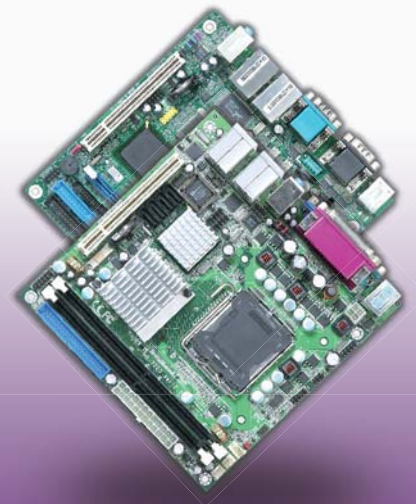


Best Engine for Embedded Computing

Mini-ITX



State of The Art



What is Mini-ITX ?



More compact than all forms of motherboard launched previously by VIA Technology at 1999, the Mini-ITX form factor is a highly integrated x86-based embedded board measuring only 170mm x 170mm proposed by the chipset vendor in Taiwan. Enables you to develop a boarder variety of small form factor PC systems, the Mini-ITX can be put into various kind of equipments to enrich our life. With fully integrated functions, the Mini-ITX form factor is smaller than the industrial SBC and this compact size is quite suitable to aim at the development of industrial controller, compact PC system, thin-clients, tiny network devices, digital media systems, set-top boxes and more.

The Mini-ITX embedded board is built with various combination of mainstream embedded chipsets and processors provided by the Silicon Vendors like Intel, VIA and others. Its key advantage is that the compact figure has been integrated with all necessary functions and the reserved expansion slot can meet the future demands for all system integrators. No matter your demands is low power consumption or high computing power, it is always the most suitable solution.

Table of various kinds of ESB and MB

Form Factor	Board Size (inch/mm)				Expansion	Board Size (inch ²)
	L (inch)	W (inch)	L (mm)	W (mm)		
PC/104	3.55	3.78	90.17	95.89	Module	13.42
PC/104+	3.55	3.78	90.17	95.89	Module	13.42
STX	3.78	3.55	95.89	90.17	Carrier Board	13.42
ETX	4.49	3.74	114.00	95.00	Carrier Board	16.79
COM Express	4.92	3.74	125.00	95.00	Carrier Board	18.40
3.5" Embedded	5.75	4.02	146.00	102.00	Cables	23.12
3.5" ECX	5.75	4.13	146.00	105.00	Module	23.75
EPIC	6.50	4.53	165.00	115.00	Module	29.45
PICMG 1.3 Half-size	6.60	4.98	167.64	126.39	Backplane	32.87
PCI Half-size	7.28	4.80	185.00	122.00	Backplane	34.94
ISA Half-size	7.28	4.80	185.00	122.00	Backplane	34.94
PICMG 1.2 Half-size	7.52	4.80	191.03	121.92	Backplane	36.10
Mini-ITX	6.69	6.69	170.00	170.00	On Board	44.76
5.25" Embedded	5.75	8.00	146.05	203.20	Cables	46.00
EBX	5.75	8.00	146.05	203.20	Module	46.00
PICMG 1.0 Full-size	13.33	4.80	338.58	121.92	Backplane	63.98
PICMG 1.2 Full-size	13.33	4.80	338.58	121.92	Backplane	63.98
PICMG 1.3 Full-size	13.33	4.98	338.58	126.39	Backplane	66.38
Flex ATX	9.00	7.50	228.60	190.50	On Board	67.50
Micro-ATX	9.60	9.60	243.84	243.84	On Board	92.16
Embedded ATX	9.60	9.60	243.84	243.84	On Board	92.16
ATX	12.00	9.60	304.80	243.84	On Board	115.20
SSI	12.00	13.00	330.20	330.20	On Board	156.00

Table of Contents

What is Mini-ITX ?	01	WADE-8141	08
Product Overview	02	Intel® 852GM Based Pentium® M Mini-ITX Board	
Naming Rule of WADE	03	WADE-6010	09
WADE-8156	04	Optimized VIA C7™ based Mini-ITX Board	
Intel® G965 based Core™ Duo Mini-ITX Board		WADE-1120	10
WADE-8165	05	Mini-ITX based Fan-less Node chassis	
Intel® 945GM based Core™ Mini-ITX Board		WADE-1042	11
WADE-8144	06	1U Height Mini-ITX RAID Server with 2 Slots	
Intel® 915GM based Pentium® M Mini-ITX Board		ARTO-220-ITX	12
WADE-8134	07	Mini-ITX based Node chassis with 1 Expansion Slots	
Intel® 915GV Based P4 LGA775 Mini-ITX Board		WADE-2121	13
		The Compact Mini-ITX based Node Chassis	
		WADE-2210	14
		Fashion-made Mini-ITX based Stack Chassis	

Products Overview



WADE-8156

- Intel® LGA775 Core 2 Duo CPUs
- G965 & ICH8
- 2 x DDR2 SDRAM sockets
- Dual display
- Dual G-LANs & Multi-I/O



WADE-8165

- Intel® m-478 Core™ Duo CPUs
- 945GM & ICH7-M
- 2 x DDR2 SDRAM sockets
- Dual display
- G-LAN & Multi-I/O



WADE-8144

- Intel® m-478 Pentium® M CPUs
- 915GM & ICH6M
- 2 x DDR SDRAM socket
- Dual display
- Three G-LAN & Multi-I/O



WADE-8134

- Intel® LGA775 Pentium® 4 CPUs
- 915GV & ICH6
- 2 x DDR SDRAM socket
- Dual display
- Three G-LAN & Multi-I/O



WADE-8141

- Intel® ULV Celeron® M 1GHz
- 852GM & ICH4
- 1 x DDR SDRAM socket
- Dual display
- Dual LANs & Multi-I/O



WADE-6010

- VIA C7™ CPUs
- VIA CX700
- 2 x DDR SDRAM socket
- LAN & Multi-I/O



WADE-1120

- Fully comply with Mini-ITX boards
- Fan-Free technique
- VGA/Dual LAN/3 COM/4 USB ports
- Design for mission critical appliance
- VGA/LAN/USB/COM ports



