Ubiquiti Networks NBE-5AC-GEN2

Ubiquiti Networks NBE-5AC-GEN2 NanoBeam ac Gen2 airMAX CPE User Manual

Model: NBE-5AC-GEN2

1. Introduction

The Ubiquiti Networks NBE-5AC-GEN2 NanoBeam ac Gen2 airMAX CPE is an advanced Customer Premises Equipment designed for high-performance wireless connectivity. This device integrates radio and antenna into a compact unit, optimized for noise immunity and efficient RF energy direction. It operates on airOS 8, supporting various wireless features for Point-to-Point (PtP) and Point-to-MultiPoint (PtMP) applications.

2. Package Contents

Verify that all items listed below are present in your package:

Image: Package contents including the NanoBeam device, mounting hardware, PoE injector, and power cord.

- Ubiquiti NanoBeam 5AC Gen 2 (NBE-5AC-GEN2)
- Ball Joint Mount
- Lock Ring

- Metal Strap
- Gigabit PoE (24V, 0.5A) with Mounting Bracket
- Power Cord
- Quick Start Guide

3. Product Overview

3.1 Key Features

- **Incredible Speed:** Achieves 450+ Mbps throughput, suitable for high-demand applications over distances exceeding 15 km.
- **Reliable Performance:** Equipped with an Atheros MIPS 74Kc 720 MHz processor, 128MB DDR2 memory, and 8MB Flash for stable and efficient data processing.
- **Strong Signal:** Features an integrated 19 dBi gain antenna with dual linear polarization for focused signal transmission, reduced interference, and extended range.
- **Easy Setup:** Includes a dedicated Wi-Fi radio for management, simplifying configuration and monitoring via intuitive software.
- **Wide Coverage:** Supports adjustable channel sizes (10/20/30/40/50/60/80 MHz in PtP, 10/20/30/40 MHz in PtMP) for optimized bandwidth and flexible network configurations.

3.2 Device Components

Image: Rear view of the NanoBeam device, highlighting the Reset Button, Ethernet Port, and Port Cover.

- **Ethernet Port:** Connects to the PoE adapter and network.
- **Reset Button:** Used to restore factory default settings.
- **Port Cover:** Protects the Ethernet port from environmental elements.
- **LED Indicators:** (Refer to image below) Provide status information such as power, Ethernet activity, and signal strength.

Image: Side view of the NanoBeam device, showing the LED indicators for power, Ethernet, and signal strength.

4. Setup

This section outlines the basic steps for setting up your NanoBeam ac Gen2 device. For detailed instructions, refer to the Quick Start Guide included in your package or the official Ubiquiti documentation.

4.1 Mounting the Device

1. Attach the Ball Joint Mount to the NanoBeam device.
2. Secure the device to a pole or mast using the Metal Strap and Lock Ring. Ensure the device is mounted securely and has a clear line of sight to the other NanoBeam unit or access point.

4.2 Powering On and Initial Configuration

1. Connect an Ethernet cable from the NanoBeam's Ethernet port to the PoE port on the Gigabit PoE adapter.
2. Connect another Ethernet cable from the LAN port on the Gigabit PoE adapter to your computer or network switch.
3. Connect the Power Cord to the Gigabit PoE adapter and plug it into a power outlet.
4. The device will power on. Use the dedicated Wi-Fi radio for management by connecting to the NanoBeam's Wi-Fi network from your mobile device.

5. Download and use the UISP mobile application (available on Google Play and Apple App Store) for simplified setup and configuration. The app communicates with the NanoBeam unit for approximately 15 minutes after power-on to assist with initial setup.
6. Alternatively, access the device's web interface via a web browser by navigating to its default IP address (refer to the Quick Start Guide for the default IP).
7. Follow the on-screen prompts to configure the device for your specific network requirements, such as setting up a Point-to-Point or Point-to-MultiPoint link.

Image: Overview of NanoBeam AC Gen2 features, including management via mobile app and typical deployment scenarios.

5. Operating Modes

The NanoBeam ac Gen2 supports various operating modes to suit different network architectures.

5.1 Point-to-Point (PtP) Link

In a PtP configuration, two NanoBeam devices establish a direct wireless link to extend network connectivity between two

locations. One device typically acts as an Access Point (AP) and the other as a Station.

