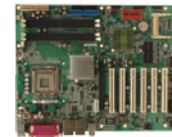
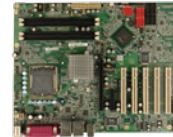
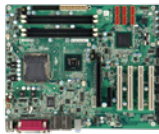


# Industrial Motherboard Selection Guide



Model Name	IMBA-Q454	IMBA-XQ354	IMBA-X9654	IMBA-9654	IMBA-9454
<b>CPU Socket</b>	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775	Intel® LGA 775
<b>CPU Type</b>	Intel® Core™ 2 Quad/Duo, Pentium® D/4/Celeron® D	Intel® Core™ 2 Quad/Duo, Pentium® D/4/Celeron® D	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
<b>FSB</b>	800/1066/1333 MHz	800/1066/1333 MHz	533/800/1066 MHz	533/800/1066 MHz	533/800/1066 MHz
<b>Chipset</b>	Intel® Q45 + ICH10DO	Intel® Q35 + ICH9DO	Intel® Q965 + ICH8DO	Intel® Q965 + ICH8DO	Intel® 945G + ICH7
<b>Memory</b>	4 x 240-pin, Max.16GB, 667/800 MHz dual-channel DDR2 DIMMs	4 x 240-pin, Max.8GB, 667/800 MHz dual-channel DDR2 DIMMs	4 x 240-pin, Max.8GB, 533/667/800 MHz dual-channel DDR2 DIMMs	4 x 240-pin, Max.8GB, 533/667/800 MHz dual-channel DDR2 DIMMs	4 x 240-pin, Max.4GB, 533/667/800 MHz dual-channel DDR2 DIMMs
<b>Display Interface</b>	VGA integrated in the Intel® Q45	VGA integrated in the Intel® Q35	VGA integrated in the Intel® Q965	VGA integrated in the Intel® Q965	VGA integrated in the Intel® 945G
<b>Ethernet</b>	LAN1: Intel® 82574L (MAC + PHY) LAN2: Intel® 82567LM (PHY)	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)	Dual PCIe GbE Broadcom BCM5787M chipsets with ASF 2.0 support	Dual PCIe GbE Broadcom BCM5787M chipsets with ASF 2.0 support	Dual PCIe GbE Broadcom BCM5787M chipsets with ASF 2.0 support
<b>I/O Interface</b>	6 x RS-232 12 x USB 2.0 1 x LPT 1 x Infrared Interface 2 x PS/2 for KB/MS	6 x RS-232 12 x USB 2.0 1 x LPT 2 x PS/2 for KB/MS 1 x 20-pin LPC (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 2 x PS/2 for KB/MS 1 x 20-pin LPC (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 2 x PS/2 for KB/MS 1 x 20-pin LPC (TPM V1.2 Module)	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 2 x PS/2 for KB/MS 1 x Infrared Interface 1 x 20-pin LPC (TPM V1.2 Module)
<b>Drive Interface</b>	6 x SATA II with RAID 1 x FDD	6 x SATA II with RAID 1 x FDD	6 x SATA II with RAID	6 x SATA II with RAID	4 x SATA II 1 x CF Type II 1 x IDE 1 x FDD
<b>Audio</b>	Realtek ALC888 HD Audio codec	Realtek ALC888 HD Audio codec	Realtek ALC883 HD Audio codec	Realtek ALC883 HD Audio codec	Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)
<b>Power Consumption</b>	3.3V@2.64A, 5V@5.4A, 12V@0.28A (Intel® Core™ 2 Duo E8500 3.16GHz with DDR2 800MHz 4*2GB)	3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™ 2 Duo E6850 CPU with 800MHz 8GB DDR2 DIMM)	5V@4.62A, 12V@9.71A, 3.3V@5.74A (Pentium® 4 3.73GHz, 1G 667MHz DDR2)	5V@4.62A, 12V@9.71A, 3.3V@5.74A (Intel® Core™ 2 Duo E6400 2.13G with 6GB DDR2 800MHz)	5V@4.25A, 12V@10.17A, 3.3V@6.07A (Pentium® D 960 3.6 GHz, 2GB*2 800MHz DDR2)
<b>Watchdog Timer</b>	software programmable and supports 1~255 sec. system reset				
<b>Operation Environment</b>	Temperature Range 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity 5% ~ 95% non- condensing				
<b>Expansions Slot</b>	1 x PCIe x16 1 x PCIe x1 4 x PCI	1 x PCIe x16 3 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	1 x PCIe x16 6 x PCI
<b>CPU Cooler</b>	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11

1

Industrial  
Computing  
Solutions

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector  
and Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

7

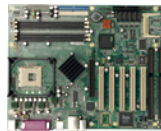
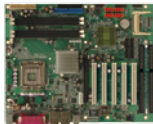
ORing  
Network  
Communication

8

Power Supply/  
Peripherals

# Industrial Motherboard Selection Guide

1

Industrial  
Computing  
Solutions

Model Name	IMBA-9454B	IMBA-9454ISA	IMBA-8650-R22	IMB-G41A	IMB-Q354	IMB-9454G-R20
<b>CPU Socket</b>	Intel® LGA 775	Intel® LGA 775	Socket478	LGA 775	Intel® LGA 775	Intel® LGA 775
<b>CPU Type</b>	Intel® Core™ 2 Duo, Pentium® D/4/ Celeron® D	Intel® Core™ 2 Duo, Pentium® D/4/ Celeron® D	Intel® Pentium® 4/ Celeron® D	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
<b>FSB</b>	533/800/1066 MHz	533/800/1066 MHz	533/800 MHz	800/1066/1333MHz	800/1066/1333 MHz	533/800/1066 MHz
<b>Chipset</b>	Intel® 945G + ICH7	Intel® 945G + ICH7	Intel® 865G + ICH5	Intel® G41 + ICH7	Intel® Q35 + ICH9-DO	Intel® 945G + ICH7
<b>Memory</b>	2 x 240-pin, Max.4GB, 533/667/800 MHz dual-channel DDR2 DIMMs	4 x 240-pin, Max.4GB, 533/667/800 MHz dual-channel DDR2 DIMMs	4 x 184-pin, Max.4 GB, 333/400 MHz dual-channel DDR DIMM	2 x 240-pin, Max.4GB, 800/1066 MHz dual-channel DDR3 DIMMs	4 x 240-pin, Max.8 GB, 533/667/800 MHz dual-channel DDR2 DIMM	4 x 240-pin, Max.4 GB, 533/667/800 MHz dual-channel DDR2 DIMM
<b>Display Interface</b>	VGA1 intrgated in the Intel® 945G VGA2 supported by Chronlet CH7021	VGA intrgated in the Intel® 945G	VGA intrgated in the Intel® 865G	VGA intrgated in the Intel® G41	VGA intrgated in the Intel® Q35	VGA intrgated in the Intel® 945G
<b>Ethernet</b>	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Broadcom BCM5787M chipsets with ASF 2.0 support	Intel® 82541 GbE chipset (IMBA-8650GN) Realtek 8110SC GbE chipset (IMBA-8650GR)	Dual PCIe Realtek RTL8111CP GbE Controllers	LAN1: Intel® 82573L (MAC + PHY) LAN2: Intel® 82566DM (PHY)	Dual PCIe GbE Broadcom BCM5787M chipset
<b>I/O Interface</b>	8 x RS-232 6 x USB 2.0 1 x LPT 2 x PS2 for KB/MS	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 2 x PS2 for KB/MS 1 x Infrared Interface 1 x 20-pin LPC (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 2 x PS2 for KB/MS	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 for KB/MS	4 x RS-232 12 x USB2.0 1 x LPT 1 x FDD 1 x Infrared Interface 1 x PS/2 for KB/MS 1 x 20-pin LPC (TPM V1.2 module)	5 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x LPT 2 x PS2 for KB/MS 1 x Infrared Interface 1 x 20-pin LPC (TPM V1.2 module)
<b>Drive Interface</b>	4 x SATA II 1 x IDE 1 x FDD	4 x SATA II 1 x CF Type II 1 x IDE 1 x FDD	2 x SATA 1 x CF Type II 1 x IDE 1 x FDD	4 x SATA II 1 x IDE	6 x SATA II support RAID	4 x SATA II 1 x IDE 1 x FDD
<b>Audio</b>	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Realtek ALC883 HD Audio codec	Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	NA	8-bit digital I/O (4 input/4 output)	NA	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)
<b>Power Consumption</b>	5V@2.11A, 12V@10.44A, 3.3V@6.07A (Pentium® D 960 3.6GHz,2GB*2, 800MHz DDR2, 3DMark 2001)	5V@4.25A, 12V@10.17A, 3.3V@6.07A (Pentium® 4 3.0GHz, 1G DDR2 667MHz)	12V@7.3A, 5V@4.9A, 3.3V@0.7A, -12V@0.2A, 5VSB@0.7A (Pentium® 4 3.0 GHz, 1G DDR 400 MHz)	5V@7.26A, 12V@0.26A, Vcore_12V@3.24A, 3.3V@0.16A (3.16GHz Intel® Core™2 Duo E8500 with 2GB*2 DDR3 1066MHz)	3.3V@2.41A, 5V@5.71A, 5Vsb@0.13A, 12V@3.69A (Intel® Core™ 2 Duo E6850 3.0 GHz, 8 GB DDR2 800 MHz)	5V@2.09A, 12V@8.9A, 3.3V@3.6A, 5Vsb@0.67A (Pentium® 4 3.2 GHz, DDR2 533 MHz 512 MB*4)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset					
<b>Operation Environment</b>	Temperature Range 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity 5% ~ 95% non-condensing					
<b>Expansions Slot</b>	1 x PCIe x1 1 x PCIe mini 3 x PCI	1 x PCIe x16 4 x PCI 1 x ISA 1 x PCI/ISA	1 x AGP x4/ x8 4 x PCI 1 x ISA 1 x PCI/ISA	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
<b>CPU Cooler</b>	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11	CF-478A-RS / CF-478B-RS / CF-514-RS / CF-519-RS	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11	CF-775A-RS / CF-520-RS-R11

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector and  
Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

7

ORing  
Network  
Communication

8

Power Supply/  
Peripherals

# IMBA-Q454

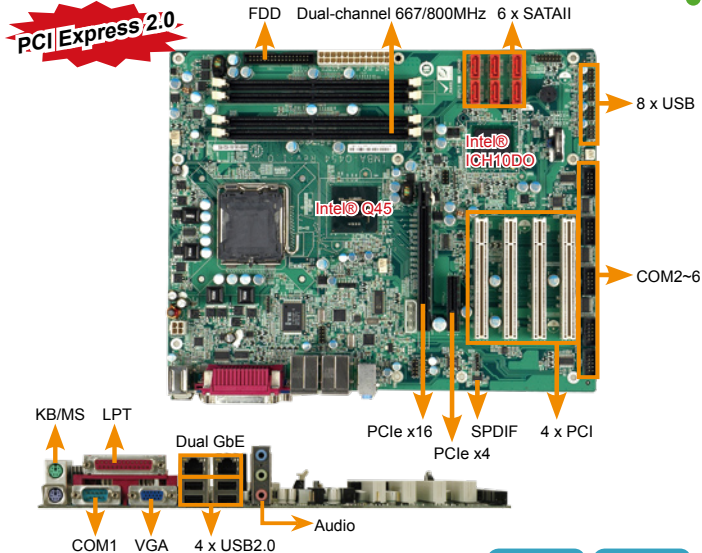


ATX motherboards supports 45nm Intel® LGA775 Core™2 Duo/ Quad with a 1333/1066/800MHz FSB, Dual Intel® GbE, six SATA II with RAID, six COM ports, USB and Audio

# IMBA-9654



ATX form factor mother board supports Intel® LGA775 Core™2 Duo, Core™2 Quad, Pentium® D, Processor at FSB1066/800/533 FSB, dual channel DDR2, dual GbE, six SATA II, six COM ports, USB, audio, and 5 PCI slots.



FSB 1333 Dual DDR2 800

## Features

1. Designed for use with the 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 iAMT5.0 supported
3. Q45 chipset integrated high performance graphic with DX10 and OpenGL 2.1 supported, external graphic card PCIe 2.0 PEG 1X16 supported
4. PCIe x16 expansion slot and VGA output for dual display supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

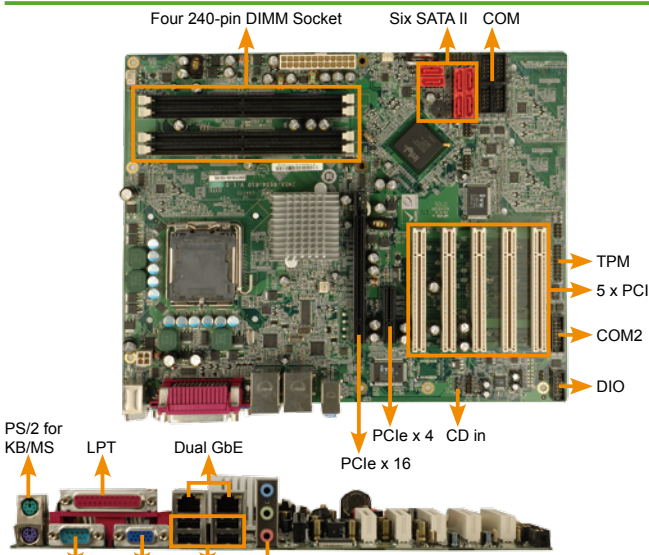
- ◆ CPU: LGA 775 45nm Intel® Core™ 2 Duo/Quad, Celeron® CPU with a 1333/1066 / 800 MHz FSB
- ◆ System Chipset: Intel® Q45 + Intel® ICH10DO
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Four 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 16 GB
- ◆ Ethernet Chipset: LAN 1: Intel® 82567LM (iAMT 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 USB2.0, 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 8718F
- ◆ Digital I/O: 8-bit (4-bit input / 4-bit output)
- ◆ Storage: 1 x FDD, 6 x SATA II (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 (Intel® Core™2 Duo E8500 3.16 GHz with DDR2 800 MHz 2 GB x 4)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW:1.2 kg / NW:0.6 kg

## Packing List

1 x IMBA-Q454 single board computer	
2 x Dual RS-232 cable (P/N: 19800-000051-RS)	6 x SATA cable (P/N: 32000-062800-RS)
1 x I/O shielding (P/N: 45002-450903-00-RS)	1 x Mini Jumper Pack
1 x Utility CD	1 x QIG (quick installation guide)

## Ordering Information

Part No.	Description
IMBA-Q454-R10	ATX motherboard supports 45nm Core™ 2 Duo/ Quad with a 1333/1066/800 MHz FSB, Intel® Q45 & ICH10DO platform, dual Intel® GbE, six SATA II with RAID, six COM ports, USB and audio
CF-775A-RS	CPU cooler
CF-520-RS-R11	CPU cooler
CB-USB02-RS	Dual USB cable
CB-USB14-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)
32200-000017-RS	FDD cable
32102-000100-100-RS	SATA power cable
32100-000100-200-RS	SATA power cable



FSB 1066 Dual DDR2 800

## Features

1. Intel® LGA775 Core™2 Duo / Quad Processor at FSB1066 / 800 MHz supported
2. Dual Broadcom PCIe BCM5787M GbE
3. Six SATA II with Intel® Matrix Storage Technology supported
4. One PCIe x16 / One PCIe x4 / Five PCI expansion slots
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: LGA 775 Intel® Core™2 Quad/Duo, Pentium® D/4, and Celeron® D with 533/800/1066MHz FSB
- ◆ FSB: 1066/800/533 MHz
- ◆ System Chipset: Intel® Q965 + ICH8-DO
- ◆ BIOS: AMI Flash BIOS
- ◆ System Memory: Four 240-pin 800/667/533 MHz dual-channel DDR2 SDRAM DIMM supported (system max. 8.0 GB)
- ◆ Ethernet: Dual Broadcom PCIe BCM5787M GbE controller
- ◆ I/O Interface: 5 x RS-232, 1 x RS-232/422/485, 1 x LPT, 1 x SPDIF, 2 x PS/2 for KB/MS, 1 x 20-pin LPC for TPM, 8 x USB 2.0 (4 on the edge, 4 on board by pin header), 6 x SATA II with RAID 0, 1, 10, 5, JBOD support
- ◆ Expansion: One PCIe x16 slot, One PCIe x4 slot, Five PCI slots (33 MHz/32 bit)
- ◆ Digital I/O: 8-bit digital I/O, 4 input/ 4 output
- ◆ Infrared Interface: 1 x 5-pin pin header
- ◆ Display Interface: Analog CRT output
- ◆ Audio: Realtek ALC883 HD audio codec
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: ATX Power
- ◆ Super I/O: ITE8712F
- ◆ Power consumption: 5V@6.03A, 12V@3.51A, 3.3V@4.43A (Intel® Core™ 2 Duo E6400 2.13GHz/ 1066Mhz 6GB DDR2 800Mhz)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~95% non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: GW:1.5 kg

## Packing List

1 x IMBA-9654 single board computer	
2 x Dual RS-232 cable (P/N: 19800-000113-RS)	
3 x SATA power cable (P/N: 32102-000100-100/200-RS)	
1 x RS-232 cable (P/N: 19800-000114-RS)	1 x Mini jumper pack
6 x SATA cable (P/N: 32000-062800-RS)	1 x I/O shielding (P/N: 45014-0017C0-00-RS)
1 x Utility CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
IMBA-9654-R10	ATX form factor mother board supports Intel® LGA775 Core™2 Duo, Core™2 Quad, Pentium D, Processor at FSB1066/800/667 FSB, dual channel DDR2, dual GbE, six SATA II, six COM ports, USB, audio, and 5 PCI slots.
CF-775A-RS	CPU cooler
TPM-WI01-R10	20-pin Winbond TPM with software management tool
TPM-IN01-R10	20-pin Infineon TPM with software management tool
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)
32200-000063-RS	RS-232/422/485 cable

# IMBA-XQ354

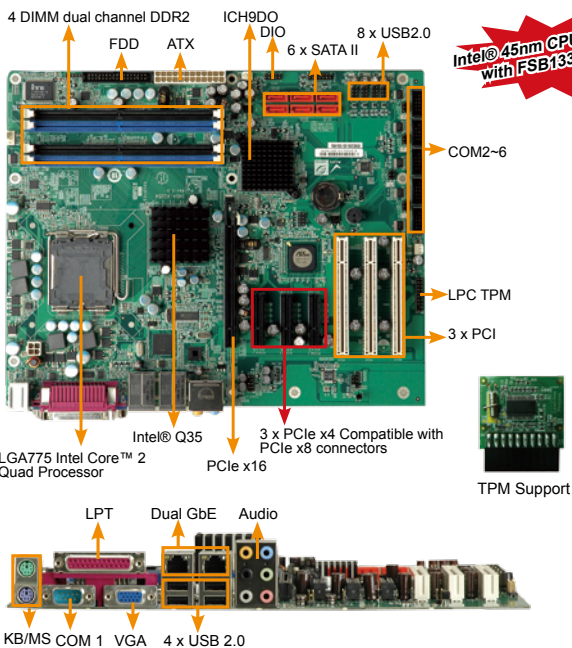
One Key Recovery

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

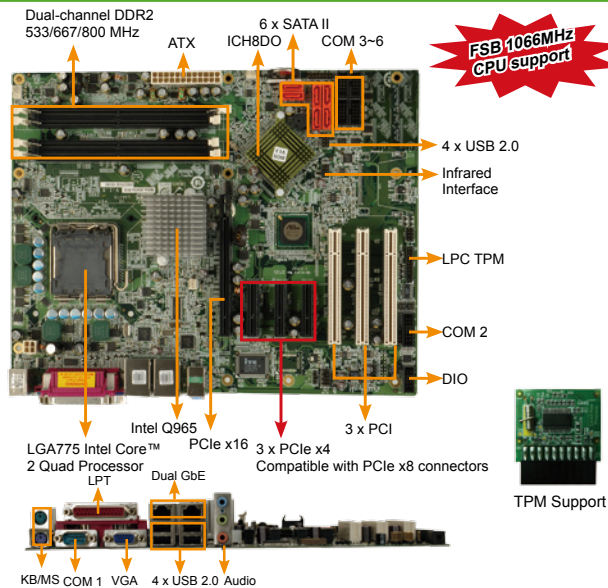
# IMBA-X9654

One Key Recovery

ATX Form Factor with Intel® Core™2 Quad CPU FSB 533/800/1066 MHz, VGA, Dual-channel DDR2, LPT, 6 x SATA II, 8 x USB 2.0 and 6 x COM



Intel® 45nm CPU support with FSB1333MHz



FSB 1066MHz CPU support

## Features

1. ATX form factor support Intel® Q35/ICH9DO platform
2. Supports Intel® Core™2 Quad/Duo 45nm processor with 1333/1066/800 MHz FSB (FSB1066 MHz for IMBA-X9654 )
3. PLX PCIe switch for 3x PCIe x4 add on Card
4. Six SATAII with Intel Matrix storage technology supported
5. Intel® PCIe GbE with iAMT 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

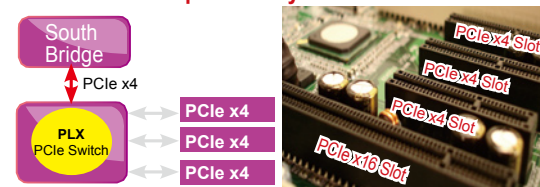
## Specifications

- ◆ 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 Label
- ◆ Memory: 4 x 240-pin 800/667 MHz dual-channel DDR2 SDRAM DIMM support up to 8 GB
- ◆ Graphic: Integrated Graphics Device from Q35
- ◆ Display Output: Analog display (VGA)
- ◆ Ethernet: Intel® 82566DM (PHY) + ICH9-DO (MAC) for iAMT support, Intel® 82573L (MAC+PHY) Interface PCI-Ex1
- ◆ Super IO: ITE IT8718F
- ◆ KB/MS: 1 x KB/MS
- ◆ COM PORT: 6 x RS-232 COM Port (2 by super IO, 4 by Fintek F81216DG)
- ◆ LPT: 1 x LPT
- ◆ FDD: 1 x FDD
- ◆ USB: 12 x USB2.0
- ◆ Audio: Realtek ALC888 HD Audio codec
- ◆ SATA: 6 x SATA II
- ◆ Digital I/O: 8-bit digital I/O 4-bit input/4-bit output
- ◆ Expansions: 1 x PCIe x 16, 3 x PCIe x 4 (by PLX PEX8518), 3 x PCI
- ◆ Watchdog Timer: Software Programmable supports 1~255 sec. system reset
- ◆ TPM: Support TPM1.2
- ◆ Power Supply: ATX supported
- ◆ FAN Connector: 1 x 4-pin CPU Fan and 2 x 3pin system fan
- ◆ Power Consumption: 3.3V@2.96A, 5V@6.92A, 12V@2.77A (Intel® Core™2 Duo E6850 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: 1.2 kg / NW: 0.6 kg

## Packing List

1 x IMBA-XQ354 / IMBA-X9654 single board computer	
2 x Dual RS-232 cable (P/N: 19800-000113-RS)	
1 x RS232 cable (P/N: 19800-000114-RS)	
6 x SATA cable (P/N: 32102-000100-100/200-RS)	
1 x I/O shielding (45014-0025C0-00-RS for IMBA-XQ354-R10, 45014-0017C0-00-RS for IMBA-X9654-R10)	
1 x Mini jumper pack	
1 x Utility CD	1 x QIG

## Three PCIe x4 expansion by switch IC solution



## Specifications

- ◆ CPU: LGA 775 Intel® Core™2 Quad/Duo, Pentium® D/4 , and Celeron® D with 533/800/1066 MHz FSB
- ◆ System Chipset: Intel® Q965 + ICH8DO
- ◆ BIOS: AMI Flash BIOS
- ◆ System Memory: 4 x 240-pin dual-channel DDR2 533/667/800 MHz up to 8 GB
- ◆ Ethernet: Dual Broadcom BCM5787M PCIe GbE chipset with ASF 2.0 support
- ◆ I/O Interface: 5 x RS-232, 1 x RS-232/422/485, 1 x 20-pin LPC for TPM, 1 x LPT, 8 x USB 2.0, 6 x SATA II with RAID 0,1,5 and 10, 2 x PS/2 for KB/MS
- ◆ Expansions: 1 x PCIe x16, 3 x PCIe x4 by PLX PEX8518, 3 x PCI
- ◆ 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: IT8712F
- ◆ Display Interface: VGA Integrated in Intel® Q965
- ◆ Audio: Realtek ALC883 HD audio
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: ATX Power
- ◆ Power consumption: 5V@4.62A, 12V@9.71A, 3.3V@ 5.74A (Pentium® 4 3.73GHz/1066 MHz CPU with 1 GB DDR2 667 MHz)
- ◆ Temperature: Operating: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ Humidity: Operating: 5% ~95% non-condensing
- ◆ Dimensions: 305 mm x 244 mm
- ◆ Weight: 1.35 kg / NW: 0.75 kg

## Ordering Information

Part No.	Description
IMBA-X9654-R10	ATX motherboard with Intel® LGA 775, Core™2 Quad/Duo, Pentium® D/4, Celeron® D processor FSB 533/800/1066 MHz, PCIe x16 , PCIe GbE, SATA II and audio
IMBA-XQ354-R10	ATX motherboard with Intel® LGA775, Core™2 Quad CPU, Celeron® with a 1333/1066/800 MHz FSB, PCIe x16, PCIe x4, PCIe GbE, SATAII and audio
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management
TPM-IN01-R10	20-pin INFINEON TPM module, S/W management
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)

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

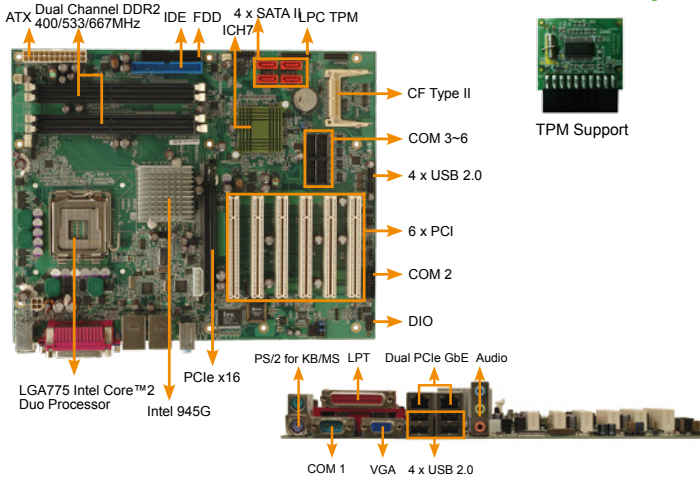
7 ORing Network Communication

8 Power Supply Peripherals

# IMBA-9454



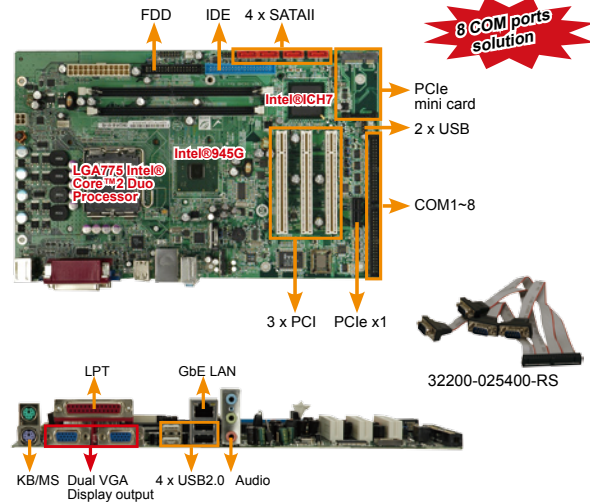
**ATX Form Factor with Intel® Core™2 Duo, Pentium® D/ Pentium® 4/ Celeron® D CPU FSB 533/800/1066 MHz, VGA, Dual-channel DDR2, FDD, LPT, 4 x SATA II, 8 x USB 2.0 and 6 COM**



# IMBA-9454B



**ATX Form Factor with Intel® Core™2 Duo, Pentium®D/ Pentium®4/ Celeron®D CPU FSB533/800/1066 MHz, Dual VGA, PCIe GbE, USB2.0, SATA and audio**



## Features

1. Intel® Core™2 Duo, Pentium® D, Pentium® 4, Celeron® D processor in the LGA 775 package
2. Integrated Intel® GMA950 graphic engine that offers adequate display quality via VGA interface
3. Dual-channel DDR2-400/533/667 MHz SDRAM socket support up to 4 GB
4. TPM V1.2 hardware security function supported
5. 4 x SATA II, 8 x USB 2.0, Audio and ATX support 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 Label
- ◆ System Memory  
4 x 240-pin Dual-channel DDR2 400/533/667 MHz up to 4 GB
- ◆ Ethernet  
Dual PCIe Broadcom BCM5787M GbE chipsets
- ◆ 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 1-255 sec. system reset.
- ◆ Power Supply  
ATX support
- ◆ Power Consumption  
5V@4.25A, 12V@10.17A, 3.3V@6.07A (Pentium® 4 3.73GHz/1066 MHz CPU with 1 GB DDR2 667MHz)
- ◆ 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: 1.2 kg / NW: 0.65 kg

## 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: 19800-000113-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	
2 x SATA cable (P/N: 32000-0628000-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
IMBA-9454G-R10	ATX motherboard with Intel® LGA 775 Core™2 Duo, Pentium® D/ Pentium® 4/ Celeron® D Processor FSB 533/800/1066MHz, PCIe GbE, SATA II and Audio
32200-000017-RS	FDD cable
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management tool
TPM-IN01-R10	20-pin INFINEON TPM module, S/W management tool
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)

## Features

1. Intel® Core™2 Duo, Pentium®D/ Pentium®4/ Celeron®D CPU FSB533/800/1066 MHz in LGA775 package
2. Dual-channel DDRII 400/533/667 MHz up to 4 GB
3. Dual VGA display output support
4. Support PCIe mini Card/ PCI slot for expansion
5. Multiple COM port support up to 8 COM ports
6. 6 x USB2.0, 4 x SATAII, 1 x IDE, 1 x FDD
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA775 Intel® Core™2 Duo, Pentium®D/ Pentium® 4/ Celeron® D CPU FSB533/800/1066 MHz
- ◆ System Chipset  
Chipset 945G+ICH7
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
2 x 240-pin 400/533/667 MHz dual-channel DDR2 DIMM up to 4 GB
- ◆ Ethernet  
Realtek PCIe 8111CP GbE controller
- ◆ I/O Interface  
6 x USB2.0  
4 x SATAII  
8 x RS-232 (COM1~COM4 pin9 jump select for 5V/12V/Ring)  
1 x LPT  
1 x IDE  
2 x PS/2 for KB/MS
- ◆ Display Output  
VGA1 integrated in Intel® 945G  
VGA2 supported by chrontel CH7021A
- ◆ Expansions  
3 x PCI  
1 x PCIe x1  
1 x PCIe mini card slot
- ◆ Super IO  
ITE IT8718F
- ◆ Audio  
Realtek ALC655 AC'97 codec
- ◆ Watchdog Timer  
Software Programmable support 1~255 sec. system reset
- ◆ Power Supply  
AT/ATX power
- ◆ Power Consumption  
5V@2.11A, 12V@10.44A, 3.3V@6.07A (Pentium® D 960 3.6GHz, 2GB x 2, 800MHz DDR2, 3DMark 2001)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32° F ~ 140° F)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
190 mm x 304 mm
- ◆ Weight  
GW: 1.2 kg / NW: 0.65 kg

## Packing List

1 x IMBA-9454B single board computer	
2 x Quad port RS-232 cable (P/N: 32200-025400-RS)	
1 x ATA66 IDE Flat cable (P/N: 32200-000052-RS)	
1 x I/O shielding (P/N: 45014-0016C0-00-RS)	
4 x SATA cable (P/N: 32000-062800-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

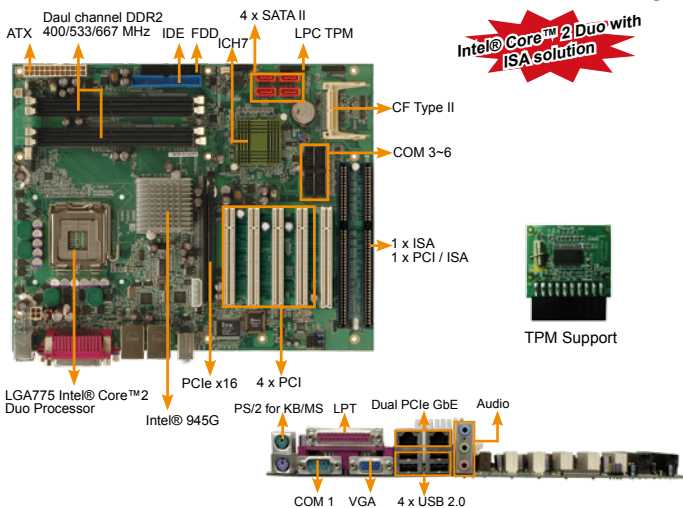
## Ordering Information

Part No.	Description
IMBA-9454B-R10	ATX motherboard with Intel® Core™2 Duo, Pentium® D/ Pentium® 4/ Celeron® D CPU FSB533/800/1066 MHz, Dual VGA, PCIe GbE, USB2.0, SATA and audio
32200-000017-RS	FDD cable
CB-USB02-RS	Dual USB cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
WMPCIE-V01-R10	802.11b+g PCIe mini card wireless LAN module with Atheros
WMUSB-V01-R10	802.11b+g USB embedded module with VIA

# IMBA-9454ISA



**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, 4 x SATA II, 8 x USB 2.0 and 6 COM**



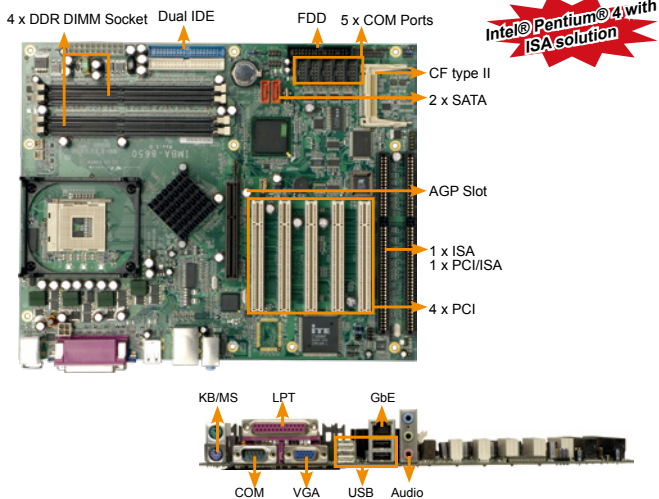
Intel® Core™2 Duo with ISA solution



# IMBA-8650-R22



**ATX Motherboard, Pentium® 4 Processor 533/800MHz FSB with VGA, LCD, SATA, 8 USB 2.0, 6 COM and Audio**



Intel® Pentium® 4 with ISA solution

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 Oring Network Communication

8 Power Supply Peripherals

## Features

1. Intel® Core™2 Duo, Pentium® D, Pentium® 4, Celeron® D processor in the LGA 775 package
2. Integrated Intel® GMA950 graphic engine that offers adequate display quality via VGA interface
3. Dual-channel DDR2-400/533/667 MHz SDRAM socket support up to 4 GB
4. TPM V1.2 hardware security function supported
5. 4 x SATA II, 8 x USB 2.0, Audio and ATX support 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 Label
- ◆ System Memory  
4 x 240-pin Dual-channel DDR2 400/533/667 MHz up to 4 GB
- ◆ Ethernet  
Dual PCIe Broadcom BCM5787M GbE chipset
- ◆ I/O Interface  
8 x USB 2.0  
1 x LPT  
5 x RS-232  
2 x PS/2 for KB/MS  
1 x CF Type II  
1 x 20-pin LPC for TPM
- ◆ Expansions  
One PCIe x16 (Support PCIe x1/x16 PCIe add-on cards)  
4 x PCI 1 x ISA 1 x PCI / ISA
- ◆ 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 1-255 sec. system reset.
- ◆ Power Supply  
ATX support
- ◆ Power Consumption  
5V@4.25A, 12V@10.17A, 3.3V@ 6.07A (Pentium 4 3.73GHz/1066 MHz CPU with 1 GB DDR2 667 MHz)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95% non-condensing
- ◆ Dimensions  
305 (L) mm x 244 (W) mm
- ◆ Weight  
GW: 1.2 kg / NW: 0.65 kg

## Packing List

1 x IMBA-9454ISA Single board computer	
1 x IDE cable (P/N: 32200-000052-RS)	
2 x Dual RS-232 cable (P/N: 19800-000113-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	
2 x SATA cable (P/N: 32000-0628000-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
IMBA-9454ISA-R10	ATX Motherboard with Intel® LGA 775 Core™2 Duo, Pentium® D/ Pentium® 4/ Celeron® D Processor FSB 533/800/1066 MHz, PCIe GbE, SATA II and audio
32200-000017-RS	FDD Cable
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
32200-000063-RS	RS-232/422/485 cable
CF-775A-RS/CF-520-RS-R11	CPU cooler
TPM-WI01-R10	20-pin WINBOND TPM Module, S/W management tool
TPM-IN01-R10	20-pin INFINEON TPM Module, S/W management tool
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)

## Features

1. Intel® Socket 478 Pentium® 4 CPU support up to FSB 533/800MHz
2. VGA integrated in Intel® 865G
3. Dual-channel DDR-333/400MHz SDRAM socket support up to 4GB
4. 2 x SATA 150, 8 x USB 2.0 and Audio, ATX support
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 478 Intel® Pentium® 4/Celeron® D support 800/533 MHz FSB up to 3.4 GHz with Hyper-Threading Technology.
- ◆ System Chipset  
Intel® 865G + ICH5
- ◆ BIOS  
AWARD BIOS
- ◆ System Memory  
4 x 184-pin dual-channel DDR 333/400 MHz up to 4GB
- ◆ Ethernet  
Intel® 82541 GbE with ASF2.0 support. (IMBA-8650GN)  
Realtek 8110SC GbE (IMBA-8650GR)
- ◆ I/O Interface  
8 x USB 2.0  
1 x LPT  
1 x CF Type II  
1 x RS-232/422/485  
2 x IDE
- ◆ Super I/O  
W83627HG
- ◆ Infrared Interface  
1 x Infrared Interface by pin header (SIR mode)
- ◆ Expansions  
1 x AGP 8x/4x 4 x PCI  
1 x ISA 1 x PCI/ISA
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ Display Interface  
VGA integrated in Intel® 865G
- ◆ Watchdog Timer  
Software programmable 1-255 sec. system reset
- ◆ Power Supply  
ATX support
- ◆ Power Consumption  
12V@7.3A, 5V@4.9A, 3.3V@0.7A, -12V@0.2A, 5VSB@0.7A (Pentium® 4 3.0GHz, 1GB DDR 400 MHz SDRAM)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95% non-condensing
- ◆ Dimensions  
305 mm x 244 mm
- ◆ Weight  
GW: 1200 g / NW: 600 g

## Packing List

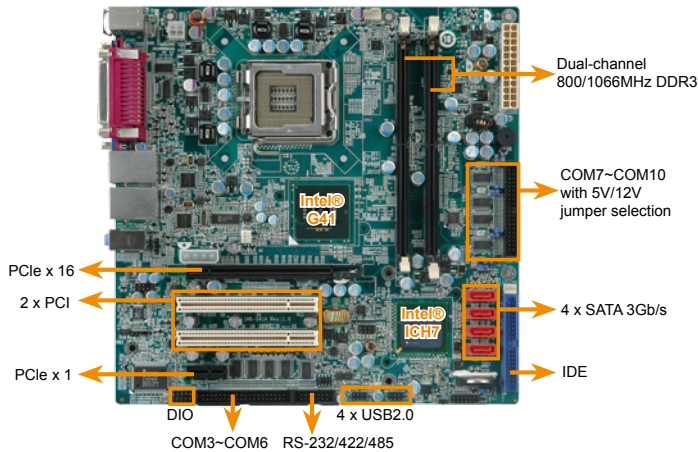
1 x IMBA-8650 Single board computer	
2 x IDE cable (P/N: 32200-000052-RS)	
1 x RS-422/485 cable (P/N: 19800-000063-RS)	
1 x SATA Power cable (P/N: 32102-000100-100/200-RS)	
1 x I/O shielding (P/N: 45002-0804C0-00-RS)	
1 x RS-232 cable (P/N: 19800-000114-RS)	2 x SATA cable (P/N: 32000-0628000-RS)
2 x RS-232 cable (P/N: 19800-000113-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

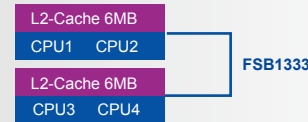
Part No.	Description
IMBA-8650GR-R22	ATX Motherboard with Intel® Pentium® 4 Socket 478 FSB 800 MHz, AGP 8X, Realtek GbE, SATA and audio
IMBA-8650GN-R22	ATX Motherboard with Intel® Pentium® 4 Socket 478 FSB 800 MHz, AGP 8X, Intel® GbE, SATA and audio
32200-000017-RS	FDD cable
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
CF-478A-RS	CPU cooler
CF-478B-RS	CPU cooler
CF-514-RS	CPU cooler
CF-519-RS	CPU cooler

# IMB-G41A

Micro ATX 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



Intel® Core™2 Quad with a total of 12 MB L2 cache. Four processing units are packed inside a single CPU package.



Chipset and Processor Compatibility Matrix

Process	Chipset Compatibility Matrix	Processor Code name	Intel®	Intel®	Intel®
			945G	Q965	G41
45nm	Core™2 Extreme QX9650	Yorkfield			v
	Core™2 Quad Q9650	Yorkfield			v
65nm	Core™2 Extreme QX6700	Kentsfield		v	v
	Core™2 Quad Q6600	Kentsfield		v	v
65nm	Core™2 Duo E6xxx & E4xxx	Conroe	v	v	v
65nm	Pentium® 4 Processor 6x1	Cedar Mill	v	v	
65nm	Pentium® 4 Processor 5x1	Prescott	v		
65nm	Conroe-L Single Core Processor	Conroe	v	v	v
65nm	Celeron D Processor 352	Cedar Mill	v	v	

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

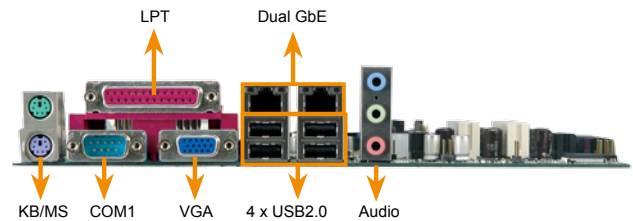
6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

## Specifications

- ◆ CPU  
LGA775 socket supports the Intel® Core™2 Duo and Intel® Core™2 Quad processors and Intel® Celeron® processor
- ◆ FSB  
800/1066/1333MHz
- ◆ System Chipset  
Intel® G41+ICH7
- ◆ Memory  
Two 240-pin 2GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (system max. 4GB)
- ◆ BIOS  
AMI BIOS
- ◆ Ethernet  
Dual Realtek RTL8111CP PCIe GbE Controllers
- ◆ Graphic Engine  
Intel® GMA4500  
Integrated Graphic Enhanced 5th Generation Core Supports DirectX 10 / OpenGL 1.5
- ◆ Display Output  
One VGA supports analog CRT up to 2048x 1536 @ 75MHz
- ◆ Super I/O  
ITE IT8783F
- ◆ Audio  
Realtek ALC888 HD Audio Codec
- ◆ I/O interface  
9 x RS-232 (COM7~COM10 with 5V/12V jumper selection)  
1 x RS-232/422/485  
8 x USB 2.0  
1 x IDE  
1 x LPT  
4 x SATA 3Gb/s  
2 x PS/2 for KB/MS
- ◆ Infrared Interface  
1 x Infrared connector by 5-pin header
- ◆ Extension  
1 x PCIe x16 Slot  
1 x PCIe x1 Slot  
2 x PCI Slot
- ◆ Watchdog Timer  
Software Programmable support 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 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  
0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operating Humidity  
5% ~95%, non-condensing
- ◆ Dimensions  
244mm x 244mm
- ◆ Weight  
GW: 1200g, NW: 700g



## Features

- Support for the next-generation 45nm Intel® Core™2 processor family with faster system performance
- Intel® GMA 4500 delivers an excellent blend of graphics performance
- Integrated VGA and PCIe x16 interface for dual display
- Diverse I/O interfaces, including ten COM ports, four SATA 3Gb/s ports and a HD Audio connector
- Two 240-pin 2GB (max.) 800/1066MHz dual-channel DDR3 SDRAM DIMM supported (system max. 4GB)
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x IMB-G41A Single Board Computer	
2 x Quad ports RS-232 cable without bracket (P/N:32200-025400-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	
4 x SATA cable (P/N: 32000-062800-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

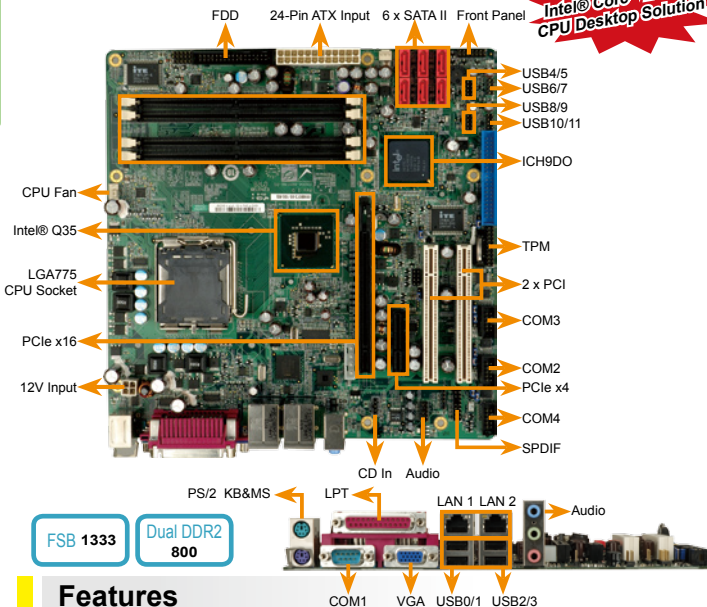
Part No.	Description
IMB-G41A-R10	Micro ATX Motherboard supports 45nm LGA775 Intel® Core™2 Quad CPU with a 1333/1066/800MHz FSB, PCIe x16, PCIe x1, 2 PCI, 10 COM, Dual PCIe GbE, SATAII and Audio
CB-USB02-RS	Dual-port USB cable with bracket
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA 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
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

Micro ATX 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 II with RAID Functions.



