

SPECIFICATIONS

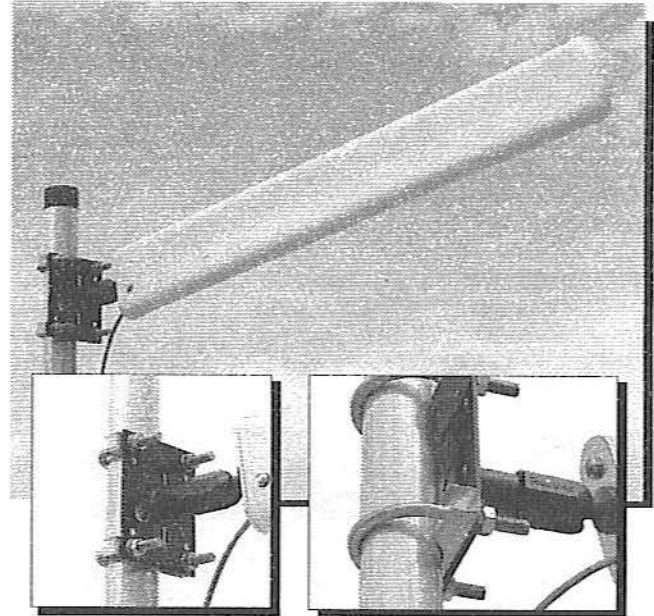
Model ML-2499-BYGA2-01

Frequency: MHz	2400-2500
Gain:	13.9 dBi
Number Elements:	15
Front-to-Back Ratio:	18 dB
E-Plane (3 dB beamwidth):	30°
H-Plane (3 dB beamwidth):	34°
Radiating Element:	Brass
Impedance (Ohms):	50
Antenna Connector:	Type N (f)
Antenna Weight lb. (kg):	1.25 (.56)
Mounting:	Articulating mount
Dimensions in.(cm):	26-1/2 x 3-3/4 x 1-1/2 (67.3 x 9.5 x 3.8)
Enclosure:	UV Stable Polycarbonate
Mast Diameter Max. in (cm):	2-1/8 (5.4)
Antenna Cable in (cm):	12 (30.5)

ML-2499-BYGA2-01

**2.4 - 2.5 GHz Antenna
Lightning Arrester and Cable Assemblies**

ASSEMBLY AND INSTALLATION



Important Warning: Two pairs of weep holes are provided in the radome one for vertical mounting and one for horizontal mounting. You must fill the unused pair of weep holes with adhesive dots prior to mounting or unwanted leakage into the radome may result (see instructions).

APPLICATION

The ML-2499-BYGA2-01 is a complete kit consisting of a highly directional 15-element Yagi enclosed in a UV stable weatherproof radome. This antenna provides extended point-to-point link coverage, or sharply focused zonal coverage for 2.4-GHz ISM applications.

SAFETY

The ML-2499-BYGA2-01 and all associated equipment should be installed in accordance with applicable local and national electrical code guidelines to ensure safe operation.

ANTENNA LOCATION

The antenna may be mounted at interior or exterior locations. For link installations, a line-of-sight path between antennas works best. Although 2.4 GHz signals penetrate cubical dividers and interior partitions with little attenuation, reinforced block walls, banks of metal cabinets, or steel shelving may attenuate signals or cause multipath, a condition where reflected signals interfere with the primary signal. Because antenna beam width is restricted to 15-degrees each side of center, the PC2415SNA must be aimed accurately during installation in order to provide optimum gain and best performance.

GENERAL MOUNTING INFORMATION

The PC2415SNA is equipped with an articulating mount, and may be oriented for vertical or horizontal polarization. It accommodates mast sizes up to 2-1/8-inches (4.76 cm).



