

DFI-ITOX

DFI Redefines Flexibility Through a Series of
Modularized Embedded Systems for...

Industrial Automation



EC220/221 Series



EC210 Series

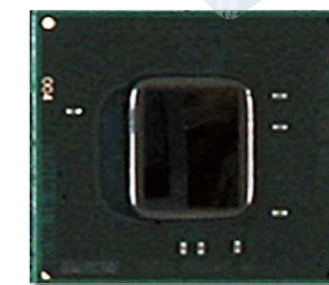


EC200 Series

3	Introduction
4	A Variety of Expansion Capability
5	Excellent I/O Connectivity
6	Features
8	Flexible Expansion
9	Industrial Computing Applications
10	Comparison
12	EC200 Series
14	EC210 Series
16	EC220 / 221 Series

The EC200 series is an industrial grade system with passive cooling and anti-shock drive bay mounting designed for factory floor environments. The unique modular-concept construction supports 12 system configurations using three riser cards and three I/O module options in a cable-free assembly. Virtually unlimited systems configurations are possible using low-cost OEM I/O modules designed to meet custom OEM specification requirements. All configurations feature fanless cooling with a 1.8GHz dual core Intel® Atom™ D525 processor and Intel® ICH8M I/O controller hub requiring only 15.4 Watts maximum power.

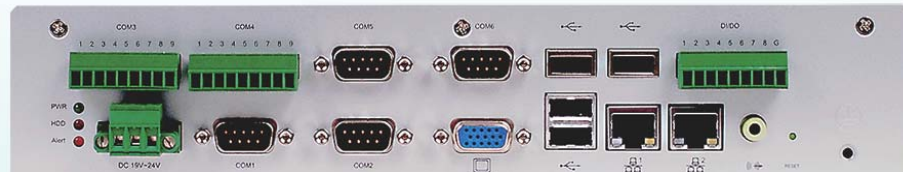
● **Powered by Intel® Atom™ D525 and ICH8M**



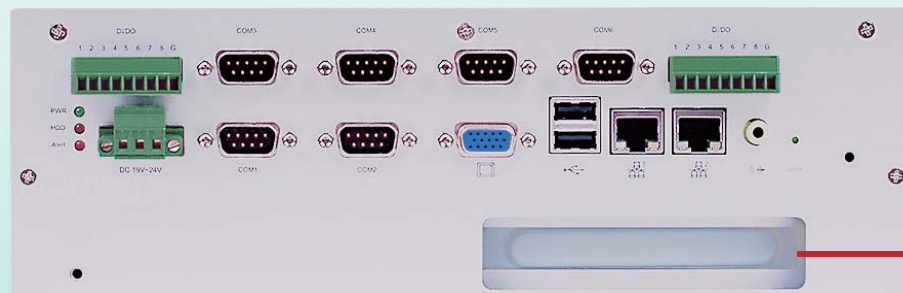
Integrated Intel® GMA 3150 graphics accelerator with DX9.0C and OpenGL 1.4 compliance supports VGA displays up to 2,048 x 1,536 @ 60 Hz.

Four Chassis Options

EC200 Series



EC210 Series



Expansion slot

EC220/221 Series



Expansion slots

Expansion Slots

	EC200	EC210	EC220	EC221
PCI	0	1	2	1
PCIe x1	0	0	0	1
Mini PCIe x1	1	1	1	1
Chassis Height	55mm (2.17")	90mm (3.54")	110mm (4.33")	110mm (4.33")

