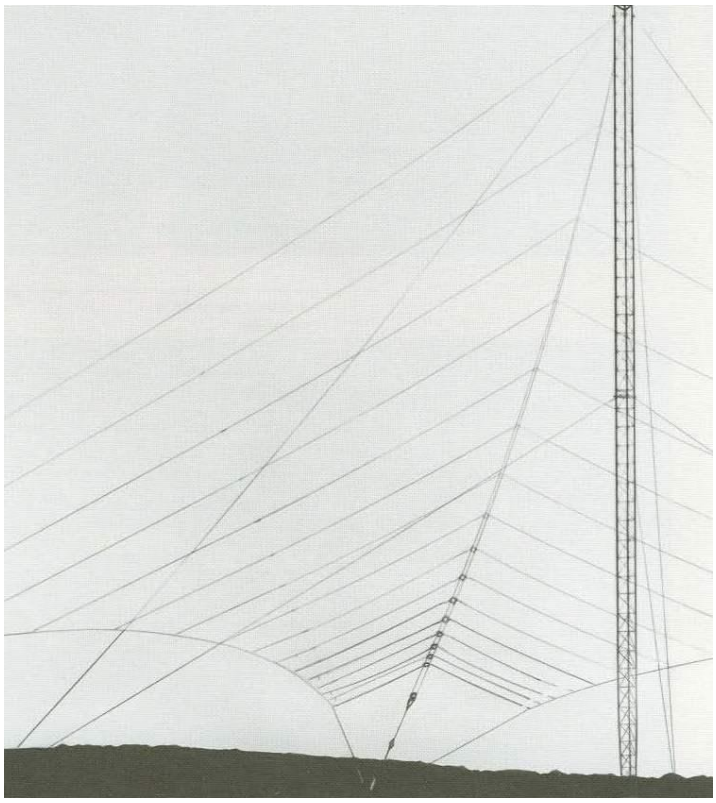
Type 747FCD Series GRANGER™
Horizontally Polarized Fixed HF Antenna

- **2-30 MHz or 4-30 MHz Frequency Range with Single Input**
- **Up to 20 kW Average 40 kW Peak Power Rating**
- **Horizontal Polarization**
- **Transportable Directional Log Periodic**
- **2.0:1 Nominal, 2.5:1 Maximum VSWR (2.0 MHz Version)**
- **Short-, Medium-, and Long-Range Communications**



General Description
The 747FCD Antenna Series intended for fixed station applications is based on the single mast, transportable 747CD Log Periodic Antenna Series. However, materials and construction techniques appropriate to a permanent installation are adopted. The result is an economic antenna permitting simple assembly and erection procedures with a single 75ft (23m) mast, saving on foundation work.

The variable take-off angle array configuration results in a high performance antenna well suited to applications where communication over varying distances is required. Elevation angles are appropriate to the frequencies commonly used for short, medium and long distances.

Frequency ranges of 2.0-30 MHz or the more compact 4.0-30 MHz version allow a choice depending upon available site space or distance of communication.

Power ratings of up to 20 kW average, 40kW peak are available. A single balun transformer converts the 200 ohm antenna feedline to a 50 ohm coaxial input.

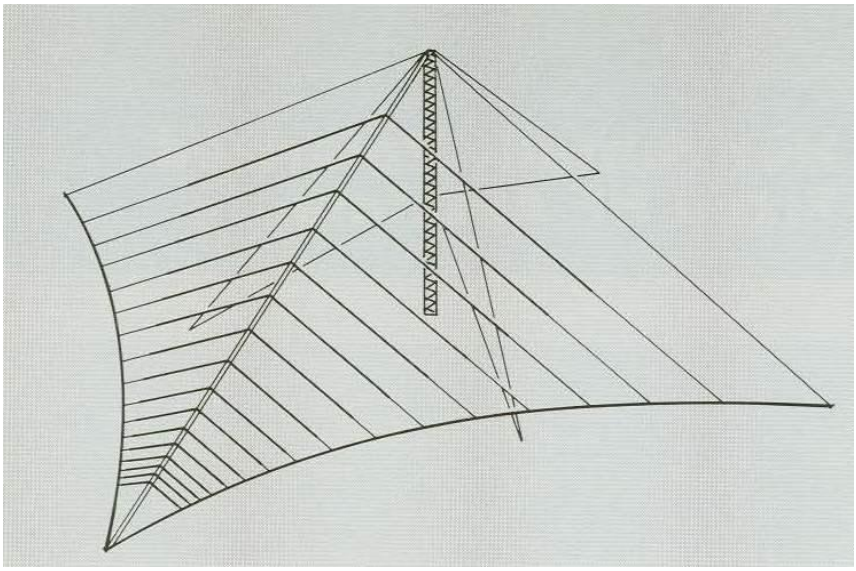
Strength and Durability
The 747FCD Series Antennas are built to withstand harsh environments. The triangular, 17 in face width, guyed tower is lattice construction with tubular crossmembers. The corner rails are of high yield steel and all parts are hot dip galvanized for corrosion resistance. The “knock-down” tower is easily bolted together on site. Guys of extra high strength galvanized steel wire rope are attached to the steel hairpin anchors supplied for installation in concrete.

