

• Properties

- 1 x PRI interface (SX2 SinglePRI)
- The line can be configured individually using a jumper field for the TE or NT mode.
- Line termination (120 Ohm or 75 Ohm) is adjustable via a DIP switch.
- 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. Please note that the SX2 DualPRI is counted as two cards because it will appear as two network cards in the Windows device manager.

PCI Interface

PCI Interface for 3.3V and 5V PCI 2.2 slots. If necessary, 5V is reduced to 3.3V using a voltage regulator located on the card.

PCM Highway

- Tact synchronization between the different SX2 cards is possible. The cards are connected with a ribbon cable.
- 2/4/8 Mbit/s data transfer rate
- Chipset: Cologne Chip HFC-4S Chip
- Exact 32,768 MHz quartz oscillator
- 512 x 8 bit serial EEPROM for programming the PCI configuration information

General purpose I/O

- Four LEDs (red/green) on the mounting bracket of the ISDN card
- Four DIP switches 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.

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. Please note that the SX2 DualPRI is counted as two cards because it will appear as two network cards in the Windows device manager.

Preparation of the SX2 SinglePRI

The connection configuration and the line termination must be configured for each E1 connection of the SX2 SinglePRI before it is inserted.

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

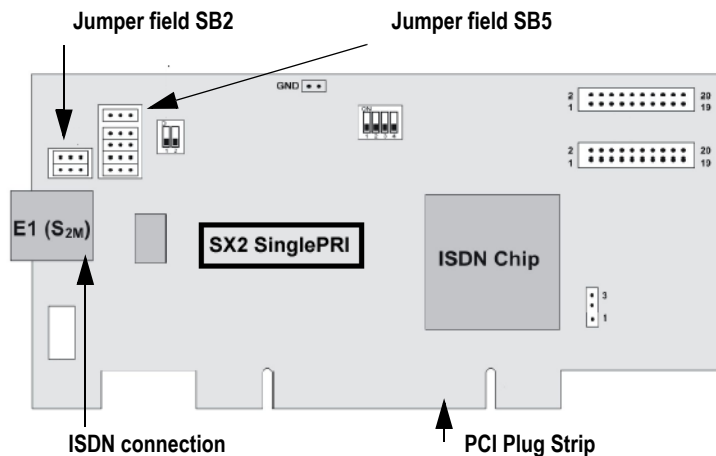


Image 1-1 Schematic representation of SX2 SinglePRI

Two jumper fields, which are in the near vicinity of the E1 connection plug, are assigned to the E1 connection. In the following, the field with two jumpers will be referred to as SB2 and the field with five jumpers will be referred to as SB5. The suffixes L and R indicate whether **all** jumpers of the respective jumper field are inserted to the left (L) or to the right (R). SB5R means, for example, that **all** jumpers of the SB5 field are inserted on the right.

Connection Configuration

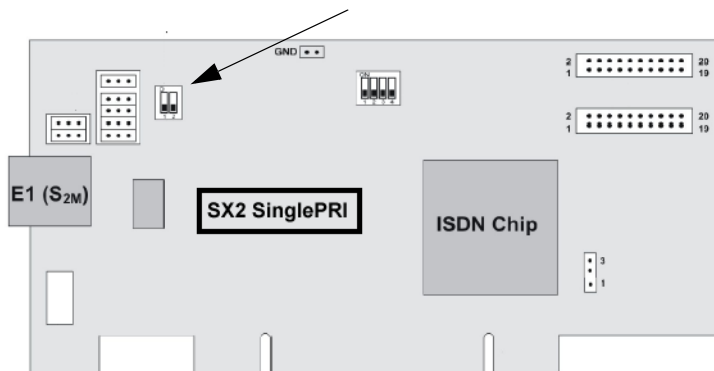
The connection configuration allows the E1 connection to be adapted to four different cable assignments.

Occupation of the Plug Bridges	Pin configuration, RJ45 jack
SB2L and SB5R	Pin1 = TX+ Pin2 = TX- Pin4 = RX+ Pin5 = RX-
SB2R and SB5R	Pin3 = TX+ Pin6 = TX- Pin4 = RX+ Pin5 = RX-
SB2L and SB5L	Pin1 = RX+ Pin2 = RX- Pin4 = TX+ Pin5 = TX-
SB2R and SB5L	Pin3 = RX+ Pin6 = RX- Pin4 = TX+ Pin5 = TX-

Configuration of the Line Termination

On the right next to the plug bridge fields for the E1 connection you will find a two-pole DIP switch with which the line termination can be configured.

DIP switch for the termination

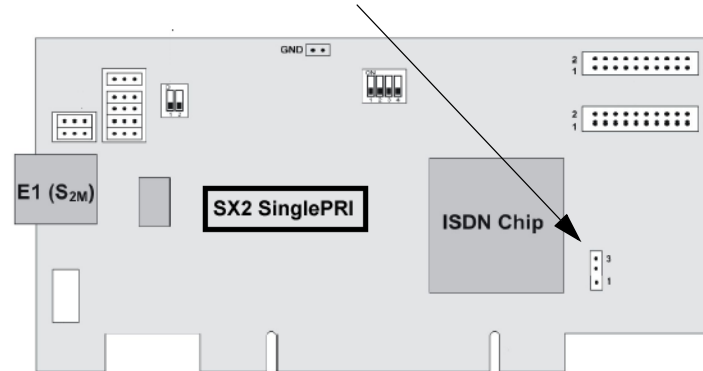


- If both pins of the switch are in the "OFF" position, no termination is switched on.
- If the left pin is on the "OFF" position and the right pin is on the "ON" position, this means that this has a 120 ohm line termination.
- If the left pin is on the "ON" position and the right pin is on the "OFF" position, this means that this has a 75 ohm line termination.

