PERSONAL COMPUTER PERIPHERALS

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Annotation: In the article, information about peripheral devices of a personal computer is given in an explanatory manner. The article explains about the printer and its types of symbolic and graphic printers, and about the scanner and its types. At the same time, the science of Strimmer and Sound kalonka is explained here. The information is briefly and succinctly interpreted scientifically.

Keywords: computer, scanner, printer, explains.

• Types and functions of printing devices for a personal computer

• Types of scanners, functions

• Microphone, speaker, web camera, etc. along with such devices, printer, plotter modem, scanner, fax, etc. can be connected to peripheral (external) devices.

A printer is an output device that prints information on paper. According to the method of outputting information, printers are divided into 2 groups: symbolic and graphic.

Character printers pass the individual characters in a string as a whole to the print head.

In graphics printers, data is output as individual dots rather than symbols.

The number of dots per unit length (1 inch) indicates the capabilities of the printer.

According to the method of recording the image on paper, printers are divided into 2 groups: percussive and non-percussive.

There are following types of printers:

• Laser

• Cartridge (jet).

• Matrix (needle) etc.

A scanner is an external device that is connected to a personal computer and is used to enter text and graphic data on paper into the computer graphically. A scanner is an input device. There are following types of scanners: Tablet, handheld, drum, etc. The optical capabilities of the scanner are characterized by the number of dots per inch.

Tablet scanners. Flatbed scanners are designed to input graphic information from transparent (clear) and opaque (opaque) sheets. The principle of operation of these devices is that the light beam reflected from the surface of the material (or passing through the transparent material) is recorded by special elements. It should be noted that text on paper can also be entered with the help of tablet scanners. In this case, the graphic image of the text is entered into the computer, and then the graphic image is converted into electronic text through special OCR (optical character reading) programs. The main parameters of flatbed scanners are:

• scanning capability (number of dots per inch during scanning);

• productivity;

• dynamic range (dynamic range is determined by the logarithm of the ratio of the brightness of brighter areas of the image to the brightness of darker areas);

• maximum size of scanned material. A typical indication of the scanning capability of flatbed scanners used in office work is the range: 600-1200 dpi (dpi-dots per inch).

Handheld scanners. The working principle of handheld scanners is basically the same as the working principle of a tablet scanner. The difference is that the regularity and accuracy of the scanning is unsatisfactory. The scanning capability of the handheld scanner is 150 - 300 dpi.

Drum scanner. In this type of scanners, the main material to be scanned is attached to the cylindrical surface of a drum that rotates at high speed. This type of device provides the highest scanning capability (in the range of 2400-5000 dpi) thanks to the photoelectronic amplifiers. They are used for high-quality original images, but they are not suitable for images with a small linear dimension (photonegatives, slides, etc.).

Form scanners. Such scanners are designed to enter data from standard forms that are mechanically or manually filled out. Such a necessity occurs in the census of the population, the calculation of the voting results and the analysis of the questionnaire data. Form scanners do not require high scanning accuracy. Barcode scanners. They are a special type of handheld scanners, designed to enter coded data in the form of barcodes. Such devices are widely used in retail trade networks.

A plotter is an output device that prints large complex graphic objects accurately and quickly on special materials.

A modem is a device that encodes information and transmits it to other computers through communication channels and decodes it. Modems have internal and external types. Modem - used in global networks, that is, the Internet. A modem is a converter device. Modem consists of 2 words - modulation (transformation of analog information into digital information - signals) and demodulation (transformation of digital information - signals into analog information). A modem is both an output and an input device. A modem is a device that connects to telephone lines.

Digitizer - ready graphic (image, map, etc.) provides conversion of information into digital form. It is in the form of a flat tablet and transfers the coordinates of the points to the computer's memory while moving on the tablet by means of a special pen tool. A digitizer is an input device.

A microphone is an input device that converts sound into an electrical signal. With the help of a microphone, audio information is entered into the computer.

A web camera is an input device that enters video information (images) into a computer. A graphic tablet (digitizer) is an input device that directly enters hand-drawn images, schemes, signatures, maps into a computer. The device chart consists of a tablet and a pen.

