

Recommendations for Radial Length and Quantity

When using the Super Ground Plane Disc, the ground radials play a critical role in maximizing antenna efficiency. Below are tailored recommendations for radial length and quantity based on your operating conditions:

1. Radial Length Selection

- Primary Rule: Use 1/4 wavelength radials for the target frequency. Example:
 - 14 MHz (20m band): 5.36m (17.6ft) per radial.
 - 7 MHz (40m band): 10.7m (35.1ft) per radial.
- Space-Saving Alternative: If space is limited, use 1/8 wavelength radials (e.g., 2.68m for 20m band), but expect slightly reduced efficiency.

2. Radial Quantity Selection

- General Rule: More radials improve performance, but there are practical limits.
 - Ground-Mounted Antennas:
 - ✓ 16 radials: Suitable for most applications.
 - ✓ 32 or more radials: Further enhances efficiency, but diminishing returns occur beyond 120 radials.
 - Low Bands (40m/80m): Due to longer wavelengths, ground radials have a greater impact. Use as many radials as possible.
 - High Bands (20m/10m): Fewer radials (e.g., 8~16) can still deliver good performance.

3. Impact of Radial Choices on Performance

- Insufficient Quantity:
 - Reduced radiation efficiency.
 - Increased signal loss, especially noticeable in low-frequency bands.
- Insufficient Length:
 - Decreased effectiveness of mirror currents.
 - Possible shift in resonant frequency toward lower frequencies.