ZYXEL

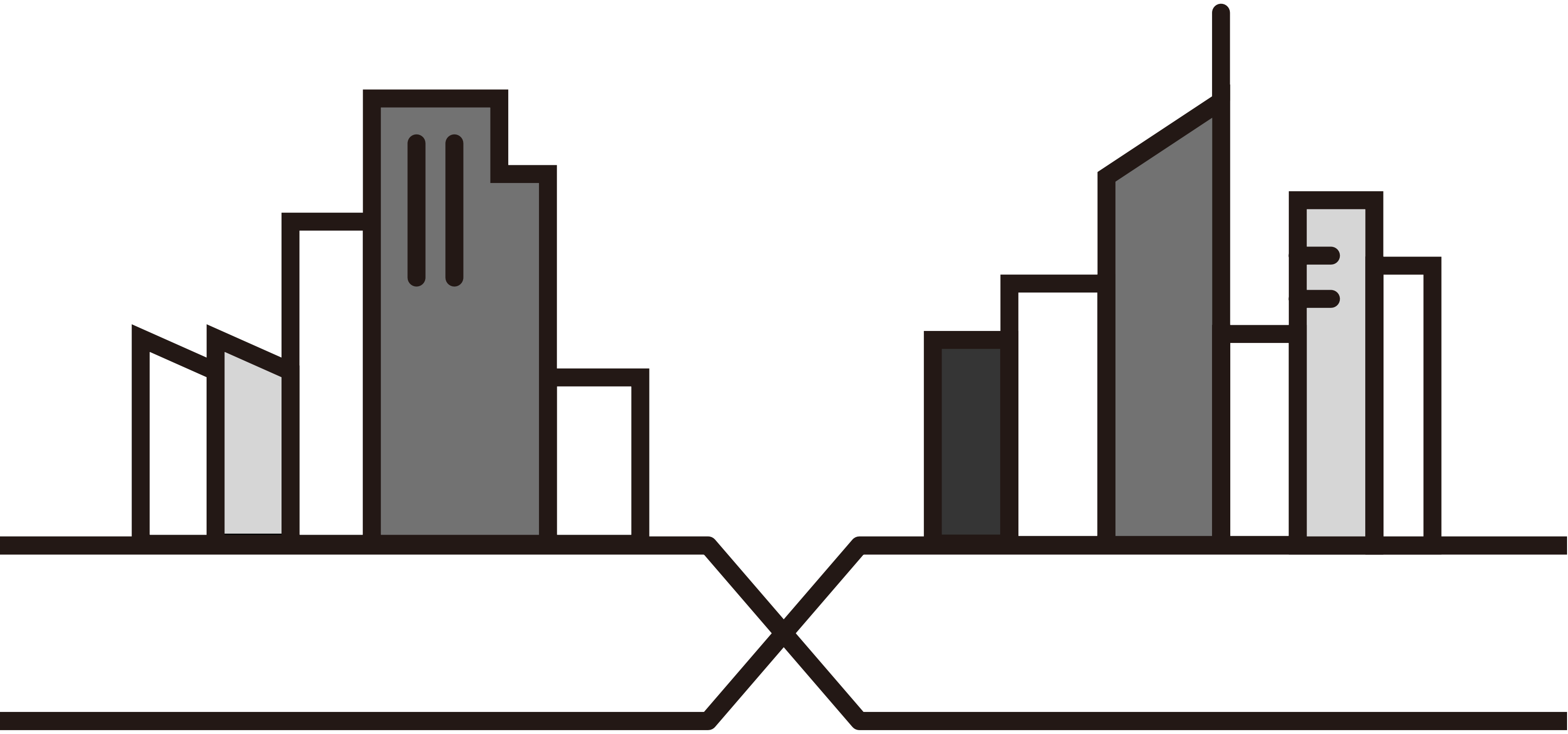
User's Guide

NR2101

5G NR Portable Router
5G NR Mobile WiFi

Default Login Details	
LAN IP Address	http: //192.168.225.1
Username	admin
Password	admin

Version 1.0 Edition 4, 12/2021



IMPORTANT!

READ CAREFULLY BEFORE USE.

KEEP THIS GUIDE FOR FUTURE REFERENCE.

Screenshots and graphics in this book may differ slightly from your product due to differences in your product firmware. Every effort has been made to ensure that the information in this manual is accurate.

Related Documentation

- Quick Start Guide

  The Quick Start Guide shows how to connect and install the NR2101.

- More Information

  Go to **support.zyxel.com** to find other information on the NR2101.

Contents Overview

Table of Contents

Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this guide.

Warnings tell you about things that could harm you or your device.

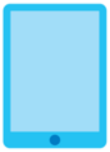
Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- Product labels, screen names, field labels and field choices are all in **bold** font.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **WWAN SETTINGS > IPv4 WWAN Settings** means you first click **WWAN SETTINGS** in the navigation panel, and then click the **IPv4 WWAN Settings** tab to get to that screen.

Icons Used in Figures

Figures in this user guide may use the following generic icons. The NR2101 icon is not an exact representation of your device.

NR2101 	Generic Router 	Switch
Server 	Firewall 	Smartphone
Tablet 	Antenna Tower 	Home
Outdoors 	Printer 	

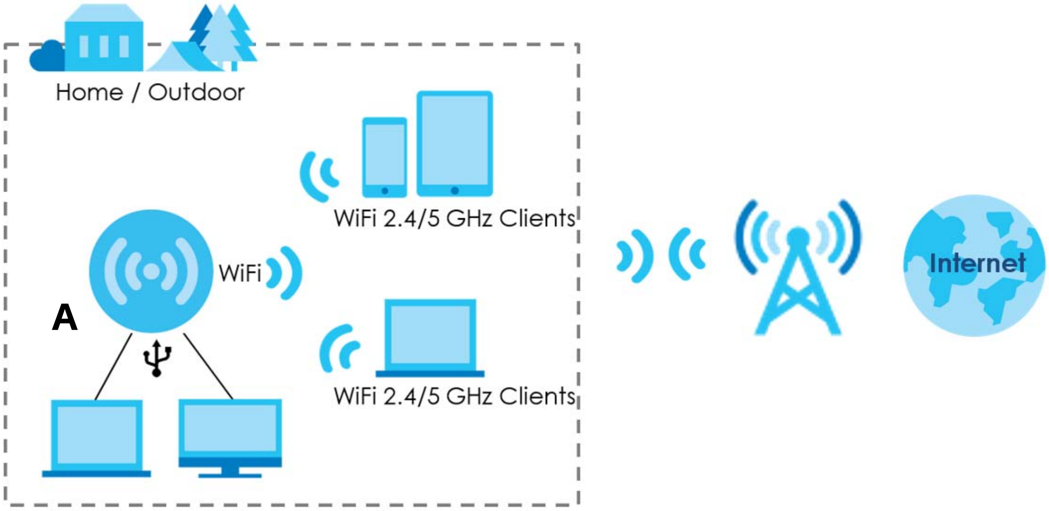
PART I

User's Guide

CHAPTER 1
Get to Know Your NR2101

1.1 Overview

Your NR2101 (**A**) is a 5G router that allows you to share Internet Access via WiFi anytime. The NR2101 supports 5G/4G/3G multi-mode and complies with the IEEE 802.11a/b/g/n/ac/ax standards. It can provide data rates of up to 1.2 Gbps/574Mbps (2.4 GHz/5 GHz)and support up to 16 simultaneous WiFi clients. The NR2101's slim design is easy to use anywhere anytime and leaves your smartphone's bandwidth and battery free for other purposes.



1.2 Applications

You can have the following networks with the NR2101:

- **Wireless LAN (WiFi):** WiFi clients can connect to the NR2101 using the network's **SSID** and **Password**. For WPS-compatible devices you can create an instant network connection using WPS (WiFi Protected Security).
- **WAN**: Connect to a mobile network using an Ethernet cable.

1.3 Ways to Manage the NR2101

- **LCD Touch Screen**

You can use the LCD touch screen to navigate and manage the NR2101.

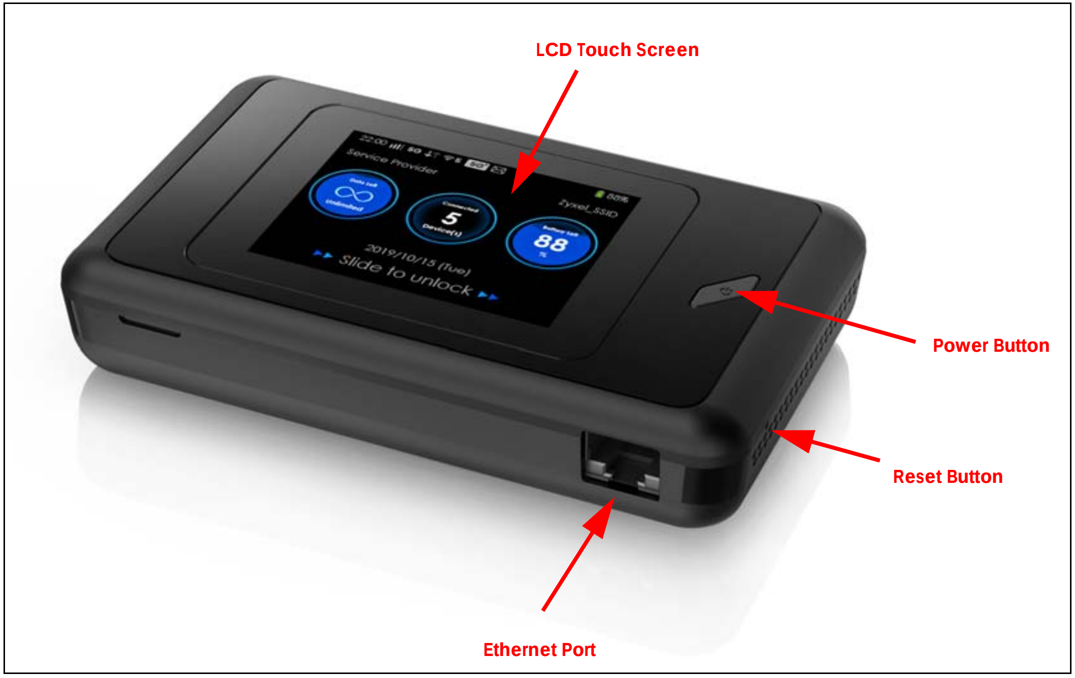
- **Web Configurator**

The Web Configurator is recommended for everyday management by using a supported web browser.

1.4 Hardware Description

The following image shows the front and side panels of the NR2101.

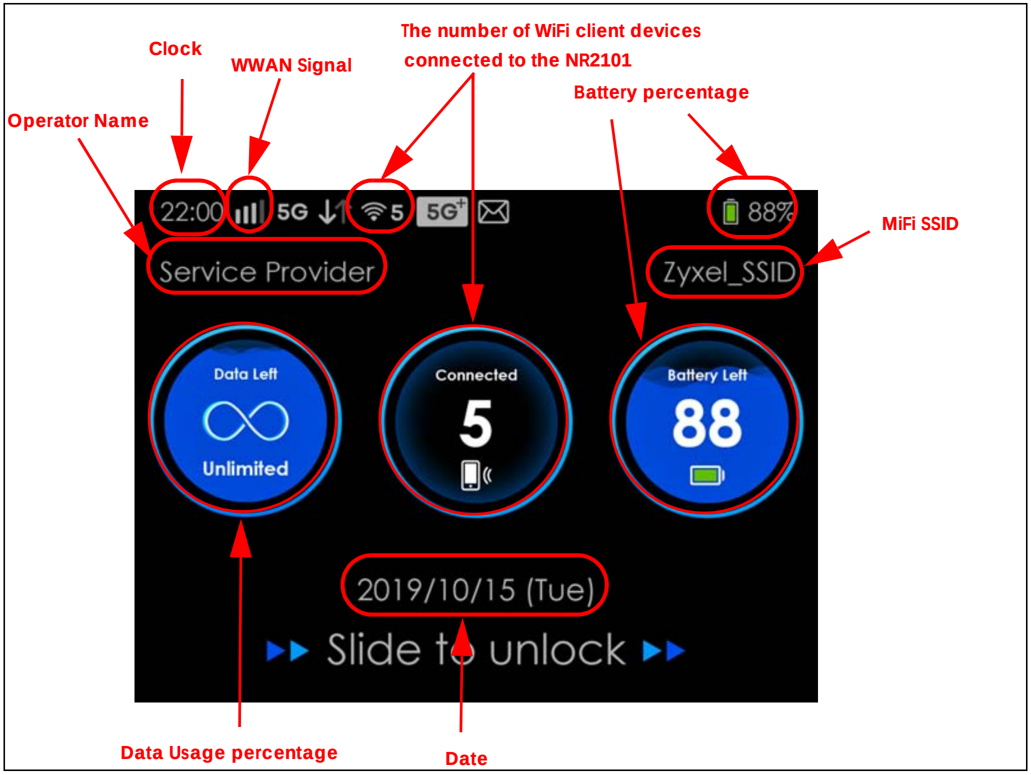
Figure 1 Front/Side Panel



You can use Power Button on the front panel to turn on the NR2101 and use LCD Touch Screen to navigate the NR2101.

1 Press the **Power** button and then the **Home** screen appears. (Press the **Power** button for three seconds and then release the button to turn on or off the NR2101.)

Figure 2 Home Screen



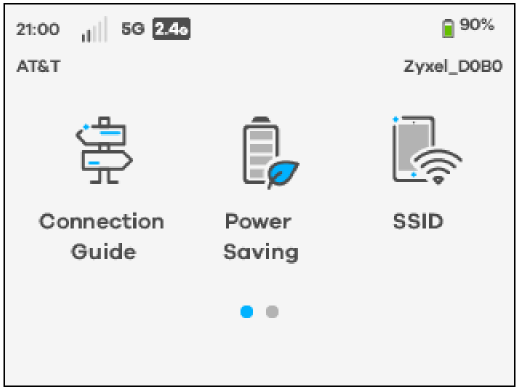
The following table describes the labels in this screen.

Table 1 NR2101's Home Screen

LABEL	DESCRIPTION
3G 4G 5G	This displays the type of network your NR2101 is connected to. Your network can be either **3G**, **4G**, or **5G**.
▂▄▆█	This displays the signal strength of the current WWAN of the NR2101.
↓↑	This displays when the NR2101 is receiving or transmitting data to/from the Internet.
ᯤ10	This displays the WiFi network status. The number indicates how many WiFi client devices are currently connected to the NR2101.
✉	This displays when the NR2101 receives a new SMS (Short Message Service) message.
🔋	This icon shows the NR2101 battery life.

2 To start navigating the NR2101, slide right to unlock the Home screen and then the Menu screen appears as shown next. Tap an icon on the Menu screen to configure the selected setting. Slide left if you want to go to another Menu screen.

Figure 3 Menu Screen



The following table describes the labels in the Menu screen.

Table 2 Menu Screen

LABEL	DESCRIPTION
Connection Guide	Use **Connection Guide** to activate WPS. If your WiFi client device supports WPS, use **WPS** to connect to the NR2101.
Power Saving	Use **Power Saving** to change the screen off time. You can also configure WiFi auto-close duration here.
SSID	Use **SSID** to allow WiFi clients to connect (2.4 GHz/5 GHz) to the NR2101 using its SSID and password. Enter a password of 8 to 20 characters, including spaces and special characters.
SMS	Use **SMS** to view and delete SMS messages. Note: You can only create an SMS messages using the Web Configurator.
Settings	Use **Settings** to configure features, such as **WPS**, **WiFi 2.4G/5G, Connected Users**, **Profile management**, **Data Usage**, **Data Roaming**, **Network Settings**, **PIN Management**, **Password Lock**, **Language**, **Time Setting**, **FW upgrade**, and **Restore Default** settings.
About	Use **About** to view the NR2101 hardware/firmware information and notifications.

1.4.1 Hardware Installation

See your Quick Start Guide for detailed information about hardware installation procedures.

1.5 LCD Screens

This section describes the labels or icons displayed on the LCD screen of your NR2101.

1.5.1 The Home & Menu Screen

Swipe right to unlock the Home screen on the LCD. The Menu screen appears. Tap an icon on the Menu screen to select the setting that you want to configure.

Figure 4 Home Screen

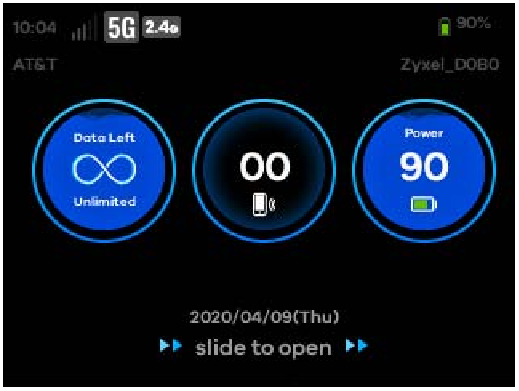
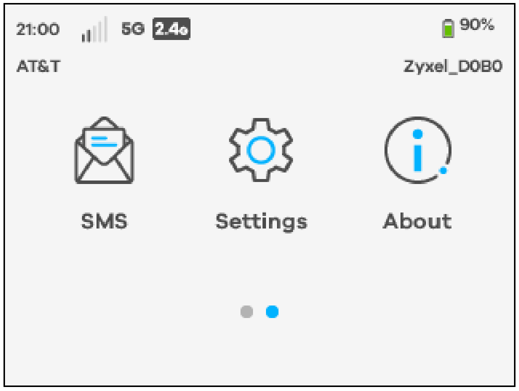


Figure 5 Menu Screen

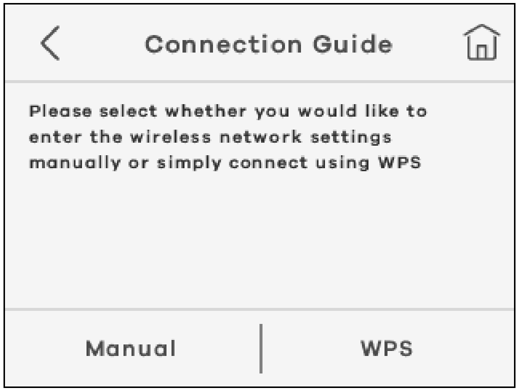


1.5.2 Connection Guide

To enable a WiFi client device to connect to the NR2101 using WPS, go to **Connection Guide** > **Next** > **WPS**.

- Tap **Manual**, if you want to enter the WiFi network setting manually. Otherwise, tap **WPS** to quickly establish a WiFi connection.

Figure 6 Connection Guide


Connection Guide

Please select whether you would like to enter the wireless network settings manually or simply connect using WPS

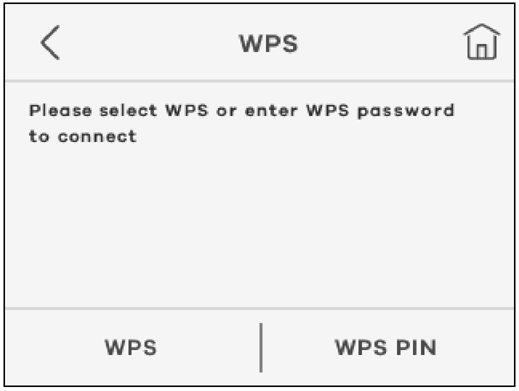
The following table describes the labels in this screen.

Table 3 Connection Guide

LABEL	DESCRIPTION
Manual	Select **Manual** and then the default WiFi network settings and security modes will appear. Enter the necessary information on the **SSID > 2.4G SSID/2.4G Password** or **5G SSID/5G Password** screen manually to connect to the NR2101.
WPS	Select this to connect to the NR2101 using WPS.

- Select **WPS** to connect. Otherwise, tap **WPS PIN** and enter the PIN code of a four-digit number to start the WiFi connection. Tap the check mark at the upper-right corner to confirm the password.

Figure 7 WPS



WPS

Please select WPS or enter WPS password to connect

The following table describes the labels in this screen.

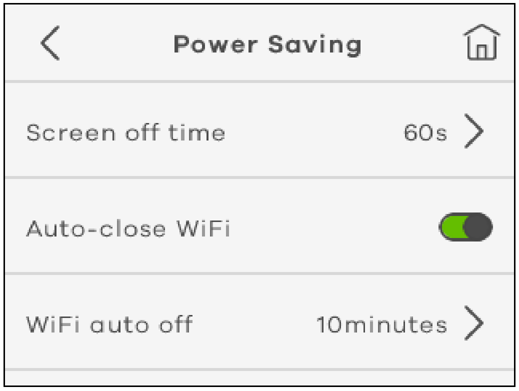
Table 4 WPS

LABEL	DESCRIPTION
WPS	Select this to connect to the NR2101 using WPS.
WPS PIN	Enter the WPS password to enable WPS.

1.5.3 Power Saving

Use this screen to configure the time your LCD screen stays on before going to sleep. Go to **Power Saving** > **Screen off time** and select from **15s**, **30s**, **60s**, **120s,** and **10 minutes**. Tap the check mark at the upper-right corner to save the changes made. To configure the time set up for turning off WiFi automatically if no WiFi client device is connected to the NR2101, select **Auto-close WiFi** and then choose from **10 minutes**, **20 minutes**, and **30 minutes** in the **WiFi auto off** field. Tap the check mark at the upper-right corner to save the changes made.

Figure 8 Power Saving



Power Saving

Screen off time 60s

Auto-close WiFi

WiFi auto off 10minutes

The following table describes the labels in this screen.

Table 5 Power Saving

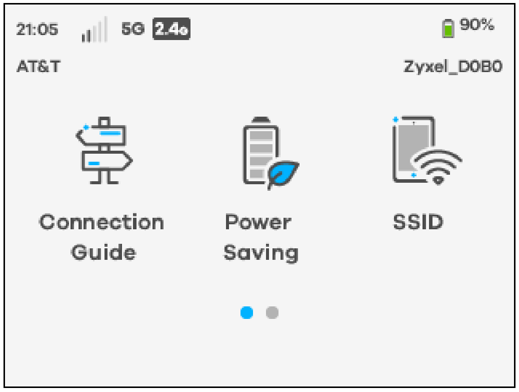
LABEL	DESCRIPTION
Screen off time	This displays the screen off time on the NR2101. If the NR2101 is not in use for a certain period of time, the system will automatically turn off the screen.
Auto-close WiFi	Select this to enable **Auto-close WiFi** on the NR2101. The NR2101 will automatically turn off Wi-Fi if no WiFi client device is connected to the NR2101 for a certain period of time.
WiFi auto off	This displays the time length set up to turn off WiFi automatically.

1.5.4 SSID

Use this screen to scan the QR code and join the WiFi network of the NR2101.

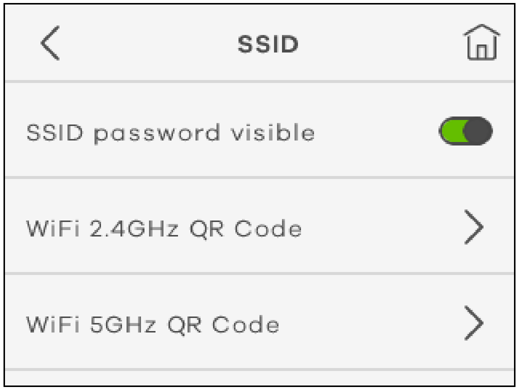
1 Tap **SSID** in the Menu screen to go to the SSID setting.

Figure 9 SSID Settings



2 Select **SSID password visible** to view the WiFi 2.4GHz/5GHz SSIDs and passwords. Tap **WiFi 2.4GHz/5GHz QR Code** in the **SSID** screen to view the WiFi QR codes.

Figure 10 SSID Password Visible



3 The following screen appears. Scan the WiFi 2.4GHz/5GHz QR code to join the WiFi network.

Figure 11 WiFi 2.4GHz QR code

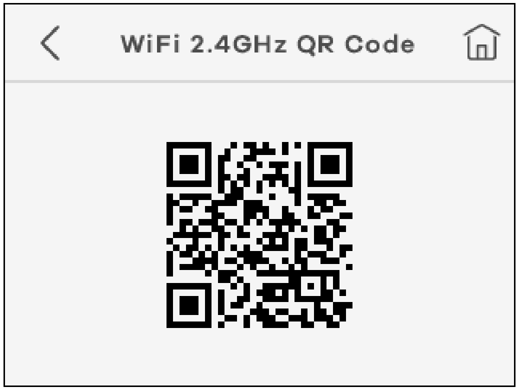
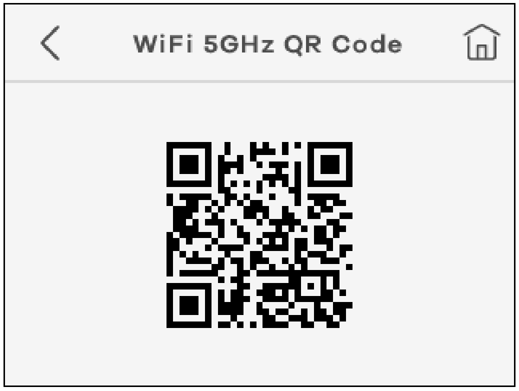
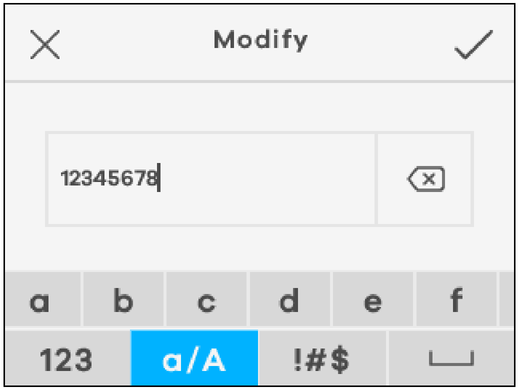


Figure 12 WiFi 5GHz QR code



4 To configure the SSID and password (2.4 GHz/5 GHz), tap **2.4G SSID**/**2.4G Password** or **5G SSID**/**5G Password** in the screen and then the **Modify** screen appears. Enter your user name and a password of 8 to 20 characters, including spaces and special characters. Tap the check mark at the upper-right corner to save the changes made.

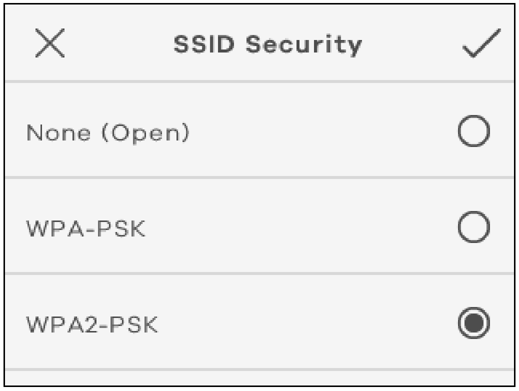
Figure 13 Modify



12345678

5 To configure the SSID security mode, tap **2.4G Security** or **5G Security** in the screen and then the **SSID Security** screen appears. Select a security mode from **None (Open)**, **WPA-PSK**, **WPA2-PSK**, and **WPA3/ WPA2 mixed mode**. Tap the check mark at the upper-right corner to save the changes made.

Figure 14 SSID Security



None (Open) ○

WPA-PSK ○

WPA2-PSK ●

From another device, find this **SSID** and enter the **Password** to connect wirelessly to the NR2101.

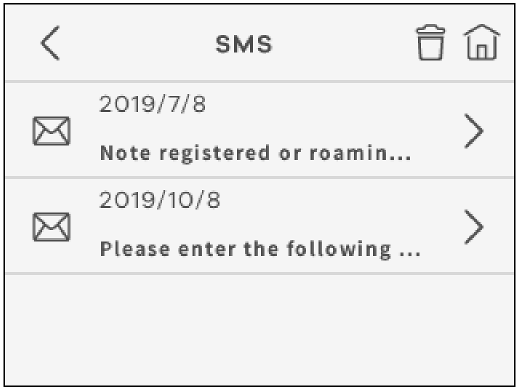
1.5.5 SMS

SMS (Short Message Service) allows you to view and delete SMS messages that the NR2101 received from mobile devices or Internet Service Provider.

Tap **SMS** in the Menu screen to go to the **SMS** setting. The following screen displays.

- Read Message: Use the LCD screen to navigate and select an SMS message to read. Tap the Menu (⌂)icon to go back to the Menu screen.

Figure 15 Read Message



2019/7/8

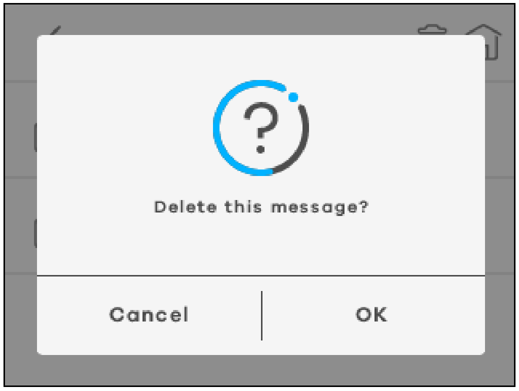
Note registered or roamin...

2019/10/8

Please enter the following ...

- Delete Message: Use the Delete(🗑) icon to delete an SMS message. Select **OK** to delete the message. Otherwise, select **Cancel** to return to the SMS screen.

Figure 16 Delete Message

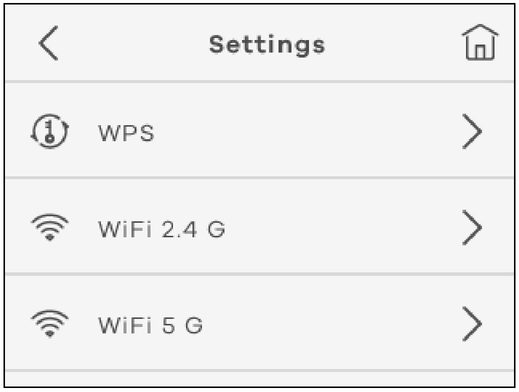

Delete this message?

Note: You can only create an SMS messages using the Web Configurator.

1.5.6 Settings

Use the **Settings** screen to manage and view the following features of the NR2101. Tap **Settings** and the following screen displays. Scroll up and down the screen to select the feature you want to configure.

Figure 17 Settings



1.5.6.1 WPS

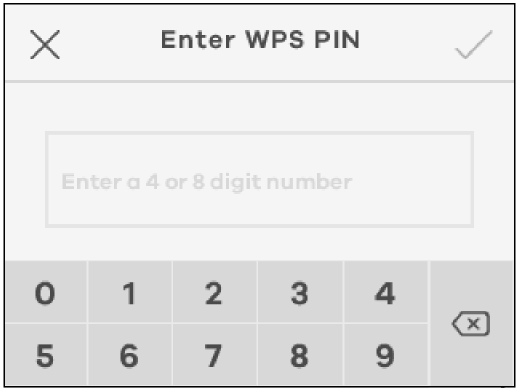
Your NR2101 supports WiFi Protected Setup (WPS), which is an easy way to set up a secure WiFi network. WPS is an industry standard specification, defined by the WiFi Alliance.

WPS allows you to quickly set up a WiFi network with strong security, without having to configure security settings manually. Each WPS connection works between two devices. Both devices must support WPS (check each device's documentation to make sure). When WPS is activated on a device, it has two minutes to find another device that also has WPS activated. Then, the two devices connect and set up a secure network by themselves.

You can use the LCD screen of the NR2101 to activate WPS in order to quickly set up a WiFi network with strong security.

Go to the **Settings** > **WPS** screen. The **WPS connect** field will be available after you enable **WPS**. Go to **WPS connect** > **WPS** to activate WPS or enter **WPS PIN** to connect. The following screen displays. Tap the check mark at the upper-right corner to save the change made.

Figure 18 Enter WPS PIN



The following table describes the labels in this screen.

Table 6 WPS

LABEL	DESCRIPTION
WPS	Use this screen to establish a WPS connection.
WPS PIN	Enter the WPS password to enable WiFi clients to connect to the NR2101.

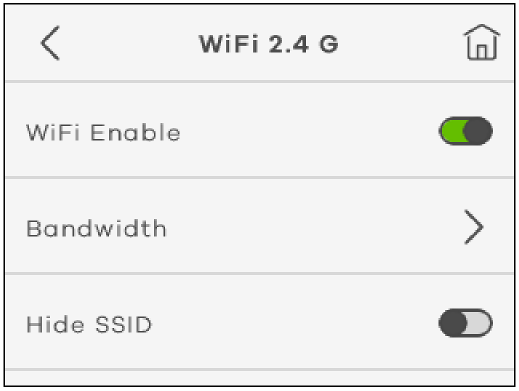
Note: You must activate WPS on the NR2101 and on another device within 2 minutes of each other.

1.5.6.2 WiFi 2.4 G

To enable a WiFi client to connect to the 2.4 GHz WiFi band, select **WiFi Enable**.

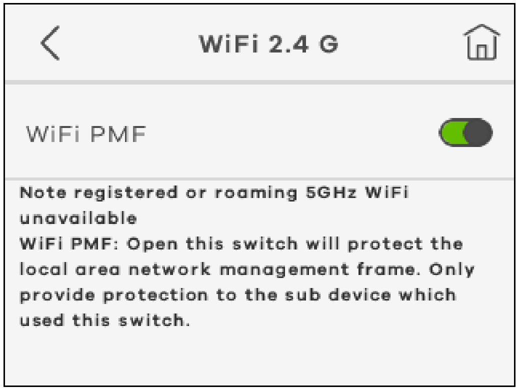
- Tap **Bandwidth** to select a 2.4 GHz bandwidth (**20MHz** or **20/40 MHz**) from the list. Tap the check mark at the upper-right corner to save the change made.
- Tap **Hide SSID** to hide your SSID from a site survey tool.

Figure 19 2.4 GHz WiFi Bandwidth



- Select **WiFi PMF** to improve security for the WiFi connection (**WiFi PMF** will not be available when **WPA3/WPA2 mixed mode** is selected in the **Security Type** field).

Figure 20 2.4 GHz WiFi PMF



Note registered or roaming 5GHz WiFi unavailable
WiFi PMF: Open this switch will protect the local area network management frame. Only provide protection to the sub device which used this switch.

The following table describes the labels in this screen.

Table 7 2.4 GHz WiFi

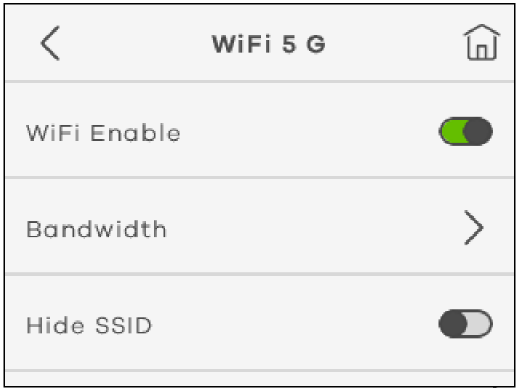
LABEL	DESCRIPTION
WiFi Enable	Select this to enable 2.4 GHz WiFi connections.
Bandwidth	Select whether the NR2101 uses a WiFi channel width of **20MHz** or **20/40MHz**. A standard 20MHz channel offers transfer speeds of up to 150Mbps whereas a 40MHz channel uses two standard channels and offers speeds of up to 300Mbps. 40MHz (channel bonding or dual channel) bonds two adjacent radio channels to increase throughput. The WiFi clients must also support 40MHz. It is often better to use the 20MHz setting in a location where the environment hinders the WiFi signal. Select **20MHz** if you want to lessen radio interference with other WiFi devices in your neighborhood or the WiFi clients do not support channel bonding.
Hide SSID	Select this to hide the NR2101's 2.4 GHz SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning using a site survey tool.
WiFi PMF	Select this to enable WiFi Protected Management Frame and enhance the security level on the LAN.

1.5.6.3 WiFi 5G

To enable a WiFi client to connect to the 5 GHz WiFi band, select **WiFi Enable**. The following screen displays.

- Tap **Bandwidth** and then select a 5 GHz bandwidth (**20MHz**, **20/40 MHz,** or **20/40/80 MHz**) from the list. Tap the check mark at the upper-right corner to save the change made.
- Tap **Hide SSID** to hide your SSID from a site survey tool.

Figure 21 5GHz WiFi Bandwidth



WiFi 5 G

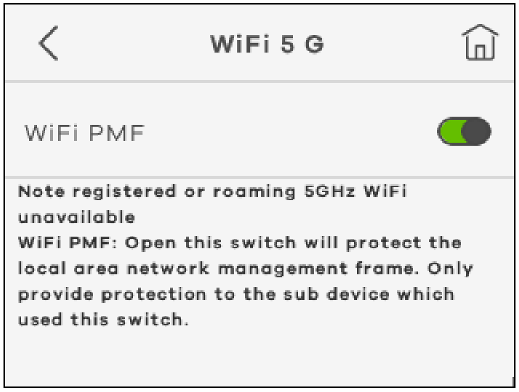
WiFi Enable

Bandwidth

Hide SSID

- Select **WiFi PMF** to improve security for the WiFi connection (**WiFi PMF** will not be available when **WPA3/WPA2 mixed mode** is selected in the **Security Type** field).

