

# Tellabs® 1000 Multi-Service Access (MSA) Series Inverse Multiplexing for ATM Plug-in Card (IMA)

## Overview

The Inverse Multiplexing for ATM (IMA) plug-in card provides Native end-to-end ATM capability over copper transport by multiplexing ATM cells across multiple circuits. This enables ATM QoS and greater than 1.5 Mbps services from copper-fed remotes. The IMA plug-in card treats multiple T-1 lines as a single ATM channel, known as an IMA group. The IMA card can be an uplink to an ATM network as a service drop to a customer, or as an interterminal data connection between Tellabs 1000 MSA series terminals.

Providing up to 12 Mbps of guaranteed services over copper fed remote terminals, the IMA plug-in card logically groups physical layer technologies such as T-1, HDSL and HDSL2, making it capable of delivering greater bandwidth and guaranteed Service Level Agreements (SLAs) over almost any copper facility.

The integrated IMA is a cost-effective complement to all copper-fed systems currently deployed or to new greenfield systems where xDSL services are planned. The IMA plug-in card supports up to eight T-1 or T-1HD links. One IMA plug-in card supports up to four groups and can be configured as:

- One IMA Group of two to eight T-1 links
- Two IMA Groups, each group requiring at least two T-1s, with the total T-1s not exceeding eight
- Three IMA Groups, each group requiring at least two T-1s, with the total T-1s not exceeding eight
- Four IMA Groups, with two T-1s each

The IMA plug-in card supports the following line cards as IMA links:

- T-1/T-1X
- T-1HD (Adtran)
- T-1HD (ADC)
- T-1HD2 (Adtran)

## Features and Benefits

- Supports up to four IMA groups and eight T-1 lines
- Each group is provisionable as ATM uplink or ATM service
- Supports up to 255 VCCs
- When a T-1 card is used as an IMA link and provisioned within an IMA “ATM Uplink” group, it can provide the terminal reference timing clock
- Supports LET aggregation of data traffic at the edge of your network

## LEDs on the faceplate of the IMA card

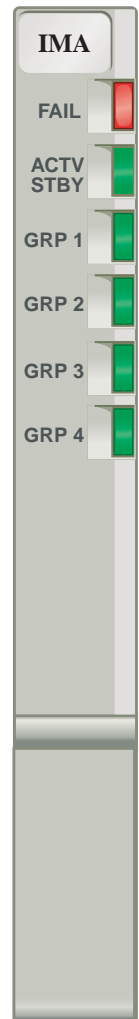
### indicate the following conditions:

- A red FAIL — plug-in card failure, CPU failure, or in power-up diagnostics
- A blinking yellow ACTV/STBY — In pump-up mode
- Non-blinking yellow ACTV/STBY — plug-in card is provisioned and is in standby mode
- A green ACTV/STBY — plug-in card is active and at least one IMA group can pass ATM traffic
- A green GRP 1 to GRP 4 — active
- A red GRP 1 to GRP 4 — inactive

## Specifications

### Environmental

- Operating temperature: -40° to +149° F (-40° to +65° C)
- Humidity: (relative) 5–95% non-condensing
- Maximum power consumption: 10 W



### *Dimensions*

- Height: 5.125 in (13.018 cm)
- Width: 0.563 in (1.429 cm)
- Depth: 10.5 in (26.67 cm)
- Weight: 0.5 lb (0.30 kg)

### *Compliance*

- ATM Forum Inverse Multiplexing for ATM Specification Version 1.1, Appendix D (Reference 41)
- UNI.3.1 specification Appendix C

One Tellabs Center  
1415 West Diehl Road  
Naperville, IL 60563  
United States

Tel +1 630 798 8800  
Fax +1 630 798 2000

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