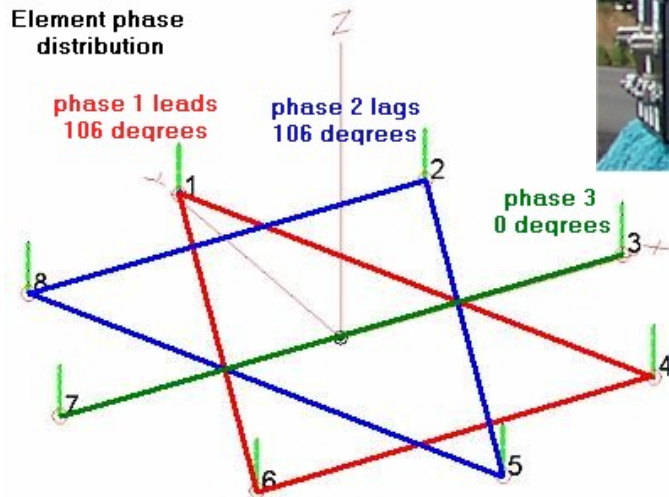


Hi-Z Antennas™ Hi-Z 8 -160 & -80 Arrays

System User Layout & Installation Guide

Models: Hi-Z 8-200 / 160 meters, Hi-Z 8-100 / 80 Meters

PLEASE NOTE – Read this document before starting to get familiar with the process.!!



Use Our Hi-Z Verticals
SD-19, HD-19, AL-18, AL-23
www.hizantennas.com/hiz_verticals.htm

www.hizantennas.com



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Hi-Z Antennas™ Hi-Z 8-160 & 80

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- **NOTE:** Information in RED refers to 80 meter topics and or measurements



Shack Switch – Direction & Orientation



Rotary switch as shown is in position 1 (North)



- 1 – North (N) 0 deg
- 2 – Northeast (NE) 45 deg
- 3 – East (E) 90 deg
- 4 – Southeast (SE) 135 deg
- 5 – South (S) 180 deg
- 6 – Southwest (SW) 225 deg
- 7 – West (W) 270 deg
- 8 – Northwest (NW) 315 deg

Circular Array Planning Hi-Z 8-200 & 100

Vertical Element Placement 1/2

1. Determine location – as far as possible from any in band resonant antennas
2. Determine where the center of a circular array will be located (phase controller will typically be mounted / placed here)
3. There are a number of ways to make a 200 or 100 foot diameter circle which equals a 100 or 50 foot radius. After locating the center, one method would be to pound a stake in the ground at the center. Using twine or other such material that does not stretch, place a loop on one end of the twine and a knot of other such marker that will be exactly 100 feet long.
4. Mark out the 45 deg increments around the circle.
5. Best solution would be a transit.
6. Placing the loop on the center stake allows you to stretch out the cord to walk the radius and locate the circular diameter where the elements will be located.
7. There are 8 directions. The shack switch has 8 positions corresponding to the 8 directions.
Typically position 1 is North = 0 deg azimuth
 - 1 – North (N) 0 deg
 - 2 – Northeast (NE) 45 deg
 - 3 – East (E) 90 deg
 - 4 – Southeast (SE) 135 deg
 - 5 – South (S) 180 deg
 - 6 – Southwest (SW) 225 deg
 - 7 - West (W) 270 deg
 - 8 – Northwest (NW) 315 deg



