



HELIAX® FiberFeed® Hybrid Solutions

Optimize FTTA deployments with hybrid connectivity

Crowd control

It's crowded at the top. As operators upgrade their networks—deploying radio units (RRUs) and fiber-to-the-antenna (FTTA) configurations—cell towers have grown increasingly crowded. And, with tower-mounted RRUs requiring both fiber and power connections, the number of cables have proliferated, resulting in available tower space that has grown scarce.

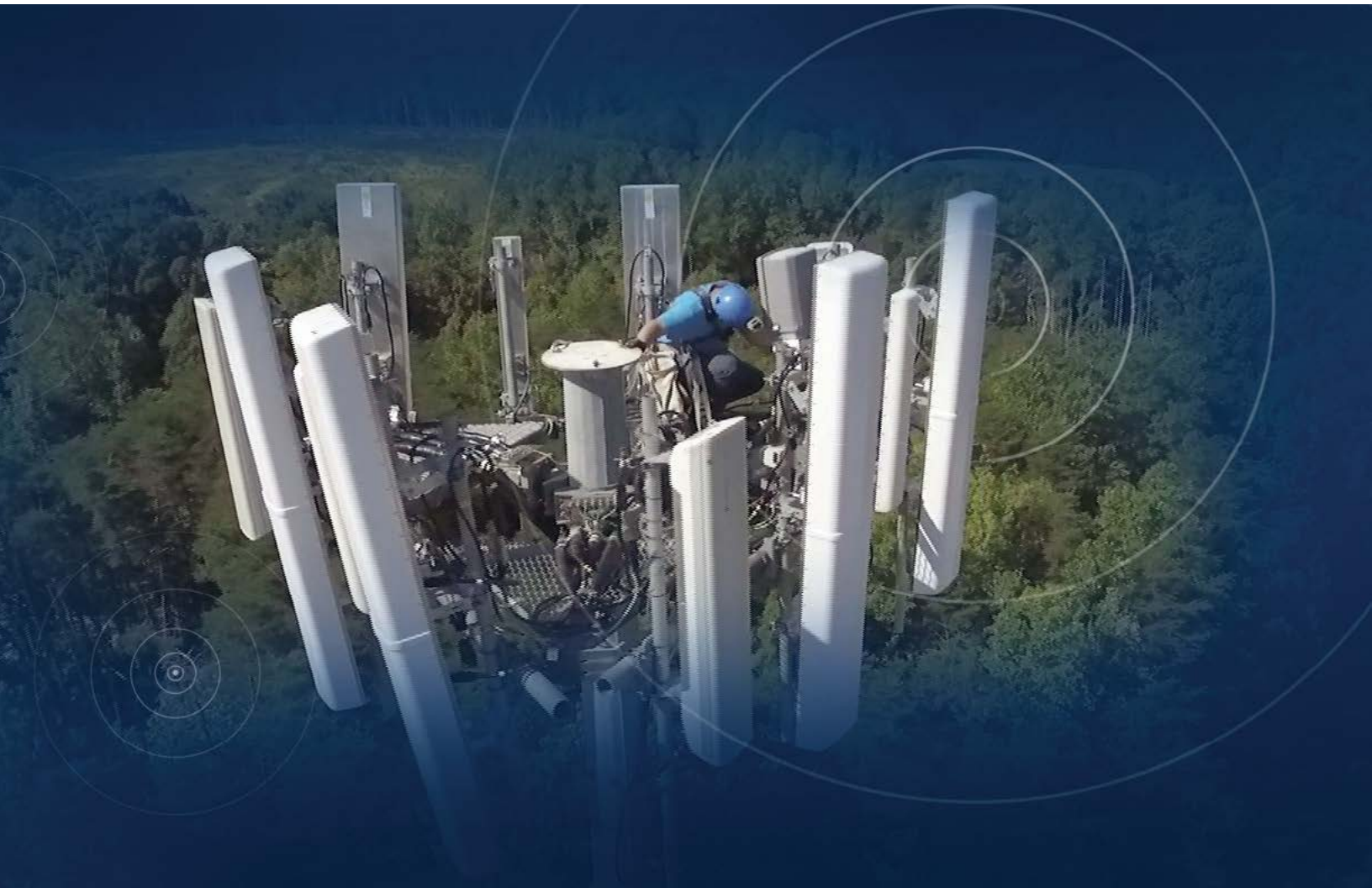
The installation itself can be time consuming and therefore expensive, where power cables and multiple fiber lines require hardwiring into the RRU. As the boxes lack interface standards, hardwiring these connections through junction boxes adds another layer of complexity—often confusing to even the most experienced network design engineers.

