

sat-nms LFTX/RX - L-Band Fiber Optical Transmitter/Receiver

The **sat-nms** LFTX Fiber Optical Transmitter and **sat-nms** LFRX Fiber Optical Receiver form together a high performance optical link for analog multi-carrier RF transportation on fiber optical media. They are available as stand alone modules, integrated in 2RU 19" rack-mount chassis, but are also designed to allow N:1 redundant L-Band optical links. Two types of optical converters are available:

sat-nms LFTX	Optical Transmitter converting from RF input spectrum to optical output at 1310nm
sat-nms LFRX	Optical Receiver regenerating the optical signal back to an RF spectrum

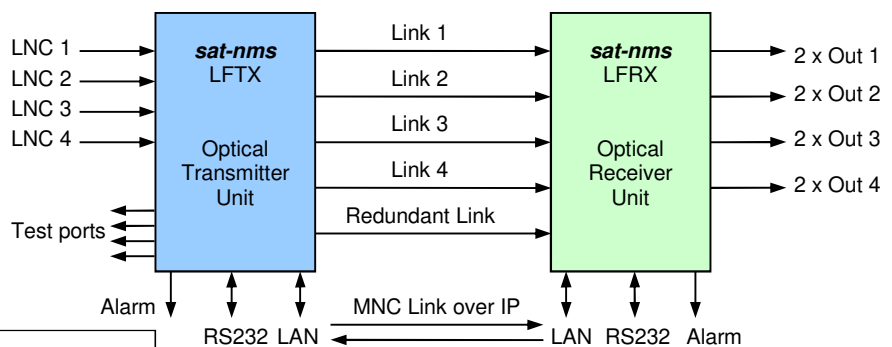
SatService offers the LFTX/RX modules for different frequency bands:

sat-nms LFTXL and LFRXL	950 to 2150MHz
sat-nms LFTXB and LFRXB	50 to 2150MHz
sat-nms LFTX10 and LFRX10	950 to 2150MHz and 10MHz reference frequency for BUC on same fiber

A common configuration is a 4:1 sub-system for an antenna with 4 LNCs including an additional redundant chain. But the modules can also be delivered in other configurations, even a 2 times 4:1 redundant configuration is possible. All modules include RF gain adjustment and extensive monitoring. The optical receiver 19" rack-mount chassis also provides an LCD Display and keyboard for local MNC. The remote MNC interface is via web-browser, SNMP, HTTP GET functions and RS232 interface as in all other **sat-nms** products. If you order a redundant configuration, the optical transmitter and receiver chassis communicate via LAN with each other.



column 1	column 2
1:1	1:1
1:2	1:2
1:3	1:3
1:4	1:4
up to 10 non-redundant optical links	



Key Features

- 10MHz and L-Band Transfer via one Fiber
- 19" 2RU Unit Compact Design
- Redundancy Switching Option
- Redundant Power Supplies
- All Modules are available with hot-swap
- 1:4 L-Band Distributor Option

Applications

- Satellite Ground Stations and Teleports
- Cable Head-end Stations

Contact Information

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Technical Specification

RF Specification

Frequency Range	950 to 2150MHz or 50 to 2150MHz
L-Band Input Connectors (Transmitter)	SMA female 50Ohm or F female 75Ohm
L-Band Output Connector (Receiver)	SMA female 50Ohm or F female 75Ohm
Input and Output Return Loss	> 17dB
L-Band Input and Output Test Connector	SMA female 50 Ohm
Optical Connectors	E2000 or FC/APC
Input Noise Figure Total Optical Link	< 30dB with 13dB Attenuator Setting
Gain Flatness Total Link	+/-1.5 dB, +/-0.25dB in any 40MHz
Gain of Complete Link with Attenuator Setting of 12 to 17dB*	0dB
Attenuation TX Card (adjustable via local and remote interface)*	0 to 31dB in 1dB Steps
Attenuation RX Card (adjustable via local and remote interface)*	0 to 31dB in 1dB Steps
Input Signal max. (Total Level)*	-5 dBm
Output Level max. (Total Power)*	-5dBm
Intermodulation at -13dBm Input Level	<-40 dBc
DC-output at L-Band input connector (<i>sat-nms</i> LFTX only)	15+/-1V 350mA max per card, 3000mA total max per chassis

