

## Introducing the BevFlex-4X

The most versatile low band receive antenna system ever!

The BevFlex-4X is the latest version of W8GNM's revolutionary BevFlex design for low band, low noise receive antennas. This unique system uses low cost, low loss, RG-6 coax for both the antenna elements and feedline functions for Beverage and BOG configurations. The result is the most versatile system ever. You can configure it as:



**Elevated Beverage \* Beverage on Ground (BOG) \* EWE \* Flag \* VE3DO**

Instead of resistive termination, the BevFlex-4X uses specially designed transformers that use the antenna sections as part of the feed line for Beverage type antennas. This provides these advantages:

- You can feed the Beverage/BOG configurations at any point instead of only from the ends while using the entire antenna length
- All configurations can be switched to the reverse direction. Install two BevFlex-4X systems at right angles to cover all four quadrants!

### BevFlex-4X System components

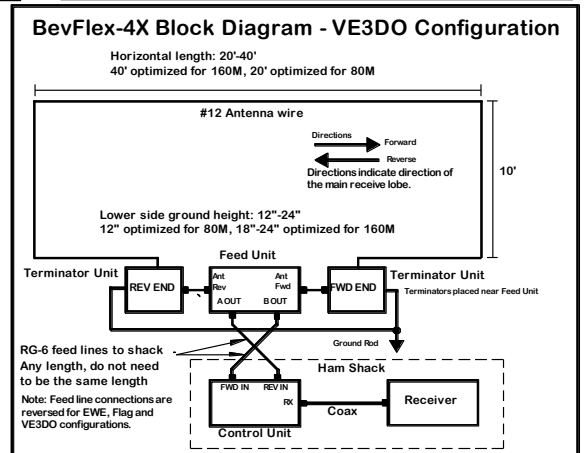
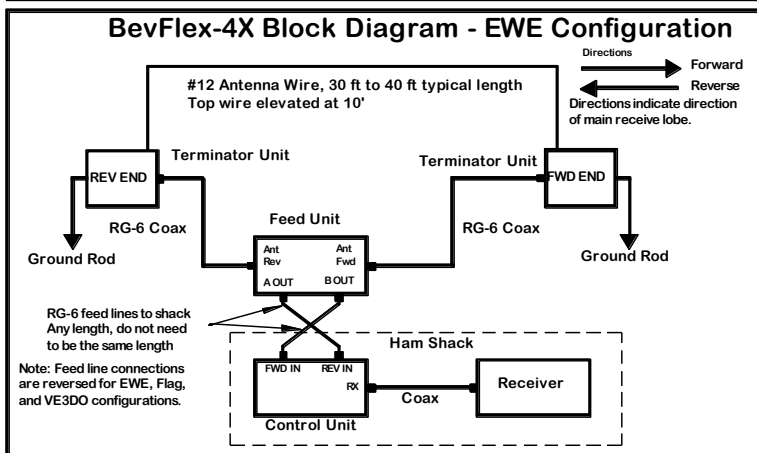
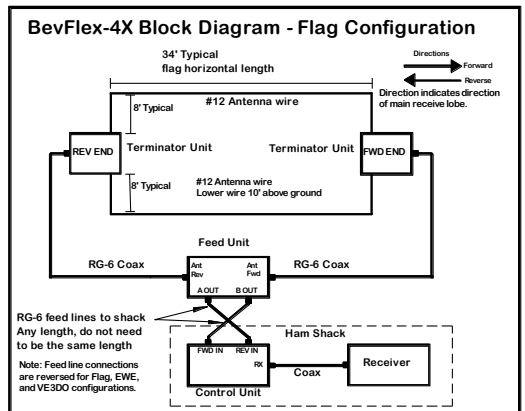
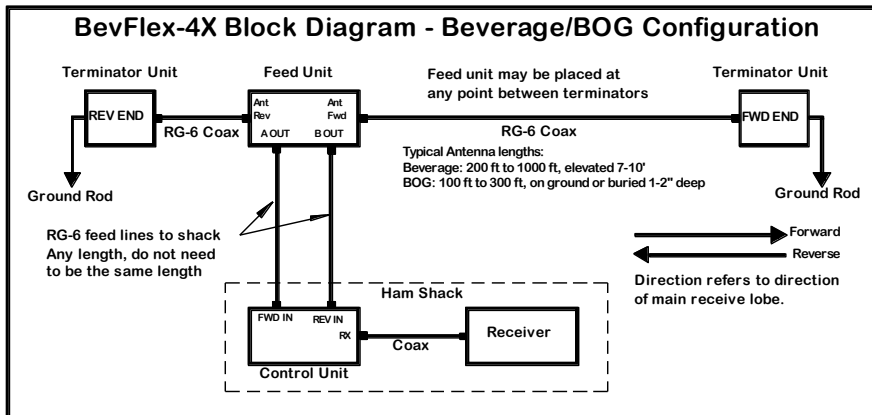
**Terminator Units** (Two per system) – These are special transformers that convert the impedance of the antenna configuration to 75Ω and inject the received signals into the coax. Since the system is symmetrical, signals from both directions are available.

