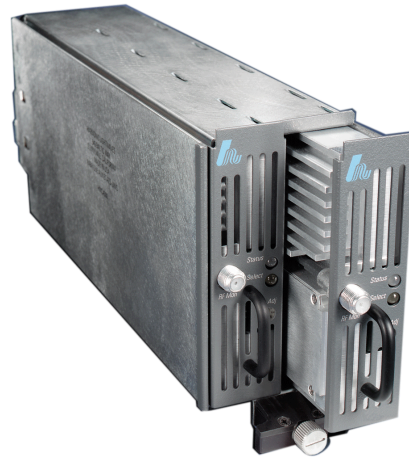


HIGHLIGHTS

- DWDM multiplexing in the return path offers a high-performance alternative to frequency stacking
- Accurate laser temperature control maintains wavelength on the ITU grid
- Integrated network management via NETWatch has SNMP interface for upward compatibility with higher level systems
- Microprocessor control of all key parameters provides consistent and optimum product performance and monitoring
- 200 MHz bandwidth provides flexibility in RF channel allocation
- Flat frequency response provides high performance and efficient system integration.
- Simple “plug-and-play” operation reduces time and cost of installation.
- Compact size enables 10 HLD transmitters to fit in a 3-RU platform

Harmonic’s METROLink™ HLD 7209T is a family of high performance DFB laser transmitter modules designed for return path narrowcasting applications. The DFB laser’s wavelength is stabilized and aligned to one of sixteen wavelengths on the ITU grid with 200 GHz (1.6 nm) spacing. By using dense wavelength division multiplexing (DWDM), multiple return path signals can be carried on a single fiber. The HLD 7209T transmitter can operate alone or in combination with Harmonic’s METROLink family of gain flattened optical amplifiers, DWDM multiplexers and demultiplexers for complete system solutions.



The HLD 7209T transmitter modules are very compact with 10 transmitter modules fitting into a single three rack unit high HLP 4200 platform via the HMC 4000 module carrier. They are intelligent and can be set up in a matter of minutes by means of the user-friendly interface. Configuration can be done in three different ways: via the HLP 4200WD platform front panel menu, the RF adjustment on the module front panel or the NETWatch™ Element Management System.

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, module temperature and composite RF drive level.

The optical components within the HLD 7209T transmitter module have been designed for ease-of-use and maintenance. The module features an optical connector on a removable plate on the back of the unit, facilitating simple cleaning and maintenance.

MODELS AVAILABLE

HLD 7209T-Cxx-zz

Cxx = Channel number on the ITU grid (see table below)

zz = Connector type (AS for SC/APC)

OPTICAL OUTPUT

Wavelength	1535.04-1560.61 nm
Output Power	9 - 9.5 dBm
Flatness	< 1 dB peak-to-valley
Eye Protection	Safety shutter

Channel	Wavelength (nm) ^{1,2}
C21	1560.61
C23	1558.98
C25	1557.36
C27	1555.75
C29	1554.13
C31	1552.52
C33	1550.92
C35	1549.32
C39	1546.12
C41	1544.53
C43	1542.94
C45	1541.35
C47	1539.77
C49	1538.19
C51	1536.61
C53	1535.04

RF INPUT

Input Level for 43 dB of NPR ³	-54 dBmV/Hz
Dynamic Range at 43 dB NPR ³	> 13 dB
Operational Bandwidth	5 to 200 MHz
RF Attenuator Adjustment Range	15 dB in 0.1 dB steps
Impedance	75Ω
Return Loss	> 16 dB

USER INTERFACE

Front Panel	
Bi-state Status LED	Normal = Green, Alarm = Red
Module Selection Indicator	Yellow LED
Monitor Point	
Laser RF Drive Monitor	
Flatness	± 1.5 dB
Return Loss	> 16 dB
Connector Type	Female F

NETWATCH™ ELEMENT MANAGEMENT SYSTEM

HEM Interface	RS-485, RS-232C connectors (in HLP 4200)
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POWER REQUIREMENTS

Nominal	+24 VDC; supplied by HLP 4200 bus
Maximum	+28 VDC
Consumption	22 Watts maximum

ENVIRONMENTAL

Operating Temperature Range	32° to 122° F 0° to +50° C
Storage Temperature Range	-40° to 158° F -40° to +70° C
Relative Humidity	Maximum 85% non-condensing
Software and hardware over temperature laser protection	

PHYSICAL

Dimensions (WxHxD)	1.3" x 4.4" x 12.7" 3.3 cm x 11.2 cm x 32.2 cm
Weight	2.1 lbs. / 0.95 kg
Mounting	HLP 4200 platform; via module carrier HMC 4000
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:

- 16 wavelengths on a single fiber for return applications, please consult your Harmonic application engineer.
- Factory set wavelength value.
- For 18 dB (9 dB fiber + 9 dB passive) of optical link loss and 5-40 MHz of Gaussian noise loading, RPR2210 used as return path optical receiver.
- Other connector types available upon request.