

ITX-QM77

Industrial Mini-ITX Intel QM77 Ivy Bridge Mobile Motherboard Support 3rd Generation Core i7 / i5 / i3 Mobile Processor

Datasheet

2012.10.16



- » Intel Ivy Bridge (IVB) 3rd Generation Core i3 / i5 / i7 / Celeron Mobile Processors
- » HDMI, DVI, LVDS, Dual Intel Gigabit Ethernet, SATA-III 6Gbit/s, USB 3.0 Ports
- » Three Internal RS-232 COM Ports with +5V/+12V DC Power Output
- » PCIe/USB MiniCard Socket and x16 PCI Express Expansion Slot
- » Industrial 1U Copper-based Dual Ball-Bearing CPU Cooler
- » Meet Ultra Low Profile 1U / 1.75 inches Height System Configuration



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Overview

Liantec ITX-QM77 industrial Mini-ITX Intel QM77 Ivy Bridge Mobile motherboard solution. The ITX-QM77 is based on Mini-ITX form factor and Intel Ivy Bridge (IVB) computing platform, supports Intel 3rd generation Ivy Bridge and 2nd generation Sandy Bridge Core i3 / i5 / i7 mobile processors, 16 GB of memory capacity, onboard dual Intel Gigabit Ethernet, HDMI, DVI, HD audio, SATA-III 6Gbit/s, and SuperSpeed USB 3.0 ports. The ITX-QM77 also offers x16 PCI Express slot and onboard MiniCard socket with x1 PCI Express and HiSpeed USB 2.0 interface for additional expansion.

With Intel latest Ivy Bridge platform, the ITX-QM77 provides advanced graphics computing capacity with Intel HD Graphics 4000 GPU, supports Microsoft DirectX 11, OpenGL 3.1, and OpenCL 1.1. Besides, the ITX-QM77 also supports x16 PCI Express 3.0 bus interface with 8 GT/s of data transfer rate on the expansion slot, suitable for add-on graphics or I/O card that need more data transfer bandwidth.

Based on the features of Mini-ITX SFF (Small Form Factor), Intel Ivy Bridge Mobile computing platform, the ITX-QM77 meets the demand of industrial embedded applied computing applications including the industrial PC platform, digital signage, transaction and multimedia workstation, vehicle PC, slim-type server, STB (Set-Top-Box), DVR, PVR, networking server and industrial embedded computing platform.

For the further information about Liantec ITX-QM77 Mini-ITX motherboard, please visit the websites at <http://www.liantec.com/product/ITX-QM77.htm>.



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Key Features

Liantec ITX-QM77 Mini-ITX motherboard is based on Intel Ivy Bridge Mobile computing platform, offers VGA, HDMI, DVI, LVDS, dual Gbit Ethernet, SATA-III 6Gbit/s, USB 3.0, GPIO, x16 PCI Express expansion slot and MiniCard socket.

- Small Form Factor (SFF) Mini-ITX motherboard with 170 x 170 mm or 6.7 x 6.7 inches of dimension (W x L).
- Intel Chief River mobile computing platform supports Intel Ivy Bridge 3rd generation and Sandy Bridge 2nd generation Core i3 / i5 / i7 / Celeron mobile processors.
- Dual DDR3 So-DIMM sockets support up to 16 GB of memory capacity.
- Intel Ivy Bridge mobile processor built-in Intel HD Graphics 4000 GPU with 650MHz of base frequency, support Microsoft DirectX 11, OpenGL 3.1, and OpenCL 1.1.
- Onboard 2*24-bit LVDS interface supports up to 1600x1200 of resolution.
- External DVI port supports up to 1920x1200 of resolution.
- Supports dual SATA-III 6Gbit/s ports and three SATA-II 3Gbit/s ports.
- Onboard Dual Intel Gbit Ethernet ports.
- Onboard SuperSpeed USB 3.0 ports.
- Four RS-232 COM ports with three internal RS-232 ports with +5V/+12V power output.
- 8-bit programmable GPIO port.
- Onboard MiniCard socket with x1 PCI Express and HiSpeed USB 2.0 interface.
- x16 PCI Express expansion slot supports graphics model and I/O mode of add-on cards.
- PCI Express rev. 3.0 compliant with Intel Ivy Bridge Core-i7 / i5 / i3 mobile processors.
- Onboard TPM with Infineon SLB9635 controller.
- Support SmartFan function on both of CPU fan and system fan.
- 1U copper-based dual ball-bearing CPU cooler
- Meet 1U height system configuration