Symbol Technologies, Inc.
One Symbol Plaza
Holtsville, NY 11742 - 1300

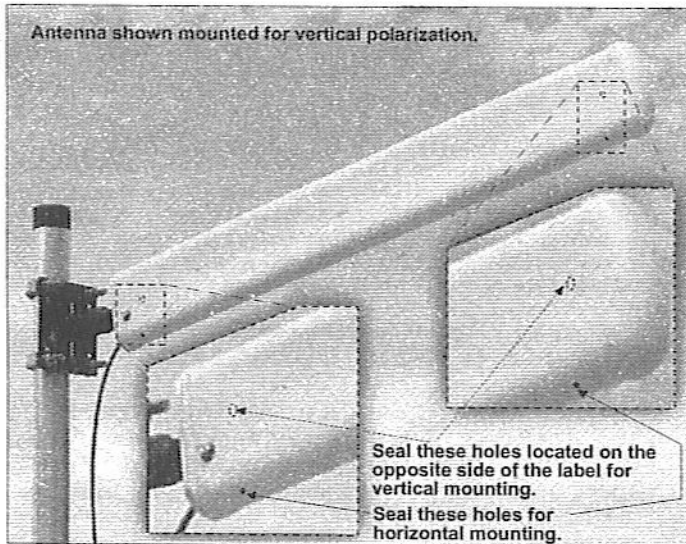
WEEP HOLES

Two sets of weep holes are provided in the PC2415NA radome one set is required for horizontal mounting and one set for vertical mounting. Prior to installation, *the unused pair of weep holes must be plugged with adhesive dots to prevent leakage.* Two small adhesive dots are supplied with each antenna for this purpose. Weep-hole locations are shown in **Figure-A**.

- 1. Vertical Mounting:** When mounting vertically, find two weep holes on the broad flat side of the radome and cover with adhesive dots.
- 2. Horizontal Mounting:** When mounting horizontally, find two (2) weep holes on the narrow edge of the radome and cover with adhesive dots.

When adhesive dots are applied, check to ensure holes are fully closed.

FIGURE A

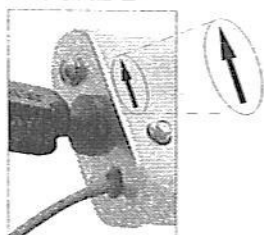


Coax Routing: During installation, avoid any sharp bend or kink in the feed line. Also, avoid bending coax close to the radome where it may apply pressure to the wall of the cable grommet and compromise the water seal. Route coax downward—or provide a drip loop to ensure rainwater accumulating on the jacket flows away from the cable grommet in the radome.

ASSEMBLY

- Prior to mounting, find the arrow sticker on the radome. When mounting vertically, the arrow should always point upward. When mounting horizontally, the arrow sticker

FIGURE B



should always be on top of the radome. This positioning is required (a) to ensure weep holes fall on the bottom of the antenna, and (b) to ensure proper phasing when multiple antennas are used with a harness.

ASSEMBLY (cont.)

- Orient for the desired polarization and install the antenna base against the mast using the two U-bolts (04), four hex nuts (18), four lock washers (19) and two V-blocks (63) provided in hardware kit.
- If the antenna has an articulating mount, install the antenna ball into position and tilt for the desired elevation angle (Figure-D). Tighten the socket screw with the supplied wrench.
- Rotate antenna to the desired directional position and tighten all hardware.

FIGURE C

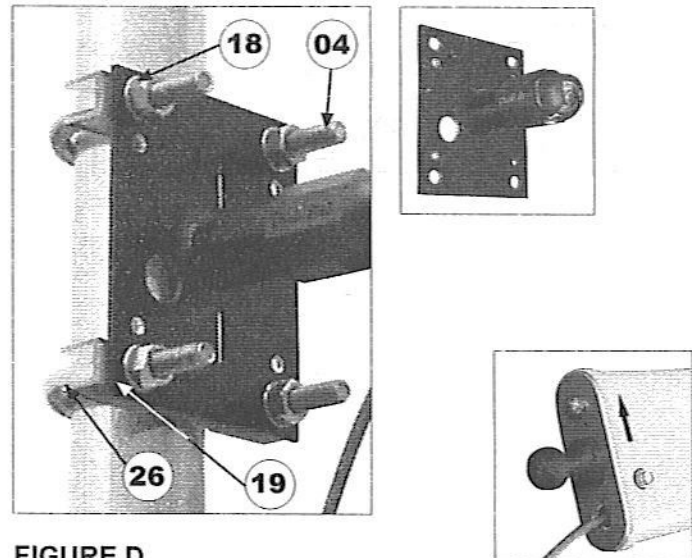
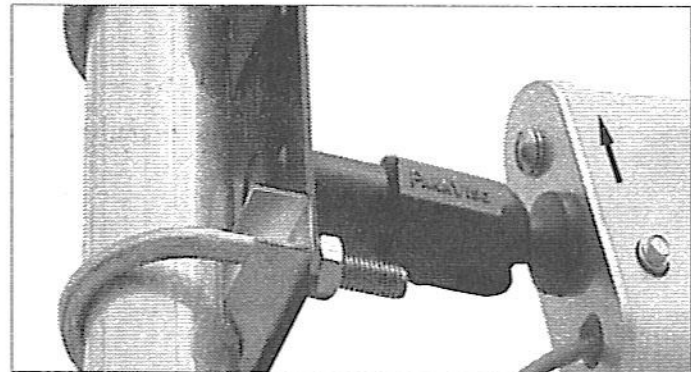


