

EMB-5940

5.25" Intel Core 2 Duo Mobile Express Networking EmBoard with Tiny-Bus® Modular Extension Solution

2 Vertical So-DIMM Sockets
Supports 4GB DDR2 SDRAM

Wide Range +9~36VDC
Single Power Operating

Onboard Four PCIe Gigabit Ethernet
with Intel 82574L Controllers

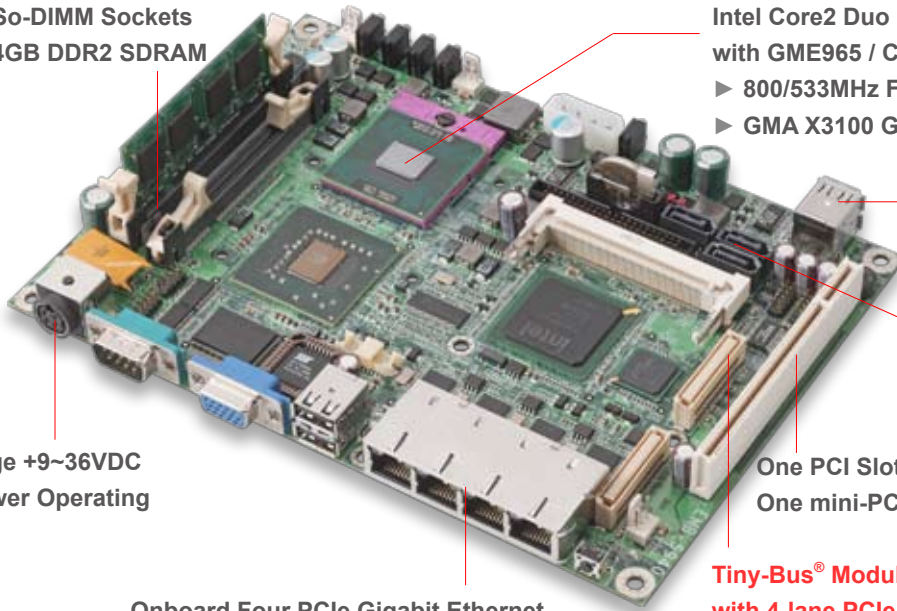
Intel Core2 Duo 65nm Merom Platform
with GME965 / Centrino2 Platform
▶ 800/533MHz FSB
▶ GMA X3100 Graphics

Dual Front Access
USB 2.0 Ports

3 SATA-II Ports with
3Gbps / 300GBps
Data Transfer Rate

One PCI Slot with dual bus master
One mini-PCI Type-III/A/B Socket

**Tiny-Bus® Modular Extension Solution
with 4-lane PCIe (four x1 or one x4) and
2 PCI Bus Interface**



Overview

The EMB-5940 is an industrial x86-based networking computing solution based on the 5.25-inch drive size form factor, Intel 65nm Merom (Santa Rosa) Core2 Duo mobile Express computing platform, and features the embedded Tiny-Bus® Modular Extension Solution. With the Intel powerful mobile processing capacity of Santa Rosa Core2 Duo platform, onboard four PCI Express Gbit Ethernet, SATA-II interfaces, mini-PCI and CompactFlash sockets, and the Tiny-Bus® modular Extension solution, the EMB-5940 EmBoard meets the demand of the industrial embedded Small Form Factor (SFF) x86-based networking computing applications with flexible modular Extension solution.