WADE-1042

- Design for Mini-ITX based ESB
- Supports two PCI slots for expansion
- RAID function supported by the ESB
- VGA/LAN/USB/COM ports
- Rear module for easily maintenance



ARTO-220-ITX

- Fully comply with Mini-ITX boards
- Compact industrial design
- Supports 3.5" HDD and 250W PSU
- VGA/LAN/USB/COM/Parallel ports
- Supports one PCI expansion slot



WADE-2121

- Fully comply with Mini-ITX boards
- Rugged and stylish design
- Tool free maintenance
- Fitting 2.5" HDD on top chassis
- VGA/LAN/USB/COM ports
- Can bind two chassis become 2U rackmount system



WADE-2210

- Fully comply with Mini-ITX boards
- Stacked design for easy maintenance
- Lower heat dissipation from separate the board, HDD and power supply
- VGA/LAN/USB/COM/Parallel ports
- Special design for embedded applications

* Specifications are subject to change without notice.

* Celeron®, Pentium® III, Pentium® 4 and Xeon™ are registered trademarks of Intel Corporation.

* Other trademarks, logo, brands and company names are the property of their respective owners.

Naming Rule of WADE

WADE is the product series name of Portwell's Mini-ITX embedded system boards, its naming rule can be categorized as follows.

WADE-**ABCD**-X (Portwell Mini-ITX Series Product)

- A** Product Type:
- | | |
|--------------------------|---------------|
| 1. Chassis-1U | 6. ESB-VIA |
| 2. Chassis-2U | 7. ESB-AMD |
| 3. Chassis-3U | 8. ESB-Intel® |
| 4. Chassis-Customer Made | 9. ESB-Module |
| 5. Chassis-undefined | |

ESB Part

B Serial Number

C Processor Grade:

- | | |
|---------------------------|--------------------|
| 0. Under P4 (Low Voltage) | 4. Pentium® M |
| 1. Under P4 | 5. P4 Dual Core |
| 2. P4-478 | 6. Pentium® Dual |
| 3. P4-775 | 7. Multi-Processor |

D Generation of the Chipset:

- | | |
|--------------|------------|
| Intel | 4. 915 |
| 0. 845 | 5. 945 |
| 1. 852 | 6. 965 |
| 2. 855 | VIA |
| 3. 865 | 0. CN700 |

X Serial number or customer code

For example:

Intel® 915GV Based D4 LGA 775 Mini-ITX Board
→ WADE-8134

Chassis Part

B Chassis Type:

0. Rack-mount
1. Equipment Machine
2. Flashing/Special made

C Width of the Chassis:
Actual width (inch) - 7 = C
When B=0
It means number of drives

D Number of Expansion Slots

X Serial number or customer code

For example:

1U Height Rack-mount Server with Four RAID Drives and Two Expansion Slots
→ WADE-1042

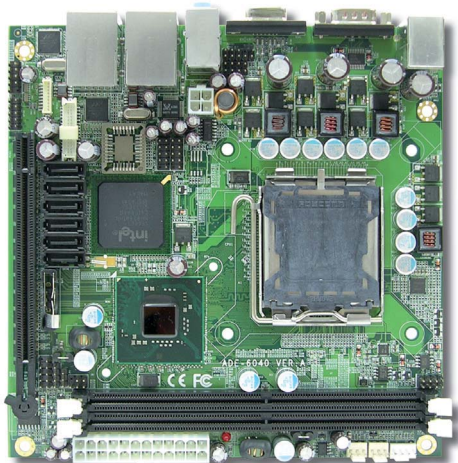


E225800



WADE-8156

Leading Intel® Core 2 Duo / Pentium® 4 LGA775 based Mini-ITX Board with Dual Display & GbE LAN Ports



Feature

- Support 65 nm Intel® Core™ 2 Duo (Conroe) processors
- Built with Intel® G965 GMCH Chipset
- Adopts Dual-channel DDR2 memory architecture
- Supports Dual View display by VGA & DVI/VGA & LVDS/LVDS & DVI
- On-board 5.1 CH Audio capability
- Dual GbE LAN ports supported
- One PCI Express x16 slot reserved for expansion
- Supports total up to two COM and eight USB 2.0 ports

The WADE-8156 is a leading design of the advanced mini-ITX ESB with the newest Intel G965 GMCH chipset. With the computing power of dual cores technology, it can offer you the dramatic energy to drive your application quick and reliable. The graphic media accelerator x3000 shows the wonderful display

speed and quality via the dual channels memory support. The expansion slot based on PCI-Express x16 design give you the best flexibility to expand your system. No wonder, the WADE-8156 is really leading among competitors.

Specification

System

CPU	Intel® LGA775 Core 2 Duo and Pentium® 4 / Celeron® D processors (E6000, 600, 500, 300 series)
FSB	FSB 1066/800/533 MHz
BIOS	Award BIOS with 8Mb Flash ROM
System Chipset	Intel® G965 GMCH & 82801HB ICH8
System Memory	2 x 240-pin dual channel DDR2 SDRAM DIMM 533/667/800 MHz supports up to 4 GB
Storage	4 x Serial ATA connector high-speed data transfers at up to 3 Gb/s
RAID	Optional ICH8R supports RAID 0, 1, 5, 10 function
Watchdog Timer	Reset; 1 sec.~255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
GPIO	On-board programmable 8-bit Digital I/O interface
Expansion	1 x PCI Express x4 Interface

I/O

MIO	2 x RS-232, 1 x K/B, 1 x Mouse, 2 x GbE
IrDA	IrDA 1.0
USB	4 x USB 2.0 ports and 4 x USB 2.0 with header
Audio Codec	HDAC codec with Realtek ALC883 7.1 +2CH 3D audio interface
Audio Interface	Mic in, Line in, CD Audio in, Line out, Rear out and Center/Subwoofer out
Ethernet Interface	IEEE 802.3 10/100/1000BASE-T Gigabit Ethernet compliant

