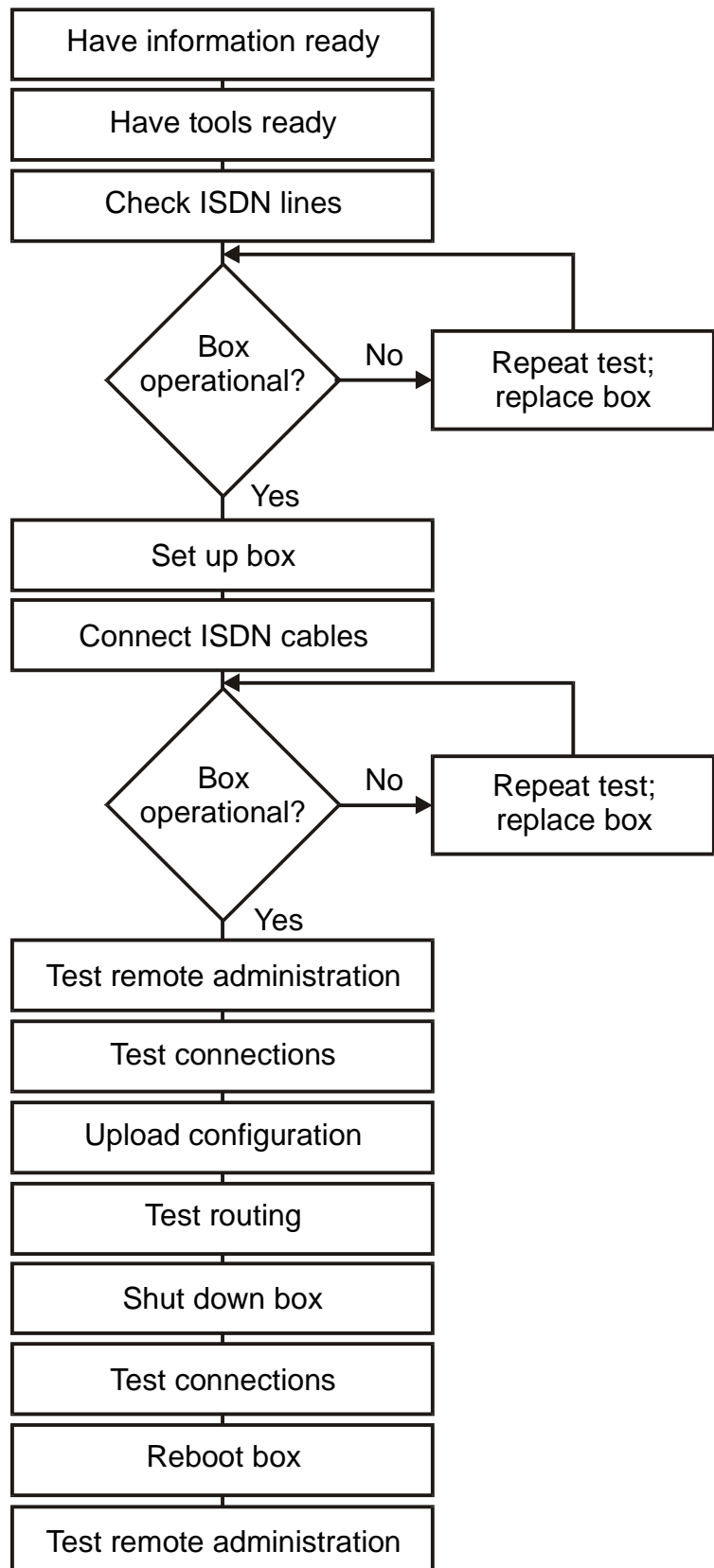


## 9 Installation, Service and Testing

### 9.1 Installing the TELES.iLCR 2BRI Box

Figure 10 describes the installation process. This is the recommended order for installing a TELES.iLCR 2BRI Box.



