



**SHDSL**

**bintec Dm742-I**

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## I Related Documents

bintec Dm772-I Common Configuration Interfaces



## Chapter 2 SHDSL Configuration

### 2.1 Accessing the interface configuration

Access the SHDSL interface configuration menu by accessing the ATM interface linked to the SHDSL interface through the **network <ATM interface>** command (general configuration menu). Once in the ATM interface, access the physical configuration layer by running **phy**:

```
Config>network atm1/0

-- ATM interface configuration --
atm1/0 config>phy

----- SHDSL Config -----
atm1/0:shdsl0 config>
```

There are certain commands that are common to all the device interfaces. These commands are described in the interfaces common configuration manual (bintec Dm772-I Common Configuration Interfaces).

Devices supporting SHDSL in PTM/EFM mode also support ATM modes. With a view to minimizing the impact of PTM/EFM support on the configuration and monitoring of our devices:

- In a device with a SHDSL interface that only supports ATM, there is an ATM interface (atmx/y) with a submenu (phy) providing access to the SHDSL.
- In a device with a SHDSL interface that supports both ATM and PTM, there is:

An ATM interface (atmx/y) with a submenu (phy), which provides access to the SHDSL (physical layer).

An Ethernet interface (ethernetx/y), which represents the data interface when the connection is established in PTM/EFM mode, associated with the same connector as the ATM interface.

Therefore, everything relating to SHDSL technology is contained in the ATM interface phy submenu while everything relating to the data interface is contained in:

- The ATM interface and subinterfaces where the negotiated encapsulation is ATM, i.e. this is only UP when the SHDSL link is using ATM mode.
- The associated Ethernet interface where the negotiated encapsulation is PTM, i.e. this is only UP when the link is using PTM mode.



#### Note

While you would expect ptmx/y to be defined in a similar way to atmx/y, this is not the case. This is because only Ethernet is transported over PTM and it seems more natural to think of a SHDSL-PTM connection as an Ethernet interface, where a copper pair and PTM are used, rather than a class 5 twisted pair and 802.3 protocol.

### 2.2 Interface Configuration Commands

The SHDL configuration commands are described and numerated in this section.

Command	Function
<i>? (HELP)</i>	Lists the available commands or their options.
<i>ADVANCED</i>	Configures the specific parameters for each chipset.
<i>IGNORE-ERRORS-SECONDS</i>	Establishes the initial connection seconds during which the errors in the connection are ignored.
<i>LINE-RATE</i>	Configures the line-rate.
<i>LIST</i>	Displays all of the current configuration.
<i>NO</i>	Negates a command or sets its default value.
<i>OPEN-MODE</i>	Configures the open mode (standard, annex, etc.).
<i>PTM-BUNDLE-CONTROL</i>	Defines parameters to control the state of a PTM interface that is using several

	links (bonding).
<b>SHUTDOWN</b>	Deactivates the interface.
<b>EXIT</b>	Exits the SHDSL configuration menu.

## 2.2.1 ADVANCED

Configures specific parameters for each chipset.

These commands should only be used under the express instructions of our technical team. Incorrect configuration may leave the interface inoperative.

## 2.2.2 IGNORE-ERRORS-SECONDS

When the connection is established with some DSLAMs, there is a brief transitory phase where some errors may be detected; these errors are ignored through this command. Once the connection has passed through this phase, it's completely stable and valid.

```
atml1/0:shdsl0 config>ignore-errors-seconds <0..127>
```

- 0 Deactivates the aforementioned mechanism.
- 1...127 Number of seconds during which the initial errors are ignored.

Default is errors ignored for 15 seconds.

## 2.2.3 LINE-RATE

Configures the SHDSL line opening rate.

```
atml1/0:shdsl0 config>line-rate <192..5696>
atml1/0:shdsl0 config>line-rate auto [current-snr <-10..21>]*
[worst-snr <-10..21>]*
[probing <standard | globespan>]*
```

auto	The rate is negotiated on establishing the link and is the result of the line conditions (length, noise, attenuation, etc.), and the speeds allowed by both ends.
current-snr	Defines the required noise margin (in dB) for the current conditions of the line. Default: 0 dB.
worst-snr	Defines the required noise margin (in dB) for the worst standard predefined line conditions. Default: disabled.
probing	Line probing method to use. In fix rate mode, line probing is disabled.
standard	Default.
globespan	Special mode to improve interoperability with GlobeSpan-based ends.
192...5696	Link rate in Kbps, per pair (if the line conditions or the remote end do not allow these, then the link is not established).

