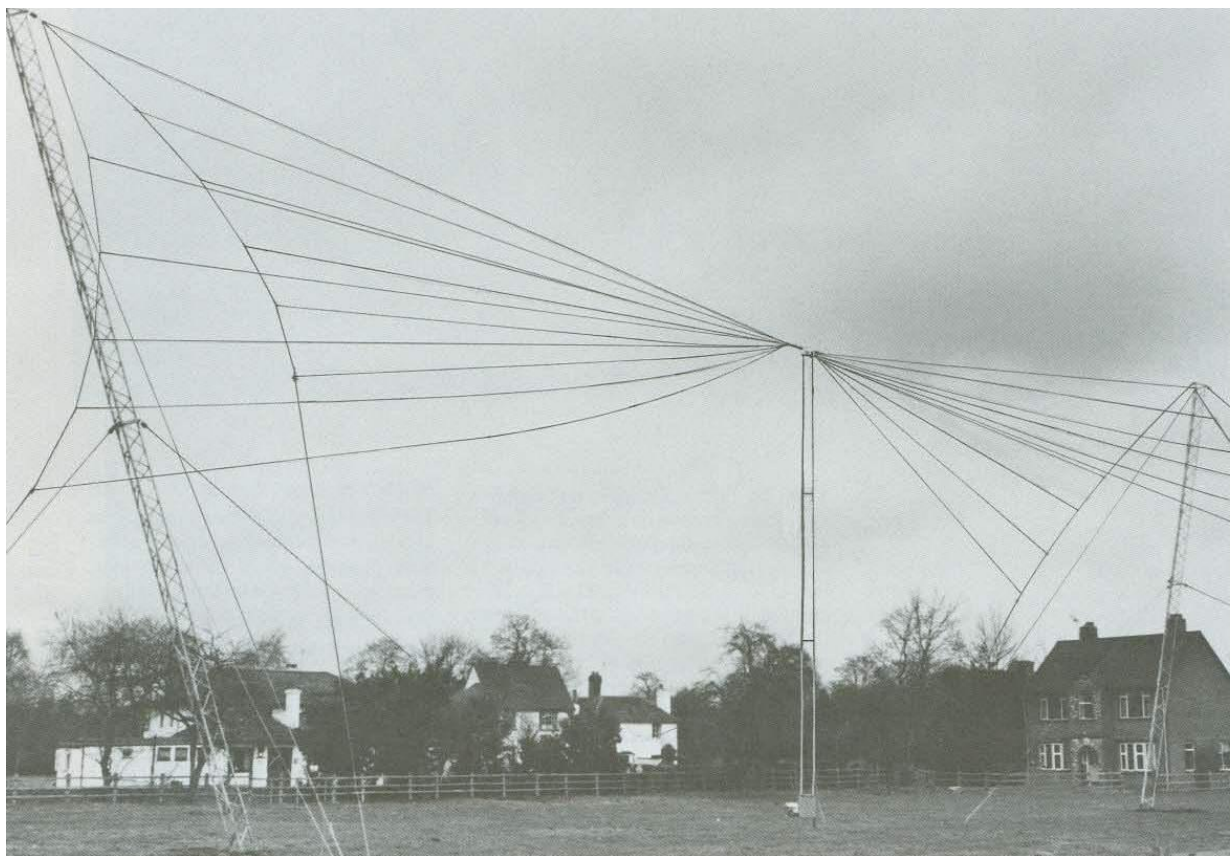


# Type 1765 Series GRANGER™ HF Broadband Dipole Antennas



- **1.6-30 MHz Frequency Range**
- **Up to 10 kW Average 20 kW Peak Power Rating**
- **Horizontal Polarization**
- **Omnidirectional**
- **2.0:1 Nominal, 2.5:1 Maximum VSWR**
- **Short-to-Medium Range Communications**
- **No Resistive Loading, Switching or Tuning**

