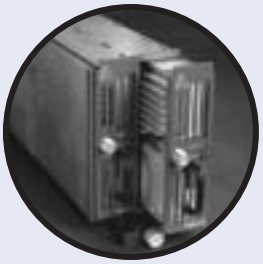
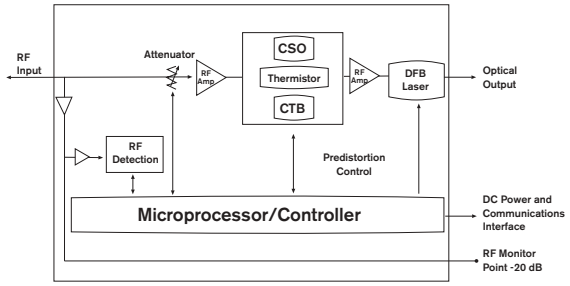


PWRLink™ II DFB Transmitter
PWL 4800T

Standard Configuration



Product Description

Harmonic's PWRLink™ II is a family of 1310 nm DFB laser transmitter modules. The PWRLink II provides the same high performance as the previous generations of PWRLink transmitters, but now in an even more compact and cost-effective package. Designed for advanced broadband networks, PWRLink II transmitters can operate alone in local distribution and narrowcasting applications and in combination with Harmonic's externally modulated transmitter family for complete system solutions.

The PWRLink II transmitter modules are very compact with 10 transmitter modules fitting into a single three rack unit high HLP 4200 platform. The transmitter modules fit into the platform via the HMC 4000 module carrier adapter. They are intelligent and easy to configure by means of the user-friendly interface, allowing for set up in minutes. Set up is possible in three ways: via the HLP 4200WD platform front panel menu, the RF adjustment on the module front panel, or the NETWatch™ Element Management System.

Due to its advanced predistortion circuitry, the state-of-the-art PWRLink II transmitter delivers high performance with RF distortion suppression, enabling system designers to achieve very high carrier-to-noise performance while avoiding receiver overdrive problems. Continuous high performance and reliability of the transmitters are assured by a microprocessor and associated firmware which control and monitor all vital functions. Monitored functions include laser temperature and operating point, optical power and module temperature. The transmitter's flat frequency response and wide operating temperature range maximize overall broadband network performance.

The optical components within the PWRLink II transmitter module have been designed for ease-of-use and maintenance. The optical connector is mounted on a removable plate on the back of the unit. This feature facilitates simple cleaning of the connector, ensuring consistently high picture quality.

Advantages

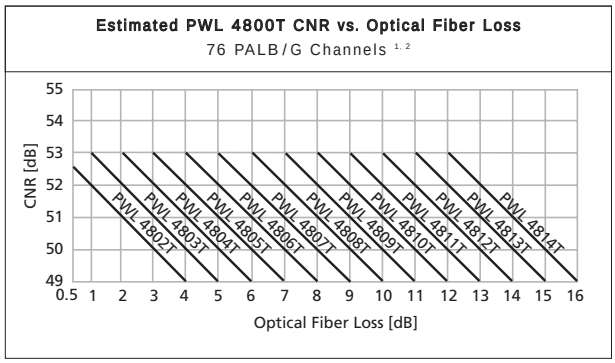
The innovative design of the PWRLink II transmitter and Harmonic's complete broadband system offer many advantages to address the needs of today and tomorrow, making it the industry's leading solution for broadband networks:

- Automatic or manual gain control simplifies operation
- Auto setup feature simplifies installation
- Integrated RF pre-amplifier reduces transmitter drive level requirements
- Shares common platform with Harmonic's MAXLink™ 1550 nm transmission system
- Compact size enables 10 DFB transmitters to fit in a 3 RU platform
- Advanced predistortion circuitry and algorithm for both CTB and CSO provide state-of-the-art distortion cancellation over a wide temperature range
- Integrated element management with SNMP compatibility
- Microprocessor control of all key parameters provides consistent and optimum product performance and monitoring
- Offers a wide range of performance levels, providing cost-effective solutions to meet specific system requirements
- 870 MHz bandwidth provides flexibility in delivery of services with 76 PAL channels with an additional 100 MHz for digital information
- Unparalleled flat frequency response provides high performance and efficient system integration
- Simple plug-and-play operation reduces time and cost of installation