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Specification

Form Factor	Mini-ITX / Mini-FlexATX form factor at 170 x 170 mm of dimension
Platform Chipset	Intel Chief River mobile computing platform with Panther Point QM77 PCH (Platform Control Hub)
CPU	<p>Intel Socket G2 μPGA988 / FCPGA988 / rPGA988B / FC-PGA10</p> <p>Ivy Bridge Core i3 / i5 / i7 / Celeron mobile processors</p> <p>Sandy Bridge Core i3 / i5 / i7 / Celeron mobile processors</p> <p>Power design supports up to 45W CPUs</p> <p>Intel Embedded Ivy Bridge μPGA988B / FCPGA988 Processor</p> <ul style="list-style-type: none"> Intel Core i7-3610QE 4-Core / 8-Thread / 2.3 GHz / 6MB / 45W Intel Core i5-3610ME 2-Core / 4-Thread / 2.7 GHz / 3MB / 35W Intel Core i3-3120ME 2-Core / 4-Thread / 2.4 GHz / 3MB / 35W <p>Intel Embedded Sandy Bridge μPGA988B / FCPGA988 Processor</p> <ul style="list-style-type: none"> Intel Core i7-2710QE 4-Core / 8-Thread / 2.1 GHz / 6MB / 45W Intel Core i5-2510E 2-Core / 4-Thread / 2.5GHz / 3MB / 35W Intel Core i3-2330E 2-Core / 4-Thread / 2.2GHz / 3MB / 35W Intel Celeron B810 2-Core / 2-Thread / 1.6GHz / 2MB / 35W
DRAM	<p>Two vertical type 204-pin So-DIMM sockets</p> <p>Supports dual channel DDR3-1333/1066 non-ECC SDRAM</p> <p>Memory Capacity supports up to 16 GBytes</p>
BIOS	AMI BIOS in 64Mb SPI flash
Power Management	<p>Support S1 / S3 / S4 / S5 of power state</p> <p>Support WoL (Wake-on-LAN) and WoR (Wake-on-Ring)</p>
Watchdog Timer	System reset with 1 to 255 sec./min. of timeout value
TPM	Support TPM 1.2 with onboard Infineon SLB9635
Expansion Bus Interface	<p>PCI Express Expansion Slot</p> <ul style="list-style-type: none"> One 16-lane PCI Express expansion slot with 16-lane PCI Express bus interface



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	<ul style="list-style-type: none"> • Support x1 / x8 / x16 PCI Express graphics mode add-on card • Support x1 / x4 / x8 / x16 PCI Express I/O mode add-on card • PCI Express 3.0 / 2.0 compliant with Intel Gen3 Core i7 / i5 CPU (i7-3610QE, i5-3610ME) • PCI Express 2.0 compliant with all Intel Gen3 Core i3 and Gen2 Core CPUs <p>MiniCard (Mini PCI Express) Socket</p> <ul style="list-style-type: none"> • One MiniCard (Mini PCI Express / Mini PCIe) socket with one USB and 1-lane PCI Express bus interface • USB 2.0 / PCI Express 2.0 compliant
<p>SATA Ports</p>	<p>Intel QM77 PCH built-in SATA controller</p> <p>Onboard 2 SATA-III 6Gbit/s ports with red connectors</p> <p>Onboard 3 SATA-II 3Gbit/s ports with black connectors</p> <p>Supports RAID 0, 1, 0+1 (10), 5</p>
<p>Video Interface</p>	<p>Intel Ivy Bridge CPU built-in Intel HD Graphics 4000/2500 GPU core with 650MHz of base frequency, Microsoft DirectX 11 support.</p> <p>Intel Sandy Bridge CPU built-in Intel HD Graphics 3000/2000 GPU core supports Microsoft DirectX 10.1, OpenGL 3.0, Clone, Twin and Extended DT display modes</p> <p>Shared Video memory supports up to 1.7 GBytes</p> <p>VGA Interface</p> <ul style="list-style-type: none"> • External VGA port with DB15 female connector on rear I/O panel • Supports up to 2048 x 1536 of resolution. <p>DVI Interface</p> <ul style="list-style-type: none"> • External DVI port with DVI-I connector on rear I/O panel • Supports up to 1920 x 1200 of resolution <p>HDMI Interface</p> <ul style="list-style-type: none"> • External HDMI 1.3 port with HDMI connector on rear I/O panel • Supports up to 1920 x 1080 of resolution <p>LVDS Interface</p>