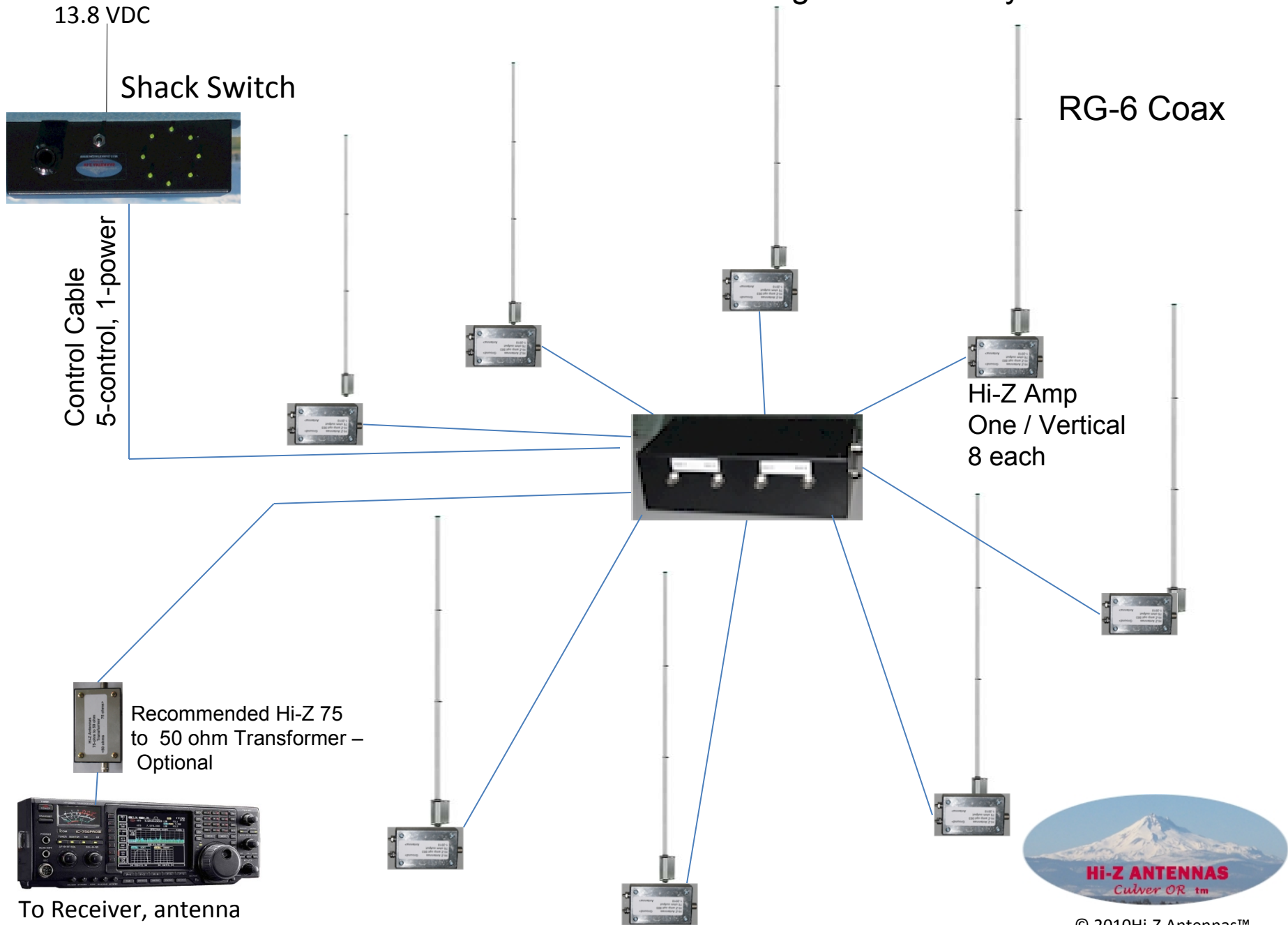
Circular Array Planning Hi-Z 8-160 & 80

Vertical Element Placement 2/2

1. With a compass locate North (0 deg azimuth - TRUE) and be sure you know the isogonic correction for true North not magnetic North
 2. At 0 deg on the circle place vertical 1 - N.
 3. At 45 deg on the circle place vertical 2 – NE.
 4. At 90 deg on the circle place vertical 3 – E.
 5. At 135 deg on the circle place vertical 4 – SE.
 6. At 180 deg on the circle place vertical 5 – S.
 7. At 225 deg on the circle place vertical 6 – SW.
 8. At 270 deg on the circle place vertical 7 – W.
 9. At 315 deg on the circle place vertical 8 – NW.
6. This completes the circular array location of all the vertical elements.



Hi-Z 8-200 & 100 Element Cabling Overview Layout



Cabling Connections Hi-Z 8-160 & 80

1. You will need a 7 conductor control cable, 5C for control and 1C for +13.8VDC & ground (based on length of cable be sure that the power conductor is gauged adequately)
 - a) Connect control 1 through 5 from the phase controller to the shack switch connector 1 -5.
 - b) Connect +13.8 terminal from the phase controller to 13.8 at the shack switch.
 - c) The ground / com is through the coax shield.
2. Make 8 each RG-6 coax cables – these will go from the phase controller to the Hi-Z amp at the base of each vertical. These cables **MUST** be the same length and long enough for the connections. See technical document for important information on RG6 cables.
 - a) Controller Antenna 1 coax connector goes to Antenna 1, controller coax connector 2 goes to vertical 2 and so on through vertical 8.
3. Two delay cables (long delay and short delay) are supplied and should be connected to the phase controller at the designated connectors labeled LONG and SHORT delay.
4. Connect a RG-6 cable from the phase controller to your receiver.
5. Install OPTIONAL Hi-Z 75 to 50 Z-transformer just before the receiver jack.
6. Now, double check ALL connections.
7. This completes the cabling .