\*Available depending on the hardware.



### Note

The configured rate does not include the overhead for the links (8 Kbps per link; therefore, 8 Kbps in 2-wire links and 16 Kbps in 4-wire links) given that the bandwidth is not available for the user and is reserved for the standard operation.



### Note

We recommend you make the open rate explicit (including *auto*) and do not delegate the value assigned by default.



2.2.4 LIST

Displays the whole of the interface configuration.

Example:

```
atml1/0:shdsl0 config>list

Chipset:          Conexant Orion Single Channel (PCI with PQ2SAR)

Open mode:
  Equipment:      CPE
  Standard:       ITU G.991.2 (G.Shdsl)
  Annex:          A (North America)
  Wire mode:      2-wire

Line rate: Default -> auto
  Current SNR 0 dB
  Worst SNR disabled
  Line Probing: default -> standard

Ignore Errors Seconds:  Default # 15

Admin status:    UP
```

2.2.5 NO

Disables features or sets the default values for some parameters.

2.2.6 OPEN-MODE

Configures the SHDSL interface open-mode.

```
atml1/0:shdsl0 config>open-mode <cpe | co> g.shdsl
                                annex <a | b | b-anfp | a/b | a/b-anfp |
                                f | g | a/f | b/g | a/b/f/g>
                                <2-wire | 4-wire-standard | 4-wire-enhanced |
                                1-pair-ptm | 2-pair-ptm | 3-pair-ptm | 4-pair-ptm |
                                1-pair-mpair | 2-pair-mpair | 3-pair-mpair | 4-pair-mpair>
                                [pair-map <0-3>]
```

cpe   co	Configures the operating mode:  user device - CPE – Customer Premises Equipmental.  central device - CO – Central Office.
g.shdsl annex	Determines the ITU G.991-2 recommendation annex going to be used.
A	North America.
B	Europe.
B-ANFP (*)	Europe (Access Network Frequency Plan).
A/B (*) (+)	Adapts to the annex requested (A or B) by the other end.
A/B-ANFP (*) (+)	Adapts to the annex requested (A or B-ANFP) by the other end.
F (*)	North America (G.SHDSL.bis).
G (*)	Europe (G.SHDSL.bis).
A/F (*)	North America (G.SHDSL / G.SHDSL.bis).
B/G (*)	Europe (G.SHDSL / G.SHDSL.bis).
A/B/F/G (*)	
2-wire	Establishes the operating mode for two wires (ATM).
4-wire-standard (*)	Establishes the operation mode for four wires with the two channels linked (there is only one effective negotiation) (ATM).
4-wire-enhanced	Establishes the operating mode for four wires with the two channels unlinked (there are two ne-

(*)	gotiations; the status of one link does not affect the status of the other) (ATM).
1-pair-ptm (*)	Defines a link in PTM mode using 1 pair.
2-pair-ptm (*)	Defines a link in PTM mode using 2 pairs in EFM bonding mode.
3-pair-ptm (*)	Defines a link in PTM mode using 3 pairs in EFM bonding mode.
4-pair-ptm (*)	Defines a link in PTM mode using 4 pairs in EFM bonding mode.
1-pair-mpair (*)	Defines a link in ATM mode using 1 pair.
2-pair-mpair (*)	Defines a link in ATM mode using 2 pairs in M-pair mode.
3-pair-mpair (*)	Defines a link in ATM mode using 3 pairs in M-pair mode.
4-pair-mpair (*)	Defines a link in ATM mode using 4 pairs in M-pair mode.
pair-map <0-3> (*)	Optional. Selects the physical pairs to be used by the link. In cases of collision, the interface with the lowest index gets the pairs and all colliding interfaces are disabled.

(\*) Available depending on the type of hardware.

(+) Only in CPE mode.

By default, the open mode is CPE in Annex B 2-wire.



#### Note

We recommend that the open rate is explicit and the default value not delegated.



#### Note

If the open mode is modified, the line rate configuration is reset to default.

## 2.2.7 PTM-BUNDLE-CONTROL

Defines the parameters that control the availability of the Ethernet-PTM interface.

```
atml1/0:shdsl0 config>ptm-bundle-control [min-aggregated-rate <192..22784>]
[ min-links <2..4> ]
```

min-aggregated-rate	When the SHDSL interface is configured to operate in PTM mode, the corresponding Ethernet-PTM interface will only be declared up if the aggregate rate offered by the SHDSL interface (calculated by adding up the rate of all the active pairs in the bonded group) meets this lower limit. Default is disabled.
min-links	Similar to the previous parameter but applied to the number of active pairs in the bonding group. Default is disabled.

