



## Features

- Fanless, compact design for industrial applications
- 3rd/ 2nd Generation Intel® Core™ processors
- Intel® QM77 Express chipset
- Supports DDR3/ DDR3L SODIMM, up to 16GB
- Up to 2 2.5" SATA drive bay, 1 CF socket
- Supports mSATA via the mini PCIe slot
- PCIe x16 and PCI expansions



## System Specifications

### PROCESSOR SYSTEM

- 3rd Generation Intel® Core™ processors (22nm process technology)
  - Intel® Core™ i7-3610QE (6M Cache, up to 3.3 GHz); 45W
  - Intel® Core™ i5-3610ME (3M Cache, up to 3.3 GHz); 35W
  - Intel® Core™ i3-3120ME (3M Cache, 2.4 GHz); 35W
- 2nd Generation Intel® Core™ processors (32nm process technology)
  - Intel® Core™ i7-2710QE (6M Cache, up to 3.0 GHz); 45W
  - Intel® Core™ i5-2510E (3M Cache, up to 3.1 GHz); 35W
  - Intel® Core™ i3-2330E (3M Cache, 2.2 GHz); 35W
  - Intel® Celeron® B810 (2M Cache, 1.6 GHz); 35W
- Chipset: Intel® QM77

### MEMORY

- 2 DDR3/DDR3L 1066/1333/1600MHz SODIMM sockets
- Supports up to 16GB memory
- Dual channel memory interface

### GRAPHICS

- Intel® HD Graphics 4000
- Supports 2 independent displays
- VGA display resolution up to 2048x1536 @ 60Hz
- DVI display resolution up to 1920x1080 @ 60Hz
- Display outputs: 1 VGA and 1 DVI

### STORAGE

- 2.5" SATA drive bay(s)
  - Standard: 1 drive bay
  - Option: Single drive bay for second SATA drive (supports RAID 0/1/5/10)
- 1 CompactFlash socket
- Supports 1 mSATA module via the Mini PCIe slot

### ETHERNET

- Intel® WG82579LM with iAMT7.0 Gigabit Ethernet Phy
- Intel® I210 PCI Express Gigabit Ethernet controller
- Intel® 82574 Gigabit Ethernet controller (EC321-CR4G65 and EC320/321-CR4866)
- Fully IEEE std 802.3at-2009 compliant (EC320/321-CR4866)
  - Power output: 48V DC 15.4 watts of power per PoE port (Type 1 15.4W per port)
- Supports wireless 802.11 b/g/n via the mini PCIe slot

### AUDIO

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

### POWER

- Power input voltage: 9-36V DC

### EXPANSION

- EC320 series
  - 2 PCI slots
  - 1 Mini PCIe slot
  - 1 XCTO-3G riser card supports 3G (option)
    - : 1 Mini PCIe slot (USB signal)
    - : 1 SIM slot
- EC321 series
  - 1 PCI slot
  - 1 PCIe x16 slot
  - 1 Mini PCIe slot
  - 1 XCTO-3G riser card supports 3G (option)
    - : 1 Mini PCIe slot (USB signal)
    - : 1 SIM slot

### ENVIRONMENT

- Temperature
  - Operating: 0°C ~ 60°C
  - Storage: -20°C ~ 65°C
- Operating Vibration
  - MIL-STD810F 514.5C-1 (HDD)
  - MIL-STD810F 514.5C-2 (CompactFlash or Solid State Disk)
- Operating Shock
  - Half sine wave 15G, 11ms, 3 shock per axis

### CONSTRUCTION

- Aluminum + SGCC

### MOUNTING

- Wall mount

### DIMENSIONS

- 340.5mm x 140.5mm x 223mm (W x H x D)