Intel® Core™2 Quad CPU Desktop Solution



## Features

1. Micro ATX and RoHS compliant
2. Supports Intel® LGA775 Intel® Core™2 Quad, Core™2 Duo, 45 nm processor with 1333/1066/800 MHz FSB
3. Intel® Q35 & ICH9DO platform
4. Six SATA II with Intel® Matrix Storage Technology supported
5. Intel® PCIe GbE with iAMT 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 iAMT support
- ◆ IO 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 II with RAID 0,1,5,10 support
- ◆ Digital I/O: 8-bit Digital I/O, 4-bit input / 4-bit output
- ◆ Infrared Interface: 1 x Infrared Interface by pin header
- ◆ Expansions: 1 x PCIe x16, 1 x PCIe x4, 2 x PCI
- ◆ Audio: Realtek ALC883 HD audio codec
- ◆ Graphic: VGA integrated in Intel® Q35
- ◆ TPM1.2: 1 x 20-pin header on-board for TPM (Trusted Platform Module)
- ◆ Watchdog Timer: Software Programmable supports 1~255sec. system reset
- ◆ Power Supply: ATX
- ◆ Super IO: ITE8712F
- ◆ 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:1.1 kg

## Packing List

1 x IMB-Q354 single board computer	
3 x SATA power cable (P/N: 32102-000100-100/200-RS)	
1 x Dual RS-232 cable (P/N: 19800-000051-RS)	
1 x I/O shielding (P/N: 45014-0017C0-00-RS)	6 x SATA cable (P/N: 32000-062800-RS)
1 x USB cable (P/N: CB-USB02-RS)	1 x mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

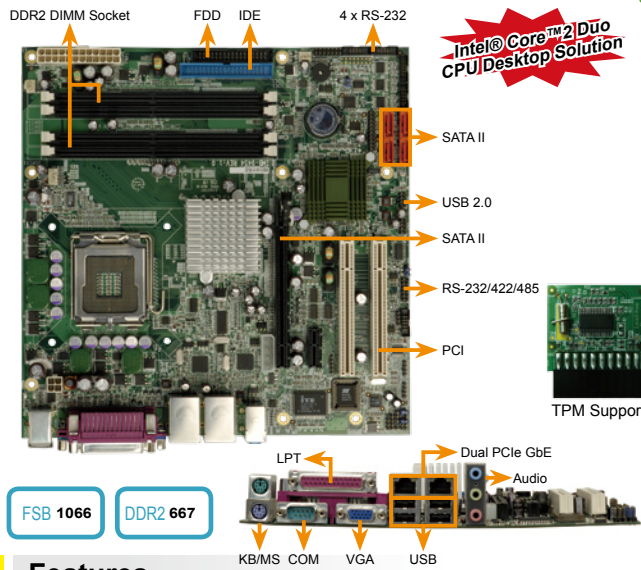
Part No.	Description
IMB-Q354-R10	Micro ATX motherboard supports 45 nm LGA775 Intel® Core™2 Duo CPU with a 800/1066/1333 MHz FSB, Intel® Q35 & ICH9DO platform, dual Intel® PCIe GbE, six SATA II with RAID functions.
CF-520-RS-R11	High performance CPU cooler, (115mm x 115mm x 67mm, 115W)
TPM-IN01-R10	Infinion 20-pin Trusted Platform Module with S/W management tool
TPM-WI01-R10	Winbond 20-pin Trusted Platform Module with S/W management tool
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-R20

micro-ATX Motherboard with Intel® Core™2 Duo, Pentium® 4/ Pentium® D/ Celeron® D FSB 533/800/1066 MHz CPU, VGA, Dual PCIe GbE, SATA II, USB 2.0, 6 COM, & Audio



Intel® Core™2 Duo CPU Desktop Solution



## Features

1. Intel® Core™2 Duo, Pentium® 4/ Pentium® D/ Celeron® D CPU support up to FSB 533/800/1066 MHz
2. VGA integrated in Intel® 945G
3. Dual-channel DDR2 533/667MHz support up to 4GB
4. FDD, LPT, 4 x SATA II, 8 x USB 2.0 and 6 x 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 533/800/1066 MHz FSB
- ◆ System Chipset: Intel® 945G + ICH7
- ◆ BIOS: AMI BIOS
- ◆ System Memory: 4 x 240-pin Dual-channel DDR2 533/667MHz up to 4GB
- ◆ Ethernet: Dual PCIe Broadcom BCM5787M GbE chipset with ASF2.0 support.
- ◆ I/O Interface: 8 x USB 2.0, 4 x SATA II, 1 x LPT, 1 x FDD, 5 x RS-232, 1 x RS-232/422/485, 2 x PS/2 for KB/MS, 1 x IDE, 1 x 20-pin LPC for TPM
- ◆ Expansions: 1 x PCIe x 1, 2 x PCI, 1 x PCIe x 16 (Support PCIe x1/16 PCIe add on cards)
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Infrared Interface: 1x 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@2.09A, 12V@8.9A, 3.3V@3.6A, 5Vsb@0.67A (Pentium® 4 3.2GHz, DDR2 533 512MB x 4)
- ◆ 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	
2 x Dual RS-232 Cable (P/N: 19800-000112-RS)	
1 x SATA Power Cable (P/N: 32102-000100-100/200-RS)	
1 x I/O Shielding (P/N: 45014-0017C0-00-RS)	1 x IDE Cable (P/N: 32200-000052-RS)
2 x SATA Cable (P/N: 32000-062800-RS)	1 x Mini Jumper Pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
IMB-9454G-R20	micro-ATX Motherboard, Core™2 Duo CPU 800/1066/1333 MHz FSB with VGA, Dual PCIe GbE, SATA II, COM and Audio
32200-000017-RS	FDD Cable
CB-USB02-RS	Dual USB Cable
CB-USB14-RS	Four USB Cable
19800-000063-RS	RS-422/485 Cable
TPM-WI01-R10	20-pin WINBOND TPM Module, S/W Management
TPM-IN01-R10	20-pin INFINEON TPM Module, S/W Management
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 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

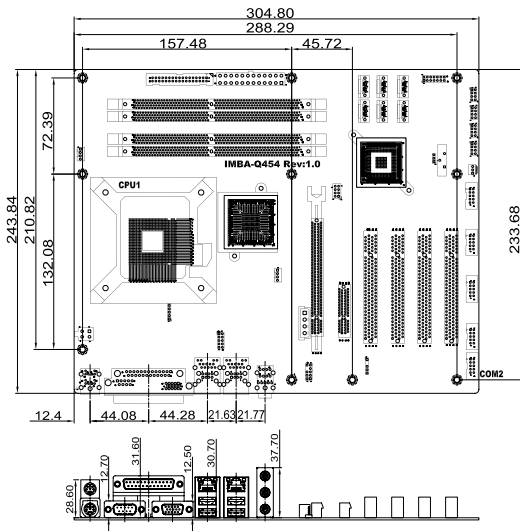
7 ORing Network Communication

8 Power Supply Peripherals

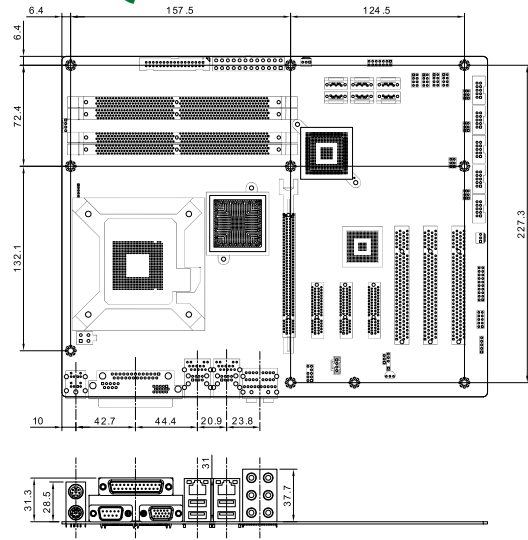


# Dimensions (Unit : mm)

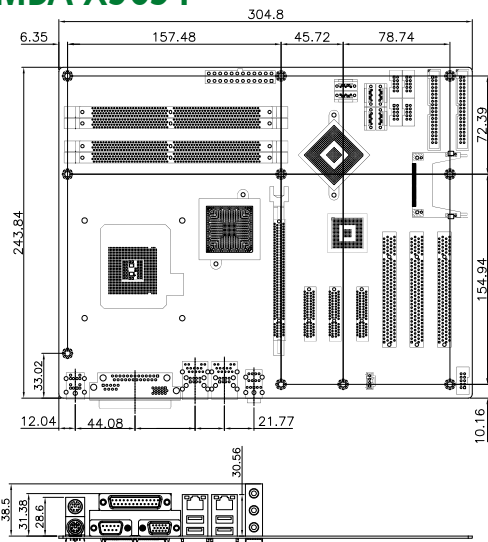
## IMBA-Q454



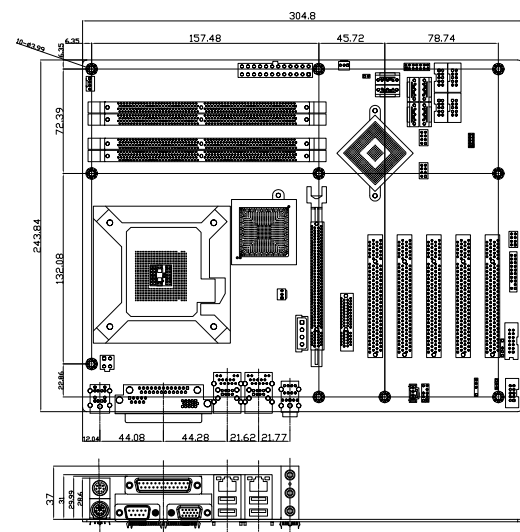
## IMBA-XQ354



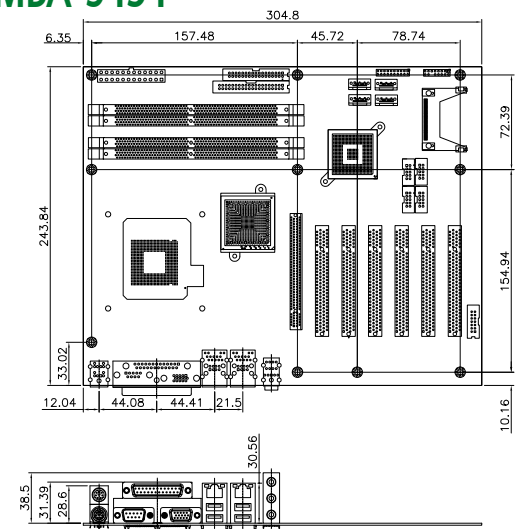
## IMBA-X9654



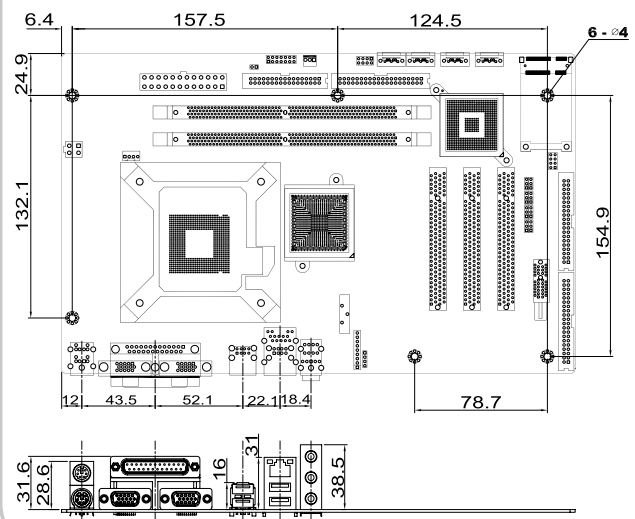
## IMBA-9654



## IMBA-9454



## IMBA-9454B



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

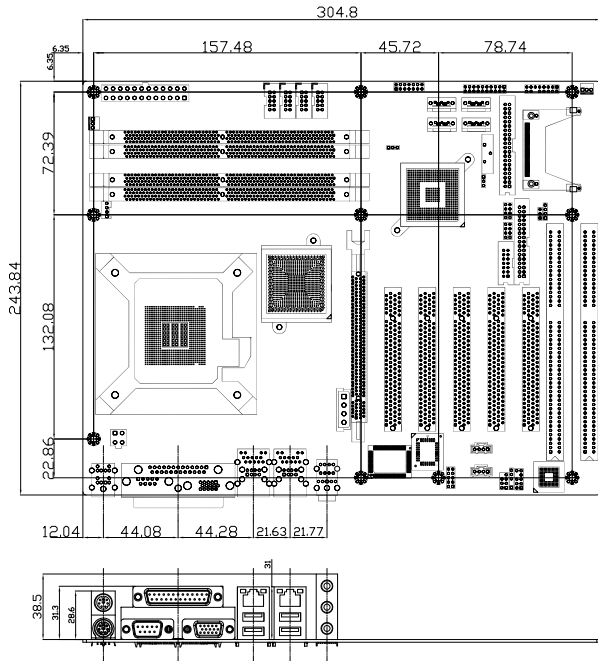
6 Panel Solutions

7 ORing Network Communication

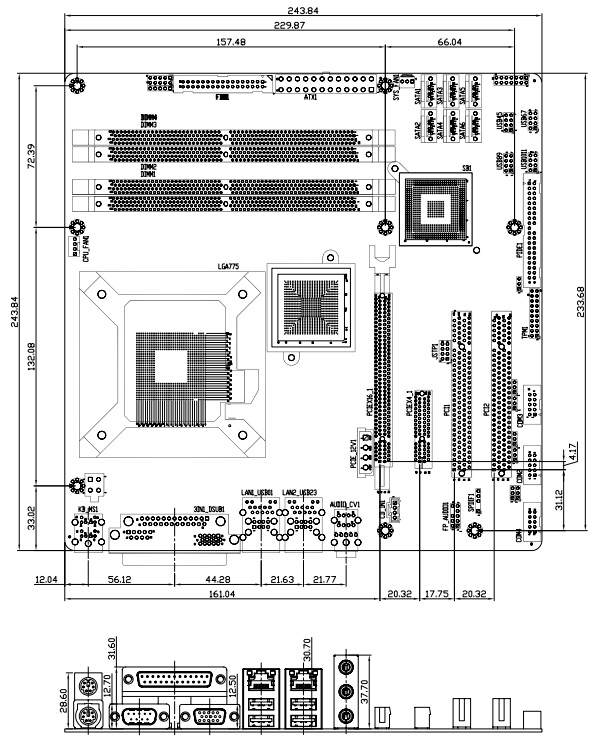
8 Power Supply/Peripherals

# Dimensions (Unit : mm)

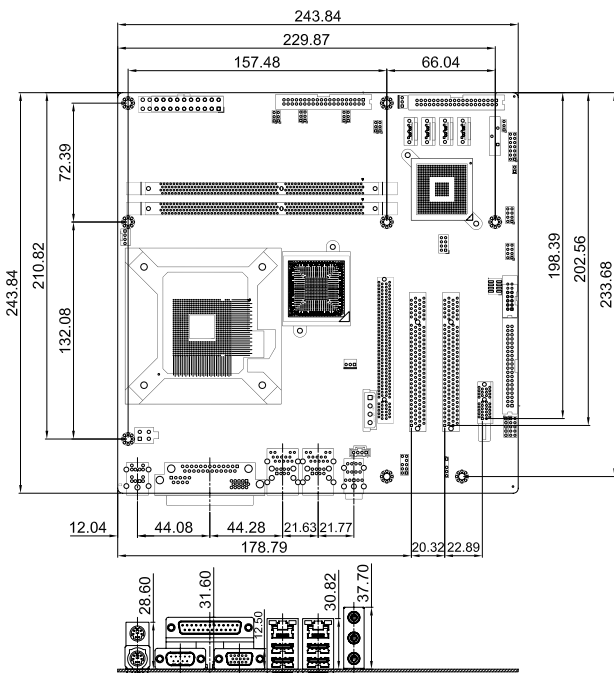
## IMBA-9454ISA



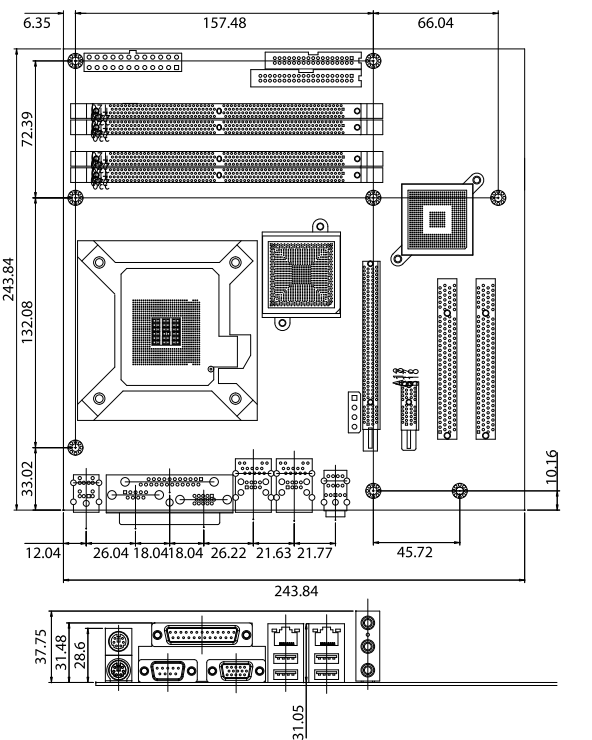
## IMB-Q354



## IMB-G41A



## IMB-9454



1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply  
Peripherals

# Mini ITX Selection Guide



Model Name	KINO-G45A	KINO-9454-R20	KINO-780AM2	KINO-QM57A	KINO-GM45A	KINO-9653	KINO-9652-R11
<b>CPU Socket</b>	LGA775	Intel® LGA775	AMD® Socket AM2	Socket G	Socket P	Intel® Socket P	Intel® Socket P
<b>CPU Type</b>	Intel® Core™ 2 Duo/Quad/Extreme	Intel® Core™ 2 Duo, Pentium® D/4/ Celeron® D	AMD® Athlon™ 64, Athlon™ 64 x2, Sempron™	Intel® Core™ i7	Intel® Core™ 2 Duo/Quad, Core™ Duo/Solo, Celeron® M	Intel® Core™ 2 Duo, Celeron® M	Intel® Core™ 2 Duo, Celeron® M
<b>FSB</b>	800/1066/1333MHz	533/800/ 1066MHz	2600MHz Hyper Transport	NA	667/800/1066 MHz	533/800MHz	533/800MHz
<b>Chipset</b>	Intel® G45 + ICH10	Intel® 945G + ICH7	AMD®780E + SB710	Intel® QM57	Intel® GM45 + ICH9M	Intel® GME965 + ICH8M	Intel® GME965 + ICH8M
<b>Memory</b>	2 x 240-pin, Max.4GB, 667/800 MHz dual-channel DDR2 DIMMs	2 x 240-pin, Max.4GB, 400/533/667 MHz dual-channel DDR2 DIMM	2 x 240-pin, Max.4GB, 667/800 MHz dual-channel DDR2 DIMMs	2 x 204-pin, Max.4GB, 800/1066 MHz DDR3 SO-DIMM	2 x 200-pin, Max.4GB, 667/800 MHz DDR2 SO-DIMM	2 x 200-pin, Max.4GB, 533/667 MHz dual-channel DDR2 DIMM	2 x 240-pin, Max.4GB, 533/667 MHz dual-channel DDR2 DIMM
<b>Display Interface</b>	VGA Integrated in the Intel® G45HDMI integrated in the Intel® G45 DVI-D integrated in the Intel® G45	VGA Integrated in the Intel® 945G	VGA integrated in the AMD® RS780E HDMI resolution up to 1080p integrated in the AMD®RS780E Dual link DVI-D integrated in the AMD® RS780E	VGA integrated in the Intel®QM57 Dual HDMI support up to 1080p 18/24 bit Dual channel LVDS by Intel® QM57	VGA integrated in the Intel® GM45 HDTV for Component, S-Video and Composite Output Interfaces support HDMI support up to 1080p 18/24 bit Dual channel LVDS by Intel® GM45	1st VGA Integrated in Intel® GME965 2nd VGA provided by Chronitel CH7317A RCA jack for TV out	VGA Integrated in Intel® GME965 HDTV-Out 24-bit dual channels LVDS by Intel® GME965
<b>Ethernet</b>	PCIe GbE Realtek RTL8111CP Controller	Dual PCIe GbE BroadcomBCM5787 chipset with ASF2.0 support	Dual PCIe GbE Realtek RTL8111CP Controller	Intel® 82577 GbE LAN controller with iAMT 6.0 support Intel® 82574L GbE LAN	PCIe GbE Realtek RTL8111CP Controller	Intel® 82566MM PCIe GbE chipsets	Intel® 82573L PCIe GbE chipsets Intel® 82566MM PCIe GbE chipset
<b>I/O Interface</b>	1 x RS-232 6 x USB 2.0 2 x PS/2 KB/MS	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x Infrared Interface 2 x PS/2 KB/MS 1 x 20-pin LPC for TPM	1 x RS-232 8 x USB 2.0 1 x PS2 for KB/MS 1 x LPC pin header for TPM	2 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x 6-pin pin header for KB/MS	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x 6-pin pin header for KB/MS	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 PS2 for KB/MS 1 x 20-pin LPC for TPM
<b>Drive Interface</b>	6 x SATAII	4 x SATAII 1 x IDE	4 x SATA II	6 x SATAII	2 x SATAII	2 x SATA II 1 x CF type II	2 x SATAII with RAID 1 x IDE 1 x CF type II
<b>Audio</b>	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	Realtek ALC888 HD Audio codec	Realtek ALC883 HD Audio codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)						
<b>Power Consumption</b>	5V@2.5A, 12V@1.65A, 5Vsb@ 0.01A	5V@1.8A, 12V@5.81A, 3.3V@3.49A, 5VSB@0.37A (Pentium® 4 3.06GHz, 1G 533MHz DDR2)	5V@4.8A, 12V@0.22A, Vcore 12V@12.69A, 3.3V@0.54A (AMD® Phenom X4 9950 CPU)	12V@5.27A (2.66GHz Intel® Core i7 620M CPU with DDR3 1333MHz 2GB*2 DIMM)	12V@5.56A (2.0GHz Intel® Core™ 2 Quad Q9000 with 1GBx2 DDRII 800MHz)	12V@3.77A (Intel® Core™ 2 Duo T7500 2.2GHz with 2x1GB DDR2 800MHz)	12V@3.77A (Intel® Core™ 2 Duo T7500 2.2GHz with 2x1GB DDR2 800MHz)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset						
<b>Operation Environment</b>	Temperature Range 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity 5% ~ 95% non-condensing						
<b>Expansions Slot</b>	1 x PCI	1 x PCIe x16 1 x Mini PCI	1 x PCIe x16	1 x PCIe x16 1 x PCIe Mini card slot	1 x PCI 1 x PCIe Mini card slot	1 x PCIe mini card	1 x PCI 1 x PCIe Mini card slot
<b>CPU Cooler</b>	CF-775A-RS CF-520-RS-R11	CF-775A-RS CF-520-RS-R11	CF-478D-RS CF-478E-RS	CF-989A-R10	CF-479B-RS	CF-479B-RS	CF-479B-RS

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

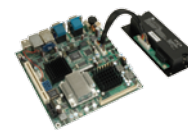
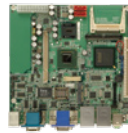
5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# Mini ITX Selection Guide



Model Name	KINO-9453-R20	KINO-9452-R20	KINO-945GSE	KINO-945GSE2	KINO-780EB	eKINO-9102	eKINO-945GSE
<b>CPU Socket</b>	Intel® Socket M	Intel® Socket M	On Board	On Board	On Board	On Board	On Board
<b>CPU Type</b>	Intel® Core™2 Duo, Core™ Duo/Solo, Celeron® M	Intel® Core™2 Duo, Core™ Duo/Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	AMD® ASB1 Processor Dual core L325 1.5GHz AMD® ASB1 Processor Single core 210U 1.5GHz	On board Celeron® M 1G 512K cache	Intel® Atom™ Processor N270 1.6GHz
<b>FSB</b>	533/677MHz	533/677MHz	533MHz	533MHz	1600MHz Hyper Transport	400MHz	533MHz
<b>Chipset</b>	Intel® 945GME + ICH7M	Intel® 945GME + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	AMD®780E + SB710	Intel® 910GML + ICH6M	Intel® 945GSE + ICH7M
<b>Memory</b>	2 x 240-pin, Max.4GB, 400/533/667 MHz dual-channel DDR2 DIMM	2 x 240-pin, Max.4GB, 400/533/667 MHz dual-channel DDR2 DIMM	1 x 200-pin, Max.2GB, 400/533 MHz DDR2 SO-DIMM	1 x 200-pin, Max.2GB, 400/533 MHz DDR2 SO-DIMMs	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)	1 x 200-pin, Max.2GB, 400 MHz DDR2 SO-DIMM	1 x 200-pin, Max.2GB, 400/533 MHz DDR2 SO-DIMM
<b>Display Interface</b>	VGA Integrated in the Intel® 945GME 24-bit dual channel LVDS DVI by Intel®945GME SDVO interface with dual display support	VGA integrated in the Intel® 945GME HDTV-Out 24-bit dual channel LVDS	VGA integrated in the Intel® 945GSE 18-bit dual channel LVDS by Intel® 945GSE DVI by Silicon Image Sil1362A	VGA integrated in the Intel® 945GSE HDTV resolution up to 1080i by component interface 1st 18-bit dual channel LVDS by Intel® 945GSE 2nd 18/24 bit Dual channel LVDS by Chrontel CH7308B	VGA integrated in the AMD® RS780E HDMI resolution up to 1080p integrated in the AMD® RS780E 18/24 bit Dual channel LVDS by Intel® RS780E	VGA integrated in the Intel® 910GML + ICH6M 24-bit dual channel LVDS by Intel® 910GML + ICH6M	VGA integrated in the Intel® 945GSE 18-bit dual channel LVDS by Intel® 945GSE DVI by Silicon Image Sil1362A
<b>Ethernet</b>	Dual PCIe GbE BroadcomBCM5787 chipset with ASF2.0 support	Dual PCIe GbE BroadcomBCM5787 chipset with ASF2.0 support	Dual PCIe GbE Realtek RTL 8111CP chipset	PCIe GbE Realtek RTL8111CP Controller	PCIe GbE Realtek RTL8111CP Controller	PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset
<b>I/O Interface</b>	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS	3 x RS-232 1 x RS-232/422/485 8 x USB 2.0 2 x PS/2 KB/MS	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 2 x PS/2 for KB/MS	4 x RS-232 2x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x 6-pin pin header for KB/MS	1 x RS-232 1 x RS-232/422/485 8 x USB 2.0 1 x Infrared Interface 1 x 6-pin pin header for KB/MS 1 x LPC pin header for TPM	2 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 6 x USB 2.0 1 x KB/MS by pin header
<b>Drive Interface</b>	2 x SATA 1 x IDE	2 x SATA 1 x IDE	2 x SATA 1 x IDE 1 x CF type II	2 x SATA 1 x CF type II	4 x SATA II 1 x CF type II (optional)	2 x SATA 1 x CF type II	2 x SATA 1 x IDE 1 x CF type II
<b>Audio</b>	Realtek ALC655 with AC'97 codec	Realtek ALC883 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)						
<b>Power Consumption</b>	5V@4.86A, 12V@1.75A (Intel® Core™2 Duo T7400 2.16GHz, 1G 667MHz DDR2)	5V@1.58A, 12V@2.05A, 3.3V@3.12A, 5VSB@0.32A (Intel® Core™ Duo 2.16GHz, 1G*2 DDR2)	5V@2.89A, 2V@0.04A (Intel® Atom™ N270 with 1GB DDR2)	2.94A@12V (Intel® Atom™ N270 1.6GHz with 2GB DDR2)	3.49A@12V (AMD® Dual core L325 1.5GHz ASB1 processors with 2GB*2 DDR2 667MHz)	12V@2.57A (Intel® Celeron®M 1GHz with 2GB DDR2)	12V@1A (Intel® Atom™ N270 with 1GB DDR2)
<b>Watchdog Timer</b>	Software programmable and supports 1~255 sec. system reset						
<b>Operation Environment</b>	Temperature Range 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity 5% ~ 95% non-condensing						
<b>Expansions Slot</b>	1 x PCI 1 x Mini PCI	1 x PCI 1 x Mini PCI	1 x PCI 1 x PCIe mini card	1 x PCI 1 x PCIe mini card	1 x PCI 1 x PCIe Mini card slot	1x PCI 1x PCIe mini card 1x PCIe x1	1x PCI 1x PCIe mini card
<b>CPU Cooler</b>	CF-479B-RS	CF-479B-RS	Heatsink	Heatsink	Cooler	Heatsink	Heatsink

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# IEI Mini-ITX KINO Series

## 2010 IEI Latest Mini-ITX Motherboard

### HDMI Display Output



**KINO-G45A**  
Intel® G45 + ICH10  
Intel® Core™2 Quad/  
Duo Processor



**KINO-GM45A**  
Intel® GM45 + ICH9M  
Intel® Core™2 Quad/  
Duo Processor



**KINO-780AM2**  
AMD® RS780E + SB710  
AMD® AM2/AM2 +  
Processor



**KINO-780EB**  
AMD® RS780E + SB710  
AMD® 210U/L325  
Processor

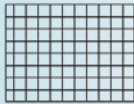
### Complete Platform in KINO Mini ITX Motherboard

CPU Platform	HDMI support	ATX power supply	Single voltage DC input	UPS Motherboard
<b>Desktop</b>	KINO-G45A KINO-780AM2	KINO-9454		
<b>Mobile</b>	KINO-QM57A KINO-GM45A	KINO-9652 KINO-9452 KINO-9453	KINO-9653	
<b>Embedded</b>	KINO-780EB	KINO-945GSE	KINO-780EB KINO-945GSE2	eKINO-945GSE eKINO-9102

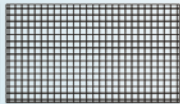
### HDMI Benefit

#### New Multimedia Interface

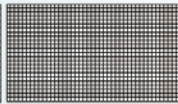
The High-Definition Multimedia Interface (HDMI) which is a compact audio/video interface for transmitting uncompressed digital data delivering high-definition video support 1080p resolution which equates to 1,920x1,080 pixels, it also supports industry standard EIA-861B video modes including 480p, 720p, 1080i, and 1080p



**480i**  
640x480  
307,200 pixels



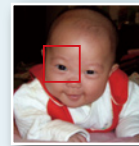
**720p**  
1280x720  
921,600 pixels



**1080p**  
1920x1080  
2,073,600 pixels

### The HDMI Advantage.

- ◆ **Simplicity**
- ◆ **Performance**
  - All-digital. No conversion or compression needed
  - Enormous bandwidth capacity.
    - » Better looking movies
    - » Faster gaming
    - » Richer audio
  - Ready for future emerging technologies



**720p**  
1,280x720 pixels



**1080p**  
1,920x1,080 pixels

### AUPS Battery Kit

#### BATKIT-2S2P3800-R10



**PN: BAT-LI-2S2P3800**  
2S2P 7.4V 3800mAH

#### BATKIT-4S2P3800-R10



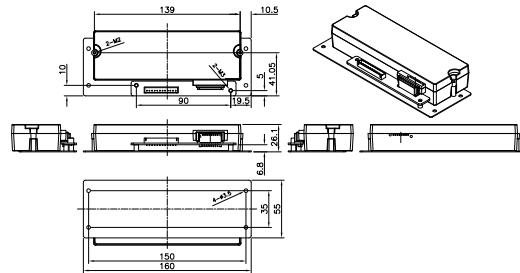
**PN: BAT-LI-4S2P3800**  
4S2P 14.8V 3800mAH

### Battery Specification

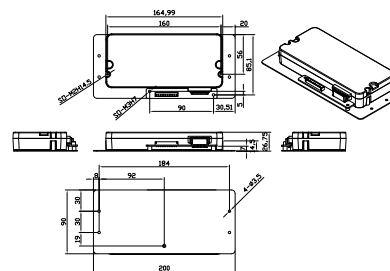
Battery Model Name	BAT-LI-2S2P3800	BAT-LI-4S2P3800
Battery type	Li-Ion 2S2P 7.4V	Li-Ion 4S2P 14.8V
Battery capacity	7.4V 3800mAH	14.8V, 3800mAH
Maximum charge voltage	8.4V	16.8V
The end of discharging voltage	5.6V	11.2V
Battery charge time (Power off)	2.5hrs	5hrs
Battery charge time (Power on)	6.5hrs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

### Dimensions (Unit : mm)

#### BATKIT-2S2P3800-R10



#### BATKIT-4S2P3800-R10



### AUPS Ready Embedded system

#### IBX-600 with IEI AUPS Sub-system Design Concept

##### Onboard DC-to-DC module

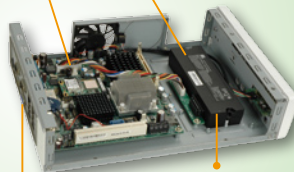
- high converting efficiency
- with battery charger circuit

##### Li-Ion smart battery

- 2S2P 7.4V 3800mAH smart battery provides backup power while main power source failure



The smart battery kits in IBX-600 can be easily accessed at the bottom on the system. Battery pack can be replaced by simply removing four screws.



#### Wide range DC input

- accepts 12VDC to 24VDC

#### Value-added software included

- AUPS network management
- Web-based remote control
- Real time monitoring

### Embedded System mapping



EBC-3620	EBC-3000	EBC-3100	ECK-161B	IBX-600
KINO-9652	KINO-780AM2	KINO-780AM2	KINO-9452	eKINO-945GSE
	KINO-G45A	KINO-G45A		eKINO-9102
	KINO-9454	KINO-9454		
	KINO-9453	KINO-9453		
	KINO-9452	KINO-9452		
	KINO-9652	KINO-9652		

1  
Industrial Computing Solutions

2  
Embedded Computing Solutions

3  
Industrial Data Collector and Controller

4  
Video Capture Solutions

5  
I/O Communication Solutions

6  
Panel Solutions

7  
ORing Network Communication

8  
Power Supply/Peripherals

# KINO-QM57A

Mini-ITX SBC with Socket G for Intel® mobile Arrandale CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB2.0, PCIe mini, SATAII and Audio



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

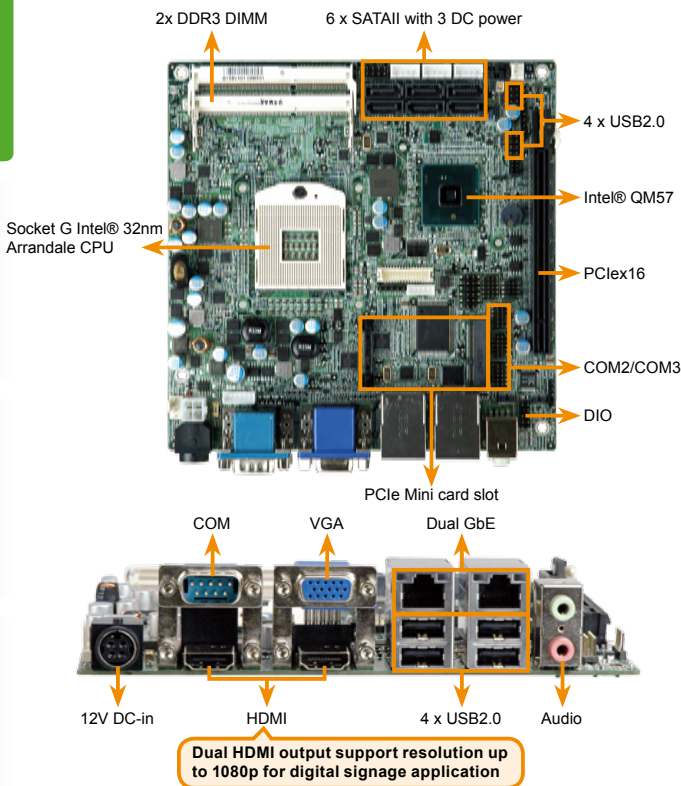
4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals



CPU Socket	Process	Brand	CPU Code	CPU No.	Clock speed	L2 cache	TDP	iAMT6.0	Chipset
Socket G 989 pin	32nm	Core™ i7	Arrandale	i7-620M	2.66G	4M	35W	V	QM57
		Core™ i5	Arrandale	i5-520M	2.4G	4M	35W	V	
		Celeron®		P4500	1.86	2M	35W		

### IEI Easy Manager Features:

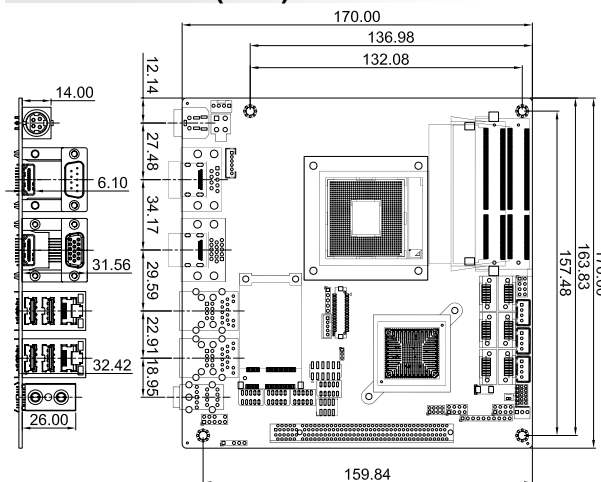
1. Remote troubleshooting and recovery
2. Event log and alert
3. Remote HW/SW asset tracking
4. Network outbreak containment
5. Agent presence alerts when agent is unresponsive



### Features

1. Mini-ITX SBC with Socket G for Intel® 32nm mobile Arrandale processor
2. 800/1066MHz dual-channel DDR3 SDRAM supported (system max. 4GB)
3. Analog CRT/18-bit or 24-bit dual-channel LVDS/Dual HDMI outputs supported
4. On key recovery CD support for system backup and recovery
5. Intel® GbE LAN with iAMT 6.0 support, iEZman UI is freely bounded for remote control under Windows environment
6. UEFI software interface between OS and platform firmware
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

### Dimensions (mm)



### Specifications

- ◆ CPU: Socket G (PGA989) Intel® 32nm Arrandale processor
- ◆ PCH: Intel® QM57
- ◆ Memory: Two 204-pin 800/1066 MHz dual-channel DDR3 SO-DIMMs supported (system max. 4GB)
- ◆ BIOS: AMI BIOS
- ◆ Ethernet: 1 x Intel® 82577 GbE LAN controller with iAMT 6.0 supported by iEZman software UI; 1 x Intel® 82574L GbE LAN
- ◆ Graphic Engine: Gen 5.75 with 12 Execution Units DirectX\* 10, OpenGL\* 2.1
- ◆ Display Output: VGA integrated in Intel® QM57; 18/24-bit dual-channel LVDS support; Dual HDMI output
- ◆ Super I/O: Fintek F81865
- ◆ Audio: Realtek ALC888 HD codec
- ◆ I/O Interface: 2 x RS-232; 1 x RS-232/422/485; 8 x USB2.0; 6 x SATA II with three SATA power connectors; 1 x 6-pin header for KB/MS
- ◆ Extension: 1 x PCIe Mini Card; 1 x PCIe x16
- ◆ Watchdog Timer: Software Programmable support 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: 12W@5.27A (2.66GHz Intel® Core i7 620M CPU with two 2GB 1333MHz DDR3 DIMMs)
- ◆ Operation Temperature: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Operation Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW:1000g / NW:350g

### Packing List

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

### Ordering Information

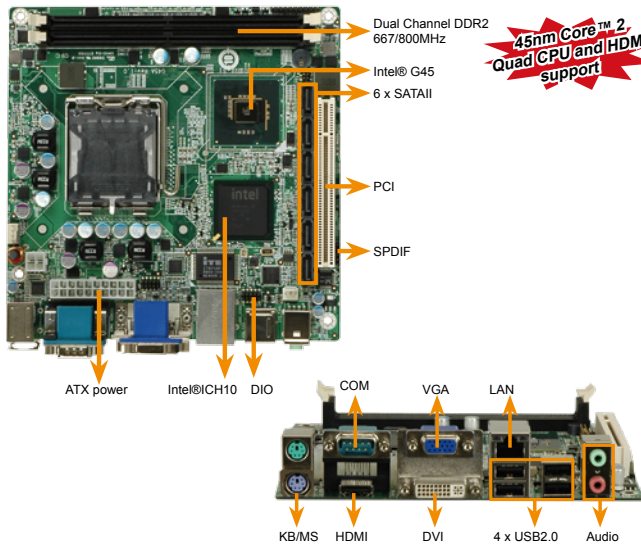
Part No.	Description
KINO-QM57A-R10	Mini-ITX SBC with Socket G for Intel® mobile Arrandale CPU, VGA/Dual HDMI/LVDS, PCIe GbE, USB2.0, PCIe mini, SATAII and Audio
CB-USB02-RS	Dual USB cable
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R10	PCIe Mini card wireless LAN module
WMUSB-V01-R10	USB Mini card wireless LAN module
63000-FSP096AHB-RS	96W/12V power adaptor 90VAC~260VAC, DIN 4 pin
CF-989A-RS	CPU Cooler

# KINO-G45A

Mini-ITX SBC with Socket LGA775 for Intel® 45nm Core™ 2 Duo/Quad CPU with FSB 1333MHz, VGA/DVI/HDMI, PCIe GbE, USB2.0, SATAII and Audio

One Key Recovery





## Features

1. Socket LGA775 for Intel® 45nm Core™ 2 Duo/Quad CPU with FSB 1333MHz
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 supporting 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 FSB 800/1066/1333MHz
- ◆ System Chipset  
Intel® G45+ ICH10
- ◆ BIOS  
AMI BIOS
- ◆ Memory  
Two 240-pin 667/800 DDR2 dual-channel SDRAM DIMMs supported (system max. 4GB)
- ◆ Ethernet  
Realtek RTL8111CP PCIe GbE Controller
- ◆ I/O Interface  
6 x USB2.0  
6 x SATAII  
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 the Intel® G45 support up to QXGA  
Support HDMI integrated in the Intel®G45 DVI-D output support
- ◆ Expansion  
1 x PCI
- ◆ SPDIF  
1 x 5pin header
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super IO  
ITE IT8718F
- ◆ Audio  
Realtek ALC888 HD codec
- ◆ FAN  
1 x CPU FAN  
1 x System FAN
- ◆ Watchdog Timer  
Software Programmable support 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 2GB\*2 DDRII 800MHz)
- ◆ 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	
6 x SATA cable (P/N: 32000-062800-RS)	
1 x Dual USB cable (PN: CB-USB02-RS)	
1 x I/O shielding (P/N: 45014-0028C0-00-RS)	
1 x Mini jumper pack	
1 x Utility CD	1 x QIG

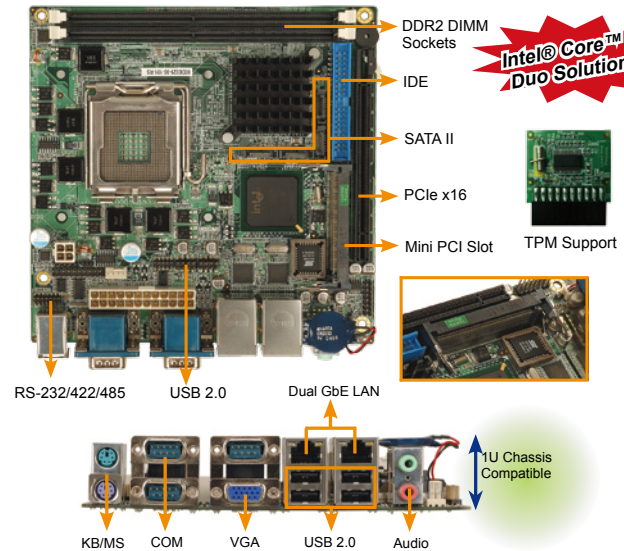
## Ordering Information

Part No.	Description
KINO-G45A-R10	Mini-ITX SBC with Socket LGA775 for Intel® 45nm Core™ 2 Duo/Quad CPU with FSB 1333MHz, VGA/DVI/HDMI, PCIe GbE, USB2.0, SATAII and Audio
32102-000100-100-RS	SATA Power cable
CF-520-RS-R11	CPU cooler (115mm x 115mm x 67mm, 115W)
CF-775A-RS	CPU cooler (92mm x 92.5mm x 73mm, 130W)
SAIDE-KIT01-R10	SATA/IDE/CF converter board

# KINO-9454-R20

Intel® Core™ 2 Duo/Pentium® 4/Pentium® D 1066/800/533 MHz CPU Mini-ITX Motherboard with, SATA II, Dual PCIe GbE, USB 2.0 and Audio

One Key Recovery

## Features

1. Intel® Core™ 2 Duo, Pentium® 4/ Pentium® D FSB 1066/800/533 MHz processor
2. VGA integrated in the Intel® 945G
3. DDR2 667/533/400 MHz DIMM socket supports up to 4GB
4. Dual PCIe Broadcom BCM5787M GbE chipset
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
LGA 775 Intel® Core™ 2 Duo, Pentium® D/4/ Celeron® D with a 533/800/1066 MHz FSB
- ◆ System Chipset  
Intel® 945G + ICH7
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
Two 240-pin 2GB (maximum) 400/533/667 MHz dual-channel DDR2 DIMM supported (maximum system memory of 4 GB)
- ◆ Ethernet  
Dual PCIe Broadcom BCM5787M GbE chipset with ASF2.0 remote control support.
- ◆ I/O Interface  
8 x USB 2.0  
4 x SATA II  
1 x IDE  
3 x RS-232  
1 x RS-232/422/485  
2 x PS/2 for KB/MS  
1 x 20-pin LPC (TPM Module)
- ◆ Expansions  
1 x PCIe x16  
1 x Mini PCI
- ◆ Infrared Interface  
One infrared Interface by pin header
- ◆ Super I/O  
ITE 8712F
- ◆ 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
- ◆ SSD  
N/A
- ◆ Display Interface  
VGA integrated in the Intel® 945G
- ◆ Watchdog Timer  
Software programmable 1-255 sec. by super I/O
- ◆ Power Supply  
ATX support
- ◆ Power Consumption  
5V@1.8A, 12V@5.81A, 3.3V@3.49A, 5VSB@0.37A  
(3.06GHz Intel® Pentium® 4 CPU with a 533 MHz 1GB DDR2 DIMM)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95% non-condensing
- ◆ Dimensions  
170 mm x 170 mm
- ◆ Weight: GW: 1100 g; NW: 400 g

## Packing List

1 x KINO-9454 single board computer	
1 x IDE cable (P/N: 32200-000052-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x I/O shielding (P/N: 41003-0186C0-00-RS)	
1 x Mini jumper pack	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-9454-R20	Intel® Core™ 2 Duo/Pentium® D 1066 MHz CPU Mini-ITX Motherboard with, Dual PCIe GbE, SATA II and audio
19800-000110-RS	RS-232/422/485 cable
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
CF-520-RS	CPU cooler
CF-775A-RS	CPU cooler
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management tool
TPM-IN01-R10	20-pin INFINEON TPM module, S/W management tool

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

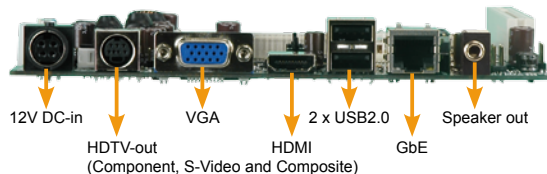
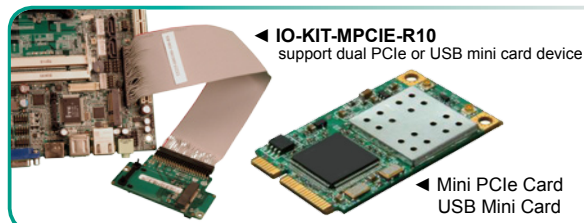
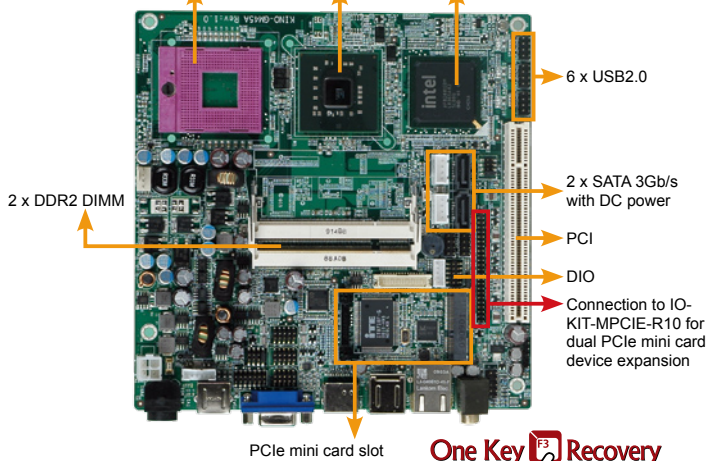
8 Power Supply/Peripherals

# KINO-GM45A

Mini-ITX SBC with Socket P for Intel® 45nm mobile Core™2 Quad/ Duo Penryn CPU, VGA/HDMI/LVDS, PCIe GbE, USB2.0, PCIe mini, SATA 3Gb/s and Audio, RoHS



Socket P 45nm/65nm Intel® CPU support up to 1066 MHz FSB Intel® GM45 Intel® ICH9M



## Features

1. Socket P for 45nm Intel® mobile Core™2 Quad/ Duo Penryn CPU with FSB 1066 MHz
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 support by VGA, LVDS, HDMI, HDTV
4. Single 12V DC input, four COM, two SATA, eight USB2.0
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 1066/800/667MHz FSB (Penryn Core)
- ◆ 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 USB2.0, 2 x SATAII, 2 x SATA 3Gb/s, 1 x 6-pin 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 codec
- ◆ Display Output: VGA integrated in the Intel® GM45 support Hot-Plug 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

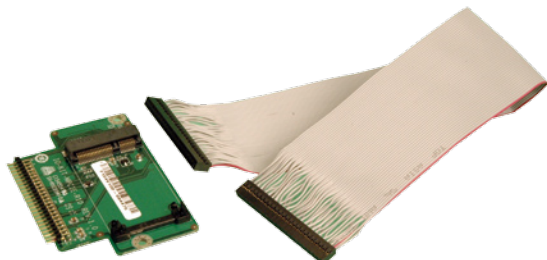
1 x KINO-GM45A single board computer	1 x IO shielding (P/N: 45014-0030C0-00-RS)
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	1 x KB/MS Y cable (P/N: 32000-023800-RS)
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
2 x SATA with power output cable (P/N: 32801-000100-100-RS)	1 x QIG (Quick Installation Guide)
	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 Penryn CPU, VGA/HDMI/LVDS, PCIe GbE, USB2.0, PCIe mini, SATAII and Audio, RoHS
IO-KIT-MPCIE-R10	PCIe/USB mini card expansion module
CB-USB02-RS	Dual USB cable
CF-479B-RS	CPU cooler
CF-479F-RS	CPU cooler for 45W
32100-088600-RS	SATA power cable
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R10	PCIe Mini card wireless LAN module
WMUSB-V01-R10	USB Mini card wireless LAN module
32200-026500-RS	RS-232/422/485 cable
32200-000049-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-FSP096AHS-RS	96W/12V Power Adaptor 90VAC~260VAC, DIN 4 PIN

# IO-KIT-MPCIE-R10

Dual PCIe/USB mini card expansion module



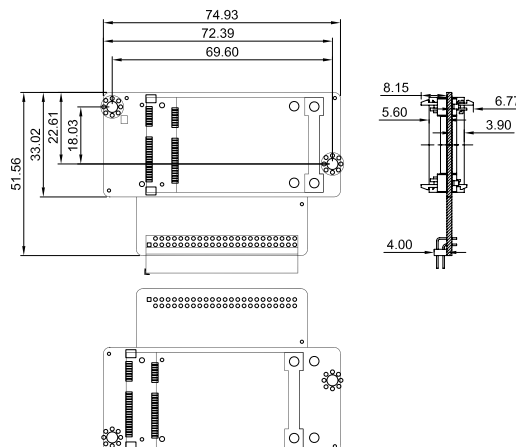
## Packing List

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)



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

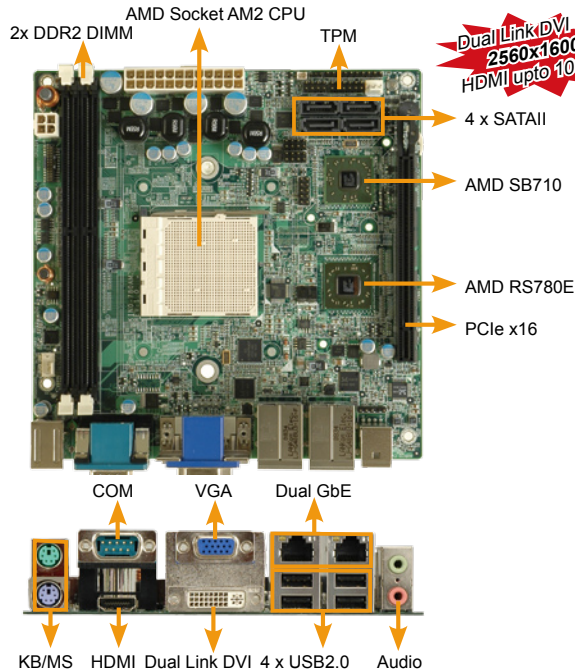
7 ORing Network Communication

8 Power Supply Peripherals



# KINO-780AM2

Mini-ITX SBC with Socket AM2 for AMD Althon™ 64, Althon™ 64 X2, Sempron™ CPU, VGA/Dual link DVI/HDMI, SPIDF Dual PCIe GbE, USB2.0, SATAII, and Audio



Dual Link DVI upto 2560x1600  
HDMI upto 1080P



**Video output3:** VGA support resolution up to 2560x1600 @60Hz



**Video output1:** HDMI support 480p, 720p, 1080i, and 1080p



**On board Dual display independent by VGA+DVI-D, VGA+HDMI:**

**Video output2:** Dual link DVI, support ultra-high resolution up to 2560x1600 @60Hz



**CPU is backward compatible with AM3 processor**



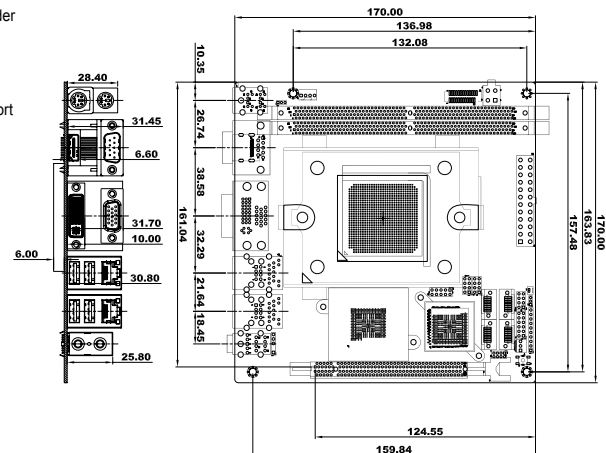
## Features

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 function option in PowerDVD video field)
2. DDR2 667/800MHz memory dual-channel DDR2 DIMMs support up to 4GB
3. Dual Display support by VGA + DVI-D/HDMI + VGA
4. AMD Socket AM2 Althon™64, Althon™64 X2, Sempron™ CPU with 2600MHz Hyper Transport 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 Hyper Transport 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 667/800 DDR2 dual-channel SDRAM DIMMs supported (system max. 4GB)
- ◆ Ethernet  
Dual Realtek PCIe RTL8111CP GbE Chipsets
- ◆ I/O Interface  
8 x USB2.0      4 x SATAII with RAID 0, 1, 10  
1 x RS-232      2 x PS2 for KB/MS  
1 x TPM
- ◆ Graphic  
ATI Radeon™ HD3200 Graphic core for DX10 support  
Graphic Memory share system memory up to 512MB (system 2GB)
- ◆ Display Output  
VGA integrated in the AMD RS780E (Max. resolution 2560x1600@32bpp)  
Support HDMI resolution up to 1080p integrated in the AMD RS780E  
Dual link DVI-D integrated in the AMD RS780E (Resolution 2560x1600)
- ◆ Expansion  
1 x PCIe x16
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super IO  
Fintek F71859
- ◆ Audio  
Realtek ALC888 HD Codec
- ◆ Watchdog Timer  
Software Programmable support 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)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimension  
170mm x 170mm
- ◆ Weight  
GW: 1000g / NW: 450 g

## Dimensions (mm)



## Packing List

1 x KINO-780AM2 single board computer	1 x Mini jumper pack
1 x I/O shielding (P/N: 45014-0028C0-00-RS)	4 x SATA cable (P/N: 32000-062800-RS)
1 x Utility CD	1 x QIG (Quick Installation Guide)

## 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, USB2.0, SATAII, and Audio
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management tool
TPM-IN01-R10	20-pin INFINEON TPM module, S/W management tool
CB-USB02-RS	Dual Ports USB cable
32102-000100-100-RS 32102-000100-200-RS	SATA Power cable
24105-000077-RS	AMD Athlon™ 64 X2 Dual Core 4200+, 2.2GHz, 512KBx2, 1000MHz, TDP 35W, Socket AM2(940-pin), RoHS
24105-000078-RS	AMD Athlon™ 64 X2 Dual Core 3600+, 1.9GHz, 512KBx2, 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

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

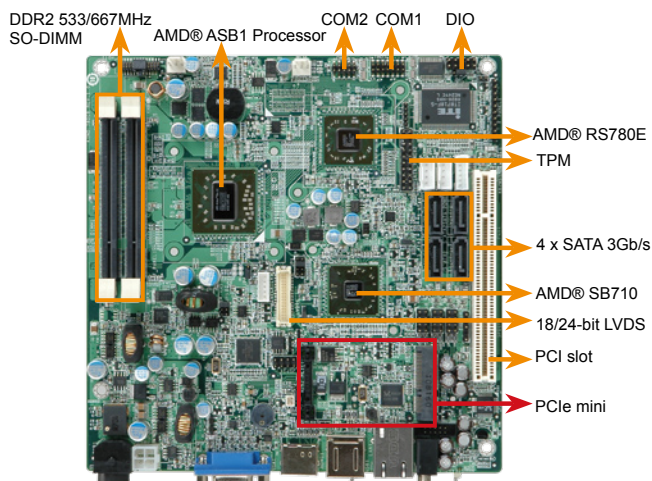
6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# KINO-780EB

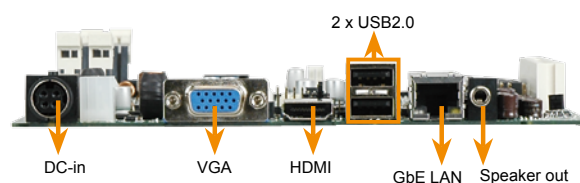
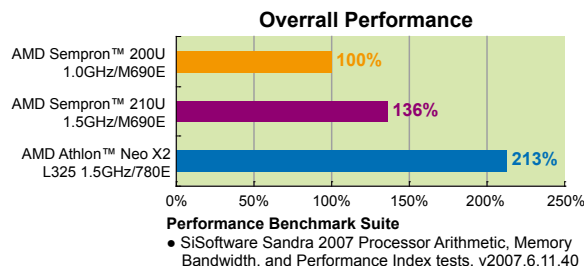
Mini-ITX SBC with AMD® ASB1 (BGA) processors,  
VGA/HDMI/LVDS, PCIe GbE, USB2.0, SATAII



## Specifications

- ◆ CPU
  - AMD® Dual core L325 1.5GHz ASB1 (BGA) processors
  - AMD® Single core 210U 1.5GHz ASB1 (BGA) processors
- ◆ 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 Chipsets
- ◆ I/O Interface
  - 8 x USB2.0
  - 4 x SATAII with Raid 0,1,10 support
  - 2 x SATA power connector with housing
  - 1 x RS-232/422/485
  - 1 x RS-232
  - 1 x CF Type II (optional)
  - 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 the AMD® RS780E (Max. resolution 2560x1600@32bpp)
  - Support HDMI resolution up to 1080p integrated in the AMD® RS780E
  - 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 Codec
- ◆ Watchdog Timer
  - Software Programmable support 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 (AMD® Dual core L325 1.5GHz ASB1 processors with two 2GB 667MHz 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: 1100g / NW: 370 g

## AMD Processor Performance Comparison



## Features

1. AMD® ASB1 (BGA) processors with 1600MHz Hyper Transport 1.0 support
2. RS780E Integrated UVD, MPEG2, and H.264/AVC Full HD Decoder
3. Dual display support 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

## Packing List

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

## Ordering Information

Part No.	Description
KINO-780EB-L325-R10	Mini-ITX SBC with AMD® Dual core L325 1.5GHz processors, VGA/HDMI/LVDS, PCIe GbE, USB2.0, SATAII
KINO-780EB-210U-R10	Mini-ITX SBC with AMD® Single core 210U 1.5GHz processors, VGA/HDMI/LVDS, PCIe GbE, USB2.0, SATAII
CB-USB02-RS	Dual USB cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
32100-192900-RS	One 4-pin (2 x 2) to one 4-pin(1x4) DC power cable with terminal block
32200-026500-RS	RS-232/422/485 cable
TPM-WI01-R10	20-pin WINBOND TPM Module, S/W management Tool
TPM-IN01-R10	20-pin INFINEON TPM Module, S/W management Tool
WMPCIE-V01-R10	802.11b+g PCIe mini card wireless LAN module with Atheros
WMUSB-V01-R10	802.11b+g USB embedded module with VIA
63000-FSP0601AD101C746-RS	60W/12V Power Adaptor 90VAC~260VAC, DIN 4 PIN

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

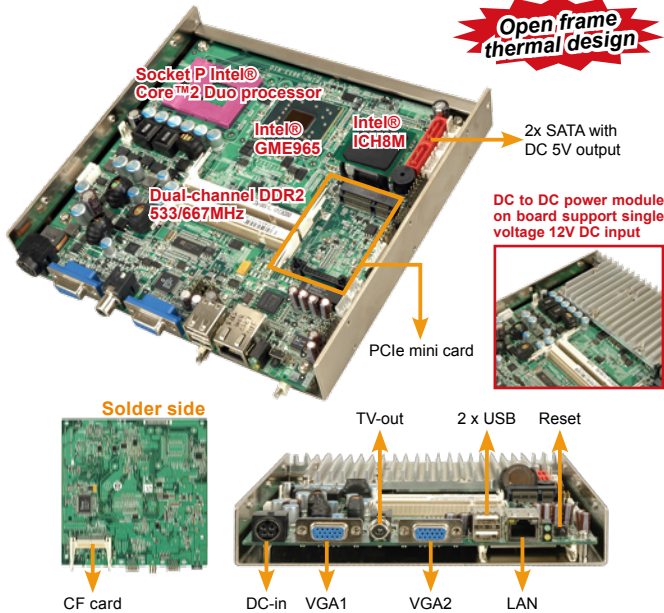
6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