**Figure 10 – TELES.iLCR 2BRI Box Installation**

## 9.1.1 Installation Requirements

Before you begin installing, be sure to have the following information at hand:

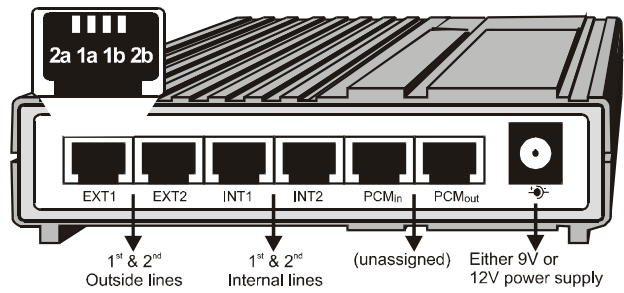
<b>Customer</b>			
Name	Contact		
Company	Dept.		
Address	Tel.		
Installation Date	Fax		
<b>Routing</b>			
TELES.iLCR 2BRI Box version			
Routing method			
International calls			
Domestic calls			
User-defined entries			
Routing table			
Alternative routing			
<b>Customer PBX</b>			
PBX Model	Service / Support / Hotline Contact		
PBX Manufacturer	Company		
Software version	Name		
No. of internal ports	Tel.		
No. of external ports	Fax		
<b>Extensions / Supplementary Services</b>			
AOC-D	CLIP		
AOC-E	CLIR		
Others			
<b>Access Point / POP</b>			
Remote Administration Number			
<b>Line Data (for each B channel)</b>			
D channel protocol		Area Code	
PP / PMP		Number(s)	
NT Model		DDI	
NT Manufacturer			

### **Required Tools and Other Materials**

- For wall-mounting the TELES.iLCR 2BRI Box: Drill, hammer, screwdriver, tape measure, pencil, screws, dowels
- To connect to the ISDN line: either preconfigured ISDN cable or unfinished cable, crimping tool, RJ-45 plugs
- Power outlet (use extension cord if necessary)
- DSS1-capable telephone for manual settings
- Laptop with PCMCIA ISDN card (optional for remote administration)

### 9.1.2 Setting Up the TELES.iLCR 2BRI Box

The TELES.iLCR 2BRI Box can either be wall-mounted or placed on a flat and level surface. To wall mount the unit, two parallel holes must be drilled.



The box dimensions and mounting measurements are listed in the following table:

Figure 11 – TELES.iLCR 2BRI Box Rear View

Measurement	Millimeters
Dimensions (L x W x H)	142 x 145 x 45
Distance between holes	118
Maximum screw diameter	5
Maximum screw head diameter	9

Before mounting the TELES.iLCR 2BRI Box, be sure to complete installation steps A and B from Table 65 on Page 9-4.

### 9.1.3 TELES.iLCR 2BRI Box Wiring Diagram

Figure 12 shows the wiring scheme for the TELES.iLCR 2BRI Box. The box is connected to an ISDN Basic Rate Interface (BRI) via an ISDN outlet. The ISDN outlet should be installed by your PBX technician.

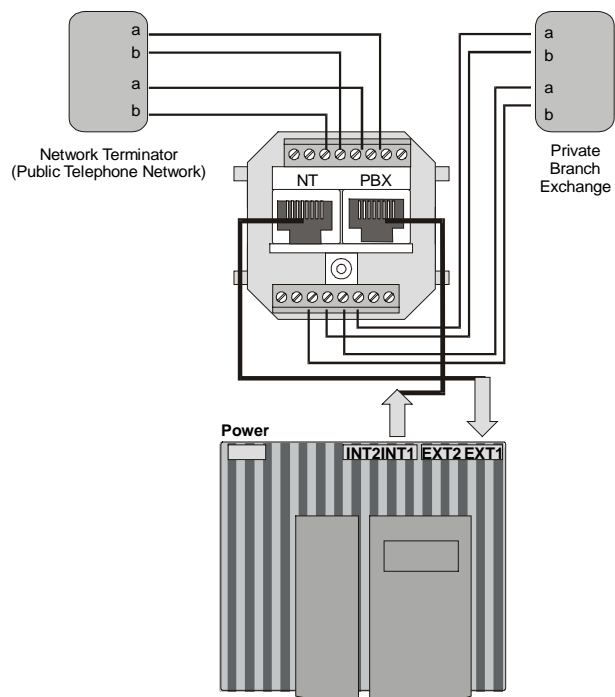


Figure 12 – TELES.iLCR 2BRI Box Wiring Scheme

## 9.1.4 Installation Steps

Before installing, have the necessary information and tools ready.

