

5 Pen PC Technology

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Abstract— Modern technologies are shaping the world in very effective and efficient ways. Computers are advancing rapidly. In this process, the technology came which is known as 5 Pen PC. This technology is a new finding of NEC corporation. It is also called “P-ISM” – Pen Style Personal Networking Gadget Package. It consists of five major components: CPU pen, communication pen, Projector pen, Camera pen and Virtual keyboard pen. It uses mainly Bluetooth and internet for communication purpose.

Keywords— CPU pen, P-ISM, virtual keyboard, communication pen, LED projector

Introduction

5 Pen Pc Technology is developed by a Japanese Company NEC (Nippon Electric Company, Limited) in 2003. It is designed by Tour Ichihashi. It has five major parts: CPU pen, communication pen, Projector pen, Camera pen and Virtual keyboard pen. It is also known as P-ISM. P-ISMs are link to each other through wireless technology like Bluetooth. It can also uses the wi-fi Technology as well and provides facilities to develop computing environment anywhere. It was first feature at ITU telecom world held in Geneva, Switzerland.



Fig. 1. 5 Pen PC Technology

Components of 5 Pen PC Technology

CPU pen

Name suggest that CPU's work is done by a pen. Every function of general computer's CPU is done in lucrative and systematic manner. These functions are arithmetical, logical and I/O operations. CPU pen works only with Windows Operating System and dual core processor is used in it.



Fig. 2. CPU pen

Communication pen

This pen is used for establishing communication between others device. It uses the wireless technology like Bluetooth or sometimes wi-fi for connecting purpose. This pen has basically inbuilt cellular functions which is used to connect it to the internet and share information to relevant devices. It is conceptually form a Tri- wireless mode consist of Bluetooth, 802.11 B/G, Cellular for connection.



Fig. 3. Communication pen

Projector pen

It is used to obtain a LED projector which is used for visual output of the computer. This projector has good resolution capacity 1024*768 approximately and nice image quality. It is necessary to project content on flat surface for better experience. Projector pen works together with Communication pen and Camera pen.



Fig. 4. Projector pen

Camera pen

Its purpose is to capture image and videos. It connects to other device like communication pen, projector pen through wireless technology like Bluetooth and wi-fi. Others features of camera are that it can rotate complete 360 degree and used for facial recognition as well. It is highly portable as same as other components.



Fig. 5. Camera pen

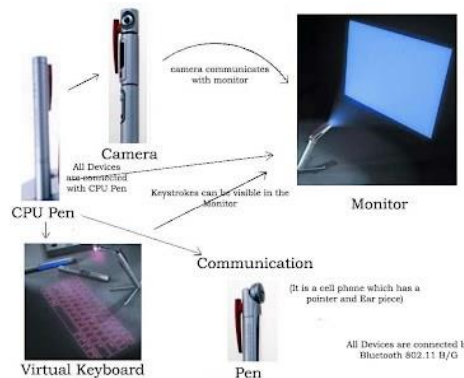
Virtual Keyboard Pen

This pen is used to project virtual keyboard which is also known as laser keyboard. It emits a virtual keyboard on flat surface or some desk which is suitable for this purpose. This keyboard is same as general computer's QWERTY keyboard but faster and much secure than ordinary keyboard. Sensitivity of laser keyboard is adjustable, a great feature of it.



Fig. 6. Virtual keyboard pen**Working of P-ISM**

P-ISM has five pen devices in which each device is connected with CPU pen. Camera pen is connected with Projector pen to establish communication between camera and display unit. Projector Pen is connected with Virtual keyboard pen so that keystrokes can be made visible on display. All components are connected by Bluetooth 802.11 B/G. Sometimes devices are also connected using wi-fi technology.

**Fig. 7. Working of P-ISM****Basic techniques of Pen computing:**

1. **Direct manipulation:**
 - a. The stylus is used to press and drag on simulated objects directly. One example, Wang Freestyle system.
2. **Gesture recognition:**
 - a. It is used to recognize a special command. For instance, "Pig tail" shape which indicates 'delete' operation.
3. **Handwriting Recognition:**

The tablet and stylus are used to replace a keyboard and mouse in two modes in following ways:

Online-Handwriting recognition mode:

- a. The stroke as handwritten characters are recognized by software. Then, Characters are entered as, if they are entered from a real keyboard.

Pointing mode

- b. Pointing device is a "Stylus" here.

Advantages of 5 Pen PC Technology

- It uses wireless technology to connect devices which completely remove the hodgepodge of wire or cable.
- It is highly portable and easy to use due to small in size.
- Size of display unit can be changed according to requirement.
- It uses less internal and external space.

Disadvantages 5 Pen PC Technology

- It is very costly.
- Projection surface for both display unit and virtual keyboard must be flat for smooth usage.
- It has limitation on range due to use of wireless technology.
- It can be misplaced easily due to small is size.

Conclusion

The communication technology is improving with time and becoming smaller and sophisticated. In this process, P-ISM came which is really a hi-tech technology and bring the computers in people's pocket. It can be surely great discovery in future when its usage will general among people and it can change the people's view about computer.

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