHS



Features

1. Mini-ITX SBC with Socket G for Intel® 32nm/45nm mobile Core™ i7/i5/i3 and Celeron® processor
2. 800/1066MHz dual-channel DDR3 SO-DIMM supported (System max. 8GB)
3. Analog CRT/18-bit or 24-bit dual-channel LVDS/Dual HDMI outputs supported
4. Intel® GbE LAN with Intel® AMT 6.0 support, iEZman UI is bounded for remote control under Windows® environment
5. UEFI software interface between OS and platform firmware
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH: Intel® QM57
- ◆ Memory: Two 204-pin 800/1066MHz dual-channel DDR3 SDRAM SO-DIMM supported (system max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet: 1 x Intel® 82577 GbE LAN controller with Intel® AMT 6.0 supported by iEZman software UI, 1 x Intel® 82574L GbE LAN
- ◆ Graphics Engine: Gen 5.75 with 12 Execution Units DirectX* 10, OpenGL* 2.1
- ◆ Display Output: Dual display supported, 1 x VGA, 2 x HDMI, 1 x 18/24-bit dual-channel LVDS support
- Note: The Intel® quad-core processor is a discrete processor which does not integrate a graphics engine. If a quad-core processor is used on the motherboard, an additional graphic card must be installed in order to support display output. Otherwise, the display will show "No display output" when connected to the on-board display port.
- ◆ Super I/O: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ I/O Interface: 3 x RS-232, 8 x USB 2.0, 1 x RS-232/422/485 with auto flow control, 1 x 6-pin header for KB/MS, 6 x SATA 3Gb/s with RAID 0/1/5/10, support three SATA power connectors
- ◆ Expansion: 1 x PCIe Mini Card, 1 x PCIe x16
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
- ◆ Power Supply: Single voltage 12V DC input, 1 x External 4-pin DIN DC jack, 1 x Internal 4-pin (2x2) power connector, Support AT/ATX mode
- ◆ Power Consumption: 12V@5.27A (2.66GHz Intel® Core™ i7 620M CPU with two 2GB 1333MHz DDR3 DIMMs)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW:1000g/NW:350g

Packing List

1 x KINO-QM57A single board computer	
3 x SATA with power output cable (P/N: 32801-000100-100-RS)	
1 x Dual RS-232 cable w/bracket (P/N: 19800-000112-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0029C0-00-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

Ordering Information

Part No.	Description
KINO-QM57A-R10	Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3/Celeron® CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and audio, RoHS
19800-003100-200-RS	Dual USB cable
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
VMUSB-V01-R20	USB Mini card wireless LAN module
63000-FSP096AHB-RS	96W/12V power adaptor 90VAC~260VAC, DIN 4 pin
19800-004300-100-RS	RS-232/422/485 cable with bracket
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
CF-989B-RS	CPU cooler for mobile socket-G (PGA988) 50W processor, Aluminum, 60x60x27.6mm, RoHS

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

O/Ring Network Communication

5

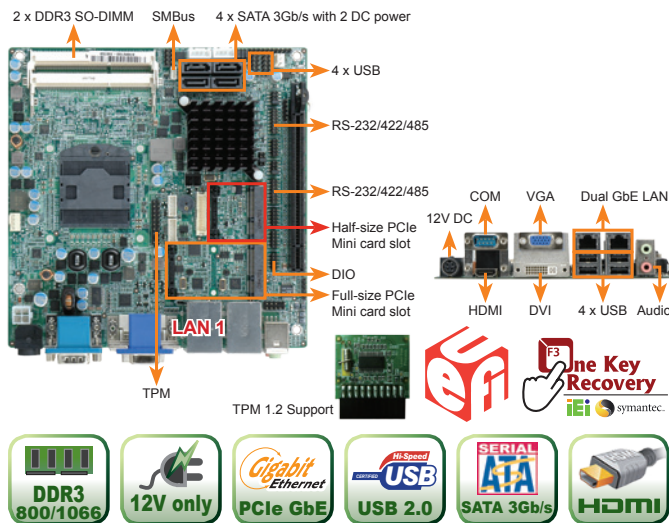
Power Supply/Peripherals

6

Panel Solutions Introduction

KINO-HM551

Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s and Audio, RoHS



Features

1. Mini-ITX SBC with Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor
2. DDR3 800/1066MHz dual-channel SDRAM supported up to 8GB
3. 18/24-bit dual-channel LVDS/Analog CRT/DVI/HDMI output supported
4. PCIe x16 slot and dual PCIe Mini card for high speed device expansion
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH: Intel® HM55
- ◆ Memory
 - Two 204-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM SO-DIMM supported (System max. 8GB)
- ◆ BIOS: UEFI BIOS
- ◆ Ethernet
 - Dual GbE LAN controller by Realtek RTL8111E LAN1 with ASF 2.0 support
- ◆ Graphics Engine
 - Gen 5.75 with 12 Execution Units DirectX® 10, OpenGL® 2.1
- ◆ Display Interface
 - Dual display supported
 - 1 x VGA
 - 2 x HDMI
 - 1 x 18/24-bit dual-channel LVDS support
- Note:

The Intel® quad-core processor is a discrete processor which does not integrate a graphics engine. If a quad-core processor is used on the motherboard, an additional graphic card must be installed in order to support display output. Otherwise, the display will show "No display output" when connected to the on-board display port.
- ◆ Super I/O: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ TPM: 2 x 10-pin header
- ◆ Expansions
 - 1 x PCIe Mini card slot
 - 1 x Half-size PCIe Mini card slot
 - 1 x PCIe x16 slot
- ◆ I/O Interface
 - 4 x RS-232
 - 8 x USB 2.0
 - 2 x RS-232/422/485 with auto flow control
 - 4 x SATA 3Gb/s with two DC power connector
 - 1 x 6-pin header for KB/MS
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin system fan connector
- ◆ Power Supply
 - Single voltage 12V DC input
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
 - AT/ATX power mode selected by jumper
- ◆ Power Consumption
 - 12V@4.67A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)
 - ◆ Operating Temperature: -10°C ~ 60°C
 - ◆ Operating Humidity: 5% ~ 95%, non-condensing
 - ◆ Dimensions: 170mm x 170mm
 - ◆ Weight: GW: 900g/NW: 450g

Packing List

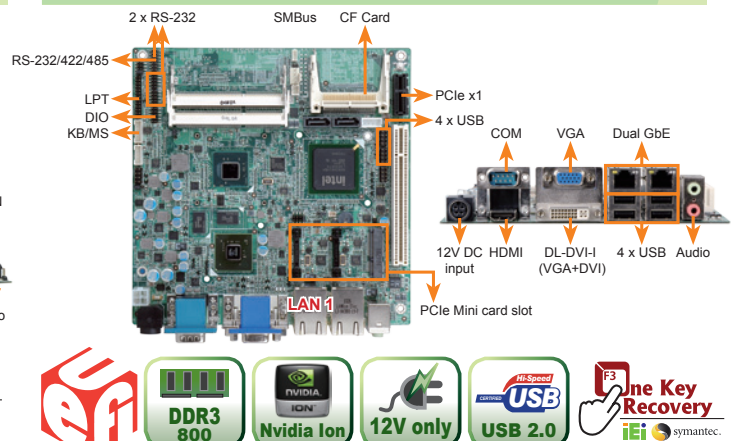
1 x KINO-HM551 single board computer	
1 x Dual RS-232 cable with bracket (P/N: 19800-000112-RS)	
2 x SATA with power cable (P/N: 32801-000100-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0032C0-00-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-HM551-R10	Mini-ITX SBC with Socket G1 for Intel® mobile Core i7/i5/i3 and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, SATA 3Gb/s and Audio, RoHS
19800-003100-200-RS	Dual USB cable with bracket
SAIDE-KIT01-R10	SATA to IDE/CF converter board
19800-004300-100-RS	RS-232/422/485 cable with bracket
32000-023800-RS	KB/MS Y cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

KINO-PVN-D4251/D5251

Mini-ITX SBC with Intel® Atom™ D425/D525, VGA/DVI-DL/HDMI by Nvidia GT218-ION, Dual GbE, Audio, USB 2.0 and SATA 3Gb/s, RoHS



Features

1. Mini-ITX form factor with Intel® Atom™ D525/D425 processor
2. 12V single voltage input designed for AT/ATX power
3. Two 800MHz DDR3 SO-DIMM slots support up to 4GB memory
4. Excellent graphics engine supports VGA, dual-link DVI-I, HDMI by Nvidia GT218-ION for dual independent display
5. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, one LPT, four COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor (1.8GHz/1MB L2 cache)
 - Intel® Atom™ D425 single-core processor (1.8GHz/512KB L2 cache)
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (system max. 4GB) for D525/D425
- ◆ Graphic
 - On-board NVIDIA GT218-ION graphics chip with 512MB DDR3 memory
- ◆ Display Interface
 - Dual display supported
 - 1 x VGA
 - 2 x HDMI
 - 1 x DVI-I
- ◆ Ethernet
 - Dual PCIe GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ I/O Interfaces
 - 1 x LPT
 - 8 x USB 2.0
 - 1 x KB/MS
 - 2 x SATA 3Gb/s
 - 3 x RS-232
 - 1 x CF Type II
 - 1 x RS-232/422/485 with auto flow control
- ◆ SMBus
 - 1 x 4-pin wafer connector
- ◆ Expansion
 - 1 x PCI slot
 - 1 x PCIe x1 slot
 - 1 x PCIe Mini card slot
- ◆ Audio
 - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V, AT/ATX power mode
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
- ◆ Super I/O: Fintek F81865
- ◆ Fan Connector
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin system fan connector
- ◆ Power Consumption
 - 12V@3.44A (Intel® Atom™ D525 1.8GHz with two 1333MHz 2GB DDR3 DIMM)
 - 12V@3.11A (Intel® Atom™ D425 1.8GHz with two 1333MHz 2GB DDR3 DIMM)
- ◆ Operating Temperature
 - 10°C ~ 60°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 900g/NW: 360g

Packing List

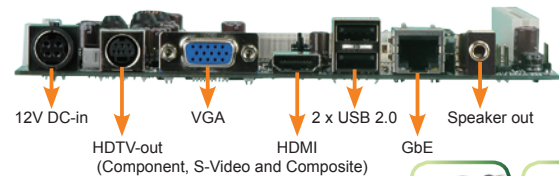
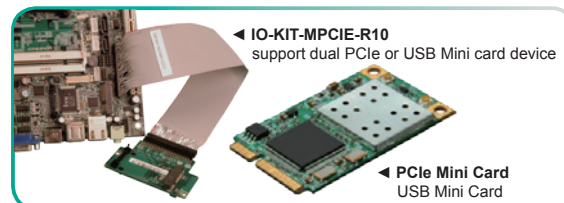
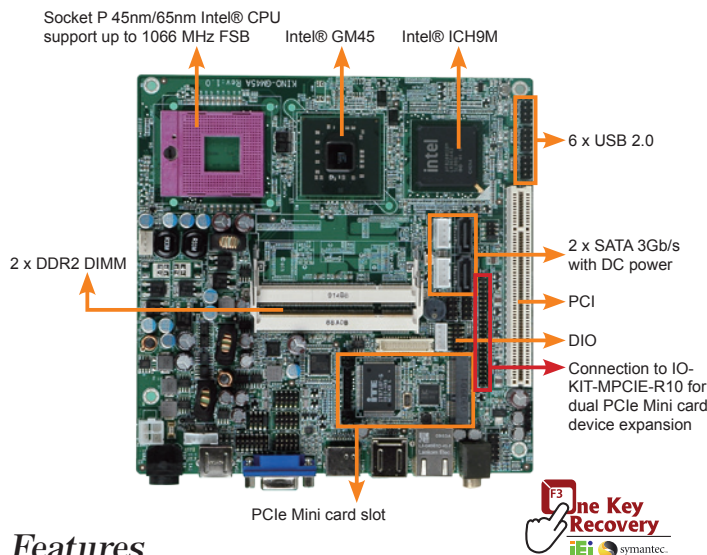
1 x KINO-PVN-D4251/D5251 single board computer	
1 x SATA with 5V/12V output cable kit (P/N: 32801-000100-100-RS)	
1 x SATA with 5V output cable kit (P/N: 32801-000201-100-RS)	1 x One Key Recovery CD
1 x RS-232 cable with bracket (P/N: 19800-000300-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0032C0-00-RS)	1 x QIG
1 x DVI to VGA Adaptor (P/N: 33Z00-000031-RS)	1 x Utility CD

Ordering Information

Part No.	Description
KINO-PVN-D5251-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz/1MB L2 cache, DDR3, VGA/DVI-I DL/HDMI by Nvidia GT218, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PVN-D4251-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz/512KB L2 cache, DDR3, VGA/DVI-I DL/HDMI by Nvidia GT218, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
32000-0023800-RS	PS2 KB/MS cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-003100-200-RS	Dual-port USB cable
PCIER-K101L-R10	PCIe x1 riser card

KINO-GM45A

Mini-ITX SBC with Socket P for Intel® 45nm mobile Core™2 Quad/Duo CPU, VGA/HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS



Features

1. Socket P for 45nm Intel® mobile Core™2 Quad/Duo CPU with a 1066MHz FSB
2. Intel® GMA4500MHD for DX10, Shader Model 4.0, high performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support
3. Display output supported by VGA, LVDS, HDMI, HDTV
4. Single 12V DC input, four COM, two SATA, eight USB 2.0
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Socket P Intel® 45nm Core™2 Quad/Duo processor with a 1066/800MHz FSB
Socket P Intel® 45nm Pentium® M/Celeron® M processor with a 800/667MHz FSB
- ◆ System Chipset: Intel® GM45 + ICH9M
- ◆ BIOS: AMI BIOS
- ◆ Memory
Two 200-pin 667/800 MHz dual-channel DDR2 SO-DIMM supported (system max. 4GB)
- ◆ Ethernet: Realtek RTL8111CP GbE controller
- ◆ I/O Interface
8 x USB 2.0 2 x SATA 3Gb/s
1 x 6-pin header for KB/MS
3 x RS-232 (COM1, COM3, COM4)
1 x RS-232/422/485 (COM2)
- ◆ Graphic: Intel® GMA4500MHD
- ◆ Expansion:
1 x PCIe Mini card, 1 x PCI
1 x Dual PCIe Mini card slot (by IO-KIT-MPCIE-R10)
- ◆ Digital I/O:
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super I/O: ITE IT8718F
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Display Output
VGA integrated in the Intel® GM45 support hotplug and resolution up to QXGA
18/24-bit dual-channel LVDS support
HDMI support up to 1080p
HDTV for component, S-Video and composite output interfaces
- ◆ Watchdog Timer
Software programmable support 1~255 sec. system reset
- ◆ Power Supply
Single voltage 12V DC input
1 x External 4-pin DIN DC jack
1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption
12V@5.56A (2.0GHz Intel® Core™2 Quad Q9000 with two 1GB 800MHz DDR2 SO-DIMMs)
- ◆ Temperature
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1000g/NW: 390g

Packing List

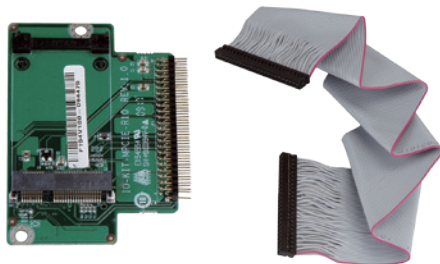
1 x KINO-GM45A single board computer	1 x IO shielding (P/N: 45014-0030C0-00-RS)
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	1 x KB/MS Y cable (P/N: 32000-023800-RS)
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
2 x SATA with power output cable (P/N: 32801-000100-100-RS)	1 x Mini jumper pack
	1 x QIG
	1 x Utility CD

Ordering Information

Part No.	Description
KINO-GM45A-R10	Mini-ITX SBC with Socket P for Intel® 45nm mobile Core™2 Quad/Duo CPU, VGA/HDMI/LVDS, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS
IO-KIT-MPCIE-R10	PCIe/USB Mini card expansion module
19800-003100-200-RS	Dual USB cable
CF-479B-RS	CPU cooler
32100-088600-RS	SATA power cable
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
WMUSB-V01-R20	USB Mini card wireless LAN module
32205-000300-100-RS	RS-232/422/485 cable
32205-002700-100-RS	Single port RS-232 cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32000-083100-RS	HDTV out cable
63000-FSP096AHB-RS	96W/12V Power Adaptor 90VAC~260VAC, DIN 4 PIN

IO-KIT-MPCIE-R10

Dual PCIe/USB mini card expansion module



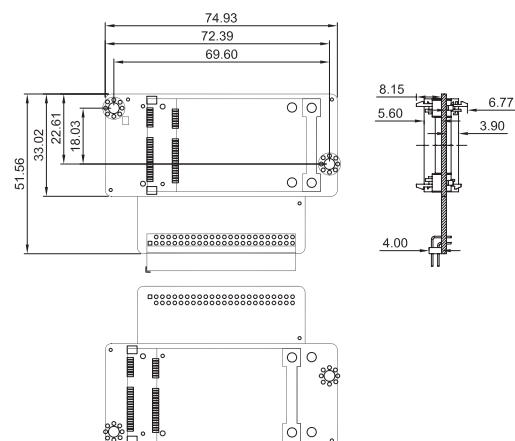
Packing List

- 1 x PCIe/USB mini card expansion module (P/N: IO-KIT-MPCIE-R10)
- 1 x Connection cable (P/N: 32225-000100-100-RS)
- 1 x QIG

Ordering Information

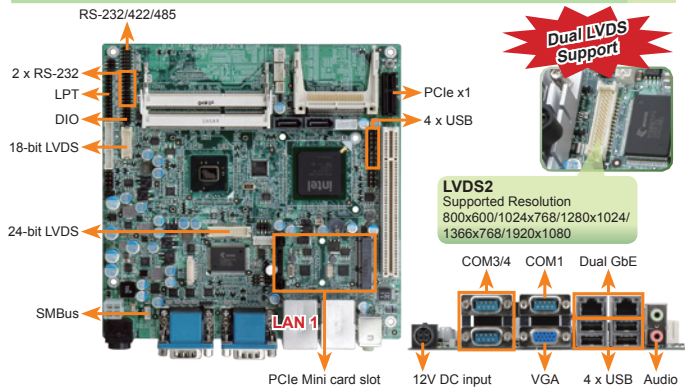
Part No.	Description
IO-KIT-MPCIE-R10	PCIe/USB mini card expansion module

Dimensions (Unit: mm)



KINO-PV-D4252/D5252

Mini-ITX SBC with Intel® Atom™ D425/D525, DDR3, VGA/18+48-bit LVDS, Dual GbE, Audio, USB 2.0 and SATA 3Gb/s, RoHS



Features

1. Mini-ITX SBC with Intel® Atom™ D525/D425 processor
2. Support 800MHz DDR3 SO-DIMM socket (system max. 4GB)
3. Support 24-bit dual-channel LVDS with up to 1920x1080 resolution
4. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, six COM and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor
 - 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor
 - 1.8GHz/512KB L2 cache
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (System max. 4GB) for D525/D425
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
- ◆ Display Interface
 - Analog CRT up to 2048x1536 for D525/D425
 - Support CRT hotplug
 - 18-bit single-channel LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
 - 24-bit dual-channel LVDS by Novatek 68667UFG, resolution support up to 1920x1080
- ◆ Ethernet
 - Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Super IO: Fintek F81865
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Weight: GW: 800g/NW: 340g
- ◆ Expansion
 - 1 x PCI slot
 - 1 x PCIe x1 slot
 - 1 x PCIe Mini card slot
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ I/O Interfaces
 - 5 x RS-232
 - 1 x LPT
 - 2 x SATA 3Gb/s
 - 8 x USB 2.0
 - 1 x CF Type II
 - 1 x 6-pin header for KB/MS
 - 1 x RS-232/422/485 (COM2) with Auto Flow control
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 12V, AT/ATX power mode
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
- ◆ TPM (Optional)
 - On-board Infineon SLB9635TT1.2
- ◆ Fan Connector
 - 1 x 4-pin CPU fan
 - 1 x 3-pin system fan
- ◆ Power Consumption
 - 12V@1.95A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing

Packing List

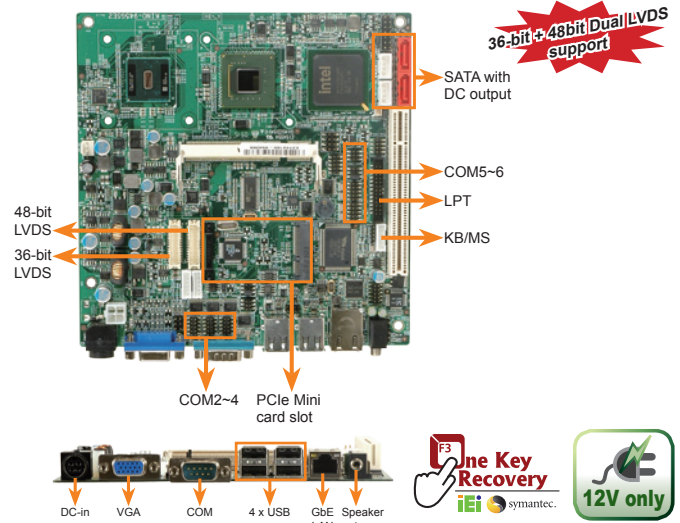
1 x KINO-PV-D4252/D5252 single board computer	
1 x RS-232 cable with bracket (P/N: 19800-000300-100-RS)	
1 x SATA with power cable (P/N: 32801-000100-100-RS)	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0024C0-01-RS)	1 x QIG
1 x One Key Recovery CD	1 x Utility CD

Ordering Information

Part No.	Description
KINO-PV-D5252-L2-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18+48-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PV-D5252T-L2-R10	Mini-ITX SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18+48-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, TPM, RoHS
KINO-PV-D4252-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, RoHS
KINO-PV-D4252T-R10	Mini-ITX SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit LVDS, dual GbE, audio, USB 2.0 and SATA 3Gb/s, TPM, RoHS
32000-0023800-RS	PS2 KB/MS cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
19800-004300-100-RS	RS-232/422/485 cable with bracket
19800-003100-200-RS	Dual-port USB cable
19FTS00032100-000001-RS	CPU fan
PCIER-K101L-R10	PCIe x1 riser card

KINO-945GSE2

Mini-ITX SBC with 1.6GHz Intel® Atom™ N270, DC 12V input, VGA/36-bit + 48-bit LVDS/HDTV, Dual PCIe GbE, USB 2.0, SATA and Audio



Features

1. 1.6GHz Intel® Atom™ N270 processor with fanless support
2. One 400/533MHz DDR2 SO-DIMM socket supports up to 2GB memory
3. One PCIe Mini card and one PCI slot for expansion
4. 36-bit and 48-bit LVDS support dual display outputs
5. Single voltage 12V DC input
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - 1.6GHz Intel® Atom™ N270 processor with a 533MHz FSB
- ◆ System Chipset
 - Intel® 945GSE+ICH7M
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
 - 1 x Realtek PCIe RT81111CP GbE controller
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA with DC power
 - 1 x RS-232 DB-9
 - 3 x RS-232
 - 2 x RS-232/422/485
 - 1 x LPT
 - 1 x 6-pin box header (2.0mm pitch) for KB/MS
- ◆ Graphic
 - Intel® Graphics Media Accelerator 950
- ◆ Display Output
 - VGA integrated in Intel® 945GSE
 - Support HDTV resolution up to 1080i by component interface
 - 18-bit dual-channel LVDS by Intel® 945GSE
 - 24-bit dual-channel LVDS by Chronitel CH7308B
- ◆ Expansion
 - 1 x PCI
 - 1 x PCIe Mini card
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
 - 1 x Infrared interface by pin header
- ◆ Super IO
 - Fintek 81865
- ◆ Audio
 - Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ DC Connector
 - Two 4-pin 5V power connectors (mainly for 2.5" HDD used)
- ◆ Power Supply
 - Single voltage 12V DC input
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption
 - 1.73A@12V (Intel® Atom™ N270 1.6GHz with 2GB DDR2)
- ◆ Temperature
 - Operation: 0°C ~ 60°C
- ◆ Humidity
 - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1000g/NW: 350 g

Packing List

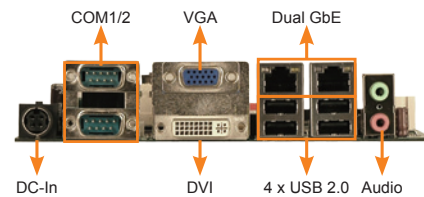
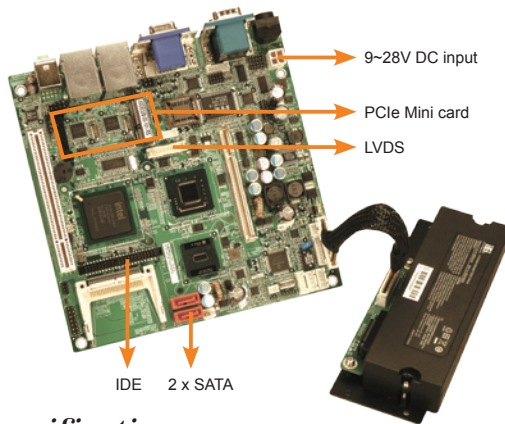
1 x KINO-945GSE2 single board computer	
2 x SATA 5V power output cable (P/N: 32801-000100-100-RS)	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x I/O shielding (P/N: 45014-0031C0-00-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Audio cable (P/N: 32000-072100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-945GSE2-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, 12V DC input, VGA/18+24-bit LVDS/HDTV, PCIe GbE, USB 2.0, SATA and Audio
19800-003100-200-RS	Dual USB cable
HDTV/CABLESET-01	HDTV cable set with S-Video, composite and component Interfaces
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32200-015100-RS	LPT cable
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VA, 4-pin DIN

eKINO-945GSE-R11

Mini-ITX SBC support AUPS sub-system, Intel® Atom™ N270 1.6GHz, Wide range 9-28VDC input, VGA/DVI/HDTV



Specifications

- CPU**
Intel® Atom™ processor N270 1.6GHz with 533MHz FSB 512K L2 Cache
- System Chipset**
Intel® 945GSE + Intel® ICH7M
- BIOS**
AMI BIOS
- Memory**
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- Ethernet**
Dual Realtek PCIe 8111CP GbE controller
- I/O Interface**
6 x USB 2.0
1 x IDE
1 x RS-232/422/485
3 x RS-232
2 x SATA with 5V DC output
1 x 6-pin header for KB/MS
- Graphic**
Intel® Graphics media accelerator 950 (Intel® GMA 950)
- Display Output**
VGA integrated in Intel® 945GSE
Support HDTV resolution up to 1080i by component interface
18-bits dual-channel LVDS by Intel® 945GSE
DVI-D support by silicon image Sil1362
- Expansion**
1 x PCI, 1 x PCIe Mini card
- DC connector**
Two 4-pin 5V power connectors (mainly for 2.5" HDD used)
- Digital I/O**
8-bit digital I/O, 4-bit input/4-bit output
- Infrared Interface**
1 x 5-pin header
- SSD**
1 x CF Type II
- Super IO**
ITE IT8718F
- Audio**
Realtek ALC655 AC'97 Codec
- Watchdog Timer**
Software programmable supports 1~255 sec. system reset
- Power Supply**
Maximum input voltage range: 9V~28V
Recommend operating input voltage range: 12V~24V
1 x External 4-pin DIN DC jack
1 x Internal 4-pin (2x2) power connector
- Power Consumption**
12V@1A (Intel® Atom™ N270 with 1GB DDR2)
- Temperature**
Operation: 0°C ~ 40°C with AUPS sub-system
Operation: 0°C ~ 60°C without AUPS sub-system
Storage: -20°C ~ 70°C
- Humidity**
Operation: 5% ~ 95%, non-condensing
- Dimensions:** 170mm x 170mm
- Weight:** GW: 1100g/NW: 400 g

Features

- Intel® Atom™ N270 1.6GHz with ultra low voltage fanless support
- Wide range 9-28V DC input
- Equipped with AUPS sub-system acts as a simple UPS system
- Dual-display supported by VGA + DVI-D, LVDS + VGA, LVDS + DVI-D
- Support six USB 2.0, two SATA, four COM
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

1 x eKINO-945GSE single board computer
2 x SATA 5V power output cable (P/N: 32801-000100-100-RS)
1 x I/O shielding (P/N: 45014-0023C0-00-RS)
1 x KB/MS Y cable (P/N: 32000-023800-RS)
1 x One Key Recovery CD
1 x Mini jumper pack
1 x Utility CD
1 x QIG

Ordering Information

Part No.	Description
eKINO-945GSE-N270UPS-R11	Mini-ITX SBC supports AUPS sub-system, Intel® Atom™ N270 1.6GHz, wide range 9-28VDC input, VGA/DVI/HDTV
19800-003100-200-RS	Dual USB cable
HDTV-CABLESET-01	HDTV cable set with S-Video, composite and component interfaces
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
BATKIT-2S2P3800-R10	2S2P 7.4V 3800mAH AUPS battery kit
BAT-LI-2S2P3800	2S2P 7.4V 3800mAH smart battery
BATKIT-4S2P3800-R10	4S2P 14.8V 3800mAH AUPS battery kit
BAT-LI-4S2P3800	4S2P 14.8V 3800mAH smart battery
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VAC, 4-pin DIN
63000-FSP120AAB-RS	120W/19V power adaptor, 90VAC~264VAC, 4-pin DIN
32200-000009-RS	44-pin 2.5" IDE cable
32100-192900-RS	One 4-pin (2 x 2) to one 4-pin (1 x 4) DC power cable with terminal block
19800-000300-100-RS	RS-232 cable with bracket
32200-833600-RS	RS-422/485 cable

AUPS Battery Kit

• BATKIT-2S2P3800-R10



P/N: BAT-LI-2S2P3800
2S2P 7.4V 3800mAH

• BATKIT-4S2P3800-R10



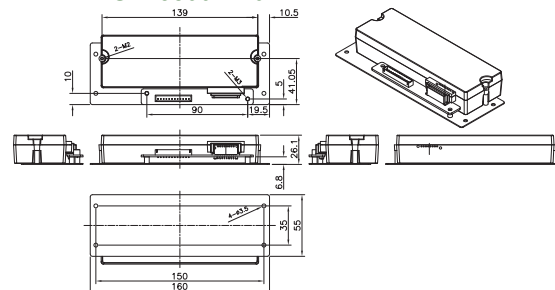
P/N: BAT-LI-4S2P3800
4S2P 14.8V 3800mAH

Battery Specifications

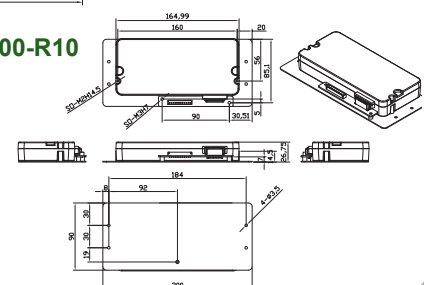
Battery Model	BAT-LI-2S2P3800	BAT-LI-4S2P3800
Battery type	Li-Ion 2S2P 7.4V	Li-Ion 4S2P 14.8V
Battery capacity	7.4V 3800mAH	14.8V, 3800mAH
Maximum charge voltage	8.4V	16.8V
The end of discharging voltage	5.6V	11.2V
Battery charge time (Power off)	2.5hrs	5hrs
Battery charge time (Power on)	6.5hrs	13hrs
Operating temp.	0°C ~ 40°C	0°C ~ 40°C
Storage temp.	-20°C ~ 60°C	-20°C ~ 60°C
Cycle life	300 charge/discharge cycles	
Backup	60W/10Min	100W/10Min
Safety class	CE	

Dimensions (Unit: mm)

BATKIT-2S2P3800-R10



BATKIT-4S2P3800-R10



1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

O/Ring
Network
Communication

5

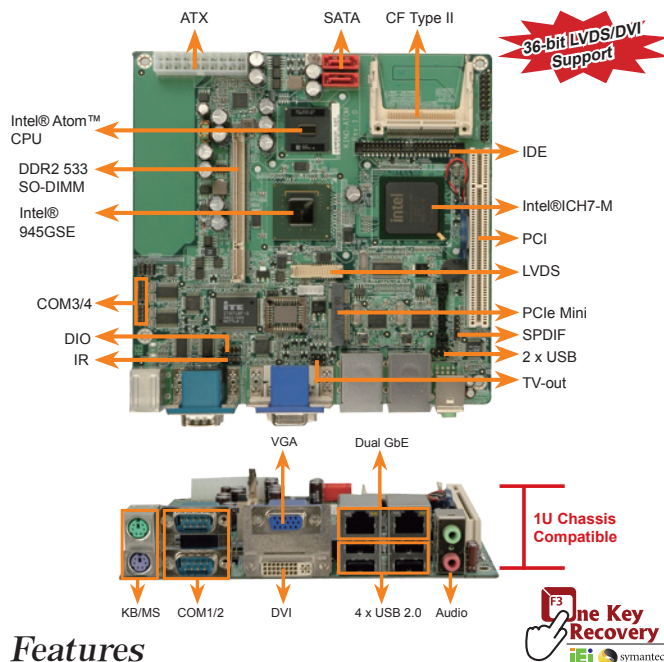
Power Supply/
Peripherals

6

Panel
Solutions
Introduction

KINO-945GSE-R11

Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio



Features

1. Intel® Atom™ processor N270 1.6GHz with ultra low voltage fanless support
2. 400/533MHz DDR2 SO-DIMM memory support up to 2GB
3. Dual display support by VGA + DVI-D, LVDS + VGA, LVDS + DVI-D
4. Support PCIe Mini slot and PCI slot for expansion
5. Support six USB 2.0, two SATA, four COM
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE + ICH7M
- ◆ BIOS
AMI BIOS
- ◆ Memory
One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual Realtek PCIe 8111CP GbE chipset
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA
 - 1 x CF Type II
 - 3 x RS-232
 - 1 x RS-232/422/485 1 x IDE
 - 2 x PS/2 for KB/MS
- ◆ Graphic
Intel® Graphics Media Accelerator 950
- ◆ Display Output
VGA integrated in Intel® 945GSE
Support HDTV resolution up to 1080i by component interface
18-bit dual-channel LVDS by Intel® 945GSE
DVI-D supported by silicon image Sil1362
- ◆ Expansion
1 x PCI, 1 x PCIe Mini card
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface by pin header
- ◆ Super IO
ITE IT8718F
- ◆ Audio
Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
AT/ATX power support
- ◆ Power Consumption:
2.89A@5V, 0.04A@12V
(Intel® Atom™ N270 with 1GB DDR2)
- ◆ Temperature
KINO-945GSE-N270-R11:
Operation: 0°C ~ 60°C (32°F~140°F)
Storage: -20°C ~ 70°C
KINO-945GSE-N270W-R11:
Operation: -20°C ~ 70°C
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
170mm x 170mm
- ◆ Weight
GW: 1100g/NW: 370g

Packing List

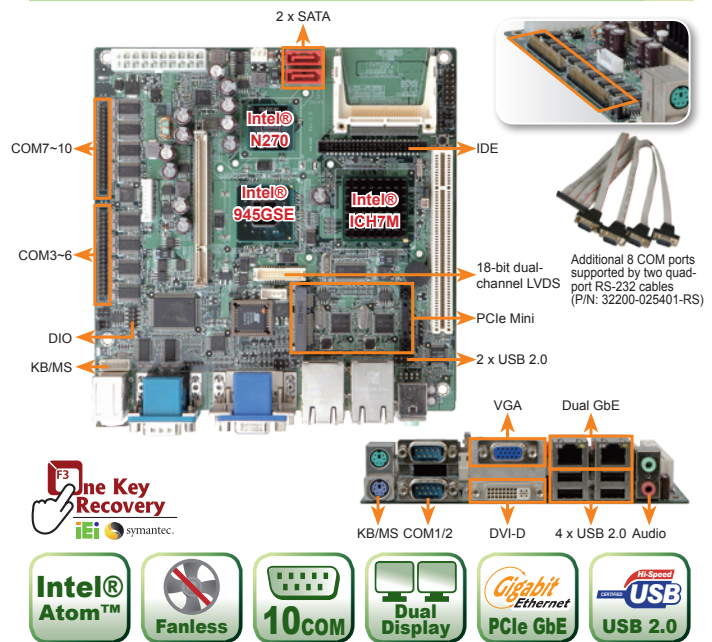
1 x KINO-945GSE single board computer	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-945GSE-N270-R11	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio
KINO-945GSE-N270W-R11	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB 2.0, SATA and Audio, -20~70°C
19800-003100-200-RS	Dual USB cable
HDTVCAABLESET-01	HDTV cable set with S-Video, composite and component interfaces
32102-000100-200-RS	SATA power cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-833600-RS	RS-422/485 cable

KINO-945GSE3

Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/LVDS, Dual PCIe GbE, USB 2.0, ten COM, SATA and Audio



Features

1. Intel® Atom™ N270 processor 1.6GHz for fanless support
2. 400/533MHz DDR2 SO-DIMM memory support up to 2GB
3. Dual display support by VGA + DVI-D/LVDS + VGA/LVDS + DVI-D
4. Support PCIe Mini card/PCI slot for expansion
5. Complete I/O interfaces: six USB 2.0, two SATA and ten COM
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ N270 processor 1.6GHz with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE + ICH7M
- ◆ BIOS
AMI BIOS
- ◆ Memory
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual Realtek PCIe RTL8111E GbE Chipsets, LAN1 with ASF 2.0 support
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA
 - 1 x CF Type II
 - 1 x 6-pin header for KB/MS
 - 1 x IDE
 - 1 x RS-232/422/485
 - 9 x RS-232
 - 2 x PS/2 for KB/MS
- ◆ Graphic
GMA950
- ◆ Display Output
VGA integrated in Intel® 945GSE
Support HDTV resolution up to 1080i by component interface
18-bits dual-channel LVDS by Intel® 945GSE
DVI-D support by Silicon Image Sil1362
- ◆ Expansion
 - 1 x PCI
 - 1 x PCIe Mini card
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
1 x Infrared Interface by pin header
- ◆ Super IO
Fintek F81865
- ◆ Audio
Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
AT/ATX power supply support
- ◆ Power Consumption
12V@0.43A, 5V@4.5A (Intel® Atom™ N270 1.6GHz with 2GB DDR2)
- ◆ Temperature
Operation: -10°C ~ 60°C
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
170mm x 170mm
- ◆ Weight: GW: 1100g/NW: 370g

Packing List

1 x KINO-945GSE3 single board computer	
2 x Quad port RS-232 cable (P/N: 32200-025401-RS)	
1 x I/O shielding (P/N: 45014-0008C0-00-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
KINO-945GSE3-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/LVDS, Dual PCIe GbE, USB 2.0, 10 COM, SATA and Audio
19800-003100-200-RS	Dual USB cable
HDTVCAABLESET-01	HDTV cable set with S-Video, composite and component interfaces
32102-000100-200-RS	SATA power cable
32200-0833600-RS	RS-422/485 cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-023800-RS	Keyboard/Mouse Y cable

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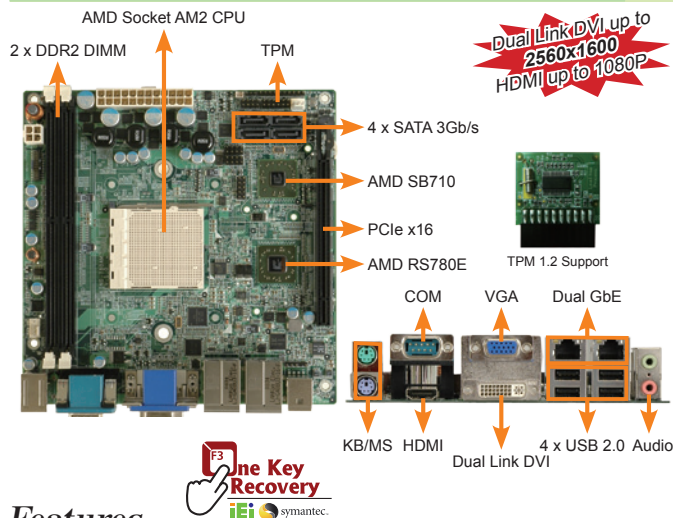
Power Supply/Peripherals

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Panel Solutions Introduction

KINO-780AM2

Mini-ITX SBC with Socket AM2 for AMD Althon™ 64, Althon™ 64 X2, Sempron™ CPU, VGA/Dual link DVI/HDMI, SPDIF Dual PCIe GbE, USB 2.0, SATA 3Gb/s, and Audio



Features

1. AMD RS780E integrated Radeon HD3200 graphic core for UVD, MPEG2, and H.264/AVC Full HD Decoder (Notes: Video decoding needs driver support and player enable function. After PowerDVD 7.0, you can find ATI option in PowerDVD video field)
2. Dual-channel 667/800MHz DDR2 DIMMs support up to 4GB memory
3. Dual display supported by VGA + DVI-D/HDMI + VGA
4. AMD Socket AM2 Althon™64, Althon™64 X2, Sempron™ CPU with 2600MHz HyperTransport 3.0 support
5. ATI Radeon™ HD3200 Graphic core for DX10 support
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - AMD Socket AM2 Althon™64, Althon™64 X2, Sempron™ CPU with 2600MHz HyperTransport 3.0 support
 - AMD Socket AM3 Phenom II, Athlon II, Sempron CPU up to 3.2GHz
 - AM3 processors are backwards compatible with today's AM2 platforms
- ◆ System Chipset
 - AMD RS780E + SB710
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - Two 240-pin 667/800MHz DDR2 dual-channel SDRAM DIMMs supported (system max. 4GB)
- ◆ Ethernet
 - Dual Realtek PCIe RTL8111CP GbE chipset
- ◆ I/O Interface
 - 8 x USB 2.0
 - 1 x TPM
 - 1 x RS-232
 - 2 x PS2 for KB/MS
 - 4 x SATA 3Gb/s with RAID 0, 1, 10
- ◆ Graphic
 - ATI Radeon™ HD3200 graphic core for DX10 support
 - Graphic Memory share system memory up to 512MB (system 2GB)
- ◆ Expansion
 - 1 x PCIe x16
- ◆ Display Output
 - VGA integrated in AMD RS780E (Max. resolution 2560x1600@32bpp)
 - Support HDMI resolution up to 1080p integrated in AMD RS780E
 - Dual link DVI-D integrated in AMD RS780E (Resolution 2560x1600)
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super IO
 - Fintek F71859
- ◆ Audio
 - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Fintek F75111R
- ◆ Power Supply
 - ATX power supply
- ◆ Power Consumption
 - 5V@4.8A, 12V@0.22A, Vcore_12V@12.69A, 3.3V@0.54A (AMD Phenom™ X4 9950 CPU)
 - Vcore_12V by CPU
- ◆ Temperature
 - Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1000g/NW: 450 g

Packing List

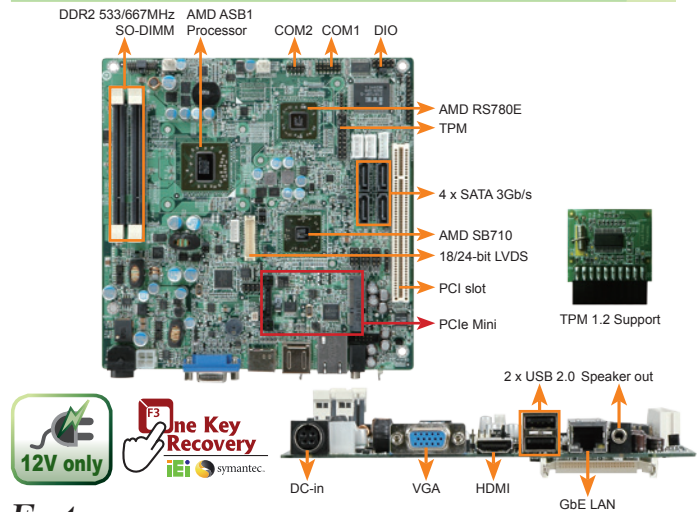
1 x KINO-780AM2 single board computer	1 x One Key Recovery CD
1 x I/O shielding (P/N: 45014-0028C0-00-RS)	1 x Mini jumper pack
4 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
KINO-780AM2-R10	Mini-ITX SBC with Socket AM2 for AMD Althon™ 64, Althon™ 64 X2, Sempron™ CPU, VGA/Dual link DVI/HDMI, SPDIF Dual PCIe GbE, USB 2.0, SATA 3Gb/s, and Audio
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
19800-003100-200-RS	Dual-port USB cable
32102-000100-200-RS	SATA power cable
24105-000077-RS	AMD Althon™ 64 X2 dual-core 4200+, 2.2GHz, 512KB x 2, 1000MHz, TDP 35W, Socket AM2 (940-pin), RoHS
24105-000078-RS	AMD Althon™ 64 X2 dual-core 3600+, 1.9GHz, 512KB x 2, 1000MHz, TDP 35W, Socket AM2 (940-pin), RoHS
CF-478D-RS-R11	1U CPU cooler for 65W
CF-478E-RS-R11	2U CPU cooler for 120W

KINO-780EB

Mini-ITX SBC with AMD ASB1 (BGA) processor, VGA/HDMI/LVDS, PCIe GbE, USB 2.0, SATA 3Gb/s



