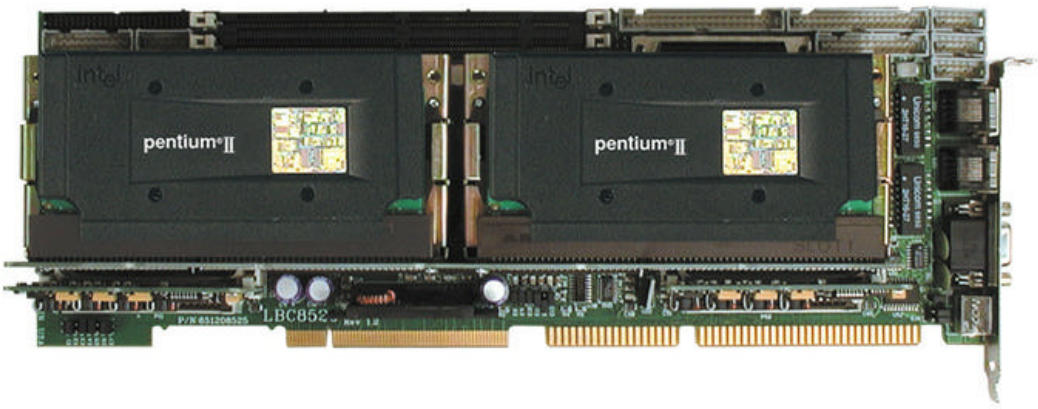
PENTIUM®II

Integrated Multiprocessing Single Board Computer



LBC8525

SPECIFICATIONS:

PROCESSOR	: Dual Pentium®II with 66 or 100MHz front side bus. This allows the use of 233 to 450MHz slot 1 Pentium II processors.
MEMORY	: Up to 1GB using 100MHz SDRAM
MEMORY ORGANIZATION	: Two Banks of 72 Bit (168 pin) 3.3v DIMMs
PCI BUS SPEED	: 33MHz
BIOS	: DTI Enhanced PHOENIX BIOS, Plug-n-Play compliant
PCI IDE	: EIDE support, PIO modes 0 to 4, bootable CD-ROM
PCI SCSI	: Adaptec 7880 Ultra/Wide
DUAL PCI ETHERNET	: 10/100 Base-T auto-negotiating
PCI VIDEO w/FLAT PANEL SUPPORT	: C&T 69000 with 2M video memory
USB	: UHCI compatible host controller with one port
KEYBOARD/ MOUSE PORTS	: PS/2 and /AT internal connectors use determined by jumper setting.
REAL TIME CLOCK	: Includes 114 bytes of CMOS RAM with long life battery
PHYSICAL	: 4.2” x 13.3”, Parallel mounting method of P2 minimizes intrusion into PCI slot area.
HUMIDITY	: 0% - 95% Non-condensing
POWER	: TBD

FEATURES:

MEMORY

The LBC8525 supports up to 1GB of system memory using two standard 168-pin 3.3 DIMMS. 100MHz SDRAM is supported.

PCI BUS

The LBC8525 provides direct support for up to 4 PCI slots by integrating a PCI-PCI bridge onboard. Each of these slots provides support for PCI mastering devices. The PCI system bus operates at 33MHz and supports PCI Burst transfer speeds up to 132MB/s.

ISA BUS

The LBC8525 provides an interface to the ISA bus with DTI’s enhanced buffering to reduce loading issues that can occur with high slot count back-planes.

SYSTEM MONITOR

The LBC8525 includes DTI’s standard system monitor which provides environmental monitoring of all system temperatures and voltages (CPU, System, Ambient, and Remote). The system monitor also features fan/switch monitoring through eight inputs, a built-in two-stage watchdog timer, alarming mechanisms for failure reporting, a dedicated serial port for remote communication through a modem or a CPU-to-CPU connection, and a general purpose scratch pad area.

PCI VIDEO

The LBC8525 uses the C&T 69000 to provide enhanced 3D graphics performance and flat panel support. Two megabytes of synchronous graphics memory is built into the 69000.

