



# Product Overview

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This chapter describes the Cisco IAD1101 integrated access device chassis, and the line interface modules supported by the Cisco IAD1101. This chapter includes the following sections:

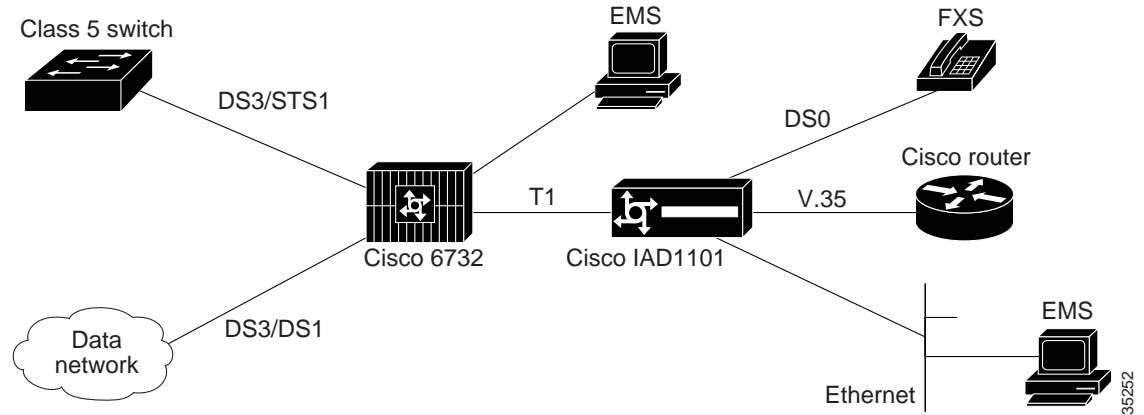
- Features
- System Components:
  - Chassis
  - Line Interface Modules

## Features

The Cisco IAD1101 integrated access device provides the following features and technologies for customer premise applications:

- 16 integrated FXS circuits
  - 8 additional FXS circuits from optional FXS line interface module
- Two T1 links support IP over frame relay and IP over Point-to-Point Protocol (PPP)
- IP routing on 10BaseT Ethernet port and T1 ports
  - Routing information protocol (RIP) versions 1 and 2
  - Network address translation (NAT) as described in RFC 1631
  - Access lists for packet filtering
- Interoperates with Cisco 6732 Multi-Service Access Platform
  - Integrated access incorporates voice and data applications
  - GR-303 gateway application concentrates analog circuits from Cisco 6732 to Class 5 switch
  - Unified management using Cisco 6700 Series Element Management System (EMS) software
  - Remote provisioning of Cisco IAD1101 over inter node data link (INDL)
- V.35 port for physical layer cross-connect to an external router
- Local management through console (EIA/TIA-232) port

**Figure 1-1 Cisco IAD1101 Integrated Access Application**



## System Components

### Chassis

Figure 1-2 shows the front panel of the Cisco IAD1101 chassis.

