

# OTPN-800-H/L

## PREMISENODE MODEL, CUSTOMER PREMISES HFC/PON OPTICAL NODE/RECEIVER WITH OPTIONAL RETURN TRANSMITTER

### Features / Benefits

- Mid-Level member of the OT *PremiseNode* family: *Cost-Effective, Full-Featured, Field-Upgradable*
- *Choice of two (2) RF Output Levels* (“H” @ +38 dBmV -or- “L” @ +28 dBmV) @ -1 dBm optical input
- “H” Version: incorporates internal Plug-in Equalizer for Slope control; 6 dB @ 870 MHz standard
- “H” Version: utilizes RF Output Level adjustment via internal user-adjustable variable attenuator.  
This version provides the full output level of +38 dBmV at any optical input level from -8 dBm to +2 dBm.
- “L” Version: No Slope or RF Output Level controls (i.e. Slope = 0 dB and RF Out varies with Optical Input)
- *Wide Optical Input Window* (+2 dBm to -8 dBm) @ 1310/1550 nm
- Full CATV Forward Path Bandwidth to **870 MHz** (Analog and QAM Digital)
- *FP, DFB -or- CWDM return laser transmitter options* for Two-Way DOCSIS operation
- *Calibrated Power Meter* (1V/mW) Optical Input power test point
- *Forward and Return external RF test points* (-20 dB)
- *Status LEDs* for optimal Optical Input and Output power ranges and unit Power-On indication
- *+12V<sub>DC</sub> Local Direct or Remote Drop -\*coax powering* via Power Inserter
- *Low Power Consumption* (Rx @ 6 Watts; Rx/Tx @ 7 Watts)
- *> 6 kV surge tolerant RF output* and SMT construction for consistency, reliability & performance
- *Compact (3”x 7”x 2.1”)*, *Lightweight and Rugged* extruded aluminum housing for Easy Installation



The **OLSON TECHNOLOGY, INC. Model OTPN-800-H/L *PremiseNode*** is a compact, cost-effective, full-featured indoor CATV node designed around the very latest optical receiver technology to reliably deliver a full slate of multiplexed video, high speed data and telephony services in an HFC or PON broadband CATV environment.

The unit is ideally suited for direct fiber transmission of CATV RF signals in FTTH, FTTX, MDU, industrial, corporate, government, educational, I-Net or traditional HFC applications where a high performance, compact indoor node is required. The unit is constructed with high quality components to enable it to meet or exceed its performance specifications over a wide temperature range in an uncontrolled environment, but it does require protection from the elements. It is configured for desktop, shelf or wall-mounting.

The base **Model OTPN-800-H/L** is a low-profile, rugged stand-alone optical receiver with: wide ranging and exceptional optical sensitivity; excellent CNR/CSO/CTB performance; choice of two (2) RF output levels, and; external RF and optical connections, test points (optical and RF) & LED status indicators. This node also features a factory-installed or field-installable FP, DFB, or CWDM return laser option, resulting in a highly-integrated, small footprint, DOCSIS-compliant two-way node.

The **OTPN-800-H/L** also features a unique provision for flexible +12V<sub>DC</sub> powering of the node, either locally through the “+12V<sub>DC</sub>” port, or remotely “up the coax” through the “RF IN/OUT” port via the Power Inserting Coupler (PIC) provided with the power supply.

The **OTPN-800-H/L** is the perfect companion to the Olson Technology, Inc. *LaserLite* (Models OTOT-870-x & OTOR-300) and *LaserPlus* (Models LP-OT-x and LP-OR) forward transmitter and return receiver product families, but is also designed to mate with 1310nm and 1550nm optical transmitters and return receivers from most leading manufacturers

Quality / Engineering / Innovation

# PremiseNode OTPN-800-H/L

## **SPECIFICATIONS (Forward Optical Receivers: H and L versions)**

<b>RF OUTPUT &amp; PERFORMANCE PARAMETERS:</b> (also see charts on pages 3 & 4)	
Frequency Range ( $\pm 1.0$ dB)	54-870MHz (NTSC) -or- 85-870MHz (PAL)
Output Level (@ -1dBm optical input) *	H: +38dBmV; L: +28dBmV (@ 550MHz)
Return Loss	14dB min., 16dB typical
Impedance	75 Ohm
CNR (@ 0 dBm optical input) *	> 53dB
CSO (@ -1 dBm optical input) *	> 63dBc
CTB (@ -1 dBm optical input) *	> 65dBc
RF Gain Adjustment (L : none)	H: 0-20dB (via internal variable attenuator)
Slope (Standard: H = 6; L = 0)	H: 0-10dB (via Model# 95180x plug-in equalizer) L: 0dB (non-adjustable)
RF Test Point (forward)	-20dB (external); Type F

### **OPTICAL PARAMETERS:**

Wavelength	1280 - 1610nm
Optical Input Power Range	+2dBm to -8dBm
Return Loss	> 50dB with APC connector
Optical Input Power Test Point	1V/mW $\pm$ 0.1V (external)
Optical Connector	SC/APC standard; FC/APC optional); 8° APC
* NOTE: Typical. H @ 6dB slope and L @ 0dB slope to 870MHz with 8dBm optical transmitter with OMI @ 3.2%, & 77 NTSC channel loading to 550MHz & digital loading to 870MHz (-6dB below analog).	