Key Features

- Intel GME965 Express Core2 Duo (Santa Rosa) mobile computing platform with 800/533MHz FSB, DDR2 SDRAM and GMA X3100 graphics core.
- Optional Intel L7500 / U7500 low power processor for fanless operating.
- Onboard four Intel PCIe 82574L Gbit Ethernet controllers with quad-RJ45 connectors.
- **Tiny-Bus® Modular Extension Solution with 4-lane (four x1 or one x4) PCI Express and dual PCI bus interface.**
 - ▶ **TBM-14xx series PCI Express based extension modules.**
 - ▶ **TBM-12xx series PCI-based extension modules.**
 - ▶ **Tiny-Bus mechanical compliant modules.**
- 44-pin IDE, SATA-II (SATA-300), 4 external and 4 internal USB 2.0, 8-bit GPIO ports.
- One PCI slot and one mini-PCI type-III/A/B socket.
- IDE-based bootable / driver-free CompactFlash socket.
- Wide range +9 to 36VDC single power operating with external DC power jack.
- Compact, slim type and fanless barebone solutions are available.



EMB-5940

5.25" Intel Core 2 Duo Mobile Networking EmBoard
Intel Embedded GME965 Express Computing Platform
with 4 PCIe Intel Gbit Ethernet, Mini-PCI, CompactFlash
and Tiny-Bus® Modular Extension Solution



Form Factor

5.25-inch drive size EBX form factor at 203 x 146 mm

CPU

Intel embedded mobile Santa Rosa computing platform
Supports 65nm Merom Core2 Duo Mobile processors
with 800 / 533 MT/s FSB at Socket-P package

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 T7500 with 2.20GHz / 800MHz / 4MB / 2 / 35W
- Intel Celeron M 550 with 2.00GHz / 533MHz / 1MB / 1 / 31W

Intel uFCBGA Low Power / Fanless CPU (for OEM only)

- Intel L7500 with 1.60GHz / 800MHz / 4MB / 2 / 17W
- Intel U7500 with 1.06GHz / 533MHz / 2MB / 2 / 10W
- Intel Celeron M 573 with 1.00GHz / 533MHz / 512KB / 1 / 10W

Memory

Two vertical type DDR2 SO-DIMM sockets
Supports up to 4GB DDR2-800 non-ECC / registered SDRAM

Chipset

Intel embedded GME965 GMCH and ICH8M

Watchdog Timer

Programmable system reset watchdog timer

Serial ATA (SATA) and IDE (PATA) Port

One 44-pin UltraATA100/133 IDE port with +5V DC power
Three SATA-II (SATA-300) 3Gbps / 300MBps ports

Solid State Flash Disk Interface

CompactFlash Card Socket

Onboard CompactFlash socket supports CompactFlash Card
Jumper selectable master / slave mode on primary IDE port

IDE / SATA DiskOnModule (DOM) Flash Disk

Onboard IDE ports support IDE-based DOM flash disk
44-pin DiskOnModule at PIO mode 4 / Multi-Word mode 2

Onboard SATA ports support SATA-based DOM flash disk
7-pin DiskOnModule at SATA-I (SATA150) / SATA-II (SATA300)

Expansion Bus Interface

1 PCI slot with dual bus master PCI
1 mini-PCI type-III/A/B socket (shared with 2nd PCI on PCI slot)
Embedded Tiny-Bus® Modular Extension Solution with 2-lane
(two x1) PCI Express and dual PCI bus master interfaces.

Video Interface

Intel GME965 GMCH built-in GMA X3100 graphics core
External DB15 female connector for VGA on rear panel

Ethernet Interface

Optional four PCIe Intel 82574L Gigabit Ethernet Interfaces
10/100/1000BASE-TX auto-switching, IEEE802.3U compliant
External quad-RJ45 connector with LED on rear I/O panel
External link / active LED on front panel

USB 2.0, COM, GPIO Port

Intel ICH8M chipset built-in Hi-Speed USB 2.0 controller
with 4 external (2 front and 2 rear) and 4 internal USB 2.0 ports
One external and one internal RS-232C COM port
Onboard 8-bit (4 in / 4 out) programmable GPIO port

External I/O Port and Indicated LED

Rear I/O Panel

Power jack, COM, VGA, 2 USB, 4 RJ45 / LED, power switch
Other external ports on add-on Tiny-Bus® module

Front I/O Panel

2 USB ports, Ethernet link / active LED, power / access LED

Environment

Power Requirement: **full range +9~36VDC power operating**
Board Dimension: 203 x 146 mm (L x W)
Operation Temperature: 0 ~ 60°C (32 ~ 140°F) with CPU cooler

Tiny-Bus® Modular Extension Solution

The EMB-5940 supports Tiny-Bus® Modular Extension Solution
with 2 x1 PCI Express and PCI bus interfaces.

