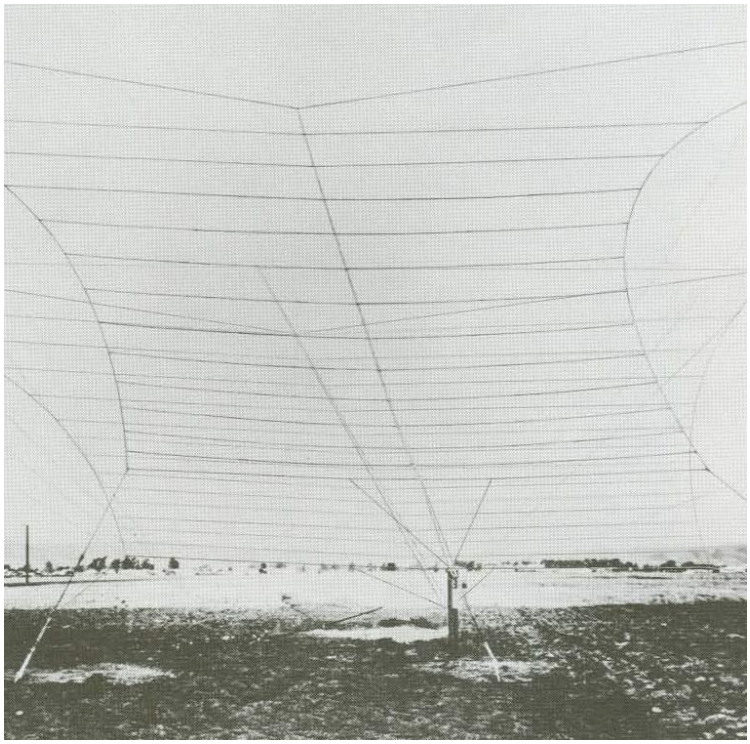
Type 748 Series GRANGER™
Multi-Bay, Horizontally Polarized Log-Periodic HF

- **5.7-30 MHz Frequency Range**
- **30 kW Continuous and Peak Power Rating**
- **Horizontal Polarization**
- **2.0:1 Maximum VSWR**
- **Medium-to-Long-Range Communications**



General Description
The Type 748 Series antennas provide a low VSWR over a broad frequency range. In addition, this Series offers a low take-off angle, independent of local ground conditions, coupled with very low side lobes and the increased directional gain contributed by a two-bay array. The virtual absence of spurious lobes excludes off-path interference at receiving terminals and minimizes interfering radiation from transmitting stations. As a result, the 748 Series antennas are ideal for medium-to long-distance circuits in which reliable communication, with adequate signal-to-noise levels is essential.

Features
Strength and Durability. The 748 Series antennas are designed for dependable long-term service in severe or corrosive environments.

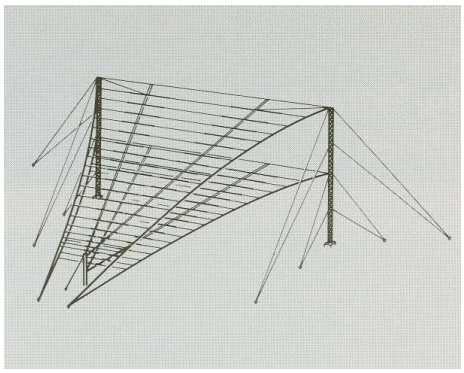
All materials, including radiators of Alumoweld and fiberglass rod or Parafil rope catenaries, are strong and corrosion-resistant.

Ease of Installation. To simplify installation at the site, antennas are largely pre-assembled before shipment.

Type No. 748-6
The Type No. 748-6 antenna is designed for communication to groups of fixed stations or mobile stations, such as ships or aircraft, at distances of 500-5000 miles. The radiation patterns change with frequency, to optimize communications at all ranges (Figure 1, next page). At the low operating frequencies, optimum for shorter ranges, radiation is beamed at an appropriately high angle. As the operating frequency is raised to reach greater distances, the take-off decreases to beam radiation closer to the horizon. Secondary lobes in the sector outside the azimuth plane coverage of the main lobe are extremely low, thereby excluding interfering signals, from the sides and rear when receiving, and reducing interference produced when transmitting. Lobe size varies in relation to frequency, the largest lobe in this sector being 15-24 dB below the main lobe.

Type No. 748-66
The Type No. 748-66 antenna has an additional nominal 3 dB gain, as compared to the Type 748-6, and is particularly suitable for long-range point-to-point communications. This is achieved by phasing two stacked arrays, identical to Type 748-6, in two bays, thus narrowing the azimuth beamwidth. The elevation plane pattern is the same as that of the Type 748-6.

Accessories
The following accessories are available for ease of installation and maintenance: tower lighting kit, erection kit, paint kit, tool kit, lightning rod kit, anti-climbing kit, and spares kit.