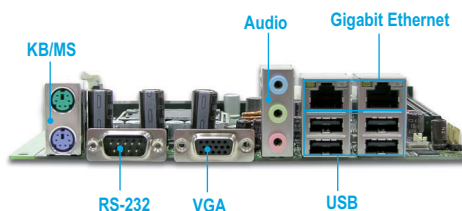
Display

Chipset	Intel® G965 GMCH Integrated GMA X3000 Graphics device
Display Memory	Intel® DVMT 4.0 supports up to 384 MB video memory
Resolution	Analog Display Port : QXGA 2048 x 1536@75HzLCD/Digital Display : Flat panels up to 2048x1536@60 Hz or digital CRT/HDTV at 1920x1080@85Hz
VGA/LCD Interface	Intel® Graphics Gen4 Media Accelerator GMA X3000, and supports widescreen LCD displays and accelerated DirectX® 9.0c
LVDS	Optional Chronitel CH7308 LVDS transmitter

Mechanical & Environmental

Power Requirement	TBD
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O



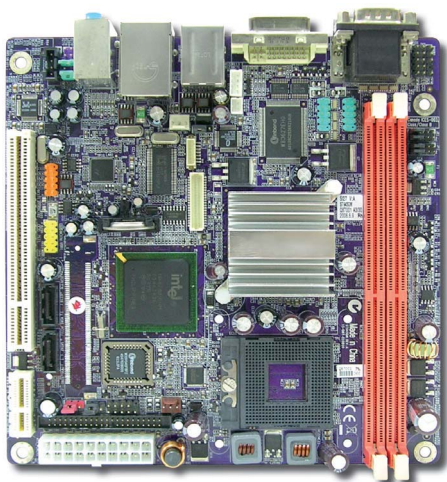
Ordering Information

■ WADE-8156

Intel® LGA775 Intel® Core™ 2 Duo and Pentium® 4 / Celeron® D processors
Main Board with VGA, Audio, Dual GbE LANs, 8 USB 2.0

WADE-8165

Advanced Intel® Core™ Duo based Mini-ITX Board with Dual Display & One GbE LAN and Six USB Ports



Feature

- Intel® Core™ Duo and Solo processors
- Built with Intel 945GM chipset
- Supports DDR2 SDRAM to 2 GB
- Dual View Display by VGA & LVDS/VGA & DVI/LVDS & DVI
- On-board AC97 Audio interface
- Gigabit LAN port supported
- PCI-E x1, PCI slot reserved for expansion
- Supports total up to four COM and six USB 2.0 ports

The WADE-8165 is an advanced mini-ITX ESB with Intel Core technology to offer the strong and reliable computing power for customers mission critical applications. Its dual display technology shows the wonderful display speed and quality for

your panel or other display devices. The expansion slot based on PCI and PCI-Express design can give you the flexibility to expand your system via new bandwidth technology. Without doubt, The WADE-8165 is really your smart choice.

Specification

System

CPU	Intel® Core™ Duo and solo Processors (T1000, 2000, 7000 series)
FSB	667/533 MHz
BIOS	AMI BIOS with 8Mb Flash ROM
System Chipset	Intel® 945GM + ICH7M
System Memory	2 x 240-pin DDR2 SDRAM DIMM 667/533/400 MHz supports up to 2GB
Storage	1 x Ultra DMA133/100/66/33 support two IDE devices by 44-Pin IDE connector; 2 x Serial ATA connector high-speed data transfers at up to 150 MB/s
Watchdog Timer	Reset: 1sec.~255 min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
GPIO	On-board programmable 8-bit Digital I/O interface
Expansion	1 x PCI-E x1, 1x 32-bit PCI slot

I/O

MIO	4 x RS-232, 1 x K/B, 1 x Mouse, 1 x 1394, 1xGbE
IrDA	115k bps, IrDA 1.0 compliant
USB	4 x USB 2.0 ports and 2 x USB 2.0 with header
Audio Codec	AC97 5.1 CH 3D audio interface
Audio Interface	Mic in, Line in, CD Audio in, Line out, Rear out and Center/Subwoofer out
Ethernet Interface	IEEE 802.3 10/100/1000BASE-T Gigabit Ethernet

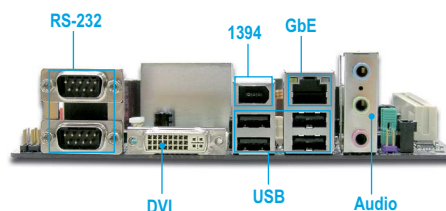
Display

Chipset	Intel® 945GM Integrated Intel® GMA 950 graphics
Display Memory	Intel® DVMT3.0 supports up to 224 MB video memory
Resolution	Analog Display Port : QXGA 2048 x 1536 @ 75Hz Digital LVDS Port : UXGA 1600x1200
VGA/LCD Interface	Intel® Graphics Media Accelerator GMA 950, and supports widescreen LCD displays and accelerated DirectX® 9.0
LVDS	Dual channel 18-bit LVDS
DVI	Chrontel CH7307 DVI transmitter

Mechanical & Environmental

Power Requirement	TBD
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O



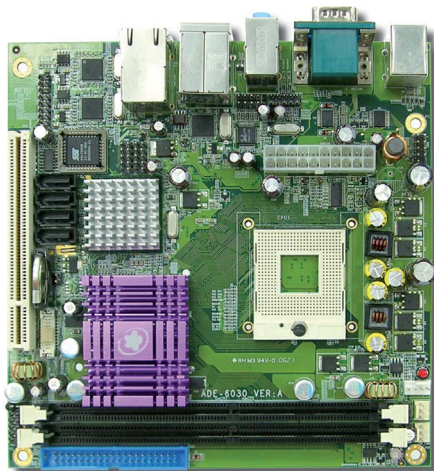
Ordering Information

■ WADE-8165

Intel® Core™ Duo and Solo Mini-ITX Board with VGA, LVDS, DVI, Audio, one GbE LANs and 6 USB 2.0 ports

WADE-8144

High Performance Intel® Pentium® M Mini-ITX Board with
Dual Display, Three GbE LANs and Six USB Ports



Feature

- Supports 90nm Intel® Pentium® M/Celeron® M processors
- Built with Intel® 915GM Chipset
- Adopts Dual-channel DDR2 memory architecture
- Supports Dual View display by VGA & DVI / VGA & LVDS / LVDS & DVI
- On-board 5.1 CH Audio capability
- Three GbE LAN ports supported
- One PCI slot reserved for expansion
- Supports total up to two COM and six USB 2.0 ports

WADE-8144 is a State-of-the-art design of the industrial grade embedded board. With a low power consumption Pentium® M processor, it not only bring you the needed computing power, but also make your application reliable without heat concerns. The dual display capability with dual memory structure

supported, it can enhance your graph and display performance. Designed with three GbE LAN ports to meet your advanced communication needs, WADE-8144 is really a wonderful choice to meet your mission requirements.

