



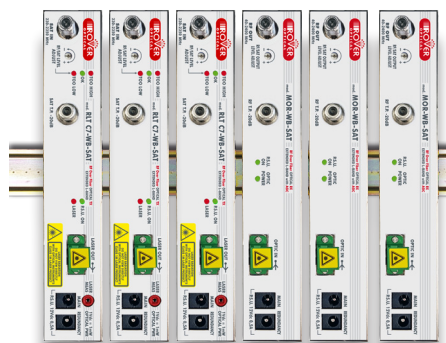
||| A STEP AHEAD IN DIGITAL TELEVISION

# Extended L Band-RF Over Fiber for SATCOM LINK SYSTEM DESIGNED for NEW WIDE BAND LNB 250-2.350 MHz

## mod. SLS-C7



OUTDOOR



INDOOR



19" RACK

SPECIALLY DESIGNED for NEW WB LNB (2 CABLES 4 POLAR.)  
1550 nm CWDM DFB SINGLE MODE LASER  
TX LEVEL ADJ. & MONITORING FOR OPTIMAL LASER PERFORMANCE  
TX with LASER POWER MEASUREMENT  
RX with WIDE RANGE OPTICAL AGC  
RF/SAT LEVEL TEST POINT ON FRONT PANEL  
DIN RAIL MODULAR ASSEMBLY OR 1U 19" RACK

**ADVANCED  
TECHNOLOGY**

FOR PROFESSIONAL  
CABLE & BROADBAND  
NETWORKS



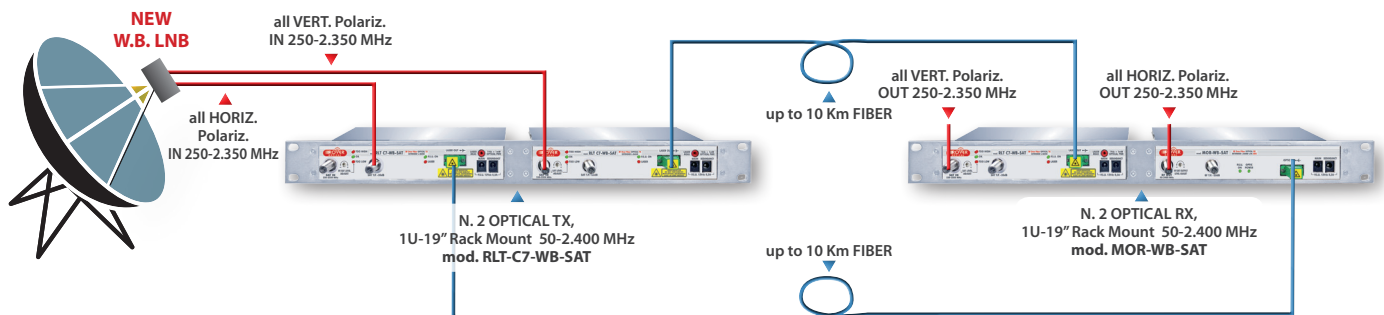


## Modular & Compact CWDM Ultra W.B. Laser Optical Transmitter & Receiver for NEW Extended Band LNB for SATCOM Link System

