Cyrix 5x86
Technical Brief

The Cyrix 5x86 PGA processor

Performance Benchmarks[1]

The Cyrix 5x86 processor offers fifth-generation performance with market-ready socket solutions.

Winstone 95[2]

5x86/100	127
Pentium-75	117

Power Meter v 1.8 MIPS

5x86/100	40
Pentium-75	39

Landmark Version 2.0 CPU

5x86/100	426
Pentium-75	433

Norton System Information Version 8.0

5x86/100	264
Pentium-75	238

[1]*All systems tested with 256K L2 cache.*

[2]*All systems tested with identical hard drive & graphics card.*

The Cyrix 5x86 QFP processor

The Cyrix 5x86™ processor, formerly called the M1sc, is first in a family of microprocessors for desktop and mobile systems. With its fifth-generation architectural core, the 5x86 processor gives users an affordable performance alternative to Pentium™ with a market-ready socket solution.

Fifth-Generation Architecture

The new 5x86 architecture core achieves compelling system performance while consuming only half the power of competing alternatives. Fifth-generation architectural features were carefully evaluated and selected for their contribution toward maximum efficiency, performance and simplicity of design. In the 5x86 architectural core, fifth-generation features such as a 64-bit internal data path, branch prediction, multiple operations issued per clock made possible by a decoupled load/store unit, and data forwarding are combined with an 80-bit floating point unit and 16K unified write-back cache. Aggressive power management features conserve power within the processor as well as power flowing to system peripherals.

Minimal Power Consumption

The Cyrix 5x86 processor architecture was engineered with power-saving intelligence to track, monitor and automatically power down the floating point unit (FPU) and other internal circuits when not in use. It features Cyrix's proven system management mode (SMM) to control power flowing to system peripherals. At 100 MHz @ 3.45 volts, the Cyrix 5x86 consumes less than 3.5 watts of power which minimizes heat generation. This reduction in heat eliminates the need for a heatsink or cooling fan, making the 5x86 processor the ideal choice for power-sensitive mobile systems.

Package

The Cyrix 5x86 processor is an example of Cyrix's strategy to design next-generation processor architectures that leverage existing designs. It is initially available in a 168-pin PGA and a 208-pin QFP package. This socket solution offers easy design-in with minimal board space requirements for maximum integration flexibility.

Cyrix Worldwide Offices

United States
Corporate Office
Richardson, Texas
Tel: (214) 968-8388
Fax: (214) 699-9857

Tech Support and Sales: (800) 462-9749
Internet: tech_support@cyrix.com
BBS: (214) 968-8610 (up to 28.8K baud)

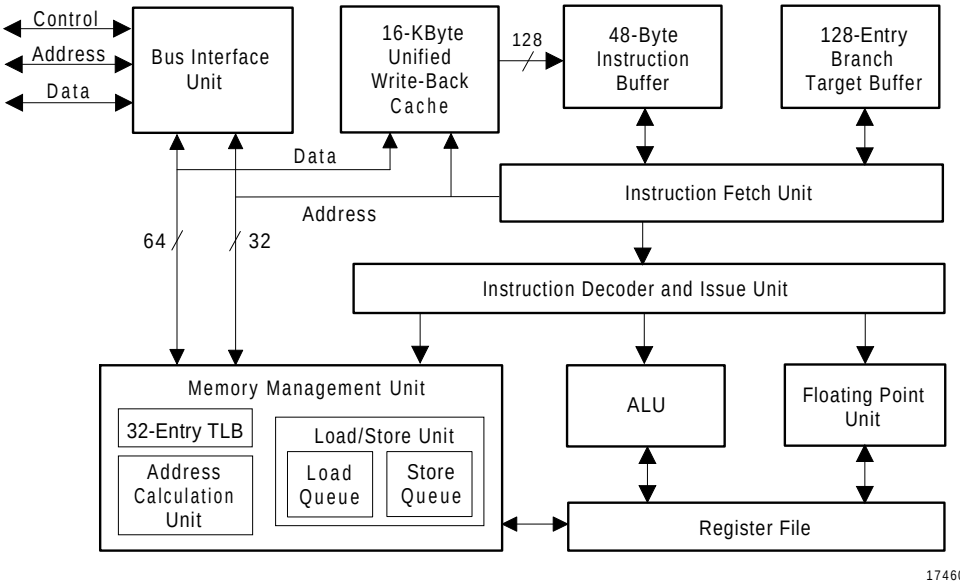
See us on the Internet World Wide Web:
http://www.cyrix.com

Europe
United Kingdom
Cyrix International Ltd.
Tel: (44) 1793 417777
Fax: (44) 1793 417770

Japan
Cyrix K.K.
Tel: (81) 45-471-1661
Fax: (81) 45-471-1666

Taiwan
Cyrix International, Inc.
Tel: (886) 2-718-4118
Fax: (886) 2-719-5255

Hong Kong
Cyrix International, Inc.
Tel: (852) 2485-2285
Fax: (852) 2485-2920



Technical Specifications

Clock Speed	100 MHz; 120 MHz
Clocking	2x, 3x clock multiplier
L1 Cache	16KByte; write-back; 4-way associative; unified instruction and data
Bus	64-bit internal data bus; 32-bit external data bus; 32-bit address bus
Pin/Socket	168-pin PGA; 208-pin QFP
Compatibility	Fully compatible with x86 software
Floating Point Unit	80-bit with 64-bit interface; parallel execution; uses x87 instruction set; IEEE-754 compatible
Voltage	3.45V core with 5V I/O tolerance
Architecture	Branch prediction; data forwarding; decoupled load/store unit; branch target cache; single-cycle execution and instruction decode
Power Management	System Management Mode (SMM); hardware suspend; stop-clock capability; FPU auto-idle

Cyrix Corporation
P.O. Box 850118
Richardson, TX 75085-0118
Tel: (214) 968-8388
Fax: (214) 699-9857