

# Chapter 1

## Introduction

### 1-1 Product Specifications

#### ❑ Processor

- Supports up to Socket-370 Intel processors up to 1GHz
- Supports 370-pin ZIF socket w/ EMI ground pad for future boxed Pentium-III processors
- Supports 66/100/133 MHz system clock speeds
- High efficiency **Switching Power Module** (VRM v8.4 compliant)

#### ❑ Chipset

- Intel 815EP GMCH + ICH2 Chipset or 815E GMCH+ICH2(AGPset with integrated 2D/3D graphics controller)

#### ❑ DRAM Memory

- Three 3.3V 168-pin DIMM sockets support up to 512MB
- Supports PC-100/133 DIMMs at 100/133MHz FSB Freq.

#### ❑ Expansion Slots

- One **CNR** slot (v1.0 compliant ) for low cost networking solution w/100 LAN/PNA + Soft-modem
- Six 32-bit PCI slots with full master sharing controller (Rev 2.2 compliant)
- One 4xAGP slot w/ AIMM (v2.0 compliant) for graphics performance upgrade
- \* Supports for 2x 1Mbx16, or 1x 2Mbx32 on an optional AIMM card

#### ❑ 2Mb Boot-Block Flash ROM

- Intel 2Mb FWH(Firmware Hub)
- Award System BIOS, supports PnP, APM, DMI,ACPI & Multi-device booting features(floppy, LS120, CD-ROM, HDD(IDE, SCSI), ZIP-ATAPI etc.)
- **BIOS Wonder** technology including ChipAway Virus, Flash BIOS Write Protect, Embedded Flash Utility, Built-in **Hard Disk Backup firmware**
- Optional **TWIN BIOS** with Instant BIOS Recovery for triple BIOS insurance

#### ❑ Embedded Super I/O Functions

- ITE 8712 LPC I/O chip with System Monitor Hardware
- One parallel supports SPP/ECP/EPP and two serial (16550A compliant) ports
- One floppy disk drive connector supports up to 2.88MB, Japanese 3- Mode and 1Mbps transfer rate
- Supports HPSIR, ASKIR and CIR function shared with 2<sup>nd</sup> serial port
- Supports Game/MIDI port (for soft-audio)
- Supports ISO 7816 compliant Smart card reader interface
- ! Using ITE GSM SIM card editor for telephone book access and editing

**❑ Embedded Ultra DMA-100 PCI IDE controller**

- Supports two IDE ports up to 4 ATAPI devices
- Supports up to PIO Mode 4 up to 16.6MBps, Multi-Word Mode 4 up to 66MBps and Ultra DMA mode 5 with bus mastering
- Bus Master software drivers for all well known multi-task operating systems

**❑ Double Stack Back-Panel I/O Connectors with PC99 Colored Codes**

- PS/2 Mini-DIN keyboard and mouse ports
- Two Channel USB ports
- One D-SUB 9-pin male serial ports
- One 15-pin D-SUB female VGA port (Optional)
- One D-SUB 25-pin female Printer port
- One D-SUB 15-pin female Game/MIDI port
- Audio Line-out, Line-in and Mic-in jacks

**❑ Optional Embedded Audio Subsystem via AC-Link**

- AC' 97 v2.1 compliant CODEC with integrated SRC

**❑ Optional PCI Audio Subsystem**

- CMedia 8738 audio chip w/ legacy audio SB16/Pro compatible
- Advanced 64-voice wavetable synthesizer
- Programmable independent sample rate from 4KHz to 48KHz for recording and playback
- Full-duplex operation for simultaneous recording and playback
- Supports MS DLS (Downloadable sample) level-1 technology with limitless variety of instrument samples using PC RAM
- Supports HRTF 3D positional audio with MSDS, DS3D, DirectMusic, Aureal A3D and Creative EAX (Environment Audio Extensions), C3DX APIs
- Option of 4 or 6-Channel speaker audio support
- Supports Fiber Optic module for Internet music, PC, and MD connections
- Supports MIDI and game ports
- Embedded 32OHM .5w earphone amplifier

**❑ Embedded USB Controller**

- USB host controller (UHCI v1.0 compliant) with Root Hub
- Optional two USB ports provided via USB kit or CNR

**❑ Embedded System Monitoring Hardware Subsystem**

- 8 external voltage inputs for CPU Vcore, 1.5v, 3.3v, +/-12v, +5v, 5Vsb, Vbat
- 2 temperature inputs VT1 for System temperature VT2 for CPU thermal diode
- 4VID inputs pin for CPU Vcore identification
- 2 Fan speed (CPU and System) monitoring and control with ON/OFF control in suspend

