

## Exhibit 15

to Motorola's Opening Claim Construction Brief

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# COMPUTER DICTIONARY

SECOND EDITION



THE COMPREHENSIVE  
STANDARD FOR  
BUSINESS, SCHOOL,  
LIBRARY, AND HOME



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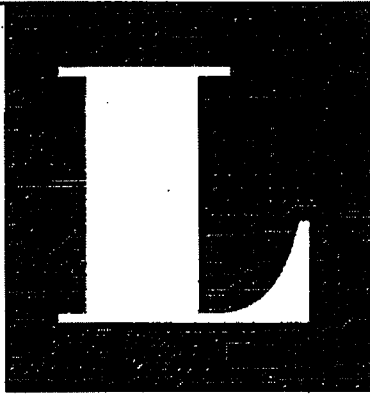
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**label** An identifier. A label can be a physical item, such as a stick-on tag used to identify disks and other computer equipment. It can also be a word, symbol, or other group of characters used to identify a file, a storage medium, an element defined in a computer program, or a specific item in a document such as a spreadsheet or a chart.

In data storage, for example, a label can be a name or other group of characters by which the operating system identifies a floppy disk or part of a hard disk, such as the names of volumes on the Apple Macintosh, IBM PCs, and related microcomputers.

In programming, a label is a name or other group of characters that identifies a variable or a part of a program. For example, a GOTO statement in BASIC in the form *GOTO dothis* tells the program to find a line labeled *dothis* and carry out the instructions that follow.

In a spreadsheet, a label is a descriptive name, such as Income or Expense, that identifies a group of cells, a named value, or a formula. In a chart, too, a label is a word, name, or number that identifies a data point on an axis in a graph. *See also* identifier.

**lag** The time difference between two events. In electronics, a lag is a delay between a change in input and a change in output.

On computer displays, a lag (also called persistence) is a fading brightness left on the phosphor coating of the screen after an image changes. *See also* persistence.

**LAN** Rhymes with "can." Acronym for local area network, a group of computers and other devices dispersed over a relatively limited area and con-

nected by a communications link that enables any device to interact with any other on the network. LANs commonly include microcomputers and shared (often expensive) resources such as laser printers and large hard disks. Most (modern) LANs can support a wide variety of computers and other devices. Each device must use the proper physical and data-link protocols for the particular LAN, and all devices that want to communicate with each other on the LAN must use the same upper-level communications protocol. Although single LANs are geographically limited (to a department or to an office building, for example), separate LANs can be connected to form larger networks. Similar LANs are linked by bridges, which act as transfer points between networks; dissimilar LANs are linked by gateways, which both transfer data and convert it according to the protocols used by the receiving network.

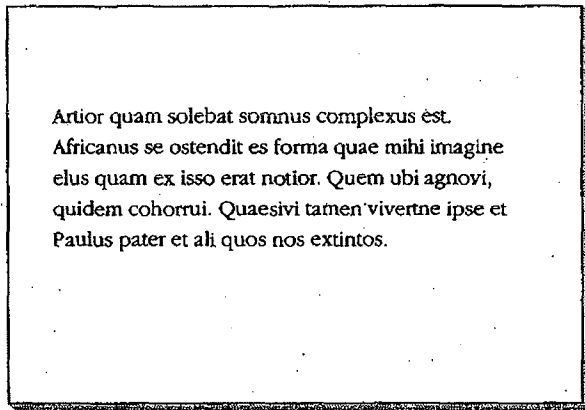
The devices on a LAN are known as nodes, and the nodes are connected by cabling through which messages are transmitted. Types of cables include twisted-pair wiring, coaxial cable, and fiber-optic (light-transmitting) cable. Nodes on a LAN can be wired together in any of three basic topologies, known as bus, ring, and star. As implied by their names, a bus network is more or less linear, a ring network forms a loop, and a star network radiates from a central hub.

To avoid potential collisions when two or more nodes attempt to transmit at the same time, LANs use either contention and collision detection or token passing to regulate traffic. *See also* baseband network, broadband network, bus network, collision detection, communications



protocol, contention, CSMA/CD, network, ring network, star network, token bus network, token passing, token ring network.

**landscape mode** A horizontal print orientation in which text or images are printed "sideways"—that is, the width of the image or the page is greater than the depth, as shown in the illustration. *Compare* portrait mode.