Initial Powering UP & System Check

- Be sure your supply voltage is +13.8 VDC. To be sure you have adequate voltage at the phase controller, go out and measure the voltage at controller power terminals and you should have a minimum +12.0 VDC for proper operation. If not you will need to increase the voltage from your power supply.
- Are the two delay cables installed at the phase controller? There is one delay for the wide spaced array and two delay cables for the narrow spaced arrays. Please refer to our 8 element Technical manual for the information to build these cable(s).
- Switch the power on at the Hi-Z shack switch.
- Go out and check to see that ALL 8 Hi-Z amp LEDs are ON. If not check coax connection(s).
- The noise floor of your receiver should increase when the array is powered up. IF NOT, then double check all of your connections.
- Rotate the rotary switch through all 8 positions and the LEDs will light accordingly.
- This completes the initial start up test.

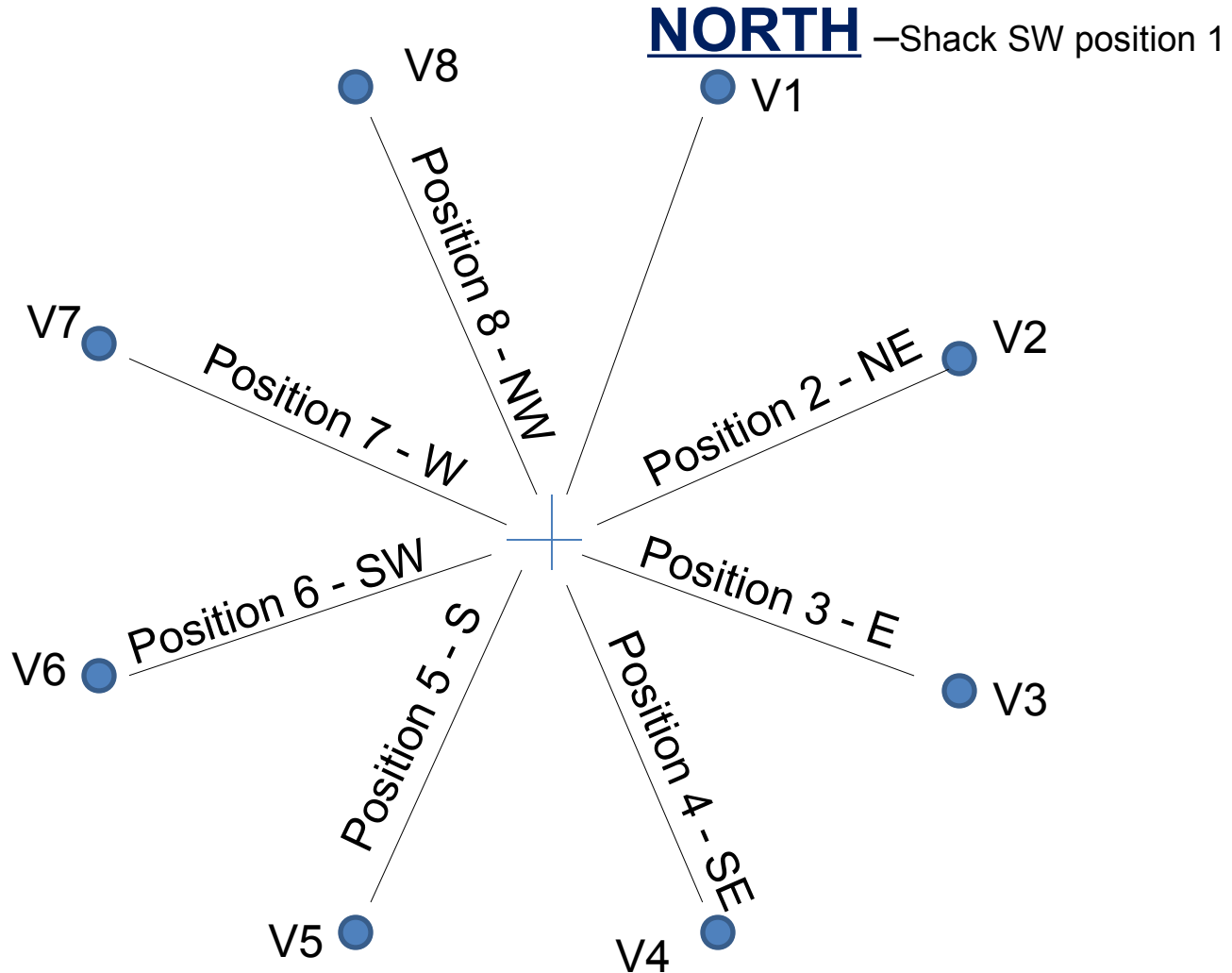


Weatherproofing

- After the system checks out, all the electronics requires weatherproofing.
- The goal is to keep rain, snow and ice off all connections (coaxes and control cabling) and enclosures (phase and Hi-Z amp enclosures).
- See http://www.hizantennas.com/application_notes.htm for ideas.
- On our website under application notes we have methods to accomplish this.
- All the Hi-Z amps MUST be weatherproofed. NOTE: the method we use for our Hi-Z Verticals.
- The phase controller MUST be weatherproofed. Note methods under our applications notes section in our website.
http://www.hizantennas.com/application_notes.htm



Hi-Z 8-160 & 80 All Active Elements - Reference

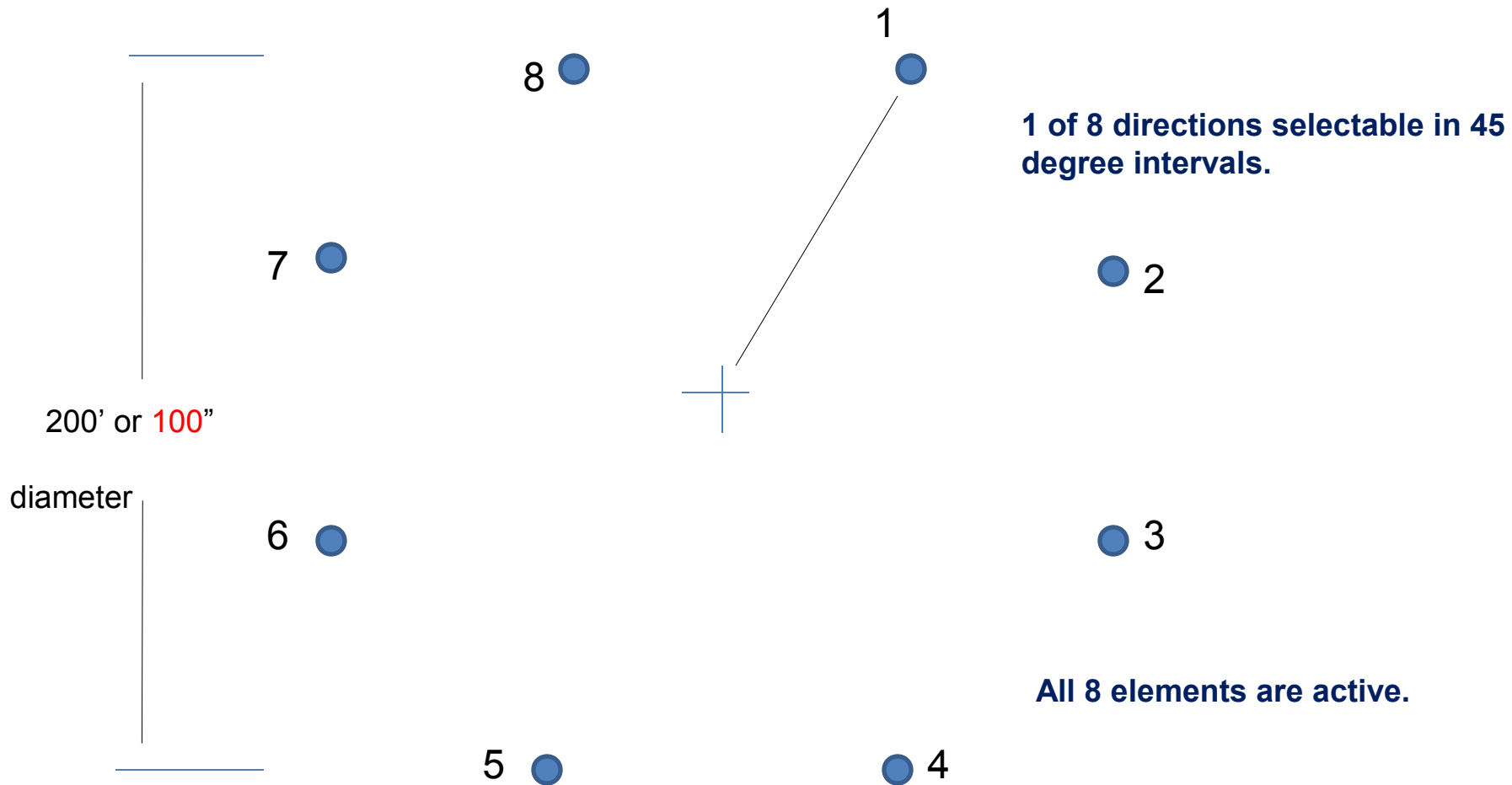


> 1 of 8 directions selectable in 45 degree intervals.

