

EMB-5950

5.25" Intel Atom 945GSE Multimedia EmBoard with Tiny-Bus® Modular Extension Solution

One DDR2 SoDIMM Socket
up to 2GB DDR2 SDRAM

Single +9 ~ 36VDC
Power Input

Y/Pb/Pr HDTV Component

S-Video SDTV TV-out

Gbit Ethernet

Intel Atom 945GSE Diamondville
Embedded Computing Platform
▶ N270 1.6GHz / 533MHz / 512KB
▶ Intel 945GSE GMCH / ICH7M

2 SATA-II Ports
3Gbps / 300GBps

Front Access USB and
HD Audio Phone Jack

2 x 18-bit LVDS
TFT LCD Interface

**Tiny-Bus® Modular Extension Solution
with Intel Single Channel SDVO, Dual x1
PCIe and Dual PCI Bus Interfaces**

Overview

The EMB-5950 is an industrial x86-based multimedia computing solution based on the 5.25-inch drive size EBX form factor, Intel Atom 945GSE Express Diamondville Calistoga computing platform, and features the embedded Tiny-Bus® Modular Extension Solution. With the Intel embedded low power Atom processing platform, onboard LVDS, TV-out, HD audio, Gbit Ethernet, SATA-II interfaces, and the Intel SDVO, PCIe and PCI based Tiny-Bus® modular Extension solution, the EMB-5950 EmBoard meets the demand of the industrial embedded Small Form Factor (SFF) x86 PC-based multimedia computing applications with flexible modular Extension solution.

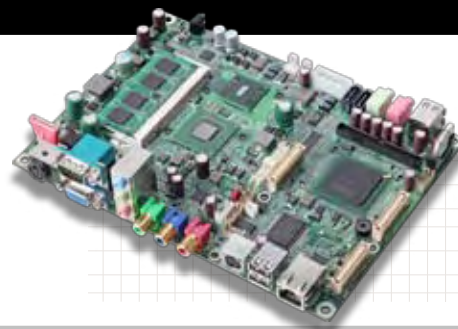
Key Features

- Intel Atom 945GSE Express computing platform with ultra low power Atom N270 CPU, GMCH built-in GMA950 VGA core and DDR2 SDRAM interfaces.
- **Intel Atom N270 1.6GHz / 533MHz FSB / 512KB L2 cache CPU for fanless operating.**
- 2x18-bit LVDS, SDTV, HDTV, Gbit Ethernet, SATA-II (SATA-300) ports.
- Onboard HD audio interface with rear and front phone jack connectors.
- External Y/Pb/Pr HDTV component RCA connectors on rear I/O panel.
- **Embedded Tiny-Bus® Modular Extension Solution with Intel SDVO video extension, dual x1 PCIe and dual PCI bus interface.**
 - ▶ TBM-16SDVO series Intel single SDVO-based video extension modules.
 - ▶ TBM-14xx series dual x1 PCI Express based extension modules.
 - ▶ TBM-12xx series PCI-based extension modules.
- Four external and 4 internal USB 2.0, 8-bit GPIO ports.
- **Single full range +9~36VDC power operating with external power jack.**
- Compact, slim type and fanless barebone solutions are available.



EMB-5950

5.25" Intel Atom 945GSE Multimedia EmBoard Intel Embedded Diamondville Express Platform with VGA, LVDS, Video / Audio, Gbit Ethernet and Tiny-Bus® Modular Extension Solution



Industrial
Mini-ITX EmBoard

Embedded Single
Board Computer

Tiny-Bus
Expansion Module

Fanless
Computing Platform

Industrial
Computing Platform

Industrial
Embedded Peripheral

Form Factor

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

CPU

Intel Atom N270 with 1.6GHz, 533MHz FSB, 512KB L2 cache
Single core with 2.5 watt Max TDP

Optional onboard-mounted Intel Diamondville 45nm Atom CPU
at PBGA437 package CPU for OEM project.

