



Connecting ISDN WAN Interface Cards to a Network

This chapter describes how to connect ISDN Cisco WAN interface cards to a network and contains the following sections:

- [1-Port ISDN BRI Cards](#)
- [1-Port ISDN BRI S/T Leased-Line Card](#)

1-Port ISDN BRI Cards

This section describes the following Cisco ISDN BRI WAN interface cards:

- [1-Port BRI S/T WAN Cards \(WIC36-1B-S/T, WIC-1B-S/T\)](#)
- [1-Port BRI WAN Cards with NT1 \(WIC36-1B-U and WIC-1B-U\)](#)

You can distinguish between WIC36 and WIC models of a BRI WAN interface card by the location and labeling of the LEDs, and the number and location of cutouts in the faceplate.

1-Port BRI S/T WAN Cards (WIC36-1B-S/T, WIC-1B-S/T)

The 1-Port ISDN-BRI WAN interface cards (WIC36-1B-S/T, WIC-1B-S/T) connect to an ISDN WAN through an external NT1 device. (See [Figure 4-1](#) and [Figure 4-2](#).) This interface is also known as an S/T interface.

Figure 4-1 WIC36-1B-S/T WAN Interface Card

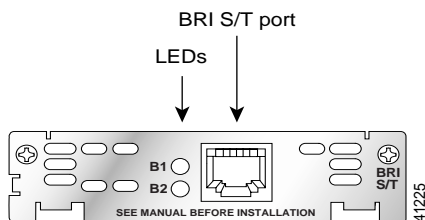
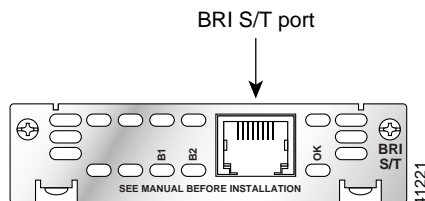
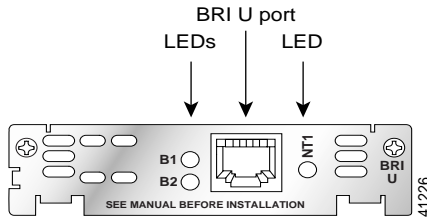
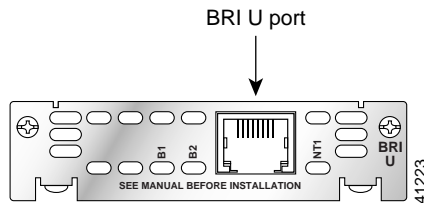


Figure 4-2 WIC-1B-S/T WAN Interface Card



1-Port BRI WAN Cards with NT1 (WIC36-1B-U and WIC-1B-U)

The 1-Port ISDN-BRI WIC36-1B-U and WIC-1B-U WAN interface cards contain an integrated NT1 device. (See [Figure 4-3](#) and [Figure 4-4](#).) This interface is also known as a U interface.

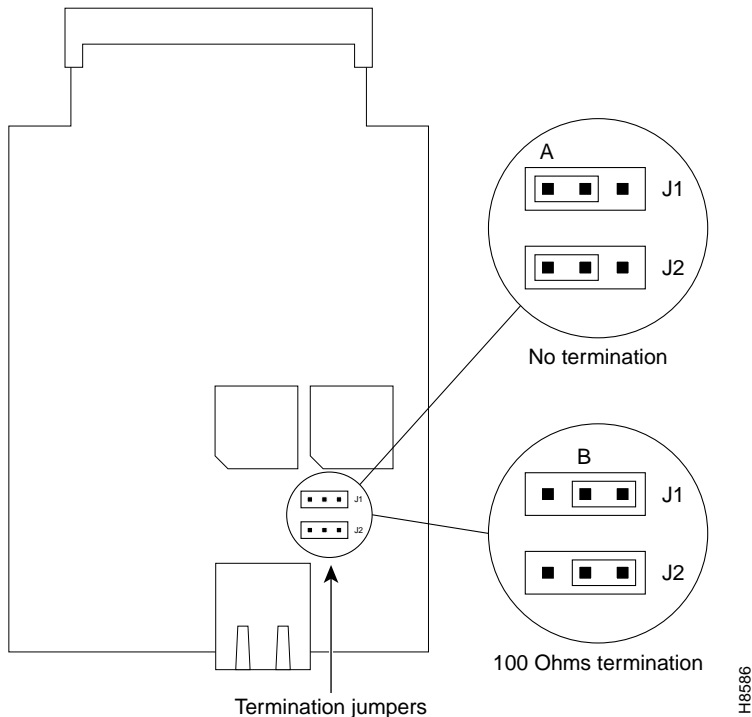
Figure 4-3 1-Port ISDN BRI WIC36-1B-U WAN Interface Card*Figure 4-4 1-Port ISDN-BRI WIC-1B-U WAN Interface Cards*