Characteristics

Type	HF log-periodic
Frequency Range, MHz	5.7-30
Power Rating, kW	30 continuous and peak
Polarization	Horizontal
VSWR	2.0:1 maximum
Gain, dBi	See ordering information
Azimuth Plane Radiation Pattern	See page 2
Elevation Plane Radiation Pattern	See page 2
Level of Largest Side or Back Lobe Relative to Main Lobe	-15
Wind Survival Rating, mph (km/h)	
Without Ice	100 (160)
With ½ in (12mm) Radial Ice	70 (100)

Typical Azimuth Plane Patterns Type 748 Series

(Gain Relative to Beam Maximum)

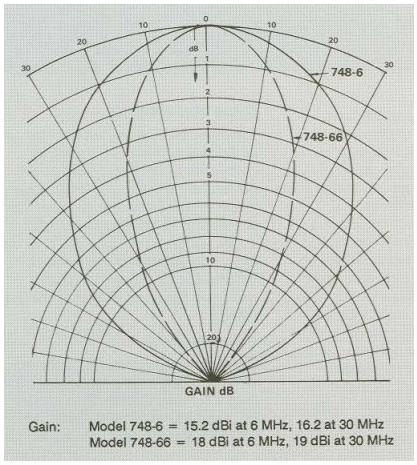


Figure 2

Elevation Plane Radiation Patterns Types 748-6 and 748-66

(Gain Relative to Beam Maximum)

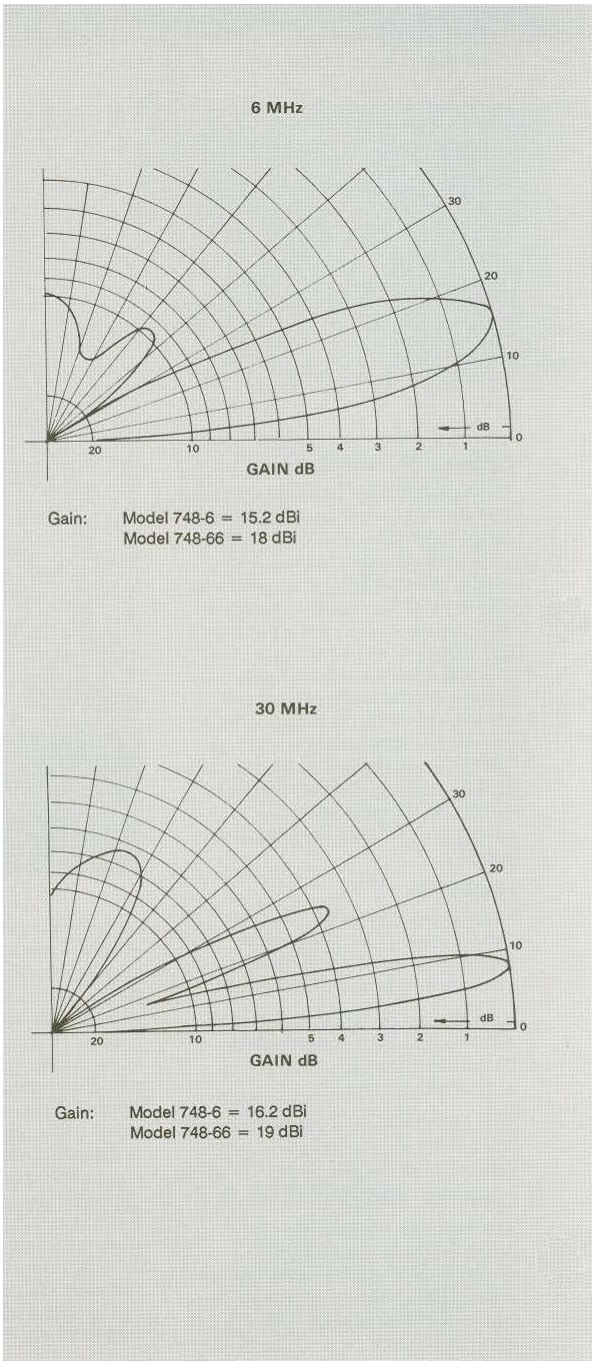
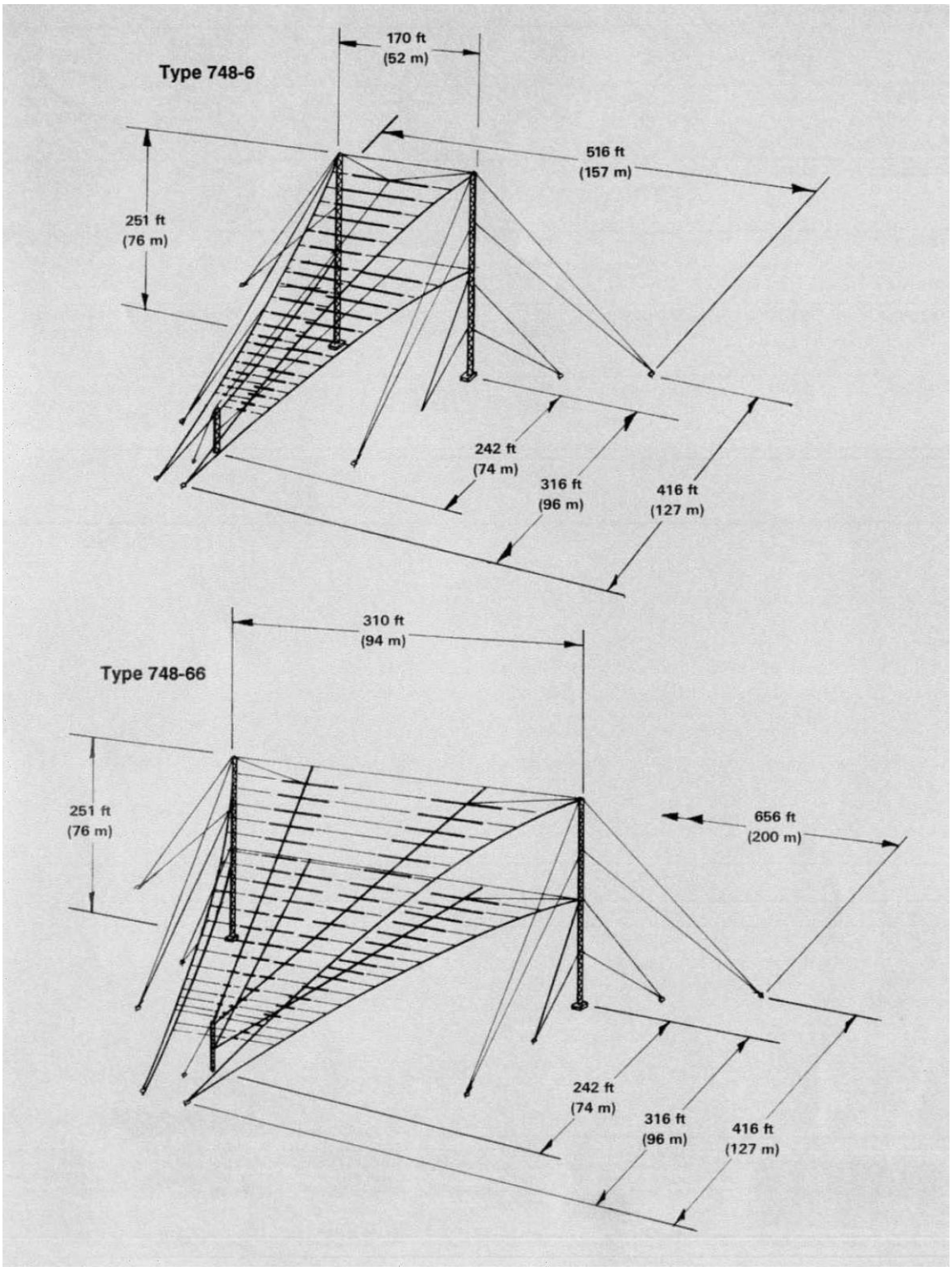


