

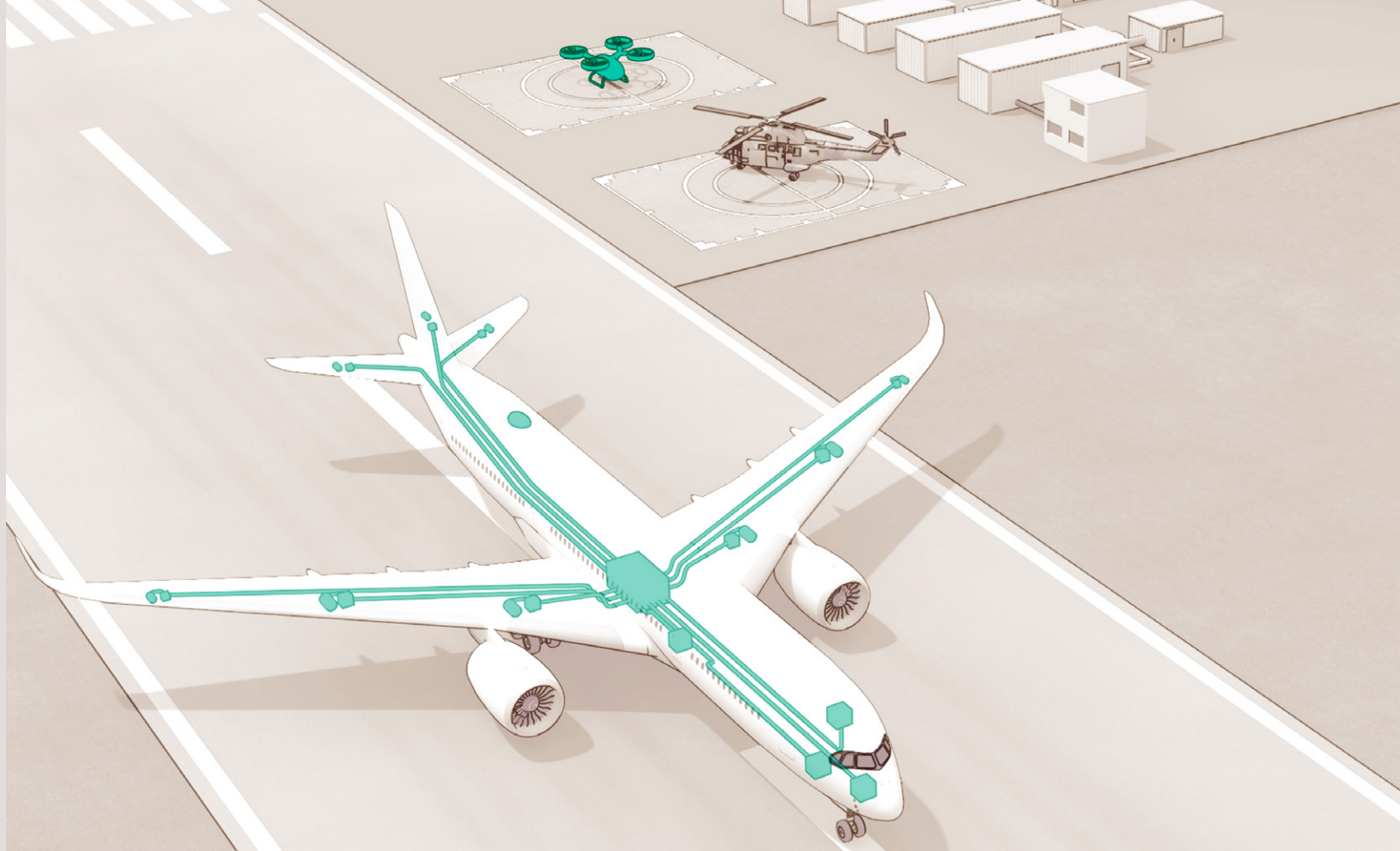


Fiber optic solutions for Aerospace & Defense

Edition 2025/07

HUBER+SUHNER offers the full connectivity package for aerospace & defense solutions across fiberoptics, radio frequency and low frequency componentry and subsystems. For fiberoptics, we offer build-to-print harnessing capabilities encompassing all common aerospace & defense interfaces.

