

PCI/ISA Single Board Computer

LBC8940



- Single Intel Pentium III Processor up to 850 MHz
- Intel 440GX Chipset with 100MHz FSB
- 32-bit / 33 MHz PCI Bus
- Up to 1 GB of PC100 SDRAM
- AGP Video with Flat Panel Support
- Dual PCI 10/100 Base-T Ethernet
- Support for 4 PCI EIDE Devices
- Flash Disk Support
- PCI Ultra-2 SCSI
- 2 Floppy, 2 Serial, 1 Parallel, and 2 USB Ports
- System Monitor

SPECIFICATIONS:

PROCESSOR

Pentium III with support for 100MHz front side bus speed.

MEMORY

Up to 1GB using 100MHz SDRAM
ECC Support

PCI BUS

33MHz - 32 bits

BIOS

DTI Enhanced PHOENIX BIOS, Plug-n-Play compliant

PCI Dual Channel IDE

EIDE support, DMA 33 ATA, bootable CD-ROM

PCI SCSI

SymBIOS SYM53C1010 SCSI
Independent Ultra 2 and Fast SCSI Channels

DUAL PCI ETHERNET

10/100 Base-T using Intel's 82559

AGP VIDEO with FLAT PANEL SUPPORT

C&T 69030 with 4MB video memory

USB

UHCI compatible host controller with two ports

FLASH DISK

ISA Solid State Hard Drive up to 72MB

KEYBOARD/MOUSE PORTS

External PS/2 keyboard and mouse connections.

PHYSICAL

4.2" x 13.3"

HUMIDITY

0% - 95% Non-condensing

POWER

TBD

FEATURES:

PROCESSOR

Allows the use of 500 to 850MHz processors in Intel's socket 370 (FC-PGA) package. The Pentium III 600, 700, and 850 MHz processors will have extended longevity through Intel's ACPP program. Higher speeds will be validated on this product when available. Call for current speed support.

PCI BUS

The LBC8940 provides support for up to 4 - 32 bit PCI cards at 33MHz. Each of these slots can be bus masters. The LBC8940 can fit into any PICMG designed backplane.

ISA BUS

The LBC8940 provides an interface to the ISA bus with DTI's enhanced buffering to reduce loading issues that can occur with high slot count backplanes.

SYSTEM MONITOR

The LBC8940 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.

AGP VIDEO

The LBC8940 uses the C&T 69030 to provide enhanced graphics performance and flat panel support. Four megabytes of synchronous graphics memory is built into the 69030.

ETHERNET

The LBC8940 supports two auto-negotiating 10/100 Base-T connections, and full duplex operation which allows data rates to reach 20Mbps and 200Mbps.

SCSI

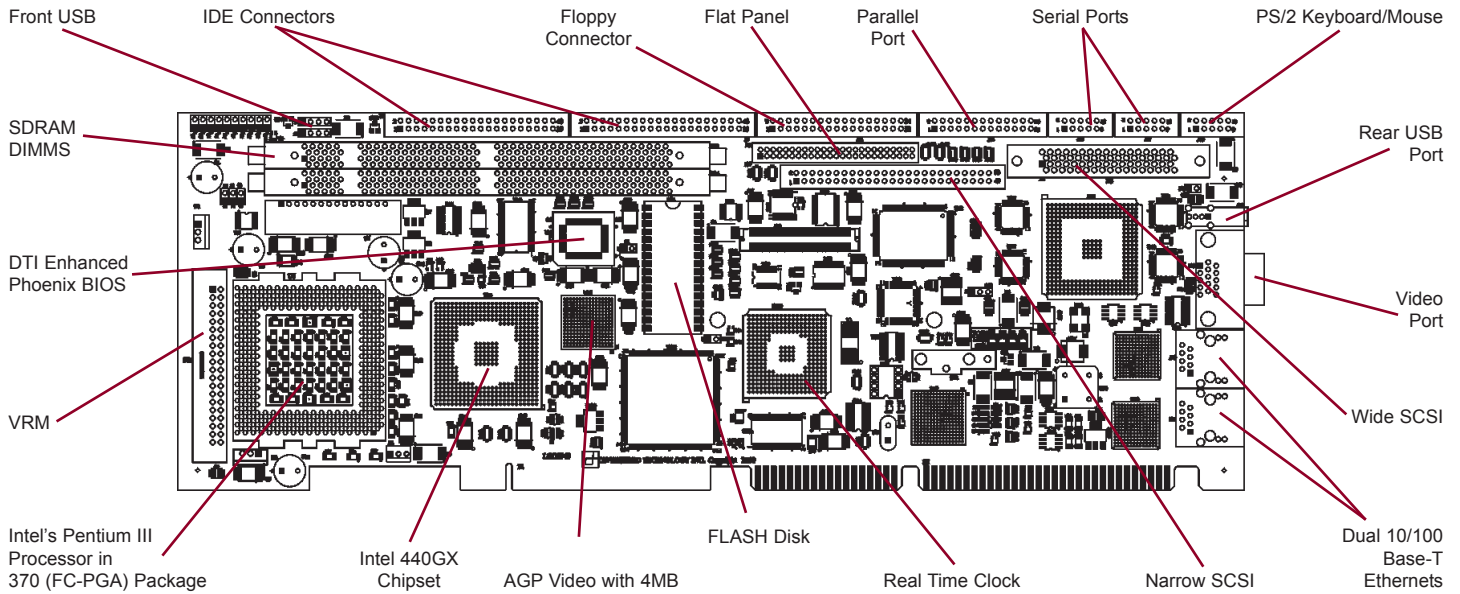
The LBC8940 provides a high performance Low Voltage Differential Ultra-II SCSI interface allowing data transfers to reach 160 MB/s using the SymBIOS SYM53C1010 LVD SCSI controller. A second independent SCSI channel supports older fast SCSI devices.



