

**1794 Series  
 Granger  
 Monocone HF Antenna**

- 1.6-32 MHz Frequency Range
- 40 KW Average, 160 KW Peak Power Rating
- Vertical Polarization
- Omnidirectional
- 2.0:1 Maximum VSWR
- Long-Range Communications (Skywave)
- Short-Range Communications (Groundwave)
- Low Angle Radiation Patterns
- Minimum Installation Ground Area



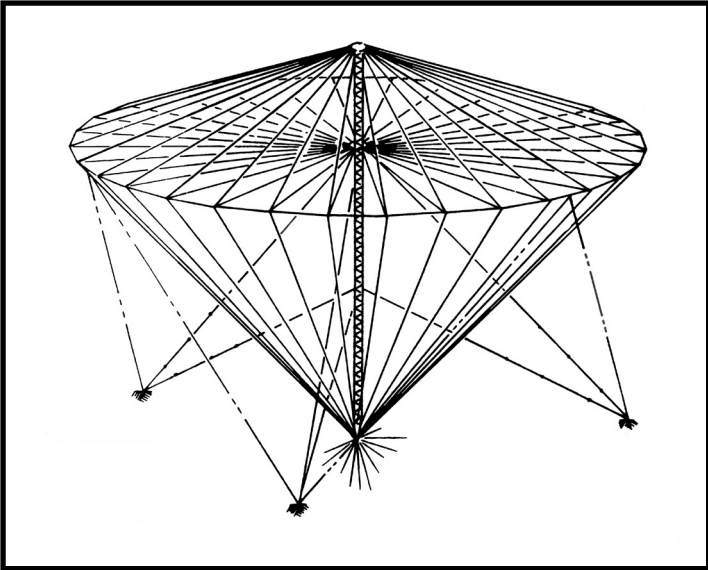
**General Description**

MONOCONE antennas are designed for very long range, high power transmit applications such as air-to-ground, ship-to-shore and HF broadcast. Advanced design provides superior electrical performance with a single central support tower. MONOCONE antennas are the first vertical omnidirectional antennas to radiate all HF frequencies effectively. The broad frequency range permits use of the optimum frequency for any distance. The radiation patterns are suitable for skywave propagation at medium and long ranges, and ground-wave propagation at short distances.

**Radiation Patterns**

Elevation plane radiation patterns are illustrated on page 2. Frequency is stated in terms of the lower frequency limit ( $f_0$ ), which is 1.6, 2.0, 2.4, 2.8, 4.0, or 5.6 depending on the model. At the higher frequencies, which are generally useful for long range skywave transmission, radiation is concentrated at the lower elevation angles. At the lower frequencies, which are useful for shorter ranges, the radiation patterns show greater gain at higher angles required for skywave transmission, while preserving sufficient gain at the low angles to facilitate ground wave propagation. The radiation patterns shown are representative of the entire frequency range. There are no frequencies within the specified ranges at which patterns deteriorates significantly from those shown.

If installation ground area is limited, low frequency (LF) versions with a low frequency limit equal to 0.8 of the low frequency limit of the standard version can be supplied on special order.



**Accessories**

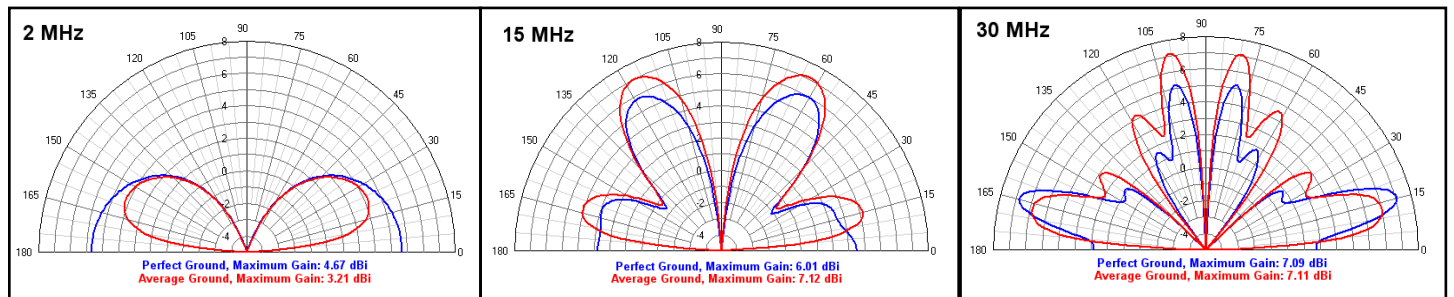
**Curtain Erection Kit** containing cables, hand winch and miscellaneous hardware for raising the curtain and ring is included with the antenna