Figure 22 5 GHz WiFi PMF



WiFi 5 G

WiFi PMF

Note registered or roaming 5GHz WiFi unavailable
WiFi PMF: Open this switch will protect the local area network management frame. Only provide protection to the sub device which used this switch.

The following table describes the labels in this screen.

Table 8 5 GHz WiFi

LABEL	DESCRIPTION
WiFi Enable	Select this to enable 5 GHz WiFi connections.
Bandwidth	Select whether the NR2101 uses a WiFi channel width of **20MHz**, **20/40MHz,** or **20/40/80MHz**. A standard 20MHz channel offers transfer speeds of up to 150Mbps whereas a 40MHz channel uses two standard channels and offers speeds of up to 300Mbps. 40MHz (channel bonding or dual channel) bonds two adjacent radio channels to increase throughput. The WiFi clients must also support 40MHz. It is often better to use the 20MHz setting in a location where the environment hinders the WiFi signal. Select **20MHz** if you want to lessen radio interference with other WiFi devices in your neighborhood or the WiFi clients do not support channel bonding.

Table 8 5 GHz WiFi

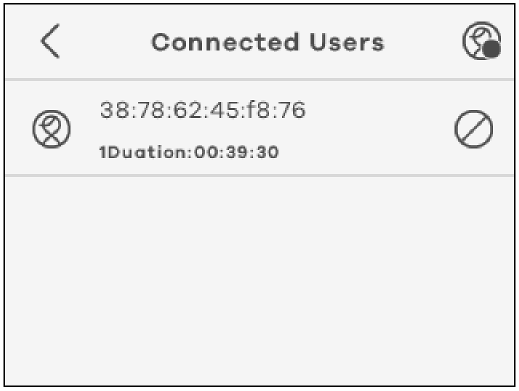
LABEL	DESCRIPTION
Hide SSID	Select this to hide the NR2101's 5 GHz SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning using a site survey tool.
WiFi PMF	Select this to enable WiFi Protected Management Frame and enhance the security level on the LAN.

1.5.6.4 Connected Users

Use this screen to view or manage the blacklist that blocks WiFi client devices from connecting to the NR2101.

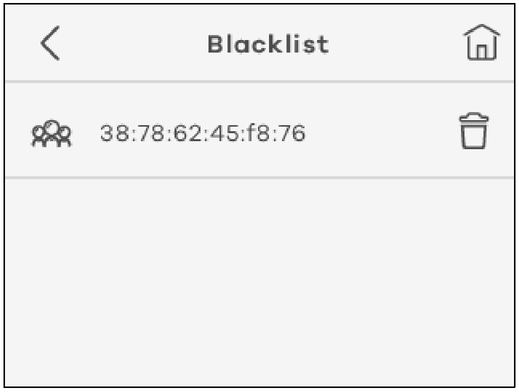
- Select **Connected Users** to view the WiFi client devices currently connected to the NR2101. Click the Blacklist icon ( )to view the blocked WiFi client devices.

Figure 23 Connected Users



- You can use the Delete icon( ) to remove a WiFi client device from the blacklist.

Figure 24 Blacklist

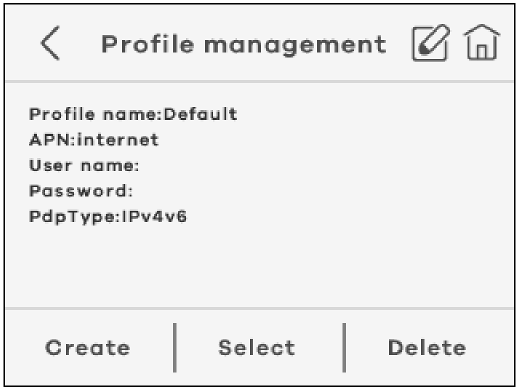


1.5.6.5 Profile management

Use this screen to set up the default APN setting. The NR2101 will automatically use the default APN setting saved in your SIM card for connections.

- Tap **Profile Management** and the following screen displays. Select **Create** to add a **Profile name**. Tap the Edit icon ( ) to modify the profile information. Click **Select** to choose the profile you want to use. Select **Delete** to remove a selected profile. Tap the Menu icon( ) to go back to the Menu screen.

Figure 25 Profile Management



Profile name:Default
APN:internet
User name:
Password:
PdpType:IPv4v6

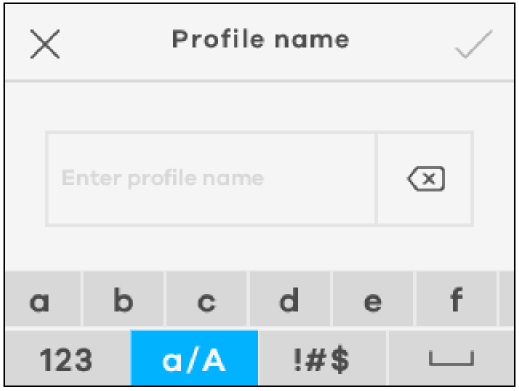
The following table describes the labels in this screen.

Table 9 Profile Management

LABEL	DESCRIPTION
Create	Use this to create an APN profile and enter the APN information provided by ISP.
Select	Use this to select the APN profile you want to use.
Delete	Use this to remove an APN profile from the profile list.

- The following screen appears after you click the Edit icon (✎)or **Create** in the **Profile management** screen. Use the **Profile name** screen to create or modify your APN settings. Enter the user name and password provided by your ISP and select the PDP type (**IPv4**, **IPv6**, or **IPv4v6)**. Tap the check mark at the upper-right corner to save the changes made.

Figure 26 Profile Name

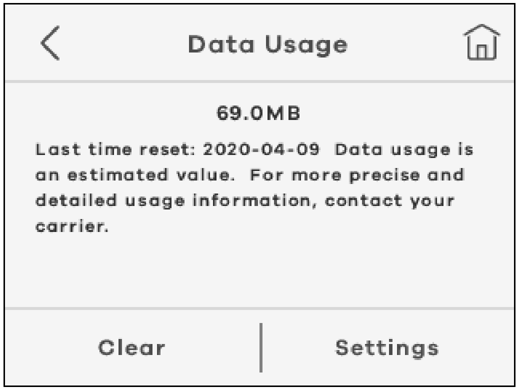


1.5.6.6 Data Usage

Use this screen to mange your monthly data usage based on your data plan.

- To view the percentage of data used on the WAN, select **Settings** > **Data Usage > Settings.** To reset data usage statistics on the NR2101, select **Settings** > **Data Usage > Clear**.

Figure 27 Data Usage

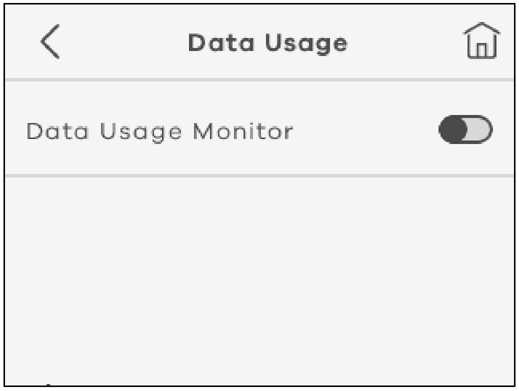


69.0MB

Last time reset: 2020-04-09 Data usage is an estimated value. For more precise and detailed usage information, contact your carrier.

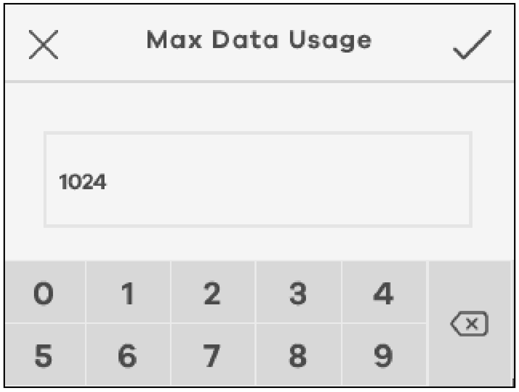
- Select **Data Usage Monitor** on the **Data Usage** screen to enable the NR2101 to monitor how much data is used.

Figure 28 Data Usage Monitor



- Select **Display data usage on home screen** to enable or disable the NR2101 to display the percentage of data used on the Home screen. Tap **Max Data Usage** to enter the maximum data based on your current data plan. Tap the check mark at the upper-right corner to save the changes made.

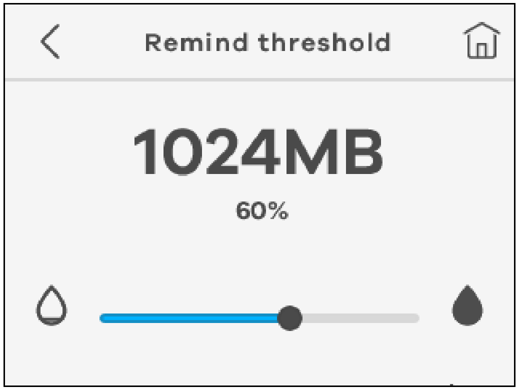
Figure 29 Max Data Usage



1024

- Select the unit you want to use on the NR2101. Tap **Period start date** to enter the date of the month your data plan starts. Select **Reminds when data usage reaches reminder threshold** to enable the reminder and set up a limit (0~100%) for sending a data usage warning message on the **Remind threshold** screen.

Figure 30 Remind Threshold



Remind threshold

1024MB

60%

The following table describes the labels in this screen.

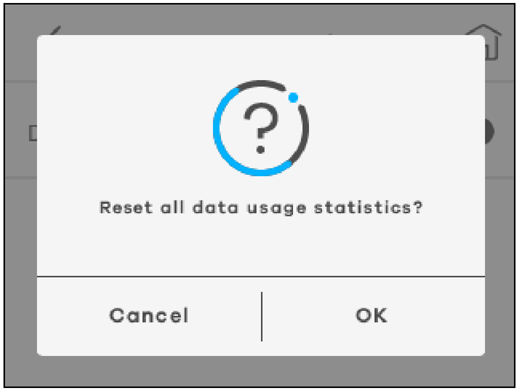
Table 10 Data Usage

LABEL	DESCRIPTION
Data Usage Monitor	Select this to enable the NR2101 to monitor how much data is used.
Display data usage on home screen	Select this to enable the NR2101 to display the percentage of the data used on the Home Screen.
Max Data Usage	This displays the maximum data provided by your ISP based on your data plan.
Unit	Use this to select the unit used in megabyte or kilobyte (**MB** or **KB**).
Period start date	Use this to enter the start date on which data usage start counting.
Reminds when data usage reaches reminder threshold	Select this to allow for a warning message for the monthly data usage limit.
Remind threshold	Use this to set up when to receive a warning message as a reminder (**0~100%**). Once you reach that limit, the LCD will show a warning message.

1.5.6.7 Data Roaming

Use the **Data Roaming** screen to reset all data usage statistics. Click the switch to enable **Data Roaming**. The following screen appears. Tap **OK** to start the reseting process.

Figure 31 Reset Data Usage



Reset all data usage statistics?

The following table describes the labels in this screen.

Table 11 Data Roaming

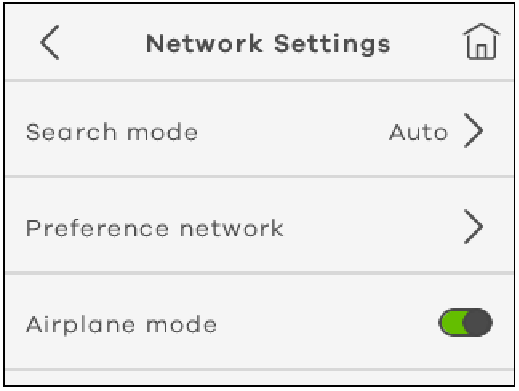
LABEL	DESCRIPTION
Data Roaming	Select this to reset all data usage statistics on the NR2101.
OK	Click **OK** to reset all data usage statistics.
Cancel	Click **Cancel** to return to the previous page.

1.5.6.8 Network Settings

Use this screen to select how the NR2101 finds available networks.

- Tap **Search mode** and select **Auto** to enable the NR2101 to find an available network automatically. Otherwise, select **Manual**.

Figure 32 Network Settings > Search mode



Network Settings

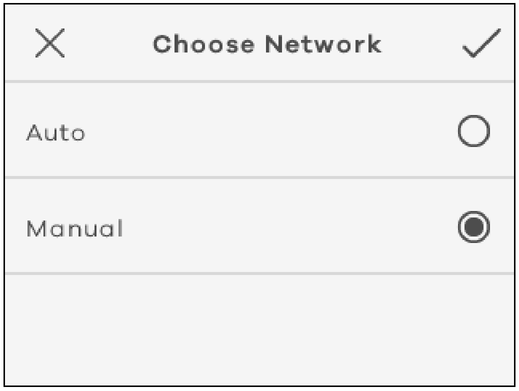
Search mode Auto

Preference network

Airplane mode

- Tap the check mark at the upper-right corner to save the changes made.

Figure 33 Network Settings > Search mode: Auto/Manual



Choose Network

Auto ○

Manual ●

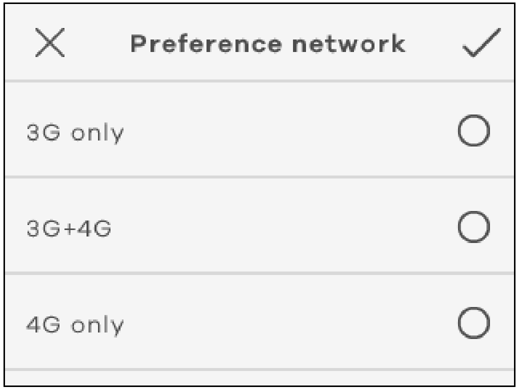
The following table describes the labels in this screen.

Table 12 Network Settings

LABEL	DESCRIPTION
Search mode	
Auto	Use this to allow the NR2101 to select a network automatically based on **Network Settings** saved on the SIM card.
Manual	Use this to manually select an available network to connect to the Internet.

- Go to **Network Settings > Preference network** to select the network type you prefer to use. The following screen appears. Choices are **3G only, 3G+4G, 4G only, 5G only, 4G+5G,** and **3G+4G+5G**.

Figure 34 Preference Network List A



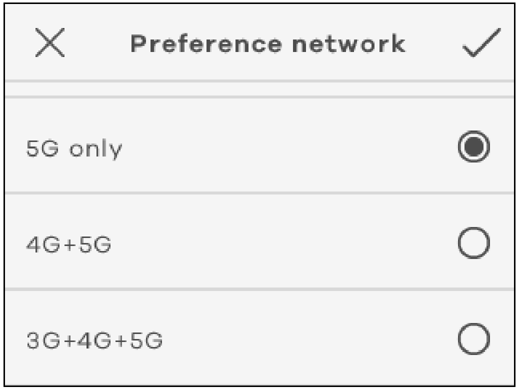
× Preference network ✓

3G only ○

3G+4G ○

4G only ○

Figure 35 Preference Network List B



× Preference network ✓

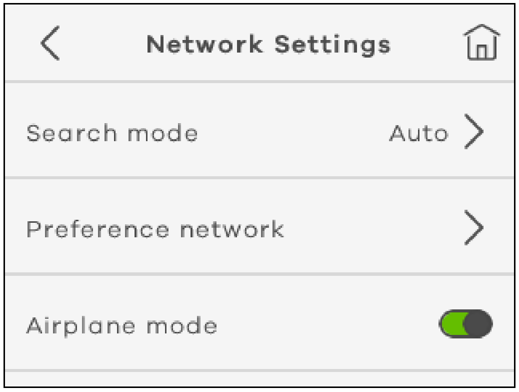
5G only ●

4G+5G ○

3G+4G+5G ○

- Select **Airplane mode** to enable or disable Airplane mode on the NR2101. Enabling Airplane mode will block radio interferences such as WiFi, Bluetooth, telephone call from your mobile device. Click **OK** to close the window.

Figure 36 Network Settings



< Network Settings

Search mode Auto >

Preference network >

Airplane mode

The following table describes the labels in this screen.

Table 13 Network Settings

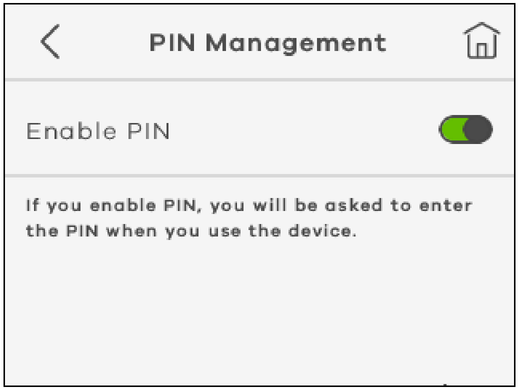
LABEL	DESCRIPTION
Preference network	Use this to select the network type you prefer to use.
Airplane mode	Use this to enable or disable the airplane mode.

1.5.6.9 PIN Management

Use this screen to verify your identity.

- Select **Enable PIN** to enable **PIN Management**. You will be asked to enter your PIN code when you use the NR2101.

Figure 37 PIN Management

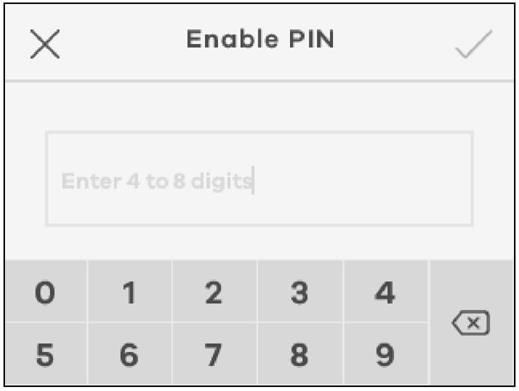


Enable PIN

If you enable PIN, you will be asked to enter the PIN when you use the device.

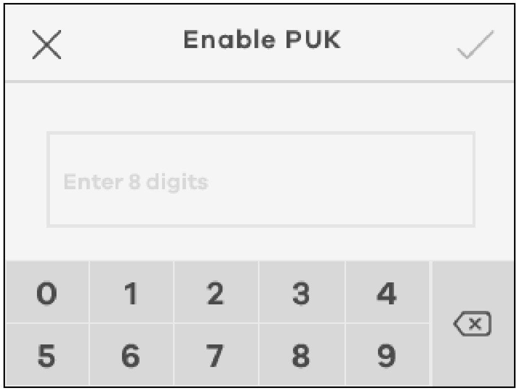
- Select **Enable PIN** and the following screen appears. Enter the PIN number of a 4 to 8-digit number to activate cellular connections using a SIM card. Tap the check mark at the upper-right corner to save the changes made.

Figure 38 Enable PIN



- If you enter incorrect PIN codes over three times, you will need to reset your PIN code using the PUK code of a 8-digit number (10 times is allowed). Tap the check mark at the upper-right corner to save the changes made.

Figure 39 Enable PUK



The following table describes the labels in this screen.

Table 14 PIN Management

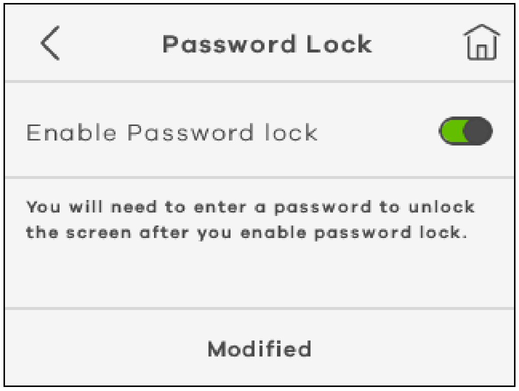
LABEL	DESCRIPTION
Enable PIN	Enter your PIN numbers of a four-to-eight-digit number for PIN management.
Enable PUK	Enter the PUK number if you enter incorrect PIN for three times to reset your PIN.

1.5.6.10 Password Lock

Use this screen to set up a password to lock/unlock the screen. If you select **Enable Password lock**, you will be asked to enter a password to unlock the screen when you use the NR2101.

- Select **Enable Password lock** to enable the screen lock.

Figure 40 Password Lock



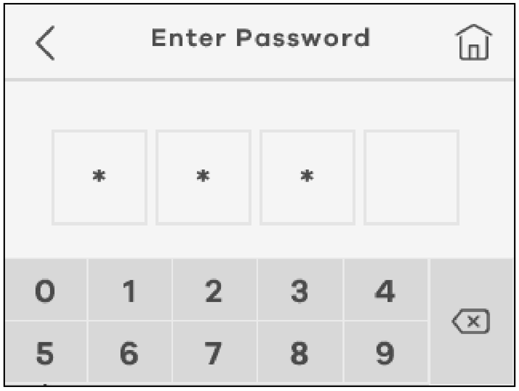
Password Lock

Enable Password lock

You will need to enter a password to unlock the screen after you enable password lock.

- Enter a password in the **Enter Password** screen and enter it again in the **Confirm Password** screen to confirm the changes made.

Figure 41 Enter Password



Enter Password

The following table describes the labels in this screen.

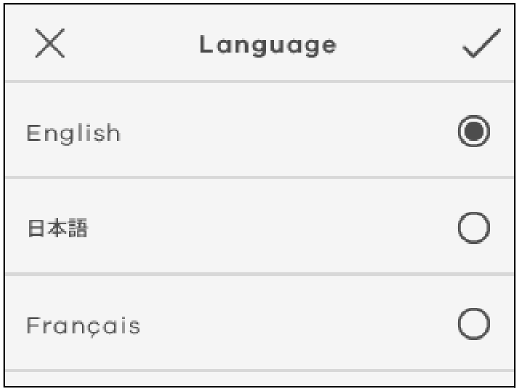
Table 15 Password Lock

LABEL	DESCRIPTION
Enable Password lock	Select this to enable the screen lock.
Enter Password	Use a password of a 4-digit number to unlock the screen.

1.5.6.11 Language

Use this screen to select the language you want to use on the NR2101. Tap **Language** and select an UI language from the list. The following screen appears. Tap the check mark at the upper-right corner to save the changes made.

Figure 42 Language



Language

● English

○ 日本語

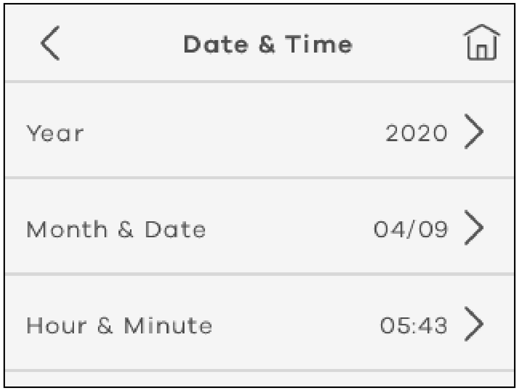
○ Français

1.5.6.12 Time Setting

Use this screen to set up the current time of your location.

- Select **Time Setting** and the following screen appears. Enter **Year**, **Month & Date**, **Hour & Minute**, and **AM/PM** to configure the time settings of the NR2101.

Figure 43 Date & Time

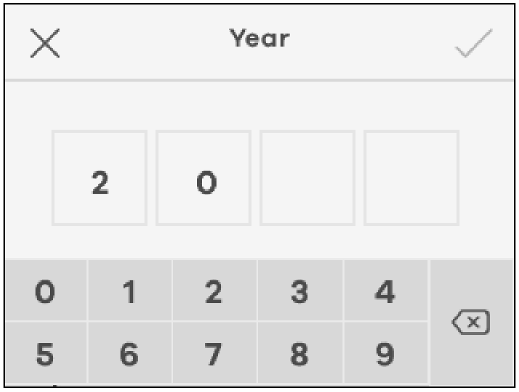


Date & Time

Year	2020
Month & Date	04/09
Hour & Minute	05:43

- Enter the number of the Year in the following screen. Tap the check mark at the upper-right corner to save the changes made.

Figure 44 Date & Time > Year



Year

2 0

The following table describes the labels in this screen.

Table 16 Time Setting

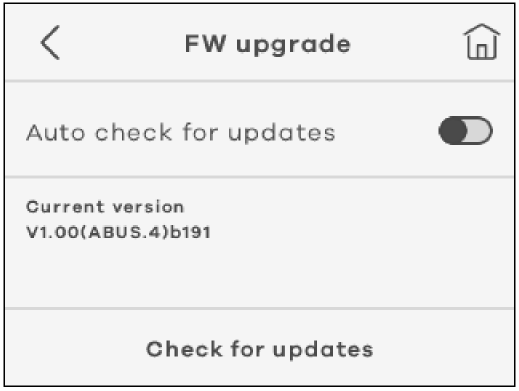
LABEL	DESCRIPTION
Year	Enter the number of the year.
Month & Date	Enter the number of the month and date.
Hour & Minute	Enter the number of the time.
AM/PM	Select **AM** or **PM** for the current time on the NR2101.

1.5.6.13 FW Upgrade

Use this screen to check and start firmware updates automatically.

- Select **Auto check for updates** to enable an auto check. Click **Check for updates** to start the checking process.

Figure 45 FW Upgrade



Current version
V1.00(ABUS.4)b191

The following table describes the labels in this screen.

Table 17 FW Upgrade

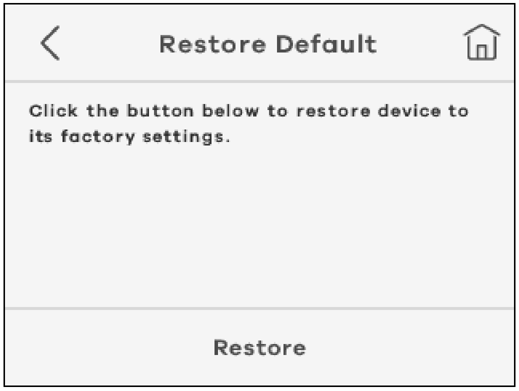
LABEL	DESCRIPTION
Auto check for updates	Select this to enable the NR2101 to check for new updates automatically.
Checking for updates	Select this to start the checking process.

1.5.6.14 Restore Default

Use this screen to restore the settings back to the factory default mode. This means that you will lose all configurations you had, such as SSID and Password.

- Go to **Settings** > **Restore Default** and then tap **Restore** to restore the NR2101 back to the factory default mode.

Figure 46 Restore Default



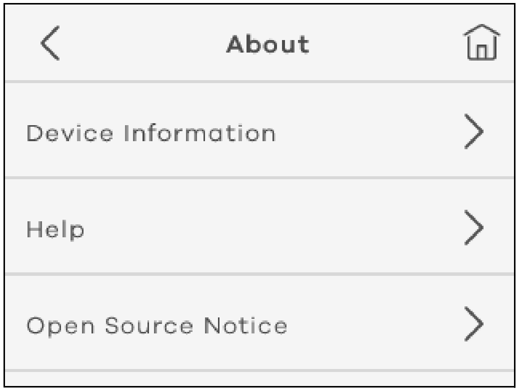
Click the button below to restore device to its factory settings.

1.5.7 About Settings

Use this screen to view software/hardware information and notifications on the NR2101.

- Tap **About** on the Menu screen and then select from **Device Information**, **Help**, **Open Source Notice**, or **Third Party Notice**.

Figure 47 About



The following table describes the labels in this screen.

Table 18 About

LABEL	DESCRIPTION
Device Information	
IMEI	This displays the International Mobile Equipment Number (IMEI) which is the serial number of the built-in 3G/4G/5G module. IMEI is a unique 15-digit number used to identify a mobile device.
LAN MAC address	This displays the MAC address of the NR2101.
Zyxel Firmware version	This displays the present firmware version of your NR2101.
Software version	This displays the present software version of your NR2101.
MiFi Software version	This displays the present MiFi software version of your NR2101.
Phone number	This displays the phone number of your NR2101
LAN IP address	This displays http://192.168.225.1. Launch your web browser and go to **http:// 192.168.225.1** to access the Web Configurator.
WAN IP address	This displays the IP address provided by your ISP.
Help	This displays the UI icons on your NR2101.

Table 18 About (continued)

LABEL	DESCRIPTION
Open Source Notice	This displays open source notices for your NR2101.
Third Party Notice	This displays third party notices for your NR2101.

CHAPTER 2
Web Configurator

2.1 Introduction

The Web Configurator is an HTML-based management interface that allows easy system setup and management through Internet browser. Use a browser that supports HTML5, such as Microsoft Edge, Internet Explorer 11, Mozilla Firefox, or Google Chrome. The recommended minimum screen resolution is 1024 by 768 pixels.

In order to use the Web Configurator you need to allow:

- Web browser pop-up windows from your device.
- JavaScript (enabled by default).
- Java permissions (enabled by default).

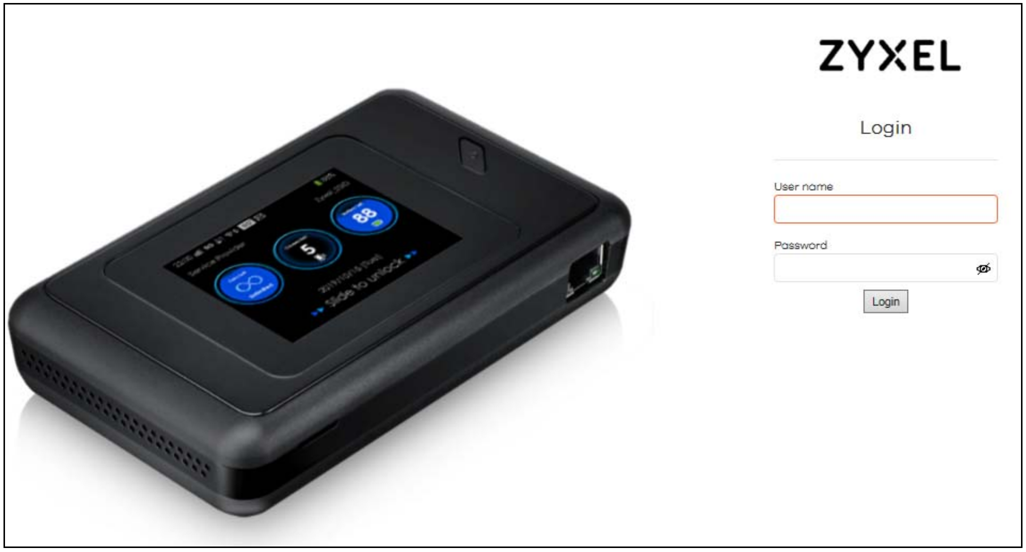
2.2 Accessing the Web Configurator

1 Use the included USB Type-C cable to connect your NR2101 to a computer or the included AC charger to charge the NR2101 (refer to the Quick Start Guide).

2 Connect your NR2101 to a computer or laptop using an Ethernet cable.

3 Launch your web browser. Go to http://192.168. 225.1 (Default username: admin, password: admin). A login screen displays. To access the administrative Web Configurator and manage the NR2101, enter the default username **admin,** and password **admin** in the login screen, and then click **Login**.

Figure 48 Login



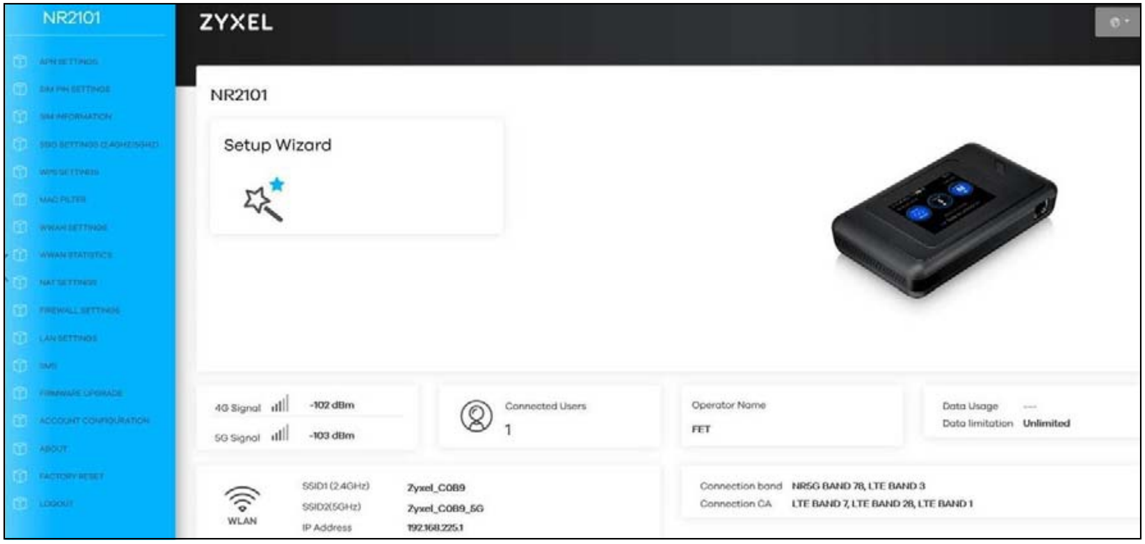
4 If this is the first time you have logged into the NR2101, you will be asked to change the default password. Enter a new password, enter it again to confirm, and then click **Login**.

5 After changing your password, you will be automatically logged out. Log in again with your new password. The **Status** screen appears. Use this screen to viewthe NR2101 signal strength, ISP information, WiFi SSID information, and the numbers of the WiFi client devices currently connected to the NR2101.

2.3 Navigating the Web Configurator

The following section summarizes how to navigate the Web Configurator starting from the **Status** screen.

Figure 49 Status Screen



4G Signal -102 dBm
5G Signal -103 dBm

Connected Users 1

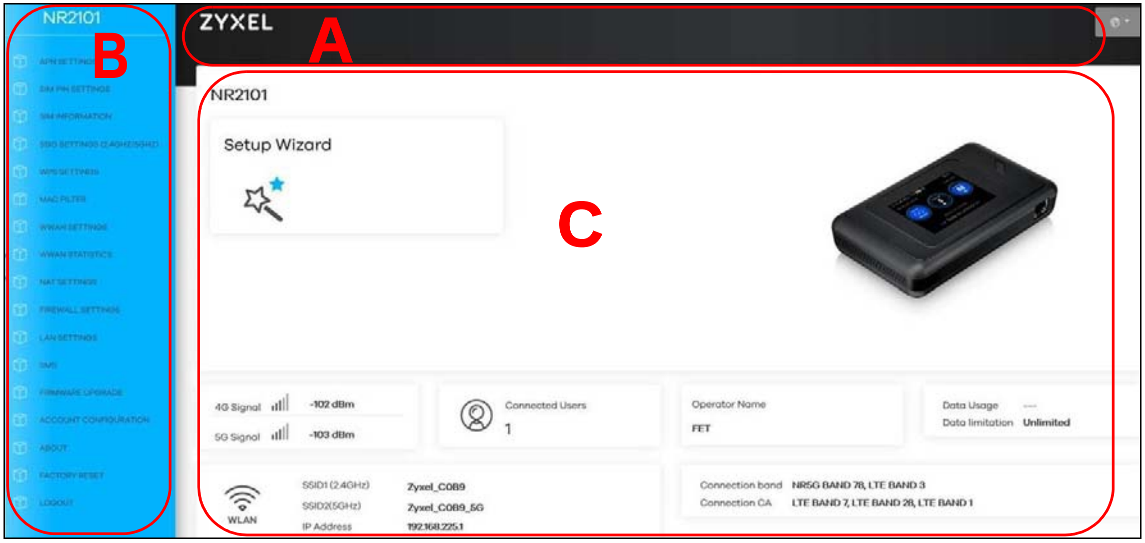
Operator Name FET

Data Usage ---
Data limitation Unlimited

SSID1 (2.4GHz) Zyxel_C0B9
SSID2(5GHz) Zyxel_C0B9_5G
IP Address 192.168.225.1

Connection band NR5G BAND 78, LTE BAND 3
Connection CA LTE BAND 7, LTE BAND 28, LTE BAND 1

Figure 50 Screen Layout



4G Signal -102 dBm
5G Signal -103 dBm
Connected Users 1
Operator Name FET
Data Usage ---
Data limitation Unlimited
SSID1 (2.4GHz) Zyxel_C0B9
SSID2(5GHz) Zyxel_C0B9_5G
IP Address 192.168.225.1
Connection band NR5G BAND 78, LTE BAND 3
Connection CA LTE BAND 7, LTE BAND 28, LTE BAND 1

- **A** - Title Bar
- **B** - Navigation Panel
- **C** - Main Window

2.3.1 Title Bar

The title bar allows you to choose your language from the drop-down list at the upper right corner.

