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Adverse Channel Entre Channel orying line quality, such as a ophone service. These enhance tempts at link setup. o accommodate scriptor a second Regulating transmission speed shifts to achieve the maximum acceptable line speed somically shifting to the modern speed most suitable to transmission line condi-

From Control Protocols and LZW.

Gresomputer The combination of CPU (Central Processing Unit) and other periphmemory, etc.) that form a basic computer system. See Microprocessor.

The traditional definition: A little world; a miniature universe. A smaller only having analogies to a larger unity. A Jimmy Stewart movie, Magic Grandview," a small town in the Midwest that is a perfect statistical microsee Inited States, a place where the citizens' opinions match perfectly with Gallup one nation. George Gilder defines it as the domains of technology unleashed of the inner structure of matter in quantum theory early in the 20th century. i the microcosm is the microchip.

antiectroMechanical System MEMS. Semiconductor chips that have a sectionical devices, such as mirrors or fluid sensors. MEMS devices are used temperature, chemical and vibration sensors, light reflectors, and switchexplainmeters for air bags, vehicle control, pace makers and games. They the construction of microactuators for data storage and read/write heads, was component for photonic switches, which can be used in cross-connect, , dispersion compensation, and gain-equalization applications. MEMS and a switching systems, which offer clear advantages in purely optical WORK (Dense Wavelength Division Multiplexing) combined with EDFA amplification) and Ramon amplification. There are two types of mechanical and microfluidic. Mechanical MEMS switches involve vast sees hundreds of thousands) of micromachined mirrors on a silicon chip. kamagnetic or thermal) adjust the mirrors to switch optical signals sets and outgoing ports associated with optical fibers. Microfluidic withe movement of fluids contained in tiny channels etched into the tem of an intersecting grid configuration. In default mode, the fluids as pass through. If the signal is to be switched, tiny bubbles are injectse from the fluid hundreds of tirnes per second, thereby reflecting the

The second splays are a sector of the flat panel display industry used in the second sector of the flat panel display industry used in the second sector of the sec ays are typically of such high resolution that they are only prachas to lancy word for a specially-designed magnifying glass). we typically sized less than two inches, many can provide a magnise to that of a full size computer screen. For example, when viewed seculation 3/4-inch diagonal display can be made comparable to computer screen or a large TV screen.

Leading street of transparent film that contains multiple rows of as af repart, catalogs, rate books, etc.

ses set anta a screen, produces a legible copy of the item or form

be select generation of floppy disks at 3 1/2 inches diameter, separate in the Apple Macintosh and most MS-DOS laps used in the Apple Macintosh and most MS-DOS lap-W-DUS machine, a 3 1/2 inch microfloppy diskette will cur-*** Assort bytes of data — equivalent to about 500 pages of dou-

The blazing fast Internet access of the future scands — might just depend on a little plumbing in the asse of MIT Technology Review, the editors wrote, "Tiny sames could improve the flow of data-carrying photons, selicibility. Realizing this radical idea is the goal of ars, whose prototype devices, called microfluidic optiagain becomes the mantra. Rogers began exploreas ope as a researcher at Lucent Technologies' Bell and data transmissions consist of pas employs fibers bored through with microscop-accometers in diameter, depending on their use. and his team shawed that pumping tiny amounts

of various fluids into them - and then controlling the expansion, contraction, and movement of these liquid "plugs" - causes the optical properties of the fibers to change. Structures such as tiny heating coils printed directly on the fiber precisely control the size, shape, and position of the plugs. Modifying the plugs' properties enables them to perform critical functions, such as correcting error-causing distortions and directing data flows more efficiently,

thus boosting bandwidth far more cheaply than is possible today." See also Mirofluidics.

Microfluidics Microfluidics is the scaling down of laboratory fluid tests to miniature sizes. Lab experiments can be performed by manipulating tiny amounts of chemicals and biological samples on chips containing tiny tubes and vessels. Amounts of fluids in quantities as small as microliters, nanoliters or even picoliters can be handled. This technique saves the use of large amounts of expensive chemicals and precious samples, and may help speed up new discoveries by enabling scientists to automate thousands of experiment a day with great occuracy. Microfluidics hardware requires construction and design that differs from conventional hardware, as it is not generally possible to scale conventional devices down to miniature size and expect them to work. When the dimensions of a device or system reach a certain size as the scale becomes smaller, the particles of fluid, or particles suspended in the fluid, become comparable in size with the apparatus itself. This dramatically alters system behavior, as capillary action changes the way in which fluids pass through microscale-diameter tubes, as compared with macroscale channels. See also Microfluidic Optical Fibers.

Microform Microform means Microfiche and Microfilm.

Micrographics Conversion of information into or from microfilm or microfiche. Micron One thousandth of a millimeter. Or one millionth of a meter. A unit of measurement corresponding to 1/25,000 of an inch or 40 millionths of an inch.. A micron can be used to specify the core diameter of fiber-optic network cabling. This diameter should match your hardware vendor's requirements; but if you install fiber before you buy the equipment, specify the 62.5-micron size.

