

# 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 P4X266A plus South Bridge VT8233, by which VIA P4X266A upgrades the whole system performance with 100MHz base frequency to support 4 x 100 MHz system bus.

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 P4X266A North Bridge plus VT8233 South Bridge supports Intel P4 processor to implement 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 :

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

### **1-1.2 System Chipsets**

North Bridge VIA P4X266A 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 and PC1600 DDR SDRAMs, at 64bit data transfer rate (DIMM voltage selectable in BIOS setup):

- P4X266A directly supporting pseudo-synchronous SDRAM up to 1.5GB unbuffered DDR SDRAMs or 3GB registered DDR SDRAMs.
- Installation of mixed volumes 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 in chip, 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);
- Wake On Modem (External) and Wake On LAN supported by Ring Power On Control;
- 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;
- 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 hardware 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 Redstorm Overclocking Technology**

Redstorm Overclocking Tech is a program embedded in BIOS for CPU automatic overclocking. Please see " Frequency / Voltage Control " of BIOS Setup for Redstorm Overclocking Technology setting.

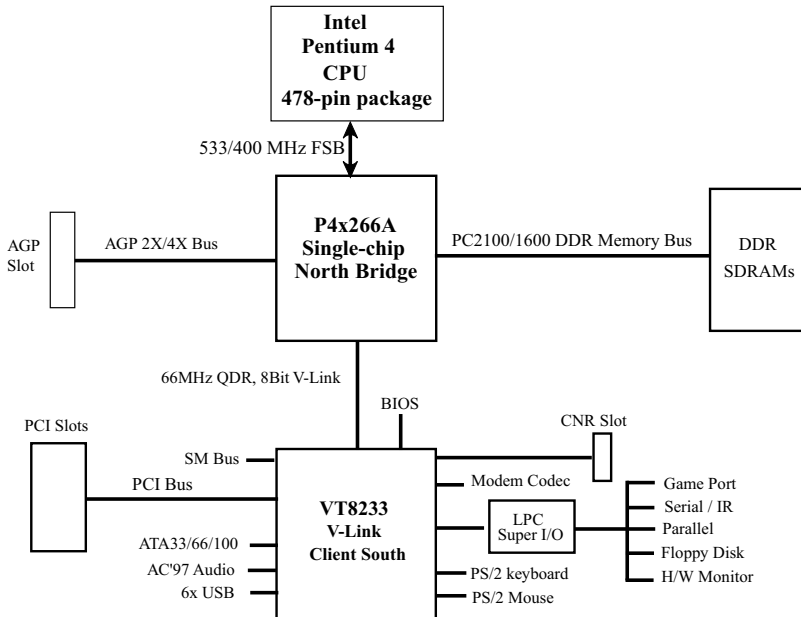
### **1-1.13 Form Factor**

- 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 Mainboard Specification Table

Model/Series	85DRV2
Memory Controller Hub	North Bridge VIA P4x266 A
I/O Controller Hub	South Bridge VIA VT8233
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 UATA 33/66/100 IDE ports
AGP Interface	AGP 4X / 2X Mode
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
BIOS writin Protection	Yes
Hardware Monitoring	Yes
Keyboard power on function & USB wake up Function	Yes

## 1-3 Chipset System Block Diagram



## Intel Pentium 4 + VIA P4X266A + VT8233 Diagram