

# 1.2 GHz 8-Port OBI-Free RFoG ONU (Fiber to the Tap - FTTH)

## LBON820ACT SERIES

LINDSAY  
BROADBAND

Lindsay's LBON820ACT RFoG node is a new member to the family of bi-directional RFoG optical nodes using WDM transmission, the ideal platform for delivering upstream and downstream DOCSIS® voice, video, and high-speed data services. The LBON820ACT ONU is an outdoor-hardened, 8-port optical node (strand, pedestal, or wall-mounted) designed for Fiber to the Tap (FTTH). Operators can use this device in place of a coax cable TV multitap to extend fiber to each tap location in brownfield applications.

It is capable of in-field, upgradeable bandsplits (42/54 MHz, 85/102 MHz, and 204/258 MHz). Downstream wavelength is 1550 nm and OBI-free upstream is 1610 nm (eight selectable wavelengths separated by 0.25 nm).

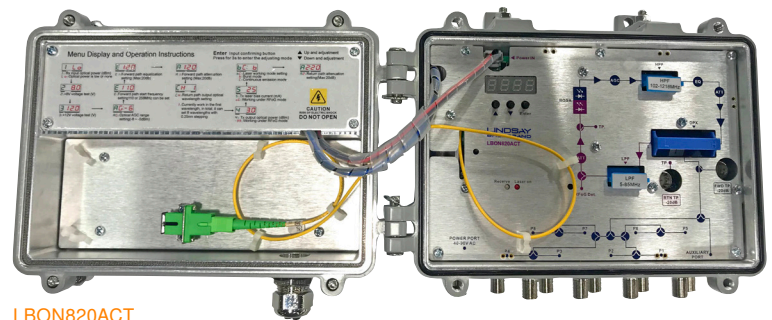
The LBON820ACT ONU has electronically adjustable controls for forward attenuator, forward equalizer and reverse attenuator. It is powered via HFC power (40-90 VAC) or 100-240 VAC mains power.



LBON820ACT  
(front angled view)

## FEATURES

- 1.2 GHz bandwidth
- In-field Upgradeable Bandsplits: 42/54, 85/102 or 204/258 MHz
- Optical Input Wavelength: 1550 ± 10 nm
- Optical AGC: -6 to +2 dBm
- Electronically adjustable attenuation & slope
- RF Output: 25 dBmV from tap ports
- Auxiliary port for connecting up to eight more subscribers
- -20 dB RF test points
- Selectable CW or burst-mode laser
- Eight selectable wavelengths separated by 0.25 nm
- Aluminum diecast housing
- Strand, wall or pedestal-mounted
- Low power consumption
- Operating Temperature: -40°C to +60°C (-40°F to +140°F)

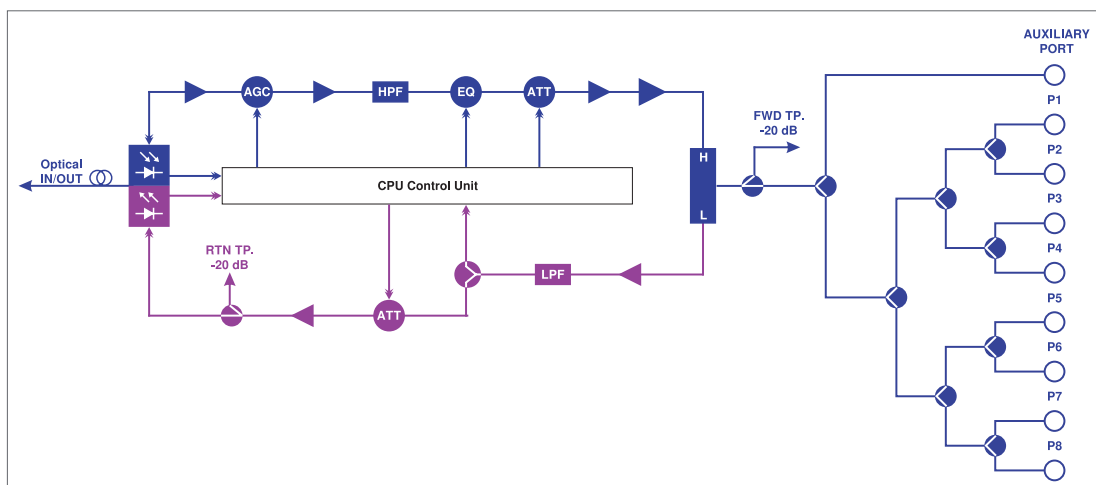


LBON820ACT  
(open view)



LBON820ACT  
(rear view)