Micropayment An on-line payment of a dime or less. Touted as the key catalyst for Internet commerce, micropayments were conceived as a means of generating revenues which would be significant for vendors, in the aggregate, while being so trivial to the individual users that they would not hesitate make micropayments freely. While still rhetorical, micropayments were to apply to such services as custom newsfeeds, processing applets

Microphone A transducer that changes the air pressure of sound waves into an elec trical signal that can be recorded, amplified and/or transmitted to another location.

Microprocessor An electronic circuit, usually on a single chip, which performs arithmetic, logic and control operations, with the assistance of internal memory. The microprocessor is the fabled "computer on a chip," the "brains" behind all desktop personal computers. Typically, the microprocessor contains read only memory — ROM — (permanently stored instructions), read and write memory — RAM, and a control decoder for breaking down the instructions stored in ROM into detailed steps for action by the arithmetic logic unit — ALU — which actually carries out the numerical calculations. There's also a clock circuitry which connects the chip to an exterior quartz crystal whose vibrations coordinate the chip's operations, keeping everything in step. And finally, the input/output section directs communications with devices on the outside of the chip, such as the keyboard, the screen and the various disk drives

The Fortune Magazine issue of May 6, 1991 contained a very good explanation of chips and microprocessors (usually used interchangeably). Here is the article, slightly con-

Chips today can store and retrieve data, perform a simple mathematical calculation, or compare two numbers or words in a few billionths of a second. And they can carry out tens of thousands of such tasks in the blink of an eye. Today's chips contain millions of transistors, capacitors, diodes, and other electronic components, all connected by metallic threads a fraction of the diarneter of a human hair. A single chip the size of a fingernal can store dozens of pages of text or combine circuits that can perform scores of tasks simultaneously.

Most chips fall into one of two categories - memory chips and logic chips. Memory chips have the easier job. They merely store information that will be manipulated by the logic chips, the ones with the smarts. Today's biggest-selling memory chip (mid-1991) is the one-megabit dynamic random access memory, or DRAM. Each DRAM is a slice of silicon embedded with a lattice of 1,000 vertical and 1,000 horizontal aluminum wires that circumscribe one million data cells. The densest DRAM designed so far has 64 million cells.

Think of those wires as streets and those cells as blocks. Each block contains a transis-

Microprocessor Controls / Microsoft Solution Provider

tor that can be turned on or off—— to signify 1 or 0 —— and that can be identified by it's unique "address" in the wire grid, much like a house in a suburban subdivision. Each digit, letter, or punctuation mark is represented by 1's or 0's stored in eight-cell strings. (See ASCIL) The word "chip" takes up 32 cells in a memory chip. Most PCs sold today have at least eight one-meaphit DRAMs

least eight one-megabit DRAMs.

It's the job of the logic chips to turn those transistors in the DRAMs on or off, and to retrieve and manipulate that information once it's stored. The most important and complex logic chips are microprocessors like Intel's 80386DX, the brains of the more powerful IBM-compatible PCs sold today. If the structure of a memory chip is a suburban subdivision, the layout of a microprocessor is more like an entire metropolitan area, with distinct neighborhoods devoted to different activities. A typical microprocessor contains among other things:

 A firing system that synchronizes the flow of information to and from memory and throughout the rest of the chip.

 An address directory that keeps track of where data and program instructions are stored in the DRAMs.

An arithmetic logic unit with all the circuits needed to crunch numbers.

On-board instructions that control the sequence of microprocessor operations.

Other logic chips in a computer take their cues from the microprocessor millions of times each second to draw images on the screen, to feed instructions from a spreadsheet program, say, out of the disk drives into DRAMs, or to dispatch data to a modem or a printer. Perhaps most amazing of all, memory and logic chips can accomplish all this with just a trickle of electricity - far less than it takes to light a flashlight bulb.

Ted Hoff at Intel invented the microprocessor in 1971. See also 1971 in the beginning of this dictionary.

Microprocessor Controls A control system that uses computer logic to operate and monitor an air conditioning system. Microprocessor controls are commonly used on modem precision air conditioning systems to maintain precise control of temperature and humidity and to monitor the unit's operation.

Microsatellites Unlike traditional satellites, which can weigh tons, microsatellites are the size of a suitcase and weigh about 220 lbs. Since it costs "a bar of gold to launch a can of Coke," according to the New York Times, lightweight microsatellites will be much cheaper to launch than their obese precursors. The U.S. military's goal is to send microsatellites into space in flocks. In this cluster, they would be reprogrammable, able to switch to new tasks when the Pentagon required it.

