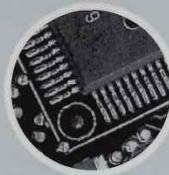


WILEY
ELECTRICAL



ELECTRONICS
ENGINEERING
DICTIONARY



STEVEN M. KAPLAN

WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY

Steven M. Kaplan
Lexicographer



A JOHN WILEY & SONS, INC., PUBLICATION

Copyright © 2004 by John Wiley & Sons, Inc. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400, fax 978-646-8600, or on the web at www.copyright.com. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representation or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services please contact our Customer Care Department within the U.S. at 877-762-2974, outside the U.S. at 317-572-3993 or fax 317-572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print, however, may not be available in electronic format.

Library of Congress Cataloging-in-Publication Data is available.

Kaplan, Steven M.

Wiley Electrical and Electronics Engineering Dictionary

ISBN 0-471-40224-9

Printed in the United States of America.

10 9 8 7 6 5 4 3 2

quencies above or below a center frequency. These are the upper and the lower sidebands, respectively. 4. Pertaining to a sideband (1) or sideband (3).

sideband attenuation The attenuation of one or both sidebands.

sideband components Same as sideband (2).

sideband cutting 1. The attenuation or suppression of either the upper or the lower sideband. 2. The attenuation of both sidebands.

sideband frequency A frequency within a sideband. The lower sideband, for instance, incorporates frequencies which are the difference between the carrier frequency and the modulation frequencies. Also called **side frequency**.

sideband interference Interference, such as sideband splatter, caused by one or both sidebands.

sideband power The power contained in both sidebands.

sideband splash Same as sideband splatter.

sideband splatter Interference of radio or TV reception by other stations using adjacent channels. Such interference may be unilateral or bilateral, and is caused, for instance, by overmodulation. It may be manifested as extraneous confusing, musical, or repetitive sounds being heard along with the desired program. Also known as **sideband splash**, **splatter**, **monkey chatter** or **adjacent-channel interference**.

sideband suppression The suppression of either the upper or the lower sideband.

sideband transmission A radio transmission in which one or both sidebands are transmitted.

sidelobe Within an antenna pattern, any lobe other than the main lobe. Also spelled **side lobe**. Also called **secondary lobe**, **secondary beam**, **minor lobe**, or **minor beam**.

sidelobe suppression The suppression of any sidelobes present. Also spelled **side-lobe suppression**.

sidetone 1. The reproduction by the receiver of sounds from the same telephone's transmitter. Although a caller's own voice is usually heard over the same telephone, if the amplitude of this signal exceeds a given threshold it is usually unwanted. Also called **telephone sidetone**. 2. An attenuated portion of transmitted audio which is returned to the sender. This signal may be desired or undesired.

sidetone adjustment The increasing or decreasing of the sidetone level, utilizing a sidetone circuit.

sidetone circuit A circuit which varies the sidetone level.

sidetone level The level of sidetone present in a signal.

siemens Its symbol is S. Formerly called **mho**, or **reciprocal ohm**. 1. The SI unit of conductance. A conductor or circuit has a conductance of one siemens when it carries one ampere per volt. 2. A unit of susceptance. 3. A unit of admittance.

sifting sort A sorting technique in which adjacent pairs of items within a list are sequentially compared and ordered, until the entire list has been evaluated. This process is then repeated as many times as required to obtain the correct order. Also called **bubble sort**, or **exchange sort**.

sigma (σ) 1. Symbol for **surface charge density**. 2. Symbol for conductivity.

sign 1. Anything, such as a symbol, action, condition, state, or the like, intended to convey information. 2. A symbol, such as + or x, used in mathematics to denote an operation. 3. The positive or negative nature of a number. Also, the symbols, + and -, which indicate this nature. 4. To affix or append a signature, such as that in an email.

sign bit A bit indicating the sign of a number, signal, or other value.

sign-in Same as **sign-on**. Also spelled **signin**.

sign-off Same as **sign-out**. Also spelled **signoff**.

sign-on To initiate a session. Also, the process of initiating a session. This may require, for instance, entering a username and the corresponding password. Also spelled **signon**. Also called **sign-in**, or **log-on**.

sign-out To end a session. Also, the process of terminating a session. One or more commands may be required for proper termination. Also spelled **signout**. Also called **sign-off**, or **log-out**.

signal 1. Anything, such as a light, sound, location, or movement, which serves to convey information. 2. A varying quantity, state, or parameter which serves to convey information. For example, a fluctuating amplitude, frequency, or waveform, a series of tones, flashing lights, field strength variations, changes in pulse duration, and so on. Used, for instance, in communications, for sending control signals, to activate processes, to alert to a given condition, and so on. 3. A fluctuating electrical quantity, such as a current or voltage, which serves as a **signal** (2). 4. The sounds, images, data, or other information transmitted and/or received in communications, radio, TV, radar, and so on. 5. A specific **signal** (1) or **signal** (2), such as a busy signal, a carrier signal, or a chrominance signal.

signal amplitude The amplitude of a given signal. For example, the displacement from a reference position, such as zero, of an amplitude-modulated wave.

signal attenuation The attenuation of a given signal. For instance, that of a sideband.

signal averaging A technique utilized to improve signal-to-noise ratios, in which signals are averaged to help extract a greater proportion of the desired information.

signal bandwidth The bandwidth of a given signal. For example, that utilized to transmit a TV signal.

signal bell A bell, such as a ringer in an older telephone, which serves to signal.

signal bit A bit which serves to signal. For instance, a bit which provides a start signal.

signal booster A component, circuit, or device, such as a booster amplifier or preamplifier, which increases, amplifies, or reinforces a signal.

signal cable A cable, such as a coaxial cable, through which a signal is transmitted.

signal carrier A signal which is modulated in frequency, amplitude, or phase, in order for it to carry information. For instance, an AM radio transmitter modulates the amplitude of a carrier signal. Also called **carrier signal**.

signal channel 1. A channel, such as a radio or TV channel, via which a signal is sent. 2. A channel along which a given type of signal is sent, as opposed to another. For instance, one carrying control signals as opposed to a conversation.

signal circuit 1. A circuit, such as communications circuit, through which a signal is sent. 2. A circuit through which a given type of signal is sent, as opposed to another. For instance, one carrying control signals as opposed to a conversation.

signal code A code, such as that utilizing varying frequencies, employed to convey meaningful information via a signal.

signal component A component within a complex signal.

Signal Computing System Architecture Same as **SCSA**.

signal conditioner A circuit or device which serves for signal conditioning.

signal conditioning 1. The processing of a signal to improve its intelligibility, signal-to-noise ratio, or the like. 2. The processing or conversion of a signal, so as to make it compatible with a given channel, device, or system. For example, line conditioning. Also called **signal conversion** (1).

signal conversion 1. Same as **signal conditioning** (2). 2. The conversion of a signal from one form, such as analog, to another, such as digital.