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INTEGRATED LINE ACCESS (ILA) DATASHEET

The Integrated Line Access (ILA) is an innovative, modular solution for accessing traditional two-wire services (i.e., POTS and DSL). The ILA consists of Access Modules that plug directly into the downstream connectors of the DSLAM or splitter—one per DSLAM connector (accommodating standard and custom port counts)—and are daisy-chained together for test access and communications. Within the network, the ILA resides between the subscriber lines and CO-serving equipment, enabling service providers to non-intrusively monitor the line or perform intrusive upstream and downstream testing. The ILA test access functionality is controlled by TL-1 messaging compliant with GR-834 standards.

Product Features

Features of the ILA include:

- POTS/ADSL/ADSL2+ compatibility;
- Remote test access supporting fault isolation and loop characterization;
- Non-intrusive monitoring;
- Direct test access for intrusive testing toward the local loop (downstream) and/or the DSLAM and switch (upstream);
- Compact size to fit all applications;
  - Master Access Module:
    (H x W x D) 0.75" x 3.6" x 5”
    19 x 91.5 x 127 mm
  - Access Module:
    (H x W x D) 0.75" x 3.6" x 5”
    19 x 91.5 x 127 mm
- Daisy-chain capability;

  The architecture is based on Shelf, Slot and Lines.
  Up to 32 ILA Access Modules can be controlled by one Master Access Module yielding a total of 768 lines of test access in a single access system. Additionally, the externally mounted Master Access Controller, which supports up to 8 Access Module Systems along with its total of 8 Slave Access Controllers that each also support additional 8 Access Module Systems, can provide control for up to 72 Access Module Systems, each containing the 32 Module systems yielding a total of over 55,000 lines of test access.

The ILA can be configured for either small- or large-line-count applications.

- For small-line-count applications, the Controller functionality of the ILA system resides on the first Access Module of the daisy-chained system, called the Master Access Module. Control and TAP extensions to the Access Modules are made by daisy-chained connections on each module via RJ-45 connectors.
- For large-line-count applications, the implementation of a separately mounted 1RU ILA Master Access Controller replaces the functionality of the Master Access Module. Each Master Access Controller with its Slave Access Controllers enables the connection of up to 24 of the 32-module systems.

- Electrical
  - Input Voltage: -40.5 VDC to -57 VDC
  - Max. Power consumption: 5W

- Access Module Capacity 24 Lines

- Maximum System Capacity
  - Master Access Module can drive one Shelf (32 Access Modules) daisy-chained together (32*24): 768 Lines
  - Each Master Access Controller can drive 8 Shelves of 32 Access Modules (8*32*24): 6144 Lines

- Master Access Controller together with 8 Slave Access Controller can drive 2304 (9*8*32) Access Modules (2304*24): 55296 Lines

- Test Access Port (TAP)
  - Master Access Module: One 4-wire full split TAP
  - Master Access Controller: Two 4-wire full split TAPs
  - Slave Access Controller: Two 4-wire full split TAPs

- Test Modes
  - Loop Around Mode (POTS/DSL)
  - Open Mode (POTS/DSL)
  - Short Modes (POTS/DSL)
  - Hitless Monitor Mode (POTS/DSL)
  - Split Mode (POTS/DSL)
  - Bridge Mode (POTS/DSL)

- Line and TAP Conditioning
  - Short
  - Open

- Self Diagnostics
  - TAP
  - Inter-connect Link

- Control
  - Via industry standard TL1 commands GR-834
  - Custom commands

- Interface
  - Ethernet: 10/100BT Port
    - Left LED: Green when cable connected; Blinking when there is activity
    - Right LED: Amber when speed is 10Mbps; Green when speed is 100Mbps
  - RS232D: Serial / Local craft access and control; Communications from terminal server on RJ-45 connector
    - Left LED: Blinking green when there is activity on Tx
    - Right LED: Blinking green when there is activity on Rx
  - Modem (Optional): V92, 56 kbps (in Master Access Module & Master Access Controller)
  - 4W TAP Port: 1 x RJ45 in Master Access Module; 2 x RJ45 in Master/Slave Access Controller (Supports two testheads)