**Tower Erection Fixture** for erection of tower by sections.

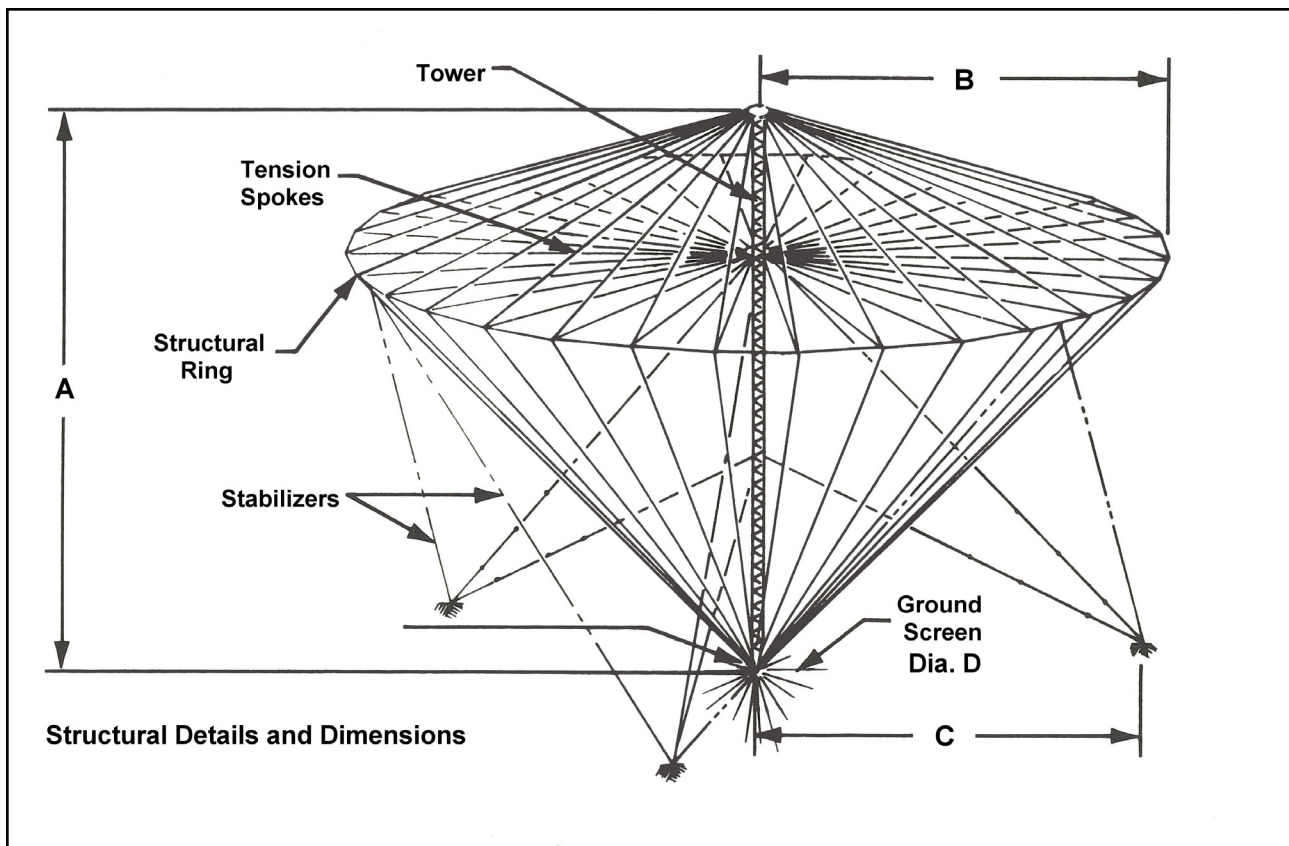
# 1794 Series Monocone

## Characteristics

|                                  |                                    |
|----------------------------------|------------------------------------|
| Type                             | Omnidirectional Conical Monopole   |
| Frequency Range, MHz             | 1.6, 2.0, 2.4, 2.8, 4.0, or 5.6-32 |
| Power Rating, kW                 | Up to 40 average, 160 peak         |
| Polarization                     | Vertical                           |
| VSWR (50 ohms)                   | 2.0:1 maximum                      |
| Azimuth Plane Radiation Patterns | Circular within $\pm 0.75$ dB      |
| Wind Survival Rating, mph (km/h) |                                    |
| Without Ice                      | 120 (190)                          |
| With 0.5 in (12mm) Radial Ice    | 90 (140)                           |



Elevation Plane Radiation Patterns (Relative to Isotropic)