Three 2nd Level Rear I/O Board Options

XCT0-4C8D2U for -LR6880 Series



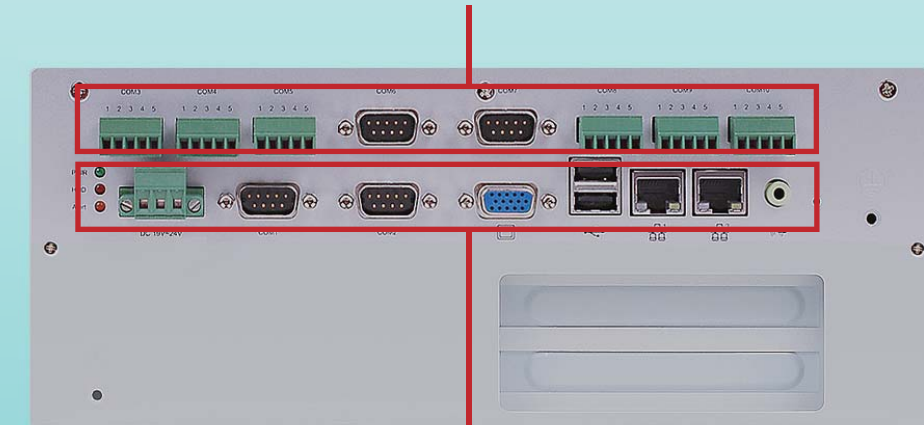
XCT0-4CGD for -LR6G60 Series



XCT0-8C for -LRA060 Series



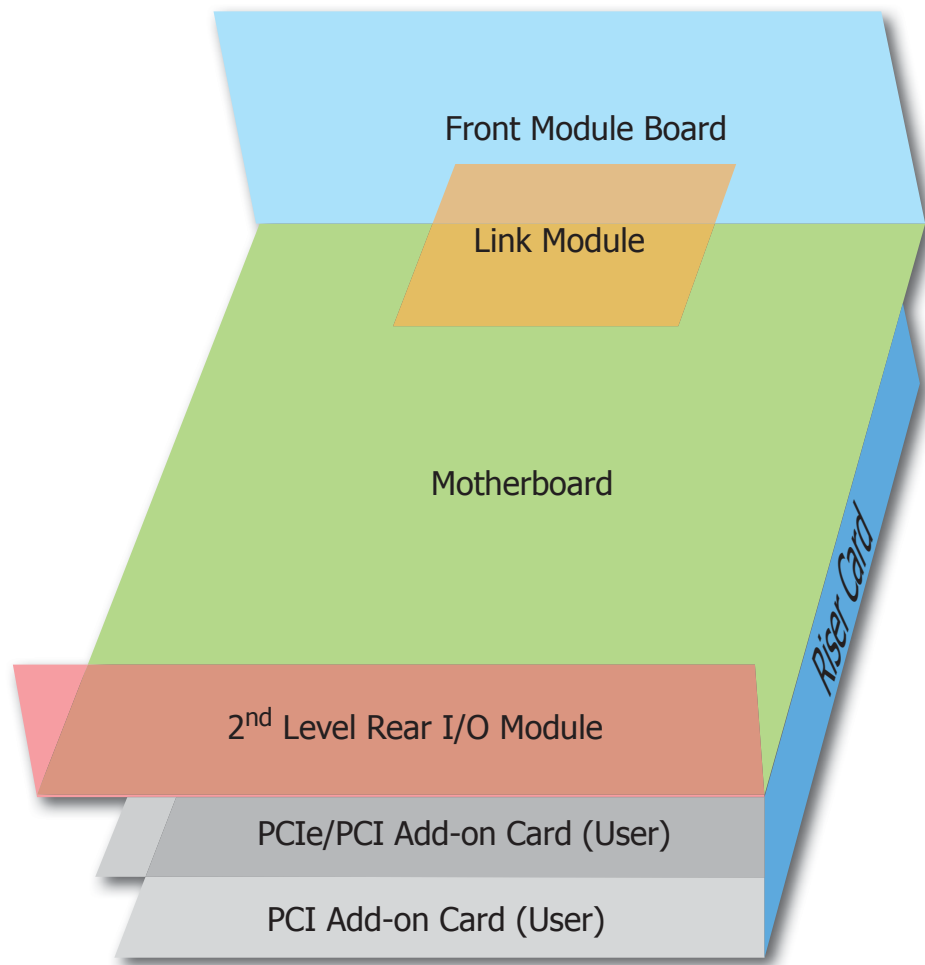
2nd Level Rear I/O



1st Level Standard I/O Board (All Models)

- We accept custom-made I/O Board on an MOQ basis
- Modularized design provides ease in replacing or interchanging the 2nd Level I/O Board with a custom-made board that suits your needs