Specification

System

CPU	90 nm Dothan Intel® µFC-PGA 478 Pentium® M/ Celeron® M processors
FSB	533/400 MHz
BIOS	Award BIOS with 4Mb Flash ROM
System Chipset	Intel® 915GM + ICH6M
System Memory	2 x 240-pin dual channel DDR2 SDRAM DIMM 400/533 MHz support up to 2GB
Storage	1 x Ultra DMA100/66 support two IDE devices by 40-Pin IDE connector ; 2 x Serial ATA connector high-speed data transfers at up to 150 MB/s
SSD	1x CompactFlash Type I/II Socket
Watchdog Timer	Reset:1 sec..~255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
GPIO	On-board programmable 8-bit Digital I/O interface
Expansion	1 x 32-bit PCI slot

I/O

MIO	2 x RS-232, 1 x K/B, 1 x Mouse, 3 x GbE
IrDA	IrDA 1.0
USB	2 x USB 2.0 ports and 4 x USB 2.0 with header
Audio Codec	Realtek ALC655 AC97 5.1 CH 3D audio interface
Audio Interface	Mic in, Line in, CD Audio in, Line out, Rear out and Center/ Subwoofer out
Ethernet Interface	IEEE 802.3 10/100/1000BASE-T Gigabit Ethernet compliant

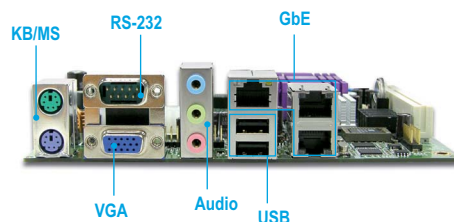
Display

Chipset	Intel® 915GM Integrated Intel® GMA 900 graphics
Display Memory	Intel® DVMT 3.0 supports up to 128 MB video memory
Resolution	Analog Display Port: QXGA 2048 x 1536 @ 75Hz Digital LVDS Port: UXGA 1600 x 1200
VGA/LCD Interface	Intel® Graphics Media Accelerator GMA 900, and supports widescreen LCD displays and accelerated DirectX® 9.0
LVDS	Dual Channel 18-bit LVDS
DVI	Chrontel CH7307 DVI transmitter

Mechanical & Environmental

Power Requirement	TBA
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O

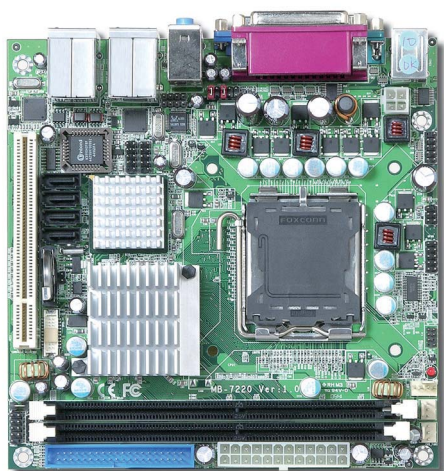


Ordering Information

- **WADE-8144**
Intel® Pentium® M/Celeron® M processors Mini-ITX Board with VGA, LCD, Audio, three GbE LANs and 6 USB 2.0 ports

WADE-8134

High Performance Intel® Pentium® 4 LGA775 Mini-ITX Board
with Dual Displays, Dual GbE LANs and Eight USB Ports



Feature

- Supports 90 nm Intel® LGA775 Pentium® 4 / Celeron® D processors
- Built with Intel® 82915GV GMCH chipset
- Adopts Dual-channel DDR memory architecture
- Supports Dual View display by VGA & DVI
- On-board 5.1 CH Audio capability
- Dual GbE LAN ports supported
- One PCI slot reserved for expansion
- Supports total up to two COM and eight USB 2.0 ports

WADE-8134 is a State-of-the-art design of the industrial grade embedded board. With a huge 775 pins advanced processor, it can bring the needed computing power for your application. The supported dual display capability with dual memory structure

can enhance your graph performance and display quality. Designed with the environmental consideration, WADE-8134 can work in harsh place to meet your mission requirement.

Specification

System

CPU	90 nm Intel® LGA775 Pentium® 4 / Celeron® D
FSB	800/533 MHz
BIOS	Award BIOS with 4Mb Flash ROM
System Chipset	Intel® 82915GV GMCH & 82801FB ICH6
System Memory	2 x 184-pin DDR DIMM socket support up to 2 GB, 6.5GB/s dual-channel interleaved mode assuming DDR 400 MHz
Storage	1 x Ultra DMA133/100/66/33 support two IDE devices by 40-Pin IDE connector ; 4 x Serial ATA connector high-speed data transfers at up to 150 MB/s
Watchdog Timer	Reset/IRQx; 1 sec.~255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
GPIO	On-board programmable 8-bit Digital I/O interface
Expansion	1 x 32-bit PCI slot

I/O

MIO	4 x SATA, 1 x EIDE, 1 x LPT, 2 x RS-232, 1 x K/B, 1 x Mouse
IrDA	115k bps, IrDA 1.0 compliant
USB	4 x USB 2.0 ports and 4 x USB 2.0 with header
Audio Codec	Realtek ALC655 AC97 5.1 CH 3D audio interface
Audio Interface	Mic in, Line in, CD Audio in, Line out, Rear out and Center/Subwoofer out
Ethernet Interface	IEEE 802.3 10/100/1000BASE-T Gigabit Ethernet compliant

