

TECHNICAL DATA

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Bintec User's Guide - XGeneration
Version 1.1

Purpose This document is part of the user's guide to the installation and configuration of Bintec gateways running software release 7.1.14 or later. For up-to-the-minute information and instructions concerning the latest software release, you should always read our **Release Notes**, especially when carrying out a software update to a later release level. The latest **Release Notes** can be found at www.funkwerk-ec.com.

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The information in this manual is subject to change without notice. Additional information, changes and **Release Notes** for Bintec gateways can be found at www.funkwerk-ec.com.

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Guidelines and standards Bintec gateways comply with the following guidelines and standards:

R&TTE Directive 1999/5/EG

CE marking for all EU countries and Switzerland

You will find detailed information in the Declarations of Conformity at www.funkwerk-ec.com.

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1 X2301

All products of the **XGeneration** provide you with a similar set of functions and differ in terms of the supported interfaces or connection types.

1.1 Delivery size

Your gateway is supplied with the following parts:

- Cable sets/power supply:
 - Ethernet cable
 - Serial cable
 - DSL cable
 - Power supply
- Bintec Companion CD
- Documentation:
 - **Quick Install Guide** (printed)
 - **User's Guide** (on CD)
 - **Release Notes**, if required
 - Safety Instructions

1.2 General Product Features

The general product features cover performance features and the technical requirements for installation and operation of your gateway.

These features are outlined in the following table:

Feature	Data
Product name	X2301

Feature	Data
Dimensions/weight (B x H x D): Dimensions without cables Weight Transport weight (incl. documentation, cabling, packaging)	140.6 mm x 26.6 mm x 99.5 mm 350 g approx. 1.2 kg
Memory	16 MB SDRAM, 4 MB Flash-ROM
LEDs	11 (1 power, 4x2 Ethernet, 1x WAN, 1x Status)
Power consumption of equipment	4.7 Watt
Voltage supply	12V DC 500mA EU PSU
Ambient requirements: Storage temperature Ambient temperature Relative humidity Room classification	-20° to +70°C 0 to 40 °C 10 to 90% non-condensing in operation 5 to 95% non-condensing in storage Operate only in dry rooms.
Available interfaces: ADSL interface Serial interface V.24 Ethernet IEEE 802.3 LAN (4 port switch)	Built-in ADSL modem for Annex A Built-in, supports the following baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bauds Built-in (twisted-pair only), 10/100 Mbps, auto sensing, MDIX
Plugs used: Serial interface Ethernet interface ADSL interface	3-pole MiniDIN RJ45 RJ11

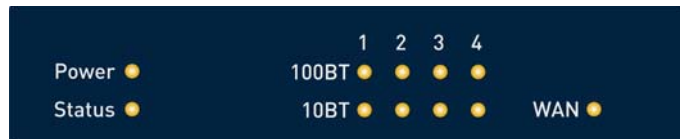
Feature	Data
SAFERNET™ Security Technology	Community Passwords, PAP, CHAP, MS-CHAP, Access Control Lists, NAT, SIF
Software includes	BRICKware for Windows BRICKtools for Unix
Printed documentation included	Quick Install Guide
Documentation in PDF format	User's Guide BRICKware for Windows Software Reference

Table 1-1: General product features

1.3 LEDs

The LEDs on your **XGeneration** Gateway indicate the states and the activity of the gateway.

They are arranged as follows:

Figure 1-1: LEDs on **X2301**

In operational mode the LEDs display the following status information:

LED	Status	Information
Power	on	Power supply has been connected.
Status	on flashing	The gateway is booting. The gateway is active.

