



A BROADCOM Company

AC206

PRODUCT Brief

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

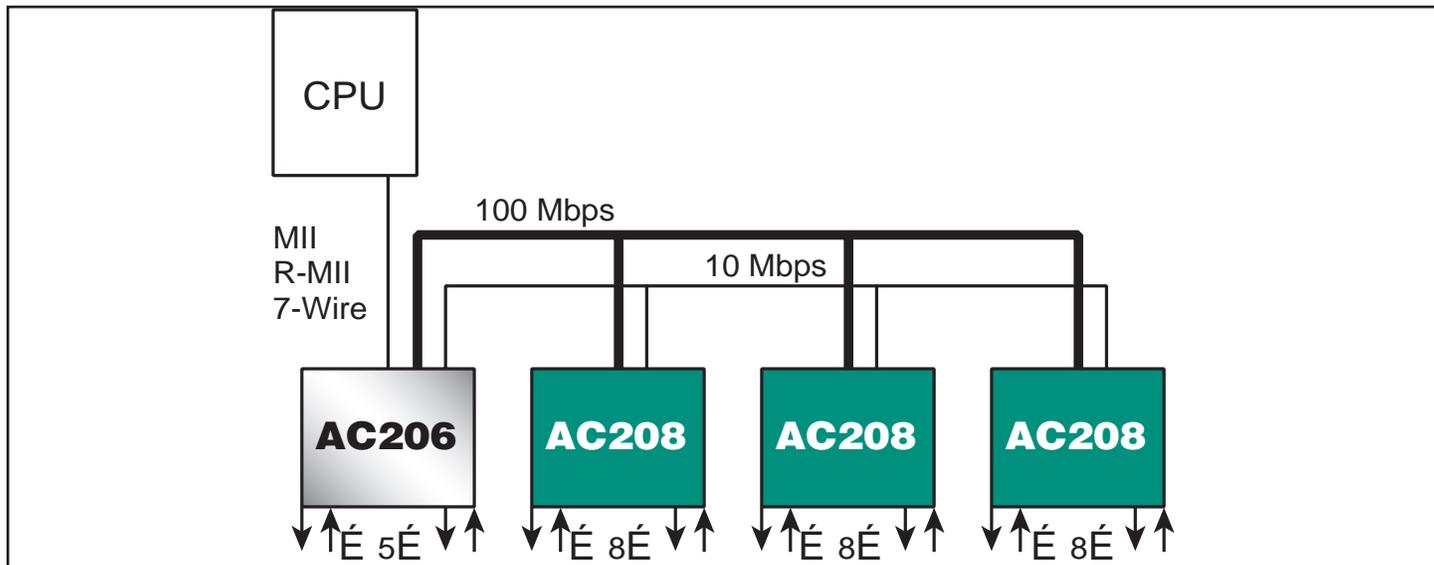
AC206 FEATURES

- The highest level of silicon integration achieved for a five-port 10/100 bridged repeater
- The AC206 integrates:
 - Five 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
- MII or reversed MII or 7-wire port
- Cascade to 13, 21, and 29 port configuration
- Fully compliant auto-negotiation
- Very small package – 128-pin PQFP
 - 280 sq. mm footprint
- Very low power – typical < 1.2W
 - Selectable TX drivers for 1:1 or 1.25:1 transformers to enable additional power reduction
- Cable detect mode – typical < .20W
- Power down mode – typical < .05W

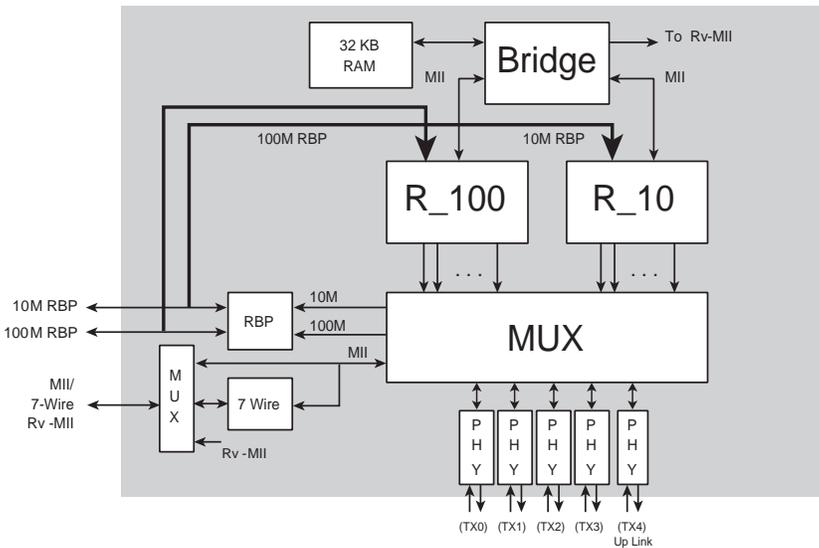
SUMMARY OF BENEFITS

- AC206 is a member of the AC208 product family, with the same architecture and fabrication technology. Other members in the product family include AC208, AC207, 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 design 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 allow high design density and low system cost.
- EEPROM-configured system parameter enables cost-sensitive architecture.
- Configurable MII or reversed MII or 7-wire interface allow versatile application with WAN connectivity.

AC206 Application with AC208 System Block Diagram



AC206 Block Diagram



- Integrated PHY, Repeater and Bridge
- Integrated Packet Buffer Memory
- Integrated 1K MAC
- Programmable LEDs via EEPROM
- Backplane for Cascading
- MII or Reversed MII or 7-Wire Interface

The Altima AC206 is a highly integrated 0.25u CMOS silicon solution. It combines all the functions of a 10/100 dual-speed bridged repeater, including PHY transceivers, an MII or reversed MII or 7-wire hard-wire configurable interface, two internal repeaters, two repeater backplane busses for expansion, and a two-port bridge with 32 KB embedded memory.

The AC206 contains five 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 MII, reversed MII and 7-wire compatible MAC interface allows the AC206 to be designed into many different applications, reducing the number of separate devices necessary to meet multiple design requirements.

The AC206 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 AC206 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 AC206 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 AC206 provides the lowest overall system cost and most reliable design.

The AC206 is a member of the AC208 product family. 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 cascable 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, cascable 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

