



hyNet 32S

RISC/DSP Microprocessor



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HS-Mkt-AM-06-01-01



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RISC/DSP Microprocessor



Benefit from both, the unique, highly efficient and easy to program Hyperstone RISC / DSP architecture combined with most necessary interfaces and features required for network enabling and communications within the embedded applications world.

- Highly efficient RISC and DSP integration helps to reduce application costs
- Excellent RISC and DSP performance of 220MIPS and up to 880MOPS
- Most necessary interface options
- Powersaving features and efficient realization guarantee a highly energyefficient chip
- Easy programming of RISC and DSP

Targeted Applications (General Purpose Microcontroller)

- Cost sensitive network-enabling and embedded web servers
- Remote Service Applications
- Communication infrastructure
- Data and Voice over IP (VoIP)
- Residential Gateways
- Industrial Automation, Control and Robotics
- Security Applications
- ... and many more

Key Data

- TFBGA Package
- Core-Voltage: 1.8V
- I/O Voltage Supply: 3.3V
- Industrial Temperature Range
- Manufactured in a 0.18µm Process

High Performance Hyperstone Processor Architecture

- Hyperstone 32-Bit RISC/DSP processor core (E1 - 32XSR)
- Up to 220MHz, dynamic frequency scaling delivering 220 MIPS and up to 880 MOPS
- Latency based parallelism of RISC ALU, Load/Store and DSP
- Comprehensive DSP Library
- ... and many more

Key Features

- 4 internal busses with multi channel DMA controller
- Peripheral Bus with variable frequency, to reduce power consumption
- Multi-master/multi-slave high frequency System Bus
- Ethernet Bus
- Co-processor Bus
- Direct Memory Access Controller with 6 independently configurable channels
- Time Processor Unit (TPU) programmable timer with one 32-bit counter and two 16-bit counters
- Efficient Power Management
- Management Unit including reset manager, clock manager and configuration unit
- Interrupt Controller
- DCT Co-processor for 8x8 DCT and IDCT
- Clock Synchronization Core according to IEEE 1588 standard
- YUV interface CCIR656-compliant video input interface reassembling raw video data out of a CCIR656 YCrCb 4:2:2 8-bit data stream
- Real Time Clock
- Watchdog