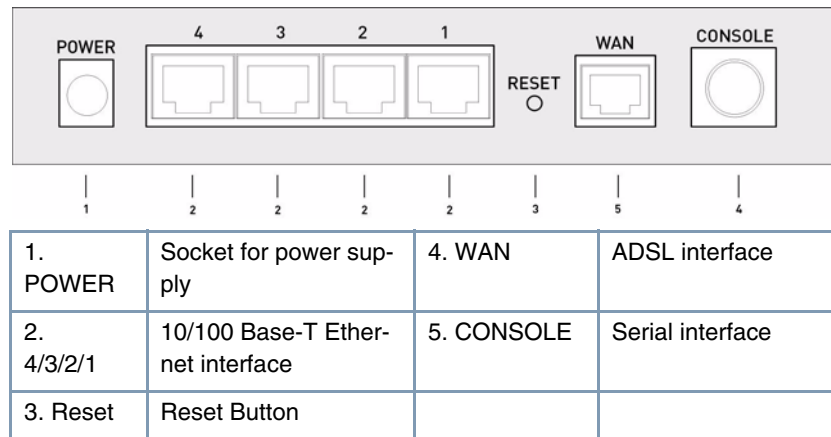
LED	Status	Information
1 to 4	on flashing	The gateway is connected to the Ethernet (100 Mbit/s or 10 Mbit/s respectively). Data traffic via the Ethernet interface (100 Mbit/s or 10 Mbit/s respectively).
WAN	on	The gateway has successfully synchronized with the ADSL provider's DSLAM.

Table 1-2: LED status display

1.4 Connections

All connections are located on the rear of the gateway. **X2301** offers a 4-port Ethernet switch and an ADSL interface as well as a serial interface.

The connections are arranged as follows:

Figure 1-2: **X2301** rear

1.5 Pin Assignments

1.5.1 Serial Interface

For connecting a console **X2301** provides a serial interface. Baud rates between 1200 and 115200 Bit/s are supported.

The interface is connected through a 3-pole MiniDIN socket:

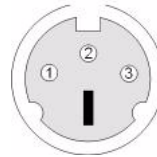


Figure 1-3: 3-pole MiniDIN socket

The pin assignment of the socket is as follows:

Pin	Function
1	Rx
2	GND
3	Tx

Table 1-3: Pin assignment of the serial socket

1.5.2 Ethernet Interface

X2301 offers an Ethernet interface with integrated 4-port switch for LAN connection. It can be used to connect single PCs as well as additional switches.

An RJ45 socket is used for connecting:

1 8

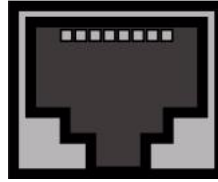


Figure 1-4: Ethernet 10/100Base-T interface (RJ45 socket)

The Ethernet sockets have the following pin assignment

Pin	Function
1	TD +
2	TD -
3	RD +
4	Not used
5	Not used
6	RD -
7	Not used
8	Not used

Table 1-4: RJ45 socket for LAN connections

1.5.3 ADSL Interface

The ADSL interface is connected using a RJ11 socket. The supplied cable combines the RJ11 plug required by the ADSL splitter and the RJ11 plug required by the gateway.

Only the inner pins are used for the ADSL connection:



Figure 1-5: ADSL interface (RJ11)

The ADSL interface has the following pin assignment:

Pin	Function
1	Not used
2	a
3	b
4	Not used

Table 1-5: ADSL interface (RJ11 socket)

2 X2302

All products of the **XGeneration** provide you with a similar set of functions and differ in terms of the supported interfaces or connection types.

2.1 Delivery size

Your gateway is supplied with the following parts:

- Cable sets/power supply:
 - Ethernet cable
 - Serial cable
 - DSL cable
 - Power supply
- Bintec Companion CD
- Documentation:
 - **Quick Install Guide** (printed)
 - **User's Guide** (on CD)
 - **Release Notes**, if required
 - Safety Instructions

2.2 General Product Features

The general product features cover performance features and the technical requirements for installation and operation of your gateway.

