

# 545T/545F Pyramid Antennas

The Model 545T transportable dual take-off angle antenna provides the features most desired in a tactical antenna required to communicate over any range at any azimuth. To achieve this performance, the Model 545T, and its fixed counterpart the 545F, are omnidirectional, and radiation is vertically steerable. They generate independent low and high beams, optimizing gain for any communications distance.

The 545 is a four-arm spiral antenna that can be excited in two orthogonal modes, each of which is horizontally polarized and essentially omni-azimuthal at all elevation angles.

The 545 can be operated in the low-angle mode only, the high-angle mode only, or low-angle and high-angle modes simultaneously.

Since the signal is circularly polarized in the horizontal plane, minimal ground losses occur. Thus, full gain is provided at either high- or low-angle to enhance communications reliability

## Optimize gain for communications at any range.

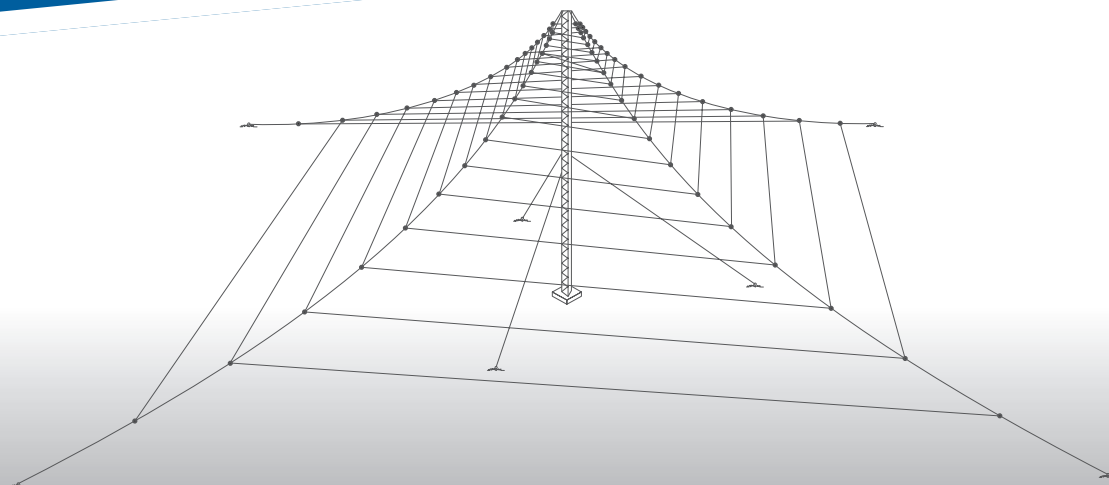
The 545T is highly transportable and quickly deployable. The materials in the 545T are selected for their ruggedness, light weight and ease of handling. The supporting tower is made of lightweight, high-strength aluminum. It is supplied in nesting 3.1-meter (10-foot) sections for easy assembly. The antenna curtain wires are flexible bronze. Careful attention is given to the fittings and connection details so assembly is simple, rapid, and foolproof. With a trained crew of five persons, the 545T may be installed and made operational in less than an hour.

The 545T includes all the necessary hardware, tools, and 50 ohm transformer. A hand winch and rope snubbers are provided to facilitate quick erection. All guy anchors are included in the tower package, along with sturdy transit cases and instructions for assembly and disassembly.

The fixed version of this antenna, the Model 545F, uses Alumoweld wire radiators and an aluminum mast. Electrically the fixed and transportable versions of the 545 are the same.

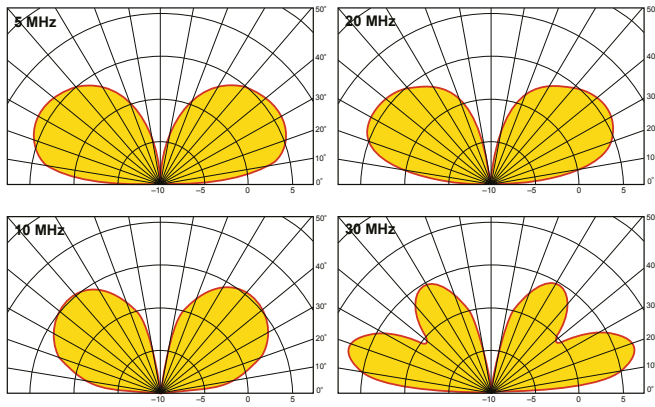
## KEY FEATURES

- › Dual take-off angle provides optimum gain for short-, medium-, and long-range circuits
- › Easy and rapid installation
- › Lightweight and small size
- › Horizontally polarized to eliminate ground losses
- › Transportable Tactical (T) and Fixed (F) versions available
- › Rugged construction