**Feed Unit** – This splits out the signals from both directions and directs them to RG-6 feed lines back to the shack.

**Control Switch Unit** – This selects the direction and resistively terminates the opposite one, so it does not affect the selected direction pattern.

The Terminal and Feed Units are housed in NEMA rated enclosures and use stainless steel hardware for maximum weather protection.

### BevFlex-4X Configuration Block Diagrams



## BevFlex-4X FAQ's

### Which configuration is best for my station?

That depends on the real estate you have available, desired performance, bands you use, and installation complexity. The following table shows some of the trade offs between configurations. Remember, with the BevFlex-4X, you can change the configuration without building or buying a whole new system. Experiment with different configurations to see what works best for you.

**BevFlex-4 Configuration Comparison**

Configuration	Performance	Physical Requirements
<b>Beverage</b>	Excellent if long enough for the band. Longer lengths will provide better performance on 160 & 80 Meters.	200'-1200'. Requires supports (7'-10') to keep it above people, deer, etc. Can be fed anywhere along the length of the coax antenna segment.
<b>Beverage On Ground (BOG)</b>	Good-Very Good, signal levels down from elevated Beverage.	100'-240' typical. 225' optimal for 160M. No supports needed. Can be fed anywhere along the length of the coax antenna segment. No supports give it a low visual profile. Improved performance if raised a few inches above ground.
<b>EWE</b>	Good, signal levels down from Beverage.	30-40' typical, simple 10' supports needed.
<b>Flag</b>	Good, signal levels down from Beverage. Better option than EWE if the ground has poor conductivity	34' typical, two 26' supports required.
<b>VE3DO</b>	Good, signal levels down from Beverage.	20-40'. Simple 10' supports needed

### How do the BevFlex-4X configurations compare with other versions?

Antenna performance depends on the physical length, height, ground characteristics, and proximity to other metal objects. The BevFlex-4X system will be similar to the same antenna constructed by traditional methods in the same physical environment. The main advantages to the BevFlex-4X system are two directions without additional hardware, and Beverage/BOG systems can be fed at any point instead of just at the ends.

### What bands does the BevFlex-4X cover?

Generally, the configurations are designed to work on the low bands, primarily 160, 80, 60, 40, and 30 Meters. Optimal Beverage/BOG performance on the lower frequency bands require longer lengths as do traditional versions. Under some circumstances, the BevFlex-4X may provide benefits on the higher HF bands.

### What lightning protection is provided?

The terminators each contain a gas discharge tube to limit voltage spikes. The Control/switch unit inside the shack has diode limiters and a fuse to provide some protection to the receiver. These provide protection, but will not protect against a direct or close lightning strike, or high power transmitters with nearby antennas. The following steps are strongly suggested:

- \* Always disconnect all antennas, including the BevFlex-4X whenever lightning is possible.
- \* A receiver protection device (produced by several vendors) is recommended, especially if your BevFlex-4X antenna is located near your transmit antennas. Also, remember the BevFlex-4X is a receive only antenna. Never transmit into it!

### Do I need a preamp with the BevFlex-4X?

Most users will not need a preamp. Signal strengths on the low bands are typically high, its just that the noise is stronger. Beverages, Flags and other low band antennas have negative gain, but attenuate the noise from other directions than the desired signals, which improves the signal/noise ratio.

Users of older, less sensitive receivers, especially with shorter BOGs, a Flag or EWE, may find a preamp useful. Many newer rigs have selectable front end preamps that would not normally be used on the low bands, but may be helpful in some situations.

### I want to use multiple BevFlex-4X systems to cover more directions. Can I use my own switch?

Yes! For proper operation the unused coax lines must be terminated in 75 ohms at the switch. Many commercial switches already do this. A 4:1 remote switch designed for use with two BevFlex-4X systems will be available from Unified Microsystems in the fall of 2020.

**Unified Microsystems**  
**PO Box 133**  
**Slinger, WI 53086**  
**www.unifiedmicro.com**