

# TERMINATED DIPOLE ANTENNA (BBTD)

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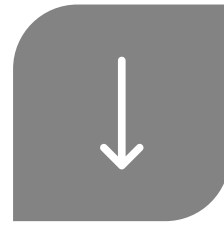
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COVERS 160-10M  
GOOD FOR TIGHT  
SPACES  
CAN VARY WIRE  
LENGTH TO FIT YOUR  
AVAILABLE SPACE



HANDLES UP TO 500 W  
SSB  
PARALLEL RESISTERS  
CAN INCREASE RATING  
2 - 1,000 W  
3 - 1,500 W



LOW SWR ACROSS ALL  
FREQUENCIES  
GOOD FOR ALE  
GOOD FOR NVIS ON  
HIGHER BANDS

Terminated  
Dipole  
Antenna  
(BBTD)  
Inverted V  
Delta Wing  
Version

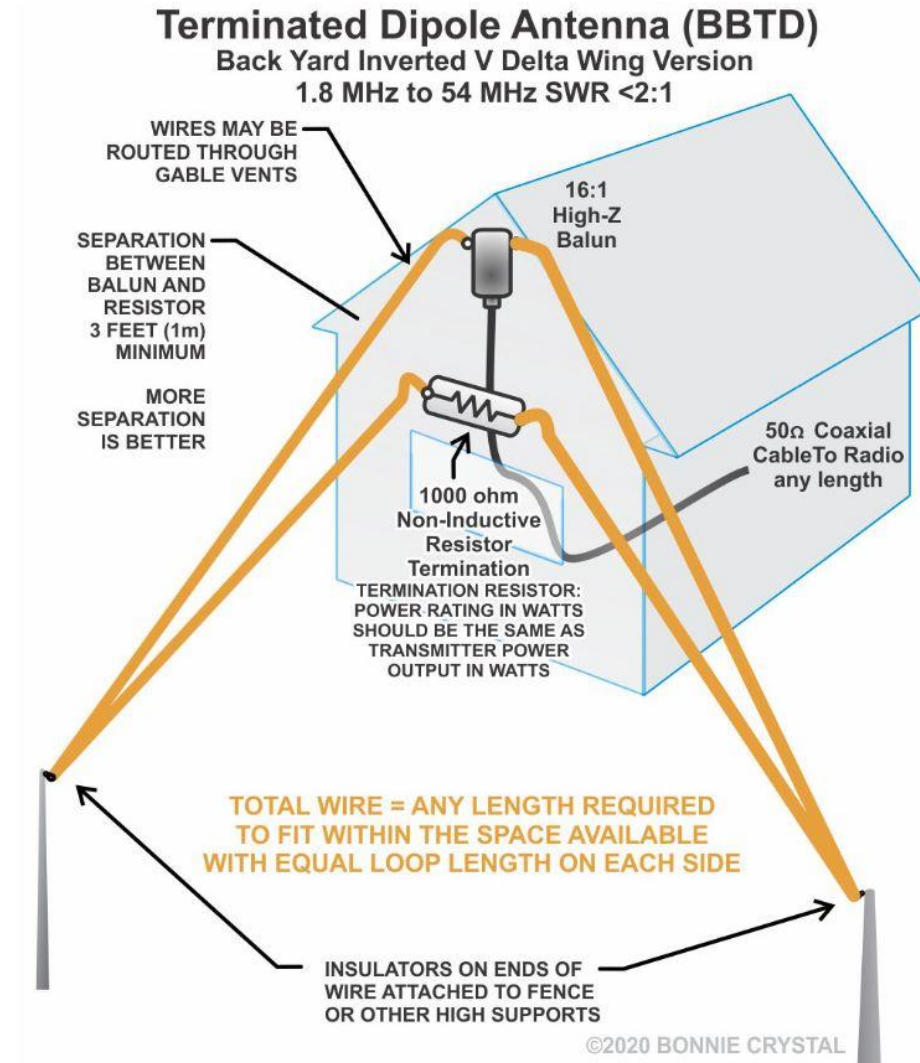
# Links to information and products:

- Concept for Antenna: <http://hflink.com/antenna/>
- 16:1 Choke Balun: <https://palomar-engineers.com/antenna-products/baluns-and-ununs/hf-161-impedance-transformers/Hybrid-16-1-Current-Balun-1-1-Current-Balun-in-one-enclosure-1-8-31-MHz-1-5KW-PEP-BBTD-T2FD-V-Beam-Antenna-p246270553>
- 1000 OHM Termination Resister: <https://palomar-engineers.com/rfi-kits/broad-band-terminated-dipoles/Termination-Resistor-1000-Ohm-Non-Inductive-for-T2FD-BBTD-Rhombic-1-61-MHz-600-Watts-PEP-p136245033>
- 14 Gauge PVC Wire (500 ft.): <https://palomar-engineers.com/antenna-products/Antenna-Wire-14-Stranded-PVC-Black-wire-500-Ft-Roll-p122854661>
- Common Mode Choke (before radio): <https://palomar-engineers.com/rfiemi-solutions/common-mode-noise-coax-filter/Coax-Jumper-Choke-RG-8X-RFI-Range-1-8-65-MHz-30-dB-Noise-Reduction-1-5KW-PEP-3-FT-Tail-p408707295>
- Insulators: <https://palomar-engineers.com/antenna-products/Dog-Bone-Antenna-Insulators-10-pack-p357427092>