### WEIGHT

- 9 kg

### OS SUPPORT

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

### OTHER FEATURES

- Watchdog Timer function

### CERTIFICATION

- CE, FCC Class A and RoHS

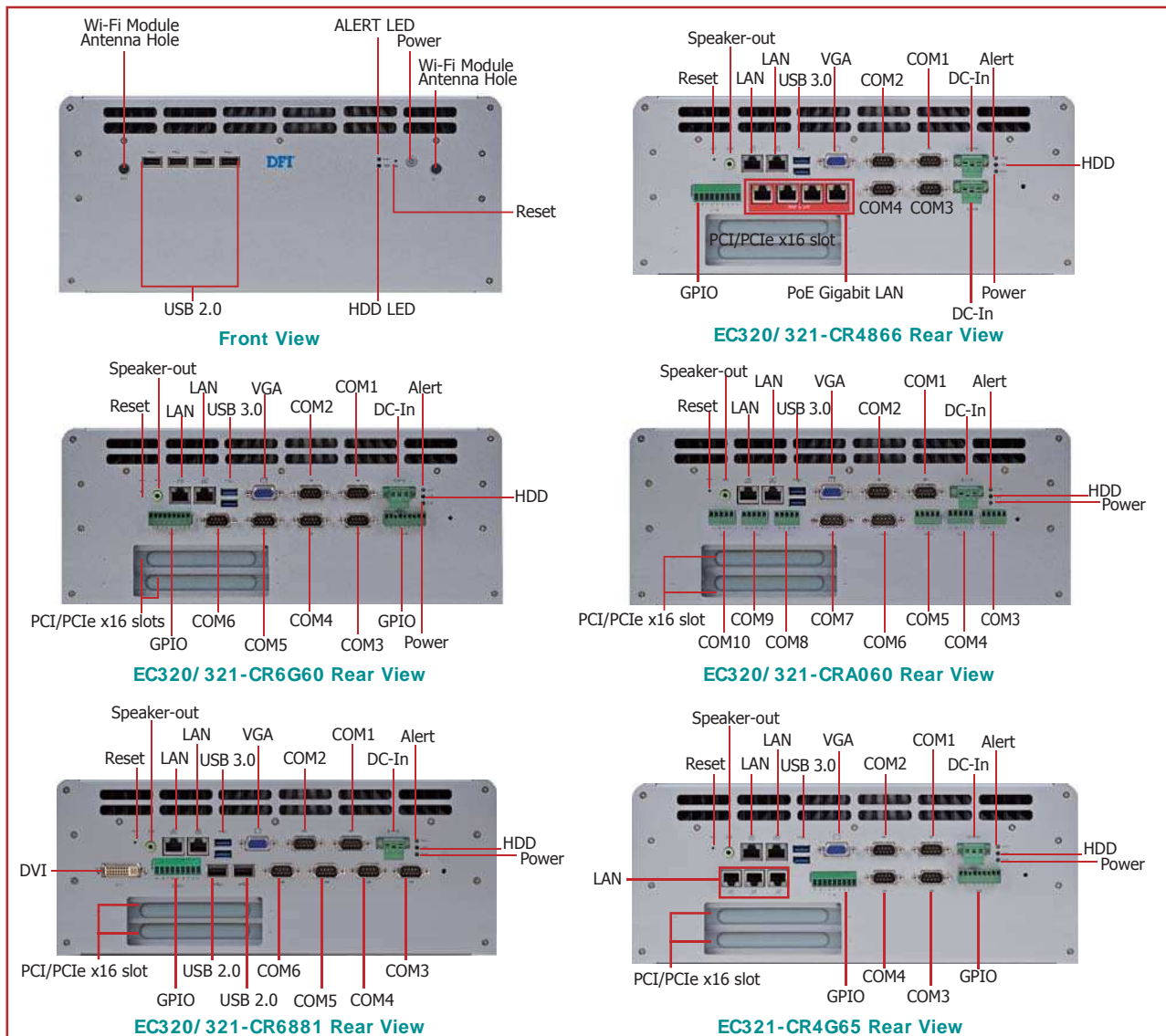
## System Models

Rear I/O Ports	EC320/ 321-CR6881	EC320/ 321-CR6G60	EC320/ 321-CRA060	EC321-CR4G65	EC320/ 321-CR4866
DC-in power jack: 3-pole terminal block	1	1	1	1	2
Speaker-out: 2W 3.5mm audio jack	1	1	1	1	1
VGA: DB-15 D-sub	1	1	1	1	1
DVI	1	0	0	0	0
Gigabit LAN: RJ45 with LEDs	2	2	2	5	2
PoE Gigabit LAN: RJ45	0	0	0	0	4
COM: DB-9 D-sub (RS232/422/485)	6	6	4	4	4
COM: 5-pole terminal block (RS232/422/485)	0	0	6	0	0
USB 3.0 Type A	2	2	2	2	2
USB 2.0 Type A	2	0	0	0	0
