The MT90222, MT90223, and MT90224 are multi-rate inverse multiplexing for ATM (IMA) and transmission convergence (TC) devices that process ATM traffic for transmission over T1/E1, fractional T1/E1, and DSL lines. This family of ICs provides complete hardware and software IMA solutions. These ICs integrate features that optimize flexibility and ease implementation of broadband access equipment.

The MT90222 is a four-port IMA/TC PHY that enables transmission of ATM cells over a group of four independent T1/E1 or DSL links, and accommodates up to four IMA logical groups. Individual links also support transmission rates of up to 10 Mb/s.

The MT90223 is an eight-port IMA/TC PHY that enables transmission of ATM cells over a group of eight independent T1/E1 or DSL links, and accommodates up to eight IMA logical groups. Each port supports data rates up to 5 Mb/s.

The MT90224 is a 16-port IMA/TC PHY that enables transmission of ATM cells over a group of 16 independent T1/E1 or DSL links, and accommodates up to eight IMA logical groups. Data rates of up to 2.5 Mb/s are also supported through a serial bus interface.

Flexible, Easy-to-Implement Chips For Broadband Access Equipment

➜ Identical package and pin-out locations support multiple combinations to accommodate four- to 32-ports on a single IMA line card with scalable cost

➜ Multi-rate functionality allows the devices to support ATM traffic over T1/E1, fractional T1/E1 or DSL carriers

➜ Up to six devices can be cascaded into IMA groups via a TDM ring that handles up to 32 links

➜ Mixed-mode services allow independent IMA and TC layer applications, as well as symmetrical and asymmetrical DSL links

Dependable Implementation

➜ Field-proven software state machines deliver robust designs

➜ Complete hardware and software solution is reinforced by interoperability track record

➜ Flexible TDM interface is compatible with most off-the-shelf framers without glue logic

Advanced Features

➜ Pre-processing of Rx ICP cells off-loads CPU

➜ Loopback capability at both TDM and UTOPIA ports simplifies diagnostics

➜ Port aggregation allows data rates up to 10 Mb/s to be supported

➜ True common and independent transmit clocking options for each link

➜ 16-bit microprocessor interface

Customer Support

All three devices are supported by an evaluation board, device driver, IMA CORE state machine software and Zarlink's network of in-house field application and design engineers.

Applications

➜ Wireless base stations and controllers
➜ Integrated multi-service access platforms
➜ ATM edge switches
➜ DSLAMs

IMA/TC Line Card

IMA has been used very successfully to bridge the bandwidth gap between T1/E1 and DS3/E3 in ATM broadband access applications. With the rapidly expanding popularity of this function comes the market demand for a variety of configurations: 4 ports, 8 ports, 16 ports, 24 ports and 32 ports. The MT90222/3/4 series of IMAs address this requirement in a seamless and cost-effective fashion. DSL deployment provides an inexpensive means for broadband users to be connected to the ATM network.

Zarlink's multi-rate IMAs offer a simple solution to doubling or quadrupling this bandwidth without costly installation expenses on the part of service providers.

4 to 32 Port T1/E1 Line Card

T1/E1 Framers
MT9076
MT9072

4 to 32 Port xDSL Line Card

0 to 10Mbps xDSL MODEM

Single Design 4 to 32 Port IMA/TC Line Card

IMA Chip Position **1**

IMA Chip Position **2**

Digital PLL MT9045

OSC

Logic

Memory

Board Processor

Optional Multi-channel Echo-cancellation MT93L00 MT93L04

Optional AAL1 or AAL2 MT90528 MT90503