And, of course, there are size and weight considerations, both of which bear a direct impact on tower leasing costs and wind loads.

Collectively, the considerations can become overwhelming. Success is predicated on making the right network modernization choice: a performance consideration, yet one that also minimizes labor and leasing costs—costs that continue to climb as cell tower tops grow ever more congested.

We can help.

Together, we can increase network coverage and capacity and expedite new site development while navigating the complexities of RRU deployments with a HELIAX® FiberFeed® hybrid solution that best fits your priorities.



HELIAX® FiberFeed®

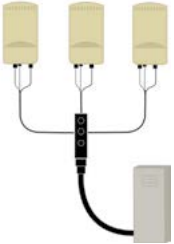



A portfolio of robust options to modernize your network

Combining both fiber and power in a hybrid cable, HELIAX FiberFeed hybrid solutions offer tremendous advantages over separate power and fiber cable configurations when speed of deployment, scalability and saving labor and leasing costs are priorities. Combining multiple power and fiber conductors in a single high-performance cable, the FiberFeed hybrid solutions help you achieve higher efficiency with your RRU and FTTA deployments while also preparing you for future growth.

These hybrid FTTA solutions install quickly and easily—trimming more than 50 percent from standard installation times with plug-and-play options*, while having fewer cable runs mean lighter weight, with 33 percent less tower loading.

Featuring a weatherproof, UV-rated outer jacket, the ruggedized cable withstands the harshest conditions, reducing total cost of ownership over the long run. And future upgrades are simple, eliminating the need to replace your entire feed system.

With four powerful options, there's a FiberFeed hybrid solution that will help you achieve your network modernization objectives efficiently.

HELIAX® FiberFeed® Hybrid Pendant Hybrid fiber/power breakout terminal with hybrid trunk	HELIAX® FiberFeed® Hybrid Direct Hybrid fiber/power breakout assembly	HELIAX® FiberFeed® Hybrid Standard Hybrid fiber/power breakout using a distribution box	HELIAX® FiberFeed® Individual Hybrid Sector Standard hybrid fiber/power
			
<p>The breakout terminal features an advanced hybrid plug-and-play interface that saves space, installation time and labor costs.</p>	<p>The breakout assembly with hybrid terminated cable legs give plug-and-play capability and saves space in high RRU-count environments.</p>	<p>The hybrid junction box offers exceptional agility for replacing cabling to add another sector or set of radios.</p>	<p>The individual hybrid sector provides an economical option that enables separate runs, yet saves space and installation time compared to a traditional discrete approach.</p>

*Based on a June 2016 time study



FiberFeed pendant

The newest addition to our FTTA hybrid solutions is FiberFeed pendant, which is equipped with integrated hybrid connector ports on the breakout terminal—delivering advanced plug-and-play connectivity to RRUs. Hybrid jumpers quickly and easily connect to the keyed ports, minimizing installation errors and deployment times. And, with its small profile and factory-attached hybrid trunk (roughly 50 percent slimmer than other cable configurations), the Pendant saves space and minimizes visual impact on site approvals.

Additionally, the pendant's hybrid trunk is armored with a corrugated shield—physically protecting the fiber and power cables housed within the trunk against physical damage from rodents or mishandling, as well as supporting a broad temperature range.

FiberFeed pendant is highly scalable to add new RRUs for future growth and its adaptable design can support up to 12 ports. These upgrades are made quickly and easily, requiring minimal adjustments to the cabling.

