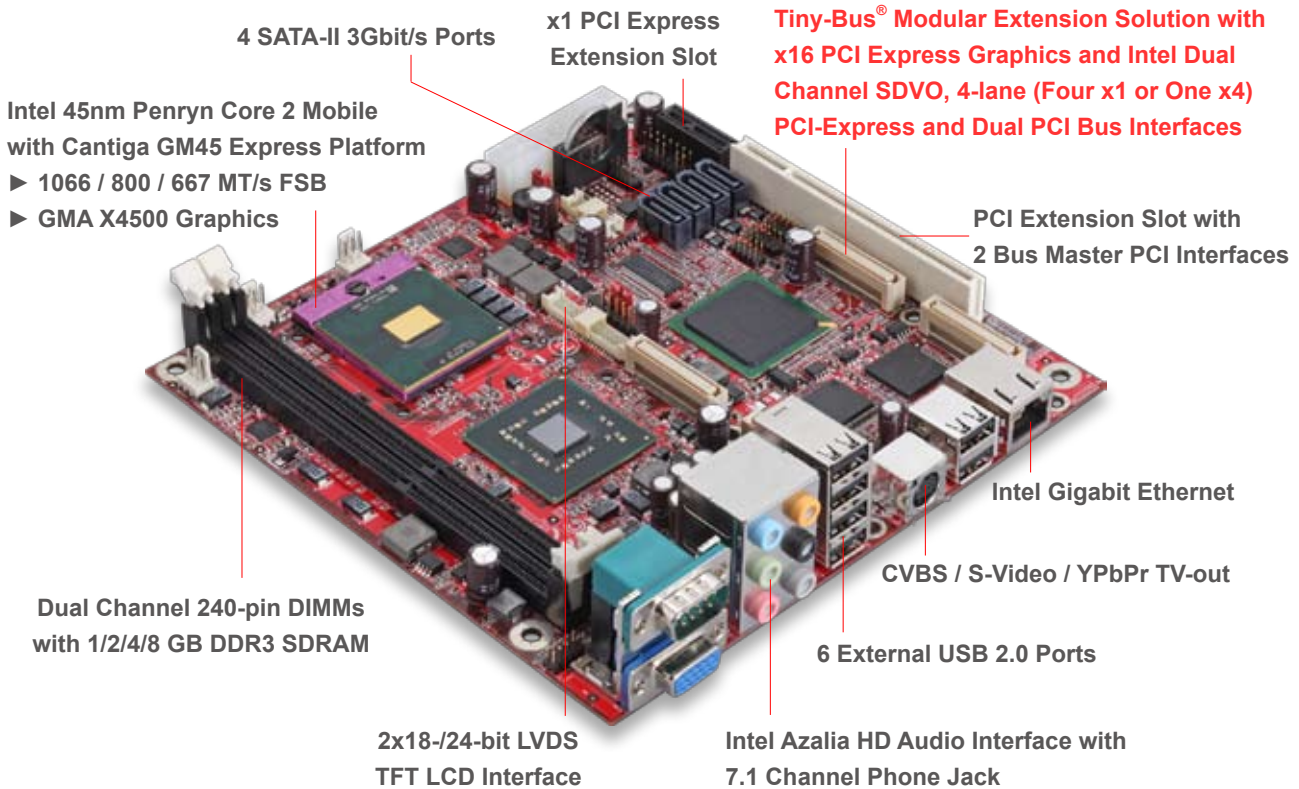


ITX-6M45

Mini-ITX Intel GM45 Core 2 Duo / Quad Mobile Express EmBoard
with Embedded Tiny-Bus® Modular Extension Solution



Overview

The Liantec ITX-6M45 is an all-in-one industrial embedded motherboard based on the Mini-ITX form factor, Intel Montevina mobile platform with Intel Cantiga GM45 Express chipset, built-in Intel GMA X4500 graphics core, supports Intel 45nm Penryn Core 2 Duo / Quad mobile processors at 1066 / 800 / 667 MT/s of FSB, and embedded Tiny-Bus® Modular Extension Solution. With the features of the Intel mobile computing technology and Tiny-Bus® Modular Extension Solution, ITX-6M45 EmBoard offers the advanced computing capacity for the industrial Small Form Factor (SFF) x86-based computing applications.