Moreover, proficient solution engineering allows us to cater to applications requiring complex communications architectures were we can combine both third party and our proprietary fiberoptic products to provide the best solution.



Exemplary harness embodiments



Aviation ARINC801 assembly
Lightweight, high-strength, abrasion-resistant optical assemblies for the commercial and military aviation/UAV markets, offering high-density connector options (i.e. ARINC801) with GOF and POF termination capabilities for meeting system redundancy safety requirements.



M29504 assembly
Drop-in optical connectivity solutions incorporating low-smoke zero halogen materials, corrosion-resistant metals and finishes, high-density connector options (i.e. D38999), moisture-sealed fiber management solutions, and precision harsh environment assembly practices.



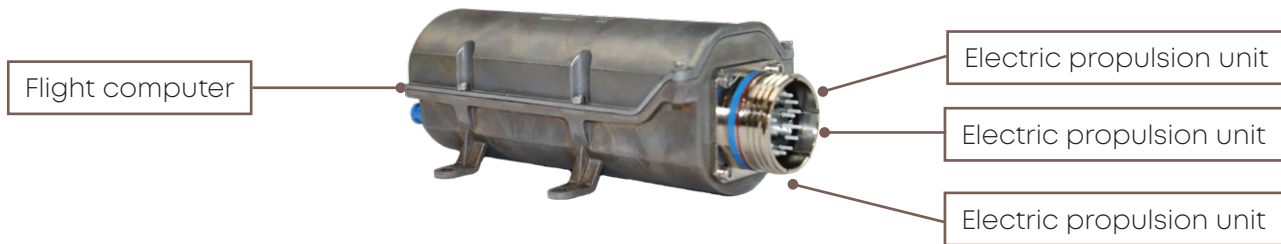
M38999 aviation assembly
Mixed POF and GOF harness including POF and LuxBeam terminations for signal transmission in fly-by-light flight control architectures.

Solution engineering showcases

With a proven track record in aerospace, defense and civilian applications, HUBER+SUHNER is a trusted partner, backed by extensive engineering and testing resources. We take pride in our vast heritage of providing reliable connectivity to the most critical programs.

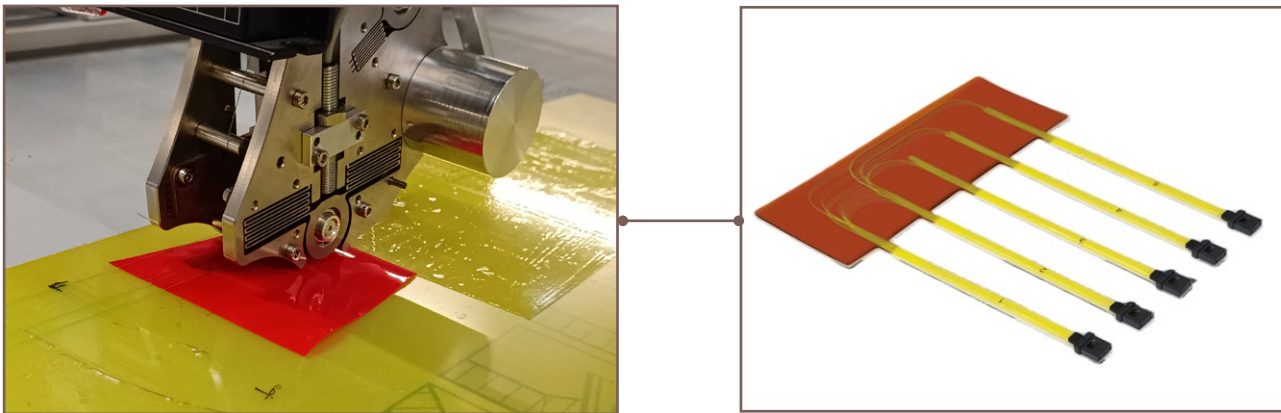
Fly-by-light FO distribution module

Supporting eVTOL flight controls, HUBER+SUHNER developed and manufactures a flightworthy fiberoptic splitter module satisfying DO-160 and EN9100. The unit passively, and in combination with HUBER+SUHNER fiberoptic harnesses, connects the flight computers to all electric propulsion units on the aircraft.



