

User's Guide

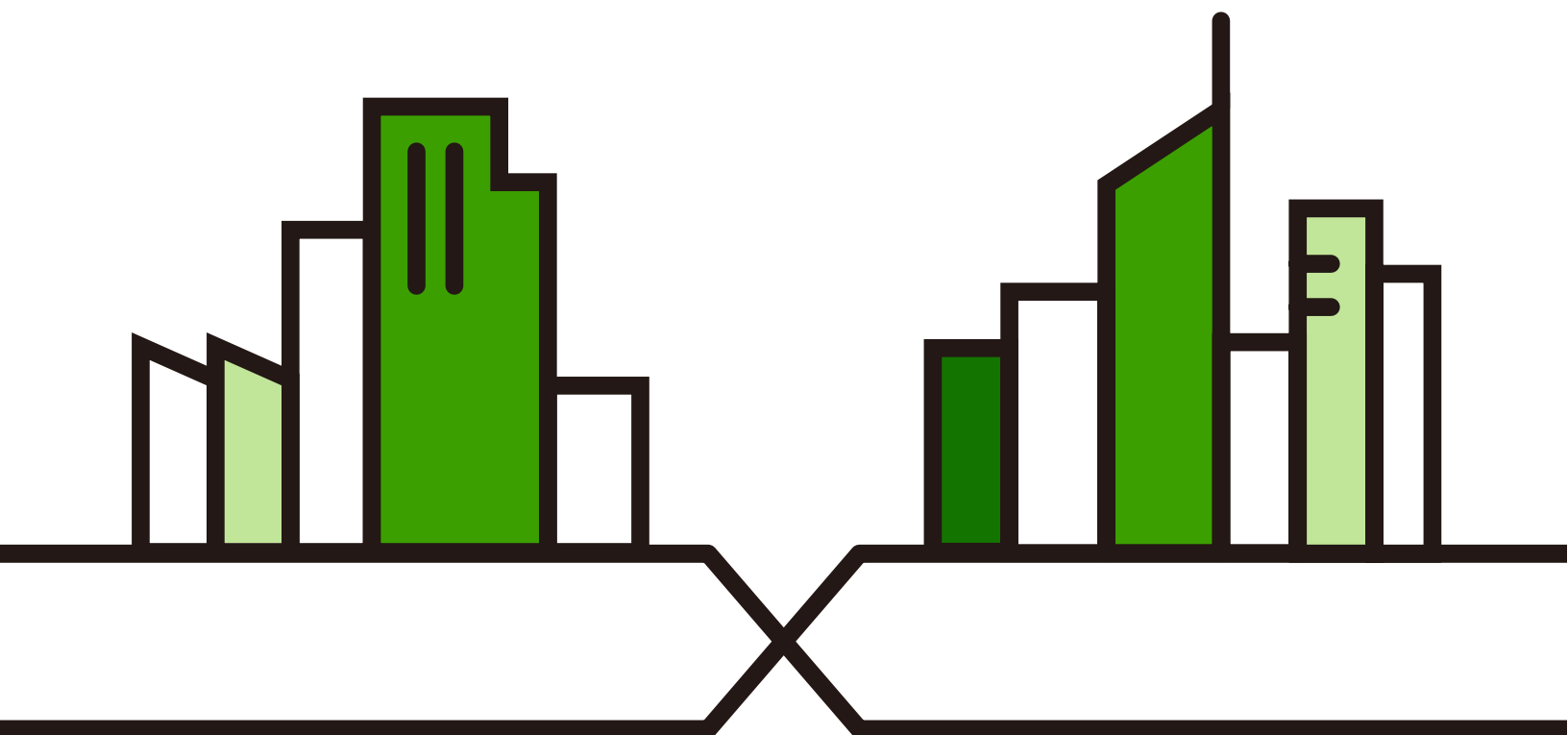
Leaf Plus

802.11be (WiFi 7) 5G/6G 2X2 Dual-Radio PTMP CPE

Default Login Details

Management IP Address	http://DHCP-assigned IP OR http://192.168.1.2
User Name	admin
Password	See Leaf Plus label

Version 7.30-7.40 Edition 1, 08/2026



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

- All models in this series may be referred to as the “Leaf Plus” in this guide.
- 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, **Maintenance > File Manager > Firmware Package** means you first click **Maintenance** in the navigation panel, then the **File Manager** sub menu and finally the **Firmware Package** tab to get to that screen.

Icons Used in Figures

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

Leaf Plus 	Router 	Switch 	Internet 
Server 	Access Point 	Laptop 	Desktop 
IP Camera 	IP Phone 		

Accessibility and Compatibility

Introduction

This User's Guide complies with the accessibility requirements set out in EAA (European Accessibility Act) (EU) 2019/882.

Accessibility makes this User's Guide usable for people with disabilities, including those with visual, auditory, motor, and cognitive impairments. Compatibility ensures this User's Guide works well with a wide range of devices, software, and assistive technologies.

Accessibility Feature – Screen Reader Support

The visually impaired may use screen readers, such as NVDA to read contents.

To use the screen reader, do the following:

- 1 Open your screen reader software.
- 2 Navigate to this User's Guide; the screen reader should automatically start reading the contents.
- 3 Use the keyboard shortcuts to navigate through this User's Guide (refer to the screen reader documentation).

Accessibility Feature – Keyboard Navigation

Keyboard navigation allows you to read the contents in this User's Guide without a mouse. Use the following keys.

- **Tab** key: navigate between interactive elements (for example, buttons, links, fields).
- **Enter** key: select or activate the highlighted item.
- Arrow keys: move between options in menus or lists.
- **Esc** (Escape) key: close pop-up windows or cancel actions.

How to Access Support Services

We offer the following ways to contact our Zyxel support team.

Email Support: support.zyxel.com

Send a detailed description of your issue, including any error messages, screenshots, or steps you have already taken to resolve the problem. The response time is typically within 24 hours.

User Forums and Community Support: <https://community.zyxel.com/en>

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CHAPTER 1

Introduction

1.1 Overview

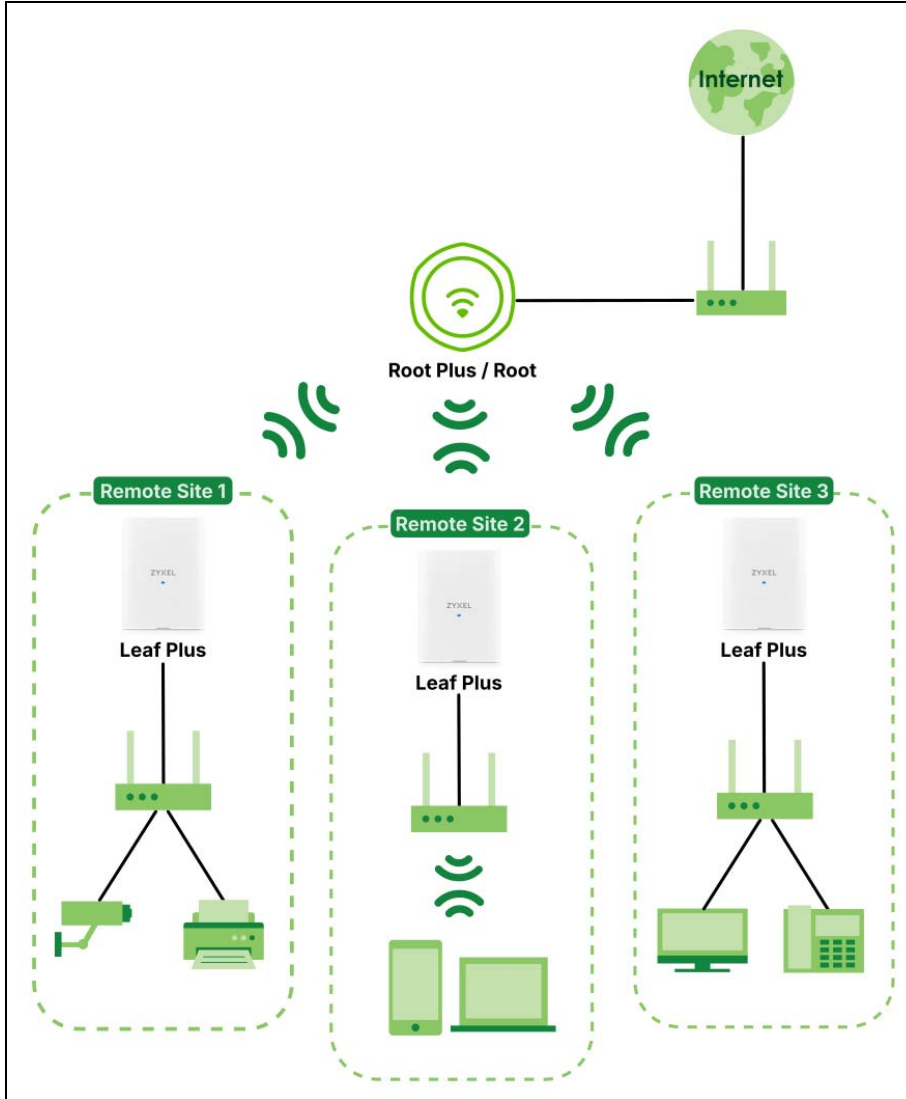
The Leaf Plus is an IEEE 802.11be (WiFi 7) 5 GHz / 6 GHz dual-radio Customer Premises Equipment (CPE) for Wireless Internet Service Provider (WISP) deployments. A WISP provides Internet access to homes and small business offices over wireless links, without requiring wired connections.

In a Point-to-Multipoint (PTMP) deployment, multiple Leaf Plus devices can connect to a single Root Plus or Root. Each Leaf Plus provides network connectivity for a home or small business office, where a router or gateway can be connected.

Note: At the time of writing, you can only pair Leaf Plus with Root Plus or Root.

The following figure shows the Leaf Plus's application in a typical WISP deployment. The Root (Plus) provides wireless Internet access to multiple Leaf Plus devices installed at locations such as homes or small business offices.

- At remote site 1, the Leaf Plus is connected to a router / gateway, which provides Internet access for home devices such as printers, and IP cameras.
- At remote site 2, the Leaf Plus is connected to a router / gateway, which provides Internet access for WiFi clients, such as smartphones and laptops.
- At remote site 3, the Leaf Plus is connected to a router / gateway, which provides Internet access for office devices such as desktop computers and IP phones.

Figure 1 Leaf Plus Application in a WISP Deployment

1.2 Leaf Plus Product Feature

The following table shows the feature of the Leaf Plus model. You can find the feature introductions in the later sections.

Table 1 Leaf Plus Feature Table

FEATURES	LEAF PLUS
Supported WiFi Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11ax IEEE 802.11be
Supported Frequency Bands	5 GHz 6 GHz

Table 1 Leaf Plus Feature Table (continued)

FEATURES	LEAF PLUS
Supported Channel Width	5G: 20 / 40 / 80 / 160 / 240 MHz 6G: 80 / 160 / 320 MHz
Available Security Modes	None / Enhanced-open / WEP / WPA2-MIX-Personal / WPA3-Personal
Number of WiFi Radios	2
BandFlex (5 GHz / 6 GHz)	No
Multi-Link Operation (MLO)	Yes
Wireless Bridge	Yes
Supported PoE Standards	IEEE 802.3af IEEE 802.3at
External Antennas	Yes
Internal Antennas	No
Antenna Switch	No
Smart Antenna	No
Console Port	No
Reset button	Yes
LED Locator	Yes
LED Suppression	Yes
NCC Discovery	Yes
AFC Report	Yes
ACS Report	Yes
Override Altitude	Yes
Ethernet Forwarding Mode	Yes
PTMP Bandwidth Control	Yes
Wireless Remote Capture	Yes
Email Daily Report	Yes
SNMP	Yes
Grounding	No
Power Jack	PoE
Maximum Number of Log Messages	512 event logs
Latest Firmware Version Supported	7.40

1.3 Dual-Radio

The Leaf Plus is equipped with two WiFi radios. The Leaf Plus uses the WiFi radios to transmit WiFi signals. This means you can configure different WiFi networks on the 5G/6G bands to operate simultaneously.

Note: Due to each country's regulations on frequency band usage, the available radio bands (5 GHz and 6 GHz) may differ by countries or markets the Leaf Plus products are sold to.

Note: A different channel should be configured for each WLAN interface to reduce the effects of radio interference.

Multi-Link Operation (MLO)

An AP can support multiple frequency bands (5 GHz and 6 GHz), but a WiFi client can only connect to the AP using one of these frequency bands. The other frequency band is unused. The client's data transmission speed depends on the frequency band they are connected to.

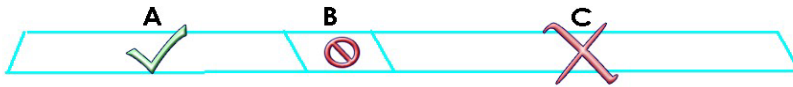
WiFi 7 MLO allows a WiFi client to connect to the AP using multiple frequency bands simultaneously. This increases speed and improves reliability of the WiFi connection. MLO makes WiFi 7 ideal for streaming 4K/8K videos, using augmented reality (AR), virtual reality (VR) applications and playing online games.

To use MLO, both the AP and the WiFi client have to support MLO.

Preamble Puncturing

In WiFi 6 and earlier, any interference would cause the entire WiFi channel to become unavailable. In the figure below, if part of the WiFi channel (B) experiences interference, the rest of the WiFi channel (C) becomes unavailable.

Figure 2 Without Preamble Puncturing



WiFi 7 preamble puncturing allows you to block the specific portion of the channel that is experiencing interference while continuing to use the rest of the WiFi channel. In the figure below, if part of the WiFi channel (B) experiences interference, the rest of the WiFi channel (C) is still available.

Figure 3 Preamble Puncturing Example



1.4 Leaf Plus Management Mode

The Leaf Plus can be managed in one of the following methods: remote management through Nebula Control Center (NCC) or troubleshooting through the local GUI. It is recommended to use NCC to manage the Leaf Plus for complete configuration and monitoring. The local GUI is intended for troubleshooting purpose only.

NCC

This is the primary means by which you manage the Leaf Plus in cloud managed mode (NCC). With NCC, you can remotely manage and monitor the Leaf Plus through a cloud-based network management system. See the NCC User's Guide for more information.

Local GUI

If your Leaf Plus is managed by NCC, use this only for troubleshooting if you cannot connect to the Internet. See [Accessing the Local GUI](#) for more information about the local GUI.

The following table shows the default IP addresses and purposes for different management modes.

Table 2 Leaf Plus Management Mode Comparison

MANAGEMENT MODE	DEFAULT IP ADDRESS	PURPOSE
Nebula Control Center	Dynamic Note: You can find the IP address in NCC at Site-wide > Devices > Access points > LAN IP .	For full configuration and monitoring
Local GUI in Full Settings Mode	Dynamic or Static (192.168.1.2)	For troubleshooting only
Local GUI in Installer Mode	Dynamic or Static (192.168.1.2)	For quick wireless bridge connection check during installation

Note: Once you register your Leaf Plus with NCC, the local GUI login password will change to an NCC assigned password. To view or change the NCC assigned password, log in to NCC and go to **Site-wide > Configure > Site settings > Local credentials**.

Figure 4 Site-wide > Configure > Site settings > Local credentials

Device configuration

Local credentials

Username: admin

Password: [masked]

Password must be at least 8 characters in length and symbols as follow: ~ ! @ # \$ % ^ & * () _ + ' - = { }

1.5 Good Habits for Managing the Leaf Plus

Do the following things regularly to make the Leaf Plus more secure and to manage it more effectively.

- Change the password often. Use a password that is not easy to guess and that consists of different types of characters, such as numbers and letters.
- Write down the password and put it in a safe place.
- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful if the Leaf Plus becomes unstable or even crashes. If you forget your password, you will have to reset the Leaf Plus to its factory default settings. If you backed up an earlier configuration file, you will not have to totally re-configure the Leaf Plus; you can simply restore your last configuration.
- Inspect the signal path periodically. Trees, vegetation, or newly constructed structures can gradually block the line of sight between the Leaf Plus and Root (Plus), reducing wireless link performance.

CHAPTER 2

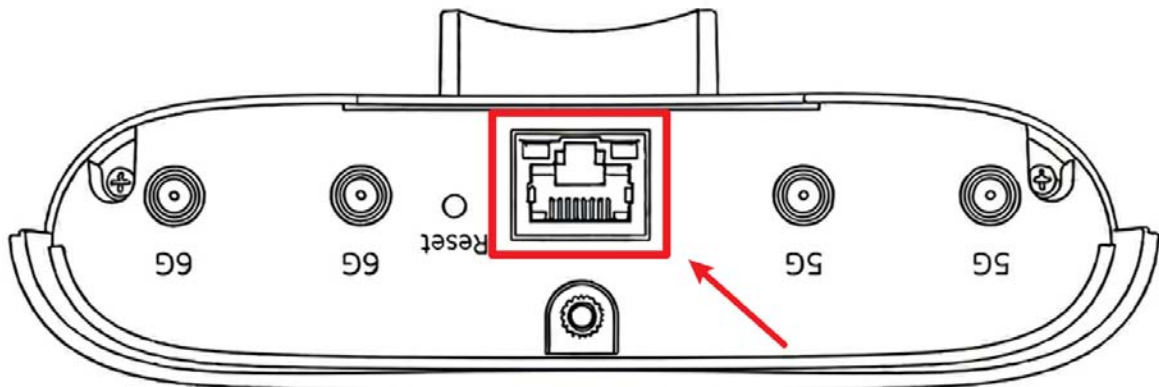
Hardware

See the Quick Start Guide for hardware installation and connections.

2.1 Port and Antennas

Locate the mounting handle on the back of the Leaf Plus. Remove the cover below the handle to access the PoE port inside. Place the Leaf Plus with the mounting handle facing upward and the port facing toward you.

Figure 5 Leaf Plus Port and Button



The following are the items on the ports panels for your Leaf Plus.

Table 3 Leaf Plus Ports and Buttons

LABEL	DESCRIPTION
PoE	Connect the PoE port to provide power and network access to the Leaf Plus.
Reset	Press the button for more than 5 seconds to return the Leaf Plus to the factory defaults.

The Leaf Plus has four RP-SMA female antenna connectors for external antennas: two for the 5 GHz band and two for the 6 GHz band. Connect all four antennas to the Leaf Plus before use.

Note: External antennas are not included and must be purchased separately. Zyxel recommends the ACCESSORY-ZZ0114F antenna. Customers may also use other compatible antennas that meet the required frequency bands and applicable regulatory requirements.

The Zyxel ACCESSORY-ZZ0114F antenna specifications are shown in the following table for your reference.