Key Features

- Intel Montevina platform supports Intel 45nm Penryn Core 2 Duo / Quad mobile processors at 1066 / 800 / 667 MT/s of FSB, dual channel DDR3-800/1066 SDRAM with up to 8GB of memory capacity, and GM45 GMCH built-in Intel GMA X4500 graphic core.
- Optional onboard Intel uFC-BGA 45nm Penryn Core 2 Duo LV / ULV and Celeron M ULV CPU for fanless and low power computing application.
- Intel GM45 GMCH built-in 2*18-/24-bit LVDS and CVBS / S-Video / YPbPr TV-out.
- Optional Tiny-Bus® Intel SDVO-based single / dual DVI / LVDS video extension.
- Onboard 7.1-CH Intel Azalia HD audio, Gigabit Ethernet and SATA-II 3Gbit/s interfaces.
- **Tiny-Bus® Modular Extension Solution with x16 PCI Express Graphics, Intel SDVO video extension, 4-lane (four x1 or one x4) PCI Express and dual PCI bus interfaces.**
- Dual bus master PCI and one x1 PCI Express extension slot.
- Compact, slim type and fanless barebone solutions are available.



ITX-6M45

Mini-ITX Intel GM45 Core2 Duo/Quad Mobile EmBoard
Intel Embedded Montevina Cantiga Computing Platform
with 1066MHz FSB, DDR3 SDRAM, GMA X4500 Graphics
and Tiny-Bus® Modular Extension Solution



Form Factor

Mini-ITX form factor at 170 x 170 mm or 6.7 x 6.7 inches

CPU

Intel embedded mobile Montevina computing platform
Supports 45nm Penryn Core2 Duo / Quad Mobile processors
with 1066 / 800 MT/s FSB at Socket-P package
Supports 65nm Celeron M processor with 667 MT/s FSB

Compatible Intel Embedded Long-term Supply CPU List
with CPU name / speed / FSB / L2 Cache / core number / TDP
Intel PPGA478 Socket P CPU (uFCPGA8)

- Intel Core 2 Duo T9400 2.53GHz / 1066MHz / 6MB / 2 / 35W
- Intel Core 2 Duo P8400 2.26GHz / 1066MHz / 3MB / 2 / 25W
- Intel Celeron M T3100 1.90GHz / 800MHz / 1MB / 2 / 35W
- Intel Celeron M 575 2.00GHz / 667MHz / 1MB / 1 / 31W

Compatible Intel Quad-Core CPU List (Not in EID Roadmap)
with CPU name / speed / FSB / L2 Cache / core number / TDP
Intel PPGA478 Socket P CPU (uFCPGA8)

- Intel Q9100 2.26GHz / 1066MHz / 12MB / 4 / 45W
- Intel Q9000 2.00GHz / 1066MHz / 6MB / 4 / 45W

Memory

Two 240-pin 1.5V DDR3 DIMM sockets
support up to dual channel 8GB DDR3-800/1066 SDRAM

Chipset

Intel embedded Cantiga GM45 GMCH and ICH9M chipset

Watchdog Timer

Programmable system reset watchdog timer

Power Management

ACPI 1.0 compliant, supports S1/S3/S5 power saving mode

Serial-ATA (SATA) Port

Four SATA-II 3Gbit/s (300MBps) ports

Extension Bus Interface

One dual bus master PCI slot and one x1 PCI Express slot
P2PCI-E-280 riser card with dual PCI and one x1 PCIe slots
Embedded Tiny-Bus® Modular Extension Solution with x16 PCI
Express graphics and dual channel Intel SDVO, 4-lane (four x1
/ one x4) PCI Express and dual PCI bus interfaces.