Features

1. AMD ASB1 (BGA) processor with 1600MHz HyperTransport 1.0 support
2. RS780E integrates UVD, MPEG2, and H.264/AVC Full HD Decoder
3. Dual display supported by VGA + HDMI/LVDS+ VGA/HDMI + LVDS
4. ATI Radeon™ HD3200 graphic core for DX10 support
5. TPM V1.2 hardware security function supported
6. Single 12V DC input and low profile design
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - 1.5GHz AMD ASB1 L325 (BGA) dual-core processor
 - 1.5GHz AMD ASB1 210U (BGA) single-core processor
- ◆ System Chipset
 - AMD RS780E + SB710
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - Two 200-pin 667MHz dual-channel DDR2 SDRAM SO-DIMMs supported (system max.4GB for L325 CPU)
 - One 200-pin 667MHz single-channel DDR2 SDRAM SO-DIMMs supported (system max.2GB for 210U CPU)
- ◆ Ethernet
 - Realtek PCIe RTL8111CP GbE chipset
- ◆ I/O Interface
 - 8 x USB 2.0
 - 1 x RS-232
 - 1 x CF Type II (optional)
 - 4 x SATA 3Gb/s with RAID 0, 1, 10 support
 - 2 x SATA power connector with housing
 - 1 x 6-pin PS2 KB/MS
- ◆ TPM
 - 2 x 10-pin header for TPM
- ◆ Graphic
 - ATI Radeon™ HD3200 graphic core for DX10 support
- ◆ Display Output
 - VGA integrated in AMD RS780E (Max. resolution: 2560x1600@32bpp)
 - HDMI integrated in the AMD RS780E supports resolution up to 1080p
 - 18/24-bit dual-channel LVDS support
- ◆ Expansion
 - 1 x PCI
 - 1 x PCIe Mini card slot
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Infrared Interface
 - 1 x 5-pin infrared interface by pin header
- ◆ Super IO: ITE IT8718F
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - Single voltage 12V input
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector
- ◆ Power Consumption
 - 3.49A@12V (1.5GHz AMD ASB1 L325 dual-core processors with two 2GB 667MHz DDR2)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 1100g/NW: 370g

Packing List

1 x KINO-780EB single board computer	
1 x RS-232 cable with bracket (P/N: 19800-000300-100-RS)	
2 x SATA with 5V power cable (P/N: 32000-106100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Utility CD
1 x I/O shielding (P/N: 45014-0030C0-00-RS)	1 x QIG

Ordering Information

Part No.	Description
KINO-780EB-L325-R10	Mini-ITX SBC with 1.5GHz AMD ASB1 L325 dual-core processor, VGA/HDMI/LVDS, PCIe GbE, USB 2.0, SATA 3Gb/s
KINO-780EB-210U-R10	Mini-ITX SBC with 1.5GHz AMD ASB1 210U single-core processor, VGA/HDMI/LVDS, PCIe GbE, USB 2.0, SATA 3Gb/s
19800-003100-200-RS	Dual-port USB cable
32102-000100-200-RS	SATA power cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
32205-000300-100-RS	RS-232/422/485 cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VAC, DIN 4-pin

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PCIER Riser Card

PCIe x1 Riser Card

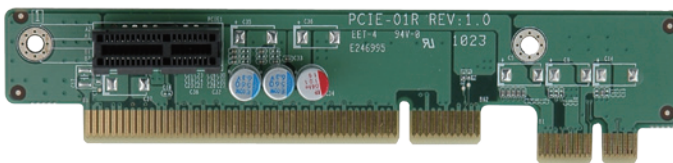
PCIER-K101L-R10

Dimensions: 135mm x 31mm

Packing List

1 x PCIe x1 riser card

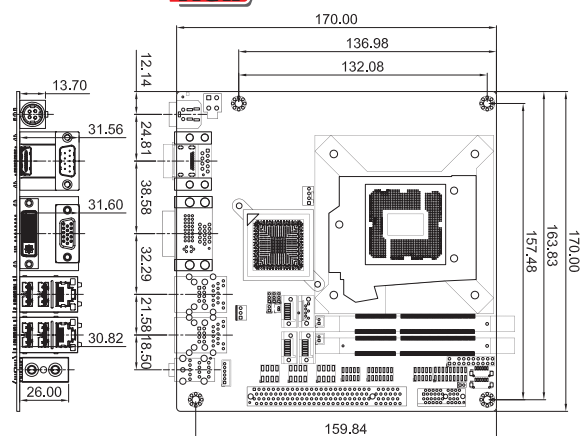
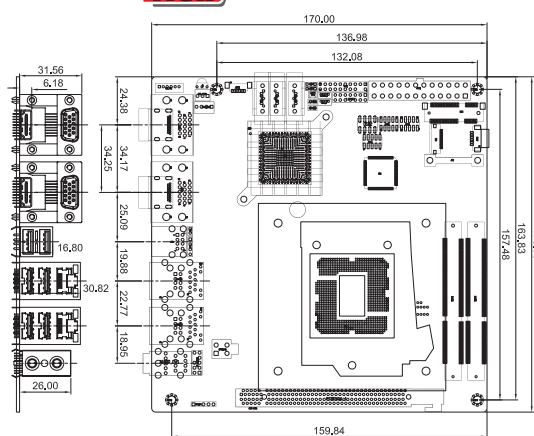
1 x QIG



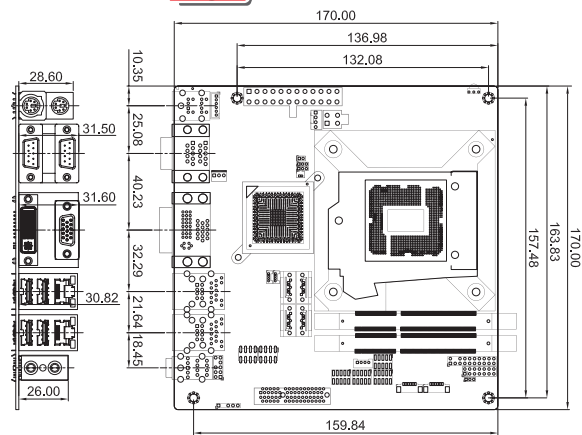
Compatible model list KINO-PVN-D4251/D5251, KINO-PV-D4252/D5252

Mini-ITX Dimensions (Unit: mm)

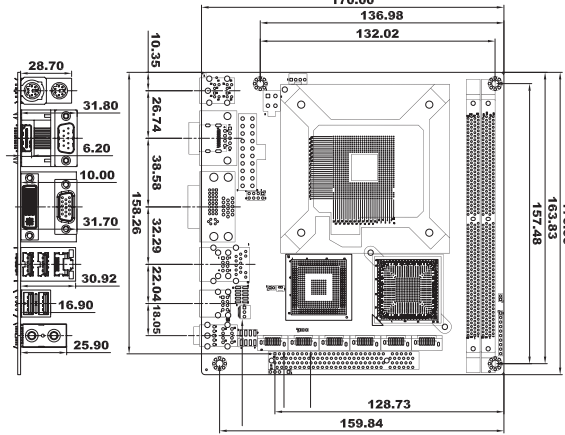
KINO-DH610 **New**

KINO-AH611 **New**

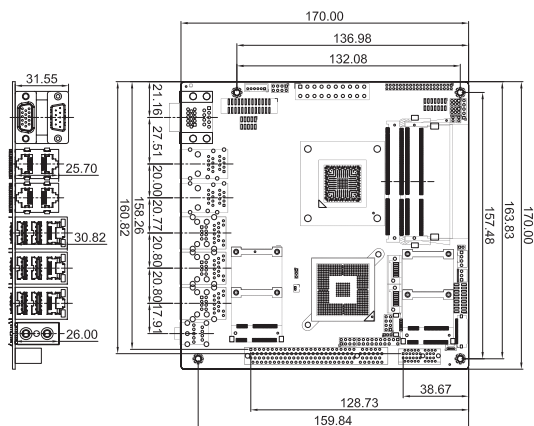
KINO-AH612 **New**



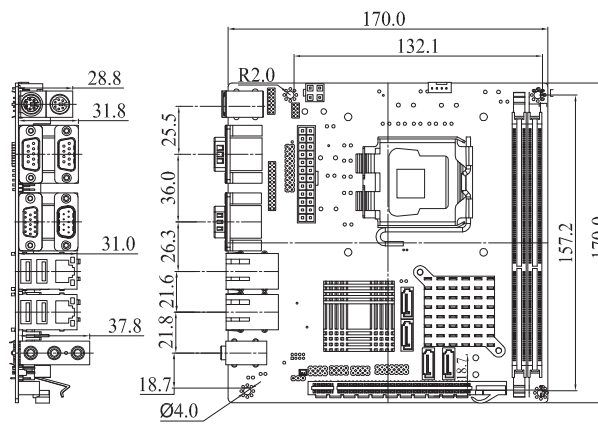
KINO-G45A



KINO-PV-D4253/D5253

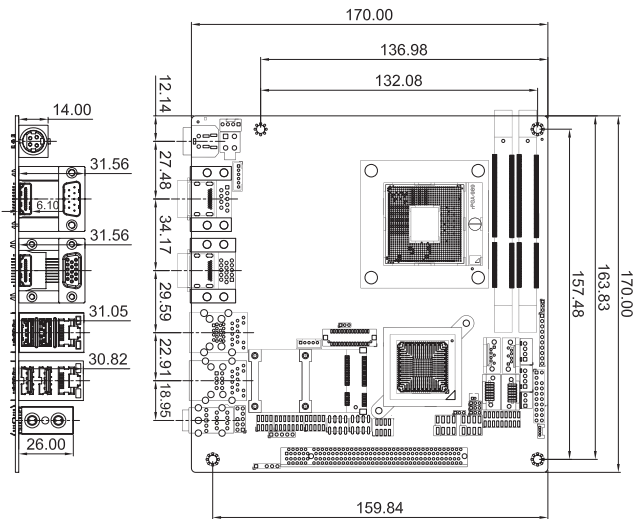


KINO-G410

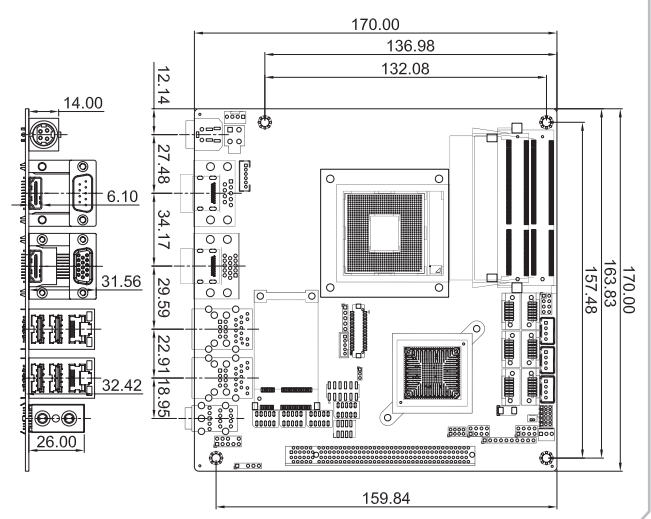


Mini-ITX Dimensions (Unit: mm)

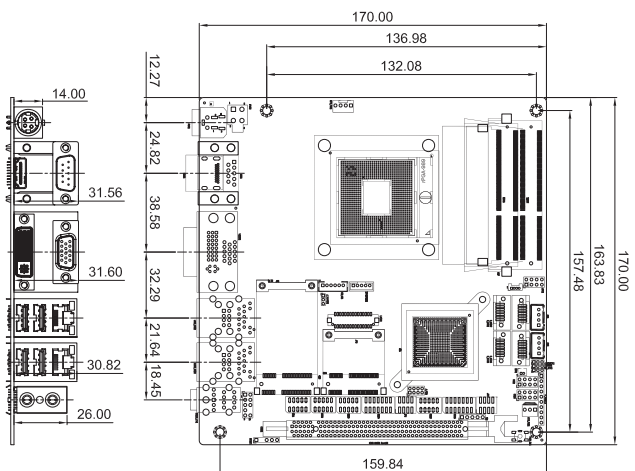
KINO-QM670



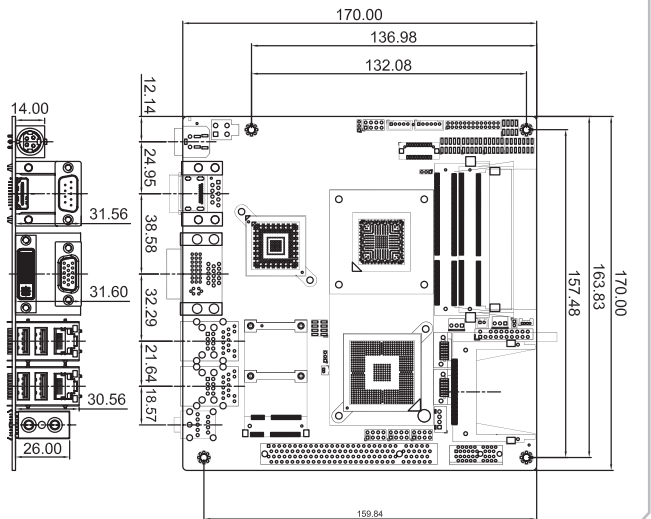
KINO-QM57A



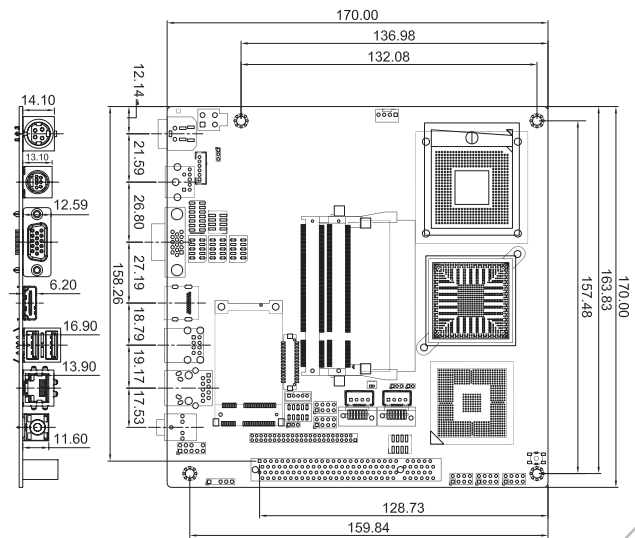
KINO-HM551



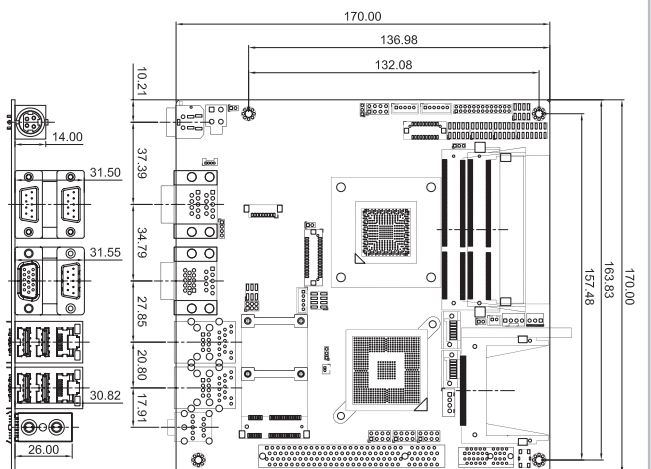
KINO-PVN-D4251/D5251



KINO-GM45A



KINO-PV-D4252/D5252



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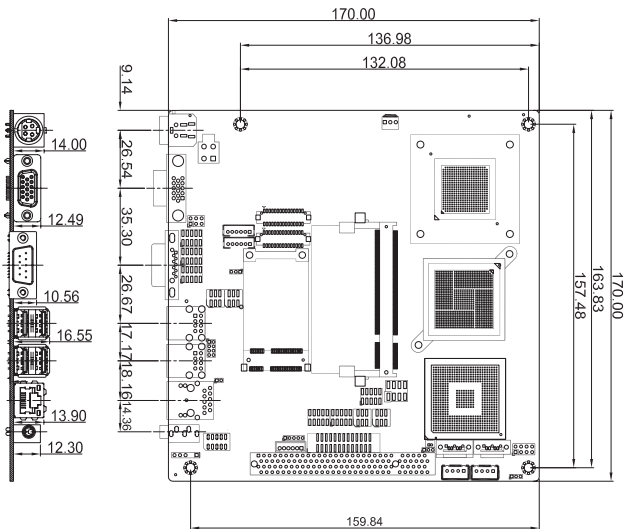
Power Supply/
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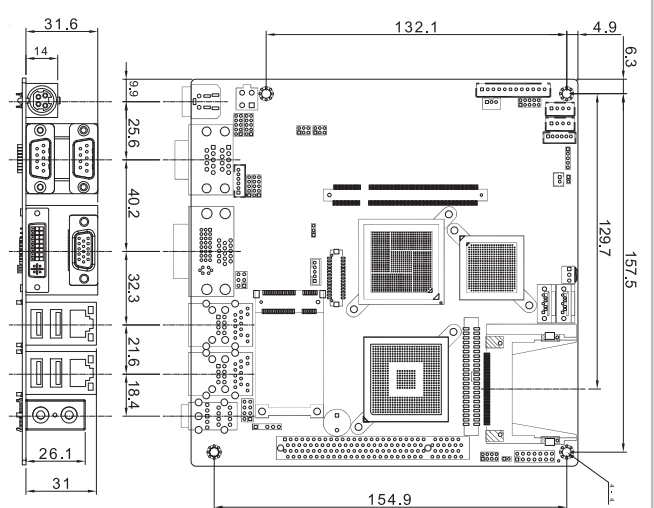
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Mini-ITX Dimensions (Unit: mm)

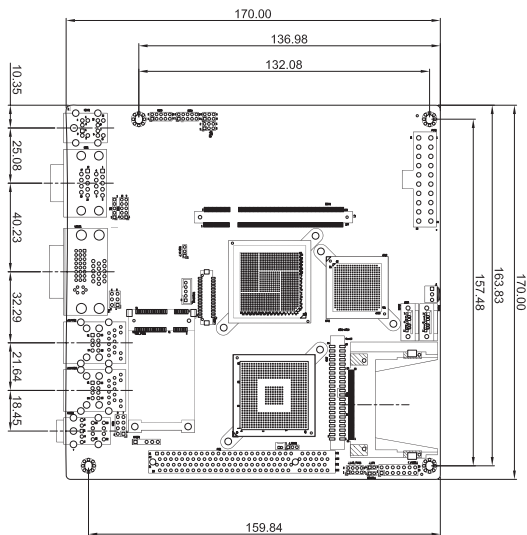
KINO-945GSE2



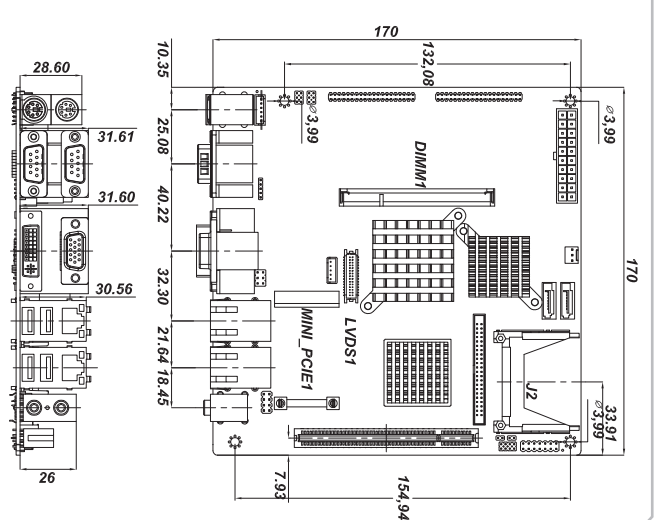
eKINO-945GSE-R11



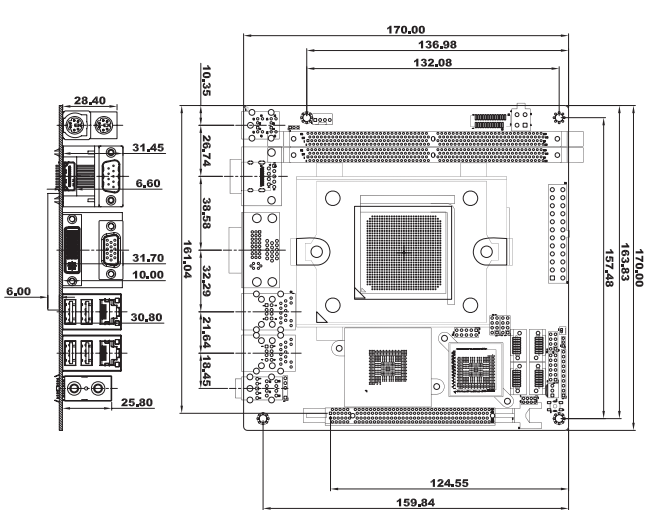
KINO-945GSE-R11



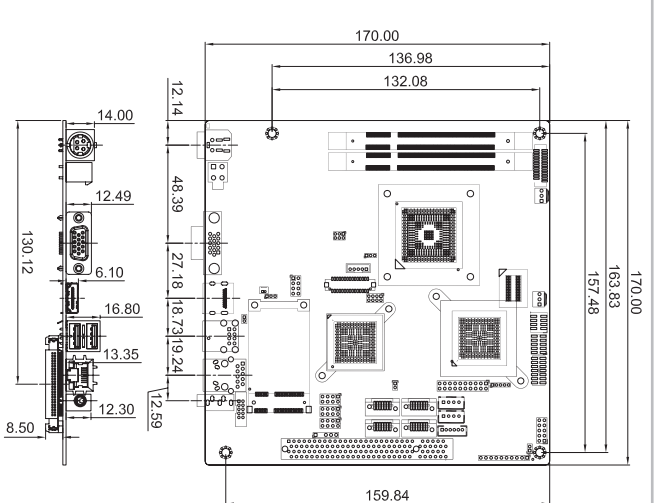
KINO-945GSE3



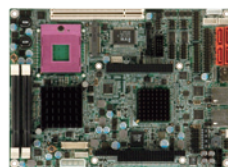
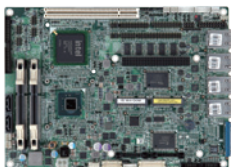
KINO-780AM



KINO-780EB

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5.25" NOVA Selection Guide



Model Name	NOVA-HM551-R11	NOVA-PV-D5251/D4251	NOVA-GM45A	NOVA-945GSE-R20
CPU Socket	Socket G1	On board	Socket P	On board
CPU Type	Intel® Core™ i7/i5/i3/Celeron®	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz	Intel® Core™2 Duo/Quad, Core™ Duo/Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz
FSB	NA	NA	667/800/1066 MHz	533 MHz
Chipset	Intel® HM55	ICH8M	Intel® GM45 + ICH9M	Intel® 945GSE + ICH7M
Memory	2 x 204-pin 800/1066 MHz 4 GB DDR3 SO-DIMM (system max. 8GB)	2 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 4GB)	2 x 200-pin 667/800 MHz 2 GB DDR2 SO-DIMM (system max. 4GB)	1 x 200-pin 400/533 MHz 1 GB DDR2 SO-DIMM (system max. 2GB)
Display Interface	Dual display supported 1 x VGA 2 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS
Ethernet	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Quad PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset
I/O Interface	4 x RS-232 2 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x 6-pin header for KB/MS	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS by pin header	4 x RS-232 2 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS by pinheader	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x KB/MS by pin header 1 x 20-pin LPC for TPM
Drive Interface	4 x SATA 3Gb/s	2 x SATA 3Gb/s 1 x CF Type II	4 x SATA 3Gb/s	2 x SATA 1 x IDE 1 x CF Type II
Audio	Realtek ALC662 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec
Digital I/O	8-bit digital I/O (4-bit input/4-bit output)	16-bit digital I/O (8-bit input/8-bit output)	16-bit digital I/O, 8-bit input/8-bit output	8-bit digital I/O (4-bit input/4-bit output)
Power Consumption	12V@4.67A (2.66GHz Intel® Core i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)	12V@1.46A (Intel® Atom™ D525 1.8GHz with two 1GB DDR3)	12V@5.76A (Intel® Core™2 Quad Q9100 2.26GHz FSB 1066MHz with two 800MHz 2GB DDR2 running 3D Mark2001SE)	5V@2.89A (Intel® Atom™ N270 with 1GB DDR2)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Environment	Temperature Range -10°C ~ 60°C Relative Humidity 5% ~ 95%, non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor Relative Humidity 5% ~ 95%, non-condensing	Temperature Range 0°C ~ 60°C (32°F~140°F) Relative Humidity 5% ~ 95% non-condensing	Temperature Range 0°C~60°C (32°F~140°F) Relative Humidity 5% ~ 95% non-condensing
Expansion Slots	1 x PCI x 16 1 x PCI-104 2 x PCIe Mini card slot	1 x PCI Slot 2 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card 1 x PC/104+ (ISA+PCI Bus)	1 x PCI 2 x PCIe Mini card 1 x PC/104+ (ISA+PCI Bus)
CPU Cooler	CF-989A-RS-R12	Heatsink	CF-479B-RS	Heatsink

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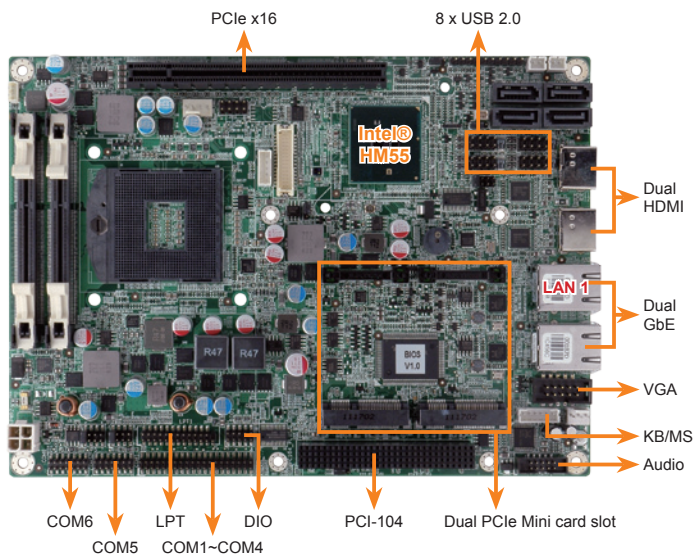
Power Supply/
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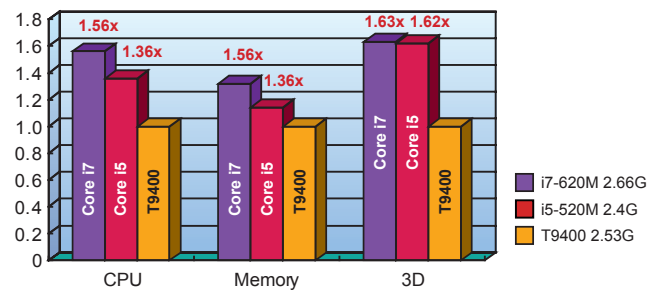
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NOVA-HM551-R11

5.25" SBC with Socket G1 Intel® 32nm/45nm Core™ i7/i5/i3 and Celeron® processor, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, PCIe x16, SATA 3Gb/s and Audio, RoHS



Performance



CPU cooler
P/N: CF-989A-RS-R12



Specifications

- ◆ CPU
Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 989A)
- ◆ PCH
Intel® HM55
- ◆ Memory
Two 204-pin 4GB (max.) 800/1066MHz dual-channel DDR3 SDRAM SO-DIMM supported (system max. 8GB)
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Gen 5.75 with 12 Execution Units DirectX* 10, OpenGL* 2.1
- ◆ Super I/O
Fintek F81865
- ◆ Display Interface
Dual display supported
1 x VGA
2 x HDMI
1 x 18/24-bit dual-channel LVDS
- ◆ LAN
Dual PCIe GbE controller by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ I/O Interface
4 x RS-232 2 x RS-232/422/485 with auto flow control
8 x USB 2.0 4 x SATA 3Gb/s with DC power output
1 x LPT 1 x 6-pin header for KB/MS
- ◆ Expansion
1 x PCIe x16 slot
1 x PCI-104
2 x PCIe Mini card slot (USB+PCIe signal)
- ◆ SMBus
1 x 4-pin wafer connector
- ◆ TPM (Optional)
On-board Infineon SLB9635TT1.2
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
1 x 4-pin for CPU fan connector
1 x 3-pin for chassis fan connector
- ◆ Audio
On-board Realtek ALC662 HD Audio codec
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
DC 12V only, AT/ATX power selected by jumper
- ◆ Power Consumption
12V@4.67A (2.66GHz Intel® Core™ i7 620M CPU with two 1333MHz 4GB DDR3 DIMM)
- ◆ Temperature
Operation: -10°C ~ 60°C
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
203mm x 146mm
- ◆ Weight
GW: 800g/NW: 300g

Features

1. 5.25" SBC with Socket G supports Intel® 32nm/45nm Core™ i7/i5/i3 and Celeron® processor
2. Dual-channel 800/1066 MHz DDR3 SDRAM supported (system max. 8 GB)
3. 18/24-bit dual-channel LVDS/analog CRT/dual HDMI output supported
4. Support PCIe x16, dual PCIe Mini card and PCI-104 device
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

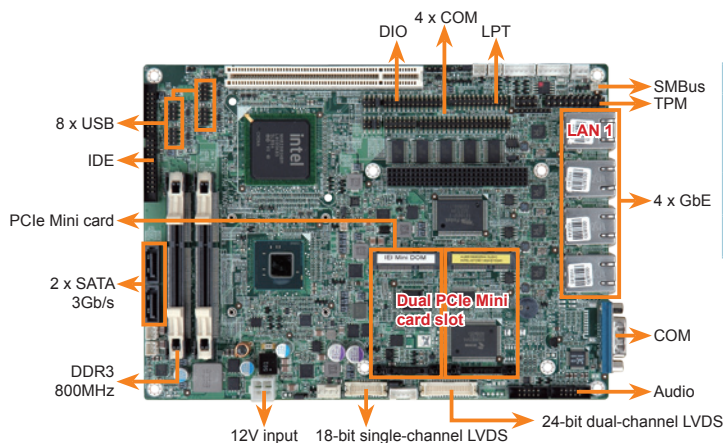
1 x NOVA-HM551 single board computer	
1 x Quad port RS-232 adapter cable (P/N: 32100-147900-RS)	
2 x SATA with 5V power cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x VGA cable (P/N: 32000-033800-RS)	1 x Utility CD
1 x USB cable (P/N: 32200-044300-RS)	1 x QIG

Ordering Information

Part No.	Description
NOVA-HM551-R11	5.25" SBC with Socket G1 support Intel® 32nm/45nm Core™ i7/i5/i3 and Celeron® processor, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 2.0, dual PCIe Mini, PCIe x16, SATA 3Gb/s and Audio, RoHS
NOVA-HM551T-R11	5.25" SBC with Socket G1 support Intel® 32nm/45nm Core™ i7/i5/i3 and Celeron® processor, VGA/Dual HDMI/LVDS, Dual PCIe GbE, USB 2.0, dual PCIe Mini, PCIe x16, SATA 3Gb/s and Audio, TPM, RoHS
19800-003100-200-RS	Dual USB cable with bracket
32205-000300-100-RS	RS-232/422/485 cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
CF-989B-RS	CPU cooler for mobile socket-G (PGA988) 50W processor, Aluminum, 60mm x 60mm x 27.6mm, RoHS
SAIDE-KIT01-R10	SATA to IDE/CF converter board
32200-015100-RS	LPT cable

NOVA-PV-D4251-D5251

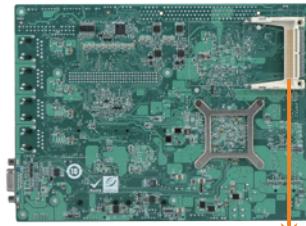
5.25" SBC, Intel® Atom™ D425/D525, DDR3, 18-bit+48-bit LVDS/VGA, Dual PCIe Mini, Quad PCIe GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS



Model Variations

Model	CPU	PCIe GbE	LVDS	COM Ports
NOVA-PV-D5251-G4	Intel® Atom™ D525	Four RJ-45	18-bit single-channel	1 x DB-9 RS-232 4 x Internal RS-232 1 x Internal RS-232/422/485
NOVA-PV-D4251-G2L2	Intel® Atom™ D425	Two RJ-45	18-bit single-channel & 24-bit dual-channel	4 x Internal RS-232
NOVA-PV-D5251-G2L2	Intel® Atom™ D525			1 x Internal RS-232/422/485

Solder side



CF Type II



Specifications

- ◆ CPU
 - 1.8GHz Intel® Atom™ D525 dual-core processor with 1MB L2 cache
 - 1.8GHz Intel® Atom™ D425 single-core processor with 512KB L2 cache
- ◆ System Chipset
 - Intel® ICH8M
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - Two 204-pin 800MHz DDR3 SDRAM SO-DIMMs supported (system max. 4GB) for D525/D425
- ◆ Ethernet
 - Four PCIe Realtek RTL8111E GbE controller, LAN1 with ASF 2.0 support
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
- ◆ I/O Interface
 - 4 x RS-232 for NOVA-PV-D5251/D4251-G2L2-R10
 - 5 x RS-232 for NOVA-PV-D5251-G4-R10
 - 1 x RS-232/422/485 with auto flow control
 - 8 x USB 2.0
 - 2 x SATA 3Gb/s
 - 1 x LPT
 - 1 x IDE
 - 1 x CF Type II
 - 1 x 6-pin header for KB/MS
- ◆ Expansion
 - 1 x PCI-104
 - 2 x PCIe Mini card slot
 - 1 x PCI
- ◆ Digital I/O
 - 16-bit digital I/O, 8-bit input/8-bit output
- ◆ Super IO
 - Fintek F81865
- ◆ Display Interface
 - Dual display supported
 - 1 x VGA
 - 1 x 18-bit single-channel LVDS
 - 1 x 24-bit dual-channel LVDS
- ◆ Audio
 - Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ TPM
 - 2 x 10-pin header
- ◆ SMBus
 - 1 x 4-pin wafer
- ◆ SATA Power
 - 2 x 2-pin wafer for SATA 5V power connector
- ◆ Fan Connector
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin system fan connector
- ◆ Power Supply
 - 12V only
- ◆ Power Consumption
 - 12V@1.46A (Intel® Atom™ D525 1.8GHz with DDR3 1GB*2)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
- ◆ Humidity
 - Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 203 mm x 146 mm
- ◆ Weight
 - GW: 1000g/NW: 400g

Features

1. 5.25" SBC supports Intel® Atom™ D525/D425 processor
2. 800/1066 MHz DDR3 supports up to 4GB
3. VGA/18-bit single-channel/24-bit dual-channel LVDS for dual independent display support
4. Quad PCIe Ethernet, two SATA 3Gb/s, and six RS-232 serial port connectors
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Packing List

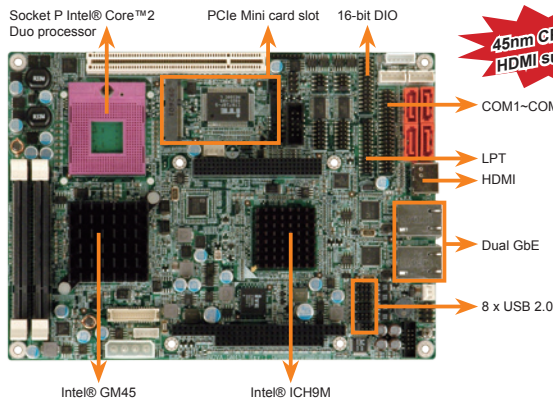
1 x NOVA-PV-D4251/D5251 single board computer	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x VGA cable (P/N: 32000-033804-RS)	
1 x Quad RS-232 cable (P/N: 32100-147900-RS)	
1 x SATA with Power cable kit (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
NOVA-PV-D5251-G4-R10	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18-bit LVDS/VGA, dual PCIe Mini, quad PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
NOVA-PV-D4251-G2L2-R10	5.25" SBC, Intel® Atom™ D425 single-core 1.8GHz, DDR3, 18+48-bit LVDS/VGA, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
NOVA-PV-D5251-G2L2-R10	5.25" SBC, Intel® Atom™ D525 dual-core 1.8GHz, DDR3, 18+48-bit LVDS/VGA, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA 3Gb/s, audio, RoHS
32200-000009-RS	44 pin 2.5" IDE cable
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
19FTS00032100-000001-RS	CPU fan
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

NOVA-GM45A

5.25" SBC with Socket P for Intel® 45nm mobile Core™2 Quad/Duo CPU, VGA/ HDMI/LVDS, Dual PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio



45nm CPU and HDMI support



Features

1. Socket P for Intel® 45nm mobile Core™2 Quad processor with 1066MHz FSB and DDR2 800MHz memory support.
2. Intel® GMA X4500 for DX10, Shader Model 4.0, high-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support
3. VGA, LVDS and HDMI display output interfaces supported
4. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Socket P Intel® 45nm mobile Core™2 Quad/Duo processor with a 1066/800MHz FSB
Socket P Intel® 45nm Pentium® M/Celeron® M processor with a 800/667MHz FSB
- ◆ FSB
667/800/1066MHz
- ◆ System Chipset
Intel® GM45+ICH9M
- ◆ Memory
Two 200-pin 800/667 MHz DDR2 SDRAM SO-DIMM supported (system max. 4GB)
- ◆ BIOS
AMI BIOS Label
- ◆ Graphic
Intel® GMA4500MHD
- ◆ Display Output
VGA integrated in Intel®GM45 support up to QXGA
1 x 18/24-bit dual-channel LVDS
1 x HDMI output resolution supports up to 1080p resolution
- ◆ LAN
Dual Realtek RTL8111CP PCIe GbE controller
- ◆ I/O Interface
4 x RS-232 2 x RS-232/422/485
8 x USB 2.0 1 x LPT
4 x SATA 3Gb/s
1 x KB/MS (by 6-pin header 2.00mm pitch)
- ◆ Digital I/O
16-bit digital I/O, 8-bit input/8-bit output
- ◆ Expansions
1 x PCI slot
1 x PC/104+ (ISA+PCI bus)
1 x PCIe Mini card slot (USB+PCIe signal)
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector
- ◆ Super I/O
ITE IT8718F
- ◆ Audio
Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power
+12V only, AT/ATX power support
- ◆ Power Consumption
12V@5.76A (2.26GHz Intel® Core2 Quad Q9100 with a 1066MHz FSB and two 2GB 800MHz DDR2 SO-DIMM running 3D Mark2001SE)
- ◆ Temperature
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions
203 mm x 146 mm
- ◆ Weight
GW: 850g/NW:290g

Packing List

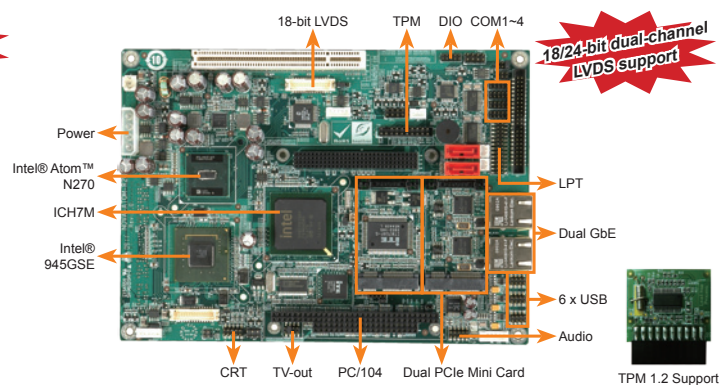
1 x NOVA-GM45A single board computer	
2 x SATA 5V power output cable (P/N: 32801-000100-100-RS)	
1 x Quad ports RS-232 adapter cable (P/N: 32100-147900-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Utility CD
1 x VGA cable (P/N: 32000-033800-RS)	1 x QIG

Ordering Information

Part No.	Description
NOVA-GM45A-R10	5.25" SBC with Socket P for Intel® 45nm mobile Core™2 Quad/Duo CPU, VGA/HDMI/LVDS, dual PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio
19800-003100-200-RS	Dual-port USB cable with bracket
32102-000100-200-RS	SATA power cable
32205-000300-100-RS	RS-232/422/485 cable
CF-479B-RS	CPU cooler (50mm x 50mm x 26mm, 50W)
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R30	PCIe Mini card wireless LAN module
WMUSB-V01-R20	USB Mini card wireless LAN module
32200-015100-RS	LPT cable

NOVA-945GSE-R20

5.25" SBC, Intel® Atom™ N270 1.6GHz, LVDS/VGA/HDTV, Dual PCIe Mini, Dual PCIe GbE, USB 2.0, SATA, RoHS



18/24-bit dual-channel LVDS support



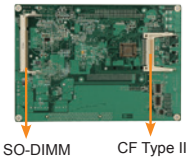
Features

1. 1.6GHz Intel® Atom™ N270 processor with fanless support
2. 400/533MHz DDR2 SO-DIMM memory support up to 2GB
3. Support dual PCIe Mini card/PCI slot for expansion
4. Dual LVDS support dual display output
5. CF socket for storage expansion
6. TPM support
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE+ICH7M
- ◆ BIOS
AMI BIOS
- ◆ Memory
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual Realtek PCIe RTL8111CP GbE LAN
- ◆ Graphic
Intel® Graphics Media Accelerator 950
- ◆ I/O Interface
3 x RS-232 1 x RS-232/422/485
6 x USB 2.0 2 x SATA with 5V output
1 x LPT 1 x IDE
1 x 6-pin header for KB/MS
- ◆ Expansion
1 x PC/104+ (ISA+PCI bus)
2 x PCIe Mini card
1 x PCI
- ◆ Digital I/O
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface
1x 5-pin infrared interface by pin header
- ◆ Super IO
ITE IT8718F
- ◆ Display Output
Analog CRT support CRT hotplug
HDTV supported by component interface
- ◆ Audio
AC'97 ALC655 codec
- ◆ SSD
CF Type II
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ TPM
1x 20-pin header
- ◆ Power Supply
5V only, 12V for LCD/system fan, AT/ATX power
- ◆ Power Consumption
5V@3.49A (Intel® Atom™ N270 with 512MB DDR2)
- ◆ Temperature
Operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 203mm x 146mm
- ◆ Weight: GW:1000g, NW:400g

Solder side



Packing List

1 x NOVA-945GSE-R20 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x VGA cable (P/N: 32000-033804-RS)
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
4 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x USB cable (P/N: 32001-008600-100-RS)	1 x QIG

Ordering Information

Part No.	Description
NOVA-945GSE-N270-R20	5.25" SBC, Intel® Atom™ N270 1.6GHz, 18-bit LVDS/VGA/HDTV, dual PCIe Mini, dual PCIe GbE, USB 2.0, SATA, RoHS
HDTVCAABLESET-01	HDTV cable set with S-Video, composite and component interfaces
32200-000009-RS	44-pin 2.5" IDE cable
32102-000100-200-RS	SATA power cable
32200-015100-RS	LPT cable
WMPCIE-V01-R30	802.11b/g PCIe Mini card wireless LAN module
WMUSB-V01-R20	802.11b/g USB embedded module
32200-833600-RS	RS-422/485 cable

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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ORing Network Communication

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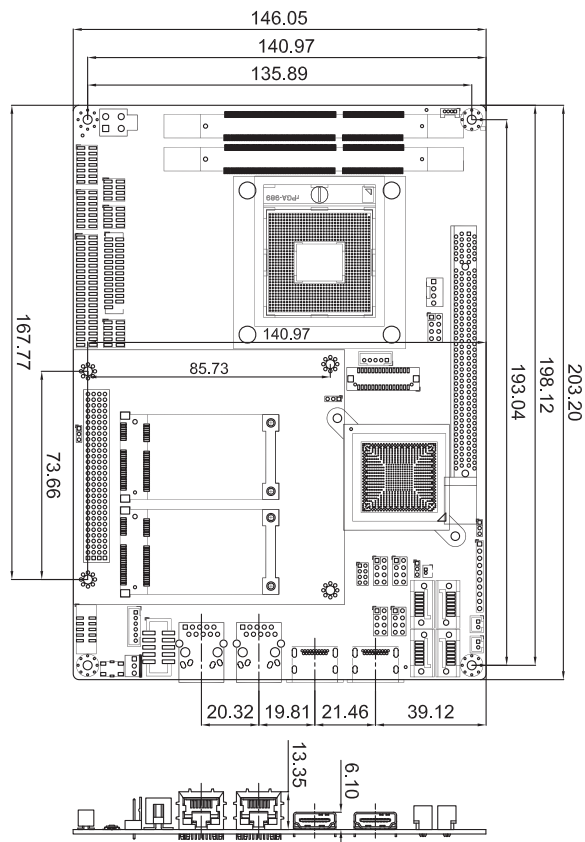
Power Supply/Peripherals

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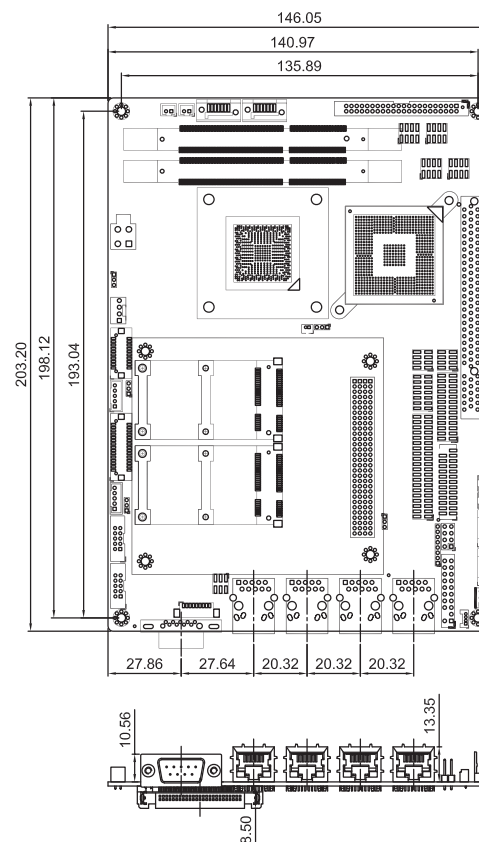
Panel Solutions Introduction

5.25" NOVA Dimensions (Unit: mm)

