**Creative Solutions for the Mobile Evolution**

**Amphenol** delivers a comprehensive product portfolio designed for the network evolution, including fiber optic connectivity and antenna systems. Our solutions are designed with the customer in mind to (a) **Improve Speed of Deployment**, (b) **Reduce Deployment Cost**, (c) **Reduce Maintenance Cost**, (d) **Reduce Risk of Failure**, and (e) **Simplify Infrastructure Deployment**.

Amphenol is the world’s leading interconnectivity provider. Founded in 1932, Amphenol designs, manufactures, and markets fiber optic, electrical, and coaxial interconnect products. Amphenol products are engineered and manufactured in the Americas, Europe, Asia, and Africa and offered through a worldwide sales and marketing organization.

**Experience**

As a manufacturer with over 80 years of interconnect design and development, Amphenol leads innovation in connector technology. Utilizing this experience, Amphenol is able to develop a cost effective end-to-end solution to satisfy a customer’s full connectivity and cabling needs.

**Customization**

Amphenol’s relationship begins at the design stage to understand the customer’s needs and project requirements in order to develop a complete customized solution.

**Reliability**

Amphenol has a long history of total quality performance. Our high quality products, helpful customer service, and dependable product support from design through production result in satisfied customers.

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<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>Feeder and drop Customize connections</td>
<td>Maximum flexibility and interchangeability to serve different network configurations and interconnectivity methods. Whether splicing or patching, Amphenol’s Enclosure solutions allow you to create the optimal solution for your application.</td>
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<tr>
<td>Customizable feeder and drop box entrance</td>
<td>Flexible cable entrance options that include weather proofing grommets for interconnect within the box, or harsh environment optical and power connectors for plug-n-play designs.</td>
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<tr>
<td>Size and Count Customize Solutions</td>
<td>Cable assemblies and enclosures are designed to fit the application and environment. High density and flexibility design with attention to cable management to accommodate all applications. This right-sized approach is intended to simplify infrastructure deployment for all environments.</td>
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<tr>
<td>NEMA-4x Rated Enclosure</td>
<td>Designed to the highest environmental standard to ensure protection of the optical and power connections from wind, rain, flooding, UV, moisture, and other environmental factors the box will be exposed to.</td>
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<tr>
<td>UL Listing</td>
<td>One solution for indoor and outdoor usage simplifies your network deployment.</td>
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<tr>
<td>Lockable cover</td>
<td>Provides easy sealing and locking for superior environmental protection of enclosures while ensuring security and protection to network circuits from vandalism and tampering.</td>
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<td>Lightweight Construction</td>
<td>Reduces wind loading on towers and structures while allowing easy, one person installation. Plastic boxes provide the lightest solution with no compromise to quality or protection. Metallic boxes use an aluminum welded construction for maximum mechanical and environmental strength, while keeping a lighter weight than steel.</td>
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<tr>
<td>Intuitive cable management</td>
<td>Highly accessible connectors and cable routing are designed for easy installation and maintenance, while protecting the fiber cables for long term reliability.</td>
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<tr>
<td>MPO and Multi-Fiber connector options</td>
<td>Multi-fiber connector options provide the fastest installation and turn up time. Amphenol’s solutions give you the flexibility of using internal Multi-fiber connectors (MPO) or external environmentally sealed connectors (PT/MPO, AARC, etc.)</td>
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Fiber-to-the-Antenna Infrastructure Solutions

Deployment Methods

- **Antenna**
- **Coax Cable**
- **RRH1**
- **RRH2**
- **RRH3**
- **Fiber & Power Jumpers**
- **Hybrid Aggregation Box**
- **Hybrid Cable**
- **Hybrid Aggregation Box**

- **BTS**
- **RRH1**
- **RRH2**
- **RRH3**

### Hybrid Trunk
- **Top/Bottom Demarcation**
- **Top Demarcation**

- **Lower Capital Cost**
- **Faster Installation Time**
- **Lower Installation Cost**
- **Lower Maintenance Cost**
- **Higher Security**
- **Lower Leasing Cost**