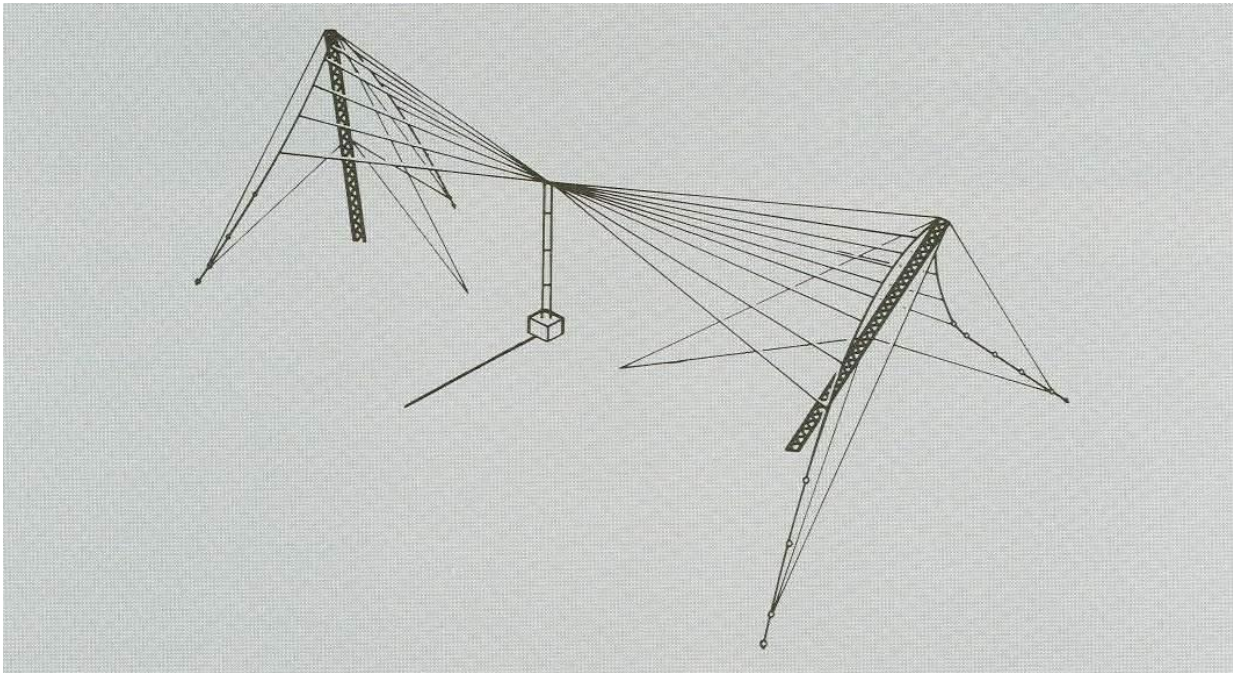
## **Omnidirectional**

An omnidirectional radiation pattern at the lower frequencies denotes improved coverage to and from base stations over short-to-medium ranges.

## **Improved Reliability and Efficiency**

As the first truly broadband dipole HF antenna, the 1765 is designed to directly replace existing families of narrow band dipole antennas. The design of the radiating elements has

increased the bandwidth over which the azimuth plane pattern is omnidirectional up to four times the lower frequency limit. The unique feature of having the support masts installed approximately 19° off vertical permits the outboard guy anchors to be in the same plane as the top of the mast. This reduces the ground area required for any given size of radiating curtain by approximately 30 percent.



The 1765 antennas require no tuning or resistive loading circuitry. This permits complete compatibility with multichannel fixed-tuned radios as well as frequency agile, synthesized HF radio equipment. Elimination of the antenna coupler maximizes the power output of the antenna/transmitter, resulting also in a significant improvement in communication reliability through the reduction of maintenance and/or repair.

#### High Take-off Angle

The elevation plane radiation patterns at the lower frequencies denote maximum power is radiated at high angles ensuring reliable communications over short-to-medium ranges.