Adaptable Modular Design

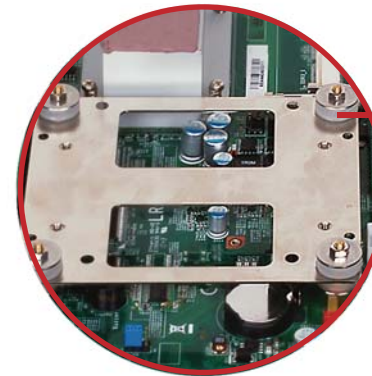


Cable Free



Using CompactFlash card as a storage device provides a cable free environment

Controls Excessive Vibration During Transfer and Transportation



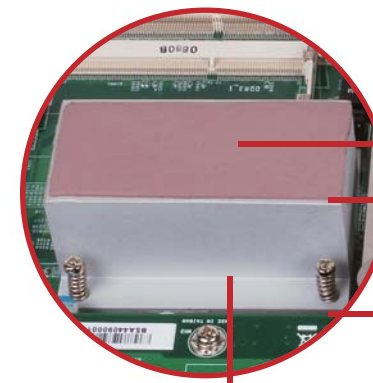
Damper: Protects the hard drive

- Impact to the chassis which is eventually transmitted to the hard drive is reduced thus protecting the hard drive from damage.

Heat Spreader Provides Sufficient Heat Dissipation



- High thermal conductivity efficiently dissipates heat throughout the system
- Ensures optimum thermal condition



Thermal Pad

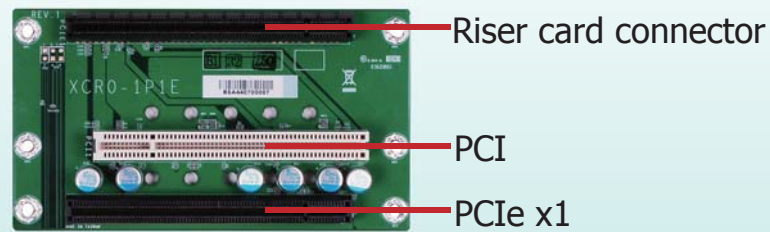
The height of the heat spreader + the thermal pad on top of it covers wide surface area of heat dissipation

Heat Spreader

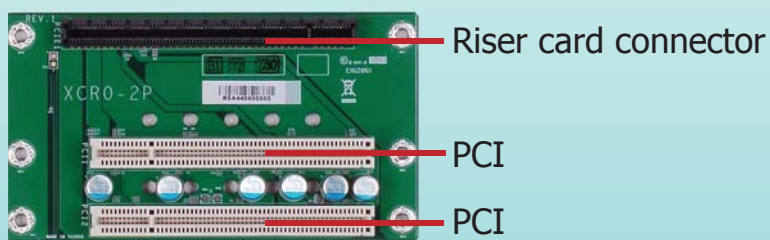
- Better cooling solution than the fin-type heat sink.

Available Riser Cards

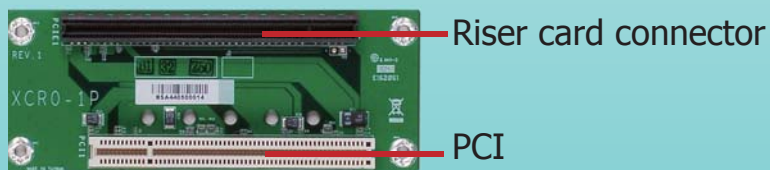
XCR0-1P1E



XCR0-2P



XCR0-1P



Mini PCIe



Mini PCIe x1 slot supports wireless connectivity using an optional Wi-Fi card and two front mounted antennas

Wide Range of Applications

Factory Automation	Power and Energy	Medical Automation	Building Automation	Transportation Automation
Production Line	Energy Management	Patient Condition Monitoring	Facility Monitoring	Facility Monitoring
Testing / Inspection Line	Power Generation	Multimedia Entertainment for Patients	Automatic Gate Control	Gate Access Control
Packing Area	Smart Grid	High Quality Image Display of X-Ray, Ultrasound, Endoscope	Light Sensor	Electronic Ticketing