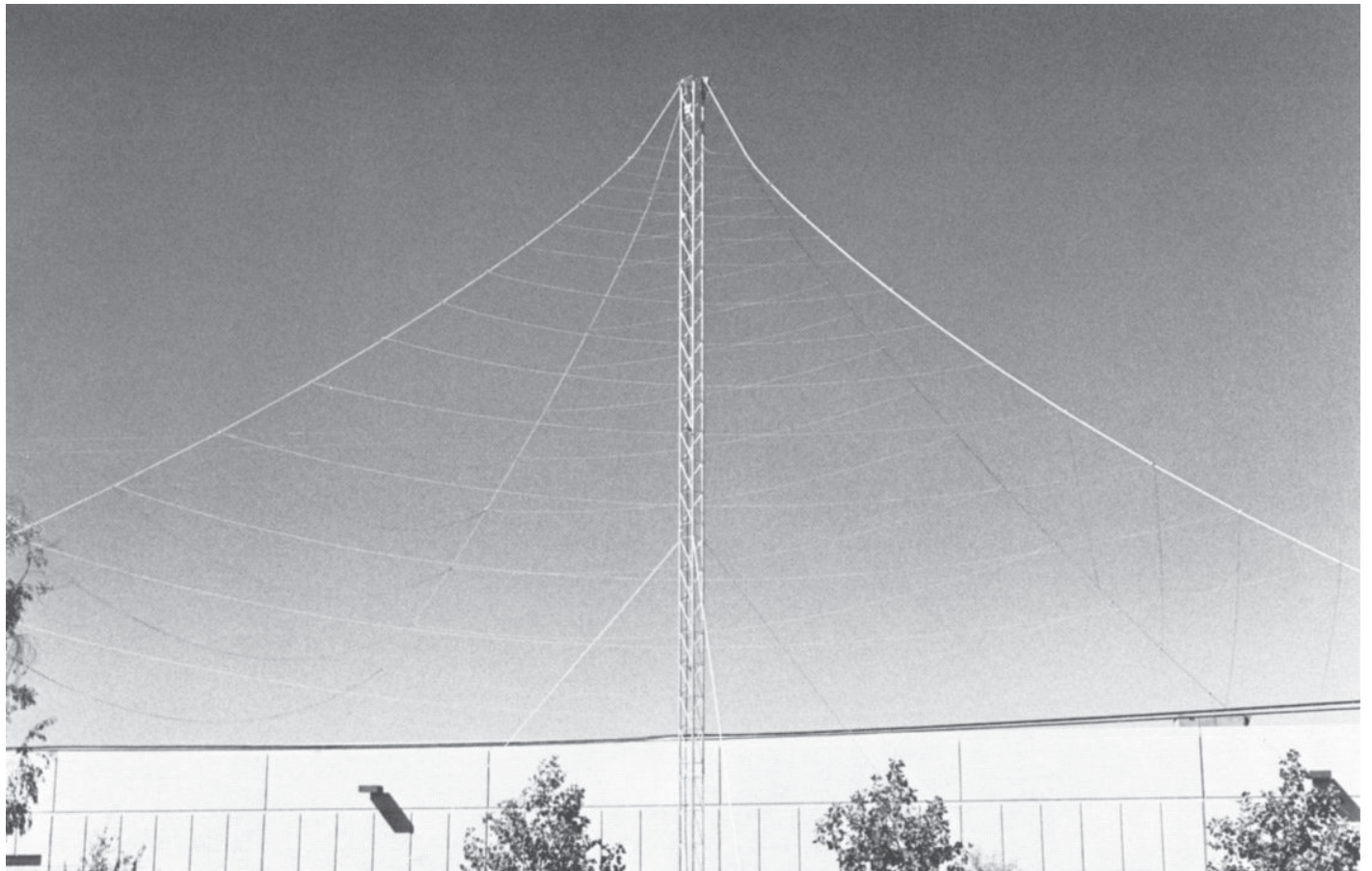
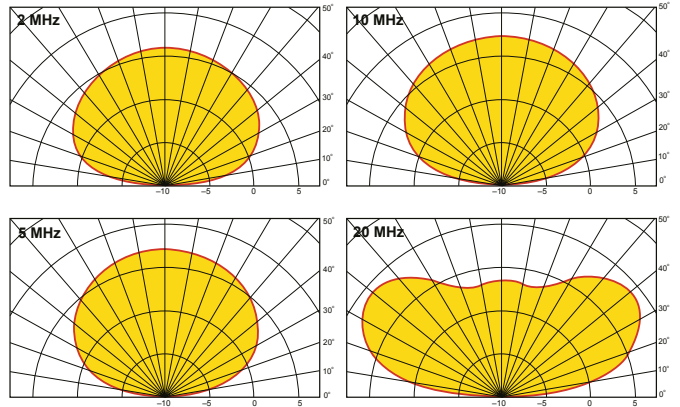


