

AC108 SU

Octal Ultra Low Power 10/100 Ethernet Switch

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Silicon Solutions Empowering the Net™

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Altima Communications, Inc

Features:

- 8 - 10 Base-T / 100 Base-TX / 100 Base-FX ports
- Full Duplex or Half Duplex
- Flow Control
- FEFI on 100FX
- Very small package - 272PBGA
- 729 sq. mm footprint
- Very low power - TYP < 3W
- Selectable TX drivers for 1:1 or 1.25:1 transformers enable additional power reduction
- Cable Detect mode - TYP < 1.4W
- Fully compliant with IEEE 802.3 / 802.3u
- Scalable to 24 line-speed ports - 148,800 pps
- 4.8Gbps NuCleus™ (back-plane interface
- Unique, per port, scrambler seed for reduced emissions
- Baseline Wander Compensation
- Highly efficient LED outputs
- Reverse polarity detection and correction
- Store and forward bridging algorithm

Functional Description:

The AC108SU is a highly integrated, low power, eight port 10/100TX/FX Ethernet Switch. All ports are configurable to 10 Base-T / 100 Base-TX or 100 Base-FX. Store and forward algorithms are used to route packets at line speed in a non-blocking manner. Buffering and address tables are stored in external SDRAM / SGRAM, up to 4MBytes. A 4.8Gbps back-plane interface allows 3 AC108SUs to be cascaded together for 24 ports of line speed switching. On chip filtering and wave shaping eliminate the need for external hybrid filters.

Customer / Application:

- High Density, low cost switch

Available Collateral:

- AC108SU data sheet
- Verilog and Spice models
- Demo Boards & Schematics

Compelling evidence:

The AC108SU with external SDRAM/SGRAM provides all of the required features of an eight port 10/100TX/FX Ethernet Switch. The AC108SU has the smallest footprint and the lowest power consumption, on a per port basis, of any 8/16/24 port switch solution. When all system costs are considered; power, heat, components and real estate, the AC108SU will provide the lowest overall system cost and most reliable design.

Availability:

Samples: Q1/00

Production: Q2/00

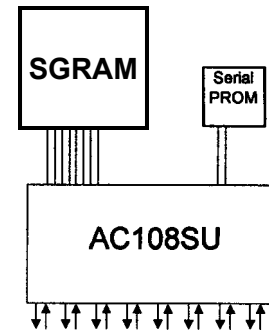
AC108SU

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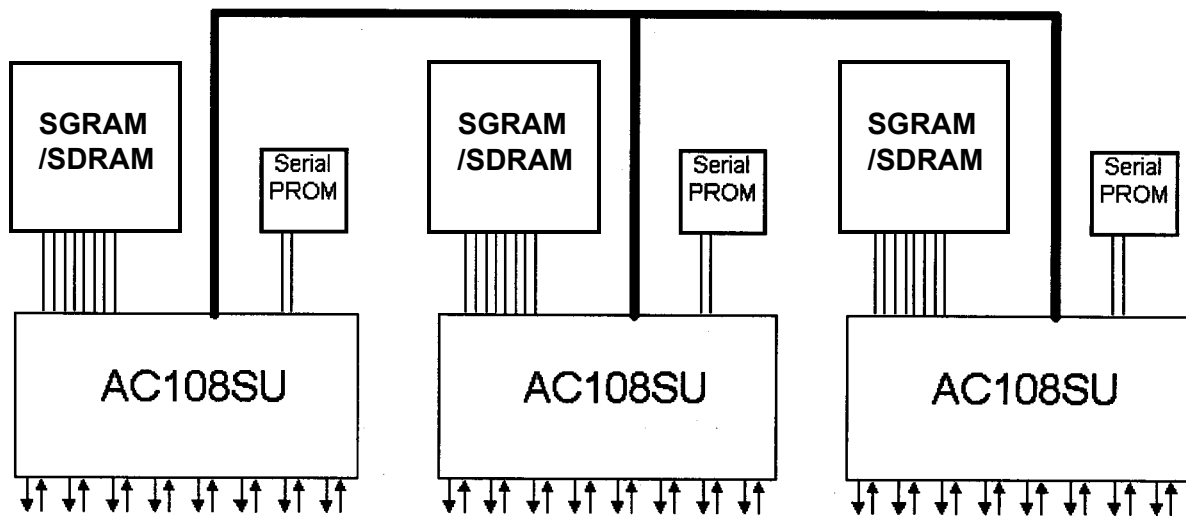
With three different physical media interfaces and a 4.8Gbps cascade bus the AC108SU Ultra Low Power Switch is the most comprehensive silicon solution for the ultra low cost 10/100 switch market. One AC108SU, a bank of SDRAM and a serial EEPROM are all that are needed to design a complete 10/100 non-blocking 8-port switch.

All the major components needed for a typical 24 port, unmanaged, switch are:

- 3-AC108SU
- a serial configuration EEPROM
- a single bank of SDRAM or SGRAM.



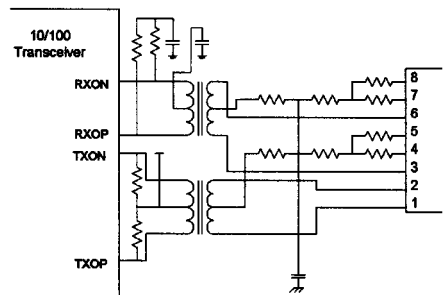
4.8Gbps NuCLeus Back-Plane



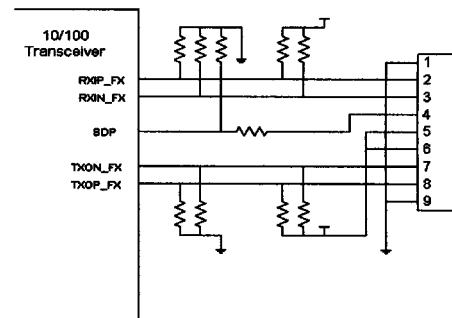
Power consumption, real estate and cost are all kept to a minimum.

For the physical media connectivity, support is provided for:

- 10Base-T - as either forced, parallel detected or negotiated 10Mbps -half / full duplex
- 100Base-TX - as either forced, parallel detected or negotiated 100Mbps - half / full duplex
- 100Base FX - forced 100Mbps - half / full duplex



Typical implementation of 10 Base-T or 10/100 TX physical layer connections. Please refer to the latest documentation to determine correct component values.



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