



RADIO
FREQUENCY
SYSTEMS

Base Station Antennas

CUTTING SITE COMPLEXITY

with no compromises



Cutting site complexity with no compromises

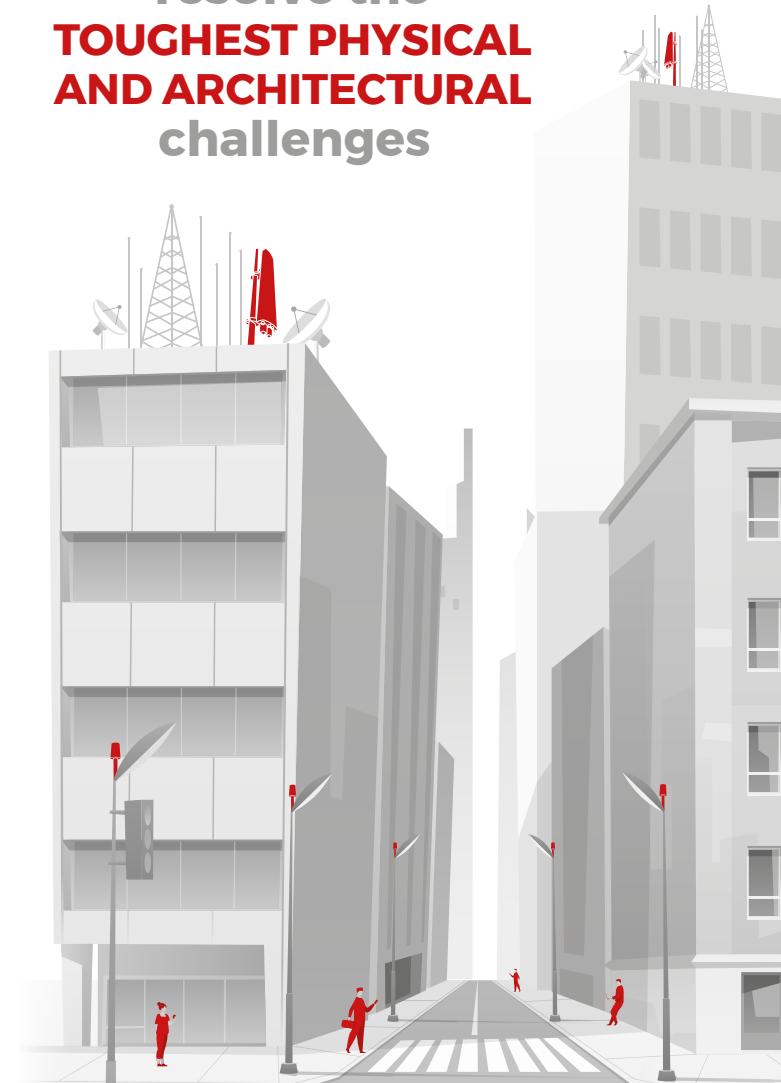
As wireless technologies continue to evolve and new frequencies become available, it's clear **mobile operators can't endlessly add base station antennas to already-crowded towers and rooftops**. The approach is not sustainable from any perspective — weight, space, cost, visual impact or efficiency. Today, antennas may address one or two issues, but with considerable compromises in other areas.

Base station antenna designers with the right skills and strategies play an important role in reducing site complexity. But, to be effective, their solutions must **tackle the challenges operators face on multiple fronts**.

Antenna designers must embrace **new ways of thinking about physical antenna designs and architectures**. At the same time, they must continue to support new technologies, new frequencies and new combinations of the two. And they must continue to **increase antenna performance** while maintaining the highest possible reliability.

At RFS, we combine our technical expertise, deep experience and design agility with our commitment to innovation to achieve all of these requirements. Our base station antennas **resolve the toughest physical and architectural challenges** to simplify sites with no compromises to performance.

resolve the
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AND ARCHITECTURAL
challenges**