Flexible fiber circuits / Shuffle boards

High density routing of fiber optic channels on a flexible substrate for backplanes and systems that require high density optical interconnects. Leveraging our in-house fiber-laying robots and termination capabilities for customized and off-the-shelf solutions.



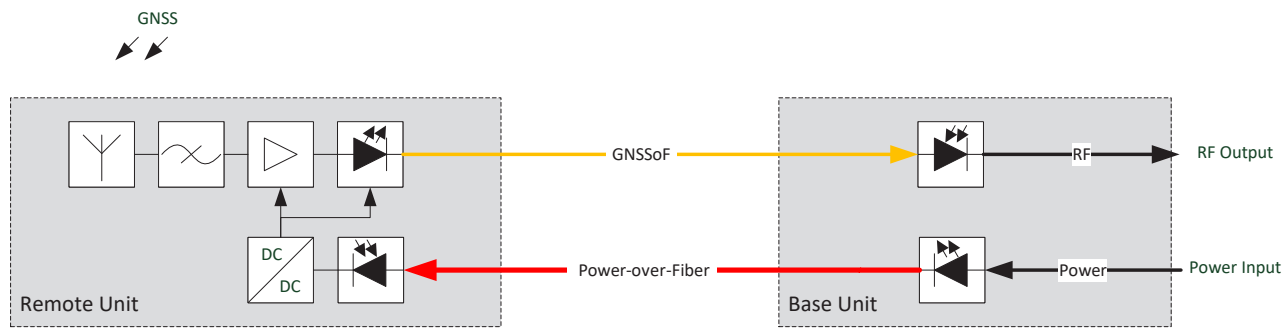
Ruggedized GNSS-over-fiber

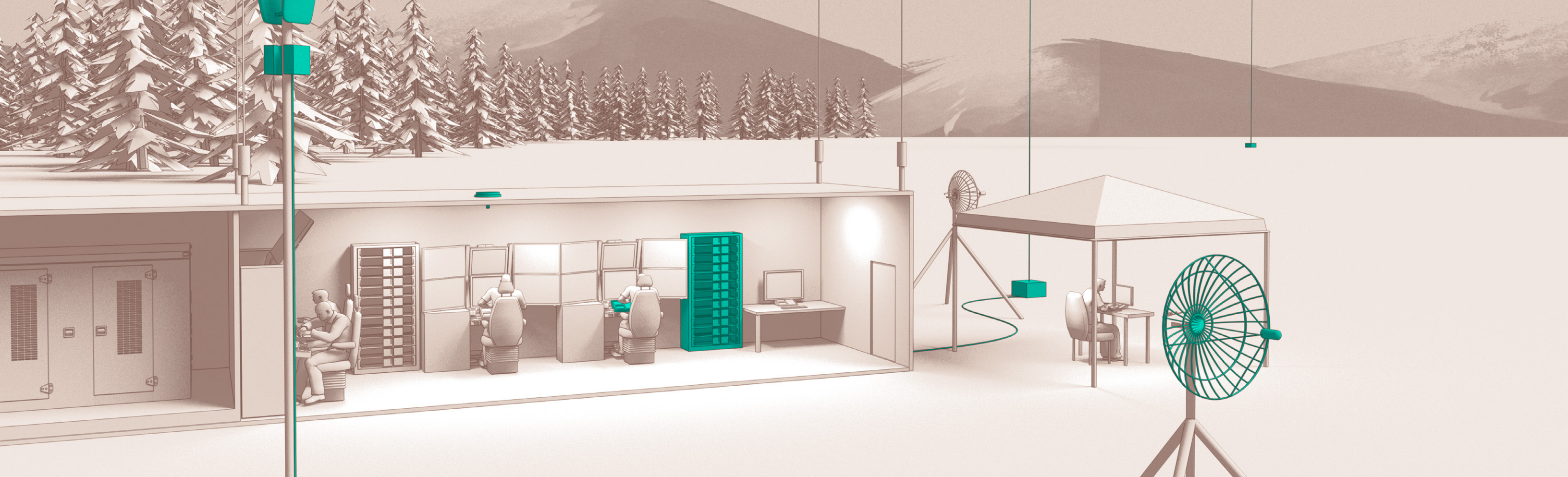
Our GNSS/Power-over-fiber technology combines leakage-free GNSS signal transmission from the antenna to the receiver while maintaining complete galvanic isolation. We ruggedized the system for heavy-duty applications such as in battle tanks and mining vehicles. A proprietary, hardened GNSS antenna is mounted on the surface of the vehicle and a fiberoptic cable conveys the signals through the body to an interior mounted, compact receiver unit. The GNSSPoF solution can be used for both navigation and precision-synchronization and supports distances up to 1 km.