# KINO-9653

Intel® Core™2 Duo CPU Mini-ITX Motherboard with dual VGA, 12V DC input, Intel PCIe Lan



**Open frame thermal design**

DC to DC power module on board support single voltage 12V DC input

## Features

1. Socket P Intel® Core™2 Duo processor with 800/667/533MHz FSB
2. Support dual-channel DDR2 533/667MHz up to 4GB
3. Single voltage 12VDC input
4. Support dual VGA, TV display output
5. Integrated Intel® GMA X3100 high performance Graphic Core
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Socket P 45nm Intel® Core™2 Duo processor with 800MHz FSB, 65nm Intel® Core™2 Duo processor with a 800 MHz FSB, Intel® Celeron® M 533 MHz FSB
- ◆ System Chipset
  - Intel® GME965 + ICH8M
- ◆ BIOS
  - AMI BIOS
- ◆ Memory
  - Two 200-pin DDR2 533/667MHz dual-channel SDRAM SO-DIMM supported (system max. 4GB)
- ◆ Ethernet
  - Intel® 82566MM GbE PHY
- ◆ I/O Interface
  - 6 x USB2.0 (2port in Rear IO, 4port in pinheader)
  - 2 x SATA II
  - 1 x 6pin box header (2.0mm pitch) for KB/MS
  - 1 x CF Type II
- ◆ Display Output
  - Dual VGA connector on rear I/O
    - 1st VGA Integrated in Intel®GME965
    - 2nd VGA provided by Chronitel CH7317A (SDVO to VGA)
  - RCA jack for TV out
- ◆ Expansion
  - 1x PCIe mini card
- ◆ Digital I/O
  - 8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super IO
  - ITE IT8718F
- ◆ Audio
  - HD Audio with Realtek ALC888 codec
- ◆ Watchdog Timer
  - Software programmable supports 1~255 sec. system reset
- ◆ Power Supply
  - Single voltage 12V DC input
  - 1 x external DIN 4pin DC jack
  - 1 x internal 2 x 2pin power connector
- ◆ DC connector
  - 2pcs 1x4pin power connector for 5V output (Major for 2.5" HDD used)
- ◆ Power Consumption
  - 12V@3.77A (Intel® Core™2 Duo T7500 2.2GHz with 2\*1GB DDR2 800MHz)
- ◆ Temperature
  - operation: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ Humidity
  - Operation: 5% ~95% non-condensing
- ◆ Dimensions
  - 170mm x 170mm
- ◆ Weight :
  - GW: 1350 g / NW: 650g

## Packing List

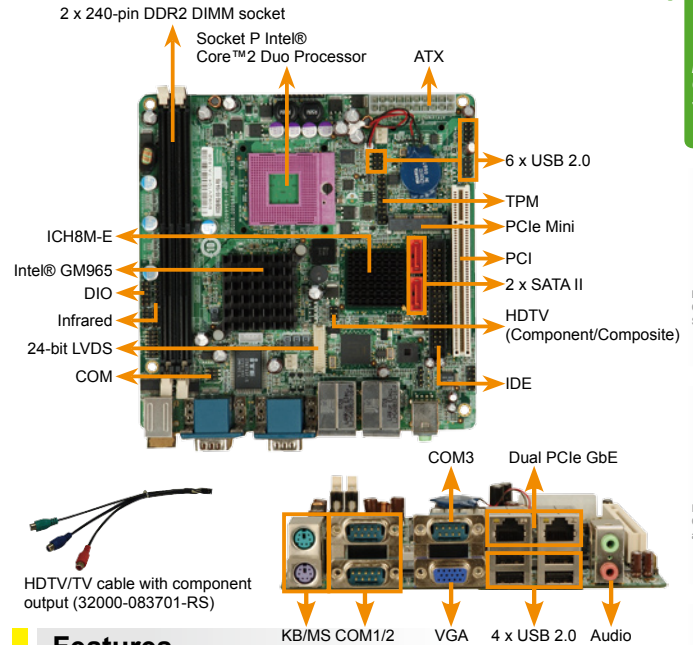
1 x KINO-9653 single board computer	
2 x SATA with 5V power cable Kits (P/N: 32801-000100-100-RS)	
1 x Dual USB cable (P/N: 32000-044300-RS)	
2 x Cooling Fan (P/N: 19FR126010BL-000001-RS)	
1 x Audio cable (P/N: 32000-072103-RS)	1 x KB/MS Y cable (P/N: 32000-023800-RS)
1 x Enclosure Heatsink	1 x Mini Jumper Pack
1 x Utility CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
KINO-9653G-R10	Intel® Core™2 Duo CPU Mini-ITX Motherboard with dual VGA, 12V DC input, Intel® PCIe GbE Lan, USB2.0, SATAII and audio
WMUSB-V01-R10	USB Mini card wireless LAN module
WMPICIE-V01-R10	PCIe Mini card wireless LAN module
63000-FSP096AHS-RS	96W/12V power adaptor 90VAC~260VAC, DIN 4 PIN
32100-192900-RS	One 4-pin(2x2) to one 4-pin(1x4) DC power cable with terminal block

# KINO-9652-R11

Intel® Core™2 Duo CPU Mini-ITX Motherboard with VGA/LVDS/HDTV, Dual PCIe GbE, USB 2.0, SATA II and Audio



## Features

1. Mini-ITX form factor and RoHS compliant
2. Integrated Intel® Graphics Media Accelerator (GMA) X3100
3. Intel® Core™2 Duo processor with a 800 MHz FSB
4. Supports dual-channel DDR2 667 MHz up to 2GB
5. Support VGA, LVDS and HDTV output up to 1080i
6. Three RS-232, one RS-232/422/485, eight x USB 2.0 and two SATA II
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU
  - Socket P 45nm Intel® Core™2 Duo processor with 800 MHz FSB (Penryn Code), 65nm Intel® Core™2 Duo processor with a 800 MHz FSB, Intel® Celeron® M 533 MHz FSB (Merom Core)
- ◆ System Chipset
  - Intel® GME965 + ICH8M-E
- ◆ BIOS
  - AMI Flash BIOS
- ◆ System Memory
  - Two 240-pin 2GB (maximum) 533/667 MHz dual-channel DDR2 DIMM supported (maximum system memory of 4 GB)
- ◆ Ethernet
  - Intel® 82573L PCIe GbE chipset
  - Intel® 82566MM PCIe GbE chipset with Intel® iAMT 2.5 support
- ◆ I/O Interface
  - 3 x RS-232, DB-9 connectors (a jumper configures Pin 9 as RI, +5V or +12V)
  - 1 x RS-232/422/485, 14-pin header connector (a jumper configures Pin 9 as RI, +5V or +12V)
  - 2 x SATA II with RAID 0,1 support
  - 8 x USB 2.0
  - 2 x PS/2 for KB/MS
  - 1 x IDE
  - 1 x 20-pin LPC for TPM
- ◆ Expansion
  - 1 x PCIe Mini card slot
  - 1 x PCI
- ◆ 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
- ◆ Display Interface
  - VGA Integrated in the Intel® GME965
  - 24-bit dual-channel LVDS by Intel® GME965
  - Composite output for NTSC/PAL TV out function
  - Component output for up to 1080i HDTV out function
- ◆ Audio
  - HD Audio interface with Realtek ALC888
- ◆ Watchdog Timer
  - Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply:
  - AT/ATX Power
  - Power consumption
  - 5V@2.5A, 12V@1.65A, 5Vsb@0.01A (Intel® Core™2 Duo T7300 2.0GHz with a 800 MHz FSB and a 533 MHz 512MB DDR2 DIMM)
- ◆ Temperature
  - Operating: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ HumidityOperating:
  - 5% ~95% non-condensing
- ◆ Dimension:
  - 170 mm x 170 mm
- ◆ Weight:
  - GW: 1000 g / NW: 362 g

## Packing List

1 x KINO-9652 single board computer	
1 x SATA power Cable (P/N: 32102-000100-100/200-RS)	
1 x I/O shielding (P/N: 45014-0014C0-00-RS)	1 x IDE flat cable (P/N: 32200-000052-RS)
2 x SATA cable (P/N: 32000-062800-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-9652-R11	Intel® Core™2 Duo CPU Mini-ITX motherboard with VGA/LVDS/HDTV, Dual PCIe GbE, USB 2.0, SATA II and Audio
CB-USB02-RS	USB Cable
32000-083701-RS	HDTV/TV Cable with component output (pin header 2.54 mm pitch)
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management tool
TPM-IN01-R10	20-pin INFINEON TPM module, S/W management tool
CF-479B-RS	CPU cooler (50mm x 50mm x 26mm, 50W)
32200-026500-RS	RS-232/422/485 cable

# KINO-9453-R20



Mini-ITX Motherboard with Intel® Core™2 Duo CPU with VGA/DVI, Dual PCIe GbE, USB 2.0, SATA and Audio

# KINO-9452-R20



Mini-ITX Motherboard with Intel® Core™2 Duo, Core™ Duo/ Solo Processor, Dual PCIe GbE, HDTV output & Two independent stream Audio

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

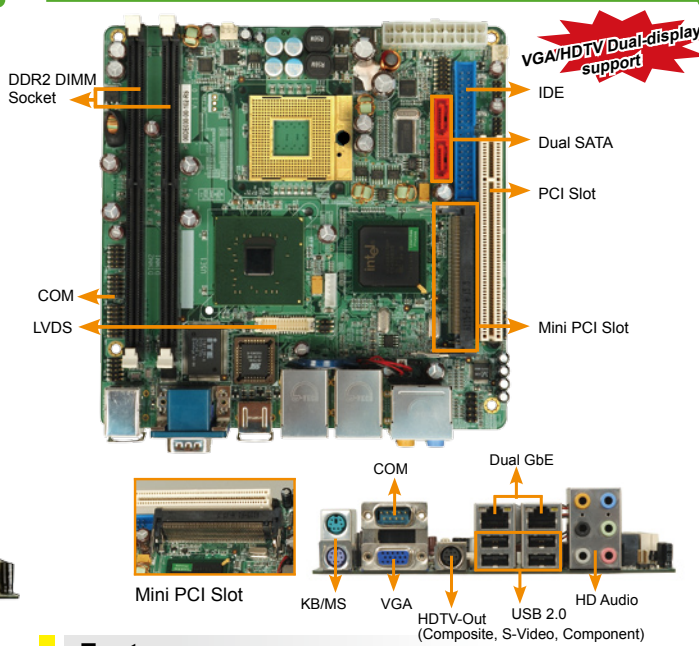
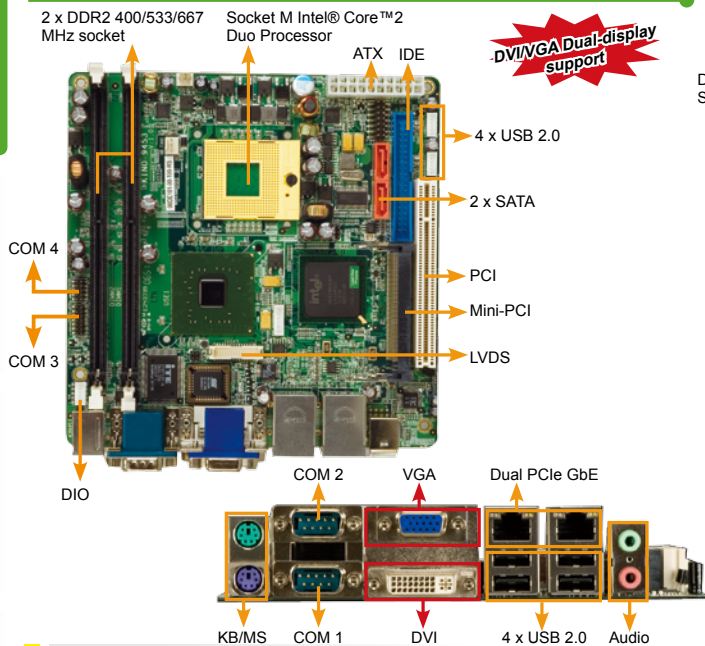
4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals



## Features

1. Mini-ITX form factor and RoHS compliant
2. Intel® Core™2 Duo CPU FSB 667MHz
3. DDR2 400/533/667 MHz up to 4GB
4. Support VGA/DVI, 18/24-bit dual-channels LVDS with dual display support
5. 4 x RS-232, 8 x USB 2.0 and 2 x SATA
6. 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 with 667MHz FSB Intel® Celeron® M 533MHz FSB
- ◆ System Chipset: Intel® 945GME + ICH7M
- ◆ BIOS: AMI Flash BIOS
- ◆ System Memory: 2 x 240-pin dual-channel DDR2 400/533/667 MHz up to 4GB
- ◆ Ethernet: Dual Broadcom BCM5787M GbE chipset (LAN1 with ASF2.0 remote control support)
- ◆ I/O Interface: 3 x RS-232, 1 x RS-232/422/485, 8 x USB 2.0, 2 x SATA, 1 x IDE, 2 x PS/2 KB/MS
- ◆ Expansions: 1 x Mini-PCI, 1 x PCI
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super I/O: ITE IT8712F
- ◆ Display Interface: VGA Integrated in Intel® 945GME, 18/24-bit dual-channel LVDS, DVI by Intel® 945GM SDVO interface with dual display support
- ◆ Audio: Realtek ALC655 with AC'97 codec
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: AT/ATX Power
- ◆ Power consumption: 5V@4.86A, 12V@1.75A (Intel® Core™2 Duo T7400 2.16GHz/667 MHz CPU with 1GB DDR2 667MHz)
- ◆ Temperature: Operating: 0 ~ 60°C ( 32 ~ 140°F)
- ◆ Humidity: Operating: 5% ~95 non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 900 g / NW: 362 g

## Packing List

1 x KINO-9453 single board computer	
1 x ATA66 flat cable (P/N: 32200-000052-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
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
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
KINO-9453-R20	Mini-ITX motherboard with Intel® Core™2 Duo CPU with VGA/DVI, Dual GbE, USB 2.0, SATA and audio
19800-000110-RS	RS-232/422/485 cable
CB-USB02-RS	Dual USB cable
CB-USB14-RS	Four USB cable
CF-479B-RS	CPU cooler

## Features

1. Support Intel® Core™2 Duo, Core Duo/Core Solo processor up to FSB 667 MHz
2. VGA integrated in Intel® 945GME support HDTV-Out, 18/24-bit dual-channel LVDS
3. DDR2 400/533/667MHz DIMM socket support up to 4GB
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 with 667 MHz FSB, Intel® Celeron® M 533 MHz FSB
- ◆ System Chipset: Intel® 945GME + ICH7M
- ◆ BIOS: AMI BIOS Label
- ◆ System Memory: 2 x 240-pin dual-channel DDR2 400/533/667 MHz up to 4GB
- ◆ Ethernet: Dual PCIe Broadcom BCM5787M GbE chipset with ASF2.0 remote control support
- ◆ I/O Interface: 8 x USB 2.0, 2 x SATA, 1 x IDE, 3 x RS-232, 1 x RS-232/422/485, 2 x PS/2 for KB/MS
- ◆ Expansions: 1 x Mini PCI Slot, 1 x PCI
- ◆ Super I/O: ITE IT8712F
- ◆ Digital I/O: 18/24-bit digital I/O, 4-bit input/ 4-bit output
- ◆ HD Audio: Realtek ALC883 HD Audio codec with dual streams audio support
- ◆ Display Interface: Overscaling / Component, S-Video and Composite output, Support HDTV resolution up to 1080i by component interface, 24-bit dual-channel LVDS
- ◆ Watchdog Timer: Software programmable 1-255 sec. system reset
- ◆ Power Supply: ATX support
- ◆ Power Consumption: 5V@1.58A, 12V@2.05A, 3.3V@0.32A, 5VSB@0.32A (Intel® Core™2 Duo 2.16GHz, DDR2 1GB x 2)
- ◆ Temperature: Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity: Operating: 5% ~ 95% non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW: 1100 g; NW: 400 g

## Packing List

1 x KINO-9452 single board computer	
1 x Dual RS-232 cable (P/N: 19800-000112-RS)	
1 x ATA66 flat cable (P/N: 32200-000052-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x I/O shielding (P/N: 45002-4520C0-00-RS)	
1 x Mini jumper pack	
1 x HDTV out cable (P/N: 32000-083100-RS)	
1 x Utility CD	1 x QIG

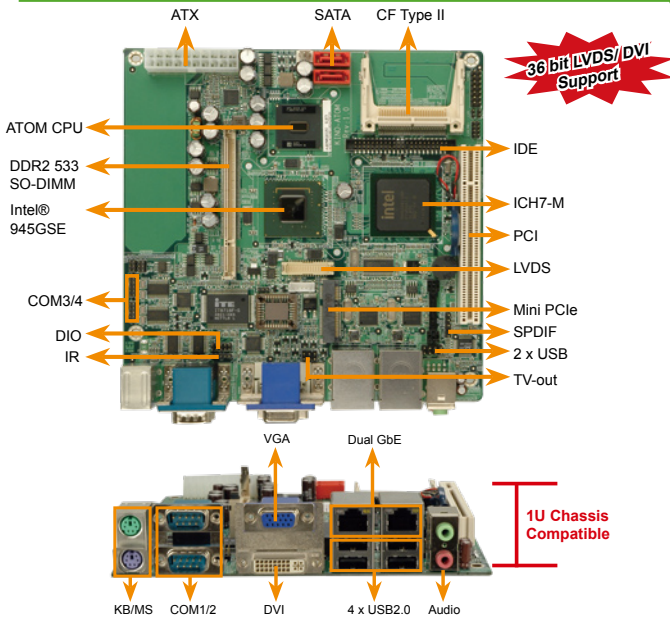
## Ordering Information

Part No.	Description
KINO-9452-R20	Mini-ITX motherboard with Intel® Core Duo/ Core Solo Processor, SATA, Dual PCIe GbE, USB 2.0 & audio
19800-000110-RS	RS-232/422/485 cable
CB-USB02-RS	USB cable
CF-479B-RS	CPU cooler

# KINO-945GSE



Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB2.0, SATA and Audio



## Features

1. Intel® Atom™ Processor N270 1.6G for ultra low voltage fan-less support
2. DDR2 400/533 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. Support 6x USB2.0, 2x SATA, 4x 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 Label
- ◆ Memory: One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe 8111CP GbE Chipsets
- ◆ I/O Interface: 6 x USB2.0, 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 support by silcon 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 support 1~255 sec. system reset
- ◆ Power Supply: ATX power support
- ◆ Power Consumption: 5V/12V, AT/ATX power supply (Intel® Atom™ N270 with 1GB DDR2)
- ◆ Temperature: KINO-945GSE-N270-R10: Operation: 0°C ~ 60°C (32°F ~ 140°F), Storage: -20°C ~ 70°C; KINO-945GSE-N270W-R10: Operation: -20°C ~ 70°C
- ◆ Humidity: Operation: 5% ~95% non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: 1100g / NW: 370 g

## 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)	
2 x SATA cable (P/N: 32000-062800-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

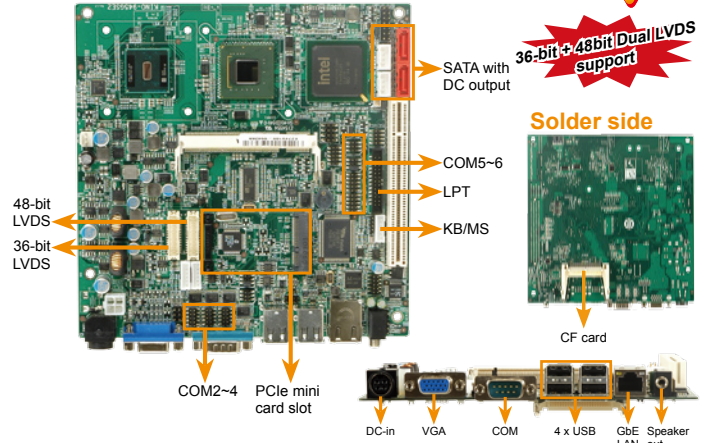
## Ordering Information

Part No.	Description
KINO-945GSE-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB2.0, SATA and Audio
KINO-945GSE-N270W-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB2.0, SATA and Audio, -20~70°C
CB-USB02-RS	Dual USB cable
HDTV-CABLESET-01	HDTV cable set with S-Video, composite and component interfaces
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	
32200-000009-RS	44pin 2.5" IDE cable
32200-833600-RS	RS-422/485 cable

# KINO-945GSE2



Mini-ITX SBC with 1.6GHz Intel® Atom™ N270, DC 12V input, VGA/ 36-bit + 48-bit LVDS/HDTV, Dual PCIe GbE, USB2.0, SATA and Audio



## Features

1. 1.6GHz Intel® Atom™ N270 processor for fan-less 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. CF socket for storage expansion
6. Single voltage DC 12V input
7. 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 RT8111CP GbE controller
- ◆ I/O Interface: 6 x USB2.0 ( four on rear, two by pin header), 2 x SATA with DC power, 1 x CF Type II (Optional), 1 x RS-232 DB-9, 3 x RS-232 (by pin header), 2 x RS-232/422/485 (by pin header), 1 x LPT, 1 x 6-pin box header (2.0mm pitch) for KB/MS
- ◆ Graphic: On 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 support 1~255 sec. system reset
- ◆ DC connector: 2pcs 1 x 4-pin 5V power connector (Major for 2.5" HDD used)
- ◆ Power Supply: Single voltage 12V DC input, 1 x external 4-pin (2x2) DC jack, 1 x internal 2 x 2-pin power connector
- ◆ Power Consumption: 2.94A@12V (Intel Atom™ N270 1.6GHz with 2GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~95% non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: 1000g / NW: 350 g

## Packing List

1 x KINO-945GSE2 single board computer	
2 x SATA 5V power output cable kit (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 Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

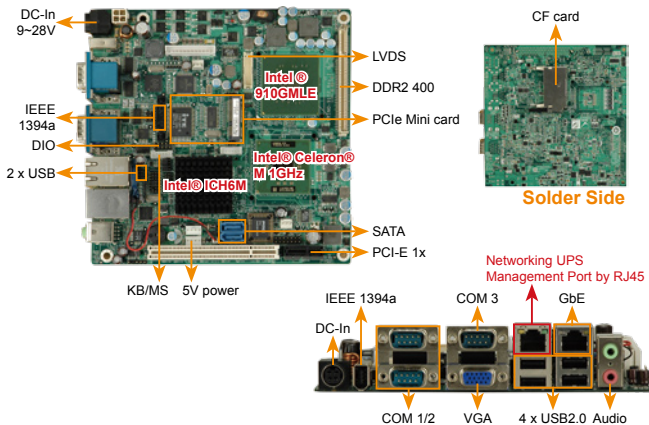
Part No.	Description
KINO-945GSE2-N270-R10	Mini-ITX SBC with Intel® Atom™ N270 1.6G, 12V DC input, VGA/ 18+24 bits LVDS/HDTV, PCIe GbE, USB2.0, SATA and Audio
WMPCIE-V01-R10	PCIe mini card wireless LAN module
WMUSB-V01-R10	USB mini card wireless LAN module
CB-USB02-RS	Dual USB cable
HDTV-CABLESET-01	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
32200-833600-RS	RS-422/485 cable
32200-015100-RS	LPT Cable
63000-FSP0601AD101C746-RS	60W/12V power adaptor 90VAC~260VA, 4-pin DIN



# eKINO-9102



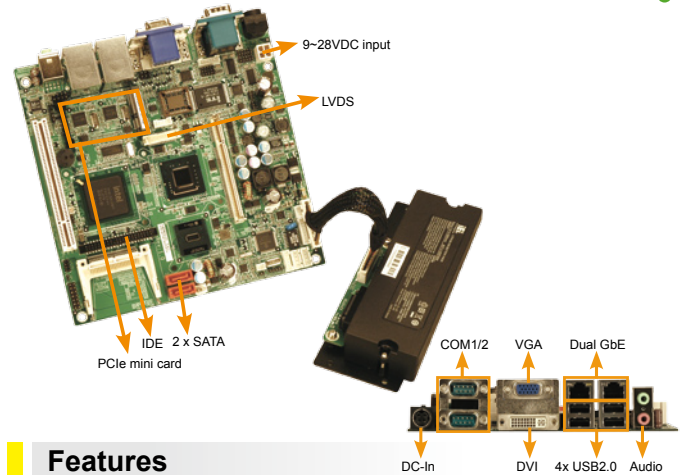
Mini-ITX Motherboard support AUPS sub-system, Intel® Pentium®M/ Celeron®M CPU, Wide range 9-28VDC input



# eKINO-945GSE



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



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

## Features

1. Support AUPS sub-system as a simple UPS system
2. IBX600 series embedded system
3. Intel® Celeron®M FSB400 MHz CPU
4. Single voltage wide range 9-28VDC input
5. Support DDR2 400MHz SO-DIMM memory up to 2GB
6. Support PCI express mini card
7. VGA, 24 bits LVDS for dual display output
8. CF socket for storage expansion
9. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On board Intel® Celeron® M 1GHz with 512K L2 cache CPU
- ◆ System Chipset: Intel® 910GML + ICH6-M
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 200-pin DDR2 400MHz SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: 1 x RTL8111CP PCIe GbE LAN controller
- ◆ Display Output: VGA Integrated in Intel® 910GML 24-bits dual-channel LVDS by Intel® 910GML
- ◆ Graphic: Intel® Graphics Media Accelerator 900
- ◆ I/O Interfaces: 2 x RS-232 (1 x RS-232/422/485), 7 x USB2.0 (4 on rear, 3 by pin header), 2 x SATA with 5V DC output, 2 x IEEE1394a (1 port by Rear IO, 1 port by CN3), 1 x 6-pin box header (2.0mm pitch) for KB/MS
- ◆ Expansion: 1 x PCI, 1 x PCIe mini card, 1 x PCIe x1
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super IO: ITE IT8718F
- ◆ Audio: AC'97 with Realtek ALC655 codec
- ◆ DC connector: 2pcs 1 x 4-pin 5V power connector (Major for 2.5" HDD used)
- ◆ SSD: CompactFlash Type II
- ◆ 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 DIN 4-pin DC jack, 1 x internal 2 x 2-pin power connector
- ◆ Power Consumption: 12V@2.57A (Intel® Celeron®M 1GHz with 2GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 40°C with AUPS sub-system, Operation: 0°C ~ 60°C without AUPS sub-system
- ◆ Humidity: Operation: 5% ~ 95% non-condensing
- ◆ Dimensions: 170mm x 170mm
- ◆ Weight: GW: 1100 g / NW: 400g

## Packing List

1 x eKINO-9102 single board computer	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x I/O shielding (P/N: 45014-0024C0-00-RS)	
2 x SATA 5V power output cable Kits (P/N: 32000-123000-RS)	
1 x Dual USB cable(PN: 32000-070301-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG (Quick installation guide)

## Ordering Information

Part No.	Description
eKINO-9102-1G512-R10	Mini-ITX Motherboard support AUPS sub-system, Intel® Celeron® M 1GHz 512K cache CPU, 910GML, Wide range 9-28VDC input
IBX-600-9102UPS-R10/CM373/1GB	Embedded system support AUPS function, Intel® Celeron® M 1GHz 512K cache CPU, 910GML, 1GB DDR2, 802.11b/g wireless, Li-ion Battery(2S2P), 9-28VDC in, 60W adaptor, white, RoHS
WMPCIE-V01-R10	PCIe Mini card wireless LAN module
BAT-LI-2S2P3800	2S2P 7.4V 3800mAh smart battery
BATKIT-2S2P3800-R10	2S2P 7.4V 3800mAh aups battery kit
19800-000103-RS	Single port IEEE1394a cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin (1x4) DC power cable with terminal block
63000-FSP0601AD101C746-RS	60W/12V Power Adaptor 90VAC~260VAC, DIN 4-pin
SAIDE-KIT01-R10	SATA to IDE/CF converter board

## Features

1. Intel® Atom™ N270 1.6GHz for ultra low voltage fan-less support
2. Wide range 9-28V DC input
3. Equipped with AUPS sub-system acts as a simple UPS system
4. Dual-display supported by VGA + DVI-D, LVDS + VGA, LVDS + DVI-D
5. IBX 600 Embedded System
6. Support 6 x USB2.0, 2 x SATA, 4x COM
7. 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 512K L2 Cache
- ◆ System Chipset: Intel® 945GSE + Intel® ICH7M
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe 8111CP GbE controller
- ◆ I/O Interface: 6 x USB2.0, 3 x RS-232, 1 x IDE, 2 x SATA with 5V DC output, 1 x RS-232/422/485, 1 x 6-pin header for KB/MS
- ◆ Graphic: On 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 SiI1362
- ◆ Expansion: 1 x PCI, 1 x PCIe mini card
- ◆ DC connector: 2pcs 1 x 4-pin 5V power connector (Major for 2.5" HDD used)
- ◆ Digital I/O: 8-bits digital I/O, 4-bits input/ 4-bits output
- ◆ Infrared Interface: 1 x 5-pin 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 DIN 4-pin DC jack, 1 x internal 2 x 2-pin 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

## Packing List

1 x eKINO-945GSE single board computer	
2 x SATA 5V power output Cable Kit (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 Mini Jumper Pack
1 x Utility CD	1 x QIG

## Ordering Information

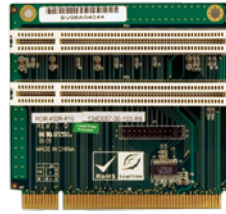
Part No.	Description
eKINO-945GSE-N270-R10	Mini-ITX SBC support AUPS sub-system, Intel® Atom™ N270 1.6GHz, wide range 9-28VDC input, VGA/DVI/HDTV
CB-USB02-RS	Dual USB cable
HDTVCAABLESET-01	HDTV cable set with S-Video, composite and component interfaces
WMPCIE-V01-R10	PCIe mini card wireless LAN module
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, DIN 4-pin
63000-FSP120AAB-RS	120W/19V power adaptor, 90VAC~264VAC, DIN 4-pin
32200-000009-RS	44pin 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

# IEI PCI Riser Card



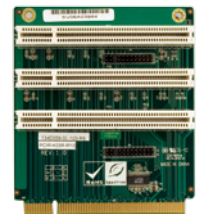
**PCIR-K01R-R10**

1-slot PCI riser card  
89.1 x 62.8 x 16 mm  
PCI 2.2 standard with 32-bit 5V support



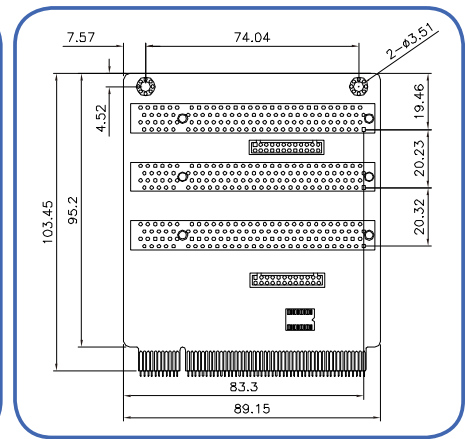
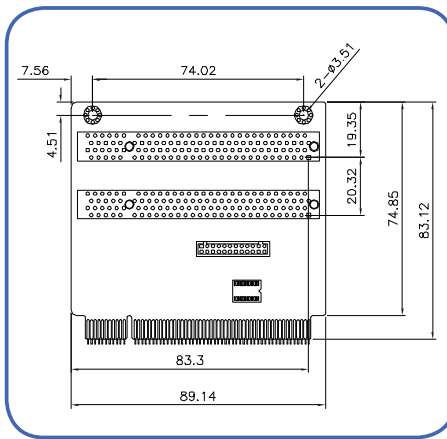
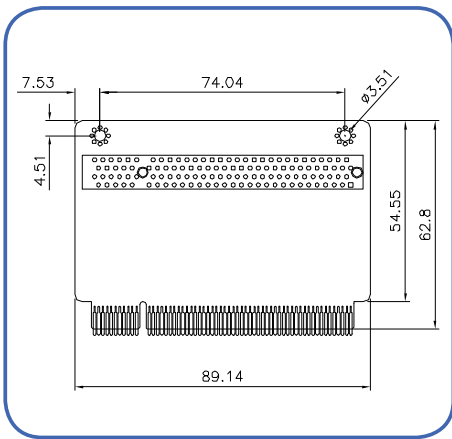
**PCIR-K02R-R10**

2-slot PCI riser card  
89.1 x 83.1 x 16 mm  
PCI 2.2 standard with 32-bit 5V support



**PCIR-K03R-R10**

3-slot PCI riser card  
89.1 x 103.4 x 16 mm  
PCI 2.2 standard with 32-bit 5V support

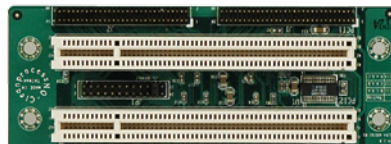


## PCI riser card by cable



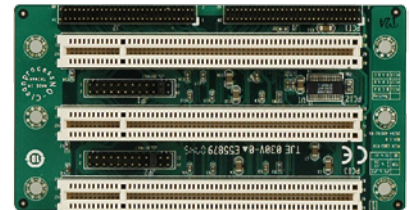
**PCIR-CB01R-R10**

1-slot PCI riser card 18.5 x 111.9 mm  
**Packing list:**  
2 x PCI riser card connection cable  
1 x 1-Slot PCI riser card  
1 x Golden finger connection board  
1 x QIG



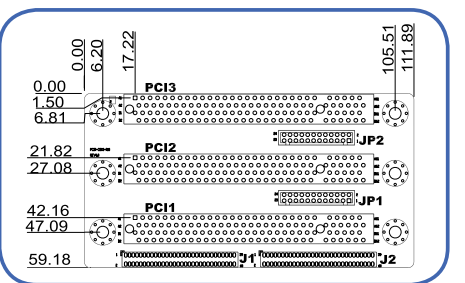
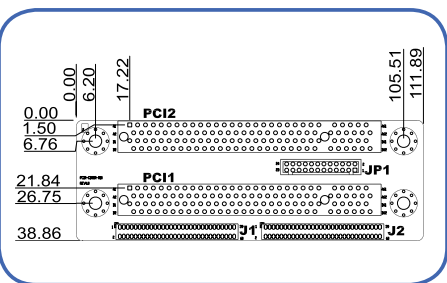
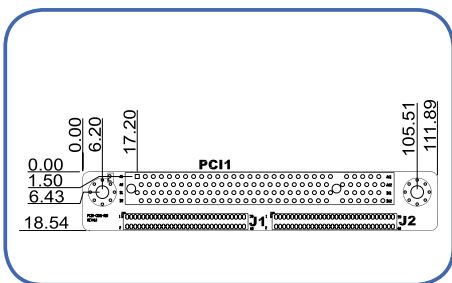
**PCIR-CB02R-R10**

2-slot PCI riser card 38.9 x 111.9 mm  
**Packing list:**  
2 x PCI riser card connection cable  
1 x 2-Slot PCI riser card  
1 x Golden finger connection board  
1 x QIG



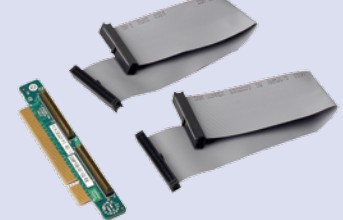
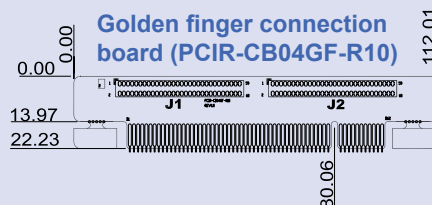
**PCIR-CB03R-R10**

3-slot PCI riser card 59.2 x 111.9 mm  
**Packing list:**  
2 x PCI riser card connection cable  
1 x 3-Slot PCI riser card  
1 x Golden finger connection board  
1 x QIG



## Compliant motherboard

PCIR-CB01R PCIR-K01R	PCIR-CB02R PCIR-K02R	PCIR-CB03R PCIR-K03R
• IMBA/IMB series (Micro ATX/ ATX)	KINO-9652-R11	KINO-9652-R11
• KINO series (Mini-ITX)	KINO-9453-R20	KINO-9453-R20
• NOVA series (5.25" SBC)	KINO-9452-R20	KINO-9452-R20
	NOVA-9452-R20	NOVA-9452-R20



1  
Industrial Computing Solutions

2  
Embedded Computing Solutions

3  
Industrial Data Collector and Controller

4  
Video Capture Solutions

5  
I/O Communication Solutions

6  
Panel Solutions

7  
ORing Network Communication

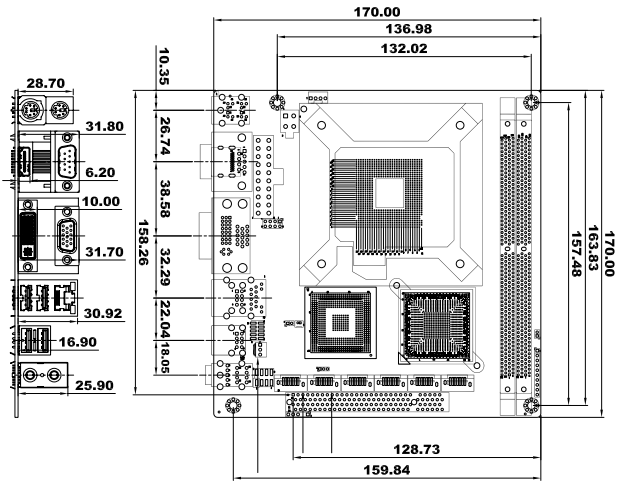
8  
Power Supply/ Peripherals

# Mini-ITX Dimensions (Unit : mm)

1

Industrial Computing Solutions

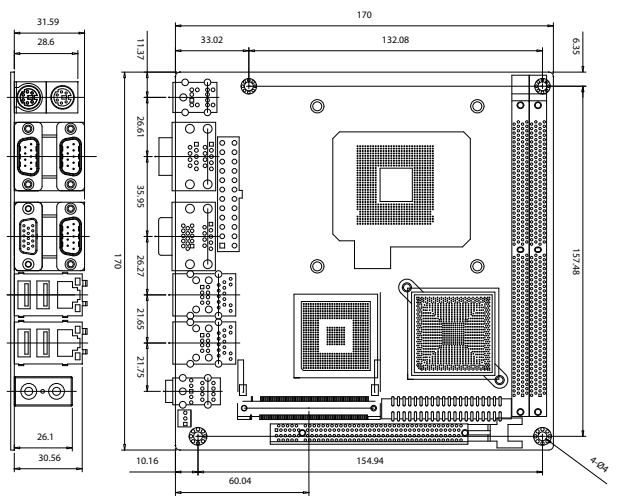
## KINO-G45A



2

Embedded Computing Solutions

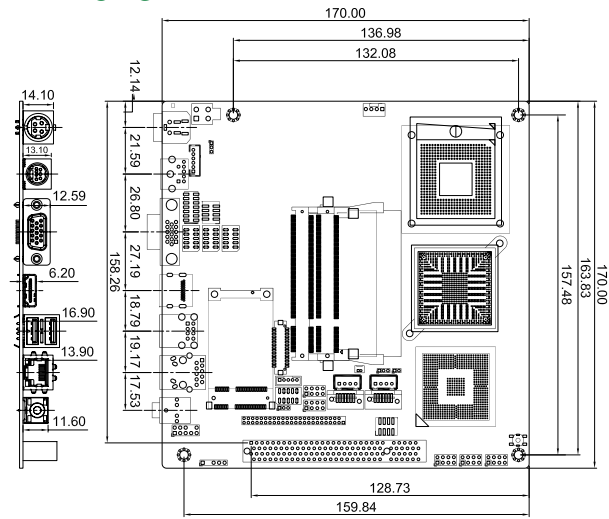
## KINO-9454



3

Industrial Data Collector and Controller

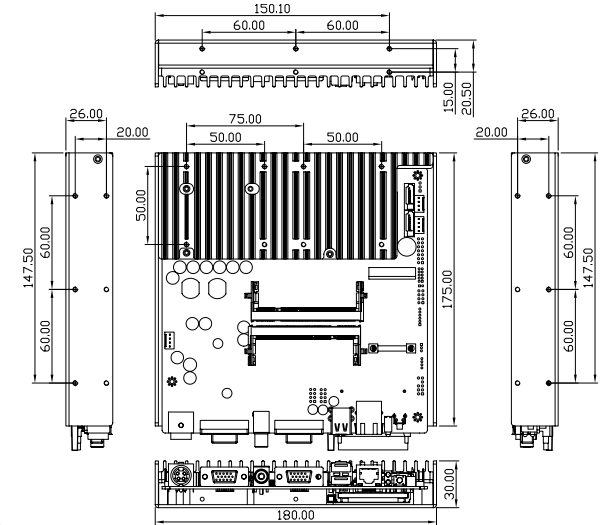
## KINO-GM45A



4

Video Capture Solutions

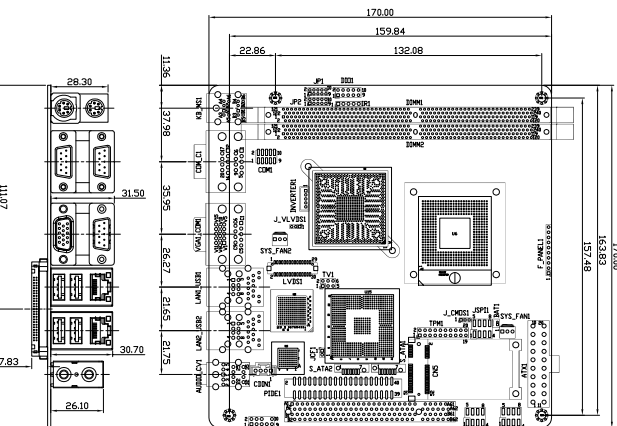
## KINO-9653



5

I/O Communication Solutions

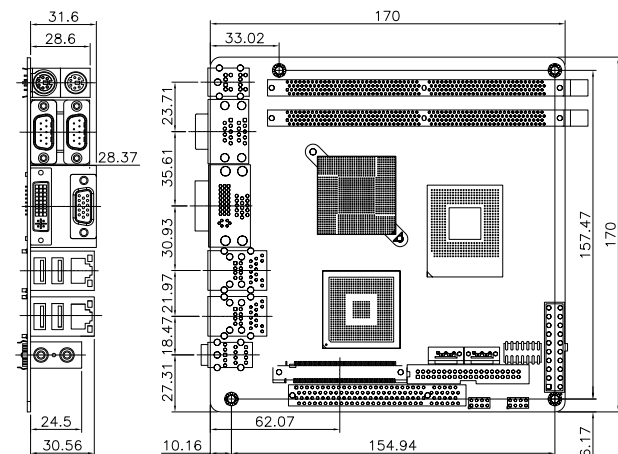
## KINO-9652



7

ORing Network Communication

## KINO-9453



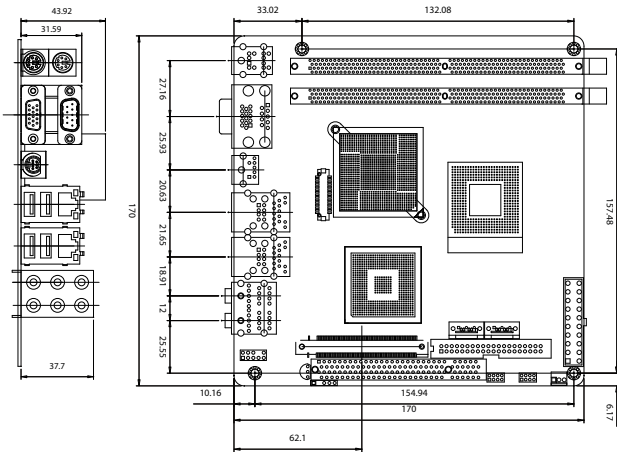
8

Power Supply Peripherals

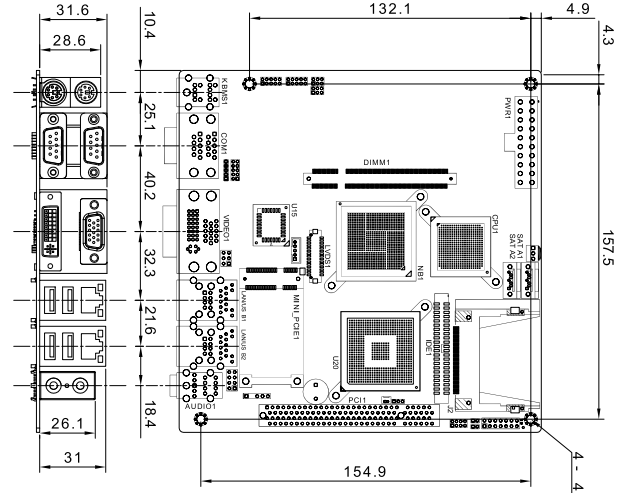


# Mini-ITX Dimensions (Unit : mm)

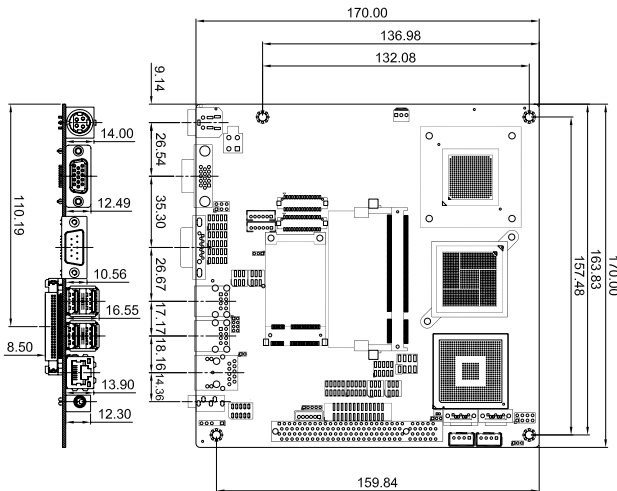
## KINO-9452



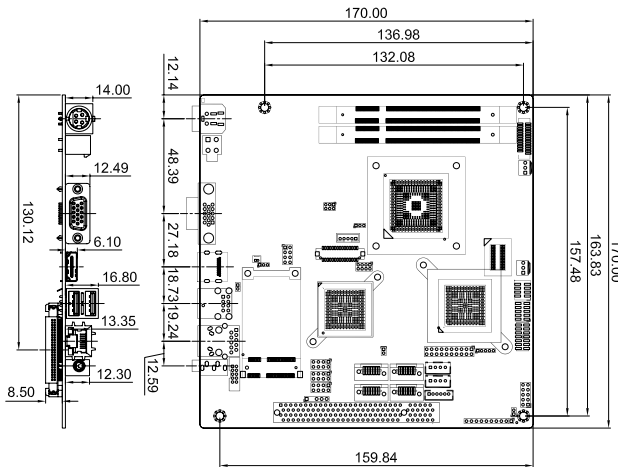
## KINO-945GSE



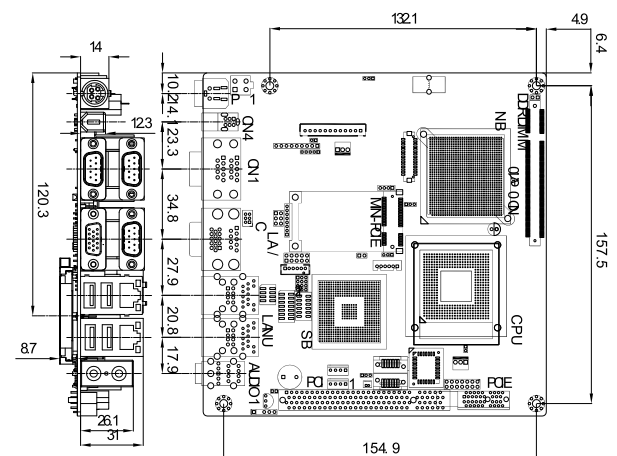
## KINO-945GSE2



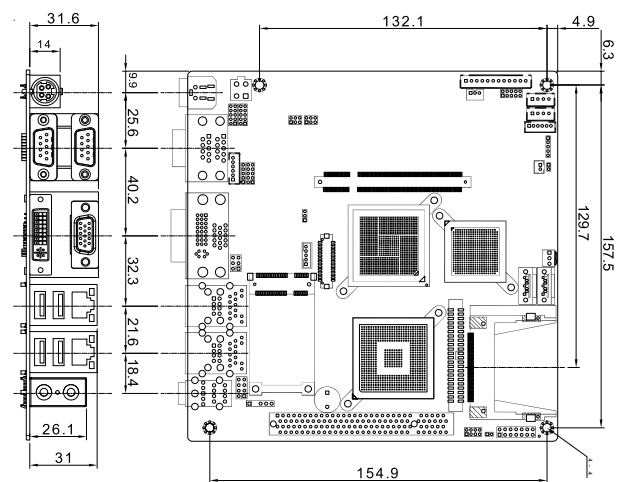
## KINO-780EB



## eKINO-9102



## eKINO-945GSE



1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

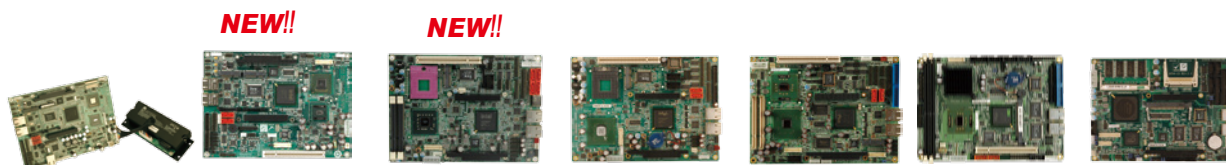
5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
Oring  
Network  
Communication

8  
Power Supply/  
Peripherals

# 5.25" NOVA Selection Guide



Model Name	eNOVA-945GSE	NOVA-945GSE-R20	NOVA-GM45A	NOVA-9452-R20	NOVA-9102	NOVA-8522G2-R11	NOVA-LX
<b>CPU Socket</b>	On Board	On Board	Socket P	Intel® Socket M	On Board	On Board Intel®Socket479	On Board
<b>CPU Type</b>	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Core™ 2 Duo/Quad, Core™ Duo/Solo, Celeron®M	Intel® Core™ 2 Duo, Core™ Duo/Solo, Celeron®M	Intel® Celeron® M	Intel® Celeron® M 600MHz 512K cache & 1GHz zero cache Intel® Pentium® M/ Celeron® M	AMD® Geode™ LX
<b>FSB</b>	533 MHz	533 MHz	667/800/1066 MHz	533/667 MHz	400 MHz	400 MHz	NA
<b>Chipset</b>	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® GM45 + ICH9M	Intel® 945GME + ICH7M	Intel® 910GML + ICH6M	Intel® 852GM + ICH4	AMD® Geode™ LX800 + AMD® CS5536
<b>Memory</b>	1 x 200-pin, Max.2GB, 400/533 MHz DDR2 SO-DIMM	1 x 200-pin, Max.2GB, 400/533 MHz DDR2 SO-DIMM	2 x 200-pin, Max.4GB, 667/800 MHz DDR2 SO-DIMM	1 x 200-pin, Max.2GB, 400/533/667 MHz DDR2 SO-DIMM	2 x 200-pin, Max.2GB, 400 MHz DDR2 SO-DIMM	2 x 184-pin, Max.2GB, 266 MHz DDR DIMMs	256MB DDR on board, optional 512MB
<b>Display Interface</b>	VGA integrated in the Intel® 945GSE 18-bit dual channel LVDS by Intel® 945GSE	VGA integrated in the Intel® 945GSE 18-bit dual channel LVDS by Intel® 945GSE 2nd 18/24-bit dual channel LVDS by Chronitel CH7308	VGA integrated in the Intel® GM45 HDMI output is integrated in the Intel®GM45 24-bit dual channel LVDS by Intel® GM45	VGA integrated in the Intel® 945GME 24-bit dual channel LVDS by Intel® 945GME	VGA integrated in the Intel® 910GML 1st 18/24-bit dual channel LVDS by Intel® 910GML 2nd 18/24-bit dual channel LVDS by Chronitel CH7308	VGA integrated in the Intel® 852GM 18 bit dual channel LVDS	VGA integrated in the AMD® LX800 24 bit TTL 18 bit single channel LVDS
<b>Ethernet</b>	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual PCIe GbE BroadcomBCM5787 chipset	Dual PCIe GbE Realtek RTL 8111CP chipset	Dual GbE Realtek RTL 8110SC chipset	Dual 10/100 Realtek RTL 8100C chipset
<b>I/O Interface</b>	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x KB/MS by pinheader 1 x 20-pin LPC for TPM	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	4 x RS-232 2 x RS-232/422/485 8 x USB 2.0 1 x LPT 1 x KB/MS by pinheader	4 x RS-232 2 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x KB/MS by pin header	4 x RS-232 2 x RS-232/422/485 6 x USB 2.0 1 x Infrared Interface 1 x KB/MS by pin header	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x LPT 1 x Infrared Interface 1 x KB/MS by pin header	6 x RS-232 2 x RS-232/422/485 4 x USB 2.0 1 x LPT 1 x KB/MS by pin header
<b>Drive Interface</b>	2 x SATA 1 x IDE 1 x CF type II	2 x SATA 1 x IDE 1 x CF type II	4 x SATAII	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 RAID 1 x IDE 1 x FDD 1 x CF type II	1 x IDE 1 x FDD 1 x CF type II
<b>Audio</b>	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC888 HD Audio codec	Audio kit	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC203 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)	16-bit digital I/O, 8-bit input / 8-bit output	24-bit digital I/O (12 input/12 output)	24-bit digital I/O (12 input/12 output)	8-bit digital I/O (4 input/4 output)	8-bit digital I/O (4 input/4 output)
<b>Power Consumption</b>	12V@1.19A (Intel® Atom™ N270 with 1GB DDR2)	5V@2.89A, 12V@0.04A (Intel® Atom™ N270 with 1GB DDR2)	12V@5.76A (Intel® Core™2 Quad Q9100 2.26GHz FSB 1066MHz with 2* 2GB DDR2 800MHz running 3D Mark2001SE)	5V@3.81A, 12V@2.42A (Intel® Core™2 Duo T7400 2.16GHz FSB 667MHz with 512MB DDR2 667MHz)	12V@1.43A, 5V@5.05A (Intel® Pentium® M 1GHz CPU with 1GB DDR2 400Mz)	5V@4.10A, 12V@2.36A (Intel® Celeron® M 1.6GHz CPU, 2 x 512MB DDR 333Mz)	5V@1.66A (AMD® LX800 500MHz CPU with 256MB on board memory)
<b>Watchdog Timer</b>	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset	software programmable and supports 1~255 sec. system reset
<b>Operation Environment</b>	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) 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) Relative Humidity 5% ~ 95% non- condensing	Temperature Range -20°C~80°C Relative Humidity 5%~95% non-condensing
<b>Expansions Slot</b>	2x PCIe mini card 1x PC/104+ (ISA+PCI Bus)	1x PCI 2x PCIe mini card 1x PC/104+ (ISA+PCI Bus)	1x PCI 1x PCIe mini card 1x PC/104+ (ISA+PCI Bus)	1x PCI 1x PCIe mini card 1x PC/104+ (ISA+PCI Bus)	1x PCI 1x PCIe mini card 1x PC/104+ (ISA+PCI Bus)	1x PCI 1x Mini PCI	1x PC/104+ (ISA+PCI Bus) 1x Mini PCI
<b>CPU Cooler</b>	Heatsink	Heatsink	CF-479B-RS	CF-479B-RS	Heatsink	CF-479B-RS / Heatsink	Heatsink