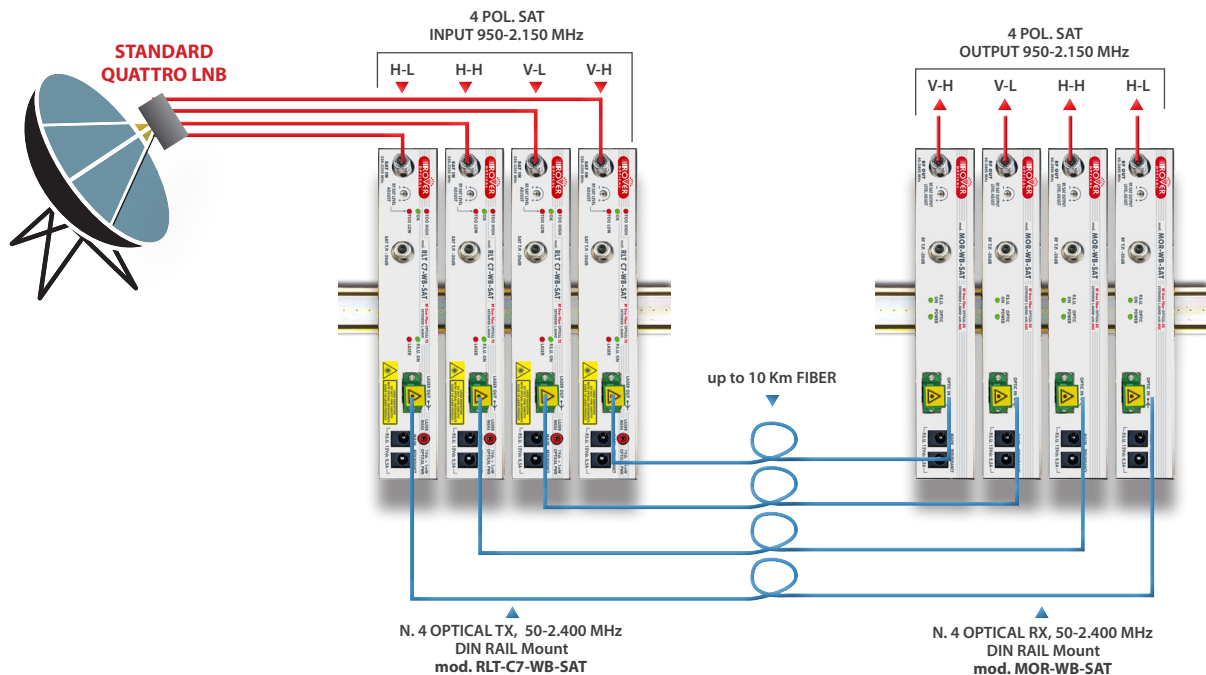


The ROVER Extended Band (50-2.400 MHz) Optical Modular series are specially designed to create a more Reliable Indoor or Outdoor SATCOM Link System with Less TX, RX and Fiber.

### 2 W.B. FULL POLARITY 250-2.350 MHz, 10 Km **RF Over Fiber** SAT LINK SYSTEM



### 4 SINGLE STANDARD POLARITY 950-2.150 MHz, 10 Km **RF Over Fiber** SAT LINK SYSTEM



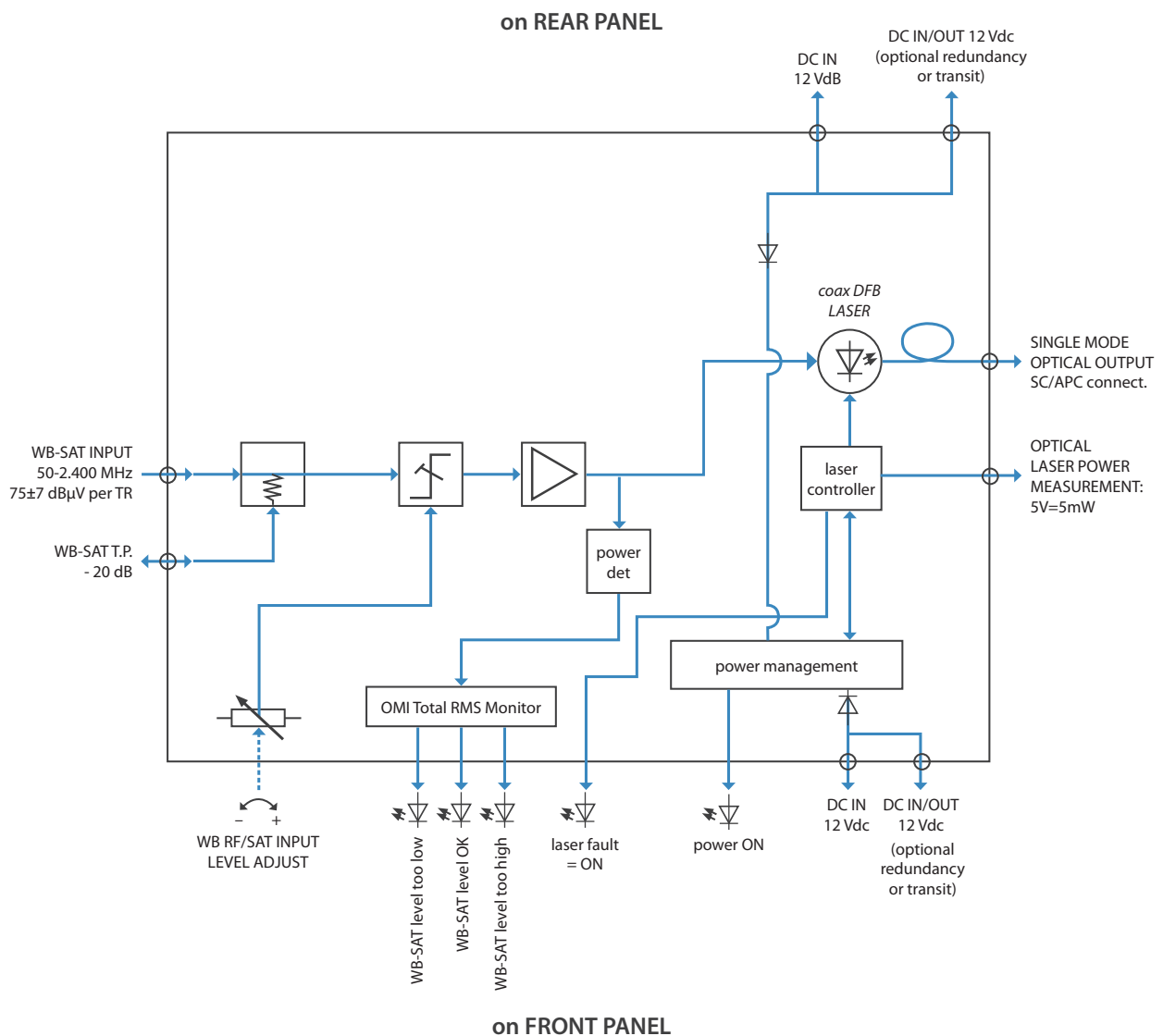
# RLT-C7 WB-SAT



## MAIN FEATURES

- Equipped with coax DFB Single Mode laser for good RIN
- W.B. SAT input 50-2.400 MHz up to 70 SAT Transponders
- SAT RF level Test Point connector
- Laser output power +7 dBm/5 mW
- RF-SAT input level adjustment with Monitor Led
- SC/APC laser output connector with shutter
- Laser output connector on front panel
- Redundancy PSU adapter (opt.)
- DIN RAIL easy assembling
- 19" Rack Assembly panel (opt.)

