

Exhibit 28

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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menu with the keyboard or with an alternative input device such as a mouse.

COMMAND.COM The command interpreter for MS-DOS. *See also* command interpreter.

command-driven system A system in which the user initiates operations by a command entered from the console. *Compare* graphical user interface; *see also* command-line interface.

command interpreter A program, usually part of the operating system, that accepts typed commands from the keyboard and performs tasks as directed. The command interpreter is responsible for loading applications and directing the flow of information between applications. In OS/2 and MS-DOS, the command interpreter also handles simple functions such as moving and copying files and displaying disk directory information. *See also* shell.

Command key On the original Apple Macintosh keyboard, a key labeled with the special symbol ⌘, sometimes called the propeller or puppy foot. On the newer Apple ADB and Extended keyboards, the Command key merged with the Apple key used on earlier Apple II keyboards. This key is found on one or both sides of the Spacebar, depending on the version of the Apple keyboard. The key serves some of the same functions as the Control key on IBM keyboards. When pressed at the same time as a character key, it serves as a shortcut to making menu selections or executing other functions that otherwise require multiple keystrokes or mouse movements.

command language The set of keywords and expressions that are accepted as valid by the command interpreter. *See also* command interpreter.

command line A string of text written in the command language and passed to the command interpreter for execution. *See also* command.

command-line interface A form of interface between the operating system and the user in which the user types commands, using a special command language. Systems with command-line interfaces are usually considered more difficult to learn and use than those with graphical interfaces. However, command-based systems are usually programmable; this gives them flexibility

unavailable in graphics-based systems that do not have a programming interface. *Compare* graphical user interface.

command mode A mode of operation in which a program waits for a command to be issued; command mode thus differs from insert mode (in which text can be added to a document) and edit mode (in which a document can be modified).

command processing *See* command-driven system.

command processor *See* command interpreter.

command shell *See* shell.

command state The state in which a modem accepts commands, such as a command to dial a telephone number. *Compare* online state.

comment Also called remark. Text embedded in a program for documentation purposes. Comments usually describe what the program does, who wrote it, why it was changed, and so on. Most programming languages have a syntax for creating comments so that the comments will be ignored by the compiler or assembler. *See also* comment out.

comment out To temporarily disable one or more lines of code from a program by enclosing them within a comment statement. *See also* comment, conditional compilation, nesting.

common carrier A communications company, such as a telephone company, that provides service to the public and is regulated by governmental organizations.

communications The vast discipline encompassing the methods, mechanisms, and media involved in information transfer. In computer-related areas, communications involves data transfer from one computer to another through a communications medium, such as a telephone, a microwave relay, a satellite link, or a physical cable. Two primary methods of computer communications exist: temporary connection of two computers via modems and permanent or semipermanent linking of multiple workstations or computers on a network. The line between the two is indistinct, however, because microcomputers equipped with modems are often used to access both privately owned and public-access network computers.



Hardware and software used in modem-based communications is different from but related to that used in network-based communications. For example, modem-to-modem communications can use public telephone and other communications carriers for one-way or two-way transmissions between computers. Networks, on the other hand, might rely more on dedicated phone lines and switching systems or, in the case of local area networks, on machine-to-machine cabling. Because of the potential volume of traffic, networks also use sophisticated transport mechanisms and error-catching procedures to route and store messages sent to and from authorized users. *Compare* data transmission, telecommunications, teleprocessing; *see also* asynchronous transmission, CCITT, channel, communications protocol, IEEE, ISDN, ISO/OSI model, LAN, modem, network, synchronous transmission.

Communications Act of 1934 *See* FCC.

communications channel *See* channel.

communications controller A device used as an intermediary in transferring communications to and from the host computer to which it is connected. A communications controller is dedicated to data transmission; communications lines run to and from the controller, rather than the computer. By relieving the host computer of the actual tasks of sending, receiving, deciphering, and checking transmissions for errors, a communications controller helps to make efficient use of the host computer's processing time—time that might be better used for noncommunications tasks. A communications controller can be either a programmable machine in its own right or a nonprogrammable device designed to follow certain communications protocols. *See also* front-end processor.

communications link The connection between computers that enables data transfer.

communications network *See* network.

communications parameter Any of several settings required in order to enable computers to communicate. In asynchronous communications, for example, modem speed, number of data bits and stop bits, and type of parity are parameters

that must be set correctly to establish communication between two modems.

communications program A software program that enables a computer to connect with another computer and to exchange information. Communications programs for microcomputers provide several services. For initiating communications, they perform such tasks as maintaining settings (such as modem speed, parity, and handshaking) required to establish a viable connection between computers; storing and dialing phone numbers automatically; recording and executing login procedures; and repeatedly dialing busy lines. Once a connection is made, communications programs can also be instructed to save incoming messages on disk or to find and transmit disk files. During communication, communications programs perform the major, and usually invisible, tasks of encoding data, coordinating transmissions to and from the distant computer, and checking incoming data for transmission errors.

communications protocol A set of rules or standards designed to enable computers to connect with one another and to exchange information with as little error as possible. The protocol generally accepted for standardizing overall computer communications is a seven-layer set of hardware and software guidelines known as the OSI (Open Systems Interconnection) model. A somewhat different standard, widely used before the OSI model was developed, is IBM's SNA (Systems Network Architecture). However, protocols exist within protocols, all affecting different aspects of communication. Thus, the word *protocol* is used, sometimes confusingly, in reference to a multitude of standards affecting different aspects of communication. Some, such as the RS-232-C standard, affect hardware connections. Other standards govern data transmission; among these are the parameters and handshaking signals (such as XON/XOFF) used in asynchronous (typically, modem) communications, as well as such data-coding methods as bit-oriented and byte-oriented protocols. Still other protocols, such as the widely used XMODEM, govern file transfer, and others yet, such as CSMA/CD, define