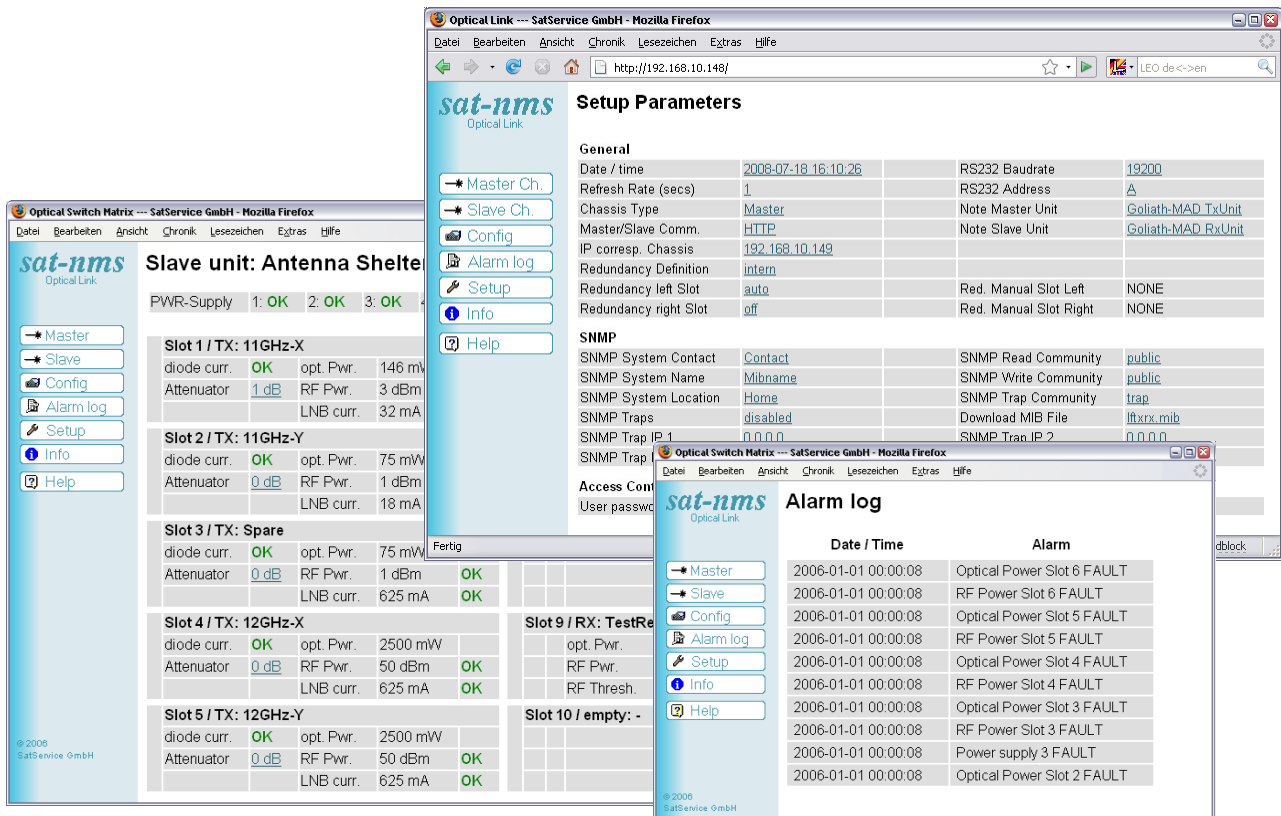
* different values for configuration with 75Ohm, redundancy or 1:4 distributor possible

MNC Interface Specification

Ethernet Interface for MNC and User Interface	10/100-Base-T, Via http GET Requests and SNMP
Front Panel Display	LCD 16x2
RS232 MNC Interface	D-SUB 9 female
Summary Fault Indication	Relay Contact D-SUB 9 male
I/O Output for external WG-Switching (Transmitter)	SUB-D 9 Socket

Electrical and Mechanical Specification, Environmental Conditions

Supply Voltage	90 to 230V AC 50 to 60Hz, 75W
Connector for the two Mains Voltage AC Inputs	IEC
Redundant Power Supplies	Hot-swap Capability available as an Option
Temperature Range operating (storage)	-20°C to + 50°C (-30°C to +70°C)
Humidity	Up to 90% non-condensing
Mechanical Size of Mainframe	436 x 89 x 350 mm (WxHxD), 19" 2RU



The image displays two screenshots of the sat-nms web interface. The top screenshot shows the 'Setup Parameters' page, which is divided into several sections: General, SNMP, and Access Control. The General section includes fields for Date/Time, Refresh Rate, Chassis Type, Master/Slave Comm., IP correspond. Chassis, Redundancy Definition, Redundancy left Slot, and Redundancy right Slot. The SNMP section includes fields for SNMP System Contact, SNMP System Name, SNMP System Location, SNMP Traps, and SNMP Trap IP. The Access Control section includes fields for User password and User permissions. The bottom screenshot shows the 'Alarm log' page, which displays a table of alarm events with columns for Date/Time and Alarm. The alarm events include 'Optical Power Slot 6 FAULT', 'RF Power Slot 6 FAULT', 'Optical Power Slot 5 FAULT', 'RF Power Slot 5 FAULT', 'Optical Power Slot 4 FAULT', 'RF Power Slot 4 FAULT', 'Optical Power Slot 3 FAULT', 'RF Power Slot 3 FAULT', 'Power supply 3 FAULT', and 'Optical Power Slot 2 FAULT'.