



RedLink+ RF-over-Fiber System

FLCRplus TX/RX chassis (N+1 & N+2 TX/RX redundancy)

Made in Germany

GENERAL

The **RedLink+ FLCRplus** Series in 1RU or 3RU/19" design represents an efficient rack-mount RF-over-Fiber chassis for insertion of optical transmitter or receiver modules supporting versatile redundant optical transmission configurations. It is designed for flexible, high quality and absolute secure optical transmission for 1... 16 signals (L-Band, IF* or 10MHz*) over a distance of up to 10km featuring various redundant optical configurations such as N+1 or N+2 (pls. refer to below table). The **RedLink+ FLCRplus** is available in 1RU/19" and 3RU/19" rack-mount design and can be equipped from 1 -16 optical modules (TX/RX) and up to 4 hot-standby modules (TX/RX) for different redundant operations (N+1 or N+2) while also mixed TX/RX configuration per group is possible with the corresponding chassis-variants. The system is scalable and expandable from non-redundant to redundant operation. The redundancy switching can be realized and configured locally (LC-D touchscreen) but also remotely via the Ethernet-Interface (WebGUI/SNMP). The **RedLink+ FLCRplus** system features automatic redundancy switching as per preconfigured configurations. Once an error for an TX or RX module happens an SNMP-message will be sent out to the other chassis and the switch-over to the hot-standby redundant module will be done automatically assuring interruption free signal transmission. The **RedLink+ FLCRplus** chassis support 1:1 redundant dual power-supply (hot-swappable) as well as all TX/RX modules are hot-swappable. Furthermore the TX/RX feature variable gain adjustment and RF power-monitoring while optionally the **RedLink+ FLCRplus** system also supports switchable LNB-supply.

The **RedLink+ FLCRplus** system has a front side LC-Display/keypads or a 5,7" touchscreen display for local configuration as well as an rear-side Ethernet-Interface for remote configuration (WebGUI, SNMP).



FEATURES

- Professional, stable and secure optical transmission
- Various non-redundant and N+1 or N+2 redundant configurations
- Permanent monitoring of laser/link (TX/RX) & power supplies...
- Manual and automatic redundancy switching
- Hot swappable TX/RX modules
- Chassis variants supporting mixed TX/RX configuration
- Variable gain adjustment & RF power monitoring
- Switchable LNB-supply (Option)
- 1:1 power-supply redundancy (hot-swappable)
- Easy local & remote configuration & monitoring (WebGUI, SNMP)
- LED's displaying laser, link, psu & access status

TECHNICAL SPECIFICATIONS

- **Dimensions:** 1RU or 3RU/19"
- **Power-supply:** 85...230V, 50/60Hz
- **Power consumption:** <100W
- **Frequency-ranges:** L-Band 950...2.150MHz
IF 40...200MHz*, 10MHz*
- **TX/RX configurations:** see table below
- **TX/RX Module slots:** 1RU/19", max. 6 slots
3RU/19", max. 20 slots
- **RF Connectors:** 50Ohm SMA(f)/BNC(f)*
75Ohm F(f)/BNC(f)*
- **LNB supply (Option):** 13/15/18V, 22kHz, 400mA
- **Local configuration:** LC-Display or 5,7" touchscreen
- **Remote config.:** Ethernet (WebGUI, SNMPv2c)
- **RoHS:** Compliant

*Upon request

CHASSIS ORDER INFORMATION & TX/RX redundant configuration possibilities

Chassis Type	Chassis size	Max. Qty. Groups	Max. Qty. Links	Redundancy per Group
FLCRplus1021	1RU/19"	1	2	1+1 or 2+1 (TX or RX)
FLCRplus2011	1RU/19"	2	2	2 x 1+1 (TX and/or RX)
FLCRplus2021*	1RU/19"	2	4	2 x 2+1 (TX and/or RX)
FLCRplus1042*	1RU/19"	1	4	4+1 or 4+2 (TX or RX)
FLCRplus4041	3RU/19"	4	4	4 x 4+1 (TX and/or RX)
FLCRplus2082	3RU/19"	2	8	2 x 8+1 / 8+2 (TX and/or RX)

*Upon Request



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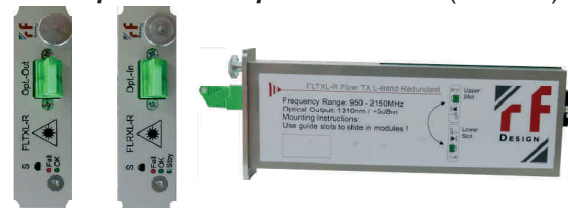
FLCRplus Optical TX (Transmit) & RX (Receive) modules