1

Industrial Computing Solutions

2

Embedded Computing Solutions

3

Industrial Data Collector and Controller

4

Video Capture Solutions

5

I/O Communication Solutions

6

Panel Solutions

7

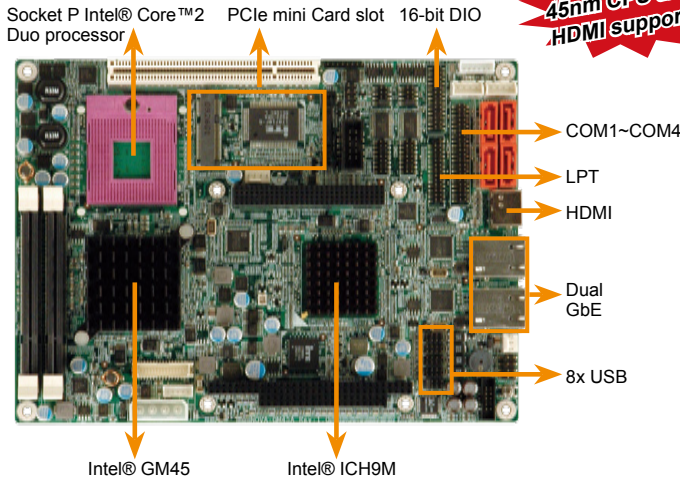
ORing Network Communication

8

Power Supply Peripherals

# NOVA-GM45A

5.25" SBC with Socket P for Intel 45nm mobile Core 2 Duo Penryn CPU, VGA/HDMI/LVDS, Dual PCIe GbE, USB2.0, PCIe mini, SATA II and Audio



Generation	Core™2 Duo		
	65nm	65nm	45nm
FSB	533 / 667 MHz	667 / 800 MHz	800 / 1066MHz
Architecture	Merom	Merom	Penryn
	Socket M	Socket P	Socket P
TDP	34W	35W	29W
Platform	945GME	GME965	GM45

NOVA-9452

NOVA-GM45A

DDR2 800  
FSB 1066



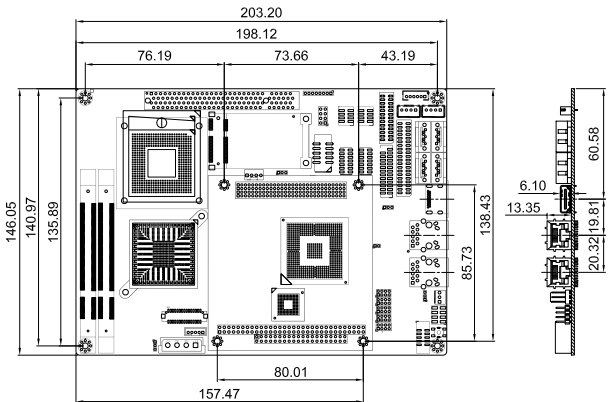
## Specifications

- ◆ CPU  
Socket P Intel® 45nm Core™ 2 Quad/Duo processor with 1066/800/667MHz 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 the 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 controllers
- ◆ I/O interface  
4 x RS232  
2 x RS232/422/485  
8 x USB 2.0  
1 x LPT  
4 x SATA II  
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
- ◆ Extension  
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  
1 x 3-pin System Fan
- ◆ Super I/O  
ITE IT8718F
- ◆ Audio  
Realtek ALC888 HD Codec
- ◆ Watchdog Timer  
Software Programmable support 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 ~ 140°F)
- ◆ Humidity  
Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions  
203 mm x 146 mm
- ◆ Weight  
GW: 850g / NW:290g

## Features

1. Socket P for Intel® 45nm mobile Core™2 Quad/Duo CPU with a 1066MHz FSB. Up to 800MHz DDR2 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

## Dimensions (mm)



## Packing List

1 x NOVA-GM45A single board computer	
2 x SATA 5V power output cable kit (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 KB/MS Y cable (P/N: 32000-023800-RS)	1 x VGA cable (P/N: 32000-033800-RS)
1 x USB cable (P/N: 32000-070301-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
NOVA-GM45A-R10	5.25" SBC with Socket P for Intel 45nm mobile Core 2 Duo Penryn CPU, VGA/HDMI/LVDS, Dual PCIe GbE, USB2.0, SATAII and Audio
CB-USB02A-RS	Dual USB cable with bracket
32102-000100-100-RS	SATA Power cable
32102-000100-200-RS	SATA Power cable
32200-026500-RS	RS-232/422/485 cable
CF-479B-RS	CPU cooler (50mm x 50mm x 26mm, 50W)
CF-479F-RS	CPU cooler (50mm x 50mm, 45W)
SAIDE-KIT01-R10	SATA to IDE/CF converter board
WMPCIE-V01-R10	PCIe mini card wireless LAN module
WMUSB-V01-R10	USB mini card wireless LAN module
32200-015100-RS	LPT cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

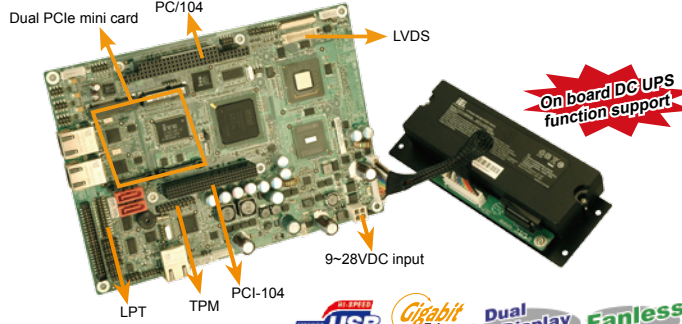
6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

# eNOVA-945GSE

5.25" SBC with AUPS sub-system, Intel® Atom™ Processor N270 1.6 GHz, Wide range 9-28VDC input, Dual PCIe Mini card



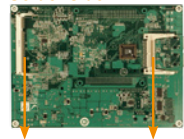
## Features

1. Intel® Atom™ N270 Processor 1.6 GHz for ultra low voltage fan-less support
2. Equipped with AUPS sub-system acts as a simple UPS system
3. Support Dual PCIe mini card for expansions
4. Wide range 9-28V DC input
5. Support LVDS, TV-out, VGA display output
6. CF socket for storage expansion
7. TPM support
8. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Intel® Atom™ Processor N270 1.6GHz with 533 MHz FSB 512K L2 Cache
- ◆ System Chipset: Intel® 945GSE / Intel® ICH7M
- ◆ BIOS: AMI BIOS
- ◆ Memory: One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe 8111CP GbE Controller
- ◆ Graphic: On Intel® Graphics Media Accelerator 950 (Intel® GMA 950)
- ◆ I/O Interface: 3 x RS-232, 1 x RS-232/422/485, 6 x USB2.0, 1 x LPT, 1 x IDE, 1 x 6pin header for KB/MS, 2 x SATA with 5V DC output
- ◆ Expansions: 1 x PC/104+ (ISA+PCI bus), 2 x PCIe mini card
- ◆ DC connector: 2pcs 1 x 2pin 5V power connector (Major 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 pin header
- ◆ Super IO: ITE8718F
- ◆ Display Output: Analog CRT Support for CRT Hot plug, Support HDTV by component interface, 18-bit dual-channel LVDS Support up to UXGA (1600x 1200)
- ◆ Audio: AC'97 ALC655 codec
- ◆ SSD: CF Type II
- ◆ TPM: 1 x 20pin pin header
- ◆ 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 internal 2 x 2-pin power connector
- ◆ Power Consumption: 1.19A@12V (Intel® Atom™ N270 processor with 1 GB DDR2)
- ◆ Temperature: Operation: 0°C ~ 40°C with AUPS sub-system, Operation: 0°C ~ 60°C without AUPS sub-system
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 203mm x 146mm
- ◆ Weight: GW:1000g / NW:400g

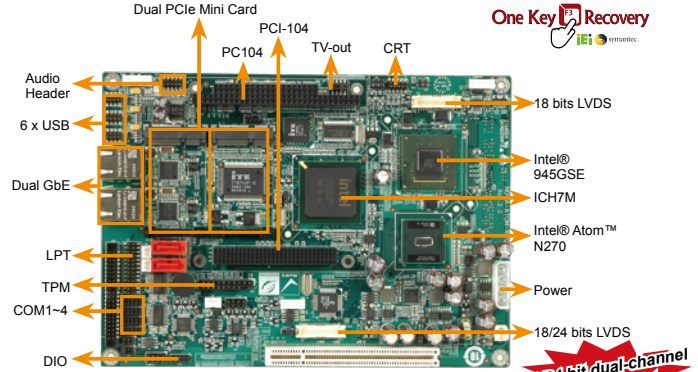
Solder side



DDR2 533 CF Type II

# NOVA-945GSE-R20

5.25" SBC, Intel® Atom™ N270 1.6GHz, LVDS/ VGA/ HDTV, Dual PCIe Mini, Dual PCIe GbE, USB2.0, SATA, RoHS



DDR2 533

FSB 533

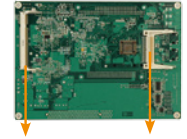
## Features

1. Intel® Atom™ Processor N270 1.6GHz for fanless support
2. DDR2 400/533 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 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Realtek PCIe RTL8111CP GbE LAN
- ◆ Graphic: On Intel® Graphics Media Accelerator 950
- ◆ I/O Interface: 3 x RS-232, 1 x RS-232/422/485, 6 x USB2.0, 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: ITE8718F
- ◆ Display Output: Analog CRT Support for CRT Hot plug, Support HDTV by component interface, 18/24 bit dual-channel LVDS by Chronitel CH7308B (NOVA-945GSELVDS2-N270-R20), 18 bit dual-channel LVDS by Intel® 945GSE
- ◆ Audio: AC'97 ALC655 codec
- ◆ SSD: CF Type II
- ◆ Watchdog Timer: Software Programmable support 1~255 sec. System reset
- ◆ TPM: 1x 20pin pinheader
- ◆ 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 ~ 60° C (32 ~ 140° F)
- ◆ Humidity: Operation: 5% ~ 95%, non-condensing
- ◆ Dimensions: 203mm x 146mm
- ◆ Weight: GW:1000g, NW:400g

Solder side



SO-DIMM CF Type II

## Packing List

1 x eNOVA-945GSE single board computer	
2 x SATA 5V power output Cable Kit (P/N: 32000-114000-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x VGA cable (P/N: 32000-033804-RS)
4 x RS-232 cable (P/N: 32200-000049-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x USB cable (P/N:32000-070301-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
eNOVA-945GSE-N270-R10	5.25" SBC with AUPS sub-system, Intel® Atom™ N270 1.6 GHz, Wide range 9-28V DC input, Dual PCIe Mini
HDTV/CABLESET-01	HDTV cable set with s-video, composite and component interfaces
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	
32200-015100-RS	LPT cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin(1x4) DC power cable with terminal block
32200-000009-RS	IDE flat cable 44p/44p
32200-833600-RS	RS-422/485 cable
WMPCIE-V01-R10	802.11b+g PCIe mini card wireless LAN module with Atheros
WMUSB-V01-R10	802.11b+g USB embedded module with VIA
TPM-WI01-R10	20-pin WINBOND TPM module, S/W management Tool
BATKIT-2S2P3800-R10	2S2P 7.4V 3800 mA AH AUPS battery kit
BAT-LI-2S2P3800	2S2P 7.4V 3800 mA AH SMART battery
BATKIT-4S2P3800-R10	4S2P 14.8V 3800 mA AH AUPS battery kit
BAT-LI-4S2P3800	4S2P 14.8V 3800 mA AH SMART battery kit

## Packing List

1 x NOVA-945GSE-R20 single board computer	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x VGA cable (P/N: 32000-033804-RS)
2 x SATA cable (P/N: 32000-062800-RS)	1 x USB cable (P/N: 32000-070301-RS)
4 x RS-232 cable (P/N: 32200-000049-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
NOVA-945GSE-N270-R20	5.25" SBC, Intel® Atom™ N270 1.6GHz, 18 bits LVDS/ VGA/ HDTV, Dual PCIe Mini, Dual PCIe GbE, USB2.0, SATA, RoHS
NOVA-945GSELVDS2-N270-R20	5.25" SBC, Intel® Atom™ N270 1.6GHz, 18+24 bits LVDS/ VGA/ HDTV, Dual PCIe Mini, Dual PCIe GbE, USB2.0, SATA, RoHS
HDTV/CABLESET-01	HDTV cable set with S-Video, composite and component Interfaces
32200-000009-RS	44pin 2.5" IDE cable
32102-000100-100-RS	SATA Power cable
32102-000100-200-RS	
32200-015100-RS	LPT cable
WMPCIE-V01-R10	802.11b+g PCIe mini card wireless LAN module with Atheros
WMUSB-V01-R10	802.11b+g USB embedded module with VIA
TPM-WI01-R10	20-pin WINBOND TPM Module, S/W management tool
32200-833600-RS	RS-422/485 cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

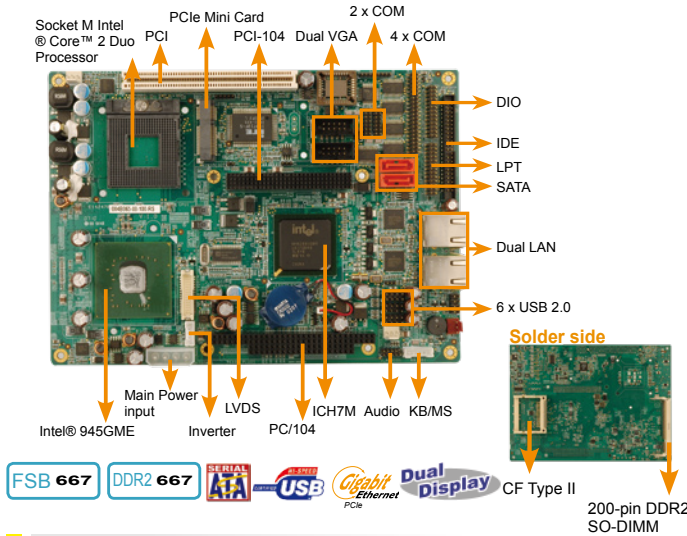
7 ORing Network Communication

8 Power Supply Peripherals

# NOVA-9452-R20



5.25" SBC, Intel® Core™2 Duo CPU SBC with Dual VGA, LVDS, Dual PCIe GbE, USB 2.0 and SATA



## Features

1. Intel® Core™2 Duo CPU with 667 MHz FSB
2. Single-channel DDR2 400/533/667 MHz up to 2GB
3. Supports dual VGA, 24-bit Dual-channel LVDS with dual display support
4. Supports 6 x RS-232, 6 x USB 2.0 and 2 x SATA
5. Supports 24-bit digital I/O
6. 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 667 MHz FSB or Celeron® M processor with a 533 MHz FSB (Yonah Core)
- ◆ System Chipset: Intel® 945GME + ICH7M
- ◆ BIOS: AMI Flash BIOS
- ◆ System Memory: One 200-pin 667/533/400 MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual Broadcom BCM5787M PCIe GbE chipset
- ◆ I/O Interface: 4 x RS-232, 2 x RS-232/422/485, 6 x USB 2.0, 2 x SATA, 1 x IDE, 1 x LPT, 1 x KB/MS (by pin header)
- ◆ Expansions: 1 x PCI, 1 x PCIe Mini card slot, 1 x PC/104 + (ISA+PCI bus)
- ◆ Digital I/O: 24-bit digital I/O, 12-bit input/ 12-bit output
- ◆ Infrared Interface: by super I/O
- ◆ Super I/O: ITE IT8712F
- ◆ Display Interface: VGA output is integrated in the Intel® 945GME 24-bit dual-channel LVDS Dual independent display over any two video outputs
- ◆ Optional External Audio Kits: 5.1 channel audio kit with Realtek ALC655 AC'97 codec, 7.1 channel HD audio kit with Realtek ALC883 codec supports dual audio streams
- ◆ SSD: CompactFlash® Type I/II
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: AT/ATX Power
- ◆ Power Consumption: 5V@3.81A, 12V@2.42A (Intel® Core™2 Duo T7400 2.16GHz/667 MHz CPU with 512MB DDR2 667 MHz)
- ◆ Temperature: Operating: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ Humidity: Operating: 5% ~95%non-condensing
- ◆ Dimensions: 203 mm x 146 mm
- ◆ Weight: GW: 850 g / NW: 290 g

## Packing List

1 x NOVA-9452 single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	2 x SATA cable (P/N: 32000-062800-RS)
1 x Mini jumper pack	1 x VGA cable (P/N: 32000-033800-RS)
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	1 x Quad ports RS-232 Adapter cable (P/N: 32100-147900-RS)
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x USB cable (P/N: 32000-044300-RS)
1 x Utility CD	1 x QIG

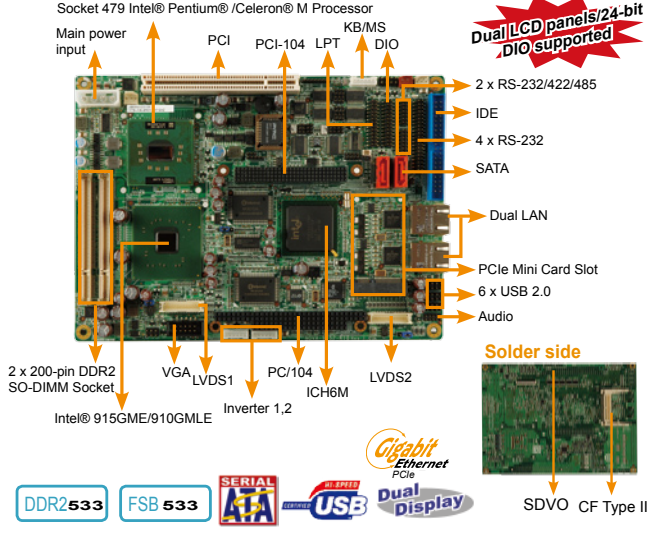
## Ordering Information

Part No.	Description
NOVA-9452-R20	5.25" SBC, Intel® Core™2 Duo CPU with VGA, LVDS, Dual PCIe GbE, USB 2.0 and SATA
AC-KIT08R-R10	5.1 channel AC'97 audio Kit with Realtek ALC655 codec
AC-KIT883HD-R10	7.1 channel HD audio kit with realtek ALC883 codec and dual audio streams
IO-KIT-4COM-R10	4 COM ports adapter board
CF-479B-RS	CPU cooler (50 mm x 50 mm x 26 mm, 50W)
32200-000017-RS	LPT cable
32200-026500-RS	RS-232/422/485 cable

# NOVA-9102



5.25" SBC, Intel® Celeron® M CPU with VGA/ LVDSx2, Dual PCIe GbE, USB 2.0, SATA and Audio



## Features

1. Intel® Pentium® M / Celeron® M with 533/400 MHz FSB
2. Dual-channel DDR2 533/400 MHz up to 2GB
3. Support VGA, dual-channel 18-bit/ 24-bit LVDS with dual display support
4. 4 x RS-232, 6 x USB 2.0, 2 x RS-232/422/485 and 2 x SATA
5. Supports 24-bit digital I/O
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On board Intel® Celeron® M 1GHz zero cache or 1GHz 512KB cache processor
- ◆ System Chipset: Intel® 910GML + ICH6-M
- ◆ BIOS: AMI Flash BIOS
- ◆ System Memory: Two 200-pin 400MHz DDR2 SDRAM SO-DIMM supported (System max. 2GB)
- ◆ Ethernet: Dual Realtek RTL8111CP GbE controller
- ◆ I/O Interface: 4 x RS-232, 2 x RS-232/422/485, 6 x USB 2.0, 2 x SATA, 1 x IDE, 1 x LPT, 1 x 6-pin header for KB/MS
- ◆ Expansions: 1 x PCI, 1 x PCIe mini card slot
- ◆ Digital I/O: 24-bit digital I/O, 12-bit input/ 12-bit output
- ◆ Infrared Interface: by pin header
- ◆ Super I/O: Winbond W83627EHG
- ◆ Display Interface: VGA Integrated in Intel® 910GML Dual-channel 18/24-bit LVDS by Intel® 910GML
- ◆ Optional External Audio kit: 5.1 channel audio kit with Realtek ALC655 AC'97 codec
- ◆ SSD: CF type I/II
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: AT/ATX Power
- ◆ Power Consumption: 12V@0.33A, 5V@ 3.21A(Intel® Celeron® M 1GZ CPU with 1GB DDR2 400 MHz)
- ◆ Temperature: Operating: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ Humidity: Operating: 5% ~95 non-condensing
- ◆ Dimensions: 203 mm x 146 mm
- ◆ Weight: GW: 1100 g / NW: 400 g

## Packing List

1 x NOVA-9102 single board computer	
1 x Quad ports RS-232 adapter cable (P/N: 32100-147900-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	1 x Mini jumper pack
1 x ATA66 flat cable (P/N: 32200-000052-RS)	1 x VGA cable (P/N: 32000-033800-RS)
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x USB cable (P/N: 32000-044300-RS)
1 x Utility CD	1 x QIG

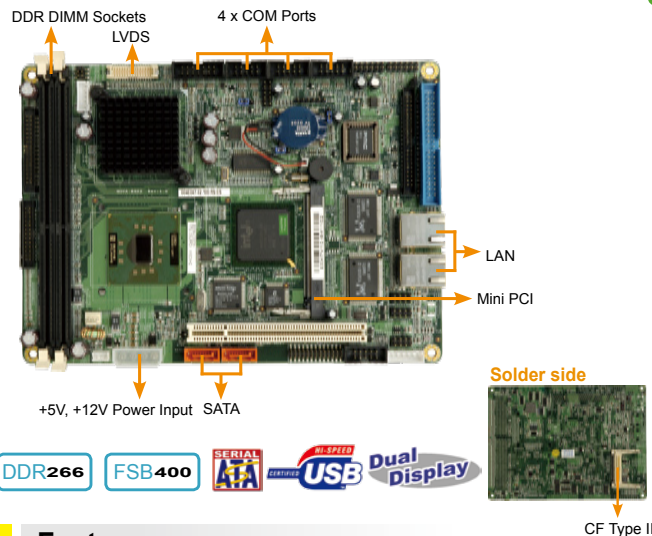
## Ordering Information

Part No.	Description
NOVA-9102-1GZ-R10	5.25" SBC with Intel® Celeron® M 1GHz zero cache CPU with VGA/ LVDS, Dual PCIe GbE, USB 2.0, SATA and Audio
NOVA-9102-1G512-R10	5.25" SBC with Intel® Celeron® M 1GHz 512KB cache CPU with VGA/ LVDS, Dual PCIe GbE, USB 2.0, SATA and Audio
IO-KIT-4COM-R10	4 COM Ports Adapter Board
32200-015100-RS	LPT cable
32100-052100-RS	ATX power cable
32200-026500-RS	RS-232/422/485 cable
AC-KIT08R-R10	5.1 channel AC'97 Audio Kit with realtek ALC655 codec

# NOVA-8522G2-R11



5.25" SBC, Intel® Pentium® M/ Celeron® M CPU with VGA/LVDS, VGA, Dual GbE, USB 2.0 and Audio



## Features

1. Intel® Pentium® M/ Celeron® M CPU with 400 MHz FSB
2. VGA integrated in Intel® 852GM and dual-channel 18-bit LVDS support
3. Independent dual display support
4. Dual DDR266 MHz support up to 2GB
5. Support PCI and mini PCI
6. CF Type II, LAN, USB 2.0, COM and Audio integrated
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: Socket 479 Intel® Pentium® M, Celeron® M processor with a 400MHz FSB. On board Intel® Celeron® M 600MHz 512KB or 1GHz zero cache processor
- ◆ System Chipset: Intel® 852GM + ICH4
- ◆ BIOS: AMI BIOS
- ◆ System Memory: Two 184-pin 266/200 MHz DDR SDRAM DIMM supported (system max. 2GB)
- ◆ Ethernet: Dual RTL8110SC GbE chipsets or Dual Intel® 82541PI GbE chipset
- ◆ I/O Interface: 2 x IDE, 1 x CF Type II, 1 x FDD, 1 x LPT, 1 x PS/2 for KB/MS, 3 x RS-232, 1 x RS-232/422/485, 6 x USB 2.0, 2 x SATA with SIL3512 RAID 0, 1 function support
- ◆ Audio: Realtek ALC655 with AC'97 codec
- ◆ Expansions: 1 x PCI / 1 x Mini PCI
- ◆ Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output by super I/O
- ◆ Infrared Interface: By pin header (SIR mode)
- ◆ Super I/O: W83627HG
- ◆ Display Interface: VGA integrated in Intel® 852GM, 18-bit dual-channel LVDS, DVI by Chronitel CH7301
- ◆ Watchdog Timer: Software programmable supports 1-255 sec. system reset
- ◆ Power Supply: AT/ATX support
- ◆ Power Consumption: 5A@4.10A, +12V@2.36A (Intel® Celeron® M 1.6G, 400 MHz with 2 x DDR333 512MB RAM)
- ◆ Temperature: Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity: Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions: 203 mm x 146 mm
- ◆ Weight: GW: 1000 g; NW: 400 g

## Packing List

1 x NOVA-8522 Single board computer	
1 x IDE Flat Cable 40P/40P/40P (P/N: 32200-000052-RS)	
1 x RS-232/422/485 Cable (P/N: 32200-000063-RS)	
1 x Audio Cable (P/N: 32000-028800-RS)	2 x SATA Cable (P/N: 32000-062800-RS)
1 x SATA Power Cable (P/N: 32102-000100-100/200-RS)	1 x VGA Cable (P/N: 32000-033800-RS)
3 x Single RS-232 Cable (P/N: 32200-000015-RS)	1 x KB/PS2 Mouse Cable (P/N: 32000-043301-RS)
1 x USB Cable (P/N: 32000-044300-RS)	1 x Mini Jumper Pack
1 x Utility CD	1 x QIG

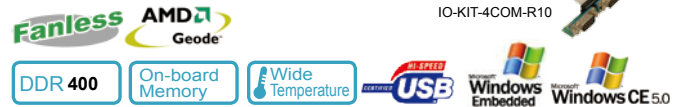
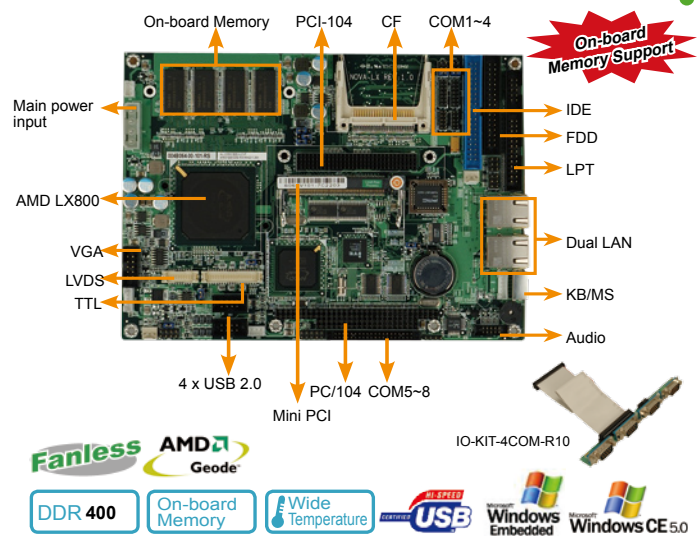
## Ordering Information

Part No.	Description
NOVA-8522G2-R11	5.25" SBC Intel® Pentium® M/ Celeron® M Processor FSB 400 MHz, Dual GbE, SATA and Audio
NOVA-8522G2-600-R11	5.25" SBC Intel® Celeron® M 600MHz 512K Cache Processor, Dual GbE, SATA and Audio
NOVA-8522G2-1GZ-R11	5.25" SBC, Intel® Celeron® M 1GHz Zero Cache Processor, Dual GbE, SATA and Audio
NOVA-8522G2N-R11	5.25" SBC Intel® Pentium® M/ Celeron® M Processor FSB 400 MHz, Dual GbE, SATA and audio
CF-479B-RS	CPU cooler
32200-000058-RS	FDD cable
32200-015100-RS	LPT cable
32100-052100-RS	ATX power cable

# NOVA-LX



5.25" SBC, AMD® Geode™ LX800 CPU with VGA/LVDS/TTL, Dual LAN, USB 2.0, Audio and On-Board Memory



## Features

1. 5.25" form factor with AMD® Geode™ LX800 CPU
2. On-board 256 MB Memory, up to optional 512 MB
3. VGA, 24-bit TTL, 18-bit single channel LVDS display interface
4. 6 x RS-232 and 2 x RS-232/422/485, 4 x USB 2.0
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™ CS5536 I/O companion
- ◆ BIOS: AMI BIOS
- ◆ System Memory: On-board 256 MB DDR SDRAM Supported, optional 512 MB
- ◆ Ethernet: 10/100Mbps dual realtek RTL8100C ethernet chipset
- ◆ I/O Interface: 6 x RS-232 (COM1 and COM2, DB9 pin-9 Voltage +5V, +12V jumper selection), 2 x RS-232/422/485 (COM3, COM4), 4 x USB 2.0, 1 x IDE, 1 x FDD, 1 x LPT, 1 x PS2 KB/MS
- ◆ Expansions: 1 x PC/104+ (ISA+PCI Bus), 1 x Mini PCI
- ◆ Digital I/O: 8-bit digital I/O, 4 input/ 4 output
- ◆ Super I/O: W83627EHG
- ◆ Display Interface: VGA integrated in AMD® LX800, 24-bit TTL, 18-bit single channel LVDS
- ◆ Audio: AC '97 codec with Realtek ALC203
- ◆ SSD: CF type I/II
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: 5V only, 12V for LCD&COM1/2, AT/ATX support
- ◆ Power Consumption: 5V@1.66A (AMD® LX800 500 MHz CPU with 256 MB on board memory)
- ◆ Temperature :Operating: NOVA-LX-800W: -20°C ~ +80°C, NOVA-LX-800: 0°C ~ +60°C
- ◆ Humidity : Operating: 5% ~95% non-condensing
- ◆ Dimensions: 203 mm x 146 mm
- ◆ Weight : GW: 700 g / NW: 260 g

## Packing List

1 x NOVA-LX single board computer	
1 x mini jumper pack	
1 x IDE flat cable (P/N: 32200-000052-RS)	
1 x VGA cable (P/N: 32000-033800-RS)	
1 x KB/MS Y cable (P/N: 32000-000138-RS)	
1 x audio cable (P/N: 32000-072100-RS)	
1 x Quad RS-232 adapter cable (P/N: 32200-025401-RS)	
2 x USB cable (P/N: 32000-044300-RS)	
2 x single RS-232 cable (P/N: 32200-000049-RS)	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
NOVA-LX-800W-R10	5.25" SBC, AMD® Geode™ LX800 CPU, VGA/LVDS/TTL, Dual LAN, USB 2.0, Audio, on-board 256 MB memory and wide operating temperature (-20°C~+80°C)
NOVA-LX-800-R10	5.25" SBC, AMD® Geode™ LX800 CPU, VGA/LVDS/TTL, Dual LAN, USB 2.0, Audio, on-board 256 MB memory
32200-000017-RS	FDD cable
19800-000049-RS	LPT cable
32200-026500-RS	RS-232/422/485 cable
IO-KIT-4COM-R10	4 COM ports adapter board

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

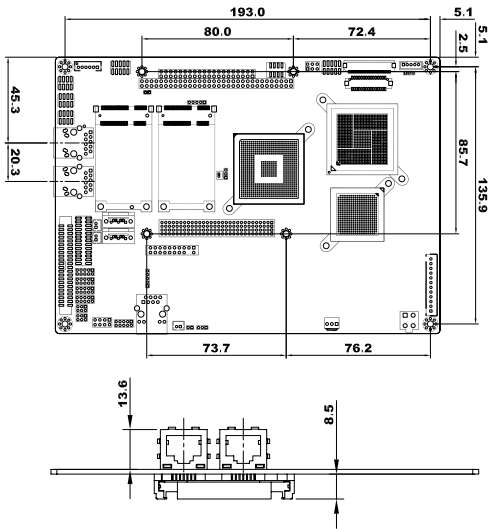
6 Panel Solutions

7 ORing Network Communication

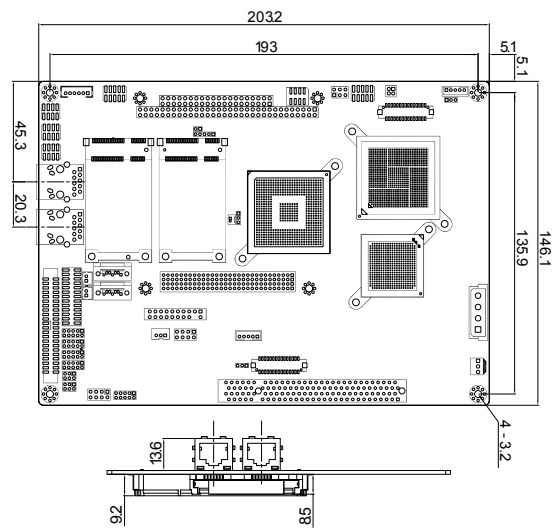
8 Power Supply Peripherals

## 5.25" NOVA Dimensions (Unit : mm)

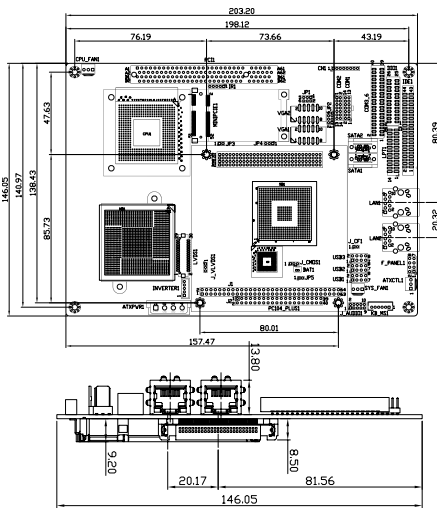
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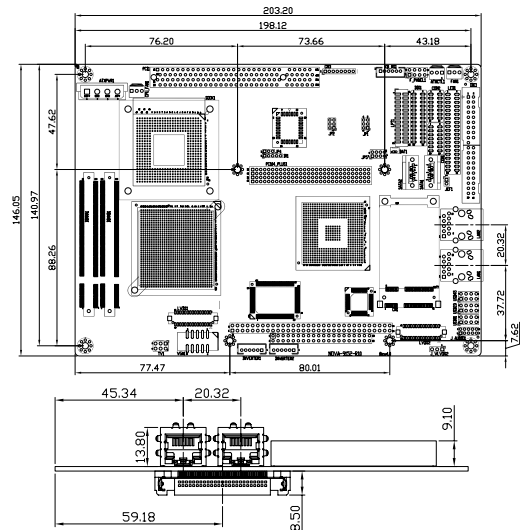
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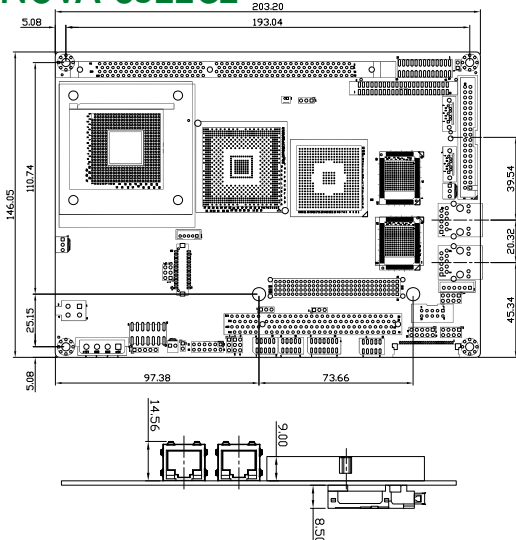
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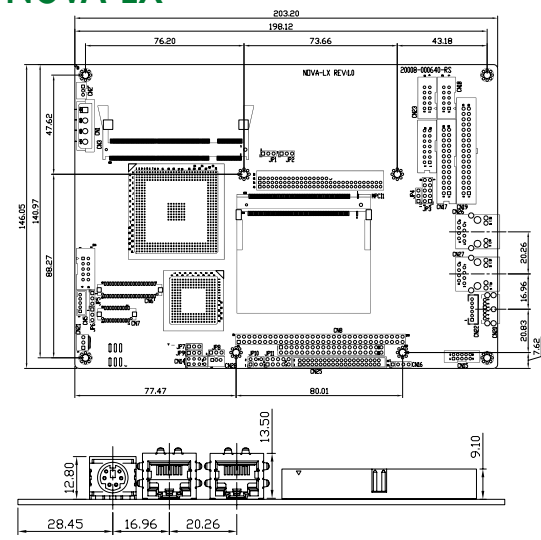
### NOVA-9102



### NOVA-8522G2



### NOVA-LX



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

# EPIC NANO Selection Guide



Model Name	epic NANO-GM45A	epic NANO-9453-R11	epic NANO-9452-R11	epic NANO-945GSE	epic NANO-945GSE2
<b>CPU Socket</b>	Socket P	Socket M	Socket M	On board	On board
<b>CPU Type</b>	Intel® Core2Duo, Celeron® M	Intel® Core2Duo, Core™ Duo/ Solo, Celeron® M	Intel® Core2Duo, Core™ Duo/ Solo, Celeron® M	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz
<b>FSB</b>	1066/800/667 MHz	533/667 MHz	533/667 MHz	533 MHz	533 MHz
<b>Chipset</b>	Intel® GM45 + ICH9M	Intel® 945GME + ICH7M	Intel® 945GME + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M
<b>Memory</b>	Two 200-pin, Max. 4 GB, 1066/800/667 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533/667 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533/667 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533MHz DDR2 SO- DIMM	One 200-pin, Max. 2 GB, 400/533MHz DDR2 SO- DIMM
<b>Display Interface</b>	VGA integrated in the Intel® GM45 18/24-bit dual-channel LVDS HDMI HDTV	1st VGA integrated in the Intel® 945GME 2nd VGA through SDVO by Chrontel CH7317A 18-bit dual-channel LVDS	VGA integrated in the Intel® 945GME 18/24-bit dual-channel LVDS HDTV	VGA integrated in the Intel® 945GSE 1st 18-bit dual-channel LVDS by Intel® 945GSE 2nd 18/24-bit dual-channel LVDS through SDVO by Chrontel CH7308 HDTV	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS 24-bit TTL (LVDS to TTL)
<b>Ethernet</b>	Dual Realtek 8111CP PCIe GbE chipsets	Dual PCIe GbE Broadcom BCM5787M chipsets	Dual PCIe GbE Broadcom BCM5787M chipsets	Dual Realtek 8111CP PCIe GbE chipsets	Dual Realtek 8111CP PCIe GbE chipsets
<b>I/O Interface</b>	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	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	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
<b>Drive Interface</b>	2 x SATAII	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 1 x IDE 1 x CF Type II	2 x SATA 1 x CF Type II
<b>Audio</b>	Realtek ALC888 with HD codec	AC-KIT883HD AC-KIT08R	AC-KIT883HD AC-KIT08R	AC-KIT883HD AC-KIT08R	Realtek ALC655 with AC' 97 codec
<b>Digital I/O</b>	N/A	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
<b>Power consumption</b>	12V@3.74A (Intel® Core2 Duo T9600 2.8GHz, 2GB DDR2 667 MHz)	12V@3.29A (Intel® Core2 Duo 2.16GHz, 1 GB DDR2 533 MHz)	12V@3.01A (Intel® Core2 Duo 2.0GHz, 1 GB 533 MHz DDR2)	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)
<b>Watchdog Timer</b>	Software programmable supports 1 ~255 sec. system reset				
<b>Operating Environment</b>	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) Relative Humidity: 5% ~ 95% non- condensing	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
<b>Expansion Slot</b>	1 x PCIe Mini Card Slot	1 x PCI-104 1 x PCIe Mini Card Slot	1 x PCI-104 1 x PCIe Mini Card Slot	1 x PCI-104 1 x PCIe Mini Card Slot	1 x PC/104-Plus
<b>Recommend Fancooler</b>	CF-479B-RS	CF-479B-RS	CF-479B-RS	Heatsink	Heatsink

1

Industrial  
Computing  
Solutions

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector  
and Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

7

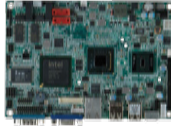
ORing  
Network  
Communication

8

Power Supply  
Peripherals



# EPIC NANO Selection Guide

**NEW!!**


Model Name	epic NANO-945GSE3	epic NANO-8522G-R13	epic NANO-LX-R12	epic NANO-GX/GXTC-R11	Enano-8523
<b>CPU Socket</b>	On board	On-board / Socket 479	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor N270 1.6GHz	Intel® Pentium® M/ Celeron® M	AMD® Geode™ LX800	AMD® Geode™ GX466	On board Celeron® M
<b>FSB</b>	533 MHz	400 MHz	N/A	N/A	400 MHz
<b>Chipset</b>	Intel® 945GSE + ICH7M		AMD® Geode™ LX800 + AMD® CS5536	AMD® Geode™ GX466 + AMD® CS5536	Intel® 852GM + ICH4
<b>Memory</b>	One 200-pin, Max. 2 GB, 400/533MHz DDR2 SO-DIMM	One 200-pin, Max. 1 GB, 200/266MHz DDR SO-DIMM	One 200-pin, Max.1 GB 333/400 MHz DDR SO-DIMM	One 200-pin, Max.1 GB, 266 MHz DDR SO-DIMM	One 200-pin, Max.1 GB, 266 MHz DDR SO-DIMM
<b>Display Interface</b>	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS HDTV	VGA integrated in the Intel® 852GM 18-bit dual-channel LVDS	VGA integrated in the AMD® Geode™ LX800 24-bit TTL 18-bit single channel LVDS(TTL to LVDS)	VGA integrated in the AMD® Geode™ GX466 24-bit TTL (NANO-GX only) 18-bit single channel LVDS (NANO-GX only)	VGA integrated in the Intel® 852GM 18-bit dual-channel LVDS
<b>Ethernet</b>	Dual Realtek 8111CP PCIe GbE chipsets	Intel® 82541PI GbE chipset or Intel® 82551ER 10/100Mbps Ethernet chipset	Realtek RTL8100C 10/100Mbps Ethernet chipsets	Realtek RTL8100C 10/100Mbps Ethernet chipsets	Intel® 82562ET Ethernet chipset
<b>I/O Interface</b>	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	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x Infrared Interface 1 x PS/2 for KB/MS	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	5 x RS-232 1 x RS-232/422/485 (NANO-GX only) 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS 1 x Infrared Interface	4 x RS-232 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS
<b>Drive Interface</b>	2 x SATA 1 x IDE 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II	2 x SATA RAID 1 x IDE 1 x CF Type II	2 x SATA RAID (NANO-GX only) 1 x IDE 1 x CF Type II	1 x IDE 1 x CF Type II
<b>Audio</b>	AC-KIT883HD AC-KIT08R	Realtek ALC655 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	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	8-bit digital I/O 4-bit input/4-bit output
<b>Power consumption</b>	12V@1.49A (Intel® Atom™ N270 1.6GHz, 2 GB DDR2 533 MHz)	12V@ 1.99A (Pentium® M 1.7 GHz, 512 MB 266 MHz DDR)	12V@ 0.92A (AMD® LX800, 256 MB 400 MHz DDR)	12V@0.83A (AMD® GX466, 512 MB 400 MHz DDR )	5V@3.66A (Intel® Celeron® 600 MHz 512K cache, 256 MB 266 MHz DDR)
<b>Watchdog Timer</b>	Software programmable supports 1 ~255 sec. system reset				
<b>Operating Environment</b>	Temperation Range: 0°C ~ 60°C (32°F ~ 140°F) -20°C ~ 70°C(W) Relative Humidity: 5% ~ 95% non- condensing	Temperation Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing	Temperation Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing	Temperation Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing	Temperation Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non- condensing
<b>Expansion Slot</b>	1 x PC/104-Plus	1 x PCI-104	1 x PC/104-Plus	NANO-GX: PC/104-Plus NANO-GXTC: PCI-104	1 x PCI
<b>Recommand Fancooler</b>	Heatsink	CF-479B-RS/Heatsink	Heatsink	Heatsink	Heatsink

1

Industrial  
Computing  
Solutions

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector  
and Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

7

ORing  
Network  
Communication

8

Power Supply/  
Peripherals

# IEI EPIC NANO

1  
Industrial Computing Solutions

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. Single board computers with multiple I/O expansions options. Its size is midway between the industry standard PC/104 module and EBX board. This size board will 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 defines PC/104 expansions; however, future updates will embrace PCI express and/or other fabrics. The EPIC standard provides a platform on which to build the next generation of Features-rich, embedded systems for industrial, medical, military, transportation, and commercial applications.

2  
Embedded Computing Solutions

## EPIC History

A new platform for embedded single board computer with multiple I/O expansions options. Defined by 5 leading SBC manufacturers: Micro/sys, Octagon Systems, VersaLogic, WinSystems, Ampro Computers. Specifications were released on March 23, 2004

3  
Industrial Data Collector and Controller

## Key Features

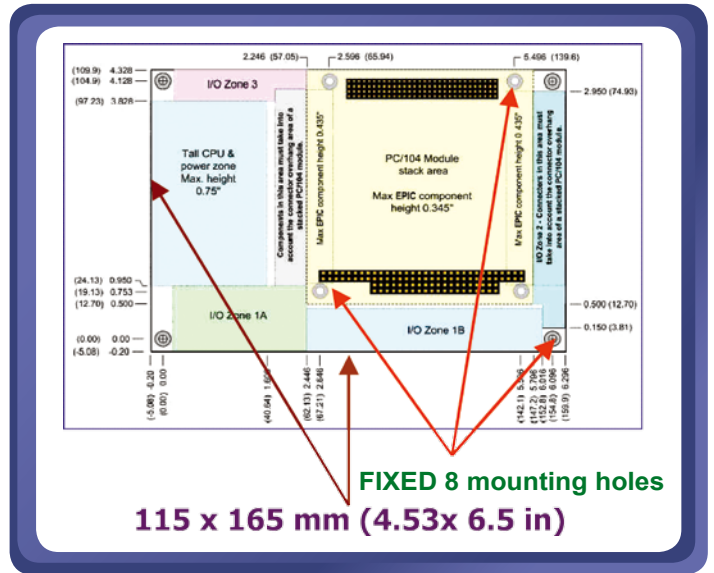
- Fixed Dimensions and mounting holes
- Fixed I/O interface
- Fixed PCI 104, PC/104 location
- Fixed CPU location



4  
Video Capture Solutions

## 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



5  
I/O Communication Solutions

## Dual display solutions

Chipset	Intel® GM45	Intel® 945GME		Intel® 945GSE			Intel® 852GM	
Model Name	NANO-GM45A	NANO-9453	NANO-9452	NANO-945GSE3	NANO-945GSE2	NANO-945GSE	NANO-8522	Enano-8523
Dual Display	VGA + LVDS VGA + Display port LVDS + Display Port	VGA + LVDS VGA + VGA	VGA + LVDS VGA + HDTV LVDS + HDTV	VGA + LVDS	VGA + LVDS VGA + TTL	VGA + LVDS VGA + HDTV LVDS + HDTV LVDS + LVDS	VGA + LVDS	VGA + LVDS

6  
Panel Solutions

## CPU support

Chipset	Intel® GM45	Intel® 945GME	
Model Name	NANO-GM45A	NANO-9453	NANO-9452
Dual Core	Socket P 1066MHz	Socket M 667MHz	Socket M 667MHz



7  
ORing Network Communication

Chipset	Intel® 945GSE	Intel® 852GM		AMD LX800	AMD GX466
Model Name	NANO-945GSE NANO-945GSE2 NANO-945GSE3	NANO-8522	Enano-8523	NANO-LX	NANO-GX
Single Core	Atom™ N270	Pentium® M /Celeron® M	Celeron® M	LX800	GX466

8  
Power Supply Peripherals

## Embedded system mapping

**Dual Core**

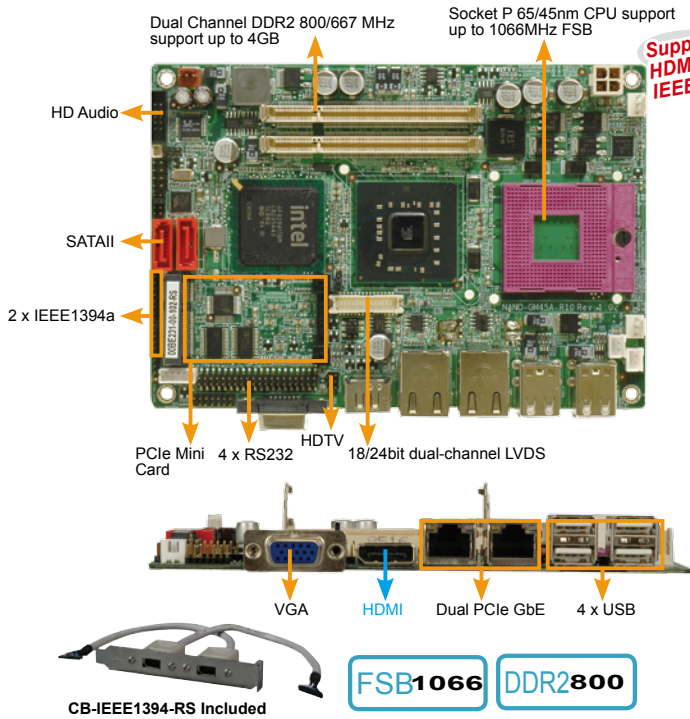
**Embedded Fanless System**

Embedded System	ECN-381B	ECN-171A	ECN-171B	EBC-2100	EBC-2101
Model	NANO-GM45A	NANO-9453 NANO-9452	NANO-8522	NANO-8522 NANO-LX NANO-GX	NANO-945GSE

epic

## NANO-GM45A

EPIC SBC supports Intel® 45nm mobile Core™ 2 Duo processor with Intel® GM45 & ICH9M platform



One Key Recovery  
symantec

## 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/ICH9M
- ◆ BIOS
  - AMI BIOS
- ◆ System Memory
  - Two 200-pin 800/667MHz DDR2 SDRAM SO-DIMM supported (system max. 4GB)
- ◆ Ethernet Chipset
  - Dual Realtek 8111CP GbE Chipset
- ◆ I/O Interface
  - 4 x USB2.0
  - 2 x SATAII
  - 4 x RS-232
  - 2 x IEEE 1394a
- ◆ Expansions
  - PCIe mini card
- ◆ Super I/O
  - Fintek F81216D
- ◆ Audio
  - Realtek ALC888 HD Audio
- ◆ Display Interface
  - Mobile Intel® Graphics Media Accelerator 4500MHD
  - Analog CRT / 18/24-bit dual channel LVDS / HDTV-out
  - HDMI supports up to 1080p
- ◆ Watchdog Timer
  - Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply
  - 12V only, AT/ATX supported
- ◆ Power Consumption
  - 12V@3.74A (Intel® Core™2 Duo T9600 2.8GHz, 2GB DDR2 800 MHz)
- ◆ Temperature
  - Operation: 0°C~ 60°C ( 32°F~ 140°F)
- ◆ Humidity
  - Operation: 5% ~95 non-condensing
- ◆ Dimensions
  - 165 mm x 115 mm
- ◆ Weight
  - GW: 700g, NW 350g

## High-Definition Multimedia Interface

The High-Definition Multimedia Interface (HDMI) is a compact audio/video interface for transmitting uncompressed digital data. It represents a digital alternative to consumer analog standards such as Radio Frequency (RF) coaxial cable, composite video, S-Video, SCART, component video, D-Terminal, and VGA. HDMI connects digital audio/video sources such as set-top boxes, Blu-ray Disc players, personal computers, video game consoles, and AV receivers to compatible digital audio devices, computer monitors, and digital televisions.

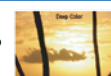


## Features of HDMI

- ◆ **Higher Speed - 10.2 Gbps**  
increases its single-link bandwidth from 165 MHz (4.95 Gbps) to 340 MHz (10.2 Gbps) to support the demands of future high definition display devices
- ◆ **New Lossless Audio Formats**  
support for new, lossless compressed digital audio formats Dolby® TrueHD and DTS-HD Master Audio™ for theater-like, professional sound quality.
- ◆ **Lip Sync**  
HDMI incorporates an automatic audio/video syncing capability that allows devices to perform this synchronization automatically with accuracy.
- ◆ **New Mini Connector**  
With small portable devices such as HD camcorders and still cameras demanding seamless connectivity to HDTVs
- ◆ **Deep Color**  
HDMI supports 30-bit, 36-bit and 48-bit (RGB or YCbCr) color depths, up from the 24-bit depths in previous versions of the HDMI specification.
  - Lets HDTVs and other displays go from millions of colors to billions of colors
  - Eliminates on-screen color banding, for smooth tonal transitions and subtle gradations between colors
  - Enables increased contrast ratio
  - Can represent many times more shades of gray between black and white.