GPIO: 9-pole terminal block	8-bit	16-bit	0	16-bit	8-bit
Reset button	1	1	1	1	1
Power LED	1	1	1	1	1
HDD LED	1	1	1	1	1
Alert LED	1	1	1	1	1
Front I/O Ports	EC320/ 321-CR6881	EC320/ 321-CR6G60	EC320/ 321-CRA060	EC321-CR4G65	EC320/ 321-CR4866
USB 2.0 Type A	4	4	4	4	4
Power button with indicator	1	1	1	1	1
Reset button	1	1	1	1	1
HDD LED	1	1	1	1	1
Alert LED	1	1	1	1	1
Wi-Fi module antenna hole	2	2	2	2	2

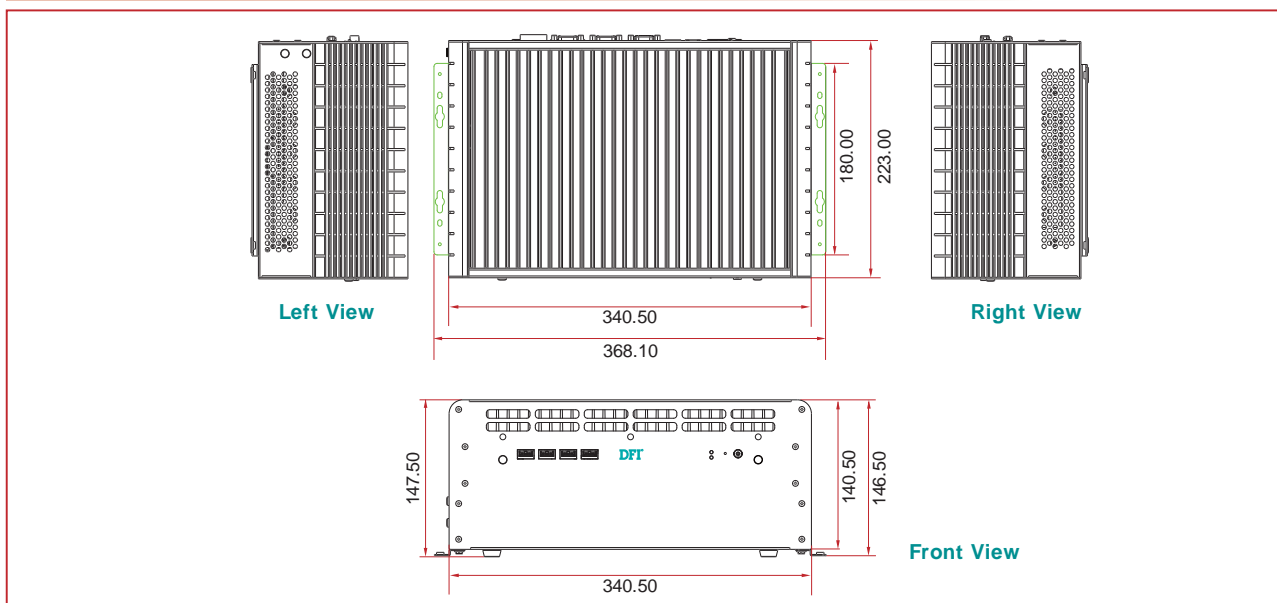
# EC320/ 321 Series Embedded Systems



## Panel



## Dimensions





# EC320/ 321 Series Embedded Systems



## Packing List

- 1 EC320/321 system unit
- 1 SATA data/power cable
- 1 120W power adapter
- 1 Quick Installation Guide
- 1 CD disk includes:
  - Drivers / Manual