### **ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:**

Dimensions/Weight	3" H x 7" D x 2.1" H / 12 oz.
Operating Temperature Range	-10 to +55°C (temperature at the mounting plate)
Enclosure IP Rating	IP20
Powering	+12 V <sub>DC</sub> (via Model# OTPS-12A-PIC)
DC Ripple	< 50 mV
Power Dissipation (with return TX)	< 7 W

## **SPECIFICATIONS (Return Optical Transmitters: FP, DFB & CWDM versions)**

<b>RF INPUT &amp; PERFORMANCE PARAMETERS:</b> (also see charts on pages 3 & 4)	
Frequency Range ( $\pm 1.0$ dB)	5-42MHz (NTSC) -or- 5-65 MHz (PAL)
RF Test Point (Return)	-20dB (external); Type F
Return Loss (with Return Tx installed)	> 16dB within the return band
Return Path NPR >15dB **	FP: over 37dB NPR; DFB/CWDM over 41dB NPR **
NPR Threshold (37dB or 41dB, as applicable)	-57dBmV/Hz
** NOTE: As measured with 6 dB of fiber and OTOR-300 High Sensitivity Return Band Receiver	

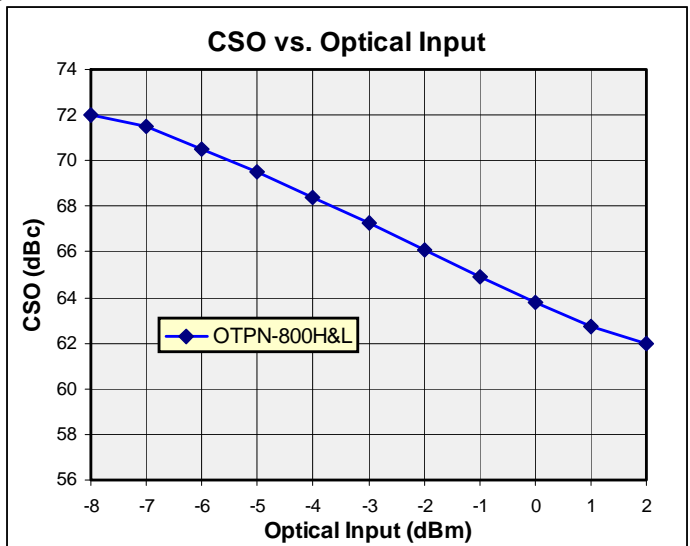
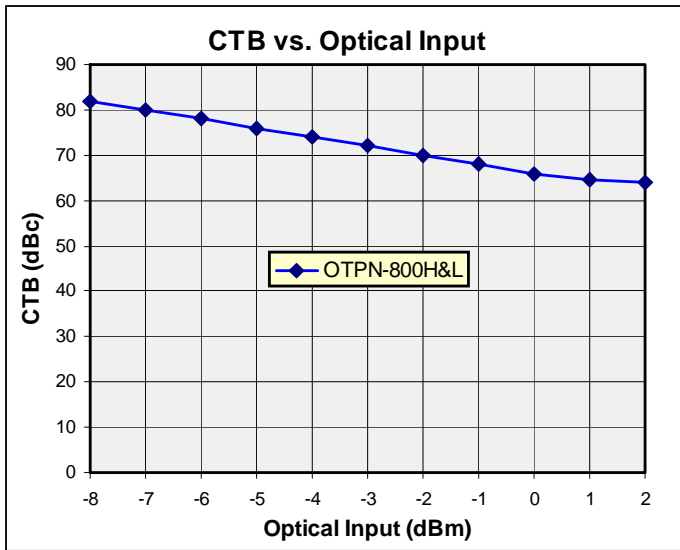
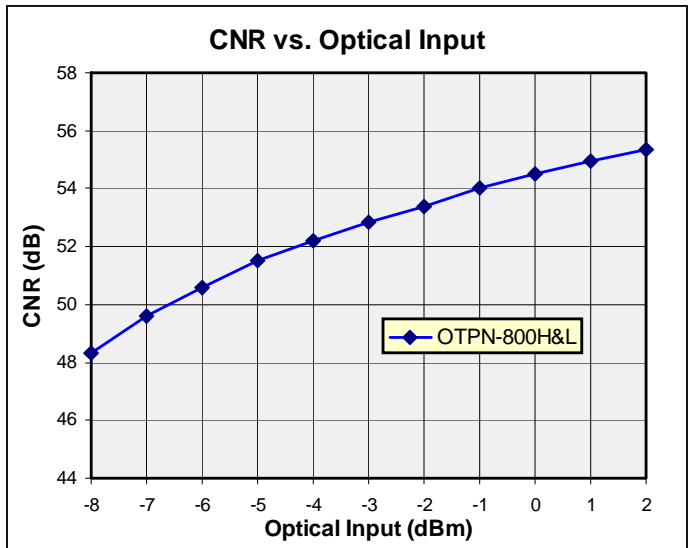
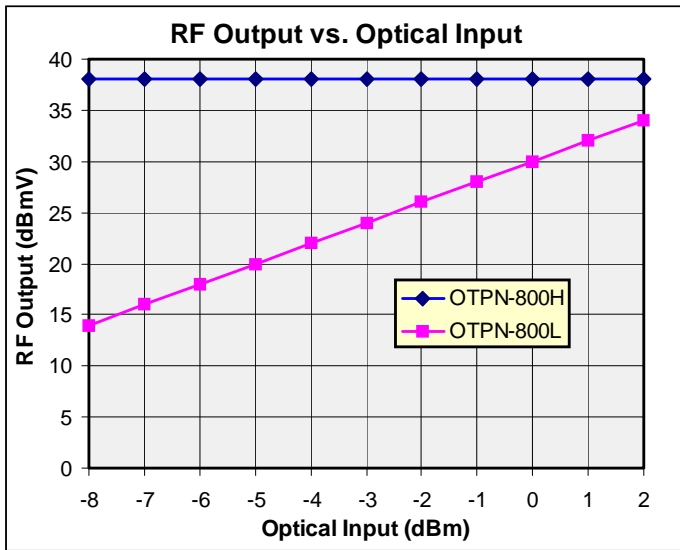
### **OPTICAL PARAMETERS:**

