

WISI LR 93 x xxxx

RFoG Node

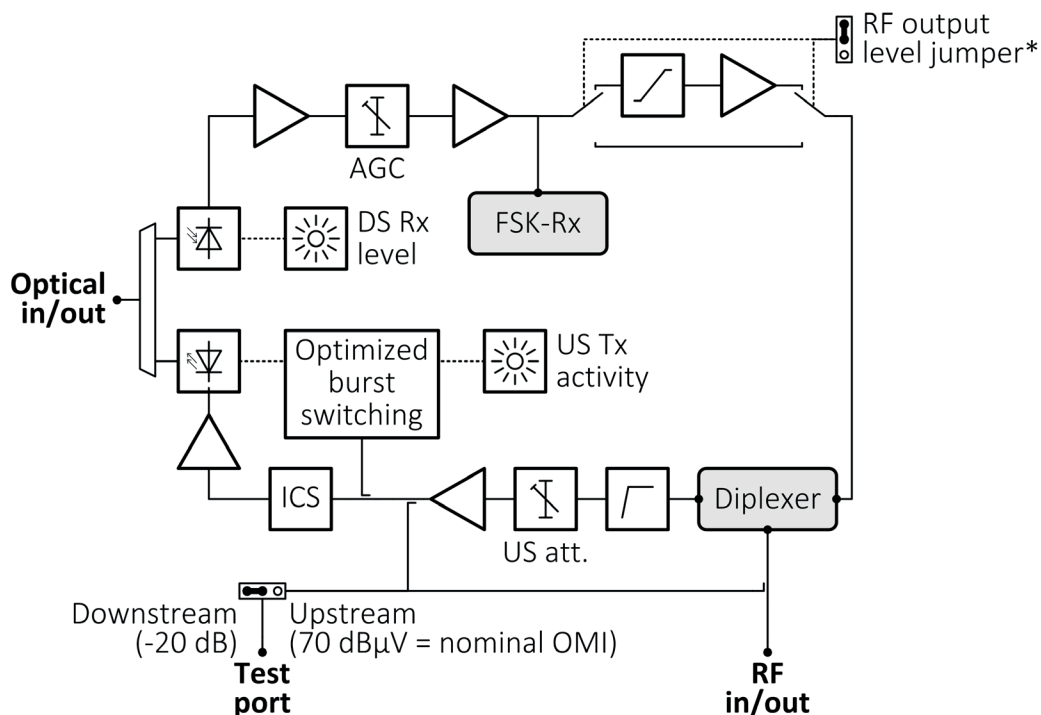


At a glance:

- Compact node for RFoG-systems
- DFB laser for upstream transmission with high signal quality
- According to SCTE ISP SP 910
- Extremely low-noise receiver
- Optical ALC for automatic control of downstream output level
- Optimized Burst-Switching to comply with DOCSIS 3.1
- Pluggable RF diplexers enable step-by-step migration towards DOCSIS 3.1

Description

The LR93 x xxxx is a fully DOCSIS 3.1-compliant RFoG transceiver for use in Passive Optical Networks (PON). For an easy migration towards DOCSIS 3.1, the diplex filters are pluggable. A LED displays whether the optical input power is within the target range (green) or outside (red). Within that range, the included Automatic Level Control (ALC) provides a constant RF output level, which is either 80 dB μ V flat or 97 dB μ V at 5 dB slope. The return path transmitter operates in „Burst Mode“ which activates the optical transmitter only when data is sent. In the remaining time, the transmission power remains at minimum level, to connect many nodes to the same upstream receiver without noise accumulation.



