



IBM 6x86MX™ MICROPROCESSOR

*Enhanced Sixth-generation CPU
Compatible with MMX™ Technology*

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Revision History

Order Number	Release Date	Description of Changes
G522-0318-00	June 1997	First Release
TBD	August 1997	Voltage specification changes to chapters one, four and appendix.



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Introduction

◆ Enhanced Sixth Generation Architecture

- Dual 7-Stage Integer Pipelines
- 64K 4-Way Unified Write-Back Cache
- 2 Level TLB (16 Entry L1, 384 Entry L2)
- Branch Prediction with a 512-entry BTB
- Optimized for both 16 and 32-Bit Code
- High Performance 80-Bit FPU
- Register Renaming

◆ X86 Instruction Set Including MMX Instructions

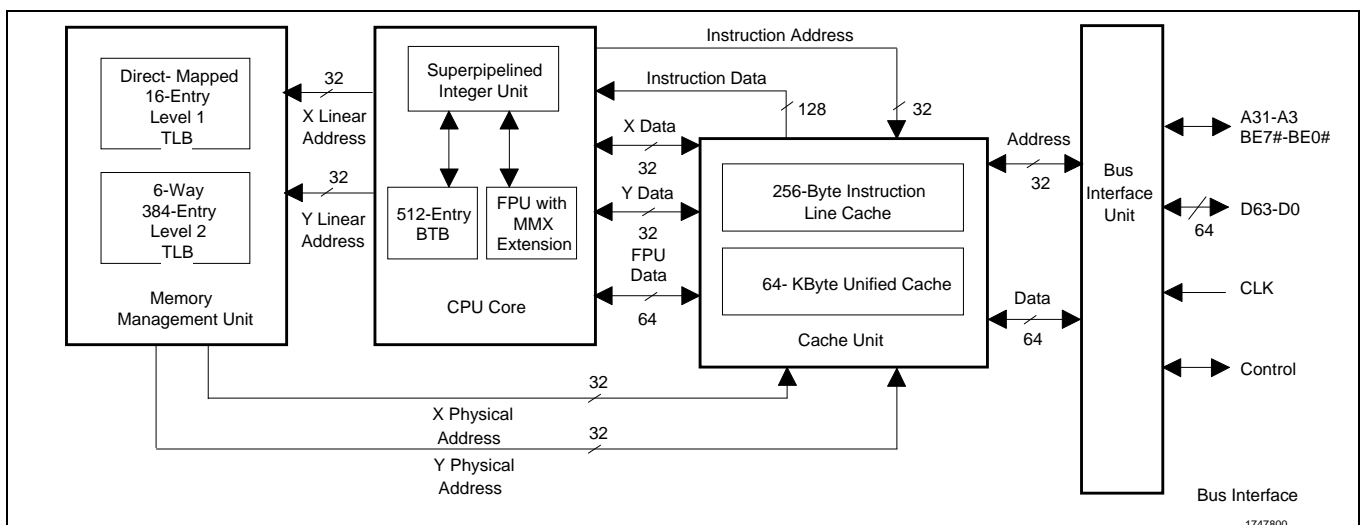
- Full MMX Instruction Set
- Runs Windows 95, Windows 3.x, Windows NT, DOS, UNIX, OS/2, Solaris, and others

◆ Other Features

- Socket 7 Pinout Compatible
- 2.9 V Core, 3.3 V I/O
- Flexible Core/Bus Clock Ratios (2, 2.5, 3, 3.5)
- Leverages Existing Infrastructure

The IBM 6x86MX™ processor¹ offers significant enhancements over the IBM 6x86™ CPU. The IBM 6x86MX processor design quadruples the cache size, triples the TLB size, increases the frequency scalability to 200 MHz and beyond, and is compatible with MMX™ technology. The IBM 6x86MX CPU contains a scratchpad RAM feature, supports performance monitoring, and allows catching of both SMI code and SMI data. The IBM 6x86MX CPU delivers high 16- and 32-bit performance running Windows® NT™, Windows 95™, OS/2™, DOS, UNIX®, and other operating systems.

The IBM 6x86MX processor achieves high performance through use of two optimized superpipelined integer units, an on-chip floating point unit, and a large 64 KByte first level cache. The superpipelined architecture reduces timing constraints and increases frequency scalability. Advanced architectural techniques include register renaming, out-of-order completion, data dependency removal, branch prediction and speculative execution. Many data dependencies and resource conflicts have been eliminated, allowing higher performance for both 16- and 32-bit software.



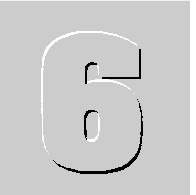
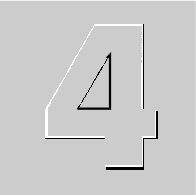
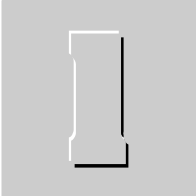
¹ The IBM 6x86MX processor is designed by Cyrix Corporation and manufactured by IBM Microelectronics.





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