

## Overview

Premium-quality towers and antenna support systems are essential factors in ensuring optimal RF coverage over a broad range of environments and terrains. RFS's comprehensive CGTI tower range provides just that—a rich selection of towers, antenna mounting systems and associated equipment that facilitates analog and digital RF transmission in the most demanding applications. These include applications requiring coverage over long distances, high-trafficked areas and hard-to-reach locations.

Expertly constructed from galvanized steel (and painted to specification), CGTI towers and antenna mounting products are globally renowned for their robustness, strength and performance. For many decades and in every corner of the globe, CGTI systems have successfully withstood the most demanding environmental conditions, including tropical cyclones, blizzards, sand storms, ice, earthquakes, and corrosive environments.

## Capabilities

For over half a century, CGTI has been a proven global leader in tower and associated infrastructure for the telecommunications, radio and television services, and microwave sectors. CGTI has supplied and installed more than 17,000 towers for leading wireless communications providers, and has delivered in excess of 3,000 turnkey tower projects in more than 70 countries. The leading-edge structural design and civil engineering expertise provided by the CGTI team makes it the number one choice.

## Range

The CGTI range includes:

- Self-supporting towers – up to 220 meters (720 feet) in height
- Guyed mast – up to 600 meters (1968 feet) in height
- Monopoles – for the broadcast, cellular and microwave industries

Tower accessories, such as antenna supports and passive reflectors up to 90 square meters (970 square feet), are also offered in the comprehensive CGTI range.

## Standards

CGTI products comply with all major tower and structural standards, including those of:

- Electrical Industries Association/Telecommunications Industry Association (EIA/TIA North America)
- Neige et Vents (France)
- British Standard (BS, United Kingdom)
- Deutsches Institut für Normung (DIN, Germany)

In addition, CGTI is fully accredited to the exacting ISO 9001-2000 quality management standard.

CGTI products are designed and rated to support heavy loads under wind conditions up to 200 km/hr. (124 miles/hr). By combining the company's standard range with special tailored options, CGTI can also offers towers and masts that are designed to meet specific customer needs.

## Safety

CGTI products are designed to provide optimal site safety with minimal exposure to hazards, from manufacture through to site installation and maintenance. The inclusion of anti-falling devices, internal ladders and indicative safety markings ensure safe and efficient tower installation. In addition, CGTI offers a comprehensive range of services to ensure the safest installation. These range from tower installation and assembly supervision, through to site maintenance and logistic and export advice.

## Product range

### 1. Self-supporting towers

The six self-supporting tower models in the CGTI range are either triangular-tubular or square-angle profiled in construction, manufactured from galvanized steel and designed to satisfy the ever-changing requirements of the wireless communications industry. The range is available in a broad selection of height, antenna load-rating and deflection combinations. This, coupled with the option to custom design, ensures that there is a CGTI self-supporting tower suitable for almost any application.

**ORYX:** With small base dimensions and external ladder, the CGTI ORYX tower has been especially designed for mobile telephone applications. It is available in heights of 12 to 50 meters (39 to 164 feet) and can support antenna loading up to six square meters (65 square feet).

**ORION-R:** The CGTI ORION-R tower has been designed for dual-carrier applications and comes with an internal ladder. It is available in heights of 8 to 60 meters (26 to 197 feet) and can support antenna loading up to 10 square meters (108 square feet).

**OMEGA:** Designed specifically for heavy antenna loading and small deflection at medium altitudes, the CGTI OMEGA tower is ideal for multiple-carrier applications. It is available in heights of 8 to 90 meters (26 to 295 feet) and can support antenna loading up to 10 square meters (108 square feet).

**PAT-91:** Designed specifically for heavy antenna loading and small deflection at higher altitudes, the CGTI PAT-91 tower is suitable for the most demanding of wireless applications. The largest in the CGTI self supporting tower range, it is available in heights of 20 to 120 meters (66 to 394 feet) and can support antenna loading in excess of 20 square meters (215 square feet).

**ALPHA:** The CGTI ALPHA tower has been designed for multiple-operator use and comes complete with an internal ladder. It is available in heights of 8 to 60 meters (26 to 197 feet) and can support antenna loading up to 15 square meters (161 square feet).

**HELIX:** Designed specifically for heavy antenna loading and small deflection at lower altitudes, the CGTI HELIX tower is suitable for areas with high wireless communication activity. It is available in heights of 15 to 60 meters (49 to 197 feet) and can support antenna loading up to 25 square meters (269 square feet).

## 2. Guyed masts

The CGTI range of guyed masts consists of three models, each boasting strong slender construction from galvanized steel to suit the widest range of applications.

CGTI's masts are specifically designed to support wireless communication equipment at heights of up to 600 meters (1968 feet). Triangular or square in section, the masts are supplied in standard sections with special guy support frames inserted at appropriate intervals. The masts are fitted with built-in climbing rungs in one face as a minimum, and can accommodate extremely high antenna loading.