TV-tuner is an input device that receives TV broadcasts of various formats (Pal, Secam, NTSC) and displays them on the monitor.

A scanner is an external device of a personal computer for entering text, image and graphic data on paper into the computer. The scanner reads the data in graphic form and enters it into the machine's memory. Then the editor reads the necessary graph and enters it into the machine's memory. Then, with the help of the necessary graphic editor programs, the necessary graphics

are converted into binary code and transferred to disks or a printing device. The scanner is connected to a personal computer through a USB port.

Examples of output devices of a personal computer include a monitor, printer, speaker, graphics card, Stimmer, etc. can be shown.

A monitor is an output device and is used to control the input data and received results. Monitors used in personal computers have the following sizes according to the size of the screen: 14, 15, 17, 19 and 21 inches. Monitors are divided into the following types according to the principles of image formation: electron-beam tube, liquid crystal and plasma. Plasma and liquid crystal monitors have a thin surface and are very light in weight.

Printers are external devices of the computer, for printing information on paper. According to the method of outputting information, printers are divided into two types: Symbolic and graphic. Character printers transfer the individual characters in a line as a whole to the printhead. In graphic printers, information is not in the form of symbols. It is transmitted to the output in the form of separate points. The number of dots per inch (1 inch = 25.4 mm) per unit length indicates the capabilities of the printer. Printers are divided into 2 groups according to the method of recording the image on paper. Percussion and non-percussion printing devices. Examples of impact printing devices are dot matrix devices. Matrix units consist of 9, 18 and 24 units. There is a colored ribbon between the print head and the paper. After the character is formed in the printhead, the nibs move, striking the colored ribbon and forming the character on the paper. Examples of non-impulse printing devices are laser and inkjet printing devices. Images from laser printers are written on paper using an intermediate data carrier. With the help of a laser beam, the image is first written on an intermediate data carrier (a negative is obtained), and then the top layer of this data carrier is covered with dust. The white paper is stretched over the top of this drum and due to the high heat, the image (negative) on the drum is absorbed onto the paper. The printing quality and speed of laser devices is very high. These printers can print 4 to 16 pages per minute and 600 to 1200 dots per inch. The working principle of cartridge printers is different from other printers. In these printers, the print head is filled with ink. There are very small holes in the hood. Ink is sprayed onto the paper from these holes. The price of cartridge printers is relatively cheap. They have the ability to print in color. They can hit 300 – 720 points at a distance of one inch. Printing speed is 2-6 errors per minute. The print head has 48 to 416 holes.

A speaker (as an output device) is used to listen to audio data.

Graphing device - an output device that draws graphic data, complex schemes and images received on a computer with the help of a pen on paper.

Strimmer (magnetic tape drive) is a storage device that stores data on magnetic tape. These devices work reliably, are cheap and have a large memory capacity. Data reading and writing speed is much lower than other memory devices.

A device that provides processing of text, sound, image and images from computers is called multimedia. This device combines a microphone, a webcam, a speaker and a sound card. They use the sound card to convert audio video information (analog) into binary digital code and vice versa to convert binary code into audio-video information. They organize audio-video conferences on computer networks with the help of multimedia devices.

Modem (modulator-demodulator) is a device used to transmit and receive data over long distances with the help of communication channels (telephone lines, radio, channel, etc.). Structurally, modems come in 2 forms: internal and external. Internal modems are connected to the system work on the motherboard. External modems are connected to the serial com, usb port.

External modems are relatively expensive and connect to a personal computer. The data transfer rate is Kbit/s - 2 Mbit/s. Users are connected to the computer network (internet) of computers with the help of a modem device.

UPS is a device that protects the computer from voltage problems. When using UPS, it can supply the computer with energy for 15-30 minutes during a power outage. The kinescope (stropascope) is connected directly to the video card device by means of a cable and plays the role of a monitor. The image passes through special lenses and creates a visual image on the board. This device is often used in conferences and modern educational complexes. Card-reader is a device for reading external memories (SD, MMC, M2, Micro cards).

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Matrix (needle)

etc.

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• Drum

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