#### Accessories

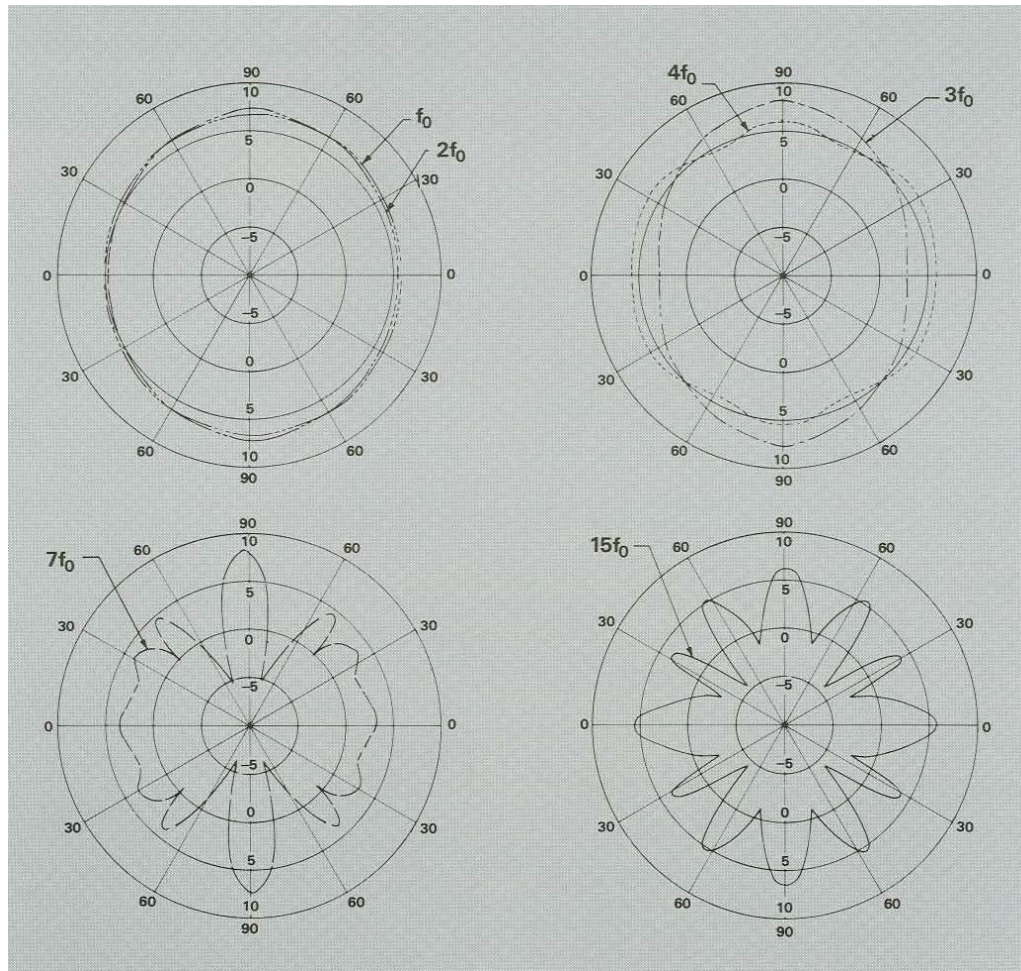
The following accessories are available for ease of installation and maintenance: tower lighting kit, erection kit, paint kit, tool kit, lightning rod kit, anti-climbing kit, and spares kit.

