Installation Guide

NXA-WAP1000 Smart Wireless Access Point

Overview

The NXA-WAP1000 (US operation: **FG2255-51**; Operation outside the US: **FG2255- 53**), powered by Ruckus™, is a high-performance 802.11a/b/g/n smart Wi-Fi access point for homes and businesses that utilizes industry acclaimed Ruckus Wireless Technology. The NXA-WAP1000 can be deployed as a standalone access point or as part of a centrally-controlled Smart Wireless LAN when combined with the AMX NXA-WAPZD1000 Wireless LAN Zone Director. With a sleek modern design, small form factor, and Power over Ethernet (PoE), the NXA-WAP1000 can be mounted on the ceiling to maximize performance without disturbing aesthetics or requiring a local power supply.

Additional Documentation

For more detailed installation, configuration and operating instructions, including troubleshooting wireless connectivity issues, refer to the *NXA-WAP1000 Operation/Reference Guide*, available online at **www.amx.com**.

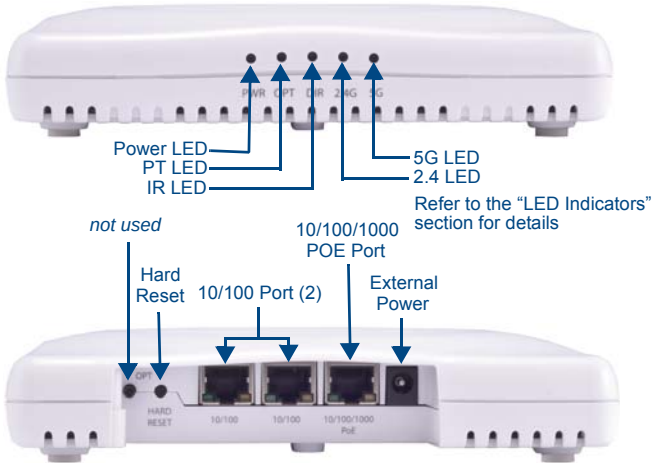


FIG. 1 NXA-WAP1000 Smart Wireless Access Point

Specifications

NXA-WAP1000 (FG2255-51/53) Specifications	
Dimensions (HWD):	1 3/8" x 7" x 7" (36 mm x 178 mm x 178 mm)
Weight:	0.88 lbs (397 g)
Power:	• External power adapter (not included) • Input: 110-240V AC • Output: 12V DC, 1.5A • Power over Ethernet Class 0
Ethernet Ports:	• 2 auto MDX, auto-sensing 10/100 Mbps, RJ-45 ports • 1 auto MDX, auto-sensing10/100/1000 Mbps, RJ-45, POE port
Antenna:	Internal software-configurable antenna that provides over 300 unique patterns.
Operating Frequency:	• IEEE 802.11n: 2.4 – 2.484 GHz and.5.15 – 5.85 GHz • IEEE 802.11a: 5.15 – 5.85 GHz • IEEE 802.11b: 2.4 – 2.484 GHz
Wireless Output Power:	• 26 dBm for 2.4GHz • 24 dBm for 5GHz • Country-specific power settings are configurable
Supported Data Rates:	• 802.11n: 6.5Mbps – 130Mbps (20MHz) 6.5Mbps – 300Mbps (40MHz) • 802.11a: 54, 48, 36, 24, 18, 12, 9 and 6Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps • 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
Power Source:	None: device uses Power Over Ethernet (PoE) via POE Injector or PoE Switch for necessary power.
LED Indicators:	• PWR (Power) • OPT (Not implemented) • DIR (Connected to Zone Director) • 2.4G (Operating at 2.4GHz) • 5G (Operating at 5GHz)
Temperature:	• Operating: 0 to 40 °C (32 to 104 °F) • Storage: -20 to 70 °C (32 to 158 °F)
Humidity:	15% to 95% (non-condensing)

NXA-WAP1000 (FG2255-51/53) Specifications (Cont.)	
Included Accessories:	• Category 5 (CAT5) network cable • NXA-WAP1000 Installation Guide (**93-2255-51**) • Mounting Template (**93-2255-55**) • #4 sheet metal mounting screws (2) with molly bolts (2) for wall installation
Other AMX Equipment:	• NXA-WAP1000 Power Supply (**FG2255-61**) • NXA-ENET8POE PoE Switch (**FG2178-62**) • NXA-WAPZD1000 Wireless LAN ZoneDirector (**FG2255-52**)

Federal Communication Commission Interference 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. ***FCC Caution:*** *Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.*

IMPORTANT NOTE: FCC Radiation Exposure 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.

FCC Caution: *Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.*

LED Indicators

The access point includes five status LED indicators, as described in the following table.

LED Indicators		
LED	**Status**	**Description**
PWR	On Green	Indicates that the system is working normally.
OPT	Off	This LED does not light at this time.
DIR	On	Indicates that the device is connected to an NXA-WAPZD1000 ZoneDirector.
	Off	Indicates that the device is not connected to a ZoneDirector.
2.4G	On/Flashing Green	Indicates that the device is transmitting and receiving at 2.4GHz.
	Off	Indicates that the device is not receiving or transmitting at 2.4GHz.
5G	On/Flashing Green	Indicates that the device is transmitting and receiving at 5GHz.
	Off	Indicates that the device is not receiving or transmitting at 5GHz.