## RLT-C7 WB-SAT BLOCK DIAGRAM



**SMATV, CATV & SAT**

RF/SAT frequency range	50-2.400 MHz
RF connectors	75 ohm type "F"
RF Return Loss	> 12 dB
Typical level for WB-SAT input	75 dbuV +/- 7 dB per channel
Test point for SAT input	input level - 20 dB
WB-SAT Gain mode adjust	Manual, adjustable +/- 7 dB, with led level indicator monitor: - too low - ok - too high, for the best performance

**LASER**

Laser type	DFB coaxial single mode with optical isolator
Laser optical power	+ 7 dBm/5mW
Optical power stability	typ. +/- 0,5 dB, max +/- , 1dB Max
Optical wavelength	1.550 +/- 4 nm (opt. 1.310)
RIN	-140 dB/Hz worst case
Optical insulation	30 dB min
Optical return loss	> 40 dB
Optical connector:	SC/APC with shutter (other on request)

**POWER SUPPLIES**

TX Power supply	12 Vdc, 300 mA
Power supply adapter	IN 100/230 Vac, OUT 12 Vdc 1A
Redundancy power supply adapter (optional)	IN 100/230 Vac, OUT 12 Vdc 1A
Power consumption	< 8 W
PSU Connector diameter	2,5 / 5,5 mm

**MECHANICAL**

Module	1/2 Unit 19" rack (up 2 module in 1 U 19" Rack mount mod. RAP-2 opt.)
Weight	0,8 kg
Single Module Dimension	H 33 x P 80 x W 190
Assembling type	(19" Rack with optional front panel), or DIN Rail, or wall mount brackets, or Outdoor optional cabinet

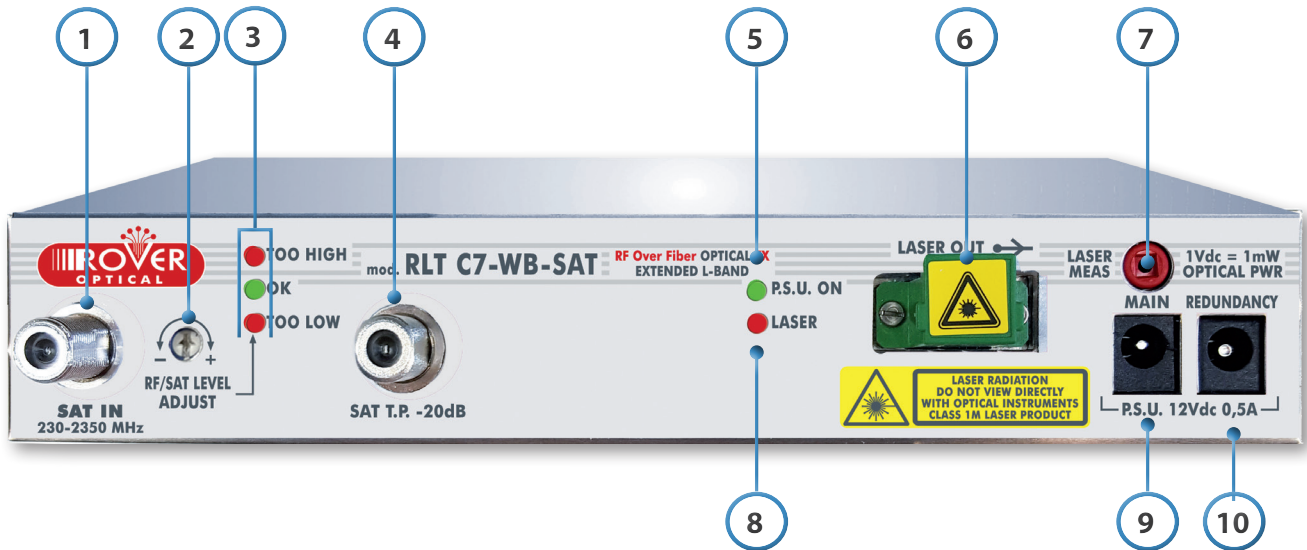
**SAFETY, EMC, INSTALLATION ENVIRONMENT**

Safety	EN 50 083-1 and EN 60 950 See yellow label on the equipment.
Laser Safety	Class 1M acc. IEC 60 825-1 (eye safe for normal viewing). During normal operations the laser beam is confined within optical fiber. Optical transmitter is intended to work ONLY connected to the proper optical network
Installation environment	Temperature range: -15° / + 45° (max 55°) According to ETS 300 019-1-3 Class 3,1 Controlled Temp. Room
Relative humidity	90 % (95 max)
EMC	EN 50 083-2