Setting Jumpers on ISDN BRI Cards

The WIC-M1B-S/T or WIC-M1B-U interface cards do not have termination jumpers. The WIC36-1B-S/T, WIC36-1B-U, CPAWIC36-1B-S/T, CPAWIC36-1B-U interface cards have two termination jumpers, labeled J1 and J2. Before installing a WIC36-1B-S/T, WIC36-1B-U, CPAWIC36-1B-S/T, or CPAWIC36-1B-U card, ensure that the termination jumpers are set appropriately for your installation.

The jumpers are factory-configured in the B position. Keep the jumpers in this position to use the BRI WAN interface card in a point-to-point connection or as the last device on the line of a passive-bus connection. Set the termination jumpers to the A position to use the BRI WAN interface card in a passive-bus connection where it is not the last device on the line. The jumpers are shown in [Figure 4-5](#).

Figure 4-5 Jumper locations on the Older ISDN BRI WAN Interface Card



Connecting ISDN BRI Cards to the WAN

Older WIC36-1B-S/T, WIC36-1B-U, CPAWIC36-1B-S/T, or CPAWIC36-1B-U WAN interface cards mount only in the W1 slot of a two-slot module and provide a single BRI interface. Newer WIC-M1B-S/T or WIC-M1B-U WAN interface cards can mount in either slot of a two-slot module.

For more information on BRI network modules, see the *Cisco Network Modules Hardware Installation Guide*.



Warning

Network hazardous voltages are present in the BRI cable. If you detach the BRI cable, detach the end away from the router first to avoid possible electric shock. Network hazardous voltages also are present on the system card in the

area of the BRI port (RJ-48C connector), regardless of when power is turned OFF. (To see translated versions of this warning, see the *Regulatory Compliance and Safety Information* document that accompanied the router.)

**Warning**

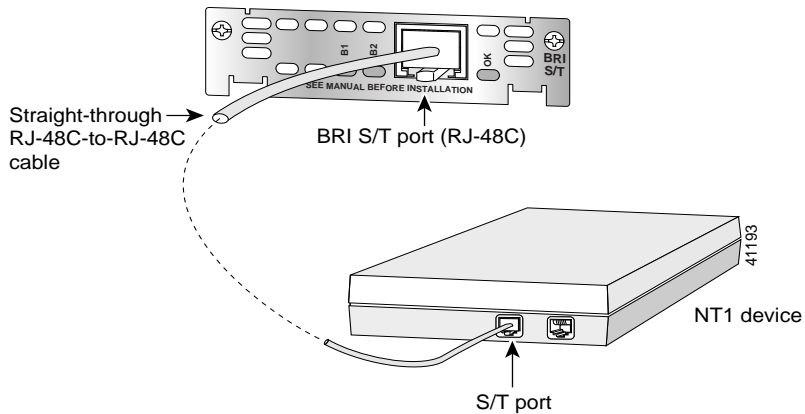
The ISDN connection is regarded as a source of voltage that should be inaccessible to user contact. Do not attempt to tamper with or open any public telephone operator (PTO)-provided equipment or connection hardware. Any hardwired connection (other than by a nonremovable, connect-one-time-only plug) must be made only by PTO staff or suitably trained engineers. (To see translated versions of this warning, see the *Regulatory Compliance and Safety Information* document that accompanied the router.)

