

# Wireless and wireline solutions for railway networks

Driven by progress, delivered by experience— CommScope expertise goes the distance

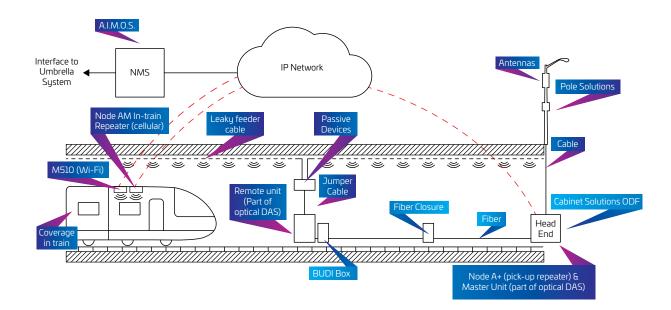


# With CommScope railway communication solutions, speed and safety are always onboard.

CommScope provides solutions designed and built to meet the communication challenges specific to railways around the world.

CommScope understands your networks must operate smoothly at any speed, in any location, under any circumstances. That's why we offer solutions that:

- $\cdot$  Connect trains to their rail signaling and management systems
- · Connect trains to the public safety infrastructure of the rail network
- · Connect passengers to their digital lives—wherever they travel





#### Wireline Solutions

#### **ODF** solutions

Modular, flexible and quickly deployed, this optical distribution frame solution offers the density and forward compatibility to power your expanding railway data network.

#### **Outdoor closures**

Connect any kind of fiber in virtually any kind of environment with this easy-to-install, easy-to maintain fiber management solution.

#### **Copper closures**

Protect copper splices anywhere your railway goes with the durable, decades-long lifespan of the most trusted copper solution available.

## CommScope wireless railway solutions keep your trains connected anywhere, at any speed.

#### Through even the longest tunnels CommScope expertise has you covered.

Wireless solutions for railways must deliver exceptional coverage and capacity wherever trains go. That's why railways all over the world count on CommScope's expertise to keep their trains connected in any conditions, at any speed.

Our extensive portfolio of wireless in-train and tunnel coverage solutions is built on our decades of industry leadership in wireless technology. CommScope expertise has helped distributed antenna systems (DAS) evolve from a static, niche product into a dynamic, responsive solution for connecting voice and data, poised to take advantage of 5G networks —even at bullet-train speeds.

CommScope also offers systems to keep stations connected with 5G and Wi-Fi 6, ensuring the best possible traveler experience, as well as reliable and efficient station operations.





### Wireless Solutions

Node AM in-train and Node A+ stationary repeater Keep passengers connected through the universal, multiband, multiservice – 2G/3G/4G/5G – digital repeater. Card-based expansion lets you add capacity as needed – in minutes.

#### Era® all-digital distributed antenna system for 2G/3G/4G/5G networks

Built on a digital architecture that consolidates and simplifies distributed antenna system (DAS) head-end resources, the system uses a simple drag-and-drop software interface to flexibly allocate capacity where and when it's needed across the covered area.

#### ION®-M DAS platform for public safety and GSM-Rail

This intelligent optical distribution solution, built for tunnels, supports VHF/TETRA/ TETRAPOL/LTE/GSM-R bands as well as TMO, TMOa, DMO-1b and analog technologies and redundancy options.

#### RADIAX<sup>®</sup> cable and passive components

This radiating coaxial cable solution and its family of splitters, couplers and tappers allow homogenous signal distribution in tunnels and other confined spaces.

#### A.I.M.O.S. Network Management

This comprehensive FCAPS management platform for CommScope's portfolio of coverage and capacity solutions helps operate the repeater and DAS network efficiently.

#### RUCKUS M510 mobile Wi-Fi access point

The RUCKUS M510 mobile-wireless access point (AP) is designed specifically to address mobile Wi-Fi use cases like in-train and other in-vehicle access. By leveraging the LTE network as a backhaul medium, the M510 can offer internet connectivity through Wi-Fi for passengers while in transit.

#### CASE STUDY

### CommScope connects passengers and crew in the world's longest railway tunnel.



Completed in the summer of 2016, the Gotthard Base Tunnel is the longest railway tunnel in the world, running 2.3 kilometers below the Swiss Alps at 250 km/h for a length of 57 kilometers.

Alcatel-Lucent Switzerland (now Nokia) looked to CommScope to develop a DAS solution that would allow wireless communication for passengers and crew alike—so that connecting in the tunnel was as effortless and reliable as doing it at the station.

CommScope answered the Gotthard Base Tunnel challenge with a highly-customizable, multiband, multioperator, fiber-optic DAS platform that is fast and reliable enough to handle the lightning-fast handoffs required by bullet trains. Parallel networks for public and railway communications extend throughout the tunnel. The solution ensures that connections made throughout the tunnel are as fast and reliable as they are in the center of Zurich or Milan.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking 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 is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com.

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