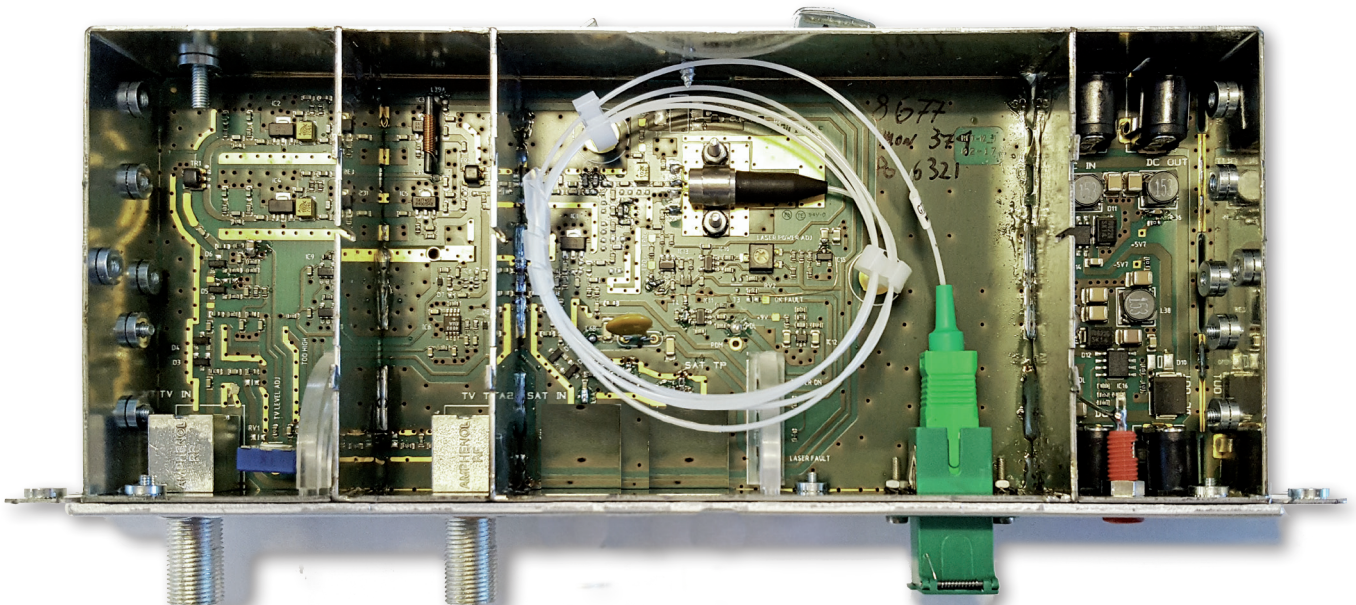
	Number of transponders: up to 70 from 250 to 2.350 MHz
OMI	1,5 % per single Transponder
CNR	> 30 dB
CXM	< 38 dBc

- All transponders FLAT  $\pm 6$  dB max
- TX test method: transmitted power 7 dBm/5mW + 10 Km G652 Fiber
- RX test method: received power = -6 dBm, noise current = 7pA/ $\sqrt{\text{Hz}}$

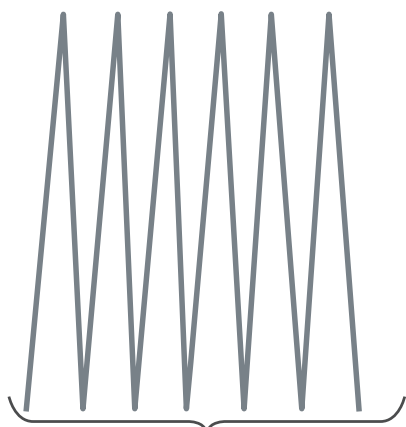




- |  |   |
|--|---|
| 1. WB RF/SAT input 50-2.400 MHz            | 6. LASER output connector with shutter          |
| 2. SAT level adjust trimmer to correct OMI | 7. Optical PWR measurement 5Vdc = 5mW Laser PWR |
| 3. RF/SAT correct input level monitor Led  | 8. Laser fault = LED ON                         |
| 4. RF/SAT Input level Test point - 20 dB   | 9. PSU Input 12 V d.c.                          |
| 5. POWER "ON" Led                          | 10. PSU REDUNDANCY or TRANSIT 12 Vdc            |

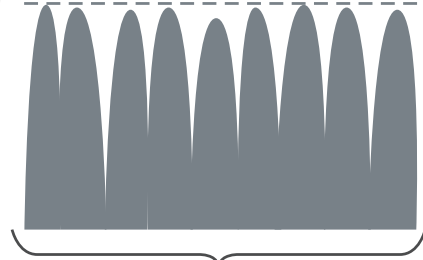


REF ———



ANALOG FM SAT TRANSPONDERS

- 6 dB ———



DIGITAL SAT TRANSPONDERS

THE EQUIPMENT MAY ONLY BE INSTALLED BY QUALIFIED PERSONNEL, WHO HAVE RECEIVED THE NECESSARY TRAINING IN HANDLING OPTICAL AND ELECTRICAL EQUIPMENT AND HAVE BEEN INSTRUCTED IN LASER SAFETY.

INVISIBLE LASER RADIATION, DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS, CLASS 1M LASER PRODUCT.  
 MAXIMUM OUTPUT POWER: 10 mW, WAVELENGTH: 1550 nm IEC 60825-1:2007  
 (EN 60825-1:2007, DIN EN 60825:2008-05).

**NOTICE**

**LASER RADIATION**  
**DO NOT VIEW DIRECTLY**  
**WITH OPTICAL INSTRUMENTS**  
**CLASS 1M LASER PRODUCT**



Laser equipment installation, operation and maintenance must only be carried out by people who have received adequate training in laser safety.

