Laser HOOTS
High Output Optical Talk Set
Singlemode
Operations Guide

Optical Wavelength Laboratories

Operations Guide
Laser High Output Optical Talk Set
(HOOTS)
LH-1310
LH-1550

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Laser HOOTS Optical Talk Set

General Description

HOOTS stands for High Output Optical Talk Set. There are two configurations of the Laser HOOTS: 1310nm (LH-1310) or 1550nm (LH-1550). The transmitter in the Laser HOOTS also serves as a calibrated -10.0 dBm singlemode light source. It uses our laser technology to convert your voice into optical signals for full-duplex voice communications over a pair of singlemode fibers. The Laser HOOTS is a reliable alternative to wireless communications systems, and is very simple to use. Communications over optical fibers with the Laser HOOTS offers both security and electromagnetic immunity.

We designed the Laser HOOTS to be economical in order to be sold as an alternative to walkie-talkies. Optionally, they can be embedded as a permanent part of a fiber network installation. Use it during the installation for end-to-end voice communications. After installation, leave it attached to a pair of unused fibers in the patch panel. This way, the Laser HOOTS can be used by communications personnel any time operations or management functions need to be performed in the fiber cable closet.

Each Laser HOOTS comes standard with 2 talk set units (one for both ends of the fiber) in a hard-shell carrying case, and each unit comes with a headset, headset adapter, protective rubber boot, lanyard, 9-volt battery, and a CD-ROM based operations guide.

General Features

1 **Laser Transmitter Connector -** This port houses a laser diode that emits a continuous beam of 1310nm or 1550nm infrared light, depending upon configuration, that is designed to couple into singlemode fiber. Connector type is ST.

2 **Power/Headset Stereo Jack -** This stereo jack serves a dual purpose as both the power switch and the headset stereo jack.

3 **Receiver Connector -** This port houses a photodiode that receives optical signals from the transmitter on the opposite end of the fiber for conversion to voice. Connector type is ST.

4 **Receiver Indicator LED -** This LED indicates the presence of optical pulses used for voice communications.

5 **Transmitter Indicator LED -** This LED indicates the ON/OFF status of the talk set.

Operation

You will need a pair of fibers terminated into a connector at both ends of the link in order to use the Laser HOOTS. Connect to the transmit and receive fibers to the talk set connectors (as shown in the figure at right).

The other end must have its fibers connected opposite to the other, i.e. the transmit fiber on one end is the receive fiber on the other.

Connect the headset plug to the headset adapter, then plug the headset adapter into the headset jack on the Laser HOOTS.

If the fibers are connected correctly, then both the Transmit and Receiver LEDs will light, and communications can begin.

If the LEDs are not lit, double-check to make sure that the transmit and receive fibers are correctly positioned.

To calculate the talkset's maximum communication distance:

D = R / A

where: D = talkset distance
R = dynamic range (Laser HOOTS = 20 dB)
A= typical fiber attenuation at specified λ

Example (λ = 1310nm, R = 20 dB, A = 0.5 dB/km):
D = 20 dB / (0.5 dB/km) = 40 km

Note: the fibers used for communication may be different than the example above. Consult the fibers data sheet for its attenuation parameter.

Key Specifications

Receiver Dynamic Range	-10 to -30 dBm
Source Power	-10 dBm into singlemode
Initial Accuracy	+/- .10dB @ 25 C
NIST traceable calibrated wavelengths	1310nm (LH-1310) or 1550nm (LH-1550)
Center Wavelength	1310nm +/- 30nm (LH-1310) 1550nm +/- 30nm (LH-1550)
Spectral Width	2nm @ 1310nm (LH-1310) 2nm @ 1550nm (LH-1550)
Dimensions (each unit)	4.94 x 2.75 x 1.28 in

Conforms to the Harmonized European Standards EN 61326-1 and EN 61010-1.

Maintenance and Calibration Procedures

Repair. Repair of this unit by unauthorized personnel is prohibited, and will void any warranty associated with the unit.

Battery Replacement. The battery compartment is covered by a sliding plate on the back of the unit. One 9v battery is required for operation.

Cleaning. For accurate readings, the optical connectors on the Laser HOOTS and the connectors on the patch cords should be cleaned prior to attaching them to one another. Minimize dust and dirt buildup by replacing the dust caps after each use.

Warranty. The Laser HOOTS comes standard with a two-year factory warranty, which covers manufacturer defects and workmanship only.

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