These features are outlined in the following table:

Feature	Data
Product name	X2302

Feature	Data
Dimensions/weight (B x H x D): Dimensions without cables Weight Transport weight (incl. documentation, cabling, packaging)	140.6 mm x 26.6 mm x 99.5 mm 350 g approx. 1.2 kg
Memory	16 MB SDRAM, 4 MB Flash-ROM
LEDs	11 (1 power, 4x2 Ethernet, 1x WAN, 1x Status)
Power consumption of equipment	4.7 Watt
Voltage supply	12V DC 500mA EU PSU
Ambient requirements: Storage temperature Ambient temperature Relative humidity Room classification	-20° to +70°C 0 to 40 °C 10 to 90% non-condensing in operation 5 to 95% non-condensing in storage Operate only in dry rooms.
Available interfaces: ADSL interface Serial interface V.24 Ethernet IEEE 802.3 LAN (4 port switch)	Built-in ADSL modem for Annex B Built-in, supports the following baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bauds Built-in (twisted-pair only), 10/100 Mbps, auto sensing, MDIX
Plugs used: Serial interface Ethernet interface ADSL interface	3-pole MiniDIN RJ45 RJ11

Feature	Data
SAFERNET™ Security Technology	Community Passwords, PAP, CHAP, MS-CHAP, Access Control Lists, NAT, SIF
Software includes	BRICKware for Windows BRICKtools for Unix
Printed documentation included	Quick Install Guide
Documentation in PDF format	User Manual BRICKware for Windows Software Reference

Table 2-1: General product features

2.3 LEDs

The LEDs on your XGeneration Gateway indicate the states and the activity of the gateway.

They are arranged as follows:

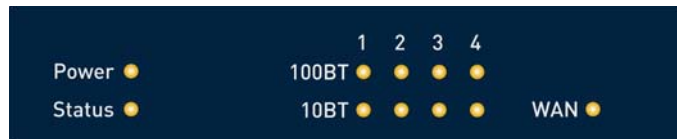


Figure 2-1: LEDs on X2302

In operational mode the LEDs display the following status information:

LED	Status	Information
Power	on	Power supply has been connected.
Status	on flashing	The gateway is booting. The gateway is active.

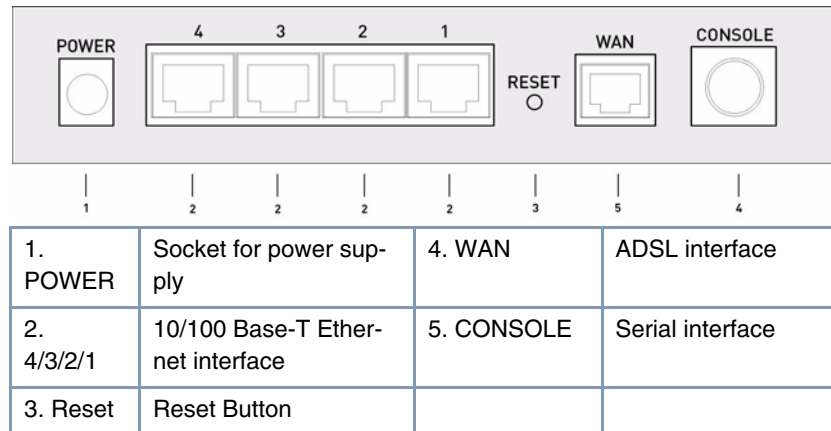
LED	Status	Information
1 to 4	on flashing	The gateway is connected to the Ethernet (100 Mbit/s or 10 Mbit/s respectively). Data traffic via the Ethernet interface (100 Mbit/s or 10 Mbit/s respectively).
WAN	on	The gateway has successfully synchronized with the ADSL provider's DSLAM.

Table 2-2: LED status display

2.4 Connections

All connections are located on the rear of the gateway. **X2302** offers a 4-port Ethernet switch and an ADSL interface as well as a serial interface.

The connections are arranged as follows:

Figure 2-2: **X2302** rear

2.5 Pin Assignments

2.5.1 Serial Interface

For connecting a console **X2302** provides a serial interface. Baud rates between 1200 and 115200 are supported.

