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FIVE PEN PC TECHNOLOGY

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ABSTRACT

“5 pen technology” is a recent discovery in the field of pen computing. Pen computing is a field that outlines computer like user interface that makes use of pen like devices that will be convenient to use in comparison to contemporary systems (such as laptops, desktops etc.). 5 Pen PC technology consists of 5 pen like devices which are used for providing functions of a CPU, a projector, a virtual keyboard, a camera, and communication functions of a cellular phone.

P-ISM's are connected with one another through short-range wireless technology. Pen-style Personal Networking Gadget is computers in the shape of different pens each having a function of its own and when combined together give us the usage of a full-blown computer.

Keyword: P-ISM, pen computing, Bluetooth, virtual keyboard, CPU pen, camera, Battery.

1. INTRODUCTION

P-ISM is a gadget package including five functions: a pen-style cellular phone with a handwriting data input function, virtual keyboard, a very small projector, camera scanner, and personal ID key with cashless pass function. P-ISMs are connected with one another through short-range wireless technology. Use of pen and paper to send SMSs, e-mails and surf Internet didn't seem feasible. However, the introduction of Pen-style Personal Networking Gadget i.e. P-ISM has made things easier and convenient. These are computers in the shape of different pens each where-in each has a function of its own, but when combined together, they give us the usage of a complete computer in an easy and compact manner.

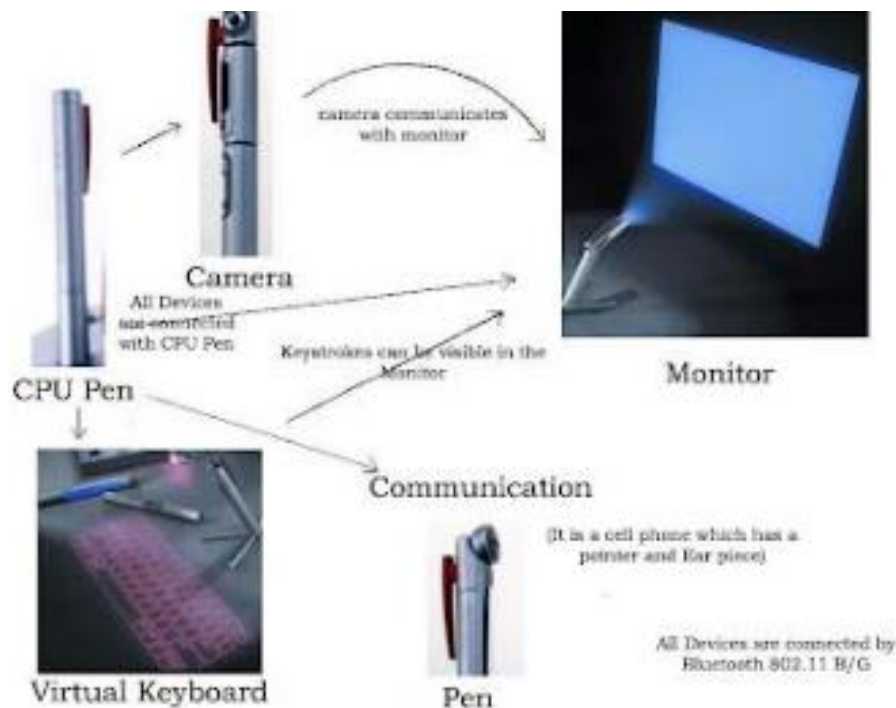


Fig1:5 Pen PC Technology

2. COMPONENTS OF PISM

The five components of PISM:

- CPU Pen
- Communication Pen
- Virtual Keyboard
- LED Projector
- Digital Camera

CPU PEN

The functionality of CPU is done by one of the pens. It is also called computing engine. It consists of a dual core processor embedded in it and it works with WINDOWS operation system. The central processing unit (CPU) is the portion of a computer system that carries out the instructions of a computer program, and is the primary element carrying out the computer's functions. The central processing unit carries out each instruction of the program in sequence, to perform the basic arithmetical, logical, and input/output operations of the system. OS is already preloaded in this pen and it cannot be altered. It works with Windows OS and is embedded with a dual core micro-processor chip.