- Inter-connect Link: 1 x RJ45
- Line OUT (MDF): 1 x RJ-21 25-pair female connectors
- Line IN (POTS splitter): 1 x RJ-21 25-pair male connectors

- Access Module LED
  - Status: Green when accessed
Blinking green in Test mode

- Master Access Module / Controller LED
  - Status: Green when powered
Blinking green in Test mode
  - Alarm: Red for major alarm
Blinking red for minor alarm conditions
- Environmental
  - Operating Temperature: -40°C to +70°C
  - Storage Temperature: -40°C to +80°C
  - Humidity: 5-95% non-condensing

- Physical Dimensions:
  - Master / Slave Access Controller: 1U: (H x W x D) 1.75” x 17.5” x 5.25”
44.5 x 444.5 x 133.5 mm

(Each chassis is rack mountable in either a 19” or 23” ANSI and ETSI dimensioned rack or cabinet)
  - Master Access Module: (H x W x D) 0.75" x 3.6" x 5”
19 x 91.5 x 127 mm
  - Access Module: (H x W x D) 0.75" x 3.6" x 5”
19 x 91.5 x 127 mm
- Alarm Status Notification (in Master/Slave Access Controller)
  - NO and NC contacts

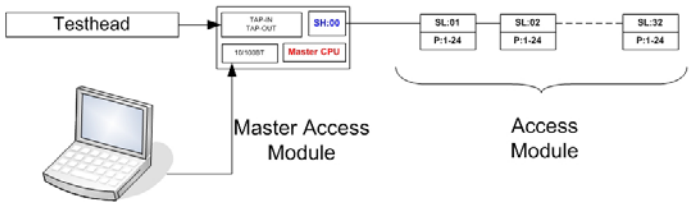
- Extra Features
  - Access Module Serial Number Detection
  - Access Module Order Detection

- Certification
  - NEBS Level 3
  - CE Mark

- Compatibility
  - POTS / ADSL /ADSL2+ / SHDSL / E-SHDSL

ILA: Master Access Module Architecture

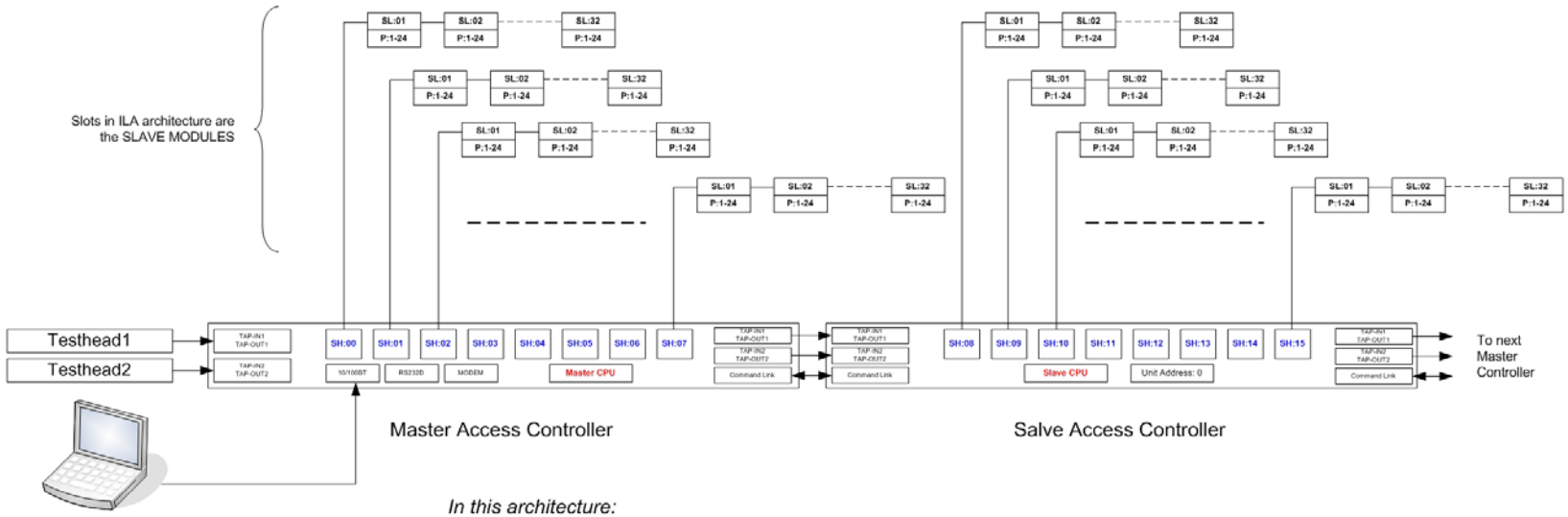
(For small-line-count applications)