**Figure 1-2 Cisco IAD1101 Front Panel**

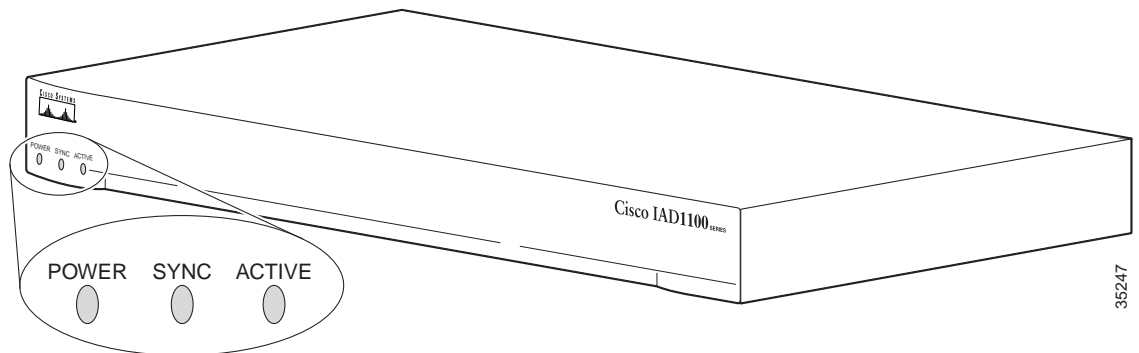


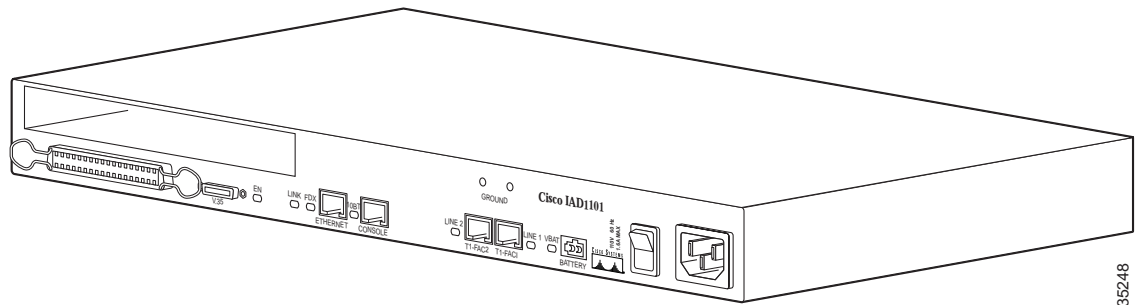
Table 1-1 describes the LEDs on the front panel.

**Table 1-1 Front Panel LED Indicators**

LED	Status	Condition
POWER	Green	Cisco IAD1101 is on.
	Off	Cisco IAD1101 is off.
SYNC	Green	Cisco IAD1101 is synchronized with an external timing source.
	Off	Cisco IAD1101 is not synchronized.
ACTIVE	Green	Cisco IAD1101 is operational or performing a software upgrade.
	Off	Cisco IAD1101 is powered off or initializing system software.

Figure 1-3 shows the rear panel of the Cisco IAD1101 chassis.

**Figure 1-3 Cisco IAD1101 Rear Panel**



The rear panel contains the following connectors:

- Expansion slot for line interface module (FXS/16)
- 50-pin subscriber connector for up to 24 FXS circuits (16 onboard, 8 expansion)
- **V.35**: 26-pin serial interface
- **ETHERNET**: 10Base-T Ethernet interface (RJ-45)
- **CONSOLE**: EIA/TIA-232 (RJ-45) console port for local access using an EMS workstation



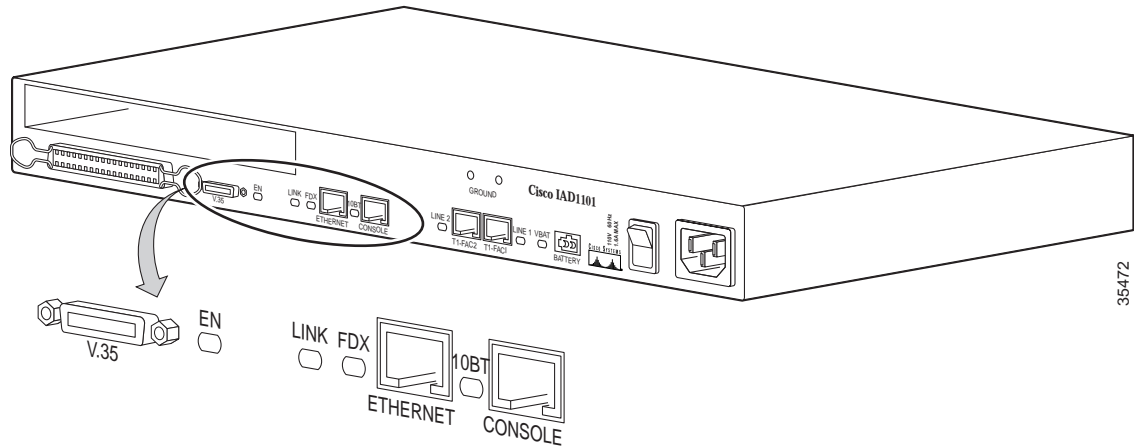
**Note** The console port does not support a terminal connection.

- **T1-FAC2** and **T1-FAC1**: T1 interfaces (RJ-48)
- **BATTERY**: Battery backup connector
- **GROUND**: Ground connector
- Power switch and AC power cord connector

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Figure 1-4 shows the connectors and LEDs on the left side of the rear panel, and Table 1-2 describes the LEDs.