Optical transmitters and amplifiers emit optical power in the invisible infra-red spectrum range. Under normal operating conditions, the optical power is transferred in the fibers and is not accessible.

Each optical transmitter and each optical amplifier is assigned to a laser class according to IEC 60825-2 and a hazard level according to IEC 60825-2.

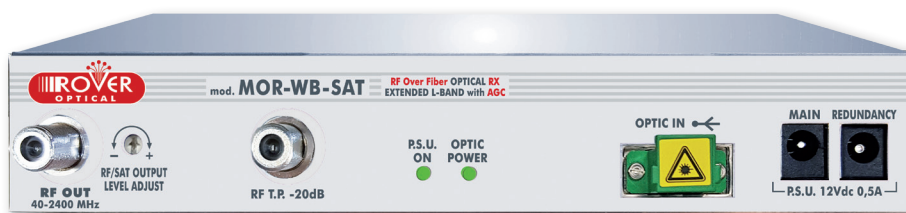
The hazard level is based on radiation that could become accessible under reasonable foreseeable circumstances, e.g. disconnected fiber connector, fiber cable break.

Both levels are documented in the according operating manual of the device and with a laser safety label on the device.

The device may be integrated in an optical fiber communication system (OFCS) complying with IEC 60825-2.

For subsequent accessible locations within the OFCS, the operator of the OFCS is obliged to assign appropriate hazard levels and to install applicable laser safety measures according to IEC 60825-2.

## MOR WB-SAT

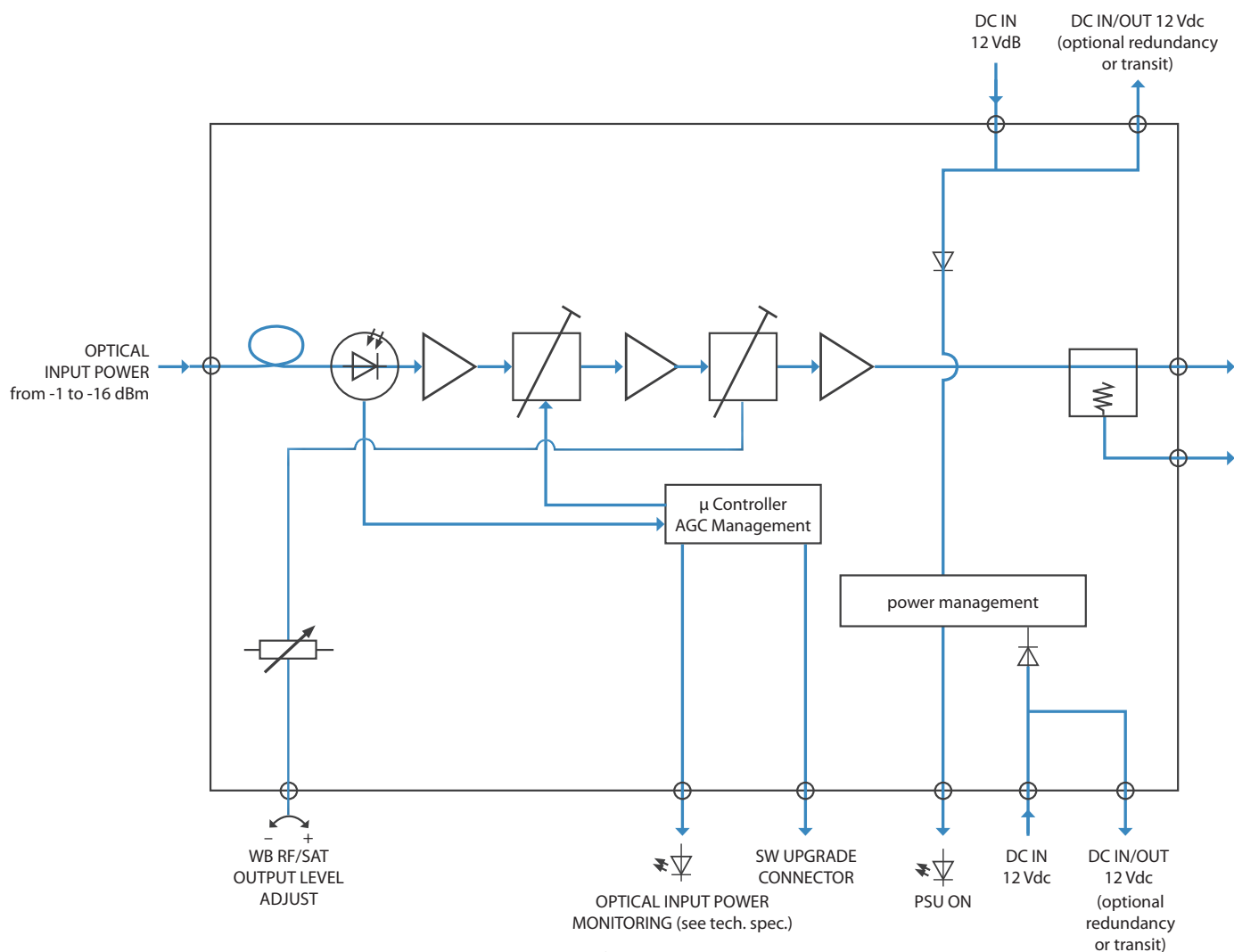


## APPLICATIONS &amp; MAIN FEATURES

- Automatic Optical Gain Control
- Ultra low Noise Optical Receiver
- Ultra Wide Range Optical Input Power
- Optical input power LED indication
- For combined Optical & RF distribution
- Analog & Digital SAT Wide Band Receiver
- High RF/SAT out level & Low IMD distortion
- Constant RF/SAT out level from -1 to -15 dBm ( $\pm 0$  to -16 max) Optical input PWR, thanks to the microprocessor controlled AGC
- Adjustable RF/SAT Output levels
- Compact modular Box