Table 4 Zyxel ACCESSORY-ZZ0114F Antenna Specifications

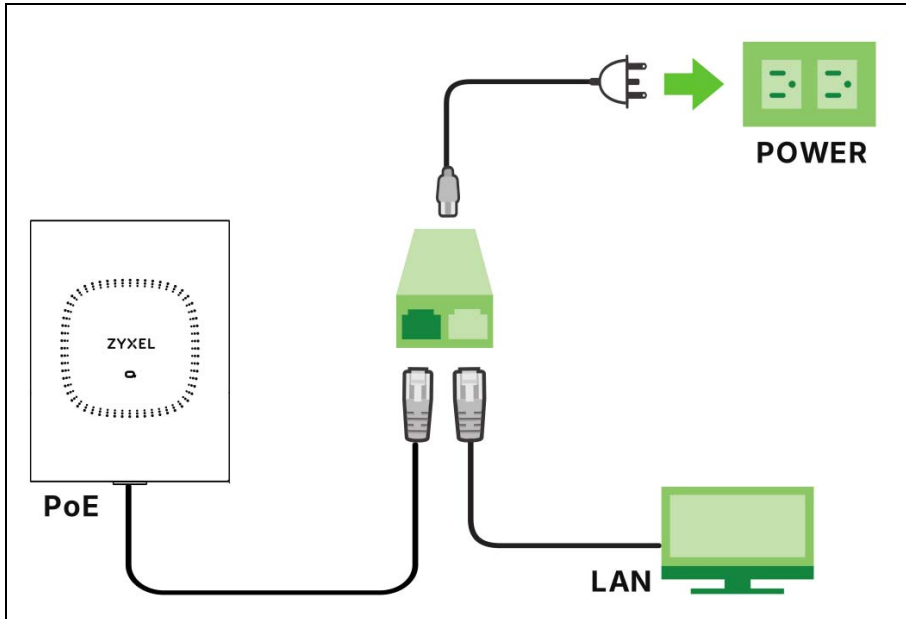
LABEL	SPECIFICATION			
Antenna	5G-1	5G-2	6G-1	6G-2
Connector	RP-SMA male	RP-SMA male	RP-SMA male	RP-SMA male
Polarization	-45	+45	-45	+45
Frequency	5150 to 5850	5150 to 5850	5925 to 7125	5925 to 7125
Peak Gain (dBi)	12.5	12.1	12.9	12.9
Voltage Standing Wave Ratio (VSWR)	< 2.5		< 3	
Half-Power Beamwidth (HPBW)-Azimuth	19.2 to 23.3°	16.8 to 24.1°	17.2 to 26.9°	17.2 to 25.7°
Half-Power Beamwidth (HPBW)-Elevation	14.3 to 21.8°	15.7 to 19.2°	12.9 to 16.1°	12.0 to 16.8°
Isolation (dB)	17		17	
Cross Isolation (dB)	25			
Power (Watts)	5			
Impedance (Ohms)	50			
Type	Patch			

2.2 PoE

Power Over Ethernet (PoE) is a technology that allows Ethernet cables to supply power and transmit data simultaneously through a single Ethernet cable.

The following figure shows a PoE injector supplying power to the Leaf Plus from a power outlet, and providing an Ethernet connection to a wired client (such as a desktop computer) through its LAN port.

Table 5 Leaf Plus's PoE Application



To view the Leaf Plus's supported PoE standards, see [Leaf Plus Feature Table](#). Use Ethernet cables that correspond to the PoE standard your Leaf Plus supports (see [PoE Standards](#)).

The supported PoE standards for Leaf Plus are:

- IEEE 802.3af Power over Ethernet (PoE)
- IEEE 802.3at Power over Ethernet + (PoE+)

The following table describes the PoE standards.

Table 6 PoE Standards

POE FEATURES	POE	POE+
IEEE Standard	IEEE 802.3af	IEEE 802.3at
PoE Type	Type 1	Type 2
PSE Port Power	PSE Port Power	PSE Port Power
IEEE Power Classification	Class 0, 1, 2, 3	Class 4
Maximum Power Per Port	15.4 W	30 W
Port Voltage Range	44 – 57 V	50 – 57 V
Cables	Cables	Cables
Twisted Pairs Used	2-pair	2-pair
Supported Cables	Cat 3 or better	Cat 5 or better

2.3 Mounting and Installer Mode

Installer Mode provides an interface for installers to quickly verify the wireless bridge connection between the Leaf Plus and Root (Plus) during installation. Installers can use a mobile phone browser to log in to this interface while mounting the Leaf Plus.

This interface displays real-time data, allowing installers to adjust the mounting position as needed. You can also verify uplink status, configure device height, and run speed tests to measure network throughput.

Use this mode:

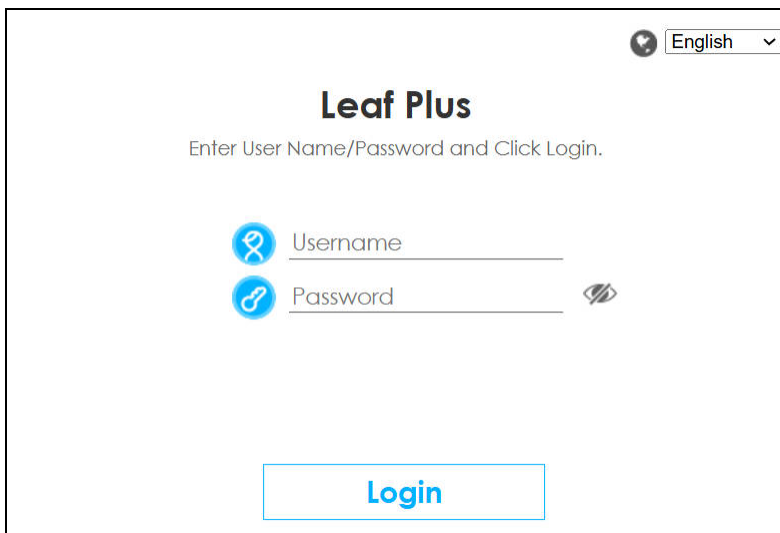
- During installation: to align the Leaf Plus and check uplink connection.
- When troubleshooting: to check signal strength and network throughput.

2.3.1 Accessing the Installer Mode

- 1 Enter the Username (default: "admin") and default password to log in to the local GUI.

The default password is unique to each Leaf Plus device and shown on the label. See [Accessing the Local GUI](#) for more information.

Note: Once you register your Leaf Plus with NCC, the local GUI login password will change to an NCC assigned password. To view or change the NCC assigned password, log in to NCC and go to **Site-wide > Configure > Site settings > Local credentials**.



Leaf Plus

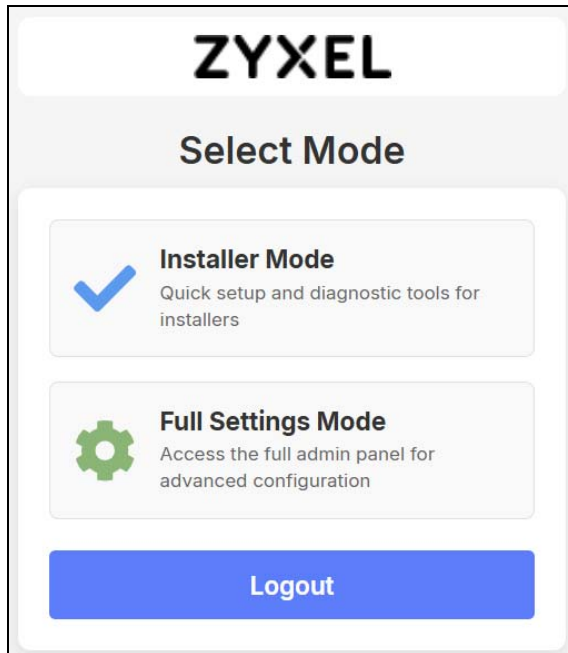
Enter User Name/Password and Click Login.

Username

Password

Login

- 2 Select the language you prefer for the local GUI. Click **Login**.
- 3 After logging in to the local GUI, select **Installer Mode**.



Note: **Full Settings Mode** is intended for troubleshooting purposes. If your Leaf Plus is registered with NCC, use NCC for complete configuration. See [Overview](#) for more information about the **Full Settings Mode**.

Figure 6 Installer Mode

ZYXEL

Device Overview

5GHz Adaptor

-83dBm

TX Rate

288Mbps

RX Rate

72Mbps

AFC Status

No data to display.

GPS Setting

Height (Meters)

Altitude above mean sea level, AMSL

☒ Auto ☐ Manual

Apply

Speed Test

☒ Schedule
(System time: 03:35:26 UTC+00:00)

Hours

Minutes

:

Invalid Hours (0-23)

Invalid Minutes (0-59)

Server IP Address

(Example: 172.16.0.100)

Invalid IP Address

Bandwidth

(Set to 0 for unlimited bandwidth)

Parallel Streams

(Connections)

Duration

(Seconds)

Port

☐ UDP ☒ TCP

☐ Reverse Mode

Start Speed Test

INIT 0.00Mbps/sec

Reconnect to Root-Plus

Reconnect

Logout

The following table describes the labels in this screen.

Table 7 Installer Mode Screen Summary

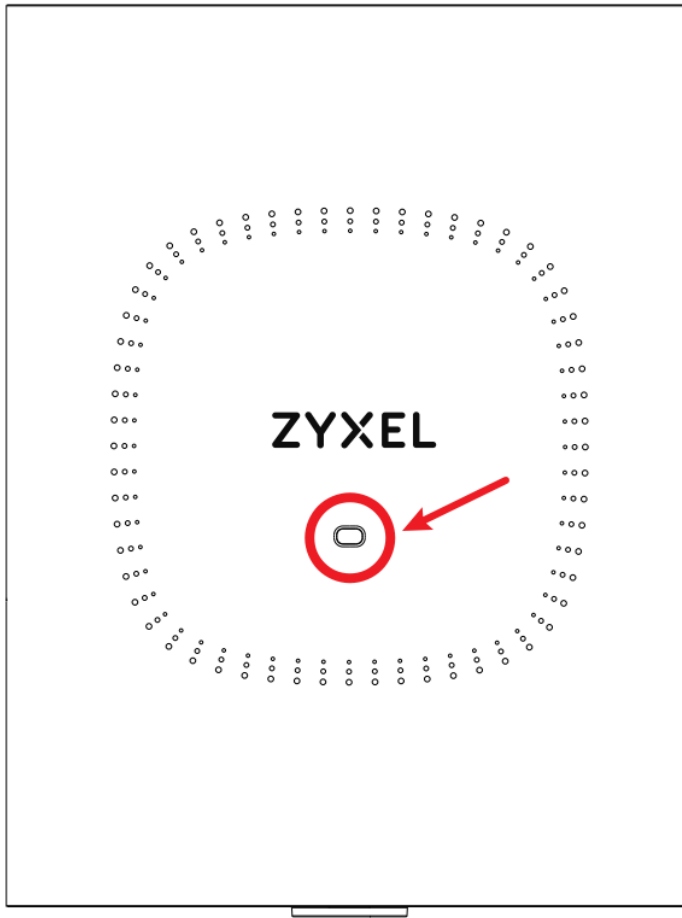
LABEL	DESCRIPTION
Device Overview	
5GHz Adaptor	This field displays the 5 GHz radio uplink RSSI (Received Signal Strength Indicator) in dBm. A value closer to 0 dBm indicates a stronger received signal. For the Leaf Plus to Root (Plus) wireless bridge connection, a signal strength between -65 dBm and -75 dBm is recommended. If the signal falls below -75 dBm, try the following: • Reduce the distance between the two Leaf Plus devices. • Realign the Leaf Plus devices so they face each other. • Remove any obstacles in the line of sight between the Leaf Plus devices.
6GHz Adaptor	This field displays the 6 GHz radio uplink RSSI (Received Signal Strength Indicator) in dBm. A value closer to 0 dBm indicates a stronger received signal. For the Leaf Plus to Root (Plus) wireless bridge connection, a signal strength between -65 dBm and -75 dBm is recommended. If the signal falls below -75 dBm, try the following: • Reduce the distance between the two Leaf Plus devices. • Realign the Leaf Plus devices so they face each other. • Remove any obstacles in the line of sight between the Leaf Plus devices.
TX Rate	This field displays the transmit data rate of the wireless uplink. The TX Rate and RX Rate should remain stable and similar in value. Note: Low or fluctuating values may indicate poor alignment, interference, or obstacles in the signal path.
RX Rate	This field displays the receive data rate of the wireless uplink. The TX Rate and RX Rate should remain stable and similar in value. Note: Low or fluctuating values may indicate poor alignment, interference, or obstacles in the signal path.
AFC Status	AFC (Automated Frequency Coordination) is a system that automatically assigns approved 6 GHz channels and maximum transmit power levels to outdoor devices based on their location and installation height. It prevents interference with other licensed services. • SUCCESS: The Leaf Plus successfully obtains an AFC grant and can operate on the approved 6 GHz channels and transmit power levels. Note: AFC is only supported in the United States and Canada. Devices located outside these two countries will display No data to display in this field.
GPS Setting	
Height (Meters)	Set the Leaf Plus's altitude Above Mean Sea Level (AMSL). • Auto: Obtain the altitude automatically from the GPS signal. Use this option when the GPS signal is strong and the detected height is accurate. • Manual: Configure the altitude manually. Use this option when the GPS signal is weak and cannot obtain the accurate height. Enter the height in meters. At the time of writing, the value accepts up to 4 digits with up to 2 decimal places (for example, 60 or 15.02).
Apply	Click Apply to save the height setting.
Speed Test	An iPerf server is a machine running the network testing tool iPerf in server mode so other devices can test network performance against it. Run an iPerf test to measure network performance such as bandwidth and throughput between an iPerf client, the Leaf Plus, and an iPerf server.
Schedule	Select this to set when the speed test runs automatically. If Schedule is not selected, the speed test runs immediately. Refer to the current System Time (UTC+0) when setting the schedule.

Table 7 Installer Mode Screen Summary (continued)

LABEL	DESCRIPTION
Hours	Specifies the system hour when the test starts. For example, hours 23 minutes 0 schedules the test to start at 11 PM system time. Enter a value between 0 to 23.
Minutes	Specifies the system minute when the test starts. For example, hours 5 minutes 15 schedules the test to start at 5:15 AM system time. Enter a value between 0 to 59.
Server IP Address	Specifies the IP address of the remote iPerf server that the Leaf Plus connects to.
Bandwidth	Sets the transmission bandwidth. The recommended value depends on the expected link capacity. The default value is set to 0 for unlimited bandwidth. 10 to 50 Mbps: For basic capacity links or initial testing 100 to 300 Mbps: For typical WiFi 5 (802.11ac) environment 500 Mbps to 1 Gbps: For high-performance WiFi 6 (802.11ax) environment
Parallel Streams	Sets the number of parallel data streams. Enter a value between 1 to 32. Recommended value: 20. Higher values can improve throughput on high-bandwidth links, while lower values are sufficient for lower-bandwidth links.
Duration	Specifies the test duration in seconds. Enter a value between 1 to 999. Recommended duration: 20 seconds.
Port	Specifies the UDP or TCP port number. The default port is 5201.
UDP	Sets the protocol to UDP to measure performance at a fixed transmission rate, allowing you to evaluate packet loss and jitter.
TCP	Sets the protocol to TCP to measure throughput. TCP automatically adjusts its transmission rate based on network conditions.
Reverse Mode	Select this to reverses the traffic direction. disable: The Leaf Plus sends traffic to the iPerf server. enable: iPerf server sends traffic to the Leaf Plus.
Start Speed Test	Click this to start the speed test. If the Schedule is not selected, the test runs immediately.
Reconnect to Root Plus	
Reconnect	If the wireless link is unstable, click this to reconnect to the Root (Plus) within the network area. The Leaf Plus disconnects from the currently connected Root (Plus), scans for available Root (Plus), and automatically reconnects to one.
Logout	Click this to log out and go back to the Select Mode screen.

2.4 Leaf Plus LED

Locate the mounting handle on the upper rear of the Leaf Plus. The LED is located on the lower front of the Leaf Plus.

Figure 7 Leaf Plus LED

The following are the LED descriptions for your Leaf Plus. For a complete description and simulation of LED behavior, see the [LED Simulator](#).

Table 8 Leaf Plus LED

COLOR		STATUS	DESCRIPTION
	Amber	Blinks between amber and green alternately (300 milliseconds interval).	The Leaf Plus is booting up.
	Green		
	Green	Steady On	The signal power is good and the Leaf Plus is connected to and registered with NCC.
	Green	Slow Blinking (On for 1 second, Off for 1 second)	The signal power is acceptable and the Leaf Plus is connected to and registered with NCC.
	Green	Fast Blinking (On for 300 milliseconds, Off for 300 milliseconds)	The signal power is weak and the Leaf Plus is connected to and registered with NCC.
	Amber	Steady On	The signal power is good and the Leaf Plus is not connected to NCC.
	Amber	Slow Blinking (On for 1 second, Off for 1 second)	The signal power is acceptable and the Leaf Plus is not connected to NCC.
	Amber	Fast Blinking (On for 300 milliseconds, Off for 300 milliseconds)	The signal power is weak and the Leaf Plus is not connected to NCC.

Table 8 Leaf Plus LED (continued)

COLOR		STATUS	DESCRIPTION
	Bright Blue	Steady On	The Leaf Plus successfully completed the boot up process.
	Red	Steady On	The Leaf Plus failed to complete the boot up process.
	Red	Fast Blinking (On for 50 milliseconds, Off for 50 milliseconds)	The Leaf Plus is undergoing firmware upgrade.
	Red	Slow Blinking (On for 1 second, Off for 5 seconds)	The Leaf Plus is connected to but not registered with NCC.
	Red	Cycle Blinking (Blink 3 times, Off for 3 seconds)	The Network Management Smart Mesh is disconnected or connecting.

2.5 Resetting the Leaf Plus

If you cannot access the Leaf Plus by any method, try restarting it by turning the power off and then on again. If you still cannot access the Leaf Plus or you forget the administrator password(s), you can reset the Leaf Plus to its factory-default settings. Any configuration files or shell scripts that you saved on the Leaf Plus should still be available afterwards.

Use the following procedure to reset the Leaf Plus to its factory-default settings. This overwrites the settings in the startup-config.conf file with the settings in the system-default.conf file.

Note: This procedure removes the current configuration.

- 1 Make sure the Power LED is on and not blinking.
- 2 Press and hold the **Reset** button with a pin until the Power LED begins to blink. (This usually takes about ten seconds.)
- 3 Release the **Reset** button, and wait for the Leaf Plus to restart.

You should be able to access the Leaf Plus using the local GUI's default settings.

CHAPTER 3

Nebula Management

3.1 Overview

As a WISP CPE, Leaf Plus is typically installed at locations such as homes or small business offices. We recommend managing it through [NCC \(Nebula Control Center\)](#).

This section shows you how to:

- [Register Leaf Plus on the NCC Portal](#)
- [Manage the NCC Dashboard](#)

3.1.1 Register Leaf Plus on the NCC Portal

Go to the NCC portal. Enter your existing Zyxel Account credentials, or log in using a social account such as **Google**, **Apple**, **Microsoft Entra ID**, or **Passkey**. Then, click **Sign in**.