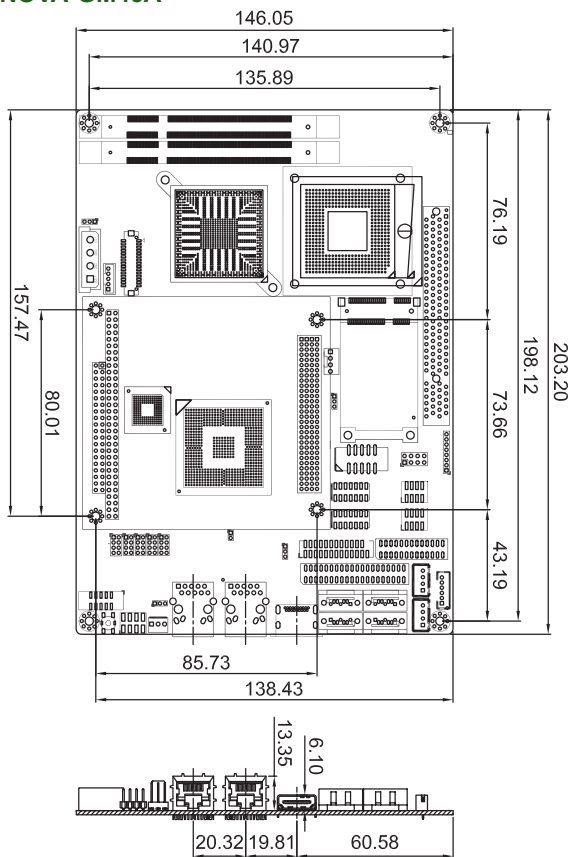
NOVA-HM551-R11



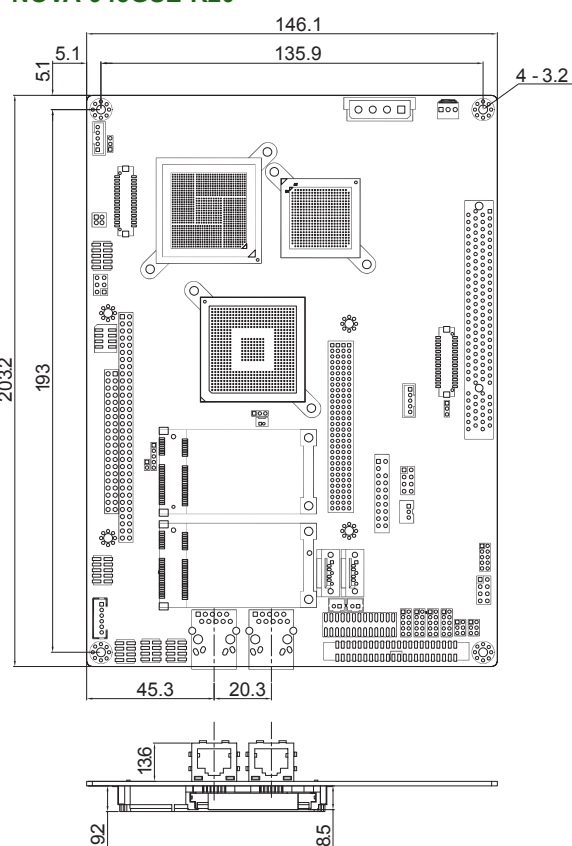
NOVA-PV-D4251/D5251



NOVA-GM45A



NOVA-945GSE-R20



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EPIC NANO Selection Guide

New**New**

Model Name	epic NANO-HM650	epic NANO-CV-D27001/N26001	epic NANO-HM551	epic NANO-QM57A
CPU Socket	Socket G2	On Board	Socket G1	Socket G1
CPU Type	2nd Generation Intel® Core™ i7/i5/i3/ Celeron®	Intel® Atom™ Processor D2700 2.13GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Core™ i7/i5/i3/Celeron®	Intel® Core™ i7/i5/i3/Celeron®
Chipset	Intel® HM65	NM10	Intel® HM55	Intel® QM57
Memory	1 x 204-pin 1066/1333 MHz 4 GB DDR3/ DDR3L (1.35V) SO-DIMM (system max. 4GB)	1 x 204-pin 1066 MHz 4 GB DDR3/ DDR3L (1.35V) SO-DIMM (system max. 4GB) for D2700 1 x 204-pin 800 MHz 2 GB DDR3/ DDR3L (1.35V) SO-DIMM (system max. 2GB) for N2600	1 x 204-pin 800/1066 MHz 4 GB DDR3 SO-DIMM (system max. 4GB)	1 x 204-pin 800/1066 MHz 4 GB DDR3 SO-DIMM (system max. 4GB)
Display Interface	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2700) 1 x 24bit Dual-channel LVDS 1 x HDMI	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS	Dual display supported 1 x DVI-I 1 x DVI-D
Ethernet	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Intel® 82577 GbE LAN controller with Intel® AMT 6.0 support
I/O Interface	2 x RS-232 1 x RS-422/485 8 x USB 2.0 1 x 6-pin header for KB/MS	5 x RS-232 1 x RS-422/485 6 x USB 2.0 2 x USB 2.0 2 x 10-pin header for TPM 1 x 6-pin header for KB/MS	3 x RS-232 1 x RS-232/422/485 1 x TTL COM 8 x USB 2.0 2 x 10-pin header for TPM 1 x 6-pin header for KB/MS	2 x RS-232 8 x USB 2.0 1 x 6-pin header for KB/MS
Drive Interface	2 x SATA 6Gb/s	2 x SATA 3Gb/s or 1 x SATA 3Gb/s + 1 x mSATA 1 x microSD	2 x SATA 3Gb/s	2 x SATA 3Gb/s
Audio	Realtek ALC662 HD Audio codec	Realtek ALC662 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec
Digital I/O	8-bit digital I/O	8-bit digital I/O	8-bit digital I/O (4-bit input/4-bit output)	N/A
Power Consumption	12V@4.85A (2.6GHz Intel® Core i5- 2540M with DDR3 1333MHz 4GB DIMM)	12V@2.1A (2.13GHz Intel® D2700 CPU with DDR3 1333MHz 2GB DIMM) 12V@1.72A (1.6GHz Intel® N2600 CPU with DDR3 1333MHz 2GB DIMM)	12V@3.8A (2.13GHz Intel® Core i3 330M CPU with DDR3 1066MHz 1GB DIMM)	12V@4.66A (2.66GHz Intel® Core i7 620M CPU with DDR3 1333MHz 2GB DIMM)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operation Environment	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slots	1 x PCIe Mini card slot 1 x PCI-104 slot	1 x PCIe Mini card slot 1 x PC-104+ slot (PCI + ISA)	1 x PCIe Mini card slot	1 x PCIe Mini card slot
CPU Cooler	CF-989A-RS-R12	Heatsink	CF-989A-RS-R12	CF-989A-RS-R12

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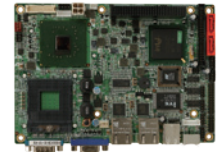
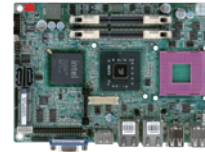
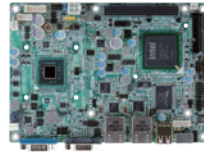
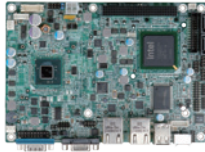
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Power Supply/
Peripherals

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Panel
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EPIC NANO Selection Guide



Model Name	epic NANO-PV-D4251/N4551/D5251	epic NANO-PV-D4252/N4552/D5252	epic NANO-PV-D510A	epic NANO-GM45A2	epic NANO-9452-R40
CPU Socket	On board	On board	On board	Socket P	Socket M
CPU Type	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor D510 1.66GHz	Intel® Core™2 Duo, Celeron® M	Intel® Core™2 Duo, Core™ Duo/Solo, Celeron® M
FSB	N/A	N/A	N/A	1066/800/667 MHz	533/667 MHz
Chipset	Intel® ICH8M	Intel® ICH8M	Intel® ICH8M	Intel® GM45 + ICH9M	Intel® 945GME + ICH7M
Memory	1 x 204-pin 800 MHz 4 GB DDR3 SO-DIMM (system max. 4GB) for D525/D425 1 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 2GB) for N455	1 x 204-pin 800 MHz 4 GB DDR3 SO-DIMM (system max. 4GB) for D525/D425 1 x 204-pin 800 MHz 2 GB DDR3 SO-DIMM (system max. 2GB) for N455	1 x 200-pin 800 MHz 2 GB DDR2 SO-DIMM (system max. 2GB)	2 x 204-pin 667/800/1066 MHz 4 GB DDR3 SO-DIMM (system max. 8GB)	1 x 200-pin 400/533/667 MHz 2 GB DDR2 SO-DIMM (system max. 2GB)
Display Interface	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA 1 x HDMI 1 x 18/24-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x 18/24-bit dual-channel LVDS 1 x HDTV
Ethernet	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Single PCIe GbE by Realtek RT8111E support ASF 2.0	Intel® GbE PHY 82567V Intel® PCIe GbE 82583V	Dual Realtek 8111CP PCIe GbE chipset	Dual PCIe GbE Realtek RTL8111E chipset
I/O Interface	4 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x 10-pin header for TPM 1 x LPT 1 x KB/MS	4 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS	4 x RS-232 4 x USB 2.0 2 x IEEE 1394a	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS
Drive Interface	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s	2 x SATA 1 x IDE 1 x CF Type II
Audio	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 with HD Audio codec	AC-KIT-888HD AC-KIT08R
Digital I/O	8-bit digital I/O (4-bit input/4-bit output)	8-bit digital I/O (4-bit input/4-bit output)	8-bit digital I/O (4-bit input/4-bit output)	N/A	8-bit digital I/O 4-bit input/4-bit output
Power Consumption	2.21A @ 12V (Intel® Atom™ D525 with 2GB 1066MHz DDR3) 2.11A @ 12V (Intel® Atom™ D425 with 2GB 1066MHz DDR3) 2.00A @ 12V (Intel® Atom™ N455 with 2GB 1066MHz DDR3)	2.16A@12V (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3) 2.08A@12V (Intel® Atom™ D425 with 2 GB 1066 MHz DDR3) 1.99A@12V (Intel® Atom™ N455 with 2 GB 1066 MHz DDR3)	12V@1.63A (Intel® Atom™ D510 1.66GHz CPU, 2GB 800MHz DDR2)	12V@3.74A (Intel® Core2 Duo T9600 2.8GHz, 2GB DDR2 667 MHz)	12V@2.99A (Intel® Core™2 Duo T2500 2.0GHz, 2GB 800 MHz DDR2)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor Relative Humidity: 5% ~ 95%, non-condensing		Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing
Expansion Slots	1 x PCI-104 slot 1 x PCIe Mini card Slot	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PCI-104 slot 1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PCI-104 1 x PCIe Mini card slot
CPU Cooler	Heatsink	Heatsink	Cooler	CF-479B-RS	CF-479B-RS

1

Industrial
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Solutions

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Video
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ORing
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Communication

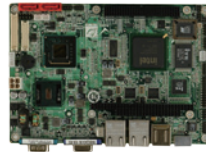
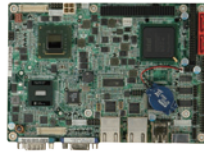
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Power Supply/
Peripherals

6

Panel
Solutions
Introduction

EPIC NANO Selection Guide



Model Name	epic NANO-945GSE-R20	epic NANO-945GSE2	epic NANO-945GSE3	epic NANO-LX-R12
CPU Socket	On board	On board	On board	On board
CPU Type	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	AMD Geode™ LX800
FSB	533 MHz	533 MHz	533 MHz	N/A
Chipset	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	AMD Geode™ LX800 + AMD CS5536
Memory	One 200-pin 2GB (max.) 400/533MHz DDR2 SO-DIMM	One 200-pin 2GB (max.) 400/533MHz DDR2 SO-DIMM	One 200-pin 2GB (max.) 400/533MHz DDR2 SO-DIMM	One 200-pin 1GB (max.) 333/400MHz DDR SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 24-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x HDTV	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL (LVDS to TTL)
Ethernet	Dual Realtek 8111E PCIe GbE chipset	Dual Realtek 8111CP PCIe GbE chipset	Dual Realtek 8111CP PCIe GbE chipset	Realtek RTL8100C 10/100Mbps Ethernet chipset
I/O Interface	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared interface 1 x PS/2 for KB/MS 2 x CAN Bus	6 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS 1 x Infrared interface
Drive Interface	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II
Audio	AC-KIT-888HD AC-KIT08R	Realtek ALC655 with AC'97 codec	AC-KIT-888HD AC-KIT08R	Realtek ALC203 with AC'97 codec
Digital I/O	8-bit digital I/O 4-bit input/4-bit output	8-bit digital I/O 4-bit input/4-bit output	8-bit digital I/O 4-bit input/4-bit output	8-bit digital I/O 4-bit input/4-bit output
Power consumption	12V@1.53A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	12V@1.6A (Intel® Atom™ N270 1.6GHz, 1 GB DDR2 533 MHz)	12V@1.49A (Intel® Atom™ N270 1.6GHz, 2 GB DDR2 533 MHz)	12V@ 0.92A (AMD LX800, 256 MB 400 MHz DDR)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset			
Operating Environment	Temperature Range: 0°C ~ 60°C (32°F~140°F) -20°C ~ 70°C (W) -40°C ~ 85°C (W2) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) -20°C ~ 70°C (W) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) -20°C ~ 70°C (W) Relative Humidity: 5% ~ 95% non- condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non- condensing
Expansion Slots	1 x PCI-104 1 x PCIe Mini card slot	1 x PC/104-Plus	1 x PC/104-Plus	1 x PC/104-Plus
Recommended CPU Cooler	Heatsink	Heatsink	Heatsink	Heatsink

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IEI EPIC

NANO

EPIC - NANO is to define a new industry open standard for small form factor embedded computer boards, called **Embedded Platform for Industrial Computing or EPIC**. The NANO single board computer series has multiple I/O expansion options. Its size is midway between the industry standard PC/104 module and EBX board. The boards in EPIC form factor support advanced processors plus complex I/O functions for applications involving data acquisition, video processing, telecommunications, networking, motion control plus the associated field wiring termination, I/O circuit protection, etc. The initial specifications define PC/104 expansions; however, future updates will embrace PCI Express and/or other expansion features. The EPIC standard provides a platform on which to build the next generation feature-rich embedded system for industrial, medical, military, transportation, and commercial applications.

■ EPIC History

A new platform for embedded single board computer with multiple I/O expansion options. Defined by five leading SBC manufacturers: Micro/sys, Octagon Systems, VersaLogic, WinSystems, Ampro Computers Specifications were released on March 23, 2004

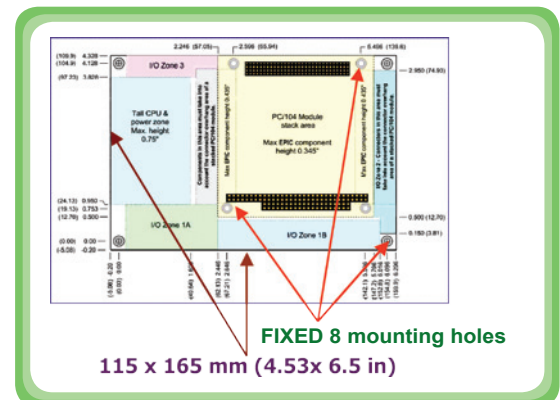
■ Key Features

- Fixed Dimensions and mounting holes
- Fixed I/O interface
- Fixed PCI-104, PC/104 location
- Fixed CPU location



■ Benefits from NANO Board

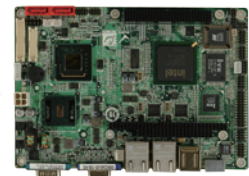
- Easy upgrading from same EPIC form factor CPU boards
- Complex I/O functions based on customers' requirements
- Small form factor
- Saves money and space with cables and shared chassis



■ Dual Display Solutions

Chipset	Intel® QM57	Intel® HM55	Intel® GM45	Intel® 945GME	Intel® D525/D425/N455	
Model Name	NANO-QM57A	NANO-HM551	NANO-GM45A2	NANO-9452	NANO-PV-D5251/D4251/N4551	NANO-PV-D5252/D4252/N4552
Dual Display	DVI + DVI DVI + VGA	VGA + LVDS VGA + HDMI LVDS + HDMI	VGA + LVDS VGA + HDMI LVDS + HDMI	VGA + LVDS VGA + HDTV LVDS + HDTV	VGA + LVDS	VGA + LVDS LVDS + LVDS

Chipset	Intel® 945GSE		
Model Name	NANO-945GSE3	NANO-945GSE2	NANO-945GSE
Dual Display	VGA + LVDS	VGA + LVDS VGA + TTL	VGA + LVDS VGA + HDTV LVDS + HDTV LVDS + LVDS



■ CPU Support

Chipset	Intel® QM57	Intel® HM55	Intel® GM45
Model Name	NANO-QM57A	NANO-HM551	NANO-GM45A2
Dual Core	Socket G1	Socket G1	Socket P 1066Mhz

Chipset	Intel® 945GME	Intel® D525	
Model Name	NANO-9452	NANO-PV-D5251	NANO-PV-D5252
Dual Core	Socket M 667MHz	On board	On board

Chipset	Intel® D425/N455	Intel® 945GSE	AMD LX800
Model Name	NANO-PV-D4251/N4551 NANO-PV-D4252/N4552	NANO-945GSE NANO-945GSE2 NANO-945GSE3	NANO-LX
Single Core	D425: 1.8GHz N455: 1.6GHz	N270: 1.6GHz	LX800

■ Embedded System Mapping



Embedded System	ECN-381B	ECN-581A	ECN-581A	EBC-2100	EBC-2101	EBC-2102
Model	NANO-GM45A2	NANO-QM57A	NANO-HM551 NANO-PV-D5251	NANO-LX	NANO-945GSE	NANO-PV-D5251

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Power Supply/
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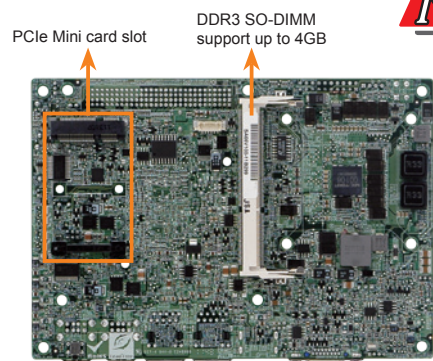
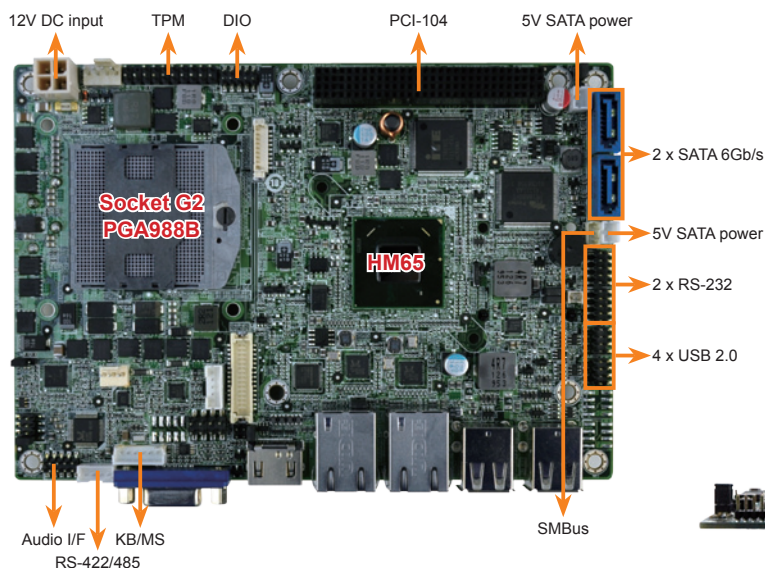
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Panel
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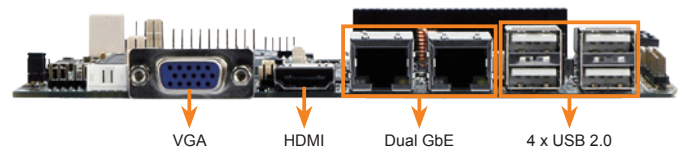
epic

NANO-HM650

EPIC SBC supports Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCI-104, SATA 6Gb/s and Audio

New

Solder side



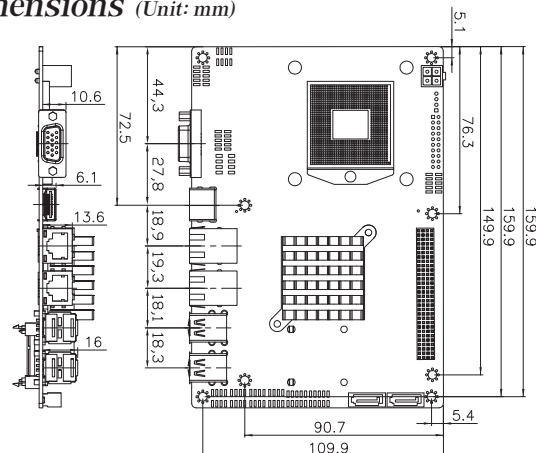
Specifications

- ◆ CPU
Socket G2 for 2nd generation Intel® Core™ i7/i5/i3 and Celeron® mobile processor
- ◆ PCH
Intel® HM65
- ◆ BIOS
UEFI BIOS
- ◆ Memory
One 204-pin 1066/1333MHz DDR3/SO-DIMMs supported (system max. 4GB)
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
1 x 18/24-bit dual-channel LVDS
- ◆ LAN
Dual PCIe LAN controller by Realtek RTL8111E with ASF 2.0 support
- ◆ Super I/O
Fintek F81866
- ◆ I/O Interface
1 x 6-pin header for KB/MS
2 x RS-232
1 x RS-422/485
2 x SATA 6Gb/s with 5V SATA power connector
8 x USB 2.0
- ◆ Audio
Realtek ALC662 HD codec on board
- ◆ Expansions
1 x PCIe Mini card slot
1 x PCI-104 slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Programmable GPIO
8-bit digital I/O
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector
- ◆ Power Supply
12V only, AT/ATX support
- ◆ Power Consumption
12V@4.85A (2.6GHz Intel® Core i5-2540M with 1333MHz 4GB DDR3 DIMM)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
115mm x 165mm
- ◆ Weight
GW: 850g/NW: 350g

Features

1. EPIC SBC with Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® processor
2. VGA 24-bit dual-channel LVDS/HDMI for dual display support
3. 1066/1333MHz DDR3/SDRAM supported (system max. 4GB)
4. Supports three COM, eight USB 2.0, two SATA 6Gb/s, PCI-104 and audio
5. TPM V1.2 hardware security function supported by TPM module
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x NANO-HM650 single board computer	
2 x SATA with power cable (P/N: 32801-000201-100-RS)	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG (Quick Installation Guide)

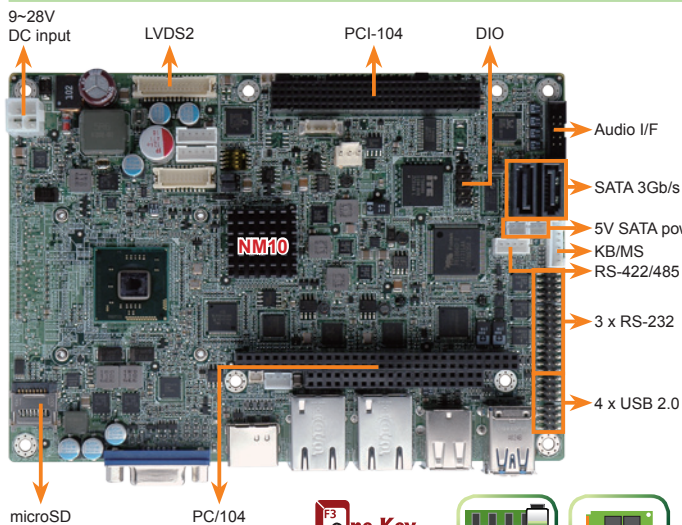
Ordering Information

Part No.	Description
NANO-HM650-R10	EPIC SBC supports Socket G2 for Intel® 2nd generation Core™ i7/i5/i3 and Celeron® CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCI-104, SATA 6Gb/s and Audio
32001-008600-100-RS	Dual port USB cable
32100-043403-RS	ATX Power cable
32205-003800-100-RS	RS-422/485 cable
32000-023800-RS	KB/MS cable
CF-989A-RS-R12	CPU cooler for mobile socket-G up to 55W processor, Copper, 60mm x 60mm x 27.6mm

epic

NANO-CV-D27001-N26001

EPIC SBC with Intel® D2700/N2600, DDR3, VGA/ HDMI/Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS



Specifications

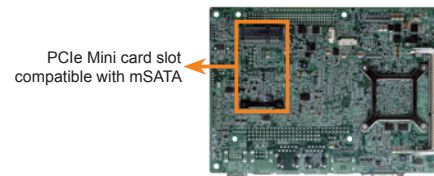
- ◆ CPU
2.13GHz Intel® Atom™ D2700 dual-core processor
1.6GHz Intel® Atom™ N2600 dual-core processor
- ◆ Chipset
Intel® NM10
- ◆ BIOS
UEFI BIOS
- ◆ Memory
1 x 1066MHz DDR3/DDR3L (1.35V) SO-DIMM up to 4GB up to 4GB (D2700)
1 x 800MHz DDR3/DDR3L (1.35V) SO-DIMM up to 2GB up to 2GB (N2600)
- ◆ Graphic
Intel® GMA 3650 with 640 MHz graphic core speed for D2700
Intel® GMA 3600 with 400 MHz graphic core speed for N2600
- ◆ Display Output
Dual display supported
1 x VGA
1 x HDMI
LVDS1 integrated in D2700/N2600
Single-channel 24-bit LVDS by D2700, resolution support up to 1440x900
Single-channel 18-bit LVDS by N2600, resolution support up to 1366x768
LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter
- ◆ LAN
Dual GbE by Realtek RTL8111E controllers
- ◆ I/O Interface
5 x RS-232 1 x RS-422/485
6 x USB 2.0 2 x USB 3.0
1 x 6-pin wafer for KB/MS 1 x microSD
2 x SATA 3Gb/s with 5V power connector
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ Expansions
1 x PCIe Mini card compatible with mSATA SSD device
1 x PC/104-Plus slot (PCI + ISA)
- ◆ SMBus
1 x 4-pin wafer connector
- ◆ TPM
1 x 20-pin LPC pin header
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Programmable GPIO
8-bit GPIO
- ◆ Fan Connector
1 x 3 pin CPU fan connector
1 x 3 pin system fan connector
- ◆ Power supply
Maximum input voltage range: 9V~28V
Recommended operating input voltage range: 12V~24V
One internal 4-pin (2x2) power connector
- ◆ Power Consumption
12V@2.1A (2.13GHz Intel® D2700 CPU with DDR3 1333MHz 2GB DIMM)
12V@1.72A (1.6GHz Intel® N2600 CPU with DDR3 1333MHz 2GB DIMM)
- ◆ Operating Temperature
-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor
-20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Weight
GW: 670g/NW: 350g



The built-in microSD card slot delivers the most reliable, outstanding performance and excellent endurance.



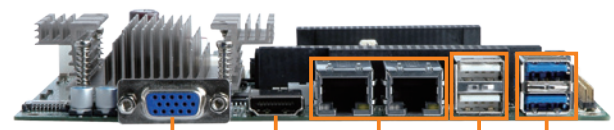
CPU Heatsink pre-installed on the board



PCIe Mini card slot compatible with mSATA

DDR3 SO-DIMM supports up to 4GB

Solder side



VGA

HDMI

Dual GbE

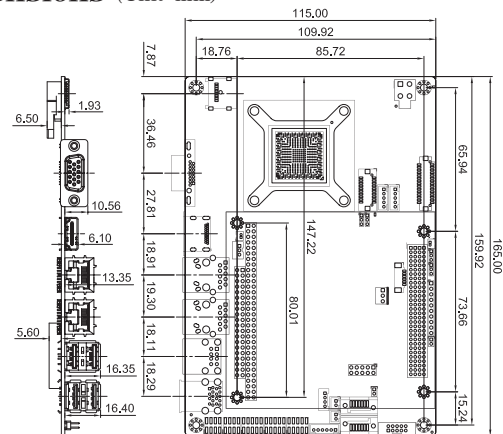
2 x USB 2.0

2 x USB 3.0

Features

1. EPIC form factor with Intel® D2700/n2600 dual-core processor supports DDR3/DDR3L (1.35V) memory
2. Wide range 9~28V DC input design
3. Flexible VGA, dual LVDS and HDMI with dual-display support
4. Support PC/104-Plus and PCIe Mini card slot compatible with mSATA SSD storage
5. Complete I/O with eight USB, one SATA 3Gb/s, six COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x NANO-CV-D27001/N26001 single board computer	
1 x KB/MS Y cable (P/N: 32000-133200-RS)	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x Power cable (P/N: 32100-087100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 19800-000049-RS)	1 x QIG (Quick Installation Guide)

Ordering Information

Part No.	Description
NANO-CV-D27001-R10	EPIC SBC with Intel® Atom™ D2700 2.13GHz, DDR3, VGA/ HDMI/Dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
NANO-CV-N26001-R10	EPIC SBC with Intel® Atom™ N2600 1.6GHz, DDR3, VGA/ HDMI/Dual LVDS, dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS
32205-003800-100-RS	RS-422/485 cable
32100-147900-RS	Quad RS-232 cable

1

Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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oRing Network Communication

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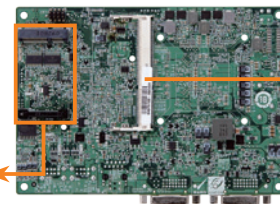
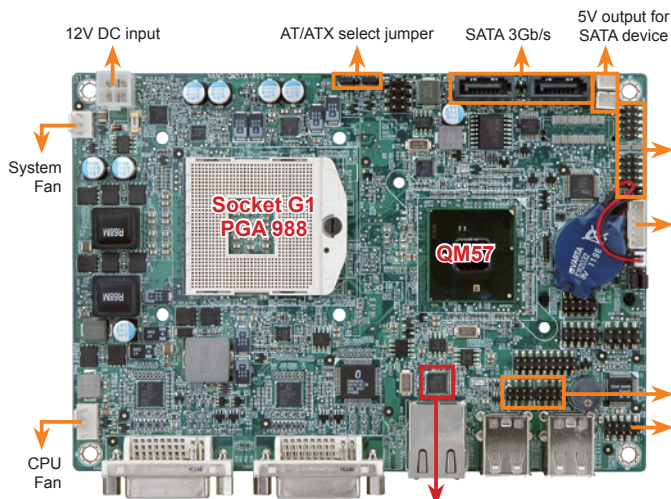
Power Supply/ Peripherals

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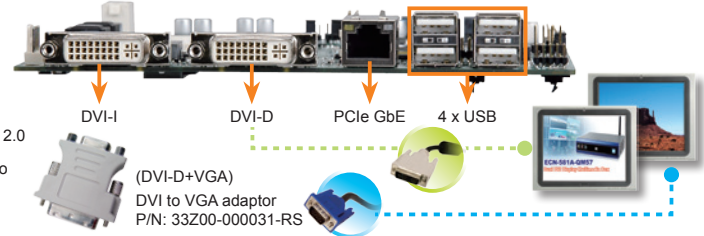
Panel Solutions Introduction

epic NANO-QM57A

EPIC SBC with Intel® Core™ i7/i5/i3 and Celeron® mobile processor, Dual DVI, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s, Audio and RoHS



Solder side



Intel® 82577LM PCIe GbE for Intel® AMT 6.0 support



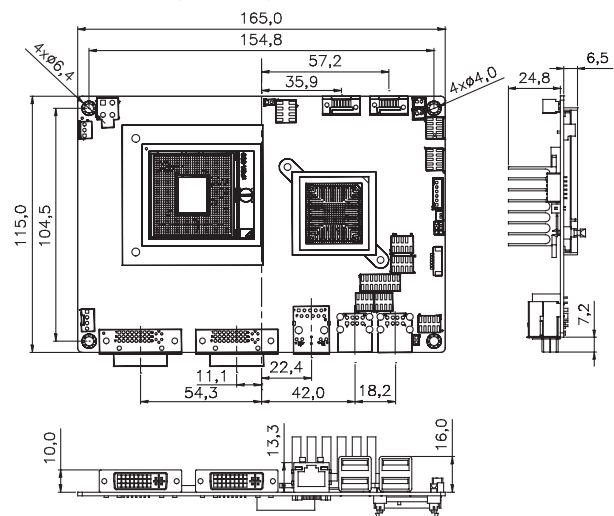
Specifications

- ◆ CPU
Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH
Intel® QM57
- ◆ BIOS
UEFI BIOS
- ◆ Memory
One 204-pin 800/1066MHz DDR3 SDRAM SO-DIMM up to 4GB
- ◆ Graphic
Gen 5.75 with 12 Execution Units DirectX* 10, OpenGL* 2.1
Support MPEG2, WMV9/VC-1, AVC and Hardware acceleration
- ◆ Display Output
Dual display supported
1 x DVI-D
1 x DVI-I
- ◆ Ethernet Chipset
One Intel® 82577LM PCIe GbE PHY with Intel® AMT 6.0 support
- ◆ Super I/O
Fintek F81801U
- ◆ Audio
Realtek ALC888 HD Audio codec
- ◆ I/O Interface
8 x USB 2.0
2 x RS-232
2 x SATA 3Gb/s with RAID 0, 1 support
1 x 6-pin header for KB/MS
- ◆ Expansion
1 x PCIe Mini card slot
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Fan Connector
1 x 4-pin CPU fan connector
1 x 3-pin system fan connector
- ◆ Power Supply
12V only, AT/ATX support by jumper
- ◆ Power Consumption
12V@4.66A (Intel® Core™ i7 620M 2.66G, DDR3 2GB/1333Mhz)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
115mm x 165mm
- ◆ Weight
GW:850g/NW:350g

Features

1. EPIC SBC supports Socket G1 Intel® Core i7/i5/i3 and Celeron® mobile processor
2. Dual independent display supported by DVI+DVI or DVI+VGA
3. One 800/1066MHz DDR3 SO-DIMM slot supports up to 4GB
4. Support dual SATA 3Gb/s with RAID 1, 0 function, two serial ports and eight USB 2.0 ports
5. One Intel® 82577LM GbE PHY with Intel® AMT 6.0 support. iEZman tool is bundled for remote control under Windows® environment
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

1 x NANO-QM57A single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x DVI-I to VGA adapter (P/N: 33Z00-000031-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-QM57A-R10	EPIC SBC supports Socket G for Intel® Core™ i7/i5/i3 and Celeron® mobile CPU, Dual DVI, PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS
32001-008600-100-RS	Dual port USB cable
32000-023800-RS	KB/MS cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS

1
Industrial
Computing
Solutions

2
Video
Capture
Solutions

3
Embedded
Computing
Solutions

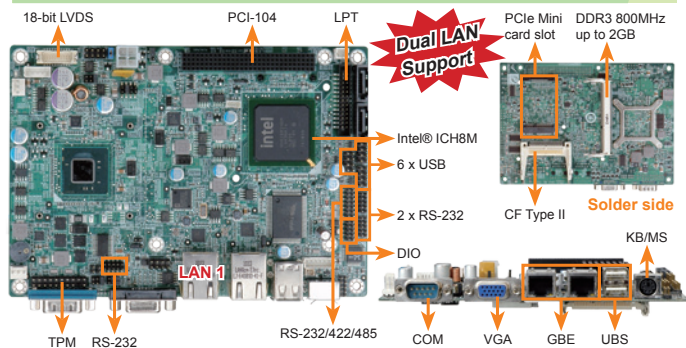
4
ORing
Network
Communication

5
Power Supply/
Peripherals

6
Panel
Solutions
Introduction

epic NANO-PV-D4251/N4551/D5251

EPIC SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, Audio and SATA 3Gb/s, RoHS



TPM 1.2 Support

Features

1. EPIC SBC with Intel® Atom™ D525/D425/N455 processor
2. 800MHz DDR3 SDRAM supported (system max. 2 GB)
3. Support VGA and 18-bit single-channel LVDS with dual display
4. Support PCI-104 and PCIe Mini card slot
5. Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
6. TPM V1.2 hardware security function support by TPM module
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
 - Graphic core speed 200MHz for N455
- ◆ Display
 - Analog CRT with up to 2048x1536 resolution for D525/D425, 1400x1050 for N455
 - Support CRT hotplug
 - 18-bit single-channel LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Super IO: Fintek F81865
- ◆ LAN
 - Dual PCIe GbE by Realtek RT8111E, LAN1 with ASF 2.0 support
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ TPM: 1 x 20-pin LPC pin header
- ◆ I/O Interface
 - 4 x RS-232 2 x SATA 3Gb/s
 - 1 x LPT 8 x USB 2.0
 - 2 x KB/MS 1 x CF Type II socket
 - 1 x RS-232/422/485 (COM3) with auto flow control
- ◆ Expansion
 - 1 x PCI-104 slot
 - 1 x PCIe Mini card slot
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
 - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption
 - 2.21A @ 12V (Intel® Atom™ D525 with 2GB 1066MHz DDR3)
 - 2.11A @ 12V (Intel® Atom™ D425 with 2GB 1066MHz DDR3)
 - 2.00A @ 12V (Intel® Atom™ N455 with 2GB 1066MHz DDR3)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 670g/NW: 350g

Packing List

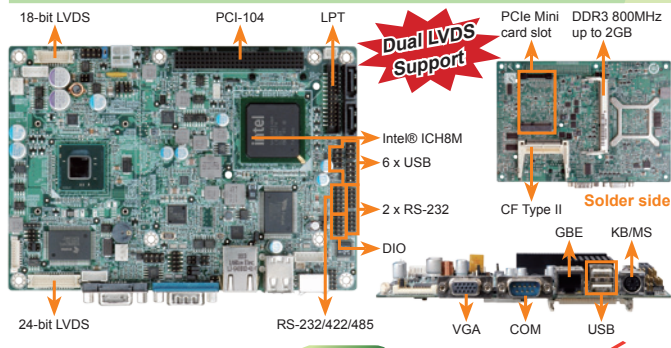
1 x NANO-PV-D4251/N4551/D5251 single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Mini jumper pack
1 x Audio cable (P/N: 32000-072100-RS)	1 x Utility CD
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-PV-D5251-R10	EPIC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
NANO-PV-D4251-R10	EPIC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
NANO-PV-N4551-R10	EPIC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, Dual GbE, USB 2.0, CF Type II, audio and SATA 3Gb/s, RoHS
32200-015100-RS	LPT cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
19FTS00032100-000001-RS	CPU fan
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

epic NANO-PV-D4252/N4552/D5252

EPIC SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s



Features

1. EPIC SBC with Intel® Atom™ D525/D425/N455 processor and DDR3 solution
2. 12V only single voltage design for AT/ATX mode
3. Support dual LVDS
4. Support PCI-104 and PCIe Mini card slot
5. Support five COM, eight USB, two SATA 3Gb/s and one CF Type II socket
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
 - Graphic core speed 200MHz for N455
- ◆ Display Out
 - Analog CRT with up to 2048x1536 resolution, support CRT hotplug
 - 18-bit single-channel LVDS, resolution support up to 1366x768
 - 18/24-bit single/dual-channel LVDS by Novatek NT68667UFG resolution support up to 800x600, 1024x768, 1280x1024, 1366 x768, 1920x1080
- ◆ I/O Interface
 - 4 x RS-232 8 x USB 2.0
 - 1 x LPT 2 x KB/MS
 - 1 x CF Type II 2 x SATA 3Gb/s
 - 1 x RS-232/422/485 (COM3) with auto flow control
- ◆ Super IO: Fintek F81865
- ◆ Audio: Realtek ALC888 HD codec
- ◆ LAN
 - Realtek RTL8111E PCIe GbE controller with ASF 2.0 support
- ◆ Expansion
 - 1 x PCI-104 slot
 - 1 x PCIe Mini card slot
- ◆ TPM (Optional)
 - On-board Infineon SLB9635TT1.2
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Fan Connector
 - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption
 - 2.16A @ 12V (Intel® Atom™ D525 with 2GB 1066 MHz DDR3)
 - 2.08A @ 12V (Intel® Atom™ D425 with 2GB 1066 MHz DDR3)
 - 1.99A @ 12V (Intel® Atom™ N455 with 2GB 1066 MHz DDR3)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 650g/NW: 340g

Packing List

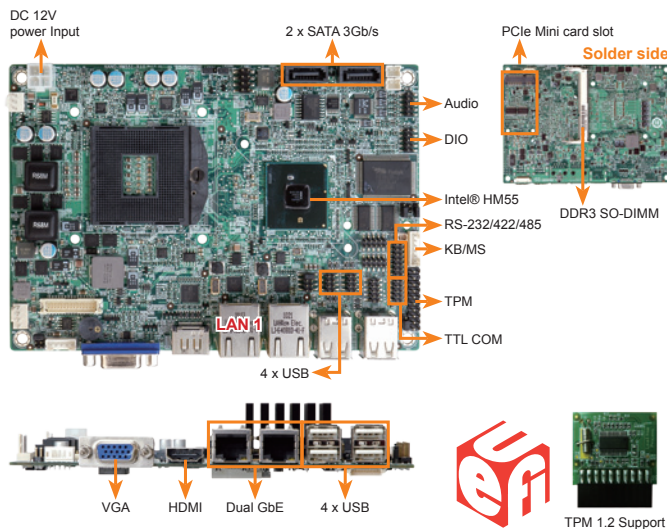
1 x NANO-PV-D4252/N4552/D5252 single board computer	
1 x SATA with 5V output cable (P/N: 32801000201-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x One Key Recovery CD
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD 1 x QIG

Ordering Information

Part No.	Description
NANO-PV-D5252-R10	EPIC SBC with Intel® Atom™ D525 1.8GHz/1MB L2, VGA/ Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-D5252T-R10	EPIC SBC with Intel® Atom™ D525 1.8GHz/1MB L2, VGA/ Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
NANO-PV-D4252-R10	EPIC SBC with Intel® Atom™ D425 1.8GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-D4252T-R10	EPIC SBC with Intel® Atom™ D425 1.8GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
NANO-PV-N4552-R10	EPIC SBC with Intel® Atom™ N455 1.66GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s
NANO-PV-N4552T-R10	EPIC SBC with Intel® Atom™ N455 1.66GHz/512KB L2, VGA/Dual LVDS, PCIe GbE, CF Type II, SATA 3Gb/s, TPM
32200-015100-RS	LPT cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
19FTS00032100-000001-RS	CPU fan

epic NANO-HM551

EPIC SBC supports Socket G1 for Intel® Core™ i7/i5/i3/Celeron® CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS



TPM 1.2 Support

Features

1. EPIC SBC with Socket G1 for Intel® Core™ i7/i5/i3 and Celeron® processor
2. VGA/24-bit dual-channel LVDS/HDMI for dual display support
3. DDR3 800/1066MHz SDRAM supported (system max. 4 GB)
4. Support five COM, eight USB 2.0, two SATA and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Socket G1 for Intel® mobile Core™ i7/i5/i3 and Celeron® processor (Socket 988)
- ◆ PCH: Intel® HM55
- ◆ BIOS: UEFI BIOS
- ◆ Memory: One 204-pin 800/1066MHz DDR3 SDRAM SO-DIMM up to 4GB
- ◆ Graphic: Gen 5.75 with 12 Execution Units DirectX® 2.1, OpenGL® 2.1
- ◆ Display Interface: Dual display supported
 - 1 x VGA
 - 1 x HDMI
 - 1 x 18/24-bit dual-channel LVDS
- ◆ LAN: Dual PCIe LAN controller by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ Expansion: 1 x PCIe Mini card slot
- ◆ I/O Interface:
 - 8 x USB 2.0
 - 3 x RS-232
 - 1 x RS-232/422/485 (COM3) with auto flow control
 - 2 x SATA 3Gb/s with SATA power connector
 - Audio: Realtek ALC888 HD Audio codec
 - Super I/O: Fintek F81865
 - TPM: 2 x 10-pin header
 - Watchdog Timer: Software programmable supports 1~255 sec. system reset
 - Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
 - Fan Connector: 1 x 4-pin CPU fan connector, 1 x 3-pin system fan connector
 - Power supply: 12V only, AT/ATX support
 - Power Consumption: 12W@3.8A (Intel® Core™ i3 330M 2.13GHz CPU with DDR3 1066MHz 1GB)
 - Operating Temperature: -10°C ~ 60°C
 - Operating Humidity: 5% ~ 95%, non-condensing
 - Dimensions: 115mm x 165mm
 - Weight: GW:850g/NW:350g
- ◆ 1 x 6-pin header for KB/MS
- ◆ 1 x TTL COM (COM5)