Figure 51 Title Bar

2.3.2 The Main Window

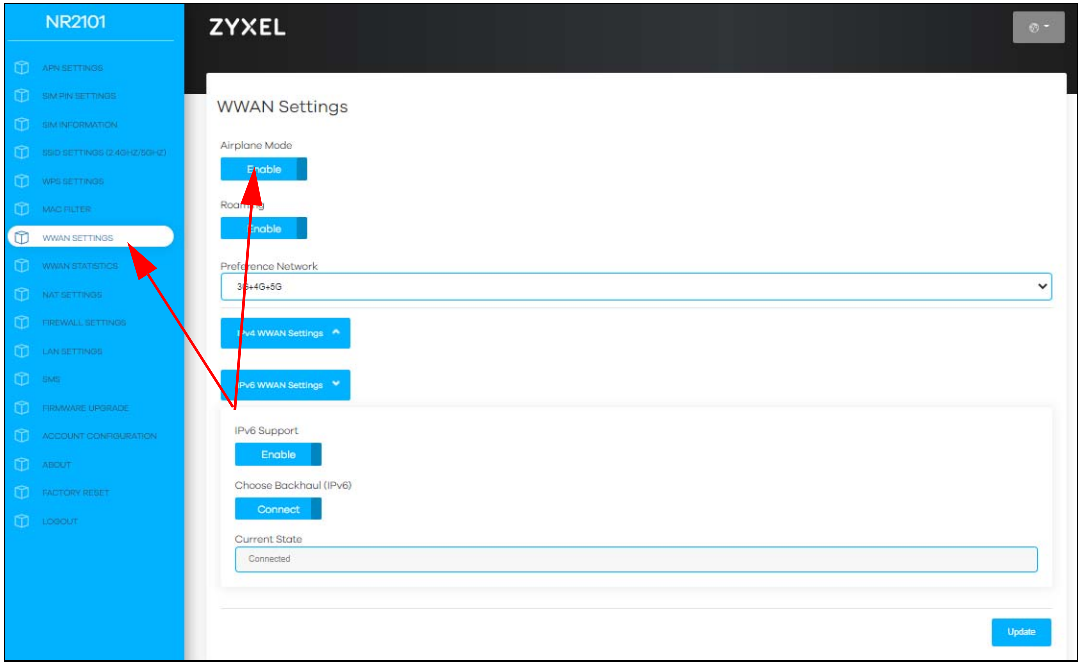
The main window displays information and configuration fields. It is discussed in the rest of this document.

After you log in, the **Status** screen will display. See Chapter 1 on page 10 for more information about the **Status** screen.

2.3.3 Navigation Panel

Use the menu items in the navigation panel to open screens to configure NR2101 features. The following section introduces the NR2101's navigation panel menus.

Figure 52 Navigation Panel



WWAN Settings

Airplane Mode: Enable

Roaming: Enable

Preference Network: 3G+4G+5G

IPv6 Support: Enable

Choose Backhaul (IPv6): Connect

Current State: Connected

The following table describe each menu item in the screen.

Table 19 Navigation Panel Summary

LINK	TAB	DESCRIPTION
APN SETTINGS	Profile Name	Use this field to enter a unique profile name to identify the APN file.
	APN	This field displays the Access Profile Name (APN) in the profile. Use this field to enter the name of your Internet Service Provider.
	User Name	Use this field to enter the user name provided by your Internet Service Provider.
	Password	Use this field to enter the password provided by your Internet Service Provider.
	PDP Type	Select the PDP types provided by your Internet Service Provider.
SIM PIN Settings	No. of Retry	This field displays the number of retry attempts left to enter your PIN code.
	SIM PIN Lock	Use this field to enable PIN code authentication and enter the PIN code.
	PIN Code	Use this field to enter the PIN code of your SIM card.
SIM INFORMATION	SIM Status	Use this field to view the status of your SIM card.
	SIM IMSI	Use this field to view your IMSI number.
	SIM MSISDN	Use this field to view your MSISDN number.
	SIM ICCID	Use this field to view your ICCID number.
SSID SETTINGS (2.4GHz/5GHz)		
SSID Settings-2.4GHz	WiFi Enable	Use this field to enable or disable 2.4 GHz WiFi.
	SSID	This field displays a descriptive name used to identify the NR2101 in the 2.4 GHz WiFi.
	Password	This field displays the password for the 2.4GHz WiFi.
	Security Type	This field displays the level of 2.4 GHz WiFi security the NR2101 is using.
	Bandwidth	This field displays the current bandwidth used in the 2.4 GHz WiFi.
	Channel	This field displays the channel used in the 2.4 GHz WiFi.
SSID Settings-5GHz	WiFi Enable	Use this field to enable or disable 5 GHz WiFi.
	SSID	This field displays a descriptive name used to identify the NR2101 in the 5 GHz WiFi.
	Password	This field displays the password for the 5 GHz WiFi.
	Security Type	This field displays the level of 5 GHz WiFi security the NR2101 is using.
	Bandwidth	This field displays the current bandwidth used in the 5 GHz WiFi.
	Channel	This field displays the channel used in the 5 GHz WiFi.
WPS SETTINGS	WPS Enable	Use this field to enable WPS.
	Via the WPS button	Use this field to activate WPS on the NR2101via the WPS button.
	WPS	Select this field to enable or disable WPS.
	Device PIN	Use this field to enter a PIN code to enable WPS.
MAC FILTER	Serial No	This field displays the serial number of the MAC address entry.
	MAC Address	This field displays the MAC addresses of the WiFi client device that are denied access to the NR2101.
	Delete	Use this field to delete the MAC address entry.
	Add New	Use this field to enter the MAC address of the WiFi client device you want to block.

Table 19 Navigation Panel Summary (continued)

LINK	TAB	DESCRIPTION
WWAN SETTINGS		
Airplane Mode		Use this field to activate the airplane mode.
Roaming		Use this field to activate data roaming.
Preference Network		Use this field to select the preferred network.
IPv4 WWAN Settings	IPv4 Support	Use this field to activate the IPv4 support.
	Choose Backhaul (IPv4)	Use this field to allow the NR2101 to connect to the Internet using IPv4.
	Current State	This field displays the current IPv4 WWAN state.
IPv6 WWAN Settings	IPv6 Support	Use this field to activate the IPv6 support.
	Choose Backhaul (IPv6)	Use this field to allow the NR2101 to connect to the Internet using IPv6.
	Current State	This field displays the current IPv6 WWAN state.
WWAN STATISTICS		
IPv4 WWAN Statistics	WWAN Statistics	This field displays the information of the IPv4 WWAN Statistics.
IPv6 WWAN Statistics	WWAN Statistics	This field displays the information of the IPv6 WWAN Statistics.
NAT SETTINGS		
IP Pass-Through		Use this field to enable or disable the NR2101's IP Pass-Through.
Select NAT Type		Use this field to select the NAT Type.
IPSEC VPN Pass-Through		Use this field to enable or disable the IPSEC VPN passthrough feature.
PPTP VPN Pass-Through		Use this field to enable or disable the PPTP VPN passthrough feature.
L2TP VPN Pass-Through		Use this field to enable or disable the L2TP VPN passthrough feature.
Webserver WWAN Access		Use this field to enable or disable the Webserver WWAN Access.
DMZ IP		Use this field to enter the IP address of the default server which receives packets from ports.
Port Forwarding	Serial	This field displays the serial number of an individual port forwarding server entry.
	Private IP	This field displays the IP address of the virtual server.
	Private Port	This field displays theport number from the LAN side.
	Global Port	This field displays the port number from the WAN side.
	Protocol	This field displays the transport layer protocol used for the service.
	Delete	Use this field to delete an existing port forwarding rule. Note that subsequent address mapping rules move up by one when you take this action.
	Modify	Use this field to edit an existing port forwarding rule.
FIREWALL SETTINGS		
Firewall		Use this field to activate or deactivate the NR2101's firewall.
View Firewall Entries		Use this field to configure IPv4/IPv6 firewall entries.

Table 19   Navigation Panel Summary (continued)

LINK	TAB	DESCRIPTION
IPv4 Firewall Entries	IP Address	Use this field to enter the source device’s IPv4 address.
	IP Subnet	Use this field to enter the IPv4 source subnet mask.
	Protocol	Use this field to select the protocol used to transport packets.
	Delete	Use this field to delete the IPv4 firewall entry.
	Modify	Use this field to edit the IPv4 firewall entry.
IPv6 Firewall Entries	IP Address	Use this field to enter the source device’s IPv6 address.
	IP Prefix	Use this field to enter the address prefix length.
	Protocol	Use this field to select the protocol used to transport packets.
	Delete	Use this field to delete the IPv4 firewall entry.
	Modify	Use this field to edit the IPv6 firewall entry.
LAN SETTINGS	LAN Gateway IP	Use this field to view the LAN IP address.
	LAN Subnet Mask	Use this field to view the subnet mask.
	LAN DHCP	Use this field to enable or disable the NR2101’s DHCP server.
	LAN DHCP Start IP	This field specifies the first of the contiguous addresses in the IP address pool for LAN.
	LAN DHCP End IP	This field specifies the last of the contiguous addresses in the IP address pool for LAN.
	LAN DHCP Lease Time	This is the period of time the DHCP-assigned address is used.
SMS	Serial No.	Use this field to view the entry number of the SMS messages stored on the NR2101.
	From	Use this field to view the telephone number of the sender.
	Date/Time	Use this field to view the time and date of the SMS messages saved on the NR2101.
	Write New SMS	Use this field to enter a new SMS message.
	Send to	Use this field to enter the phone number of the message receiver.
	Content	Use this field to view the content of the SMS messages.
FIRMWARE UPGRADE	Current Version	Use this field to view the current firmware version of the NR2101.
	Upgrade From Local	Use this field to upload firmware to the NR2101.
	Select File	Use this field to select a fie from your local drive to upload to the NR2101.
	Upgrade From Network	Use this field to upgrade firmware through the Internet.
	Start Firmware Upgrade	Use this field to start upgrading firmware.

Table 19   Navigation Panel Summary (continued)

LINK	TAB	DESCRIPTION
ACCOUNT CONFIGURATION	Session Timeout (Min)	Use this field to edit the setting of the session timeout.
	Old Password	Use this field to change the password entering the old password.
	New Password	Use this field to enter a new password of 4 to 20 characters. The new password must contain one numeric, one lower case, one upper case letter and one special character.
	Confirm New Password	Enter the new password again to confirm the change.
ABOUT	Zyxel Firmware version	Use this field to view the current firmware version of the NR2101.
	Software version	Use this field to view the current software version of the NR2101.
	MiFi Software version	Use this field to view the current MiFi software version of the NR2101.
	Open Source Notices	Use this field to view open source notices information.
FACTORY RESET		Use this field to restore the NR2101 back to the factory default mode.
LOGOUT		Use this field to log out of the NR2101's Web Configurator.

CHAPTER 3 Setup Wizard

3.1 Overview

This chapter provides information on the setup wizard screens in the Web Configurator.

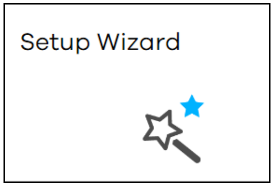
The Web Configurator’s setup wizard helps you configure your NR2101 to access the Internet and change the WiFi settings. Refer to your ISP for your Internet account information. Leave a field blank if you do not have that information.

3.2 Access the Setup Wizard

1 Launch your web browser and go to https://192.168.225.1. Enter "admin" (default) as the user name, "admin" (default) as the password and then click **Login**.

2 Click the **Setup Wizard** icon in the navigation panel of the Web Configurator to open the **Setup Wizard** screen.

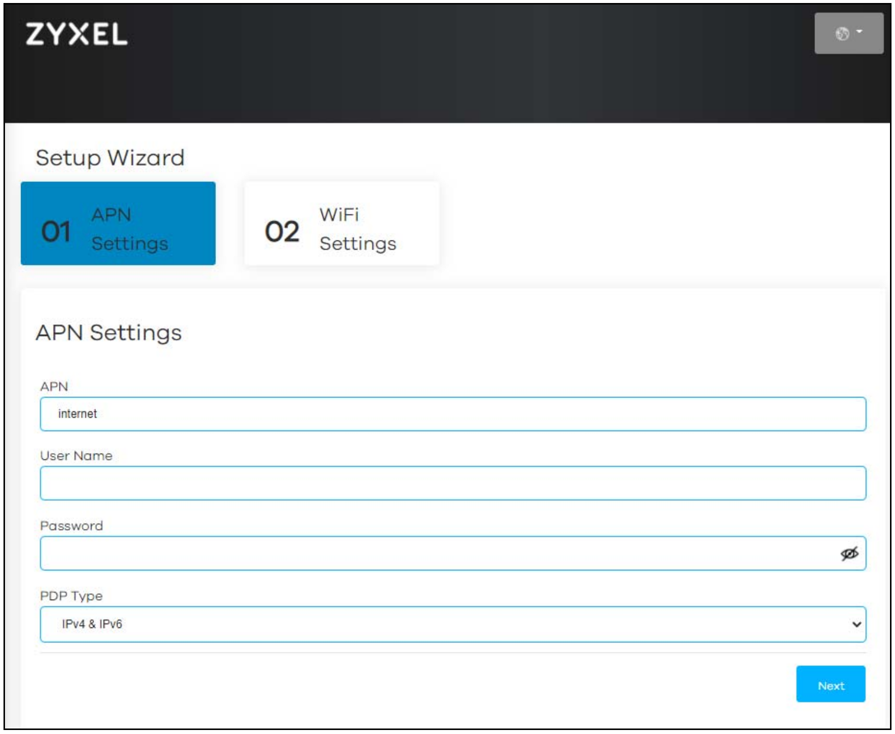
Figure 53 Title Bar: Setup Wizard Icon



3.3 Use the Setup Wizard

1 The first **Setup Wizard** screen displays the **APN Settings** screen. Use this screen to configure the APN (Access Profile Name) provided by your ISP (Internet Service Provider). Enter the user name and password provided by your ISP, and then select your PDP Type (**IPv4**, **IP46**, or **IPv4 &IPv6**). Click **Next**.

Figure 54 Setup Wizard > APN Settings



APN Settings

APN: internet

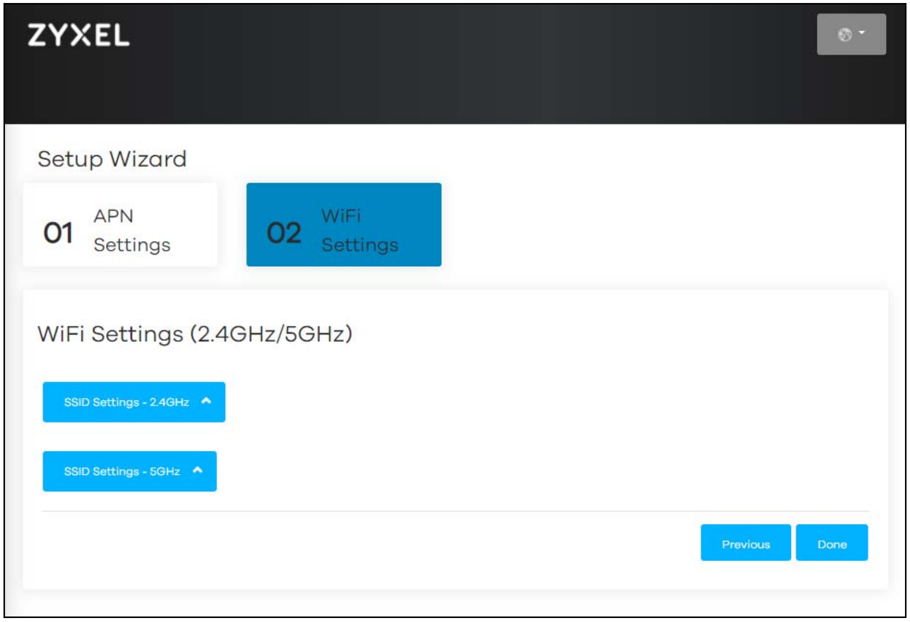
User Name:

Password:

PDP Type: IPv4 & IPv6

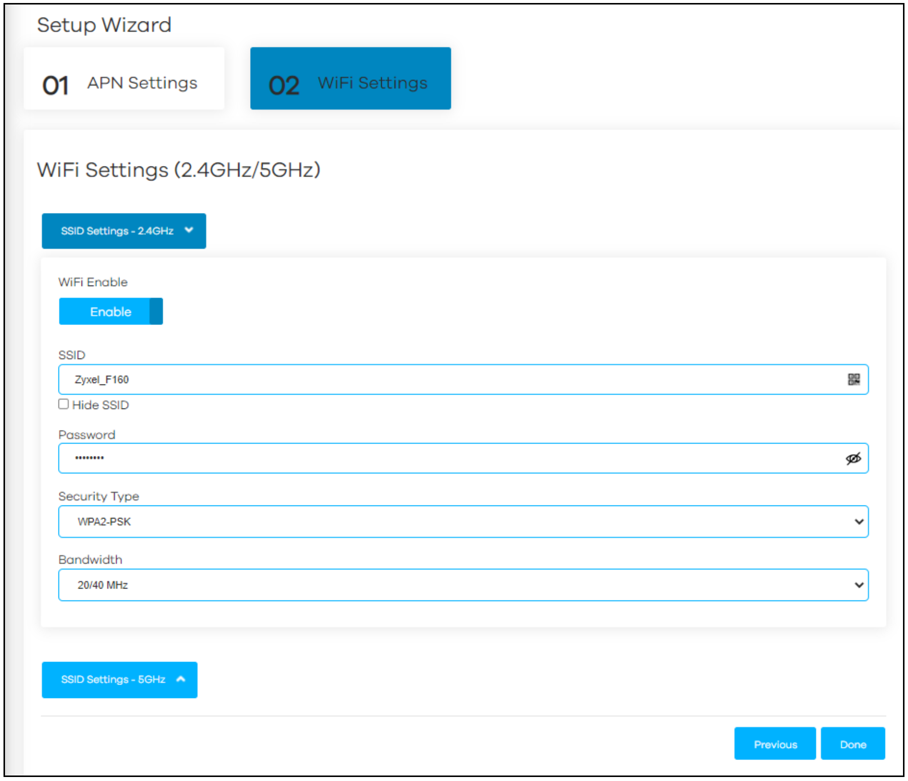
2 The **WiFi Settings** screen appears. Use this screen to configure the 2.4 GHz/5 GHz WiFi SSID settings and the WiFi security types.

Figure 55 Setup Wizard > WiFi Settings



3 Click **SSID Settings-2.4GHz** to configure the NR2101's 2.4 GHz WiFi setting, and enter the WiFi network name (**SSID**). Select the **Hide SSID** check box to hide your SSID from a site survey tool. Enter a password of 8 to 63 case-sensitive characters, including special characters and numbers for data encryption. For the WiFi Setting (2.4GHz) select a security type from **WPA-PSK, WPA2-PSK**, and **WPA3/WPA2 mixed mode.** The 2.4 GHz WiFi client devices which want to associate with this WiFi network must have the same WiFi security settings. Otherwise, select **None (Open)** to allow any WiFi client device to connect to this network without any data encryption or authentication.

Figure 56 Setup Wizard > WiFi Setting > SSID Settings-2.4GHz



Setup Wizard

01 APN Settings

02 WiFi Settings

WiFi Settings (2.4GHz/5GHz)

SSID Settings - 2.4GHz

WiFi Enable: Enable

SSID: Zyxel_F160

□ Hide SSID

Password: ••••••••

Security Type: WPA2-PSK

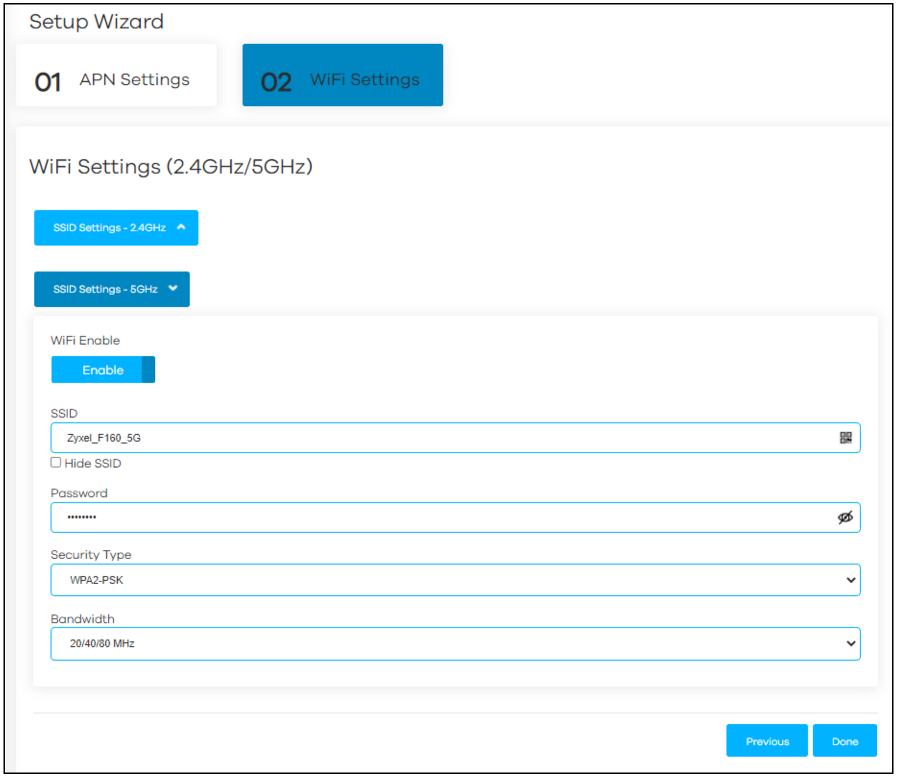
Bandwidth: 20/40 MHz

SSID Settings - 5GHz

Previous Done

4 Click **SSID Settings-5GHz** to configure the NR2101's 5 GHz WiFi setting, and enter the WiFi network name (**SSID**). Select the **Hide SSID** check box to hide your SSID from a site survey tool. Enter a password of 8 to 63 case-sensitive characters, including special characters and numbers for data encryption. For the WiFi Setting (5GHz), select a security type from **WPA-PSK, WPA2-PSK,** and **WPA3/WPA2 mixed mode**. The 5 GHz WiFi client devices which want to associate with this WiFi network must have the same WiFi security settings. Otherwise, select **None** to allow any WiFi client device to connect to this network without any data encryption or authentication.

Figure 57 Setup Wizard > WiFi Setting > SSID Settings-5GHz



Setup Wizard

WiFi Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password: ••••••••

Security Type: WPA2-PSK

Bandwidth: 20/40/80 MHz

Click **Done** to save your settings or click **Previous** to go back to the previous screens. You are now ready to access the Internet and allow WiFi client devices to connect to your NR2101.

CHAPTER 4
Tutorials

4.1 Overview

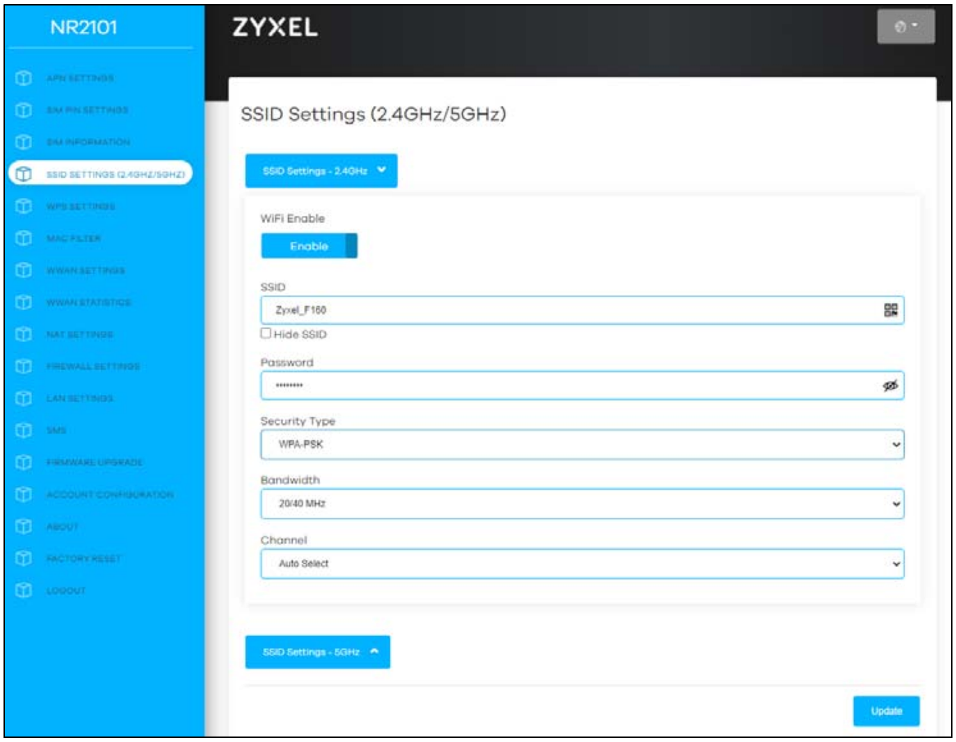
This chapter shows you how to use the NR2101's various features using the Web Configurator.

- Set Up Your WiFi Network
- Connect to the NR2101 WiFi Network
- Set Up a WiFi Network Using WPS
- Configure the MAC Address Filter

4.2 Set Up Your WiFi Network

You can change the NR2101's WiFi network name and password. It is recommended you change your WiFi password regularly for your WiFi network security. Use a password that is not easy to guess and that consists of different types of characters, such as numbers and letters.

1 Go to the **SSID SETTINGS(2.4GHz/5GHz)** > **SSID SETTINGS-2.4GHz**/**SSID SETTINGS-5GHz** screen to configure the NR2101 WiFi network settings. After changing the SSID settings, select the security type, bandwidth, channel, and then click **Update** to save your changes.



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160

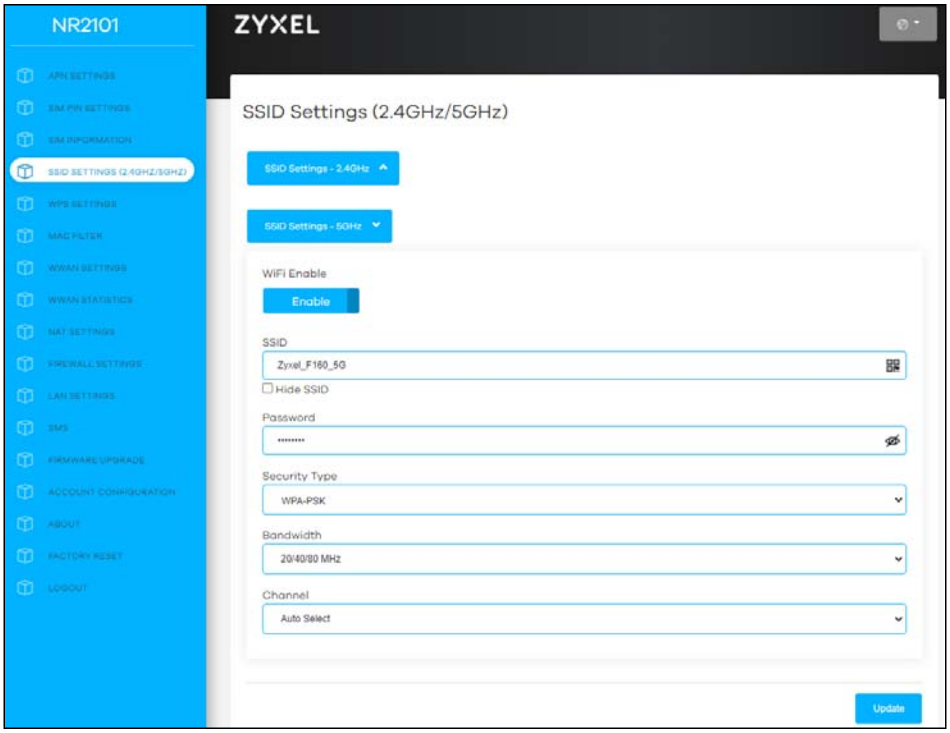
□ Hide SSID

Password: ••••••••

Security Type: WPA-PSK

Bandwidth: 20/40 MHz

Channel: Auto Select



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password: ••••••••

Security Type: WPA-PSK

Bandwidth: 20/40/80 MHz

Channel: Auto Select

2 When your changes are saved, your WiFi client device will be temporarily disconnected from the NR2101. Connect to the NR2101's WiFi network once again with the new WiFi settings.

4.3 Connect to the NR2101 WiFi Network

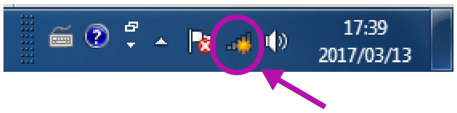
In this example, you have configured the NR2101's WiFi network to the following settings.

SSID	SSID_Example
Channel	6
Security	WPA2-PSK (Pre-Shared Key: ThisismyWPA-PSKpre-sharedkey)

Note: In this example, we use a Windows 7 laptop that has a built-in WiFi adapter as the WiFi client.

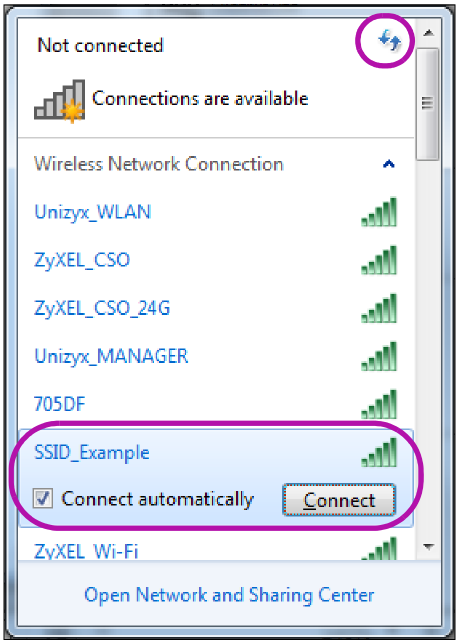
1 The NR2101 supports IEEE 802.11 a/b/g/n/ac/ax WiFi clients. Make sure that your notebook or computer's WiFi adapter supports one of these standards.

2 Click the WiFi icon in your computer's system tray.



3 The **Wireless Network Connection** screen displays. Click the refresh button to update the list of the available WiFi APs within range.

4 Select **SSID_Example** and click **Connect**.


Not connected

Connections are available

Wireless Network Connection

Unizyx_WLAN

ZyXEL_CSO

ZyXEL_CSO_24G

Unizyx_MANAGER

705DF

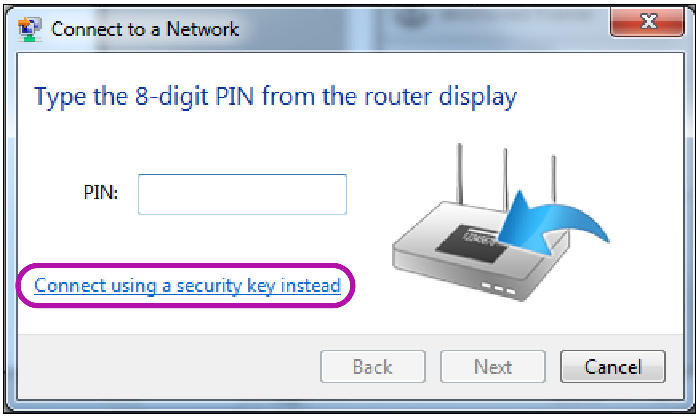
SSID_Example

☑ Connect automatically Connect

ZyXEL_Wi-Fi

Open Network and Sharing Center

5 Click **Connect using a security key instead**.



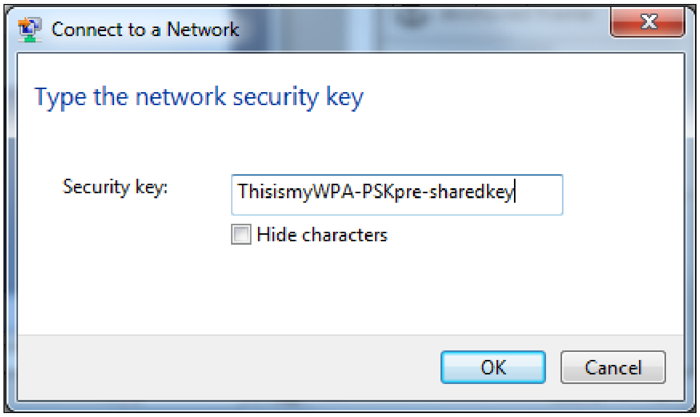
Connect to a Network

Type the 8-digit PIN from the router display

PIN:

Connect using a security key instead

6 Enter the security key in the following screen. Click **OK**.



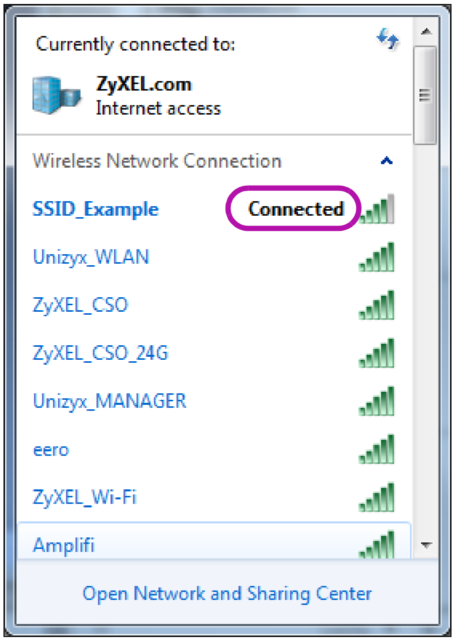
Connect to a Network

Type the network security key

Security key: ThisismyWPA-PSKpre-sharedkey

□ Hide characters

7 Check the status of your WiFi connection in the screen below.



Currently connected to:

ZyXEL.com
Internet access

Wireless Network Connection

SSID_Example Connected

Unizyx_WLAN

ZyXEL_CSO

ZyXEL_CSO_24G

Unizyx_MANAGER

eero

ZyXEL_Wi-Fi

Amplifi

Open Network and Sharing Center

8 If the WiFi client device keeps trying to connect to or acquiring an IP address from the NR2101, make sure you entered the correct security key.

If the connection has limited or no connectivity, make sure the DHCP server is enabled on the NR2101.

If your connection is successful, open your Internet browser and enter http://www.zyxel.com or the URL of any other web site in the address bar. If you are able to access the web site, your WiFi connection is successfully configured.

4.4 Set Up a WiFi Network Using WPS

This section gives you an example of how to set up a WiFi network using WPS in the NR2101's Web Configurator. This example uses the NR2101 as the AP and a WPS-enabled Android smartphone as the WiFi client device.

PIN Configuration

When you use the PIN configuration method, you need to check the WiFi client's PIN number and use the NR2101's configuration interface (see Section 7.4 on page 72).

1 Go to your phone settings and turn on WiFi.

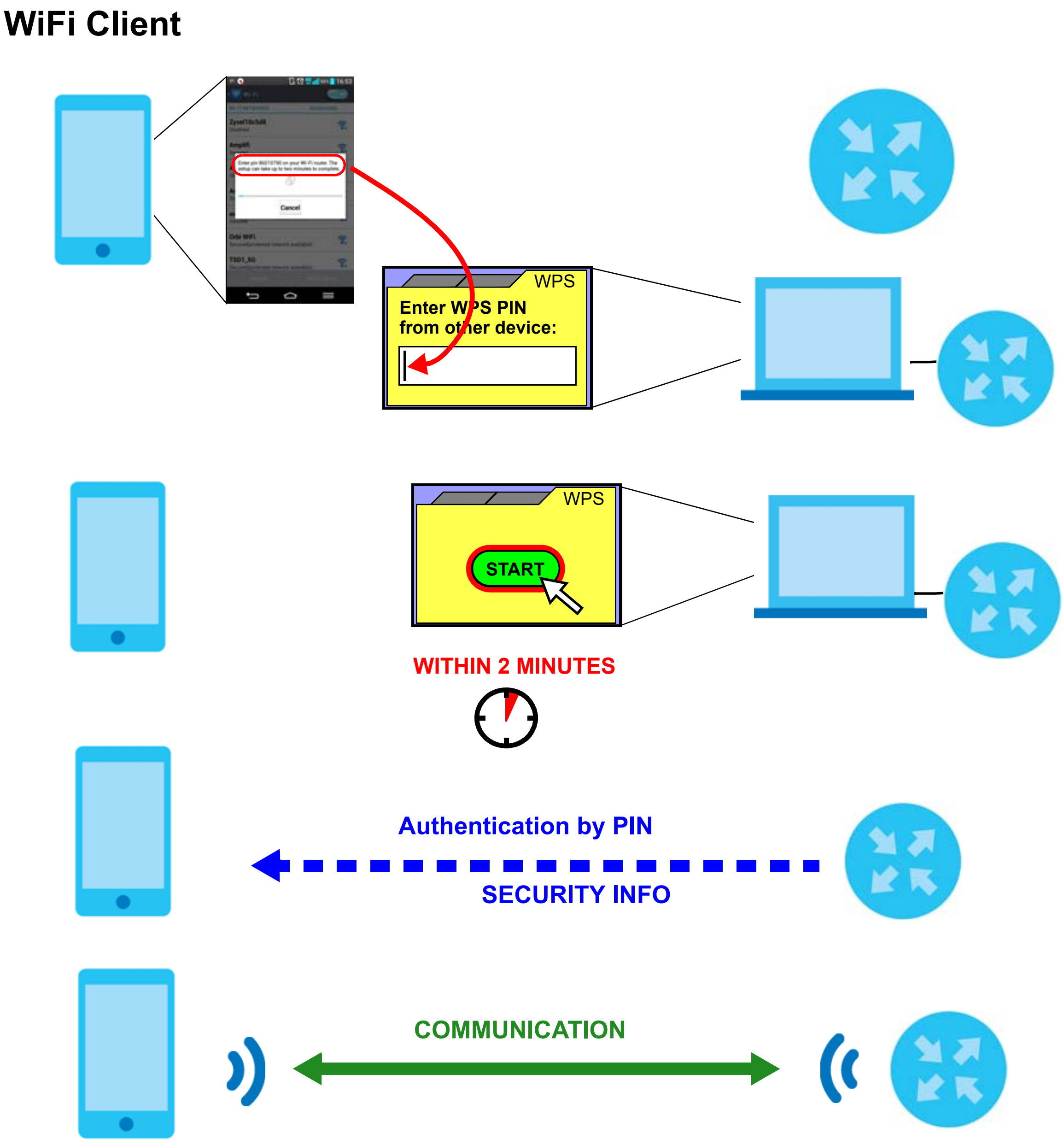
2 Log into NR2101's Web Configurator and go to the **WPS SETTINGS > WPS Settings** screen. Click **WPS Enable** to enable the PIN configuration.