## > Elevation Patterns Directive gain in dBi

Low-Angle Mode



High-Angle Mode



# Model 545T/545F Specifications

<b>Polarization</b>	Circular in horizontal plane
<b>Input impedance</b>	50 ohms nominal
<b>VSWR</b>	<ul style="list-style-type: none"> <li>• 2.0:1 nominal</li> <li>• 2.5:1 maximum</li> </ul>
<b>Environmental Performance</b>	Designed in accordance with EIA Specification RS-222C for loading of 176 km/h (110 mi/h) wind, no ice, 112 km/h (70 mi/h) wind, with 6 mm (1/4") radial ice.
<b>Mast height</b>	12.2m (40 ft)
<b>Size</b>	25.9m x 25.9m (84.9 ft x 84.9 ft)
<b>Erection Time</b>	545T: One hour with five trained men
<b>Azimuth Pattern</b>	Essentially circular

Power			
Model Numbers		Power Handling Capacity	Connector
Transport	Fixed		
545T-1-02	545F-1-02	Receive	Type N Female
545T-1-06	545F-1-06	1kW Avg/2kW PEP	Type N Female
545T-1-28	545F-1-28	5kW Avg/10kW PEP	7/8" EIA Female
	545F-1-03	10kW Avg/10kW PEP	1-5/8" EIA Female

Dimensions when packed for transit, Model 545T					
	Weight	Volume	Length	Height	Width
<b>Tower Package</b>	125 kg (275 lbs)	1.33 m <sup>3</sup> (47 ft <sup>3</sup> )	3.11 m (10.2 ft)	0.37 m (1.2 ft)	1.2 m (3.8 ft)
<b>Curtain Package</b>	110 kg (240 lbs)	.26 m <sup>3</sup> (9.1 ft <sup>3</sup> )	1.07 m (3.51 ft)	0.46 m (1.5 ft)	.52 m (1.71 ft)
<b>Total</b>	230 kg (515 lbs)	1.59 m <sup>3</sup> (56 ft <sup>3</sup> )			

Radiation Characteristics				
Frequency	Low-Angle Mode		High-Angle Mode	
	Take-off Angle	Directive Gain	High-Angle Mode	Directive Gain
2 MHz	25°	6.8 dBi	90°	6.1 dBi
4 MHz	30°	6.3 dBi	90°	7.0 dBi
10 MHz	45°	5.7 dBi	90°	7.6 dBi
20 MHz	30°	6.2 dBi	40°	9.3 dBi
30 MHz	20°	7.6 dBi	20°	7.9 dBi

Available Multimode Options	
Single Mode (one input);	Receive, 1kW
Dual Mode (one high angle, one low angle input)	Receive, 1 kW, 5 kW
Triple Mode (two high angle, one low angle input)	Receive, 1kW

## Specialized Expertise in a Global Family

TCI International, Inc. is a leading global provider of innovative solutions for spectrum monitoring, spectrum management, communications intelligence, and antennas for communications and high-power radio broadcasting. TCI's products have been delivered to customers in more than 100 countries.

TCI's communication, DF, and spectrum monitoring antennas embody over 55 years of experience in RF system design and production techniques. Broadcasters rely on TCI for optimized HF antennas that minimize operating costs. Ground-to-air, shore-to-ship, GMDSS, military and civilian communication systems use TCI HF antennas tailored for a variety of mission critical applications.

Based in Fremont, California, TCI is a wholly-owned subsidiary of SPX Technologies (NYSE: SPXC), a global, diversified, multi-industry manufacturing leader of highly-engineered systems. With employees in over 15 countries, SPX team members collaborate across borders and business segments to deliver greater efficiencies and better ideas that help our customers succeed.

Learn more about TCI at [www.tcibr.com](http://www.tcibr.com), and SPX at [www.spx.com](http://www.spx.com).



Company Proprietary  
Data and specifications subject to change without notification.  
Not for distribution without prior permission from TCI.  
© 2014-2024 – All Rights Reserved

**TCI INTERNATIONAL, INC.**, 3541 Gateway Blvd., Fremont, CA 94538-6585 USA

| Tel: 1-510-687-6100 | [tcibr.com](http://tcibr.com) | [in](#) [▶](#)