# 1794 Series Monocone

## Ordering Information

| Type Number* | Frequency Range, MHz | Power Rating, KW |      | Input Connector Female | Dimensions |           |           |            |
|--------------|----------------------|------------------|------|------------------------|------------|-----------|-----------|------------|
|              |                      | Average          | Peak |                        | A, ft (m)  | B, ft (m) | C, ft (m) | D, ft (m)  |
| 1794-101LF   | 1.6-32               | 10               | 40   | 1-5/8" EIA             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-15LF    | 1.6-32               | 5                | 20   | 7/8" EIA               | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-11LF    | 1.6-32               | 1                | 4    | 50 Ohm 'N'             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-102LF   | 1.6-32               | Receive Only     |      | 50 Ohm 'N'             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-1K      | 2-32                 | 40               | 160  | 3-1/8" EIA             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-101K    | 2-32                 | 10               | 40   | 1-5/8" EIA             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-15K     | 2-32                 | 5                | 20   | 7/8" EIA               | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-11K     | 2-32                 | 1                | 4    | 50 Ohm 'N'             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-102K    | 2-32                 | Receive Only     |      | 50 Ohm 'N'             | 86 (26)    | 63 (19)   | 60 (18)   | 246 (75)   |
| 1794-3K      | 2.4-32               | 40               | 160  | 3-1/8" EIA             | 71 (22)    | 52 (16)   | 49 (15)   | 205 (62.5) |
| 1794-103K    | 2.4-32               | 10               | 40   | 1-5/8" EIA             | 71 (22)    | 52 (16)   | 49 (15)   | 205 (62.5) |
| 1794-35K     | 2.4-32               | 5                | 20   | 7/8" EIA               | 71 (22)    | 52 (16)   | 49 (15)   | 205 (62.5) |
| 1794-31K     | 2.4-32               | 1                | 4    | 50 Ohm 'N'             | 71 (22)    | 52 (16)   | 49 (15)   | 205 (62.5) |
| 1794-104K    | 2.4-32               | Receive Only     |      | 50 Ohm 'N'             | 71 (22)    | 52 (16)   | 49 (15)   | 205 (62.5) |
| 1794-5K      | 2.8-32               | 40               | 160  | 3-1/8" EIA             | 61 (18.6)  | 45 (14)   | 42 (13)   | 176 (53.7) |
| 1794-105K    | 2.8-32               | 10               | 40   | 1-5/8" EIA             | 61 (18.6)  | 45 (14)   | 42 (13)   | 176 (53.7) |
| 1794-55K     | 2.8-32               | 5                | 20   | 7/8" EIA               | 61 (18.6)  | 45 (14)   | 42 (13)   | 176 (53.7) |
| 1794-51K     | 2.8-32               | 1                | 4    | 50 Ohm 'N'             | 61 (18.6)  | 45 (14)   | 42 (13)   | 176 (53.7) |
| 1794-106K    | 2.8-32               | Receive Only     |      | 50 Ohm 'N'             | 61 (18.6)  | 45 (14)   | 42 (13)   | 176 (53.7) |
| 1794-7K      | 4-32                 | 40               | 160  | 3-1/8" EIA             | 43 (13)    | 32 (10)   | 29 (9)    | 123 (37.5) |
| 1794-107K    | 4-32                 | 10               | 40   | 1-5/8" EIA             | 43 (13)    | 32 (10)   | 29 (9)    | 123 (37.5) |
| 1794-75K     | 4-32                 | 5                | 20   | 7/8" EIA               | 43 (13)    | 32 (10)   | 29 (9)    | 123 (37.5) |
| 1794-71K     | 4-32                 | 1                | 4    | 50 Ohm 'N'             | 43 (13)    | 32 (10)   | 29 (9)    | 123 (37.5) |
| 1794-108K    | 4-32                 | Receive Only     |      | 50 Ohm 'N'             | 43 (13)    | 32 (10)   | 29 (9)    | 123 (37.5) |
| 1794-9K      | 5.6-32               | 40               | 160  | 3-1/8" EIA             | 31 (9.5)   | 23 (7)    | 19 (5.8)  | 88 (26.8)  |
| 1794-109K    | 5.6-32               | 10               | 40   | 1-5/8" EIA             | 31 (9.5)   | 23 (7)    | 19 (5.8)  | 88 (26.8)  |
| 1794-95K     | 5.6-32               | 5                | 20   | 7/8" EIA               | 31 (9.5)   | 23 (7)    | 19 (5.8)  | 88 (26.8)  |
| 1794-91K     | 5.6-32               | 1                | 4    | 50 Ohm 'N'             | 31 (9.5)   | 23 (7)    | 19 (5.8)  | 88 (26.8)  |
| 1794-110K    | 5.6-32               | Receive Only     |      | 50 Ohm 'N'             | 31 (9.5)   | 23 (7)    | 19 (5.8)  | 88 (26.8)  |

\* The letter suffix "K" denotes that the antenna is supplied with "knockdown" (unassembled) tower.

Refer to the sketch on the previous page to reference dimensions

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