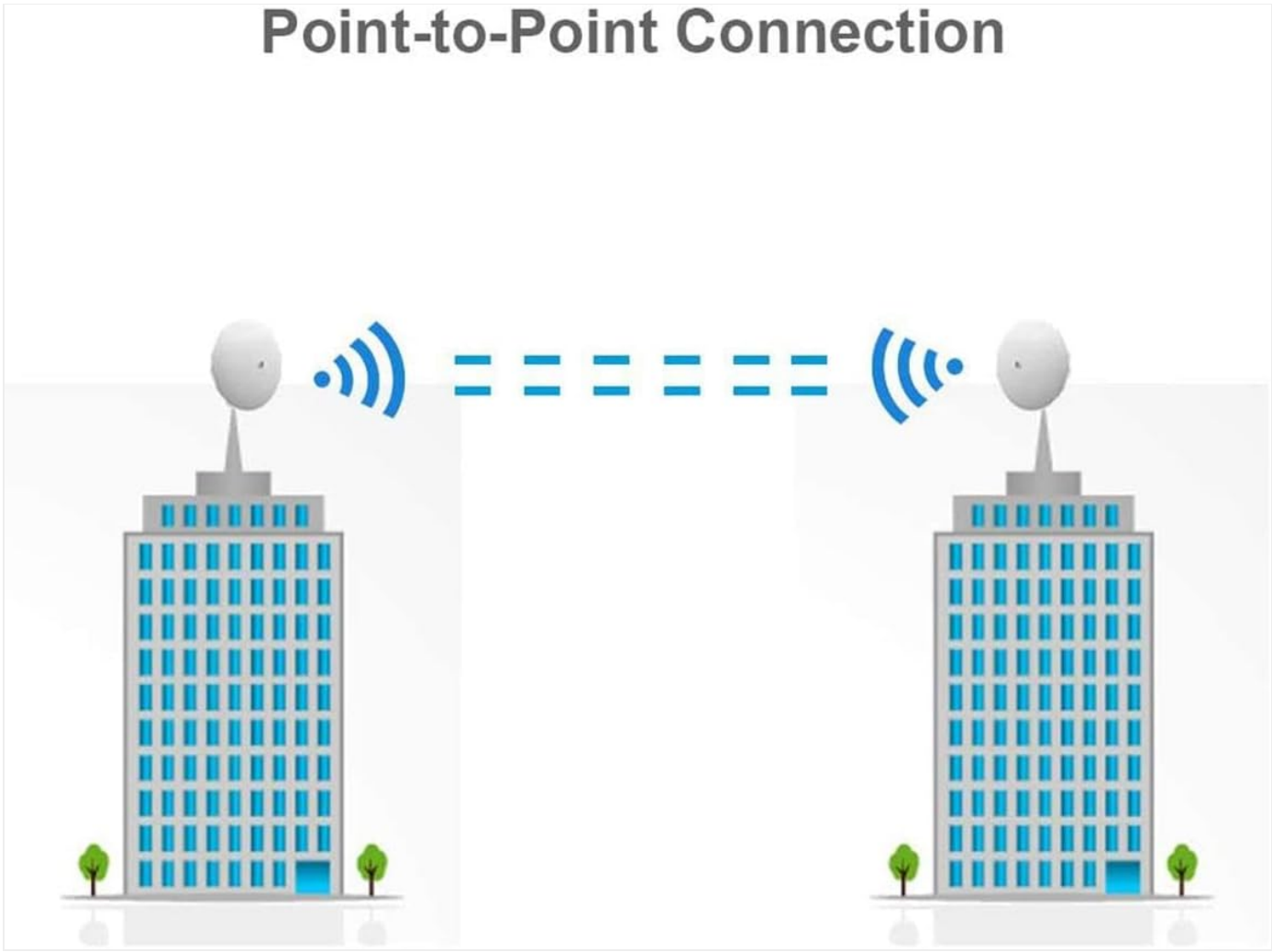

Image: Visual representation of a Point-to-Point wireless connection between two buildings using NanoBeam devices.

5.2 Point-to-MultiPoint (PtMP) Client Link

In a PtMP setup, a central Access Point (e.g., an airMAX BaseStation) communicates with multiple NanoBeam devices acting as CPEs (Customer Premises Equipment) at various client locations. Each NanoBeam 5AC Gen 2 functions as a client device in this network.

