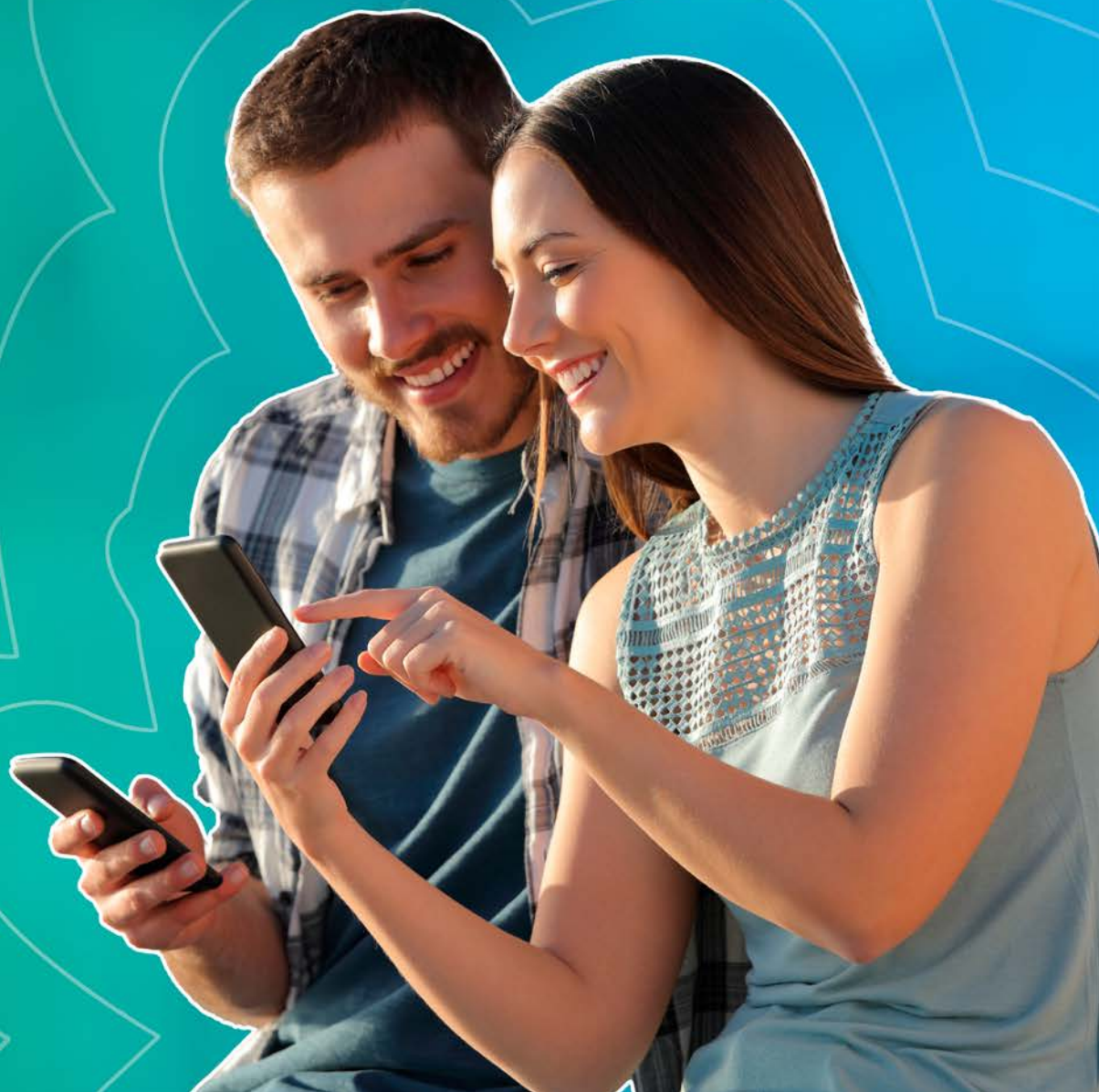