Model		EC200			EC210			EC220			EC221			
		-LR6880	-LR6G60	-LRA060	-LR6880	-LR6G60	-LRA060	-LR6880	-LR6G60	-LRA060	-LR6880	-LR6G60	-LRA060	
Rear I/O	COM: DB-9 D-sub	4	6	4	4	6	4	4	6	4	4	6	4	
	COM: 9-pole terminal block	2	0	0	2	0	0	2	0	0	2	0	0	
	COM: 5-pole terminal block	0	0	6	0	0	6	0	0	6	0	0	6	
	USB 2.0 Type A	4	2	2	4	2	2	4	2	2	4	2	2	
	GPIO: 9-pole terminal block	8-bit	16-bit	0	8-bit	16-bit	0	8-bit	16-bit	0	8-bit	16-bit	0	
	DC-in power jack (3-pole Phoenix terminal block)							1						
	Speaker-out: 2W (3.5mm audio jack)							1						
	VGA: DB-15 D-sub							1						
	Gigabit LAN: RJ45 with LED							2						
	Power LED							1						
	HDD LED							1						
	Alert LED							1						
	Reset button							1						
Expansion	PCI	0			1		2		1					
	PCIe x1	0			0		0		1					
	Mini PCIe (for Wireless or mSATA module)							1						
Front I/O	USB 2.0 Type A							4						
	Power button with indicator							1						
	Reset button							1						
	HDD LED							1						
	Alert LED							1						
	Wi-fi module antenna hole							2						
Storage	CompactFlash socket							1						
	2.5" Anti-Vibration HDD drive bay							1						
	mSATA (via mini PCIe socket)							1						
Memory	2 DDR3 800MHz SODIMM up to 4GB													
Chipset	Intel® ICH8M													
CPU	Onboard CPU Intel® Atom™ D525													



Features

- Fanless, compact design for industrial applications
- Intel® Atom™ D525 and ICH8M
- Supports DDR3 SODIMM, up to 4GB
- 1 2.5" SATA drive bay, 1 CF socket
- LR6880: 1 VGA, 2 LAN, 8 USB, 6 COM, 8-bit GPIO
LR6G60: 1 VGA, 2 LAN, 6 USB, 6 COM, 16-bit GPIO
LRA060: 1 VGA, 2 LAN, 6 USB, 10 COM

System Specifications

- Processor System**
- CPU: Intel® Atom™ D525
 - dual-core, 1.8GHz, 1M cache
 - Chipset: Intel® ICH8M
- Memory**
- 2 DDR3 800MHz SODIMM sockets
 - Supports up to 4GB memory
 - Single channel memory interface
- Graphics**
- Intel® GMA 3150
 - Display resolution up to 2048x1536 @ 60Hz
 - Display output: 1 VGA
- Storage**
- HDD
 - 1 2.5" SATA drive bay
 - SSD
 - 1 CompactFlash socket
 - Supports 1 mSATA module via the mini PCIe socket
- Ethernet**
- 2 Realtek® RTL8111DL Gigabit Ethernet controllers
- Audio**
- Realtek ALC262 High Definition Audio
 - 2 watt, 4Ω power amplifier
- Expansion**
- 1 mini PCIe x1 slot
- I/O Ports**
- Front Panel
 - 1 HDD LED and 1 Alert LED
 - 1 Power switch and 1 Reset switch
 - 4 USB ports
 - Rear Panel
 - 1 Power LED, 1 HDD LED and 1 Alert LED
 - 1 Reset switch
 - Power jack: 3-pole Phoenix terminal block
 - Speaker-out: 3.5mm audio jack
 - DB-15 VGA: 15-pin D-sub
 - LAN with LEDs
 - COM RS232/422/485: 9-pin D-sub or terminal block
 - USB 2.0
 - GPIO: 9-pole terminal block
- Power**
- Power type
 - Power adapter
 - : AC input: 100-240V, 1.8A, 50-60Hz
 - : DC output: 19V, 3.15A
 - Power input voltage
 - +19-24V DC

- Environment**
- Temperature
 - Operating: 0°C ~ 50°C
 - Storage: -20°C ~ 70°C
 - Relative Humidity
 - 10% to 90% non-condensing
- Construction**
- Aluminum + SECC
- Mounting**
- Wall/VESA mounting kit (brackets and screws) - optional
- Dimensions**
- 275mm x 55mm x 203mm (W x H x D)
- Weight**
- 2.68 kg
- OS Support**
- Windows 7, Windows XP SP3, Windows XP Embedded, Linux
- Other Features**
- Watchdog Timer function
- Certification**
- CE
 - FCC Class A

System Models

Rear I/O Ports	EC200-LR6880	EC200-LR6G60	EC200-LRA060
Power jack	1	1	1
Speaker-out	1	1	1
VGA	1	1	1
LAN	2	2	2
COM DB-9	4	6	4
COM 9-pole terminal block	2	0	0
COM 5-pole terminal block	0	0	6
USB	4	2	2
GPIO 9-pole terminal block	8-bit	16-bit	0

Packing List

- 1 x EC200 system unit
- 1 x HDD drive bay kit
 - 2 x brackets
 - 1 x SATA data/power cable
 - 4 x bracket screws
 - 4 x HDD screws
- 1 x 60W power adapter
- 1 x Quick Installation Guide
- 1 x CD disk includes:
 - Drivers / Manual