FiberFeed direct

FiberFeed direct incorporates a single hybrid cable that runs from the baseband unit (BBU) to a plug-and-play breakout assembly located just below the RRUs. Equipped with cable legs that easily connect directly to hybrid jumpers, the setup accommodates up to nine RRUs.

The result? Another highly scalable and future-ready FTTA solution, ideal for accelerated rollouts.

FiberFeed standard

With its junction box breakout system, the FiberFeed standard solution offers exceptional agility for replacing cabling to add another sector or set of radios. Incorporating a hybrid cable trunk that terminates at a standard FTTA junction box, the setup offers speed of installation, reduced cable count, and flexibility to use a distribution box.

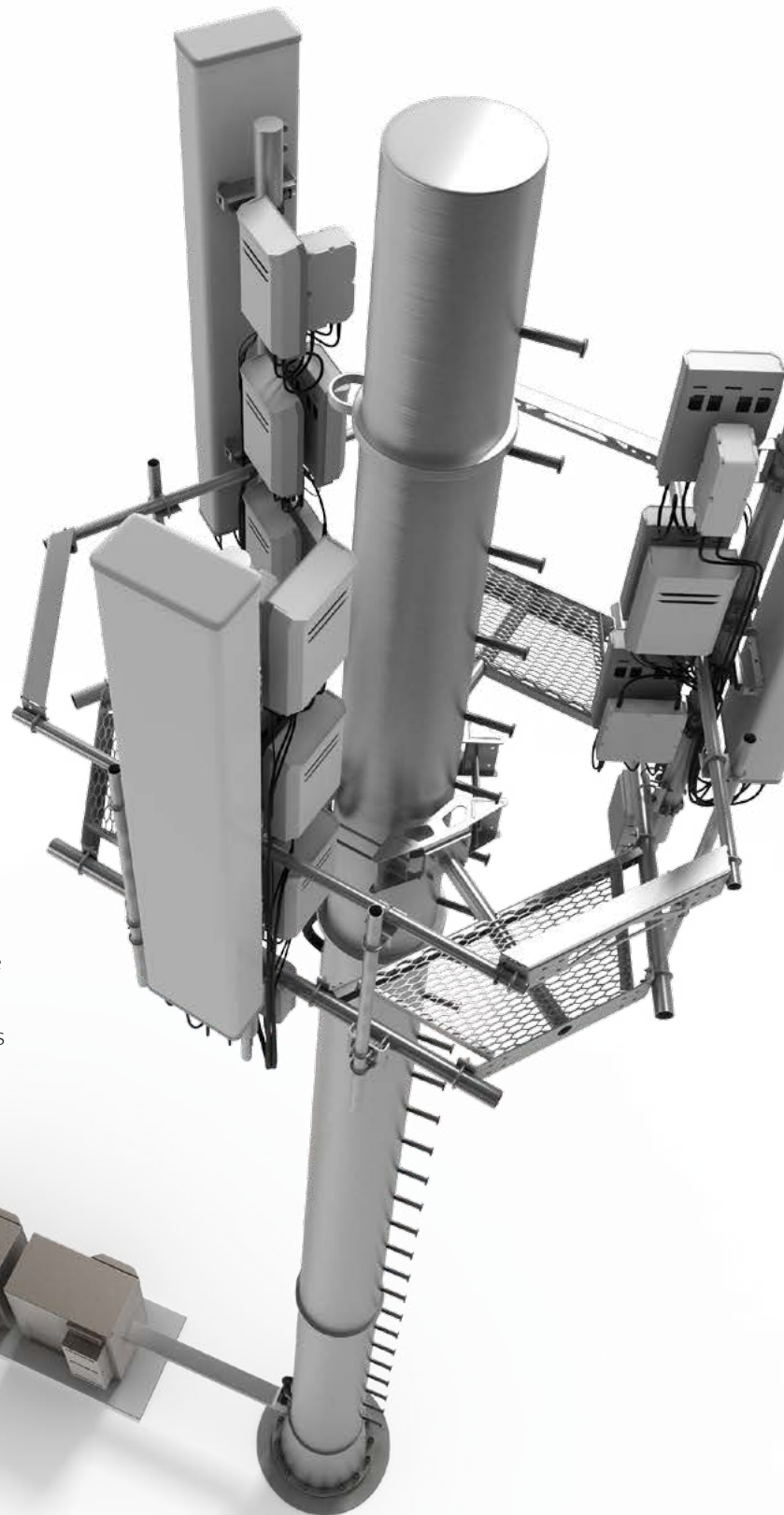
The result? Decreased total cost of ownership over the long run, making FiberFeed standard the right solution for forward-thinking operators who prefer trunked cables and distribution boxes.

