**sat-nms LFTX-S and sat-nms LFRX-S**

Single L-Band Fiber Optical Transmitter/Receiver

**sat-nms** LFTX-S and **sat-nms** LFRX-S are the stand-alone, single box modules of the well-established **sat-nms** LFTXRX Fiber Optical Transmission System. With the help of these modules you are now in the position to interconnect also smaller satellite ground terminals or VSATs that need only 1 or two transmission links in a cost-efficient way. Also mechanical “space” requirements are now reduced to a minimum if you have limited equipment space like in SNG vans.

The **sat-nms** LFTX Optical Transmitter Module and **sat-nms** LFRX Optical Receiver Module form together a high performance optical link for analog multi-carrier RF transportation on fiber optical media.

<table>
<thead>
<tr>
<th><strong>sat-nms</strong> LFTX-S</th>
<th>Optical Transmitter converting from RF input spectrum to optical output at 1310nm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>sat-nms</strong> LFRX-S</td>
<td>Optical Receiver regenerating the optical signal back to an analogue RF spectrum</td>
</tr>
</tbody>
</table>

SatService offers the **sat-nms** LFTX/RX-S Modules in different frequency bands:

| **sat-nms** LFTXL-S and LFRXL-S | 950 to 2150MHz (with LNC supply voltage) |
| **sat-nms** LFTXB-S and LFRXB-S | 50 to 2150MHz (broadband) |
| **sat-nms** LFTX10-S and LFRX10-S | 950 to 2150MHz and 10MHz reference frequency for BUC on same fiber |

**Key Features**

- 10MHz and L-Band Transfer via one Fiber
- Integrated Attenuator
- Compact Design
- LNC Power Supply
- 50Ohm SMA or 75Ohm F-Type Connector

**Applications**

- Satellite Ground Stations and Teleports
- VSAT and SNG

**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 Test Connector
SMA female 50 Ohm

Optical Connectors
E2000/APC 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)
-5dBm

Output Level max. (Total Power)
-5dBm

Intermodulation at -13dBm Input Level
<-40dBc

DC-Output at L-Band Input Connector
0.5…1.5V below Supply Voltage (for LFTXL Model only)

MNC Interface Specification

Summary Alarm
Open Collector

Remote Control Interface
I²C

Electrical and Mechanical Specification, Environmental Conditions

Supply Voltage
16V DC mA without LNC Supply

Connector for Power Supply, Alarm- and Remote Interface
D-SUB25 male

Temperature Range
-20 to + 50°C

Humidity
Up to 90% non-condensing

Mechanical Size of Case without Connectors
113.5 x 31 x 223 mm (WxHxD)

D-SUB25 Connector Pin Assignment

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remote control (I²C SCL Clock)</td>
<td>14 GND</td>
</tr>
<tr>
<td>2</td>
<td>Remote control (I²C SDA Data)</td>
<td>15 GND</td>
</tr>
<tr>
<td>3</td>
<td>Remote control (I²C Address select)</td>
<td>16 GND</td>
</tr>
<tr>
<td>4</td>
<td>TX Module: TX Laser Current Alarm (open Collector)</td>
<td>17 GND</td>
</tr>
<tr>
<td>5</td>
<td>RF Power Alarm (open Collector)</td>
<td>18 GND</td>
</tr>
<tr>
<td>6</td>
<td>RX Module: RX Optical Power Alarm (open Collector)</td>
<td>19 GND</td>
</tr>
<tr>
<td>7</td>
<td>Opt. Power Monitor 100uW~100mV</td>
<td>20 TX Module: Laser Current Monitor 10mA~100mV RX Module: GND</td>
</tr>
<tr>
<td>8</td>
<td>RF Power Monitor 50mV/dB</td>
<td>21 GND</td>
</tr>
<tr>
<td>9</td>
<td>DC Input</td>
<td>22 GND</td>
</tr>
<tr>
<td>10</td>
<td>Redundant DC Input</td>
<td>23 GND</td>
</tr>
<tr>
<td>11</td>
<td>n.c.</td>
<td>24 n.c.</td>
</tr>
<tr>
<td>12</td>
<td>n.c.</td>
<td>25 n.c.</td>
</tr>
<tr>
<td>13</td>
<td>n.c.</td>
<td></td>
</tr>
</tbody>
</table>

Gain select (0...15dB/16...31dB)

Gain adjust

Laser Diode Current Monitor

RF Power (50mV/dB)

RF Level Max Alarm

Diode Status

RF Test Port

TX module

RX module

(100mV relates to 10mA)

(100mV relates to 100uW)

Power Supply Status

RF Level Min Alarm

GND

Optical Power Monitor

LNB DC on/off (LFTXL-S only)

Local/remote switch

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