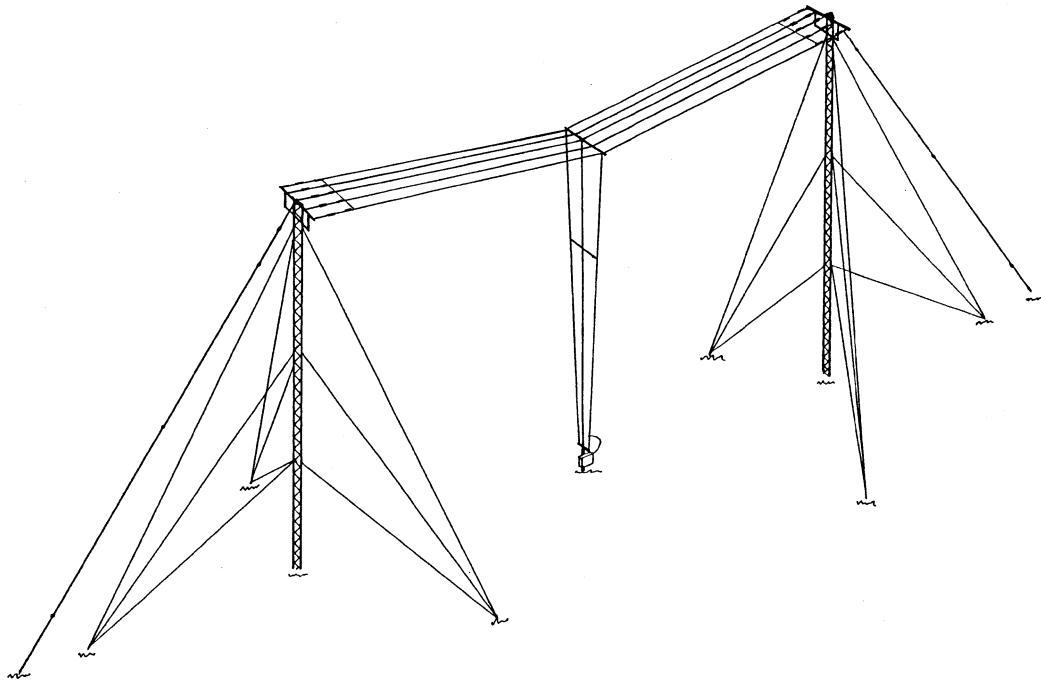




"T" Type Antenna

CT-046

For MF Band



DESCRIPTION

The CD Model CT-046 are omnidirectional MF vertically polarized "T" type antenna, designed to provide a high efficiency and high power radiation capability for fixed transmitting and receiving sites. Optimum frequency range of this CT-046 MF "T" type antenna is approx. 300-600 KHz. The antenna have a low angle radiation pattern and provide both short and long range MF communications by ground wave and skywave, respectively. The radiation pattern in the azimuth plane is essentially omnidirectional, while the elevation pattern varies with frequency. In order to minimize the loss of antenna coupler, it is available to shift the self resonance frequency between 450-800 KHz on request.

The "T" type antennas are special type of vertical radiator in which the upper part of the aerial is bent over. This enables a reasonable length of wire to be used without the need for using high mast. The supporting mast is guyed at eight places around each mast. The ground screen requires 90mx40 m land area standard.

90 man-hours required for the installation of the CT-046, excluding the time required for pouring and curing of concrete foundations and ground screen installation.

SPECIFICATIONS

	CT-046
Polarization	Vertical
RF Power Capability, Max.	10 kW
Frequency Range	MF Band
Radiator to Ground Capacity	650 pF
Horizontal Section	
Mast Height	40 m
Site Requirement	40x140 m
Mast Span	62 m
Wind Survival Rating	45 m/s
Weight, Net	1550 Kg

Optional Antenna Coupler Model CM-046-x
for CT-046

Frequency Range 400-600KHz, Standard
Frequency Channels

CM-046-1-x 1-Channel

CM-046-2-x 2-Channel

RF Power Capability Average/ PEP.

