



PB001300-ZMP0999

eZ80™

HIGH PERFORMANCE Z80

FEATURES

- Improved CPU performance, code-compatible with Z80 core
- Extended instructions
- 16 MB linear address
- Multiply and Accumulate engine
- Internet-ready TCP/IP stack
- ZiLOG Debug Interface (ZDI)

GENERAL DESCRIPTION

The eZ80™ is ZiLOG's next-generation Z80™ processor. The eZ80 provides 16 times the performance of a traditional Z80. The multiple operating modes of the processor allows Z80 and Z180 code to be run without change in *virtual Z80* or *virtual Z180* partitions, in the same application with new code, taking advantage of the eZ80's 16-Mbyte linear addressing space and enhanced instruction set. These features provide customers performance comparable to 16-bit processors with the form factor and power savings of an 8-bit processor. At the same time, the eZ80 remains 100% Z80 code-compatible, reducing customer development time.

The eZ80 also features a Multiply and Accumulate engine, which enables customers to attack signal-processing applications that require polynomial calculations, such as basic filters.

The eZ80 is internet-ready. ZiLOG can provide a complete TCP/IP stack, allowing for rapid internet connectivity.

The eZ80 also features ZiLOG's Debug Interface (ZDI). This two-pin interface allows advanced debugging features without the cost and difficulty and uncertainty of an in-circuit emulator.

The eZ80 is a licensable soft core, allowing rapid integration into designs.

DETAILED DESCRIPTION

Z80 High-Performance Microprocessor Core.

The eZ80 is one of the fastest 8-bit CPUs available today, executing code 4 times faster than a standard Z80 operating at the same clock speed. The increased processing efficiency can be used to improve available bandwidth or to decrease power consumption.

Both the increased clock speed and processor efficiency features provides eZ80 customers 16 times the processing performance. This processing power rivals performance customers would normally expect from 16-bit microprocessors.

16 MB Linear Address. The eZ80 is also the first 8-bit microprocessor to support 16 MB linear addressing—a feature that addresses large memories that support complex software applications.

The eZ80 supports several modes: Z80-compatible (64KB) mode, Z80180-compatible mode (1 MB MMU) mode, or full 24-bit (16 MB) address mode.

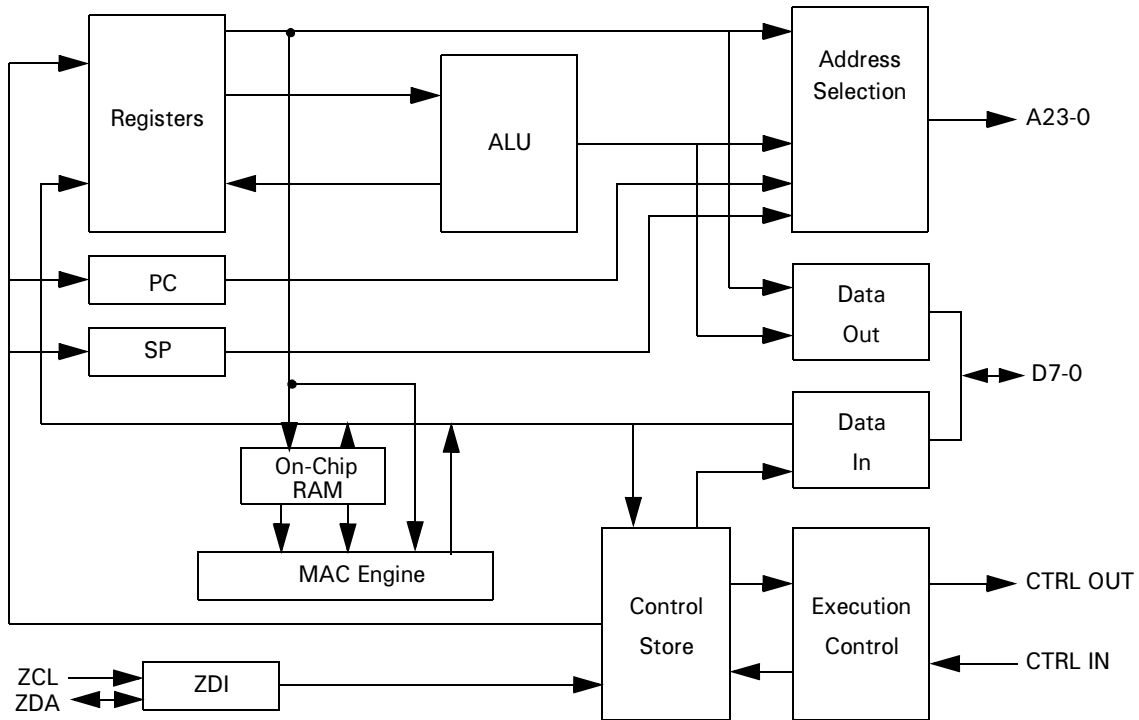
Internet-Ready. A complete TCP/IP stack is also offered so customers can design products that connect to the Internet.

Multiply and Accumulate. A Multiply and Accumulate engine operates with the eZ80 processor to calculate a sum of products that is the core of digital signal processing. The MAC provides a 16x16 into a 40-bit accumulator.

ZDI. The ZiLOG Debug Interface is a 2-pin communication port. When used with the ZiLOG Develop Suite (ZDS) software, ZDI provides on-chip emulation.



BLOCK DIAGRAM



DISCLAIMER

The product represented by this document is newly introduced and ZiLOG has not completed the full characterization of the product. The document states what ZiLOG knows about this product at this time, but additional features or non-conformance with some aspects of the document may be found, either by ZiLOG or its customers in the course of further application and characterization work. In addition, ZiLOG cautions that delivery may be uncertain at times, due to start-up yield issues.

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