If this is your first time logging in to the NCC portal, see [First-Time Login to the NCC Portal](#).

If this is not your first time logging in to the NCC portal, see [Subsequent Login to the NCC Portal](#).

First-Time Login to the NCC Portal

- Follow the Nebula setup wizard to create an organization and site.
 - The setup wizard helps you create an organization and site, add Nebula Devices, upgrade your Nebula Device firmware, and set up WiFi networks quickly.
 - The wizard appears automatically after you log in the first time or if there is no organization created under your account.
 - The wizard also starts when you click **Create organization** from the **Organization** drop-down list in the title bar.
- Enter the **Organization** and **Site names**. Select your **Country** and **Time zone**. Click **Next**.

01 — — — — —

With Nebula Control Center, you can efficiently manage multiple USG FLEX H firewalls along with other Zyxel devices in a single window, including on/off monitoring, firmware management, configuration backup/restore, and accessing the remote GUI.

To register your USG FLEX H firewall with Nebula, please provide your Organization and Site names.

You organize Zyxel devices in Nebula into Organizations, for example, "YourCompany" or "YourClient", and Sites, for example, "London Branch" or "Factory".

First step is to create your Organization and Site

Organization: Zyxel

Site: Alicia

Country: Taiwan

Time zone: Asia - Taipei (UTC +8.0)

Next

[Exit Wizard](#)

- Enter the **MAC address**, **Serial number**, and **Name** of the **Leaf Plus**. Click the **Add** icon , then click **Next**.

02 — — — — —

To add your device(s) you will need to input the MAC address, which is the number that looks like this: 7C:99:DD:39:AC:F0, and the Serial Number that looks similar to: S891345239054. These are located on the box and at the bottom of each device, it may appear as:

Serial Number: S/N:XXXXXXXXXXXX
MAC address: MAC:XXXXXXXXXXXX

Let's now add your device(s) to Nebula

MAC address	Serial number	Name	Model

Add

Back **Next**

You might just click Next to skip this step.

[Exit Wizard](#)

- 4 Select the trial license applicable to your Leaf Plus. You can also click **Activate All** to use all trial licenses. When finished, click **Next**.

Here's your license information [Exit Wizard](#)

03

Please review your license information.

We also offer 30 days free trial for each kind of services per demand.

Note: You can activate once per service type and cancel it anytime during the trial period.

Trial licenses ☒ Activate All

- ☒ **Nebula Pro Pack Trial**
A full feature set/service with all advanced functionality and management features of Nebula Control Center for device, site and organization.
- ☐ **Gold Security Pack Trial**
Apply to ATP/USG FLEX series.
Gold Security Pack includes Sandboxing, Web Filtering, Application Security, Malware Blocker, Intrusion Prevention, Reputation Filter, Geo Enforcer, Secure WiFi Service, Collaborative Detection & Response, SecuReporter, Security Profile Sync and Nebula Pro Pack.
- ☐ **Content Filter Pack Trial**
Apply to USG20(W)-VPN/USG FLEX 50/50AX.
Content Filter Pack include Web Filtering/Content Filtering, SecuReporter, and Security Profile Sync.
- ☐ **Elite Pack Trial**
Three-in-one security service license add-on(s) to SCR, USG LITE series which includes Web Filtering, Ransomware Prevention Premium and Nebula Pro Pack.
- ☐ **Connect & Protect Trial**
Apply to IAP500BE, NWA123ACv3, WACS00, WACS00H, NWA110AX, NWA210AX, NWA210AXv2, WAX510D, WAX610D, WAX630S, WAX650S, NWA110BE, NWA130BE, NWA210BE, NWA240BE, WBE510Q, WBE530, WBE630S, WBE660S & WBE665S.
Connect & Protect service is a cloud mode license focus on 5G hotspot with scenarios. Through de-identification and application throttle to ensure smooth & secure wireless experience for with clients.
- ☐ **Secure WiFi Trial**
Apply to ATP/USG FLEX series.
Secure tunnel & managed AP service

[Back](#) [Next](#)

- 5 Check if the **Organization summary** and **Devices** information are correct. Once finished, click **Go to Nebula Dashboard**. Your Leaf Plus is now registered on the NCC portal.

Let's take a look for what you had done [Exit Wizard](#)

Organization summary ☒

- Organization: Zyxel
- Site: Alicia
- Country: Taiwan
- Time zone: Asia - Taipei (UTC +8.0)

Devices ☒

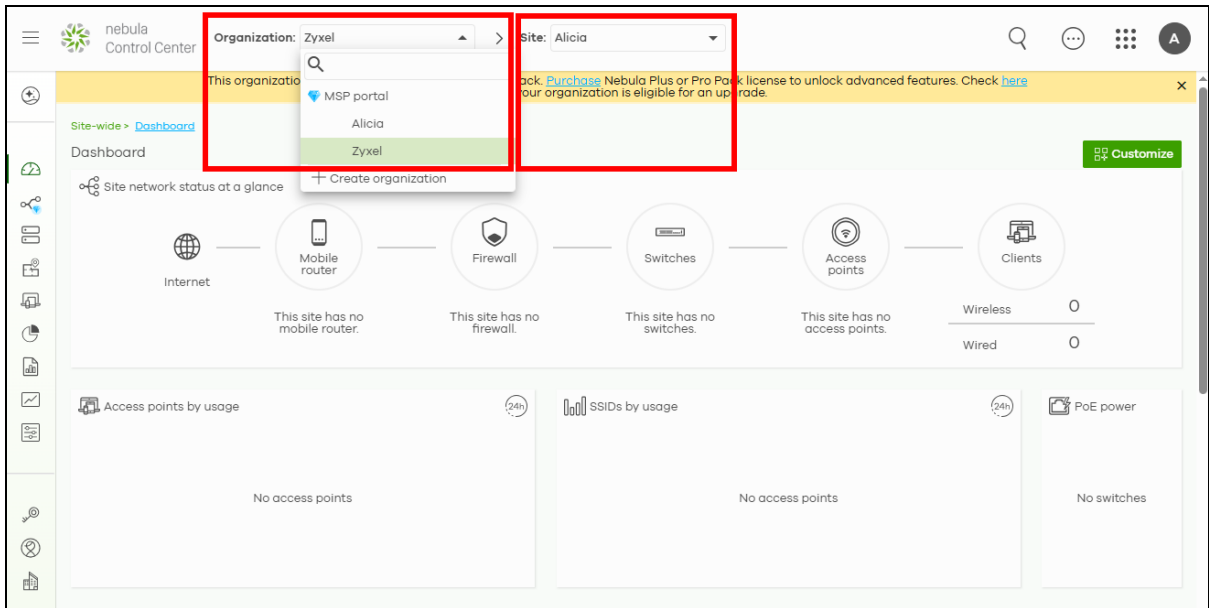
- Mobile router
- Firewall
- Switch(es)
- Access point(s)
- Accessory

Everything seems fine, ready to go?

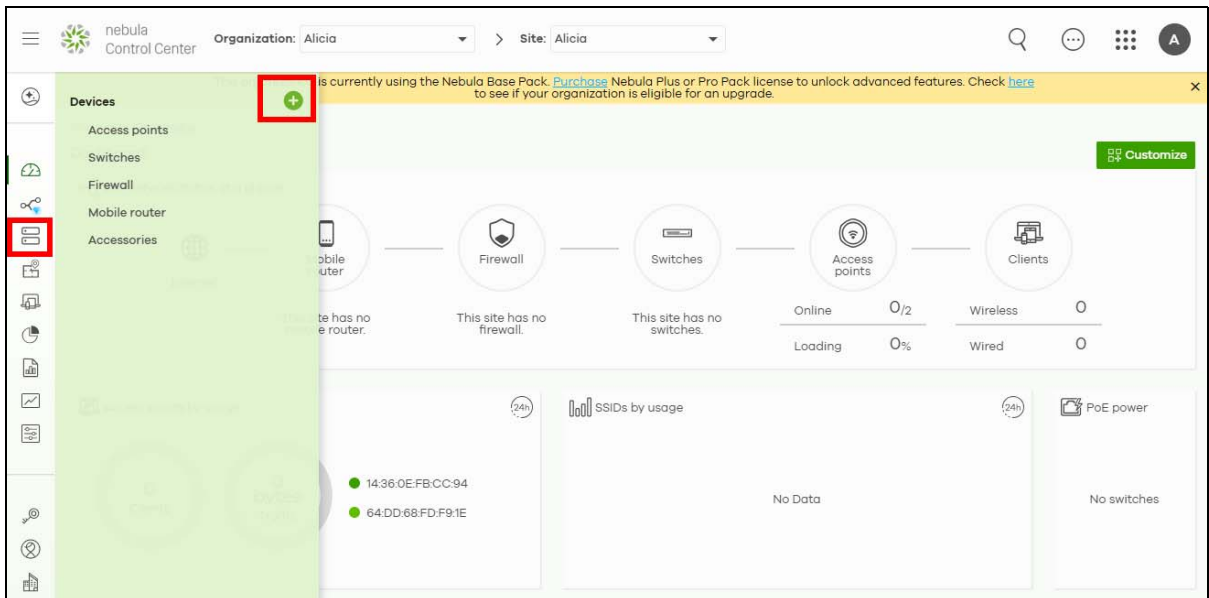
[Go to Nebula Dashboard](#)

Subsequent Login to the NCC Portal

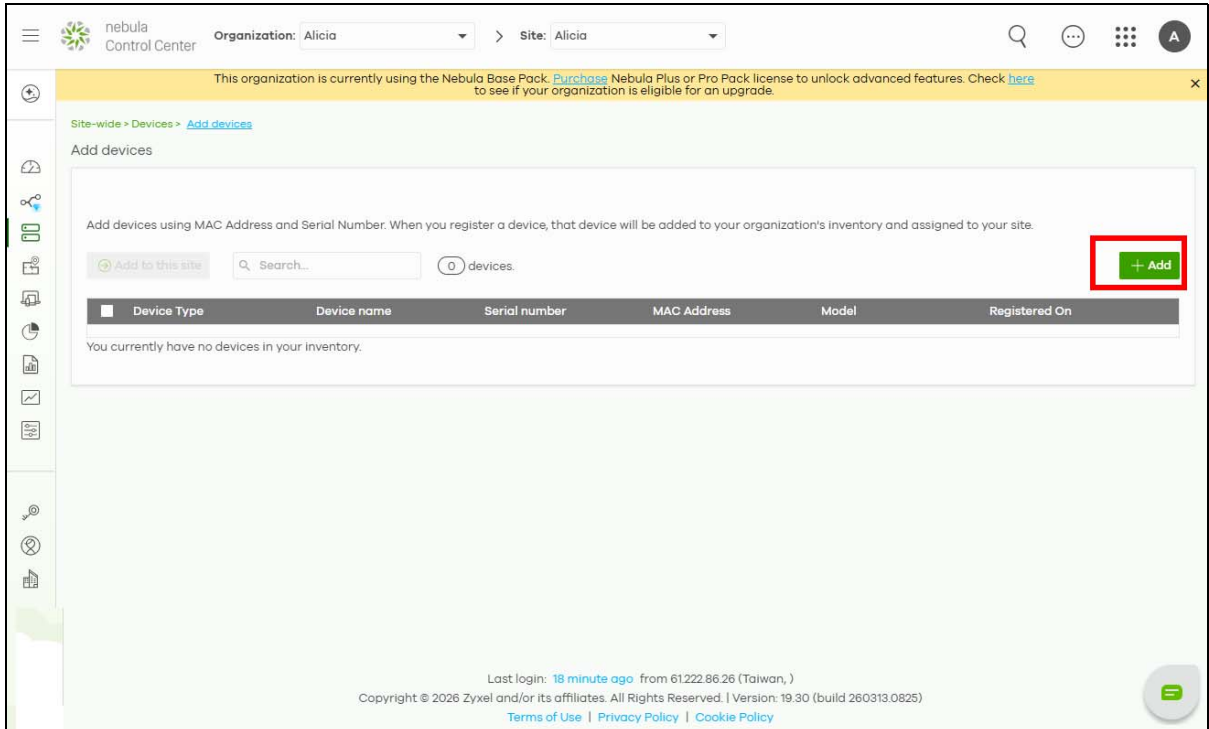
- 1 Select the **Organization** and **Site** where you want to register the Leaf Plus from the drop-down list at the top of the **Dashboard** screen.



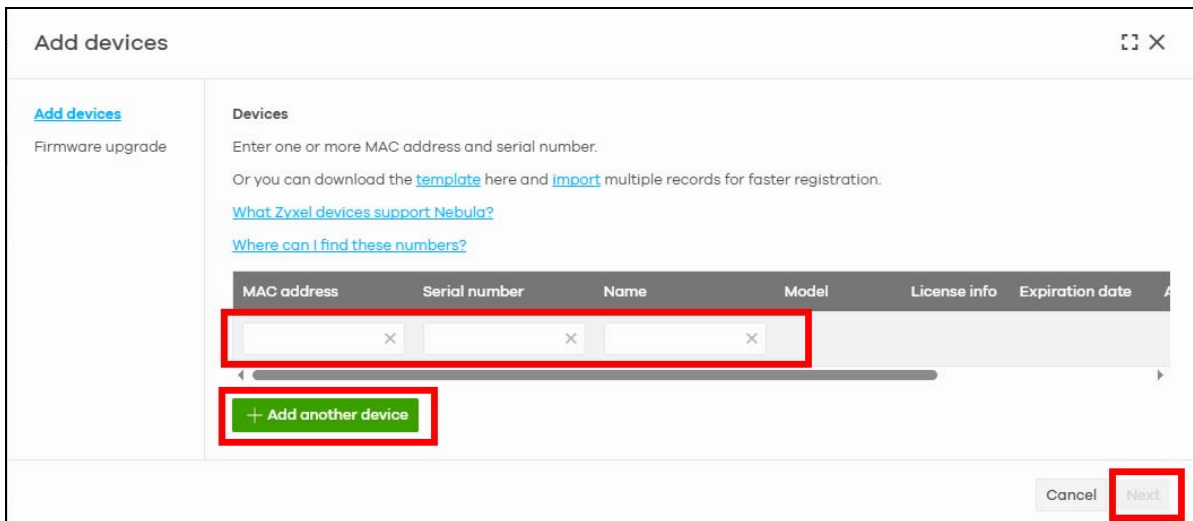
- 2 Click the **Devices** icon on the left-hand bar of the **Dashboard** screen. Click the **Add** icon (+) to register the Leaf Plus.



- 3 Click the **+Add** button on the right in the **Add devices** screen.



- 4 Enter the **MAC address**, **Serial number**, and **Name** of the Leaf Plus. The **Serial number** and **MAC address** can be found on the **Dashboard** screen or on the device back label on the Leaf Plus. Click the **Add another device** button to add more devices if needed. When finished, click **Next**.



- 5 Select **Yes** to upgrade the Leaf Plus to the latest firmware. Click **Finish** to complete the registration.

Add devices

[Firmware upgrade](#)

Firmware upgrade

If a newer firmware is available, do you want to upgrade it during the device registration?

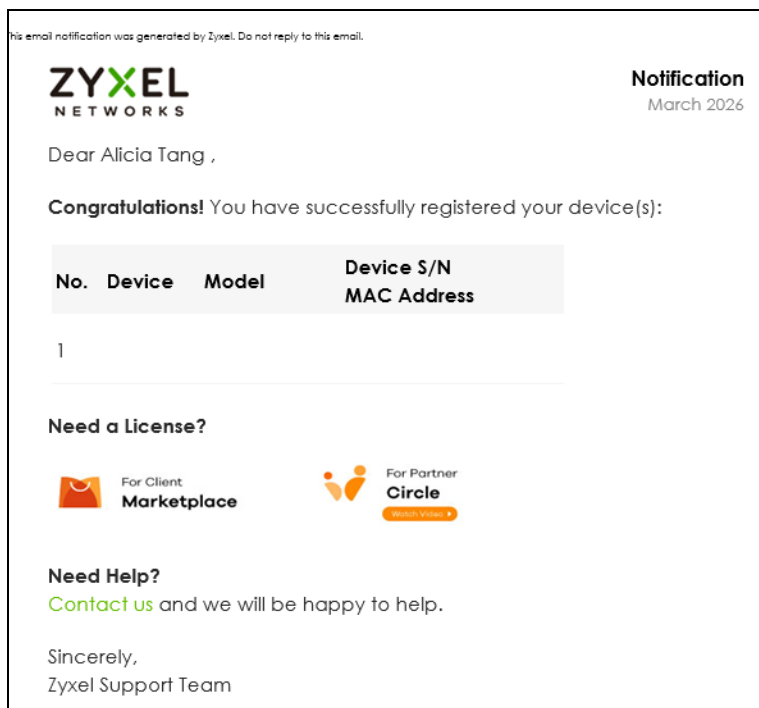
The upgrade may take a few minutes. Please check the LED status on your device(s).

☒ Yes

☐ No

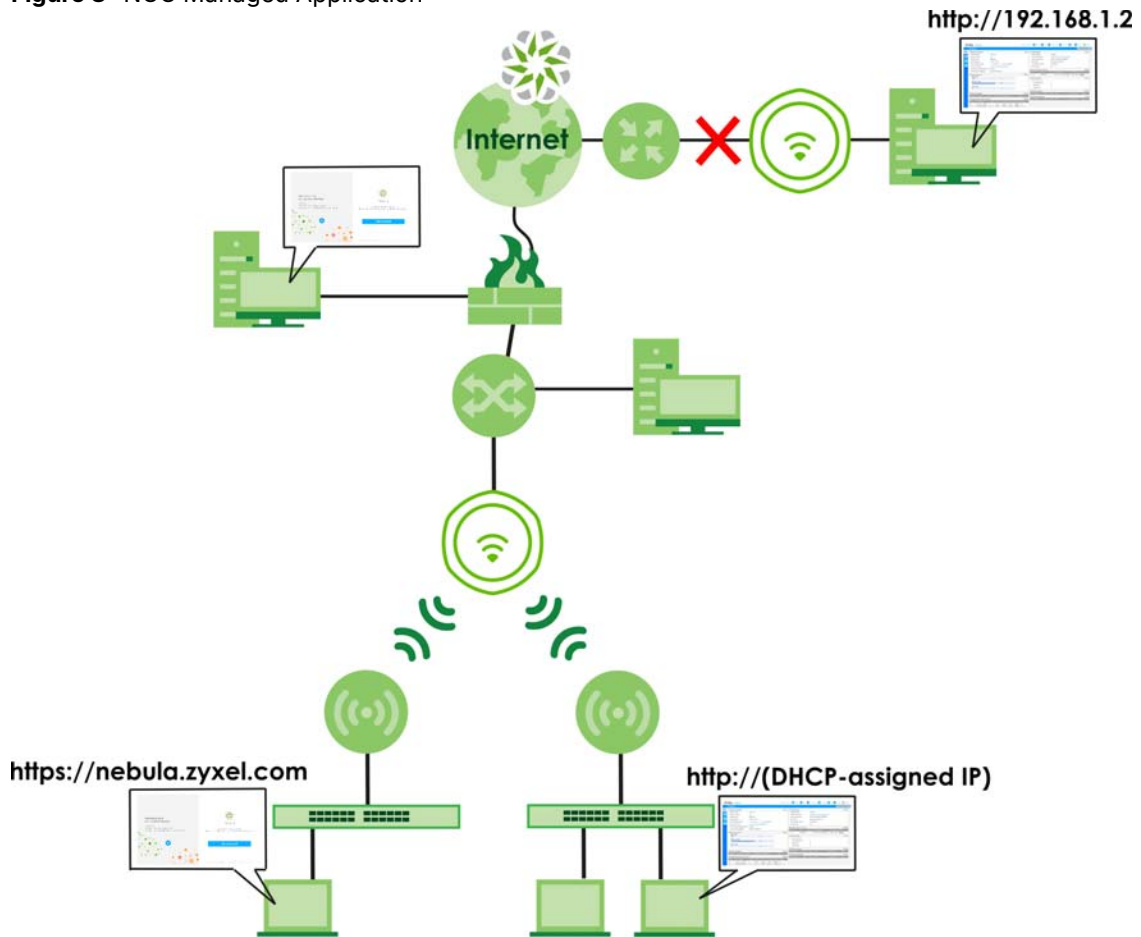
Cancel Previous **Finish**

- 6 An email will be sent to inform you that the Leaf Plus has been successfully registered on the NCC portal.



