

Extended Coverage Antenna Kit**INSTALLATION INSTRUCTIONS**

The EC30 is an omnidirectional antenna, primarily designed for extended outdoor coverage during speed-team operations. It enables team members wearing HME headsets to greet customers at a greater distance from the building, with uninterrupted transmission and reception. It can also be used indoors, in stores where coverage is exceptionally difficult with standard, base station antennas. An optional antenna splitter can be used if 2 base station antennas are needed for indoor coverage (See paragraph 1.5).

These instructions are for typical outdoor installation of the EC30, which requires walk testing the antenna coverage area to determine the best location for the antenna, mounting the antenna on the building, running the coaxial cable from the base station to the antenna, connecting the cable to the antenna, lightning arresstor, antenna adaptor cable and base station. Installation of the EC30 must only be done by an HME certified professional. The installation should take approximately 2 hours.

Equipment Provided

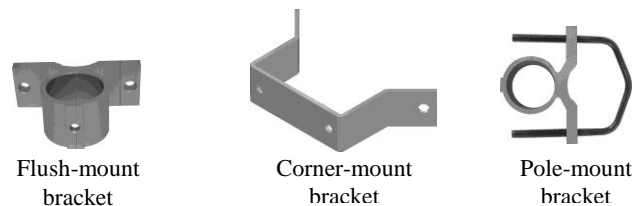
- EC30 Antenna
- Antenna mounting brackets with hardware
- Lightning arresstor with mounting bracket
- Coaxial Cable, 100 foot (30.48 meters)
- Antenna adaptor cable, 3 foot (.91 meter)

Tools/Equipment Needed

- Phillips (cross-point) screwdriver, size #2
- Standard (slotted) screwdriver, 1/8 inch (3.2 mm)
- Power drill and drill-bit set
- Fish tape, 100 foot (30 meters)
- Wire, 18 gauge, (typical, per local code) for grounding lightning arresstor
- Ladder to reach outside antenna-mounting location



EC30 Antenna



Antenna mounting brackets



Lightning arresstor

Optional splitter



Coaxial cable, 100 ft (30.48 meters)



Antenna adaptor cable, 3 ft (.91)

Figure 1. Equipment provided in EC30 Extended Coverage Antenna Kit

1. INSTALLATION

1.1 Determine Location

Determine the best location for mounting the EC30 Antenna, with the following considerations.

- **Coverage area** —
The coverage area extends outward from the antenna approximately 130 feet (39.62 meters) in all directions. The mounting brackets provided with the antenna will allow it to be mounted on a corner of the building nearest the required coverage area, as shown in Figure 2. The antenna can also be flush-mounted on a wall, or mounted on a pole.

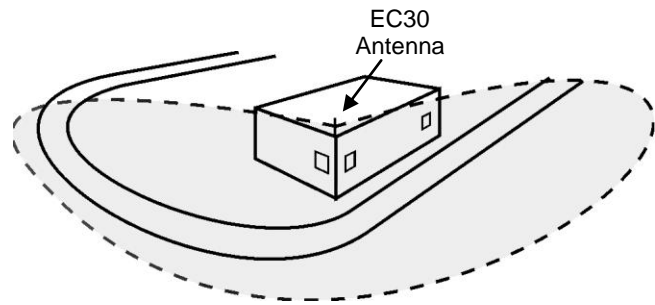


Figure 2. Typical EC30 Antenna coverage area

- **Cable routing** —
The 100 foot (30.48 meter) coaxial cable must be able to be routed from the base station, through walls and ceiling as needed, to reach the antenna. Note that the coaxial cable is thick and relatively stiff, making it difficult to route around corners and through tight openings.