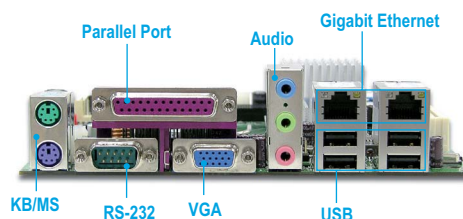
Display

Chipset	Intel® 82915GV GMCH
Display Memory	Integrated Intel® Graphics Media Accelerator GMA 900, and share system memory to 224 MB
Resolution	CRT mode: 2048 x 1536@85 Hz LCD/Simultaneous mode: 2048 x 1536@16 bpp (85Hz)
VGA/LCD Interface	Intel® Graphics Media Accelerator GMA 900, and supports widescreen LCD displays and accelerated DirectX® 9
DVI	Chrontel CH7307 DVI transmitter

Mechanical & Environmental

Power Requirement	76W (Intel® 3.2GHz CPU with 1GB system memory in DOS V 6.22)
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O

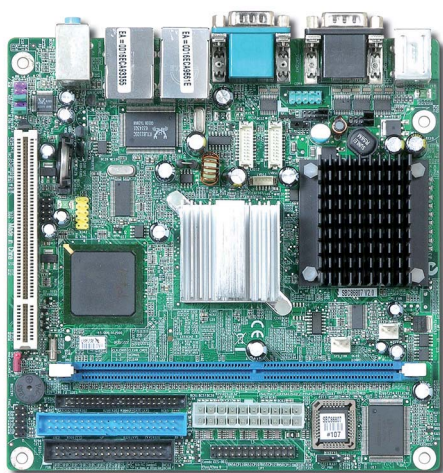


Ordering Information

- **WADE-8134**
Intel® LGA775 Pentium® 4 / Celeron® D processors Mini-ITX Board with VGA, DVI, Audio, Dual GB LANs, and 8 USB 2.0 ports
- **1U Heat Sink**
Copper made heat sink to expire the system heat with 40 CFM fans

WADE-8141

Cost-effective Intel® ULV Celeron® M Mini-ITX Board
with VGA/LVDS Display, Dual LANs and Six USB Ports



Feature

- Built with Intel® Celeron® M processors
- Supports DDR SDRAM to 1 GB
- Dual View Display by VGA & LVDS
- On board AC97 Audio interface
- Dual 10/100Mbps LANs supported
- One PCI slot reserved for expansion
- Supports total up to four COM and six USB 2.0 ports

The WADE-8141 is a cost-effective Mini-ITX board for the panel or lower power oriented application. Built with the 1GHz ULV Pentium-M processor, it give you the necessary computing power for most part of the applications in your life. Its dual view

display capability enables you to support various kind of panels or display devices. Four COM and Six USB ports are supported to meet your versatile of expansion needs.

Specification

System

CPU	90 nm Intel® ULV Celeron® M 600Mhz(512KB cache) or 1GHz (zero cache) processor
FSB	400 MHz
BIOS	Award BIOS with 2Mb Flash ROM
System Chipset	Intel® 82852GM & 82801DB ICH4
System Memory	1 x 184-pin DDR 333/266 DIMM socket supports up to 1 GB
Storage	2 x Ultra DMA133/100/66/33 support four IDE devices by one 40-pin and one 44-pin IDE connector
SSD	1 x CompactFlash Type I/II socket
Watchdog Timer	Reset/IRQx; 1 sec.-255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats
GPIO	On-board programmable 8-bit Digital I/O interface
Expansion	1 x 32-bit PCI slot

I/O

MIO	2 x EIDE, 1 x LPT, 1 x FDD, 3 x RS-232, 1 x K/B, 1 x Mouse
IrDA	115k bps, IrDA 1.0 compliant
USB	4 x USB 2.0 ports and 2 x USB 2.0 with header
Audio Codec	Realtek ALC655 AC97 5.1 CH 3D audio interface
Audio Interface	Mic in, Line out
Ethernet Interface	IEEE 802.3 10/100 BASE-T Ethernet compliant

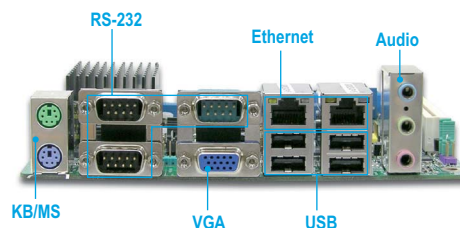
Display

Chipset	Intel® 82852GM (MCH)
Display Memory	Integrated Intel® Graphics share system memory to 64 MB
Resolution	CRT mode: 2048 x 1536@85 Hz LCD/Simultaneous mode: 1600 x 1200 (85 Hz)
VGA/LCD Interface	Up to 64 MB of dynamic video memory allocation
LVDS	Dual channel 24-bit LVDS

Mechanical & Environmental

Power Requirement	16W (Intel® Celeron® M 1GHz CPU with 256MB system memory in DOS 6.22)
Operating Temperature	0~60°C (32~140°F)
Operating Humidity	0%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O

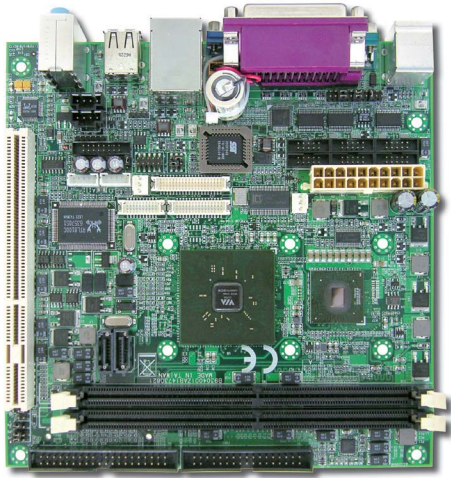


Ordering Information

- **WADE-8141**
Intel® Celeron® M 600MHz(512KB cache) Based Mini-ITX Board with VGA, LVDS, Audio, Dual LANs and Six USB 2.0 ports

WADE-6010

Optimized VIA C7 based Mini-ITX Board with Dual Display,
Six USB Ports and Six COM Ports



Feature

- Built with VIA C7 1.5GHz processor
- Secure sensitive transaction platform with DDR2 ECC memory such as POS and cash drawer
- Dual display via CRT and LVDS or CRT and DVI for interactive client application such as KIOSK POS
- CompactFlash socket reserved for diskless application
- Six COM ports on-board dedicate to support low speed I/O connectivity especially for industrial automation application

The WADE-6010 is an optimized mini-ITX board for entry level POS equipment with the VIA C7 processor, it can give you the necessary computing power to drive your application. Without the heat problem, you can put it into any compact chassis or

housing to fit for the environmental demands. Six USB ports and six COM ports are supported for your flexible expansion when connected to the external devices.

