

Installing Transceivers on the Cisco AccessPath Integrated Access System

Product Numbers: AP-10BTR=, AP-2511-TX=, AP-FE-TX=

This document provides procedures for installing transceivers in the Cisco AccessPath Integrated Access System. When the AccessPath system was originally shipped, it had all the required transceivers preinstalled. This document is for users who need to replace one or more of their AccessPath system transceivers.

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- Installing 10BaseT Transceivers (Access Server Shelves and Failsafe/Console Management Shelf), page 2
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Note For applicable regulatory compliance and safety information, refer to the *Regulatory Compliance and Safety Information for the Cisco AccessPath Integrated Access System*.

Corporate Headquarters

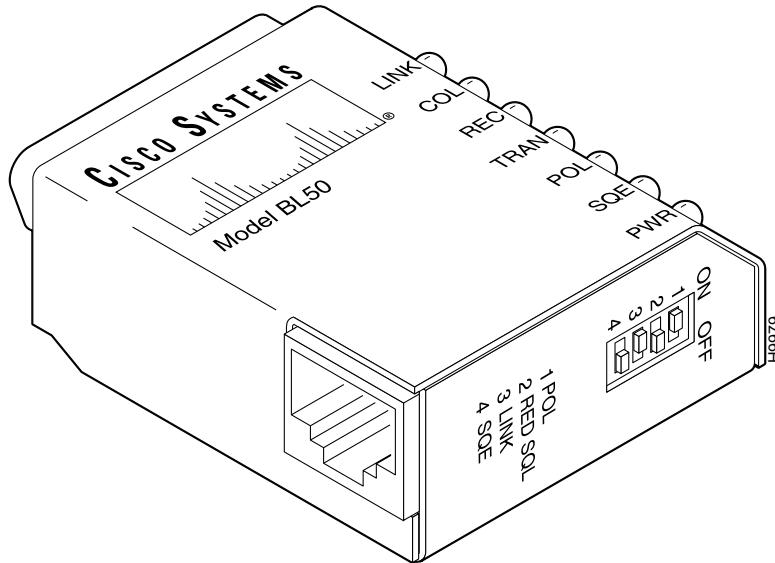
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Installing 10BaseT Transceivers (Access Server Shelves and Failsafe/Console Management Shelf)

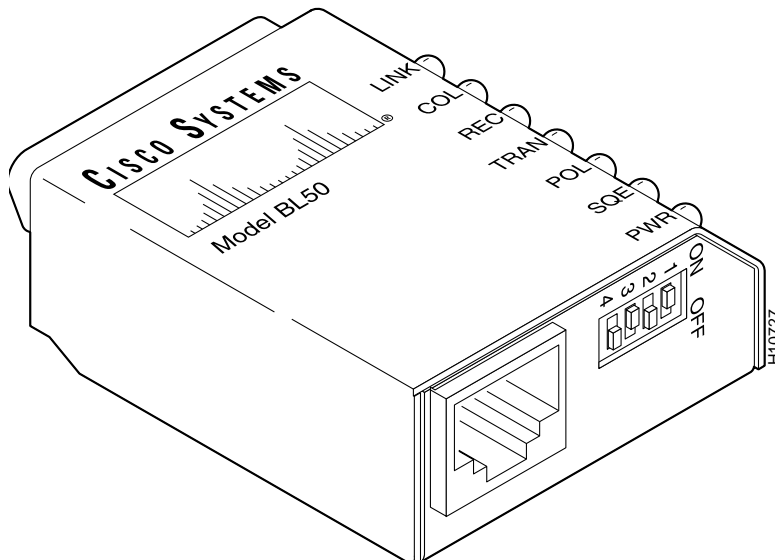
Each of the Access Server Shelves uses a Model BL50 10BaseT IEEE 802.3 transceiver to connect from its Ethernet LAN port to the Router Shelf. These transceivers should already have been installed before the AccessPath system was shipped. See Figure 1.

Figure 1 Model BL50 10BaseT Transceiver



The Failsafe/Console Management Shelf uses a Model BL50R 10BaseT IEEE 802.3 transceiver. This transceiver should already have been installed before the AccessPath system was shipped. See Figure 2.

