

# *Channel Master*<sup>®</sup>

UHF Performance  
antenna series

## USER GUIDE

CM-4220HD

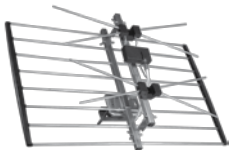
CM-4220MHD

CM-4221HD

CM-4228HD

**CM-4220HD**

METROtenna- Suburban/Metro  
Range 2-Bay [Antenna](#)



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METROtenna- Suburban/Metro  
Range 2-Bay Antenna

**CM-4220MHD**



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**CM-4221HD**

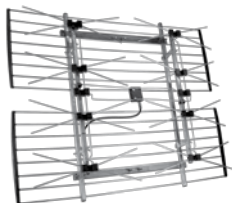
ULTRAtenna- Suburban/Metro  
Range 4-Bay Antenna



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Fringe/Deep Fringe 8-Bay  
Antenna

**CM-4228HD**



UHF Performance  
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## Product Overview

All Channel Master UHF Performance Series Outdoor Antennas are engineered to be easy to install, and have been optimized for receiving the highest quality UHF HDTV signals available. The modern design makes it easy to simply unfold the antenna, mount it, connect it, and you're ready to go! Attention to detail has been taken into consideration; every piece is smooth and machined to ensure a safe, trouble-free installation. Every antenna is made of the finest components to exceed consumer expectations. That means peace of mind for years to come.

## Product Features

- Designed and tested for high quality HDTV digital and UHF reception
- Easy installation - Unfold, mount, and connect
- Long lasting, durable design:
  - Heavy duty aluminum elements
  - UV stabilized plastics
  - 75 Ohm PC balun built into antenna
- Easily mounts to a traditional antenna mast
  - CM4220MHD includes a high quality mount making an installation convenient and effortless
- Rooftop, eave, or wall mountable
- Transparent design

## Package Contents and Accessories

### CM-4220HD

1. Hardware Kit

### CM-4220MHD

1. Hardware Kit

2. "J" Mount

### CM-4221HD

1. Hardware Kit

### CM-4228HD

1. Hardware Kit

# DANGER

## WATCH FOR WIRES!



**You can be KILLED if  
this antenna comes near  
electric power lines!**



**READ INSTRUCTIONS**



## WARNING AND SAFETY INFORMATION

Please read this user's manual before operating this product. The information contained in this document is subject to change without notice. Features or specifications may be different depending on the type of product model purchased.

UHF Performance  
antenna series

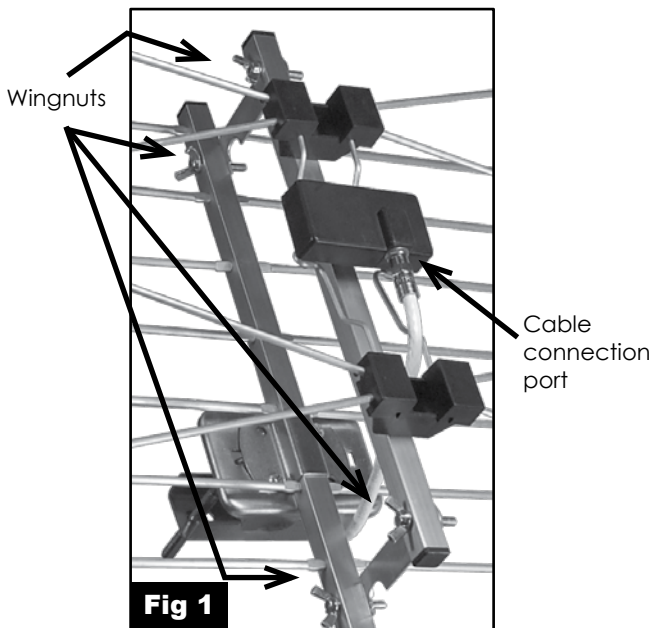
## Follow These Procedures for the Safest Installation

1. Perform as much antenna assembly on the ground as possible.
2. Watch out for overhead power lines. Check the distance to the power lines before you start installing. **WE RECOMMEND YOU STAY A MINIMUM OF TWICE THE MAXIMUM LENGTH OF THE ANTENNA ASSEMBLY AWAY FROM ALL POWER LINES.**
3. Do not use a metal ladder.
4. Remember, even the slightest touch of an antenna to a power line can cause a fatal shock.
5. Do NOT try to do the job on a windy day.
6. Have a friend as a spotter when you're on the roof. They can see things you can't.
7. If you start to drop an antenna, move away from it and let it fall.
8. If any part of the antenna should come into contact with a power line **CALL YOUR LOCAL POWER COMPANY! DO NOT TRY TO REMOVE IT YOURSELF!** They will remove it safely.
9. Mast, lead-in, and metal guy wires are excellent conductors of electrical current - - keep them away from power lines too.
10. Be sure your family and friends understand the danger of touching an overhead power line. Tell them never to try to remove any object in contact with a power line (TV antenna, mast or anything else).
11. Make sure that the antenna mast assembly is properly grounded.

# CM-4220HD, CM-4220MHD, CM4221HD

## Installation Instructions:

1. Identify the direction of the desired TV stations transmitter.
2. Fold antenna front section out and tighten 4 wing nuts as shown in **Fig 1**. Make sure the front section is aligned straight with respect to the reflector grid and the 4 wing nuts are securely tightened.



3. Attach mounting hardware (**Fig 2 and 3**) to middle of antenna grid as shown in **Fig 4**. Make sure the U-bolt is placed between the 2 bracket clamps before attaching using the 2 screws.
  4. Mount antenna to mast as shown in **Fig 4**.
  5. Connect coaxial cable to antenna cable connection port shown in **Fig 1**. Secure cable to the mast with a cable tie to prevent strain on the cable connector.
  6. Point the front of the antenna toward the TV transmitter location and adjust for best reception.
- NOTE:** The front of the antenna is the side with the X shaped elements.
7. Tighten all loose hardware.