Specification

System

CPU	VIA C7 1.5GHz processor
FSB	400 MHz
BIOS	Award BIOS
System Chipset	VIA CX700
System Memory	Up to 2GB DDR2 400 SDRAM on dual 240-pin DIMM socket, support ECC
Storage	Support one EIDE channel with Ultra DMA 100/66/33 and dual SATA 300 drives
SSD	1 x Type II CF socket on EIDE channel
Watchdog Timer	Programmable via software from 30 sec. to 250 sec.
H/W Status Monitor	System monitor (fan, temperature, voltage)
GPIO	N/A
Expansion	1 x PCI expansion slot supports up to three PCI devices via riser card

I/O

MIO	5 x RS-232, 1 x Selectable RS232/422/485, 1 x LPT, 1 x FDD, 1 x K/B, 1 x Mouse
IrDA	IrDA 1.0
USB	4 x USB 2.0 ports and 2 x USB 2.0 with header
Audio Codec	HDA 2.1 CH 3D Audio Interface
Audio Interface	Mic in, CD Audio in, Line out
Ethernet Interface	Single Fast Ethernet port (project based Gigabit Ethernet upgradeable)

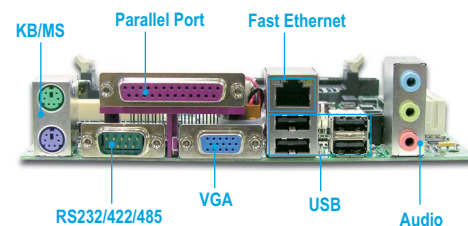
Display

Chipset	VIA CX700 integrated graphic controller
Display Memory	Share system memory up to 128MB
Resolution	CRT mode: 1920 x 1440 LCD/Simultaneous mode: 1600 x 1200
VGA/LCD Interface	Support CRT LVDS, DVI & DVO interfaces, and dual display via CRT & LVDS or CRT & DVI interfaces
LVDS	Dual channel 24-bit LVDS, Single channel 18-bit LVDS

Mechanical & Environmental

Power Requirement	TBA
Operating Temperature	0~40°C
Operating Humidity	5%~90% relative humidity, noncondensing
Size (L x W)	6.69" x 6.69" (170 mm x 170 mm)
Weight	0.94 lbs (0.43 Kg)

Rear I/O



Ordering Information

- **WADE-6010**
VIA C7 1.5GHz processor with DDR2 SDRAM, VGA/Panel, Dual display, LAN and Audio

WADE-1120

The Fan-Free Designed Compact Node Chassis built with Intel® Celeron® M Mini-ITX based board

Feature



- Equipped with WADE-8141 or similar Mini-ITX board
- Delicate embedded platform with fan-free design
- Built with VGA, Dual LAN, 3 COM and 4 USB ports
- Rugged design for mission critical appliance
- Tool-Free design for easy assembling

The WADE-1120 is an indeed fan free design node chassis that shot for the mission critical environment. Its compact future really brings the advantage for embedded application. Built in with WADE-8141 or similar Mini-ITX boards make the

tiny chassis a powerful controller in any kind of appliance. The tool free design help users to assemble or maintain the system easily.

Specification

System

ESB	Adopts WADE-8141 Mini-ITX ESB. (Optional for other Mini-ITX based ESB)
CPU	Supports various kind of Mini-ITX board, (Intel® ULV Celeron® M 600MHz with 512KB cache processor)
System Memory	1 x 184-pin DDR 333/266 DIMM socket supports up to 1 GB
Display	Intel® 82852GM (MCH), integrated Intel® Graphics share system memory to 64 MB
Audio	MIC in and Line out
Ethernet	Dual 10/100 Mbps support
System Indicators	Power / Storage / LAN
HDD	N/A
CD/DVD-ROM	N/A
Expansion	N/A

External I/O

COM Port	3 x RS-232
LAN Port	2 x RJ45
VGA/LCD	1 x DB15
Audio Port	Line-in / Line-out / MIC
USB Port	4 x USB ports
IEEE 1394 Port	N/A
Parallel Port	N/A
Mouse & KB	2 x PS/2 mini DIN

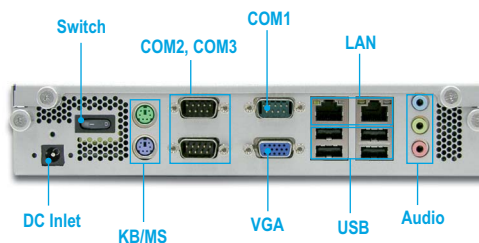
Power Supply Unit

Power Input	100~240Vac/50~60Hz (full range)
Power Output	90 Watt

Mechanical & Environmental

Operation Temperature	0~45°C
Storage Temperature	N/A
Relative Humidity	5~95% non-condensing
Dimension	190 x 170 x 50 (mm)
Weight	2~2.5 Kg

Rear I/O



Ordering Information

- **WADE-1120**
The Fan-free Designed Compact Node Chassis built with Intel® Celeron® M Mini-ITX based board
- **WADE-1120-8141**
Advance Mini-ITX based Chassis with WADE-8141 of integrated system

WADE-1042

1U Height Mini-ITX based Server with 4 RAID drives and
2 Expansion Slots



Feature

- Designed for Mini-ITX based ESB
- Supports two PCI slots for expansion
- RAID function supported by the ESB
- Built-in VGA/LAN/USB/COM ports
- Tiny space with huge functions
- Rear module (I/O shield) design for easily and quickly maintenance



The WADE-1042 is a 1U height rack-mount server designed for Mini-ITX ESB to fit in ISP or special Application. Compared with other rack-mount servers, it is really tiny and slim for user to save the space in the server farm. With extra two PCI expansion

slots, it can fit for your versatile demand of advanced application like NAS or WEB server. Four SATA drives are equipped to offer the RAID function with the Mini-ITX ESB that can fit for customer's needs.