Packing List

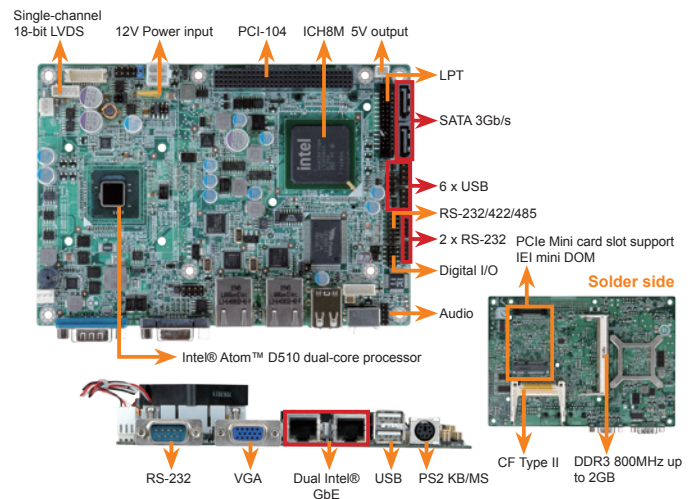
1 x NANO-HM551 single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA with power cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
NANO-HM551-R10	EPIC SBC supports Socket G1 for Intel® Core™ i7 CPU, VGA/HDMI, Dual PCIe GbE, USB 2.0, PCIe Mini, SATA 3Gb/s and Audio, RoHS
32001-008600-100-RS	Dual port USB cable
32100-043403-RS	ATX power cable
CF-989A-RS-R12	CPU cooler for mobile socket-G (PGA988) up to 55W processor, Copper, 60mm x 60mm x 27.6mm, RoHS
CF-989B-RS	CPU cooler for mobile socket-G (PGA988) 50W processor, Aluminum, 60mm x 60mm x 27.6mm, RoHS
32000-023800-RS	KB/MS cable
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

epic NANO-PV-D510A

EPIC SBC with Intel® Atom™ D510 dual-core processor



Features

1. EPIC SBC with Intel® Atom™ D510 dual-core processor
2. 12V single voltage design for AT/ATX support
3. Dual independence display supported by VGA and single-channel 18-bit LVDS
4. Support PCI-104 and PCIe Mini card slot
5. Support four COM, eight USB, two SATA 3Gb/s and one CF Type II socket
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU: Intel® Atom™ D510 dual-core processor, 1.66GHz/2x 512KB L2 Cache
- ◆ Chipset: Intel® ICH8M chipset
- ◆ BIOS: AMI BIOS
- ◆ System Memory: One 200-pin 800/667MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet Chipset: Dual Intel® GbE chipset, GbE PHY 82567V + PCIe GbE 82583V chipset
- ◆ I/O Interface:
 - 8 x USB 2.0
 - 1 x LPT
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 1 x PS2 KB/MS
 - 1 x CF Type II
 - 2 x SATA 3Gb/s
- ◆ Expansion: 1 x PCI-104 slot, 1 x PCIe Mini card slot
- ◆ Super I/O: Fintek F81865
- ◆ Digital I/O: 8-bit digital I/O (4-bit input/4-bit output)
- ◆ Audio: Realtek ALC888 HD codec
- ◆ Display Output: Intel® Graphics Media Accelerator 3150 integrated in Intel® Atom™ D510 processor, DirectX® 9 compliant/Pixel Shader® v2.0, MPEG2 Hardware Acceleration, 18-bit Single-Channel LVDS supporting resolution up to 1366 x 768, 18bpp, Analog CRT display output resolution up to 2048 x 1536@60Hz
- ◆ WDT: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Power Consumption: 12W@1.63A (Intel® Atom™ D510 1.66GHz CPU, 2GB 800MHz DDR2)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 165mm x 115mm
- ◆ Weight: GW: 650g/NW: 280g

Packing List

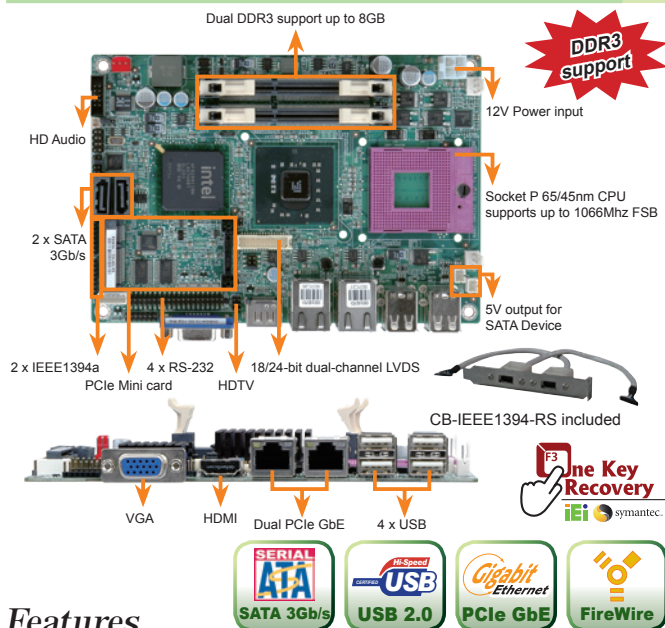
1 x NANO-PV-D510A single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x CPU cooler (Pre-Installed)	1 x Utility CD
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-PV-D510A-R10	EPIC SBC with Intel® dual-core Atom™ D510 1.66GHz/1MB L2, VGA/LVDS, dual GbE, USB 2.0, CF Type II, Audio and SATA 3Gb/s, RoHS
32001-002700-200-RS	Dual port USB cable
32200-015100-RS	LPT Cable
32801-000703-200-RS	SATA cable
32102-000100-200-RS	SATA power cable
32205-000300-100-RS	RS-232/422/485 cable

epic NANO-GM45A2

EPIC SBC supports Intel® 45nm mobile Core™2 Duo processor with Intel® GM45 & ICH9M platform, DDR3/HDMI/IEEE1394



Features

1. Socket P Intel® 45nm mobile Core™2 Duo processor with up to 1066MHz FSB
2. High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR3 1066/800MHz dual-channel DDR3 supported (system max. 8 GB)
4. 18/24-bit dual-channel LVDS/Analog CRT/HDTV output/HDMI supported
5. Support four COM, four USB, two SATA 3Gb/s, two IEEE 1394a and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Socket P Intel® Core™ Duo processor with a 1066/800MHz FSB
Socket P Intel® Celeron® M processor with a 667/800 MHz FSB
- ◆ System Chipset
Intel® GM45/ICH9M
- ◆ BIOS
AMI BIOS
- ◆ System Memory
Two 204-pin 1066/800/667 MHz DDR3 SDRAM SO-DIMM supported (system max. 8GB)
Support DDR3 at 667MHz when FSB at 667MHz only
- ◆ Ethernet Chipset
Dual Realtek 8111CP GbE chipset
- ◆ I/O Interface
4 x USB 2.0 2 x SATA 3Gb/s 4 x RS-232
2 x IEEE 1394a ports up to 400Mbps data transfer by VIA VT6315N
- ◆ Expansion
PCIe Mini card
- ◆ Audio
Realtek ALC888 HD Audio
- ◆ Display Interface
Intel® Gen 5.0 integrated graphics engine with Mobile Intel® GMA 4500MHD
High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC)
Microsoft DirectX®10 support
Analog CRT resolution up to 2048x1536
18/24-bit dual-channel LVDS resolution up to 1920x1200
HDTV-out resolution up to 1920x1080i by component interface
HDMI port supports up to 1080i/p
- ◆ WDT
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
12V only, AT/ATX supported
- ◆ Power Consumption
12V@3.06A (Intel® Core™2 Duo T9400 2.53GHz, 1GB DDR3 1066 MHz)
- ◆ Operating Temperature: -10°C ~ 60°C
- ◆ Operating Humidity: 5% ~ 95 non-condensing
- ◆ Dimensions
165 mm x 115 mm
- ◆ Weight
GW: 700g NW 350g

Packing List

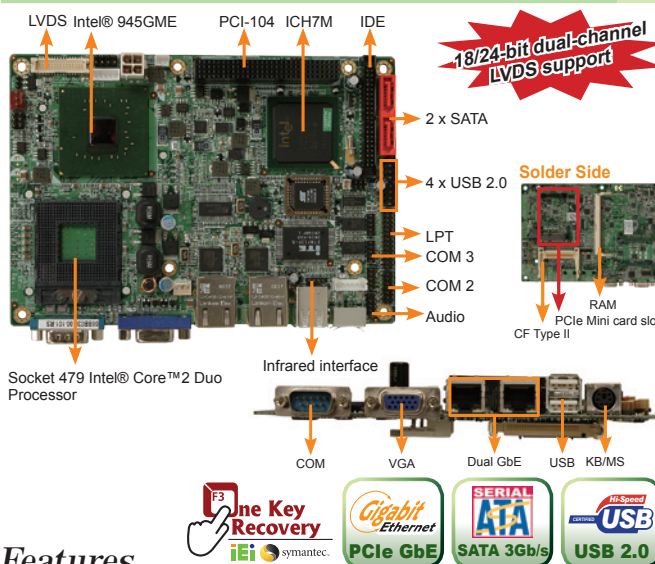
1 x NANO-GM45A2 single board computer	
1 x Dual port IEEE1394 cable (P/N: CB-IEEE1394-RS)	
1 x Quad RS-232 cable (P/N: 32100-147900-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-GM45A2-R10	EPIC SBC supports Intel® 45nm mobile Core™2 Duo processor with Intel® GM45 & ICH9M platform, DDR3, dual GbE, LVDS/ CRT/HDTV-out, SATA 3Gb/s, USB 2.0
CF-479B-RS	CPU cooler
32010-000400-100-RS	HDTV cable set with S-Video, composite and component interfaces
32102-000100-200-RS	SATA power cable
32000-114001-RS	SATA 5V power output cable kit for NANO series, SATA cable 20cm, power cable 20cm
32100-043403-RS	ATX power cable

epic NANO-9452-R40

EPIC SBC with Intel® Core™2 Duo/Core™ Duo/Solo processor, SATA, Dual PCIe GbE, CF Type II, IDE, USB 2.0 & audio



Features

1. Support Intel® Core™2 Duo, Core™ Duo/Solo processor with 667 MHz FSB
2. VGA integrated in Intel® 945GME supports 1080i HDTV-out, 18/24-bit dual-channel LVDS
3. DDR2 667/533/400 MHz SO-DIMM socket supports up to 2 GB
4. Dual PCIe Broadcom BCM5787M GbE chipset
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Socket M Intel® Core™2 Duo, Core™ Duo/Solo processor with a 667MHz FSB
Celeron® M processor with a 533MHz FSB (Yonah Core)
- ◆ System Chipset
Intel® 945GME + ICH7M
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 667/533/400MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual PCIe Realtek RTL8111E GbE chipset
- ◆ I/O Interface
6 x USB 2.0
2 x SATA
1 x IDE
3 x RS-232
1 x RS-232/422/485
1 x PS/2 for KB/MS
1 x LPT
1 x CF Type II
- ◆ Infrared Interface
1 x Infrared interface by pin header
- ◆ Expansion
1 x PCI-104 (PCI bus)
- ◆ Super I/O
ITE IT8712F
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio
5.1 channel audio kit with Realtek ALC655 AC'97 codec
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio stream
- ◆ Display Interface
VGA integrated in Intel® 945GME
Support HDTV resolution up to 1080i by component interface
18/24-bit dual-channel LVDS
- ◆ Watchdog Timer
Software programmable 1-255 sec. by super I/O
- ◆ Power Supply
12V only AT/ATX support
- ◆ Power Consumption
12V@2.99A (Intel® Core™2 Duo T2500 2.0GHz, 2GB 800 MHz DDR2)
- ◆ Temperature
Operating: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions
165 mm x 115 mm

Packing List

1 x NANO-9452 single board computer	
2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x IDE cable (P/N: 32200-000009-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-9452-R40	EPIC SBC, Intel® Core™2 Duo, Core Duo/Solo FSB 667MHz with VGA/LVDS/HDTV-out, dual PCIe GbE, SATA and audio
32001-002700-200-RS	USB cable
19800-004300-100-RS	RS-232/422/485 cable
AC-KIT08R-R10	5.1 channel AC'97 Audio Kit with Realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with realtek ALC888 codec support dual audio streams
CF-479B-RS	CPU cooler (50 mm x 50 mm x 26 mm, 50W)
32200-015100-RS	LPT cable
32100-043403-RS	ATX power cable
32010-000700-100-RS	HDTV out cable

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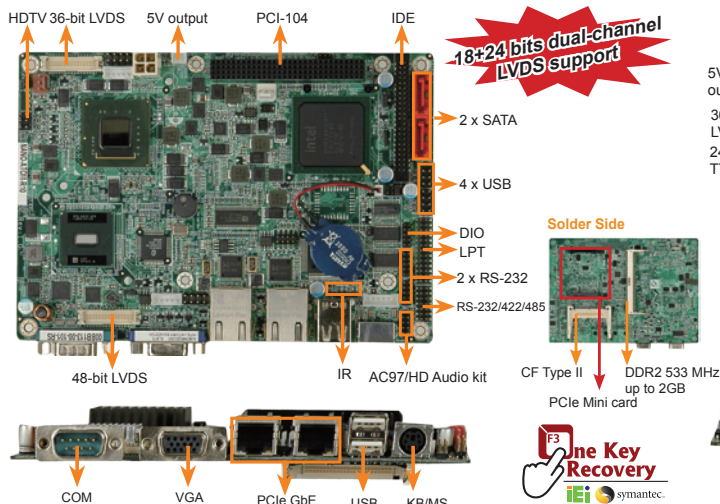
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epic NANO-945GSE-R20

EPIC SBC with Intel® Atom™ processor, VGA/Dual LVDS/Dual PCIe GbE, CF Type II, SATA



Features

1. Intel® Atom™ processor N270 1.6GHz CPU for ultra low voltage fanless support
2. Single 12V power input, 5V output for SATA device
3. Dual LVDS supports dual independent display
4. Support four COM, six USB, two SATA
5. Support PCIe Mini Card, PCI-104 for expansion
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
1.6 GHz Intel® Atom™ N270 processor with a 533 MHz FSB
- ◆ System Chipset
Intel® 945GSE
Intel® 82801GBM/ICH7M
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual PCIe Realtek 8111E GbE chipset
- ◆ I/O Interface
6 x USB 2.0
1 x IDE
1 x RS-232/422/485
1 x LPT
- ◆ Infrared Interface
1 x Infrared interface by pin header
- ◆ Expansions
1 x PCI-104 (PCI Bus) 1 x PCIe Mini card
- ◆ Super IO
ITE IT8718
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio
5.1 channel audio kit with Realtek ALC655 AC'97 codec
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio stream
- ◆ Display Interface
Intel® Graphics Media Accelerator 950
VGA integrated in Intel® 945GSE
Support HDTV resolution up to 1080i by component interface
- ◆ Dual LVDS support:
18-bit dual-channel LVDS integrated in Intel® 945GSE
18/24-bit dual-channel LVDS supported by Chronitel CH7308B (NANO-945GSELVDS2)
- ◆ Watchdog Timer
software programmable 1-255 sec. by super I/O
- ◆ Power Supply:
12V only, AT/ATX support
- ◆ Power Consumption
12W@1.53A (Intel® Atom™ N270 with 2GB DDR2)
- ◆ Temperature
Operation: 0°C ~ 60°C (NANO-945GSE-N270-R20)
Operation: -40°C ~ 85°C (NANO-945GSE-N270W2-R20)
Operation: -20°C ~ 70°C (NANO-945GSE-N270W-R20)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 165 mm x 115 mm
- ◆ Weight: GW: 700g NW 350g

Packing List

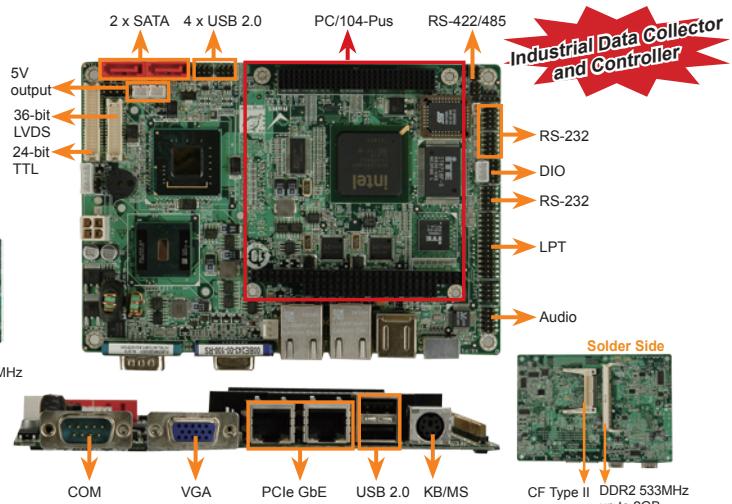
1 x NANO-945GSE single board computer	2 x RS-232 cable (P/N: 32205-002700-100-RS)
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
NANO-945GSE-N270-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA
NANO-945GSE-N270W2-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -40~85°C
NANO-945GSE-N270W-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -20~70°C
NANO-945GSELVDS2-N270-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA
NANO-945GSELVDS2-N270W2-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -40~85°C
NANO-945GSELVDS2-N270W-R20	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/18+24-bit dual-channel LVDS, dual GbE, CF Type II, USB, SATA, -20~70°C
32001-002700-200-RS	Dual port USB cable
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
32100-043403-RS	ATX power cable
32010-000700-100-RS	HDTV out cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-008800-RS	44-pin to 2.5"/3.5" IDE cable
32102-000100-200-RS	SATA power cable
32801-000201-100-RS	SATA 5V power output cable kit for NANO series
AC-KIT08R-R10	5.1 channel AC'97 audio kit with realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with realtek ALC888 codec support dual audio stream

epic NANO-945GSE2

EPIC SBC with Intel® Atom™ processor, VGA/LCD/Dual PCIe GbE, CF Type II, SATA, PC/104-Pus



Features

1. 1.6 GHz Intel® Atom™ N270 CPU with ultra low voltage fanless support
2. Single 12V power input, 5V output for SATA device
3. Dual display supported by VGA+LVDS, VGA+TTL
4. Support four COM, six USB, two SATA and CF Type II socket
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
1.6 GHz Intel® Atom™ N270 processor with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE
Intel® 82801GBM/ICH7M
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
Dual PCIe Realtek 8111CP GbE chipset
- ◆ I/O Interface
6 x USB 2.0
2 x SATA
3 x RS-232
1 x RS-232/422/485
(RS-232, RS-422/485 shared with COM3)
1 x PS/2 for KB/MS
1 x LPT
1 x CF Type II
- ◆ Infrared Interface
1 x Infrared interface by pin header
- ◆ Expansions
1 x PC/104-Pus
- ◆ Super IO
ITE IT8718
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio
Realtek ALC655 with AC'97 codec
- ◆ Display Interface
Intel® Graphics media accelerator 950
VGA integrated in Intel® 945GSE
18-bit dual-channel LVDS integrated in Intel® 945GSE
24-bit TTL (LVDS to TTL)
- ◆ Watchdog Timer
Software programmable 1-255 sec. by super I/O
- ◆ Power Supply
12V only, AT/ATX support
- ◆ Power Consumption
12W@1.45A
(Intel® Atom™ Processor N270 with 1GB DDR2)
- ◆ Temperature
Operation: 0°C ~ 60°C (NANO-945GSE2-N270-R10)
Operation: -20°C ~ 70°C (NANO-945GSE2-N270W-R10)
- ◆ Operation Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 165 mm x 115 mm
- ◆ Weight: GW: 700g NW 350g

Packing List

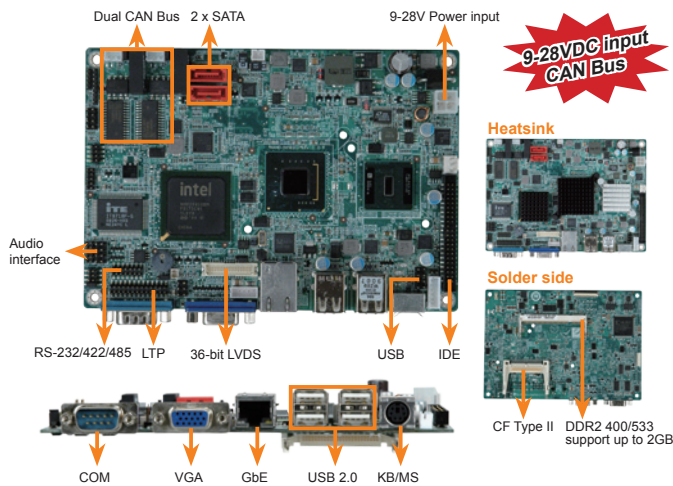
1 x NANO-945GSE2 single board computer	1 x Audio cable (P/N: 32000-072100-RS)
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-945GSE2-N270-R10	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/LVDS/TTL, dual GbE, CF Type II, USB, SATA and PC/104+
NANO-945GSE2-N270W-R10	EPIC SBC with Intel® Atom™ processor N270 1.6 GHz, VGA/LVDS/TTL, dual GbE, CF Type II, USB, SATA and PC/104+, -20~70°C
32001-008600-100-RS	Dual port USB cable
32200-015100-RS	LPT cable
32200-833600-RS	RS-422/485 cable
32100-052100-RS	ATX power cable
32102-000100-200-RS	SATA power cable
32801-000201-100-RS	SATA 5V power output cable kit for NANO series

epic NANO-945GSE3

EPIC SBC with Intel® Atom™ N270 1.6GHz, VGA/LVDS, PCIe GbE, CF Type II, SATA, and CAN-Bus



Features

1. Intel® Atom™ N270 1.6GHz processor CPU with ultra low voltage fanless support
2. 9V~28V wide range voltage input
3. Support two COM ports, six USB ports and two SATA ports
4. Support two CAN-Bus interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
1.6GHz Intel® Atom™ N270 processor with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE+ICH7M
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
One Realtek RTL8111CP PCIe GbE controller
- ◆ Display Output
Intel® Graphics Media Accelerator 950
VGA integrated in Intel® 945GSE
18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ I/O Interface
1 x RS-232 1 x LPT
1 x IDE 1 x RS-232/422/485
2 x SATA 1 x CF Type II
1 x PS/2 KB/MS 6 x USB 2.0
- ◆ Digital I/O
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface
1 x Infrared interface by pin header
- ◆ Super I/O
ITE I8718F
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ CAN-Bus Interface
2 x CAN-bus interface
PCI to CAN-bus CPLD: Xilinx XC95288XL-10TQG144C
CAN-bus controller: Philips SJA100T
CAN-bus transceiver: Philips PCA82C251
Signal support: CAN_H, CAN_L
Isolated protection: 2500Vrms on CAN side
Programmable transfer rate: up to 1Mbps
Drive support: Windows® XP, Windows® XP Embedded
- ◆ Audio
Support by audio kit (AC'97 & HD)
5.1 channel AC'97 audio kit with Realtek ALC655 codec
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio stream
- ◆ Power Supply
AT/ATX support
Power input: 9-28V Wide Range Voltage Input
- ◆ Power Consumption
12V@1.49A (Intel® Atom™ N270 with 2GB DDR2)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: EPIC 165mm x 115mm
- ◆ Weight: GW:700g/NW:320g

Packing List

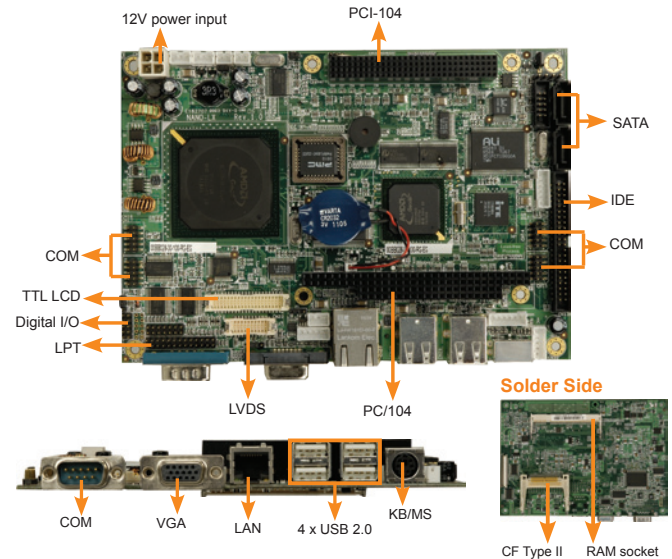
1 x NANO-945GSE3 single board computer	
1 x SATA with power cable kit (P/N: 32801-000201-100-RS)	
1 x KB/MS cable (P/N: 32006-000300-100-RS)	
2 x CAN-bus cable (P/N: 32100-212800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
NANO-945GSE3-N270-R10	EPIC SBC with Intel® Atom™ processor supports VGA/LVDS, PCIe GbE, CF Type II, SATA, and CAN-bus
32200-000009-RS	44-pin to 44-pin 2.5" IDE cable
32001-002700-200-RS	USB cable
32205-000300-100-RS	RS-232/422/485 cable
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 codec support dual audio stream
32200-015100-RS	LPT cable
32010-000700-100-RS	HDTV out cable
32801-000703-200-RS	SATA cable
32100-000100-100-RS	SATA power cable
32100-000100-200-RS	
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block

epic NANO-LX-R12

EPIC SBC with AMD LX800 CPU, Audio, VGA/LVDS, SATA and RAID 0, 1, JBOD Function Support



Features

1. EPIC form factor AMD LX800 processor embedded board with RoHS compliant
2. DDR 400MHz SO-DIMM SDRAM up to 1GB
3. VGA, 24-bit TTL, and 18-bit single-channel LVDS
4. SATA RAID 0, 1, JBOD function support
5. Complete I/O support with two SATA, IDE, PC/104-Plus and four USB 2.0
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
On-board AMD Geode™ LX800 (500MHz) processor
- ◆ System Chipset
AMD Geode LX800 + AMD CS5536
- ◆ BIOS
AWARD
- ◆ System Memory
One 200-pin 400/333MHz DDR SDRAM SO-DIMM Supported (System max. 1GB)
- ◆ Ethernet
10/100Mbps Realtek RTL8100C chipset
- ◆ I/O Interface
4 x USB 2.0
2 x SATA with VIA VT6421A RAID 0, 1 function support
1 x CF Type II
1 x LPT
6 x RS-232
1 x RS-422/485
1 x PS/2 for KB/MS
1 x IDE
- ◆ Expansion
1 x PC/104-Plus
- ◆ Audio
Realtek ALC203 with AC'97 Codec
- ◆ Infrared Interface
1 x Infrared interface by pin header
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Super I/O
Winbond W83627EHG
- ◆ Display Interface
VGA integrated in AMD LX800
24-bit single-channel TTL
18-bit single-channel LVDS
- ◆ Watchdog Timer
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply
12V only, AT/ATX support
- ◆ Power Consumption
12V@ 0.92A
(AMD LX800 with 400MHz 256MB DDR RAM)
- ◆ Operating Temperature : 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions
115 mm x 165 mm
- ◆ Weight
GW: 950 g; NW: 350 g

Packing List

1 x NANO-LX single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x SATA power cable (P/N: 332102-000100-200-RS)	
2 x RS-232 port cable (P/N: 32205-002700-100-RS)	
1 x KB/MS Y cable (P/N: 32006-000300-100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
NANO-LX-800-R12	EPIC SBC, AMD LX800 500MHz processor, VGA/LVDS/TTL, LAN, SATA and Audio
32200-015100-RS	LPT cable
32100-052100-RS	ATX power cable
32205-000300-100-RS	RS-232 and RS-422/485 cable

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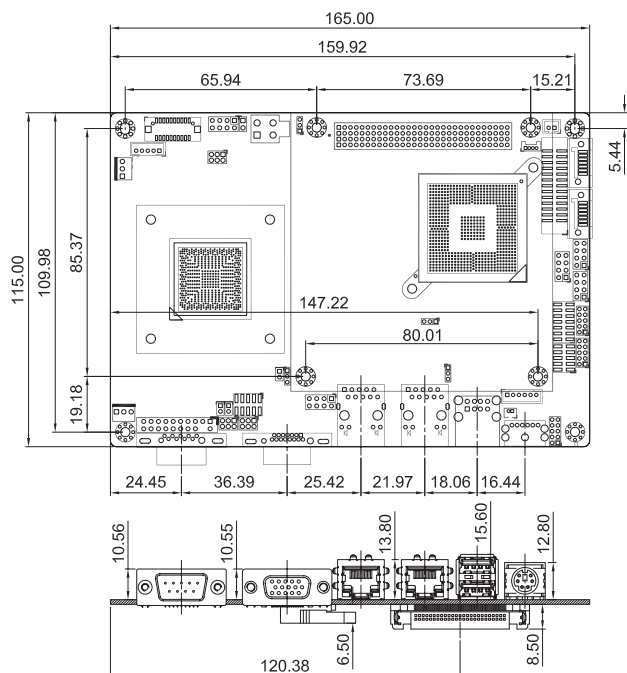
Power Supply/
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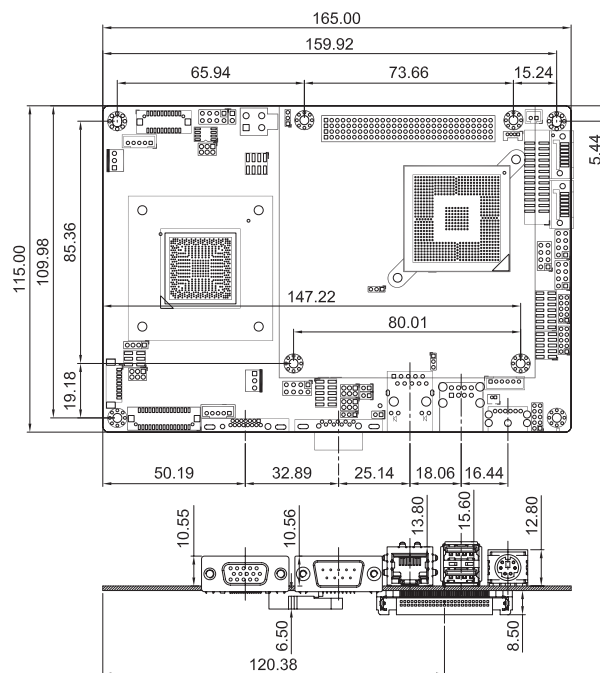
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EPIC NANO Dimensions (Unit: mm)

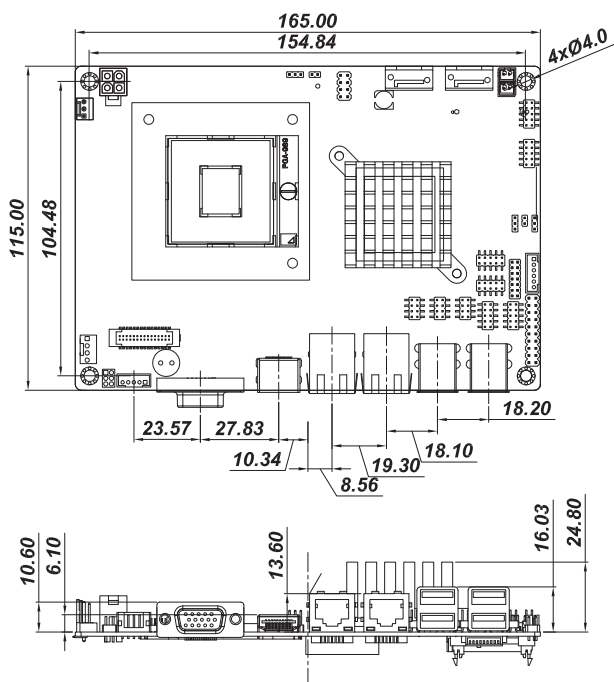
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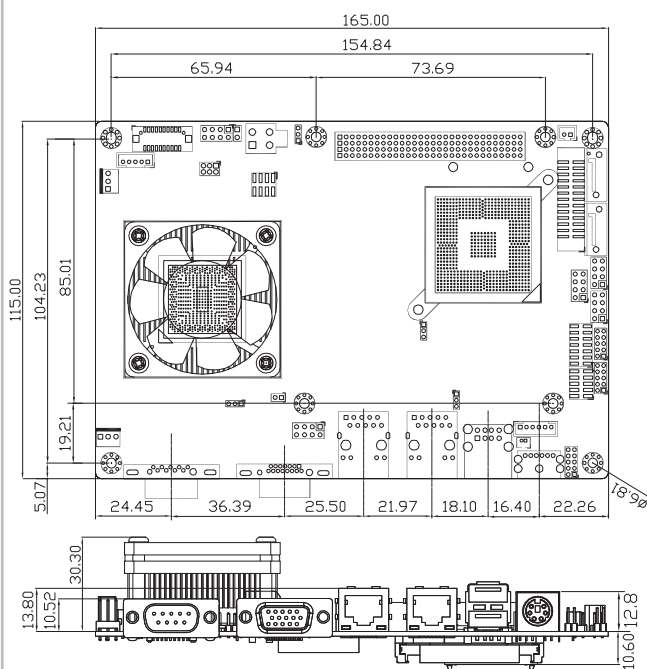
NANO-PV-D4252/N4552/D5252



NANO-HM551



NANO-PV-D510



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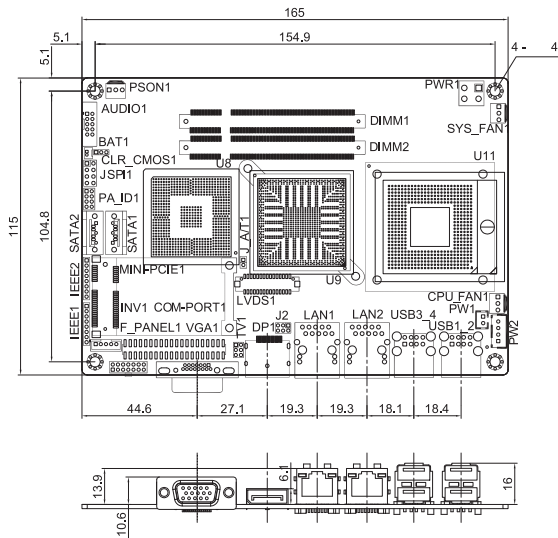
Power Supply/
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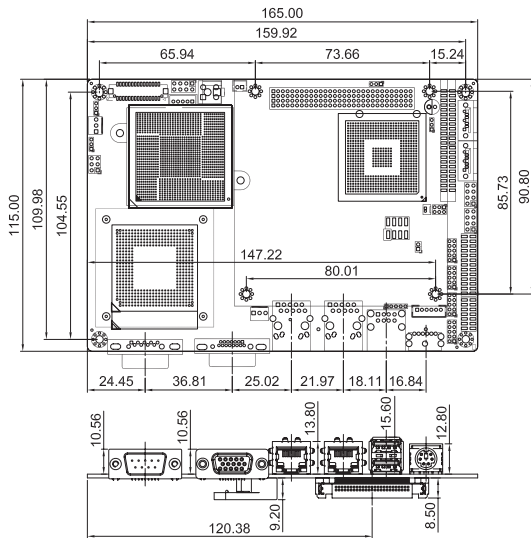
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EPIC NANO Dimensions (Unit: mm)

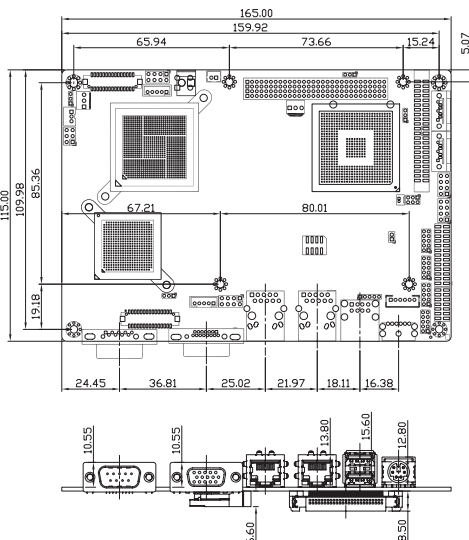
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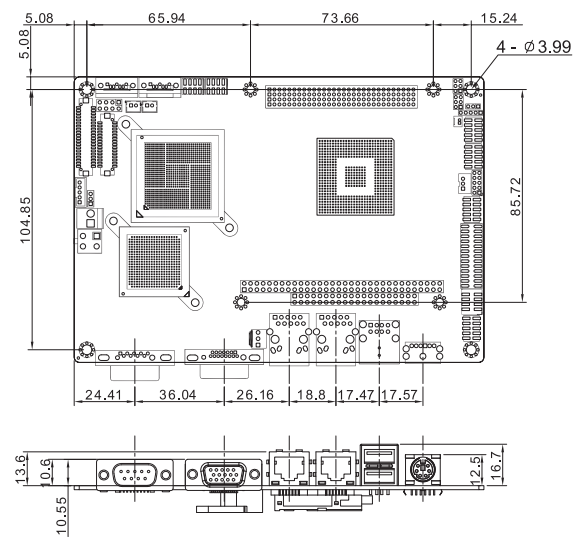
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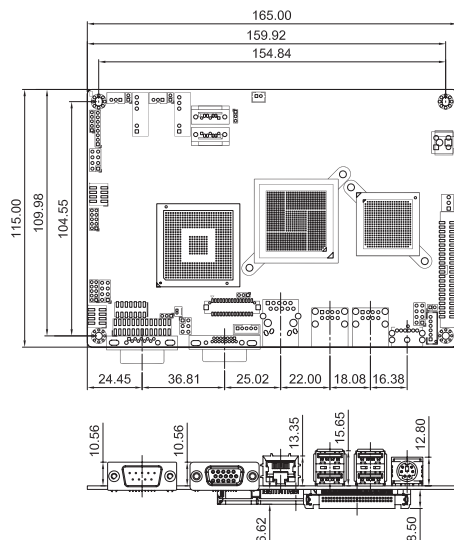
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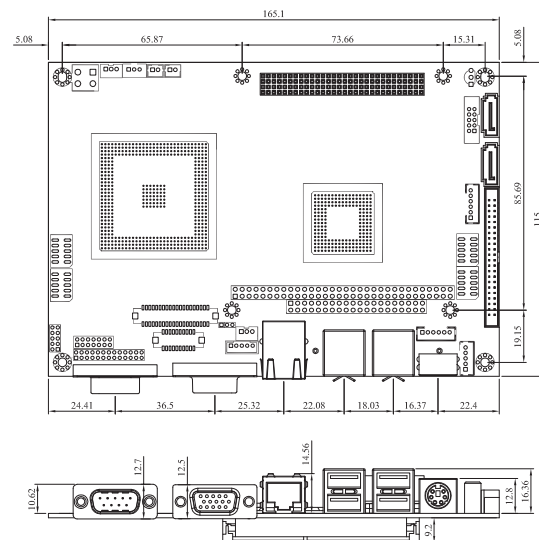
NANO-945GSE2



NANO-945GSE3



NANO-LX-R12



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3.5" WAFER Selection Guide

New**New**

Model Name	WAFAER-CV-D27001/ N26001	WAFAER-OT-Z650/Z670	WAFAER-PV-D4251/ N4551/D5251	WAFAER-PV-D4252/ N4552/D5252	WAFAER-PV-D4253/ N4553/D5253	WAFAER- 945GSELVDS2	WAFAER-US15WP2
CPU Socket	On Board	On Board	On board	On board	On board	On board	On board
CPU Type	Intel® Atom™ Processor D2700 2.13GHz Intel® Atom™ Processor N2600 1.6GHz	Intel® Atom™ Processor Z650 1.2GHz Intel® Atom™ Processor Z670 1.5GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor D525 1.8GHz Intel® Atom™ Processor D425 1.8GHz Intel® Atom™ Processor N455 1.66GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor Z530P 1.6GHz Intel® Atom™ Processor Z510P 1.1GHz
FSB	NA	NA	NA	NA	NA	533 MHz	400/533 MHz
Chipset	NM10	SM35	ICH8M	ICH8M	ICH8M	Intel® 945GSE + ICH7M	Intel® US15WP
Memory	1 x 204-pin 1066 MHz 4GB (max.) DDR3/ DDR3L (1.35V) SO- DIMM (D2700) 1 x 204-pin 800 MHz 2GB (max.) DDR3/ DDR3L (1.35V) SO- DIMM (N2600)	On-board 1GB 800 MHz DDR2 memory	On-board 2GB 800 MHz DDR3 memory	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO- DIMM (D525/ D425) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO- DIMM (N455)	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO- DIMM (D525/ D425) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO- DIMM (N455)	1 x 200-pin 400/533 MHz. 2 GB (max.) DDR2 SO-DIMM	1 x 200-pin 400/533 MHz. 2 GB (max.) DDR2 SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x Single-channel 18-bit (N2600)/24-bit LVDS2 (D2700) 1 x 24bit Dual-channel LVDS	Dual display supported 1 x HDMI 1 x 18-bit single- channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single- channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single- channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single- channel LVDS 1 x 18/24-bit dual- channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual- channel LVDS 1 x 18/24-bit dual- channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single- channel LVDS 1 x 18/24-bit dual- channel LVDS
Ethernet	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	USB interface 10/100 Mbps LAN by AX88772A	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Dual PCIe GbE by Realtek RT8111E support ASF 2.0	Single PCIe GbE by Realtek RT8111E support ASF 2.0	Realtek RTL8111CP PCIe GbE chipset	Intel® 82574L PCIe GbE chipset
I/O Interface	3 x RS-232 1 x RS-422/485 6 x USB 2.0 1 x KB/MS by pin header	4 x RS-232 7 x USB 2.0	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x PS2 for KB/MS
Drive Interface	2 x SATA 3Gb/s 1 x mSATA	1 x SATA 3Gb/s 1 x SD	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 3Gb/s 1 x CF Type II	2 x SATA 1 x CF Type II	1x SATA 1 x CF Type I
Audio	Realtek ALC662 HD Audio codec	Realtek ALC662 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 with HD codec
Digital I/O	8-bit digital I/O (4-bit input/4-bit output)	N/A	8-bit digital I/O (4-bit input/4-bit output)				
Power Consumption	12V@1.53A (2.13GHz Intel® D2700 with 1GB DDR3 1066MHz) 12V@1.15A (1.6GHz Intel® N2600 with 1GB DDR3 1066MHz)	12V@0.93A (1.2GHz Intel® Z650 with 1GB DDR2 800MHz) 12V@0.95A (1.5GHz Intel® Z670 with 1GB DDR2 800MHz)	12V@1.7A (Intel® Atom™ D525 with 1GB 1066MHz DDR3) 12V@1.52A (Intel® Atom™ D425 with 1GB 1066MHz DDR3) 12V@1.33A (Intel® Atom™ N455 with 1GB 1066MHz DDR3)	12V@1.79A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)	12V@1.66A (Intel® Atom™ D525 with 2 GB 1066 MHz DDR3)	5V@2.49A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	12V@1.15A (Intel® Atom™ Z530P 1.6GHz, 1GB DDR2 533 MHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset						
Operating Environment	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor Relative Humidity: 5% ~ 95%, non- condensing	Temperature Range: -10°C ~ 60°C Relative Humidity: 5% ~ 95%, non- condensing	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor Relative Humidity: 5% ~ 95%, non-condensing				Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCIe Mini card slot	N/A	1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PCIe Mini card slot	1 x PCIe Mini card slot
Recommended CPU Cooler	Heatsink enclosure	Heatsink	Heatsink	Heatsink enclosure	Heatsink	Heatsink enclosure	Heatsink enclosure

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Industrial
Computing
Solutions

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Video
Capture
Solutions

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Embedded
Computing
Solutions

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ORing
Network
Communication

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Power Supply/
Peripherals

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Panel
Solutions
Introduction

3.5" WAFER Selection Guide



Model Name	WAFER-945GSE-R20	WAFER-945GSE2-R20	WAFER-945GSE3	WAFER-US15WP	WAFER-LX-R12	WAFER-LX2-R11	WAFER-LX3-R20
CPU Socket	On board	On board	On board	On board	On board	On board	On board
CPU Type	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor Z530P 1.6GHz Intel® Atom™ Processor Z510P 1.1GHz	AMD Geode™ LX800	AMD Geode™ LX800	AMD Geode™ LX800
FSB	533 MHz	533 MHz	533 MHz	400/533 MHz	N/A	N/A	N/A
Chipset	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® US15WP	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536
Memory	1 x 200-pin 400/533 MHz. 2 GB (max.) DDR2 SO-DIMM	On-board 1GB DDR2 SDRAM	1 x 200-pin 400/533 MHz. 2 GB (max.) DDR2 SO-DIMM	1 x 200-pin 400/533 MHz. 2 GB (max.) DDR2 SO-DIMM	1 x 200-pin 333/400 MHz. 1 GB (max.) DDR SO-DIMM	1 x 200-pin 400 MHz. 1 GB (max.) DDR SO-DIMM	256 MB DDR on board
Display Interface	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS 1 x 18-bit TTL (LVDS to TTL)	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS 1 x 24-bit TTL
Ethernet	Dual PCIe Realtek 8111E GbE	Dual Realtek RTL8111E PCIe GbE chipset	One Realtek RTL8111CP PCIe GbE chipset	Intel® 82574L PCIe GbE chipset	Dual Realtek RTL8100CL GbE chipset	Realtek RTL8100CL Ethernet chipset	Dual Intel® 82551ER Ethernet chipset
I/O Interface	5 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	3 x RS-232 1 x RS-232/422/485 4 x USB 2.0 1 x LPT 1 x PS2 for KB/MS	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	2 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS	7 x RS-232 1 x RS-232/422/485 4 x USB 2.0	2 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS
Drive Interface	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	1x IDE 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II	1 x IDE
Audio	Realtek ALC662 with HD Audio codec	Realtek ALC662 with HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 with HD Audio codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec
Digital I/O	8-bit digital I/O (4-bit input/4-bit output)						
Power Consumption	5V@2.94A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@2.36A (Intel® Atom™ N270 1.6GHz, 1GB DDR2 533 MHz)	5V@2.54A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@1.48A (Intel® Atom™ Z530P 1.6GHz, 1GB DDR2 533 MHz)	5V@1.53A (AMD Geode™ LX 800 1GB 400 MHz DDR)	5V@1.33A (AMD Geode™ LX800 512MB 333 MHz DDR)	5V@1.34A (AMD Geode™ LX 800 with 256MB on board memory)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset						
Operating Environment	Temperature Range: 0°C ~ 60°C, -20°C ~ 70°C (W), -40°C ~ 85°C (W2) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C, -20°C ~ 70°C (W) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C, Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C, Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) Relative Humidity: 5% ~ 95% non-condensing	Temperature Range: 0°C ~ 60°C (32°F~140°F) -40°C ~ 85°C (W) Relative Humidity: 5% ~ 95% non-condensing
Expansion Slot	1 x PCIe Mini card slot	1 x PC/104	1 x PC/104	1 x PCIe Mini Card Slot	1 x PC/104	1 x PC/104	1 x PC/104
Recommended CPU Cooler	Heatsink enclosure	Heatsink	Heatsink	Heatsink	Heatsink	Heatsink	Heatsink

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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ORing Network Communication

