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## Specifications

### Form Factor

µATX 24.4cm. x 24.4cm Form Factor

### CPU Support

- Socket (Socket 754) for AMD Athlon 64 (previous names : K8, Clawhammer) processor

### System Memory

- Two 184-pin DDR SDRAM DIMM sockets.
- Support for single-sided or double-sided DIMMs (DDR 333 and DDR400)

## K8T800 Chipset

HyperTransport<sup>™</sup> Bridge for Athlon64 CPU with 6.4 GB / Sec HyperTransport Interface and 8x / 4x / 2x AGP Bus with VPX Support plus 8X / 4X V-Link South Bridge Connection for Desktop PC Systems

### Product Features

High Performance Noth Bridge with Hyper Transport interface to AMD<sup>™</sup> Athlon64 CPU plus AGP 8X external bus to external Graphics Controller plus high-speed V-Link interface to chipset South Bridge.

- Combines with VIA VT8235CD V-Link South Bridge
- High Performance HyperTransport CPU Interface
- Chipset support for AMD<sup>™</sup> Athlon64<sup>™</sup> processor
- Processor interface via HyperTransport bus
- 800 / 600 / 400 / 200 Mhz clock rates with "Double Data Rate"-style operation for 1600 / 1200 / 800 / 400 MT/s (Mega-Transfers per second) in both directions simultaneously (total 6.4 GB/sec using 16-bit data transfer mode)
- Default 8-bit / 200 Mhz operation on startup for high reliability with speedup to dual 16-bit, 800 Mhz operation

### High Bandwidth 533 MB /Sec 8-bit V-Link Host Controller south Bridge Interface

- Supports 66 MHz V-Link Host interface with total bandwidth of 533 MB/sec
- Operates in 4x and 8x modes
- Full duplex commands with separate command /strobe for 4x mode, half-duplex for 8x mode

## Full Featured Accelerated Graphics Port (AGP) 8x Controller

- Supports 533 Mhz 8x, 266 Mhz 4x, and 133 Mhz 2x transfer modes for AG and SBA signaling
- AGP v3.0 compliant with 8x transfer mode

## VT8235CD Chipset

- Low cost V-Link client
- Highly integrated south bridge
- High bandwidth V-Link client controller
- Integrated fast ethernet
- Integrated AC'97 Audio
- Ultra DMA 133 / 100 / 100 / 66 / 33 Master mode E-IDE controller
- Six port USB 2.0 controller
- Keyboard /mouse controller
- RTC, LPC, SM-BUS, SERIAL IRQ ,Plug and Play (PnP)
- ACPI and PC2001 compliant enhanced power management

### Product Features

Inter-operable with VIA Host-to-V-Link Host Controller.  
High Bandwidth 533 MB/s 8-bit V-Link Client Controller:

- Supports 66 MHz V-Link Client interface with peak bandwidth of 533 MB/sec
- V-Link operates in 2x,4x,and 8x modes
- Full duplex commands with separate Strobe /Command
- Request /Data split transaction
- Configurable outstanding transaction queue for V-Link Client accesses
- Auto Client Retry to eliminate V-Link Host-Client Retry cycles
- Intelligent V-Link transaction protocol to eliminate data wait-state /throttle transfer latency;all V-Link transactions for both Host and Client have a consistent view of transaction data depth and buffer size to avoid data overflow.
- Highly efficient V-Link arbitration with minimum overhead;all V-Link transactions have predictable cycle length with known Command /Data duration
- Auto connect /reconnect capability and dynamic stop for minimum power consumption
- Parity checking to insure correct data transfers

### Integrated Peripheral Controllers

- Integrated Fast Ethernet Controller with 10 /100 Mbit capability
- Integrated USB 2.0 Controller with three root hubs and six function ports
- Dual channel UltraDMA-133 /100 /66 /33 master mode E-IDE controller
- AC-link interface for AC-97 audio codec and modem codec
- Integrated DirectSound compatible digital audio controller
- LPC interface for Low Pin Count interface to Super-I/O or ROM

### Integrated Legacy Functions

- Integrated Keyboard Controller with PS2 mouse support
- Integrated DS12885-style Real Time Clock with extended 256 byte CMOS RAM and Day/Month Alarm for ACPI
- Integrated DMA,timer,and interrupt controller
- Serial IRQ for docking and non-docking applications
- Fast reset and Gate A20 operation