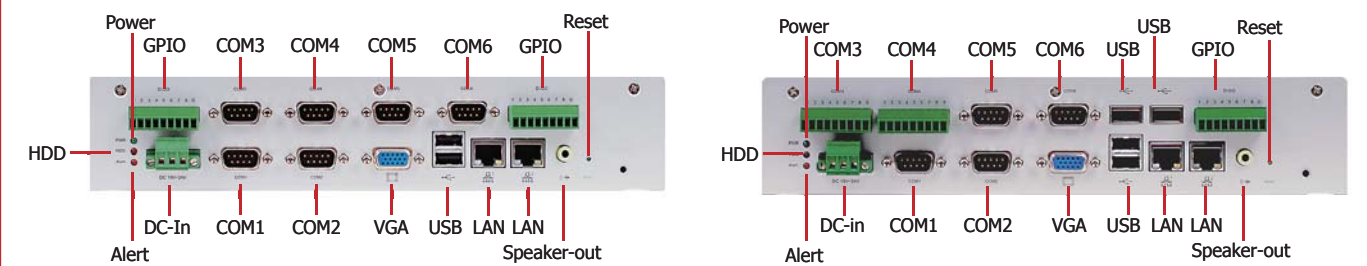
Optional Items

- 1 x Wallmount kit
 - 2 wallmount brackets
 - Bracket screws
- 1 x VESA mount kit
 - 1 VESA bracket
 - Bracket screws
- 1 x power cord

Front Panel

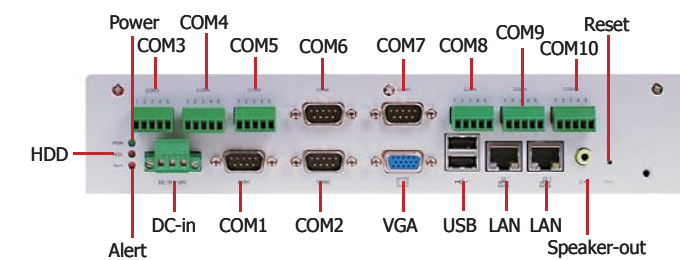


Rear Panel



EC200-LR6G60

EC200-LR6880



EC200-LRA060



Features

- Fanless, compact design for industrial applications
- Intel® Atom™ D525 and ICH8M
- Supports DDR3 SODIMM; up to 4GB
- 1 2.5" SATA drive bay, 1 CF socket
- LR6880: 1 VGA, 2 LAN, 8 USB, 6 COM, 8-bit GPIO
LR6G60: 1 VGA, 2 LAN, 6 USB, 6 COM, 16-bit GPIO
LRA060: 1 VGA, 2 LAN, 6 USB, 10 COM
- 1 PCI expansion

System Specifications

Processor System

- CPU: Intel® Atom™ D525
 - dual-core, 1.8GHz, 1M cache
- Chipset: Intel® ICH8M

Memory

- 2 DDR3 800MHz SODIMM sockets
- Supports up to 4GB memory
- Single channel memory interface

Graphics

- Intel® GMA 3150
- Display resolution up to 2048x1536 @ 60Hz
- Display output: 1 VGA

Storage

- HDD
 - 1 2.5" SATA drive bay
- SSD
 - 1 CompactFlash socket
 - Supports 1 mSATA module via the mini PCIe socket

Ethernet

- 2 Realtek® RTL8111DL Gigabit Ethernet controllers

Audio

- Realtek ALC262 High Definition Audio
- 2 watt, 4Ω power amplifier

I/O Ports

- Front Panel
 - 1 HDD LED and 1 Alert LED
 - 1 Power switch and 1 Reset switch
 - 4 USB ports
- Rear Panel
 - 1 Power LED, 1 HDD LED and 1 Alert LED
 - 1 Reset switch
 - Power jack: 3-pole Phoenix terminal block
 - Speaker-out: 3.5mm audio jack
 - DB-15 VGA: 15-pin D-sub
 - LAN with LEDs
 - COM RS232/422/485: 9-pin D-sub or terminal block
 - USB 2.0
 - GPIO: 9-pole terminal block

Expansion

- 1 PCI slot
- 1 mini PCIe x1 slot

Power

- Power type
 - Power adapter
 - : AC input: 100-240V, 1.8A, 50-60Hz
 - : DC output: 19V, 3.15A
- Power input voltage
 - +19-24V DC