## MOR-WB-SAT - BLOCK DIAGRAM

on REAR PANEL



on FRONT PANEL

## OPTICAL

- Optical Wavelength : 1.280/1610 nm (typ. 1310 or 1550)
- Optical Input pwr Range : - 1 to -15 dBm (max  $\pm 0$  to -17)
- Optical Input power indication : Led: Green, Yellow, Red (see below)
- Optical Return Loss : 45 dB
- Optical Connector : SC/APC

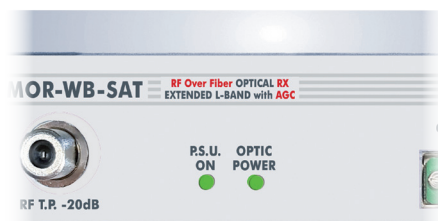
## RF SAT WB

- Frequency Range : 50-2.400 MHz
- Receiver Noise Input :  $5 \pm 1$  pA  $\sqrt{\text{Hz}}$
- RFOut Level : \*  $95 \pm 3$  dBuV with -20 dB Test Point output
- RF Gain : 28 dB adjustable
- RF flatness :  $\pm 1,5$  dB typ, 2,5 max
- RF Impedance :  $75 \Omega$
- RF Output connector : male "F"
- RF Return Loss 50-900 MHz : 12 dB, typ. 14 max
- RF Return Loss 900-2.400 MHz : 10 dB, typ. 12 max
- Operating temp. Range :  $-20$  to  $+60^\circ\text{C}$
- Storage temperature Range :  $-40$  to  $+85^\circ\text{C}$

\* Stable RF OUT level with Optical AGC, from -1 to -15 dBm. The RF/SAT input level is normally set in the Optical TX 10 dB lower than TV level, the RF level is measured on a single Channel and single Transponder.

## DIAGNOSTIC LEDs INDICATIONS

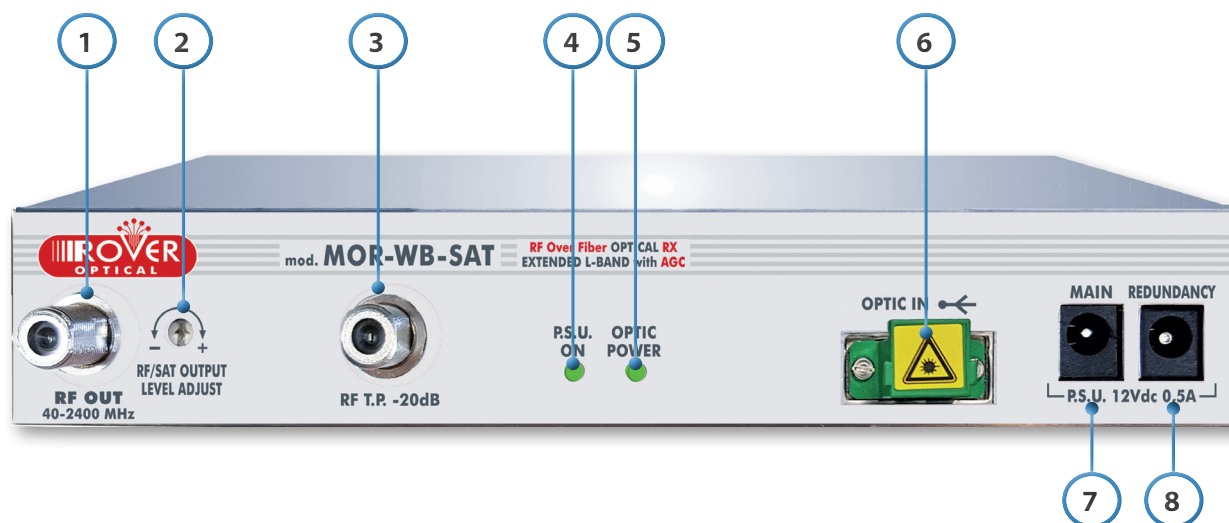
- OPTIC INPUT POWER MONITORING:
  - Too High : RED Led Flashing (over -1 dBm)
  - Normal : GREEN Led (from -1 to -15 dBm)
  - Low : YELLOW Led (from -15 to -17 dBm)
  - Too low : RED Led (below -17 dBm)
- 12 Vdc PSU : Green LED