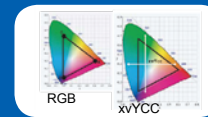
Color banding is perceptible to the human eye with standard color displays



Using billions of colors, Deep Color virtually eliminates color banding

## Broader Color Space:

- The next generation "xYCC" color space can display virtually the entire gamut of colors viewable by the human eye
- Next-generation "xYCC" color space supports 1.8 times as many colors as existing HDTV signals
- Lets HDTVs display colors more accurately
- Enables displays with more natural and vivid colors



## Features

1. Intel® 45nm mobile Core™ 2 Duo processor(Penryn) supported
2. High quality media MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) ,DX10 supported
3. DDR2 800/667 MHz dual channel SDRAM supported up to 4GB
4. 18/24-bit dual channel LVDS / Analog CRT / HDTV output/HDMI supported
5. Support 4 x COM, 4 x USB, 2 x SATAII, 2 x IEEE1394a
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Packing List

1 x NANO-GM45A single board computer
1 x Power cable (P/N: 32100-087100-RS)
2 x SATA cable (P/N: 32000-062800-RS)
1 x Audio cable (P/N: 32000-072100-RS)
1 x Dual port IEEE1394 cable (P/N: CB-IEEE1394-RS)
1 x Quad RS-232 cable (P/N: 32100-147900-RS)
1 x Mini jumper pack
1 x Utility CD
1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
NANO-GM45A-R10	EPIC SBC supports Intel® 45nm mobile Core™2 Duo processor with Intel® GM45 & ICH9M platform, DDR2, dual GbE, LVDS/ CRT/HDTV-out, SATAII, USB2.0
CF-479B-RS	CPU cooler
32000-083702-RS	HDTV cable set with S-Video, composite and component interfaces
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
32000-114000-RS	SATA 5V power output cable kit for NANO series
32100-043403-RS	ATX power cable

1

Industrial Computing Solutions

2

Embedded Computing Solutions

3

Industrial Data Collector and Controller

4

Video Capture Solutions

5

I/O Communication Solutions

6

Panel Solutions

7

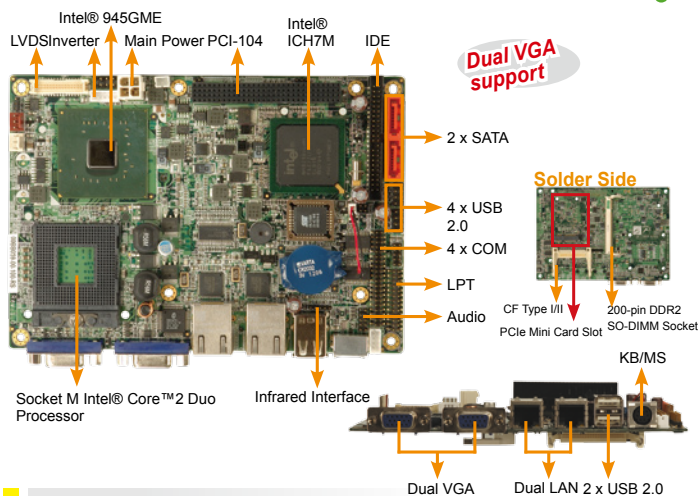
ORing Network Communication

8

Power Supply/ Peripherals

# epic NANO-9453-R11 One Key Recovery

EPIC with Intel® Core™2 Duo Processor, Dual VGA, SATA, Dual PCIe GbE, CF Type I/II, IDE & USB 2.0



## Features

1. Support an Intel® Core™2 Duo processor with a 667 MHz FSB
2. Support one DDR2 400/533/667MHz SO-DIMM with a maximum capacity of 2GB
3. Dual PCIe GbE Broadcom BCM5787M controllers
4. Support dual 18-bit LVDS LCD panels and Dual VGA ports
5. 2 x SATA, 6 x USB 2.0, 1 x CF Type I/II, 1 x LPT and 4 x COM
6. PCIe Mini card and PCI-104 expansion interface
7. 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 533 MHz 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 Broadcom BCM5787M chipset
- ◆ I/O Interface  
6 x USB 2.0  
1 x IDE  
1 x RS-232/422/485  
1 x LPT  
2 x SATA  
3 x RS-232  
1 x PS/2 for KB/MS  
1 x CF Type II
- ◆ Expansions  
1 x PCI-104 (PCI bus)  
1 x PCIe Mini Card Slot
- ◆ 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 by super I/O
- ◆ Audio  
5.1 channel audio kit with Realtek ALC655 AC'97 codec  
7.1 channel HD audio kit with Realtek ALC883 codec supports dual audio streams
- ◆ Display Interface  
1st VGA DB15 output Integrated in Intel® 945GME  
2nd VGA DB15 through SDVO by Chronitel CH7317A  
Dual display independent by VGA1+VGA2 or VGA1+LVDS or VGA2+LVDS  
18-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@3.29A (Intel® Core™2 Duo 2.16GHz, 1GB DDR2 533MHz)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operating: 5% ~ 95% non-condensing
- ◆ Dimensions 165 mm x 115 mm
- ◆ Weight GW: 800 g / NW: 250 g

## Packing List

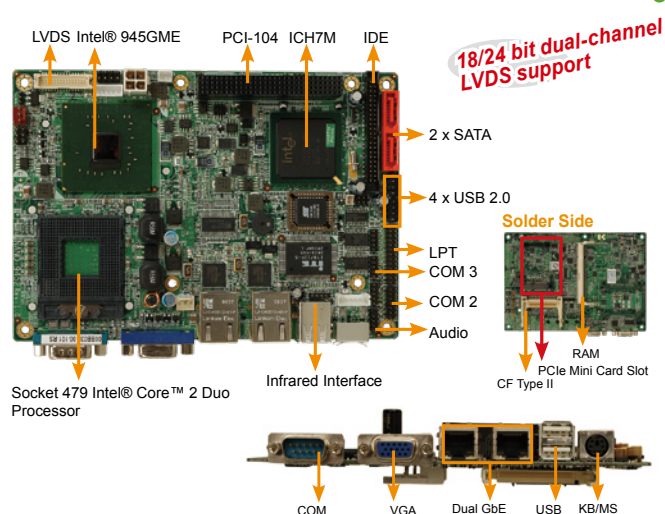
1 x NANO-9453 Single board computer
1 x Quad RS-232 Adapter Cable (P/N: 32100-147900-RS)
1 x IDE Flat Cable 44p/44p (P/N: 32200-000009-RS)
2 x SATA Cable (P/N: 32000-0628000-RS)
1 x SATA Power Cable (P/N: 32102-000100-100/200-RS)
1 x KB/MS Cable (P/N: 32000-133200-RS)
1 x Power Cable (P/N: 32100-087100-RS)
1 x Mini Jumper Pack
1 x Utility CD
1 x QIG

## Ordering Information

Part No.	Description
NANO-9453-R11	EPIC SBC, Intel® Core™2 Duo, Core™ Duo/Solo FSB 667MHz with Dual VGA, LVDS, Dual PCIe GbE and SATA
32000-044300-RS	USB Cable
32200-074800-RS	RS-422/485 Cable
AC-KIT08R-R10	5.1 Channel AC'97 Audio Kit with Realtek ALC655
AC-KIT-883HD-R10	7.1 Channel HD Audio Kit with Realtek ALC883 Support Dual Audio Streams
CF-479B-RS	CPU Cooler (50mm x 50mm x 26mm, 50W)
32200-015100-RS	LPT Cable
32100-043403-RS	ATX Power Cable

# epic NANO-9452-R11 One Key Recovery

EPIC 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 Broadcom BCM5787M 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
- ◆ Expansions  
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 ALC883 codec supports dual audio streams
- ◆ 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@3.01A (Intel Core™2 Duo 2.0GHz, 1GB 533MHz DDR2)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 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: 32200-000049-RS)
1 x IDE cable (P/N: 32200-000009-RS)
1 x SATA Power cable (P/N: 32102-000100-100/200-RS)
2 x SATA cable (P/N: 32000-062800-RS)
1 x Mini jumper pack
1 x Utility CD
1 x KB/MS cable (P/N: 32000-133200-RS)
1 x Power cable (P/N: 32100-087100-RS)
1 x QIG

## Ordering Information

Part No.	Description
NANO-9452-R11	EPIC SBC, Intel® Core™2 Duo, Core Duo/ Solo FSB 667MHz with VGA/LVDS/HDTV-out, Dual PCIe GbE, SATA and audio
32000-044300-RS	USB cable
19800-000110-RS	RS-232/422/485 cable
AC-KIT08R-R10	5.1 channel AC'97 Audio Kit with Realtek ALC655 codec
AC-KIT-883HD-R10	7.1 channel HD audio kit with realtek ALC883 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
32000-083701-RS	HDTV out cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

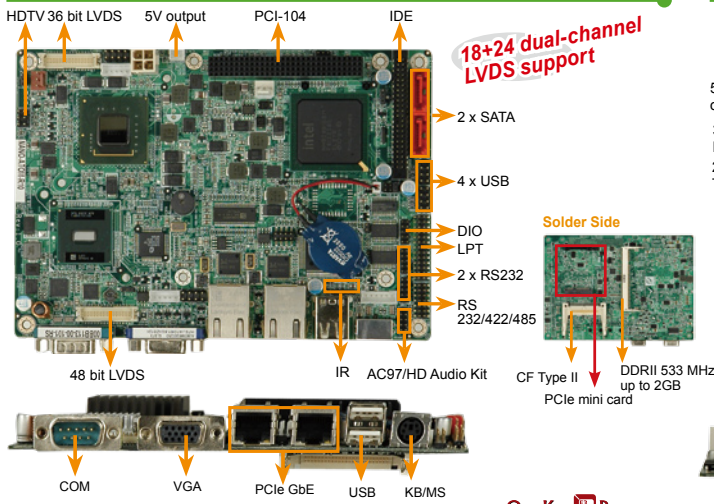
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# epic NANO-945GSE

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 Fan-less support
2. Single 12V power input, Provide 5V output for SATA Device
3. Dual LVDS support dual independent display
4. Support 4 x COM, 6 x USB, 2 x 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  
Intel® Atom™ Processor N270 1.6GHz with 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 8111CP 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
- ◆ Expansions  
1 x PCI-104 (PCI Bus)    1 x PCIe mini card
- ◆ Super I/O  
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 ALC883 codec supports dual audio streams
- ◆ Display Interface  
Intel® Graphics Media Accelerator 950  
VGA intergrated in Intel® 945GSE support HDTV resolution up to 1080i by component interface  
Dual LVDS support:  
18 bit dual-channel LVDS intergrated in Intel® 945GSE  
18/24 dual-channel LVDS support 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-R10)  
Operation: -40°C ~ 85°C (NANO-945GSE-N270W2-R10)  
Operation: -20°C ~ 70°C (NANO-945GSE-N270W-R10)
- ◆ Humidity: operation: 5% ~95 non-condensing
- ◆ Dimensions: 165 mm x 115 mm
- ◆ Weight: GW: 700g NW 350g

## Packing List

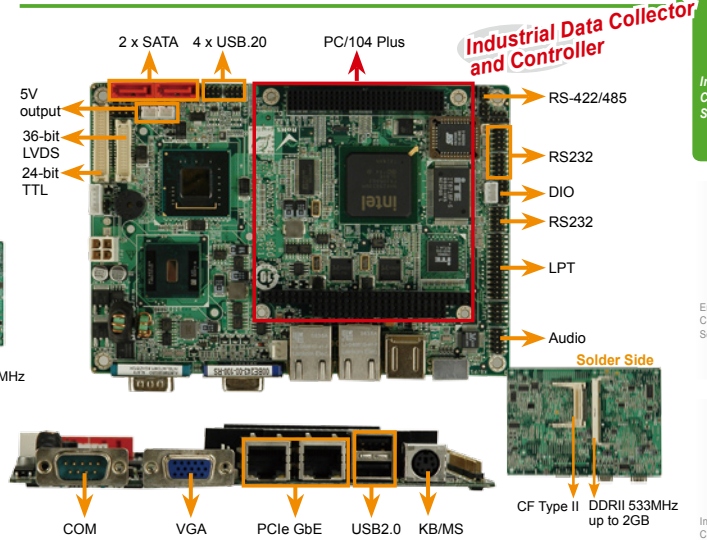
1 x NANO-945GSE single board computer	2 x RS-232 cable (P/N: 32200-000049-RS)
2 x SATA cable (P/N: 32000-062800-RS)	1 x KB/MS cable (P/N: 32000-133200-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
NANO-945GSE-N270-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18 bit dual-channel LVDS, Dual GbE, CFII, USB, SATA
NANO-945GSE-N270W2-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18 bit dual-channel LVDS, Dual GbE, CFII, USB, SATA, -40~85°C
NANO-945GSE-N270W-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18 bit dual-channel LVDS, Dual GbE, CFII, USB, SATA, -20~70°C
NANO-945GSELVDS2-N270-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18+24bit dual-channel LVDS, Dual GbE, CFII, USB, SATA
NANO-945GSELVDS2-N270W2-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18+24bit dual-channel LVDS, Dual GbE, CFII, USB, SATA, -40~85°C
NANO-945GSELVDS2-N270W-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/18+24bit dual-channel LVDS, Dual GbE, CFII, USB, SATA, -20~70 °C
32000-044300-RS	Dual port USB cable
32200-015100-RS	LPT cable
32200-026500-RS	RS-232/422/485 cable
32100-043403-RS	ATX power cable
32000-083701-RS	HDTV out cable
32200-000009-RS	44pin 2.5" IDE cable
32200-008800-RS	44pin to 2.5"/3.5" IDE cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
32000-114000-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-KIT83HD-R10	7.1 Channel HD audio kit with realtek ALC883 codec support dual audio streams

# epic NANO-945GSE2

EPIC SBC with Intel® Atom™ Processor, VGA/LCD/Dual PCIe GbE, CF type II, SATA, PC/104 Plus



## Features

1. Intel® Atom™ Processor N270 1.6GHz CPU for Ultra Low Voltage Fan-less support
2. Single 12V power input, Provide 5V output for SATA Device
3. Dual Display support by VGA+LVDS, VGA+TTL
4. Support 4 x COM, 6 x USB, 2x SATA 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 N270 1.6 GHz with 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)
- ◆ 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)
- ◆ Humidity  
Operation: 5% ~95 non-condensing
- ◆ Dimensions  
165 mm x 115 mm
- ◆ Weight  
GW: 700g NW 350g
- ◆ Super I/O  
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 intergrated in Intel® 945GSE  
18-bit dual-channel LVDS intergrated in Intel® 945GSE  
24-bit TTL (LVDS to TTL)
- ◆ Watchdog Timer  
Software programmable 1-255 sec. by super I/O
- ◆ Infrared Interface  
1 x Infrared Interface by pin header
- ◆ Expansions  
1 x PC/104-Plus

## Packing List

1 x NANO-945GSE2 single board computer	2 x RS-232 cable (P/N: 32200-000049-RS)
2 x SATA cable (P/N: 32000-062800-RS)	1 x KB/MS cable (P/N: 32000-133200-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x Audio cable (P/N: 32000-072100-RS)
	1 x QIG

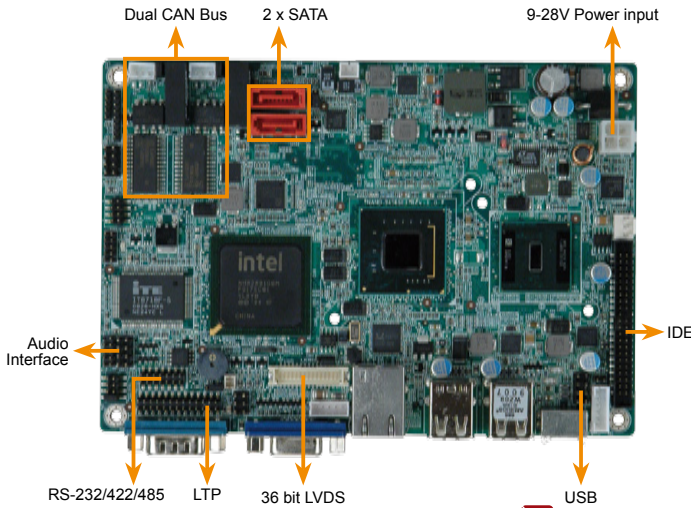
## Ordering Information

Part No.	Description
NANO-945GSE2-N270-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/LVDS/TTL, Dual GbE, CFII, USB, SATA and PC/104+
NANO-945GSE2-N270W-R10	EPIC SBC with Intel® Atom™ Processor N270 1.6 GHz, VGA/LVDS/TTL, Dual GbE, CFII, USB, SATA and PC/104+, -20~70°C
32000-070301-RS	Dual Port USB cable
32200-015100-RS	LPT cable
32200-833600-RS	RS-422/485 cable
32100-052100-RS	ATX power cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
32000-114000-RS	SATA 5V power output cable kit for NANO series

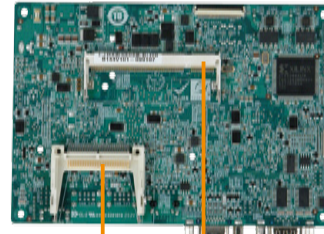
epic

# NANO-945GSE3

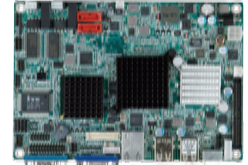
EPIC SBC with Intel® Atom™ N270 1.6GHz, VGA/LVDS, PCIe GbE, CF type II, SATA, and CAN BUS



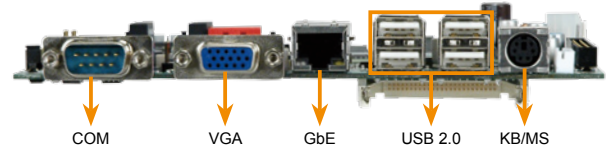
### Solder side



9-28VDC input  
CAN Bus



Heatsink



## 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
 

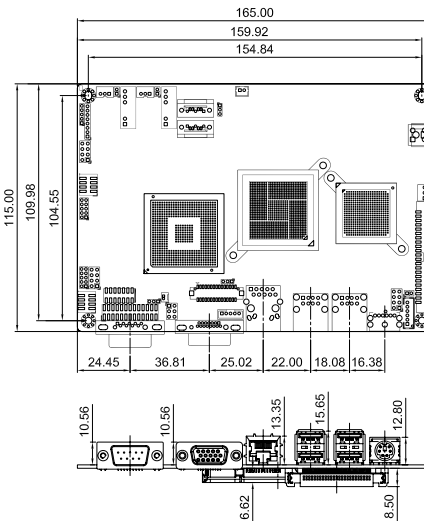
1 x RS-232	1 x LPT
1 x IDE	1 x RS-232/422/485
2 x SATA	1 x CF Type II
1 x PS/2 KB/MS	6 x USB2.0
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Infrared Interface  
1 x Infrared Interface by pin header
- ◆ CAN-bus interface  
2 x CAN-bus interface  
PCI to CAN-bus CPLD: Xilinx XC95288XL-10TQG144C  
CAN-bus controller: Philips SJA1000T  
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 ALC883 codec supports dual audio streams
- ◆ Super I/O  
ITE IT8718F
- ◆ Watchdog Timer  
Software Programmable support 1~255 sec. System reset
- ◆ Power Supply  
AT/ATX support  
Power input: 9-28V Wide Range Voltage Input
- ◆ Power Consumption  
12V@1.49A(Intel® Atom™ N270 with 2GB DDR2)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
EPIK 165mm x 115mm
- ◆ Weight  
GW:700g / NW:320g



## Features

1. Intel® Atom™ N270 1.6GHz processor CPU for Ultra Low Voltage Fan-less support
2. 9V~28V wide range voltage input
3. Support two COM ports, six USB ports and two SATA ports
4. Support 2xCAN-bus interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (mm)



## 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
32000-044300-RS	USB cable
32200-026500-RS	RS232/422/485 cable
AC-KIT08R-R10	5.1 channel AC'97 audio kit with Realtek ALC655 codec
AC-KIT883HD-R10	7.1 channel HD audio kit with Realtek ALC883 codec support dual audio streams
32200-015100-RS	LPT cable
32000-083701-RS	HDTV out cable
32000-062800-RS	SATA cable
32100-000100-100-RS	SATA power cable
32100-000100-200-RS	SATA power cable
32100-192900-RS	One 4-pin (2x2) to one 4-pin(1x4) DC power cable with terminal block

## Packing List

1 x NANO-945GSE3 Single Board Computer	
1 x SATA with power cable kit (P/N: 32000-114000-RS)	
2 x CAN-bus cable (P/N: 32100-212800-RS)	1 x KB/MS cable (P/N: 32000-133200-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

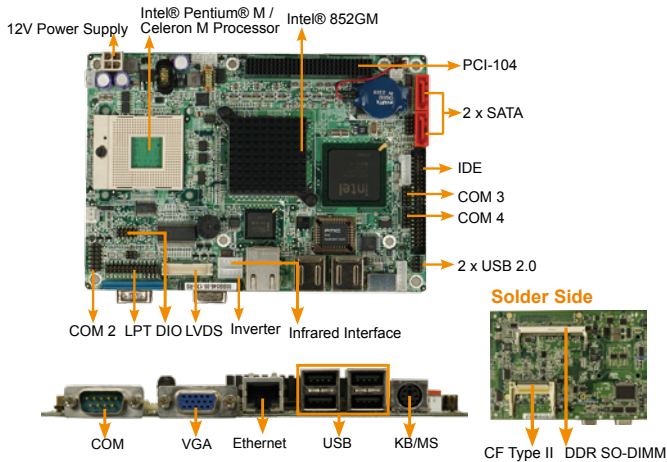
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# epic NANO-8522G-R13 One Key Recovery

EPIC Intel® Pentium® M/Celeron® M CPU with VGA/LVDS, SATA, LAN and Audio



## Features

1. Intel® Pentium® M/ Celeron® M CPU with 400MHz FSB
2. VGA integrated in Intel® 852GM, support 18-bit dual-channel LVDS for independent dual display
3. One DDR266/200MHz SO-DIMM supports up to 1GB
4. Support PCI-104 extension slot
5. CF Type II, Intel® LAN, USB 2.0, Multi-COM, Audio and SATA integrated
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 479 Intel® Pentium® M, Celeron® M processor with 400 MHz FSB  
On board Intel® Celeron® M 600MHz 512KB or 1GHz zero cache processor
- ◆ System Chipset  
Intel® 852GM + ICH4
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
One 200-pin 266/200MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet  
Intel® 82541PI GbE chipset with ASF2.0 remote control support  
Intel® 82551ER Ethernet chipset
- ◆ I/O Interface  
2 x SATA with VIA VT6421A RAID 0,1 function support  
6 x USB 2.0  
1 x CF Type II  
3 x RS-232  
1 x RS-232/422/485  
1 x PS/2 for KB/MS  
1 x IDE
- ◆ Expansions  
1 x PCI-104 (PCI bus)
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/ 4-bit output by super I/O
- ◆ Infrared Interface  
By super I/O
- ◆ Super I/O  
W83627EHG
- ◆ Display Interface  
VGA integrated in Intel® 852GM 18-bit dual-channel LVDS
- ◆ Watchdog Timer  
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply  
12V only, AT/ATX support
- ◆ Power Consumption  
12V@ 1.6A  
(ULV Intel® Celeron® M 1G zero cache with DDR266MHz, 256MB RAM)  
12V@ 1.99A  
(Pentium® M 1.7GHz/L2-2M with DDR266MHz, 512MB RAM)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
165 mm x 115 mm
- ◆ Weight  
GW: 1100 g; NW: 250 g

## Packing List

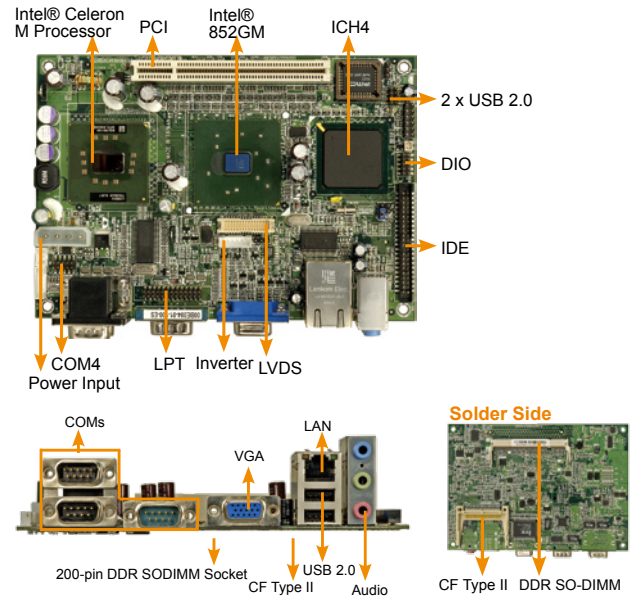
1 x NANO-8522 single board computer	
1 x IDE Flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	2 x RS-232 cable (P/N: 32200-000049-RS)
1 x PS2 KB/MS (P/N: 32000-133200-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
NANO-8522E-1GZ-R13	EPIC SBC with Intel® Celeron® M 1GHz zero cache processor on board with VGA/LVDS, LAN, SATA and Audio
NANO-8522E-600-R13	EPIC SBC Intel® Celeron® M 600MHz 512K cache processor on board with VGA/LVDS, LAN, SATA and Audio
NANO-8522G-R13	EPIC SBC Socket 479 Intel® Pentium® M / Celeron® M (Banias core/90nm) processor FSB 400 MHz, VGA/LVDS, GbE, SATA and Audio
CF-479B-RS	CPU cooler
32000-070301-RS	USB cable
32200-015100-RS	LPT cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32000-114000-RS	SATA 5V Power output Cable Kit for NANO series

# Enano-8523 One Key Recovery

ULV Intel® Celeron® M 1GHz Zero Cache with COM Ports, USB 2.0



## Features

1. EPIC form factor with Intel® Celeron® M processor
2. Preinstalled CPU heat sink for fan-less solution
3. Supports up to 1GB of 266/200 MHz single channel DDR memory
4. Supports dual independent displays, VGA display and 18-bit dual channel LVDS flat panel screens
5. Complete I/O support with 4 x COM ports, 1 x IDE device, 1 x CF type II, 1 x Intel® LAN and 4 x USB 2.0
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 479 Intel® Pentium® M, Celeron® M processor with 400 MHz FSB  
On board Intel® Celeron® M 1GHz zero cache processor
- ◆ System Chipset  
Intel® 852GM + ICH4
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
One 200-pin 266/200MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet  
10/100Mbps Intel® 82562ET Ethernet chipset
- ◆ I/O Interface  
4 x USB 2.0  
1 x LPT  
1 x CF Type II  
4 x RS-232  
1 x PS/2 for KB/MS  
1 x IDE
- ◆ Expansions  
1 x PCI
- ◆ Super I/O  
ITE IT8712F
- ◆ Audio  
AC'97 codec realtek ALC655
- ◆ Display Interface  
VGA integrated in Intel® 852GM 18-bit LCD dual-channel integrated in Intel® 852GM  
Support independent dual display
- ◆ Watchdog Timer  
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply  
ATX power only
- ◆ Power Consumption  
5V@3.66A, 12V@20mA  
(ULV Intel® Celeron® M 800 zero Cache with DDR 266 MHz, 256 MB RAM)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight:  
GW: 1100 g; NW: 950 g

## Packing List

1 x Enano-8523 single board computer	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x IDE Flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x Mini jumper pack	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
Enano-8523-1GZ-R10	EPIC SBC with ULV Intel® Celeron® M 1GHz Zero Cache CPU, VGA/LVDS, LAN, USB 2.0, Audio and COM
32000-070301-RS	USB cable
32200-015100-RS	LPT cable
32100-052100-RS	ATX power cable
32200-000049-RS	RS-232 cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

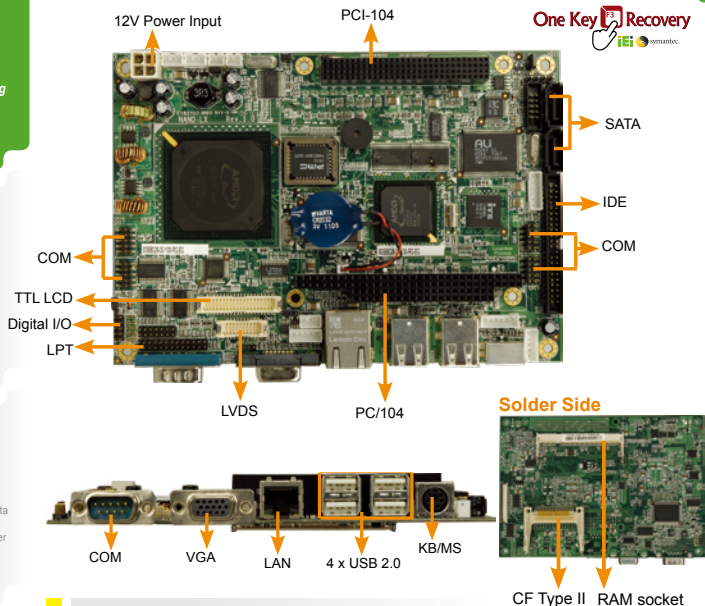
6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

# 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 2 x SATA, IDE, PC/104-Plus and 4 x 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
- ◆ Expansions  
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 input/ 4 output by super I/O
- ◆ Super I/O  
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 DDR 400MHz, 256MB RAM)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight  
GW: 950 g; NW: 350 g

## Packing List

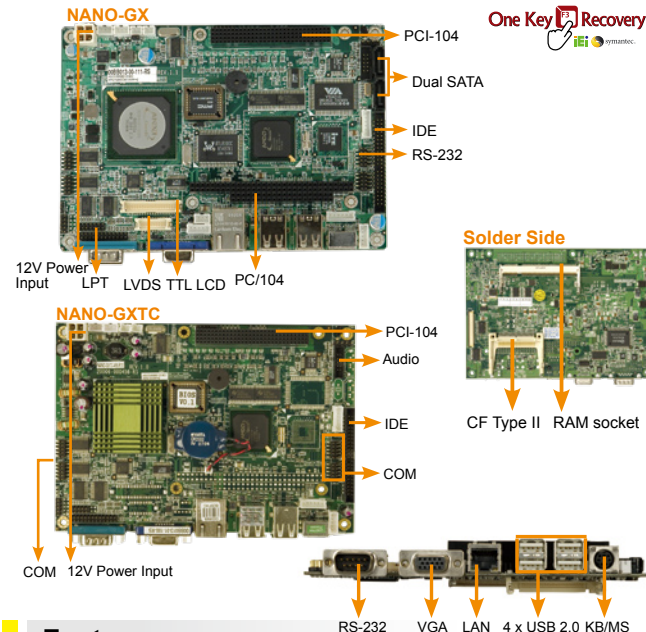
1 x NANO-LX Single board computer
1 x IDE Flat Cable 44p/44p (P/N: 32200-000009-RS)
1 x Audio Cable (P/N: 32000-072100-RS)
2 x SATA Cable (P/N: 32000-062800-RS)
1 x SATA Power Cable (P/N: 332102-000100-100/200-RS)
1 x Power Cable (P/N: 32100-087100-RS)
2 x RS-232 Port Cable (P/N: 32200-000049-RS)
1 x KB/MS Y Cable (P/N: 32000-133200-RS)
1 x Mini Jumper Pack
1 x Utility CD
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
32200-026500-RS	RS-232 and RS-422/485 cable

# epic NANO-GX/GXTC-R11

EPIC SBC with AMD® GX466 CPU, SATA, VGA/LVDS/TTL, LAN, USB 2.0 and Audio



## Features

1. EPIC form factor, AMD® GX466 processor embedded board
2. Supports up to 512MB of 266/200MHz SO-DIMM DDR memory
3. Two SATA channels with transfer rates up to 150MB/S on-board
4. Supports four USB 2.0 devices
5. PC/104-Plus expansion slot
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
On board AMD® Geode™ GX466 (333MHz) processor
- ◆ System Chipsets  
AMD® Geode® GX466 + CS5536
- ◆ BIOS  
AMI Flash BIOS
- ◆ System Memory  
One 200-pin 266/200MHz DDR SDRAM DIMM supported (system max. 512MB)
- ◆ Ethernet  
10/100Mbps RTL8100C Ethernet chipset
- ◆ I/O Interface  
6 x RS-232, 1 x RS-232/422/485 (NANO-GX only)  
1 x IDE  
4 x USB 2.0  
2 x SATA1 by VIA VT6421A & RAID 0,1 function support (NANO-GX only)  
1 x LPT  
1 x PS/2 for KB/MS
- ◆ Expansions  
NANO-GX: PC/104-Plus  
NANO-GXTC: PCI-104
- ◆ 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 input/ 4 output)
- ◆ Super I/O  
W83627EHG
- ◆ Display Interface  
VGA Integrated in the AMD Geode GX466  
24-bit TTL (NANO-GX only)  
18-bit single channel LVDS (NANO-GX only)
- ◆ Audio  
Realtek ALC203 with AC'97 Codec
- ◆ SSD  
CF Type II
- ◆ Watchdog Timer  
Software programmable 1-255 sec. system reset
- ◆ Power Supply  
12V only, AT/ATX support
- ◆ Power Consumption  
12V@0.83A (AMD Geode GX466, DDR 400MHz 512MB)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32 ~ 140° F)
- ◆ Humidity  
Operating: 5% ~ 95%, non-condensing
- ◆ Dimensions  
115 mm x 165 mm
- ◆ Weight  
GW: 950 g; NW: 350 g

## Packing List

1 x NANO-GX / GXTC Single board computer
1 x ATA33 Flat Cable (P/N: 32200-000009-RS)
2 x SATA Cable (P/N: 32000-062800-RS) (NANO-GX)
1 x SATA Power Cable (P/N: 32102-000100-100/200-RS) (NANO-GX)
2 x RS-232 Cable (P/N: 32200-000049-RS)
1 x KB/MS Y Cable (P/N: 32000-133200-RS)
1 x Audio Cable (P/N: 32000-072100-RS)
1 x Power Cable (P/N: 32100-087100-RS)
1 x Mini Jumper Pack
1 x Utility CD
1 x QIG

## Ordering Information

Part No.	Description
NANO-GX-466-R11	EPIC SBC with AMD® GX466 333MHz CPU, CRT/LCD, LAN, USB 2.0 and Audio
NANO-GXTC-466-R11	EPIC SBC with AMD GX466 333MHz CPU, VGA, LAN, COM, USB 2.0, PCI-104 Expansions slot and Audio
32200-015100-RS	LPT Cable
32200-026500-RS	RS-232/422/485 Cable (NANO-GX only)

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

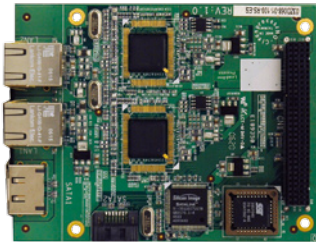
8 Power Supply Peripherals



# EPM-G2N/R

Dual GbE, e-SATA, SATA Function

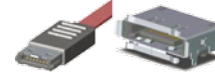
## IEI EPIC Add-on Cards for NANO Series CPU Board



Dual GbE selection



Low Profile design in NANO



e-SATA Connector

### LAN Options:

1. Dual Intel® 82541PI GbE
2. Dual Realtek RTL8110S GbE

### Key benefits of eSATA:

1. Up to 6 times faster than existing external storage solutions: USB 2.0, & 1394
2. Robust and user friendly external connection
3. High performance, cost effective expansions storage
4. Up to 2 meter shielded cables and connectors

### Features :

1. Low Profile design for EPIC form factor
2. Dual Intel® / Realtek GbE
3. e-SATA, SATA connectors by SiliconImage SII3512E On board BIOS

1  
Industrial Computing Solutions

2  
Embedded Computing Solutions

3  
Industrial Data Collector and Controller

4  
Video Capture Solutions

5  
I/O Communication Solutions

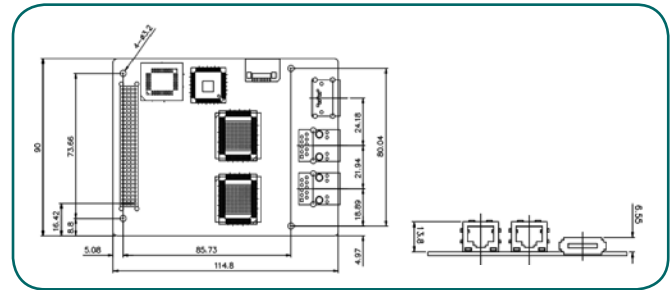
6  
Panel Solutions

7  
ORing Network Communication

8  
Power Supply/Peripherals

### Ordering Information

Part No.	Description
EPM-G2R-R10	PCI-104 Card with Dual Realtek RTL8110S GbE for EPIC
EPM-G2RS-R10	PCI-104 Card with Dual Realtek RTL8110S GbE and Dual SATA for EPIC
EPM-G2N-R10	PCI-104 Card with Dual Intel® 82541PI GbE for EPIC
EPM-G2NS-R10	PCI-104 Card with Dual Intel® 825541PI GbE and Dual SATA for EPIC



# EPM-1056

4-Channel 30 fps Video Capture Module



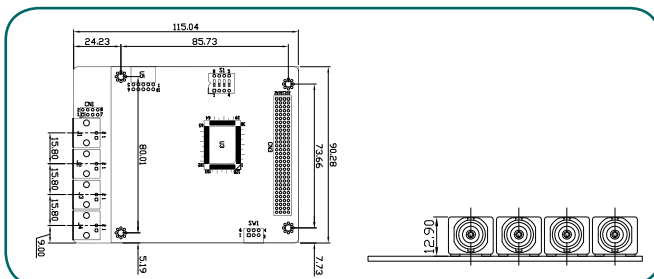
### Resolution

NTSC	PAL/SECAM
720x480	720x576
704x480	704x576
640x480	640x576
352x240	352x288
320x240	176x144
176x112	

### Specifications

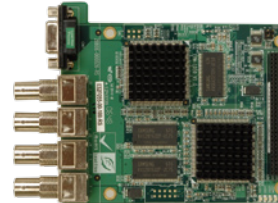
- ◆ Video Input  
4 Channels Composite Video  
NTSC / PAL / SECAM auto sensing
- ◆ Video Input Interface  
BNC connector
- ◆ PCI-104 interface  
PCI Rev. 2.1 compliant
- ◆ Card ID  
DIP switch selectable with LED
- ◆ Video Engine  
1 x Conexant Fusion 878A
- ◆ Frame Rate  
NTSC: up to 30 fps  
PAL/SECAM : up to 25 fps
- ◆ Audio Input  
None
- ◆ Software Device Driver  
Support Windows® 2000/XP and Linux Driver
- ◆ Temperature  
Operating: 0°C ~ 60°C ( 32 ~ 140°F)
- ◆ Humidity  
Operating: 5% ~95 non-condensing
- ◆ Dimensions  
115 mm x 90 mm
- ◆ Weight  
NW: 127g

### Dimensions (mm)



# EPM-1059

4-Channel Hardware MPEG-4 Video/Audio Capture Module



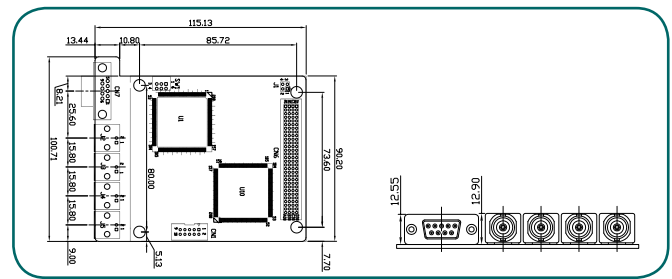
### Resolution & Frame rate

NTSC	PAL/SECAM
720x480@30fps	720x576@25fps
720x240@60fps	720x288@50fps
360x240@120fps	360x288@100fps

### Specifications

- ◆ Video Input  
4 Channels Composite Video  
NTSC / PAL auto sensing
- ◆ Video Input Interface  
BNC connector
- ◆ PCI-104 interface  
PCI Rev. 2.1 compliant
- ◆ Video Compression  
MPEG-4 Advanced Simple Profile@level 5 (ISO/IEC 14496-2)  
MPEG-2 Main Profile @Main level (ISO/IEC 13818-2)  
MPEG-1 (ISO/IEC 11172-2)  
H.263 (ITU-T recommendation H.263)
- ◆ Audio Input  
4 channels stereo audio
- ◆ Audio Input Interface  
DB-9 connector
- ◆ Audio Compression  
G.726 (ADPCM)
- ◆ Video Input Interface  
4 channels speech recording  
1 channel stereo/Mono Playback
- ◆ Software Device Driver  
Support Windows® 2000/XP and Provide SDK with C++ source code.
- ◆ Temperature  
Operating: 0°C ~ 60°C ( 32 ~ 140°F)
- ◆ Humidity  
Operating: 5% ~95 non-condensing
- ◆ Dimensions  
115 mm x 90 mm
- ◆ Weight  
NW: 166 g

### Dimensions (mm)



### Packing List

- 1 x EPM-1056 video capture module
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG

### Ordering Information

Part No.	Description
EPM-1056-R10	4 Channels Video Capture Module

### Packing List

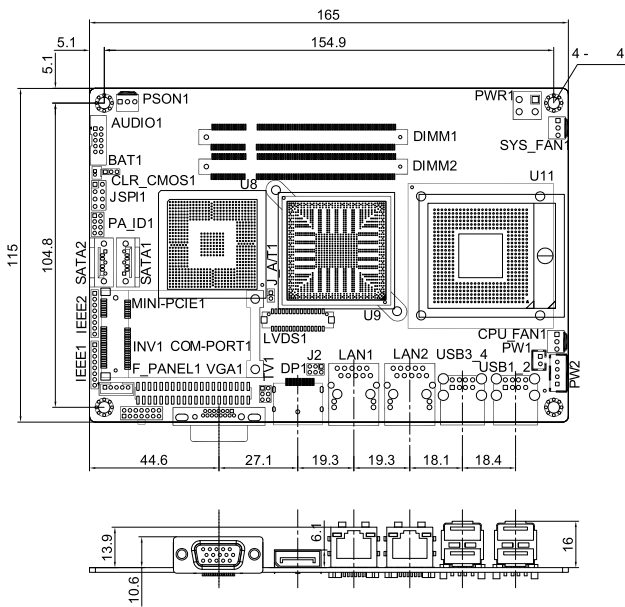
- 1 x EPM-1059 video/audio capture module
- 1 x Mini Jumper Pack
- 1 x DB-9 to RCA jack audio cable
- 1 x Utility CD
- 1 x QIG

### Ordering Information

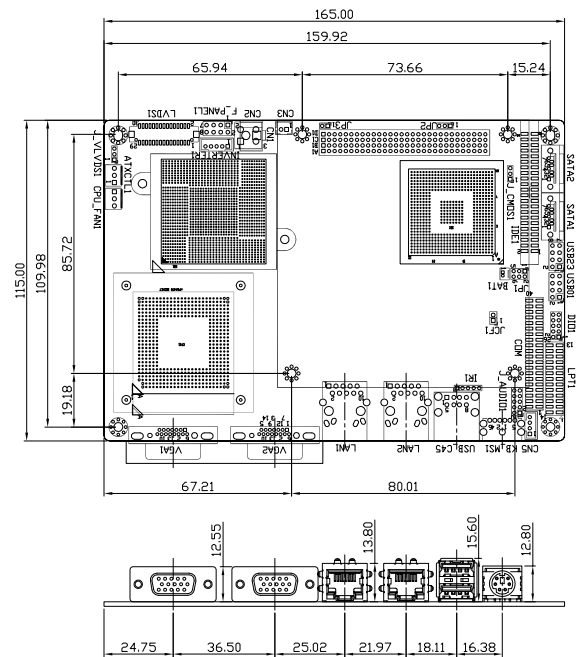
Part No.	Description
EPM-1059-R10	4 channels MPEG-4 Video/Audio Capture Module

# EPIC NANO Dimensions (Unit : mm)

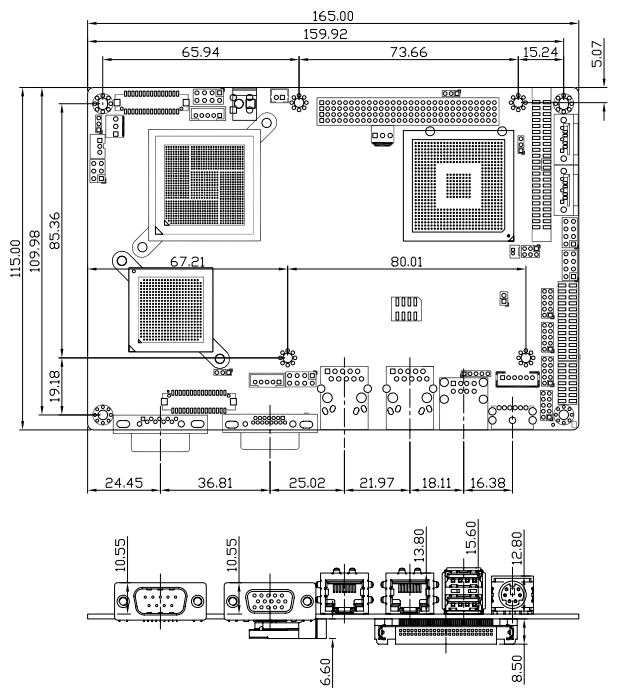
## NANO-GM45A



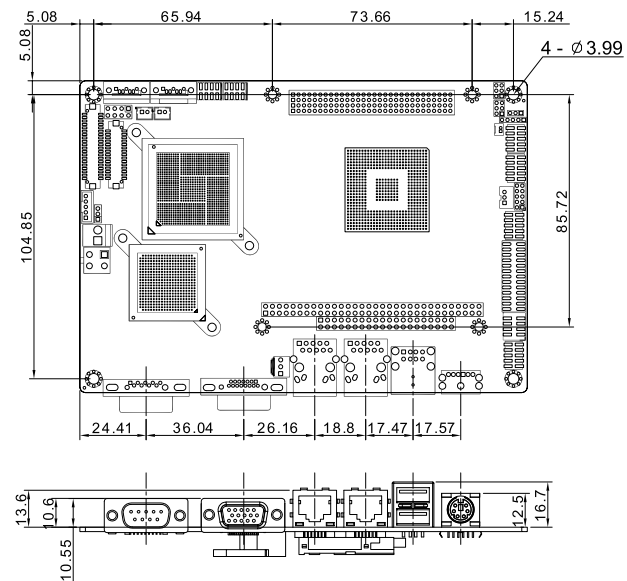
## NANO-9453/9452



## NANO-945GSE



## NANO-945GSE2



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

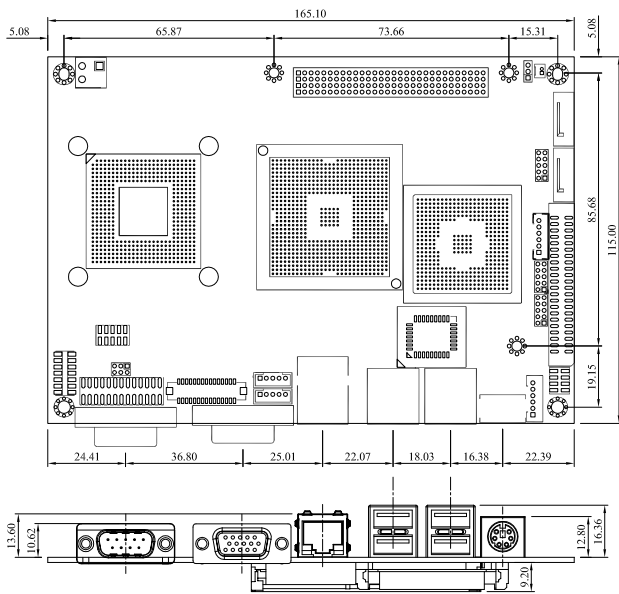
6 Panel Solutions

7 ORing Network Communication

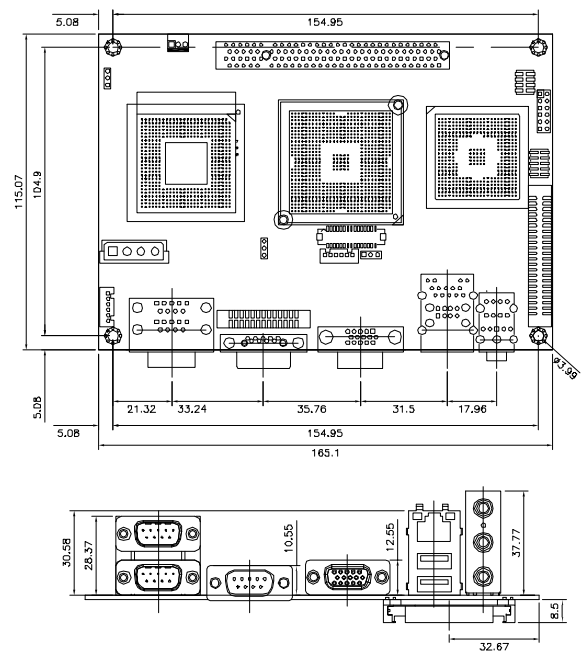
8 Power Supply Peripherals

# EPIC NANO Dimensions (Unit : mm)

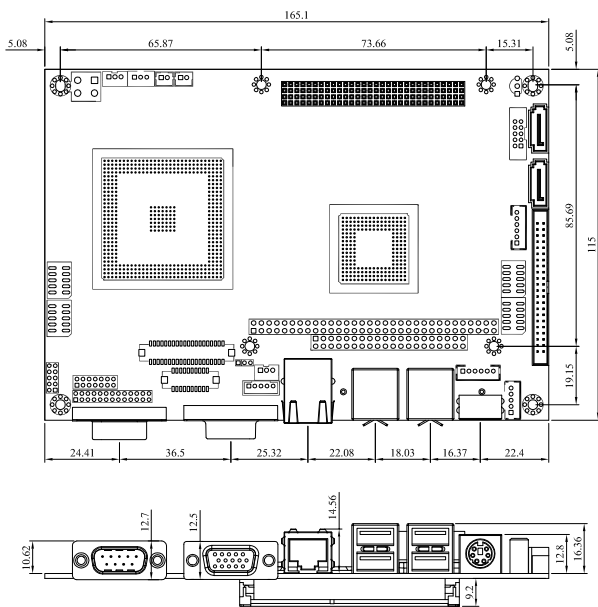
## NANO-8522



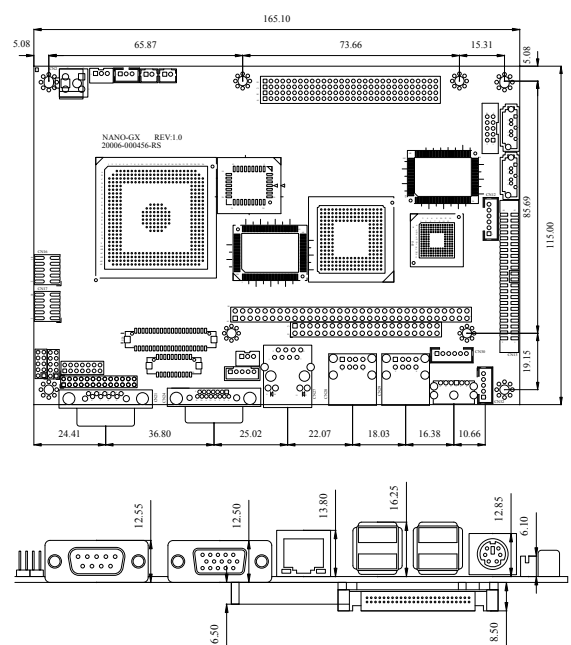
## Enano-8523



## NANO-LX



## NANO-GX/GXTC



1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# 3.5" WAFER Selection Guide



Model Name	WAFER-US15WP2	WAFER-US15WP	WAFER-945GSE3	WAFER-945GSE2	WAFER-945GSELVDS2	WAFER-945GSE
<b>CPU Socket</b>	On board	On board	On board	On board	On board	On board
<b>CPU Type</b>	Intel® Atom™ Processor Z530P 1.6GHz Intel® Atom™ Processor Z510P 1.1GHz	Intel® Atom™ Processor Z530P 1.6GHz Intel® Atom™ Processor Z510P 1.1GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz	Intel® Atom™ Processor N270 1.6GHz
<b>FSB</b>	400/533 MHz	400/533 MHz	533 MHz	533 MHz	533 MHz	533 MHz
<b>Chipset</b>	Intel® US15WP	Intel® US15WP	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M	Intel® 945GSE + ICH7M
<b>Memory</b>	One 200-pin, Max. 2 GB, 400/533 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533 MHz DDR2 SO-DIMM	On board 1GB DDR2 SDRAM	One 200-pin, Max. 2 GB, 400/533 MHz DDR2 SO-DIMM	One 200-pin, Max. 2 GB, 400/533 MHz DDR2 SO-DIMM
<b>Display Interface</b>	VGA support by Chronitel CH7317 LVDS1: 18/24-bit Dual-Channel LVDS support by SDVO through scaler chip Novatek 6866UFG LVDS2: 18/24-bit Single-channel LVDS intergrated in Intel® US15WP	18/24-bit single-channel LVDS integrated in the Intel® US15WP VGA support by Chronitel CH7317	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS 18-bit TTL (LVDS to TTL)	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS 24-bit dual-channel LVDS (CH7308)	VGA integrated in the Intel® 945GSE 18-bit dual-channel LVDS
<b>Ethernet</b>	Intel® 82574L PCIe GbE chipset	Intel® 82574L PCIe GbE chipset	One Realtek RTL8111CP PCIe GbE chipset	Dual Realtek RTL8111CP PCIe GbE chipsets	Realtek RTL8111CP PCIe GbE chipset	Dual Realtek RTL8111CP PCIe GbE chipsets
<b>I/O Interface</b>	3 x RS-232 1 x RS-232/422/485 6 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	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	3 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS	5 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS
<b>Drive Interface</b>	1x SATA 1 x CF Type I	1x IDE 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II	2 x SATA 1 x CF Type II
<b>Audio</b>	Realtek ALC888 with HD codec	Realtek ALC888 with HD codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)					
<b>Power Consumption</b>	12V@1.15A (Intel® Atom™ Z530P 1.6GHz, 1GB DDR2 533 MHz)	5V@1.48.A (Intel® Atom™ Z530P 1.6GHz, 1GB DDR2 533 MHz)	5V@2.54.A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@3.1A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@2.49A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)	5V@2.94A (Intel® Atom™ N270 1.6GHz, 2GB DDR2 533 MHz)
<b>Watchdog Timer</b>	Software programmable supports 1~255 sec. system reset					
<b>Operating Environment</b>	Temperation Range: 0°C ~ 60°C, Relative Humidity: 5% ~ 95% non-condensing	Temperation Range: 0°C ~ 60°C, Relative Humidity: 5% ~ 95% non-condensing	Temperation Range: 0°C ~ 60°C, Relative Humidity: 5% ~ 95% non-condensing	Temperation Range: 0°C ~ 60°C, -20°C ~ 70°C(W) Relative Humidity: 5% ~ 95% non-condensing	Temperation Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95% non-condensing	Temperation Range: 0°C ~ 60°C, -20°C ~ 70°C(W), -40°C ~ 85°C(W2) Relative Humidity: 5% ~ 95% non-condensing
<b>Expension Slot</b>	1 x PCIe Mini Card Slot	1 x PCIe Mini Card Slot	1x PC/104	1x PC/104	1 x PCIe Mini Card Slot	1 x PCIe Mini Card Slot
<b>Recommand Fancooler</b>	Encloure Heatsink	Heatsink	Heatsink	Heatsink	Encloure Heatsink	Encloure Heatsink

1  
Industrial Computing Solutions2  
Embedded Computing Solutions3  
Industrial Data Collector and Controller4  
Video Capture Solutions5  
I/O Communication Solutions6  
Panel Solutions7  
ORing Network Communication8  
Power Supply Peripherals

