FACED LASER BEAM MONITORING APPARATUS AND PROCEDURE

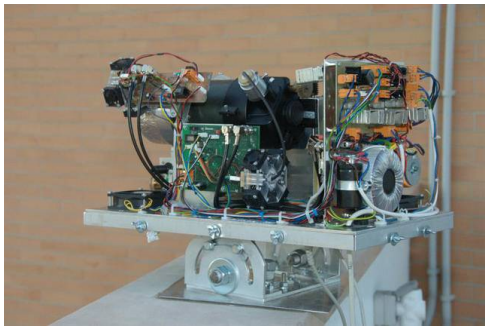
Description:

Optical communications in free space using modulated laser beams are presented as an alternative to fiber optics and cable if they offer similar quality parameters. A laser transceiver is a system that establishes two-way optical communication. These optical transceivers are located on the roofs of buildings anchored to solid structures; however, these structures are subject to spatial changes caused by geodynamic movements of the foundation and expansion-compression phenomena caused by thermal changes between day and day. night. That is why it is necessary to propose dynamic beam tracking solutions that maintain the optimal link regardless of the possible movements of the structures that support the transceivers. Thus, the present invention solves said problem, consisting of an apparatus and a method for tracking opposing laser beams based on embedded control. The tracking apparatus is installed in an optical transceiver that consists of an electronically controlled micrometric guidance system on which an optical duplexer apparatus is supported that allows the simultaneous transmission and reception of laser beams. Thus, the optical duplexer apparatus of an optical transceiver transmits a laser beam and simultaneously receives another laser beam from a duplexer apparatus of a counterpart optical transceiver. The beam tracking procedure involves two opposing laser beams that are initially aligned and then follow each other to remain aligned in time. The tracking algorithm is applied in duplicate on each transmitter-receiver pair and acts independently on each of them.

Keywords:
Laser, Telecommunications, Beams, Optics

Sectors:
ICT, Electronics

Areas:
Telecommunications, Electronics, Internet and Networks, Components



Advantages:

The present invention is mainly characterized by having as its objective the effective and permanent establishment of high-speed communications carried out in free space by the transceivers of an optical communication network.

Uses and Applications:

This technology has its utility as a control instrument for the monitoring of light beams within the field of high speed optical communications electronics industry.

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