## FUNCTIONAL SCHEMATIC





## SPECIFICATIONS

Parameter	Specification		
	Min	Typ	Max
<b>Forward Receiver</b>			
Optical Receive Wavelength	1540-1560 nm		
Optical Input Power	Optical AGC	-6 to +2 dBm	
Optical Return Loss	45 dB Min		
RF Frequency Range <sup>(1)</sup>	fmin		1218 MHz
Flatness of Frequency Response	f = fmin-1218 MHz	± 1 dB	
Output Return Loss	f = fmin-1218 MHz	16 dB	
Output Level per Tap Port <sup>(2)</sup>	@ 1218 MHz (± 2 dB)	25 dBmV	
Output Level from Auxillary Port <sup>(2)</sup>	@ 1218 MHz (± 2 dB)	38 dBmV	
Adjustable Slope (RF frequency range)	± 1 dB	20 dB	
Port-to-Port Isolation	25 dB		
Forward RF Output Test Point with Respect to Auxillary Port	± 1.5 dB	-20 dB	
C/N <sup>(2)</sup>	50 dB	51 dB	
CTB <sup>(2)</sup>			-65 dB
CSO <sup>(2)</sup>			-60 dB
<b>Return Transmitter</b>			
Optical Wavelength <sup>(3)</sup>	1610 ± 6.5 nm		
Optical Wavelength Separation <sup>(3)</sup>	0.25 nm		
Optical Wavelength Drift over Temperature	≤ 0.5 nm		
Optical Output Power		2 mW	
RF Input Level into the Tap Port	Total power	20-40 dBmV	
Dynamic Input Range <sup>(4)</sup>		15 dB	
RF Frequency Range <sup>(1)</sup>	5 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 Return Loss	45 dB Min		
TX OMI <sup>(5)</sup>		35%	
Laser Turn ON Level	from subscriber port (± 1.5 dB)	26 dBmV	
Laser Turn OFF Level	from subscriber port (± 1.5 dB)	7 dBmV	
Laser Turn ON Time		1.3 μs	
Laser Turn OFF Time		1.6 μs	
<b>Power, Environmental &amp; Physical</b>			
Total Power Consumption	≤ 20 W		
Powering	40-90 VAC HFC or 100-240 VAC mains powering		
Operating Temperature	-40°C to +60°C (-40°F to +140°F)		
Humidity	95%, non-condensing		
Dimensions (H x W x D)	7.5"H x 9.0"W x 4.1"D (19.0xH x 23.0W x 10.5D cm)		
Weight	5.1 lb (2.3 kg)		

### NOTES:

- (1) Diplex splits available: fmin = 42, 85 or 204 MHz; fmax = 54, 102 MHz or 258 MHz. Field-upgradeable diplex filter
- (2) RF output levels refer to analog levels, for digital assume -6 dB. Link parameters: -1 dBm optical input, 3.5% OMI/channel, 54-550 MHz analog channels & digital channels above 550 MHz
- (3) Eight user-selectable optical wavelengths separated by 0.25 nm to choose from 1603.5-1616.5 nm
- (4) NPR @ 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)
- (5) SCTE 174 2018 with a 39 dBmV single tone input from subscriber port. 35% ± 3 dB OMI



**ORDERING INFORMATION**

	Fwd Output Level per Port	Total Return Input Power	Laser Type	TX Power	Optical Connector	TX Wavelength	Sub-Split	Powering	Power Adapter <sup>(1)</sup>
<b>LBON820ACT</b>	<b>25</b>	<b>35</b>	<b>D</b>	<b>2</b>	<b>SA</b>	<b>61</b>	<b>xx</b>	<b>x</b>	<b>xx</b>
	25 = 25 dBmV	35 = 35 dBmV	D = DFB	2 = 2 mW	SA = SC/APC	61 = 1610 nm	45 = 42/54 81 = 85/102 22 = 204/258	H = 40-90 VAC HFC M = 100-240 VAC	00 = None 01 = N. America 02 = Europe

**NOTE:**

(1) For AC mains powered in North America, select M for Powering & 01 for Power Adapter

**EXAMPLES:**

**Part # LBON820ACT-2535-D2-SA-61-81-H-00**

8-port RFoG ONU with 25 dBmV fwd output level per port, 35 dBmV total return input power, DFB laser, 2 mW TX power, SC/APC connector, 1610 nm TX wavelength, 85/102 sub-split, 40-90 VAC HFC powering

**Part # LBON820ACT-2535-D2-SA-61-81-M-01**

8-port RFoG ONU with 25 dBmV fwd output level per port, 35 dBmV total return input power, DFB laser, 2 mW TX power, SC/APC connector, 1610 nm TX wavelength, 85/102 sub-split, 100-240 VAC mains powering, North American power adapter

**Part # LBON820ACT-2535-D2-SA-61-81-M-02**

8-port RFoG ONU with 25 dBmV fwd output level per port, 35 dBmV total return input power, DFB laser, 2 mW TX power, SC/APC connector, 1610 nm TX wavelength, 85/102 sub-split, 100-240 VAC mains powering, European power adapter

Optional Accessories	
Part #	Description
LBON820ACT-DF-45	Diplex filter kit consists of one diplex filter module, one downstream high-pass filter module & one upstream low-pass filter module for 42/54 MHz frequency range
LBON820ACT-DF-81	Diplex filter kit consists of one diplex filter module, one downstream high-pass filter module & one upstream low-pass filter module for 85/102 MHz frequency range
LBON820ACT-DF-22	Diplex filter kit consists of one diplex filter module, one downstream high-pass filter module & one upstream low-pass filter module for 204/258 MHz frequency range



LBON820ACT-DF-45 (side views)



LBON820ACT-DF-81 (side views)



LBON820ACT-DF-22 (side views)