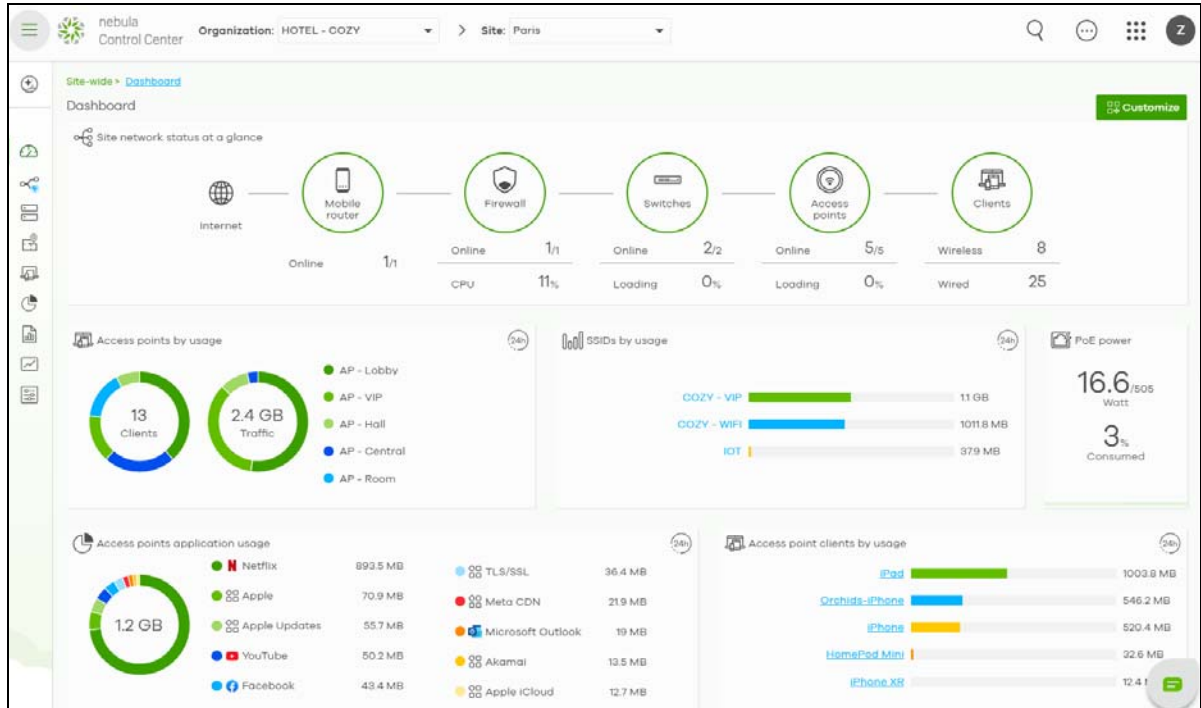
3.1.2 Manage the NCC Dashboard

The following figure is an example of the Leaf Plus application when it's managed by NCC.

Figure 8 NCC Managed Application

In this mode, you can manage and monitor the Leaf Plus through the Zyxel Nebula cloud-based network management system. This means you can manage devices remotely without the need of connecting to each device directly. It offers many features to better manage and monitor not just the Leaf Plus, but your network as a whole, including supported switches and gateways. Your network can also be managed through your smartphone using the Nebula Mobile app.

Figure 9 NCC Dashboard



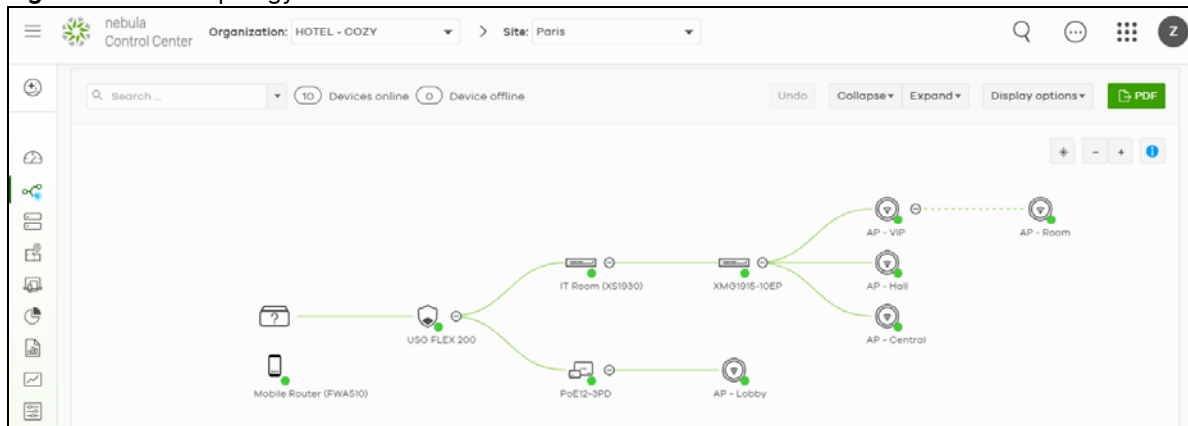
Each Leaf Plus must belong to a site which must be in an organization. You can configure each Leaf Plus device on its own or configure a set of Leaf Plus devices together in a site. You can also monitor groups of sites in organizations.

Table 9 Sites and Organizations

Organization			
Site A		Site B	
Device A-1	Device A-2	Device B-1	Device B-2

You can use the **Topology** in NCC which graphically presents your device and network statistics. It shows an overview of your network topology, as shown in the following figure. See the NCC User's Guide for how to configure Nebula managed devices.

Figure 10 NCC Topology



Note: Make sure your network firewall allows TCP ports 443, 4335, and 6667 as well as UDP port 123 so the Leaf Plus can connect to and sync with the NCC.

If you cannot access the Leaf Plus from the NCC, you need to access the local GUI by connecting directly to the LAN port of the PoE injector of the Leaf Plus, and check if the Leaf Plus's VLAN setting or IP address has changed.

Note: To find the Leaf Plus's current LAN IP address, go to **Site-wide > Devices > Access points** screen or the gateway to which the AP is connected. Alternatively, disconnect the gateway or disable its DHCP server function and use the Leaf Plus's default static LAN IP address (192.168.1.2).

Note: Once you register your device with NCC, the local GUI login password will change to an NCC assigned password. To view or change the NCC assigned password, log in to NCC and go to **Site-wide > Configure > Site settings > Local credentials**.

CHAPTER 4

Accessing the Local GUI

4.1 Overview

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

In order to use the local GUI you need to allow:

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

4.2 Accessing the Local GUI

This section shows how to access the local GUI for the first time.

- 1 Ensure your Leaf Plus hardware is properly connected. See the Quick Start Guide.
- 2 Access the local GUI login screen through a WiFi or wired connection.

2a WiFi connection

From a WiFi-enabled device, search for the Leaf Plus's initial SSID (Zyxel-xxxx, where xxxx is the last four characters of the MAC address on the device label.) and connect to it. The local GUI appears once your computer connects to the initial SSID. If the local GUI does not appear automatically, open your web browser and enter "https://1.1.1.1" or "https://setup.zyxel.com".

Note: If the Leaf Plus cannot connect to the Internet, use the Leaf Plus's DHCP-assigned IP address to access its local GUI. Check the connected router or DHCP server for the IP address of the Leaf Plus.

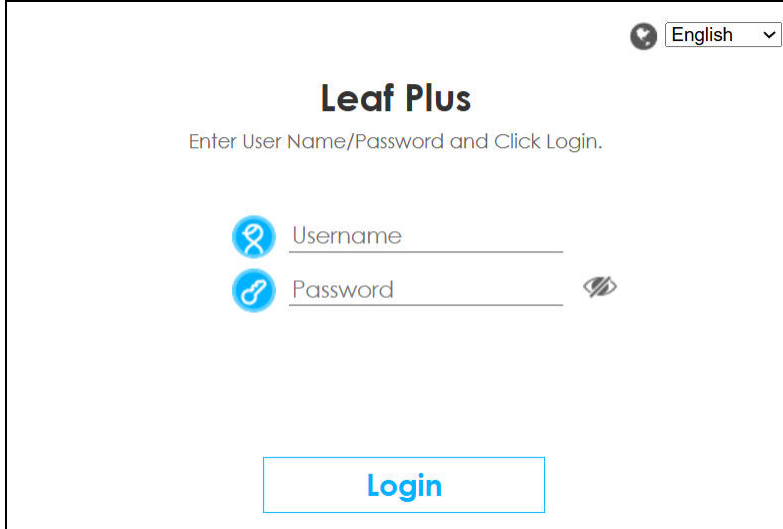
Note: The default security mode for the Leaf Plus's initial SSID is enhanced-open. Client devices without enhanced-open support cannot connect to the initial SSID. Alternatively, you can use a wired connection to access the local GUI.

2b Wired connection

Use Cat 5e or higher Ethernet cables to connect the Leaf Plus to the PoE port of a PoE injector that supports IEEE 802.3at or IEEE 802.3af, and connect your computer to the LAN port. Open your web

browser and enter the Leaf Plus's DHCP-assigned IP address or `http://192.168.1.2`. If the Leaf Plus and your computer are not connected to a DHCP server, ensure your computer's IP address is between "192.168.1.3" and "192.168.1.254".

- 3 Enter the user name (default: "admin") and default password. The default password is unique to each Leaf Plus and shown on the label.

The image shows the Leaf Plus login web interface. At the top right, there is a language selection dropdown menu currently set to "English". In the center, the text "Leaf Plus" is displayed in a large, bold font. Below it, a smaller instruction reads "Enter User Name/Password and Click Login." There are two input fields: the first is labeled "Username" with a blue user icon to its left, and the second is labeled "Password" with a blue key icon to its left and a toggle icon (an eye) to its right. At the bottom center, there is a blue "Login" button with a white border.

- 4 Select the language you prefer for the local GUI. Click **Login**.

PART I

Local GUI

CHAPTER 5

Full Settings Mode

5.1 Overview

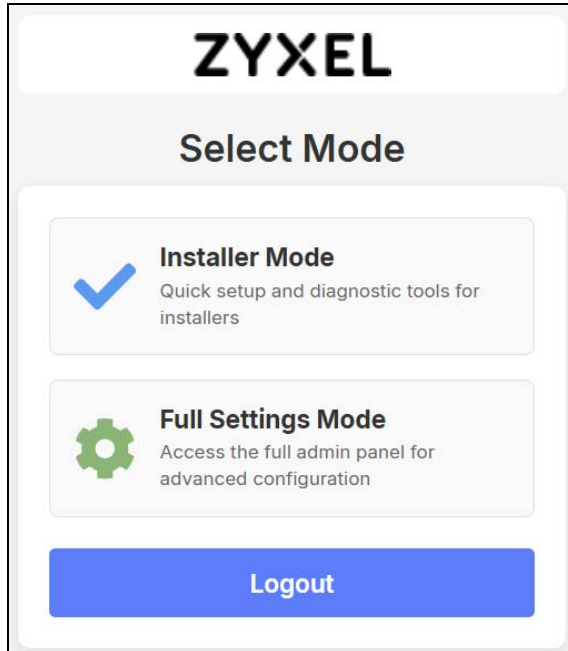
If your Leaf Plus is managed by NCC, use the local GUI Full Settings Mode for troubleshooting only if your Leaf Plus cannot connect to the Internet. Check the [Cloud Control Status](#) on the dashboard for the Internet and NCC connection.

You can access the following screens through the local GUI Full Settings Mode:

- **Dashboard**
- **Maintenance > File Manager > Firmware Package**
- **Maintenance > File Manager > Shell Script**
- **Maintenance > Legal and Regulatory > Legal and Regulatory**
- **Maintenance > Diagnostics > Diagnostics**
- **Maintenance > Diagnostics > Remote Capture**
- **Maintenance > Log > View Log**
- **Maintenance > Reboot > Reboot**

5.1.1 Accessing the Full Settings Mode

After logging in to the local GUI, select **Full Settings Mode**. For more information on accessing the local GUI, see [Accessing the Local GUI](#).



Note: **Full Settings Mode** is intended for troubleshooting purposes. If your Leaf Plus is registered with NCC, use NCC for complete configuration.

5.1.2 Navigating Full Settings Mode

The following sections introduce the menus and screens in the Leaf Plus's **Full Settings Mode**.

5.1.2.1 Title Bar

The title bar provides some useful links that always appear over the screens below, regardless of how deep into the local GUI you navigate.

Figure 11 Title Bar



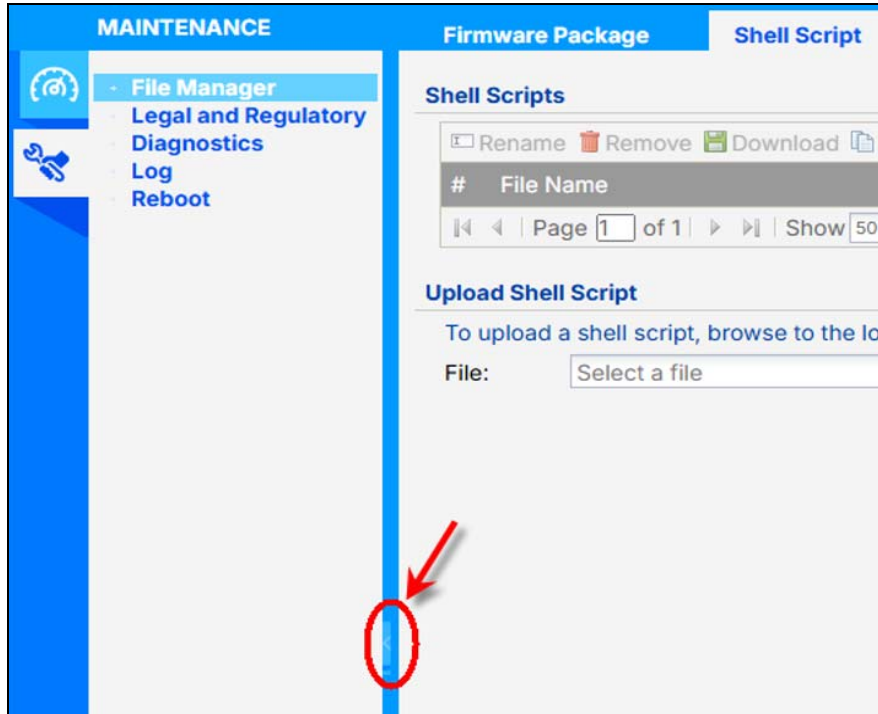
The icons provide the following functions.

Table 10 Title Bar: local GUI Icons

LABEL	DESCRIPTION
Help	Click this to open the help page for the current screen.
Community	Click this to log into the Zyxel forum to post questions, contribute to a discussion and get feedback on Leaf Plus.
Logout	Click this to log out of the local GUI.
nebula	Click this to open the NCC web site login page in a new tab or window.

5.1.2.2 Navigation Panel

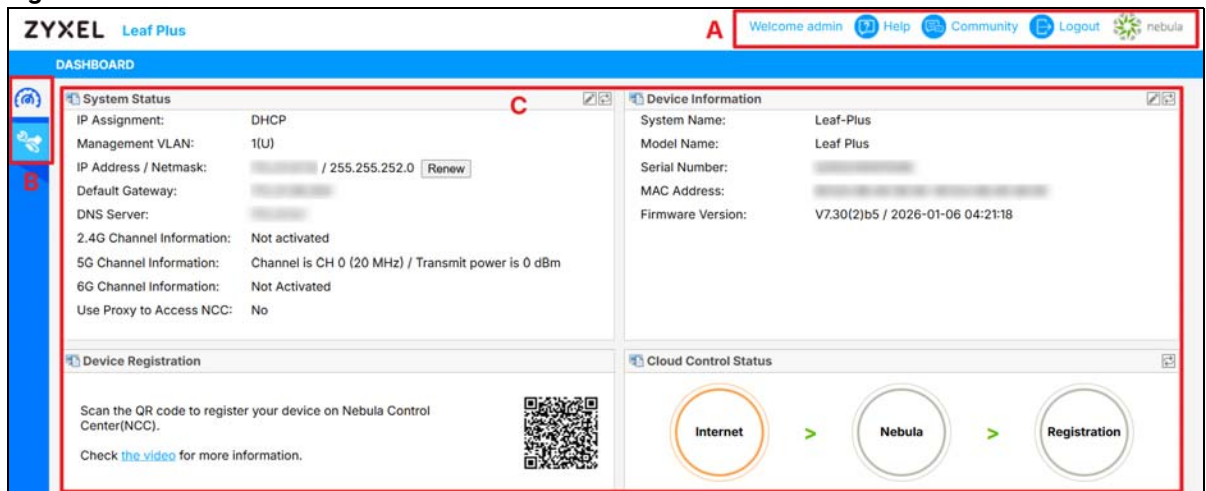
Use the navigation panel on the left to open screens to configure Leaf Plus features. Click the arrow in the middle of the right edge of the navigation panel to hide the navigation panel menus or drag it to resize them.

Figure 12 Navigation Panel**Table 11** Navigation Panel Menus

LABEL	DESCRIPTION
Dashboard	Displays general device information.
Maintenance	Configure firmware files, run diagnostics, and reboot the device.

5.1.2.3 Dashboard

The dashboard displays information such as general device information, system status, Leaf Plus registration on NCC, and cloud control status in widgets that you can rearrange to suit your needs.