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FLTXIplus/FLRXIplus Modules (IF) FLTX10Mplus/FLRX10Mplus Modules (10MHz)



FLTXLplus/FLRXLplus Modules (L-Band)



FLTXIplus Optical Transmitter IF (*upon request)

FLTX10Mplus Optical Transmitter 10MHZ* (*upon request)

- Frequency range: 40...200MHz (FLTXI-R)
10MHz (FLTX10M-R)
- RF Input connector: via Chassis RF I/O ports
- RF Input level: 0dBm max.
10dBm max. (FLTX10M-R)
- Frequency response: $\pm 0,5\text{dB typ./} \pm 1,0\text{dB max.}$
- Return loss: 18dB (Δ VSWR: 1:1.29)
- Optical Output connectors: E2000 or SC/APC
- Operating wavelength: 1310nm
- Optical power: +5dBm
+6dBm
- Ip1: all ports 18dB
- Port matching: -15...+15dB* (*not for 10MHz)
- Gain adjustment*: 60dB
- RF power monitoring: OK, Fail, Stand-by
- Status LED's: 0...45°C
- Operating temperature: -10°C...70°C
- Storage temperature: 90% non-condensing
- Humidity: Compliant
- RoHS:

FLTXLplus Optical Transmitter L-Band

- Frequency range: 950...2150MHz
- RF Input connector: via Chassis RF I/O ports
- RF Input level: 0dBm max.
- Frequency response: $\pm 0,5\text{dB typ./} \pm 1,0\text{dB max.}$
- Return loss: 16dB (Δ VSWR: 1:1.38)
- Optical Output connectors: E2000 or SC/APC
- Operating wavelength: 1310nm
- Optical power: +5dBm
- Gain adjustment: -15...+15dB
- RF power monitoring: 70dB
- Status LED's: OK, Fail, Stand-by
- LNB supply (Option): via corresponding FLCRplus chassis (13/15/18V, 22kHz, 400mA)
- Operating temperature: 0...45°C
- Storage temperature: -10°C...70°C
- Humidity: 90% non-condensing
- RoHS: Compliant

FLRXIplus Optical Receiver IF (*upon request)

FLRX10Mplus Optical Receiver 10MHZ* (*upon request)

- Frequency range: 40...200MHz (FLRXI-R)
10MHz (FLRX10M-R)
- Optical Input connectors: E 2000 or SC/APC
- Operating wavelength: 1310 - 1560nm
- Optical Input level: 0dBm max.
- RF Output connector: via Chassis RF I/O ports
- Frequency response: $\pm 0,5\text{dB typ./} \pm 1,0\text{dB max.}$
- Return loss: 18dB (Δ VSWR: 1:1.29)
- Gain adjustment*: -15...+15dB* (*not for 10MHz)
- RF power monitoring: 60dB
- Status LED's: OK, Fail, Stand-by
- Operating temperature: 0...45°C
- Storage temperature: -10°C...70°C
- Humidity: 90% non-condensing
- RoHS: Compliant

FLRXLplus Optical Receiver L-Band

- Frequency range: 950...2150MHz
- Optical Input connectors: E 2000 or SC/APC
- Operating wavelength: 1310 - 1560nm
- Optical Input level: +10dBm max.
- RF Output connectors: via Chassis RF I/O ports
- Frequency response: $\pm 0,5\text{dB typ./} \pm 1,0\text{dB max.}$
- Return loss: 16dB (Δ VSWR: 1:1.38)
- Gain adjustment: -15...+15dB
- RF power monitoring: 70dB
- Status LED's: OK, Fail, Stand-by
- Operating temperature: 0...45°C
- Storage temperature: -10°C...70°C
- Humidity: 90% non-condensing
- RoHS: Compliant

Link Specifications (10MHz & IF modules)

- IMA3 @ -10dBm @ 0dB Gain: < -66dBc
- IP1: +10dBm
- Noise Figure: < 23dB
- Spurious free dynamic range: 109dBm/Hz
- RF output power: +10dBm max.

Link Specifications (L-Band modules)

- IMA3 @ -10dBm: < -60Bc
- IP1: +15dBm
- Noise Figure: < 20dB
- Spurious free dynamic range: 106dBm/Hz
- RF output power: +10dBm max.

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