

(Volume2, Issue4) Available online at <u>www.ijarnd.com</u> 5 Pen PC Technology: A Review

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ABSTRACT

"5 pen technology" is a recent innovation in the area of pen computing. Pen computer is a field that outline computer like user interface that makes use of pen-like devices that will be suitable to use in evaluation to modern 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. All the 5 pens are connected to each other via wireless technology if possible Bluetooth i.e. 802.11 BG .The whole set of 5 pen technology is connected to the internet via the cellular phone pen.5 pen PC technology is also known as P-ISM i.e. Pen-style Personal Networking Gadget Package.

Keywords: P-ISM, Display, Camera, CPU Pen, Battery, Virtual Keyboard, Bluetooth, Wireless Connectivity.

I. INTRODUCTION

The current 21st century is considered to be a new era in the field of technology. In the contemporary world, communication technology is becoming larger. Since the time computer has been invented engineers have been trying to making it more and more packed in so that it would become easy to use. The world where everybody can use modern IT without being a specialist was always thought as something unreal. Use of pen and paper to send SMSs, e-mails and surf Internet didn't seem possible. However, the beginning 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 wherein each has a function of its own, but when joint together, they give us the handling of a complete computer in an easy and compact manner. In other words, it is a computer that is broken apart into pieces. Fig.1 shows the example of 5 Pen Technology.

The 5 Pen PC technology was designed by Toru Ichihash. It is basically an innovation in the field of computers in association to the communication field. Rest assured, it will have a greater impact in the field of computers. People often tend to make notes of the important things they come across in the most traditional method used and still in use are pen and paper. On similar but more technical terms, the 5 pen PC technology with the digital pen makes it possible to obtain a digital copy of the handwritten information, and have it transferred to digital devices via wireless technologies like Bluetooth, which operates as the main interconnecting device between different peripherals. The whole set is also coupled to the Internet which makes the communication even more easy and efficient.



Fig. 1 Block diagram of 5 Pen PC Technology.

II. HISTORY

The abstract example of the "pen" computer was built in 2003. The prototype device, dubbed the "P-ISM", was a "Pen-style Personal Networking Gadget" created in 2003 by Japanese technology company NEC. The P-ISM was featured at the 2003 ITU Telecom World held in Geneva, Switzerland.

The designer of the 5 Pen Technology,"Toru Ichi has", said that" In developing this concept he asked himself – "What is the future of IT when it is small?" The pen was a logical choice. He also wanted a product that you could touch and feel. Further, the intent is to allow for an office anywhere."

However, although a conceptual prototype of the "pen" computer was built in 2003; such devices are not yet available to consumers. "The design idea 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."



Fig: They can implement information exchange capabilities within the designs of the Blue tooth.

III. THE COMPONENTS

Concept	Function	Reliability
Component		
CPU Pen	Computing Engine	Open
Communication	Cell phone, Pressure,	New Term
Pen	Sensitive Porting Device,	
	Communications using	
	Bluetooth, Pointer, and	
	ear	
	piece	
Display	LED Projector A4 Size	Slightly Farther out
	approx. 1024*768	then the phone and
		camera
	Projected keyboard with	
Keyboard	3D	Slightly Farther out
	IR Sensor	then the phone and
		camera
Camera	Digital Camera	Near Term
Based	Battery charger and Mass	Open
	Storage	

3.1 CPU PEN

The functionality of the CPU is finished by a single of the pen. It is also known as a computing machine. It consists of dual-core processor embedded in it and it works with WINDOWS operation system. The central processing unit (CPU) is the part of a computer system that carries out the information of a computer program and is the key element carrying out the computer's function.

The control unit does not execute program commands; fairly, it directs other parts of the system to do so. The control unit must communicate with both the arithmetic/logic unit and memory. They can implement information exchange capabilities within the designs of the Blue tooth.

3.2.1 BLUETOOTH

Bluetooth uses a radio knowledge called regularity-hopping enlarge variety which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centered from 2402 to 2480 MHz) in the range 2,400-2,483.5 MHz (allowing for guard bands). This variety is in the worldwide unlicensed Industrial, Scientific, and Medical (ISM) 2.4 GHz short-range radio occurrence band.



Fig.3.2.1 Diagram of Communication Pen

3.2 COMMUNICATIONS PEN

P-ISM's are linked with one another through limited 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 regularity band of 2.4 GHz ISM (although they use dissimilar access mechanisms). Blue tooth mechanism is used for exchanging signal status information among two devices. These techniques have been developed that do not require communication between the two devices (such as Blue tooth's Adaptive Frequency Hopping), the most capable and comprehensive solution for the most serious problems can be accomplished by silicon vendors.

3.2.2 IEEE 802.11

They are formed and maintain by the IEEE LAN/MAN Standards Committee (IEEE 802). The base existing description of the standard is IEEE 802.11-2007.

3.3.3 CELLULAR NETWORK

A cellular network is a two-way radio network distributed. When joined together these cells supply radio coverage over a wide geographic area. This enables a big number of moveable transceivers (e.g., mobile phones, pagers, etc.) to swap a few words with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if a few of the transceivers are moving during more than one cell during transmission. Cellular networks propose a number of advantages over alternative solutions:

- Increased capacity reduced power use larger coverage area.
- Reduced interference from other signals.

An example of a simple non-telephone cellular system is an old taxi driver's radio system where the taxi company has several transmitters based around a city that can communicate directly with each taxi.

3.3 Projector Pen (DISPLAY)

This projector pen works as a conventional projector. Its maximum display resolution is 1024x768 pixels which will provide high-quality picture. It must be probable on a flat plane for better user knowledge and its clearness depends on the space among the projector pen and the probable surface. Greater the distance between the two less will be its clarity. Its plants in mixture with communication pen and camera pen. Projector pen can be attached to a small stand for steady projection on any flat surface as shown in the Figure.



Fig.3.4.1 Projector Pen

3.4 Digital Camera Pen

This pen has an innate digital camera which helps in capture imagery and video. Apart from that, it can also function as a webcam which can be used for web related applications such as video conferencing, Skype etc... Also, it can be used for facial recognition. The motion sensors embedded in the pen assists the camera to automatically adjust since the camera can rotate 360 degrees. The Digital Camera Pen is shown in Figure

3.5 Virtual Keyboard (VKB) Pen

This pen functions alike 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. The input is recognized by the device when the keys are typed on the laser keyboard. Its functions are almost similar to those of the computer keyboard or the on-screen keyboard. The Virtual keyboard pen is shown in Figure.



Fig.3.5.1 Virtual Keyboard Pen It has following features

- 1. Timeouts: Co-ordinated timeouts to conserve the VKB's battery life.
- 2. Sensitivity: Sensitivity of the VKB can be adjusted.
- 3. Auto-repeat: Allows the VKB to automatically suggest a key based on some parameters.
- 4. Controllable Virtual Keyboard sound effects (key clicks)
- 5. Intensity: Intensity of the projected Virtual Keyboard
- 6. VKB settings can be changed by sound.

IV. CONCLUSION

The communication devices are fetching lesser and solid. This is only an example for the start of this new technology. We can imagine more such development in the future, it seems that in order terminal is much getting lesser. However, we will continue to manipulate them with our hands for now. We have visualized the link among the newest knowledge 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. This owns gadget in a minimalist pen style enable the eventual ubiquitous computing. "The plan idea uses five unlike pens to make a computer. 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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