

Chapter 1 Specification

Introduction

This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge VIA Apollo P4X400 plus South Bridge VT8235, by which the whole system performance can be upgraded to 533 MHz system bus.

The Intel P4 processor is a rapid execution engine providing 4X100/4X133MHz quadpumped system bus to allow 3.2GB data transfer rates possible, while VIA Apollo P4X400 plus VT8235 supports Intel P4 processor to implement the 4X133 Front Side Bus, AGP 8X external bus, the LPC Super I/O, the DDR SDRAM and UATA 133/100/66 data transfer rate. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

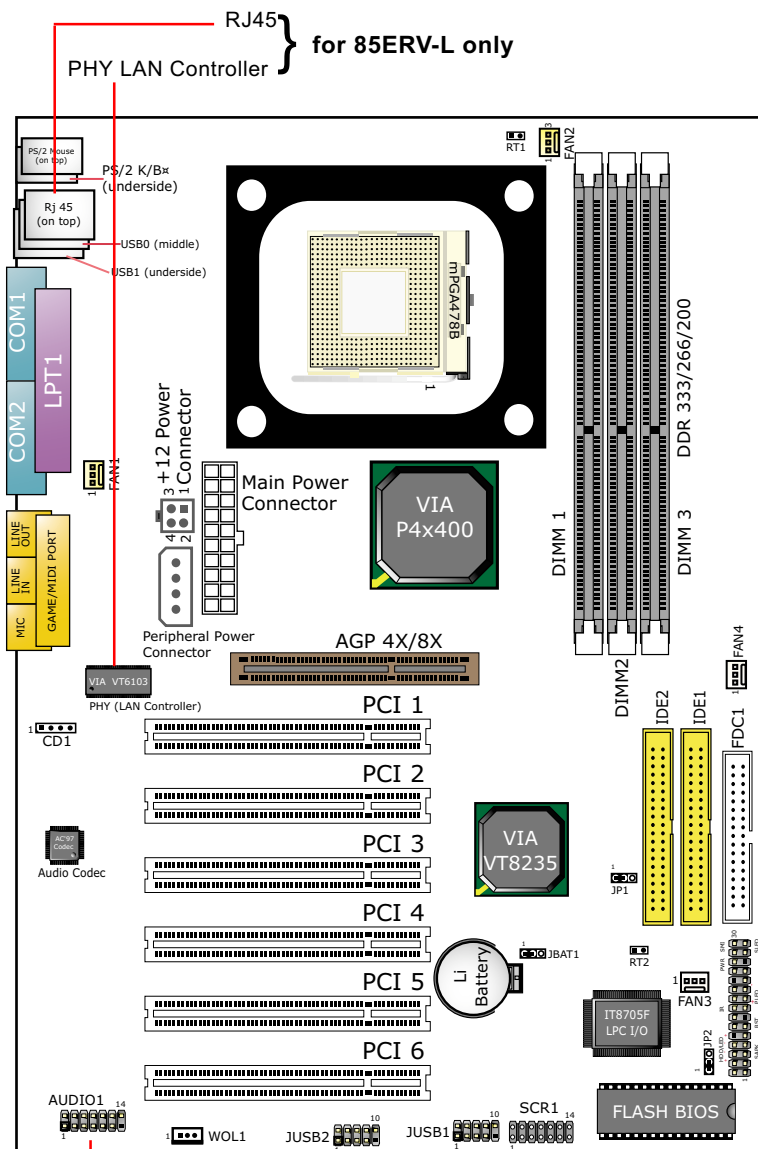
1-1 Mainboard Components Locations

1-2 Mainboard Specifications

1-3 Mainboard Specification Table

1-4 Chipset Diagram

1-1 85ERV / 85ERV-L Components and Options



1-2 Mainboard Specifications

1-2.1 CPU Socket

CPU Socket 478B on board, supporting Intel® Pentium 4 processors in 478-pin package for :

- 533/400MHz System Bus;
- Hyper-pipelined technology;
- Advanced dynamic execution;
- Advanced transfer cache;

1-2.2 System Chipsets

- North Bridge VIA P4X400 for managing and supporting 4X133/4X100MHz system Bus, DDR 333/266/200 SDRAM memory interface, Hub interface and AGP4X/8X interface.
- South Bridge VIA VT8235 working with North Bridge supporting the double speed V-Link, LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, LAN interface, USB V2.0 interface, as well as AC'97 Audio 6-channel interface.

1-2.3 Memory

3 DDR DIMM 184-pin slots on board for DDR 333/266/200 SDRAMs :

- Supporting unregistered, non-ECC DDR333/266/200 SDRAM up to 3 GBs
- Supporting installation of mixed volumes yet same type of DDR SDRAM modules

1-2.4 AMI BIOS

- Supporting Plug & Play V1.0
- Flash Memory for easy upgrade
- Supporting BIOS Writing Protection and Year 2000 compliant
- Supporting BIOS Setup (See Chapter 4 BIOS Setup)

1-2.5 Accelerated Graphics Port (AGP) Interface

AGP Controller embedded on board, supporting:

- 1.5V(4X/8X) power mode only, 1 AGP Slot supported
- 4x AD and SBA signaling, AGP pipelined split-transection longburst transfers up to 2GB/sec.
- AGP 4X/8X only, AGP v3.0 compliant