## Ordering Information

Model Name	Part Number	Description
EC321-CR6G60	750-EC3210-100G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 VGA, 6 COM, 16-bit GPIO, 6 USB, 1 PCI, 1 PCIe, RoHS
EC321-CRA060	750-EC3210-200G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 VGA, 10 COM, 6 USB, 1 PCI, 1 PCIe, RoHS
EC321-CR6881	750-EC3210-300G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 DVI, 1 VGA, 6 COM, 8-bit GPIO, 8 USB, 1 PCI, 1 PCIe, RoHS
EC321-CR4G65	750-EC3210-A00G	Fanless, i7/i5/i3, QM77, 5 LAN, 1 VGA, 4 COM, 16-bit GPIO, 6 USB, 1 PCI, 1 PCIe, RoHS
EC321-CR4866	750-EC3210-500G	Fanless, i7/i5/i3, QM77, 1 VGA, 4 PoE Gigabit LAN, 2 LAN, 4 COM, 8-bit GPIO, 6 USB, 1 PCI, 1 PCIe, RoHS
EC320-CR6G60	750-EC3200-100G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 VGA, 6 COM, 16-bit GPIO, 6 USB, 2 PCI, RoHS
EC320-CRA060	750-EC3200-200G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 VGA, 10 COM, 6 USB, 2 PCI, RoHS
EC320-CR6881	750-EC3200-300G	Fanless, i7/i5/i3, QM77, 2 LAN, 1 DVI, 1 VGA, 6 COM, 8-bit GPIO, 8 USB, 2 PCI, RoHS
EC320-CR4866	750-EC3200-500G	Fanless, i7/i5/i3, QM77, 1 VGA, 4 PoE Gigabit LAN, 2 LAN, 4 COM, 8-bit GPIO, 6 USB, 2 PCI, RoHS

## Optional Items

Optional Items	Part Number	Description
CPU	785-CP988BML	CPU, Socket 988B, Long-term support, RoHS
Memory	785-RSOD31G	SODIMM, DDR3, 1GB, RoHS
	785-RSOD32G	SODIMM, DDR3, 2GB, RoHS
	785-RSOD34G	SODIMM, DDR3, 4GB, RoHS
	785-RSOD38G	SODIMM, DDR3, 8GB, RoHS
HDD	785-H25250G	2.5" SATA HDD, 250GB, RoHS
	785-H25500G	2.5" SATA HDD, 500GB, RoHS
	785-S25128G	2.5" SATA SSD; 128GB MLC; RoHS
CF	785-CF01G	CF Card, 1G, Industrial Grade SLC
	785-CF02G	CF Card, 2G, Industrial Grade SLC
	785-CF04G	CF Card, 4G, Industrial Grade SLC
	785-CF08G	CF Card, 8G, Industrial Grade SLC
Power Cord	785-PWRD	Power cord, Standards (USA/EUR/CH), 1.8m, RoHS
Wall Mount	785-EC3WMK	EC300 Series Wall Mount kit
3G	785-EC3G	For EC300/310/320/321 Series and EC200/210/220/221 Series 3G Module

DFI reserves the right to change the specifications at any time prior to the product's release. Changes thereafter will be based on the product's revision. Please contact your sales representative for the exact revision offered in your area. Refer to the website ([www.dfi.com](http://www.dfi.com)) for the most updated information. All product names mentioned are trademarks of their respective companies. © October 8, 2013 DFI Inc.