

1 GHz Customer Premise RFoG ONU with 1G/10G PON Pass Through Port

LBN500AC SERIES



Lindsay's RFoG product family includes several optical network units (ONUs). The LBN500AC series is our third generation RFoG premise ONU with xPON pass through port, supporting the overlay of GEAPON and 10G EPON with RFoG to coexist on the same fiber network. The LBN500AC ONU incorporates the necessary filtering for proper rejection between the RFoG and 1G/10G PON wavelengths.



LBN500AC
(front angled view)

The LBN500AC ONU supports 42/54 MHz, 65/85 MHz and 85/102 MHz frequency splits with the downstream frequency band out to 1002 MHz.

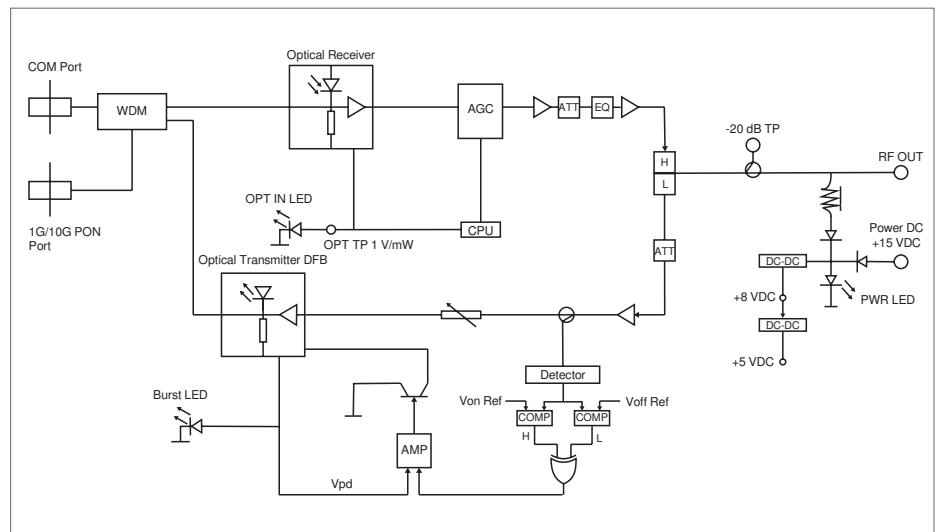
- 1610 nm upstream optical wavelength
- 1550 nm downstream optical wavelength

The LBN500AC series comes standard with Automatic Gain Control (AGC) and burst-mode return lasers (2 or 3 mW).

FEATURES

- Input Optical Wavelength: 1550 nm
- Optical AGC: -6 to +2 dBm
- Thermally stable DFB burst-mode laser
- Transmit Wavelength: 1610 nm
- Downstream Bandwidth: 102-1002 MHz
- Upstream Bandwidth: 5-85 MHz
- Output RF Level: 20 dBmV at 1002 MHz
- Input RF Level: 20-40 dBmV/CH
- RF Bi-directional Test Point: -20 dB
- Supply Voltage: 12-15 VDC
- Pwr-On, Opt I/P, Opt TX LED indicators

FUNCTIONAL SCHEMATIC



ORDERING INFORMATION

	Fwd Output Level	Total Return Input Power	Laser Type	TX Power	Optical Connector	TX Wavelength	Sub-Split	Power Adaptor
LBN500AC	xx	xx	D	x	xx	xx	xx	xx
	20 = 20 dBmV	25 = 25 dBmV	D = DFB	2 = 2 mW	SA = SC/APC	61 = 1610 nm	45 = 42/54	00 = None
	36 = 36 dBmV	30 = 30 dBmV		3 = 3 mW	SU = SC/UPC		68 = 65/85	01 = N. America
							81 = 85/102	02 = Europe



SPECIFICATIONS

Parameter	Specifications		
	Min	Typ	Max
Forward Receiver			
Optical Receive Wavelength	1540-1565 nm		
Monitor Voltage	1 V/mW		
Optical Input Power	Optical AGC	-6 to +2 dBm	
RFoG Path Rejection of PON Wavelengths	1260-1540 nm	≤ -30 dB	
	1565-1598 nm	≤ -30 dB	
	1625-1680 nm	≤ -30 dB	
PON Path Rejection of RFoG Wavelengths	1551/1611 nm	≤ -25 dB	
PON Pass Through Port Loss	1G/10G	1 dB	
RF Frequency Range ⁽¹⁾	102-1002 MHz		
Flatness of Frequency Response	f = fmin-1002 MHz	± 1 dB	
Output Return Loss	f = fmin-1002 MHz	16 dB	
Reference Output Level ⁽⁴⁾	@ 1000 MHz (± 2 dB)	20 dBmV	
Slope	(± 1 dB)	5 dB	
Optical Input Return Loss	45 dB		
C/N ⁽²⁾	50 dB	51 dB	
CTB ⁽²⁾	-65 dB		
CSO ⁽²⁾	-60 dB		
Return Transmitter			
Optical Wavelength	1610 nm		
Optical Output Power	2 mW		3 mW
RF Input Level	Total power	20-40 dBmV	
Dynamic Input Range ⁽³⁾		15 dB	
Frequency Range ⁽¹⁾	5 MHz		85 MHz
Flatness of Frequency Response	f = 5 MHz to fmax	± 0.75 dB	± 1 dB
Input Return Loss	f = 5 MHz to fmax	16 dB	
Optical Output Return Loss	45 dB		
TX OMI ⁽⁵⁾	35%		
Laser ON	± 1.5 dB	15 dBmV	
Laser OFF	± 1.5 dB	-4 dBmV	
Power, Environmental & Physical			
Total Power Consumption	15 VDC power pack	≤ 5.2 W	
Operating Humidity	5-95%, non-condensing		
Operating Temperature	-40° C to +65° C (-40° F to +149° F)		
Dimensions (H x W x D)	4.1"H x 6.7"W x 1.5"D (10.4H x 17.0W x 3.9D cm)		
Weight	0.3 kg (0.7 lb)		

NOTES:

- (1) Other duplex splits available: 42/54 MHz
- (2) -1 dBm optical input; 3.5% OMI/CH; 54-550 MHz analog channels & digital compressed channels above 550-1002 MHz at levels 6 dB below equivalent video
- (3) NPR at 30 dB. Measured using a receiver with an equivalent input noise (EIN) of <2.5 pA/Hz0.5 with a link budget of 23 dB (20 km fiber + passive loss). NPR test performed with 80 MHz noise loading
- (4) 3.5% OMI/CH
- (5) SCTE 174 2010 with a single 39 dBmV tone; 35% ± 3 dB