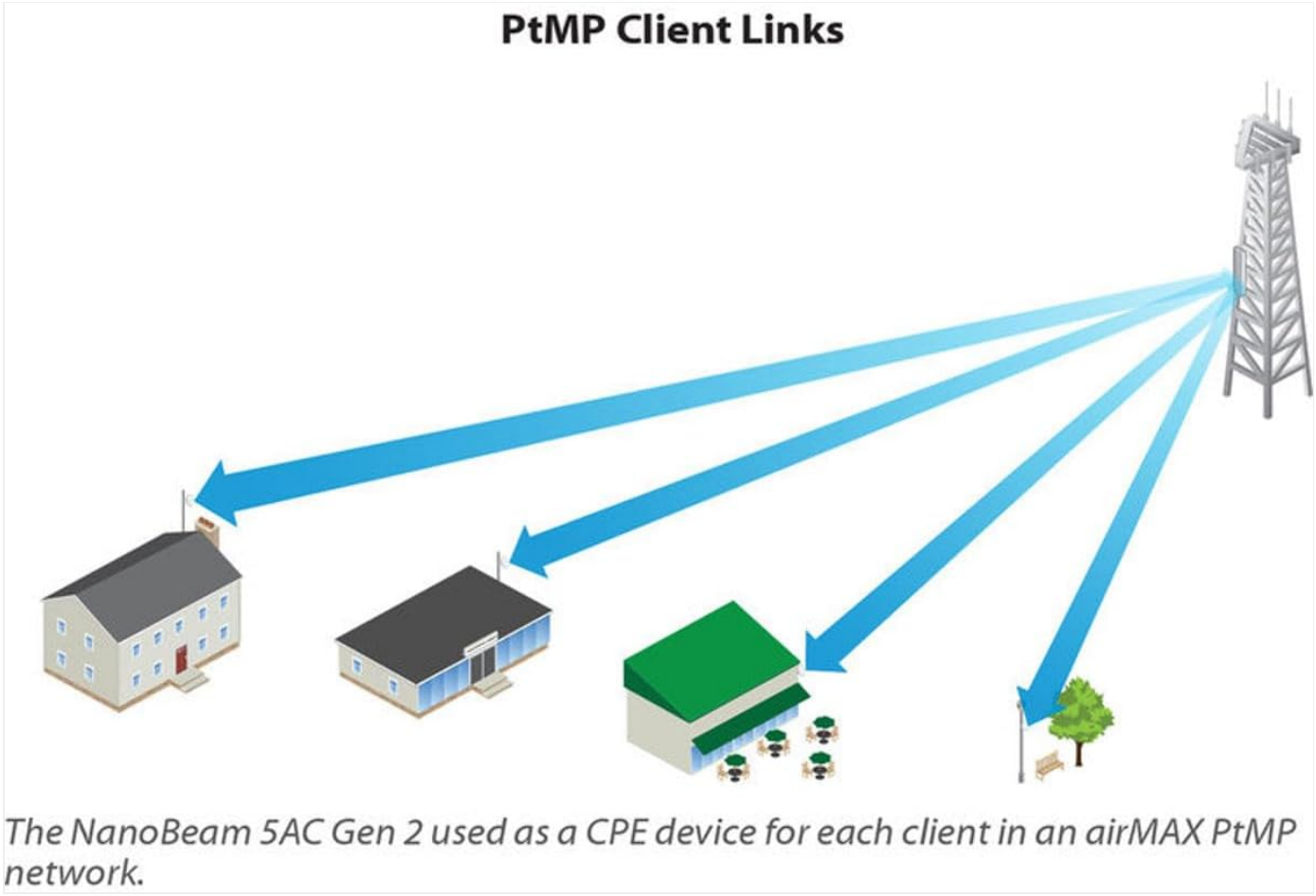

Image: Visual representation of Point-to-MultiPoint client links, where a central tower connects to several NanoBeam CPEs at different locations.

6. Maintenance

Proper maintenance ensures the longevity and optimal performance of your NanoBeam device.

- **Regular Inspections:** Periodically check the physical mounting and cable connections for any signs of wear, corrosion, or damage.
- **Firmware Updates:** Keep the device firmware updated to the latest version. Ubiquiti regularly releases updates that include performance improvements, security enhancements, and bug fixes. These can typically be managed through the UISP app or web interface.
- **Environmental Protection:** Ensure the port cover is securely in place to protect the Ethernet port from moisture and dust.
- **Cleaning:** Gently clean the exterior of the device with a soft, dry cloth if necessary. Avoid using harsh chemicals or abrasive materials.

7. Troubleshooting

This section provides solutions to common issues you might encounter.

- **No Power:**
  - Verify that the PoE adapter is properly connected to a power source and the NanoBeam.
  - Check the power cord and Ethernet cables for damage.
  - Ensure the power outlet is functional.
- **No Network Connectivity:**

- Confirm that both NanoBeam devices in a PtP link are powered on and aligned correctly.
- Check Ethernet cable connections between the NanoBeam, PoE adapter, and network equipment.
- Verify network settings (IP addresses, subnet masks, gateway) are correctly configured.
- Ensure there is a clear line of sight between devices, free from obstructions.

- **Poor Signal Strength:**
  - Adjust the alignment of the NanoBeam devices for optimal signal reception. Use the signal strength LEDs or the UISP app for precise alignment.
  - Check for any new obstructions that might be blocking the line of sight.
  - Consider reducing the distance between devices if possible, or using a higher gain antenna if available (though this model has an integrated antenna).
- **Cannot Access Web Interface/UISP App:**
  - Ensure your computer or mobile device is connected to the correct network segment or the NanoBeam's management Wi-Fi.
  - Verify the IP address of the NanoBeam and your device.
  - Try resetting the device to factory defaults using the Reset Button (press and hold for 10 seconds while powered on). **Warning: This will erase all custom configurations.**

8. Specifications

Feature	Detail
Model Number	NBE-5AC-GEN2
Brand	Ubiquiti Networks
Product Dimensions	8.7 x 8.6 x 4 inches
Item Weight	4.3 pounds
Antenna Gain	19 dBi
Maximum Range	15000 Meters (15+ km)
Processor	Atheros MIPS 74Kc 720 MHz
Memory	128MB DDR2
Flash Memory	8MB
PoE Support	Gigabit PoE (24V, 0.5A)
Operating System	airOS 8
UPC	646444122405

9. Warranty and Support

The Ubiquiti Networks NBE-5AC-GEN2 NanoBeam ac Gen2 comes with a**1 Year Limited Warranty**. For warranty claims or technical support, please refer to the official Ubiquiti Networks website or contact their customer service. Keep your proof of purchase for warranty validation.