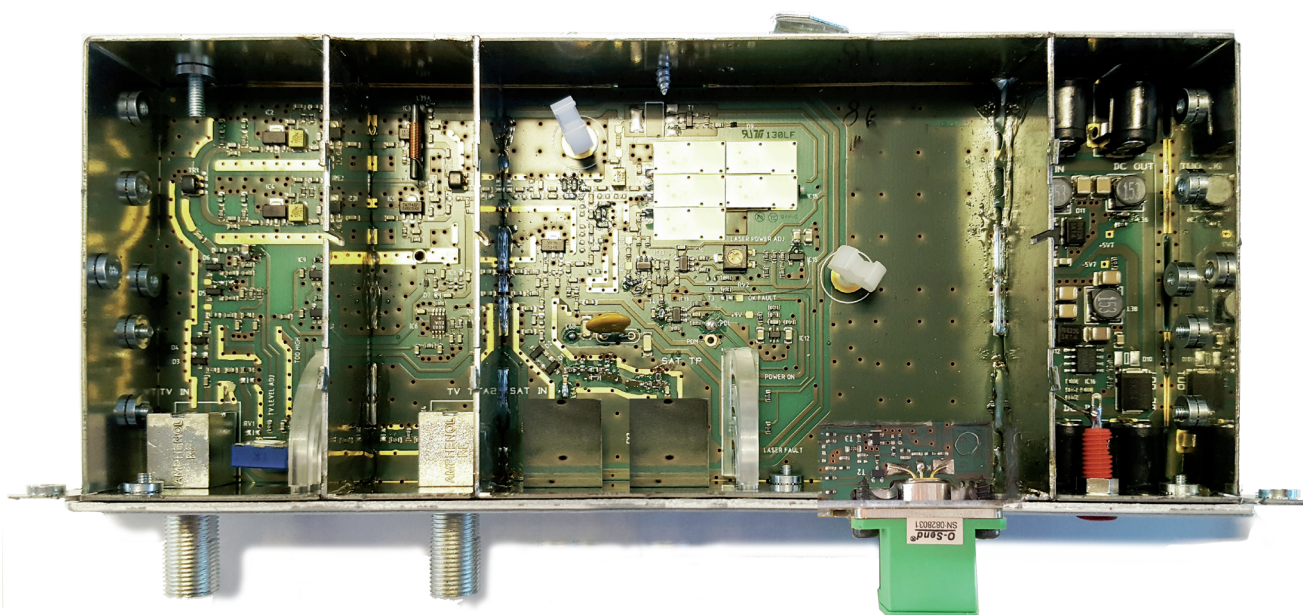
## GENERAL

- PSU Voltage : 12 Vdc (max 18)
- PSU connector diameter : 2,5 / 5,5 mm
- Power Consumption "AOR-STC95" : 140 mA
- Environment : Indoor use (opt. cabinet for Outdoor use)
- Dimensions : 11 x 15 x 5 cm
- Assembling type : 19" Rack with opt. front panel, or DIN Rail, or wall mount, or Outdoor opt. Cabinet
- Weight : 300 g

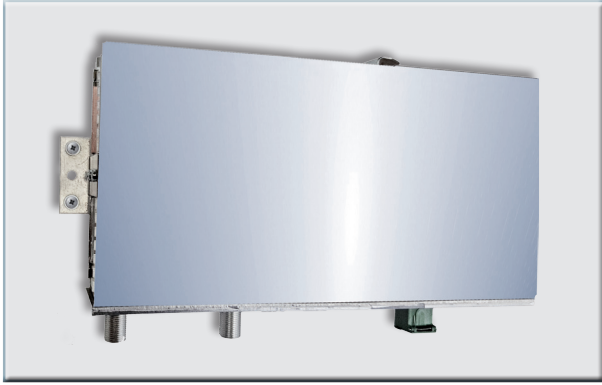




- |  |  |
|--|--|
| 1. WB RF/SAT Output 50-2.400 MHz           | 5. Optical Input Power monitoring Led            |
| 2. RF/SAT output level adjust gain trimmer | 6. Optical Input connector, SC/APC, with shutter |
| 3. RF/SAT Output level Test point - 20 dB  | 7. PSU Input 12 V d.c.                           |
| 4. PSU Power ON Led indications            | 8. PSU REDUNDANCY or TRANSIT 12 Vdc              |



## ASSEMBLING EXAMPLES



FLAT WALL ASSEMBLING



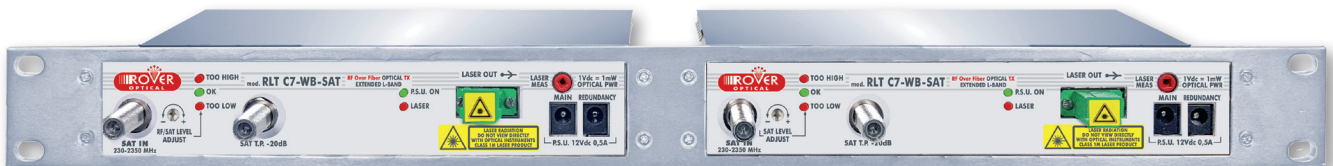
FLAG WALL ASSEMBLING



MULTIPLE DIN RAIL ASSEMBLING



OUTDOOR ENCLOSURE  
FOR RF L BAND OVER FIBER SYSTEM



N° 2 OPTICAL TX mod. "RLT-C7-WB-SAT" IN 1 U 19" RACK



N° 1 OPTICAL TX mod. "RLT-C7-WB-SAT"  
+ N° 1 OPTICAL RX mod. "MOR-ST-90" IN 1 U 19" RACK

## ROVER OPTICAL PRODUCTS RANGE

TX

### RLT-C9



**CWDM** HIGH POWER, ULTRA WIDE BAND CATV & SAT  
47-2.700 MHZ OPTICAL LASER TRANSMITTER 9 dBm

SWITCH

### ROS-2



REDUNDANCY OPTICAL SWITCH

TX

### RLT-D10



**DWDM** HIGH POWER, ULTRA WIDE BAND CATV & SAT  
47-2.800 MHZ OPTICAL LASER TRANSMITTER 10 dBm

SAT  
PROC.