3 Enter the **Device PIN** of the WiFi client and click the **Connect** button. Activate WPS function on the WiFi client utility screen within two minutes.

The NR2101 authenticates the WiFi client and sends the proper configuration settings to the WiFi client. This may take up to two minutes. The WiFi client is then able to communicate with the NR2101 securely.

The following figure shows you how to set up WiFi network and security on NR2101 and WiFi client (Android smartphone in this example) by using the PIN method.

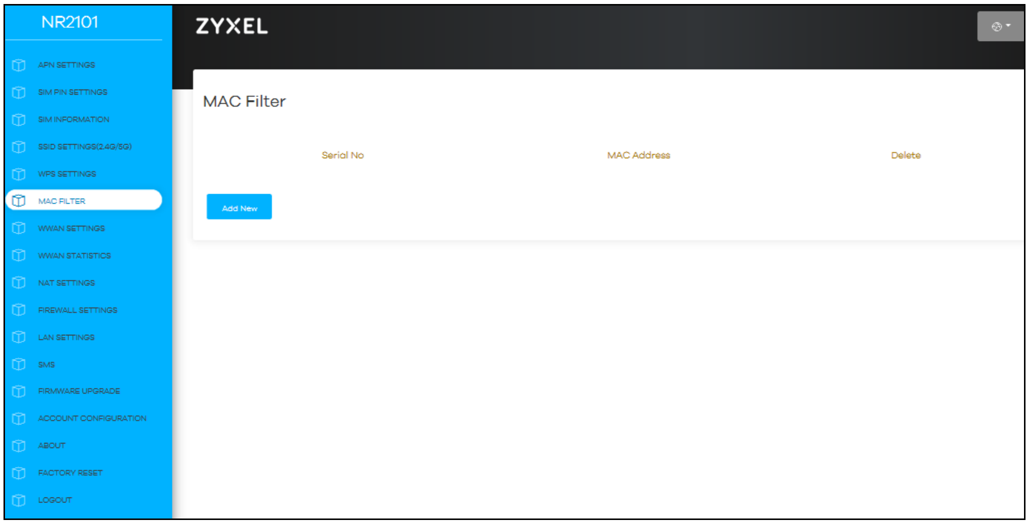
Figure 58 Example WPS Process: PIN Method



4.5 Configure the MAC Address Filter

This screen allows you to configure the NR2101 to exclude specific WiFi client devices from accessing the NR2101 .

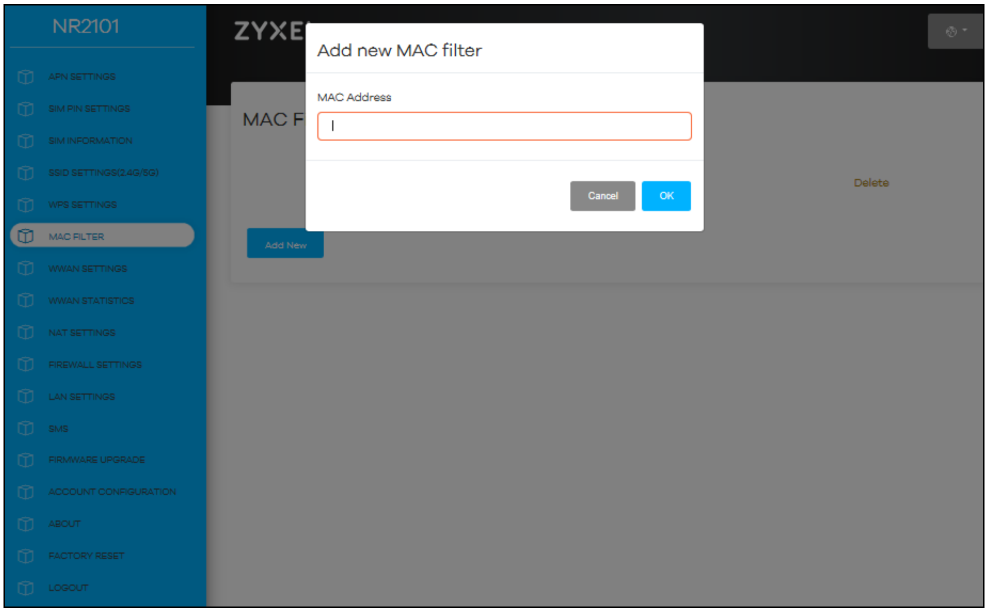
1 Go to the **MAC Filter** screen, and then click **Add New** (see Section 7.5 on page 73).



MAC Filter

Serial No	MAC Address	Delete

2 Enter the **MAC Address** of a WiFi client device that you want to block from connecting to the NR2101. Click **OK**.



Add new MAC filter

MAC Address: |

CHAPTER 5
Status

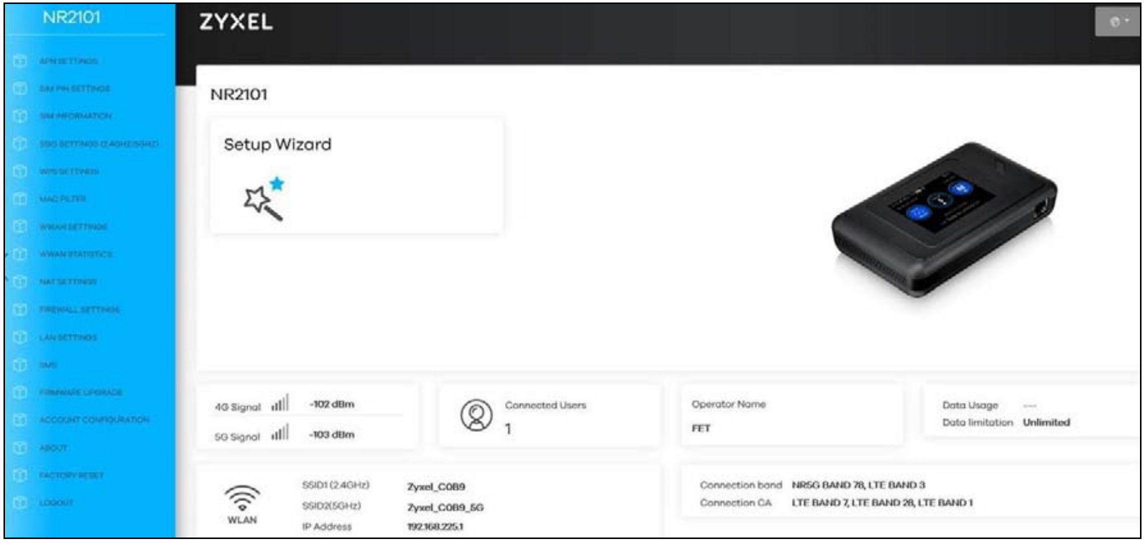
5.1 Overview

Use the **Status** screen to check status information about the NR2101.

5.2 Status

This screen is the first thing you see when you log into the NR2101's Web Configurator. It also appears every time you click **NR2101** in the navigation panel. The **Status** screen displays the NR2101's WiFi information, cellular signal strength and traffic statistics.

Figure 59 Status



4G Signal -102 dBm

5G Signal -103 dBm

Connected Users 1

Operator Name FET

Data Usage ---

Data limitation **Unlimited**

SSID1 (2.4GHz) Zyxel_C0B9

SSID2(5GHz) Zyxel_C0B9_5G

IP Address 192.168.225.1

Connection band NR5G BAND 78, LTE BAND 3

Connection CA LTE BAND 7, LTE BAND 28, LTE BAND 1

The following table describes the labels in this screen.

Table 20 Home

LABEL	DESCRIPTION
4G Signal	This shows the type and the strength of the mobile network to which the NR2101 is connecting.
5G Signal	This shows the type and the strength of the mobile network to which the NR2101 is connecting.
Connected Users	This displays the total number of the client devices currently connected to the NR2101.
Operator Name	This displays the name of the internet service provider.
Data Usage	This displays the amount of data used by the NR2101.
Data Limitation	This displays the total limiting amount of data that can be used by the NR2101.

Table 20   Home (continued)

LABEL	DESCRIPTION
SSID1 (2.4GHz)	This displays a descriptive name used to identify the NR2101 in the 2.4 GHz WiFi.
SSID2 (5GHz)	This displays a descriptive name used to identify the NR2101 in the 5 GHz WiFi.
IP Address	This field displays the current IPv4 address of the NR2101 in the LAN.
Connection band	This field displays the frequency band on which your ISP is operating.
Connection CA	This displays the multiple frequency blocks combined to speed up the data rates.

PART II
Technical Reference

CHAPTER 6
APN & SIM PIN

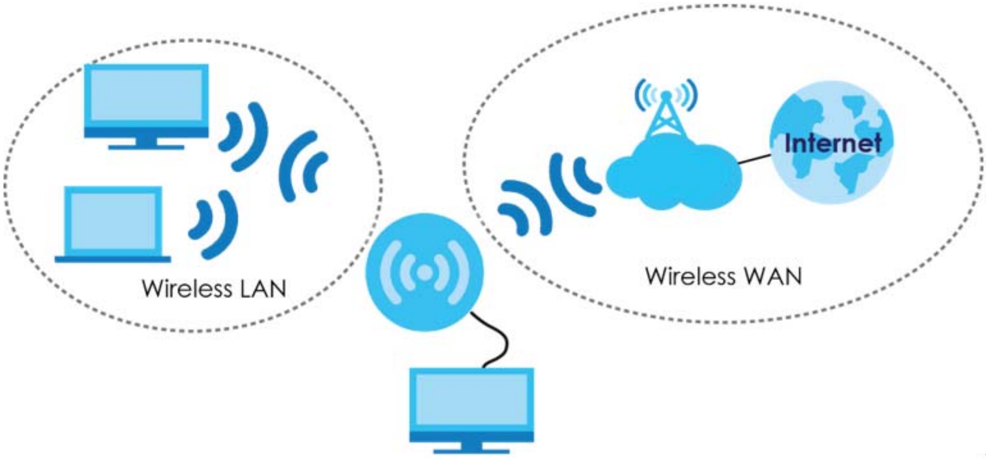
6.1 Overview

This chapter discusses the NR2101's **APN & SIM PIN** settings. Use these screens to configure your NR2101 for Internet access.

A WAN (Wide Area Network) connection is an outside connection to another network or the Internet. It connects your private networks such as a LAN (Local Area Network) and other networks, so that a device in one location can communicate with devices in other locations.

3G, 4G, and 5G cellular technology standards for the sending and receiving of voice, video, and data in a mobile environment. You can insert a 5G SIM card and set the NR2101 to use the 3G/4G/5G connection as your WAN.

Figure 60 LAN/Wireless LAN and Wireless WAN



6.1.1 What You Can Do in this Chapter

- Use the **APN Settings** screen to configure the APN (Access Point Name) settings (Section 6.2 on page 58).
- Use the **SIM PIN Setting** screen to enable SIM PIN lock (Section 6.3 on page 59).

6.1.2 What You Need To Know

3G

3G (Third Generation) is a digital, packet-switched mobile technology. Bandwidth usage is optimized as multiple users share the same channel and bandwidth is only allocated to users when they send data. It allows fast transfer of voice and non-voice data and provides broadband Internet access to mobile devices.

4G

4G is the fourth generation of the mobile telecommunications technology and a successor of 3G. Both the WiMAX and Long Term Evolution (LTE) standards are the 4G candidate systems. 4G only supports all-IP-based packet-switched telephony services and is required to offer gigabit speed access.

5G

5G is the fifth generation of the mobile telecommunications technology that delivers exceptionally high bandwidth and low latency. 5G is expected to bring about a brand new uniform user experience using massive IoT devices.

DNS Server Address Assignment

Use Domain Name System (DNS) to map a domain name to its corresponding IP address and vice versa, for instance, the IP address of www.zyxel.com is 204.217.0.2. The DNS server is extremely important because without it, you must know the IP address of a computer before you can access it.

The NR2101 can get the DNS server addresses in the following ways.

1. The ISP tells you the DNS server addresses, usually in the form of an information sheet, when you sign up. If your ISP gives you DNS server addresses, manually enter them in the IPv6 DNS server fields.
2. If your ISP dynamically assigns the DNS server IP addresses (along with the NR2101's WAN IP address), set the DNS server fields to get the DNS server address from the ISP.

IPv6 Introduction

IPv6 (Internet Protocol version 6), is designed to enhance IP address size and features. The increase in IPv6 address size to 128 bits (from the 32-bit IPv4 address) allows up to 3.4 x 10^{38} IP addresses. The NR2101 can use IPv4/IPv6 dual stack to connect to IPv4 and IPv6 networks, and supports IPv6 rapid deployment (6RD).

IPv6 Addressing

The 128-bit IPv6 address is written as eight 16-bit hexadecimal blocks separated by colons (:). This is an example IPv6 address `2001:0db8:1a2b:0015:0000:0000:1a2f:0000`.

IPv6 addresses can be abbreviated in two ways:

- Leading zeros in a block can be omitted. So `2001:0db8:1a2b:0015:0000:0000:1a2f:0000` can be written as `2001:db8:1a2b:15:0:0:1a2f:0`.
- Any number of consecutive blocks of zeros can be replaced by a double colon. A double colon can only appear once in an IPv6 address. So `2001:0db8:0000:0000:1a2f:0000:0000:0015` can be written as `2001:0db8::1a2f:0000:0000:0015`, `2001:0db8:0000:0000:1a2f::0015`, `2001:db8::1a2f:0:0:15` or `2001:db8:0:0:1a2f::15`.

IPv6 Prefix and Prefix Length

Similar to an IPv4 subnet mask, IPv6 uses an address prefix to represent the network address. An IPv6 prefix length specifies how many most significant bits (start from the left) in the address compose the network address. The prefix length is written as "/x" where x is a number. For example,

```
    2001:db8:1a2b:15::1a2f:0/32
```

means that the first 32 bits (`2001:db8`) is the subnet prefix.

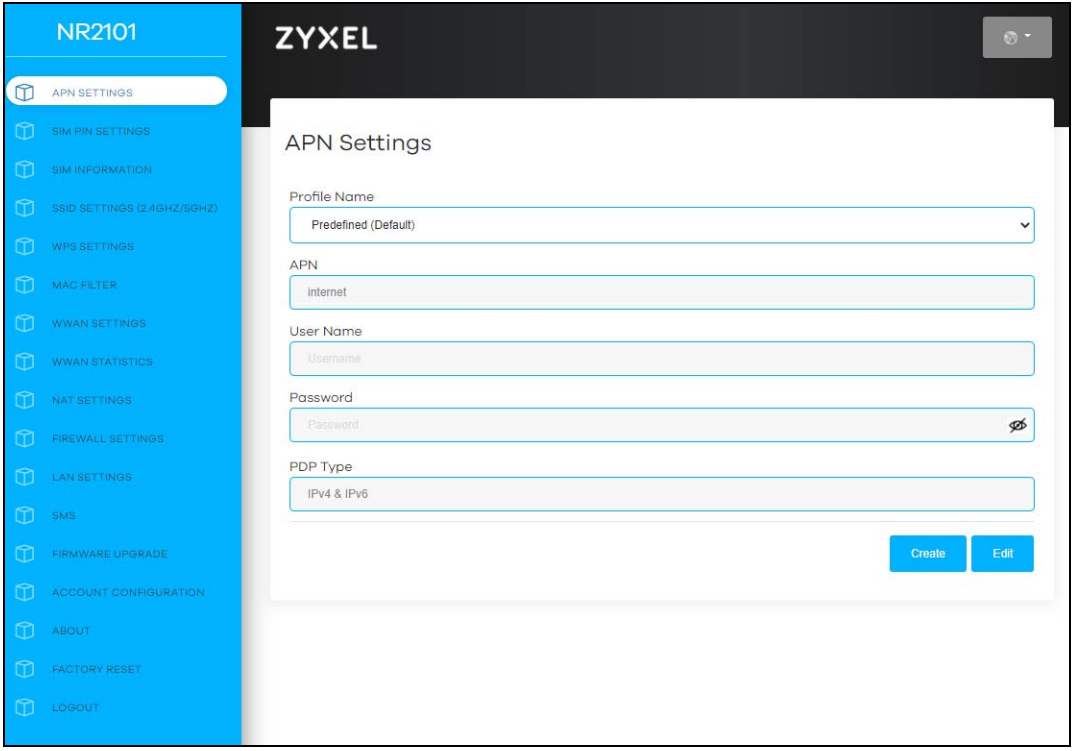
IPv6 Subnet Masking

Both an IPv6 address and IPv6 subnet mask compose of 128-bit binary digits, which are divided into eight 16-bit blocks and written in hexadecimal notation. Hexadecimal uses four bits for each character (1 ~ 10, A ~ F). Each block's 16 bits are then represented by four hexadecimal characters. For example, FFFF:FFFF:FFFF:FFFF:FC00:0000:0000:0000.

6.2 APN Settings

Click **APN SETTINGS** and the screen appears as shown next. Use this screen to configure the APN (Access Profile Name). Enter the credentials (**User Name** and **Password**) provided by your ISP and select your **PDP** (Packet Data Protocol) **Type** from the drop-down list box. Click **Edit** to save the changes.

Figure 61 APN SETTINGS



APN Settings

Profile Name: Predefined (Default)

APN: internet

User Name: Username

Password: Password

PDP Type: IPv4 & IPv6

The following table describes the labels in this screen.

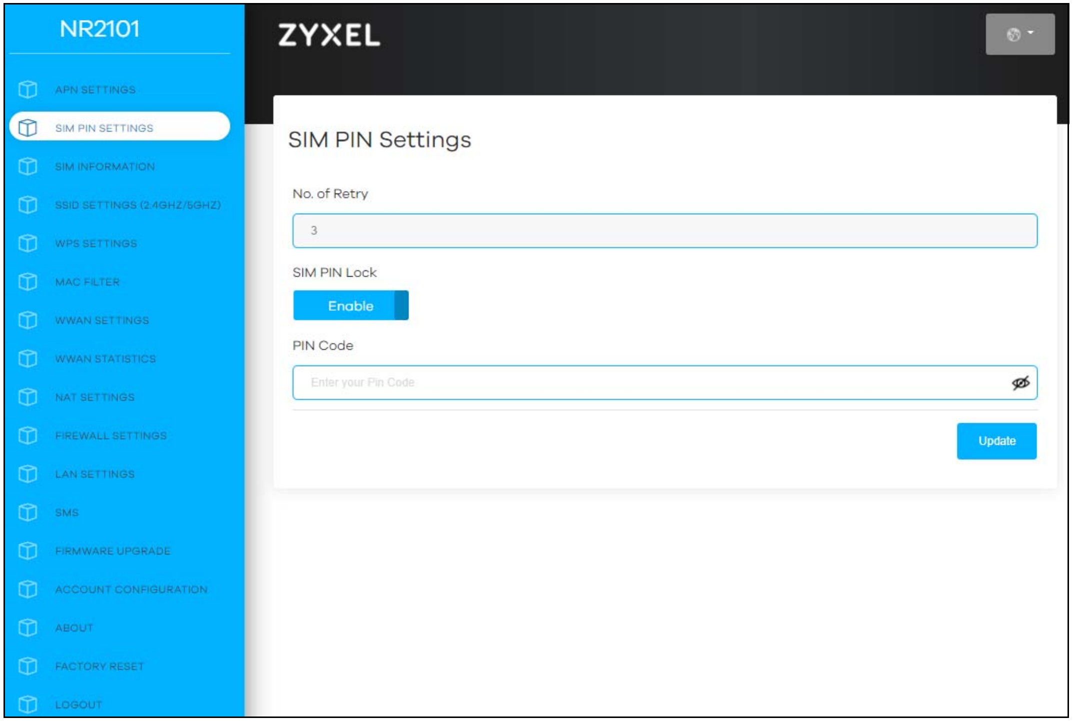
Table 21 APN SETTINGS

LABEL	DESCRIPTION
APN	Connections with different APNs (Access Profile Names) may provide different services (such as Internet access or MMS (Multi-Media Messaging Service)) and charge method.
User Name	Enter the user name (of up to 64 ASCII printable characters) given to you by your service provider.
Password	Enter the password (of up to 64 ASCII printable characters) associated with the user name above.
PDP Type	Select **IPv4** if you want the NR2101 to use IPv4 only. Select **IPv6** if you want the NR2101 to use IPv6 only. Select **IPv4 & IPv6** to allow the NR2101 to use IPv4 and IPv6 at the same time.
Edit	Click **Edit** to save your changes.
Create	Click **Create** to add an APN entry.

6.3 SIM PIN Settings

Click **SIM PIN SETTINGS** and the screen appears as shown next. Click **SIM PIN Lock** to enable the PIN code authentication on the installed SIM card. Enter the number of the attempts allowed for wrong PIN codes. Enter the PIN code provided by your ISP. Click **Update** to save the changes.

Figure 62 SIM PIN SETTINGS



SIM PIN Settings

No. of Retry: 3

SIM PIN Lock: Enable

PIN Code: Enter your Pin Code

Update

The following table describes the labels in this screen.

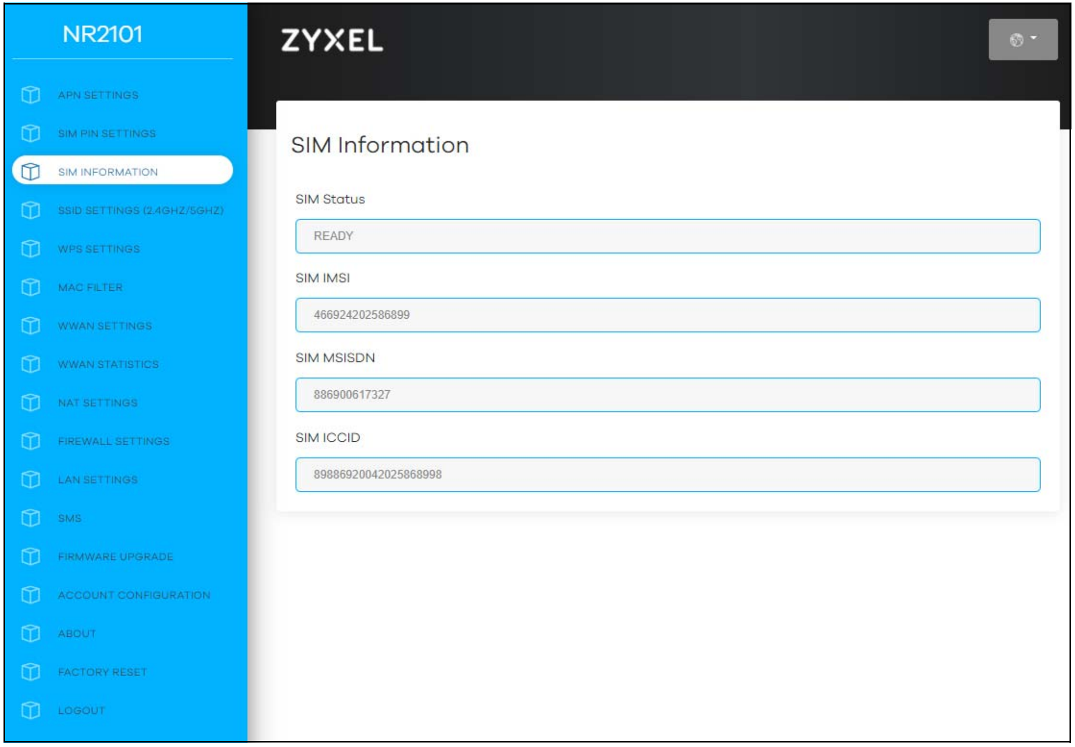
Table 22 SIM PIN SETTINGS

LABEL	DESCRIPTION
No. of Retry	This field displays the number of times consecutive wrong passwords can be entered for this account.
SIM PIN Lock	Select **Enable** to enable SIM PIN lock. You need to enter your PIN code every time the NR2101 reboots. To turn off PIN code authentication, enter the PIN code and select **Disable**.
PIN Code	If you select **Enable**, enter a 4-digit default PIN code (0000 for example) provided by your ISP for the installed SIM card.
Update	Click **Update** to save your changes.

6.3.1 SIM Information

Click **SIM INFORMATION** and the screen appears as shown next. Use this screen to view information about the SIM card currently installed on the NR2101.

Figure 63 SIM INFORMATION



SIM Information

SIM Status: READY

SIM IMSI: 466924202586899

SIM MSISDN: 886900617327

SIM ICCID: 89886920042025868998

The following table describes the labels in this screen.

Table 23 SIM INFORMATION

LABEL	DESCRIPTION
SIM Status	This displays the status of the installed SIM card.
SIM IMSI	This displays the International Mobile Subscriber Identity (IMSI) stored in the SIM card. The IMSI is a unique 15-digit number used to identify a user on a carrier network.

Table 23 SIM INFORMATION

LABEL	DESCRIPTION
SIM MSISDN	This displays the MSISDN (Mobile Subscriber ISDN) number, the mobile phone number assigned to this SIM card.
SIM ICCID	This displays the serial number of the SIM card.

.

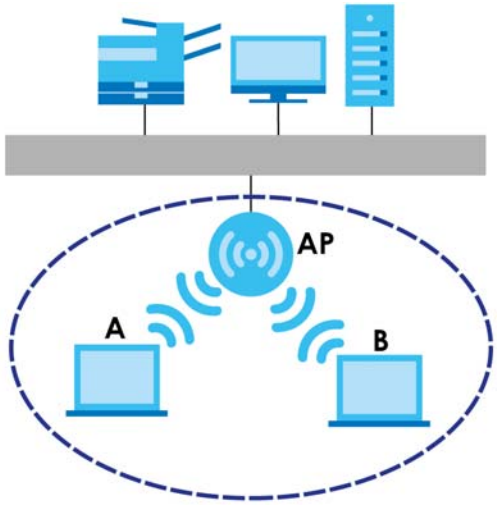
CHAPTER 7
WLAN & WWAN

7.1 Overview

This chapter discusses how to configure the WiFi network settings in your NR2101.

The following figure provides an example of a WiFi network.

Figure 64 Example of a WiFi Network



The WiFi network is the part in the blue circle. In this WiFi network, devices **A** and **B** are called WiFi clients. The WiFi clients use the access point (AP) to interact with other devices (such as the printer) or with the Internet. Your NR2101 is the AP.

7.1.1 What You Can Do in this Chapter

- Use the **SSID Settings** screen to configure the WiFi SSID settings (2.4 GHz/5 GHz) and WiFi security modes (Section 7.2 on page 64).
- Use the **WPS Settings** screen to activate WPS via a PIN code (Section 7.4 on page 72).
- Use the **MAC Filter** screen to deny WiFi clients using their MAC addresses from connecting to the NR2101 (Section 7.5 on page 73).
- Use the **WWAN Settings** screen to configure the WWAN settings on the NR2101 for Internet access (Section 7.6 on page 74).

7.1.2 What You Need to Know

Every WiFi network must follow these basic guidelines.

- Every WiFi client in the same WiFi network must use the same SSID.

  The SSID is the name of the WiFi network. It stands for Service Set IDentity.
- If two WiFi networks overlap, they should use different channels.

  Like radio stations or television channels, each WiFi network uses a specific channel, or frequency, to send and receive information.
- Every WiFi client in the same WiFi network must use security compatible with the AP.

  Security stops unauthorized devices from using the WiFi network. It can also protect the information that is sent in the WiFi network.

WiFi Security Overview

The following sections introduce different types of WiFi security you can set up in the WiFi network.

SSID

Normally, the AP acts like a beacon and regularly broadcasts the SSID in the area. You can hide the SSID instead, in which case the AP does not broadcast the SSID. In addition, you should change the default SSID to something that is difficult to guess.

This type of security is fairly weak, however, because there are ways for unauthorized devices to get the SSID. In addition, unauthorized devices can still see the information that is sent in the WiFi network.

MAC Address Filter

Every WiFi client has a unique identification number, called a MAC address.[1] A MAC address is usually written using twelve hexadecimal characters[2]; for example, 00A0C5000002 or 00:A0:C5:00:00:02. To get the MAC address for each WiFi client, see the appropriate User's Guide or other documentation.

You can use the MAC address filter to tell the AP which WiFi clients are allowed or not allowed to use the WiFi network. If a WiFi client is allowed to use the WiFi network, it still has to have the correct settings (SSID, channel, and security). If a WiFi client is not allowed to use the WiFi network, it does not matter if it has the correct settings.

This type of security does not protect the information that is sent in the WiFi network. Furthermore, there are ways for unauthorized devices to get the MAC address of an authorized WiFi client. Then, they can use that MAC address to use the WiFi network.

WPS

WiFi Protected Setup (WPS) is an industry standard specification, defined by the WiFi Alliance. WPS allows you to quickly set up a WiFi network with strong security, without having to configure security settings manually. Depending on the devices in your network, you can either press a button (on the device itself, or in its configuration utility) or enter a PIN (Personal Identification Number) in the devices.

[1] Some WiFi devices, such as scanners, can detect WiFi networks but cannot use WiFi networks. These kinds of WiFi devices might not have MAC addresses.

[2] Hexadecimal characters are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F.

Then, they connect and set up a secure network by themselves. See how to set up a secure WiFi network using WPS in the Section 7.4 on page 72.

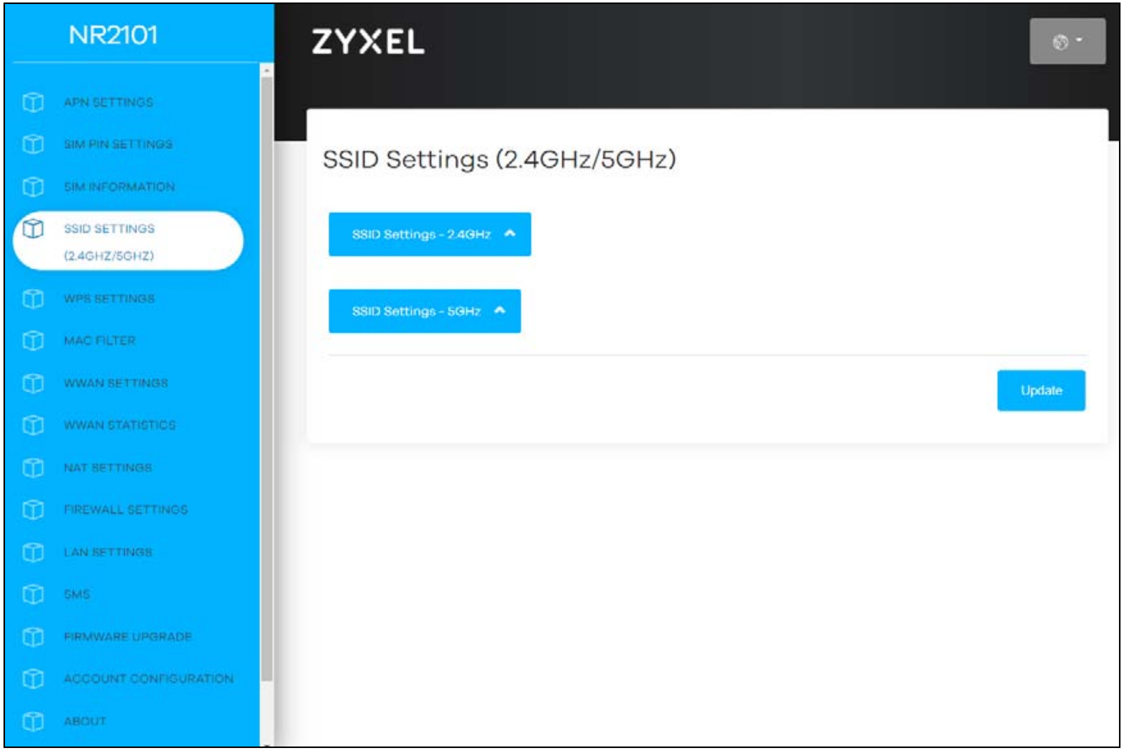
7.2 SSID Settings(2.4GHz/5GHz)

Use this screen to configure your WiFi **SSID** and **Password** settings and select the WiFi security type, bandwidth, and channelfor 2.4 GHz/5 GHz network.

Note: If you change the NR2101's SSID, channel or security settings when a WiFi client device is connected to the WiFi , your WiFi client device will lose its WiFi connection when you press **Update** to confirm. You must then update the WiFi settings of your WiFi client device to match the NR2101's new settings.

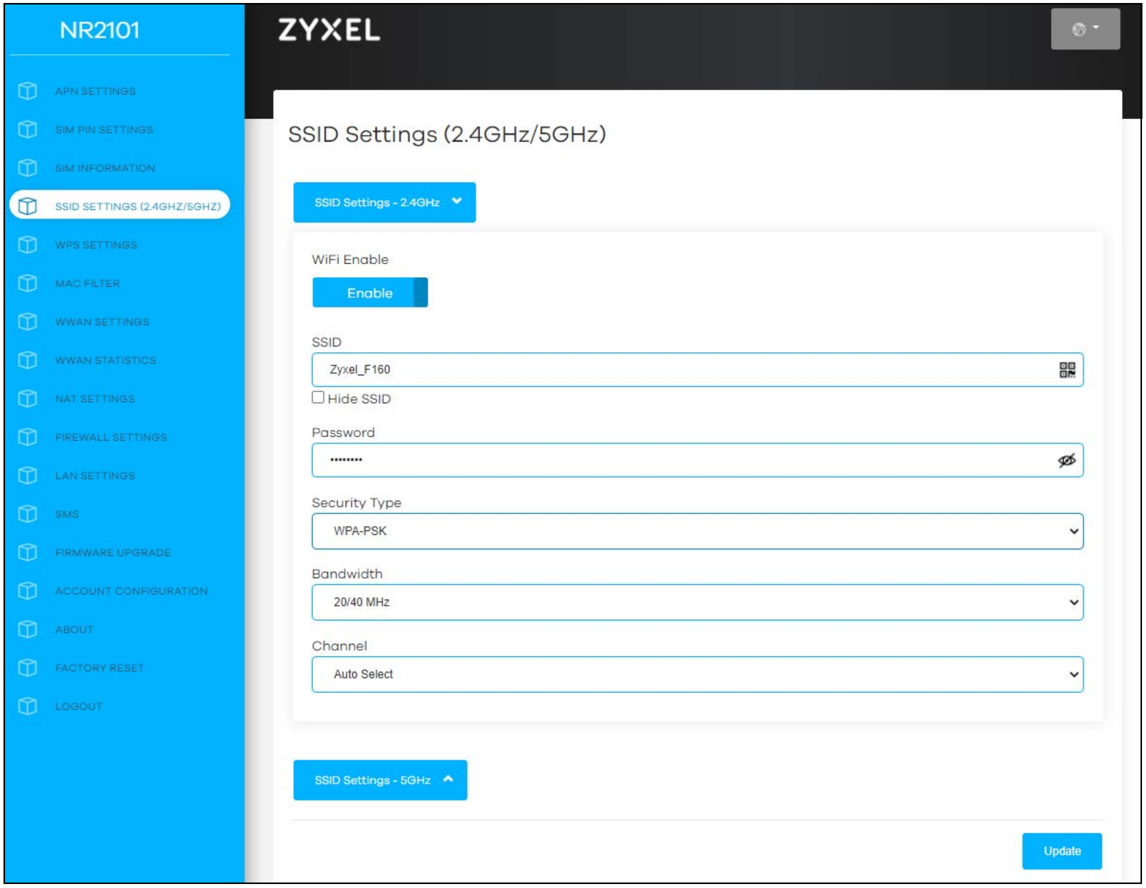
Click **SSID SETTINGS(2.4GHZ/5GHZ)** and the following screen displays.

