

**User's Guide**  
**bintec R3000w / R3400 / R3800**  
**SHDSL**

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Version 0.9

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R&TTE-Richtlinie 1999/5/EG

CE-Zeichen für alle EU-Länder

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<b>1</b>	<b>SHDSL Menu .....</b>	<b>3</b>
	<b>Index: SHDSL .....</b>	<b>11</b>



# 1 SHDSL Menu

The fields of the *SHDSL* menu are described below.

In the *SHDSL* menu you configure the **>> SHDSL** interface of your gateway.

**R3400** and **R3800** are equipped with an integrated SHDSL modem and support ITU-T Recommendation **>> G.991.2**. According how being equipped the gateway transmits the data over one pair of wires at up to 2312 kbps, over two pair of wires at up to 4624 kbps, over three pairs of wires at up to 6936 kbps or over four pairs of wires at up to 9248 kbps.



## Note

Ask your provider about any special features of your SHDSL connection that need to be considered.

**R3800** The *SHDSL* menu of **R3800** displays the list of all ATM interfaces (*fcca-3-x*) which can be used for an SHDSL connection (to the provider or for leased lines).

R3800 Setup Tool		Funkwerk Enterprise Communications GmbH			
[SHDSL 8-WIRE]: Units		MyGateway			
ATM interface	Wire Pairs	Annex	Mode	Status	
fcca-3-0	4-5	ANNEX B	CO	down	
fcca-3-1	7-8	not configured			
fcca-3-2	3-6	ANNEX B	CO	up	
fcca-3-3	1-2	not configured			
EXIT					

The ATM interfaces can be configured separately (**EQUIPMENT TYPE**, **OPERATING MODE**, **WIRE MODE** and clock rate).

Configuration of the ATM interfaces for the SHDSL connection is carried out in the **EDIT** menu. Tag the respective list item for the interface to edit and press **Enter**.

Four ATM interfaces are predefined. One wire pair is assigned to each interface per default. If you apply bonding, the wire pairs of one ATM interface must be assigned to the required one (choose the respective wire pair in **ADDITIONAL WIRE PAIRS**). The numbering of the wire pairs is described in the **bintec User's Guide** chapter **Technical Data**.

**R3400** As R3400 only has one ATM interface (*fcca-3-0*) which is used for an SHDSL connection, this interface's configuration menu is displayed here.

Further ATM interfaces are configured in the **ATM** menu.

**Bonding** Your gateway offers the possibility to apply the bonding technology to enhance the data transfer rate.

For **R3800** you can combine the four wire pairs into combinations of four, six, or eight wires (please see provider data and leased line specification). This results in a varying number of the displayed interfaces.

For **R3400** you can add two further wires to the preconfigured two wires used per default for the SHDSL connection.

**m-pair bonding** For m-pair bonding the pieces of data are distributed per byte on several wire pairs (see ITU-T recommendation **G.991.2**).

**IMA bonding** The gateway can also operate as inverse multiplexer using IMA ((Inverse Multiplexing over ATM, according to **AF-PHY-0086.001** of the ATM Forum). The data is distributed via the wire pairs per cell.

The **SHDSL** resp. **SHDSL** → **<INTERFACE>** → **EDIT** menu opens as follows:

R3400 Setup Tool	Funkwerk Enterprise Communications GmbH
[SHDSL 8-WIRE] [FCCA-3-0 PIN 4-5]: SHDSL settings	MyGateway
Physical Connection:	not established
Equipment Type:	Central Office (CO)
Operating Mode:	region 2 (Annex B)
Wire Mode:	2 wire
Clock Rate Mode:	adaptive
Minimum Rate (kbit/s):	192
Maximum Rate (kbit/s):	2304
SAVE	CANCEL

The **SHDSL** menu consists of the following fields:

Feld	Wert
Physical Connection	Shows the status of the SHDSL connection and cannot be edited. Possible values: <ul style="list-style-type: none"> <li>■ <i>established</i>: SHDSL connection has been set up.</li> <li>■ <i>not established</i>: SHDSL connection has not been set up.</li> </ul>
Actual Line Speed	Only if <i>established</i> is indicated for <b>PHYSICAL CONNECTION</b> . Shows the current transmission speed of the connection in bps.

Feld	Wert
Equipment Type	<p>Defines the type of equipment.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ <i>Customer Premises (CPE)</i>: Mode for the device the customer uses for his SHDSL access (customer side) (default value).</li> <li>■ <i>Central Office (CO)</i>: Mode for the access device at the SHDSL provider (provider side).</li> </ul>
Operating Mode	<p>Defines which annex of ITU-T Recommendation G.992.1 is used for the connection.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ <i>region 1 (Annex A)</i>: For applications in North America (provider-dependent).</li> <li>■ <i>region 2 (Annex B)</i>: Default value. For applications in Europe (provider-dependent).</li> </ul>
Wire Mode	<p>Defines number and combination of wires (depends on type of device), which are to be used for the connection.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ <i>2 wire</i>: 2 wires are used for m-pair bonding with a data transfer rate of 192 to 2312 kBit/s.</li> <li>■ <i>4 wire</i>: 4 wires are used for m-pair bonding with a data transfer rate of 384 to 4624 kBit/s. This option supports the 4 wire mode according to G991.2 and the Globespan Enhanced Mode.</li> </ul>



