Comet CHA-250HD

Comet CHA-250HD All Band Vertical Base Antenna Instruction Manual

Model: CHA-250HD

Brand: Comet

1. Introduction

The Comet CHA-250HD All Band Vertical Base Antenna is designed for continuous operation across a wide frequency range of 3.5 to 57 MHz. This antenna covers popular amateur radio bands including 80m, 40m, 20m, 15m, 10m, and 6m, without requiring external tuners or radials. Its construction features a durable fiberglass radiating element and corrosion-resistant aluminum hardware, ensuring resilience against various weather conditions. An integrated transformer matching network optimizes impedance across multiple bands, contributing to efficient signal transfer and minimal SWR.

Key Features:

- Continuous 3.5–57 MHz coverage without manual tuning or external antenna tuners.
- Built-in transformer matching network for consistent impedance and low SWR.
- Constructed from high-quality fiberglass with a reinforced weatherproof coating.
- Efficient wideband design eliminates the need for ground radials or multiple antennas.
- Rated at 250 watts PEP and features an SO-239 connector.

2. Package Contents

Before beginning assembly, ensure all components are present and undamaged. The package should contain the following:

- CHA-250HD Antenna Main Unit (Fiberglass radiating elements)
- Transformer Matching Network (Base unit with SO-239 connector)
- Mounting Hardware (U-bolts, nuts, washers for mast mounting)
- Instruction Manual

Figure 1: All components of the CHA-250HD antenna kit.

3. Setup and Installation

The CHA-250HD is designed for straightforward installation. No complex tuning or ground radials are typically required for operation. However, proper mounting is essential for optimal performance and longevity.

3.1 Site Selection

- Choose a location free from obstructions (trees, buildings, power lines) that could interfere with signal propagation.
- Mount the antenna as high as safely possible to maximize range and minimize local interference.
- Ensure the mounting surface (mast, tower, roof) is sturdy enough to support the antenna's weight and withstand wind loads.

3.2 Assembly Steps

1. **Attach Radiating Elements:** Carefully connect the fiberglass radiating elements to the transformer matching network base unit. Ensure all connections are secure but do not overtighten.
2. **Mounting Bracket:** Secure the mounting bracket to the antenna base using the provided hardware.
3. **Mast Mounting:** Using the U-bolts, attach the antenna to your chosen mast or pole. Ensure the antenna is mounted vertically and securely.
4. **Coaxial Cable Connection:** Connect a high-quality 50-ohm coaxial cable (e.g., RG-8X, RG-213)

to the SO-239 connector at the base of the antenna. Ensure the connection is weatherproofed using self-amalgamating tape or similar.

Figure 2: Close-up of the antenna base and mounting bracket.

Figure 3: Fully assembled Comet CHA-250HD antenna.

4. Operating Instructions

The CHA-250HD is designed for wideband operation, eliminating the need for an external antenna tuner for most amateur radio transceivers. However, always monitor your SWR (Standing Wave Ratio) to ensure safe and efficient operation.

4.1 SWR Monitoring

- Before transmitting, perform an SWR check across your desired operating frequencies.
- An SWR of 1.5:1 or lower is generally considered excellent. Up to 2.0:1 is acceptable for most transceivers.
- If SWR is excessively high (e.g., above 3.0:1), recheck all connections and ensure the antenna is clear of obstructions.
- Confirm the antenna is mounted vertically and not hanging more than 20 degrees from vertical.

4.2 Power Handling

- The CHA-250HD is rated for 250 watts PEP (Peak Envelope Power).
- Avoid exceeding the maximum power rating to prevent damage to the antenna or your transceiver.
- For digital modes, it is recommended to operate at lower power levels (e.g., below 80W) due to the continuous duty cycle.

5. Maintenance

The Comet CHA-250HD is designed for minimal maintenance due to its durable construction. However,

periodic checks can extend its lifespan and ensure continued performance.