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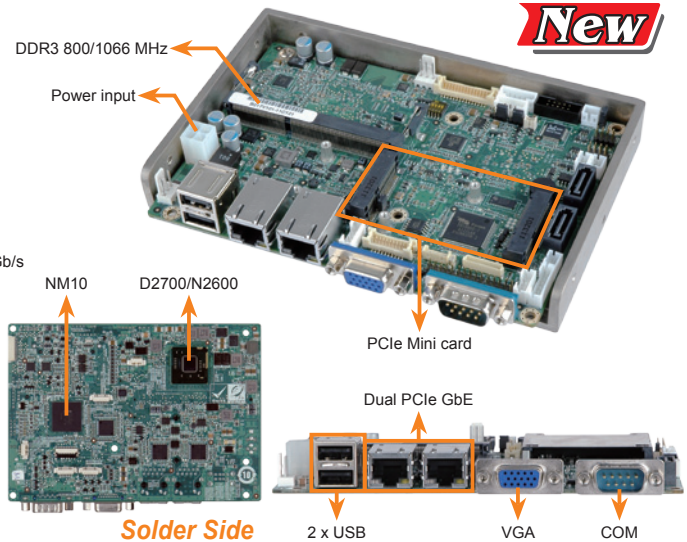
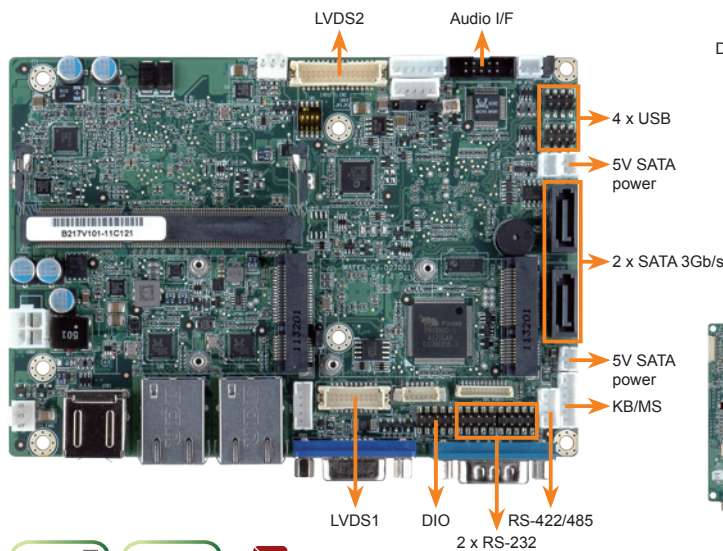
Power Supply/Peripherals

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Panel Solutions Introduction

WAFER-CV-D27001-N26001

3.5" SBC with Intel® Atom™ D2700/N2600 processor, DDR3, VGA/Dual LVDS, Dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS



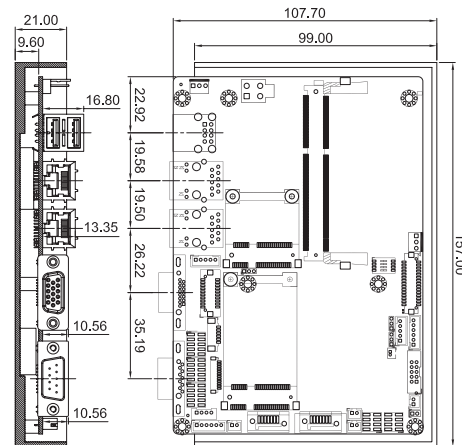
Features

- 1.35" form factor with Intel® Atom™ D2700/N2600 dual-core processor supports DDR3/DDR3L (1.35V) memory
- 12V only single voltage design for AT/ATX power
- Open frame heatsink thermal design for fanless solutions
- Flexible VGA, 18/24-bit LVDS with dual display support
- Complete I/O: six USB, two SATA 3Gb/s, one mSATA, four COM and audio
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- CPU**
 - 2.13GHz Intel® Atom™ D2700 dual-core processor
 - 1.6GHz Intel® Atom™ N2600 dual-core processor
- Chipset**
 - Intel® NM10
- BIOS**
 - UEFI BIOS
- Memory**
 - 1 x 1066MHz DDR3/DDR3L (1.35V) SO-DIMM up to 4 GB for D2700
 - 1 x 800MHz DDR3/DDR3L (1.35V) SO-DIMM up to 2 GB for N2600
- Graphic**
 - Intel® GMA 3650 with 640 MHz graphic core speed for D2700
 - Intel® GMA 3600 with 400 MHz graphic core speed for N2600
- Display Output**
 - Dual display supported
 - 1 x VGA
 - LVDS1 integrated in D2700/N2600
 - Single-channel 24-bit LVDS by D2700, resolution support up to 1440x900
 - Single-channel 18-bit LVDS by N2600, resolution support up to 1366x768
 - LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter, resolution support up to 2560x1600 for D2700, 1600x1200 for N2600
- Ethernet**
 - Dual GbE by Realtek RTL8111E controller
- I/O Interfaces**
 - 1 x RS-422/485
 - 1 x 6-pin KB/MS
 - 6 x USB 2.0
 - 3 x RS-232
 - 2 x SATA 3Gb/s with 5V power connector
- Super IO**
 - Fintek F81866
- Digital I/O**
 - 8-bit digital I/O (4-bit input, 4-bit output)
- Expansion**
 - 1 x Full-size PCIe Mini card slot supporting mSATA SSD storage
- Audio**
 - Realtek ALC662 HD Audio codec
- Watchdog Timer**
 - Software programmable supports 1~255 sec. system reset by Super I/O
- Power Supply**
 - 12V only, AT/ATX support
- Fan Connector**
 - 1 x 3-pin CPU fan connector
 - 1 x 3-pin system fan connector
- Power Consumption**
 - 12V@1.53A (2.13GHz Intel® D2700 with 1GB DDR3 1066MHz)
 - 12V@1.15A (1.6GHz Intel® N2600 with 1GB DDR3 1066MHz)
- Operating Temperature**
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2700 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 processor
- Operating Humidity**
 - 5%~95%, non-condensing
- Weight**
 - GW: 600g/NW: 250g

Dimensions (Unit: mm)



Packing List

1 x WAFER-CV-D27001/N26001 single board computer	
2 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Enclosure heatsink
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
1 x Screw set for PCIe mini card	1 x QIG

Ordering Information

Part No.	Description
WAFER-CV-D27001-R10	3.5" SBC with Intel® Atom™ D2700 2.13 GHz, DDR3, VGA/ Dual LVDS, Dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
WAFER-CV-N26001-R10	3.5" SBC with Intel® Atom™ N2600 1.6 GHz, DDR3, VGA/Dual LVDS, Dual GbE, USB 2.0, SATA 3Gb/s, Audio, RoHS
32001-008600-100-RS	Dual-port USB cable
32205-003800-100-RS	RS-422/485 cable

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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ORing Network Communication

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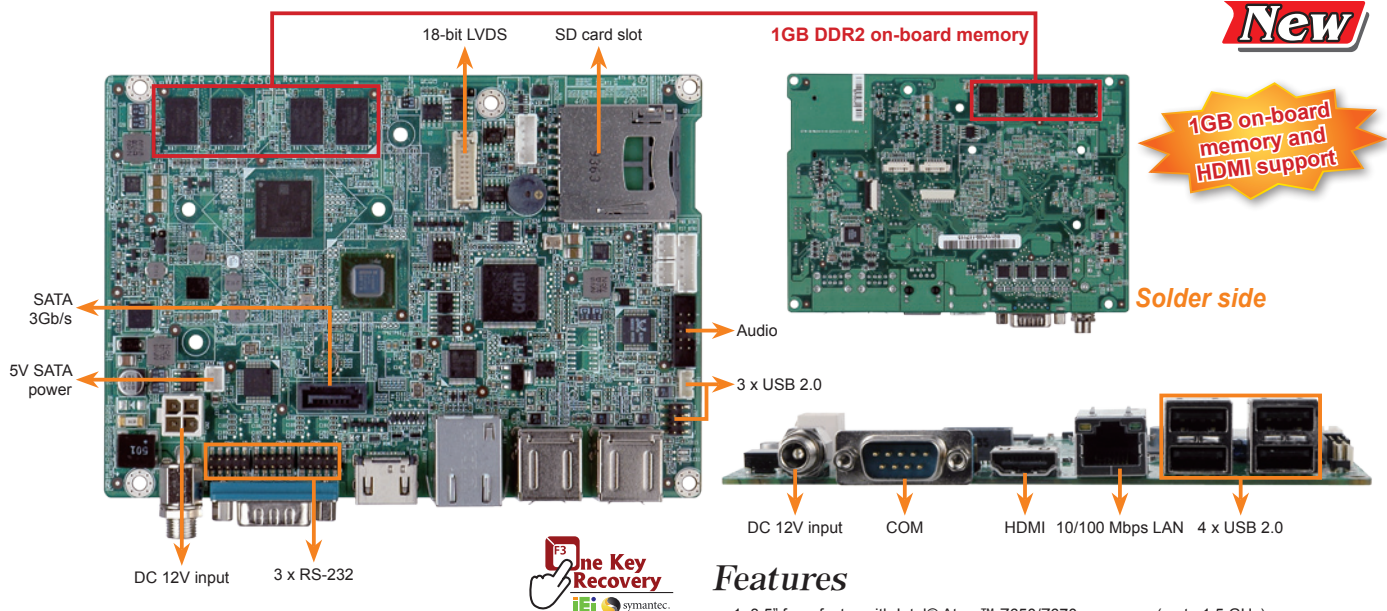
Power Supply/ Peripherals

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Panel Solutions Introduction

WAFER-OT-Z670-Z650

3.5" SBC with Intel® Atom™ Z650/Z670 Processor, 1GB DDR2 Memory on Board, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0 and SATA 3Gb/s, Audio, RoHS



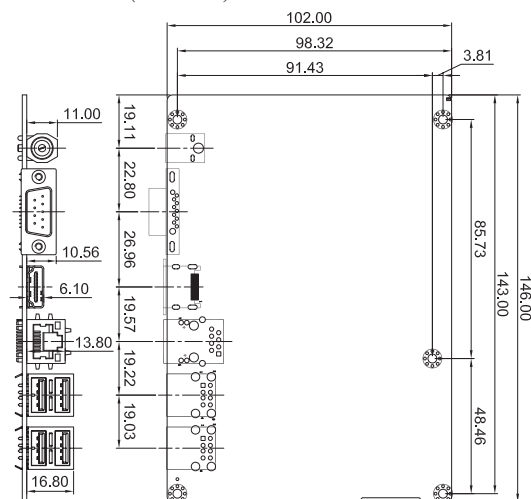
Specifications

- ◆ CPU
Intel® Atom™ Z650 processor 1.2GHz
Intel® Atom™ Z670 processor 1.5GHz
- ◆ Chipset
Intel® SM35
- ◆ BIOS
AMI BIOS
- ◆ Memory
On-board 800 MHz 1 GB DDR2 SDRAM
- ◆ Graphics
Intel® GMA 600 with a 400MHz graphics core
Support MPEG2, H.264, VC-1/WMV9 up to 1080p decode
- ◆ Display Output
Dual display supported
1 x HDMI
1 x 18-bit single-channel LVDS
- ◆ Ethernet
USB interface 10/100 Mbps LAN by AX88772A
- ◆ I/O Interfaces
4 x RS-232
1 x SATA 3Gb/s with 5V power
1 x SD card slot
7 x USB 2.0/1.1
- ◆ Audio
Realtek ALC662 HD Audio codec
- ◆ Power Supply
12V input only
AT/ATX mode supported
1 x External power jack
4-pin (2x2) internal power connector
- ◆ Power Consumption
12V@0.93A (1.2GHz Intel® Z650 with 1GB DDR2 800MHz)
12V@0.95A (1.5GHz Intel® Z670 with 1GB DDR2 800MHz)
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5%~95%, non-condensing
- ◆ Dimensions
146mm x 102mm
- ◆ Weight
GW: 450g/NW: 130g

Features

1. 3.5" form factor with Intel® Atom™ Z650/Z670 processor (up to 1.5 GHz)
2. Delivers significant low power consumption and HD video decoding for Windows® 7, WES 2011 and MeeGo OS
3. On-board 800 MHz 1 GB DDR2 SDRAM
4. Support HDMI and 18-bit single-channel LVDS display output
5. Complete I/O with seven USB ports, one SATA 3Gb/s connector, one SD slot, four COM ports and an audio connector
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Packing List

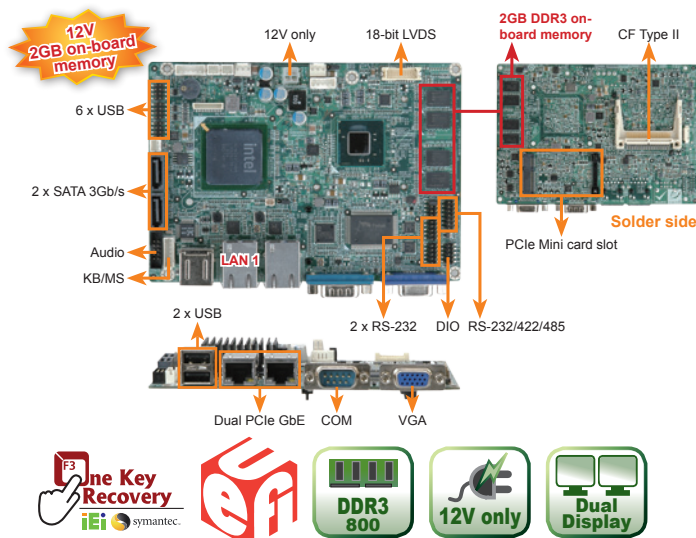
1 x WAFER-OT-Z650/Z670 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
3 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x USB cable (P/N: 32001-002700-200-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
WAFER-OT-Z670-R10	3.5" SBC with Intel® Atom™ Z670 1.5 GHz processor, on-board 1GB DDR2 memory, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0 and SATA 3Gb/s, Audio, RoHS
WAFER-OT-Z650-R10	3.5" SBC with Intel® Atom™ Z650 1.2 GHz processor, on-board 1GB DDR2 memory, HDMI/LVDS, 10/100 Mbps LAN, USB 2.0 and SATA 3Gb/s, Audio, RoHS
63000-FSP036RAB608-RS	36W/12V power adaptor 90~264VAC
32000-120100-RS	Single USB port cable

WAFER-PV-D4251/N4551/D5251-R11

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3 2GB memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



Features

1. 3.5" form factor with Intel® Atom™ D525/D425/N455 processor supports DDR3 memory
2. 12V only single voltage design for AT/ATX power
3. On-board DDR3 800 MHz 2GB SDRAM
4. Support VGA and 18-bit single-channel LVDS with dual-display support
5. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, four COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - On-board DDR3 800MHz 2GB SDRAM
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
 - Graphic core speed 200MHz for N455
- ◆ Display Interface
 - Analog CRT up to 2048x1536 for D525/D425, 1400x1050 for N455
 - Support for CRT hotplug
 - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
 - Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ I/O Interfaces
 - 3 x RS-232
 - 1 x CF Type II
 - 1 x KB/MS
 - 2 x SATA 3Gb/s
 - 8 x USB 2.0
 - 1 x RS-232/422/485 with Auto Flow control
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
 - 1 x PCIe Mini card slot
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
 - 12V input only
 - AT/ATX mode select
 - 4-pin (2x2) power connector
- ◆ Super IO: Fintek F81865
- ◆ Fan Connector
 - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ Power Consumption
 - 1.7A @ 12V (Intel® Atom™ D525 with 1GB 1066MHz DDR3)
 - 1.52A @ 12V (Intel® Atom™ D425 with 1GB 1066MHz DDR3)
 - 1.33A @ 12V (Intel® Atom™ N455 with 1GB 1066MHz DDR3)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 650g/NW: 170g

Packing List

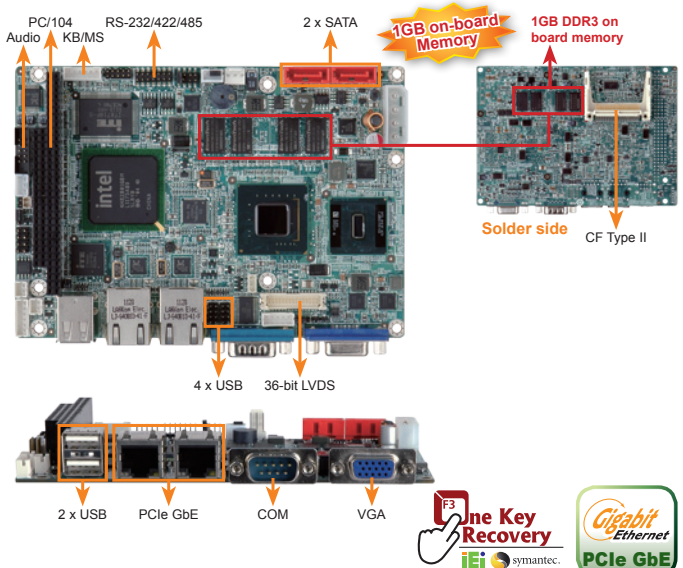
1 x WAFER-PV-D4251/N4551/D5251 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
WAFER-PV-D5251-2GB-R11	3.5" SBC with Intel® Atom™ D525 1.8GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4251-2GB-R11	3.5" SBC with Intel® Atom™ D425 1.8GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4551-2GB-R11	3.5" SBC with Intel® Atom™ N455 1.66GHz, 2GB DDR3 memory on board, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual port USB cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/422/485 cable
19FTS00032100-000001-RS	CPU fan

WAFER-945GSE2-R20

3.5" SBC with Intel® Atom™ N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, 1GB on-board Memory and PC/104



Features

1. Intel® Atom™ N270 1.6GHz processor for ultra low voltage fanless support
2. Support VGA and LVDS for dual display
3. On-board 1GB DDR2 memory
4. Support two COM, six USB 2.0, two SATA and one CF Type II socket
5. Support PC/104 ISA expansion slot
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
 - Intel® 945GSE
 - Intel® 82801GBM/ICH7M
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - 1GB on-board DDR2 SDRAM
- ◆ Ethernet
 - Dual Realtek RTL8111E PCIe GbE controller
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 1 x CF Type II
 - 1 x PS/2 for KB/MS
- ◆ Digital I/O
 - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Super IO
 - ITE IT8718
- ◆ Expansion
 - PC/104 (ISA Bus, not support ISA DMA Mode)
- ◆ Audio
 - Realtek ALC662 with HD Audio codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 950
 - VGA integrated in Intel® 945GSE
 - 18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ Watchdog Timer
 - Software programmable support 1~255 sec. system reset
- ◆ Power Supply
 - 5V only, 12V for LCD/system fan, AT/ATX support
- ◆ Watchdog Timer
 - Software programmable 1-255 sec. by super I/O
- ◆ Operating Temperature
 - 0°C ~ 60°C (WAFER-945GSE2-N270-R20)
 - 20°C ~ 70°C (WAFER-945GSE2-N270W-R20)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Power Consumption
 - 5V@2.36A (Intel® Atom™ N270 1.6G with on-board 1GB DDR2)
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 700g/NW 230g

Packing List

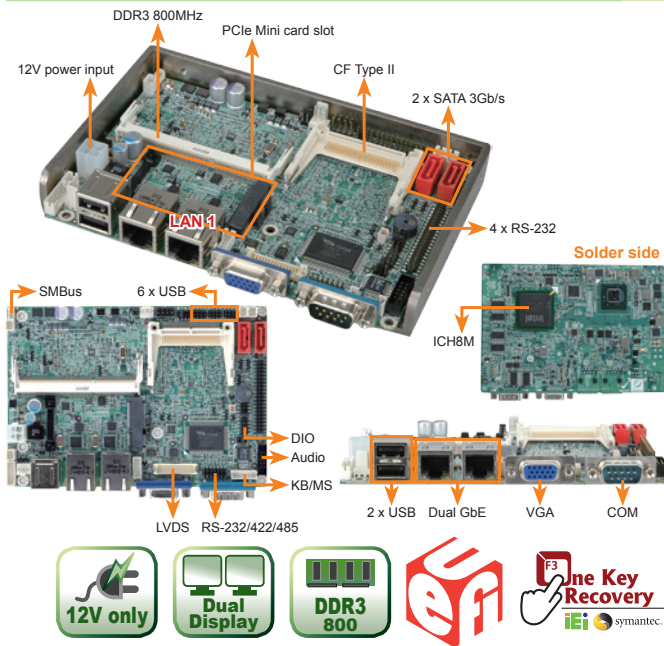
1 x WAFER-945GSE2 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
4 x Plastic intermediate pole for PC/104	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
WAFER-945GSE2-N270-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, on board 1GB memory and PC/104
WAFER-945GSE2-N270W-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, Dual GbE, CF Type II, USB, SATA, on board 1GB memory and PC/104, -20°C ~ 70°C
32001-008600-100-RS	Dual port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable

WAFER-PV-D4252/N4552/D5252

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/LVDS, Dual GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



Features

1. 3.5" form factor with Intel® Atom™ D525/D425/N455 processor supports DDR3 memory
2. 12V only single voltage design for AT/ATX power
3. Open frame heatsink thermal design for fanless solutions
4. Support VGA and 18-bit single-channel LVDS with dual display support
5. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, six COM and audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
 - Graphic core speed 200MHz for N455
- ◆ Display Interface
 - Analog CRT up to 2048x1536 for D525/D425, 1400x1050 for N455
 - Support for CRT hotplug
 - Single-channel 18-bit LVDS
- ◆ I/O Interfaces
 - 1 x KB/MS
 - 2 x SATA 3Gb/s
 - 8 x USB 2.0
 - 1 x CF Type II
 - 5 x RS-232
 - 1 x RS-232/422/485 with auto flow control
- ◆ Ethernet
 - Dual GbE by Realtek RTL8111E, LAN1 with ASF 2.0 support
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
 - 1 x PCIe Mini card slot
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Super I/O: Fintek F81865F
- ◆ Fan Connector
 - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Power Consumption
 - 12V@1.79A (Intel® Atom™ D525 1.8GHz with 1GB DDR3)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 600g/NW: 250g

Packing List

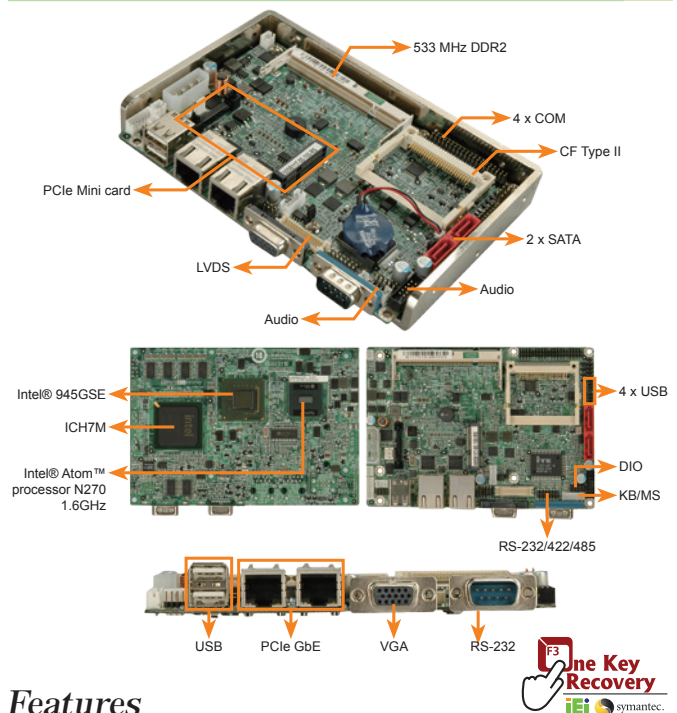
1 x WAFER-PV-D4252/N4552/D5252 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Quad RS-232 cable (P/N: 32200-025401-RS)	
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Enclosure heatsink	1 x Utility CD
1 x Power cable (P/N: 32100-087100-RS)	1 x QIG

Ordering Information

Part No.	Description
WAFER-PV-D5252-R10	3.5" SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4252-R10	3.5" SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4552-R10	3.5" SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, dual GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/RS-422/485 cable

WAFER-945GSE-R20

3.5" SBC with Intel® Atom™ Processor, VGA/LVDS/Dual PCIe GbE, CF Type II, SATA



Features

1. Intel® Atom™ processor N270 1.6 GHz CPU for ultra low voltage fanless support
2. Support dual display for VGA+LVDS
3. System memory supports up to 2 GB 533 MHz DDR2
4. Support six COM, six USB 2.0, two SATA and CF Type II socket
5. Thermal design for easy assembly
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ Processor N270 1.6 GHz with 533 MHz FSB
- ◆ System Chipset
 - Intel® 945GSE/Intel® 82801GBM/ICH7M
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
 - Dual PCIe Realtek 8111E GbE chipset with ASF 2.0 support
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA
 - 5 x RS-232
 - 1 x RS-232/422/485
 - 1 x CF Type II
 - 1 x PS/2 for KB/MS
- ◆ Digital I/O
 - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
 - 1x PCI Express Mini card
- ◆ Audio
 - Realtek ALC662 with HD Audio codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 950
 - Intel® 945GSE
 - 18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ Power Supply
 - 5V only, 12V for LCD/System FAN, AT/ATX support
- ◆ Super IO
 - ITE IT8718
- ◆ Watchdog Timer
 - Software programmable 1-255 sec. by super I/O
- ◆ Operating Temperature
 - 0°C ~ 60°C (WAFER-945GSE-N270-R20)
 - 20°C ~ 70°C (WAFER-945GSE-N270W-R20)
 - 40°C ~ 85°C (WAFER-945GSE-N270W2-R20)
- ◆ Power Consumption
 - 5V@2.94A (Intel® Atom™ N270 1.6G with 1GB DDR2)
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 700g/NW 230g

Packing List

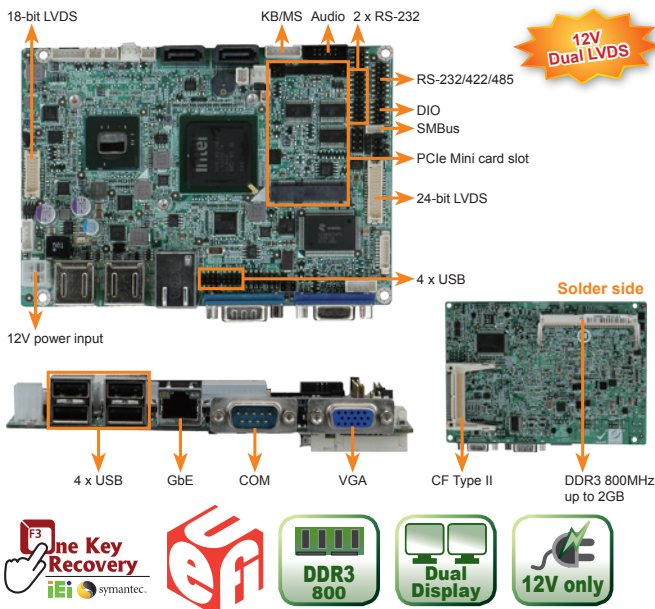
1 x WAFER-945GSE single board computer	
1 x Quad RS-232 cable (P/N: 32200-025401-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x Enclosure heatsink	1 x Mini jumper pack
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
WAFER-945GSE-N270-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA
WAFER-945GSE-N270W-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA, -20°C~70°C
WAFER-945GSE-N270W2-R20	3.5" SBC with Intel® Atom™ processor N270 1.6G, VGA/LVDS, dual GbE, CF Type II, USB, SATA, -40°C~85°C
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable

WAFER-PV-D4253/N4553/D5253

3.5" SBC with Intel® Atom™ D425/N455/D525, DDR3, VGA/18-bit+48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, Audio, RoHS



Features

1. 3.5" form factor with Intel® Atom™ D525/D425/N455 processor
2. 12V only single voltage design for AT/ATX power
3. Support 24-bit dual-channel LVDS resolution up to 1920x1080
4. Complete I/O with eight USB, two SATA 3Gb/s, one CF Type II, four COM and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
 - Intel® Atom™ D425 single-core processor 1.8GHz/512KB L2 cache
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
- ◆ Chipset: Intel® ICH8M
- ◆ BIOS: UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525/D425)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525/D425
 - Graphic core speed 200MHz for N455
- ◆ Display Interface
 - Analog CRT up to 2048x1536 for D525/D425, 1400 x 1050 for N455
 - Support for CRT hotplug
 - Dual-channel 24-bit LVDS by scaler chip
 - Novatek 68667UFG, resolution support up to 1920x1080
 - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
 - Single GbE by Realtek RTL8111E with ASF 2.0 support
- ◆ I/O Interfaces
 - 1 x KB/MS
 - 2 x SATA 3Gb/s
 - 8 x USB 2.0
 - 1 x CF Type II
 - 3 x RS-232
 - 1 x RS-232/422/485 with auto flow control
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
 - 1 x PCIe Mini card slot
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply: 12V only, AT/ATX support
- ◆ Super IO: Fintek F81865
- ◆ Fan Connector
 - 1 x 3-pin CPU fan, 1 x 3-pin system fan
- ◆ SMBus: 1 x 4-pin wafer connector
- ◆ Power Consumption
 - 12V@1.66A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 65°C with free air, -20°C ~ 70°C with force air for D425 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Weight: GW: 600g/NW: 180g

Packing List

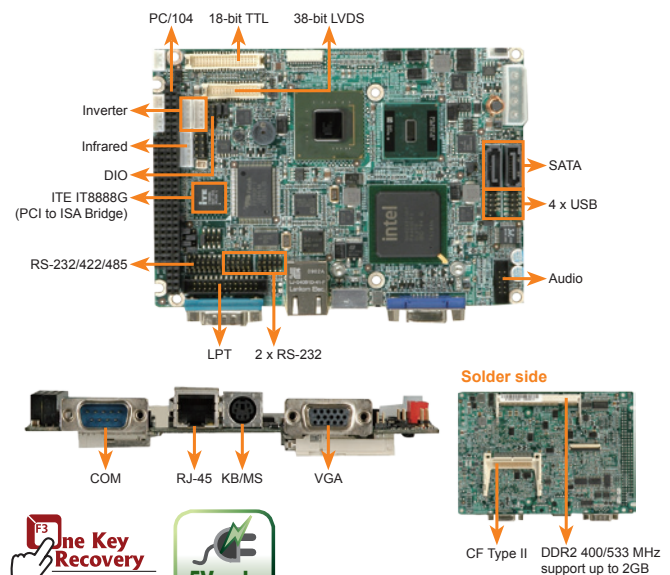
1 x WAFER-PV-D4253/N4553/D5253 single board computer	
1 x SATA with 5V output cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
WAFER-PV-D5253-R10	3.5" SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-D4253-R10	3.5" SBC with Intel® Atom™ D425 1.8GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
WAFER-PV-N4553-R10	3.5" SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/18-bit + 48-bit LVDS, GbE, USB 2.0 and SATA 3Gb/s, audio, RoHS
32001-008600-100-RS	Dual port USB cable
32801-000703-200-RS	SATA cable
32205-000300-100-RS	RS-232/RS-422/485 cable
32205-002700-100-RS	RS-232 cable

WAFER-945GSE3

3.5" SBC with Intel® Atom™ N270 1.6G, VGA/LVDS/TTL, GbE, CF Type II, USB, SATA, LPT, four COM ports and PC/104, RoHS



Features

1. Intel® Atom™ N270 1.6GHz CPU for ultra low voltage fanless support
2. Support dual display for VGA+LVDS, VGA+TTL
3. Support four COM, four USB 2.0, two SATA and CF Type II socket
4. Support PC/104 ISA expansion slot
5. Low profile heatsink design
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
 - Intel® 945GSE
 - Intel® 82801GBM/ICH7M
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - One 200-pin 533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
 - One PCIe Realtek 8111CP GbE chipset
- ◆ I/O Interface
 - 3 x RS-232
 - 1 x PS/2 for KB/MS
 - 1 x CF Type II
 - 4 x USB 2.0
 - 2 x SATA
 - (COM1 with 5V/12V power selected by jumper)
 - 1 x RS-232/422/485
 - (COM2 with 5V/12V power selected by jumper)
- ◆ Infrared Interface
 - 1 x Infrared Interface (shared with COM2)
- ◆ Digital I/O
 - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
 - PC/104 (ISA Bus, not support ISA DMA Mode)
- ◆ Audio
 - Realtek ALC655 with AC'97 codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 950
 - VGA integrated in Intel® 945GSE
 - 18-bit dual-channel LVDS integrated in Intel® 945GSE
 - 18-bit TTL (LVDS to TTL)
- ◆ Power Supply
 - 5V only, AT/ATX support, 12V for LCD/system fan/COM
- ◆ Super IO
 - Fintek F81865
- ◆ Watchdog Timer
 - Software programmable support 1~255 sec. System reset
- ◆ Operating Temperature
 - 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Power Consumption
 - 5V@2.54A (Intel® Atom™ N270 1.6G with 2GB DDR2)
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 650g/NW 250g

Packing List

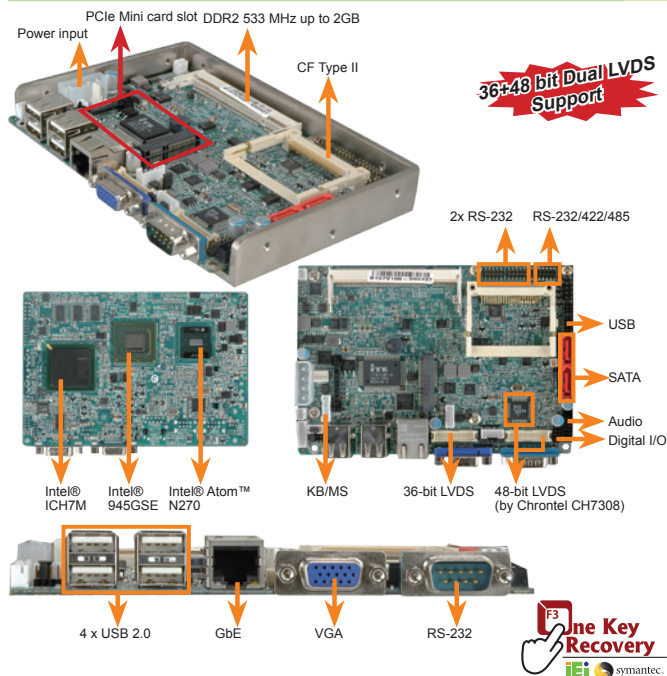
1 x WAFER-945GSE3 single board computer	
1 x Dual USB cable (P/N: 32001-004600-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32006-000300-100-RS)	1 x Mini jumper pack
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Utility CD
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x QIG

Ordering Information

Part No.	Description
WAFER-945GSE3-N270-R10	3.5" SBC with Intel® Atom™ N270 1.6G, VGA/LVDS/TTL, GbE, CF Type II, USB, SATA, LPT, four COM ports and PC/104, RoHS
32205-000300-100-RS	RS-232/422/485 cable
32100-000100-200-RS	SATA power cable
32100-052100-RS	ATX power cable
32200-015100-RS	LPT Cable

WAFER-945GSELVDS2

3.5" SBC with Intel® Atom™ processor, 18-bit and 24-bit dual-channel LVDS, four COM ports



Features

1. Intel® Atom™ N270 1.6GHz CPU for ultra low voltage and fanless support
2. Single 5V low power design, 12V for LCD
3. Dual LVDS support 36-bit and 48-bit for dual independent display
4. Support two SATA, four COM, six USB, PCIe Mini card, CF Type II and audio
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
 - Intel® 945GSE
 - Intel® 82801GBM/ICH7M
- ◆ BIOS
 - AMI BIOS
- ◆ Memory
 - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
 - One Realtek RTL8111CP PCIe GbE controller
- ◆ I/O Interface
 - 6 x USB 2.0
 - 2 x SATA
 - 3 x RS-232
 - 1 x RS-232/422/485
 - 1 x PS/2 for KB/MS
 - 1 x CF Type II
- ◆ Digital I/O
 - 8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
 - 1x PCI Express Mini card
- ◆ Audio
 - Realtek ALC655 with AC'97 codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 950
 - VGA integrated in Intel® 945GSE
 - LVDS1: 18-bit dual-channel LVDS integrated in Intel® 945GSE
 - LVDS2: 18/24-bit dual-channel LVDS supported by Chronitel CH7308
- ◆ Power Supply
 - 5V only, 12V for LCD, AT/ATX support
- ◆ Super I/O
 - ITE IT8718
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Operating Temperature: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity: 5% ~ 95 non-condensing
- ◆ Power Consumption
 - 5V@2.49A (Intel® Atom™ N270 1.6G with 2GB DDR2)
- ◆ Dimensions
 - 146 mm x 102 mm
- ◆ Weight
 - GW: 700g/NW: 350g

Packing List

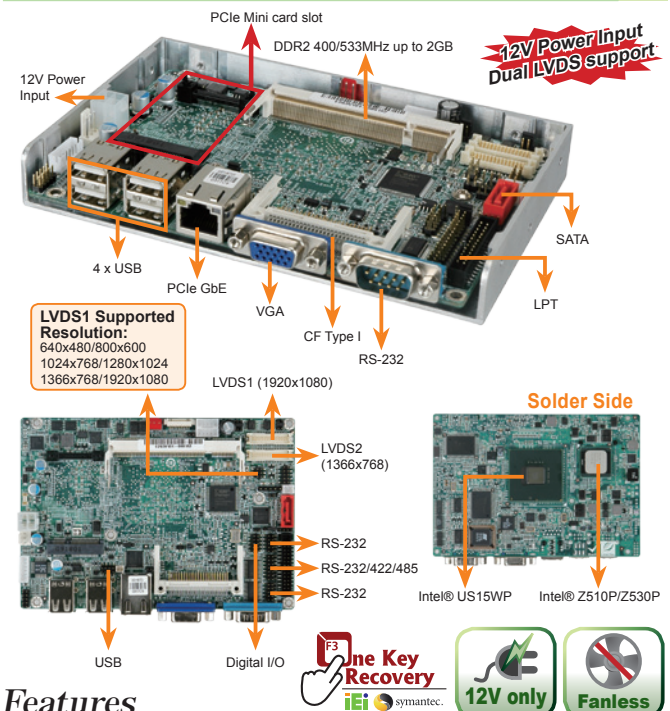
1 x WAFER-945GSELVDS2 single board computer	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Enclosure heatsink
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
WAFER-945GSELVDS2-N270-R10	3.5" SBC with Intel® Atom™ N270 1.6GHz, VGA/18-bit and 24-bit dual-channel LVDS, GbE, CF Type II, USB, Audio, SATA
32001-008600-100-RS	Dual-port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32102-000100-200-RS	SATA power cable

WAFER-US15WP2

3.5" SBC with Intel® Atom™ processor Z510P/Z530P with dual LVDS support



Features

1. Intel® Atom™ Z510P/Z530P CPU for ultra low voltage and fanless support
2. Single 12V power input and 5V output for SATA device
3. Support dual LVDS for dual independent display
4. High graphics performance supports H.264, MPEG1/2/4, VC1/WMV9 high definition decode
5. Support four COM, six USB, six SATA and CF Type I socket
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - 1.6GHz Intel® Atom™ Z530P processor with a 533MHz FSB
 - 1.6GHz Intel® Atom™ Z510P processor with a 400MHz FSB
- ◆ System Chipset: Intel® US15WP
- ◆ BIOS: AMI BIOS
- ◆ Memory
 - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
 - ** Z530P supports 533MHz memory
 - ** Z510P supports 400MHz memory
- ◆ Ethernet
 - One Intel® 82574L PCIe GbE controller
- ◆ I/O Interface
 - 6 x USB 2.0
 - 3 x RS-232
 - 1 x PS/2 for KB/MS
 - 1 x RS-232/422/485 w/ auto flow control
 - 1 x SATA (IDE to SATA, 12-pin wafer for SATA 5V output)
- ◆ Infrared Interface
 - 1 x Infrared interface
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output by Super I/O
- ◆ Expansion
 - 1 x PCIe Mini card
- ◆ Audio
 - Realtek ALC888 HD Audio codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 500 (GMA 500) VGA by Chronitel CH7317A
 - LVDS1: 24-bit dual-channel LVDS support by SDVO through scaler chip Novatek 6866UF
 - Support resolution 640x480, 800x600, 1024x768, 1280x1024, 1366x768, 1920x1080
 - LVDS2: 24-bit single-channel LVDS integrated in Intel® US15WP
- ◆ Watchdog Timer
 - Software programmable 1-255 sec. by super I/O
- ◆ Power Supply
 - 12V only, AT/ATX support
- ◆ Super I/O
 - Fintek F81865
- ◆ Power Consumption
 - 12V@1.15A (Intel® Atom™ Z530P 1.6GHz 1GB DDR2)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity: 5% ~ 95 non-condensing
- ◆ Weight: GW: 700g/NW: 350g

Packing List

1 x WAFER-US15WP2 Single board computer	
1 x SATA 5V power output cable (P/N: 32801-000201-100-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Enclosure heatsink
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x One Key Recovery CD
2 x RS-232 cable (P/N: 32205-002700-100-RS)	1 x Mini jumper
1 x Power cable (P/N: 32100-087100-RS)	1 x Utility CD
	1 x QIG

Ordering Information

Part No.	Description
WAFER-US15WP2-Z530P-R10	3.5" SBC with Intel® Atom™ Z530P 1.6GHz, 24-bit + 48-bit dual LVDS, GbE, CF Type I, USB, SATA
WAFER-US15WP2-Z510P-R10	3.5" SBC with Intel® Atom™ Z510P 1.1GHz, 24-bit + 48-bit dual LVDS, GbE, CF Type I, USB, SATA
32001-008600-100-RS	Dual-port USB cable
32200-015100-RS	LPT cable
32205-000300-100-RS	RS-232/422/485 cable
32100-043403-RS	ATX power cable

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

O/Ring
Network
Communication

5

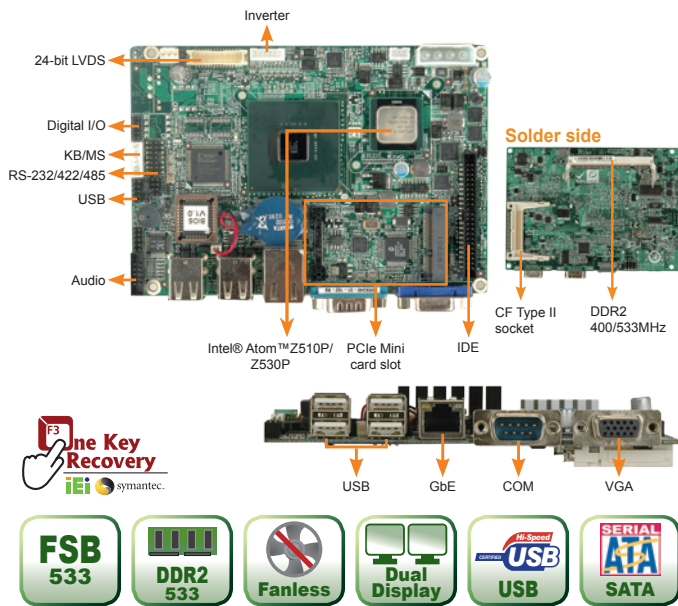
Power Supply/
Peripherals

6

Panel
Solutions
Introduction

WAFER-US15WP

3.5" SBC with Intel® Atom™ Processor Z510P/Z530P



Features

1. Intel® Atom™ Z510P/Z530P CPU for ultra low voltage fanless support
2. Support VGA and 24-bit single LVDS for dual independent display
3. High graphics performance supports H.264, MPEG1/2/4, VC1/WMV9 high definition decode
4. Support two COM ports, six USB ports and CF Type II socket
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor Z530P 1.6GHz with a 533MHz FSB
 - Intel® Atom™ processor Z510P 1.1GHz with a 400MHz FSB
- ◆ System Chipset
 - Intel® US15WP
- ◆ BIOS
 - AMI BIOS
- ◆ System Memory
 - One 200-pin 400/533MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
 - One Intel® 82574L PCIe GbE chipset
- ◆ I/O Interface
 - 6 x USB 2.0
 - 1 x IDE
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 1 x PS/2 for KB/MS
 - 1 x CF Type II
- ◆ Expansion
 - 1 x PCIe Mini card
- ◆ Super IO
 - ITE IT8718
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio
 - Realtek ALC888 HD Audio codec
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 500 (GMA 500)
 - VGA support by Chronitel CH7317A
 - 18/24-bit single-channel LVDS integrated in Intel® US15WP
- ◆ Watchdog Timer
 - Software programmable 1-255 sec. by super I/O
- ◆ Power Supply
 - 5V only AT/ATX support
- ◆ Power Consumption
 - 5V@1.48A (Intel® Atom™ Z530P 1.6GHz with 1GB DDR2)
- ◆ Operating Temperature
 - 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 146 mm x 102 mm
- ◆ Weight
 - GW: 650g/NW: 230g

Packing List

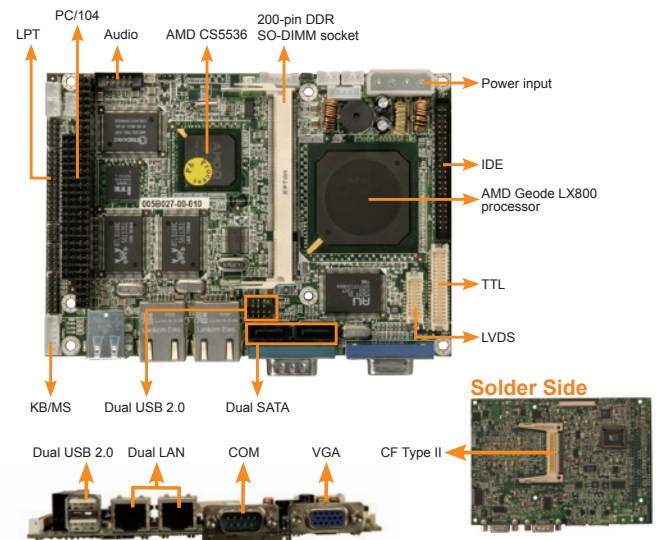
1 x WAFER-US15WP single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
WAFER-US15WP-Z530P-R10	3.5" SBC with Intel® Atom™ Z530P 1.6GHz, VGA/24-bit LVDS, GbE, CF Type II, USB, audio
WAFER-US15WP-Z510P-R10	3.5" SBC with Intel® Atom™ Z510P 1.1GHz, VGA/24-bit LVDS, GbE, CF Type II, USB, audio
32001-008600-100-RS	Dual port USB cable
32205-000300-100-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable

