

DXPANDER

DXP-140

G5RV Antenna - 40 to 10m (7 to 30MHz)



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The DXP-140 antenna is a multi-band center-fed dipole antenna capable of 1500 Watts (1.5kW). This antenna requires the use of an antenna tuner to get the best performance from 7 to 30MHz (40 to 10m band).

⚠ WARNING

- ⚠ **This antenna is an electrical conductor.** Do not install it where there is any possibility of contact with power cables. It should not be close to power lines during installation, operation or removal.
- ⚠ **Keep this antenna out of reach of people, children, and animals.** Contact with any part of this antenna can cause RF burns or other injuries.
- ⚠ **Any contact with this antenna while transmitting can cause RF burns.**
- ⚠ **Never place this antenna close to electric power lines or utility wires.**

INSTALLING

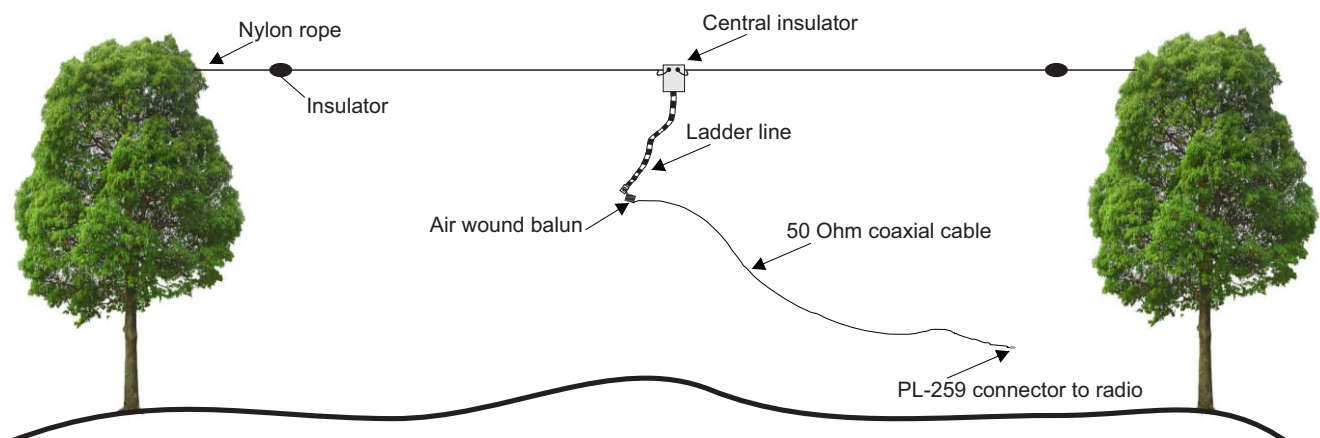
This antenna is easy to install. You do not need special tools or skills. You need only nylon ropes to support the ends of the antenna from a suitable structure or tree.

AIR WOUND BALUN - The air wound balun for this antenna can be constructed by winding the 50 Ohm coaxial cable feed line with at least 10 turn of 4 to 6 inch (10 to 15cm) diameter. You can wound the balun on PVC or any other non-metallic form. Place the balun immediately at the feed point connection.

The best location is as high and far away as possible from utility wires, other antennas, and other structures. You can install it in three basic ways:

1. Horizontal Antenna

This method requires two tall supports separated at least 52 feet (15.9m). Suspend the antenna with a nylon rope or another strength weather resistant non-metallic rope. Attach the rope to the end insulators through the empty holes. The antenna must be more than 35' (10m) above ground level to give acceptable performance, and should be as high as 80 feet (24m) for the best overall performance. The ladder line should drop vertically from the horizontal section.



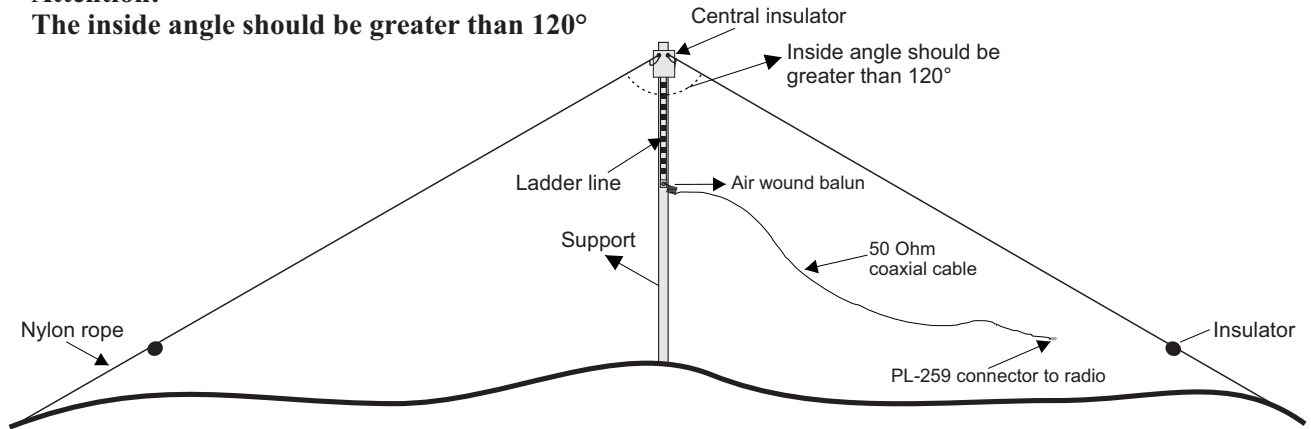
2. Inverted "V" Antenna

This method requires only one tall support. Hang the antenna from the support using a nylon rope to the center hole of the center insulator. The center insulator should be the highest point of the antenna.