## 2.2.8 SHUTDOWN

Detains any SHDSL interface activity.

## 2.2.9 EXIT

Returns to the ATM configuration menu.

## 2.3 Commands Summary

```
[no] advancedmindspeed-zipwire-plus <0x0..0xffff> <0x0..0xff> <0x0..0xff>
conexant-orion          <1..65535> <0 | 1> <0..65535> <0x0..0xffff>
lantiq-socrates-4e <1..65535> <0..65535> <0x0..0xffffffff>
                        <0x0..0xffffffff>

[no] ignore-errors-seconds<0..127>

[no] line-rateauto [current-snr <-10..21>] [worst-snr <-10..21>]
                [probing <standard|globespan>]>
[no] line-rate<192..5696>

[no] open-mode <cpe |co> g.shdsl
                annex <a | b | b-anfp | a/b | a/b-anfp | f | g | a/f | b/g | a/b/f/g>
                <2-wire          | 4-wire-enhanced | 4-wire-standard |
                1-pair-ptm      | 2-pair-ptm      | 3-pair-ptm      | 4-pair-ptm |
                1-pair-mpair | 2-pair- mpair   | 3-pair- mpair   | 4-pair- mpair>
                [pair-map <0-3>]

[no] ptm-bundle-control [min-aggregate-rate <192..22784>] [min-links <2..4>]

[no] shutdown

exit
```

## Chapter 3 SHDSL Monitoring

### 3.1 Accessing the interface monitoring

Access the SHDSL interface monitoring menu by accessing the ATM interface (linked to the SHDSL interface) and running **network <ATM interface>** (general monitoring menu). Once in the ATM interface, access the physical monitoring layer by running **phy**:

```
+network atm1/0

-- ATM Console --
atm1/0 monitor+phy
----- SHDSL Monitor -----
atm1/0:shdsl0 monitor+
```

### 3.2 Interface Monitoring Commands

The SHDSL interface monitoring commands are described and numerated in this section.

Command	Function
<i>? (HELP)</i>	Lists the available commands or their options.
<i>CLOSE</i>	Finalizes any interface activity and prevents any activity from being produced.
<i>OPEN</i>	Reactivates the interface activity.
<i>SIGNAL</i>	Returns information on the SHDSL signal.
<i>STATE</i>	Information on the chipset status.
<i>HISTORIC</i>	Connections history.
<i>VENDOR-INFO</i>	Vendor information on the CEP and the CO.
<i>TEST</i>	Test commands.
<i>EXIT</i>	Exits the SHDSL monitoring menu.

#### 3.2.1 CLOSE

Finalizes any interface activity and prevents any activity from being produced.

#### 3.2.2 OPEN

Reactivates the interface activity.

#### 3.2.3 SIGNAL

##### 3.2.3.1 SIGNAL PARAMETERS

Displays the most representative signal parameters.

```
atm1/0:shdsl0 monitor+signal parameters
```

	Remote	Local
	-----	-----
Noise Margin (dB)	+ 0.0	+ 37.6
Attenuation (dB)	+ 0.0	+ 29.3
Tx power (dB)	+ 0.0	+ 13.5
Rx Gain (dB)	+ 0.0	+ 21.0
Activation state	Data	Data
Actual Line Rate (bps):	392	
Actual Payload Rate (bps):	384	
Transmission Mode:	ITU-T G.991.2 Annex B	

**Note**

Values relative to the remote end are obtained through the EOC channel and, therefore, availability is subject to the functioning of said channel.

**3.2.3.2 SIGNAL PERFORMANCE GLOBAL**

Displays the global performance parameters.

```
atml1/0:shdsl0 monitor+signal performance global
```

	Remote	Local
	-----	-----
Errored Seconds	0	1
Severely errored seconds	0	0
CRC anomalies	0	5
SEG anomalies	0	724
Loss of sync word	0	4
Unavailable seconds	0	1782
Current 15 min		
Time Elapsed	0	1942
Errored Seconds	0	1
Severely errored seconds	0	0
CRC anomalies	0	5
SEG anomalies	0	8
Loss of sync word	0	4
Unavailable seconds	0	159
Current day		
Time Elapsed	0	1942
Errored Seconds	0	1
Severely errored seconds	0	0
CRC anomalies	0	5
SEG anomalies	0	724
Loss of sync word	0	4
Unavailable seconds	0	1782

**Note**

Values relative to the remote end are obtained through the EOC channel and, therefore, availability is subject to the functioning of said channel.

