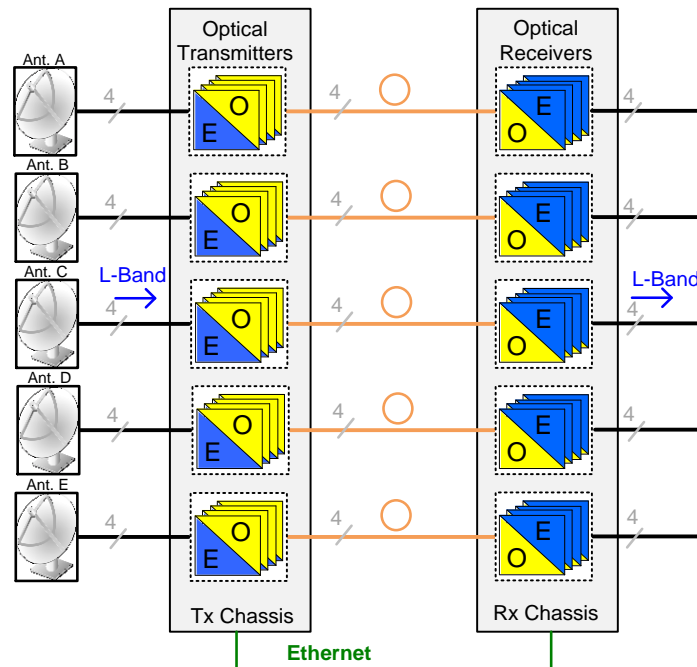


RF over Fiber for Interfacility Links

In all satellite ground stations or teleports an effective method of wire-based transmission of RF signals between field-based receiving antennas and ICT control rooms or between different equipment centers is mandatory. These so-called interfacility links were traditionally based on copper or coaxial cables respectively. However using lossy, heavy, and expensive electrical cables for signal transmission bear several challenges. By using RF over Fiber (RToF) technology, whereby light is modulated by a radio frequency signal and transmitted over an optical fiber link, these technical and economical obstacles can be overcome.



Typical application scenario for transmitting 20 RF signals between 5 satellite receiving antennas and a central control room by 20 optical fiber links.

In the drawing above, the most straightforward RF over Fiber architecture is shown. That means one optical link, consisting of an optical transmitter, the optical fiber itself and an optical receiver, is used to transmit one RF signal (so-called 1:1 scheme) from a satellite receiving antenna to a central location as for instance an ICT control room.

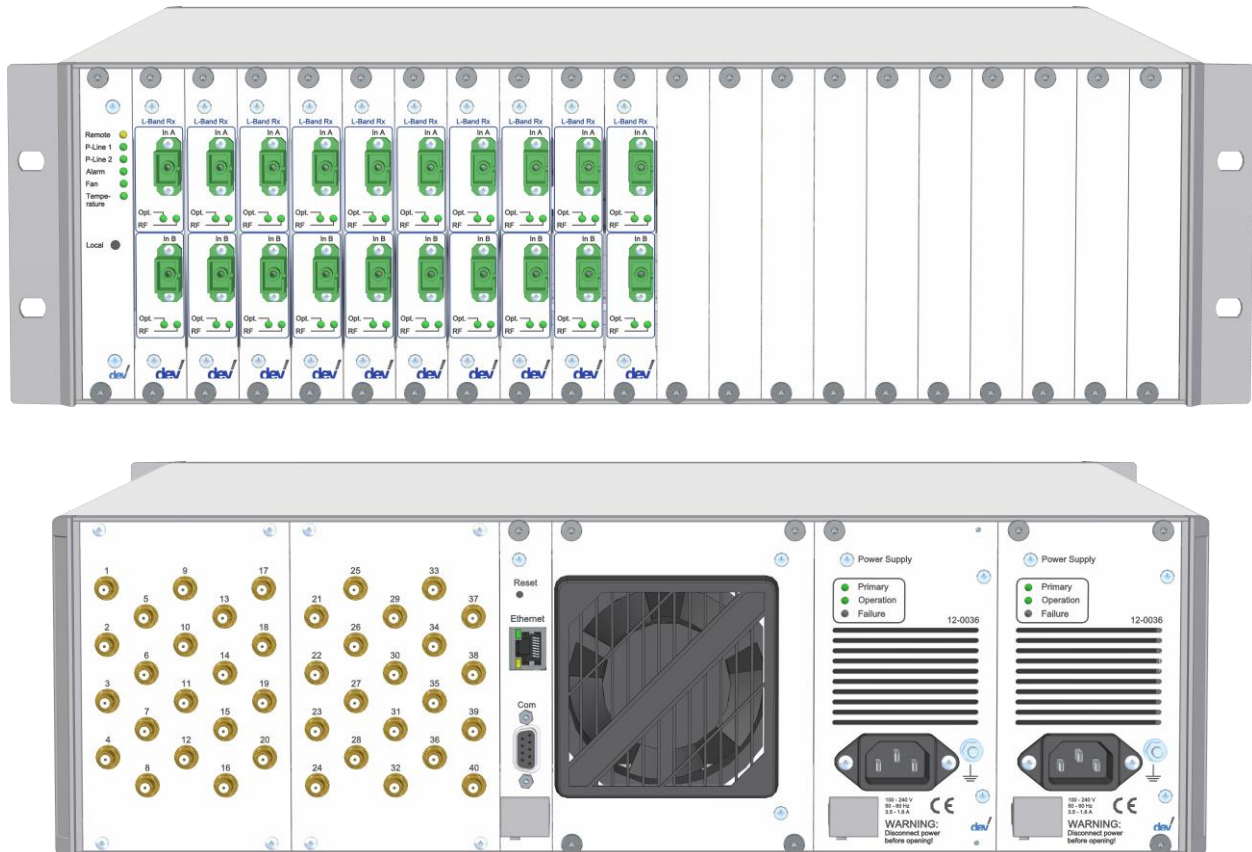
Benefits:

RF over Fiber technology shows several advantages compared to all-electrical signal transmission and are applicable for transmission distances from below 100 m for standard interfacility link applications to above 100 km for site diversity architectures.