## **Concurrent PCI Bus Controller**

- 33 MHz operation
- Supports up to six PCI masters, three PCI used
- Peer concurrency
- Concurrent multiple PCI master transactions; i.e., allow PCI masters from both PCI buses active at the same time
- Zero wait state PCI master and slave burst transfer rate
- PCI to system memory data streaming up to 132Mbyte/sec (data sent to north bridge via high speed V-Link Interface)
- PCI master snoop ahead and snoop filtering
- Eight DW of CPU to PCI posted write buffers
- Byte merging in the write buffers to reduce the number of PCI cycles and to create further PCI bursting possibilities
- Enhanced PCI command optimization (MRL, MRM, MWI, e.c.)
- Four lines of post write buffers from PCI masters to DRAM
- Sixteen levels (double-words) of prefetch buffers from DRAM for access by PCI masters
- Delay transaction from PCI master accessing DRAM
- Transaction timer for fair arbitration between PCI masters (granularity of two PCI clocks)
- Symmetric arbitration between Host/PCI bus for optimized system performance
- Complete steerable PCI interrupts
- PCI-2.2 compliant, 32 bit 3.3V PCI interface with 5V tolerant inputs

## **Fast Ethernet Controller**

- High performance PCI master interface with scatter /gather and bursting capability
- Standard MII interface to external PHYceiver
- 10 /100 MHz full and half duplex operation
- Independent 2K byte FIFOs for receive and transmit
- Flexible dynamically loadable EEPROM algorithm
- Physical, Broadcast, and Multicast address filtering using hashing function
- Magic packet and wake-on-address filtering
- Software controllable power down

## **UltraDMA-133 /100 /66 /33 Master Mode EIDE Controller**

- Dual channel master mode hard disk controller supporting four Enhanced IDE devices
- Transfer rate up to 133MB/sec to cover PIO mode 4, multi-word DMA mode 2 drives, and UltraDMA-133 interface
- Increased reliability using UltraDMA-133/100/66 transfer protocols
- Thirty-two levels (doublewords) of prefetch and write buffers
- Dual DMA engine for concurrent dual channel operation
- Bus master programming interface for SFF-8038i rev.1.0 and Windows-95 compliant
- Full scatter gather capability
- Support ATAPI compliant devices including DVD devices
- Support PCI native and ATA compatibility modes
- Complete software driver support

## **System Management Bus Interface**

- Host interface for processor communications
- Slave interface for external SMBus masters

## **Universal Serial Bus Controller**

- USB v2.0 and Enhanced Host Controller Interface (EHCI)v1.0 compatible
- USB v1.1 and Universal Host Controller Interface (UHCI)v1.1 compatible
- Eighteen level (doublewords) data FIFO with full scatter and gather capability
- Three root hubs and six function ports
- Integrated physical layer transceivers with optional over-current detection status on USB inputs
- Legacy keyboard and PS/2 mouse support

## **Sophisticated PC2001-Compatible Mobile Power Management**

- Supports both ACPI (Advanced Configuration and Power Interface) and legacy (APM) power management
- ACPI v1.0 Compliant
- APM v1.2 Compliant
- CPU clock throttling and clock stop control for complete ACPI C0 to C3 state support
- PCI bus clock run, Power Management Enable (PME) control, and PCI/CPU clock generator stop control
- Supports multiple system suspend types: power-on suspends with flexible CPU/PCI bus reset options, suspend to DRAM, and suspend to disk (soft-off), all with hardware automatic wake-up
- Multiple suspend power plane controls and suspend status indicators
- One idle timer, one peripheral timer and one general purpose timer, plus 24/32-bit ACPI compliant timer
- Normal, doze, sleep, suspend and conserve modes
- Global and local device power control
- System event monitoring with two event classes
- Primary and secondary interrupt differentiation for individual channels
- Dedicated input pins for power and sleep buttons, external modem ring indicator, and notebook lid open/close for system wake-up
- 32 general purpose input ports and 32 output ports
- Multiple internal and external SMI sources for flexible power management models
- Enhanced integrated real time clock (RTC) with date alarm, month alarm, and century field
- Thermal alarm on external temperature sensing circuit
- I/O pad leakage control