# 3.5" WAFER Selection Guide



Model Name	WAFER-9102	WAFER-8523	WAFER-8522	WAFER-LX-R12	WAFER-LX2-R11	WAFER-LX3-R20	WAFER-GX
<b>CPU Socket</b>	On-board / Socket 479	On board	On board	On board	On board	On board	On board
<b>CPU Type</b>	Intel® Pentium® M/ Celeron® M	Intel® ULV Celeron® M 600 MHz 512K cache/ 1 GHz zero cache	Intel® ULV Celeron® M 600 MHz 512K cache/ 1 GHz 512KB/ zero cache	AMD Geode™ LX800	AMD Geode™ LX800	AMD Geode™ LX800	AMD Geode™ GX466
<b>FSB</b>	400 MHz	400 MHz	400 MHz	N/A	N/A	N/A	N/A
<b>Chipset</b>	Intel® 910GML E + ICH6M	Intel® 852GM + ICH4	Intel® 852GM + ICH4	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ LX800 + AMD CS5536	AMD Geode™ GX466 + AMD CS5536
<b>Memory</b>	One 200-pin, Max. 2 GB, 400MHz DDR2 SO-DIMM	One 200-pin, Max. 1 GB, 266 MHz DDR SO-DIMM	1 x 200-pin, Max. 1 GB, 266 MHz DDR SO-DIMM	One 200-pin, Max. 1 GB, 333/400 MHz DDR SO-DIMM	One 200-pin, Max. 1 GB, 400 MHz DDR SO-DIMM	DDR 256 MB on board	1 x 200-pin, Max. 1 GB, 266 MHz DDR SO-DIMM
<b>Display Interface</b>	VGA integrated in the Intel® 910GML E 18/24-bit dual-channel LVDS	VGA Integrated in Intel® 852GM 18-bit dual-channel LVDS 18-bit TTL(LVDS to TTL)	VGA Integrated in Intel® 852GM 18-bit dual-channel LVDS	VGA integrated in the AMD Geode™ LX800 18-bit single channel LVDS (TTL to LVDS) 24-bit TTL	VGA integrated in the AMD Geode™ LX800 18-bit single channel LVDS 24-bit TTL	Integrated in AMD Geode™ LX800 18-bit single channel LVDS 24-bit TTL	VGA integrated in the AMD Geode™ GX466 18-bit single channel LVDS 24-bit TTL
<b>Ethernet</b>	Realtek RTL8111CP PCIe GbE chipset	Realtek RTL8110SC GbE chipset	Dual Realtek RTL8110SC GbE chipsets	Dual Realtek RTL8100CL GbE chipsets	Realtek RTL8100CL Ethernet chipset	Dual Intel 82551ER Ethernet chipset	Dual 10/100Mbps Realtek 8100C Ethernet chipsets
<b>I/O Interface</b>	1 x RS-232 1 x RS-232/422/485 6 x USB 2.0 1 x PS2 for KB/MS 1 x Infrared Interface	1 x RS-232 1 x RS-232/422/485 2 x USB 2.0 1 x PS/2 for KB/MS 1 x Infrared Interface	5 x RS-232 1 x RS-232/422/485 4 x USB 2.0 1 x PS/2 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	2 x RS-232 1 x RS-422/485 4 x USB 2.0 1 x LPT 1 x PS/2 for KB/MS
<b>Drive Interface</b>	1 x IDE 2 x SATA 1 x CF Type II	1 x SATA 1 x CF Type II	1 x 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	2 x SATA RAID 1 x IDE 1 x CF Type II
<b>Audio</b>	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC655 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec	Realtek ALC203 with AC'97 codec
<b>Digital I/O</b>	8-bit digital I/O (4 input/4 output)						
<b>Power Consumption</b>	5V@ 3.11A, 12V@0.37A (Intel® Celeron® M 373 1.0G with 1GB DDR2) 5V@2.94A, 12V@1.57A (Intel® Pentium® M 725 1.6G with 1GB DDR2)	5V@2.93A (Intel® Celeron® M 1GHz/ without L2 Cache, 512MB 400 MHz DDR) 5V@2.57A (Intel® Celeron® M 600MHz, 512MB 400 MHz DDR)	5V@3.43A, 12V@0.13A (Celeron® M 1GHz, 1GB 266 MHz DDR)	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)	5V@1.15A (AMD GeodeGX466 256MB 400 MHz DDR )
<b>Watchdog Timer</b>	Software programmable supports 1~255 sec. system reset						
<b>Operating Environment</b>	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) 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	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95% non-condensing
<b>Expansion Slot</b>	1 x PCI-104	1x PCI-104	1x PCI-104	1 x PC/104	1 x PC/104	1 x PC/104	1 x PC/104
<b>Recommad Fancooler</b>	Cooler/Heatsink	Heatsink	Heatsink	Heatsink	Heatsink	Heatsink	Heatsink

1

Industrial  
Computing  
Solutions

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector  
and Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

7

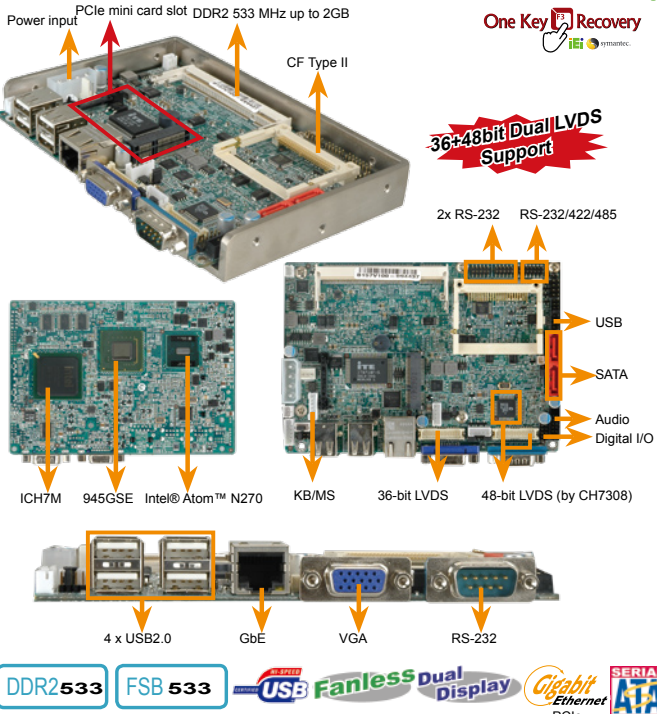
ORing  
Network  
Communication

8

Power Supply/  
Peripherals

# 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 system fan, AT/ATX support
- ◆ Super IO: ITE IT8718
- ◆ Watchdog Timer: Software programmable support 1~255 sec. System reset
- ◆ Temperature operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity operation: 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

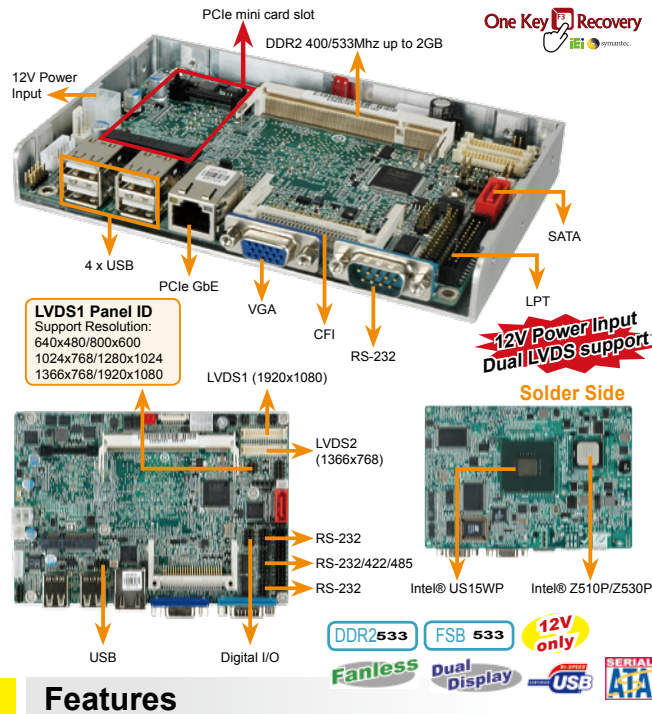
1 x WAFER-945GSELVDS2 single board computer	
2 x SATA cable (P/N: 32000-062800-RS)	1 x KB/MS cable (P/N: 32000-023800-RS)
1 x Audio cable (P/N: 32000-072100-RS)	2 x RS-232 cable (P/N: 32200-000049-RS)
1 x Enclosure heatsink	1 x Mini jumper pack
1 x Utility CD	1 x QIG (Quick Installation Guide)

## 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, CFII, USB, Audio, SATA
32000-070301-RS	Dual port USB cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32102-000100-100-RS	SATA 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™ Processor 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 graphic 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, 1 x CF Type I, 3 x RS232, 1 x LPT, 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: HD Codec with Realtek ALC888
- ◆ Display Interface: Intel® Graphics Media Accelerator 500 (GMA500) VGA by Chronitel CH7317A, LVDS1: 24-bit dual-channel LVDS support by SDVO through scaler chip Novatek 6866UF9, 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/DDR2 1GB
- ◆ Temperature operation: 0°C ~ 60°C (32°F~140°F)
- ◆ Humidity operation: 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 kit (P/N: 32000-114000-RS)	
2 x RS-232 cable (P/N: 32200-000049-RS)	1 x KB/MS cable (P/N: 32000-023800-RS)
1 x Power cable (P/N: 32100-087100-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x Enclosure heatsink	1 x mini jumper
1 x Utility CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
WAFER-US15WP2-Z530P-R10	3.5" SBC with Intel® Atom™ Z530P 1.6GHz, 24bit+48bit Dual LVDS, GbE, CFI, USB, SATA
WAFER-US15WP2-Z510P-R10	3.5" SBC with Intel® Atom™ Z510P 1.1GHz, 24bit+48bit Dual LVDS, GbE, CFI, USB, SATA
32000-070301-RS	Dual port USB cable
32000-015100-RS	LPT cable
32200-026500-RS	RS232/422/485 cable
32100-043403-RS	ATX power cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

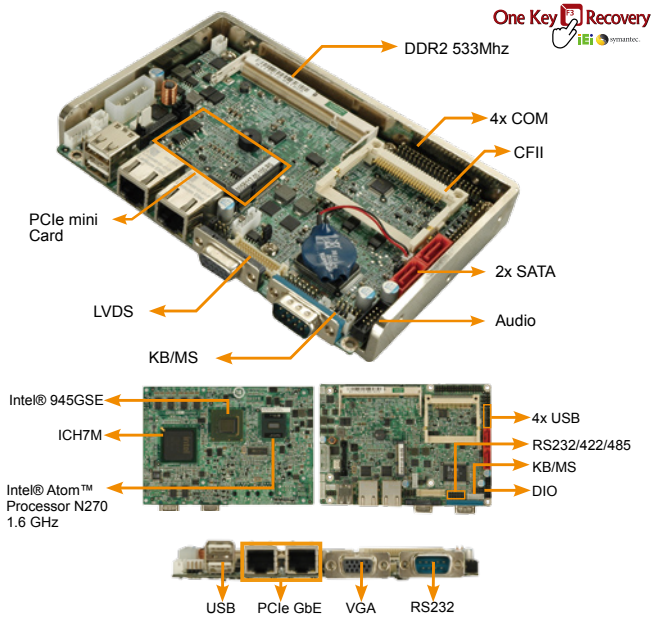
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# WAFER-945GSE

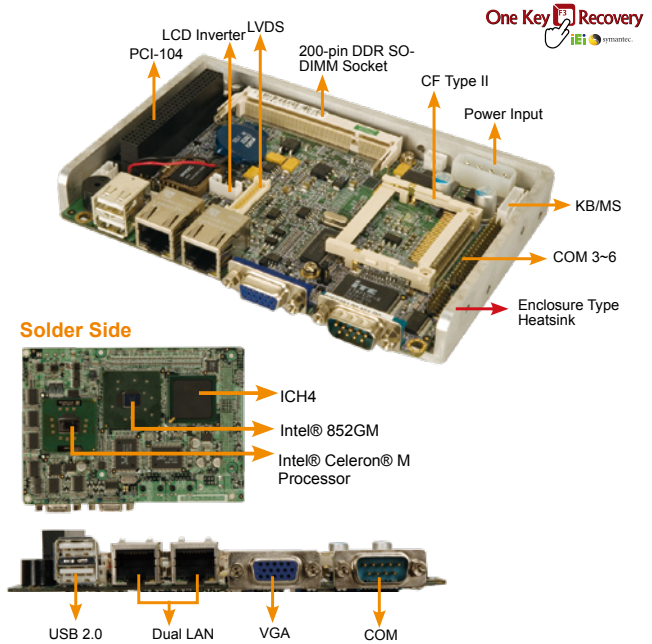
3.5" SBC with Intel® Atom™ Processor, VGA/LVDS/Dual PCIe GbE, CF type II, SATA



One Key Recovery

# WAFER-8522

3.5" SBC, Intel® Pentium® M/ Celeron® M CPU with VGA/LVDS, VGA, Dual GbE, USB 2.0 and Audio



One Key Recovery

Solder Side

## Features

1. Intel® Atom™ Processor N270 1.6 GHz CPU for ultra low voltage fan-less support
2. Support Dual display for VGA+LVDS
3. System memory support up to 2GB/DDR2 533 MHz
4. Support 6 x COM, 6 x USB2.0, 2 x SATA and CF typell 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 8111CP GbE chipset
- ◆ I/O Interface: 6 x USB 2.0, 2 x SATA, 5 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)
- ◆ Expansions: 1x PCI express mini card
- ◆ 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
- ◆ Power Supply: 5V only, 12V for LCD / System FAN, AT/ATX support
- ◆ Super I/O: ITE IT8718
- ◆ Watchdog Timer: software programmable 1-255 sec. by super I/O
- ◆ Temperature: Operation: 0°C ~ 60°C (WAFER-945GSE-N270-R10), Operation: -20°C ~ 70°C (WAFER-945GSE-N270W-R10), Operation: -40°C ~ 85°C (WAFER-945GSE-N270W2-R10)
- ◆ Humidity: Operation: 5% ~ 95 non-condensing
- ◆ 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)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	1 x KB/MS cable (P/N: 32000-023800-RS)
1 x Enclosure heatsink	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-945GSE-N270-R10	3.5" SBC with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, Dual GbE, CFII, USB, SATA
WAFER-945GSE-N270W-R10	3.5" SBC with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, Dual GbE, CFII, USB, SATA, -20~70°C
WAFER-945GSE-N270W2-R10	3.5" SBC with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, Dual GbE, CFII, USB, SATA, -40~85°C
32000-070301-RS	Dual port USB cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable
IO-KIT-4COM-R10	4 COM ports adapter board

## Features

1. 3.5" form factor with ULV Intel® Celeron® M CPU
2. CPU and chipset on the solder side easy for system thermal solution
3. DDR266MHz SO-DIMM up to 1GB
4. VGA, 18-bit dual-channel LVDS
5. CF Type II, USB 2.0, 6 x RS-232 and Audio
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On board Intel® Celeron® M 1GHz zero cache processor
- ◆ System Chipset: Intel® 852GM + ICH4
- ◆ BIOS: AMI BIOS
- ◆ System Memory: One 200-pin 266/200MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet: Dual Realtek RTL8110SC GbE chipset
- ◆ I/O Interface: 5 x RS-232, 1 x RS-232/422/485, 4 x USB 2.0, 1 x IDE, 1 x PS/2 for KB/MS
- ◆ Expansions: PCI-104 (PCI Bus)
- ◆ Super I/O: ITE IT8712F
- ◆ Display Interface: VGA integrated in Intel® 852GM, 18-bit dual-channel LVDS
- ◆ Audio: Realtek ALC655 with AC'97 codec
- ◆ SSD: CF Type II
- ◆ Watchdog Timer: Software programmable supports 1 ~255 sec. system reset
- ◆ Power Supply: AT/ATX support
- ◆ Power Consumption: 5V@3.43A, 12V@0.13A (Celeron® M 1GHz CPU with 1GB 266 MHz DDR)
- ◆ Temperature: Operating: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operating: 5% ~ 95% non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 700g / NW: 175g

## Packing List

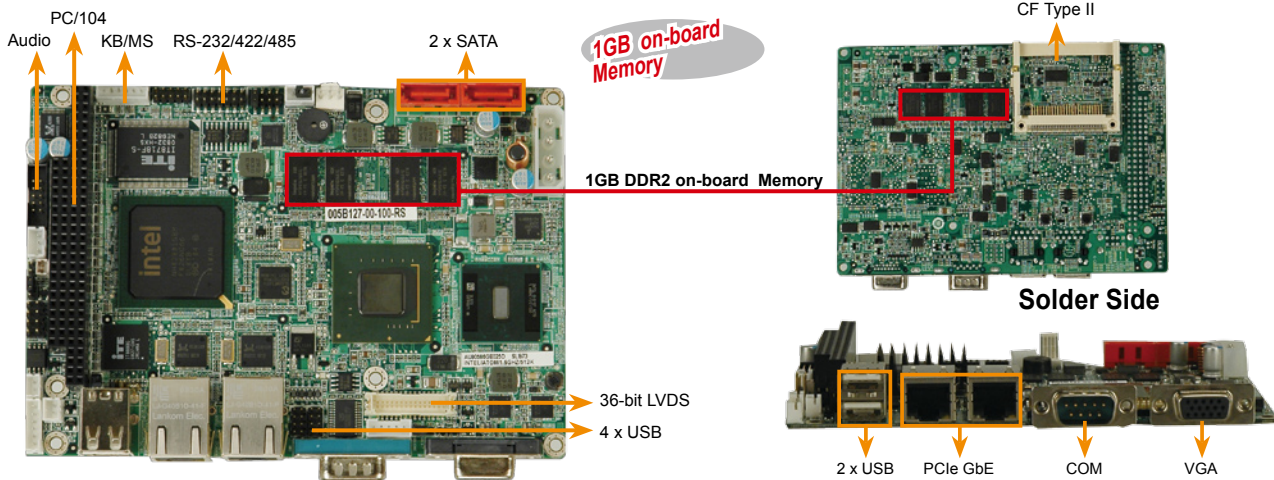
1 x WAFER-8522 single board computer	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x Quad RS-232 adapter cable (P/N: 32200-025401-RS)	
1 x PS/2 KB/MS cable (P/N: 32000-043301-RS)	
1 x Audio cable (P/N: 32000-072100-RS)	
1 x Enclosure heatsink	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-8522-600-R10	3.5" SBC with ULV Intel® Celeron® 600MHz 512KB Cache CPU with VGA/LVDS, Dual GbE, USB 2.0, and audio
WAFER-8522-1GZ-R10	3.5" SBC with ULV Intel® Celeron® 1GHz Zero Cache CPU with VGA/LVDS, Dual GbE, USB 2.0, and audio
19800-000110-RS	RS-232/422/485 cable
32000-070301-RS	USB cable
IO-KIT-4COM-R10	4 COM ports adapter board

# WAFER-945GSE2

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



## 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 RTL8111CP PCIe GbE controllers
- ◆ I/O Interface
 

6 x USB 2.0	2 x SATA
1 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  
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
- ◆ Watchdog Timer  
Software programmable support 1~255 sec. system reset
- ◆ 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
- ◆ Temperature  
Operation: 0°C ~ 60°C (WAFER-945GSE2-N270-R10)  
Operation: -20°C ~ 70°C (WAFER-945GSE2-N270W-R10)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Power Consumption  
5V@3.1A (Intel® Atom™ N270 1.6G with on-board 1GB DDR2)
- ◆ Dimensions  
146 mm x 102 mm
- ◆ Weight  
GW: 700g / NW 230g

## Packing List

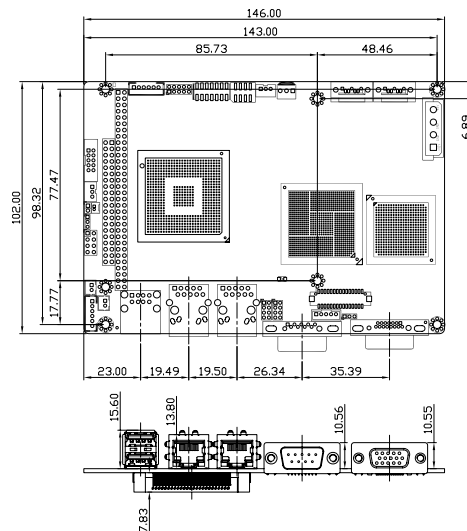
1 x WAFER-945GSE2 single board computer
2 x SATA cable (P/N: 32000-062800-RS)
1 x KB/MS cable (P/N: 32000-023800-RS)
1 x Audio cable (P/N: 32000-072100-RS)
4 x Plastic intermediate pole for PC/104
1 x Mini jumper pack
1 x Utility CD
1 x QIG (Quick Installation Guide)



## Features

- Intel® Atom™ N270 1.6GHz processor for ultra low voltage fan-less support
- Support VGA and LVDS for dual display
- On-board 1GB DDR2 memory
- Support two COM, six USB2.0, two SATA and CF type II socket
- Support PC/104 ISA expansion slot
- IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (mm)



## Ordering Information

Part No.	Description
WAFER-945GSE2-N270-R10	3.5" SBC with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, Dual GbE, CF II, USB, SATA, on board 1GB memory and PC/104
WAFER-945GSE2-N270W-R10	3.5" SBC with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, Dual GbE, CF II, USB, SATA, on board 1GB memory and PC/104, -20~70°C
32000-070301-RS	Dual port USB cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
32100-088600-RS	SATA power cable

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

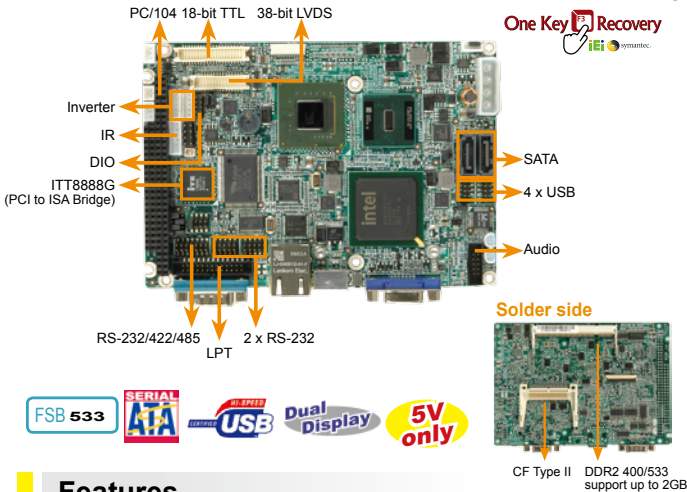
7  
ORing  
Network  
Communication

8  
Power Supply  
Peripherals



# WAFER-945GSE3

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



## Features

1. Intel® Atom™ N270 1.6GHz CPU for Ultra Low Voltage fan-less support
2. Support Dual display for VGA+LVDS, VGA+TTL
3. Support 4 x COM, 4 x USB2.0, 2 x SATA and CF Type II socket
4. Support PC/104 ISA expansion slot
5. Low Profile heatsink design
6. Rear I/O same as WAFER-9371A and WAFER-8523
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, 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 (Same as WAFER-9371A, WAFER-8523), 2 x SATA (COM1 with 5V/12V power select by jumper), 1 x RS-232/422/485 (COM2 with 5V/12V power select 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
- ◆ Temperature operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity operation: 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

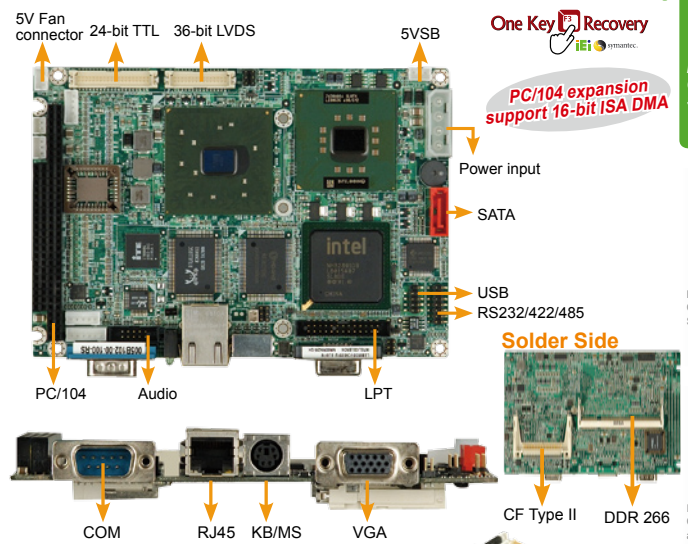
1 x WAFER-945GSE3 single board computer
2 x SATA cable (P/N: 32000-062800-RS)
1 x KB/MS cable (P/N: 32000-133200-RS)
1 x Audio cable (P/N: 32000-072100-RS)
1 x Dual USB cable (P/N: 32000-073400-RS)
2 x RS-232 cable (P/N: 32200-000049-RS)
1 x Mini Jumper Pack
1 x Utility CD
1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
WAFER-945GSE3-N270-R10	3.5" SBC with Intel® Atom™ N270 1.6G, VGA/LVDS/TTL, GbE, CFII, USB, SATA, LPT, 4COM and PC/104
32200-026500-RS	RS-232/422/485 Cable
32102-000100-100-RS	SATA Power Cable
32100-000100-200-RS	ATX Power Cable
32200-015100-RS	LPT Cable

# WAFER-8523

3.5" SBC with Intel® Celeron® M CPU with VGA/LVDS/TTL, GbE, USB 2.0 and Audio



## Features

1. 3.5" form factor with ULV Intel® Celeron® M processor
2. Low profile heat sink for fan-less solution
3. Supports up to 1GB of 266/200MHz single channel DDR memory
4. Support dual independent display for CRT LVDS, CRT+TTL
5. PC/104 support for 16-bit ISA DMA
6. Support 2x USB 2.0, 1x SATA, 1x CF
7. Rear I/O location same as WAFER-9371A
8. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU: On-board ULV Intel® Celeron® M processor with 400 MHz FSB
- ◆ System Chipset: Intel® 852GM + ICH4
- ◆ BIOS: AMI BIOS
- ◆ System Memory: One 200-pin 200/266MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet: One Realtek RTL8110SC GbE chipset
- ◆ I/O Interface: 1 x RS-232, 1 x RS-232/422/485, 2 x USB 2.0, 1 x SATA (JMICRON JM20330, IDE to SATA), 1 x LPT, 1 x PS/2 for KB/MS, 1 x CF Type II
- ◆ Expansions: PC/104 for 16-bit ISA DMA support
- ◆ Infrared interface: 1 x Infrared by pin header
- ◆ Super I/O: ITE IT8718
- ◆ Display Interface: VGA integrated in Intel® 852GM, 18-bit dual-channel LVDS, 24-bit TTL LCD supported
- ◆ Audio: Realtek ALC655 with AC'97 codec
- ◆ Watchdog Timer: Software programmable supports 1 ~ 255 sec. System reset
- ◆ Power Supply: 5V only or 5V/12V, AT/ATX support
- ◆ Power consumption: 5V@2.93A (Intel® Celeron® M 1GHz/ without L2 Cache, 512MB DDR400), 5V@2.57A (Intel® Celeron® M 600MHz, 512MB DDR400)
- ◆ Temperature: Operation: 0 ~ 60°C (32 ~ 140°F)
- ◆ Humidity: Operation: 5% ~ 95% non-condensing
- ◆ Dimensions: 146 mm x 102 mm
- ◆ Weight: GW: 670g / NW: 240g

## Packing List

1 x WAFER-8523 single board computer
1 x KB/MS Y cable (P/N: 32000-133200-RS)
1 x SATA cable (P/N: 32000-062800-RS)
1 x Mini jumper pack
1 x Utility CD
1 x Audio cable (P/N: 32000-072100-RS)
1 x USB cable (P/N: 32000-073400-RS)
1 x QIG

## Ordering Information

Part No.	Description
WAFER-8523-600-R10	3.5" SBC with ULV Intel® Celeron® 600MHz 512K cache CPU with VGA/LVDS/TTL, GbE, USB 2.0, SATA and Audio
WAFER-8523-1GZ-R10	3.5" SBC with ULV Intel® Celeron® 1GHz zero cache CPU with VGA/LVDS/TTL, LAN, USB 2.0, SATA and Audio
32200-015100-RS	LPT cable
32102-000100-100-RS	SATA Power cable
32102-000100-200-RS	ATX Power cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX Power Cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

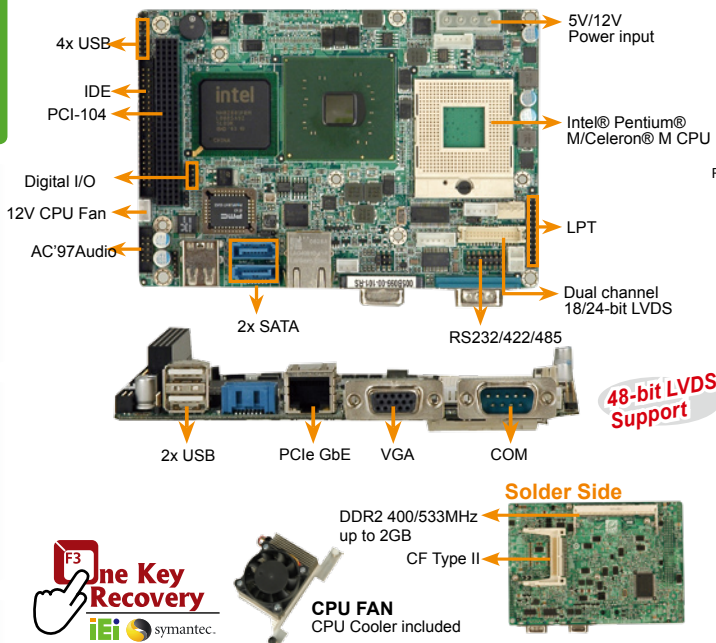
6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

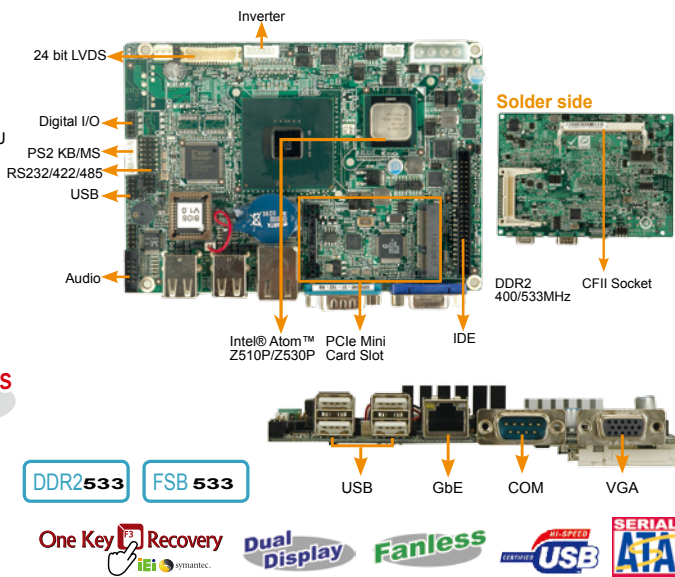
# WAFER-9102

3.5" SBC, Socket 479 Intel® Pentium® M / Celeron® M CPU, VGA/LVDS, LAN, USB 2.0 and Audio



# WAFER-US15WP

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



## Features

1. Socket 479 Intel® Pentium® M / Celeron® M Processor with 400MHz FSB CPU
2. DDR2 SODIMM 400 MHz support up to 2GB
3. Dual Channel 18/24-bit LVDS support
4. High performance Realtek PCI Express Gigabit Ethernet
5. Support 2 x SATA, 6 x USB 2.0
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 479 Intel® Pentium® M, Celeron® M processor with 400 MHz FSB on board Intel® Celeron® M 1GHz 512KB cache processor
- ◆ System Chipset  
Intel® 910GML + ICH6-M
- ◆ BIOS  
AMI Flash BIOS
- ◆ System Memory  
One 200-pin 400MHz DDR2 SDRAM SO-DIMM supported (system max.2GB)
- ◆ Ethernet  
Realtek RTL8111CP PCIe GbE Chipset
- ◆ I/O Interface  
1 x RS-232 1 x RS-232/422/485  
6 x USB 2.0 2 x SATA  
1 x IDE 1 x LPT  
1 x PS2 KB/MS 1 x CF type II
- ◆ Infrared Interface  
1 x Infrared Interface by pin header
- ◆ Expansions  
PCI-104 (PCI Bus)
- ◆ Super I/O  
ITE IT8718
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input / 4-bit output
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ Display Interface  
Intel® Graphics Media Accelerator 900  
VGA Integrated in Intel® 910GML  
18/24-bit Dual channel LVDS
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec.  
System reset
- ◆ Power Supply  
5V/12V, AT/ATX support
- ◆ Power Consumption  
5W@ 3.11A, 12V@0.37A  
(Intel® Celeron® M 373 1.0G with 1GB DDR2)  
5V@2.94A, 12V@1.57A  
(Intel® Pentium® M 725 1.6G with 1GB DDR2)
- ◆ Temperature  
Operation: 0°C~ 60°C (32°F~ 140°F)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions:  
146 mm x 102 mm
- ◆ Weight: GW: 700g NW 230g

## Packing List

1 x WAFER-9102 single board computer	2 x SATA cable (P/N: 32000-062800-RS)
1 x KB/MS cable (P/N: 32000-023800-RS)	1 x Audio cable (P/N: 32000-072100-RS)
1 x Cooler	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-9102-R10	3.5" SBC, Socket 479 with Intel® Pentium® M/Celeom® M processor with 400MHz FSB CPU, VGA/LVDS, PCIe GbE,USB2.0, SATA and Audio
WAFER-9102-1G512-R10	3.5" SBC, Socket 479 with Intel® Celeron® M 1GHz 152KB with VGA/LVDS, PCIe GbE,USB2.0, SATA and Audio
32000-070301-RS	Dual port USB cable
32200-026500-RS	RS-232/422/485 cable
32100-043403-RS	ATX power cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	
32000-015100-RS	LPT cable
32200-000009-RS	44-pin 2.5" IDE cable
32200-008800-RS	44-pin 2.5"/3.5" IDE cable

## 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 graphic 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 PCIe Intel® 82574L GbE Chipset
- ◆ I/O interface  
6 x USB 2.0 1 x IDE  
1 x RS232 1 x RS-232/422/485  
1 x PS/2 for KB/MS  
1 x CF Type II
- ◆ Expansions  
1 x PCIe mini card
- ◆ Super I/O  
ITE IT8718
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/4-bit output by super I/O
- ◆ Audio  
HD interface with Realtek ALC888 codec
- ◆ Display Interface  
Intel® Graphics Media Accelerator 500 (GMA500)  
VGA support by Chrontel CH7317A  
18/24 bit Single-channel LVDS intergrated 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)
- ◆ Temperature  
operation: 0 ~ 60°C ( 32 ~ 140°F)
- ◆ Humidity  
operation: 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 KB/MS cable (P/N: 32000-023800-RS)	
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	
1 x Utility 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,CFII, USB, Audio
WAFER-US15WP-Z510P-R10	3.5" SBC with Intel® Atom™ Z510P 1.1GHz, VGA/24 bit LVDS, GbE,CFII, USB, Audio
32000-070301-RS	Dual port USB cable
32200-026500-RS	RS-232/422/485 cable
32100-052100-RS	ATX power cable
ITS-44-R11	2.5" IDE to SATA module

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

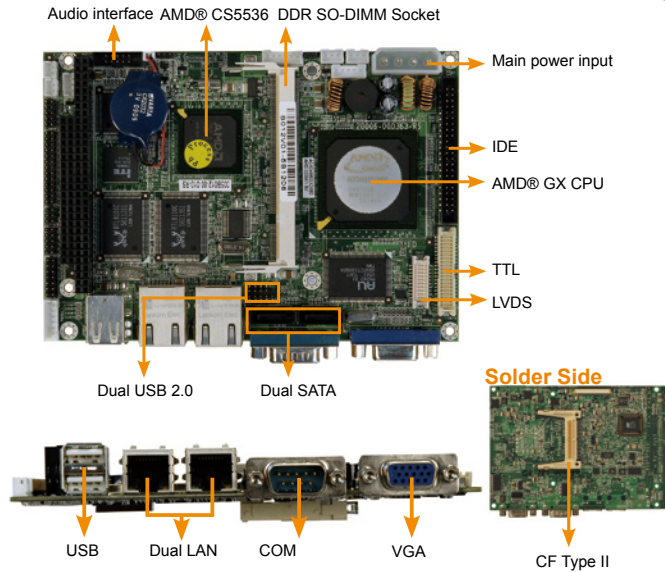
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# WAFER-GX

3.5" SBC, AMD® Geode™ LX800 Processor with VGA/LVDS/TTL, Dual LAN, USB 2.0, Audio and On-Board Memory



## Features

1. AMD® GX466 333MHz and RoHS compliant
2. DDR 266 MHz SO-DIMM socket support up to 512 MB
3. Dual 10/100Mbps RTL8100C Ethernet chipsets
4. SATA, USB 2.0, CF Type II, LPT and COM port
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
On board AMD® Geode™ GX466(333MHz) processor
- ◆ System Chipset  
AMD® Geode™ GX466 + CS5536
- ◆ BIOS  
Award BIOS
- ◆ System Memory  
One 200-pin 266/200 MHz DDR SDRAM DIMM supported (system max. 512MB)
- ◆ Ethernet  
10/100Mbps dual RTL8100C Ethernet chipsets
- ◆ I/O Interface  
4 x USB 2.0  
2 x SATA with ALI M5283 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
- ◆ Expansions  
1 x PC/104
- ◆ Digital I/O  
8-bit digital I/O, 4-bit input/ 4-bit output
- ◆ Super I/O  
W83627EHG
- ◆ Audio  
Realtek ALC203 with AC'97 Codec
- ◆ Display Interface  
VGA integrated in AMD® GX466  
24-bit TTL  
18-bit single channel LVDS
- ◆ Watchdog Timer  
Software programmable supports 1-255 sec. system reset
- ◆ Power Supply  
5V only, AT/ATX support
- ◆ Power Consumption  
5V@1.15A (AMD® GX466, DDR266MHz/ 256MB HCT11.2)
- ◆ Temperature  
Operating: 0° to 60°C
- ◆ Humidity  
Operating: 5% to 95%, non-condensing
- ◆ Dimensions  
146 mm x 102 mm
- ◆ Weight  
GW: 670 g / NW: 230 g

## Packing List

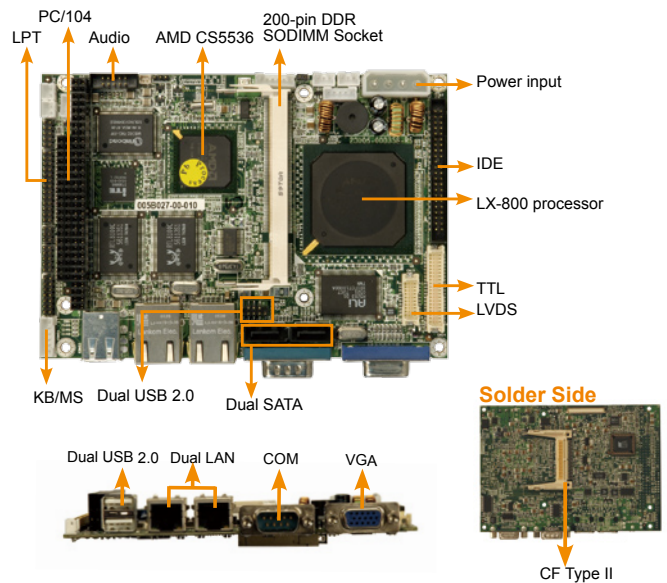
1 x WAFER-GX single board computer	
1 x ATA33 flat cable (P/N: 32200-000009-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x RS-232 cable (P/N: 32200-000049-RS)	
1 x RS-232/422/485 cable (P/N: 32200-026500-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x Mini jumper pack	
1 x Audio cable (P/N: 32000-072100-RS)	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-GX-466-R10	3.5" SBC with AMD® GX466 333 MHz CPU, VGA/LVDS/TTL, Dual LAN, USB 2.0 and Audio
32000-070301-RS	USB cable
32200-015100-RS	LPT cable

# WAFER-LX-R12

3.5" SBC with AMD® Geode LX800 onboard Processor VGA/ LVDS/ TTL, Dual LAN and SATA



## Features

1. 3.5" form factor, AMD® LX800 processor embedded board with RoHS compliant
2. DDR 333/400MHz SO-DIMM SDRAM up to 1GB
3. Complete I/O support with 2xSATA, IDE, CF Type II, PC/104, dual LAN and 4xUSB 2.0
4. 24-bit TTL/ 18-bit single channel LVDS
5. Value embedded applications with low power, 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
- ◆ Expansions  
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  
W83627EHG
- ◆ Audio  
Realtek ALC203 with AC'97 Codec
- ◆ Display  
VGA integrated in AMD® Geode LX800  
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)
- ◆ Temperature  
Operating: 0° to 60°C
- ◆ Humidity  
Operating: 5% to 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 Audio cable (P/N: 32000-072100-RS)	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
2 x SATA cable (P/N: 32000-062800-RS)	
1 x SATA power cable (P/N: 32102-000100-100/200-RS)	
1 x RS-232/422/485 cable (P/N: 32200-026500-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	
1 x USB cable (P/N: 32000-070301-RS)	
1 x Mini jumper pack	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-LX-800-R12	3.5" SBC with AMD® LX 800 Processor, Audio, VGA/LVDS/TTL, Dual LAN and SATA connectors
32200-015100-RS	LPT cable

1

Industrial Computing Solutions

2

Embedded Computing Solutions

3

Industrial Data Collector and Controller

4

Video Capture Solutions

5

I/O Communication Solutions

6

Panel Solutions

7

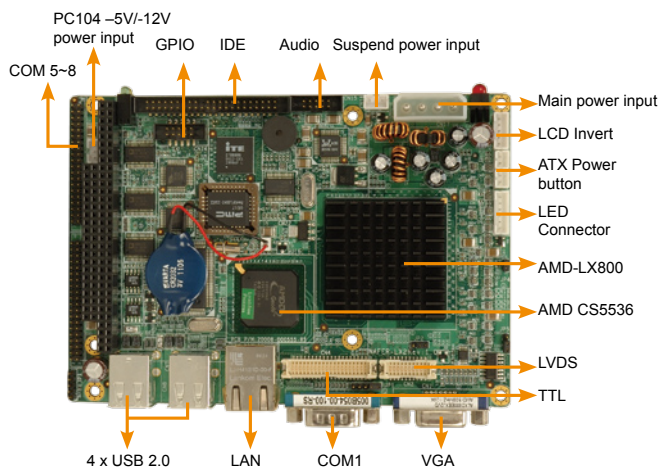
ORing Network Communication

8

Power Supply/Peripherals

# WAFER-LX2-R12

3.5" SBC with AMD® Geode LX800 Processor, 8 COM, DDR 400MHz, VGA/LVDS/TTL Display Interfaces, PC/104, 4 x USB 2.0 & Embedded OS Support



## Features

1. 3.5" form factor with AMD® Geode™ LX800 CPU
2. DDR 333/400MHz SO-DIMM Socket up to 1GB
3. VGA, 24-bit TTL, 18-bit LVDS display interface
4. 7 x RS-232 and 1 x 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™ LX800 (500MHz) processor
- ◆ System Chipsets  
AMD® Geode™ LX800 + CS5536
- ◆ BIOS  
Award BIOS
- ◆ System Memory  
One 200-pin 400/333MHz DDR SDRAM SO-DIMM Supported (System max. 1GB)
- ◆ Ethernet  
10/100Mbps Single RTL8100C Ethernet Chipsets
- ◆ I/O Interface  
7 x RS-232  
1 x RS-232/422/485  
4 x USB 2.0  
1 x IDE
- ◆ Expansions  
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 LX800  
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® LX800 with DDR 400MHz/ 1GB)
- ◆ Temperature  
Operating: 0°C ~ 60°C ( 32°F~ 140°F)
- ◆ Humidity  
Operating: 5% ~95% non-condensing
- ◆ Dimensions  
146 mm x 102 mm
- ◆ Weight  
GW: 670g / NW: 230g

## Packing List

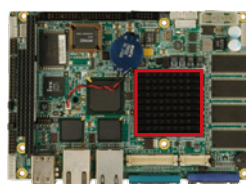
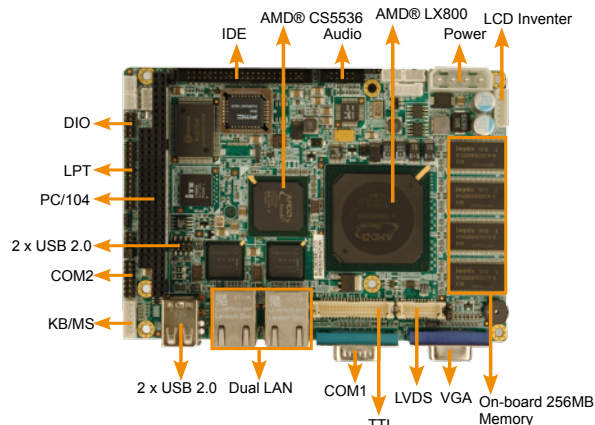
1 x WAFER-LX2 single board computer	
1 x Mini jumper pack	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
2 x Quad RS-232 adapter cable (P/N: 32200-025401-RS)	
1 x Audio cable (P/N: 32200-072100-RS)	
1 x Utility CD	1 x QIG

## Ordering Information

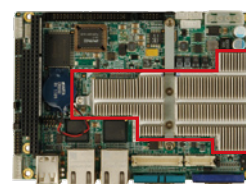
Part No.	Description
WAFER-LX2-800-R12	3.5" SBC with AMD Geode LX800 Processor, Audio, VGA/LVDS, TTL/LVDS, 4 x USB 2.0, 7 x RS-232 and 1 x RS-232/422/485
IO-KIT-4COM-R10	4 COM ports adapter board

# WAFER-LX3-R20

3.5" SBC, AMD® Geode™ LX800 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™ LX800 (500MHz) CPU
2. On board memory support up to 512MB
3. VGA, 24-bit TTL, 18-bit LVDS display interface
4. 2 x RS-232 and 1 x 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™ LX800 + CS5536
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
On board Memory support 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™ LX800  
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™ LX800 (500MHz) CPU with 256MB on-board memory)
- ◆ Temperature  
0°C ~+60°C for WAFER-LX3-800  
-40°C ~+85°C for WAFER-LX3-800W
- ◆ Humidity  
Operating: 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: 32200-026500-RS)	
1 x KB/MS Y cable (P/N: 32000-023800-RS)	1 x USB cable (P/N: 32000-070301-RS)
1 x Audio cable (P/N: 32000-072100-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
WAFER-LX3-800-256MB-R20	3.5" SBC with AMD® Geode™ LX800 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™ LX800 (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

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

## Enclosure Heatsink

Old Way

### OLD STYLE

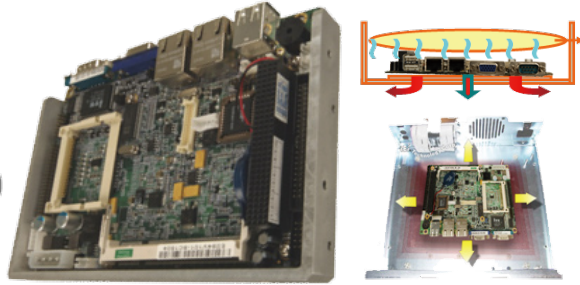
Heat from CPU board is circling in the system. Accumulation heat occurs the unstable system !!!

New Way

### UPGRADE NOW!

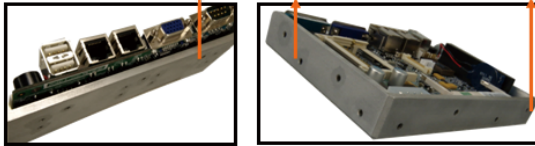
Most of heat will be spread out by whole system surface !!!

iEi Technology Corp.



IEI Enclosure Type Heatsink design, the heatsink housing is included in the standard packing list.

Flexibility screw mounting holes for all directional thermal solutions.



## WAFFER Dimensions (Unit : mm)

### WAFFER-945GSE

### WAFFER-8522

### WAFFER-9102

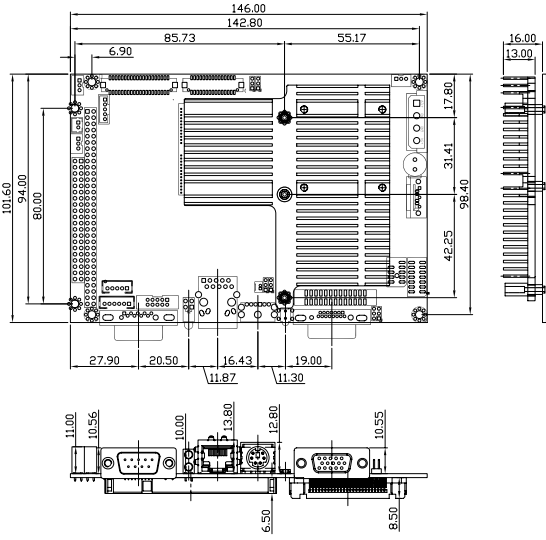
### WAFFER-945GSELVDS2

- 1 Industrial Computing Solutions
- 2 Embedded Computing Solutions
- 3 Industrial Data Collector and Controller
- 4 Video Capture Solutions
- 5 I/O Communication Solutions
- 6 Panel Solutions
- 7 ORing Network Communication
- 8 Power Supply/Peripherals

# WAFER Dimensions (Unit : mm)

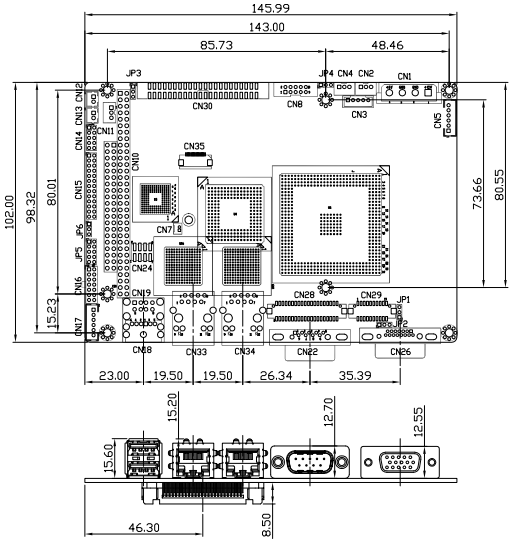
1  
Industrial Computing Solutions

## WAFER-8523



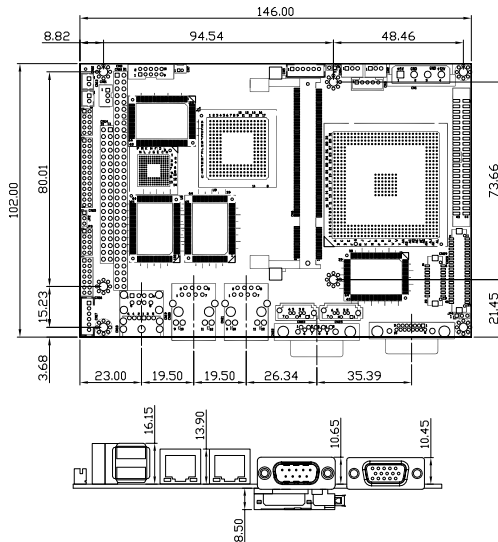
2  
Embedded Computing Solutions

## WAFER-LX3



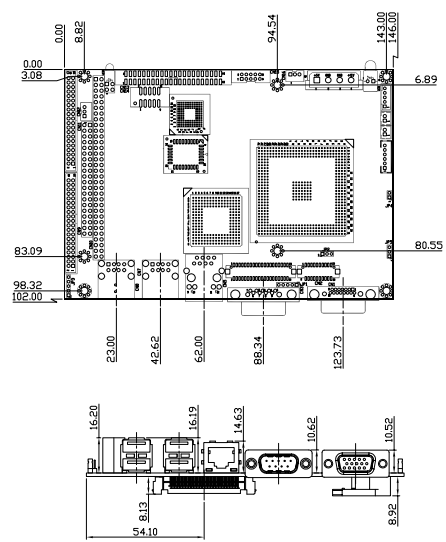
3  
Industrial Data Collector and Controller

## WAFER-LX



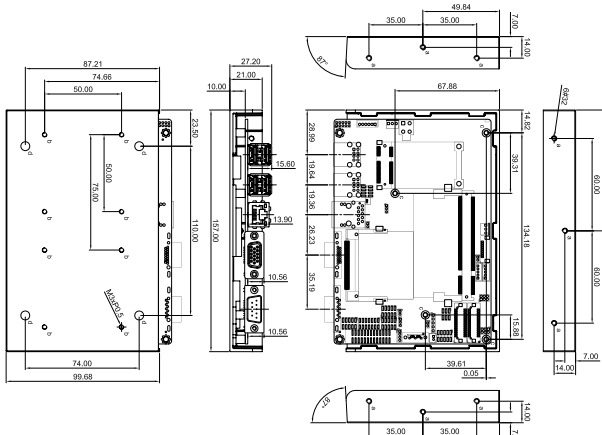
4  
Video Capture Solutions

## WAFER-LX2



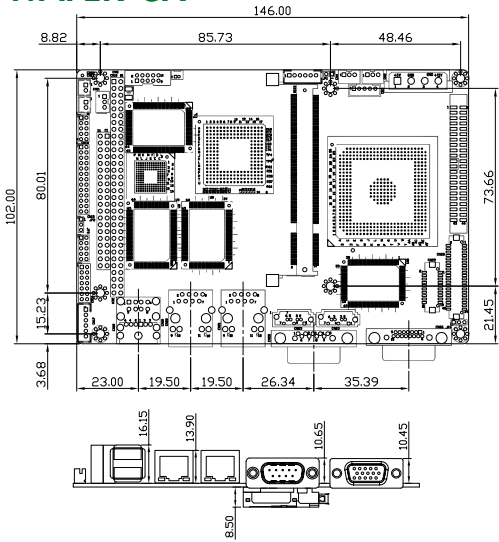
5  
I/O Communication Solutions

## WAFER-US15WP2



6  
Panel Solutions

## WAFER-GX



7  
ORing Network Communication

8  
Power Supply Peripherals

# ETX IEM Series

**ETX, Embedded Technology Extended, is a new architecture for industrial applications. It fulfills the requirements for embedded technology by a compact module of most PC functions:**

ETX divides a complete motherboard system into two parts physically:

- ETX MODULE - as small as 4.5 x 4 size, carries CPU system and core ASICs
- BASEBOARD including all I/O connectors, plus some supplementary functions.