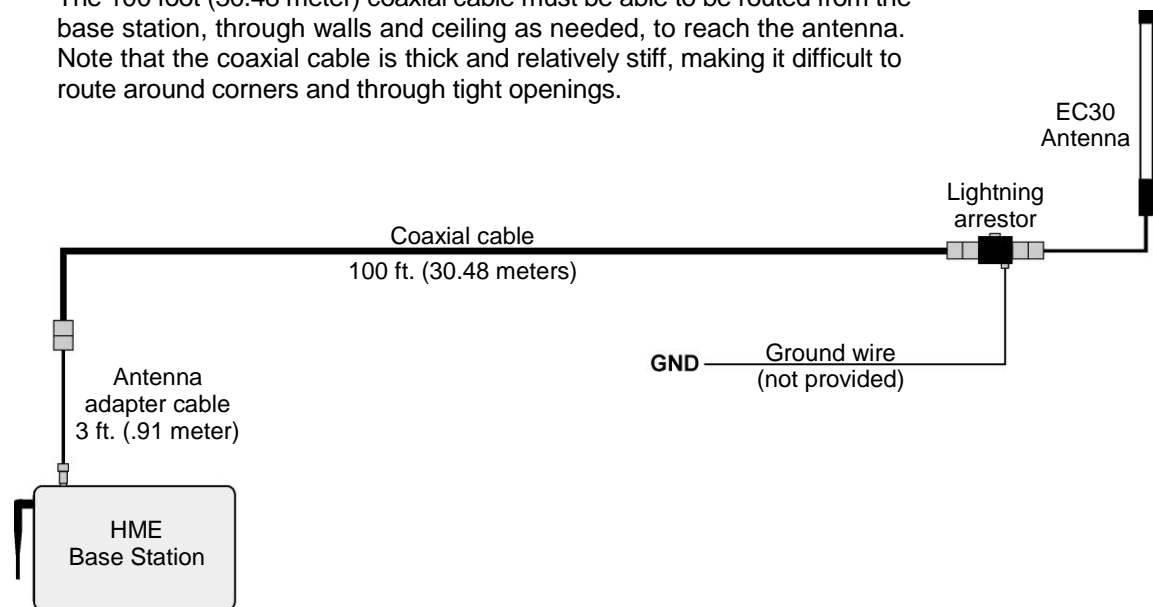


Figure 3. Diagram of EC30 cable routing and connections

- **Esthetics** —
Some stores restrict the location of equipment mounted on the outside of stores, with regard to distance from signage or visibility to customers, for esthetic reasons.
- **Walk test** —
To determine the best location for mounting it, **you must do a walk test before permanently mounting the EC30 Antenna.** Remove power from the HME base station and remove one of the base station antennas. Temporarily connect the enclosed antenna adapter cable where you removed the base station antenna, and then connect the coaxial cable to the adapter cable as shown in Figure 3. Route the coaxial cable to the area where you would like to mount the EC30 Antenna, and connect the lightning arrester and antenna to the cable connector. Place the antenna temporarily in a position central to where its extended coverage is needed. Return power to the base station. With two people using headsets (with fully charged batteries) and pressing button B to communicate with each other, check transmission and reception around the menu board and throughout the area where speed-team operators will walk. If necessary, move the antenna and repeat the walk test until you find the location where the best transmission and reception occur. You can now permanently mount the EC30 Antenna in accordance with the following instructions.

1.2 Mount Antenna

1.2.1 Mounting Antenna on Outside Flat Wall of Building

- Hold the flush-mount antenna bracket against the wall at the mounting location, 12-15 feet (3.66-4.58 meters) above ground level, and mark the wall through the two screw holes in the bracket.
- Put the bracket aside and drill a $\frac{3}{16}$ inch (4.76 mm) hole in the wall at each of the marked spots.
- Insert one of the enclosed screw anchors all the way into each of the drilled holes.
- Place the bracket against the wall with its two screw holes over the anchors and insert the enclosed screws through the holes, screwing them all the way into the anchors to hold the bracket securely in place.
- Insert the antenna through the hole in the flush-mount bracket, with its cable extended from the bottom of the antenna, and the black part of the antenna inside the hole in the bracket. Secure the position of the antenna in the bracket with the enclosed set screw.
- Drill a $\frac{3}{4}$ inch (19 mm) hole in the wall, centered approximately 4 inches (101.6 mm) below the bracket, where the antenna cable will be routed into the building.
- Insert the antenna cable connector and cable through the hole in the wall, and fill the hole around the cable with weatherproofing sealant.



Figure 4. Antenna mounted with flush-mount bracket

1.2.2 Mounting Antenna on Outside Corner of Building

- Assemble the flush-mount bracket and the corner-mount bracket as shown in Figure 5, using the enclosed bolts and nuts.
- Hold the corner-mount bracket assembly against the walls at the mounting location on a corner of the building, 12-15 feet (3.66-4.58 meters) above ground level, and mark the wall through the two screw holes in the bracket.
- Put the bracket assembly aside and drill a $\frac{3}{16}$ inch (4.76 mm) hole in the walls at each marked spot, and insert the enclosed screw anchors into the holes.
- Place the bracket assembly against the wall with its two screw holes over the anchors and insert the enclosed screws through the holes, screwing them all the way into the anchors to hold the bracket assembly securely in place.
- Drill a $\frac{3}{4}$ inch (19 mm) hole through the wall, **as close to the antenna as possible**, so the 12 inch (305 mm) antenna cable can be routed through the hole into the building.
- Insert the antenna in the bracket assembly as shown in Figure 5, with its cable extended from the bottom and the black part of the antenna inside the hole in the bracket. Secure the position of the antenna in the bracket with the enclosed set screw.
- Insert the antenna cable connector and cable through the hole in the wall, and fill the hole around the cable with weatherproofing sealant.