## **Plug and Play Controller**

- PCI interrupts steerable to any interrupt channel
- Steerable interrupts for integrated peripheral controllers: USB, floppy, serial, parallel, and audio
- Microsoft Windows XP™, Windows NT™, Windows 2000™, Windows 98™ and plug and play BIOS compliant

## **Built-in NAND-tree pin scan test capability**

## **0.22µm, 2.5V, low power CMOS process**

## **I/O controller : ITE IT8705F with the following features:**

- Low Pin Count Interface
- PC98/PC99, ACPI Compliant
- Enhanced Hardware Monitor
- Fan Speed Controller
- Game Port
- Two 16C550 UARTs
- MIDI Interface
- Consumer Remote Control (TV remote) IR with Power-up Feature
- IEEE 1284 Parallel port supporting SPP (Standard parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) modes, and BPP (Bi-directional Printer port)
- Floppy disk controller supporting one FDD with 360K, 720K, 1.2M and 1.44M-bytes
- Smart Card Reader
- 48 General Purpose I/O Pins
- Flash ROM Interface
- Single 24/48 MHz Clock Inputs

## **Audio Chipset:**

Audio Chipset: Integrated on the Sigmatal technologies STAC9750T -audio codec

- DirectSound AC'97 2.2 Audio
- Inputs and Outputs : Stereo inputs for line-in, CD audio, Auxiliary, mono inputs for microphone and TAD, MPU-401 (UART mode) interface for synthesizers and MIDI devices.Integrated game port.
- Mixer Features: mixer with stereo for line, CD audio, auxiliary ,music synthesizer, digital audio (wave files), and mono for microphone and speakerphone.
- Features: 3D stereo enhancement for simulated surround, Power management support.
- SPDIF output for PCM & AC3 sound formats

## **Connectors**

- 1 AGP slot with integrated retention mechanism
- 3 PCI bus masters slots (1 combo with CNR connector)
- 1 DB9 serial port (COM A )
- 1 DB9 serial port (COM B )
- 1 DB25 parallel port with SPP, ECP, EPP bidirectional modes
- PS/2 keyboard and PS/2 mouse ports (not swappable)
- 6 USB 2.0 ports 4 + 2 front USB
- 1 mono microphone input (Mic-In)
- 1 Line-In
- 1 Line-Out
- 2 IDE connectors
- 1 Floppy connector
- Panel connector
- 1 RJ45 connector
- 1 IEEE connector

# Bios Specifications

Award BIOS, including support for:

- Plug and Play
- Advanced Configuration and Power Interface (ACPI) 1.0
- Advanced Power Management (APM) 1.2
- Y2K
- PC 2001
- S3/S1 mode
- Desktop Management Interface (DMI)
- 2 Mbits flash device.
- Language supported: English
- POST

## Compliance

SPECIFICATION	DESCRIPTION
<b>µ ATX</b>	µ ATX form factor specifications
<b>AGP</b>	3.0 Accelerated Graphics Port
<b>APM</b>	Advanced Power Management BIOS interface specification
<b>ACPI</b>	Advanced Configuration and Power management Interface
<b>EPP</b>	Enhanced Parallel Port IEEE 1284 standard, Mode [1 or 2]
<b>ECP</b>	Extended Capabilities Port
<b>ATA-33</b>	Synchronous DMA Transfer Protocol specification (to be proposed as Ultra DMA/33 standard )
<b>PCI 2.2</b>	PCI Local Bus specification
<b>Plug and Play</b>	Plug and Play BIOS specification
<b>USB</b>	Universal Serial Bus specification
<b>ATA-66/100/133</b>	Synchronous DMA Transfer Protocol specification

## How to configure..

### BIOS

► Eberly Motherboard BIOS Screens

17-11-2003

### Jumpers

► Eberly (GA-K8VM-P-NF) Ver0.3 Jumpers and Connectors



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## Related items

### Download

- Via Hyperion 4-in-1 drivers 4.48v  
Version: [4.48v] WinXP

### How to configure...

- How to download, create and use a Bootable BIOS update CD

### Support articles (FAQ)

- System hangs when trying to read a DVD with Power Cinema