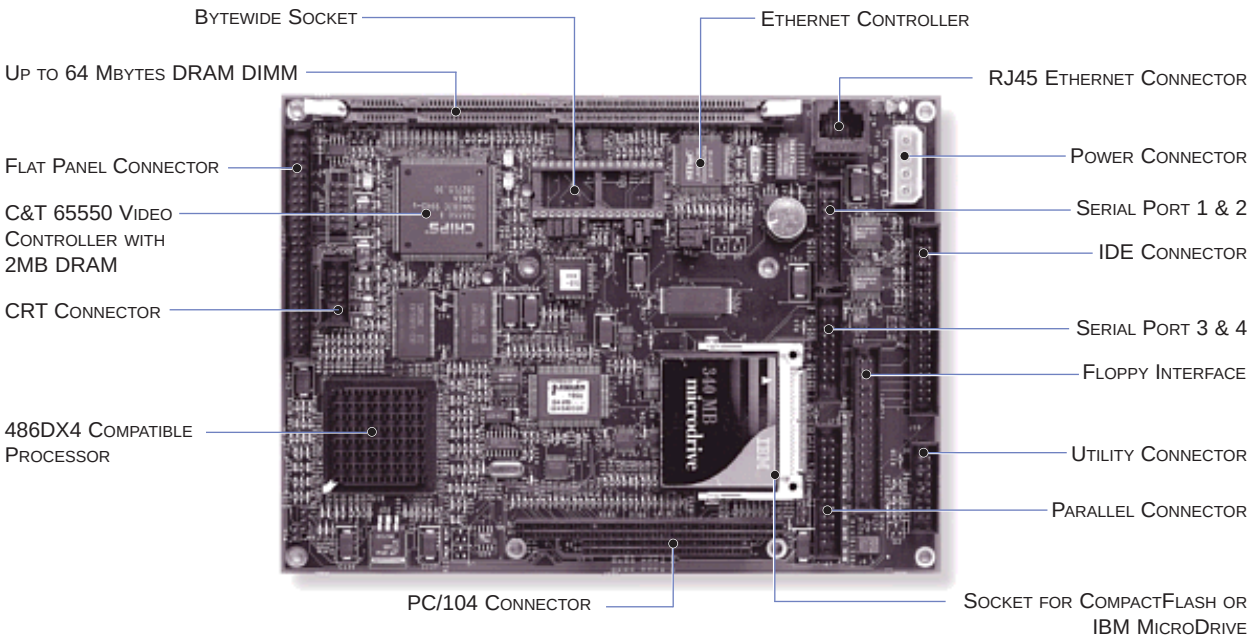
LB3-486e

Little Board™/486e • *High integration PC/AT compatible single board system*



The Little Board™/486e is a low cost, high integration, high performance embedded PC offering exceptional value. In the EBX form-factor pioneered by Ampro, this rugged, high quality single-board system contains all the basic embedded PC subsystems plus video and Ethernet. Little Board/486e utilizes an ultra-modern design that combines the performance of a new generation 486 processor with the latest peripheral controllers plus support for SanDisk CompactFlash and the IBM MicroDrive, enabling OEMS to build cost-effective, state-of-the-art products.

Key functions on the Little Board/486e include a 133 MHz 3.3V integrated 486DX CPU, a sophisticated CRT and flat panel video interface, and a 10Base-T (twisted pair) Ethernet LAN interface. Based on the C&T 65550 graphics controller, the video function supports resolutions of up to 1280 x 1024 in 16 colors, as well as 24-bit true color in 640 x 480 resolution. A programmable VGA BIOS provides support for virtually all types and resolutions of digital flat panels, including monochrome and color LCD, electroluminescent (EL) and plasma. Bias voltage generation and power sequencing logic are supplied on the board for 3.3V or 5V LCD panels. The Ethernet interface is based on the popular LAN 9000 Series Ethernet controller. The interface is supported by a broad range of commercial and real-time operating systems.