**Table 65 – TELES.iLCR 2BRI Box Installation Steps**

Step	Task
<b>A Test ISDN lines</b>	<ul style="list-style-type: none"> <li>• Incoming calls number display</li> <li>• Outgoing calls number display</li> <li>• Services required</li> <li>• Supplementary Services required (e.g. CLIP, CLIR, AOC)</li> <li>• Compare the parameters required with those supported by TELES.iLCR 2BRI Box (see appendix)</li> </ul>
<b>B Box operational?</b>	<ul style="list-style-type: none"> <li>• Connect the TELES.iLCR 2BRI Box to the power supply and plug it into a 230 V outlet.</li> <li>• The TELES.iLCR 2BRI Box starts. The LEDs light up in quick succession. The start takes 20 seconds. When completed, only the red Ready LED remains on.</li> <li>• When successfully started, disconnect the power supply.</li> </ul>
<b>C Set up box</b>	Wall mount the TELES.iLCR 2BRI Box or place it on a flat, level surface
<b>D Connect ISDN cables</b>	<p>There are three ways to connect the ISDN cables:</p> <ol style="list-style-type: none"> <li>1. Use the cables supplied. Connect the cable from the PBX to the Network Terminator to the internal line INT1. The cable supplied goes from the EXT1 port to the Network Terminator</li> <li>2. Undo the cable connecting the Network Terminator and the PBX. Connect RJ-45 plugs to both ends of the cable. Connect the PBX to the INT1 port and the Network Terminator to the EXT1 port.</li> <li>3. Have your PBX technician install an ISDN outlet (Figure 12). Disconnect the cable joining the two RJ-45 jacks. Use one cable to connect the public telephone network to the EXT1 port, and the other to connect the PBX to the INT1 port.</li> </ol> <p>The TELES.iLCR 2BRI Box lines are assigned in the same way as the public telephone network lines. Repeat the procedure to connect another BRI line, using INT2 and EXT2 ports</p>
<b>E Box operational?</b>	<ul style="list-style-type: none"> <li>• Turn on the TELES.iLCR 2BRI Box by plugging in the power supply unit. The running LEDs show that the box has booted.</li> <li>• Reboot takes about 20 seconds. The TELES.iLCR 2BRI Box automatically recognizes the D channel protocol and the connection type.</li> <li>• When the red LED lights up, the TELES.iLCR 2BRI Box has been successfully booted.</li> </ul>
<b>F Test remote administration</b>	<ul style="list-style-type: none"> <li>• Test remote administration from the public network. By default, the TELES.iLCR 2BRI Box accepts all incoming data calls. The TELES.iLCR 2BRI Box default table (see Table 66) is loaded. LED 3 (green LED) remains on during remote administration.</li> <li>• Have the port status displayed and check that all ports are active.</li> </ul>
<b>G Test connections</b>	<p>Test the following:</p> <p><b>Incoming calls</b></p> <ol style="list-style-type: none"> <li>1. dialed off-hook to exchange</li> <li>2. dialed on-hook to exchange</li> <li>3. dialed off-hook to any extension</li> <li>4. dialed on-hook to any extension</li> <li>5. dialed off-hook to a fax machine</li> <li>6. dialed on-hook to a fax machine</li> <li>7. is the caller's telephone number displayed?</li> </ol>

