



OTPN-2200C/OTPT-300A

High Output FTTP Premise Node Optical Receiver with Optional Return Transmitter

- Flagship Model of the OT "Premise Node" family: High-Output, Premium-Performance & Full-Featured
- Stable, High RF Output Level (+46 dBmV) over Wide (+2 to -6dBm @ 1310/1550nm) Optical Input range
- Superior Low-Noise Performance (CNR > 49 dB @ -6 dBm Optical Input) & CSO/CTB Specs (> 64/69dB)
- Designed to Directly Feed 64+ television outlets in FTTH applications (more with line extender amplifiers)
- Inter-Stage Slope and RF Input/Output control via internal Plug-in EQ's and Plug-In attenuator Pads
- Calibrated external Optical Input Power Meter (1V/mW) and internal RF test points (@ -20dB)
- Full CATV Forward Path Bandwidth (Analog and QAM Digital) 54-1,220MHz (± 1.0 dB)
- DFB & CWDM Return Laser Transmitter options (field-installable) for two-way DOCSIS operation
- Choice of Return/Forward Frequency Diplexer Splits (42/54MHz, 65/85MHz, 85/102MHz or 30/45MHz)
- Built-in Universal 90-240 V_{AC} (@ 50/60 Hz) CE-approved Power Supply for local powering
- > 6kV surge tolerant RF output and SMT construction for consistency, reliability & performance
- Compact (3" x 5" x 8"), Lightweight, Rugged cast aluminum housing for easy installation

The **OLSON TECHNOLOGY, INC. PremiseNode Model OTPN-2200C** is a high-output, high-performance, full-featured CATV optical node designed around the very latest optical receiver technology to reliably deliver a full slate of multiplexed video, high speed data & telephony services in an HFC/PON fiber-to-the-premise (FTTP) environment. The unit is ideally suited for direct fiber



transmission of CATV RF signals in FTTH, MDU, industrial, corporate, government, educational or other I-Net 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 does require protection from the elements. It is configured for standalone desktop, shelf or wall-mounting, or can be 2RU 19" EIA rack-mounted via the optional OTLL-RMKIT2 kit. The OTPN-2200C is forced-air cooled via an external high-MTBF fan, which is designed to be field-replaceable without interrupting operation. The base "receiver-only" model is a rugged, self-contained device with an optical input range which is wider and more sensitive than traditional CATV node receivers, permitting its link deeper into the subscriber base. The OTPN-2200C accepts reliable plug-in attenuator pads to allow the RF output level to be ad-

justed over a wide range of optical input power. The unit also allows for an interchangeable equalizer so that the slope of the RF output can be adjusted. See the middle chart on page 6 for more details. The units ships with a 15dB equalizer installed. The attenuator pad is usually in the 8dB to 10dB range. The OTPN-2200C accepts a return path transmitter for two-way CATV service. This OTPT-300A "side-car" transmitter module is available with DFB lasers for 1310 nm, 1550 nm, or CWDM wavelengths for DOCSIS and telephony return path compatibility. It is a separate unit designed to be installed at any time in the field with a minimum of effort.

The OTPT-300A also features an external wideband (5-300MHz) RF input, which eliminates the need for costly sub-band modulators and demodulators in local origination upstream video applications. The OTPN-2200C is the perfect companion to the Olson Technology, Inc. LaserLite (Models OTOT-1220C-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 analog optical transmitters and return receivers from most leading manufacturers.



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OTPN-2200C (Forward Optical Receiver) SPECIFICATIONS

RF OUTPUT & PERFORMANCE PARAMETERS:

Frequency Range (& Flatness)	54-1,220MHz, 102-1,220MHz, 85-1,220MHz or 45-1,220MHz (± 1.0 dB)
Output Level *	+46dBmV @ 550MHz *
Return Loss	>16dB
Impedance	75-Ohm
CNR*	>53dB @ -1dBm; >49dB @ -6dBm optical input*
CSO*	>64dBc @ -1dBm optical input*
CTB*	>69dBc @ -1dBm optical input*
RF Gain Adjustment	0-18dB
Slope Adjustment	4-17dB
RF Test Point	-20dB (internal)
RF Output Connector	Type F

* NOTE: Typical; Measured with 12dB slope to 1,220MHz; +8dBm optical transmitter with OMI @ 2.8%, and; 77 NTSC Channel loading to 550MHz & digital loading to 1,220MHz (-6 dB below analog).

OPTICAL PARAMETERS:

Wavelength	1280-1600nm
Optical Input Power Range	-6 dBm to +2dBm
Return Loss	>60dB with APC type connector
Optical Input Power Test Point	1 V/mW (external)
Optical Connector	SC/APC standard; FC/APC optional); 8° APC

ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:

Dimensions	3" H x 4.5" W x 8" D (7.75cm x 12.1cm x 20.5cm)
Weight	2.1 lb. (0.96 kg)
Operating Temperature Range	-10 to +55°C
Enclosure IP Rating	IP20
Powering	90 - 240V _{AC} @ 50-60 Hz via IEC320 connector
Power Dissipation	19W maximum
Cooling	Fan cooled, forced air (Field-replaceable)





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RF INPUT & PERFORMANCE PARAMETERS:

Frequency Range (& Flatness) via Diplexer
Freq. Range (& Flatness) via Ext. Aux. RF Input
Return Loss

5-42MHz (NTSC), 5-65MHz (PAL), 5-85MHz (DOCSIS) (± 1.0 dB)
5-300MHz (± 1.0 dB)
>16dB @ 5-42MHz, 5-30MHz, 5-65MHz, or 5-85MHz

OPTICAL PARAMETERS:

Return Loss
Laser Power Test Point
Laser Current Test Point
Optical Connector

>60dB with APC type connector
1 V/mW (external)
1 V/50 mA (external)
SC/APC standard; FC/APC optional); 8° APC

ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:

Dimensions
Weight
Powering (& Power Dissipation)

2.5" H x 0.75" W x 7.1" D (6.25cm x 1.8cm x 18cm)
0.5 lb. (0.2 kg)
via OTPN-2200 (4W maximum)

OTPT-304A & OTPT-305A SPECIFICATIONS (DFB Return Optical Transmitters)

RF INPUT & PERFORMANCE PARAMETERS:

Return Path NPR (DFB)**
NPR 41dB Threshold

>15dB over 41dB NPR **
-57dBmV/Hz

**NOTE: As measured with 10dB of fiber and OTOR-300 High Sensitivity Return Band Receiver

OPTICAL PARAMETERS:

Wavelength (OTPT-304A)
Laser Type; Optical Output Power (OTPT-304A)
Wavelength (OTPT-305A)
Laser Type; Optical Output Power (OTPT-305A)

1310nm ± 20 nm
Distributed Feedback: +3.0mW ± 0.5 mW
1550nm ± 20 nm
Distributed Feedback: +2.0 mW ± 0.5 mW

OTPT-347A thru OTPT-361A SPECIFICATIONS (CWDM Return Optical Transmitters)

RF INPUT & PERFORMANCE PARAMETERS:

Return Path NPR (DFB)**
NPR 41dB Threshold

>15dB over 41dB NPR **
-57dBmV/Hz

**NOTE: As measured with 10dB of fiber and OTOR-300 High Sensitivity Return Band Receiver

OPTICAL PARAMETERS:

Wavelengths (OTPT-347 thru 361)
Laser Type; Optical Output Power (OTPT-347 thru 361)

1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610 nm ± 3 nm
Course Wave Division Mux: +2.0mW ± 0.5 mW