The ladder line should drop vertically from the center insulator for at least 10 feet (3m) and kept away from conductive objects for at least 6" (15cm).

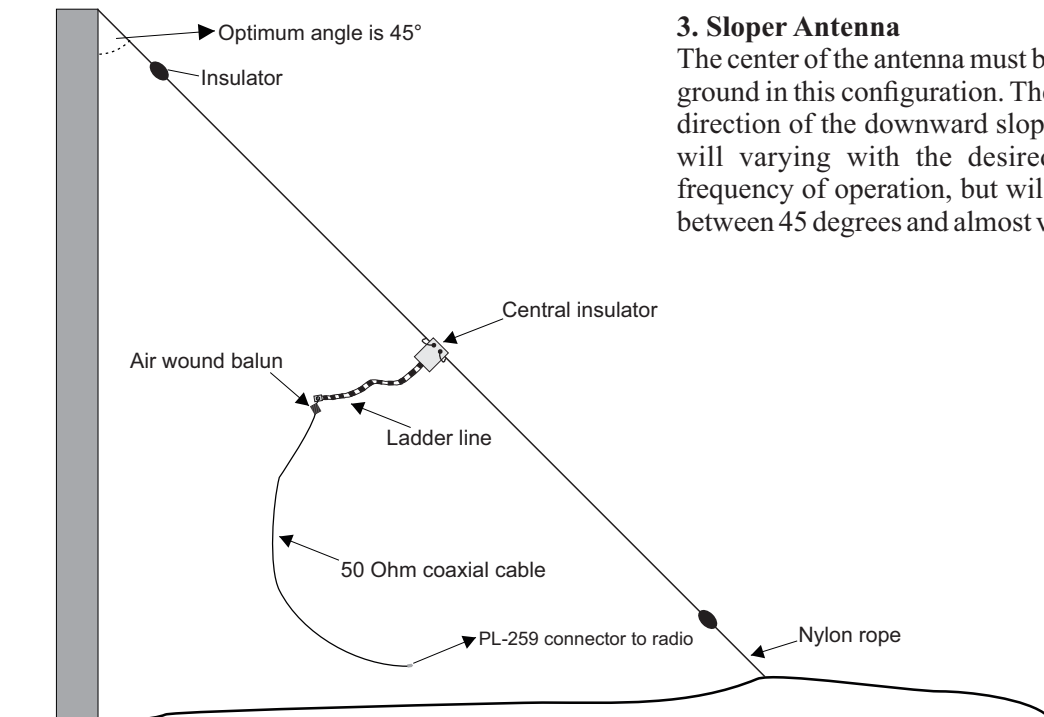
Attention:

The inside angle should be greater than 120°



3. Sloper Antenna

The center of the antenna must be at least 30 feet (9m) above the ground in this configuration. The antenna radiates mainly in the direction of the downward slope. The optimum angle of slope will vary with the desired coverage distance and the frequency of operation, but will almost always be somewhere between 45 degrees and almost vertical.



TUNNING YOUR G5RV ANTENNA

The G5RV requires a tuner to match it to the transmitter impedance. Operating this antenna without a tuner is not recommended.

You can use a manual or automatic antenna tuner to match your antenna. If you have a problem tuning this antenna on any band, try changing the length of the coax by 3-6 feet (0.9-1.8m) from the tuner to the antenna.

Grounding Considerations

This antenna requires a good earth ground connection to reduce the risk of lightning damage to the station equipment and to improve operator safety. Adequate protection can be obtained by burying the coaxial feedline directly in the ground for 20 feet (or more) before the feedline enters the building. The feedline's shield should be grounded to the station ground at the entrance point of the building before reaching the operating position. Failure to follow these precautions will increase the risk of lightning damage to equipment and reduce safety.

The earth ground should consist of at least one copper ground rod driven into the earth a minimum of 6 feet (1.8m). Multiple ground rods and buried wires are superior to a single rod for lightning and RF protection.

Never use woven flexible braiding for ground connections unless absolutely necessary. Braiding has high resistance to RF and lightning. Copper flashing, wide copper foil, or large gauge solid copper wires are the proper materials for use in RF and lightning grounding applications. Never ground the feedline on the antenna side of the balun. In-line coaxial lightning arrestors offer a minimal improvement in lightning protection. The best method of protecting station equipment is to disconnect the feedline outside the building.

MAINTENANCE

This antenna is constructed of heavy duty materials and should withstand normal climates for many years. The use of some type of coaxial connector moisture protection is recommended at the bottom coax connection. This is especially true in coastal areas where salty mist is commonplace.

GE makes a pure silicone grease called "silicone dielectric compound" that can be applied sparingly to the threaded area of the female connector. This compound or even a clear silicone heat sink compound, will prevent moisture from entering the connector through the threads and protect the connectors from corrosion.

A less desirable but adequate sealer is the automobile seam sealer commonly marketed as "coax seal". This is a pliable black sealing compound.

When installing any coax sealer, never completely cover the barrel of the coax connector. The sealer should only be placed near the junction of the threaded part of the connector and the knurled area of the male connector. The bottom of the male connector's outer sleeve should be left open to permit the connector to "breathe". Mount the connector vertically with the unsealed barrel end down so it does NOT collect moisture!

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RADIOHAUS

www.radiohausamerica.com

sales@radiohausamerica.com