

Exhibit 4

WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY

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Lexicographer



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- transmissions at different frequencies are received. Also called **dual-diversity reception**.
- diversity system** A reception or transmission system which employs **diversity reception** or **diversity transmission**, respectively. Also called **diversity (2)**, **diversity communications system**, **dual-diversity system**, or **dual-diversity**.
- diversity transmission** The converse of **diversity reception**. For example, instead of having two or more receiving antennas in separate locations, there can be two or more physically separate transmitting antennas. Also called **dual-diversity transmission**.
- diversity transmitter** A transmitter used with **diversity transmission**. Also called **dual-diversity transmitter**.
- divide overflow** An error which occurs as a result of dividing by zero, or by a number so small that the result exceeds the capability of a program or computer. Also called **overflow error**.
- divided-carrier modulation** Modulation in which the carrier is divided into two identical components which are 90° out-of-phase. Each component is modulated by a different signal, and the two signals are added together.
- divider** A circuit or device which divides a number of pulses, cycles, signals, or other input quantity, by a fixed number, such as 2 or 10. For example, counter circuits, voltage dividers, or frequency dividers.
- divider probe** A test probe that divides a voltage by a given factor, such as 10 or 1000, so that a reading falls within the range of the measuring instrument.
- dividing network** A filter circuit in a speakers which divides the input audio frequencies and sends the corresponding bands of frequencies to the designated speakers units, such as woofers, midranges, tweeters, super-tweeters, and so on. Also called **crossover network**, **crossover (3)**, **frequency dividing network**, **speaker dividing network**, or **loud-speaker dividing network**.
- division** 1. The process of separating into two or more parts. Also, the result of such a separation. For instance, the division of multiple communications channels. 2. The process of finding out how many times a quantity fits into another. Also, the result of such a computation.
- DLC** Abbreviation of **digital loop carrier**.
- DLCI** Abbreviation of **data link connection identifier**.
- DLE** Abbreviation of **data link escape character**.
- DLL** Abbreviation of **dynamic-link library**, **dynamically-linked library**, or **dynamic-linked library**.
- DLP** 1. Abbreviation of **digital light processing**. 2. Abbreviation of **digital light processor**.
- DLP projector** Abbreviation of **digital light-processing projector**.
- DLTS** Abbreviation of **deep level transient spectroscopy**.
- dm** Abbreviation of **decimeter**.
- DM** 1. Abbreviation of **delta modulation**. 2. Abbreviation of **document management**.
- DMA** Abbreviation of **direct memory access**.
- DMA/33** A version of Ultra ATA with transfer rated of up to 33 MBps.
- DMA/66** A version of Ultra ATA with transfer rated of up to 66 MBps.
- DMA/100** A version of Ultra ATA with transfer rated of up to 100 MBps.
- DMA/133** A version of Ultra ATA with transfer rated of up to 133 MBps.
- DMA channel** Abbreviation of **direct memory access channel**.
- DMA controller** Abbreviation of **direct memory access controller**.
- DMD** Abbreviation of **digital micromirror device**.
- DME** Abbreviation of **distance-measuring equipment**.
- DMI** Abbreviation of **desktop management interface**.
- DML** Abbreviation of **data manipulation language**.
- DMM** Abbreviation of **digital multimeter**.
- DMOS** Abbreviation of **diffused metal-oxide semiconductor**.
- DMR** Abbreviation of **digital microwave radio**.
- DMS** 1. Abbreviation of **data management system**. 2. Abbreviation of **document management system**.
- DMT** Abbreviation of **discrete multitone**.
- DMT modulation** Same as **discrete multitone**.
- DNC** Abbreviation of **direct numerical control**.
- DNIS** Abbreviation of **dialed number identification service**.
- DNS** Abbreviation of **Domain Name System**, or **Domain Name Service**. Over the Internet, a system which translates a domain name, such as *www.yipeeee.com*, into an IP address, such as 91.2.133.206. The DNS maintains a database which correlates domain names with the appropriate IP addresses. A domain name may have more than one IP address associated with it, and an IP address may also have more than one domain name associated with it. Although an IP address or a domain name may be entered in the address field of a browser, the latter is more often used as it is generally easier to remember.
- DNS error** An error 404 resulting from the inability to convert a domain name into an IP address.
- DNS query** Abbreviation of **Domain Name System query**, or **Domain Name Service query**. A request for a conversion from a domain name to an IP address.
- DNS server** Abbreviation of **Domain Name System server**, or **Domain Name Service server**. A computer which handles **DNS queries**. It is a type of name server.
- do-nothing instruction** Same as **dummy instruction**.
- dock** 1. Same as **docking station**. 2. To plug into a **docking station**.
- docking station** A base unit that a portable computer plugs into, so that the user can expand its functionalities to that of a desktop computer. Such a base has connections for a monitor, a full-sized keyboard, a printer, AC power, and so on. Also called **dock (1)**.
- DOCSIS** Acronym for **Data Over Cable Service Interface Specification**. A set of standards for the bi-directional transfer of data utilizing a cable TV network and a cable modem. Data rates are usually between 27 and 36 Mbps downstream, and up to 10 Mbps upstream.
- document** 1. A file created by a computer application, especially that of a word processor. 2. To explain a program or process. Also, the recorded explanation, be it on paper or in another form.
- document-centric** Pertaining to an operating system in which a document is the starting point of a task. For example, a document is retrieved, and then the appropriate application is invoked automatically. This contrasts with **application-centric**, where the application is the starting point of a task.
- document image processing** The storing and retrieving of information in the form of electronic images of paper documents. For example, a series of documents may be scanned, and then stored in the form of bitmapped images. Similar to microfilm, signatures, drawings, hand-written comments, and other markings are left intact, though it does occupy comparatively more storage space. Its abbreviation is **DIP**.
- document management** The use of computer software, such as database programs, and hardware, such as scanners, to create and manage the documents of an organization. Such documents may be paper-based, or electronic. Its abbrevia-

