Preliminary - Product Information

OPTOPUS
HIGH DENSITY OPTICAL PLATFORM

WISI

ELPAS

Fiber Nodes for HFC/RFoG & RF Overlay

LR 22, LR 23 & LR 27

LR 2x node series

The LR 2x series of fiber nodes are optical nodes for HFC, RFoG or RF Overlay applications.

They can be operated in RFoG (burst-mode) and HFC (continuous wave mode).

Highlights

- HIGH RF OUTPUT LEVEL OF 117 dBµV FOR COAXIAL DISTRIBUTION OF FTTC OR FTTB SIGNALS
- DOCSIS-3.1-COMPLIANT FREQUENCY RANGE: DOWNSTREAM UP TO 1.2 GHZ, UPSTREAM UP TO 204 MHZ
- DEVICE CONTROL VIA BLUETOOTH APP OR VIA HANDSET OH 41

Features

- PLUGGABLE DIPLEXERS ENABLE MIGRATION TOWARDS DOCSIS 3.1 UPSTREAM
- PLUGGABLE OUTPUT SPLITTERS / TAPS FOR FLEXIBLE CONFIGURATION OF THE TWO RF OUTPUTS
- OPTIONAL: REMOTE CONTROL COMPLIANT TO IEC 60728-14 VIA FSK RECEIVER MODULE
- COMPACT HOUSING FOR OUTDOOR DEPLOYMENT (IP66)
- POWERED LOCALLY (LR 2X 2XXX) OR REMOTELY (LR 2X 6XXX)
- OPTICAL ALC FOR REGULATED OUTPUT LEVELS
- TRAFFIC LED INDICATOR

Technical Information

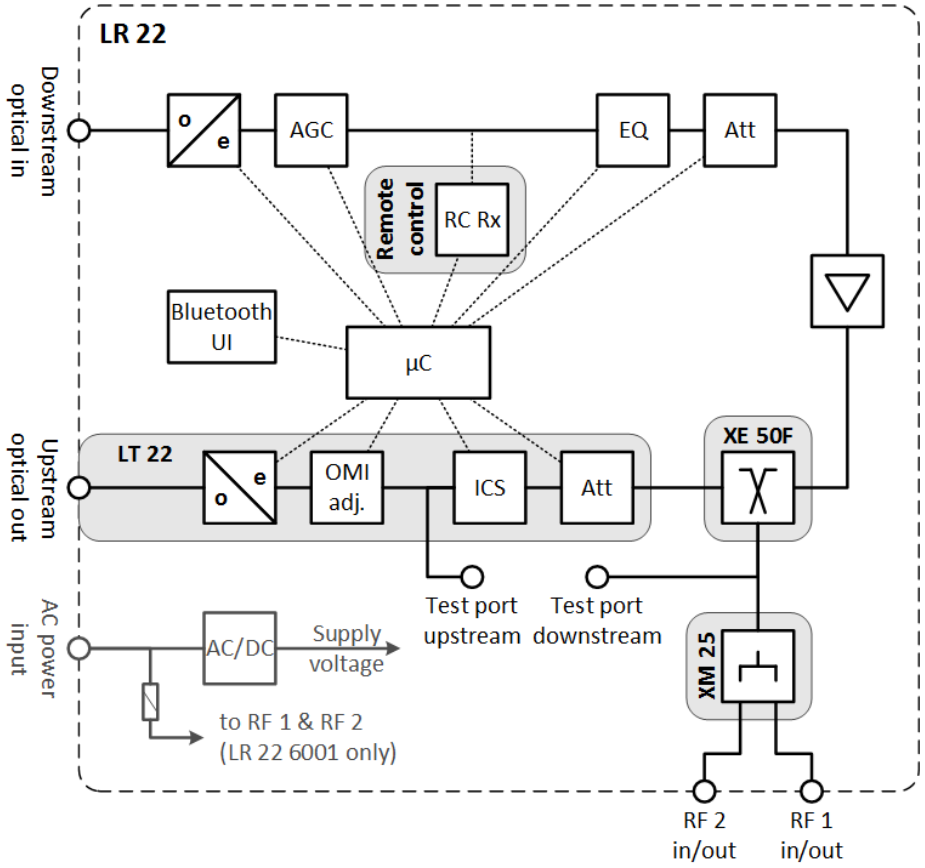
Downstream			
	LR 22	**LR 23**	**LR 27**
Optical input power	-8 ... +2 dBm		
Wavelength range for downstream	1260 ... 1610 nm	1303 ... 1317 nm	1543.5 ... 1556.5 nm
Frequency range downstream	47 ... 1218 MHz (depending on diplexer)	85 ... 1218 MHz (depending on diplexer)	85 ... 1218 MHz (depending on diplexer)
Equivalent input noise density	< 4.5 pA/√Hz		
Attenuator downstream	0 ... 20 dB (0,5 dB-steps)		
Equalizer downstream	0 ... 15 dB (0,5 dB-steps)		
RF output level (PAL), sloped, single output CSO&CTB >60dB	117 dBµV (CENELEC42, 6dB slope)/ 110 dBµV (30 PAL CHs + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)		
RF output level, flat	114 dBµV (CENELEC42, CSO&CTB >60 dB, 1 output)		
Output test point	-20 dB		
RF return loss	> 18 dB (-1dB/Octave min 14dB)		
Optical return loss	> 40 dB		