WISI Communications GmbH & Co. KG

Wilhelm-Sihn-Str. 5-7
75223 Niefern-Oeschelbronn, Germany

Phone: +49 7233 66-280, Fax: -350
E-Mail: export@wisi.de

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Technical data

Downstream	
Wavelength	1535...1565 nm
Output level L/H (4% OMI)	80 dBμV (flat)/ 97 dBμV (5 dB slope)/ 95 dBμV (5 dB slope, „v“ option only)
Signal Quality (all QAM) 121 QAM CH	MER >41dB, BER < 1e-9 (measured @ 2,5% OMI, 35 km fiber, -3 dBm @ receiver input)
Optical input power	-6...+3 dBm
Frequency range	85...1218 MHz (depending on diplexer)
Return loss	≥18 dB (-1dB/Octave, min. 14 dB)
Frequency Response (O-E)	±0,75 dB
Equivalent input noise density	<4 pA/√Hz
Test point	-20 dB
Upstream	
Optical output power	3 dBm (±1 dB)
Wavelengths	1270...1610 nm (except 1550 nm) (CWDM grid)
Wavelengths incl. xPON WDM filter	1610 nm
Frequency range	15...204 MHz (depending on diplexer)
Return loss	≥18 dB (-1dB/Octave, min. 14 dB)
Frequency Response (O-E)	±0,75 dB
Attenuator range	0...30 (2 dB-steps)
RF input level	70...100 dBμV/ 75...100 dBμV („v“ option only)
Upstream test point (default)	70 dBμV (nominal OMI), 75 dBμV (nominal OMI, „v“ option only)
PON-WDM	
PON wavelengths	1260...1500 nm
Insertion loss	<1 dB
Isolation COM -> RF downstream	>30 dB
Isolation COM -> PON	>15 dB
Isolation PON -> RF-Downstream	>50 dB
Connectors	
SC/APC connectors	1/2 pcs. (Simplex),(2 pcs. if WDM Filter incl.)
LC/APC connector	1 pcs. (Duplex)
F-connectors	2 pcs. (RF in/output, test port)
General data	
Supply voltage	230 V AC (50/60 Hz)
Power consumption	max. <6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Ambient temperature	-10...+50 °C
Protection class	IP 20
EMC	EN 50083-2
Impedance	75 Ω

Technical data

Monitoring	
Optical RX Level LED colour	red: < -6 dBm / > +3 dBm; green: -6 dBm ...+3 dBm
TX activity LED	off: laser off; static: laser permanently on; flashing green: traffic detected
Accessories	XE 50 B 0650, XE 50 B 0850, XE 50 B 2040, XE 50 B 1170

LR 9X X XXXX

Options:

- 1 – 15% OMI, default (no VT21 module socket)
- 5 – 8% OMI (no VT21 module socket)
- 6 – 8% OMI, VT21 module socket (empty)
- 7 – 8% OMI, VT21B 862 MHz FSK module incl.
- A – 15% OMI, VT21 module socket (empty)
- B – 15% OMI, VT21T - tunable FSK module incl.
- V – 15% OMI, VT21 module socket (empty)

Diplexer:

- 1 – default (without)
- 2 – XE50B0650 - 65/85
- 3 – XE50B0850 - 85/105
- 4 – XE50B1170 - 117/149
- 5 – XE50B2040 - 204/258

Upstream Wavelength:

- 1 – 1270 nm
- 2 – 1290 nm
- 3 – 1310 nm
- 4 – 1330 nm
- 5 – 1350 nm
- 6 – 1370 nm
- 7 – 1390 nm
- 8 – 1410 nm
- 9 – 1430 nm
- A – 1450 nm
- B – 1470 nm
- C – 1490 nm
- D – 1510 nm
- E – 1530 nm (on request only)
- F – 1570 nm (on request only)
- G – 1590 nm
- H – 1610 nm

- U – 1510 nm (incl. WDM filter)
- V – 1530 nm (incl. WDM filter, on request only)
- W – 1570 nm (incl. WDM filter, on request only)
- X – 1590 nm (incl. WDM filter)
- Y – 1610 nm (incl. WDM filter)

Power Supply:

- 2 – local powered 230V AC EU
- 3 – local powered 230V AC UK
- 6 – local powered (230V AC, req. LR PS x230)
flat housing (only on special request)
- C – coax remote feeding 12V DC
(requires DL01A & LR PS x230)
- D – coax remote feeding 12V DC
(requires DL01A & LR PS x230)
flat housing (only on special request)

Output Power Level:

- _ – default (switchable L/H SC/APC)
- U – switchable L/H (LC/APC)
- L – low output power (SC/APC)
- H – high output power (SC/APC)
- K – low output power (LC/APC)
- G – high output power (LC/APC)

Typ of Node:

- 3 – Single Fiber RFoG Node