Figure 1

Antenna Dimensions



Ordering Information

Type No.	Frequency Range MHz	Power Rating kW	Input Impedance ohms	Input Connector	Tower Height ft (m)	Required Site Area ft (m)	Directive Gain, dB
748-6-2K	5.7-30	30 continuous and peak	600 balanced	Open Lines	Rear 251 (76.5) Front 60 (18)	416 x 516 (127 x 157)	15.2 at 5.7 MHz to 16 at 30 MHz
748-66-2K	5.7-30	30 continuous and peak	600 balanced	Open Lines	Rear 251 (76.5) Front 60 (18)	416 x 656 (127 x 200)	18 at 5.7 MHz to 19 at 30 MHz
748-6-3K	5.7-30	30 continuous and peak	50 coaxial	3-1/8 in EIA Female	Rear 251 (76.5) Front 60 (18)	416 x 516 (127 x 157)	15.2 at 5.7 MHz to 16 at 30 MHz
748-66-3K	5.7-30	30 continuous and peak	50 coaxial	3-1/8 in EIA Female	Rear 251 (76.5) Front 60 (18)	416 x 656 (127 x 200)	18 at 5.7 MHz to 19 at 30 MHz
748-6-5K	5.7-30	30 continuous and peak	50 coaxial	Type N Female	Rear 251 (76.5) Front 60 (18)	416 x 516 (127 x 157)	15.2 at 5.7 MHz to 16 at 30 MHz
748-66-5K	5.7-30	30 continuous and peak	50 coaxial	Type N Female	Rear 251 (76.5) Front 60 (18)	416 x 656 (127 x 200)	18 at 5.7 MHz to 19 at 30 MHz

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