Specification

System

ESB	Adopts WADE-8141 Mini-ITX ESB. (Optional for other Mini-ITX based ESB)
CPU	90 nm Intel® LGA775 Pentium® 4 / Celeron® D
System Memory	1 x 184-pin DDR 333/266 DIMM socket supports up to 1 GB
Display	Intel® 82852GM (MCH), integrated Intel® Graphics share system memory to 64 MB
Audio	Reversed audio interface for system use
Ethernet	Dual 10/100/1000 Mbps support
System Indicators	Power LED
HDD	Mounting Kits for 4 sets of 3.5" HDD with SATA interface
CD/DVD-ROM	N/A
Expansion	Two PCI slot

External I/O

COM Port	1 selection RS-232/422/485
LAN Port	Dual fast Ethernet Port
VGA/LCD	1 x DB15 interface
Audio Port	Line-in/Line-out/MIC
USB Port	Four USB ports
IEEE 1394 Port	N/A
Parallel Port	1xDB-25
Mouse & KB	2 x PS/2 mini DIN

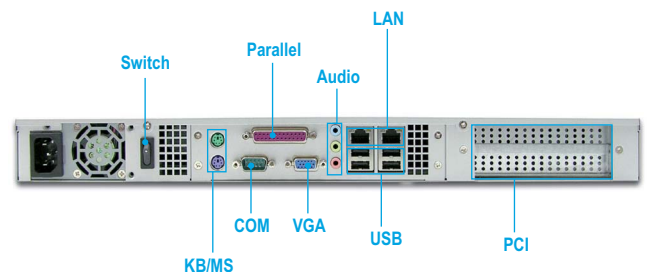
Power Supply Unit

Power Input	100~240Vac/50~60Hz (full range)
Power Output	250 Watt

Mechanical & Environmental

Operation Temperature	0~50°C
Storage Temperature	-20~80°C
Relative Humidity	5~95% non-condensing
Dimension	432 x 380 x 44 (mm)
Weight	8.5 Kg

Rear I/O



Ordering Information

- **WADE-1042**
Advance Mini-ITX based Chassis for Rack-Mount
- **WADE-1042-8141**
Advance Mini-ITX based Chassis with WADE-8141 of integrated system



Feature

- Fully comply with Mini-ITX form factor Board
- Compact, slim and stylish industrial design
- Supports one 3.5" HDD and 250W full range PSU
- Supports VGA/LAN/USB/COM/ Parallel ports
- Supports one PCI expansion slot



The ARTO-220-ITX is design for variety of embedded applications. Features with tool free design for easy assembly and maintenance, equips with 3.5" HDD and network ready to meet most of the demands of the system applications. Sup-

ports one PCI slot for extra expansion card and one 250Watts power supply to drive a higher computing power.

Specification

System

ESB	Adopts WADE-6010 Mini-ITX ESB. (Optional for other Mini-ITX based ESB)
CPU	Support various kind of Mini-ITX board
System Memory	Up to 2GB DDR2 400 SDRAM on dual 240-pin DIMM socket, support ECC
Display	VIA CX700 integrated graphic controller, share system memory up to 128MB
Audio	Reversed audio interface for system use
Ethernet	Single 10/100/1000 Mbps support
System Indicators	Power, HDD, LAN
HDD	3.5" HDD
CD/DVD-ROM	N/A
Expansion	One PCI slot

External I/O

COM Port	1 selection RS-232/422/485
LAN Port	Single fast Ethernet Port (Project based Gigabit Ethernet upgraded)
VGA/LCD	1xDB15
Audio Port	Line-in/Line-out/MIC
USB Port	Dual USB portsx2
IEEE 1394 Port	N/A
Parallel Port	1xDB-25
Mouse & KB	2 x PS/2 mini DIN

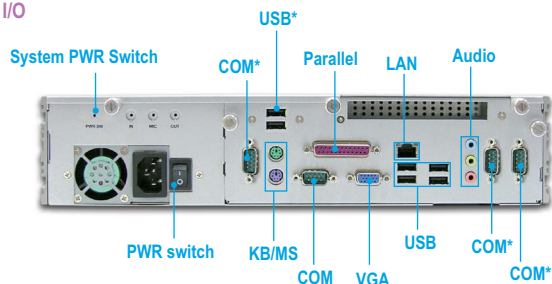
Power Supply Unit

Power Input	100~240Vac/50~60Hz (full range)
Power Output	250 Watt

Mechanical & Environmental

Operation Temperature	0~50°C
Storage Temperature	-20~80°C
Relative Humidity	5~95% non-condensing
Dimension	374 x 241 x 74 (mm)
Weight	6.5 Kg

Rear I/O



"*" Represents Optional

Ordering Information

- **ARTO-220-ITX**
Advance Mini-ITX based Chassis for Embedded application
- **ARTO-220-ITX-6010**
Advance Mini-ITX based Chassis with WADE-6010 of integrated system



Feature

- Fully comply with Mini-ITX form factor
- Rugged and stylish design
- Tool free design for easy assembly and maintenance
- Smart piggyback design for fitting the 2.5" HDD on top chassis
- Built-in VGA/LAN/USB/COM ports
- Special design tray can bind two to become 2U rackmount system

The WADE-2121 is a rugged, stylish design MiniITX ESB chassis for fitting in various embedded applications. A front mesh is suitable for ventilation. The tool free design is easy for assembly and maintenance. Equipped with 2.5" HDD and one PCI

expansion slot can provide versatile of advanced applications. With 180 Watts power supply to provide enough power source for the system.