# ANTENNA DIAGRAM

## CREDIT – BONNIE CRYSTAL

- Simple design
- Forgiving of installation constraints
- Cost is around \$90 more than a typical dipole
- Most important installation issue for author was twisted wire on legs (6 ft. between balun and resistor found to be optimal)





# ANTENNAS INSTALLED

- 10 ft fiberglass non-conductive mast
- Apex at around 30 ft
- VHF / UHF Antenna - Located above on same mast with no issues (good for minimal footprint)

## SIDE VIEW OF ANTENNA

- Balun and resister provided with approximately 6 ft of separation as installed
- Provides enough space to prevent wire twisting at ends with no spreaders
- Could be mounted on side of house if needed
- Ends as tested approximately 12 ft. above ground





# Terminated Resistor Mount

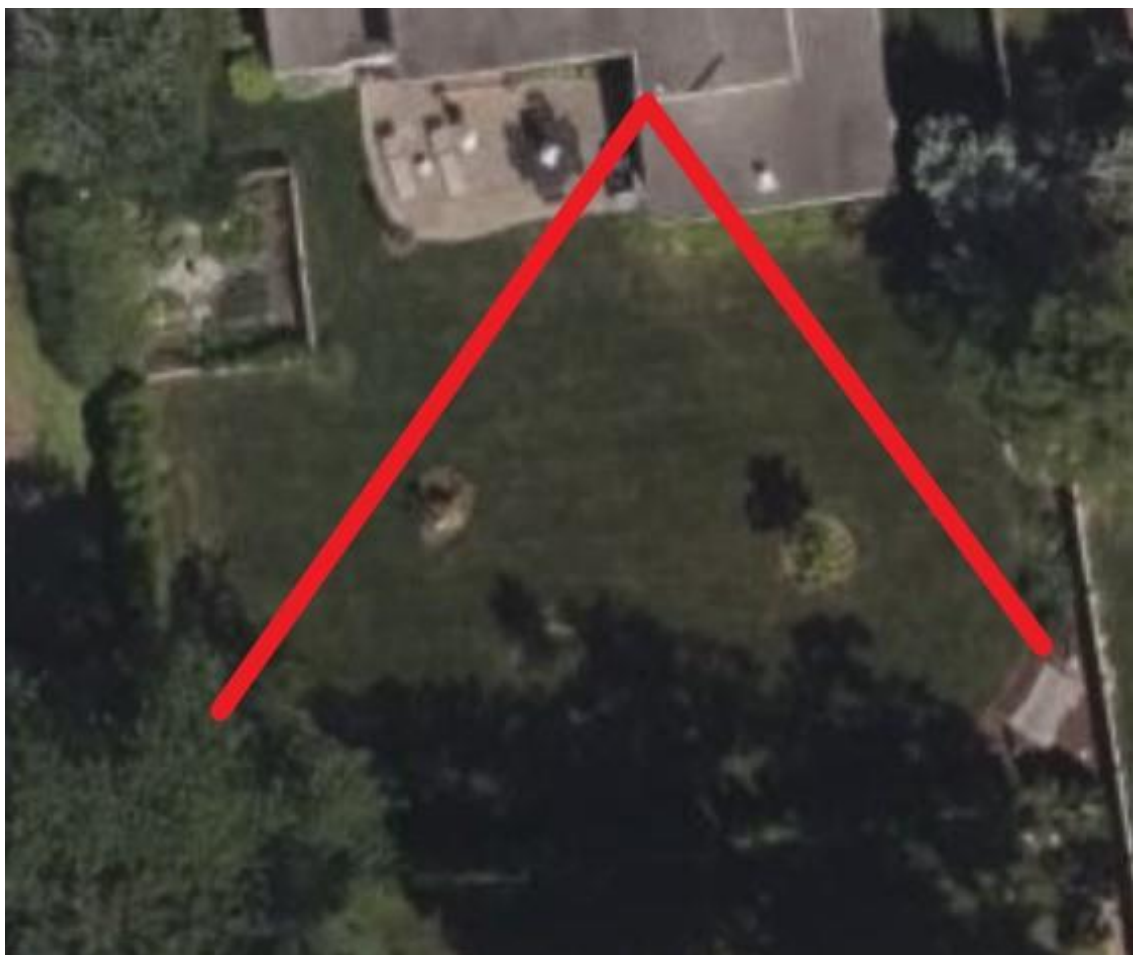
- U -bolts and plastic board found at Home Depot or Lowes used to make a mount directly on the mast near supports to limit flexing of the pole.