Use a RJ-48C-to-RJ-48C BRI cable (not included) to connect the ISDN BRI WAN interface card directly to an ISDN. See the online document *Cisco Modular Access Router Cable Specifications* for pinouts.

Connecting an ISDN BRI S/T Card to the WAN

Take the following steps to connect an ISDN BRI S/T interface card to the WAN:

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- Step 1** Confirm that the router is turned off.
 - Step 2** Connect one end of a straight-through RJ-48C-to-RJ-48C cable to the S/T interface.
 - Step 3** Connect the other end of the cable to the NT1, as shown in [Figure 4-6](#).

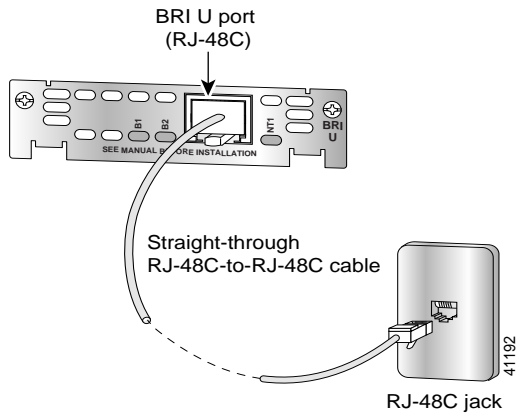
Figure 4-6 Connecting a BRI S/T WAN Interface Card

- Step 4** Connect the NT1 to the ISDN wall jack according to the documentation that came with the NT1.
- Step 5** Turn on power to the router.

Connecting an ISDN BRI U Interface Card to the WAN

Take the following steps to connect an ISDN BRI U interface card WAN interface card to an ISDN network:

- Step 1** Confirm that the router is still turned off.
- Step 2** Connect one end of a straight-through RJ-48C-to-RJ-48C cable to the card's U interface.
- Step 3** Connect the other end of the cable directly to the ISDN wall jack as shown in [Figure 4-7](#).

Figure 4-7 Connecting a BRI U WAN Interface Card

Step 4 Turn on power to the router.

BRI WAN Interface Card LEDs

LEDs for the ISDN BRI cards are shown in this section. The functions of the LEDs are described in [Table 4-2](#).

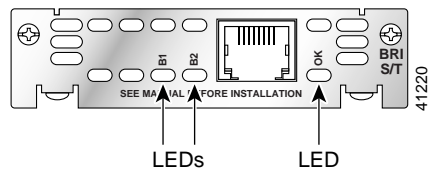
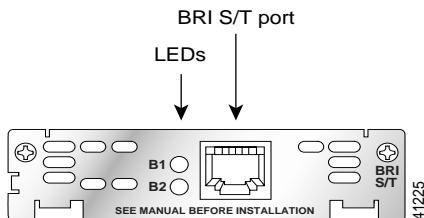
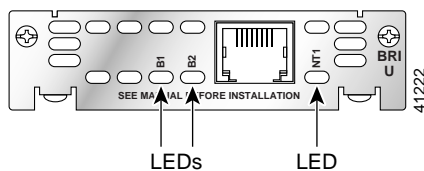
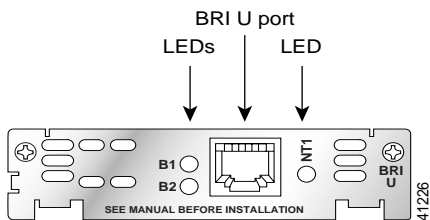
Figure 4-8 WIC-1B-S/T WAN Interface Card LEDs