**CG-350:** The CGTI CG-350 guyed mast has been designed with a reduced side section and comes complete with an external climbing rung assembly on one face. It is available in heights of 12 to 40 meters (39 to 131 feet) and can support antenna loading up to three square meters (32 square feet).

**CG-600:** The big brother of the CG-350, the CGTI CG-600 guyed mast system is available in heights of 18 to 90 meters (59 to 295 feet) and can support antenna loading up to eight square meters (86 square feet).

**CG-1200:** Designed specifically for heavy

antenna loading at higher altitudes, the CGTI CG-1200 guyed mast is suitable for the most demanding of wireless installations. The largest in the CGTI guyed mast range, it is available in heights of 30 to 121 meters (98 to 397 feet) and can support antenna loading up to 20 square meters (215 square feet).

**CG2200:** This tower is designed for specifically for the broadcast industry. It can reach heights up to 400m (1,312 ft).

## 3. Monopoles

The CGTI monopole range is constructed from galvanized steel and is supplied complete with an external ladder and working platform. The lightweight monopoles are designed to support wireless communication equipment at heights of 12 to 35 meters (39 to 115 feet) and can accommodate antenna loading capacities of up to five square meters (54 square feet).

### Inclusions and options

All CGTI self-supporting towers, guyed masts and monopoles incorporate all necessary support steel work, and access infrastructure. These include:

- Galvanized steel structure
- Working platform (with the exception of the CG350 and CG600 guyed masts and the ORYX tower)
- Internal ladder (with the exception of the CG350 and CG600 guyed masts and the ORYX tower)
- Vertical cable tray
- Anchoring system

In addition, a wide range of options are available, enhancing and extending the range. Available for CGTI self-supporting towers, guyed masts and monopoles, these options include:

- Lightning arrestors
- Rest platforms
- Anti-climbing systems
- Fall arrestor slides
- Grounding systems
- Customized painting
- Night beacon systems
- Horizontal cable trays
- Antenna supports

## 4. Antenna supports

CGTI offers a broad array of galvanized steel antenna supports, enabling the tailoring of self-supporting towers, guyed masts and monopoles to meet the needs of almost any wireless communications application.

The comprehensive CGTI antenna support range

includes a selection of low-profile, low visual-impact mounting systems. These provide wireless communication carriers practical and easy-to-deploy options for dense urban applications where larger communication towers are impractical.

**Cluster-mount:** CGTI offers a unique and attractive mechanical 'cluster-mount' system for rooftop sites. The CGTI cluster-mount assembly is specifically designed to accommodate the low visual impact RFS integrated cluster antenna configuration. The one-piece mechanical cluster-mount system is lightweight and can be carried by hand. It has been specially designed to operate without physical fastening – no drilling is required – meaning that it does not impact permanently on the site. In addition, the mounting system is height-adjustable for achieving optimum coverage and ease of servicing.

**Adjustable antenna supports:** CGTI adjustable antenna supports allow azimuth and tilt adjustment, along with tower slope compensation. These are available in a range of sizes and maneuverability. Cross-beam kits are also available for sway-bar installation, along with standard antenna-mounting kits – all offer optimal reliability and allow for speedy installation.

**Wall supports:** CGTI offers a range of antenna wall support systems, both with and without platforms. The wall supports permit convenient placement of both microwave and cellular antennas in built-up locations.

**Rooftop supports:** A range of both permanent-bolted and moveable rooftop supports is offered by CGTI. Available in monopod and 'easel' design, the CGTI rooftop supports allow both microwave and cellular antenna mounting at heights where self-supporting towers and masts would normally be used, but at a fraction of the price.

**Antenna support system accessories:** CGTI's comprehensive selection of antenna support system accessories includes half-rung, rung and ladder kits (all available in multiple variations), along with securing components that are designed with safety in mind. All accessories are manufactured from corrosion-resistant galvanized steel.

## 5. Passive reflectors/repeaters

Passive reflectors (or repeaters) are an essential element in any microwave transmission system. They

provide the crucial link where – due to one or more obstacles – a direct line-of-sight within the microwave 'hop' is not easily achievable. CGTI is a leading provider of such crucial reflector systems.

CGTI passive reflectors are designed and built to withstand wind loads of up to 240km/h (149 miles/hr), while achieving maximum signal reflection and compliance with all relevant flatness standards at frequencies up to 40 GHz. The reflecting face of each passive reflector is manufactured from solid aluminum, while the rigid-steel framework is based on CGTI's unique triangular design.

CGTI passive repeaters are available in seven sizes and two distinct types – 'back-to-back' or 'mirror'. Custom-made repeaters with surface areas up to 18 square meters (194 square feet) are also available.