Customized Tiny-Bus® extension modules for ODM / OEM
projects. For the further information about Tiny-Bus® modules,
please visit the website at <http://www.liantec.com>.

Ordering Code

EMB-5940SN4

5.25" Intel Core 2 Duo Mobile Express Networking EmBoard
with Onboard Four PCIe Intel 82574L Gbit Ethernet
VGA, USB 2.0, PCI, mini-PCI and CompactFlash Socket
and Tiny-Bus® Modular Extension Solution

EMB-5940LN4 (with Intel Core 2 Duo L7500 LV CPU)

Same as above but with **Intel L7500 1.6GHz / 17W CPU**

EMB-5940UN4 (with Intel Core 2 Duo U7500 ULV CPU)

Same as above but with **Intel U7500 1.06GHz / 10W CPU**

EMB-5940CN4 (with Intel Celeron M 573 ULV CPU)

Same as above but with **Intel CM573 1.00GHz / 10W CPU**

Customized ODM/OEM Service

Customized ODM/OEM service based on EMB-5940 EmBoard
with onboard Intel compatible uFC-BGA LV / ULV CPU, optional
function configuration and embedded Tiny-Bus® Extension
modules.

Tiny-Bus Modular Extension Solution

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



PCI Express Based Extension

TBM-1400

Tiny-Bus PCIe Dual Mini-PCIe MiniCard Extension Module with Dual Mini-PCIe Full-size MiniCard Sockets External Wi-Fi Indicated LEDs and SMA Antenna Connectors

TBM-1410

Tiny-Bus PCIe PCMCIA ExpressCard Extension Module with ExpressCard Socket 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 Gbit Ethernet Switch Ports

TBM-1442

Tiny-Bus PCIe Dual Bypass Intel Gbit Ethernet Module with Dual Intel 82574L Gbit Ethernet with Bypass Function 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 with Dual PCMCIA CardBus and Mini-PCI Socket

TBM-1220

Tiny-Bus Video Capture Module with BT878A Video Capture and Mini-PCI Socket

TBM-1230

Tiny-Bus 4-Port Fast Ethernet Switch Module with 4-Port 10/100 Switch and Mini-PCI Socket

TBM-1240

Tiny-Bus Quad Fast Ethernet Module with Quad Fast Ethernet and Mini-PCI Socket

TBM-1241

Tiny-Bus +48VDC PoE PSE Fast Ethernet Module with Fast Ethernet, +48VDC / 400mA PoE PSE and Mini-PCI Socket

TBM-1242

Tiny-Bus Dual Bypass Fast Ethernet Module with Pair Bypass Fast Ethernet Ports and Mini-PCI Socket

TBM-1260

Tiny-Bus IEEE1394a FireWire Host Module with 3 IEEE1394a Ports and Mini-PCI Socket

TBM-1261

Tiny-Bus Hi-Speed USB 2.0 Host Module with 6 USB 2.0 Ports and Mini-PCI Socket

TBM-12PCM

Tiny-Bus PC/104-Plus Extension Module with PC/104-Plus Connector and Mini-PCI Socket

Peripheral and Accessory Extension

TBM-DB25

Tiny-Bus 2.5" Drive Bay Module

Customized ODM/OEM Service

Customized ODM/OEM service based on EMB-5950 EmBoard with Intel compatible uFC-BGA LV / ULV CPU, optional function configuration and embedded Tiny-Bus® extension modules.

