FIC VT-502 PCI SYSTEM BOARD BENCHMARKING REPORT

Document Revision 2.0

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1.0 Introduction

To evaluate the VT-502 performance and to ensure its compatibility with a complete range of the most popular operating systems and software applications, FIC 's Motherboard R&D Team conducted a comprehensive suite of benchmark tests on the board in a variety of hardware configurations, including a full selection of Intel Pentium , IBM/Cyrix 6x86, AMD-K5 , AMD K6 and Intel Pentium with MMX processors as well as Fast Page Mode and EDO DRAM types. The performance of the board running some of the most popular VGA adapter cards was also tested.

In order to demonstrate realistic business application performance, Winstone 97 under Windows 95 was chosen as the primary benchmarking tool for FIC's tests. Winstone 97 Version 1.0 was developed by the Ziff-Davis Publishing Company to provide a tool for accurate and realistic measurement of system performance of personal computers running popular business-oriented applications in the Microsoft Windows 95 operating system environment.

System Tests Configuration :

Main Board	FIC VT-502 PCB Ver:2.0
System Core Logic	Intel 430VX(82371SB+82437VX+82438VX)
System BIOS	Award BIOS Version 1.08ff11
Video	Matrox Mystique 1064SG 2MB SGRAM with VGA BIOS Version 1.4
Video Driver	Matrox Mystique Windows 95 Driver Version 4.03.00.3410
IDE Driver	Windows 95 default PCI Bus Master IDE Driver
IDE HDD	Quantum Fireball 1280 PIO Mode 4 or DMA mode 2 (FB-1280A)
Operating System	Microsoft Windows 95 4.00.950b (OSR2)

2.0 Processor Benchmarks Performance Summary

A) Intel Pentium Processor Performance

The chart below illustrates the Winstone 97 under Windows 95 performance processor benchmark with the VT-502 using different speed Intel Pentium processors. The following is a sample of the results using **512KB Pipeline Burst** SRAM, **32MB SDRAM** system memory , with a Matrox Mystique, **2MB SGRAM** PCI VGA card in **1024 x 768 x 256 colors**, **resolution refresh rate of 75Hz, small font.** colors, resolution refresh rate 75Hz, small font

VT-502 Winstone 97 Pentium Performance Comparison Chart
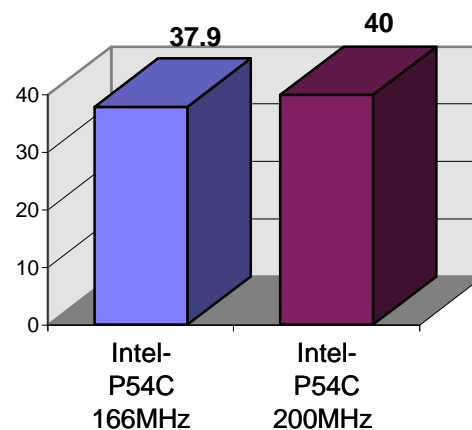
The table below provides more detailed benchmark testing data about the VT-502 using different speed Intel Pentium processors. The board was configured with 512KB Pipeline Burst SRAM and 32MB of SDRAM Memory .

Benchmarks	Weighted Suite	Intel P54C-166	Intel P54C-200
Winstone 97	Business Winstone 97	37.9	40
	High End Winstone 97	16.5	18
Winbench 97	Business Disk WinMark 97	815	818
	High End Disk WinMark9 7	2530	2580
	CPUmark 16	326	378
	CPUmark 32	342	385
	Business Graphics WinMark 97	61.2	66.9
	High End Graphics WinMark 97	28.6	31.7

B) Cyrix 6x86 Processor Performance

The chart below illustrates the Winstone 97 under Windows 95 performance processor benchmark with the VT-502 using different speed Cyrix/IBM processors. The board was configured with **512KB Pipeline Burst** SRAM and **32MB SDRAM of System Memory** , with a Matrox Mystique, **2MB SGRAM** PCI VGA card in **1024 x 768 x 256 colors, resolution refresh rate of 75Hz, small font.**

**VT-502 Winstone 97 Cryix/IBM Performance Comparison Chart**
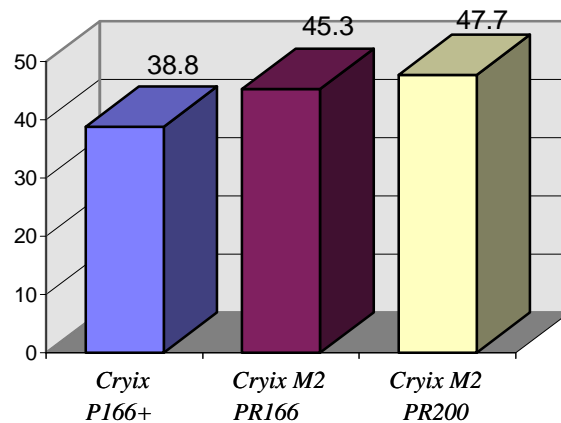
The table provides a detailed summary of VT-502 benchmark performance using different speed Cyrix/IBM 6x86 processors. The board was configured with 512KB Pipeline Burst SRAM and 32MB of SDRAM memory.