Specification

System

ESB	Adopts WADE-6010 Mini-ITX ESB. (Optional for other Mini-ITX based ESB)
CPU	Support various kind of Mini-ITX board, (VIA C7 1.5GHz processor)
System Memory	Up to 2GB DDR2 400 SDRAM on dual 240-pin DIMM socket, support ECC
Display	VIA CX700 integrated graphic controller, share system memory up to 128MB
Audio	Reversed audio interface for system use
Ethernet	Single 10/100/1000 Mbps support
System Indicators	Power and HDD
HDD	2.5" HDD
CD/DVD-ROM	N/A
Expansion	One PCI slot

External I/O

COM Port	1 selection RS-232/422/485
LAN Port	Single fast Ethernet Port (Project based Gigabit Ethernet upgraded)
VGA/LCD	1xDB15
Audio Port	Line-in/Line-out/MIC
USB Port	Dual USB portsx2
IEEE 1394 Port	N/A
Parallel Port	1xDB-25
Mouse & KB	2 x PS/2 mini DIN

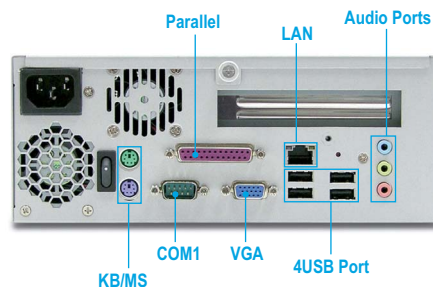
Power Supply Unit

Power Input	100~240Vac/50~60Hz (full range)
Power Output	180 Watt

Mechanical & Environmental

Operation Temperature	0~50°C
Storage Temperature	-20~80°C
Relative Humidity	5~95% non-condensing
Dimension	223 x 212 x 86.2 (mm)
Weight	3.5 Kg

Rear I/O



Ordering Information

- **WADE-2121**
Advance Mini-ITX based Chassis for Embedded application
- **WADE-2121-6010**
Advance Mini-ITX based Chassis with WADE-6010 of integrated system

Feature



- Fully comply with Mini-ITX form factor
- Stacked design for easy assembly and maintenance
- Lower the heat dissipation from separate the board, HDD and power supply
- Supports VGA/LAN/USB/COM/Parallel ports
- Special design for embedded applications

The WADE-2210 adopts separated stack as the chassis structure that is suitable for easy assembly and maintenance. The upper layer is equipped with a Mini-ITX ESB and the bottom layer is designed for PSU and storage.

It can be apply to many embedded applications through the powerful MiniITX ESB. Supports one 3.5" HDD and one 180 Watts power supply to drive the system efficiently.

Specification

System

ESB	Adopts WADE-6010 Mini-ITX ESB. (Optional for other Mini-ITX based ESB)
CPU	Adopts VIA C7 1.5GHz processor
System Memory	Up to 2GB DDR2 400 SDRAM on dual 240-pin DIMM socket, support ECC
Display	VIA CX700 integrated graphic controller, share system memory up to 128MB
Audio	MIC in and Line out
Ethernet	Single 10/100/1000M bps support
System Indicators	Power and HDD
HDD	3.5" HDD
CD/DVD-ROM	N/A
Expansion	N/A

External I/O

COM Port	1 selection RS-232/422/485
LAN Port	Single fast Ethernet Port (Project based Gigabit Ethernet upgraded)
VGA/LCD	1xDB15
Audio Port	Line-in/Line-out/MIC
USB Port	Dual USB portsx2
IEEE 1394 Port	N/A
Mouse & KB	2 x PS/2 mini DIN

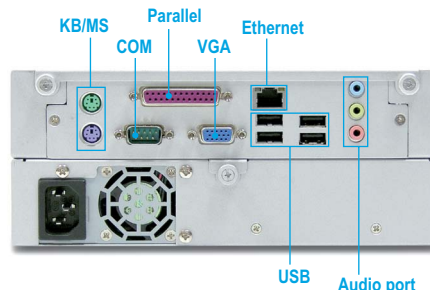
Power Supply Unit

Power Input	100~240Vac/50~60Hz (full range)
Power Output	180 Watt

Mechanical & Environmental

Operation Temperature	0~50°C
Storage Temperature	-20~80°C
Relative Humidity	5~95% non-condensing
Dimension	216 x 190 x 88 (mm)
Weight	3.5 Kg

Rear I/O



Ordering Information

- **WADE-2210**
Advance Mini-ITX based Chassis for Embedded application
- **WADE-2210-6010**
Advance Mini-ITX based Chassis with WADE-6010 of integrated system



Portwell

Together in Electric Dream!



Portwell, Inc. Headquarters

3F, No. 92, Sec. 1, Nei-Hu Rd.,
114 Taipei, Taiwan
Tel: +886-2-27992020
Fax: +886-2-27991010
E-mail: info@portwell.com.tw
<http://www.portwell.com.tw>

American Portwell

44200 Christy St.
Fremont, CA 94538, USA
Tel: +1-510-403-3399
Fax: +1-510-403-3184
E-mail: info@portwell.com
<http://www.portwell.com>

Portwell Japan, Inc.

〒101-0042 ShowaKanda Build, 10-2
Kanda Higashi matsushita-cho
chiyoda-ku Tokyo Japan
Tel: +81-3-5298-8071
Fax: +81-3-5298-8072
E-mail: info@portwell.co.jp
<http://www.portwell.co.jp>

Beijing Portwell

6F, Building 3, Qunying Zone,
Chuangye Rd. 8, Shangdi, Haidian
District, Beijing, China 100085
Tel: +86-10-82701616
Fax: +86-10-82700606
E-mail: info@portwell.com.cn
<http://www.portwell.com.cn>

Portwell (UK) Ltd.

Unit 7, Holloways, Bessemer Close
Ebbleke Industrial Estate, Verwood,
Dorset, BH31 6AZ, UK
Tel: +44(0)1202-813816
Fax: +44(0)1202-813817
E-mail: info@portwell.co.uk
<http://www.portwell.co.uk>

Portwell-Laxsons India

Laxsons House, AA2, Walbhat Road,
Goregaon (E), Mumbai - 400 063,
Maharashtra, India.
Tel: +91-22-2685-9911
Fax: +91-22-2685-9922
E-mail: info@portwelllaxsons.com
<http://www.portwelllaxsons.com>