

Thunderbird

Mini-ITX board with Intel® Pentium® M
1.4/1.6/1.8 GHz

Features

Intel® Pentium® M processor 7xx

GB DDR-SDRAM

High performance 3D graphics controller

SXGA: 2048 x 1536 pixel

Dual channel LVDS

Fast Ethernet 100/10 BaseT

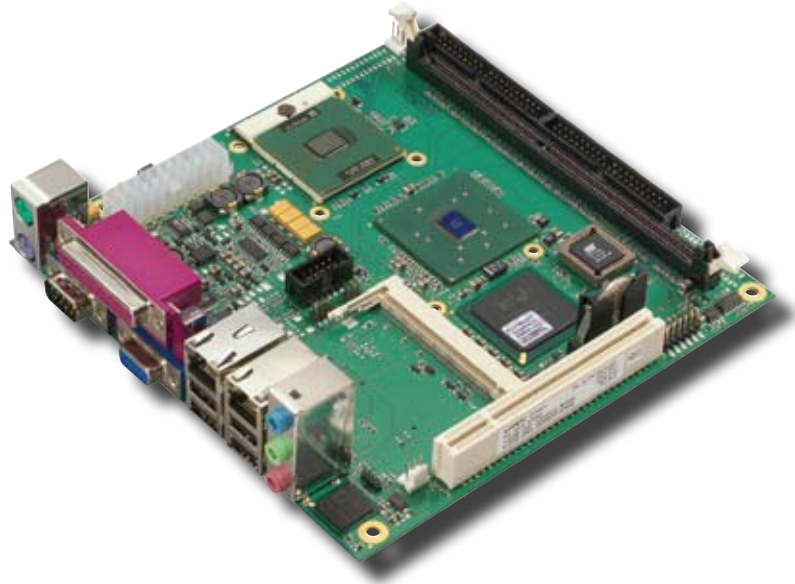
Gigabit Ethernet 1000 BaseT

6 x USB 2.0

Small power consumption

Passive cooling possible

Opt. ext. temperature range @ 1.4 GHz



More Features

- Sound I/O AC97 compatible
- Watchdog
(software configurable)
- Flash BIOS
- Battery buffered RTC
- 1 x 3.3 V PCI slot
(V2.2 compliant)
- 1 x 3.3 V Mini-PCI slot
(V1.0 compliant)



The Thunderbird is a compact, highly integrated low-power single board computer, in the Mini-ITX form factor.

At the core of the board is the Intel Pentium M processor running up to 1.8 GHz. The accompanying Intel 82855GME chipset features a high performance 3D graphics controller with Intel Extreme Graphics-2, supporting dual independent displays. The integrated display controller comes with up to 32 MB improved UMA VRAM and handles up to 2048 x 1536 pixels at 75 Hz. LCD screens can be connected with dual channel LVDS.

The Thunderbird comes with floppy, PS/2 keyboard and mouse, two RS232 serial ports, Ultra ATA 100 EIDE and IrDA interface on-board. Networking capabilities are provided by two LAN ports, one with Fast Ethernet (100/10 BaseT) and the other with Gigabit Ethernet (1000 BaseT), respectively. Six independent USB 2.0 ports and AC-97 Sound I/O are also integrated. In addition to a standard PCI slot, a mini-PCI connector is available for system expansion and can hold all types of mini-PCI modules. For instance, wireless LAN interfaces can easily plugged in. LiPPERT provides some specialized mini-PCI modules that add special functionality to the Thunderbird. See our web site for available types.

The Thunderbird's RAM is expandable with the single on-board DIMM socket that can hold 1024 MB DDR333 SDRAM.

System integrity is assured with temperature and fan speed monitoring. The Thunderbird with the 1.4 GHz processor works with a +5V-only supply and is optionally available for operation in the extended temperature range from -40 °C to +85 °C.

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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Technical Specifications

Board Format	Mini-ITX, 170 mm x 170 mm	LPT	Multi-Mode™ bi-directional Parallel-Port IEEE 1284 compliant with EPP/EPC modes
Processor	Intel Pentium M	IDE	4 independent drives Primary and Secondary ports Ultra ATA 100/66/33 Mbyte/s, PIO modes
Speed	1.4 / 1.6 / 1.8GHz	Sound I/O	AC97 2.3 (Line-in, Line-out, Mic-in)
FSB	400+ MHz	RTC Backup	Battery on board
Core logic	i82855 GME i82801 DB (ICH4) Super I/O: NSC PC87364	Watchdog	Software configurable, 1s...255s
RAM (max.)	1 GB DDR SDRAM (PC2700) One slot available	Power Consumption (maximum)	1.4 GHz: ~19 W (with +5 V-only supply) 1.6 GHz: ~30 W 1.8 GHz: ~34 W
RAM clock	200 / 266 / 333 MHz	Operating temperature	Standard: -20°C ... +60°C Extended: -40°C ... +85°C (optionally available for the 1.4 GHz version)
Graphics	Integrated i82855 graphics controller 1600 x 1200 at 85 Hz 2048 x 1536 at 75 Hz	MTBF	109.600 hours at 30 °C
CRT	Analog VGA	Cooling	Passive cooling possible
LVDS	Dual channel 18-Bit interface for LCDs	Status LED	Power, Ethernet, IDE
Floppy	up to 2.88 Mbyte	PCI Bus	1 x Standard PCI slot, 3.3V V2.2 compliant 1 x Mini-PCI slot, V1.0 compliant
Serial	2 x RS232C with hardware handshake	Power Supply	ATX, a +5 V only supply can be used optionally. All necessary voltages are generated on-board.
Infrared	IrDA (SIR, Consumer IR) with TTL level to connect an external infrared transmitter	BIOS	Phoenix FirstBIOS. The BIOS parameters are also saved in FEPROM
USB	6 x USB 2.0	Supported OS	Windows® XP, Windows® XPE, Windows® CE, Linux®
Ethernet	1 x 100/10 BaseT with i82801DB 1 x 1000 BaseT with i82541ER		
Keyboard, Mouse	PS/2 or USB		

Ordering Information

Ordering Number	Description
805-0002-11	Mini-ITX board with socketed 1.8 GHz Intel® Pentium® M 745, active cooler, max. 1GB DDR-RAM, 6xUSB, IrDA, RTC, Battery, FDC, 2xIDE, 2xCOM, LPT, PS/2 keyboard and mouse, watchdog, PCI slot, miniPCI slot, 1x Fast Ethernet, 1x Gigabit Ethernet, LVDS, AC97 sound, ATX power connector sound, S/PDIF, ATX power connector
805-0002-10	Like 805-0002-11 but with 1.6 GHz Pentium® M
t05-0001-10	Like 805-0002-10 but with soldered 1.4 GHz Pentium® M 738, passive cooler and 5 volt single voltage supply

Note: t denotes the temperature range. Substitute with **8** for standard and **9** for extended temperature range



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