#### Characteristics

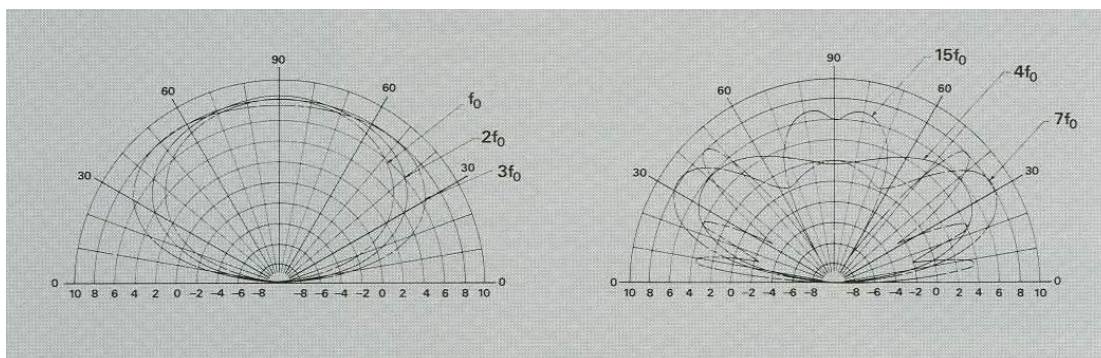
Type	HF broadband dipole
Frequency Range, MHz	1.6 to 4.3 lower limit, 30 maximum
Power Rating, kW	Up to 10 average, 20 peak
Polarization	Horizontal
VSWR	2.0:1 nominal, 2.5:1 maximum
Gain, dBi	8 nominal
Wind Survival Rating, mph (km/h)	
Without Ice	140 (224)
With 0.5 in (12 mm) Radial Ice	50 (80.5)



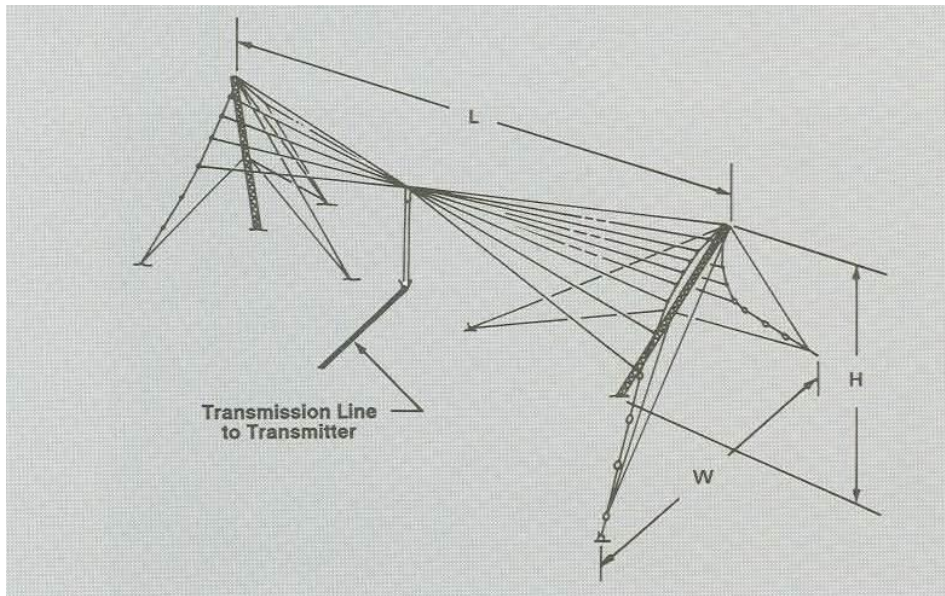
## Azimuth Plane Radiation Patterns at Beam Maximum (Directive gain in dBi)



## Elevation Plane Radiation Patterns (Orthogonal to Dipole Length)



## Antenna Dimensions



## Ordering Information

Type Number	Frequency Range MHz	Length ft (m)	Dimensions Height ft (m)	Width ft (m)
1765-101-(* )	1.6-30	230 (70)	85 (26)	167 (51)
1765-120-(* )	2.0-30	184 (56)	69 (21)	135 (41)
1765-121-(* )	2.4-30	160 (49)	59 (18)	115 (35)
1765-122-(* )	3.4-30	115 (35)	40 (12)	81 (25)
1765-123-(* )	4.3-30	90 (27)	30 (10)	62 (19)

\*See following table for appropriate suffix to Type Number

Type Number Suffix	Power Rating kW		Input Impedance ohms	Input Connector
	Average	Peak		
1K	10	20	300 Balanced	Open Line
2K	1	2	50	Type N Jack (female)
3K	2.5	5	50	7/8" EIA
4K	10	20	50	1-5/8" EIA
5K	Receive Only	Receive Only	75	Type N Jack (female)
6K	Receive Only	Receive Only	50	Type N Jack (female)
10K	5	10	50	7/8" EIA