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LBC9426

Single Board Computer



Diversified Technology's LBC9426 PICMG® passive backplane compliant SBC with one or two Dual Core Intel Xeon® low voltage processors with 2MB L2 cache processors and dual NICs addresses intense SMP computational network applications.

The extraordinary LBC9426 industrial single board computer features one or two 65nm Dual Core Xeon processor with 2MB L2 cache Micro-FCPGA processors and up to 8GB dual channel, DDR2 SDRAM DIMMs, with full ECC support, on two sockets. Onboard are two channels of 10 Base-T, 100 Base-TX, 1000 Base-TX Ethernet and dual Serial ATA channels, as well as four Universal Serial Bus (USB) ports, 2 serial ports, a parallel port, floppy interface and a PCI VGA and flat-panel controller with 8 MB of memory.

The LBC9426 uses the Intel® E7520 chipset providing a 667 MHz system bus as well as one x4 PCI Express Link. The single x4 PCI Express link provides access to a dual port Gigabit Ethernet controller allowing multiple high-speed offboard data transfers. The 6300ESB ICH provides 2 PCI busses for added support. The 32-bit/33MHz onboard PCI bus links the Video controller, while the 64-bit/66MHz PCI bus is routed to the backplane and supports up to two 64-bit / 66MHz or four 64-bit / 33MHz PCI I/O expansion slots. The 6300ESB also supports USB 2.0, Serial ATA at speeds up to 150MB/s, and an LPC bus linking to an SMSC LPC47B272 Super I/O that provides legacy PC/AT I/O. ISA support for 8-bit cards is also provided.

The AMI BIOS, in field upgradeable Flash, supports software Ethernet enable/disable, video override, serial/parallel port remapping/disable, keyboard disable, console redirection, ACPI 2.0, and PnP. Other features include a hardware monitor (board and system voltages, temperatures, and fan speeds), and a programmable two-stage watchdog timer.

Product Features

Form Factor

PCI/ISA Single Board Computer based on the Dual Core Intel® Xeon® Low Voltage processor

CPU/Cache

- 1 or 2 Intel® 65nm LV Dual Core Xeon Processors up to 1.67GHz and 2MB ECC L2 cache, Micro-FCPGA
- Intel® E7520 Chipset

Bus Interface

- 667MHz Front Side Bus; 33/66MHz PCI Busses; 8.33MHz ISA Bus
- Supports (2) 64-bit/66MHz or (4) 64-bit/33MHz slots
- High drive ISA buffers, up to 20 slots
- 8-bit on ISA bus

Memory

- Dual Channel 240-pin latching DIMM socket (1 socket per channel)
- Up to 8GB using DDR2-400 Registered SDRAM

I/O

- (4) USB Ports
- (2) RS-232 Serial Ports
- (1) Parallel Port
- Floppy Disk
- Serial ATA
- Dual Ethernet

BIOS

DTI Enhanced AMI BIOS Core 8 release 13

Physical Dimensions:

13.30" x 4.80" x 1.78" at CPU/fan

OS Support

- Standard: Windows 2000®, Windows XP®, Red Hat Linux
- Optional: UnixWare, LynxOS, SCO Openserver, Novell Netware, VxWorks, OS/2® Warp, Solaris, QNX 6.4

Warranty

Parts and labor covered for 2 years

CPU / Cache

- 1 or 2 Intel® 65nm Dual Core Intel® Xeon® Low Voltage Processors up to 1.67GHz and 2MB ECC L2 cache, Micro-FCPGA
- Intel® E7520 Chipset

Bus Interface

- 667MHz Front Side Bus; 33/66MHz PCI Busses; 8.33MHz ISA Bus
- Supports two 64-bit/66MHz or four 64-bit / 33MHz slots
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Memory

- Dual Channel 240-pin latching DIMM socket (1 socket per channel)
- Up to 8GB using DDR2-400 Registered SDRAM

Data Path

- 64-bit / 667MHz on CPU and memory bus
- One x4 PCI Express Link (connects to onboard Gigabit Ethernet Controller)
- 64-bit / 66MHz on off-board PCI bus; 32-bit / 33MHz on onboard PCI bus
- 8-bit on ISA bus

Flash Memory

- 8 Mb (1 MB) sectored Flash for BIOS field upgrade
- 8KB EEPROM for user applications (internal to the ADM1026 system monitor)