Included Hardware



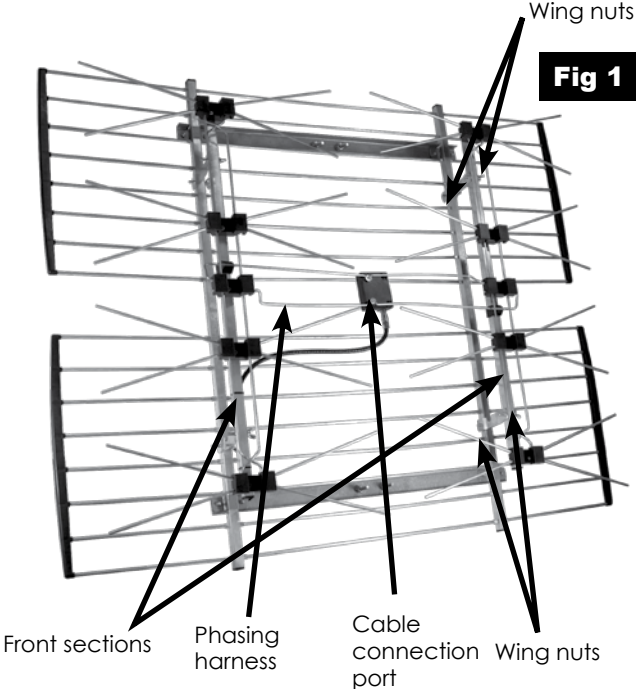
U-bolt must be thru bracket before assembling to antenna



**Fig 4**

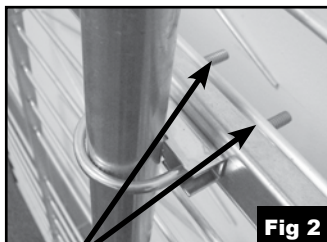
# CM-4228HD Installation Instructions:

1. Identify the direction of the desired TV stations transmitter.
2. Fold out the 2 front sections of the antenna making sure to fold out the right and left sections simultaneously to ensure that stress is not put onto the phasing harness. Make sure that the front sections are straight and parallel with respect to the reflector grid and securely tighten the 8 wing nuts (**See Fig 1**).





- Attach the mounting hardware to the antenna as shown in **Fig 2**.



U-bolt must be secured with bolts thru antenna.



Included Hardware

- Mount antenna to mast as shown.
- Connect coaxial cable to antenna cable connection port. Secure cable to the mast with a cable tie to prevent strain on the cable connector.
- Point the front of the antenna toward the TV transmitter location and adjust for best reception.

**NOTE:** The front of the antenna is the side with the X shaped elements.

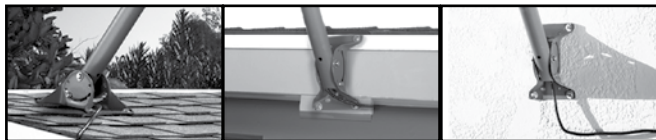
- Tighten all loose hardware.

## CM-4220MHD Mounting Instructions:

1. Assemble mast bolts with hex flange nut loose enough to allow movement in curved slot without damaging the painted surface (on each side) (**see Fig A**). Once proper alignment is determined, tighten flange nuts.
2. With the provided lag bolts, secure the DBS mount so that the antenna can be pointed towards the TV transmitters with clearance from obstructions to allow for adjusting. Secure at least 2 lag bolts into a stud.
3. Mount the antenna per the 4220HD and 4221HD instructions.
4. Tighten all loose hardware.

**NOTE:** Use proper hardware for brick or masonry installations.

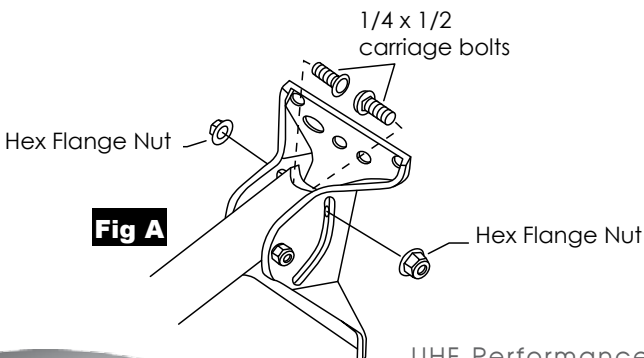
Use sealant for roof mounts to prevent leaks.



Roof

Eave

Wall



UHF Performance  
antenna series

## Operating Instructions:

For best reception, please consider the following conditions:

1. Keep the antenna away from sources of interference, including air conditioners, microwave ovens, hair dryers, etc. These are all sources of strong electrical interference, and can cause poor quality or total loss of TV signals.
2. Place the antenna near a window, preferably on the side of the house facing the TV station transmitters, when installing the antenna indoors.
3. Install the antenna as high as possible, and preferably with a clear path between the antenna and the TV station transmitters. Trees, buildings, mountains, etc., can all impact the performance of any antenna.

## Features and Technical Data for the UHF Performance Antenna Series

- Designed for reception of HD digital TV signals
- Frequency Range: 470-700 MHz
- Impedance: 75Ω
- Gain:

### **CM4220HD/CM4220MHD**

Average Gain, UHF: 8 dB

Number of Elements: 8

### **CM4228HD**

Average Gain, UHF: 12 dB

Number of Elements: 32

### **CM4221HD**

Average Gain, UHF: 10.2 dB

Number of Elements: 16