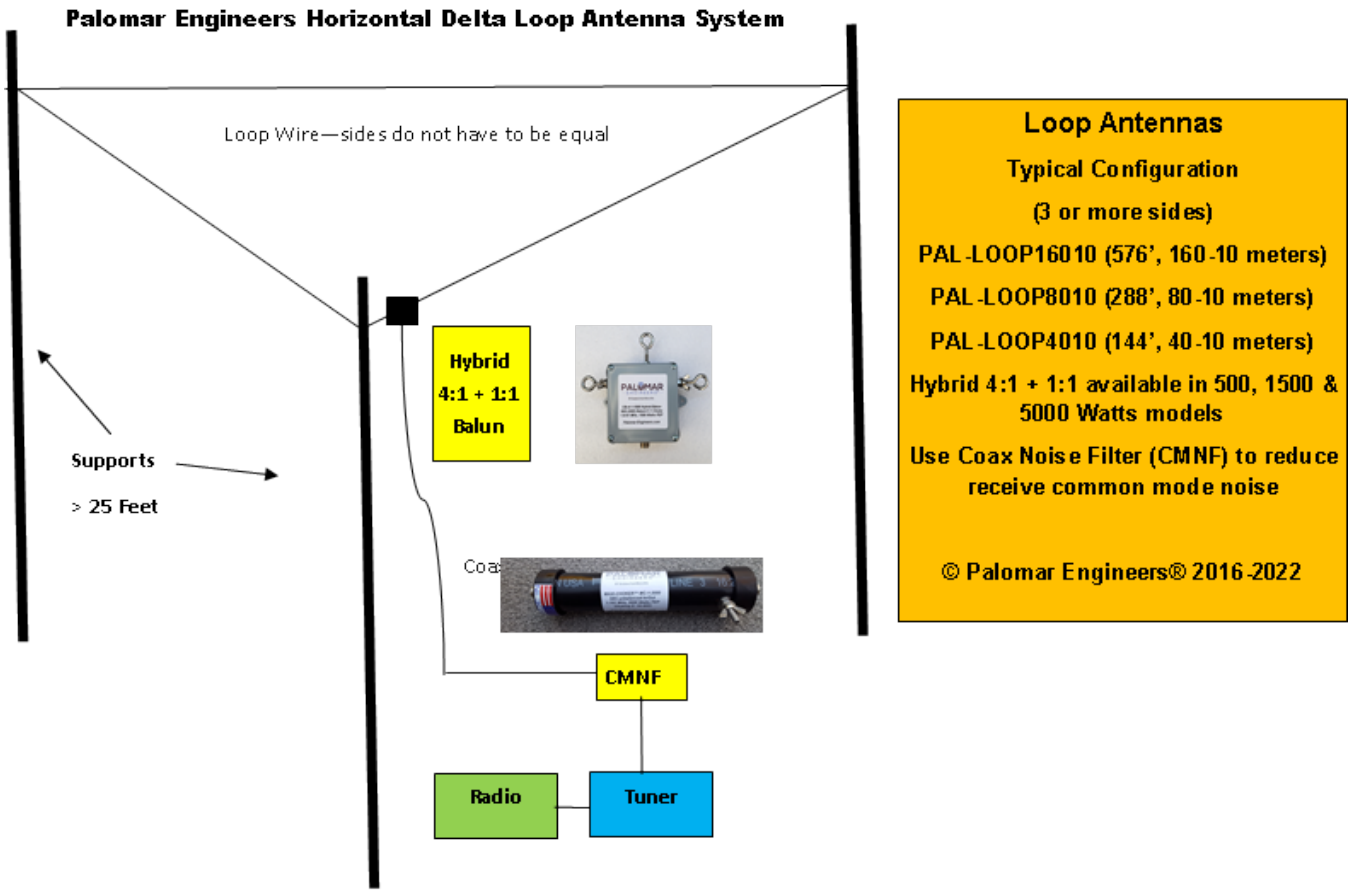
RFI Solutions from KHz to GHz

Product Manual
Horizontal Loop Antenna
Part #, 1.5KW and 5KW
PAL-LOOP16010
PAL-LOOP8010,
PAL-LOOP4010