FIGURE D



GROUNDING

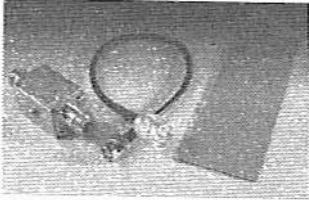
System grounding and lightning protection are essential especially for exterior-mounted antennas exposed to the elements (refer to the National Electrical Code). Never install an antenna where it may fall and contact electrical lines.

KEY	P/N	DISPLAY	DESC	SIZE	QTY
04	010404		U-BOLT	5/16"-18 x 3-1/4" x 2-7/16"	2
18	010118		SS HEX NUT	5/16" - 18	4
19	010119		SPLIT LOCK WASHER	5/16"	4
26	195726		V-BRACKET		2
21	295721		ADHESIVE DOTS		2

JUMPER KIT INSTALLATION (OPTIONAL)

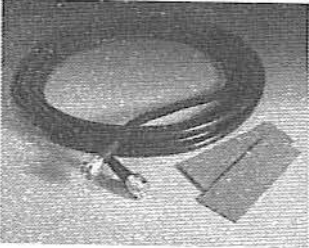
The jumper and arrester kits provide a convenient way to set up your link. For best results, tighten connectors securely and encapsulate exterior junctions with sealant tape. When routing cable, use drip loops to guide rain water away from the LAC4 and back of the antenna.

CANM12BRBNMLA



The Cushcraft lightning arrester kit has been designed to provide in-line lightning protection and can be easily integrated into the Cushcraft extension cable jumper system.

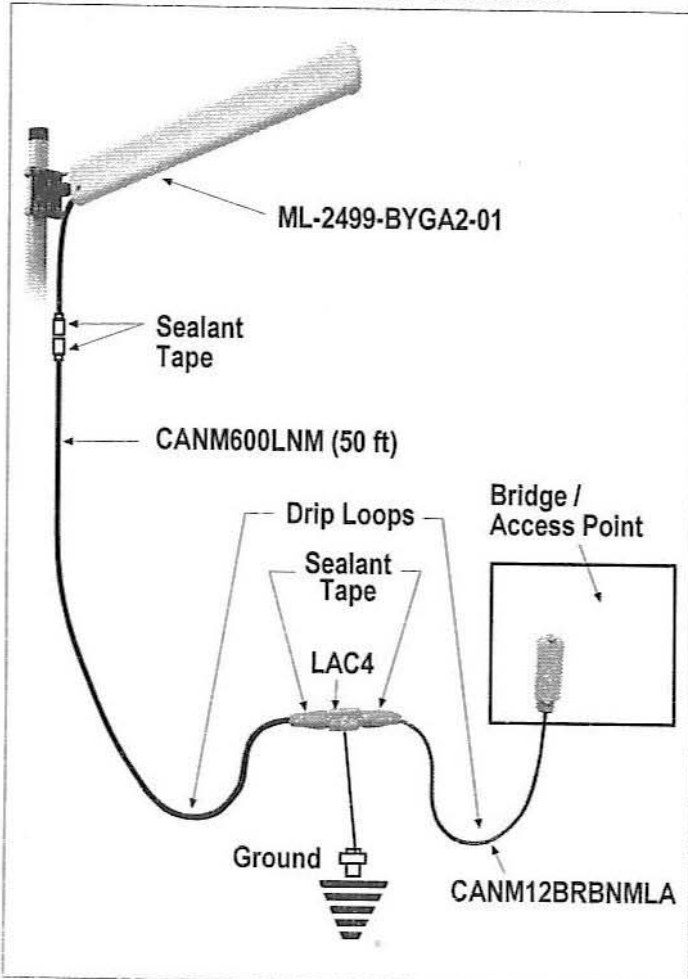
CANM600LNM



The pre-made low loss cable assembly features high quality cable and N male connectors and easy to use connector wraps. It offers the user a fast, convenient method to remotely mount the antenna at a distance of up to 100 feet from the access point or bridge.

