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logarithmic scale A scale whose graduations are spaced logarithmically rather than linearly.



Logarithmic scale gives constant percentage accuracy of readings for all pointer positions.

logger A recorder that automatically scans measured quantities at specified times and records or logs their values on a chart.

logic The translation of formal logic into functional electronic circuits that can be represented by a system of symbols (e.g., AND, OR, and NOT). The functions are performed by switching circuits or *gates* with only two states—ON or OFF or OPEN or CLOSED—making it possible to use binary numbers in solving problems. Each logic symbol can be represented as a *truth table* that gives the output for all possible input conditions. Gate circuits are the basis for digital computers.

logic analysis Determination of the sequence of logic steps required during a computer run to produce the desired output files from the input files.

logic analyzer An analyzer that locates trouble in digital systems by displaying digital signal levels simultaneously for a number of locations at a predetermined instant of time, which is usually determined by counting clock ticks. The logic analyzer can generate a trigger that stops data collection at the desired instant and displays the pulse signals on a cathode-ray tube screen for analysis of circuit or program errors, isolation of glitch sources, detection of illegal states, mapping of data flow, and diagnosis of other computer problems.

logic comparison The operation of comparing two items in a computer and producing a 1 output if they are equal or alike and a 0 output if they are not alike.

logic design The design of the complete system of logic elements required for a specific application in a digital computer or other digital system.

logic diagram A diagram that represents the logic elements of a computer and their interconnections without necessarily showing construction or engineering details.

logic element The smallest building block that can be represented by an operator in an appropriate system of symbolic logic for a computer data-processing system. Typical logic elements are the AND gate and the flip-flop.

logic function A means of expressing a definite state or condition in magnetic amplifier, relay, and computer circuits. Examples include: (a) the AND function, where an output is produced only when the correct number of input signals is present and combined; (b) the OR function, where an output is obtained when any one of a number of input signals is applied; (c) the NOT function, where the output obtained is the inverse of the input signal.

logic level One of the two voltages whose values have been arbitrarily chosen to represent the binary numbers 1 and 0 in a particular digital system. The magnitude and polarity of the voltage levels must be specified for a par-

ticular application to avoid confusion because the level used for 1 can be either higher or lower than that for 0. Terms such as positive logic, negative logic, normal logic, and inverse logic are ambiguous because they can be construed differently for NPN than for PNP devices.

logic operation A nonarithmetic operation in a computer, such as comparing, selecting, making references, matching, sorting, and merging, where yes/no decisions are involved.

logic sum A computer addition in which the result is 1 when either one or both input variables is a 1, and the result is 0 when the input variables are both 0.

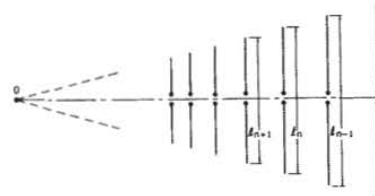
logic swing The voltage difference between the logic levels used for 1 and 0. The magnitude of the swing is chosen arbitrarily for a particular system and is usually well under 10 V.

logic switch A diode matrix or other switching arrangement that is capable of directing an input signal to one of several outputs.

logic symbol A graphic symbol that represents the means for performing some specified simple computer operation, such as NOT, AND, OR, NAND, and NOR.

log-periodic antenna A broadband antenna in which the electrical lengths and element spacings are chosen so the bidirectional radiation pattern, impedance, and other properties of the antenna are repeated at a number of other frequencies that are equally spaced when plotted on a logarithmic scale.

log-periodic dipole array A broadband antenna array whose dipole lengths and spacings increase with distance from a source, with the transmission lines being transposed between adjacent dipole elements. The radiation pattern is unidirectional in the backfire direction, toward the source.



Log-periodic dipole array.

log-periodic folded-dipole array A unidirectional broadband antenna whose elements are arranged as in a log-periodic dipole array, but with all the folded dipoles connected in series with the transmission line rather than in shunt. A phasing strip in each folded dipole is adjusted experimentally to produce a good backfire beam.

log-periodic folded-monopole array A unidirectional broadband array that is essentially half of a log-periodic folded-dipole array, fed against a ground plane.

log-periodic folded-slot array A unidirectional broadband antenna that consists of a single metal sheet from which slots are cut in the pattern of a log-periodic folded-dipole array.

loktal base A tube base that has a grooved center post which locks firmly in a corresponding eight-pin loktal socket. The tube pins are sealed directly into the glass envelope. It is also called a loctal base.

loktal tube An electron tube that has a loktal base.