**Landscape mode.**

**landscape monitor** A monitor that is wider than it is high. Landscape monitors are usually about 33 percent wider than they are high—roughly the same proportion as a television screen. *Compare* full-page display, portrait monitor.

**language-description language** *See* meta-language.

**language processor** A hardware device or a software program designed to accept instructions written in a particular language and translate them into machine code. If the instructions are executed as they are translated, the language processor is an interpreter; if the language processor translates the instructions into lower-level language without executing them, it is a compiler. *See also* compiler, interpreter.

**language translation program** A program that translates statements written in one language into another language. Although a compiler is a translator, the term usually refers to programs that translate between one high-level language and another, such as a Pascal-to-C translator.

**LAN Manager** A local area network technology

developed by Microsoft Corporation and distributed by Microsoft, IBM (as IBM LAN Server); and other original equipment manufacturers (OEMs). LAN Manager connects computers running the MS-DOS, OS/2, and UNIX operating systems and allows users to share files and system resources such as hard disks and printers and to run distributed applications using a client-server architecture. *See also* client-server architecture.

**laptop computer** *See* portable computer.

**large model** A memory model of the Intel 80x86 processor family. The large model allows both code and data to exceed 64 kilobytes (KB), but the total of both must generally be less than 1 megabyte (MB). Each data structure must be less than 64 KB in size. *See also* memory model.

**large-scale integration** Abbreviated LSI. A term describing the concentration of between 100 and 5000 circuit elements on a single chip. *See also* integrated circuit.

**laser** Originally LASER, an acronym for light amplification by stimulated emission of radiation, now a word in its own right. A device that utilizes certain quantum effects to produce coherent light in the visible, infrared, or ultraviolet ranges. Coherent light has a single frequency and phase, in sharp contrast to normal, noncoherent light, which, even if it appears to be a single color, consists of multiple frequencies and random phase combinations. Noncoherent light can be likened to a mob of people rushing pell-mell down a street, whereas coherent light is more like a group of soldiers marching in formation and in step. Collimated laser light (as from a laser tube rather than a laser diode) travels with greater efficiency than noncoherent light because the beam diverges only slightly as it travels. The laser effect can be obtained in many different kinds of materials—gas, liquid, and solid. Early lasers used a ruby crystal; many modern commercially available lasers use a mixture of helium and neon gases. Lasers come in a wide range of power outputs. For example, low-power lasers are used for fiber-optic communication, laser printers, and distance measurement. High-power lasers are used in surgery, welding, drilling, and weaponry.



**wafer** A thin, flat piece of semiconductor crystal that is used in the fabrication of integrated circuits. Various etching, doping, and layering techniques are used to create the circuit components on the surface of the wafer. Usually, multiple identical integrated circuits are formed on the surface of a single wafer, which is then cut into individual sections. Each integrated circuit then has leads attached and is packaged in a plastic, metal, or ceramic holder.

**wafer-scale integration** A reference to the fabrication of integrated circuits (ICs) with such a large number of components that only a single IC can be fabricated from one wafer. Normally, multiple ICs are formed on a single wafer of semiconductor material, which is then cut apart. *See also* wafer.

**wait state** A pause of one or more clock cycles during which a microprocessor waits for data from an input/output device or from memory. Wait states are most often used to control the speed at which the microprocessor receives data from random access memory (RAM). A wait state is not noticeable to a human because it is based on the computer's internal clock, which runs at millions of cycles per second. Given the speed at which a computer operates, however, wait states are, like the speed of the clock itself, a factor that can slow system performance. In terms of system memory, "zero wait states" means that the microprocessor does not have to idle for one or more clock cycles while waiting for data from random access memory.

**WAN** *See* wide area network.

**wand** Any pen-shaped object, including a graph-

ics tablet's stylus, but generally the pen-shaped scanning mechanism used with many bar code readers. The user passes the tip of the bar code wand, which contains optical scanning equipment, over a bar code to read it. *Compare* stylus; *see also* optical scanner, scan head.

**warm boot** A system restart that does not involve turning on the power and waiting for the computer to check itself and its devices. A warm boot typically means loading or reloading the computer's operating system. On IBM and compatible personal computers, the user can perform a warm boot by using the Ctrl-Alt-Del key combination. On Apple Macintosh computers, the user can request a warm boot with the Restart command on the Special menu.