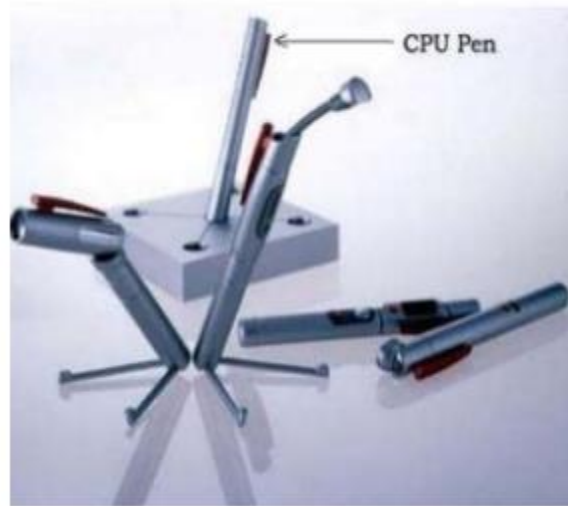


Fig2: Diagram of CPU pen

COMMUNICATON PEN

Cell phone, pressure sensitive, pointer and earpiece, pointing device Communication Pen. As the name suggests this component facilitates communication between all the pens. This pen has inbuilt cellular phone function which enables it to connect. P-ISMs are connected with one another through short-range wireless technology. The whole set is also connected to the Internet through the cellular phone function. They are connected through Tri-wireless modes (Blue tooth, 802.11B/G, and Cellular) which are made small and kept in a small pen like device. It is a pointing device that will provide functions similar to a mouse. This pen will help the user to interact with information that is projected by the projector pen.



Fig3: Communication Pen

VIRTUAL KEYBOARD

Emits laser on to the desk where it looks like the keyboard having QWERTY arrangement of keys. Virtual Keyboard (VKB) Pen. This pen functions similar to the LED projector pen. The laser pen emits a laser keyboard on a flat surface which looks like the keyboard is having an arrangement of QWERTY. It generate a full-size perfectly operating laser keyboard that smoothly connects to of PC and most of the handheld devices. As we type on the laser projection, it analyses what we are typing according to the co-ordinates of the location. virtual keyboard is a software component that allows a user to enter characters. A virtual keyboard can usually be operated with multiple input devices, which may include a touch screen, an actual keyboard, a computer mouse, a head mouse and an eye mouse

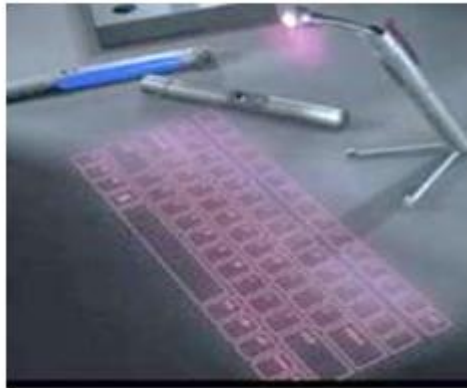


Fig4: Virtual keyboard pen

FEATURES OF VIRTUAL KEYBOARD

Connection: Connection to the appropriate Laptop/PC port Intensity: Intensity of the projected Virtual Keyboard VKB settings can be changed

Sound: A direction technology based on an optical recognition mechanism enables the user to tap on the projected key images, while producing real tapping sounds. Controllable Virtual Keyboard sound effects (key clicks). VKB's adaptable technology studies the user's finger movements to interpret and record keystrokes. Because the virtual keyboard is an image projected by light, it disappears completely when not in use.

Timeouts: coordinated timeouts to conserve the Virtual Keyboard's battery life Sensitivity: adjustable sensitivity of the Virtual Keyboard

Auto-repeat: Allows the VKB to automatically repeat a key based on prescribed parameters.