- **Visual Inspection:** Annually inspect the antenna for any visible damage, cracks in the fiberglass, or loose hardware.
- **Connection Check:** Verify that all coaxial cable connections are tight and weatherproofed.
- **Cleaning:** If necessary, gently clean the fiberglass elements with mild soap and water to remove dirt or grime. Avoid abrasive cleaners.

6. Troubleshooting

If you experience issues with your CHA-250HD antenna, consider the following common problems and solutions:

- **High SWR:**
  - Check coaxial cable for damage or shorts.
  - Ensure all antenna connections are tight.
  - Verify the antenna is clear of nearby metal objects or structures.
  - Confirm the antenna is mounted vertically and not hanging more than 20 degrees from vertical.
- **Poor Reception/Transmission:**
  - Check all cable connections from the antenna to the transceiver.
  - Ensure your transceiver is set to the correct frequency and mode.
  - Consider local noise sources or propagation conditions.

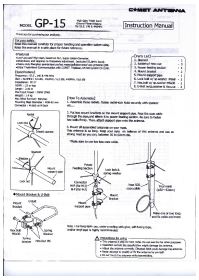
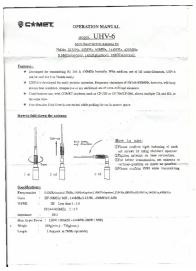
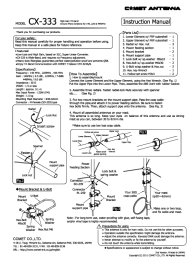
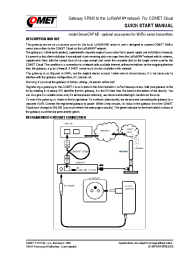
7. Specifications

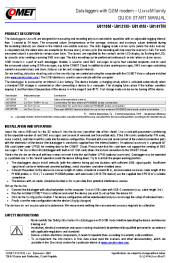
Feature	Detail
Frequency Range	3.5 – 57 MHz (Continuous)
Power Rating (PEP)	250 Watts
Impedance	50 Ohms
Connector	SO-239
Antenna Type	All Band Vertical Base Antenna
Construction Material	Fiberglass, Aluminum Hardware
Height	Approximately 23 feet (7.01 meters)
Item Weight	8.98 pounds (4.07 kg)
Product Dimensions	23"L x 2.5"W x 1.98"H (Base)

8. Warranty and Support

For warranty information or technical support, please refer to the manufacturer's official website or contact their customer service department. Keep your purchase receipt for warranty claims.

Related Documents - CHA-250HD

	Comet GP-15 Antenna Instruction Manual: High Gain Triple Band Ground Plane This manual provides instructions for the Comet GP-15, a high-gain triple-band ground plane antenna designed for ham radio use on 52.5, 146, and 446 MHz frequencies. It covers features, specifications, assembly, and precautions.
	Comet UHV-6 Multi Band Mobile Antenna Operation Manual This operation manual provides comprehensive details for the Comet UHV-6 Multi Band Mobile Antenna. It covers features, specifications, frequency adjustment procedures, wiring examples with duplexers, maintenance guidelines, and customer support information for amateur radio operators.
	COMET CX-333 Tri-Band Antenna User Manual User manual for the COMET CX-333 Tri-Band Antenna, detailing features, specifications, assembly instructions, and precautions for ham radio use.
	COMET Gateway SP042: Quick Start Guide for LoRaWAN Network and COMET Cloud Integration Get started with the COMET Gateway SP042, your access point for LoRaWAN networks. This quick start manual guides you through setup, connection, and registration with the COMET Cloud for Wx9xx series transmitters.

	[COMET UxxxxM Dataloggers with GSM Modem Quick Start Manual] Quick start guide for COMET UxxxxM series dataloggers featuring GSM modem. Learn about product description, installation, operation, and technical specifications for measuring and recording physical and electric quantities.
	[COMET Wx8xxP Series SIGFOX Transmitters: Instructions for Use] User manual for COMET Wx8xxP series SIGFOX network transmitters. Learn about installation, operation, technical parameters, and maintenance for models measuring temperature, humidity, voltage, and pulse counts.