

bintec Workshop
WLAN Configuration with WPA PSK

Purpose This document is part of the user's guide to the installation and configuration of bintec gateways running software release 7.1.4 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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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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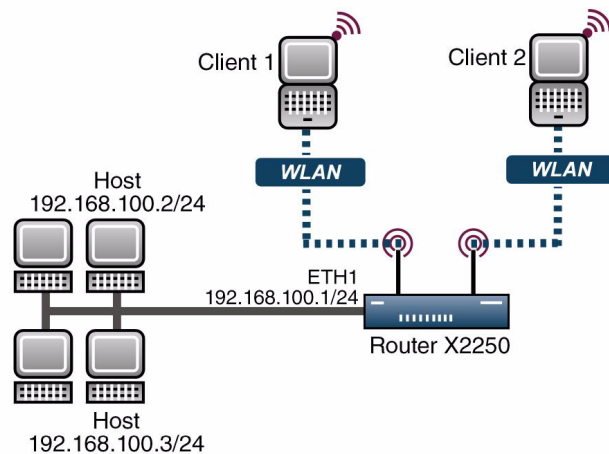
1	Introduction	3
1.1	Requirements	3
2	Configuration	5
2.1	Settings in the Wireless LAN Menu	5
2.1.1	Settings in the Wireless Interfaces Menu	6
2.1.2	Activate Bridging	7
2.1.3	Configuring the WLAN Adapter under Windows XP	8
3	Result	11
3.1	Test	11
3.2	Overview of Configuration Steps	12

1 Introduction

The following chapters describe the configuration of the Wireless LAN as access point.

The WPA preshared key is used for encryption. Each client receives its own ID for accessing the network over the router. The multi SSID functionality makes it possible to assign different rights for clients to increase the security.

A DHCP server in the LAN distributes IP addresses from the network 192.168.100.0/24 for clients from the LAN and WLAN.



1.1 Requirements

The following requirements must be fulfilled for the configuration:

- A boot image of version 7.1.16 or later.
- Your LAN is connected over the first Ethernet interface (ETH 1) of your router.
- Windows XP as operating system.

- A Wireless LAN card, e.g. artem Client Card.

2 Configuration

Settings must be made in the following menu for configuring a Wireless LAN:

MAIN MENU → WIRELESS LAN

2.1 Settings in the Wireless LAN Menu

■ Go to **WIRELESS LAN**

X2250	Bintec Access Networks GmbH
[WLAN-2-0]: Configure WLAN Interface	Headoffice
Operation Mode	Access Point
Location	Germany
Channel	AUTO
Wireless Interfaces >	
WDS Link Configuration >	
Advanced >	
SAVE	CANCEL
Use <Space> to select	

The following fields are relevant:

Field	Meaning
Operation Mode	Here you activate the access point.
Location	This is the country in which you use the device.
Channel	For selecting the radio channel.
Wireless Interface	For configuring the WLAN connections.

Table 2-1: Relevant fields in **WIRELESS LAN**

Proceed as follows to set the menu:

- Set **OPERATION MODE** to *Access Point*.
- Leave **LOCATION** set to *Germany*.
- Set **CHANNEL** to *AUTO*.
- Press **SAVE** to confirm your settings.

2.1.1 Settings in the Wireless Interfaces Menu

Go to the following submenu to configure a Wireless LAN connection:

WIRELESS LAN → WIRELESS INTERFACES

To be able to configure a Wireless LAN connection, you must either add a new one with **ADD** or edit the standard entry.

X2250	Bintec Access Networks GmbH
[WLAN-2-0] [WIRELESS] [EDIT]: Wireless Interface	Headoffice
	<Client-1>
AdminStatus	enable
Network Name	Client-1
Name is visible	no
Max. Clients	16
Security Mode	WPA PSK (TKIP)
Preshared Key	Secure-Bintec-1
MAC Filter >	
IP and Bridging >	
SAVE	CANCEL

The following fields are relevant:

Field	Meaning
AdminStatus	For activating the WLAN connection.

Field	Meaning
Network Name	Here you enter the network name (SSID).
Name is visible	For selecting whether the network name is visible.
Security Mode	Select the encryption.
Preshared Key	Enter the network password here.
IP and Bridging	For configuring routing or bridging.

Table 2-2: Relevant fields in **WIRELESS LAN → WIRELESS INTERFACES**

Proceed as follows to configure the entry:

- Set the **ADMINSTATUS** to *enable*.
- Enter a **NETWORK NAME**, e.g. *Client-1*.
- Set **NAME IS VISIBLE** to *no*.
- Set the **SECURITY MODE** to *WPA PSK (TKIP)*.
- Enter a value for **PRESHARED KEY**, e.g. *Secure-Bintec-1*.
- Press **SAVE** to confirm your settings.



Note

To increase security, hide the SSID with the menu item **NAME IS VISIBLE no** and use special characters, numbers and capital and small letters for the key.

2.1.2 Activate Bridging

The client receives an IP address from the network 192.168.100.0/24 as soon as he has set up a radio connection to the router. You must therefore also configure bridging in all the interfaces involved.