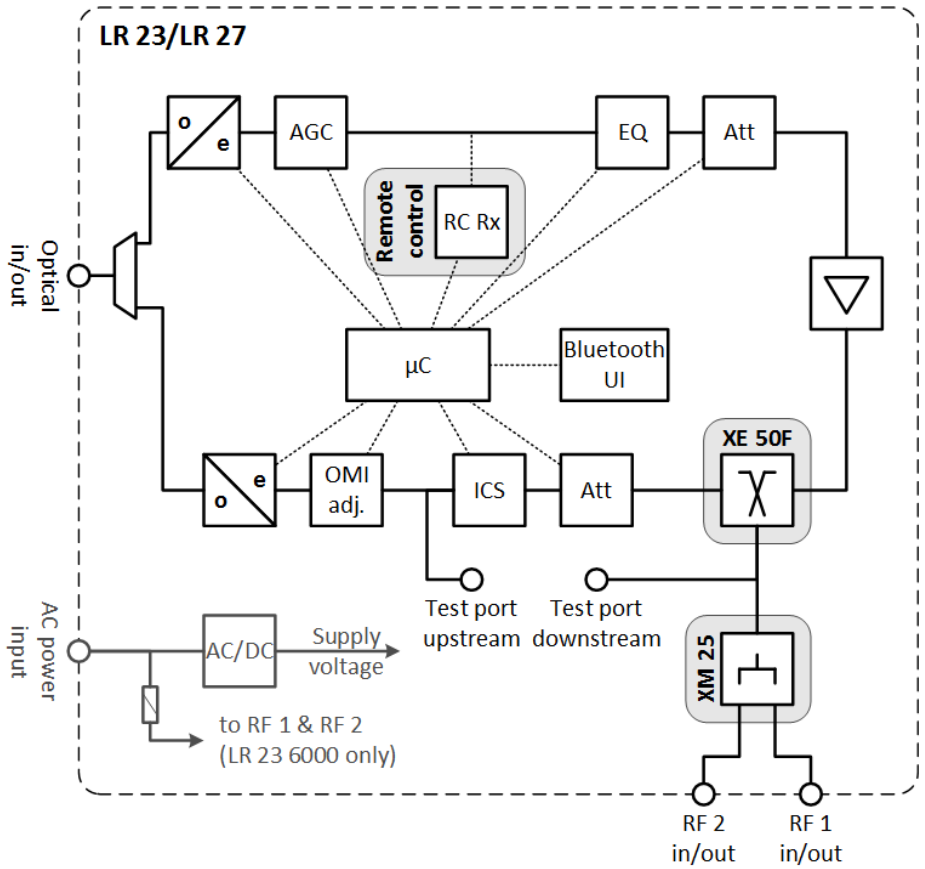
Upstream			
	LR 22 (with LT 22)	**LR 23**	**LR 27**
Optical output power	+3 dBm		
Wavelength for upstream	1270 ... 1610 nm (CWDM grid, corresponding to order code)	1270 ... 1610 nm (CWDM grid, corresponding to order code)	1270 ... 1610 nm (CWDM grid, corresponding to order code)
Frequency range upstream	5 ... 204 MHz (depending on diplexer)		
RF input level	75 dBµV (5% OMI)	70 dBµV (15% OMI)	70 dBµV (15% OMI)
Attenuator Range	3% ... 10% OMI Attenuation	0 ... 30 dB Input Attenuation	0 ... 30 dB Input Attenuation
Upstream test point	75 dBµV (for 5% OMI per channel)	70 dBµV (for 15% OMI per channel)	70 dBµV (for 15% OMI per channel)
Ingress Control Switch (ICS)	0 / -6 / -45 dB		
RF return loss	> 18 dB		
Optical return loss	> 40 dB		
Laser Mode	CW mode	CW or Burst mode	CW or Burst mode