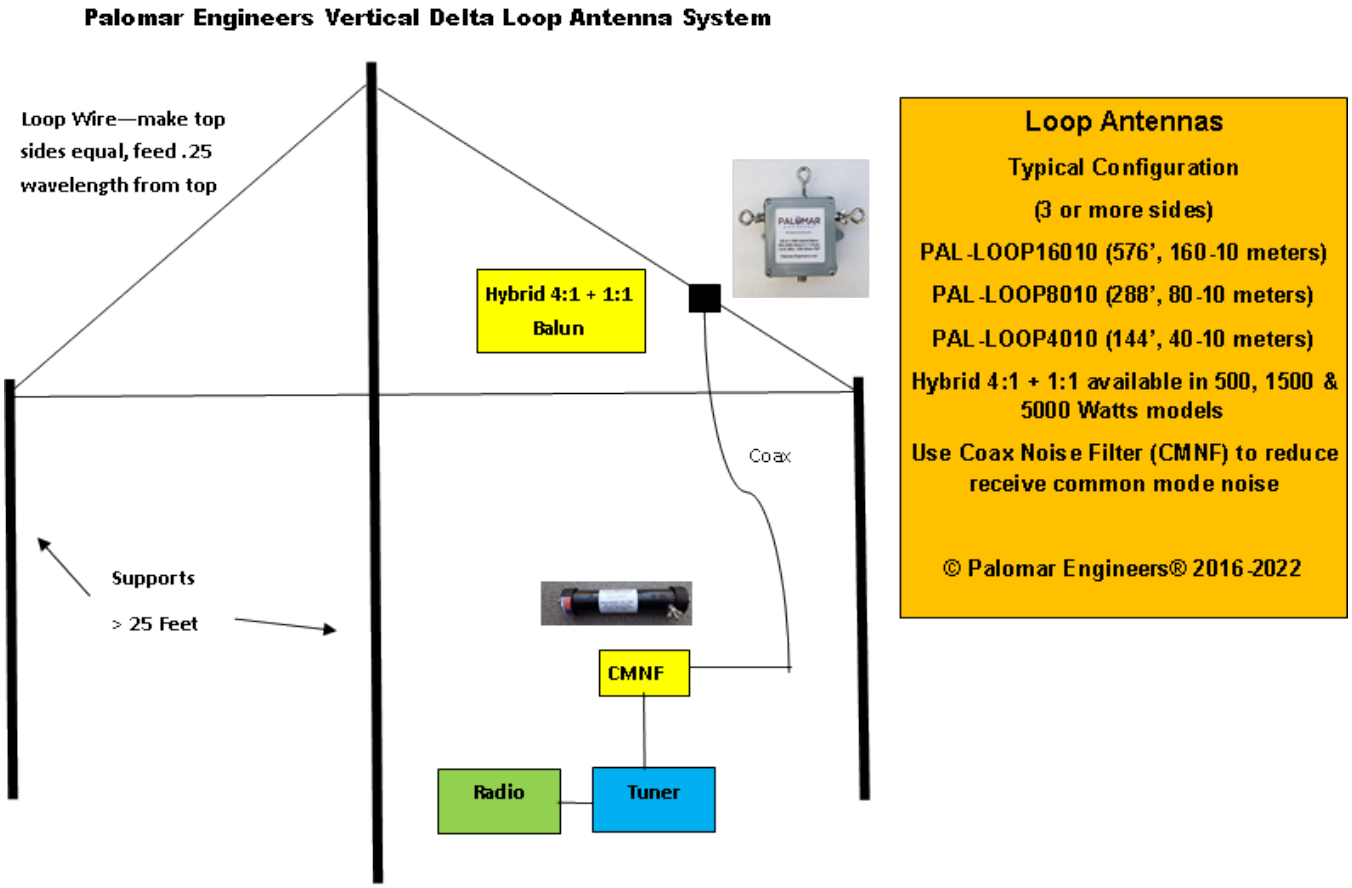
160-10 Meter Loop (576' wire), 80-10 Meter Loop antenna (288' wire – cut for 3.5 MHz) or 40-10 Meter Loop Antenna (144' wire – cut for 7.0 MHz)+ 1500 Watt PEP rated 4:1 Current Balun + internal 1:1 Current Balun in one enclosure + 4 insulators for support on 80 and 40 meter models, 6 insulators for 160 meter loop