Compatible: It is more compatible and it did not require any practice to operate.

LED PROJECTOR

The role of monitor is taken by LEDProjector which projects on the screen. The role of monitor is taken by LED Projector which projects on the screen. The size of the projector is of A4 size. It has the approximate resolution capacity of 1024 X 768. Thus it is gives more clarity and good picture. A video projector is a device that receives a video signal and projects the corresponding image on a projection screen using a lens system. All video projectors use a very bright light to project the image, and most modern ones can correct any curves, blurriness, and other inconsistencies through manual settings. Video projectors are widely used for conference room presentations, classroom training and home theatre.



Fig5: LED Projector

DIGITAL CAMERA

It is useful in video recording, video conferencing, simply it is called as web cam. This terminal will enable us to know about the surrounding atmosphere and group to group communication with a round display and a central super wide angle camera. his terminal enables showing of the surrounding atmosphere and group-to-group communication with a round display and a central super-wideangle camera. Digital cameras can do things film cameras cannot displaying images on a screen immediately after they are recorded, storing thousands of images on a single small memory device, and deleting images to free storage space. The majority, including most compact cameras, can record moving video with soundas well as still photographs. Some can crop and stitch pictures and performsother elementary imageediting. Some have a GPSreceiver built in, and can produce Geo-tagged photographs.



Fig6: Digital Web Camera

3. P-ISM

P-ISM (Pen-style Personal Networking Gadget Package), which is nothing but the newdiscovery which is under developing stage by NEC Corporation. In this device you will find Bluetooth as the main interconnecting device between different peripherals. P-ISM is a gadget package including five functions: a pen-style cellular phone with ahandwriting data input function, virtual keyboard, a very small projector, camerascanner. P-ISMs are connected with one another through short-range wirelesstechnology (Bluetooth). The whole set is also connected to the Internet through thecellular phone function. This personal gadget in a minimalist pen style enables the ultimate ubiquitous computing.

4. TYPES OF LED DISPLAY

There are two types of LED panels:

- Conventional(using discrete LEDs) and
- Surface-mounted device (SMD) panels.

Most indoor screens on the market are built using SMD technology—a trend that is now extending to the outdoor market. An SMD pixel consists of red, green, and blue diodes mounted in a single package, which is then mounted on the driver PC board. The individual diodes are smaller than a pinhead and are set very close together. The difference is that the maximum viewing distance is reduced by 25% from the discrete diode screen with the same resolution. Most indoor screens on the market are built using SMD technology—a trend that is now extending to the outdoor market. An SMD pixel consists of red, green, and blue diodes mounted in a single package, which is then mounted on the driver PC board. The individual diodes are smaller than a pinhead and are set very close together. The difference is that the maximum viewing distance is reduced by 25% from the discrete diode screen with the same resolution.

5. BATTERY

The most important part in the portable type of computer is its battery. Usually batteries must be small in size and work for longer time. It comes with a battery life of 6+. For normal use it can be used for 2 weeks. This 'pen sort of instrument' produces both the monitor as well as the keyboard on any flat surfaces from where you can carry out functions you would normally do on your desktop computer.

ADVANTAGES

- Portable Feasible Ubiquitous
- Makes use of Wi-Fi technology
- Mobility
- Touch and feel the technology
- It supports wireless technologies

DISADVANTAGES

- It works on wireless technologies and therefore it has limitations of range.
- It is exorbitantly expensive.
- One of the components can be easily misplaced.
- Projection surface should be flat for optimum usage

CONCLUSION

The communication devices are becoming smaller and compact. This is only an example for the start of this new technology. “The design concept uses five different pens to make a computer. One pen is a CPU, another camera, one creates a virtual keyboard, another projects the visual output and thus the display and another communicator (a phone). All five pens can rest in a holding block which recharges the batteries and holds the mass storage. Each pen communicates wireless, possibly Bluetooth”.

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