Applications

- Combination of broadcast video and digital narrowcasting
- DFB-1550 nm hybrid cascades for trunking, supertrunking and interconnects
- High performance transport of 870 MHz over links of up to 45 km
- Analog and digital narrowcasting

Harmonic



1. Channel loading: 76 unmodulated PAL B/G channels and 100 MHz digital at –10 dBc.
2. Optical link defined as PWRLink II transmitter + 100% fiber link + HRM 3811 receiver.

Models Available

PWL 48xxT-zz
xx = Model Number (02 to 14)
zz = Connector Type (AS, AF, US, UF or AE)

Link Performance

Carrier-to-Noise (CNR)	Shown in figure above
Carrier-to-CSO[1,3]	> 64 dB
Carrier-to-CTB[1,3]	> 68 dB

When link includes optical splitter loss add 0.15 dB to CNR for every 1 dB of splitter loss.

Optical Output

Wavelength	1300 - 1320 nm

Model	Optical Power (dBm)
PWL 4802T	2.5 ± 0.5
PWL 4803T	4.0 ± 0.5
PWL 4804T	5.0± 0.5
PWL 4805T	5.5 ± 0.5
PWL 4806T	6.0 ± 0.5
PWL 4807T	7.0 ± 0.5
PWL 4808T	8.0 ± 0.5
PWL 4809T	9.0 ± 0.5
PWL 4810T	9.75 ± 0.75
PWL 4811T	10.5 ± 1.0
PWL 4812T	11.0 ± 1.0
PWL 4813T	11.5 ± 1.0
PWL 4814T	13.0 ± 1.0

RF Input

Input Level Range per Unmodulated Analog Channel PWL 4802T – PWL 4814T	16 to 22 dBmV
Operational Bandwidth	45 to 870 MHz
Frequency Response	< 1 dB peak-to-valley
RF Attenuator Adjustment Range	10 dB
Impedance	75 Ω
Return Loss	> 16 dB
Level Control	Manual (MGC) / Automatic (AGC) Auto setup feature

User Interface

Front Panel	
Bi-state Status LED	Normal = Green, Alarm = Red
Module Selection Indicator	Yellow LED
RF attenuation adjustment	
Monitor Point	
Laser RF Drive Monitor	
Flatness	± 1.0 dB
Return Loss	> 16 dB
Connector Type	Standard Female F
Level	-20 ± -0.5 dB below input

NETWatch™ Element Management System

HEM Interface	RS-485, RS-232C connectors (in HLP 4200)
Carrier	Externally generated

Power Requirements

Nominal	+24 VDC; supplied by HLP 4200 bus
Consumption	22 Watts maximum

Environmental

Operating Temperature Range[3]	0° to +50° C / +32° to 122° F
Storage Temperature Range	–40° to +70° C / –40° to 158° F
Relative Humidity	Maximum 85% non-condensing

Software over temperature laser protection

Physical

Dimensions	1.3" W x 4.4" H x 12.7" D / 3.3 cm W x 11.2 cm H x 32.2cm D
Weight	2.1 lbs / 0.95 kg
Mounting	HLP 4200 platform; via HMC module carrier
Optical Connector Type	SC/APC[4]
RF Connector Type	Standard F, RG-59 cable type (accepts 0.64 - 0.8 mm center conductor diameter)

Notes:
3. Typical case performance, given for 100% fiber optical links at room temperature. For the worst case scenario, subtract 1 dB to CSO and 1 dB to CTB performance.
4. For operation over entire temperature range, subtract 2 dB from CSO and CTB performance specifications.
5. Other connector types available upon request.

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