

Expansion Modules

The Catalyst 3900 offers several types of expansion modules that you can use to increase the number of ports on your switch or to interconnect your switch with other switches. The expansion modules currently available include:

- Stack port module
- 4-port fiber Token Ring module
- 4-port UTP/STP Token Ring module
- Multimode fiber ATM module
- Token Ring Inter-Switch Link module

Stack Port Module

The Stack port is an optional single-port expansion module with a special 50-pin connector that can be inserted into the back of the Catalyst 3900 and allows you to stack, or interconnect, switches. This port operates in FDX mode at speeds of 140 Mbps. It switches packets at wire speeds with low forwarding latency. When interconnected via the Stack port, the members of the stack function as one operational system. You can attach the Stack port directly to the Stack port of another Catalyst 3900 or to a Stack Matrix unit. For more information about stacking Catalyst switches, refer to the “Interconnecting Catalyst 3900 Switches” chapter.

4-Port Fiber Token Ring Module

The 4-port fiber Token Ring module provides four additional Token Ring connections for the base Catalyst 3900 Token Ring switch. The ports of this expansion module support four pairs of multimode fiber connections via ST-type optical transmitter and receiver ports. The ports can be connected to the following:

- A station, in which case the port acts like an active MAU port.
- A port on a concentrator, in which case the port acts like a station.
- The RI or RO ports of a Token Ring concentrator or hub.
- The ports of another 4-port fiber Token Ring expansion module installed in another Catalyst 3900, forming a TokenChannel.

4-Port UTP/STP Token Ring Module

The 4-port UTP/STP Token Ring module provides four additional Token ring connections for the base Catalyst 3900 Token Ring switch. The ports of this module support Token Ring twisted-pair (UTP/STP) media connections via RJ-45 connectors. Similar to the ports of the base Catalyst 3900, each port can be connected to either shared or dedicated media. The ports can also be connected to ports of another Catalyst 3900, forming a TokenChannel.

Multimode Fiber ATM Module

The ATM expansion module is a single-port expansion module that provides high-speed connectivity between the Catalyst 3900 Token Ring switch and an ATM backbone network. The ATM expansion module has a transmission speed of 155 Mbps over a multimode fiber interface using a duplex SC connector.

The ATM expansion module supports up to 63 emulated LANs and up to 2048 virtual channel connections (VCCs). It can support up to 128 concurrent calls and 256 concurrent LAN Emulation-Address Resolution Protocol (LE-ARP) requests.

Note The Catalyst 3900 ATM expansion module requires Release 2.0(1) of the Catalyst 3900 software, which is available via CCO.

Features

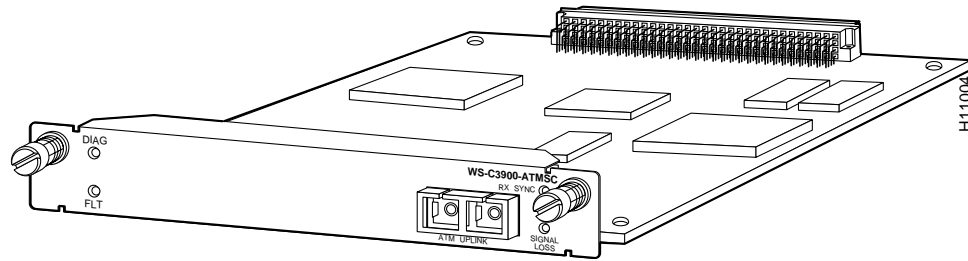
Table 2-1 provides an overview of the features of the ATM expansion module.

Table 2-1 ATM Expansion Module Highlights

Feature	Description
Protocol support	ATM Forum LANE over ATM, Version 1.0
Signalling	ATM Forum UNI Version 3.0, Version 3.1, and Version 4.0 (auto-detectable)
Maximum VLANs (emulated LANs)	63 per switch stack
Maximum VCCs	2048 per ATM expansion module (distributed over all active LAN Emulation Clients [LECs])
Maximum bit rate	155 Mbps (SDH STM-1, SONET STS-3 OC-3)
VCC types	As required by the <i>ATM Forum LAN Emulation over ATM</i> Version 1.0 specification: <ul style="list-style-type: none"> • Multicast-send VCC: Configurable as constant bit rate (CBR), variable bit rate (VBR), or unspecified bit rate (UBR) • All other VCCs: UBR
Switching	Port-to-port hardware switching without embedded processor intervention. On-board processor is reserved for VCC establishment and maintenance.

Figure 2-1 shows the ATM expansion module. There are two port status LEDs and two expansion module status LEDs that indicate the operational status of the expansion module and the port.

Figure 2-1 ATM Expansion Module



ATM Module Usage Recommendations and Restrictions

Be sure to follow these rules when installing the ATM expansion module:

- Never enable more than one LEC per TrCRF per ATM expansion module.

A TrCRF can include only one enabled LEC from any ATM expansion module.

An ATM expansion module LEC is assigned to a LAN switch TrCRF to provide connectivity to the ATM network. In this sense, an ATM expansion module is a logical port. When assigning enabled LECs to TrCRFs, the enabled LECs of any one ATM expansion module should each be assigned to different TrCRFs.

Note This restriction applies only to enabled LECs. Multiple disabled LECs can be assigned to one TrCRF.

- Never enable more than one LEC per TrBRF per ATM expansion module.

A TrBRF can include only one enabled LEC from any ATM expansion module.

Note This restriction applies only to enabled LECs. Multiple disabled LECs can be assigned to one TrCRF. This restriction pertains only to the LECs of a single ATM expansion module. LECs on multiple ATM expansion modules can be assigned to the same TrCRF for backup purposes.

Token Ring Inter-Switch Link Module

The 2-port, 100 Mbps Token Ring Inter-Switch Link (ISL) module supports the encapsulation of Token Ring frames on a standard Fast Ethernet link to allow VLANs to be distributed across multiple platforms and devices. The module is available with a fiber or UTP/STP copper media interface. The ports of the ISL module can be connected to the ports of another ISL module in another router or switch.

Note The Catalyst 3900 ISL expansion module requires Release 3.0(1) of the Catalyst 3900 software, which is available via CCO.

Figure 2-2 shows the UTP/STP ISL module.

Figure 2-2 UTP/STP ISL Module

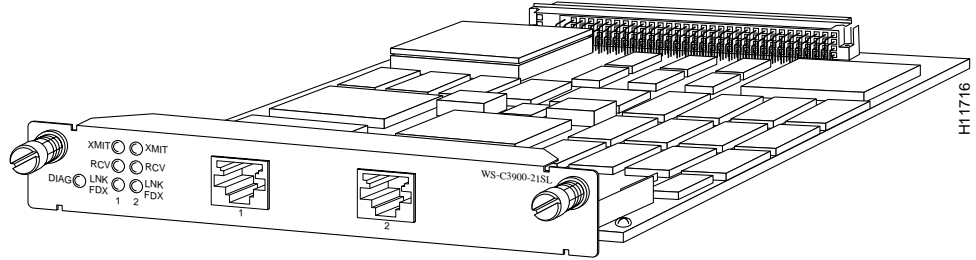


Figure 2-3 shows the fiber ISL module.

Figure 2-3 Fiber ISL Module