Memory

One DDR2 So-DIMM socket
Supports 2GB DDR2-400/533 non-ECC / registered SDRAM

Chipset

Intel embedded Calistoga 945GSE GMCH and ICH7M

Watchdog Timer

Programmable system reset watchdog timer

Serial ATA (SATA) and IDE (PATA) Port

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

Solid State Flash Disk Interface

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 (150) / SATA-II (300)

Video Interface (VGA, LVDS, SDTV, HDTV)

Intel embedded 945GSE GMCH built-in GMA950 VGA core
with 2x18-bit LVDS transmitter and SDTV / HDTV encoder
External DB15 female connector for VGA on rear I/O panel
External Y/Pb/Pr HDTV component RCAs on rear I/O panel
External CVBS / S-Video TV-out connector on rear I/O panel
Onboard 40-pin Hirose DF13-40DP-1.25V LVDS connector

Video Extension Interface (DVI, 2nd LVDS)

Embedded Tiny-Bus® modular Extension solution with Intel
SDVO based DVI / LVDS extension interface

- ▶ TBM-16SDVOD1: Intel SDVO DVI and mPCI Module (1*DVI)
- ▶ TBM-16SDVOX1: Intel SDVO LVDS Module (1*LVDS)

Audio Interface

Intel Azalia 7.1 / 5.1 channel HD audio with ALC888S codec
External line-in / line-out / mic-in phone jack on rear I/O panel
External line-out / mic-in phone jack on front panel

Ethernet Interface

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

Hi-Speed USB 2.0, RS-232 COM, GPIO Port

Intel ICH7M 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, line-in / line-out / mic-in phone jack
Y/Pb/Pr HDTV, CVBS / S-Video TV-out, dual USB, RJ45 / LED
Other external ports on add-on Tiny-Bus® extension module

Front I/O Panel

2 USB ports, line-out / Mic-in phone jack, power / access LED

Environment

Power Requirement: single +9 ~ 36V DC power operating
Board Dimension: 203 x 146 mm (L x W)
Operation Temperature: 0 ~ 60°C (32 ~ 140°F)

Tiny-Bus® Modular Extension Solution

The EMB-5950 EmBoard supports the embedded Tiny-Bus®
Modular Extension Solution with single Intel SDVO, dual x1
PCI Express and PCI bus interfaces including (but not only) :

- ▶ **TBM-16SDVOD1**: Intel SDVO DVI and mPCI Module (1*DVI)
- ▶ **TBM-16SDVOX1**: Intel SDVO LVDS Module (1*LVDS)
- ▶ **TBM-1400**: PCIe Dual PCIe MiniCard Wi-Fi Module
- ▶ **TBM-1410**: PCIe PCIe ExpressCard and mini-PCI Module
- ▶ **TBM-1420**: PCIe PCIe 4-CH 120fps Video Capture Module
- ▶ **TBM-1430**: PCIe 4-Port Gbit Switch and mini-PCI Module
- ▶ **TBM-1442**: PCIe Dual Bypass Gbit Ethernet Module
- ▶ **TBM-1450**: PCIe IEEE1394b 800Mbps Firewire Module
- ▶ **TBM-1460**: PCIe eSATA / SATA-II Multiplier RAID Module
- ▶ All Liantec standard PCI-based Tiny-Bus extension modules

Other customized compatible Tiny-Bus® 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-5950N270

5.25" Intel Atom 945GSE Multimedia EmBoard
Intel Atom N270 1.6GHz / 533MHz / 512KB CPU
with VGA, LVDS, SDTV, HDTV, HD Audio, Gbit Ethernet
and Tiny-Bus® Modular Extension Solution

EMB-5950-OEM

Customized EMB-5950 EmBoard

Customized ODM/OEM Service

Customized ODM/OEM service based on the EMB-5950
EmBoard with onboard Intel compatible PBGA437 Atom CPU,
optional function configuration and embedded Tiny-Bus® Intel
SDVO / PCIe / PCI extension modules.

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