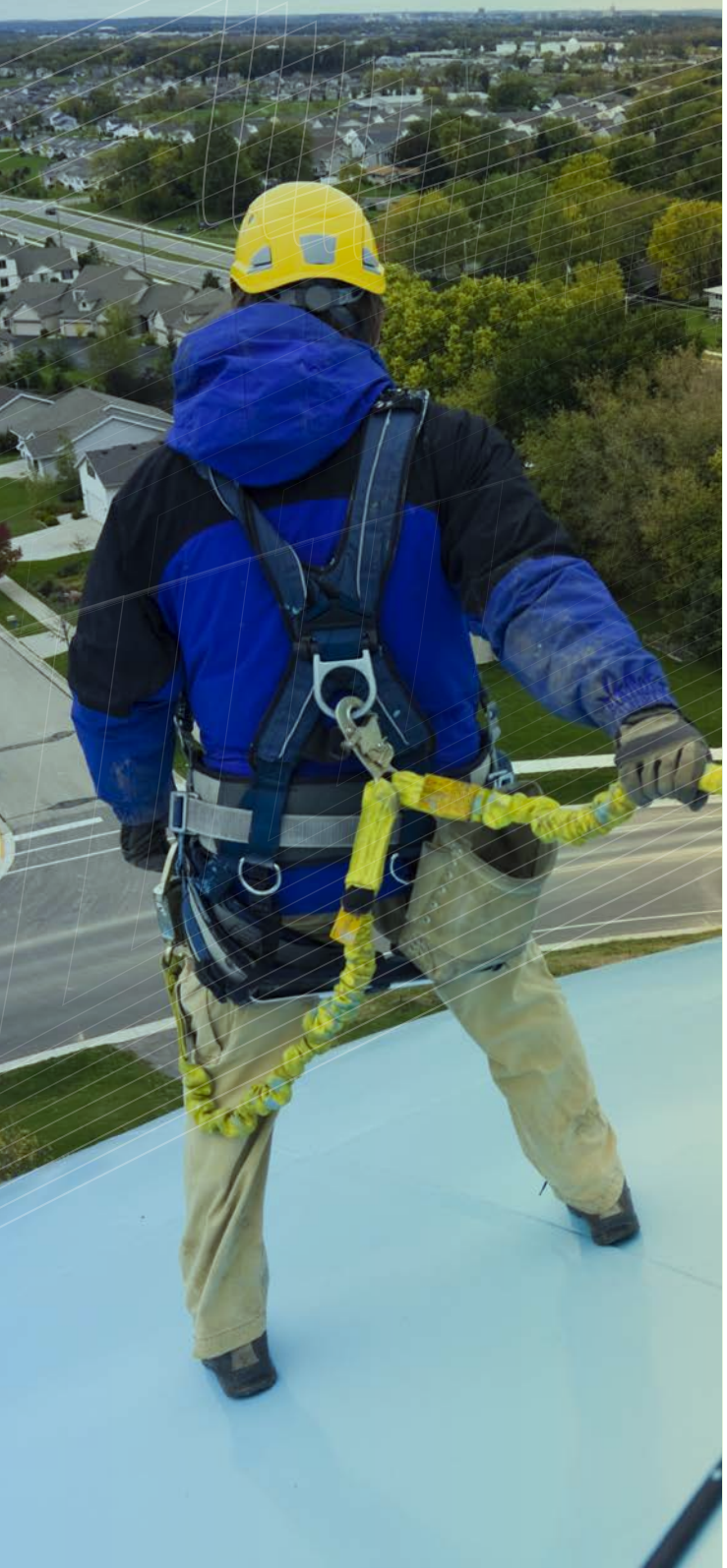
ANDREW®
an Amphenol company