Video Interface (VGA, LVDS and TV-out)

Intel GM45 GMCH built-in GMA X4500 graphics core
Hardware full MPEG-2, VC-1, and AVC decoder
with 2x18-/24-bit LVDS transmitter and TV-out encoder
External DB15 female connector for VGA on rear I/O panel
External CVBS / S-Video / YPbPr TV-out on rear I/O panel
Onboard 40-pin Hirose DF13-40DP-1.25V LVDS connector

x16 PCI Express / Intel SDVO Extension Interface

Tiny-Bus® extension solution with x16 PCIe graphics interfaces
Supports Tiny-Bus® x16 PCIe graphics extension modules and
dual channel Intel SDVO video extension modules

Audio Interface

Intel Azalia 7.1 / 5.1 channel HD audio with ALC888S codec
External 6 phone jack and internal pin header connector

Ethernet Interface

Onboard PCIe Intel 82574L Gigabit Ethernet controller
10/100/1000BASE-TX auto-switching, IEEE802.3U compliant
Supports PXE boot and Wake-On-LAN functions
External RJ45 connector with LED on rear I/O panel

Hi-Speed USB 2.0 and Multi-I/O Port

6 external and 6 internal Hi-Speed USB 2.0 ports
One external and one internal RS232 COM port

Tiny-Bus® Modular Extension Solution

ITX-6M45 EmBoard supports Tiny-Bus® Modular Extension
Solution with x16 PCI Express graphics or Intel SDVO video
extension, 4-lane (four x1 or one x4) PCI Express and dual PCI
bus interfaces based extension modules.

External Rear I/O Port

- DB15 female VGA and DB9 male COM port
- 7.1 channel and S/P DIF audio port
- Four USB 2.0 ports
- CVBS / S-Video / YPbPr TV-out
- Dual USB ports
- RJ45 Gigabit Ethernet port
- Other external ports on add-on Tiny-Bus® extension module

Environment

Power Requirement: onboard 20-pin ATX power connector
Board Dimension: 170 x 170 mm or 6.7 x 6.7 inches (L x W)
Operation Temperature: 0 ~ 60°C (32 ~ 140°F)

Ordering Code

ITX-6M45N: Mini-ITX Intel GM45 Express DDR3 EmBoard
Supports Intel Core 2 Duo / Quad Mobile CPU
with VGA, LVDS, Audio, TV-out, Gbit Ethernet
and Tiny-Bus® Modular Extension Solution

Customized ODM/OEM Service

Customized ODM/OEM service based on the ITX-6M45
EmBoard with optional Intel compatible processors, function
configuration and embedded Tiny-Bus® extension modules.

Tiny-Bus Modular Extension Solution

- x16 PCI Express and Intel SDVO Video Extension
- 4-lane PCI Express with Four x1 or One x4 PCIe Interface
- Dual Bus Master 32-bit / 33 MHz PCI Interfaces
- Peripheral and Accessory



x16 PCI Express Graphics Extension

TBM-1630

Tiny-Bus MXM 3.0 Type-A/B Graphics Extension Module with Dual DVI-DL (Dual Link DVI), VGA, TV-out, and Optional Dual 18-/24-bit LVDS Video Output Ports

TBM-1620

Tiny-Bus MXM 2.1 Type-III/HE Graphics Extension Module with DVI-DL (Dual Link DVI), HDMI, VGA, TV-out, and Optional Dual 18-/24-bit LVDS Video Output Ports

TBM-1610

Tiny-Bus MXM 1.3/2.1 Type-II Graphics Extension Module with DVI, VGA, CVBS / S-Video / YPbPr TV-out, and Optional Dual 18-/24-bit LVDS Video Output Ports

TBM-16AM72

Tiny-Bus AMD-ATI M72 Radeon E2400 GPU Module with DVI, VGA, CVBS / S-Video / YPbPr TV-out, and Optional Dual 18-/24-bit LVDS Video Output Ports