1-2.6 Advanced System Power Management:

- ACPI 1.0B compliant (Advanced Configuration and Power Interface)
- APM V1.2 compliant (Legacy Power Management)
- ACPI POS (Power On Suspend)
- PS/2 Keyboard & Mouse Power On
- Supporting Ring Power Up Control for Wake-on-Modem (external) and Wake-on-LAN (via Connector WOL1)
- Real Time Clock (RTC) with date alarm, month alarm, and century field

1-2.7 Multi-I/O Functions :

- PCI EIDE Controller, supporting:
 - 2x Ultra ATA133 / 100 / 66 IDE connectors supporting up to 4 IDE devices
- Dedicated IR Functions:
 - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
- Multi-mode parallel data transfer:
 - Standard mode, high speed mode ECP and enhanced mode EPP
- Floppy Disk connector:
 - One FDD connector supporting 2 floppy drives with drive swap support
- Universal Serial Bus Transfer Mode:
 - USB V2.0 compliant, 480 Mb/s USB Bus, supporting Win 2000 and later operating system; USB drivers provided in Support CD for installation
 - 2 built-in USB connectors and 2 USB pin-headers which require 2 optional USB cables to provide 4 more optional USB ports
- PS/2 Keyboard and PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
 - Two complete serial ports (COM1 & COM2) on board

1-2.8 Expansion Slots

- 6 PCI bus Master slots
- 1 AGP 4X/8X slot
- 3 DDR DIMM slots

1-2.9 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board

- Supporting up to 6 channels of PCM audio output
- 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Woofer for complete surround sound effect
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-2.10 LAN on board (85ERV-L only)

Fast Ethernet Controller integrated in VT8235 and PHY VIA VT6103:

- Supporting 10/100Mb Fast Ethernet Base T LAN
- Supporting Wake On LAN through on-board WOL1 connector
- LAN Driver enclosed in Support CD for user's installation.

1-2.11 Hardware Monitor on board

- Hardware Monitor integrated in Super I/O IT8705F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software SmartGuardian for displaying Monitoring status is enclosed in Support CD for user's installation.

1-2.12 6-channel Sound Output Support (optional)

- This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

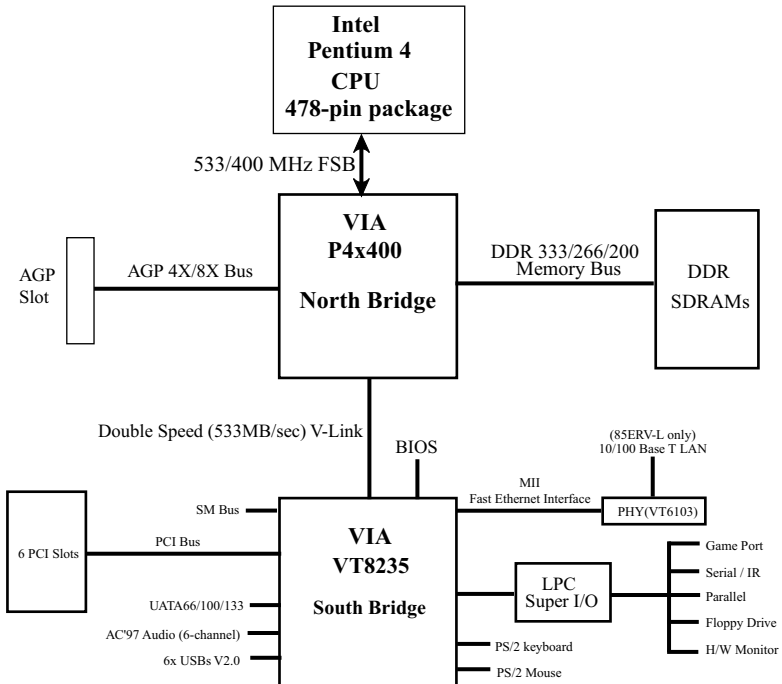
1-2.13 Form Factor

- ATX form factor, ATX power supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Peripheral Power Connector
- Mainboard size: 305mm x 220mm

1-3 Mainboard Specification Table

SL-85ERV / 85ERV-L Specifications and Features	
CPU	Socket 478B for Intel Pentium 4 CPUs
North Bridge	VIA Apollo P4X400, supporting 533/400MHz FSB
South Bridge	VIA VT8235
BIOS	AwardBIOS
Memory	Supporting DDR 333/266/200 SDRAM, up to 3GB in 3 DDR DIMM slots
I/O Chip	IT8705F
AGP interface	1.5V AGP4X/8X mode only
Audio	AC'97 Audio V2.2 compliant, 6-channel interface
IDE Interface	2 UATA 66/100/133 IDE ports
Networking	VIA LAN Controller, 1xRJ45 (85ERV-L only)
PCI Slots	6 PCI Master slots on board
I/O Connectors	6xUSB ports (V2.0), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	VGA not integrated on board
Other Features	BIOS Writing Protection; Hardware Monitoring in IT8705F keyboard Power On; ATX 2.03 Power Supply; ATX form factor

1-4 Chipset System Block Diagram



Intel Pentium 4 + VIA P4X400 + VIA VT8235 Diagram