

MAXLink™ 1550 nm Optical Transmitter HLT 7706R/7806R

Product Description

Harmonic's MAXLink™ product line is a family of transmitters and optical amplifiers designed for 1550 nm-based network applications. The MAXLink system provides a cost-effective solution for a variety of applications and architectures, including long-haul transport that is beyond the reach of 1310 nm transmitters, and fiber-dense architectures that take advantage of high-power optical amplifiers. In addition, this system is ideally suited for new, evolving transport architectures such as redundant rings, broadcast layer transmission, and hub interconnects used in broadband networks.

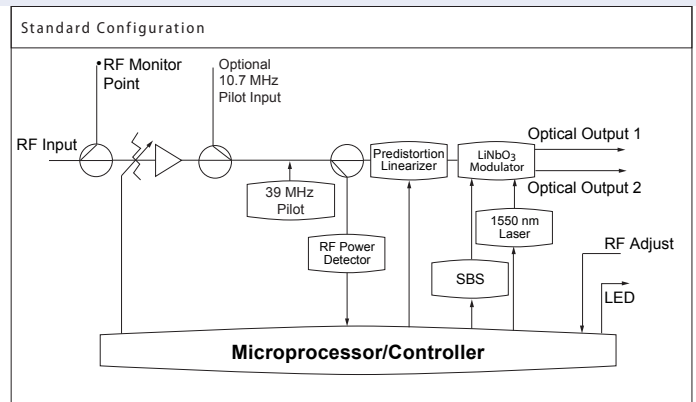
The MAXLink product line includes slim 1-RU 19" rack-mountable transport devices, such as 1550 nm broadcast optical transmitters, erbium-doped fiber amplifiers and optical switches. The stand-alone 1-RU product design saves valuable rack space and operational costs since an additional platform and power supplies are not needed.

The high-performance HLT 7706R/7806R transmitter is designed for supertrunking or distribution applications where it is immediately followed by an optical amplifier. In supertrunking applications, an important component of the MAXLink system is the MAXLink Extender (HLE). The HLE enables a push-pull transmission architecture over two fibers, resulting in a CNR improvement of at least 3 dB and a CSO improvement of at least 6 dB (with respect to single-fiber performance).

Advantages

The MAXLink transmitter's advanced technology and versatility provide users with many advantages for optimizing broadband network performance while minimizing operational costs:

- Industry-leading, high performance 1550 nm transmission improves network transport.



- Stand-alone 1-RU 19" rack-mountable design saves valuable space and eliminates need for additional platform and power supplies.
- Integrated element management intelligence with SNMP compatibility enables seamless communication with comprehensive network management systems.
- Microprocessor control of all key parameters provides consistent, optimum product performance and monitoring.
- Harmonic's patented SBS suppression allows the highest launch power and performance available at 1550 nm in the cable and telecommunications industries – up to 17 dBm (50 mW).
- Dual outputs provide route diversity and cost efficiency.
- Dual complementary outputs enable push-pull operation with MAXLink Extender (HLE) for 3 dB or more in CNR improvement.
- Harmonic's proprietary electrical linearization provides a proven, robust solution for optimal distortion performance.

Transmitter Performance^{1, 2}

Carrier-to-Noise (CNR)	> 55.0 dB ³ > 52.0 dB ⁴
Carrier-to-CSO	> 65 dB (dual fiber operation) ³ > 67 dB (single fiber operation) ³
Carrier-to-CTB	> 65 dB ³ > 63 dB ⁴
With Harmonic Link Extender (HLE)	
Carrier-to-Noise	> 3 dB improvement
Carrier-to-CSO	> 6 dB improvement

Optical Outputs

Wavelength	1563 to 1565 nm (-D7) 1550 to 1560 nm (-F7) 1540 to 1547 nm (-W7)
Flatness	< 1 dB peak-to-valley
Number of Outputs	2
Optical Power per Fiber Output	9 dBm minimum 10 dBm typical
Laser Shutdown	DISABLE/ENABLE switch
Eye Protection	Safety shutter

SBS Suppression³

HLT 7706R/7806R	17 dBm (50 mW) dual SBS-tone 14 dBm (25 mW) single SBS-tone
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RF Input

Input Level Range	18 to 26 dBmV
Operational Bandwidth	55 to 870 MHz (7706R) 45 to 870 MHz (7806R)
RF Attenuator Adjustment Range	12 dB
Impedance	75 Ω
Return Loss	> 16 dB
Level Control	Auto/manual

User Interface

Front Panel	Full numeric keypad Multi-line alphanumeric display
RF Monitor Point (on front panel)	
Flatness	± 0.5 dB
Return Loss	> 16 dB
Test Point Loss	20 dB ± 1 dB (below RF input)
Rear Panel	Laser ON/OFF switch Optical output drawer RJ-45 connector for network management TTL alarm contacts

Network Management

SNMP Protocol	v1, v2c, v3
HTTP Protocol	HTTP 1.1 (with Web browser-based authentication)

Power Requirements

Consumption	<75 W
AC Version	100 to 240 V 50 to 60 Hz
DC Version	-48 V

Environmental

Operating Temperature Range	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
Over Temperature Laser Protection	Software and hardware

Physical

Dimensions (WxHxD)	19" x 1.7" x 21" (1-RU) 48.3 cm x 4.3 cm x 53.3 cm
Weight	31 lbs. / 14.06 kg
Optical Connector Type	SC/APC, E2000
Connector Type	Standard F, RG-59 cable type (accepts 0.64 - 0.80 mm center conductor diameter)

Notes:

1. Overall performance of a 1550 nm transmission system depends on many factors. Consult your Harmonic applications engineer for more information.
2. Dual-fiber vs. single-fiber and dual SBS-tone vs. single SBS-tone are operating modes that can be selected from the front-panel display.
3. Performance given for MAXLink transmitter + HRM 3811 optical receiver with 0 dBm received power. 80 NTSC channels.
4. Performance given for MAXLink transmitter + HRM 3811 optical receiver with 0 dBm received optical power. 80 PAL channels.



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