Figure 13 Local GUI's Dashboard

The local GUI's main screen is divided into these parts:

- **A** – Title Bar

- **B** – Navigation Panel
- **C** – Main Window

5.1.2.4 Maintenance

Use the maintenance menu screens to manage configuration and firmware files, run diagnostics, and reboot the Leaf Plus.

Table 12 Maintenance Menu Screens Summary

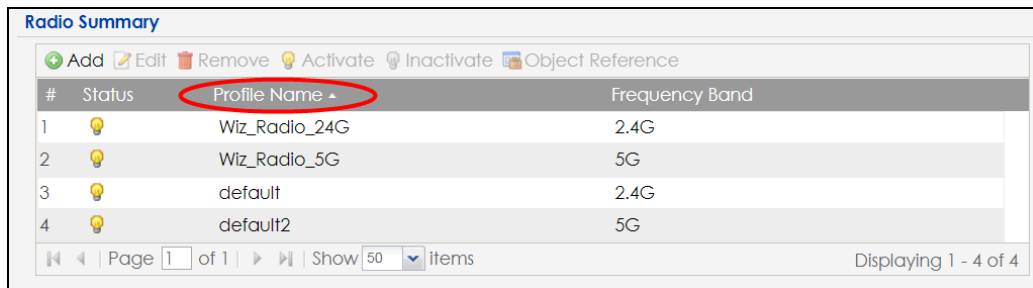
FOLDER OR LINK	TAB	FUNCTION
File Manager	Firmware Package	View the current firmware version and to upload firmware.
File Manager	Shell Script	Manage and run shell script files for the Leaf Plus.
Legal and Regulatory	Legal and Regulatory	View the legal and regulatory information of the Leaf Plus.
Diagnostics	Diagnostics	Collect diagnostic information.
Diagnostics	Remote Capture	Capture network traffic going through the Leaf Plus and output the captured packets to an analyzer.
Log	View Log	Display log entries for the Leaf Plus.
Reboot	Reboot	Restart the Leaf Plus.

5.1.3 Manipulating Table Display

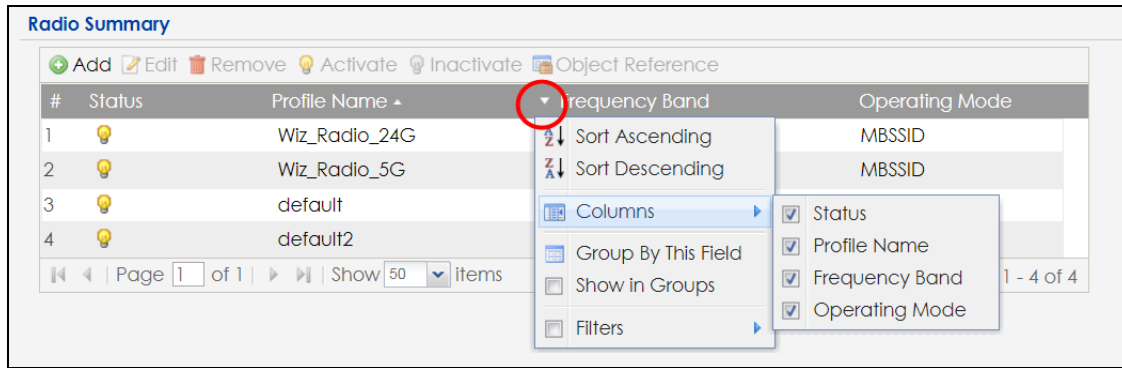
The local GUI tables and lists are quite flexible and provide several options for how to display their entries.

Here are some of the ways you can manipulate the local GUI tables.

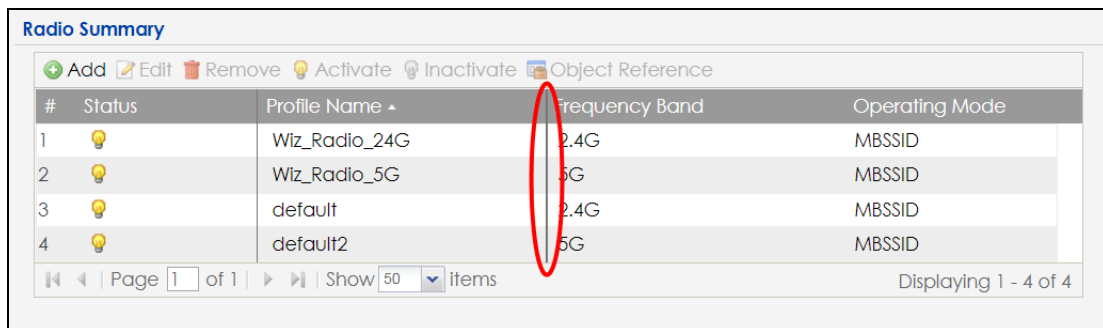
- 1 Click a column heading to sort the table's entries according to that column's criteria.



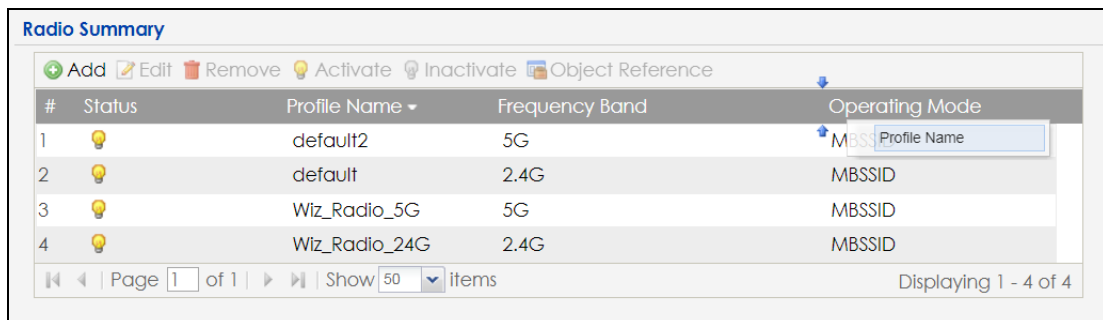
- 2 Click the down arrow next to a column heading for more options about how to display the entries. The options available vary depending on the type of fields in the column. Here are some examples of what you can do:
 - Sort in ascending alphabetical order
 - Sort in descending (reverse) alphabetical order
 - Select which columns to display
 - Group entries by field
 - Show entries in groups
 - Filter by mathematical operators (<, >, or =) or searching for text.



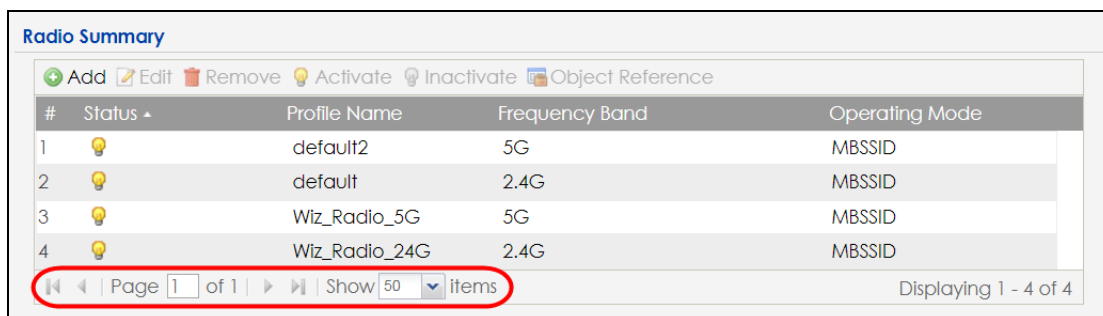
- 3 Select a column heading cell's right border and drag to re-size the column.



- 4 Select a column heading and drag and drop it to change the column order. A green check mark displays next to the column's title when you drag the column to a valid new location.



- 5 Use the icons and fields at the bottom of the table to navigate to different pages of entries and control how many entries display at a time.



CHAPTER 6

Full Settings Mode Dashboard

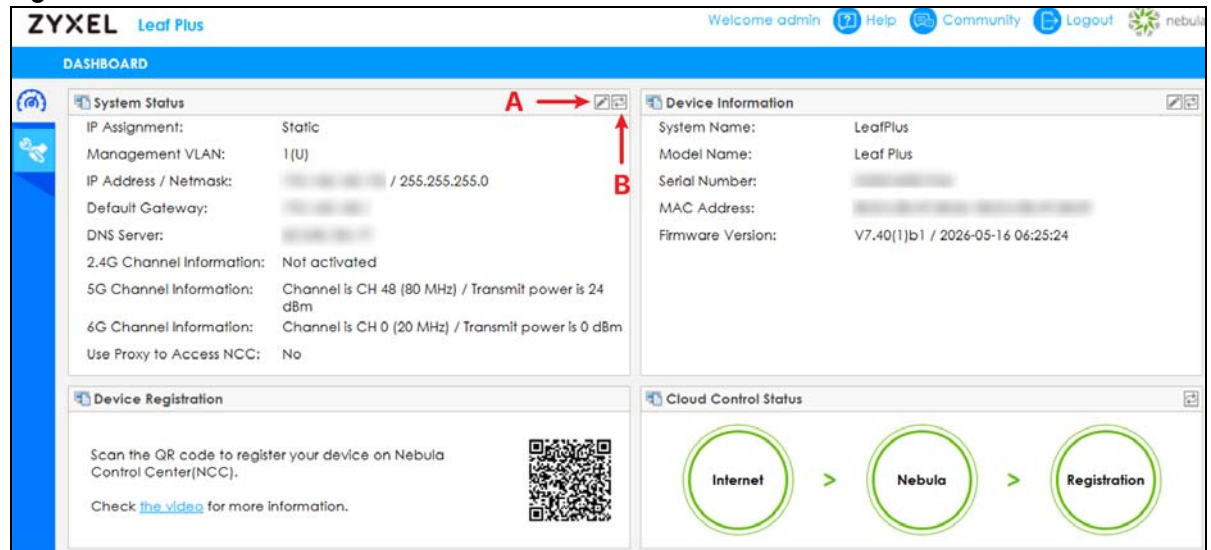
6.1 Overview

This screen displays general device information, and NCC information in widgets that you can rearrange to suit your needs. You can also edit and refresh individual widgets.

The menus and options are fewer in local GUI, The rest of the Leaf Plus's features must be configured through NCC.

Note: After registering the Leaf Plus with NCC, we recommend managing and configuring it exclusively through NCC. Using both NCC and the local GUI may cause configuration settings to overwrite one another, making configuration changes difficult to track.

Figure 14 Dashboard



The following table describes the labels in this screen.

Table 13 Dashboard

LABEL	DESCRIPTION
Edit (A)	Click this to open the setup window to configure settings such as the IP address, VLAN, system name, and other network parameters.
Refresh Now (B)	Click this to update the widget's information immediately.

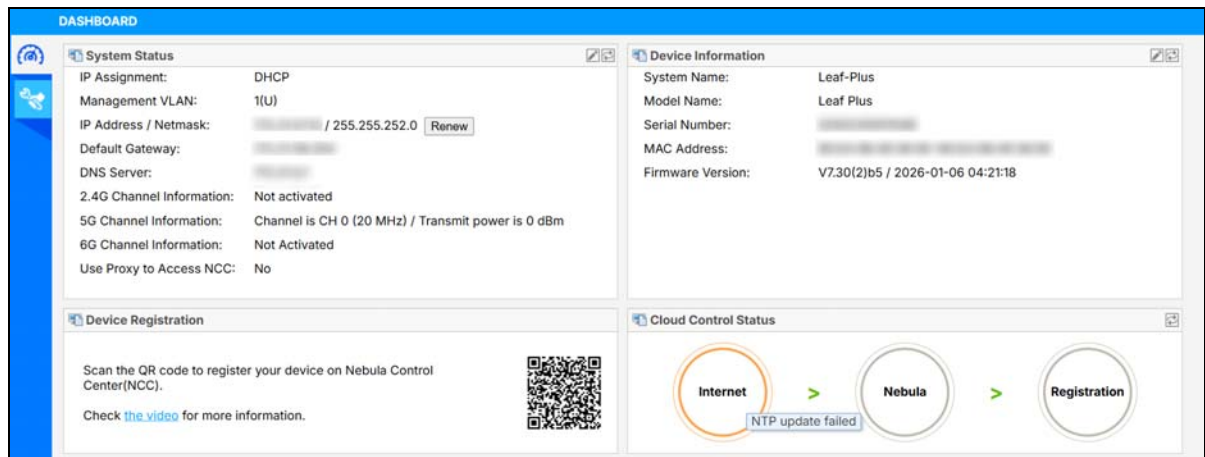
Table 13 Dashboard (continued)

LABEL	DESCRIPTION
System Status	
IP Assignment	This field displays how the interface gets its IP address. Static – This interface has a static IP address. DHCP Client – This interface gets its IP address from a DHCP server.
Management VLAN	This field displays the management VLAN ID for the Leaf Plus.
IP Address / Netmask	This field displays the current IP address and subnet mask assigned to the interface. If the IP address is 0.0.0.0, the interface is disabled or did not receive an IP address and subnet mask through DHCP. If the interface has a dynamic IP address, click Renew to update the IP address for the interface.
Default Gateway	This field displays the IP address of the default outgoing gateway.
DNS Server	This field display the IP address of the DNS server.
2.4G Channel Information	This shows Not activated because the Leaf Plus does not have a 2.4 GHz radio.
5G Channel Information	This field displays the channel number the Leaf Plus is using and its output power in the 5 GHz spectrum. This shows Not activated if the wireless LAN is disabled.
6G Channel Information	This field displays the channel number the Leaf Plus is using and its output power in the 6 GHz spectrum. This shows Not activated if the wireless LAN is disabled.
Use Proxy to Access NCC	This displays whether the Leaf Plus uses a proxy server to access the NCC.
Device Information	
System Name	This field displays the name used to identify the Leaf Plus on any network.
Model Name	This field displays the model name of this Leaf Plus.
Serial Number	This field displays the serial number of the Leaf Plus.
MAC Address	This field displays the MAC address of the Leaf Plus.
Firmware Version	This field displays the firmware version of the Leaf Plus.

Table 13 Dashboard (continued)

LABEL	DESCRIPTION
Device Registration	This field displays the information on NCC registration.
Cloud Control Status	This field displays: - The Leaf Plus Internet connection status. - The connection status between the Leaf Plus and NCC. - The Leaf Plus registration status on NCC. Mouse over the circles to display detailed information. To pass your Leaf Plus management to NCC, first make sure your Leaf Plus is connected to the Internet. Then go to NCC and register your Leaf Plus. 1. Internet Green – The Leaf Plus is connected to the Internet. Orange – The Leaf Plus is not connected to the Internet. 2. Nebula Green – The Leaf Plus is connected to NCC. Orange – The Leaf Plus is not connected to NCC. 3. Registration Green – The Leaf Plus is registered on NCC. Gray – The Leaf Plus is not registered on NCC.

If the Leaf Plus cannot connect to the Internet or to NCC, move the mouse over the status circle to check the error message. See the NCC (Nebula Control Center) User's Guide for more information.



6.2 Edit System Status

Use this screen to configure the Leaf Plus's network setting and allow a proxy to access NCC.

6.2.1 Network

Use this screen to configure the VLAN ID, IP address and time server. To access this screen, click **Dashboard > Edit (System Status) > Network**.

Figure 15 Dashboard > Edit (System Status) > Network

Each field is described in the following table.

Table 14 Dashboard > Edit (System Status) > Network

LABEL	DESCRIPTION
Management VLAN	
Configure in NCC: Site-wide > Devices > Access points > Select the device > Edit LAN IP	
VLAN ID	Enter a VLAN ID for the Leaf Plus to use to tag traffic originating from this SSID. Make sure your VLAN settings allow the Leaf Plus to connect to the Internet so you could manage it with NCC.
Tag Type	Select tagged to make the Leaf Plus adds the Management VLAN ID to outbound traffic transmitted through its Ethernet port. If you select Untagged , the outbound traffic transmitted through the Leaf Plus Ethernet port will NOT be tagged with the Management VLAN ID.
IP Address	
Configure in NCC: Site-wide > Devices > Access points > Select the device > Edit LAN IP	
IP Address Assignment	Select DHCP to make the interface a DHCP client and automatically get the IP address, subnet mask, gateway and DNS Server IP address from a DHCP server. Select Static IP to specify the IP address, subnet mask, gateway and DNS server IP address manually.
Use Fixed DNS Server IP Address	Select this if you have a preferred DNS server that you want to specify manually even if the IP type is DHCP. Setting a fixed DNS server IP address may help if you experience unreliable DNS resolution.
IP Address	Enter the IP address for this interface.
Subnet Mask	Enter the subnet mask of this interface in dot decimal notation. The subnet mask indicates what part of the IP address is the same for all computers in the network.

Table 14 Dashboard > Edit (System Status) > Network

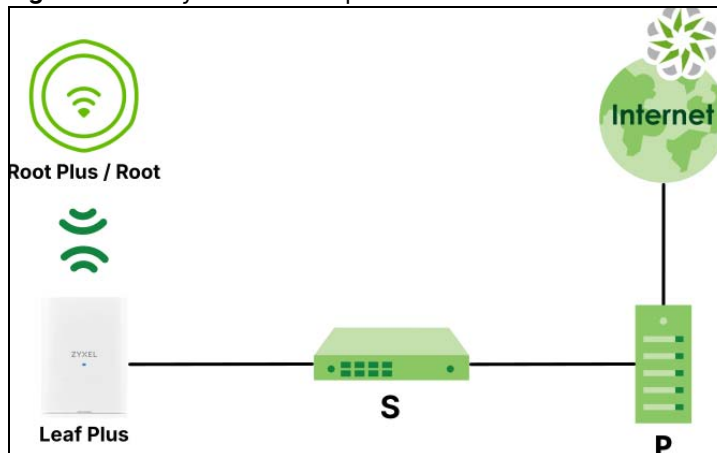
LABEL	DESCRIPTION
Gateway	Enter the IP address of the gateway. The Leaf Plus sends packets to the gateway when it does not know how to route the packet to its destination. The gateway should be on the same network as the interface.
DNS Server IP Address	Enter the IP address of the DNS server.
Time and Date Setup	
Time Server Address	Enter the IP address or URL of your time server. Check with your ISP/network administrator if you are unsure of this information.
Sync. Now	Click this button to have the Leaf Plus get the time and date from the time server (see the Time Server Address field). This also saves your changes.
OK	Click OK to save your changes.
Cancel	Click Cancel to exit this screen without saving your changes.

6.2.2 NCC Discovery

Use this screen to allow a proxy to access NCC. Configure a proxy server only if your network requires devices to connect to the Internet through a proxy. If your device can access the Internet directly, no proxy configuration is required.

For example, a school may use a proxy server to control Internet access. The following figure shows the Leaf Plus connected to a school switch (S) and accessing NCC through a proxy server (P).