### RSP-30-4/8



WIDE BAND SATELLITE TRANSPONDER  
PROCESSOR FOR NEW EXTENDED BAND LNB  
WITH 8 INPUT FROM 250 TO 2.350 MHZ

EDFA

### REA-20



EDFA OPTICAL AMPLIFIER 20 dBm, FROM 1 TO 8 OUTPUT

### RLT-C7



MODULAR OPTICAL  
LASER TRANSMITTER 7 dBm

### REA-C20



MODULAR EDFA OPTICAL  
AMPLIFIER 20 dBm

### RLT-C7-WB-SAT



OPTICAL TX EXT. L-BAND

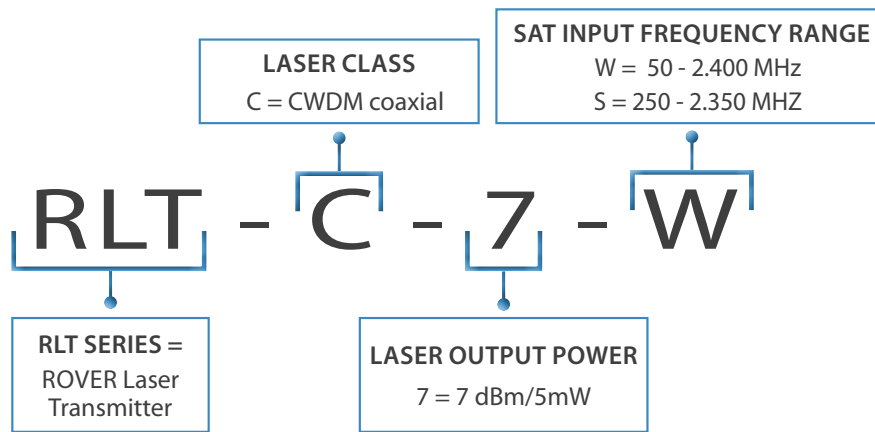
### MOR-WB-SAT



OPTICAL RX EXT. L-BAND WITH AGC

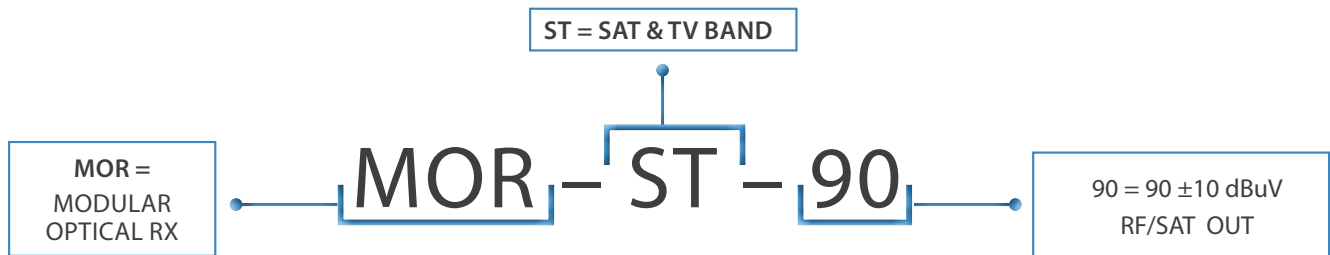
## NOTES





## ORDERING MODEL / CODE EXAMPLE

MODEL / CODE	DESCRIPTION	APPLICATION
RLT-C-7-W	CWDM Laser transmitter with DFB LASER, 7 dBm power, 1 front panel LASER out, RF/SAT 50-2.400 MHz input frequency range	L-Band RF Over Fiber SAT Link System for standard & new Wide Band LNB



## ORDERING MODEL / CODE EXAMPLE

MODEL / CODE	DESCRIPTION	APPLICATION
MOR-ST-90	AGC High level Modular Optical Receiver, 95 ± 2 dBuV, constant output RF level, from -1 to -15 dBm Optical power INPUT	L-Band RF Over Fiber SAT Link System for standard & new Wide Band LNB

## SUPPLIED ACCESSORIES

MODEL / CODE	DESCRIPTION	APPLICATION
P.S.U.	IN 100/230 Vac OUT 12 Vdc 1A	

## OPTIONS

ITEM	DESCRIPTION	CODE DEFINITION
TRASF-12V-1A0-G-EU	Redundancy PSU adapter IN 100/230 Vac OUT 12 Vdc 1A	/
19" RACK ASSEMBLY	1 u 19" RACK Front Panel ASSEMBLY can carry up 2 modules	RAP-2
OUTDOOR CABINET	Rain proof cabinet for Outdoor Installations	/

V1,4 7-1-17



Product  
made in Italy by  
Rover Broadcast.com



Specifications and features are subject to change without notice.

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