Environment

- Temperature
 - Operating: 0°C ~ 50°C
 - Storage: -20°C ~ 70°C
- Relative Humidity
 - 10% to 90% non-condensing

Construction

- Aluminum + SECC

Mounting

- Wall/VESA mounting kit (brackets and screws) - optional

Dimensions

- 275mm x 90mm x 203mm (W x H x D)

Weight

- 3.4 kg

OS Support

- Windows 7, Windows XP SP3, Windows XP Embedded, Linux

Other Features

- Watchdog Timer function

Certification

- CE
- FCC Class A

System Models

Rear I/O Ports	EC210-LR6880	EC210-LR6G60	EC210-LRA060
Power jack	1	1	1
Speaker-out	1	1	1
VGA	1	1	1
LAN	2	2	2
COM DB-9	4	6	4
COM 9-pole terminal block	2	0	0
COM 5-pole terminal block	0	0	6
USB	4	2	2
GPIO 9-pole terminal block	8-bit	16-bit	0

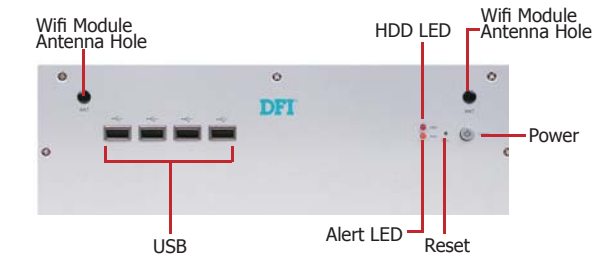
Packing List

- 1 x EC210 system unit
- 1 x HDD drive bay kit
 - 2 x brackets
 - 1 x SATA data/power cable
 - 4 x bracket screws
 - 4 x HDD screws
- 1 x 60W power adapter
- 1 x Quick Installation Guide
- 1 x CD disk includes:
 - Drivers / Manual

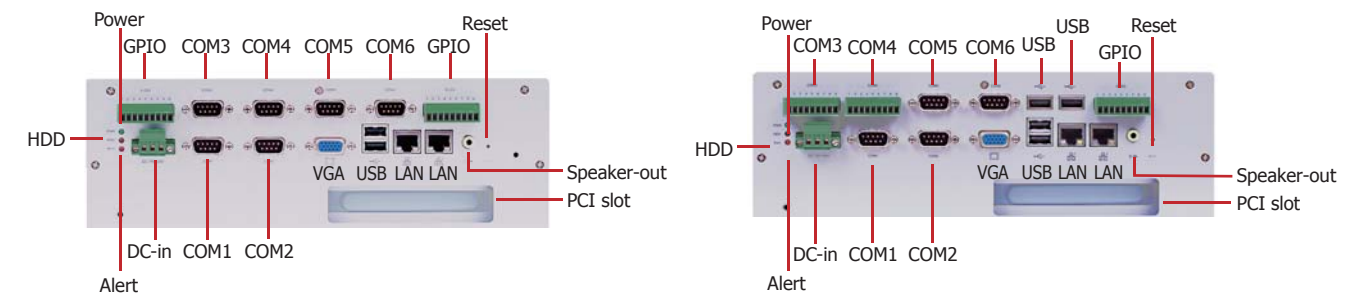
Optional Items

- 1 x Wallmount kit
 - 2 wallmount brackets
 - Bracket screws
- 1 x VESA mount kit
 - 1 VESA bracket
 - Bracket screws
- 1 x power cord

Front Panel

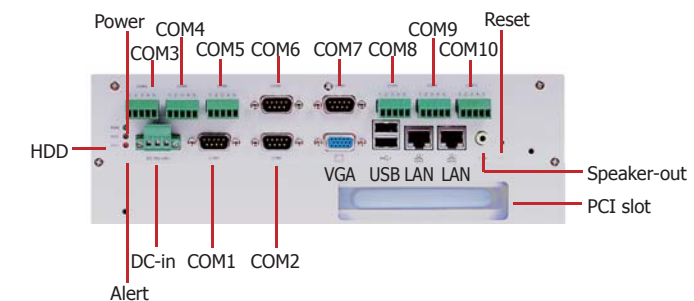


Rear Panel



EC210-LR6G60

EC210-LR6880



EC210-LRA060



Features

- Fanless, compact design for industrial applications
- Intel® Atom™ D525 and ICH8M
- Supports DDR3 SODIMM; up to 4GB
- 1 2.5" SATA drive bay, 1 CF socket
- LR6880: 1 VGA, 2 LAN, 8 USB, 6 COM, 8-bit GPIO
- LR6G60: 1 VGA, 2 LAN, 6 USB, 6 COM, 16-bit GPIO
- LRA060: 1 VGA, 2 LAN, 6 USB, 10 COM
- PCIe x1 and PCI expansions

