



8T8R base station antennas

The right-size alternative that balances
RAN performance and energy efficiency

COMMSCOPE®

The world has reached a tipping point. We are coming face to face with the existential realities of climate change that threatens lives and is reshaping the landscape. At the same time, our dependence on high-speed mobile access—for work, education, healthcare and community—continues to increase. From densely populated metropolitan markets to rural agricultural communities, mobile operators are under increasing pressure to expand access to 5G services.

Network operators must thread the needle, providing more coverage and capacity—especially in less populated areas—while reducing power consumption, CO₂ emissions and production waste.

Right sizing your RAN

A key enabler of sustainable network growth is the radio/antenna configuration. It dictates capacity and coverage and is a major consumer of power. 5G configurations include 4T4R, 8T8R, 32T32R and 64T64R. Choosing the right one has never been more critical.

An undersized RAN yields insufficient capacity and coverage and requires network upgrades which add to the supply chain waste





stream. Conversely, oversizing the radio/antenna system results in overspending on power, adding unnecessary weight to the tower and compromising environmental sustainability.

Right sizing the RAN starts with antennas that enable use of radios that consume less power while delivering the coverage and capacity for medium- and low-capacity sites.

When bigger isn't better

Many new sites use 32T32R or 64T64R radios with mMIMO active antennas. Yet, this configuration is only necessary for the highest capacity sites. For medium- and low-capacity sites, it wastes power while increasing environmental impact and cost.

By right-sizing the RAN, we can boost energy savings, conserve resources, lower total cost of ownership and create a more eco-friendly network.

Very high traffic	64T64R	32T32R	32T32R 16T16R	(FWA) 32T32R 16T16R
Moderate/low traffic	Not suitable	8T8R	8T8R	8T8R
				
Dense urban high-rise ISD 200-500 m	Urban low-rise ISD 500-1,000 m	Suburban ISD >1 km	Rural ISD ~5 km	

Complemented with dynamic spectrum sharing (DSS) in some scenarios. In very low traffic sites 3.5 GHz probably not deployed and FDD bands may be enough.

8T8R BSAs are suitable in 70% to 80% of all deployments

CommScope 8T8R antennas: a smarter, more sustainable option

Repeated testing indicates that, for low- and medium-capacity applications, the use of 8T8R radio and 8T8R antennas can dramatically cut radio power consumption while delivering all the capacity and coverage needed.

The CommScope Outdoor Wireless Network (OWN) portfolio of 8T8R antennas enables MNOs to right-size their medium- and low-capacity sites for a greener, more energy-efficient network.

For example: Using a 160W 8T8R radio and CommScope passive 8T8R antennas provides the same approximate downlink coverage as a 32T32R 100W radio/antenna configuration—all while using 30 percent less power and emitting 30 percent less CO₂. The power and CO₂ savings jump to 50 percent when compared to a 64T64R system.

Our 8T8R antennas also deliver 5-6dB more gain and 60 percent more capacity than 4T4R. In fact, when compared to 4T4R, 32T32R and 64T64R configurations, 8T8R has the lowest cost per bit.

Smaller, more sustainably designed 8T8R antennas also enable MNOs to reduce tower loading, free up tower space and use fewer, smaller mounting components. And, because support for your 4G/5G legacy bands can be integrated into any 8T8R beamforming antenna, you can add more capabilities and power savings without adding more antennas. The results? Lower leasing costs, easier upgrades, faster deployments and reduced energy requirements across the supply chain.

- Leverage **80+ antennas** with a **wide variety of functionality and frequency support**
- **Reduce power consumption** and **carbon footprint** while expanding your network capabilities
- Address **all low- and medium-capacity** applications



One portfolio, more applications, a greener network and smaller carbon footprint

8T8R is more
suitable in
70-80%
to all deployments

80+ antennas
with a **wide**
variety of functionality
and frequency support

8-32
ports
and multiple
RET inputs

Available for

5G beamforming (FDD/TDD),
tri-sector, small cell

One compact
antenna combines 8T8R
beamforming and legacy
band support **reducing raw
material, and transportation
requirements**

Supported
beamforming bands:

1800-2600 MHz (FDD)
2300- 2690 MHz (TDD)
3300-3800 MHz (TDD)
2300-3800 MHz (TDD)
3300-4200 MHz (TDD)

30% ↓ 

less power use
and **CO₂** release than

8T8R vs 32T32R


- UP TO 2,339 KWH ENERGY SAVINGS PER YEAR
- AS MUCH AS 700 KG LESS CO₂ RELEASED

50% ↓ 

less power use
and **CO₂** release than

8T8R vs 64T64R

- UP TO 5,000 KWH ENERGY SAVINGS PER YEAR
- AS MUCH AS 1,600 KG LESS CO₂ RELEASED

 Antenna shape
optimized for
**wind load
reduction**

Small is more:
compact solutions create
more space on the tower
for future upgrade, use
less materials and reduce
energy use across the
supply chain

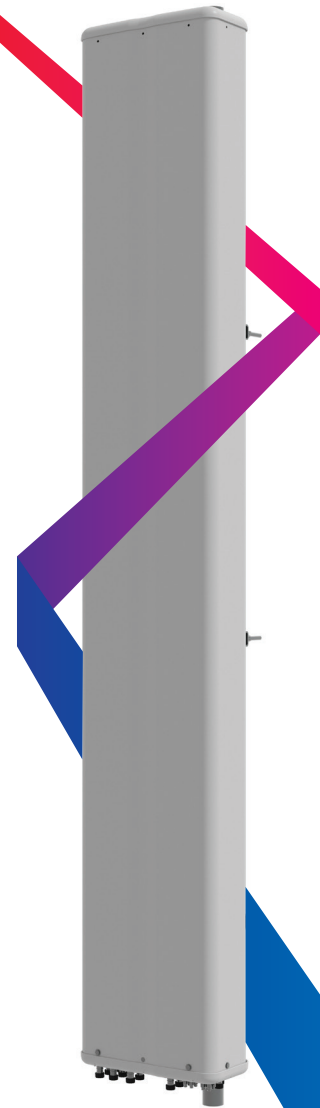
Compatible
with all **OEM** and
Open RAN radios


NGMN-approved
cluster connectors
to speed deployment

Reduced TCO

Now, one portfolio of 8T8R antennas allows operators to address all their low- and medium-capacity applications. Because all antennas share the same basic design, connectivity and mounting characteristics, deployment teams can work faster and better.

CommScope 8T8R antennas deliver consistently superior performance in a smaller form factor. So, networks can better address key operational issues like tower and wind loading and faster design and deployment to significantly reduce their total cost of network ownership.



Reduce power consumption and carbon footprint while expanding your network capabilities with 8T8R base station antennas from CommScope.

Designed and supported by a global leader in sustainable network infrastructure

At CommScope OVN, we recognize that building the world's best wireless networks means little if the global environment is irreparably damaged.

Around the world, mobile network operators are working hard to reduce the industry's environmental impact. We're supporting them with an aggressive environmental agenda focusing on four pillars:

To meet the industry's environmental standards—in Europe, the Americas and elsewhere—we continuously re-evaluate our product designs, processes and partnerships as we seek to minimize use of the world's finite natural resource

To learn more about CommScope OVN 8T8R antennas and how they can be used to create a greener, more sustainable model of network growth, download and read [CommScope: Supporting Service Providers on Their Journey to Net Zero](#).





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