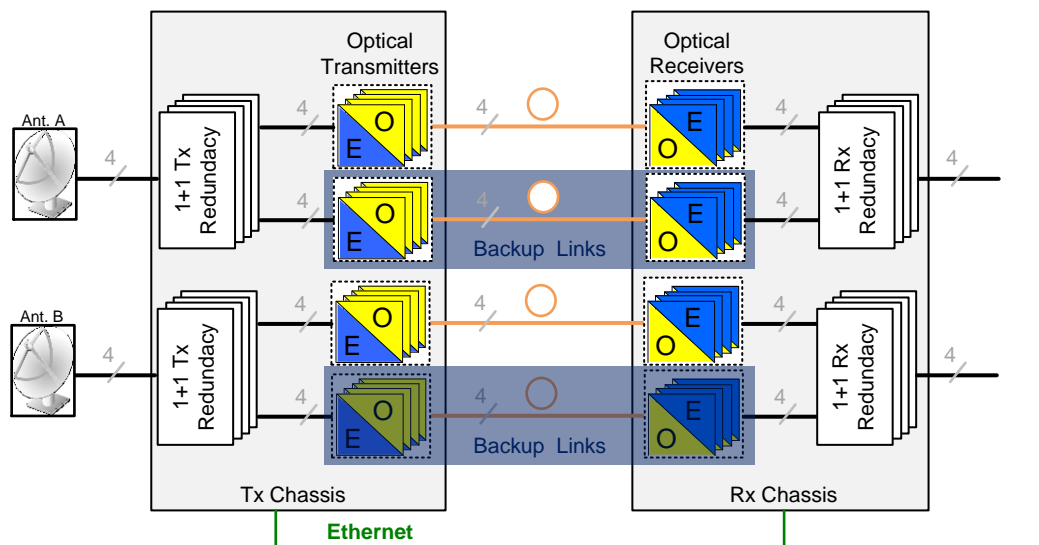


## RF over Fiber Links in 1+1 Redundancy Configuration

RF over Fiber systems, in which light is modulated by a radio frequency signal and transmitted over an optical fiber link, are typically employed in satellite ground stations or teleports to transmit RF signals between field-based receiving antennas and ICT control rooms or between different equipment centers. Beside the general benefits of optical technology like significant lower transmission losses and higher signal quality, the reliability and availability of these systems can be further increased by applying 1+1 link redundancy configurations. This way any defect optical Main link can be balanced by automatically switching to the corresponding optical Backup link ensuring signal transmission with highest possible reliability and uptime.



**Typical application scenario for a 1+1 redundancy configuration with in total 8 Main and 8 Backup RF over Fiber transmission paths to transmit 8 L-Band signals from 2 satellite receiving antennas.**

In the drawing above, a RF over Fiber architecture in 1+1 redundancy configuration is shown. By this configuration a maximum in system reliability is achieved as a defect of one or multiple optical Main links, due to defect transmitters, receivers or optical fibers can be compensated by the corresponding optical backup links.

### Benefits:

RF over Fiber technology in a 1+1 redundancy configuration shows several advantages compared to all-electrical signal transmission.

- Maximum system reliability by 1+1 redundancy scheme
- Increased uptime by automatic switching to Backup link
- Significant lower losses and less frequency dependent loss by optical transmission
- Applicable for transmission distances from below 100 m to above 100 km
- More flexible and light weight optic cables assuring simple installations
- Reduced sensitivity to noise and electromagnetic interference
- CWDM and DWDM allow transmission of multiple signals over a single fiber
- Monitoring and Control over Ethernet via Graphical User Interface or SNMP

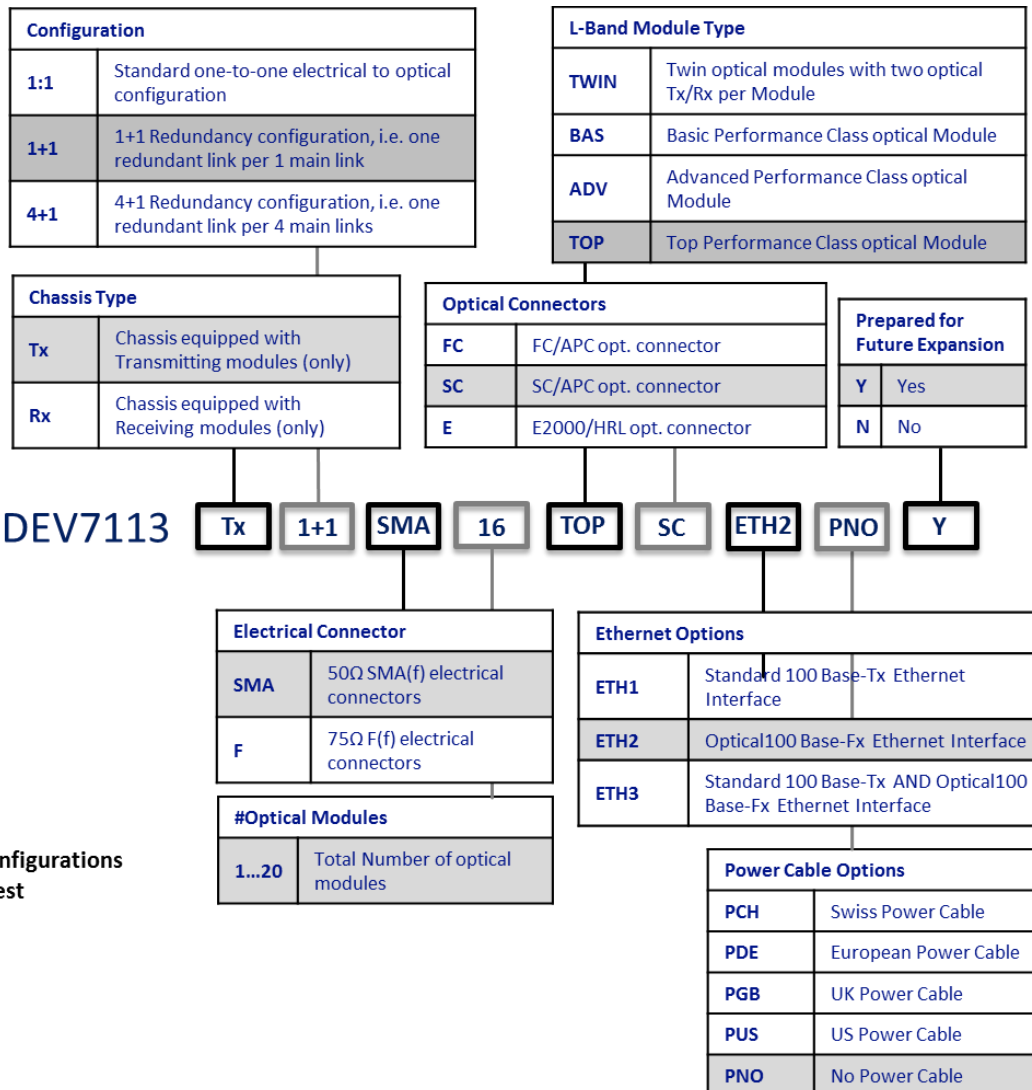
### DEV RF over Fiber Indoor Chassis

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 16 'TOP' Tx modules.

## Ordering Key



Further chassis configurations available on request

### Ordering Key: DEV7113-Tx-1+1-SMA-16-TOP-SC-ETH2-PNO-Y

Results in a DEV7113 indoor chassis equipped with 16 RF over Fiber 'TOP' transmitting modules in 1+1 configuration, prepared for future expansion, with SMA and SC/APC connectors and equipped with optical 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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