

# FIBER OPTICS STANDARD DICTIONARY

THIRD EDITION

MARTIN H. WEIK



# **FIBER OPTICS STANDARD DICTIONARY**

**THIRD EDITION**

**JOIN US ON THE INTERNET**

**WWW: <http://www.thomson.com>**

**EMAIL: [findit@kiosk.thomson.com](mailto:findit@kiosk.thomson.com)**

*thomson.com* is the on-line portal for the products, services and resources available from International Thomson Publishing (ITP).

This Internet kiosk gives users immediate access to more than 34 ITP publishers and over 20,000 products. Through *thomson.com* Internet users can search catalogs, examine subject-specific resource centers and subscribe to electronic discussion lists. You can purchase ITP products from your local bookseller, or directly through *thomson.com*.

Visit Chapman & Hall's Internet Resource Center for information on our new publications, links to useful sites on the World Wide Web and an opportunity to join our e-mail mailing list. Point your browser to: <http://www.chaphall.com>

A service of I(T)<sup>®</sup>

Cover Design: Saïd Sayrafiezadeh, Emdash Inc.

Copyright © 1997 Chapman & Hall

Printed in the United States of America

For more information, contact:

Chapman & Hall  
115 Fifth Avenue  
New York, NY 10003

Chapman & Hall  
2-6 Boundary Row  
London SE1 8HN  
England

Thomas Nelson Australia  
102 Dodds Street  
South Melbourne, 3205  
Victoria, Australia

Chapman & Hall GmbH  
Postfach 100 263  
D-69442 Weinheim  
Germany

International Thomson Editores  
Campos Eliseos 385, Piso 7  
Col. Polanco  
11560 Mexico D.F.  
Mexico

International Thomson Publishing-Japan  
Hirakawacho-cho Kyowa Building, 3F  
1-2-1 Hirakawacho-cho  
Chiyoda-ku, 102 Tokyo  
Japan

International Thomson Publishing Asia  
221 Henderson Road #05-10  
Henderson Building  
Singapore 0315

All rights reserved. No part of this work covered by the copyright hereon may be reproduced or used in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems—without the written permission of the publisher.

1 2 3 4 5 6 7 8 9 10 XXX 01 00 99 98 97

**Library of Congress Cataloging-in-Publication Data**

Weik, Martin H.

Fiber optics standard dictionary / Martin H. Weik. — 3rd ed.  
p. cm.

Includes bibliographical references.

ISBN 0-412-12241-3 (alk. paper)

1. Optional communications—Dictionaries. 2. Fiber optics—Dictionaries. I. Title.

TK5102.W45 1997

621.36'92—dc21

97-6013  
CIP

**British Library Cataloguing in Publication Data available**

"Fiber Optics Standard Dictionary, 3rd edition," is intended to present technically accurate and authoritative information from highly regarded sources. The publisher, editors, authors, advisors and contributors have made every reasonable effort to ensure the accuracy of the information, but cannot assume responsibility for the accuracy of all information or for the consequences of its use.

To order this or any other Chapman & Hall book, please contact International Thomson Publishing, 7625 Empire Drive, Florence, KY 41042. Phone: (606) 525-6600 or 1-800-842-3636.

Fax: (606) 525-7778, e-mail: [order@chaphall.com](mailto:order@chaphall.com).

For a complete listing of Chapman & Hall's titles, send your requests to Chapman & Hall, Dept. BC, 115 Fifth Avenue, New York, NY 10003.



**service termination point:** 1. Proceeding from a network toward a user terminal, the last point of service rendered by a commercial carrier, i.e., a common carrier, under applicable tariffs. *Note 1:* The service termination point usually is on the customer premises. It may be at the customer end of an electrical or a fiber optic loop. *Note 2:* The customer is responsible for equipment and operation from the service termination point to user end instruments. 2. In a switched communications system, the point at which common carrier service ends and user-provided service begins, i.e., the interface point between the communications system equipment and the user terminal equipment, under applicable tariffs. *See also* common carrier, customer premises equipment, customer service unit, fiber optic loop, interface, line-unit-line termination, line-unit-network termination, medium access unit, network, network interface, network terminating interface, point, switched network, tariff, terminal, user, user end instrument.

**service time interval:** In communications system operations, a performance measurement period, or a succession of performance measurement periods, (a) during which a communications service is scheduled to perform its normal function, (b) that includes operational and outage periods, and (c) that is scheduled by the calendar, such as 0600 to 2200 hours daily, except Sunday 1200 to 2200 hours. *See also* function, outage, outage period, performance measurement period, service, telecommunications service.

**service unit:** *See* channel service unit, customer service unit, data service unit.

**service user:** An individual or organization, including a service vendor, that is provided a telecommunications service for which a priority level has been requested or assigned. *See also* priority level, service, telecommunications service.

**serving arrangement:** *See* basic serving arrangement.

**servomechanism:** 1. An automatic usually electromechanical device that uses feedback to control the spatial position of an element or part. *Note:* A fiber optic device, such as a fiber optic sensor, may be used to control the servomechanism, thus converting an optical signal into a mechanical action. 2. A control device in which one or more of the internal or external signals represent mechanical motion. *Note:* Examples of servomechanisms are (a) a device that controls the precise positioning of an elevator at a floor, (b) an autopilot, and (c) an antenna position controller that maximizes the received signal level. *See also* fiber optic device, optical signal, signal, signal level.

**session:** In communications, computer, data processing, and control systems, (a) a period, (b) a temporary grouping of equipment, such as fiber optic equipment, or (c) a set of interactions among humans, among machines, or among humans and machines. *Note:* Examples of sessions are (a) the time interval between a log-on and a log-off at a computer remote terminal, (b) a connection between two terminals that allows them to communicate for a period, (c) a temporary connection between a control panel and a ship or aircraft propulsion system controller to enable real time online control of the system or one of its subsystems, and (d) a conference telephone call. *See also* call, connection, control panel, fiber optic equipment, log-off, log-on, online, period, remote access, remote control, session layer, telephone, terminal.

**session layer:** In open systems architecture, the layer that provides the functions and services that may be used to (a) establish and maintain connections among elements of a session, (b) maintain a dialogue of requests and responses between the elements of a session, and (c) terminate the session. *See also* connection, function, interconnection, layer, open systems architecture, open systems interconnection, Open Systems Interconnection—Reference Model, service, session. *Refer to* Fig. L-4.

**Session Layer:** *See* Open Systems Interconnection—Reference Model. *Refer to* Fig. L-4.

**set:** 1. Any defined group of entities, usually defined according to specified criteria, such as (a) all the optical fibers in a fiber optic cable, (b) all the links that form a trunk, or (c) all the protocols used in a given communications system. 2. A finite or infinite number of objects, entities, or concepts that have a given property or properties in common. 3. In a specified communications, computer, data processing, or control system, to put all or part of system hardware, firmware, and software into a specified state. *See* alphabetic character set, character set, chipset, coded character set, engineering circuit multiplex set, four-wire terminating set, key set, numeric character set, numeric coded character set, optical fiber connector set, optical loss test set, radio set, telegraph set, television set, tone wedge set, user set. *See also* entity, fiber optic cable, fiber optic link, fiber optic trunk, firmware, hardware, object, optical fiber, protocol, software, state.

**settling time:** In systems that require changes to different frequencies, such as (a) spread spectrum frequency shift keying systems and (b) wavelength-modulated fiber optic transmission systems, the time required for the frequency of a multifrequency device to change to, and stabilize at, a new operating frequency. *See also*