Key benefits:

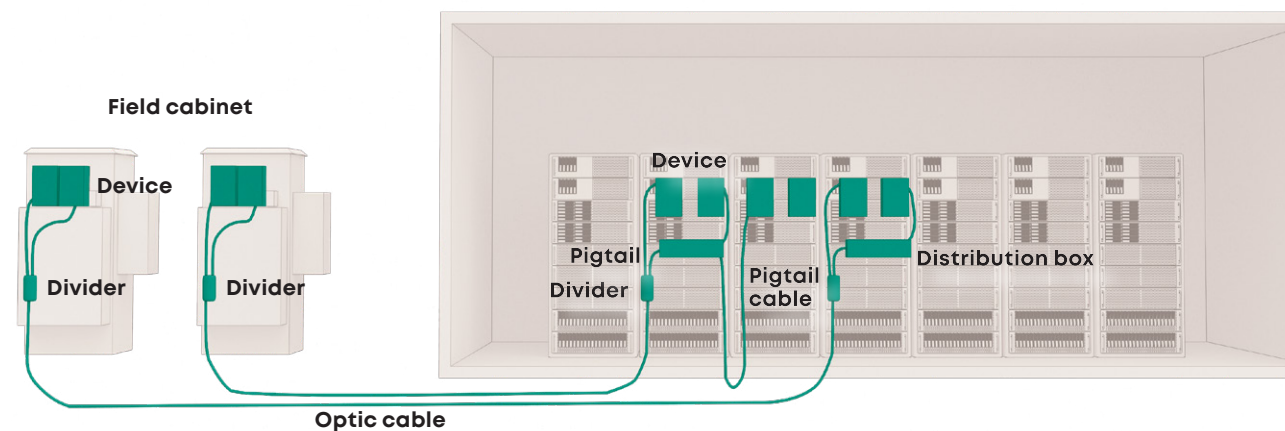
- Designed for harsh environments such as military, mining, tunnels, etc.
- More flexible connection cables with smaller diameter and less weight
- Galvanic isolation between remote and base unit
- Provides a highly secure tamper-proof connection between remote and base unit
 - Robust link
 - Immunity against EMP
- Greater distance between remote and base unit





In-shelter networks

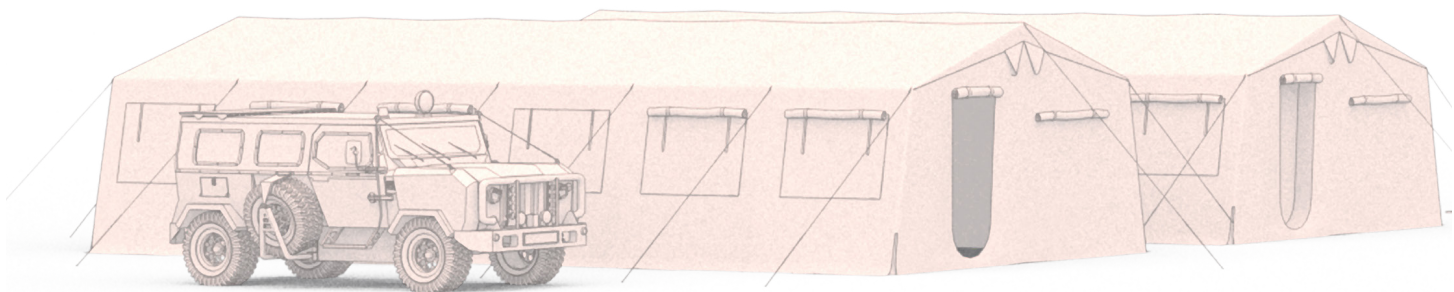
HUBER+SUHNER offers the core building blocks for network architectures: Patchboxes, transition modules, optical distribution frames and pre-assembled cabling systems for ease of fiber management within shelters, weapon systems and cabinets. The great variety of mounting options and flexibility for customization permit easy integration. Great in combination with our proprietary QODC-12/24 quick-lock connectors that incorporate 12/24 core MT ferrules for maximum density.