Figure 65 SSID SETTINGS(2.4GHZ/5GHZ)



Click **SSID SETTINGS-2.4GHz** and the screen is shown as next.

Figure 66 SSID SETTINGS(2.4GHz)



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160

□ Hide SSID

Password: ••••••••

Security Type: WPA-PSK

Bandwidth: 20/40 MHz

Channel: Auto Select

The following table describes the labels in this screen.

Table 24 SSID SETTINGS (2.4GHz)

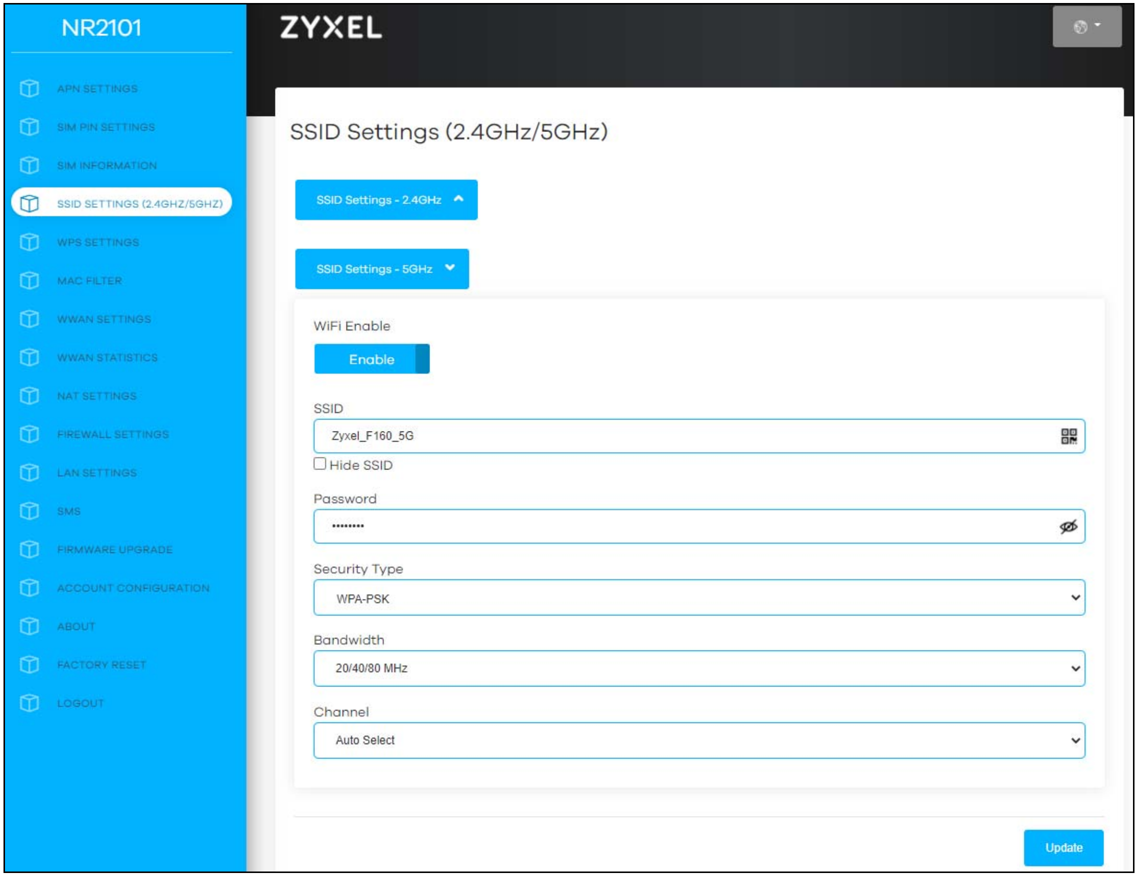
LABEL	DESCRIPTION
SSID SETTINGS (2.4GHz)	
SSID Settings-2.4GHz	Click this button to configure the 2.4GHz SSID Settings on the NR2101.
WiFi Enable	Select this to enable or disable WiFi.
SSID	The SSID (Service Set IDentity) is the name of the WiFi network. WiFi clients use the SSID to identify and connect to the NR2101. Enter a descriptive name (up to 32 ASCII characters, including spaces and special characters) for the NR2101's WiFi network. Click the QR code icon(▦) in the **SSID** field and scan the 2,4GHz QR code to join the WiFi network.
Hide SSID	Select this check box to hide the SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning using a site survey tool.
Password	Enter a password (of up to 8-64 characters including spaces and special characters) the WiFi clients need to enter to connect to the WiFi network.
Security Type	Select **WPA-PSK**, **WPA2-PSK** or **WPA3/WPA2 mixed mode** to add a layer of security to this WiFi network. The WiFi clients which want to connect to this network must have the same WiFi security settings as the NR2101. See Section 7.3.1 on page 68 for detailed information on different security modes. Or you can select **None (Open)** to allow any WiFi client device to connect to this network without authentication.

Table 24 SSID SETTINGS (2.4GHz) (continued)

LABEL	DESCRIPTION
Bandwidth	Select an operating frequency depending on your particular region. Choices are **20M** or **20/40M**.
Channel	Select a channel from the drop-down list box. The options vary depending on the frequency band and the country you are in. Choices are **Auto Select, 1,2,3,4,5,6,7,8,9,10,and 11**.

Click **SSID SETTINGS-5GHz** and the screen is shown as next.

Figure 67 SSID SETTINGS(5GHz)



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password: ••••••••

Security Type: WPA-PSK

Bandwidth: 20/40/80 MHz

Channel: Auto Select

The following table describes the labels in this screen.

Table 25 SSID SETTINGS (5GHz)

LABEL	DESCRIPTION
SSID SETTINGS (5GHz)	
SSID Settings-5GHz	Click this button to configure the 5GHz SSID Settings on the NR2101.
WiFi Enable	Select this to enable or disable WiFi.
SSID	The SSID (Service Set IDentity) is the name of the WiFi network. WiFi clients use the SSID to identify and connect to the NR2101. Enter a descriptive name (up to 32 printable characters found on a typical English language keyboard) for the NR2101's WiFi network. Click the QR code icon( ) in the **SSID** field and scan the 5GHz QR code to join the WiFi network.

Table 25 SSID SETTINGS (5GHz) (continued)

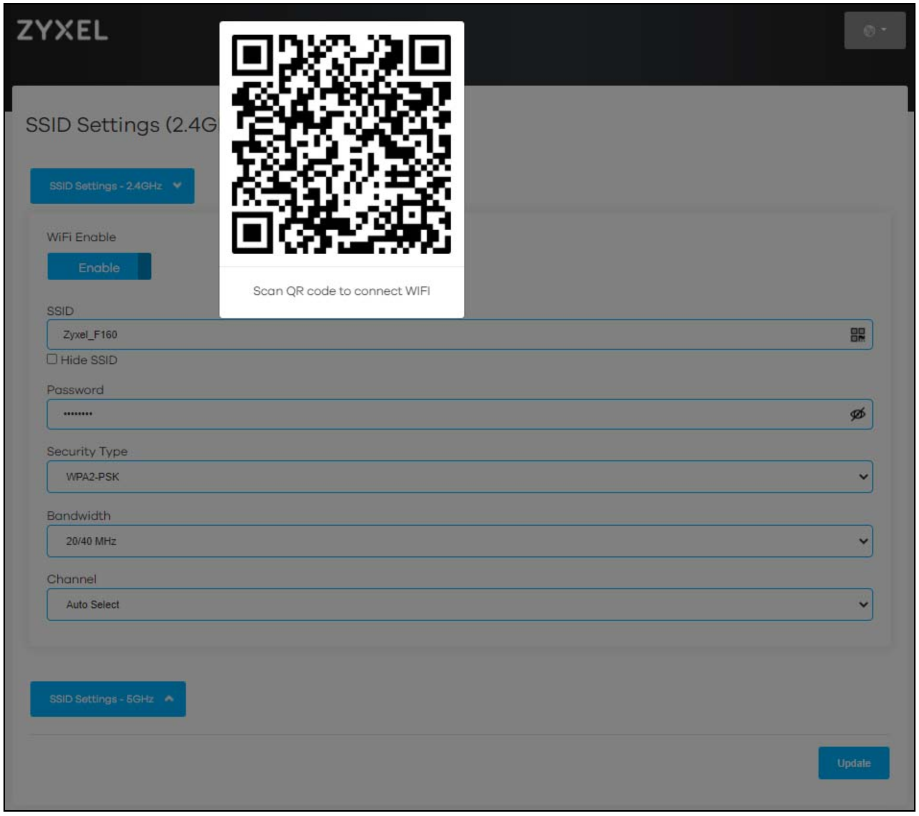
LABEL	DESCRIPTION
Hide SSID	Select this check box to hide the SSID in the outgoing beacon frame so a station cannot obtain the SSID through scanning using a site survey tool.
Password	Enter a password (of up to 8-64 characters including spaces and special characters) the WiFi stations need to enter to connect to the WiFi network.
Security Type	Select **WPA-PSK**, **WPA2-PSK** or **WPA3/WPA2 mixed mode** to add a layer of security to this WiFi network. The WiFi clients which want to connect to this network must have the same WiFi security settings as the NR2101. See Section 7.3.1 on page 68 for detailed information on different security modes. Or you can select **None (Open)** to allow any WiFi client device to connect to this network without authentication.
Bandwidth	Select an operating frequency depending on your particular region. Choices are **20M**, **20/40M**, or **20/40/80M**.
Channel	Select a channel from the drop-down list box. The options vary depending on the frequency band and the country you are in. Choice are **Auto Select, 36,40,44,48,149,153,157 and161**.

See the rest of this chapter for information on the other labels in this screen.

7.3 SSID WiFi QR Code

Click **SSID SETTINGS(2.4GHz/5GHz)** and then click the QR code icon(⊞) in the **SSID** field. The **Scan QR code to connect WiFi** screen appears. Use this screen to scan the 2,4GHz or 5GHz QR code and join the WiFi network.

Figure 68 SSID SETTINGS-2.4 GHz > SSID



WiFi Enable: Enable

SSID: Zyxel_F160

☐ Hide SSID

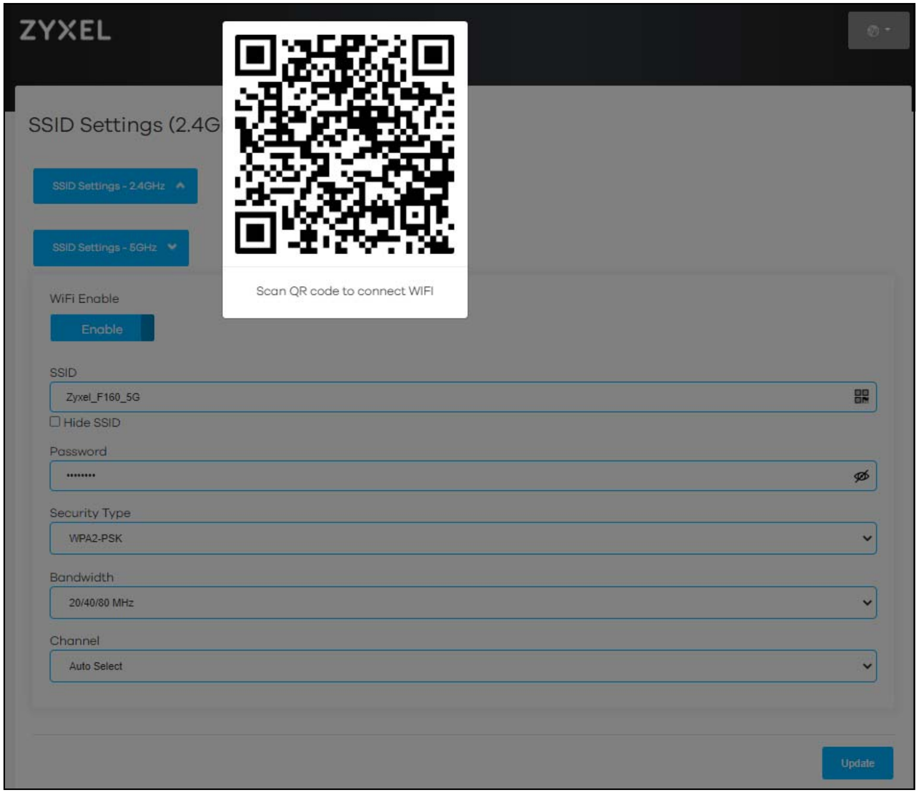
Password: ••••••••

Security Type: WPA2-PSK

Bandwidth: 20/40 MHz

Channel: Auto Select

Figure 69 SSID SETTINGS-5 GHz > SSID



WiFi Enable: Enable

SSID: Zyxel_F160_5G

☐ Hide SSID

Password: ••••••••

Security Type: WPA2-PSK

Bandwidth: 20/40/80 MHz

Channel: Auto Select

7.3.1 WiFi Security

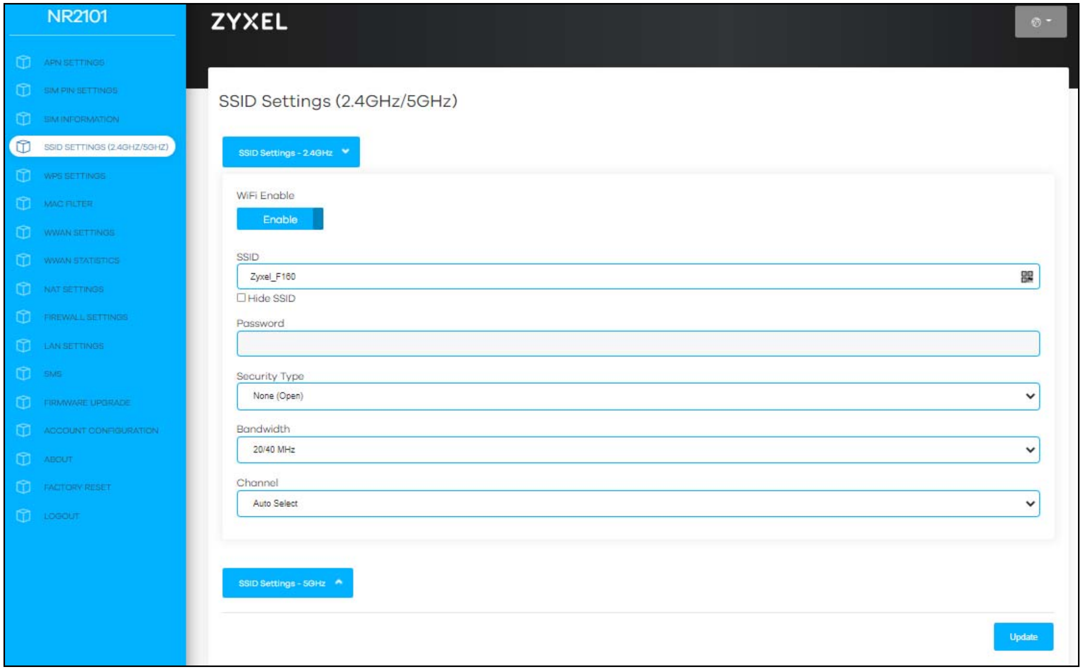
Use this screen to select the WiFi security mode for the 2.4 GHz/5 GHz WiFi network.

7.3.1.1 No Security

Select **None (Open)** to allow WiFi clients to communicate with the NR2101 without any data encryption.

Note: If you do not enable any WiFi security on your NR2101, your network will be accessible to any WiFi networking device that is within range.

Figure 70 SSID SETTINGS-2.4 GHz > Security Type: None (Open)



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160

□ Hide SSID

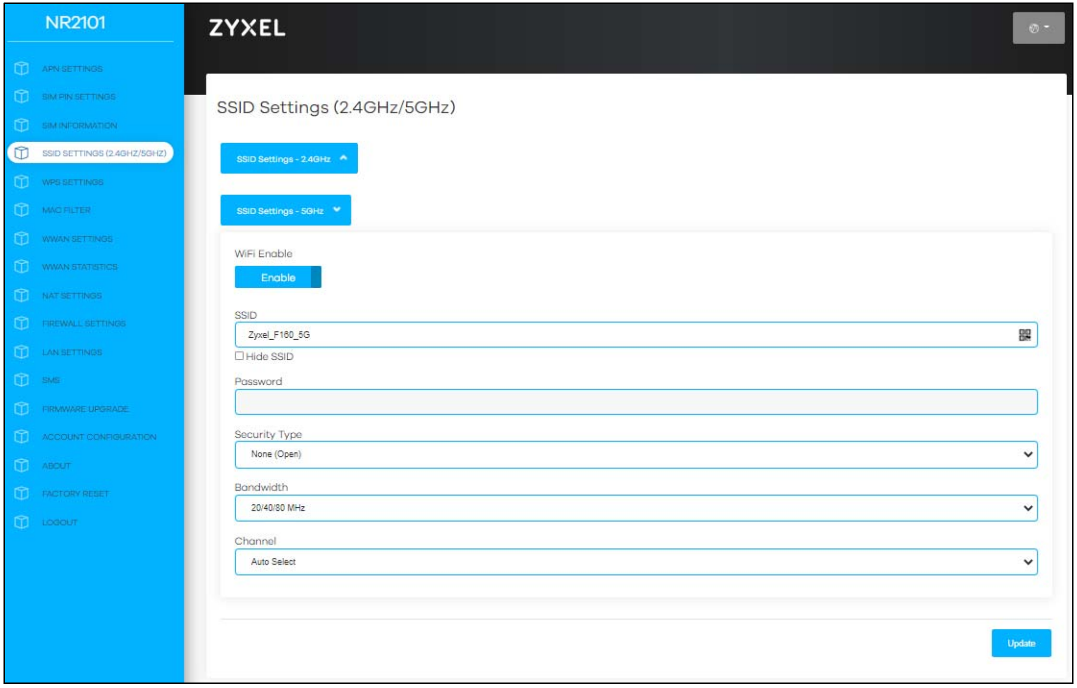
Password:

Security Type: None (Open)

Bandwidth: 20/40 MHz

Channel: Auto Select

Figure 71 SSID SETTINGS-5 GHz > Security Type: None (Open)



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password:

Security Type: None (Open)

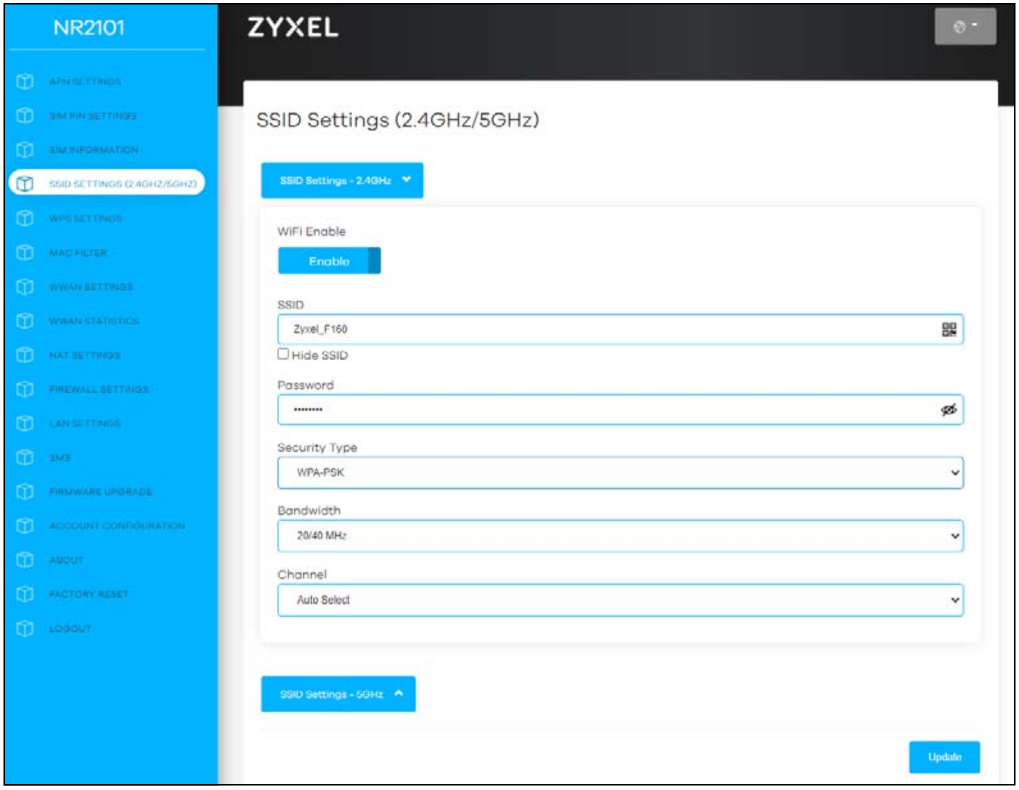
Bandwidth: 20/40/80 MHz

Channel: Auto Select

7.3.1.2 WPA-PSK

Select **WPA-PSK** from the **Security Type** drop-down list box.

Figure 72 SSID SETTINGS-2.4GHz > Security Type: WPA-PSK



SSID Settings (2.4GHz/5GHz)

SSID Settings - 2.4GHz

WiFi Enable

Enable

SSID

Zyxel_F160

□ Hide SSID

Password

••••••••

Security Type

WPA-PSK

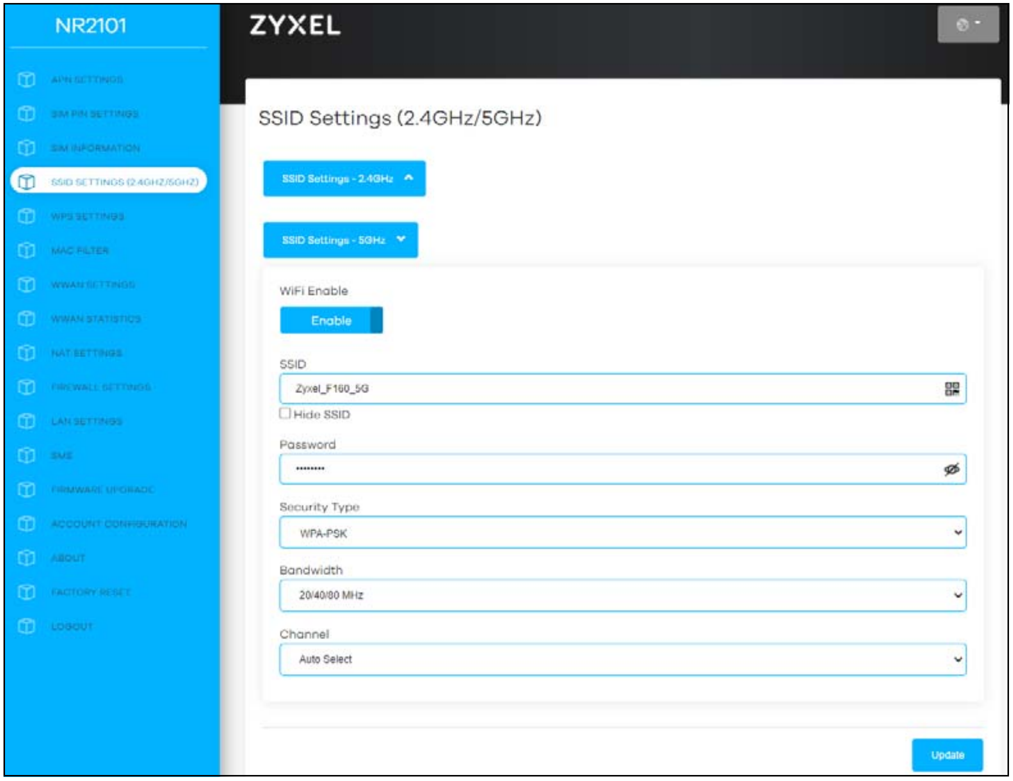
Bandwidth

20/40 MHz

Channel

Auto Select

Figure 73 SSID SETTINGS-5GHz > Security Type: WPA-PSK



SSID Settings (2.4GHz/5GHz)

SSID Settings - 5GHz

WiFi Enable

Enable

SSID

Zyxel_F160_5G

□ Hide SSID

Password

••••••••

Security Type

WPA-PSK

Bandwidth

20/40/80 MHz

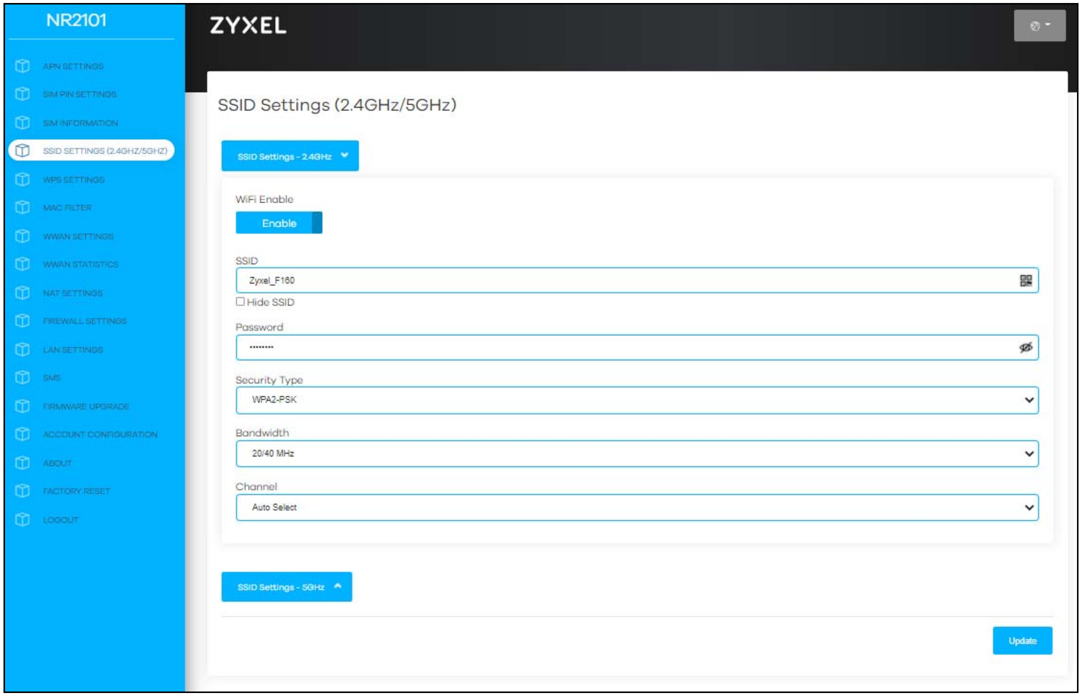
Channel

Auto Select

7.3.1.3 WPA2-PSK

Select **WPA2-PSK** from the **Security Type** drop-down list box.

Figure 74 SSID SETTINGS-2.4 GHz > Security Type: WPA2-PSK



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160

□ Hide SSID

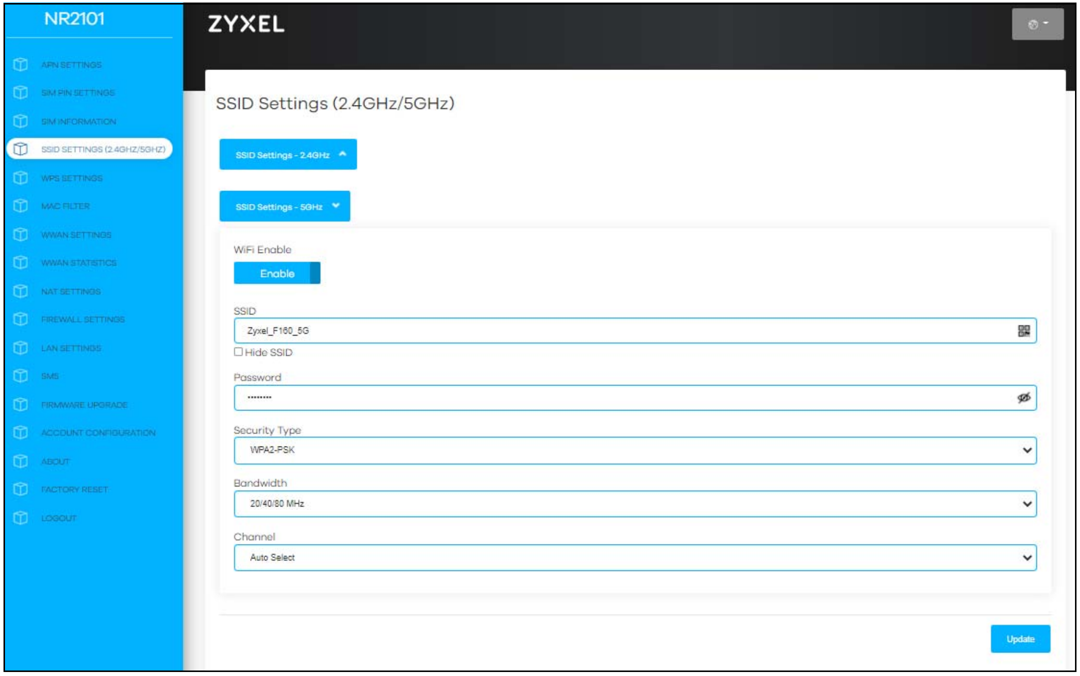
Password: ••••••••

Security Type: WPA2-PSK

Bandwidth: 20/40 MHz

Channel: Auto Select

Figure 75 SSID SETTINGS-5 GHz > Security Type: WPA2-PSK



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password: ••••••••

Security Type: WPA2-PSK

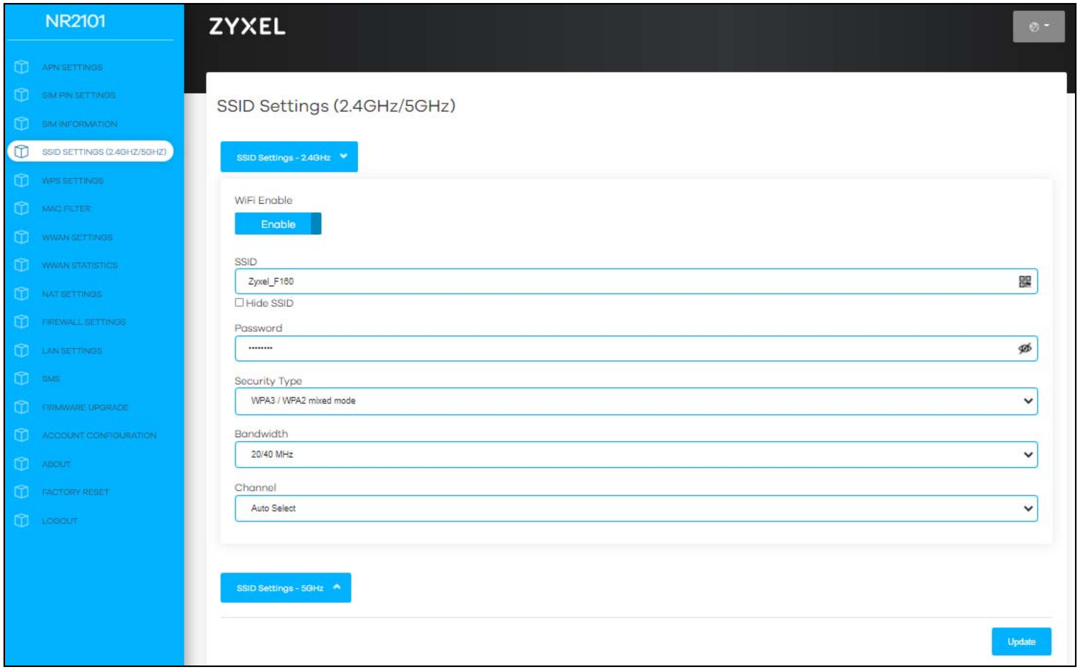
Bandwidth: 20/40/80 MHz

Channel: Auto Select

7.3.1.4 WPA3/WPA2 mixed mode

Select **WPA3/WPA2 mixed mode** from the **Security Type** drop-down list box.

Figure 76 SSID SETTINGS-2.4 GHz > Security Type: WPA3/WPA2 mixed mode



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160

□ Hide SSID

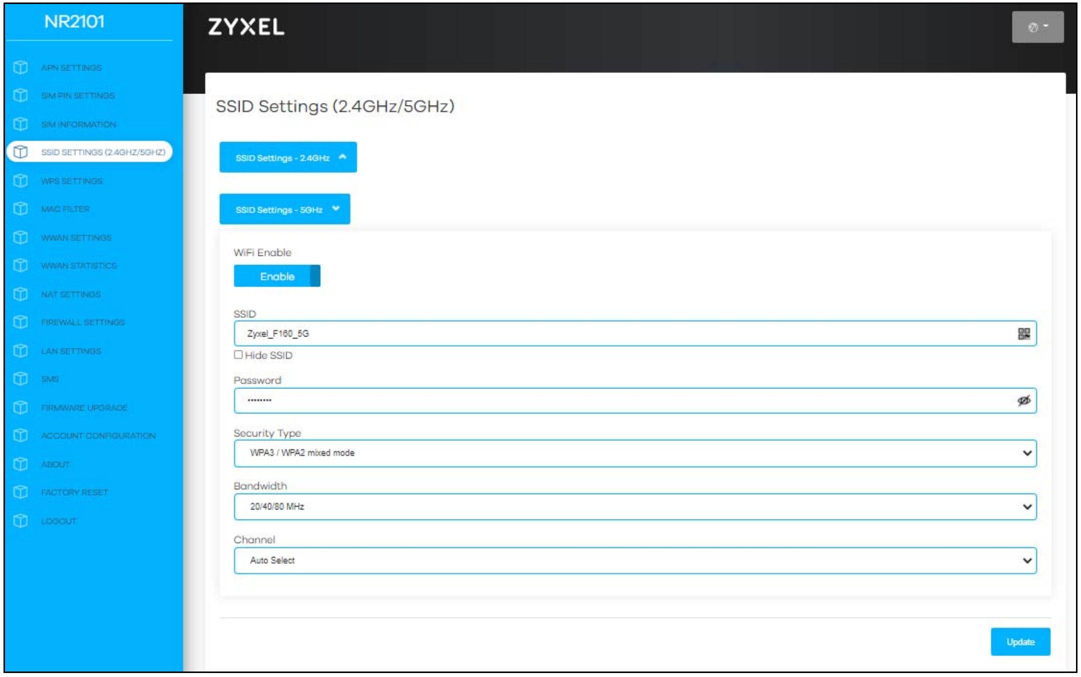
Password: ••••••••

Security Type: WPA3 / WPA2 mixed mode

Bandwidth: 20/40 MHz

Channel: Auto Select

Figure 77 SSID SETTINGS-5 GHz > Security Type: WPA3/WPA2 mixed mode



SSID Settings (2.4GHz/5GHz)

WiFi Enable: Enable

SSID: Zyxel_F160_5G

□ Hide SSID

Password: ••••••••

Security Type: WPA3 / WPA2 mixed mode

Bandwidth: 20/40/80 MHz

Channel: Auto Select

7.4 WPS Settings

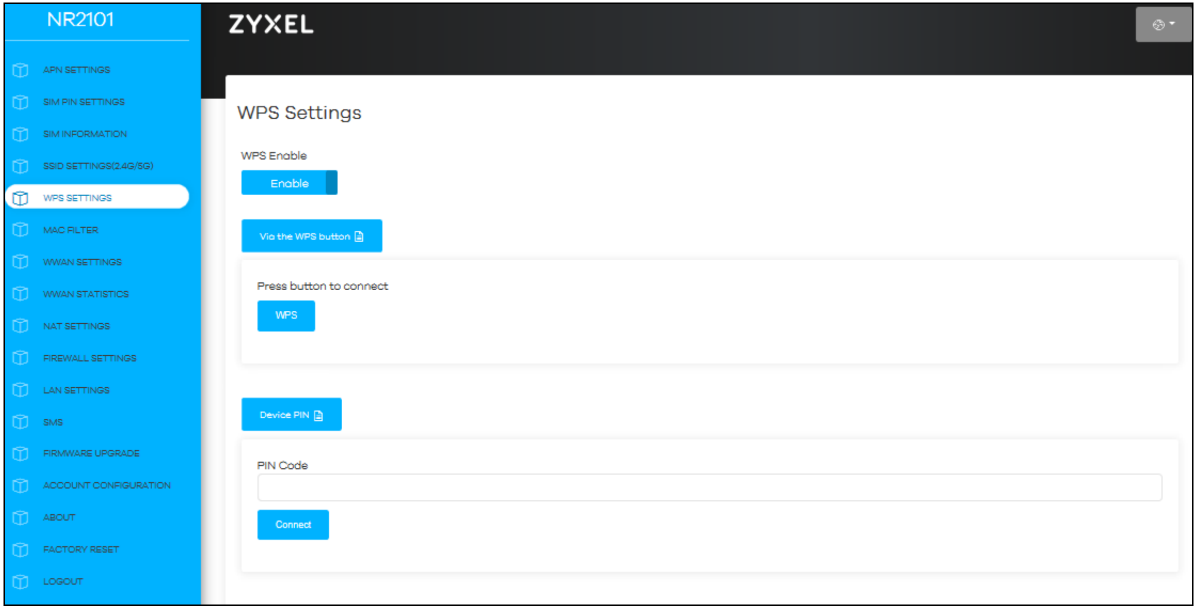
Use this screen to configure WiFi Protected Setup (WPS) on your NR2101.