component Same as **electronic element**.

computer Nearly always synonymous with **computer**. Very few computers are not electronic. A personal computer, for instance, has no electronic components.

conduction The flow of electricity as a result of the movement of electrons.

content Information that is available online, such as any combination of audio, video, files, text, or graphics. Its abbreviation is **e-content**, or **eccontent**.

control The control of a device, piece of equipment, or process through the use of electronic components such as transistors or electron tubes. This contrasts with **mechanical control**, which utilizes electrical components such as relays, or rheostats. Also called **electronic control**.

controller An automatic controller that utilizes electronic control.

counter An electronic circuit or device used as a counter. For example, it may serve to store and/or indicate a count to generate an output after counting a specified number of pulses. Such counters have no moving parts, and are characterized by speed, reliability, and durability.

counter-countermeasures Measures taken to counter the effects of **electronic countermeasures**. Its abbreviation is **CCCM**.

countermeasures Measures taken to reduce the effects of electronic devices, such as radars, which utilize any part of the electromagnetic spectrum. An example is **ECM**.

coupling Coupling occurring in association with electronic components or electrons. An example is **electron coupling**.

Same as **e-credit**.

Same as **electronic cash**.

Same as **EDI**.

data processing Its abbreviation is **EDP**. Also called **data processing, information processing, or automatic data processing**. 1. The processing of information within a computer. The processing of information within a computer. For example, the manipulation of large amounts of data in a program.

data processing equipment Equipment used for data processing. Such equipment includes computers and peripherals used in this process. Its abbreviation is **EDPS**, or **electronic data-processing system**.

data processing system Also called **data processing system**. 1. Same as **electronic data-processing system**. Resources and procedures utilized for data processing.

data storage Automatic Calculator A computer used in 1949 which used mercury delay lines and which performed approximately 650 instructions per second and its operating system consisted of a program. Its acronym is **EDSAC**.

data simulation The use of sophisticated equipment to simulate the function of electronic components. For instance, that of chips, or of televisions. Its abbreviation is **EDA**.

data format A standard format for the exchange of graphics data, such as that used in computer-aided design. Its abbreviation is **EDIF**.

diode A physical unit, such as a transistor or diode, that can operate on an applied electrical signal, such as rectifying, or switching. 2. A device

which incorporates one or more **electronic devices** (1). There are countless examples, including computers, cellular telephones, and audio and video recording and reproducing equipment.

electronic differential analyzer A differential analyzer which uses electronic components.

electronic display A device, incorporating electronic components such as LEDs, utilized to display the images generated by a computer, TV, oscilloscope, radar, or other similar device with a visual output.

electronic document management The use of computer software, such as database programs, and hardware, such as scanners, to create and manage the documents of an organization. Such documents may be paper-based or electronic. Its abbreviation is **EDM**. Also called **enterprise document management, or document management**.

electronic document management system A system which facilitates **electronic document management**. It performs various functions, such as providing search engines, converting between formats, providing access through networks, and determining if a given user can update or only read documents. Its abbreviation is **EDMS**. Also called **enterprise document management system, or document management system**.

electronic eavesdropping 1. The use of electronic devices, such as bugs, to **eavesdrop**. 2. To **eavesdrop electronic communications**.