TESTED WIRE SIZE LENGTH OF 116 FT PER SIDE, UNDER 58  
FT AS INSTALLED (DOUBLED BACK TO RESISTOR)

\*USE WHAT FITS YOU SPACE, LEGS MUST BE IDENTICAL

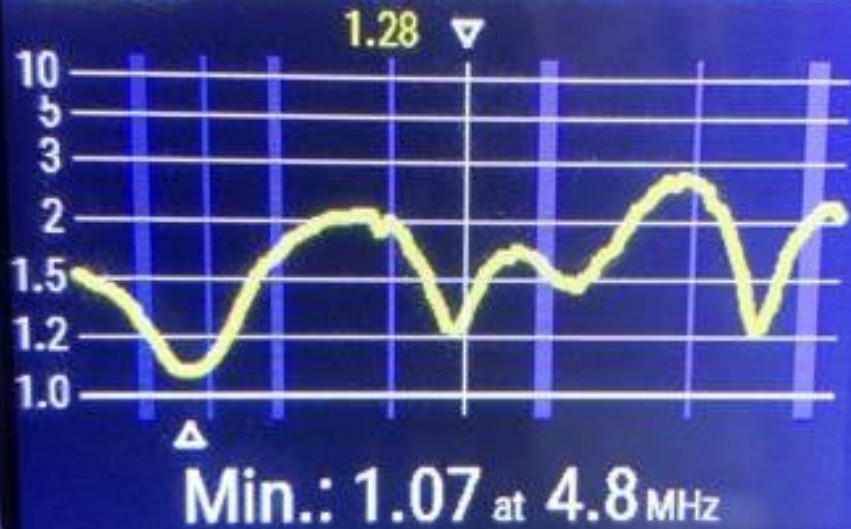




## FITS IN A 60 FT BY 60 FT SPACE

- Tested design has two (2) 58 ft. legs (total of 116 ft. of wire each) allowing for entire setup to fit in under a 60 ft. by 60 ft. space.
- Apex is approximately 30 ft. and does not require a mast if mounting points on side of house are preferred.
- Ends of legs can be as low as 10 ft. above ground allowing fence post and a fence top rail to be used for a mounting point
- When space for only one antenna is available, this will allow for 160-10 M operation
- Good NVIS properties on higher bands
- Low noise properties on receive!

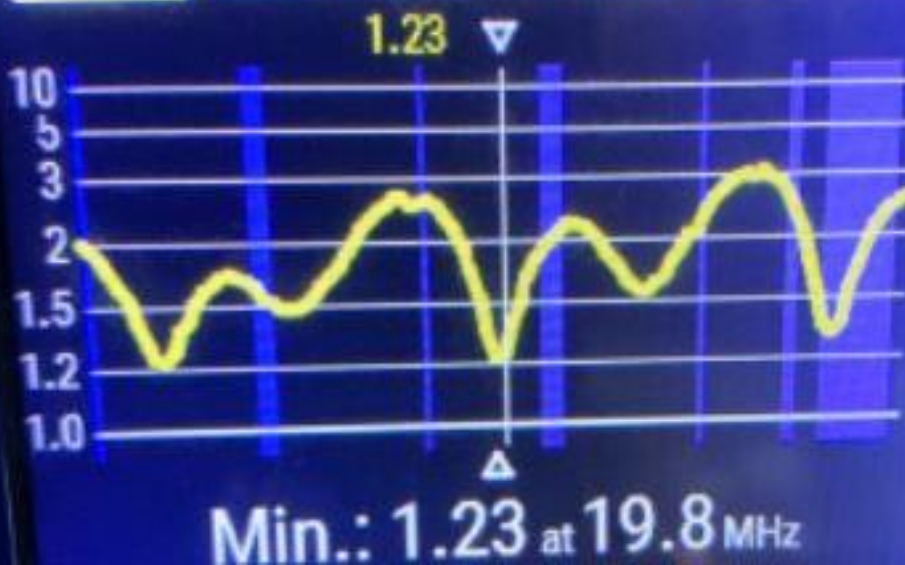
SWR 12028 ±10000 kHz



## SWR across entire spectrum 160-10 m

- Most amateur radio bands fall under an SWR of 2 or less
- SWR of 3 or less across entire frequency bandwidth from 160-10 m
- Just about any internal antenna tuner can tune the antenna to a perfect match
- Great for ALE operation
- Quick frequency changes with acceptable SWR
- Low coax losses on longer runs based on low SWR

SWR 20028 ±10000 kHz





QUESTIONS?