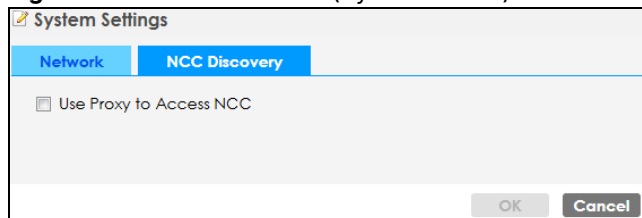
Figure 16 Proxy Server Example



To access this screen, click **Dashboard > Edit (System Status) > NCC Discovery**.

Select the checkbox and click **OK** so that the Leaf Plus can access the NCC through the proxy server.

Figure 17 Dashboard > Edit (System Status) > NCC Discovery



6.3 Edit Device Information

Use this screen to configure the Leaf Plus's system name. To access this screen, click **Dashboard > Edit (Device Information)**.

Enter the system name and click **OK** to save the change.

Figure 18 Dashboard > Edit (Device Information)



The screenshot shows a 'Device Setting' dialog box. The title bar includes a pencil icon and the text 'Device Setting'. The main area contains a label 'System Name' and a text input field with the value 'LeafPlus'. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

CHAPTER 7

Full Settings Mode

Maintenance

7.1 Overview

When the Leaf Plus is set to work in cloud managed mode, the **Maintenance** screens allow you to upload firmware, manage shell script files, generate a diagnostic file, view log messages, or reboot the Leaf Plus.

7.1.1 What You Can Do in this Chapter

- The **File Manager > Firmware Package** screen ([Firmware Package](#)) displays current firmware information and allows you to upload firmware file.
- The **File Manager > Shell Script** screen ([Shell Script](#)) allows you to store, name, download, and upload shell script files.
- The **Legal and Regulatory > Legal and Regulatory** screen ([Legal and Regulatory](#)) allows you to view the legal and regulatory information.
- The **Diagnostics > Diagnostics** screen ([Diagnostics](#)) allows you to generate a file containing the Leaf Plus's configuration and diagnostic information if you need to provide it to customer support during troubleshooting.
- The **Diagnostics > Remote Capture** screen ([Remote Capture](#)) allows you to enable remote packet captures on wired or wireless interfaces through an external packet analyzer.
- The **Log > View Log** screen ([View Log](#)) displays the Leaf Plus's current log messages when it is disconnected from the NCC.
- The **Reboot > Reboot** screen ([Reboot](#)) allows you to reboot the Leaf Plus.

7.2 Firmware Package

Click **Maintenance > File Manager > Firmware Package** to open this screen. Use the **Firmware Package** screen to check your current firmware information and upload firmware to the Leaf Plus. You can manually download the new firmware from the Zyxel website.

Note: The local GUI is the recommended method for uploading firmware. You only need to use the command line interface if you need to recover the firmware. See the CLI Reference Guide for how to determine if you need to recover the firmware and how to recover it.

The firmware update can take up to five minutes. Do not turn off or reset the Leaf Plus while the firmware update is in progress!

Figure 19 Maintenance > File Manager > Firmware Package

The following table describes the labels in this screen.

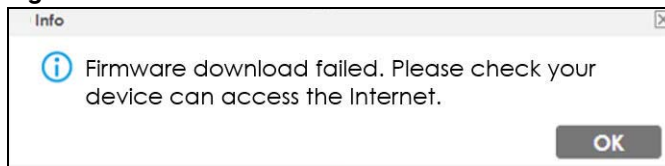
Table 15 Maintenance > File Manager > Firmware Package

LABEL	DESCRIPTION
Version	
Current Version	This is the firmware version.
Released Date	This is the date that the version of the firmware was created.
Upload File	
File Path	Enter the location of the file you want to upload in this field or click Browse... to find it.
Browse...	Click Browse... to find the .bin file you want to upload. Remember that you must decompress compressed (.zip) files before you can upload them.
Upload	Click Upload to begin the upload process. This process may take up to two minutes.

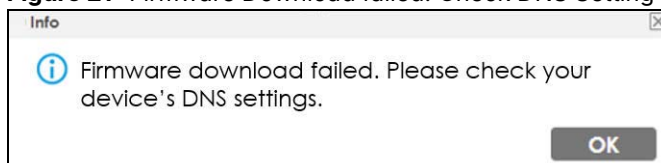
Firmware Download Failed

The following pop-up messages display the causes and solutions for firmware download failure.

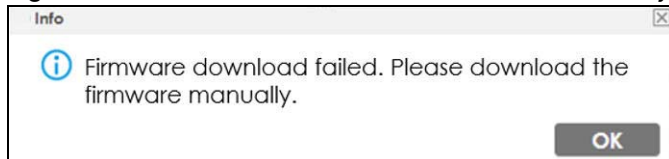
Firmware download failed due to an Internet error. Refer to [Internet Access](#) for more information.

Figure 20 Firmware Download Failed. Check Internet Access

Firmware download failed due to a DNS problem. Please check your device's DNS settings.

Figure 21 Firmware Download failed. Check DNS Setting

Firmware download failed. Download the new firmware manually from the Zyxel website. Then, go to the **Maintenance > File Manager > Firmware Package** screen to upload the new firmware.

Figure 22 Firmware Download Failed. Download Manually

Note: The Leaf Plus automatically reboots after a successful upload.

The Leaf Plus automatically restarts causing a temporary network disconnect to devices connected to its network. In some operating systems, you may see the following icon on your desktop.

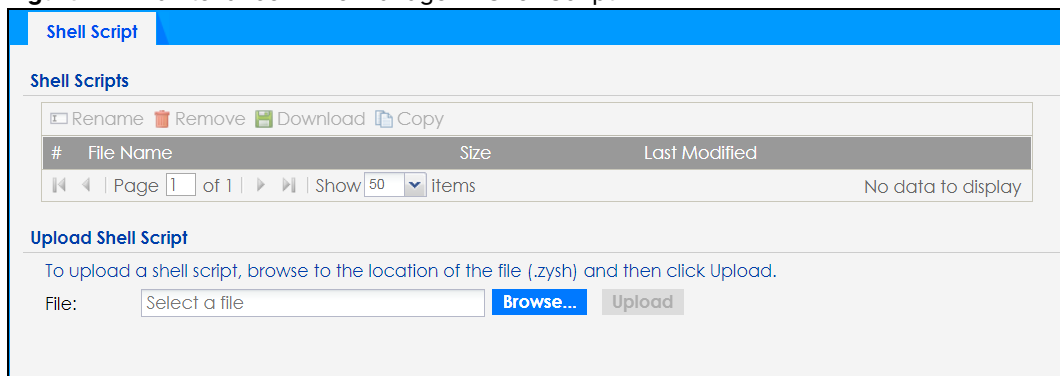
Figure 23 Network Temporarily Disconnected

After five minutes, log in again and check your new firmware version in the **Dashboard** screen.

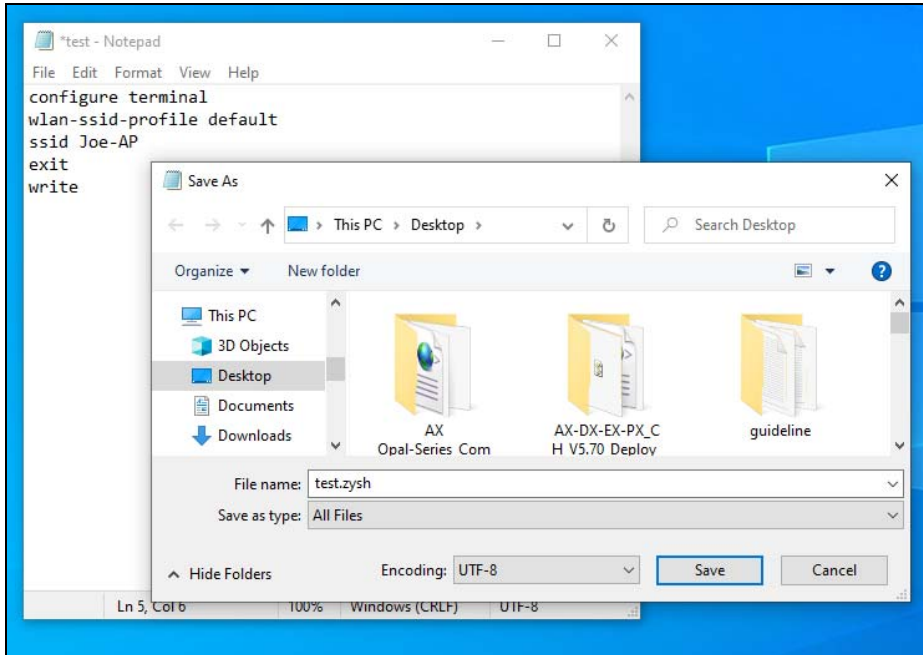
7.3 Shell Script

A shell script is a list of commands to manage the Leaf Plus. Use a text editor to create the shell script files. They must use a ".zysh" filename extension. For example, test.zysh.

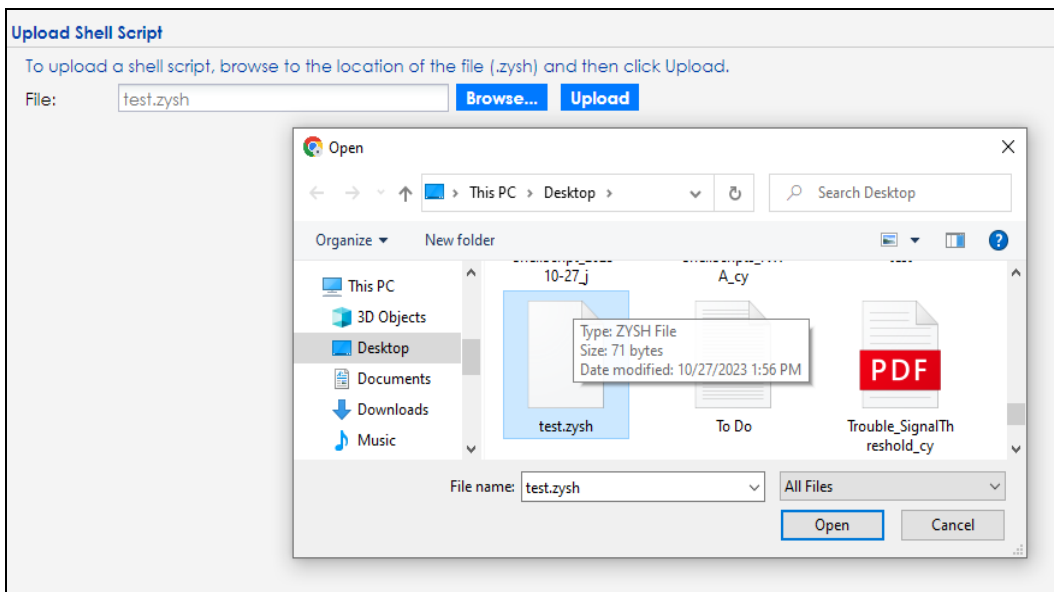
Click **Maintenance > File Manager > Shell Script** to open this screen. Use the **Shell Script** screen to store, name, download, and upload shell script files. You can store multiple shell script files on the Leaf Plus at the same time.

Figure 24 Maintenance > File Manager > Shell Script

- 1 In the text editor, save the shell script with a .zysh filename extension. Select **All Files** as the file type.



- 2 Go to the **Maintenance > File Manager > Shell Script** screen. Click **Browse...** to upload the .zysh file.



- 3 Click **Upload**. The uploaded shell script will be shown in the **Shell Scripts** field.

Shell Scripts

☐ Rename
 ☐ Remove
 ☐ Download
 ☐ Copy
 ☐ Apply

#	File Name	Size	Last Modified
1	test.zysh	73	2023-10-14 03:52:42

Page 1 of 1 | Show 50 items | Displaying 1 - 1 of 1

Upload Shell Script

To upload a shell script, browse to the location of the file (.zysh) and then click Upload.

File:

Each field is described in the following table.

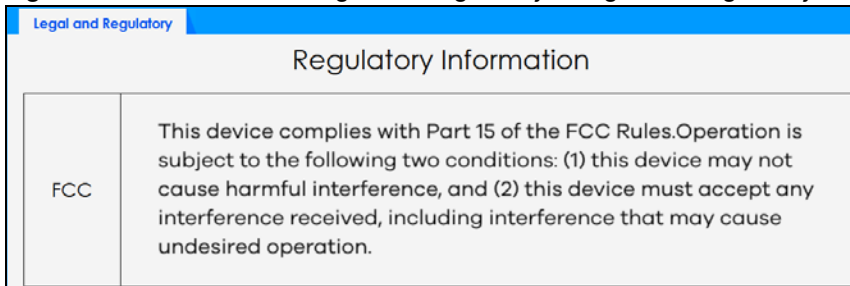
Table 16 Maintenance > File Manager > Shell Script

LABEL	DESCRIPTION
Shell Scripts	
Rename	Use this button to change the label of a shell script file on the Leaf Plus. You cannot rename a shell script to the name of another shell script in the Leaf Plus. Click a shell script's row to select it and click Rename to open the Rename File screen. Specify the new name for the shell script file. Use up to 25 characters, including the following characters inside the square brackets [a-zA-Z0-9;~!@#%^&()_+[]{}',.-)]. Click OK to save the renamed file or click Cancel to close the screen without saving a renamed file.
Remove	Click a shell script file's row to select it and click Delete to delete the shell script file from the Leaf Plus. A pop-up window asks you to confirm that you want to delete the shell script file. Click OK to delete the shell script file or click Cancel to close the screen without deleting the shell script file.
Download	Click a shell script file's row to select it and click Download to save the configuration to your computer.
Copy	Use this button to save a duplicate of a shell script file on the Leaf Plus. Click a shell script file's row to select it and click Copy to open the Copy File screen. Specify a name for the duplicate file. Use up to 25 characters, including the following characters inside the square brackets [a-zA-Z0-9;~!@#%^&()_+[]{}',.-)]. Click OK to save the duplicate or click Cancel to close the screen without saving a duplicate of the configuration file.
Apply	Use this button to have the Leaf Plus use a specific shell script file. Click a shell script file's row to select it and click Apply to have the Leaf Plus use that shell script file. You may need to wait awhile for the Leaf Plus to finish applying the commands.
#	This column displays the number for each shell script file entry.
File Name	This column displays the label that identifies a shell script file.
Size	This column displays the size (in KB) of a shell script file.
Last Modified	This column displays the date and time that the individual shell script files were last changed or saved.
Upload Shell Script	
File	Enter the location of the file you want to upload in this field or click Browse... to find it.
Browse...	Click Browse... to find the .zysh file you want to upload.
Upload	Click Upload to begin the upload process. This process may take up to several minutes.

7.4 Legal and Regulatory

Use this screen to view the information on legal and regulatory. This screen may not display depending on the Leaf Plus model you are using.

Figure 25 Maintenance > Legal and Regulatory > Legal and Regulatory

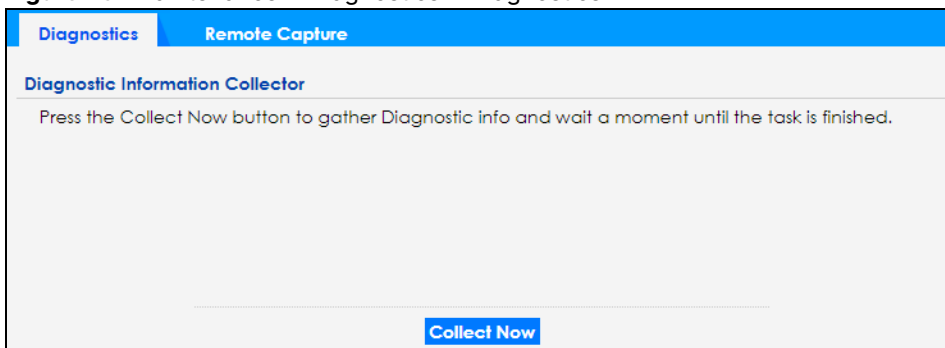


7.5 Diagnostics

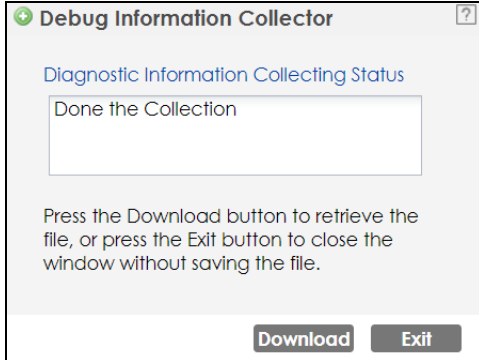
This screen provides an easy way for you to generate a file containing the Leaf Plus's configuration and diagnostic information. You may need to generate this file and send it to customer support during troubleshooting, as they may require information in these screens. All categories of settings and shell script files stored on the Leaf Plus will be included in the diagnostic file.

Click **Maintenance > Diagnostics > Diagnostics** to open the **Diagnostics** screen. Click **Collect Now** to have the Leaf Plus create a new diagnostic file.

Figure 26 Maintenance > Diagnostics > Diagnostics



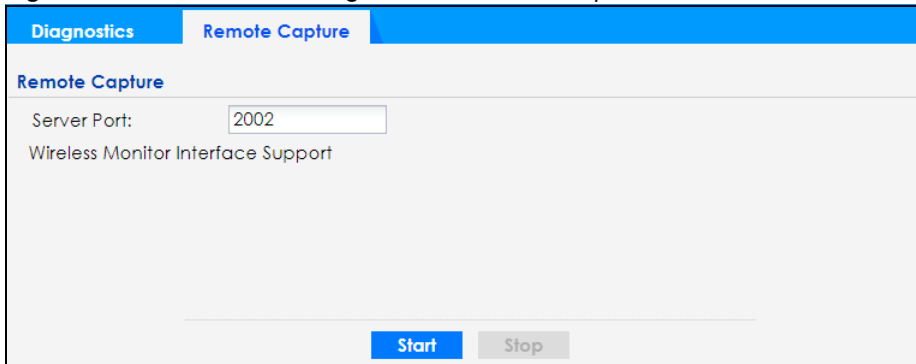
The **Debug Information Collector** screen then displays showing whether the collection is in progress, was successful, or has failed. When the data collection is done, click **Download** to save the most recent diagnostic file to a computer.

Figure 27 Maintenance > Diagnostics > Diagnostics: Debug Information Collector

7.6 Remote Capture

Use this screen to capture network traffic going through the Leaf Plus and output the captured packets to a packet analyzer (also known as network or protocol analyzer) such as Wireshark. If the Leaf Plus is connected to the Zyxel gateway or ZyWALL, you might need to configure the Zyxel gateway or ZyWALL to allow remote capture on the Leaf Plus. Customer support may require access to troubleshoot remotely.

Click **Maintenance > Diagnostics > Remote Capture** to open the **Remote Capture** screen.

Figure 28 Maintenance > Diagnostics > Remote Capture

The following table describes the labels in this screen.