The Little Board/486e supports an industry-standard DRAM module with up to 64MB DRAM, and includes an embedded PC BIOS, keyboard and speaker interfaces, four buffered serial ports offering RS-232C and RS-485 compatibility (port 2 only), IEEE-1284 enhanced parallel port, and floppy and fast IDE drive controllers. The Little Board/486e is designed to meet the size, power consumption, temperature range, quality, and reliability demands of embedded applications.

The Little Board/486e also offers a comprehensive set of embedded system extensions and enhancements to ensure fail-safe embedded system operation. These include a watchdog timer, a powerfail NMI generator, and an onboard bootable Solid State Disk (SSD) capability. System operation requires a single +5V power source and offers "green PC" power-saving modes under support of special Advanced Power Management (APM) BIOS functions.

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SPECIFICATIONS

PC FUNCTIONS

CPU	• 486 DX4 compatible processor, 133MHz
MEMORY	• Supports one 168-pin DIMM up to 64 Mbytes EDO DRAM
	• Shadow RAM support provides fast system/video BIOS execution
DMA INTERNAL	• 15 interrupt channels (8259 equivalent)
	• 7 DMA channels (8237 equivalent)
COUNTER TIMER	• 3 programmable counter/timers (8254 equivalent)
KEYBOARD	• Standard PC/AT keyboard port
	• Speaker port with 0.1 watt output
REAL TIME CLOCK	• Battery backed real-time clock and CMOS setup
BIOS	• Award ROM-BIOS with Ampro enhancements (See Ampro Embedded-PC Enhancements section)

ADDITIONAL ONBOARD FUNCTIONS

SERIAL	• Four FIFO-buffered serial ports with full handshaking (16550 equivalent)
	• Each channel supports RS232C (direct connection)
	• One channel supports RS485
PARALLEL	• EPP/ECP compatible, bidirectional parallel port
FLOPPY	• Supports 1 or 2 drives
FAST IDE	• Supports "fast" IDE data transfer modes, up to PIO mode 4
BYTEWIDE SOCKET	• One 32-pin byte-wide memory socket: usable with 64K-1M byte EPROMs, 64K-512K byte Flash EPROMs, with onboard support for +5V programming
	• 64K-512K byte SRAMs, or 32K-512K byte NOVRAMs
	• Usable with DiskOnChip 2000™ or DiskOnChip Millennium for read/write flash SSD device
CONFIG EEPROM	• 512 bits available for OEM use
WATCHDOG TIMER	• Utilizes real time clock alarm function
	• Timeout triggers NMI or hardware reset
POWERFAIL NMI	• Triggers when +5V power drops below +4.7V
COMPACT FLASH	• Supports one Type II Compact Flash socket

VL BUS DISPLAY CONTROLLER

	• Supports CRT, LCD, and EL displays
CONTROLLER	• C&T 65550
ONBOARD DISPLAY RAM	• 2 MByte (internal)
FLAT PANEL SUPPORT	• Supports 24-bit "true color" (640 x 480)
	• "GUI accelerator" for enhanced graphic function performance
	• Software programmable flat panel interface signal timing
	• Sequenced LCD power to protect display
	• Supports DPMS-compatible displays
	• Optional plug-in LCD bias supply: supplies ±15 to ±35 VDC @ 30 mA; voltage level adjusted via onboard or external potentiometer

ETHERNET LAN INTERFACE

	• Complies with IEEE-802.3 (ANSI 8802-3)
CONTROLLER	• LAN 9000 series
MEDIA INTERFACE OPTIONS	• 10Base-T (twisted pair), via onboard RJ45 connector
DATA RATE	• 10M bits/sec
REMOTE BOOT ROM	• Can be installed in byte-wide SSD socket

MECHANICAL

SIZE	• 5.75 x 8.0 x 1.2 in. (146 x 203 x 30 mm)
POWER	• Power requirements (contact factory)
ENVIRONMENTAL	• 0° to 70° C standard temperature
	• –40° to +85° C extended operating temperature (available by special order) Note: additional airflow or heatsinking required to maintain 85° C maximum CPU case temperature.
	• 5% to 95% relative humidity, non-condensing
	• Storage temperature: –55° C to +85° C
	• Weight: 9.5 oz. (270 gm)

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