The interface is connected through a 3-pole MiniDIN socket:

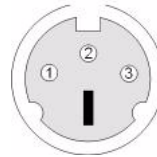


Figure 2-3: 3-pole MiniDIN socket

The pin assignment of the socket is as follows:

Pin	Function
1	Rx
2	GND
3	Tx

Table 2-3: Pin assignment of the serial socket

2.5.2 Ethernet Interface

X2302 offers an Ethernet interface with integrated 4-port switch for LAN connection. It can be used to connect single PCs as well as additional switches.

An RJ45 socket is used for connecting:

1 8

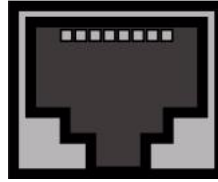


Figure 2-4: Ethernet 10/100Base-T interface (RJ45 socket)

The Ethernet sockets have the following pin assignment:

Pin	Function
1	TD +
2	TD -
3	RD +
4	Not used
5	Not used
6	RD -
7	Not used
8	Not used

Table 2-4: RJ45 socket for LAN connections

2.5.3 ADSL Interface

The ADSL interface is connected using a RJ11 socket. The supplied cable combines the RJ45 plug required by the ADSL splitter and the RJ11 plug required by the gateway.

Only the inner pins are used for the ADSL connection:



Figure 2-5: ADSL interface (RJ11)

The ADSL interface has the following pin assignment:

Pin	Function
1	Not used
2	a
3	b
4	Not used

Table 2-5: ADSL interface (RJ11 socket)

1 X2301w

All products of the **XGeneration** provide you with a similar set of functions and differ in terms of the supported interfaces or connection types.

1.1 Delivery size

Your gateway is supplied with the following parts:

- Cable sets/power supply:
 - Ethernet cable
 - Serial cable
 - DSL cable
 - Power supply
- Antennas:
 - two standard antennas
- Bintec Companion CD
- Documentation:
 - **Quick Install Guide** (printed)
 - **User's Guide** (on CD)
 - **Release Notes**, if required
 - Safety Instructions

1.2 General Product Features

The general product features cover performance features and the technical requirements for installation and operation of your gateway.

These features are outlined in the following table:

Feature	Data
Product name	X2301w
Dimensions/weight (B x H x D):	
Dimensions without cables	158 mm x 101 mm x 27 mm
Weight	350 g
Transport weight (incl. documentation, cabling, packaging)	approx. 1.43 kg
Memory	16 MB SDRAM, 4 MB Flash-ROM
LEDs	12 (1 power, 4x2 Ethernet, 1x WAN, 1x WLAN, 1x Status)
Power consumption of equipment	4.7 Watt
Voltage supply	12V DC 800mA EU PSU
Ambient requirements:	
Storage temperature	-20° to +70°C
Ambient temperature	0 to 40 °C
Relative humidity	10 to 90% non-condensing in operation 5 to 95% non-condensing in storage
Room classification	Operate only in dry rooms.

Feature	Data
Available interfaces: ADSL interface Serial interface V.24 Ethernet IEEE 802.3 LAN (4 port switch) WLAN interface (antennas)	Built-in ADSL modem for Annex A Built-in, supports the following baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bauds Built-in (twisted-pair only), 10/100 Mbps, auto sensing, MDIX 802.11b and 802.11g with Antenna Diversity Data rates of 1-, 2-, 5.5-, 6-, 9-, 11-, 12-, 18-, 24-, 36-, 48-, 54 Mbps
Plugs used: Serial interface Ethernet interface ADSL interface	MiniUSB RJ45 RJ11
SAFERNET™ Security Technology	Community Passwords, PAP, CHAP, MS-CHAP, Access Control Lists, NAT, SIF
Software includes	BRICKware for Windows BRICKtools for Unix
Printed documentation included	Quick Install Guide
Documentation in PDF format	User's Guide BRICKware for Windows Software Reference

Table 1-1: General product features



Note

Antenna Diversity

The two antennas do not have equal function. The one named "Main", "Primary" or "1" (at **XGeneration** devices the antenna next to the power switch) is used for sending and receiving, the other one only for receiving. The AP (Access point) verifies, which of the two antennas receives the better signal, which is then used for decoding. As the antennas are positioned with a distance of approx. one wave length, the signal quality can differ enormously.