Table 17 Maintenance > Diagnostics > Remote Capture

LABEL	DESCRIPTION
Server Port	Enter the number of the server port you want the packet analyzer to connect to in order to capture traffic going through the Leaf Plus. The default port number is 2002.
Start	Click this button to allow the packet analyzer to start capturing traffic going through the Leaf Plus.
Stop	Click this button to stop the packet analyzer from capturing traffic going through the Leaf Plus.

7.7 View Log

The NCC periodically gathers log files from the devices being managed by it. Before the NCC pulls logs from the Leaf Plus or when the Leaf Plus is disconnected from the NCC, you can use this screen to view its current log messages. To access this screen, click **Maintenance > Log > View Log**.

Note: When a log reaches the maximum number of log messages, new log messages automatically overwrite existing log messages, starting with the oldest existing log message first.

Events that generate an alert (as well as a log message) display in red. Regular logs display in black. Click a column's heading cell to sort the table entries by that column's criteria. Click the heading cell again to reverse the sort order.

Figure 29 Maintenance > Log > View Log

The following table describes the labels in this screen.

Table 18 Maintenance > Log > View Log

LABEL	DESCRIPTION
Show Filter / Hide Filter	Click this button to show or hide the filter settings. If the filter settings are hidden, the Display field is available. If the filter settings are shown, the Display , Priority , Source Address , Destination Address , Source Interface , Destination Interface , Protocol , Keyword , and Search fields are available.
Display	Select the category of log message(s) you want to view. You can also view All Logs at one time, or you can view the Debug Log .
Priority	This displays when you show the filter. Select the priority of log messages to display. The log displays the log messages with this priority or higher. Choices are: any , emerg , alert , crit , error , warn , notice , and info , from highest priority to lowest priority. This field is read-only if the Display is Debug Log .
Source Address	This displays when you show the filter. Enter the source IP address of the incoming packet that generated the log message. Do not include the port in this filter.

Table 18 Maintenance > Log > View Log (continued)

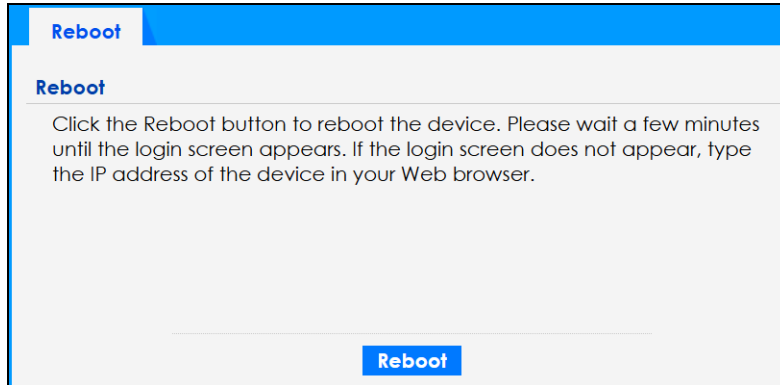
LABEL	DESCRIPTION
Destination Address	This displays when you show the filter. Enter the IP address of the destination of the incoming packet when the log message was generated. Do not include the port in this filter.
Source Interface	This displays when you show the filter. Select the source interface of the packet that generated the log message.
Destination Interface	This displays when you show the filter. Select the destination interface of the packet that generated the log message.
Protocol	This displays when you show the filter. Select a service protocol whose log messages you would like to see.
Keyword	This displays when you show the filter. Enter a keyword to look for in the Message , Source , Destination and Note fields. If a match is found in any field, the log message is displayed. You can use up to 63 alphanumeric characters and the underscore, as well as punctuation marks (') , ; , ! , + , - , * , / , = , # , \$, % , @ , ; the period, double quotes, and brackets are not allowed.
Search	This displays when you show the filter. Click this button to update the log using the current filter settings.
Refresh	Click this to update the list of logs.
Clear Log	Click this button to clear the whole log, regardless of what is currently displayed on the screen.
#	This field is a sequential value, and it is not associated with a specific log message.
Time	This field displays the time the log message was recorded.
Priority	This field displays the priority of the log message. It has the same range of values as the Priority field above.
Category	This field displays the log that generated the log message. It is the same value used in the Display and (other) Category fields.
Message	This field displays the reason the log message was generated. The text "[count=x]", where x is a number, appears at the end of the Message field if log consolidation is turned on and multiple entries were aggregated to generate into this one.
Source	This field displays the source IP address and the port number in the event that generated the log message.
Source Interface	This field displays the source interface of the packet that generated the log message.
Destination	This field displays the destination IP address and the port number of the event that generated the log message.
Destination Interface	This field displays the destination interface of the packet that generated the log message.
Protocol	This field displays the service protocol in the event that generated the log message.
Note	This field displays any additional information about the log message.

7.8 Reboot

This screen allows users to restart the Leaf Plus remotely. To access this screen, click **Maintenance > Reboot > Reboot**.

Reboot is different from reset; reset returns the Leaf Plus to its default configuration.

You may reboot your Leaf Plus when the Internet connection is slow or intermittent.

Figure 30 Maintenance > Reboot > Reboot

The following table describes the labels in this screen.

Table 19 Maintenance > Reboot > Reboot

LABEL	DESCRIPTION
Reboot	Click Reboot then click Yes to restart the Leaf Plus immediately.

After the Leaf Plus reboots, wait a few minutes until the login screen appears. If the login screen does not appear, type the IP address of the Leaf Plus in your Web browser.

PART II

Appendices and Troubleshooting

CHAPTER 8

Troubleshooting

8.1 Overview

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

- [Power, Hardware Connections, and LEDs](#)
- [Local GUI Access and Login](#)
- [Internet Access](#)
- [WiFi Network](#)
- [Getting More Troubleshooting Help](#)

8.2 Power, Hardware Connections, and LEDs

[The Leaf Plus does not turn on. None of the LEDs turn on.](#)

If you are using a power adapter to power the Leaf Plus:

- 1 Make sure you are using a compatible power adapter.
- 2 Make sure the power adapter is securely connected to the Leaf Plus and plugged into an appropriate power source.
- 3 Make sure the power adapter is functional.
- 4 If the problem persists, contact Zyxel technical support.

If you are using a PSE or PoE injector to power the Leaf Plus:

- 1 Make sure you are using the correct PoE port on the PSE or PoE injector.
- 2 Make sure the PSE or PoE injector is functional.
 - Check whether the PSE or PoE injector is malfunctioning. See your PSE or PoE injector user's guide for more information.
 - If the connected PSE or PoE injector does not fully comply with the Leaf Plus's supported PoE standard, replace it with compliant PSE or PoE injector. See [PoE](#) for the Leaf Plus's supported PoE standards. Certain PSEs can adjust the power delivered to each PD based on the PoE standard supported by the PD. For detailed instructions, refer to your PSE User's Guide.

- 3 Make sure the Ethernet cable connected to the PSE or PoE injector is functional.
 - Check whether the Ethernet cable is malfunctioning.
 - Use the correct type of Ethernet cable for the PoE standard supported by the Leaf Plus. See [PoE](#) for the Leaf Plus's supported PoE standards and see [PoE Standards](#) for the compliant Ethernet cables.
- 4 If the problem persists, contact Zyxel technical support.

The LED does not behave as expected.

- 1 Make sure you understand the normal behavior of the LED. See [Leaf Plus LED](#).
- 2 Check the hardware connections. See the Quick Start Guide.
- 3 Inspect your cables for damage. Contact the vendor to replace any damaged cables.
- 4 Disconnect and re-connect the power adapter or PoE power injector to the Leaf Plus.
- 5 If the problem continues, contact the vendor.

8.3 Local GUI Access and Login

I forgot the IP address for the Leaf Plus.

- 1 The default in-band IP address for the local GUI Web Configurator in Nebula Cloud-managed mode is **https://DHCP-assigned IP** (when connecting to a DHCP server) or **192.168.1.2**.
- 2 If you changed the IP address and have forgotten it, you have to reset the Leaf Plus to its factory defaults. See [Getting More Troubleshooting Help](#).
- 3 If your Leaf Plus is a DHCP client, you can find your IP address from the DHCP server. This information is only available from the DHCP server which allocates IP addresses on your network. Find this information directly from the DHCP server or contact your system administrator for more information.
- 4 If NCC has managed the Leaf Plus, you can also check the NCC's **Site-wide > Devices > Access points** screen for the Leaf Plus's current LAN IP address.

I cannot see or access the **Login** screen in the local GUI.

- 1 Make sure you are using the correct IP address.
 - The default IP address for the local GUI is 192.168.1.2.
 - 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 Leaf Plus](#).
- 2 Check the hardware connections, and make sure the LED is behaving as expected. See the Quick Start Guide and [Leaf Plus LED](#).
 - 3 Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled.
 - 4 Make sure your computer is in the same subnet as the Leaf Plus. (If you know that there are routers between your computer and the Leaf Plus, skip this step.)
 - If there is a DHCP server on your network, make sure your computer is using a dynamic IP address. Check the DHCP IP address assigned to your Leaf Plus on the connected router .
 - If there is no DHCP server on your network, make sure your computer's IP address is in the same subnet as the Leaf Plus.
 - 5 Reset the Leaf Plus to its factory defaults, and try to access the Leaf Plus with the default IP address. See [Getting More Troubleshooting Help](#).
 - 6 If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

Advanced Suggestions

- Try to access the Leaf Plus using another service, such as SSH. If you can access the Leaf Plus, check the remote management settings to find out why the Leaf Plus does not respond to HTTP.
- If your computer is connected wirelessly, use a computer that is connected to the **Ethernet PoE** port.

[I forgot the local GUI password.](#)

- 1 The default password is unique to each Leaf Plus and shown on the label. If the Leaf Plus is connected to the NCC and registered, check the NCC for the password.
- 2 If this does not work, you have to reset the Leaf Plus to its factory defaults. See [Getting More Troubleshooting Help](#).

[I can see the **Login** screen, but I cannot log into the Leaf Plus.](#)

- 1 Clear your browser's cache.
- 2 Check the Leaf Plus's management mode.
 - The default password is unique to each Leaf Plus and shown on the label. If you have changed the username and password, use the ones you configured to log in.
 - If the Leaf Plus is in cloud managed mode, use the Nebula **Local credentials Password** to log into the cloud managed mode local GUI. The **Local credentials Password** can be found in **Site-wide > Configure > Site settings > Device configuration: Local credentials: Password** in the NCC portal.
 - If the Leaf Plus is managed by an APC such as the ZyWALL, then use the APC to manage the Leaf Plus.

- 3 Depending on your Leaf Plus's management mode, make sure you have entered the correct user name and password. These fields are case-sensitive, so check if [Caps Lock] is on or off.

Note: Steps 1 and 2 are applicable if you get an "Invalid password" error message when using some functions in the ZON utility. See [Leaf Plus Management Mode](#) for more information.

- 4 Disconnect and re-connect the power adapter or PoE power injector to restart the Leaf Plus.
- 5 If this does not work, you have to reset the Leaf Plus to its factory defaults. See [Getting More Troubleshooting Help](#).

NCC is managing the Leaf Plus, but the NCC cannot access the Leaf Plus.

Connect to the Leaf Plus directly and log into the local GUI with the credentials configured in NCC. See [Accessing the Local GUI](#) for more information.

I cannot register the Leaf Plus in NCC because it is already registered by the previous owner.

- If the previous owner has registered the Leaf Plus in NCC and has disabled the NCC **Override device ownership** feature in the **Organization-wide > Organization-wide manage > Organization settings** screen, use the Nebula Mobile app to scan the NCC QR code on the back label of the Leaf Plus to register with NCC.
- If the previous owner has registered it in NCC and has locked the Leaf Plus with the NCC **Override device ownership** feature in the **Organization-wide > Organization-wide manage > Organization settings** screen, inform the previous owner to unregister the Leaf Plus or contact Zyxel technical support.

The Leaf Plus is already registered with NCC, but it cannot connect to the NCC.

- 1 Check the Leaf Plus LED and make sure the Leaf Plus is on and ready for use.
- 2 Check your network's firewall/security settings. Make sure the following ports are allowed:
 - TCP: 443, 4335, and 6667
 - UDP: 123 is allowed.
- 3 Make sure your Leaf Plus has obtained an IP address and can access the Internet. Check the **Cloud Control Status** on the **Dashboard** screen for your Internet connection.
- 4 You may have to change the Management VLAN settings of the Leaf Plus to allow it to connect to the Internet and access the NCC.

Note: Changing the management VLAN and IP address settings on the Leaf Plus also pushes these changes to the NCC. Do this only if your device cannot otherwise connect to the NCC.

- 5 Make sure your Leaf Plus does not have to go through network authentication such as a captive portal. If your network uses a captive portal, the network administrator may have to create a new VLAN without this requirement. Change your Leaf Plus's management VLAN settings as necessary.
- 6 Make sure your DNS server can resolve `d.nebula.zyxel.com`. Open the **Command Prompt** on your computer, enter `nslookup d.nebula.zyxel.com`, see if the DNS server can return the resolved IP address. If not, you can try set your gateway to use the Google Public DNS server 8.8.8.8.

Some features I set using the NCC do not work as expected.

- 1 Make sure your Leaf Plus can access the Internet.
- 2 Make sure the NCC can access the Leaf Plus. Check your network's firewall/security settings. Make sure the following ports are allowed:
 - TCP: 443, 4335, and 6667
 - UDP: 123
- 3 After changing your Leaf Plus settings using the NCC, wait 1 to 2 minutes for the changes to take effect.

I can only see newer logs. Older logs are missing.

When a log reaches the maximum number of log messages, new log messages automatically overwrite the oldest log messages.

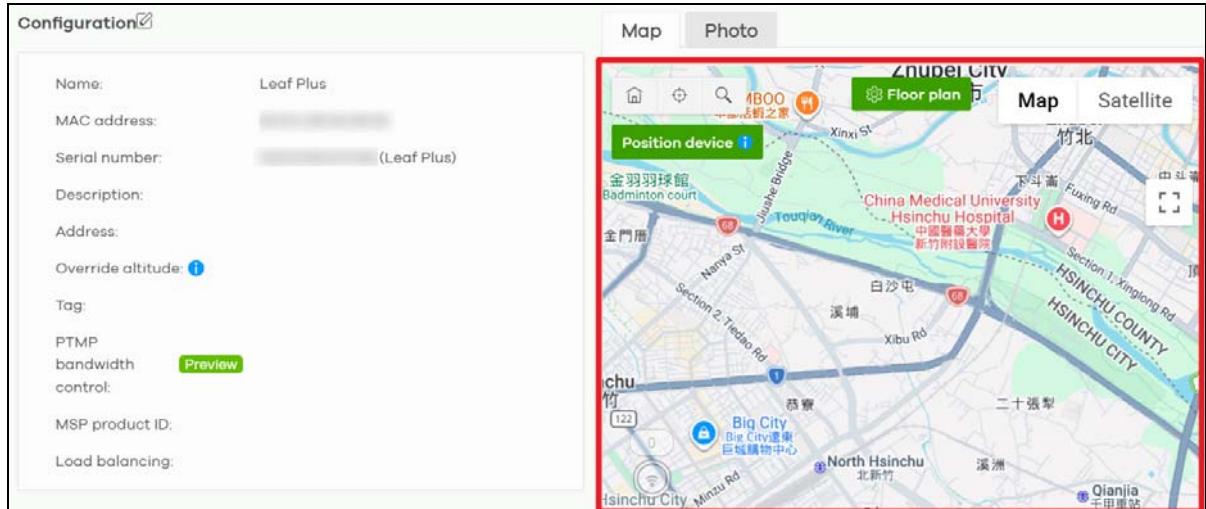
The commands in my configuration file or shell script are not working properly.

- In a configuration file or shell script, use `"#"` or `!"` as the first character of a command line to have the Leaf Plus treat the line as a comment.
- Your configuration files or shell scripts can use `"exit"` or a command line consisting of a single `!"` to have the Leaf Plus exit sub command mode.
- Include `write` commands in your scripts. Otherwise the changes will be lost when the Leaf Plus restarts. You could use multiple `write` commands in a long script.

Note: `"exit"` or `!"` must follow sub commands if it is to make the Leaf Plus exit sub command mode.

My Leaf Plus cannot display properly in the NCC map.

If the Leaf Plus GPS signal is unavailable or weak, it may not display properly in the NCC map (**Site-wide > Devices > Access Points**).



To obtain a stronger GPS signal, try the following:

- Avoid nearby buildings, walls, trees, or other objects that may block GPS signals.
- Wait a few minutes after power-on for the Leaf Plus to obtain GPS information.

Leaf Plus cannot connect to Root (Plus).

If your Leaf Plus cannot connect to Root (Plus), try the following:

- Check that all antennas are securely attached.
- Verify that a Root (Plus) is available within range.
- Check the wireless signal strength and adjust the device alignment. Ensure that the front of the Leaf Plus faces the front of the Root (Plus). See [5GHz Adaptor](#) for more information.
- Move the Leaf Plus closer to the Root (Plus).
- Click the [Reconnect](#) button in **Installer Mode** to reconnect to the Root (Plus).

8.4 Internet Access

Clients cannot access the Internet through the Leaf Plus.

- 1 Check the Leaf Plus's hardware connections, and make sure the LEDs are behaving as expected (refer to [Leaf Plus LED](#)). See the Quick Start Guide.
- 2 Make sure the Leaf Plus is connected to a broadband modem or router with Internet access and your computer is set to obtain an dynamic IP address.

- 3 If clients are trying to access the Internet wirelessly, make sure the WiFi settings on the WiFi clients are the same as the settings on the Leaf Plus.
- 4 Make sure the Leaf Plus has the same VLAN settings configured as the gateway connected to the Leaf Plus. Traffic tagged with a specific VLAN ID tag can only go to the WiFi clients of the WiFi network that uses the same VLAN ID. Devices connected to the Leaf Plus need to have the same VLAN ID configured to receive traffic from the Leaf Plus.
- 5 Disconnect all the cables from your Leaf Plus, and follow the directions in the Quick Start Guide again.
- 6 Reboot the client and reconnect to the Leaf Plus.
- 7 If the problem continues, contact your ISP.

The Internet connection is slow or intermittent.

- 1 There might be a lot of traffic on the network. Look at the LEDs, and check [Leaf Plus LED](#). If the Leaf Plus 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 using the NCC, AC, or the Leaf Plus Web Configurator, or the client device itself. If the signal is weak, try moving the client closer to the Leaf Plus (if possible), and look around to see if there are any devices that might be interfering with the wireless network (microwaves, other wireless networks, and so on).
- 3 Reboot the Leaf Plus using the Web Configurator/CLI or the NCC or APC.
- 4 Check the settings for QoS. If it is disabled, activate it. When enabled, raise or lower the priority for some applications.
- 5 If the problem continues, contact the network administrator or vendor.

8.5 WiFi Network

The WiFi connection is slow or intermittent.

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 wireless devices.