## IEM Advantages

ETX is an industry standard System-On-Module (SOM) technology. By choosing integrated CPU and memory module and customized baseboard with I/O functionality, embedded product solutions could be incredibly efficiently and economically.

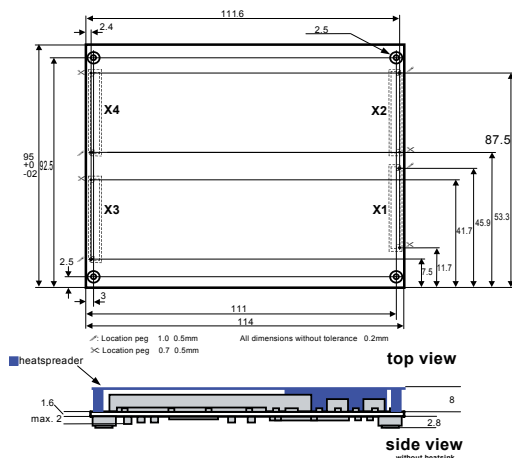
### Benefits

- Time Advantage !
- Complete PC functionality with x86 architecture
- Cost saving in engineering and developing
- Time to market in software designing and scheduling
- Design Advantage !
- Customize designing in reliable connectors
- Easy upgrading with no redesign needed in the event of component end of life
- Extremely slim low power fanless design
- Installation/Size Advantage !
- Gas-proof connectors and mounting holes enable rugged applications.

## Fitting Solution for Embedded Application

It occurs a lot that a CPU board doesn't meet industrial PC- based applications, due to unsuitable board size, improper connectors location or missing functions. The only alternative solution was to develop a completely new design, which is expensive and very time-consuming. Now, IEI presents to you FSEA (Fitting Solution for Embedded Application) which is based on the open standard of ETX technology and designed by Kontron AG. It occurs a lot that a CPU board doesn't meet industrial PC- based applications, due to unsuitable board size, improper connectors location or missing functions. The only alternative solution was to develop a completely new design, which is expensive and very time-consuming. Now, IEI presents to you FSEA (Fitting Solution for Embedded Application) which is based on the open standard of ETX technology and designed by Kontron AG.

### Dimensions (mm)



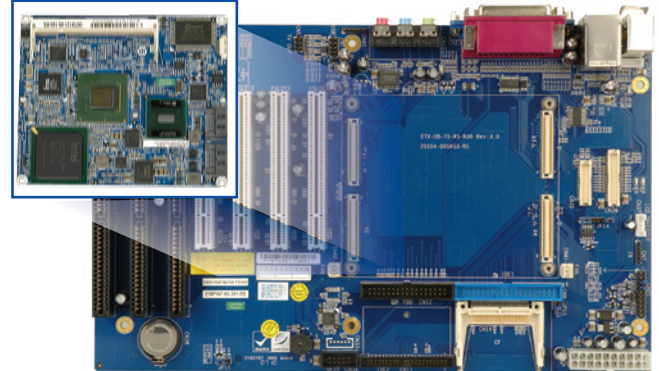
## Basic Concept of IEI FSEA

ETX modules are scaleable and interchangeable. Thus with a single baseboard, several products can be launched in the same time by the aid of a wide choice of CPU modules.

**M (ETX CPU Module) + N (ETX Baseboard) → M x N Products**

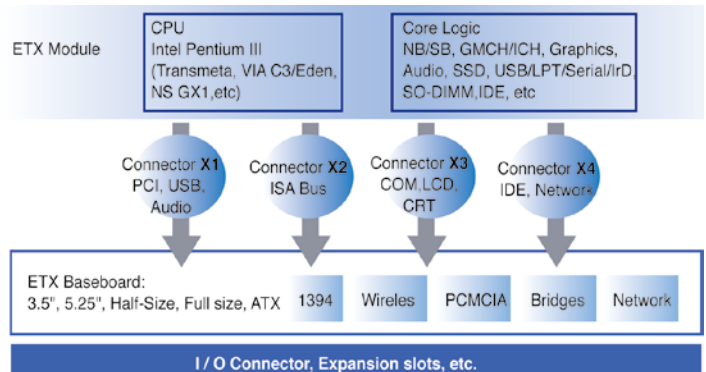
In order to enhance the reliability and flexibility of ETX solutions, IEI moves the Ethernet interface from the CPU module to the baseboard. Testing performance reveals that IEI's innovative design produces outstanding results.

### ETX CPU MODULE



ETX Baseboard

## ETX Module Architecture



1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 Communication Solutions

6 Applications

7 ORing Network Communication

8 Power Supply/Peripherals

# IEM-945GSE

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

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

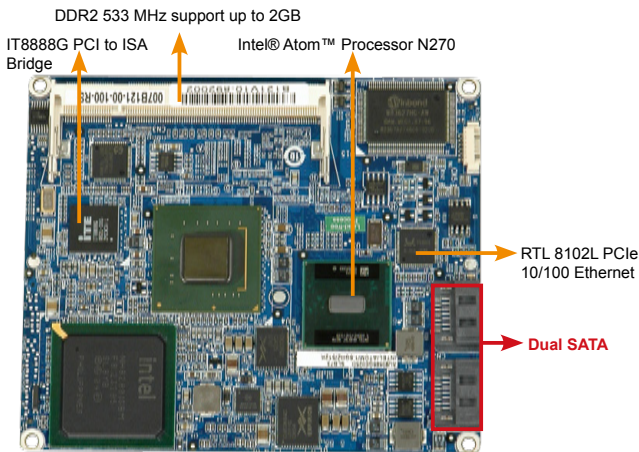
4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

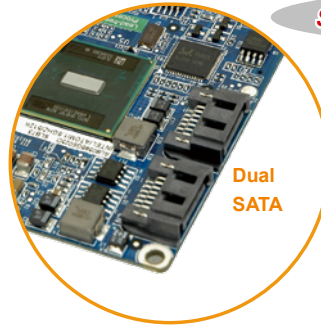
6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply  
Peripherals



ETX 3.0



Dual  
SATA

Ship with Heat spreader only

IEM-945GSE ETX 3.0 Module with  
IEM-DB-7S ETX Base board

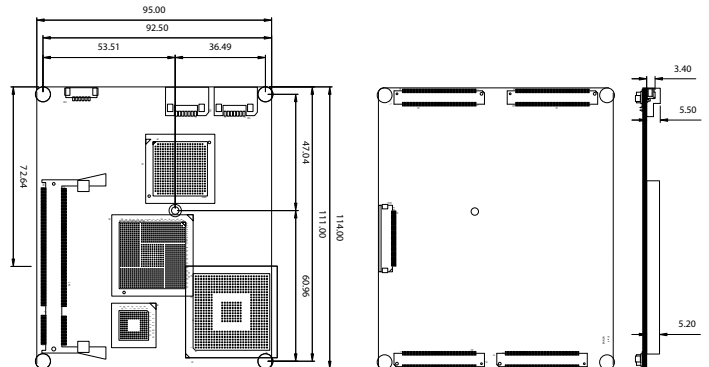


One Key Recovery  
iEi symantec.

## Features

1. ETX 3.0 CPU module with on board dual SATA-150 ports
2. Support 4x PCI, 1x ISA slot for expansion
3. Support dual display for VGA + LVDS
4. Support 4 x USB2.0, 2 x SATA, 1 x IDE Interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Mechanical drawing



## Specifications

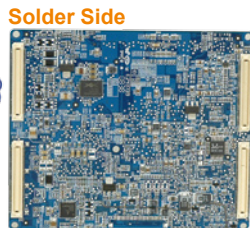
- ◆ CPU  
Intel® Atom™ Processor N270 1.6 GHz with 533 MHz FSB
- ◆ System Chipset  
Intel® 945GSE + Intel® 82801GBM/ICH7M
- ◆ BIOS  
AMI
- ◆ System Memory  
One 200-pin 533/400MHz DDR2 SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
One 10/100Mbps realtek RTL8102E Ethernet chipset (PCIe Interface)
- ◆ Super I/O  
ITE IT8718
- ◆ I/O Interface  
4 x USB 2.0 (to Base Board)  
2 x SATA (on CPU module)  
1 x IDE (to base board)  
1 x LPT (to base board)  
2 x RS-232 (to base board)  
1 x PS2 KB/MS (to base board)
- ◆ Expansions  
4 x PCI, 32 bit / 33 MHz PCI bus to base board  
ISA support by ITE IT8888G
- ◆ Display Interface  
VGA/TV-Out Integrated in Intel® 945GSE signal (to base board)  
18-bit Dual channel LVDS Signal (to base board)
- ◆ 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)
- ◆ Temperature  
Operation: 0°C ~ 60°C (IEM-945GSE-N270-R10)  
Operation: -40°C ~ 85°C (IEM-945GSE-N270W2-R10)  
Operation: -20°C ~ 70°C (IEM-945GSE-N270W-R10)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
115 mm x 95 mm
- ◆ Weight  
GW: 600g / NW 250g

## Packing List

1 x IEM-945GSE single board computer
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, -40~85°C
IEM-945GSE-N270W-R10	ETX 3.0 module with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, LAN, USB, SATA and audio, -20~70°C
IEM-DB-7S-RS-R30	ATX size 7 slots ETX baseboard
34000-000180-RS	Heatsink for ETX 3.0 module





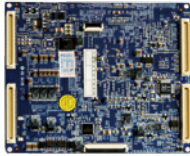
# IEM-9452

ETX CPU Module with Intel® Core™2 Duo L7400 or Celeron® M 423, VGA, LVDS, PCIe GbE, USB 2.0 and SATA

ETX 3.0



Solder Side



One Key Recovery

FSB 667

DDR2 667

Gigabit Ethernet

SERIAL ATA

HI-SPEED USB

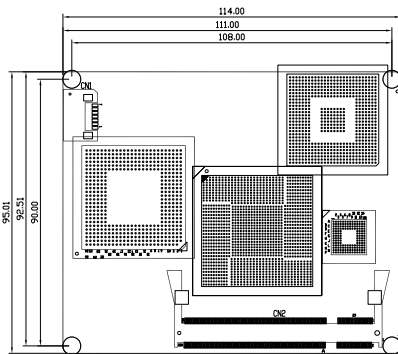
## Features

1. Intel® Core™2 Duo CPU with 667 MHz FSB
2. Single channel DDR2 400/533/667 MHz up to 2GB
3. Support VGA, 18/24-bit dual-channel LVDS with dual display support
4. 2 x RS-232, 4 x USB 2.0 and 1 x SATA
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
On board Intel® Core™2 Duo L7400 1.5GHz 4MB L2 cache processor with 667 MHz FSB
- ◆ System Chipset  
Intel® 945GME + ICH7-M
- ◆ BIOS  
AMI Flash BIOS
- ◆ System Memory  
One 200-pin 667/533/400 MHz DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- ◆ Ethernet  
10/100Mbps Intel® 82562ET Ethernet chipset
- ◆ I/O Interface  
2 x RS-232  
4 x USB 2.0  
1 x IDE  
1 x LPT/FDD  
1 x KB/MS  
above I/O via IEM-DB-7S  
1 x SATA connector on board
- ◆ Expansions  
4 x PCI  
1 x ISA
- ◆ 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  
W83627HG
- ◆ Display Interface  
VGA output Integrated in Intel® 945GME 18/24-bit Dual-channel LVDS
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ SSD  
CF Type II
- ◆ Watchdog Timer  
Software programmable supports 1 ~ 255 sec. system reset
- ◆ Power Supply  
5V only, AT/ATX Power
- ◆ Power Consumption  
5V@3.81A, 12V@2.42A (Intel® Core™2 Duo L7400 1.5GHz/667 MHz CPU with 512 MB DDR2 667 MHz)
- ◆ Temperature  
Operating: 0°C ~ 60°C ( 32°F ~ 140°F)
- ◆ Humidity:  
Operating: 5% ~95%non-condensing
- ◆ Dimensions:  
95 mm x 114 mm
- ◆ Weight:  
GW: 850 g / NW: 290 g

## Dimensions (mm)



## Packing List

1 x IEM-9452 single board computer	1 x Utility CD
1 x Heatspreader (P/N: 34000-000183-RS)	1 x QIG (Quick Installation Guide)
1 x Cooler (P/N: 19100-000074-RS)	

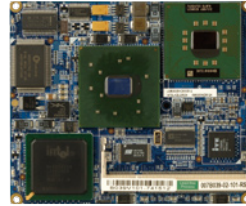
## Ordering Information

Part No.	Description
IEM-9452-L7400-R10	ETX CPU module with Intel® Core™2 Duo L7400, VGA, LVDS PCIe GbE, USB 2.0 and SATA

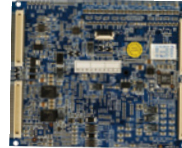
# IEM-8522

ETX CPU Module with Intel® Pentium® M/ Celeron® M CPU , USB 2.0, LAN and Audio

ETX 2.8



Solder Side



One Key Recovery

FSB 400

DDR266

HI-SPEED USB

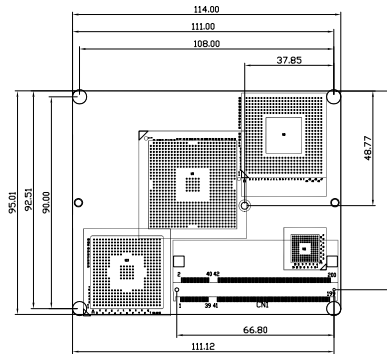
## Features

1. ETX form factor for flexible base board design
2. Intel® Pentium® M/ Celeron® M CPU FSB 400 MHz on-board
3. Single channel DDR200/266 MHz up to 1GB
4. Support VGA, 18-bit dual-channel LVDS
5. 2 x RS-232, 4 x USB 2.0, LAN, Audio ready for baseboard
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 479 Intel® Pentium® M, Celeron® M processor with 400MHz FSB 1GHz zero cache processor
- ◆ System Chipset  
Intel® 852GM + ICH4
- ◆ BIOS  
AMI
- ◆ System Memory  
One 200-pin 266/200MHz DDR SDRAM SO-DIMM supported (system max. 1GB)
- ◆ Ethernet  
10/100Mbps Intel® 82562ET Ethernet chipset
- ◆ I/O Interface  
2 x RS-232  
1 x LPT/FDD  
4 x USB 2.0  
2 x IDE  
1 x KB/MS
- ◆ Expansions  
4 x PCI bus master  
1 x ISA
- ◆ Infrared Interface  
1 x Infrared Interface by pin header
- ◆ Super I/O  
Winbond W83627HG
- ◆ Display Interface  
VGA integrated in Intel® 852GM 18-bit dual-channel LVDS
- ◆ Audio  
Realtek ALC655 with AC'97 codec
- ◆ SSD  
CF Type II
- ◆ Watchdog Timer  
Software programmable supports 1 ~ 255 sec. system reset
- ◆ Power Supply  
AT/ATX support
- ◆ Power Consumption  
5V@3.39A (Celeron® M 1.0GHz, zero cache /1GB DDR 333MHz)  
5V@2.79A(Celeron® M 600MHz,512MB Cache/ 1GB DDR 333MHz)
- ◆ Temperature  
Operating: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operating: 5% ~95% non-condensing
- ◆ Dimensions  
95 mm x 114 mm
- ◆ Weight  
GW: 650 g / NW: 90 g

## Dimensions (mm)



## Packing List

1 x IEM-8522 single board computer	
1 x Cooler (P/N: 19100-000074-RS for IEM-8522E only)	
1 x Heat sink (P/N: 34000-000180-RS for IEM-8522-1GZ/600)	
1 x Heatspreader (P/N: 34000-000181-RS for IEM-8522-1GZ/600) (P/N: 34000-000182-RS for IEM-8522E )	
1 x Utility CD	1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
IEM-8522E-R10	Socket 479 Intel® Pentium® M/ Celeron® M ETX CPU module with LAN function
IEM-8522-1GZ-R10	ULV Intel® Celeron® M 1GHz Zero cache ETX CPU module with LAN function

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

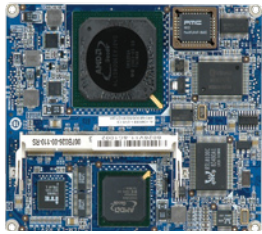
8 Power Supply/ Peripherals

# IEM-LX-R11

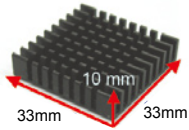
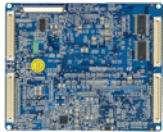
AMD® LX800 Highly Integrated ETX Module

ETX 2.8

**ETX CPU Module with AMD® LX800 CPU on-board, USB 2.0, LAN & Audio**



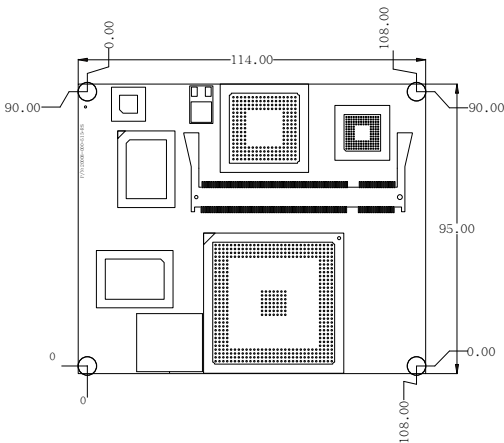
Solder Side



## Specifications

- ◆ CPU  
On board AMD® Geode™ LX800 (500MHz) processor
- ◆ System Chipset  
AMD® LX800 + 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 IT8888G
- ◆ Audio  
AC'97 codec realtek ALC203
- ◆ SSD  
CF Type II
- ◆ Super I/O  
W83627EHG
- ◆ Display Interface  
VGA integrated in AMD® LX800  
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® LX-800 CPU with DDR 333MHz 256MB RAM)
- ◆ Temperature  
Operating: 0°C ~ 60°C(32 ~ 140° F)
- ◆ Humidity  
Operating: 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 Utility CD
- 1 x QIG
- 1 x Screw kit

## Ordering Information

Part No.	Description
IEM-LX-800-R11	AMD® LX800 500MHz processor, VGA/LVDS/TTL, LAN & Audio

# IEM-DB-7S-RS-R30

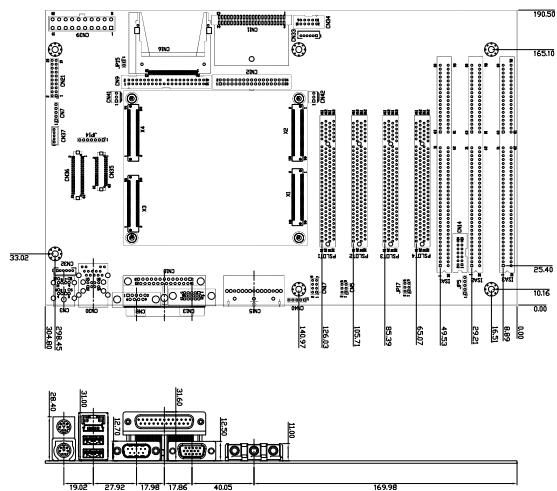
Full Function ETX Baseboard with VGA/LVDS/TTL, Audio, CF Type II and Digital I/O



## Specifications

CPU Module Interface	ETX form factor
LCD Interface	1x30-pin, 18-bit dual-channel LVDS 1x40-pin, 24-bit TTL
Expansion Slot	4 x PCI, 3 x ISA
SSD	CF Type II
Audio	Line-in, Speaker out, Mic-in
Ethernet Connector	1 x RJ-45
RS-232	1
RS-232,422,485	1
KB/MS	2 x PS/2
VGA	1
USB 2.0	4
IDE Connector	2
LPT/ FDD	1
Digital I/O	4 Inputs, 4 Outputs
IR Connector	5 pin-header
Power Supply	ATX

## Dimensions (mm)



## Packing List

- 1 x IEM-Baseboard single board computer
- 1 x FDD cable (P/N: 32200-000017-RS)
- 1 x HDD cable (P/N: 32200-000052-RS)
- 1 x RS-232/422/485 cable (P/N: 32200-000063-RS)
- 1 x mini jumper pack
- 1 x User manual

## Ordering Information

Part No.	Description
IEM-DB-7S-RS-R30	ATX size 7 slots ETX baseboard

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

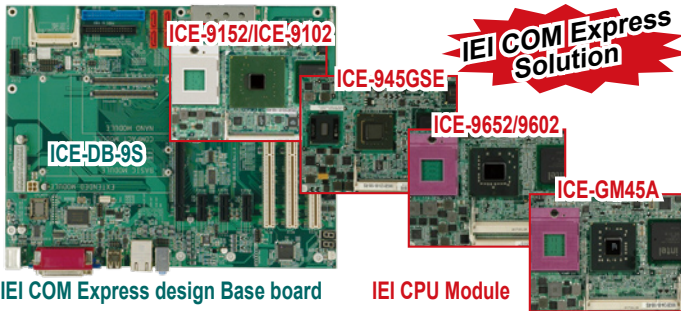
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# 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 modulization and efficiency.



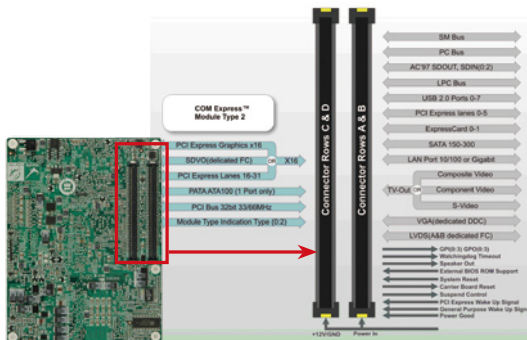
**Transfer your ETX Module to IEI COM Express Solution**  
COM Express provides PCI Express, Dual Channel LVDS, GbE, 8x USB, 4x SATA for I/O Expansion

Platform	ETX	COM Express Type II Basic Module
size	95x 114 mm	95x 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

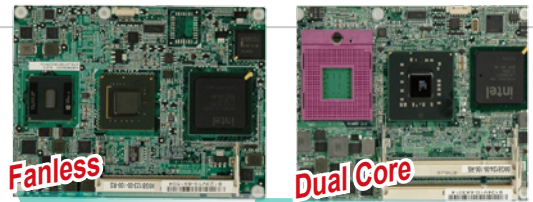
## Benefits

### A: High Compatibility

- IEI ICE modules follow standard COM Express Type II design guide and have highly compatibility.
- ICE modules are compatible with all base boards compliant with COM Express specifications standard.
- Complete performance level for customers' choice



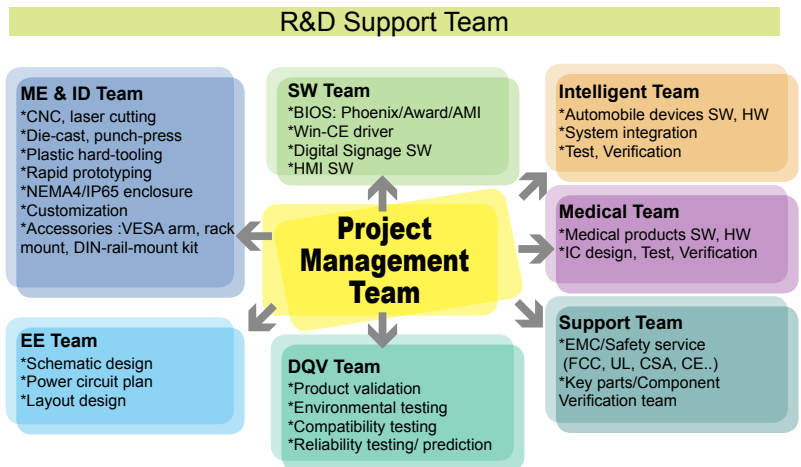
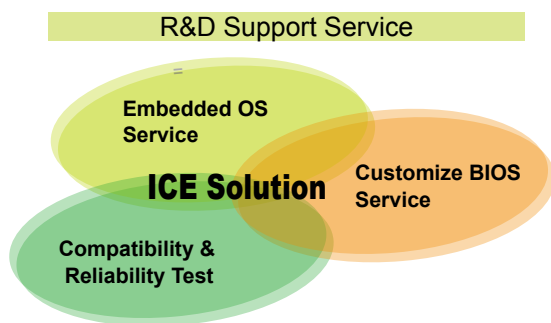
### Embedded Fanless Performance Dual Core



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

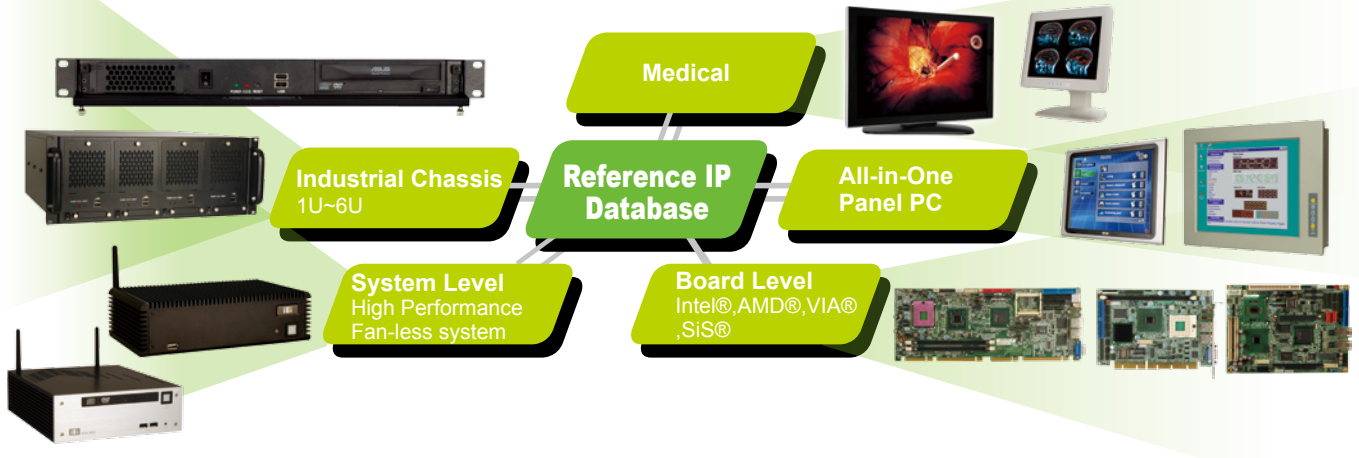
### B: Strong Support

- 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.



## C: Complete Design Reference

- IEI is the only provider with over 800 standard products for design reference
- Any functions/features from standard products could be easily integrated on the carried boards.
- HW/SW reference IP database for complete Intel®, VIA®, SiS®, and AMD® platforms with all difference vertical applications.



## D: Design Assurance & Production Capability

- With large number of in house testing Lab investment, all IEI products are performed on quality assurance tests throughout the product development cycle.
- Global Manufacturing System for best cost effective solution.



Thermal Test



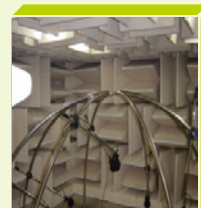
ESD Test



Waterproof Test



Thermal Analysis Lab Chamber



Acoustic Chamber



Noise Test

### Production Facility:

Taipei	3 SMD lines 1 SMD Sample line	2 DIP lines 1 DIP Sample line	4 Assembly lines
Shanghai	3 SMD lines	3 DIP lines	1 Assembly line
Shanghai (2008 Q4)	6 SMD lines	4 DIP lines	1 Assembly line
KunShang	2 Laser Cutting Machines		1 Painting Line



Solder Printer

Pick & Place Mounting Machine

Tangtech Reflow Oven



AOI



Solder Printer Inspection



Victronics Wave Soldering Oven



DIP

### Mockup Customization Service



Metal Mockup



Plastic Mockup

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

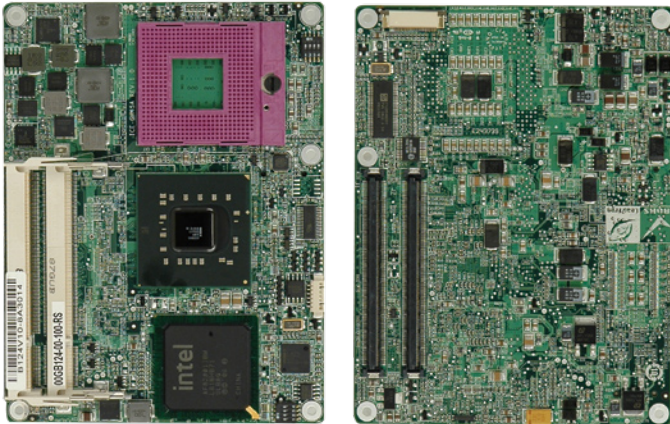
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# ICE-GM45A

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



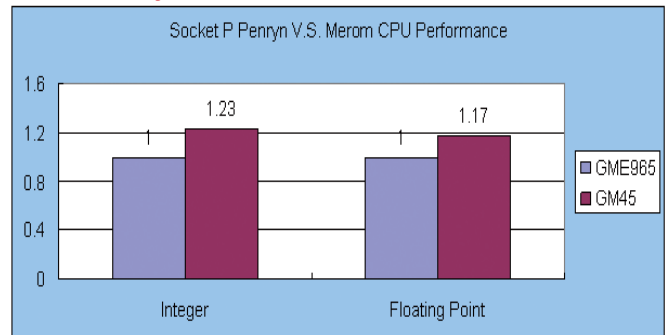
## Specifications

- ◆ 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 up to 4 GB
- ◆ Ethernet
  - One Intel® 82574L PCIe GbE chipset
- ◆ I/O Interface
  - 8 x USB 2.0 (to Base Board)
  - 4 x SATAII (to Base Board)
- ◆ Audio
  - HD audio signal to base board (audio codec on base board)
- ◆ Expansions
  - 1 x PCIe x16 or 2 x SDVO signal to base board
  - 5 x PCIe x1 signal to Base Board
  - 4 x PCI , 32 bit / 33 MHz PCI bus to base board
- ◆ Display Interface
  - VGA/HDTV Integrated in Intel® GM45 signal (to base board)
  - 18/24-bit Dual channel LVDS signal (to base board)
- ◆ Watchdog Timer
  - Software programmable supports 1 ~255 sec. system reset (Depend on super I/O of base board)
- ◆ Power Supply
  - AT / ATX supported
- ◆ Power Consumption
  - 12V@2.574A (Intel® Core™2 Duo Processor P8600 2.4 GHz with 1 GB DDR2)
- ◆ Temperature
  - Operation: 0°C~ 60°C (32°F ~ 140°F)
- ◆ Humidity
  - Operation: 5% ~95% non-condensing
- ◆ Dimensions
  - 125 mm x 95 mm
- ◆ Weight
  - GW: 700g / NW 250g

## Packing List

- 1 x ICE-GM45A single board computer
- 1 x Heatspreader for peryn CPU (45nm)
- 1 x Cooler
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)

## 45nm Penryn VS 65nm Merom Performance



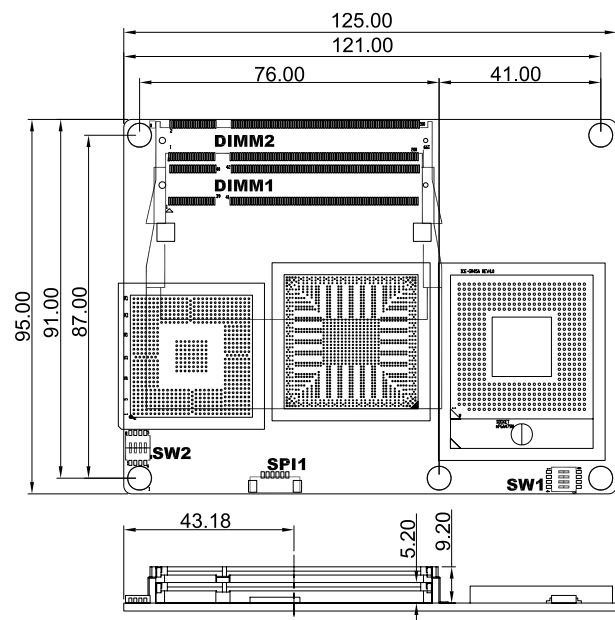
- Intel® Core™ 2 Duo T7500 (2.2 GHz, 800 MHz FSB) w/ GME965 Chipset and 667 MHz DDR2
- Intel® Core™ 2 Duo processor (Penryn) (2.53 GHz, 1066MHz FSB) w/ GM45 Chipset and 667 MHz DDR2



## Features

1. Intel® 45nm mobile Core™ 2 Duo Processor(Penryn) supported
2. High performance MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) supported
3. DDR2 800/667MHz dual channel SD RAM supported up to 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

## Dimensions (mm)



## Ordering Information

Part No.	Description
ICE-GM45A-R10	COM express basic type 2 Module, Intel® 45nm Core™ Duo Processor, VGA/LVDS, GbE, SATAII, USB and audio
ICE-DB-9S-R10	Base board for COM express Type 2 module
34000-000256-RS	Heatspreader for socket P merom CPU (65nm)

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

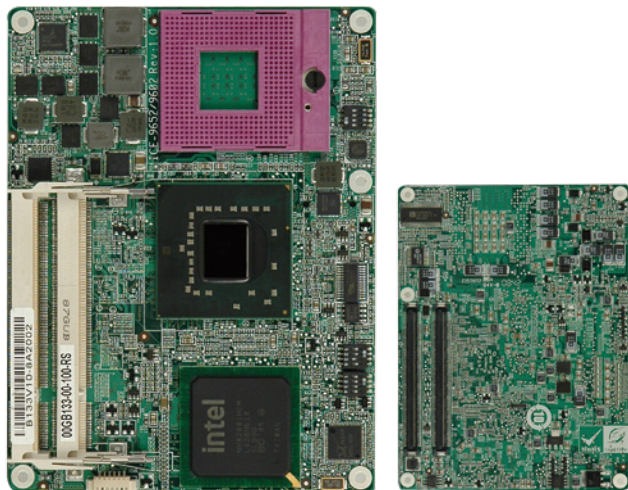
7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# ICE-9652 / 9602

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

1 Industrial Computing Solutions



2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

Package Type	Brand Name	Code Name	Package Size	CPU No.	Clock Speed	FSB (MHz)	L2	TDP	Chipset
Socket P	Core 2 Extreme	Merom (Santa Rosa)	35x35mm	X7900	2.8G	800	4M	44W	GME965/ GME965
				X7800	2.6G		4M	44W	
				T7800	2.6G		4M	35W	
	T7700	2.4G	4M	35W					
	T7500	2.2G	4M	35W					
	T7300	2.0G	4M	35W					
	Core™2 Duo	Merom (Santa Rosa)	35x35mm	T7250	2.0G	2M	35W	GME965/ GME965	
				T7100	1.8G	2M	35W		
				L7700(BGA)	1.8G	4M	17W		
				L7500(BGA)	1.6G	4M	17W		
				L7300(BGA)	1.4G	4M	17W		
				T1700	1.83G	1M	31W		
	Celeron®	Merom (Montevina )	35x35mm	T1600	1.66G	1M	31W	GME965/ GME960	
				585	2.16G	1M	31W		
				575	2.0G	1M	31W		
				570	2.26G	1M	31W		
				560	2.13G	1M	31W		
				550	2.00G	1M	31W		
Pentium Dual Core Mobile	Merom	35x35mm	T2390	1.86G	1M	31W	GME965/ GME960		
			T2370	1.73G	1M	35W			
			T2330	1.6G	1M	35W			
			T2310	1.46G	1M	35W			

## Specifications

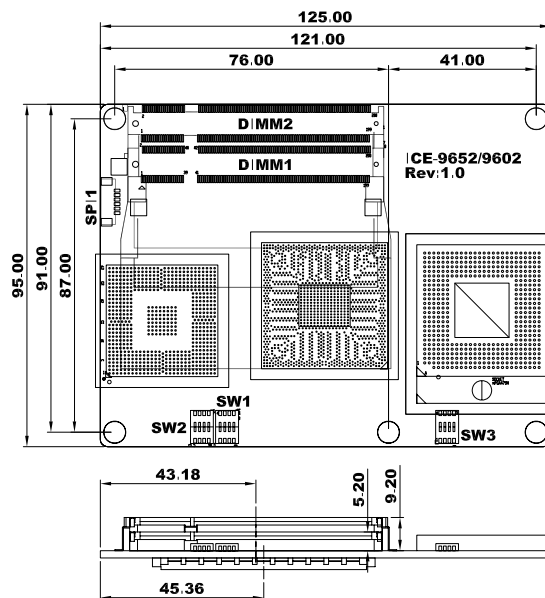


- ◆ CPU  
Socket P Intel® Core™ Duo Processor with 800MHz FSB  
Socket P Intel® Celeron® M Processor with 533MHz FSB
- ◆ System Chipset  
Intel® GME965 / GLE960 + ICH8M
- ◆ BIOS  
AMI BIOS
- ◆ System Memory  
Two 200-pin 667/533/400MHz DDR2 SO-DIMM support up to 4GB for ICE-9652  
Two 200-pin 533/400MHz DDR2 SO-DIMM support up to 2GB for ICE-9602
- ◆ Ethernet  
One Realtek RTL8111CP PCIe GbE chipset
- ◆ I/O Interface  
8 x USB 2.0 (to base board)  
3 x SATAII (to base board)  
1 x IDE channel (to base board)
- ◆ Expansions  
1 x PCIe x16 (ICE-9652) or 2 x SDVO signal to base board  
5 x PCIe x1 signal to base board  
4 x PCI , 32 bit / 33 MHz PCI bus to base board
- ◆ Display Interface  
VGA/HDTV integrated in Intel® GME965 / GLE960 signal (to base board)  
18/24-bit dual channel LVDS signal (to base board)
- ◆ Audio  
HD Interface:HD audio signal to base board (Audio codec on base board)
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec. system reset (Depend on super I/O of base board)
- ◆ Power Supply  
AT / ATX supported
- ◆ Power Consumption  
12V@3.039A (Intel® Core™2 Duo Processor T7500 2.2GHz with 1GB DDR2)
- ◆ Temperature  
Operation: 0°C~ 60°C (32°F~ 140°F)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
125 mm x 95 mm
- ◆ Weight  
GW: 700g / NW 250g

## Features

1. COM Express Type 2 basic module
2. Socket P Intel® Core™ Duo Processor support up to 800MHz FSB
3. Support one PCIe x 16, five PCIe x 1 or one PCIe x 4 and one PCIe x 1, PCI Slot for expansion
4. Support 8 x USB2.0, 3 x SATAII, 1 x IDE interface
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (mm)



## Packing List

- 1 x ICE-9652/9602 single board computer
- 1 x Heatspreader
- 1 x Cooler
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)

## Ordering Information

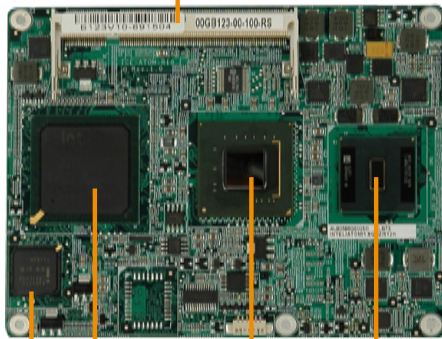
Part No.	Description
ICE-9652-R10	COM express basic type 2 module with Intel® GME965, VGA/LVDS, GbE, USB, SATAII and Audio
ICE-9602-R10	COM express basic type 2 module with Intel® GLE960, VGA/LVDS, GbE, USB, SATAII and audio
ICE-DB-9S-R10	Base board for COM express type 2 modules

# ICE-945GSE

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

Fanless support with Heatspreader Only

DDR 2 400/533 up to 2 GB



Intel® ICH7M Intel® 945GSE Intel® Atom™ Processor N270  
Intel® 82541PI GbE

One Key Recovery  
IEI symantec.

Atom™ CERTIFIED USB

Fanless Dual Display

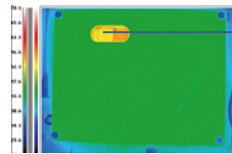
Gigabit Ethernet SERIAL ATA

## 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 base board)  
2 x SATA (to base board)  
1 x IDE channel (to base board)
- ◆ Expansions  
1 x SDVO signal to base board  
4 x PCIe x1 signal to base board  
4 x PCI, 32 bit / 33 MHz PCI bus to base board
- ◆ Display Interface  
VGA/HDTV integrated in Intel® 945GSE signal (to base board)  
18-bit Dual channel LVDS Signal (to base board)
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec. System reset (Depend on super I/O of base board)
- ◆ Power Supply  
AT / ATX supported
- ◆ Power Consumption  
12V@0.95A (Intel® Atom™ Processor N270 with 1GB DDR2)
- ◆ Temperature  
Operation: 0°C ~ 60°C (ICE-945GSE-N270-R10)  
Operation: -40°C ~ 85°C (ICE-945GSE-N270W2-R10)  
Operation: -20°C ~ 70°C (ICE-945GSE-N270W-R10)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
125 mm x 95 mm
- ◆ Weight  
GW: 700g / NW 250g

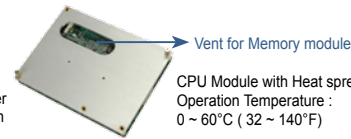
## Packing List

- 1 x ICE-945GSE single board computer
- 1 x Heatspreader
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



Memory

Ultra low power  
Fanless design



CPU Module with Heat spreader  
Operation Temperature :  
0 ~ 60°C (32 ~ 140°F)

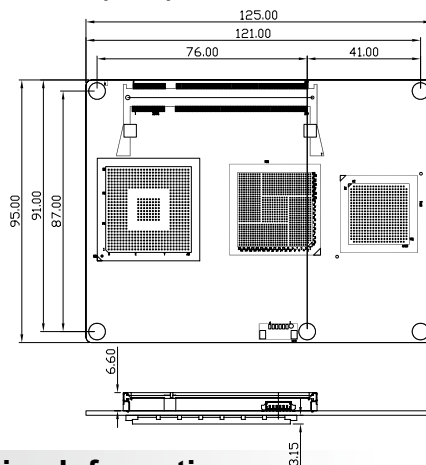
## Power Saving / Cost Saving for Thermal design

IEI Model	ICE-9152-R10	ICE-9102-1GZ-R10 ICE-9102-1G512-R10	ICE-945GSE-N270-R10
CPU	Socket 479 Intel® Pentium® M, Celeron® M processor with a 533/400MHz FSB	On board Intel® Celeron® M 1GHz zero cache or 1GHz 512KB cache processor	Intel® Atom™ Processor N270 1.6GHz with a 533MHz FSB
System Chipset	Intel® 915GME + ICH6-M	Intel® 910GML + ICH6-M	Intel® 945GSE + ICH7M
BIOS	AMI Flash BIOS	AMI Flash BIOS	AMI Flash BIOS
System Memory	One 200-pin 533/400MHz DDR2 SO-DIMM support up to 2GB	One 200-pin 400MHz DDR2 SO-DIMM support up to 2GB	One 200-pin 533/400MHz DDR2 SO-DIMM support up to 2GB
Ethernet	One Intel® 82541PI GbE Chipset	One Intel® 82541PI GbE Chipset	One Intel® 82541PI GbE Chipset
I/O Interface	8 x USB 2.0 / 2 x SATA 1 x IDE channel	8 x USB 2.0 / 2 x SATA 1 x IDE channel	8 x USB2.0 / 2x SATA IDE channel
Expansion	1 x PCIe x16 signal or 2x SDVO signal 4 x PCIe x1 signal 4 x PCI, 32 bit / 33 MHz PCI bus	2 x SDVO signal 4 x PCIe x1 signal 4 x PCI, 32 bit / 33 MHz PCI bus	1 x SDVO signal 4 x PCIe x1 signal 4 x PCI, 32 bit / 33 MHz PCI bus
Display Interface	VGA Integrated in Intel® 915GME Signal 18/24-bit Dual channel LVDS Signal	VGA Integrated in Intel® 910GML Signal 18/24-bit Dual channel LVDS Signal	VGA / HDTV Integrated in Intel® 945GSE Signal 18-bit Dual channel LVDS Signal
Power Supply	AT / ATX supported	AT / ATX supported	AT / ATX supported
Power consumption	12V@2.09A (Pentium® M 1.5GHz)	12V@1.33A (Celeron® M 1GZ/Celeron M 373)	12V@0.95A (ATOM N270)
Thermal Solution	Heat Spreader with Cooler	Heat Spreader with Heat sink	Heat Spreader Only

## Features

1. COM Express Type 2 basic module
2. Support 1x SDVO, 4 x PCIe x1, 4 x PCI slots for expansion
3. Support dual display for VGA + LVDS
4. Support 8 x USB2.0, 2 x SATA, 1 x IDE interface
5. Ultra low power design for fanless solution
6. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions (mm)



## Ordering Information

Part No.	Description
ICE-945GSE-N270-R10	COM express basic type 2 Module with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio
ICE-945GSE-N270W2-R10	COM express basic type 2 Module with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -40~85°C
ICE-945GSE-N270W-R10	COM express basic type 2 Module with Intel® Atom™ Processor N270 1.6G, VGA/LVDS, GbE, USB, SATA and audio, -20~70°C
ICE-DB-9S-R10	Base board for COM express Type 2 module
34000-000231-RS	Heatsink for COM express module

1

Industrial Computing Solutions

2

Embedded Computing Solutions

3

Industrial Data Collector and Controller

4

Video Capture Solutions

5

I/O Communication Solutions

6

Panel Solutions

7

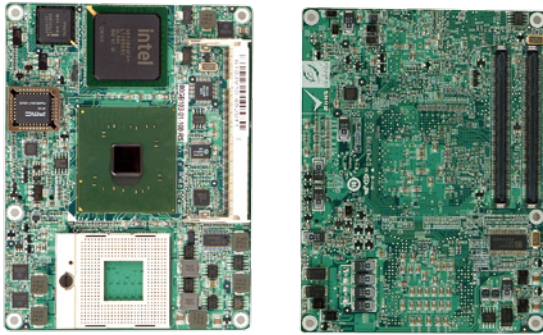
ORing Network Communication

8

Power Supply/Peripherals

# ICE-9152 / 9102

COM Express Basic Type 2 Module, Socket 479 Intel® Pentium® M / Celeron® M CPU, VGA/LVDS, LAN, CF, SATA, USB 2.0 and Audio



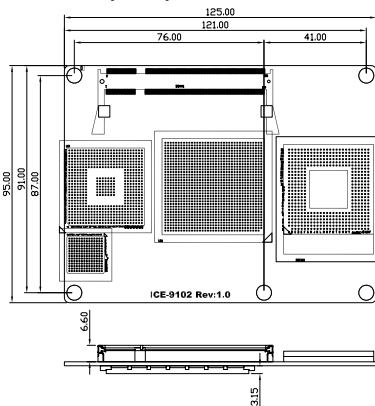
## Features

1. COM express type 2 basic module
2. Support 1x PCIe x16, 4 x PCIe x1, 4 x PCI slots for expansion
3. Support dual display for VGA + LVDS
4. Support 6 x USB 2.0, 2 x SATA, 1x DE
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Specifications

- ◆ CPU  
Socket 479 Intel® Pentium® M, Celeron® M processor with a 533/400 MHz FSB on board  
Intel® Celeron® M 1GHz zero cache or 1 GHz 512KB cache processor
- ◆ System Chipset  
Intel® 915GME + ICH6M (ICE-9152)  
Intel® 910GME + ICH6-M (ICE-9102)
- ◆ BIOS  
AMI Flash BIOS
- ◆ System Memory  
One 200-pin 533/400MHz DDR2 SO-DIMM support up to 2GB (ICE-9152)  
One 200-pin 400MHz DDR2 SO-DIMM support up to 2GB (ICE-9102)
- ◆ Ethernet  
One Intel® 82541PI GbE Chipset
- ◆ I/O Interface  
8 x USB 2.0 (to base board)  
2 x SATA (to base board)  
1 x IDE channel (to base board)
- ◆ Expansions  
1 x PCIe x16 signal to base board (ICE-9152)  
4 x PCIe x1 signal to base board  
4 x PCI, 32 bit / 33 MHz PCI bus to base board
- ◆ Display Interface  
VGA Integrated in Intel® 915GME/910GME Signal (to base board)  
18/24-bit Dual channel LVDS Signal (to base board)
- ◆ Watchdog Timer  
Software programmable supports 1 ~255 sec. system reset (Depend on Super I/O of base board)
- ◆ Power Supply  
ATX / AT supported
- ◆ Power Consumption  
12V@1.33A (Intel® Celeron® M 373 1G/512 L2 cache, DDR2 1GB/ 533MHz)
- ◆ Temperature:  
Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity: Operation: 5% ~95% non-condensing
- ◆ Dimensions: 125 mm x 95 mm

## Dimensions (mm)



## Packing List

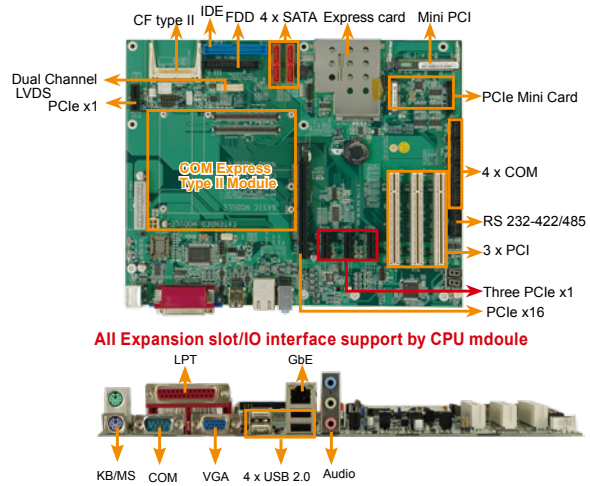
1 x ICE-915/9102 single board computer	
1 x Heatspreader	
1 x Heatsink (ICE-9102)	1 x Cooler (ICE-9152)
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
ICE-9152-R10	COM express Socket 479 Intel® Pentium® M / Celeron® M CPU with VGA/LVDS, GbE, USB 2.0, SATA and audio
ICE-9102-1GZ-R10	COM express ULV Intel® Celeron® 1GHz zero cache CPU with VGA/LVDS, GbE, USB 2.0, SATA and Audio
ICE-9102-1G512-R10	COM express ULV Intel® Celeron® 1GHz 512K cache CPU with VGA/LVDS, GbE, USB 2.0, SATA and audio
ICE-DB-9S-R10	Base board for COM express Type 2 modules

# ICE-DB-9S

Base Board for COM Express Type 2 Module



All Expansion slot/I/O interface support by CPU module

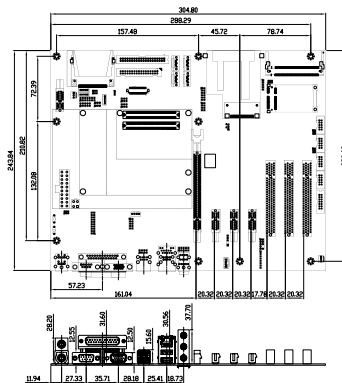
## Features

1. ATX Form factor Base board for COM Express type 2 Module
2. Support 1x PCIe x16/4x PCIe x1, 3 x PCI for expansions
3. Second I/O support up to 6 x COM Ports
4. COM2 /COM3 with 5V/12V power by jumper selection

## Specifications

- ◆ CPU Module Interface  
Supports COM Express Compact / Basic module using connector pin out Type 2
- ◆ Display Interface  
VGA DB15 connector  
18/24-bit dual channel LVDS  
TV-out interface
- ◆ Expansions  
1 x PCIe x16  
4 x PCIe x1  
3 x PCI, 32 bit / 33 MHz PCI bus  
1 x PCIe Mini card  
1 x Express Card  
1 x Mini PCI
- ◆ I/O Interface  
4 x SATA/SATA II  
1 x IDE  
1 x CF type II  
5 x RS-232 (COM2/COM3 with 5V/12V power)  
1 x RS-232/422/485  
2 x PS2 KB/MS  
6 x USB 2.0  
1 x LPT  
1 x FDD
- ◆ Audio  
Realtek ALC888 for 7.1 channels HD audio  
1 x Mic-in, Lin-in, Lin-out connector  
1 x Front Audio
- ◆ Ethernet Connector  
1 x RJ-45 connector for GbE
- ◆ 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, Support smart fan for CPU Fan (FAN1)
- ◆ Temperature  
Operation: 0°C ~ 60°C (32°F ~ 140°F)
- ◆ Humidity  
Operation: 5% ~95% non-condensing
- ◆ Dimensions  
304.8 mm x 243.8 mm ( 12" x 9.6" )

## Dimensions (mm)



## Packing List

1 x COM express base board	2 x SATA cable (P/N: 32000-062800-RS)
1 x Dual ports RS-232 cable (P/N: 19800-000051-RS)	1 x Mini jumper pack
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description	Part No.	Description
ICE-DB-9S-R10	Base board for COM express Type 2 Modules	32200-000052-RS	40-pin 3.5" IDE cable
19800-000082-RS	RS-232/422/485 cable	32200-000017-RS	FDD cable
32102-000100-100/200-RS	SATA power cable	19800-000049-RS	LPT cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals



# 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.



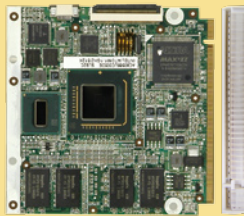
1 Industrial Computing Solutions

2 Embedded Computing Solutions

## 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
- 8x USB 2.0
- ExpressCard
- High Definition Digital Audio
- 2 x Serial ATA
- LPC interface
- Secure Digital I/O interface
- Gigabit Ethernet
- 2 x 24bit 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

## Benefit of Q7

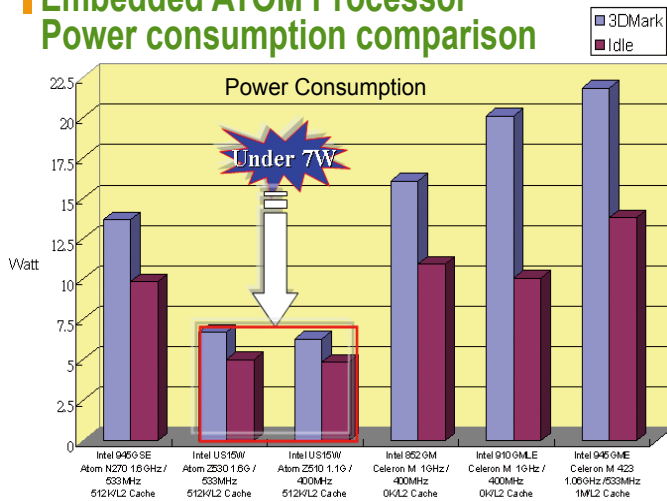
- Compact size, cost efficient & low power consumption (TDP 12W)
- legacy free & fast serial interface