Interfaces			
	LR 22 (incl. LT 22)	**LR 23**	**LR 27**
SC/APC connectors	2 pcs. (Downstream input & upstream output separated)	1 pcs. (Downstream input & upstream output)	1 pcs. (Downstream input & upstream output)
PG11 connectors	4 pcs. (2x RF input/output)		

User interfaces			
	LR 22 (incl. LT 22)	**LR 23**	**LR 27**
Status LED downstream	Optical input power		
Status LED upstream	Laser activity	Traffic Indicator LED	
Management ports RJ11	1 pcs. (for handset OH 41)		
Bluetooth version	4.0 / LE		
Bluetooth profiles	GATT		
Bluetooth app compatibility	Android 4.3 or higher		
Remotely controlled via FSK	DS on/off, US on/off, ICS 0/-6/-45. (with optional Rx module)		

Block diagramm





Ordering Information

LR 2X XXX1

Upstream Wavelength:
- 00 – LR 22 DS only
- 27 – 1270 nm
- 29 – 1290 nm
- 31 – 1310 nm (LR 27 only)
- 33 – 1330 nm
- 35 – 1350 nm
- 37 – 1370 nm
- 39 – 1390 nm
- 41 – 1410 nm
- 43 – 1430 nm
- 45 – 1450 nm
- 47 – 1470 nm
- 49 – 1490 nm
- 51 – 1510 nm
- 53 – 1530 nm
- 55 – 1550 nm (LR 23 only)
- 57 – 1570 nm
- 59 – 1590 nm
- 61 – 1610 nm

Power Supply:
- 2 – 230V local powered
- 6 – 65V remote powered

Typ of Node:
- 2 – Dual Fiber HFC Node (with LT 22)
- 3 – Single Fiber RFoG Node (DS 1310 nm)
- 7 – Single Fiber RFoG Node (Standard)

LT 22 3XX1

Upstream Wavelength:
- 27 – 1270 nm
- 29 – 1290 nm
- 31 – 1310 nm
- 33 – 1330 nm
- 35 – 1350 nm
- 37 – 1370 nm
- 39 – 1390 nm
- 41 – 1410 nm
- 43 – 1430 nm
- 45 – 1450 nm
- 47 – 1470 nm
- 49 – 1490 nm
- 51 – 1510 nm
- 53 – 1530 nm
- 55 – 1550 nm
- 57 – 1570 nm
- 59 – 1590 nm
- 61 – 1610 nm

Output Power:
- 3 – 3 dBm

WISI Communications GmbH & Co. KG
Empfangs- und Verteiltechnik
Wilhelm-Sihn-Strasse 5-7
75223 Niefern-Öschelbronn
Germany

Inland: Phone +49 7233-66-0 Fax -320
Export: Phone +49 7233-66-280 Fax -320
Email: info@wisi.de