System Specifications

Processor System

- CPU: Intel® Atom™ D525
 - dual-core, 1.8GHz, 1M cache
- Chipset: Intel® ICH8M

Memory

- 2 DDR3 800MHz SODIMM sockets
- Supports up to 4GB memory
- Single channel memory interface

Graphics

- Intel® GMA 3150
- Display resolution up to 2048x1536 @ 60Hz
- Display output: 1 VGA

Storage

- HDD
 - 1 2.5" SATA drive bay
- SSD
 - 1 CompactFlash socket
 - Supports 1 mSATA module via the mini PCIe socket

Ethernet

- 2 Realtek® RTL8111DL Gigabit Ethernet controllers

Audio

- Realtek ALC262 High Definition Audio
- 2 watt, 4Ω power amplifier

I/O Ports

- Front Panel
 - 1 HDD LED and 1 Alert LED
 - 1 Power switch and 1 Reset switch
 - 4 USB ports
- Rear Panel
 - 1 Power LED, 1 HDD LED and 1 Alert LED
 - 1 Reset switch
 - Power jack: 3-pole Phoenix terminal block
 - Speaker-out: 3.5mm audio jack
 - DB-15 VGA: 15-pin D-sub
 - LAN with LEDs
 - COM RS232/422/485: 9-pin D-sub or terminal block
 - USB 2.0
 - GPIO: 9-pole terminal block

Expansion

- EC220 series
 - 2 PCI slots
 - 1 mini PCIe x1 slot
- EC221 series
 - 1 PCI slot
 - 1 PCIe x1 slot
 - 1 mini PCIe x1 slot

Power

- Power type
 - Power adapter
 - : AC input: 100-240V, 1.8A, 50-60Hz
 - : DC output: 19V, 3.15A
- Power input voltage
 - +19-24V DC

Environment

- Temperature
 - Operating: 0°C ~ 50°C
 - Storage: -20°C ~ 70°C
- Relative Humidity
 - 10% to 90% non-condensing

Construction

- Aluminum + SECC

Mounting

- Wall/VESA mounting kit (brackets and screws) - optional

Dimensions

- 275mm x 110mm x 203mm (W x H x D)

Weight

- 3.6 kg

OS Support

- Windows 7, Windows XP SP3, Windows XP Embedded, Linux

Other Features

- Watchdog Timer function

Certification

- CE
- FCC Class A

System Models

Rear I/O Ports	EC220/221-LR6880	EC220/221-LR6G60	EC220/221-LRA060
Power jack	1	1	1
Speaker-out	1	1	1
VGA	1	1	1
LAN	2	2	2
COM DB-9	4	6	4
COM 9-pole terminal block	2	0	0
COM 5-pole terminal block	0	0	6
USB	4	2	2
GPIO 9-pole terminal block	8-bit	16-bit	0

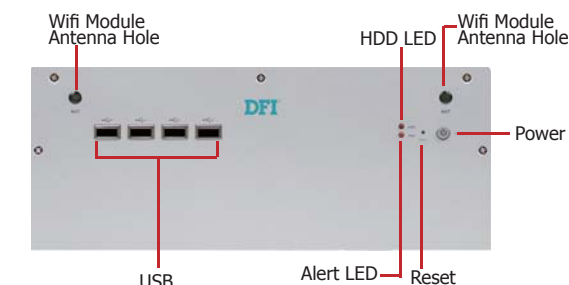
Packing List

- 1 x EC220/221 system unit
- 1 x HDD drive bay kit
 - 2 x brackets
 - 1 x SATA data/power cable
- 4 x bracket screws
- 4 x HDD screws
- 1 x 60W power adapter
- 1 x Quick Installation Guide
- 1 x CD disk includes:
 - Drivers / Manual