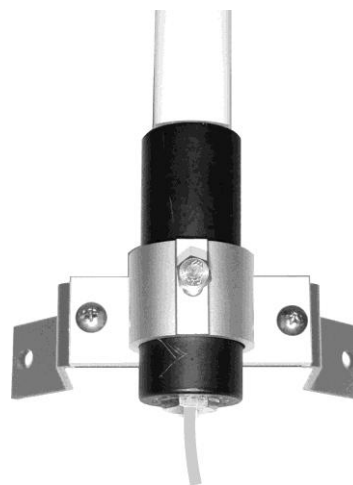


Figure 5. Antenna in corner-mount bracket assembly

1.2.3 Mounting Antenna on Pole

- Insert the antenna through the hole in the flush-mount bracket, with its cable at the bottom, and the black part at the bottom of the antenna inside the hole in the bracket. Secure the position of the antenna in the bracket with the enclosed set screw.
- Mount the antenna and bracket on the pole, using the enclosed U-bolt and nuts, as shown in figure 6. If possible, the antenna should be 12-15 feet (3.66-4.58 meters) above ground level.
- Connect the enclosed lightning arrester to the EC30 antenna cable, and then connect a coaxial cable connector to the other side of the lightning arrester.

NOTE: It will be necessary to route a cable and conduit from the lightning arrester into the building to connect to the base station as described in section 1.4.

- Attach a grounding wire to the ground connector screw on the lightning arrester, and connect the other end of the wire to the nearest grounding point.

NOTE: The type/gauge of ground wire used for lightning arrester must comply with the local code.



Figure 6. Antenna mounted on pole

1.3 Run Cable

Inside the store, run the enclosed 100 foot (30.48 meter) coaxial cable from the base station of the HME audio system, through walls and ceiling as needed, to where the antenna cable comes through the wall.

1.4 Make Connections

- Remove the antenna from the top of the HME base station, and connect the EC30 antenna adapter cable in its place. One end of the cable has a connector that fits the connector on the base station, and the other end has a larger connector.

NOTE: For optimum antenna coverage, the EC30 adapter cable should be connected directly to the base station connector, not to a splitter.

- Connect the other end of the antenna adapter cable to the coaxial cable.
- Go to where the EC30 antenna cable comes through the outside wall into the building. Connect the enclosed lightning arrester to the EC30 antenna cable, and then connect the coaxial cable connector to the other side of the lightning arrester.
- Attach a grounding wire to the ground connector screw on the lightning arrester, and run the other end of the wire to the nearest grounding point and connect it there.

NOTE: The type/gauge of ground wire used for lightning arrester must comply with the local code.

- Using the mounting bracket enclosed with the lightning arrester to mount the lightning arrester on the wall is recommended. This will act as a strain relief to prevent pulling on the antenna cable. Use two screws (not provided) to mount the bracket on the wall before attaching the lightning arrester to it. Tighten the bolt on the lightning arrester to secure it to the bracket.



Figure 7. Lightning arrester and bracket

1.5 Optional EC30 Installation with Splitter

The optional antenna splitter allows both base station antennas to be used, together with the EC30 antenna. Instructions below describe standard antenna connections using the splitter and EC30 cable.