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The LBC8940 is a Pentium®III FC-PGA single board computer which is offered in a full-size /AT PCI PICMG card form factor. The LBC8940 is based on Intel®'s 100MHz front side bus Pentium®III FC-PGA processor with the 440 GX chipset

The Pentium®III processor, like its predecessors in the P6 family of processors, implements a Dynamic Execution microarchitecture—a unique combination of multiple branch prediction, data flow analysis, and speculative execution. This enables these processors to deliver higher performance than the Intel® Pentium® processor, while maintaining binary compatibility with all previous Intel® Architecture processors. The processor also executes Intel® MMX™ technology instructions for enhanced media and communication performance just as its predecessor, the Intel® Pentium®II processor. Additionally, the Pentium®III processor executes Streaming SIMD (single-instruction, multiple data) Extensions for enhanced floating point and 3-D application performance. The concept of processor identification, via CPUID, is extended in the processor family with the addition of a processor serial number.

The processor includes an integrated on-die, 256 KB, 8-way set associative level-two (L2) cache. The L2 cache implements the new Advanced Transfer Cache Architecture with a 256-bit wide bus. The processor also includes a 16 KB level one (L1) instruction cache and 16 KB L1 data cache. These cache arrays run at the full speed of the processor core. As with the Intel® Pentium®III processor for the SC242 connector, the Pentium®III processor for the PGA370 socket has a dedicated L2 cache bus, thus maintaining the dual independent bus architecture to deliver high bus bandwidth and performance. Memory is cacheable for 4 GB of addressable memory space, allowing significant headroom for desktop systems. The LBC8940 supports up to one processor at a FSB frequency of 100MHz.

The LBC8940 supports two banks of SDRAM. This allows industry standard PC100 168-pin DIMMs to be used and allows up to 1GB of system memory. The LBC8940 supports 64 and 72-bit wide memory modules. 72-bit modules allow ECC data correction operation which

is necessary for mission critical applications.

The LBC8940 provides enhanced 3D graphics performance by utilizing a C&T 69030 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 LBC8940 can support simultaneous display on a CRT and a flat panel.

The LBC8940 implements a 32-bit PCI interface which provides burst transfer speeds up to 132MB per second. It is designed to support up to four PCI expansion slots (at 33MHz), of which all may be PCI masters. The LBC8940 also provides outstanding ISA support.

The LBC8940 provides a high performance Ultra-160 LVD SCSI interface. 16-bit (wide) devices are supported. The SCSI interface is based on the Symbios SYM53C1010 controller.

Integrated onboard are two of Intel®'s 82559 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 DMA 33 ATA interface on the LBC8940 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 98, Windows NT, and Windows 2000.

The LBC8940 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.

An onboard flash disk is also provided. Once enabled this device acts like a hard drive and uses standard OS partitioning, formatting and coping utilities, without cables and external devices. This allows an LBC8540 to boot to the OS without any floppy or hard drive connected to the system. The embedded flash disk comes in a variety of sizes, currently the maximum available is 72MB. Contact DTI sales to discuss the possibility of size changes to the flash disk.

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 LBC8940.

The LBC8940 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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