# Thunderbird-E3100

Mini-ITX Single Board Computer, Server Class Chipset
Intel® Core™ 2 Duo Processor

## Features

Intel Core 2 Duo processor

Intel E3100 server class chipset

Max. 8 GB DDR2-400 ECC RAM

Graphics up to 1600 x 1200 pixels

VGA CRT

2 x Gigabit LAN

6 x USB 2.0

2 x RS232/RS422/RS485

6 x SATA

2 x PCI Express x4 slot

PCI Express Mini Card

ASF (Alert Standard Format)

### More Features

- LIPPERT Enhanced Management Technology
- Flash BIOS
- RoHS compliant

The Thunderbird-E3100 is a high-reliability, server-class Mini-ITX board for mission critical applications. Its E3100 server class chipset handles up to eight Gigabytes of error correcting registered DDR2 RAM (ECC RAM). Together with the Intel Core 2 Duo processor, this chipset delivers maximum throughput while showing only little power consumption, typically just about 29 watts.

The Thunderbird-E3100 features an integrated Volari Z9M GPU graphics controller. Its powerful 64-bit graphics engine works with 16 MB video RAM and efficiently handles 2D operations. It supports grapghics modes up to 16M true color and screen resolutions up to 1600 by 1200 pixels.

The board's interfaces comprise two Gigabit LAN ports, six USB2.0 host ports and six SATA AHCI ports. There even are two serial interfaces available, which can be configured to handle either RS232, RS422, or RS485 line levels.

There are two standard PCI Express x4 slots available for system expansion. Additionally, a PCI Express Mini Card can be used to add more functionality.

The Thunderbird-E3100 comes with LiPPERT Enhanced Management Technology (LEMT) functionality. Together with its ASF Out Of Band operation features, this allows remote control and supervison.

LiPPERT is an independent design house and manufacturer that develops and builds special customer specific solutions. Please ask for a specific quotation

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# Thunderbird-E3100
## Mini-ITX Single Board Computer, Server Class Chipset
## Intel® Core™ 2 Duo Processor

## Technical Data

| | |
|---|---|
| **Board Format** | Mini-ITX, 170 mm x 170 mm (6.69" x 6.69") |
| **Processor** | Intel Core 2 Duo T7500 Intel Core 2 Duo L7500 |
| **Speed** | T7500: 2.2 GHz U7500: 1.06 GHz |
| **Core Logic** | E3100 server class chipset ICH 9M I/O controller |
| **RAM (max.)** | 8 GB DDR2 registered ECC |
| **RAM clock** | 400 MHz |
| **Graphics** | Volari Z9M GPU 16 MB DDR RAM |
| **CRT** | Analog VGA 1600 x 1200 pixels |
| **USB** | 4 x USB 2.0 host external 2 x USB 2.0 host internal |
| **Ethernet** | 2 x 1000/100/10 MBit with - Intel 82574IT - 82573V with ASF |
| **Serial** | 2 x RS232/RS422/RS485 |
| **SATA** | 6 AHCI ports available |
| **Watchdog** | Yes |

| | |
|---|---|
| **Status LED** | HDD, power, standby, power mode, watchdog, MiniCard, Ethernet |
| **Operating temperature** | 0°C…+60°C (commercial, all versions) -20°C…+60°C (industrial, all versions) -40°C…+85°C (extended, optional) |
| **PCI Express Bus** | 2 PCIe x4 slots 1 PCIe x1 Mini Card |
| **RTC Backup** | Battery on board |
| **Power Supply** | 12V ±5 % or ATX power supply +3.3V, +5V, +5VSB, +12V |
| **Power Consumption** | *Maximum* 37 watts *Average* 29 watts *Idle* 21 watts |
| **Cooling** | Active |
| **MTBF** | 178.802 hours at 25 °C |
| **BIOS** | Award BIOS BIOS parameters are also saved in FEPROM |
| **Supported OS** | Windows XP, XP Embedded, Windows Server 2003, Linux. 32 and 64 bit versions are supported. |

### Ordering Information

| Ordering Number | Description |
|---|---|
| t05-0010-11 | CPU module with SV Intel Core 2 Duo T7500 (2.2GHz) and E3100 chipset. Includes support CD. |
| t05-0011-10 | CPU module with SV Intel Core 2 Duo L7500 (1.6 GHz) and E3100 chipset. Processor soldered down, passively cooled. Includes support CD. |

Note: t denotes the temperature range. Use 7 for commercial, 8 for industrial and 9 for extended temperature range

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