WAFER-LX-R12

3.5" SBC with on-board AMD Geode™ LX 800 processor VGA/LVDS/TTL, Dual LAN and SATA



Features

1. 3.5" form factor embedded board with AMD Geode™ LX 800 processor and RoHS compliant
2. DDR 333/400MHz SO-DIMM SDRAM up to 1GB
3. Complete I/O support with two SATA, IDE, CF Type II, PC/104, dual LAN and four USB 2.0
4. 24-bit TTL/18-bit single-channel LVDS
5. Value embedded applications with low power and fanless design. Support Windows® XP/CE/XPe
6. The best choice for thin client Windows® CE 5.0, XPe OS image with ICA, RDP and IE APs ready
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - On board AMD Geode™ LX800 (500MHz) processor
- ◆ System Chipsets
 - AMD Geode LX800 + AMD CS5536
- ◆ BIOS
 - Award BIOS
- ◆ System Memory
 - One 200-pin 400/333MHz DDR SDRAM SO-DIMM Supported (system max. 1GB)
- ◆ Ethernet
 - 10/100Mbps dual RTL8100C Ethernet Chipsets
- ◆ I/O Interface
 - 4 x USB 2.0
 - 2 x SATA with VIA VT6421A RAID 0, 1 function support
 - 1 x LPT
 - 1 x CF Type II
 - 2 x RS-232
 - 1 x RS-422/485
 - 1 x PS/2 for KB/MS
 - 1 x IDE
- ◆ Expansion
 - 1 x PC/104
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Super I/O
 - Winbond W83627EHG
- ◆ Audio
 - Realtek ALC203 with AC'97 Codec
- ◆ Display
 - VGA integrated in AMD Geode™ LX 800
 - 24-bit TTL
 - 18-bit single-channel LVDS
- ◆ Infrared Interface
 - 1 x Infrared interface by pin header
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
 - 5V only, AT/ATX power support
- ◆ Power Consumption
 - 5V@1.53A (AMD LX800 with DDR 400MHz/1GB)
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 146 mm x 102 mm
- ◆ Weight
 - GW: 670 g/NW: 230 g

Packing List

1 x WAFER-LX800 single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x RS-232/422/485 cable (P/N: 32205-000300-100-RS)	
1 x SATA power cable (P/N: 32102-000100-200-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x USB cable (P/N: 32001-008600-100-RS)	1 x QIG

Ordering Information

Part No.	Description
WAFER-LX-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, audio, VGA/LVDS/TTL, dual LAN and SATA connectors
32200-015100-RS	LPT cable

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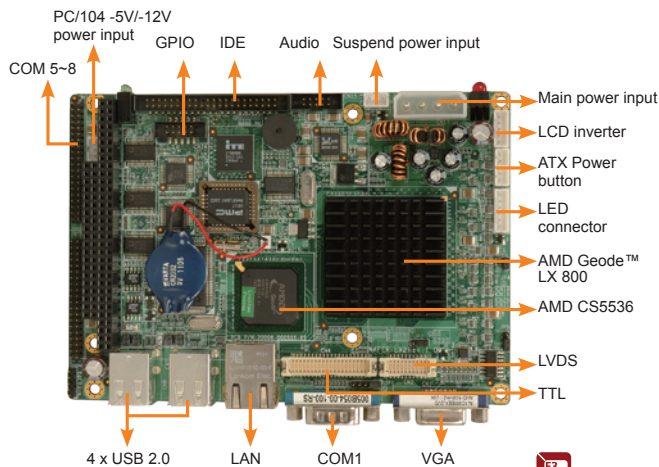
4
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WAFER-LX2-R12

3.5" SBC with AMD Geode™ LX 800 processor, 8 COM, DDR 400MHz, VGA/LVDS/TTL display interfaces, PC/104, four USB 2.0, Embedded OS support



Features

1. 3.5" form factor with AMD Geode™ LX 800 CPU
2. One 333/400MHz DDR SO-DIMM socket supports up to 1GB memory
3. VGA, 24-bit TTL, 18-bit LVDS display interfaces
4. Seven RS-232 and one RS-232/422/485
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipsets
 - AMD Geode™ LX 800 + CS5536
- ◆ BIOS
 - Award BIOS
- ◆ System Memory
 - One 200-pin 400/333MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet
 - Single Realtek RTL8100C 10/100Mbps Ethernet chipset
- ◆ I/O Interface
 - 7 x RS-232 1 x RS-232/422/485
 - 4 x USB 2.0 1 x IDE
- ◆ Expansion
 - PC/104 (ISA Bus)
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Display Interface
 - VGA integrated in AMD Geode™ LX 800
 - 24-bit TTL
 - 18-bit single-channel LVDS
- ◆ Audio
 - Realtek ALC203 with AC'97 codec
- ◆ SSD
 - CF Type II
- ◆ Watchdog Timer
 - Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply
 - 5V only, AT/ATX support
- ◆ Power Consumption
 - 5V@1.33A (AMD Geode™ LX 800 with 400MHz 1GB DDR)
- ◆ Operating Temperature
 - 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 146 mm x 102 mm
- ◆ Weight
 - GW: 670g/NW: 230g

Packing List

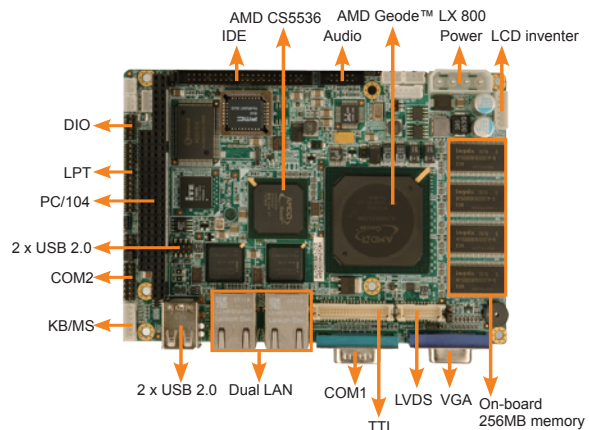
1 x WAFER-LX2 single board computer		
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)		
2 x Quad RS-232 adapter cable (P/N: 32200-025401-RS)		
1 x Audio cable (P/N: 32200-072100-RS)	1 x One Key Recovery CD	
1 x Mini jumper pack	1 x Utility CD	1 x QIG

Ordering Information

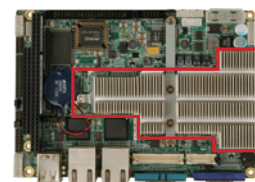
Part No.	Description
WAFER-LX2-800-R12	3.5" SBC with AMD Geode™ LX 800 processor, Audio, VGA/LVDS, TTL/LVDS, four USB 2.0, seven RS-232 and one RS-232/422/485

WAFER-LX3-R20

3.5" SBC, AMD Geode™ LX 800 Processor with VGA/LVDS/TTL, Dual LAN, USB 2.0, Audio and On-board Memory



WAFER-LX3-800 :
0°C ~ 60°C operating temperature



WAFER-LX3-800W :
-40°C ~ 85°C operating temperature

Features

1. 3.5" form factor with AMD Geode™ LX 800 (500MHz) CPU
2. On-board memory support up to 512MB
3. VGA, 24-bit TTL, 18-bit LVDS display interface
4. Two RS-232 and one RS-422/485
5. Supports wide operating temperature
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - On-board AMD Geode™ LX800 (500MHz) processor
- ◆ System Chipset
 - AMD Geode™ LX 800 + CS5536
- ◆ BIOS
 - AMI BIOS
- ◆ System Memory
 - On-board memory supports up to 512MB
- ◆ Ethernet
 - Dual 10/100 Mbps Intel® 82551ER controller
- ◆ I/O Interface
 - 3 x RS-232 1 x RS-422/485
 - 4 x USB 2.0 1 x IDE
 - 1 x LPT 1 x CF Type II
- ◆ Expansion
 - PC/104 (ISA Bus)
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super I/O
 - SMSC 3114
- ◆ Display Interface
 - VGA integrated in AMD Geode™ LX 800
 - 24-bit TTL
 - 18-bit single-channel LVDS
- ◆ Audio
 - AC'97 codec with Realtek ALC203
- ◆ Watchdog Timer
 - Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply
 - 5V only, AT/ATX support
- ◆ Power Consumption
 - 5V@1.34A (AMD Geode™ LX 800 (500MHz) CPU with 256MB on-board memory)
- ◆ Operating Temperature
 - 0°C ~ 60°C for WAFER-LX3-800
 - 40°C ~ 85°C for WAFER-LX3-800W
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 146 mm x 102 mm
- ◆ Weight: GW: 600g/NW: 160g

Packing List

1 x WAFER-LX3 single board computer		
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)		
1 x RS-232/422/485 cable (P/N: 32205-000300-100-RS)		
1 x Audio cable (P/N: 32000-072100-RS)	1 x One Key Recovery CD	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Mini jumper pack	
1 x USB cable (P/N: 32001-008600-100-RS)	1 x Utility CD	1 x QIG

Ordering Information

Part No.	Description
WAFER-LX3-800-256MB-R20	3.5" SBC with AMD Geode™ LX 800 processor, VGA/LVDS/TTL, dual LAN, USB 2.0, Audio, on-board 256MB memory
WAFER-LX3-800W-256MB-R20	3.5" SBC with AMD Geode™ LX 800 (500MHz) processor, VGA/LVDS/TTL, dual LAN, USB 2.0, Audio, on-board 256MB memory and wide operating temperature (-40°C~+85°C)
32200-015100-RS	LPT cable

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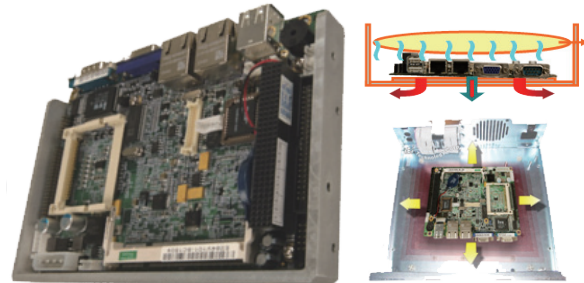
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Power Supply/
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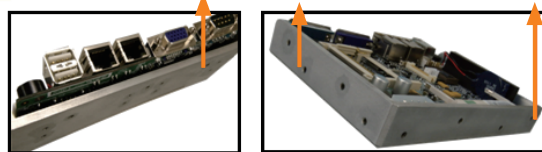
Panel
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■ Enclosure Heatsink



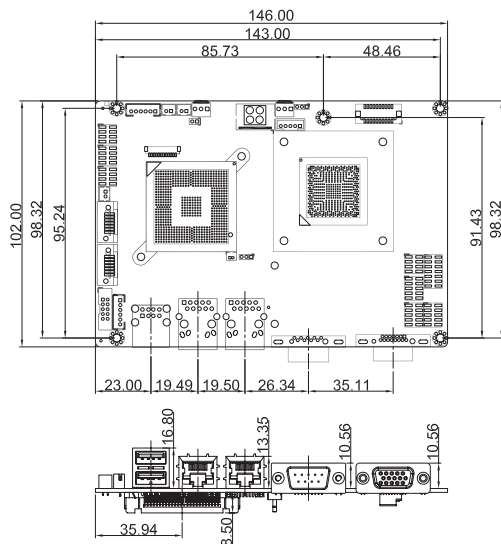
IEI unique enclosure heatsink design: the heatsink housing is included in the standard packing list.

Multiple screw mounting holes provide flexibility for all thermal solutions.

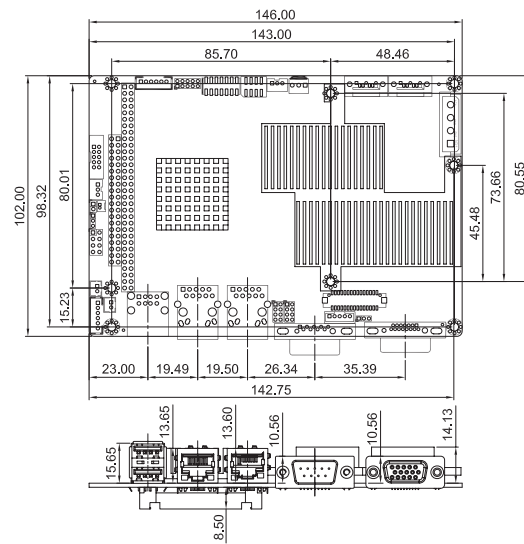


WAFER Dimensions (Unit: mm)

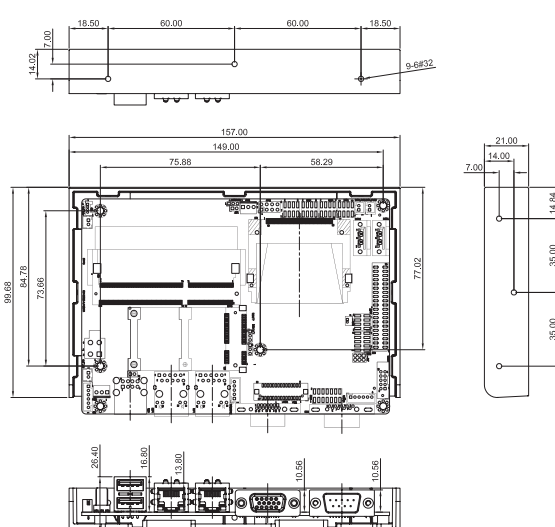
WAFER-PV-D4251/N4551/D5251-R11



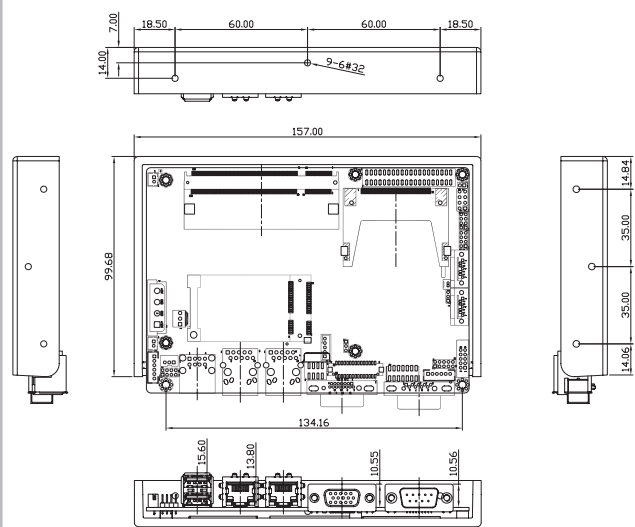
WAFER-945GSE2-R20



WAFER-PV-D4252/N4552/D5252



WAFER-945GSE2-R20



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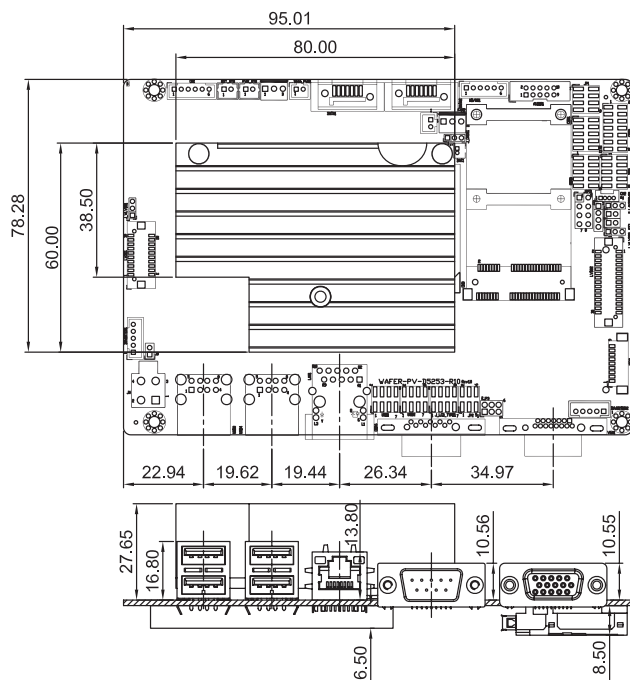
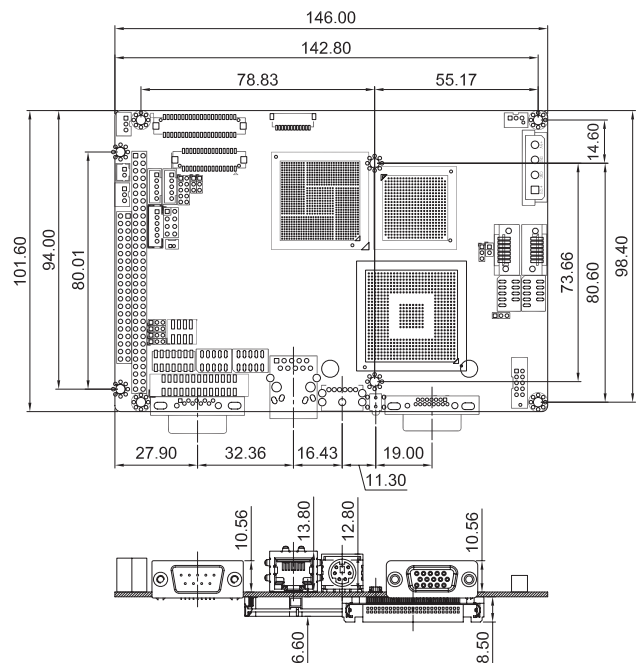
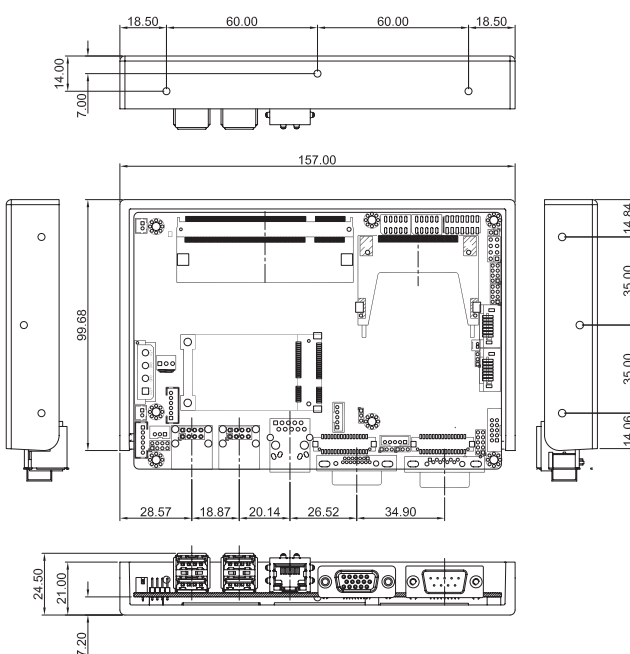
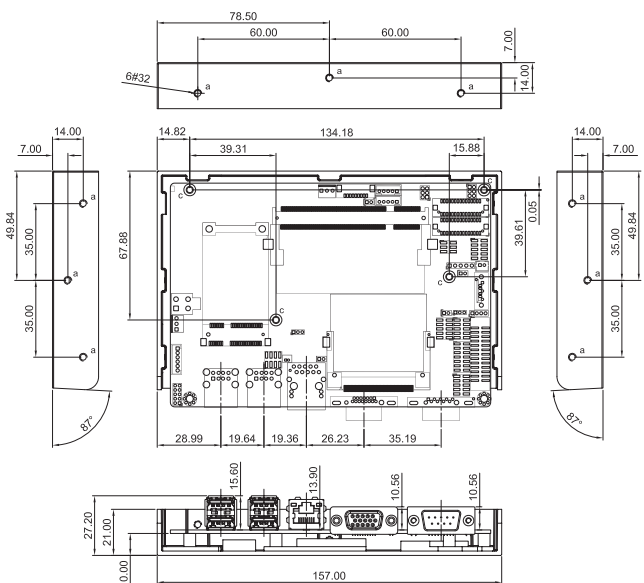
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WAFER Dimensions (Unit: mm)

WAFER-PV-D4253/N4553/D5253

WAFER-945GSE3

WAFER-945GSELVDS2

WAFER-US15WP2


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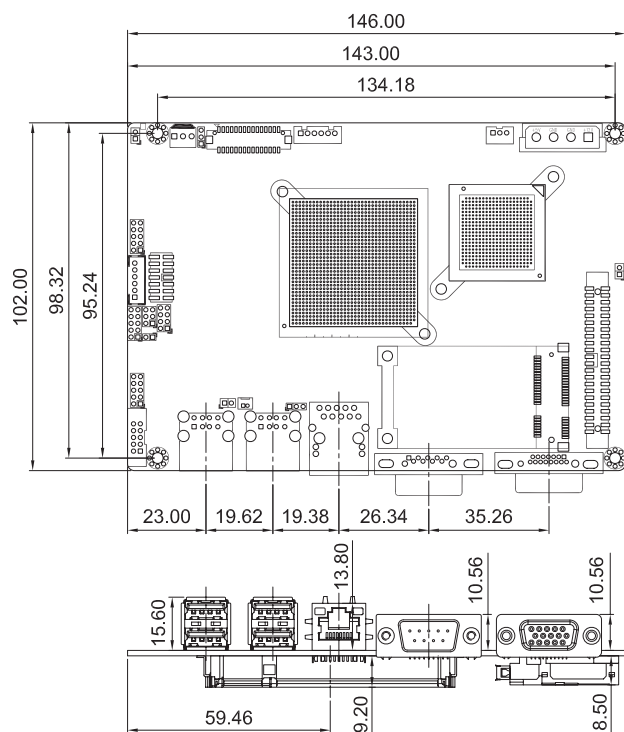
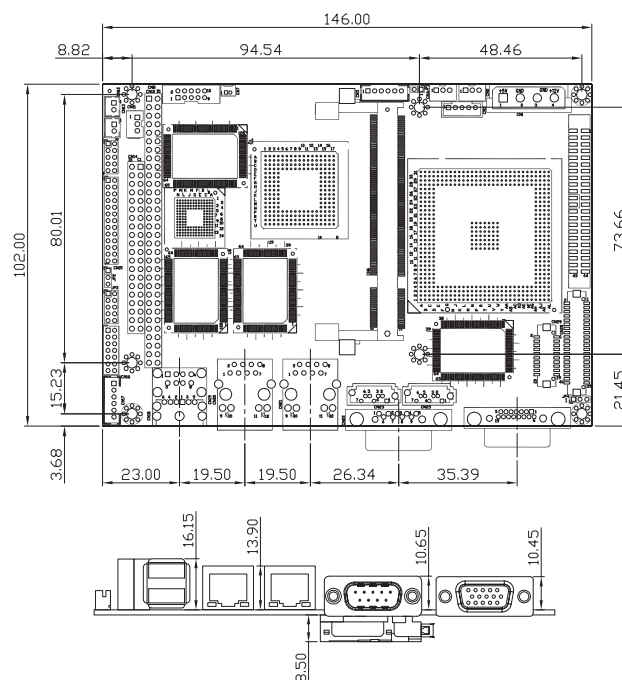
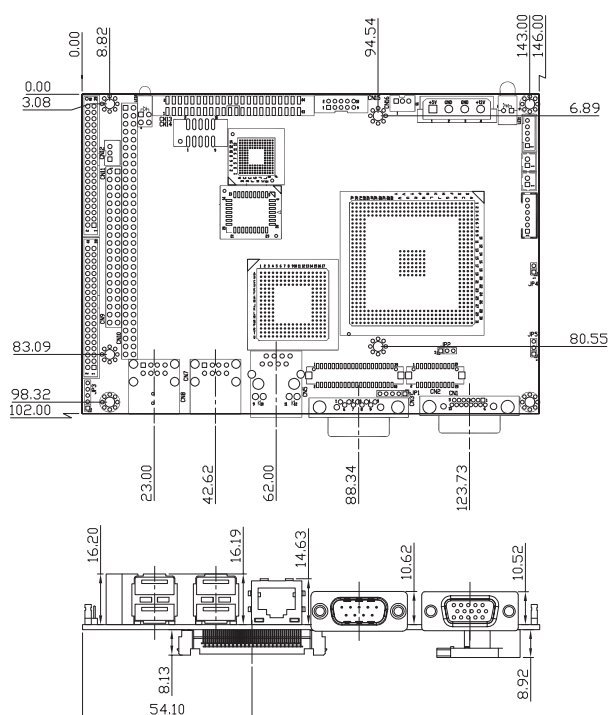
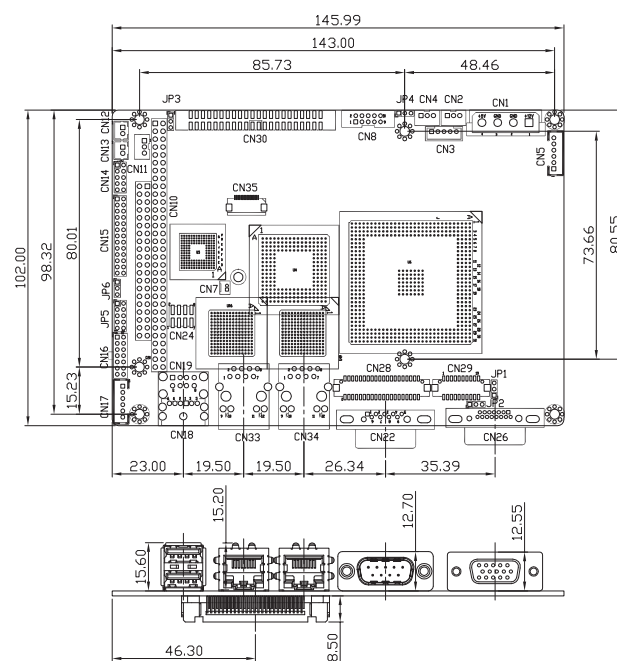
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Peripherals

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WAFER Dimensions (Unit: mm)

WAFER-US15WP

WAFER-LX-R12

WAFER-LX2-R12

WAFER-LX3-R20


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PC/104 Selection Guide



Model Name	PM-PV-N4551/D5251	PM-US15W	PM-945GSE	PM-LX	PM-LX2
CPU Socket	On board	On board	On board	On board	On board
CPU Type	Intel® Atom™ processor D525 1.8GHz Intel® Atom™ processor N455 1.66GHz	Intel® Atom™ processor Z530 1.6GHz Intel® Atom™ processor Z510 1.1GHz	Intel® Atom™ processor N270 1.6GHz	AMD Geode™ LX 800 500MHz processor	AMD Geode™ LX 800 500MHz processor
FSB	NA	533MHz w/HT for Z530 400MHz w/o HT for Z510	533MHz	N/A	N/A
Chipset	ICH8M	US15W	945GSE + ICH7M	Geode™ LX800 + CS5536	Geode™ LX800 + CS5536
Memory	1 x 204-pin 800 MHz 4GB (max.) DDR3 SO-DIMM (D525) 1 x 204-pin 800 MHz 2GB (max.) DDR3 SO-DIMM (N455)	1 x 200-pin 533 MHz 2GB (max.) DDR2 SO-DIMM	On-board 1GB 800 MHz DDR2 memory	1 x 200-pin 400 MHz 1GB (max.) DDR SDRAM SO-DIMM	1 x 200-pin 400 MHz 1GB (max.) DDR SDRAM SO-DIMM
Display Interface	Dual display supported 1 x VGA 1 x 18-bit single-channel LVDS	Dual display supported 1 x VGA supported by LVDS-VGA-R10 1 x 18/24-bit single-channel LVDS	Dual display supported 1 x VGA 1 x 18-bit dual-channel LVDS	Dual display supported 1 x VGA 1 x 24-bit TTL	Dual display supported 1 x VGA 1 x 24-bit TTL
Ethernet	GbE by Intel® 82567V Ethernet PHY	10/100Mbps LAN by Realtek RTL8102E	10/100Mbps LAN by Realtek RTL8102E	10/100Mbps LAN by Realtek RTL8100C	10/100Mbps LAN by Realtek RTL8100C
I/O Interface	1 x RS-232 1 x RS-232/422/485 4 x USB 2.0 1 x KB/MS by pin header	4 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x KB/MS by pin header	4 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x KB/MS by pin header	2 x RS-232 1 x RS-422/485 2 x USB 2.0 1 x KB/MS by pin header 1 x LPT	2 x RS-232 1 x RS-422/485 2 x USB 2.0 1 x KB/MS by pin header 1 x LPT
Drive Interface	1 x SATA 3Gb/s 1 x CF Type II	1 x IDE 1 x CF Type II	1 x SATA 1 x CF Type II	1 x IDE 1 x CF Type II	1 x Slim FDD 1 x IDE 1 x CF Type II
Audio	10-pin header on board supports 7.1 channel HD Audio by AC-KIT-888HD	10-pin header on board supports 7.1 channel HD Audio by AC-KIT-888HD	10-pin header on board supports 7.1 channel HD Audio by AC-KIT-888HD or AC97 audio by AC-KIT08R	N/A	N/A
Digital I/O	N/A	8-bit digital I/O (4-bit input/4-bit output)	8-bit digital I/O (4-bit input/4-bit output)	N/A	N/A
Power Consumption	5V@3.31A (Intel® Atom™ D525 with 1GB DDR3) 5V@2.39A (Intel® Atom™ N455 with 1GB DDR3)	5V@1.84A (Intel® Atom™ Z510 with 1GB DDR2)	5V@2.6A (Intel® Atom™ N270 with 1GB DDR2)	5V@1.13A (AMD Geode™ LX 800 with 1GB DDR 400 MHz)	5V@1.09A (AMD Geode™ LX 800 with 512MB DDR 400 MHz)
Watchdog Timer	Software programmable and supports 1~255 sec. system reset				
Operation Environment	-20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing			Temperature Range: -40°C ~ 70°C (W) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCI-104	1 x PCI-104	1 x PCI-104	1 x PCI-104	1 x PC-104
CPU Cooler	Heatsink	Heatsink	Heatsink	Heatsink	Heatsink

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Industrial Computing Solutions

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Video Capture Solutions

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Embedded Computing Solutions

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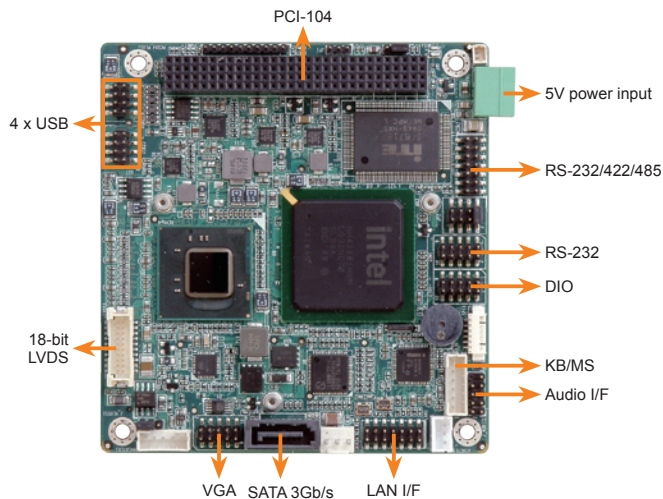
Power Supply/Peripherals

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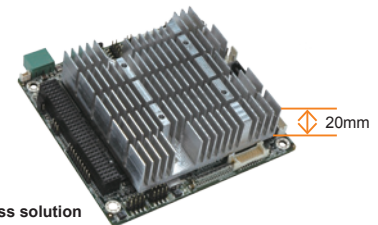
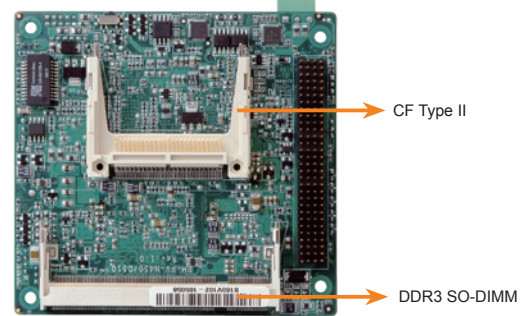
Panel Solutions Introduction

PM-PV-N4551 D5251

PCI-104 SBC with Intel® Atom™ N455/D525, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS



Solder Side



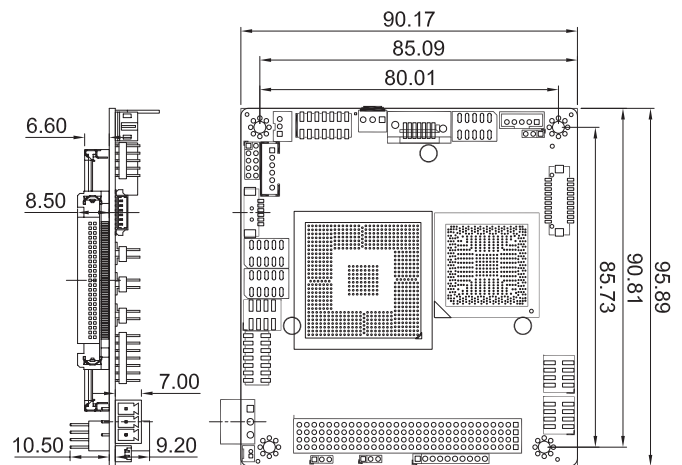
Specifications

- ◆ CPU
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
- ◆ Chipset
 - Intel® ICH8M
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ Graphic
 - GMA 3150
 - Graphic core speed 400MHz for D525
 - Graphic core speed 200MHz for N455
- ◆ Display interface
 - Analog CRT up to 2048x1536 for D525, 1400x1050 for N455
 - Support for CRT hotplug
 - Single-channel 18-bit LVDS, resolution support up to WXGA 1366x768 or XGA 1024x768
- ◆ Ethernet
 - Intel® 82567V GbE Ethernet PHY
- ◆ I/O Interface
 - 4 x USB 2.0
 - 1 x SATA 3Gb/s
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 1 x KB/MS
 - 1 x CF card slot
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output
- ◆ Expansion
 - 1 x PCI-104 slot
- ◆ Audio
 - 7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by Super I/O
- ◆ Power Supply
 - 5V power input, AT/ATX support
- ◆ Super I/O
 - ITE IT8718F
- ◆ Power Consumption
 - 5V@3.31A (Intel® Atom™ D525 with 1GB DDR3)
 - 5V@2.39A (Intel® Atom™ N455 with 1GB DDR3)
- ◆ Operating Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 96mm x 90mm

Features

1. Intel® Atom™ N455/D525 processor with DDR3 memory
2. Single 5V power input design, 12V for LCD/fan
3. Single-channel 18-bit LVDS/VGA output for display
4. Support two COM, four USB, SATA 3Gb/s and CF Type II socket
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Dimensions (Unit: mm)



Ordering Information

Part No.	Description
PM-PV-D5251-R10	PCI-104 SBC with Intel® Atom™ D525 1.8GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
PM-PV-N4551-R10	PCI-104 SBC with Intel® Atom™ N455 1.66GHz, DDR3, VGA/LVDS, GbE, USB 2.0, SATA 3Gb/s and CF Type II, RoHS
32205-000300-100-RS	RS-232/422/485 cable
32102-000100-200-RS	SATA power cable
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 supports dual audio streams
CF-PV4010-R10	CPU fan (40mm x 40mm x 10mm)

Packing List

1 x PM-PV-N4551/D5251 single board computer	
1 x Dual-port USB cable (P/N: 32001-008600-100-RS)	
1 x PS/2 KB/MS cable (P/N: 32000-023800-RS)	1 x SATA cable (P/N: 32000-062800-RS)
1 x VGA cable (P/N: 32000-033804-RS)	1 x One Key Recovery CD
1 x LAN cable (P/N: 32013-000400-100-RS)	1 x Mini jumper pack
1 x Power cable (P/N: 32100-130300-RS)	1 x Utility CD
1 x RS-232 cable (P/N: 32200-000049-RS)	1 x QIG

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

ORing
Network
Communication

5

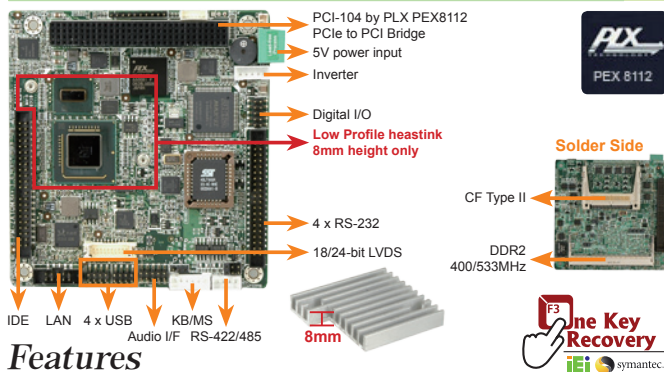
Power Supply/
Peripherals

6

Panel
Solutions
Introduction

PM-US15W

PCI-104 Intel® Atom™ Z510/Z530 CPU board with 18/24-bit LVDS, USB, CF



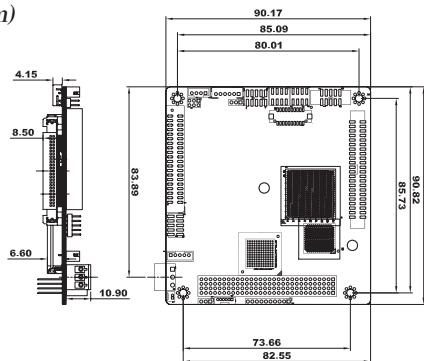
Features

1. Intel® Atom™ Z510/Z530 processor up to 1.6GHz
2. PLX PEX8112 PCIe to PCI bridge supports PCI-104 add-on card
3. Single-channel 18/24-bit LVDS supported
4. CF Type II and four USB, four COM supported
5. Full hardware acceleration of H.264, MPEG2, VC1, and WMV9 supported
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ Z510 1.1GHz with a 400MHz FSB w/o HT support
Intel® Atom™ Z530 1.6GHz with a 533MHz FSB w/HT support
- ◆ System Chipset
Intel® US15W
- ◆ BIOS
AMI BIOS
- ◆ System Memory
1 x 200-pin single-channel DDR2 SO-DIMM 400/533MHz up to 2GB
- ◆ Ethernet
10/100Mbps Realtek RTL8102E Ethernet chipset (PCIe Interface)
- ◆ I/O Interface
1 x IDE 1 x KB/MS
4 x RS-232 4 x USB 2.0
1 x RS-422/485 (shared with COM2)
1 x CF Type II Socket
- ◆ Expansion
PCI-104 slot (PCI BUS)
- ◆ Digital I/O
8-bit digital I/O, 4-bit input/4-bit output
- ◆ Super I/O
SMSC 3114
- ◆ Display Interface
18/24-bit single-channel LVDS
VGA supported by LVDS to VGA module (LVDS-VGA-R10)
- ◆ Audio
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
5V only, AT/ATX support
- ◆ Power Consumption
5V@1.84A (Intel® Atom™ Z510 1.1GHz with 1GB DDR2)
- ◆ Operating Temperature: 0°C ~ +60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
96 mm x 90 mm
- ◆ Weight
GW: 650g/NW: 250g

Dimensions (mm)



Packing List

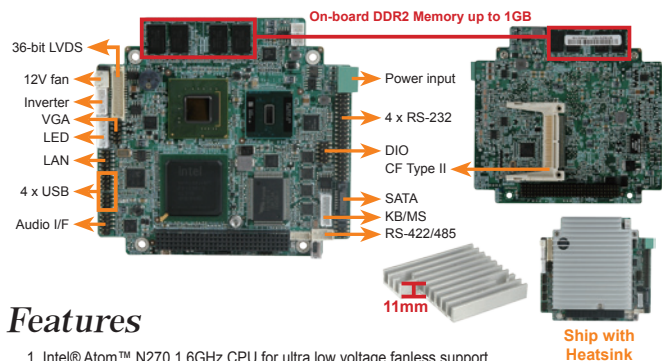
1 x PM-US15W single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x Quad port RS-232 cable (P/N: 32200-025401-RS)	
2 x Dual USB ports cable (P/N: 32001-008600-100-RS)	
1 x LAN cable (P/N: 32000-055702-RS)	1 x One Key Recovery CD
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Mini jumper pack
1 x Power cable P/N: 32100-130300-RS)	1 x Utility CD 1 x QIG

Ordering Information

Part No.	Description
PM-US15W-Z530-R10	PCI-104 SBC Intel® Z530 1.6GHz with LVDS, USB, CF, 4COM
PM-US15W-Z510-R10	PCI-104 SBC Intel® Z510 1.1GHz with LVDS, USB, LAN, CF, 4COM
LVDS-VGA-R10	LVDS to VGA converter board
32600-114400-RS	20-pin LVDS connecting cable
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
32205-003800-100-RS	RS-422/485 cable

PM-945GSE

PCI-104 SBC with Intel® Atom™ 1.6GHz CPU, VGA/LVDS, LAN, USB, SATA, four COM and on-board 1GB memory



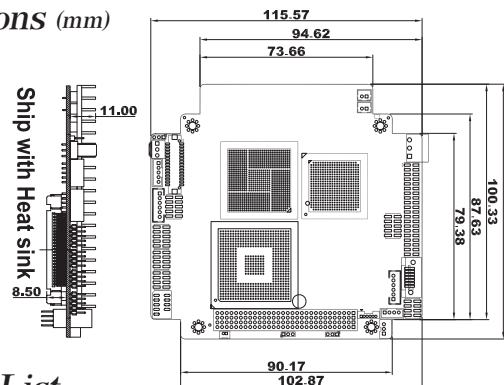
Features

1. Intel® Atom™ N270 1.6GHz CPU for ultra low voltage fanless support
2. Single 5V power input design, 12V for LCD/fan
3. 18-bit dual-channel LVDS plus VGA support dual independent display
4. On-board memory supports up to 1GB
5. Support four COM, four USB 2.0, one SATA and CF Type II socket
6. Low profile heat sink design
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ processor N270 1.6GHz with a 533MHz FSB
- ◆ System Chipset
Intel® 945GSE/ICH7-M
- ◆ BIOS
AMI BIOS
- ◆ Memory
On-board 1GB DDR2 SDRAM supported
- ◆ Ethernet
One Realtek 8102E PCIe 10/100Mbps chipset
- ◆ I/O Interface
4 x USB 2.0 1 x SATA
1 x PS/2 for KB/MS 1 x CF Type II
4 x RS-232 1 x RS-422/485 (share with COM2)
- ◆ Digital I/O
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion
PCI-104
- ◆ Power Supply
5V only, 12V for LCD/fan, AT/ATX support
- ◆ Super I/O
Fintek F81865
- ◆ Audio
5.1 channel audio kit with Realtek ALC655 AC'97 codec
7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams
- ◆ Display Interface
Intel® Graphics Media Accelerator 950
VGA integrated in Intel® 945GSE
18-bit dual-channel LVDS integrated in Intel® 945GSE
- ◆ Watchdog Timer
Software programmable 1-255 sec. by super I/O
- ◆ Operating Temperature
0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Power Consumption
5V@2.6A (Intel® Atom™ N270 1.6GHz, 1GB DDR2)
- ◆ Dimensions
108.59mm x 116mm (4.275" x 4.55")
- ◆ Weight
GW: 650g/NW: 250g

Dimensions (mm)



Packing List

1 x PM-945GSE single board computer	
1 x Quad RS-232 cable (P/N: 32100-147900-RS)	
2 x Dual USB cable (P/N: 32001-008600-100-RS)	
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x VGA cable (P/N: 32000-033804-RS)
1 x LAN cable (P/N: 32000-055702-RS)	1 x One Key Recovery CD
1 x Power cable (P/N: 32100-130300-RS)	1 x Mini jumper pack
1 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD 1 x QIG

Ordering Information

Part No.	Description
PM-945GSE-N270-R10	PCI-104 SBC with Intel® Atom™ 1.6GHz CPU, VGA/LVDS, LAN, USB, SATA, four COM and on-board 1GB memory
32205-003800-100-RS	RS-422/485 cable
32102-000100-200-RS	SATA power cable
32100-052100-RS	ATX power cable
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655 codec
AC-KIT-888HD-R10	7.1 channel HD Audio kit with Realtek ALC888 codec supports dual audio streams

1

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Computing
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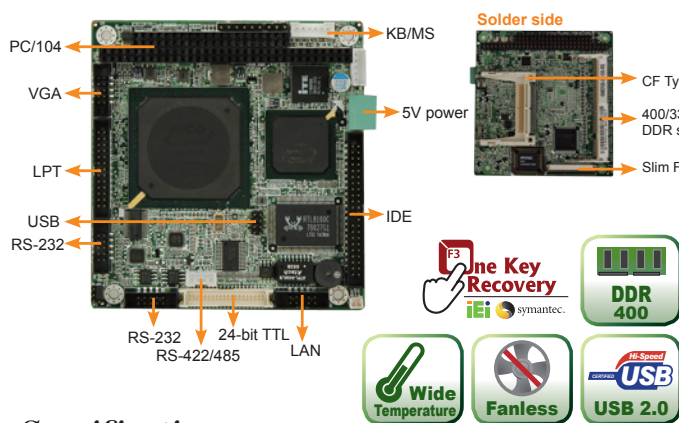
Power Supply/
Peripherals

6

Panel
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PM-LX2

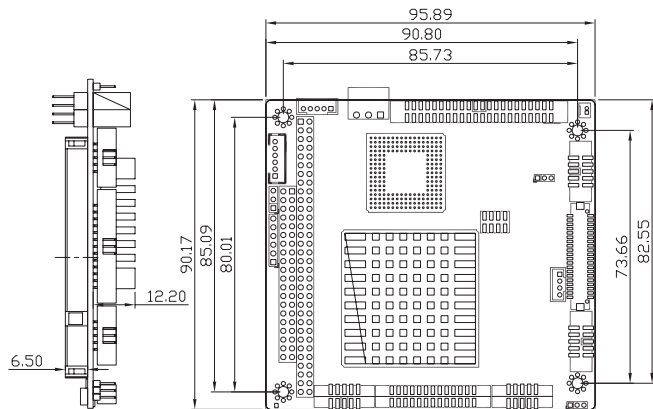
AMD Geode™ LX 800 CPU on-board PC/104 Module