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	<ul style="list-style-type: none"> • Internal dual channel 24-bit LVDS interface • Supports 1920x1200 of resolution • Onboard backlight connector
Audio Interface	<p>Onboard Realtek ALC892 HD audio codec</p> <p>External Line-in, Line-out, Mic-in audio jacks</p> <p>Internal front audio pin header</p>
Ethernet Interface	<p>Onboard dual Intel Gbit Ethernet interfaces</p> <p>10/100/1000BASE-TX auto-switching, IEEE802.3U compliant</p> <p>1st Gbit Ethernet with Intel 82579LM controller</p> <p>2nd Gbit Ethernet with Intel 82583V controller</p> <p>External dual RJ45 8P8C connectors on rear I/O panel</p>
USB Ports	<p>Intel QM77 PCH built-in USB controller</p> <p>Support SuperSpeed USB 3.0 interface with 5Gbps of data transfer bandwidth</p> <p>External 4 USB 3.0 / 2.0 ports on rear I/O panel</p> <p>Internal 8 USB 2.0 ports pin headers</p> <p>NOTICE : The Intel USB 3.0 eXtensible Host Controller Driver is ONLY supported on Windows 7 (both 32-bit and 64-bit versions).</p>
Super-I/O Port	<p>Nuvoton NCT6776F Super-I/O controller</p> <ul style="list-style-type: none"> • 4 RS-232 COM port including 1 external RS-232 port and 3 internal RS-232 port with +5V/+12V power output • External PS/2 keyboard and mouse port • Internal 8-bit programmable GPIO port with 4-bit input and 4-bit output
Rear I/O Panel	<ul style="list-style-type: none"> • PS/2 Keyboard and Mouse Ports • RS232 COM and HDMI Ports • VGA and DVI Ports • 1st Gbit Ethernet RJ45 8P8C and Dual USB 3.0 Ports • 2nd Gbit Ethernet RJ45 8P8C and Dual USB 3.0 Ports • HD Audio Line-in, Line-out, Mic-in Phone Jacks



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Environment	<ul style="list-style-type: none">• Power Requirement : ATX power input with onboard 20-pin ATX power connector and 4-pin +12V aux power connector.• Board Dimension : 170 x 170 mm (L x W)• Operating Temperature : 0 ~ 60°C (32 ~ 140°F)• Storage Temperature : -40 ~ 85°C (-40 ~ 185°F)• Operating Humidity : 10 ~ 90% relative humidity, non-condensing.
Packing List	<ul style="list-style-type: none">• 1 x ITX-QM77 motherboard• 1 x CPC-1500C 1U Copper-based Socket G2 PGA988 CPU Cooler• 2 x SATA clip-lockable cables• 2 x DB9 male RS232 COM port cable with brackets• 1 x DVD-ROM disc with OS drivers and user's manual• 1 x Quick Installation Guide



