

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 P4X266. The Intel P4 processor is a rapid execution engine providing 400MHz quadpumped system bus to allow 3.2GB data transfer rates possible, while VIA Apollo P4X266 North Bridge plus VT8233 South Bridge support Intel P4 processor to execute the 400MHz FSB, the AGP 4X external bus, the LPC Super I/O and the DDR SDRAM data transfer. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

1-1 Mainboard Specifications

1-2 Mainboard Layout

1-3 Mainboard Specification Table

1-4 Chipset Diagram

1-1 Mainboard Specifications

1-1.1 CPU Socket

- CPU Socket 478B on board, supporting Intel® Pentium 4 and Northwood processors in the 478-pin package for :
 - 400MHz System Bus;
 - Hyper pipelined technology;
 - Advanced dynamic execution;
 - Advanced transfer cache;

1-1.2 System Chipsets

- North Bridge VT8753 (P4X266) plus South Bridge VT8233 to work with Intel Pentium 4 Processor for managing and arbitrating operations between all system interfaces:

1-1.3 Memory

- 3 DDR DIMM 184-pin sockets on board for PC2100/1600 DDR SDRAMs, supported by 2.5V default voltage (DIMM voltage selectable in BIOS setup):
- VT8753 directly supporting pseudo-synchronous SDRAM transfer rate 100/133MHz up to 1.5GB unbuffered DDR SDRAMs or 3GB registered DDR SDRAMs.
 - Installation of mixed sizes of DDR SDRAM modules supported .

1-1.4 AWARD BIOS V6.0

- Supporting Plug & Play V1.0;
- Flash Memory for easy upgrade;
- Supporting BIOS writing protection and Year 2000 compliant;
- BIOS Setup supported (Please see Chapter 4 BIOS Setup);

1-1.5 Accelerated Graphics Port (AGP) Interface

AGP Controller is embedded on VT8753, supporting:

- 1.5V/4X, 3.3V/2X power mode , AGP voltage selectable in BIOS Setup;
- 2x/ 4x AD and SBA signalling, AGP pipelined split-transection long-burst transfers up to 1GB/sec.;
- AGP v2.0 compliant;

1-1.6 Advanced system Power Management, supporting:

- ACPI 1.0B compliant (Advanced Configuration and Power Interface);
- APM V1.2 compliant (Legacy power management);
- ACPI STR mode (Suspend To RAM) , POS (Power On Suspend) and STD (Suspend to Disk);
- PS/2 Keyboard & Mouse power on;
- Wake On Modem and Wake On LAN;
- Real time clock (RTC) with date alarm, month alarm, and century field.
- USB wake-up Function;

1-1.7 Multi-I/O Functions:

- PCI EIDE Controller, supporting:
 - 2x Ultra ATA100 / 66 / 33 IDE Connectors supporting up to 4 IDE devices;
- Promise RAID IDE Controller:
 - Supporting other two Ultra ATA-100 / 66/ 33 IDE Connectors up to 2 RAID disks (on SL-85DRV* and SL-85DRV*-X only)
- 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, ECP and EPP support;
- Floppy Disk connector:
 - One FDD connector with drive swap support;
- Universal Serial Bus Transfer Mode:
 - USB V1.1 compliant;
 - 2 built-in USB connectors and two USB Headers (USB2, USB3) which require two optional USB cables to provide 4 more optional USB ports;
- PS/2 Keyboard
- PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
 - Two complete Serial Ports (COM1 & COM2) on board;

1-1.8 Expansion Slots

- Six PCI bus Master slots;
- One AGP 4x/2X slot;
- One CNR slot (supporting Modem / Audio Riser only);
- Three DDR DIMM slots;

1-1.9 Hardware Monitor on board

- Programmable control, status, to provide monitoring and alarm for flexible desktop management of hardware temperatures. Utility Software is enclosed in Support CD to help display monitoring statuses of:
 - 9 voltages, 2 types of hardware temperatures, 2 Fan speeds;

1-1.10 AC'97 Audio Codec on board

- AC'97 Audio codec supported by AC97 Link on chip VT8233;

1-1.11 CNR Slot on board

- CNR Slot on board for Modem Riser card or Audio Riser Card;

1-1.12 Disk RAID (Redundant Array of Independent Disks)

On SL-85DRV⁺ and SL-85DRV⁺-X only.

- Promise FastTrak100-Lite RAID controller on board.
- Supporting striping (RAID 0) and mirroring (RAID 1) Disk Arrays.
- Supporting Ultra ATA/100 / 66 /33 specification up to 100MB/sec.
- Two RAID Connectors IDE3 and IDE4 on board, compatible with Ultra ATA/100/66/33 and EIDE, supporting up to 2 RAID disks.