	MTP high density module • Robust steel construction • Fast and tool-less installation • Capacity 12 or 18 ports
	MDR2 module distribution box for industry applications • Compact form factor • Simple installation and mounting • Robust DIN-mountable solution
	IANOS transition, splice, patch modules • Up to 48 x single modules or 24 x double modules • Modules can be fitted from the front or the rear of chassis • Insertion and removal of modules with one hand
	Q-ODC FO cable assemblies Compact design with MT ferrules • Highest outdoor installation safety • Robust push-pull coupling mechanism

Ruggedized FO PON networks

Field-networks across shelters, radars and weapon systems require equipment that is reliable in harsh-environments. HUBER+SUHNER offers its H3RO GPON unit in combination with FO field cables and MT-based push-pull connectors for rapid deployment. Standardized components for common network configurations (e.g. star, daisy-chain) make design and sourcing hassle-free.





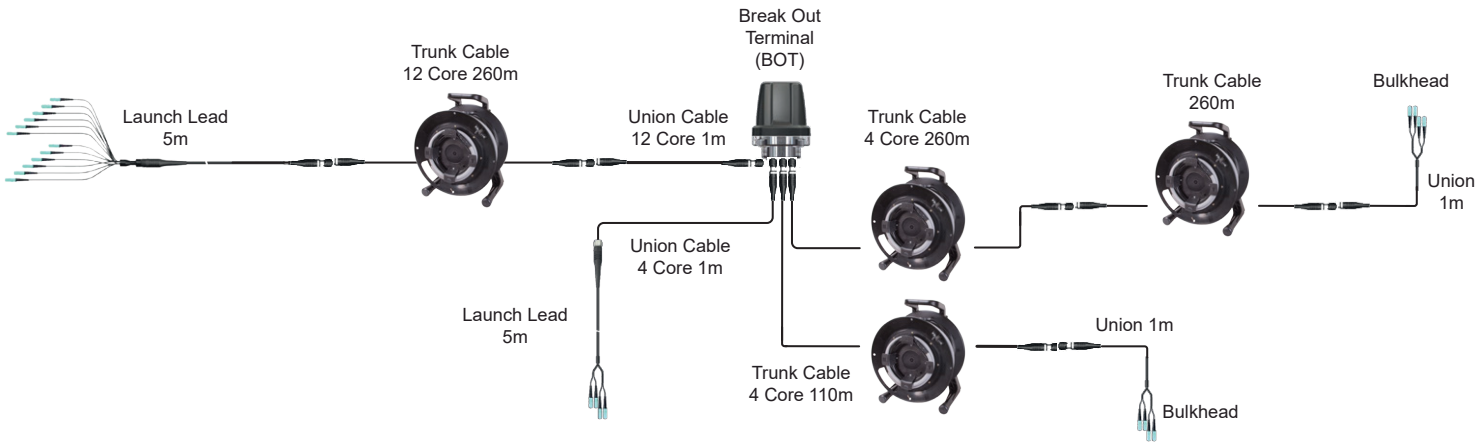
H3RO (Harsh Environment Reticulated Optics)

- Robust, industrial tough, IP68, FRAS break-out terminal
- High quality, low loss IP68 connectors
- Tool-less installation, universal mounting bracket



