



Small cell RF connectivity solutions: HELIAX[®] cable assemblies

Small and flexible to bring high performance to tight spaces

COMMSCOPE[®]

Add network density and expand capacity with small cell connectivity solutions from CommScope

As the demand for wireless bandwidth continues its explosive growth, operators are increasing network density and spectrum efficiency to add more capacity, patch coverage holes and optimize signal strength.

Discreet and easier to deploy in densely populated areas, small cell sites offer a great opportunity to add more capacity without the costs and challenges of macro cell site development. But adding or expanding small cell sites also means keeping RF losses and passive intermodulation (PIM) as low as possible—especially as more equipment and more connections are packed into a limited physical space.

The key to small cell success is miniaturization—the downsizing of RF components—without sacrificing performance. Compatible with virtually all small cell equipment (and 5G ready) CommScope's SureFlex® small-cell cable assemblies allow you to put more connections in tighter spaces with low loss and certified low-PIM performance.

CommScope small-cell cable assemblies offer maximum deployment flexibility

Choose from small-cell assemblies with 4.3-10 or NEX10™-compatible connectors—or let us configure an assembly with different connectors to meet your specific small-cell application needs.

Full range of products; simplified inventory management....

- Size selection: from 1/4" size cable for super tight spaces to 1/2" for best performance.
- Full portfolio of 4.3-10 connectors, NEX10 for 1/4" assemblies
- Guaranteed static and dynamic PIM
- 10 years HELIAX warranty
- Solution integration with other CommScope products for optimized vendor management

High Performance

- Electrical characteristics meet or exceed your link budget needs
- Patented design
 - Optimized for small cell application and tested up to 6GHz
- Superflexible and compact
 - For easy routing in tight spaces

New! NEX10™ small-cell cable assemblies

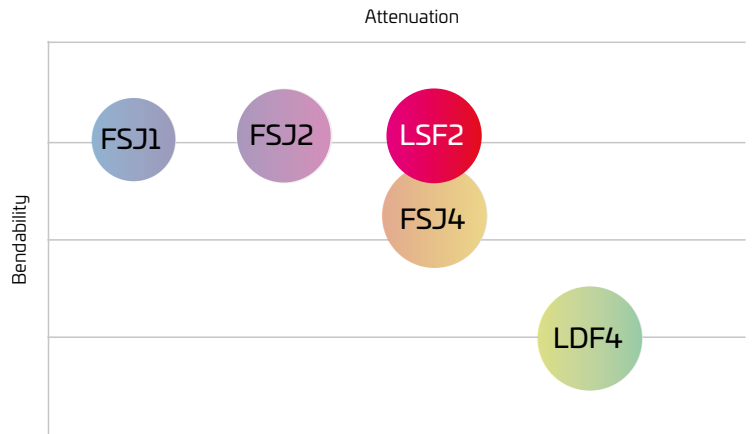
- Small form factor for dense port areas, compatible with Nokia Airscale radio
- -166 dBc PIM, independent of torque
- Operating till 20 GHz with excellent return loss
- Robust design for outdoor use



Insertion Loss Comparison

Family name	Size	Loss @ 20ft 3.5GHz	Multiple Bend Radius, in
LDF4-50A	1/2"	1.005	5.00
FSJ4-50B	1/2"	1.613	1.25
LSF2-50	3/8"	1.613	1.00
FSJ2-50	3/8"	1.758	1.00
FSJ1-50A	1/4"	2.478	1.00

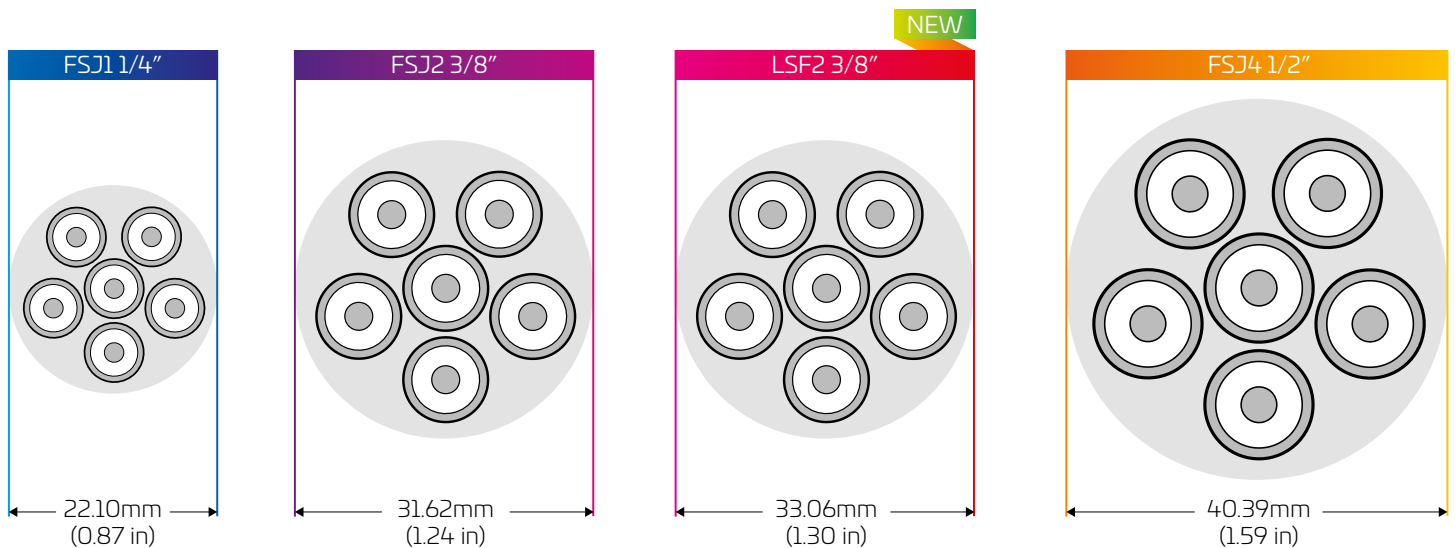
**LSF2 is the best of two worlds—
high performance and small form factor**



Big connection density increase with comparable performance

At the shorter lengths used in small-cell applications, the performance of our HELIAX® SureFlex **1/4"** and **3/8"** cables is comparable to industry standard 1/2" cables, while providing more bendability for easier cable routing and greater jumper density in the available space.