The feedline and radiating curtain are accurately prefabricated from Alumoweld wire, a material extremely resistant to corrosion, ensuring high electrical conductivity. The high purity Alumina Ceramic feedline spacers and insulators are unaffected by arcing or corona, unlike organic materials which tend to carbonize under these conditions.

Array support catenaries are fabricated from Parafil, a stable prestretched parallel filament dielectric material, surrounded by a flexible dense black protective sheath which resists ultraviolet light deterioration and moisture penetration.

Accessories

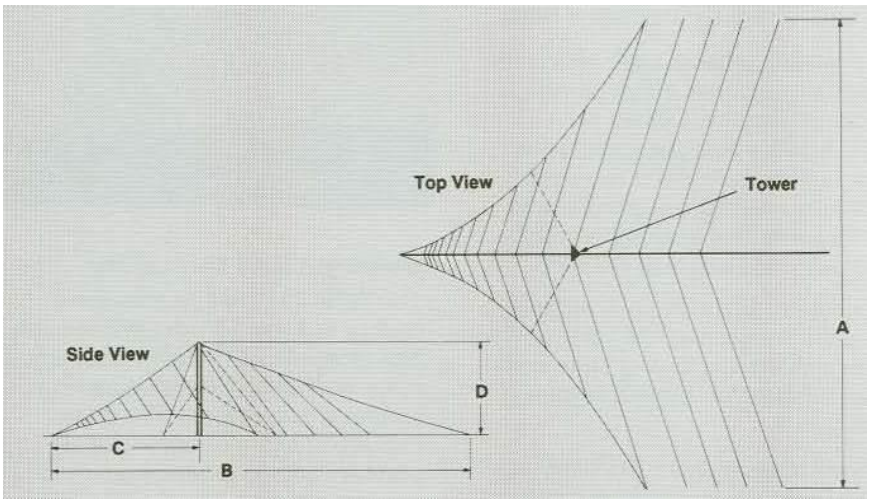
The following accessories are available for ease of installation and maintenance: tower lighting kit, erection kit, paint kit, tool kit, lightning rod kit, anti-climbing kit, and spares kit.



Characteristics

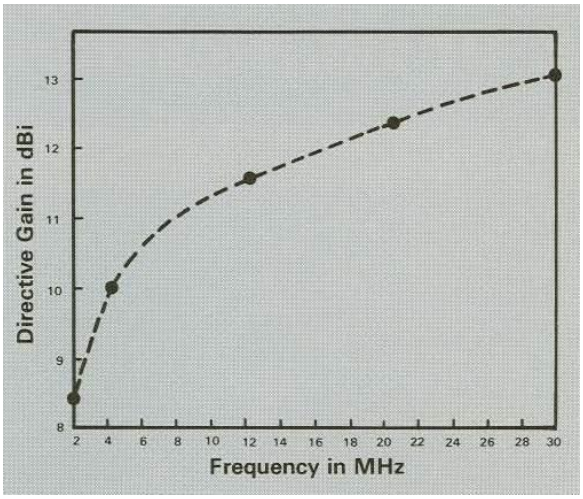
	Standard Series	**Compact Series**
Frequency Range, MHz	2-30	4-30
Polarization	Horizontal	Horizontal
VSWR without Resistive Loading, max.	2.0:1 (2.5:1 below 4.2 MHz)	2.0:1
Input Impedance, ohms	50	50
Gain	See Page 3	See Page 3
Azimuth Plane Half-Power Beamwidth, degrees		
2-4 MHz	Essentially omnidirectional	
4-30 MHz	60	60
Elevation Plane Pattern	See Page 3	See Page 3
Wind Survival Rating, mph (km/h)		
Without Ice	140 (230)	140 (230)
With 0.5 in (12mm) Radial Ice	80 (125)	80 (125)

Antenna Dimensions

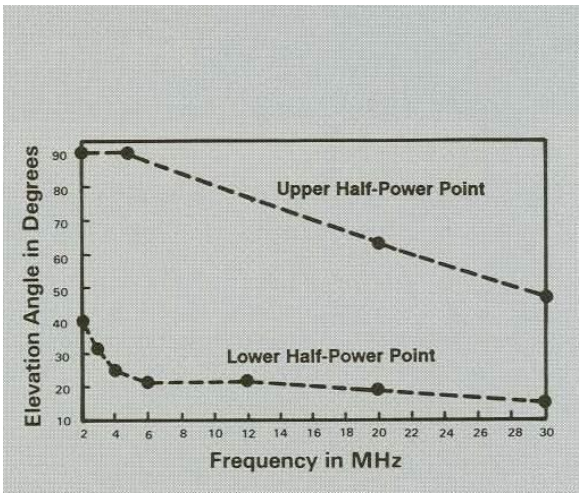


	A ft (m)	B ft (m)	C ft (m)	D ft (m)
Standard Series 2.0-30 MHz	317.5 (96.8)	328.3 (100.1)	120 (36.6)	75 (22.9)
Compact Series 4.0-30 MHz	303 (92.4)	186 (56.7)	120 (36.6)	75 (22.9)

