

## sat-nms LFRX/TX L-Band Fibre Optical Receiver/Transmitter

The **sat-nms** LFRX Optical Receiver and **sat-nms** LFTX Optical Transmitter together form 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" drawers, 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 which converts from RF input spectrum to optical output at 1310nm
- sat-nms** LFRX optical receiver which regenerates the optical signal back to an RF spectrum

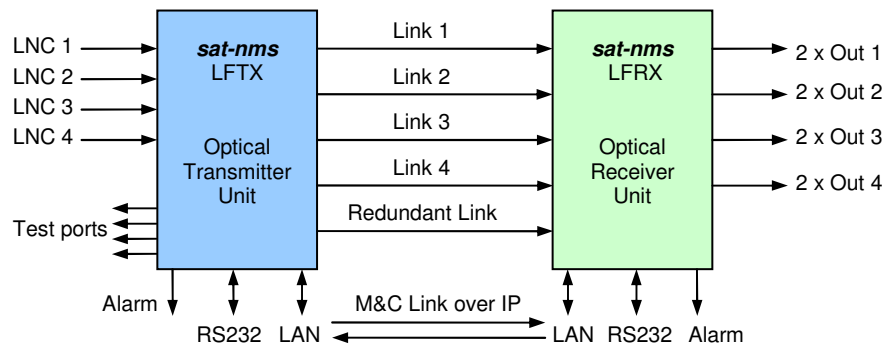
SatService offer the LFTX/RX modules for different frequency bands.

- sat-nms** LFTXL and LFRXB 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, with an additional redundant chain. But the modules can be delivered also 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" drawer also provides a LCD display and keyboard for local M&C. The remote M&C 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 communicates 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
- Hot swap 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	15+/-1V (for LFTXL model only)

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

### M&C Interface Specification

Ethernet interface for M&C and user interface	10/100-Base-T, Via http GET requests and SNMP
Front panel display	LCD 16x2
RS232 M&C 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
Connector for the two mains voltage AC inputs	IEC
Redundant power supplies	Hot swap capability available as an option
Temperature range	-20 to + 50 °C
Humidity	up to 90% non condensing
Mechanical size of mainframe	436 x 89 x 350 mm (WxHxD), 19" 2RU

The image displays three overlapping screenshots of the sat-nms web interface in a Mozilla Firefox browser window. The main screenshot shows the 'Setup Parameters' page, which is divided into 'General' and 'SNMP' sections. 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 addresses. A second screenshot shows the 'Slave unit: Antenna She' page, displaying parameters for three slots (Slot 1, Slot 2, Slot 3) including diode current, attenuator, RF power, and LNB current. A third screenshot shows the 'Alarm log' page, which lists a series of fault events with their respective dates, times, and descriptions, such as 'Optical Power Slot 6 FAULT' and 'RF Power Slot 6 FAULT'.