HELIAX® INNOVATIVE RF CONNECTORS

Engineered for today's demanding and complex mobile networks





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The need for a comprehensive RF connector strategy

As capacity demands on mobile networks soar, operators are turning to more advanced RF applications, such as multiband and massive MIMO, as well as more filters and amplifiers. Connection atop the tower is growing more diverse and complex, while available tower space, deployment times and installation budgets are all tightening.

As a result, network operators and OEM partners can no longer afford to rely on a patchwork of connectors from different suppliers. Today's connectivity requirements demand a unified platform that delivers consistent performance and reliability, regardless of connector type or application. More than individual solutions, operators need a unified connector strategy.

The HELIAX® innovative connector platform

The ANDREW® HELIAX innovative connector platform is a unified portfolio that covers the full range of fiber and copper connectivity—push-pull, cluster type, device-to-device (D2D) and board-to-board (B2B) connectors. Engineered to the uncompromising standards of ANDREW's legendary HELIAX line, each connector delivers consistent mating, PIM performance and fast installation. Tool-free deployment mitigates the need for torque wrenches, reducing installation costs, time and errors—especially in heavily congested, hard-to-reach areas.

More than innovative individual connector solutions, now network operators and their OEM partners have a unified strategy for maximizing the performance and value of evolving mobile networks.

See the full comprehensive portfolio

HELIAX® push-pull 4.3-10 connectors feature a patented tool-less quick lock mechanism that can reduce errors for mating and up to 10x faster installation than traditional screw-type connectors. Engineered and tested to deliver industry leading electrical, mechanical and environmental performance, these HELIAX connectors also have a compact footprint that makes them ideal for high-density connector arrays. Designed for use with HELIAX one-half inch and three-eighth inch cables, they are available as factory-installed jumpers or field-terminated components.

WATCH VIDEO

Applications

- Outdoor macro and small cell sites
- Base station devices
- In-building communications

Push-pull connector Q&A

Why would one use a push-pull connector over a traditional torque-style connector?

No tools are required for push-pull installation, allowing for a quicker connect/disconnect. Not needing tools also allows for a closer pitch of the connectors.

Is the push-pull connector recommended for outdoor and tower applications?

Yes, the push-pull is rated for outdoor applications—providing the same environmental protection as a traditional connector. Additionally, weatherproofing boot options are available.

Are push-pull connectors available for all cable types?

Yes, ANDREW® offers push-pull connectors for all cable sizes and types from one-quarter inch to one-half inch, including our new LSF2 cable.

Is there a preferred interface type for use with a push-pull connector?

Yes, ANDREW currently recommends a push-pull connector for 4-3-10 type interfaces.

For applications like 4T4R and 8T8R MIMO, HELIAX® M-LOC cluster connectors provide toolless mating and dynamic PIM performance in a compact, IP68-rated design. The multiport interface is keyed to help provide accurate connectivity, and it uses the same simple mounting/mating mechanism for four- and five-port clustered connectivity. A patented locking mechanism provides outstanding RF performance at every band and enables one-handed blind mating for faster installation. Available with one-quarter inch and three-eighth inch low-loss jumpers.

Applications

- Outdoor macro and small cell sites
- 5G multiband antennas
- Multiport communication devices

WATCH VIDEO

FACT SHEET

M-LOC cluster connector Q&A

What are some advantages of a cluster connector over individual jumper assemblies?

Smaller footprint, port mapping, reduced installation times.

How are installation times reduced?

ANDREW's patented latching mechanism allows for a quick, simultaneous, toolless connection of four or five RF ports at one time.

Are there any PIM or RL concerns with the M-LOC style connector?

No. PIM and RL performance are rated as good as other traditional high-performing RF interfaces.

Is a weatherproof boot or additional weatherproofing required?

No. The MLOC housing itself is designed to drain, and the interface ports are all sealed and IP68 rated.

HELIAX® 4.3–10 D2D connectors feature a patented two-piece, blind-mate connector system for secure mating with standard 4.3-10 female RRU ports. A weatherproof boot mitigates the need for an additional planar seal. For crowded, heavily-loaded applications, HELIAX 2.5–5 D2D connectors and LSF2 jumpers can reduce cable diameter by 13 percent and improve electrical performance by as much as 10 percent.