WPS allows you to quickly set up a WiFi network with strong security, without having to configure security settings manually.

Note: To use the WPS feature, make sure you have WiFi enabled in the **SSID SETTINGS (2.4GHz/ 5GHz)** screen.

Click **WPS SETTINGS** and the following screen displays.

Figure 78 WPS SETTINGS



The following table describes the labels in this screen.

Table 26 WPS SETTINGS

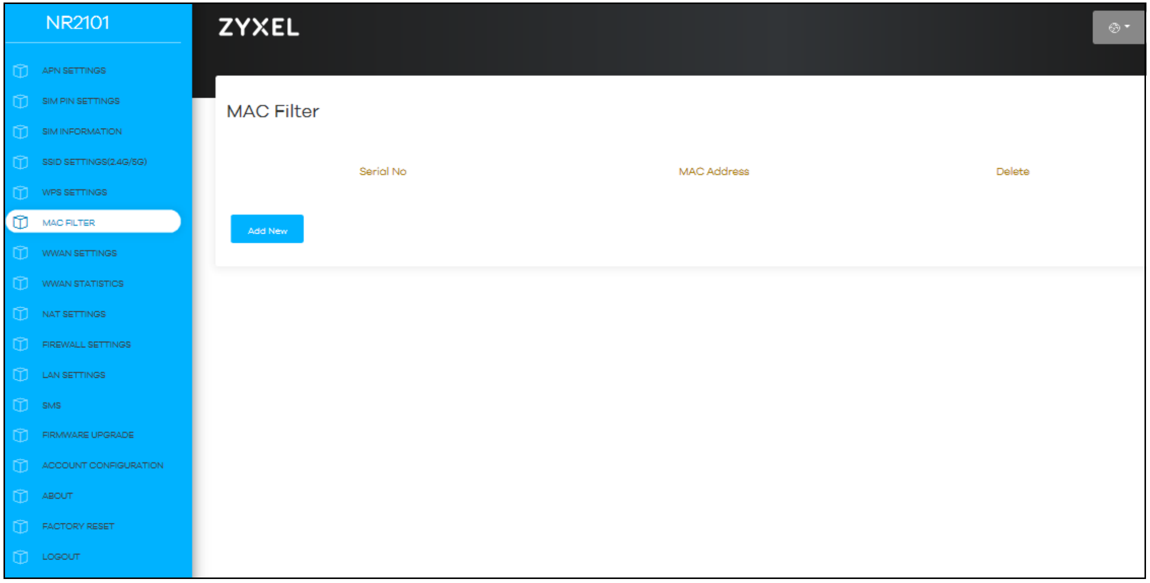
LABEL	DESCRIPTION
WPS Enable	Click **Enable** to enable WPS on the NR2101.
Via the WPS button	Click this to activate WPS on the NR2101 via the WPS button.
WPS	Click this button to connect.
Device PIN	This field is available only when you set **WPS Enable** to **Enable**. Enter the **PIN Code** of the WiFi client device that you are setting up a WPS connection with, and then click **Connect** to authenticate and add the cllient device to your WiFi network. You can find the PIN either on the outside of the WiFi client device, or by checking the WiFi client device's settings. Note: You must also activate WPS on that WiFi client device within two minutes to have it present its PIN to the NR2101.

7.5 MAC Filter

This screen allows you to configure the NR2101 to exclude specific WiFi client devices from accessing the NR2101 . Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02. You need to know the MAC addresses of the WiFi client devices to configure this screen.

Click **MAC FILTER** and the screen appears as shown. Use this screen to view your NR2101's MAC filter settings and add new MAC filter rules. Click **Add New** to add a new MAC filer rule.

Figure 79 MAC FILTER



The following table describes the labels in this screen.

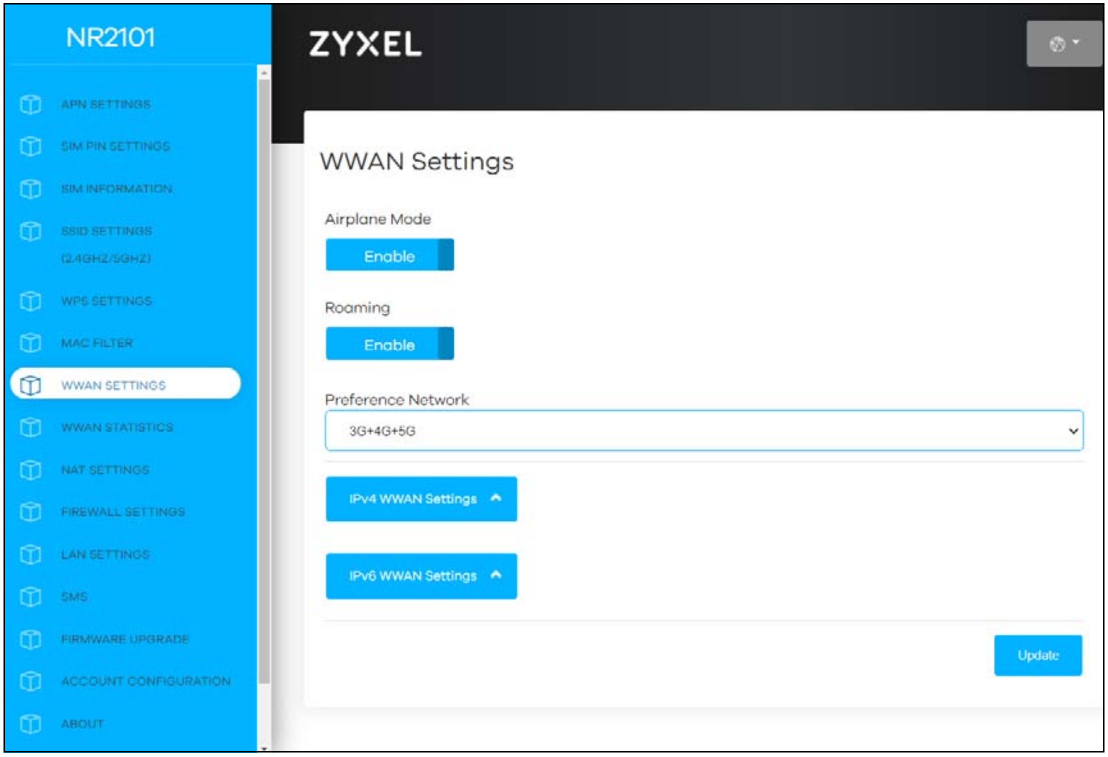
Table 27 MAC FILTER

LABEL	DESCRIPTION
Serial No.	This field displays the serial number of the MAC address entry.
MAC Address	This field displays the MAC addresses of the WiFi client devices that are denied access to the NR2101. Click **Add New** to enter the MAC address of the WiFi client devices that are denied access to the NR2101 in this field. Enter the MAC addresses in a valid MAC address format, that is, six hexadecimal character pairs, for example, 12:34:56:78:9a:bc.
Delete	Click **Delete** to remove an existing MAC address entry.

7.6 WWAN Settings

Click **WWAN SETTINGS** and the screen appears as shown next. Use this screen to change your NR2101's Internet access settings. Select a network you prefer to use from the **Preference Network** drop-down list box.

Figure 80 WWAN SETTINGS



WWAN Settings

Airplane Mode: Enable

Roaming: Enable

Preference Network: 3G+4G+5G

The following table describes the labels in this screen.

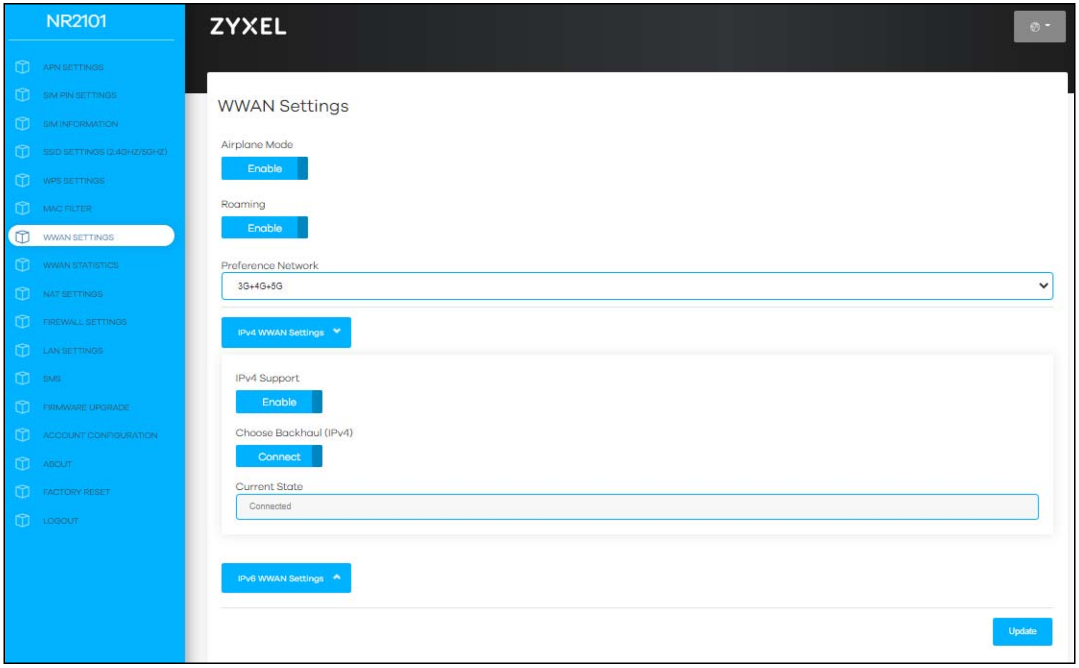
Table 28 WWAN SETTINGS

LABEL	DESCRIPTION
WWAN Settings	
Airplane Mode	Select **Enable** to activate the airplane mode.
Roaming	Select **Enable** to activate data roaming. 3G/4G/5G roaming is to use your mobile device in an area which is not covered by your service provider. Enable roaming to ensure that your NR2101 is kept connected to the Internet when you are traveling outside the geographical coverage area of the network to which you are registered.
Preference Network	Select the network you want to use. Choices are **3G only, 3G+4G, 4G only, 5G only, and 3G+4G+5G**.

7.6.1 IPv4/IPv6 WWAN Settings

Use this screen to configure your NR2101's IPv4 WWAN and IPv6 WWAN settings. Click **WWAN SETTINGS > IPv4 WWAN Settings/ IPv6 WWAN Settings** and the screen appears as shown.

Figure 81 WWAN SETTINGS > IPv4 WWAN Settings



WWAN Settings

Airplane Mode: Enable

Roaming: Enable

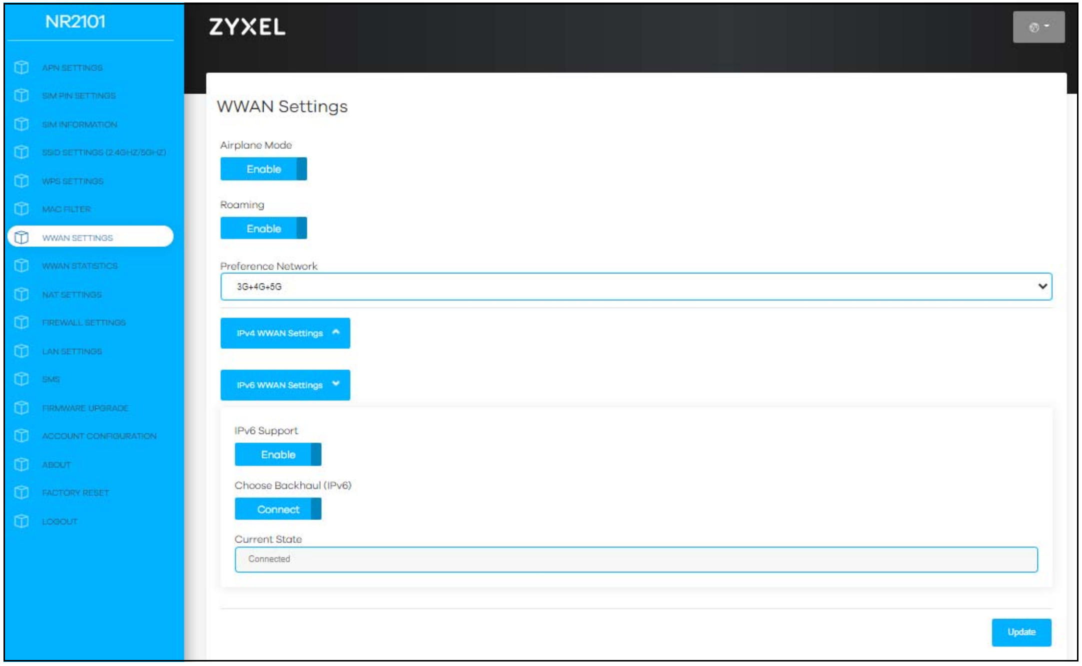
Preference Network: 3G+4G+5G

IPv4 Support: Enable

Choose Backhaul (IPv4): Connect

Current State: Connected

Figure 82 WWAN SETTINGS > IPv6 WWAN Settings



WWAN Settings

Airplane Mode: Enable

Roaming: Enable

Preference Network: 3G+4G+5G

IPv6 Support: Enable

Choose Backhaul (IPv6): Connect

Current State: Connected

The following table describes the labels in this screen

Table 29 WWAN SETTINGS> IPv4 WWAN Settings/ IPv6 WWAN Settings

LABEL	DESCRIPTION
IPv4 WWAN Settings	
IPv4 Support	Select **Enable** to allow the NR2101 to use IPv4 addresses. Otherwise, select **Disable**.
Choose Backhaul (IPv4)	Select **Connect** to use Backhaul (IPv4). Otherwise, select **Disconnect**.
Current State	Use this field to view information of the current IPv4 connection state.

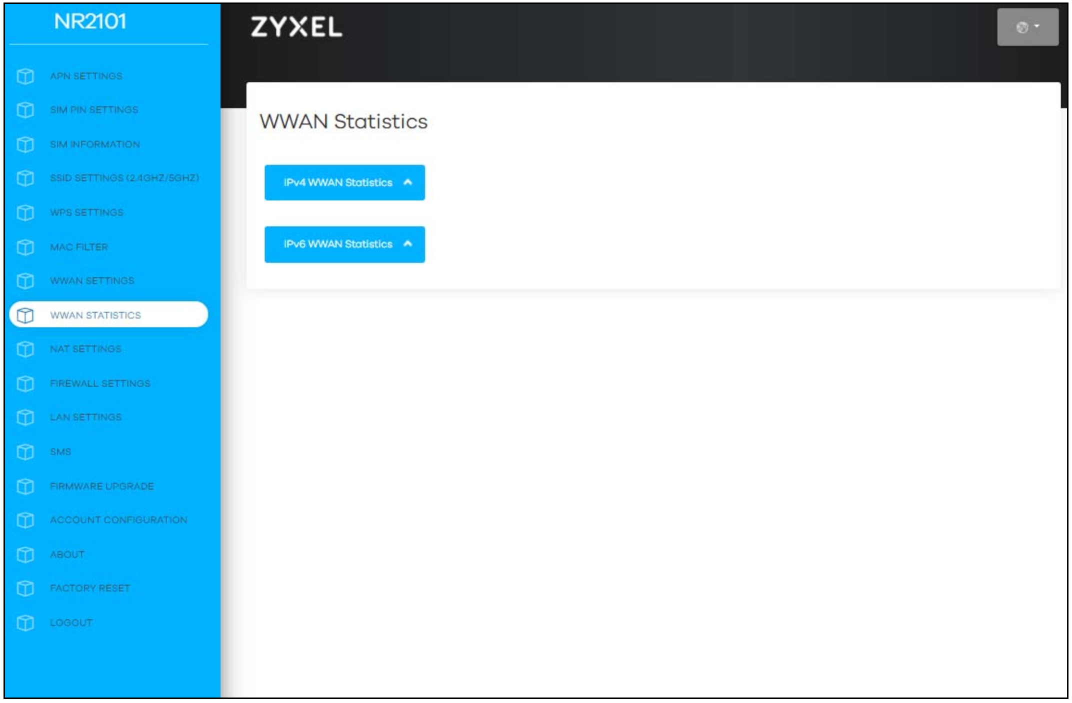
Table 29 WWAN SETTINGS> IPv4 WWAN Settings/ IPv6 WWAN Settings

LABEL	DESCRIPTION
IPv6 WWAN Settings	
IPv6 Support	Select **Enable** to allow the NR2101 to use IPv6 addresses. Otherwise, select **Disable**.
Choose Backhaul (IPv6)	Select **Connect** to use Backhaul (IPv6). Otherwise, select **Disconnect**.
Current State	Use this field to view information of the current IPv6 connection state.

7.6.2 WWAN Statistics

Use this screen to view detailed information about the WWAN, such as data sent and received, packets sent and received, and network settings. Click **WWAN STATISTICS** and the screen appears as shown next.

Figure 83 WWAN STATISTICS



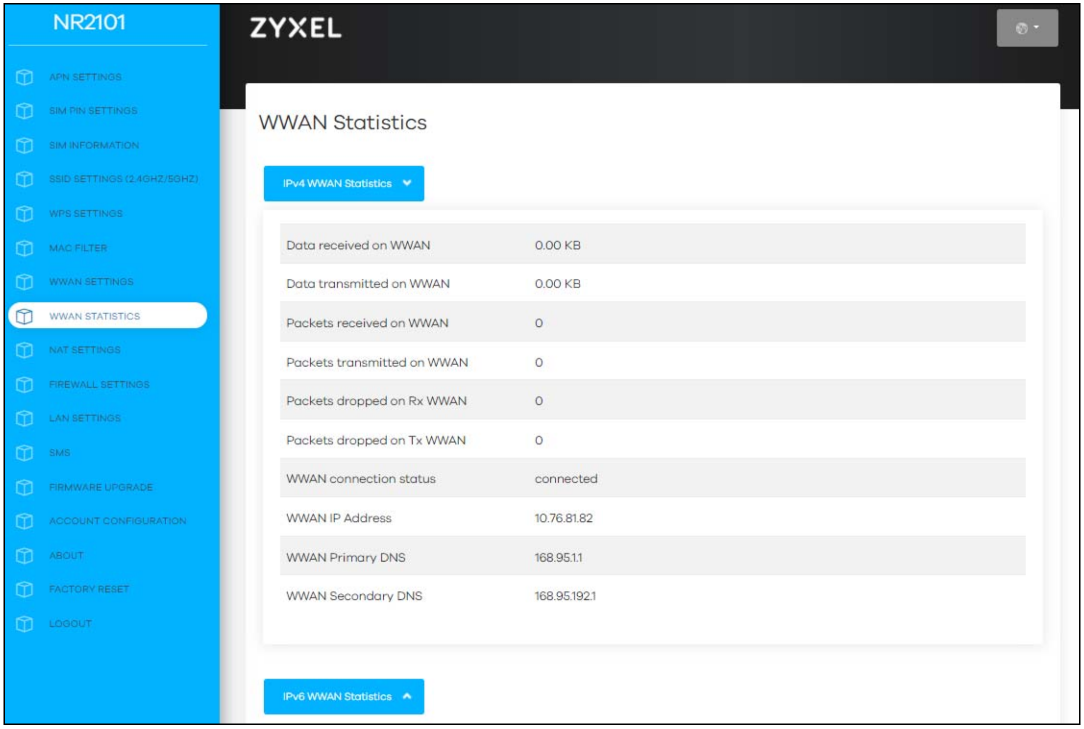
The following table describes the labels in this screen.

Table 30 WWAN STATISTICS

LABEL	DESCRIPTION
IPv4 WWAN Statistics	Click this field to view the detailed information of IPv4 WWAN Statistics.
IPv6 WWAN Statistics	Click this field to view the detailed information of IPv6 WWAN Statistics.

Click **IPv4 WWAN Statistics/IPv6 WWAN Statistics** and the screen appears as shown next.

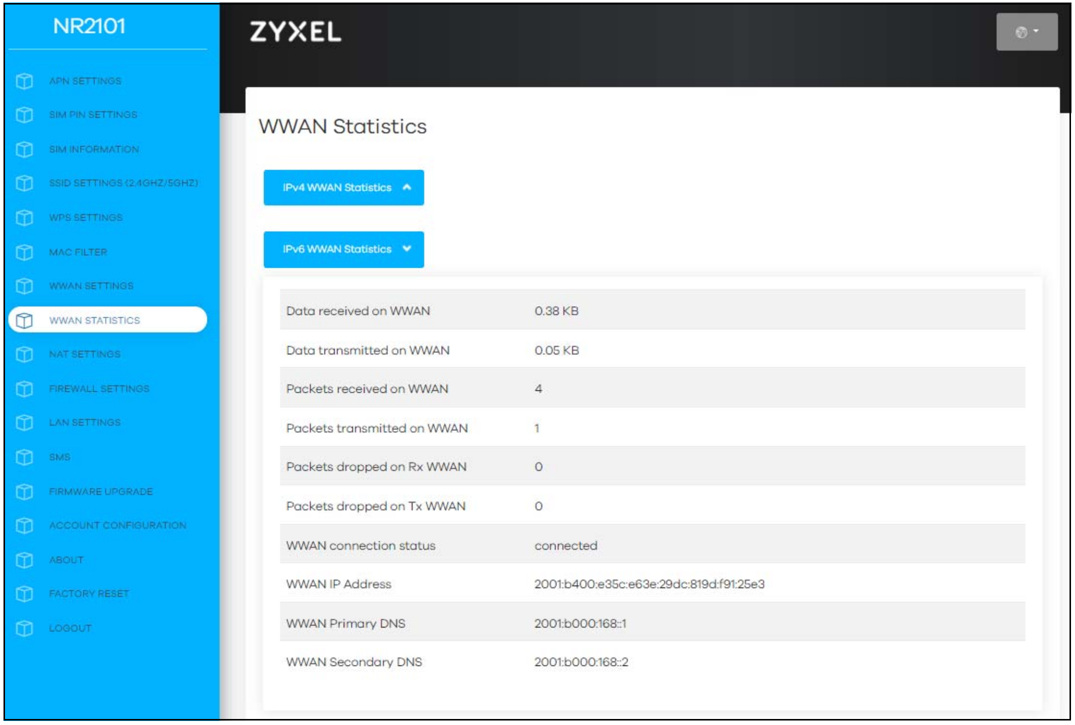
Figure 84 IPv4WWAN Statistics



WWAN Statistics

Data received on WWAN	0.00 KB
Data transmitted on WWAN	0.00 KB
Packets received on WWAN	0
Packets transmitted on WWAN	0
Packets dropped on Rx WWAN	0
Packets dropped on Tx WWAN	0
WWAN connection status	connected
WWAN IP Address	10.76.81.82
WWAN Primary DNS	168.95.1.1
WWAN Secondary DNS	168.95.192.1

Figure 85 IPv6WWAN Statistics



WWAN Statistics

Data received on WWAN	0.38 KB
Data transmitted on WWAN	0.05 KB
Packets received on WWAN	4
Packets transmitted on WWAN	1
Packets dropped on Rx WWAN	0
Packets dropped on Tx WWAN	0
WWAN connection status	connected
WWAN IP Address	2001:b400:e35c:e63e:29dc:819d:f91:25e3
WWAN Primary DNS	2001:b000:168::1
WWAN Secondary DNS	2001:b000:168::2

The following table describes the labels in this screen.

Table 31 WWAN Statistics

LABEL	DESCRIPTION
IPv4 WWAN Statistics	
Data received on WWAN	This shows the reception count in bytes on this port
Data transmitted on WWAN	This shows the transmission count on this port
Packets received on WWAN	This is the number of received packets on this port.
Packets transmitted on WWAN	This is the number of transmitted packets on this port.
Packets dropped on Rx WWAN	This field displays the number of packets dropped by NR2101's Rx WWAN since it was last connected.
Packets dropped on Tx WWAN	This field displays the number of packets dropped by NR2101's Tx WWAN since it was last connected.
WWAN connection status	This shows the NR2101's WWAN IPv4 connection status.
WWAN IP Address	This shows the NR2101's WWAN IPv4 address, which was assigned by your Internet Service Provider.
WWAN Primary DNS	This shows the primary IPv4 Link-local address in the LAN side. This is used by NR2101 when communicating with neighboring devices on the same link. It allows IPv4-capable devices to communicate with each other in the LAN side.
WWAN Secondary DNS	This shows the secondary IPv4 Link-local address in the LAN side. This is used by NR2101 when communicating with neighboring devices on the same link. It allows IPv4-capable devices to communicate with each other in the LAN side.
IPv6 WWAN Statistics	
Data received on WWAN	This shows the reception count in bytes on this port
Data transmitted on WWAN	This shows the transmission count in bytes on this port
Packets received on WWAN	This is the number of received packets on this port.
Packets transmitted on WWAN	This is the number of transmitted packets on this port.
Packets dropped on Rx WWAN	This field displays the number of packets dropped by NR2101's Rx WWAN since it was last connected.
Packets dropped on Tx WWAN	This field displays the number of packets dropped by NR2101's Tx WWAN since it was last connected.
WWAN connection status	This shows the NR2101's WWAN IPv6 connection status.
WWAN IP Address	This shows the NR2101's WWAN IPv6 address, which was assigned by your Internet Service Provider.
WWAN Primary DNS	This shows the primary IPv6 Link-local address in the LAN side. This is used by NR2101 when communicating with neighboring devices on the same link. It allows IPv6-capable devices to communicate with each other in the LAN side.
WWAN Secondary DNS	This shows the secondary IPv6 Link-local address in the LAN side. This is used by NR2101 when communicating with neighboring devices on the same link. It allows IPv6-capable devices to communicate with each other in the LAN side.

CHAPTER 8
NAT

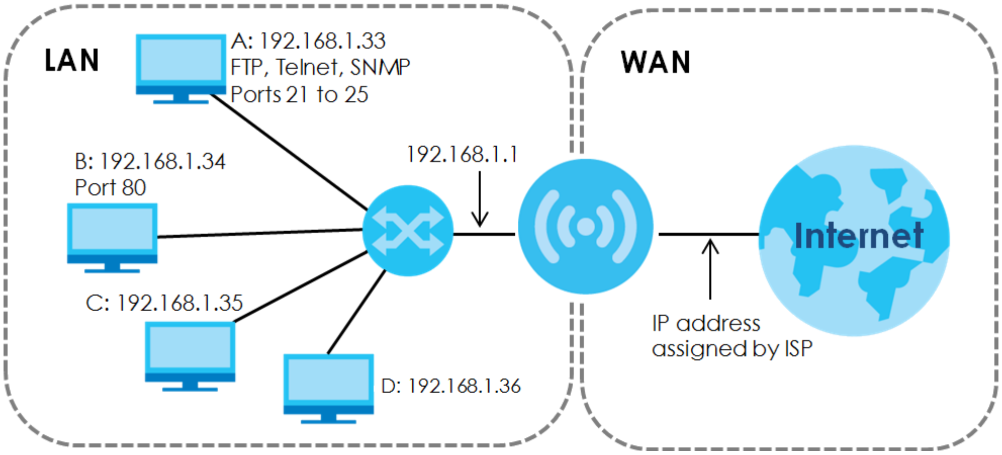
8.1 Overview

NAT (Network Address Translation - NAT, RFC 1631) is the translation of the IP address of a host in a packet. For example, the source address of an outgoing packet, used within one network is changed to a different IP address known within another network.

The figure below is a simple illustration of a NAT network. You want to assign ports 21-25 to one FTP, Telnet and SMTP server (**A** in the example), port 80 to another (**B** in the example) and assign a default server IP address of 192.168.1.35 to a third (**C** in the example).

You assign the LAN IP addresses to the devices (**A** to **D**) connected to your NR2101. The ISP assigns the WAN IP address. The NAT network appears as a single host on the Internet. All traffic coming from **A** to **D** going out to the Internet use the IP address of the NR2101, which is 192.168.1.1.

Figure 86 NAT Example



Note: You must create a firewall rule in addition to setting up NAT, to allow traffic from the WAN to be forwarded through the NR2101.

8.1.1 What You Can Do

- Use the **NAT Settings** screen to configure your NR2101's VPN pass-through and port forwarding settings (Section 8.2 on page 82).

8.1.2 What You Need to Know

Inside/Outside

Inside/outside denotes where a host is located relative to the NR2101, for example, the computers of your subscribers are the inside hosts, while the web servers on the Internet are the outside hosts.

Global/Local

Global/local denotes the IP address of a host in a packet as the packet traverses a router, for example, the local address refers to the IP address of a host when the packet is in the local network, while the global address refers to the IP address of the host when the same packet is traveling in the WAN side.

NAT

In the simplest form, NAT changes the source IP address in a packet received from a subscriber (the inside local address) to another (the inside global address) before forwarding the packet to the WAN side. When the response comes back, NAT translates the destination address (the inside global address) back to the inside local address before forwarding it to the original inside host.

NAT Types

This section discusses the following NAT types that are implemented on the NR2101.

- **Full Cone:** In full cone NAT, the NAT router maps all outgoing packets from an internal IP address and port to a single IP address and port on the external network. The NAT router also maps packets coming to that external IP address and port to the internal IP address and port.
- **Address Restricted or Restricted Cone:** As in full cone NAT, a restricted cone NAT router maps all outgoing packets from an internal IP address and port to a single IP address and port on the external network. The difference from full cone NAT is in how the restricted cone NAT router handles packets coming in from the external network.
- **Port Restricted:** Port restricted cone NAT maps all outgoing packets from an internal IP address and port to a single IP address and port on the external network.
- **Symmetric:** The full, restricted and port restricted cone NAT types use the same mapping for an outgoing packet’s source address regardless of the destination IP address and port. In symmetric NAT, the mapping of an outgoing packet’s source address to a source address in another network is different for each different destination IP address and port.

The following table summarizes how these NAT types handle outgoing and incoming packets.

Table 32 NAT Types

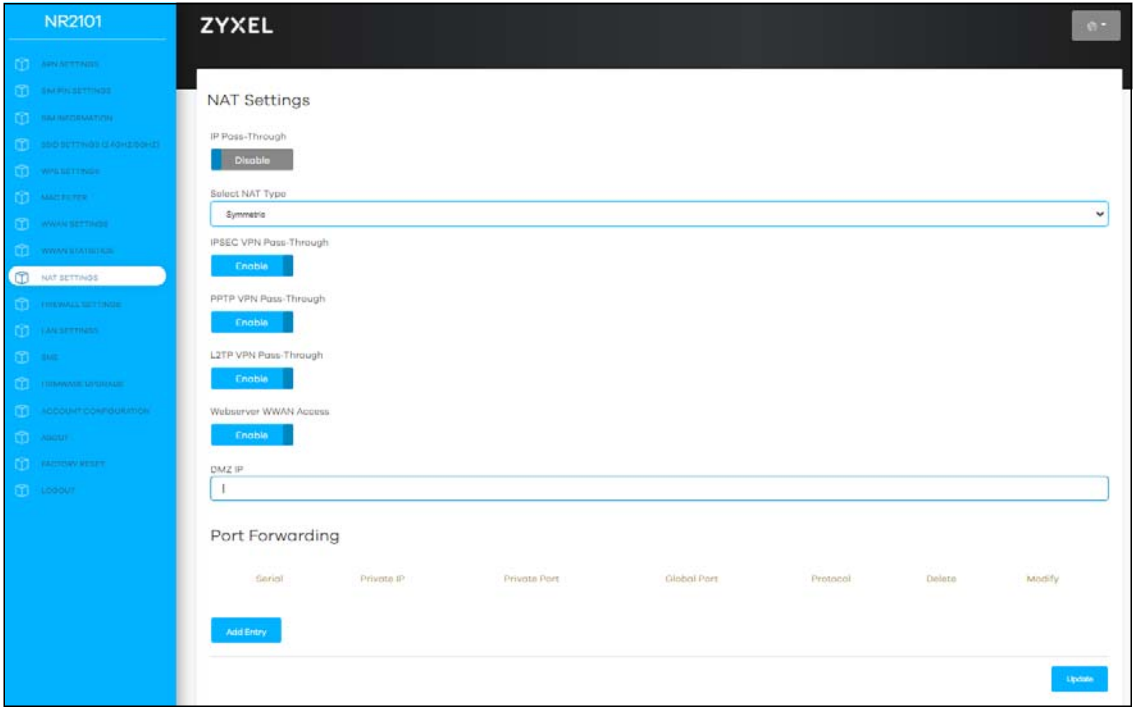
	FULL CONE	ADDRESS RESTRICTED	PORT RESTRICTED	SYMMETRIC
Incoming Packets	Any external host can send packets to the mapped external IP address and port.	Only external hosts with an IP address to which the internal host has already sent a packet can send packets to the mapped external IP address and port.	Only external hosts with an IP address and port to which the internal host has already sent a packet can send packets to the mapped external IP address and port.	A host on the external network can only send packets to the specific mapped external IP address and port that the NAT router used in sending a packet to the external host's IP address and port.
Outgoing Packets	The NAT router maps the internal IP address and port of all outgoing packets to a single IP address and port on the external network.			The NAT router maps the internal IP address and port of each outgoing packet to a different external IP address and port for each different destination IP address and port.

8.2 NAT Settings

Use this screen to enable **IP Pass-Through**, **VPN Pass-Through, PPTP VPN Pass-Through**, **L2TP Pass-Through**, and **Webserver WWAN Access** protocols. Click **NAT SETTINGS** to open the following screen.

Note: To select a NAT type from the **Select NAT Type** drop-down list box or edit DMZ IP, you must disable **IP Pass-Through**.

Figure 87 NAT SETTINGS



NAT Settings

IP Pass-Through: Disable

Select NAT Type: Symmetric

IPSEC VPN Pass-Through: Enable

PPTP VPN Pass-Through: Enable

L2TP VPN Pass-Through: Enable

Webserver WWAN Access: Enable

DMZ IP:

Port Forwarding

Serial	Private IP	Private Port	Global Port	Protocol	Delete	Modify

The following table describes the labels in this screen.

Table 33 NAT SETTINGS

LABEL	DESCRIPTION
IP Pass-Through	Select **Enable** to activate IP Pass-Through. IP Pass-through allows a LAN computer on the local network of the NR2101 to have access to web services using the NR2101's public WWAN IP address. When IP Pass-Through is configured, all traffic is forwarded to the LAN computer and will not go through NAT.
Select NAT Type	Select a NAT type from the drop-down list box. Choices are **Symmetric**, **Port Restricted, Full cone,** or **Address Restricted.**
IPSEC VPN Pass-Through	Select **Enable** to allow VPN clients to make outbound IPSec connections. It is required in order to connect to a IPSec VPN account. If IPSEC is disabled, then when a client sends a request to a VPN server, the server will reply to the NR2101 and the NR2101 will drop the request. When IPSEC is enabled, the NR2101 will forward the reply from the VPN server to the client that initiated the request, and the connection will establish successfully.
PPTP VPN Pass-Through	Select **Enable** to allow VPN clients to make outbound PPTP connections. It is required in order to connect to a PPTP VPN account. If PPTP is disabled, then when a client sends a request to a VPN server, the server will reply to the NR2101 and the NR2101 will drop the request. When PPTP is enabled, the NR2101 will forward the reply from the VPN server to the client that initiated the request, and the connection will establish successfully.
L2TP VPN Pass-Through	Select **Enable** to allow VPN clients to make outbound L2TP connections. It is required in order to connect to a L2TP VPN account. If L2TP is disabled, then when a client sends a request to a VPN server, the server will reply to the NR2101 and the NR2101 will drop the request. When L2TP is enabled, the NR2101 will forward the reply from the VPN server to the client that initiated the request, and the connection will establish successfully.
Webserver WWAN Access	Select **Enable** to activate remote web server management.
DMZ IP	Enter the IP address of the default server which receives packets from ports that are not specified in the port forwarding table.
Port Forwarding	Port forwarding allows you to define the local servers to which the incoming services will be forwarded. You can configure a new schedule rule by clicking **Add Entry**. You can view the schedule rules by clicking **Get Entries**. **Serial**: This field displays the serial number of an individual port forwarding server entry. **Private IP**: This field displays the IP address of the virtual server on the LAN. **Private Port**: A private port refers to the port number of a host when the packet is in the LAN side. **Global Port**: A global port refers to the port number of the host when the same packet is traveling in the WAN side. **Protocol**: Select the protocol (**TCP_UDP**, **TCP**, **UDP**, or **ICMP**) used to transport the packets for which you want to apply the rule. **Delete**: Click **Delete** to delete an existing port forwarding rule. **Modify**: Click **Modify** to edit an existing port forwarding rule.