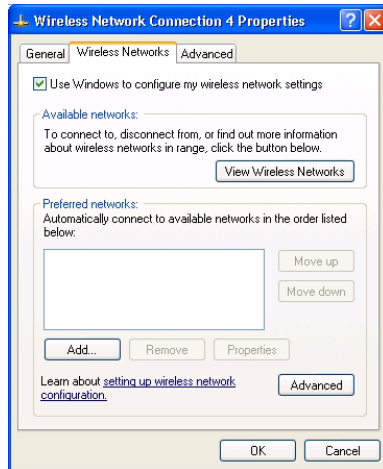
- Go to **WIRELESS LAN → WIRELESS INTERFACES → IP AND BRIDGING**.
- Set **WORKING MODE** to *Bridging*.
- Go to the **ETHERNET UNIT 1** menu.

- Set **BRIDGING** to *enabled*.

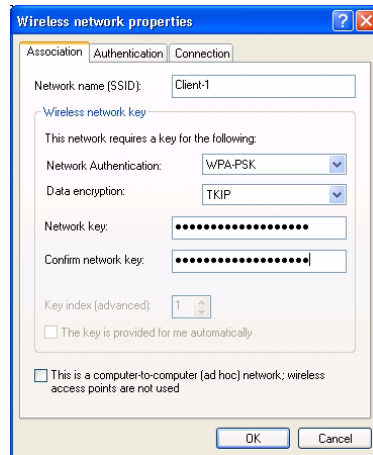
2.1.3 Configuring the WLAN Adapter under Windows XP

After installing the drivers for your WLAN card, Windows XP set up a new connection in the network environment. Proceed as follows to configure the Wireless LAN connection:

- Click **START → SETTINGS → NETWORK CONNECTIONS → WIRELESS NETWORK CONNECTION** with the right mouse key.
- Then select the properties.
- Go to Tab **WIRELESS NETWORKS**.



- Click **Add**.



The following fields are relevant:

Field	Meaning
Network Name	This is the SSID of the Bintec router.
Network Authentication	Here you select the authentication.
Data Encryption	Select the encryption.
Network Key	Enter the network key.
Confirm Network Key	Enter the network key again.

Table 2-3: Relevant fields in **START** → **SETTINGS** → **NETWORK CONNECTIONS** → **WIRELESS NETWORK CONNECTION**

Proceed as follows to configure the entry:

- Enter a **NETWORK NAME**, e.g. *Client-1*.
- Set **NETWORK AUTHENTICATION** to *WPA-PSK*.
- Set **DATA ENCRYPTION** to *TKIP*.
- Enter a **NETWORK KEY** and **CONFIRM NETWORK KEY**, e.g. *Secure-Bintec-1*.
- Exit each menu with **OK**.

**Note**

Create a separate WLAN connection for each client so that multi SSID can be used. This is done by repeating steps “Settings in the Wireless Interfaces Menu” on page 6 to “Configuring the WLAN Adapter under Windows XP” on page 8 and using a separate SSID and a new preshared key for the second client.

3 Result

You have configured a separate WLAN connection for each of your Wireless LAN clients and used WPA with Preshared Key for encryption. You have also completed the configuration of the WLAN card under Windows XP.

3.1 Test

The following should appear in the Windows task bar after a successful call set-up to the WLAN router:



You can see all the successfully connected clients on the router in the SNMP shell in the *WLANSTATIONTABLE*.

To test the IP connection to the network, open the command prompt and use the PING to reach a PC, e.g. `ping 192.168.100.2`.

You should then receive a result similar to the following:

```
Running Ping for 192.168.100.2 with 32 bytes of data:
Answer from 192.168.100.2: Bytes=32 time=1ms TTL=64
Answer from 192.168.100.2: Bytes=32 time=1ms TTL=64
Answer from 192.168.100.2: Bytes=32 time=1ms TTL=64
Answer from 192.168.100.2: Bytes=32 time=1ms TTL=64

Ping statistics for 192.168.100.2:
    Packets: sent = 4, received = 4, lost = 0 (0% loss),
    approx. time in milliseconds:
        minimum = 1ms, maximum = 1ms, mean = 1ms
```

3.2 Overview of Configuration Steps

Field	Menu	Description
Operation Mode	WIRELESS LAN	<i>Access Point</i>
Location	WIRELESS LAN	<i>Germany</i>
Channel	WIRELESS LAN	<i>AUTO</i>
AdminStatus	WIRELESS LAN → WIRELESS INTERFACES → ADD	<i>enabled</i>
Network Name	WIRELESS LAN → WIRELESS INTERFACES → ADD	<i>e.g. Client-1</i>
Name is visible	WIRELESS LAN → WIRELESS INTERFACES → ADD	<i>no</i>
Security Mode	WIRELESS LAN → WIRELESS INTERFACES → ADD	<i>WPA PSK (TKIP)</i>
Preshared Key	WIRELESS LAN → WIRELESS INTERFACES → ADD	<i>e.g. "Secure-Bintec-1"</i>
Working Mode	WIRELESS LAN → WIRELESS INTERFACES → IP AND BRIDGING	<i>Bridging</i>
Bridging	ETHERNET UNIT 1	<i>enabled</i>