CASNM120NM	10 ft.	CASNM300NM	25 ft.
CASNM600NM	50 ft.	CASNM1200NM	100 ft.

Figure E LAC4 Installation on PC2415SNA



LAC4 LIGHTNING ARRESTER (OPTIONAL)

For best results, install the LAC4 in close proximity to a low-resistance ground at a point where the coaxial cable enters the building (see Photo-1). In most cases, one 8-foot rod driven into moist soil—or multiple rods bonded together will provide adequate grounding (see National Electrical Code guidelines).

To connect the LAC4 to ground, use a very short and direct run of #10 solid copper wire (or equivalent). For exterior installations, weatherproof coax connectors with a suitable mastic or rubberized tape to prevent water incursion (see Photo 1).

Be sure to install in an accessible location that permits periodic inspection and (as needed) replacement of the gas cartridge. Provide drip loops in cables to prevent water from entering the building (see Photo 2).

Photo 1

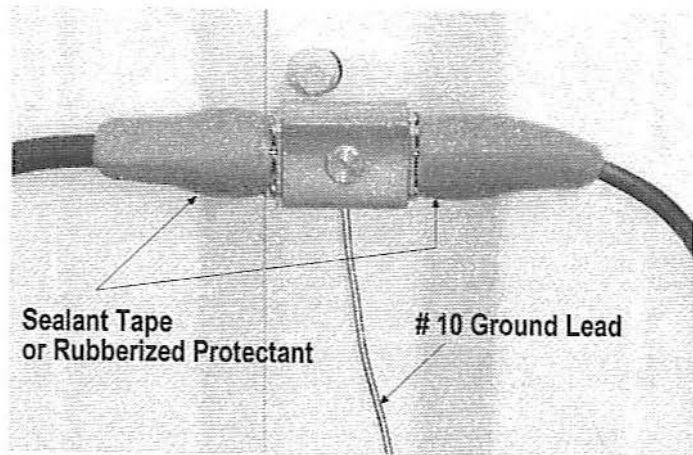
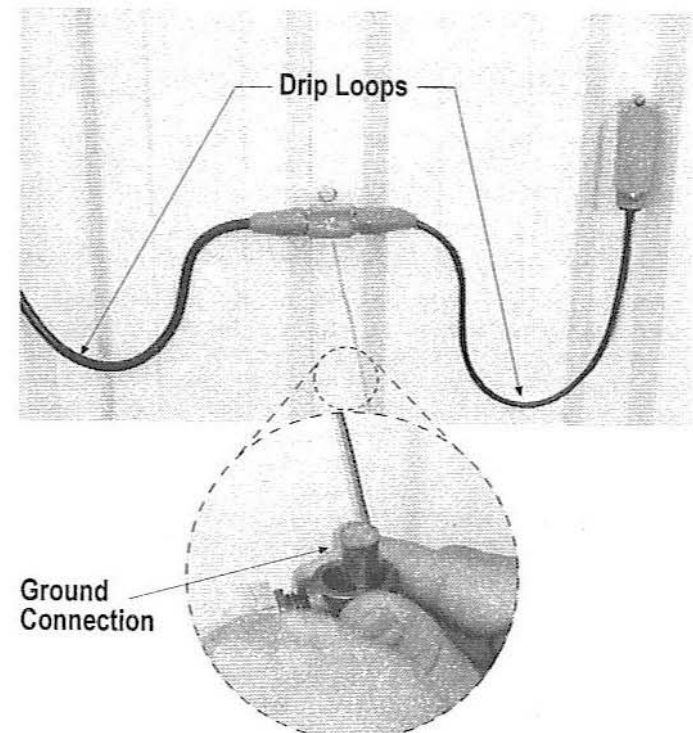


Photo 2



Important Note: A good ground system is essential for proper operation.