Intel SDVO Video Extension

TBM-16SDVOB

Tiny-Bus Intel SDVO DVI / TV-out Extension Module with Intel SDVO DVI Transmitter and TV-out Encoder DVI-D, CVBS / S-Video / YPbPr TV-out, and Mini-PCI Socket

TBM-16SDVOD

Tiny-Bus Intel SDVO Dual DVI Extension Module with Dual Intel SDVO DVI Transmitters Dual DVI-D Video Output Ports and Mini-PCI Socket

PCI Express Based Extension

TBM-1400

Tiny-Bus PCIe Dual Mini-PCIe MiniCard Extension Module with Dual MiniCard Sockets with SMA Antenna Connectors

TBM-1410

Tiny-Bus PCIe PCMCIA ExpressCard Extension Module with ExpressCard and Mini-PCI Socket

TBM-1420

Tiny-Bus PCIe 4-Ch BT878A Video Capture Extension Module with PCIe/PCI Bridge and Four Video Input BNC Connectors

TBM-1430

Tiny-Bus PCIe 4-Port Gbit Ethernet Switch Module with Four RJ45 Switch Ports

TBM-1441

Tiny-Bus PCIe Quad Gbit Ethernet Module with Four Intel 82574L Gbit Ethernet and Mini-PCI Socket

TBM-1444

Tiny-Bus PCIe Quad Gbit Ethernet Module with Four Intel 82574L Gbit Ethernet and Mini-PCI Socket

TBM-1445

Tiny-Bus PCIe Quad Gbit Ethernet Module with Four Intel 82574L Gbit Ethernet and MiniCard Socket

TBM-1450

Tiny-Bus PCIe IEEE1394b FireWire 800 Host Module with Three IEEE1394b Ports and Mini-PCI Socket

TBM-1453

Tiny-Bus PCIe SuperSpeed USB 3.0 Host Module with External 2 USB 3.0/2.0 Connectors and MiniCard Socket

TBM-1460

Tiny-Bus PCIe eSATA / SATA-II 3Gb/s Multiplier Module with External 3/4 eSATA and Internal SATA-II Connectors

PCI-Based Extension

TBM-1200 Tiny-Bus Dual Mini-PCI Type-III A/B Module

TBM-1210 Tiny-Bus PCMCIA CardBus Module

TBM-1220 Tiny-Bus Video Capture Module

TBM-1230 Tiny-Bus 4-Port Fast Ethernet Switch Module

TBM-1240 Tiny-Bus Quad Fast Ethernet Module

TBM-1241 Tiny-Bus +48V PoE PSE Fast Ethernet Module

TBM-1242 Tiny-Bus Dual Bypass Fast Ethernet Module

TBM-1260 Tiny-Bus IEEE1394a FireWire Host Module

TBM-1261 Tiny-Bus Hi-Speed USB 2.0 Host Module

TBM-12PCM Tiny-Bus PC/104-Plus Extension Module

1U 2-slot PCIe/PCI Extension

TBM-X1700

Tiny-Bus 1U 2-slot x16 PCIe / x1 PCIe Extension Module with IEEE1394b FireWire 800, Gbit Ethernet, PCIe MiniCard x16 PCI Express and x1 PCI Express Extension Slots

TBM-X2000PE

Tiny-Bus 1U 2-slot PCIe / PCI Extension Module with IEEE1394b FireWire 800, Gbit Ethernet, PCIe MiniCard One x1 PCI Express and One PCI Extension Slots

TBM-X2000P2

Tiny-Bus 1U 2-slot PCI Extension Module with IEEE1394b FireWire 800, Gbit Ethernet, PCIe MiniCard Dual PCI Extension Slots

Peripheral and Accessory Extension

TBM-DCX60F

Tiny-Bus +9~36V DC/ATX Power Converter Module

TBM-DB25

Tiny-Bus 2.5" Drive Bay Module

Customized ODM/OEM Service

Customized ODM/OEM service based on ITX-6M45 EmBoard with Intel compatible uFC-BGA LV / ULV CPU, optional function configuration and embedded Tiny-Bus® extension modules.