Feld	Wert
Wire Mode (cont.)	<ul style="list-style-type: none"> <li data-bbox="801 286 1303 450">■ <i>4 wire standard</i> (only <b>R3800</b>): 4 wires are used for m-pair bonding with a data transfer rate of 384 to 4624 kBit/s. This option supports the 4 wire mode according to G991.2, but not the Globespan Enhanced Mode.</li> <li data-bbox="801 479 1303 570">■ <i>4 wire IMA</i> (only <b>R3800</b>): 4 wires are used for IMA with a data transfer rate of 384 to 4624 kBit/s.</li> <li data-bbox="801 599 1303 690">■ <i>6 wire</i> (only <b>R3800</b>): 6 wires are used for m-pair bonding with a data transfer rate of 576 to 6936 kBit/s.</li> <li data-bbox="801 719 1303 809">■ <i>6 wire IMA</i> (only <b>R3800</b>): 6 wires are used for IMA with a data transfer rate of 576 to 6936 kBit/s.</li> <li data-bbox="801 838 1303 929">■ <i>8 wire</i> (only <b>R3800</b>): 8 wires are used for m-pair bonding with a data transfer rate of 768 to 9248 kBit/s.</li> <li data-bbox="801 958 1303 1048">■ <i>8 wire IMA</i> (only <b>R3800</b>): 8 wires are used for IMA with a data transfer rate of 768 to 9248 kBit/s.</li> <li data-bbox="801 1077 1303 1134">■ <i>not used</i> (only <b>R3800</b>): No specific usage of wires for the SHDSL connection.</li> </ul>

Feld	Wert
Additional Wire Pairs	<p>(only <b>R3800</b>)</p> <p>Only for <b>WIRE MODE = 4 wire, 4 wire IMA, 6 wire, 6 wire IMA</b></p> <p>Defines which wire pairs are to be added to the connection (depends on the type of device).</p> <p>The wires of the SHDSL interface not used are displayed together with their assigned wires.</p> <p>For <b>4 wire</b> and <b>4 wire IMA</b> you can choose one wire pair.</p> <p>For <b>6 wire</b> and <b>6 wire IMA</b> you can choose from two wire pairs.</p> <p>Wires which are already assigned to combinations are not available. If these should be added to another connection, the existing combination must be dissolved first.</p>
Clock Rate Mode	<p>Defines the mode for the transmission rate.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ <i>adaptive</i>: The transmission rate is negotiated according to the line quality. The minimum and maximum values for the transmission rate are indicated by the values <b>MINIMUM RATE (KBIT/S)</b> and <b>MAXIMUM RATE (KBIT/S)</b>.</li> <li>■ <i>fixed</i>: The transmission rate is fixed and is determined by the value indicated in the <b>REQUESTED RATE</b> field.</li> </ul>

Feld	Wert
Requested Rate (kbit/s)	<p>Only for <b>CLOCK MODE</b> = <i>fixed</i>.</p> <p>Defines the transmission rate of the connection.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ for <b>WIRE MODE</b> = <i>2 wire</i>: 192 to 2312 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>4 wire / 4 wire IMA</i>: 384 to 4624 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>6 wire / 6 wire IMA</i>: 576 to 6936 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>8 wire / 8 wire IMA</i>: 768 to 9248 kBit/s in predefined steps.</li> </ul>
Minimum Rate (kbit/s)	<p>Only for <b>CLOCK MODE</b> = <i>adaptive</i>.</p> <p>Defines the minimum transmission rate of the connection.</p> <ul style="list-style-type: none"> <li>■ for <b>WIRE MODE</b> = <i>2 wire</i>: 192 to 2312 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>4 wire / 4 wire IMA</i>: 384 to 4624 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>6 wire / 6 wire IMA</i>: 576 to 6936 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>8 wire / 8 wire IMA</i>: 768 to 9248 kBit/s in predefined steps.</li> </ul>

Feld	Wert
Maximum Rate (kbit/s)	<p>Only for <b>CLOCK MODE</b> = <i>adaptive</i>.</p> <p>Defines the maximum transmission rate of the connection.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ for <b>WIRE MODE</b> = <i>2 wire</i>: 192 to 2312 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>4 wire / 4 wire IMA</i>: 384 to 4624 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>6 wire / 6 wire IMA</i>: 576 to 6936 kBit/s in predefined steps.</li> <li>■ for <b>WIRE MODE</b> = <i>8 wire / 8 wire IMA</i>: 768 to 9248 kBit/s in predefined steps.</li> </ul>

Table 1-1: **SHDSL** menu fields

## Index: SHDSL

<b>A</b>	Actual Line Speed	5
	Additional Wire Pairs	8
<b>C</b>	Clock Rate Mode	8
<b>E</b>	Equipment Type	6
<b>M</b>	Maximum Rate (kbit/s)	10
	Minimum Rate (kbit/s)	9
<b>O</b>	Operating Mode	6
<b>P</b>	Physical Connection	5
<b>R</b>	Requested Rate (kbit/s)	9
<b>W</b>	Wire Mode	6