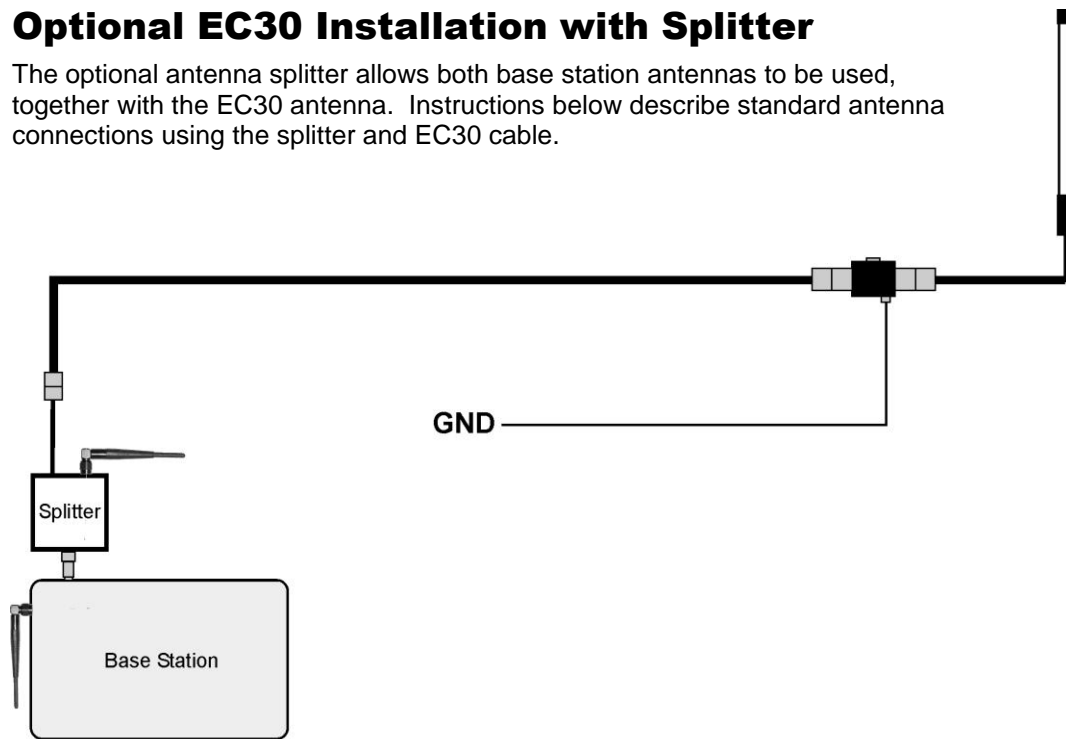


Figure 8. EC30 configuration with optional splitter

- Mount the splitter on either base station antenna connector as shown in Figure 8.
- Screw the connector of the EC30 cable onto one of the antenna connectors on the splitter.
- Screw one of the base station antennas onto the other splitter connector.

2. SPECIFICATIONS

Electrical

Frequency	2400-2500 MHz
Gain	8 dBi
Polarization	Omnidirectional
Impedance	50 Ohm
Max. input power	100 Watts
VSWR	< 2.0:1 average
Lightning protection	DC short

Mechanical

Weight	1.5 lbs. (.68 Kg)
Dimensions	Length: 16" (406 mm) Diameter: 1 $\frac{3}{8}$ " (35 mm)
Operating temperature	-40°F to 185°F (-40°C to 85°C)
Mounting	Flush and corner-mount hardware included

FCC NOTICE

The use of all radio equipment is subject to radio regulations in each country. It is the responsibility of the purchaser/installer/operator to insure that only approved equipment is installed/used. For the ISM band equipment (equipment that generates RF energy for industrial, scientific or medical purposes) manufactured, sold/or used in the USA, FCC Title 47, Part 15 governs its sale, lease, use and manufacture, and prohibits the same unless such equipment is used in the FCC-certified system configuration with which it is authorized. This equipment is intended for use in industrial or commercial environments only, and is not intended for use by the general public.

According to FCC rules, this equipment requires professional installation. This equipment must be purchased only from HME authorized dealers, and its installation must be done by HME certified professionals. The installation of this equipment must be done appropriately to ensure that its placement and setup meets the needs of individual customers and locations. To ensure system components are installed in compliance with applicable building codes, installation of this equipment may require a trained electrician.

Waste Electrical and Electronic Equipment (WEEE)

The European Union (EU) WEEE Directive (2002/96/EC) places an obligation on producers (manufacturers, distributors and/or retailers) to take-back electronic products at the end of their useful life. The WEEE Directive covers most HME products being sold into the EU as of August 13, 2005. Manufacturers, distributors and retailers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union

The symbol shown below is on the product or on its packaging which indicates that this product was put on the market after August 13, 2005 and must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of the user's waste equipment by handing it over to a designated collection point for the recycling of WEEE. The separate collection and recycling of waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local authority, your household waste disposal service or the seller from whom you purchased the product.



The antenna(s) used for the base transmitter must be installed where there is a separation distance of at least 7.87 inches (20 cm) from all persons, and must not be near or operating in conjunction with any other antenna or transmitter.