

## 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 and integrated in outdoor cabinets for outdoor use, and are also designed to allow N:1 or 1:1 redundancy switching. Two types of optical converter modules form an optical link, normally sliding into the chassis or outdoor cabinet:

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

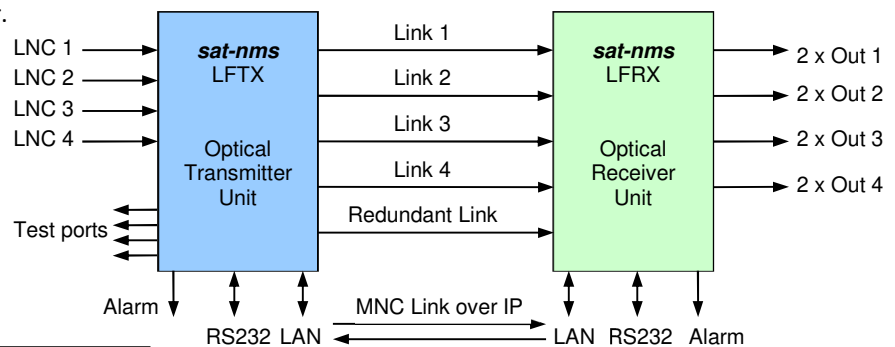
SatService offers the LFTX/RX modules for different frequency bands:

<b>sat-nms</b> LFTXL and LFRXL	950 to 2150MHz
<b>sat-nms</b> LFTXB and LFRXB	50 to 2150MHz
<b>sat-nms</b> LFTXO10 and LFRXO10	10MHz

A common chassis configuration is 2x 4:1 sub-system for Ku-band antennas with 4 LNBS including an additional redundant chain. Other configurations are a chassis with 5x 1:1 redundancy switching or a 10x non redundant chassis. One of these configurations is selected at the time of order and defines the chassis and its internal backplanes which are responsible for the redundancy switching. All modules include RF gain adjustment and extensive monitoring. The 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

- 19" 2RU Unit Compact Design
- Redundancy Switching Option (1:1 or 1:n)
- Redundant hot swap Power Supplies
- RX or TX Modules hot-swap as well
- 1:4 L-Band Distributor as 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 or 10MHz
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 (+10dBm damage level)
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 per chassis

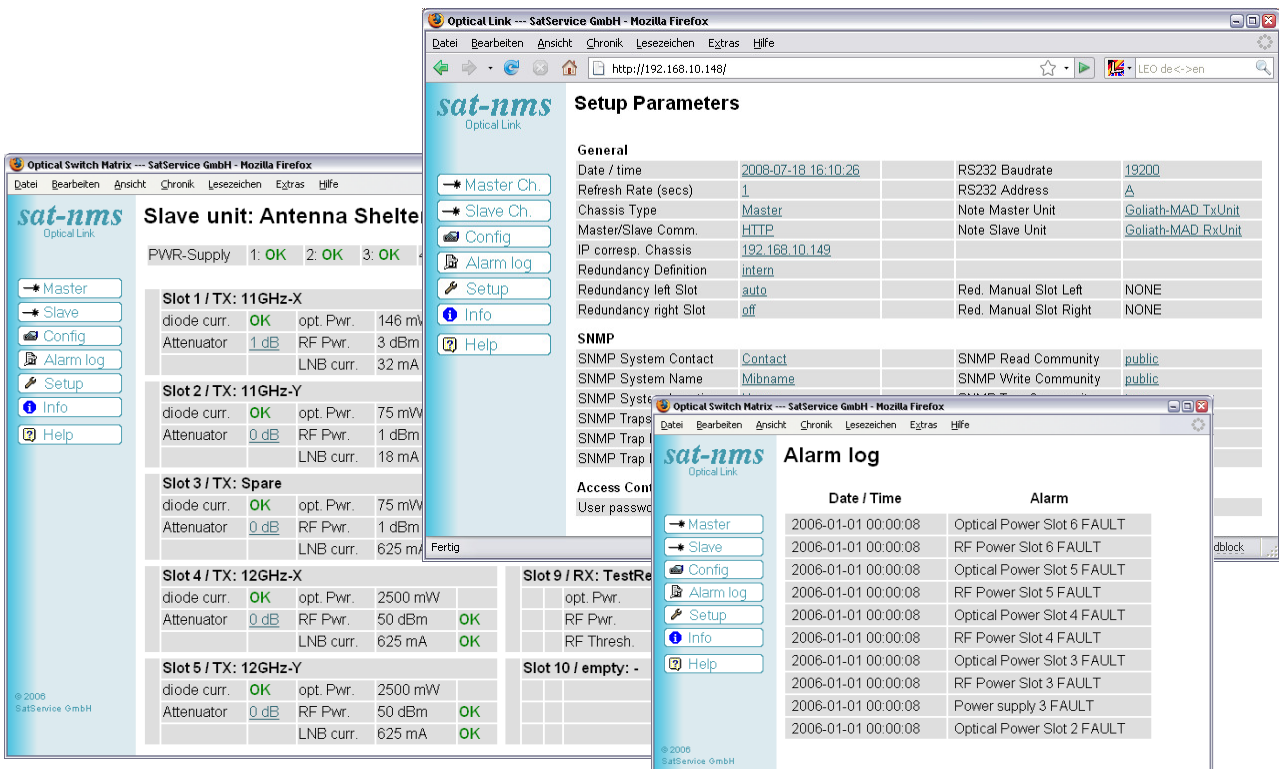
\* different values depending on configuration with 50 or 750hm, redundancy type or 1:4 distributor

### 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
Weight (depending on installed modules and options)	from 4,9kg to 8,9kg



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 Traps, and SNMP Trap I. The Access Control section includes a field for User password. 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.