CM-046-x-1 100W/ 200W

CM-046-x-2 1kW/ 2kW

CM-046-x-3 5kW/ 10kW

Power Requirement for CM-046-2-x.

24 VDC. 0.5A Max.

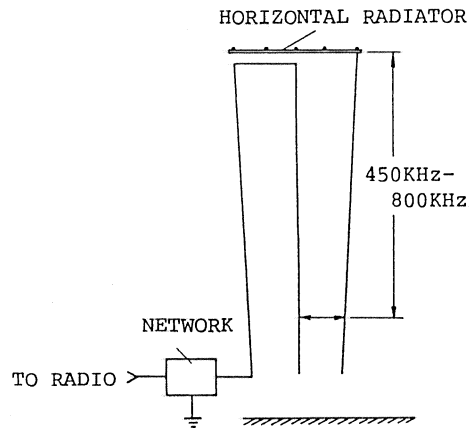
12-Core Cable

Selecting Time, 3 Second Max.

Input Impedance 50 Ohms

LINEAR LOADING CIRCUIT

The vertical element of the model CT-046-x is shortened by the linear loading method. The small MF antenna requires loading circuit because the resonant frequency is higher than a operating frequency. Usually, a loading inductor of a matching network assume the role of the Circuit, therefore the loss of transfer of RF energy become large. Providing a low loss linear loading circuit in the vertical element, the model CT-046-x reduce the load of the matching network, and CT-046-x also reduce the design work for the network. As a result of using CT-046-x it is possible to make a low loss MF antenna system.



SITE

A site as illustrated in Figure 1 is needed when the model CT-046-x antenna is erected. Figure 1A shows a maximum permissible deviation of horizontality of the site for erecting it. As indicated in the sketch, it is desirable to have the center to perimeter difference in height of the concrete ground less than 0.6m.

The peripheral area around the concrete paved ground for the antenna should be well drained. It should be noted in terms of the electric performance that any tall metallic structure within 80 m radius from the center of the antenna could disturb the horizontal beam pattern.

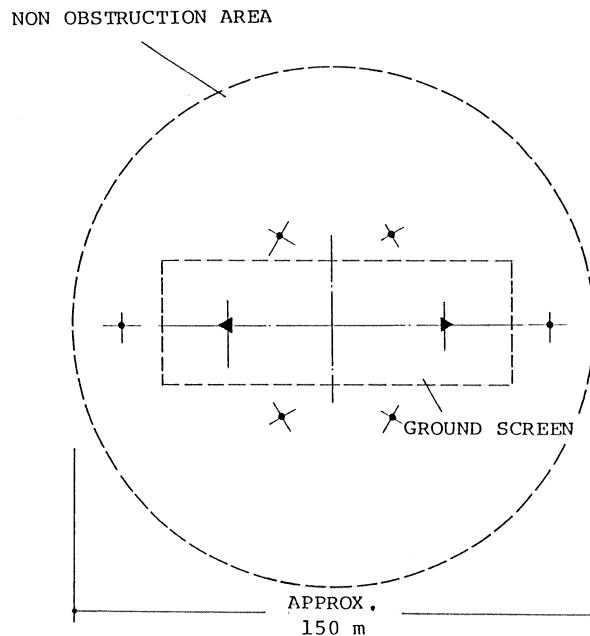


Figure 1

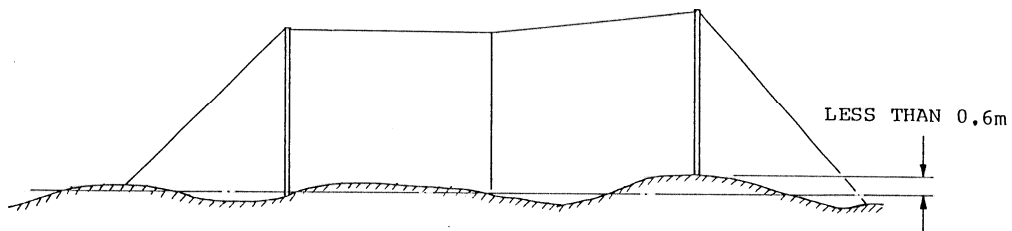


Figure 1A. Installation Site, model CT-046.