8.3 Technical Reference

The following section contains additional technical information about the NR2101 features described in this chapter.

8.3.1 NAT Port Forwarding: Services and Port Numbers

A port forwarding set is a list of inside (behind NAT on the LAN) servers, for example, web or FTP, that you can make accessible to the outside world even though NAT makes your whole inside network appear as a single machine to the outside world.

Use the **Port Forwarding** screen to forward incoming service requests to the server(s) on your local network. You may enter a single port number or a range of port numbers to be forwarded, and the local IP address of the desired server. The port number identifies a service; for example, web service is on port 80 and FTP on port 21. In some cases, such as for unknown services or where one server can support more than one service (for example both FTP and web service), it might be better to specify a range of port numbers.

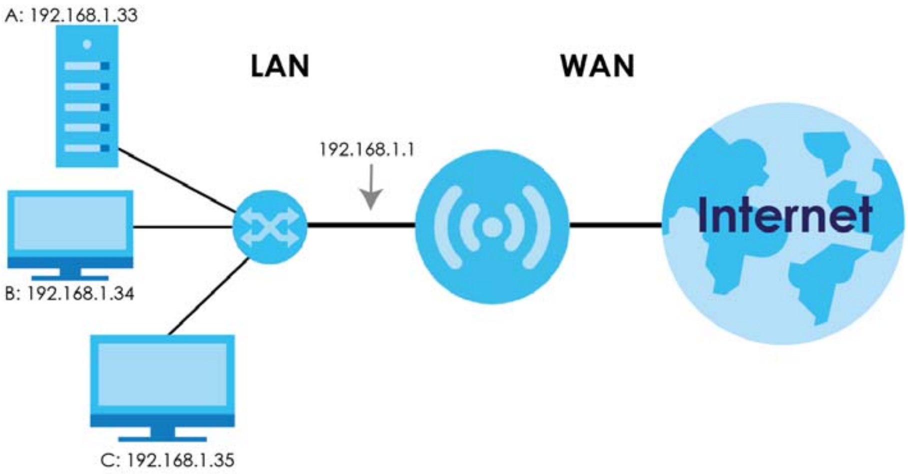
In addition to the servers for specified services, NAT supports a default server. A service request that does not have a server explicitly designated for it is forwarded to the default server. If the default is not defined, the service request is simply discarded.

Note: Many residential broadband ISP accounts do not allow you to run any server processes (such as a Web or FTP server) from your location. Your ISP may periodically check for servers and may suspend your account if it discovers any active services at your location. If you are unsure, refer to your ISP.

8.3.2 NAT Port Forwarding Example

Let's say you want to assign ports 21-25 to one FTP, Telnet and SMTP server (**A** in the example), port 80 to another (**B** in the example) and assign a default server IP address of 192.168.1.35 to a third (**C** in the example). You assign the LAN IP addresses and the ISP assigns the WAN IP address. The NAT network appears as a single host on the Internet.

Figure 88 Multiple Servers Behind NAT Example



8.3.3 Trigger Port Forwarding

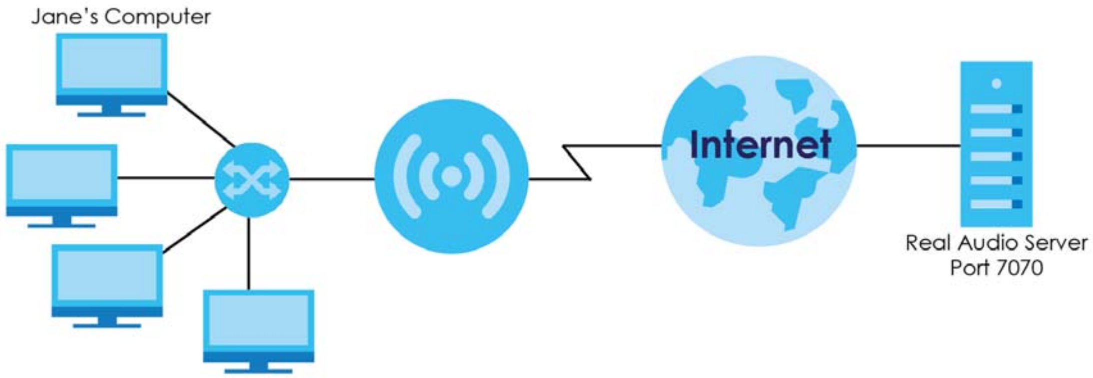
Some services use a dedicated range of ports on the client side and a dedicated range of ports on the server side. With regular port forwarding you set a forwarding port in NAT to forward a service (coming in from the server on the WAN) to the IP address of a computer on the client side (LAN). The problem is that port forwarding only forwards a service to a single LAN IP address. In order to use the same service on a different LAN computer, you have to manually replace the LAN computer's IP address in the forwarding port with another LAN computer's IP address.

Trigger port forwarding solves this problem by allowing computers on the LAN to dynamically take turns using the service. The NR2101 records the IP address of a LAN computer that sends traffic to the WAN to request a service with a specific port number and protocol (a "trigger" port). When the NR2101's WAN port receives a response with a specific port number and protocol ("incoming" port), the NR2101 forwards the traffic to the LAN IP address of the computer that sent the request. After that computer’s connection for that service closes, another computer on the LAN can use the service in the same manner. This way you do not need to configure a new IP address each time you want a different LAN computer to use the application.

8.3.4 Trigger Port Forwarding Example

The following is an example of trigger port forwarding.

Figure 89 Trigger Port Forwarding Process: Example



1 Jane requests a file from the Real Audio server (port 7070).

2 Port 7070 is a “trigger” port and causes the NR2101 to record Jane’s computer IP address. The NR2101 associates Jane's computer IP address with the "incoming" port range of 6970-7170.

3 The Real Audio server responds using a port number ranging between 6970-7170.

4 The NR2101 forwards the traffic to Jane’s computer IP address.

5 Only Jane can connect to the Real Audio server until the connection is closed or times out. The NR2101 times out in three minutes with UDP (User Datagram Protocol), or two hours with TCP/IP (Transfer Control Protocol/Internet Protocol).

8.3.5 Two Points To Remember About Trigger Ports

1 Trigger events only happen on data that is coming from inside the NR2101 and going to the outside.

2 If an application needs a continuous data stream, that port (range) will be tied up so that another computer on the LAN cannot trigger it.

CHAPTER 9
Firewall

9.1 Overview

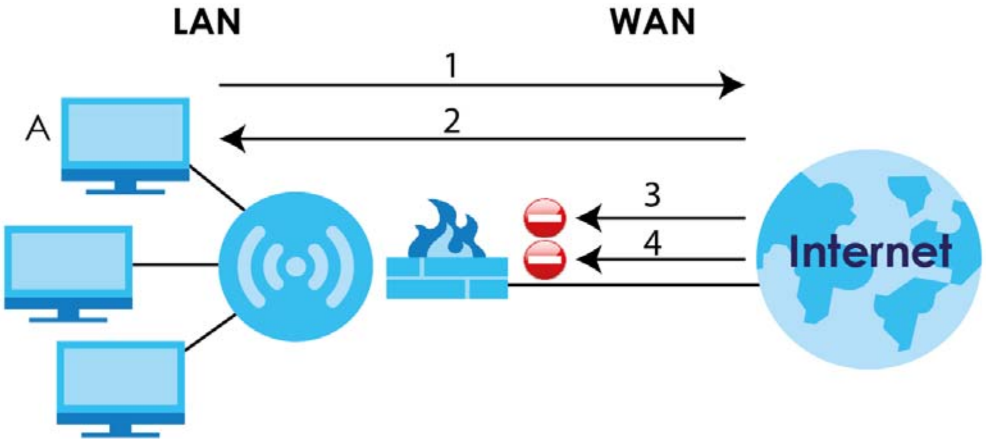
Use these screens to enable and configure the firewall that protects your NR2101 and your LAN from unwanted or malicious traffic.

Enable the firewall to protect your LAN devices from attacks by hackers on the Internet and control access between the LAN and WAN. By default the firewall:

- Allows traffic that originates from your LAN devices to go to all of the networks.
- Blocks traffic that originates on the other networks from going to the LAN.

The following figure illustrates the default firewall action. User **A** can initiate an IM (Instant Messaging) session from the LAN to the WAN (1). Return traffic for this session is also allowed (2). However other traffic initiated from the WAN is blocked (3 and 4).

Figure 90 Default Firewall Action



9.1.1 What You Can Do

- Use the **Firewall Settings** screen to configure predefined Internet services and firewall rules (Section 9.2 on page 87).

9.1.2 What You Need To Know

The following terms and concepts may help as you read through this chapter.

About the NR2101 Firewall

The NR2101’s firewall feature physically separates the LAN and the WAN and acts as a secure gateway for all data passing between the networks.

It is a stateful inspection firewall and is designed to protect against Denial of Service attacks when activated (click the **General** tab under **Firewall** and then click the **Enable** check box). The NR2101's purpose is to allow a private Local Area Network (LAN) to be securely connected to the Internet. The NR2101 can be used to prevent theft, destruction and modification of data, as well as log events, which may be important to the security of your network.

The NR2101 is installed between the LAN and a broadband modem connecting to the Internet. This allows it to act as a secure gateway for all data passing between the Internet and the LAN.

The LAN (Local Area Network) connects to a network of computers, which needs security from the outside world. These computers will have access to Internet services such as e-mail, FTP and the World Wide Web. However, "inbound access" is not allowed (by default) unless the remote host is authorized to use a specific service.

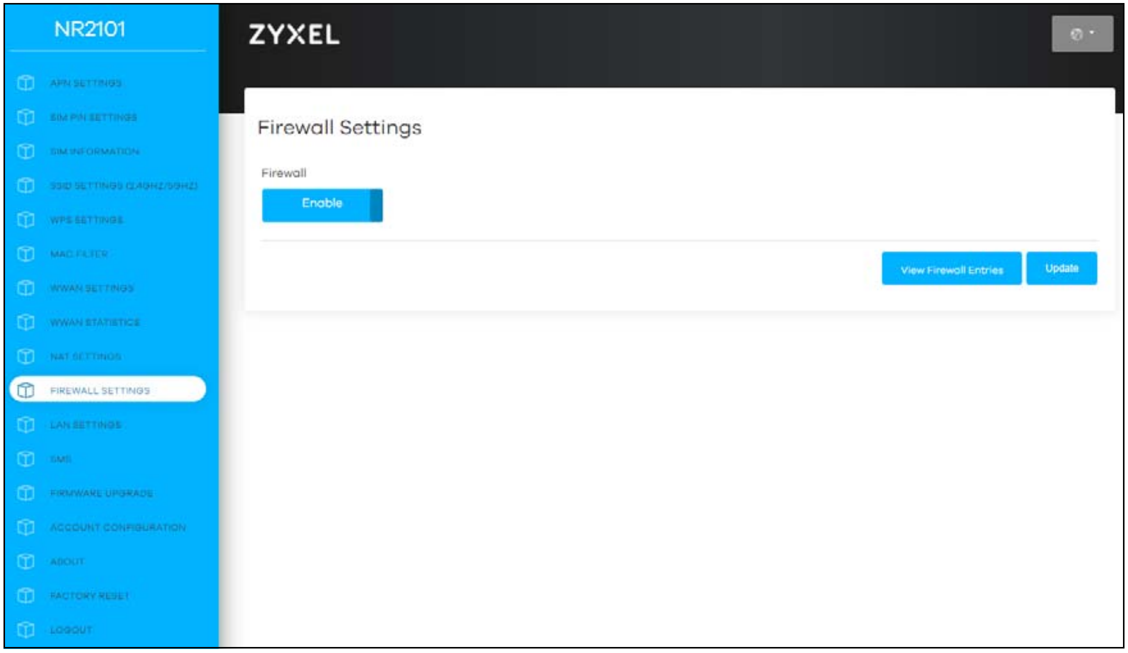
Guidelines For Enhancing Security With Your Firewall

1. Change the default password via Web Configurator.
2. Think about access control before you connect to the network in any way, including attaching a modem to the port.
3. Limit who can access your NR2101.
4. Don't enable any local service (such as NTP) that you don't use. Any enabled service could present a potential security risk. A determined hacker might be able to find creative ways to misuse the enabled services to access the firewall or the network.
5. For local services that are enabled, protect against misuse. Protect by configuring the services to communicate only with specific peers, and protect by configuring rules to block packets for the services at specific interfaces.
6. Protect against IP spoofing by making sure the firewall is active.
7. Keep the firewall in a secured (locked) room.

9.2 Firewall Settings

Click **FIREWALL SETTINGS** to open the following screen. Use this screen to enable or disable the NR2101’s firewall, and set up firewall logs. Click **View Firewall Entries** to view or configure IPv4/IPv6 firewall entries.

Figure 91 FIREWALL SETTINGS



Firewall Settings

Firewall

Enable

The following table describes the labels in this screen.

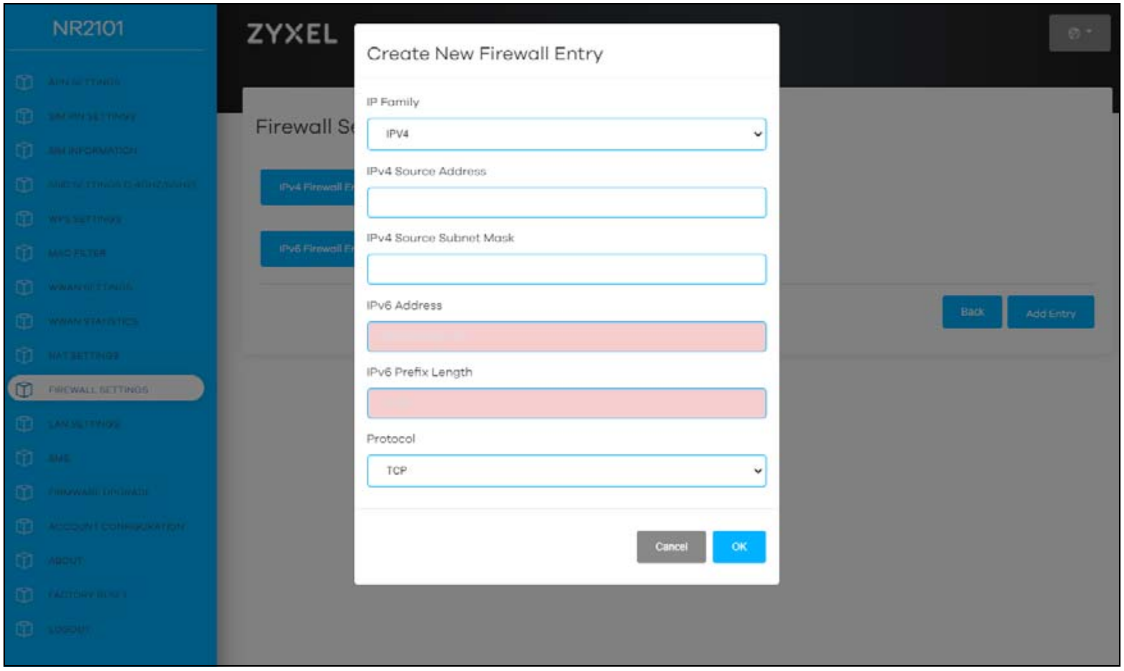
Table 34 FIREWALL SETTINGS

LABEL	DESCRIPTION
Firewall	Select **Enable** to activate the firewall. The NR2101 performs access control when the firewall is activated.
View Firewall Entries	Select this to view and configure IPv4/IPv6 firewall entries.
Update	Click **Update** to save the settings.

9.2.1 IPv4/IPv6 Firewall Entry

Click **View Firewall Entries** > **Add Entry** and the following screen appear. To apply the firewall rule to the IPv4 or IPv6 IP address only, select **IPv4** or **IPv6**. To apply the firewall rule to both IPv4 and IPv6 IP address, select **IPv4/IPv6** from the drop-down list box. To apply a rule to a specific IP address, enter the IPv4 source address, IPv4 source subnet mask, IPv6 address, IPv6 prefix length, and select the protocol for the service. Click **OK** to save the changes.

Figure 92 Add Entry



Create New Firewall Entry

IP Family: IPV4

IPv4 Source Address

IPv4 Source Subnet Mask

IPv6 Address

IPv6 Prefix Length

Protocol: TCP

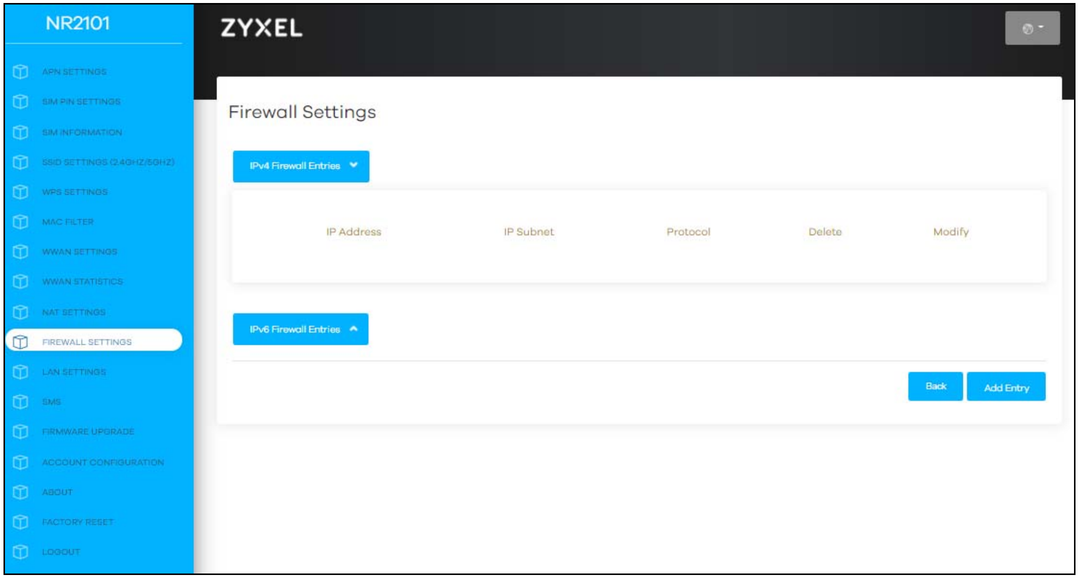
The following table describes the labels in this screen.

Table 35 Create New Firewall Entry

LABEL	DESCRIPTION
IP Family	Select between **IPv4** and **IPv6**. Compared to **IPv4**, **IPv6** (Internet Protocol version 6) is designed to enhance IP address size and features. The increase in **IPv6** address size to 128 bits (from the 32-bit **IPv4** address) allows up to 3.4 x 1038 IP addresses. The NR2101 can use **IPv4/ IPv6** dual stack to connect to **IPv4** and **IPv6** networks, and supports **IPv6** rapid deployment (6RD).
IPv4 Source Address	If you want the firewall rule to apply to a specific IP address, enter the source device's IPv4 address here.
IPv4 Source Subnet mask	If you want the firewall rule to apply to a specific IP address, enter the IPv4 Source subnet mask here.
IPv6 Address	If you want the firewall rule to apply to a specific IP address, enter the source device's IPv6 address here.
IPv6 Prefix Length	The prefix length indicates what the left-most part of the IP address is the same for all computers in the network, that is, the network address. Enter the address prefix length to specify how many most significant bits in an IPv6 address compose the network address.
Protocol	Select the protocol (**None, TCP_UDP**, **TCP**, **UDP**, **ICMP, or ESP**) used to transport the packets for which you want to apply the rule.
Cancel	Click this to exit this screen without saving.
OK	Click this to save your changes.

Click **IPv4/IPv6 Firewall Entries** to view and configure IPv4/IPv6 settings.

Figure 93 IPv4 Firewall Entries

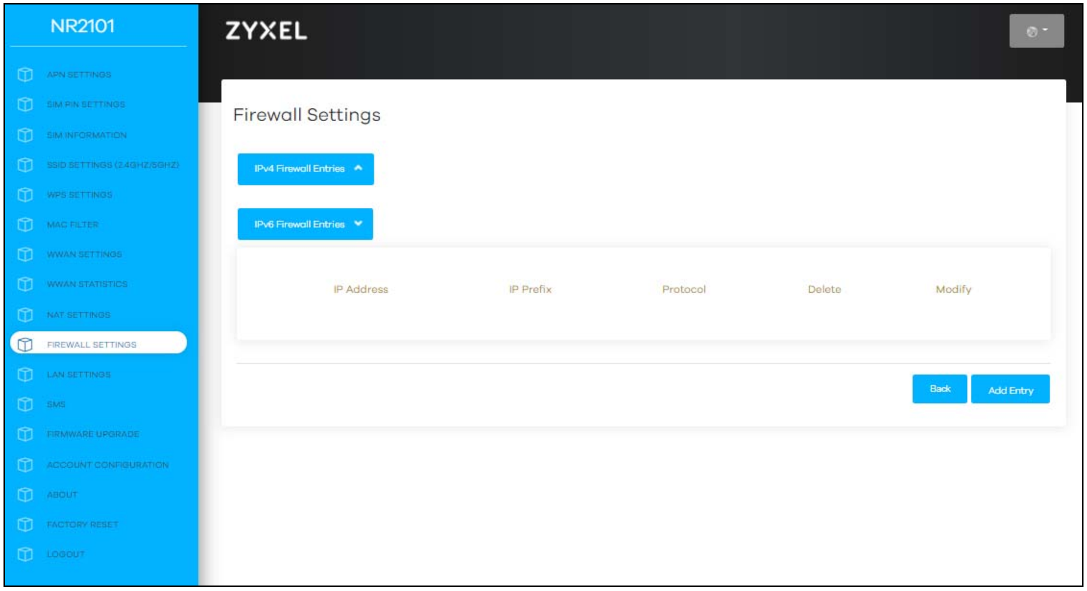


The following table describes the labels in this screen.

Table 36 IPv4 Firewall Entries

LABEL	DESCRIPTION
IPv4 Firewall Entries	
IP Address	This field displays the source IPv4 addresses to which this rule applies.
IP Subnet	This field displays subnet mask of the IPv4 addresses.
Protocol	This field displays the protocol (**None**, **TCP_UDP**, **TCP**, **UDP**, **ICMP**, or **ESP**) used to transport the packets for which you want to apply the rule.
Delete	Click **Delete** to delete an existing firewall rule.
Modify	Click **Modify** to edit the firewall rule.
Add Entry	You can add a new schedule rule by clicking **Add Entry**.

Figure 94 IPv6 Firewall Entries



The following table describes the labels in this screen.

Table 37 IPv6 Firewall Entries

LABEL	DESCRIPTION
IPv6 Firewall Entries	
IP Address	This field displays the source IPv6 addresses to which this rule applies.
IP Prefix	This field displays the IPv6 prefix that the NR2101 will advertise to its clients. Enter the IPv6 prefix for this interface if you want to use a static IP address.
Protocol	This field displays the protocol (**None**, **TCP_UDP**, **TCP**, **UDP**, **ICMP**, or **ESP**) used to transport the packets for which you want to apply the rule.
Delete	Click **Delete** to delete an existing firewall rule.
Modify	Click **Modify** to edit the firewall rule.
Add Entry	Y Click **Add Entry** to add a new schedule rule.

CHAPTER 10 LAN Settings

10.1 Overview

DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients to obtain TCP/IP configuration at start-up from a server. You can configure the NR2101 as a DHCP server or disable it. When configured as a server, the NR2101 provides the TCP/IP configuration for the clients. If DHCP service is disabled, you must have another DHCP server on your LAN, or else the computer must be manually configured.

10.1.1 What You Can Do

- Use the **LAN Settings** screen to enable the LAN DHCP server and view the current DHCP client information (Section 10.2 on page 92).

10.1.2 What You Need To Know

The following terms and concepts may help as you read through this chapter.

MAC Addresses

Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02. Find out the MAC addresses of your network devices if you intend to add them to the **DHCP Client List** screen.

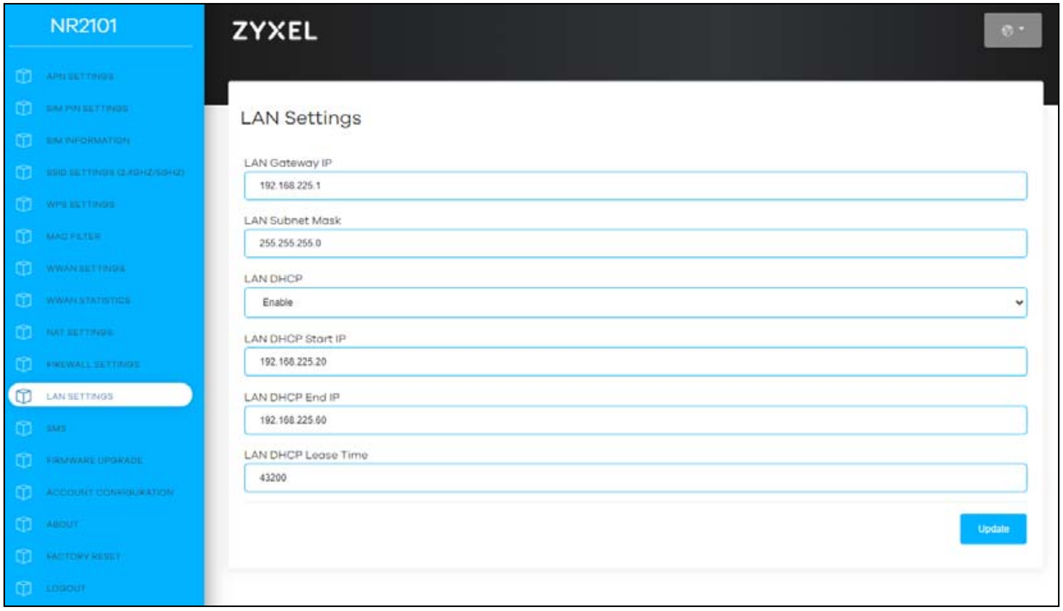
IP Pool Setup

The NR2101 is pre-configured with a pool of 32 IP addresses starting from 192.168.1.33 to 192.168.1.64. This configuration leaves 31 IP addresses (excluding the NR2101 itself) in the lower range (192.168.1.2 to 192.168.1.32) for other server computers, for instance, servers for mail, FTP, TFTP, web, etc., that you may have.

10.2 LAN Settings

The NR2101 has the built-in DHCP server capability that assigns IP addresses to systems that support DHCP client capability. Use this screen to enable the DHCP server function. Click **LAN SETTINGS** and the following screen displays. Enter the IP address of the default gateway on the LAN. Enter the subnet mask in dotted decimal notation, for example 255.255.255.0. Select **Enable** or **Disable** in the **LAN DHCP** field to enable or disable the DHCP function on the NR2101. Enter the first and the last of the contiguous addresses in the IP address pool. Enter the time length the DHCP server allows the assigned IP address to be used.

Figure 95 LAN SETTINGS



LAN Settings

LAN Gateway IP
192.168.225.1

LAN Subnet Mask
255.255.255.0

LAN DHCP
Enable

LAN DHCP Start IP
192.168.225.20

LAN DHCP End IP
192.168.225.60

LAN DHCP Lease Time
43200

Update

The following table describes the labels in this screen.

Table 38 LAN SETTINGS

LABEL	DESCRIPTION
LAN Gateway IP	This shows the LAN port's gateway IP address.
LAN Subnet Mask	This shows the LAN port's subnet mask.
LAN DHCP	Select **Enable** to activate DHCP for LAN. DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (computers) to obtain TCP/IP configuration at startup from a server. Enable the DHCP server unless your ISP instructs you to do otherwise. Select **Disable** to stop the NR2101 from acting as a DHCP server. When configured as a server, the NR2101 provides TCP/IP configuration for the clients. If not, DHCP service is disabled and you must have another DHCP server on your LAN, or else the computers must be manually configured. When set as a server, fill in the following three fields.
LAN DHCP Start IP	This field specifies the first of the contiguous addresses in the IP address pool for LAN.
LAN DHCP End IP	This field specifies the last of the contiguous addresses in the IP address pool for LAN.
LAN DHCP Lease Time	This is the period of time the DHCP-assigned IP addresses is used. DHCP automatically assigns IP addresses to client devices when they log in. DHCP centralizes IP address management on central computers that run the DHCP server program. DHCP leases addresses, for a period of time, which means that past addresses are "recycled" and made available for future reassignment to other systems.
Update	Click **Update** to save your changes back to the NR2101.

CHAPTER 11
SMS

11.1 Overview

This chapter shows you how to view the text messages.

SMS (Short Message Service) allows you to send and view the text messages that the NR2101 received from mobile devices or the service provider.

11.1.1 What You Can Do in this Chapter

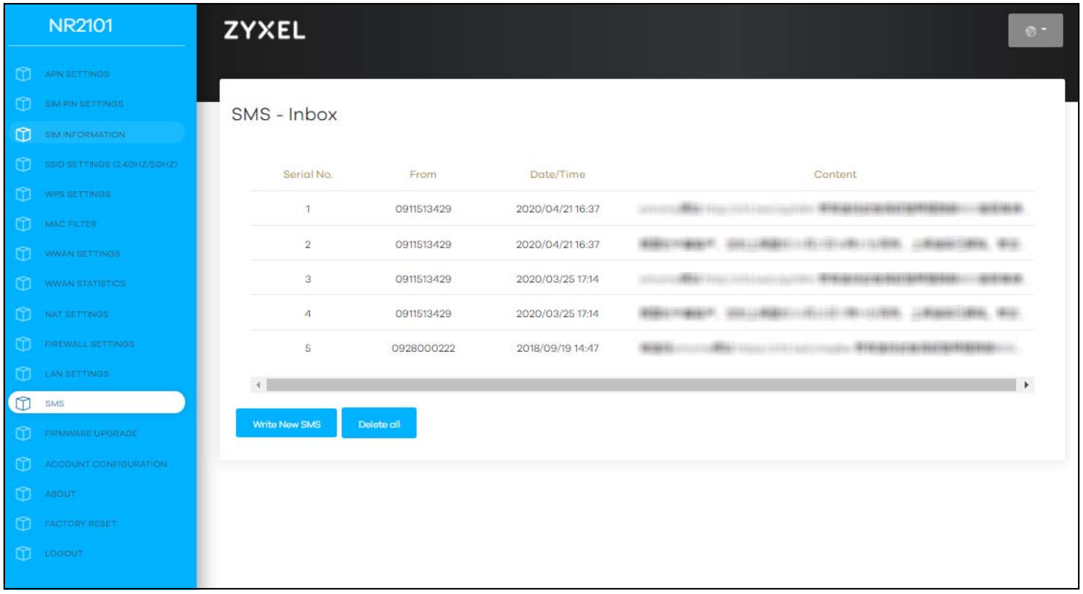
- Use the **SMS** screen to view messages received on the NR2101 (Section 11.2 on page 94).

11.2 SMS-Inbox

Click SMS and then the following screen appears. Use this screen to view messages received by the NR2101.Click **Write New SMS** to create a new SMS message. Click **Delete all** to remove all of the previous SMS messages

Note: You can store an approximate total of 500 messages.

Figure 96 SMS



SMS - Inbox

Serial No.	From	Date/Time	Content
1	0911513429	2020/04/21 16:37	[redacted]
2	0911513429	2020/04/21 16:37	[redacted]
3	0911513429	2020/03/25 17:14	[redacted]
4	0911513429	2020/03/25 17:14	[redacted]
5	0928000222	2018/09/19 14:47	[redacted]

The following table describes the labels in this screen.

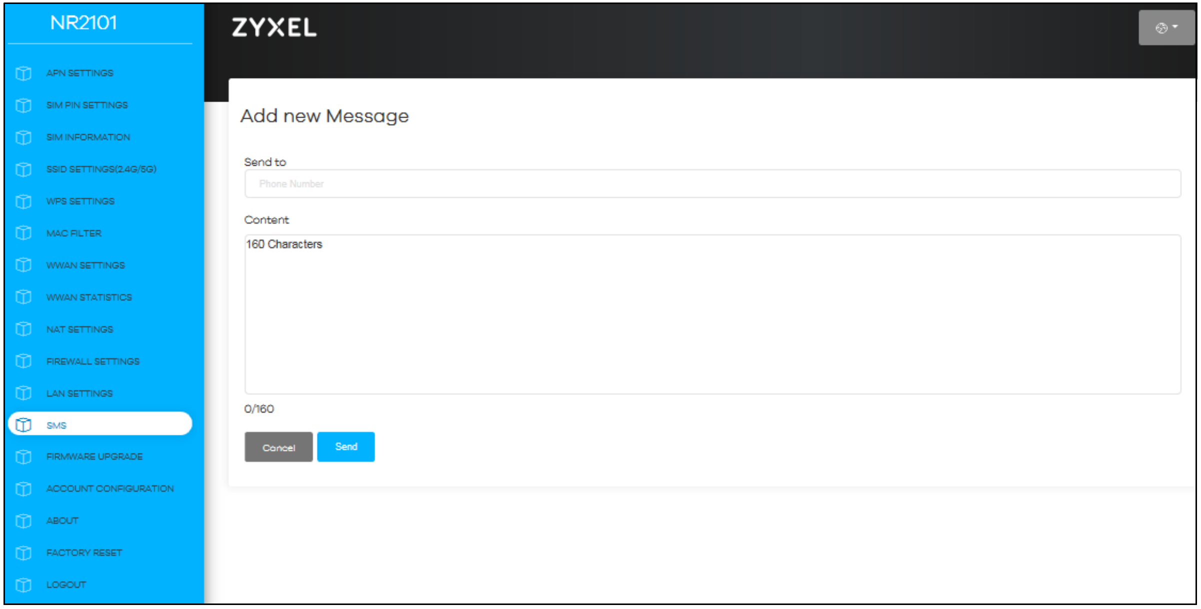
Table 39 SMS

LABEL	DESCRIPTION
Serial No.	This field displays the serial number of the message entries.
From	This field displays the telephone number of the sender.
Date/Time	This field displays the date and time the message was received.
Content	This field displays the content of the message.

11.3 Add New Message

Enter the phone number of the SMS message receiver in the **Send to** field. Enter your message in the **Content** filed. Click **Send** to send the message out.

Figure 97 Add new Message



The following table describes the labels in this screen.

Table 40 Add new Message

LABEL	DESCRIPTION
Send to	Use this field to enter the phone number of the message receiver.
Content	Use this field to enter the content of the message.
Send	Click this to send the message.
Cancel	Click this to exit this screen without saving.

CHAPTER 12 Maintenance

12.1 Overview

Use the system screens to configure general NR2101 settings.

12.1.1 What You Can Do in this Chapter

- Use the **Firmware Upgrade** screen to upload new firmware to your NR2101 (Section 12.2 on page 96).
- Use the **Account Configuration** screen to change the NR2101's system password and configure the web configurator's inactive time (Section 12.3 on page 97).
- Use the **About** screen to view the detailed information of software and firmware on the NR2101(Section 12.4 on page 98).
- Use the **Factory Reset** screen to reset your NR2101 settings back to the factory default mode(Section 12.5 on page 99).
- Use the **Logout** screen to log out of the Web Configurator (Section 12.6 on page 100).

12.2 Firmware Upgrade

This screen allows you to upload new firmware to your NR2101. You can download new firmware releases from your nearest Zyxel FTP site (or www.zyxel.com) to use to upgrade your NR2101's performance.

Only use firmware for your device's specific model.