1.3 LEDs

The LEDs on your XGeneration Gateway indicate the states and the activity of the gateway.

They are arranged as follows:

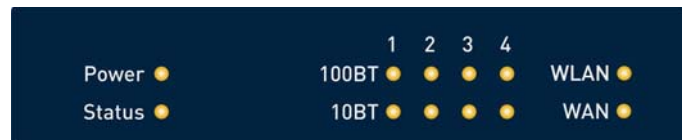


Figure 1-1: LEDs on **X2301w**

In operational mode the LEDs display the following status information:

LED	Status	Information
Power	on	Power supply has been connected.
Status	on flashing	The gateway is booting. The gateway is active.
1 to 4	on flashing	The gateway is connected to the Ethernet (100 Mbit/s or 10 Mbit/s respectively). Data traffic via the Ethernet interface (100 Mbit/s or 10 Mbit/s respectively).
WAN	on	The gateway has successfully synchronized with the ADSL provider's DSLAM.

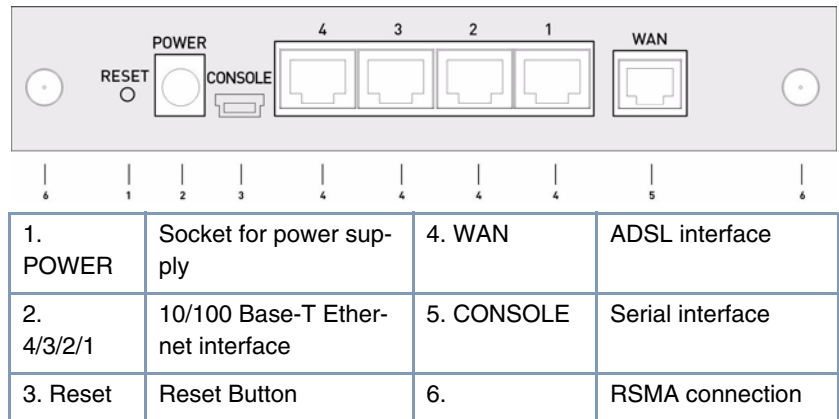
LED	Status	Information
WLAN	on flashing	The WLAN module is active. Data traffic via the WLAN interface.

Table 1-2: LED status display

1.4 Connections

All connections are located on the rear of the gateway. **X2301w** offers a 4-port Ethernet switch and an ADSL interface as well as a serial interface.

The connections are arranged as follows:

Figure 1-2: **X2301w** rear

1.5 Pin Assignments

1.5.1 Serial Interface

For connecting a console **X2301w** provides a serial interface. Baud rates between 1200 and 115200 Bit/s are supported.

The interface is connected through a 5-pole MiniUSB socket:

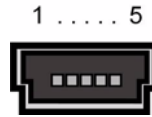


Figure 1-3: 5-pole MiniUSB socket

The pin assignment of the socket is as follows:

Pin	Function
1	Not used
2	Rx
3	GND
4	Not used
5	Tx

Table 1-3: Pin assignment of the serial socket

1.5.2 Ethernet Interface

X2301w offers an Ethernet interface with integrated 4-port switch for LAN connection. It can be used to connect single PCs as well as additional switches.