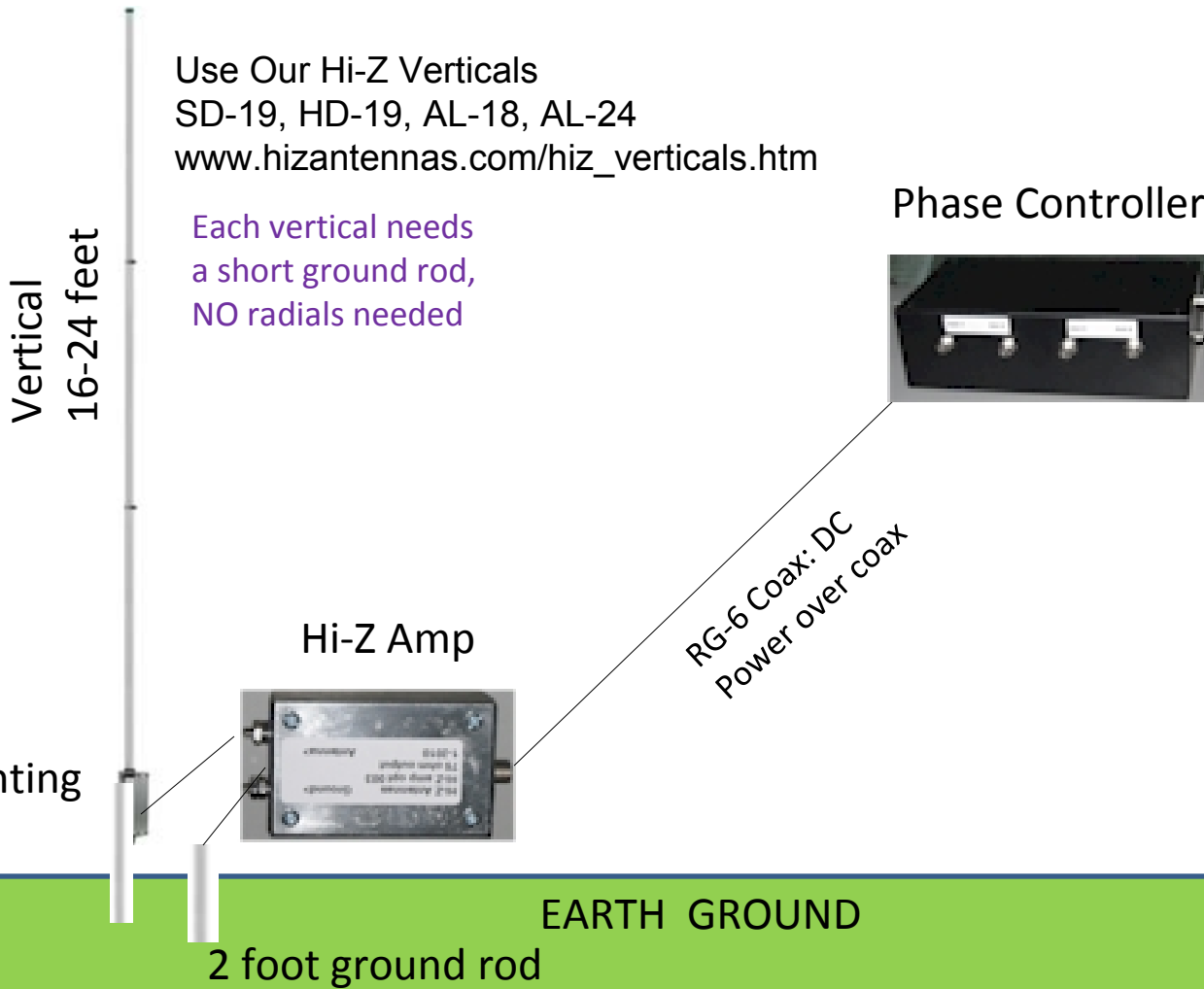
> Array uses 8 active vertical elements



Hi-Z 8-160 & 80 All 8 Active Elements - Reference



Typical Hi-Z Antennas™ Vertical Installation



NOTE:

The element to Hi-Z amp connecting wire length is not critical but should remain less than 12 inches long and be equal length for each element in an array. The ground rod connection should be made with the same constraints..