ETHERNET

The LBC8525 supports two fully auto-negotiating 10/100 Base-T connections, and full duplex operation which allows data rates to reach 20Mbps and 200Mbps.

SCSI

The LBC8525 provides a high performance Ultra-Wide SCSI interface allowing data transfers to reach 40 MB/s using the Adaptec 7880 controller.

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PICMG PCI/ISA BUS

PCI INDUSTRIAL PICMG™ COMPUTERS

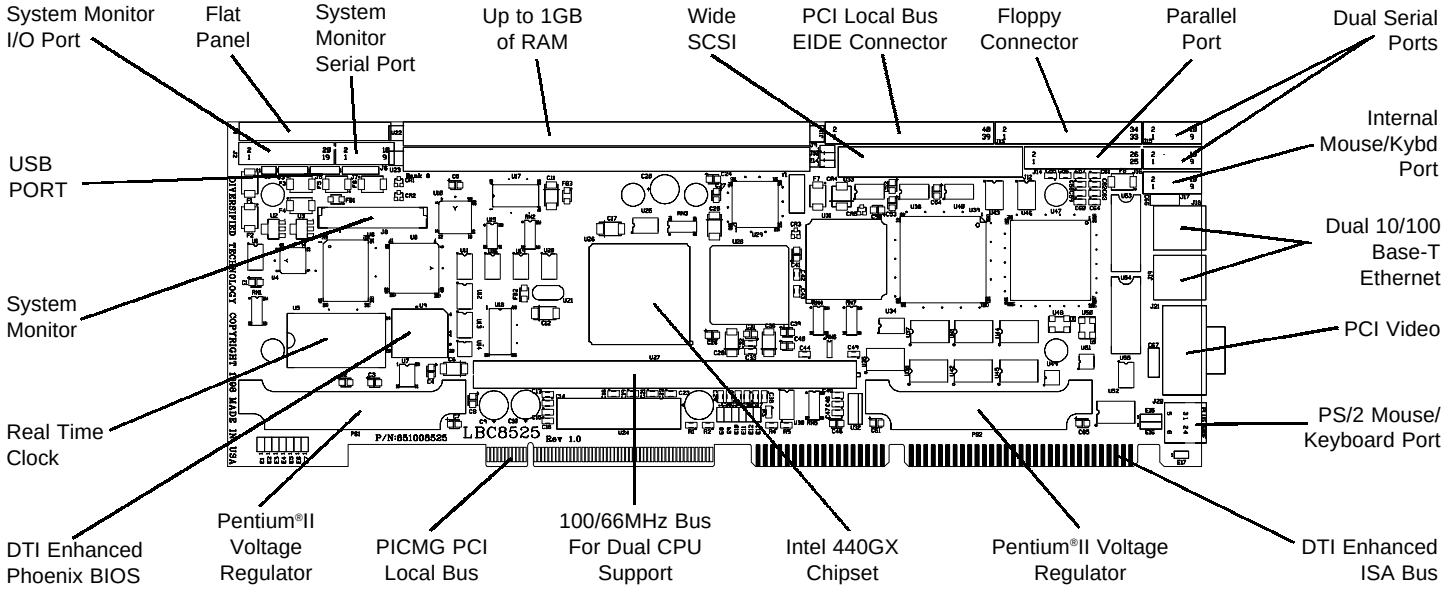
- **Dual Intel Pentium®II Processor up to 450MHz, 100/66MHz Bus Speeds**
- **Up to 1GB of RAM**
- **PCI Enhanced IDE Controller**
- **PCI Ultra Wide SCSI**
- **PCI Video w/Flat Panel Support**
- **Dual 10/100 Base-T Ethernet Ports**
- **Keyboard Port for PS/2, /AT Keyboards**
- **Mouse Port -PS/2 compatible**
- **Floppy, Parallel, and Serial Standard /AT Interfaces**
- **USB**
- **Onboard Battery backup for Real Time Clock and CMOS RAM**
- **Supports four PCI Slots**
- **33Mhz PCI Bus Speed**
- **DTI Enhanced Phoenix BIOS**
- **Fault Detection/Alarm Notification Enhanced System Monitor**

Made in the U.S.A.
8/98 Rev. 1.0

LBC8525

Product Specification

PENTIUM®II PCI/ISA CPU



The LBC8525 is a dual Pentium®II single board computer which is offered in a full-size /AT PCI PICMG card form factor. The LBC8525 is based on Intel's 100/66MHz front side bus Pentium II processor with the 440GX chipset. Two standard 168-pin DIMM sockets are provided for support of up to 1GB of memory. In addition to the 32KB primary cache, a secondary (L2) cache device is integrated in the Pentium®II processor module.