Power

The access point does not have a power switch. It utilizes Power Over Ethernet (PoE), which draws power from its Ethernet connection. An additional power supply (**FG2255- 61**, not included) may also be used in circumstances where PoE is not available.

Ethernet Ports

The access point has two 10BASE-T/100BASE-TX RJ-45 ports and one 10/100/1000 RJ-45 port that can be attached directly to 10BASE-T/100BASE-TX LAN segments. These segments must conform to the IEEE 802.3-2005 specifications. These ports supports automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs, switches, or hubs.

Reset Button

The Hard Reset button is used to restart the access point or to restore the factory default configuration. If you hold down the button for less than 10 seconds, the access point will perform a hardware reset. If you hold down the button for 10 seconds or more, any configuration changes you may have made are removed, and the factory default configuration is restored to the access point.

Hardware Installation

The access point is designed to be mounted on any surface, such as a desktop, or on a wall. The access point can be mounted on a wall by marking the position of the mounting screws (included) on the wall so they line up with the two mounting slots on the bottom of the access point. (For more information, refer to the included Installation Template.) Set the screws into the wall, leaving about 3 mm (0.12 in.) clearance from the wall. Then slide the access point down onto the screws.

1. **Observe the Indicator LEDs** – When you power on the access point, verify that the PWR LED turns on and that the other LED indicators start functioning as described under "LED Indicators".
2. **Connect the Ethernet Cable** – The access point can be connected to any 10 or 100 Mbps Ethernet network device, such as a hub or a switch. Connect your network to one of the three RJ-45 ports on the back panel using category 3, 4, or 5 UTP Ethernet cable. When the access point and the connected device are powered on, the LAN LED should turn on indicating a valid network connection. If the LAN LED fails to turn on, refer to *Troubleshooting* in the *NXA-WAP1000 Operation/Reference Guide*.

***Note**: The RJ-45 port on the access point supports automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs, switches, or hubs.*

Access Point Configuration

Configuring the NXA-WAP1000 requires access to a computer running Windows 7, Vista, XP, or Windows 2000, and one or more of the following:

- A modem (DSL or cable), E1/T1 router, or other device provided by your Internet Service Provider, that brings Internet access to your site.
- A network switch or a DSL/Internet gateway device.

***NOTE:** If the NXA-WAP1000 is deployed with a NXA-WAPZD1000 Wireless LAN Zone Director, connect the device to your Ethernet network. For more information, refer to the NXA-WAPZD1000 Operation/Reference Guide, available from **www.amx.com**.*

Connecting the NXA-WAP1000 to a Computer

***IMPORTANT:** Do NOT connect the NXA-WAP1000 or the computer to the network until you have completed the NXA-WAP1000 setup. Make sure that the computer is configured with a static IP address from 192.168.0.2 to 192.168.0.255.*

1. Remove the NXA-WAP1000 from its package and place it next to the computer.
2. Temporarily disconnect the computer from any local network, if connected.
3. Using an Ethernet cable, connect the computer's network port to one of the three ports on the NXA-WAP1000.
4. Connect the 10/100/1000 PoE port (FIG. 1) to a PoE (Power over Ethernet) switch for power and network connectivity.
5. After a minute, verify that the PWR LED is a steady green.

Preparing Your Computer For NXA-WAP1000 Setup

1. On the computer, open the *Network Connections* (or *Network and Dial-up Connections*) control panel according to how the Start menu is set up:
   Start > Settings > Network Connections Start > Control Panel > Network Connections
2. When the *Network Connections* window appears, right-click the icon for **Local Area Connection**, and then click select **Properties**.

NOTE: Make sure NOT to open the *Properties* dialog box for the wireless network.

3. When the *Local Area Connection Properties* dialog box appears, select **Internet Protocol (TCP/IP)** from the scrolling list, and then click **Properties** to open the *TCP/IP Properties* dialog box.

NOTE: Write down all of the currently active settings so you can restore your computer to its current configuration later (when this process is complete).

4. Select *Use the following IP address* if it is not already selected, and then make the following entries:
   - **IP address:** 192.168.0.22 (or any address in the 192.168.0.x network)
   - **Subnet mask:** 255.255.255.0
   - **Default gateway:** 192.168.0.1
   - **Preferred DNS server:** 192.168.0.1 Leave the *Alternate DNS server* field empty.
5. Click **OK** to save your changes, and then exit first the *TCP/IP Properties* dialog box, and then the *Local Area Connection Properties* dialog box. Your changes are put into effect immediately.

Log Into the NXA-WAP1000

NOTE: As specified earlier, the AP should be directly connected to your computer (through one of the LAN ports), and have been powered on, ready for setup.