An RJ45 socket is used for connecting:

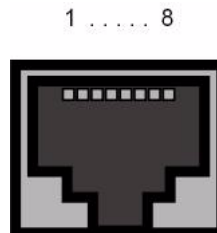


Figure 1-4: Ethernet 10/100Base-T interface (RJ45 socket)

The Ethernet sockets have the following pin assignment

Pin	Function
1	TD +
2	TD -
3	RD +
4	Not used
5	Not used
6	RD -
7	Not used
8	Not used

Table 1-4: RJ45 socket for LAN connections

1.5.3 ADSL Interface

The ADSL interface is connected using a RJ11 socket. The supplied cable combines the RJ11 plug required by the ADSL splitter and the RJ11 plug required by the gateway.

Only the inner pins are used for the ADSL connection:

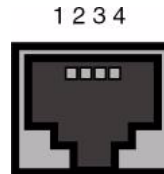


Figure 1-5: ADSL interface (RJ11)

The ADSL interface has the following pin assignment:

Pin	Function
1	Not used

Pin	Function
2	a
3	b
4	Not used

Table 1-5: ADSL interface (RJ11 socket)

2 X2302w

All products of the **XGeneration** provide you with a similar set of functions and differ in terms of the supported interfaces or connection types.

2.1 Delivery size

Your gateway is supplied with the following parts:

- Cable sets/power supply:
 - Ethernet cable
 - Serial cable
 - DSL cable
 - Power supply
- Antennas:
 - two standard antennas
- Bintec Companion CD
- Documentation:
 - **Quick Install Guide** (printed)
 - **User's Guide** (on CD)
 - **Release Notes**, if required
 - Safety Instructions

2.2 General Product Features

The general product features cover performance features and the technical requirements for installation and operation of your gateway.

These features are outlined in the following table:

Feature	Data
Product name	X2302w
Dimensions/weight (B x H x D):	
Dimensions without cables	158 mm x 101 mm x 27 mm
Weight	350 g
Transport weight (incl. documentation, cabling, packaging)	approx. 1.43 kg
Memory	16 MB SDRAM, 4 MB Flash-ROM
LEDs	11 (1 power, 4x2 Ethernet, 1x WAN, 1x Status)
Power consumption of equipment	4.7 Watt
Voltage supply	12V DC 800mA EU PSU
Ambient requirements:	
Storage temperature	-20° to +70°C
Ambient temperature	0 to 40 °C
Relative humidity	10 to 90% non-condensing in operation 5 to 95% non-condensing in storage
Room classification	Operate only in dry rooms.

Feature	Data
Available interfaces: ADSL interface Serial interface V.24 Ethernet IEEE 802.3 LAN (4 port switch) WLAN interface (antennas)	Built-in ADSL modem for Annex B Built-in, supports the following baud rates: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bauds Built-in (twisted-pair only), 10/100 Mbps, auto sensing, MDIX 802.11b and 802.11g with Antenna Diversity Data rates of 1-, 2-, 5.5-, 6-, 9-, 11-, 12-, 18-, 24-, 36-, 48-, 54 Mbps
Plugs used: Serial interface Ethernet interface ADSL interface	MiniUSB RJ45 RJ11
SAFERNET™ Security Technology	Community Passwords, PAP, CHAP, MS-CHAP, Access Control Lists, NAT, SIF
Software includes	BRICKware for Windows BRICKtools for Unix
Printed documentation included	Quick Install Guide
Documentation in PDF format	User Manual BRICKware for Windows Software Reference

Table 2-1: General product features



Note

Antenna Diversity

The two antennas do not have equal function. The one named "Main", "Primary" or "1" (at **XGeneration** devices the antenna next to the power switch) is used for sending and receiving, the other one only for receiving. The AP (Access point) verifies, which of the two antennas receives the better signal, which is then used for decoding. As the antennas are positioned with a distance of approx. one wave length, the signal quality can differ enormously.

2.3 LEDs

The LEDs on your XGeneration Gateway indicate the states and the activity of the gateway.