Benchmarks	Weighted Suite	Cyrix/IBM 6x86L-P166[+]	Cyrix/IBM M2-PR166	Cyrix/IBM M2-PR200
Winstone 97	Business Winstone 97	38.8	45.3	47.7
	High End Winstone 97	15.5	18.4	19.1
Winbench 97	Business Disk WinMark 97	806	870	805
	High End Disk WinMark 97	2540	2810	2710
	CPUmark 16	320	367	400
	CPUmark 32	330	381	424
	Business Graphics WinMark 97	68	90.5	109
	High End Graphics WinMark 97	32.5	43.3	50.2

C) AMD K5 and K6 Processor Performance

The chart below illustrates the Winstone 97 under Windows 95 performance processor benchmark with the VT-502 using different speed AMD-K5/K6 processors. The board was configured with **512KB Pipeline** Burst SRAM and **32MB of SDRAM Memory** , with a Matrox Mystique, **2MB SGRAM** PCI VGA card in **1024 x 768 x 256 colors, resolution refresh rate of 75Hz, small font.**

**VT-502 Winstone 97 AMD K5/K6 Performance Comparison Chart**
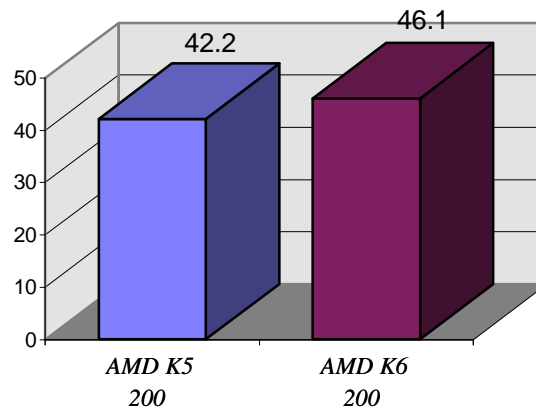
The table summarizes the processor benchmark performance of the VT-502 using different speed AMD-K5 processors. The board was configured with 512KB Pipeline Burst SRAM and 32MB of SRAM memory .

Benchmarks	Weighted Suite	AMD K5-PR200	AMD K6-200
Winstone 97	Business Winstone 97	42.2	46.1
	High End Winstone 97	18.4	19.7
Winbench 97	Business Disk WinMark 97	855	865
	High End Disk WinMark 97	2730	2770
	CPUmark 16	306	404
	CPUmark 32	337	496
	Business Graphics WinMark 97	82.3	90.1
	High End Graphics WinMark 97	39.3	41.4

D) Intel Pentium with MMX (P55C) Processor Performance

The chart below illustrates the Winstone 97 under Windows 95 performance processor benchmark with the VT-502 using different speed Intel Pentium with MMX(P55C) processors. The board was configured with **512KB Pipeline Burst SRAM** and **32MB of SDRAM Memory** , with a Matrox Mystique, **2MB SGRAM** PCI VGA card in **1024 x 768 x 256 colors, resolution refresh rate of 75Hz, small font.**

VT-502 Winstone 97 Pentium Performance Comparison Chart
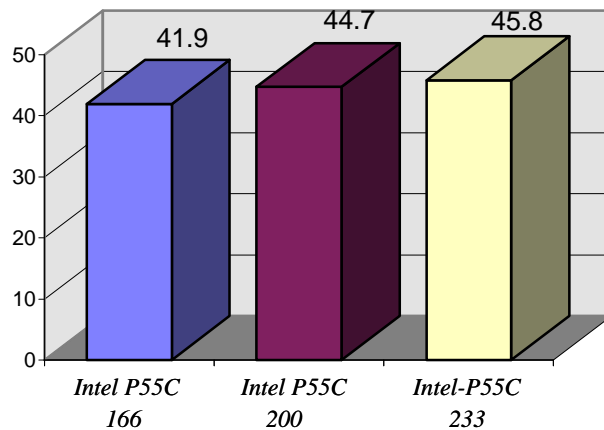
The following table summarizes the Processor Benchmark Performance with the VT-502 using different speed Pentium with MMX (P55C) processors. The tests were conducted on a board featuring 512KB Pipeline Burst SRAM and 32 MB of SDRAM Memory .

Benchmarks	Weighted Suite	Intel P55C-166	Intel P55C-200	Intel P55C-233
Winstone 97	Business Winstone 97	41.9	44.7	45.8
	High End Winstone 97	18	19.7	20.9
Winbench 97	Business Disk WinMark 97	842	860	863
	High End Disk WinMark 97	2600	2700	2700
	CPUmark 16	368	421	479
	CPUmark 32	366	419	455
	Business Graphics WinMark 97	80.2	91.8	101
	High End Graphics WinMark 97	36.5	41.5	45.3

2.1 Memory Configurations

The table below provides more detailed measurements of the performance of the VT-502 using the following different memory types: EDO, SDRAM and Fast Page Mode DRAM. The tests were conducted on a board featuring an Intel P55C-200MHz Pentium processor, 32MB Main Memory, and 512KB Pipeline Burst Cache.

Benchmarks	Weighted Suite	Fast Page	EDO	SDRAM
Winstone 97	Business Winstone 97	43.6	44	44.7
	High End Winstone 97	19.4	19.7	19.7
Winbench 97	Business Disk WinMark 97	855	853	860
	High End Disk WinMark 97	2680	2700	2700
	CPUmark 16	409	418	421
	CPUmark 32	397	413	419
	Business Graphics WinMark 97	89.9	91.6	91.8
	High End Graphics WinMark 97	40.2	41.1	41.5

This table measures the performance of the VT-502 using different memory sizes of 32MB and 64MB EDO memory. The tests were done on a board featuring an **Intel P55C-200 MHz** Pentium processor, **512KB Pipeline Burst Cache** and **EDO Main Memory**.

Benchmarks	Weighted Suite	32MB	64MB
Winstone 97	Business Winstone 97	44	44.8
	High End Winstone 97	19.7	21.3
Winbench 97	Business Disk WinMark 97	853	871
	High End Disk WinMark 97	2700	3010
	CPUmark 16	418	421
	CPUmark 32	413	414
	Business Graphics WinMark 97	91.6	91.7
	High End Graphics WinMark 97	41.1	41.3