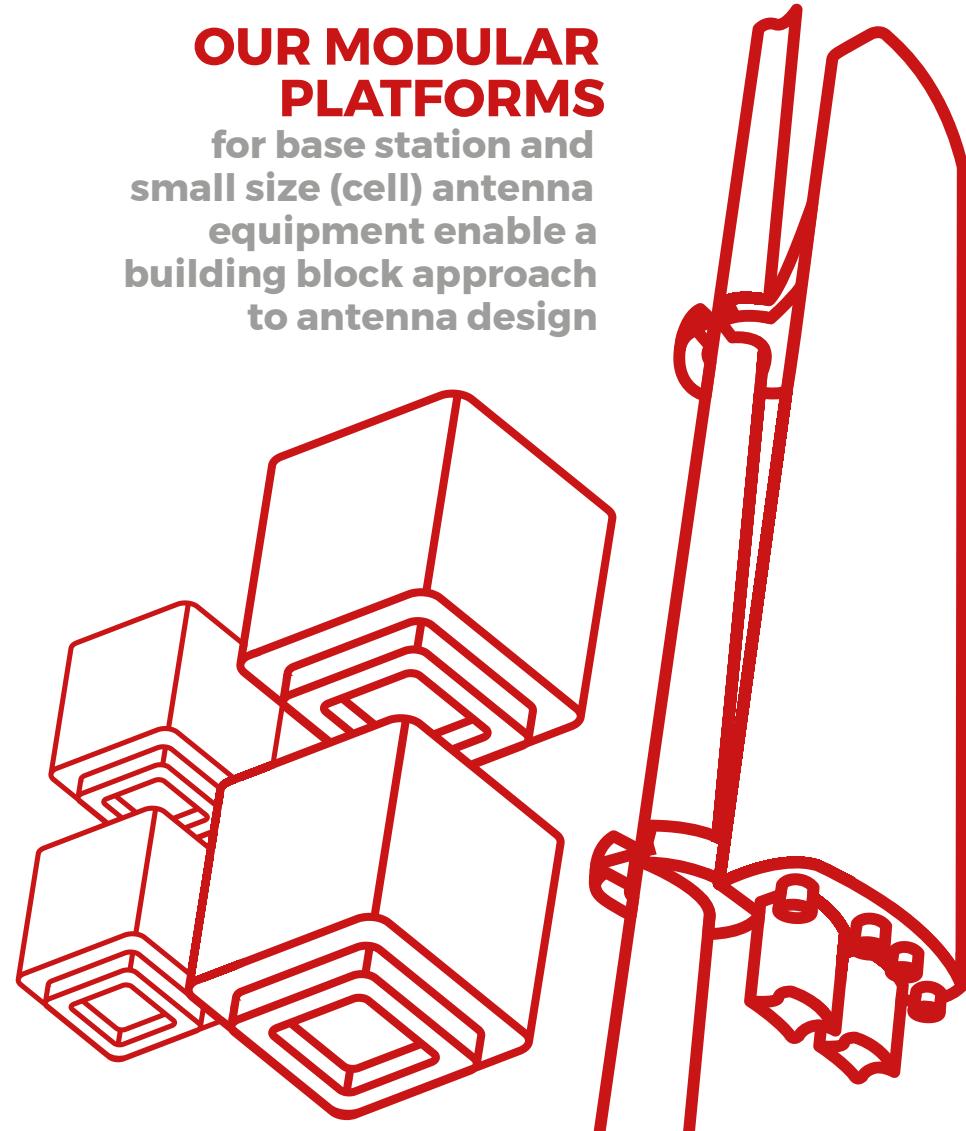


Ingenious multi-frequency, multi-technology antennas optimize...everything

Many of today's base station antenna designers are content to continue with traditional antenna designs. We're not. We recognize that disruptive design is essential to help mobile operators conquer the complexity challenges associated with new technology rollouts:

- Our **modular platforms for base station and small size (cell) antenna equipment** enable a **building block approach to antenna design**. We can combine the frequencies and network technologies operators need — including 5G — in a single compact antenna with no compromises to spectrum efficiency, throughput or performance. With our groundbreaking approach, **operators can address space, complexity and site sharing challenges** while avoiding the delays that come with a custom-built solution.
- Our **Active Passive Antenna** features our innovative **plug-and-play FUSION architecture**. With the antenna's modular architecture, operators can deploy any RFS passive antenna today then seamlessly upgrade the antenna with active components when the time is right with no impact on either the passive or active aspects of antenna performance.

**OUR MODULAR
PLATFORMS**
for base station and
small size (cell) antenna
equipment enable a
building block approach
to antenna design





Design agility gives you exactly what you need

Often, base station antenna designers don't have the flexibility, expertise or willingness to adapt their antenna designs to meet **unique and challenging requirements**.

We have all three of these characteristics. We also have a **broad portfolio of adaptable and configurable base station antennas** that support network technologies from 2G to 5G including 8T8R, 32T32R and 64T64R technologies.

With this combination, **we are the ideal strategic partner to design and tailor base station antennas to meet any network and operator requirements** — no matter how complex or challenging. For example, we are among the only antenna designers in the world with the ability to integrate 64T64R sub-6 GHz time division duplex (TDD) massive MIMO (mMIMO) antennas with conventional frequency division duplex (FDD) linear arrays that operate from 0.6 GHz to 2.7 GHz.

5G
↑
64T64R
32T32R
8T8R
2G





Every decibel counts

When it comes to performance, accuracy is as important as excellence. Mobile operators can't afford to be surprised when base station antenna systems don't perform as expected or as specified.

Our antenna experts extensively **optimize and test our base station antennas to ensure maximum throughput and efficiency.** And we are painstakingly accurate in our data sheet specifications to ensure our base station antenna systems perform exactly as described.

Our **exhaustive efforts to identify and minimize passive intermodulation (PIM) sources** are just one example of how we go above and beyond the efforts of other vendors to maximize performance:

- We carefully select materials and design circuit layouts **to avoid PIM sources.**
- Our manufacturing facilities are **environmentally controlled and meticulously cleaned to avoid PIM-causing contaminants.**
- We've put extensive effort into our **dynamic PIM testing** techniques and test every antenna.
- We understand how to **control PIM** during all the phases, from design to manufacturing, ensuring reliable antenna shipping and handling.

Together, these efforts ensure our base station antenna systems **deliver reliable operation and stable PIM performance that won't fade,** even under adverse conditions, for many years. We know this because we have more than one million antennas in the field.

MILLIONS of antennas in the field



100%

we test
**EVERY
ANTENNA**
to avoid
PIM sources



RADIO FREQUENCY SYSTEMS



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to learn how we can help you get the base station antennas
you need to cut site complexity with no compromises.

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