Figure 4-9 WIC36-1B-S/T WAN Interface Card LEDs**Figure 4-10** WIC-1B-U WAN Interface Card LEDs**Figure 4-11** WIC36-1B-U WAN Interface Card LEDs**Table 4-1** ISDN BRI WAN Interface Card LEDs

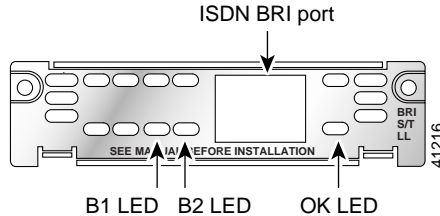
LED	Meaning
B1	Active connection on the first B channel.
B2	Active connection on second B channel.
OK	ISDN port has established a connection with the central office switch (D channel).

If you have additional cards to install, proceed to the appropriate sections in this manual. When you have finished all installations, see the software configuration guide that shipped with your router to configure the interfaces.

1-Port ISDN BRI S/T Leased-Line Card

The ISDN BRI S/T Leased-Line card provides a single B channel operating in leased-line mode at 64-kbps. (See [Figure 4-12](#).)

Figure 4-12 ISDN BRI S/T Leased-Line WAN Interface Card

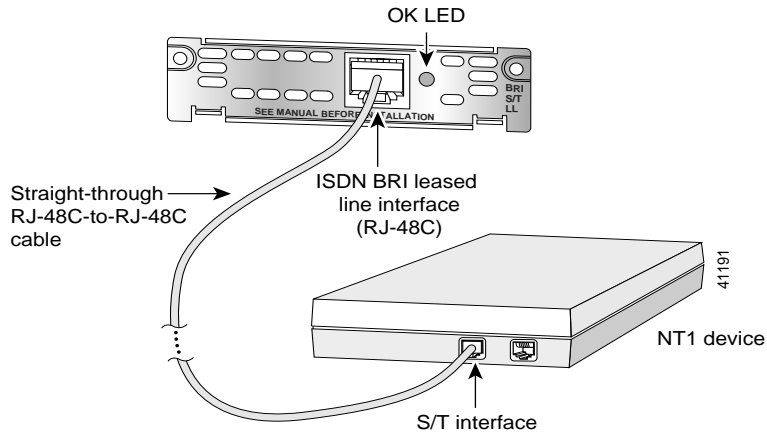


Connecting the ISDN BRI S/T Leased-Line Card to the Network

You must provide an RJ-48C-to-RJ-48C cable and a NT1 device for this connection.

Take the following steps to connect to the WAN:

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- Step 1** Confirm that the router is turned off.
 - Step 2** Connect one end of the RJ-48C cable to the card's ISDN BRI leased-line port.
 - Step 3** Connect the other end of the cable to the NT1 device, as shown in [Figure 4-13](#).
 - Step 4** Connect the NT1 to the ISDN wall jack according to the documentation that came with the NT1.

Figure 4-13 Connecting the ISDN BRI S/T Leased Line Card to the NT1

- Step 5** Turn on power to the router by pressing the power switch to the ON (|) position.
- Step 6** Check that the OK LED goes on, which indicates that the card's ISDN port has synchronized with the central office switch.

If you have additional cards to install, proceed to the appropriate sections in this manual. When you have finished all installations, see the software configuration guide that shipped with your router to configure the interfaces.

ISDN BRI S/T Leased-Line WAN Interface Card LEDs

ISDN BRI S/T Leased-Line card has three LEDs, which are described in [Table 4-2](#).

Table 4-2 ISDN BRI S/T Leased-Line Card LEDs

LED	Meaning
B1	ISDN connection on B1 channel when blinking.

Table 4-2 ISDN BRI S/T Leased-Line Card LEDs

LED	Meaning
B2 ¹	ISDN connection on B2 channel (not used).
OK	ISDN port has synchronized with the central office switch when lit.

1. Always off for 64 kbps, which is available on B1 only.

If you have additional cards to install, proceed to the appropriate sections in this manual. When you have finished all installations, see the software configuration guide that shipped with your hardware.