Mobile field fiber optic cables

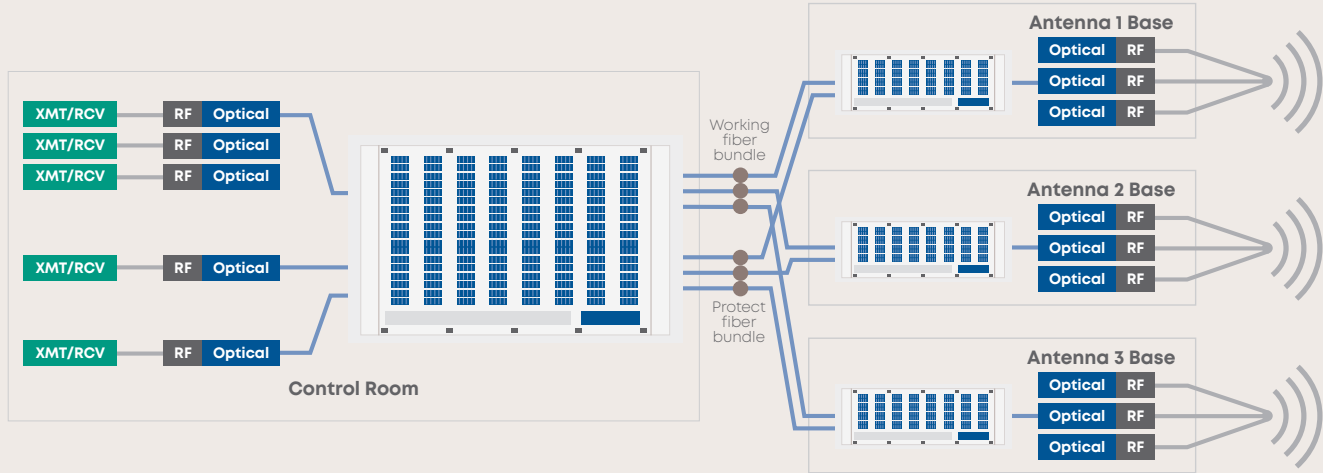
- Metal-free cable
- Excellent coiling capability
- Easy stripping, high flexibility
- Halogen-free and non-corrosive fire gases



Teleport streamlining

Utilizing direct-modulated, temperature-agnostic RF-over-Fiber conversion at the antenna, down-conversion and signal processing can be performed at a central control location—streamlining deployment, maintenance, and upgrade costs while reducing EMI footprint and signal losses of each link.

Modular RF/FO components from HUBER+SUHNER, combined with multiplexing capabilities, enable hitless expansion of channels without adding fiber lines.



Subsystems

All-optical switching



HUBER+SUHNER Polatis utilizes highly reliable piezoelectric Directlight® beam-steering technology to deliver a full line of all-optical switches, enabling low latency, fully transparent connections between optical fibers without requiring conversion between optical and electrical signals, offering greater flexibility and energy efficiency. Ideal for ground station integration and lab automation.

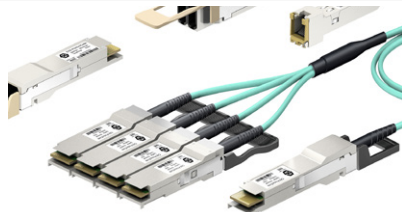
Fiber lasers



LIDAR and free space optical communication

HUBER+SUHNER Bktel photonics fiber lasers and amplifiers provide high power CW or modulated optical output power in the 1, 1.3, 1.5, and 2 μm bands for air-, space-born and ground based applications. The systems come as rack-mountable or OEM modules.

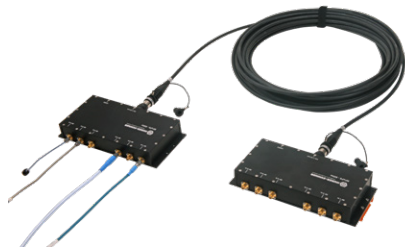
Active optical transport



Transceivers

HUBER+SUHNER offers the world’s most compact form factor ROSA/TOSAs for integration in 40G, 100G, 200GBase-LR4, and 400GBase-FR8 transceivers, maximizing bandwidth (integrated WDM available), form factor efficiency, and cost effectiveness across various protocols and power budgets.

RF-over-Fiber



End-to-end hybrid solutions

The RF-over-Fiber Series enables the use of radio frequency and fiber optics in a single connectivity link. This unique solution allows for greater distances between the RF source and the RF receiver system, and is immune to electromagnetic and RF interference, as well as electromagnetic pulses.