FiberFeed individual hybrid sector

For site builds where tower space is limited, speed of deployment is important, and an economical solution is a priority, FiberFeed individual hybrid sector delivers impactful results.

With its single run of hybrid cable that extends from the BBU to each sectorized RRU, individual hybrid sector trims installation time in half, lowers wind load and saves on tower leasing costs compared to separate power and fiber runs*.

*Based on a June 2016 time study



HYBRID CABLE MODEL NUMBER GUIDE

The hybrid cable model number guide shown below provides an excellent resource to help users quickly find the best solution for their needs. Please visit our [website](#) for the most current information.

1 FD2
2 610
—
3 24
4 S
5 55
—
6 200

Hybrid cable series

1	FD2	Pendant
	FDH	Direct
	FDL	Direct, LSZH
	HFA	Standard, Gen. 2
	HFT	Standard, UL Type TC-ER
	RFA	Standard, Gen. 1

Number of conductors and gauge

2	610	Example: 6 power cords that are 10 AWG gauge, inside the hybrid cable
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Number of fibers

3	24	Example: 24 fibers inside the hybrid cable
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Fiber mode

4	S	Singlemode
	M	Multimode

Breakout code

5	XX	Specific to customer application
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Length, examples

6	10	10 feet
	10M	10 meters

SnapStak® Plus Adjustable Cable Hangers

Traditional coaxial hangers, the industry's longtime standard, weren't designed to fit the wide range of fiber and power cables in use today. This issue has created a proliferation of diameter-specific grommet inserts, which adapt traditional coaxial hangers to every size cable an installer might encounter on the job site.

The new [SnapStak Plus adjustable cable hangers](#) (covered by patents and pending patent applications) are the first and only uniquely designed hangers with a flexible section that adjusts to the cable diameter during installation. The new design enables one hanger to support a range of cable sizes without the need for a grommet insert. This flexibility makes hanger installation two to three times faster than the hanger and grommet combination.



Make the right call

Network modernization needs are indeed unique and must meet your ultimate objectives—expanding network coverage and capacity while balancing deployment priorities, such as accelerating rollouts, minimizing deployment and ownership costs and maintaining scalability.

While connecting fiber-to-the-antenna to a remote radio unit can produce dramatic network efficiencies, the route from status quo to optimization is a complex undertaking. By partnering with CommScope, we can help you meet those challenges, with a hybrid solution that streamlines cell site connectivity and fully unlocks the performance and cost savings of FTTA architecture.

Contact CommScope to learn how HELIAX FiberFeed hybrid solutions can efficiently optimize your network modernization efforts.



Time is Money

Hybrid FiberFeed installations deliver bottom-line savings, trimming installation times by 50 percent or more. Learn more in our [Hybrid time study](#).



Tech considerations

How do you ensure adequate fiber capacity while making sure your network is future ready? Learn more in our white paper, “[Technical keys to network modernization](#),” available for download.

Everyone communicates. It's the essence of the human experience. *How* we communicate is evolving. Technology is reshaping the way we live, learn and thrive. The epicenter of this transformation is the network—our passion. Our experts are rethinking the purpose, role and usage of networks to help our customers increase bandwidth, expand capacity, enhance efficiency, speed deployment and simplify migration. From remote cell sites to massive sports arenas, from busy airports to state-of-the-art data centers—we provide the essential expertise and vital infrastructure your business needs to succeed. The world's most advanced networks rely on CommScope connectivity.



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