

Radials— Ground verses Elevated

The Age-Old debate of what is better? Radials on the ground or radials in the air. And as usual there are advantages and disadvantages...

Let's summarise these and then you can make up your own mind.

Ground Mounting:

<u>Advantages</u>	<u>Disadvantages</u>
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> The Radials are non-resident so one length (0.1 wl minimum at lowest frequency) works on all frequencies. <input checked="" type="checkbox"/> Easy to mount. <input checked="" type="checkbox"/> Easy to Access. <input checked="" type="checkbox"/> Lower visual profile. <input checked="" type="checkbox"/> Sixteen 0.1 wl (wavelength) radials of lowest intended frequency give 65% - 70% efficiency. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Takes 120 radials to equal an elevated vertical with 2 resonant radials (90% efficiency). <input checked="" type="checkbox"/> Surrounding objects can reduce signal strength.

Elevated Mounting:

<u>Advantages</u>	<u>Disadvantages</u>
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> > 90% efficiency with two .25 wl radials. <input checked="" type="checkbox"/> The Antenna is generally more "in the clear", so surrounding objects don't cause as much attenuation. <input checked="" type="checkbox"/> A peaked metal roof will make a very good all-frequency radial system. <input checked="" type="checkbox"/> Contrary to conventional wisdom the vertical doesn't have to be elevated very high, 150mm elevation results in much lower losses, even on 80m—1500mm is just fine for 80m. 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Mounting is generally more involved. <input checked="" type="checkbox"/> Requires two 0.25 wl radials (minimum) for each band of operation (radials interact, so spacing will affect length). <input checked="" type="checkbox"/> Visually higher profile. <input checked="" type="checkbox"/> Must be mounted high enough so that people or animals will not accidentally make contact with the radials. <input checked="" type="checkbox"/> Elevating lowers the impedance so radials may need up to 30 degree downward slop to achieve a reasonable match.