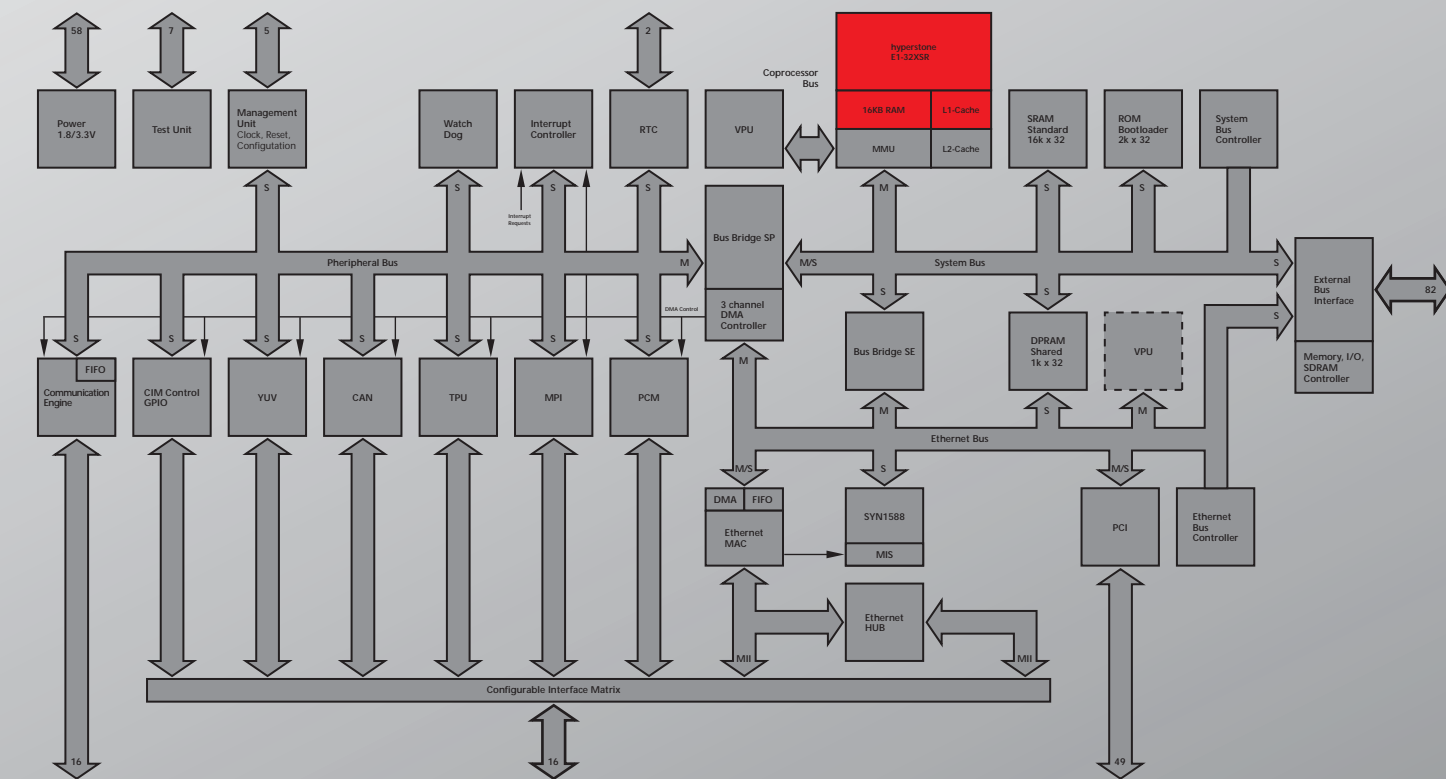
Versatile Interfaces

- 10/100 Mbit/s Ethernet MAC with MII supporting real-time standard (IEEE 1588), also fully compliant with Ethernet standards such as IEEE 802.3, 802.3u, and ANSI X3.263-1995 (FDDI-TP-PMD)
- Mini PCI interface, 32-bit/66MHz
- Programmable serial Communication Engine 16 I/O lines or software controlled general purpose I/Os, providing eight communication channels including UART, IrDA, I2C Master and Slave, Synchronous Communication and interface options to various devices such as A/D or D/A converters, codecs and serial memories
- MPI interface for powerline communication
- Controller Area Network (CAN) interface compatible to CAN 2.0, extended format and Philips SJA1000; featuring non-destructive bit-wise arbitration (CSMA/CA), message based addressing/filtering, broadcast communication, and 1Mbit/sec operation.

Internal Memory-System

- 16 kByte RAM, two 2 kByte instruction/data caches
- 8 kByte Mask ROM (Boot loader)
- 64 kByte SRAM
- 4 kByte shared DPR (Ethernet)
- 32-Bit data and address bus

hyNet 32S Block Diagram



Development Software and Hardware Support

All necessary development software and hardware is available from Hyperstone. Available options include an inexpensive starter-kit option as well as the Hyperstone real-time kernel (hyRTK), DSP software library (hyDSP), macro assembler, C-compiler, debugger, file-linker, library manager, and profiler.



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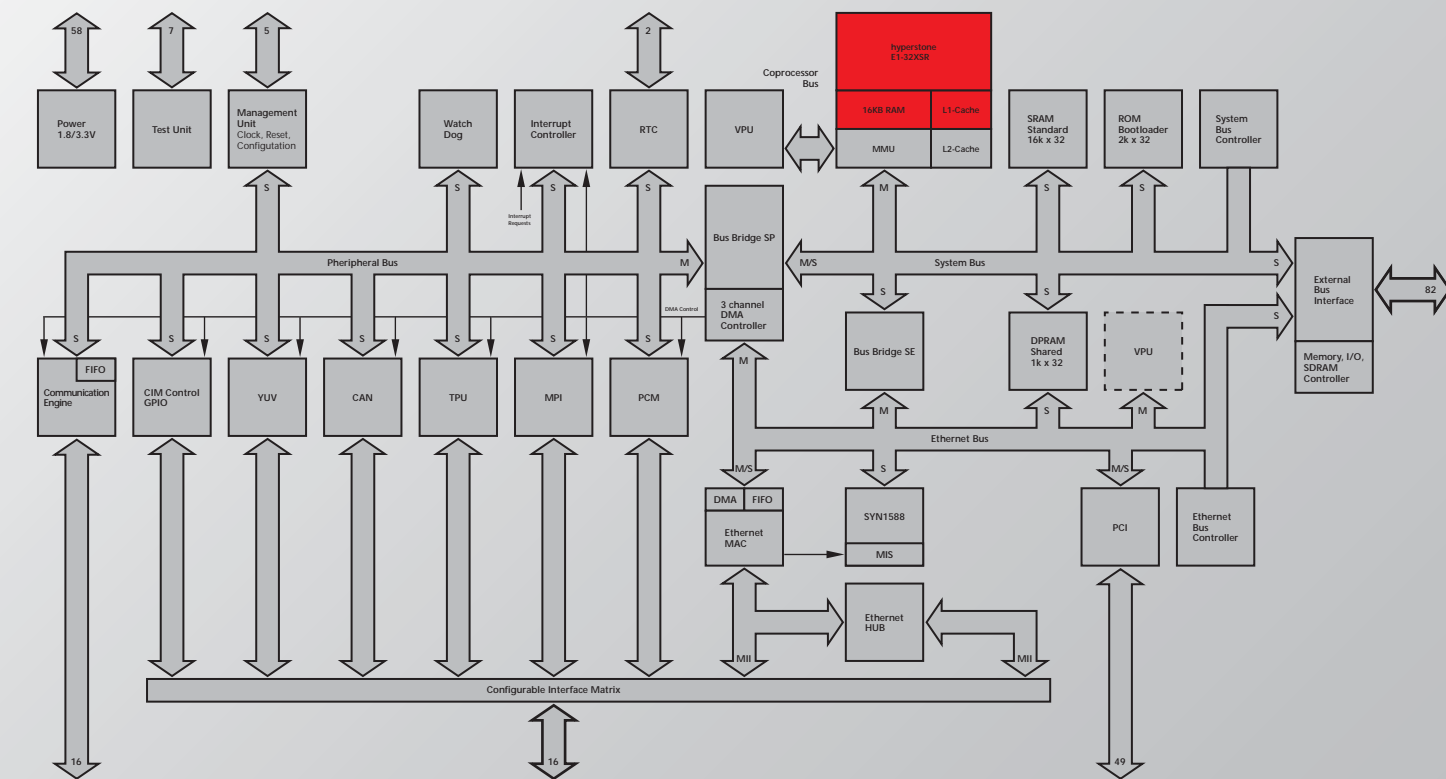
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