1-1.13 Voice Diagnostic Technology

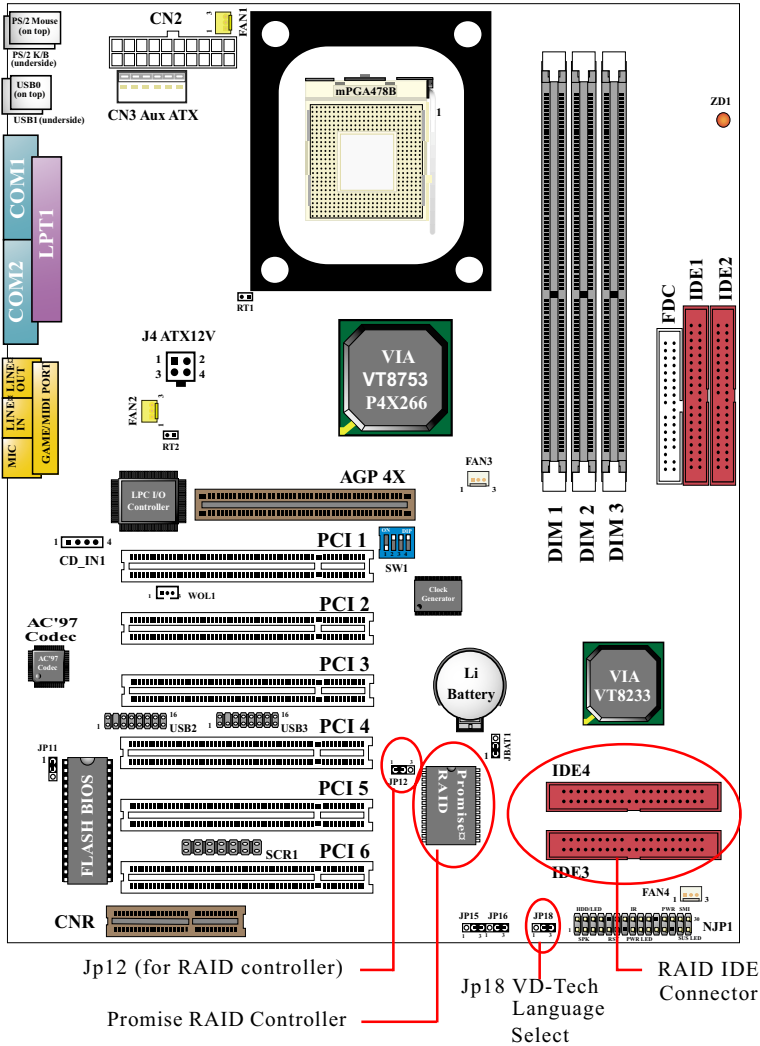
On SL-85DRV-X and SL-85SD⁺-X only:

- A Voice Diagnostic Function is incorporated in "Advanced BIOS Features" of the "Award BIOS Setup" as "VD-Tech II Function". With this function enabled in "Advanced BIOS Features", it will voice out the problems or conflicts whenever user configures the components or boots up the PC system.
- The voice can be in Chinese or English, depending on the setting of Jumper JP18. Changing the setting of JP18 will change the language of the voice.

1-1.14 Form Factor

- ATX form factor, ATX spec. version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Aux Power Connector;
- Mainboard size: 305mm x 245mm;

1-2 Series SL-85DRV -- Layout with Optional Features



Optional features of Series SL-85DRV:

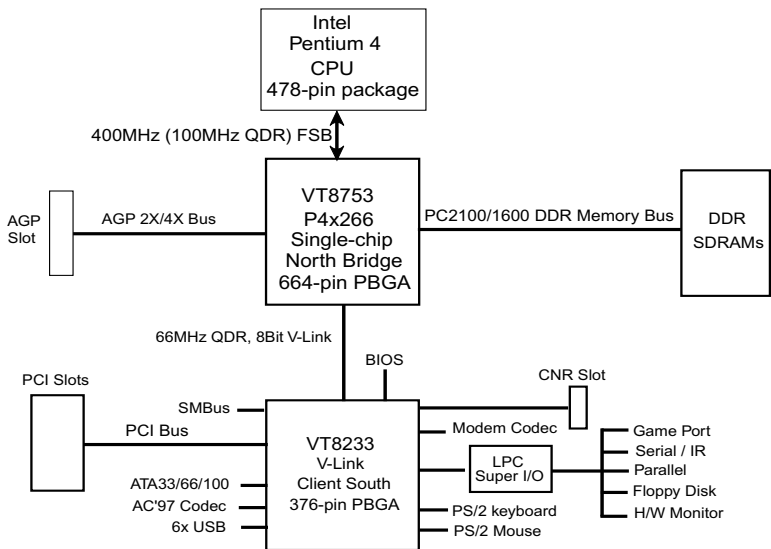
Feature	85DRV	85DRV-X	85DRV ⁺	85DRV ⁺ -X
VD-Tech II	No	Yes	No	Yes
IDE RAID	No		Yes	

1-3 Mainboard Specification Table

Series 85DRV	85DRV	85DRV-X	85DRV ⁺	85DRV ⁺ -X
Memory Controller Hub	VIA VT8753 P4x266 North Bridge			
I/O Controller Hub	VIA VT8233 South Bridge			
CPU Socket	Socket PGA478B for Intel Pentium 4 478-pin package CPU			
Memory	Supporting Registered/3GB or unbuffered/1.5GB DDR SDRAMs with 3 DDR DIMM Slots			
I/O Chip	ITE IT8705F			
Audio	AC'97 Audio Codec			
Onboard IDE	2 x ATA 33/66/100 IDE ports			
AGP Interface	AGP 4X Mode			
Onboard IDE RAID Controller, 2xATA 33/66/100 RAID ports for 2 RAID disks	No		Yes	
I/O Connectors	6 x USB ports, 1 x FDD port, 2 x COM ports, 1 x LPT port, 1 IrDA, 1 PS/2 Mouse, 1 PS/2 K/B			
PCI slot	6 PCI Master Slots			
CNR slot	1 x CNR slot			
Bilingual VD-Tech II (Voice diagnostic Tech.)	No	Yes	No	Yes
Hardware Monitoring	Yes to all members			
BIOS writing Protection	Yes to all members			
Keyboard power on function & USB wake up Function	Yes to all members			
SCR Interface	Yes to all members			

1-4 Chipset System Block Diagram

(with respect to Series SL-85DRV)



Intel Pentium 4 + VIA VT8753 + VT8233 Diagram