Configuration of the PCI bus power supply

On the lower right side of the SX2 SinglePRI is a three-pole jumper field for setting the PCI bus power supply.

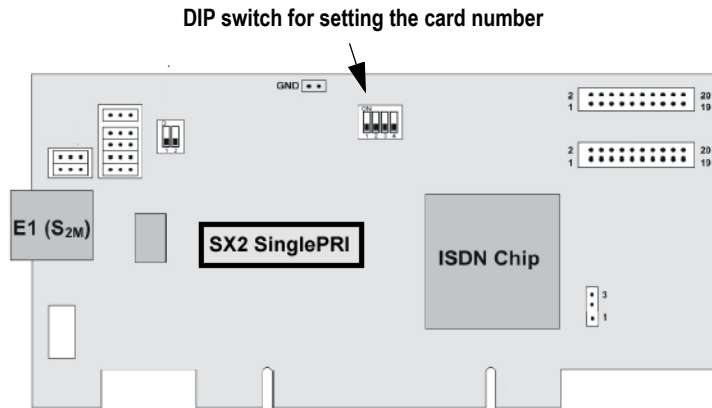
Jumper field for the PCI power supply



Make sure that the jumper is at the correct setting for the PC main board.
Lower for an environment with 3 V, upper for an environment with 5 V, which will be found on older main boards.

Configuration of the card number

You can set the card number with the four-pole blue DIP switch in the upper middle of the SX2 SinglePRI.

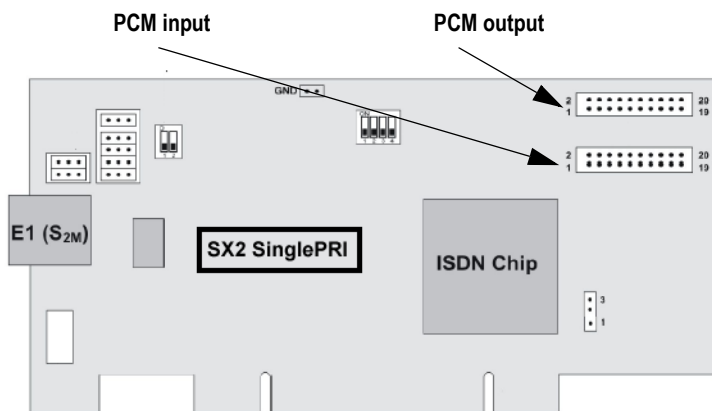


The following assignment is valid:

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

PCM bus connection

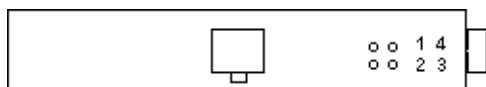
The card has two 20-pole jacks for connection with an optional PCM cable.



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 an SX2- card to the input jack of another SX2 card.

LED Status Display

The E1 connection of the SX2 SinglePRI 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 info please refer to 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 (expansion) slot:

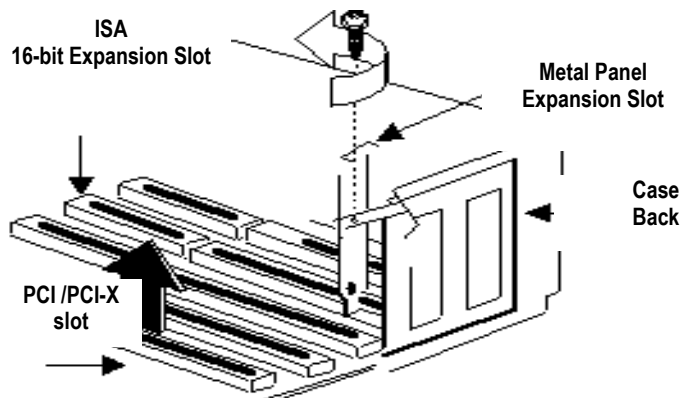


Image 1-2 Removing the Metal Panel

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 SinglePRI to the PRI ISDN connections using the cable which has been supplied.

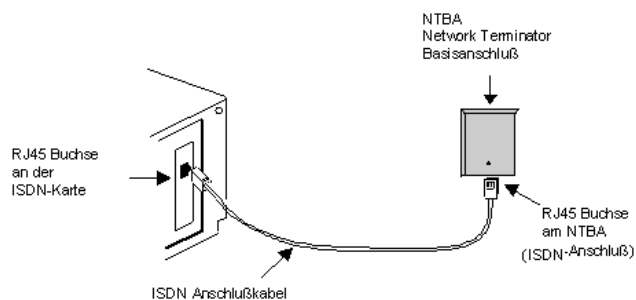


Image 1-3 Connecting the ISDN Cable

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. Please insert the SwyxWare-disk in your CD-ROM device.
Click „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 „Next>“.
6. Please follow the instructions and click on „Finish“.

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 in SwyxWare-documentation.

You can check whether the installed ISDN cards function properly by using the utilities supplied on the SwyxWare CD. For further info please refer to SwyxWare Administrator-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 SinglePRI".
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".

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