Cable bundle size comparison



For 6-cable bundle

Offering SureGuard® weatherproofing to protect your performance

For the ultimate protection against the elements and maximum reliability, SureFlex assemblies are available with CommScope's patented SureGuard® weatherproofing system—a factory-installed molded boot that seals connector junctions between jumpers, antennas, RRUs and amplifiers.

- Ideal for tight spaces or on multiport devices
- Installs in seconds with no special tools
- Reusable—unlike traditional weatherproofing solutions

D-Class performance options: dynamic PIM testing

CommScope has developed dynamic PIM testing, which replicates IEC-recommended tests to ensure SureFlex D-Class jumpers meet or exceed IEC PIM standards. Each SureFlex D-Class jumper is individually tested under these dynamic conditions, with test results available 24/7 on your computer or smartphone through the CommScope WebTrak® and cTrak® app.



SureFlex Cable Assemblies



Cable Type

F1A	FSJ1-50A 1/4" Cable
F2A	FSJ2-50 3/8" Cable
F1	D-CLASS FSJ1-50A 1/4" Cable
F2	D-CLASS FSJ2-50 3/8" Cable
LS2	D-CLASS LSF2 3/8" Cable

Connector Type

HM	4.3-10 Male
XM	NEX10 Male
DM	7-16 DIN Male

Cable Length

1 thru 20	1 thru 20 Feet Lengths in one foot increments
1M thru 20M	1 thru 20 Meter Lengths in one meter increments

Weatherproofing

(blank)	No Boot
W*	SureGuard Weatherproofing Boots

*Sureguard not available on NEX10



D-CLASS SureFlex Cable Assemblies

Please note, NEX10 is only available with 1/4" FSJ1 cables. Assemblies are available with the plenum-rated and fire-retardant cables.

Small-cell cable management accessories

SnapStak® Plus adjustable hangers

Traditional hangers and diameter-specific grommet combinations complicate installations, making it difficult to secure cables from wind and vibration that can cause PIM problems. SnapStak® Plus adjustable hangers eliminate clumsy hanger-grommet assemblies, reducing the parts installers must handle and making hanger installation two to three times faster. The small form-factor hangers self adjust to grip a range of cable diameters and are stackable to enable high-density cable management.

SnapStak Plus application chart:

Hanger model	Hanger Cable range, min to max, mm (in)
SSH-47	4.0 to 7.0 (0.16 to 0.28)
SSH-710	7.1 to 10.0 (0.28 to 0.39)
SSH-1014	10.1 to 14.0 (0.39 to 0.55)
SSH-1416	14.1 to 16.0 (0.55 to 0.63)



SnapStak Plus adapters

Bring the versatility of SnapStak Plus hangers to any mounting structure. Whether it's an angled or round tower member, a unistrut or wood pole, CommScope has an adapter for every situation.



Small-cell FiberFeed® jumpers and power cables

These jumpers feature a flexible armored design for durability while maintaining ease of installation. The LC duplex breakout design supports common small-cell radio ports. Optional weatherproofing boots are available based on OEM interface requirements. Power cables support radio power requirements.

DFJ-2S123-1M	FiberFeed® fiber jumper, 2 SM, LCD-LCD. 1 meter, flexible armor
DFJ-2S123-3M	FiberFeed fiber jumper, 2 SM, LCD-LCD. 3 meters, flexible armor
DFJ-2S123-5M	FiberFeed fiber jumper, 2 SM, LCD-LCD. 5 meters, flexible armor
DFJ-2S123-10M	FiberFeed fiber jumper, 2 SM, LCD-LCD, 10 meters, flexible armor
DFJ-2S123-20M	FiberFeed fiber jumper, 2 SM, LCD-LCD, 20 meters, flexible armor
PWRT-212-S	Power cable, two conductors with shield, 12 AWG

Installation Accessories and Tools

Commscope offers a comprehensive line of installation accessories and tools for small cables.

These include universal grounding kits to speed and simplify installation and new cold shrink weatherproofing specifically for 3/8" coaxial cables with 4.3-10 connectors. See the full selection at www.commscope.com.

Partner with CommScope— the RF path expert

From small cells to macro, count on CommScope for complete, end-to-end RF path solutions with these unique advantages:

- Immediate access to test results on WebTrak
- Assured quality and reliability with extensive in-house testing of all components
- Global reach, with more than 30 facilities for manufacturing, R&D and distribution
- A commitment to innovation, with an annual R&D investment of more than \$200 million and nearly 10,000 patents and pending applications
- Our PartnerPRO® Network of certified installers, consultants and integrators who are trained and experienced in designing and deploying CommScope wireless network solutions

Visit www.commscope.com or contact your local CommScope representative to learn more.

CommScope pushes the boundaries of communications technology with game-changing ideas and groundbreaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It's our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com.

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