Platform	ETX 3.0	COM Express Type IIBasic 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

3 Industrial Data Collector and Controller

4 Video Capture Solutions

## Embedded ATOM Processor Power consumption comparison



## iQ7-US15W Supported Video Codecs

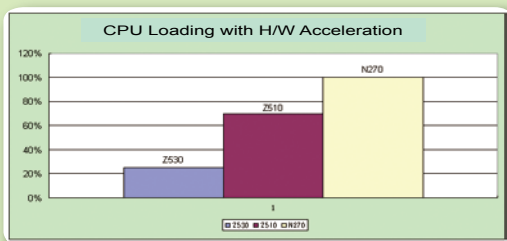
IEI Q7 module – iQ7-US15W with Intel® US15W chipset graphic video codecs support table

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 @ 30 fps
MPEG-2	MP@HL	80M	1920 x 1080 @ 30fps
MPEG-1	CPB	1.856M	768 x 576 @ 30fps
JPEG	Baseline	N/A	Not restricted

5 I/O Communication Solutions

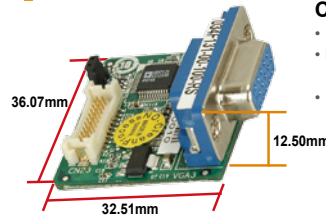
6 Panel Solutions

## 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

## 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	30pin LVDS connecting cable
32600-114400-RS	20pin LVDS connecting cable

7 ORing Network Communication

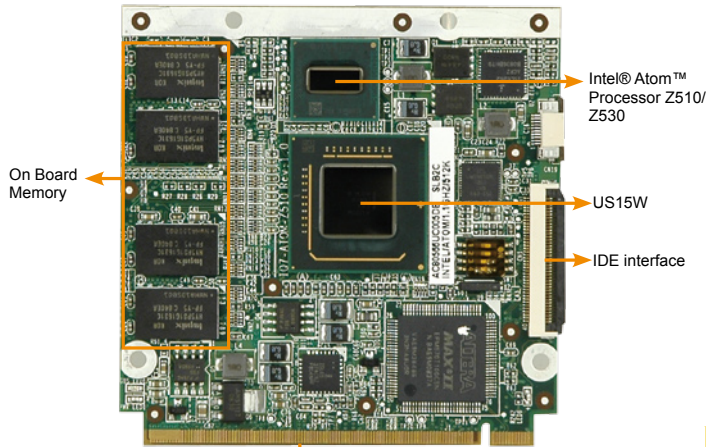
8 Power Supply/Peripherals

# iQ7-US15W

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

1

Industrial Computing Solutions



On Board Memory

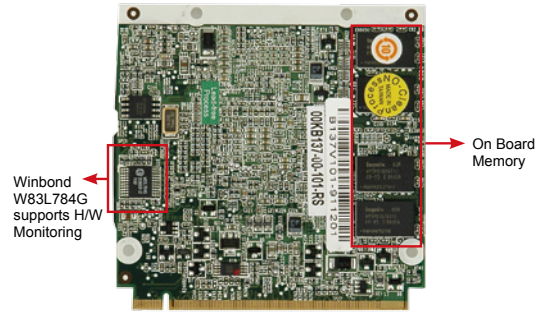
Intel® Atom™ Processor Z510/ Z530

US15W

IDE interface

- 2 x PCI Express x1
- 8 x USB 2.0, 1 x SDIO
- 1 x SDVO, 1 x 24bit LVDS
- LPC Bus

Solder Side



Winbond W83L784G supports H/W Monitoring

On Board Memory

2

Embedded Computing Solutions

3

Industrial Data Collector and Controller

4

Video Capture Solutions

5

I/O Communication Solutions

6

Panel Solutions

7

ORing Network Communication

8

Power Supply/ Peripherals

## 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 24bit LVDS supported
4. On board memory 1GB supported
5. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

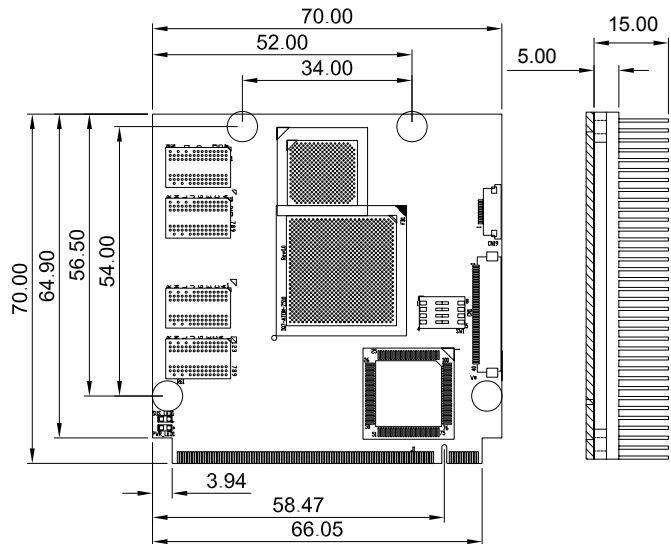
## Specifications

- ◆ 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 base board)
  - 1 x IDE (On CPU module)
  - 1 x LPC Bus (to base board)
  - 1 x Single channel 18/24 bit LVDS (to base board)
  - 1 x SDIO (to base board)
  - 1 x SDVO (to base board)
  - 1 x SMBUS(to base board)
- ◆ Expansion
  - 2x PCIe x1 (to base board)
- ◆ Display Interface
  - Intel® Graphics media accelerator 500
  - SDVO / single-channel 24-bit LVDS Integrated in Intel® US15W (to base board)
  - Max Display Resolution:
    - LVDS: 1366x768 (24 bit color)
    - SDVO: 1280 x 1024
- ◆ Audio
  - 1 x HD Audio Interface (to base board)
- ◆ HW Monitor
  - Winbond W83L784G
- ◆ 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)
- ◆ Temperature
  - Operation: 0°C ~ 60°C
- ◆ Humidity
  - operation:5% ~95% non-condensing
- ◆ Dimensions
  - 70 mm x 70 mm
- ◆ Weight
  - GW: 600g / NW: 100g

Max Display Resolution:  
LVDS: 1366 x 768 (24bit color) , SDVO: 1280 x 1024

Model	iQ7-US15W-Z530	iQ7-US15W-Z510
CPU	<ul style="list-style-type: none"> <li>• Z530</li> <li>• 1.6 GHz</li> <li>• 13 x 14 mm HDI</li> <li>• HT, No VT</li> <li>• 533MHz FSB</li> <li>• TDP: 2.3W</li> </ul>	<ul style="list-style-type: none"> <li>• Z510</li> <li>• 1.1 GHz</li> <li>• 13 x 14mm HDI</li> <li>• No HT, No VT</li> <li>• 400MHz FSB</li> <li>• TDP: 2.0W</li> </ul>

## Dimensions(mm)



## Ordering Information

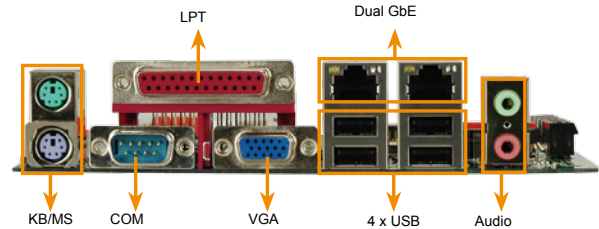
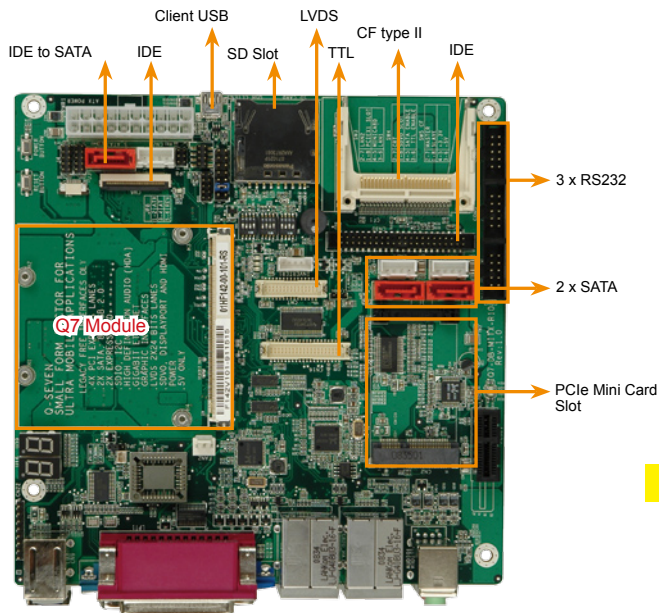
Part No.	Description
iQ7-US15W-Z510-R10	Q7 module with Intel® Atom™ Z510 1.1GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-US15W-Z530-R10	Q7 module with Intel® Atom™ Z530 1.6GHz, SDVO/LVDS, USB, SD, IDE, on board 1GB memory
iQ7-DB-MITX-R10	Mini ITX form factor base board for Q7 module, RoHS
32400-307900-RS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

## 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 QIG

# iQ7-DB-MITX

## Base Board for Q7 modules



## Specifications

- ◆ Display Interface
  - VGA DB15 connector (SDVO to VGA by chrontel CH7021A)
  - 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(Select by switch: SW3)
  - 1 x PCIe x1 slot shared with LAN2 (Select by switch: SW3)
- ◆ I/O Interface
  - 2 x SATA/SATA II with 5V/12V power output (not support by iQ7-US15W)
  - 1 x IDE (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 RS232
- ◆ Audio
  - Realtek ALC883 for 7.1 channels HD audio
  - 1 x Mic-in, Lin-out connector
- ◆ Ethernet connector
  - 2 x Realtek RTL8111CP GbE chipsets
  - LAN1 shared with PCIe Mini card Slot (Select by switch: SW3)
  - LAN2 shared with PCIe x1 Slot (Select 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
- ◆ Temperature
  - operation: 0°C~ 60°C ( 32°F~140°F)
- ◆ Humidity
  - operation: 5% ~95% non-condensing
- ◆ Dimensions
  - 170 mm x 170 mm
- ◆ Weight
  - GW: 700g / NW: 350g

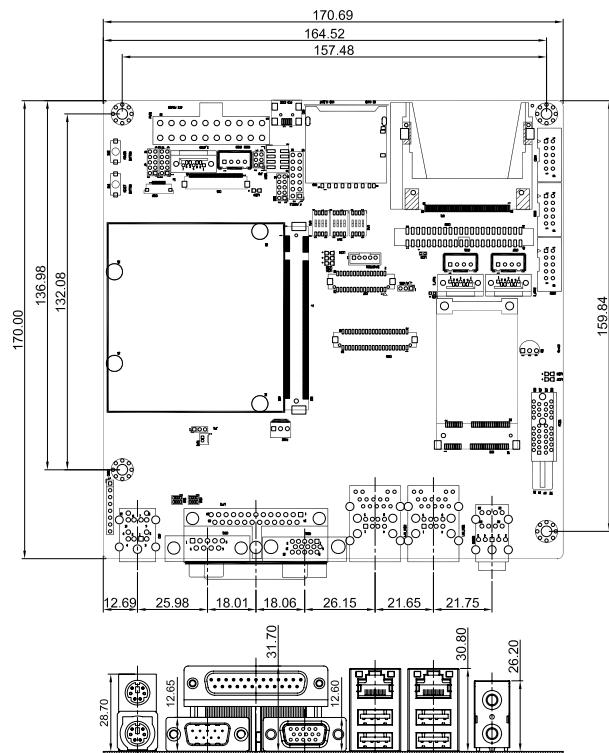
## Packing List

- 1 x Mini ITX Form Factor base board for Q7 Module
- 1 x QIG

## Features

1. Mini ITX form factor base board for Q7 platform
2. Support audio, SD Slot, IDE, CFII, Single channel LVDS, TTL
3. Support 6 x USB, 4 x COM, 2 x SATA
4. Support PCIe x1 slot, 1x PCIe Mini card

## Dimensions(mm)



## Ordering Information

Part No.	Description
iQ7-DB-MITX-R10	Mini ITX form factor base board 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 Base board
32400-029002-RS	5cm IDE FFC Cable from Q7 Module to Base board

1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals

# PM-US15W

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

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

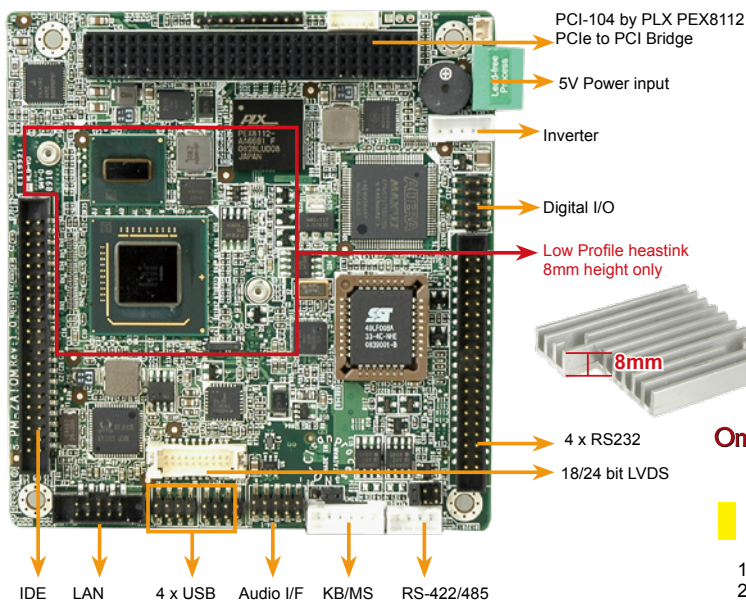
4 Video Capture Solutions

5 I/O Communication Solutions

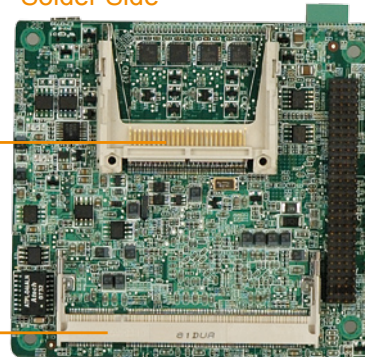
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals



Solder Side



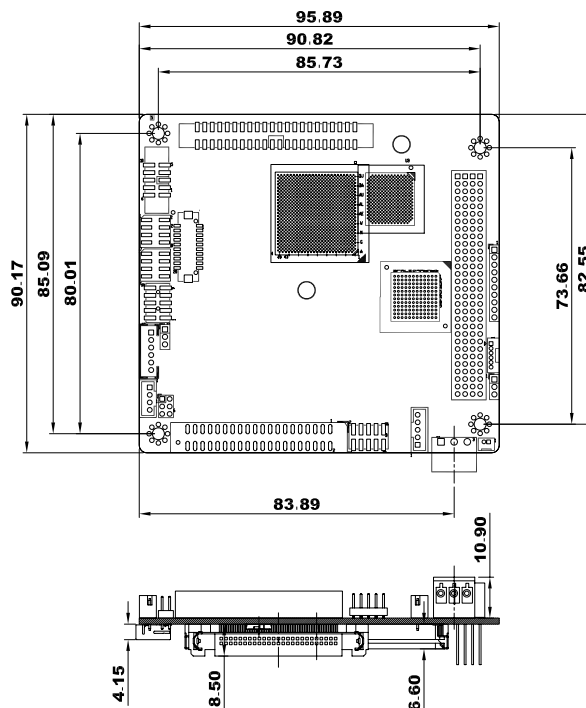
## Features

1. Intel® Atom™ Z510/Z530 Processor up to 1.6GHz
2. PLX PEX8112 PCIe to PCI bridge support PCI-104 Add-on card
3. Single channel 18/24 bit LVDS supported
4. CF type II and 4 x USB, 4 x COM supported
5. Full hardware acceleration of H.264, MPEG2, VC1, and WMV9 is 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  
4 x RS-232  
1 x RS-422/485 (Shared with COM2)  
4 x USB 2.0  
1 x IDE  
1 x KB/MS  
1 x CF type II Socket
- ◆ Expansion  
PC-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 support by LVDS to VGA Module (LVDS-VGA-R10)
- ◆ Audio  
7.1 channel HD audio kit with Realtek ALC883 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)
- ◆ Temperature  
operating: 0°C ~ +60°C
- ◆ Humidity  
operation: 5% ~95%non-condensing
- ◆ Dimensions  
96 mm x 90 mm
- ◆ Weight  
GW: 650g / NW: 250g

## Dimensions(mm)



## Packing List

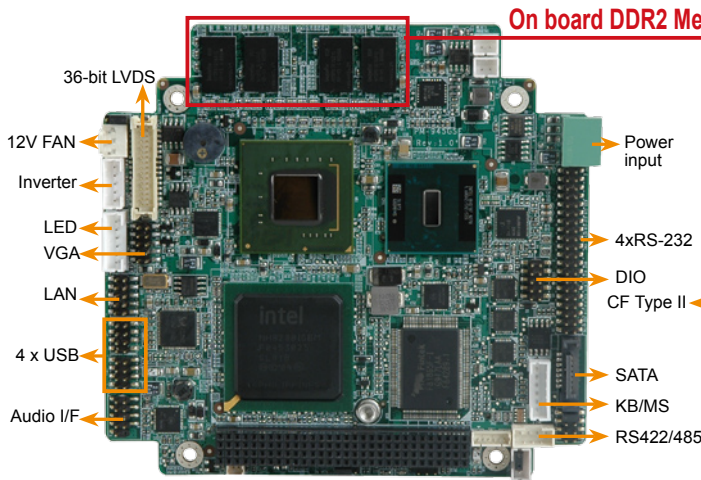
1 x PM-US15W single board computer	
1 x Mini jumper pack	
1 x KB/MS cable (P/N:32000-023800-RS)	
1 x LAN cable (P/N:32000-055702-RS)	
1 x Power Cable P/N: 32100-130300-RS)	
1 x IDE flat cable 44p/44p (P/N: 32200-000009-RS)	
1 x Quad ports RS-232 cable (P/N: 32200-025401-RS)	
2 x Dual USB ports cable (P/N: 32000-070301-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	20pin LVDS connecting cable
AC-KIT883HD-R10	7.1 channel HD audio Kit with realtek ALC883 codec support dual audio streams
ITS-44-R10	2.5" IDE to SATA module
32200-074800-RS	RS-422/485 cable

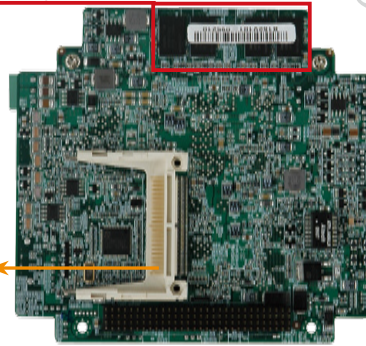
# PM-945GSE

PCI-104 SBC with Intel® Atom™ 1.6GHz CPU, VGA/ LVDS, LAN, USB, SATA, 4COM and on Board 1GB Memory

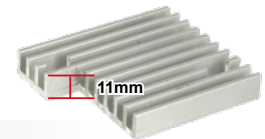


On board DDR2 Memory up to 1GB

On board 1GB Memory



Ship with Heat sink



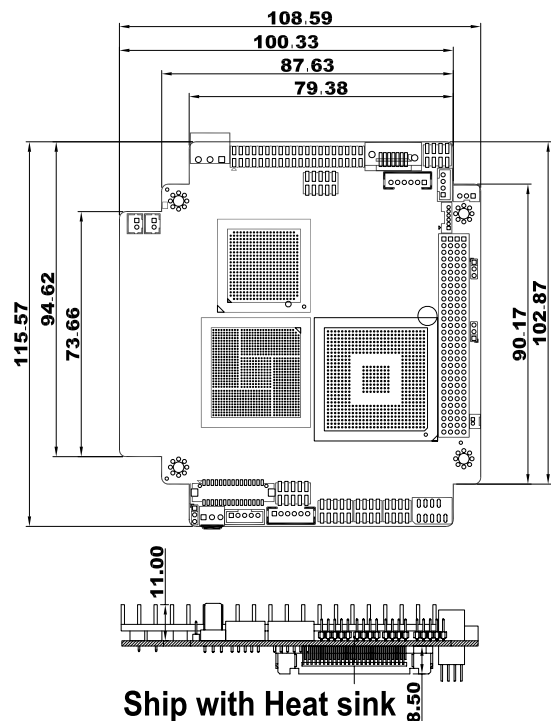
## Specifications

- ◆ 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 PCIe 10/100Mbps Realtek 8102E chipset
- ◆ I/O interface  
4 x USB 2.0  
4 x RS-232  
1 x PS/2 for KB/MS
- ◆ Digital I/O  
8-bit digital I/O (4-bit input, 4-bit output)
- ◆ Expansion  
PCI-104
- ◆ Audio  
5.1 channel audio kit with Realtek ALC655 AC'97 codec  
7.1 channel HD audio kit with Realtek ALC883 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
- ◆ Power Supply  
5V only, 12V for LCD/FAN, AT/ATX support
- ◆ Super IO  
Fintek F81865
- ◆ Watchdog Timer  
software programmable 1-255 sec. by super I/O
- ◆ Temperature  
operation: 0°C~ 60°C ( 32°F~ 140°F)
- ◆ Humidity  
operation: 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

## Features

1. Intel® Atom™ N270 1.6GHz CPU for Ultra Low Voltage Fan-less support
2. Single 5V Power design, 12V for LCD/FAN
3. 18-bit dual channel LVDS + VGA support dual independent display
4. On board Memory support up to 1GB
5. Support 4x COM, 4x USB2.0, 1x SATA and CF TypeII socket
6. Low Profile Heat sink design
7. IEI One Key Recovery solution allows you to create rapid OS backup and recovery

## Dimensions(mm)



## Packing List

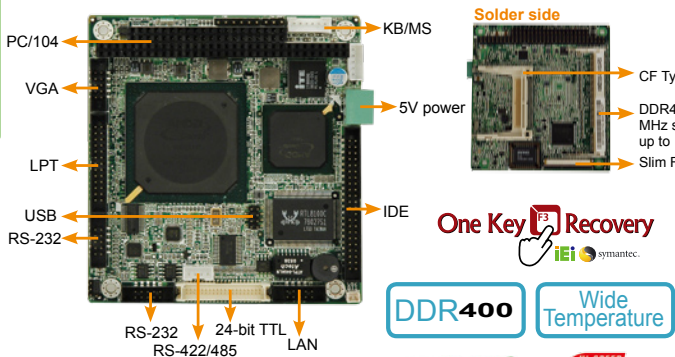
1 x PM-945GSE single board computer	
1 x Power cable (P/N: 32100-130300-RS)	
1 x SATA cable (P/N: 32000-062800-RS)	
1 x KB/MS cable (P/N: 32000-023800-RS)	
1x Quad RS-232 cable (P/N: 32100-147900-RS)	
1x VGA cable (P/N: 32000-033804-RS)	
1 x LAN cable (P/N: 32000-055702-RS)	
2 x Dual USB cable (P/N: 32000-070301-RS)	
1 x Mini jumper pack	
1 x CD Utility	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, 4COM and on Board 1GB memory
32200-074800-RS	RS-422/485 cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	ATX power cable
32100-052100-RS	AC power cable
AC-KIT08R-R10	5.1 channel AC'97 Audio Kit with Realtek ALC655 codec
AC-KIT883HD-R10	7.1 channel HD Audio Kit with Realtek ALC883 codec support dual audio streams

# PM-LX2

AMD® Geode™ LX800 CPU on-board PC/104 Module



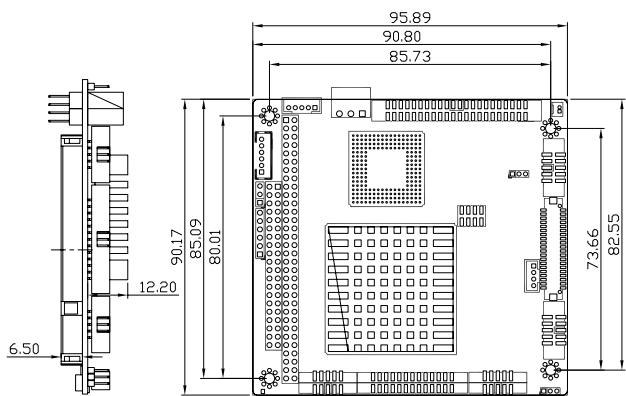
DDR400 Wide Temperature

Fanless CERTIFIED HI-SPEED USB

## Specifications

- ◆ CPU: AMD® Geode™ LX800 500MHz processor
- ◆ System Chipset: AMD® Geode™ LX800 + CS5536
- ◆ BIOS: Award 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® LX800
- ◆ 24-bit TTL integrated in AMD® LX800
- ◆ Watchdog Timer: Software programmable support 1~255 sec. system reset.
- ◆ Extensions: 1 x PC/104 support by ITE IT8888G
- ◆ Power Supply: 5V only, AT support
- ◆ Power Consumption: 5V@ 1.09A (AMD® Geode™ LX800 with 512MB DDR400)
- ◆ Temperature:
  - Operation: PM-LX2-800-R10: 0°C~60°C
  - PM-LX2-800W-R10: -40°C~70°C
- ◆ Humidity: Operation: 5% ~95% non-condensing
- ◆ Dimensions: 96mm(L) x 90mm (W)
- ◆ Weight: GW: 500g / NW 110g

## Dimensions (mm)



## Packing List

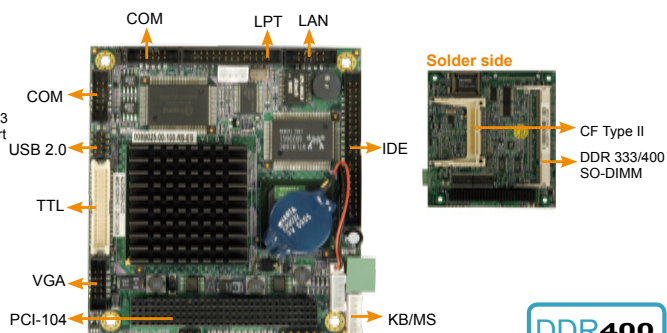
1 x PM-LX2 single board computer	1 x ATA33 flat cable (P/N:32200-000009-RS)
1 x PS/2 KB/MS cable (P/N: 32000-023800-RS)	1 x Power cable (P/N: 32100-130300-RS)
1 x Dual USB cable (P/N: 32000-070301-RS)	1 x VGA cable (P/N: 32000-033804-RS)
1 x LAN cable (P/N: 32000-055702-RS)	2 x RS-232 cable (P/N: 32200-000049-RS)
1 x Mini jumper pack	1 x QIG
1 x Utility CD	

## Ordering Information

Part No.	Description
PM-LX2-800-R10	PC/104 SBC with AMD® LX800 500 MHz, VGA/TTL, LAN, USB2.0 and CFII
PM-LX2-800W-R10	PC/104 SBC with AMD® LX800 500 MHz, VGA/TTL, LAN, USB2.0 and CFII, Wide Temperature -40~70°C
32400-001100-RS	FDD cable
32200-015100-RS	LPT cable
32200-074800-RS	RS-422/485 cable

# PM-LX

AMD LX800 CPU on-board PCI-104 Module



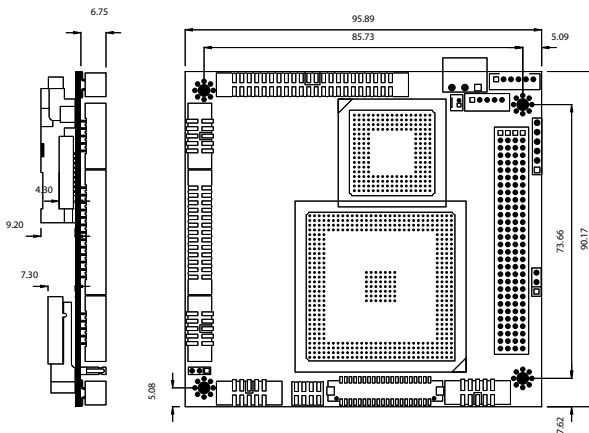
DDR400

Fanless CERTIFIED HI-SPEED USB

## Specifications

- ◆ CPU: On board AMD® Geode™ LX800 (500MHz) processor
- ◆ System Chipset: AMD® LX800 + 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
- ◆ Expansions: 1 x PCI-104
- ◆ Super I/O: W83627EHG
- ◆ SSD
- ◆ CF Type II
- ◆ Display Interface: VGA integrated in LX800
- ◆ 24-bit TTL
- ◆ Watchdog Timer: Software programmable supports 1~255 sec. system reset
- ◆ Power Supply: 5V only, AT support
- ◆ Power Consumption: 5V@ 1.13A (LX800-500 MHz, DDR 400/1G RAM)
- ◆ Temperature: Operating: 0°~60°C
- ◆ Humidity: Operating: 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 Mini jumper pack	
1 x ATA33 flat cable (P/N:32200-000009-RS)	
2 x RS-232 cable (P/N:32200-000049-RS)	
1 x USB cable (P/N: P/N:32000-070301-RS)	
1 x VGA cable ( P/N:32000-033804-RS)	
1 x LAN cable (P/N:32000-055702-RS)	
1 x Power cable (P/N:32100-130300-RS)	
1 x KB/MS Y cable (P/N:32000-023800-RS)	
1 x Utility CD	1 x QIG

## Ordering Information

Part No.	Description
PM-LX-800-R11	PCI-104 SBC with AMD® LX800 Processor , VGA/TTL, LAN, USB 2.0, CF Type II
32200-015100-RS	LPT cable
32200-074800-RS	RS-422/485 cable

1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

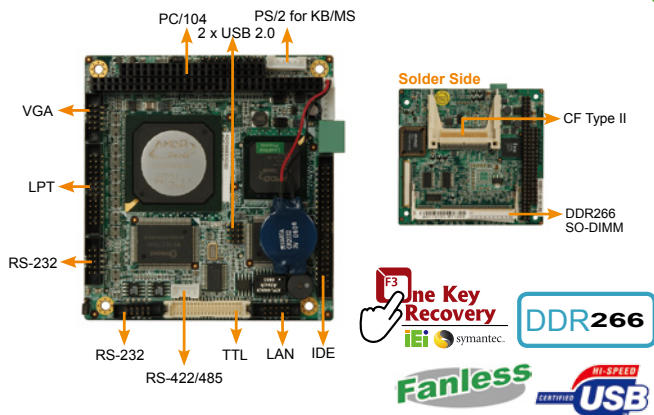
6 Panel Solutions

7 ORing Network Communication

8 Power Supply Peripherals

# PM-GX

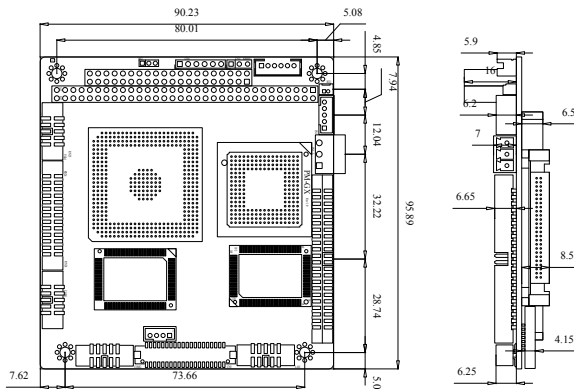
AMD® GX466 CPU on-board PC/104 Module



## Specifications

- ◆ **CPU**  
On board AMD® Geode™ GX466(333MHz) processor
- ◆ **System Chipset**  
AMD® GX466 + CS5536
- ◆ **BIOS**  
Award BIOS
- ◆ **System Memory**  
One 200-pin 266/200MHz DDR SDRAM DIMM supported (system max. 512MB)
- ◆ **Ethernet**  
10/100Mbps RTL8100C Ethernet chipset
- ◆ **I/O Interface**  
2 x RS-232  
1 x RS-422/485  
2 x USB 2.0  
1 x IDE  
1 x PS/2 for KB/MS
- ◆ **Expansions**  
1 x PC/104
- ◆ **Super I/O**  
W83627EHG
- ◆ **SSD**  
CF Type II
- ◆ **Display Interface**  
VGA integrated in AMD® GX466  
24-bit TTL
- ◆ **Watchdog Timer**  
Software programmable supports 1-255 sec. system reset
- ◆ **Power Supply**  
5V only, AT support
- ◆ **Power Consumption**  
5V@1.05A  
(AMD® GX466, DDR266MHz 512 MB)
- ◆ **Temperature**  
Operating: 0°~60°C
- ◆ **Humidity**  
Operating: 5%~95%,
- ◆ **Dimensions**  
96 mm x 90 mm
- ◆ **Weight**  
GW: 500 g / NW: 110 g

## Dimensions (mm)



## Packing List

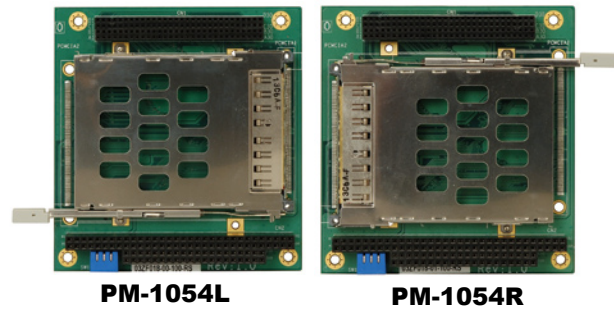
- 1 x PM-GX single board computer
- 1 x ATA33 flat cable (P/N: 32200-000009-RS)
- 1 x Single RS-232 cable (P/N: 32200-000049-RS)
- 1 x VGA cable (P/N: 32000-033804-RS)
- 1 x LAN cable (P/N: 32000-055702-RS)
- 1 x KB/MS Y cable (P/N: 32000-023800-RS)
- 1 x USB cable (P/N: 32000-070301-RS)
- 1 x Power cable (P/N: 32100-130300-RS)
- 1 x Mini jumper pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
PM-GX-466-R11	PC/104 SBC with AMD® GX466 333MHz Processor, VGA/TTL, LAN, USB 2.0 and CF Type II
32200-015100-RS	LPT cable
32200-074800-RS	RS-422/485 cable

# PM-1054L/R

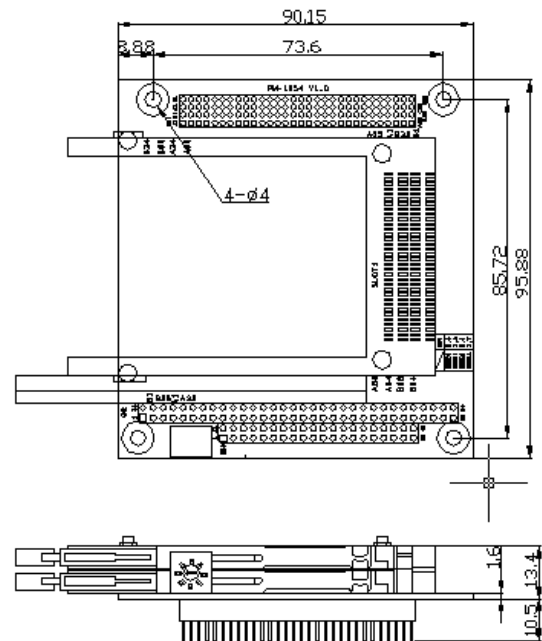
PCI-104 Card Bus PCMCIA module



## Specifications

1. Chipset: RICOH R5C485 card bus controller
2. Data Bus: 32-bit, 33 MHz (133MB/s), DMA bus master (Compliant with PCI 2.1)
3. PC Card 95/97/98 32-bit CardBus compatible
4. Supports Plug & Play auto-detected & configuration
5. Driver support: Windows® 98/ME/NT/2000/XP
6. Accepts PCMCIA Type I/II/III
7. 1 x PCMCIA slot

## Dimensions (mm)



## Packing List

- 1 x PM-1054 PCMCIA Module
- 1 x QIG

## Ordering Information

Part No.	Description
PM-1054L-R10	PCI-104 card bus PCMCIA module (left side)
PM-1054R-R10	PCI-104 card bus PCMCIA module (right side)

1

Industrial  
Computing  
Solutions

2

Embedded  
Computing  
Solutions

3

Industrial Data  
Collector  
and Controller

4

Video  
Capture  
Solutions

5

I/O  
Communication  
Solutions

6

Panel  
Solutions

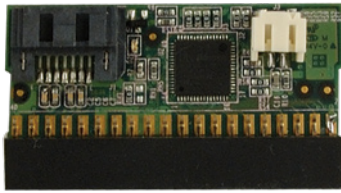
7

ORing  
Network  
Communication

8

Power Supply/  
Peripherals

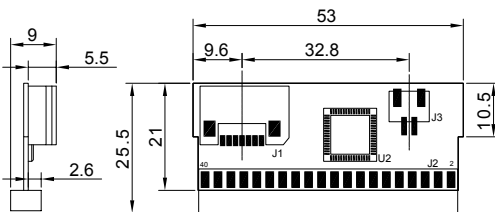
## ITS-40-R11 3.5" IDE to SATA Module



### Specifications

- ◆ 3.5" IDE to SATA module
- ◆ Converts standard SATA to IDE interface
- ◆ Chipset: JMicron JMH330
- ◆ Compliance to serial ATA Generation 1
- ◆ ATA/ATAPI PIO mode 0 to 4
- ◆ ATA/ATAPI Ultra DMA transfer rate up to 133MB/s
- ◆ Dimensions: 53(L) mm x 25.5(W) mm

### Dimensions (unit: mm)



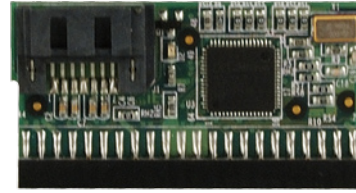
### Packing List

1 x ITS-40 daughter card	1 X Power cable (P/N: 32100-173300-RS)
1 X SATA Data cable (P/N: 32000-062800-RS)	1 x QIG (Quick Installation Guide)

### Ordering Information

Part No.	Description
ITS-40-R11	3.5" IDE to SATA module, RoHS

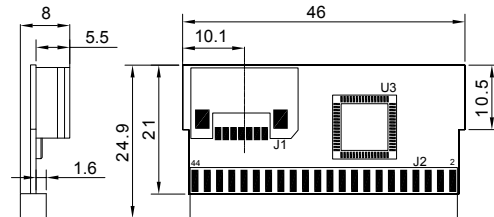
## ITS-44-R11 2.5" IDE to SATA Module



### Specifications

- ◆ 2.5" IDE to SATA Module
- ◆ Converts standard SATA to IDE interface
- ◆ Chipset: JMicron JMH330
- ◆ Compliance to Serial ATA Generation 1
- ◆ ATA/ATAPI PIO mode 0 to 4
- ◆ ATA/ATAPI Ultra DMA transfer rate up to 133MB/s
- ◆ Dimensions: 46(L) mm x 24.9(W) mm

### Dimensions (unit: mm)



### Packing List

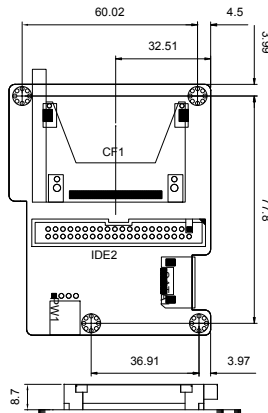
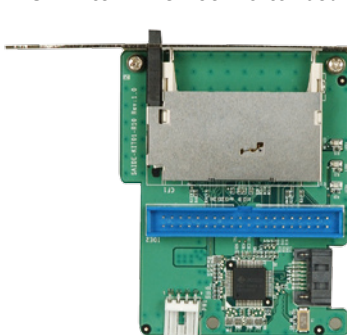
1 x ITS-44 daughter card
1 X SATA data cable (P/N: 32000-062800-RS)
1 x QIG (Quick Installation Guide)

### Ordering Information

Part No.	Description
ITS-44-R11	2.5" IDE to SATA Module, RoHS

## SATA to IDE/CF Type II Carry Board IDE/ CF Type II Carry 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 1x IDE device or 1x 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
32000-062800-RS	SATA cable
32102-000100-100-RS	SATA power cable
32102-000100-200-RS	SATA power cable
32100-064401-RS	Power cable

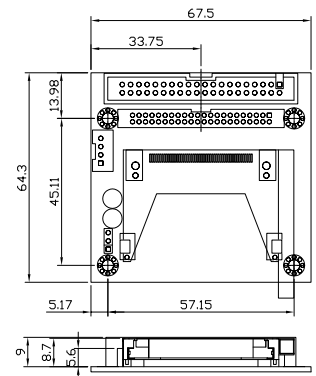


### CF-KIT04-R10 IDE to CFII Carry board with master/slave mode selection

#### Features

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

#### IEI CF Solution



1  
Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

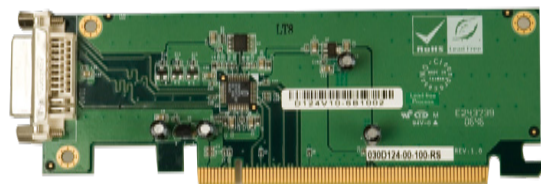
7  
ORing  
Network  
Communication

8  
Power Supply  
Peripherals



# PCIe 16X SDVO interface VGA/ DVI graphic card

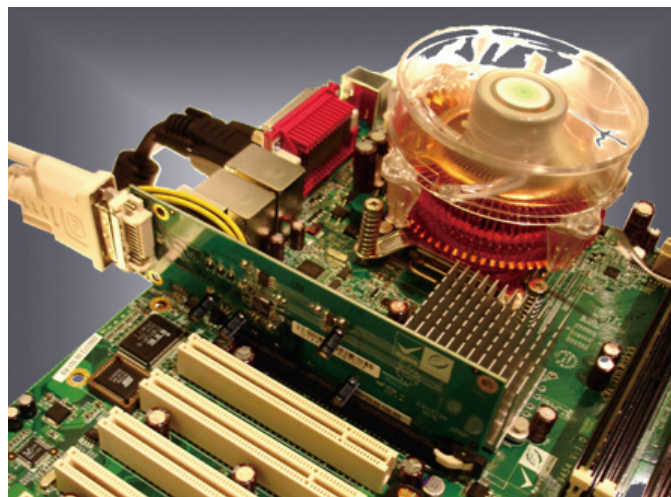
IEI only for Intel® 915/945/Q965 dual display solution by PCIe 16X interface SDVO add on card.



**SDVO-100DVI-R10**



**SDVO-100VGA-R10**



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

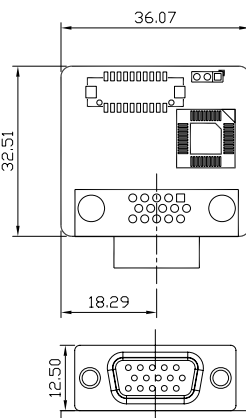
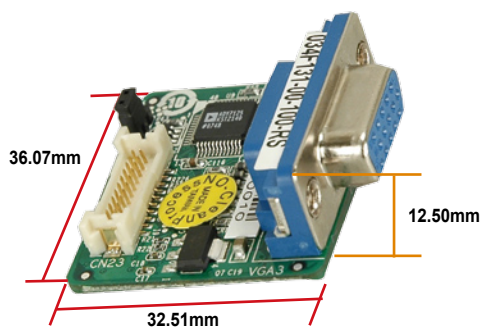
## Ordering Information

Part No.	Description
SDVO-100DVI-R10	DVI output , PCIe x16 add-on card by SDVO interface
SDVO-100VGA-R10	VGA output , PCIe x16, add-on card by SDVO interface
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)

## IEI SDVO Cards Support List

PCIMG 1.3 Board	Model	PCIE-Q350 / PCIE-9652 / PCIE-9650 / PCIE-9450 / PCIE-9452 / PCIE-9152
Embedded Board	Model	IMBA-XQ354 / IMBA-X9654 / IMBA-9654 / IMBA-9454 / IMBA-9454ISA / IMB-Q354 / IMB-9454 / IMB-9452 / IMB-9154 / KINO-9654 / KINO-9454 / KINO-9451/KINO-9152

## 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	30pin LVDS connecting cable
32600-114400-RS	20pin LVDS connecting cable

## LCD TTL/ LVDS Cable

Open Frame LCD cable for various panel connection evaluation



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.

# Mini-PCI Realtek/ VIA/ Ralink Wireless LAN Module

The IEI Networking wireless Mini-PCI cards are fully compliant with IEEE's security and 802.11b/g or 802.11 a/b/g standards. With data rates between wireless devices of up to 54Mbps, it can deliver the bandwidth necessary for real-time streaming for many applications. Supports Windows®, Linux and CE Operating Systems.



**WMV-01**  
Mini-PCI VIA Wireless LAN Module



**WMR-01**  
Mini-PCI Realtek Wireless LAN Module



**WMRA-01**  
Mini-PCI Ralink Wireless LAN Module

Tri-Band

Model Name	WMV-01	WMR-01	WMRA-01
<b>Standards</b>	IEEE 802.11 b/g	IEEE 802.11 b/g	IEEE 802.11 a/b/g
<b>Interface</b>	Mini-PCI	Mini-PCI interface 1.0	Mini-PCI Interface 1.0
<b>Controller Chip</b>	VIA VT6655	Realtek RTL8185L	Ralink RT2561ST
<b>Connectors</b>	2 x U.FL (I-PEX) Antenna connectors	2 x Diversity U.FL Compatible Coaxial Connector	Diversity Coaxial Connector
<b>Security</b>	Supports WPA and WPA 2.0; Built-in hardware security engine for 802.11i 4.0. WEP (128-bit, 64-bit), TKIP, AES CCMP	Hardware-Based Encryption/Decryption Using 64-, 128-bit Wired-Equivalent Privacy (WEP) Keys, WPA and WPA2 are also supported	Hardware-Based Encryption/Decryption Using WEP 64/128, WPA, WPA2, 802.1 and 802.11i
<b>Frequency Range</b>	2.4 ~ 2.497 GHz (for US, Canada, Europe, Japan)	2.412 GHz ~ 2.484 GHz (for US, Canada, Europe, Japan)	2.412 GHz ~ 2.4835 GHz, 5.15 GHz ~ 5.724 GHz, 5.725 GHz ~ 5.825 GHz
<b>Modulation Type</b>	QPSK, BPSK, CCK, OFDM	PBCC, CCK, DQPSK, DBPSK	802.11b: CCK, DQPSK, DBPSK 802.11a/g: QAM64, QAM16, QPSK, BPSK
<b>Supported OS</b>	Windows® 98/NT/2000/XP Windows® CE 4.2/5.0 Linux 2.4.x / 2.6.x	Windows® 98/NT/2000/XP Windows® CE 4.2/5.0 Linux 2.4.x / 2.6.x	Windows® 98/ME/2000/XP Windows® CE 5.0 Linux 2.4.x/2.6.x, MAC OSX
<b>Receiver Sensitivity</b>	802.11b ( 8% PER ) -84 dBm(max.) at 11Mbps 802.11g ( 8% PER ) -71 dBm(max.) at 54Mbps	802.11b ( in 8% PER ) -80 dBm(max.) at 11Mbps 802.11g ( in 10% PER ) -70 dBm(max.) at 54Mbps (-65dBm in average)	802.11a: -65 dBm at 54Mbps 802.11b: -80 dBm at 11Mbps 802.11g: -65 dBm at 54Mbps
<b>Power Consumption</b>	802.11b: 250 mA@3.3V 802.11g: 230 mA@3.3V	802.11b: 340 mA@3.3V 802.11g: 330 mA@3.3V	802.11a: 389 mA@3.3V 802.11b: 375 mA@3.3V 802.11g: 325 mA@3.3V
<b>Temperature</b>	Operating: 0 ~ 50°C	Operating: 0 ~ 50°C	Operating: 0 ~ 60°C
<b>Humidity</b>	Operating: 0% ~70% non-condensing	Operating: 0% ~90% non-condensing	Operating: 0% ~90% non-condensing
<b>Dimensions</b>	64.7mm x 44.6mm	59.75 mm x 44.6 mm	59.6mm x 44.6mm
<b>Weight</b>	NW: 10 g	NW: 9.7 g	NW: 12 g
<b>Complaint Certifications</b>	Wi-Fi, FCC	FCC, CE	FCC Part 15.247 in US EN300328 and EN300826 (EN301489-17) in Europe



**WMUSB-V01-R10**  
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-R10**  
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

<b>Standards</b>	IEEE 802.11 b/g	IEEE 802.11 b/g , Wi-Fi compliant
<b>Interface</b>	USB 1.1/2.0 interface	PCIe mini card
<b>Controller Chip</b>	VIA VT6655	Atheros
<b>Connectors</b>	2 x U.FL (I-PEX) Antenna connectors	2 x U.FL (I-PEX) Antenna connectors
<b>Security</b>	Supports WEP, WPA 1.0/2.0	WEP 64-bit and 128-bit encryption, WPA (Wi-Fi Protected Access), WPA2 (Wi-Fi Protected Access)
<b>Frequency Range</b>	2.4 ~ 2.5GHz	2.4GHz ISM Bands 2.412-2.472GHz, 2.484GHz
<b>Modulation Type</b>	802.11b : DQPSK, DBPSK, DSSS and CCK 802.11g : BPSK, QPSK, 16QAM, 64QAM, OFDM	802.11b : CCK, DQPSK, PSK 802.11g : OFDM
<b>Supported OS</b>	Windows® 98SE/ME/2000/XP	Windows® 2003 server/ XP/XP64/Vista 32/Vista 64
<b>Receiver Sensitivity</b>	802.11b ( 8% PER ) -83 dBm(Typical) at 11Mbps 802.11g ( 10% PER ) -68 dBm(Typical) at 54Mbps	802.11b: -76 dBm(Typical) at 11Mbps 802.11g: -68 dBm(Typical) at 54Mbps
<b>Power Consumption</b>	382 mA@ 5V Tx mode/High speed 305 mA@ 5V Rx mode/High speed	802.11b: TX : MAX 710 mA@ 3.3V , MIN 630mA at 3.3V RX : MAX 330 mA@ 3.3V , MIN 310mA at 3.3V 802.11g: TX : MAX 650 mA@ 3.3V , MIN 620mA at 3.3V RX : MAX 340 mA@ 3.3V , MIN 320mA at 3.3V
<b>Temperature</b>	operation: 0°C ~ 60°C	operation: 0 ~ +60°C
<b>Humidity</b>	operation: 10% ~90% non-condensing	operation: 15% ~95% non-condensing
<b>Dimension</b>	60 mm x 25 mm	51 mm x 30 mm
<b>Weight</b>	NW: 8 g	NW: 18 g
<b>Compliance Certifications</b>	FCC, CE	FCC, CE


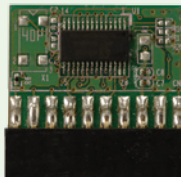

## Ordering Information

Part No.	Description	Part No.	Description
WMR-01-R10	802.11 b+g Wireless Mini-PCI module with Realtek RTL8185L	32500-000500-RS	2 dBi 109mm Antenna
WMV-01-R10	802.11 b+g Wireless Mini-PCI module with VIA VT6655	32500-001000-RS	5 dBi 173mm Antenna
WMRA-01-R10	802.11 a+b+g Wireless Mini-PCI module with Ralink RT2561ST	32100-143900-RS	RF cable ; 300MM; 28AWG; (A)SMA connector ; (B)MHF20278-11R-13;ROHS
WMPCIE-V01-R10	802.11 b+g PCIe mini card wireless LAN module with Atheros	32000-105000-RS	USB cable, 2x4-pin 2.54mm to JST SHR-06V 1.0mm, L:20cm
WMUSB-V01-R10	802.11 b+g USB embedded module with VIA VT6655	32000-102500-RS	USB cable, 2x4pin 2.0mm to JST SHR-06V 1.00mm, L:150mm


# 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	<b>INFINEON</b> SLB9635 TT1.2	<b>WINBOND</b> WPCT200
<b>Features</b>		
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	MS-CAPI
H/W Certification		-
Management Tool Function	<ol style="list-style-type: none"> <li>TPM Management</li> <li>File&amp;Folder En/De-cryption</li> <li>Personal Secure Drive</li> <li>Secure E-Mail</li> <li>Key Transferring</li> <li>Security Policy Configuration</li> </ol>	<ol style="list-style-type: none"> <li>TPM Owner management</li> <li>Password management</li> <li>Fingerprint biometrics support</li> <li>Secure Login</li> <li>TPM Key Backup</li> </ol>
Market Segment	Complete TPM1.2 function	Easy, simple TPM solution
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	

## Pin Assignment



Pin	Singnal	Pin	Singnal
1	LCLK	2	VSS
3	LFRAME#	4	KEYWAY
5	LRST#	6	VCC5
7	LAD3#	8	LAD2#
9	VCC3	10	LAD1#
11	LAD0#	12	VSS
13	SCL	14	SDA
15	SPDA1	16	SPDA0
17	VSS	18	SERIRQ
19	RC#	20	A20GATE

## What is EAL?

\* EAL (Evaluation Assurance Level, EAL1 through EAL7) is a numerical grade assigned following the completion of a Common Criteria security evaluation, an international standard. To achieve a particular EAL, It must meet specific assurance requirements.

## TPM OS Supported List

OS Supported	Infineon	Winbond
Windows®	Windows® XP SP2	Windows® XP SP2
Linux	Fedora 6 (Kemel 2.6.8 or above)	Fedora 6 (Kemel 2.6.8 or above)

## IEI SBC with TPM support

Model Name	Form Factor	Chipset	TPM Type
PCIE-Q350	PICMG 1.3	Intel® Q35 + ICH9DO	Infineon Winbond
PCIE-9652	PICMG 1.3	Intel® GME965 + ICH8M-E	
PCIE-9152	PICMG 1.3	Intel® 915GM + ICH6	
WSB-Q354	PICMG 1.0	Intel® Q35 + ICH9DO	
WSB-9452	PICMG 1.0	Intel® 945GM + ICH7M	
IMBA-X9654 / IMBA-9654	ATX	Intel® Q965 + ICH8DO	
IMBA-9454 / IMBA-9454ISA	ATX	Intel® 945G+ ICH7	
IMB-Q354	MicroATX	Intel® Q35 + ICH9DO	
IMB-9454	MicroATX	Intel® 945G+ ICH7	
KINO-780AM2 / KINO-780EB	MicroATX	AMD® 780E + SB710	
KINO-9652	Mini-ITX	Intel® G M965 + ICH8M	
KINO-9454	Mini-ITX	Intel® 945G+ ICH7	
NOVA-945GSE	5.25"	Intel® 945GSE + ICH7M	

## Ordering Information

Model Name	Description
TPM-IN01-R10	Infineon 20 pin trusted platform module with S/W management tool
TPM-WI01-R10	Winbond 20 pin trusted platform module with S/W management tool