

SEVENTH EDITION


MODERN
DICTIONARY
of
ELECTRONICS

RUDOLF F. GRAF




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the ROM address lines are scanned. 9. A memory in which the contents are not intended to be altered during normal operation. The term read-only memory implies that the content is determined by its structure and is unalterable (e.g., mask programmable ROM). Most ROMs are $n \times 8$ (words \times bits/word) to work with popular microprocessors. There are also special-purpose ROMs, such as character generators, with a 7-bit-wide output word and addressing structure to output one-hundred twenty-eight 9×7 characters.

readout—1. The manner in which a computer displays processed information—e.g., digital visual display, punched tape, automatic typewriter, etc. *See also* display. 2. The information extracted from a memory device, such as a program store or call store. 3. The visual display of the output of a measuring instrument, or of a memory, or of a computer.

readout device—In a computer, a device, consisting usually of physical equipment, that records the computer output either as a curve or as a set of printed numbers or letters.

readout equipment—The electronic apparatus that provides indications and/or recordings of transducer output.

readout station—A recording or receiving radio station at which information is received as it is read out by the transmitter in a missile, probe, satellite, or other spacecraft. (The same station may serve also as a tracking station.)

read pulse—1. A pulse applied to one or more binary cells to determine whether a bit of information is stored there. 2. A pulse that causes information to be read out of a memory cell.

readthrough—The continuous recovery in an audio channel of the target modulation, making possible rapid evaluation of the effectiveness of a jamming effort.

read time—More commonly called access time. With respect to a memory, the interval between the time the read control and the address or location are present and the time the data output changes state.

read/write check indicator—A device incorporated in some computers to indicate, on interrogation, whether there was an error in reading or writing. The machine can be made to stop, attempt the operation again, or follow a special subroutine, depending on the result of the interrogation.

read/write cycle—The sequence of operations required to read and write (restore) memory data.

read/write cycle time—*See* cycle time.

read/write head—1. The device that reads and writes information on tape, drum, or disk storage devices. 2. The mechanism that writes data to or reads data from a magnetic recording medium. 3. An electromagnet capable of producing a switchable magnetic field to read and record bit streams.

read/write memory—1. A memory whose contents can be continuously changed quickly and easily during system operation. It differs from a read-only memory (ROM), whose contents are fixed and not subject to change, and a reprogrammable ROM, whose contents can be changed but only periodically. 2. A memory in which each cell may be selected by applying appropriate electrical input signals, and the stored data may be either (a) sensed at appropriate output terminals, or (b) changed in response to other similar electrical input signals.

ready-to-receive signal—In a facsimile system, a signal returned to the transmitter to indicate that the receiver is ready to accept a transmission.

real estate—Slang for the area on a printed circuit board or the surface of a wafer on which circuits can be built.

real power—The component of apparent power that represents true work in an ac circuit. It is expressed in watts and is equal to the apparent power times the power factor.

real time—1. Having to do with the actual time during which physical events take place. 2. The performance of a computation during the actual time that the related physical process transpires in order that results of the computations are useful in guiding the physical process. 3. Refers to a type of operating system that supports online equipment having critical time constraints. Events must be handled promptly (within set timing limits). Most process control and military command/control systems are real-time systems. 4. A computer process executed with sufficient speed so that the results of a process being monitored appear to be presented instantaneously. The computer generally is able to present the results with sufficient speed to permit control changes to be made. *See* closed loop; open loop. 5. A computation or process by a computer using inputs derived from time-initiated events; the output resulting from the computation or processing can have an effect on and/or predict trends concerning those events. 6. Responding instantaneously, rather than delayed by transmission format. 7. The operation of a program in the same time frame as a human being would.

real-time clock—1. A clock that indicates the passage of actual time, such as elapsed time in the flight of a missile, as opposed to some fictitious time established by a computer program. 2. A system clock that indicates actual elapsed time from some reference time (e.g., noon). 3. A timing device used by a computer to derive elapsed time between events and to control processing of time-initiated event data. 4. A device that measures time at a rate consistent to the tasks being performed. Sometimes used for pacing the occurrence of events within a system.

real-time data processing—The processing of transactions as they occur, rather than batching them.

real-time executive—1. Supervisory software that allocates system resources among several tasks to allow them to perform necessary calculations in real time. The executive has responsibility for all priority scheduling, interrupt handling, timer service, physical control, inter-program communication, and queue maintenance required by real-time applications. 2. An operating system that runs the system in a real-time mode, typically required by online data communications or process-control systems.

real-time input—Input information inserted into a system at the time it is generated by another system.

real-time operating system—Operating system capable of real-time task management. Includes event scheduling, interrupt management, and real-time event counters.

real-time operation—1. Operations performed on a computer in time with a physical process so that the answers obtained are useful in controlling that process. 2. The use of a computer to control a process as it is actually occurring, necessitating, in general, relatively rapid operation on the part of the computer. 3. Data-processing technique in which information is utilized as events occur and the information is generated, as opposed to batch processing at a time unrelated to the time the information was generated.

real-time output—Output information removed from a system at the time it is needed by another system.

real-time reaction—A computer function that immediately responds to, or causes, a physical application action.

real-time spectrum analyzer—A device in which analysis of the spectrum of the incoming signal is