The Pentium®II processor is Intel's newest most advanced 80X86 compatible processor. Like the Pentium®Pro processor, the Pentium®II improves the performance from the previous generation of Intel processors through the innovative use of its unique "Dynamic Execution" micro-architecture. This micro-architecture is a unique combination of multiple branch prediction, data flow analysis, and speculative execution. The Pentium®II processor includes advanced data integrity, reliability, and serviceability features for critical applications. All of these improvements, however, do not affect its compatibility with other Intel 80X86 family CPUs. In the case of the secondary (L2) cache, the Pentium®II is different from the Pentium®Pro processor where the Tag RAM and BSRAM are individual separate components in the processor module. The Pentium®II processor uses the Single Edge Contact Cartridge package technology which will be used by Intel for future Slot 1 processors.

The LBC8525 provides enhanced 3D graphics performance by utilizing a C&T 69000 video controller. The video controller provides desktop graphics with full featured high end performance up to extended VGA mode. It also provides support for various flat panels such as VGA, XGA, SVGA, and SXGA active matrix TFT panel displays. Passive matrix flat panels like DSTN and SSTN are also supported. Some of its more notable features are its advanced frame rate control (FRC) for STN panels, auto-expansion and centering for text and graphics modes on high resolution panels, and advanced power sequencing techniques for the panel power and control/data signals. The LBC8525 can support simultaneous display on a CRT and a flat panel.

The LBC8525 implements a 32-bit PCI interface which provides burst transfer speeds up to 133MB per second. It is designed to support four PCI expansion slots, of which all four may be PCI masters and operate at 33MHz. The LBC8525 also provides outstanding ISA support for non PCI adapter cards.

The LBC8525 provides a high performance Ultra-Wide SCSI interface. 16-bit (wide) devices are supported. Double-speed Ultra operation is supported, allowing data rates to reach 40MB/s. The SCSI interface is based on Adaptec's industry standard AIC 7880 controller.

Integrated onboard are two of Intel's 82558 ethernet controllers. This PCI ethernet interface provides a fully auto-negotiating 10/100 Base-T connection over a standard UTP-5 data grade twisted pair up to 100 meters in length. Support for Remote-Boot operation for diskless workstations can also be provided. Drivers are available for many of today's popular operating systems.

A PCI based, enhanced IDE interface on the LBC8525 provides excellent performance with all modern high speed IDE drives. It supports 32-bit access, LBA mode, and bootable CD-ROMs. This interface supports enhanced speeds up to PIO mode 4. One or two devices can be supported through this interface. Also, fast DMA modes can be utilized with device drivers in advanced operating systems such as Windows 95 and Windows NT.

The LBC8525 also features DTI's standard System Monitor for monitoring of system critical variables like voltage, temperature, and fan operation. The system monitor provides eight inputs that can be configured as switch closure inputs or strobed inputs useful for monitoring the rotational speed of fans with strobe outputs. A two-stage programmable watchdog timer is built into the system monitor providing a timeout in the case of a software failure. A dedicated serial port is also included, allowing the System Monitor to transfer data and diagnostic information through a modem or a CPU-to-CPU connection.

Standard ISA bus peripherals like a PS/2 Keyboard/Mouse Controller, Real Time Clock, floppy controller, RS-232 serial port, and field upgradeable flash BIOS are also integrated on to the LBC8525.

DTI's enhanced Phoenix BIOS, which includes ROM based SETUP and CONFIGURATION, is year 2000 (Y2K) compliant.

The LBC8525 is designed for operation in passive backplane systems. DTI offers a wide variety of PCI passive backplane versions. A comprehensive validation has been completed on the product.

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