(also see charts on pages 3 & 4)	
Return Loss	> 50dB with APC connector
Optical Connector	SC/APC standard; FC/APC optional); 8° APC

### **ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:**

See Specifications (above)	Return transmitter is an internal plug-in PCB module
----------------------------	--

# PremiseNode OTPN-800-H/L



## OTPN-800 MODEL NUMBER CONFIGURATOR

OTPN-	8nn	- X	y	z -	cA
	Return Transmitter	RF Output (Low/High)	Diplexer Split	Slope (dB)	Optical Connector
	800: <i>No Return Transmitter</i>	L: 28dBmV (LOW) <i>(No Pad/Slope Controls)</i>	4: (5-42/54-870MHz) <i>(Standard)</i>	0: (Std: OTPN-800L) 6: (Std: OTPN-800H)	SA: SC/APC <i>(Standard)</i>
	802: (1.5mW Unisolated FP; 1310nm)				
	803: (2mW Isolated FP; 1310nm)	H: 38dBmV (HIGH)	6: (5-65/85-870MHz)	Options (OTPN-800H)	FA: FC/APC
	804: (3mW DFB; 1310nm)	<i>(With Pad/Slope Controls)</i>	<i>(Optional)</i>	0: (0dB)	<i>(Optional)</i>
	805: (2.5mW DFB; 1550nm)			1: (1dB)	
				2: (2dB)	
	847: (2.5mW CWDM; 1470nm)			3: (3dB)	
	849: (2.5mW CWDM; 1490nm)			4: (4dB)	
	851: (2.5mW CWDM; 1510nm*)			5: (5dB)	
	853: (2.5mW CWDM; 1530nm*)			7: (7dB)	
	855: (2.5mW CWDM; 1550nm*)			8: (8dB)	
	857: (2.5mW CWDM; 1570nm*)			9: (9dB)	
	859: (2.5mW CWDM; 1590nm)			A: (10dB)	
	861: (2.5mW CWDM; 1610nm)	<b>ACCESSORIES REQUIRED for OTPN-800H/L OPERATION</b>			
	* These four CWDM wavelengths are the recommended options for analog HFC return path transmission	1) AC/DC Power Supply (PS) & Power Inserting Coupler (PIC) - Model# OTPS-12A-PIC (Universal AC => 12V <sub>DC</sub> PS and PIC for OTPN-400/800 Nodes)			