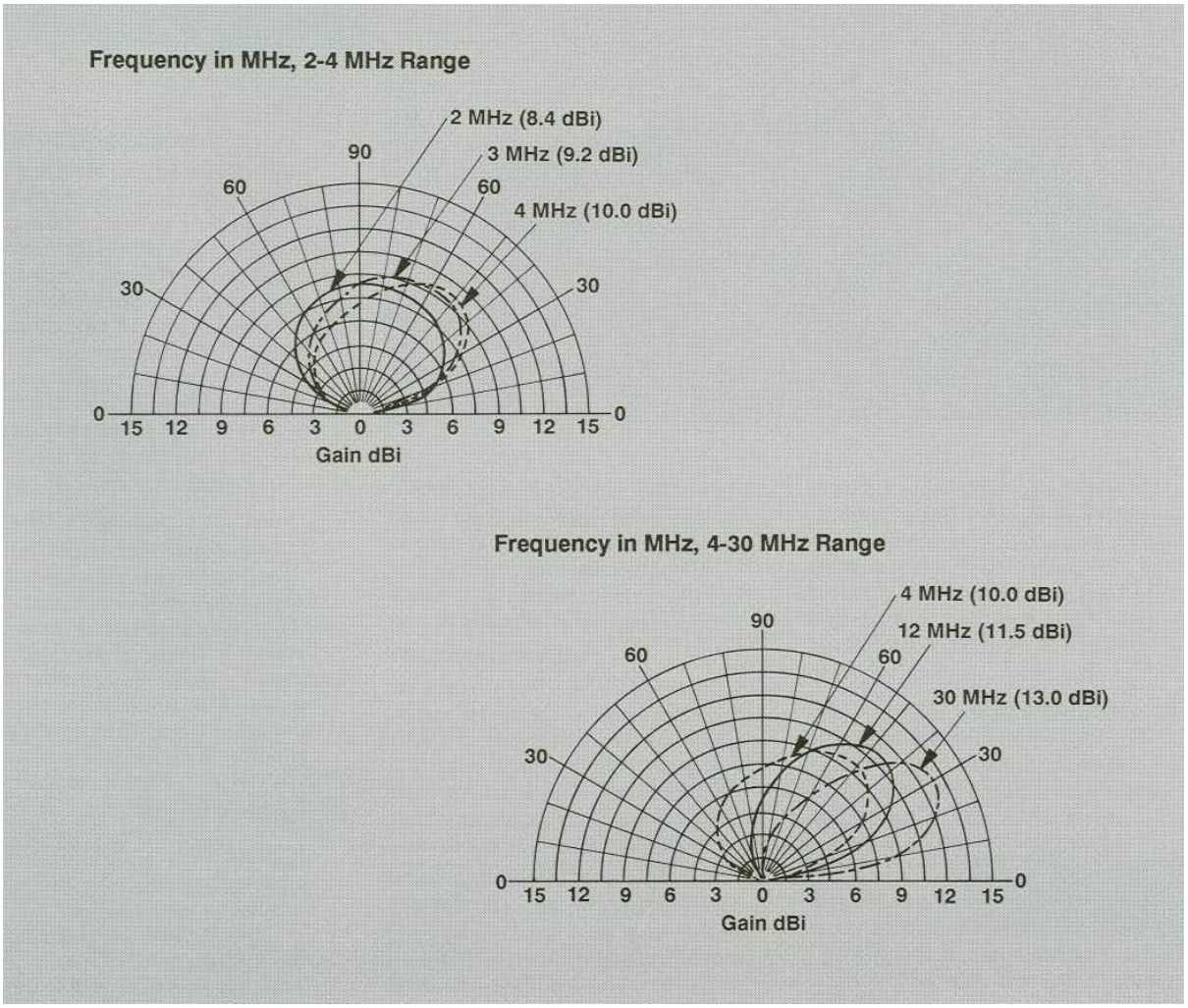
Directive Gain vs. Frequency



Elevation Plane Coverage



Elevation Plane Radiation Patterns
(Directive Gain in dB Relative to Isotropic)



Ordering Information

Type Number	Frequency Range MHz	Power Rating kW Average	Peak	Input Connector Female
747FCD-2	2-30	Receive Only	Receive Only	Type N
747FCD-3	2-30	1	2	Type N
747FCD-7	2-30	10	30	1-5/8" EIA
747FCD-9	2-30	2.5	30	7/8" EIA
747FCD-11	2-30	20	40	1-5/8" EIA
747FCD-42	4-30	Receive Only	Receive Only	Type N
747FCD-43	4-30	1	2	Type N
747FCD-44	4-30	20	40	1-5/8" EIA
747FCD-47	4-30	10	30	1-5/8" EIA
747FCD-49	4-30	2.5	30	7/8" EIA

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