5 PEN PC TECHNOLOGY

Mr. Ebrahim Mujawar [1], Mr. Shreyas Mali[1], Mr. Suyog Sutar[1], Ms. K. N. Rode[2]

[1]Students, Electronics & Telecommunication Department, Sharad Institute Of Technology College Of Engineering Yadrav, Maharashtar, India.
[2]Asst. Prof. Electronics & Telecommunication Department, Sharad Institute Of Technology College Of Engineering Yadrav, Maharashtar, India.
 ebrahimmujawar80@gmail.com, Shreyasmali2312@gmail.com, Suyogsutar098@gmail.com

ABSTRACT

When writing a quick note, pen and paper are still the most natural to use. The 5 pen pc technology with digital pen and paper makes it possible to get a digital copy of hand written information, and have it sent to digital devices via Bluetooth.

P-ISM (Pen-style Personal Networking Gadget Package), which is nothing but the developing stage by NEC Corporation. It is simply a new invention in computer and it is associated with communication field. Surely this will have a gr eat impact on the computer field. 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 a hand writing 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. The whole set is also connected to the Internet through the cellular phone function. This personal gadget in a min list pen style enables the ultimate ubiquitous computing.

1. INTRODUCTION

Computer affects our life in a much bigger way then most of us might have thought. It has become a compulsory requirement in most professions to be able to use computer software. Modern computers which are based on integrated circuits are small enough to fit into mobile devices but imagine having computer that will fit into a pen.

Imagine a world where everybody can use modem IT without being an expert. Imagine using only pen and paper to send e-mails and SMS. Pen-style Personal Networking Gadget are 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 It is a computer broken apart into pieces, each the size of a pen. The screen and keyboard are projected onto surfaces.

The P-ISM (Pen-style Personal Networking Gadget Package) is only a prototype under developing stage by NEC Corporation. In 2003, Geneva held the ITU telecom Word exhibition which exhibited a conceptual $30,000 prototype of a P-ISM designed by the Tokyo- based NEC Corporation.

Working Principle:

- A computer that utilizes an electronic pen rather than a keyboard for input. Pen computers generally require special operating systems that support handwriting recognitions that users can write on the screen or on a tablet instead of typing on a keyboard.
- Most pen computers are hand- held devices, which are too small for a full – size keyboard.

How does it work ?

The P-ISM (Pen-style Personal Networking Gadget Package) consists of a package of 5 pens that all have unique functions; combining together to create virtual computing experience by producing both monitor and keyboard on any flat surfaces from where you can carry out functions that you would normally do on your desktop computer. P-ISM′s are connected with one another via a short-range (Bluetooth) wireless technology. The whole set is connected to the Internet through the cellular phone function.

The five components of P-ISM:

1. CPU pen

2. Communication pen

3. Virtual keyboard

4. Digital camera

5. LED projector

How does each component work?

Concept Component	Function	Reliability
CPU Pen	Computing Engine	Open
Communications Pen	Cell Phone, Pressure Sensitive Pointing Device, Pointer and ear piece. Communications using Bluetooth	Near Term
Display	LED Projector A4 Size Approx. 1024 X 768	Slightly Farther Out Than the Phone and Camera
Keyboard	Projected keyboard with 3D IR Sensor	Slightly Farther Out Than the Phone and Camera
Camera	Digital Camera	Near Term
Based	Battery Charger and Mass Storage	Open

2. CPU PEN

The functionality of the CPU is done by one of the pen. It is also known as computing engine. It consists of 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.

Fig. Diagram of CPU pen

Control unit: The control unit of the CPU contains circuitry that uses electrical signals to direct the entire computer system to carry out, stored program instructions. The control unit does not execute program instructions; rather, it directs other parts of the system to do so. The control unit must communicate with both the arithmetic/logic unit and memory.

3.   COMMUNICATION PEN

P-ISM′s 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 terabytes of data, exceeding the capacity of today′s hard disks.

This is very effective because we can able to connect whenever we need without having wires. They are used at the frequency band of 2.4 GHz ISM (although they use different access mechanisms). Blue tooth mechanism is used for exchanging signal status information between two devices. This techniques have been developed that do not require communication between the two devices (such as Blue tooth′s Adaptive Frequency Hopping), the most efficient and comprehensive solution for the most serious problems can be accomplished by silicon vendors. They can implement information exchange capabilities within the designs of the Blue tooth.

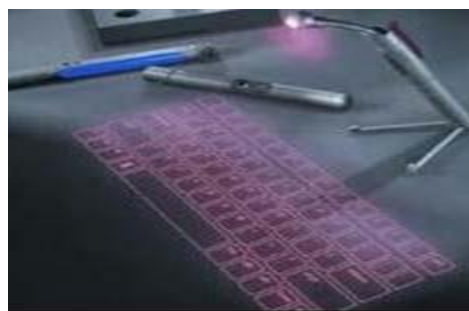**Fig. Diagram of Communication Pen**

Technology used in communication-

- Bluetooth
- Cellular network

4.   VIRTUAL KEYBOARD

The Virtual Laser Keyboard (VKB) is the ULTIMATE new gadget for PC users. The VKB emits laser on to the desk where it looks like the keyboard having QWERTY arrangement of keys i.e., it uses a laser beam to 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. A 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

Fig. Diagram of Virtual Keyboard

5.   DIGITAL CAMERA

The digital camera is in the shape of pen .It is useful in video recording, video conferencing, simply it is called as web cam. It is also connected with other devices through Blue tooth. It is a 360 degrees visual communication device. 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

.