**❑ Optional Embedded 3D AGP VGA (for Intel 815E only)**

- 3D Hyper pipelined architecture with PDP (Parallel Data Processing ), PPI (Precise Pixel Interpolation)
- 3D graphics visual enhancements
- Texture color keying/ Chroma keying can be globally enabled or disabled
- Integrated 24-bit 230MHz RAMDAC
- Full 2D H/W acceleration with up to 1600 x 1200 in 8-bit color at 85Hz refresh
- Motion Video acceleration for 30fps software DVD
- Digital video output
  - \* 1024x768 85MHz Flat Panel Monitor/ Digital CRT Interface
  - \* Use an external TV encoder for NTSC and PAL TV out support
  - \* Independent gamma correction, saturation, brightness and contrast for overlay
- Optional LTI-II slot for Panel Link LCD monitor and TV out

**❑ Board Dimensions**

- Standard ATX form factor, 305mm x 220mm, 4 Layers

**❑ Switching Power Supply Requirement**

| Output Voltage | Max. Regulation Requirement | Min. Current Requirement (Amps) |
|----------------|-----------------------------|---------------------------------|
| +12V           | +/- 5%                      | 5.5                             |
| +5V            | +/- 5%                      | 20                              |
| +3.3V          | +/- 5%                      | 15                              |
| -5V            | +/- 10%                     | 0.5                             |
| -12V           | +/- 10%                     | 0.5                             |
| <b>+5VSB</b>   | <b>+/- 5%</b>               | <b>0.75</b>                     |

**Table 1-1**

3.3V at 15Amps is necessary to guarantee full loading operation because some AGP cards and memory modules have high current consumption.

## 1-2 Product Features

- Complete CPU protection with OVT (Over Voltage Protect) and OCP (Over Current Protect) technology
- System Monitor Hardware
- Poly-fuse over-current protection with error warning for keyboard circuitry
- Chassis intrusion detection with mnemonics during power loss
  
- Complete Data Security:
  - \* **Flash BIOS write protection** against unauthorized access
  - \* **Trend ChipAway Virus** for a 100% virus free system boot-up
  - \* **Embbded Flash Utility** to ease BIOS upgrade and eliminate in compatibility with the flash utility version.
  - \* **Embedded HDD Instant Recovery** to protect against system crash.
  
- Advanced Management Features:
  - \* Power-on events:  
WOL(Wake-on-LAN) network card, Modem ring, RTC Alarm
  - \* Software power-off control for Win9x
  - \* Over-ride power button
  - \* Three states advanced Power-failure recovery: Always On, Always Off, Last state
  - \* Blinking Power-LED in suspend

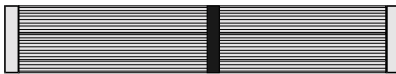
## 1-3 Package Contents

This product comes with the following components:

- ☐ One mainboard
- ☐ One 40-pin UDMA-66/100 IDE connector ribbon cable (Figure 1-1)
  - \* **Color coded connection for UDMA-66/100 cable**
  - Blue to mainboard, Gray to Master and Black to slave
- ☐ One 34-pin floppy disk drive ribbon cable (Figure 1-2)
- ☐ Optional 9-pin serial port "COM2 Cable port" (Figure 1-3) (**for Intel 815E only**)
- ☐ One User's Manual
- ☐ One CD-ROM that includes
  - Award Flash EPROM Utility
  - Award DMI Utility for DOS
  - Intel Bus Master IDE drivers for Win95/98
  - Intel Security Driver
  - Audio drivers for Win9x, NT4.0, Win2000
  - Optionl **CMedia 8738** audio driver for Win98, NT and Win2000
  - Optional **Value Pack** software including Acrobat Reader, Trend PC-cillin, Norton AntiVirus, ADOBE ActiveShare, Appio and X-stop

### Optional Items

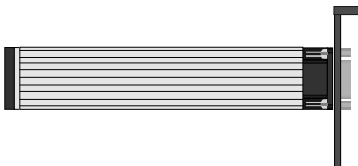
- ☐ **LTI-II** Panel link adapter for LCD/TV-out (**for Intel 815E only**)
- ☐ AIMM card (boost up to 4MB display cache at 133MHz)
- ☐ AC3 Surround/Center + Bass jack extension. (Figure 1-4)



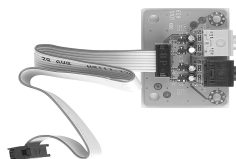
**Figure 1-1** UDMA66 IDE cable



**Figure 1-2** Standard Floppy cable



**Figure 1-3** COM2 Cable (Optional)



**Figure 1-4** AC3 Surround/Center + Bass jack extension (Optional)

***Memo***