**3.2.3.3 SIGNAL PERFORMANCE 15 MIN-INTERVAL**

Displays the performance parameters for the last day at 15 minute intervals.

```
atml1/0:shdsl0 monitor+signal performance 15min-interval
```

```
Interval index (1..96)[1]? 2
```

	Remote	Local
	-----	-----
Interval number	2	2
Errored Seconds	0	0
Severely errored seconds	0	0
CRC anomalies	0	0
SEG anomalies	0	131
Loss of sync word	0	0
Unavailable seconds	0	132

**3.2.3.4 SIGNAL PERFORMANCE 1DAY-INTERVAL**

Displays the performance parameters at 1 day intervals.

```
monitor+signal performance 1day-interval
```

```
Interval index (1..30)[1]? 2
```

Remote	Local
--------	-------

	-----	-----
Interval number	1	1
Monitored seconds	0	0
Errored Seconds	0	0
Severely errored seconds	0	0
CRC anomalies	0	0
SEG anomalies	0	0
Loss of sync word	0	0
Unavailable seconds	0	0

3.2.4 STATE

Displays information on the chipset.

```
atml/0:shdsl0 monitor+state

Chipset          Conexant Single Orion
Board revision    A
Modem status      DOWN
Interface HSM state Opening
Channel 0 HSM state Opening (UNKNOWN)

Interrupts A:     0
Interrupts B:     0

Internal Transceiver configuration (Num: 29 Len: 29)

Item  0: 0x0000 0x0001 0x0000 0x6600 0x0004
Item  5: 0x0004 0x0000 0x0000 0x016e 0x0331
Item 10: 0x0005 0x0005 0x0001 0x0002 0x359f
Item 15: 0x359f 0x000f 0x000f 0x0000 0x2c00
Item 20: 0x0000 0x0000 0x0000 0x0000 0x0000
Item 25: 0x0000 0x0001 0x0024 0x0910

Transceiver parameters: Modified items default value
Item  0 (0x00): 0xffff --> 0x0000
Item 13 (0x0d): 0x0001 --> 0x0002

Internal Framer configuration (Num: 18 Len: 18)

Item  0: 0x0003 0x0000 0x0000 0x0000 0x0000
Item  5: 0x0001 0x0000 0x0021 0x0000 0x0000
Item 10: 0x0000 0x0000 0x0000 0x0000 0x0000
Item 15: 0x0000 0x0000 0x0000
```

3.2.5 HISTORIC

Returns the connections history with the most important connection parameters.

```
atml/0:shdsl0 monitor+historic
```

Id	Start	End	Mode	Rate	NM (dB)	Att (dB)
8	14/10 16:17:33	14/10 16:18:41	6WIRE-PTM	17088	----	----
					17.0	0.0 (1)
					16.0	0.0 (2)
					17.0	0.0 (3)

Mode:	2WIRE / 4WIRE / 6WIRE / 8WIRE 2WIRE-PTM / 4WIRE-PTM / 6WIRE-PTM / 8WIRE-PTM
Rate:	in kbps.
NM (dB):	Noise margin in dB.
Att (dB):	Attenuation in dB.

### 3.2.6 VENDOR-INFO

Returns the vendor information relative to the local and the remote ends.

```
atml1/0:shdsl0 monitor+vendor-info
```

Remote unit vendor info

```
ID:                BINTEC
Model Number:      CNXT ORION S
Serial Number:     106/01024
EOC sw version:    1
Standard version:  8
List Number:       00 00 00
Issue Number:      00 00
SW version:        R3.1.1
Equipment code:    TS-542A/0
Other:             10.6.31
Tx Mode Capability: unknown
```

Local unit vendor info

```
ID:                BINTEC
Model Number:      CNXT ORION D
Serial Number:     106/01023
EOC sw version:    1
Standard version:  8
List Number:       00 00 00
Issue Number:      00 00
SW version:        R3.1.1
Equipment code:    TS-542B/1
Other:             10.6.31-Alfa
Tx Mode Capability: ITU-T G.991.2 Annex B
```



#### Note

Values relative to the remote end are obtained through the EOC channel and, therefore, availability is subject to the functioning of said channel.

### 3.2.7 TEST

The use and interpretation of these test commands must be supervised by our technical personnel.

### 3.2.8 EXIT

Exits to the previous menu.