They are arranged as follows:

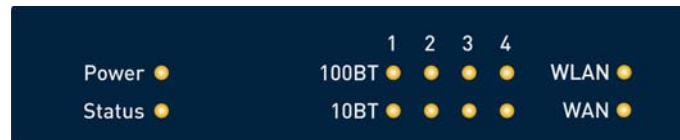


Figure 2-1: LEDs on **X2302w**

In operational mode the LEDs display the following status information:

LED	Status	Information
Power	on	Power supply has been connected.
Status	on flashing	The gateway is booting. The gateway is active.
1 to 4	on flashing	The gateway is connected to the Ethernet (100 Mbit/s or 10 Mbit/s respectively). Data traffic via the Ethernet interface (100 Mbit/s or 10 Mbit/s respectively).
WAN	on	The gateway has successfully synchronized with the ADSL provider's DSLAM.

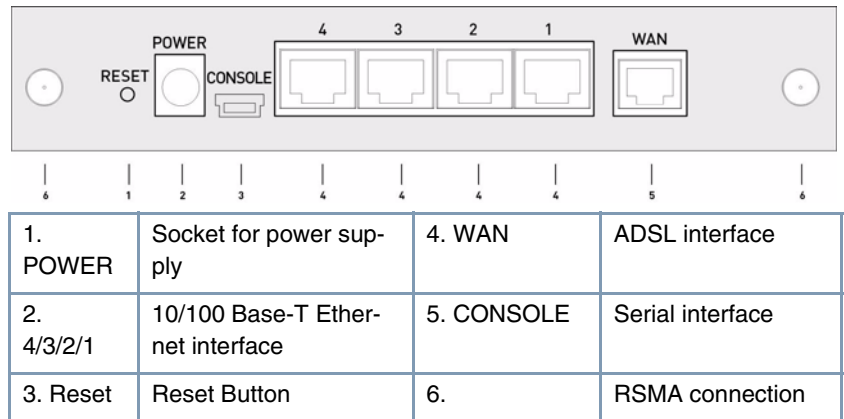
LED	Status	Information
WLAN	on flashing	The WLAN module is active. Data traffic via the WLAN interface.

Table 2-2: LED status display

2.4 Connections

All connections are located on the rear of the gateway. **X2302w** offers a 4-port Ethernet switch and an ADSL interface as well as a serial interface.

The connections are arranged as follows:

Figure 2-2: **X2302w** rear

2.5 Pin Assignments

2.5.1 Serial Interface

For connecting a console **X2302w** provides a serial interface. Baud rates between 1200 and 115200 are supported.

The interface is connected through a 5-pole MiniUSB socket:

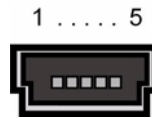


Figure 2-3: 5-pole MiniUSB socket

The pin assignment of the socket is as follows:

Pin	Function
1	Not used
2	Rx
3	GND
4	Not used
5	Tx

Table 2-3: Pin assignment of the serial socket

2.5.2 Ethernet Interface

X2302w offers an Ethernet interface with integrated 4-port switch for LAN connection. It can be used to connect single PCs as well as additional switches.

An RJ45 socket is used for connecting:

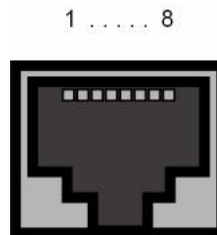


Figure 2-4: Ethernet 10/100Base-T interface (RJ45 socket)

The Ethernet sockets have the following pin assignment:

Pin	Function
1	TD +
2	TD -
3	RD +
4	Not used
5	Not used
6	RD -
7	Not used
8	Not used

Table 2-4: RJ45 socket for LAN connections

2.5.3 ADSL Interface

The ADSL interface is connected using a RJ11 socket. The supplied cable combines the RJ45 plug required by the ADSL splitter and the RJ11 plug required by the gateway.

Only the inner pins are used for the ADSL connection:



Figure 2-5: ADSL interface (RJ11)

The ADSL interface has the following pin assignment:

Pin	Function
1	Not used

Pin	Function
2	a
3	b
4	Not used

Table 2-5: ADSL interface (RJ11 socket)