1. On your computer, open a Web browser window.
2. In the browser, type this URL to connect to the AP: https://192.168.0.1
3. Press **Enter** to initiate the connection. When a security alert dialog box appears, click **OK/Yes** to proceed.
4. When the *AMX Wireless Admin* login page appears, enter the following:
   Username: **admin**
   Password: **1988**
5. Click **Login**.

If Your Computer Cannot Connect to the NXA-WAP1000

- Disconnect the NXA-WAP1000 from the Ethernet cable, wait 5 seconds, then reinstall it. Wait 60 seconds before attempting a reconnection.
- Disconnect and reconnect the NXA-WAP1000 and the computer.
- Replace the Ethernet cable with a new one if the relevant LAN port LED is not illuminated. (LEDs in each port light up during a successful connection.)

Customize the Wireless Settings

1. Log into the NXA-WAP1000 Web interface.
2. On the Web interface menu, click **Configuration > Radio 2.4G** or **Configuration > Radio 5G**.
3. Verify that the following options are active:
   - **Wireless Mode:** Radio 2.4G or Radio 5G
   - **Channel:** SmartSelect
   - **Country Code:** If you are not located in the United States, select your current country
4. Click **Update Settings** if you made any changes.
5. Click any of the *Wireless #* tabs near the top of the screen.
6. In *Wireless Availability*, click **Enabled**.
7. Delete the text in the SSID field, and then type the name of your network. If your network does not have a name, type a short name that will help your users identify the AP in their wireless network connection application.
8. Click **Update Settings** to save your changes.
9. Repeat Steps 4-6 for each Wireless # interface that you want to enable.

If you anticipate regularly logging into the NXA-WAP1000 to perform monitoring or maintenance (once it is in place), you may want to consider assigning a static IP address to the NXA-WAP1000.

In a default NXA-WAP1000 configuration, the NXA-WAP1000 uses a DHCP-assigned IP address. Any post-installation connections require (1) a reverse ARP lookup or (2) logging into the DHCP server, to determine which IP address is in effect in the NXA-WAP1000.

For more information on IP address assignment options and logging into the NXA-WAP1000 through either a static IP or dynamic IP address, please refer to the *NXA-WAP1000 Operation Reference Guide*, available at **www.amx.com**.

If you wish to switch from DHCP (the default):

- On the menu, click **Configuration > Internet**.
- Click the **Static IP** option. • Fill in the *IP Address*, *Gateway IP Address*, and *Mask* fields.
- Click **Update Settings** to save your changes.

10. Click **Logout** to exit the NXA-WAP1000 Web interface.
11. When the Web Admin login page reappears, you can exit your browser.
12. Disconnect the NXA-WAP1000 from the computer and from the current power source, and then restore your computer to its normal network connections.

Restoring Your Computer's Network Settings

1. Click **Start > Settings > Network Connections**. (If Windows 2000, click **Start > Settings > Network and Dial-up Connections**.)
2. When the *Network Connections* window appears, right-click the icon for the Local Area Connection designated for your home network and choose *Properties*.
3. When the *Local Area Connection Properties* dialog box appears, select *Internet Protocol (TCP/IP)* from the scrolling list, and click **Properties**. The *TCP/IP Properties* dialog box appears.
4. Restore your previously saved original TCP/IP settings from your standard network configuration.
5. Click **OK** to save your settings and exit the *TCP/IP Properties* dialog box and then the *Local Area Connection Properties* dialog box. Your computer is now ready for normal network use.

Place the NXA-WAP1000 in Your Site

1. Disconnect the PoE cable from the device.
2. Move the NXA-WAP1000 to its permanent location, accessible to network connections. Follow these guidelines to maximize wireless signal performance:
   - Place the NXA-WAP1000 as close to the center of the room, and away from any physical obstructions, as possible.
   - Place the NXA-WAP1000 on a shelf or other elevated location where the user's wireless networking devices are in line-of-sight access. Alternatively, the NXA-WAP1000 can be mounted to the ceiling using the mounting holes on the underside of the unit.
   - Avoid any sources of electromagnetic interference.
   - Avoid placing the NXA-WAP1000 near large metal or glass surfaces.
3. Use an Ethernet cable to connect the 10/100/1000 port of the NXA-WAP1000 to the ISP's modem or gateway device or the Ethernet switch that is connected to the ISP's device. Using PoE requires a CAT-5e or better Ethernet cable to connect the AP to the PoE switch.
4. Verify that the Ethernet port LED is lit.
5. After a short pause to re-establish the Internet connection, you can test the NXA-WAP1000.

Verifying the Installation

1. Using any wireless-enabled computer or mobile device, search for and select the Spreviously configured wireless network.
2. If you can connect, open a browser and link to any public Web site.

NOTE: "Ruckus", "Ruckus Wireless", and "ZoneFlex" are trademarks of Ruckus Wireless and are used under license. *800-70242-101 Manual, Quick Setup Guide, ZoneFlex 7343/7363 802.11n (AMX)*

©2011 AMX. All rights reserved. AMX and the AMX logo are registered trademarks of AMX.
AMX reserves the right to alter specifications without notice at any time.

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 • 800.222.0193 • fax 469.624.7153 • technical support 800.932.6993 • www.amx.com