electronic efficiency The ratio of the power delivered by an electron stream, to the power supplied to said stream. Utilized as a measure of the effectiveness of an electron stream for the transmission of power.

electronic element A circuit component, such as a transistor or electron tube, which can operate on an applied electrical signal, as in amplifying, rectifying, or switching. **Electrical element** is a more general concept, and also includes any other electrical components that are a part of a circuit, such as resistors, capacitors, and generators. Also called **electronic component**.

electronic engineering The branch of engineering which deals with the design, construction, operation, and optimization of electronic circuits, components, devices, equipment, and systems.

electronic flash 1. A repeatable and artificially produced burst of bright light. Such a flash is usually generated by applying a high voltage to an electrode of a tube containing an inert gas such as xenon. The gas becomes ionized, which permits it to rapidly discharge the energy previously stored in a capacitor. Used, for instance, in photography. Also called **photoflash, flash (2), or strobe (3)**. 2. Same as **electronic flash tube**.

electronic flash lamp Same as **electronic flash tube**.

electronic flash tube A tube which produces an **electronic flash (1)**. Also called **electronic flash (2), electronic flash lamp, flash tube, strobe (2), or strobe light**.

electronic form An online document with blank spaces in which information is entered. May be used, for instance, by an online seller requesting billing and shipping information from a client. When utilized for business transactions, such forms are usually secured with encryption. Its abbreviation is **e-form**.

electronic funds transfer The transfer of money from one account to another, via electronic means such as computer networks. Such transactions should be secure and instantaneous, and usually occur automatically. Examples include electronic transfers between banks, and online payments of bills. Its abbreviation is **EFT**.

electronic game Its abbreviation is **e-game**, or **egame**. 1. A computer game which is played on its own portable, usually

palm-sized, device. 2. A computer game played over the Internet. Also called **Internet game**.

electronic guitar Same as **electric guitar**.

electronic heating The use of a radio-frequency power source, such as an oscillator, to provide heat. Also called **RF heating, or high-frequency heating**.

electronic ignition Ignition which is controlled by electronic devices, such as semiconductors.

electronic image An image formed through **electronic imaging**. Also called **electron image**.

electronic imaging The process of converting an image into an electronic equivalent, such as a bitmap, suitable for computer processing, storing, transmitting, or displaying. A charge-coupled device, for instance, may be used to capture such an image. Also called **electron imaging, or imaging (2)**.

electronic information processing The use of electronic devices and equipment, such as computers, to process data. This data may be in any form, including text, audio, images, and so on.

electronic ink The coating, such as a flexible array of transistors, of a sheet of **electronic paper**. Its abbreviation is **e-ink** or **e-ink**. Also called **digital ink**.

electronic instrument 1. An instrument, such as a multimeter or absolute altimeter, which incorporates one or more electronic devices. 2. Same as **electronic musical instrument**.

electronic interference 1. Any electrical or electromagnetic interference which surrounds an electronic device, and which diminishes its performance, such as its ability to receive or process a desired signal, or that causes a malfunction or failure. 2. Any interference an electronic device produces.

electronic inverter An inverter which utilizes one or more electronic components to perform its function.

electronic jamming The intentional use of electromagnetic radiation, especially radio-frequency signals, to disrupt communications. Also called **jamming**.

electronic journal Same as **electronic log**.

electronic line scanning The use of electronic means to move a scanning spot along a scanning line.

electronic listening device Same as **electronic bug**.

electronic lock 1. A lock which can only be opened by entering a specific sequence of signals. Such a lock may be used, for instance, with a key about the size of a credit card which incorporates a magnetic stripe that is swiped to provide the proper signals enabling access or authorization. Electronic locks are easy to reprogram, and usually provide the ability to monitor and log usage. Such locks may be used, for instance, for entrances, or to allow the use of equipment. 2. A lock incorporating one or more electronic devices.

electronic locking The use of an **electronic lock**.

electronic log A record of computer and/or network activity. Used, for example, to find the origin of problems, monitor usage, recover data, or to identify unauthorized access. Also called **electronic journal, journal, or log (3)**.

electronic magazine A magazine, or similar publication, which is distributed or otherwise made available in digital form. Its abbreviation is **e-zine**.

electronic mail 1. Same as **email (1)**. 2. Same as **email (2)**.

electronic means The utilization of electronic components, circuits, devices, equipment, and/or systems, to perform any given function. There are countless examples, including recording of multimedia content onto a DVD, filing of an income tax return through the Internet, or conversing using a cellular phone.

electronic meeting room A location specially equipped with computers, peripherals, and other electronic devices which