

- **Properties of SX2-express SinglePRI / SX2-express DualPRI**

- **ISDN Interface**

- SX2-express SinglePRI: 1 x PRI interface or SX2-express DualPRI: 2 x PRI interface
- Each line can be configured individually using a jumper field for the TE or NT mode.
- Failover Relay on the SX2 DualPRI. This enables the two lines to be directly connected to each other in the event of power failure or software problems, so that a PRI external line can be looped through the card. This can be used for standby scenarios.
- A maximum of 4 different cards (SX2 QuadBRI, SX2 SinglePRI and SX2 DualPRI) can be used in one PC. In doing so, a maximum of 76 B channels will be supported.

- **PCM Highway**

- Tact synchronization only between the different SX2-express cards is possible. The cards are connected with a ribbon cable.
- 2/4/8 Mbit/s data transfer rate
- Chipset: Exar XRT86VL
- 6 DIP Switches
- Exact 32,768 MHz quartz oscillator
- PCIe x1 Interface

- **General purpose I/O**

- Four LEDs (red/green) on the mounting bracket of the ISDN card per PRI interface
- Four DIP switches per PRI interface that can be used for the identification of the card
- You will find more recent drivers for the SX2 in the download area of the homepage:
<http://www.swyx.com/support/index.html>.

- **Installation of the ISDN PC Cards**

The ISDN card can be installed in the same PC on which the SwyxServer is also installed. In the standard installation, the SwyxGate service is also installed. This service controls the ISDN lines that appear in the SwyxWare Administration as an ISDN trunk.

In order to be able to install a SwyxGate on a separate PC, the SwyxServer must already be installed and operable. For the SwyxGate installation you will need

- the server name and
- the name of the domain account, which was created in preparation for the installation of the SwyxServer

Before the ISDN cards are inserted, they must be configured for operation.



Mixed operation of different SX2 cards isn't possible!

Preparation of SX2-express SinglePRI / SX2-express DualPRI

The connection configuration must be configured for each E1 connection before it is inserted.

Requirement for further description: The SX2-express SinglePRI / SX2-express DualPRI is lying in front of you with the PCI plug strip facing down and the E1 connections to the left.

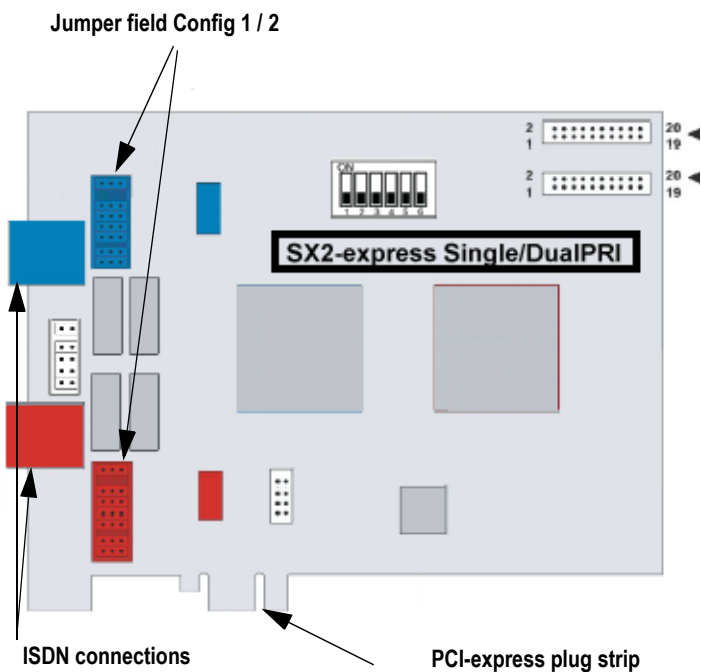


Figure 1 Schematic representation of SX2-express SinglePRI / SX2-express DualPRI

A jumper field, which are in the near vicinity of the E1 connection plug, are assigned to each E1 connection.

Connection Configuration

The connection configuration allows each E1 connection of the SX2-express SinglePRI resp. SX2-express DualPRI to be adapted to four different cable assignments.