Figure 2 Model BL50R 10BaseT Transceiver



To remove and install 10BaseT transceivers on an Access Server Shelf or a Failsafe/Console Management Shelf, follow these steps:

- Step 1** Make sure the shelf is powered down.
- Step 2** Use a screwdriver to push the metal slide latch, located between the transceiver and the shelf, to the unlocked position. On the Access Server Shelf, slide left to unlock. On the Failsafe/Console Management Shelf, slide right to unlock.
- Step 3** Carefully remove the old transceiver.
- Step 4** Carefully align the new transceiver's 15-pin connector with the mating connector on the shelf, and slowly and firmly insert it.
- Step 5** Push the slide latch back into the locked position, using the screwdriver.

The 10BaseT transceivers (both models BL50 and BL50R) have four switch settings and seven diagnostic lights. The switches should be kept at the factory settings (shown in Figure 1 and Figure 2), unless changes to the switch settings are recommended by Cisco-certified maintenance personnel.

For information on the factory switch settings, refer to Table 1.

For information on the diagnostic lights, refer to Table 2.

For information on pinouts, refer to Table 3.

Table 1 Model BL50 10BaseT Transceiver Factory Switch Settings

Switch	Function	Setting
1 POL	Automatically corrects reversed polarity.	ON
2 RED SQL	Allows a connection to be used on a Shielded Twisted Pair (STP) network by reducing STP squelch.	OFF
3 LINK	Disables the transceiver from working with older equipment that does not conform to 10BaseT specifications.	ON
4 SQE	Enables the 10BaseT SQE test.	OFF

Table 2 Model BL50 10BaseT Transceiver Diagnostic Lights

Light	Function
LINK (Green)	Indicates that the transceiver is connected to the Router Shelf, and that the twisted pair circuit between them is complete.
COL (Yellow)	This light will flash if there is a collision detected on the network. If the light stays on, the MAU is jabber protected.
REC (Green)	This light flashes when an Ethernet packet is received from the network. The speed of the flashing reflects the density of the Ethernet traffic.
TRAN (Green)	This light flashes when Ethernet packets are transmitted to the network.
POL (Yellow)	Indicates that packets of reversed polarity are being received when the reverse polarity slide switch POL is set to the ON position.
SQE (Yellow)	Indicates that squelch reduction is on. The connection can be used on a Shielded Twisted Pair (STP) network. See RED SQL in Table 1.
PWR (Green)	This light will be on continuously while power is being supplied to the transceiver from the DTE.

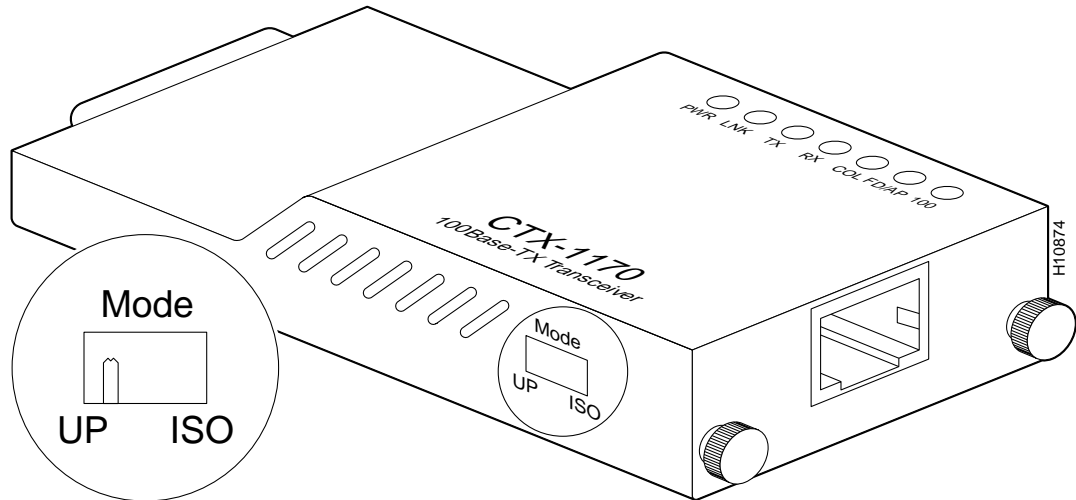
Table 3 Model BL50 10BaseT Transceiver RJ-45 Pinout

RJ-45 Pin	Signal	Description
1	TD+	Transmit Data
2	TD-	Transmit Data
3	RD+	Receive Data
4	–	No connection
5	–	No connection
6	RD-	Receive Data
7	–	No connection
8	–	No connection

Installing 100BaseTX Transceivers (Dual Router Shelf Configurations Only)

Each of the Router Shelves in a dual Router Shelf configuration uses a Model CTX-1170 100BaseTX IEEE 802.3u transceiver to connect from its Fast Ethernet MII port on the Input/Output (I/O) controller to the corresponding port on the other Router Shelf. These transceivers should already have been installed before the AccessPath system was shipped. See Figure 3.