Step	Task
	<p><b>Outgoing calls</b></p> <ol style="list-style-type: none"> <li>1. dialed off-hook to local network</li> <li>2. dialed on-hook to local network</li> <li>3. dialed off-hook long distance</li> <li>4. dialed on-hook long distance</li> <li>5. by fax to local network</li> <li>6. is the called number displayed?</li> </ol> <p>(See Table 88)</p>
<b>H Upload configuration</b>	Upload the configuration table prepared for the customer
<b>I Test routing</b>	<p>Test the following routing features:</p> <ol style="list-style-type: none"> <li>1. off-hook dialed long-distance connections</li> <li>2. on-hook dialed long-distance connections</li> <li>3. off-hook dialed connections to mobile network</li> <li>4. on-hook dialed connections to mobile network</li> <li>5. long-distance connections by fax</li> <li>6. alternative routing when provider is engaged</li> <li>7. alternative routing when provider is not assigned</li> <li>8. alternative routing when customer has no authorization</li> <li>9. alternative routing for DTMF where connection is interrupted, according to MapCallBackWaitDisc</li> <li>10. alternative routing for Callback with DTMF when Provider fails to call back</li> <li>11. number display during routing</li> <li>12. number transmission during routing, number suppression (permanently and call-by-call)</li> <li>13. message transfer</li> <li>14. Disconnect</li> </ol> <p>(See Table 89)</p>
<b>J Shut down box</b>	Disconnect the TELES.iLCR 2BRI Box and test the hub functionality. All existing connections are thus interrupted. The PBX is now directly connected to the public network.
<b>K Test connections</b>	<p>Test the following:</p> <p><b>Incoming calls</b></p> <ol style="list-style-type: none"> <li>1. dialed off-hook to exchange</li> <li>2. dialed on-hook to exchange</li> <li>3. dialed off-hook to any extension</li> <li>4. dialed on-hook to any extension</li> <li>5. dialed off-hook to a fax machine</li> <li>6. dialed on-hook to a fax machine</li> <li>7. is the caller's number displayed?</li> </ol> <p><b>Outgoing calls</b></p> <ol style="list-style-type: none"> <li>1. dialed off-hook to local network</li> <li>2. dialed on-hook to local network</li> <li>3. off-hook dialed long distance</li> <li>4. on-hook dialed long distance</li> <li>5. by fax to local network</li> <li>6. is the called number displayed?</li> </ol> <p>(See Table 88)</p>
<b>L Reboot box</b>	<ul style="list-style-type: none"> <li>• Plug in the TELES.iLCR 2BRI Box. The LEDs light up in quick succession. Reboot takes approx. 20 seconds.</li> <li>• The configuration table is loaded</li> <li>• When the red LED lights up, the TELES.iLCR 2BRI Box has been successfully booted.</li> </ul>
<b>M Test remote administration</b>	<ul style="list-style-type: none"> <li>• Use the remote administration number and the password to test remote administration from the public network.</li> <li>• Have the port status displayed and check that all ports are active.</li> </ul>