Microsecond One millionth of a second. A microsecond is fen to the minus six. One microsecond — a millionth of a second — is the duration of the light from a camera's electronic flash. Light that short freezes motion, making a pitched ball or a bullet appear stationary. See Atto, Nanosecond, Femto and Pico.

Microsegmenting The process of configuring Ethernet and other LANs with a single workstation per segment. The objective is to remove contention from Ethernet segments. With each segment having access to a full 10 Mbps of Ethernet bandwidth, users can do things involving significant bandwidth, such as imaging, video and multimedia.

Microsegmentation Division of a network into smaller segments, usually with the intention of increasing aggregate bandwidth to devices.

Microstot The time between two consecutive busy/idle flags (60 bits, or 3.125 miliseconds at 19.2 kbps). It is used in CDPD only. A cellular radio term.

Microsoft Founded in 1975 by Bill Gates and Paul Allen as Microsoft (now called Microsoft) it is (or was at the time of writing this edition of this dictionary) one of the largest software companies in the world. See the next few definitions.

Microsoft At Work A new architecture announced by Microsoft on June 9, 1993 and then put into retirement a couple of years later. Many of its features and ideas surfaced in Windows 95. It consisted of a set of software building blocks that will sit in both office machines and PC products, including:

- Desktop and network-connected printers.
- Digital monochrome and color copiers.
- Telephones and voice messaging systems.
- Fax machines and PC fax products.
- Handheld systems.
- Hybrid combinations of the above.

According to Microsoft, the Microsoft At Work architecture focuses on creating digital connections between machines (i.e. the ones above) to allow information to flow freely throughout the workplace. The Microsoft At Work software architecture consists of several technology components that serve as building blocks to enable these connections. Only one

of the components, desktop software, will reside on PCs. The rest will be incorpored other types of office devices (the ones above), making these products easier to use patible with one another and compatible with Microsoft Windows-based PCs. The contents, according to Microsoft, are:

Microsoft At Work operating system. A real-time, preemptive, multi tacking
ing system that is designed to specifically address the requirements of the
automation and communication industries. The new operating systems
Windows compatible application programming interfaces (APIs) where apprentices.

Microsoft At Work communications. Will provide the connectivity between the
At Work-based devices and PCs. It will support the secure transmission of
digital documents, and it is compatible with the Windows Messaging Aff
Windows Telephony API of the Windows Open Services Architecture (WOS)

Microsoft At Work rendering. Will make the transmission of digital document formatting and fonts intact, very fast and, consequently, cost-effective, without a document sent to any of these devices will produce high-quality referred to as "What You Print Is What You Fax Is What You Copy is Wesse."

Microsoft At Work graphical user interface. Will make all devices very see and will make sophisticated features accessible; will provide user fuel features. Leveraging Microsoft's experience in the Windows user interface. At Work-based products will use very simple graphical user interface people who are not computer users.

Microsoft At Work desktop software for Windows-based PCs. Will provide the based PC applications the ability to control, access and exchange information and product based on Microsoft At Work. Desktop software is the one pass as Microsoft At Work architecture that will reside on PCs.

See also Fax At Work, Voice Server, Windows, Windows CE, Windows 95, ***
Telephony and WOSA.

Microsoft Exchange A family of products that offers enterpase conformation sharing. According to the Windows 95 Resource Kit, Windows 95 Microsoft Exchange client, an advanced messaging application that retrieves one inbox from many kinds of messaging service providers, including Microsoft Network and Microsoft Fax. Its integration with Microsoft Fax you to send rich-text documents as faxes or mail messages. With Microsoft Fax you can do the following:

Send or receive electronic mail in a Win 95 workgroup.

Include files and objects created in other applications as part of mass.

Use multiple fonts, font sizes and colors, and text alignments in the size

Create a Personal Address Book or use address books for providers.

Create folders for storing related messages, files, and after items

Organize and sort messages in a variety of ways

Send and receive messages to and from the following sense: proceedings and the Microsoft Network (online service), Microsoft Fee and services that use MAPI service providers.

Services that use MAPI service providers.

Microsoft Fax | plucked the following explanation from the moderns can excluse the service providers. The service providers are exclused by a printing a document or sending an electronic male is compatible with the millions of traditional Group 3 fax maximum vides advanced security and binary file transfer (BFT) features the service in by means of a fax easier and more powerful. To use Aucuse the Microsoft Exchange, Microsoft Fax has been integrated into Microsoft Exchange, Microsoft Fax has been integrated in the Microsoft Fax are received in the Microsoft Exchange universal by composing a Microsoft Exchange message, or by using the second of a MAPI-compatible application (such as Microsoft Excel as Microsoft Solution Provider This is Microsoft Solution Provider This is Microsoft Solution Provider This is Microsoft and Microsoft Solution Provider This is Microsoft and Microsoft Solution Provider This is Microsoft and Microsoft Solution Provider This is Microsoft Solution Providers are independent organizations that have second to the second the second to the sec

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