Figure 3 Model CTX-1170 100BaseTX Transceiver



Caution Make sure input power to your Router Shelf is turned off and the router is completely powered down before connecting an external transceiver to the Fast Ethernet port on the I/O controller. If you connect an external transceiver to the Fast Ethernet port when the router is powered on, the system will reset and you could lose data.

To install a 100BaseTX transceiver on a Router Shelf, follow these steps:

- Step 1** Carefully align the transceiver's 40-pin MII connector with the mating connector on the Router Shelf, and slowly and firmly insert it.
- Step 2** Turn the thumb wheels to tighten the threaded screws to secure the transceiver connection.
- Step 3** Carefully align the RJ-45 connector attached to the twisted pair cable with the mating connector on the transceiver.
- Step 4** Slowly insert the RJ-45 connector into the transceiver until it clicks into place.

The 100BaseTX transceiver has one switch setting and seven diagnostic lights. Make sure that the switch is in **UP** ("Up and Running") mode (shown in Figure 3). In this case, the transceiver is free to transmit and receive data. The **ISO** ("Isolation") mode applies only if the transceiver is configurable by the host's software, and thus does not apply here.

Note Make sure that the switch is in **UP** mode before powering up. Otherwise, the transceiver must be powered off so that the transceiver can reset itself during power up.

For information on the diagnostic lights, refer to Table 4.

For information on pinouts, refer to Table 5.

Table 4 Model CTX-1170 100BaseTX Transceiver Diagnostic Lights

Light	Function
PWR (Green)	This light will be on continuously while power is being supplied to the transceiver from the DTE.
LNK (Yellow)	Indicates that a fiber-optic link is made on the receive connector.
TX (Green)	This light flashes when Ethernet packets are transmitted to the network. The speed of the flashing reflects the density of the Ethernet traffic.
RX (Yellow)	This light flashes when an Ethernet packet is received from the network. The speed of the flashing reflects the density of the Ethernet traffic.
COL (Red)	This light will flash if there is a collision detected on the network.
FD/AP (Green)	This light will flash when the unit is in full duplex (FD) mode. This light will be off when the unit is in half duplex mode.
100 (Yellow)	This light will flash to indicate that the unit is operating at 100 Mbps.

Table 5 Model CTX-1170 100BaseTX Transceiver Pinout

Pin ¹	In	Out	I/O	Signal	Description
14-17	-	Yes	-	TxD	Transmit Data
12	Yes	-	-	Tx_CLK ²	Transmit Clock
11	-	Yes	-	Tx_ER	Transmit Error
13	-	Yes	-	Tx_EN	Transmit Enable
3	-	Yes	-	MDC	MII Data Clock
4-7	Yes	-	-	RxD	Receive Data
9	Yes	-	-	Rx_CLK	Receive Clock
10	Yes	-	-	Rx_ER	Receive Error
8	Yes	-	-	Rx_DV	Receive Data Valid
18	Yes	-	-	COL	Collision
19	Yes	-	-	CRS	Carrier Sense
2	-	-	Yes	MDIO	MII Data Input/Output
22-39	-	-	-	COMMON	Common (ground)
1, 20, 21, 40	-	-	-	+5.0V	-

1. Any pins not indicated are not used.

2. Tx_CLK and Rx_CLK are provided by the external transceiver.

Safety Recommendations

The following guidelines will help to ensure your safety and protect the equipment:

- Review the safety warnings listed in the publication *Regulatory Compliance and Safety Information for the Cisco AccessPath Integrated Access System* before installing, configuring, troubleshooting, or maintaining the AccessPath system.
- Keep the area clear and dust free during and after installation.
- Keep tools and chassis components away from walk areas.
- Do not wear loose clothing, jewelry (including rings and chains), or other items that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- The Cisco AccessPath Integrated Access System operates safely when it is used in accordance with its marked electrical ratings and product usage instructions.

Note If you have questions or need assistance, see the section “Cisco Connection Online.”

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems’ primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

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- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO’s Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

This document is to be used in conjunction with the *Cisco AccessPath Integrated Access System Hardware Installation and Configuration Guide* and the *Regulatory Compliance and Safety Information for the Cisco AccessPath Integrated Access System*.

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