AC205 PRODUCT Brief

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

AC205 FEATURES

- The highest level of silicon integration achieved for a five-port 10/100 bridged repeater
- The AC205 integrates:
  - Five transceivers of 10BASE-T/100BASE-TX
  - 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 7-wire port
- Fully compliant auto-negotiation
- Very small package – 100-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

- AC205 is a member of the AC208 product family, with the same architecture and fabrication technology. Other members in the product family include AC208, AC207, AC206 and AC205i.
- Provides easy product migration.
- Provides seamless integration for WAN connections and system expansion.
- Provides lowest overall cost and form factor for 10/100 repeater hub design and SOHO gateway and router design.
- Utilizes field-proven, industry-standard 10BASE-T/100BASE-TX Fast Ethernet transceivers to 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 7-wire interface allows versatile application with WAN connectivity.

AC205 Application with AC208 System Block Diagram
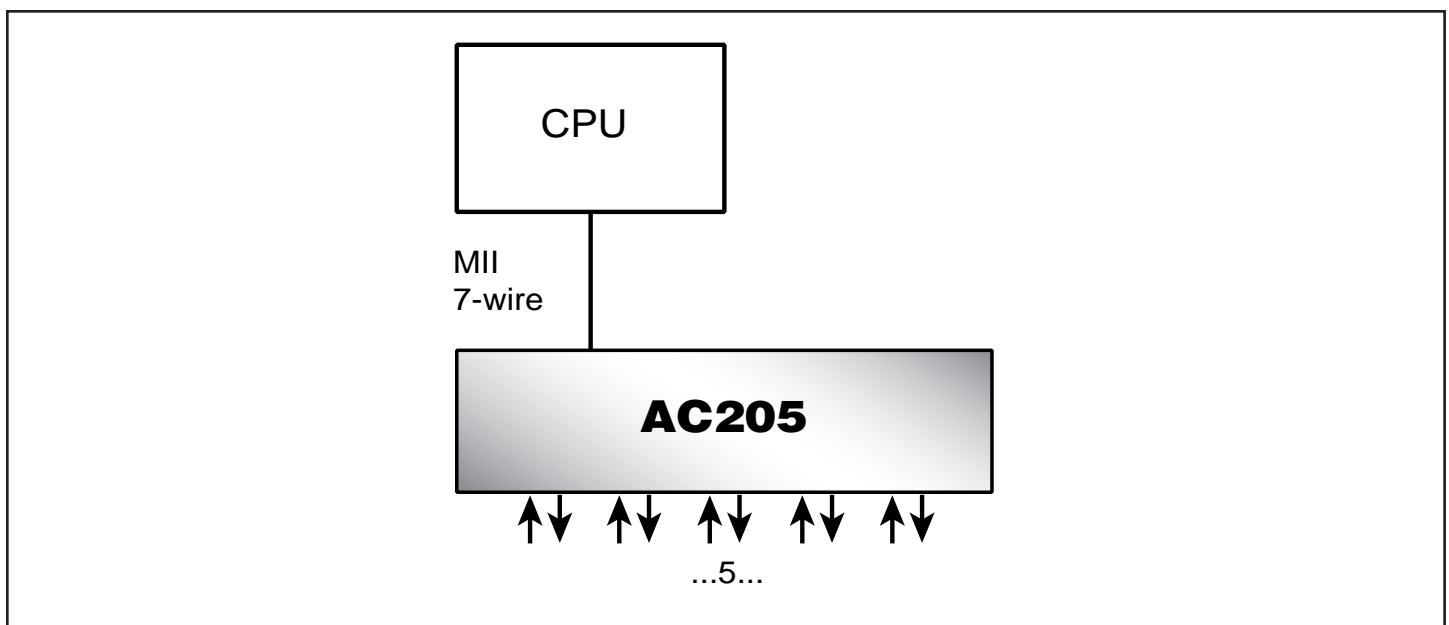
AC205 Block Diagram
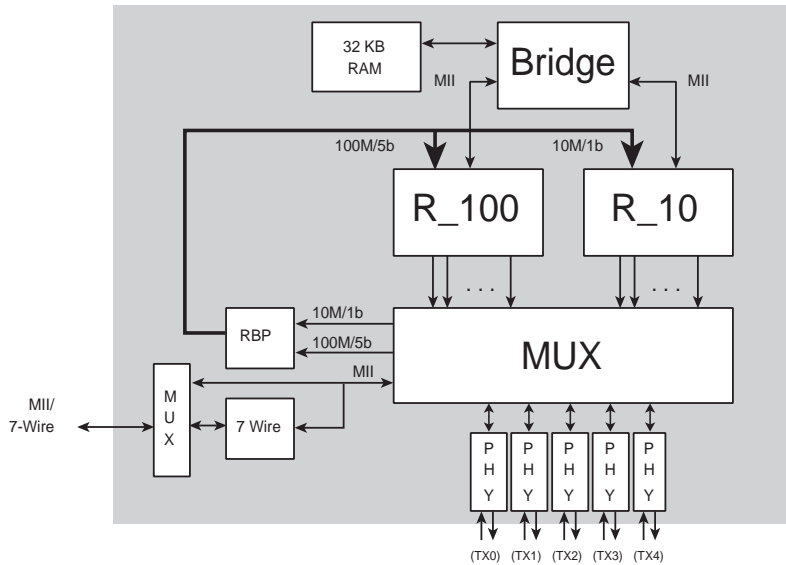
- Integrated PHY, Repeater and Bridge
- Integrated Packet Buffer Memory
- Integrated 1K MAC
- Programmable LEDs via EEPROM
- MII or Reversed MII or 7-wire Interface

The Altima **AC205** 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 7-wire hard-wire configurable interface, two internal repeaters, and a two-port bridge with 32 KB embedded memory.

The **AC205** 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 and 7-wire compatible MAC interface allows the **AC205** to be designed into many different applications, reducing the number of separate devices necessary to meet multiple design requirements.

The **AC205** 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 AC205 offers the obvious advantage of cost savings in the discrete memory device. Additionally, a 100-pin PQFP package means savings in manufacturing and testing.

Because the **AC205** 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 **AC205** provides the lowest overall system cost and most reliable design.

The **AC205** is a member of the AC208 Product Family. The AC208 Product Family includes the AC208, AC207, AC206, **AC205** and AC205-I 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

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ALTIMA COMMUNICATIONS, INC.
16215 Alton Parkway, P.O. Box 57013
Irvine, California 92619-7013