I/O

- USB Ports: four (two 10-pin headers)
- Serial Ports: Two RS-232 (16C550) with 16 byte FIFO (two male 10-pin shrouded headers)
- Parallel Port: One bi-directional with all IEEE 1284 protocols supported (male 26-pin shrouded header)
- Floppy Disk: Support for two drives (360KB to 2.88MB), (male 34-pin shrouded header)
- Serial ATA: Support for two drives, up to 150MB/s
- Ethernet: PCI Express 10 Base-T, 100 Base-TX, 1000 Base-TX (Intel 82571EB), (dual shielded RJ-45 on face plate with link/activity and speed LEDs)

Video

- PCI VGA flat panel controller with 8 MB SDRAM memory (Silicon Motion SM722), (female DB-15 on face plate and 21-pin LVDS connector onboard)
- Supports CRTs with resolution up to 1280x1024, 16.8M colors@60Hz; 1280x1024, 64K colors@85Hz; or 1024x768, 16.8M col.@85Hz, non-interlaced

Clock / Calendar

- Real-time clock with battery backed CMOS RAM

Misc.

- PS/2 mouse and keyboard support
- Speaker, Reset, Intruder, Clear CMOS, Disable Video, Serial ATA activity LED
- Strobed CPU fans
- Dual ATX12V Power
- Hardware Monitor - CPU fans, Voltages, Temperatures

BIOS

- DTI Enhanced AMI BIOS Core 8 release 13
- PCI 2.1 compliant
- Boot from LAN (PXE 2.0)
- Support for memory hole at 15-16 MB
- PnP V1.0a compatible
- Console redirection to serial port (VT100 or ANSI mode) with BIOS setup access
- Software enable/disable onboard Ethernet
- Diskless, keyboardless, and videoless operation extensions; system, video, and third party option card ROM shadowing
- SymBIOS V2.3 support
- HDD S.M.A.R.T. support

Supervisory

- Two-stage programmable watchdog timer drives interrupt on 1st stage and system reset on 2nd stage
- Hardware system monitor (voltages, CPU and board temperatures, fan speed)
- System Intruder Detection

OS Compatibility

- Standard: Windows 2000®, Windows XP®, Red Hat Linux
- Optional: UnixWare, LynxOS, SCO Openserver, Novell Netware, VxWorks, OS/2® Warp, Solaris, QNX 6.4

Mechanical

- 13.30" x 4.80" x 1.78" at CPU / fan (338 mm x 122 mm x 70 mm at CPU / fan)
- Single wide face plate
- Conforms to IEEE P996 PC/AT bus, PCI Rev. 2.1, and PICMG Rev. 2.0 standards

Power Requirements

Input power	68W (Total Average)
ICC typ. *	+5V 30W
	+12V 36W

Environmental**Operating**

- Temperature: 0° to 50°C / 32° to 122°F
- Humidity (RNC): 5 to 95% @ 40°C / 104
- Altitude: 4,572 m / 15,000 feet
- Shock: 8g half-sine shock for 11ms
- Vibration: Sine sweep 1.0 g from 5-100 Hz

Storage and Transit (in approved packaging)

- Temperature: -40° to +70°C / -40° to 158°F
- Humidity (RNC): 0 to 95% @ 40°C / 104°F
- Altitude: 15,240 m / 50,000 feet
- Shock: 20g half-sine shock for 6ms
- Vibration: Random 5-20Hz @ .0132g/Hz (1.0 m2/s3); 20-200 with -3dB slope for 30 minutes.

Reliability

MTBF	Configuration	Note
22,850	Dual processors	Calculations include heat sink fans
42,528	Single processor	
265,691	Dual processors	Calculations exclude heat sink fans
284,594	Single processor	

Reliability predictions were done using Issue 6, Method I, Case 3 of the Bellcore Industrial Reliability program. The predictions assumed an operating temperature of 25°C with a 100% duty cycle, in a ground benign, controlled environment.

- 2 year limited warranty

Regulatory Compliance

- Safety: UL/cUL to 60950-1; EN 60950-1; CSA C22.2 No. 60950-1
- EMI/EMC: FCC 47 CFR Part 15 Class A; EN55022 Class A; EN55024

Ordering Information**LBC9426**

SBC with single/dual 1.67GHz Dual Core Intel® Xeon® Low Voltage processors

* (D) is used to indicate dual processors

Options

DDR2 SDRAM
Cables

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