* Complete package - just add coax

* works multiple bands with ease

* can be configured as delta, square, rectangle or multi-sided horizontal (or vertical) loop (4 insulators included)

* No need for extra feed line choke as it is built into the 4:1 balun enclosure



After many requests we have created a compact, special balun for OCF and loop (Skyloop or Delta loop) antennas. The CB-4-1500OCF is a CUBE enclosure containing a multi-core, broadband 4:1 impedance transformer in series with a 1:1 current balun for extra common mode current choking to keep RF current off the outside of the coax braid and on the antenna where it belongs. The extra choking action also means that the coax feed line will not act as a radiator causing unnecessary RF interference (RFI). Rated for full 1500 watts PEP and 450 watts CW (ICAS). 1.8Mhz – 31 MHz. 5KW model is 5KW PEP, 1500 watts CW/RTTY/FT8.

Typical size id 1005/F(MHz) and cut for lowest frequency in band segment.

Installation

For best results support antenna at least 30+ feet – the higher the better radiation. Any length of 50 ohm feed line ok but longer feed lines over 50 feet may show reduced SWR on some bands due to losses in feed line and soil conductivity, nearby objects, etc. Due to local ground conditions, antenna height and feed line length, SWR may vary and an antenna tuner may be required or some bands to bring SWR at end of feed line to acceptable levels. Use a good quality 52 ohm cable adequate for the power level of your station. The CB-4-1-1500 balun is rated for 1500 watts PEP at 50% duty cycle for RTTY, AM, or other continuous modes. The 5KW version is rated for full legal limit of 1500 watts for RTTY/FT8 (Model # CB-4-1-5000EB)

80 meter loop structure display This 80 meter loop is actually 288 feet of wire. This is a little long for 80, 17 and 12 meters, but a little short for 40 and 30 meters and just right for 20, 15 and 10 meters. If we make the loop much longer or shorter, we would end up with the antenna being unsuitable for some of the bands. At this length, it is a good compromise for all of the bands.

In practice, the shape of the loop will be determined by the location of good supports for the loop (usually trees). The shape of the loop is not critical at all, my loop is an irregular pentagon and it seems to get out fine. This model is square, however the feed point has been placed in an odd location. This avoids the typical patterns of a loop fed at a corner or in the middle and results in the kind of irregular looking patterns you would expect from a real life loop antenna.