Barebone Solution

LPC-R1C

1U 19" Rackmount Mini-ITX Intel GM45 DDR3 Platform
Supports Intel Penryn Core 2 Duo / Quad Mobile CPU
with Embedded Tiny-Bus® Modular Extension Solution



Form Factor

Industrial 1U 19" rackmount heavy-duty steel chassis
with 430 x 44 x 210 mm (W x H x D) of dimension

Motherboard

Liantec Mini-ITX EmBoard with Tiny-Bus® Extension Solution

Tiny-Bus® Extension Solution

- x16 PCI Express Graphics or Intel SDVO video extension
- 4-lane (four x1 or one x4) PCI Express bus interface
- Dual bus master PCI interfaces
- Tiny-Bus 2.5" drive bay

Ultra Low Profile 1U Slim Add-on Card

Support one ultra low profile 1U slim PCI add-on card

Drive Bay

One 3.5" or two 2.5" drive bay supports HDD and SSD.

System Fan and Air Filter

One Sunon 4020 VAPO DC fan on rear panel
Operating-removeable air filter on front panel

Back I/O Panel

Customized back I/O panel for OEM motherboard

Power Supply

Internal 250W AC/DC ATX power supply
Supports 90~264V / 47~63 Hz AC power input
Efficiency > 85% under system full load.
Standby Efficiency < 1 watt of true input power.

LPC-R1X

1U 19" Rackmount Mini-ITX 2-Slot PCIe / PCI Platform
Supports Intel Penryn Core 2 Duo / Quad Mobile CPU
with Tiny-Bus® 2-slot PCIe / PCI Extension Solution



Form Factor

Industrial 1U 19" rackmount heavy-duty steel chassis
with 430 x 44 x 330 mm (W x H x D) of dimension

Motherboard

Liantec Mini-ITX EmBoard with Tiny-Bus® Extension Solution

Tiny-Bus® 1U / 2-slot PCIe/PCI Extension Solution

- TBM-X1700 supports one x16 and one x1 PCIe add-on card
- TBM-X2000PE supports one x1 PCIe and one PCI add-on card
- TBM-X2000P2 supports dual PCI add-on cards
- Supports 280mm of Length for add-on cards

Drive Bay

2 * 3.5" drive bay supports HDD and SSD.

System Fan and Air Filter

Dual Sunon 4020 VAPO DC fan on front panel
Removeable air filter on front panel

Power Supply

Internal 250W AC/DC ATX power supply
Supports 90~264V / 47~63 Hz AC power input
Efficiency > 85% under system full load.
Standby Efficiency < 1 watt of true input power.

LPC-M2B

Wallmount / Standalone Mini-ITX Graphics Workstation Platform
Supports Intel Penryn Core 2 Duo / Quad Mobile CPU
with Tiny-Bus® x16 PCIe Graphics Extension Solution



Form Factor

Industrial wallmount / standalone heavy-duty steel chassis
with 88 x 228 x 220 mm (W x H x D) of dimension

Motherboard

Liantec Mini-ITX EmBoard with Tiny-Bus® Extension Solution

Tiny-Bus® x16 PCIe Graphics Extension Solution

- TBM-1630 supports x16 PCIe MXM 3.0 Type-A/B GPU module
- TBM-1620 supports x16 PCIe MXM 2.1 Type-HE GPU module
- TBM-1610 supports x16 PCIe MXM 1.3 Type-II GPU module
- TBM-16AM72 supports AMD-ATI M72 GPU module

Drive Bay

1 * 3.5" or 2 * 2.5" drive bay supports HDD and SSD.

System Fan and Air Filter

One Sunon 8025 VAPO DC fan on front panel
Removeable air filter on front panel

Power Supply

Internal 250W AC/DC ATX power supply
Supports 90~264V / 47~63 Hz AC power input
Efficiency > 85% under system full load.
Standby Efficiency < 1 watt of true input power.

For the further product information please visit the website at <http://www.liantec.com/product/emboard/ITX-6M45.htm>