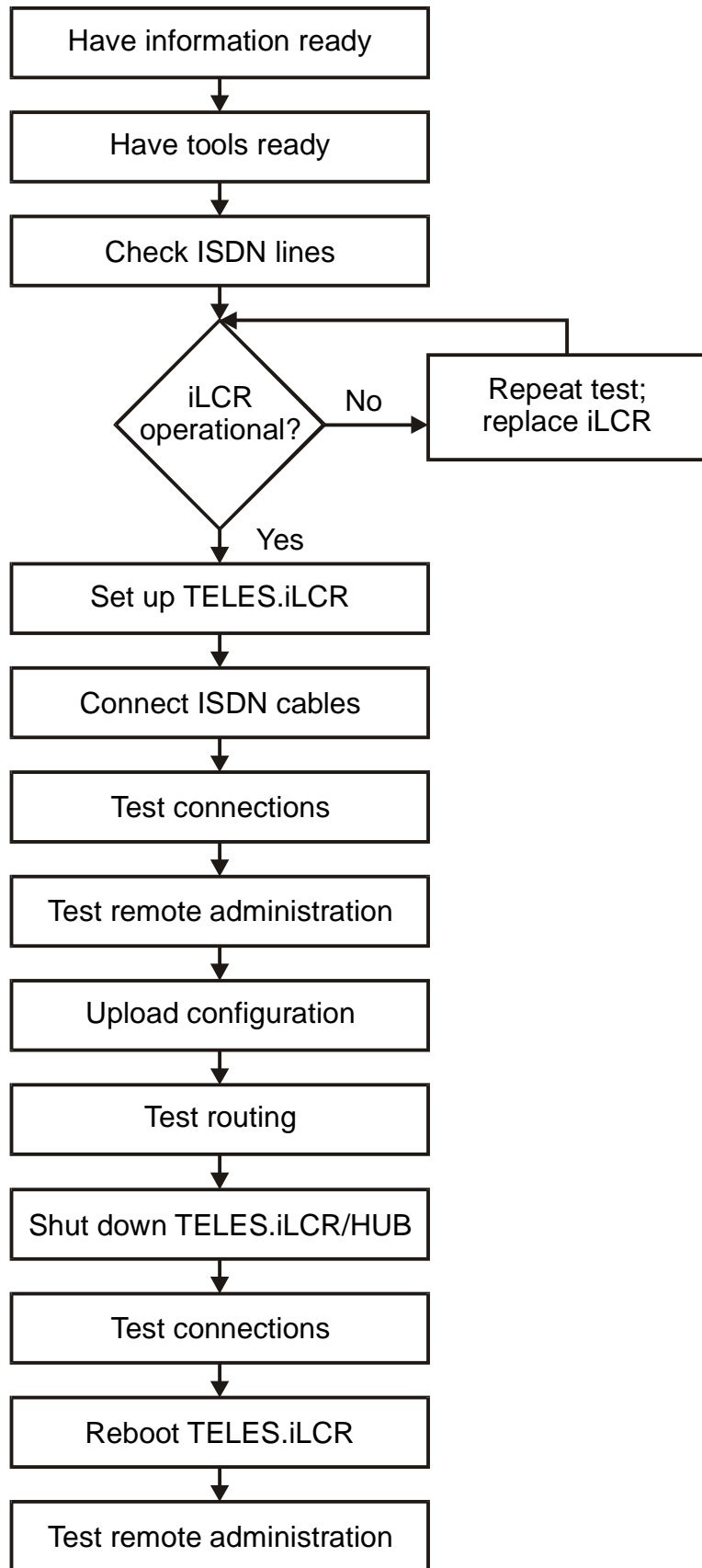
## 9.1.6 Troubleshooting

**Table 67 – TELES.iLCR 2BRI Box Installation Troubleshooting**

Step	What to do
<b>A</b>	Make a note of the test results. The TELES.iLCR 2BRI Box can reach only these results. Should there be any discrepancy between the services and supplementary services supported and required, check if the customer still wants the TELES.iLCR 2BRI Box installed.
<b>B</b>	Reboot the TELES.iLCR 2BRI Box if the first boot was unsuccessful. To do this, disconnect the power for 5 seconds. If the reboot is unsuccessful, the box will have to be replaced.
<b>C</b>	-
<b>D</b>	Look out for crossed wires or cables, and check that plugs are securely in place.
<b>E</b>	Reboot the TELES.iLCR 2BRI Box if the first boot was unsuccessful. To do this, disconnect the power for 5 seconds. If the reboot is unsuccessful, the TELES.iLCR 2BRI Box will have to be replaced.
<b>F</b>	The default configuration accepts all incoming data calls without a password. If this does not happen, check the CAPI error messages during connection setup. Try to set up another connection to the same number. If remote administration cannot be accepted, check whether the TELES.iLCR 2BRI Box is operational. <ul style="list-style-type: none"> <li>• Use a connected ISDN telephone to activate the default table ( <b>**RESETTABLE#</b> )</li> <li>• Reboot the TELES.iLCR 2BRI Box ( <b>**BOOTORIGINAL#</b> )</li> <li>• Cold start the TELES.iLCR 2BRI Box by unplugging it.</li> <li>• Check the ISDN wires and plugs. Unplug and plug them in again.</li> <li>• Check if the ports respond.</li> </ul>
<b>G</b>	<ul style="list-style-type: none"> <li>• If the TELES.iLCR 2BRI Box has not yet recognized the connection type, the first incoming call may be rejected. The subsequent incoming calls are accepted.</li> <li>• If a problem arises, repeat the test. Record the error with a trace. Analyze the trace and contact the TELES AG service center if necessary.</li> </ul>
<b>H</b>	<ul style="list-style-type: none"> <li>• If an error occurs, transfer the table again.</li> <li>• If there are incorrect entries in the table, it may not be possible to load it. Correct the errors and reload the table.</li> </ul>
<b>I</b>	<ul style="list-style-type: none"> <li>• If connections are not being routed, check the entries in the routing table. Load a correct table. Perform the test again.</li> <li>• If the errors continue to occur, record a trace and analyze it. Try to adapt the configuration accordingly.</li> </ul> <p>Note: In the DTMF system, no DTMF tones can be created during remote administration.</p>
<b>J</b>	-
<b>K</b>	<ul style="list-style-type: none"> <li>• Repeat the test whenever an error occurs.</li> <li>• If the error persists, connect the PBX directly to the ISDN and reproduce the error. If this succeeds, the error is in the ISDN connection or the PBX.</li> <li>• If the error does not occur when the PBX is connected directly, replace the TELES.iLCR 2BRI Box and repeat the tests.</li> </ul>
<b>L</b>	Reboot the TELES.iLCR 2BRI Box if the first boot was unsuccessful. To do this, disconnect the power for at least 5 seconds. If the reboot is unsuccessful, the TELES.iLCR 2BRI Box will have to be replaced. Begin again at Step E above.
<b>M</b>	<ul style="list-style-type: none"> <li>• If the connection cannot be made by remote administration, check if the number entered is correct.</li> <li>• Analyze the CAPI error messages during connection setup.</li> <li>• Check the password. Note that capital and small letters are differentiated when entering password.</li> <li>• Check the configuration table to see if the parameters entered are correct (<code>RemoteCode</code>, <code>MapIn to RemoteCode</code>, <code>RemoteOrigination</code>, <code>RemotePassword</code>)</li> </ul>