Specifications

- ◆ CPU
AMD Geode™ LX 800 500MHz processor
- ◆ System Chipset
AMD Geode™ LX 800 + CS5536
- ◆ BIOS
AMI BIOS
- ◆ System Memory
One 200-pin 400MHz DDR SDRAM
SO-DIMM supported (system max. 1GB)
- ◆ Super I/O
SMSC 3114
- ◆ Ethernet
One Realtek RTL8100C 10/100Mbps
Ethernet chipset
- ◆ I/O Interface
2 x USB 2.0
2 x RS-232
1 x RS-422/485
1 x PS/2 for KB/MS
1 x LPT
1 x Slim FDD
1 x CF Type II
1 x IDE
- ◆ Display Interface
CRT integrated in AMD Geode™ LX 800
24-bit TTL integrated in AMD Geode™ LX 800
- ◆ Watchdog Timer
Software programmable supports 1~255 sec.
system reset.
- ◆ Expansion
1 x PC/104 supported by ITE IT8888G
- ◆ Power Supply
5V only, AT support
- ◆ Power Consumption
5V@ 1.09A (AMD Geode™ LX 800 with
400MHz 512MB DDR)
- ◆ Operating Temperature
PM-LX2-800-R10: 0°C ~ 60°C
PM-LX2-800W-R10: -40°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions:
96mm (L) x 90mm (W)
- ◆ Weight
GW: 500g/NW 110g

Dimensions (mm)



Packing List

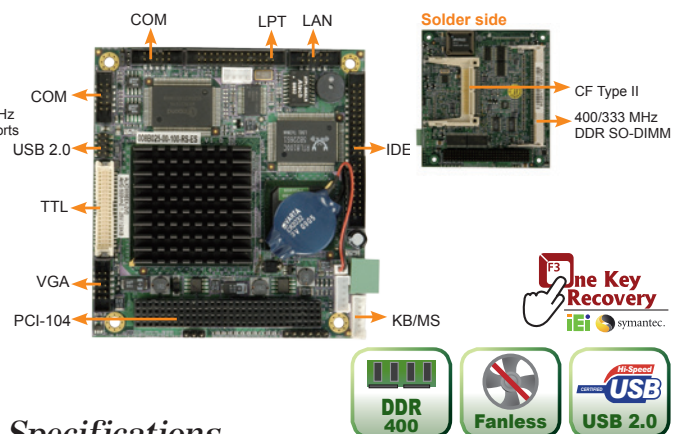
1 x PM-LX2 single board computer		
1 x PS/2 KB/MS cable (P/N: 32200-023800-RS)	1 x ATA33 flat cable (P/N: 32200-000009-RS)	
1 x Dual USB cable (P/N: 32001-008600-100-RS)	1 x Power cable (P/N: 32100-130300-RS)	
1 x LAN cable (P/N: 32000-055702-RS)	1 x VGA cable (P/N: 32000-033804-RS)	
1 x One Key Recovery CD	2 x RS-232 cable (P/N: 32205-002700-100-RS)	
1 x Mini jumper pack	1 x Utility CD	1 x QIG

Ordering Information

Part No.	Description
PM-LX2-800-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II
PM-LX2-800W-R10	PC/104 SBC with AMD Geode™ LX 800 500 MHz, VGA/TTL, LAN, USB 2.0 and CF Type II, Wide Temperature -40°C ~ 70°C
32400-001100-RS	FDD cable
32200-015100-RS	LPT cable
32205-003800-100-RS	RS-422/485 cable

PM-LX

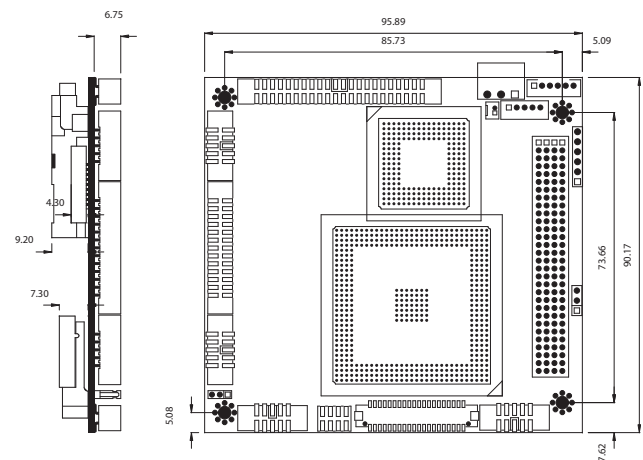
PCI-104 Module with on-board AMD Geode™ LX 800 CPU



Specifications

- ◆ CPU
On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipset
AMD Geode™ LX 800 + AMD CS5536
- ◆ BIOS
Award BIOS
- ◆ System Memory
One 200-pin 400/333MHz DDR SDRAM
SO-DIMM supported (system max. 1GB)
- ◆ Ethernet
10/100Mbps realtek RTL8100C Ethernet
chipset
- ◆ I/O Interface
2 x USB 2.0
1 x LPT
2 x RS-232
1 x RS-422/485
1 x PS/2 for KB/MS
1 x IDE
- ◆ Expansion
1 x PCI-104
- ◆ Super I/O
Winbond W83627EHG
- ◆ SSD
CF Type II
- ◆ Display Interface
VGA integrated in AMD Geode™ LX 800
24-bit TTL
- ◆ Watchdog Timer
Software programmable supports 1~255
sec. system reset
- ◆ Power Supply
5V only, AT support
- ◆ Power Consumption
5V@1.13A (AMD Geode™ LX 800
500MHz with 400MHz 1G DDR memory)
- ◆ Operating Temperature
0°C ~ 60°C
- ◆ Operating Humidity
5%~95%
- ◆ Dimensions
95 mm x 95 mm
- ◆ Weight
GW: 500 g/NW: 110 g

Dimensions (mm)



Packing List

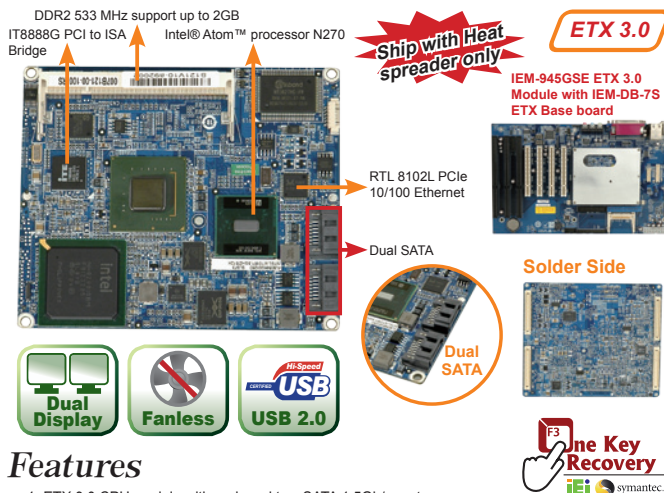
1 x PM-LX single board computer		
1 x ATA33 flat cable (P/N: 32200-000009-RS)	1 x VGA cable (P/N: 32000-033804-RS)	
1 x USB cable (P/N: 32001-008600-100-RS)	1 x One Key Recovery CD	
1 x LAN cable (P/N: 32000-055702-RS)	1 x Mini jumper pack	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x Utility CD	
1 x Power cable (P/N: 32100-130300-RS)	1 x QIG	
2 x RS-232 cable (P/N: 32205-002700-100-RS)		

Ordering Information

Part No.	Description
PM-LX-800-R11	PCI-104 SBC with AMD Geode™ LX 800 processor, VGA/TTL, LAN, USB 2.0, CF Type II
32200-015100-RS	LPT cable
32205-003800-100-RS	RS-422/485 cable

IEM-945GSE

ETX 3.0 CPU Module with Intel® Atom™ processor, VGA/LVDS, LAN, SATA, USB and Audio



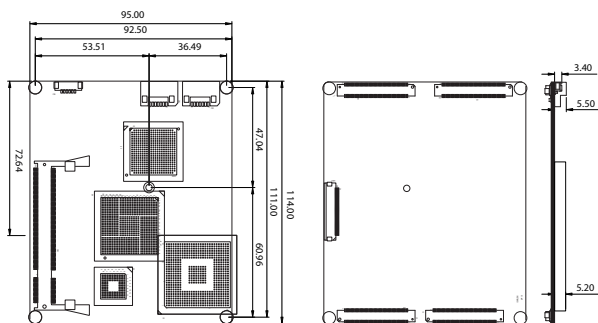
Features

1. ETX 3.0 CPU module with on-board two SATA 1.5Gb/s ports
2. Support four PCI, one ISA slot for expansion
3. Support dual display for VGA + LVDS
4. Support four USB 2.0, two SATA, one IDE interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
Intel® Atom™ processor N270 1.6 GHz with 533 MHz FSB
- ◆ System Chipset
Intel® 945GSE + Intel® 82801GBM/ICH7M
- ◆ BIOS
AMI
- ◆ System Memory
One 200-pin 533/400MHz DDR2 SO-DIMM supported (system max. 2GB)
- ◆ Ethernet
One 10/100Mbps Realtek RTL8102E Ethernet chipset (PCIe interface)
- ◆ Super I/O
ITE IT8718
- ◆ I/O Interface
4 x USB 2.0 (to baseboard)
2 x SATA (on CPU module)
1 x IDE (to baseboard)
1 x LPT (to baseboard)
2 x RS-232 (to baseboard)
1 x PS2 KB/MS (to baseboard)
- ◆ Expansions
4 x PCI, 32-bit 33MHz PCI bus to baseboard
ISA supported by ITE IT8888G
- ◆ Display Interface
VGA/TV-Out integrated in Intel® 945GSE (to baseboard)
18-bit dual-channel LVDS signal (to baseboard)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
AT/ATX supported
Power Consumption
5V@2.9A (Intel® Atom™ processor N270 with 1GB DDR2)
- ◆ Operating Temperature
0°C ~ 60°C (IEM-945GSE-N270-R10)
-40°C ~ 85°C (IEM-945GSE-N270W2-R10)
-20°C ~ 70°C (IEM-945GSE-N270W-R10)
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
95 mm x 114 mm
- ◆ Weight: GW
600g/NW 250g

Dimensions (mm)



Packing List

1 x IEM-945GSE single board computer	1 x One Key Recovery CD
1 x Heatspreader	1 x Utility CD 1 x QIG

Ordering Information

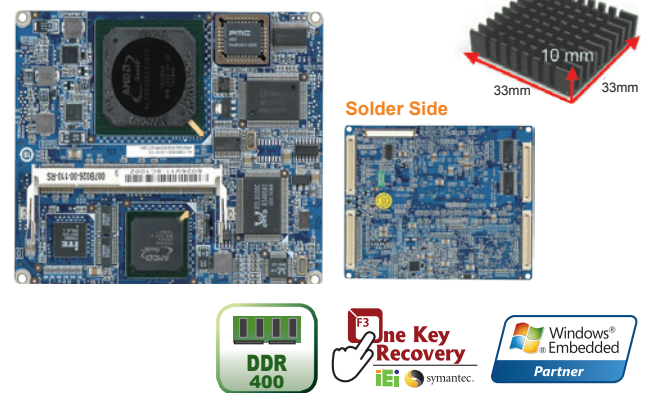
Part No.	Description
IEM-945GSE-N270-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio
IEM-945GSE-N270W2-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio, -40°C ~ 85°C
IEM-945GSE-N270W-R10	ETX 3.0 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio, -20°C ~ 70°C
IEM-DB-7S-RS-R30	ATX size 7 slots ETX baseboard

IEM-LX-R11

AMD Geode™ LX 800 Highly Integrated ETX Module

ETX CPU Module with on-board AMD Geode™ LX 800, USB 2.0, LAN & Audio

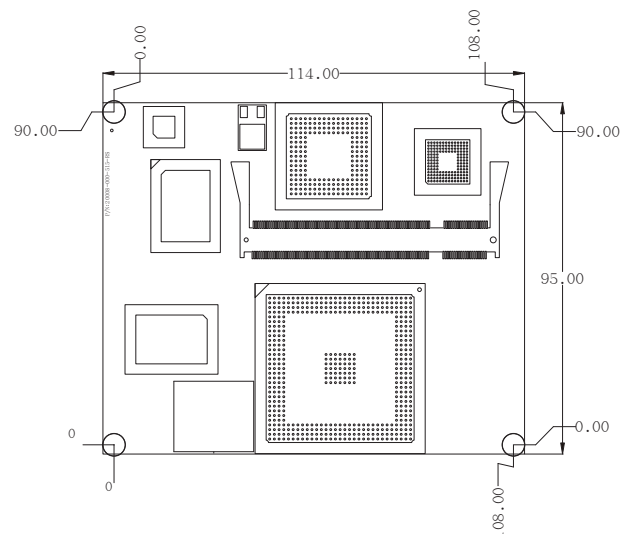
ETX 2.8



Specifications

- ◆ CPU
On-board AMD Geode™ LX 800 (500MHz) processor
- ◆ System Chipset
AMD Geode™ LX 800 + AMD CS5536
- ◆ BIOS
Award BIOS
- ◆ System Memory
One 200-pin 400/333 MHz DDR SDRAM SO-DIMM Supported (system max. 1GB)
- ◆ Ethernet
10/100Mbps RTL8100C Ethernet chipset
- ◆ I/O Interface
4 x USB 2.0 1 x LPT/FDD
1 x IDE 2 x RS-232
1 x PS/2 KB/MS
- ◆ Expansions
4 x PCI bus master
ISA support by ITE IT8888G
- ◆ Audio
Realtek ALC203 AC'97 codec
- ◆ SSD
CF Type II
- ◆ Super I/O
Winbond W83627EHG
- ◆ Display Interface
VGA integrated in AMD Geode™ LX 800 24-bit TTL (optional)
18-bit single-channel LVDS
- ◆ Watchdog Timer
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply
AT/ATX support
- ◆ Power Consumption
5V@0.92A (AMD Geode™ LX 800 CPU with DDR 333MHz 256MB RAM)
- ◆ Operating Temperature
0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
95 mm x 114 mm
- ◆ Weight
GW: 650g/NW: 250g

Dimensions (mm)



Packing List

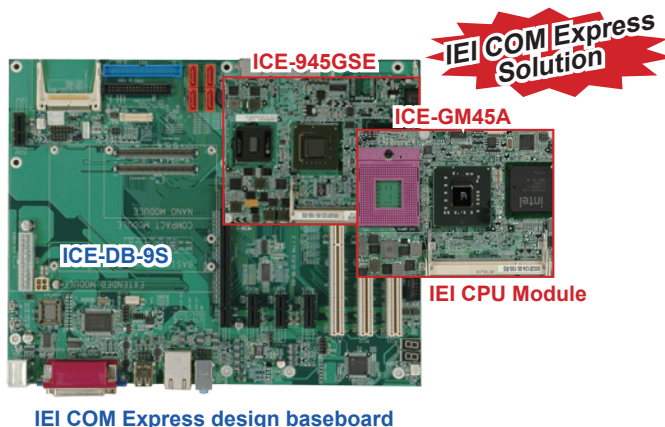
1 x IEM-LX single board computer	1 x One Key Recovery CD
1 x Screw kit	1 x Utility CD 1 x QIG

Ordering Information

Part No.	Description
IEM-LX-800-R11	AMD Geode™ LX 800 500MHz processor, VGA/LVDS/TTL, LAN & Audio

IEI COM Express Series

COM Express is a computer-on-module (COM) form factor series. It can be integrated in various customized applications. Each COM Express module integrates CPU, memory and common I/O of a PC/AT including USB, audio, graphics, and Ethernet. All I/O signals are mapped to two high density, low profile connectors on the bottom side of the module. The COM Express specification is hosted by PICMG. ICE (IEI COM Express) modules provide complete performance range for users to choose. With the IEI COM Express baseboard design service, user can quickly enjoy the benefits of modularization and efficiency.



IEI COM Express design baseboard

Transfer your ETX Module to IEI COM Express Solution

COM Express provides PCI Express, dual-channel LVDS, GbE, eight USB and four SATA ports for I/O Expansion

Platform	ETX	COM Express Type II Basic Module
Size	95 mm x 114 mm	95 mm x 125 mm
VGA	Yes	Yes
LCD	TTL or LVDS	Up to 2x single LVDS or dual-channel LVDS
SDVO	N/A	Up to 2 SDVO (shared with PCIe x16)
Expansion	PCI & ISA	PCIe & PCI
Ethernet	10/100 Mbps	10/100/1000 Mbps
USB	up to 4 ports	up to 8 ports
SATA	up to 2 Ports (ETX 3.0 only)	up to 4 SATA
IDE	up to 2 channels	up to 1 channel

COM Express pin-out types

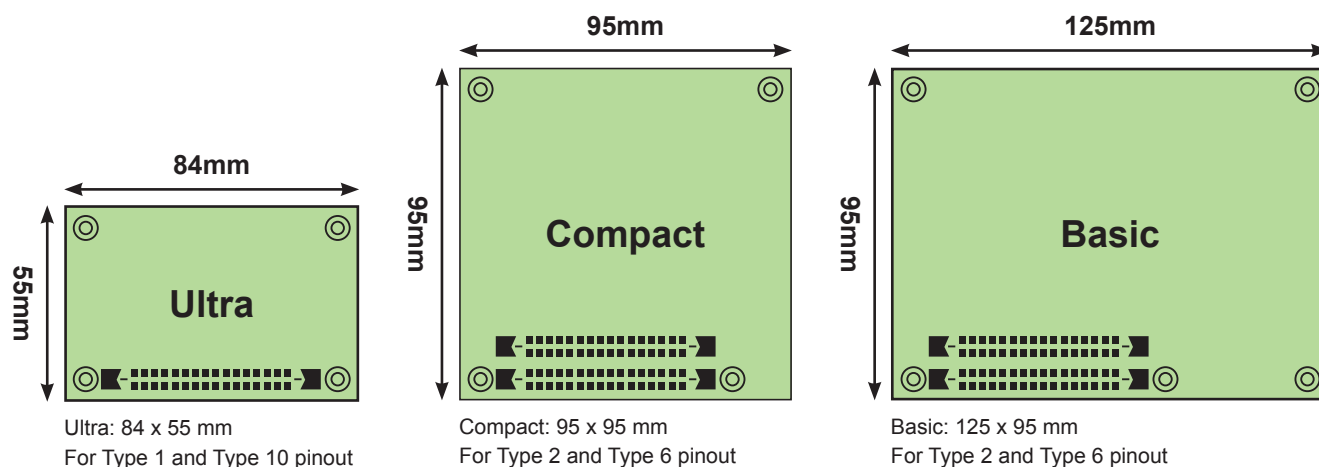
COM Express, a computer-on-module (COM) form factor, is a highly integrated and compact PC that can be used in a design application much like an integrated circuit component. Each COM Express Module COM integrates core CPU and memory functionality, the common I/O of a PC/AT, USB, audio, graphics (PEG), and Ethernet. All I/O signals are mapped to two high density, low profile connectors on the bottom side of the module.

Types

The COM Express specification is hosted by PICMG. There are seven different pinouts defined in the specification. The most common used pin out is Type 2 and Type 1. The latest pin-outs added in the revision 2.0 of the COM Express specification are Type 6 and Type 10.

Types	PCIe Lanes	PEG/SDVO	Display	SATA	LAN	PCI	IDE	USB 2.0	USB 3.0
Type 1	Up to 6	×	VGA, LVDS	4	1	×	×	8	×
Type 10	Up to 4	/1	DDI, LVDS	2	1	×	×	8	×
Type 2	Up to 22	1/2	VGA, LVDS, PEG, SDVO	4	1	✓	×	8	×
Type 6	Up to 24	1/	VGA, LVDS, PEG, 3*DDI	4	1	×	×	8	4

The specification defines three module sizes:



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◆ Pinout Comparison of Type 1 and Type 10

Type 1 Pinout

B	LPC SMB I ² C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	12V

Type 10 Pinout

B	LPC SMB I ² C	2 ports SATA	n/c	Audio	8 ports USB 2.0	4 lanes PCIe x1	n/c	LVDS B	VGA	5VSB	12V
A	GBE							LVDS A	Others	SPI	2 ports serial 12V

◆ Pinout Comparison of Type 2 and Type 6

Type 2 Pinout

D	PATA IDE	PCI				PCIe x16 (SDVO)				12V
C										

B	LPC SMB I ² C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B	VGA	5VSB	12V
A	GBE					LVDS A	Others	SPI	12V

Type 6 Pinout

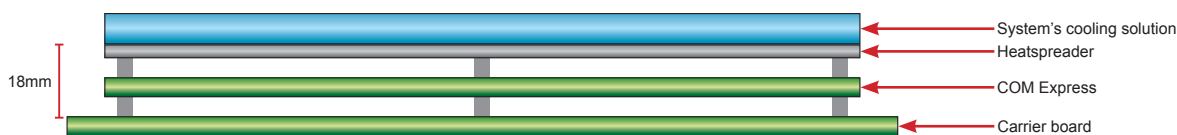
D	4 ports USB 3.0/2.0		2 Lanes PCIe x 1	DDI 1	DDI 2	DDI 3	PCIe x16			12V	
C											

B	LPC SMB I ² C	4 ports SATA	Audio	8 ports USB 2.0	6 lanes PCIe x1	LVDS B		VGA	5VSB	12V	
A	GBE					LVDS A		Others	SPI	2 ports Serial JRM	12V

■ Installing the COM Express

◆ Thermal Design of COM Express

COM Express definition includes a heatspreader that acts as a thermal interface between the COM Express module and the system's cooling solution. The height of a COM Express module, including the heatspreader, has been defined as 18 mm and covers the complete area of the COM Express. All heat generating components are thermally conducted to the heatspreader in order to avoid hot spots.

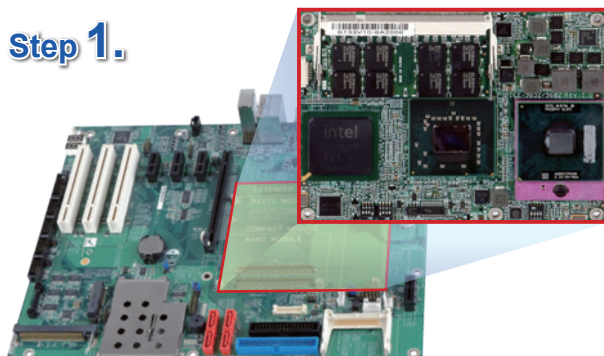


1. Installing the COM Express

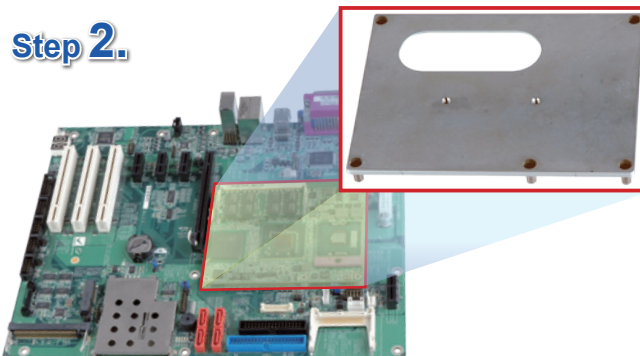
Firmly insert the COM Express into the COM Express socket.

2. Installing the heatspreader

A heatspreader must be installed on the COM Express. Thermal pads must be smeared on the lower side of the heatspreader before it is mounted on the COM Express. Heatspreaders are mounted on the CPU, Northbridge and Southbridge chipsets to ensure the operating temperature of these chips remain low.



▲ Installing the COM Express



▲ Installing the heatspreader

3. Installing the system's cooling solution

In addition to the heatspreader, COM Express needs another heatsink or other thermal solution to cool down the COM Express.

Before installing the system's cooling solution, make sure that you have properly applied thermal interface material to the heatspreader.

Operating Temperature

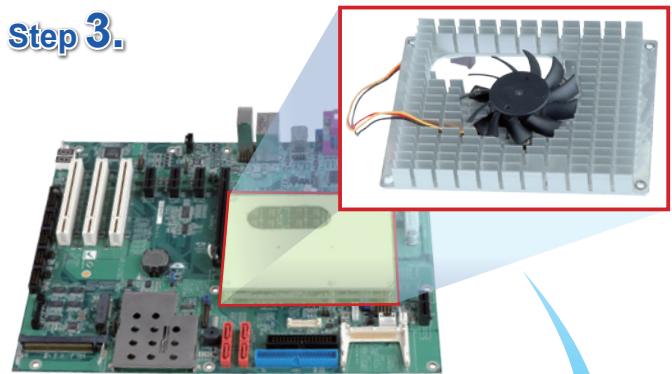
The maximum and minimum operating temperatures for the standard COM Express are listed below.

- Minimum Operating Temperature: 0°C (32°F)
- Maximum Operating Temperature: 60°C (140°F)

WARNING:

Never run the embedded module without the heat sink. The heatspreader plate shipped with the COM Express acts as a thermal interface between the module and the heat sink. The heat sink must be installed on the heatspreader plate to maintain proper operating temperatures. Make sure to maintain the heatspreader plate temperature under 60°C in operation.

Step 3.



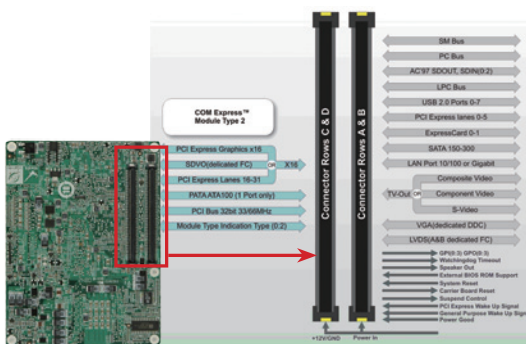
▲ Installing the system's cooling solution



■ Benefits

A: High Compatibility

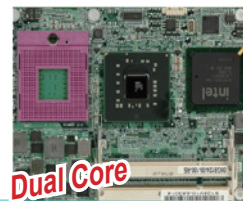
- IEI ICE modules follow standard COM Express design guide and have high compatibility
- ICE modules are compatible with all baseboards compliant with COM Express specifications
- Complete performance level for customers' choice



Embedded Fanless



Performance Dual Core



Embedded, single core, or dual core complete performance level could be immediately applied on the baseboard.

B: Strong Support

- With strong R&D resources, IEI provides customers innovatively leading products and service to drive successfully experience.
- IEI provides complete turnkey solutions from hardware, software and industrial BIOS design support.

R&D Support Service

Embedded OS Service

ICE Solution

Customized BIOS Service

Compatibility & Reliability Test

R&D Support Team

ME & ID Team

*CNC, laser cutting
*Die-cast, punch-press
*Plastic hard-tooling
*Rapid prototyping
*NEMA4/IP65 enclosure
*Customization
*Accessories: VESA arm, rack mount, DIN-rail-mount kit

SW Team

*BIOS: Phoenix/Award/AMI
*Windows® CE driver
*Digital Signage SW
*HMI SW

Intelligent Team

*Automobile devices SW, HW
*System integration
*Test and verification

Medical Team

*Medical products SW, HW
*IC design, test and verification

Support Team

*EMC/Safety service (FCC, UL, CSA, CE...)
*Key parts/Component verification team

Project Management Team

EE Team

*Schematic design
*Power circuit plan
*Layout design

DQV Team

*Product validation
*Environmental testing
*Compatibility testing
*Reliability testing/prediction

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

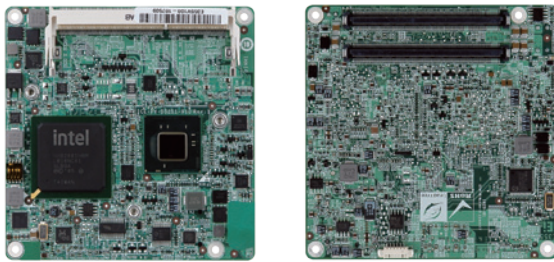
Power Supply/Peripherals

6

Panel Solutions Introduction

ICE-PV-N4551/D5251

COM Express Compact Type 2 Module, Intel® Atom™ N455/D525 Processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS



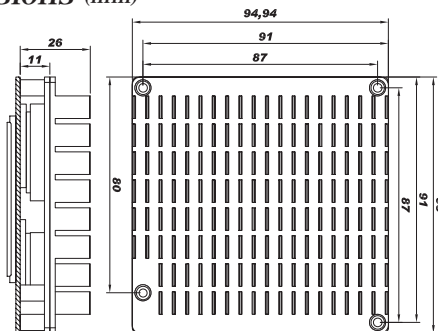
Features

1. COM Express Type 2 module with compact size (95 mm x 95 mm)
2. Intel® Atom™ N455/D525 processor support
3. DDR3 800MHz SO-DIMM socket supports up to 2GB
4. Support eight USB 2.0, three SATA 3Gb/s and one IDE
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ N455 single-core processor 1.66GHz/512KB L2 cache
 - Intel® Atom™ D525 dual-core processor 1.8GHz/1MB L2 cache
- ◆ System Chipset
 - Intel® ICH8M
- ◆ BIOS
 - UEFI BIOS
- ◆ Memory
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 4GB for D525)
 - One 204-pin 800MHz DDR3 SDRAM SO-DIMM supported (system max. 2GB for N455)
- ◆ GMA
 - GMA 3150
 - Graphic core speed 400MHz for D525
 - Graphic core speed 200MHz for N455
- ◆ Display Interface
 - Analog CRT (VGA) integrated in Intel® N455/D525 (signal to baseboard)
 - 18-bit single-channel LVDS signal (to baseboard)
- ◆ Ethernet
 - Intel® 82567V Gbe Ethernet PHY
- ◆ I/O Interface
 - 1 x IDE channel (signal to baseboard)
 - 3 x SATA 3Gb/s (to baseboard)
 - 8 x USB 2.0 (to baseboard)
- ◆ Expansions
 - 5 x PCIe x1 signal to baseboard
 - 4 x PCI, 32-bit/33MHz PCI bus to baseboard
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset by F75111R
- ◆ Power Supply
 - 12V only, AT/ATX mode support
- ◆ Power Consumption
 - 12V@1.25A (Intel® Atom™ D525 1.8GHz with DDR3 1GB)
- ◆ Temperature
 - 20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D525 processor
 - 20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N455 processor
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 95mm x 95mm
- ◆ Weight: GW: 600g/NW:200g

Dimensions (mm)



Packing List

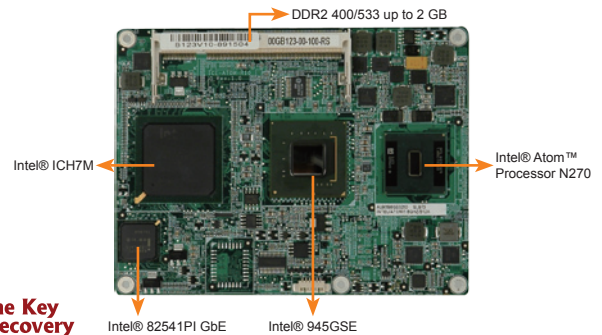
1 x ICE-PV-N4551/D5251 single board computer	1 x Heat spreader
1 x Heat sink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
ICE-PV-D5251-R10	COM Express Compact Type 2 module, Intel® Atom™ D525 processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS
ICE-PV-N4551-R10	COM Express Compact Type 2 module, Intel® Atom™ N455 processor, DDR3, VGA/LVDS, GbE, SATA, USB and audio, RoHS
ICE-DB-9S-R10	Baseboard for COM Express Type II modules

ICE-945GSE-R11

COM Express Basic Type 2 Module, Intel® Atom™ Processor, VGA/LVDS, GbE, SATA, USB and Audio



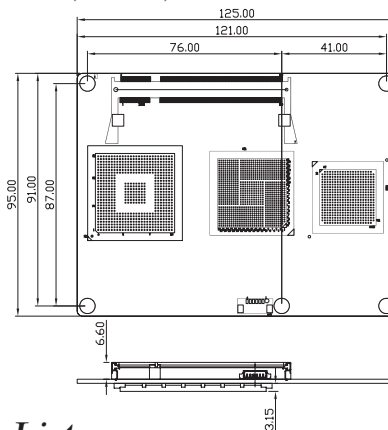
Features

1. Intel® 45nm mobile Atom™ N270 processor supported
2. High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR2 800/667MHz dual-channel SD RAM supported (system max. 4 GB)
4. 18/24-bit dual-channel LVDS, analog CRT, HDTV supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor N270 1.6GHz with 533MHz FSB
- ◆ System Chipset
 - Intel® 945GSE, Intel® 82801GBM/ICH7M
- ◆ BIOS: AMI BIOS
- ◆ System Memory
 - One 200-pin 533/400MHz DDR2 SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: One Intel® 82541PI GbE chipset
- ◆ I/O Interface
 - 8 x USB 2.0 (to baseboard)
 - 2 x SATA (to baseboard)
 - 1 x IDE channel (to baseboard)
- ◆ Expansions
 - 1 x SDVO signal to baseboard
 - 4 x PCIe x1 signal to baseboard
 - 4 x PCI, 32 bit/33 MHz PCI bus to baseboard
- ◆ Display Interface
 - VGA/HDTV integrated in Intel® 945GSE signal (to baseboard)
 - 18-bit dual-channel LVDS Signal (to baseboard)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset (depend on super I/O of baseboard)
- ◆ Power Supply
 - AT/ATX supported
- ◆ Power Consumption
 - 12V@0.95A (Intel® Atom™ processor N270 with 1GB DDR2)
- ◆ Operating Temperature
 - 0°C ~ 60°C (ICE-945GSE-N270-R10)
 - 40°C ~ 85°C (ICE-945GSE-N270W2-R10)
 - 20°C ~ 70°C (ICE-945GSE-N270W-R10)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 125 mm x 95 mm
- ◆ Weight: GW: 700g/NW 250g

Dimensions (Unit: mm)



Packing List

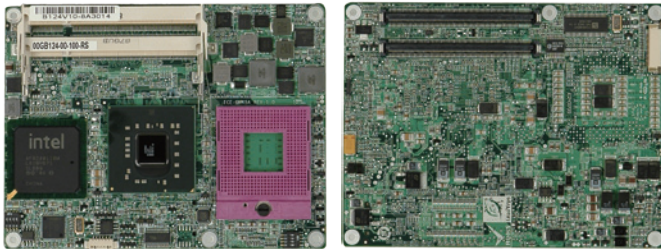
1 x ICE-945GSE single board computer	1 x Heatspreader
1 x Heatsink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
ICE-945GSE-N270-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio
ICE-945GSE-N270W2-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -40°C ~ 85°C
ICE-945GSE-N270W-R11	COM Express basic type 2 module with Intel® Atom™ processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -20°C ~ 70°C
ICE-DB-9S-R10	Baseboard for COM express Type 2 module

ICE-GM45A

COM Express Basic Type 2 Module, Intel® 45nm Core™ Duo Processor, VGA/LVDS, GbE, SATA 3Gb/s, USB and Audio



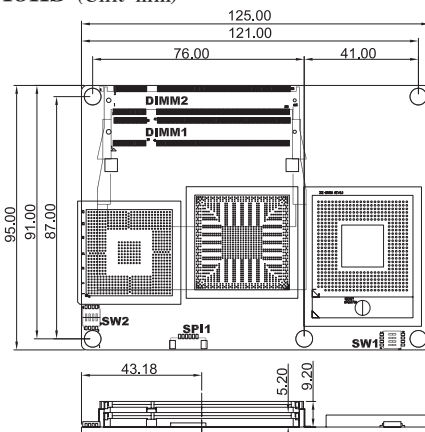
Features

1. Intel® 45nm mobile Core™ Duo processor supported
2. High-performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR2 800/667MHz dual-channel SD RAM supported (system max. 4 GB)
4. 18/24-bit dual-channel LVDS, analog CRT, HDTV supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Socket P Intel® Core™ Duo processor with 1066/800 MHz FSB
 - Socket P Intel® Celeron® M processor with 667 MHz FSB
- ◆ System Chipset: Intel® GM45/ICH9-M
- ◆ BIOS: AMI BIOS
- ◆ System Memory
 - Two 200-pin 800/667MHz DDR2 SO-DIMM support (system max. 4 GB)
- ◆ Ethernet
 - One Intel® 82574L PCIe GbE chipset
- ◆ I/O Interface
 - 8 x USB 2.0 (to baseboard)
 - 4 x SATA 3Gb/s (to baseboard)
- ◆ Audio
 - HD Audio signal to baseboard (audio codec on baseboard)
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset (depend on super I/O of baseboard)
- ◆ Expansions
 - 1 x PCIe x16 or 2 x SDVO signal to baseboard
 - 5 x PCIe x1 signal to baseboard
 - 4 x PCI, 32-bit/33 MHz PCI bus to baseboard
- ◆ Display Interface
 - VGA/HDTV integrated in Intel® GM45 signal (to baseboard)
 - 18/24-bit dual-channel LVDS signal (to baseboard)
- ◆ Power Supply
 - AT/ATX supported
- ◆ Power Consumption
 - 12V@2.574A (Intel® Core™2 Duo processor P8600 2.4 GHz with 1 GB DDR2)
- ◆ Operating Temperature
 - 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions: 125 mm x 95 mm
- ◆ Weight: GW: 700g/NW 250g

Dimensions (Unit: mm)



Packing List

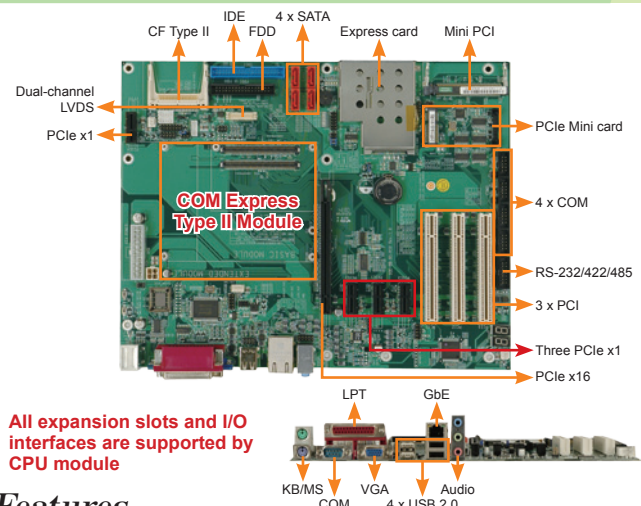
1 x ICE-GM45A single board computer	1 x One Key Recovery CD
1 x Heatspreader for CPU (45nm)	1 x Utility CD
1 x Cooler	1 x QIG

Ordering Information

Part No.	Description
ICE-GM45A-R10	COM Express basic Type 2 module, Intel® 45nm Core™ Duo processor, VGA/LVDS, GbE, SATA 3Gb/s, USB and audio
ICE-DB-9S-R10	Baseboard for COM Express Type 2 module
34000-000256-RS	Heatspreader for socket P merom CPU (65nm)

ICE-DB-9S

Baseboard for COM Express Type 2 Module



All expansion slots and I/O interfaces are supported by CPU module

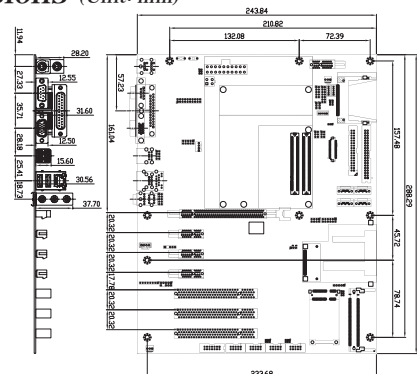
Features

1. ATX form factor baseboard for COM Express Type 2 module
2. Support one PCIe x16, four PCIe x1, three PCI for expansions
3. Second I/O interface supports up to six COM ports
4. COM2/COM3 with 5V/12V power by jumper selection

Specifications

- ◆ CPU Module Interface
 - Supports COM Express Compact/Basic module using connector pinout Type 2
- ◆ Display Interface
 - VGA DB-15 connector
 - 18/24-bit dual-channel LVDS
 - TV-out interface
- ◆ Expansions
 - 1 x PCIe x16
 - 1 x Mini PCI
 - 3 x PCI, 32-bit/33 MHz PCI bus
 - 1 x Express Card
- ◆ I/O Interface
 - 1 x IDE
 - 1 x FDD
 - 1 x LPT
 - 2 x PS/2 KB/MS
 - 5 x RS-232 (COM2/COM3 with 5V/12V power)
 - 1 x RJ-45 connector for GbE
 - 4 x SATA/SATA 3Gb/s
 - 1 x CF Type II
 - 1 x RS-232/422/485
 - 6 x USB 2.0
- ◆ Audio
 - Realtek ALC888 for 7.1 channels HD Audio
 - 1 x Mic-in, Lin-in, Lin-out connector
 - 1 x Front audio
- ◆ Super I/O
 - First Super I/O: Winbond W83627EHG
 - Second Super I/O: Fintek F81216
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output by Winbond W83627EHG
 - 8-bit digital I/O, 4-bit input/4-bit output by Fintek F75111R
- ◆ Infrared Interface
 - 1 x Infrared interface by pin header
- ◆ Power Supply: ATX/AT support
- ◆ Fan
 - 3 x Fan connector (FAN1 supports smart fan for CPU)
- ◆ Operating Temperature: 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 304.8 mm x 243.8 mm (12" x 9.6")

Dimensions (Unit: mm)



Packing List

1 x COM Express baseboard	
1 x Dual ports RS-232 cable (P/N: 19800-000051-RS)	
2 x SATA cable (P/N: 32801-000703-200-RS)	1 x Utility CD
1 x Mini jumper pack	1 x QIG

Ordering Information

Part No.	Description
ICE-DB-9S-R10	Baseboard for COM Express Type 2 modules
19800-000082-RS	RS-232/422/485 cable
32102-000100-200-RS	SATA power cable
32200-000052-RS	40-pin 3.5" IDE cable
32229-000100-100-RS	FDD cable
19800-000400-100-RS	LPT cable

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

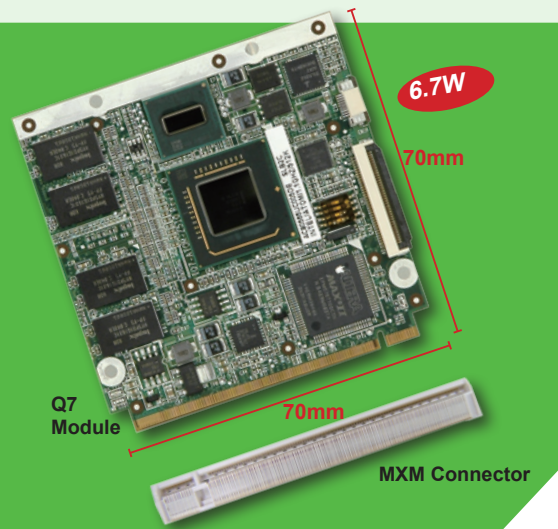
Power Supply/Peripherals

6

Panel Solutions Introduction

Q7 Introduction

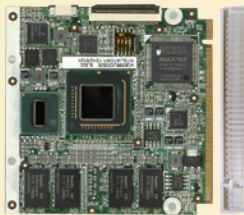
- The Qseven™ concept is an off-the-shelf, multi vendor, Single Board Computer that integrates all the core components of a common PC and is mounted onto an application specific carrier board.
- Qseven™ modules have a standardized form factor of 70mm x 70mm and have specified pinouts based on the high 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 singleruggedized MXM connector provides the carrier board interface to carry all the I/O signals to and from the Qseven™ module.