### Hybrid Trunk
- **Sealed Breakout**
- **Top Hybrid Demarcation**
- **Top Discrete Demarcation**

- **Higher Capital Cost**
- **Moderate Capital Cost**
- **Lower Capital Cost**
- **Moderate Capital Cost**
- **Moderate Capital Cost**
- **Lower Capital Cost**

- **Higher Security**
- **Moderate Security**
- **Higher Security**
- **Moderate Security**
- **Higher Security**
- **Moderate Security**

- **Higher Reliability**
- **Moderate Reliability**
- **Higher Reliability**
- **Moderate Reliability**
- **Higher Reliability**
- **Moderate Reliability**

- **Higher Leasing Cost**
- **Moderate Leasing Cost**
- **Lower Leasing Cost**
- **Moderate Leasing Cost**
- **Moderate Leasing Cost**
- **Lower Leasing Cost**

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Amphenol Fiber Optic Products | www.amphenol-fiberoptics.com
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Hybrid Fiber/Power FTTA Deployment

Discrete Fiber/Power FTTA Deployment

AARC Connector

Power Connector

Power Block Breaker Option
No/Protection Option

Cable Entrance Gland

Hybrid Connector

RRH 1
OEM 1

RRH 2
OEM 1

RRH 3
OEM 1

RRH 1
OEM 2

RRH 2
OEM 2

RRH 3
OEM 2

Top of the Tower

BTS Shelter

Fiber Panel

To Power Supply

DC Distribution Box

12 or 24 Fiber Trunk Cable

Power Cable

PT/MPO Connector

AARC Connector

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Demarcation and Aggregation Boxes

- **IP 66** and **IP 67**: Hybrid and discrete, Fiber and Power, designs
- **Plug’n’Play**: Connectorized designs with multi-fiber feeder connector and duplex or quad fiber and power RRH connectors
- **Grommeted**: Designs with sealed grommets for feeder and drop cables. Uses internal patch connectors or splice solutions
- **Combined**: Designs with grommets, internal and external connectors
- **Customized**: Designs for different environments, mounting options, applications, deployment strategy, and budgets
- **Application based**: Designs for Macro, Small Cell, or DAS deployments

Hybrid Trunk Cables and Cable Assemblies

Amphenol Fiber Optic Products and Amphenol Times Fiber team up to expand upon the customized cable assembly solutions for fiber-to-the-antenna. Cable assemblies are **factory terminated**, breakout sealed and put on pallets for simplified cell site deployment. **Weather proof breakouts** include potted, heat shrink, and other methods of breakout sealing. **PowerOptX** hybrid cables by Amphenol Times Fiber come in a variety of fiber counts, fiber types and with power conductor choices and quantities, ranging from 14 to 3/0 AWG, up to 10 conductor count. Jacket types and shielding options can be specified to meet customer's most demanding applications.

Trunk & RRH Cable Assemblies

- **Multi Fiber Cable Assemblies** – For Outdoor and Indoor Applications
  - Multi-fiber assemblies are becoming increasingly popular due to the high density applications in the marketplace. Assemblies are available in **various fiber counts** and utilize a **variety of connectors**. Cable is offered in distribution (900µm tight buffered), breakout, ribbon, Indoor/outdoor, Armored, ONFR, LSZH, CLT, and loose tube configurations in both **Singlemode** and **Multimode** options. Available for most **industry standard RRH connectors** and available with **customized breakout** types and lengths.

Complete Site Solutions

Amphenol offers the **full cell site infrastructure solution** for different environments and deployment types. From Micro sites to Macro and Pico sites, **custom solutions** are designed to fit the application and can be completely kitted with other insular products to be delivered to sites with **minimal secondary handling**. Amphenol has the complete solution from the BTS shelter connectivity needs to the antenna. With its extensive product portfolio and knowledge, we can provide the leading **fiber**, **power**, **coax**, and **antenna** solutions needed for reliable installations.