In this architecture:
- An Ethernet link to each Master Access Module is required.
- All Master Access Modules are recognized as Shelf zero.

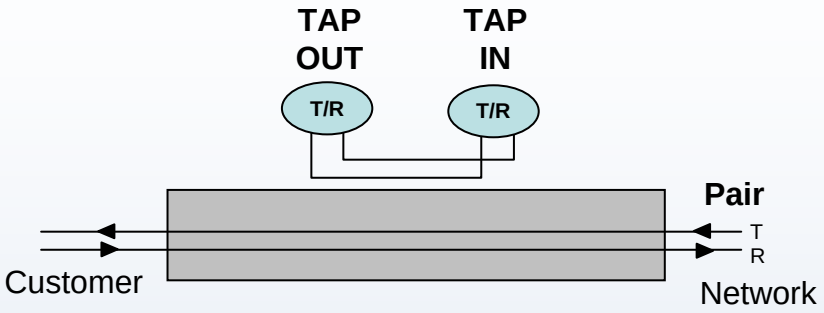
ILA: Master Access Controller with Slave Access Controller Architecture

(For large-line-count applications)

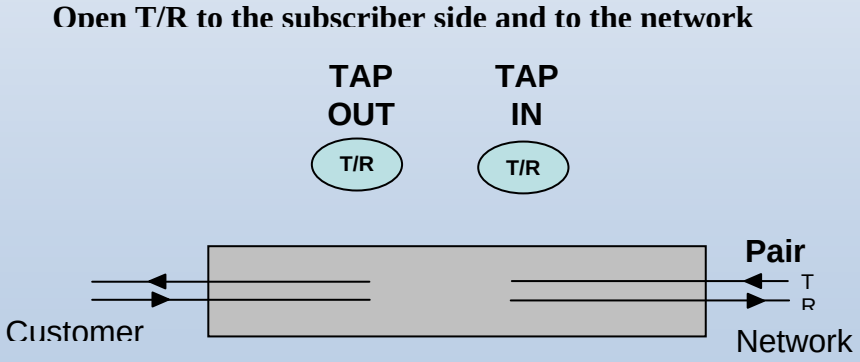


In this architecture:
- The first controller is a Master Access Controller, which has *Ethernet, RS232 and optional 56k V92 Modem.*
- The remaining controllers are Slave Access Controllers.
- Salve Access Controller *needs to be assigned an address using its rotary switch.*

2 – Wire Access: Loop Around Mode (POTS/DSL)



2 – Wire Access: Open Mode (POTS/DSL)



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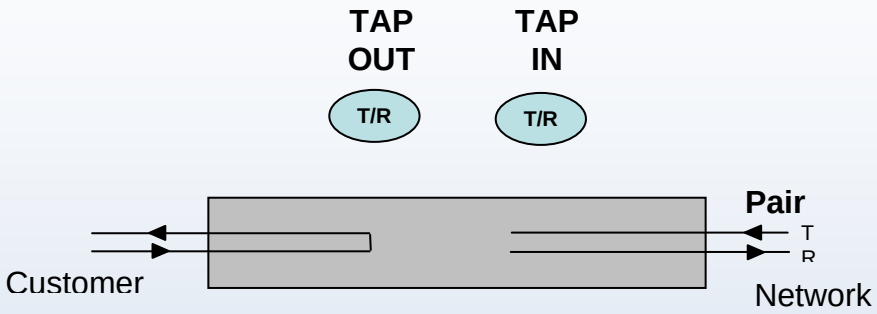
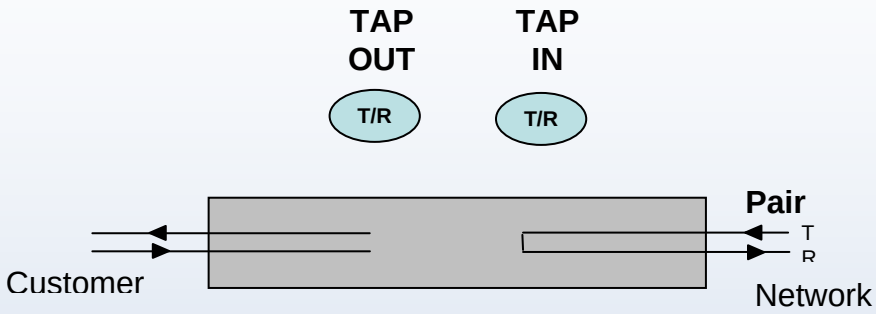
2 – Wire Access: Short Modes (POTS/DSL)