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

- Move your WiFi device closer to the Leaf Plus if the signal strength is low.

- Reduce wireless interference that may be caused by other wireless networks or surrounding wireless electronics such as cordless phones.
- Place the Leaf Plus where there are minimum obstacles (such as walls and ceilings) between the Leaf Plus and the wireless client. Avoid placing the Leaf Plus inside any type of box that might block WiFi signals.

The wireless security is not following the re-authentication timer setting I specified.

If a RADIUS server authenticates wireless stations, the re-authentication timer on the RADIUS server has priority over the setting in the Leaf Plus. Change the RADIUS server's configuration if you need to use a different re-authentication timer setting.

8.6 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 Communication offices, see <https://service-provider.zyxel.com/global/en/contact-us> for the latest information.

For Zyxel Network 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 (Taiwan) Co., Ltd.
- <https://www.zyxel.com>

Asia

China

- Zyxel Communications Corporation–China Office
- <https://www.zyxel.com/cn/sc>

India

- Zyxel Communications Corporation–India Office
- <https://www.zyxel.com/in/en-in>

Kazakhstan

- Zyxel Kazakhstan

- <https://www.zyxel.com/ru/ru>

Korea

- Zyxel Korea Co., Ltd.
- <http://www.zyxel.kr/>

Malaysia

- Zyxel Communications Corp.
- <https://www.zyxel.com/global/en>

Philippines

- Zyxel Communications Corp.
- <https://www.zyxel.com/global/en>

Singapore

- Zyxel Communications Corp.
- <https://www.zyxel.com/global/en>

Taiwan

- Zyxel Communications (Taiwan) Co., Ltd.
- <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 Communications Corp.
- <https://www.zyxel.com/ru/ru>

Belgium (Netherlands)

- Zyxel Benelux
- <https://www.zyxel.com/nl/nl>
- <https://www.zyxel.com/fr/fr>

Bulgaria

- Zyxel Bulgaria
- <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.com/fr/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 S.r.l.
- <https://www.zyxel.com/it/it>

Norway

- Zyxel Communications A/S
- <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>

Russian Federation

- Zyxel Communications Corp.
- <https://www.zyxel.com/ru/ru>

Slovakia

- Zyxel Slovakia
- <https://www.zyxel.com/sk/sk>

Spain

- Zyxel Iberia
- <https://www.zyxel.com/es/es>

Sweden

- Zyxel Communications A/S
- <https://www.zyxel.com/se/sv>

Switzerland

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

Turkey

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

UK

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

Ukraine

- Zyxel Ukraine
- <https://www.zyxel.com/ua/uk-ua>

South America

Argentina

- Zyxel Communications Corp.
- <https://www.zyxel.com/co/es-co>

Brazil

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

Colombia

- Zyxel Communications Corp.
- <https://www.zyxel.com/co/es-co>

Ecuador

- Zyxel Communications Corp.
- <https://www.zyxel.com/co/es-co>

South America

- Zyxel Communications Corp.
- <https://www.zyxel.com/co/es-co>

Middle East

Israel

- Zyxel Communications Corp.
- <https://il.zyxel.com>

North America

USA

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

APPENDIX B

Legal Information

Copyright

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Your use of the Leaf Plus is subject to the terms and conditions of any related service providers.

Trademarks

Trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

Regulatory Notice and Statement (Class B)

United States of America



The following information applies if you use the product within USA area.

Federal Communications Commission (FCC) EMC Statement

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) this device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna
 - Increase the separation between the equipment and receiver
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
 - Consult the dealer or an experienced radio/TV technician for assistance

FCC Radiation Exposure Statement

- This device complies with FCC Radio Frequency (RF) radiation exposure limits set forth for an uncontrolled environment.
- This transmitter must be at least 20 cm from the user and must not be co-located or operating in conjunction with any other antenna or transmitter. Refer to the list below for the models whose transmitters require a minimum distance of over 20 cm from the user, along with the required distances.
- Leaf Plus: 42 cm
- Country Code selection feature to be disabled for products marketed to the US / CANADA.

Caution (For device with 6 GHz function)

- The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft.
- Operation of transmitters in the 5.925 to 7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

Brazil

The following applies if you use the product within Brazil.

For WiFi 6 products,

- Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.
- Este produto não é apropriado para uso em ambientes domésticos, pois poderá causar interferências eletromagnéticas que obrigam o usuário a tomar medidas necessárias para minimizar estas interferências.

For devices with 6 GHZ capability,

- Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.
- Este produto não é apropriado para uso em ambientes domésticos, pois poderá causar interferências eletromagnéticas que obrigam o usuário a tomar medidas necessárias para minimizar estas interferências.
- O uso deste equipamento é restrito a ambientes fechados é proibido em plataformas petrolíferas, carros, trens, embarcações e no interior de aeronaves abaixo de 3.048 m (10.000 pés).
- Para maiores informações, consulte o site da Anatel:
www.gov.br/pt-br/search?origem=form&SearchableText=anatel

Canada

The following information applies if you use the product within Canada area.

Innovation, Science and Economic Development Canada ICES statement

CAN ICES(B)/NMB(B)

Innovation, Science and Economic Development Canada RSS-GEN & RSS-247 statement

The following information applies to products with wireless functions.

- This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- The radio transmitter 25830-04371 (Leaf Plus) have been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed, are strictly prohibited for use with this device.

Antenna Information

MODEL NAME	NO.	TYPE	GAIN (dBi)	IMPEDANCE
Leaf Plus	1	Patch	11.1 dBi (5150 MHz) 11.6 dBi (5350 MHz) 10.7 dBi (5550 MHz) 11.3 dBi (5750 MHz) 10.4 dBi (5850 MHz)	50 Ω
Leaf Plus	2	Patch	11.0 dBi (5150 MHz) 10.9 dBi (5350 MHz) 10.8 dBi (5550 MHz) 10.5 dBi (5750 MHz) 10.8 dBi (5850 MHz)	50 Ω
Leaf Plus	3	Patch	10.0 dBi (5925 MHz) 11.4 dBi (6325 MHz) 11.1 dBi (6725 MHz) 11.4 dBi (6925 MHz) 11.8 dBi (7125 MHz)	50 Ω
Leaf Plus	4	Patch	10.3 dBi (5925 MHz) 11.3 dBi (6325 MHz) 11.6 dBi (6725 MHz) 10.8 dBi (6925 MHz) 12.0 dBi (7125 MHz)	50 Ω

If the product with 5G wireless function operating in 5150 to 5250 MHz and 5725 to 5850 MHz, the following attention must be paid,

- For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725 to 5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; and
- Where applicable, antenna type(s), antenna model(s), and the worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in Section 6.2.2.3 of RSS 247 shall be clearly indicated.

If the product with 5G wireless function operating in 5250 to 5350 MHz and 5470 to 5725 MHz, the following attention must be paid.

- For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250 to 5350 MHz and 5470 to 5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit.

Innovation, Sciences et Développement économique Canada RSS-GEN & RSS-247

- L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage; (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- Le présent émetteur radio 25830-04371 (Leaf Plus) a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

Informations Antenne

NOM DU MODÈLE	NB.	TYPE	GAIN (dBi)	IMPÉDANCE
Leaf Plus	1	Patch	11.1 dBi (5150 MHz) 11.6 dBi (5350 MHz) 10.7 dBi (5550 MHz) 11.3 dBi (5750 MHz) 10.4 dBi (5850 MHz)	50 ohm
Leaf Plus	2	Patch	11.0 dBi (5150 MHz) 10.9 dBi (5350 MHz) 10.8 dBi (5550 MHz) 10.5 dBi (5750 MHz) 10.8 dBi (5850 MHz)	50 ohm
Leaf Plus	3	Patch	10.0 dBi (5925 MHz) 11.4 dBi (6325 MHz) 11.1 dBi (6725 MHz) 11.4 dBi (6925 MHz) 11.8 dBi (7125 MHz)	50 ohm
Leaf Plus	4	Patch	10.3 dBi (5925 MHz) 11.3 dBi (6325 MHz) 11.6 dBi (6725 MHz) 10.8 dBi (6925 MHz) 12.0 dBi (7125 MHz)	50 ohm

Lorsque la fonction sans fil 5G fonctionnant en 5150 to 5250 MHz and 5725 to 5850 MHz est activée pour ce produit, il est nécessaire de porter une attention particulière aux choses suivantes

- Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5 725 à 5 850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée, selon le cas;

- Lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3 du CNR-247, doivent être clairement indiqués.

Lorsque la fonction sans fil 5G fonctionnant en 5 250 à 5 350 MHz et 5 470 à 5 725 MHz est activée pour ce produit, il est nécessaire de porter une attention particulière aux choses suivantes.

- Pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5 250 à 5 350 MHz et de 5 470 à 5 725 MHz doit être conforme à la limite de la p.i.r.e.

Industry Canada radiation exposure statement

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

For the models whose radiators require a minimum distance of over 20 cm from your body, along with the required distances.

- Leaf Plus: 43 cm

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps. Veuillez vous référer à la liste ci-dessous pour connaître les modèles dont les radiateurs nécessitent une distance minimale de plus de 20 cm par rapport à votre corps, ainsi que les distances requises.

- Leaf Plus: 43 cm

Caution:

- The maximum antenna gain permitted for devices in the bands 5250 to 5350 MHz and 5470 to 5725 MHz shall comply with the e.i.r.p. limit; and
- the maximum antenna gain permitted for devices in the band 5725 to 5825 MHz shall comply with the e.i.r.p. limits specified for point to point and non point to point operation as appropriate.
- Outdoor device: Leaf Plus

Caution (For device with 6 GHz function):

- Devices shall not be used for control of or communications with unmanned aircraft systems.
- Devices shall not be used on oil platforms.
- Devices shall not be used on aircraft, except for the low-power indoor access points, indoor subordinate devices, low-power client devices, and very low-power devices operating in the 5925 to 6425 MHz band, that may be used on large aircraft as defined in the Canadian Aviation Regulations, while flying above 3,048 meters (10,000 feet).
- Devices shall not be used on automobiles.
- Devices shall not be used on trains.
- Devices shall not be used on maritime vessels.

Antenna Information

Regulatory Statement

The antenna height shall be determined by the installer or operator of the standard-power access point or fixed client device, or by automatic means. This information shall be stored internally in the device. Provision of accurate device information is mandatory.

Device Specifications

This product uses an integrated internal antenna, permanently installed and not user replaceable.

- **Antenna type:** Metal Array (Internal antenna)
- **Antenna model:** OLA25B-127160-A
- **Antenna peak gain:** 5 GHz: 14.4 dBi; 6 GHz: 15.1 dBi

Avertissement:

- le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250 à 5 350 MHz et 5 470 à 5 725 MHz doit se conformer à la limite de p.i.r.e.;
- le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725 à 5825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.
- Appareil extérieur: Leaf Plus

Avertissement (Pour modèle avec fonction 6 GHz)

- Les dispositifs ne doivent pas être utilisés pour commander des systèmes d'aéronef sans pilote ni pour communiquer avec de tels systèmes.
- Les dispositifs ne doivent pas être utilisés sur les plateformes de forage pétrolier.
- Les dispositifs ne doivent pas être utilisés dans les aéronefs, à l'exception des points d'accès intérieurs de faible puissance, des dispositifs subordonnés intérieurs, des dispositifs clients de faible puissance et des dispositifs de très faible puissance fonctionnant dans la bande de 5 925 à 6 425 MHz, qui peuvent être utilisés dans les gros aéronefs tel qu'il est défini dans le Règlement de l'aviation canadien, et ce, lorsqu'ils volent à une altitude supérieure à 3 048 mètres (10 000 pieds).
- Les dispositifs ne doivent pas être utilisés dans les automobiles.
- Les dispositifs ne doivent pas être utilisés dans les trains.
- Les dispositifs ne doivent pas être utilisés sur les navires maritimes.

Informations sur l'antenne

Déclaration réglementaire

La hauteur de l'antenne doit être déterminée par l'installateur ou l'opérateur du point d'accès de puissance normale ou du dispositif client fixe, ou par des dispositifs automatiques. Cette information doit être enregistrée dans le dispositif. La fourniture d'information précise sur le dispositif est obligatoire.

Spécifications de l'appareil

Ce produit utilise une antenne interne intégrée, installée de manière permanente et non remplaçable par l'utilisateur.

- **Type d'antenne:** Réseau métallique (antenne interne)
- **Modèle d'antenne:** OLA25B-127160-A
- **Gain de crête de l'antenne:** 5 GHz: 14,4 dBi; 6 GHz: 15,1 dBi

Europe and the United Kingdom



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

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

- Compliance information for wireless products relevant to the EU, United Kingdom and other Countries following the EU Directive 2014/53/EU (RED) and UK regulation 2017 SI 2017-1206. And this product may be used in all EU countries (and other countries following the EU Directive 2014/53/EU) and United Kingdom without any limitation except for the countries mentioned below table:
- In the majority of the EU and other European countries, the 5 GHz 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 5 GHz wireless LANs.
- If this device operates in the 5150 to 5350 MHz or 5945 to 6425 MHz band, it is for indoor use only.
- This equipment should be installed and operated with a minimum distance of 20 cm between the radio equipment and your body.
- The maximum RF operating power for each band is as follows:

FREQUENCY	MAXIMUM POWER
2,400 MHz to 2,483.5 MHz	< 100 mW
5,150 MHz to 5,350 MHz	< 200 mW
5,470 MHz to 5,725 MHz	< 1000 mW
5,945 MHz to 6,425 MHz	< 200 mW
(For device with 6 GHz function)	

	National Restrictions
Belgium (English)	• 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.
België (Flemish)	
Belgique (French)	
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 overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.
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/EU põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
Ελληνικά (Greek)	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Zyxel ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU.
English	Hereby, Zyxel declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
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.
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/EU.
Hrvatski (Croatian)	Zyxel ovime izjavljuje da je radijska oprema tipa u skladu s Direktivom 2014/53/EU.
Íslenska (Icelandic)	Hér með lýsir, Zyxel því yfir að þessi búnaður er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipunar 2014/53/EU.
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/EU. 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 https://www.mise.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 https://www.mise.gov.it/ per maggiori dettagli.
Latviešu valoda (Latvian)	Ar šo Zyxel deklarē, ka iekārtas atbilst Direktīvas 2014/53/EU būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių kalba (Lithuanian)	Šiuo Zyxel deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 2014/53/EU Direktyvos nuostatas.
Magyar (Hungarian)	Alulírott, Zyxel nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.
Malti (Maltese)	Hawnhekk, Zyxel, jiddikjara li dan tagħmir jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 2014/53/EU.
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.
Norsk (Norwegian)	Erklærer herved Zyxel at dette utstyret er i samsvar med de grunnleggende kravene og andre relevante bestemmelser i direktiv 2014/53/EU.
Polski (Polish)	Niniejszym Zyxel oświadcza, że sprzęt jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU.
Português (Portuguese)	Zyxel declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.
Română (Romanian)	Prin prezenta, Zyxel declară că acest echipament este în conformitate cu cerințele esențiale și alte prevederi relevante ale Directivei 2014/53/EU.
Slovenčina (Slovak)	Zyxel týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.
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.
Български (Bulgarian)	С настоящото Zyxel декларира, че това оборудване е в съответствие със съществените изисквания и другите приложими разпоредбите на Директива 2014/53/ЕС.

Notes:

- Not all European states that implement EU Directive 2014/53/EU are European Union (EU) members.
- 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	Sweden	SE
Ireland	IE	Switzerland	CH
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

Safety Warnings

- Do not put the device in a place that is humid, dusty, has extreme temperatures, or that blocks the device ventilation slots. These conditions may harm your device.
- Please refer to the device back label, datasheet, box specifications or catalog information for power rating of the device and operating temperature.
- There is a remote risk of electric shock from lightning: (1) Do not use the device outside, and make sure all the connections are indoors. (For indoor devices only) (2) Do not install or service this device during a thunderstorm.
- 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.
- Connect ONLY suitable accessories to the device.
- Do not open the device. Opening or removing the device 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 connected cables carefully so that no one will step on them or stumble over them.
- 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 the power adaptor or cord to the right supply voltage (for example, 120 V AC in North America or 230 V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove the damaged power adaptor or cord from the device and the power source. Do not try to repair the power adaptor or cord by yourself. Contact your local vendor to order a new one.
- CAUTION: There is a risk of explosion if you replace the device battery with an incorrect one. Dispose of used batteries according to the instructions. 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.
- Do not leave a battery in an extremely high temperature environment or surroundings since it can result in an explosion or the leakage of flammable liquid or gas. (For devices with a battery)
- Do not subject a battery to extremely low air pressure since it may result in an explosion or the leakage of flammable liquid or gas. (For devices with a battery)
- This device must be grounded by qualified service personnel. Never defeat the ground conductor or operate the device in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. (For devices that require grounding)
 - If your device has an earthing screw (frame ground), connect the screw to a ground terminal using an appropriate AWG ground wire. Do this before you make other connections.
 - If your device has no earthing screw, but has a 3-prong power plug, make sure to connect the plug to a 3-hole earthed socket.
- For a pluggable device, the socket-outlet shall be installed near the device and shall be easily accessible.
- Do not use a power adapter that has a power cable longer than 3 meters.
- Fuse Warning! Replace a fuse only with a fuse of the same type and rating. (For devices with a fuse)
- To avoid possible eye injury, do not look into an operating fiber-optic module's connector. (For devices with fiber)
- Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019. (For devices with fiber)
- Conforme à 21 CFR 1040.10 et 1040.11 sauf pour la conformité à la norme CEI 60825-1 Ed. 3., comme décrit dans la notice laser Numéro 56 du 8 mai 2019. (For devices with fiber)
- CLASS 1 LASER PRODUCT & "IEC 60825-1:2014" (For devices with fiber)
- APPAREIL À LASER DE CLASS 1 (For devices with fiber)

- CLASS 1 CONSUMER LASER PRODUCT & "EN 50689:2021" (For devices with fiber)
- The antenna must be installed completely perpendicular to the horizon.
- **Installation Angle Requirement**
The device shall be installed such that the main radiation direction of the internal antenna does not exceed 30 degrees above the horizontal plane (horizon).
Installation angles greater than 30 degrees upward tilt are not permitted.
Failure to comply with this installation requirement may result in operation outside authorization.
- **Installation Angle Definition**
Horizon (0 degree): Horizontal plane parallel to the ground.
Elevation Angle: The angle between the antenna main radiation direction and the horizontal plane.

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。
- 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。

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。
- 請使用隨貨提供或指定的連接線 / 電源線 / 電源變壓器，將其連接到合適的供應電壓（如：台灣供應電壓 110 伏特）。
- 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。（僅限於室內產品）

- 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 is the unidirectional flow or movement of electric charge carriers.
	Earth; ground: A wiring terminal intended for connection of a Functional 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 <https://www.zyxel.com/global/en/support/warranty-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, please go to: https://www.zyxel.com/form/gpl_oss_software_notice.shtml.

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