BEFORE YOUR START

CAUTION

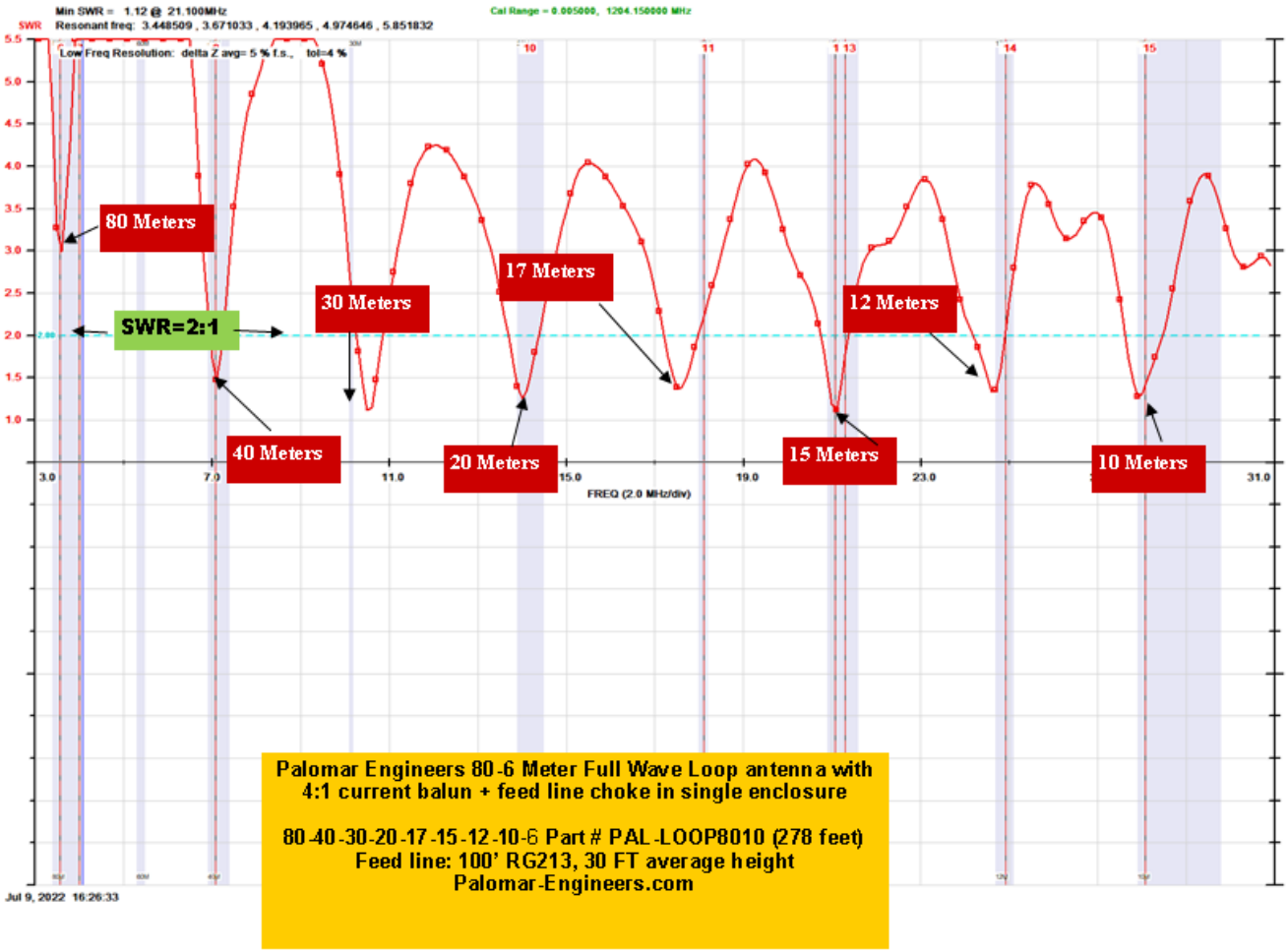
WARNING: INSTALLATION OF THIS PRODUCT NEAR POWER LINES IS DANGEROUS. FOR YUR SAFETY FOLLOW THE INSTALLATION IINSTRUCTIONS.

WARNING: AT NO TIME DURING ASSEMBLY, INSTALLATION, ADJUSTMENT OR OPERATION SHOULD ANY PART OF THIS PRODUCT BE ALLOWED TO COME INTO CONTACT WITH ELECTRIC POWER LINES, NOR SHOULD THIS PRODUCT BE INSTALLED IN SUCH A WAY THAT ANY PART OF IT MAY CONTACT POWER LINES DURING NORMAL OPERATION OR IN THE EVENT OF STRUCTURAL FAILURE. FAILURE TO EXERCISE EXTREME CARE IN THIS MATTER CAN RSULT IN DAMAGE TO PROPERTY, PERSONAL INJURY, OR DEATH.

Loop length formula = 1005/F (MHz). where F is lowest frequency to be used.

For 3.5MHz, Length = 288 feet, for 7.0MHz, Length is 144 feet

80-10 Meter Loop Typical SWR



40-10 Meter Loop Typical SWR