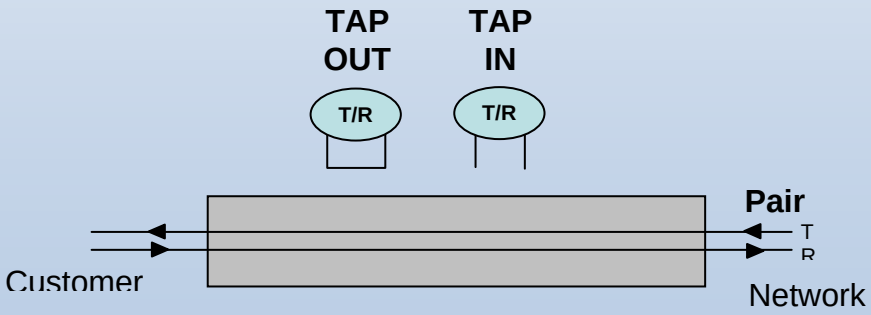
Short T/R to the subscriber side



Short T/R to the network side



Short T/R of TAP OUT



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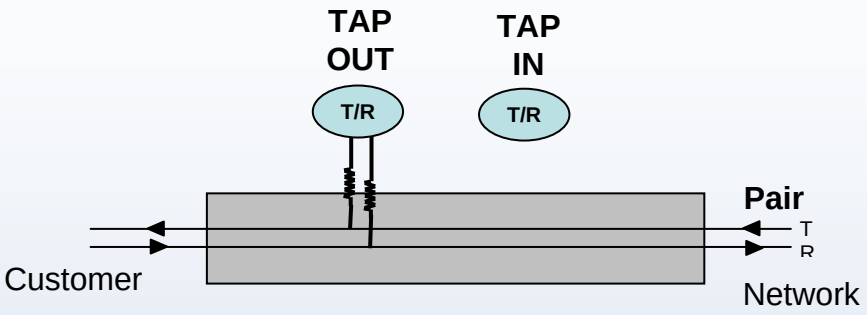
2 – Wire Access: Hitless Monitor Mode (POTS/DSL)



Access device must provide hitless access so as not to disrupt ADSL service

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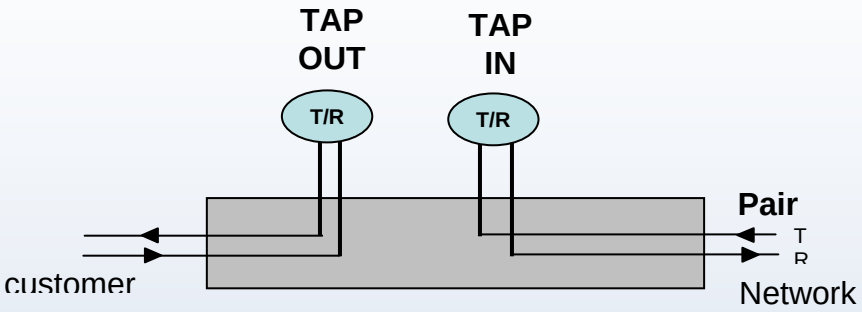
2 – Wire Access: Split Mode (POTS/DSL)



Look-in and Look-out are presented to the testhead in order to do testing in the appropriate direction.

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2 – Wire Access: Bridge Mode (POTS/DSL)