**warm start** *See* warm boot.

**watt** The unit of electrical power equal to the expenditure of 1 joule of energy in 1 second. The power of a circuit is a function of the potential across the circuit and the current flowing through the circuit. If  $E$  = potential,  $I$  = current,  $R$  = resistance, and  $W$  = watts, power in watts can be calculated as  $W = (I) \times (E)$ ,  $W = (I^2) \times (R)$ , or  $W = E^2/R$ . A small flashlight uses 1–2 watts, a car radio has an output of roughly 5 watts, and a toaster uses approximately 1200 watts. For low-power circuits, power is often measured in microwatts (0.000001 watt) or milliwatts (0.001 watt). In high-power circuits, units of kilowatts (1000 watts) or megawatts (1,000,000 watts) are often used.

**wave** Any disturbance or change that has an oscillatory, periodic nature—for example, light or sound waves. In electronics, *wave* (or *waveform*)



is used to refer to the time-amplitude profile of an electrical signal.

**waveform** A general term used to refer to the manner in which a wave's amplitude changes over time. *See also* period, phase, wavelength.

**wavelength** The distance between successive peaks or troughs in a periodic signal that is propagated through space. Wavelength is symbolized by the Greek letter lambda ( $\lambda$ ). Wavelength is directly related to the frequency of the signal and the speed of propagation, and it can be calculated as speed divided by frequency. For electromagnetic radiation, wavelength in meters equals 300,000,000 meters per second divided by frequency in hertz. For sound traveling through air, wavelength in meters equals 335 meters per second divided by frequency in hertz.

**weak typing** A characteristic of a programming language, such as C, that allows the program to change the data type of a variable during program execution. *Compare* strong typing; *see also* data type, variable.

**weighted code** Data representation code in which each bit position has a specified inherent value, which might or might not be included in the interpretation of the data, depending on whether the bit is on or off.

**well-behaved** An adjective describing a program that performs properly, even when given extreme or erroneous input values. A program that obeys the rules of a particular programming environment can also be described as well-behaved. Operating-system vendors often promise that well-behaved programs will be upwardly compatible with future enhancements of the operating system.

**"what-if" evaluation** A kind of spreadsheet evaluation in which certain values in a spreadsheet are changed in order to reveal the effects of those changes—for example, trying different mortgage rates and terms to see the effect on monthly payments and on total interest paid over the life of the loan. Spreadsheet programs allow values in an existing model to be changed and recalculated with little effort, so these programs are considered ideal for the otherwise tedious task of preparing and comparing financial alternatives.

**wheel printer** *See* daisy-wheel printer.

**Whetstone** A benchmark test that attempts to measure the speed and efficiency with which a computer carries out floating-point operations. The result of the test is given in units called whetstones. The Whetstone benchmark has fallen out of favor because it produces inconsistent results compared to other benchmarks such as the Dhrystone and the sieve of Eratosthenes. *See also* benchmark, Dhrystone, sieve of Eratosthenes.

**white noise** Noise that contains components at all frequencies, at least within the frequency band of interest. It is called "white" by analogy to white light, which contains light at all the visible frequencies. In the audible spectrum, white noise is a hiss or a roar, such as that produced when a television set is tuned to a channel over which no station is broadcasting.

**whole number** A number without a fractional component—for example, 1 or 123; an integer.

**wide area network** A communications network that connects geographically separated areas.

**wideband** *See* broadband network.

**widow** A single word, a portion of a word, or a few short words left on a line by themselves at the end of a paragraph or column of type on a page. A widow is considered visually undesirable on the printed page. Because it is short, however, a widow can generally be eliminated by editing or rebreaking preceding text. *Compare* orphan.

**wildcard character** A keyboard character that can be used to represent one or many characters; usually encountered with operating systems as a means of specifying more than one file by name. In MS-DOS, for example, the question mark (?) wildcard character can be used to represent any single character, and the asterisk (\*) can be used to represent any number of characters. Thus, ?OOK.DOC would refer to BOOK.DOC, COOK.DOC, LOOK.DOC, and so on; \*.DOC would refer to any filename ending in the extension .DOC; and \*.\* would refer to any filename and any extension—in other words, to all files on the specified disk or in a specified directory.

**Winchester disk** An early IBM name for a hard disk. The term is derived from IBM's internal