Regardless of the size, HELIAX D2D connectors provide industry-leading PIM protection and return-loss performance for high-port-count or hard-to-reach environments. With hardened mechanical construction and an IP68 rating, they stand up to harsh environments.

Applications

- Outdoor macro cell sites (zero footprint)
- Automated test systems
- Device-to-device or module-to-module interconnects

Device-to-device connector Q&A

Why would one choose a D2D connector over a traditional RF connector?

D2D connectors are for compact and hard-to-reach applications where a traditional RF jumper is not practical; there may no room for a cable or tool needed to connect a typical configuration.

What makes the ANDREW® D2D connector better suited for this application?

The patented ANDREW D2D is a blind-mate connector, designed to mate two devices such as antenna to an RRU in a zero-footprint application, meaning the antenna and RRU are directly mounted to each other.

What types of interfaces does the D2D connector offer?

It comes in a 4.3-10 or 2.2-5 interface; both allow for standard female connectors to be installed on one of the devices.

Are the D2D connectors a good choice for automated and high-density (port count) test systems?

Yes, the blind-mate nature of the design along with the market-leading interface options make this an ideal choice for testing of today's wireless equipment.

HELIAX® board-to-board connectors enable antenna manufacturers and OEMs to quickly and securely connect boards to leverage the space-saving, weight-saving benefits of integrated RF subsystems. Engineered with a standardized interface and unique float capability, the connector automatically adjusts to variances in the board for easy and reliable mating. The result is dynamic PIM performance across all mating conditions and excellent broadband return loss.

Applications

- Integrated OEM radio, antenna and filter systems

WHITE PAPER

Board-to-board connector Q&A

There are many B2B connectors available; what makes ANDREW's unique?

The PIM-rated performance of the ANDREW B2B connector is a leader in the industry—meeting today's most strenuous requirements.

Is the B2B connector suitable for use as an outdoor connector?

No. While many of the performance attributes of the B2B connector are similar to the D2D connector, it is not rated for environmental sealing. As such it should be utilized inside of an enclosure.

Should a B2B connector be used for a wireless application?

It most definitely should. The B2B connector was specifically designed for next-generation wireless technology such as MIMO configurations. It is the smallest connector on the market that meets today's required PIM ratings.

What B2B spacings can be accommodated with ANDREW's B2B solution?

ANDREW offers a standard set of bullet lengths designed to meet most applications. However, we are able to provide for custom specified lengths as well.

Powered by the past, prepared for the future

As part of the HELIAX® family of connectivity solutions, the HELIAX innovative connector portfolio is backed by 85 years of experience in communications cabling and connectivity. From its early pioneering work in coaxial technology to future-ready fiber-to-the-antenna (FTTA) and cluster connector solutions, HELIAX continues to evolve and lead. Today, HELIAX helps operators solve their toughest outdoor wireless connectivity challenges—faster, easier deployment; improved RF and PIM performance; system reliability and lower total cost of ownership. Powered by yesterday's accomplishments, HELIAX innovative connectors prepare ANDREW® customers for tomorrow.

Connect with ANDREW to create your HELIAX connector strategy

Now more than ever, network operators need a unified connector strategy—one that provides consistent performance, reliability, and ease of deployment across their mobile networks.

To learn how the HELIAX innovative connector portfolio can help you adapt and succeed in an environment of change, contact your ANDREW representative.

Since 1937, ANDREW, an Amphenol company, has driven the evolution of wireless technology. Trusted by mobile network operators and enterprises globally, we work closely with our customers to deliver innovative solutions that enhance connectivity experiences both outdoors and indoors. Our dedicated global team is committed to advancing the industry, fueled by the vision that a better-connected future is possible.

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Visit our website or contact your local ANDREW representative for more information.