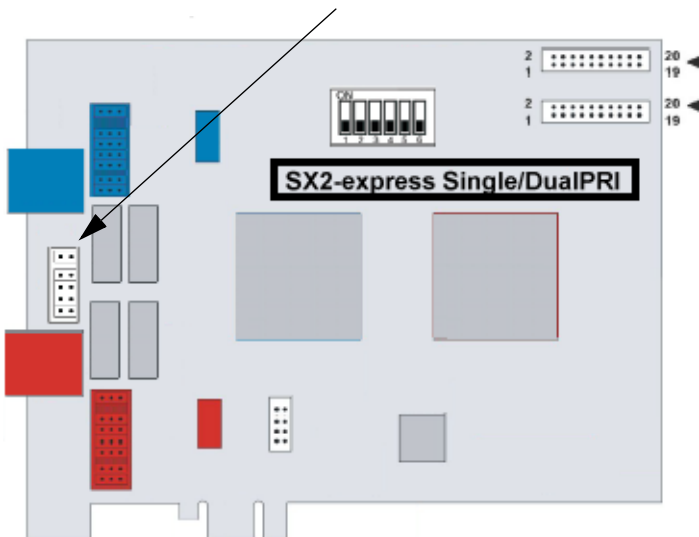
Figure 2 Counting pins of the connector plug (RJ45)

Jumper	Pin configuration, RJ45 jack
	Pin1 = TX+ Pin2 = TX- Pin4 = RX+ Pin5 = RX-
	Pin6 = TX+ Pin3 = TX- Pin4 = RX+ Pin5 = RX-
	Pin1 = RX+ Pin2 = RX- Pin4 = TX+ Pin5 = TX-
	Pin6 = RX+ Pin3 = RX- Pin4 = TX+ Pin5 = TX-

SwyxStandby support

The card supports the SwyxWare option pack SwyxStandby.

Jumper to support SwyxStandby (Config 3).



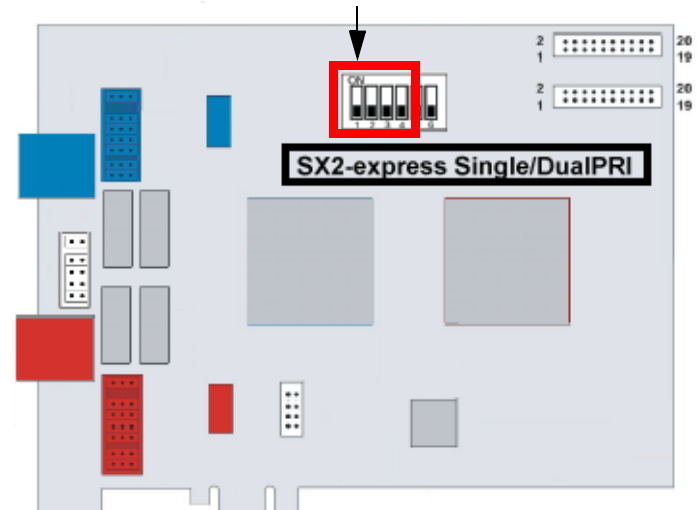
In order to activate this function on the SX2-express DualPRI, please make sure that the six-pole jumper is inserted between the two ISDN connections. If this jumper is not present, the card cannot support the standby option.

For information on configuring the SX2-express DualPRI before insertion, so that the existing relay can be used, please refer to the SwyxWare documentation.

Configuration of the card number


You can set the card number with the six-pole DIP switch in the upper middle of the SX2-express SinglePRI / SX2-express DualPRI.