**Figure 1-4** Subscriber, V.35, Ethernet, and Console Connectors

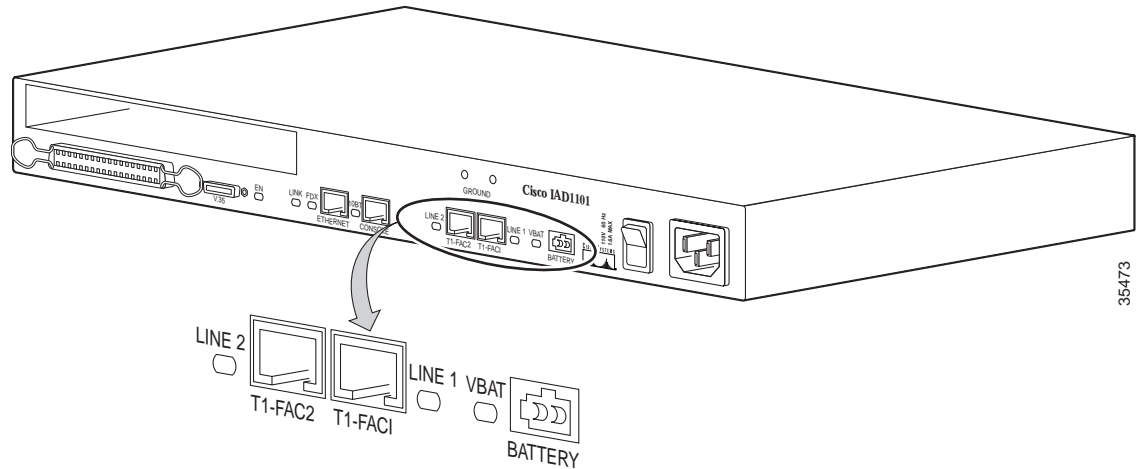


**Table 1-2** V.35, Ethernet, and Console LED Indicators

LED	Status	Condition
EN	Green	V.35 serial DCE cable is connected to the V.35 port.
	Yellow	V.35 serial DTE (incorrect) cable is connected to the V.35 port.
	Off	No cable is connected to the V.35 port.
LINK	Green	Ethernet port is active.
	Off	Ethernet port is not active.
FDX	Green	Ethernet port is operating in full-duplex mode.
	Off	Ethernet port is not operating in full-duplex mode.
10BT	—	Reserved for future use.

Figure 1-5 shows the connectors and LEDs on the right side of the rear panel, and Table 1-3 describes the LEDs.

**Figure 1-5 T1 and Battery Connectors**



**Table 1-3 T1 and Battery LED Indicators**

LED	Status	Condition
LINE 2	Green	T1 line is framed and in service.
	Yellow	T1 port is experiencing far end failure.
	Red	T1 port is experiencing loss of signal (LOS), loss of frame (LOF), or hardware failure.
	Off	T1 port is out of service
LINE 1	Green	T1 line is framed and in service.
	Yellow	T1 port is experiencing far end failure.
	Red	T1 port is experiencing loss of signal (LOS), loss of frame (LOF), or hardware failure.
	Off	T1 port is out of service
VBAT	Green	Battery is supplying power to the Cisco IAD1101.
	Off	Battery is not connected or not supplying power.

## FXS Circuits

The Cisco IAD1101 provides 16 FXS circuits with ring generation and line test functionality. These FXS circuits support loop start and ground start operation, with full-time on hook transmission.

For FXS circuit specifications, see the “FXS/16” section on page 1-6.

## T1 Ports

The two T1 ports on the Cisco IAD1101 can be provisioned for T1 (long haul) or DSX1 (short haul) signaling and line buildouts.

- Bandwidth: 1.544 Mb/s
- Frame format: ESF, SF
- DS0 mapping: D4
- Line coding: AMI, B8ZS

## Line Interface Modules

Line interface modules for the Cisco IAD1101 integrated access device are hot swappable. They can be inserted into (or removed from) the Cisco IAD1101 module slot with or without power applied to the system without incurring damage.

The following line interface modules are available for the Cisco IAD1101:

- FXS/16

## FXS/16

Each FXS/16 line interface module provides 16 circuits of FXS service.



### Note

Only 8 POTS/FXS circuits on the FXS/16 module are supported in a Cisco IAD1101 chassis, giving a total of 24 POTS/FXS circuits—16 internal circuits, and 8 on the FXS/16 module.

**Figure 1-6** FXS/16 Front Panel



- Integrated ring generation
- Line test functionality
- Reverse loop current feed
- On-hook transmission
- Self test capacity of analog interfaces

## Specifications

- Loop limit: 630 ohms
- Off-hook line feed: 25mA (+/- 23mA)
- Impedance: 600 ohms
- Signaling: loop start, ground start, and wink start

## LEDs

The LEDs on the FXS/16 module indicate module status. (See Table 1-4.)

**Table 1-4** FXS/16 LED Indicators

LED	Status	Condition
FAIL	Red	FXS/16 module has failed.
	Off	FXS/16 module has not failed.
BUSY	Green	FXS/16 module is in service, and at least one port is in service.
	Off	FXS/16 module in not in service, or no ports are in service.

Alternately blinking FAIL and BUSY LEDs indicate that a slot has been provisioned in EMS for another type of module.

## Connectors

Use the 50-pin analog subscriber connector to connect the FXS/16 module. See Appendix B, “Connector and Cable Specifications,” for connector information.

