



A **BROADCOM** Company

AC208

PRODUCT Brief

8-PORT ULTRA LOW POWER 10/100 ETHERNET BRIDGED REPEATER

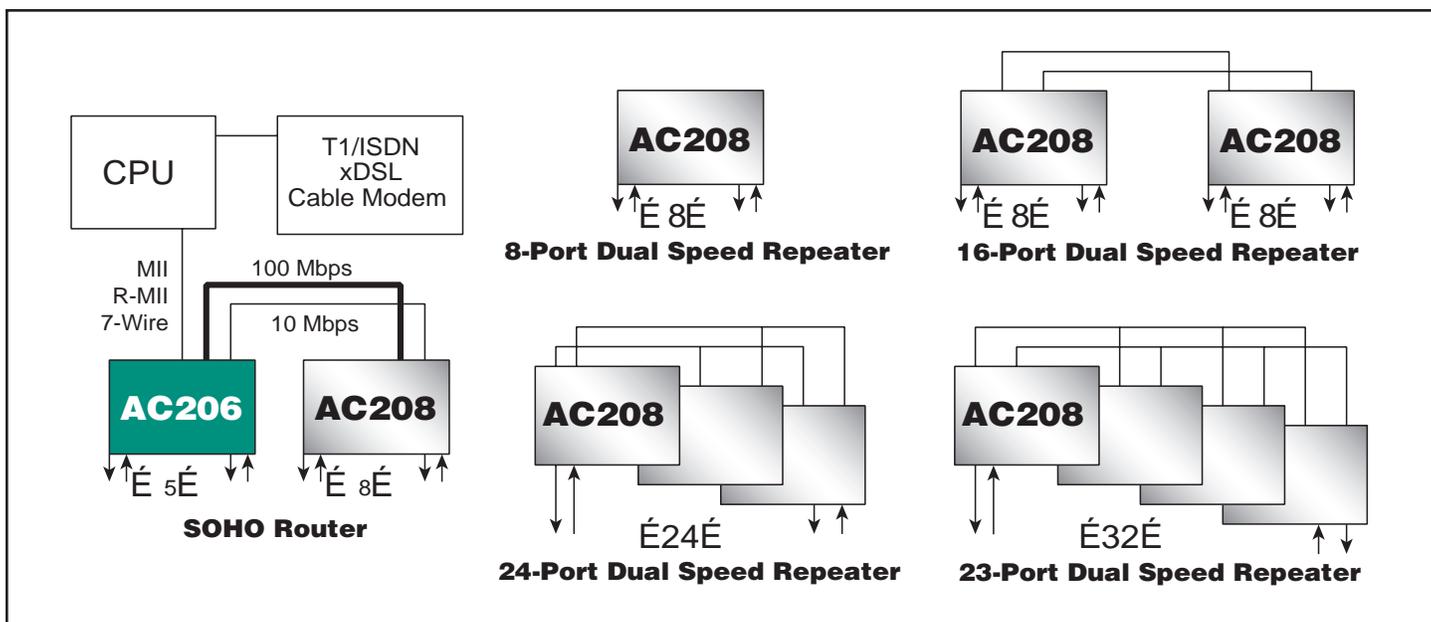
AC208 FEATURES

- The highest level of silicon integration achieved for an eight-port 10/100 bridged repeater
- The AC208 integrates:
 - Eight transceivers of 10BASE-T/100BASE-TX
 - One uplink port
 - 10M repeater
 - 100M repeater
 - Two-port bridge including:
 - 32 KB memory for address table and packet buffer
 - Local MAC address filter
 - Address table up to 1K entries
- Cascadable to 16, 24, and 32 port configuration
- Fully compliant auto-negotiation
- Very small package – 128-pin PQFP
 - 280 sq. mm footprint
- Very low power – typical < 1.8W
 - Selectable TX drivers for 1:1 or 1.25:1 transformers to enable additional power reduction
- Cable detect mode – typical < .32W
- Power down mode – typical < .08W