Configuration of the card number



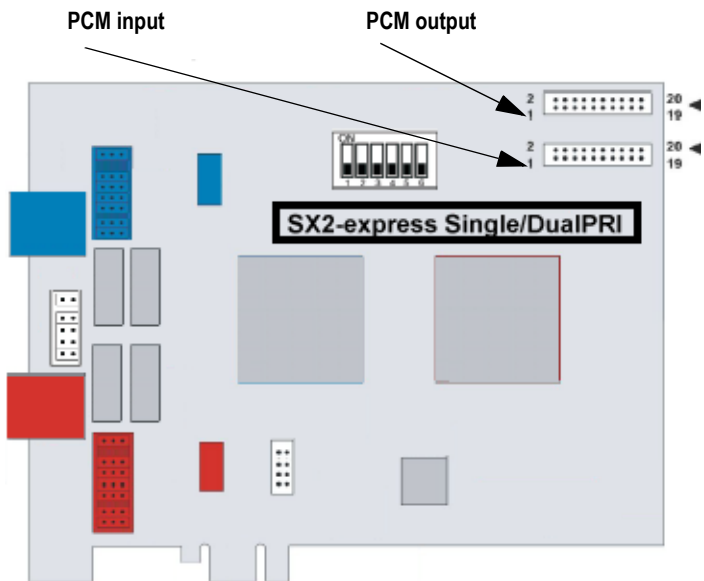
Only DIP switches 1 to 4 are used. The following assignment is valid:

Switch 1	Switch 2	Switch 3	Switch 4	Card number
on	off	off	off	1
off	on	off	off	2
on	on	off	off	3
off	off	on	off	4
on	off	on	off	5
off	on	on	off	6
on	on	on	off	7
off	off	off	on	8
on	off	off	on	9
off	on	off	on	10
on	on	off	on	11
off	off	on	on	12
on	off	on	on	13
off	on	on	on	14
on	on	on	on	15
off	off	off	off	assigned automatically

 If you use several cards in one system, please make sure that either one card number was assigned for all cards, or automatic card number assignment is set for all cards.

PCM bus connection

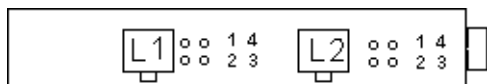
The SX2-express SinglePRI / SX2-express DualPRI has two 20-pole jacks for connection with an optional PCM cable.



The upper jack is the output. The lower jack is the input. Connect the SX2 cards with the PCM cable, by connecting the output jack of one card to the input jack of another card.

LED Status Display

Each E1 connection of the SX2-express SinglePRI / SX2-express DualPRI has a status display consisting of two red and two green LEDs.



The following assignments are valid:

LED	LED	Statement
1	off	Layer 1 deactivated
1	red glowing	Layer 1 activated
2	green glowing	Layer 2 activated
3	green, blinking	At least one connection is active
4	red, blinking	The line is being configured

Insertion of the ISDN Card

The insertion of the ISDN cards is nearly identical and therefore they are explained together in this chapter.

After the card has been installed physically, it will automatically be recognized the next time the computer is booted and a request for the installation of the driver software will appear.

You may find more recent drivers for the ISDN cards in the download area of the homepage: <http://www.swyx.com/support/index.html>.

Do the necessary hardware configuration before the insertion. For further information, please refer to the SwyxWare Administrator documentation.

- ⚠ It is absolutely necessary that you **turn off the PC** and remove the **mains plug** from the power supply whenever you are doing something which requires you to open the PC case!
- ⚠ Do not touch **any of the electronic components** of the PC card during the entire installation process. The electronic components of the PC card can be damaged by electrostatic discharges!
- ⚠ For safety reasons, it is necessary that you disconnect all **connection cables from the telephone network** before you open the PC case.

This is how you install the ISDN cards in your PC

1. Turn off your PC and pull the respective mains plug out of the socket.
2. Open your PC.
3. Remove the screw from the metal panel covering a free PCI-express (expansion) slot:

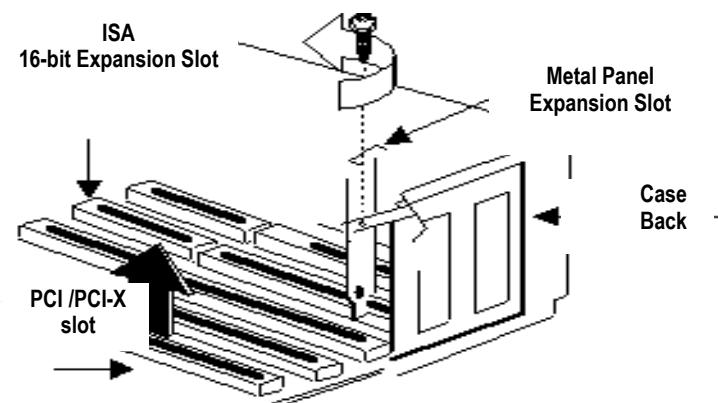


Figure 3 Removing the Metal Panel

4. Insert the ISDN PC card into a free PCI or PCI-X plug-in slot.
5. Use the screw you just removed to secure the PC card.