Barebone Solution

LPC-5940S

Industrial 5.25" Drive-size Networking Computing Platform
with Intel Embedded Merom Core 2 Duo Mobile CPU
Supports Tiny-Bus® Modular Extension Solution



Form Factor

Industrial wallmount / standalone heavy-duty steel chassis
with 210 x 44 x 153 mm (W x H x D) of dimension

Motherboard

Liantec EMB-5940 EmBoard with Tiny-Bus® Extension Solution
Supports Intel Merom Core 2 Duo Mobile CPU, DDR2 SODIMM
Four PCIe Intel Gigabit Ethernet interface with RJ45 connector
External VGA, RS-232, two front and two rear USB 2.0 ports
Mini-PCI socket supports Wi-Fi and add-on Mini-PCI modules
CompactFlash socket on bottom side with removeable door

Power Supply

External 60W +12V AC/DC power adapter
Supports 90~264V / 47~63 Hz AC power input

Tiny-Bus® Extension Solution

- 2-lane (two x1) PCI Express bus interface supports
TBM-1430 4-port Gbit Ethernet switch module
TBM-1444 Quad Intel Gbit Ethernet and Mini-PCI module
TBM-1445 Quad Intel Gbit Ethernet and MiniCard module
- Dual bus master PCI interfaces
- Tiny-Bus 2.5" drive bay supports 2.5" HDD/SSD

LPC-5940MP

Industrial Slim-type Networking Computing Platform
with Intel Embedded Merom Core 2 Duo Mobile CPU
Supports Tiny-Bus® Modular Extension Solution



Form Factor

Industrial wallmount / standalone heavy-duty steel chassis
with 290 x 44 x 153 mm (W x H x D) of dimension

Motherboard

EMB-5940 EmBoard with Tiny-Bus® Extension Solution
4 x1 PCIe Intel Gigabit Ethernet interface with RJ45 connector
Mini-PCI socket supports Wi-Fi and add-on Mini-PCI modules
CompactFlash socket on bottom side with removeable door

System Fan

One Sunon 4020 VAPO DC fan on rear panel

Power Supply

Internal 60W +12V AC/DC open frame power supply
Supports 90~264V / 47~63 Hz AC power input

Tiny-Bus® Extension Solution

- 2-lane (two x1) PCI Express bus interface supports
TBM-1430 4-port Gbit Ethernet switch module
TBM-1444 Quad Intel Gbit Ethernet and Mini-PCI module
TBM-1445 Quad Intel Gbit Ethernet and MiniCard module
- Dual bus master PCI interfaces
- Tiny-Bus 2.5" drive bay supports 2.5" HDD/SSD

LPC-5940MD

Industrial Slim-type Networking Computing Platform
with Intel Embedded Merom Core 2 Duo Mobile CPU
Supports Tiny-Bus® Modular Extension Solution



Form Factor

Industrial wallmount / standalone heavy-duty steel chassis
with 290 x 44 x 153 mm (W x H x D) of dimension

Motherboard

Liantec EMB-5940 EmBoard with Tiny-Bus® Extension Solution
Four PCIe Intel Gigabit Ethernet interface with RJ45 connector
Mini-PCI socket supports Wi-Fi and add-on Mini-PCI modules
CompactFlash socket on bottom side with removeable door

Drive Bay

One 2.5" drive bay for 2.5" HDD / SSD.

Power Supply

External 60W +12V AC/DC power adapter
Supports 90~264V / 47~63 Hz AC power input

Tiny-Bus® Extension Solution

- 2-lane (two x1) PCI Express bus interface supports
TBM-1430 4-port Gbit Ethernet switch module
TBM-1444 Quad Intel Gbit Ethernet and Mini-PCI module
TBM-1445 Quad Intel Gbit Ethernet and MiniCard module
- Dual bus master PCI interfaces
- Tiny-Bus 2.5" drive bay supports additional 2.5" HDD/SSD

For the further information, please visit the website of <http://www.liantec.com>.