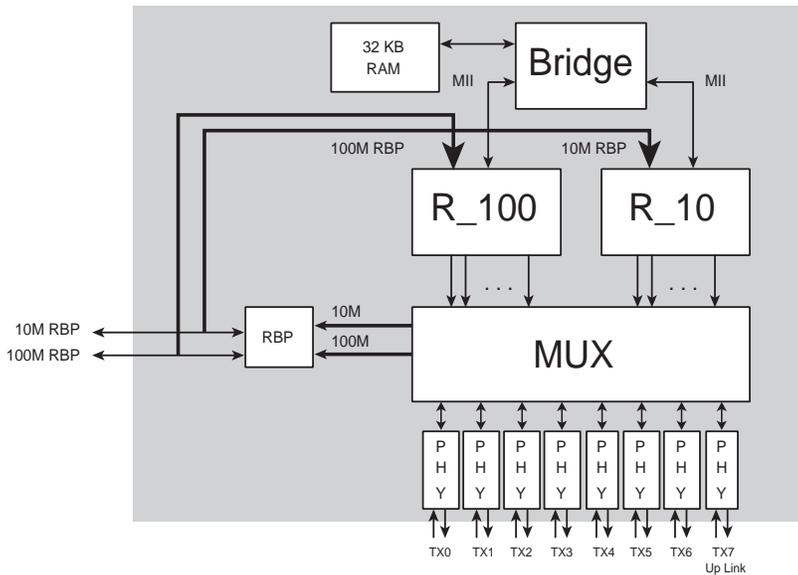
SUMMARY OF BENEFITS

- AC208 is the first chip of the AC208 product family with the same architecture and fabrication technology. Other members of the product family include AC207, AC206, AC205 and AC205i.
- Provides easy product migration.
- Provides seamless integration for WAN connections and system expansion.
- Includes lowest overall cost and form factor for 10/100 repeater hub and SOHO gateway and router design.
- Field-proven, industry-standard 10BASE-T/100BASE-TX Fast Ethernet transceivers lower overall system interoperability and reliability risks.
- Integrated memory reduces component cost and manufacturing and testing costs.
- Low power consumption and low heat dissipation allows high design density and low system cost.
- EEPROM-configured system parameter enables cost-sensitive architecture.
- Repeater backplane compatibility with AC108R enables flexibility and expandability in system architecture.

AC208 with AC206 System Block Diagram



AC208 Block Diagram



- Integrated PHY, Repeater and Bridge
- Integrated Packet Buffer Memory
- Integrated 1K MAC
- Programmable LEDs via EEPROM
- Backplane for Cascading

The Altima **AC208** is a highly integrated 0.25u CMOS silicon solution. It combines all the functions of a 10/100 dual-speed bridged repeater including PHY transceiver, two internal repeaters, two repeater backplane busses for expansion, a two-port bridge with 32 KB embedded memory.

The **AC208** contains eight 10BASE-T/100BASE-TX Fast Ethernet transceivers, one of which can be configured into a full-duplex uplink port. The transceivers perform all of the physical layer interface functions for 10BASE-T Ethernet on Category 3, 4, or 5 unshielded twisted pair (UTP) cable and 100BASE-TX Fast Ethernet on Category 5 UTP cable.

The **AC208** represents a marked improvement over the previous generation of the dual-speed bridged repeater family AC108R. Because the memory is embedded in the silicon, the **AC208** offers the obvious advantage of cost savings in the discrete memory device. Additionally, a 128-pin PQFP package means savings in manufacturing and testing.

Because the **AC208** has the smallest footprint and the lowest power consumption, on a per-port basis, of any micro-LAN solution, when all system costs are considered — power, heat,

components and real estate — the **AC208** provides the lowest overall system cost and most reliable design.

The **AC208** product family includes the **AC208**, AC207, AC206, AC205 and AC205i with the following features and configurations:

- **AC208**: 128-pin PQFP, eight-port TX with cascadable backplane
- AC207: 128-pin PQFP, eight-port TX with MII or 7-wire
- AC206: 128-pin PQFP, five-port TX with MII or reversed MII or 7-wire, cascadable repeater backplane
- AC205: 100-pin PQFP, five-port TX with MII or 7-wire
- AC205i: 100-pin PQFP, five-port TX with MII or 7-wire and single independent TX port for IP phone