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Ordering Guide

Ordering Code	Features
ITX-QM77	<p>Mini-ITX Intel QM77 μPGA988 Ivy Bridge Mobile Motherboard</p> <p>Support Intel Gen3 / Gen2 Core-i3 / i5 / i7 / Celeron Mobile CPU with VGA, DVI, HDMI, LVDS, Dual Intel Gigabit Ethernet, HD Audio, SATA-III 6Gbit/s, SuperSpeed USB 3.0, 4 COM, 8-bit GPIO Ports, MiniCard Socket, and x16 PCI Express Expansion Slot</p> <p>with CPC-1500C 1U Copper-based / Dual Ball Bearing CPU Cooler</p>
ITX-QM77-3610QE	<p>Mini-ITX Intel Core i7-3610QE QM77 Motherboard</p> <p>with Intel Ivy Bridge Core i7-3610QE 4-Core / 8-Thread CPU</p> <p>with VGA, DVI, HDMI, LVDS, Dual Intel Gigabit Ethernet, HD Audio, SATA-III 6Gbit/s, SuperSpeed USB 3.0, 4 COM, 8-bit GPIO Ports, MiniCard Socket, and x16 PCI Express Expansion Slot</p> <p>with CPC-1500C 1U Copper-based / Dual Ball Bearing CPU Cooler</p>
ITX-QM77-3610ME	<p>Mini-ITX Intel Core i5-3610ME QM77 Motherboard</p> <p>with Intel Ivy Bridge Core i5-3610ME 2-Core / 4-Thread CPU</p> <p>with VGA, DVI, HDMI, LVDS, Dual Intel Gigabit Ethernet, HD Audio, SATA-III 6Gbit/s, SuperSpeed USB 3.0, 4 COM, 8-bit GPIO Ports, MiniCard Socket, and x16 PCI Express Expansion Slot</p> <p>with CPC-1500C 1U Copper-based / Dual Ball Bearing CPU Cooler</p>
ITX-QM77-3120ME	<p>Mini-ITX Intel Core i3-3120ME QM77 Motherboard</p> <p>with Intel Ivy Bridge Core i3-3120ME 2-Core / 4-Thread CPU</p> <p>with VGA, DVI, HDMI, LVDS, Dual Intel Gigabit Ethernet, HD Audio, SATA-III 6Gbit/s, SuperSpeed USB 3.0, 4 COM, 8-bit GPIO Ports, MiniCard Socket, and x16 PCI Express Expansion Slot</p> <p>with CPC-1500C 1U Copper-based / Dual Ball Bearing CPU Cooler</p>
ITX-QM77-B810	<p>Mini-ITX Intel Celeron B810 QM77 Motherboard</p> <p>with Intel Sandy Bridge Celeron B810 2-Core / 2-Thread CPU</p>



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	with VGA, DVI, HDMI, LVDS, Dual Intel Gigabit Ethernet, HD Audio, SATA-III 6Gbit/s, SuperSpeed USB 3.0, 4 COM, 8-bit GPIO Ports, MiniCard Socket, and x16 PCI Express Expansion Slot with CPC-1500C 1U Copper-based / Dual Ball Bearing CPU Cooler
ITX-QM77-OEM	Customized OEM configuration based on the existing ITX-QM77 motherboard with compatible Intel Socket G2 PGA988 CPU, optional onboard interfaces, customized outlook and other integration service.



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Barebone Solution

Model Name	Description
<p><u>R1C-QM77</u></p> 	<p><u>1U Mini-ITX Intel QM77 Ivy Bridge Mobile Platform</u></p> <ul style="list-style-type: none"> • 1U 19" Rackmount Chassis with 430 x 44 x 210 mm (W x H x D) • Mini-ITX Intel QM77 Gen3 Core-i3 / i5 / i7 Mobile Motherboard • VGA, DVI, HDMI, Dual Gbit Ethernet, HD Audio, USB 3.0 Ports • SATA-III 6Gbit/s, MiniCard Socket, x16 PCIe Expansion Slot • Supports Ultra Low Profile Slim 1U x1 PCIe Add-on Card • 40mm System Fan with Front Operating-Removable Air Filter • Internal 1 x 3.5" / 2 x 2.5" HDD / SSD Drive Bay • Internal AC/DC PSU with 85% Efficiency, Standby below 1 watt
<p><u>M2B-QM77</u></p> 	<p><u>Wallmount Mini-ITX Intel QM77 Ivy Bridge Mobile Platform</u></p> <ul style="list-style-type: none"> • Wallmount Chassis with 230 x 88 x 230 mm (W x H x D) • Mini-ITX Intel QM77 Gen3 Core-i3 / i5 / i7 Mobile Motherboard • VGA, DVI, HDMI, Dual Gbit Ethernet, HD Audio, USB 3.0 Ports. • SATA-III 6Gbit/s, MiniCard Socket, x16 PCIe Expansion Slot • Supports Ultra Low Profile Slim 1U x1 PCIe Add-on Card • 80mm System Fan with Front Operating-Removable Air Filter • Internal 1 x 3.5" / 2 x 2.5" HDD / SSD Drive Bay • Internal AC/DC PSU with 85% Efficiency, Standby below 1 watt
<p>LPC-QM77-OEM</p>	<p>Customized OEM chassis configuration based on the existing ITX-QM77 EmBoard with compatible Intel FCPGA-988 CPU, optional onboard interfaces, extension function modules, system enclosure, embedded peripheral and other integration service. For the further information about Liantec OEM service, please contact with info@liantec.com.</p>

For the further information about ITX-QM77 Industrial Mini-ITX Intel QM77 Ivy Bridge Mobile motherboard, please visit the website at <http://www.liantec.com/product/ITX-QM77.htm> or email to info@liantec.com.