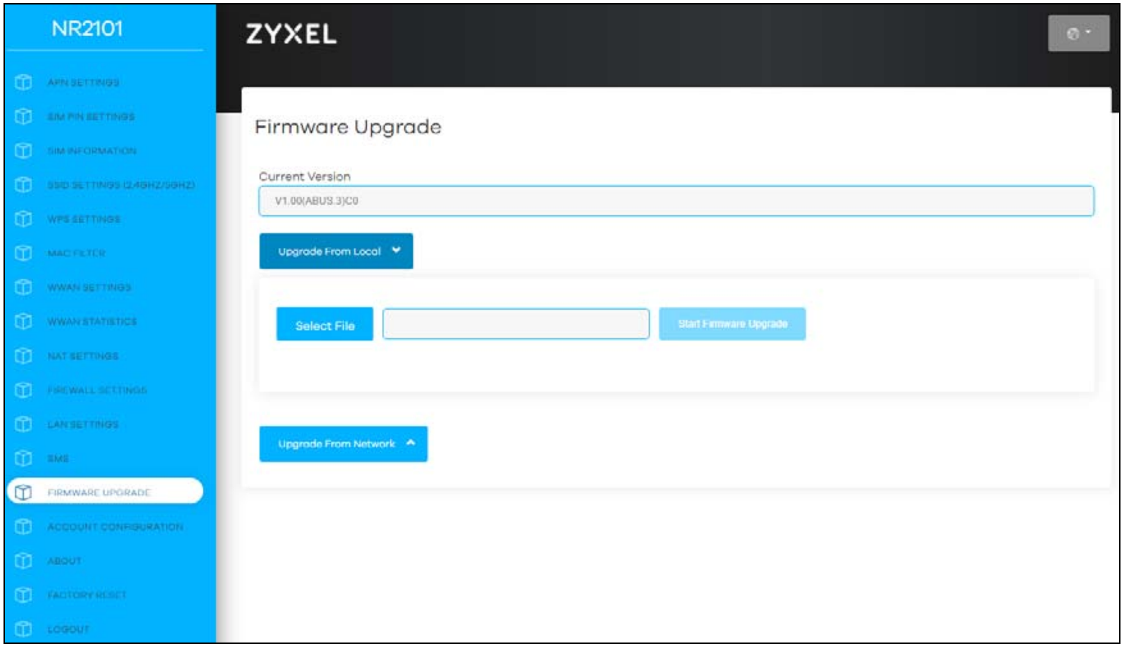
To access this screen, click **Firmware Upgrade**. This screen displays the current firmware version and status of the NR2101. Click **Upgrade From Local** and the **Select File** tab appears. To update firmware, click **Select File** to select a file from you local drive to upload to the NR2101.

The upload process uses HTTP (Hypertext Transfer Protocol) and may take up to two minutes. After a successful upload, the system will reboot.

Firmware Over the Air (FOTA) allows for timely and automatic firmware upgrades. You can click **Start Firmware Upgrade** and check if any update is available.

Do NOT turn off the NR2101 while firmware upload is in progress!

Figure 98 Firmware Upgrade



Current Version: V1.00(ABUS.3)C0

The following table describes the labels in this screen.

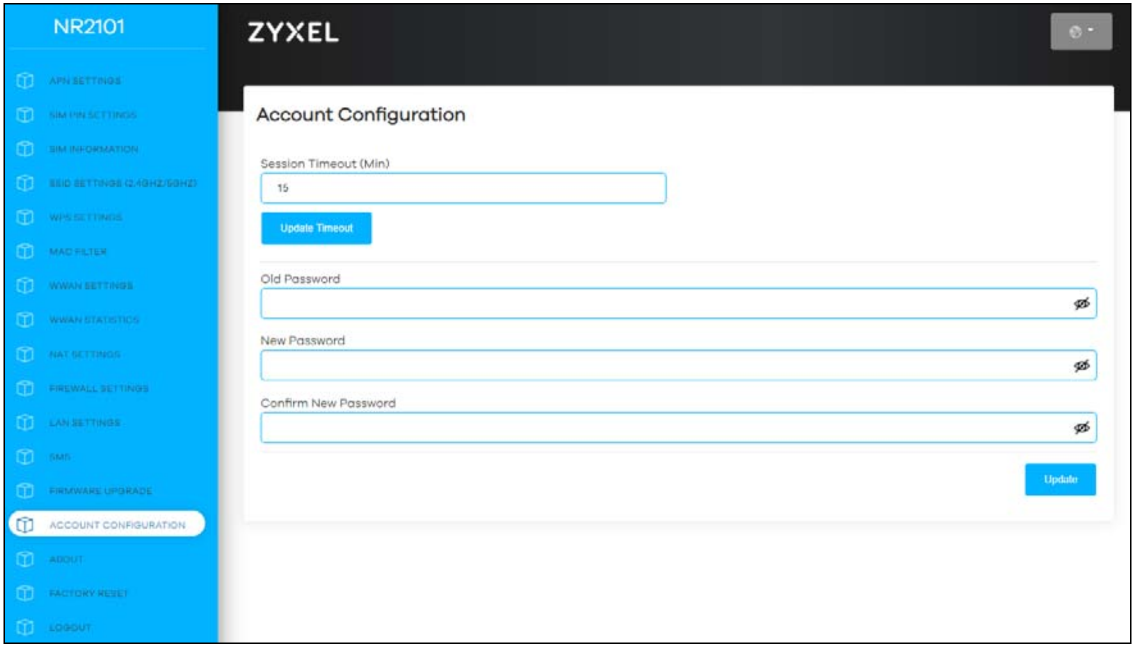
Table 41 Firmware Upgrade

LABEL	DESCRIPTION
Current Version	This field displays the current firmware version number of the NR2101.
Upgrade From Local	Click this button to upload the firmware file to the NR2101 from a local drive.
Select File	Click this button to choose a file.
Upgrade From Network	Click this button to check if any new firmware is available online.

12.3 Account Configuration

Click **Account Configuration** and the following screen appears. Use this screen to configure the NR2101's admin account settings. Enter your **Session Timeout (Min)** and then click **Update Timeout** to save the changes. To change your account password, enter the **Old Password**, **New Password**, and then re-enter the **New Password** to confirm. Click **Update** to save the changes.

Figure 99 Account Configuration



Account Configuration

Session Timeout (Min)

15

Old Password

New Password

Confirm New Password

The following table describes the labels in this screen.

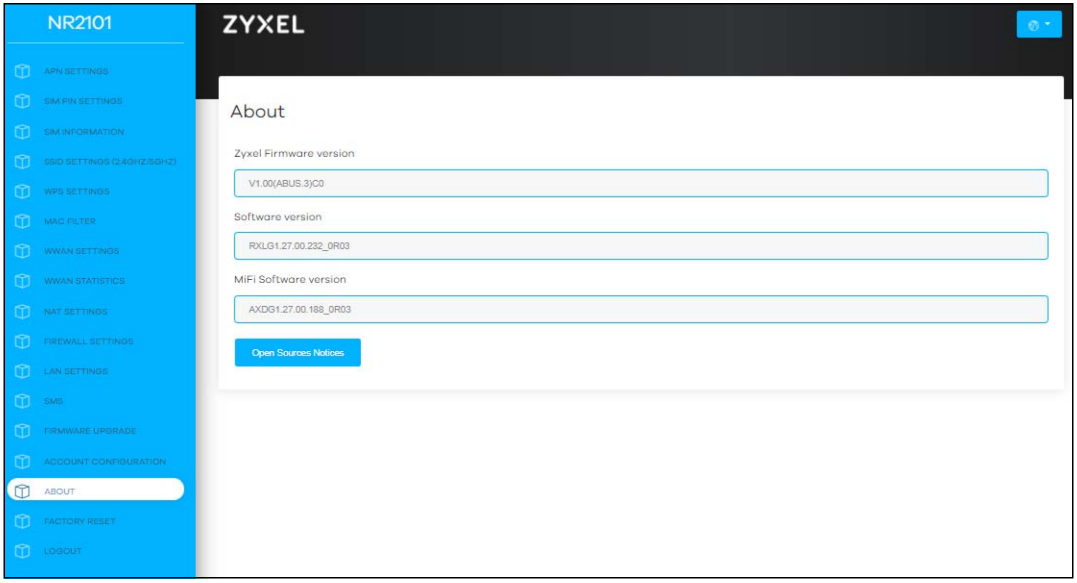
Table 42 Account Configuration

LABEL	DESCRIPTION
Session Timeout (Min)	Enter how many minutes a management session can be left idle before the session times out and click **Update Timeout** to save your changes back to the NR2101. After it times out you have to log in with your password again. Very long idle timeouts may have security risks. A value of "0" means a management session never times out, no matter how long it has been left idle (not recommended).
Old Password	Enter the default password or the existing password you use to access the system in this field.
New Password	Enter your new system password of between 4 and 24 characters. Note that as you enter a password, the screen displays as dot (.) for each character you enter. The new password must contain one numeric, one lowercase, one upper case letter and one special character.
Confirm New Password	Enter the new password again in this field.
Update	Click this button to save your changes back to the NR2101.

12.4 About

Use this screen to check the software and firmware information of your NR2101.

Figure 100 About



About

Zyxel Firmware version: V1.00(ABUS.3)C0

Software version: RXLG1.27.00.232_0R03

MiFi Software version: AXDG1.27.00.188_0R03

The following table describes the labels in this screen.

Table 43 About

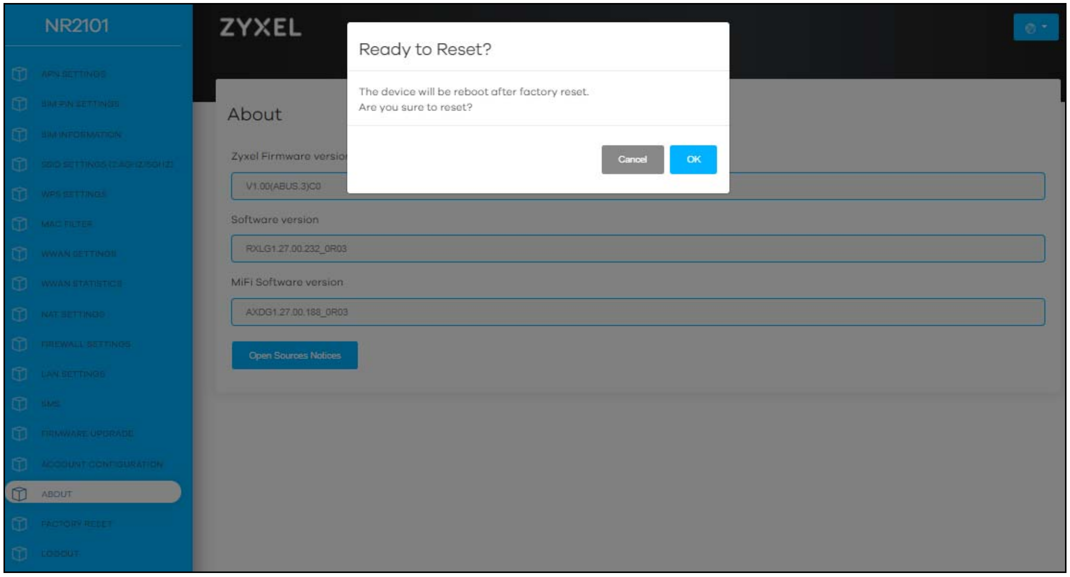
LABEL	DESCRIPTION
Zyxel Firmware version	Use this screen to view the current firmware version of the NR2101.
Software version	Use this screen to view the current software version of the NR2101.
MiFi Software version	Use this screen to view the current MiFi software version of the NR2101.
Open Source Notices	Click this to see the open source notices of the NR2101.

Note: If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as that of the default NR2101 IP address (192.168.225.1).

12.5 Factory Reset

Use this screen to reset the NR2101 to the factory default mode. Click **FACTORY RESET**, and the following pop-up window appears. Click **OK** to reboot the NR2101. This allows you to reboot the NR2101 without turning the power off. Wait a few minutes until the login screen appears. If the login screen does not appear, enter the default IP address (192.168.225.1)of the NR2101 in your web browser.

Figure 101 FACTORY RESET



Ready to Reset?

The device will be reboot after factory reset.
Are you sure to reset?

About

Zyxel Firmware versio
V1.00(ABUS.3)C0

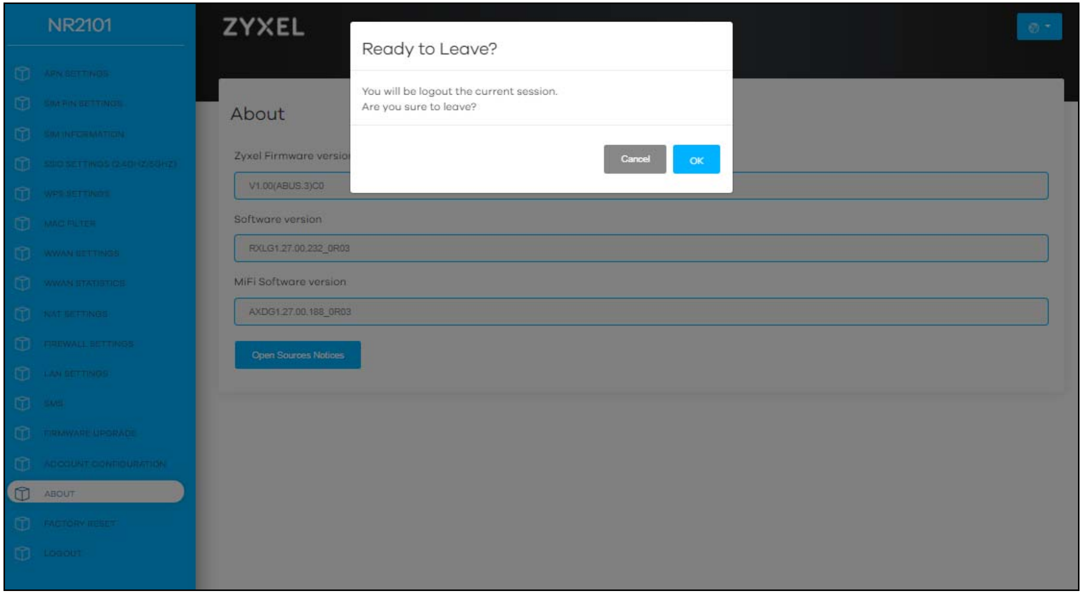
Software version
RXLG1.27.00.232_0R03

MiFi Software version
AXDG1.27.00.188_0R03

12.6 Logout

Use this screen to log out of the NR2101's web configurator. Click **LOGOUT**. The following screen appears. Click **OK** to log out.

Figure 102 Logout



Ready to Leave?

You will be logout the current session.
Are you sure to leave?

About

Zyxel Firmware versio
V1.00(ABUS.3)C0

Software version
RXLG1.27.00.232_0R03

MiFi Software version
AXDG1.27.00.188_0R03

CHAPTER 13
Troubleshooting

13.1 Overview

Here are offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- Power
- NR2101 Access and Login
- Internet Access
- WiFi Internet Access
- WiFi Connections

13.2 Power

The NR2101 does not turn on. The LCD display is not on.

1. Make sure the battery is charged. Press the power button to turn the NR2101 on (Section 1.4 on page 11).
2. If the problem continues, contact the vendor.

13.3 NR2101 Access and Login

I forgot the IP address for the NR2101.

1. The default IP address is 192.168. 225.1.
2. If you changed the IP address and have forgotten it, you have to reset the NR2101 to its factory defaults. To reset your NR2101, use the LCD touch screen to go to **Settings** > **Restore Default** and then select **Restore**.

I cannot see or access the **Login** screen in the Web Configurator.

1. Make sure you are using the correct IP address.
   - The default IP address is 192.168. 225.1.
   - If you changed the IP address, use the new IP address.
   - If you changed the IP address and have forgotten it, see the troubleshooting suggestions for I forgot the IP address for the NR2101.
2. Make sure the NR2101 is correctly installed and turned on. See the Quick Start Guide.
3. Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled.
4. Make sure your computer is connected to the NR2101.
5. Make sure the NR2101's WiFi LAN is enabled. You can enable or disable the NR2101's WiFi network using SSID Setting on the NR2101. See Section 7.2 on page 64.
6. Reset the NR2101 to its factory defaults, and try to access the NR2101 with the default IP address. To reset the NR2101, use the LCD touch screen to go to **Settings** > **Restore Default** and then select **Restore**. See Section 1.5.6.14 on page 32.
7. Disconnect your computer from the NR2101 and then connect once again.
8. If the problem continues, contact the vendor.

I forgot the password of the Web Configurator.

1. The default user name is **admin**. The default password is **admin**.
2. If this does not work, you have to reset the NR2101 to its factory defaults. Use a thin object to press the RESET button on the NR2101's side panel. Otherwise, use the LCD touch screen to reset your NR2101. Go to the **Settings** > **Restore Default** screen and then select **Restore**.

I can access the **Login** screen, but I cannot log in to the NR2101.

1. Make sure you have entered the user name and password correctly. The default user name is **admin** and the default password is **admin**. These fields are case-sensitive, so make sure [Caps Lock] is not on.
2. This can happen when you fail to log out properly from your last session. Try logging in again after five minutes.
3. Disconnect and connect to the NR2101 again.

4 If this does not work, you have to reset the NR2101 to its factory defaults. To reset your NR2101 use the LCD touch screen to go to **Settings** > **Restore Default** and then select **Restore**.

13.4 Internet Access

I cannot access the Internet through a 3G/4G/5G wireless WAN connection.

1 Make sure you insert a SIM card into the card slot before turning on the NR2101.

2 If your SIM card has a PIN code, connect to the Web Configurator (http://192.168.225.1) using the user name (Default: **admin**) and password (Default: **admin**) to unlock your SIM card.

3 Make sure your mobile access information (such as APN) is entered correctly. You can check this in the Web Configurator (http://192.168.225.1). The APN fields are case-sensitive, so make sure [Caps Lock] is not on. Check with your service provider for the correct APN if you do not have it.

4 Make sure your SIM card's account is valid and has an active data plan. Check your service contract or contact your service provider directly.

5 Make sure your data plan has not reached its limit.

6 If you are using a pre-paid SIM card, insert the SIM card on another mobile device to check if the SIM card still works. If the SIM card works without any problems on another mobile device, contact the vendor. Otherwise, contact your service provider.

7 Make sure you are in the ISP's coverage area.

8 If the problem continues, contact your ISP.

I cannot access the Internet anymore. I had access to the Internet (with the NR2101), but my Internet connection is not available anymore.

1 Reboot the NR2101.

2 Make sure the NR2101's WiFi network is enabled. You can enable NR2101's WiFi network on the LCD.

3 Make sure your SIM card's mobile data is enabled. Check this in the Web Configurator. (Section 7.6 on page 74).

4 If you have set a data limit, make sure you have not reached it yet. Check your data left in the Web Configurator.

5 If the problem continues, contact your ISP.

One of my WiFi clients cannot access the Internet anymore. They had access to the Internet (with the NR2101), but the Internet connection is not available anymore.

1 Make sure your WiFi client is not blocked. You can check this on the Web Configurator (See Section 7.5 on page 73).

2 Make sure your SIM card's mobile data is enabled. Check this on the Web Configurator (See Section 6.3 on page 59).

3 If you have set a data limit, make sure you have not reached it yet. You can check your data left in the Web Configurator.

4 Reboot the NR2101.

The Internet connection is slow or intermittent.

1 There might be a lot of traffic on the network. If the NR2101 is sending or receiving a lot of information, try closing some programs that use the Internet, especially peer-to-peer applications.

2 Check the signal strength on the NR2101 LCD screen. If the signal strength is low, try moving the NR2101 closer to the ISP's base station if possible, or try pointing it directly to the ISP's base station. Look around to see if there are any devices that might be interfering with the WiFi network (for example, microwaves, other WiFi networks, and so on).

3 Reboot the NR2101.

4 If the problem continues, contact the network administrator or vendor.

13.5 WiFi Internet Access

What factors may cause intermittent or unstabled WiFi connection? How can I solve this problem? The following factors may cause interference:

- Obstacles: walls, ceilings, furniture, and so on.
- Building Materials: metal doors, aluminum studs.
- Electrical devices: microwaves, monitors, electric motors, cordless phones, and other WiFi devices.

To optimize the speed and quality of your WiFi connection, you can:

- Move your WiFi clientdevice closer to the AP if the signal strength is low.
- Reduce WiFi interference that may be caused by other WiFi networks or surrounding WiFi electronics such as cordless phones.

- Place the AP where there are minimum obstacles (such as walls and ceilings) between the AP and the WiFi client.
- Reduce the number of WiFi clients connecting to the same AP simultaneously, or add additional APs if necessary.
- Try closing some programs that use the Internet, especially peer-to-peer applications. If the WiFi client is sending or receiving a lot of information, it may have too many programs open that use the Internet.

13.6 WiFi Connections

I cannot access the NR2101.

1 Make sure WiFi is enabled on the NR2101. You can enable or disable the NR2101's WiFi network using the SSID Setting on the NR2101. See Section 1.5.4 on page 16.

2 Make sure the WiFi adapter (installed on your computer) is IEEE 802.11 compatible and supports the same WiFi standard as the NR2101's active radio.

3 Make sure your device (with a WiFi adapter installed) is within the transmission range of the NR2101.

4 Make sure you are using the correct WiFi network name and password to connect to your NR2101. Check your WiFi network settings by reexamining the network name **Name (SSID)** and/or **Password** in the Web Configurator (Section 7.2 on page 64).

5 If you changed your network WiFi **Name (SSID)** and/or **Password** you will be automatically disconnected from the NR2101. Try reconnecting to the network wirelessly with the new network WiFi **Name (SSID)** and/or **Password**.

One of my WiFi clients cannot access the NR2101.

1 Make sure the WiFi LAN is enabled on the NR2101. You can enable or disable the NR2101's WiFi network using the SSID Setting on the NR2101. See Section 1.5.4 on page 16.

2 Make sure the WiFi adapter (installed on your computer) is IEEE 802.11 compatible and supports the same WiFi standard as the NR2101's active radio.

3 Make sure your WiFi client's device (with a WiFi adapter installed) is within the transmission range of the NR2101.

4 Make sure your WiFi client is using the correct WiFi network name **Name (SSID)** and password **Password** to connect to your NR2101 (Section 7.2 on page 64).

13.7 Getting More Troubleshooting Help

Search for support information for your model at www.zyxel.com for more troubleshooting suggestions.

APPENDIX A Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a Zyxel office for the region in which you bought the device.

For Zyxel Communications offices, see *https://service-provider.zyxel.com/global/en/contact-us* for the latest information.

For Zyxel Networks offices, see *https://www.zyxel.com/index.shtml* for the latest information.

Please have the following information ready when you contact an office.

Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

Corporate Headquarters (Worldwide)

Taiwan

- Zyxel Communications Corporation
- https://www.zyxel.com

Asia

China

- Zyxel Communications (Shanghai) Corp.
  Zyxel Communications (Beijing) Corp.
  Zyxel Communications (Tianjin) Corp.
- https://www.zyxel.com/cn/zh/

India

- Zyxel Technology India Pvt Ltd
- https://www.zyxel.com/in/en/

Kazakhstan

- Zyxel Kazakhstan
- https://www.zyxel.kz

Korea

- Zyxel Korea Corp.
- http://www.zyxel.kr

Malaysia

- Zyxel Malaysia Sdn Bhd.
- http://www.zyxel.com.my

Pakistan

- Zyxel Pakistan (Pvt.) Ltd.
- http://www.zyxel.com.pk

Philippines

- Zyxel Philippines
- http://www.zyxel.com.ph

Singapore

- Zyxel Singapore Pte Ltd.
- http://www.zyxel.com.sg

Taiwan

- Zyxel Communications Corporation
- https://www.zyxel.com/tw/zh/

Thailand

- Zyxel Thailand Co., Ltd
- https://www.zyxel.com/th/th/

Vietnam

- Zyxel Communications Corporation-Vietnam Office
- https://www.zyxel.com/vn/vi

Europe

Belarus

- Zyxel BY
- https://www.zyxel.by

Bulgaria

- Zyxel България
- https://www.zyxel.com/bg/bg/

Czech Republic

- Zyxel Communications Czech s.r.o
- https://www.zyxel.com/cz/cs/

Denmark

- Zyxel Communications A/S
- https://www.zyxel.com/dk/da/

Finland

- Zyxel Communications
- https://www.zyxel.com/fi/fi/

France

- Zyxel France
- https://www.zyxel.fr

Germany

- Zyxel Deutschland GmbH
- https://www.zyxel.com/de/de/

Hungary

- Zyxel Hungary & SEE
- https://www.zyxel.com/hu/hu/

Italy

- Zyxel Communications Italy
- https://www.zyxel.com/it/it/

Netherlands

- Zyxel Benelux
- https://www.zyxel.com/nl/nl/

Norway

- Zyxel Communications
- https://www.zyxel.com/no/no/

Poland

- Zyxel Communications Poland
- https://www.zyxel.com/pl/pl/

Romania

- Zyxel Romania

- https://www.zyxel.com/ro/ro

Russia

- Zyxel Russia
- https://www.zyxel.com/ru/ru/

Slovakia

- Zyxel Communications Czech s.r.o. organizacna zlozka
- https://www.zyxel.com/sk/sk/

Spain

- Zyxel Communications ES Ltd
- https://www.zyxel.com/es/es/

Sweden

- Zyxel Communications
- https://www.zyxel.com/se/sv/

Switzerland

- Studerus AG
- https://www.zyxel.ch/de
- https://www.zyxel.ch/fr

Turkey

- Zyxel Turkey A.S.
- https://www.zyxel.com/tr/tr/

UK

- Zyxel Communications UK Ltd.
- https://www.zyxel.com/uk/en/

Ukraine

- Zyxel Ukraine
- http://www.ua.zyxel.com

South America

Argentina

- Zyxel Communications Corporation
- https://www.zyxel.com/co/es/

Brazil

- Zyxel Communications Brasil Ltda.
- https://www.zyxel.com/br/pt/

Colombia

- Zyxel Communications Corporation
- https://www.zyxel.com/co/es/

Ecuador

- Zyxel Communications Corporation
- https://www.zyxel.com/co/es/

South America

- Zyxel Communications Corporation
- https://www.zyxel.com/co/es/

Middle East

Israel

- Zyxel Communications Corporation
- http://il.zyxel.com/

North America

USA

- Zyxel Communications, Inc. - North America Headquarters
- https://www.zyxel.com/us/en/

APPENDIX B
Legal Information

Copyright

Disclaimer

Zyxel does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. Zyxel further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

Regulatory Notice and Statement

EUROPEAN UNION

The following information applies if you use the product within the European Union.

Declaration of Conformity with Regard to EU Directive 2014/53/EU (Radio Equipment Directive, RED)

- Compliance information for wireless products relevant to the EU and other Countries following the EU Directive 2014/53/EU (RED). And this product may be used in all EU countries (and other countries following the EU Directive 2014/53/EU) without any limitation except for the countries mentioned below table:
- In the majority of the EU and other European countries, the 5GHz bands have been made available for the use of wireless local area networks (LANs). Later in this document you will find an overview of countries in which additional restrictions or requirements or both are applicable. The requirements for any country may evolve. Zyxel recommends that you check with the local authorities for the latest status of their national regulations for the 5GHz wireless LANs.
- If this device for operation is in the band 5150-5350 MHz. It is for indoor use only.
- The radio wave exposure guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit for mobile device is 2W/kg. Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands. The highest standalone SAR value for a single frequency band is 1.186W/kg. The highest simultaneous SAR value is 1.977W/kg.
- The maximum RF power operating for each band as follows:
- **WiFi**
The band 2,400 to 2,483.5 MHz is 97.72 mW.
  The band 5,150 to 5,250 MHz is 198.15 mW.
- **WCDMA**
  The WCDMA Band I is 24dBm.
  The WCDMA Band VIII is 24dBm.
- **LTE**
  The LTE Band 1 is 23dBm.
  The LTE Band 3 is 23dBm.
  The LTE Band 7 is 23dBm.
  The LTE Band 8 is 23dBm.
  The LTE Band 20 is 23dBm.
  The LTE Band 28 is 23dBm.
  The LTE Band 38 is 23dBm.

- **NR**
  The NR Band n1 is 23dBm.
  The NR Band n3 is 23dBm.
  The NR Band n20 is 23dBm.
  The NR Band n28 is 23dBm.
  The NR Band n77 is 23dBm.
  The NR Band n78 is 23dBm.

Български (Bulgarian)	С настоящото Zyxel декларира, че това оборудване е в съответствие със съществените изисквания и другите приложими разпоредбите на Директива 2014/53/EC. **National Restrictions** • The Belgian Institute for Postal Services and Telecommunications (BIPT) must be notified of any outdoor wireless link having a range exceeding 300 meters. Please check http://www.bipt.be for more details. • Draadloze verbindingen voor buitengebruik en met een reikwijdte van meer dan 300 meter dienen aangemeld te worden bij het Belgisch Instituut voor postdiensten en telecommunicatie (BIPT). Zie http://www.bipt.be voor meer gegevens. • Les liaisons sans fil pour une utilisation en extérieur d'une distance supérieure à 300 mètres doivent être notifiées à l'Institut Belge des services Postaux et des Télécommunications (IBPT). Visitez http://www.ibpt.be pour de plus amples détails.
Español (Spanish)	Por medio de la presente Zyxel declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/UE.
Čeština (Czech)	Zyxel tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.
Dansk (Danish)	Undertegnede Zyxel erklærer herved, at følgende udstyr udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU. **National Restrictions** • In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage. • I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.
Deutsch (German)	Hiermit erklärt Zyxel, dass sich das Gerät Ausstattung in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet.
Eesti keel (Estonian)	Käesolevaga kinnitab Zyxel seadme seadmed vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Ελληνικά (Greek)	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Zyxel ΔΗΛΩΝΕΙ ΟΤΙ εξοπλισμός ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EE.
English	Hereby, Zyxel declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Français (French)	Par la présente Zyxel déclare que l'appareil équipements est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/UE.
Hrvatski (Croatian)	Zyxel ovime izjavljuje da je radijska oprema tipa u skladu s Direktivom 2014/53/UE.
Íslenska (Icelandic)	Hér með lýsir, Zyxel því yfir að þessi búnaður er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipunar 2014/53/UE.
Italiano (Italian)	Con la presente Zyxel dichiara che questo attrezzatura è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/UE. **National Restrictions** • This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check http://www.sviluppoeconomico.gov.it/ for more details. • Questo prodotto è conforme alla specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all 'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN richiede una "Autorizzazione Generale". Consultare http://www.sviluppoeconomico.gov.it/ per maggiori dettagli.
Latviešu valoda (Latvian)	Ar šo Zyxel deklarē, ka iekārtas atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. **National Restrictions** • The outdoor usage of the 2.4 GHz band requires an authorization from the Electronic Communications Office. Please check http://www.esd.lv for more details. • 2.4 GHz frekvenèu joslas izmantoðanai ârpus telpâm nepiecieðama atïauja no Elektronisko sakaru direkcijas. Vairâk informâcijas: http://www.esd.lv.
Lietuvių kalba (Lithuanian)	Šiuo Zyxel deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 2014/53/ES Direktyvos nuostatas.
Magyar (Hungarian)	Alulírott, Zyxel nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvetõ követelményeknek és az 2014/53/EU irányelv egyéb elõírásainak.
Malti (Maltese)	Hawnhekk, Zyxel, jiddikjara li dan tagħmir jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/UE.
Nederlands (Dutch)	Hierbij verklaart Zyxel dat het toestel uitrusting in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.

Polski (Polish)	Niniejszym Zyxel oświadcza, że sprzęt jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/UE.
Português (Portuguese)	Zyxel declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/UE.
Românǎ (Romanian)	Prin prezenta, Zyxel declarǎ cǎ acest echipament este în conformitate cu cerinţele esenţiale şi alte prevederi relevante ale Directivei 2014/53/UE.
Slovenčina (Slovak)	Zyxel týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EÚ.
Slovenščina (Slovene)	Zyxel izjavlja, da je ta oprema v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Suomi (Finnish)	Zyxel vakuuttaa täten että laitteet tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska (Swedish)	Härmed intygar Zyxel att denna utrustning står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.
Norsk (Norwegian)	Erklærer herved Zyxel at dette utstyret er I samsvar med de grunnleggende kravene og andre relevante bestemmelser I direktiv 2014/53/EU.

Notes:

1. Although Norway, Switzerland and Liechtenstein are not EU member states, the EU Directive 2014/53/EU has also been implemented in those countries.

2. The regulatory limits for maximum output power are specified in EIRP. The EIRP level (in dBm) of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

List of national codes

COUNTRY	ISO 3166 2 LETTER CODE	COUNTRY	ISO 3166 2 LETTER CODE
Austria	AT	Liechtenstein	LI
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Croatia	HR	Malta	MT
Cyprus	CY	Netherlands	NL
Czech Republic	CZ	Norway	NO
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Serbia	RS
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Switzerland	CH
Ireland	IE	Sweden	SE
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

Safety Warnings

- Do not use this product near water, for example, in a wet basement or near a swimming pool.
- Do not expose your device to dampness, dust or corrosive liquids.
- Do not store things on the device.
- Do not obstruct the device ventilation slots as insufficient airflow may harm your device. For example, do not place the device in an enclosed space such as a box or on a very soft surface such as a bed or sofa.
- Do not install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- Do not open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks.
- Only qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Do not remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.
- Do not allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.

- Please use the provided or designated connection cables/power cables/ adaptors. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove it from the device and the power source, repairing the power adapter or cord is prohibited. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- CAUTION: Risk of explosion if battery is replaced by an incorrect type, dispose of used batteries according to the instruction. Dispose them at the applicable collection point for the recycling of electrical and electronic devices. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- The following warning statements apply, where the disconnect device is not incorporated in the device or where the plug on the power supply cord is intended to serve as the disconnect device,

  - For permanently connected devices, a readily accessible disconnect device shall be incorporated external to the device;

  - For pluggable devices, the socket-outlet shall be installed near the device and shall be easily accessible.

Environment Statement

Disposal and Recycling Information

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

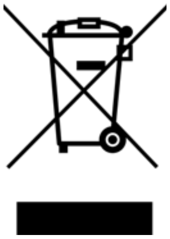
Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.



台灣

以下訊息僅適用於產品具有無線功能且銷售至台灣地區

- 取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。
- 使用無線產品時，應避免影響附近雷達系統之操作。高增益指向性天線只得應用於固定式點對點系統。
- 無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。
- 無線資訊傳設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中

以下訊息僅適用於產品屬於專業安裝並銷售至台灣地區

- 本器材須經專業工程人員安裝及設定，始得設置使用，且不得直接販售給一般消費者。

安全警告 - 為了您的安全，請先閱讀以下警告及指示 :

- 請勿將此產品接近水、火焰或放置在高溫的環境。
- 避免設備接觸 :
  - 任何液體 - 切勿讓設備接觸水、雨水、高濕度、污水腐蝕性的液體或其他水份。
  - 灰塵及污物 - 切勿接觸灰塵、污物、沙土、食物或其他不合適的材料。
- 雷雨天氣時，不要安裝，使用或維修此設備。有遭受電擊的風險。
- 切勿重摔或撞擊設備，並勿使用不正確的電源變壓器。
- 若接上不正確的電源變壓器會有爆炸的風險。
- 請勿隨意更換產品內的電池。
- 如果更換不正確之電池型式，會有爆炸的風險，請依製造商說明書處理使用過之電池。
- 請將廢電池丟棄在適當的電器或電子設備回收處。
- 請勿將設備解體。
- 請勿阻礙設備的散熱孔，空氣對流不足將會造成設備損害。
- 請插在正確的電壓供給插座 (如 : 北美 / 台灣電壓 110V AC，歐洲是 230V AC)。
- 假若電源變壓器或電源變壓器的纜線損壞，請從插座拔除，若您還繼續插電使用，會有觸電死亡的風險。
- 請勿試圖修理電源變壓器或電源變壓器的纜線，若有毀損，請直接聯絡您購買的店家，購買一個新的電源變壓器。
- 請勿將此設備安裝於室外，此設備僅適合放置於室內。
- 請勿隨一般垃圾丟棄。
- 請參閱產品背貼上的設備額定功率。
- 請參考產品型錄或是彩盒上的作業溫度。
- 產品沒有斷電裝置或者採用電源線的插頭視為斷電裝置的一部分，以下警語將適用 :
  - 對永久連接之設備，在設備外部須安裝可觸及之斷電裝置；
  - 對插接式之設備，插座必須接近安裝之地點而且是易於觸及的。

About the Symbols

Various symbols are used in this product to ensure correct usage, to prevent danger to the user and others, and to prevent property damage. The meaning of these symbols are described below. It is important that you read these descriptions thoroughly and fully understand the contents.

Explanation of the Symbols

SYMBOL	EXPLANATION
∿	Alternating current (AC): AC is an electric current in which the flow of electric charge periodically reverses direction.
⎓	Direct current (DC): DC if the unidirectional flow or movement of electric charge carriers.
⏚	Earth; ground: A wiring terminal intended for connection of a Protective Earthing Conductor.
⧈	Class II equipment: The method of protection against electric shock in the case of class II equipment is either double insulation or reinforced insulation.

Viewing Certifications

Go to http://www.zyxel.com to view this product's documentation and certifications.

Zyxel Limited Warranty

Zyxel warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized Zyxel local distributor for details about the Warranty Period of this product. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, Zyxel will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of Zyxel. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. Zyxel shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact your vendor. You may also refer to the warranty policy for the region in which you bought the device at http://www.zyxel.com/web/support_warranty_info.php.

Registration

Register your product online at www.zyxel.com to receive e-mail notices of firmware upgrades and related information.

Open Source Licenses

This product may contain in part some free software distributed under GPL license terms and/or GPL-like licenses.
To request the source code covered under these licenses:
for Zyxel Communication products, please go to: https://service-provider.zyxel.com/global/en/gpl-oss-software-notice
for Zyxel Network products, please go to: https://www.zyxel.com/form/gpl_oss_software_notice.shtml

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