- Significant lower losses and less frequency dependent loss by optical transmission
- More flexible and light weight optic cables assuring simple installations
- Reduced sensitivity to noise and electromagnetic interference
- Monitoring and Control over Ethernet via Graphical User Interface or SNMP
- CWDM and DWDM allow transmission of multiple signals over a single fiber

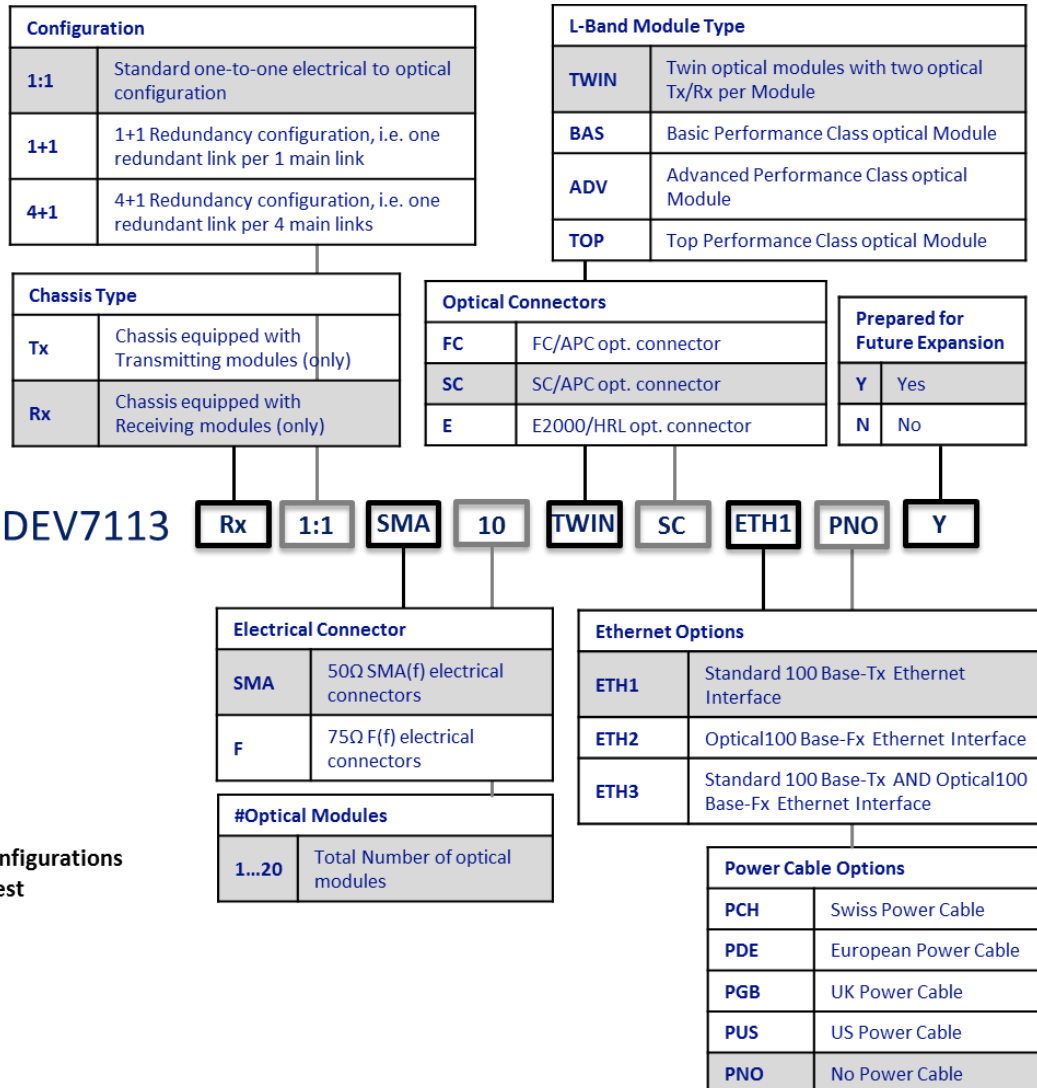
DEV RF over Fiber Indoor Chassis

The DEV Systemtechnik chassis for indoor use can be flexibly equipped with various RF over Fiber optical modules. In the following, an indoor chassis configuration according to the example discussed previously is presented.



Front and rear view of DEV7113 chassis in 1:1 configuration equipped with 10 'TWIN' Rx modules.

Ordering Key



Ordering Key: DEV7113-Rx-1:1-SMA-10-TWIN-SC-ETH1-PNO-Y

Results in a DEV7113 indoor chassis equipped with 10 RF over Fiber 'TWIN' receiving modules in 1:1 configuration, prepared for future expansion, with SMA and SC/APC connectors and equipped with electrical Ethernet interface.

About DEV Systemtechnik:

DEV Systemtechnik is a leading manufacturer of RF signal management equipment. The company produces RF matrix switches, RF over fiber equipment, routers, test automation and control software, redundancy switches, relay switches, splitters, combiners, amplifiers, and RF accessories such as powering products available in various frequencies. The products are used in Satellite, Broadcast, Government/Military, and Wireless Markets and meet the highest standards of system availability, reliability, and controllability.

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