Pin Definition of Q7

Qseven offers the newest I/O technologies on this minimum size form factor. This includes serial high speed buses such as:

- 4 x PCI Express x1 Lanes
- DisplayPort, TDMS or SDVO Interface
- 8 x USB 2.0
- ExpressCard
- High Definition Digital Audio
- 2 x Serial ATA
- LPC interface
- Secure Digital I/O interface
- Gigabit Ethernet
- 2 x 24-bit LVDS Display Interface



1. PCI Express
2. USB 2.0
3. Express Card
4. SATA
5. SDIO
6. Audio
7. Display Port
8. HDMI
9. GbE

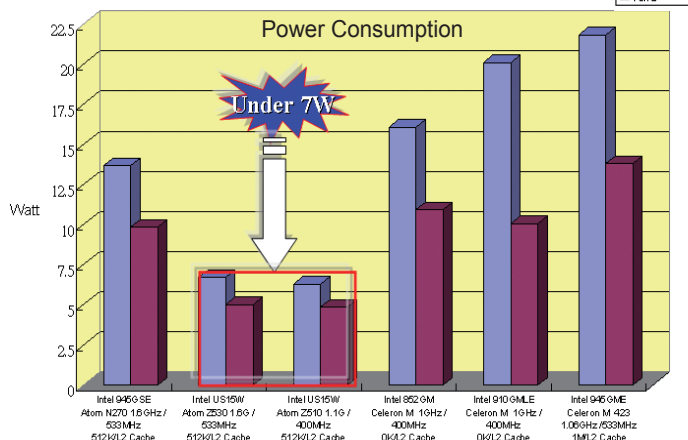
Benefits of Q7

- Compact size, cost-efficient and low-power consumption (TDP 12W)
- Legacy free and fast serial interface

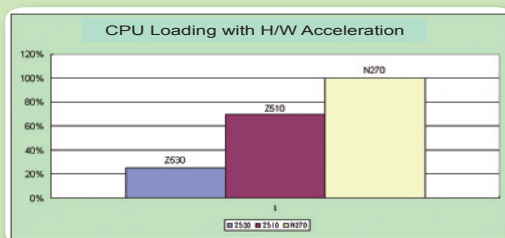
ETX/COM Express/Q7 Comparison Table

Platform	ETX 3.0	COM Express Type II Basic Module	Q7
Size	95 x 114 mm	95 x 125 mm	70 x 70 mm
Connector	4 x 100-pin	2 x 220-pin	1 x 230-pin
Memory	1 x SO-DIMM	1 x SO-DIMM	on board memory
VGA	Yes	Yes	N/A
LCD	TTL or LVDS	Up to 2 x single LVDS or Dual-channel LVDS	SDVO/HDMI/DP (Shared)
Expansion	PCI & ISA	PCI & PCI Express	PCI Express
Ethernet	10/100 Mbps	10/100/1000 Mbps	10/100/1000Mbps
USB	4	8	8
SATA	2 (ETX 3.0 only)	up to 4 SATA	up to 2 SATA
IDE	2CH	1CH	N/A
Audio	Mic-In/Lin-in/Lin-Out	AC97/HD interface	HD interface
Power	5V	12V	5V

Embedded Intel® Atom™ Processor Power Consumption Comparison



H.264 Graphic Performance



SW: Power DVD V8.0/Video type: H.264 DVD 1080P video file

CPU	Z530/1.6G	Z510/1.1G	ATOM N270
CPU Loading (With H/W acceleration)	20%~30% smoothly	60%~80% Laggard	Not Support

iQ7-US15W Supported Video Codecs

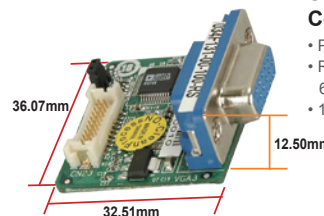
IEI Q7 module – iQ7-US15W with Intel® US15W chipset graphic video codecs support table

Codec	Profile @ Level	Max Bit Rate (bps)	Resolution and Frame Rate
H.264	BP@L3	10M	720 x 480 @ 30fps (NTSC), 720 x 576 @ 25fps (PAL)
H.264	MP@L4.1	50M	1920 x 1080 @ 30fps, 1280 x 720 @ 60fps
H.264	HP@L4.1	50M	1920 x 1080 @ 30fps, 1280 x 720 @ 60fps
VC-1 (WMV9)	SP@MP	384K	240 x 176 @ 30fps, 352 x 288 @ 15fps (CIF)
VC-1 (WMV9)	MP@HP	20M	1920 x 1080 @ 30fps
VC-1 (WMV9)	AP@L3	45M	1920 x 1080p @ 24fps, 1920 x 1080i @ 30, 1280 x 720p @ 60
MPEG-4 Part 2	SP@L3	384K	CIF @ 30fps
MPEG-4 Part 2	ASP@L5	8M	720 x 480 @ 30fps (NTSC), 720 x 576 @ 25fps (PAL)
DivX	Certified HD	4M	1280 x 720 @ 30fps
MPEG-2	MP@HL	80M	1920 x 1080 @ 30fps
MPEG-1	CPB	1.856M	768 x 576 @ 30fps
JPEG	Baseline	N/A	Not restricted

LVDS-VGA-R10

Single-channel LVDS to VGA Converter Board

- Provide 2nd VGA option for dual VGA display
- Resolution adjust by BIOS: Support 640x480, 800x600, 1024x768
- 18-bit LVDS to VGA Converter board



Packing List

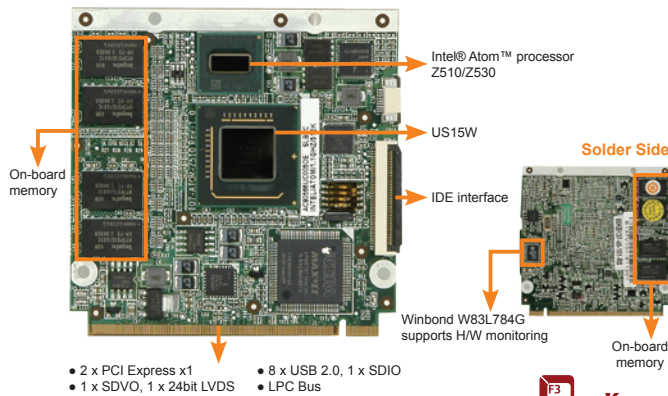
- 1 x LVDS to VGA Converter board
- 1 x QIG

Ordering Information

Part No.	Description
LVDS-VGA-R10	18-bit LVDS to VGA converter board
32600-112300-RS	30-pin LVDS connecting cable
32600-114400-RS	20-pin LVDS connecting cable

iQ7-US15W

Q7 CPU module with Intel® Atom™ processor Z510/530



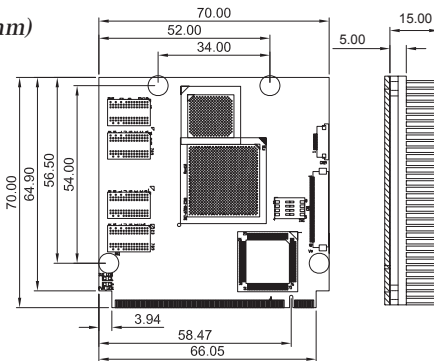
Features

1. Intel® Atom™ processor Z510/Z530 low power CPU with single 5V low power design
2. High graphic performance supports H.264, MPEG1/2/4, VC1/WMV9 high-definition decode
3. Single-channel 24-bit LVDS supported
4. On-board memory 1GB supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

Specifications

- ◆ CPU
 - Intel® Atom™ processor Z530 1.6GHz with a 533MHz FSB
 - Intel® Atom™ processor Z510 1.1GHz with a 400MHz FSB
- ◆ System Chipset
 - Intel® US15W
- ◆ BIOS
 - AMI BIOS
- ◆ System Memory
 - On-board 1GB DDR2 SDRAM supported
- ◆ I/O Interface
 - 8 x USB 2.0 (to baseboard)
 - 1 x IDE (on CPU module)
 - 1 x LPC bus (to baseboard)
 - 1 x Single-channel 18/24-bit LVDS (to baseboard)
 - 1 x SDIO (to baseboard)
 - 1 x SDVO (to baseboard)
 - 1 x SMBUS (to baseboard)
- ◆ Expansion
 - 2x PCIe x1 (to baseboard)
- ◆ Audio
 - 1 x HD Audio interface (to baseboard)
- ◆ HW Monitor
 - Winbond W83L784G
- ◆ Display Interface
 - Intel® Graphics Media Accelerator 500
 - SDVO/single-channel 24-bit LVDS Integrated in Intel® US15W (to baseboard)
 - Max Display Resolution:
 - LVDS: 1366x768 (24-bit color)
 - SDVO: 1280 x 1024
- ◆ Watchdog Timer
 - Software programmable supports 1~255sec. system rest by Winbond W83L784G
- ◆ Power Supply
 - 5V only AT/ATX supported
- ◆ Power Consumption
 - 5V@1.34A (Intel® Atom™ Z530 1.6GHz with 1GB DDR2)
 - 5V@1.255A (Intel® Atom™ Z510 1.1GHz with 1GB DDR2)
- ◆ Operating Temperature
 - 0°C ~ 60°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 70 mm x 70 mm
- ◆ Weight
 - GW: 600g/NW: 100g

Dimensions (mm)



Packing List

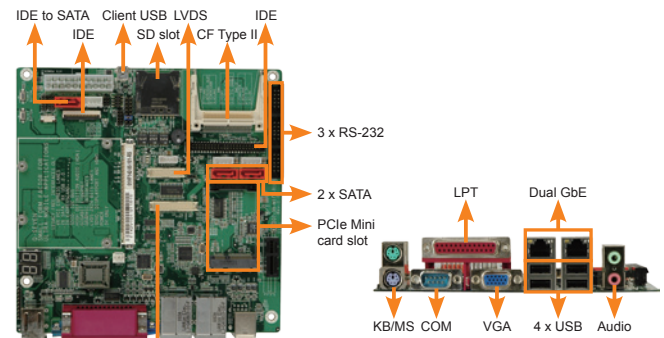
1 x Q7 CPU module	
1 x 50mm 1.8" IDE HDD FFC cable (P/N: 32400-029002-RS)	
1 x Heatsink	1 x Utility CD
1 x One Key Recovery CD	1 x QIG

Ordering Information

Part No.	Description
iQ7-US15W-Z510-R10	Q7 module with Intel® Atom™ Z510 1.1GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-US15W-Z530-R10	Q7 module with Intel® Atom™ Z530 1.6GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-DB-MITX-R10	Mini-ITX form factor baseboard for Q7 module, RoHS
32400-307900-RS	15cm 1.8" IDE FFC cable

iQ7-DB-MITX

Baseboard for Q7 modules



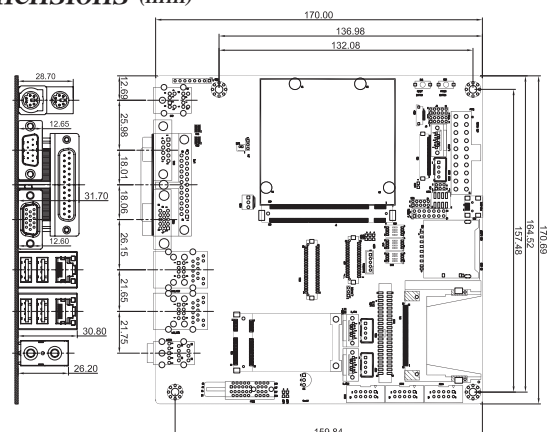
Features

1. Mini-ITX form factor baseboard for Q7 platform
2. Support audio, SD slot, IDE, CF Type II, single-channel LVDS, TTL
3. Support six USB, four COM, two SATA
4. Support PCIe x1 slot, one PCIe Mini card

Specifications

- ◆ Display Interface
 - VGA DB15 connector (SDVO to VGA by Chronitel CH7317B)
 - 18/24-bit single-channel LVDS
 - TTL (LVDS to TTL by TI SN75LVDS) (Option)
- ◆ Expansion Slot
 - 1 x PCIe Mini card slot shared with LAN1 (selected by switch: SW3)
 - 1 x PCIe x1 slot shared with LAN2 (selected by switch: SW3)
- ◆ I/O Interface
 - 2 x SATA/SATA 3Gb/s with 5V/12V power output (not support by iQ7-US15W)
 - 1 x SD Slot (IDE signal support from iQ7-US15W)
 - 1 x CF Type II (signal support from iQ7-US15W)
 - 1 x SATA with 5V/12V power output (IDE to SATA Bridge: Jmicron JM20330 Signal support from iQ7-US15W)
 - 1 x SD Slot 2 x PS2 KB/MS
 - 6 x USB 2.0 1 x USB Client
 - 1 x LPT 4 x RS-232
- ◆ Audio
 - Realtek ALC883 for 7.1 channels HD Audio
 - 1 x Mic-in, Line-out connector
- ◆ Ethernet Connector
 - 2 x Realtek RTL8111CP GbE chipsets
 - LAN1 shared with PCIe Mini card slot (selected by switch: SW3)
 - LAN2 shared with PCIe x1 Slot (selected by switch: SW3)
- ◆ Super I/O
 - SMSC SCH3114-NU
- ◆ Digital I/O
 - 8-bit digital I/O, 4-bit input/4-bit output by SMSC SCH3114-NU
- ◆ Infrared Interface
 - N/A
- ◆ Power Supply
 - ATX Power, ATX/AT Mode Support
- ◆ Operating Temperature
 - 0°C ~ 60°C (32°F~140°F)
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions
 - 170 mm x 170 mm
- ◆ Weight
 - GW: 700g/NW: 350g

Dimensions (mm)



Packing List

1 x Mini-ITX form factor baseboard for Q7 module
1 x One Key Recovery CD
1 x QIG

Ordering Information

Part No.	Description
iQ7-DB-MITX-R10	Mini-ITX form factor baseboard for Q7 module
19800-000051-RS	Dual RS-232 cable
19800-000047-RS	Single RS-232 cable
32400-029000-RS	15cm IDE FFC cable from Q7 module to baseboard
32400-029002-RS	5cm IDE FFC cable from Q7 module to baseboard

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

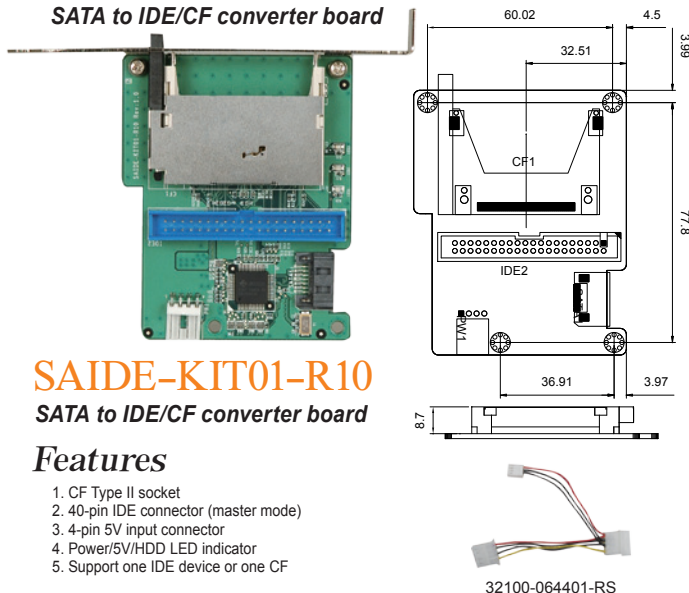
Power Supply/Peripherals

6

Panel Solutions Introduction

SATA to IDE/CF Type II Converter Board

SATA to IDE/CF converter board



SAIDE-KIT01-R10

SATA to IDE/CF converter board

Features

1. CF Type II socket
2. 40-pin IDE connector (master mode)
3. 4-pin 5V input connector
4. Power/5V/HDD LED indicator
5. Support one IDE device or one CF

Packing List

1 x SAIDE-KIT01-R10

1 x Power cable (P/N: 32100-171800-RS)

1 x QIG

Ordering Information

SAIDE-KIT01-R10	SATA to 40-pin IDE/CF socket converter board with bracket
32801-000703-200-RS	SATA cable
32102-000100-200-RS	SATA power cable
32100-064401-RS	Power cable

IDE/CF Type II Converter Board



CF-KIT04-R10

IDE to CF Type II converter board with master/slave mode selection

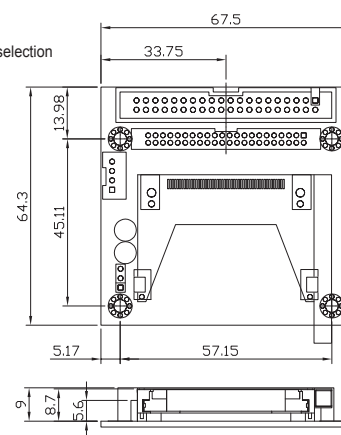
Features

1. CF Type II socket with master/slave mode selection
2. 4-pin power connector
3. Power/HDD signal LED

IEI CF Solution



ICF1000 Industrial standard grade ICF1000 Wide Temp. grade



SATA to CF Type II Converter Board

SATA to CF converter board



SACF-KIT01-R10

SATA to CF converter board

Features

1. CF Type II socket
2. 50-pin CF Type II connector

Packing List

1 x SACF-KIT01-R10

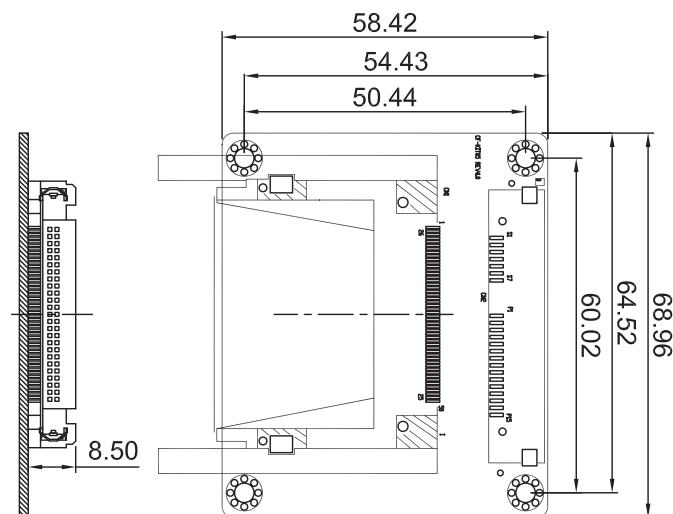
1 x SATA with power cable kit (P/N: 32801-000100-100-RS)

1 x QIG



32801-000100-100-RS

Dimensions (mm)

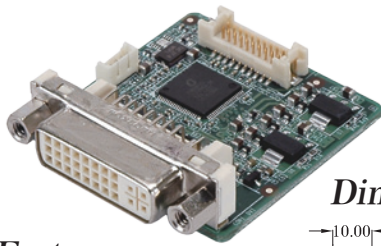


Ordering Information

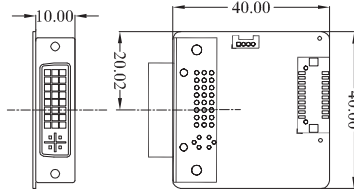
Part No.	Description
SACF-KIT01-R10	SATA to 50-pin CF socket converter board
45015-000400-RS	CF Type II cover with right side ejector

LVDS-DVI

18-bit LVDS to DVI converter board, resolution support up to 1366x768



Dimensions (Unit: mm)



Features

- ◆ Provide DVI option for dual display output
- ◆ Resolution supported: 1366x768, 1024x768, 800x600, 640x480
- ◆ 18 or 24-bit LVDS to DVI converter board

Supported Models

WSB-PV-D5251	PIC0e-PV-D5251	PCISA-PV-D5251
KINO-PV-D5252	NOVA-PV-D5251	NANO-PV-D5251
NANO-PV-D5252	WAFFER-PV-D5252	

Packing List

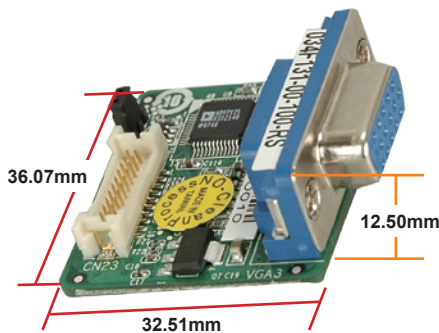
1 x LVDS to DVI converter board	
1 x SMBus cable	1 x QIG

Ordering Information

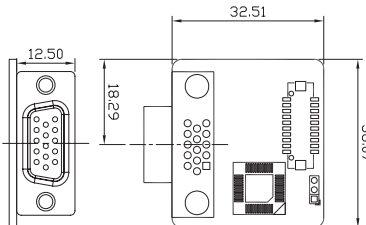
LVDS-DVI-R10	18/24-bit LVDS to DVI converter board
32602-012200-100-RS	20-pin to 30-pin LVDS connecting cable for WAFFER-PV-D5252 only
32602-012300-100-RS	20-pin to 30-pin LVDS connecting cable

LVDS-VGA-R10

Single-channel LVDS to VGA converter board



Dimensions (Unit: mm)



Features

- ◆ Provide 2nd VGA option for dual VGA display
- ◆ Resolution adjust by BIOS: Support 1024x768, 800x600, 640x480
- ◆ 18-bit LVDS to VGA converter board

Packing List

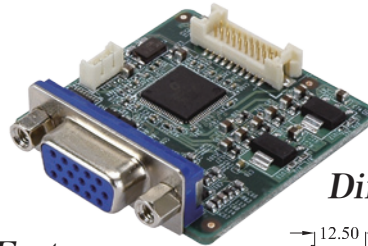
1 x LVDS to VGA converter board
1 x QIG

Ordering Information

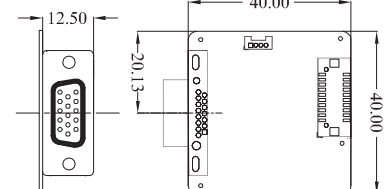
Part No.	Description
LVDS-VGA-R10	18-bit LVDS to VGA converter board
32600-112300-RS	30-pin LVDS connecting cable
32600-114400-RS	20-pin LVDS connecting cable

LVDS-VGA02

18-bit LVDS to VGA converter board, resolution support up to 1366x768



Dimensions (Unit: mm)



Features

- ◆ Provide VGA option for dual VGA display output
- ◆ Resolution supported: 1366x768, 1024x768, 800x600, 640x480
- ◆ 18 or 24-bit LVDS to VGA converter board

Supported Models

WSB-PV-D5251	PIC0e-PV-D5251	PCISA-PV-D5251
KINO-PV-D5252	NOVA-PV-D5251	NANO-PV-D5251
NANO-PV-D5252	WAFFER-PV-D5252	

Packing List

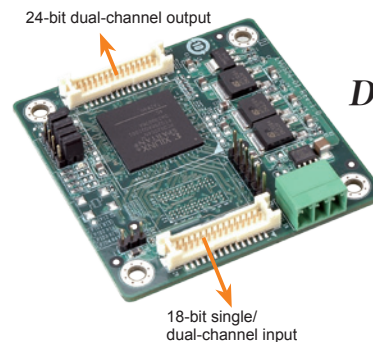
1 x LVDS to VGA converter board	
1 x SMBus cable	1 x QIG

Ordering Information

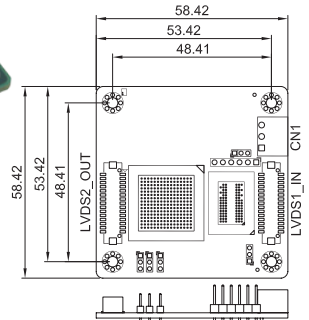
LVDS-VGA02-R10	18/24-bit LVDS to VGA converter board
32602-012200-100-RS	20-pin to 30-pin LVDS connecting cable for WAFFER-PV-D5252 only
32602-012300-100-RS	20-pin to 30-pin LVDS connecting cable

LVDS24-01

18-bit to 24-bit LVDS converter board



Dimensions (Unit: mm)



Features

- ◆ Resolution supports up to 1280x1024
- ◆ Support below configuration:
 - » Single-channel 18-bit to single-channel 24-bit
 - » Single-channel 18-bit to dual-channel 24-bit
 - » Dual-channel 18-bit to dual-channel 24-bit

* Note: The module does not support dual-channel 18-bit to single-channel 24-bit conversion.

Packing List

1 x 18-bit to 24-bit LVDS converter board
1 x Power cable (P/N: 32100-130300-RS)
1 x QIG



Power cable
P/N: 32100-130300-RS

Ordering Information

Part No.	Description
LVDS24-01-R10	18-bit to 24-bit LVDS converter board
32600-004900-RS	30-pin LVDS connection cable for evaluation
32602-007900-100-RS	Single-channel 18-bit 20-pin to 24-bit LVDS 30-pin connection cable
32602-008000-100-RS	Dual-channel 18-bit 30-pin to 24-bit 30-pin LVDS connection cable

1

Industrial
Computing
Solutions

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Video
Capture
Solutions

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Embedded
Computing
Solutions

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ORing
Network
Communication

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Power Supply/
Peripherals

6

Panel
Solutions
Introduction

IGCME-1300

PCIe Mini VGA adapter card, RoHS

IEI Scalable Display Solution

The IGCME-1300 is applied to expand one VGA port for the IEI motherboard with a PCIe Mini slot for multiple display applications.

Compatible models

KINO-QM670-R10	PCIE-Q670-R10
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Features

1. Support PCIe VGA/2D Controller, 1920x1200@60Hz 32bpp
2. DDR3 SDRAM supports up to 800 MHz speed
3. Compliant with PCI Express Mini specification 1.2

Specifications

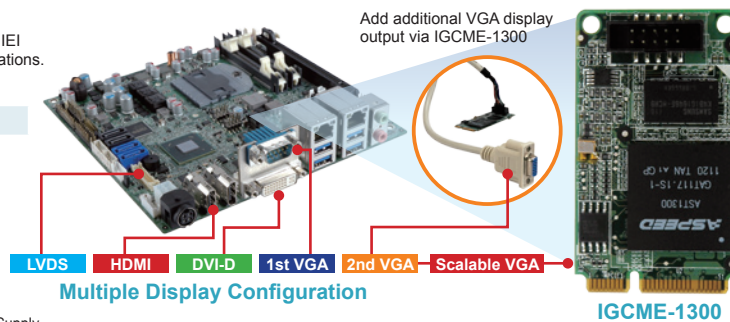
- ◆ Form Factor
PCI Express Mini card
- ◆ Display Controller
Aspeed AST1300
- ◆ Internal Connector
1 x 10-pin (2x5) box header by 2.0mm pitch
- ◆ Compatible OS
Windows® 2000/XP/Server 2003/Server 2008
Linux kernel version 2.6.32 above
- ◆ Power Supply
On-board 3.3V
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions (LxW)
50mm x 30mm
- ◆ Weight
70g

Packing List

1 x IGCME-1300 PCIe Mini VGA adapter card
VGA cable (Pitch=2.0mm) (P/N: 32000-033804-RS) 1 x QIG

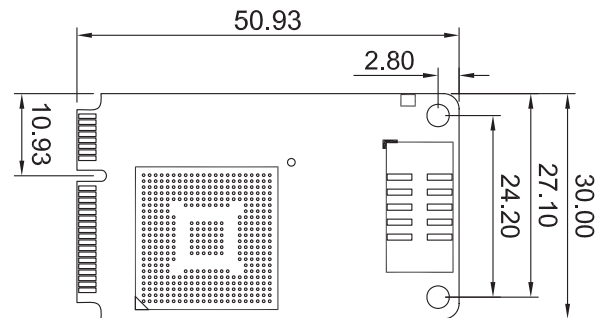
Ordering Information

Part No.	Description
IGCME-1300-R10	PCIe Mini VGA adapter card, RoHS



New

Dimensions (mm)



LCD TTL/LVDS Cable

Open frame LCD cable for various panel connection evaluation

1

Industrial Computing Solutions

2

Video Capture Solutions

3

Embedded Computing Solutions

4

ORing Network Communication

5

Power Supply/Peripherals

6

Panel Solutions Introduction

20-pin LVDS

P/N: 32600-004800-RS

I. IEI AMD GX/LX Solutions

1. 1.25 pitch 20-pin connector for 18-bit LVDS panel
2. Connecting to IEI series SBC 20-pin LVDS LCD connector
3. 300 mm length

30-pin LVDS

P/N: 32600-004900-RS

II. IEI SiS 661 ; Intel® 852/915/945 ; VIA MARK/LUKE Solutions

1. 1.25 pitch 30-pin connector for dual-channel 18/24-bit LVDS panel
2. Connecting to IEI series SBC 30-pin LVDS LCD connector
3. 600 mm length

40-pin TTL

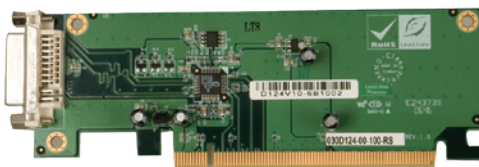
P/N: 32600-004700-RS

III. IEI AMD GX/LX ; VIA MARK/LUKE

1. 1.25 pitch 40-pin connector for 18/24-bit TFT LCD panel
2. Connecting to IEI series SBC 40-pin TFT LCD connector
3. 300 mm length

PCIe x16 SDVO Interface VGA/DVI Graphics Card

PCIe SDVO add-on card: IEI only Intel® dual display solution by PCIe x16 interface



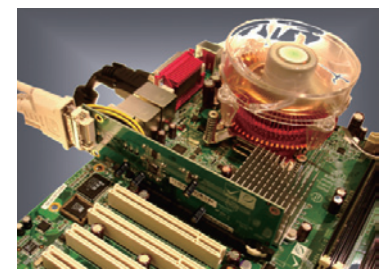
SDVO-100DVI-R10



SDVO-100VGA-R10

Ordering Information

Part No.	Description
SDVO-100DVI-R10	DVI output, PCIe x16 add-on card by SDVO interface, Max. resolution 1600x1200
SDVO-100VGA-R10	VGA output, PCIe x16, add-on card by SDVO interface, Max. resolution 1600x1200
32100-154400-RS	SDVO I²C bus wire cable (Connector pitch 2.0mm to 2.0mm) (SBC to PE & PXE series backplane only)
32100-154401-RS	SDVO I²C bus wire cable (Connector pitch 2.54mm to 2.0mm) (SBC to PE & PXE series backplane only)



The most cost effective dual display solution for IEI boards with customized BIOS.

IEI SDVO Cards Support List

PCIMG 1.3 Board	Model	PCIE-G41A2, PCIE-Q350, PCIE-9652
Embedded Board	Model	IMBA-G410, IMBA-G412ISA, IMBA-Q454, IMBA-XQ354, IMBA-9454G, IMBA-9454ISA, IMBA-9454B, IMB-G41A, IMB-Q354, IMB-9454G, KINO-G410

Wireless LAN Module



WIFI-RT5392-SB-R10

Features

New

1. Half-size PCIe Mini card
2. 2.4GHz 802.11b/g/n supports 2Tx/2Rx 2-stream MIMO to enable data rates up to 300Mbps for a 40MHz channel.
3. 20MHz/40MHz bandwidth
4. Solid design with external antenna diversity
5. Low power consumption and high performance
6. Supports 802.11x authentication, WEP 64/128, WPA, WPA2, TKIP, AES, WAPI encryption
7. Supported operating systems: Windows® XP, CE6.0, XPE, 2000, Vista 32/64, Windows® 7 32/64, Linux, MAC



WIFI-RT3593-DB-R10

Features

New

1. Half-size PCIe Mini card
2. Dual band 802.11a/b/g/n supports 3Tx/3Rx 3-stream MIMO to enable data rates up to 450Mbps for a 40MHz channel.
3. 20MHz/40MHz bandwidth
4. Solid design with external antenna diversity
5. Low power consumption with advanced power management
6. Supports 802.11x authentication, WEP 64/128, WPA, WPA2, WAPI encryption.
7. Supported operating systems: Windows® XP, CE6.0, XPE, 2000, ME, 98SE, Vista 32/64, Windows® 7 32/64, Linux, MAC

Model	WIFI-RT5392-SB-R10	WIFI-RT3593-DB-R10
Standards	IEEE 802.11b/g/n, Wi-Fi compliant	IEEE 802.11a/b/g/n, Wi-Fi compliant
Rate	300 Mbps PHY rate in 2T2R mode	450 Mbps PHY rate in 3T3R mode
Interface	PCIe Mini card	PCIe Mini card
Controller Chip	Ralink RT5392	Ralink RT3593
Connectors	2 x U.FL (I-PEX) antenna connectors	3 x U.FL (I-PEX) antenna connectors
Security	WEP 64/128, WPA, WPA2, TKIP, AES, WAPI	WEP 64/128, WPA, WPA2, WAPI
Frequency Range	2.4GHz	2.4/5GHz
Modulation Type	802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n (OFDM): BPSK, QPSK, 16-QAM, 64-QAM	802.11a (OFDM) 802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM 802.11n (OFDM): BPSK, QPSK, 16-QAM, 64-QAM
Supported OS	Windows® XP, CE6.0, XPE, 2000, Vista 32/64, Windows® 7 32/64, Linux, MAC	Windows® XP, CE6.0, XPE, 2000, ME, 98SE, Vista 32/64, Windows® 7 32/64, Linux, MAC
Receiver Sensitivity	802.11b: -84dBm (Typical) at 11 Mbps 802.11g: -71dBm (Typical) at 54 Mbps 802.11n: -71dBm (Typical) at 300 Mbps	802.11a: -71dBm (Typical) at 54 Mbps 802.11b: -80dBm (Typical) at 11 Mbps 802.11g: -73dBm (Typical) at 54 Mbps 802.11n: -71dBm (Typical) at 450 Mbps
Power Consumption	255mA@3.3V in continuous Tx 495mA@3.3V in continuous Rx	430mA@3.3V in continuous Tx 460mA@3.3V in continuous Rx
Temperature	Operating: -10°C ~ 70°C Storage: -40°C ~ 150°C	Operating: -10°C ~ 70°C Storage: -40°C ~ 150°C
Humidity	Operating: 10% ~ 90%, non-condensing Storage: 5% ~ 95%, non-condensing	Operating: 10% ~ 90%, non-condensing Storage: 5% ~ 95%, non-condensing
Dimensions (W x D x H)	28 mm x 30 mm x 4 mm	28 mm x 30 mm x 4 mm
Weight	NW: 11g	NW: 11g
Safety & EMC	CE/FCC	CE/FCC

Ordering Information

Part No.	Description	Part No.	Description
WIFI-RT5392-SB-R10	Wi-Fi module with RT5392 single chip, 2T2R, single band, RoHS	32501-000200-100-RS	Antenna; RF cable; outside diameter: 1.13mm; L=128mm; 0-6 GHz; (A)reverse sma jack, nut *1+washer *2; (B)I-PEX; RoHS
WIFI-RT3593-DB-R10	Wi-Fi module with RT3593 single chip, 3T3R, dual band, RoHS	32505-000900-100-RS	External antenna; WLAN; RG 178; 108mm; TANK-700-QM67-R10; PEAK GAIN 2.0DBi; Exceltek; 2.4-2.5 GHz/5.15-5.85 GHz; reverse SMA plug; RoHS



WMUSB-V01-R20

USB embedded module with VIA wireless LAN module

Features

1. IEEE 802.11b DSSS/IEEE 802.11g OFDM high rate compatible
2. USB embedded module
3. Supports RF On/Off mechanism
4. Supports an external or internal LED indicator
5. WEA/WAP support



WMPCIE-V01-R30

PCIe Mini card wireless LAN module

Features

1. PCIe Mini card form factor
2. High speed wireless connection to 54Mbps
3. Solid design with external antenna diversity
4. Low power consumption and high performance
5. Enhanced wireless security

Model	WMUSB-V01-R20	WMPCIE-V01-R30
Standards	IEEE 802.11 b/g	IEEE 802.11 b/g/n
Interface	USB 1.1/2.0 interface	PCIe Mini card
Controller Chip	VIA VT6656	Ralink
Connectors	2 x U.FL (I-PEX) antenna connectors	2 x U.FL (I-PEX) antenna connectors
Security	Supports WEP, WPA 1.0/2.0	64/128-bit WEP, WPA, WPA2, TKIP, AES
Frequency Range	2.4 ~ 2.5GHz	2.412-2.472 GHz
Modulation Type	802.11b : DQPSK, DBPSK, DSSS and CCK 802.11g : BPSK, QPSK, 16QAM, 64QAM, OFDM	IEEE 802.11b (DSSS): CCK, DQPSK, DBPSK 802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM
Supported OS	Windows® 98SE/ME/2000/XP	Windows® 2000/XP/Vista
Receiver Sensitivity	802.11b (8% PER) -83 dBm (Typical) at 11Mbps 802.11g (10% PER) -68 dBm (Typical) at 54Mbps	802.11g: -72 dBm (Typical) at 54 Mbps 802.11b: -88 dBm (Typical) at 11 Mbps
Power Consumption	382 mA@ 5V Tx mode/High speed 305 mA@ 5V Rx mode/High speed	868mA@3.3V in continue Tx 485mA@3.3V in continue Rx
Temperature	operation: 0°C ~ 60°C	Operation: 5°C to 55°C Storage: -20°C to 70°C
Humidity	operation: 10% ~ 90%, non-condensing	Operation: 10% ~ 90% (non-condensing) Storage: 5% ~ 90% (non-condensing)
Dimensions	60 mm x 25 mm	510 mm x 30 mm
Weight	NW: 8 g	NW: 5 g
Compliance Certifications	FCC, CE	FCC

Ordering Information

Part No.	Description	Part No.	Description
WMPCIE-V01-R30	802.11 b+g PCIe Mini card wireless LAN module with Ralink	32500-001900-RS	RF cable; 300MM; 28AWG; (A) SMA connector; (B) MHF20278-11R-13; ROHS
WMUSB-V01-R20	802.11 b+g USB embedded module with VIA VT6656	32000-102500-RS	USB cable, 2x4pin 2.0mm to JST SHR-06V 1.00mm, L: 150mm
32500-000500-RS	2 dBi 109mm antenna	32500-001000-RS	5 dBi 173mm antenna

MPCIE-USB3

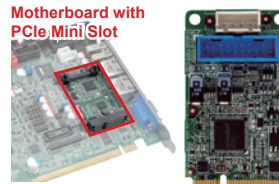
PCIe Mini USB 3.0 adapter card, RoHs



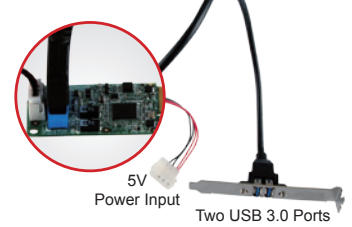
IEI USB 3.0 Expanded Solution

The MPCIE is applied to add additional super speed USB 3.0 ports for the motherboard with a PCIe Mini slot.

Motherboard with PCIe Mini Slot



MPCIE-USB3



Specifications

- ◆ Form Factor
PCI Express Mini card
- ◆ USB 3.0 Controller
Asmedia ASM1042
- ◆ Internal Connector
1 x 20-pin (2x10) box header
- ◆ Power Jack
1 x 4-pin box header
- ◆ Compatible OS
Windows® 2000/XP/Server 2003/Server 2008/Vista/7
Linux kernel version 2.6.32 above
- ◆ Operating Temperature
-10°C ~ 60°C
- ◆ Operating Humidity
5% ~95%, non-condensing
- ◆ Dimensions (LxW)
50mm x 30mm
- ◆ Weight
70g

Packing List

- 1 x MPCIE-USB3 PCIe Mini USB 3.0 adapter card
- 1 x Dual USB 3.0 type A port cable with bracket (P/N: 19800-010500-100-RS)
- 1 x Power Cable (P/N: 32102-020900-100-RS)
- 1 x QIG

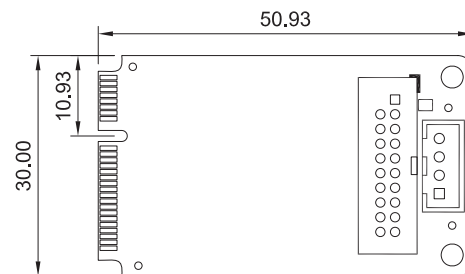
Ordering Information

Part No.	Description
MPCIE-USB3-R10	PCIe Mini USB 3.0 adapter card, RoHs
19800-010500-100-RS	Dual USB 3.0 type A port cable with bracket

Features

1. Support two external USB 3.0 type A ports
2. USB 3.0 provides up to 5Gbps of transferring rate
3. Backward compatible with USB 2.0 and USB 1.0/1.1 devices
4. Fully compliant with USB 3.0 rev 1.0 specifications and Intel® xHCI rev 0.96 specifications, with transfer rates up to 5Gbps
5. Compliant with PCI Express Mini specification 1.2

Dimensions (mm)



IEI Trusted Platform Module (TPM)

Hardware base security solution for data protection and reliable authentication via TPM that stores key, passwords and digital certificates.

H/W Features Comparison

Solution	Infinion SLB9635 TT1.2
Features	
Secure Startup	Root of Trust Measurement of early boot devices
Anti H/W Attack	Sensors and active shield
TSS API Support	MS-CAPI/PKCS#11, #12
H/W Certification	EAL 4
Management Tool Function	1. TPM management 2. File&Folder En/De-cryption 3. Personal secure drive 4. Secure Email 5. Key transferring 6. Security policy configuration
Market Segment	Complete TPM1.2 function
TCG Specification	TCG 1.2 compliance trusted platform module
Interface	Low pin count
Software Structure	TCG software stack 1.2 complaint
Cryptographic Accelerator	HAS-1/RSA algorithm

Ordering Information

Model Name	Description
TPM-IN01-R11	20-pin Infineon TPM module, software management tool, firmware V3.17

IEI SBC with TPM support

Form factor	Model name	Form factor	Model name
ATX	IMBA-H610	Mini-ITX	KINO-QM770
	IMBA-C2060		KINO-AQ670
	IMBA-Q670		KINO-DH610
	IMBA-G410		KINO-AH611
	IMBA-G412ISA		KINO-AH612
	IMBA-XQ354		KINO-PV-D5253/D4253
	IMBA-9454		KINO-QM670
microATX	IMB-H610	5.25" SBC	KINO-HM551
	IMB-H612		KINO-780AM2
	IMB-C2060		KINO-780EB
	IMB-Q670		NOVA-PV-D5251/D4251
	IMB-Q354		NOVA-945GSE
PICMG1.3	IMB-9454	EPIC	NANO-QM770
	SPCIE-C2060		NANO-HM551
	PCIE-H610		NANO-PV-D5251/D4251
	PCIE-Q670	PICMG1.0	WSB-H610
	PCIE-Q350		WSB-PV-D5251/D4251
Half-size SBC	PCIE-9652		WSB-Q354
	PICOe-B650		WSB-9452
	PICOe-HM650		

Pin Assignment



TPM OS Supported List

OS Supported	Infinion
Windows®	Windows® XP SP2, Windows® 7, Vista
Linux	Fedora 6 (Kernel 2.6.8 or above)

Pin	Singnal	Pin	Singnal
1	LCLK	11	LAD0#
2	GND	12	GND
3	LFRAME#	13	SCL
4	KEYWAY	14	SDA
5	LRST#	15	SB3V
6	VCC5	16	SERIRQ
7	LAD3#	17	GND
8	LAD2#	18	CLKRUN#
9	VCC3	19	LPCPD#
10	LAD1#	20	LDRQ#

PM-1004/1028-4/1028-8

4-port non-isolated RS-232/422/485 serial communication PC/104 module



PM-1004



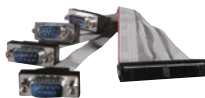
P/N: 32200-026800-RS

Shipped with 4-port RS-422/485 connection cable

4-port/8-port non-isolated RS-232 serial communication PC/104 modules



PM-1028



P/N: 32200-025400-RS

Shipped with 4-port RS-232 connection cable

Features

1. PC/104 form factor
2. 16C554 UART controller
3. Four jumper selectable RS-232 or RS-422/485 serial communication ports
4. Supports shared IRQ or independent IRQ mode
5. Jumper selectable interrupt level
6. Max. baud rate: 921.6kb/s
7. Windows® NT, Windows® 2000, Windows® XP, Windows® CE and Linux driver support

Specifications

	PM-1004	PM-1028-4	PM-1028-8
Bus Interface	PC/104		
Number of Ports	4-port	4-port	8-port
Interrupt Level	3, 4, 5, 7, 9, 10, 11, 12		
Chipset	TI 16C554A		
Baud Rate	921.6 Kbps (max.) at 14.745MHz clock input		
Serial Port	16C550-compatible UARTs		
Connectors (40-pin; 2.54 box header)	4-port RS-232/RS-422/RS-485 x 1	4-port RS-232 x 1	4-port RS-232 x 2
Power Consumption	+5V@0.6A (max.)		
Operating Temperature	0°C ~ 60°C		
Dimensions	96 mm x 90 mm		
Driver Support	Windows®NT, Windows®2000, Windows®XP, Windows®CE and Linux		

Packing List

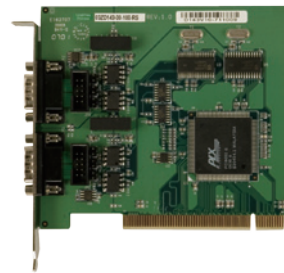
- 1 x 4-port non-isolated RS-232/422/485 serial communication PC/104 module
- 1 x 4-port RS-422/485 connection cable (P/N: 32200-026800-RS)
- 1 x Utility CD
- 1 x RS-232 cable (P/N: 32200-025400-RS)
- 1 x Mini jumper pack

Ordering Information

Part No.	Description
PM-1004-R20	4-port non-isolated RS-232/422/485 serial communication PC/104 module
PM-1028-4-R20	4-port non-isolated RS-232 serial communications PC/104 module
PM-1028-8-R20	8-port non-isolated RS-232 serial communications PC/104 module

IPCI-1680-CBM

2-port isolated protection CAN communication bus PCI card supports CANopen

CANopen
Bundle CANopen AP

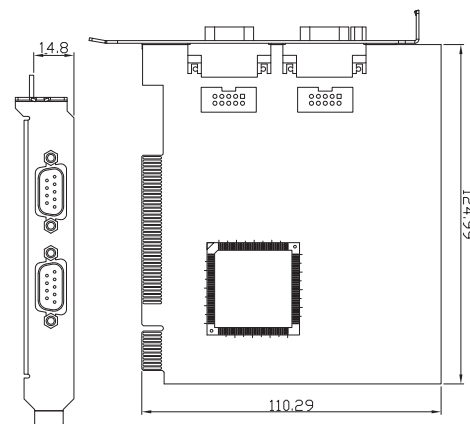
Features

1. PCI Revision 2.2 compliant
2. Two independent CAN-bus communication ports
3. Compatible with CAN Specifications 2.0
4. On-board optical isolation protection 2500Vrms on CAN side
5. Programmable transfer rate up to 1 Mbps
6. Selective jumper for dual ports select 120 Ω terminator resistor
7. Support CANopen protocol following Cja DS-301 and support Cja DS-401

Specifications

Bus Interface	PCI Revision 2.2 compliant
Number of Ports	2-port
CAN Controller	Philips SJA1000T
CAN Transceiver	Philips PCA82C251
Signal Support	CAN_H, CAN_L
Speed (bps)	1 Mbps
Connectors	Two external DB-9 male connectors or two internal 10-pin 2.54 pitch box headers
Isolated Protection	2500Vrms on CAN side
Power Consumption	5 V @ 400 mA
Temperature	Operating: -5°C ~ 65°C (23°F ~ 149°F)
Humidity	Operating: 5% ~ 95% Non-condensing
Driver Support	Windows® XP/Windows® XP Embedded/Windows® CE 5.0
CANopen Communication	Support NMT/EMCY/SYNC/SDO/PDO/Error Control protocols Follow Cja DS-301 and support Cja DS-401 Support 10K, 20K, 50K, 125K, 250K, 500, 800K, 1M bps Transfer Rate

Dimensions (mm)



Packing List

- 1 x IPCI-1680-CBM CAN-bus PCI card
- 1 x Mini jumper pack
- 1 x Utility CD (with bundled CANopen software)
- 1 x QIG

Ordering Information

Part No.	Description
IPCI-1680-CBM-R10	2-port isolated protection CAN communication bus PCI card support CANopen

1

Industrial
Computing
Solutions

2

Video
Capture
Solutions

3

Embedded
Computing
Solutions

4

ORing
Network
Communication

5

Power Supply/
Peripherals

6

Panel
Solutions
Introduction