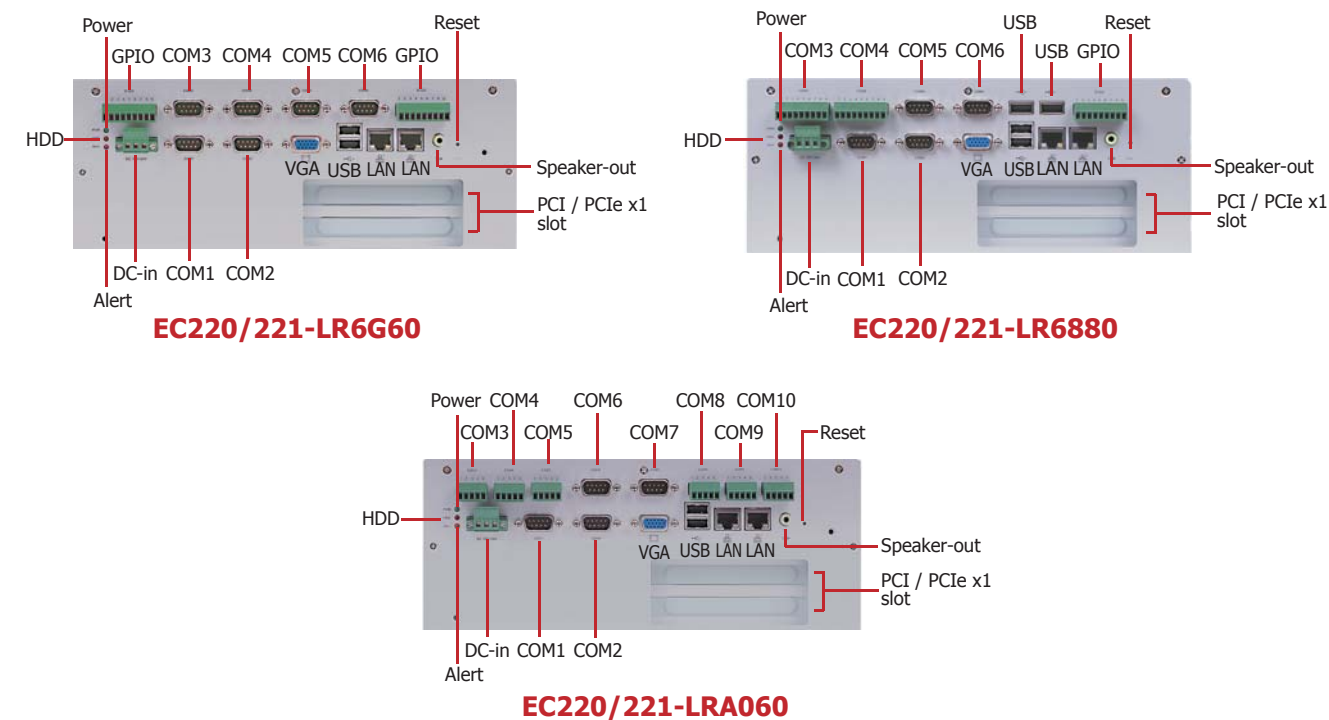
Optional Items

- 1 x Wallmount kit
 - 2 wallmount brackets
 - Bracket screws
- 1 x VESA mount kit
 - 1 VESA bracket
 - Bracket screws
- 1 x power cord

Front Panel



Rear Panel





Established in 1981, DFI® is a leading supplier of high-performance computing technology worldwide. With more than 30 years of experience, DFI® focuses on innovative design and manufacture of leading-edge board and system level products for embedded applications requiring strict revision control and long life availability. DFI® uses the latest technology platforms and manufacturing techniques to produce cost-effective products for use in medical diagnostic & imaging, ATM/POS, industrial control, kiosk, security & surveillance, digital signage, gaming, and other embedded applications. As an Associate member of the Intel® Embedded Alliance (IEA), DFI® works closely with Intel® on development of next-generation standards-based building blocks, platforms and solutions for the communications and embedded market segments.

All product specifications are subject to change without notice.

Intel® and Atom™ are registered trademarks of Intel® Corporation in the U.S. and other countries.

AMD® is a registered trademark of the Advanced Micro Devices, Inc. in the U.S. and other countries.

Other names are for informational purpose only and are trademarks of their respective owners.

For more information on the Digital Signage Series ,
please visit: www.dfi-itox.com

DFI-ITOX, LLC.

8 Elkins Road
East Brunswick, New Jersey 08816

Tel: 1-888-200-4869 ☐

Fax: 1-732-390-2817

E-Mail: sales@dfi-itox.com

Website: <http://www.dfi-itox.com>