6. Connect the SX2 DualPRI to the PRI ISDN connections using the cable which has been supplied.

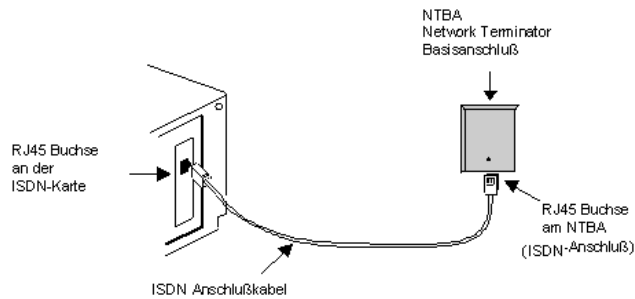


Figure 4 Connecting the ISDN Cable

7. Close your PC and restore the power supply by plugging in the mains plug.

Installation of the software for the ISDN card

After the card has been installed, it will automatically be recognized the next time the computer is booted and a request for the installation of the driver software will appear.

This is how you install the drivers for the ISDN card

1. Follow the instructions given by the hardware wizard.
2. When you are asked to enter the source for the driver, select "Enter other source".
3. Put the SwyxWare CD in your CD ROM drive.
Click on "Next >".
4. Enter the path on the SwyxWare CD for the driver files on the SwyxWare CD
"\\ISDN\\SX2 Standard Driver"
During the installation of the driver you will be asked to enter the ISDN switching type or the D-channel protocol.
5. Select the ISDN exchange type or the switch protocol used by your telephone company (in Europe this is Euro-ISDN (DSS1)).
Click on "Next >".
6. Follow the wizard's instructions and then click on "Finish" in the dialog "Completing the wizard".

You can check to see if the driver installation was successful by checking the entries in the Device Manager in the 'Network Cards' category. You will find more information on the Device Manager under SwyxWare documentation.

- 1 You can check whether the installed ISDN cards functions properly by using the utilities supplied on the SwyxWare CD. For further information please refer to the SwyxWare documentation.

Configuration of the ISDN Card

If you would like to connect the card to a direct dialing in line, you must make some configuration changes for the ISDN PC card driver.

You can change the defined parameters in the driver software of the ISDN card at a later point in time.

This is how you modify the ISDN PC card driver configuration

1. Run computer management, the simplest possibility is to use the shortcut menu for "My Computer" on the Windows Desktop
2. Select "Manage".
The Microsoft Management Console (MMC) will be started.
3. Select "Device Manager" in the console structure.
A list of all installed devices will now be shown on the right. There you will find the following entry under "Network Cards": "SX2 DualPRI".
4. Enter the appropriate settings under "Properties":
 - Select "ISDN Parameters" on the "Advanced" tab.
Select the "Port" tab in the dialog which is displayed.
 - To switch to a line configured for direct dialing-in, please choose "Point to Point" and close both this tab and the previous tab by clicking on "OK".

- 1 Tip: If the line of an SX2 card is configured, the LED which is associated with this line will blink. This simplifies the identification when operating several SX2 cards.

Configuration of the Line Termination

The line termination will be configured in the software settings. Default value: 120 Ohm.

This is how you change the line termination of SX2-express SinglePRI resp. SX2-express DualPRI

1. Run computer management, the simplest possibility is to use the shortcut menu for "My Computer" on the Windows Desktop
2. Under "ISDN Controller" switch to the corresponding SX2-express board.
3. There are settings for each Controller. On the right side mark the controller and choose the line termination you want in the dropdown list.
You can choose between 120, 110, 100 and 75 Ohm.
4. Save the changes with "OK" and close the Device Manager.