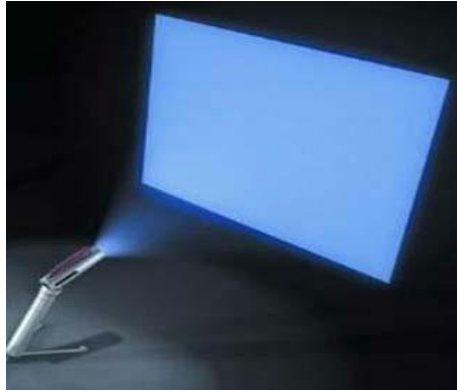**Fig. Diagram of Digital Camera**

A digital camera (or digi cam) is a camera that takes video or still photographs, or both, digitally by recording images via an electronic image sensor. Most 21st century cameras are digital.

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 sound as well as still photographs. Some can crop and stitch pictures and performs other elementary image editing. Some have a GPS receiver built in, and can produce Geo tagged photographs.

6.   LED PROJECTOR

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.

Fig. Diagram of Led Projector

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, home theatre and live events applications. Projectors are widely used in many schools and other educational settings, connected to an interactive whiteboard to interactively teach pupils.

6.1 PROJECTION TECHNOLOGIES

CRT projector using cathode ray tubes. This typically involves a blue, a green, and a red tube. This is the oldest system still in regular use, but falling out of favor largely because of the bulky cabinet. However, it does provide the largest screen size for a given cost. This also covers three tube home models, which, while bulky, can be moved (but then usually require complex picture adjustments to get the three images to line up correctly).

LCD projector using LCD light gates. This is the simplest system, making it one of the most common and affordable for home theaters and business use. Its most common problem is a visible "screen door" or pixelation effect, although recent advances have minimized this.

6.2 TYPES OF LED DISPLAY

There are two types of LED panels: conventional (using discrete LEDs) and surface-mounted device (SMD) panels. Most outdoor screens and some indoor screens are built around discrete LEDs, also known as individually mounted LEDs. A cluster of red, green, and blue diodes is driven together to form a full-color pixel, usually square in shape. These pixels are spaced evenly apart and are measured from center to center for absolute pixel resolution. The largest LED display in the world is over 1,500 ft (457.2 m) long and is located in Las Vegas, Nevada covering the Fremont Street Experience. The largest LED television in the world is the Center Hung Video Display at Cowboys Stadium, which is 160×72 ft (49×22 m), 11,520 square feet (1,070 m2).

Battery:

The most important part in portable type of computer is battery and storage capacity. Usually batteries must be small in size and work for longer time. For normal use it can be used for 2 weeks. The type of battery used here is lithium ion battery. The storage device is of the type tubular holographic which is capable of storing. The use of lithium ion battery in this gadget will reduce energy density, durability and cost factor.

By making Five Pen PC feasible, it will enable ubiquitous computing therefore it is easier for people to use. Many applications can be imagined with this new technology. As it makes use of E-fingerprinting the gadget will be more secure, which allows only owner to activate the Pc. So even if we lose it, no one else can access the gadget. All PC's communicate each other with the help of Bluetooth technology and the entire gadget is connected to internet (Wi-Fi). This technology is very portable, feasible and efficient. Everybody can use this technology in very efficient manner. Some prototypes have been already developed in 2003 which are very feasible, but currently unclear. The enhancement in this technology can be expected in coming years.

7. CONCLUSION

The communication devices are becoming smaller and compact. This is only a example for the start of this new technology. We can expect more such developments in the future. It seems that information terminals are infinitely getting smaller. However, we will continue to manipulate them with our hands for now. We have visualized the connection between the latest technology and the human, in a form of a pen. 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. The whole set is also connected to the Internet through the cellular phone function. This personal gadget in a minimalistic pen style enables the ultimate ubiquitous computing

"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.

REFERENCES

[1] www.webstatschecker rom/ieee paper on 5 pen pc technology.

[2] www.keuru.info/s/5-pen-pc-technology.

[3] www.ieeexplore.ieee.org/pen-based learning technologies, 2007, plt 2007.

[4] Mrunal Shidurkar, Mohammad Usman https://www.ijser.org/researchpaper/5-Pen- PC-Technology.

[5] Sai Kiran Lakumarapu, http://www.researchpublish.com/download. php?file

[6] Chavan Mayur, https://medium.com/@chavanmayur996/5- pen-pc-technology-6b1bb92e4136.

[7] http://thejoblessengineer.hol.es/5-pen-pc- technology-p-ism-includes-5-functions.

[8] https://i0.wp.com/catchupdates.com/wp- content/uploads/2012/07/pen.

[9] http://rockinglearners.blogspot.com/p/cpu- pen.html

[10] http://mosaic.cnfolio.com/B101CW2010Art icle154.

[11] https://i0.wp.com/catchupdates.com/wp- content/uploads/2012/07/led1.

[12] http://1.bp.blogspot.com/- j3u2rmFogZc/U9KRmXx1_wI/AAAAAAA AATg/_LEAxLfCYdA/s1600/11 .