## 9.2 Installing the TELES.iLCR

Figure 13 describes the installation process. This is the recommended order for installing a TELES.iLCR.



**Figure 13 – TELES.iLCR Installation**

### 9.2.2 Setting Up the TELES.iLCR

The TELES.iLCR is available in a mini tower or industrial PC. You can set up both housings. The industrial PC can also be integrated into a 19" rack.

Measurement	Millimeters
Mini tower: Dimensions (L x W x H)	330 x 180 x 420
Industrial PC: Dimensions (L x W x H)	180 x 440 x 530

Steps A and B in Table 69 – TELES.iLCR Installation Steps must be completed before TELES.iLCR can be set up.

### 9.2.3 TELES.iLCR Wiring Diagram

Your PBX technician should install the outlets. Until the TELES.iLCR is connected, a cable joins the RJ 45 jacks.

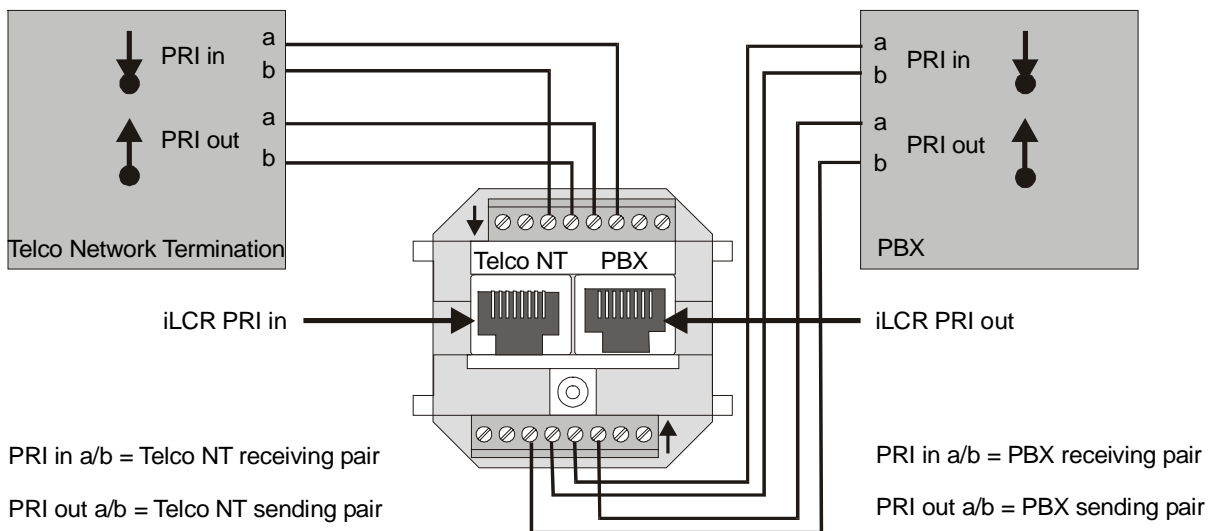


Figure 14 – TELES.iLCR Wiring Scheme