FO components

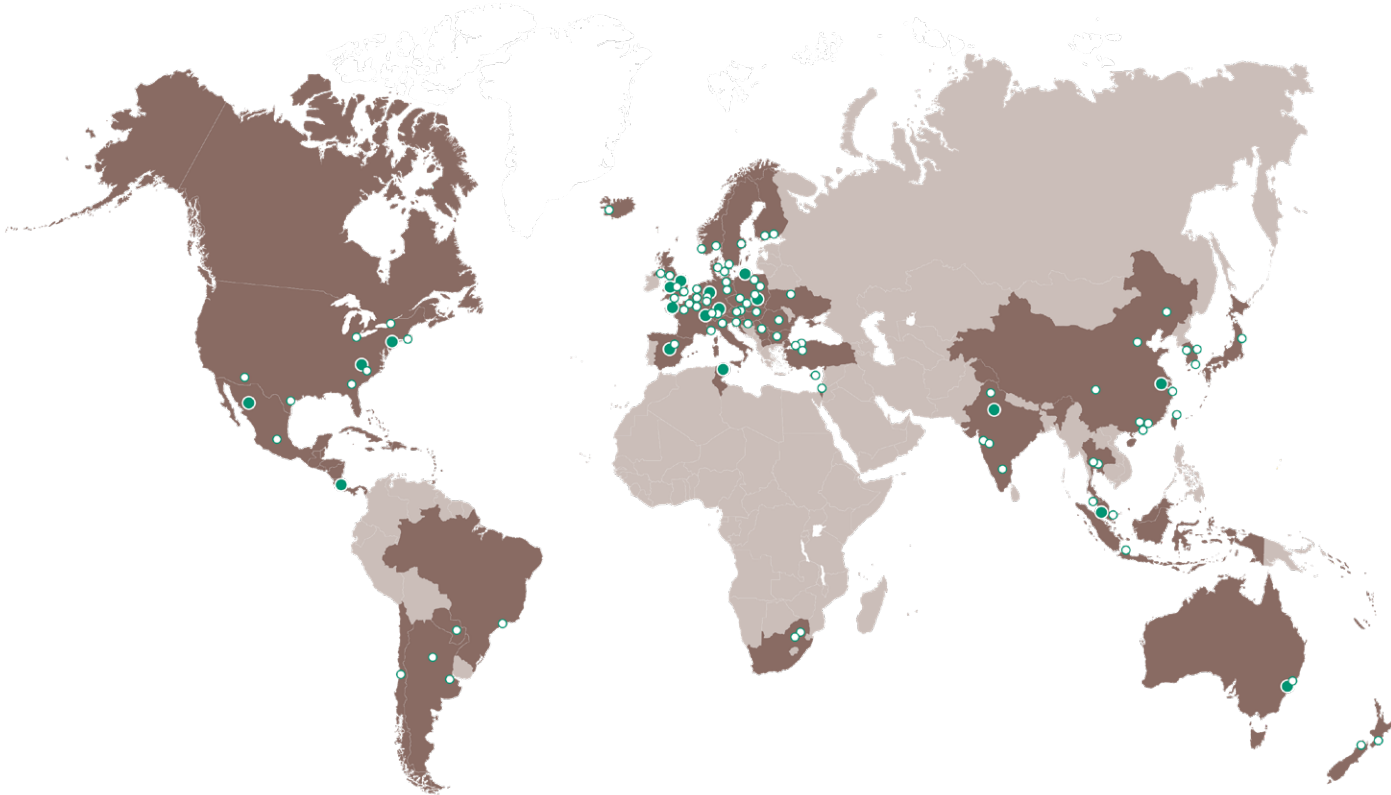


Small form-factor wavelength division multiplexers, optical MEMS switches, and optical splitters serving as base components for on-board optical networking. We can help you design the optimal layouts with our photonics engineers.

Heritage

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Headquartered in Herisau, Switzerland, we develop and produce products and solutions that excel in performance, quality, reliability and long service lives – even under the most demanding conditions. Through a global production network, combined with subsidiaries and representations in more than eighty countries, we are close to our customers worldwide.



- Countries with HUBER+SUHNER representation
- Sales locations
- Production and assembly plants



Connecting – today and beyond

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HUBER+SUHNER is certified according to ISO 9001, ISO 14001, OHSAS 18001, EN(AS) 9100, IATF 16949 and ISO/TS 22163 – IRIS.

Waiver

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